

LMD-2451MT

24-inch Full HD 3D LCD medical monitor



Overview

3D high definition medical monitor with advanced Sony 3D technology

The LMD-2451MT combines Sony 3D professional technology with an advanced 24-inch LCD panel to display clear 3D pictures.

Surgeons can also view images from multiple monitors whilst wearing light, comfortable polarized glasses.

Practical features include a user memory function and chroma phase control, while ChromaTRU technology contributes to optimised image quality.

This equipment is intended for use by qualified medical professionals only.

Features

- **Pioneering 3D quality**

The LMD-2451MT uses advanced panel micro polarizer filter technology to deliver clear, smooth, consistent pictures that are viewed with passive glasses.

- **Multiple 3D formats**

The versatile LMD-2451MT accepts various sources of 3D signal, such as 3D on 3G, dual stream left and right, field sequential and side-by-side HD-SDI, as well as DVI-D line interleave (line by line) mode. The display can accept almost any signal ranging from SD to HD video, as well as PC signals via its DVI-D or HD15 connectors.

- **Sony unique colour matching technology ChromaTRU**

The LMD-2451MT helps to ensure more accurate colour consistency by means of a series of calibrations. The panel is individually calibrated so that RGB co-ordinates are consistent. A further calibration helps maintain white balance at a uniform colour temperature throughout all grayscale levels.

- **High brightness and contrast through super-wide WUXGA**

The display utilises a wide WUXGA (1920x1200) LCD panel that offers high brightness and contrast.

- **Natural gradation and accurate colour reproduction**

In order to ensure images have a smooth, natural gradation, the LMD-2451MT uses an advanced 10-bit digital video signal processor.

- **Gamma curve selection**

The LMD-2451MT offers users the choice of DICOM or CRT 2.2. as sometimes, the accuracy of images does require a different gamma curve.

- **Multiple display modes**

A choice of different display modes includes picture-out-picture, side-by-side split screen, zooming, and viewing live video all help to view images simultaneously.

- **Mirror image**

The surgeon's assistant can view a mirror image of the surgeon's own display, in order to assist with more convenient manoeuvring of the camera.

- **Protected controls**

In such a sensitive environment, it is vital to prevent inadvertent operation from the control panel. The LMD-2451MT's key-inhibit function helps to remove this risk.

- **Safety listing and compliance**

The LMD-2451MT is fully safety listed and compliant for use in medical environments. The display is UL60601-1 listed and complies with CSA C 22.2 No. 60601 and EN60 601-1 safety regulations.

Technical Specifications

Picture Performance	
● Type	a-Si TFT Active Matrix LCD with an AR-coated protection panel
● Resolution	1920 x 1200 pixels (WUXGA)
● Effective picture size (H x W)	518.4 x 324.0 mm (20 1/2 x 12 7/8 inches)
● Effective picture size (diagonal)	613.2 mm (24 1/4 inches)
● Aspect	16:10
● Colors	Approx. 16.7 million colors (8-bit)
● 2D Viewing angle	89°/89°/89°/89° (typical) (up/down/left/right contrast >10:1)
● 3D Viewing angle	50° at a viewing distance more than 300 mm, crosstalk less than 7% (typical)

