



PEG Pro™

Graphics Software for Embedded Systems

A High-Performance Graphical User Interface Solution



PEG Pro™ offers developers of embedded graphical user interfaces (GUIs) a proven software solution for creating complex, high-color depth embedded graphic applications. Designed specifically for use in the development of GUI applications in automotive, consumer electronics, infotainment and medical devices, PEG Pro runs on a wide variety of real-time operating systems (RTOSes) and microprocessors.

Design a Compelling User Experience

PEG Pro enables the design of sophisticated embedded graphics by supporting the key features and advanced applications demanded by interactive devices such as navigation systems, cell phones, gaming systems and medical electronics.

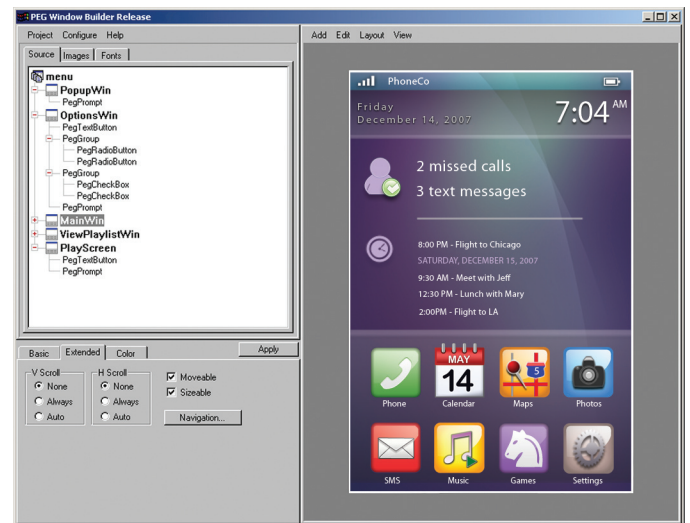
PEG Pro accelerates product delivery by providing robust functionality such as drag-and-drop visual development tools and the ability to begin development on a Windows or Linux platform. Key features include unlimited graphics layers, per-pixel and per-layer alpha blending, bitmap rotation and scaling, screen transitions, text rotation and complete anti-aliasing of all drawing primitives. In addition, PEG Pro provides run-time selection of themes to allow end-users to tailor their experience. PEG Pro supports a wide range of color depths up to 32 bits per pixel (bpp).

PEG Pro includes a broad set of basic control types such as buttons, text gadgets, animations, menu-list display and bitmap display objects. All of these display widgets can be fully customized, both at compile time and at runtime. PEG Pro offers advanced classes such as tree-view, spreadsheet and charting classes. Rotated screen mounting is seamlessly supported.

Accelerate Time to Market

PEG WindowBuilder™ is a complete visual layout and design tool included with PEG Pro. PEG WindowBuilder automatically generates embedded C++ source code that is ready to be compiled and linked into the application. This visual development environment allows for rapid prototyping of embedded interfaces, validating the design concepts and usability for key stakeholders by adding an interactive device “frame” to the graphics window simulation.

Custom user-supplied control types, graphics and fonts can easily be incorporated within the PEG WindowBuilder environment, allowing custom interfaces to be designed using simple drag-and-drop techniques. Interface personalization is further simplified through resource files which may be compiled within the application or provided on the device for run-time selection of new themes and language support.



Features

- Support for multiple hardware graphics layers
- True anti-alias line and font drawing
- Per-pixel alpha-blending
- Run-time “theme” support
- Screen transition effects – slide-in, wipe, fade
- Complete multi-language support, including UNICODE
- Support for a wide variety of input devices
- Highly portable across OS & CPUs
- Small memory footprint for cost-sensitive applications

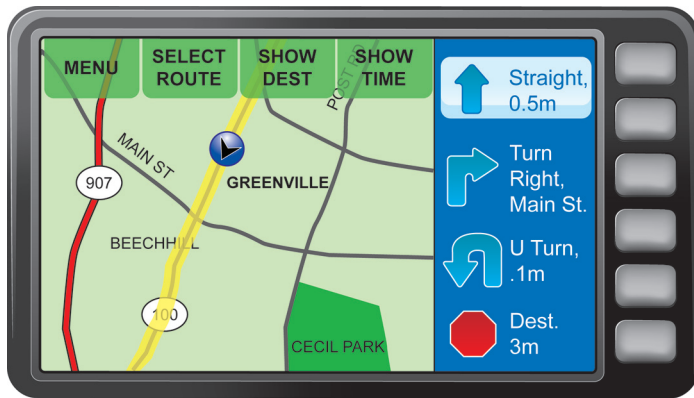
Benefits

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

Maintain Your Brand Identity

Unlike other solutions, PEG Pro GUI elements can be fully tailored, allowing OEMs to create user interfaces that maintain and accurately reflect the company's brand image – not one which another company has selected for you.

