



RAYSTAR

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RFC570B-EIW-DAS

SPECIFICATION

CUSTOMER:

APPROVED BY	
PCB VERSION	
DATE	

FOR CUSTOMER USE ONLY

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY

ISSUED DATE:

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1. Revision History

DATE	VERSION	REVISED PAGE NO.	Note
2013/04/18	1		First issue
2013/07/08	2	18	Modify the packing diagram

RAYSTAR OPTRONICS

2. General Specification

- Resolution: 320 x RGBx240
- Module dimension: 160.0 x 109.0 x 13.0 mm
- Active Area : 115.2 X 86.4 mm
- Dot pitch: 0.12 x 0.36 mm
- LCD type: TFT LCD Transmissive,
- View direction: 12 o'clock
- Gray Scale Inversion Direction: 6 o'clock
- Backlight Type: LED, Normally White
- Driver IC: SSD1963
- Interface: Digital 8080 family MPU

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3. Module Coding System

R	F	C	57	0B	-	E	I	W	-	D	A	S
1	2	3	4	5	-	6	7	8	-	9	10	11

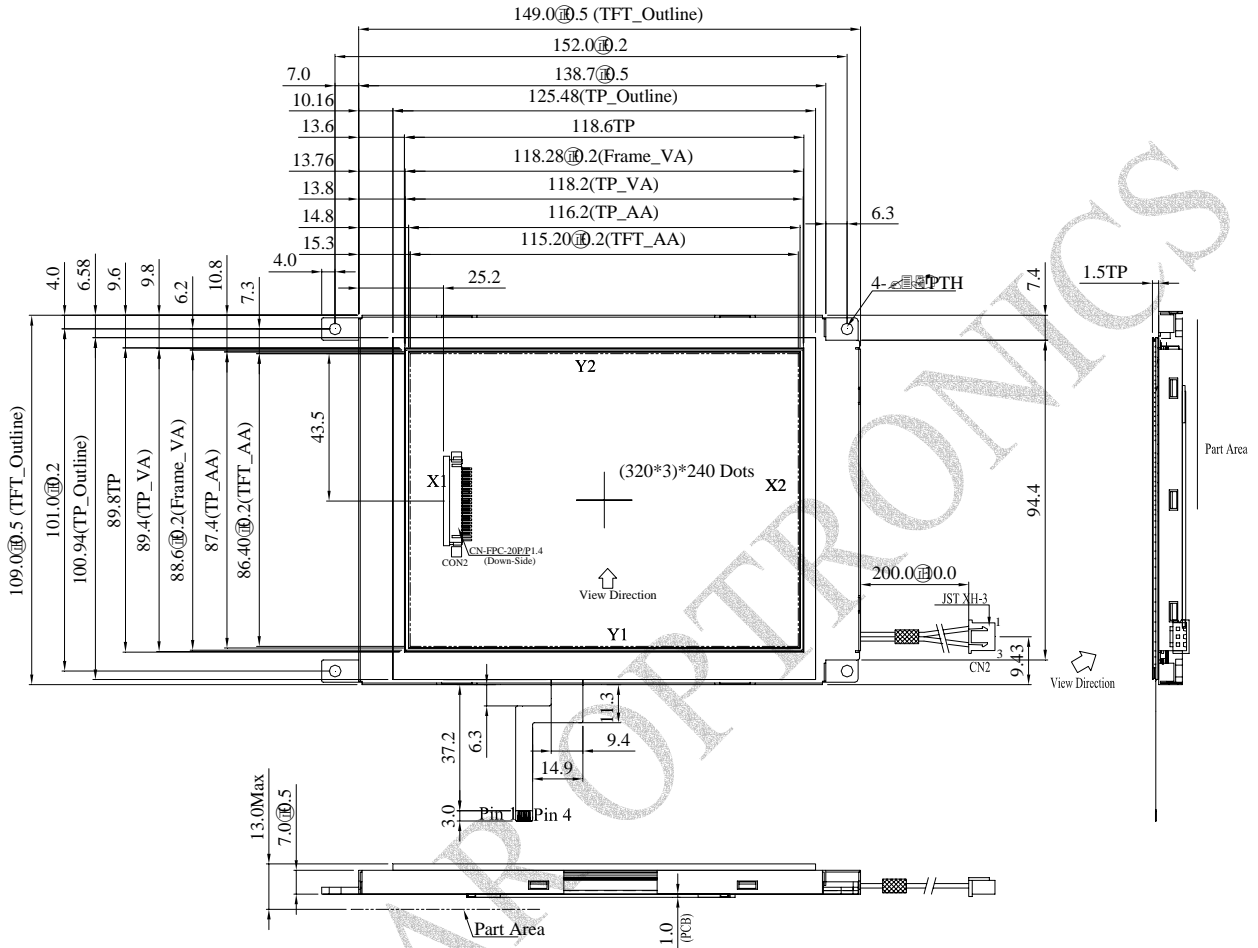
Item	Description		
1	R : Raystar Optronics Inc.		
2	Display Type : TFT Type		
3	Solution: A: 128x160 B:320x234 C:320x240 D:480x234 G:640x480		
4	Display Size : 5.7" TFT		
5	Version Code.		
6	Model serials no.		
7	Polarizer Type, Temperature range, View direction	A : Reflective, N.T, 6:00	K : Transflective, W.T,12:00
		D : Reflective, N.T, 12:00	1 : Transflective, U.T,6:00
		G : Reflective, W. T, 6:00	4 : Transflective, U.T.12:00
		J : Reflective, W. T, 12:00	C : Transmissive, N.T,6:00
		0 : Reflective, U. T, 6:00	F : Transmissive, N.T,12:00
		3 : Reflective, U. T, 12:00	I : Transmissive, W. T, 6:00
		B : Transflective, N.T,6:00	L : Transmissive, W.T,12:00
		E : Transflective, N.T.12:00	2 : Transmissive, U. T, 6:00
		H : Transflective, W.T,6:00	5 : Transmissive, U.T,12:00
8	Backlight	N : Without backlight	Y : LED, Yellow Green
		P : EL, Blue green	A : LED, Amber
		T : EL, Green	W : LED, White
		D : EL, White	O : LED, Orange
		F : CCFL, White	G : LED, Green
9	Driver Method	D: Digital A: Analog	
10	Interface	N : without control board A : 8Bit B : 16Bit	
11	TS	N : Without TS S : resistive touch panel	
		C : capacitive touch panel	

