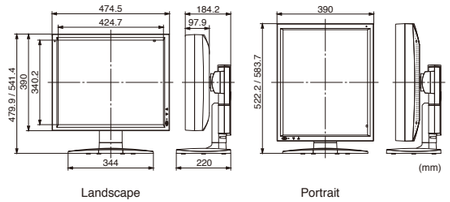
5MP with ISD Technology
21.3" Digital Mammography Display **MS51i2**

Specifications

Model Name		MS51i2
LCD Panel	Technology	21.3-inch, TFT Monochrome, IPS Technology
	Display Area	422.4mm X 337.9mm
	Pixel Pitch	0.165mm X 0.165mm
	Contrast Ratio	800 :1 typ.
	Maximum Luminance	750cd/m² typ. (calibrated to 410cd/m² and 500cd/m² by factory default)
	Viewing Angle	170° vertical and horizontal
Visual Performance	Available Resolution	7680 (2560 X 3) sub-pixel X 2048pixel
	Grayscale	3061 shades of gray to 256 shades of gray Simultaneous display of 1276 shades of gray is possible with the customized viewer.
Input Signal	Input Sync Signal	DVI 1.0 compliant
	Plug and Play	DDC2B compliant
Input Power Supply	Input	AC adapter 100V ~ 240V (±10%) 50/60Hz
	Maximum Power Consumption	80W typ. (with power management feature)
Features	Calibration Control	Luminance, Gamma, Capability of saving 3 sets of LUT settings (An optional calibration kit is required.)
	OSD Information Display	Model name, Serial No., Total operating time, Calibration settings (Operating time from Last Calibration, Luminance, Gamma, etc.), Current luminance, etc.
	USB Hub	USB Rev. 2.0 compliant, Self-powered USB upstream connector (x1), USB downstream connector (x2)
	Other Features	Luminance Uniformity Correction, Hardware Pivot, LED indicator
Approvals		UL60601-1, CSA C22.2 No.601.1, MDD/CE, FCC-B, VCCI-B, FDA510 (k), MIC, CCC
Physical Characteristics	Dimensions (incl. tilt stand)	Landscape : 474.5 (W) X 479.9 / 541.4 (H) X 220 (D) mm Portrait : 390 (W) X 522.2 / 583.7 (H) X 220 (D) mm
	Weight	Net: approx. 11.6kg, Without tiltstand: approx. 7.4kg
	Tilt stand	Tilt, Swivel, Portrait / Landscape
	Mount	100mm VESA mounting
	Security Slot	On the back of the panel and the tilt stand
	LCD surface treatment	Special AR Coating
Accessories		AC adapter, Power cord (3P), DVI cable, USB cable, Operation manual



Landscape Portrait

Options

Graphics Cards

LV Series

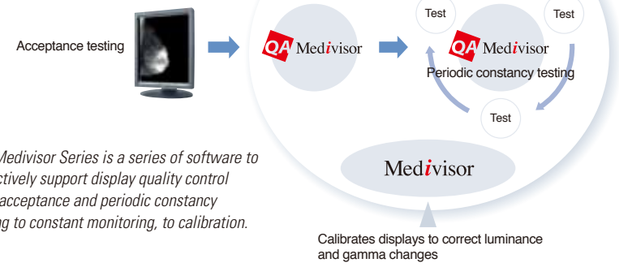
TOTOKU's lineup of PCI Express graphics cards enable smooth transfer of images whose size can be expected to grow even bigger in the future. (Optional.)

	LV52P1	LVU2E2-N16
Max. resolution	2560 X 2048 Pixels	
BUS	PCI 64bit (66MHz) / 32bit (33MHz)	PCI Express X16
I/F	DVI X2	DVI X2 (Dual-link)
Memory	256MB	256MB
OS	XP/2000/NT 4.0(SP6)	Vista/XP/2000
Max. Power Consumption	35W	38W
Outline	190 X 107mm	168 X 111mm

* Despite the hardware requirements for this graphics card, some computers or software and/or a combination of both may prevent the proper installation of this graphics card. Please check with your dealer before you purchase it.

Collective support for display quality control

Medivisor® Series



The Medivisor Series is a series of software to collectively support display quality control from acceptance and periodic constancy testing to constant monitoring, to calibration.

Viewer Software

MS51i2 supports 15M-ISD and 5M-normal modes.
To use MS51i2 in 15M-ISD mode, customized viewer software is required.

TOTOKU supports Pink Ribbon activities.

TOTOKU has obtained ISO14001 and ISO9001/ISO13485 certification which are international standards concerning environment management and quality control respectively.

ISO 14001 JQA-EM0674

ISO 9001 ISO 13485

TOTOKU

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Additional product information is available at **http://www.totoku.com/display/**

Please contact the distributor below with inquiries and orders.

