NTX / NT, Booster

Lighting Consoles
Manual

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Overview

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Short Description

The NT-Software runs on various platforms and operating systems:

    NT-Console on Operating system MTOS
    Booster on Operating system Linux
    NTX-Console, Operating system Linux
    NT Offline Editor, Operating system Windows (with reduced functionality)

Using the NT-system is similar on all OS platforms, shows can be exchanged between the various platforms
(if they are not exceeding the memory capacity of NT-consoles).

NT and NTX consoles are based on a console unit which contains the control CPU, the "master keyboard"
with control keys, analog faders and digital wheels, disk drives, hard discs and desk displays. External
monitors or TFT-displays, PC keyboard and mouse complete the system.
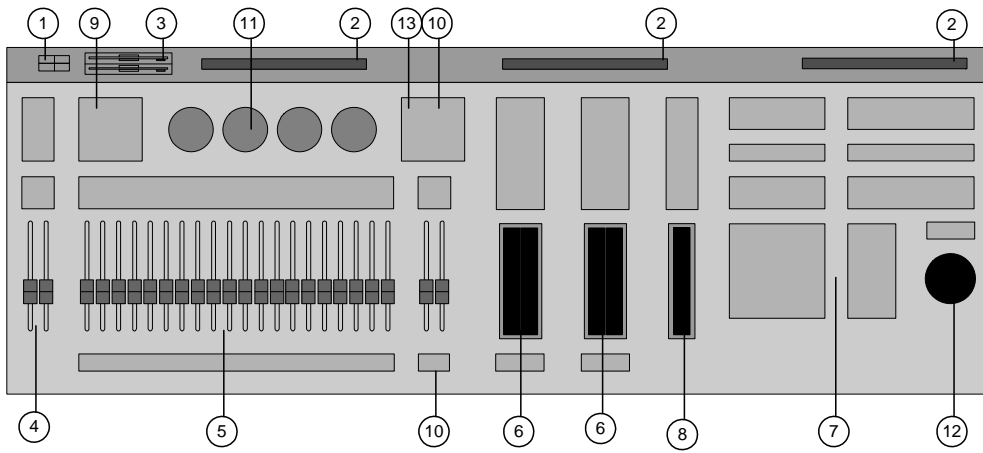
Pic 1: Overview Prisma NT/NTX
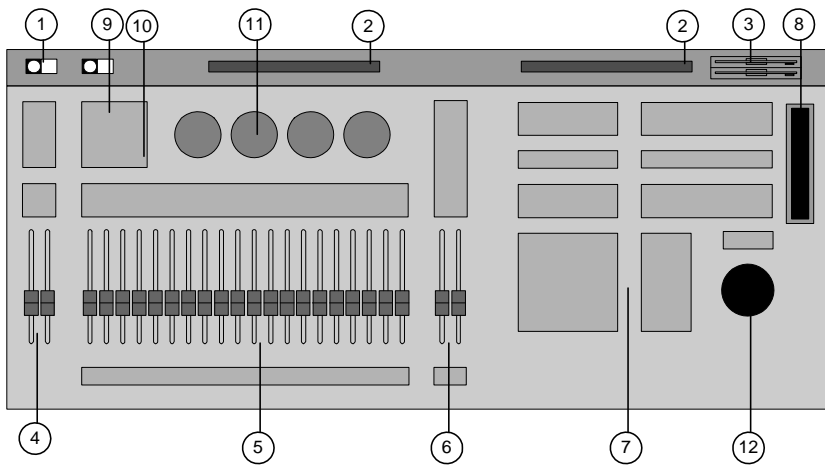
Picture 2: Overview Focus NT/NTX
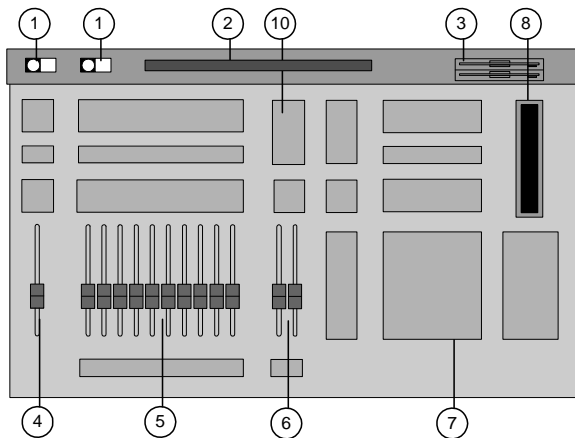
Picture 3: Overview Iris

1 Key operated switch

The switch turns the system on or off
the memory protection switch allows to disable memory write access.

2 Desk Displays

Integrated VFD-displays display various information

3 Disk Drives

for
- storing Shows
- storing Setup-Information
- restoring system-setup data

NTX consoles are equipped with one disk drive and USB ports

4 Grandmaster Faders

Prisma/Focus:
Two faders **I** and **II**, selection keys **I** and **II** with corresponding Blackout-keys, Reset-key **RS**, key **FLASH** for activating the flash-keys (and key **BLD** on Focus for selecting the blind-preset).

Iris
has a fader for Grandmaster **M** with corresponding Blackout-key, key **FOH** in conjunction with the digital wheel acts as second Grandmaster. Key **RS** for reset operations, key **FLASH** for activating the flash-keys and selection key **BLD** for selecting the blind-preset.

5 Submasters (Groups)

Each submaster or group has a dedicated fader, a selection key, a blackout and a flash key. Prisma has a grand master for all group-submasters.

6 Crossfade Systems

Prisma has two independent crossfade systems with digital wheels for controlling times or manual crossfading, Focus/Iris has one crossfade system with faders for manual crossfading or time control.

The crossfade systems act as playback for the sequence programmed; if no independent times are assigned the crossfade controls in- and out-times automatically (or manually). There are various ways for the operator to interact at each level of an automated crossfade.

7 Control Keys

are used for general operating of the system.

8 Digital Wheel

The digital wheel controls either intensities or movinglight attributes; some keys change the function of the digital wheel.

9 Attribute Groups

On Prisma/Focus the displayed attributes controlled by the encoders can be changed here; Focus has keys for controlling effects in this section.

10 Effect Control Keys

control effects like chasers etc.

11 Encoder

Prisma/Focus have Encoders for controlling assigned movinglight-attributes.

12 Trackball

The built-in Trackball can be used for controlling Pan-/Tilt within the movinglight control and can be configured as mouse with property MOUSE_PRESENT.
Response of the trackball is controlled by property TRACK...

13 Dynamic Effects (Dynamics)

Prisma has keys for controlling Dynamics; Focus/Iris keys for changing between list views. Dynamic Effects on Focus/Iris are controlled with menu controls.

Some keys have key lamps showing the functions state (like **S/CH**) or operations in progress (like **FLi**).

The internal hard disc drives stores the console software, configuration and shows.

An external PC-keyboard is used for entering texts or as input device, giving the option to input various control commands.

The mouse can be used to select presets, channels, fixture attributes and helps to control the menus.

The Booster is normally connected to a console which then acts as Facepanel. Using the system is similar to using the console; the user will notify the highly improved performance after connecting the "stand alone console" to a Booster.

The NT Offline Editor works "stand alone" and is controlled by PC-keyboard and mouse. Details about the assignment of PC-keys to control keys are explained in its documentation.

With the introduction of the NTX-console some key labels have slightly changed, the function of the keys remained unchanged:

NT	NTX
E	EFF
ERE	EREV
TRK	TRACK
PROGCL	PRGCL
PROGBO	PRGBO

Presets

Presets have the following functions:

- Creating or correcting cues
  Intensity levels, Movinglight-attributes and Effects can be created in all presets; independent channel times only within the Crossfade System **XF** or in **BLD** (blind) preset.

- Presetting cues
  Lighting output is controlled by the content of presets which depend on the level of the directly assigned or super ordinate faders/levers or is controlled by external signals.

- Lighting cues can be copied from and to the memory (or to other presets).

The target for a cue is always the actual, selected preset. Each preset can contain values for control channels or movinglight attributes (both HTP and LTP values). Times for fading between presets can be flexible assigned.

We differ between the following preset types:

Active Presets
> contribute to the "active" lighting output of the console; the preset levels can be modified by faders. Submasters/groups, **XF**- and **PROG**-presets (PROG not on Iris) are "active" presets.

"Blind" Presets
> act as "preview" only (without lighting output) for editing cues or effects. Blind presets are **BLD** and **PV**.

The output values for channels are the intensities set in the active presets and can be modified by (master) faders. Dimmer channels act HTP, movinglight attributes can be assigned as LTP. The PROG-preset always has the highest priority and acts as LTP.

Intensity levels within the selected preset are displayed at the **LEVEL** list view. The **STAGE** list view shows the intensities of all presets, crossfaders and submasters without levels from effects. The actual, "true" console output (including effects) can be viewed with list **OUT**. For more information please refer to chapter "monitor views" in section "Views".

Submasters

The console has 20 (Iris 10) interdependent submaster groups (short: submasters) which give the following functionality:

- Analog faders with Blackout keys for controlling the submasters preset levels, cues or effects or to enable movinglight (LTP) attributes.
- Automatic timing for fading a cue within the group in/out, selectable per submaster
- Independent Effects per submaster
- Flash key, which bumps the fader-output to 100% or Blacks out
- External Analog signal, which overruns the fader level
- External Digital signal, can be used to flash or blackout a submaster
- Tone control for level of selected channels

The contribution to the output level of a channel is calculated as follows: The level in each submaster is multiplied by the current status of the associated master fader, the highest value from all submasters determines the contribution to dimmer output.

The general master fader with the associated blackout switch (**GRBO**) is super ordinate to all submasters. It regulates the contribution of the group system to the active light output.

Property GR_ZEIT defines if times within groups are taken from the fade time of the cues or independently linked to the groups.

Crossfade System]

Prisma has two similar, independent crossfade systems (Focus/Iris: one), controlled by the Sequence Lists, which organize the order (and how) cues will be played back.

Crossfades can be controlled manual or automatically; for automated crossfading the following times define the total crossfade time and are assigned independent to each lighting cue:

- Delay (wait) and crossfade time for fading down and up (in/out) are stored as a cue time.
- Furthermore, independent times assigned to control channels control the individual timing of channels or parts of the cue.

A master fader (Prisma **XFM**, on Focus/Iris **XF** combined with digital wheel) and the Blackout-Key **XFBO** control the crossfade system(s) output.

The presets have the following function:

- The **PV**-preset: is a "blind" register which contains the next cue to be faded in.
- The **DEST**-preset is a "blind" preset and contains the "destination" values the cue will reach and the relevant times. Level changes in the **DEST**-preset while fading modify the destination value the cue will reach and not the actual output value. The content of preset **DEST** will be similar to **XF** after the fade is finished.

  Note: On Focus/Iris the DEST-preset is selected by the external PC keyboard, key **{**

- The **XF**-preset is the active preset of the crossfade system; in automated mode the console calculates the output for each channel by its start- and end-value and the times assigned. When crossfading manually, the output is defined by the position of the crossfade faders/wheels. An effect recorded to a cue will be started with the start of a crossfade.

Programmer-Preset

The Programmer is super ordinate to the actual output-calculation (has the highest priority), values for dimmers and Movinglight-attributes in the **PROG** overwrite the actual output value. The Programmer-preset is controlled like any preset, its BLACKOUT key stops output from the programmer, key **PROGCL** clears the content of the programmer which means that involved channels and attributes now can be controlled by the normal output controls, crossfaders etc.

Memory

Cues, effects and other settings are held in the consoles memory; for NT consoles it is battery-buffered.

Cues in the consoles memory have no indication from which preset they have been recorded. A recorded cue can be read into any preset, but submasters do not handle independent channel fade times (if cues containing independent times are loaded to a submaster and re-recorded the independent times are lost).

The list view **QLIST** shows all recorded cues, sorted by their cue number.

Hard Disc, Floppy Discs, Fileserver, USB-Memory

Data (complete shows, default settings or setup files) can be stored on the local hard disc or onto floppy discs. The default settings stored on the hard discs will be restored after a 52 RS / "erase all memory".

From version 5.5, the Fileserver-client is available. Data, which previously could only be saved onto floppy or hard disc, can be stored now on an external Fileserver, giving the option to exchange these data with multiple consoles connected to the server.

On NTX-Booster and NTX-Consoles the additional media USB Memory is available which can be used in addition to HD, FL or Fileserver.

After 52 RS / erase all memory the memory of the system is cleared and the configuration will be loaded from the hard discs setup; it is possible to define a show number within M215, Property list, which will then be loaded.

Cue

The following information defines a lighting cue:

>   Cue number
>   Cue text QTX
>   Intensity Values
>   Times
>   Fade times (out-/in)
>   Wait times (out-/in)
>   Independent times (per channel or attribute)
>   Wait time
>   Fade time
>   Movinglight-Attributes (IFCB), Values and Times
>   Effects
>   Dynamic Effects

The intensity levels, combined with the timing of a cue define the character of a lighting cue. The fades between cues can be controlled automated or manual.

A cue contains the levels of channels / fixtures and the times which control the change of a lighting state. Independent wait- and fade-times can be set for all channels or attributes involved in a cue; furthermore, effects can be recorded within a cue to assure precise recalling within a show.

Rear Connections

All peripheral connectors are located on the rear of the console due to space limitations not all connections are available on Iris or Focus-consoles.

Consoles Type NT

Label.	Application	Comment
KBD	External PC keyboard	MF-2 compatible
MOUSE	Mouse or trackball	Microsoft compatible
MIDI	MIDI interface	5mA current loop
DMXi	DMX-Output	
DIAG	Diagnostics/service/modem	RS232
DFB	Dimmer feedback	2 x RS-485, DMX90/FDX90/FDX2000
COM	Control for external systems	RS-232
LPT	Parallel Printer	Centronics
PROFIBUS		unused
LK	Channel keyboard	20mA loop
HT3	Remote controller radio/wire	20mA loop
HT4	Remote controller radio/wire	20mA loop
AUX1		20mA loop
AUX2	Serial link for AUX	20mA loop
AUX3		20mA loop
HT1	Remote controller radio/wire	20mA loop
HT2	Remote controller radio/wire	20mA loop
EFFECT	Keyboard for effect control	
AUDIO	Sound control	2 channels (Pin 2 and 3)
DMX IN	DMX input	
LAN	Ethernet-/LAN-connection	Ethernet 10 MB/sec
EXT	External Signals analog/digital	With power supply
MON4	Monitor connector (optional)	VGA compatible
MON3	Monitor connector (optional)	VGA compatible
MON2	Monitor connector	VGA compatible
MON1	Monitor connector	VGA compatible
S1	Switched mains power supply	
230V 6A	Mains power for Monitors	

Console Type NTX

Label.	Application	Comment
USB	2 USB connectors, directly to CPU	mouse, keyboard
Line in/out	Sound connectors directly to CPU	unused
MIDI	MIDI connectors in/out/thru	
DFB	Dimmer feed back	2 x RS-485, DMX90/FDX90/FDX2000
LPT	Local printer	Centronics
LK	External channel keyboard	20mA loop
HT1 – HT4	Transtechnik radio remote	20mA loop
MON1	Monitor directly to CPU	VGA kompatibel
MON2 / MON3	Monitors standard	VGA kompatibel
MON4 / MON5	Monitors option	VGA kompatibel
EXT	External Signals analog/digital	With power supply
AUDIO	Tonsteuerung	2 channels (Pin 2 and 3)
DMX IN	DMX input	
LAN	Ethernet-Anschluss	Ethernet 1 GB
RFU	Remote Focusing Unit	ETC remote control
EFFECT	Keyboard for effect control	
S1	Switched mains power supply	
230V 6A	Mains power for Monitors	

Glossary

Adding / Piling
It is possible to add cues or preset content, the highest value of control channels will be taken.

Alteration Indexing
If a recorded cue is edited in a preset (and differs from its recorded version kept in the memory) the cue will be marked with the alteration index ↔ next to its number.

Control Channel
number of a dimmer or movinglight device. Control channels are patched to one or more dimmer channels, Movinglights are controlled by the assigned attributes.

Channel Fade Time
are Wait- and Crossfade-time assigned to particular channels.

Crossfade Time
The time for a crossfade between channels, Movinglight-attributes or a complete lighting cue.

Cue Text
Each cue can be labeled with a description text which is stored as part of the cue.

Cue Time
Time for crossfading a cue. Channel fade times for dimmer-parameters of Movinglights are not considered.

Default Patch
means that dimmer channels are patched to corresponding, identical control channels numbers.

Delay time
Starting cues can be automated within the sequence. The delay time defines the delay of the start of the next sequence step after starting the actual step.

Digital wheel
The digital (fader) wheel is a multifunctional fader which basically controls intensity-values; various control keys switch the digital wheels mode/function.

Dimmer Channel
Number of an output device (like dimmer).

Dimmer Feedback
Transtechnik Dimmersystems give the possibility of advanced dimmer monitoring and feedback of the dimmer systems controlled by the console. The DFB-software option displays errors and extended dimmer configuration (list view DFB).

Erase all Memory
Clears the memory and restores the systems default settings.

Factory Settings
Most settings are factory preset and can be changed and stored as default settings by the user, these will be restored after clearing all memory or rebooting (some settings can be reset to the factory defaults).

Fileserver
For data storage a Fileserver can be used (from Version 5.4.3). A Fileserver is an external PC running Linux or Windows; Windows-installations need to have the optional NFS-protocol installed.

Free control/dimmer channel
Control channels can be patched to multiple dimmer channels; if no dimmer channel is assigned/patched to a control channel (or vice versa) the channel is "free" and will be marked.

Hold Time
   Starts of crossfades can be triggered automatically at individual sequence steps. The Hold Time defines
   the delay of the automated start of the following sequence step after the previous crossfade is finished.

Independent Dimmer Levels
   Channels set to Independent dimmer levels are not influenced by faders (or crossfades), the output is
   defined by the percentage set in the preset.

Inhibit
   Submasters can act as Inhibit faders, giving the option to be an additional fader for channels involved in
   the submaster group.

Involved
   The criteria "involved" relates to the list view selected:

      List view **LEVEL**:
            A channel is "involved", if its level is higher then the default threshold value (see below).
            Channels within Effects will not appear as "involved".

            Preset **XF**:
                  All channels changing intensity levels are "involved" when crossfading.

            Preset **PV** or **BLD**, cue type ADD chosen:
                  Channels which are changed with a cue are "involved".

      List view **STAGE**:
            Channels contributing to the actual lighting / "stage" output are involved.

      List view **T**, **TXF**, **TWAIT** (Independent times):
            All channels with independent times assigned are "involved".

      List **MOVL/COL**: Attributes that have a value/entry at a preset are "involved".

      Default setting BET_SCHWELLE sets the minimum threshold value from which channels are
      considered being involved; factory preset is 6%.

Link
   It is possible to set links within the sequence list and define the amount of loops between cues to be
   executed.

Locked Channels
   A channels level and independent times can be locked avoiding alterations (like crossfades); the
   relevant (master) faders will remain active for locked channels.

Locked Crossfade
   When a crossfade is started, previous (running) crossfades are terminated. It is possible to "lock" selected
   channels which then will not be influenced by started crossfades.

Macro
   Recorded key inputs.
   Key inputs can be recorded and played back thus acting as "automated" input.

Mask
   Intensity (LEVEL/STAGE) and time-lists (T/TXF/TWAIT) display relevant channels information, the number
   of channels to be displayed can vary. It is possible to define a "mask" showing only channels in use.

Patch
   The Assignment of Control Channels to Dimmer Channels
   A control channels controls one or various dimmer channels, the system calculates the values for the
   control channel and outputs on the patched dimmer channels. Each dimmer channel can have various
   dimmer characteristics (like preheat, limits) or curves assigned which modify the output independent from
   the control channels value.

Property
    The system can be user-configured to a certain point; Menu M210 (Default Settings) configures
    commonly used settings, menu M215, All Settings, configures all settings. All adaptations and
    customization of the setup can be stored as "Default Setting" within the systems setup and will be
    restored after "erase all memory".

QList / Cuelist
    show all recorded cues in the memory, sorted by cue numbers.

Reboot
    Clears the memory, reloads program and resets all settings to defaults.
    A reboot is started with ENA and 62 RS. If there is a system disk in a floppy drive, the program
    is loaded from the disk, otherwise from the harddisk. All data in memory is cleared and all
    settings are restored to their defaults.

Remaining Time
    In automated crossfades the time until the end of the crossfade (remaining time) is indicated. Modifying the
    time can accelerate or slow down the ongoing crossfade.

Replacement Channels
    It is possible to assign "replacement channels" for essential channels, which means that alternative dimmer
    channels are patched to a control channel and these prepared replacements can be quickly activated (and
    deactivated) in case of a failure.

Sequence
    The sequence list defines the order in which cues will be played back within a show. A show consists of
    sequence steps which are executed in the order set by the sequence, started automatically or manual, with
    optional links or loops (with loop counters).

Single Channel Selection
    When channels are selected, the single channel selection (S/CH) function offers the possibility of keeping
    the previous selection or clearing it. With the S/CH function activated, the current selection is cleared
    before each "new", absolute channel selection (selection without +/-). This affects all channel selection-
    operations and selections done on an optional channel keyboard.

Subtracting
    Cues and preset contents can be subtracted from each other, the levels of channels having a level greater
    the threshold are set to 0%.

System Error
    Some Errors of the Hard- or Software will be notified as system errors:

    • Log-entry at the ERR-list
    • Printing of the error message
    • Message "System Error" at the Message Line

Threshold
    is the intensity level from which a channel is "involved". The factory setting is 6% and can be changed with
    Menu M210.

Tracklist
    The tracklist displays the recorded values of the selected channel(s), giving the option to edit values which
    are instantly changed.

Wait time
    If a wait time is set a started crossfade starts after executing the wait time.

Text Conventions

Operations are shown in the manual in the following way:

Key operation
> Description of operation

Example:

CLEAR
> Terminate ongoing entry and clear entry line

Part of key operations are numeric entries like channel number, level, cue number, etc, identified by abbreviations. The abbreviations used and their meanings are listed in the section "Overview of Key Operations".

Abbreviations used

The following abbreviations are used in this manual (numeric ranges are noted with a minus sign, like 1-20):

Key and ...	Hold key depressed until next key is pressed to enable special functions)
ch	Control Channel number, range: 1 to 9999
chrange	Control channel range, key **-** equals "minus" or thru, key **THRU** is always "thru"
CH/G	Number of a Channel Group, from: 1 to 999
cue	Cue number 0.1 to 999.9 Example: 5, 0.5, .5 (equals 0.5)
cuerange	Range of cues or single cue numbers Example: 1 - 5 (cues 1 thru 5)
col	Color Number, corresponding to the color table installed
dcurve	Dimmer Curve number, from 1 to 16
dch	Dimmer Channel number, Range: 1 to 9999
dest	Destination preset when transferring
digi	Digital Wheel
dmx	DMX value/intensity, Range: 0 to 255
dyn	Number of a Dynamic Effect (1 – 999)
FLi, **FLj**	Key **FL1** or **FL2**
GRi, **GRj**	Submaster (Group) preset key
gr	Number of a Submaster (Group)(**GR7** = 7)
int	Channel level/intensity from 0 to 100
lkrange	Range of Dimmer Channels, for example: 1 - 512
pal	Number of Palette, 0.1 to 999.9
reh	Rehearsal Cue number, 1 to 9999
rehrange	Rehearsal Cue range, for example: 1 - 28
source	Source preset when transferring
preset	Preset (all available), e.g.: **GR5**, **XF**, **PV**, **BLD**
seq	Sequence Step (0.1 to 999.9)
time	Time value, from: 0.1seconds to 60 minutes

> Examples:
>
> | | |
> |---|---|
> | 5 | 5 seconds |
> | 5.5 | 5.5 seconds |
> | 0.1 | 0.1 seconds |
> | .1 | as 0.1 |
> | 1' | 1 minute |
> | 1'03 | 1 minute and 3 seconds |

Introduction to General Operations

This chapter describes the general operating and using of the system.

- Operations with the **RS** –key (reset) restore defined settings and states or switch between various display configurations

- A text editor allows the user to create notes which are stored within the system

- An integrated "online help" manual gives the operator quick assistance

- It is possible to record key operations within "Macros" which can be called with key commands or automatically from within the crossfade sequence

- A PC-keyboard connected the lighting console can be simultaneously used as additional terminal. Keys of the lighting console are assigned to keys on the external keyboard (or to Software like Libra, Channel Monitor etc).

Key-operated Switches

On the left hand side of the lighting console are two key-operated switches:

On
Switches the internal power supply and the mains-sockets on the back of the console on/off

Memory Lock
Controls the memory write protection: if activated (control lamp is lit) writing to the internal memory is disabled to prevent unauthorized or unintentional access to the systems memory or hard disc.

The hardware design of NT-Systems allows using the console straight after powering-on by buffering the consoles memory with a rechargeable battery/accumulator. A shut-down-procedure is not required for NT-consoles; turning on the console is similar to the reset command when operating.

NTX- or Booster systems are built on PC-hardware running Linux-OS; a rechargeable battery/accumulator ensures a controlled shut-down of the system. When turning off an NTX-system "shutting down system" will be displayed, the display color changes to grey and both local and DMX-over-Ethernet-output will be stopped. The detailed shutdown-procedure will be displayed on the monitor connected to MON1. When the shutdown process is finished (↑20 seconds), the state of the on/off key-operated switch is checked: if turned back to the "ON"-position the system will re-start again, if kept in "OFF"-position the system will be powered off.

When mains-power is lost, a warning note will be displayed and the screens are greyed. The console can only be operated by its external keyboard or mouse, the power-control lamp stays lit. If mains power is restored within 20seconds a message will be displayed and the console can be used after an automatic software restart. If the power cut lasts longer than 20seconds the console will automatically shut-down; turning off the mains key-operated switch within these 20seconds will immediately shut down the system.

When powering on the NTX-/Booster system its operating system will be loaded and initialized and the last known state before shutting down is restored (similar to the reset command when operating the console).

Correcting Key Inputs

CL
Terminates current entry and clears the input line
This function refers only to inputs of control keys.

M233 defines what will be displayed in the message line pressing CLEAR (property BEF_MODE) and allows to turn the systems "beeper" on or off.

BS

Backspace, delete last key input

Using the **BS** key allows correction of the last inputs made, wrong syntax or inputs will be indicated by "**??"**. The key has no effect if an entry is completed.

Reset Operations

Commands followed by **RS** restore a pre-defined state or switch between various display settings. Please note that pressing **RS** will "warm start" / reset the console.

Restart Software

RS

Re-start Software

Memory- and input-operations will be interrupted, the monitor displays "refreshed", time relevant actions (like crossfades) are interrupted. The lighting output will keep its last values to prevent a "blackout".

Before starting a Show or Rehearsal

Operations with the **RS** key restore a defined basic state of the system and allow the switch between display setups. The number code (see below) restores various different settings or states, the following actions are identical to all codes:

- If a show is loaded, the first sequence-entry will be loaded into the PV-presets.

- The Rehearsal-list will be turned off

- FIX-Function = off

1 RS

Clears all presets, maximizes the channel mask to all available channels

2 RS

Clears all presets, reduces the channel mask to channels used within the show.

The key lamp **RS** flashes after entering "**1 RS**" or "**2 RS**" until the software is restarted.

3 RS

All active presets remain unchanged, the system is set to the state similar the loading of a show.

4 RS

Likewise "**3 RS**" but clears all presets

Operation:	1	2	3	4
Unselect circuits	x	x		
Clear presets	x	x		x
Sequence to start of show	x	x	x	x
Maximize Mask	x			
Clean up mask		x	x	x
Close mask			x	x
Restart software	x	x		
Load default settings from show			x	x

Menu M34, begin show, can be used, too, for resetting the console to begin of a show.

Erase all memory

ENA and 52 RS
> Complete clearing of memory

All presets and the memory are completely cleared, properties and other configurations will be restored to their default settings, and the software is restarted.

If the memory protection is activated this operation is rejected.

ENA und 62 RS
> Reload program, execute complete clearing of memory

The control program of the system is loaded from hard disk (or a program disk if inserted).

If the memory protection is activated the operation will be rejected.

Reset using Menus

Menu M19, Reset functions, gives the option of some reset functions:

Expand mask   equals "**1 RS**".

Cleanup mask   equals "**2 RS**".

Erase all memory   equals "**ENA and 52 RS**".

Adapting the Monitor Output Resolution

The following operations optimize the VGA output signal for various display types connected, the default setting CRT_MODE saves the settings.

70 RS Standard VGA-Monitors, 720x480, 67Hz, (CRT_MODE=0)

71 RS Optimized for LCD/TFT-Monitors, 640x480, 60Hz, (CRT_MODE=1)

72 RS Optimized for CRT-Monitors, 720x480, 72Hz, (CRT_MODE=2)

73 RS Optimized for CRT-Monitors, 720x480, 76Hz, (CRT_MODE=3)

74 RS Optimized for CRT-Monitors, 720x480, 90Hz, (CRT_MODE=4)

75 RS Optimized for LCD/TFT-Monitors, 1024x768, 60Hz, (CRT_MODE=5)

76 RS Optimized for LCD/TFT-Monitors, 1024x768, 72Hz, (CRT_MODE=6)

Switching between the Monitors

The monitor devices are connected to MON1 – MON4 on the lighting console, the alignment can be changed with the following commands (and is stored in the default setting CRT_MODE):

81 RS Only MON1 active

82 RS Only MON2 active

83 RS Two screens, main monitor is MON1

84 RS Two screens, main monitor MON2

85 RS MON2 is main monitor, MON1 = handheld terminal 1

86 RS MON1 = main monitor, MON2 = handheld terminal 2

87 RS Three screens, main monitor is MON1

88 RS Four screens, main monitor MON1

89 RS 4 screens, MON4 assigned to LIBRA

Dis-/Enabling Control Stations / Input Devices

It is possible to enable or lock/disable input devices. A locked control device only allows inputs for unlocking the device.

Default setting BEDLOCK_MODE presets the behavior of the master input device/consoles faders.

   0 The faders (submasters and master) remain "active", cues stored on submasters can be faded in/out.

   1 Fader changes are ignored in the disabled state. To avoid sudden changes of lighting level when re-enabling the modified faders are marked by capture code "**CAT**". The code disappears and the faders are reactivated when they are set to the value displayed.

0 RS
> Disable key entries
> The input device at which this entry is made is locked

0 1 RS
> Re-Enables the input device

Online Help

?
```
       Request Help
```

When pressing key **?** the system prompts for a key of which help will be displayed on the main monitor. The displayed texts are short excerpts from the complete manual.

Underlined/highlighted parts in the text indicate links to further descriptions. Keys ← or → can be used to move to the links and key **ENTER** to display the text.

Available keys:

↑	One line up
↓	One line down
PG↑	One screen up
PG↓	One screen down
→	Select next mark
←	Select previous mark
ENTER	Display selected mark in the manual
UNDO	Return to the previous display
HOME	Return to the initial entry point
COPY	Mark displayed screen for PASTE
PASTE	Display marked screen with COPY
ESC	Quit manual

Using the Mouse

You can scroll using the mouse and the arrows at the corners of the display. The left mouse button shifts the display in the indicated direction (line by line in the left margin and screen by screen within the right margin).

You can follow highlighted links by clicking them.

Display the Help using Menus

The online help can also be started with menu numbers:

701 MENU
is similar to key **?**.

9 MENU
Displays the online help

Backing-up the Online-Help

Menu M135, Backup online help, saves the help file to a selected destination.

Menu M136, Restore online help, copies the help file back to the consoles hard disc.

Macros

Key inputs can be recorded as so called Macros, a maximum number of 999 macros can be recorded.

Recording of Macros

A macro can contain up to 999 key inputs (but no inputs done by faders, digital wheel or the external keyboard). An existing macro will be replaced by a new recording.

ENA and Fi
Starts/ends macro-recording for the selected function key

When activated the key lamps of **F** and **Fi** will blink. All inputs will be recorded and executed. Pressing **F** or **Fi** ends the recording mode, the key lamps will go off.

ENA and number F
Records a macro with the selected number

Pressing **ENA F** ends the recording mode, the key lamps will go off.

Starting Macros

Macros will execute recorded key inputs automatically and can be started in various ways:

Fi
starts Macro i

number F
starts Macro number …

Macros can be started with function keys on an external keyboard using Ctrl-Function key and with number and key F from the remote PC monitor in mode 3 or from the channel monitor when connected as independent input device (the SKMONBDST must be set to 1). Macros can also be called from a hand-held remote if the system is accordingly configured.

Once started, macros can only be stopped with the key combination "**Ctrl-Alt-Del**" on the external keyboard, but not with the consoles input keys.

Using Macros within the Sequence List

Macros can be called from the sequence list. Please refer to chapter Sequence List, "Actions" for more information.

Editing Macros

Menu M207, Macros, allows editing recorded macros. The last edited macro will be displayed, its name and number is displayed in the headline. The arrow-mark followed by a keys name indicates that the key has been released.

The first entry is highlighted which means that it is selected. The selection is of importance for the inputs **INS** and **DEL**.

You can enter pauses between the individual steps of macros: In insert mode, pressing 'ENA' and 'THLD' opens a menu which gives the option to enter a hold time between 1 and 99 seconds. Alternatively, the keys 'TWAIT' or 'TDLY' can also be used.

Options in the bottom line:

ESC	Ends the macro menu view
MENU	Select a macro New Macro Delete Macro starts Menu M72, Delete Macro Rename Load, Merge, Save, Remove (macro file) Print
CLEAR	Deletes the displayed macro
INS	Inserts key inputs at the selected position. The key lamp of a dedicated function key blinks, inputs entered will only but recorded but not executed.
DEL	Deletes the selected entry
PRN	Prints the recorded macros
Select	Selects a macro
<<<	Display previous Macro
>>>	Display next Macro
Rename	Renames actual Macro; Libra: the macros name will be displayed instead of the recorded key sequence
New	Records a new macro
Load	Loads macros from a file
Save	Saves macros to a file

External Keyboard: when displaying list view CH/G on the main monitor:

The function key F4 opens a dialog to enter a name for a selected channel group, Shift-F4 renames the selected channel group.

Libra, Pallet-View CHG or Topo-View, Key Channel Group: right-clicking the option "Rename" allows editing its name.

Notebook

Menu M5, Notebook (or function key F2 on an external keyboard) starts a text editor which allows to enter notes and messages, which can be saved and printed. When starting the notebook, the last edited note will be displayed.

The console can display M5 with a note upon powering on, if

- Menu M5 was activated when powering off and

- the note was saved.

The cursor keys or the mouse moves the cursor, clicking sets the marker to the selected position. The following keys give further options:

Esc	Ends the Notebook
Insert, **INS**	Switches between insert or replace mode (indicated by the cursors color)
Alt-B	Selects rows which are to be marked with the cursor
Alt-C	Marks columns
+(*), **COPY**	Copies the selection into the clipboard
-(*), **CUT**	Cuts the selection into the clipboard
PASTE	Pastes the clipboard content to the cursors position
DEL	Deletes the letter under or in front of the cursor
Backspace	Deletes the letter in front of the cursor
Alt-S	Searches a string
Alt-R	Replaces after pressing ENTER.
MENU	Opens the load/save or edit menu:
Print	likewise **PRN**
Clear text	clears the documents text
Search	likewise Alt-S
Replace	likewise Alt-R
Mark rows	likewise Alt-C
Mark columns	likewise Alt-B
PRN	Prints the notebook

(*) + and – of the numerical block of the external keyboard

The default setting AUTO_INSERT presets if mode Replace (0) or Insert (1) is applicable for a new notebook.

A warning note will be displayed if entered/changed text has not been saved, this can be turned off with default setting EXPERT_LEVEL.

If you save the document to the local setup with name LTX, each line is regarded as a text modul, which can be used from menu M11 or M14.

External Keyboard

The console can be operated with the consoles' build-in keys ("master keyboard") or an external keyboard. The default setting TAST_MODE allows to disable the external keyboard.

Special Functions

Key	Console
Ctrl-Alt-Del	RS
Ctrl-Alt-F1	Keyboard, International Layout
Ctrl-Alt-F2	Keyboard, Layout referring to setting KDB_NAT_CODE
Alt-Shift-left	switches between layouts

General Functions

Key	Console
Esc	ESC
ENTER	ENTER

Text Keys

Key	Console
<	Fader wheel "down"
>	Fader wheel "up"
?	**?**
@, ^	**@**
V, v	**100%**
"	**ALL**
B, b	**BLD**
←	**BS**
\\	**CAN**
G, g	**CH/G**
*	**CHAN**
Space Bar	**CLEAR**
N, n	**COL**
#	**CUE**
C, c	**DCH**
{	**DEST1**
}	**DEST2** (Prisma)
U, u	**DFB**
D, d	**DOWN**
&	**EF, NTX: EFF**
F, f	**F**
!	**FIX**
R, r	**GR**
J, j	**INH**
%, /	**INT**
$	**INVO**
|	**ISO**
I, i	**LEVEL**
TAB	**LIST**
L, l	**LOAD**
M, m	**MAS**
Shift-TAB	**MON2 and LIST**
O, o	**OUT**
K, k	**PATCH**
Y, y	**POS**
[	**PV1**
]	**PV2** (Prisma)
Z, z	**QLIST**
S, s	**REC**
P, p	**REH**
E, e	**REPL**
~	**RS**
Q, q	**SQL**
A, a	**STAGE**
T, t	**T**
=	**TAKE**
_	**THRU**
,	**TRK**
W, w	**TWAIT**

H, h	**UP**
	X
(	**XF1/XF**
)	**XF2** (Prisma)

Keys with Alt or Ctrl:

Alt-A	**ADJ**
Alt-N	**AUX**
Alt-K	**DCURV**
Alt-D	**DMX**
Alt-G	**EGO**
Alt-R	**EREV**
Alt-E	**FAN** (Booster/NTX)
Alt-T	**ESTOP**
Alt-L	**LINK**
Alt-S	**MEM**
Alt-M	**MLINK**
Alt-Z	**MON2**
Alt-B/Ctrl-B	**PAL_B**
Alt-C/Ctrl-N	**PAL_C**
Alt-F/Ctrl-F	**PAL_F**
Alt-I/Ctrl-I	**PAL_I**
Alt-V	**REM**
Alt-O	**SOLO**
Alt-U	**USB** (Booster/NTX)
Alt-X	**WAUX**

Ctrl-T	**ACT**
Ctrl-A	**BACK**
Ctrl-K	**DCA**
Ctrl-M	**DM**
Ctrl-D	**DYN**
Ctrl-S	**LOCK**
Ctrl - ← or →	**MON2**
Ctrl-U	**NFS** (Booster | NTX)
Ctrl-G	**PROG**
Ctrl-W	**RCH**
Ctrl-R	**REL**
Ctrl-E	**SEL** (Booster | NTX)

If using the Online Help:

TAB	→
SHIFT-TAB	←

Function Keys

The external keyboards Function Keys are assigned to the following commands:

Key	Console
F1	**?**
F2	M 5, Notebook
F3	M 8, History
F4	M 11, Preset name new
F5	M 28, Show label
F6	**COPY**
F7	**CUT**
F8	**PASTE**
F9	**UNDO**
F10	**MENU**

F11	**STOP1**
F12	**GO1**
Shift-F1	M 2, Main monitor
Shift-F2	M 3, 2nd monitor
Shift-F3	M 4, Menu selection
Shift-F4	M 17, edit preset name
Shift-F5	M 201, Realtime clock
Shift-F6	M 41, Recorded show list
Shift-F7	M 21, Load show
Shift-F8	M 22, Save show
Shift-F9	M 45, Clear show
Shift-F10	M 1, Main menu
Shift-F11	**CONT1** (Default setting CONT_KEY)
Shift-F12	F12

It is possible to edit often used default settings:

Key	Console
Alt-F1	M 213, Motor Delay
Alt-F2	M 214, Cursor
Alt-F3	M 202, Colors
Alt-F4	M 207, Macros
Alt-F5	M 80, Channels
Alt-F6	M 90, Dimmers
Alt-F7	M 120, Floppy
Alt-F8	M 220, Personality
Alt-F9	M 208, IO Configuration
Alt-F10	M 200, Configuration
Alt-F11	**SEQ1**
Alt-F12	**RET1**

If Ctrl is pressed, an external keyboards function keys act as the lighting consoles F-keys.

If a PC is connected to the console as "Remote Monitor" in Mode 3 ("Independent Input Device"), its function keys are assigned to the crossfade systems (and not to macros):

Key	Console
Strg-F1	**SEQ1**
Strg-F2	**RET1**
Strg-F3	**STOP1**
Strg-F4	**CONT1**
Strg-F5	**GO1**
Strg-F6	**SEQ2**, (Prisma)
Strg-F7	**RET2**, (Prisma)
Strg-F8	**STOP2**, (Prisma)
Strg-F9	**CONT2**, (Prisma)
Strg-F10	**GO2**, (Prisma)
Strg-F11	**ESTOP**
Strg-F12	**EGO**

The PC-Remote Monitors keys F11 and F12 are assigned to the consoles Crossfade System 1, if the remote monitor is connected in Mode 3 or 4.

Key	Console
F11	**STOP1**
F12	**GO1**
Shift-F11	**CONT1**
Shift-F12	**CUT1**
Alt-F11	**SEQ1**
Alt-F12	**RET1**

Numerical Keys

Key	Console
0 – 9	**0 – 9**
/	**INT**
*	**CHAN**
+	**+**
-	**-**
,	**decimal dot**
ENTER	**ENTER**

Cursor-Keys

Key	Console
Print	**HC**
Ctrl-Print	**MON2 and HC**
Arrow up	**Cursor up**
Arrow down	**Cursor down**
Insert	**INS**
Delete	**DEL**
Arrow left	**Cursor left**
Arrow right	**Cursor right**
Pos1	**HOME**
End	**END**
Page up	**Cursor page up**
Page down	**Cursor page down**

Windows- compatible Commands

Windows-"shortcuts" can be used for the following commands on the lighting console:

Shortcut	Console input key
Alt-F4	**ESC**
Ctrl-C	**COPY**
Ctrl-X	**DEL**
Ctrl-V	**PASTE**
Ctrl-Z	**UNDO**
Ctrl-P	**PRINT**
Ctrl-S	**REC**, Save
Ctrl-O	**LOAD**, Load
Ctrl-N	**INS**
Shift-F10	**MENU**

when using menu control:

F4	Save
F5	Update
TAB	next field
Shift-TAB	previous field

Introduction to Displays

Up to five monitors NTX consoles, four monitors NT consoles can be connected:

Main Monitor	Displays Menus Inputs Preset name and cue text in the displays header
Second Monitor(s)	Fader levels Show name or system name in the header

Key MON2 switches the main monitor to the next monitor. On mouse movements main monitor follows the mouse cursor. Additionally main monitor can be changed by keys Ctrl and arrow keys.

Consoles of type Prisma come with three built in desk displays (VFDs) which display essential information:
- POS/COL-Attributes (on Prisma/Focus)
- Crossfade Systems (Prisma)
- System Status-/Input Display

Monitor Displays

The basic display layout is identical for all monitors and split into five areas:

```
+-------------------------------------------+
|                 Header                    |
|-------------------------------------------|
|                                           |
|                                           |
|                                           |
|                 Lists                     |
|                                           |
|                                           |
|-------------------------------------------|
|          Submaster / Master Display       |
|                                           |
|-------------------------------------------|
|                          |Inputs or       |
|       Crossfade System   |Fader Levels    |
+-------------------------------------------+
```
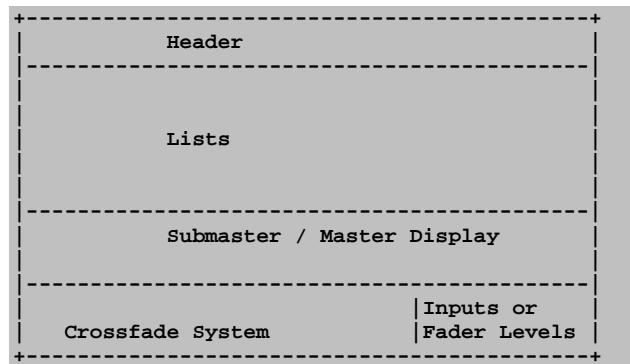
Header

The Header displays the following information:

Main Monitor:

Information of the selected register
    Name of the selected Register
    Cue number
    Cue type
    if using an effect: number of the effect
    cue text
Rehearsal list on
Monitor (MON1-4), available memory, **CORR**-Factor/**FIX**-Intensity or
Master Fader level
Index for linked monitors
Name of the selected list view

Additional Monitors:

Information of the selected register
    Name of the selected register or time (default setting CLOCK_DISP)
    cue number with alteration-indexing ($\leftrightarrow$)
    Cue type
    if using an effect: number of the effect
System name or show number and name
available memory
Index for linked monitors
Name of the selected list view

If no show name is set, the system name will be displayed.

The alteration index ($\leftrightarrow$) next to the show number signalises that the show has been changed and will disappear after saving or loading.

A blackout of the selected register will be displayed with changed background color of the header. 'DMX offline' and 'LTPBO' (Menu M209) will be notified with 'DMX off' or 'LTPBO' in the monitors headers.

Lists

The list-area displays the following data (and can be scrolled using the cursor keys, if more than one screen page):

These three list-types are used:

Dynamic Listings
    are permanently updated and display the level and change of values, for example the **STAGE** list.

Static Listings
    will be updated when needed, like the **QLIST**. This list is updated when a new cue is recorded.

Static Views
    will be updated upon inputs (like the notebook view).

Scrolling the Lists

The following keys on the console are used to scroll a list:

HOME	Start / top of list
END	End of list
$\uparrow$	One line up
$\downarrow$	one line down
PG$\uparrow$	one page up
PG$\downarrow$	one page down
$\rightarrow$	move one character right
$\leftarrow$	move one character left

From software 5.2 onwards, the Shift-key which is situated between the arrow-keys of the cursor section is introduced. This changes the behaviour of the cursor keys and the digital wheel:

Shift and HOME	List POS/COL: display from the first attribute
Shift and END	List POS/COL: display the last attribute
Shift and digi	likewise ↑/↓
Shift and ↑	Page Up, as **PG↑**
Shift and ↓	Page Down, as **PG↓**
Shift and **PG↑**	List POS/COL: scrolls the attributes
Shift and **PG↓**	List POS/COL: scrolls the attributes
Shift and →	List TRK: scrolls to the right
Shift and ←	List TRK: scrolls to the left

Key Lamps

The key lamp of the active list views key will be lit (if applicable), if pressing **MON2** the key lamp referring to the active list of monitor2 will be lit. (with more than 2 active monitors key **MON2** refers to the screen on the right hand side of the active monitor; if the last monitor is active to the last but one monitor). Using **Ctrl** and → or ← on the external keyboard changes switches between the monitors, too.

Printing of Lists

Keys **"PRN"** or **"MON2 and PRN"** print the complete list displayed on the main-/2nd monitor. Additionally hotkey Ctrl-P prints list display from main monitor.

Selecting Lists

Most often used lists have dedicated keys. The key **LIST** opens the following menu which displays all available lists.

LIST
> List Selection on the main monitor

MON2 and LIST
> displays the list selection on the 2nd monitor

The list views are numbered and can be called using this shortcut:

number LIST
> displays the selected list on the main monitor

MON2 and number LIST
> displays the selected list on the 2nd monitor

Available list views:

Name	No.	Function
BMON	28	Remote monitors
CH/G	17	Channel Groups
COL	22	Color changer attributes
DCA	14	Dimmer Curve Assignment
DCURV	13	Dimmer Curves
DFB	21	Dimmer feedback
DMX	25	DMX-Output
DYN	27	Dynamics
EFF	6	Effects
ERR	18	System Errors
EXT	7	External Signals
LEVEL	1	Channel Levels
MOVL	23	Movinglight-attributes
OUT	16	Output Levels
PATCH	15	Patch list
QLIST	8	Cue list
REH	20	Rehearsal list
REPL	12	Replacement list
SQL	9	Sequence list
STAGE	2	Present Stage Levels
T	5	Wait/fade times, Time
TCUE	19	Cue times Crossfade Systems and BLD-Register
TRK	24	Track sheet
TXF	3	Crossfade time

Linking List Views

The Monitor connections on the back of the console are numbered MON1, MON2, MON3 and MON4 (on Iris: MON1 and MON2). If a lists (LEVEL, STAGE, OUT or DCA) content is longer than one page the list can be linked/continued on the next monitor.

MLINK
En-/disables a monitor link to the next screen

The link will be active when a list is longer than one screen page.

If the monitor link is activated, the headers display **"MLINK"** and the **MLINK** key will be lit. The header of a linked monitor will indicate its state with arrows.

TAKE MLINK
Enables the monitor link

CANCL MLINK
turns the monitor link off

List Views and Recording of Cues

The default setting SMODE presets which parts of a cue or which cue type is stored with **"REC REC",** depending on the active list. Please refer to "Memory Operations".

Flexichannel-View

It is possible to hide unused channel numbers in lists of the type LEVEL/STAGE, T/TXF/TWAIT and POS/COL, which means that only involved or selected channels will be displayed in this list.

LEVEL   Level of a channel > 0%
             ADD-cues in BLD/PV: recorded channels and channels fading down (0%)

STAGE   Stage level of the dimmer > 0%.

T/TA/TW   Independent fade time assigned

POS/FW   Preset level of the dimmer > 0%
             Selection in XF/GR: level of the dimmer > 0%
             PV/BLD/PROG: Attribute involved in the register

The flexichannel-view is indicated by the way the list-name is displayed in the header:

CAPITAL LETTERS: shows all channels of the mask (e.g. LEVEL)
small letters: shows only involved channels(level)

Changing between Flexichannel modes:

+ MAS
     Flexichannel-view active

- MAS
     Flexichannel-view off

. MAS
     LEVEL/STAGE and T/TWAIT/TXF: Fleximode active
     POS/COL: Compact mode active

' MAS
     switches between the flexi modes

The default settings for lists LEVEL/STAGE and T/TWAIT/TXF are defined in FLEXICHAN_MODE:

FLEXICHAN_MODE=0:   Standard/default view (default factory setting)
FLEXICHAN_MODE=1:   Flexichannel-View

Menu M243, Display Options, presets the way the lists POS/COL are displayed.

When selecting channels with the cursor keys left/right or with +/- CHAN selection is done following the channel mask even if using the Flexi mode. Channel numbers will appear upon selection and disappear from the screen, if no value has been set and the channel is deselected.

Levels and Independent Fade Times

These lists relate to channel numbers; the list colour indicates the list type. Selected channels are highlighted.

The list view will only change automatically back to **LEVEL** when selecting a submaster after using the independent fade time-list**.**

Level- and time lists use the same channel mask, channel numbers are sorted ascending.

Intensity levels are displayed in percent, if no value is displayed the level is "0%". Time lists only show channels which have independent fade times assigned; all others channels follow the set crossfade-time. Channels with value "0" have 0secs (independent) fade/wait time.

List views can be displayed topographically, please refer to Display.

The following letters label channels with special features:
"l"   Channel locked
"f"   LEVEL/STAGE: control ch. is "free"/ not patched to a dimmer circuit
                 OUT/DCA: dimmer channel, not patched to a control channel

Note: It is not possible to change to a Time list within submaster groups as they can't contain independent times.

STAGE
>   Output Levels related to channels

This view displays the output levels from submasters/groups and the crossfade systems; levels from the effect section and Dynamic Effects can be included; see property AKTA_DISP. Default setting AKTA_KENN allows to arrange the way channels with changing values will be marked (the marker will disappear two seconds after the last change of value).

For movinglight devices using attribute Ignition property ZDISP_MODE controls display of a label for the state of ignition (on/off)

If using option "Dimmer Feedback", channels controlling failed dimmer channels will be highlighted.

LEVEL
>   Levels in the selected register

This list displays the levels in the chosen register without being influenced by the faders/levers.

The default setting HEDU_KENN gives the choice of various ways the up/down-fading channels will be marked. If using option "Dimmer Feedback", channels controlling failed dimmer channels will be highlighted.

For movinglight devices using attribute Ignition property ZDISP_MODE controls display of a label for the state of ignition (on/off)

T
>   Independent Times, Total Crossfade Time

The time displayed is the total of wait- and fade times, if longer than 99 minutes, the time will be displayed as **>99'**.

TWAIT
>   Independent Times, Wait Time

TXF
>   Independent Times, Crossfade Time

The times displayed follow this color code (default setting):

> grey   fixed time assigned (crossfade time)
> green   "running" TWAIT
> red   "running" TXF

The mark **"I"** followed by the time value indicates that the channel is part of a "guarded crossfade". Please refer to "Guarded Crossfade" of chapter "Crossfade Systems".

Dimmer Channel Levels OUT

The list **OUT** displays the dimmer channel levels as sent by the console (on the DMX-universes) and refer to the dimmer channels, not the control channels.
LKI
>   Dimmer Channel Levels OUT

In contrast to list STAGE, the OUT-list also displays

- Levels of the effects-section
- the control-channel – dimmer channel patch and
- the modified output-levels of dimmer channels influenced by attribute settings

Dimmer channels marked with **"d"** are set to a "direct intensity"/independent dimmer level which can not be modified with other intensity inputs. If using option "Dimmer Feedback", channels controlling failed dimmer channels will be highlighted.

Level values displaying "**on**" or "**off**" indicate dimmer channels that are set to an switching point within dimmer channel attributes; "**off**" = turned off, "**on**" = switched to full.

The key **OUT** can be used to enter independent/"direct" intensity levels; please refer to chapter Independent Dimmer Levels in Channels / Dimmer Channels

DMX-Values

The **DMX** list shows the DMX-output of the console to dimmer channels and the attributes of the LTP-devices, depending on the Assignment to the DMX universes. The sorting corresponds to the DMX-addresses of the selected line/universe.

The lists header indicates the used output protocols, the bottom line shows the minimal length of the address range within the universe and the DMX-rate.
DMX
     DMX-Values

The second line of the list indicates the Display Mode which can by changed by clicking:

Dec	value range (decimal) 0 - 99, FF
Hex	00 - FF
255	0 - 255

The keys **PG↑** and **PG↓** change the DMX line/universe and DMX-Input.

It is possible to enter DMX-values DMX directly by entering the value followed by **DMX**.

Effects

E
     Display Effects

NTX: Key label: EFF.

If an effect is prepared or running at a selected register/preset, the effect number and description will be displayed, otherwise **"no effect selected"**.

On list display LEVEL/STAGE/OUT on one of the remaining monitors the channel selection works in conjunction with the actual, edited effect step; when "stepping" thru effect steps with the cursor keys the channels of the effect step will be marked selected.

Key **MENU** displays all available effects and allows to select and activate an effect.

Cue List

The Cue List displays all recorded cues sorted by their cue numbers.

QLIST
Display the Cue List

Cueno QLIST
   displays the cue list from the entered cue-number

  The following will be displayed:
      Cue number
      Type of cue including palette markers
      Effect number
      Delay fade-out/down
      Delay fade-in/up
      Crossfade time in/up
      Crossfade time out/down
      Cue text (Text)

From Software-Version 5.4 the cursor keys left/right change between displaying of above or date and time the cue was recorded (in list QLIST and REH).

The marker at the left of the screen indicates the cue which is active in the selected preset/register. Default setting SZL_MODE allows defining whether the list should automatically scroll.

Sequence List

The crossfade systems are controlled by sequence lists, on Prisma default setting SEQLIST_MODE allows to run two independent (=0) or one sequence for both crossfade systems (=1). Please refer to chapter "Sequence List".

SQL
   Display Sequence List

Rehearsal List

REH
   Rehearsal List

It is possible to automatically record a copy of a cue in the rehearsal list when recording. This list displays the cues recorded in REH-mode by their reh-number.

Please refer to Rehearsal List in "Crossfade Systems".

Cue Times

The displays for the crossfade-system(s) and the **BLD** register show time-values shortened, the **TCUE** list displays cue times and cue text in full length. Key sequence 19 LIST or Menu M2 or M3 can be used to switch on this list type.

Tracksheet

The Tracksheet displays dimmer values and attributes and allows to edit intensity, attribute and times of the recorded cues directly. Please refer to "Tracksheet" in chapter "Memory Operations" for more details.

System Errors

It is possible to display and print occurred system errors for diagnostics.

External Signals

This list **EXT** displays external analogue and digital-signals and links to the active register/preset.

Refer to externalsignals for more information.

Patch List

PATCH
  Control channel/dimmer channel patching

The patch list displays the assignment of control channels to ("patched") dimmer channels. Channels of the channel mask are highlighted.

More information in chapter Patch.

Dimmer Curve Assignment

DCA
  Display Dimmer Curve Assignment

displays the dimmer curve assigned to a dimmer channel.

Please refer to "Dimmer Curves".

Dimmer Curves and Editing of Curves

DCURV
  last displayed Dimmer Curve

DCURVno DCURV
  selected Dimmer Curve

The points are shown in 5% increments, and above the output levels of the points. The step-like display of the curves is caused by the monitor display, the curves are calculated accurate and smooth.

You can scroll through the recorded curves with cursor keys PG↑ and PG↓.

Displayed dimmer curves can be altered. Refer to "Dimmer Curves"

Replacement Channels

REPL
  Replacement Channel List

Please refer to chapter "Replacement Channels" in the section "Control Channel/Dimmer Channel Patch".

Channel Groups

CH/G
  Channel Groups

The list can be sorted either by the channel or by **CH/G**-numbers (key **MENU** gives the option to change between the display modes).

Please refer to "Channel Selection" in chapter "Controlling Channels".

Dimmer Feedback

DFB
> selects list **DFB**

Systems connected to *transtechnik* **DMX90**, **FDX90** or **FDX2000** modules monitor the control units and dimmers and display their stations current status. Various menus allow to display and configure parameters, please refer to Dimmer Feedback.

Color Changers

Color Changers/scrollers can be controlled directly with the **COL** section, the COL list displays the configured devices and their status. COL list display.

Movinglight Control

This list displays the ML control. For more information please refer to ML Control.

List BMON

From Software 5.5 onwards, external input devices have dedicated monitor pages on the lighting console named: LIBRA, REM1 - REM4, or PC-Remote Monitor. The list BMON allows displaying these external monitor pages on the lighting console.

28 LIST or Menu M2/M3 starts the list/page, changing to another list view ends the list. The header and the input line of an external page will be displayed in black and white to mark external devices lists.

Key Inputs in the BMON-List:

- `PGUP/PGDN/HOME/END changes the Input Device`

- `Cursor left/right: displays Monitor MON1 to MON4`

- `ESC ends the BMON-list and returns to the previous (local) list view.`

All other inputs made are routed to the (external) input device.

Selecting Lists by Menus

The menu shows all available lists and their numbers for the main monitor; the more often used lists can be activated by dedicated keys.

2 MENU
> Menu List Selection for the main monitor

A selected list will be activated with **ENTER**.

3 MENU
> List selection for the 2nd monitor

Groups / Submaster Displays

The group (or submaster) displays are small windows dedicated to a group. If multiple monitors are connected, group 1 to 10 will be displayed at Monitor 1 (MON1) and, if installed, at Monitor 3 (MON3); Groups 11 to 20 at Monitor 2 (MON2) and Monitor 4 (MON4). If only one monitor is installed, submasters 1 through 10 or 11 through 20 are displayed depending on the last submaster selection.

A group window has four lines:

Line 1: Name of the group; a selected group will be highlighted. If Inhibit is activated, **"INH"** will be displayed.

Line 2:	Alteration indexing ↔, Cue number, Index **"E"** for Effects. If the group is selected, key **"E"** will display the effect in this group.
Line 3:	Level of the group fader If the fader is controlled by automatic timing, an arrow indicates the direction in which it is being moved.
	If the fader level displayed is marked with **"*",** the current position of the fader does not correspond to the output value of the submaster/group. This is caused by:

- Controlling the "fader" by key inputs or commands
- Function SOLO
- Remote Control

Line 4:	Time up/down or, if applied, the names of the external signals Ai and Di, or the indication @r["CAT"][UEB_STELLER].

When in "Blackout" the background will change to the "blackout color" (default: blue).

Property GRDISP_MODE allows displaying the cue text.

Crossfade System Displays

The status of the crossfade systems is displayed in the crossfade systems-area of the monitors; on Prisma monitor 1,3 and 5 display crossfade system 1, monitor 2 and 4 crossfade system 2.

A Blackout of the **XF** presets will be indicated by a change of the background colour to the "blackout-color".

The format of the displays depends on

- the selected preset PV/XF
- the operating mode (automatic/manual)
- the current status of the crossfade

For more information please refer to "Crossfade Systems".

When selecting the Blind-preset (**BLD**) the display of the crossfade system on the main monitor will be replace by the blind-presets display which is identical to the display format of presets **PV** or **DEST**.

Command Display

Key inputs, errors or system messages will be displayed on the command line of the main monitor. The display has three lines:

- Last command executed
- Command line, actual inputs
- Error- or system messages

A cursor which disappears once an input is completed signalises that the console is ready for input.

When starting a new input the last valid command will be moved to the reminder line, wrong entries cause **"??"** and the message line will display further explanations.

Inputs can be cleared with **CLEAR** and deleted from the end with key **BS**.

Fader Display

The status of Master faders will be displayed on the second monitor instead of the command display. The following is indicated from left to right:

Grand master fader I, **I**, Iris **M**
Grand master fader II, **II**, Iris **FOH**
Master
Master fader effects system
Master fader crossfade system 1
Master fader crossfade system 2 (on Prisma)

Blackout will change the background color of the relevant fader.

All faders can be modified with key inputs/commands. If a command causes a discrepancy between virtual and real fader value the marker **"CAT"** will be displayed. The arrows indicate the direction of which the fader has to be moved in order to "catch" the actual output value. Please see "Fader Control" in chapter "Controlling Channels".

Color Settings

Menu M202, Color Settings, allows modifying the color scheme of the monitors to your own preferences. Aside the default factory settings various pre-defined color pallets are available; colors are numbered and named. The chapter "Default Settings" gives more information about the color names.

The entry to be changed is selected with cursor keys or mouse, a preview window shows the color scheme.

ENTER or the left mouse button opens a window which allows to change the color components; Red, Green and Blue can be adapted independently for Fore- and Background.

Note: Display colors highlight important information. The selection of control channels, for example, is indicated by highlighting; changes can cause information to be lost.

Desk Displays / VFDs

The built-in desk displays show the main systems status additional to the monitors. The displays' brightness can be adjusted with the properties with the setting VFD_INT.

Movinglights-Control Display

The desk display above the encoders displays actual values of selected Movinglight attributes (on Prisma/Focus consoles). Please refer to R[Movinglight Control][ML_CONTROL].

Crossfade Systems Display

Prisma consoles are equipped with a desk display above the crossfade systems which displays information additional to the monitors in two lines with 19 digits.

For more details about the information displayed (which depends on the status of the crossfade systems and the mode selected) please refer to chapter Crossfade Systems.

Command Display

The desk display above the main input keys section of the console displays the following important information:

Line 1:	Name of the selected list displayed on the main monitor
	Content of the command line
Line 2:	Name of the selected preset
	Content of the message line

Topographical Channel Display

Channels within the list views **LEVEL**/**STAGE** and **T**/**TWAIT**/**TXF** can be displayed either "traditional" or topographical, which means that channels can be positioned, grouped or labelled.

The channel mask for a topographic view is edited on a PC and transferred to the console, where the menu control allows loading a topo.

Menu M807, Topographic channel layout, organizes and controls the topographical display on the system.

The following choices are displayed:

Load	Load topography file The topography loaded is immediately activated.
Save	Save topography file The current topography can be saved.
Delete	Delete topography file
Reset	Revert to the conventional list display

Topography files can be saved

- as a default setting which is activated upon loading a show or on clearing all memory,

- as Setup with name,

- as a default setting in the current show,

- under a name in the current show.

Tips

- A topography which has been saved for the show is activated when that show is loaded.

- A topography which has been saved as default setting is activated following clearing all memory, on loading a show or with input "**4 RS**".

- If a channel is not involved in the current mask, the intensity field is hidden.

Colors for the display of the channels can be changed with the menu M202, Colors,. The standard list display colors are used in displaying channel numbers and values. The background of the topography is defined by color 130, SKTOPO_BG.

Printer

All lists mentioned can be printed in full length. Please check that the correct printer driver / interface is installed before attempting to print.

Key Inputs

PRN
Prints the list displayed on the main monitor
External keyboard: Shortcut Ctrl-P

MON2 and PRN
Prints the list displayed on Monitor 2

HC
Hardcopy of Main monitor

MON2 and HC
Hardcopy of Monitor 2

Pressing Shift (in the middle of the consoles' cursor keys) and HC allows saving the Hardcopy to a file: depending on the installation the file can be saved within a show, as setup, to floppy, USB-memory or NFS-Server.

Printing from Menu Control

Menus with yellow background color display configurations, e.g. Menu M205 (Channel List), or Menu M83, Grand Master Assignment. Key PRN, the Shortcut Ctrl-P or Soft key PRN in the bottom line of these menus will print the complete listing.

When pressing MENU, the Print-Option allows to either print or to write the listing to a file.

Menus with white background color (like M220, Personality) allow various print-options when pressing PRN or using shortcut Ctrl-P.

Configuring Printers

Depending on the hardware-basis of the console, the following options configure a printer:

NTX:	Linux System printer (LPT1, Centronics) or Network Printer Netinfo Printservice 20mA-Interface.
Booster:	Centronics or 20mA-Interface on the Facepanel Netinfo Printservice Linux, System printer on LPT1 (Centronics) or Network printer
NT-Console:	Centronics parallel and 20mA-Interface on the rear of the console Netinfo Printservice
NT Offline Editor:	Windows System Printer Netinfo Printservice

Menu M203, Printer, selects the default printer for the system and displays the current setup:

Interface:	Printer Interface, depending on the hardware. The consoles' Centronics-interface is labelled with "**PRN**", the 20mA-interface with "**DRK**".
Printer Type:	Printers connected to Centronics and 20mA are controlled from the consoles software. **MENU** displays the available printer drivers.
Printer Name:	when using a System Printer a name of an installed printer can be selected.

"OK with printer test" prints a test page.

To configure a system printer on NTX- or Booster-systems Menu M915 is used which opens a terminal window to the Linux operating system and its printer configuration.

Menu M919, clear printer cue, removes all printjobs from the printer queue.

The NT Offline Editor uses the printers configured with Windows Control Panel.

When using the "Netinfo Print Service", the Netinfo Print Service software needs to be installed, configured and running on an external PC connected to your network. If the software-option "Preview" is activated, the document sent by the console will be displayed and can be saved or printed.

Introduction to Channel Control

This chapter explains the various ways of controlling channels and intensity levels:

- Selecting Presets
- Selecting Channels
- Controlling Levels

Presets

The following presets are available:

- **GR1** - **GR20** within the Submaster/Group section (10 submaster on Iris)
- **PV**, **XF** and **DEST** (on Prisma) within the crossfade systems
- **BLD**, an independent "preview"-preset for editing
- **PROG**, an independent "Programmer"-preset
- Level, time and text entries relate to the selected preset; also list views **LEVEL**, **T**, **TWAIT** and **TXF**.
- The current list view is kept when changing presets or is changed to **LEVEL**-view

The systems behavior when changing presets can be configured with default setting REGWAHL_MODE.

Each group/submaster has a dedicated fader, the crossfade systems **XF** presets have crossfade system masters (Prisma **XFM**, Focus/Iris **XF** and digital wheel).

The faders have the following functionality:

- Blackout key (sets the level to 0%)
- Blackout by Flash key (for submaster groups only)
- Blackout by an external digital signal
- Automatic timing (can be disabled)
- Flash function by key (groups only)
- Flash function by external digital signal
- Control by external analogue signal

Every fader has an internal, resulting eg. from key inputs, and a physical or real value. Usually both values are equal. But they can differ in case the internal value is changed by

- times controlling the fader value
- remote control
- SQL, action fader
- key inputs

A marker CATCH is displayed, if the fader has to moved to get back control of the inernal value.

The following general information can be assigned to each preset, in addition to channel levels and individual fade times:

- Cue number
- Cue text
- Cue times

All presets can control effects, the keys for effects control on the keyboard control the effect in the selected preset.

Preset key
  Selecting Presets

The name of the selected preset is displayed in the monitor headers (for groups and the crossfade presets the display information on the monitors is highlighted) and the key lamp of a selected preset is lit.

Preset data for BLD and PROG will be displayed in the playback area of the main monitor as they do not have their own, dedicated view window.

groupnumber GR
     Select submaster/group
     Key lamp is lit for the selected preset

It is possible to select groups with the consoles keys, the external keyboard, PC-remote monitor or handheld terminals; key "R" on the PC keyboard equals key **GR.**

Example: "**5 GR**" selects group 5.

+ GR
     select next group
     If the last group is selected, the selection will jump to group 1.

- GR
     select previous group
     If group 1 is selected, the selection jumps to the last group.

Submaster Groups Master Fader

On Prisma the group/submaster system has a dedicated master fader which includes a Blackout key.

GRBO
     Blackout Groups on/off

A lit key lamp indicates an active group blackout (which disables any HTP output by the groups).

TAKE GRBO
     Blackout for Groups ON

CANCL GRBO
     Blackout for Groups OFF

Default setting FRG_BO:
When set to FRG_BO=1 or 2, blackout can only be activated in combination with key **ENA.** However, this does not affect inputs with **CANCL** and **TAKE.**

Focus/Iris consoles use the wheel for controlling the master:

GR and digi
     Controls the group-submaster

The fader section on the monitors displays the current output/master value; pressing key **GR** displays the output on the header of the main monitor, too.

It is possible to modify the group master with key commands, see Controlling Faders by Key Inputs.

Group-/Submaster-Blackout Keys

Each group (submaster) can be blacked out individually, the mode of the blackout keys is configured with default setting BOTAST_MODE.

BOi
> Blackout for group i on/off
> an active Blackout will be indicated by lit Blackout-key lamp.

TAKE BOi
> Blackout for group i on

CANCL BOi
> Blackout for group i off

Default setting FRG_BO:
If FRG_BO is set to 1 or 2, blackout can only be activated in combination with key **ENA.** However, this does not affects inputs with **CANCL** and **TAKE.**

Default setting ACTRELOPT:
Menu M225, Activate and Release, allows to configure the groups blackout-keys to act as Activate and Release in various ways.

Clearing Presets

CANCL Preset key
> Clears the presets content

- All dimmer channels (excluding locked channels) are set to 0%
- All Attributes are cleared
- Clears times
- clears the cue text
- clears the cue number
- and the effect

The times of the group systems faders will remain unchanged, if default setting GRTBLOPT is 0.

Clearing preset **XF** automatically clears the content of preset **DEST**, too.

Clearing the **PROG**-preset sets the attributes of selected ML-fixtures to "transparency", the last entered values will be restored.

CANCL ALL GR
ENA and CANCL GR
> clears all groups

is similar to "**CANCL GRi**" on individual groups.

CANCL groupno GR
> clears group number i

It is possible to clear groups with the consoles keys, the external keyboard, PC-remote monitor or handheld terminals; key "R" on the PC keyboard equals key **GR.**

Example:
"**CANCL 5 GR**" clears group 5.

Accessing Presets by Menu Control

Menu M10 (Preset) allows the following control options and is identical to option "**Preset**" of the main menu:

Cue Text, M17
Effects, M12
Print selected preset
Gang load, M15
Gang record, M16
Reset functions, M19

Option "**Print selected preset**" prints the content of the selected preset in cue-layout.

Channel Selection

Most operations relate to the current channel selection, indicated by:
- highlighted channel number in lists
- flashing channel key lamp on the optional channel keyboard.

If function **FIX** is deactivated, channel selections will not change the current channel levels; with FIX activated, selected channels will be set to the preset **FIX** intensity (see FIX.

The behavior of channel selections depends from:
- the state of the channel mask and
- the S/CH (single channel)-mode selected

Channel selections can be initiated with key **+** or **-; +** adds channels to the current selection**, -** removes channels from the current selection.

Editing of Control Channels by Menu Control

Menu M80 (Channels) allows the following options for editing control channels configured:

Channel mask M82
Grand master assignment M83
Locked channels M84
Channel names M81

Channel Mask

The control channel mask, short "mask", displays all channels currently used (and being displayed in lists **LEVEL, STAGE** and **T**, **TWAIT** and **TXF**).

If the mask is "open", channels are automatically included in the mask upon selection: this extends the mask. When the mask is "closed", channels not being part of the mask are ignored when selecting.

After clearing the memory the mask is empty and a default mask will be loaded if configured. The channel mask will be reconfigured to the channels used when loading a show.

The current mask can be recorded as a cue-type and re-activated again, see chapter "Recording Channel Masks" in the section "Memory Operations".

The mask can be different for the various input devices used.

Open/close Mask

The lit key lamp **MAS** indicates a "closed" mask.

MAS
     Open/close the channel mask

It toggles between open mask (key lamp off) and closed mask (key lamp lit).

TAKE MAS
     opens the mask

CANCL MAS
     closes the channel mask

Cleaning the Mask

If the mask is open, a channel selection adds the channel to the mask; the channel will be displayed in the mask even if no value is assigned to it or it is not used within a show. These channels can be "cleaned" from the mask with the following commands:

The mask needs to be open (channels used within the show but not being part of the current mask will not be added to the mask with this command):

ENA and ALL MAS
     cleans the mask
     in cues used channels are added to the mask

The mask will be reduced to channels

- used in the current show,
- used in an active preset,
- or are locked;

Channel levels will not be modified.

ENA and CANCL CHAN
     cleans the mask referring to the selected channels

The selected channels will be removed from all presets and from the mask (if not part of the recorded cues).

Adapting the mask to a cue range

The mask can be adapted to channels used in a range of cues:

ENA and cuerange MAS
     Adapt the mask

The mask will display channels which

- are stored in the selected cue range
- are active in a preset,
- are locked.

Note: Unused channels are removed from the mask. Before you start all in the show used channels have to be in the mask: TAKE MEM MAS.

Active channels can be removed from the mask (and the presets) with "**ENA** and **CANCL CHAN**".

The mask created can be saved as a cue and restored to display an "optimized" mask on playback.

Expanding the Mask

Channels which are part of a show can be removed or added from the channel mask:

TAKE MEM MAS
    Adds all channels recorded to the mask.

TAKE cuerange MEM MAS
ENA + cuerange MAS
    Adds channels of the indicated cuerange to the mask.

Note: The function **RCH** will not expand the channel mask.

Recording a Mask

The mask can be recorded and reloaded/played back.

cuenumber REC MAS
    records the current mask under the cue number given.

The cue type for mask cues is "**MASK**", loading the cue into the active preset activates the mask.

Menu M82 (Channel mask) allows to load and save the channel mask to a file.

Editing Channel Masks by Menu Control

Menu M82 lists all channels used, channels can be added or removed with this menu.

The channel mask shows all channels used in lists **LEVEL**, **STAGE** and in independent time lists**.** Selecting channels expands the mask (if "open"), these channels can be cleaned from the mask if not having levels.

Channels removed from the mask by menu will disappear from the mask. If cues containing levels for the channels are loaded into a preset, the channels will reappear in the mask.

Key **MENU** opens a menu which allows to save or load masks to a file (being part of the show, a setup with name or as default setting).

Single Channel Selection

Single channel selection determines if, when channels are selected, the previous selection is kept or cleared. With single channel selection activated, the current selection is cleared before each absolute channel selection (without + or -).

All channel selection operations are affected, channel selection with the optional channel keypad, too.

The lamp of the S/CH key is lit when S/CH mode is activated.

S/CH
    Activate/deactivate single channel selection

TAKE S/CH
    Activate single channel selection

CANCL S/CH
    Deactivate single channel selection

Function ISO

The ISO function restricts level output to the currently selected channels which will be "isolated" outputting their level, resulting from the presets and faders. Unselected channels are output with 0%.

If several input devices are active (e.g. remote PC monitor), channel levels will be output which are selected from at least one input device.

The function does not affect

- levels from effect control,
- locked channels.
- Dimmer channels with attributes producing 0% levels,
- Dimmer channels with independent levels.

The lit ISO key-lamp indicates active ISO-mode.

Displays

ISO mode is only indicated on list views **STAGE** and **OUT; levels in LEVEL** are not modified by ISO mode.

Activated ISO-mode is indicated by "**ISO**" in the header of the main monitor, area **CORR**- or **FIX**.

