

MDT043002	480x800	MIPI Interface	TFT Module
Specification			
Version: 1		Date: 23/04/2022	
Revision			
1	21/04/2022	First issue	

Display Features			
Display Size	4.30"		
Resolution	480x800		
Orientation	Portrait		
Appearance	RGB		
Logic Voltage	3.3V		
Interface	MIPI		
Brightness	350cd/m ²		
Touchscreen	---		
Module Size	62.50 x 105.50x 2.15 mm		
Operating Temperature	-20°C ~ +70°C	Created By	Checked By
Pinout	25 way FFC	CL	TSB
Pitch	0.3 mm	Box Quantity	Weight / Display
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* - For full design functionality, please use this specification in conjunction with the ILI9806E display driver specification.(Provided Separately)

Display Accessories	
Part Number	Description
MDIB-CC1	Interconnect board for standard pitch pinouts to fine pitch wires. Providing pinouts for 2.54 pinout. 1.27, 1, 0.845, 0.8, 0.7, 0.65, 0.62, 0.6, 0.5 & 0.3 pads.

Optional Variants	
Appearances	Voltage



1. GENERAL SPECIFICATIONS

Item	Contents	Unit
LCD TYPE	TFT/TRANSMISSIVE	
MODULE SIZE (W*H*T)	62.50*105.50*2.15	MM
ACTIVE SIZE (W*H)	56.16*93.60	MM
PIXEL PITCH (W*H)	0.117*0.117	MM
NUMBER OF DOTS	480*800	
DIVER IC	ILI9806E	
INTERFACE TYPE	MIPI	
TOP POLARIZER TYPE	GLARE	
RECOMMEND VIEWING DIRECTION	ALL	O'CLOCK
GRAY SCALE INVERSION DIRECTION	-	O'CLOCK
BACKLIGHT TYPE	8-LED WHITE	
TOUCH PANEL TYPE	WITHOUT	

