MITSUBISHI ELECTRIC

Changes for the Better

for a greener tomorrow eco Changes

COLOR TFT-LCD MODULES
FOR INDUSTRIAL USE

The Next Step in the Evolution of Displays

True-to-life Color Reproduction & Variety of Sizes
Highly Advanced TFT-LCD Modules by Mitsubishi Electric

LINEUP A line-up rich in variety to match diversified customer requirements

Standard

	5.7″	6.5″	8.4″	10.4″	12.1″	15.0″	17.0″	19.0″
QVGA 320x240	Standard Type							
VGA 640x480	Super High Brightness Transflective	Super High Brightness Low Reflection	Standard Type Super High Brightness Transflective	Standard Type Super High Brightness				
SVGA 800x600	CMOS-IF Compatible		Standard Type Super High Brightness Super Wide Viewing Angle	Standard Type Super High Brightness Super Wide Viewing Angle	Standard Type Super High Brightness Super Wide Viewing Angle			
XGA 1024x768			Standard Type Super High Brightness LVDS-IF Compatible	Standard Type Super High Brightness	Standard Type Super High Brightness	Standard Type* Super High Brightness* Super Wide Viewing Angle*		
SXGA 1280x1024	Mounting Compatible						Standard Type 2ch LVDS-IF Compatible	Super High Brightness

*The pin assignment is compatible, but the connector model name is different.

Mitsubishi Electric color thin-film transistor liquid-crystal display (TFT-LCD) modules are produced utilizing advanced imaging and color reproduction technologies and come in a variety of sizes to match diversified needs. With applications including point of sale (POS) terminals, vending and ticketing machines, bank automatic teller machines (ATMs) and monitors in vehicles and boats, our TFT-LCD modules have become an essential part of society and people's lives today. Features include excellent visibility, stylish design, simplicity of use and customer-focused product development.

Wide

	4.3″	5.0″	7.0″	9.0″	10.6″	12.1″	14.1″	17.5″
Wide-VGA 800x480	Standard Type	Standard Type Super Wide Viewing Angle	Super High Brightness Super Wide Viewing Angle	Standard Type Super High Brightness Super Wide Viewing Angle				
Wide-XGA 1280x768				Super Wide Viewing Angle	Super High Brightness Super Wide Viewing Angle			Standard Type*
Wide-XGA 1280x800	Mounting Compatible				LVDS-IF Compatible	Standard Type Super High Brightness	Standard Type	

*The pin assignment is compatible, but the connector model name is different.

Special


	9.0″	19.2″
QHD 960x540	Super Wide Viewing Angle	
1/3HD 1920x360	LVDS-IF Compatible	Standard Type**

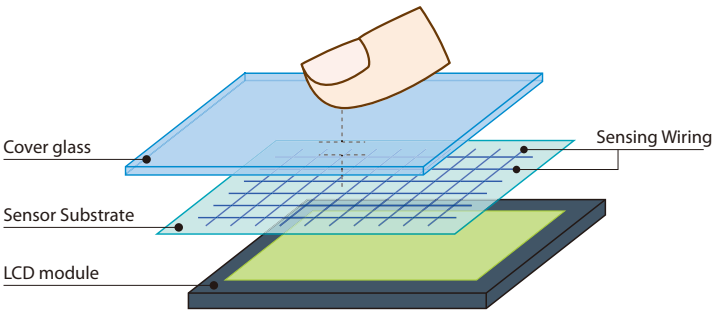
*The pin assignment is compatible, but the connector model name is different.
**There are Landscape(AA192AA01) and Portrait(AA192AA51).