Operations

chrange ISO
  select channels and activate **ISO**

TAKE ISO
  Activate **ISO** for selected channels

CANCL ISO
  Deactivate **ISO**

ENA and ISO
  Toggle **ISO** mode

Channel Names

Menu M81 (Channel names) allows the editing and assignment of names to channel numbers. All menus requiring the entry of a control channel or dimmer channel number, will then show the channel name in the name list which be started with key MENU; ENTER selects the channel.

The displayed channel summary is initially empty, key MENU opens a selection menu. The first three options add channel numbers by different criteria, allowing entering channel names. Existing entries will be kept.

Options:

  ESC   Ends the menu

  MENU   Start the selection menu for editing:

    Include all channels in mask
      All channel numbers used in the current mask are included in the summary.

    Include all control channels in mask
      All configured control channels are included in the summary.

    Include all dimmer channels in mask
      All configured dimmer channels are included in the summary.

Further menu options are for file management of the channel summary.

ENTER	Edit selected entry
INS	Insert a new entry in the name list
DEL	Delete selected entry from list
PRINT	Print complete list
Load	Load saved summary
Save	Save summary

Name assignment is unique in a 1:1 patch (control channel number = dimmer channel number). If channels are not patched 1:1, the user can decide if the names assigned are for control channels or dimmer channels.

Channel Selection with Keys CHAN or ENTER

Control channel selection is usually done with key **CHAN** or **ENTER:**

chrange CHAN
> Select a channel or a channel range

The following operations apply to channels in the current mask only:

+ CHAN
+ +
→
> Select next channel

-CHAN
- -
→
> Select previous channel

Libra: Keys +SK and -SK can be added to a Topo, offering the above selections.

Selecting Channels with the Digital Wheel

The digital wheel can be used for selecting channels. If a channel number or range has already been entered on the keyboard and only the final key operation is needed, moving the digital wheel executes the selection. The level of the selected channels is immediately changed.

Selecting Channels by Mouse

Channels can be selected or deselected by clicking with the left mouse key; if key Shift is pressed, single channel selection is switched off; from version 5.2 channel ranges can be selected by "dragging".

Channel Groups

Control channel groups (**CH/G)** allow to quickly selected or unselect a group of channels.

From software version 4.2, channel groups were part of the I-Pallets; from version 5.6 channel groups are handled as independent groups. When loading shows created with a previous software version, I-Pallets are imported as channel groups. If the channel groups are stored as part of the show, the CH/G will be loaded (and the I-Pallets ignored).

List View

List **CH/G** shows the channel groups and the assignment of channels to groups, two view modes are possible:

CH/G-number – Channel
displays **CH/G** numbers, followed by the channels included in the channel group. If there is not enough room to display all channels of a group, "**...**" is displayed; key **ENTER** opens a menu displaying all channels.

Channel number - **CH/G**-number
All control channels of the mask are listed together with the channel groups assigned (in ascending order).

The list view mode is configured with default setting SKGMODE. With list **CH/G** displayed at the main monitor, key **MENU** will open Menu M804, Channel Groups; option "Toggle display mode" then switches between the display modes.

Creating Channel Groups

Channel groups are edited with key operations or Menu Control; key operations relate to channels currently selected.

chgroup S CH/G
TAKE chgroup CH/G
TAKE chgroup1 - chgroup2 CH/G
Included selected channels in channel group(s)

+ chgroup S CH/G
Add selected channels to channel group

- chgroup S CH/G
CANCL chgroup CH/G
CANCL chgroup 1 - chgroup2 CH/G
Remove selected channels from channel group(s)

CANCL ALL CH/G
Remove selected channels from all channel groups

It is possible to prefix the operation by a channel range, channels which are part of the mask will be included.

Key DEL deletes the highlighted channel group.

If list **CH/G** is active on the main monitor and channel groups are displayed sorted by channel group numbers, key **ENTER** opens a menu view displaying the channels involved in the channel groups. The mouse, cursor and various keys allow selecting channel groups:

ESC	ends the view
ENTER	shows the channels name (M81, Channel names)
INS	inserts a channel
DEL	deletes a channel
PRN	prints the view
Rename	renames the channel group

Selecting Channel Groups

char CH/G
> selects the channels involved in channel group

chgr1 - chgr2 CH/G
> selects channels of the channel groups

char ' CH/G
> selects all channels not in channel group
> the channel mask remains unaffected

Keys **+/-** extend or minimize the channel selection.

Menu Control for Channel Groups

Channel groups are managed with Menu M804.

Toggle Display mode
> List **CH/G** can be sorted by channel group numbers or control channels

Channel group names
> starts M161 and allows to assign or edit channel group names. Libra will show the channel group names when using view CH/G.
>
> The names can be edited with M11 or M17, when using the CH/G-view mode channel sorted.
>
> The length of CH/G-names can be 8 digits on the system and up to 30 on Libra.

Delete channel **groups**
> starts M164 which allows to delete single or a range of channel groups; key **MENU** or clicking shows all recorded channel groups.

Load, Merge**, Save, Remove**
> Configured channel groups can be saved and restored or merged.

Print
> prints the current channel groups.

Older software versions used Menu M805 for managing channel groups; from version 5.6 this menu is only used to merge channel groups configured with software versions older 4.2 (max 32 CH/Gs).

Selecting Dimmer channels

Key **DCH** allows to select control channels by the patched dimmer channels number (please refer to Control – Dimmer Channel Patch in chapter "Control Channel / Dimmer Channel Patch".

Channels patched 1:1 don't differ between selection with **CHAN** or **DCH**.

dchrange DCH
> select patched control channels

Dimmer channel keyboard (Optional)

When using the optional dimmer channel keyboard (where each dimmer channel has a dedicated key), control channels can be selected by the patched dimmer channels.

Selecting a dimmer channel key selects the associated control channel (similar to the "dimmer DCH" selection), pressing the key again deselects the channel.

The key lamps on the dimmer channel keypad indicate the status of the dimmer channels:

Off	Dimmer channel not used
Flashing	Associated control channel selected
On	Associated channel not selected Output level above set threshold

Deselecting Channels

Channels can be deselected and will then not respond to entries.

Depending on the S/CH mode selected, channels can be automatically deselected upon selection of a new channel; refer to the chapter Single Channel Selection.

ESC]
X
  Deselect all selected channels
chanrange X
  Deselect channel-range

Channel selection last deselected by key X can be retored.

' X
  restore previous selection

Selecting Involved Channels

The involvement of channels in the selected preset or current lighting output can be used as selection criteria. Normally, the main monitors list is the criteria for "involved" channels; if the list active does not give information the second monitors list or the selected preset will be checked for intensity levels involving channels.

If the function FIX is active, operations with the INVO key are rejected.

INVO
  Select involved channels

chrange INVO
  Select involved channels in range

ALL INVO
  Select all channels of mask

The function of the INVO key can be reversed by the ' key. "' INVO" selects non-involved channels.

Key Shift and INVO mark channels changed since last save.

Channels set to the DIR mode by the property DIR_MODE = 0, cut crossfade, are ignored when selecting within a crossfade preset.

Menu M211 (Level minimum) defines the (threshold) level from which a channel is regarded as being involved. This affects all operations with the INVO and RCH keys. The set threshold value is defined in the BET_SCHWELLE property.

Changing Involvement in ADD-Cues

When recording "added" (or piled) cues with "**+ REC REC**" (Cue type ADD or "**- REC REC**", cue type SADD), only the levels of selected channels will be recorded and changed when crossfading; these channels are "involved" in a cue.

If an ADD-cue is loaded into the **PV**-preset, channels will be marked as involved when changing intensities. The following operations allow changing channel involvement (for ADD-cues loaded to PV or BLD):

TAKE INVO
    Involves selected channels

chrange TAKE INVO
    selects and involves channels

CANCL INVO
    uninvolves selected channels

chanrange CANCL INVO
    selects and uninvolves channels

Note: This affects only the cue loaded to the selected preset.

Selecting Channels fading In/Out

If a crossfade preset is selected, the channels which are faded in or out can be selected with keys **DOWN** and **UP**.

  Selected preset **PV**:
    Intensity levels will be compared between **PV** and **DEST**.

  Preset **XF**- or **DEST**:
    Levels when starting the current (or the previous) crossfade will be compared with levels of **DEST**-preset.

UP
    select channels fading "up"/in

DOWN
    select channels fading "down"/out

Operation "**DOWN**" followed by "**+ UP**", selects all channels modified by a crossfade.

Channels set to mode DIR by default setting DIR_MODE=0 will be ignored.

Key sequence Shift and IN/OUT marks in/out fading channels, which have been changed since last save/load.

Selecting Channels Recorded in Cues

"Memory selection" selects channels recorded in cues of the current show. Exception are channels used only by effects.

Usually only the intensity or dimmer value are evaluated. If list display ML/COL is active on main monitor, stored attributes are searched. If the cursor line marks an attribute, only for this attribute is searched.

Key lamp RCH is lit as long as the memory is searched; at the end the search result appears as channel selection.

RCH
> Select channels involved in current show

cuerange RCH
> Select involved channels in cue range

RCH can be replaced by the key sequence ´ RCH. The selection then applies to channels non-involved in memory.

Memory RCH access is not possible during operations that access the memory; the lamp of the RCH key will then flash for approx. 5 s, then the message "Memory transaction in progress" is displayed and the RCH aborted. An example of this is using the "RCH" operation while a loading a show.

Fade in Cue

Intesinity values from cues can be faded in to the selected preset.

cue RCH and digi
> fade in indicated cue
> cue ranges are possible too.

The fader value for fading in is displayed in the header marked by „RCH".

Selecting by Grand Master-Assignment

The assignment to grand master faders can be used as criteria for channel selection. The single channel selection function is ignored in this kind of selection.

Prisma/Focus:

I/II
> Select channels assigned to grand master fader

chanrange I/II
> Select channel range assigned to grand master

I/II can be supplemented by **' I/II**. The selection then applies to channels not assigned to the grand master fader.

Iris:

FOH
> select channels assigned to FOH master

chrange FOH
> select channel range assigned to FOH master

The input can be supplemented by **'**, the selection then applies to channels not assigned to the FOH fader.

Selecting Independent Channels

Channels in independent mode are not influenced by master faders, their output level is defined by the level entered in the active presets.

DIR
> Select all independent channels

chanrange DIR
> Select independent channels in range

DIR can be supplemented by ´ **DIR**, the selection then applies to channels not operated in independent mode.

Refer to DIR Assignment in the chapter "Intensity Levels".

Selecting Locked Channels

Guarded (or "locked") channels are channels whose level is not modified by level entries in active presets, loading of cues from memory, crossfades or effects

LOCK
> Select guarded channels

chanrange LOCK
> Select guarded channel range

LOCK can be supplemented by ´ LOCK, the selection then applies to channels not operated in locked mode.

Refer to "Guarding Channels" in the chapter "Levels".

Intensity Level Control

Introduction

Level entries generally relate to selected channels in the current preset, displayed by the following list views:

LEVEL   Level display, channel level within the selected preset

Levels can be controlled in the presets between -99 and +199% (light output is of course only between 0 and 100%), this indicates different levels between channels.

Restriction to the range 0 to 100% happen when:

- channels are deselected,
- the preset is changed,
- the preset content is saved.

The OVDISP_MODE property defines whether levels are shown in the full range or only between 0 and 100%.

STAGE   Current output, resulting from all presets

OUT   Dimmer channel levels, "true" output level

DMX   Output displayed as DMX-values, according to the patch

Channels can be guarded against changes with function LOCK.

Function FIX

The FIX function sets channels to a predefined level (which can be between 0 to 100%) upon selection. When FIX is deactivated, the channel levels are unaltered on selection.

Please note when using FIX:

- The FIX level is modified by level entries, even if no channel is selected.
- All channels are set to the FIX level upon selection (except Guarded channels)
- Channels can not be selected with **INVO, RCH, DIR, UP, DOWN, I** and **II** keys
- Channels can only by modified between 0-100% (and not -99 to 199%)

Reset operations with key **RS** disable the FIX mode and reset the FIX level to 0%.

Displays

Enabled FIX is indicated by

- lit key lamp of key **FIX**
- displaying of **FIX**-level in the main monitors header

(if using **CORR** the FIX-level will be overlaid by the CORR-level displayed).

Operations

FIX
> en-/disable **FIX**
> The current channel selection will be cleared when enabling FIX.

The **FIX**-level set will be remembered and can be re-used when re-enabling the function.

int FIX
> Enable **FIX**
> The **FIX**-level will be set, the current channel selection cleared.

FULL FIX
> Enables the **FIX**-function, set to 100%

TAKE FIX
> Enable **FIX**

CANCL FIX
> Disable **FIX**

Intensity Inputs with INT and ENTER

Keys **%** or **ENTER** allow to enter intensity levels in percents.

int %
> set selected channels to intensity level

Inputs can be between 0% and 100%.

+/- int %
> In-/decrease level of selected channels

If no channels are selected, the input is rejected by "**No channels found**"

CANCL %
>Clears all intensity levels of the current (selected) preset

All channels (except effect channels) of the current preset are set to 0%; not considering the channel selection.

CANCL ALL %
>all intensities will be cleared

All channels (except of effect channels) of all presets are set to 0%; not considering the channel selection.

Entering DMX values

Key **DMX** allows directly entering DMX values:

dmx DMX
>sets selected channels to DMX value

Values can be between 0 and 255.

+/- dmx DMX
>in-/decrease value of selected channels by DMX value entered

If no channels are selected, the input is rejected by "**No channels found**"

Coarse Intensity Input with Key @

Key **@** allows to enter intensities in 10% steps; for example, key 8 stands for 80%, key **FULL** for 100%. For absolute entries (without **+** or **-**) input "**@ @**" acts as "**@ FULL**".

After entering a "coarse" value you can define the level with the digital wheel or input **%**.

@ digit
@ FULL
@ 0%
@ @
>Set selected channels to level

Input "@ @" uses the last @-value entered or "@ FULL".

chanrange @ digit
chanrange FULL
chanrange @ @
>Select channel range and set to entered level

@ +/- digit
>In-/decrease level of selected channels

chanrange @ +/- digit
>In-/decrease level of selected channel range

channel + channel + channel + ... @ digit
>Select stated channels and set to entered level

Example:
21 + 23 + 29 @ 7   Select channels 21, 23, 29 and set to 70%

@ FIX
>sets selected channels to **FIX**-intensity

@ Dimmer channel key
>   Set channel to level last entered

Property ATMODE controls input mode:
>   ATMODE=0: one digit, **@ 5** = 50%
>   ATMODE=1: two digits, **@ 52** = 52%

Note: This entry can only be done with key @ on the optional dimmer channel keypad, not with the key @ on the control keyboard.

@ '
>   mirror output value around 50%

This function can be used for dimmers and attributes. As an example Pan or Tilt can be easily be mirrored.

Fan-Function

This function "fans" dimmer levels or attributes (depending on the actual list view of the main monitor):

LEVEL/STAGE:	Fans Intensity of selected channels
ML/COL:	Fans Attributes (like Pan/Tilt etc)
T/TWAIT/TXF:	Fans Time-values

NTX consoles have a key FAN.
External keyboard: Key FAN is mapped to Strg-E for all types of consoles.

Fan using direct input

This fans selected channels or attributes of the selected preset:

int1-int2 FAN
int1-int2 %
int1-int2 ENTER
>   linear fan of selected channels/attributes between int1 and int2.

+/- int1-int2 FAN
+/- int1-int2 %
+/- int1-int2 ENTER
>   Linear in-/decreasing of fan values using int1-int2.

Key **DMX** can be used to enter DMX values between 0 and 255 (instead of key **%**).

Example:
Channels 21 to 25 are selected, the input 30 – 70 % assign the levels 30, 40, 50, 60 and 70 to the channels.

Fanning using the Digital Wheel

By pressing the THRU key you can fan using the digital wheel, the *fan-factor* will be displayed on the monitors header line. The rotation/fan basis is set to the center of the chosen area and can be modified by pressing:

THRU and +:	sets the basis rotation point to the lowest/first selected channel
THRU and -:	basis rotation point is the last selected channel
THRU and .:	Standard / center as basis rotation point

Plus/Minus Mode will be displayed on the header line.

If there are no individual attributes selected in the ML/COL list, the fan-function refers to the dimmer attribute of the moving lights.

Fanning using the Encoders

Pressing THRU switches the encoders (on Prisma/Focus) to fan-mode (independent of the main monitors list view), regardless of the list view selected.

Fanning Times

If the "independent times"-option is configured, the independent times can be fanned as well:

t1 - t2 T/TWAIT/TXF
 linear fan of t1 to t2 for selected channels' time-values.

+/- t1 - t2 T/TWAIT/TXF
 linear change of times for selected from t1 to t2.

Example:
Channels 21 to 25 are selected, entering 5 – 9 TXF assigns the independent times 5, 6, 7, 8 and 9 seconds to the channels.

Function BACK

Key **BACK**- allows to revert changes of intensities or attributes.

Levels used from the BACK function are these of:

- First-time selection of channels after changing presets
- Transfer of levels between presets
- Transfer of complete preset contents
- Loading of cues
- Starting the CORR function

The function depends to the input device; when you use a handheld terminal for example, only the channels controlled from the terminal are affected.

Please note when using **BACK**:

- in lists ML and COL, BACK affects complete attribute groups (like Pan/Tilt or Cyan/Magenta/Yellow or shutters/barndoors)

- after crossfading, BACK reverts the selected channels to the value of starting the crossfading; changes made after a finished crossfade will be reverted to the destination values of the crossfade.

- Default settings ALT_MODE and ALT_TOGGLE allow modifying the BACK-behavior further.

BACK
 en-/disable **BACK**

chrange BACK
 selects channels and enables **BACK**

Values of selected channels can be set back to the levels of a cue loaded earlier or to the levels stored in a cue; list ML/COL only the selected attribute.

@ BACK
TAKE BACK
 sel. Channels back to cue values

TAKE cue BACK
 sel. channels/attributes to levels in cue.

Digital Wheel, Mouse, Crossfade keys

The digital wheel allows to fine-control levels of selected channels; its mode can be changed with keys **CORR** or **SUM**.

Note: When displaying menus or time lists, the digital wheel will not control intensity levels.

Channel levels in presets can be controlled between -99 to 199%. If several channels with different levels are modified simultaneously, the difference of the levels are maintained if you fade above 100% or below 0%. The property OVDISP_MODE defines the display of levels outside the 0% to 100%-range:

OVDISP_MODE=0   Display range -99 thru 199%
OVDISP_MODE=1   Display range 0% thru 100%
OVDISP_MODE=2   Display range 0% thru 100%, 100% = FF
OVDISP_MODE=3   Display range 0% thru 100%, 100% = FL

The mouse can also be used as digital wheel; when the right mouse button is pressed down, vertical movements of the mouse have the same effect as movements of the digital fader wheel. Move speed is cotrolled by properties FAHR_LINCR and FAHR_SINCR.

CORR and digi
Correcting levels by factor **CORR**

CORR allows proportional changes of intensity levels. When pressing key **CORR**, the system notes the levels of channels selected, moving the digital wheel then sets a CORR-factor with whom the channel levels will be multiplied upon depressing the key.

The **CORR**-factor is displayed in the main monitors header if the value is ↔ 1.00.

chanrange CORR and digi
select channels and correct them

The function depends on the list displayed on the main monitor:

Menu View   The digital wheel does not modify levels.

List **DCURV**   the displayed curve is modified.

List **E**   if the cursor line highlights channel entries their values will be modified.

SUM and digi
regulates the output sum of selected channels

This function allows modifying the output level of selected channels, independently to the levels set in various presets. (not including the effect section).

When fading up/down the level of the selected channels will be in-/decreased in all presets. It is possible to configure the behavior in default settings.

Grand Master Faders

Two master faders (on Prisma/Focus) control the lighting output of dimmer channels; both faders have a dedicated blackout key.
On Iris, grandmaster function is achieved by fader M (and dedicated blackout key) and function FOH, combined with the digital wheel.

The grand master fader (or the blackout) will be ignored when:

- a dimmer channel has an independent or heat level.
- the assigned curve produces a level at 0%.

Channels can be assigned to the two faders, assignment is done by menu M83, Grand master assignment, or with the following operations; it can be saved as default or for the current show.

Key operations only affect channels of the current mask.

TAKE I/II/FOH
  assign channels ("exclusively") to the selected fader

chanrange TAKE I/II/FOH
  select and assign channels

Iris has no special key for the grandmaster, channels are assigned to both grand masters (Menu M83: "**M+FOH**").

+ TAKE I/II/FOH
  add selected channels to the assignment

chanrange + TAKE I/II,FOH
  select and add channels

This allows adding channels to both grandmasters.

CANCL I/II/FOH
  unassign selected channels

CANCL chrange I/II
  unassign selected channel range

Channels assigned to grandmasters can be selected with the grandmaster keys **I/II/FOH**.

BOI/BOII/BO
  Blackout for channels assigned to the grandmaster

Default setting FRG_BO:
This defines if key **ENA** has to be used additional to BO keys.

The key lamp is lit when Blackout is active (oppressing output).

TAKE BOI/BOII/BO
  Enable Blackout

CANCL BOI/BOII/BO
  Disable Blackout

Displays

The current state of the faders is shown in percent on the fader display of the second monitor. Blackout is indicated by "BO" and changed background color.

If master I is below 100% or if blackout is activated, this will also be indicated on the first monitor's header, for blackout the header appears in the blackout color.

The value used for calculating the output levels is always indicated. The internal value may differ from the current faders physical positions through operations for fader control or by remote controlling, this is indicated by:

- the fader is labeled with "CATCH".
- Indexing arrow shows the direction in which the fader has to be moved to capture the internal value again.

To "catch" the fader you have to move it above the "internal" value.

Grandmaster Assignment using Menu Control

Menu M83, Grandmaster Assignment, displays the current assignment and allows editing with key **ENTER**:

On Prisma/Focus

I	Assigned to **I**(default setting)
II	assigned to fader **II**
I+II	assigned to both grandmasters

On Iris

M	Assigned to fader **M** (default setting)
FOH	assigned to **FOH**
M+FOH	assigned to both faders

Further options:

DIR	Direct mode, not assigned to any fader.
NONE	Not assigned to master faders or (group) submaster
NULL	the channel is permanently set to 0%.

Key **MENU** opens the file management menu, option "Init" allows to assign various channels simultaneously.

Function INH - Inhibit

Channel(s) can be modified by a dedicated submaster fader:

Example:
Channels 121, 122, 123 and 129 are assigned to submaster **GR1** using function **INH**. The submaster fader of GR1 will now control the level of the channels.

Please note:

- Effect channels can not be modified by INH
- when activating **INH**, the function **SOLO** will be disabled.

Using Inhibit:

1 select an unused submaster to be used as **INH**
2 set the level of channels to be used with INH above the threshold default value.
3 set channels not the be controlled by INH to 0%
4 TAKE **INH** enables INH.

The levels set at the INH-submaster act only as selecting criteria and do not affect the resulting level (which is modified by the submaster fader).

All other submaster level controls will affect the inhibited submaster as well:

- Submaster Blackout
- Flash
- Faders controlled by time values
- External digital or analogue signals

When disabling **INH,** the internal value of the submaster fader will be set to 0%. If the current position of the fader is above 0%, "CATCH" will be displayed (and the fader needs to be "catched" to 0%).

The default setting INH_MODE allows modifying the control range of the inhibited fader:

INH_MODE=0	Control range 0% - 100%
INH_MODE=1	Control range 0% - 200%

The submaster/group name will be replaced by "**INH**", for example: "**GR1**" will be displayed as "**INH1**" in the group section and the selected presets header.

When activating INH, the fader will be internally set to 100% ("CATCH" will be displayed if the physical faders position is below 100%); when disabling INH the fader will be internally set to 0% (and "CATCH" will be displayed, if applicable).

Key lamp **INH** is lit when the function is enabled for a submaster.

Key Operations

TAKE INH
> enable inhibit for the selected submaster

CANCL INH
> disable inhibit for the selected submaster

ENA INH
> Toggle inhibit on/off

TAKE submasternumber INH
> enable inhibit for submaster number…

CANCL submasternumber INH
> disable inhibit for submaster…

CANCL ALL INH
> disables inhibit for all submasters

Function DIR

Channels can be set to a "direct output level", which makes them independent from the influence of all faders; their output level is only determined by the level entered in the active presets.

Default Setting

DIR-channels can be faded or "cut" when crossfading, this is preset with default setting DIR_MODE.

Displays

Channels that have **DIR**-values assigned are not displayed different to other channels; key **DIR** selects all channels that have DIR-values.

Effects

Effects are not affected by **DIR.**

Operations

TAKE DIR
>   switch selected channels to DIR mode

chrange TAKE DIR
>   assign DIR to a channel range

CANCL DIR
>   disable DIR on selected channels

chrange CANCL DIR
>   disable DIR on a channel range

DIR-channels are controlled by master fader **I**, (on Iris **M).**

Independent Levels

Channels can be used in direct mode; furthermore, dimmer channels can have independent levels which are not influenced by presets or intensity control inputs etc.

R[Menu M93 (Independent Dimmer Levels)][MANUAL_M_DIRINT] allows to assign and save independent levels to dimmer channels which will override further attributes assigned to a dimmer channel.

Function LOCK

Guarded (or "locked") channels are channels whose level is not modified by level entries in active presets, loading of cues from memory, crossfades or effects; only Faders will modify the level of guarded channels (if not set to "NONE" in M83, Grandmaster Assignment).

Locked channels can be marked by selection, see "Selecting Channels".

Displays

Locked channels are indicated with the index "**I**", followed by the channel number, in all intensity list views.

Effects

Locked channels will not be modified by effects.

Operations

TAKE LOCK
>   lock selected channels

chrange TAKE LOCK
>   select and lock channel range

Channels which are modified by a running crossfade will be "locked" at their current level.

CANCL LOCK
>   unlock selected channels

chrange CANCL LOCK
>   select and unlock channel range

If channels currently involved in a crossfade are unlocked, their level remains unaltered in an ongoing crossfade.

Common Channel Control

84 MENU
> Starts Guarded channels menu

In addition to key operations, the list offers a convenient way of handling locked channels output levels. The list shows all currently guarded channels, extra channels can be added with INS and "guarding" cancelled with DEL.

The related file menu allows saving and loading configurations.

Options in the bottom line:

ESC	ends the menu
MENU	Open file management for guarded channels
ENTER	indicate channel name (if entered)
INS	Guard extra channels
DEL	Cancel guard
PRINT	Print list of all guarded channels
Load	Load file with list of guarded channels
Save	Save current list of guarded channels

Locked Channels and Reading from Memory

PV, BLD
> Property SPE_OPT controls behaviour on loading cues to a blind preset PV/BLD
> SPE_OPT=0: Locking is ignored, values for locked channels are loaded.
> On re-recording the cue values remain unchanged.
> SPE_OPT=1: Locking takes effect, values are not loaded.
> On re-recording values may be changed.

Active preset
> Recorded values for locked channels are ignored. Values in presets are not changed for locked channels.

If the cue is re-recorded, current value of locked channels in the preset will be recorded.

Clearing Channels

Channels can be set to 0% in all presets (as long as they are not locked).

If the mask is open (key lamp **MAS** is off), channels which are not part of cues in memory (with a level greater than the threshold set) are removed from the mask. The remaining channels are unselected.

Levels in effects will not be changed, but the channels will be removed from the mask (if not part of recorded cues).

ENA and CANCL CHAN
> clear and unselect selected channels

ENA and chrange CANCL CHAN
> select and clear channel range

Functions 0% and 100%

Keys **0%** and **100%** help "searching" or highlighting channels. When pressing the keys, selected channels will be set to 0% or 100%.

The **100%**-output can be limited by:

- Grandmaster fader or –blackout
- Dimmer characteristics "maximum output level"
- Independent level for dimmer channels

The function works for selected channels, changes of the channel selection while using the keys are ignored.

0%
> sets selected channels to 0%

chrange 0%
> selects and sets a channel range to 0%

100%
> sets selected channels to 100%

chrange 100%
> selects and sets channels to 100%

Simultanuously pressed key Shift switches both functions on and off.

Level of Recorded Channels

The intensity level of recorded channels can be comfortably displayed with:

chnumber MEM
> displays intensity levels of the selected channel in recorded cues

The operation starts menu M30, searching all recorded cues for levels greater than the threshold set for the selected channel. Involvement in effects is ignored.

Channels recorded can be edited with further menus.

Flash Function

The flash keys "bump" the content of a submaster to 100% (or 0%, to be configured at M150, Flash-Function.

The flash keys are situated below the submaster faders; times assigned to submasters will be ignored. The group blackout is superordinated to the submaster faders and will influence the flash function, too.

FLASH
> Flash function (keys) off/off

TAKE FLASH
> Flash-function on

CANCL FLASH
> Flash-function off

The lit key lamp **FLASH** indicates that the flash-keys are enabled.

External Signals

Analogue signals simulate the submaster faders and are overlaid by the flash keys.

Digital signals simulate blackout and thus override a 100% flash.

Flash-Function and Menu Control

Menu M150, Flashers configures and enables the flash keys:

Flash keys   enabled or disabled

Mode   Flash-In or Flash-Out

Settings are stored in property FLASH_MODE.

Copying Levels between Presets

Levels of selected channels can be "copied" between presets. The levels entered in the source preset are transferred to a destination preset, considering the preset master, the source preset remains unaltered. The destination preset will be selected automatically. If the presets involved are assigned to different masters, they will also be considered.

The operation only affects levels of non-locked channels; effects, external signals and independent fade times will be ignored.

Notes:

- When transferring from an **XF**-preset, the current crossfaded levels will be copied

- when transferring into **XF**-presets, the affected channels will be set to the "new" intensities and are taken out of the current crossfade.

- for the preview-presets **PV** and **BLD,** the preset master will be assumed with 100% which means that when transferring to an active preset values can differ.

TAKE source dest
> copies levels of selected channels from source to destination preset

+ TAKE source dest
> copies levels of selected channels from source to destination preset

Levels will only be transferred if the level held in the source preset is higher than the destination presets channel level.

- TAKE source dest
> clears levels from the destination, if a level is set in the source preset.

The master fader of the source preset will not be considered.

Copying Output Levels

Output levels of selected channels as displayed in **STAGE** can be copied to a preset:

TAKE STAGE dest
TAKE SUM dest
> copies output levels to the destination presets

Function SOLO

Function SOLO reduces the total dimmer output to a single, the SOLO preset. The master of this preset controls the masters of all other presets with reverse proportionality. If the master of the SOLO preset is at 100%, all other preset masters will be at 0%; if the master of the SOLO preset is at 0%, all other presets remain unaffected.

The SOLO mode is only possible for the active presets (groups, XF preset).

When SOLO is activated within submasters, the INH function (if active) will be disabled and vice versa.

External keyboard: Alt-O works as a shortcut for console key SOLO.

Displays

Monitor Header:
The active **SOLO** presets' name will be displayed, if **FIX** and **CORR** are not active.

Submaster groups:
The master value displayed is identified by "*", if the value differs from the true lever position because of the SOLO function. The name of the controlling SOLO preset appears in the display area; if the SOLO preset is a group, it will be identified by "SOLO" in the area for the time displays.
Property GRDISPMODE=3: SOLO is indicated instead of times or text.

Master window on second monitor:
The controlling SOLO preset is indicated with the current master value. If the SOLO preset is an XF preset, it will be identified by "SOLO".

Preset-Blackout

The preset-blackout key brings the output of a preset to 0%. If blackout is active on an **SOLO**-preset, all other presets are unaffected; if blackout is off, the preset master fader controls the function.

External Signals

All active presets can be influenced by an analogue or digital signal. If a signal is assigned to an SOLO preset, it will control the SOLO function.

Operations

ENA and SOLO
> en-/disable **SOLO**

The function will be activated for the active / selected preset and will be rejected for preview presets **BLD** or **PV**, displaying the message "**Not for blind or preview**".

Function SOLO will be disabled when changing presets.

TAKE SOLO
> enables **SOLO** for the selected preset

TAKE preset SOLO
> enables **SOLO** for an preset

CANCL SOLO
> disables **SOLO**

Menu M13 (**SOLO**-Function) can be used to enable or disable the function.

SOLO-Function within Menu Control

Menu M13 (**SOLO**-Function) allows to control **SOLO**. The menu control has the following advantages:

- The function can be applied to any active preset without changing preset.
- The function does not need to be deactivated before changing the SOLO preset.

The current SOLO preset is displayed within the menu. If the entry field for the SOLO preset is active, the preset can be selected by the according preset key; the "Off" setting deactivates the SOLO function.

Submaster Group Transfer

Group transfer allows compiling cues split to or built by several submaster/groups into a single preset. All levels of the destination preset are cleared and the highest source levels will be transferred to the destination preset. Masters and master faders will be included.

The operation affects all channels of the current mask, regardless of the current selection. Locked channels and effects are ignored.

Involved source presets remain unaffected by the operation; times, cue text, applied signals and effects are ignored. Following the operation the destination preset is automatically selected.

ALL GRi thru GRj TAKE dest
> Compile groups i through j into destination preset

Controlling Faders by Key Inputs

All faders can be set to a value by key commands; a time can be specified for controlling the (internal) fader "movement". In contrast to operating faders manually, all faders can thus be controlled by automated timing control.

The operations can be integrated within macros; this allows loading and executing cues of any complexity by inserting such macros in the sequence list.

Two types of "faders" have to be distinguished: faders, and levers operated by an extra key and digital wheel:

- for faders of groups and grand master fader I/II, the set point (the current state of the lever) and the actual point, set by the controlling entry, can differ; this will be indicated by label "CATCH" in the lever value display and with an arrow pointer. The lever is catched by moving the fader in the indicated direction over the actual point.

- Other faders are subject to the digital wheel again when being corrected; an ongoing time operation will be aborted.

TAKE int fader
> sets a fader to a %-value

The value will be set immediately.

TAKE int % time T fader
> "moves" the fader with the time given to the value set

Group times in normal mode relate to a lever movement of 100%; the time set with above command is the time (for all faders) of the change ("internal fader movement) to be made.

Within group displays, fader values will be marked with "*", if the output value set and the "real" fader position differ. The "CATCH" identification shows in which direction the fader needs to be moved to synchronize the internal value with the true fader position.

Note: For submaster groups, the key input "**number GR**" (**8 GR =** submaster 8) can be used to allow operation by input devices like handheld terminals.

Introduction to Timing Control

The following functions can be controlled by times:

- Crossfading of cues (cue time) and "split" fade with separate fade in and out-times

- Independent times for single channels (channel fade time)

- Automated follow-up cues within the crossfade sequences

- Smooth, automated fading of cues and effects on submaster presets by time-controlling the faders.

- all master- and grand master faders can be controlled by times

Times in the range of 0 to 59'59 (59 minutes,59 seconds) can be assigned with the following keys:

T, TXF	Crossfade times
TWAIT	Wait times
TDLY, THOLD	Delay and hold times

Entries relate to the list displayed on main monitor:

List view	
T, TWAIT, TXF	Independent time for selected channel(s)
E	Time for controlling effects
COL, ML	Independent time for selected attribute
others	Preset Submaster/group selected: Fade time (in/out) all others: Cue time

Default setting TGRBLOPT allows to define if cue and submaster group times are treated independently or as one; refer to chapter "default settings" for more information.

Time entries can be initiated with **+** or **-** , this allows to modify times entered.

Cue Times

Crossfade times control the timing of lighting cues within the crossfade system and are a part of the cue. The times refer to all channels involved in a crossfade (e.g. changing levels when played back), exceptions are channels with independent fade times and locked channels.

Changes of Movinglight-attributes can be controlled by cue times, if configured accordingly.

When starting a crossfade, the system differs between channels fading in and out based on the values held in **PV**- and **XF**-presets. Separate fade- and wait times can be assigned to both channels fading in or out.

Times of the crossfaded presets (displayed: time in/out) are displayed in the dedicated display window on the monitors and, on Prisma, on the crossfade systems desk displays; refer to the description of the crossfade systems for more information.

If both wait times are assigned for a cue, default setting AUTO_TS allows configuring if a hold time will then be automatically inserted in the sequence.

Key inputs **DOWN T/TXF/TWAIT** or **UP T/TW/TA** are used to assign in ("up") or out ("down")-times independently, "**+/-**" modifies the entered times.

time T
> set the fade time and clear wait times

CANCL T
> clear cue times

> When selecting a submaster preset, this will be set to manual control; times within submaster groups are cleared with "**0 T**".

time TXF
> set crossfade time

CANCL TXF
> clear crossfade time

time TWAIT
> set wait time (in/out)

CANCL TWAIT
> clear wait time

Options for List SQL

If selecting the **SQL** on active XF- or BLD-presets, times can be inserted and assigned directly to cues by entries in the sequence list:

List area	Sequence steps (starting cues) assign the time inserted to the according cue.
Lens (upper area)	The time will be assigned to the active preset (the cue will need to be re-recorded to make a permanent change).

Using Times from Manual Crossfades

When manually fading between cues, the system remembers the up- and down-times used (on Prisma, these times will be shown on the desk display). These times can be transferred and used as cue time:

Keys **DOWN T/TXF/TWAIT** and **UP T/TXF/TWAIT** allow to select manual fade times.

TAKE T
> takes all manual fade times as cue time

TAKE TXF
> take fade times only

TAKE TWAIT
> take the wait-time (if applicable)

Independent Channel Times

Any number of channels involved by a crossfade can have independent wait- and fade times assigned, if:
- the software option "Channel Fade Times" is configured
- Presets **XF** or **BLD** are selected and lists **T, TWAIT** or **TXF** are active on the main monitor

Inputs act for selected channels and are displayed for each channel within the lists **T, TWAIT** and **TXF:**

TWAIT	Wait times
TXF	Fade times
T	Total (fade and wait) time

Channels not displaying times in those lists don't have independent times assigned and thus are controlled by the cue time. No separation between "up"- and "down"-time is made here, as these times are set by starting a crossfade; times of locked channels can not be modified.

time T
    set fade time (and clear wait-times)

time TXF
    set crossfade time

CANCL TXF
    clear crossfade time

time TWAIT
    set wait time

CANCL TWAIT
    clear wait time

ALL time T/TWAIT/TXF
    assign a time to all channels of the channel mask (not just to selected channels)

CANCL ALL T/TWAIT/TXF
    clear all independent times (not just of selected channels)

Channels can be faded by the cue time or independent times; channels which are set to independent times will automatically be set to the fade in-time of the cue.

The following operations refer to lists **T, TXF** or **TWAIT,** with **MAN**-fading turned off:

TAKE T
    set selected channels to independent fade time

CANCL T
    reassign channels to the "normal" crossfade, clear independent times

To avoid unwanted "jumps" when running a crossfade, a crossfade will be continued regardless the cleared independent times; these times can be modified by selecting the channels and controlling them with the crossfade (time)-wheels or faders.

Submaster Group Times

The submaster group systems faders can be controlled by times to allow smooth, "automated" fading with up-/down times set.

Times set always refer to a maximum fader level of 100% and to both cues and effects; before assigning times you have to select the submaster preset.

Wait times can not be assigned to channels of a submaster group and will be rejected.

These default settings allow the following modes:

GR_ZEIT   Time assigned after clearing a group/submaster

GRTBLOPT   takes the cues up-/down times as "group times".

time T
   assign a time (both up-/down)

time DOWN T
   set time for fading out

time UP T
   set time for fading in

ALL time T
   set time to all groups/submasters

ALL time DOWN T
   fade out- time for all groups

ALL time UP T
   fade in- time for all groups

CANCL DOWN T
   clear down-/out time

CANCL UP T
   clear up-/in time

The automated timing can be en- or disabled for all groups; time values set to the groups will be obtained. If the automated timing is disabled, the group displays replace the fader value by the label "**MAN**".

CANCL T
   disable automated timing for the selected group

TAKE T
   enable automated timing for the selected group

ALL CANCL T
   disable automated timing for all groups

ALL TAKE T
   enable automated timing on all groups

GRi and digi
   modify times of group i

Pressing group key and moving the digital wheel, both times can be modified.

Delay and Hold Time

A stack of cues can be started automatically by the sequence list, controlled by delay- or hold times. Please refer to chapter Sequence List.

Default Times

Menu M218 (Fade time constants) allows to define default times for various timing operations:

Setting	Default Setting	Range
RET XF time	RET_ZEIT	0.0 .. 1'
MAN fade time	MAN_ZEIT	0.0 .. 1'
GR fade time	GR_ZEIT	0.0 .. 59'59
ADJ fade up time	ABR_ON_ZEIT	0.0 .. 1'
ADJ fade down time	ABR_OFF_ZEIT	0.0 .. 1'
Default cue fade time	STD_BLK_ZEIT	0.0 .. 1'

Introduction to Memory Operations

NT-systems are equipped with battery-buffered CMOS-memory which keeps the current shows data, NTX and Booster systems use the systems RAM as show memory. All read or write operations (key **MEM)** refer to this memory.

The following preset-content can be stored in cues:

- Levels of involved channels
- Cue times
- Independent channel times
- Effects
- Assignment to external signals
- Cue text
- Assignment and relation of levels to presets
- Content of the ML-control

This data is stored under a cue number, depending on the way of recording and the presets content, in the systems memory.

The following cue-types can be recorded:

L/E	Total cue without channel fade times
LTE	Total cue with channel fade times
L	Levels only
L/T	Levels with channel fade times
ADD	Piled cue
LADD	Piled cue for guarded crossfade
E	Effect
SUM	Levels and related preset distribution
PROF	Levels and the Crossfade Profile, for Prisma

Furthermore, the following non-lighting cues can be recorded:

MAS	Channel Mask
COʟ	Attributes of Color Changers
ML	Attributes of Movinglights
DYN	Dynamic Effects
TXT	Text cue (ADD-cue without channels involved)

The cue list **QLIST** shows all recorded cues, sorted by the cue number. The IFCB-label indicates which Palette-parts are recorded within a (ML/COL) cue, "levels-only" cues are labeled with "I---".

From version 5.4, date and time of recording can be displayed; the cursor left/right keys within lists QLIST and REH toggle between the display options.

The following table illustrates the parts of a cue to be saved in different cue types. Cues STAGE and SUM recorded the sum of all presets. M240 to M242 allow to define the ways cues are recorded.

Cue type	L/E	LTE	L	L/T	ADD	E	SUM	PROF	DYN
Levels	x	x	x	x	x		x	x	
Cue times	x	x	x	x	x				
Channel fade times		x		x	x				
Effect	x	x				x			
Preset label							x		
Crossfade profile								x	
Dynamic effects	x	x							x

When loading/reading a cue, the content will be read into the current or the selected preset.

Submaster presets can not contain TWAIT-times, these are set to 0 when recording a cue from a submaster group.

The alteration index "↔" at the header of the preset indicates that the presets content differs from the cue recorded.

Format of recorded Cues

From software version 5.4, the size of cues has been considerably reduced. The default setting BLKCOMPRESS_MODE allows using the previous recording format for compatibility with older software versions.

Menu M440 (Convert cue format) allows to convert the compressed cue format to the backwards compatible format, if using a show on a system running the previous software versions.

Note: When using AUX-systems, please make sure to use the same cue format on both systems to avoid loss of data.

Memory Usage

Menu M140 (Memory Usage) displays the capacity and the available memory of all memory areas and storage devices:

Option "**Drive**" lists the memory areas and devices:

SETUP	Partition on the harddisk for saving data and settings (independent from shows)
MEM	CMOS memory for saving current show
HD	Harddisk-partition for saving shows
FL1	Floppy-disk drive 1
FL2	Floppy-disk drive 2
USB	USB Memory (on NTX and Booster)
NFS	NFS-Fileserver (if option NFS-server is available and configured).

The following columns indicate the memory capacity:

Total	overall memory capacity
Used	used memory
Free	remaining memory capacity
Percent	remaining capacity in percent

For the floppy drives, the values of the disks inserted will be displayed.

Assigning Cue Numbers

A cue number can be assigned in the active preset for a cue to be recorded; if the presets content is recorded without entering a dedicated cue number this assigned number will be taken.

Cue numbers can be any number between 1 and 999, (additional) cues can be numbered in the form x.1 through x.9. In the group and crossfade presets display the number of the cue held in the preset will be displayed, also in the monitor header of the selected preset.

The displays of the crossfade systems show "***" if no cue number is entered/available.

cue CUE
>   Cue number for the active preset
>   values unchanged
>   clear text, channel fade times, effect
>   message, if cue exists

CUE cue ENTER
>   If cue exists, load it
>   else cue number for the active preset
>   values unchanged
>   clear text, channel fade times, effect
>   message, if cue does not exist

If the sequence list is selected on the main monitor, the cue number will be inserted as action for the selected step. Please refer to Sequence List within "Crossfade Systems".

+/- CUE
>   assign previous/next cue number to the active preset

If the selected preset contains a number, the following or preceding cue number is set. Otherwise the actions are the same as for **"cue CUE"**.

The up/down increment offset can be set with BLKSTEP.

Cue Text

Within the presets, you can enter a short, descriptive cue text which is a part of the cue and is recorded and loaded with it.

11 MENU
>   Generate new cue text

An existing text will be cleared.

17 MENU
>   Correct cue text

Repeatedly used text can be prepared as text modules. Menu M5, Notebook, a document can be made, which lines are regarded as text modules. It has to be saved to the local setup named LTX.

On entry of text using menus M11 or M17, key MENU on the input field offers the lines from this document as a selection. Mouse click or key ENTER copies the selected line to the input field, controlled by the current insert mode. Key INS changes input mode from insert to overwrite.

Recording Cues

Recording is initiated by key **REC**. The system checks if a cue with the particular number exists and if problems could arise when recording. The message line displays a warning if a cue is to be overwritten or the cue type is changed, the "end key" operation then starts the record operation.

The "end key" defines which information of the current preset is to be recorded; the cue text is always included.

The key lamps of **REC** and **MEM** are lit during memory access.

Note: The "Mem Lock" key switch prevents all write operations.

If there are ongoing operations that block the memory for a period of time, memory access will not be possible; the lamp of the REC key flashes for approx. 5 s and then the operation is rejected with `"Memory transaction in progress"` message.

Recording with REC REC

The operation "**REC REC**" records a default cue Default Cue. The content of the recorded cue is defined by the following settings and operations:

REC REC
cue REC REC
>   Record a default cue

REC ENTER
cue REC ENTER
>   record cue type depending on the list displayed on the main monitor

This is equal to "**REC REC**" with default setting SMODE=1.

Default Setting SMODE

The default setting SMODE defines which information is to be recorded; further settings for cue parts to be recorded are configured with Menus M240 to M242.

SMODE=0   for intensity-only cues, cue type L/E or LTE will be recorded; if independent times are assigned, cue type LTE will be used.

>   If ML-attributes are to be included, M240, Default Cue, allows to define the parts to be recorded within a default cue.

SMODE=1   The cue type to be recorded depends on the list view displayed at the main monitor:

Display	Cue type	Cue content
LEVEL	L/E or LTE	Levels, effects, channel times
STAGE		
OUT		
TXF		
TWAIT		
T	INT/TINT	Levels and independent times
E	E	Effects only
COL	COL	color changes only
ML	ML	moving lights only
DYN	DYN	dynamic effects only

SMODE=2	if a cue type is loaded into presets **PV** or **BLD,** the same cue type will be used when recording from those presets; for cue type ADD: all involved channels (not considering the current selection).
SMODE=3	for REC REC the Record-window will be displayed (like with softkeys "Save" or "Update" within ML/COL), all other operations are treated like SMODE=0.
SMODE=4	REC REC records changes only; like using Update-Mode

Parts of a Default Cue

Default setting SMODE = 0, combined with menu M240, Default Cue, defines the parts to be recorded with "REC REC"; these settings are stored in default setting REC_PARTS.

The menu gives the following options:

Mask
if the selected presets contains ML-/COL-information these will be included; the setting defines which information (depending on the palette-entries) are to be included (I,F,C,B).

Effects
sets if effects are to be included in the cue

Dyn. Effects
sets if dynamic effects of the selected preset are included

Attributes:
Used: records only attributes involved in the selected preset
All: records all attributes output values.

As default
stores the settings as default setting which is restored after "erase all memory" or loading of a show.

Recording of ADD-Cues

+ REC REC
record cue type ADD, "piled" cue

When recording, intensity levels, cue time and independent times **of selected channels** only will be recorded. If no channels are selected, a warning will be displayed at the message line; effects are not included.

In contrast to default cues, only the levels of recorded channels (selected at the time of recording) are modified when loading an ADD-cue. ADD-cues have a special time response in crossfades: only those (selected) channels recorded as ADD are crossfaded.

Note for printing ADD-cues:

When printing ADD-cues, involved channels with 0% intensity will be indicated with **"0"** (normally, when printing LTE-cues, 0%-levels are blank). Channels not involved remain unchanged and are indicated by label **"="**.

+ cue REC REC
record ADD-cue with the number given

- REC REC
record LADD-cue (locked crossfade)

- cue REC REC
record LADD cue under the number given

Recoding Intensity Levels only

REC %
> record preset levels and channel times, cue-type L
> Levels and cue times from the selected preset are recorded

cue S %
> record preset levels and channel times to cue number

REC LEVEL
> record preset levels, cue-type L
> Levels from the selected preset are recorded

cue REC LEVEL
> record preset levels to cue number

REC STAGE
> record output levels as cue type L

The output levels are the total output of all active presets, effects are ignored. This operation allows recording the consoles output as a cue.

cue REC STAGE
> record output levels as cue type L under the number given

REC T
> record cue type L/T

If a crossfade (or blind) preset containing channel fade times is selected, the levels and channel times will be recorded.

If a submaster is selected or a preset does not contain channel times, the cue will be recorded as L-cue.

cue REC T
> record cue type L/T under the number given

Update-Mode for Recording

Basics

This function allows recording changes only ("update" or "tracking" mode), rather then the whole cue state with all information; the cue-type remains unchanged.

Activating the Update-Mode

Default setting UPDATE_KENN = 1 activates the update mode.
Starting with version 5.8.1.1 this property has disappeared from menu M215. Update-Mode is the default.

All other record operations are available without restrictions, which means that you can combine both ways of recording cues.

Display Colors

In update mode, changes to attributes compared with the original cue are indicated by a darker gray background within MOVL and COL lists. Two new entries have therefore been added to M202 "Colors":

160 PROG_ACTMOD:	Indication for changed attributes in the "active" status. Factory setting: red on gray
161 PROG_CAPMOD:	Indication for changed attributes in the "released" status. Factory setting: red on gray

Within intensity lists, changes are not indicated.

Recording Changes as new cue

Changes of attributes can be recorded as ADD-cue; only changes made after the last recording will be recorded.

cue REC TRK
     record changes as ADD-cue

+ cue REC TRK
     record changes of the selected channels as ADD-cue

- cue REC TRK
     record changes of the selected channels as locked ADD (LADD)-cue.

Updating Changes to an existing cue

Changed attributes can be updated to an existing cue:

REC ENTER
     record changes to the existing cue (Softkey "Update" in the bottom line).

cue REC ENTER
     record changes to the cuenumber given

If the current or selected cue number does not exist, a new ADD-cue will be recorded (like "REC TRK").

Softkeys in List ML/COL

The bottom line of the list views ML and COL allows operations with mouse clicks:

Update	record changes (likewise REC ENTER).
Ignore	remove "marking changes" of the selected channel or attribute; the attribute(s) will then remain unchanged and thus are not recorded.
Get	marks "changes" of selected channels or attributes; the "changed" attributes will be included when recording.

Recording in update mode as default setting

It is possible to record in update mode as default; with default setting SMODE=4 "REC REC" and "x REC REC" record only changes ("Update-" or "Tracking-Mode", likewise 'REC ENTER').

Note: If using update mode by default, it is recommended to record all levels and attributes by 'x REC ALL' as "complete cue".

Recording Effects

REC E
     record cue type E, Effect
     if an effect is prepared in the selected preset it will be recorded.

If no effect is prepared, the empty effect description and the assignment of external signals are recorded.

cue REC E
     record E-cue under the number given

Recording active output with Source Preset-Information

The operation "**REC STAGE**" records the "active" lighting output (disregarding effects). It is possible to include information about the "source" presets which contribute to the total lighting output:

SUM and REC REC
> record cue type SUM

The total output of all channels will be recorded (under cue number and times set in the selected/active preset).

When reading, the cue will be handled as "normal" L-cue, if read with "**cue SUM**" the cue is "split" to the presets which originally defined the output; a default setting allows to configure the destination for cue parts of the crossfade systems.

Recording the Mask

It is a big advantage for installations with a large amount of channels if only channels are displayed at views LEVEL and STAGE which are of importance for the current show part.

The system allows recording the current channel mask as cue; when started within the sequence, the mask of channels displayed can be reduced to the channels required.

Note: The systems lighting output controls only channels which are part of the current mask; channels set to >0% will be set to 0% if taken off the channel mask.

Note: Function **MASK** allows to "close" the mask, channels not being part of the mask can not be selected. A "lock" of the mask is ignored for loading recorded MASK-cues.

REC MASK
> record the current mask under the cue number set in the selected preset

cue REC MASK
> record the current mask under the number given

Cues only containing channel mask information are marked as "**MASK**"-cues.

Multiple-Recording from Submaster Groups

Submaster content can be recorded to consecutive cues; the numbering depends on the default setting BLKSTEP. The content of multiple-recorded cues can be read back to the submasters with "**cue - LOAD**".

Menu M240, Default cue, defines which information of a cue is to be recorded.

cue - REC REC
> multiple-recording of submaster groups

The second "REC" operation can be replaced by various other functions for defining the information to be recorded (e.g. %, E etc).

Recording can be set to a range of submaster groups:

cue - GRi REC REC
> record all submaster groups from group i

cue - GRi GRj REC REC
> record submaster groups GRi to GRj

The menu control uses Menu M16, Gang Record, for recording a range of groups to a number of cues.

first:	first submaster group to be used Default: GR1 or the selected group
last:	last group to be used Default: GR20
Cue:	first cue number Default: cue number of the selected preset
Step:	value for increasing the cue numbers
Type:	defines if the submaster content is recorded "complete" as L/E, L only or E only.
Overwrite:	allows to overwrite ("yes") existing cues.
Overlap:	allows to overlap the cue range to be recorded with existing cues, "no" declines the recording if overlapping would occur.

Re-recording Cues loaded to Submasters

All cues loaded onto submasters can be re-recorded once modified with the following operation:

REC GR
   re-record all cues on submasters

The cue types remain unchanged, unused groups are ignored.

Loading Cues

The target for loading cues is normally the selected preset.

When loading to submaster groups:

- Groups have no wait times; wait times within a cue are ignored.
- Groups have no independent fade times, these will be ignored.

Before loading information, the current preset state will be remembered and can be restored with function **BACK.**

The action when loading a cue depends on the cue type:

L/E	Levels and cue times are loaded; the effect is loaded. If the recorded cue contains no effect, a present effect is cleared.
LTE	as L/E, channel times will be loaded (not for groups).
L	Levels and cue time will be loaded
L/T	Levels, cue time and channel fade times will be loaded.
SUM	for normal load-operation, this cue will behave as L-cue.
E	the effect will be loaded, all other preset content remains unchanged.
MASK	Channel mask for list displays LEVEL/STAGE are loaded**.**

ADD   Default setting ADDLES_MODE defines:

ADDLES_MODE=1: the preset content will be overwritten when loading.
ADDLES_MODE=0: depends of the following:

- on submaster groups levels of recorded channels will be set; the cue number is displayed with the alteration index as the group content differs from the cue number loaded.

- Presets **BLD** and **PV** will be overwritten, effect cleared.

- At **DEST**-preset the recorded channels will be added, an ongoing crossfade remains unaffected.

- At the **XF**-presets the recorded channels are taken off an ongoing crossfade and set to the new values.

PROF   In presets `XF,` `PV` and `BLD` intensity levels and the crossfade profile (Prisma) are loaded.

COL   Color changer- values are loaded to the selected preset.

ML   ML-attributes are loaded to the selected preset.

When loading into the **XF**-preset:

- a running crossfade is stopped.
- **XF**- and **DEST**-presets are changed
- the next crossfade starts the **PV**-presets (unaffected) cue.

when loading into **DEST**-preset:

- a running crossfade is stopped.
- the **DEST**-preset is set to the new values, a crossfade to the cue loaded is started and paused at 0% to be continued.
- The **PV**-preset and the sequence remain unaffected; this allows to load cues into the sequence without modifying the original sequence.

Loading into **PV**-preset depends on the sequence list state:

- for a synchronized sequence, the cue number is assigned to a sequence step number; loading a cue calls the sequence step assigned.
- in the "free"-mode the PV-action is replaced by the cue loaded, the sequence order remains unaffected.

Locked/guarded channels are treated depending of the preset type:

PV, BLD   Regardless the lock, levels will be displayed in the preset. If the preset content is recorded, the current level of a locked channel is recorded.

Active Presets   Recorded levels of locked channels are ignored; the loaded cue is altered and, if re-recorded, the locked channels value will be recorded.

If there are ongoing operations that block the memory for a period of time, memory access will not be possible; the lamp of the REC key flashes for approx. 5 s and then the entry is rejected with "Memory transaction in progress" message.

LOAD
Loads a preset with the number set into the current preset

cue LOAD
Loads selected cue number

+ LOAD
Loads the following cue to the current presets cue

+ cue LOAD
Adds the selected cues content to the current cue

This operation relates to the recorded intensity levels only, the higher value is taken. Cue texts, cue numbers, times and effect remain unaffected.

- LOAD
Loads previous cue number to the current cue

- cue LOAD
Subtracts a cue number from the current presets cue
Levels of the cue to be loaded are set to 0% in the current cue; Cue texts, cue numbers, times and effect remain unchanged.

Cues can be loaded directly into any preset:

cue preset
"loads"/cuts the selected cue into the destination preset

Levels are treated as using the Load-command, effects are started immediately. A warning message will be displayed if the selected cue number does not exist.

Default setting EXPERT_LEVEL allows to set a "prompt" before a cue can be loaded "hard" into an active preset.

When loading into **BLD**, the preset will be automatically selected.

+/- cue preset
adds or subtracts a cue from the preset chosen

Distributing Cues onto Presets

Normally a cue recorded with "SUM and REC REC" is treated as cue of type L; the recorded channels are loaded into the destination preset, all others are set to 0%. The cue can be re-distributed to the presets involved in recording the cue:

The destination preset for levels originating from the **XF** presets can be set by the SUMREG default setting; the default is GR1.

cue SUM
Distribute SUM-cue to presets

This operation distributes the cue content to the recorded source presets; uninvolved channels are set to 0% on involved submasters, uninvolved submasters remain unaltered.

Multiple Loading to Submasters

Cue sequences can be loaded to consecutive submasters with:

cue - LOAD
Multiple loading of cues

Cues from the stated number onwards are loaded onto the submaster groups; you can limit the load operation to just some of the submasters:

cue - GRi LOAD
Load cues to submasters GRi and the following submasters

cue - GRi GRj LOAD
Load cues from cuenumber onto submasters i thru j

Menu M15 (Gang Load) allows to load a range of cues onto a sequence of submasters.

Options:

First: First submaster to be loaded onto
Default: **GR1** or selected submaster

Last: Last submaster to be loaded
Default: **GR20** (Iris: **GR10**)

To cue: First cue to be loaded
Default: Cue number of the current preset

Mode: direct: load cues directly onto submasters

fetch: fetch new cues with the submaster fader, see default setting GRLOAD_MODE.

Fetch Submasters, Setting GRLOAD_MODE

When loading a cue to a submaster, its content will be changed immediately causing the lighting output to "jump"; this can be avoided with setting GRLOAD_MODE:

GRLOAD_MODE=0   Cues will be directly load onto the submasters.
GRLOAD_MODE=1   Loading will be prepared and executed, when the fader is set ("fetched") to 0%.

The operating mode applies to read operations with **LOAD,** without keys **+** or **–** or with multiple read operations. When reading direct to submaster groups, like "**1 GR1**", the submasters content changes instantaneously.

The group display shows the number of the preset together with an indexing label; for fading down the automatic timer is inactive, when faded up the new cue content is active.

Editing Cues in the Memory

Cues can be edited in the memory with various menus:

Clearing the Memory

CANCEL MEM
Clears the complete memory

Clears all cues, effects and all information related to the current show.

Note: If the show is not saved it will be lost.

CANCL cuerange CUE
CANCL cuerange MEM
deletes the selected cue range

Track Sheet

The track sheet displays values for dimmers, attributes or channel fade times of selected channels from the show in memory. It offers a quick overview of how dimmers or movinglights are used in the current show. Its format is like a list display but display fields can be edited. Changes are immediately saved in memory. All values stored in a cue can be changed.

Cues of type **E** and **MAS** are ignored.

Activating the Track Sheet

Key **TRK** switches to the track sheet.

TRK
> Displays the track sheet for the current channels selected

If no channels are selected the list remains empty.

chrange TRK
> Displays the track sheet for indicated channel range

Example:
23 - 27 TRK   Displays the track sheet list for channels 23 thru 27.

External Keyboard: Key **TRK** is mapped to key comma.

The list view is switched off by:

- Selection of another list view
- Key TRK which switches back to the previous view
- clicking field **[x]** in the top right corner of the track list

Display Format of the Track Sheet

Header line 1

- Sequence number, Prisma only according to the selected crossfade system
- If channel fade times are displayed, a message „Fade times"
- Attribute display, to the displayed attributes assigned palettes and the device's name

Header line 2

The left part shows common cue data. Display can be geared to sequence or to cue list.

SEQ	step number, if geared to cue list, empty column
CUE	cue number
Type	of cue
IFCB	attribute types within the cue

Mouse click into this area switches display mode.

The left part shows the column headers for displayed values.

Bottom line

Below the area for common cue data the number of selected channels/devices is displayed.

Below the area for displaying values there are some Softkeys to switch display mode by mouse click.

General display mode
expanded	all cues are displayed
compact	displays only the cues which contain data for selected channels.

Switch display dimmer/attribute values
%	dimmer values
ML/COL	attribute values

Select attributes' display from IFCB
     By click to a palette softkey only values for assigned attributes are displayed
     console keys for palettes can be used as well

T
     values/channel fade times
     optionally console keys for times can be used.

Display area for values

Left side shows common cue data, right side displays values from cues in memory for selected channel(s).

Displaying dimmer values, all channels of the current selection are displayed.

Displaying attributes the range of attributes can be limited by softkeys in the bottom line or keys from the console. Key Shift (center of cursor keys) and palette keys PAL_i switch off/on display of the assigned attrributes.

Values for dimmers and attributes are displayed as percent value. If a range configuration for an attribute exists, the range name is displayed. In case a palette is assigned the palette's name is displayed. In display mode channel times channel fade times are display.

Empty value displays signal, no value (0%) stored for the channel within the cue. But for cue type ADD or an assigned channel fade time value 0% is displayed.

Channel fade times for a dimmer/attribute value are indicated by letter t.

If the number of cues or values to be displayed exceeds the length or width of the display area, a horizontal and/or vertical scroll bar shows the position of the track lists display area; scrolling with the arrow keys or mouse moves the display area.

The selected (highlighted) cue from the track sheet is loaded into the BLD-preset, giving the possibility to see the cues content, cue text etc. by switching the 2nd monitor to view LEVEL.

Operations within the Track Sheet

The cursor line marks a cue and a display field (= input field) for the channel selected. Inputs refer to the selected value of the selected preset.

Changing the Channel Selection

Channels within the track sheet are defined by the current channel selection. The attribute-view shows only one fixture; all other selected fixtures/channels can be displayed by clicking the arrows in the display window for the number of selected channels in the bottom line or with keys ∑/-- and +/- CHAN.

Changing Intensity Levels

Values can be changed with direct level inputs in the corresponding values field; changes are directly written to memory.

Key **ENTER** opens a window for editing the selected field:

Options:

Cue:	Cue number (default: the selected cues number)
Channel level:	current value
All fade times:	If software option CH fade times is installed, those times can be changed too.

                                       ← or → choose "Yes" or "No":
                                          No   no channel fade times
                                            if selected, existing times will be cleared.
                                          Yes   Times TWAIT and TXF can be entered; assigning of a channel time
                                              might change the cue type.

TWAIT/TXF: Wait/Crossfade time

The form allows editing levels for one channel within one cue. To change multiple channels and cues, Operation "**TAKE % MEM**" can be used.

Changing ML-Attributes

Selected attribute values can be changed with intensity inputs. Key ENTER opens a form which allows further editing of values, channel times and cue range.

If a palette is assigned, key MENU within the input field for the selected attribute opens the choice of available palettes.
If an entry of a range configuration is assigned, key ENTER opens the range the range configuration.

Line "+ Time group":
In case the attribute is member of time group (refer to column Tg within channel configuration of menu M651), you can choose between changing all members of the time group or only the selected attribute.

Palettes can be used as well.

TAKE PAL_i
palno PAL_i
> If the track sheet is on the main monitor, a form is opened for adding the palette for the selected attribute in the selected cue

Palette →
> Key MENU shows all recorded palettes of the selected type

Mask
> Select attributes mask-type

Channel select
> Options:
> All channels involved in the palette
> currently selected channels
> the selected channel only

Attribute
> Options:
> All or
> only the selected attribute

Mode
> Options:
> "add new values" assign all values
> "modify old values" change only, if there is a palette assignment

Fist/Last Cue
> Cue range to be modified.

The key sequence is rejected, if the selected device is not involved within the indicated palette: Message "No palette entry found".

A shortcut can be used for quick changes.

Take palno PAL_i
> Store palette without confirmation

Channel Fade Times

Within the tracksheet key ENTER opens forms where you can edit channel fade times.

In case display mode is for channel times, keys T/TWAIT/TXF can be used for editing.

Using the Clipboard

With the following operations, intensity levels, range or palette entry can be copied to the clipboard:

- Absolute intensity entries (without +/-), like "85 %"
- Key **COPY** (Ctrl-C on the PC keyboard) copies the selected value
- Key **CUT** (Ctrl-X) copies and deletes the selected value.

The clipboard content is inserted to input fields by key **PASTE** (Ctrl-V).

Menu Control

Key **MENU** starts a selection menu which allows to change the display mode and to edit the show held in the systems memory.

Selection
    toggles between expanded and compact view

Display order
    changes the SEQ/CUE display order

Toggle attribute display
    switches between dimmer-only and all attributes (for ML-/COL-fixtures).

Correct
    Menu M401 channel correction

Swap
    Menu M402 swapping channels

Copy
    Menu M403 Copies a channel

Delete
    Menu M404 delete channel

Add
    Menu M405 Adds a channel to existing cues

Modify selected channels
    Menu M406 correcting options for the selected channels

Remove selected channels
    Menu M407 Remove selected channels

Add selected channels
    Menu M408 adds selected channels

Copy to selected channels
    Menu M409 copies values to selected channels

Print
    Prints the track sheet

The following keys start menus:

    DEL   Menu M404, Delete Channel

    INS   Menu M405, Add channel

    CORR   Menu M401, Channel Correction

Edit Cue Times

Within list display TRK the cursor line marks a cue. Wait- and Crossfade time of a cue can be changed by directly entering time values in the line .

Editing Cue Text

Within list display TRK the cursor line marks a cue. Keys F4 and Shift-F4 start the menu for editing the selected cues cue text.

Printing the Track Sheet

The track sheet can be printed as a whole by

- Key **PRN**, (prints the list directly)
- Key **MENU**, Option "**Print**", prints either to a file or to the printer

Recorded Channels

Menu M30 (Recorded Channels) allows to search for and display a channels level within a range of cues. The menu view allows starting further menus for editing level and time of the channel:

Channel:	Channel Number
	Key MENU shows the channel names (M81), selection is done with key ENTER.
Limit:	defines the minimum level from which a channels information will be displayed
First/Last cue:	cue range

The results are displayed as listing of cues with the particular channel involved (with a level greater than the specified threshold). Besides the cue numbers and type, the display shows the level and, if assigned, independent times.

You can select a display line with the cursor keys; key MENU starts a menu with allows to edit levels and channel fade times in the recorded cues.

```
Select channel M30
Correct M401
Swap M402
Copy M403
Modify Modify
Delete M404
Add M405
Correct selected channels Menu M406
Delete selected channels Menu M407
Add selected channels Menu M408
Copy to selected channels M408
Print
```

The menus can also be started direct by their corresponding numbers.

Menu "Modify" is started with key **ENTER** and allows to edit the level and channel fade times without having to load the cue into a preset.

Correcting Channels

Menu M401 (Correct) allows you to correct levels of recorded cues.

Entry fields:

Channel	Channel number to be corrected
	MENU displays channel summary M81, select with key ENTER.
First/Last	Cue range
Attribute	allows selecting the attribute to be corrected
Mode	linear: the value entered will be added/subtracted
	factor: levels will be multiplied with the factor entered

Effects remain unchanged.

To correct several channels at the same time you can use the operation "**TAKE CORR MEM**". This corrects the levels of selected channels in a range of cues by the current COR factor.

Swapping Channels

Menu M402 (Swap) swaps channel levels and channel fade times (if configured and recorded):

Channel	Channel to be replaced **MENU** displays channel summary M81, select with **ENTER**.
With channel	Channel to be swapped with
Mask	defines the attributes to be swapped
First/Last	Cue range

Effects remain unchanged.

Copying Channels

Menu M403 (Copy) copies all channel data into recorded cues.

Channel	Source channel **MENU** displays channel summary M81, select with **ENTER**.
To channel	Destination channel
First/Last	Cue range

Effects remain unchanged.

If the source channel is not recorded in cues, the destination channel is cleared.

Deleting Channels

Menu M404 (Delete) deletes channels from recorded cues. The level (or the attributes chosen) and, if configured and assigned, the channel fade time will be deleted.

Options:

Channel	Channel to be deleted **MENU** displays channel summary M81, select with **ENTER**.
Mask	allows to select (individual) attributes to be deleted
First/Last	Cue range

Effects remain unchanged.

Adding Channels

Menu M405 (Add) adds levels of individual channels to recorded cues. The channel fade time 0 will be entered in additive cues if the "CH fade times" option is configured.

Entry fields:

Channel	Channel to be added
MENU	displays channel summary M81, select with **ENTER**.
First/Last	Cue range
Channel level	Level for the channel to be added

Limit	Threshold level (the channel will be added above this limit)
	The limit can avoid that a level is entered in cues where the channel is originally not involved. An entry will only be made if the channel is recorded with a level greater than or equal to the limit entered; value 0 adds the channel into all cues.
Movefade cues	defines if the value should be written into ADD- or ML-cues
	Yes The specified intensity is inserted into all cues
	No ADD- or movefade-cues will not be modified.

Effects remain unchanged.

To add several channels at once, you can use the operation "**TAKE % MEM**"; the levels of the selected channels will then be recorded subsequently into the memory range.

The following key operations add the intensities of the current presets selected channels to the memory (or into a range of cues):

TAKE % MEM
Add intensities of the selected channels into all cues.

TAKE % cuerange MEM
As above, but only into the specified range

Note: Intensities will be added to all cues (to ADD, ML, COL cues, too).

Correcting selected Channels

Intensity levels of channels in cues can be changed; however, this will not affect intensities in effects.

TAKE CORR MEM
Correct selected channels in all cues

TAKE COR cuerange MEM
As above, in the specified cuerange

These operations start menu M406 (Modify selected channels):

First/Last	Cue range
Attribute	allows selecting an attribute to be modified
Mode	Two types of change are possible
	linear The stated value is added/subtracted
	factor Intensities are multiplied with a correction factor

Remove selected Channels

With menu M407, currently selected channels can be removed from all cues, from submasters and from the mask.

First/Last	Cue range
Mask	defines which parts of the mask/cue are to be removed
Options	memory The channels are only removed from cues in the memory.
	submaster Channels are deleted from all active preset fields.
	mask The channels are removed from the mask.

Adding Selected Channels to Cues

Menu M408 allows copying the current active- or preset-values of the **selected** channels to a range of cues.

First/Last	Cue range
Mask:	select the attributes to be added.
Source:	It is possible to add values from the current preset (content) or the actual output (active levels) of all presets.

Copy to Selected Channels]

Menu M409 allows copying of values to channels defined by the current selection into a range of cues in memory.

Channel.	Source channel
Mask:	select the attributes to be added.
First/Last	Cue range

Fade Time Corrections

Menu M421 allows to correct times of recorded cues by using a correcting factor which is multiplied with the cues original times.

First/Last	Cue range

CORR TWAIT DOWN:	**CORR**- Factor for the Wait-Time Fade Out
CORR TWAIT UP:	**CORR** -Factor for the Wait-Time Fade In
CORR TXF DOWN:	**CORR** –Factor for the Crossfade-Time Fade Out
CORR TXF UP:	CORR - Factor for the Crossfade-Time Fade In

If option "channel fade times" is available:

Channel TW:	**CORR** - Factor for the Wait-Times
Channel TXF:	**CORR** - Factor for the Crossfade-Times

The range of the **CORR**- factor is between 0.20 and 5.0, **CL** resets the **CORR** to 1.0. Only cues which have above times assigned are modified.

If no times are assigned, no modifications can be made with this menu; Menu M422 (re-record splitfade times) allows to add times to cues.

Re-recording splitfade times

Menu M422 (Re-record splitfade times) allows to add splitfade/crossfade times to recorded cues.

Options:

First/Last	Cue range
C**ue TWAIT DOWN：**	Wait time fade-down
Cue TWAIT UP:	Wait time fade-up
Cue TXF DOWN:	Crossfade time fade-down
Cue TXF UP:	Crossfade time fade-up

If no time entries are made, the corresponding times of cues in memory remain unchanged. Entries can be in the range of 0 through 59'59 and are removed with **CLEAR**. Entries are only made to cues which are affected by crossfade times.

If both wait times are entered, property AUTO_TS will determine whether hold times are automatically entered into the sequence list.

Editing the Current Show

The current show hold in the systems memory can be edited with various menus:

Show Label

Shows need to have an individual show number which can be any number from 0.1 thru 9999.9.

Menu M41 (Show list) displays the shows recorded on a particular data medium.

The name of a show is stored in its show label, VTX. As soon as a show number is set, it will be displayed together with the name in the header of the left monitor.

28 MENU
> Menu Show Label

Menus for the Current Show

Menu M20, Current Show, allows Load/Save/Remove-operations both for the complete show held in the memory and for parts of the show (cue ranges).

  Recorded Channels, M30
  Load, M21
  Save, M22
  Remove, M23
  Cue list
  Print Cue list
  Load Cue, M24
  Save cue, M25
  Delete cues, M26
  Print cues, M29
  Sort cues, M27
  Print dimmer levels M31
  Time lapse M39
  Fade time corrections M421
  Re-record splitfade times M422
  Show label, M28
  Show configuration, M255
  Recorded shows, M40

Load Show

ENA and FLi MEM
ENA and HD MEM
> Load Show
> M21 (Load show) will be started.

At Menu M21 (Load show), the number of a show to be loaded is entered. When loading, the show currently held in the systems memory is deleted and replaced by the new show.

If the input field for the show number is active, key **MENU** displays all shows recorded at the storage device chosen.

Show disks created on older Transtechnik-consoles can be loaded; to load enter a show number the show should have (the disks contain no show number).

If a show is copied into the systems memory, hold-times can be automatically assigned if:

- Sequence list is in "sync"-mode
- Wait-time for Fade In- **and** Out
- Default setting AUTO_TS=1

ASCII-Format, Export/Import ASCII Show Files

Show files can be exchanged to other consoles by using „ASCII Text Representation for Lighting Console Data" format.

Menu M55, Import/Export USITT ASCII file, covers this feature.

Especially for exporting files:
Standard format only covers a small part of show data. Export of additional data is specific to manufacturers and is controlled by property ASCII_EXPORT_MODE. Use menu M275, USITT ASCII Options, to change setting.

Removing the Show

Menu M23 removes the current show from the memory; a prompt will be displayed. If OK is selected and confirmed with **ENTER,** the show will be completely removed from the memory, including all configuration settings stored with the show.

Loading Cues

Menu M24 (Load Cue) allows to load individual cues or a cue range from recorded shows.

