

FreescalE Embedded Graphical User Interface

Complimentary GUI solution for FreescalE microcontrollers and microprocessors

Overview

The FreescalE embedded graphical user interface (eGUI) is a complimentary and lightweight LCD panel graphical user interface software driver for low-resource microcontroller and microprocessor systems. The eGUI allows system designers to easily add LCD-based graphical displays to their products without the conventional hardware or software overhead. It has primarily been developed to drive LCD panels with integrated display RAM and hardware LCD drivers (typically up to 1/4 (VGA)). However, support will be added in future releases for conventional microprocessors (MPUs) with integrated hardware LCD driver and external display RAM. The FreescalE eGUI has been developed to have an extremely small flash and RAM footprint so that graphical LCD panels can be driven by extremely small and simple microcontrollers (MCUs).

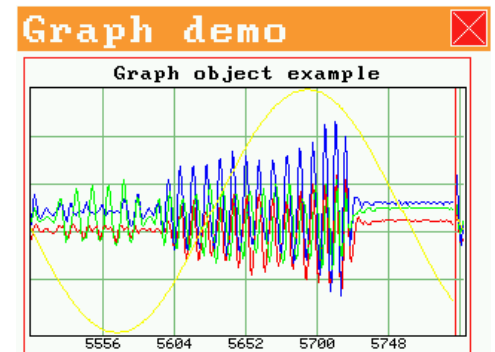
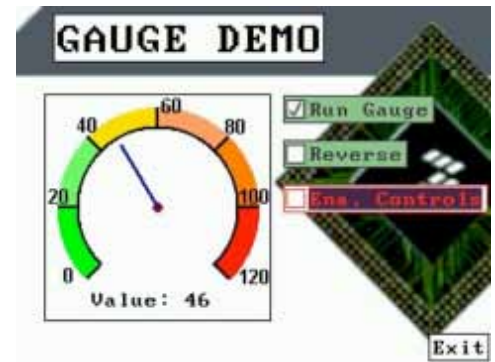
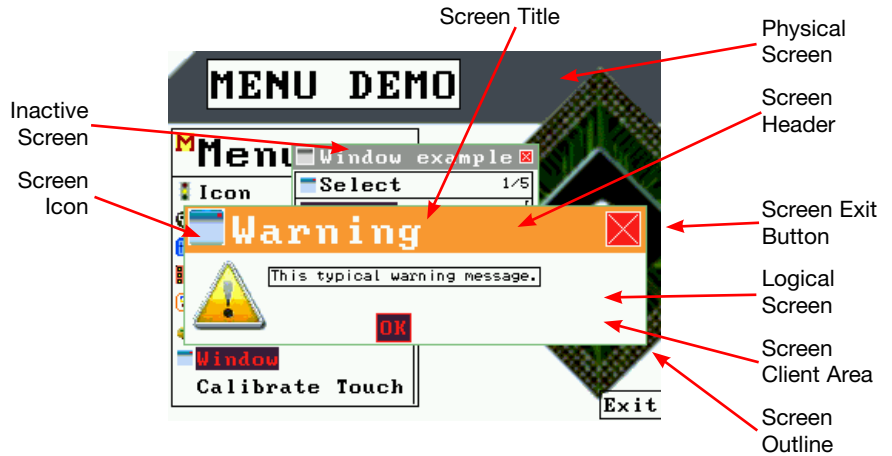
The FreescalE eGUI can be integrated into an existing system running without an operating system or can be used within an MQX-based operating system solution. The eGUI can also be used with other third-party operating systems such as embOS from Segger.

The FreescalE eGUI has been ported to the following architectures: HCS08, HCS12, and V1 and V2 ColdFire MCUs.

Features

The eGUI can generate user menu, graphics, images and text for display on the LCD module. It allows interaction with all objects, dynamically changing, adding or removing them, and also supports resistive touch screen overlays.

- Support graphical color LCD displays of various sizes
- Very small RAM (volatile) memory footprint
- Object style of driver
- Very smart support screen oriented structure of user code
- Custom screen sizes, position and header like a window
- Objects:
 - Button
 - Check box/user handled radio button
 - Gauge
 - Icon
 - Label
 - Menu
 - Picture
 - Slider
 - Graph
- Touch screen support
- Multiple font support
- Buffer for input keys



eGUI Structure

The image to the right shows the position of eGUI in a project.

