High resolusion and precision graphics board for Medical Imaging

VREngine™/SMD-Adv.series

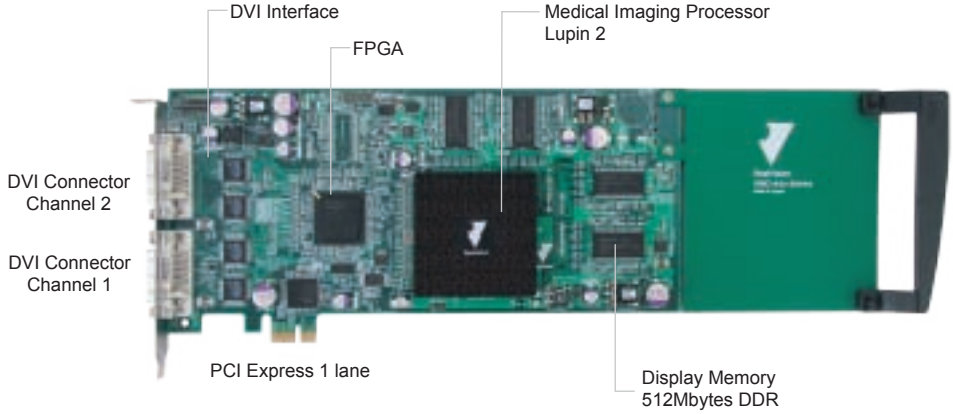
The VREngine/SMD Adv. series is the newest line of Medical Imaging boards using the Lupin 2 Medical Imaging Processor for high to super-high resolution LCD monitors from RealVision. The VREngine/SMD Adv. series boards are designed for demanding medical applications, such as CT, MRI, and other advanced modalities, that require high performance and high precision. The VREngine/SMD Adv. Series is composed of three boards: the SMD2 Adv. for up to 2MP resolution applications; the SMD3 Adv. for up to 3MP resolution applications; and the SMD5 Adv. for up to 5MP resolution applications. The VREngine/SMD Adv. series boards are single lane PCI Express boards, with driver support for the Microsoft® Windows®XP and Linux operating systems.

FEATURES

- Series composition
  - SMD2-Adv. (up to 2M pixels)
  - SMD3-Adv. (up to 3M pixels)
  - SMD5-Adv. (up to 5M pixels)
- Display resolutions
  - Up to 3840 * 2400 pixels (single head display)
  - Up to 2560 * 2048 pixels (dual head display)
- Colors depth
  - Up to 4096 grayscale (12-bit)
  - Up to 1G colors (30-bit)
- Hardware rotation (Portrait display)
- Board Size
  - 224mm X 111mm (braket not included)
- PCI Express 1 lane card
- Number of occupied slot
  - 1 slot (PCI Expess)
- Certifications
  - FCC Class B, UL, CE/CL
- Frame buffer size
  - 512MB
- Fine View Technology™ on-board
- Duallink outputs
- OS :
  - WindowsXP Professional
  - WindowsXP Professional x64 edition
  - Linux
- Fanless
- WEEE and RoHS compliant

Medical Imaging Processor Lupin 2

VREngine/SMD Adv. series outline



VREngine™/SMD-Adv.series

Display Clolors

Following list shows Color data formats stored in display memory.

Grayscale	8-bit grayscale
	10-bit grayscale
	12-bit grayscale(Note)
Color	8-bit RGB (256 color)
	16-bit RGB (64K color)
	24-bit RGB (16M color, True Color)
	30-bit RGB [10:10:10] (1G color)

(Note) Internal gamma table that can set 256 scales from 1024scales

Display Resolution

- Please refer "Display Format and Maximum Display Resolution"

Number of connectable monitors

- Connectable up to two monitors

(More than 3 monitors are connectable by using multiple boards)

Display output interface

- DVI (Digital Visual Interface) DVI-D 2 channels
- Support Duallink

Maximum display performance

- Host memory to/from Display memory : 192MB/sec
- Display memory to/from Display memory : 1141MB/sec

Display Functions

- Landscape and Portrait display
- Point drawing (1 pixel width)
- Line drawing
- Polygon drawing
- BITBLT
  - Display memory to/from Display memory
  - Host memory to/from Display memory (using Scatter Gather DMA)
- Transparent BLT
- Index DIB color conversion (8-bit index color)
- Raster operation (Dynadic operation)

Display Mode

Variety of display modes are supported when using multiple monitors. Following configurations are available.

