

# SciTech

## SOFTWARE

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### *Product Line Overview*

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*(pricing and features subject to change without notice.  
Please call or check WWW site for current pricing)*

This file contains an overview of the software products that SciTech Software offers. Evaluation versions of all our products are available directly from our ftp and World Wide Web sites and on most major online services.

#### **About SciTech Software**

##### ***Our Mission:***

With our current stable of products, we are aiming to give you the maximum performance possible out of the available hardware, while maintaining portability.

All of our tools are written to be as fast and efficient as possible, but they are also written to be highly portable. We have already achieved complete portability between DOS and Windows with our new WinDirect 2.0 package, and we are heading towards providing the same sort of performance and portability to the OS/2 operating system as well.

One of the goals that we strive for is maximum portability between operating systems. We want all our code (and your code) to be so portable that you can swap operating systems simply by changing a few #define's and recompiling your code. We have achieved this with the latest version of our MGL graphics library; we can recompile for 16 bit DOS, 32 bit DOS or 32 bit Windows just by changing a few #defines and hitting the compile key.

#### **Downloading the Files**

You can download evaluation versions of most of the programs listed here from our FTP or World Wide Web sites. We also have a limited presence on most of the major online services. Since SciTech Software does not moderate those forums, some of the files and information may not be fully up to date. If you are using one of these online services, you may wish to check our ftp site for the most up to date information.

www	: www.scitechsoft.com
ftp	: ftp.scitechsoft.com (/devel)
America Online	: Keyword VESA
CompuServe	: GO VESA

## ***End User Products***

This section describes all the SciTech Software end user products, designed to help increase your productivity and enhance the compatibility of your system.

### **Universal VESA BIOS (UniVBE) 5.1a**

**\$28**

UNIVBE, the Universal VESA BIOS driver, makes super VGA cards compatible with VESA BIOS Extension (VBE 2.0) programming standards so that games, CD-ROMs, utilities and other applications will work properly (and faster) in high resolution modes. It also includes chip detection, power management, monitor centering and compatibility & performance testing utilities. It now supports over 160 different SVGA chips. NOTE: VESA VBE is a software standard, so even if you have a PCI graphics card, you still need to load a VESA VBE driver; VBE is different from VESA Local Bus.

UniVBE also makes available number of new high performance low resolution video modes so the latest SuperVGA games can run with the absolute maximum performance on your system.

This same technology is also available (in linkable form only) for license by software developers (see OEM Products).

## ***Developer Products - Professional***

This section provides details of all the SciTech Professional Developer Products. All Professional Developer Products are provided with libraries for most popular compilers (Borland, Microsoft, Symantec and Watcom).

### **MegaGraph Graphics Library (MGL) 2.0 (DOS or Windows)**

**\$299<sup>95</sup>**

The MegaGraph Graphics Library (MGL) is a full featured 32 bit graphics library for high performance graphics programming on PC compatibles. It provides fast, low level rasterisation of 2D and 3D primitives, that can be used for computer games, user interface software and other real-time graphics applications. The MGL fully supports all graphics resolutions from 320x200 right up to 1600x1200, with any pixel depth from 4 bits per pixel right up to 32 bits per pixel. The MGL is also the very first graphics library to fully support the new VESA VBE 2.0 standard.

The MGL currently supports development under both DOS and Windows, and an OS/2 version is under development. When running under Windows, the MGL can be used for rendering in a windowed environment under Windows 3.1, Windows '95 and Windows NT. When running under Windows 3.1, the MGL will use the WinG library for high performance output with support for 8 bit color depths. When running under Windows '95 or Windows NT 3.5, the MGL will use CreateDIBSection with support for all color depths from 8 bits to 32 bits per pixel.

The MGL for Windows also fully supports full screen graphics under Windows 3.1 and Windows '95 using our WinDirect library (available separately; see below). WinDirect provides high performance, full screen graphics in any supported video mode independent of the current Windows graphics mode.