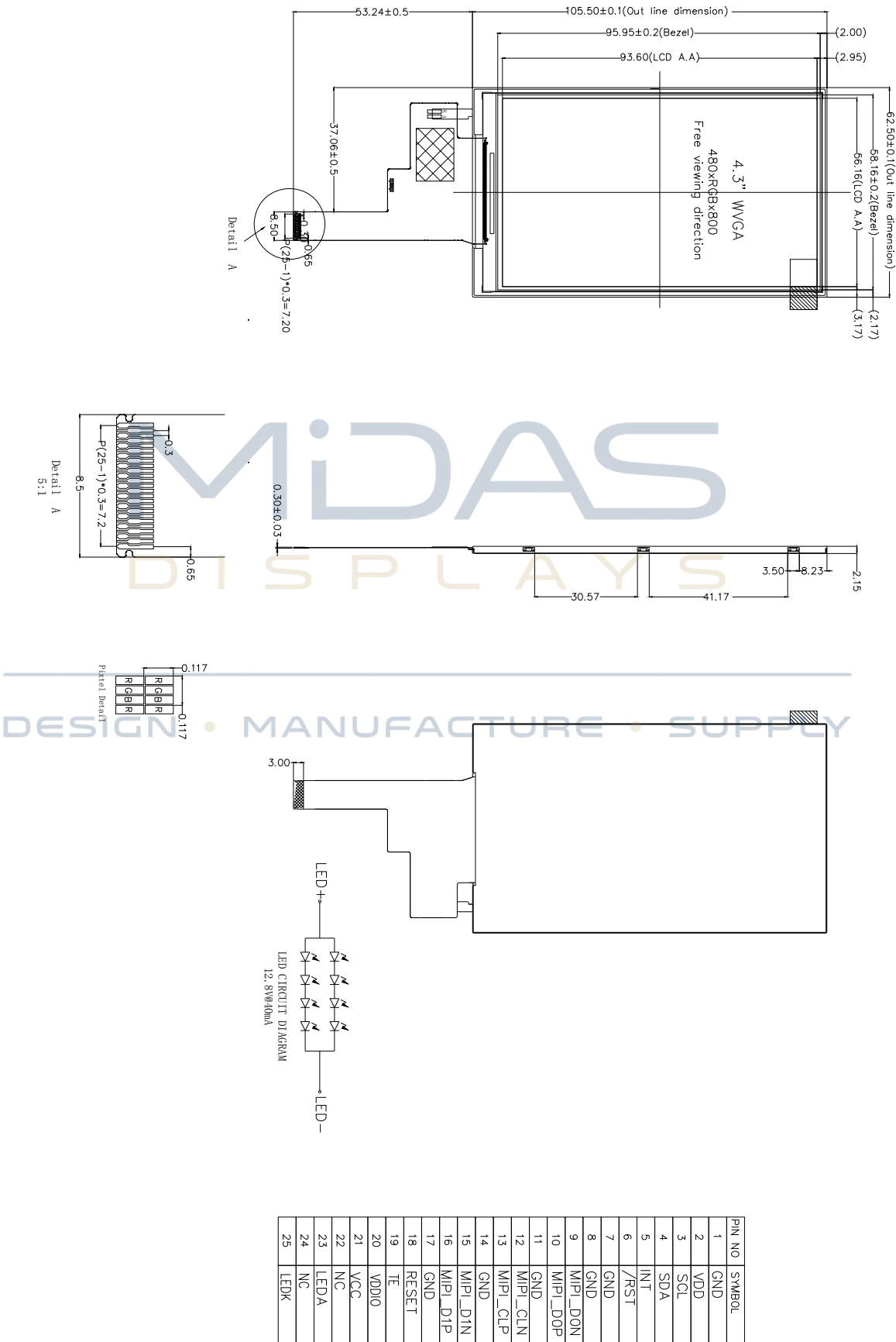
MIDAS
DISPLAYS

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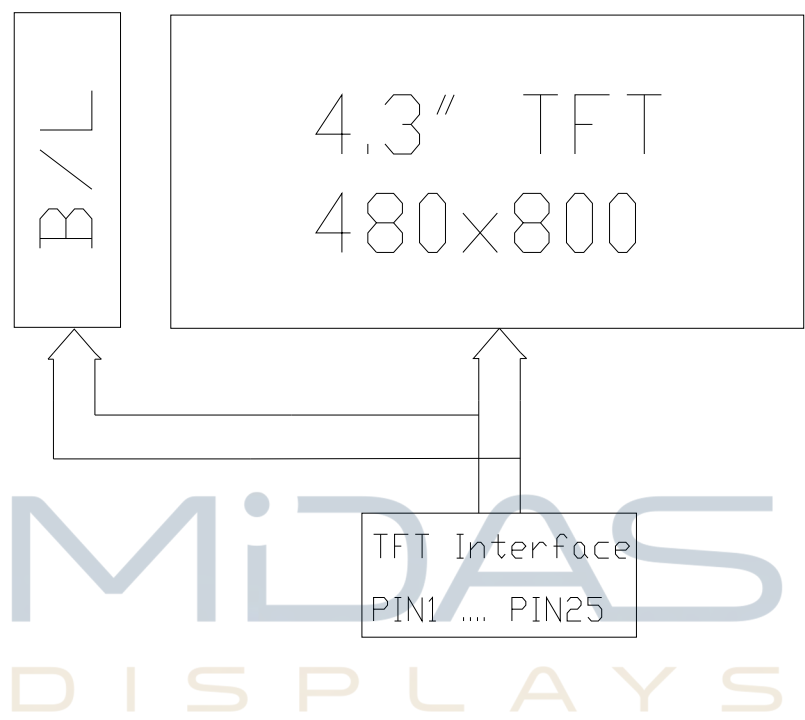


2. EXTERNAL DIMENSIONS

Remark:
1. Unmarked tolerance is ± 0.2
2. All materials comply with RoHS
3. ...: critical dimension