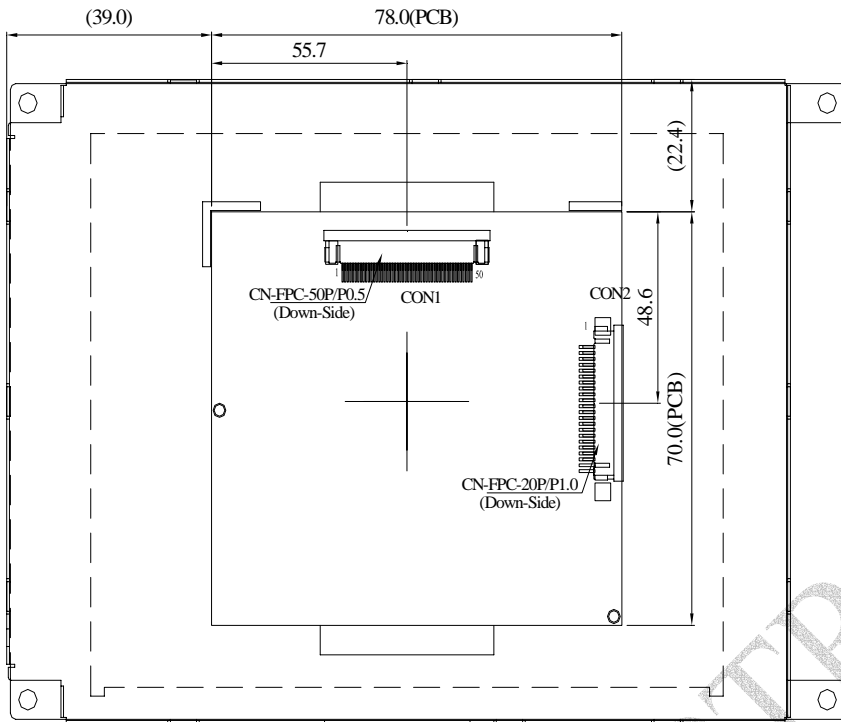
4. Interface Pin Function

4-1 Pins Connection To Control Board

Pin No.	Symbol	I/O	Description	Remark
1	GND		System ground pin of the IC. Connect to system ground.	
2	VDD		Power Supply : +3.3V	
3	NC		No connection	
4	D/C		Data/Command select	
5	WR		Write strobe signal	
6	RD		Read strobe signal	
7	DB0		Data bus	
8	DB1		Data bus	
9	DB2		Data bus	
10	DB3		Data bus	
11	DB4		Data bus	
12	DB5		Data bus	
13	DB6		Data bus	
14	DB7		Data bus	
15	CS		Chip select	
16	RST		Hardware reset	
17	NC		No connection	
18	RL		Left /right selection	
19	UD		Up/down selection	
20	NC		No connection	

