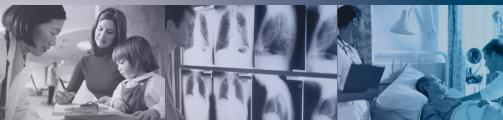
PACSmateTM



MMD-2213M 2MP

54cm(21.3") Diagnostic Grayscale Monitor



- 21.3" grayscale TFT LCD
- 2MP-1600(H) x 1200(V)
- Max. luminance: 1000cd/m²

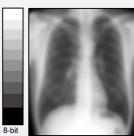
Max. calibrated luminance: 600cd/m²

- 700:1 exceptional contrast ratio
- Out-of-box DICOM compliant
- Intelligent display mode auto adjustment with graphic card auto detection
- GrayBoost® 12-bit to 12-bit LUT provides simultaneously 4,096 tones of gray
- Ready for Deep color and HDMI™ 1.3 with GrayEasy® technology for 12-bit grayscale displaying

GrayBoost® 12-bit Simultaneous Grayscale

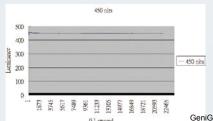
12-bit (4096 tones) image input can be all retained in 12-bit (4096 tones) image output via built-in 12-bit LUT. The IEI GrayBoost® technology successfully produces 12-bit image data flow through commercial dual-link graphic card, lowering total cost of ownership.





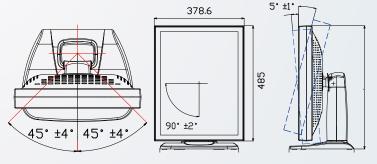
Backlight Stabilizer

The GeniGUARD® built-in backlight stabilizer integrated in PACSmateTM monitors automatically calibrates the shift of LCD brightness caused by startup drift, ambient temperature and backlight aging.





GeniGUARD® Backlight Stabilizer



Uniform Luminance

Uniform luminance is especially critical for diagnostic applications and IEI sets a high standard for the uniformity of every medical monitor. IEI's special testing equipment ensures every customer gets the medical monitors with best uniformity for precise diagnostic results.







15° ±1°

Original

IEI Factory Calibration

Meets AAPM TG18 & DIN 6868-57 standards

GrayEasy® HDMI[™] 1.3 Grayscale Support

The GrayEasy® technology successfully produces a HDMITM 1.3 compatible, 12-bit grayscale display system without any additional upgrade cost. The built-in 12-bit to 12-bit Look-Up-Table (LUT) for DICOM calibration ensures the quality of grayscale images.

Display Mode Auto-Detection

IEI's PACSmate™ medical monitors have built-in auto-detection technology which identifies different graphic cards automatically and self adjusts the mode fit with the specific graphic card.

Smart Software OSD

The smartOSD is an intelligent and easy to use proprietary On-Screen Display (OSD) software especially designed for the IEI display monitors. It delivers excellent performance and flexibility over hardware OSD solutions in the monitor unit. Users can adjust the monitor with the smartOSD in a Windows® environment from the remote system instead of adjustment from front panel.

The smartOSD allows some functions as below:

· Power on/off

- Luminance selection
- Graphic card mode selection
- · GrayBoost® on/off

- DICOM Look-Up-Table selection
- Monitor Information

GeniSPOT® & GeniPASS® QC Solution

Packed in every IEI PACSmate™ monitor, the GeniSPOT® 3-in-1 calibration system and GeniPASS® QC Utility ensures the display conforms with AAPM, DIN, JIS and IEC standards all the time.

Functions:

- · Luminance testing
- DICOM calibration
- Luminance auto-dimming
- GeniSPOT® self-diagnosis
- Five-point testing of uniformity



Ergonomic Design

Narrow bezels enable seamless side-by-side viewing for diagnostic applications.



Pairing Monitors

IEI provides a pair matching service for dual-head display applications, allowing image comparison for diagnostic practices.