3. BLOCK DIAGRAM



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4. PIN ASSIGNMENT

Pin No.	Symbol	Description
1	GND	Ground
2	VDD	Power supply voltage(3.3V)
3	SCL	I2C Serial clock input/output
4	SDA	I2C Serial data input/output
5	INT	External Interrupt
6	/RST	Reset pin
7	GND	Ground
8	GND	Ground
9	MIPI_D0N	MIPI DSI differential pair (DSI-Dn+/-). If MIPI are not used, they should be connected to GND.
10	MIPI_D0P	
11	GND	Ground
12	MIPI_CLN	MIPI DSI differential clock pair (DSI-CLK+/-). If MIPI are not used, they should be connected to GND.
13	MIPI_CLP	
14	GND	Ground
15	MIPI_D1N	MIPI DSI differential data pair (DSI-Dn+/-). If MIPI are not used, they should be 12 MIPI_D1N I/O connected to GND.
16	MIPI_D1P	
17	GND	Ground
18	RESET	The external reset input. Initialize the chip with a low input. Be sure to execute a power-on reset after supplying power
19	TE	Tearing effect output. Leaving the pin open when not in use
20	VDDIO	I/O power supply voltage
21	VDD	Power supply voltage(3.3V)
22	NC	Not connection
23	LEDA	Anode pin of backlight
24	NC	Not connection
25	LEDK	Cathode pin of backlight

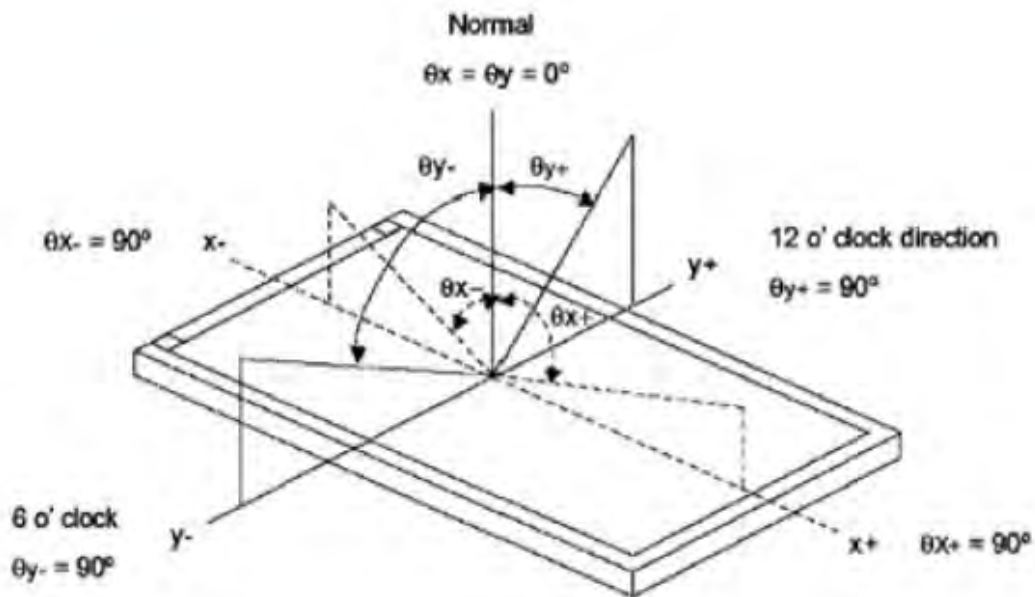


5. OPTICAL CHARACTERISTICS

ITEM		SYMBOL	CONDITIONS	SPECIFICATIONS			UNIT	NOTE
				MIN	TYP.	MAX		
Luminance		L	If=40mA	310	350	390	Cd/m²	
Contrast ratio		CR	$\theta = 0^\circ$	650	800			
Response time		T _{ON}	25℃		35	40	ms	
		T _{OFF}						
CIE COLOUR COORDINATE	RED	R _X	VIEWING NORMAL ANGLE	0.63	0.645	0.66		
		R _Y		0.304	0.319	0.334		
	GREEN	G _X		0.256	0.271	0.286		
		G _Y		0.579	0.594	0.609		
	BLUE	B _X		0.123	0.138	0.153		
		B _Y		0.083	0.098	0.113		
	WHITE	W _X		0.284	0.299	0.314		
		W _Y		0.309	0.324	0.339		
VIEWING ANGLE	Hor.	θ_{x+}	CR≥10	70	80		Degree	
		θ_{x-}		70	80			
	Ver.	θ_{y+}		70	80			
		θ_{y-}		70	80			
Uniformity	Un			80			%	