From show:	Number of the source show
	Key **MENU** displays all shows saved on the chosen drive
Drive:	Source shows drive
First/Last	Cue range

Into the current show:

Cue:	number of the first cue
Step:	the value by which the cue numbers will be increased. If no step is set the original cue numbers are used.
Overwrite:	if set to "No" the system will not execute the loading of cues if existing cues would be overwritten
Overlap:	if set to "No" the system will not execute the loading of cues if the loaded cue range would overlap with existing cues

Saving Cues to recorded shows

Menu M25 (Save cues) allows to copy cues from the current show to recorded shows:

Current show:

First/Last	**Cue range**
To show:	Number of show file
Drive:	`Name of destination drive`
Cue:	number of the first cue
Step:	the value by which the cue numbers will be increased. If no step is set the original cue numbers are used.
Overwrite:	if set to "No" the system will not execute the saving of cues if existing cues would be overwritten
Overlap:	if set to "No" the system will not execute the saving of cues if the loaded cue range would overlap with existing cues

In case the recorded show is protected the password is needed.

Key Operations for Loading and Saving of Cues

The following key operations start the menu for loading / saving of cues:

TAKE MEM FLi
TAKE MEM HD
      starts Menu M25, Save cue

TAKE cuerange MEM FLi
TAKE cuerange MEM HD
      as above, for a range of cues

TAKE FLi MEM
TAKE HD MEM
      Copies cues into the current show
      starts Menu M24, Load cues

TAKE cuerange FLi MEN
TAKE cuerange HD MEM
      as above, for a range of cues

Deleting Cues

Menu M26 (Delete Cues) allows removing individual cues from the memory:

    First/Last   Cue range

Sorting Cues

Menu M27 (Sort cues) allows to re-sort the cue numbers held in the memory, giving the possibility to re-number existing cues.

    First/Last   Cue range

    Cue: first destination cues number

    Step: the value by which the cue numbers will be increased. If no step is set the original cue numbers will be used.

If overlapping of cues might occur the operation is rejected.

Note: It is recommended to save the show before sorting.

Merging Cues

Menu M48 (Merge cues) allows to merge the current with a recorded show. Cues which only exist in the (recorded) show to be merged will be copied directly into the current show; cues existing in both shows (with identical cue numbers) are merged by taking the higher value of both shows for HTP-attributes/Dimmers and adding the attribute of LTP-attributes to the current show.

Options:

    Drive: Show drive

    Show: show number

    First/Last   Cue range

Note: It is recommended to save the show before merging.

Printing Cues

Cues of the current show can be printed or saved to a file.

Printing Cues

Menu M29 (Print cues) allows to print the cues with all information saved in the cues.

Options:

First/Last	Cue range
Channel select:	Channel numbers to be printed can be limited to All, Used, or In mask
T cues only:	Printout can be restricted to cues with channel fade times.
All fade times:	Printout of channel fade times can be suppressed, only the levels are printed.
< > marks:	Levels in can be labeled, showing whether the channel is built up (>) or checked (<) compared to the previous cue number.

If the menu is closed with **ENTER**, a further menu appears. In the input field "**Output To**" the destination for the output can be specified.

The following appeals to ADD-cues:

- Channels saved with 0% are indicated with the value 0.

- Channels which are saved in a preceding cue with an intensity which is not equal to 0% are identified with "=" if their intensity is not changed by the additive preset.

Channel/dimmer patching and dimmer channel attributes are not considered in this type of printout. Menu M31 (Print dimmer levels) generates a printout referring to dimmer channel numbers which indicates patching and attributes.

Printing Dimmer Levels

Menu M31 (Print dimmer levels) prints the levels recorded in cues referring to dimmer channels and dimmer channel attributes. The printout corresponds to the **OUT** list display (dimmer levels).

Options for printout:

First/Last	Cue range
< > mark:	Levels in printouts can be labeled, showing whether the channel is built up (>) or checked (<) compared to the previous cue number.

Printout of cues referring to channels is made with menu M29, Print cues.

Saving and Loading of Shows

Consoles are equipped with a hard disk (HD), one or two floppy disk drives (FL1, FL2) or a NFS Server for saving shows; NTX, Booster and Offline Editor additionally can use USB memory sticks and CD-drives.

The current show consists of recorded cues and all configurations used of the current show. Shows or parts of can be copied between the storage medias; key **ENA** initiates operations for complete shows, key **TAKE** for parts of a show.

Key lamps **MEM**, **HD**, **FL1** and **FL2** are lit during access; on Booster and NT-consoles as Facepanel, key lamp FL2 indicates activities of the USB memory.

NFS-Fileserver

From version 5.4.3 the NFS-client option is available. A NFS-server can be accessed like a local drive. Archive data can be saved to external PCs. The server needs to have NFS installed and configured, the lighting system is then configured with Menu M190, NFS-Fileserver.

Virtual HOST Drive

From Version 5.6, a directory on the host PC can be used for local storage on NTX/Booster and NT Offline Editor. The directory can be mounted via network. For NT Offline Editor, every mounted drive can be used.

If a path is configured in M191, the drive option HOST is available.

The path is absolute and accords to the name conventions for path on the local OS.

Example / Linux:	/home/tt/test
Example for Windows/Offline:	e:\tt\test

NT Offline Editor: If more than one CD drive or USB memory stick is connected, the default drive for each memory type can be selected via the drive letter. "Auto" stands for the first drive found by Windows.

The virtual host drive is not available on NT-consoles.

Copying Entire Shows

Shows can be copied between the various storage medias. The hard disc and the floppy disc drives have dedicated keys, all other storage medias can be accessed with the following menu:

ENA and MEM FLi
ENA and MEM HD
    Save Show
    which starts Menu M22

Options:

Number:	Number of the current show This can be changed, the show is then saved under the new number assigned. Key **MENU** lists all shows recorded to the chosen media / drive.
Show label:	Name of the current show. If changed, the show will be stored under the new name.
Drive:	The drive or media the show is saved onto.
Ena. passwd:	Property VSTPW=1 sets password protection for the show file to save.

If a show exists under the number given, a warning prompt will be displayed and the overwriting can be cancelled or confirmed.

Saving to floppy disc can be done in two modes:

```
Normal
```
	Advantage	Disks are PC-compatible
		multiple shows can be saved to one disc
	Disadvantage	time-consuming

  Fast
	Advantage	quicker
	Disadvantage	only one show per disc

When using "fast saving" to disc, the memory can not be accessed (e.g. loading and saving of cues, playback).

After starting the saving to disc, cues can be recorded – but is not guaranteed that they are saved to disc.

Show Configuration

All menus which modify configuration settings can save the settings to the current show. If this is not done a loss of configuration could happen when loading the show at a later stage.

Menu M255 (Show configuration) allows to define the settings which are to be included automatically when saving a show (like "Save to Current Show" of the configuration menus).

These settings can be automatically saved:

Short name	Name
ARTNET	Art-Net dimmer protocol
ATTRIB	Dimmer characteristics
CH/LCK	Locked channels
CH/MSK	Channel mask
CHG	Channel groups
CHLIST	Channel list
CHNAME	Channel name
COLORS	Color names
CURVES	Dimmer curves
DCHLST	Dimmer list
DCUASS	Dimmer curve assignment
DMX	DMX patch
DMX90	DFB backup
DYNEFF	Dynamic Effect list
ETHDMX	DMX over Ethernet
FIXPAR	Attribute names
HMICNF	HMI Topo
INDEP	Independent dimmer levels
KNACNF	Data sync on AUX function
LAYOUT	Topographic channel layout
MACRO	Macros
MASTER	Grand master assignment
MIDI	MIDI action mapping
MLCONF	ML configuration
MLPAL	Display order
MTC	SMPTE/MTC
NET2ED	DMX/EDMX mapping
PATCH	Dimmer channel patch
REPL	Channel replacement
SHWCNF	Show configuration

Configurations used in the current show are to be marked in the menus list.

Options / Bottom line:

ESC   Ends the menu

MENU   File options for the configuration settings
The list can be saved, loaded, deleted or printed.

ENTER   is used to mark or unmark options highlighted by the cursor.

L   Load configuration file

S   Save configuration file

Note: The configuration setting files are stored at the shows part of the memory before they saved with the show to disc. Unmarking a configuration option does not delete the configuration setting; when saving, the file will be included in the show. If you want to delete a configuration file you will need to do this in the corresponding menu with "Remove" "Current Show".

Setup-list views marked yellow:
All marked configurations will be saved without prompting to the show and, if active, send to the AUX-system.

Recorded Shows

Menu M40 (Recorded shows) gives access to various menus for editing recorded shows:

    Recorded show list M41
    Delete show M45
    Copy show M43
    Rename show M44
    Cue list M42
    Delete cues M46
    Show archive M50
    Current show M20

Show List

Menu M41, Recorded show list, lists recorded shows from a particular storage device / drive.

The header indicates the drive and the number of recorded shows; the shows number, the date of last saving the show and the shows name are displayed. Mouse click to a column header sorts the display accordingly. Second mouse click inverts sort order.

Options in the bottom line:

ESC	Close menu
MENU	Choice of menus:

                Change sort order
                Cue list M42
                Load M21
                Load cue M24
                Save cue M25
                Copy show range M47
                Backup shows to CD M49
                Copy show M43
                Rename M44
                Remove M45
                Print

ENTER	Load show M21
DEL	Delete show M45
COPY	Copy show M43
QLIST	Cue list M42
PRINT	Print show list
LOAD	Load show M21

Copying multiple Shows

Menu M47 allows copying a range of shows to another drive:

from Drive	Source drive
from show	first show number
to show	last show number
to Drive	destination drive
Overwrite	if a show exists it will be deleted before copying
Rehearsal list	in- or excludes copying of the rehearsal list

Password protected showfiles require their password.

Backup Show Files to CD

The NT Booster has a built in CD writer. An external CD writer can be connected to NTX consoles using the USB interface. Single or multiple show files from the local harddisk can be stored to a CD-R(W). From menus loading cues or show files these CDs can be used as source drive. As an option cues from the rehearsal list can be included.

Menu M49, Backup shows to CD, opens a form for saving the show files. The operation is controlled by a Linux script, which is displayed while writing to CD.

Menus loading cues or show files from CD can use these CDs as a source.

If necessary, CDs can be formatted using menu M125, Erase CD-RW. Options are quick format or complete new formatting.
A Linux script is displayed while the operation is executed.

CDs formatted on Windows-PCs must be formatted again before they can be used as a backup by NTX/Booster.

Deleting Shows

Menu (Delete show) deletes shows on a particular drive chosen.

If the entry field for the show number is activated, key MENU opens a list of all shows saved on the drive.
In case the recorded show is protected the password is needed.

Copying Shows

Menu M43 copies shows between storage devices / drives:

Source

Number：	Source show number
Drive：	source drive

Destination

Number：	destination shows number
Drive：	target drive

If a show number exists on the destination drive, a warning will be displayed.
In case the recorded show is protected the password is needed.

Renaming Shows

Menu M44 (Rename show) changes the number of a saved show; the name of the show remains unchanged.

In case the recorded show is protected the password is needed.

Export/Import Shows as ZIP File

For NTX/Booster it is possible to export/import show files in zip format. A selection of show files can be zipped to one file and stored to an external drive.

Menu M56, Export/Import Shows as ZIP File, handles zipping.

Cue List of saved Shows

Menu M42 displays the cue list of a saved show without the need of having to load the show.

The header displays the show number, its name and the number of cues, the bottom line shows the following options:

ESC	Closes menu
MENU	Options
	Load cues M24
	Print the displayed cue list
PRN	Print the displayed cue list
Load	Load cues M24

Deleting Cues from recorded Shows

Menu M46 (Delete cues) allows to delete cues from recorded shows without having to load the show into the memory.

Show	Number of show to be edited
	MENU shows a list of the shows saved on the drive.
Drive	Drive
First/Last	Cue range

In case the recorded show is protected the password is needed.

Show Archive

Menu M50 (Show archive) shows a summary of all shows recorded on the system.

The system stores numbers and names of all shows recorded and checks whether a show has already been saved under the number given before saving a show.

If the current show is to be saved to a drive, the system checks whether the show number exists on the data medium. If so, **"Show ... exists"** is displayed.

If a show has already been saved under the chosen number on another data medium, the warning **"Show ... already registered"** is displayed in order to prevent that show numbers are assigned multiple times.

Options in the bottom line:

ESC	Close menu
MENU	Selection menu:
Rebuild	Clean up archive; only shows saved on the harddisk are re-entered in the archive.
	Print Print archive list
DEL	Delete selected archive entry
PRINT	Print archive list

Rehearsal Sequence List

Cues are stored in the memory under a cue number; most recording operations overwrite the existing cue when re-recording, only the last recorded version of the cue is kept.

With function **REH** activated, each cue will also be recorded in a part of memory under a consecutive rehearsal sequence number (up to 9999 "rehearsal cues") keeping all versions of cues re-recorded.

The rehearsal cue list is part of the show in memory and is saved with the show; loading the show makes the cue list available again.

Note: The rehearsal list uses memory intended for cues; extensive rehearsal lists might restrict the space available for the show.

From version 5.4, the rehearsal list can be kept on hard disc with default setting BIGRAMDISK=1.

The activated rehearsal sequence is identified in the header of the first monitor with "**REH**", displaying the list is indicated by the lit key lamp **REH**.

Menu M60 (Rehearsal sequence) gives options for the rehearsal list.

Activating/Deactivating the Rehearsal Sequence

After clearing the memory and after "1 RS" or "2 RS" the rehearsal sequence is deactivated.

When the rehearsal sequence is first activated after clearing the memory, the rehearsal sequence number is set to 1 or to the next free number of existing rehearsal lists.

```
TAKE REH
```
Activate rehearsal sequence

"REH" is indicated in the header of the first monitor.

```
CANCL REH
```
Deactivate rehearsal sequence

Menu M60 (Rehearsal sequence) gives options for the rehearsal list.

Displaying the Rehearsal Sequence

The rehearsal sequence is a list view which can be scrolled with the cursor keys.

REH
Display list `REH` on the main monitor

The list displays the following information per rehearsal cue recorded:

  Rehearsal sequence number
  Original Cue number
  Cue type
  Effect number
  Crossfade times for fade-up/fade-down
  Cue label

From version 5.4, date and time of the recording can be displayed; keys Cursor Left/Right toggle between the views.

A small arrow at the left edge of the screen marks the entry last recorded or last loaded; the total number of rehearsal cues recorded is displayed in the top right corner.

The **REH** key lamp is lit when the rehearsal list is displayed.

MON2 and REH
>   List display REH on second monitor

If the rehearsal list is activated on the first monitor, key MENU starts menu M60, Rehearsal sequence.

PRINT
>   Prints the rehearsal list (on first monitor) in full length

MON2 and PRINT
>   Prints the rehearsal list of the second monitor

Loading Rehearsal Cues

The cues recorded in the rehearsal sequence can be loaded to presets like "normal" cues; rehearsals cues loaded into a preset carry the associated (original) cues number. The rehearsal sequence number is used for management of the rehearsal sequence, when recording the next free rehearsal sequence number will be automatically assigned.

rehnumber REH
>   Load rehearsal cue into current preset

If the rehearsal list is selected, the associated entry is marked. This marking is useful for the following operations.

+ REH
>   Load next rehearsal cue from the rehearsal list into current preset

- REH
>   Load previous rehearsal cue into the current preset

Deleting Rehearsal Cues

Rehearsal cues no longer needed should be deleted to free memory space.

The following delete operations start menu M62, Delete rehearsal cues.

CANCL rehrange REH
>   Delete cue range or single cue of the rehearsal sequence

CANCL ALL REH
>   Delete entire rehearsal sequence

The numbering of the rehearsals within the rehearsal sequence will then start again at 1.

Menu Control of the Rehearsal Sequence

The menu control allows the following operations with the rehearsal sequence.

Rehearsal Sequence

Menu M60 controls the rehearsal sequence by menu control; it can also be activated by key **MENU** when the rehearsal list is active on the first monitor.

>   Rehearsal recording on/off
>   Delete rehearsal cues M62
>   Print

Activating/deactivating the rehearsal sequence corresponds to the key operations **TAKE REH** and **CANCL REH**.

Printing prints a list of all cues recorded in the rehearsal sequence.

Delete Rehearsal Cues

Menu M62 (Delete rehearsal cues) removes rehearsal cues from the memory.

Options:
  Begin rehearsal   first rehearsal cue to be deleted
  End rehearsal   number of last rehearsal cue to be deleted

Recorded rehearsal cues are removed from memory and the rehearsal sequence numbers disappear from the rehearsal list leaving blanks; new rehearsal cues are numbered to the end of the rehearsal list.

Introduction to Crossfade Systems

Two independent, equally powerful crossfade systems control lighting cues of virtually any complexity on Prisma systems (Focus and Iris offer one crossfade system). In addition to the automatic sequence of cues during a show, extra actions can be carried out by inserting special instructions in the sequence list.

The crossfade systems are numbered crossfade system 1 (left) and 2 (right); dedicated display areas on the bottom left corner of the monitors show the current state of the crossfade system (crossfade 1 on monitor 1 and 3, crossfade system 2 on monitor 2 and 4).

The crossfade system(s) can be disabled by menu M249; this setting is stored in default setting UEB_LOCK.

Settings made in menu M247, Xfade sequence options, define the following:

    SEQUEB   sets the main crossfade system.

    SEQLIST_MODE controls the sequence lists: one common or two independent sequence lists

Crossfades can be carried out in the following modes:

- controlled manually, using the crossfade faders or wheels
- Automated, controlled by times programmed
- Automated, controlled by a crossfade profile recorded (Prisma only)

Levels of channels involved in a running crossfade can be modified at any time during a running crossfade; locked channels are exempted from crossfades, until un-locked.

Crossfade system controls

On Prisma, two digital wheels and a crossfade master are available per crossfade system; on Focus/Iris two faders and the crossfade system master are used to control the Xfade system.

Crossfade wheels or faders

The function of Prismas digital wheels depends on the crossfade system mode used:

- In automated mode, the wheels correct the remaining crossfade times (up/down)
- In manual crossfades, the wheels control the crossfade directly.

Focus/Iris: the two Xfade faders control manual crossfades as set by function **MAN.** Key lamp **MAN** indicates the state of the crossfade system:

    Key lamp on: manual crossfade, not using time control

    Key lamp off: manual crossfade using cue times

Crossfade system Master fader

The crossfade systems have a dedicated master fader and blackout key.

Prisma:
XFM and digi
    Control crossfade systems master

Focus/Iris:
XF and digi
    Control crossfade system master

The current status is indicated in the fader window on the second monitor; values between 0 and 99% are displayed (a blank display field indicates 100% fader level). The fader level is displayed on the main monitor when key XF is pressed.

The value of the master fader can also be controlled by key entries. Refer to chapter "Controlling Levers" in section "Control of Channels".

Digital and analog signals can be used for controlling the master fader. Refer to the chapter "External Signals" in the section "Effects".

XFBO
> Activate/deactivate blackout of the crossfade system

Blackout is indicated by

- Lit **XFBO** key lamp
- **XF**-preset monitor color changed to blackout-color
- If the **XF** preset is selected, background color of header lines changed to blackout color

You can define with FRG_BO in the properties, whether key **ENA** is necessary to operate the blackout.

Keys **TAKE** and **CANCL** can be used:

TAKE XFBO
> Activate Blackout

CANCL XFBO
> Deactivate Blackout

Displays

The current state of a crossfade system is displayed on the monitor; on Prisma on the desk display VFDs, and by the status of key lamps **GO** and **STOP**.

Monitor displays

Status displays of the crossfade systems are shown in the crossfade windows on the monitors and in various lists.

Crossfade windows

A three-line window indicating information of crossfades is located at the bottom left on both monitors. Monitors connected to MON1, MON3 and MON5 display crossfade system , monitors on MON2 and MON4 Xfade system 2.

The display format is defined by the following settings:

SEQDISP_MODE	Determines if the display relate to preset (XF/DEST/PRE) or list display SQL.
UEB_DISP	Specifies the sorting of the sequence preset fields (SEQDISP_MODE=0) (**PV, DEST, XF** or **XF, DEST, PV**)
INFODISP_MODE	Determines whether crossfade times and cue text or only cue text are displayed.

Display for selection PV/DEST:

```
PV    ↔160   This is cue 160
LTE         TWAIT            TXF            Σ
24E        '02   '03        '04   '05      '09
```

Information displayed:

- Preset name
- Cue number and alteration indexing ↔, if the preset content has been modified
- Cue text
- Cue type
- Number of effect (if used)
- Cue times TWAIT/TXF
  Times not assigned are indicated by an empty field.
- ∑ shows the total crossfade time (8sec = 3sec TWAIT + 5sec fade time for the fade in)
  Independent channel times are not displayed in this section, they are displayed at the time lists.

If preset **BLD** is selected, information held in BLD is displayed on the main monitor.

Displayed information for preset XF

The content of the presets involved in a crossfade are displayed in condensed form. The display sorting can be defined in the properties by UEB_DISP, see "Properties"

For this example, UEB_DISP=1 and INFODISP_MODE=0 is set:

```
XF        160    > 161        TWAIT8.9  TXF2.0
DEST      161      LTE   12E     '13      '03 Applause
PV        162      LTE   24E     '13      '13 Tabs in
```

For presets **PV** and **DEST,** the following is displayed:

- Preset name (**PV**, **DEST**)
- Cue number (162, 161), with alteration indexing ↔, if content has been changed ("***", if no cue held in preset.)
- Cue type (both LTE)
- Effect number, if recorded (24E, 12E)
- Total of Wait- and fade time (both 13sec)
- Total of wait- and fade time for fade-in (13secs, 3secs)
- Cue text ("Tabs in", "Applause"), max. 10 characters

The display for the **XF** preset depends on the current status of the crossfade and mode (automatic or manual control). For further details of the displays, refer to the descriptions of the individual modes

List Views

The following list views display the current crossfade systems state:

SQL   The sequence list has a window area dedicated to crossfade information.

QLIST   The current preset is marked on the left display side.

LEVEL   If a crossfade preset is selected, setting HEDU_KENN defines, if and how changing channel levels are displayed.

T, TWAIT, TXF
                 Software option channel fade times displays independent channel fade times in the corresponding list views (also the time defaults for selected presets **PV**- or **DEST**).

In addition to the time defaults, the dynamic time remainders for channels are displayed for an ongoing crossfade and XF preset selection. By default, the following colors indicate the crossfade phases:

White   Time expired, default time
Red   Ongoing crossfade time
Green   Ongoing wait time

Desk Displays

On Prisma, the desk displays next to the crossfade systems keys display information about the ongoing or prepared crossfade.

At the left, the cue numbers of the ongoing or prepared crossfade are displayed, together with the crossfade direction. Other information shown on the VFD displays depend on the mode and the current crossfade status.

Key Lamps

The lamps of the **GO** and **STOP** keys signal the status of the current crossfade, independent of the mode used for crossfades:

STOP	GO	
Off	Off	Crossfade halted, no crossfade active
Off	On	Crossfade started (running/not completed)
On	On	Crossfade paused

Setting UEBLMP_MODE determines whether the lamps of the active display are on or flash.

Sequence list SQL

Crossfade system actions are controlled by the sequence list. The running of the current show is done by a sequence of steps, which are executed in various ways.

An independent sequence list can be set for each of Prismas crossfade systems; setting SEQLIST_MODE defines if two independent or one common list is used.

Each line of the sequence list represents a step of the sequence; the following parameters are displayed:

SEQ
Number of sequence step
The sequence steps are in ascending order.

sync/free
Sequence list mode

ACTION
Action to be executed in a sequence step

TWAIT/TXF
If the action is starting a cue: wait/crossfade time of the cue

CUE TEXT
Text assigned to a cue

TRIGGER
Trigger for an action

LINK
Next sequence step number if jumping

COUNT
Loop counter

The following actions are possible:

- No action (empty step)
- Standard; starts cue with same/corresponding cue number
- Start selected cue
- Start macro
- Load file, update data
- Wakeup
- Send MIDI-command
- Execute Darkmove
- Block Darkmove ("Silent")

The actions are described in detail later.

Sequence steps prepared in preset **PV** can be started by:

GO	Key **GO** (sequence steps can always be started by **GO**)
TDELAY	Delay time; the delay between starting the previous action and start of the current action; label "**TDLY**"
THOLD	Hold time; the time between a finished and the next started action, labeled "**THLD**"
Absolute time	Triggers action at a defined real time (if the step is loaded into **PV**)
Ext. Signal	Digital signal D1 .. D4 starts the action.

With function **LINK**, a jump to another sequence step can be programmed and a loop set: if loop counts are entered, the loop will be executed until counted down; if no loop is set the jump is executed always. An empty **LINK**-field indicates that no jump is set.

Delay and hold-times trigger an automated start of follow-on or simultaneous actions.

Menu M35 gives further access to options of the current sequence list.

Modes

Two sequence list modes - synchronous or free - can be set, the current mode is indicated in the SQLs header by "sync" or "free".

If using two independent sequence lists on Prisma, the mode can be set for each list.

Synchronous

The sequence lists is set up synced to cues recorded; a sequence step with the same number is automatically assigned to each cue. Cues can be used multiple times by entering additional sequence steps. If cues are deleted, the corresponding SQL step number is removed.

Free Mode

The sequence can be programmed "free", independent of cue numbers. Cues can be used on various places of the SQL; not recorded cue numbers might be inserted as actions.

Changing the mode used

The mode can be changed any time; after clearing the memory, mode "sync" is preset. If using two sequence lists on Prisma, the operation affects the list of the currently selected crossfade system:

CANCL QLIST SQL
  Activate "free" mode

The existing list will be used as basis for the free sequence list.

TAKE QLIST SQL
  Activate mode "sync"

When starting the synced mode, the sequence list is rebuild based on cues held in the memory.

Note: A "free" sequence list might be lost (if not saved before changing the mode).

Options "Mode" in menus M35 or M36 (Sequence list) allows to change the mode.

The sequence list can be edited by key operations or menus M35/M36; if the list is active on the main monitor, key **MENU** gives the following options:

Mode	change mode used
Begin show	Start of show The crossfade systems content remains unchanged; all loop counters are reset to 0. Menu M34, Begin Show, is started, allowing to reset changes made to configuration files to the state saved to the show.
Time lapse	Set a time lapse
Cleanup	Actions referring to no-existing cues are removed; sequence steps not triggering actions are removed.
Load	Load sequence list saved to current shows
Save	Save sequence list to current show
Remove	Remove sequence list saved to current show
Reset	Reset sequence lists to actions triggering cues only; all steps starting other actions are removed
Print	print complete sequence list

Note: If two lists are set on Prisma, the current lists will be saved and loaded to the show. It is possible to save a list by name, this allows to save SQL1 by name and load this file onto crossfade system 2, for example.

List view SQL

List SQL can be selected independent of the current preset.

SQL
Sequence list on main monitor

MON2 and SQL
Sequence list on 2nd monitor

If two independent lists are defined with setting SEQLIST_MODE on Prisma, the list view follows the preset selected; otherwise the last list displayed is shown. Keys ← and → switch between the lists of the two crossfade systems.

The display has four windows:

History

The history shows the two last executed sequence entries. These entries can no longer be edited.

Sequence magnifier

The current status of the crossfade system is shown in the "magnifier".

Line 1 displays the following information during a crossfade:

- Cue numbers involved, together with crossfade direction (forwards/backwards) (>>/<<)
- Automatic crossfade: time remainders or, if set, time lapse factor;   Manual crossfade: current values of crossfade faders/wheels
- STOP/RET and GO indication

On manual mode (and if no crossfade is performed,) mode "**MAN**" is indicated.

Line 2 shows the current sequence step held in **DEST/XF** preset.

Line 3, (preparation) shows the next, prepared step of the sequence. If a delay or wait time is programmed, the time remainder to the start of the action is indicated.

List display

The list display of the sequence list can be scrolled with the cursor keys.

Current display

If the cursor line marks the sequence magnifier, extra information from crossfade presets **DEST** and **PV** is shown; otherwise information for the marked entry will be displayed: Cue number, cue type, effect and cue text.

Cursor line

In the list area and in the preparation line of the magnifier, the cursor line selects an entry for editing. The following keys control the cursor:

HOME	List sequence list from first entry
	If the cursor line is already in the first line, it jumps to the sequence magnifier and the display in the list area is synchronized: the list display continues the sequence list in the sequence magnifier.
	If the cursor line is in the sequence magnifier, it jumps to the first entry in the list display.
END	Cursor line to end of sequence list
↑	Cursor line one line up
	If the cursor line is in the first line of the display area, the content is shifted down by one entry.
↓	Cursor line one line down
	If the cursor line is in the first line of the display area, the content is shifted up one entry; if the cursor line is in the sequence magnifier, it jumps to the list area.
PG↑	Scroll display up
	The position of the cursor line remains unchanged.
PG↓	Scroll display down
	The position of the cursor line remains unchanged.
ESC	Set cursor line in magnifier
	If the cursor line is in the list area, it is switched to the magnifier; if already in the magnifier, it switches to the **LEVEL** display.

When the cursor line is in the sequence magnifier, crossfade times and cue text of the **XF**-preset can be edited without being direct written to the memory (only if the cue is recorded).

Operations

Basis for the following operations is:

- List **SQL** displayed on the main monitor
- Cursor line in list area

Inserting/Deleting Sequence Steps

Steps can be inserted into the sequence or deleted from it.

seqno INS
  Insert sequence step

The entry is rejected if the sequence step number exists.

INS
  Insert sequence step after current cursor line

The sequence step number is assigned automatically. The entry is rejected if the existing numbering of steps does not allow insertion.

For both operations, an empty step without action assigned is inserted.

seqno DEL
  Delete step from sequence list

DEL
  Delete marked step from sequence list.

For "sync"- mode:
If a cue is assigned to the sequence step, menu M26, Delete cues, will be opened.

Enter/Delete Action

Entries affect the selected sequence step of list **SQL** on the main monitor. Entered actions overwrite existing entries; a blank step remains when an action is deleted.

cueno CUE
CUE cueno ENTER
TAKE cueno CUE
  Insert cue

A crossfade to the cue entered/inserted is set as action.

TAKE CUE
  Insert sequence step number with/as cue number

Mode "sync":
Only cue numbers of existing cues can be inserted; otherwise the entry is rejected.

Mode "free":
Any cue number can be inserted; non-existing cue numbers are labeled as "FREE".

CANCL CUE
  Delete cue number

Mode "sync":
The operation is rejected if the sequence step number is identical to a recorded cues number.

TAKE number F
  Insert macro number

The action of the sequence step is starting the entered macro.

CANCL F
  Delete macro
  The macro itself remains unchanged.

Automatic Start

Actions can be triggered automatically after a delay- or hold time.

Time 0 starts the action immediately: if 0 is set as delay time, the action is started together with the start of the previous action. If 0 is set as hold time, the action is started 0sec after completion of the previous action.

time TDLY
>Set delay time

time THOLD
>Set hold time

Mode "sync":
Setting AUTO_TS defines if a cue with wait time for fade up and down will have THLD = 0 assigned automatically when inserted in the sequence list.

CANCL TDLY
>Cancel delay time

CANCL THOLD
>Cancel hold time

Jumps (or links)

Jump (or link) instructions are possible with or without using a loop counter. A loop counter can be set to an existing link. When a loop counter is inserted, the loop counter for the jumps already executed will be set to 0.

seqno LINK
>Insert jump destination

The destination of a link/jump is the sequence step entered. If no loop counter is set, the link is always executed.

seqno - counter LINK
>Insert sequence step and counter

- counter LINK
>Re-assign counter

- LINK
>Remove counter

CANCL LINK
>Remove jump (and loop counter)

Menu editing

When the cursor line is in the list area of the sequence list, the marked entry can be edited using menu control; key ENTER will start a menu with three selection fields for setting control parameters:

ACTION
TRIGGER
LINK

Keys → and ← scroll to available options, key **MENU** lists all options. Selection is made with keys ↓ and ↑, confirmed by **ENTER**.

Additional lines for entering extra data are displayed, depending on the option.

ACTION

This parameter determines what action is carried out by the current sequence step:

None   The sequence step triggers no action. In linked (AUX) systems, the number of the
                  sequence step is sent to the other system when started allowing to start an independent
                  action.

Default   The default action is starting a cue with the corresponding cue number; if non-existing,
                  an error message in sync mode will be displayed on ending the menu, in mode free the
                  action field will indicate "FREE".

Cue   A cue number can be entered in the entry field (and, if the cue does not exist, might be
                  rejected).
                  The cue number will only be displayed in the SQL if it differs from the sequence step
                  number. Cue type, effect number and cue times are always displayed.

Macro   A macro number can be entered; key **MENU** lists all recorded macros.

File   The following files can be loaded automatically and assigned.

                  Input field **Type** lists available file types with key **MENU**:

ATTRIB	Dimmer characteristics
CH/LCK	Locked Channels
CH/MSK	Channel mask
CHG	Channel groups
CURVES	Dimmer curves
DCUASS	Dimmer curve assignment
INDEP	Independent dimmer levels
LAYOUT	Topographic channel layout
MACRO	Macros
MASTER	Grand master assignment
MTC	SMPTE/MTC
PATCH	Dimmer channel patch
REPL	Channel replacement
SEQ	Sequence

                  Line two allows to enter a file name; key **MENU** lists all files of a selected type
                  recorded to the show.

WAKEUP   A "wakeup call" can be programmed which is executed when starting the sequence
                  step. One to three beeps can be set; the message line will show "Ding Dong".

MIDI command The following commands can be sent to control external MIDI devices:

                  MIDI Channel   Channel 1 - 16
                  Command   The 7 channel voice messages can be sent; the names are
                                      displayed with key MENU.
                  Data 1/2   Each command can be send with one or two additional data
                                      bytes.

                  Chapter "Diagrams" shows the MIDI Implementation Chart used by the system. This
                  is saved as "MIDICHRT" in the systems setup and can be displayed with menu M5
                  on the main monitor.

Darkmove   This command executes a darkmove (if the function is off).

Silent   This command allows to oppress a Darkmove (if enabled).

Fader   The internal value of a fader can be controlled by a special step inserted into the
                  sequence
                  Target   Submaster, General fader
                  Fader value   Target value for the movement
                  Fader time   fade in/out time

Activate	A submaster can be activated by a special step from the sequence	
	Target	Submaster
	Load cue	before activating. Empty if submaster remains unchanged
	Fader time	In time
Release	A submaster can be released by a special step from the sequence	
	Target	Submaster
	Load cue	after release. Empty if submaster remains unchanged
	Fader time	Out time

TRIGGER

This parameter defines how an action is to be started.

None	Actions can only be started by key **GO**.
Delay time	The current delay time settings are displayed and can be edited.
Hold time	The current hold time settings are displayed and can be edited.
Absolute time	If the step is "prepared" (= in preset **PV**), it can be started at a chosen time by the internal clock.
External signal	Digital signals D1 to D4 start the action.

LINK

This option edits the jump instruction:

None	The sequence continues with the next step; a link set will be deleted.
Jump	A jump "forward" to a sequence step number lower than the current is set with this option.
Loop	sets a jump to a sequence step number behind/higher the current one. The loop counter defines, how often the jump is to be carried out; if the loops counts set are executed, the sequence will continue with the next regular step.

Edit Cue text and times

If the **XF**-preset is selected and the cursor is in the list area of the SQL, cue text and times can be corrected directly:

- F4 or Shift-F4 on the external keyboard start menus for cue text editing

  Time entries are directly assigned to the highlighted cue.

Changing the Sequence

The crossfade list order can be edited any time, allowing to change the order actions are started.

seqno SEQ
  Restart the sequence
  The entered sequence step number is prepared.

If the action starts a cue, this cue will be loaded in the **PV** preset of the crossfade system affected. Any further trigger options set (delay, hold time) are ignored. The start of the crossfade or key **GO** continues the sequence at the entered step.

If the automated sequence is deactivated, **PV** preset will not be loaded; the load operation will be done when the sequence is activated.

+ SEQ
  Move sequence one step up/on

The prepared step is replaced by the next step.

- SEQ
     Move sequence one step down/back

The prepared step is replaced by the previous step.

cue PV
     Prepare cue, restart the sequence when in "sync" mode

Activate/Deactivate Sequence

The sequence list can be deactivated; the current mode of the crossfade system (automatic or manual) is irrelevant.

Sequence activated

After the start of an action, the next sequence step is prepared. If starting a cue is entered as action, this cue will be prepared in preset **PV**. For all other actions, the cue held in PV remains unaltered.

At the end of a crossfade sequence, a blackout cue (all channels 0%) is prepared automatically in preset PV; in manual mode, the next crossfade carried out will start this cue. In automated crossfades, the cue last started remains in the XF preset; the next start sets the beginning of the sequence in both cases.

Sequence deactivated

New loading of the PV preset is disabled; the following actions are executed when starting a crossfade:

- Copy preset **PV** to **DEST**

- Copy preset **DEST** to **PV**

Start/GO therefore only changes back and forth between the cues held in the crossfade presets.

An prepared action will be started as soon as the sequence is activated again; an automated start set will be ignored until re-activation of the list.

Key lamp **SEQ** is lit if the sequence is activated.

SEQ
     Sequence on/off

TAKE SEQ
     Sequence on

CANCL SEQ
     Sequence off

The reset operations "1/2/3/4 RS" set both crossfade systems to the beginning of the sequence; the first entry will be prepared.

Saving and Loading the Sequence List

When saving a show, the sequence list(s) are automatically included. Key **MENU** starts (if active list **SQL** on the main monitor) a menu which allows to save the current sequence list to the show (and by name).

The SQL saved to a show will be automatically read when loading a show; changes made can be reverted by re-loading the sequence list. A sequence list saved under a name can be loaded any time to both crossfade systems (allowing to transfer a SQL from one to the other crossfader).

Intensity level correction within running crossfades

Channel levels can be corrected at any time during a crossfade with various operations (depending on the preset selected):

Preset **XF**:

Operation	
@ x	Remove channel from crossfade
int %	Set intensity to the channel
@ +/- x	Channel remains in crossfade
+/- int %	Correct **XF**- and **DEST**
Digi	

Preset **DEST** (on Focus/Iris by external keyboard, key **{**):

Changes made in preset **DEST** only affect the level a channel will reach, not the current intensity level. The channels modified will fade to the new level set.

Level changes in **DEST** or **XF** made before starting or after the end of a crossfade always affect both presets.

Effects in Crossfades

Effects can be recorded together with a cue (as type L/E, LTE) or as separate cue (type E). During a show, the effects are started automatically.

An effect integrated in the sequence is first prepared in preset PV. At the start of the crossfade, the effect is loaded from the PV preset to the XF preset and started immediately. When loading the next cue into XF, the following happens:

- L/E and LTE cues clear the existing effect.

- All other cues leave the effect unaltered/running.

If a crossfade preset is selected, the keys for effect control automatically control the effect held in the XF preset.

Crossfading DIR Channels

Channels in DIR mode are independent of all super ordinate controls. Their crossfade response can be defined with DIR_MODE property:

DIR_MODE = 0   The channels are cut, ignoring fade times. This also applies to a manual crossfade.

DIR_MODE = 1   The channels, like all others involved in the crossfade, are controlled by the times or crossfade controls.

Time Lapse

Timed sequences of the crossfade systems are controlled by cue and channel fade times. They can be shortened using a time lapse factor.

Menu M39 (Time lapse) allows to set a time lapse factor separately for each crossfade system. When the menu starts, the factors set for the two crossfade systems are indicated.

The current time lapse factor is shown in the crossfade system displays (for XF preset selected) and in the sequence magnifier replacing the time remainders.

Set range is 1 to 255; 1 leaves times unmodified.

Automated Crossfades

Key **GO** starts automated crossfades controlled by the automatic timing. The crossfade made is from the current cue in preset **XF** to the cue loaded in the **PV** preset.

Times

Cue times are times for the fade-down (out) and fade-up (in) of all channels involved in the crossfade (if not having channel fade times assigned). Wait and crossfade times can be set both for fade-down and fade-up. During a running crossfade, times can be corrected at any time.

Channel fade times control the individual timing of channels. All operations relating to fading channels times also affect independent channels.

If movinglight attributes are part of a crossfade, their behavior is set by the devices configuration.

Control

In automatic mode (**MAN** lamp=off), the actions preset by the sequence list are executed one after the other started by key **GO**. If the action is starting a cue, the crossfade is started. The sequence list offers various ways of automatic triggered starts. Ongoing crossfades can be paused at any time with the key **STOP**. Halted crossfades can be resumed completely or in part.

Two different modes can be set for continuing a crossfade. The UEB_CONT property determines whether the **GO** key or the extra **CONT** key is used to continue crossfades:

UEB_CONT=0   The **CONT** key on the master keyboard is ignored; key **GO** resumes a halted crossfade.

UEB_CONT=1   Only key **CONT** is used to resume crossfades; **GO** starts a new crossfade.

Key **RET** allows to bring a running or completed crossfade back to its start (not including effects). The time for a return crossfade can be set with property RET_ZEIT and with menu M218, Time constants.

Time Corrections

Both cue and channel fade times can be corrected in the **PV** preset before a crossfade is started. When starting, the corrected times are used.

At the start of a crossfade the involved channels are split into building and checking channels by comparing the levels in **PV** and **XF** presets. This division is important for subsequent time remainder correction.

Ongoing or stopped times can be modified in the **XF** preset. The times entered in the **DEST** preset remain unaltered.

Prisma, crossfade wheels:
The left wheel controls fade-down and the right one fade-up times, both of cue and channel fade times.

Focus/Iris, digital wheel:
On Focus/Iris, the crossfade wheels are replaced by keys DOWN/UP and the digital wheel.

Remaining channel fade times can be modified in the **XF** preset, using the following lists:

TWAIT   Wait time only

TXF   Fade time only

T   Both wait- and fade time

Absolute time entries are entered to the **DEST** preset when **XF** is selected; ongoing crossfades is not affected. Changes take effect when the crossfade is returned by **RET** and restarted. When the cue is recorded, the changed times held in preset **DEST** are recorded.

Crossfading using Cue Times

Cue times control the fade-up and fade-down separately (splitfade) for all channels not having channel fade times assigned.

Various types of cues can be recorded with different recording operations:

L/E, LTE	All channel levels are set to the state held in the recorded cue. An ongoing effect in the XF preset is cleared and replaced (if recorded) Operation: REC REC
L, L/T, SUM	Only channel levels are renewed; effects in the XF preset remain unaltered. Operations: REC %, REC T, SUM REC REC
ADD, LADD	Only levels of involved channels are modified; all other levels and the effect remain unaltered. Operations: + REC REC, - REC REC The involvement of channels can be edited; refer to the operations with the INVO key.].
E	Levels remain unaltered. The recorded effect is started. Operation: REC EFF

Starting Crossfades

GO
    Starts action prepared in preset PV

For crossfades, the following applies:

1   If preceding crossfade is completed: the prepared crossfade is started.

2   The preceding crossfade is not yet completed:
     The ongoing crossfade is terminated at the current status. The new crossfade begins from the current status of the XF preset.
     Exception: If a cue of type ADD or LADD is loaded, the ongoing crossfade is not terminated; only involved channels are modified.

3   The preceding crossfade is not yet completed but halted: the crossfade is resumed (if key CONT is disabled).

During a manually controlled crossfade, key **GO** is rejected with the message "MAN is active".

The **GO** key lamp is lit until the crossfading of all channels involved in the crossfade is completed.

cueno GO
    Start crossfade to selected cue number

Depending on the mode of the sequence:

sync The sequence is restarted from the number chosen

free The chosen cue is started, the sequence remains unchanged.

Menu M231 (Expert level) allows to specify whether the operation should be carried out immediately or whether it must be confirmed first. This helps to prevent unintended jumps in the sequence.

Halting Crossfades

Ongoing crossfades can be halted at any time.

STOP
>Halt ongoing crossfade

All times, including channel fade times, are halted. Parts of a crossfade can also be halted, refer to the separate control of fade-up/fade-down and of single channels.

If a delay or hold time is set, the automatic follow-on start is aborted and needs to be started with the **GO** key.

During a manual crossfade, key **STOP** is rejected with the message "MAN is active".

The **STOP** key lamp is lit if a crossfade is entirely or partly halted.

Resuming Crossfades

A halted crossfade can be resumed at any time.

GO
>Resume halted crossfade

CONT
>Handheld terminal, radio control, text keyboard: resume halted crossfade

Handheld terminals and radio control are fitted with key **CONT** to ensures that any halted crossfade is resumed and that the next cue is not started.

Terminating an active crossfade

CANCL GO
>An active crossfade is terminated

All time operations, cue and individual times are paused and the current lighting status is kept in the XF preset.

Cut Crossfades

Using function "CUT" allows to override times set for a crossfade, allowing to quickly step thru cues without using crossfade times assigned:

CUT
>Start "cut" crossfade

Likewise operation GO, three situations have to be distinguished: crossfade at standstill, ongoing or halted. The response to the operation corresponds.

cueno CUT
>Cut selected cue into XF preset

Depending on the sequence mode used, the sequence list reacts differently.

Menu M231 (Expert level) allows to specify whether the operation should be carried out immediately or whether it must be confirmed first. This ensures that unintended jumps in the sequence are not triggered.

Return Crossfade

An ongoing or completed crossfade can be returned to its initial status.

RET
    Start return crossfade

At the end of the return fade, the crossfade is stopped at 0%. The return time can be selected by the RET_ZEIT property, menu M218 (Fade time constants) can be used for direct entry of the figure.

The **RET** key lamp is lit during returning a crossfade.

Note: If one or more ADD presets have been started, **RET** resets the channels which were involved in the last ADD preset or which were controlled by the automatic timer when started.

Fade Out Channels in Preset XF

Cue number 0 can be used for fading out channels in the XF preset. Default fade time controls transition.

0 GO
0 CUT
    All channels are faded out.

+ 0 GO
+ 0 CUT
    selected channels are faded out.

Cue Displays

The current status of a crossfade is displayed on the monitor crossfade window, by the **GO** and **STOP** key lamps and, on Prisma, by the desk display of the crossfade systems.

The way the information is displayed is defined with the following properties:

| UEB_DISP | display sorting order |
| | PV - DEST - XF or XF - DEST - PV |

| SEQDISP_MODE | displays sequence step numbers or cue text |

The following examples use sorting XF - DEST – PV:

Crossfade window of preset XF

Before starting a crossfade:

```
XF       160
DEST     160    LTE          '03    '03
PV       161    LTE  12E     '13    '03 Music
```

The crossfade to cue 160 is finished, content in presets **DEST** and **XF** is identical. All relevant times are finished, no further timing is displayed for preset **XF**.

Cue 161 is prepared for crossfading in the **PV** preset:

- Cue type LTE
- Effect (12E) is part of the cue
- Fade down in 13secs
- Fade up in 3secs

When crossfading:

```
XF         160   > 161       TW8.9    '02.0
'11.9
DEST       161    LTE   12E    '13     '03 Music
PV         162    LTE   24E    '13     '13 Tabs in
```

- Crossfading cue 160 to 161.
- The remaining wait time for fading down is 8.9secs.
- Fade in is completed in 2secs.
- The crossfade time remaining is 11,9secs.

If the crossfade is halted, the timing is paused, too. The displaying of the remaining times remains unchanged.

Returning a crossfade:

```
XF         160   < 161       RET2.0 RET2.0
'01.4
DEST       161    LTE   12E    '13     '03 Music
PV         162    LTE   24E    '13     '13 Tabs in
```

The previous crossfade was from cue 160 to 161; now the arrow indicates that this fade is running in opposite direction, from 161 to 160, the remaining times are marked with "**RET**".

If a time lapse > 1 is set, the time lapse factor is replacing the remaining time display. See menu M39 (Time lapse).

```
XF         160   > 161       FAST  x5
'01.4
DEST       161    LTE   12E    '13     '03 Music
PV         162    LTE   24E    '13     '13 Tabs in
```

This example shows time lapse factor x5.

Desk displays (Prisma only)

Before starting a crossfade:

```
v 160     3.0   3.0
v 161      '10
```

The crossfade prepared fades from cue 160 into cue 161.
Fade up-/down time is 3secs each; for fading down a wait time of 10sec is set.

During crossfade:

```
v 160     3.0   1.5*
v 161      8.5*
```

Index "*" marks current "running"/changing times.
For fading down, 8.5sec wait time are remaining before the fade is done in 3sec.
The fade in is finished in 1.5sec.

Halted / stopped crossfade:

```
v 160     3.0  1.5s
v 161     8.5s
```

"**s**" indicates stopped times.

Return crossfade:

```
^ 160     1.5r 1.5r
^ 161
```

Index "**r**" indicates a RET crossfade.

If a time lapse is set, the lapse factor is displayed:

```
v 160     FAST x5
v 161
```

Controlling Fade-Down/Fade-Up Separately

Fade-down and fade-up can be controlled independently by keys **DOWN** and **UP** on the control panel of the crossfade systems. The operations cover all channels, regardless of whether they are controlled by a cue- or channel fade time.

Starting Fade-Down or Fade-Up only

DOWN and GO
   Start fade down (out)

UP and GO
   Start fade up (in)

Halting Fade-Down/Fade-Up

DOWN and STOP
   Halt running fade down

UP and STOP
   Halt running fade up

Resuming Fade-Down/Fade-Up

Halted parts of a crossfade can be resumed:

DOWN and GO
   Resume halted fade down

UP and GO
   Resume halted fade up

Cut Fade-Down/Fade-Up

DOWN and CUT
> Cut fade down

UP und CUT
> Cut fade-up

The part not started is treated like a partial start having the status of a crossfade stopped at 0%.

Return Fade-Down/Fade-Up

Fade-downs and fade-ups can be reset to their initial status.

DOWN and RET
> Return fade-down

UP and RET
> Return fade-up

Recalculation on Sequence jump

When loading a cue to a preset or jumping into the sequence, the content of the cue can be loaded or the memory can be scanned to recalculate the current lighting state (including attributes etc) for the jump-in point. This is essential when not recording LTE IFCB-cues (including all attributes and dimmers; if this recording mode is used, function "recalculation on sequence jump" has no effect).

Menu M248, Recalculation on sequence jump, defines when and for what operations the recalculation should be carried out. The settings made should allow to both load a cue directly and recalculated.

Crossfading of selected channels only

Crossfades can be controlled for individual or a range of channels only; crossfade times are defined by cue- or channel fade times.

Setting EXPERT_LEVEL allows to define if this function needs to be enabled with pressed key ENA (in Menu M231, Expert Level, option „+/- GO/STOP/HRT/RET without ENA").

The following operations refer to selected channels:

+ GO
> Start or resume crossfade for selected channels only

+ chrange GO
> Select channel and start or resume crossfade

Channels not selected remain in stopped state at the beginning of the crossfade.

+ STOP
> Halt crossfade of selected channels

+ chrange STOP
> Select channels and halt crossfade for selected channels

+ CUT
> Cut selected channels

+ chrange CUT
> Select and cut selected channels

+ RET
> Return crossfade of selected channels

+ chrange RET
> Select and return crossfade of selected channels

Locked / Guarded Crossfade

Channels started as locked or guarded crossfade are no longer influenced by subsequent regular crossfades; this means that very slow changes of light can be started as independent part cues, likewise simulating a sunrise not being modified by other crossfades.

A locked crossfade is normally recorded as a part cue of type LADD (**- REC REC**); it is also possible start a selection of channels as guarded crossfade.

The lock only applies to the crossfading and is removed after the crossfade is finished. Channels running as guarded crossfade are identified by "-" in channel list views.

The following operations relate to selected channels and are initiated with key **-** (minus).

- GO
> Start locked crossfade

- chanrange GO
> Select channels and start guarded crossfade for those channels

- STOP
> Halt locked crossfading of selected channels

- chanrange STOP
> Select channels and halt locked crossfade

- GO/CONT
> Resume locked crossfade of selected channels

- chanrange GO/CONT
> Select channels and resume locked crossfade

- RET
> Start return-crossfade for selected channels

- chanrange RET
> Select channels and return crossfade for selected channels

Manual Crossfading

Crossfade systems can be used in automatic and manual mode. Manual control on Prisma is done using the two digital crossfade wheels (left wheel for fade-down and right for fade-up); Focus/Iris systems use the faders **DOWN** and **UP**. Recorded crossfade times have no effect when in manual mode, all timing (channels, attributes and channel fade times) is controlled by the wheels / faders.

On Focus/Iris, key **MAN** switches between two manual control modes, the current mode is indicated by the key lamp:

MAN off:	The programmed cue times control the automated fader follow-up when crossfading; when crossfading, key lamp **MAN** flashes**.**
MAN on:	The automatic fader follow-up is controlled by the minimum time set in menu M218, Time constants; cue times are ignored

Key lamp **GO** indicates for manual crossfades:

Key lamp off	Crossfade not started or finishes
Key lamp on	Crossfade running

The behavior of sequence list functions for manual crossfade:

- If the loaded action starts a cue, the crossfade is executed by the crossfade controls.
- If another action is entered, it is started by **GO** as long as it is loaded into **PV** (preparation). No "special" actions can be triggered by the crossfade controls.

Default setting SEQDISP_MODE=1 displays the sequence numbers in the crossfade system windows, this allows to display prepared "special" actions. Prepared special actions leave the cue entered in the PV preset unaltered. In a subsequent manual crossfade, the light output from the crossfade system is not changed, only the entered special action is skipped.

- Delay times also apply to manual crossfades and can be used for automated follow-on starts
- Hold times are without effect and are not used for automated starts.

System settings for manual crossfade are defined by the following properties:

MAN_SCHWELLE	Fader/wheel control sensitivity for starting crossfades
MAN_ZEIT	Minimum crossfade time used when "cutting" a crossfade with the fader wheels/faders
UEBDIROPT	Prisma only: Rotation-direction of wheels for starting crossfades
UEBLMP_MODE	Mode of crossfade key lamps
	Key lamps **GO**, **STOP**, **ADJ** and **RET** can be lit or flash.

The crossfade windows display the current status of a crossfade (when **XF** preset is selected), the displays for **PV** or **DEST** preset are identical to the automatic mode.

When in a manual controlled crossfade, operation of **GO**, **STOP**, **CUT** and **RET** is rejected.

The desk displays on Prisma display the current state of a (manual) crossfade.

If a manual crossfade is finished on Focus/Iris, key **GO** can be used to start an automated crossfade. Furthermore, crossfades can be carried out using the faders when mode **MAN** is off.

Activating/Deactivating Manual Mode

MAN
> Activate/deactivate manual crossfade

If **MAN** is used while an automatic crossfade is running, the MAN key lamp flashes until the current crossfade is completed; switching to manual mode is then done.

The MAN key lamp is lit when in activated manual mode.

Stopwatch

With the start of a manual crossfade, an internal stopwatch counts the time until ending the crossfade and wait and crossfade times (separate for fade-down and fade-up). The times are displayed on Prismas desk display. Crossfade times "stopped" can be transferred to a crossfade preset and recorded as cue times.

The stopwatch is triggered by a fader wheel movement and in manual mode when using the **GO** key to start a crossfade.

Returning the faders to the start position or returning the crossfade clears the times "stopped".

The operation is only accepted if a crossfade preset is selected.

TAKE T
> Take both stopwatch times

Take both stopwatch times:

TAKE DOWN T
> Take wait and crossfade time for fade-down

TAKE UP T
> Take wait and crossfade time for fade-up

Time Displays in crossfade windows

When manually controlling crossfades, the cue times recorded are displayed in the crossfade windows; these don't have an effect on the timing of the manual crossfade as they only apply to automated crossfades.

Note: On Focus/Iris, the cue times control the fader follow-up when using the fader in mode "MAN off".

The sum of wait (TWAIT) and crossfade (TXF) time is displayed.

RET of manual crossfades

As long as a manually controlled crossfade is not finished, it can be returned to the initial state with **RET**. If the crossfade is finished, the reaction depends on the basic setting UEBDIRMODE.

On Focus/Iris, the "**Corner Position**" field in the crossfade window of the monitors indicates if the faders should be moved to a corner position before the crossfade can be re-started.

Different Modes

The following modes can be used to define the way a manual crossfade is started with the crossfade wheels (set with setting UEBDIROPT):

UEBDIROPT=0   Prisma: Wheel movement direction "up" only

UEBDIROPT=1   Prisma: Wheel movement direction "down" only

UEBDIROPT=2   Fader movement alternating up/down (default setting)

A crossfade in one direction only can be started with key **GO**.

Alternating fader movement

Crossfades are controlled with the digital wheels on Prisma and with faders **DOWM** and **UP** on Focus/Iris. The direction of the fader/wheel movement is displayed in the crossfade systems window and, on Prisma, on the desk display. A crossfade is started as soon as a fader is moved.

It is possible to "mix" various crossfade modes using this setting; **GO** starts an automated crossfade, **CUT** cuts the crossfade. Please note:

- If the sequence list indicates that the next action is the start of a cue, the crossfade is started. In an ongoing crossfade, the message line indicates "MAN is active".
- The key lamp **MAN** flashes until the crossfade is completed; a manual crossfade is possible when the automatic crossfade is finished.
- On Prisma, the digital wheels are used to correct the times during automated crossfades.
- **RET** in an automated crossfade returns the crossfade which can be re-started with **GO, CUT** or in manual mode.

If a cue of the type E (effect) or LADD (guarded crossfade) is loaded into **PV**, it is started by a control movement (similar to using key **GO**). The next crossfade can be started immediately from the opposite control wheel/fader position.

Crossfade windows displays in Manual Crossfade mode

The following display states are shown for preset **XF**:

Crossfade not yet started

```
XF        160              ↓↓     %       %
DEST      160    L/E              '13    '03
PV        161    L/E  12E  '13    '13 Music
```

Cue 160 of type L/E is active; programmed crossfade times are 13s (down) and 3s (up). Blank percentage value fields indicate that the crossfade is not yet started. Move the controls down to crossfade.

Cue 161, type L/E, is ready for crossfading; a chase effect (12E) is also part of the cue. A total of 13 s each is recorded for fade-down and fade-up. The related cue text is "Music".

Crossfade started

```
XF        160   > 161    ↓↓   21%    34%
DEST      161    L/E  12E  '13    '13 Music
PV        162    L/E  24E  '05    '05 Tabs in
```

A crossfade from cue 160 to 161 is started, the controls for fade-down and fade-up are at 21% and 34%; the chase effect (12E) has been started with the beginning of the crossfade.

The next cue 162, type L/E, is prepared in the **PV** preset, including its effect (24E). The entered cue text is "Tabs in".

Crossfade finished

```
XF        161              ↑↑     %       %
DEST      161    L/E  12E  '13    '03 Music
PV        162    L/E  24E  '05    '05 Tabs in
```

Cue 161 is active. Move the controls up for starting the next/following crossfade.

Desk display on Prisma

Crossfade prepared, not yet started

```
v 161         %    %
v 160
```

The crossfade from cue 160 to 161 is prepared, move the digital wheels down to crossfade.
Blank percentages indicate that the crossfade is not yet started.

Crossfade started

```
v 161     31%  18%
v 160    '05  '05
```

The crossfade from cue 160 to 161 is "running"; the controls for fade-down and fade-up are at 31% and 18%.
Fade-down and fade-up were started simultaneously 5secs ago.

Crossfade finished

```
^ 162        %     %
^ 161     '07    '08
```

The crossfading to cue 161 is completed. The next crossfade (to cue 162) is prepared. Times stopped for the crossfade are 7s for the fade-down and 8 s for fading-up.

Return Crossfade

Since the following crossfade is started automatically by moving the controls in the opposite direction, **RET** is used for returning a crossfade in this mode.

RET
  Initiate return crossfade

Crossfade window display:

```
XF       160    > 161   ↓↓   99%    99%?
DEST     161    L/E   12E   '13   '03 Music
PV       162    L/E   24E   '05   '05 Tabs in
```

The crossfade is reversed to a state of 99% on controls; to return the crossfade to its start, move the controls into the opposite direction.

Desk display on Prisma:

```
v 161     99%  99%
v 160     '03  '03
```

The stopwatch registers the times for the return crossfade too; key **RET** was used 3s ago.

Digital wheel up/down, on Prisma

To initiate a crossfade, press **GO.** The fading is done using the control wheels and started when moved (key lamp **GO** will then indicate the ongoing crossfade).

Crossfade window display

The following displays are shown for preset **XF**:

Crossfade prepared

```
XF2      160              ↑↑  100%   100%
DEST2    160    L/E            '13    '03
PV2      161    L/E   12E   '13    '13 Music
```

Cue 160, type L/E, is active (controls at 100%). Crossfade times are 13 s and 3 s. Move the controls up to crossfade.

Cue 161, type L/E, is ready to crossfade, a chase effect (12E) is programmed. A total of 13 s are recorded for fade-down and fade-up each. The related cue text is "Music".

Crossfade initiated with key GO

```
XF2      160    > 161   ↑↑    0%     0%?
DEST2    161    L/E  12E     '13    '13 Music
PV2      162    L/E  24E     '05    '05 Tabs in
```

The crossfade from cue 160 to 161 is loaded; control figures 0% indicate that **GO** was operated but the controls are not yet moved. The crossfade can now be done using the controls.

The next cue 162, type L/E, is prepared in the PV preset; an effect (24E) is also programmed. The cue text is "Curtain".

Crossfade finished

```
XF2      161            ↑↑  100%   100%
DEST2    161    L/E  12E     '13    '03 Music
PV2      162    L/E         '05    '05 Tabs in
```

Both crossfade wheels are at 100%, cue 161 is active.

Desk Displays on Prisma

Crossfade prepared:

```
^ 161          %     %
^ 160
```

The crossfade from cue 160 to 161 is prepared; move the controls up to crossfade.

The blank percentage fields indicate that the crossfade is not yet started.

Crossfade started:

```
^ 161       31%  18%
^ 160       '05   '05
```

The crossfade from cue 160 to 161 is ongoing. The control for the fade-down is at 31% and for fade-up 18%.

Fade-down and fade-up were started simultaneously 5secs ago.

Crossfade finished:

```
^ 162          %     %
^ 161       '07   '08
```

The crossfade to cue 161 is completed and crossfade to cue 162 is prepared. 7sec were stopped for fade-down and 8 s for fade-up.

Return Crossfade

A crossfade can be returned at any time by moving the control wheels to the opposite direction; key **RET** is not needed.

On the desk display, the stopwatch times continue running. If both controls are returned to 0%, the stopwatch times are cleared.

Crossfade Profile (on Prisma only)

Crossfades can be controlled manually or automated by time-control:

Automated   Cues are cross-faded; various delays and fade times can be set and repeated.

Manual   "Crossfades" can be more complex as the crossfade controls can be moved non-linear.

The profile crossfade combines both two methods, allowing reproduction of "manual" crossfades the same way as automated ones.

The fader movements of a manual crossfade are recorded together with the channel levels to a profile cue. If this PROF cue is loaded to the **PV** preset, the recorded fader movements are executed automatically when the profile crossfade is started.

Cues with a crossfade profile are marked "**PROF**", the displayed times correspond to the total execution time of the crossfade profile.

When a PROF cue is loaded to a group, its profile will be ignored (times entered correspond to the profiles' running times).

Note: The DIGI_STEP setting controls the sensitivity of the crossfade faders for starting a crossfade. If the next manual crossfade is started accidentally after the previous manual crossfade, the set value can be increased.

Profile crossfades are not possible on Focus/Iris.

Recording a profile

For each manual crossfade, a crossfade profile will be recorded automatically.

In the following example, a profile crossfade is prepared from sequence step 72 to 73. The cues are recorded with cue crossfade times; these times are ignored for the manual crossfade. The display of the crossfade system on the monitor and the console display indicate the status before starting the manual crossfade.

Monitor display:

```
XF1      10
 72             L/E           '05    '05
 73             L/E           '03    '03
```

Desk display (Prisma):

```
v  72    3.0  3.0
v  73
```

Cue 72 is active in preset **XF** and cue 73 is prepared in preset **PV**.

When switched to manual crossfade using key **MAN**, the crossfade direction and the digital wheel levels are displayed; the value fields for the wheels are empty, until the crossfade is started.

Monitor:

```
XF1      72              ↓↓      %       %
 72             L/E           '05    '05
 73             L/E           '03    '03
```

Desk display:

```
v  72          %      %
v  73
```

The current wheel levels and the stopwatch times are displayed during the manual crossfade.

Monitor:

```
XF1     72   >  73   ↓↓    61%     80%
 73             L/E        '03     '03
 74             L/E        '04     '04
```

Desk display:

```
v  72      61%    80%
v  73      '05    '05
```

In this example, the fade-out fader is at 61% and the fader for the fade-in at 80%. The stopwatch on the console display indicates a total running time of 5 seconds.

After the crossfade has been started, the next cue (74) is prepared in preset **PV**.

When both crossfade wheels are at 100%, the crossfade is completed and the recording of the profile is finished.

Notes:

The stopwatch times can be set as cue times with "**TAKE T**"

If a hold or delay time is set to the next step in the sequence list, the sequence should be switched off because the automatic follow-on will delete the recorded profile.

Recording a Profile

The crossfade profile recorded internally for a manual crossfade can be recorded together with a cue.

REC MAN
Records the cue of the **XF**-preset selected by key **MAN** together with the profile set

cueno REC MAN
Records the cue of the **XF**-preset selected by key **MAN** together with the profile set under the cue number entered

Before recording a cue, the **XF** preset with the corresponding **MAN** key must be currently selected; if not, the input is rejected as "**Bad input**".

The input will be rejected with message "**No Xfade profile recorded**" if the associated **XF** preset does not contain a profile. A crossfade profile is held in the **XF** preset if:

- A manual crossfade has been executed or
- a PROF cue is loaded

All other operations for recording of cues use the execution time used for the profile as cue time.

The crossfade profile is held in the preset until:

- The cue is overwritten (by loading another cue to the **XF** preset).
- A new profile is created by a manual crossfade.

PROF-Cues in QLIST and SQL

A cue with a recorded crossfade profile is indexed with label "P", followed by the cue type. The times displayed are the total profile execution times.

Editing of PROF cues

A recorded profile can not be modified; it needs to be re-recorded.

The times used cannot be changed; menus M422 (Re-record splitfade times), M421 (Fade time corrections) and M39 (Time lapse) have no effect on the profile times.

Channel levels recorded can be edited.

PROF cues in presets PV and BLD

Levels of PROF cues can be edited and re-recorded in presets **BLD** and **PV**:

 1   **REC ENTER** records the cue using its the number and cue type.

 2   With SMODE=2 as setting, **REC REC** records the content of the preset under the set number and cue type.

Executing a Crossfade Profile

If a cue with a crossfade profile ("**PROF**" cue type) is loaded to preset **PV**, it can be started with key **GO**. Internally, the system performs a manual crossfade using the fader movements originally recorded.

In the following example, cue 73 is recorded with a crossfade profile. The total execution time of the profile is 14 seconds:

Monitor:

```
XF1       72
  72              L/E             '05     '05
  73              PROF            '14     '14
```

Desk display (Prisma):

```
v   72
v   73     PROF '14
```

After the crossfade is started, the current fader levels and the time remaining is displayed:

Monitor:

```
XF1       72  >  73   ↓↓    40%     21% PROF '09.6
  73              PROF            '14     '14
  74              L/E             '04     '04
```

Desk display:

```
v   72       40%  21% ?
v   73       PROF 9.6*
```

The following is displayed:

- The fade-out fader is currently at 40%
- The fade-in fader is currently at 21%.
- The remaining time is 9.6 seconds. **'*'** indicates that the crossfade is running.

Key lamp MAN: The key lamp flashes during the crossfade, indicating that that a manual crossfade is currently running.

Crossfaders: When a crossfade profile is running, the wheels have no function; it is not possible to adjust the remaining time of the crossfade profile.

The next crossfade can be started at any time with key **GO;** the current status is the basis for the new crossfade.

Note: It is not possible to start ADD cues while a crossfade profile is running.

Stopping a Profile Crossfade

Key **STOP** stops a running profile crossfade; keys **GO/CONT/CUT** resume the crossfade profile.

A stopped crossfade profile is indicated by:

- Lit **STOP/GO** key lamp.
- The remaining time is marked **'s'.**

Cut Profile Crossfade

Key **CUT** cuts a cue with a profile to the **XF** preset; the profile is not used, but loaded to the **XF** preset.

Return Profile Crossfade

Key **RET** returns a running or finished crossfade profile to its start; key **GO** re-starts the crossfade.

Profile Crossfades in the Sequence List

Cue type **PROF** indicates a crossfade profile cue in the sequence list. During the crossfade, the current fader levels are displayed, replacing the remaining times:

```
        72  >  73           PL/E     40%       0%
   GO
   73           PROF                  '14       '14
   74         L/E
```

Crossfade profiles on linked systems

Crossfade profiles are only available on **Prisma** systems. Shows including PROF cues can be transferred to **Focus** or **Iris,** the cue type will be indicated on the lists but the crossfade is used excluding the profile by using the time displayed as cue time.

Adjustment

The Adjustment-function helps when focusing; if enabled, the involved channels are set to a preheat level and are brought to the maximum level set by the ADJ cue upon selection. When the channels are deselected, their level is set to 0%.

A (standard) cue is used for the function: all channels to be adjusted are set to the desired adjustment level, others at 0%. A cue recorded can be used or can be prepared in preset **PV**.

The following settings affect ADJ:

ABR_INT   Default preheat level
ABR_OFF_ZEIT   Fade-down time when deselected
ABR_ON_ZEIT   Fade-up time when selected

The mask is automatically closed upon activation of ADJ, key lamp **MAS** is lit. The previous mask state is restored when ADJ is deactivated.

The function can be started with menu M18, Adjustment or with dedicated keys **ADJ** on Prisma.

Starting Adjustment

The function is started using menu M18 (Adjustment), which sets the preset (**PV**) or cue to be used.

Content of preset **PV** will not be changed, the following actions are performed:

- Abort ongoing crossfade
- Select **XF** preset
- Set all involved channels to the default preheat level
- Clear current channel selection
- **LEVEL** display on main monitor

Operations on Prisma:

ENA and ADJ
TAKE ADJ
        Start adjustment using content of the PV preset

TAKE cueno ADJ
ENA and cueno ADJ
        Start adjustment using cue entered

Key lamp **ADJ** is lit, if adjustment is active.

Using Adjustment

The adjustment function initially uses channels which (at the start of the function) are involved in preset **PV** or in the specified cue. To control ADJ, preset **XF** must be active and list views **LEVEL, STAGE, OUT, COL** or **MOVL** activated on the main monitor.

When the function is started, the mask is automatically closed; on exiting, the mask function reverts to the original state. It can be opened any time during the adjustment, channels added to the mask are included to the adjustment function and are set to 100%.

The following operations select channels, which are faded automatically to the value set in the cue used for adjustment:

- Selection with **CHAN**, like "**15 CHAN**"
- Selection with **DCH**, like "**15 DCH**"
- Selection using channel groups, for example "**3 CH/G**"
- Selections on the optional channel board
- Selection of channels by mouse click in lists LEVEL, STAGE, OUT, COL or MOVL
- Selection on the channel monitor or Transtechnik Show-Designer/VISTA

Channels not involved in adjustment are selected; if a level is assigned they become involved in ADJ: upon deselection they are brought to 0%, when re-selected to the previous level.

Deselection sets the channels to 0% level:

- Deselect with key **CHAN**, eg "- 15 - 17 **CHAN**"
- Key **X**
- Deselection using channel groups, eg "- 3 **CH/G**"
- Deselection on the optional channel board
- Clicking channels by mouse in lists LEVEL, STAGE, OUT, COL or MOVL
- Deselection on the channel monitor or Transtechnik Show-Designer/VISTA

Fade up-/down times are indicated in the crossfade system windows and can be modified by time entries.

External input devices (like remote controls) can be used for ADJ; please note that only channels selected by a input device can be deselected using the input device.

Displays

Crossfade window

During active adjustment, "ADJ" is displayed in the crossfade window of the **XF** preset; followed by fade-down and fade-up time used:

```
XF                      ADJ   2.0    2.0
DEST      ↔21    L/E           '05    '05
PV         21    L/E           '05    '05
```

All other times relate to the cues held in the presets.

Desk displays (Prisma)
If ADJ is activated, "**ADJ**" and the times used are displayed:

```
^ ADJ     2.0  2.0
^
```

Ending Adjustment

Menu M18 (Adjustment) disables the function when selecting "off" in the entry field for the adjustment cue and leaving the menu with "OK".

Operations on Prisma:

CANCL ADJ
    End adjustment

ENA ADJ
    End adjustment (if active)

The preset content of involved presets is not changed when ending ADJ; key lamps **GO** and **STOP** indicate a stopped crossfade.

Key **GO** crossfades into the adj cue used.

Menu M18, Adjustment

Menu M18 (Adjustment) controls the function:

Entry fields:

Crossfade system	Prisma only: Xfade system 1 or 2
Adjustment cue	Cue to be used for adjustment
Preview:	Cue (content) of preset **PV**
Memory:	enter a recorded cues number

Off: turns off adjustment, when menu is ended with **ENTER**

Cue	Cue number (for Memory selected)

M235 Adjustment Level

Menu M235 (Adj level) defines the preheat level used for adjusting.

Introduction Control and Dimmer Channels

The systems DMX-output is controlled using the following channels:

Control Channels   control one or more Dimmer Channels and act as operating/spot channel number.

Dimmer Channels   refer to the actual loads connected to dimmers. Dimmers require the control value which modify their output; more complex fixtures can require multiple control attributes, like color scrollers, motor yokes etc.

The DMX-output is influenced by factors like limits, preheats, dimmer curves and controls like the various masters.

The systems output is the standard protocol DMX512/1990 and depends on the assignment / DMX patch.

Dimmer Channel Configuration

Menu M204 (Dimmer list) allows to configure the dimmer channels used.

Deleting a dimmer channels marks the assigned/patched control channel as "free" if the control channel does not control further dimmer channels (indicated with index "**f**" in level and time list views). Assigned special attributes will be cleared, the dimmer channel number will be blanked in the patch list.

Dimmer channels need to be patched before being able to output information, refer to Menu DMX Patch, M206.

New dimmer channels will be patched 1:1 if a control channel with the same channel number is available/"free"; otherwise the dimmer channel needs to be patched manually to a control channel.

The Dimmer Channel Configuration can be saved as

- Default Setting
- Setup by name,
- under Current Show,
- as part of the Current Show by name

Note: Menu M204 configures the dimmer channels used by the system. Each attribute of Movinglights acts as additional dimmer channel; the maximum amount of dimmer channels and fixture attributes is 4096 for NT-consoles, 16384 for NTX and Booster). If trying to configure more dimmer channels or attributes, the message "Channel list full" will be displayed and the configuration is aborted.

Control Channel Configuration

Menu M205 (Channel List) allows to modify the available control channels.

When deleting an control channel, all assigned dimmer channels will be unpatched and the control channel will disappear from the channel mask. List views displaying dimmer channel numbers indicate unpatched dimmer channels with the index "**f**".

Added channel numbers will be patched 1:1 to a dimmer channel with the corresponding number (if available and not patched to another control channel).

The Control Channel Configuration can be saved as

- Default Setting
- Setup by name,
- under Current Show,
- as part of the Current Show by name

Control – Dimmer Channel Patch

Each *control* channel can control one or more dimmer channels, but a dimmer channel can only be controlled by one control channel. As default, each dimmer channel is controlled by an control channel with the same number, this is called 1:1 patch.

Unpatched dimmer channels will not be automatically re-patched to an control channel; these dimmer channels are marked as "free" and indexed with an "**f**" in channel masks.

Assignment of control- to dimmer channels can be changed any time, changes affect the actual patch.

Patch Display

The patch can be displayed on main or second monitor:

PATCH
> Display list **PATCH** at the main monitor

MON2 and PATCH
> Display the **PATCH** on the second monitor

The PATCH-list shows the control channel numbers followed by patched dimmer channels; control channels which are part of the current mask will be highlighted.

The cursor-keys allow to select a channel which will be modified by patch commands.

Key **PRN** prints the list displayed on the main monitor in full length, including channels which are not part of the default 1:1 patch.

Creating a 1:1 Patch

The default patch can be assigned to all or to a range of control channels configured.

ENA and CANCL PATCH
> Default 1:1 patch for all channels
> All dimmer channels will be patched to control channels with the same name.

ENA and CANCL chrange PATCH
> Default patch for the selected channel range

Option "1:1 patch" in Menu M803 (Dimmer Channel Patch) allows to reset the patch to a default 1:1 patch.

If list view **PATCH** is selected, key **DEL** resets the selected control channels to its default 1:1 patch.

