



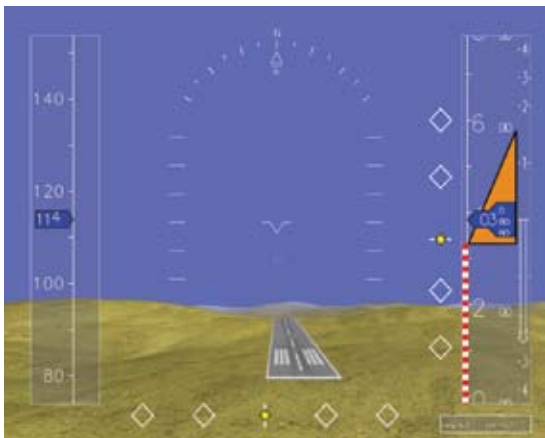
ALT Software Inc.

Embedded OpenGL Driver Kits

ALT Software provides feature-rich OpenGL display drivers for embedded computing systems that employ hardware accelerated graphics. Performance-tuned for resource constrained devices, these graphics libraries are fully customizable and offer native support for several system configurations (i.e. main computer board / graphics card / operating system). ALT's 2D/3D OpenGL drivers are used in aerospace and defense systems, consumer devices, automotive infotainment platforms, industrial controls, and medical devices.

Features

- Platform independent OpenGL graphics API
- Processors supported: Freescale and IBM PowerPC, Renesas SH4, Intel x86 (Pentium III, IV, M), ARM
- Graphics controllers and SOCs supported: ATI Mobility Radeon 9000 (M9) and X1400 (M54), Fujitsu Coral P/PA, Carmine and Ruby
- SOCs Supported for OpenGL ES 1.1: Freescale MPC5121e, Texas Instruments OMAP2
- Operating systems supported: Embedded Linux, Green Hills INTEGRITY, Deos™, QNX Neutrino, Windows XP, Windows XP Embedded, Wind River VxWorks
- Small memory footprint
- Comprehensive video handling features
- Hardware cursor support
- Mini-X compact X-Windows subset
- Dual display support
- Optional full X11R7 package available
- Optional WindML Integration package available



Applications

- Aerospace & Defense
- Avionics
- Automotive Infotainment
- Consumer Electronics
- Industrial Controls
- Medical Devices



Customization Services

ALT Software offers system integration services, comprehensive technical support, and custom configuration support to assist clients with integrating the driver into a target environment or adding functionality when required. Our services include supporting platforms without an operating system. With over ten years experience developing embedded graphics display drivers, ALT is a trusted provider of device level graphics solutions for hardware and RTOS vendors such as GE Fanuc Embedded Systems, Curtiss-Wright Controls Embedded Computing, AiTech Defense Systems, Green Hills Software, and Wind River Systems.

Modular Architecture

ALT's OpenGL drivers are designed with a modular architecture to minimize and isolate the coding changes required to move between target systems. This lessens the impact of developing for different platforms, operating systems, and graphics controllers. A common interface between the components simplifies integration and testing of custom modules and enhances the overall robustness of the driver.

About ALT Software

ALT Software provides system level software products and development services that enable graphics, audio, video, and networking functionality in embedded devices. Our services include project management, device driver development, QA testing, and performance optimization. Our graphics kit family includes the GEK-178, a complete DO-178B Level A certifiable 2D / 3D graphics display driver and certification package for military and commercial aircraft cockpit display systems.



For more information contact:
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Graphics Controllers and SOCs Support

- GE Fanuc Embedded Systems G2 Basic/Dual/Plus
- Aitech M59x
- Curtis-Wright Controls Embedded Computing PMC-704/706
- ATI Mobility Radeon 9000/9200/9250 PCI/AGP and X1400 PCI/PCle
- Fujitsu Coral P/PA/Carmine/Ruby Reference Board
- Freescale MPC5121e Reference Board for OpenGL ES 1.1
- Texas Instruments OMAP2 Reference Board for OpenGL ES 1.1

Base Driver Features

- Support for OpenGL, OpenGL ES
- Support for GLUT 3.7, GLU 1.3, GLX 1.2
- Small footprint Mini-X Windowing API
- Direct mode rendering
- Supports both DMA and PIO
- Variable sync modes
- Resides in application space
- Texture size up to 4096 x 4096

