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Paradigm Touchscreen Theme Design Overview

Introduction:

ControlDesigner software provides a toolkit used for the creation of themes, called ThemeDesigner. This toolkit creates a resource package called the "Theme" that contains all graphics and sound information for Paradigm Touchscreens. This information is separate from the station's configuration file (*.lcdconf, or the component created by ControlDesigner). The configuration file is responsible for defining various pages, where UI objects exist on them, and how to navigate between them. The theme file defines how all the elements appear to a user. Themes are modular and its media resources may be exchanged with little to no impact to the configuration file, allowing for an entirely different UI experience.

Theme design, is the creation of the look (and sound) of a given user interface. In the end a given theme may serve a great number of users, so differing amounts of practicality must be considered during its design. The theme also does not normally dictate size of UI elements, such as a buttons or faders. Instead, the design must be fairly extensible to allow user flexibility when using it for UI design in ControlDesigner. At the same time the theme cannot bloat the overall theme size with excessive graphics or resolutions. For instance, consider that the 7" Paradigm Touchscreen's resolution is 800x480. A given button graphic might be best at 48x48 pixels, while a full-screen page skin should not be larger than 800x480 pixels.

Skins and Skin Sets

The theme affects all visible Touchscreen elements and is deployed in ControlDesigner through the use of Skins. A skin is a particular look for a UI element such as a button or fader. For organizational purposes skins are grouped into a skin set, or a collection of skins of similar style or look. Buttons need to indicate the state of their configured functionality, so each skin set should contain one skin used to indicate the button's function is "On" and another skin to indicate it is "Off". Paradigm control offers other additional states of indication and the typical or minimum sets of skins for each theme element are specified below.

To help align a skin's look to a useful purpose, each skin also supports a keyword that automatically selects the use of that skin when matched to the name of a State in ControlDesigner (typically just for buttons and faders). For instance, when a button is created, a theme's "On" button skin that is keyword tagged properly will be automatically deployed on a button State also named "On". This time saver deploys the designer's intended looks automatically.

Use of Image and Audio Files (Media)

In Theme Designer, all media included in a given theme is managed by the Resource Library. The entire contents of the Resource Library is delivered to, and stored on, the Touchscreen for a given theme. Always take care to remove unused media or minimize use of large files. The following image types are supported: .png (including animation/filmstrips), .gif (including animations), .jpg, and .xpm. Wave (.wav) files are also supported for short sound clips. The .wav files must be stereo 8 or 16 bit using the following sample rates: 8 kHz, 11 kHz, 22 kHz, and 44 kHz.

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Recommended Theme Elements:

Standard Themes, or those shipping with the software products, need to provide the following elements. If no detail is listed, at least a single skin will be required. Skins and skin sets should be named something sensible regarding their look rather than intended function.

New Themes should aim to provide at least the following elements listed as an outline below. Skins and skin sets should be named something sensible regarding their look rather than intended function. Using an ETC provided theme as a reference can be helpful in creating your custom theme.

1. Background
   a. 1 texture background skin (graphic repeated or "tiled" in x/y)
   b. 1 full-screen background skin (800x480 resolution)
2. Button (skins are listed by keyword each should be associated with, the actual skin name can be anything useful)
   a. 1 skin set with sounds.
      i. Off
      ii. On
      iii. Neutral – used as intermediate between On and Off or 'partially on'
      iv. Warning – animated blink
      v. Lockout
      vi. Override
3. Clock
   a. 1 analog skin
   b. 2 digital skins (one with and one without background image)
4. Color Button
   a. One required
5. Custom Keypad
   a. No skin needed. ControlDesigner will use the default Frame unless a skin is defined.
6. Date
   a. No skin needed. ControlDesigner Draws this independently
7. Dial Level Indicator
   a. One required
8. Digital Level Indicator
   a. 2 skins (one with and one without background image)
9. Fader
   a. 1 skin set without buttons
      i. Off
      ii. On
      iii. Lockout
   b. 1 skin set with buttons for increment/decrement (with button sounds)
      i. Off
      ii. On
      iii. Lockout

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10. Frame
    a. Skin with solid background
    b. Skin with translucent background

11. Keypad
    a. No Skin needed. ControlDesigner will use the default frame if no skin is created

12. Keypad Button
    a. No Skin needed. ControlDesigner will use the default button if no skin is created

13. Keypad Screen
    a. One required.

14. Label
    a. Off
    b. On
    c. Neutral
    d. Warning 1
    e. Special

15. Linear Level Indicator
    a. One required

16. Number Edit
    a. Skin with solid background
    b. Skin with translucent background

17. Popup
    a. Skin with solid background
    b. Skin with translucent background

18. Stopwatch
    a. Skin with solid background
    b. Skin with translucent background

19. Tab Widget
    a. At least 1 skin, prefer 2 styles

20. Table
    a. Skin with solid background
    b. Skin with translucent background

21. Time
    a. No skin needed. ControlDesigner Draws this independently

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Keywords

Keywords are used to identify where a specific skin should be used based on indicator state. Keywords should be used for Buttons, Labels and Faders, and each keyword should be used. Multiple keywords can be assigned to a single skin when necessary. Detailed information for the use of keywords can be found in the ThemeDesigner help system within the application.

The available keywords are:

- On
- Off
- Neutral
- Warning
- Override
- Lockout

Two additional keywords are used for buttons.

- Open
- Closed

Additional information on Keywords and theme properties can be found in the ThemeDesigner Online help system.

Color Hints

Color hints are used to allow ControlDesigner to automatically choose the best match for a control when switching between themes. This is a last resort option as ControlDesigner will first use Matching Skin names and Keywords to choose the best match. Detailed information on using Color Hints is available from the ThemeDesigner Help system.