Note 1: Definition of Viewing Angle θ_x and θ_y :

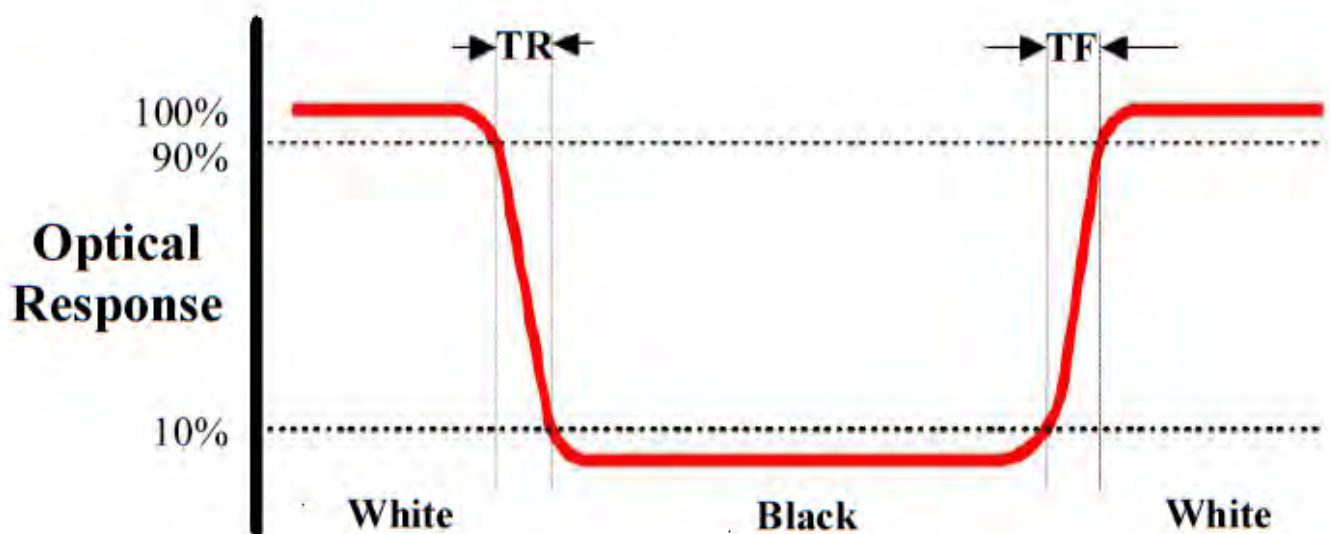


Note 2: Definition of contrast ratio CR:

$$CR = \frac{\text{Luminance of white state}}{\text{Luminance of black state}}$$

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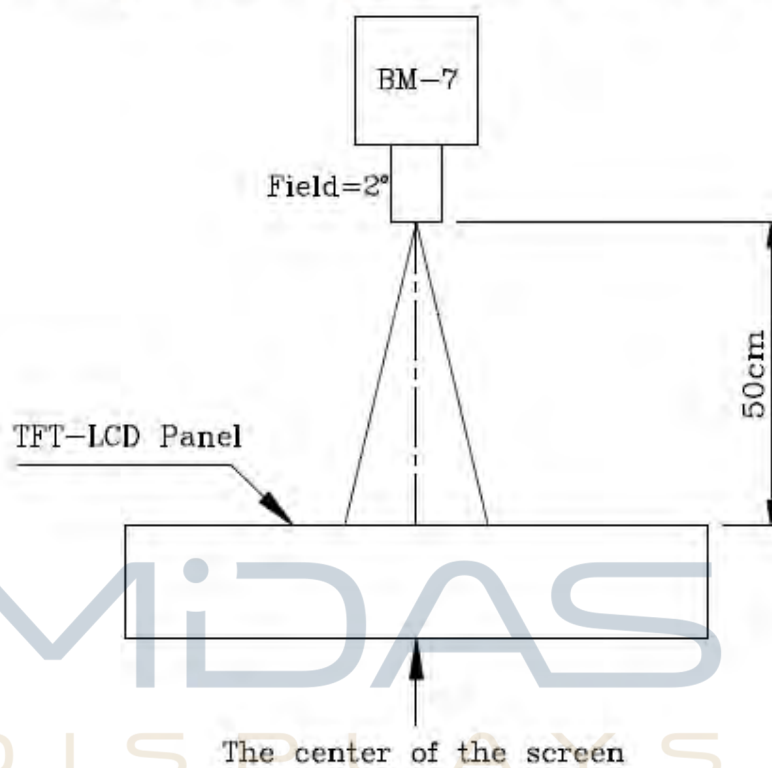
Note 3: Definition of Response Time(T_r, T_f)



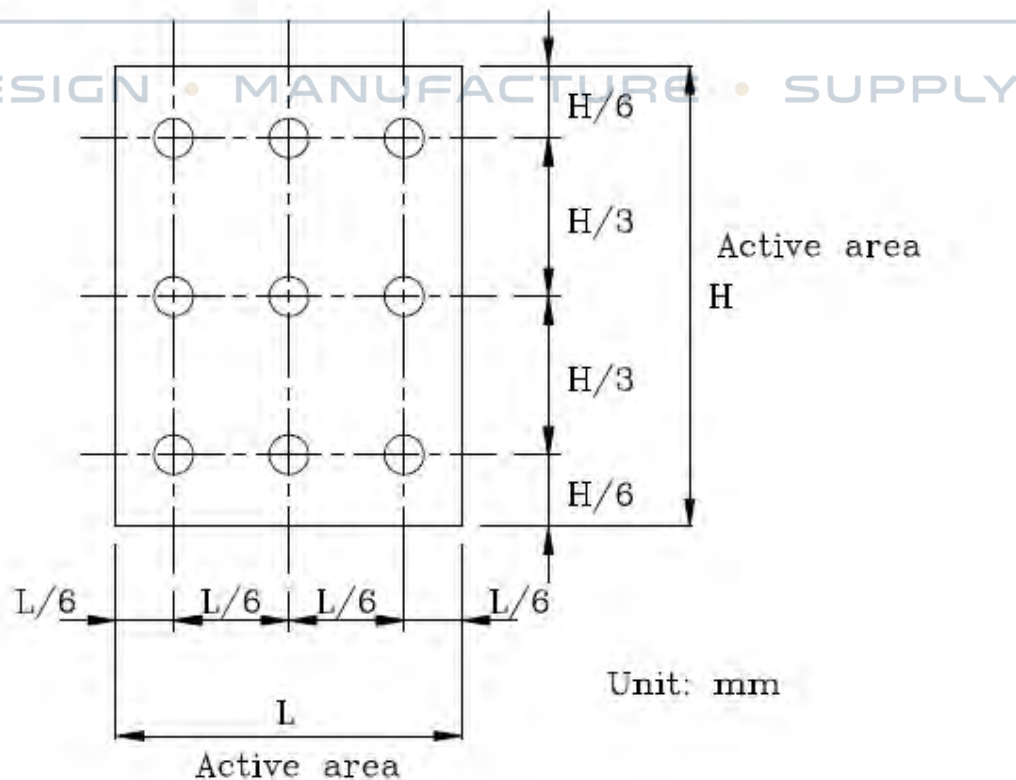
Note 4: Definition of Luminance

①The Brightness Test Equipment Setup

Field=2° (As measuring “black” image, field=2° is the best testing condition)



②The Brightness Test Point Setup



6. ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Max	Unit
Supply voltage for analog	VCC	-0.3	6.0	V
Supply voltage for logic	VDDIO	-0.3	4.5	V
Supply current (One LED)	I _{LED}		30	mA
Operating temperature	T _{OP}	-20	+70	°C
Storage temperature	T _{ST}	-30	+80	°C

Note: The absolute maximum rating values of this product are not allowed to be exceeded at any times. Should a module be used with any of the absolute maximum ratings exceeded, the characteristics of the module may not be recovered, or in an extreme case, the module may be permanently destroyed.