Graphic Card Compatibility





nVIDIA QUADRO FX560/FX1500 nVidia GeForce 8600GT

Matrox MED series





RealVision SMD PCI-X series RealVision SMD ADV series

ATI V7100/V3400

Packing List

Ordering information

Part No.	
MMD-2213M	
2MP	

Description

2 megapixel, 21.3" monochrome LCD monitor includes GeniSPOT® and GeniPASS® calibration kit

Specifications

Drive System Display area (H x V) Diagonal size of display Resolution (H x V) Pixel pitch (H x V) Diagonal size of display Resolution (H x V) Pixel pitch (H x V) Diagonal size of display Resolution (H x V) Pixel pitch (H x V) Diagonal size of display Pixel pitch (H x V) Diagonal size of display Pixel form x Diagonal size of display Diagonal size of display Pixel form x Diagonal size of display	PACSmate® Model	MMD-2213M
Diagonal size of display Resolution (H x V) Pixel pitch (H x V) Sub-pixel pitch (H x V) Pixel potch (H x V) Sub-pixel pitch (H x V) Pixel format Luminace-max. 1000cd/m² Max. luminance (calibrated) Wite chromaticity Viewing angle Response time (Ton + Toff) Backlight Default gamma Grayscale Lutt Signal input USB 2.0 hub Membrane keypad Power adapter Input Voltage range Power adapter Input AC current Power adapter Power output Physical dimensions (H x W x D) Adjustable height range (with storage) Storage (Transportation) 1000 2,70mm x 0.270 mm 1 pixel consists of 3 sub-pixels, LCR vertical stripe 1000cd/m² 1000cd/m² Wx, Wy=(0.280, 0.304) (typical) 700:1 (typical) 70	Drive System	a-Si TFT active matrix
Resolution (H x V) Pixel pitch (H x V) O.270mm x 0.270 mm Sub-pixel pitch (H x V) O.090mm x 0.270 mm Pixel format 1 pixel consists of 3 sub-pixels, LCR vertical stripe Luminace-max. 1000cd/m² Max. luminance (calibrated) Max. luminance (calibrated) White chromaticity Wx, Wy=(0.280, 0.304) (typical) Contrast ratio 700:1 (typical) Viewing angle Right 85°, Left 85°, Up 85°, Down 85° (10:1 contrast) Response time (Ton + Toff) 35ms (typical) Polarizer surface/ hardness Antiglare/ 2H Backlight 6 CCFL Default gamma DICOM Grayscale Simultaneous 12-bit LUT Signal input Single link DVI-D (digital) USB 2.0 hub 1 upstream/ 2 downstream Membrane keypad Yes Power adapter Input voltage range Power adapter Input frequency range Power adapter Input AC current Power adapter Power output 12/DC, 8.33A, 100W (max) Physical dimensions (H x W x D) Adjustable height range (with stand) Viewing angle impured to the same x 380mm x 274 mm (portrait) With stand: 485mm x 380mm x 100 mm (portrait) With stand: 520mm x 380mm x 274 mm (portrait) With stand: 520mm x 380mm x 100 mm (portrait) Viewing angle imperature 10°C-40°C Storage temperature 10°C-40°C Operation relative humidity 30% ~75% Non-condensing	Display area (H x V)	433.2mm x 324.9 mm
Pixel pitch (H x V) Sub-pixel pitch (H x V) Pixel format 1 pixel consists of 3 sub-pixels, LCR vertical stripe Luminace-max. 1000cd/m² Max. luminance (calibrated) White chromaticity Contrast ratio 700:1 (typical) Viewing angle Response time (Ton + Toff) Polarizer surface/ hardness Antiglare/ 2H Backlight Grayscale LUT Signal input USB 2.0 hub Power adapter Input Voltage range Power adapter Input frequency range Power adapter Input AC current Physical dimensions (H x W x D) Adjustable height range (with stand) Operation relative humidity Storage/ Transportation 100cd/m² Wx, Wy=(0.280, 0.304) (typical) Reyon.304 (typical) Power 85°, Down 85° (10:1 contrast) Anumatical Sub-pixels, LCR vertical