Changing the Patch

Patching can be done without using the list view by the following commands:

TAKE chno - dchno PATCH
>   Patch Dimmer channel to control channel,
>   all dimmer channels previously patched to the control channel will be unpatched

Example: "**TAKE 12 - 14 PATCH**" patches dimmer channel 14 to control channel 12, dimmer channels previously patched to channel 12 will be unpatched.

TAKE chno + dchno PATCH
>   Add dimmer channel to control channel

Example: "**TAKE 12 + 14 PATCH**" patches channel 14 to control channel 12; if dimmer channel 12 was patched 1:1 to control channel 12,the control channel will now control dimmer channels 12 and 14.

TAKE chno - ALL PATCH
>   Unpatches all channels, including 1:1 patched channels.

Active list view **PATCH** on the main monitor allows the following operations:

chno CHAN
>   Select a control channel for patching

The control channel will be highlighted by the cursor line (which can be moved up/down with the cursor-keys).

The following operations relate to the selected control channel:

dchrange DCH
>   exclusive-patch of a dimmer channel

All previously patched dimmer channels will be unpatched from the control channel, the selected dimmer channels will be unpatched from other control channels.

+ dchrange DCH
>   Patch additional dimmer channels

Previously patched dimmer channels remain unaffected, selected channels will be added to the control channel.

- dchrange DCH
>   Unpatch dimmer channel

Selected dimmer channels will unpatched from the control channel.

- ALL DCH
>   Unpatch all dimmer channels

All dimmer channels will be unpatched from the control channel, incl. the 1:1 dimmer channel.

DEL
>   1:1 patch

Dimmer channels can be selected with an optional channel keyboard (depending on the S/CH mode channels will then be added or exclusively patched).

Saving the Patch

Menu M803 (Dimmer channel patch) allows to save and load various patch files. Key **MENU** within list **PATCH** (on main monitor) starts the menu:

The patch can be saved as:
- Default setting
- Setup by name,
- Show,
- Current show by name.

The following options will be displayed:

Load	Load a patch
Save	Save the patch
Remove	Deletes a patch-file
1:1 patch	Assigns the default 1:1 patch to all channels
Print	Prints the patch (or saves to file).

Note: Unsaved changes are lost when after "erasing all memory" or loading a show

Replacement Channels

Dimmer channels which are vital for a show can be replaced temporarily by one or more other dimmer channels. The replacement can already be prepared during rehearsals; if a dimmer channel fails during the show, its replacement can be activated. Once the failed dimmer channel is back working again, the replacement can be undone.

Replacements are changes to the control channel/dimmer channel patch. Upon activation of an replacement, dimmer channels patched to an control channel are unpatched and replaced by the dimmer channels defined as replacement. Once the replacement is cleared, the original patch is restored.

Possible Replacements:
Preparations/Replacements: max. 64
Number of dimmer channels per replacement: max. 15

64 replacements can be prepared, up to 15 replacing dimmer channels can be entered for each replacement.

If the option "Dimmer Feedback" is installed, default setting SKU_MODE=5 will automatically activate prepared replacement(s) on failure of an dimmer channel.

Display

The Replacement Channel list can be displayed on the main or second monitor:

REPL
> Display replacement channel list
> All prepared and activated replacements are shown in the replacement channel list. The cursor line marks the entry selected for editing.

Highlighted replacement channels are activated. '+' indicates that the dimmer channel with the same number is involved in activation of the replacement (1:1 patch).

Preparing Replacements

Please activate the replacement channel list on the first monitor for the following operations:

channel INS
>   Selects a channel for editing

If the channel is not yet part of the list, it will be added and the current control channel/dimmer channel patch is shown.

A channel is marked by the cursor line in the list display on the monitor.

channel CHAN
>   Select channel for replacement editing
>   If the channel is part of the replacement channel list, it is marked by the cursor line, otherwise "No replacement prepared" will be displayed.

The following operations prepare the dimmer channels intended for replacement:

dimmer DCH
>   enter dimmer channel "exclusively"
>   The S/CH function determines if existing dimmer channels are deleted or if the dimmer channel is additionally entered.

+ dimmer DCH
>   Add a dimmer channel
>   The dimmer channel numbers already entered are kept.

- dimmer DCH
>   Remove dimmer channel
>   If the dimmer channel number is part of the replacement list, it will be removed.

Dimmer channel keys
>   Enter/delete dimmer channel number

You can also use the optional dimmer channel keypad to produce the replacement channel list.

Activating the Replacements

Replacements can be activated immediately without having to switch to list **REPL**:

chrange TAKE REPL
chrange REPL
>   Activates the replacement for selected channels
>   If no replacements are prepared, **"No replacement prepared"** will be displayed.

TAKE ALL REPL
>   Activate all prepared replacements

For the following operations list REPL needs to be active, operations refer to the replacement channel selected:

TAKE REPL
INS
>   Activates the replacement

Deleting Replacements

To deactivate an replacement, use the replacement channel list. If no replacement channel number is entered, the entries apply to the selected replacement channel.

' REPL
CANCL REPL
> Deactivate replacement
> If the replacement marked is active, it will be deactivated. The preparation is kept and can be re-activated again.

chanrange ' REPL
chanrange CANCL REPL
> Deactivate replacements for the channel range

CANCL ALL REPL
> Deactivate all replacements

DEL
> Deactivate/remove replacement

If the marked replacement channel is activated, it will be deactivated. If the replacement channel is not active or already deactivated, it will be removed from the replacement channel list.

channel DEL
> Deactivate/remove stated replacement channel

Save Replacement Channel Configuration

Menu M801 (Channel Replacement) allows to save and restore replacement preparations, which can be saved as
- Default setting
- Setup by name,
- Show,
- Current show by name.

Within list **REPL** on the main monitor, key **MENU** starts the above selection.

Dimmer Channel Control

The characteristics of dimmer channels can be modified with various options which are not influenced by the channel controlling the dimmer.

Menu M90 (Dimmer Channels) displays a choice of functions:

> Dimmer characteristics M92
> Independent dimmer levels M93
> Patch list M94

Dimmer Characteristics

Menu M92 (Dimmer Characteristics) allows to assign various attributes to each dimmer channel. The list shows all dimmer channels which have special attributes, the first entry in the list will be selected.

The bottom line gives the following options:

ESC	Close list view
MENU	Menu for file management
ENTER	Edit selected dimmer channel
INS	Insert new entries or edit multiple entries

DEL	Remove all attributes from the selected dimmer channel (the dimmer channel will the disappear from the list).
COPY	Copy the selected channels attributes onto the clipboard
PASTE	Paste the clipboard content onto the selected channel
PRN	Print the list
L	Load a dimmer characteristics-file
S	Save the current dimmer-characteristics

Attributes do not apply to dimmer channels with indepent levels set. Dimmer channels without attributes assigned are controlled referring to the control channels level and are modified by their dimmer curve.

The following options are available:

Switch:

The switch point is the level at which the dimmer channel switches from its preheat/set level to maximum output (overriding the dimmer curve assigned).

Default setting is 0%, no switching.

If activated, values for attenuation and the patch factor will not be displayed.

Channels with a switching point assigned will be displayed with "off" or "on" at list **OUT** ."**On**" symbolises that the level is above the switching point and the output level is maximum / 100% (or the limited output value).

Atten:

The attenuation defines a value by which the control channels levels will be reduced.

Default setting is 0%, no attenuation.

Patch:

The Patch level multiplies the control channels value (after attenuation) with a defined factor.

The patch level range is between 0.05 und 10.0, default value is 1.0.

Preheat:

The preheat level defines a minimum value which will send to the dimmers after activating the system in order to "preheat" channels.

Default setting LIWEHEIZ defines a standard preheat value for all channels, all channels which differ from this value are listed with their values and vice versa.

Notes:
1   Preheating needs to enabled with default setting HEIZMODE=2, otherwise it is only possible to preheat channels within effects.
2   The preheat output is only sent to dimmer channels patched to control channels being part of the actual channel mask.
3   Function **0%** overrides a preheat value set.

Limit:

Output limit allows to define an maximum output level, the limit will not be bypassed by key **100%**.

Default setting is 100%, no limit.

Independent Dimmer Levels

Menu M93 (Independent dimmer levels) sets a fixed output value for a dimmer channel, which will not be modified by attributes, faders etc.

Entries listed can be modified with the digital wheel or keys **FULL** and **CL.**

Options of the bottom line:

ESC	Ends the menu
MENU	Menu for file management
ENTER	enters intensity values in percent
INS	inserts dimmer channels and sets intensities, which will be displayed
DEL	allows to remove channels which then will respond "normal" and are removed from the list.
PRN	Prints the list
L	Load a file
S	Saves the current independent dimmer level-configuration to a file

Additional to M93, independent dimmer levels can be set with key **OUT.**

TAKE dchannelrange DCH int OUT
> Sets a independent level (int) for the selected channels

CANCL dchannelrange OUT
> Removes the independent level

Patch List

Menu M94 (Patch list) combines the patch with dimmer characteristics: the dimmer channel, its control channel and the patch factor assigned will be displayed and can be edited within this list:

Digital wheel	modifies the patch factor
Key **CL**	sets the patch factor to 1.00
Key **ENTER**	opens a form for editing values

Dimmer channels with a switching point assigned don't display a patch factor.

Starting the display selects the first entry in the list. Selecting is done with cursor keys or the mouse. The digital wheel sets the patch factor for the selected entry, key **CL** resets the patch factor to 1.0.

Note: The patch factor is part of the dimmer characteristics and is saved/restored by M92 (Dimmer Characteristics).

Options:

ESC	Ends the menu
MENU	gives the following options:

> Unused dimmer channels
> > Free dimmer channels (not patched to a control channel)
>
> Unused control channels
> > Free control channels (not controlling a dimmer channel)
>
> Dimmer channel patch
> > starts the menu for file management (save, load, etc)

Dimmer characteristics
> Menu M94 allows direct editing of the patch factor, the dimmer characteristics menu gives further options and will be started. This menu also allows the saving and loading of all attributes.

1:1 patch
> The 1:1 patch (control channel number to dimmer channel number) can be created for all dimmer channels.

Reset patch value
> The patch factors of all dimmer channels will be reset to default 1.0.

Print
> Prints the patch list.

ENTER opens a form for editing the selected dimmer channels' control channel and patch factor:

Control Channel
> Key **CL** removes the control channel, the dimmer channel will appear "free".

Patch level
> can be edited by entering values or with the digital wheel, key **CL** resets the level to 1.00.

PRN Prints the list

Dimmer Curves

It is possible to assign an individual dimmer curve to each dimmer channel which will define the consoles output behaviour for the dimmer channel. Dimmer curve 1 is a "linear curve" which can not be edited, all other curves can be edited.

M92 (Dimmer Characteristics) gives further options to control the systems output for each channel.

Assigning Dimmer Curves

You can assign a dimmer curves to each dimmer channel. If multiple dimmer channels are patched to a control channel, each dimmer channel responds according to its attributes and curve assigned.

NTX, Booster and Offline Editor can have up to 99, NT consoles up to 16 dimmer curves.

TAKE dcurve DCURV
> Assigns the dimmer curve to selected dimmer channel(s)

chrange TAKE dcurve DCURV
> assigns a dimmer curve to a channel range

TAKE dchannelno - dchannelno DCURV
dchannelno - dcurve DCURV
> Assigns dcurve to dimmerchannel dchannelno

Load/Save Dimmer Curve Assignment

With menu M806, Dimmer Curve Assignment, the dimmer curve assignment can be saved as a file.
When list **DCA** is selected on the main monitor, key **MENU** opens an menu and the assignment can be saved
- as default setting,
- Setup under name,
- Show,
- in the show under a name.

The menu gives the following options:

Load	loads a dimmer curve assignment
Reload	Dimmers which were not assigned to dimmer curve 1 at the time of saving will get new curves assigned.
Save	Save current dimmer curve assignment
Remove	Delete saved dimmer curve assignment file
Reset	Assign all channels to dimmer curve 1
Print	Print assignment or save as a file

Displaying Dimmer Curves

Dimmer curves are displayed in block graphics, the output calculated is done "smoothly" by the systems computing accuracy.

Dimmer curves can be displayed on the first and the second monitor. The following operations refer to the second monitor with the MON2 key prefixed.

DCURV
>	Display curve

digit DCURV
>	Display stated curve

PG↑
>	Display next curve

PG↓
>	Display previous curve

Dimmer Curve Names

Menu M171 (Dimmer curve name) gives the possibility to name dimmer curves, the names will be displayed at the top left corner of the curve display.

Options:

ESC	ends the menu
ENTER	enters a name for the curve selected:

>	Name
>>		the curves name

>	Interpolation
>>		when interpolating, the range between two points of the curve will be calculated continuously. If turned off, the output value will stay constant between two points and jumps to the new value set by the next point.

PRN	prints the name list

Modifying Dimmer Curves

Dimmer curves can be user-defined, except the linear curve 1.

The following dimmer curves are pre-assigned:

Curve 1:	linear
Curve 2:	under-linear
Curve 3:	over-linear
Curve 4:	switching curve

All other dimmer curves are preset as linear curves.

Dimmer curves can be edited on the main monitor within view DCURV. The input values are shown horizontally and the output values vertically. On the right next to the graphical display is a table showing the output levels ("OUT" column) for the levels calculated by the system ("IN" column). The input values are indicated in 5% increments (the "points").

A highlighted marker on the dimmer curve indicates the cursor position where markings or changes can be made. To edit, points are marked on the horizontal axis and the output level is edited with the digital fader while holding key CORR. The system calculates the progress of the curve between the marked points and the current cursor position.

HOME
> to 100% point

END
> to 0% point

↑
→
> move right to the next point

↓
←
> go to next point left

INS
> insert a point

Curve 1 cannot be edited. Curve 4, the switching curve, is only altered at the current point, there is no interpolation between marked points.

DEL
> Delete point marker

CORR and digi
> Mark current point, change level

Loading and Saving of Dimmer Curves

It is possible to save and load dimmer curves with Menu M802 (Dimmer curves). Key MENU within list view DCURV on the main monitor starts the options menu. The option "Dimmer curve name" will start menu M171.

DMX-Output

The system gives the choice of DMX via the following outputs:
- The DMX-connectors on the rear of the console (Prisma 8, Focus 4, Iris 2 connectors)
- Ethernet/LAN

Depending on the connected fixtures or Ethernet-to-DMX converters you can configure three protocols with M280, DMX over Ethernet:
- Ethernet, AVAB/UDP Protocol
- Ethernet, AVAB/IPX Protocol
- Ethernet ETCNet2/EDMX Protocol, for NTX and Booster

The protocols can be en- or disabled with M299 and are saved in default setting DMXPROT_ENABLE

DMX Patch

The systems output is patched to DMX-lines/universes; 8 on NT-consoles, 64 universes on NTX and Booster-systems. Up to 512 Movinglight attributes or dimmer channels can be assigned to each line/universe.

The patch assigns a dimmer channel or Movinglight attribute to an DMX-address, Movinglights are automatically patched by setting the DMX start address (the address range can not be assigned to various different universes); dimmer channels can of course be patched onto various universes.

The connectors on the back of the console give direct DMX output, labelled according to their DMX line/universe.

Patching is done with Menu M206 (DMX patch), the menus header shows the DMX-line number and the output protocol used (local, UDP, EDMX, IPX, Artnet, sACN). Disabled protocols/output (on M299) will be indicated by []. Furthermore, the length of the address range will be displayed and can be configured with key MENU, option "Change minimal length". If parts of the DMX output (like LTP-attributes) are disabled using menu M209, DMX output control, or the LTPBO-key, a note will be displayed in the header of the patch sheet.

You can use the mouse or cursor keys to move to an DMX-address displaying the assigned dimmer channel or number of the ML/COL-fixture.

Options:

ESC ends the menu

MENU gives the following options:

Select DMX line:
chooses a DMX line/universe

Change minimal length:
the length of a DMX-line can be 512 Bytes (addresses) or less.

Linear patch:
patches a DMX address range linear to a dimmer channel range.

Copy DMX line:
allows to copy the patch from one line to another

Find assigned dimmer channels:
searches for a dimmer channel on all DMX universes and displays the results in a listing, showing the line and DMX-address of the dimmer channel.

Find unused dimmer channels:
searches for unused/available dimmer channels on all lines.

DMX over Ethernet:
starts Menu M280, DMX over Ethernet, which configures various protocols for sending DMX over Ethernet.

ML configuration
: Before configuring and patching Movinglights in the Movinglight configuration (M 651) you should check that the address range to be used is free; if not a warning will be displayed, giving the option to overwrite the range.

Print DMX line
: prints the currently displayed DMX line

DMX Output control
: DMX output (Menu M209) can be turned off for LTP-attributes and/or dimmer channels.

Protection
: protects DMX-lines from being overwritten, e.g. when loading a show

Load
: loads saved patch files

Save
: allows to save a complete patch as default setting or setup with name.

Remove
: deletes a patch file

Reset
: resets the patch to the default patch

Print
: prints all DMX lines/universes

ENTER changes the dimmer channel assigned to the selected address

| **Dimmer channel:** | number of the dimmer channel to be patched |
| **MSB/LSB:** | high- (MSB) or low/secondary (LSB) Byte. |

If the selected entry belongs to a Movinglight, the ML configuration will be started.

INS inserts dimmer channels from the current DMX address; the length of the DMX line remains unchanged.

Key **MENU** starts M81 (Channel names), a name can be selected with key **ENTER**

DEL deletes the selected DMX-address' entry, the length of the DMX line remains unaffected.

COPY copies the dimmer channel assigned into the clipboard

CUT cuts (and deletes) the dimmer channel assigned into the clipboard

PASTE pastes a dimmer channel number from the clipboard to the selected address

PRN prints the patch

<<< previous page

>>> next page

LOAD loads a patch file

SAVE saves the current patch to a file

The patch can be saved as
- Default setting,
- Setup under Name,
- Current show,
- Current show by name.
- onto Floppy Disk (FL),
- USB-memory stick (for NTX and Booster) and
- on NFS-Server

Protecting DMX-Lines

Menu M238 (Protect DMX patch) allows to write-protect selected DMX lines. Protected lines remain unchanged when loading other shows or configurations; this allows to "add" lines from other configurations to the current patch. Protected lines are marked with "Yes".

DMX Output Control

Menu M209 allows to disable parts or the complete DMX output. This is important for linked (AUX) systems which outputs are merged.

Dimmers + ML	Output of dimmer channels and ML-LTP-attributes
offline	no DMX output (no value)
Dimmers only	output of only HTP attributes; LTP attributes with 0%

Key LTPBO on **Prisma** and **Focus** allows to "black out" the LTP attributes, the key lamp indicates the state of menu M209:

off	**Dimmers + ML**
flashing	**offline**
lit	**Dimmers only**

Furthermore, the header line of the monitors will change its color and "offline" or "LTPBO" will be displayed.

This menu allows to configure the behaviour of linked systems (AUX) as LTP-attributes are not influenced by the systems master faders. After "erase all memory" the DMX output is set to **Dimmers + ML**.

DMXoutput over Ethernet

Additional to the DMX output connectors on the consoles backwall it is possible to send DMX over Ethernet. Four protocols are available which can be used in parallel. Basis for DMX-over-Ethernet is the patch done in menu M206, DMX patch.

Menu M280, DMX over Ethernet, displays available protocols and jumps to the configuration menus:
- AVAB/UDP dimmer protocol, menu M291
- ETCNet2 EDMX protocol, menu M292 (NTX/Booster only)
- Art-Net dimmer protocol, menu M293
- sACN dimmer protocol, menu M294
- AVAB/IPX dimmer protocol, menu M290
- Enable DMX protocols, menu M299

Menus show current configuration on start up. They are the tools to configure the output as needed. Bottom line shows available options:

ESC	close menu display
MENU	Load saved configuration file
	Save current configuration
	Print current configuration
	Remove saved configuration file
	Enable DMX protocols, menu M299
	Reset, clear current configuration
ENTER	edit selected entry line
INS	insert new entry
DEL	delete selected entry line
PRN	print current configuration
Load	load saved configuration file
Save	save current configuration

DMX output over ethernet can be locked/unlocked for each used protocol without changing configuration. The header of the configuration menus show current state.

Header of menu M206, DMX patch, displays assigned protocols for each DMX line. Locked protocols are displayed within square brackets.

AVAB/IPX Dimmer Protocol, Menu M290

A total of 12 ports is available. Each port can be used to transmit one DMX line. "off" indicates unused.

AVAB/UDP Dimmer Protocol, Menu M291

Up to 32 universes on NT-consoles, up to 64 on NTX and Booster can be transmitted to transtechnik devices FDX2000 and Egates. Each universe is assigned one DMX line, configured in menu M206, DMX patch.

Starting with version 5.9 universes can be assigned a priority. Receivers only evaluate highest priority. Equal priority from more than one sender are merged. Low priority is ignored. Data received without priority is treated like highest priority.

Receivers have to be upgraded: FDX2000 to 1.19.x, Egates to 1.9.x. Older software versions ignore priorities.

DMX	assigned DMX line from menu M206, DMX patch
Universe	1 .. 32
Logical net	0 .. 9
Prority	1 (low) .. 200 (high)

ETCNet2 EDMX Dimmer Protocol, Menu M292

NTX-consoles and Booster-systems can transmit DMX using the ETCNet2 protocol. DMX lines are mapped to an address space of 32768 for the ETCNet2 EDMX protocol.

DMX	assigned DMX line from menu M206, DMX patch
Length	number of values to transmit
DMX range	address range within assigned DMX line
EDMX range	address range within EDMX protocol space

Artnet Protokoll, Menu M293

Each Artnet universe can transmit one DMX line from menu M206, DMX patch.

DMX	assigned DMX line from menu M206, DMX patch
Universe	0 .. 15
Logical net	0 .. 15

Subnet address can be defined by softkey „Config" or MENU – Art-Net configuration.

Options

local	local broadcast address, factory
255.255.255.255	„Limited Broadcast" address
2.255.255.255	broadcast class-A subnet 2.x.x.x according to Art-Net spec. 1.4
10.255.255.255	broadcast class-A subnet 10.x.x.x according to Art-Net spec. 1.4

Additionlly "Art-Net Poll Replay" is implemented. The consoles are visible in diagnostic tools for Art-Net.

ACN Streaming DMX, sACN, Menu M294

Each sACN universe can transmit one DMX line from menu M206, DMX patch.

DMX   assigned DMX line from menu M206, DMX patch
Universe   universe number used
Priorität   assigned priority
Name   is displayed by the configuration software of ETC

Enabling DMX Protocol, Menu M293

DMX output over ethernet can be locked/unlocked for each used protocol without changing configuration.

Current state is displayed in the header of the configuration menus and in the header of menu M206, DMX patch.

Current state is stored in property DMXPROT_ENABLE.

DMX over Ethernet Timing, Menu M236

If DMX values sent don't change, the refresh rate can be reduced with menu M236. Possible settings are 1, 2, 4 (default), 8, 16 and 32x/sec, the setting is stored in ETHDMXLOW_RATE.

If values are changed output is always send with the highest speed.

Introduction to Menu Control

Besides using keys and levers/faders, the system also offers operation by its menu-controlled user surface, which has those advantages:

- Helps carrying out complex operations
- Keys can be omitted for operations that seldom occur. This means that the remaining keys can be arranged more clearly.
- The mouse is used for controlling menus which simplifies and speeds up operation considerably.

Menus (which differ on size, depending on their functions) are displayed as windows in the list area of the first monitor. You can open several windows at a time, the window on top is the current menu used.

Using the Menu Control

Menus might restrict the systems normal operation, because keys and digital faders may be required for controlling the menus.

Keys for Menu Control

Some keys on the master keyboard are mainly used for menu control:

↑	Cursor/display up
↓	Cursor/display down
←	Cursor/display left
→	Cursor/display right
PG↑	Scroll up one page
PG↓	Scroll down one page
HOME	Cursor/display to first position
END	Cursor/display to last position
INS	Insert
UNDO	Manual, return to start
DEL	Delete
COPY	Copy selected value
CUT	Copy and delete selected value
PASTE	Copy value back
ESC	Close menu display
MENU	Start menu display
ENTER	Terminate, edit entry

The following keys are also used:

PRINT	Print menu display
FULL	Set number to maximum
CLEAR	Set number to minimum
-	Enter ranges: go to next field

The following keys have special functions assigned within menu control:

HOME	Select first entry field
END	Select last entry field (usually option OK)
↑, ↓	Select next field up, down
→, ←	Toggle select fields
INS	Switch entry mode (in text fields)
	Refer to M5 (notebook]
DEL	Delete character marked by cursor
ESC	Close menu display
MENU	Show available options for the select field
ENTER	Go to OK, terminate field
CLEAR	Delete entry field, toggle in select fields
FULL	Maximum value in entry field

External PC Keyboard

Some of the menu control keys are available on the external keyboard. A number of frequently used menus can be started direct with the function keys of the external keyboard. In addition, keys for menu control are mapped to the function keys. The following table shows the assignment:

F1	**?**, Online help
F2	M5, Notebook
F3	M8, History
F4	M11, Text
F5	M28, Show label
F6	**COPY**
F7	**CUT**
F8	**PASTE**
F9	**UNDO**
F10	**MENU**
Shift F1	**LIST** selection main monitor
Shift F2	**MON2** and **LIST**, list selection 2nd monitor
Shift F3	M4, Menu selection
Shift F4	M17, Cue Text
Shift F5	M201, Realtime clock
Shift F6	M41, Recorded show list
Shift F7	M21, Load show
Shift F8	M22, Save show
Shift F10	M1, Main menu
Alt F1	M213, Motor delay (hard disk/floppy)
Alt F2	M214, Cursor
Alt F3	M202, Colors

The key combination CTRL-ALT-F1 sets the keyboard to US and CTRL-ALT-F2 to German keyboard layout.

Mouse Control

The mouse cursor appears in the list area of the first monitor when starting the menu control. It can be moved freely by the mouse within the list area and can be moved across monitors (if set).

Mouse keys:

Left Key	Start Menu control, likewise key **MENU**
	Scroll display
	Click/select field highlighted by cursor
	Fields displaying a selection with key **MENU** can be started with a mouse click, too.
Right key	Closes the menu displayed, as **ESC**
Middle key	Not used

You can scroll using the mouse within menus with displaying ranges. As long as the left mouse key is pressed, the display window follows the vertical mouse movements (if the cursor is positioned on its scroll bar).

The section in the display window is scrolled line by line when the arrows of the range display are clicked with the left mouse key.

You can define the mouse operations in the properties. Refer to the settings MOUSE_MOVE, MOUSE_PRESENT and MOUSE_SCALE in chapter "Properties".

Menu Types

Menus depend on the function chosen and are displayed when started by menu control or menu number.

Their display consists of the following fields:

Display field	Displays data, no entry possible
Entry field	Field for entries
Select field	Selection field for selecting displayed options
Switch field	Initiate or abort function Examples: "OK", "Escape"

Fields are selected with the mouse or the keys.

Main Menu

The main menu is the start of the menu control and is identified by the menu bar at the top edge of the list area. When individual menu items are selected, selection menus appear, offering further menus.

Submenus started from the main menu will not return to the main menu when closed.

Selection Menu

Selection menus offer a choice of menus with related functions. If a selection menu is started by entering its the menu number, the submenus started will return back to the selection menu when closed.

```
+-------------------------------+
¦ M804   Channel Groups         ¦
+-------------------------------+
¦ ¦ Toggle display mode         ¦
¦ ¦ Channel group names         ¦
¦ ¦ Delete channel groups       ¦
¦ ¦ Load                        ¦
¦ ¦ Merge                       ¦
¦ ¦ Save                        ¦
¦ ¦ Remove                      ¦
¦ ¦ Print                       ¦
+-------------------------------+
```

Above, menu "Channel groups" is displayed. Upon starting this menu, its first entry will be selected; this selection can be changed by cursor keys or mouse. **ENTER** or left mouse key selects (start the submenu).

Forms

Forms are used for entering data like text and numbers or selecting options.

```
+------------------- M22  Save show ------------------------------+
¦                                                                 ¦
¦  Number:              23                                        ¦
¦  Show label:                                                    ¦
¦  40 cues for Elvis                                              ¦
¦                                                                 ¦
¦  Drive:               NFS                                       ¦
¦                                                                 ¦
¦   ESC                                                  OK       ¦
¦                                                                 ¦
+-----------------------------------------------------------------+
```

At the bottom line of this form, the allowed range of values (for example show numbers), available options or a general information regarding the input will be displayed depending on the input field active.

Entry fields can be selected with the cursor keys or mouse. Text entries are made using the external keyboard, for number-only values the numeric keys on the master keyboard can be used.

Key **MENU** displays possible options for entry fields, which can be selected by cursor keys or mouse, followed by **ENTER** or a mouse click.

Fields marked "**%**" can be modified with the digital wheel or movements keys.

Key **ENTER** ends the input to a field which will then be checked. If a field contains incorrect values, the input is rejected, a beep will sound and the field is selected again for correction. If all entries are correct, the OK-button will be selected. By pressing **ENTER** again, the inputs are taken or the menus operation is carried out**.**

If "**ESC**" is selected and activated by mouse click or **ENTER**, the menu will be closed and inputs or changes are discarded.

List Displays

The list displays of the menu control vary from normal lists in form and color. They consist of title line, the actual list and a footer, giving various options.

```
+------------------------------------------------------------------------------+
¦ M206  DMX patch                   DMX1 UDP              Length: 512           ¦
+------------------------------------------------------------------------------¦
¦ ¦                                                                            ¦
¦¦¦     1:         ¦ 17:  17   ¦ 33:  33   ¦ 49:  49   ¦ 65:  65               ¦
¦¦¦     2:         ¦ 18:  18   ¦ 34:  34   ¦ 50:  50   ¦ 66:  66               ¦
¦¦¦     3:         ¦ 19:  19   ¦ 35:  35   ¦ 51:  51   ¦ 67:  67               ¦
¦¦¦     4:         ¦ 20:  20   ¦ 36:  36   ¦ 52:  52   ¦ 68:  68               ¦
¦¦¦     5:         ¦ 21:  21   ¦ 37:  37   ¦ 53:  53   ¦ 69:  69               ¦
¦¦¦     6:         ¦ 22:  22   ¦ 38:  38   ¦ 54:  54   ¦ 70:  70               ¦
¦¦¦     7:         ¦ 23:  23   ¦ 39:  39   ¦ 55:  55   ¦ 71:  71               ¦
¦¦¦     8:         ¦ 24:  24   ¦ 40:  40   ¦ 56:  56   ¦ 72:  72               ¦
¦¦¦     9:         ¦ 25:  25   ¦ 41:  41   ¦ 57:  57   ¦ 73:  73               ¦
¦¦¦    10:         ¦ 26:  26   ¦ 42:  42   ¦ 58:  58   ¦ 74:  74               ¦
¦¦¦    11:         ¦ 27:  27   ¦ 43:  43   ¦ 59:  59   ¦ 75:  75               ¦
¦¦¦    12:         ¦ 28:  28   ¦ 44:  44   ¦ 60:  60   ¦ 76:  76               ¦
¦¦¦    13:         ¦ 29:  29   ¦ 45:  45   ¦ 61:  61   ¦ 77:  77               ¦
¦¦¦    14:  14     ¦ 30:  30   ¦ 46:  46   ¦ 62:  62   ¦ 78:  78               ¦
¦¦¦    15:  15     ¦ 31:  31   ¦ 47:  47   ¦ 63:  63   ¦ 79:  79               ¦
¦¦¦    16:  16     ¦ 32:  32   ¦ 48:  48   ¦ 64:  64   ¦ 80:  80               ¦
¦¦¦                                                                            ¦
+------------------------------------------------------------------------------¦
¦ ESC   MENU   ENTER   INS   DEL   COPY   CUT   PRN   <<<   >>>   Load   Save   ¦
+------------------------------------------------------------------------------+
```

The exmplae above is an output list for the DMX512 output line DMX1

Header	Shows the menu number, the name of the menu and further information like number of entries.
List	The data to be listed and edited: Entries in the list can be highlighted and selected. Key ENTER or mouse click starts a form for editing the entries values.
Footer	Options The individual fields can be chosen with the mouse and activated by a click. If the options have corresponding keys, these can be used, too (e.g. Load, Save, Cut, Copy...)

A warning will be displayed if trying to close the list without having saved changes/entries made.

Warnings, Error Messages

This menus display error messages and warnings which might prompt for actions (like overwriting).

This warning will be displayed, if a show to be recorded to a drive already exists.

```
+------------------------- Warning ----------------------------+
¦                                                              ¦
¦    Show 23                                                   ¦
¦    40 cues for Elvis                                         ¦
¦    exists                                                    ¦
¦                                                              ¦
¦    ESC                                       Overwrite   ¦
¦                                                              ¦
+--------------------------------------------------------------+
```

Information

Information about internal operations is displayed and will be closed as soon as the action is completed. The information window below indicates, that the system is waiting for a drive to become ready.

```
+----------------------------------------+
|                                        |
|           Waiting for drive            |
|                                        |
+----------------------------------------+
```

List Displays as Menus

Some list displays use menu control for displaying and editing particular information. Unlike the "normal" lists, one entry of the list is highlighted and thus selected for further operations.

```
+------------------------------------------------+
| M205   Channel list                            |
+------------------------------------------------+
|        1       2       3       4       5     6 |
|       11      12      13      14      15    16 |
|      171     172     173     174     175   176 |
+------------------------------------------------+
| ESC   MENU   INS DEL   PRN   Load   Save       |
+------------------------------------------------+
```

A footer giving various options can be accessed by mouse or by the corresponding key on the system. The keys have the following functions:

ESC	Close menu display
MENU	Start file management menu
INS	Insert a new entry
DEL	Delete entries from the list
PRN	Prints the list
Load	Load data from file
Save	Save data

Menu Control, General Operation

Menus are started either by selection from the main menu or by entering the menus number, for example:
"**21 MENU**" starts the form for loading a show.

Starting the Menu Control

MENU
>   Starts menu display, depending on the list view active

If menu control is already active, a submenu for the active menu will be started (if available).

The following table shows list views with the corresponding menus:

LEVEL	M1 Main menu
STAGE	M1 Main menu
PATCH	M803 Dimmer channel patch
DCA	M806 Dimmer curve assignment
DCURV	M802 Dimmer curves
OUT	M90 Dimmer channels
QLIST	M20 Current show
REPL	M801 Channel replacement
EXT	M1 Main menu
TCUE	M1 Main menu
ERR	M1 Main menu
CH/G	M805 Channel groups
T	M1 Main menu
TXF	M1 Main menu
TWAIT	M1 Main menu
EFF	M12 Select special effect
COL	M651 ML configuration
MOVL	M651 ML configuration
DMX	M206 DMX Patch

number MENU
>   Start menu with the menu number entered

A listing of all menu numbers available is displayed with menu M4 (Menu selection).

File Management

A number of list displays start menus with key **MENU** which display file options available.

Settings changed by menu control are active until overwritten by loading a show, by erasing the memory, by loading saved setting, or by a reset. A warning will be displayed if data entered or edited is not saved before closing a menu (this warning can be suppressed by the EXPERT_LEVEL setting).

Default:
Saving as default saves settings as system default and not to a show. The defaults are activated after erasing the memory.

Setup by Name:
These settings are saved to the systems setup by the name entered, not to the current show.

Both default and setup by name files can be backed up with menu M133, Backup Setup. Menu M134, Restore Setup, is used to load the backup files back to the system.

Current show:
The settings are part of the current show in the memory and are saved together with the show. Settings will be automatically activated when loading the show.

Current show by name:
The settings are saved to the current show by a name entered and can be loaded with options "Load" or "Merge".

Recorded Show
For loading of setup files: all setup files (chosen in menu M255, Show configuration) of recorded shows can be loaded or merged into the current show. After selecting the show and drive, a list of available settings are displayed; "DEFAULT" stands for default setting recorded to a show.

Floppy FLi
The settings are saved to floppy disk drive 1 or 2 under the name entered without the need of saving the show to hard disk before. This data is not automatically saved when a show is saved. When a file is loaded from the floppy disk drive, the current data/file will be overwritten.

USB Memory
On Booster, NTX and NT Offline Editor, settings can be stored to USB memory.

NFS
From software version 5.5, all settings can be stored to the NFS fileserver (if configured).

General options:

Load	Load and activate saved setting
Save	Save data or settings of the current menu. If not done, changes in the settings are only temporary and are lost when erasing the memory.
Delete	Settings which are no longer needed should be deleted.

The following menu items can appear depending on the current menu:

Merge	Depending on the current display, settings can be total or partial. On loading, a setting can replace the old setting entirely or only parts saved to the file. For example, all function keys are affected when macros are loaded; if merged, the assignment of keys not in the file to be loaded will remain unaffected.
Reset	This option re-activates the factory default settings.
Print	Allows to save printouts to a file with extension .TXT.

Description of Menus

Menus are described in the corresponding sections of the manual. The main menu and menu M4 (Menu selection) are special features of the menu control and are described below.

M1 Main Menu

The main menu is the central starting point of the menu control. It displays overall parts of the menus which will display various related menus in form of "dropdown" menu.

The main menu options are:

    Main menu
                Display
                Submasters M10
                Show
                Channels
                Setup

Display drop down menue helps controlling the views active in the list area of the monitors. The following menus are available:

    Display
                1st monitor M2
                2nd monitor M3
                Menu selection M4
                Notebook M5
                Macros M207
                History M8
                Online help M9
                Topographic channel layout M807
                shutdown

Submasters drop down menu displays operations for submasters and presets. It can be started direct by entering menu M10.

    Submasters
                Preset name, M17
                Palettes, R[M681][ML_PALETTEN]
                Select special effect, M12
                SOLO, M13
                Flasher, M150
                Print submaster
                Gang load, M15
                Gang record, M16
                ADJ mode, M18
                Reset functions, M19

Show drop down menu gives options for editing both the current and recorded shows.

    Show
                Current Show, M20
                Recorded Shows, M40
                Rehearsal sequence, M60

Channels drop down menu allows to edit channels and dimmer channel assignment and gives access to DFB.

Channels
> Channels, M80
> Dimmer channels, M90
> DFB, M500
> DMX Output control, M209

Setup drop down menu allows to edit and modify multiple settings like the systems installation setup and customization of the system.

Setup
> Floppy Disk M120
> Memory Usage M140
> Hard disk backup M130
> Configuration M200
> Personality M220
> MIDI Setup M301
> SMPTE/MTC M321
> Online tests M920
> Installation M900

M4 Menu Selection

This list displays all available menus, sorted by the menus numbers. The menus can be selected with mouse or cursor keys and key **ENTER**. Furthermore, menus can be started by entering the menu number (like **"4 MENU"**).

Available menus:

1	Main menu
2	1st monitor
3	2nd monitor
5	Notebook
8	History
9	Online help
10	Submaster
11	Preset name
12	Select special effect
13	SOLO
15	Gang load
16	Gang record
17	Preset name
18	ADJ mode
19	Reset functions
20	Current show
21	Load show
22	Save show
23	Delete show
24	Load cue
25	Save cue
26	Delete cues
27	Sort cues
28	Show label
29	Print cues
30	Recorded channels
31	Print dimmer levels
35	Sequence playback 1
36	Sequence playback 2

39	Time lapse
40	Recorded shows
41	Recorded show list
42	Cue list
43	Copy show
44	Rename show
45	Delete show
46	Delete cues
47	Copy show range
48	Merge cues
50	Show archive
55	Import/export USITT ASCII file
56	Import/Export Shows as ZIP file
60	Rehearsal sequence
62	Delete rehearsal cues
71	Playback macro
72	Delete macros
80	Channels
81	Channel names
82	Channel mask
83	Grand master assignment
84	Locked channels
90	Dimmer channels
92	Dimmer characteristics
93	Independent dimmer levels
94	Patch list
120	Floppy Disk
121	Disk info
124	Test disk
130	Harddisk backup
131	Backup setup files
132	Restore setup files
133	Backup complete setup
134	Restore complete setup
135	Backup online help
136	Restore online help
138	Edit license file
139	Load license file
140	Memory usage
150	Flasher
161	Channel group names
164	Delete channel groups
171	Dimmer curve name
185	Data backup
186	Save data backup
187	Restore data backup
188	Delete date backup
190	NFS Server
191	Host directory configuration
192	NFS History
193	NFS server configuration
195	Facepanel configuration
200	Configuration
201	Realtime clock
202	Screen colors
203	Printer setup
204	Dimmer list
205	Channel list
206	DMX patch

207	Macros
208	I/O configuration
209	DMX output control
210	Properties
211	Level minimum
212	Use preset data for submaster fade time
213	Motor delay
214	Cursor
215	Property list
216	Auxiliary system
217	Goose neck lamps
218	Fade time constants
219	Monitor setup
220	Personality
223	Error codes
224	System setup
225	Activate and Release
228	Dark move
231	Warnings
232	Remote control setup
233	Command display
235	ADJ level
236	DMX over Ethernet Timing
237	DMX Timing
238	Protect DMX patch
240	Default cue parts
241	COL cue parts
242	ML cue parts
243	ML/COL display options
245	Backup synchronisation options
247	Xfade sequence options
248	Recalculation on sequence jump
250	Total configuration
251	Load total configuration
252	Save total configuration
255	Show configuration
258	Default show
272	Mouse and trackball setup
280	DMX over Ethernet
281	Host names
290	AVAB/IPX dimmer protocol
291	AVAB/UDP dimmer protocol
293	Art-Net dimmer protocol
299	Enable DMX protocols
301	MIDI Setup
311	MIDI action mapping
321	SMPTE/MTC
322	Record SMPTE/MTC
323	Update SMPTE/MTC
324	Play SMPTE/MTC
325	SMPTE/MTC Start
330	Dynamic Effect List
401	Correct
402	Swap
403	Copy
404	Delete
405	Add
406	Modify selected channels
407	Remove selected channels

408	Add selected channels
421	Fade time corrections
422	Re-record splitfade times
430	Renumber table
440	Convert cue format
451	Voyager configuration
500	DFB
501	DFB event history
502	Record DFB dimmer levels as preset
511	DFB configuration
512	DFB check
513	Dimmer setup
514	Dimmer tests
521	DFB presets
522	Check DFB presets
531	DFB unit basic setting
532	DFB preset fade times
540	DFB backup
602	Color names
641	Copy values to selected fixtures
651	ML configuration
652	Display order
665	Attribute names
680	ML palette configuration
690	Copy palettes
691	Copy palettes to selected fixtures
695	Convert channel to ML attribute
698	Modify attribute
801	Channel replacement
802	Dimmer curves
803	Dimmer channel patch
804	Channel groups
805	Channel groups (old format 1-32)
806	Dimmer curve assignment
807	Topographic channel layout
808	Channel board
900	Installation
903	Install program
920	Online tests
921	Key input tests
930	DFB installation
932	Software installation

Introduction to Remote Control

The system can be used with various kinds of remote controls for:

- Remote controlling the system from an external control point / input device.
  Remote operations equal "normal" operations done locally on the system, the range of functions usable depend on the input device type.

- Linked Systems

  Systems can be linked as follows:

Auxiliary System	An Auxiliary system is linked to the main system for backup purposes, allowing to continue operation in case of failure of the main system.
Extra System	An extra system can be used for controlling features like moving light control, special effect modules etc.
Older Installations	Configurations using SITRALUX-K10 can replace the K10 or the remoting SITRALUX B40 or K40. The system also understands information of older transtechnik systems.

Remote Control

The system offers a variety of remote control possibilities:

REM Function

Systems can be linked via network using the local keyboard to operate another system.

This function offers full operability: all operations done on the primary system can be performed on the remote controlled system.

Radio Control

A handheld transmitter and receiver unit connected to the system is used for remote controlling the system via radio control terminals.

Wired handheld terminal

A 20mA-interface allows long cable runs from handheld terminal to the system.

Infrared handheld transmitter

Several receivers can be used for operating an IR handheld transmitter. These are connected to a modem which transfers the received signals to the system on a serial link (no longer supported from software release 5.4 onwards).

Remote PC Monitor

A networked PC can be used as monitor or remote control input device; all available PC keyboard inputs can be used for remote operation.

Channel Monitor

A networked PC can be used as channel monitor; all available PC keyboard inputs can be used for remote operation

On handheld or radio remote controls and IR remote controls, available remote control operations depend on the devices keypad layout:

- Channel selection and level control
- Controlling crossfades
- Loading and recording of cues to/from the XF-preset assigned to the remote control
- Changing monitor views
- Adjustment-function

Each remote control or input device is an independent device:

- Inputs and operations from various input devices do not interfere with each other.
- Each input device has its dedicated channel selection, level inputs only affect the current input device.

The keypads have various operation keys, usage is similar to the master keyboard keys.

Remote Control Configuration

Special settings for the different kinds of remote control are be made by menu control.

I/O Configuration

Menu M208 (I/O configuration) configures the type and total number of remote controls used.

Remote Controls	This setting configures the amount of terminals used. Only terminals in use should be configured for performance reasons.
RC1/RC2/RC3/RC4	defines the kind (radio/20mA) and types of remote controls used:

    "**Standard**"   uses the crossfade systems
    "**Studio**"   controls crossfade systems and groups
    "**ML**"   for extended movinglight control

Remote Control Setup

Menu M232 (Remote control setup) en- or disables the configured remote controls and defines their assignment to crossfaders.

Mode	off	remote control disabled
	full mode	full operation
	ADJ mode	channel level control only
Connection	remote controls always work on XF-preset(s); on Prisma-systems the assignment to XF1 or XF2 can be chosen.	

The settings are stored in HT_MODE and HT_BIND. Menu M210 (Settings) allows to save the configuration.

Functions **REM** or the Remote Monitor always gives full remote functionality.

REM (Remote) Function

Function "Remote" allows to remote control a system by another networked system. All operations, inputs etc are send to the remoted system; its main monitor view and the key lamps are displayed on the remoting system.

Glossary

For function **REM**, the following glossary is used:

Remote control system	System which is used for remote controlling
Primary system	Remote controlled system

Functionality

- En- or disabling of the remote control function without lighting output "dipping".
  Faders need to be "catched" (if positions differ on the systems) before changes can be made.
- Monitor view of the Primary system
  The primary systems main monitor view is sent to the remote control system.
- Full functionality
  All functions of the primary system can be remote controlled.
- If multiple systems are networked in an installation, they can remote-control each other
- AUX system linking (AUX) can be used simultaneously and parallel to remote controlling the AUX system, allowing to check the AUX systems state by using the remote control.
- Connection of other input devices does not affect remote control operations.
- Operating keys and digital wheels on the primary system can be fully used while the system is remote controlled; only analogue faders are disabled while in remote control.

Settings

The following settings define the behavior of the systems in remote control mode:

DMX_FB_MODE   remote control system: DMX512-output can be disabled when using REM-function (DMX_FB_MODE=1).

FB_MT_MODE   primary system: the master keyboard can be disabled when the system is remote controlled (FB_MT_MODE=1).

AUTO_FBREG   primary system: when remote controlled, a pre-defined preset (INITREG) can be automatically selected upon REM-start (AUTO_FBREG=1).

Preparations

The following configuration needs to be done on both systems before using **REM**:

I/O Configuration

REM uses the network connection; the IP addresses of systems to be used need to be configured. On the remote control system, the primary systems IP-address needs to be set:

Menu M208 (I/O configuration)
"Internet addresses"
"Remote access".

The primary systems IP address can be entered directly or by selecting the systems name (if entered in menu M281, Host names).

Operations

The remote control function is started with the following operation:

TAKE REM
Start remote control

Operation of the primary system is now done via the remote control system; the remote function is indicated on the systems as follows:

Remote control system   lit key lamp **REM**
message "**REM send mode started** "
display "**R**" on the top right corner of the monitor

Primary system   lit key lamp **REM**
message "**REM receive mode started**"

The REM key lamp flashes while the connection is being established; if no connecting can be made, the operation is aborted after approx. 4 s and message "REM communication error" will be displayed.

Message **"REM receive mode started"** is displayed, if the operation is made while a remote connection exists (which will not be affected).

In the analog faders display, "CATCH" indicates that the fader levels of the remote control system differ from that of the primary system. This means that the faders of the remote control system must be "catched" to the levels of the primary system before they can take effect.

If the primary system has analog crossfade faders and a manual crossfade is in progress, the ongoing crossfade will be aborted.

CANCL REM
    Disable remote control

The remote control can be ended both by the primary system and the remote control system. If analog faders have been altered during remote control, "CATCH" is displayed in the fader displays of the primary and remote control system. The faders must be catched again before they can take effect.

ENA and REM
    En-/disable remote control

Monitor Views

When remote controlled, the main monitors view of the primary system is sent to the remote control system. **"R"** on the top right corner indicates (on the remote control system) that this view is the primary systems main monitor.

If the remote control system has multiple monitors, the corresponding monitor views of the primary system are displayed; indicated with message "REM send mode started".

Desk Displays

The desk displays of the remote control system always display "local" data. In this way local information can be displayed even if the remote control system is configured with only one monitor.

Different System Types

Remote control can be used from and to any transtechnik system. If **Focus** or **Iris** control a **Prisma**, the following applies:

Crossfade Systems

Remote control systems with only one crossfade system always control the main crossfade system of **Prisma** systems (as set with SEQUEB); the second crossfade system can only be controlled with the external keyboard.

The remaining crossfade times can be modified with operations "**DOWN/UP and digital wheel"**. (same on the primary system while remote controlled).

The crossfade master fader is controlled with "**XF and digital wheel"** on **Focus** and **Iris**; this operation controls the hold time of effects on **Prisma** systems. While in remote control mode, the operation is the crossfade master fader control on **Prisma**, too.

Available Groups

If the remote control system has only 10 groups, the primary systems groups 11-20 can be selected with "**x GR**" or "**+/- GR**"; the faders with "**TAKE x GR**".

Examples:

14 GR	selects group 14
TAKE 80 % 12 GR	Group fader 12 to 80%
TAKE FULL 5 T 11 GR	Group fader 11 in 5secs to 100%

FOH Master

Iris controls the FOH master with key **FOH**, together with the digital wheel. The blackout key can not be remoted.

Turning Off Systems

If one of the remote systems is turned off, the other will revert to a state in which it can be operated.

Primary System

If the primary system is turned off, message "**REM communication error"** will be displayed after 7s and function REM is disabled on the remote control system.

Remote control system

If the remote control system is turned off, message "**REM finished"** is displayed on the primary system. If the remote control system is powered on again, a popup will prompt for re-establishing remote control operation.

Local peripherals

Expansions like remote controls, terminals etc connected to the remote control system remain "local" and are not sent to the remoted system (exception: external PC keyboard).

External PC keyboard

The external keyboard is used in remote control like the master keyboard. Operation "CTRL-ALT-DEL" still can be used to reset the local system, regardless the remote control mode.

Wired Handheld Terminals

Up to four handheld terminals (or remote controls, "RCs") can be connected to a system; the built-in LCD display displays console messages/feedback:

Line 1:	Input line
Line 2:	Messages or number, preset or level of the last selected channel. **CLEAR** displays the number of the terminal, system type and name.

Default settings for handheld terminals:

HT_BIND   defines the assignment of a terminal to a crossfade system (on Prisma)

    0   RC1, RC3 Crossfade system 1
          RC2, RC4 crossfade system 2

    1   all RCs on crossfade system 1

    2   all RCs on crossfade system 2

HT_MODE   defines the operation mode of the terminals:

    0   RCs off
          allows to disable the handheld terminals; inputs on the terminal will cause the message **"Input disabled"**

    1   Full operation

    2   Adjustment only, all other inputs are declined with message **"Bad Input"**

The number of RCs in use is set in menu M208. Please note that each active RC costs performance.

Operating keys on the RC are similar to those of the master keyboard. Key CONT resumes a stopped crossfade.

RCs are input devices whose channel selection is independent from master keyboard and other input devices. Channels selected with RCs will normally not be indicated as "selected" on the monitors (only if a monitor is assigned with 85 or 86 RS the selection is displayed).

Two types of handheld terminals are available:

Standard Remote Control
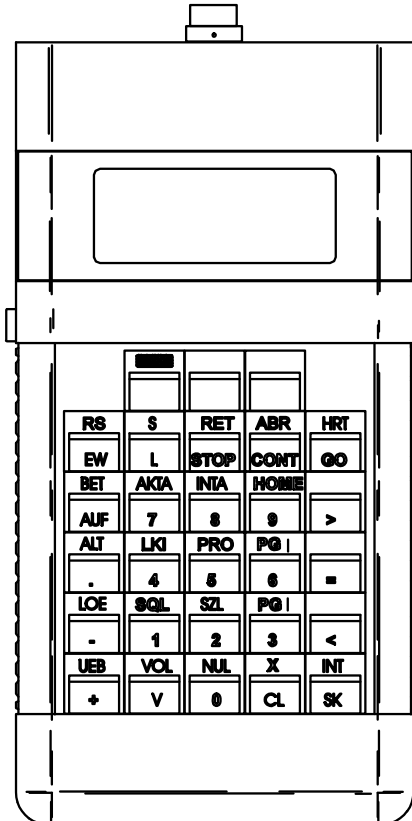
This RC uses the XF preset of the assigned crossfader.

The following operations are possible (if enabled with menu M232):

- Channel selection and level control
- Recording, loading of cues
- En-/disabling the REH list
- Controlling crossfades
- Adjustment
- List selection on the assigned monitor, scrolling
- Reset functions with **RS**

  Operations "**45 RS**" and "**46 RS**" make a hardcopy of the main- or 2nd monitor.

Keys TAKE and CANCL are used to en- or disable the following functions:

- Rehearsal list **REH**
- Channel selection **S/CH**
- Adjustment **ADJ**

Studio Remote Control
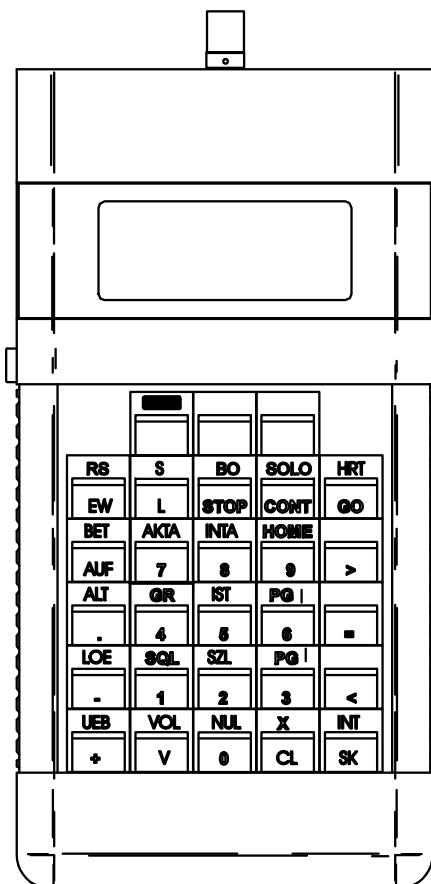
The studio version can work both in crossfade system and groups.

The following operations are possible (if enabled with menu M232):

- Selection of **XF**-preset and groups, for example "**5 GR**"
- Blackout of the selected preset

- Channel selection and level control
- Recording , loading of cues
- Controlling crossfades
- List selection on the assigned monitor, scrolling
- Reset functions with **RS**

Keys TAKE and CANCL are used to en- or disable the following functions:

- Blackout **BO**
- Channel selection **S/CH**
- **SOLO**

Radio Remote Control

A radio remote control is available, offering the same functions as above terminals. The remote control displays no console feedback, all operations and inputs are therefore shown in the RCs display.

The receivers are connected at the wired remote controls interfaces; settings HT_BIND and HT_MODE are similar to using wired RCs.

Radio RCs are input devices whose channel selection is independent from master keyboard and other input devices. Channels selected with RCs will normally not be indicated as "selected" on the monitors (only if a monitor is assigned with 85 or 86 RS the selection is displayed).

Using Radio Remote Controls

The display of radio remote controls has 4 lines, the two middle ones are used. The upper line indicates messages and key inputs, the bottom line operating state.

Press and hold the red Shift key on the left side of the RC for 2secs to turn the RC on, "Radio Remote" will be displayed.

```
Radio Remote
```
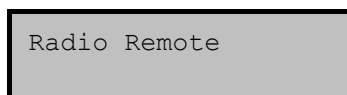
The three keys under the display give the following functions:

Left Key:

      If the RC is on, this key turns the display backlight on (which will be turned off if no operation has been made for 2 minutes).

      The left key together with key Shift turns the remote control off.

      The key lamp of the left key flashes if the HF transmitter is active.

Middle Key:

> This key is used to switch to the optional ML-control. Operation "**Shift and Key**" activates the ML control, MOVL will be indicated on the lower line of the display.

```
                      MOVL
MOVL
```

Note: In this state the system can not be controlled*.*

The ML control is disabled by pressing the middle key again (without key Shift); the message line indicates "Light" and "MOVL" is cleared.

```
                     LIGHT
```
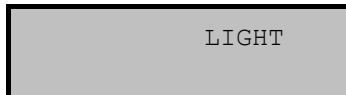
Right Key:
> Emergency Stop in ML-mode

Charging the Batteries

The RC checks the capacity of the rechargeable batteries; warning "B" is displayed if the batteries capacity is near their end, message "Charge Battery" indicates that the batteries are to low for normal operation and need to be replaced immediately. Akkus can be charged with the supplied charger.

```
Charge Battery
                  B
```
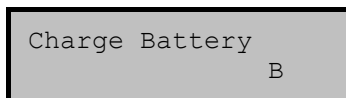
Note for loading batteries >700mAh capacity:
Time for loading is 75-90mins; after loading the batteries are charged for 70-80%. Please unplug the charger for 20secs and replug it to the mains, this will fully load the batteries.

Operation

Radio remote controls are available as:

- Standard
- Studio
- ML-control

Standard Radio Remote Control

The standard radio remote control is works with the assigned XF system only.
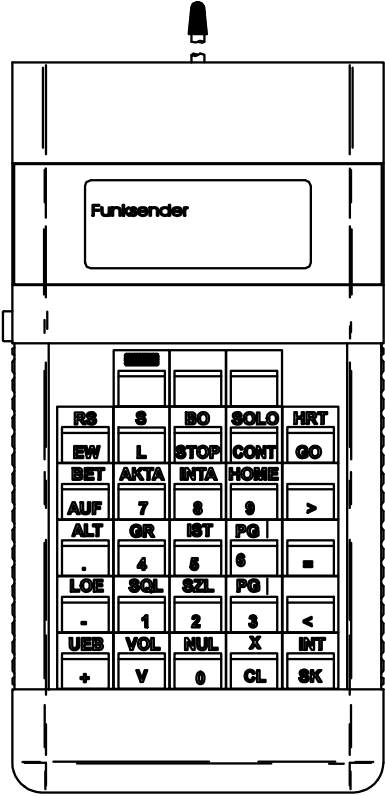
	The following operations are possible (if enabled with menu M232): • Channel selection and level control • Recording, loading of cues • En-/disabling the REH list • Controlling crossfades • Adjustment • List selection on the assigned monitor, scrolling • Reset functions with **RS** Operations "**45 RS**" and "**46 RS**" make a hardcopy of the main- or 2nd monitor. Keys TAKE and CANCL are used to en- or disable the following functions: • Rehearsal list **REH** • Channel selection **S/CH** • Adjustment **ADJ**

Studio Radio Remote Control

The studio-version can work both in crossfade system and groups.

Funksender

RS	S	BO	SOLO	HRT
EW	L	STOP	CONT	GO
BET	AKTA	INTA	HOME	
AUF	7	8	9	>
ALT	GR	IST	PG↑	
.	4	5	6	■
LOE	SQL	SZL	PG↓	
-	1	2	3	<
UEB	VOL	NUL	X	INT
+	V	0	CL	SK

The following operations are possible (if enabled with menu M232):

- Selection of **XF**-preset and groups, for example "**5 GR**"
- Blackout of the selected preset

- Channel selection and level control
- Recording, loading of cues
- Controlling crossfades
- List selection on the assigned monitor, scrolling
- Reset functions with **RS**

  Operations "**45 RS**" and "**46 RS**" make a hardcopy of the main- or 2nd monitor.

Keys TAKE and CANCL are used to en- or disable the following functions:

- Blackout **BO**
- Channel selection **S/CH**
- **SOLO**

MOVL-Remote Control
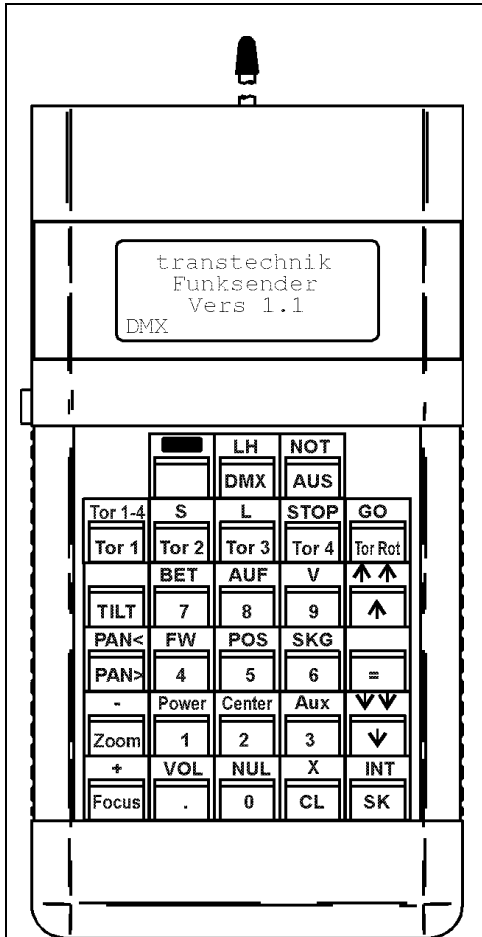
The optional ML-control version can control both channels and the MOVL-control section of the system. Operations on the remote control use control keys to control channel levels or movinglight attributes; the RC mode used is displayed in line 4.

The keys on the remote control are similar to corresponding keys on the system.

- Level control of channels, key % switches the movement keys to control of levels.
- Controlling color changers
- Record, Load of cues
- Controlling crossfades
  Controlling Movinglight Attributes

The remote control can only control configured ML devices.

Controlling is done as follows:

1. Select the ML device
2. Choose the attribute to be controlled
   The movement keys are switched for controlling the attribute(s).
3. Control the attribute with the movement keys

Operation

The attribute is indicated in line 4 of the display:

```
@ FULL 43 CH TILT
DMX TILT
```

This example shows the current operations in line 2; line 4 indicates "DMX" (control of the system) and mode "TILT" used for the movement keys.

The attributes on the RC control directly the attributes of the device (if configured).

Unlike to the console keys, Keys COL and ML can be used for assignment of palettes:

x COL
x ML
    Assign palette to selected devices
        Special Functions

The following keys control special functions:

    TOR1-4   controls all 4 barndoors simultaneously

    PAN>   pan movement

    PAN<   reversed pan movement

Power	controls attribute "Lamp" or "Ignite" (e.g. for HMI):	
	0 Power	Lamp Off
	x Power	Lamp ON (x=1...100)

Key POWER can be added to Libra-Topos, too.

Center Pan/Tilt to center, operation mode of the movement keys remains unchanged.
Key CENTER can be added to Libra-Topos.

Controlling Pan and Tilt simultaneously

When pressing PAN/PAN and TILT, the movement keys control both attributes.

Controlling Attributes

Only some attributes have dedicated keys on the RC; other attribute can be accessed in the following order: (attributes not available for a device are skipped):

FOCUS	Focus, Zoom 2, Frost
ZOOM	Zoom, Focus 2, Frost
AUX	Aux 1, Iris, Jalousie, Power, Dia, Fog, Effect, Speed, EfWhRot, Shutter, Dimmer
TOR1	Tor_1, Blende1A, Color, Aux1, Red, Cyan
TOR2	Tor2, Blende2B, Gobo, Aux2, Green, Magenta
TOR3	Tor3, Blende3C, Gobo2, Aux3, Blue, Yellow
TOR4	Tor4, Blende4D, Prisma, Aux4, CSpeed1, TorRotTorRot, GoboRot, Rotation, EffWhRot, RotGobo1, PrismRot, LensRot

Example:
Attribute "Zoom" is not available for a selected device, but attribute "Frost". In that case the movement keys control attribute "Frost" in mode "Zoom". If both "Zoom 2" and "Frost" are not configured, only "Zoom 2" will be controlled.

Controlling MARTIN PAL1200

The moving mirror MARTIN PAL1200 is equipped with shutters, configured to attributes Blend1A, Blend2A, Blend3A and Blend4A. In that case functions "TOR1-4" (Shift TOR1), "REC" (Shift TOR2), "LOAD" (Shift and Tor3) and "STOP" (Shift and Tor4) switch the movement keys as follows:

Key	no Shift	with Shift
TOR1	Blend1A	Blend1B
TOR2	Blend2A	Blend2B
TOR3	Blend3A	Blend3B
TOR4	Blend4A	Blend4B

The normally assigned functions "REC", "LOAD", "STOP" und "GO" are not available in this operation mode; to use them unselect the device or select another device type.

Infrared Remote Control

The infrared remote control is another input device; its features are similar to standard handheld remote controls.

The infrared remote control has no console feedback; it displays the key inputs (likewise the radio remote control).

Menu M208, (I/O configuration) en- or disables the infrared remote.

Menu M232 (Remote control) sets the remote control mode and preset (on Prisma).

From software release 5.4.3.1, the infrared remote control is not further supported.

Linking Auxiliary Systems

Backup-systems can be connected to the main system by:

- Ethernet
- Serial interface 20mA
- MIDI

transtechnik systems are connected using the Ethernet or 20mA serial connection; systems from other manufactures can be connected via MIDI (if available and configured).

Linking Options

Menu M216, Auxiliary system, gives the following options for linking an AUX system:

- **T90/Prisma/Prisma NT** memory-only
- **T90/Prisma/Prisma NT** synchronized
- **Focus/Iris/T40-M/T20-M** memory only
- **Focus/Iris/T40-M/T20-M** synchronized
- **T40-2** current loop
- **T40-2** Ethernet
- K10 current loop
- MSC MIDI OUT
- NSI Melange MIDI

"Warning on Restart":
Defines, if the link should be re-established after reset or power-off:

  no   the link will be automatically re-established

  yes   a prompt will be displayed asking if the connection should be established

"Ask before data synchronization":
When the link is started, the show can be transferred automatically or after prompting to the AUX system.

Changes made to these options will be stored as default setting in KNA_MODE.

Auxiliary Linking AUX

The AUX linking assures that both systems are kept on the same state with identical information, allowing to continue working on the AUX system in case the main system fails.

With starting the link, the crossfade system(s) of the AUX system are set to the main systems state.

The link is en-/disabled with:
TAKE AUX
        Activates the AUX link

While establishing the link, the AUX-key lamp flashes; when the link is established the key lamp stays lit.

CANCL AUX
        Deactivates the AUX link

The AUX system will acknowledge the link-ending. If a connection error occurs, an error message is displayed and the AUX key lamp flashes. If writing to the AUX system (key lamp WAUX is lit), the transfer will be aborted.

ENA and AUX
> Turn link on/off

TAKE WAUX
ENA and WAUX
> Transfer memory content to AUX system

Menu M231, Warnings, has an option to assure TAKE AUX/WAUX. It shall prevent show data on the target console from destruction.

This transfer is independent of the link state (which can be activated when transferring). After a completed transfer, the state of the AUX system is equal to after loading a show.

Note: If the transfer was aborted or an error message is displayed, the show data on the aux system is incomplete; the transfer needs to be started again.

Key lamp **WAUX** is lit during transfer; if the aux system is offline flashing of the key lamp indicates connection attempts.

If the transfer is aborted due to a reset or power off/on, the main system tries to send the data again (indicated by flashing key lamp **WAUX** and, if activated, **AUX**). The key lamps keep flashing until the transfer is completed.

While transferring, no changes can be made to the main systems memory content.

TAKE cuerange WAUX
ENA and cuerange WAUX
> Transfer a range of cues to the aux system.

CANCL WAUX
> Abort the writing to the aux system

Linking NT/NTX-Systems

When linked, both systems are run "in parallel" regarding:

- Current show in memory
- Crossfade sequence
- Settings saved to the show
- Replacement channels

System default settings should be identical on both systems.

The link is rejected if memory write protection is activated on the aux system.

Synchronizing Shows

When the link is activated, show numbers are checked to ensure that both systems have the same show in memory. If necessary, the show of the primary system is automatically transferred to the auxiliary system.

Cues recorded on the primary system are automatically transferred to the auxiliary system upon recording; delete operations in memory are also executed simultaneously on the auxiliary system. When a show is loaded on the primary system, it will be immediately transmitted to the auxiliary system. The **WAUX** key lamp is lit during this procedure.

If the memory content of a system is changed by recording cues while the aux link is disabled, identical status can be produced by **WAUX**.

In contrast to the normal loading of a show, the rehearsal sequence will not be sent to the linked system.

Synchronization of Crossfade Systems

When linking is enabled, the crossfade systems of the primary and auxiliary systems are automatically synchronized to the same status; the primary system sends cue and sequence numbers to the auxiliary system, which then executes the load operations.

Three different modes are possible for synchronizing the crossfade systems and are defined by the T90KOP_MODE settings in the properties of the primary system:

T90KOP_MODE = 0	Actions in the sequence of the aux system will only be prepared but not started.
T90KOP_MODE = 1	Sequence actions are started as CUT (without using the crossfade times set). In this mode, the grand master faders of the auxiliary system should be set to 0%.
T90KOP_MODE = 2	Sequence actions are started on the auxiliary system synchronously to the primary system. Crossfades are halted on both systems and continued again.

Prisma systems have two, Focus/Iris one crossfade system. If a Prisma is linked to Focus or Iris, setting SEQUEB defines which crossfader will control the aux system. This is done with Menu M247, Xfade sequence options.

The crossfade system of Focus/Iris always controls crossfader 1 on Prisma.

Sequences are controlled entirely by the primary system. Times for automated start of cues in the sequence are blanked on the aux systems sequence list display, as automated actions will not be executed on the auxiliary system.

Synchronized Operation of linked Systems

Synchronized operation is an option for linking, set in Menu M245, Backup synchronization options (and stored in KNASYNC_OPT).

Preset contents	when recording or loading a cue to a group, the corresponding action will be performed on the aux systems group.
Fader positions	the group submaster faders positions will be sent to the aux system; index "CATCH" indicates that fader levels differ from their "real" position.
Xfader 1, 2	Linking Prisma-Prisma: both crossfade systems can be synchronized.
	Linking Prisma-Focus/Iris: the main crossfader controls the Xfader of Focus/Iris.
	Linking Focus/Iris-Prisma: the Xfader controls crossfade system 1 of Prisma.
	Active levels: Output values of the main system are sent to the aux systems preset, defined in setting KNA_AKTREG; this setting defines, if the Programmer (KNA_AKTREG = 0) or a group (KNA_AKTREG = 1 .. 20) is to be used.
Reduced prio.	On linking consoles network protocol settings for transmission of DMX data are transmitted. For priority controlled protocols priority for the auxiliary system can automatically be reduced.
	If the link is switched off, priority of the backup system is same as on main system.
As default	the above settings are stored as default setting.

New options from software release 5.5.1.1:

If linking is activated, the aux system will be checked and a connection error will be displayed on the main system upon loss of connection; key lamp AUX flashes. The link is still active and will be automatically re-established upon connection.

Menu M216 gives the option to prompt before transferring the show data when re-establishing a connection. If show data on both systems is identical, no show data needs to be transferred.

Cues in submaster groups will be synchronized if setting "preset contents" is set to yes in menu M245, Backup synchronization options.

Yellow list views of setup data in menus:
All data chosen in M255 "Show configuration" will be automatically saved when ending the menus and sent to the aux system without prompting.

Syncing Configuration Files

Additionally to the transmission of the show file configuration files can be sent to the auxiliary system. Menu M246, AUX data setup, shows all possible configuration files. Key ENTER marks the file marked by the cursor line for transmission. On linking the auxiliary system those files are transmitted and activated.

Note: Including lots of configuration files while syncing NT systems can considerably extend the time needed for transmission.

Linking previous Systems

The system can be linked with previous systems like **SITRALUX B40**, **K40**,**K10** and with transtechnik **T40-2** or **T20-2**.

Note: When linking to older systems, only cues with intensity levels can be transferred. Movinglight information can not be processed by these systems and can cause a crash of the aux system.

Linking T40-2 or T20-2

Linking can be done in both directions.
> **Main System**

The functionality applies to both transtechnik **T40-2** or **T20-2** as aux systems:

Parallel memory link:
> The memory state of the auxiliary system is kept to the same state as the main system. Alterations like recording, subsequent loading or deletions are immediately executed on the auxiliary system (when linking is enabled).

Paralleled crossfade systems:
> When crossfades are started, the presets on the auxiliary system are kept to the main systems status.
>
> The following cue data is transferred:
>
> - Levels
> - Cue times
> - Effects
> - Cue label

The following settings are transferred:

- Dimmer curve assignment
- Dimmer curves
- Channel/dimmer patching
- Grand master fader assignment
- DIR assignment
- Replacement channels
- Channel mask

Note: **T40** or **T20** as auxiliary systems have restricted functionality. Please note:

- Channel fade times and wait times are not available on the auxiliary system.

- Cues can include an effect and levels. Level information of a cue is sent to the auxiliary system, but not the effect. Only effects recorded as a effect cue (cue REC EFF) are transmitted.

- In effects, the primary system can control more channels than the auxiliary system. Control channels exceeding the max channel numbers allowed in an effect are cut off. The auxiliary system, unlike the primary system, only handles channels in the mask.

- Effects are skipped in the crossfade sequence of the auxiliary system.

- Cues of the types ADD, L/E, LADD, LTE and SUM are converted into level cues on the auxiliary system.

- Cues of the types ML and COL are not transferred.

- The auxiliary system can only control four dimmers per channel.

- Curve numbers greater than 8 are changed to curve 1 on the auxiliary system.

- There is only one dimmer channel on the auxiliary system available for replacements.

- The PV preset of the auxiliary system can only be synchronized if a cue number is entered directly into the primary systems PV preset.

Note: Linking the auxiliary system only works properly if the dimmer configuration on both systems is identical and does not exceed more than 720 channels. Changes to the dimmer configuration on the primary system are possible at any time with menu M204, changes to the auxiliary system can only be made as a factory default setting.

Settings for Interfaces

Menu M216 defines the interface to be used and the transfer speed.

T40-2/T20-2 current loop:
Data transfer between the systems uses the serial interface (AUX). No extra hardware is necessary. The connection will not work if an Ethernet interface is integrated in the aux system.

T40-2/T20-2 Ethernet:
Data transfer between the systems uses the Ethernet interface giving much faster speeds when transferring. The Ethernet option must be installed on the aux system.

Properties for linking T40-2/T20-2 systems:

SEQUEB
> The crossfade system controlling the auxiliary system is defined by SEQUEB. Setting 2 means crossfade system 2, otherwise crossfade system 1 is used. Changing this settings needs reset or new start of the link to take effect.

T90KOP_MODE
> The property has no effect on **T40/T20**.

KNA_MODE
> Menu M216 defines the interface used.

DMX_NA_MODE
> If the link is active, DMX512-output is disabled completely (DMX_NA_MODE=1) or for MOVL-devices only (DMX_NA_MODE=2).
> **T40-2 or T20-2 as Primary System**

The system understands information received from **T40-2** and **T20-2** systems and can be synchronized with these systems. This affects only control of the crossfade systems, shows can only be transferred to the system manually by using a show disk.

Linking SITRALUX B40 or SITRALUX K40

The system can replace SITRALUX K10 as an auxiliary system for SITRALUX B40 or SITRALUX K40. The following information can be linked:

- Transfer of cues (levels, cue time)

- Paralleling crossfade system

Linking helps to transfer shows from older installations to the system.

Linking via MIDI

Auxiliary systems can be linked via MIDI in order to receive commands from the main system.

No cues etc can be transferred to the auxiliary system by MIDI.

The following settings are necessary for linking by MIDI:

Main System:

> Menu M215 (Property list)

- SEQUEB, define primary crossfade system

> Menu M216 (Auxiliary system)

- KNA_MODE on MSC MIDI OUT

> Menu M301 (MIDI show control)

- Activate transfer, MIDI OUT = "Yes".
- Command set 1: start, halt, continue on auxiliary system
- Command set 2: current sequence step is only set up, not executed (**NT/NTX** as auxiliary system).
- Match device id to receiving system.