5. Contour Drawing



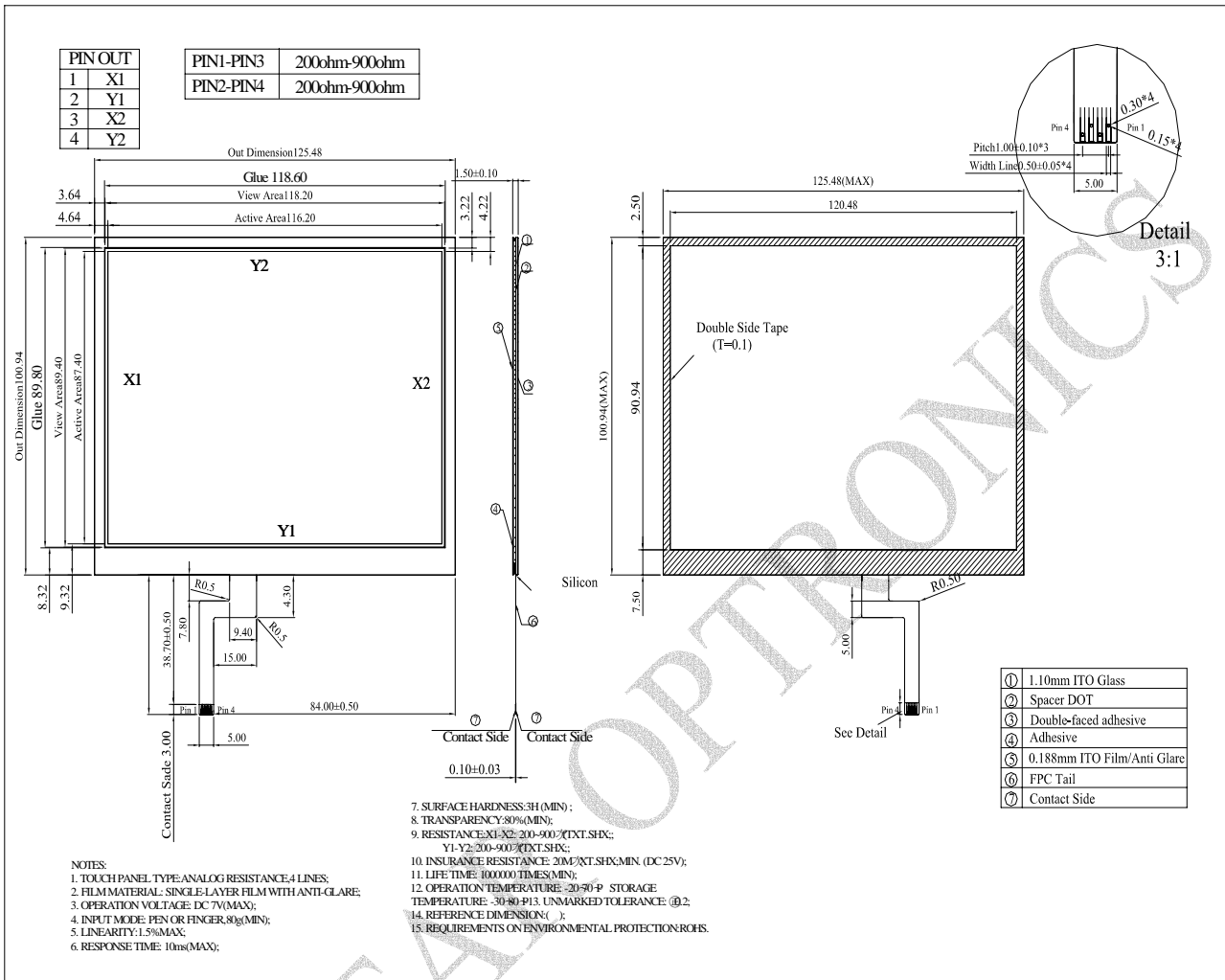


CON2
8bit mode

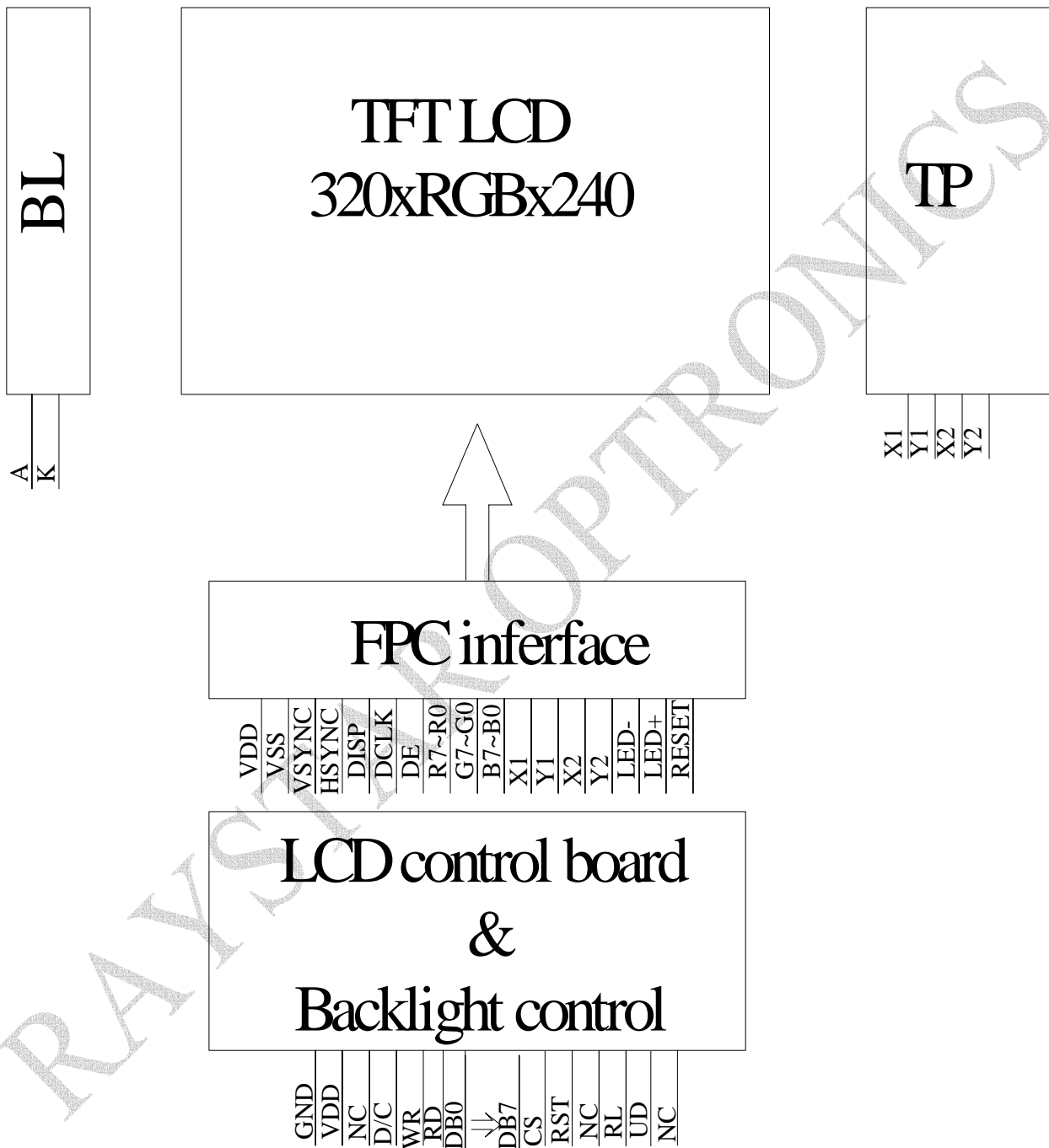
PIN NO.	SYMBOL	PIN NO.	SYMBOL
1	GND	17	NC
2	VDD	18	RL
3	NC	19	UD
4	D/C	20	NC
5	WR		
6	RD		
7	DB0		
8	DB1		
9	DB2		
10	DB3		
11	DB4		
12	DB5		
13	DB6		
14	DB7		
15	CS		
16	RST		

Pin 4  Pin 1

Touch panel Information



6. Block Diagram

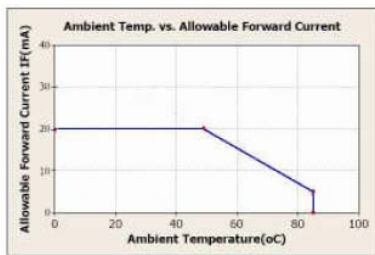


7. Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	T _{OP}	-20	—	+70	°C
Storage Temperature	T _{ST}	-30	—	+80	°C

Note: Device is subject to be damaged permanently if stresses beyond those absolute maximum ratings listed above

1. Temp. $\leq 60^{\circ}\text{C}$, 90% RH MAX. Temp. $> 60^{\circ}\text{C}$, Absolute humidity shall be less than 90% RH at 60°C



8. Electrical Characteristics

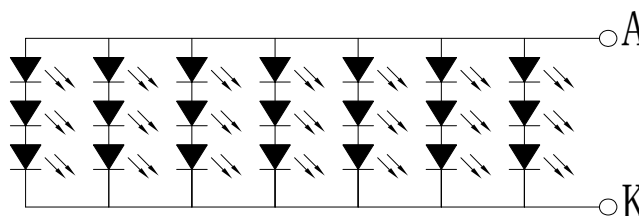
8.1. Operating conditions:

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	V _{DD}	—	3.0	3.3	3.6	V

8.2 LED driving conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
LED current		-	140	-	mA	
Power Consumption			1365	1470	mW	
LED voltage	VBL+	9.0	-	10.5	V	Note 1
LED Life Time		-	50,000	-	Hr	Note 2,3,4

Note 1 : There are 1 Groups LED



Note 2 : T_a = 25 °C

Note 3 : Brightness to be decreased to 50% of the initial value

Note 4 : The single LED lamp case

9. DC CHARACTERISTICS

Parameter	Symbol	Rating			Unit	Condition
		Min.	Typ.	Max.		
Low level input voltage	V_{IL}	0	-	0.3VDD	V	
High level input voltage	V_{IH}	0.7VDD	-	VDD	V	