stripe 100cd/m² Wx, Wy=(0.280, 0.304) (typical) Contrast ratio 700:1 (typical) Viewing angle Right 85°, Left 85°, Up 85°, Down 85° (10:1 contrast) 35ms (typical) Power 85°, Down 85° (10:1 contrast) 35ms (typical) Antiglare/ 2H Soma (typical) Simultaneous 12-bit 12-bit Single link DVI-D (digital) 1 upstream/ 2 downstream Yes Power adapter Input voltage range 100VAC - 240VAC 47Hz-63Hz Power adapter Input frequency 100VAC - 240VAC With stand: 520mm x 380mm x 274 mm (portrait) Without stand: 485mm x 380mm x 100 mm (portrait) Without stand: 485mm x 380mm x 100 mm (portrait) Adjustable height range (with stand) Operation relative humidity 30% ~75% Non-condensing Storage/ Transportation 10% ~95% Non-condensing	Diagonal size of display	54cm (21.3 inches)
Sub-pixel pitch (H x V) Pixel format I pixel consists of 3 sub-pixels, LCR vertical stripe Luminace-max. 1000cd/m² Max. luminance (calibrated) 600cd/m² White chromaticity Wx, Wy=(0.280, 0.304) (typical) Contrast ratio 700:1 (typical) Viewing angle Response time (Ton + Toff) Polarizer surface/ hardness Antiglare/ 2H Backlight Grayscale LUT 12-bit Signal input USB 2.0 hub 1 upstream/ 2 downstream Membrane keypad Power adapter Input voltage range Power adapter Input frequency range Power adapter Input AC current Physical dimensions (H x W x D) Adjustable height range (with stand) Operation relative humidity Storage/ Transportation 1000cd/m² 1000cd/m² Wx, Wy=(0.280, 0.304) (typical) 1000c1, 300c1, 3	Resolution (H x V)	1600 x 1200
Pixel format Luminace-max. 1000cd/m2 Max. luminance (calibrated) Wy (wy=(0.280, 0.304) (typical) Contrast ratio 700:1 (typical) Viewing angle Right 85°, Left 85°, Up 85°, Down 85° (10:1 contrast) Response time (Ton + Toff) 35ms (typical) Polarizer surface/ hardness Antiglare/ 2H Backlight Default gamma DICOM Grayscale LUT 12-bit Signal input USB 2.0 hub 1 upstream/ 2 downstream Membrane keypad Power adapter Input voltage range Power adapter Input AC current Power adapter Input AC current Physical dimensions (H x W x D) Adjustable height range (with stand) Operating temperature 10°C~40°C Storage / Transportation 10% ~95% Non-condensing Signal consists of 3 sub-pixels, LCR vertical stripe 1000cd/m2 600cd/m2 Wx, Wy=(0.280, 0.304) (typical) Contrast ratio Wx, Wy=(0.280, 0.304) (typical) 10:10-10-10-10-10-10-10-10-10-10-10-10-10-1	Pixel pitch (H x V)	0.270mm x 0.270 mm
Luminace-max. 1000cd/m² Max. luminance (calibrated) 600cd/m² White chromaticity Wx, Wy=(0.280, 0.304) (typical) Contrast ratio 700:1 (typical) Viewing angle Right 85°, Left 85°, Up 85°, Down 85° (10:1 contrast) Response time (Ton + Toff) 35ms (typical) Polarizer surface/ hardness Antiglare/ 2H Backlight 6 CCFL Default gamma DICOM Grayscale Simultaneous 12-bit LUT 12-bit Signal input Single link DVI-D (digital) USB 2.0 hub 1 upstream/ 2 downstream Membrane keypad Yes Power adapter Input voltage range 100VAC - 240VAC Power adapter Input AC current 1.25A-0.5A Power adapter Power output 12VDC, 8.33A, 100W (max) Physical dimensions (H x W x D) With stand: 520mm x 380mm x 274 mm (portrait) Without stand: 485mm x 380mm x 100 mm (portrait) Adjustable height range (with stand) Landscape: 465mm~590 mm Landscape: 465mm~595 mm Operating temperature -20°C~60°C Operation relative humidity 30% ~75% Non-condensing	Sub-pixel pitch (H x V)	0.090mm x 0.270 mm
