POWERTIP TECH. CORP.

SPECIFICATIONS

CUSTOMER	:	-
SAMPLE CODE	:	SH102600T021-ZFC
MASS PRODUCTION CODE	:	PH102600T021-ZFC
SAMPLE VERSION	:	01
SPECIFICATIONS EDITION	:	001
DRAWING NO. (Ver.)	:	LMD-PH102600T021-ZFC (Ver.001)
PACKAGING NO. (Ver.)	:	-

Customer Approved

Date:

Approved	Checked	Designer
廖志豪 **Rex Liao**	陳宗淇 **Howard Chen**	廖郁鈞 **Grace Liao**

POWERTIP
2024.05.31
TWRD APR

■ Preliminary specification for design input

☐ Specification for sample approval
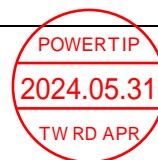
POWERTIP TECH. CORP.

NO.PT-A-005-8

History of Version

Date (mm / dd / yyyy)	Ver.	Edi.	Description	Page	Design by
05/31/2024	01	001	Preliminary.	-	Grace

Contents

1. SPECIFICATIONS

1.1 Features

Item	Standard Value
Display Resolution	1024 *3 (RGB) * 600 Dots
LCD Type	Full Viewing Angle , Normally Black , Transmissive type
Screen size(inch)	7 inch
Color configuration	RGB Vertical Stripe
Backlight Type	White LED B/L
Interface	LVDS Interface
Driver IC	JD9165 (Or Compatible IC)
ROHS	THIS PRODUCT CONFORMS THE ROHS OF PTC Detail information please refer website: http://www.powertip.com.tw/news_detail.php?Key=1&cID=1

1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	192.96 (W) * 115.76 (L) * 4.84 (H)	mm

LCD panel

Item	Standard Value	Unit
Active Area	154.21(W) * 85.92 (L)	mm

Note: For detailed information please refer to LCM drawing.

1.3 Absolute Maximum Ratings

Item	Symbol	Condition	Min.	Max.	Unit
Supply power voltage	VDD	-	-0.3	4.0	V
	AVDD	-	-0.3	12.0	V
	VGH	-	-0.3	VGL+32V	V
	VGL	-	VGH-32V	-0.3	V
Operating Temperature	T_{OP} (Ts)	Note 1	-20	70	°C
Storage Temperature	T_{ST} (Ta)	Note 2	-30	80	°C
Storage Humidity	H_D	Ta $\leqq$ 60 °C	-	90	%RH

The absolute maximum rating values of this product are not allowed to be exceeded at any time. 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.

Note 1: Ts is the temperature of panel's surface

Note 2: Ta is the ambient temperature of samples

1.4 DC Electrical Characteristics

Module   GND = 0V, Ta = 25°C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply power voltage	VDD	-	3.1	3.3	3.6	V
	AVDD	-	-	-	-	V
	VGH	-	-	(20)	-	V
	VGL	-	-	(-7)	-	V
Input signal Voltage	VCOM	-	-	(3.7)	-	V
Input Signal Voltage	V_{IH}	GND=0	0.8VDD	-	VDD	V
	V_{IL}	GND=0	0	-	0.2VDD	
Supply Current	I_{DD}	V_{DD} = 3.3 V Pattern= Red	-	(15)	-	mA
	I_{ADD}	A_{VDD}= - V Pattern= Red	-	(30)	-	mA
	I_{GH}	V_{GH}= 20.0V Pattern= Red	-	(0.5)	-	mA
	I_{GL}	VGL=-7.0V Pattern= Red	-	(0.5)	-	mA

1.5 Optical Characteristics

3V3=3.3V, Ta=25°C

Item	Symbol		Condition	Min.	Typ.	Max.	unit	
Response time	Tr+Tf		Ta = 25°C θX, θY = 0°	-	(30)	(40)	ms	Note 2
Viewing angle	Top	θY+	CR ≥ 10	-	80	-	Deg.	Note 4
	Bottom	θY-		-	80	-		
	Left	θX-		-	80	-		
	Right	θX+		-	80	-		
Contrast ratio	CR			(650)	(800)	-		Note 3
Color of CIE Coordinate	White	X	Ta = 25°C θX , θY = 0°	-	(0.30)	-	-	Note1
		Y		-	(0.34)	-		
	Red	X		-	(0.62)	-		
		Y		-	(0.33)	-		
	Green	X		-	(0.29)	-		
		Y		-	(0.55)	-		
	Blue	X		-	(0.14)	-		
		Y		-	(0.17)	-		
Average Brightness Pattern=white display (With LCD & CTP)*2	IV		IF=200mA	(400)	(500)	-	cd/m^2	Note1
Uniformity (With LCD & CTP)*1	△B		IF=200mA	80	-	-	%	Note1

Note 1:

*1: △B=B(min) / B(max) * 100%

*2: Measurement Condition for Optical Characteristics:

   a: Environment: 25℃±5℃ / 60±20%R.H, no wind, dark room below 10 Lux at typical lamp

   current and typical operating frequency

   b: Measurement Distance: 500 ± 50 ㎜, (θ= 0°)

   c: Equipment: TOPCON BM-7 fast, (field 1°), after 10 minutes operation

   d: The uncertainty of the C.I.E coordinate measurement ±0.01, Average Brightness ± 4%

Colorimeter=BM-7 fast
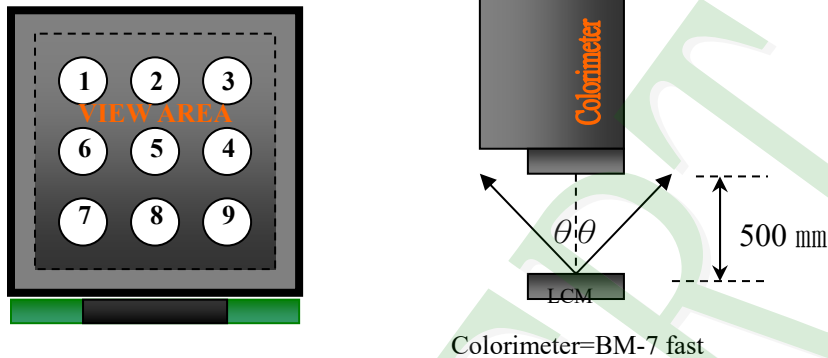
To be measured at the center area of panel with a viewing cone of 1° by Topcon
luminance meter BM-7, after 10 minutes operation (module)

Note 2: Definition of response time:

The output signals of photo detector are measured when the input signals are changed from
"black" to "white" (falling time) and from "white" to "black" (rising time), respectively. The response
time is defined as the time interval between the 10% and 90% of Amplitudes.
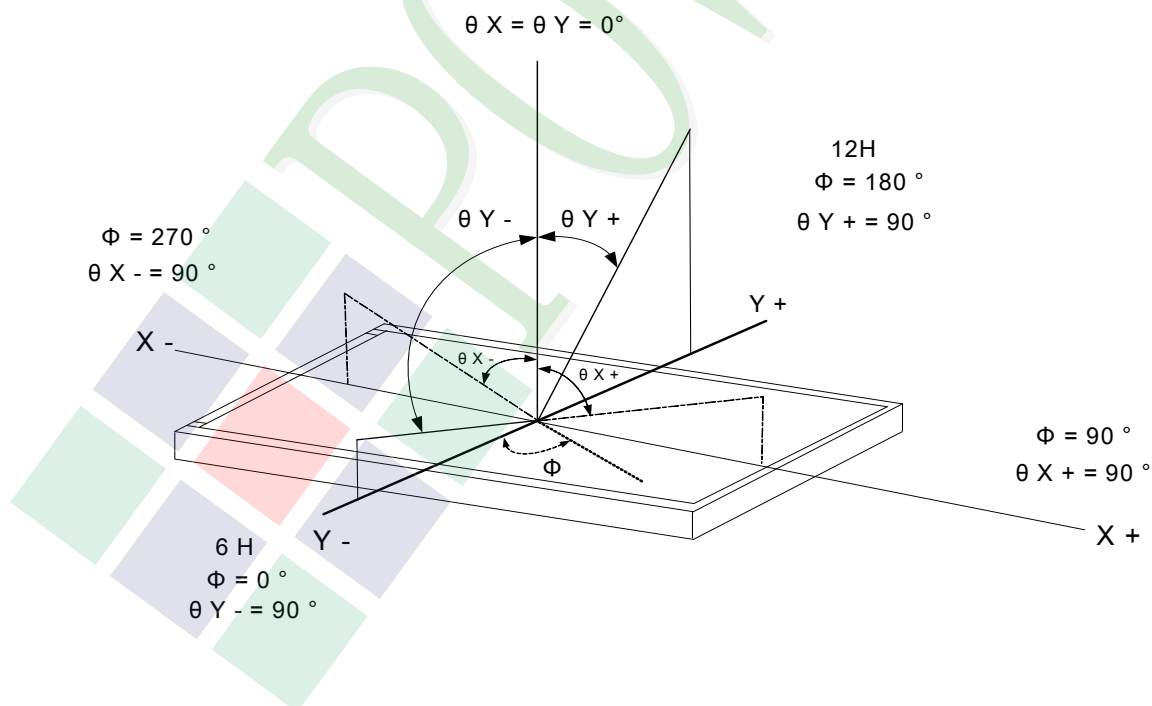Refer to figure as below:

Normally White

Normally Black

"Black"　　　　"White"　　　　"Black"
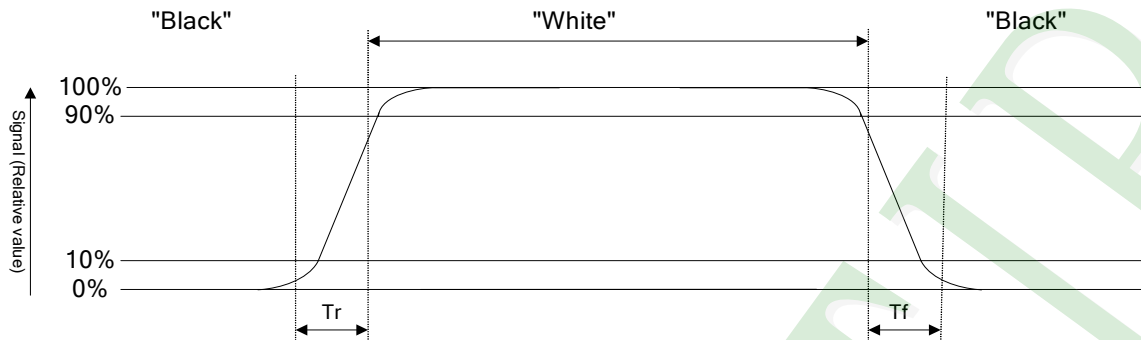
Note 3: Definition of contrast ratio:

Contrast ratio is calculated with the following formula

$$Contrast\ ratio\ (CR) = \frac{Photo\ detector\ output\ when\ LCD\ is\ at\ "White"\ state}{Photo\ detector\ output\ when\ LCD\ is\ at\ "Black"\ state}$$

Note 4: Definition of viewing angle:

Refer to figure as below:

θ X = θ Y = 0°

12H
Φ = 180°
θ Y + = 90°

Φ = 270°
θ X - = 90°

θ Y -　θ Y +

Y +

X -

θ X -　θ X +

Φ = 90°
θ X + = 90°

Φ

Y -

X +

6 H
Φ = 0°
θ Y - = 90°

1.6 Backlight Characteristics

Maximum Ratings

Item	Symbol	Min.	Max.	Unit	Remark
LED Forward Current	I_F	-	300	mA	
LED Reverse Voltage	V_R	-	5	V	-
Power Dissipation	PD	-	3.06	W	

Electrical / Optical Characteristics

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	V_F		8.4	9.0	10.2	V
Average Brightness (without LCD)	IV		10000	12000	14000	cd/m^2
Color of CIE Coordinate*1 (Without LCD)	X	I_F=200 mA	0.24	0.27	0.30	-
	Y		0.22	0.25	0.28	
Uniformity	$\triangle$B		80	-	-	*2
Color	White					

*1：This value will be changed while mass production.

*2：$\triangle$B=B(min) / B(max) *100%

B/L Internal Circuit Diagram
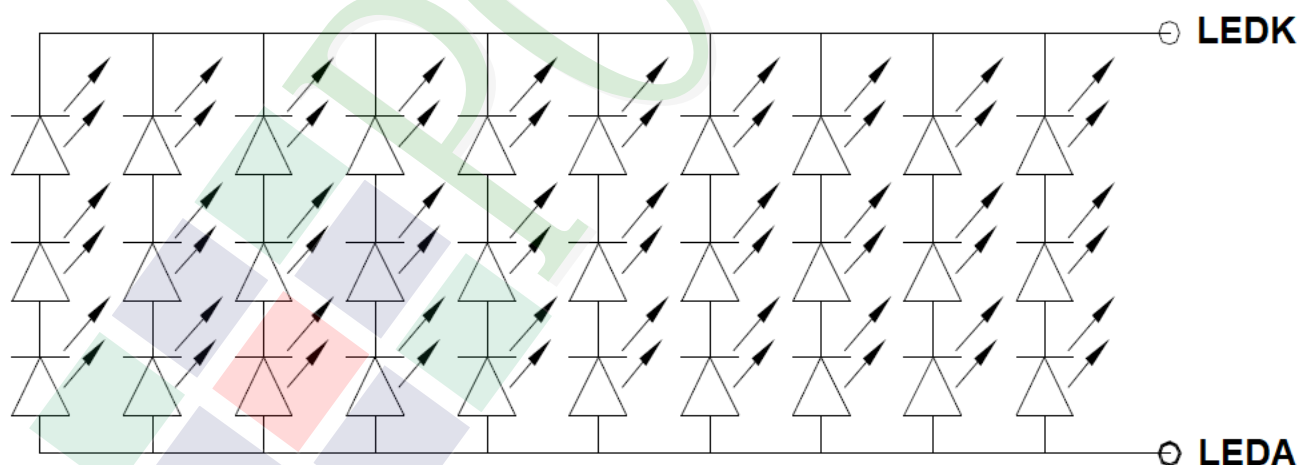
Other Description