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7. ELECTRICAL CHARACTERISTICS

7.1 BLACKLIGHT DRIVING CONDITIONS

Item	Symbol	Value			Unit	Remark
		Min.	Typ.	Max.		
Voltage for LED Backlight	V _F	11.2	12.8	13.6	V	I _L =40mA
Current for LED Backlight	I _L		40		mA	
Power Consumption	P		0.512		W	
LED Life Time		30,000	50,000		Hr	Note

Note: Brightness to be decreased to 50% of the initial value at ambient temperature TA=25°C

7.2 INPUT POWER

Item	Symbol	Min	Typ.	Max	Unit	Applicable terminal
Supply Voltage for Analog	VCC	2.5	3.3	3.6	V	
Supply Voltage for Logic	VDDIO	1.65	1.8	3.6	V	
Input Voltage	V _{IL}	-0.3	-	0.3VDDIO	V	
	V _{IH}	0.7VDDIO	-	VDDIO		
Input leakage Current	I _{LKG}	-1		1	μA	



8. RELIABILITY TEST

NO.	TEST ITEM	CONDITIONS
1	HIGH TEMPERATURE STORAGE	TA=80℃, 240H
2	LOW TEMPERATURE STORAGE	TA=-30℃, 240H
3	HIGH TEMPERATURE OPERATION	TA=70℃, 240H
4	LOW TEMPERATURE OPERATION	TA=-20℃, 240H
5	HIGH TEMPERATURE AND HIGH HUMIDITY OPERATION	+60℃, 90%RH, 240H

9. LCD MODULES HANDLING PRECAUTIONS

- The display panel is made of glass. Do not subject it to a mechanical shock by dropping it from a high place, etc.
- If the display panel is damaged and the liquid crystal substance inside it leaks out, do not get any in your mouth. If the substance come into contact with your skin or clothes promptly wash it off using soap and water.
- Do not apply excessive force to the display surface or the adjoining areas since this may cause the color tone to vary.
- The polarizer covering the display surface of the LCD module is soft and easily scratched. Handle this polarizer carefully.
- To prevent destruction of the elements by static electricity, be careful to maintain an optimum work environment.
 - Be sure to ground the body when handling the LCD module.
 - Tools required for assembly, such as soldering irons, must be properly grounded.
 - To reduce the amount of static electricity generated, do not conduct assembly and other work under dry conditions.
 - The LCD module is coated with a film to protect the display surface. Exercise care when peeling off this protective film since static electricity may be generated.
- Storage precautions

When storing the LCD modules, avoid exposure to direct sunlight or to the light of fluorescent lamps. Keep the modules in bags designed to prevent static electricity charging under low temperature / normal humidity conditions (avoid high temperature / high humidity and low temperatures below 0℃). Whenever possible, the LCD modules should be stored in the same conditions in which they were shipped from our company.



10. OTHERS

- Liquid crystals solidify at low temperature (below the storage temperature range) leading to defective orientation of liquid crystal or the generation of air bubbles (black or white). Air bubbles may also be generated if the module is subjected to a strong shock at a low temperature.
- If the LCD modules have been operating for a long time showing the same display patterns may remain on the screen as ghost images and a slight contrast irregularity may also appear. Abnormal operating status can be resumed to be normal condition by suspending use for some time. It should be noted that this phenomena does not adversely affect performance reliability.
- To minimize the performance degradation of the LCD modules resulting from caused by static electricity, etc. exercise care to avoid holding the following sections when handling the modules:
 - Exposed area of the printed circuit board
 - Terminal electrode sections.



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