Aux system (NT/NTX):

Menu M301 (MIDI show control)

- Activate receiver, MIDI IN on "Yes".
- Match command set to transmitting system.
- Define device id.

The link is activated with the following operations:

TAKE AUX
Activate link

CANCL AUX
Disable link

PC-Software

The following software allows remote monitoring or remote control of the system. The PC is connected to the system via Ethernet.

Remote PC Monitor

The remote PC monitor allows to display monitor views from the system on a PC.

Options:

1   Viewing monitor/first monitor

2   Viewing monitor/second monitor
    The PC screen works as an extra monitor. The displayed image is identical to that on the first or second monitor. No system remote controlling is possible in this mode.

3   Remote monitor
    The PC works as input device, similar to a handheld terminal. The monitor display is independent to the monitor images of the primary system. The system can be operated independently of all other controls by the text keyboard.

4   Master keyboard
    The PC acts as parallel control to the master keyboard. The monitor image equals the systems main monitor.

When you start the program on the PC, the mode last used will be restored (system setting: RMON_MODE) and is indicated in the top right corner of the PC monitor.

You can set the modes on the PC after starting the program:

ALT 1   Viewing monitor/first monitor
ALT 2   Viewing monitor/second monitor
ALT 3   Remote monitor
ALT 4   Master keyboard

The setting on the system in menu M215 (Property list) can be used to restrict the functionality of the PC:

RMON_MODE	Permissions
1	1, 2
2	1, 2
3	1, 2, 3
4	All

If you use the PC as remote control, operation is done by the text keyboard. The key assignment to the keys of the master keyboard is listed in section "Operation on Text Keyboard".

Restrictions when remote controlling via PC:

- No effect control
- No support of mouse connected to PC

The function keys of the remote monitor PC will not start macros (like the text keyboard connected to the system), as they are used to control the crossfade systems. Refer to @r[Key Assignment][RMON_FUNKTAST] in chapter "Operation on Text Keyboard".

The "Print" key of the text keyboard allows to print hardcopies of the monitor image on a locally connected printer.

Channel Monitor

The channel monitor allows a topographical view of the dimmer channels on the PC monitor. The channel mask can be edited with an editor.

The software requires MS-DOS; more sophisticated and expanded features are offered by LIBRA.

LIBRA

LIBRA is graphical extension for NT/NTX-systems, which communicates with the system via Ethernet and gives multiple functions:

- Topographic views
- Operating devices
- Comfortable, sophisticated access to palettes
- independent input device

Operation can be done parallel to the NT/NTX or as independent input device. LIBRA gives multiple remote monitor view options which can be used as remote control or as remote monitor wherever required.

Operation is optimized for using touch screen monitors; views and windows can be arranged flexible on the monitor devices.

Transtechnik Show Designer, VISTA

The optional Show Designer or VISTA allow to pre-program Movinglights in real-time in a 3D-view environment. Please contact ETC for further information.

Facepanel for Booster

From software release 5.4.3, NT/NTX-systems can be connected via Ethernet to a Booster and are then used as "facepanel" for operating the Booster. Configuration is done using Menu M195, Facepanel-configuration, on both NT/NTX facepanel and Booster.

Facepanel

The facepanel mode needs to be enabled with the internal Dip-Switch Jumper 4. Before activating the facepanel mode, this switch needs to be set; to disable the facepanel mode just switch off dip-switch 4, the system then reverts back into "normal" mode within 4secs.

In Menu M195, Facepanel client-configuration, the Booster in use will be defined:

Booster:	IP-Address of the Booster.
Enable facepanel mode	setting "yes" connects as facepanel to the Booster
As default	stores the settings as default

Booster

In Menu M195, Facepanel server-configuration defines the facepanel to be used:

Facepanel:	IP-Address of the facepanel
Facepanel type:	Prisma/Focus/Iris NT, Prisma/Focus NTX
DMX over Ethernet only when connected:	
	If the facepanel connection is lost (e.g. when the facepanel is powered off), the DMX-over Ethernet output (configured in Menu M291) is stopped.
DMX output on facepanel:	
	Needs to be activated if the local facepanel DMX outputs are to be used.
Enable facepanel mode	Setting "yes" allows the facepanel to connect
As default	Stores the settings as default setting

MIDI

The MIDI-interface can be used for MIDI Show Control and standard MIDI commands.

Show Control commands follow the standard MIDI Show Control (MSC) 1.0, MIDI 1.0 Recommended Practice RP-002 of International MIDI Association.

Please note:

- On Prisma, MSC-commands are sent by the main crossfade system and received on the secondary crossfade system (as set in SEQUEB).

- Transmitter and receiver can be independently set to Minimum Command Set 1 or 2.

- The automated sequence is controlled by the sequence list. Q_number is identical to the sequence step with corresponding number. Q_list and Q_path are ignored / not transmitted.

Menu M301 (MIDI Show Control) configures the MIDI interface for transmitting (out) and receiving (in); the command set used and the device ID can be set and en-/disabled. Refer to chapter "Menu Controls".

MIDI-Interface

The MIDI interface has three 5-pin DIN sockets on the rear of the system labelled MIDI IN, MIDI OUT and MIDI THRU.

MIDI IN	Input	
	This is the input for commands received by the system.	
MIDI THRU	Through-connection of received commands	
	If the system is integrated into a larger MIDI network, the received commands are passed through to the next unit.	
MIDI OUT	Output	
	System generated commands are sent to the controlled units on this output.	

MIDI Setup

Menu M301, MIDI Setup, configures the MIDI interface for MIDI Show control and standard MIDI commands:

MIDI IN	Activate/deactivate reception
	"Yes" = reception is activated. The system only responds to commands when activated.
MSC command set	Switchover between command set 1 and 2 for reception
	The command set determines what commands the system accepts.
MSC device id	Number of local MIDI device.
MIDI OUT	Activate/deactivate transmitting
	"Yes" = transmitting is activated
MSC command set	Switches between command set 1 and 2 for transmitting
MSC device id	Number of controlled unit

Standard MIDI commans:
MIDI Input   MIDI command reception on/off
MIDI Channel   MIDI channel used

MIDI-Commands

MIDI commands can be parameterized. Parameters without brackets must be entered, those in brackets < > may be omitted.

Commands identified by (2) are only transmitted or processed if command set 2 is set.

MIDI OUT

The following commands are sent on the MIDI interface for the appropriate operations. Commands identified by (2) are only transmitted if command set 2 is enabled.

01, GO Q_number	Start sequence step Q_number
02, STOP	Halt crossfade
03, RESUME	Resume crossfade
05, LOAD Q_number (2)	Load sequence step Q_number
0a, RESET (2)	Reset sequence

MIDI IN

The following commands can be executed by the system. For each command, the number from the MSC recommendation is stated.

01, GO <Q_number>

Start loaded sequence step
If Q_number is entered, the sequence step is loaded and immediately started. In both cases the next sequence step is loaded immediately.

02, STOP

Halt crossfade
The command corresponds to the STOP key.

03, RESUME

Resume crossfade
The command is transmitted to resume a halted crossfade.

04, TIMED_GO timespec <Q_number> (2)

Like GO
timespec specifies a time in which the crossfade is to be executed. The time applies to fade-down and fade-up. Only cues of the type M/L or MTL can be started. The command is ineffective for all other actions.

05, LOAD Q_number (2)

Load sequence step
If special trigger conditions are entered, e.g. a delay time, they are not activated, preventing an automatic start.

06, SET ctl val <timespec> (2)

Set lever/fader values
If a time is also entered by timespec, the lever moves to the value within the time specified.

ctl	Lever number
0 - 19	Master 1 - 20
128	Master crossfade system 1
130	Master crossfade system 2
128	Master crossfade system
132	Master for submasters
134	Master effects
136	Grand master fader II
510	Grand master fader I
136	Grand master fader FOH
510	Grand master fader M

val	Set value	

Lever	LSB	MSB
0%	0 0	
50%	0 64	
100%	127	127

07, FIRE macro_number (2)

Start macro
macro_number must be between 1 and 50.

08, ALL_OFF (2)

Deactivate crossfade system
An ongoing crossfade is halted, blackout of the crossfade system activated and the automatic sequence deactivated.
The operation can be reversed by the RESTORE command.

09, RESTORE (2)

Reverse actions initiated by ALL_OFF

0a, RESET (2)

Reset crossfade system
An ongoing crossfade is aborted and the sequence reset. The XF preset remains unaltered.

0b, GO_OFF (2)

Fade down all channels
The fade-down time of the cue in preparation is used. The sequence remains unaltered.

11, STANDBY_+
12, STANDBY_-

Load following or previous cue of sequence into PV preset

SEQUENCE_+
SEQUENCE_-

Like STANDBY
The next integral sequence number is used.

MIDI Action Mapping

Menu M311, MIDI Action mapping, allows to trigger actions by notes received.

Name	Name of the action
Event	accepted events are: Note On/Off, Note On/Off Range, Prog Chg
Start/End	Note or range of notes
Action	start sequence step in main crossfader start macro Flash key Load cue

Options in the footer:

MENU	File options Reset, clears all entries
ENTER	edit selected entry
INS	insert new entry
DEL	delete selected entry
PRINT	prints the list
CHECK	checks the selected entry
Load	loads an action mapping file
Save	saves the action mapping

SMPTE/MTC Time code Control

Functionality

Software-Option SMPTE/MTC offers the following functionalities:

- Correct recognition of MIDI time code in all variants to MIDI specifications
- Display of time code received by MIDI in the message line of the first monitor in real-time
- Recording of sequence events with reference to an external time code
- Playback of the recorded sequence synchronized to external time code
- Update mode for subsequent overwriting of a time code segment in real-time
- Display of the recorded sequence events in a list sorted by time code
- Manual insertion, deletion and alteration of sequence events
- Starting/stopping of recording and playback by menu control or mouse click
- Saving the event lists to the current show or to show by entering a name

Requirements

- on NT-systems: Software-Option "SMPTE/MTC Input" needs to be licensed (can be checked with 220 MENU)
- External time code generator. If this only produces an SMPTE signal (e.g. from the audio track of an analog tape machine), an external unit is normally used to convert from SMPTE to MIDI time code (MTC.

Setup

- Connect the MIDI time code signal to the MIDI IN socket of the lighting console.
- It is advisable to activate time code display in the message line for checking reception of the code:

  1. Start M215 (Property list).
  2. Select the BEF_MODE property variable with the cursor keys and ENTER or by mouse click.
  3. The M233 Command display form appears, set the Command line field to SMPTE/MTC and terminate with OK.
  4. Save the modified properties to hard disk as a default with the **MENU** key, then end the menu control.
  5. Clear the message line (bottom right on first monitor) with **CLEAR**.
     SMPTE/MTC --:--:--:-- STOP   will be displayed in the message line.
  6. Start the time code generator. The current time code is now shown in the command line.
     Example: SMPTE/MTC 00:00:17:12 STOP
  7. Start SMPTE/MTC playback with M324. The M324 form appears, in which the current time code is displayed in real-time. The status in the form and message line is now PLAY.
  8. Terminate the M324 form with **ENTER** or **ESC**. The status in the message line reverts to STOP.
  9. Stop the time code generator. The current time code disappears from the message line.

Note: Depending on the SMPTE/MTC converter used, there may be a delay of a few seconds until the applied time code is accepted by the system. The time code display may also run on for a short time after the time code generator is switched off.

Overview / Current Time Code Sequence

Menu M321 (SMPTE/MTC) shows the current time code sequence. The header line indicates the number of recorded events. On NT-systems up to 99, on NTX and Booster up to 9999 entries are possible.

The footer shows a number of options which can be and activated with the mouse. If the operations have keys assigned to them, these can be used instead.

ESC	End menu display
MENU	The selection menu shows the operating possibilities indicated in the footer.
ENTER	Edit current entry
CLEAR	Clear sequence
DEL	Delete current entry
INS	Insert sequence step
PRINT	Print entire sequence
Record	Start recording
Update	Add to, modify sequence
Play	Start playback
Load	Load saved sequence
Save	Save current sequence

Functions relate to master keyboard keys.

Recording of Time Code Sequences

- The show which should be synchronized with time code must be prepared before recording, i.e. the cues to be started should exist and special actions like function macros must have been entered in the sequence list (SQL).

- Prepare commencement of the sequence, e.g. by 1 **SEQ** to start from sequence number 1. For simplification, select the sequence list with the **SQL** key.

- The sequence must be switched on (key lamp **SEQ** on).

- For a better overview, start the SMPTE/MTC event list with M321. It can also be accessed through the main menu under Setup. The list is empty (0 events) when first called up.

- Start M322, Record SMPTE/MTC, by clicking the Record field in the footer of the event list. Alternatively use the **MENU** key and choose the Record option.

- Start the time code generator. The current time code appears in the form in real-time. RECORD status indicates that the system is ready to record.

- Run through the required show sequence synchronously to the time code. This is normally done by pressing the **GO** key at the particular point in time. The sequence can be newly set up at any time and at any point by **x SEQ**. Cues can also be inserted in between by x **GO** in the "Sync" mode of the sequence list.

- End recording by clicking Enter or with key **ENTER**. The recorded events appear in event list M321, as time code sequence. Alternatively, recording can be stopped by clicking Abort or with key **ESC**, without overwriting the previous event list. This ensures that accidental start of recording will not do any damage.

Note: If you don't want event list M321 displayed, e.g. because another list is to be displayed, the M322 Record SMPTE/MTC form can also be called up straight from the command line by menu 322. The form can also shifted on the screen by gripping its edge with the mouse.

Note: Adopting the new recording simultaneously deletes all previous event entries. Compilation of previous and newly recorded events is possible with the Update function (see below).

Playback of Time Code Sequence

- The show that is going to be run synchronized with time code must already be prepared at the beginning of recording, i.e. the cues to be started should exist already, and special actions like function macros must have been entered in the sequence list (SQL).

- The sequence must be switched on (key lamp **SEQ** on).

- For more clarity, call up the SMPTE/MTC event list, M321. It can also be accessed through the main menu, option Setup.

- Start M324, Play SMPTE/MTC, by clicking Play in the footer of the event list. Alternatively, use key **MENU** key and choose option Play.

- Start the time code generator. The current time code appears in the form in real-time. PLAY status indicates that the system is playing back time coded events.

- The previously recorded show sequence will run automatically, synched to the current time code. Parallel to this, the system can be operated manually.

- End playback by clicking Esc or with keys **ENTER** or **ESC**.

Note: Synchronous playback can be suppressed temporarily at any time by switching the sequence off, and then on again later, with the **SEQ** key.

Update of Time Code Segment

This function allows to insert or overwrite a time code segment deleting the events already entered.

- The sequence must be switched on (key lamp **SEQ** on).

- For more clarity, call up the SMPTE/MTC event list, M321. It can also be accessed through the main menu under Setup.

- Start the M323, Update SMPTE/MTC, form by clicking Update in the footer of the event list. Alternatively, use key **MENU** key and choose option Update. Enter the time code range to be updated.

- Click OK or press **ENTER** for the M323 Update SMPTE/MTC form, displaying the selected time code range limits.

- Start the time code generator. The current time code appears in the form in real-time. Outside the selected time code range the sequence events run synchronously as in regular playback, status is STANDBY. When the current time code reaches the bottom range limit, status changes to UPDATE and sequence actions are recorded. Once the top range limit is crossed, status reverts back to STANDBY.

- End recording by clicking Enter or by key **ENTER**. The changes appear in the event list. Alternatively, recording can be stopped by clicking Abort field or with key **ESC**, without overwriting the previous event list.

Direct Operation through Command Line

Direct starting of recording and playback for time code events is possible with the following commands; the current status will then be displayed in the message line.

30 RS	**STOP**	(regular end of recording or playback)
31 RS	**PLAY**	(playback)
32 RS	**RECORD**	(recording)
33 RS	**Abort**	ongoing recording without accepting new figures

Note: If used often, it is recommended to record these operations as macros and assign them to function keys.

Manual Editing of Time Code Events

Recorded events can be modified with M321, time code events list.

- Select `the` event to be modified with the mouse or cursor keys.
- Start `the` Modify SMPTE/MTC event form by mouse click or with key **ENTER**.
- The `time` of the event can be altered in the Time code field. The entry is shifted to the correct point in time in the event list.
- The `sequence` event can be altered in the Cue number field.
- Confirm by clicking OK or with **ENTER**.

Manual Insertion of Time Code Events

Events can be inserted manually within the time code event list M321.

- Select where the new event should be inserted (by mouse or cursor keys).
- Start the Insert SMPTE/MTC event form with key **INS** or by clicking the INS field in the footer of the list.
- Edit the time code with the fader wheel or by entering values, the event is automatically sorted in the event list. A number of different events can be inserted for a time code which will be executed after one another.
- Enter `the` required sequence event in the Cue number field.
- Confirm by clicking OK or with **ENTER.**

Note: The entered sequence number is not checked with the current sequence list (SQL). This allows to prepare the complete time code sequence manually in advance and define the cues and special actions afterwards.

Manual Deletion of Time Code Event

Events can be deleted manually from the time code event list, M321.

- Select `the` events to be deleted with the mouse or cursor keys.
- Start `the` Delete SMPTE/MTC event form with key **DEL** key or by clicking Del*.*
- Edit the time code range to be deleted with the fader wheel or by direct entry.
- Confirm by clicking OK or with **ENTER.**

Note: Key **CLEAR** or Clear in the footer clears the entire event list.

Saving the Time Code Event List

The time code event list of the current show must be saved to the show to ensure that sequence numbers and cues match.

- Start `the` Save SMPTE/MTC event list menu (M321) with key **REC** key or by clicking Save in the footer of the list.
- Option "Current show" saves the event list as part of the current show. The event list is `prepared` automatically when the show is loaded.
- Option "Active show by name" saves the event list under a name to the current show.

Note: If you try to load a new show without first saving the current show, a warning will be displayed. Furthermore, a warning is displayed when trying to end M321 without having saved the list.

Loading Time Code Event List

All time code event lists saved to a show are automatically loaded when the show is loaded; the preset event list will be prepared.

- Choose Load SMPTE/MTC event list in M321 with key **LOAD** key or by clicking LOAD

- Option Current show loads the event list preset for the show. This is done automatically when loading a show but can be repeated at any time.

- Option "Active show by name" allows to load any other event list saved to the show

Note: Time code event lists can also be loaded from within the sequence list (SQL) with action "File". Event sequences of any length and interleaving are thus possible.

Printing Time Code Event List

Time code event lists can be printed:

- Start printout in M321 with key **PRINT** key or by clicking PRINT.

- Alternatively, select option Print with key **MENU**. This allows to print to a file, e.g. for editing with a text editor.

Editing Time Code Event Lists with External Text Editor

The time code event lists saved to a show disk can be edited with any PC text editor or word processor program and read back into the system.

- Choose the subdirectory of the required show on the show disk.

  Examples of directory names:

Show number	Directory name
16	V0016D0
16.7	V0016D7

- All `time` code files have the extension .MTC. The default file is named DEFAULT.MTC.

- File format:

  - MTC identifies a time code file, optionally followed by a comment delimited by the character →, e.g. date of generation.

  - Second line: FRAMETYPE**,** followed by the frame number.
    Possible figures: 24, 25, 30N, 30D

  - Then the events in ascending chronological order:
    Time code in format 01:02:03:04, followed by the event type after by a tab or blank space, then the assigned sequence number. At the end may be a comment, delimited by the character →.

  - The event list is terminated by a new line with operation END.

  - Comment lines can be inserted at any point. These must start with the character →.

Notes for Entering Time Code in Form Fields

- The time code can also be corrected with the fader wheel.

- Use cursor keys ← and → to change between hours, minutes, seconds and frames.

- The decimal point jumps to the next numeric field

- `Key` **CLEAR** key or space bar of the PC keyboard resets the form field to 00:00:00:00.

- The frame number is determined by the external time code generator (24, 25, 30).

DMX Input

Option DMX Input allows to receive DMX from another console; the values received are interpreted using a DMX line configured with M206, Patch and are assigned to the patched dimmer channels or attributes.

For that option is a hardware expansion needed.

Operation

The following operation assigns DMX Input to the current preset:

TAKE x DMX (x=1..8)
> Assign DMX-line x

TAKE DMX
> assign last used DMX line; DMX1 after "erase all memory".

DMX received is read into the current preset and can be modified or saved as cue.

Note: The mask needs to be manually expanded, otherwise channels or attributes received might not be displayed.

CANCL DMX
> Ends DMX-Input for the selected preset; values last received are kept in the preset.

Displays

Header	Index "DMX" is displayed to cues in the preset with DMX-input assigned.
Groups	In the group field, header display "GRi" is replaced by "DMX IN".
List DMX	the received DMX-values are displayed in list DMX (on page before DMX1).

Notes

Restart/"Erase all memory":

A reset does not affect the DMX input, levels in the current preset are preserved. After a "erase all memory", DMX input is disabled.

Input signal failure:
If the DMX signal fails while DMX input activated, "No DMX Input" is displayed. Current preset values are unaffected.

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If the DMX signal fails while DMX input activated, "No DMX Input" is displayed. Current preset values are unaffected.Introduction to Effect Control

Effects can run in all active presets parallel to cues. Channels can be used simultaneously in cues and effects and can be controlled independently in effect and cue.

Key **E**, on NTX **EFF,** switches the current list display the effect display.

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Effects Grand Master

There is a superordinated master fader for all effects which is controlled by pressing the **EFF** key and simultaneously turning the digital fader on Focus/Iris or by the dedicated fader on Prisma. The current status is indicated in the display on the second monitor. The current value also appears during actuation of the **EFF** key in the header of the first monitor.

You can also alter the value of the fader by key entries. Refer to the paragraph on fader control

Effects Blackout

Effect control can be overridden by a blackout key.

Default setting ENA_BO, determines whether or not superordinated blackouts are only possible in conjunction with the **ENA** key. The use of **TAKE** and **CANCL** is not affected by this.

The key LED comes on when the blackout is active and output from the effect system is disabled.

Effects on Submasters

An effect can be loaded and started on all presets independently of another preset. The master acts simultaneously on channel levels and effect.

Effects in Crossfade System

Crossfade systems have a preset for effects assigned to the **PV** preset and to **XF** and **DEST** presets. The master fader for the crossfade system acts simultaneously on the levels of the cue and the effect.

An effect can be loaded in the **PV** preset or entered by loading from memory; starting the effect is not possible from within the PV.

Like on the presets, an effect can also be loaded and controlled into the **XF** preset. If there is an effect entered in the PV preset, it is started together with a crossfade.

Effects in Sequence

An effect loaded in a preset can be recorded as a pure effect cue (**REC EFF**) or together with the cue as a default cue (**REC REC**). Effects recorded parallel to the cues are loaded and started with the cue.

At the start of a cue type L/E, LTE and EFF, the effect entered in the PV preset is transferred to the XF preset and an ongoing effect is terminated. This ensures that the effect and cue are synchronous.

Level Displays

Levels from effects are not displayed in the **STAGE** and **LEVEL** list displays. The **OUT** list display the true output levels to dimmer channels and also includes the values from the effects system.

Speed

The speed of chases, builds and bounces (ping-pongs) is controlled by the hold time. Even if the effect is already started, this can be altered by time entries or by pressing the **GR**i or **XF** preset key and turning the digital fader, provided the **EFF** list is displayed on the first monitor.

Effect Key Numbers

Effects are defined by two-digit key numbers. The first number is the main key which specifies the type of effect. The second number, the sub key, is a more detailed specification of the particular effect.

number EFF
> Load effect in selected preset (number = key number)

The descriptive mask appears on the first monitor. This is divided into three areas:

Header	Name of effect with key number
	Status (ready, halted, active)
	Number of involved steps
Parameters	Controlling variables of effect
Channels	Display of individual steps with assigned control channels

Operation **0 EFF** removes the effect from the selected preset.

Table of main keys:

1	Chase
2	Build
3	Ping-pong
4	Flicker, flash
5	Cycle
6	Audio control, ext. keyboard

Table of sub keys:

Chase
11	End dark
12	End lit
13	Pendulum
14	Negative
15	Pendulum negative
16	Random number generator
17	Random number generator negative
18	Random number generator switch
19	Random number generator, end lit

Build
2	End dark
22	End lit
23	Pendulum
24	Negative
25	Pendulum negative
26	Pendulum switch

Ping-pong
31	Ping-pong
32	Ping-pong-peng

Flicker
    41   Flicker 1
    42   Flicker 2
    43   Flicker 3

Fire
    44   Fire 1
    45   Fire 2
    46   Fire 3

Flash
    47   Flash 1
    48   Flash 2
    49   Flash 3

Cycle
    51   With interval
    52   Without interval
    53   With merge

Special effects
    60   Audio control
    61   Sensor keypad
    7x   Analog signals
    8x   Digital signals

Menu M12 (Select special effect) shows all effect keys, **ENTER** activates the selected entry and displays the effect description.

Parameters

Use the cursor keys to select the appropriate line in the parameters area of the display to enter and alter controlling parameters, then set the parameter to the required value.

Run

You can set the number of times an effect should be executed / run, up to 255 runs are programmable. 'Infinite' allows an effect to run until it is manually halted or cleared.

Digital faders and incrementing keys alter the number continuously, keys → and ← step by step. The entry "**num INS**" is a direct entry of the number.

Next

Once an effect is completed after a finite number of runs, a cue or a new effect can be loaded and started. Make the entry with "**cue INS**". If no next cue is entered, the chase corresponding to the sub key is ended. The cue number can be cleared with the **DEL** key. By default, no next cue is set.

Interval Time

The Hold Time determines how long a step is active. There can be a joint time for all steps ranging up to 1 h. The time can be varied continuously with the digital fader; entry "**time T**" sets it to a fixed value, "**CANCL T**" clears the time.

If you want different times for the individual steps, you can enter the steps a number of times in succession in the channel list. The effective hold time is thus a multiple of the programmed hold time. As default, the hold time is 1 s.

Time Factor

The effects fire, flicker and flash can have a time factor between 0 and 9.99 assigned, which influences the speed at which the particular effect runs. Once the time factor has been selected with the cursor line, it can be altered with the digital fader. It can also be corrected by pressing the appropriate preset key and turning the digital fader.

Fade-Up Time

You can specify the fade-up time for cycle effects, the default for is 1 s.

Fade-Down Time

You can specify the fade-down time for cycle effects. The default for this is 1 s.

Interval Time

After the fade-down of a step, an interval before the next step is faded up can be set for cycle effects; default is 1 s.

Preheat Level

The output level of involved channels during inactivity can be specified between 0 and 50%. Effects that switch off the active channels (negative) use this value as the active value.

All operations for entering levels can be used to set preheat level. The default can be varied in the properties by the TEHEIZ setting.

External Lock

An externally applied digital signal can block the consecutive switching of steps. If the signal is active, the chase remains on the currently activated step. You can step through the signal numbers continuously with the digital fader and in increments with the → and ← keys. The default setting is no external lock.

External Blackout

An external digital signal can act on the effect as blackout switch without influencing the timing of the effect. You can step through the signal numbers continuously with the digital fader and in increments with the → and ← keys. The default setting is no external blackout.

Audio Control

Audio signals can control the running of an effect and affect one of the following functions:
- Enable
- Start
- Clock

The setting defines the function. Start and clock use the same signal source.

The type of signal that assumes control can be defined in a preset by the "**60 EFF**" operation, "Source for clock" and "Source for enable" are the relevant parameters. Effects started by audio signals are enabled to start by the **EGO** key. The lamp of the key flashes until a start has been triggered by the audio signal.

Selection is made with the digital fader or the ← and → keys, default is audio control off.

The total intensity of an effect can be controlled by an analog signal. The system compares the analog signal to the assigned lever value, the higher value is used. You can step through the signal numbers A1 to A8 continuously with the digital fader and in increments with the → and ← keys. The default does not provide for a modulating analog signal.

Assignment of Channels

All dimmer channels of the system can be involved in effects. A total of 99 steps with up to 9999, NT consoles 480, channels per effect can be controlled by the effect control system. Fire, flicker and flash effects only use a list of involved channels which can be up to 9999, NT 480, channels in total.

The cursor line must be in the step area of the effects display to edit the individual steps of an effect. Select the step with the cursor keys. The cursor line marks the currently active step.

The active level can be set to all values between 0 and 100% by the usual level entries, operation "**CORR and digital fader**" alters all levels. Control channels involved in a step can be defined by the familiar select and deselect operations. The **S/CH** function, as in normal channel selection, determines the resulting assignment.

INS
> Insert step
> A new step is inserted after the selected step.

chan INS
> Insert new step number
> The new step with the entered number is inserted after the step currently selected. Any of the regular methods of selecting channels can be used to assign the channels which participate in an effect step: e.g. **CH/G, INVO, RCH, I/II/FOH/MASTER, UP/DOWN, LOCK**

DEL
> Delete step
> If a step is selected, it is deleted from the step list.

ENTER
> opens a list display to edit the channels for the selected step.

Sequence Control

The following keys on the keyboard control the sequence of effects:

EGO	Start/resume effect
EREV	Reverse effect
ESTOP	Halt effect

The keys act on the effect in the selected preset. If a crossfade preset is selected, the keys control the effect in the **XF** preset.

Changing of presets leaves the status of effects in the deselected and selected preset unaltered.

In the submaster displays, an "**E**" indicates that an effect is entered in the submaster. Different colors of the identifier show, independently of preset selection, whether an effect is running or halted.

Start, Resume

GO
> Start or resume effect

If an effect is loaded in the selected preset, it is started. If the effect is already ongoing, the key has no influence. An effect that has already run is started again.

The key lamp signals, in addition to the indications on the monitor, the following statuses of an effect in the selected preset:

Off	No effect or effect already run
On	Effect running
Flash	Effect ready

The key lamp flashes to confirm enabling. As soon as the audio signal is applied, the effect starts and the lamp illuminates.

SUM GO
> Restart all halted effects

Halt

ESTOP
> Halt effect, execute single step

An effect ongoing in the selected preset is halted at the currently active step. When using audio control, all enabled steps are switched off. If the effect is already halted, the key activates the next step.

The key lamp is lit while an effect is halted.

SUM ESTOP
> Halt all ongoing effects, switch off audio steps

Reverse

EREV
> Reverse direction of effect
> normally steps are activated in the order in which they are entered in the steps area of the effects display. This operation reverses the step sequence.
>
> If the key lamp is lit, the selected presets effect is running in the reverse direction.

SUM EREV
> Reverse direction of all active effects

Regulating Effect Speed

preset digi
> Regulate speed

If the **EFF** list is active on the first monitor, the speed of an effect can be regulated continuously with the digital fader. This regulation, depending on the particular effect, governs hold and crossfade times; no regulation is possible within **BLD** and **PV** presets.

CANCL EFF
> Abort ongoing effect, reset start position

The dimmer output of the effect in the selected preset is reset to its initial status. The effect is in start position and can be started again with **GO**.

0 E
> Delete effect
> the description of the effect is cleared.

Control by analog or digital signals is not affected, these can be disconnected by "**70 EFF**" or "**80 EFF**".

CANCL preset
> Delete preset contents
> the effect, if present, is cleared in addition to channel levels. Analog and digital signals are also cleared.

Recording and Loading of Effects

Effects can be recorded either as a ("pure") effect or together with the cue contained in the preset as a default cue.

Cues containing only effects are identified in the cue list by "**EFF**". The type of effect can be seen from the indicated key number in both cases.

Unless stated otherwise, record and load operations always refer to the selected preset.

REC REC
> Record preset contents (effect and cue)
> Recording is under the cue number entered in the selected preset.

cue REC REC
> Record preset contents under stated cue number

REC EFF
> Record effect only
> Recording is under the cue number entered in the selected preset.

cue REC EFF
> Record effect only under stated cue number

LOAD
> Load cue
> the cue number is determined by the selected preset. If the cue to be loaded includes an effect, this will be adopted but not started. The effect can be started by GO or the stated control signals.

cue LOAD
> Load cue

cue preset
> Load cue in preset and start effect immediately

Description of Effects

Channels are involved in effects when they are entered in at least one of the programmed steps. Their output level changes between the preheat level and the level specified for each step.

Activation is in the sequence of the steps, as a pendulum or controlled by a random number generator. Two means of activation are programmable:

- Switch from preheat to channel level
- Switch from channel to preheat level

The effect sub key defines the type of activation.

Chases

Chases activate individual steps one after another, non-active steps are in idle status. If a finite number of runs is set, the sub key determines whether the last step is switched off (end dark) or remains active (end lit).

Parameters:
       Run
       Next
       Interval time
       Preheat level
       External lock
       External blackout
       Audio control
       External modulation

11 EFF
       Chase, end checked

The individual steps are activated and deactivated in the prescribed sequence. At the end all involved channels are dark.

12 EFF
       Chase, end lit

The individual channels are activated and deactivated in the prescribed sequence. At the end the last step is kept lit.

13 EFF
       Chase, pendulum, end dark

The chase channels are activated alternately in ascending and descending order.

14 EFF
       Chase, negative

The preheat and channel levels are changed over in function. At the end all involved channels are lit.

15 EFF
       Chase, pendulum negative

The preheat and channel levels are exchanged. The chase channels are activated alternately in ascending and descending order. At the end all involved channels are dark.

16 EFF
       Chase, random number generator

The channels are activated by a random number generator. At the end all involved channels are dark.

17 EFF
> Chase, random number generator negative

The preheat and channels levels are exchanged. The channels are activated by a random number generator.

18 EFF
> Chase, random number generator switch

The steps are activated and deactivated, controlled by a random number generator. Several steps can be active at the same time.

19 EFF
> Chase, random number generator, end lit

The steps are activated and deactivated, controlled by a random number generator. Several steps can be active at the same time. At the end the step that happens to be active is lit.

Builds

Builds activate the steps of the programmed step sequnce until all are active. If a finite number of runs is set, the sub key determines whether at the end all channels are dark or remain lit.

Parameters:
> Run
> Next
> Interval time
> Preheat level
> External lock
> External blackout
> Audio control
> External modulation

21 EFF
> Build, end dark

The involved steps are activated in ascending order. At the end all involved steps are dark.

22 EFF
> Build, end lit

The involved steps are activated in ascending order. At the end all involved steps are lit.

23 EFF
> Build, pendulum

The steps are activated in ascending order and deactivated again in descending order.

24 EFF
> Build, negative

The preheat and channel levels are exchanged. All involved steps are lit to begin with.

25 EFF
> Build, pendulum negative

The preheat and channel levels are exchanged. The steps are deactivated in ascending order and activated again in descending order.

26 EFF
> Build, switch

The effect consists of two runs. The channels are activated in the first run and deactivated again in the second.

Ping-Pong

In contrast to the effects described above, this effect has two different hold times: One determines the forward time (ping), the other the return time (pong).

Parameters:
>   Run
>   Next
>   Ping time
>   Pong time
>   Preheat level
>   External lock
>   External blackout
>   Audio control
>   External modulation

31 EFF
>   Ping-pong

A real ping-pong effect are only two steps programmed; here ping is the hold time of the first step and pong that of the second. If more than two steps are entered, there is an automatic switch to "ping-pong-peng".

32 EFF
>   Ping-pong-peng

This effect corresponds to a chase pendulum. Ping is the hold time when building and pong the hold time when checking.

Fire, Flicker, Flash

Parameters:
>   Run
>   Next
>   Time factor
>   Preheat level
>   External lock
>   External blackout
>   Audio control
>   External modulation

The effects control all involved channels together in a specified rhythm. The profiles are invariable, only timing can be expanded or accelerated by the time factor parameter.

41 EFF
42 EFF
43 EFF
>   Fire effects

Different versions simulate the appearance of fire.

44 EFF
45 EFF
46 EFF
>   Flicker effects

Different versions simulate the appearance of flickering fire.

47
48 EFF
49 EFF
>   Flash effects

Different versions simulate different kinds of flashes.

Cycle

Cycle effects are chases with variable fade-up and fade-down times; an interval is also possible.

Parameters:
> Run
> Next
> Fade-up
> Interval time
> Fade-down
> Pause
> Preheat level
> External lock
> External blackout
> Audio control
> External modulation

51 EFF
> Cycle with pause

Besides the fade-up and fade-down times, a common hold time and an interval can be set.

52 EFF
> Cycle without pause

The effect is identical to a cycle with interval, only the interval is missing.

53 EFF
> Cycle with merge

The consecutive switching of the steps is in the form of crossfades. The fade-up and fade-down time of the individual steps is determined by the crossfade time set jointly for all steps.

External Control Signals

The system can be controlled by external signals. Possible signals are sound signals, analog and digital signals, and optionally an external sensor keypad.

Like effects, the individual signals are identified by a main key and a sub key.

Main key:
6	Audio control, external keypad
7	External analog signals
8	External digital signals

Sub key:
60	Audio control
61	External keypad
70	Disconnect analog signal
71	Connect analog signal 1
.	
78	Connect analog signal 8
80	Disconnect digital signal
81	Connect digital signal 1
.	
84	Connect digital signal 4

Audio Control

The system offers the possibility of controlling channel levels by audio signals. Similar to the effects, the control is assigned to a preset and be entered for several presets. The settings listed in the display apply jointly to all presets, only the control channel assignment can differ from preset to preset.

The incoming audio signal can be used as follows:

    4 separate frequency bands
    Overall signal
    Envelope

A separate gain factor and individual level can be entered for each channel. The level can be set by "**CORR and digital fader**" or regular level entries.

Besides audio control of the control channels entered in the steps, there is the possibility of audio control for effects. The "Audio control" parameter defines the controlling audio signal.

Similar to effects, the individual frequency bands can be assigned up to 60 control channels. The control channels involved in a step can be entered by the normal operations for control channel selection.

Like normal effects, the audio control settings can be recorded and recalled.

60 EFF
    Activate audio control in selected preset
    the parameters have to be selected with the cursor keys to edit them.

The following parameters can be set:

Sensitivity
    The sensitivity of the electronic control can be matched to the level of the input signal. Gain is possible up to 6 dB and attenuation down to minus infinite. This is controlled by the digital fader.

    The sensitivity of the digital fader can be set through the properties.

H	**8000 Hz**
M	**1500 Hz**
MT	**400 Hz**
T	**70 Hz**

    The gain of the individual channels with the stated center frequencies can be varied by the digital fader. Channel levels can be regulated by the familiar entries for level control.

E Envelope
    The channel acts as a mean value throughout the frequency range. Gain can be set independently of the frequency bands.

ET Envelope
    the channel is derived from the envelope channel, deactivation of involved control channels is with a time delay. The time can be set with the digital fader, the incrementing keys, the ← and → keys as well as by the "**+/- time T**" operation in a range up to 2 min.

P Pause
    if no frequency band is active, the assigned control channels are activated at this point.

PT Pause timed
    if no frequency band is active, the assigned control channels are activated at this point after the specified delay. Entry of the time is as for "LT delayed". This prevents lamps intended for the interval from being activated by brief pauses in a musical piece.

Next two lines define one of the audio signals for controlling other effects, if they have selceted audio control for starting or stepping. Setting controlls all effects, which use this signals.

Clock source

affected effect use this signal for stepping. Additionally it can be used to start an effect.

Selection is made with the ← and → keys or the digital fader.

Gate source

This setting defines an audio channel as a gate signal. Affected effects are in run state as long as the signal is active.

Selection is made with the ← and → keys or the digital fader.

Next three lines control channels attached to the audio channels in the upper part of the display.

Preheat level

Like with the effects, preheat level of all control channels involved in audio control can be set to a level between 0 and 50%. All operations for level entry can be used for the setting.

The default is a level of 5%. This can be changed to other values through the property.

External blackout

Like with the other effects, a digital signal is determined that acts on the sound channels like a blackout switch. You can step through the signal numbers D1 to D4 continuously with the digital fader or in increments with the → and ← keys. The default does not provide for an external blackout.

External modulation

the overall intensity of the control channels influenced direct by the audio control can be governed by an external analog signal. Comparison is made to the associated master or master crossfader. The higher value determines output intensity.

External Keypad

A sensor keypad is available as an option. Control comprises twelve keys. Each key can serve up to 40 control channels.

The keypad has two rows of twelve keys each. The top row activates the assigned channel. The bottom row activates the channels as long as they are kept pressed. On release, the channels are deactivated.

Control by using the keypad is assignable to any preset. Several presets can be controlled simultaneously by the keypad. The extra parameters are always determined by the last setting. As in audio control, the control channels in the individual steps can differ.

Selection of the control channels in the channels is made by the operations for control channel selection.

The active level of a step can be varied. Entry is made by selecting the step with the cursor keys and then entering the level with the digital fader or operating keys.

61 EFF

Load control by sensor keypad

Parameters:

Preheat level
External blackout
External modulation

Note: If no keypad is connect, all involved channels are activated.

External Signals

Presets and effects can be controlled by external analog or digital signals. Each signal may control any number of presets and effects.

The assignment between presets and signals can be saved and activated again at any time.

Analog Signals

Analog signals override the masters or master faders of the crossfade system. The lever value is compared to the assigned signal. The higher value determines the output level, also allowing for the superordinated master faders and grand master faders of course.

There are eight inputs available for analog signals.

7x EFF
　　　Assign analog signal x to selected preset
　　　x = 0 cancels the applied analog signal.

Digital Signals

Digital signals act as blackout switches. When the signal is active, the selected preset is switched off. In effects the digital signals can also be used as a lockout signal.

There are four inputs available for digital signals.

Introduction to the Movinglight-Control

The Movinglight-Control (ML-Control) allows to comfortably work with moving lights, color changers, motor yokes etc.

HTP versus LTP

Lighting levels are calculated in accordance to the HTP principle (highest takes precedence), i.e. the highest preset value is the output. In contrast, the output values for the ML controller are defined by the LTP principle (last takes precedence); the lighting level is determined by the value of the last preset activated, irrespective of the values stored in the other presets.

Presets

All presets have, aside effect and intensity levels, a dedicated ML-section.

ML-attributes held on presets are activated upon moving the presets fader (regardless their value in other presets) (LTP); the fader itself controls the dimmer channel. Default setting GRLOAD_MODE defines the behavior upon loading a submaster with Load.

In addition to submasters, crossfader, and blind presets, a programmer (**PROG)** preset which defines the output values independently of all other active presets and presets is available. The programmer has priority over all other active presets and presets; values entered define the output levels and are not influenced by any other preset. Even the calculation of HTP intensity values from submasters and crossfaders has no effect to channels active in the programmer.

If values are entered into the Programmer, the **PROGCL** key lamp flashes; pressing **PROGCL** clears the programmer and the lighting levels are again determined by the other active presets.

Key PROG**BO** acts as blackout for the Programmer and deactivates the programmers' output. Once again, the lighting levels are then determined by the other active presets.

If a blind preset is selected while configuring ML devices, the output values activated by the configuration are automatically entered into the programmer. If a fixture appears to operate incorrectly after configuration, please check whether the programmer is active (**PROGCL** key lamp flashing).

Glossary

Attribute
Attributes are the individual functions of a device to be controlled (like Pan/Tilt, Color, Shutters etc), referring to the control channels.

Control Channel
DMX-channel controlling an (named) attribute.

Device
A device is a moving light, motor yoke, color scroller or, in general, a fixture controlling various attributes.

Display Order
The display order defines the assignment of control channels to encoders and encoder attribute banks (keys A...H). The assignment displayed then can be changed with attribute group keys A...H.

Device Configuration
List of all devices with their channel configuration

Channel configuration
Device-specific configuration of control channels,
Default / home and highlight values for control channels
Range configuration for the individual control channels

Involvement
Attributes are regarded involved if a value is set; various display colors indicate the involvement.

Old Configuration
>   Configuration created with software version 3.x or previous versions

Old Show
>   Show created with software version 3.x or previous versions

Palettes
>   Palettes allow to record attributes for quick recalling.
>
>   When recording palettes, (some or all) attributes of selected devices are recorded and can be re-assigned to the device by selecting the palette entry.
>
>   If recording ML- or COL-cues, attributes set by palettes are stored as "shortcut" to the contributing palette; modifying the palette then changes the reference in all cues recorded with the palette number.
>
>   Example:
>   A F(focus)-palette is used to focus a device on an stage set object and used for recording to cues; if the position needs to be edited (thru to a new position of the object) you will only need to edit and update the palette, all cues recorded with this palette entry will then use the new position.

Palette Group
>   Each channel (attribute) of a device is assigned to a palette group:
>
>   I   Intensity (e.g. Dimmer)
>   F   Focus (Pan, Tilt)
>   C   Color (and all related attributes)
>   B   Beam (like Gobo, Shutters, Iris etc.)
>
>   Assignment of control channels is important for the recording of cues, as various attributes are included depending on their mask type (IFCB) or predefined when using (**REC REC**, **REC ML**, **REC COL**).

Part
>   Control channels used of a device can be split to various DMX output lines or address ranges within a DMX range; for example:
>   The dimmer of a color changer is on DMX line 1, the color changer mounted to the fixture is controlled with DMX line 2.

Range configuration
>   Division of values of a control channel/attribute into various, defined ranges (e.g. color values, gobos).

Time Group
>   Related attributes (like CMY, Pan/Tilt) can be combined in a time group.

Operating Elements

ML devices are controlled with the following operating devices:

Encoders
>   The encoders control the displayed attributes (if available for the device type selected); changes are applied in the current preset. If ranges are configured, each encoder-step moves to the next set-value.

Display Order
>   Assigns the attributes to the encoders

Trackball
>   controls Pan-/Tilt of selected devices.
>   With default setting MOUSE_PRESENT=2, the trackball is used as mouse; to control Pan/Tilt press key Shift (in the middle of the cursor section).
>   Response to trackball movement can be controlled by properties TRACK...
>   NTX only: Latest type of trackball can be illuminated.
>   Trackball blinking: Device(s) can be controlled
>   Trackball lit: No device selected
>   Illumination of: Trackball replaces mouse

Fine adjustment
  The middle key above the trackball or the Shift key, located in the center of the cursor keys, switches digital and encoder wheel and the trackball to fine adjustment mode for the selected attribute (controlling the LSB of the attribute, if configured).

Digital wheel
  The digital wheel modifies the selected attribute linear; ranges are ignored.

Mouse
  The mouse is used for selection of devices and attributes of a device; right-clicking and moving the mouse controls the selected attribute.

Device Numbering

On previous software versions (up to 3.0), COL- and ML-devices where differenced, control channel numbers could be assigned to multiple devices. From version 4.1 both device types are combined, channel numbers can only be assigned once.

When loading old configurations, overlapping of channel number can occur; please refer to backward compatibility.

ML-Devices and Channel Mask

A ML device will be displayed in lists ML/COL upon inserting; when loading a show, the devices will be displayed upon selection (likewise channel numbers).

Devices can be separated by using lists COL and ML; depending on the configuration list COL can only displays color changers, list ML all other moving lights. Menu M651 of the Configuration defines which list is to be used of the device.

Preparing ML Devices

ML devices need to be configured:

- Connect the device to a DMX line and set the devices DMX-start address.

- The assignment of control channels to attributes needs to be set for each device, including the range configuration of special control channels.

- The assignment of control channels to the encoders (display options) needs to be configured.

The devices in the systems library come pre-configured.

Device Configuration, M651

This menu displays the global settings of the devices; if no devices are configured the list is empty. M651 is started by its menu number or with key **MENU** with list **MOVL/COL** active on the main monitor.

```
M651  ML configuration                                33 devices

   Chan  Type             Name              Attrs    DMX start

   101  S4 Revolution                         31    DMX2 101
   401  Studio Color                          16    DMX1   1
   402  Studio Color                          16    DMX1  17
   403  Studio Color                          16    DMX1  33
   404  Studio Color                          16    DMX1  49
   405  Studio Color                          16    DMX1  65
   406  Studio Color                          16    DMX1  81
   501  Mac 2000 Per m2                       31    DMX1 253
   502  Mac 2000 Per m2                       31    DMX1 284
   503  Mac 2000 Per m2                       31    DMX1 315
   504  Mac 2000 Per m2                       31    DMX1 346
   505  Mac 2000 Per m2                       31    DMX1 377
   506  Mac 2000 Per m2                       31    DMX1 408
   507  Mac 2000 Per m2                       31    DMX1 439
   601  Mac 600 m2                            12    DMX1  97
   602  Mac 600 m2                            12    DMX1 109

 ESC  MENU  ENTER  INS  DEL  COPY  CUT  UNDO  PRINT  Config  Load  Save
```

Figure 1.: Menu M651, ML Device Configuration

Headers

Chan	Channel number of the device
Type	e.g. Studio Color, Magmax, etc
Name	Device name, like position of the device. When loading an old configuration, the channel number of the old device is used.
Attrs	Number of attributes
DMX	DMX line/universe
Start	Start address of the device
ML/COL old	
	When loading an old ML- or COL-configuration, new channel numbers are assigned to the devices (if overlapping would occur). Refer to chapter Backwards Compatibility.

Key ENTER or double-click allows to modify the settings.

Bottom Line Options

Options in the bottom line (see Figure 1):

ESC	ends the menu
MENU	further configuration options (see below)
ENTER	edits the selected device
INS	insert a new device
DEL	delete device
	As an option deleted devices or parts can immediately be removed from palettes and cues in memory. Now unused attribute names can be kept for later use by new devices.
COPY	copy the selected devices channel configuration to the clipboard
CUT	copies and removes the selected device
PASTE	after COPY or CUT: applies the clipboard content to the selected device
UNDO	undo last change in configuration

PRINT	prints configuration
Config	starts the channel configuration of the selected device
Load	load ML configuration (likewise key LOAD)
Save	save ML configuration (key REC)

MENU gives the following options:

Channel Configuration
Channel configuration of the selected device

Display Order
Assignment of attributes to encoder-wheels

Attribute names
open menu M665, Atttribute names

Color names
Color list with color names and numbers

DMX output control
starts Menu M209, for en- or disabling DMX output

Backwards compatibility
refer to Backwards compatibility.

ML palettes
see chapter ML Palettes

Insert	likewise key INS
Load	load device configuration (likewise key LOAD)
Merge	load and add devices to existing configuration
Save	save configuration (like key REC)
Remove	remove configuration files
Print	print configuration

Insert Devices

A device needs to be configured before it can be controlled.

Note: Menu M204, Dimmer list, shows all dimmer numbers configured. Each attribute of a device is counts as a ("dimmer") channel, the maximum amount of available dimmer channels and device attributes is displayed in menu M220, entry Channels. If exceeded, message "dimmer list full" is displayed and configuration aborted.

On Menu M651, key **INS** inserts devices, giving the following options:

From file
insert device from the library provided.
Library files can be used from all installed drives (HD/Floppy/USB/NFS/Host/CD)

From library list
An overview of all devices from library files is generated for selection.

From ML device list
An overview of all devices from configuration files is generated for selection.

from old ML configuration
copy device from old library or configuration (software version <3).

Insert fixture part
insert a new fixture Part to the selected device.

Define a new device
Defines a new device from start.

The quickest option is to insert a device from the provided library; names refer to the manufacturer and to the fixture type. After selecting a device, the following settings need to be configured:
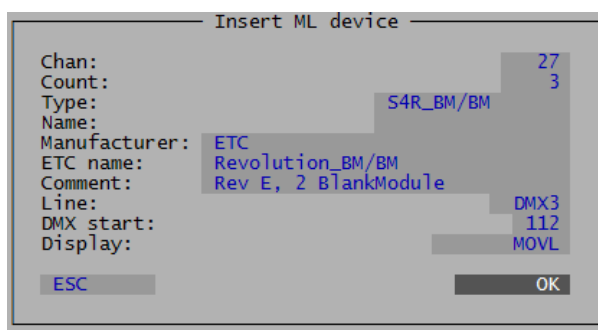
Figure 2.: Menu M651, Insert ML device

Chan	First device number
count	number of devices to insert
Type	set or insert the type of the device, like "Technobeam".
Name	each device can be labeled with a name (eg. position).
Manuf.	Manufacturer name, example Martin, Clay Paky, ..
ETC Name	Device name as it is used by other ETC consoles
Comment	Each device can have a special comment
Line	selects the systems DMX output to which the device is connected; "off" indicates that the device is not assigned to a DMX universe thus being "offline".
DMX start	DMX start address of the device. Key MENU opens menu M206, DMX patch, for the assigned line. You can quickly select a free address range.

If an overlap of the DMX address chosen to the existing patch would occur, a warning is displayed:
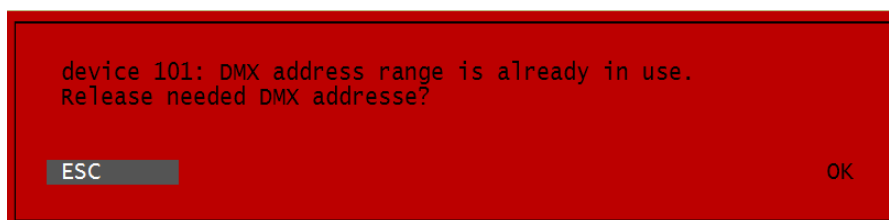
Figure 3.: Menu M651, Insert device, DMX address overlap

OK	patches the device to the addresses entered; previously patched channels or devices will be removed from the patch.
ESC	aborts without applying changes.

M668, All ML device lists, helps in finding devices. It provides an overview of all devices from all library files of the selected memory.

Type:	Device type
Attrs:	Number of DMX channels
Library	Name of the library file (NAME.MLC). There is no difference between library and configuration files. In case a device is configured more than once in a file, as usual in configuration files, the number of devices is indicated, eg. "4x".

Menu M206, patch, indicates ML-devices with index "**p**", the low-byte of 16bit-control channels is marked "**p/l**", plain channel numbers identify (dimmer) control channels.
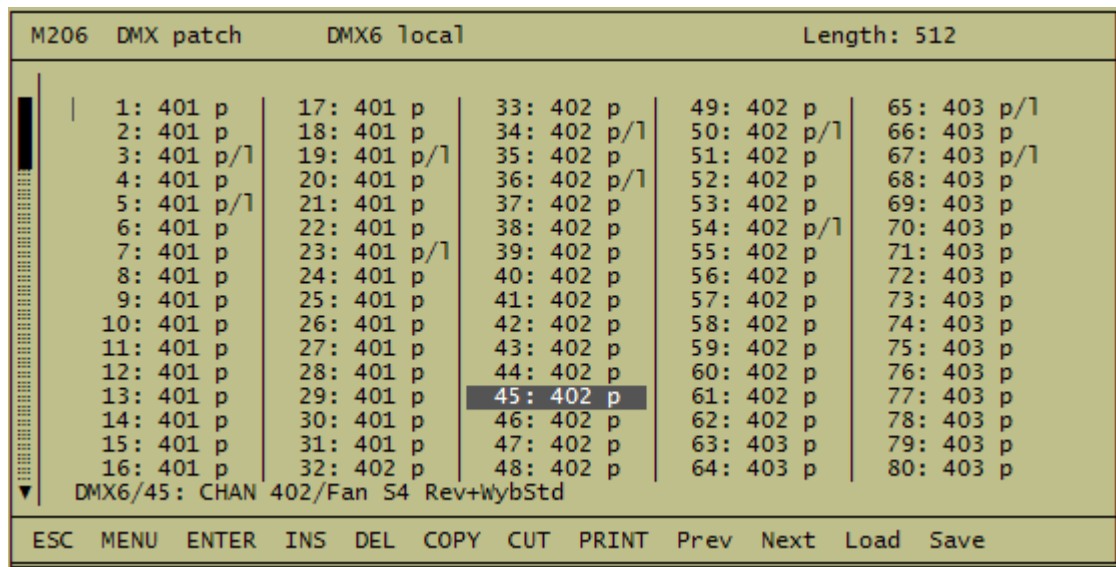
Figure 4.: Menu M206, Patch

Device Lists

Two types of files for ML configuration exist: Libraries, provided by ETC via setup, and configuration files, local device configuration. After loading a file from menu M651, file type is indicated in the header.

Menu M668, All ML library lists, searches through library files.
Last column of the list display can be switched by cursor left/right or Softkey "Disp" through name, ETC name and comment.

Menu M669, All ML device lists, searches through configuration files.
An additional column indicates the number of each device configured.
Last column of the list display can be switched by cursor left/right or Softkey "Disp" through name, ETC name and comment.

Both list displays can be exchanged by softkey MENU in the footer.

Depending on the console type, searching can take some time. A progress bar indicates the state of searching. Key ESC can be used to cancel the search.

Edit Devices

Global settings of a device can be changed. In menu M651, select the device. Key ENTER opens a form:
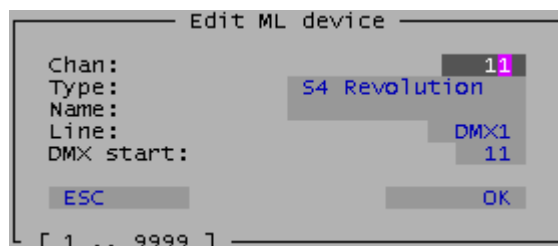
Figure 5.: Menu M651, Edit ML device.

Please note for following settings:

Chan   Device number
               Changing the device number an additional form opens. AS an option you can update palettes and cues in memory.

Type   Device type
            Key MENU opens the list of library files, where you can choose a new device type like
            inserting the devices. Changing a device type, attributes with names equal in both devices
            inherit values in palettes and cues.

In case the device number is changed, as an option cues and palettes can be updated accordingly.

Channel Configuration

Devices from the library provided come pre-configured; if configuring a new device, the control channels
(attributes) need to be configured (refer to chapter "Channel Configuration").

If inserting more then one device of a type, configure one device and copy the configuration to the other
devices by:

- select the device to be used

- COPY copies the selected devices configuration to the clipboard

- select the devices to be configured, **PASTE** copies the channel configuration to the selected device.

Saving of Configurations

The device and channel configuration needs to be saved, otherwise it will be lost after erasing all memory.
You can save the configuration as default or to a show.

Channel Configuration

General

The channel configuration assigns control channels to the control attributes (functions). When inserting a
device type not available in the library, refer to the devices user manual for functions of control channels.


```
Channel configuration ML 103 S4 Rev+WybStd DMX3/101          31 attributes

 Pos DMX Name        Home High  Off Prio Fade TXF  CV Inv Pg Tg Ca Rng Dm

  1 101 Dimmer        0%    FL   0%  HTP fade txf   1      I
  2 102 Pan      MSB  50%       50%  LTP fade txf          F  1
  3 103 Pan      LSB
  4 104 Tilt     MSB  50%       50%  LTP fade txf          F  1
  5 105 Tilt     LSB
  6 106 Frost        0%        0%  LTP              B           2
  7 107 Focus        50%      50%  LTP fade txf     B
  8 108 Zoom         50%      50%  LTP fade txf     B
  9 109 MovTime      0%        0%  LTP fade         F
 10 110 Col Time     0%        0%  LTP fade         C
 11 111 BeamTime     0%        0%  LTP fade         B
 12 112 Reset        0%        0%  LTP              B          11
 13 113 Color        0%        0%  LTP fade         C          12
 14 114 Fan          50%      50%  LTP fade     inv C
 15 115 Iris         0%        0%  LTP fade txf     B
 16 116 Gobo         0%        0%  LTP fade         B           5

 ESC  MENU  ENTER  PRINT  Home  High  Offline  Invert  Swap  Config  Disp
```

Figure 6.: Channel configuration

Pos   DMX control channel number

DMX   DMX address of the attribute

Name   Attribute-name (internal list, referring to its function)
               Attributes with 16bit-resolution indicate MSB (=higher byte) or LSB (=lower Byte)

Home   Output value output if device is included in channel mask

High   Output value when pressing key **100%**

Off   Output value for configured devices not being part of the mask

Prio   Output calculation HTP or LTP

Fade	Fade possible, without TXF set only independent fade times
TXF	Use cue time as fade time (if no independent fade time is assigned)
CV	assigned dimmer curve, linear if empty
Inv	invert control channel
Pg	assignment to Palette groups I; F, C or B
Tg	time group-number
Cal	High resolution fade (calculated 32x per second)
Rng	ranges, if configured
Dm	Darkmove-time (if DM is activated and Fade=yes)

Bottom Line:

ESC	ends the menu
MENU	selection menu
ENTER	edit selected entry
PRINT	print channel configuration
Home	activate Home-values
High	activate High-values
Offline	activate Offline-values
Invert	invert output
Swap	swap Pan/Tilt of selected device
Config	start range configuration
Disp	display mode for Home, High and Off values, % or decimal keys cursor left/right can be used as an option

Key **MENU** gives the following options:

Range configuration
> starts the range configuration

Invert DMX-output
> invert DMX-output for selected control channel

Swap PAN/TILT
> swap Pan/Tilt of the selected device

Home positions
> activate Home-values

Highlight positions
> activate High-values

Offline positions
> activate Offline-values

Key **ENTER** or double-clicking opens for editing the selected control channel the following form:

```
┌─ Channel configuration  Chan 101 S4 Revolution ─┐
│                                                  │
│    Attribute:                            Tilt    │
│    MSB position:                            4     │
│    LSB position:                            5     │
│    Palette group:                        PAL_F    │
│    Time group:                              1     │
│    Home:                                  50%     │
│    Highlight:                                     │
│    Offline:                                0%     │
│    Priority:                              LTP     │
│    Fade allowed:                          Yes     │
│    TXF assigned:                           No     │
│    Invert DMX output:                      No     │
│    High resolution fade:                   No     │
│    Darkmove:                              10.0    │
│                                                   │
│    ESC                                     OK     │
└───────────────────────────────────────────────────┘
```

Figure 7.: Edit Channel configuration

Attribute

Name of the control channel
Key **MENU** displays a list of available attribute names, key **ENTER** selects; *<none>* clears the name, leaving the channel unused.
If an attributes name is changed, a form offers the possibility to change palettes and cue in memory accordingly.

MSB Position

MSB (coarse) DMX control address

LSB Position

DMX address for LSB (fine) control of 16bit-channels (these are marked "**h**" in the patch, menu M206).

Palette group

Assignment to palette groups I, F, C or B

Time group

99 different time groups can be assigned to attributes; attributes of a time group are selected "involved" if an attribute is modified. "0" = no time group assigned
Single attributes of a time group can be accessed by adding key shift to the command.

Home

Output value when adding a device to the ML/COL mask.

Highlight

Output when pressing key **100%** or clicking **High**.

Offline

Output value if the device is not part of the mask.

Priority

HTP or LTP
HTP channels (standard: dimmer) are calculated "highest takes precedence" (like all dimmer control channels); all other attributes should be configured as LTP.

Fade allowed

allows to crossfade the attribute; if set to **"no"**, only wait-times can be assigned.

TXF assigned

If no independent fade times are assigned, the cue fade time is used (if option "Fade allowed" is set to "yes").

Invert DMX output
> This option allows to invert the DMX output (e.g. for modifying the Pan/Tilt-behavior of a device).

High resolution fade
> NT only: The attribute can be calculated in high resolution (32x/sec) when crossfading, if the DMX output rate is synced to 32/sec at menu M237.

Darkmove
> activates darkmove for the attribute and sets the time used for "darkmoving" the attribute; **CL** deactivates Darkmove.
> Please refer to chapter Darkmove

The Channel configuration is part of a devices configuration and saved with the configuration.

Range Configuration

General

The range configuration allows to divide and name ranges within a control channel, allowing to set specific color, gobo or control values which will be displayed with their assigned name rather than with 0-100%.

The range configuration is started with key **MENU** or "Config" in the main menus bottom line.

```
Range configuration Color device #103 S4 Rev+WybStd          13 Ranges

        Range   Name      Start      End       Set

          1     R00           0       11         1
          2     R33          12       33        22
          3     R13          34       57        45
          4     R57          58       78        68
          5     R348         79      103        91
          6     R348         80      102        91
          7     R343        104      125       113
          8     R23         126      148       136
          9     R371        149      172       160
         10     R361        173      195       183
         11     R83         196      219       207
         12     R26         220      242       230
         13     R89         243      255       254




 ESC   MENU   ENTER   COPY   PASTE   UNDO   PRINT   Load   Save
```
Figure 8.: Range Configuration

When using the digital wheel, the output value is controlled linear (even with ranges configured); likewise direct value inputs. The display refers to the ranges configured.
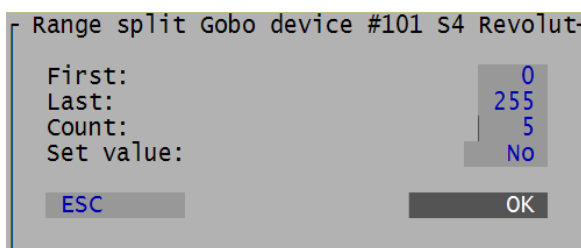
Range configurations can be copied between devices by saving and loading to a range setup file.

Softkey MENU displays a selection. Reset clears the whole range configuration.

Key UNDO undoes the last change including loading of a range setup file.

INS starts the following form:
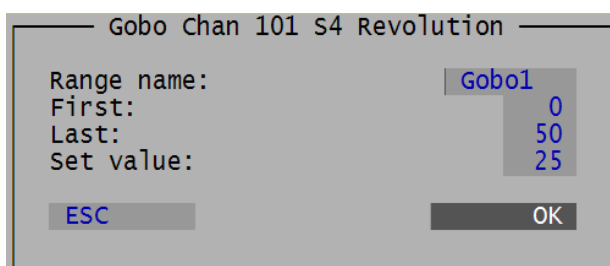
Figure 9.: Preparing a range

first/last	Some devices use parts (ranges) of a channel to control various functions, like slow to fast shutter/strobe, lamp on/off etc, which can be assigned here (first and last value of a range). The non-configured range of a control channel will be controlled linear; furthermore a "DimOff"-control function can be set.
Count	Number of output ranges (like gobos, colors)
Set Value	if set to "yes", the mid-point between first and last value is used (but can be changed later); if "no" is chosen the set-value can be entered manually.

If the ranges are defined, they can be fine-tuned and labeled by pressing key **ENTER**:

Figure 10.: Editing a range

Special Functions

The following indexes give further control over ranges:

@	The range name and current DMX-value will be displayed at the ML/COL-list and the VFD-displays, e.g.: @gobo1 as range name will display *13gobo1* for DMX-value 13.
%	the relative value (in percent) will be displayed, followed by the range name, like: %col2 as range name will display *47%col2* for 47%.
/	a range indexed with / is ignored when using encoders, digital wheel or trackball, which is essential for control channels with ranges like "Reset" or "Lamp Off" to prevent accidental activating. For example: /reset as range name will ignore range "reset".
!DIMOFF	allows automatically turning off the Dimmer-attribute of a device in defined situations (like closed barn doors on automated yokes). For each attribute of a device, a !DIMOFF-range can be configured which will set the dimmer of the device to 0; this range needs to be entered without set values and named **!DIMOFF.** If the range !DIMOFF is selected, the dimmer will be set to 0; its value will still be displayed at lists LEVEL and STAGE; the list DMX will display 0 for the dimmer, list OUT displays !DO. **!DIMOFF** works for channels set to a direct/independent intensity, too.

Virtual Dimmer

In case a device has no dimmer channel, a virtual dimmer can be assigned. It behaves like a conventional dimmer, but it is not assigned a DMX-channel. By using a virtual dimmer it is possible to control the intensity of color mixing devices like Chroma4 or LED devices without changing the color channels.

Within channel configuration line „Fade allowed" offers an additional option „virtual Dimmer".
Display of the channel configuration marks such attributes by "vdim" in column "Fade".
Menu M651 marks devices with virtual dimmer by "+V" in column "Attrs"

In list displays LEVEL, STAGE, ML, COL and OUT there is no difference between dimmers and virtual dimmers. Except in OUT the list displays mark virtual dimmer devices by letter "v" added to the channel numbers.

List displays ML/COL always show the original value for attributes without influence of the virtual dimmer.
Only list display DMX shows the real output values controlled by the virtual dimmer.

Display Order, Menu M652

Menu M652, Display Order, defines the assignment of attributes to the encoders and the attribute bank keys **A – H (PG_A – PG_H)** left to the encoders.
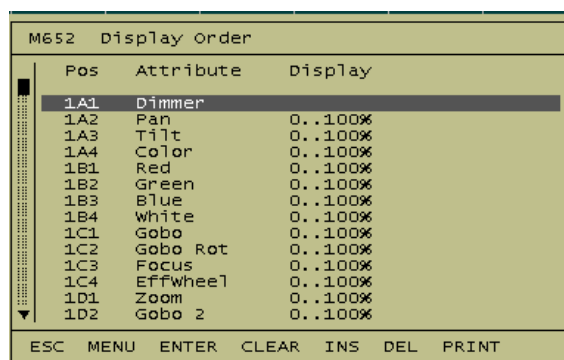
Up to 256 attributes can be arranged within 8 groups of banks. Repeatedly pressing the attribute key switches through the banks. The left corner of the encoder display shows the number of the active attribute bank.

Configuring devices or loading a configuration fills the banks: First bank 1 of each attribute bank A – H (as before), next bank 2 to 8 of attribute bank A, bank 2 to 8 of attribute bank B etc.

List display of menu M652 shows the banks as bank number – attribute bank name – attribute number.
Example: 2A3 is attribute for encoder 3 within bank 2 of attribute bank A.

If devices are selected while switching through the banks only by the selection used banks are displayed. If no devices are selected, the attribute keys switch through all used banks.

The arrangement of attributes and the format for displaying values can be changed. to speed up operation, the same attribute can be assigned to different banks.

Figure 11.: Menu M652, Display Order

Options:

ESC	ends the menu
MENU	file options like load, save, remove
ENTER	edit selected entry
CL	clear selected entry, leaves an empty line
INS	inserts entry before the selected entry
DEL	deletes selected entry, following entries are moved up
PRN	print assignment

ENTER opens a menu for editing the selected entry. Attribute name and display format can be changed. Within the selection of attribute names, already used names are marked. For attributes of related function display format is changed for all attributes.

Available diplay formats:

+/- 99.9	Center, 50% = 0 (Pan/Tilt only)
0..100%	displays 0 to 100
0..255	displays 000 to 255 for 8bit attributes
0..65535	displays 00000 to 65535 for 16bit attributes
0..FF	00 to FF for 8bit attributes
0..FF00	0000 to FF00 for 16bit attributes
0..360	HsV for Color control

Editing attribute values by using forms this format is used too. Example is adding values from the track list display.

Addtionally to the keys indicated in the options, console keys COPY/CUT/PASTE/UNDO can be used for quick editing.

MENU – Reset arranges attributes back according to the internal rules.

Note: The display order is not part of the device configuration and needs to be saved if customized.

Attribute Names

Names for attributes are coded into the software. It is possible to make changes or add new names.

Menu M665, Attribute Names, displays existing names. Left click onto column heading Number or Name resorts display accordingly. Current sort order is marked by an arrow before the column header.

Number	internal name number, 1 - 999
	    numbers up to 499 are for internal use only
	    new names can be assigned to numbers 500 upward

Name	Attribute names
Pg	Assigned palette group

Typ	fix, cannot be changed
	    mod, was changed
	    usr, added by user

Options in the bottom line:

ESC	close menu
MENU	change sort order
	Load saved file
	Merge saved file
	Save current list to a file
	Print current list of names
	Delete saved file
	Reset list to factory setting
ENTER	edit marked entry
CL	marked entry to factory setting
INS	insert new name
DEL	delete marked name
PRN	print current list of names
Load	saved file
Save	current list to a file

Color Names

Names of colors entered with C-index are displayed with the related color name, like **clear** for **C130.** If palettes are auto-created, color names from the color list will be used as pal-name.

Especially for displaying true colors in Libra, manufacturer numbers can be used: Prefix "L" for Lee, "R" for Rosco.

If loading old color changer configurations, the color list will be used as reference for building the new configuration.

ML-Palettes

Palettes are of great help for working with various different devices and quick operating of moving-lights in general. Within configuration menu M651, option **ML Palettes** gives the following options:

Copy palettes
> opens Menu M690. If a device is recorded to a palette, the palette information can be copied to other devices.

Autopalettes
> generates palettes from the ranges configured.

ML palette configuration
> file options for the palette-configuration:
> Load, Merge, Save, Remove, Reset, Print

Backwards Compatibility

Configurations from software version 4.1 onwards are not compatible to previous versions; the old configurations can be imported but will be saved in the new format.

When loading a show containing old configuration data, a warning will be displayed in the message line. If an overlap would occur to existing dimmer or control channel numbers or configured devices, new numbers are assigned to the old configuration:

- ML devices are numbered 5001 – 5999,

- COL-devices 6001 – 6999.

The device name will be labeled with the old device number; the numbering can be changed later.

If the configuration is then saved in new format, the old configuration will be ignored but can be read (if not deleted).

The old color configuration will be converted into a range configuration for attribute "color"; color numbers are used as Cxxx range names. C-Palettes will be generated and, if the fan-attribute was assigned to colors, it will be copied into the palettes.

Within configuration Menu M651, key MENU allows to choose the option "backwards compatibility":

Convert old COL/ML cues
> ML- and COL-cues recorded in old format can be converted into the new format to improve loading of those cues.

Old ML/COL numbering
> allows adapting old COL/ML numbers to the current configuration.

Old ML configuration
> **Color changer configuration**
> Old configurations can be loaded/merged; if the configuration is edited and updated, the old configuration files should be deleted.

ColorKinetics Light System Manager

Light System Manager (LSM) by Colorkinetics can be connected and controlled via serical interface.

Configuration:

> Property LSM_SK in menu M215, Properties, defines the device number. LSM_SK=0 deactivates the interface. Changes of the value require a software restart. (reset).

> Menu M651, ML configuration: Insert device LSM from library file ColKin. A new attribute LSMShow was introduced. It has automatically a range configuration of 256 ranges.
> The device is controlled via serial interface. Assignment of a DMX address is not necessary.

Using the ML Control

ML- and COL-display

Each device can be assigned to either the MOVL (ML), the COL or both display lists. Menu M243 allows defining which attributes are to be displayed in which list and which display mode is used:

normal   displays all devices in the channel mask

compact   only selected devices are displayed

flexi   Devices are displayed if
    they are selected
    Dimmer value in the current preset is >0%,
    Active dimmer value is >0%,
    Presets BLD/PV/PROG: device is involved
  refer to chapter Flexi mode for more information

Keys **MOVL** and **COL** switch to the corresponding view or toggle back to the previous view. Each device is displayed with its channel number and name; the number of devices displayed can be configured by settings POSDISP_BANKS and FWDISP_BANKS.

Figure 12.: ML list view

The device/channel number and its name is displayed in the lists header; furthermore, the LTP-state of the preset and the view mode is displayed in the lists header.

Display modes:

Contents   values contributed by the current preset

Active   active output values

Fade Times   fade times assigned (in presets XF, PV and BLD only).

Dynamics   to attribute assigned modulation table (sine, step, ..)

The display mode is changed by clicking the display mode or by key **T**.

On display mode Contents and Active right to the mode display is a field displaying the mode values are displayed; mode can be changed by clicking or softkey Disp in the footer:

  /Pal   if assigned name of a palette
  /Name   range name
  /Val   numerical value

The LTP indicator shows if the LTP-output of the current preset is activated (**active, color red**) or **released (color green)**; key ENA and mouse click on the status display changes status for the current preset.

Colors used for the values give the following information:

red　　　　active output value, contributed by the current preset

green　　　value held in the selected/current preset.

yellow　　 active value, device selected

white　　　active value, device not selected.

The values are displayed in various ways:

Percentage　　　　　　　the output or preset value in % (or +/- 100% for Pan/Tilt).

Range name　　　　　　　for attributes with ranges configured the range name is displayed; from software 5.4.1.3, the relative % within a range (without set value) is displayed.

Palette name　　　　　　if a Palette is set, the palette name is displayed, indexed with "".

***　　　　　　　　　　　attribute is not involved (for BLD or PV)

For fade times:

txf　　　　the cue time is used for crossfading the attribute.

min　　　　attribute is configured for crossfading but no crossfade time is set and minimum time (0 sec) is used.

---　　　　　 no fade time possible

The names of control channels displayed refer to all devices; if a control channel is not available for a certain device the field is kept empty.

Depending of the attribute highlighted (by the cursor line), key **ENTER** or a double-click starts the following display modes:

- Pan/Tilt: track form displaying the current Pan/Tilt position graphically.

- Attributes with ranges configured: opens the range list, allowing selecting a range with mouse or cursor keys.

Fine adjustment while controlling attributes:
pressing the middle trackball button switches trackball and encoders to fine adjust attributes (if configured and in XF-preset).
Key Shift switches Encoders to fine adjustment.