Item	Conditions	Description
Life Time	Ta =25℃ I_F= 200 mA	50000 hrs

![POWERTIP logo]

1.7 Touch Panel Characteristics

Features

Item	Standard Value
Touch Panel Size	7"
Touch type	Projective Capacitive Touch Panel
Input Method	Finger / 5 Points touch
Output Interface	I²C
IC	FT5426

I2C Address

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
-	-	-	-	-	-	-	R/W

Bit 0: 0 for Write / 1 for Read

Mechanical Specifications

Item	Standard Value	Unit
Viewing Area	154.88 (W) x 86.72 (H)	mm

Absolute Maximum Ratings

Item	Symbol	Condition	Min.	Max.	Unit
Supply voltage	TPVDD	-	-0.3	+6.0	V
Operating Temperature	T_{OP}	-	-20	+70	°C
Storage Temperature	T_{ST}	-	-30	+80	°C

DC Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply Voltage	TPVDD	-	2.8	3.3	3.6	V

Optical Characteristics

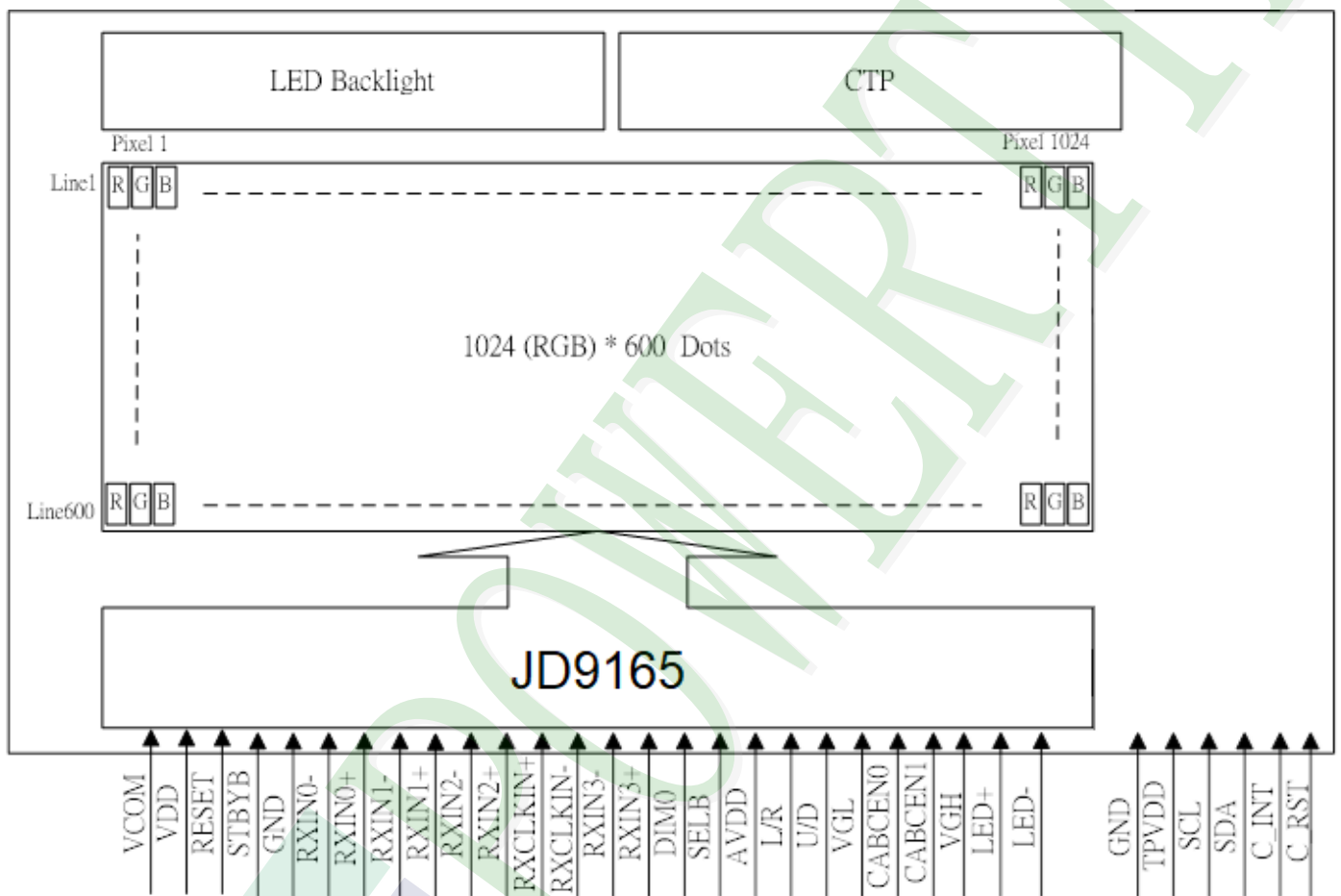| Item	Standard Value	Unit
Total light transmittance	（85%）or more	-
Hardness	≥(7H)	-