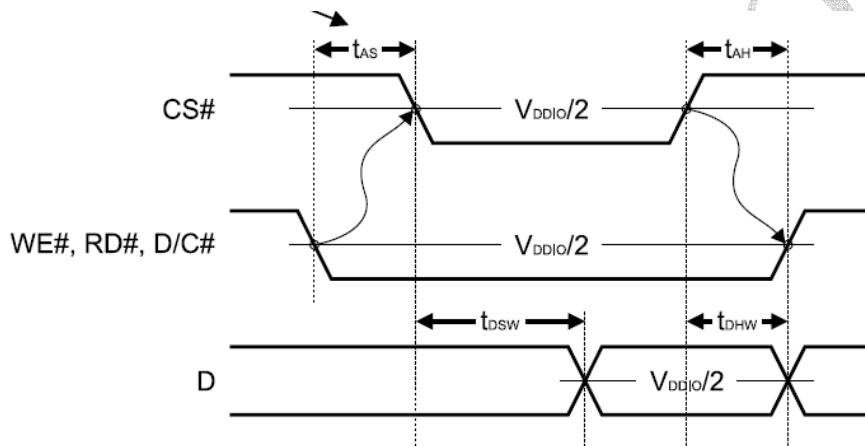
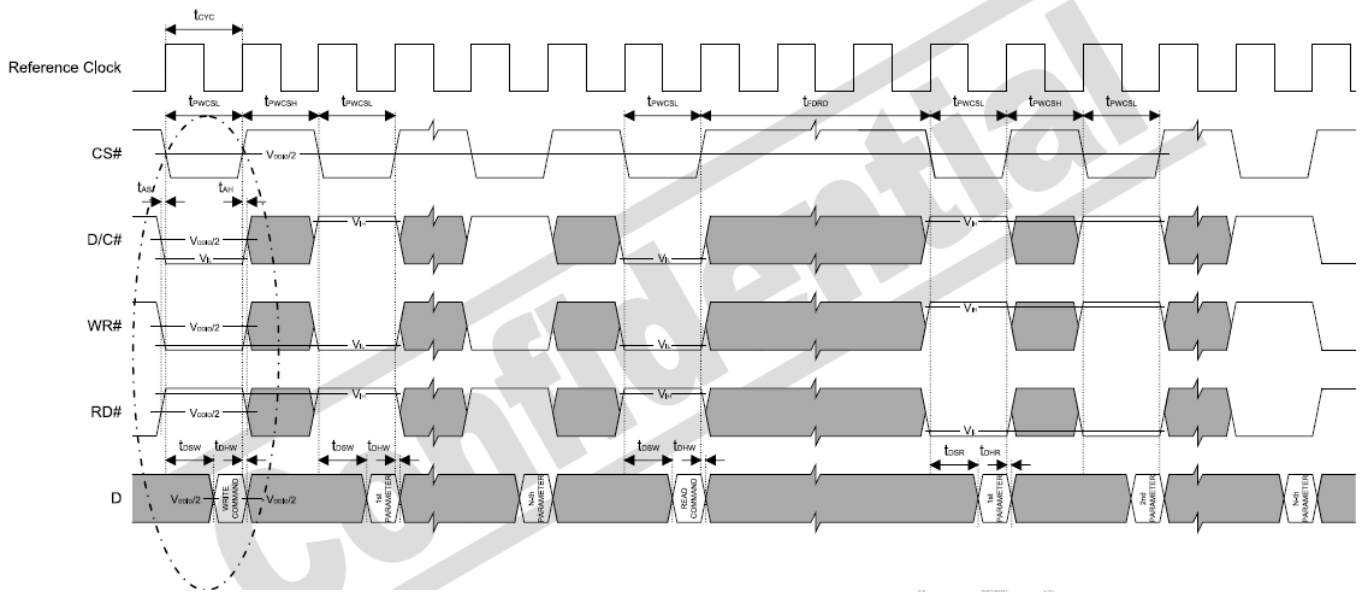
10. Interface Timing

10.1.1 8080 Mode

The 8080 mode MCU interface consist of CS#, D/C#, RD#, WR#, D[23:0] and TE signals (Please refer to Table 6-1 for pin multiplexed with 6800 mode). This interface use WR# to define a write cycle and RD# for read cycle. If the WR# goes low when the CS# signal is low, the data or command will be latched into the system at the rising edge of WR#. Similarly, the read cycle will start when RD# goes low and end at the rising edge of RD#.

10.1.2 8080 Mode Write Cycle

Symbol	Parameter	Min	Typ	Max	Unit
t_{cyc}	Reference Clock Cycle Time	9	-	-	ns
t_{PWCSL}	Pulse width CS# low	1	-	-	t_{cyc}
t_{PWCSH}	Pulse width CS# high	1	-	-	t_{cyc}
t_{FDRD}	First Read Data Delay	5	-	-	t_{cyc}
t_{AS}	Address Setup Time	1	-	-	ns
t_{AH}	Address Hold Time	1	-	-	ns
t_{DSW}	Data Setup Time	4	-	-	ns
t_{DHW}	Data Hold Time	1	-	-	ns
t_{DSR}	Data Access Time	-	-	5	ns
t_{DHR}	Output Hold time	1	-	-	ns



10.1.3 Pixel Data Format

Interface	Cycle	D[23]	D[22]	D[21]	D[20]	D[19]	D[18]	D[17]	D[16]	D[15]	D[14]	D[13]	D[12]	D[11]	D[10]	D[9]	D[8]	D[7]	D[6]	D[5]	D[4]	D[3]	D[2]	D[1]	D[0]
24 bits	1 st	R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0
18 bits	1 st							R5	R4	R3	R2	R1	R0	G5	G4	G3	G2	G1	G0	B5	B4	B3	B2	B1	B0
16 bits (565 format)	1 st									R5	R4	R3	R2	R1	G5	G4	G3	G2	G1	G0	B5	B4	B3	B2	B1
16 bits	1 st									R5	R4	R3	R2	R1	R0	X	X	G5	G4	G3	G2	G1	G0	X	X
	2 nd									B5	B4	B3	B2	B1	B0	X	X	R5	R4	R3	R2	R1	R0	X	X
	3 rd									G5	G4	G3	G2	G1	G0	X	X	B5	B4	B3	B2	B1	B0	X	X
9 bits	1 st																R5	R4	R3	R2	R1	R0	G5	G4	G3
	2 nd																G2	G1	G0	B5	B4	B3	B2	B1	B0
8 bits	1 st																	R5	R4	R3	R2	R1	R0	X	X
	2 nd																	G5	G4	G3	G2	G1	G0	X	X
	3 rd																	B5	B4	B3	B2	B1	B0	X	X

X: Don't Care

11. OPTICAL CHARACTERISTIC

Item	Symbol	Condition.	Min	Typ.	Max.	Unit	Remark	
Response time	Tr	$\theta = 0^\circ$, $\Phi = 0^\circ$	-	15	30	.ms	Note 3	
	Tf		-	35	50	.ms		
Contrast ratio	CR	At optimized viewing angle	150	200	-	-	Note 4	
Color Chromaticity	White	$\theta = 0^\circ$, $\Phi = 0^\circ$	Wx	0.27	0.32	0.37		Note 2,5
			Wy	0.30	0.35	0.40		
Viewing angle	Hor.	$CR \geq 10$	ΘR	60	70		Deg.	Note 1
			ΘL	60	70			
	Ver.		ΦT	40	50			
			ΦB	60	70			
Brightness	-	-	300	-	-	cd/m ²	Center of display	

Ta=25±2°C, IL=20mA

Note 1: Definition of viewing angle range

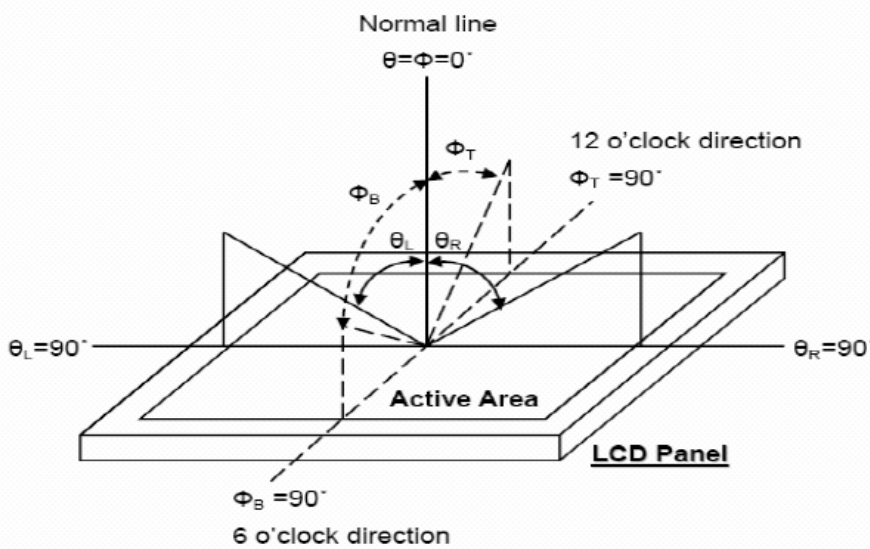


Fig. 11-1 Definition of viewing angle

Note 2: Test equipment setup:

After stabilizing and leaving the panel alone at a driven temperature for 10 minutes, the measurement should be executed. Measurement should be executed in a stable, windless, and dark room. Optical specifications are measured by Topcon BM-7 luminance meter 1.0° field of view at a distance of 50cm and normal direction.