2010.03 MS51i2-A-1K-2010.03 SE

TOTOKU

i model

5MP with ISD Technology
21.3" Digital Mammography Display

MS51i2

λ-Sentinel II

Medivisor®

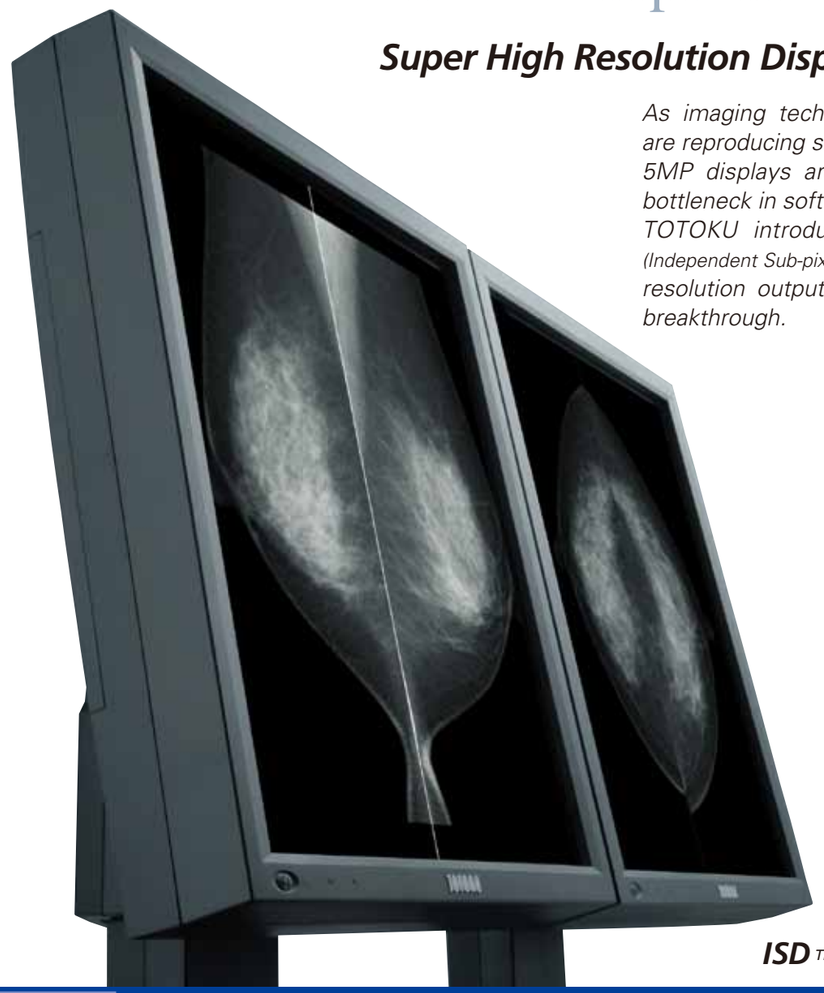
5 Megapixel with ISD Technology
Digital Mammography Display

ISD TECHNOLOGY

NEW
15M
Independent Sub-pixel Drive

TOTOKU supports Pink Ribbon activities.

15 million reasons for a better diagnosis



15M Independent Sub-pixel Drive

Super High Resolution Display for Mammography

As imaging technology advances, modality devices are reproducing such high resolution that even current 5MP displays are unable to reproduce, creating a bottleneck in softcopy diagnostic environment.
TOTOKU introduces "MS51i2" equipped with ISD (Independent Sub-pixels Drive) technology to accept higher resolution output from modality devices as a major breakthrough.

5MP with ISD Technology
21.3" Digital Mammography Display

MS51i2

21.3" | Digital Input | 750 cd/m² | 800:1 | Calibration function | 1276 Step grayscale
OSD | Dual Link input | Luminance Uniformity Correction | Hardware Pivot | LED Indicator | Special AR Coating

ISD TECHNOLOGY Medivisor® λ-Sentinel II

Super-high 15M ISD resolution with a pixel pitch of 55μm

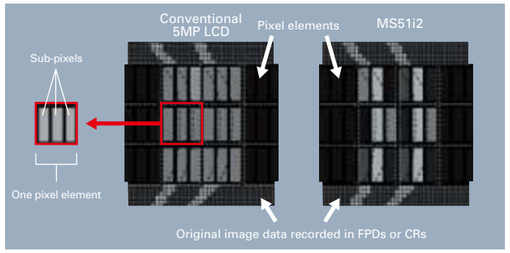
Faithful Reproduction of Image Details

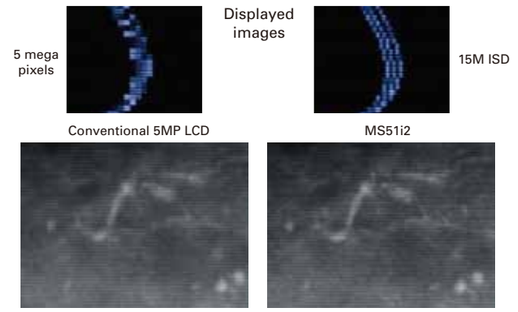
While a pixel pitch of 5MP displays is 165μm, MS51i2 achieves 55μm in sub pixel chain direction by newly developed ISD technology to realize excellent depiction of image details.