Graphics & Video Support

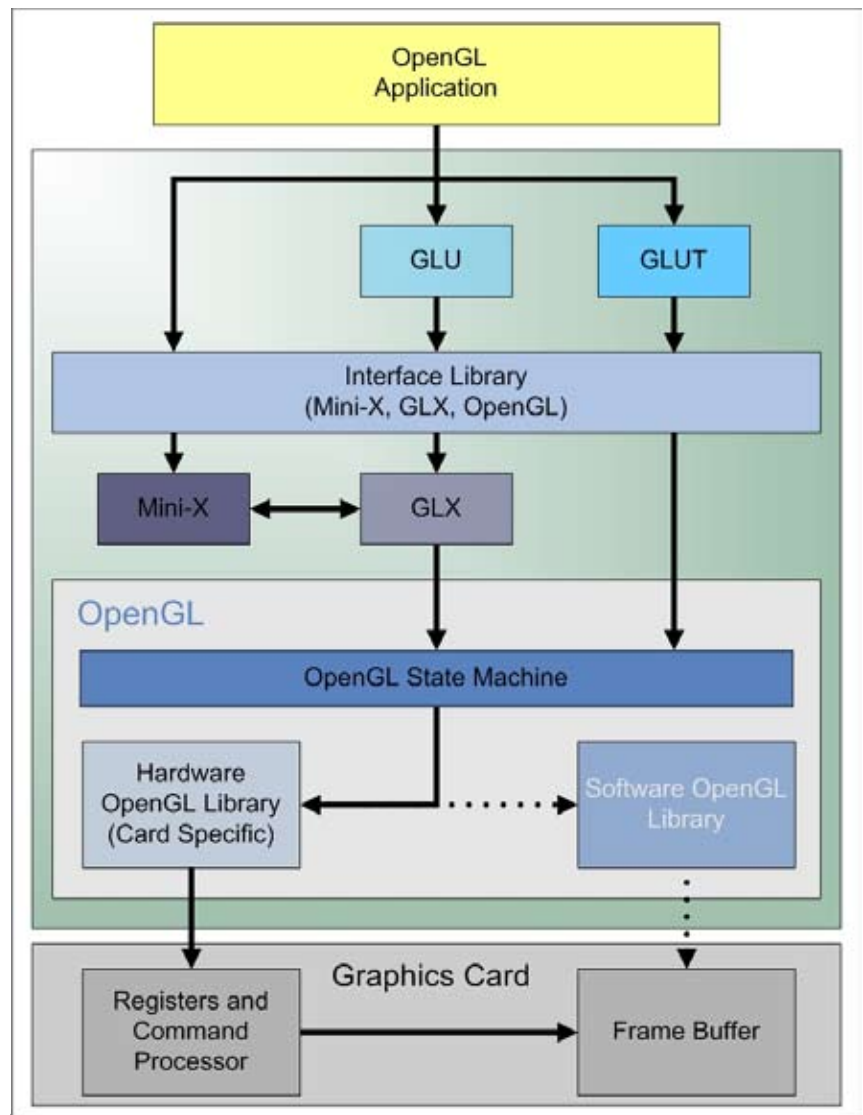
- Video as a texture or overlay
- Adjustable gamma
- De-interlacing support
- RGB Analog, DVI, LVDS, NTSC, PAL, STANAG 3350
- Custom resolutions up to 2048 x 1536
- 2 simultaneous and independent outputs per graphics controller

2D Acceleration Support

- BitBLT
- Line draw
- Polygon and rectangle fill
- Scissoring
- Raster operations
- Double buffering
- Hardware cursor

3D Feature Support

- Lighting effects
- Multiple clipping planes
- Geometry culling and clipping
- All 3D primitives
- Fog effects
- Alpha blending
- Point sample, bilinear and trilinear filtering
- Bump mapping



Mini-X Windowing

ALT's general purpose OpenGL graphics drivers include Mini-X, a compact windowing API that allows a user to run an application within multiple Windows or to run a single Window in full screen mode. Mini-X is particularly suitable for deployment in limited-memory systems for which a full X-Server implementation is impractical.

Memory Management for Limited-Memory Systems

Standard OpenGL assumes unlimited memory and a hard disk for virtual or paged memory support. ALT's OpenGL drivers provide optimized memory management functions that coordinate allocation between processes in limited-memory systems and systems with only physical memory.