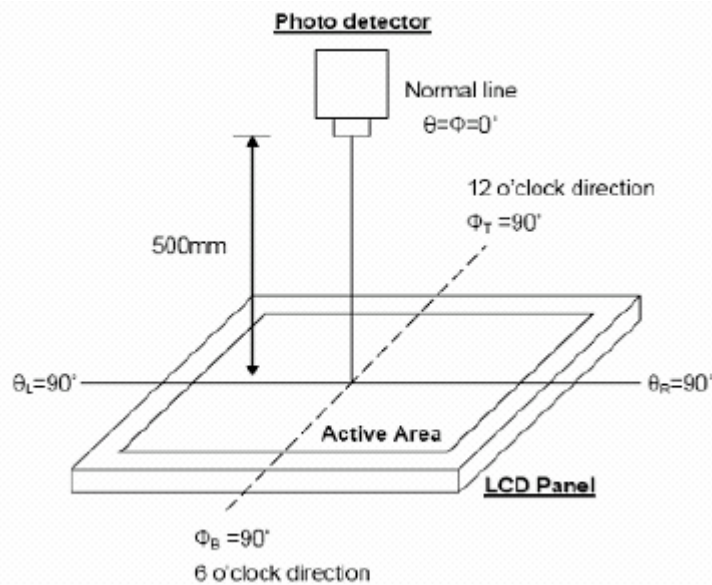


Fig. 11-2 Optical measurement system setup

Note 3: Definition of Response time:

The response time is defined as the LCD optical switching time interval between “White” state and “Black” state. Rise time, T_r , is the time between photo detector output intensity changed from 90% to 10%. And fall time, T_f , is the time between photo detector output intensity changed from 10% to 90%

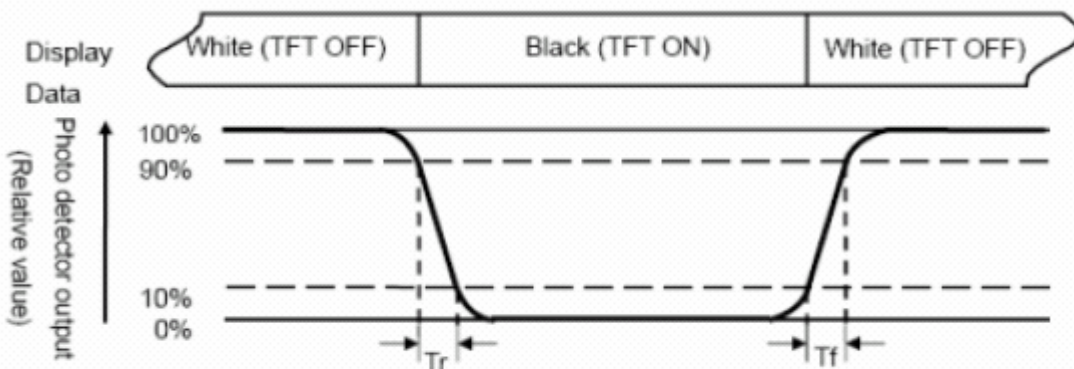


Fig. 3-3 Definition of response time

Note 4: Definition of contrast ratio:

The contrast ratio is defined as the following expression.

$$\text{Contrast ratio (CR)} = \frac{\text{Luminance measured when LCD on the "White" state}}{\text{Luminance measured when LCD on the "Black" state}}$$

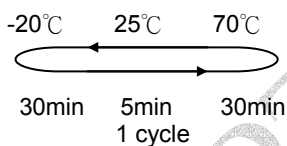
Note 5: Definition of color chromaticity (CIE1931)

Color coordinates measured at center point of LCD.

Note 6: All input terminals LCD panel must be ground while measuring the center area of the panel

12. Reliability

Content of Reliability Test (Wide temperature, -20°C~70°C)

Environmental Test			
Test Item	Content of Test	Test Condition	Note
High Temperature storage	Endurance test applying the high storage temperature for a long time.	80°C 200hrs	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30°C 200hrs	1,2
High Temperature Operation	Endurance test applying the electric stress (Voltage & Current) and the thermal stress to the element for a long time.	70°C 200hrs	—
Low Temperature Operation	Endurance test applying the electric stress under low temperature for a long time.	-20°C 200hrs	1
High Temperature/ Humidity Operation	The module should be allowed to stand at 60°C,90%RH max For 96hrs under no-load condition excluding the polarizer, Then taking it out and drying it at normal temperature.	60°C,90%RH 96hrs	1,2
Thermal shock resistance of operation	The sample should be allowed stand the following 10 cycles of operation <div style="text-align: center;">  <p>-20°C 25°C 70°C</p> <p>30min 5min 30min</p> <p>1 cycle</p> </div>	-20°C/70°C 10 cycles	—
Vibration test	Endurance test applying the vibration during transportation and using.	Total fixed amplitude : 3 15mm Vibration Frequency : 10~55Hz One cycle 60 seconds to 3 directions of X,Y,Z for Each 15 minutes	3
Static electricity test	Endurance test applying the electric stress to the terminal.	VS=800V,RS=1.5kΩ CS=100pF 1 time	—

Note1: No dew condensation to be observed.

Note2: The function test shall be conducted after 4 hours storage at the normal Temperature and humidity after remove from the test chamber.

Note3: The packing have to including into the vibration testing.

13. Package specification

LCM Model	RFC570B-EIW-DAS	LCM 包裝規格書 LCM Packaging Specifications	Approve	Check	Contact
Drawing NO.			DATE	初版	版次 Ver
			2013/04/18	2013/04/18	0

1. 包裝材料規格表 (Packaging Material) :(per carton)

