



VREngine™/MD2

VREngine/MD2 is RealVision's advanced cost effective 2-Megapixel display controller which targets the demands of imaging applications. With on-board accelerated drawing functions, 24-bit color and 10-bit grayscale support, independent Look-up tables, multiple screen support and digital outputs, VREngine/MD2 delivers the highest quality and highest performance imaging graphics on 2-Megapixel LCD displays. This makes the VREngine/MD2 product ideally suited for advanced imaging applications including medical imaging, satellite imaging, military displays, avionics displays or virtually any application requiring high resolution support. The VREngine/MD2 supports popular operating environments such as Microsoft® Windows® NT4.0, Windows® 2000, Windows® XP, Sun Solaris™ and Linux.

FEATURES

Supports 2-Megapixel UXGA (Ultra-XGA)

- 1600 x 1200 pixel (Landscape form)
- 1200 x 1600 pixel (Portrait form)

Single card Dual-head Display

- 3200 x 1200 pixel (Landscape form)
- 2400 x 1600 pixel (Portrait form)

Hardware Pivot

Dual view function

10 bit Grayscale display capability

VGA display capability

Supports 2-Megapixel Digital LCD monitor

DVI Monitor Display Interface (2 Channels)

PCI Bus Card

Operating Systems

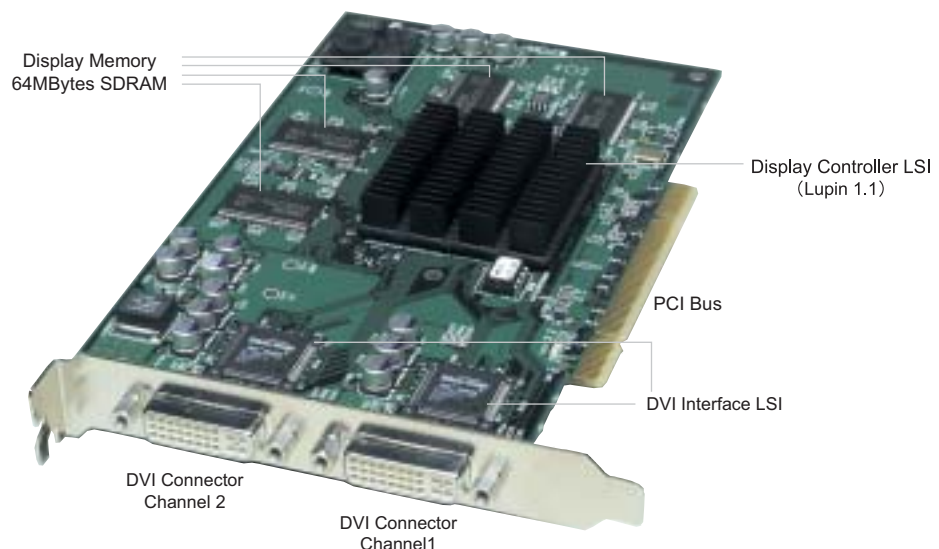
- Windows
- Linux
- Solaris



Newly developed High-resolution Display Controller LSI (Lupin-1.1)

Card Name	Operating System	Platform
VREngine/MD2W	Windows NT 4.0	IBM PC compatibles
	Windows 2000 Professional	
	Windows XP	
	Linux	
VREngine/MD2S	Solaris 8	Sun Workstation

Board Outline





VREngine™/MD2 Board Specification

LCD
Controller
Board

Display Color

The format of color format in Frame memory (bpp : bit per pixel)

Color	Format
8bpp	256 shades of gray
8bpp	Index color
10bpp	1024 shades of gray (Note.1)
24bpp	RGB (8 : 8 : 8)

(Note.1) On Board Gamma table which can set 256 gray-scales from 1024 gray-scales.

Display Resolution

Single Head

- 1600 x 1200 pixel (Landscape)
- 1200 x 1600 pixel (Portrait)

Dual Head

- 3200 x 1200 pixel (Landscape)
- 2400 x 1600 pixel (Portrait)

Number of connectable monitors

Maximum 2 monitors (Gray-scale and Color display)
(More than 2 monitors are connectable using multiple board (Max 4) configuration)

Display Output Interface

DVI (Digital Visual Interface) DVI-D 2 Channels

Maximum Drawing Performance

3.2 Giga pixels /sec (at Gray-scale drawing)

Drawing Functions

- Supports Landscape and Portrait form drawing (Counter clockwise)
- Point drawing (1 pixel width)
- Line drawing
- Polygon drawing
- BITBLT
- Graphic memory→Graphic memory
- Host memory→Graphic memory(supporting Scatter Gather DMA)
- Transparent BLT
- Index DIB color conversion (8 bit index color)
- Raster operation (Dynadic operation)

Hardware Pivot

High speed Pivot form drawing by display controller

Supports VGA display (depends on monitors)

Gamma Correction

- Supports linear, non-linear or dynamic palette modes.
- 2 monitors are controlled independently.

