Fact Sheet

PEG GUI Development Tools
Any LCD. Anywhere.

SWELL software

Swell Software provides graphical user interface (GUI) solutions for embedded devices. Swell's PEG Pro, PEG+ and C/PEG product offering includes a GUI library for embedded development that works tightly with real-time operating systems. The development tool allows developers to layout user interface screens and controls using the PEG library and external resources to generate C/C++ code.

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

Swell's GUI software products work hand in hand with Freescale customers' 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 on-board or external controller.

PEG Pro	PEG+	C/PEG
• Screen transitions • Blending of transparent images and windows • True anti-aliasing • Gradient manager • Open GL support • Written in C++	• Multiple window updates • Alpha-blended images • Runtime image decoders and language resources • Custom widget integration • Dynamic themes • Written in C++	• Designed for small LCDs (QVGA) • Low color depth • Very small footprint • Single window update • Multi-language capable • Written in ANSI C
One of the smallest footprints and most efficient code bases available.		
Starting 64 KB Typical 64–96 KB	Starting at 48 KB Typical 48–72 KB	Starting at 42 KB Typical 42–52 KB
Professional Services team provides custom consulting and software development: driver development, UI development, graphic design.		

RTOS Driver

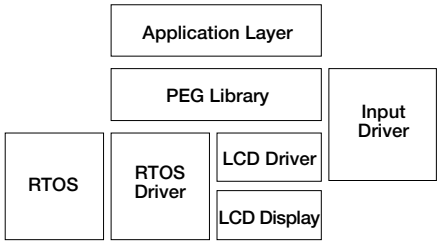
- The driver interfaces between the PEG Library and the RTOS installed on the MPU. If an RTOS has not been selected, use the standalone driver to jump start your development process.

Input Drivers

- Inputs drivers available in multiple forms, including, but not limited to, a touch screen, 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, touch screens and other input devices.

PEG Software Architecture



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+ 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

PEG's modular form enables a rapid development process

- The core library interfaces to different RTOSs, input devices and LCD controllers by replacing the underlining drivers.

freescale™

Features

- Highly customizable, small footprint for cost-sensitive applications
- Multi-lingual 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, fade
- Touch screen 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

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

Supported Ecosystem and Partners

RTOS

- Analog Devices VDK
- Mentor Graphic Nucleus
- Micro/sys Phar Lap ETS
- CMX RTX
- eCosPro
- Freescale MQX™
- ENEA OSE
- eSol PrKernel eT-KERNELv4
- Express Logic ThreadX
- Green Hills INTEGRITY
- C Executive
- Kadak AMX
- Keil RTX, ARTX
- LynuxWorks LynxOS
- Micrium uC/OS-II
- Micro Digital SMX
- WinCE, 2000, XP, Vista
- On Time RTOS-32
- Quadros RTXC
- Any uITRON compatible RTOS
- WindRiver VxWorks

Silicon

- Freescale ColdFire and Kinetis MCUs, and i.MX and Power Architecture® processors
- Renesas H8,SH
- MIPS R3000, R4000
- All ARM® cores including NXP and Samsung
- Intel/Marvell StrongARM
- Altera Nois II
- Analog Devices Blackfin
- Texas Instruments

Target Applications

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

Discount Available for Freescale Silicon

Non-Freescale Silicon	C/PEG		PEG+		PEG Pro	
PEG Base Single Product/MCU (3 seats, <=10K units, 1 year support)[1]	N-PEGC-LIC-PB	$6,000	N-PEGL-LIC-PB	$8,400	N-PEGR-LIC-PB	$9,000
Upgrade: Unlimited Runtime for PEG Base	N-PEGC-LIC-UR	$12,000	N-PEGL-LIC-UR	$16,800	N-PEGR-LIC-UR	$18,000
Upgrade: Same MCU across Product Family (+3 seats, unlimited runtime)[2]	N-PEGC-LIC-FS	$30,000	N-PEGL-LIC-FS	$42,000	N-PEGR-LIC-FS	$45,000
Upgrade: Multi MCU across Product Family (+6 seats, unlimited runtime)[3]	N-PEGC-LIC-FM	$48,000	N-PEGL-LIC-FM	$67,200	N-PEGR-LIC-FM	$72,000
Additional Seat	N-PEGA-LIC	$1,875	-	-	-	-

[1] Specific to the processor used and the specific name and model of the customer end product
[2] Supports a family of customer end products that use the same processor
[3] Supports a family of customer end products that use multiple processors
Support is available at an additional cost. All pricing is subject to change. For current pricing, please contact a sales representative.

Free evaluation: swellsoftware.com

For other licensing options, please contact sales@swellsoftware.com

1-810-385-2893

For more information, visit swellsoftware.com

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