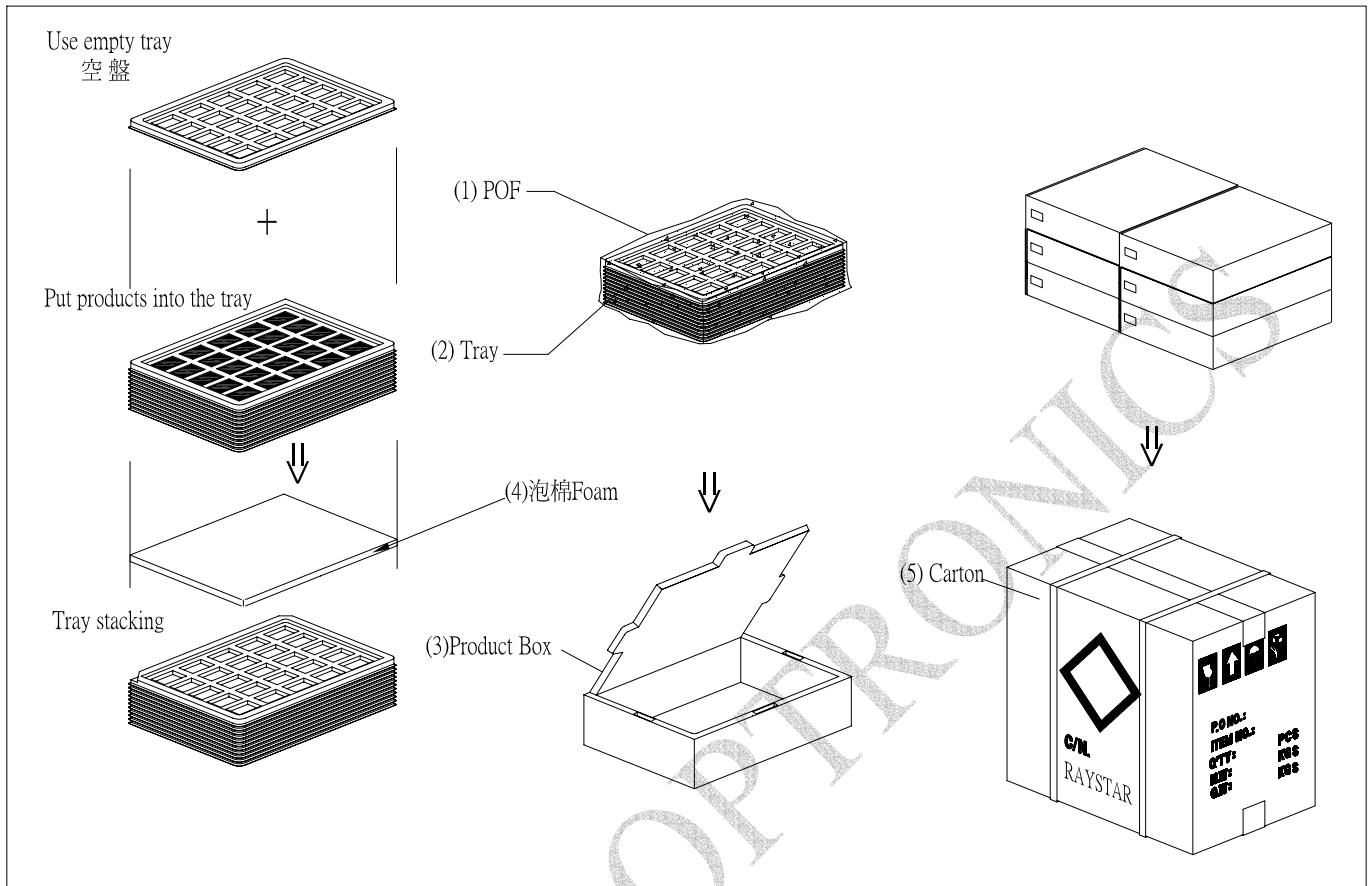
NO.	Item	Model	Dimensions	Quantity
1	成品 (LCM)	RFC570B-EIW-DAS	TBD	TBD
2	TRAY 盤 (2)	TBD	TBD	TBD
3	BP01 內盒(3)Product Box	PK3R1XXXXXXXXXXXX0001	332 x 280 x 100	TBD
4	泡棉(4)Foam	-----	283 x 230 x 8	TBD
5	外紙箱(5)Carton	PK4Q1XXXXXXXXXXXX0000	565 x 340 x 320	TBD
6				
7				
8				
9				

2. 單箱數量規格表(Packaging Specifications and Quantity) :

(1) LCM quantity per box : no per box **TBD** x no of box **TBD** = **TBD**
 (2) Total LCM quantity in carton : quantity per box **TBD** x no of boxes **TBD** = **TBD**

特 記 事 項 (REMARK)

<p>1. Label Specifications :</p> <table border="1" style="width:100%; height: 40px;"> <tr> <td>MOEL:</td> </tr> <tr> <td>LOT NO :</td> </tr> <tr> <td>QUANTITY:</td> </tr> <tr> <td>CHECK:</td> </tr> </table>	MOEL:	LOT NO :	QUANTITY:	CHECK:	
MOEL:					
LOT NO :					
QUANTITY:					
CHECK:					



14. Initial Code For Reference

```

void Initial_SSD1963()
{
    Write_Command_SSD1963(0x01);
    Delay_ms(10);
    Write_Command_SSD1963(0xe0);    //START PLL
    Write_Parameter_SSD1963(0x01);
    Delay_ms(5);
    Write_Command_SSD1963(0xe0);    //LOCK PLL
    Write_Parameter_SSD1963(0x03);
    Delay_ms(5);

    Write_Command_SSD1963(0xb0);    //SET LCD MODE  SET TFT 18Bits
MODE
    Write_Parameter_SSD1963(0x0c);    //SET TFT MODE &
hsync+Vsync+DEN MODE
    Write_Parameter_SSD1963(0x80);    //SET TFT MODE &
hsync+Vsync+DEN MODE
    Write_Parameter_SSD1963(0x01);    //SET horizontal size=320-1 HightByte
    Write_Parameter_SSD1963(0x3f);    //SET horizontal size=320-1
LowByte
    Write_Parameter_SSD1963(0x00);    //SET vertical size=240-1 HightByte
    Write_Parameter_SSD1963(0xef);    //SET vertical size=240-1 LowByte
    Write_Parameter_SSD1963(0x00);    //SET even/odd line RGB seq.=RGB

    Write_Command_SSD1963(0xf0);    //SET pixel data I/F format=8bit
    Write_Parameter_SSD1963(0x00);
    Write_Command_SSD1963(0x3a);    // SET R G B format = 6 6 6
    Write_Parameter_SSD1963(0x60);

    //Set the MN of PLL
    Write_Command_SSD1963(0xe2);    //100MHz PLL frequency
    Write_Parameter_SSD1963(0x1d);    //M
    Write_Parameter_SSD1963(0x02);    //N
    Write_Parameter_SSD1963(0x54);

    Write_Command_SSD1963(0xe6);    //SET PCLK freq=9MHz;
  
```

Vsync=60Hz

```
Write_Parameter_SSD1963(0x01);
Write_Parameter_SSD1963(0x40); //55
Write_Parameter_SSD1963(0xff);

//Set front porch and back porch
Write_Command_SSD1963(0xb4);
Write_Parameter_SSD1963(0x01); //horizontal total period HT
Write_Parameter_SSD1963(0xb8); //HT=
Write_Parameter_SSD1963(0x00); //HPS
Write_Parameter_SSD1963(0x44);
Write_Parameter_SSD1963(0x07); //HPW
Write_Parameter_SSD1963(0x00); //SET Hsync pulse start position
Write_Parameter_SSD1963(0x00); //Set the horizontal sync pulse width
```