Cursor Line

The cursor line selects a control channel; value entries and the digital wheel then only affect the highlighted attribute of selected device(s).

- clicking a control channel by mouse: cursor line is set to the control channel and device selected.

- the cursor keys move the cursor line up/down
  Shift HOME/END move it to ther first/Last line

- Key **ESC** ends the cursor line.

- Key **ENTER** displays a form for control channels with ranges, showing all ranges configured and allows to select a range by cursor keys or mouse click; key **ESC** ends the form.

If the cursor line is switched off:

- level entries relate to the dimmer (if available)

- softkey-operations (bottom line) refer to all attributes of selected devices

- within display "Fade Times", time entries are used as cue time

The lists bottom line gives multiple operations which act as softkeys and are activated by mouse clicks. Clicking "..." on the bottom right corner of the screen toggles between the various options.

The softkey's label are located above the submaster display windows on the bottom of the screens. As an option to the mouse submaster keys GR1 .. GR20 can be used: Pressing the shift key located in the center of the arrow keys and a submaster key activates the assigned softkey.
On Prisma the empty key below LTPBO on the left side can be used as an option for the shift key.

Prev	switch to previous devices' page
⁞	page-down (attributes)
Next	to next devices page
LTP act	activate LTP for the selected / current preset
Release	deactivate LTP-output of the current preset (likewise key **REL**)
Ignore	(for default setting UPDATE_KENN=1: modified attributes are selected/marked): the selection is removed. If key Shift is pressed, only the highlighted/selected attributes of a time group are affected.
Get	gets the active output value of the selected attribute (or all attributes) into the current preset. If key Shift is pressed, only the highlighted/selected attributes of a time group are affected. Difference to key operation **TAKE INVO**: Even dark moved values are set active.
Remove	likewise **CANCL INVO**: remove (uninvolve) selected or all attributes of the selected device. If key Shift is pressed, only the highlighted/selected attributes of a time group are affected.
Load	load cue
Save	save cue: opens a window which gives, independently of settings made in menu M240-M242, various saving options for the cue.
Update	saves changed attributes only (depending on UPDATE-setting)
Config	starts menu M651, device configuration
...	scrolls the bottom line
PAL_I	likewise key **PAL_I**
PAL_F	likewise key **PAL_F**
PAL_C	likewise key **PAL_C**
PAL_B	likewise key **PAL_B**
Home	activates the configured Home value for the selected device or attribute.
High	activates the configured highlight-value for the selected device or attribute.
Full	Cursor-line off: Dimmer to 100%, otherwise the selected attribute is set to 100%
Null	Cursor-line off: Dimmer to 0%, otherwise the selected attribute is set to 0%
Rec I	likewise **REC PAL_I**
Rec F	likewise **REC PAL_F**
Rec C	likewise **REC PAL_C**
Rec B	likewise **REC PAL_B**
Resolve	if the cursor line is off, the palette-assignment of the selected devices attributes is removed/resolved; the current values are displayed instead of the palette-name. Time groups: If key Shift is pressed, only the highlighted/selected attributes of a time group are affected.

COPY	starts M641, Copy values to selected fixtures
PALCOPY	starts M691, Copy palettes to selected fixtures
Display	toggles the value display mode: Palette name Range names (mode **/Name**) Values (mode **/Val**)

The display mode is indicated in the top left corner of the list view; the palette-assignment remains unaffected when changing the display mode.

Involvement of Attributes

If a device is inserted to the configuration, its outputs are the home-values set; these are not contributed by a preset which means the device and all its attributes are not involved.

An attribute is involved in a preset, if:

- it is set to a value within the current preset or

- its actual output value is transferred into the current preset with keys **TAKE INVO**, **TAKE MOVL** or softkey **Get**
  Values changed by Darkmove are ignored.

- save a cue with setting Attribute set to "All" in menus M240/M241/M242.

- load a cue including attribute values.

The operations **CANCL INVO, CANCL MOVL** or softkey **Remove** uninvolves the attribute; for attributes with active output(display color red) a new output value source is searched using the following order: XF1, XFT2 (on Prisma), GR1 .. GR20.

Home-Position

The home-position value configured can be recalled any time for a device or selected attributes:

- by clicking softkey "HOME" in lists COL and ML

- with key operation **CANCL CANCL ore "@ ."**
  Together with key Shift Home-Position is set only for the attribute marked by the cursor line.

The operation "*chanrange* **CANCL CANCL**" allows to home multiple devices independent of the current list used. Within lists COL and ML, if the cursor line marks an attribute, only the selected attribute is set "home".

LTP-Preset Priorities

From version 5.5, it is possible to assign LTP priorities to presets:

All active presets can have the priority "normal", "high", or "low" assigned; changes of LTP-attributes are then only carried out if not "blocked" by a preset with higher priority. Presets with similar priority are treated the LTP-way.

The Programmer preset (PROG) always has the highest priority.

Assigned preset priorities are lost after clearing all memory and reset to "normal" on all presets.

Operation

TAKE + Preset	Priority = high
TAKE - Preset	Priority = low
CANCL + / - Preset	Priority = normal

'High' or 'low' priority is indicated by the '+' or '-' index in monitor views; without index, the priority is "normal".

If a preset is "released", it has the lowest priority. LTP-values set in the preset and attributes of the preset are without effect. 'Released' is indicated with index 'r' followed by the preset name.

Example for Priorities

Values set in submaster GR1 should not be modified by attributes in cues running in a XF-system:

Key operation TAKE + GR1 assigns high priority to GR1; changes made in the XF preset will not affect the higher priorities GR1-attributes, as long as XF is set to normal priority.

Activate/Release Attributes (ACT/REL)

Values for attributes held in presets can be activated or deactivated. Only attributes are affected, no dimmer channels.

Function Release releases active values from the selected preset and activates last active values from the assigned preset regarding priorities.

For NTX/Booster there is no limitation in going back to previous values. NT only can do one step back.

Function Activate activates attribute values from the affected preset. It can be triggered by

- move submasterfader out of the 0% position
- Flash key
- key ACT for selected preset.

Menü M225, Activate und Release, defines operating modes:

Enable ACT key
> The LTP values set in the selected preset are activated, all other LTP values are unaffected.

Enable REL key
> LTP values of the selected preset are deactivated. Active values are replaced by the values of the last selected active preset.

Move fader
> This option allows to set the submaster fader to 100% or 0% by pressing keys ACT or REL. The submaster fader is then marked with CATCH if its position differs from the "real" fader position.
>
> **Note:** The fader needs to be "catched" before it can be manually used.

Use EGO and ESTOP key
> Key EGO can activate LTP values of a selected preset, if no effect has been programmed; key ESTOP than releases the selected preset.

Use blackout keys
> With default setting BOTAST_MODE=1, the blackout keys of the submasters are used as release keys. The key lamp then signalizes the "released" state of a submaster preset.

REL clears channel selection
> Function REL can be set to clear the channel selection ("yes") or to leave it unchanged ("no")

Copy values between devices

Values can be copied from to multiple selected devices: Menu M641, Copy values to selected fixtures, copies the values within the current preset from the chosen to selected devices; the mask type defines which attributes are to be copied.
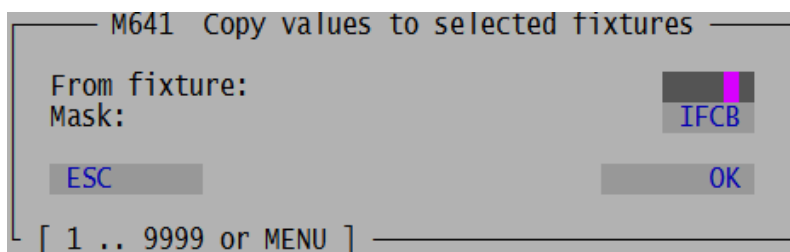
```
┌──── M641  Copy values to selected fixtures ────┐
│                                                 │
│  From fixture:                          ███     │
│  Mask:                                  IFCB    │
│                                                 │
│    ESC                                   OK     │
│                                                 │
└ [ 1 .. 9999 or MENU ] ─────────────────────────┘
```
Figure 13.: Menu M641

Copying attributes between presets

The following operation allows to transfer ML-attributes between presets:

TAKE *target destinationpreset*

Levels and ML-attributes are copied from the target to the destination preset; LTP-attributes are activated by the destination preset.

Convert channels to ML-attributes

Menu M695 allows converting channel levels to ML-attributes:

first/last cue	defines the cue range into which the attribute should be copied.
from chan	selects a channel which should be converted to a ML-attribute, key menu shows available channels.
to fixture	specifies the ML-device to which the channel should be copied to; selection can be done with key MENU.
Attribute	specifies the ML-devices attribute to be used; selection with key MENU.
clear channel	chooses if the channel should be removed after conversion.
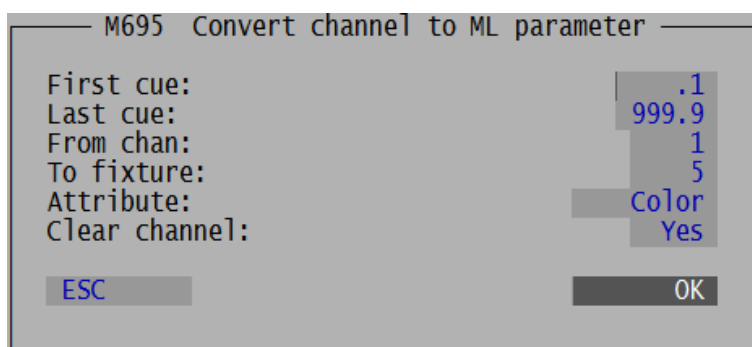
```
┌──── M695  Convert channel to ML parameter ────┐
│                                                │
│  First cue:                            .1      │
│  Last cue:                          999.9      │
│  From chan:                             1      │
│  To fixture:                            5      │
│  Attribute:                         Color      │
│  Clear channel:                       Yes      │
│                                                │
│    ESC                                 OK      │
│                                                │
└────────────────────────────────────────────────┘
```
Figure 14.: Menu M695

Modify Attribute

Menu M698 allows to add ML-attributes to existing cues.

first/last cue	cue range to be modified
Chan	device channel; selection with key MENU
Attribute	attribute to be added to the cues, selection with key MENU.
Channel level	level value of the attribute

Additional Operations with key COL

The following operations affect attribute **Color** of selected devices within the current preset:

x COL	assign selected color palette
+/- COL	one step forward/back in the configured ranges (similar to moving the encoder of attribute **Color)**.
TAKE pal COL	involves attribute **Color** with the palette number entered
TAKE COL	involves attribute **Color**
CANCL COL	resets color values to home and uninvolves attribute **Color**.
CANCL pal COL	set home to devices with entered color value and uninvolved the attribute.

Operation BACK

Key **BACK** works for attributes which are involved in the current preset; when changing the preset or attribute the previous state can be restored with key BACK.
Attributes connected by time groups are restored all together. With key Shift only the selected attribute is restored.

Crossfading Attributes

Attributes can have cue and independent fade times assigned if "fade allowed" is configured.

The configuration settings "**Fade**" and "**TXF**" define the behavior of each attribute; if the attribute can be faded (Fade=yes) and if the cue time should be used (TXF=yes) by default. A wait time can be assigned independently of these settings to all attributes.

The COL or ML-list needs to be switched to "T"-view for editing the times, times entered are assigned to selected attributes (cursor line) of selected devices and recorded with the cue.

From version 5.6:
Normally, an independent time is assigned to all attributes of a time group. If key SHIFT is pressed while entering, the time is only assigned to the attribute highlighted thus allowing different TXFs within a time group.

Various control channels allow to modify the time behavior of a device (e.g. "movespeed"); these control the timing device-internally and don't relate to the crossfade timing set on the lighting system.

VFD Desk Displays

The VFD desk displays next to the encoders display the current values of attributes assigned to the encoders (automatically done when configuring a device or edited with M652 – Display order).

Information displayed:

blank	attribute is not configured for the selected device
***	control channel is not involved in the current preset
Name	range configuration name
*Name	for XF and PROG: name of palette assigned

Palettes

Palettes allow to record frequently used attribute information (like focus, colors etc) independent of cues in various palette-types.

Recorded ML/COL cues which contain information from palettes store a link to the palette (and not the values); modifying the palette affects all cues which "link" to the palette.

The Pal-keys display all palettes of a type for the selected device:


```
M683  PAL C

        .1   Home
        .2   Offline
        .3   Highlight
        1    clear
        2    1/4 ctb
        3    1/2 ctb
        4    1/1 ctb
        5    nd3
        6    nd6
        7    ros sun
        8    frost
        9    silk
        10   magenta
        11   zeph bl
        12   violet
        13   nile bl

ESC   PAL_I   PAL_F   PAL_C   PAL_B
```
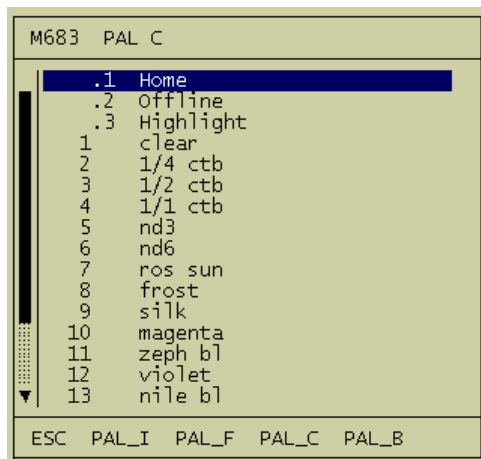
Figure 15.: List Palette C (M683)

Palettes are an essential part of a show; to include them when saving a show mark "MLPAL" in Menu M255, Show Configuration.

When loading or saving palettes directly, it is possible to load or save palettes depending on the pal-type.

On linked systems, palettes saved to a show are automatically transferred to the aux system.

Menu operations:

INS   creates a palette

DEL   clears the selected palette

MENU   gives the following options

> **PAL I/PAL F/PAL C/PAL B**
> switches the Pal-list to the selected palette type.
> If no mouse is connected, the softkeys in the bottom line of the menu are not accessible;
> on Iris the lists are changed with this menu as no dedicated palette keys are available.
> If an external PC-keyboard is connected, the pal-lists can be changed with key operations, too.

> **Rename**
> rename the selected palette

> **Copy**
> Menu M691, copy palettes to selected devices

> **Delete**
> delete selected devices from the selected palette

> **Save**
> **Add**
> creates or updates a palette

> **Print**
> prints the palette information.

> **ML palette configuration**
> extended palette configuration menu (file management)

Creating Palettes

Palettes can be created by:

- key input **pal REC PAL_I/PAL_F/PAL_C/PAL_B**

- with the softkeys in COL/ML-lists bottom line (Rec_I, Rec_F, Rec_C, Rec_B)
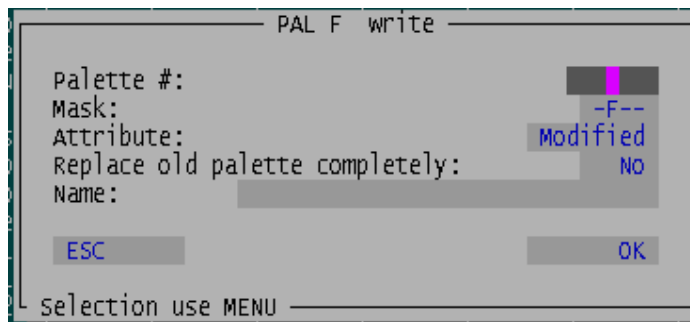
Figure 16.: Recording palettes

Palette →	Number of the palette Key **MENU** displays recorded palettes
Mask	defines which attribute-types are to be included
Attribute	Modified, used in the current preset used or all attributes

Replace old palette completely:
> no: Append selected values,
> yes: replace old palette.

Name	name of the palette

If the palette number exists, the values of the selected device are either added or updated; data of non-selected devices remains unaffected.

Assigning Palettes to fixtures

The following operations assign values recorded to palettes to the selected devices:

- Key input: **12 PAL_C** assigns the values of C-palette 12 to the selected device.

- Palette Key (opening the list of palettes available for the selected device): keys Up/Down and ENTER (or double-click) select the entry

Values are only assigned to (selected) devices which were involved in recording the palette; devices not having information stored in the palette remain unchanged.

LIBRA (from version 1.4) offers enhanced palette editing and the function –SELECT, which removes values set by using a palette entry from a device. The function for this on the lighting system is:

- palnr PAL_i
> (PAL_i = PAL_I/PAL_F/PAL_C/PAL_B)

Extend Palettes

When recording a palette, the active values of selected devices is stored. Menu M691 allows to copy palettes to devices, allowing to quickly create palettes for devices of the same type.
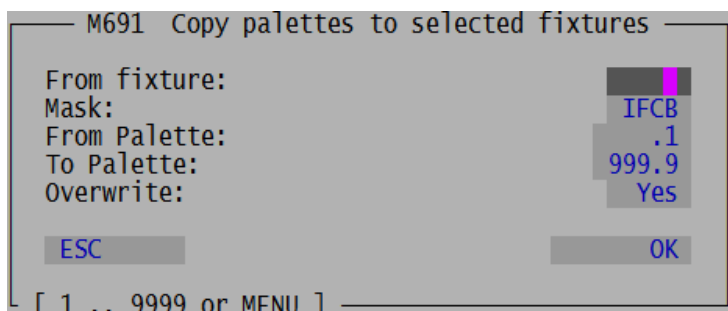
```
┌──── M691  Copy palettes to selected fixtures ────┐
│                                                  │
│   From fixture:                        ████ █    │
│   Mask:                                  IFCB    │
│   From Palette:                            .1    │
│   To Palette:                           999.9    │
│   Overwrite:                              Yes    │
│                                                  │
│   ESC                                      OK    │
│                                                  │
└─ [ 1 .. 9999 or MENU ] ──────────────────────────┘
```
Figure 17.: Copying palettes

The palette range and type can be chosen.

+/TAKE palno S PAL_i
>   Values of involved attributes of selected devices are added to the named palette.

Involvement of Devices in Palettes

The palette lists displays only palettes available for the selected device. Devices involved in a palette can be displayed the following ways:

SUM and *palno* PAL_i
>   selects all devices containing information in the selected palette and assigns the palette to them

>   (Only possible in presets BLD and PV)

ALL *palno* PAL_i
>   selects all devices containing information in the selected palette and assigns the palette to them

Delete Devices from Palettes

Devices involved in palettes can be removed from palettes. From menus M681 – M684, key DEL or key MENU, option delete, a form is opened for deleting a device from the selected palette.

As an option you can remove only selected devices or all devices. Deleting all devices results in a remove of the whole palette.

Resolve palettes in cues:

yes   All references in cues to the palette are replaced by the values stored within the palette.

no   Palettes are still referenced, but have no values. You later can merge palettes or make new entries.

Palette File Management, Menu M680

Palettes can be saved and loaded like any other configuration data by using menu M680, ML palette configuration.

Additional to standard options save, load, remove and print there are two interesting options:

Merge   merge palettes
>   single or range
>   preserve palettes not affected in range
>   mask palette group

Reset   delete all palettes from memory

Saving Device settings as Cues

Device settings can be saved as part of "normal" cues or as special cue types (ML, COL). When loading the cue or playing back within the XF-systems the settings are restored, depending on the systems default settings.

Default Settings

Menu M240, Default cue parts, defines which parts and content of preset (and which attributes) are to be recorded with operation "**x REC REC**"; Menu M241 defines the cue parts to be included in COL cue ("**x REC COL**"), Menu M242 for ML-cues ("**x REC MOVL**").

```
┌──── M240  Default cue parts ────┐
│                                 │
│  Mask:                    │IFCB │
│  Effects:                    No │
│  Dyn. Effekte:               No │
│  Attribute:                 All │
│                                 │
│  As default:                 No │
│                                 │
│   ESC                        OK │
│                                 │
└─────────────────────────────────┘
```
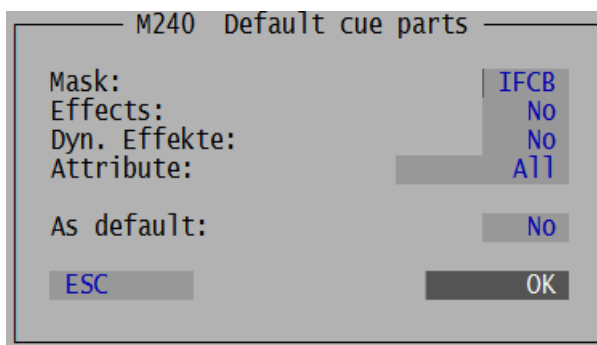
Figure 18.: Menu M240, Default cue parts

Mask
   defines which attribute types are to be recorded

Effects
   defines if effects should be included

Dyn. Effects
   defines if dynamic effects should be included

Attribute
   sets if the active output ("all") or only attributes used in the current preset should be saved.

As default
   The settings made are part of menu M215, default settings; with option "yes" they are stored as default setting.

The cue type recorded is indicated in lists QLIST and SQL; furthermore, label "IFCB" shows which attributes are included.

Saving and Loading Cues

The following operations are used to record ML devices:

x REC REC
   the standard HTP-dimmers and the attributes set in M240 are recorded.

x REC COL
x REC ML
   Device attributes according to settings in Menu M241 and M242 are recorded.

x REC DYN
   Record involved dynamic effects of the current preset only.

x REC INVO
   record involved attributes of all devices of the current preset.

The bottom line of lists COL and ML offers the softkey **"Save"** which starts menu M671, allowing to define which parts of the current presets content are to be recorded. "Auto Increment" will automatically increase the cue number, depending on BLKSTEP-setting. The softkey **"Update"** in the bottom line opens the same form, but only updates changed attributes.
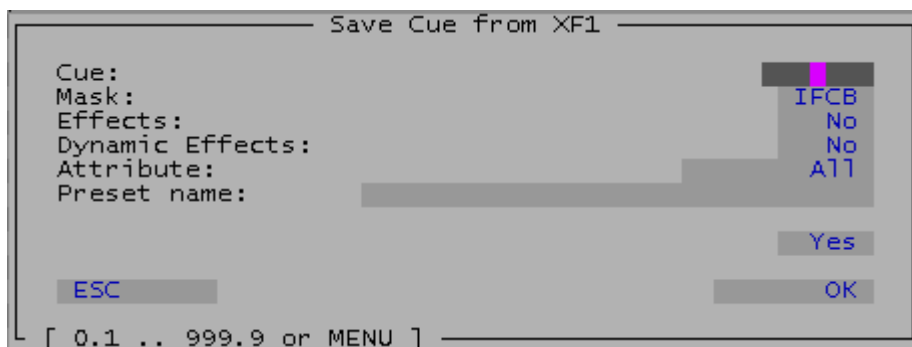
```
┌─────────────────── Save Cue from XF1 ───────────────────┐
│                                                         │
│   Cue:                                        ▉ ▉       │
│   Mask:                                       IFCB      │
│   Effects:                                     No       │
│   Dynamic Effects:                             No       │
│   Attribute:                                   All      │
│   Preset name:                                         │
│                                                         │
│                                               Yes       │
│                                                         │
│   ESC                                         OK        │
│                                                         │
└── [ 0.1 .. 999.9 or MENU ] ─────────────────────────────┘
```
Figure 19.: Menu M671, Save Cue

Softkey **"Load"** or menu M672 opens a dialog box for loading a cue into the current preset.

Values from Cues

Selected devices and attributes can be set to stored values from cues.

TAKE cue CUE
Take values from indicated cue

@ CUE
If the selected preset contains a cue, either stored or loaded, changes can be made undone.

Blackout for ML-Devices

The output for ML-devices can be selective blacked out or turned off (essential when using linked aux systems), please refer to "DMX-Output" in "Controlling Channels".

RCH and Attributes

Function RCH selects channels involved in cues. Usually dimmer values are evaluated. If list display ML/COL is active on the main monitor, attribute values are evaluated.

In case the cursor line is not visible, all attributes are searched. Else the attribute marked by the cursor line is used for evaluation. In this case shortcut ALL RCH searches again for all attributes.

Dynamic Effects

Introduction

Dynamic effects ("Dynamics") give multiple effect options like various Pan/Tilt-movements, color fades etc. Combined with dimmers you have easy access to fade in/out movements.

The library offers a wide range of essential effects which can be quickly assigned to moving light-devices.

Dynamic effects apply parameters to attributes which override the current output value; effect parameters for example are the movement type (sine, step, ramp), the "size" of a movement or effect and its rate. Changing effect parameters makes movements faster, slower, smaller, ...

The attributes current output value (basic value) is the mid-/center-value ("reference position") of the effect. If this value is changed, the effect is moved accordingly (like moving the center point of a circular movement with Pan/Tilt).

Dynamic effects are not bound to a preset. They influence values as they are forwarded to output lines.

Within a dynamic effect a preset fader is assigned to the dimmer attribute of a device. Grandmaster faders also influence the values. Additional HTP attributes are controlled by the preset fader only.

Dynamics can be edited in presets PV and BLD without affecting the current output.

Glossary

Effects library
> The effects library provides regular used effects stored in the systems setup which can be edited or added with own effects.

Effects group
> Devices which are controlled by the same dynamic effect are described as effect group. Changes to the settings, such as the radius of the circle, affect all devices of an effect group. Effects groups are listed in the list display of the dynamic effects (a line for each group). If a device is part of various effect groups, the most recently started effect group overrides the other groups output (LTP principle).

Reference position
> Dynamic effects use the current output of an attribute as basis, this is called reference position.

Relation
> If an effect controls multiple devices, a relation between the individual devices can be set, allowing to control the devices parallel or in succession.

Dynamic Effects Display

List DYN, Dynamic Effects

The dynamic effects have a dedicated list which is displayed on the main monitor by key **DYN**.

The list view is split: the upper half shows the effect groups channels and the dimmer values of devices involved; if no effect group is selected, all devices which are part of any effect groups are displayed.

The bottom half shows active effect groups (allowing selection within the XF or a submaster preset); a line per group. The cursor line marks a group for editing; if the cursor line is turned off (by key **ESC**, similar to lists COL and ML) inputs relate to all groups (if the input is possible for the groups).

The display columns contain the following information:

Eff the position of the effect group.
The numbers allows to access effect groups directly (on Prisma consoles with the keys **GO**, **STOP**, **OFF**, and with the key **DEL**).
Marked effect groups which are included when recording a cue; all non-marked groups will not be included.

Dyn The number of device attributes which are controlled by effect groups. If a device is part of multiple effect groups, the most recently started effect group overrides the attributes (LTP).

Lib Library number of the effect, according to the "Dynamic Effect List" (menu M330).

Name Each effect group has a name assigned. When creating an effect group, a library name is used which can be edited by using softkey **Text** of the bottom line or by pressing **F4** on the keyboard.

Src Assigned preset fader including preset priority and REL-state

Stat Current status:
Go Effects group is running
Stop Effects group is paused
Off Effects group is in the reference position

The left and right cursor arrow keys and softkey **Next** in the bottom line (see below) switch the attributes displayed in the list display and on the consoles VFD display.

Display 1:

Size The size (e.g. the radius of a circle). Values between 0 (with a circle, the beam is in reference position) and 10. A value of 1 represents a displacement of 25%.

Rate the speed of the movement; from 0 (no movement) to 10 (maximum speed).

Form modifies the relationship of the pan and tilt-axe in movements when forming a circle (circle ↔ ellipse)

Off The movement offset:
For a circle: if several devices are involved in the circular movement, the setting defines the distribution of the beams around/on the circle circumference.
Example: Two devices perform a circular movement; their beams can run in parallel (setting ---) or with an offset. With the setting 1:2, the beams are at opposite points on the circle.

Display 2:

Dly Delay: devices involved in an effect group can execute the effect simultaneously or in sequence.
Example: Two devices form a circle; both can run simultaneously (setting ---) or in sequence which means device 1 runs the circular movement while device 2 pauses. As soon as device 1 has finished the movement it stays on its position and device 2 starts.

Dist If a Dly is set, Distance sets the delay of the following (sequenced) movement.

Loop Dynamic effects are executed until altered, stopped manually or by a cue. The loop counter allows to define the number of runs from its start; if the loops set are finished, the effect status is "go". If the effect group is saved, it will start immediately when loaded within a sequence and execute the loops set.

Channels
Channel number of devices involved in an effect group.

Softkeys in the lists bottom line:

Go Starts the selected effect group.
Independent from the current state of effect groups, they are always started from their starting point.
If no effect group is selected, all effect groups are started.
Prisma consoles have a dedicated system key.

Stop	Stops the movement of the selected effect group. Effect groups in state Offline jump to their starting point If no effect group is selected, all effect groups are stopped. Prisma consoles have a dedicated system key.
Off	All effect groups to their reference position If no effect group is selected, all effect groups jump to their reference position. Prisma consoles have a dedicated system key.
Cleanup	Remove effect groups with empty channel list In case an active preset is selected, additionally all effect groups are removed which do not control attributes (column Dyn empty).
Text	Edits the name of the selected effect group (likewise key **F4** on the keyboard).
Full	Set the dimmer channels of all devices of the selected effect group to 100%. If no effect group is selected, the dimmer channels for all devices involved in effect groups are set to 100%.
Null	Sets the dimmer channels of all devices in the selected effect group to 0%. If no effect group is selected, the dimmer channels of all devices involved in the effect groups are set to 0%.
Setup	Display the effects library, **330 MENU**.
Monitor	A schematic graphic representing the pan/tilt movement is displayed on the second monitor. The softkey corresponds to key **MON2**.

Indication of Dynamic Effects in list MOVL

Device numbers marked with a → indicate that the device is involved in effect groups; attribute values indexed → are overridden by a dynamic effect. When an effect is running, the "**Active levels**" display mode shows changes to the output value.

Within the MOVL list, display mode "**Dynamics"** shows the assigned effect control table's name for the device attributes.

Console VFD Display of Dynamic Effects

When starting the **DYN** list display on the main monitor, the consoles VFD desk displays (on Prisma/Focus) display the parameters of the selected effect groups.

Attribute bank A:	Size, Rate, Form and Offset
Attribute bank B:	Delay, Distance and Loop

The corresponding encoders control the settings of the selected effect groups parameter.

The attribute group keys A and B can be used to switch the display of the **DYN** list display on the monitor.

Effects Groups

Groups of devices which are controlled by a dynamic effect are called effect groups; changes to controlling parameters like as **Size** or **Rate**, affect all devices of an effect group.

Creating Effects Groups

Dynamic effects are applied to effect groups which are created as follows:

- selection of devices

- dynnr **DYN** assigns a dynamic effect to the effect group; the number relates to the library (menu M330); the effect is started immediately.
  In case the selected preset is in state released, the effect is left in state off.

If the **DYN** list is displayed on the main monitor, key **INS** allows to create a new effect group by starting a form.

On creating effect groups the fader of the current selected preset is assigned for controlling the dimmer and other HTP attributes.

The settings correspond to the display columns of the **DYN** list display, option "Save" represents the write flag next to the effect number (identifier).

If the window is closed with "OK", a message is displayed asking whether the selected devices should be included into the effect group. If "Cancel" is chosen, no devices are assigned and the channel numbers display remains empty, channels can than be added at a later stage.

@[Devices involved in an Effects Group]

When creating an effect group, all devices currently selected can be included in the effect group; the **DYN** list display shows the numbers of the devices involved and the dimmer values of the devices (in the upper half of the list display).

Devices can be added or removed from a selected effect group with the standard channel selection operations.

All control channels involved are removed from the selected effect group with the **X** key.

Channel numbers are displayed in selection and not in numerical order. This order can be relevant if an attribute, such as Tilt, occurs several times in the description of an effect; the devices are then distributed to the individual tilt attributes automatically. For more information, refer to the effects description.

Devices can be included in several effect groups at a time, the most recent started effect group takes the devices attributes used in the effect from the other groups.

The **DYN** list display can contain effect groups without devices assigned, these can be activated at any time by assigning devices (select the effect group and then the devices).

Controlling Effects Groups

On Prisma consoles, effect groups can be controlled by keys DOFF, DSTOP and DGO. They have the same functions as the softkeys in the bottom line of list display DYN.

In case list display DYN marks an effect group, keys EREV, ESTOP und EGO can be used for all types of consoles.

Keys REL/ACT control output of movinglight attributes from the selected preset. Additionally they control the state of assigned effect groups. In case PREV or BLD are selected, these keys are rejected. Effects groups stopped by REL only can be activated when the assigned preset (Src) is activated by ACT.

In preset PREV created effect groups are activated by key GO. The change from PREV to XF is indicated in the Src assignment.

Editing Effects Groups

Key **ENTER** edits the selected effect groups.

The options refer to the options of list DYN; "Save" corresponds to the flag next to the effect number. This setting can also be altered directly in the **DYN** list display by clicking the "**Eff**" column.

On Prisma/Focus consoles, the parameters of effects can be edited with the encoder wheels, too.

Deleting Effects Groups

Key **DEL** deletes the selected effect group when in list view DYN. If no group is selected with the cursor line, all effect groups are deleted.

x DEL deletes an effect group, x is the effect group number specified in "**Eff**" column.

Clearing a preset automatically removes effect groups, which are assigned the presets fader (Src).

If an active preset is selected, softkey Cleanup from the bottom line removes every effect groups which have an empty channel list.

Prisma

Prisma has dedicated keys for **GO**, **STOP** and **OFF,** allowing to control dynamics without having list DYN active.

Dynamic Effect Number 0

0 DYN
> Assigns effect 0 to the *selected* devices, i.e. all dynamic effects of the selected devices are stopped. Even if all devices are removed from an effect group, the group can be reactivated by assigning devices within list DYN.

Dynamic Effect number 0 stops running effects. Depending on the current list display on the main monitor, this has different effects:

DYN list display: As devices of the selected effect group are assigned to effect 0, running effects are stopped. This "zero effect" can be saved to cues in order to control the effect movement of devices with the crossfade sequence.

In all other list displays, the **0 DYN** entries affects selected devices, which are removed from all effect groups. An effect group with effect 0 is created or extended to include the devices selected.

CANCL DYN	Assigns effect 0 to all selected devices.
CAN dynno DYN	Assigns effect 0 to the attributes involved in the specified effect group for the selected devices. This allows, deleting a movement effect without affecting the color effect.
CANCL ALL DYN	Deletes all effect groups. The **DYN** list display is then empty, all movements have been stopped.

Effects Library

Selecting Dynamic Effects

The effects library contains preconfigured effects which are listed with **DYN MENU** or **330 MENU** and can be edited or supplemented with own effects.

Displays:

DYN	The number of the effect entry; **dynno DYN** activates the dynamic effect immediately for the selected devices.
Name	Description name of the effect The name is assigned when an effect group is created.
Attribute	Device attributes controlled by an effect.
Off	Settings Offset and Delay, as well as Distance
Dly	are assigned when an effect group is created.

Dist	It is possible to access the softkeys functions displayed in the bottom line by using the **MENU** key:
ENTER	edit the selected effect
INS	insert new effect
DEL	delete selected effect from the list
PRN	print the list
Setup	edit relations within the selected effect
Load	load effects list
Save	save effects list
Reset	reset the effects list to factory default
Delete	remove saved effect lists

Editing Effects

A dynamic effect is described by its effect parameters which control the attributes of the devices involved.

In the dynamic effects list, a window appears on pressing **ENTER** which displays the effect attributes of the selected effect and the corresponding settings values. New attributes can be added (**INS**) and existing ones can be deleted (**DEL**):

Attribute	The name of the devices attribute which is controlled by the effect.
Table	The control table assigned to the movement. The following tables are provided by the software:

	Sine	Sine modification
	Step	Switch between two values
	Sawtooth	Sawtooth
	Ramp	Slow upward movement, sudden fall
	RampInv	fast upward movement, slow fall
	MarkOn	Switch, long on, short off
	MarkOff	Switch, long off, short on
	Spiral	Sine behavior with varying displacement
	Tangent	Sine wave with sudden end
	Random1 - 3	Random values
	Stop	No movement

Size	Movement Size, 1.00 equals 50% displacement.
Rate	Speed
Phase	Phase shift, 0.25 equals 90° shift.
Delay	Start delay (referring to other effect parameters)
Wait	Wait time before re-starting the effect after a run

Key ENTER allows to set an additional effects parameter.

Index	Device attributes can be used and controlled several times by effect parameters. If several devices are involved in an effect group, they have effect parameters assigned in the order of channel selection. By setting different values for the effect parameters like **Size** or **Rate**, it is possible to achieve different behavior of the same device attributes, for example:

An effect description contains the pan and tilt control attributes twice, each with index 1 and 2. If an effect group is created with devices 201 through 204, pan and tilt of devices 201 and 203 are controlled by index 1 and of devices 202 through 204 by index 2.

Creating new effects

New effects can be created and added to the list with key **INS** within menu M330. An effect number can be assigned; an empty table with effects attributes appears. Individual settings can be made for effects parameters as previously described in "editing effects".

Recording Dynamic Effects

The displayed effect groups can be individually recorded.

Recording Effect Groups

Menus 240, 241 and 242 define if dynamic effects should be included in recording, when using operations **REC REC**, **REC COL** and **REC MOVL.**

All marked effect groups in list DYN are included in recording, including their current state (Go, Stop, Off). This defines if the effect is prepared (state: Stop), devices are kept in reference position (state: Off) or the effect started ("go") when loaded into the XF sequence.

Marking can be set for a selected effect group by kex ENTER. Global change of the flag for all displayed Dynamic Effekts is possible by mouse click to the header "Eff".

Dynamic effects can be edited like any cue in PV or BLD preset without active output of the effect.

Effects can be turned off from within the sequence with operation **0 DYN**.

Loading Dynamic Effects

Cues including dynamic effects are loaded like all other cues:

cue XF
loads the cue including all effects recorded, the effects state defines if the effect is started.

The preset used for recording of the effects does not matter as the effects are run by the preset-independent effects section.

cue LOAD
loads a cue and included effect groups, effect groups are set to off and must be started manually.

Dynamic Effects within Sequences

Dynamic effects included in sequences are added in list DYN; if newly added effect groups use attributes of previous groups these are allocated to the newly added groups.

Key DYN on the external PC-Keyboard

Key **DYN** is mapped to key combination **Alt – D**.

Dark Move

The Darkmove-functionality has been implemented with software version 5.2.

Description

Darkmove can automatically apply changes within the crossfade sequence to attributes of devices as soon as the relevant dimmer channel is off; an internal preview checks the cues for attribute changes, which will be then carried out before the actual lighting cue is started (which re-activates the dimmer).

If a fixtures color changer should change "if dark" and is configured to "dark move", the system checks the dimmer (part) of the device and the color for changes to happen. If the dimmer is closed, the system changes the color attribute to the value the device should have when the dimmer is back on again. All "while dark" color changing values which are not relevant are ignored.

Darkmove is a crossfade sequence feature; on Prisma systems, the crossfader which uses darkmove needs to be specified as only one crossfade system can run darkmove at a time.

Darkmove Settings

The following settings need to be configured in order to use Darkmove:

M220, Personality

Darkmove depends on option "channel fade times" and can only be used if this option is installed.

M651, Device Configuration

The channel configuration allows to set up darkmove for individual attributes of a device. The setting "Darkmove" specifies the time used for "darkmoving" the attribute, if the field is empty (or cleared by key **CLEAR**) darkmove is disabled for the attribute.

Note: Darkmove works as time-controlled crossfade for attributes, therefore the setting **"Fade allowed"** needs to be set to **"yes"** in order to use darkmove.

M215, Default Settings

The following settings relate to Darkmove:

DARKMOVE_MODE	starts Menu M228, Dark Move.
DARKMOVE_LIMIT	Limit of cues to be previewed for dark-moving.
	The amount of cues can be limited to avoid delays. Options:
	0 no limit
	1 ... 50 Limit 1 – 50 cues
	Factory default is 10 cues.

Note: If the dimmer is off in the limited range set, the system will not carry out dark-moves.

M228, Dark Move

The menu configures the function, depending on lighting system type:

Keys DM1/DM2 enabled	
	On Prisma: allows to en- or disable the DM-keys.
Xfader	On Prisma: only one crossfade system can be used for darkmove; the crossfader to be used can be specified here.
Darkmove active	en-/disables Darkmove
	On Prisma: Darkmove can be en-/disabled with the **DM** – keys.

Operations

Darkmove can be turned on or off with menu M228 or with the dedicated keys **DM** on Prisma (if enabled in M228):

TAKE DM
> Darkmove on

CANCL DM
> Darkmove off

The corresponding DM-key lamp is lit for enabled darkmove.

Display

If enabled, the DM-enabled XF-systems display indicates "DM" (and the key lamp on Prisma consoles is lit).

When darkmoves are executed, the attributes which are modified change their display color (which can be configured at menu M202, setting 162 PROG_SPECIAL).

Darkmove within the Sequence List

Within list SQL, the behavior of darkmove can be defined by selecting a sequence step and pressing **ENTER**:

Darkmove	If Darkmove is turned off, the darkmove functionality can be enabled for a range of cues only; the cue-number entered defines the range for darkmove to use.
Silent	If the dimmer is set to 0%, Silent disables the darkmove for the sequence step.

External PC-Keyboard

Key **DM** is mapped to key Ctrl – M and affects the left XF system (Prisma).

Introduction Dimmer Feedback DFB

The digital Dimmer System FDX90/FDX2000 is processor-controlled and gives multiple control, monitoring and feedback options. The installation parameters are set with the lighting system or with Windows-software WinDFB.

The output unit consists of dimmer processor, optional backup processor unit and the dimmer units. The following options are available:

- DMX90 provides an analogue output signal which can be used to control transtechnik PM90 dimmers or other manufacturers' dimmers which are equipped with analogue inputs.

- FDX90 is exclusively designed to control the transtechnik DP90 digital dimmer.

- FDX2000 is designed for controlling the digital dimmer transtechnik DP90, giving further functionality like connection via Ethernet.

- Monitoring of dimmer voltage and current (load)

- External input circuit for monitoring special functions

- External analogue channels 0-10V for direct controlling of individual dimmers

- Two inputs for temperature sensors

- Configuration and software update via lighting console or PC

Features of the Dimmer Processor

- Controls up to 72 dimmers

- Merging of two DMX512 input signals and selection of maximum value (HTP)

- Can store up to 24 independent presets which can be used as "emergency lighting" state.

- 8 dimmer curves per dimmer (with a resolution of 4096 steps), assignable independent of the lighting consoles curve settings.

- Option to limit current of each dimmer

- 4 analogue input signals for controlling dimmers

Wireing

The processors receive dimmer levels via DMX512 from the lighting system. For monitoring, the processors are connected to the lighting system or a PC.

Lighting System	Connection is done using the DFB connector and two serial RS-485-links for (Ports) A and B (Port B for spare processors).
PC	Connection to the processors is done using the COM-interface of the PC which is connected to COM4 und the front of the unit. If both ports are to be used, connection is made using a link.

Up to 40 processor units can be connected directly to a system or PC, up to 99 if using feedback hubs. FDX2000 Processors are connected directly via Ethernet.
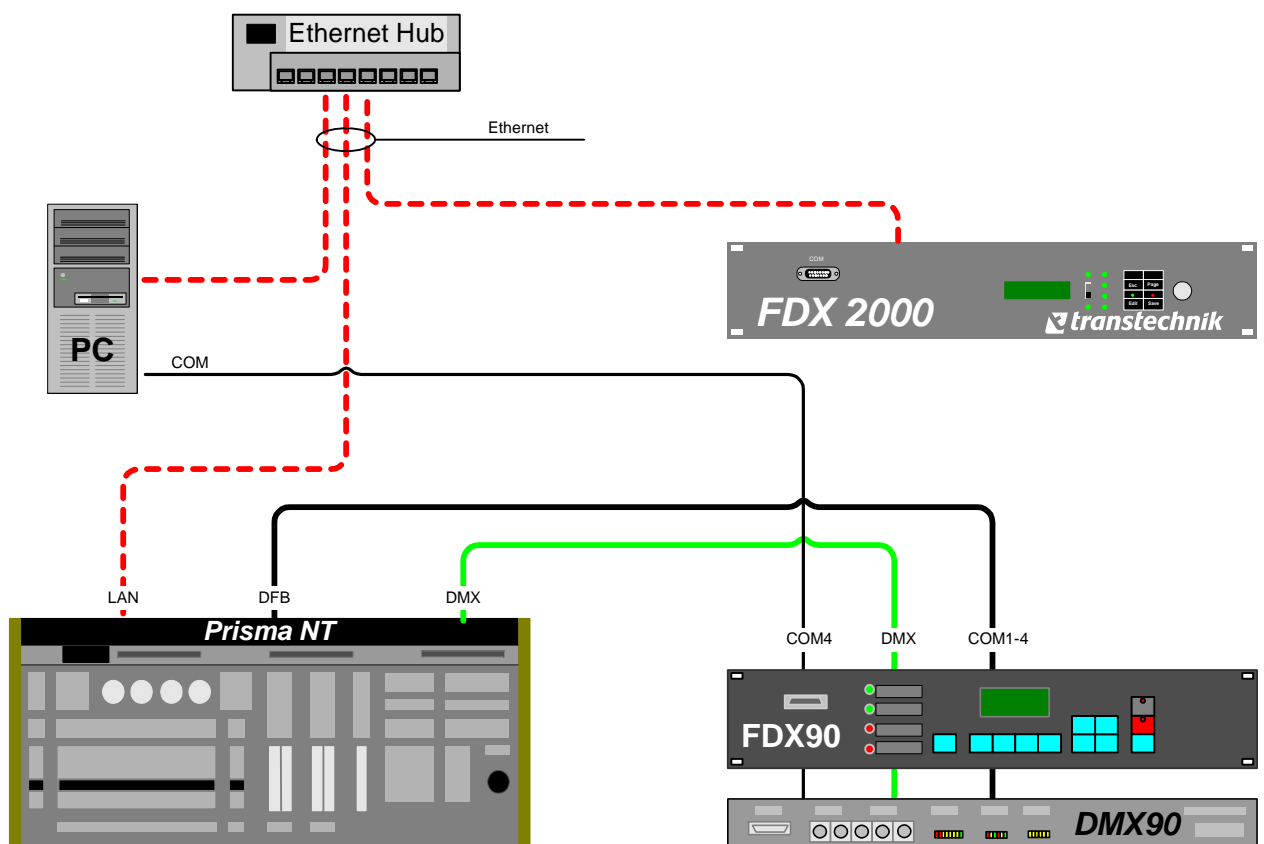
Connection Diagram

DFB Memory

The processor units are equipped with:

RAM-Memory	which keeps all current data; upon power-on the configuration will be copied from the Flash-EPROM to the RAM. Changes of the configuration will be send directly to the RAM and are programmed to the Flash-EPROM with a dedicated operation command.
Flash-EPROM	contains the System software and configuration

Default Settings

If the monitoring detects errors at specific circuits, channel levels displayed at lists **LEVEL**, **STAGE** and **OUT** will be highlighted and an entry is made in the DFB history. Property DFB_MODE defines the systems behavior:

DFB_MODE=0   No additional reaction
DFB_MODE=1   Message: **"DFB reports dimmer error"**
DFB_MODE=2   Message: **"DFB reports dimmer error"**, additional beep
DFB_MODE=3   Treats error message as system error
DFB_MODE=4   Message: **"DFB reports dimmer error"**, display DFB history
DFB_MODE=5   Message: **"DFB reports dimmer error"**, activate replacement preset
DFB_MODE=6   for linked systems, operating mode of the secondary system is DFB unit

Configuration of DFB-Systems

The following settings have to be done:

- for each processor unit, unit numbern, connected DMX line, number of dimmers menu M511

- Unit defaults like reaction to DMX-signal failure: Menu M531

- Dimmer setup for each unit: Menu M513

M511 DFB Configuration

This menu configures connected units:

```
+--------------------------------------------------------------+
¦ M511  DFB Configuration                             3 Units ¦
+--------------------------------------------------------------¦
¦  Unit         Name     Connection    Line    Dimmer   Aux Unit ¦
¦                                                              ¦
¦   1 A        HA 1     RS-485        DMX1    36             ¦
¦   2 A        HA 2     Autodetect    DMX1    36             ¦
¦   3 A        HA 3     Ethernet      DMX1    36             ¦
¦                                      ¦                       ¦
¦                                                              ¦
¦                                                              ¦
+--------------------------------------------------------------¦
¦ ESC   MENU   ENTER   INS   DEL   PRN   Load   Save           ¦
+--------------------------------------------------------------+
```

Figure 1: Menu M511, DFB Configuration

This example shows a configuration with three units at port A, connected to output line DMX1 and equipped with 36 dimmers each; no replacement units are configured.

Settings:

Unit	unit address (unit number and control port A or B).
Note:	The unit number needs to correspond to the number configured at the unit itself.
Name	assignable unit name
Connection	connection type selection for FDX2000: RS-485, Ethernet or Autodetect
Line	connected to DMX512-Output line: DMX1 .. DMX8
Dimmer	number of dimmers to be controlled by the unit
Aux Unit	replacement unit which will be activated in case of failure of the master unit. The aux unit needs to be mounted to the master units rack and set to an identical address.

Bottom line options:

ESC	ends the menu, prompting if changes are not saved.
MENU	menu for file options: The configuration needs to be saved to the lighting system or PC (independent of programming the units).
	option 'Logical Net' allows to set a global net ID (for FDX2000), changes are applied immediately (a global net ID $\leftrightarrow$0 is indicated in M511s header).
ENTER	edits the current selection:

Changes can be made selectively using the menu:

```
¦                               ¦
¦                               ¦
¦   Unit:                 1    ¦
¦   Port:                 A    ¦
¦   Name:              HA 1    ¦
¦   Line:                 DMX1 ¦
¦                               ¦
¦   Dimmer:               96   ¦
¦   Connection:      Ethernet  ¦
¦                               ¦
¦    ESC              OK   ¦    ¦
¦                               ¦
+ [ 1 .. 99 or MENU ] ----------+
```

Figure 2: Menu M511, Edit Unit

Parameters are explained at chapter **INS**.

INS	Inserts a new unit:

```
+--------Insert Unit-------------+
¦                               ¦
¦   Number:                 a   ¦
¦   Port:                 A     ¦
¦   Name:                       ¦
¦   Line                DMX1    ¦
¦   Dimmer:               48    ¦
¦   Connection:      RS-485     ¦
¦                               ¦
¦    ESC                 OK     ¦
¦                               ¦
+ [ 1 .. 99 or MENU ]  ----------+
```

Figure 3: Menu M511, Insert unit

Number	Unit Number	
	The unit number addresses the unit at the port / control line chosen. If the unit is not reachable under the number entered, **"offline"** is indicated.	
	Key **MENU** checks all unit numbers on the Port chosen and displays a list of all available (online) units.	
Port	specifies the control line (A or B) used for communication with the unit. Setting "**A + B**" assigns a unit with a corresponding number connected to port B as aux unit.	
Name	Name of the unit, 8 characters	
Line	Number of the DMX512 output line (DMX1 to DMX8). This assignment is required for correct displaying of channel and dimmer numbers within lists **STAGE**, **LEVEL**, **OUT** and **DFB**. It is also required for the optional channel board and error messages.	
Dimmer	Number of dimmers to be controlled by the unit	
	Note: This number must relate to the actual number of dimmers installed in the unit/rack. Specifying more dimmers than are actually installed will result in misleading error messages.	
Connection	Chooses the connection type used for FDX2000: RS-485, Ethernet or Autodetect	

When the entry is completed, unit parameters are indicated in the menu display of menu M511.

DEL   Remove units from the configuration

```
+--- Remove Unit-------------+
¦                            ¦
¦   from unit 1              ¦
¦   to unit   1              ¦
¦   Port:              A     ¦
¦                            ¦
¦   ESC              OK      ¦
¦                            ¦
+ [ 1 .. 99 or MENU ] -------+
```

Figure 4: Menu M511, Remove DFB unit

If the menu is confirmed with "OK", the selected units are removed from the configuration and are ignored by PC or lighting systems.

PRN   prints all configured units

Load   Load configuration

Save   Save configuration

The displayed configuration will be saved at the lighting system or PC, not on the unit.

M531 DFB Unit Basic Settings

Control parameters used for all dimmers controlled by a unit are defined in
the DFB unit basic settings. The menu lists and allows editing the current
settings.

The number of configured units is displayed in the header; all units will be
checked for availability, unavailable units are marked **"offline"**.

```
+------------------------------------------------------------------------+
¦ M531   DFB unit basic setting                               3 units    ¦
+------------------------------------------------------------------------¦
¦    Unit  Name  Line Dimmer       DMX-Fail Threshold  L1      L2      L3 ¦
¦                                                                        ¦
¦    1 A   HA 1  DMX1      36 DP90  Buffer   10%  10%  250 V  250 V  250 V¦
¦    2 A   HA 2  DMX1      36 DP90  Buffer   10%  10%  250 V  250 V  250 V¦
¦    3 A   HA 3  DMX1      36 DP90  Buffer   10%  10%  250 V  250 V  250 V¦
¦                                                                        ¦
¦                                                                        ¦
¦                                                                        ¦
+------------------------------------------------------------------------¦
¦ ESC   MENU   ENTER   COPY   PASTE   PRN   Update   Program   Reset      ¦
+------------------------------------------------------------------------+
```

Figure 5: Menu M531, DFB unit basic setting

Unit	Unit address, and Port (A or B), see M511.
Name	Unit Name, M511.
Line	DMX512-Line used, M511.
Dimmer	number and type of dimmers used, the type is auto detected by the unit
DMX-fail	behavior in case of a DMX-failure
Threshold	On- and Off-threshold values for switching
L1,L2,L3	Default input voltage preset (for FDX90 and FDX2000)

Bottom line:

ESC	ends the menu
MENU	edit selected options:

	Program	program current configurations into the units Flash-EPROM
	Reset	Reset settings to factory settings and transfer settings to the units
	Update	Update list displayed by reading data from the units
	Print	Print settings

ENTER	Edit settings Settings can be edited for a single unit or a range of units:

```
+----------- Edit Unit-----------+
|                                |
|   from unit:            1      |
|   to unit:              1      |
|   Port:                 A      |
|   DMX-failure:     Buffer      |
|                                |
|   On threshold:        10%     |
|   Off threshold:       10%     |
|   L1:                250 V     |
|   L2:                250 V     |
|   L3:                250 V     |
|                                |
|    ESC                  OK     |
|                                |
+ [ 1 .. 99 or MENU ] -----------+
```

Figure 6: Menu M531, Edit unit

DMX-failure
> behavior in case of DMX-loss:

> | **Blackout** | switch all dimmers off after 2secs (default) |
> | **Preset 1** | fades a recorded preset in (24 presets available) |
> | **Buffer** | hold the last DMX output until the signal is restored or the unit is turned off. |

> *Note:* The DMX512 signal is usually distorted if it is lost due to a connection failure; this may result in uncontrolled activation of dimmer channels.

> If a unit is not ready, it is marked as **"offline"**.

On threshold
> If switching thresholds have been set to dimmers, this setting specifies the control value at which the dimmer switches full voltage.

Off threshold
> If switching thresholds are set to dimmers, this setting specifies the control value at which output voltage is switched off. You can select an off threshold which is lower than the on threshold value.

L1/L2/L3
> For FDX90 and FDX2000 only: the unit monitors the voltage of the three phases to calculate the activation time of the dimmers. In the case of interference during voltage measurement, this setting is used as preset voltage value for calculation; the voltage set should therefore be equal to the average input voltage.

OK   immediately transfers the settings to the RAM-memory of the units and, if available and online, to auxiliary units.

COPY	Copy the settings for the selected unit to the clipboard
PASTE	Pastes the clipboard values to the selected unit and transfer them to the unit
PRN	Prints the settings
Update	Update display by rereading from the units
Program	program current configurations into the units Flash-EPROM.
Reset	Reset settings to factory settings and transfer settings to the units

M513 Dimmer Setup

Settings for each dimmer are stored in the units; this menu displays and
edits the current settings. You must specify the unit number when starting
the menu:

```
+--- M513 DFB Unit-----------+
¦                            ¦
¦  Unit:                 ª   ¦
¦  Port:                 A   ¦
¦                            ¦
¦   ESC                  OK  ¦
¦                            ¦
+ [ 1 .. 99 or MENU ] -------+
```

Figure 7: Menu
M513, DFB Unit
selection

The current configuration of the selected unit is read and displayed; if the
unit is offline the message **"bad unit number"** appears.

```
+--------------------------------------------------------------------------------+
¦ M513  DFB Dimmer setup Unit 1 A (DMX 90)                          12 Dimmers ¦
+--------------------------------------------------------------------------------¦
¦ Dimmer   Channel Type     V/I     follow-up     Charact.     Umax   Analog chan.¦
¦                                                                                ¦
¦   1         1       PMR-H   yes      160 ms         1         230 V            ¦
¦   2         1       PMR-H   yes      160 ms         1         230 V            ¦
¦   3         2       PMR-H   yes      160 ms         1         230 V            ¦
¦   4         2       PMR-H   yes      160 ms         1         230 V            ¦
¦   5         5       PMR-H   yes      160 ms         1         230 V            ¦
¦   6         6       PMR-H   yes      160 ms         1         230 V            ¦
¦   7         7     PM90/PMR  yes      160 ms         1         230 V            ¦
¦   8         8     PM90/PMR  yes      160 ms         1         230 V            ¦
¦   9         9     PM90/PMR  yes      160 ms         1         230 V            ¦
¦  10        10     PM90/PMR  yes      160 ms         1         230 V            ¦
¦  11        11     PM90/PMR  yes      160 ms         1         230 V            ¦
¦  12        12     PM90/PMR  yes      160 ms         1         230 V   A1 Fader  ¦
¦                                                                                ¦
+--------------------------------------------------------------------------------¦
¦ ESC   MENU   ENTER   COPY   PASTE   PRN   Prog.   Reset   Update   Test        ¦
+--------------------------------------------------------------------------------+
```

Figure 8: Menu M513, DFB Dimmer Setup with 12 dimmers

The header displays the number of the selected unit and the installed dimmers.

M/L	If a dimmer is assigned to an M/L-dimmer attribute, the first five characters of the ML fixture name are displayed.
Channel	The channel assigned to the dimmer The dimmer channel numbers are automatically calculated from the status of the assigned DMX512 line (menu M206, DMX patch) and the DMX512 start address reported by the unit.
Type	The dimmer type used: DMX90: **PM90/PMR** or **PMR-H** FDX90: DP90 only FDX 2000: normal (DP90), Nondim, blind free or small load, or HMI
V/I	Switch dimmer monitoring on ("yes") or off ("no")

Monitoring should only be activated for dimmers controlling loads (like spotlights), otherwise the unit will report an error on the dimmer.

Notes:

V/I monitoring is deactivated on auxiliary units.

In order for the settings to take effect, software version 2.4 or higher must be installed in the units.

follow-up Individual time constant for dimmer control, used for limiting the power input when switching to full.

Charact. Selection of one of the 8 characteristic or the switching curve of the unit. Default curves are:

curve 1:	linear output
curve 2:	stage curve
curve 3:	not used
curve 4:	not used
curve 5:	not used
curve 6:	not used
curve 7:	half voltage: for 110V loads
curve 8:	Switching, controlled by the specified switching thresholds

CLEAR assigns switching to the selected dimmer. Full output voltage is switched corresponding to the switching thresholds specified for the unit, see menu M531.

Note: If this curve is preselected, DP90 digital dimmers output the full sine wave; PM90 type dimmers must be specially aligned if similar behavior is required.

Umax For DP90 digital dimmers only: Sets the max. output voltage when the dimmer is set to 100%. Life span of the lamps can be significantly increased if a value lower than the lamp rating is used; dimmer output is linearly controlled within the specified range.

Note: PM90 type dimmers must be manually aligned to the desired output voltage.

analog chan.

Assignment of an analogue signal connected to the dimmer processor. The following settings are possible:

No	No control signal assigned
Ai Fader	The signal controls up to the output value received over DMX.
Ai Direct	The signal controls the circuit parallel to the DMX signal.

Default settings for Dimmer setup:

V/I	Yes (monitoring activated)
follow-up	160 ms (typical spotlight follow-up)
characteristic	1 (linear output control)
Umax	normal signal forwarding
analog channel	No (no analog control signal allocated

Bottom line Options:

ESC   Close menu
If a unit has not been explicitly programmed with the modified data, the
message **"DFB not programmed"** appears.

MENU   Menu to edit the following settings:

    Program unit
      Save the current settings to the Flash
      EPROM of the units.

    Reset DFB configuration
      Reset all dimmer configuration settings to
      factory defaults and program the settings to
      the Flash EPROM

    Dimmer test
      Start menu M514, dimmer test

    Update
      Update configuration with data read from the
      units

    Print
      Print current settings or save them in a file

ENTER   Edit selected entry:

```
+-- DFB Dimmer setup -------------+
¦                                 ¦
¦  from Dimmer:              1    ¦
¦  to Dimmer:                1    ¦
¦  V/I feedback:           yes    ¦
¦  follow-up time:      160 ms    ¦
¦  Characteristic:           1    ¦
¦  Analog input:            No    ¦
¦  Umax:                 230 V    ¦
¦                                 ¦
¦   ESC                     OK    ¦
¦                                 ¦
+ [ 1 .. 12 ] --------------------+
```

Figure 9: Menu M513, DFB
Dimmer setup

You can modify the following settings for a range of
dimmers:

from/to dimmer:	Dimmer range
V/I feedback:	Activate/deactivate dimmer monitoring
follow-up time:	20, 40, 80, 160 or 320 ms are possible.
characteristic:	select one of 8 curves recorded in the unit or use **CLEAR** for the switching curve.
analog input:	Allocates an analogue control signal
Umax:	Set the maximum output voltage at 100% modulation

If you close the form with "**OK**", settings are transferred to the unit.

COPY   Copy settings of the selected dimmer to the clipboard

PASTE	Pastes the clipboard values to the selected unit and transfers them to the unit.
PRINT	Print settings
Program	Program unit Save current settings in the permanent Flash EPROM of the units.
Reset	Reset settings to factory default settings
Update	Update the configuration by reading the current units data
Check	Dimmer test Start menu M514

If the dimmer setup is not programmed to the units when you terminate the menu, a message appears. You can use the default setting EXPERT_LEVEL to deactivate the message.

M930 DFB Installation

This menus are used to configure and install the DFB system:

```
+-----------------------------------+
¦ M930  DFB Installation            ¦
+-----------------------------------¦
¦ ¦ DFB check                       ¦
¦ ¦ Software installation           ¦
¦ ¦ DFB presets                     ¦
¦ ¦ Check DFB presets               ¦
¦ ¦ DFB Configuration               ¦
¦ ¦ Dimmer setup                    ¦
¦ ¦ Dimmer test                     ¦
¦ ¦ DFB backup                      ¦
+-----------------------------------+
```

Figure 10: Menu M930, DFB Installation

The following menus will be started:

DFB check M512
Display configuration data of the connected units

Software installation M932
Load control software into the units

DFB presets M521
Record the active level of all controlled dimmers as preset within the units.

Check DFB presets M522
Activate the presets recorded with menu M521

DFB Configuration M511
Configure the connected units

Dimmer setup M513
Individual settings for each dimmer

Dimmer test M514
Address dimmer independently of the dimmer output

DFB Backup M540
Record all unit configuration data

Operations and Displays

The **DFB** display list displays the current status of the units in real time.

DFB
> **DFB** list at main monitor

MON2 and DFB
> **DFB** list is displayed at second monitor

If the monitors are linked, two units are displayed.

If a unit reports an error, the unit will be automatically preselected.

number DFB
> Display selected unit at main monitor.

MON2 and number DFB
> Display selected unit at second monitor

DFB Display

The DFB list shows the status of a unit. If an error is detected, the bad unit will be displayed upon starting the list view.

The information displayed depends on the unit connected (DMX90-, FDX90- or FDX2000-unit).

```
                                                                   HA 1
 A DMX B   Line   DMX-Start    Dimmer unit 1A     DFB       ADC       EXT
 FSA FSA     DMX1      1           online          I+U      online    123456
   L1         L2        L3                      Temperature Power     DimmerCtl
 229.5V     230 V     230 V       50.0Hz         -  /  -    online    online
Pos  CHA   DCH  %   V      Pos  CHA  DCH    %  V     Pos  CHA   DCH    %   V
 1:Znnd     1   0%     ¬    5:   5    5    0%    ¬    9:   9     9     0%   V
 2:   1     1   0%     ¬    6:   6    6    0%    ¬   10:  10    10    50%   IV
 3:Znnd     2   0%     ¬    7:   7    7    0%  X ¬   11:  11    11     0%   V
 4:   2     2   0%     ¬    8:   8    8    0%    ¬   12:  12    12     0%
```

> Figure 11: DFB display list, FDX90-unit with 12 dimmers ("Alex" dimmer pack)

The name of the unit is indicated in the upper right-hand corner of the screen.

The display is divided into two parts:

- General unit data is displayed in the header (DFB unit basic settings)
- The lower area displays the data and status of the controlled dimmers.

Header:

A DMX B   Status display, the active status is highlighted
> F: Error, no DMX512-Signal
> S: Signal, DMX512-Signal present but not addressed correctly
> A: Active, valid data for the specified DMX start address

> The display is identical to the status display on the unit's front panel.

Line   assigned DMX512-output line (configured in menu M511)

DMX-Start   start address set for the unit,
> **"no"** for address 0 (Unit not addressed)

Dimmer unit	The current status of the unit is indicated below the station description (unit and port):

offline	Not accessible
online	Unit working
DFB off	DFB offline
started	Power-up phase (Monitoring data is not yet possible)
Dimmer Error	At least one dimmer error has occurred
ADC error	Error in analog/digital converter of the unit. As a result, the temperature is not displayed and the analog control signals are not forwarded. The FDX90/2000 units deactivate the adjustment of fluctuations in the input voltage.

FDX90**-** and FDX2000-units output further status information:

Dimmer disabled	Dimmer output disabled
Phase missing	one ore more power supply phases are missing
Power supply Err	DC current supply missing

DFB	displays the activated monitoring procedures:

V	Voltage monitoring
I	Current monitoring
I+V	Current and voltage monitoring
no	no monitoring

ADC	displays the status of the units Analog/Digital-Converter (ADC):

no	no ADC present
online	ADC online and running
Error 2	ADC-Error and the error number
empty	ADC starting up or self-testing
EXT	Status of the 6 external inputs, corresponding to the LEDs on the unit's front.

The following information is only displayed on FDX90- and FDX2000 units:

L1,L2,L3	Phase voltages A missing phase voltage is indicated below the address of the unit by message "Phase missing" on red background and the message "missing" instead of the display of the phase voltage.
50.0Hz	Network frequency
Temperature	Temperature at the air cooling inlet and outlet **"- / -"**: no temperature sensors installed
Power Supply	Supply voltage online voltage supply OK **missing** voltage supply missing
DimmerCtl	Position of the dimmer switch (FDX90- and FDX2000-unit) **online** dimmers are operational **off** dimmers are disabled

Dimmer information:

Pos	Dimmer number (1-96)
CHA	Assigned control channel empty: control channel not patched to dimmer channel Attribute name: DMX-Address patched to a ML-attribute
DCH	assigned dimmer channel (internal dimmer number) empty: dimmer channel not patched (no DMX512 output)
%	Control value output to the dimmer
VI	if V/I monitoring is available: The headers follow the DFB-display of the first display line:

V/I green	actual return value (control value > 10%)
V red	dimmer voltage error: e.g. short circuit
I red	dimmer current error: e.g. no load
X red	no light connected

The following keys can be used to control the display:

HOME	Display first configured unit
END	Display last configured unit
PG↑	Display preceding configured unit
PG↓	Display next configured unit
→, ↓	Display next bad unit
←, ↑	Display previous bad unit

Additional functions:

DEL	Acknowledge all errors on the indicated unit, reset error display If an error is still present, it will be immediately redisplayed; errors which no longer exist are removed. If monitors are linked, errors on both displayed units are acknowledged. *Note:* The displayed errors are acknowledged with **DEL** within display lists **LEVEL**, **STAGE** and **OUT**.
ENTER	starts menu M513, DFB Dimmer configuration, for the unit displayed on the main monitor
MENU	menu M500, Dimmer feedback

Displays at the Channel Board

Dimmer errors can also be indicated at the optional channel board. The property LKT_MODE determines the functions which are indicated by the key lamps of the channel board. For LKT_MODE = 3, results of dimmer channel monitoring are passed directly to the channel board. If dimmer errors occur, the corresponding key lamp flashes.

Activating and Deactivating DFB

Dimmer feedback can be temporarily activated and deactivated without needing to change the configuration:

TAKE DFB
    DFB activated

CANCL DFB
    DFB deactivated

If dimmer feedback has been deactivated, 'DFB disabled' will be displayed at the DFB list, highlighted yellow. All error indicators are suppressed in the LEVEL/STAGE/OUT lists when dimmer feedback is deactivated.

Using DFB

The DFB-system gives the following additional functionality:

Monitoring of the configuration using menu M512

- History, menu M501
- Recording output values as cue at the lighting system, M502
- Testing of dimmers, menu M514
- Recording of cues/presets within the unit, menu M521
- Saving the unit basic settings, menu M932
- Software-Update of units, menu M932
- Control via aux system

M500 Dimmer Feedback

The menu displays a number of menus used for operating the DFB system.

It is started
- by option DFB within the main menu, CH/DCH
- with key **MENU** within list view **DFB** on the main monitor.

The options start the corresponding menus:

Reset DMX90 units

Deletes errors already reported, but not yet acknowledged.

Errors not yet corrected will be re-reported again.

This menu item is only displayed by using key **MENU** within the **DFB** display list.

Reset all DMX90 units

All available units receive a signal for the acknowledgment of errors reported; errors not corrected are reported again.

DFB History

starts M501, DFB History

DFB check

checks all available units and starts menu M512, DFB Units displaying the current state.

Record DFB dimmer levels as preset

Records output levels as lighting cue at the lighting console

DFB Dimmer setup

starts menu M513, DFB Dimmer setup

DFB Dimmertest

test dimmer

DFB preset

record current output as internal DFB preset

DFB preset fade time

Assign fade in/out time to DFB presets

Check DFB preset

activate DFB preset using menu M521, DFB presets

DFB Configuration

starts menu M511, DFB configuration

DFB Backup

starts menu M540

M512 DFB/DMXlink Units

This menu displays the configurations of the connected DFB and DMXlink-units.

```
+-------------------------------------------------------------------------------+
¦ M512  DFB/DMXlink Units                                        3 dimmer units ¦
+-------------------------------------------------------------------------------¦
¦  Unit      Type        Name      Line       DMX-Start Dimmer    release/date  ¦
¦                                                                               ¦
¦    1 A     DMX90       HA 1      DMX1          1        36 PM90  3.3   26.03.98 ¦
¦    2 A     FDX90/II    HA 2      DMX1          37       72 DP90  3.3   26.03.98 ¦
¦    3 A     FDX2000     HA 3      DMX1                   96       offline       ¦
¦                                                                               ¦
+-------------------------------------------------------------------------------¦
¦ ESC   MENU   ENTER   COPY   PASTE   PRN   Update                              ¦
+-------------------------------------------------------------------------------+
```

Figure 12: Menu M512, 3 DFB units

The header indicates the number of units. The following information is displayed for each unit:

Unit	Unit number and port
Type	Unit type: DMX90, FDX90I or II, FDX2000 or DMXlink
Name	unit name, menu M511
Line	DMX512 output line, menu M511
DMX-Start	Unit start address
Dimmer	number dimmers controlled by the unit, menu M511
Release/date	of the software installed at the unit.

Units which can not be accessed carry an empty DMX512 start address field, instead of the version number **"offline"** appears. Options in the bottom line:

ESC	Close menu
MENU	menus Update, Print
ENTER	starts menu M513, DFB setup, for the unit selected
COPY	Copy dimmer configuration of selected unit to clipboard
PASTE	Transfer dimmer configuration from clipboard to selected unit
PRN	prints displayed units
Update	refreshes the unit data list

The configuration shown at figure 13 consists of three units:

- units are numbered consecutively and connected to port A

- Unit names HA 1 .. 3

- All units are connected to the DMX1 output line

- The start addresses 1 and 37 are assigned to units 1 and 2. The start address of unit 3 cannot be displayed; it is **"offline"** and therefore does not return a value.

- Units 1 and 2 control 36 PM90-type dimmers each. 36 dimmers are specified in the configuration, menu M511 for unit 3. Since the actual value cannot be retrieved from the unit (**"offline"**), the value specified in the unit is displayed.

- Software release 3.3, created on 26.03.98 is installed at units 1 and 2. Unit 3 does not respond and is therefore **"offline"**.

M501 DFB History

The History records the following events:

- System reset caused by **RS** operations or by power-on/off
- Unit not ready
- Unit ready (connection re-established)
- DMX512 start address of unit has been modified
- User acknowledged error
- Dimmer error (voltage and/or current)
- Severe internal error of the unit itself, e.g. after self-test
- DMX512 signal is missing at both inputs
- DMX512 signal back
- DFB operating system software reloaded
- Modifications of the DFB configuration
- Modification of the dimmer configuration
- Modification of the output channel assignment (menu M206)
- Show reloaded or cleared
- ADC error with error code
- FDX90/2000 only: dimmer trigger pulses have been manually de- or re-activated
- FDX90/2000 only: phase voltage missing or restored
- FDX90/2000 only: problem in power supply unit

```
+------------------------------------------------------------------------------+
¦ M501  DFB History                                                            ¦
+------------------------------------------------------------------------------¦
¦     Date      time         unit       Event                                  ¦
¦                                                                              ¦
¦   1  30.11.99 10:14:57                 Memory erased                         ¦
¦   2  30.11.99 10:17:10                 DFB configuration changed             ¦
¦   3  30.11.99 10:17:10    1 A DMX1 offline                                   ¦
¦   4  30.11.99 10:17:27                 DFB configuration changed             ¦
¦   5  30.11.99 10:17:29    2 A DMX2 offline                                   ¦
¦   6  30.11.99 10:17:48                 DFB configuration changed             ¦
¦   7  30.11.99 10:17:50    3 A DMX3 offline                                   ¦
¦   8  30.11.99 10:17:54    1 A DMX1 DMX input signal missing                  ¦
¦   9  30.11.99 10:17:54    1 A DMX1 online                                    ¦
¦  10  30.11.99 10:22:46    1 A DMX1 DMX input signal o.k.                     ¦
¦  11  30.11.99 10:23:24    2 A DMX2 online                                    ¦
¦  12  30.11.99 10:23:25    1 A DMX1 V-Error Dimmer 1 / Znnd  1                ¦
¦  13  30.11.99 10:23:26    1 A DMX1 V-Error Dimmer 2 /       1                ¦
¦  14  30.11.99 10:25:18    1 A DMX1 V-Error Dimmer 3 / Znnd  2                ¦
¦  15  30.11.99 10:25:19    1 A DMX1 V-Error Dimmer 4 /       2                ¦
¦                                                                              ¦
+------------------------------------------------------------------------------¦
¦ ESC   MENU   ENTER   DEL   PRN                                               ¦
+------------------------------------------------------------------------------+
```

Figure 13: Menu M501, DFB History

The entries are numbered consecutively; date, time and unit address of each incident are recorded. If clearing the memory completely, the history is cleared and reinitialized.

At the start of the display, the last entry is automatically selected. The following options are displayed in the bottom line:

ESC	Close menu
MENU	Selects a unit The display is reduced to messages received from the selected unit.
ENTER	ends **DFB**-History, **DFB**-List for unit selected
DEL	deletes old entries from the history. This operation is only possible if the display is not restricted to individual units.
PRN	prints all entries

M502 Record DFB Dimmer Levels

The current output values to the dimmers can be recorded as cues in the
current show by reading current values from all units into the lighting
console.

All lighting system functions such as patch, dimmer channel attributes,
characteristics and DMX patch are considered; intensities that generate
the current output values in the units are recorded.