- Use two monitors as one monitor
- Same image is displayed on two monitors
- Use two monitors as independent monitors

Hardware Pivot

- Portrait display is hardware accelerated by Lupin 2.1

VGA display capability (depends type of monitor)

- VGA, SVGA standard compliant

Gamma Correction

- Possible to use linear, non-linear or dynamic palette mode
- Calibrates two monitors independently

Display Memory

- On board 512Mbytes DDR-SDRAM

Video Output Specification

	SMD2 Adv.	SMD3 Adv.	SMD5 Adv.
Dot Clock	→	→	25-165MHz(SL)
	→	→	25-330MHz(DL)
Vertical timing signal	→	→	Max 60Hz
Refresh Rate	→	→	Max 60Hz
Max screen size	2M pixel	3M pixel	>5M pixel

Note) SL : Single Link, DL : Dual Link

Bus Interface

- PCI Express 1 lane

Power Dissipation

- Max15W

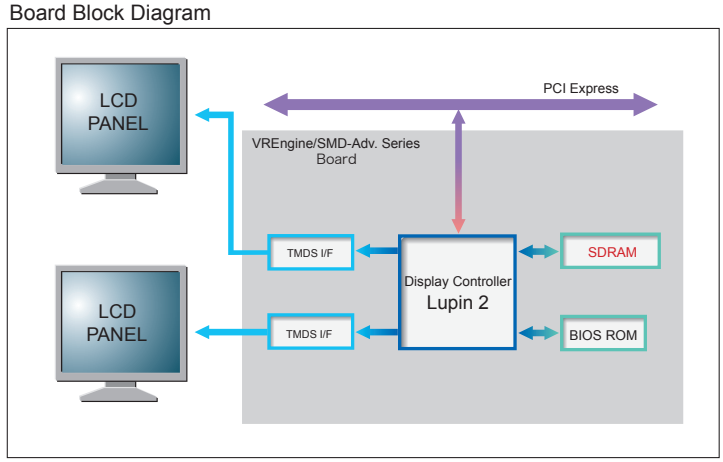
Operating Environment

- Host System Windows based PC (PC/AT compatible)
- CPU Clocklk >500MHz
- System Bus PCI Express
- System Memory >256Mbytes

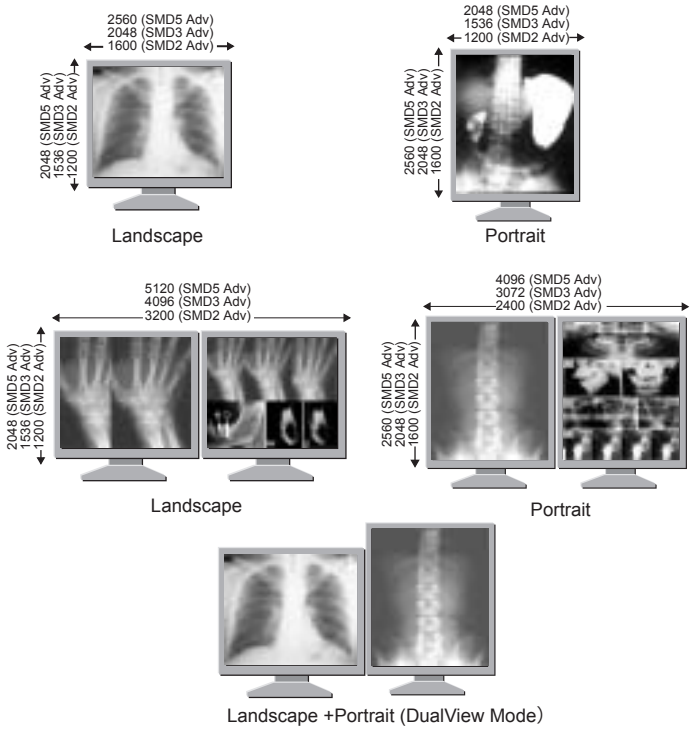
Operating System

- Windows XP Proffessional
- Linux (contact out sales office)

Board Block Diagram



Display Mode and Maximum Display Resolution



Certification

- UL/cUL, FCC, CE, WEEE, RHoS compliant

Mechanical Specification

- Size 353.00 (width) x 126.68 (height) mm
- Weight 241g
- # of slot 1 slot

Connectable Monitors

- 2M, 3M or 5M pixel digital LCD monitors

Note)
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