(LLINE) in start.

```
Write_Parameter_SSD1963(0x00);

Write_Command_SSD1963(0xb6);
Write_Parameter_SSD1963(0x01); //VT=
Write_Parameter_SSD1963(0x08);
Write_Parameter_SSD1963(0x00); //VPS
Write_Parameter_SSD1963(0x13);
Write_Parameter_SSD1963(0x07); //VPW
Write_Parameter_SSD1963(0x00); //FPS
Write_Parameter_SSD1963(0x00);

Write_Command_SSD1963(0x2a); //
Write_Parameter_SSD1963(0x00);//
Write_Parameter_SSD1963(0x00);
Write_Parameter_SSD1963(0x01);//
Write_Parameter_SSD1963(0x3f);

Write_Command_SSD1963(0x2b); //SET page address
Write_Parameter_SSD1963(0x00);//SET start page address=0
Write_Parameter_SSD1963(0x00);
Write_Parameter_SSD1963(0x00);//SET end page address=240
Write_Parameter_SSD1963(0xef);
```

```
Write_Command_SSD1963(0x29);  
Write_Command_SSD1963(0x2c);
```

```
}
```

RAYSTAR OPTRONICS

Inspection Provision

1. Purpose

The RAYSTAR inspection provision provides outgoing inspection provision and its expected quality level based on our outgoing inspection of RAYSTAR LCD produces.

2. Applicable Scope

The RAYSTAR inspection provision is applicable to the arrangement in regard to outgoing inspection and quality assurance after outgoing.

3. Technical Terms

3-1 RAYSTAR Technical Terms



4. Outgoing Inspection

4-1 Inspection Method

MIL-STD-105E Level II Regular inspection

4-2 Inspection Standard

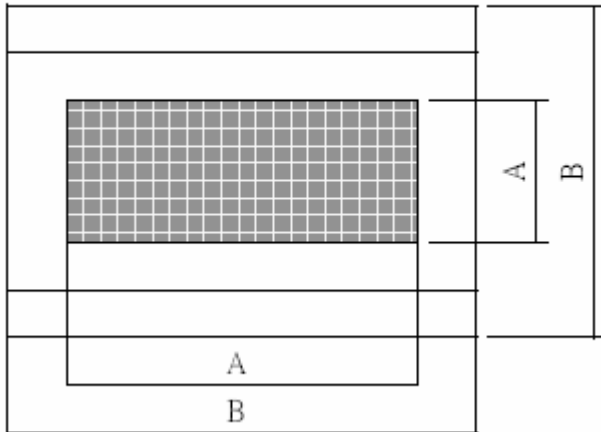
	Item	AQL(%)	Remarks
Major Defect	Dots	0.4	Faults which substantially lower the practicality and the initial purpose difficult to achieve
	Solder appearance		
	Cracks		

	Dimensions	External from Dimensions	AQL	Remarks
Minor Defect	Inside the glass	Black spots	0.65	Faults which appear to pose almost no obstacle to the practicality, effective use, and operation
	Polarizing plate	Scratches, foreign Matter, air bubbles, and peeling		
	Dots	Pinhole, deformation		
	Color tone	Color unevenness		
	Solder appearance	Cold solder Solder projections		

4-3 Inspection Provisions

*Viewing Area Definition

Fig. 1



A : Zone Viewing Area
 B : Zone Glass Plate Outline

*Inspection place to be 500 to 1000 lux illuminance uniformly without glaring.
 The distance between luminous source(daylight fluorescent lamp and cool white fluorescent lamp)
 and sample to be 30 cm to 50 cm.

*Test and measurement are performed under the following conditions, unless otherwise specified.

Temperature $20 \pm 15^{\circ}\text{C}$
 Humidity $65 \pm 20\%\text{R.H.}$
 Pressure 860~1060hPa(mmbar)

In case of doubtful judgment, it is performed under the following conditions.

Temperature $20 \pm 2^{\circ}\text{C}$
 Humidity $65 \pm 5\%\text{R.H.}$
 Pressure 860~1060hPa(mmbar)

5.Specification for quality check

5-1-1 Electrical characteristics :

NO.	Item	Criterion
1	Non operational	Fail
2	Miss operating	Fail
3	Contrast irregular	Fail
4	Response time	Within Specified value

5-1-2 Components soldering :

Should be no defective soldering such as shorting, loose terminal cold solder, peeling of printed circuit board pattern, improper mounting position, etc.

5-2 Inspection Standard for TFT panel

5-2-1 The environmental condition of inspection :

The environmental condition and visual inspection shall be conducted as below.

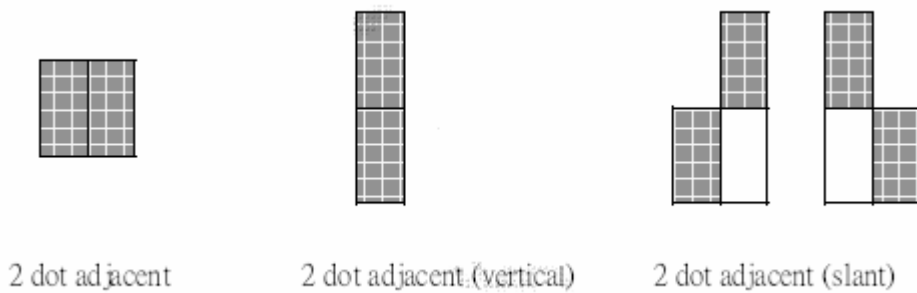
- (1) Ambient temperature : $25\pm 5^{\circ}\text{C}$
- (2) Humidity : 25~75% RH
- (3) External appearance inspection shall be conducted by using a single 20W fluorescent lamp or equivalent illumination.
- (4) Visual inspection on the operation condition for cosmetic shall be conducted at the distance 30cm or more between the LCD panels and eyes of inspector. The viewing angle shall be 90 degree to the front surface of display panel.
- (5) Ambient Illumination : 300~500 Lux for external appearance inspection.
- (6) Ambient Illumination : 100~200 Lux for light on inspection.

5-2-2 Inspection Criteria

(1) Definition of dot defect induced from the panel inside

- a) The definition of dot : The size of a defective dot over 1/2 of whole dot is regarded as one defective dot
- b) Bright dot : Dots appear bright and unchanged in size in which LCD panel is displaying under black pattern.
- c) Dark dot : Dots appear dark and unchanged in size in which LCD panel is displaying under pure red, green, blue pattern.
- d) 2 dot adjacent = 1 pair = 2 dots

Picture :