Color TFT-LCD Modules for Industrial Use with Touch Panel

TFT-LCD Modules with PCAP* Touch Panel NEW

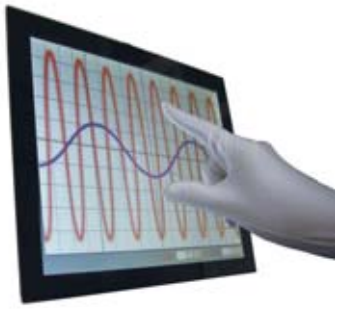
There is a growing demand in the industrial equipment market for intuitive touch interfaces like those on smartphones and tablet PCs. Mitsubishi Electric has responded to that demand with new LCD modules employing PCAP touch panel technology for superior visibility and durability. Our unique TFT array processing technology coupled with low-resistance material has paved the way to a breakthrough development in microfine sensing wires for touch panels. You can now say goodbye to color shift and hello to superior visibility without the need for any transparent conductive film like ITO**. Our proprietary detective processing technologies deliver seamless performance through a 2.8-mm-thick protective glass that's designed for superior durability. The touch panel's sensors can detect a user's touch even if he or she is wearing gloves or water drops exist on the screen. Everything, including the LCD module's touch panel, control board, driver software, and glass bonding, has been integrated during manufacturing to deliver all its outstanding features in one neat package. This integrated assembly process ensures a highly reliable user interface environment that delivers steady performance in the toughest industrial or outdoor environments.

* PCAP: Projected Capacitive **ITO: Indium-tin-oxide



Simplified image of TFT-LCD PCAP Touch Panel

Intuitive touch



With gloves

TFT-LCD Modules with 4-wire resistive Touch Panel

We offer a complete line of highly versatile industrial LCD modules equipped with a 4-wire resistive touch panel designed to meet a world of industrial equipment needs. Our integrated assembly method builds reliability into every LCD module with touch panel.

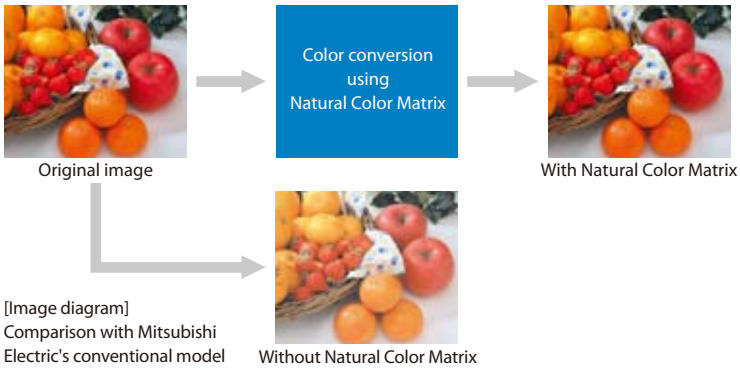
Glass bonding and touch panel options are also available. Please contact our sales office.

White LED Backlighting

White light-emitting diodes (LEDs), which consume less power and have superior electrical properties compared to their conventional cold cathode fluorescent lamp(CCFL) counterparts, are increasingly being used as LCD backlights. Among pioneers in the use of white LEDs, Mitsubishi Electric was the first to complete introducing LED into industrial-use LCD line-up. White LED backlights are used in all our standard product models as well as our high-brightness products designed especially for outdoor use.

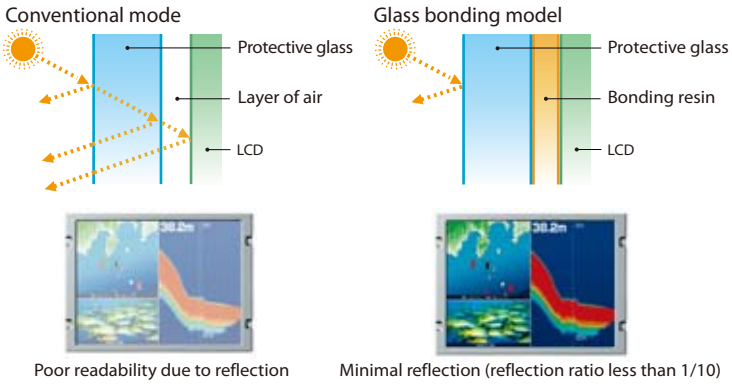
Natural Color Matrix

Today, industrial-use LCDs are incorporated into a range of different equipment where they display a wide variety of content. An increasing number of these applications require natural color reproduction. Mitsubishi Electric's unique Natural Color Matrix color conversion technology was introduced as a standard feature in the company's industrial-use LCDs beginning from the early stages of production providing stunningly vivid color reproduction.