Max. luminance (calibrated) White chromaticity White chromaticity Wy, Wy=(0.280, 0.304) (typical) Viewing angle Right 85°, Left 85°, Up 85°, Down 85° (10:1 contrast) Response time (Ton + Toff) Polarizer surface/ hardness Antiglare/ 2H Backlight Backlight	Pixel format	1 pixel consists of 3 sub-pixels, LCR vertical stripe
White chromaticity Contrast ratio Viewing angle Response time (Ton + Toff) Polarizer surface/ hardness Backlight Default gamma Grayscale LUT Signal input USB 2.0 hub Membrane keypad Power adapter Input voltage range Power adapter Input frequency range Power adapter Power output Physical dimensions (H x W x D) Adjustable height range (with stand) Operating temperature One of the surface of t	Luminace-max.	1000cd/m ²
Contrast ratio Viewing angle Right 85°, Left 85°, Up 85°, Down 85° (10:1 contrast) Response time (Ton + Toff) Polarizer surface/ hardness Antiglare/ 2H Backlight 6 CCFL Default gamma DICOM Grayscale Simultaneous 12-bit LUT 12-bit Signal input USB 2.0 hub 1 upstream/ 2 downstream Membrane keypad Power adapter Input voltage range Power adapter Input frequency range Power adapter Input AC current 1.25A-0.5A Power adapter Power output Physical dimensions (H x W x D) Adjustable height range (with stand) Adjustable height range (with stand) Operating temperature 10°C~40°C Storage temperature 100% ~95% Non-condensing Storage/ Transportation 10% ~95% Non-condensing	Max. luminance (calibrated)	600cd/m ²
Response time (Ton + Toff) Response time (Ton + Toff) Polarizer surface/ hardness Antiglare/ 2H Backlight	White chromaticity	Wx, Wy=(0.280, 0.304) (typical)
Response time (Ton + Toff) Polarizer surface/ hardness Antiglare/ 2H Backlight 6 CCFL Default gamma DICOM Grayscale Simultaneous 12-bit LUT 12-bit Signal input USB 2.0 hub 1 upstream/ 2 downstream Membrane keypad Power adapter Input voltage range Power adapter Input frequency range Power adapter Input AC current Power adapter Power output Physical dimensions (H x W x D) Adjustable height range (with stand) Adjustable height range (with stand) Operating temperature Storage temperature Operation relative humidity Storage/ Transportation Adjustable height range (with storage/ Transportation) Antiglare/ 2H Antiglare/ 2H Antiglare/ 2H Battiglare/ 2H Ba	Contrast ratio	700:1 (typical)
Polarizer surface/ hardness Backlight 6 CCFL Default gamma DICOM Grayscale Simultaneous 12-bit LUT 12-bit Signal input USB 2.0 hub 1 upstream/ 2 downstream Membrane keypad Power adapter Input voltage range Power adapter Input frequency range Power adapter Input AC current Power adapter Power output Physical dimensions (H x W x D) Adjustable height range (with stand) Adjustable height range (with stand) Operating temperature Storage temperature Operation relative humidity Storage/ Transportation Adjustage A Antiglare/ 2H Backlight 6 CCFL DICOM 6 CCFL 12-bit Single link DVI-D (digital) 1 upstream/ 2 downstream 1 upstream/ 2 downstream 1 upstream/ 2 downstream 1 00VA - 240VAC 47Hz-63Hz 12VDC, 8.33A, 100W (max) With stand: 520mm x 380mm x 274 mm (portrait) Without stand: 485mm x 380mm x 100 mm (portrait) Without stand: 485mm x 380mm x 100 mm (portrait) Adjustable height range (with stand) 10°C~40°C Storage temperature -20°C~60°C Operation relative humidity 10°A ~95% Non-condensing	Viewing angle	Right 85°, Left 85°, Up 85°, Down 85° (10:1 contrast)