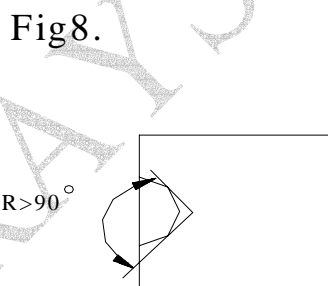
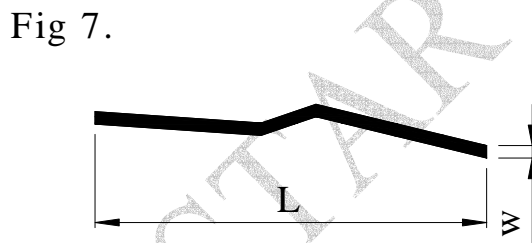
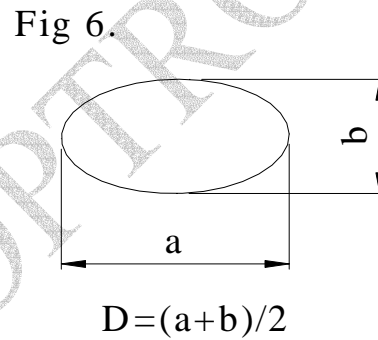
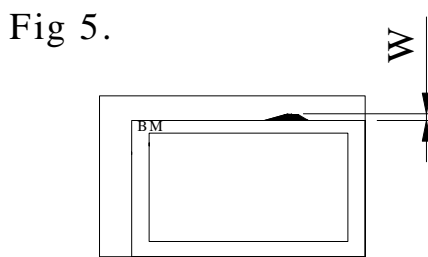
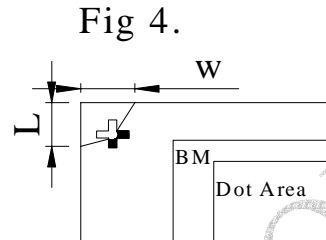
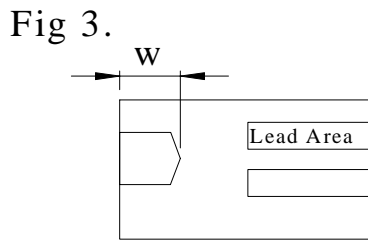
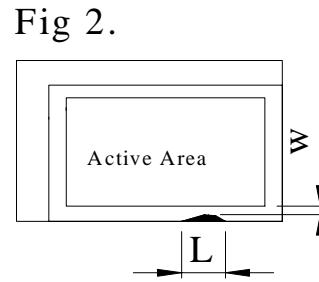
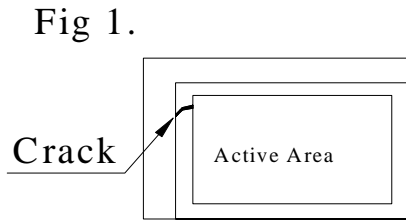


(2) Display Inspection

NO.	Item		Acceptable Count	
1	Dot defect	Bright Dot	Random	$N \leq 2$
			2 dots adjacent	$N \leq 0$
		Dark Dot	Random	$N \leq 3$
			2 dots adjacent	$N \leq 1$
	Total bright and dark dot		$N \leq 4$	
Functional failure (V-line/ H-line/Cross line etc.)		Not allowable		
	Mura	It's OK if mura is slight visible through 6% ND filter. (Judged by limit sample if it is necessary)		
2	Newton ring (touch panel)	Orbicular of interference fringes is not allowed in the optimum contrast within the active area under viewing angle.		

(3) Appearance inspection

NO.	Item	Standards
1	Panel Crack	Not allow. It is shown in Fig.1.
2	Broken CF Non -lead Side of TFT	The broken in the area of $W > 2\text{mm}$ is ignored, L is ignored. It is shown in Fig.2.
3	Broken Lead Side of TFT	FPC lead, electrical line or alignment mark can't be damaged. It is shown in Fig.3.
4	Broken Corner of TFT at Lead Side	FPC lead. electrical line or alignment mark can't be damaged. It is shown in Fig.4.
5	Burr of TFT / CF Edge	The distance of burr from the edge of TFT / CF, $W \leq 0.3\text{mm}$. It is shown in Fig.5.
6	Foreign Black / White/Bright Spot	(1) $0.15 < D \leq 0.5 \text{ mm}$, $N \leq 4$; (2) $D \leq 0.15\text{mm}$, Ignore. It is shown in Fig.6.
7	Foreign Black / White/Bright Line	(1) $0.05 < W \leq 0.1 \text{ mm}$, $0.3 < L \leq 2 \text{ mm}$, $N \leq 4$.
		(2) $W \leq 0.05\text{mm}$ and $L \leq 0.3\text{mm}$ Ignore. It is shown in Fig.7.
8	Color irregular	Not remarkable color irregular.



Notes

1.W:Width

2.Length

3.D:Average Diameter

4.N:Count

5.All the anhle of the broken must be larger than 90° .It is shown in Fig.8.($R > 90^\circ$ ~)

NOTICE:

- SAFETY

1. If the LCD panel breaks, be careful not to get the liquid crystal to touch your skin.
2. If the liquid crystal touches your skin or clothes, please wash it off immediately by using soap and water.

- HANDLING

1. Avoid static electricity which can damage the CMOS LSI.
2. Do not remove the panel or frame from the module.
3. The polarizing plate of the display is very fragile. So, please handle it very carefully.
4. Do not wipe the polarizing plate with a dry cloth, as it may easily scratch the surface of plate.
5. Do not use ketonics solvent & Aromatic solvent. Use a soft cloth soaked with a cleaning naphtha solvent.

- STORAGE

1. Store the panel or module in a dark place where the temperature is $25\pm 5^{\circ}\text{C}$ and the humidity is below 65% RH.
2. Do not place the module near organics solvents or corrosive gases.
3. Do not crush, shake, or jolt the module.

- TERMS OF WARRANT

1. Acceptance inspection period

The period is within one month after the arrival of contracted commodity at the buyer's factory site.

2. Applicable warrant period

The period is within twelve months since the date of shipping out under normal using and storage conditions.

LCM Sample Estimate Feedback Sheet

Module Number : _____

1 、 Panel Specification :

1. Panel Type :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
2. View Direction :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
3. Numbers of Dots :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
4. View Area :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
5. Active Area :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
6. Operating Temperature :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
7. Storage Temperature :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
8. Others :	_____	

2 、 Mechanical Specification :

1. PCB Size :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
2. Frame Size :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
3. Material of Frame :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
4. Connector Position :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
5. Fix Hole Position :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
6. Backlight Position :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
7. Thickness of PCB :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
8. Height of Frame to PCB :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
9. Height of Module :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
10. Others :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____

3 、 Relative Hole Size :

1. Pitch of Connector :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
2. Hole size of Connector :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
3. Mounting Hole size :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
4. Mounting Hole Type :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
5. Others :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____

4 、 Backlight Specification :

1. B/L Type :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
2. B/L Color :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
3. B/L Driving Voltage (Reference for LED Type) :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
4. B/L Driving Current :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
5. Brightness of B/L :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
6. B/L Solder Method :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
7. Others :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____

>> **Go to page 2** <<

Module Number : _____

5 、 Electronic Characteristics of Module :

1.Input Voltage :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
2.Supply Current :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
3.Driving Voltage for LCD :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
4.Contrast for LCD :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
5.B/L Driving Method :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
6.Negative Voltage Output :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
7.Interface Function :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
8.LCD Uniformity :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
9.ESD test :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____
10.Others :	<input type="checkbox"/> Pass	<input type="checkbox"/> NG , _____

6 、 Summary :

Sales signature : _____

Customer Signature : _____

Date : / /

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