MGL 2.0 also includes the Techniques Class Library and the Zen Timer Library freeware developer tools for your convenience. The source code is not provided in the base MGL, but is provided in the MGL Plus Pack, or you can download the freeware archives from our ftp site. For complete descriptions, see descriptions in "Developer Products - Freeware" below.

You can download the evaluation versions of the MGL to try out the libraries, however when you order the full retail version of the MGL you will also get full support for the DLL version of the MGL (Windows/OS2 versions only), plus nearly 300 different bitmap font and vector font files.

## **MGL 2.0 Plus Pack (DOS or Windows)**

**\$99<sup>95</sup>**

The MGL Plus Pack is a set of useful utility libraries for the MGL that have been developed by SciTech Software. Libraries are provided for performing 2D and 3D vector math and transformations, realtime 2D rendering including arbitrary rotations, scales and shears, realtime 3D rendering including arbitrary parallel and perspective viewing with wireframe, flat shaded and smooth polygons, a 3D modelling system for easy scene management, a C++ abstract data type class library, a C++ GUI framework and a set of makefile utilities.

All of the libraries (except the 2D/3D math library) are provided with full source code so you can see just how all this stuff works with the MGL. Most of the libraries have very sparse documentation and are provided on an as is basis and are not supported directly by SciTech Software. The libraries were developed in house by SciTech Software and made available in the hope that our customers may find them useful in order to take full advantage of the MGL's capabilities. Both the 2D and 3D GUI demo programs supplied with the MGL require the Plus Pack if you wish to rebuild them.

All libraries are provided pre-built for all supported compilers. Following is a brief description of each of the libraries in the MGL Plus Pack:

### **MegaVision GUI library**

The MegaVision is a C++ based GUI toolkit for the MegaGraph Graphics Library and is the GUI library that was used to build the MGL demo programs. The MegaVision is a fully object oriented user interface library and provides support for moveable, resizable windows and pull down menus. Full source provided.

### **Fixed/Floating Point transform library**

This is a C and C++ library that provides high performance fixed point or floating point math functions for both DOS and Windows. This library has been designed to provide the ability to write a single set of source code that can be compiled to use either 16.16 fixed point numbers or full floating point numbers.

High performance functions are provided for common math functions like trig functions, 2D, 3D and 4D vector math functions and 2D and 3D transformation matrices. All code has been hand tuned for maximum speed on Pentium processors and this library provides the mathematical foundation for the Quick2D, Quick3D and QuickModeller libraries. No source code provided.

### **Quick2D rendering library**

The Quick2D library is a C++ rendering library that provides a fast fixed/floating point two dimensional world coordinate system on top of the MGL. It provides full support for arbitrary 2D transformations such as translates, rotates, scales and shears. It provides 2D versions the MGL primitives such as pixels, lines, ellipses, polygons and even vector font text output (fully transformed). It relies upon the fixed point library for fast vector and matrix math functions. Full source provided.

### **Quick3D rendering library**

The Quick3D library is a C++ rendering library that provides a fast fixed/floating point three dimensional world coordinate system on top of the MGL. It provides support for arbitrary 3D transformations such as translates, rotates, scales and 3D viewing transformations. It provides 3D primitives such as pixels, lines, ellipses, polygons and even vector font text output (fully transformed). It relies upon the fixed point library for fast vector and matrix math functions.

This library is written entirely in C++ and hence is not as fast as it could be. In fact there are many parts of this library that can be sped up, but it was developed as an experimental 3D library to prototype many of the concepts that will hopefully become available as a new, high performance 3D library running on top of the MGL. This is the

library that is used by the MGL 3D demonstration programs.

### **QuickModeller 3D modelling library**

The QuickModeller 3D modelling library is a hierarchy of C++ objects that can be rendered directly using the MGL. It provides support for building complete modelling hierarchies and provides support for single polygons and polygonal models. There is much that can be done do this library, and it is intended as a guide to show how you can develop a high performance modelling system on top of the MGL and Quick3D. Full source is provided.