PEG Pro graphics can be overlaid on real-time video and alpha blended using multiple graphical layers. The PEG Pro library is easily configured for a variety of display resolutions, orientations and color depths, supporting a wide range of color formats up to 32 bits per pixel (bpp).



Anti-aliased fonts and line drawing allows the rendering of high-quality interfaces demanded by today's users. Industry leading multi-lingual application support includes full Unicode and SJIS character encoding support, and string table editing and string resource file generation facilities incorporated within the WindowBuilder StringTableEditor.

Designed for the Requirements of Embedded Systems

PEG Pro is written with the embedded market firmly in mind, meaning that the value of every feature is weighed against the code size and performance requirements for that feature.

A minimum PEG Pro footprint requires roughly 220K of code space, 8K of stack space and 32K of dynamic memory. A typical full-featured GUI requires a PEG Pro footprint of roughly 240K code, 8K stack and 32K dynamic memory.

PEG Pro is fully integrated with RTOS messaging, memory management and synchronization services to provide the lowest possible overhead and a true real-time multitasking GUI environment. PEG Pro input devices are interrupt driven, and again use RTOS services to communicate user input information to the graphical user interface.

PEG Pro can also be configured to support multiple GUI tasks. These tasks can be of differing priorities and can each directly create, display and control any number of GUI windows or child controls. This advanced capability is unique to the design of PEG Pro.

Rapidly Prototype on Windows or X11

PEG Pro provides a set of hardware and OS encapsulation classes which allow the PEG Pro user interface to run as a standard 32-bit Windows or X11 application. In addition, users can create and test the entire user interface while using the very mature Windows® or Unix application development tools. PEG Pro supports leading Unix platforms including Linux®, LynxOS®, NetBSD® and Solaris®. The flexibility to begin work on a Windows/X11 development platform accelerates product delivery by allowing developers to simply re-compile the PEG Pro library and application software for the target device with the customers preferred target development tools.

Learn More

For more information on products from Swell Software, visit www.swellsoftware.com or write sales@swellsoftware.com.

Swell Software

US: +1-810-385-2893



Compiler Support

The PEG Pro library has been fully verified with all the most popular embedded compilers including Green Hills MULTI, Metrowerks CodeWarrior, MetaWare, IAR, ARM ADS and RVDS, Borland, Microsoft, Renesas HEVW, STMicroelectronics, Paradigm, Watcom, GCC, Tasking, TI Code Composer, Analog Devices VisualDSP++, and Microtec C/C++.

Input Devices

PEG Pro can be configured to support any combination of mouse, keyboard, touch-screen or membrane keypad input.

Processor Support

PEG Pro can be used with nearly any 32-bit embedded CPU. PEG Pro performance is enhanced through the use of hardware accelerated graphics controllers supporting multiple layers and 2D graphics acceleration. A partial list of supported CPU types includes:

- Altera NIOS II family of cores
- Analog Devices Blackfin family of processors
- ARM9 & ARM11 architectures
- ARC cores
- Atmel AT91SAM926x, AVR32
- Cirrus Logic Maverick family of processors
- Freescale ColdFire, i.MX, and PowerPC family of processors
- Intel 80386, Pentium, Itanium, Athlon, and other x86 derivatives
- Renesas SH family of processors
- Marvell PXA family of processors
- MIPS R3000, R4000 architectures
- Texas Instruments DaVinci & OMAP family of processors

Display Output

PEG Pro supports color depths of 16-bpp (65K), 16-bit + alpha, 24-bpp (TrueColor) RGB or BGR, and 24-bit + alpha (ARGB). For application requirements at lower color depths, Swell Software offers a range of products targeted to these applications. Any x, y display resolution may be used, including custom resolutions and profile orientation or rotation of the display device. Many CPUs include built-in video/LCD control, while external video/LCD controllers may also be used. For a complete list of currently supported controllers, please contact Swell Software or visit www.swellsoftware.com.