If another manufacturers system is connected to the **DFB** system via the DMX512 input, the
presets of this system can be transferred and recorded in the **DFB** system.

```
+-- M502 Save dimmer levels --+
¦                             ¦
¦  Cue:                       ¦
¦                             ¦
¦  ESC               OK       ¦
¦                             ¦
+ [ 0.1 .. 999.9 or MENU ]----+
```

Figure 14: Menu M502, Save dimmer levels

M514 DFB Dimmer Test

Dimmers can be checked independently of the DMX received:

```
+- M514  DFB Dimmertest ---+
¦                          ¦
¦  Unit:                   ¦
¦  Port:             A     ¦
¦                          ¦
¦   ESC              OK     ¦
¦                          ¦
+ [ 1 .. 99 or   MENU ]----+
```

Figure 15: Menu M514, DFB Dimmertest, select unit

```
+----------------------------------------------------------+
¦ M514  DFB Dimmertest Unit 1 A              36 Dimmers ¦
+----------------------------------------------------------¦
¦ ¦        Dimmer          Channel        %             ¦
¦-¦                                                      ¦
¦-¦          1               1           0%             ¦
¦¦¦          2               2           0%             ¦
¦¦¦          3               3           0%             ¦
¦¦¦          4               4           0%             ¦
¦¦¦          5               5           0%             ¦
¦¦¦          6               6           0%             ¦
¦¦¦          7               7           0%             ¦
¦¦¦          8               8           0%             ¦
¦¦¦          9               9           0%             ¦
¦¦¦         10              10           0%             ¦
¦¦¦         11              11           0%             ¦
¦¦¦         12              12           0%             ¦
¦¦¦         13              13           0%             ¦
¦¦¦         14              14           0%             ¦
¦¦¦         15              15           0%             ¦
¦ ¦         16              16           0%             ¦
+----------------------------------------------------------¦
¦ ESC   MENU   ENTER   PRN  Select  Config             ¦
+----------------------------------------------------------+
```

Figure 16: Menu M514, DFB Dimmertest, Unit 1 A, 36 dimmers

Initially, all dimmer channels of the selected unit are at 0% intensity. With keys **0**, **100%**, the run keys or the digital fader wheel you can control the intensity of the selected dimmer.

If the menu is closed or key **MENU** is used to select another unit, the system resets all values to 0%.

Note: The test levels are outputted parallel to the DMX512 output received; the intensities at the lighting console should therefore be set to 0% before testing.

Options / bottom line:

ESC	Close menu
MENU	select DFB unit
	DFB Dimmer setup
	Print
ENTER	controls the selected dimmer channel by menu,
	levels can be entered as %-values using the numeric keys.
PRN	prints the list
Select	selects a unit
Config	Dimmer setup, menu M513

DFB Presets

Up to 24 presets can be recorded at the unit and are activated by:

- Menu M522, Check DFB presets
- Automatically upon loss of DMX signal
- DFB- auxiliary desk (optional)
- PC with DFB or PC90-software

M521 DFB preset

Menu M521, DFB preset, records the output level to a preset number at the unit.

```
+ M521  DFB Preset        +
¦                         ¦
¦ Auxiliary preset:       ¦
¦                         ¦
¦ ESC              OK     ¦
¦                         ¦
+ [ 1 .. 24 ] ------------+
```

Figure 17: Menu M521, DFB presets

A preset number (1 ... 24) is entered, **"OK"** records the current output values.

You can set independent fade in/out times for the 24 DFB presets; these
are recorded within the units and are independent of the lighting system
connected. DFB presets can be activated by the system, a PC, an
auxiliary desk or automatically upon DMX512 signal failure.

```
+---------------------------------------------------------------------+
¦ M532  DFB Preset fade times                                         ¦
+---------------------------------------------------------------------¦
¦    DFB preset      F-out      F-in     DFB preset      F-out     F-in ¦
¦                                                                      ¦
¦         1                           ¦      13                        ¦
¦         2                           ¦      14                        ¦
¦         3                           ¦      15                        ¦
¦         4                           ¦      16                        ¦
¦         5                           ¦      17                        ¦
¦         6                           ¦      18                        ¦
¦         7                           ¦      19                        ¦
¦         8                           ¦      20                        ¦
¦         9                           ¦      21                        ¦
¦        10                           ¦      22                        ¦
¦        11                           ¦      23                        ¦
¦        12                           ¦      24                        ¦
+---------------------------------------------------------------------¦
¦ ESC  MENU  ENTER  COPY  PASTE  PRN  Prog.  Reset  Update  Check      ¦
+---------------------------------------------------------------------+
```

Figure 18: DFB Preset fade times menu

ESC   Close menu

MENU   Options
- **Program**   Save current settings in Flash EPROM
- **Reset**   Read Flash-EPROM and transfer values to system
- **Update**   refresh display
- **Check**   menu M522, Check DFB presets
- **Print**   prints displayed times

ENTER   starts form:

```
+- DFB preset fade times    ----+
¦                               ¦
¦  from preset:          1      ¦
¦  to preset:            1      ¦
¦  Fade out-time:        5.0    ¦
¦  Fade in-time:         5.0    ¦
¦                               ¦
¦   ESC                 OK      ¦
¦                               ¦
+-[ 1 .. 24 ] -----------------+
```

Figure 19: Menu DFB preset fade times, input

Inputs can be made for one or a range of DFB presets, times for "fade
out" and "fade in" can be entered separately.

"OK" transfers the times to the units; **"Program"** is used to transfer the
values to the units permanent Flash EPROM.

COPY   copies the times to the clipboard

PASTE   transfers times from the clipboard to the units

PRN   prints displayed values

Update   refreshes the display by re-reading the units information

Prog.   values transferred to the units are kept in the units RAM memory; use
                  "Program" to transfer them to the Flash EPROM.

Reset   clear all times

Check   menu M522, check DFB presets

This menu allows to check/activate recorded DFB presets:

```
+-------------------------------------------+
¦ M522  Check DFB presets                   ¦
+-------------------------------------------¦
¦        1     0%      a      13     0%      ¦
¦        2     0%      a      14     0%      ¦
¦        3     0%      a      15     0%      ¦
¦        4     0%      a      16     0%      ¦
¦        5     0%      a      17     0%      ¦
¦        6     0%      a      18     0%      ¦
¦        7     0%      a      19     0%      ¦
¦        8     0%      a      20     0%      ¦
¦        9     0%      a      21     0%      ¦
¦       10     0%      a      22     0%      ¦
¦       11     0%      a      23     0%      ¦
¦       12     0%      a      24     0%      ¦
+-------------------------------------------¦
¦ ESC   ENTER   PRN                         ¦
+-------------------------------------------+
```

Figure 20: Check DFB presets

The list shows all DFB presets together with their allocated fader values.
You can use the digital fader, the run keys and the **0** and **100%** keys to
control the "fader"/master value of the selected preset.

ESC	Close menu
ENTER	Fader control by menu
	The menu allows entering channel levels in %.

```
+------ DFB preset 3  ------+
¦                           ¦
¦  Channel level:     0%    ¦
¦                           ¦
¦  ESC               OK     ¦
¦                           ¦
+ [ 0 .. 100% ] ------------+
```

Figure 21: Menu DFB preset control

PRN	print current fader status

M540 DFB Backup

Menu M540 allows backing up all settings recorded in the units to the lighting system. If a unit
is changed/replaced, you can use the backup data to update the new unit to the previous
unit's state.

M932 Software-Update

The control software of the units can be updated using the lighting system with M932, DMX90 software, menu or with a PC.

```
+----  M932  DFB Software  -----+
¦                               ¦
¦  Port:                  A   ¦
¦  from unit:             1   ¦
¦  to unit:               3   ¦
¦                               ¦
¦  Insert disk in drive FL1     ¦
¦                               ¦
¦   ESC                   OK   ¦
¦                               ¦
+----- Selection use MENU ------+
```

Figure 22: Menu M932, DFB Software-Update

Options:

Port:	Possible settings: "**A**", "**B**" or "**A + B**"
	If "**A**" or "**B**" is chosen, additional entry fields **"from unit"** and **"to unit"** are displayed, this allows to address individual units.
	If "**A + B**" is chosen, the software is sent via both ports to all units installed in the configuration.
from unit:	Only if port "**A**" or "**B**" is selected: first unit number
to unit:	Only if port "**A**" or "**B**" is selected: last units number

If the specified units are not configured using menu M511 before the above settings are made, message **"No dimmer unit in setup"** will be displayed.

If a unit is inaccessible, message **"offline"** appears, giving the following options:

ESC	Cancels the software-update
Again	Attempt to program the specified unit again
Ignore	skips the specified unit; programming continues with the next unit.

DFB Auxiliary Desk

The DFB auxiliary desk controls the 24 DFB presets of the units:
- Key-operated switch to switch the desk on/off
- ENA key-operated to enable programming
- Dedicated program key for the individual DFB presets
- A Fader for each DFB preset
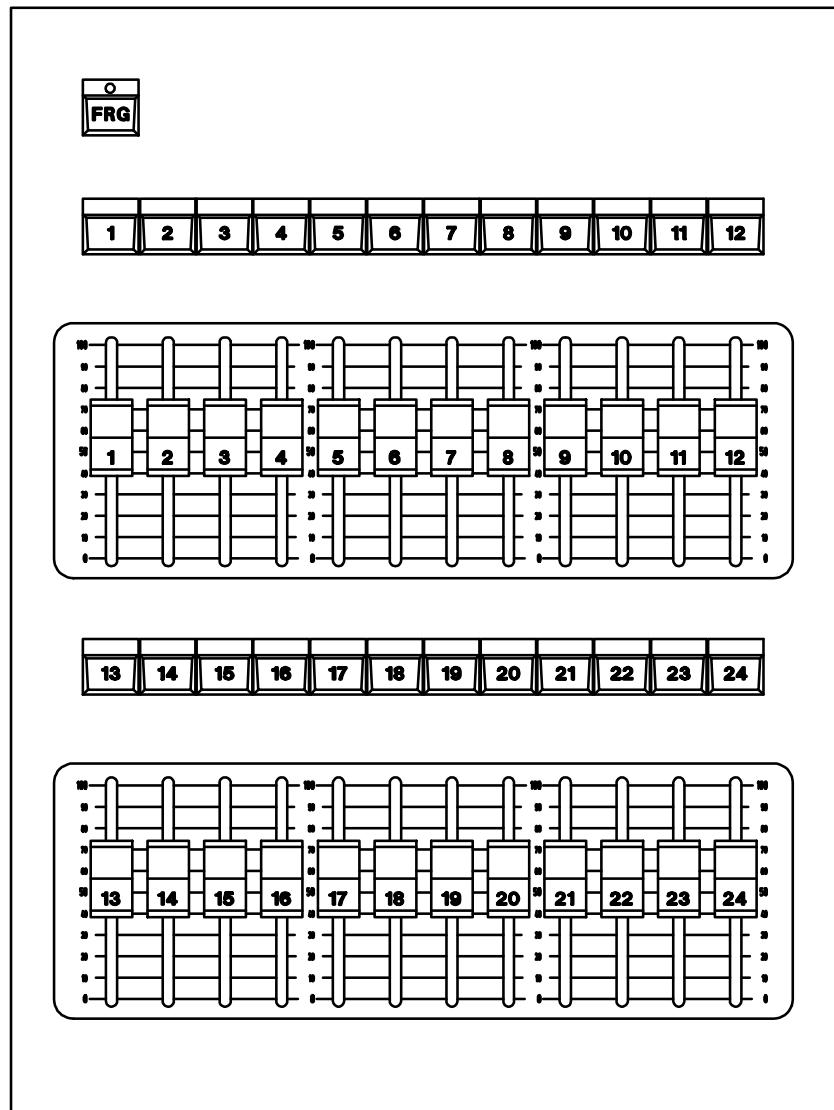
Figure 23: DFB Desk – Front panel

Programming DFB Presets using the Aux Desk

You record the current output of the unit to one of the 24 DFB presets.
The recording process is identical to using M521, DFB preset, for
recording.

ENA and preset key
      record the current output to the specified DFB unit preset (1 to 24).

The key lamp of the **ENA** key is lit until the programming command has finished transferring
the preset to all DFB units. You cannot program units which are not accessible from the
auxiliary desk.

Controlling DFB Presets by Fader

The 24 faders are used to fade the DFB presets recorded; the times assigned are used.

Connecting to the DFB Units

The DFB-aux desk is connected parallel to the lighting system via RS485-interface to the DFB-units.

Properties

Features of the system can be adapted to the operators needs using the following menus:

210 MENU Properties

Essential, often used functions are in this menu, all other properties are listed in menu M215.

This menu allows to save the current setup to a file or load configurations from a file (replacing the current settings/properties).

215 MENU All properties

Each entry consists of a name and value. Unless noted otherwise, internal values are used for levels and times:

Levels:	255 equals 100%
Times:	16 equals to 1 s
Cues:	10 corresponds to cue 1

Values not listed are reserved and might lead to unexpected results.
Factory default settings are marked [W].

ABR_INT Preheat level for adjustment

The preheat level used for spotlight adjustment can be edited using menu M235 (ADJ level).

Range:	0-255, corresponds to 0-100%
Factory setting:	30, corresponds to 12%

ABR_OFF_ZEIT Fade-down time for adjustment

Range:	0-960, corresponds to 0-60 s
Factory setting:	32, corresponds to 2 s

Note: The value can be edited with the fade-time levers or by numeric time entries (when the adjustment function is active). Menu M218 (Time constants) allows direct input of time.

ABR_ON_ZEIT Fade-up time for adjustment

Range:	0-960, corresponds to 0-60 s
Factory setting:	32, corresponds to 2 s

Note: The value can be modified with the fade-time levers or by numeric time entries (when the adjustment function is active). The time can be entered direct in menu M218 (Fade-time constants).

ACTRELOPT Activate and Release

Setting ACTREGOPT activates or disables keys ACT (Activate) and REL (Release).

For editing, Menu M225 "Activate and Release" is started.

ADDLES_MODE Reading of ADD cues

When reading, additive cues can be added to the current contents of the master or can replace the current contents.

ADDLES_MODE=0 [W]	Adding: modifies the participating values, all other values remain unchanged.
ADDLES_MODE=1	Replacing: on reading, ADD cues are treated as complete cues, non-participating values are deleted.

Read operations introduced by the **+** key are usually additive.

AKTA_Disp Effects Control Listdisplay STAGE

Property AKTA_DISP controls influence of Effects and Dynamic Effects for display of values:

AKTA_DISP=0	No influence on displayed values, factory setting
AKTA_DISP=1	Values include influence of effects
AKTA_DISP=2	No influence on displayed values, Dynamics are marked by '→'
AKTA_DISP=3	Values include influence of effects, Dynamics are marked by '→'.

AKTA_KENN Up/down identification in STAGE list

In the STAGE level display view, channel numbers can have an identification showing whether the channel is built or checked which is marking the direction in which the channel level is changing. The identification disappears when the channel stops changing.

Up/down identification can use various characters:

AKTA_KENN=0	No identification
AKTA_KENN=1	Arrow marker up/down
AKTA_KENN=2	Arrow up/down
AKTA_KENN=3	Characters </>
AKTA_KENN=4	Graphic characters
AKTA_KENN=5 [W]	Color marker
	Can be set in menu M202, color number 149, ZVG

AKTKORREG Destination preset for SUM correction

In sum correction (digital fader with key **SUM** depressed), the current output level of a channel can also be increased. To enable this, a preset has to be defined in which the channel value is increased:

AKTKORREG=0 [W]	Currently selected preset

Prisma:

AKTKORREG=1	XF1 (left crossfade system)
AKTKORREG=5	XF2 (right crossfade system)
AKTKORREG=11-30	GR1 thru GR20

Focus/Iris:

AKTKORREG=1	XF preset
AKTKORREG=11-30	GR1 thru GR20 (Focus)
AKTKORREG=11-20	GR1 thru GR10 (Iris)

ALT_MODE Key BACK

The ALT_MODE defines the behavior of the system when the BACK key is used.

ALT_MODE=0 [W]	Only the dimmer channel is reset (factory setting)
ALT_MODE=1	All moving light parameters including the dimmer channel are reset.
ALT_MODE=2	In the MOVL/COL list, BACK applies to the selected parameter(s) (as with ALT_MODE=1); in all other lists only to the dimmer (as with ALT_MODE=0)

When a single parameter is selected in the MOVL/COL list, only the selected parameter will be reset.

ALT_TOGGLE Toggle between values

Property ALT_TOGGLE allows to toggle between the current value and the most recently used value.

ALT_TOGGLE=0 [W]	BACK resets the current value once (no toggeling)
ALT_TOGGLE=1	BACK toggles between current value and the most recent called value (in BLD and PV)
ALT_TOGGLE=2	BACK toggles between the current value and the most recently called value in all presets

ASCII_EXPORT_OPT ASCII Export Control

Export of a complete show is controlled. Document "ASCII Text Representation for Lighting Console Data" describes file format for storing show files in ASCII format. Not all data of a show is covered by that document.

Menu M275, USITT ASCII options, controls setting:

Standard:	Export only data according to standard
Extended:	Export additional data like moving light data etc.

ATMODE AT input mode

This parameter determines the input mode of key **@:**

ATMODE=0 [W]	"1 digit", for example: **@ 5** = 50%
ATMODE=1	"2 digits", for example: **@ 45** = 45% After the first character has been entered, it is possible to use key **ENTER** to ensure that the single-digit entry is accepted. Example: '**@ 5 ENTER**' results in 50%

The @ operations can also be carried out with preset channels, channel ranges or chains.

AUTO_FBREG Automatic preset selection in remote control

When activating remote control (**REM**) function, a preset can be selected automatically. The preset is determined by the INITREG property.

AUTO_FBREG=0 [W]   No automatic preset selection
AUTO_FBREG=1   Automatic preset selection

AUTO_INSERT Insert mode for text inputs

AUTO_INSERT=0   "Overwrite", overwrite former text
AUTO_INSERT=1 [W]   "Insert", shift former text to right

The mode can be changed temporarily during text entry with the **INS** key, the cursor then changes its color.

AUTO_RESTORE Load NFS-Backup

Setting AUTO_RESTORE=1 opens Menu M189 after erasing all memory, allowing to load a backup from an NFS server.

AUTO_TS Auto-assignment of hold times

The value determines whether hold time 0 (automatic follow-on start) is to be automatically entered in the sequence list, if

- both wait times (cue times) are assigned,
- sequence list is in synchronous mode,
- sequence step and cue number are identical.

The entry is made for the following actions:

- Record cue
- Copy/load cues from hard disk etc
- Change times by menu M422 (Re-record splitfade times)

AUTO_TS=0 [W]   no auto-hold time
AUTO_TS=1   Automatic hold time assigned

AUTOREC Automatic saving of changes

Not yet implemented.

BEDLOCK_MODE Fader lock if master keyboard is locked

All input devices can be locked, preventing key entries, by operation "0 RS". The faders of the master keyboard can also be locked with "0 RS":

BEDLOCK_MODE=0   Faders remain operable.
BEDLOCK_MODE=1 [W]   Faders are locked.
                       To prevent dips, changed faders are
                       identified "CATCH" after re-enabling of
                       the master keyboard. They can be
                       operated again as soon as they are
                       "catched" to the value displaied, the
                       "CATCH" label will then disappear.

BEF_MODE Display in command/message line

This property defines:

Beeper on/off
What to be displayed in the message line after **CLEAR** is pressed:

Options are:

- Blank
- Name of system and input device
- Time
- SMPTE/MTC
- MIDI Input

Setting is done using menu M233 (Command display); menu M215 shows the internal value set.

BET_SCHWELLE Level threshold for "Involved"

Uninvolved channels are ignored when recording cues; functions like **INVO** or the adjustment function also refer to this minimum value. The channel mask also refers to this threshold.

Range: 0-255, corresponds to 0-100%
Factory setting: 15, corresponds to 6%

Menu M211 (Level minimum) also allows direct alteration of the percentage by the digital fader.

BLKCOMPRESS_MODE Compressed Cues

From software 5.4, the memory used for cues has been significantly reduced. For compatibility with previous software releases, the previous memory format can be used.

BLKCOMPRESS_MODE=0 [W]   Existing memory format, allows to use shows on
                            systems with previous software releases
BLKCOMPRESS_MODE=1   Compressed format
                            Cues in old format are marked with a dot in the
                            QLIST, followed by IFCB.

BLKSTEP Increment for counting cue numbers

The increment is used when switching the current cue number by the **+/- CUE** operation and for multiple recording (recording of several submaster contents in consecutive cues).

Range: 0-100, corresponds to increment 0.1 thru 100.0
Factory setting: 10, corresponds to increment 1.0

BOTAST_MODE Group blackout mode

This setting allows you to control the functions of the group blackout key for ML priority control.

The key lamp is lit if the group is "released" (LTP attributes of this group are not involved) and the group fader is internally at 0%.

This setting can be applied using M225 M225, "Activate and Release".

CLOCK_DISP Time display on monitor

The current time can be shown in the header of the second monitor.

CLOCK_DISP=0	Off
CLOCK_DISP=1	Hours:minutes
CLOCK_DISP=2 [W]	Hours:minutes:seconds
CLOCK_DISP=3	the current CPU load will be displayed in the header.

CONT_KEY Key CONT on master keyboard

Key **CONT** can be fitted between keys **GO** and **STOP** of the crossfade array and is used for resuming of halted crossfades.

CONT_KEY=0 [W]	CONT key not configured
CONT_KEY=1	CONT key configured

CRT_MODE Monitor Setup

TFT- and CRT-monitors can be connected to the system; this setting optimizes output for the monitors used:

CRT_MODE=0 [W]	640 x 480, 68Hz
CRT_MODE=1	640 x 480, 60Hz
CRT_MODE=2	640 x 480, 72Hz
CRT_MODE=3	640 x 480, 76Hz
CRT_MODE=4	640 x 480, 90Hz
CRT_MODE=5	1024 x 768, 60Hz
CRT_MODE=6	1024 x 768, 72Hz

Note: Operations "**70 RS**" to "**76 RS**" set CRT_MODE to values 0 to 6. If the connected monitor can't sync to the value set, other modes can be set "blind" using the operations.

NTX-Systems:
The modes above relate to monitors MON2 - MON5. MON1 has only two modes:

CRT_MODE = 0 - 4	1280 x 1024, 60Hz
CRT_MODE = 5 - 6	1024 x 768, 60Hz

CURSOR_DELAY Initial delay for cursor repeat function
CURSOR_REPEAT Cursor repeat rate

When a cursor key is pressed, first the initial delay time is waited, then the key is repeated automatically at the rate set:

Representation:	n 1/100 secs
Range:	0..200 (equals 0..2sec)
Factory setting:	CURSOR_DELAY=40 (0.4sec)
	CURSOR_REPEAT=8 (0.08sec)

214 MENU   form direct input

DARKMOVE_LIMIT Darkmove limit

The number of sequence steps to be checked from the Darkmove function can be limited for performance reasons.

Setting 0 = no limit set.

DARKMOVE_MODE Darkmove

Menu M228, Darkmove, defines:

- Keys **DM** activated (Prisma)
- Crossfade system used (Prisma)
- Darkmove on/off

DEFAULT_MACRO Default macro after clearing memory

A macro can be automatically started after erasing the memory, setting DEFAULT_MACRO = 0 deactivates the default macro.

DEFAULT_VST Load show after clearing memory

A show which will is loaded (from hard disk) after clearing the memory can be defined. Menu M258 defines the number; 0= no show is loaded automatically.

DIAGNOTERM Terminal type used for diagnostic system

The DIAGNO connector on the rear of the system allows connection of a terminal for diagnostic purposes, either direct or by modem. The terminal type determines the interface used:

DIAGNOTERM=0 [W]	ADDS Viewpoint
DIAGNOTERM=1	VT100, ANSI
DIAGNOTERM=2	VT52

DIGI_NONLIN Nonlinear digital wheel response

The sensitivity of the digital fader wheel can set to follow the speed of rotation (the faster moved, the greater the change; slower movement allows finer scaling).

DIGI_NONLIN=0	Linear (change is proportional to movement)
DIGI_NONLIN=1 [W]	Nonlinear (greater change for fast fader movement)

DIGI_STEP Digital fader sensitivity for effect selection

In effect control, the digital fader is also used to select units like dB values for sound control. This determines how large the fader movement must be for switching to the next value.

Range: 1..100, (small values for higher sensivity), Factory setting = 10

DIR_MODE Direct mode in crossfade

Color changers and other mechanical controls should be operated independent of master faders and blackouts using the direct mode (DIR function) and should be set to the new value immediately (hard) when a cue is started.

DIR_MODE=0	Hard
DIR_MODE=1 [W]	Soft, using specified times

Note: This setting needs to be defined before applying direct mode to channels.

DMX_DELAY DMX-output rate

The DMX-output rate on all 8 DMX outputs (excluding DMX-over-Ethernet) can be reduced with menu M237, DMX timing.

  Range: 30/sec to 44/sec (Factory setting: 44/sec)
  When set to 32/sec, mode synch DMX Output will be set.

DMX_FB_MODE Local DMX512-Output when in remote control

When the system remote-controls another systems (REM active), the local output can not be controlled. This setting allows to turn the DMX output off when remote-controlling:

  DMX_FB_MODE=0 [W]   DMX512-output remains on
  DMX_FB_MODE=1   DMX512-output off when remote-
                          controlling

Note: When DMX output is off (DMX_FB_MODE=1), "DMX off" will be displayed in the 2nd monitors header (of the remote-controlling system).

DMX_NA_MODE DMX512-output with linked AUX-systems

When an AUX system is connected (**AUX**), the DMX output of the AUX system can be controlled by the main system:

  DMX_NA_MODE=0 [W]   AUX system has full output
  DMX_NA_MODE=1   AUX system has no output (when linked
                          to main system)
  DMX_NA_MODE=2   AUX system has no HTP output when
                          linked to main system

DMXPROT_ENABLE DMX-Output protocols

The output protocols used can be en- or disabled, regardless their configuration.

Menu M299, Enable DMX protocols, defines the settings which can be saved as default.

DOUBLE_CLICK Mouse click in menu selection

Mouse movements and mouse clicks can be interpreted differently in menu control.

  DOUBLE_CLICK=0   1st click immediately triggers
                                  action
  DOUBLE_CLICK=1 [W]   1st click only selects field, 2nd click
                          triggers action

The setting also controls the selection in list displays of menu control.

  DOUBLE_CLICK=0   The entry on which the mouse-controlled
                          cursor is located at the start of the
                          display is selected.
  DOUBLE_CLICK=1   The selection is independent of cursor
                          location.

ETHDMX_LOWRATE DMX-over-Ethernet send rate

DMX send over Ethernet is usually sent at full speed of 44 packets per second. If values do not change from packet to packet, the number of packets sent can be reduced to a minimum of one packet per second to reduce network load. If values are changed, they will be transmitted at full speed.

The setting range is between 1 and 32; default (0) sends 4 telegrams/sec.

EXPERT_LEVEL Expert Level

It is possible to disable various prompts to speed up work with the menu control:

- Overwrite defaults
- Data not saved
- Text not saved
- DMX90/FDX2000 station not programmed
- Reset to factory default settings
- Cursor on ESC in configuration menus
- Direct loading of cues into XF preset
- Direct loading of cues to submasters
- CANCL CHAN possible without key ENA
- +/- GO/STOP/CUT/RET with/without ENA
- REL/ACT without ENA
- Warning if cue number exists

Values displayed refer to internal values. Changes are made with menu M231 (Expert level).

FAHR_LINCR Sensitivity of slow incrementing keys
FAHR_SINCR Sensitivity of fast incrementing keys

The increment (or "movement") keys simulate slow or fast movement of the digital wheel.

Display:	internal (255 equals 100%)
Range:	1..100 (equals ↑ 0.4..40%)
Factory setting:	3 for slow incrementing keys (approx. 1% level)
	10 for fast incrementing keys (approx. 4% level)

FB_MODE REM (remote control) function range

Setting FB_MODE allows to restrict the mode when another system or PC remote control software connects to the local system:

FB_MODE=0	No remote controlling allowed
FB_MODE=1	Read only (remote viewing)
FB_MODE=2 [W]	Remote control allowed/enabled

FB_MT_MODE Master keyboard in REM (remote control)

This setting defines the state of the remote controlled systems master keyboard (when in REM mode):

FB_MT_MODE=0 [W]	Master keyboard of the remoted system is unlocked.
FB_MT_MODE=1	Master keyboard of the remoted system is locked.

FBKOMPAT_MODE VFD-displays in REM

Information displayed on the remoted systems VFD displays can be sent to the remoting system (when in REM):

FB_KOMPAT_MODE=0 [W]	VFD-Displays are sent to the remoting system
FB_KOMPAT_MODE=1	No sending of VFD displays. This setting is required when linking with a system with a software release < 4.1.1.3.

FL_DELAY Floppy motor delay

Defines a delay time, after which the floppy drive motors are turned off.

Representation:	seconds
Range:	1..3600 (1sec to 1 hour)
	0 for permanent on
Factory setting:	10 (secs)

213 MENU   Menu Motor delay

Note: "permanent on" causes greater wear of diskettes and drive.

FLASH_MODE Mode of Flash-keys

The flash keys can be used as Flash or Blackout keys or can be disabled.

Settings are made using Menu M150, Flashers.

FLEXICHAN_MODE FlexiChannel-Mode

Channels not currently in use can be hidden in views LEVEL/STAGE and T/TXF/TWAIT.

FLEXICHAN_MODE=0 [W]:	normal mode (all mask channels are displayed)
FLEXICHAN_MODE=1:	compressed mode

FRG_BO ENA key for Blackout

Blackout-keys can be set to work with pressed ENA key only (to prevent accidental operation).

FRG_BO=0 [W]	Not locked, operation without key **ENA**
FRG_BO=1	BOI/II, XFBO, EBO, GRBO, PROGBO only with **ENA**
FRG_BO=2	as FRG_BO=1, also Group blackout keys only with **ENA**

The group blackout keys can be used to control Activate and Release (setting ACTRELOPT).

FULLVAL Radio Remote Control, Level for key FULL

A differnt level for key **FULL** can be set for some radio remote control types:

FULLVAL=0 [W]	100%
FULLVAL=1 .. 9	10% - 90%
FULLVAL=10	100%

FW_PARTS Recording COL-cues

Setting FW_PARTS defines, which parts or attributes are to be included when recording 'REC COL'. Menu M241 "COL-Cue" will be started.

FWDISP_BANKS Number of devices in list COL

Settings FWDISP_BANKS defines how many devices per page are to be displayed in list COL. Up to 24 devices can be displayed; the attributes displayed depend on the number of devices displayed:

FWDISP_BANKS=1	8 devices per page /20 attributes
FWDISP_BANKS=2	two lines, 16 devices per page /7 attributes
FWDISP_BANKS=3 [W]	three lines: 24 devices per page /4 attributes

FWDISP_PAR Attributes displayed in list COL

Setting FWDISP_PAR defines the attributes to be displayed in list COL; menu M243 "ML/COL display options" is started.

GR_ZEIT Standard fade time for masters

This setting defines the fade times to be used for group submasters (if not using the cue fade times, setting GRTBLOPT=0).

Representation:	Internal (in 1/16 s)
Range:	0..57600 (corresponds to 0 s thru 60 min)
Factory setting:	1 (equals 1/16sec)

Notes:
1. A change to this values works after the submasters are cleared
2. Fade times can be altered manually. The values are reset when submasters are cleared.

The time can be entered direct with menu M218 (Fade-time constants).

GRDIGIOPT Controlling the submaster faders by remote control

Incrementing/movement keys of the remote control can control the submaster faders of the local system:

GRDIGIOP=0 [W]	no remote controlling of submasters
GRDIGIOPT=1	Operation '+|- GR' and 'x GR' use the incrementing/movement keys of the remote control to control the current submaster.

GRDISP_MODE Submaster display options

In the submaster displays, the cue number held on the submaster or the following text can be displayed:

DISP_MODE=0	Cue number, "changed"- indexing
DISP_MODE=1	Cue text instead cue number
DISP_MODE=2	Cue text instead of fader value
DISP_MODE=3[W]	SOLO/QTXT instead of times

GRLOAD_MODE Loading Cues to submasters

When loading cues to submasters, the can be "cut" or faded/"fetched" with the submaster fader.

GRLOAD_MODE=0 [W]	Load cues direct / "cut"
GRLOAD_MODE=1	Fetch loaded cues with submaster fader

GRTBLOPT Cue times on submasters

Cue times saved can be used or ignored when a cue is loaded to a submaster (times held on the submaster remain unaltered).

GRTBLOPT=0	Cue times are ignored
GRTBLOPT=1 [W]	Cue times act as submaster times

HD_DELAY Harddisk motor delay

Defines a delay time after which the HD drive motor is turned off.

Representation:	seconds
Range:	1..3600 (1sec to 1 hour)
	0 for permanent on
Factory setting:	1800secs

213 MENU   Menu Motor delay

Note: "permanent on" can be used for the hard disk.

HEDU_KENN Up/down identification for LEVEL list display

Channel numbers can be indexed, identifying whether the channel is built up or checked.
Depending on preset selection, the following comparisons are made at the start of crossfade:

PV: PV - DEST
XF: DEST - XF
DEST: changes compared to the last crossfade

Up/down identification can use different characters:

HEDU_KENN=0	No identification
HEDU_KENN=1 [W]	Arrow marker up/down
HEDU_KENN=2	Arrow up/down
HEDU_KENN=3	Characters </>
HEDU_KENN=4	Graphic characters

HEIZMODE Preheat

Channels can be preheated with a set minimum level:

HEIZMODE=0	only for channels in running or loaded effects
HEIZMODE=2 [W]	also for channels with assigned preheat level

92 MENU, Dimmer characteristics, allows to assign a preheat level.

Notes:
1. The default preheat level is defined by the LIWEHEIZ property
2. Effects can have individual preheat levels.

HMIOPT Optional HMI-console

This setting enables the optional HMI console:

HMIOPT=0 [W]	HMI-communication off
HMIOPT=1	HMI- communication on

Note: Changes require a reset

HT_BIND Preset assignment of handheld terminals (RCs)

Prisma only: defines the assignment of handheld RCs to the crossfaders.

HT_BIND=0	RC1 and RC3 on **XF1**, RC2 and RC4 on **XF2**
HT_BIND=1 [W]	All RCs on **XF1**
HT_BIND=2	All RCs on **XF2**

Menu M232 (Remote control setup) offers a convenient way for changing this setting.

Properties

HT_MODE Functionality of handheld terminals (RCs)

This defines the functionality of all handheld terminals (wired, infrared or radio).

HT_MODE=0	Remote control input disabled
HT_MODE=1 [W]	Full functionality
HT_MODE=2	Only access to channel levels, no memory access allowed

Menu M232 (Remote control setup) offers a convenient way of changing this setting.

INFODISP_MODE Crossfade displays on monitors

The format used for crossfade systems displays on the monitors can be changed.

INFODISP_MODE=0 [W]	Crossfade times and 10 characters of cue text
INFODISP_MODE=1	No crossfade times, 24 characters QTEXT

INH_MODE Inhibit level mode

Setting INH_MODE modifies the control range of the INH fader:

INH_MODE=0 [W]	Range 0% - 100%
INH_MODE=1	Range 0% - 200%

INITREG Automatic preset selection

Sets which preset will be current/selected after a reset or when REM is activated (when AUTO_FBREG=1).

INITREG=0 [W]	XF preset of master crossfader (SEQUEB)
INITREG=1 .. 20	Group 1 .. 20

KBD_NAT_CODE Nation Code / layout of the external keyboard

KBD_NAT_CODE=0	US (international)
KBD_NAT_CODE=1 [W]	German
KBD_NAT_CODE=2	French

Note: Another keyboard layout can be activated temporarily (until the next reset):

Ctrl-Alt-F1 Switches to US keyboard
Ctrl-Alt-F2 back to German keyboard layout

KNA_AKTREG Preset for linked AUX systems

This setting defines a preset on the AUX system used for active value synchronization.

KNA_AKTREG=0 [W]	Programmer (or GR10 on Iris)
KNA_AKTREG=1..20	GR1..GR20 (or GR1..GR10 on Iris)

KNA_MODE Mode for AUX system linking

Different interfaces and protocols can be used for the AUX and WAUX functions; the Ethernet interface is used as standard. The following settings are possible:

  T90/Prisma/Prisma NT/NTX, memory only
  T90/Prisma/Prisma NT/NTX, synchronized
  Focus/Iris, T40/T20-M memory only
  Focus/Iris, T40/T20-M synchronized
  T40-2 current loop
  T40-2 Ethernet
  SIEMENS K10 current loop using interface "AUX"
  MIDI MSC using MIDI OUT
  NSI Melange on MIDI OUT

After a restart, the link can be reestablished automatically or after prompting.

Menu M216 (**AUX** system) can be used for above setting.

Note: When in synchronized-mode, the submaster groups are synchronized with the AUX system.

KNASYNC_OPT Backup synchronization options (AUX)

This setting defines the sync-functions of the main system; menu M245 will be started.

Note: Changes require a restart.

LAMP_INT Brightness of key lamps

The brightness of the master keyboards key lamps can be modified.

The property starts menu M217 (Goose neck lamps) to alter the setting.

A special EPROM is necessary to adapted the key lamps brightness; this can be fitted to older installations.

LIWEHEIZ Standard preheat value

Dimmer channels can have an individual preheat level assigned; the default value used is defined here.

Representation:	Internal
Range:	0-255, corresponds to 0-100%
Factory setting:	0 (no preheat)

92 MENU, Dimmer characteristics, allows to assign a preheat level.

Note: The preheat mode must be activated with HEIZMODE property.

LKIDISP_MODE Information on list OUT

The channel mask of list **OUT** can be matched likewise the lists **LEVEL** and **STAGE**.

LKIDISP_MODE=0 [W]	Displays all available channels
LKIDISP_MODE=1	Displays only channels that are part of the channel mask, or for which a direct intensity is set

LKT_MODE Display mode for optional channel table

The key lamps of the optional channel table show the status of the assigned dimmer channels. They can assume three different statuses:

Flashing	Channel selected or dimmer feedback error
On	High threshold level, not selected
Off	Low threshold level

The following settings are possible:

LKT_MODE=0 [W]	Display follows list selection of first monitor:
	STAGE, Active output from presets without effects
	EFF, Output from effects system
	OUT, Total output, presets and effects system
	DFB, Dimmer feedback errors
	other settings: levels of the current preset:
LKT_MODE=1	**STAGE** – active presets output
LKT_MODE=2	**OUT** – total output values
LKT_MODE=3	**DFB**- Dimmer feedback errors

LSM_SK Colorkinetics LSM-Manager, Device Number

The value defines the device number for a LSM-Manager from Colorkinetics for control via serial interface..
LSM_SK = 0 deactivates the interface.
Changes of the value require software restart. (reset).

MAN_SCHWELLE Initial threshold for starting manual crossfades

In manual crossfade, a crossfade operation might be started if crossfade levers are touched accidentally. This threshold defines the minimum lever movement necessary to start a crossfade.

Range:	0-25, corresponds to 0-10% lever movement
Factory setting:	2, corresponds to approx. 1% lever movement

Note: The threshold is only effective for starting, not during the ongoing crossfade.

MAN_ZEIT Fader lag for manual crossfade

In manual crossfade, faders can be moved "hard" to the end state of a crossfade. This setting can be used to define the minimum time for the crossfade.

Representation: Internal (in 1/16 s)
Range: 0 .. 960, corresponds to 0 thru 1 min
Factory setting: 0

The time can be entered direct with menu M218 (Fade-time constants).

MAS_SET_MODE Mask changes when reading MAS cues

Various display options on reading **MAS** cues are possible for channels not involved in the new mask:

MAS_SET_MODE=0   Channels are removed from the mask
MAS_SET_MODE=1   Channels are displayed, if they are
                         included in a group
MAS_SET_MODE=2 [W]   Channels are displayed (if in an active
                         preset).

MEM_FORM Defaults in forms

Input fields in forms can be preset with a default or the last input made:

MEM_FORM=0 [W]   uses the default
MEM_FORM=1   uses the last input made

Clearing the memory resets to factory default.

MINUS_THRU Options for key MINUS

Key minus was used both as "minus" or "thru". Now it is possible to define its functions:

MINUS_THRU = 0   minus only (use key THRU for ranges)
MINUS_THRU = 1   minus and thru

Starts menu M227, Input syntax options

MONMODE Monitor Assignment

This setting defines the assignment of up to four monitors; changes require a restart. Most of the functions can be accessed by RS operations:

	Monitor 1	Monitor 2	Monitor 3	Monitor 4
81 RS	Main monitor	not used	not used	not used
82 RS	not used	Main monitor	not used	not used
83 RS	Main monitor	Monitor 2	not used	not used
84 RS	Main monitor	Main monitor	not used	not used
85 RS	RC 1	Main monitor	not used	not used
86 RS	Main monitor	RC 2	not used	not used
87 RS	Main monitor	Monitor 2	Monitor 2	not used
88 RS	Main monitor	Monitor 2	Monitor 2	Monitor 2
89 RS	Main monitor	Monitor 2	Monitor 2	BMON:Libra

Menu M219 (Monitor setup) allows to setup the monitors.

Note: Monitor 3 and 4 are optional.

MOUSE_MOVE Mouse move area

This setting defines the areas for the mouse used:

MOUSE_MOVE=0	identical to older hardware: the mouse cursor moves only in the list area of the main monitor, click=key MENU.
MOUSE_MOVE=1 [W]	the mouse cursor can be moved on the complete screen, clicking selects channels; changing monitors is done in the header or footer or by drag-left.
MOUSE_MOVE=2	as MOUSE_MOVE=1, the mouse can move to the next monitor vertically on any position
MOUSE_MOVE=3	the mouse moves to next monitor "horizontal" (header, footer).

Note: The settings require a restart (RS).

MOUSE_PRESENT Mouse/Trackball on/off

The mouse or trackball can be disabled:

MOUSE_PRESENT=0	off
MOUSE_PRESENT=1 [W]	on
MOUSE_PRESENT=2	Trackball is used as mouse; left and right key over the trackball act as mouse keys.

MOUSE_SCALE Sensitivity of mouse/trackball

The sensitivity is the reaction of the mouse cursor in relation to movement of the hand. Higher values mean a longer path on the monitor for the same hand movement.

Range: 1-32
Factory setting: 25 (typical value for standard mouse)

OVDISP_MODE Display mode for list LEVEL

Channel levels can be controlled from -99 thru 199%. If several channels with different levels are controlled at the same time, the difference of levels is maintained if moved above 100% or below 0%. The setting defines the display of levels outside the range of 0 thru 100%.

OVDISP_MODE=0   Display in range -99 thru 199%
OVDISP_MODE=1   Display in range 1 thru 199%
OVDISP_MODE=2   Display in range 1 thru 99%, 100% = FF
OVDISP_MODE=3 [W]   Display in range 1 thru 99%, 100% = FL

Independent of the setting, the control range used is -99 thru 199% and if not using display mode 1 or 2, channels might appear to react delayed as being out of the display range.

PLUSLES_MODE Loading of ADD cues

This setting defines the mode used for '+ x LOAD'

PLUSLES_MODE=0   Only channels are read whose levels in
                           cue x exceed the current level.
PLUSLES_MODE=1 [W]   Only channels are read which have
                           higher value in cue x than in the current
                           preset, independent times are used.
                           Dimmer levels in ADD cues are used;
                           ML-attributes in cue x will be assigned.

POPUP_TIME Popup display time

On NTX/Booster, some popup windows are displayed for a very short time only, making it difficult to be read (for example, M250).

The display time is the time entered, multiplied by 100 ms. The maximum is 5seconds, default is 0 (no display time).

POS_PARTS Recording MOVL cues

Setting POS_PARTS defines which parts or attributes are to be included when recording 'REC MOVL'. Menu M242 "MOVL-Cue" will be started.

POSDISP_BANKS Devices per POS-list page

Settings POSDISP_BANKS defines how many devices per page are to be displayed in list MOVL. Up to 24 devices can be displayed; the attributes displayed depend on the number of devices displayed:

POSDISP_BANKS=1   8 devices per page /20 attributes
POSDISP_BANKS=2   two lines, 16 devices per page /7
                          attributes
POSDISP_BANKS=3 [W]   three lines: 24 devices per page /4
                          attributes

POSDISP_MODE Display mode for list COL/MOVL

Setting POSDISP_MODE defines, which devices are to be displayed in the COL/MOVL list:

POSDISP_MODE=0 [W]   all devices of the mask
POSDISP_MODE=1   selected devices only
POSDISP_MODE=2   Flexi mode

Menu M243 "ML/COL display options" is started.

POSDISP_PAR Attributes displayed in list MOVL

Setting POSDISP_PAR defines the attributes to be displayed in list MOVL; menu M243 "ML/COL display options" will be started.

PROTOTYP Service

This setting is used for servicing the system and needs to be set to 0.

PULT_INT Desk Lighting level

The level of the desk lighting can be controlled between 0 (Min.) and 100 (Max.) by starting menu M217 (Goose neck lamps).

A special EPROM is needed which can be fitted to older installations.

RANG_PROTECT Write-protecting DMX lines

Setting RANG_PROTECT allows to write-protects DMX lines; when loading, a protected line will not be overwritten. This setting can be applied with menu M238, Protect DMX patch. A form will be displayed, allowing to protect DMX1-8; write-protected DMX lines are indicated by "protected" in the header of menu M206.

By factory default, no lines are write-protected.

REC_PARTS Recording default cues

Setting REC_PARTS defines which parts or attributes are to be included when recording 'REC REC'. Menu M240 "Default Cue" will be started.

REGWAHL_MODE Channel selection when changing presets

The channel selection can follow when changing presets:

REGWAHL_MODE=0 [W]   Channel selection remains unaffected
REGWAHL_MODE=1   unselect all channels
REGWAHL_MODE=2   remember the presets channel selection
                            and restore the last selection on re-
                            selecting the preset.

This setting affects only the master keyboard; channel selection on all other input devices remains unchanged.

RET_ZEIT Time constant for RET crossfade

Crossfades can be returned to their initial status with the RET function. This setting defines the time constant for it.

Representation:	internal
Range:	0..960, equals 0..60secs
Factory setting:	32, equals 2secs

Menu M218 (Time constants) allows to set the time directly.

RMON_MODE Remote PC-monitor mode

This setting defines the allowed operations when using the remote PC monitor:

RMON_MODE = 1	Viewing first monitor only, no inputs
RMON_MODE = 2	Viewing second monitor only, no inputs
RMON_MODE = 3	Independent operation as input device
RMON_MODE = 4	Operation parallel to the master keyboard

You can make the setting direct on the PC with the entry ALT and number (1-4), restricted by the systems setting.

Modes:

RMON_MODE=0	disable remote PC monitor
RMON_MODE=1 [W]	1, 2
RMON_MODE=2	1, 2
RMON_MODE=3	1, 2, 3
RMON_MODE=4	All (1, 2, 3 and 4)

SEQDISP_MODE Display in crossfade windows

It is possible to change the information displayed in the crossfade windows of the monitors.

SEQDISP_MODE=0	Preset information PV/DEST/XF
SEQDISP_MODE=1 [W]	Sequence list

If the sequence is turned off, the display follows SEQDISP_MODE=0.

SEQLIST_MODE Independent crossfade sequence lists

On Prisma, the crossfaders can be controlled by two individual, independent or one synced sequence list.

SEQLIST_MODE=0	Independent sequence lists Sequence steps refer only to the current XF playback, the sequence lists of the two crossfade systems thus can differ.
SEQLIST_MODE=1 [W]	One sequence list for both crossfaders Inputs refer to both crossfade systems.

Menu M247 (Xfade sequence options) allows to change the setting.

This setting does not apply to Focus or Iris.

SEQSETOPT Recalculation on sequence jump

Setting SEQSETOPT defines if and when a recalculation is done if a sequence jump occurs.

Menu M248 will be started.

SEQUEB Main Crossfade system

On Prisma, one of the two crossfade systems is the "Main Xfade system" (normally the crossfader used for running the shows). The setting is important for

Linking AUX systems:	AUX systems with one playback are synchronised with the main Xfade system.
MIDI-Control:	MIDI-devices are controlled by the main Xfader.

Menu M247 (Xfade sequence options) allows to edit the setting.

On Focus/Iris, the setting is 1.

SKGMODE Display mode for Channel groups

List **CH/G** displays channel groups either sorted by the channel group number or by channels.

SKGMODE=0	sorted by channel numbers
SKGMODE=1 [W]	sorted by channel group numbers

This setting can be changed with menu M805, Channel Groups, too.

SKMON_MODE Channel Monitor and Libra display mode

The way dimmer levels are displayed on the channel monitor or with dimmer objects on Libra is defined using this setting:

SKMON_MODE=0 [W]	**OUT**-levels
SKMON_MODE=1	display follows the main monitor
SKMON_MODE=2	display follows the 2nd monitor
SKMON_MODE=3	**LEVEL**-values
SKMON_MODE=4	**STAGE**-levels

In modes 0,3 and 4, the display can be switched by operation MON2 and LEVEL/STAGE or OUT.

SKMONBDST Assignment of the channel monitor

Defines the assigned input device for the channel monitor:

SKMONBDST=0 [W]	System / Console
SKMONBDST=1	Unused and infrared transmitter
SKMONBDST=2	RC 1
SKMONBDST=3	RC 2
SKMONBDST=4	RC 3
SKMONBDST=5	RC 4
SKMONBDST=6	Remote PC-monitor in mode 3

Note: Changes require a restart. For interactive use of the channel monitor mouse, the same parameter X must be assigned to the SKMON program using command line option -uX.

SKU_MODE DFB messages

transtechnik DMX/FDX-dimmer systems give feedback to the console; the following settings define which warnings are to be carried out upon dimmer errors:

SKU_MODE=0	No warning
SKU_MODE=1	Indication in the message line
SKU_MODE=2 [W]	Indication plus acoustic signal
SKU_MODE=3	System error
SKU_MODE=4	Indication plus display of dimmer feedback history view
SKU_MODE=5	Indication, activate replacement (if available)
SKU_MODE=6	for AUX systems: state of the AUX system

All dimmer feedback error messages are listed in the history. In lists STAGE, LEVEL and OUT, levels of control channels/dimmer channels with dimmer feedback errors are highlighted.

SMODE Record mode for REC REC

The record mode for operation **REC REC** is defined with these settings:

SMODE=0 [W]	The content of the selected preset is recorded as a cue of type LTE, or as TLTE if channel fade times are programmed.
SMODE=1	The list displayed on the main monitor determines what information is to be recorded and what cue type will be used. Refer to "Recording Cues" in the section "Memory Operations".
SMODE=2	for PV or BLD: If a cue type is entered in the selected preset, this type is used when recording. For cues of type ADD, all involved channels are saved, independent of the current selection.
SMODE=3	Operation REC REC starts a popup window (similar to softkeys "Save" or "Update" in ML/COL); all write operations are handled as in SMODE=0.
SMODE=4	Operation REC REC saves changes only; (Update mode)

SPE_OPT Locked channels when loading cues to PV/BLD

When loading cues into PV/BLD, locked channels can be treated as follows:

SPE_OPT=0	the lock will be ignored, orginial values are loaded when re-recording the values are not changed
SPE_OPT=1	lock is active, values are not loaded when re-recording, the lock-value is used.

STD_BLK_ZEIT Default cue time

When a crossfade or BLD preset is cleared, crossfade times are set to the default cue time, wait times are cleared.

Representation:	internal
Range:	0..960, equals 0..60secs
Factory setting:	32 (= 2secs)

Menu M218 (Time constants) allows direct entering of the time.

STELLER_RS_MODE Get Fader Values on Restart

In case faders are moved while the console is switched off, there can be a short flicker in the DMX output, because old DMX values are sent as fast as possible. New values according to new fader values are sent shortly behind. To avoid this flicker DMX output can be delayed until values according to the fader values are available.

STELLER_RS_MODE = 0:	fast DMX output
STELLER_RS_MODE = 1	delayed DMX output

Note: If DMX output is delayed time out in peripheral DMX devices have to be adjusted for short power fails.

SUMREG Destination preset for SUM cues

Operation "**SUM** and **cue REC REC**" records the active output levels together with information of the presets used (sum cue).

The "**cue SUM**" load operation distributes the sum cue back to the presets originally used. Values from a crossfade system don't need to be loaded into the crossfade system used; the destination preset can be explicitly stated:

SUMREG=0 [W]	Current preset
SUMREG=1	**XF1** (Prisma), **XF** Focus/Iris
SUMREG=5	**XF2** (Prisma)
SUMREG=11..30	Submaster groups **GR1** to **GR20**

SZL_MODE QLIST display mode

In the QLIST, the cue in the current preset is marked on the left. If preset **XF** is selected, the list can be scrolled.

SZL_MODE=0	fixed display mode
SZL_MODE=1...20	scroll list, cue from current preset marked in the selected line

T40KOMPAT Grand master faders mode

The grand master faders can be used as master faders for the crossfade systems (keeping the grand masters set to 100%).

This mode refers to older T40/T20 systems.

T40KOMPAT=0 [W]	normal mode
T40KOMPAT=1	Grand master for Xfade systems

T90KOP_MODE Crossfade systems used in AUX

This setting, done on the primary system, defines how the AUX system carries out crossfades (when linked):

T90KOP_MODE=0	Prepare crossfade only (do not start)
T90KOP_MODE=1	Cut-crossfade (not using times)
T90KOP_MODE=2 [W]	Crossfade using times

All sequence list actions (like start macro, load file) are carried out on the AUX system when in mode 1 or 2. In mode 0, only cues are prepared.

TAST_MODE Mode of external PC keyboard

TAST_MODE=0	Only inputs and menu control
TAST_MODE=1[W]	as option 0, plus function as operating keyboard

The assignment of PC keyboard to master keyboard keys can be found at chapter "Using the external Keyboard".

TEHEIZ Standard preheat value for effects

This setting defines the default preheat level for effects:

Representation:	internal
Range:	0..255, (= 0..100%)
Factory setting:	13, equals 5%

TRACKMOUSE_SCALE TRACKPOS_SCALE TRACKPOS_FINE Trackball Sensitivity

The trackballs sensitivity can be adapted.

UEB_BEEP Beep on end of crossfade

The completion of a crossfade can be signaled with a beep.

UEB_BEEP=0	no signal
UEB_BEEP=1 [W]	Signal on ended manual crossfade
UEB_BEEP=2	Signal on ended manual or automated crossfade

UEB_CONT Key GO for stopped crossfades

Key **GO** either continues a stopped crossfade or starts the next crossfade:

UEB_CONT=0 [W]	continues stopped crossfade
UEB_CONT=1	starts the next crossfade

Note: Mode 1 should only be set if key **CONT** is enabled with setting CONT_KEY.

UEB_DISP Display sorting of the crossfaders

The sorting of the **XF** crossfader displays on the monitors can be changed:

UEB_DISP=0	PV, DEST, XF
UEB_DISP=1 [W]	**XF, DEST, PV**

Factory default setting 1 refers to the sorting used in the sequence list.

UEB_LOCK Disabling crossfade systems

Crossfade systems can be disabled with menu M249, Disable playback.

UEBDIROPT Manual crossfade mode

Prisma:
Manual crossfades are controlled by moving the digital crossfade wheel. This setting determines the direction in which they are to be moved:

UEBDIROPT=0	from bottom to top only
UEBDIROPT=1	from top to bottom only
UEBDIROPT=2 [W]	both directions alternately

Note: If the fader is moved in the same direction (0 or 1), the start of a new crossfade must be initiated with the **GO** key. For alternating crossfade direction the **GO** key can be used to insert an automatic crossfade in between manual crossfades.

Focus/Iris:
The crossfade faders can be deactivated.

UEBDIROPT=2 [W]	active
UEBDIROPT=3	disabled, only key GO starts crossfades

UEBKOR_MODE

If levels of channels involved in an ongoing crossfade are modified, the following settings define the systems reaction:

UEBKOR_MODE=0 [W]	Levels are changed both in DEST and XF while the crossfading of the channel(s) continues.
UEBKOR_MODE=1	The channels are taken out of the crossfade and modified in preset XF only.

UEBLMP_MODE Crossfade systems key lamps

Key lamps **GO**, **STOP**, **ADJ** and **RET** can flash signalising running or stopped crossfades; key lamps **GO** and **STOP** flash alternating for stopped crossfades.

UEBLMP_MODE=0	Key lamps are lit
UEBLMP_MODE=1 [W]	Key lamps flash

VFD_INT Brightness of VFD displays

The level of the VFD displays can be modified with menu M217.

VFDPAR_MODE Attributes on encoder VFDs

This setting defines what to be displayed in the encoder section VFD displays, if no value is set in the current preset to a selected device.

VFDPAR_MODE=0 [W]	Marking '***' if attribute is not involved in the current preset
VFDPAR_MODE=1	display active value (without Dynamics-contribution).

VOL_INT Output value for function 100%

Output value on using function 100% can be set at any value.

VOY_AKTREG

This setting defines which preset receives values from optional Voyager-systems:

VOY_AKTREG=0 [W]	Programmer (XF on Iris)
VOY_AKTREG=1..20	GR1..GR20 (GR1..GR10 on Iris)

VOY_PARMASK Mask used for Voyager-attributes

Setting VOY_PARMASK allows to filter data received from a connected Voyager. Menu M451 'Voyager Configuration' is started and defines the IFCB-mask used.

For option mask=IFCB, all values received are used (default), otherwise only attributes of the selected mask type are used.

VSTPW Password protection for saved Show Files

Saved show files can be protected by password.

VSTPW=0 [W]	no protection
VSTPW=1	protection is possible
VSTPW=2	entries have to be verified

Saving a show file from memory to harddsik or an external drive, a password can be provided. Every time the show file shall be overwriten, this password is needed.

ZDISP_MODE Ignition indication

Devices with attributes IGNITION/ZUENDUNG (like HMI) can be displayed with an indicator, showing their ignition state:

ZDISP_MODE=0 [W]	No indication
ZDISP_MODE=1	Rhomb indicates 'ignited'
ZDISP_MODE=2	addition indicator 'not ignited' by symbol: slash-colon

Criteria for 'ignited' is, that output value of attribute 'INGNITION' is >0. In BLD/PV, the indication follows the preset values.

If ranges are configured for IGNITION, the first range will be indicated as 'not ignited'.

Color Settings

The colors of monitor displays can be modified. Several color palettes are supplied; the color schemes can be altered with menu M202 (Colors). The colors are identified in the menu by their internal number and the name.

Colors are mixed from the components red, green and blue with different saturation; 100% is white and 0% black.

0	SYSTEM	Restart/memory clear, should always be white on black
1	USER	Not used
2	DESKTOP	Separator between submaster arrays
3	MENU	Not used
4	ALERT	Not used
5	HELP?	Electronic manual
6	SHADOW	Shadow menu display on menu display must be identical to LST_SHADOW (47)
7	KOPF	Not used
8	BEF	Command display
9	INSCURSOR	Entry fields, cursor in "Insert" mode
10	CURSOR	Entry fields, cursor in "Overwrite" mode
11	PALEDIT	Color sample for menu M202 (Colors)
12	SYS_12	Not used
13	REGHEAD	Headers of monitors and non-selected submasters Crossfade/blind preset display
14	REGHEAD_AW	Header of selected preset
15	REGBODY	Preset display
16	REGBODY_BO	Preset display for blackout
17	REGBODY_RUN	Ongoing effect in preset displays
18	REGBODY_BORUN	For blackout instead of REGBODY_RUN
19	DMXOFF	Not used
20	BEDI_WIN	Not used
21	FLOP_WIN	Not used
22	SYS_22	Not used
23	SYS_23	Not used
24	NONE_LIST	Not used
25	INTA_SK_NORM	LEVEL list, channel numbers
26	INTA_SK_ANW	LEVEL list, selected channels
27	INTA_INT	LEVEL list, levels
28	INTA_INT_BLD	LEVEL list, levels for BLD selection
29	AKTA_SK_NORM	STAGE list, channel numbers
30	AKTA_SK_ANW	STAGE list, selected channels
31	AKTA_INT	STAGE list, levels
32	TA_SK_NORM	TXF list, channel numbers
33	TA_SK_ANW	TXF list, selected channels
34	TA_T_STAT	TXF list, times
35	TA_TW_DYN	Not used
36	TA_TA_DYN	TXF list, ongoing crossfade times
37	TW_SK_NORM	TWAIT list, channel numbers
38	TW_SK_ANW	TWAIT list, selected channels
39	TW_T_STAT	TWAIT list, times
40	TW_TW_DYN	TWAIT list, ongoing wait times
41	TW_TA_DYN	Not used
42	T_SK_NORM	T list, channel numbers
43	T_SK_ANW	T list, selected channels

44	T_T_STAT	T list, times
45	T_TW_DYN	T list, ongoing wait times
46	T_TA_DYN	T list, ongoing crossfade times
47	LST_SHADOW	Shadow menu display on list, must be identical to SHADOW
48	CSC_HIGHLIGHT	Menu displays, current entry field
49	CSC_FORM_REG	Menu displays, entry fields
50	CSC_FORM_BACK	Background form displays
51	CSC_GRAPH	ML-control, stage adjustment
52	CSC_RESERVE_2	Not used
53	CSC_LIST_REG	Not used
54	CSC_LIST_BACK	Lists of menu control
55	CSC_POPUP	Main, selection menu
56	CSC_POPUP_INV	Main, selection menu, cursor line
57	CSC_WARNING	Warnings and error messages
58	CSC_HELP_BACK	Manual, background
59	CSC_HELP_REG_1	Manual, entry points
60	CSC_HELP_HIGH_1	Not used
61	CSC_HELP_REG_2	Manual, references
62	CSC_HELP_HIGH_2	Manual, selected reference
63	CSC_FORM_PROT	Protected entry fields in forms
64	TE_NORM	EFF list, background
65	TE_EDIT	EFF list, cursor line
66	TE_STRICH	EFF list, delimiter
67	TE_INIT	EFF list, "Not ready"
68	TE_READY	EFF list, "Ready"
69	TE_START	EFF list, "Started"
70	TE_RUN	EFF list, "Active"
71	TE_STOP	EFF list, "Halted"
72	TE_STEP	EFF list, "Single step"
73	TE_END	EFF list, "Ended"
74	EXT_SCHRIFT	EXT list, background
75	EXT_ANA	EXT list, analog signals
76	EXT_DIGI	EXT list, digital signals
77	EXT_BALKEN	EXT list, bar for analog and digital signals
78	LKLST_EVN	DCA/OUT list, dimmer numbers
79	LKLST_EVN_MARK	DCA/OUT list, selected dimmer numbers
80	LKLST_ODD	Not used
81	LKLST_ODD_MARK	DCA/OUT list, value lines
82	SKLST_EVN	CH/G,PATCH,REPL list, odd lines
83	SKLST_EVN_MARK	CH/G,PATCH,REPL list, odd lines, selected channels
84	SKLST_ODD	CH/G,PATCH,REPL list, even lines
85	SKLST_ODD_MARK	CH/G,PATCH,REPL list, even lines, selected channels
86	SKLST_EDIT	CH/G,PATCH,REPL list, cursor line
87	SKLST_EDIT_MARK	CH/G,PATCH,REPL list, cursor line when selected
88	KL_SCHRIFT	DCURV list, title and table of values
89	KL_ACHSEN	DCURV list, axis scaling
90	KL_BALKEN	DCURV list, display of dimmer curve
91	KL_CURSOR	DCURV list, cursor in display
92	KL_EDIT	DCURV list, cursor in table of values
93	ERR_SCHRIFT	ERR list
94	RESERVE_1	Not used
95	TBLK_HEAD	TCUE list, headers of presets
96	TBLK_HEAD_AW	TCUE list, header of selected preset
97	TBLK_NORM	TCUE list, display range
98	SQL_EVN	SQL list, even lines
99	SQL_MARK	SQL list, odd lines

100	SQL_ODD	SQL list, selected sequence step
101	SZL_EVN	QLIST list, even lines
102	SZL_ODD	QLIST list, odd lines
103	SKU_NORM	DFB list, background
104	SKU_ACTIVE	DFB list, active indicator
105	SKU_ERROR	DFB list, error indicator
106	SKU_NOT_READY	DFB list, "Not ready" and DMX lamp "F"
107	SKU_READY	DFB list, "Ready" and DMX lamp "A"
108	SKU_INIT	DFB list, "Started" and DMX lamp "S"
109	SKU_HEADLINE	DFB list, headlines
110	SKU_ERRVAL	DFB list, error indicator for STAGE, LEVEL and OUT list
111	FW_EVN	COL list, color changer numbers
112	FW_EVN_MARK	COL list, selected color changer numbers
113	FW_ODD	COL list, color numbers
114	FW_ODD_MARK	COL list, color numbers of selected color changers
115	POS_NORM	ML list
116	POS_FPAR	ML list, selected parameter (cursor line)
117	POS_NUM	ML list, selected ML unit
118	POS_SELECT	ML list, cursor line for selected ML unit
119	POS_FRAME	Not used
120	POS_VAL	Not used
121	SKM_SK_NORM	Channel monitor, normal channel number
122	SKM_SK_ANW	Channel monitor, selected channel number
123	SKM_VAL_NORM	Channel monitor, level display
124	SKM_SK_SKUERR	Channel monitor, dimmer feedback error indicator
125	SKM_BUTTON_NORM	Channel monitor, control key, key lamp off
126	SKM_BUTTON_LED	Channel monitor, control key, key lamp on
127	SKM_FKEY	Channel monitor, macro
128	SKM_VAL_MAS	Channel monitor, intensity of channel levels in the mask
129	SKM_SKG	Channel monitor, channel group field
130	SKTOPO_BG	Background topographical channel display
131	TRACK_1	TRK, primary color
132	TRACK_2	TRK, input field
133	TRACK_3	TRK, column headings
134	TRACK_4	TRK, column heading, channel selected
135	TRACK_5	TRK, busy indicator
136	TRACK_6	TRK, Exit button ([x])
137	TRACK_7	Unused
138	TRACK_8	Unused
139	TRACK_9	Unused
140	TRACK_10	Unused
141	TRACK_11	Unused
142	TRACK_12	Unused
143	POSBLD_NORM	ML list in BLD/PV
144	POSBLD_FPAR	ML list in BLD/PV, parameters used
145	POSBLD_NUM	ML list in BLD/PV, ML device used
146	POSBLD_SELECT	ML list in BLD/PV, cursor line
147	POSBLD_FRAME	Unused
148	POSBLD_VAL	Unused
149	ZVG	STAGE list, changing intensities
150	PROG_NORM	ML/COL list, parameters not used
151	PROG_FPAR	ML/COL list, parameters not used in cursor line
152	PROG_NUM	ML/COL list, used ML/COL device
153	PROG_SELECT	ML/COL list, used ML/COL device in cursor line
154	PROG_FRAME	ML/COL list, active values
155	PROG_VAL	ML/COL list, active values in cursor line

156	PROG_NORM_CAP	ML/COL list, inactive parameters participating in master
157	PROG_FPAR_CAP	ML/COL list, inactive parameters participating in master in cursor line
158	PROG_NUM_CAP	Unused
159	PROG_SELECT_CAP	Unused
160	PROG_ACTMODE	ML/COL list, active attributes (if UPDATE_KENN=1)
161	PROG_CAPMODE	ML/COL list, participating - inactive - parameters (if UPDATE_KENN=1)
162	PROG_SPECIAL	ML/COL list, attributes in darkmove modus

Data Backup

The local disk drive is used for saving all data regarding setup and show files

Backup medias can be floppy discs, the hard disc of a networked PC using the HDB-Tool (from software 5.3.1.1), and from version 5.5 the networked NFS-Fileserver. USB memory or a CD_RW can be used on NTX and Booster systems; of course on PC-/LAN based backups all local drives and archives can be used on the PCs operating system.

Menu M130, Hard Disc Backup

Menu M130, Hard Disc Backup, gives various options for backup of settings which are not recorded to shows (like setup) and the online help:

> Backup complete setup M133
> Restore complete setup M134
> Backup online help M135
> Restore online help M136
> Backup setup files M131
> Restore setup files M132
> Data backup M185
> Libra data M914

Selective Backup of Setup files

Menu M131, Save backup, allows to select and backup or restore configuration files. The destination drive is displayed in the header and can be changed with the bottom lines softkeys.

The menu lists all configuration files saved to the hard disc giving the following options:

ESC   ends the menu

MENU   displays a selection menu:

> **Restore setup files**
> > Menu M132, Restore setup files from FLi
>
> **Print**   prints the list

ENTER   displays recorded files of the selected type:

> "**Default setting**" indicates that a default setting of the selected file type is recorded.
>
> The cursor keys select, key **ENTER** saves the file as backup.
>
> Options:
>
> > **ESC**   ends the menu
> > **MENU**   prints selected files list
> > **ENTER**   creates a backup of the selected file
> > **DEL**   deletes the selected file from the hard disc
> > **PRN**   prints selected list

FL1   Backup to floppy disc drive 1

FL2   Backup to floppy disc drive 2

USB   Backup to USB memory

NFS   Backup to NFS-fileserver

PRN   print selected list

Restoring Setup Files

Menu M132, Restore Backup, allows to restore backup files; the backup drive to be used is indicated in the header.

The menu shows all backups held on the selected drive.
Options in the bottom line:

ESC   ends the menu

MENU   displays the following options:

     Restore setup files**:** starts **M132**

     Update: updates the list (after changing media on FL1/2)

     Print: Prints **the** list

ENTER   displays a list of recorded files of the selected type:

     "**Default** setting" means that a default setting of the selected file type is recorded.

     The cursor keys select, key **ENTER** saves the file as backup.

     Options:
ESC	ends the menu
MENU	prints selected files list
ENTER	copies the selected file to hard disc
DEL	deletes the selected file from the hard disc
PRINT	prints selected list

FL1   Backup from floppy disc drive 1

FL2   Backup from floppy disc drive 2

USB   Backup from USB memory

NFS   Backup from NFS-fileserver

PRINT   print selected list

Update
     updates the list view

Backup complete setup

Menu M133 is used to create a backup of the complete setup on the local hard disc.

When using floppy discs as destination, from software 5.2 backups are spread to multiple discs, if necessary.

Restore complete setup

Menu M134, Restore setup, copies all setup files backed to an external media back to the systems hard disc.

Note: Changes of default settings require an "erase all memory" (ENA 52 RS).

NFS-Client

From version 5.5, the NFS client functionality can be used with a networked PC (the NFS-fileserver, running the NFS (network file system)).

Definitions:

Server   A networked PC acts as NFS-server. The NFS-function is standard on Linux-OS but needs to be installed and configured on Windows-systems.

Client   The console or booster are clients of the server. After completed configuration the fileserver (NFS) – option appears as an additional data storage drive.

The NFS option needs to be enabled with a valid license key which is to be installed once using menu M139, Load license key, or thru the Booster Menu. Installations which do not make use of the fileserver option don't need a key file.

Configuration of the NFS-Client

A folder on the NFS-fileserver is used and needs to be configured on the system according to the servers' settings with menu M190:

Server	IP-Address of the server
Share	Name of the folder prepared on the NFS server
User ID Group ID	user and group settings of the server
Write protected	allows to write-protect the server
Timeout (sec)	The timeout can be adjusted according to the servers performance and network structure.
Enable NFS	Connection to the server can be switched off without changing configuration data.

Menu number M193, NFS Server configuration can be used to save the configuration. In case more than one server is in the network, it is possible to make a fast change between the servers.

NFS as additional Storage Media

Like the local drives HD and FL (and USB on NTX and Booster), the NFS-named drive allows storing shows and all data which can be stored as default setting, setup with name, to current show or floppy. This allows flexible backup and exchange of data between systems.

Backup of Setup Files

The additional drive NFS can be used for data backup using menu M130:

- Menu M131/M132 Save and Load of selected setup files
- Menu M133/M134 Save and Load of all setup files
- Menu M135/M136 Save/Load of manual files

Note:
If identical server settings are used, setup files from different systems will overwrite existing files without prompting.

Multiple NFS-Servers

If multiple NFS-servers are used in an installation, menu M193 allows to configure and en-/disable individual servers.

Option "Edit" starts menu M190.

Harddisk Backup

NT software uses three partitions for saving data on the local disk drive (HD):

System	NT software
Setup	configuration files, saved as default or in setup area and the manual
Show files	all show files which were saved to HD

These partitions can be saved and restored as a whole, single or all together, to an external drive.

NT	NFS file server
NTX/Booster	NFS file server, CD-RW, USB memory

Menus for saving and restoring can be opened from menu M185, Data backup. You can proceed to:

Backup, create a backup, M186

Restore, restore a backup, M187

Delete, delete a backup, M188

The menus give the following options:

Backup-Type	The partitions of the systems hard disc can be backed completely (Full) or selective (System, Shows, Setup).
Drive	NT: NFS file server NTX/Booster: NFS file server, CD-RW, USB memory
Name	Each backup should have a unique name (like the name of the system, for example).

In case more there are several backups on a NFS server, menu M189, select NFS-Backup, show all names of backups. Selecting a backup immediately starts restoring data without confirmation.

Property AUTO_RESTORE = 1: After erasing all memory this menu is started automatically.

HDB-Tool

For consoles of type NT only: The Windows- software HDB-Tool allows to create and archive an image of the disk partitions which are sent to a networked PC.

After starting the software, a destination folder for the data is to be entered; the backup process will then be controlled by the lighting system.

Restoring a backup copies the saved image back to the harddisk. Changes in the data files since the backup was made are lost.

Menu M180, Data backup, controls the backup via network:

Backup	starts menu M181, complete or partial backup of the systems hard disc to PC.
Restore	Menu M182 allows to restore the complete or parts of a backup to the lighting systems hard disc, existing partitions will be deleted.
Verify	Menu M183 verifies the content of the PC-backup with the data kept on the systems harddisk.
Delete	Menu M184, deletes a backup on the PC.

The following needs to be configured:

Server	IP-Address of the PC The local IP address of the PC is displayed when starting the HDB-Tool or can be viewed/edited under network configuration / Properties of the TCP/IP protocol (for example: 192.9.200.156); key MENU displays host names as entered in M281.
Backup-Type	selects the partition(s) to be used.
Name	defines the name to be used for the backup file when creating or restoring a backup.

CD-RW on Booster

When using a Booster or NTX systems, menu M850 starts a Linux script "Booster Data Backup", allowing to backup to CD from within the NTX-system software.

Service

The system gives multiple options for service and trouble-shooting; operations are done with the menu control.

Personality

Menu M220, Personality, displays the systems personality:

Release:	the software release version and date
Hardware version:	Hardware version
Firmware version:	Firmware version
DRAM	capacity of available dynamic memory
License:	the systems license number; if "no valid license" is displayed, an invalid or no license key is entered.
Ethernet →:	the Ethernet address depends on the hardware and is unique to the system.
Internet →:	
Default:	default Internet →.
Effective:	Active Internet address The default address can be changed with menu M208 for configuring the system within an existing network.
	Name of the system, assigned at menu M281.
Channels:	maximum number of channels and movinglight-attributes controllable; this number differs from the actual channel numbering.
CH fade times:	Option "Channel fade times" installed
ML/COL devices:	Option "ML/COL device control", number 1024 indicates activated ML/COL device control.
NFS Client:	Option NFS Client Configuration is done with menu M180.
Monitors:	maximum number of connected monitors
Facepanel type:	Booster/NTX: Type of the connected Facepanel.

From software 5.5, software updates can be applied by
1. personalized system disc
2. installing a licence key file

On NTX and Booster, the license key enables various options.

An invalid license key is indicated with message "No valid license" in menu M220; in that case please contact the ETC service immediately.

The following has been added:

- NT-systems: NFS-Client option can only be enabled with a valid license key. After installing the license, a 52 RS needs to be done.
- Menu M139, Load license key, installs a license key file from floppy, USB or NFS server.
- Menu M220, Option "NFS-Client" added.
  NFS-Menus and storage options will not be available, if option NFS-client is not enabled.
- Menu M900, Installation, has been extended with menu option "Load license" (M139). Menu M138 displays the license key file using the systems editor (M5); please note that any changes need a new key code. For changes contact ETC service, Holzkirchen.

Booster and NT Offline Editor are by default set to a maximum channel number of 16384; if shows are to be used on NT-systems with less channel numbers available, this settings needs to be adapted with menu M224, System settings, (also on NTX-systems). This menu allows to configure the system language used, too.

System Setup

On Booster and NTX-systems: Menu M224, System Setup, modifies the current system settings:

Language:	Display language can be set to German, English and Italian.
Channels:	Booster and NT Offline editor allow a maximum preset length/channels of 16384, which can be adapted to NT-systems.
Face panel:	On NTX-systems, the keyboard layout can be changed between NT- and NTX-layout.

History

All key and digital wheel operations and errors are logged within the History; the maximum log length is 1000 entries on NT-systems and 25000 on NTX and Booster.