Input	
● Composite	BNC (x1), 1.0 Vp-p ±3dB sync negative
● Y/C	Mini DIN 4-pin (x1)
●	Y: 1.0 Vp-p ±3dB sync negative,
●	C: 0.286 Vp-p ±3dB (NTSC burst signal level),
●	0.3 Vp-p ±3dB (PAL burst signal level)
● RGB, Component	BNC (x3)
●	RGB : 0.7 Vp-p ±3dB (sync on green, 0.3 Vp-p sync negative)
●	Component : 0.7 Vp-p ±3dB (75% chrominance standard color bar signal)
● DVI-D	DVI-D (x1)
●	TMDS single link
● HD15	D-sub 15-pin (x1),
●	RGB: 0.7 Vp-p sync positive (sync on green, 0.3 Vp-p sync negative)
●	Sync : Total level (polarity free, H/V separate sync)
●	Plug & Play function : corresponds to DDC2B
● External sync	BNC (x1)
●	0.3 Vp-p to 4.0 Vp-p ±bipolarity ternary or negative polarity binary
● Option slot	2 slots
● Parallel remote	Modular connector 8-pin (x1) (pin-assignable)
● Serial remote	D-sub 9-pin (RS-232C) (x1), RJ-45 modular connector (Ethernet) (x1) (10BASE-T/100BASE-TX)
● DC in	DC 5V / 24V (output impedance 0.05 ohms or less)

Output	
● Composite	BNC (x1), loop-through, with 75 ohms automatic termination

● Y/C	Mini DIN 4-pin (x1) loop-through, with 75 ohms automatic termination
● RGB, Component	BNC (x3), loop-through, with 75 ohms automatic termination
● External sync	BNC (x1), loop-through, with 75 ohms automatic termination

General	
● Power requirements	DC IN: 24 V 5.0 A, 5 V 0.030 A (supplied from AC adapter)
●	AC adapter (Sony, AC110MD)
●	AC IN: 100 V to 240 V, 50/60 Hz, 1.53 A to 0.58 A
●	DC OUT: 24 V 5.0 A, 5 V 0.060 A
● Power consumption	Maximum: approx. 136 W (with 2 x BKM-229X)
● Operating temperature	0°C to 35°C (32°F to 95°F)
● Recommended	20°C to 30°C (68°F to 86°F)
● Operating humidity	30% to 85% (no condensation)
● Storage and transport temperature	-20°C to +60°C (-4°F to +140°F)
● Storage and transport humidity	0% to 90% (no condensation)
● Operating, storage, and transport pressure	700 hPa to 1060 hPa
● Dimensions (W x H x D)	602.4 x 386.2 x 110 mm (23 3/4 x 15 1/4 x 4 3/8 inches) (including projections)
● Mass	8.7 kg (19 lb 3 oz) (with 2 x BKM-229X) AC adapter (AC110MD) 1.2 kg (2 lb 10 oz)

Supplied Accessories	
● AC-110MD	AC adapter (1)
●	AC power cord (1)
●	AC plug holder (2)
●	3D glasses (glasses-type) (1)
●	3D glasses (clip-on type) (1)
●	L/R labels (1)
●	Instructions for use (1)
●	CD-ROM (1)
●	Using the CD-ROM Manual (1)
●	Quick Reference (1)
●	When you First Use the Monitor (1)
●	Sales Companies Guide (1)
●	Warranty

Medical Accessories



AC-110MD

AC adapter for medical monitors, working with LMD-3251MT, LMD-3251TC, LMD-2451MC*, PVM-2551MC*, LMD-1951MD and, LMD-2451MD*



BKM-243HSM

HDSDI/4:2:2 SDI Input Adaptor



BKM-250TGM

3G/HD/SD-SDI Input Adaptor



BKM-30GM

3D circular micro-polariser glasses



BKM-31GM

3D circular micro-polariser glasses (clip-on)



CFV-B100

Shield Frame



CFV-E30D

3D Eye Shield



CFV-E30SK

3D Eye Shield Kit



SU-560

Stand specifically designed for medical monitors, working with LMD-1951MD, LMD-2451MD and PVM-2551MD

Option Boards and Cables



BKM-220D

4:2:2 Sdi Input Adaptor



BKM-227W

NTSC / PAL input adaptor for LMD monitors



BKM-229X

Analogue component input adaptor for LMD monitors



CFV-E20D

2D Eye Shield



CFV-E20SK

2D Eye Shield Kit



BKM-243HS

HDSDI/4:2:2 SDI Input
Adaptor



BKM-256DD

Medical grade option
board for medical monitors