Glass Bonding Technology

Outdoor-use equipment incorporating LCDs often comes equipped with a glass panel to protect the LCD surface. However, the reflection of sunlight off the surface of the LCD can adversely affect visibility. As a solution, Mitsubishi Electric has introduced bonding of the LCD and protective glass with resin. This minimizes the reflection of sunlight and realizes superior visibility for products with protective glass.



Wide Product Line-up

A diverse line-up of TFT-LCD modules is available, including a full range of standard resolution displays. Examples of special industrial-use LCDs include a 9.0-inch quarter-high-definition (QHD) resolution monitor ideal for camera monitor applications and a wide 19.2-inch full high-definition monitor that is one-third the height of conventional displays.

Specification

Screen Size (inch)	Resolution (pixel)	Model Name	Features*								Electric Interface	Brightness (cd/m²)	Contrast Ratio	Viewing Angle (°) <U/D><L/R>	Number of Colors	Outline Dimensions (mm) <W><H><D>
			LED Driver	Natural Color Matrix	Color Saturation 72%	Low Reflection	Transflective	Super High Brightness	Super Wide Viewing Angle	Feed Forward Driving (Motion Improvement Technology)						
4.3	Wide-VGA (800x480)	AA043MA01		✓							CMOS	200	400:1	45/65, 65/65	262K/16.7M	103.0x67.5x5.3
5.0	Wide-VGA (800x480)	AA050ME01									CMOS	420	450:1	65/45, 65/65	16.7M	118.5x77.8x3.5
		AA050MG01							✓		CMOS	800	900:1	85/85, 85/85	16.7M	118.5x84.7x3.9
5.7	QVGA (320x240)	AA057QD01	✓								CMOS	450	800:1	80/60, 80/80	262K	144.0x104.6x8.8
	VGA (640x480)	AA057VF12 NEW	✓	✓				✓			CMOS	1100	600:1	80/60, 80/80	262K	135x104.6x8.85
		AA057VG12 NEW	✓	✓			✓				CMOS	500*2	185:1*2	50/65, 80/80*2	262K	135x104.6x8.85
6.5	VGA (640x480)	AA065VE11 NEW		✓				✓			LVDS	1300	600:1	80/60, 80/80	262K/16.7M	154.0x121.0x11.0
		AA065VE13 NEW		✓		✓		✓			LVDS	1300	600:1	80/60, 80/80	262K/16.7M	154.0x121.0x11.0
7.0	Wide-VGA (800x480)	AA070MC01 NEW	✓	✓				✓	✓		LVDS	1000	1000:1	85/85, 85/85	262K/16.7M	169.8x109.7x8.9
		AA070MC11 NEW		✓				✓	✓		LVDS	1300	1000:1	85/85, 85/85	262K/16.7M	169.8x109.7x8.9
		AA070ME01 NEW	✓	✓				✓			LVDS	1000	800:1	60/80, 80/80	262K/16.7M	169.8x109.7x8.9
8.4	VGA (640x480)	AA084VJ01 NEW	✓	✓							LVDS	800	800:1	80/60, 80/80	262K/16.7M	199.5x149.0x9.7
		AA084VJ11 NEW		✓				✓			LVDS	1500	800:1	80/60, 80/80	262K/16.7M	199.5x149.0x9.7
		AA084VL01 NEW		✓			✓				CMOS	300*2	200:1*2	(50/70), (80/80)*2	262K	199.5x149.0x11.5
	SVGA (800x600)	AA084SC01 NEW	✓	✓	✓				✓		LVDS	600	1000:1	85/85, 85/85	262K/16.7M	199.5x149.0x9.7
		AA084SD01 NEW	✓	✓							LVDS	600	600:1	80/60, 80/80	262K/16.7M	199.5x149.0x9.7
		AA084SD11 NEW		✓				✓			LVDS	1200	600:1	80/60, 80/80	262K/16.7M	199.5x149.0x9.7
	XGA (1024x768)	AA084XE01 NEW	✓	✓							LVDS	500	600:1	80/60, 80/80	262K/16.7M	199.5x149.0x9.7
		AA084XE11 NEW		✓				✓			LVDS	1000	600:1	80/60, 80/80	262K/16.7M	199.5x149.0x9.7
9.0	Wide-VGA (800x480)	AA090ME01		✓	✓				✓		LVDS	400	900:1	85/85, 85/85	262K/16.7M	219.0x136.2x9.5
		AA090MF01		✓							LVDS	800	800:1	80/60, 80/80	262K/16.7M	219.0x136.2x9.5
		AA090MF11 NEW		✓				✓			LVDS	1500	800:1	80/60, 80/80	262K/16.7M	219.0x136.2x9.5
	QHD (960x540)	AA090AA01	✓		✓				✓	✓	LVDS	400	1000:1	85/85, 85/85	262K/16.7M	217.0x130.0x9.5
	Wide-XGA (1280x768)	AA090TA01 NEW		✓					✓		LVDS	800	1000:1	85/85, 85/85	262K/16.7M	219.0x136.2x9.5
10.4	VGA (640x480)	AA104VJ02 NEW	✓	✓							LVDS	800	800:1	80/60, 80/80	262K/16.7M	230.0x180.2x9.5
		AA104VJ12 NEW		✓				✓			LVDS	1500	800:1	80/60, 80/80	262K/16.7M	230.0x180.2x9.5
	SVGA (800x600)	AA104SJ02 NEW	✓	✓	✓				✓		LVDS	600	1000:1	85/85, 85/85	262K/16.7M	230.0x180.2x9.5
		AA104SL02 NEW	✓	✓							LVDS	700	700:1	80/60, 80/80	262K/16.7M	230.0x180.2x9.5
		AA104SL12 NEW		✓				✓			LVDS	1200	700:1	80/60, 80/80	262K/16.7M	230.0x180.2x9.5
	XGA (1024x768)	AA104XF02 NEW	✓	✓							LVDS	600	700:1	80/80, 80/80	262K/16.7M	230.0x180.2x9.5
		AA104XF12 NEW		✓				✓			LVDS	1000	700:1	80/80, 80/80	262K/16.7M	230.0x180.2x9.5