2. Module Structure

2.1 Counter Drawing
2.1.1 LCM Mechanical Diagram

* See Appendix

2.1.2 Block Diagram

2.2 Interface Pin Description

TFT LCM Interface

Pin No.	Symbol	Function
1	VCOM	Common Voltage
2	VDD	Power Voltage for digital circuit
3	VDD	Power Voltage for digital circuit
4	NC	No connection
5	Reset	Global reset pin
6	STBYB	Standby mode, Normally pulled high STBYB = "1", normal operation STBYB = "0", timing controller, source driver will turn off, all output are High-Z
7	GND	Ground
8	RXIN0-	- LVDS differential data input
9	RXIN0+	+ LVDS differential data input
10	GND	Ground
11	RXIN1-	- LVDS differential data input
12	RXIN1+	+ LVDS differential data input
13	GND	Ground
14	RXIN2-	- LVDS differential data input
15	RXIN2+	+ LVDS differential data input
16	GND	Ground
17	RXCLKIN-	- LVDS differential clock input
18	RXCLKIN+	+ LVDS differential clock input
19	GND	Ground
20	RXIN3-	- LVDS differential data input
21	RXIN3+	+ LVDS differential data input
22	GND	Ground
23	NC	No Connection
24	NC	No Connection
25	GND	Ground
26	NC	No Connection

Pin No.	Symbol	Function
27	DIM0	Backlight CABC controller signal output DIMO=L Turn off external backlight controller DIMO=H Logical control signal to turn on external backlight controller
28	SELB	6bit/8bit mode select If LVDS input data is 6 bits ,SELB must be set to High; If LVDS input data is 8 bits ,SELB must be set to Low.
29	AVDD	Power for Analog Circuit
30	GND	Ground
31	LED-	LED Cathode
32	LED-	LED Cathode
33	L/R	Green Data.
34	U/D	Horizontal inversion When L/R="0", set right to left scan direction. When L/R="1", set left to right scan direction.
35	VGL	Vertical inversion When U/D="0", set top to bottom scan direction. When U/D="1", set bottom to top scan direction.
36	CABCEN1	CABC H/W enable Note:1
37	CABCEN0	CABC H/W enable Note:1
38	VGH	Gate ON Voltage
39	LED+	LED Anode
40	LED+	LED Anode

Note1:

CABCEN1	CABCEN0	DESCRIPTION
L	L	CABC OFF
L	H	User interface Image
H	L	Still Picture
H	H	Moving Image

Capacitive Touch Panel (CTP) Interface

Pin	Symbol	Function
1	GND	Ground. (T/P)
2	TPVDD	Power.(T/P)
3	SCL	I^2C Clock. (T/P)
4	SDA	I^2C Data.(T/P)
5	C_INT	Active Low. (T/P)
6	C_RST	RESET. (T/P)