## **WinDirect 2.0**

**\$99<sup>95</sup>/\$599<sup>95</sup>**

WinDirect is a runtime package for Windows 3.1 and Windows '95 that provides direct access to the display hardware, for both 16 bit and 32 bit Windows applications. Traditionally Windows applications have had to perform all graphics output using the standard Graphics Device Interface (GDI). Although the GDI is very extensive and powerful, it is also not particularly fast for the sort of graphics that real time applications like interactive video games require.

WinDirect breaks this barrier by allowing high performance applications to shut down the normal GDI interface, and to take over the entire graphics display hardware. Once GDI has been shut down, interactive graphics applications can re-program the display controller and write directly to video memory. WinDirect applications can program any standard VGA video mode, such as 640x480x4 or 320x200x8, or it can re-program the controller and run standard VGA ModeX style graphics, and even call the standard VESA BIOS routines to run high resolution SuperVGA graphics.

WinDirect also includes a Windows version of the PM/Pro library, which provides services for calling real mode code, directly accessing linear framebuffer memory on SuperVGA devices, and for providing a virtualised framebuffer for SuperVGA devices that do not have a hardware linear framebuffer.

But best of all, WinDirect applications are still standard Windows applications, so you can use all the standard Windows multi-media API's for digitised sound, CD-ROM audio, networking etc.

WinDirect 2.0 is available in two single product distribution licenses. The first costs \$99.95 and entitles you to ship up to 20,000 copies of a single product incorporating WinDirect. The second costs \$599.95 and allows you to ship an unlimited quantity of a single product incorporating WinDirect.

## ***Developer Products - Freeware***

This section describes all the SciTech Software Freeware Developer Products. All the Freeware Developer Products are provided with both pre-compiled libraries for popular compilers and full source code so you can compile the libraries yourself. All freeware products may be used for no charge in shareware and commercial applications. The code is *not* public domain code, but is fully copyrighted code (C) SciTech Software. These products can be downloaded free of charge from SciTech's Internet site, or we can ship them via airmail for a nominal fee.

### **SuperVGA Kit 5.2**

#### **FREE (download)**

The SuperVGA Kit is an extensive, low-level source code library showing how to program VESA VBE SuperVGA video cards in all video mode resolutions. Includes full support for 32 bit protected mode programming and support for the new VBE 2.0 specification. VBE 2.0 support includes full 32 bit protected mode bank switching functions and full flat linear frame buffer access for maximum performance. Includes an ASCII text version of the VBE 2.0 specification. If you want to learn the low level details of how to interface properly to VBE 1.2 and VBE 2.0 SuperVGA video cards, then this is the library for you.

Requires the PM/Pro library for low level DOS extender specific details.

## **PM/Pro 2.2**

### **FREE (download)**

The PM/Pro library is an extensive, DOS extender interface source code library. This library provides a high level, DOS extender and compiler independent interface to all the common low level DOS extender functions that DOS developers need to use in their applications. By sticking with the PM/Pro interface you can re-compile and link your application code with any of the supported compilers and DOS extenders. Provides support for allocating/freeing memory blocks, mapping real mode memory, creating/destroying selectors, mapping physical memory locations and high performance interrupt handling (timer, keyboard, mouse etc). Also contains full support for virtual linear framebuffer virtualisation under DOS with Watcom C++ and the DOS4GW or PMODE/W DOS extenders. Supports all common 16 and 32 bit DOS extenders and compilers, including real mode compatibility support.

This library is used by all SciTech Software products so that all DOS extender dependant code resides in this single library, and pre-compiled versions of the library are usually provided with all SciTech Software products for the supported compilers.

## **Console 1.0**

### **FREE (download)**

The console library is an efficient and high performance console output library that renders text by drawing directly to the video display for maximum performance. Provides similar support to the Borland conio output routines but is faster and more powerful. All of the code is contained in a single C module and can be compiled and used with any of the supported compiler/DOS extender combinations that the PM/Pro library supports. Can even be compiled and used from WinDirect to provide a text mode interface for Windows.