*1 White LED backlights are used in all models.
*2 Transmissive mode

Screen Size (inch)	Resolution (pixel)	Model Name	Features*								Electric Interface	Brightness (cd/m²)	Contrast Ratio	Viewing Angle (°) <U/D><L/R>	Number of Colors	Outline Dimensions (mm) <W><H><D>
			LED Driver	Natural Color Matrix	Color Saturation 72%	Low Reflection	Transflective	Super High Brightness	Super Wide Viewing Angle	Feed Forward Driving (Motion Improvement Technology)						
10.6	Wide-XGA (1280x768)	AA106TA01 NEW	✓	✓				✓	✓		LVDS	1000	1000:1	85/85, 85/85	262K/16.7M	250.0x157.0x8.9
		AA106TA11 NEW		✓				✓	✓		LVDS	1000	1000:1	85/85, 85/85	262K/16.7M	250.0x157.0x8.9
12.1	SVGA (800x600)	AA121SU01 NEW	✓	✓							LVDS	800	600:1	80/80, 80/80	262K/16.7M	260.5x203.0x9.5
		AA121SU11 NEW		✓				✓			LVDS	1500	600:1	80/80, 80/80	262K/16.7M	260.5x203.0x9.5
		AA121ST01 NEW	✓	✓	✓				✓		LVDS	600	1000:1	85/85, 85/85	262K/16.7M	260.5x203.0x9.5
	XGA (1024x768)	AA121XN01 NEW	✓	✓							LVDS	700	600:1	80/80, 80/80	262K/16.7M	260.5x203.0x9.5
		AA121XN11 NEW		✓				✓			LVDS	1300	600:1	80/80, 80/80	262K/16.7M	260.5x203.0x9.5
	Wide-XGA (1280x800)	AA121TD01	✓	✓							LVDS	800	700:1	80/60, 80/80	262K/16.7M	283.0x185.1x9.7
		AA121TD11 NEW		✓				✓			LVDS	1500	700:1	80/60, 80/80	262K/16.7M	283.0x185.1x9.7
14.1	Wide-XGA (1280x800)	AA141TC01		✓							LVDS	800	700:1	80/60, 80/80	262K/16.7M	326.0x216.5x16.0
15.0	XGA (1024x768)	AA150XS02			✓				✓		LVDS	350	1000:1	85/85, 85/85	262K/16.7M	326.0x255.0x16.6
		AA150XS11		✓	✓			✓	✓		LVDS	1100	1000:1	85/85, 85/85	262K/16.7M	326.0x255.0x16.6
		AA150XT01		✓							LVDS	800	800:1	60/80, 80/80	262K/16.7M	326.0x255.0x16.6
		AA150XT11		✓				✓			LVDS	1500	800:1	60/80, 80/80	262K/16.7M	326.0x255.0x16.6
17.0	SXGA (1280x1024)	AA170EC01 NEW		✓	✓						LVDS	600	800:1	80/60, 80/80	262K/16.7M	358.5x296.5x16.9
17.5	Wide-XGA (1280x768)	AA175TD01		✓							LVDS	700	700:1	80/60, 80/80	262K/16.7M	404.0x258.0x16.2
19.0	SXGA (1280x1024)	AA190EA01		✓				✓			LVDS	1500	800:1	80/80, 80/80	262K/16.7M	404.2x330.0x14.9
19.2	1/3HD (1920x360)	AA192AA01	✓	✓							LVDS	500	700:1	80/60, 80/80	262K/16.7M	496.0x109.2x13.9
		AA192AA51 NEW	✓	✓							LVDS	650	700:1	80/80, 60/80	262K/16.7M	496.0x109.2x13.9