2.3 Timing Characteristics

Data Input Format For LVDS

6-bit RGB LVDS input timing
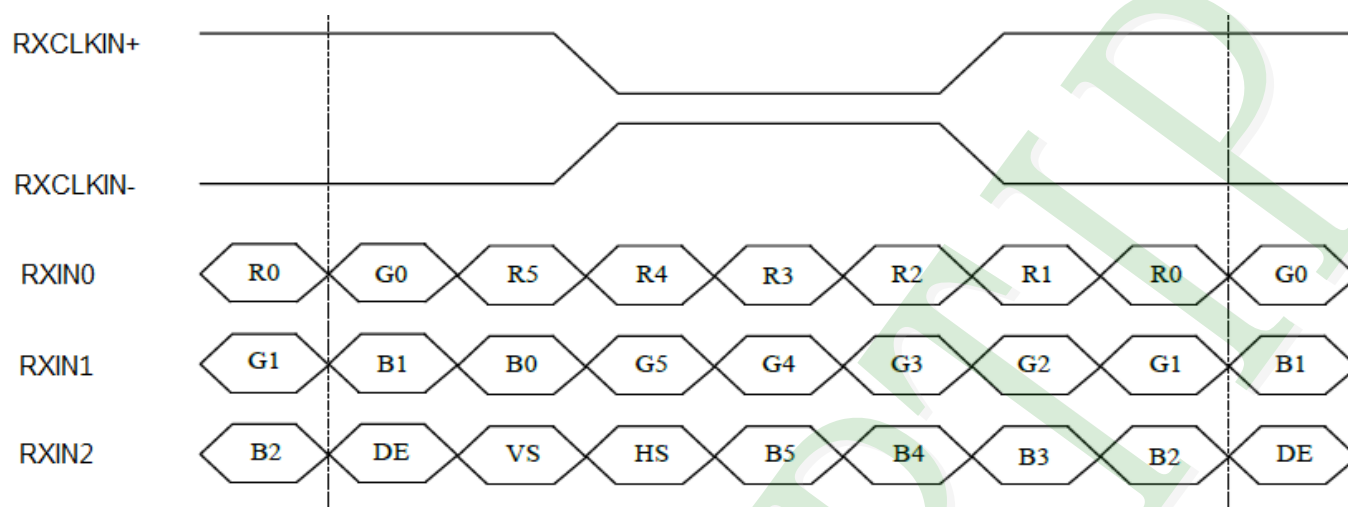
8-bit RGB LVDS VESA input timing
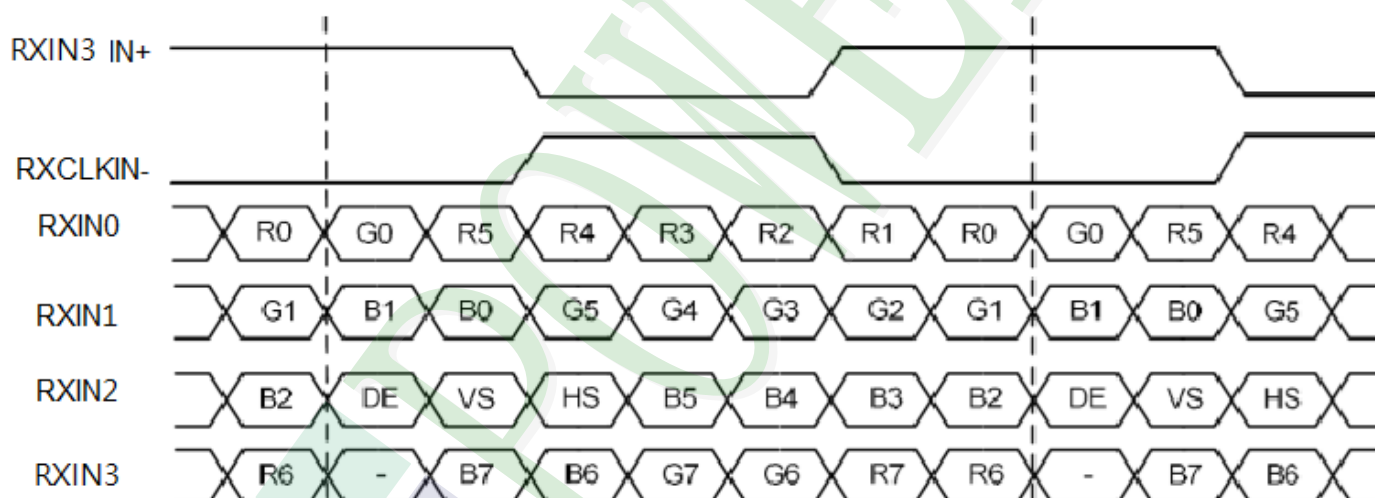
Signal	Symbol	Min	Tpy	Max	Unit
RXCLK Frequency	-	41.4	51.2	67.2	MHZ
Horizontal Total	t_{ht}	1114	1344	1400	DCLK
Hsync Pulse width	t_{hs}	1	24	HBP-1	DCLK
Horizontal Back Porch	t_{hb}	60	160	160	DCLK
Horizontal Valid Data	t_{hd}	1024			DCLK
Horizontal Front Porch	t_{hfp}	30	160	216	DCLK
Vertical Total	t_{vt}	620	635	800	THT
Vsync Pulse Width	t_{vs}	1	2	VBP-1	THT
Vertical Back Porch	t_{vb}	8	23	100	THT
Vertical Valid Data	t_{vd}	600			THT
Vertical Front Porch	t_{vfp}	12	12	100	THT

