NXP

freescale™

Freescale's PEG Pro, PEG Plus and PEG Lite Products

PEG Graphics Software

Freescale provides graphical user interface (GUI) solutions for embedded devices. Freescale's PEG Pro, PEG Plus and PEG Lite product offering includes a GUI library for embedded development that works elegantly with real-time operating systems. The graphical development solution tool allows developers to lay out user interface screens and controls using the PEG library and external resources to generate C++ code.

The PEG product family is designed to meet widely varying power, performance and memory requirements, helping to:

• Reduce product development risk

• Lower in-house development costs

• Accelerate time to market

PEG software accelerates GUI design for embedded devices by allowing developers to create prototypes on a Windows®- or Linux®-based PC by providing a complete visual layout and design tool to enable GUI design to take place in parallel to the embedded software/hardware development.

The PEG WindowBuilder automatically generates C++ source code that is ready to be compiled and linked into any application, further accelerating the deployment of the final product.

Freescale's PEG graphic solutions work hand in hand with real-time operating systems to incorporate LCD screens and display interfaces into future products. The GUI development tools address a variety of embedded systems, including consumer electronics, industrial, medical and communications markets.

GUI Interface— Three Basic Drivers

LCD Driver

• The LCD driver interfaces between the PEG Library and the LCD panel either through an onboard or external controller.

RTOS Driver

• The driver interfaces between the PEG library and the RTOS installed on the MPU. If an RTOS has not been selected, use the standalone driver to jump-start your development process.
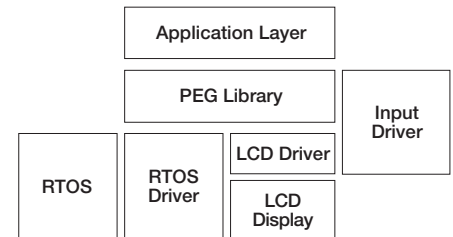
Input Drivers

• Inputs drivers available in multiple forms, including, but not limited to, a touchscreen, keypad or from other sources within the system, including support of Freescale Xtrinsic solutions.

PEG software also provides custom drivers for most LCD panels and controllers, RTOS systems, touchscreens and other input devices.

PEG's modular form enables a rapid development process.

• The core library interfaces to different RTOSs, input devices and LCD controllers by replacing the underlying drivers.
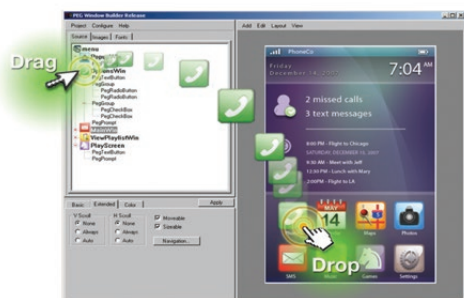
PEG Software Architecture

Application Layer

PEG Library

Input Driver

RTOS

RTOS Driver

LCD Driver

LCD Display

PEG Graphics Software

PEG Lite	PEG Plus	PEG Pro
• Free source-code license on Freescale silicon • Up to 16-bit color • Very small footprint • Basic widgets • Dual-language capable	• Multiple window updates • Alpha-blended images • Runtime image decoders and language resources • Custom widget integration • Dynamic themes • Multi-language capable	• Screen transitions • Blending of transparent images and windows • True anti-aliasing • Gradient manager • Transparent text with drop shadow effects
One of the smallest footprints and most efficient code bases available		
Starting at 42 KB Typical 42–52 KB	Starting at 48 KB Typical 48–72 KB	Starting 64 KB Typical 64–96 KB
The Professional Services team provides custom consulting and software development: driver development, UI development and graphic design.		

PEG Window Builder

Target Applications

Appliance	Consumer	General Purpose	Medical	Factory Automation
• Human-machine interface • Small home appliances • Large appliances	• Digital TV and set-top box applications • Handheld GPS units • Printers • Smart phones • Digital cameras	• Connected multimedia devices • Automotive infotainment • Home security systems • Test and measurement devices • POS kiosks	• Blood glucose monitors • Electrocardiogram • Ventilators • Patient monitors • Defibrillators	• Industrial automation • Human-machine interface

PEG Window Builder for Rapid Development

Window Builder allows a designer to layout each of the screens for a project through a simple-to-use interface, providing a "What You See Is What You Get" (WYSIWYG) display.

- Full WYSIWYG development
  - Simulation environment for PEG Lite, PEG Plus and PEG Pro
  - Runs on PC/Linux®/X11 to allow proof of concept development
  - Enables hardware/software development to happen in parallel
  - Made available for free evaluation

Benefits

- Reduce development time and costs
- Rapid user interface development
- Resolve product usability issues before committing to a physical design
- Standardize on graphics software solutions across products
- Differentiate your product with a sophisticated user experience
- Flexibility in selecting the processor/graphics controller

Features

- Highly customizable, small footprint for cost-sensitive applications
- Multilingual support, including Unicode
- High color, including true anti-alias line and font drawing support and per-pixel alpha blending
- Designed for cross-platform application development, highly portable across OS and CPUs
- Screen transition effects: slide-in, wipe and fade
- Touchscreen support
- Support for multiple graphics layers
- Runtime "theme" support
- Button, sliders, scrolling text, dials, progress bars, multiline text box and spreadsheet
- Integrated font creation and image conversion utilities

Supported Ecosystem and Partners

RTOS

- Freescale MQX™ RTOS software
- Mentor Graphics Nucleus®
- Express Logic ThreadX®
- Green Hills Software INTEGRITY
- ARM®, ARM Keil® RTX, ARTX
- Micrium µC/OS-II
- Can be integrated with any RTOS

Hardware

- Freescale ColdFire and Kinetis MCUs, i.MX applications processors and Power Architecture® technology-based processors
- All ARM cores, including NXP and Samsung
- Can be supported for any vendor silicon

Free evaluation: freescale.com/PEG

For other licensing options, please contact **pegsales@freescale.com**.

Pricing subject to change. For current pricing, contact a sales representative.

For more information, visit freescale.com/PEG