Backlight Default gamma DICOM Grayscale Simultaneous 12-bit LUT 12-bit Signal input USB 2.0 hub 1 upstream/ 2 downstream Membrane keypad Yes Power adapter Input voltage range Power adapter Input frequency range Power adapter Input AC current Power adapter Power output 12-bit 1 upstream/ 2 downstream Membrane keypad Yes Power adapter Input voltage range 47Hz-63Hz Power adapter Input AC current 1.25A-0.5A Power adapter Power output 12VDC, 8.33A, 100W (max) Physical dimensions (H x W x D) Adjustable height range (with stand) Adjustable height range (with stand) Operating temperature 10°C~40°C Storage temperature 10°C~40°C Operation relative humidity 30% ~75% Non-condensing Storage/ Transportation	Response time (Ton + Toff)	35ms (typical)
Default gamma Grayscale Simultaneous 12-bit 12-bit Signal input USB 2.0 hub 1 upstream/ 2 downstream Membrane keypad Power adapter Input voltage range Power adapter Input frequency range Power adapter Input AC current Power adapter Power output 1.25A-0.5A Power adapter Power output 1.25A-0.5A Power adapter Power output Physical dimensions (H x W x D) Adjustable height range (with stand) Adjustable height range (with stand) Operating temperature 10°C~40°C Storage temperature 10°C~40°C Operation relative humidity Storage/ Transportation	Polarizer surface/ hardness	Antiglare/ 2H
Grayscale LUT 12-bit Signal input Single link DVI-D (digital) USB 2.0 hub 1 upstream/ 2 downstream Membrane keypad Power adapter Input voltage range Power adapter Input frequency range Power adapter Input AC current Power adapter Power output Power adapter Power output Physical dimensions (H x W x D) Adjustable height range (with stand) Adjustable height range (with stand) Operating temperature 10°C~40°C Storage temperature 10°C~50°C Operation relative humidity Single link DVI-D (digital) 1 upstream/ 2 downstream 1 upstream/ 2 downstream 100VA - 240VAC 47Hz-63Hz 12VDC, 8.33A, 100W (max) With stand: 520mm x 380mm x 274 mm (portrait) Without stand: 485mm x 380mm x 100 mm (portrait) Portrait: 520mm~590 mm Landscape: 465mm~535 mm Operating temperature -20°C~60°C Operation relative humidity 30% ~75% Non-condensing	Backlight	6 CCFL
LUT Signal input Single link DVI-D (digital) USB 2.0 hub 1 upstream/ 2 downstream Membrane keypad Yes Power adapter Input voltage range 100VAC - 240VAC Power adapter Input frequency range Power adapter Input AC current Power adapter Power output 125A-0.5A Power adapter Power output Physical dimensions (H x W x D) Adjustable height range (with stand) Adjustable height range (with stand) Operating temperature 10°C~40°C Storage temperature 10°C~40°C Operation relative humidity 10°C~20°C~60°C Operation relative humidity 10°C~20°C-20°C-20°C-20°C-20°C-20°C-20°C-20°C-	Default gamma	DICOM
Signal input Single link DVI-D (digital) USB 2.0 hub 1 upstream/ 2 downstream Membrane keypad Yes Power adapter Input voltage range 100VAC - 240VAC Power adapter Input frequency range Power adapter Input AC current 1.25A-0.5A Power adapter Power output Physical dimensions (H x W x D) Adjustable height range (with stand) Adjustable height range (with stand) Operating temperature 10°C~40°C Storage temperature 10°C~50°C Operation relative humidity Single link DVI-D (digital) 10VA c95% Non-condensing	Grayscale	Simultaneous 12-bit
USB 2.0 hub 1 upstream/ 2 downstream Yes Power adapter Input voltage range 100VAC - 240VAC Power adapter Input frequency range Power adapter Input AC current 1.25A-0.5A Power adapter Power output 12VDC, 8.33A, 100W (max) Physical dimensions (H x W x D) With stand: 520mm x 380mm x 274 mm (portrait) Without stand: 485mm x 380mm x 100 mm (portrait) Without stand: 485mm x 380mm x 100 mm (portrait) Stand) Operating temperature 10°C~40°C Storage temperature 20°C~60°C Operation relative humidity 30% ~75% Non-condensing Storage/ Transportation	LUT	12-bit