2.4 Power Sequence

Power ON Sequence
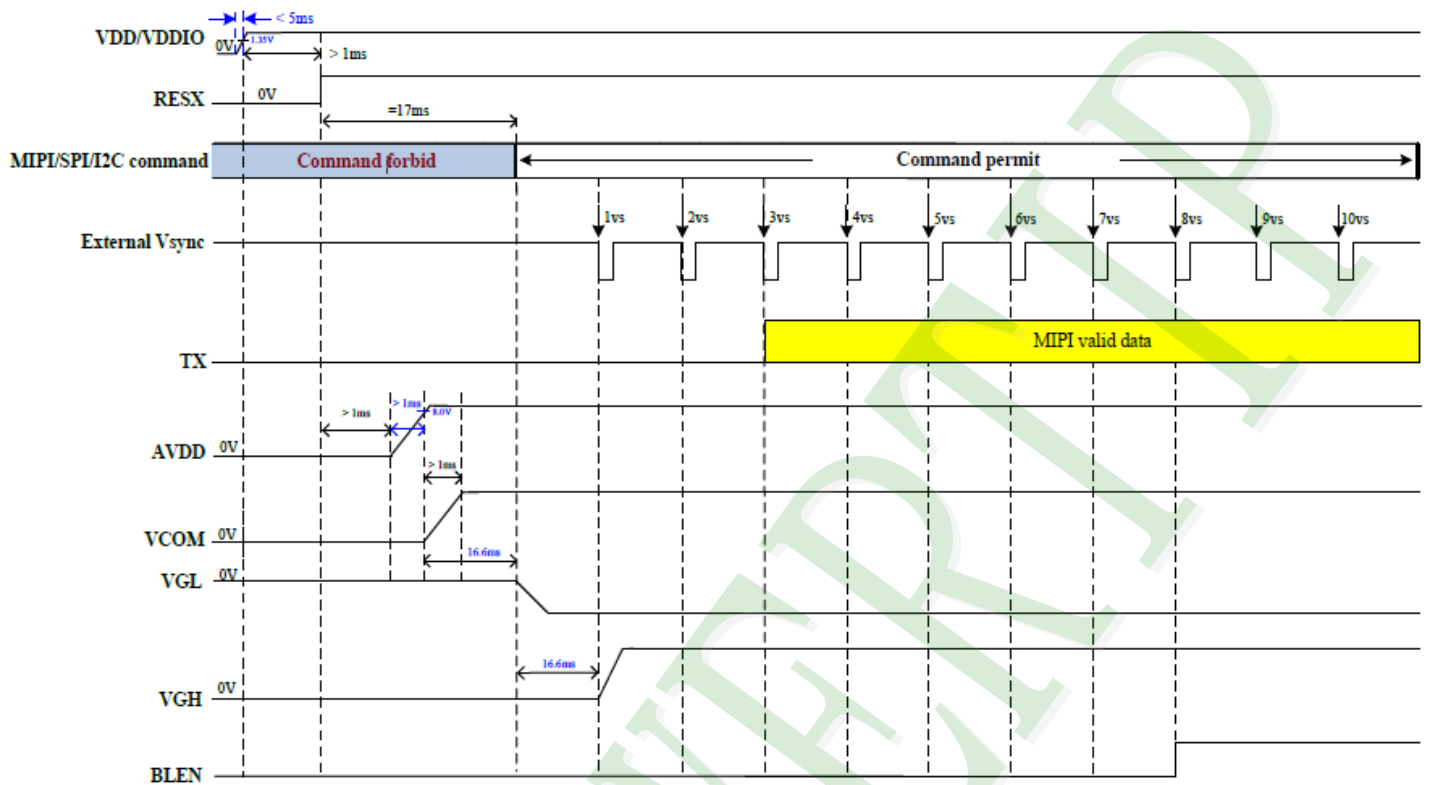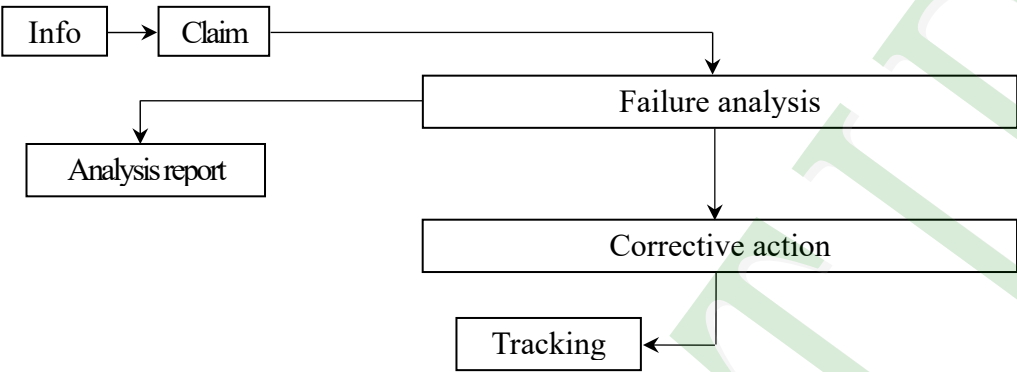
Power OFF Sequence
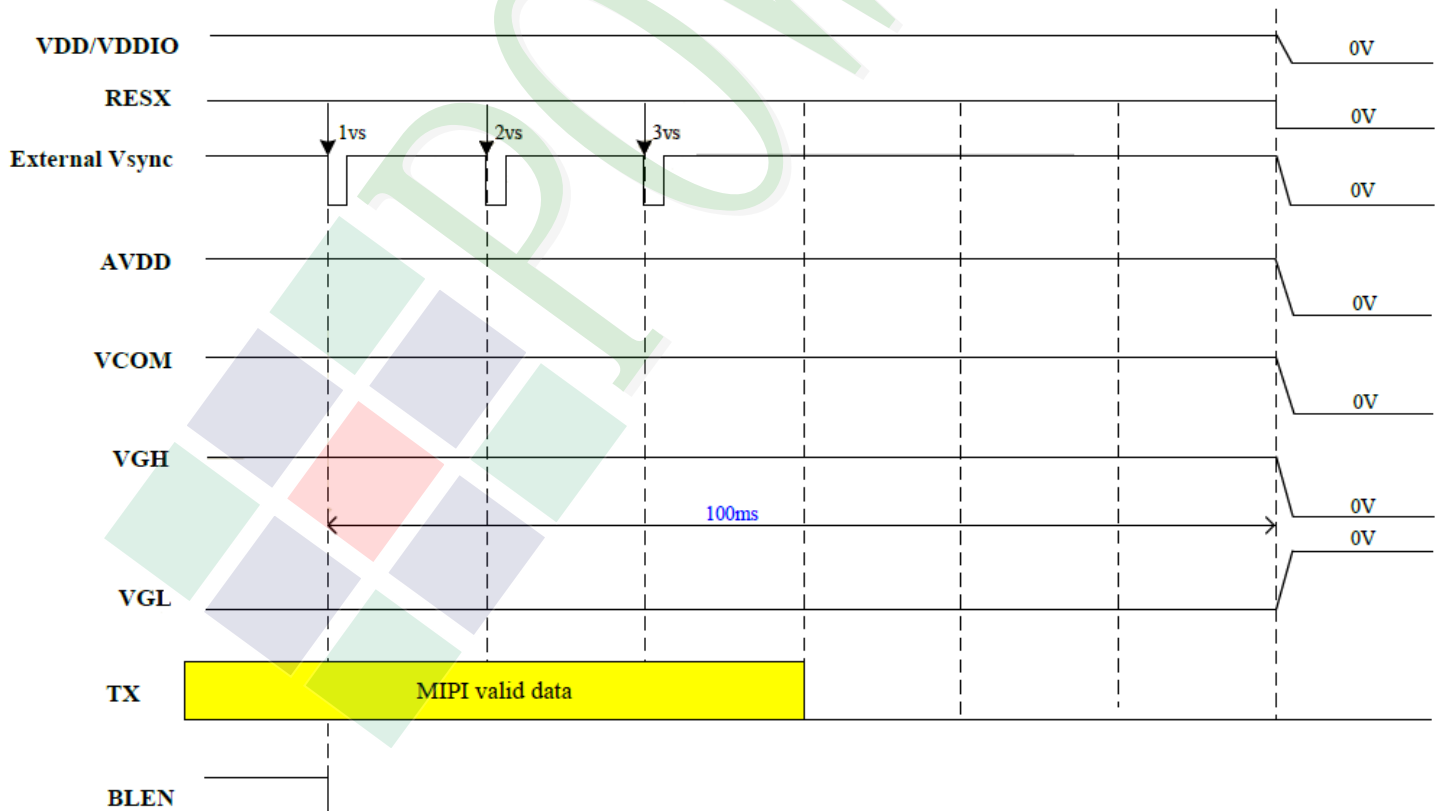
3. Quality Assurance System