Menu M8, History, displays the recorded events, this list is cleared with erasing all memory (52 RS).

When started, the history of the master desk is displayed. Key **MENU** allows to display events of other available input devices; the current input devices name is displayed in the header.

If the history of all input devices is displayed, events other than master keyboards are displayed with the related input device.

The inputs are labeled as follows:

Mx	Menu with number x started
SUM	Key SUM pressed
↑SUM	Key SUM released (for some keys)
D/CH72	Dimmer channel key 72 pressed (for optional channel keyboard)
DIGI	Digital wheel
E173	System error 173
GO1 G12	Cue 12 started with key GO1
CUT1 G12	Cue 12 started with key CUT1
F43	Operation syntax error 43

When printing, operations and errors are printed with the errors name.

Menu M223 lists all error numbers.

The cursor-keys select, key **ENTER** gives a detailed description of an entry.

Options in the bottom line:

ESC	ends the menu
ENTER	displays details of the selected entry From version 5.5, events are displayed with a time stamp.
MENU	Options:

	Select input device	selects the input device
	Update	refreshes the display
	Error Codes	displays a list of error codes
	Print	prints the history

PRN	prints the history; if printing to a file, the print-out can be attached to an existing file.
Update	likewise **MENU**, Update

If option NFS is configured, the history can be stored within folder setup on the NFS server by configuring a file name with menu M192, NFS history. Clearing all memory will not delete this file; the history logging can be turned on or off.
Memory size for NT is 10.000 entries, NTX/Booster 25.000 entries.

Save Log Files

NTX and Booster save system messages to logfiles on hard disk. In case of problems these files can be copied to USB memory. This file including an error report can be sent to ETC for analysing the problems.

On USB memory a directory "logfiles" is created. Logfiles names include console name and date.

Messages are marked with a time stamp. Please care for the right system time (menu M201). In case of problems please note time and date and add it to an error report.

Save Snapshot

Menu M918, save snaphot, saves system data to USB memory: system memory state, setup and show data. Additionally to the logfiles, this file can be included in an error report sent to ETC service.

Menu Storage Media

Menu M120, storage media, gives various options for working with exchangeable storage medias:

Disk Info M121
Copy Disk M122
Format Disk M123
Test Disk M124
Format USB memory M126
Erase CD-RW M125

Disk Info

Menu M121, Disk Info, checks a disk inserted in the selected drive recognizing system and show disks (from older transtechnik-systems like T40 or K40, too).

Copy Disk

Show and system discs can be copied using key input:

TAKE FL1 FL2
Copy disc

The content of the disc in drive FL1 is copied to the disc in drive FL2. Booster and NTX have only one floppy disc drive; after reading the source disc the destination disc needs to be inserted.

The disc type is checked before copying and a warning will be displayed if the disc can not be copied.

Format Disc

Discs need to be formatted before use; this can be done on the system, a PC or by using pre-formatted HD-discs.

CANCL FLi
Format disc in drive FLi
Menu M123, Format disc, is started.

The system allows use of DD- und HD-discs; please make sure to use the right format when formatting discs.

Options:

Drive:	Drive to be used
Format:	only HD is possible
Label:	Name of the disc
QuickFormat:	Format disc using quick format (from version 5.4.3)

Test Disk

Menu M124, Test disk, checks the disk of the drive chosen.

If no errors occur, a message is displayed, otherwise the number of faulty sectors is displayed.

Note: Please discard bad discs immediately.

Format USB Memory

On NTX/Booster USB memory sticks can be formatted in case they cause problems.

Error Codes

Events are displayed with the error code number, pressing ENTER shows a description.

Menu M223, Error Codes, display all error codes with a description.

Configuration

The following menus allow to adapt the systems configuration:

Menu Selection "Configuration"

Menu M200, Configuration, starts the configuration done by various menus:

> Total Configuration M250
> Realtime Clock M201
> Properties M210
> Screen Colors M202
> Printer Setup M203
> System Setup 224
> I/O Configuration M208
> Host Names M281
> Dimmer list M204
> Channel list M205
> Topographic Channel Layout M807
> Channel board [M808]MANUAL_M_LKTOPO_RW]
> DMX patch M206
> DMX over Ethernet M280
> ML configuration M651 *)
> NFS server configuration [M190][MANUAL_M_NFSCONF]
> Host directory configuration [M191][MANUAL_M_HOSTCONF]
> DFB configuration M511
>
> *) only if the optional ML control is configured.

Total Configuration

Menu M250, Total configuration, allows to adapt the systems configuration, which can be saved (menu M252), loaded (menu M251) or deleated. Every on the console available memory devices ore areas can be used.

When saving to the show, the configuration will be automatically restored when loading the show.

Option "Show Configuration" starts menu M255. This allows to select options which are saved within the show (see chapter "Show Configuration in "Memory Operations").

Realtime Clock

Menu M201, Realtime clock, allows to set the internal clock.

I/O Configuration

Menu M208, I/O configuration, allows to configure and edit optional extensions:

Channel Board:
indicates, if an (optional) external channel keyboard is connected. If set to "yes", dimmer channels can be selected using the external keyboard.

Remote Monitor:
En- or disables access from a PC with software Remote-Monitor.

Channel Monitor:
for "Channel monitor"-software (MS-DOS): en-/disables connection. Libra is using the same logical interface, the setting is irrelevant for Libra.

DMXlink:
indicates if DMXlink is used

Remote Controls:
sets the number of handheld remote controls used on the system. Please only enter the devices used.

RC1/RC2/RC3/RC4:
Various remote control types are available:

Standard	Standard version
Studio	Studio version
ML	ML remote control

The IP-addresses of system components can be entered and the hosts named with M281, Host Names.

Local Address:
own IP address

Subnet mask:
subnet mask number of the IP-range used

Gateway:
Network (hubs) on other subnets can be accessed by entering the gateways IP-address.

Aux system:
The AUX-systems IP address used for linking (AUX, WAUX)

Remote monitor:
IP-Address PC-Remote monitor

Channel monitor:
From version 5.5, the logical interface is multi user-enabled; the address entered has to be 255.255.255.255
Only change this address if using the MSDOS-"channel monitor" software (to the PCs IP).

Remote access:
System which is to be remote controlled with function REM

Voyager:
IP-address of the Voyager system, if available

Print service:
IP-address of the PC running the NetInfo-Print-Service

Changes are applied after a reset (**RS**).

Note: After modifying IP-addresses, all system components and PCs should be restarted.

The factory default settings can be restored with "Reset".

Host Names

Menu M281, Host Names, allows to assign names to IP-addresses (Menu M208, I/O configuration then allows to use the entered systems name). If systems are connected over LAN, each system needs an individual IP address.

Options:

ESC	ends the menu
MENU	Menu for Load/save
ENTER	edit selected entry
INS	insert a new entry
DEL	delete the selected entry
Print	Print the list
Load	load configuration
Save	save configuration

Settings are saved as default setting.

Example:

192.9.200.150	Main system
192.9.200.151	Aux system

Entries Localhost (127.0.0.1) and Netinfo (255.255.255.255) can not be edited or deleted.

Properties

Wide parts of the system can configure by software using M215; more often used configurations have a dedicated menu:

Overview Properties

Menu M210, Properties, gives a selection of menus allowing major adaptations of the systems configuration:

> Property List M215
> Minimal Level M211
> Submaster Fade Time M212
> Motor Delay M213
> Cursor M214
> Auxiliary System M216
> Goose neck lamps M217
> Fade time constants M218
> Monitor setup M219
> Warnings, M231
> Remote control setup M232
> Command display M233
> ADJ level M235
> Reset
> Load
> Save
> Remove
> Print

Note: Some settings have a huge effect on the systems behavior and thus should be applied carefully and with consideration of all operators using the system.

Property settings are stored as default settings or as setup with name and can not be stored into the current show.

"Reset" restores the factory-set, installation- and customer-specific defaults.

Submaster Fade Time

Menu M212, Submaster fade time, defines if cue times are used when loading cues to submasters:

No   Cue- and submaster times are independent; submaster times are assigned to the submaster group used and unaffected by times loaded cue times. When re-recording a cue from the submaster, all time values are 0.

Yes   Fade times of the submaster fader are recorded as cue time when recording, wait times are set to 0. When loading to the submaster, cue times are used accordingly.

Default setting is GRTBLOPT.

Motor Delay

Menu M213, Motor Delay, defines the time after which a "spin down" of hard disc and floppy drives motors is carried out. When accessing the drive a longer reaction time will occur.

Options:

Floppy: Delay for both floppy drives

Harddisk: Delay for the hard disc

Time "0" disables the spin-down, otherwise up to 59min59secs delay can be set and is recorded to default settings FL_DELAY and HD_DELAY.

Cursor

Menu M214, Cursor defines the systems behavior when holding the master keyboards cursor keys:

Delay Time: when pressing the cursor keys, the auto-repeat starts after the set delay time.

Repeat Time: depressed keys are treated as if pressed repeatedly (after the delay time).

Values in 10 msec (0.01 seconds), up to 2 seconds are possible; Repeat-time = 0 disables the repeat function.

This setting affects the left cursor key (e.g. when scrolling lists), too. Keys of the external keyboard are not affected.

Times are recorded as default settings CURSOR_DELAY and CURSOR_REPEAT.

Mouse/Trackball Control

Menu M272, mouse and trackball setup, control behavior of mouse and trackball.

External mouse
    If an external mouse is connected, it can be locked.

Trackball as mouse
    If no mouse is available it can be replaced by the trackball. Both devices can be used in parallel.

Sensitivity mouse
Sensitivity trackball
    adjusts movements with mouse/trackball to cursor movement on the screens.

Trackball scaling Pan/Tilt
Trackball scaling Pan/Tilt fine
    controls sensitivity of the trackball while controlling Pan/Tilt attributes.

Property List

Menu M215 gives access to all default settings (which are explained in chapter "Default settings".

Options in the bottom line:

ESC	ends the menu
MENU	file menu
ENTER	edit selected entry
Print	print settings
Load	load saved setting
Save	save current settings

Warnings

Menu M231 defines the systems behavior for dangerous operations. If settings are not saved, a warning will be displayed. The following warnings can be disabled:

- Overwrite defaults
- Data not saved
- Text not saved
- DFB unit not programmed
- Reset to factory settings
- Cursor on ESC in confirmation dialogs
- Load cue directly into active levels
- Load cue directly into submaster
- CANCL CHAN without key ENABLE
- +/- GO/STOP/CUT/RET w/o ENABLE button
- REL/ACT w/o ENABLE
- Warning cue exists
- DCH already patched
- TAKE WAUX/AUX

Stored in setting EXPERT_LEVEL.

Input Syntax Options

Some key sequences can be aligned to personal taste. Menu M227, Input sequence options, is used for settings.

Key Minus:	same as THRU, depending on context, minus or thru
	Minus only, use THRU for ranges
	(see property MINUS_THRU)
At(@)Mode	1 digit, roughly in Steps of 10%
	2 digits, accurate values
	(see property ATMODE)

Desk lamps

Menu M217 controls the level of the systems desk lamps:

- VFD-displays
- Keyboard LEDs
- Desks gooseneck lamps

The previous settings are restored if the menu is left with "ESC".

Overview Installation

Menu M900, Installation, helps installing, updating and servicing the system:

Install program M903
Install Libra M913
System printer installation M915
DFB installation M931
Restore complete setup M134
Restore online help M136
Load License key M139
Data backup M185
Save log files M137

Install Program

Menu M903 updates the systems program. On NT-systems, update is done by floppy discs, on Booster and NTX with USB memory or CD.

NT-systems

Menu M138 displays the license file, if it is available on the console. If the display is empty, no license file is available on the console.

For upgrading a system floppy disc containing the software is needed. In case the license file is installed, upgrades can be executed by a file ntupdate.img which can be downloaded from internet. Else a upgrade disc has to be ordered from the service of ETC GmbH.

Insert the system disc into the upper floppy drive 1. With operation "ENA and 62 RS" the software is loaded from floppy to memory. The software kept on the harddisc remains unchanged. In case there is a problem remove the floppy. Same operation loads the software held on harddisc.

Menu M903 copies the software from floppy to hard disc. After copying a message is displayed to execute a reboot. Remove the floppy and start reboot. The new software now is loaded from harddisc to memory.

The software can be loaded with a reboot ("**ENA and 62 RS**"), the system will search for a disc in floppy drive 1 and 2, if no software disc is found the software is loaded and installed from the harddisc.

NTX-systems and Booster

The upgrade file is named booster_update.tgz. It can be downloaded from internet. Copy the file to USB memory without unzip. To upgrade use menu number M903.

From the boostermenu it is possible to return to the previous software version.

Libra for NTX/Booster

Libra can be run inside NTX or Booster as an option. Only if the option is activated menus for installation and control are accessible: menu M220, personality, Libra = yes.

Libra software inside NTX is identical to the external Libra desk. For operation refer the special Libra manual.

Installation

To install Libra on your console Type NTX or Booster use menu M913, Install Libra. You can install from USB memory, CD or network.
File name for installation is l_updeate.tgz.

@H [Open Libra]

Menu M224, system setup, has an option Libra. The Booster desktop shows an icon to open Libra.

External Libra is connected via the network. For local operation use IP address 127.0.0.1. Localhost.

Monitor Assignment

On NTX consoles, Libra uses the monitor output labeled MON1 on the back wall. For the Booster, the local display can be replaced by an external high resolution monitor. Display resolution can be set from the Booster menu 7 service menu – 8 system settings – 6 Display resolution. Touch monitors ELO Accutouch or Intellitouch can be used optinally.

The monitor assigned to Libra can be placed left or right of the console monitors. Assignment is controlled by menu M224, system setup. The setting controls cursor movement from the console monitors to the Libra monitor.

With Libra activated, the number of monitors for console displays is reduced by one. This has to be considered in the setting of menu M219, Monitor setup.

Import/Export Libra Configuration

Menu M914, Import/Export Libra data as ZIP file, can be used to load Libra files including background pictures or export and save Libra configurations. For import the zipfile must not contain any path info.

Partition Harddisk

Menu M901 splits the harddisk to logical partitions which are then formatted.

The partition is factory set and should only be changed if advised.

Note: Partitioning and formatting deletes all shows recorded on the disk.

This menu is only available if PROTOTYP is set in the default settings.

Format Harddisk

Menu M902, formats partitions of the harddisk (which can be individually chosen).

Note: Formatting deletes all shows recorded on the disk.

This menu is only available if PROTOTYP is set in the default settings..

NTX, Booster: Keyboard and Mouse settings

Menus M916, Keyboard and M917, mouse configuration allows to specify keyboard-layouts and special mouse-types.

Please note:

- Linux-setup-dialogs in English are used (blue background color). Operations are done with the systems cursor keys and Enter; "Cancel" is only possible with the dialog-button, not with keys ESC or list selection.

- The setup-dialogs can be started from the booster menu (Booster Menu => service menu => System settings).

- If a wrong interface connection for the mouse is chosen, the systems GUI fails to work (LCD-display on Booster or Monitor 1 on NTX). In that case please change to the OS with Ctrl-Alt-F1 and use the Booster-menu to correct the mouse settings (Booster Menu => service menu => System settings).

- Keyboard- and mouse settings of the Booster relate to the Boosters OS and not to the Facepanel; the facepanels keyboard settings are done with default setting KBD_NAT_CODE, the mouse type is fixed.

- On NTX, default setting KBD_NAT_CODE has no function, please use the Linux-setup instead.

These settings should only be changed if not using the standard-configuration of the systems (internal keyboard and touch pad on Booster, USB-keyboard and mouse on NTX).

Channel Keyboard

The layout of the optional external channel keyboard can be saved and restored; from version 5.2 the layout can be changed with a PC.

System Online Tests

The following menus allow testing the systems hardware and keys:

Online Tests

Menu M920, allows testing the following:

   Key input test, M921
   Lamp test

The lamp test can be started with:

12 RS
         Lamp test

When starting the lamp test by menu, the key lamps are deactivated after 5secs. Operation **112 RS** turns on all key lamps, **113 RS** off; Restarting resets the keys lamps to normal state, too.

The system can be used normally while testing.

Key Input Test

Menu M921, Key input test, can be used to test the individual keys: if a key is pressed, the keys function is displayed (except Flash- and Go-keys). It can be closed by key **ESC.**

System Info

Menu M222, System infos displays some parameters of the PC-hardware used in NTX and Booster systems:

   CPU-Load

   Type of Motherboard
   BIOS version
   Type of ethernet controller
   Available Memory

   CPU Temperature
   Temperature Motherboard
   Fan Speed

   Ethernet Link
   Ethernet Speed

The data is refreshed each second.

Overview of Key Operations

Apostroph

Separates minutes: 1'25 = 1 minute and 25 seconds

Inverts selection:

	Example
cuenr RCH	select all channels engaged in Cue
cuenr ' RCH	select all channels not engaged in cue
@ '	mirror output value around 50%

Request help

?	Request help for the selected key

Run keys

The run keys can be used instead of the digital fader wheel.

<<, <, >, >>	Run keys slow/fast

Key Plus/Minus

On input of numbers these keys indicate add or subtract

Examples:
 + 35 CH, add channel 35 to selection
 - 35 CH, deselect channel 35

+ + / - -	For some list displays same as + or - CH
TAKE +/- GRi|XF	ML-Control: Change preset priority
CANCL +/- GRi|XF	ML-Control: Preset priority default

% key: Enter level

The **%** key allows level entries with 1% accuracy.

***level* %**	Set selected channels to level

Examples:
85 %	Set selected channels to 85%
+ 7 %	Increase level by 7%
- 13 %	Reduce level by 13%
int1 - int2 INT	Fan-Function
CANCL %	Clear levels of selected preset
CANCL ALL %	Clear levels of channel selection in all presets
CANCL *level* % *preset*	
	Control fader

Example:
CANCL 80 % GR	Set submaster master fader to 80%
CANCL *level* % *number* GR	
	Control submaster fader

Example:
CANCL 80 % 9 GR	Submaster 9 set to 80%
TAKE % MEM	Add channel selection to memory
TAKE % *cuerange* MEM	
	Add channel selections values to a range of cues

Example:
TAKE % 1 - 9 MEM	Add channel selections values to cues 1 thru 9
REC %	
***cue* REC %**	Record cue type L, levels and channel times

Example:
7 REC %	Record to cue 7

Editing levels of recorded cues:
401 MENU	Correct channel
402 MENU	Swap channel
403 MENU	Copy channel
404 MENU	Remove channel
405 MENU	Add channel
406 MENU	Correct channel selection
407 MENU	Remove channel selection

0% key: Set to 0%

The 0% function simplifies searching spotlights.

0%	Set selected channels to 0% (while depressing key)
chanrange **0%**	Set channelrange to 0%
Shift and 0%	Toggle 0% on/off

Examples:

5 0%	Set channel 5 to 0%
1 - 3 0%	Set channels 1 thru 3 to 0%

100% key: Set to 100%

The 100% function simplifies searching for particular spotlights.

100%	Set selected channels to 100% (while holding the keys)
chanrange **100%**	set selected channels to 100%
Shift and 100%	Toggle 100% on/off

Examples:

5 100%	Flash channel 5 to 100%
1 - 3 100%	Flash channels 1 thru 3

@ key: Coarse level input

Coarse entries are in 10% steps, allowing to set levels with a single key input.
Property ATMODE defines number of digits after key @
ATMODE=0: one digit, @ 5 = 50%
ATMODE=1: two digits, @ 52 = 52%

@ *digit*	Set selected channels to level of digit * 10%
@ +/- *digit*	add/subtract level

@ FULL	
@ 100%	to 100%
@ 0%	to 0%
@ @	to last @ level
@ FIX	to FIX level

@ .	set HOME values
Shift and @ .	time group, for cursor line only

chrange* @ *digit	As before, for a channel range
***chrange* FULL**	
chrange* @ +/- *digit	

	values from cues
@ CUE	from loaded cue or
TAKE cue CUE	from indicated cue

@ and dimmer channel key	
	Only for channel board: set dimmer channel to current level

@ '	mirror output value around 50%

Examples:

@ 5	Selected channels to 50%
@ + 2	Increase selected channels by 20%
1 - 5 FULL	Channels 1 thru 5 to 100%
1 @ + 3	Increase Channel 1 by 30%

ACT key: Activate key

ACT activates all LTP attributes of the current preset. Further settings can be made using the ACTRELOPT setting.

ACT	Activate LTP values of the selected preset

Default setting EXPERT_LEVEL specifies if the ACT key can only be activated if used with ENA.

ADJ key: Adjust

	On Prisma NT only
TAKE ADJ	Using Adjust with the cue held in PV
TAKE *cue* **ADJ**	Using Adjust with the cue number entered
CANCL ADJ	Ends Adjust

Note: Default settings ABR_INT, ABR_ON_ZEIT and ABR_OFF_ZEIT preset the pre-adjust-intensity and the fade in/out-times used with adjusting.

ALL key: All ...

Main operations with key ALL:

ALL INVO	Select all channels of the mask
ENA and **ALL MASK**	Remove unused channels from mask, clean up
CANCL ALL REH	Cancel rehearsal cues
CANCL ALL GR	Cancel all submasters
CANCL ALL %	Clear channel levels of all presets
TAKE ALL REPL	Activate all replacement channels
CANCL ALL REPL	Deactivate all replacement channels
ALL GRi...**GRj TAKE** *dest*	Transfer submasters i and j to submaster dest
CANCL ALL CH/G	Clear selected channels in all channel group banks
ALL *time* **T**	Set out and in time for all submasters
ALL CANCL T	Deactivate automatic timing of all submasters (MAN mode)
ALL TAKE T	Activate automatic timing for all masters
REC ALL	Record all attributes
+/- REC ALL	Record all attributes of the selected channel(s)
SUM REC ALL	Record all attributes of selected channels as SUM-cue

AUX key: Link auxiliary system

TAKE AUX	Auxiliary system link on
CANCL AUX	Auxiliary system link off
ENA and **AUX**	Auxiliary system link on/off

Note: Property KNA_MODE determines the type of auxiliary system link.

BACK key: Previous channel values

BACK	set selected channels to previous levels/attributes
chrange **BACK**	set selected channel range to previous values

Note:
Key UNDO has the same functionality in the LEVEL/STAGE/MOVL/COL and OUT lists.

	Selected channels back to cue values
TAKE BACK	cue loaded in selected preset
TAKE cue BACK	indicated cue

BLD key: Blind Preset

The blind preset is an independent preset for preparing and editing channel levels, times and effects.

BLD   Select blind preset
CANCL BLD   Cancel blind preset

cue **BLD**   Read cue to BLD
+/- *cue* **BLD**   Add/subtract named cue

Examples:
5 BLD   Read cue 5 into blind preset
+ 6 BLD   Add cue 6

TAKE *source* **BLD**   Levels of selected channels
TAKE BLD *dest*   Copy into/out blind preset

Keys BO1 thru BO20: Submaster Group blackout

Each submaster has its own blackout switch.

BOi   Blackout group i on/off
TAKE BOi   Blackout group i on
CANCL BOi   Blackout group i off

BOI/BOII keys: General blackout

The general blackout keys (**BOI, BOII** or **BO** on Iris NT) acts as blackout for the with M83 assigned channels.

BOI / BOII   General blackout on/off
TAKE BOI / BOII   General blackout on
CANCL BOI / BOII   General blackout off

BS key: Backspace

BS   Delete last key entry

CANCL key: Cancel

The major cancel functions:

CANCL ADJ	End adjustment
CANCL *cuerange* **CUE**	Delete cue range from memory
CANCL DIR	Remove selected channels from direct mode
CANCL EFF	Halt ongoing effect
CANCL ALL REPL	Cancel all replacement channels
ENA and **CANCL FLi**	Format disk
CANCL GO	End ongoing crossfade
CANCL I	Unassign selected channels from grand master fader
CANCL %	Clear channels
CANCL ALL %	Clear channels in all presets
CANCL LINK	Delete link
CANCL AUX	Cancel auxiliary system link
CANCL REH	Cancel rehearsal sequence
ENA and **CANCL CHAN**	Delete selected channels
CANCL *changroup* **CH/G**	Remove selected channels from channel bank
ENA and **CANCL PATCH**	Establish 1:1 patch
ENA and **CANCL MEM**	Delete current show
CANCL LOCK	Cancel lock for selected channels
CANCL QLIST SQL	Mode "free" for sequence list
CANCL T	Cancel time entry
CANCL VST	Cancel show label
CANCL *preset*	Cancel preset
TAKE +/- *preset*	Set preset priority

CHAN key: Channel selection

After selecting, a channel can be modified by the digital wheel or with key inputs.

chanrange **CHAN**   Select channels

Examples:
5 **CHAN**   Select channel 5
1 - 3 **CHAN**   Select channels 1 thru 3
+ 4 - 6 **CHAN**   Add 4 thru 6 to selection
- 5 - 7 **CHAN**   Deselect channels 5 thru 7

+ CHAN or + +   Select next channel
(Pressing '+ +' in the **MOVL** or **COL** lists selects the next channel in the list.)

- CHAN or - -   Select previous channel
(Pressing '- -' in the **MOVL** or **COL** lists selects the previous channel in the list.)

Note: Default setting REGWAHL_MODE presets how a channel selection behaves when changing the preset.

The following functions set the channel to 0%. If the mask is not closed and the channel is no longer involved in the current show, it will be removed from the mask.

ENA and **CANCL CHAN**
                                      Clear selected channels
ENA and *chanrange* **CANCL CHAN**
                                      Clear channel range

Examples:
ENA and **1 CANCL CHAN**
                                      Clear channel 1
ENA and **5 - 7 CANCL CHAN**
                                      Clear channels 5 thru 7

CH/G key: Channel groups

This key allows selection of grouped channels by a channel-group number.

changroup **CH/G**	Select named channel group
changroup - *changroup* **CH/G**	
	Select all channels of named group
changroup **' CH/G**	Select all channels with exception of named channel group

Examples:
1 CH/G	Select channel group 1
+ 2 CH/G	add channel group 2 to current selection
- 3 CH/G	Deselect channel group 3

	Assigning channels to a channel group:
TAKE *changroup* **CH/G**	
changroup S CH/G	Assign selected channels to channel group
+ changroup S CH/G	Add selected channels to channel group
CANCL *changroup* **CH/G**	
- changroup S CH/G	Remove channels from named channel group
CANCL ALL CH/G	Remove channels from all channel group

Examples:
TAKE 1 CH/G	Take channel selection into channel group 1
1 - 3 TAKE 4 **CH/G**	Take channels 1 thru 3 into channel group 4
CANCL 2 CH/G	Remove channel selection from channel group 2

Monitor displays:
CH/G	Channel groups on main monitor
804 MENU	Save/load assignment

Note: The list display is sorted either by channel groups numbers or by channel numbers. The property SKGMODE determines the mode.

CHMON key: Channel monitor

Libra:
Values displayed for dimmer objects of a topographic view can be switched between LEVEL, STAGE or OUT. For input device „Master desk" you can use command keys ↓CHMON and LEVEL/STAGE/OUT. For all input devices you can use command keys from a topographic view.

Channel Monitor:
Pages of a connected channel monitor can be switched with the following operations:

CHMON and **PG↑/PG↓**	go to next/previous page
CHMON and **↑/↓**	go to next/previous page
CHMON and **→/←**	go to next/previous page
CHMON and **HOME**	to first page
CHMON and **END**	to last page

Note: This key needs default setting SKMONBDST=0 and channelmonitor-software connected as master keyboard.

CLEAR key: Clear

CLEAR	Clears input line entered
	setting BEF_MODE defines the message displays

content.

COL key: Color changer

The optional color changer control enables direct control of color changers.

COL	List view "COL" on main monitor
pal **COL**	assign C-Palette entry to the selected channels
+/- COL	Next/previous color number
CANCL COL	Return to default/home position
cue **REC COL**	Save color setting

CONT key: Continue

The CONT key continues a started and paused crossfade. This key is only available as option on
Prisma NT or radio remote.

CONT	Continue paused crossfade
DOWN CONT	Continue fade-up
UP CONT	Continue fade-down
+ CONT	Continue selected channels
- CONT	Continue selected channels with
	crossfade lock

Note: The CONT key can be activated or disabled on the master keyboard with property CONT_KEY.

CORR: Correction

Key CORR allows a proportional change of values; the factor used is displayed at the header.

CORR and *digi*	Level correction of selected channels
dchrange **CORR**	Select dimmer channels for corretion

Memory correction of selected channels:
TAKE CORR MEM	Correct levels in the memory
TAKE CORR *cuerange* MEM	
	for a cue range

Examples:
TAKE CORR 1 - 5 MEM

                      Correct selected channels by correction factor set   in
cues 1 to 5

Depending on the list viewed:
CORR and *digi*	List DCURV: Change dimmer curve
CORR and *digi*	List E: change all levels

CUE key: Select cue number

The cue number is used for storing lighting cues or effects.

cue **CUE**	Select cue number for recording
	clear text, channel fade times, effect
	warning if cue exists
CUE *cue* **ENTER**	If cue exists, load it
	Else clear text, channel fade times, effect
	note "cue not recorded"
+ CUE	Select next cue
- CUE	Select previous cue
@ CUE	sel. channels/attributes back to cue values
@TAKE cue CUE	to values of cue

Note: The increment can be defined with default setting BLKSTEP.

CANCL *cuerange* CUE	Delete cue range from memory

Examples:
5 CUE	Select cue number 5
CANCL 1 - 3 CUE	Delete cues 1 thru 3
CANCL CUE	SQL: remove cue number from selected step

CUT key: Cut

This key allows to crossfade cues without using the crossfade times assigned.

CUT	Cut
cue CUT	Cut cue
	Example:
DOWN CUT	Cut fade-down
UP CUT	Cut fade-up
+ CUT	Cut selected channels

DCA key: Dimmer curve list

The dimmer curve list shows the dimmer curve assigned to each dimmer channel.

DCA	Dimmer curve list on main monitor For dimmer curve assignment see DCURV
806 MENU	Save/load dimmer curve assignment

Note: Changes in dimmer curve assignment are made with key **DCURV**.

DCH key: Select control channel by dimmer channel number

Each active dimmer channel is assigned to a unique control channel. This key selects a control channel by the dimmer channel number.

dimrange **DCH**	Select assigned control channels
+/- dimrange **DCH**	Select extra channels/deselect channels

Examples:

5 DCH	Select channel controlling dimmer channel 5

Special functions depending on list:

Replacement list **REPL**	Enter/remove dimmer channel(s)
Channel patch **PATCH**	Patch/unpatch dimmer channel

DCURV key: Display, assign, edit dimmer curves

DCURV   Select dimmer curve display view

curve **DCURV**   Display dimmer curve
TAKE *curve* **DCURV**   Assign dimmer curve to selected channels
TAKE *dimmer - curve* **DCURV**

                      Assign curve to dimmer channel

Examples:
6 DCURV   Display dimmer curve 6
TAKE 3 DCURV   Assign selected channels to dimmer curve 3
TAKE 1 - 4 DCURV   Assign dimmer channel 1 to curve 4

For dimmer curve display on main monitor:
PG↓/PG↑   Show next/previous dimmer curve
HOME/↑/↓/END   Go to vertex
INS   Mark vertex
DEL   Delete marking
CORR and *wheel*   Mark vertex, alter level

802 MENU   Save/load dimmer curve

DEL key: Delete/Clear

Key **DEL** deletes or removes the selected entry.

DEL   REPL list: deactivate/delete replacement
                                    DCURV list: delete vertex marking
                                    PATCH list: set 1:1 patch
                                    SQL list: delete marked entry
                                    E list: remove effect channel
cue **DEL**   SQL list: delete entry with cue number
channel **DEL**   REPL list: deactivate/delete replacement   for entered
channel

DEST key: Destination preset of crossfade system

It is possible to edit the destination values of an ongoing crossfade at preset DEST.

DEST   Select DEST preset
CANCL DEST   Clears the DEST preset
cue **DEST**   Read cue into DEST preset
+/- cue **DEST**   Add/subtract cue

Note: Contents of presets DEST and XF presets are identical when a crossfade is finished.

DFB key: Dimmer feedback

Dimmer feedback links the console to dimmer systems **DMX90/FDX90/FDX2000**; status of the units and error messages are displayed in realtime.

DFB   Display unit
number **DFB**   Display unit number entered

Dimmer feedback can be temporarily activated and deactivated:
TAKE DFB   Activate DFB
CANCL DFB   Deactivate DFB

Related Menu numbers:
511 MENU   DFB configuration
500 MENU   Dimmer feedback, main menu
501 MENU   Dimmer feedback history
930 MENU   DFB installation
513 MENU   Configure DFB unit

DGO key: Start dynamic effects

                               on Prisma NT:
GO   Start selected effect step

DSTOP key: Stop dynamic effect

DSTOP   Prisma NT: Stop selected effect step

DIR key: Direct mode

The direct mode makes the selected channels independent from influence thru faders and blackouts, allowing them to be used for special functions.

TAKE DIR   Set selected channels to direct mode
chanrange **TAKE DIR**   Set channel range to direct mode
CANCL DIR   Cancel direct mode for selected channels
chanrange **CANCL DIR**

                               Cancel named channels in direct mode
DIR   Select channels in direct mode
chanrange **DIR**   Channels in named range
' DIR   Select all channels without direct mode

Note: The property DIR_MODE determines whether channels with direct mode are crossfaded or cut to new values.

DM key: Darkmove

Prisma NT-systems have a dedicated key (if activated)for the Darkmove-function;
otherwise Menu
M228 sets the options for Darkmove.

TAKE DM	Darkmove on
CANCL DM	Darkmove off

The key lamp DM is lit when the function is activated.

DMX key: DMX display

The DMX list shows the actual DMX output as hexadecimal values and allows entering
DMX-values directly.

DMX   DMX list on the main monitor

dmx **DMX**   Set selected channels to specified DMX values

If option DMX-Input is available, it can be used with the following operations:

TAKE *x* DMX   DMX-input for current preset connected to   DMX
universe/line x

TAKE DMX   DMX-input for current preset connected to last selected
                                 line

CANCL DMX   Ends DMX-input to the current preset

Example:
5 CHAN 128 DMX   Set channel 5 to DMX-value 128
+ 127 DMX   Increase DMX value by 127
- 13 DMX   Decrease DMX value by 13

TAKE 4 DMX   Connect line/universe 4 as DMX-input

DOWN key: Fade-down

DOWN   For crossfade system:
                                 select channels fading out
Shift and **DOWN**   only changed channels fading out

time **DOWN T**   Set fade-down time
TAKE DOWN T   Take the stopwatch time for fading down

CANCL DOWN T   Cancel fade-down time

DOWN and wheel   change running fade out time

DOWN key in Crossfade Area: Fade-down

Using the DOWN key in the crossfade area, to operate those channels separately, which are faded out.

DOWN GO	Start/Continue fade out
DOWN STOP	Stop fade out
DOWN RET	Reverse Fade out
DOWN CUT	Cut fade out

DYN key: Dynamic Effects

DYN	Dynamic effects list on main monitor
dynno **DYN**	Assign the dynamic effect *dynno* to the selected channels
+ dynno DYN	Prepare Dynamic Effekt in STOP mode
- dynno DYN	Prepare Dynamic Effekt in OFF mode
0 DYN	Stop all dynamic effects for selected devices
CANCL ALL DYN	Delete all dynamic effect groups

E key: Effect control

NTX: The key is labeled "EFF"

E	Effect display on main monitor
***number* E**	Set up effect or assign external signal
0 E	Cancel effect

Examples:

11 E	Set up effect 11 (chase)
71 E	Connect analog signal 1
81 E	Connect digital signal 1
CANCL E	Pause ongoing effect and reset to start position
REC E ***cue* REC E**	Record effect

Example:

17 REC E	Record effect as cue number 17

The effect control has a superordinated master fader:

E and ***wheel***	Master fader of effect control
TAKE *level* E	Set master fader level
TAKE *level* % *time* T E	Fade master fader in defined time

Examples:

TAKE 50 E	Set master fader to 50%
TAKE FULL E	Set master fader to 100%
TAKE 10 % 5 T E	Fade master fader to 10% in 5 s

EBO key: Blackout of effect control

On Prisma NT: Key EBO toggles blackout for the effect control on/off

EBO	Blackout effect control on/off
TAKE EBO	Blackout on
CANCL EBO	Blackout off

EGO key: Start/continue effect

EGO	Start or continue effect
SUM EGO	Start/continue all effects

Note: An effect is continued from its current position; resetting to its initial status is possible with LOE E.

ENA key: Enable advanced operations

ENA and MEM HD	Save current show
ENA and MEM FLi	Save current show
ENA and AUX	Auxiliary system link on/off
ENA and WAUX	Transfer memory to auxiliary system
ENA and ALL MASK	Remove unused channels from mask
ENA and 12 RS	Lamp test
ENA and 52 RS	Clear all memory
ENA and 62 RS	Clear all memory, load system software
ENA and CANCL CHAN	
	Delete selected channels
ENA and CANCL PATCH	
	Produce 1:1 patch (control = dimmer channel)
ENA and HD MEM	Load show
ENA and FLi MEM	Load show
ENA and CANCL MEM	
	Delete current show
	With active menu control:
ENA and *any key*	Key input is forwarded to the input line
ENA and *wheel*	Digital wheel is forwarded to the input line

ENTER key: Select Channels

This key can be used for intensity inputs of selected channels (like key %).

int ENTER	Set selected channels to value *int*
int1 – int2 ENTER	Fan-Function for selected channels
x ENTER	List E: Change effect parameters, add channel(s)
	List ML, 16-bit-mode:
1234.5 ENTER	set selected attribute to value 1234.5

Within menu control, the ENTER key starts various actions:

> Selection menu: start selected menu
> List displays: edit selected entry
> Form: Take parameters

EREV key: Reverse effect

EREV	Reverse direction of effect
SUM EREV	Reverse direction of all effects

ESTOP key: Stop effect

ESTOP	Stop effect
SUM and **ESTOP**	Stop all effects

Keys F1 thru F8: Function keys

Each function key can have a macro assigned; all other macros can be accessed by their number and key F.

Fi	Start macro of function key Fi
ENA and **Fi**	Start/end recording of macro for function key Fi
ENA and *number* **F**	Start recording of macro named
ENA and **F**	End recording
number **F**	Start named macro

Examples:

ENA and **27 F**	Record macro 27
27 F	Start macro 27

Menu control:

207 MENU	Edit macros

Sequence list:

TAKE *number* **F**	Enter macro
CANCL F	Cancel macro entry

Key FAN: Fan-Function

int1-int2 **FAN**	selected channels/attributes to int1 – int2

FIX key: Fix mode

In Fix mode, channels are set to the predefined fix-value upon selection.

FIX	Fix mode on/off
TAKE FIX	Fix mode on
CANCL FIX	Fix mode off
level **FIX**	Turn Fix mode with entered value on
@ FIX	Selected channels to FIX level

Example:

80 FIX	Activate Fix mode, set to level of 80%

Note: The current FIX level can be modified any time with the digital fader wheel or by direct level entries.

FL1 and FL2 keys: Disk drives

The following menus will be started:

ENA and MEM FLi	Save show to floppy
ENA and FLi MEM	Load show from floppy
TAKE FLi MEM	Load cue
TAKE MEM FLi	Copy cue
ENA and CANCL FLi	Format floppy
ENA and FL1 FL2	Copy floppy
120 MENU	Disk menu
NTX/Booster:	FL2 refers to the USB memory

FLASH key: Flash function on/off

The dedicated flash keys "flash" a submaster to 100%, regardless the faders position. Key FLASH en- or disables the flash keys (to avoid unintentional triggering of the flash function)

FLASH	Flash buttons active/passive
TAKE FLASH	Flash buttons active
CANCL FLASH	Flash buttons disabled

GO key: Start crossfade

GO	Start/continue automatic crossfade
cue **GO**	Start crossfading to cue
	Setting SEQSETOPT en- or disables this operation
Example:	
7 **GO**	Start cue 7
DOWN GO	Start/continue fade-out (down)
UP GO	Start/continue fade-in (up)
+ GO	Start selected channels
- **GO**	Start/continue selected channels as locked crossfade
	Property EXPERT_LEVEL: locked by **ENA**
CANCL GO	Cancel ongoing crossfade

Note: Setting UEB_CONT determines, if a paused crossfade is continued by key GO or if GO starts the next regular crossfade (a paused crossfade will then be continued by key CONT).

GR key: Master fader for submaster system

The submaster groups have a dedicated grand master fader:

	on Focus/Iris NT:
GR and *wheel*	Master fader for submasters
TAKE *level* **GR**	Set master fader value
TAKE *level* **% *time* T GR**	
	Fade master fader to value entered (in time entered)

Examples:

TAKE 50 GR	Set master fader to 50%
TAKE FULL GR	Set master fader to 100%
TAKE 10 % 5 T GR	Fade master fader to 10% in 5 s
CANCL ALL GR	Clear all submasters content
number **GR**	Select submaster by group number
CANCL *number* **GR**	Cancel submaster by group number

Examples:

5 GR	Select submaster 5
CANCL 7 GR	Cancel submaster 7

Keys GR1 to GR20: Group submasters

A cue and a effect can be loaded to each submaster group.

GRi	Preset selection submaster i
GRi and *wheel*	Correct fade-up/fade-down time
GRi and *wheel*	EFF: Correct effect timing profile
REC GR	Record changed cue
CANCL GRi	Cancel group contents
ALL GRi ... **GRj TAKE** *dest*	Transfer content of groups i ... j to *dest*

Example:
ALL GR1 GR3 GR5 TAKE GR10

Comprise content of groups 1, 3 and 5 in group 10

cue **GRi**	Read cue to group i
+/- *cue* **GRi**	Add/subtract cue

Examples:

17 GR5	Read cue 17 to group 5
+ 18 GR5	Add cue 18 to group 5
- 19 GR5	Subtract cue 19 from group 5
TAKE *source dest*	Copy levels of channel selection

Example:
TAKE GR2 GR5	Copy selected channels from group 2 to group 5

cue - GRi GRj REC REC

Save groups GRi and GRj

Example:
120 - GR4 GR7 REC REC

Save contents of GR4 to GR7 to cues, starting with cue

number 120

cue **- GRi LOAD**	Multiple read starting with named group
cue **- GRi GRj LOAD**	Multiple read for range of groups
TAKE +/- GRi	Set preset priority
Shift and GRi	List Display ML/COL
	activate Softkey indicated above group window
TAKE int % GRi	set preset fader to value int
TAKE int % time GRi	
	with fade time

GRBO key: Blackout for Submasters system

The GRBO key is superordinate to all group submasters.

GRBO	Blackout for group submaster system on/off
TAKE GRBO	Blackout on
CANCL GRBO	Blackout off

HC key: Hardcopy

The hardcopy function allows to print the current screen.

HC	Hardcopy main monitor
Shift and HC	Hardcopy can be saved to file

HD key: Harddisk

All harddisk operations start dedicated menus:

ENA and **MEM HD**	Save show to harddisk
ENA and **HD MEM**	Load show from harddisk
TAKE MEM HD	Add cues
TAKE *cuerange* MEM HD	
	As above, for named cue range
TAKE HD MEM	Load cues
TAKE *cuerange* HD MEM	
	As above, for named cue range

Examples:

TAKE 1 MEM HD	Add cue 1 to show on harddisk
TAKE 5 - 7 HD MEM	Load cues 5 thru 7

Keys I and II: Grand master faders

The two grand master faders are superordinate to the crossfade systems, the group submasters system and the effect control. On Iris NT, the grand master faders are labeled

XFM and **FOH.** All the following operations are similar to both faders.

TAKE I	Assign selected channels to grand master fader
chanrange **TAKE I**	Assign channel range
+ TAKE I	add channel selection to grand master
chanrange **+ TAKE I**	add channel range to grand master
CANCL I	remove selected channels from grand master fader
chanrange **CANCL I**	remove channel range from grand master
I	Select channels assigned to grand master fader
chanrange **I**	select channel range assigned to grand master
' I	Select unassigned channels

Examples:
1 - 3 TAKE I	Assign channels 1 thru 3 to grand master fader I
1 - 2 + TAKE II	Add channels 1 and 2 to grand master fader II
1 CANCL I	Remove channel 1 from grand master fader I

The grand master faders can be controlled by key inputs:

TAKE *level* **I**	Set grand master to a value
TAKE *level* **%** *time* **T I**	
	Fade grand master fader to a value

Examples:
TAKE 50 I	Set grand master to 50%
TAKE FULL I	Set grand master to 100%
TAKE 10 % 5 T I	Fade grand master to 10% in 5 s

INH key: Submasters as inhibit faders

Submasters can be used as inhibit-faders, modifying levels of the submasters channels.

The following operations affect the selected submaster:

TAKE INH	Inhibit on
CANCL INH	Inhibit off
ENA and **INH**	Switch inhibit mode

The submaster can be specified:

TAKE *group* **INH**	Inhibit on
CANCL *group* **INH**	Inhibit off
CANCL ALL INH	All inhibits off

INS key: Insert

Key INS inserts new data or other entries.

INS	REPL list: activate entry
	DCURV list: mark vertex
	SQL list: insert intermediate step
	E list: insert step
sequence **INS**	SQL list: insert step
	E list, follow-on cue: define follow-on cue
channel **INS**	REPL list: activate new entry or entry
	of the stated channel

INVO key: Involved channels

A channel is regarded as being "involved" if its level is above a defined threshold.

INVO	Select involved channels
chanrange **INVO**	Selected involved channels in named range
' INVO	Select non-involved channels
ALL INVO	Select all channels of current mask
Shift and INVO	Select involved changed channels
TAKE INVO	COL/ML: Copy active values to preset
CANCL INVO	COL/ML: Remove values from preset
	Else: Change involvement in
	additive cues
REC INVO	record involved attributes

Note: The "involved" threshold is set by the property BET_SCHWELLE.

ISO key: Level output reduced to selected channels

The output of levels can be reduced to channels selected; all channels not selected will have a level of 0%.

chanrange **ISO**	Select channels, ISO function on
TAKE ISO	ISO function on
CANCL ISO	ISO function off
ENA ISO	Toggle ISO-mode on/off

LEVEL key: Display level

Displaying channel levels of the selected preset.

LEVEL   Level display on main monitor

Recording output levels as cue:
REC STAGE   Record using the current cue number
cue **REC STAGE**   Record under entered cue number

Example:
7 REC STAGE   Record active level output as cue 7

Recording current (selected) preset levels as cue:
REC LEVEL   Record under current cue number
cue **REC LEVEL**   Record with entered cue number

Example:
7 REC LEVEL   Record current preset levels as cue 7

LINK key: Linking cues within the crossfade sequence

It is possible to link cues within a sequence list in order to change the playback order.

sequence **LINK**   link / jump to named sequence number
sequence - *number* **LINK**
                              Jump with loop counter
- *number* **LINK**   Change loop counter
CANCL LINK   Cancel link
- LINK   Clear loop counter

LIST key: List selection

LIST   List selection for main monitor
number **LIST**   Stated list on main monitor

LOAD key: Read from memory

LOAD	Read cue into current preset
cue **LOAD**	Read entered cue
+ LOAD	Read next cue
- LOAD	Read previous cue
+/- *cue* **LOAD**	Add/subtract cue
cue **SUM**	Re-distribute sum cue to submasters
cue **- LOAD**	Multiple read for all groups
cue **-** *GRi* **LOAD**	Multiple read from named submaster group onwards
cue **-** *GRi GRj* **LOAD**	Multiple read for a range of submaster groups
15 MENU	Multiple read through form

Examples:

7 LOAD	Read cue 7
+ 8 LOAD	Add cue 8
- 9 LOAD	Subtract cue 9
15 - LOAD	Load submaster groups 1 thru 20 from cue 15
15 - GR9 LOAD	Load groups 9 thru 20 from cue 15
15 - GR5 GR7 LOAD	Load groups 5 thru 7 from cue 15

LOCK key: Channel lock

Locking prevent channel values from being changed.

TAKE LOCK	Lock selected channels
chanrange **TAKE LOCK**	
	Lock channel range
CANCL LOCK	Cancel lock for selected channels
chanrange **CANCL LOCK**	
	Cancel lock for named channels

Examples:

1 - 3 TAKE LOCK	Lock channels 1 thru 3
4 CANCL LOCK	Cancel lock for channel 4
LOCK	Select locked channels
chanrange **LOCK**	As above, for named range
' LOCK	Select unlocked channels

Key LTPBO: Disable DMX output of LTP-Attributes

DMX output of LTP-attributes (e.g. Movinglights, Scrollers etc) can be disabled globally.

LTPBO	Activate/deactivate output for LTP devices
TAKE LTPBO	Deactivate output for LTP devices
CANCL LTPBO	Activate output for LTP devices

MAN key: Manual crossfade

MAN	Manual crossfade on/off
TAKE MAN	Manual crossfade on
CANCL MAN	Manual crossfade off
cue **REC MAN**	Prisma NT: Record Crossfade profile

Note: Switching to MAN will be carried out as soon as the current (automated) crossfade is finished.

MASK key: Channel mask

The MASK function allows to define the channels being displayed in list views.

MASK	Close/open mask
TAKE MASK	Close mask
CANCL MASK	Open mask
	Cleaning the mask
ENA and **ALL MASK**	disregarding the selection, add used channels
ENA and **CANCL CHAN**	considering the channel selection
	Adapting the mask
ENA *cuerange* **MASK**	to Range of Cues
	Expanding the mask:
TAKE MEM MASK	Channels used in the show
TAKE *cuerange* **MEM MASK**	
ENA + *cuerange* **MASK**	Channels used in a range of cues
cue **REC MASK**	Record the current mask
82 MENU	Edit the mask
	Fleximode in List views:
* MASK	Fleximode on
- MASK	Fleximode off
. MASK	LEVEL/STAGE, T/TWAIT/TXF: Fleximode on
	ML/COL: Compact mode on
' MASK	Toggle Fleximode

MEM key: Memory of the current show

The following operations for the current show start a corresponding menu.

CANCL MEM	Clear current show
CANCL *cuerange* **MEM**	Delete range of cues
ENA and **MEM FLi**	Save show to floppy
ENA and **FLi MEM**	Load show from floppy
ENA and **MEM HD**	Save show to harddisk
ENA and **HD MEM**	Load show from harddisk
TAKE FLi MEM	Load cues from floppy
TAKE *cuerange* **FLi MEM**	
	As above, for named cue range
TAKE MEM FLi	Save cues to floppy
TAKE *cuerange* **MEM Fli**	
	As above, for named cue range
TAKE HD MEM	Load cues from harddisk
TAKE *cuerange* **HD MEM**	
	As above, for named cue range
TAKE MEM HD	Save cues to harddisk
TAKE *cuerange* **MEM HD**	
	As above, for named cue range

Examples:

CANCL 1 - 3 MEM	Delete cues 1 thru 3
TAKE 1 - 3 MEM HD	Save cues 1 thru 3
TAKE 1 - 3 HD MEM	Load cues 1 thru 3
channel **MEM**	Display saved levels of channel, menu M30
TAKE % MEM	Add channel selection to memory
TAKE % *cuerange* **MEM**	
	Add channel selections values to a range of cues

MENU key: Menu control

MENU	Start menu control

This will start a menu corresponding to the list view chosen.

number **MENU**	Start a menu by number

Examples:

1 MENU	Start main menu
4 MENU	Start menu selection

Note: Instead of key MENU, the left mouse key can be used to start the menu control.

ML key: Moving Light Control

The moving light control facilitates the easy control of moving lights.

ML	List display ML
cue REC ML	Record ML values
651 MENU	ML configuration
652 MENU	ML display order
chanrange **TAKE ML**	select devices
	attribute values to selected preset
chanrange **CANCL ML**	select devices
	clear attribute values from selected preset

MLINK key: Link monitor

The monitor link expands / continues the list display of the left on the right monitor.

MLINK	Monitor link on/off
TAKE MLINK	Monitor link on
CANCL MLINK	Monitor link off

MON2 key: 2nd monitor

MON2	Switches the main monitor to the next
monitor on the right.	
	(or back to the first monitor).
MON2 and key LIST	Display list on the 2nd monitor

NFS key: NFS-Server

NTX: Operations for loading and saving to the NFS-Server

ENA NFS MEM	Menu M21, Load show
ENA MEM NFS	Menu M22, Save show
ENA NFS HD	Menu M43, Copy show from NFS-Server - Harddisk
	(likewise for FL - NFS)
ENA HD NFS	Menu M43, Copy show from Harddisk - NFS-Server
	(likewise for FL and USB)

OFF key: Terminate dynamic effects

OFF	Prisma NT: Terminate selected DYN-effect step

OUT key: Display dimmer channel levels

List OUT displays the actual dimmer output levels.

OUT   Dimmer channel levels on main monitor

Independent dimmer levels:

TAKE *dimrange* DCH *level* OUT
CANCL *dimrange* OUT

PAL_I/F/C/B keys: Palettes

PAL_i   Display recorded
                                       List TRK: display only attributes from palette

pal PAL_i   Assign palette   to the selected channels
                                       List TRK: store palette to cue

- pal PAL_i   BACK: remove selected palette from channels

pal REC PAL_i   Record involved attributes of selected channels to palette
+ S PAL_i   Add involved attributes of selected channels to palette
TAKE pal PAL_i   Add involved attributes of selected channels to palette
                                       List TRK: store palette to cue
TAKE PAL_i   List TRK: store palette to cue

CANCL pal PAL_i   Remove involved attributes of selected channels from
palette

SUM and pal PAL_i   BLD/PV only:
                                       select channels involved in palette
                                       assign values from palette
ALL pal PAL_i   select channels involved in palette
                                       assign palette

PATCH key: Patching Channels

Patching assigns dimmer channel(s) to a control channel.

TAKE *channel* **-** *dimmer* **PATCH**
>   Patch dimmer channel to control channel

TAKE *channel* **+** *dimmer* **PATCH**
>   Patch extra dimmer channel to control channel

TAKE *channel* **-** **ALL PATCH**
>   Unpatch all dimmer channels from channel

ENA and **CANCL PATCH**
>   Produce 1:1 patch for all channels

ENA and **CANCL** *chanrange* **PATCH**
>   Produce 1:1 patch for a range

Examples:

TAKE 1 - 3 PATCH	Patch dimmer channel 3 to channel 1
TAKE 1 + 4 PATCH	Add dimmer channel 4 to channel 1
ENA and **CANCL 5 PATCH**	
	Patch dimmer channel 5 to channel 5

Monitor displays:

PATCH	PATCH list on main monitor
803 MENU	Save/load patch

For the selected entry (by cursor line) in list PATCH list:

channel **CHAN**	Preselect channel for patching
dimrange **DCH**	Patch dimmer channel range
+ *dimrange* **DCH**	Patch additional dimmer channels
- *dimrange* **DCH**	Unpatch dimmer channels
- ALL DCH	Unpatch all dimmer channels
DEL	Create 1:1 patch

Examples:

5 CHAN	Preselect channel 5
6 - 8 DCH	Patch dimmer channels 6 thru 8 to control channel 5
+ 9 DCH	Add dimmer channel 9
- 7 DCH	Unpatch dimmer channel 7

Note: M92 "Dimmer channel attributes" allows to modify the patch factor used.

PRINT key: Print

PRINT	Print list display of the main monitor
203 MENU	"Printer configuration" menu

PROG key: Programmer Preset

The programmer preset has the highest priority for LTP control; the ML list shows the active values of the configured ML/COL devices.

PROG	Select programmer preset
CANCL PROG	Clear programmer preset, set all attributes of the selected devices to non-involved
cue **PROG**	Read cue to programmer

Note: Pressing key PROG again will deselect the programmer and call the most recently used preset.

PROGBO key: Blackout for programmer preset

PROGBO	Activate/deactivate blackout for programmer preset
TAKE PROGBO	Activate blackout for programmer
CANCL PROGBO	Deactivate blackout for programmer

PROGCL key: Clear key for programmer

	NTX: Key labeled PRGCLR
PROGCL	Releases all attributes involved in the programmer preset.

PV key: Preparation-preset of the crossfade system

The PV preset "prepares" a cue for the next crossfade, allowing to edit the cue independently of an ongoing crossfade.

PV	Select PV
CANCL PV	Clear PV preset
cue **PV**	Read cue into PV preset
+/- cue **PV**	Add/subtract cue
TAKE *source* **PV**	Copy levels to PV
TAKE PV *dest*	Copy levels from PV

QLIST key: Cue List

The cue list displays all recorded cues of a show in ascending order.

QLIST	Display cue list on main monitor

Note: The ongoing crossfade sequence is displayed with setting SZL_MODE = 1.

Menu control:

42 MENU	Cue list of shows saved on floppy or harddisk

RCH key: Cue memory selection

Cue memory selection allows to select channels recorded in cues. Usually only the intensitity or dimmer value are evaluated. If list display ML/COL is active on main monitor, stored attributes are searched. For list displays T/TWAIT/TXF independent channel times are evaluated.

RCH   Select all channels recorded in a show
cuerange **RCH**   Select channels recorded in a range
ALL RCH   ML/COL: Search for all attributes
' RCH   Reverse: select channels not recorded
- ' RCH   Deselect all channels not involved in show

cue RCH and digi   Fade in cue

REC key: Record

All record operations are initiated with the REC key and confirmed (finished) by pressing it again or are aborted with the CLEAR key. All record operations can be prefixed with a cue number.

REC REC	
REC ENTER	Record preset contents (according to M240)
REC %	Record levels $\downarrow$ channel times
REC LEVEL	Record levels
REC STAGE	Save active values as cue
REC T	Record levels and channel fade times
REC E	Record effect
REC COL	Record (content according to Menu M241)
REC ML	Record according to Menu M242
REC TRK	Record changed attributes of all fixtures
REC ENTER	Update changes into current cue
REC INVO	Involved attributes
REC ALL	Current values of all attributes
+/- S ALL	Current values of selected channels
REC DYN	Dynamic effects
+ REC REC	Record selected channels as additive cue
- REC REC	Record selected channels as additive cue for locked crossfade
SUM and **REC REC**	Record current values as sum cue
cue **- REC REC**	Multiple record all group submasters
cue **- GRi GRj REC REC**	
	Multiple record for named submaster range
REC GR	Update cues of submasters
REC MAN	On Prisma NT: Crossfade Profile
REC MASK	Record current mask as cue

Examples:

5 REC REC	Record preset contents as cue 5
5 REC E	Record effect as cue 5
+ 6 REC REC	Record selected channels as additive cue 6
SUM and **3 REC REC**	Record active values with preset assignment as sum cue 3
3 REC STAGE	Record active values as cue 3
4 REC STAGE	Record preset levels as cue 4
5 - REC REC	Record all group submasters from cue 5
5 - GR7 REC REC	Record group submasters 7 thru 20 from cue 5
5 - GR3 GR7 REC REC	
	Record group submasters 3 thru 7 from cue 5

REH key: Rehearsal sequence

All cues recorded during a rehearsal can be additionally recorded as rehearsal (cue) sequence.

REH	Rehearsal list on main monitor
TAKE REH	Writing of rehearsal sequence on
CANCL REH	Writing of rehearsal sequence off
reh **REH**	Read rehearsal with rehearsal sequence number
+ REH	Read next rehearsal
- REH	Read previous rehearsal
CANCL ALL REH	Clear entire rehearsal sequence
CANCL *rehrange* REH	Clear rehearsal range

Examples:

3 REH	Read rehearsal 3
CANCL 1 - 3 REH	Clear rehearsal sequence cues 1 thru 3
60 MENU	"Rehearsals" menu selection

REL key: Release key

The release key sets all LTP attributes of the current preset to not-involved and deselects the selected devices. Further settings can be made using the ACTRELOPT setting.

REL   Release LTP values of the selected preset

Use the EXPERT_LEVEL setting to specify if key release can only be activated in conjunction with key ENA.

REM key: Remote control

The local systems keyboard can be used to act as remote control for another connected system.

REM	Switch remote on/off
TAKE REM	Switch remote on
CANCL REM	Switch **remote** off

REPL key: Replacement channels

The replacement channel system prepares one or more replacement dimmer channels for patching in case of a dimmer channel failure.

REPL   Replacement channel list on main monitor

chanrange **REPL**   Prepare replacement

chanrange **TAKE REPL**

                                Activate replacements for named channels

chanrange **CANCL REPL**

                                Deactivate replacement for named channels,
                                restore original patch

Examples:
5 REPL   Patch replacement for channel 5
5 CANCL REPL   Cancel replacement for channel 5

TAKE ALL REPL   Activate all replacement preparations
CANCL ALL REPL   Deactivate all replacements

With REPL list displayed on the main monitor:

channel **INS**   Include channel in replacement channel list

INS   Activate current entry
channel **CHAN**   Select replacement
dimmer **DCH**   Enter dimmer channel
+ *dimmer* **DCH**   Add dimmer channel to a replacement
- *dimmer* **DCH**   Remove dimmer channel from replacement
TAKE REPL   Activate selected replacement
CANCL REPL   Deactivate active replacement
DEL   Deactivate/delete active replacement

801 MENU   Save/load replacement preparations

RET key: Return crossfade

Return returns a (ongoing) crossfade to its starting point.

RET   Return crossfade
                                with automatic timing
                                with manual crossfade

DOWN RET   Only fade-down
UP RET   Only fade-up

+ RET   Only lected channels
- RET   Only channels with crossfade lock

Note: Setting RET_ZEIT defines the time used for "returning".

RS key: Reset

The RS key triggers various functions.
The following functions restart the systems software:

RS	Restart system software
1 RS	Clear preset, maximize mask
2 RS	Clear presets, minimize mask
3 RS	Clean up mask (presets remain unaffected)
4 RS	Begin show, preset cleared
12 RS	Lamp test

Backwards-compatibility:

40 RS	Print out operating history
41 RS	Display operating history
42 RS	Start Menu M220, "Personality"
44 RS	System error list on main monitor
45 RS	Hardcopy of main monitor
46 RS	Hardcopy of 2nd monitor

Monitor configuration:

70 RS	Standard VGA display
71 RS	Display optimized for older LCD/TFT displays
72 RS	Optimized for CRT-monitors with 72Hz
73 RS	Optimized for CRT-monitors with 76Hz
74 RS	Optimized for CRT-monitors with 90Hz
75 RS	Optimized for LCD/TFT displays with 60Hz
76 RS	Optimized for LCD/TFT displays with 72Hz (XVGA)
81 RS	Only left monitor
82 RS	Only right monitor
83 RS	Two monitors, main monitor left
84 RS	Two monitors, main monitor right
85 RS	Left monitor for hand terminal 1
86 RS	Right monitor for hand terminal 2
87 RS	3 monitors, main monitor is the left monitor
88 RS	4 monitors, main monitor is the left monitor

The following functions clear all data of the memory:

ENA and **52 RS**	Memory clear
ENA and **62 RS**	Reload program, clear all memory

Access control for input device:

0 RS	Disable input device
0 1 RS	Enable input device

S/CH key: Single channel selection

When single channel selection is active, all other channels are deselected upon new channel selection.

S/CH	Single channel selection on/off
TAKE S/CH	Single channel selection on
CANCL S/CH	Single channel selection off

SEQ key: Crossfade sequence

SEQ	Crossfade sequence on/off
TAKE SEQ	Crossfade sequence on
CANCL SEQ	Crossfade sequence off
sequence **SEQ**	Set up new crossfade sequence, defined by setting SEQSETOPT.

Example:

1 SEQ	Set crossfade sequence to beginning

The following operations alter the crossfade sequences order without triggering a crossfade:

+ SEQ	Move crossfade sequence step forward
- SEQ	Move crossfade sequence step back

+SEQ and –SEQ keys: Change crossfade sequence

Prisma NT: The keys alter the crossfade sequences order without triggering a crossfade (defined with setting SEQSETOPT):

+SEQ	Move crossfade sequence step forward
-SEQ	Move crossfade sequence step back

Shift key: Switch Functions

	Especially with list displays ML/COL
Shift and HOME/END	first/last line
Shift and softkeys	time group, for cursor line only
Shift and T	time group, for cursor line only
Shift and AUF .	time group, for cursor line only
Shift and GRi	activate Softkey indicated above group window
Shift and digi	Wheel turns list displays
Shift and trackball	switches to mouse control
Shift and NUL/VOL	Toggle 0%/100% on/off
Shift and PAL_i	list display TRK: show/hide attributes
Shift and BET/D/H	mark changed channels
Shift and Encoder	16bit control
Shift and …	Time group, input only for selected attribute

SOLO key: Solo function

TAKE SOLO	Solo function for selected preset on
CANCL SOLO	Solo function off
SOLO	Solo function on/off
TAKE *preset* SOLO	Solo function for named preset on
TAKE *number* SOLO	Solo function for submasters on

Examples:

TAKE GR7 SOLO	Solo function for submaster GR7 on
TAKE 5 SOLO	Solo function for submaster GR5 on
13 MENU	Menu for switching solo function on/off

Note: The property FRG_BO determines whether the solo function has to be enabled with key ENA

SQL key: Sequence list

The sequence list determines the sequence of crossfades and further actions.

SQL	Sequence list on main monitor

Switching mode:

TAKE QLIST SQL	Synchronized mode
CANCL QLIST SQL	Free mode

For selected sequence step (cursor line):

INS	Insert intermediate step
DEL	Delete current step
TAKE CUE	"Start cue" action
***cue* CUE**	"Start named cue" action
TAKE *number* F	"Start macro" action
***time* TDLY**	Enter delay time
***time* THOLD**	Enter hold time
***sequence* LINK**	Enter link
***sequence - number* LINK**	
	Enter link with loop counter

Selection menus:

35 MENU	Sequence 1 (left crossfade system)
36 MENU	Sequence 2 (right crossfade system)

Examples:

14 CUE	"Start cue 14" action
TAKE 27 F	"Start macro 27" action
7 TDLY	Execute 7 s after previous action
20 THOLD	Hold 20 s after end of previous crossfade, then start next action
5 LINK	Jump to sequence step 5
5 - 3 LINK	Triple jump to sequence step 5, continue from 4th loop run

STAGE key: Active Level view

Displays the active output levels list view.

STAGE   Output levels on main monitor

Record output levels as cue:

REC STAGE   Record under current cue number
cue **REC STAGE**   Record under entered cue number
TAKE STAGE *dest*   Transfer active values of selected   channels into
destination preset

Example:
7 REC STAGE   Record active level output as cue 7

STOP key: Stop crossfade

STOP   Stop ongoing crossfade

DOWN STOP   Only stop fade-downs
UP STOP   Only stop fade-ups

+ STOP   Only stop selected channels
- STOP   Only stop selected channels
                                with locked crossfade

SUM key: Sum of levels

Key SUM allows to influences the active dimmer output direct.

SUM and *wheel*	"Sum correction": direct change of outputs from selected channels
TAKE SUM *dest*	Transfer active values of selected channels to named destination preset
chanrange **TAKE SUM** *dest*	
	As above, for named channels

Example:
1 - 3 TAKE SUM GR5

Transfer active output levels of channels 1 thru 3 to submaster 5

In addition to the current output levels, a sum cue holds information of which preset produced the level:

SUM and **REC REC**	Record active light as sum cue
SUM and *cue* **REC REC**	
	As above, for named cue number
cue **SUM**	Distribute sum cue to group submasters

Examples:
SUM and **5 REC REC**	Record active level output in sum cue 5
5 SUM	Distribute sum cue 5 to submasters

For all current effects:

SUM ESTOP	Stop all effects
SUM EGO	Start all effects
SUM EREV	Reverse direction of all effects

T key: Timing control

Cue (crossfade) times and channel fade times are considered as times.

List selection:

T   Channel fade times on main monitor

For crossfade system:

***time* T**   Set general crossfade time
CANCL T   Clear general crossfade time
TAKE T   Take stopwatch times as crossfade times

For selected channels within timing list T, TWAIT or TXF on main monitor:

***time* T**   Set individual crossfade time (channel fade time)

time1 - time2 T   Fan-Function
CANCL T   Clear channel fade time (assign cue time)
TAKE T   Take cue time as channel fade time

For submasters:

***time* T**   Set fade-up and fade-down time
CANCL T   Disable automated timing
TAKE T   Enable automated timing
ALL TAKE T   Automatic timing on (all submasters)
ALL CANCL T   Automatic timing off for all submasters

Shift and T   List Display ML/COL
                                           time group, for cursor line only

Note: The setting GRTBLOPT = 1 uses the cue time as fade-up time for a submaster.

Examples:

5 T   5 s
10 '   10 min
+ 5 T   5 s longer
- 4 T   4 s less
3 UP T   3 s fade-up time
4 DOWN T   4 s fade-down time

Note: In contrast to timing entries made with key TXF, key T automatically sets the wait time to 0.

TAKE key: Transfer

Transfers selected channels (fader states will be acknowledged):

TAKE *source dest*	Copy levels from source preset to destination preset
+ TAKE *source dest*	Enter (add) maximum levels of source/destination preset
in destination preset	
- TAKE *source dest*	Clear (subtract) selected channels (involved in source
preset) from destination preset	
TAKE SUM *dest*	Transfer active values to destination preset

Examples (for selected channels):

TAKE GR1 GR2	Copy levels from GR1 to GR2
+ TAKE GR3 GR4	Copy sum of GR3 and GR4 to GR4
- TAKE GR5 GR6	Clear channels involved in GR5 from GR6

Preset transfer for all channels (independent of selection):

ALL GRi ... **GRk TAKE** *dest*

> Transfer values from presets i thru k to destination preset

Example:

ALL GR1 GR3 GR5 TAKE GR9

> Transfer values from submasters 1, 3 and 5 to group

submaster 9

TAKE +/- reg	Set preset priority

TDLY key: Delay for crossfade sequence

A delay time allows automatic follow-on start; the delay time begins immediately with the preceding start/"go".

time **TDLY**	Enter follow-on start with delay time
CANCL TDLY	Clear follow-on start

Examples:

5 TDLY	Trigger follow-on start 5 s after
	preceding start
0 TDLY	Trigger follow-on start immediately after preceding start

THOLD key: Hold time for crossfade sequence

A hold time programs an automatic follow-on start which starts after the preceding crossfade (and the hold time assigned) is finished.

For the selected entry in the sequence list:

time **THOLD**	Enter follow-on start with hold time
CANCL THOLD	Clear follow-on start

Examples:

5 THOLD	Trigger follow-on start 5 s after end of
	crossfade
0 THOLD	Trigger follow-on start immediately after finished crossfade

THRU key: 'Thru'- key

Key THRU is used to specify ranges and is similar to key minus.
It is also possible to specify ranges when "chain selecting".

channel THRU channel CHAN

Select channel range

dimmer THRU dimmer DCH

Select dimmer range

changroup THRU changroup CH/G

Select channel group range

THRU and + / - / .   Fan-Function

Examples:
4 THRU 10 CHAN   Select channels 4 to 10
1 THRU 3 + 5 THRU 8 CH/G

Select channel groups 1 to 3 and 5 to 8

TRK key: Track Sheet

NTX: Key labeled **TRACK**
The Track Sheet displays values of selected channels in a list form, allowing to edit
channels directly.

Display track sheet

TRK   for selected channels
chanrange **TRK**   for channel range
%∑/--   On displaying attributes: next/prev. device

COPY/CUT/PASTE   Copy entries within list display

pal PAL_i
TAKE PAL_i   Add palette to cue(s)

TAKE pal PAL_i

While in Update-Mode)
cue REC TRK   Save changes

TWAIT key: Wait time

The wait time defines the time between the start of a crossfade and the actual start of the crossfade phase (like channel fade times).

List selection:

TWAIT	Individual wait times on main monitor

For crossfade system:

time **TWAIT**	Set overall wait time
CANCL TWAIT	Clear general wait time (set to minimum)
TAKE TWAIT	Take wait time from stopwatch

For channel selection with timing list T, TWAIT or TXF on main monitor:

time **TWAIT**	Set individual wait time
time1 - time2 TWAIT	Fan-Function
CANCL TWAIT	Set minimum wait time
TAKE TWAIT	Take wait time from cue time

Example:

5 DOWN TWAIT	Begin fade-down 5 s after start

TXF key: Crossfade time

The crossfade time defines the duration of a crossfade operation (without considering wait phases/times).

List selection:

TXF	Individual crossfade times on main monitor

For crossfade system:

time **TXF**	Set general crossfade time
CANCL TXF	Clear general crossfade time (set to minimum)
TAKE TXF	Take crossfade time from stopwatch

For channel selection with timing list T, TWAIT or TXF on main monitor:

time **TXF**	Set individual (channel) crossfade time
time1 - time2 TXF	Fan-Function
CANCL TXF	Set minimum crossfade time
TAKE TXF	Take crossfade time from cue time

Note: The crossfade time can be prefixed with a wait time by key TWAIT.

Examples:

4 TXF	Crossfade 4 s
3 UP TXF	Fade-up 3 s
2 DOWN TXF	Fade-down 2 s

UNDO key: Undo changes

Manual: Back to preceding text

Menu M651, ML configuration, undo last change in configuration and in range configuration.

UP key on main control panel: Fade-up

	Only for selected crossfade systems:
UP	select building channels
Shift and **UP**	only changed building channels
time **UP T**	Set fade-up time
TAKE UP T	Take stopwatch time
CANCL UP T	Clear fade-up time

UP key in crossfade area: Fade-up

Using the UP key in crossfade area, you can control channel fading in (up)

UP GO	Start/Continue fade in
UP STOP	Stop fade in
UP RET	Reverse fade in
UP CUT	Cut fade in
UP and wheel	change running fade in time

USB key: USB-Memory

NTX: Key operations for accessing the USB memory

ENA USB MEM	Menu M21, Load show (from USB)
ENA MEM USB	Menu M22, Save show
ENA USB HD	Menu M43, Copy show (USB-HD, FL1, NFS)
ENA HD USB	Menu M43, Copy show from HD to USB

Note: Even if the software confirms that a operation to/from USB memory is finished, please do not remove the memory stick while the USB key lamp is lit/flashes as the operating system might access the memory delayed.

WAUX key: Transfer to auxiliary system

TAKE WAUX	Transfer complete show to auxiliary system
TAKE *cuerange* WAUX	
ENA *cuerange* WAUX	Transfer cue range

Example:
TAKE 1 - 3 WAUX	Transfer cues 1 thru 3

Note: Transfer is done to the auxiliary system preselected/configured.

Digital Wheel functions

The digital "wheel" modifies values, its function depends on the list displayed on the main monitor. Various keys change the digital wheels function.

wheel	Level control for channel selection (linear)
	lists T, TWAIT, TXF Channel fade time correction
wheel lists ML, COL	
	Movinglight control
wheel list E	Correction of current parameter
wheel list DCURV	Correction of output value
chanrange wheel	Select channels and change levels
SUM and **wheel**	Modify active output levels
CORR and **wheel**	Channel correction for channel selection (factor)
GR and **wheel**	Master fader for submaster system (Focus/Iris NT)
XFM and **wheel**	Master fader, crossfade system (Focus/Iris NT)
XFx and **wheel**	Focus/Iris: Master fader, crossfade system (Prisma NT)
EFF and **wheel**	Focus/Iris: Master fader, effect system (Focus/Iris NT)

X key: Deselect channels

Deselected channels are no longer influenced by the digital wheel or other manual operations.

X	Deselect all channels
chanrange X	Deselect channel range

Example:

1 - 3 X	Deselect channels 1 thru 3
' X	restore last selection deselected by key X

XF key: Actual preset of crossfade system

The XF preset contains the current output levels of the crossfade system both during and after crossfading.

XF	Select XF preset
CANCL XF	Clear XF preset
cue XF	Read cue into XF
+/- cue XF	Add/subtract cue
TAKE source XF	Copy levels to XF
TAKE XF dest	Copy levels from XF
XF and **wheel**	Prisma: Correct time profile of effect
	Focus/Iris: Master fader for crossfade system
TAKE +/- XF	Set preset priority

XFBO key: Blackout of crossfade system

XFBO	Blackout on/off
TAKE XFBO	Blackout on
CANCL XFBO	Blackout off

XFM key: Crossfade master fader

On Prisma NT:
Each crossfade system has its superordinate master fader.

XFM and *wheel*	Control master fader
TAKE *level* **XFM**	Set master fader direct
TAKE *level* **%** *time* **T XFM**	
	Fade master fader by time

Examples:

TAKE 50 XFM	Set master fader to 50%
TAKE FULL XFM	Set master fader to 100%
TAKE 10 % 5 T XFM	Fade master fader to 10% in 5 s