ISD *(Independent Sub-pixel Drive)*

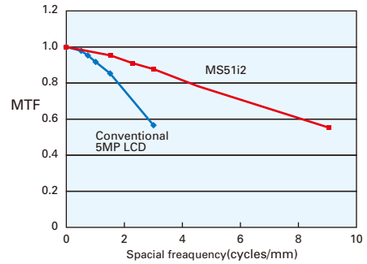
Driven by each sub-pixel value corresponding to detailed information recorded in an original image, three times resolution enhancement is achieved. (Patent pending) In addition, up to 1276 shades of gray are now simultaneously displayable by the upgraded ISD technology.

*Customized viewer software is required to display images with enhanced resolution by the ISD technology





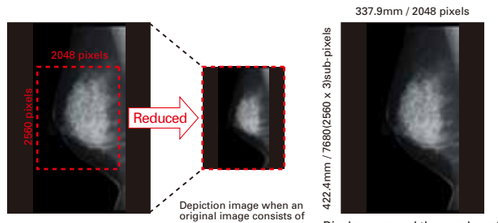
The depiction detail of micro calcifications was obviously improved on MS51i2.



Measured MTFs of horizontal direction (the sub-pixel chain direction) on MS51i2 and a conventional 5MP LCD

Advanced Image Quality with Less Degradation

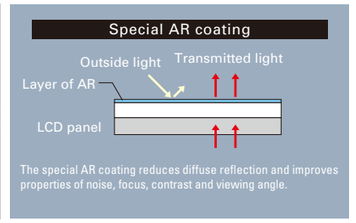
To display an overall image whose native resolution is higher than the monitor is able to reproduce, the image is converted to a lower resolution image with a certain amount of data loss.
The MS51i2 with super high resolution offers excellent image reproduction, faithful to the original captured by the modality device with less image degradation.



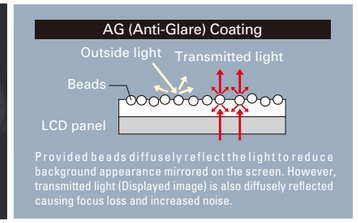
Original image
Depiction image when an original image consists of more pixels than a display in full-screen.
Display area and the number of pixels on MS51i2

Special AR Coating for Film-like Black and Improved Sharpness

TOTOKU's new special AR coating technology addresses properties of focus, noise reduction, contrast, and viewing angle achieving film-like black and accurate reproduction of images.



The special AR coating reduces diffuse reflection and improves properties of noise, focus, contrast and viewing angle.



Provided beads diffusely reflect the light to reduce background appearance mirrored on the screen. However, transmitted light (Displayed image) is also diffusely reflected causing focus loss and increased noise.

*The image explains general ideas of each mechanism and may be different from the actual structures.

High image quality with high precision & user-friendly functions

Luminance equalizer λ-Uniformity Congruence

Is built in to achieve highly accurate luminance uniformity across the screen. Luminance unevenness is minimized in the final tune-up prior to shipping.

Calibration function

Calibrates luminance and gamma to enable smooth grayscale display that is faithful to DICOM GSDF.
* Optional calibration kit is required.

Simultaneous display of 1276 shades of gray

Realizes smoother grayscale display required for medical image displays.

Hardware pivot function

Stress-free operation is made possible by fast drawing speed for on-the-fly change to portrait orientation.

High luminance, high contrast and wide viewing angle

With the highest-in-class luminance and contrast and a wide viewing angle, TOTOKU's LCD drive technology maximizes the display's performance for the best image quality.

Dual Link input

Provides smooth display of motion pictures.

OSD Information Display

With a push of a button, the display's current status can be checked such as the display model, total operating time, actual measurement of luminance, and calibration settings.

LED indicator

A glance at the LED indicator tells you the display's current operating status.

Advanced quality control solution

Enhanced convenience with utility software:

Utility software offers enhanced features such as gamma check, ambient light and display luminance measurement, and advanced power saving to reduce power consumption and prevent unnecessary deterioration of the backlight.

* Utility software is included in optional calibration kit.

Luminance stabilizing system λ-Sentinel II

The luminance sensor, integrated into the front bezel, consistently monitors and accurately stabilizes luminance on the screen by rapidly communicating with the backlight sensor. In addition, a build-in luminance sensor provided with i2 models enables even simpler calibration without attaching the calibration sensor.

Remote grayscale check and remote calibration functions

Conformance testing to DICOM GSDF and calibration can be remotely accomplished. These features minimize the burden on display administrators.

* Optional PM Medivisor software is required.

High reliance and a full range of services provide confidence

Worldwide medical safety standards

This display is certified under various medical safety standards that are much more demanding than those for general-purpose IT equipment.

Pairing service to match display colors (Optional)

Medical imaging often uses two displays side-by-side, and it is very important that they present the same color temprature.
TOTOKU offers a display pairing service that match colors of two displays using a high-definition spectrophotometer before shipping.

* Consult your dealer for more information about the pairing service.