## **Techniques Class Library 1.0**

### **FREE (download)**

The Techniques Class Library is high performance C++ class library for neatly implementing various data structures in C++. It uses the C++ template facility to provide type-safe generic data structures such as arrays, stacks, queues, linked lists, hash tables etc. This library is used by all SciTech Software's C++ products as the low level data structure class library.

## **Zen Timer Library 2.2**

### **FREE (download)**

This is a 'C' callable library for timing code fragments with an accuracy of better than 10 microseconds under the MSDOS operating system and 1 millisecond under Windows. The code was originally written by Michael Abrash for his book "Zen of Assembly language - Volume I, Knowledge" and was made into a 'C' callable library with a set of C++ wrapper classes. This latest versions supports an identical API under DOS, Win16 and Win32.

## ***OEM Distribution Products - Device Support***

This section provides describes our device support Products for distribution with your software titles. The OEM products are not available through normal retail channels and must be licensed directly from us. Please contact us directly if you are interested in these products and to obtain licensing and pricing information.

SciTech Software's OEM distribution products are used in hundreds of commercial applications where 100% compatibility is essential, including high performance video games and end user applications.

## Universal VESA BIOS (UniVBE) 5.1a - Shareware

**\$49<sup>95</sup>**

*(one-time fee)*

*(See description in "End User Products" above).* This allows you to bundle the latest UNREGISTERED shareware release of UniVBE with your product. This is the lowest cost way to get the best in SVGA device support for your product into your users' hands. If they run into problems with their video card, you can have them contact their graphics card vendor, or they can load our driver and fix the problem without another phone call. All that we ask in this agreement is that you always include the latest version of UniVBE when you master or re-master your product.

### UVBELib Device Support Libraries (DOS or Windows)

#### Call for pricing

The UVBELib libraries are linkable library versions of our popular UniVBE device driver for the MSDOS (Windows 3.1&95 support coming in Q4, 95) operating system. It is linked directly into your applications code, and loads a standard UNIVBE.DRV file to provide the device support. The loader library itself is only about 5Kb in size and requires about 10Kb to load the driver file. The driver files are generated by our standard device support configuration program that is distributed along with your application, which now supports over 160 different SVGA chips. The latest versions are also fully plug and play and will automatically detect if the user has changed their video card configuration and will re-run the configuration program automatically to generate a valid device driver file.

The UVBELib API consists of only two function calls; one to install the device support and another to remove it. Once the device support library is installed, it installs full support for the latest VBE 1.2 or 2.0 standards. Hence you don't need to change a single line of code to use this library, just link it in and you are done.

The UVBELib library supports both 16 bit real mode (UVELib/Accel is 32-bit only) and 32 bit protected mode applications and supports all popular compilers such as Borland C++, Visual C++, Symantec C++ and Watcom C++ under both DOS and WinDirect.

UVBELib comes in four different versions for either the DOS or Windows 3.1/95 operating systems (separate licenses) depending on your particular requirements:

#### **UVBELib/Lite:**

Provides basic VBE 1.2 services with support for video modes from 640x350 up with color depths from 8 bits per pixel to 32 bits per pixel.

#### **UVBELib/Pro:**

Provides basic VBE 2.0 services with support for video modes from 640x350 up with color depths from 8 bits per pixel to 32 bits per pixel. VBE 2.0 services provide support for 32 bit protected mode bank switching and hardware panning/page flipping code, but no linear framebuffer support is provided.

#### **UVBELib/Ultra:**

Provides full VBE 2.0 services with the addition of linear framebuffer support and support for our new low resolutions SuperVGA video modes including 320x200/240/400/480, 360x200/240/400/480 and 512x384 in 8,15 and 16 bits per pixel.

#### **UVBELib/Accel:**

Provides full VBE/AF (Accelerator Functions) 1.0 services. VBE/AF drivers are full 32 bit protected mode only drivers and support the same functionality as VBE 2.0 with the addition of full hardware acceleration support. Note that VBE/AF is not backwards compatible with VBE 2.0 (it is a 32 bit loadable driver) but the programming concepts and functionality are identical. This product is still under construction and will be available sometime in Q4 '95. Call us for details.

Product Line Overview