Membrane keypad Yes Power adapter Input voltage range 100VAC - 240VAC Power adapter Input frequency range 47Hz-63Hz Power adapter Input AC current 1.25A-0.5A Power adapter Power output 12VDC, 8.33A, 100W (max) Physical dimensions (H x W x D) With stand: 520mm x 380mm x 274 mm (portrait) Without stand: 485mm x 380mm x 100 mm (portrait) Adjustable height range (with stand) Portrait: 520mm~590 mm Landscape: 465mm~535 mm Operating temperature 10°C~40°C Storage temperature -20°C~60°C Operation relative humidity 30% ~75% Non-condensing Storage/ Transportation 10% ~95% Non-condensing	Signal input	Single link DVI-D (digital)
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Power adapter Input frequency range Power adapter Input AC current 1.25A-0.5A Power adapter Power output Physical dimensions (H x W x D) Adjustable height range (with stand) Adjustable height range (with stand) Operating temperature Operation relative humidity Storage/ Transportation 47Hz-63Hz 1.25A-0.5A 12VDC, 8.33A, 100W (max) With stand: 520mm x 380mm x 274 mm (portrait) Without stand: 485mm x 380mm x 100 mm (portrait) Portrait: 520mm~590 mm Landscape: 465mm~535 mm Operation relative humidity 30° ~75° Non-condensing	Membrane keypad	Yes
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Power adapter Power output Physical dimensions (H x W x D) Adjustable height range (with stand) Portrait: 520mm x 380mm x 274 mm (portrait) Without stand: 485mm x 380mm x 100 mm (portrait) Portrait: 520mm~590 mm Landscape: 465mm~535 mm Operating temperature 10°C~40°C Storage temperature -20°C~60°C Operation relative humidity 30% ~75% Non-condensing	, , , , , , , , , , , , , , , , , , , ,	47Hz-63Hz
Physical dimensions (H x W x D) With stand: 520mm x 380mm x 274 mm (portrait) Without stand: 485mm x 380mm x 100 mm (portrait) Without stand: 485mm x 380mm x 100 mm (portrait) Portrait: 520mm~590 mm Landscape: 465mm~535 mm Operating temperature 10°C~40°C Storage temperature -20°C~60°C Operation relative humidity 30% ~75% Non-condensing Storage/ Transportation	Power adapter Input AC current	1.25A-0.5A
Physical dimensions (H x W x D) Without stand: 485mm x 380mm x 100 mm (portrait) Adjustable height range (with stand) Portrait: 520mm~590 mm Landscape: 465mm~535 mm Operating temperature 10°C~40°C Storage temperature -20°C~60°C Operation relative humidity 30% ~75% Non-condensing Storage/ Transportation	Power adapter Power output	12VDC, 8.33A, 100W (max)
stand) Landscape: 465mm~535 mm Operating temperature 10°C~40°C Storage temperature -20°C~60°C Operation relative humidity 30% ~75% Non-condensing Storage/ Transportation 10% ~95% Non-condensing	Physical dimensions (H x W x D)	· · · · · · · · · · · · · · · · · · ·
Storage temperature -20°C~60°C Operation relative humidity 30% ~75% Non-condensing Storage/ Transportation 10% ~95% Non-condensing	, , ,	
Operation relative humidity 30% ~75% Non-condensing Storage/ Transportation 10% ~95% Non-condensing	Operating temperature	10°C~40°C
Storage/ Transportation 10% ~05% Non-condensing	Storage temperature	-20°C~60°C
	Operation relative humidity	30% ~75% Non-condensing
		10% ~95% Non-condensing



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