Display memory

On board 64Mbytes SDRAM

Video Output Specifications

- Dot clock 162MHz or 133.6MHz
- Horizontal timing signal 75KHz
- Vertical timing signal 60Hz
- Refresh rate 60Hz

Bus Interface

PCI Bus (Version 2.2 Compliant), 32 bit width, 33MHz

Board power dissipation

Maximum 15W

Operating Environment

- Host system Windows based PC(PC/AT compatibles)
Sun Blade™ 100 or Sun Ultra60™ or greater
- CPU speed more than 500MHz
- Host system bus PCI 32bit, 5V/3.3V (PCI Version 2.2 compliant)
- Bus frequency 33MHz
- Main memory size More than 256Mbytes

Operating Systems

- Windows NT 4.0 Workstation (later than Service Pack 6)
- Windows 2000 Professional
- Windows XP
- Linux (RedHat 4.0, 4.1, 4.2)
- Solaris 8

Certifications

- UL/cUL, FCC Class A, CE

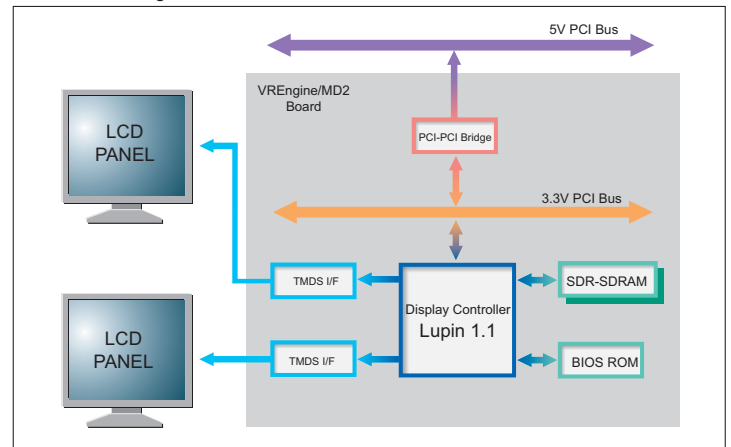
Mechanical Specifications

- Board size 174.5 (W) x 106.7 (H) mm
- Number of occupied slot 1 slot

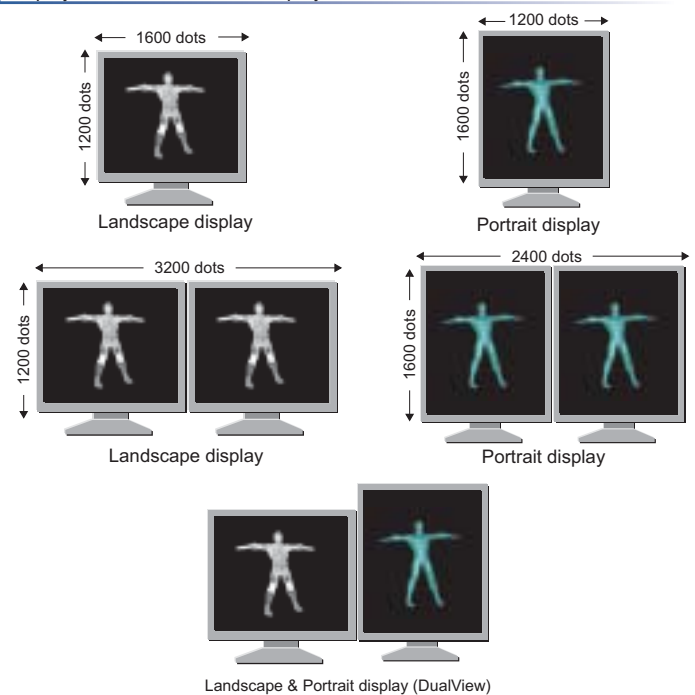
Monitors

- 2M-VESA Compliant digital LCD monitor
- 2M-133.6MHz (Dotclk) digital LCD monitor

Board Block Diagram



Display form and Maximum display resolution



Three Drawing mode at Dual Head configuration

- Wide view
Two displays are drawn as single display.
- Twin view
Mirror image of the first display is drawn on another display.
- Dual view
Two displays are drawn as two independent displays.

Note)

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