- User application: Layer of user application code
- Application programmable interface: Interface layer between user application and eGUI
- eGUI high level: Layer that manages all screens and objects (redraws, input keys, touch screen events, etc.)
- LCD low level: Manages communication with LCD and provides some basic functions (draw line, bitmap, circle, etc.)
- Hardware: Freescale MCU board plus LCD

Hardware Interface Options

Hardware drivers have been created to drive both smart LCD panels with either SPI or parallel interfaces (support for conventional RGB LCD panels will be added in a future release).

Development Tools

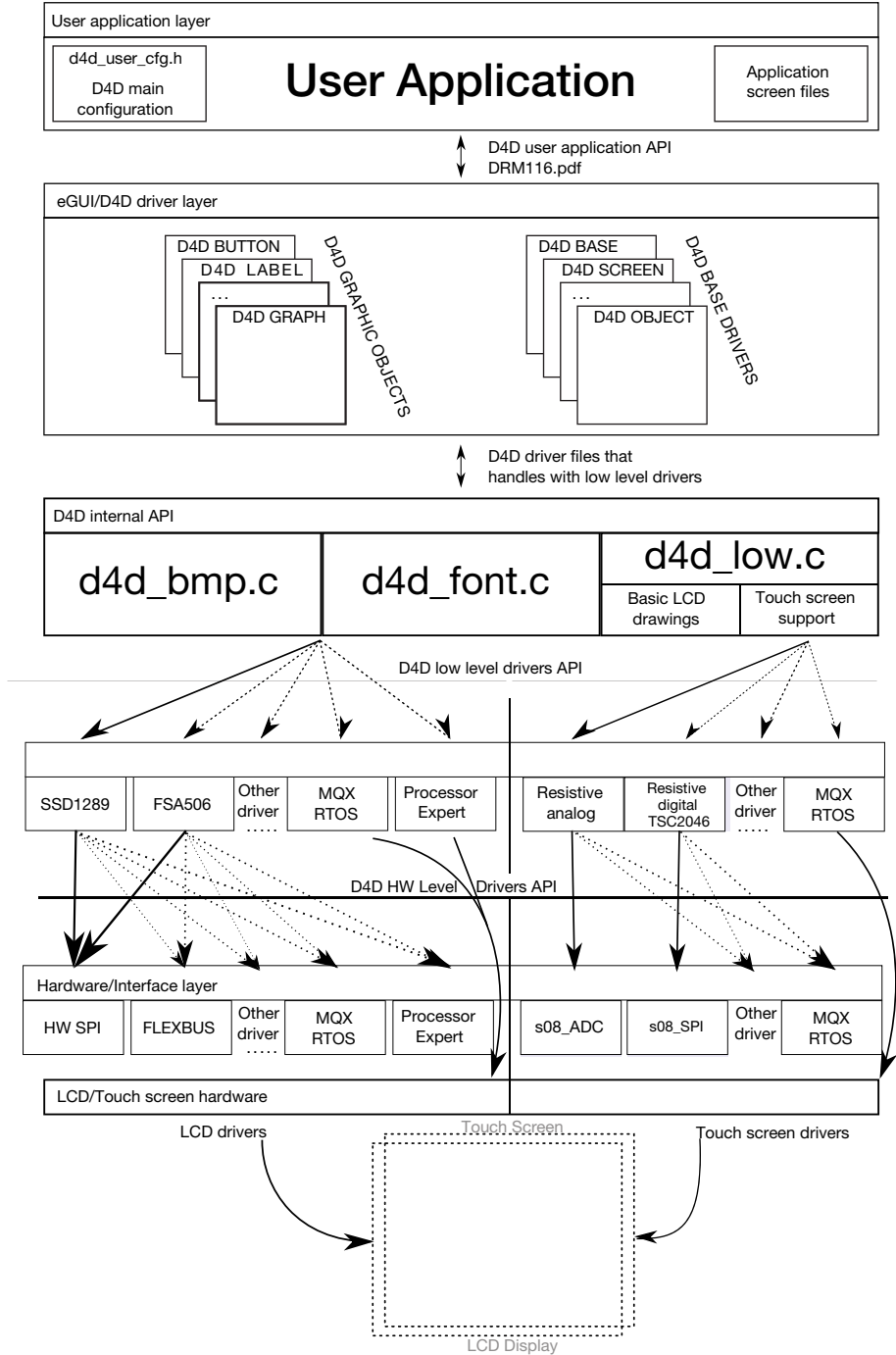
Demo examples are available to run on the Tower LCD board are available at freescale.com/towertcd.

eGUI resources

For more information in the Freescale eGUI, visit freescale.com/eGUI.



Freescale eGUI/D4D Low Level Drivers Structure



Learn More: For current information about Freescale products and documentation, please visit freescale.com.