



# Raptor MED 12

Monochrome Display

Controllers with Multimonitor

Capability for Windows<sup>®</sup>, Solaris<sup>™</sup> and Linux

## Raptor MED 12 Features and Benefits

- 2, 3, 5 and 9.2 Megapixel resolution
- High speed TROZ proprietary graphics chip
- 12 bit gray scale (LUT)
- Up to 3061 shades of gray
- Large off-screen memory
- Simultaneously drive two flat panel displays
- Support for various off the shelf monitors \*
- PCI Interface 33/66 MHZ, 32/64-Bit
- Landscape or Portrait modes (hardware rotation)
- Compatible with DVI Standards
- Windows<sup>®</sup> 2000 & XP, Solaris<sup>™</sup> platforms and Linux

The Tech Source Raptor MED 12 Monochrome Display Controllers are designed to satisfy the market needs for high resolution gray scale displays in the Medical Imaging and Healthcare Markets. Their features enable the products to aggressively compete with existing products by setting new performance standards, while enabling system integrators to easily migrate to the Tech Source Raptor MED 12 products.

The Raptor MED 12 products are PCI Display Controllers capable of simultaneously driving multiple high resolution monochrome flat panel monitors. They are the first Medical display controllers capable of 4,096 shades of gray for image display and Gamma Correction. The Raptor MED 12 controllers have interface supports for a variety of off-the-shelf high resolution monochrome flat panel monitors. (The number of shades of gray displayed is monitor dependent.)

The MED 12 products all have a large off-screen memory, which can be configured for storage and manipulation of 12-bit Medical Images. Off-Screen memory can be utilized for high-speed implementation of window/leveling, roam, zoom and various image

processing functions. Allowance for gamma correction and other LUT functions is also provided with up to 12-bit depth. On-board hardware provides real-time 12-bit Window/Level functionality and hardware rotation for portrait or landscape displays. The Tech Source Raptor MED 12 products offer the best Price/Performance ratio in the industry. The heart of the Raptor MED series controllers is the TROZ high speed Tech Source proprietary Graphics Chip. It provides the fastest graphics display, finest memory management and most multiple overlay planes in the industry. The Raptor MED series products offer driver support for Windows 2000, Windows XP, Solaris and Linux drivers. This allows system integrators flexibility to meet consumer demand for the most popular platforms.

Tech Source is one of the world's leading suppliers of graphics accelerators for applications requiring ultra high resolution. Tech Source is now bringing this knowledge and expertise into the Medical Imaging Market. The Raptor MED 12 products are one of the new products that is destined to make Tech Source the leader in Medical Imaging Display Controllers.

## 12 Bit Gray-Scale Emulation

Medical Imaging applications use up to 12 bit gray-scale pixels. The Raptor MED 12 Imaging Products are capable of displaying the appropriate depth of each pixel up to 4,096 shades of gray. Modifying a color panel design by leaving out the color filters provides a gray-scale panel with three 8 bit elements per pixel.

The Raptor MED 12 boards take advantage of the 24 bit flat panel pixels by driving them with every unique shade of gray achievable within the 24 bit space. The result is spatial modulation, also known as sub-pixel modulation. This enables the Raptor MED Series products to display 766 shades using 8 bit elements. By doing temporal modulation for dithering of four frames, the Raptor MED Series controllers are able to quadruple the total shades of gray perceived by the human eye.

Using temporal modulation in conjunction with spatial yields 3,061 unique shades of gray for many flat panel monitors. The shades of gray capability is monitor dependent. For most monitors, the following number of shades of gray can be achieved with the Raptor MED Series Products: 256/766/1,024/1,531/3,061.

## Raptor MED 12 Technical Specifications

Graphics processor	High speed TROZ proprietary graphics chip
Display Resolution	2, 3, 5 and 9.2 megapixel (portrait and landscape)
Refresh Rates	Up to 70 Hz
Display Depth	Up to 4,096 shades of gray
Display Memory	256 MB
Lookup Table	On board 12 bit grayscale LUT
Window/Leveling and Gamma Correction	Can be done in real time utilizing a built in 4,096 LUT
Bus Interface	PCI local bus, 32/64 bit, up to 66 MHz
Video Output	Dual, quad DVI
Power Consumption	25 watts PCI, 5 volts 5 amps
Environmental Specifications	
Operating Temperature	32° to 140° F (0° to 50° C)
Storage Temperature	-40° to 165° F (-40° to 70° C)
Humidity	80% relative humidity, non-condensing
Software Environment	Windows® 2000 & XP, Solaris™ and Linux

Product	Memory	Resolution(s) Supported	Number of Monitors
Raptor MED 12-SL (single link)	256 MB	2 MP (1,200 X 1,600) Portrait or Landscape	1 or 2
		3 MP (1,536 X 2,048) Portrait or Landscape	1 or 2
		5 MP (2,048 X 2,560) Portrait or Landscape	1 or 2
Raptor MED 12-DL (dual link)	256 MB	3 MP (1,536 X2,048) Portrait or Landscape	1or 2
		5 MP (1,536 X 2,048) Portrait or Landscape	1or 2
		9.2 MP (3,840 x 2,400) Portrait of Landscape	1

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\* For a list of supported monitors contact Tech Source.

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