*1 White LED backlights are used in all models.
*2 Transmissive mode

LED Driver
Natural Color Matrix
Color Saturation 72%
Low Reflection
Transflective
Super High Brightness
Super Wide Viewing Angle
Feed Forward Driving (Motion Improvement Technology)

Other available features are grass bonding type and touch panel type. Please contact our sales office.

COLOR TFT-LCD MODULES FOR INDUSTRIAL USE

Please see here in detail.

http://www.MitsubishiElectric.com

Keep safety first in your circuit designs!

●Mitsubishi Electric Corporation puts the maximum effort into making LCD products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with LCD may lead to personal injury, fire or property damage. Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as(i) placement of substitutive, auxiliary circuits,(ii) use of non-flammable material and(iii) prevention against any malfunction or mishap.

Notes regarding these materials

●These materials are intended as a reference to assist our customers in the selection of the Mitsubishi LCD product best suited to the customer's application; they do not convey any license under any intellectual property rights, or any other rights, belonging to Mitsubishi Electric Corporation or a third party.●Mitsubishi Electric Corporation assumes no responsibility for any damage, or infringement of any third-party's rights, originating in the use of any product data, diagrams, charts or circuit application examples contained in these materials.●All information contained in these materials, including product data, diagrams and charts, represent information on products at the time of publication of these materials, and are subject to change by Mitsubishi Electric Corporation without notice due to product improvements or other reasons. It is therefore recommended that customers contact Mitsubishi Electric Corporation or an authorized Mitsubishi LCD product distributor for the latest product information before purchasing a product listed herein.●Mitsubishi Electric Corporation LCDs are not designed or manufactured for use in a device or system that is used under circumstances in which human life is potentially at stake. Please contact Mitsubishi Electric Corporation or an authorized Mitsubishi LCD product distributor when considering the use of a product contained herein for any specific purposes, such as apparatus or systems for transportation, vehicular, medical, aerospace, nuclear, or undersea repeater use.●The prior written approval of Mitsubishi Electric Corporation is necessary to reprint or reproduce these materials in whole or in part. ●If these products or technologies are subject to the Japanese export control restrictions, they must be exported under a license from the Japanese government and cannot be imported into a country other than the approved destination. Any diversion or reexport contrary to the export control laws and regulations of Japan and/or the country of destination is prohibited.●Please contact Mitsubishi Electric Corporation or an authorized Mitsubishi Electric LCD product distributor for further details on these materials or the products contained therein.

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