3.1 Quality Assurance Flow Chart

Item	Customer	Sales	R&D	Q.A	Manufacturing	Product control	Purchase	Inventory control
Marketing & Design								
Sample Approval								
Pilot Run & Mass Product								
Ship Out								

Info → Survey

Request → Inquiry → Project evaluation

Project Validation
NG
OK → Quote → Contract

Design check

Sample test

Verification
NG
OK

Sample approval
NG
OK

Pilot run & Reliability test

Verification
NG
OK

Specification preparation

Mass production

Inspection
OK
NG

Shipment

Ship out

Item	Customer	Sales	R&D	Q.A	Manufacturing	Product control	Purchase	Inventory control
Sales Service	Info → Claim → Failure analysis → Corrective action → Tracking; Analysis report							
Q.A Activity	1. ISO 9001 Maintenance Activities 2. Process improvement proposal 3. Equipment calibration 4. Education And Training Activities 5. Standardization Management							

3.2 Inspection Specification

◆Scope: The document shall be applied to TFT-LCD Module for 3.5"-15″ (Ver.B01).

◆Inspection Standard: MIL-STD-105E Table Normal Inspection Single Sampling Level Ⅱ.

◆Equipment: Gauge, MIL-STD, Powertip Tester, Sample

◆Defect Level: Major Defect AQL: 0.4; Minor Defect AQL: 1.5

◆OUT Going Defect Level: Sampling

◆Standard of the product appearance test:

a. Manner of appearance test:

(1). The test best be under 20W×2 fluorescent light(about 300lux ～500lux)

and distance of view must be at 30~40 cm.

(2). The test direction is base on about around 45° of vertical line.
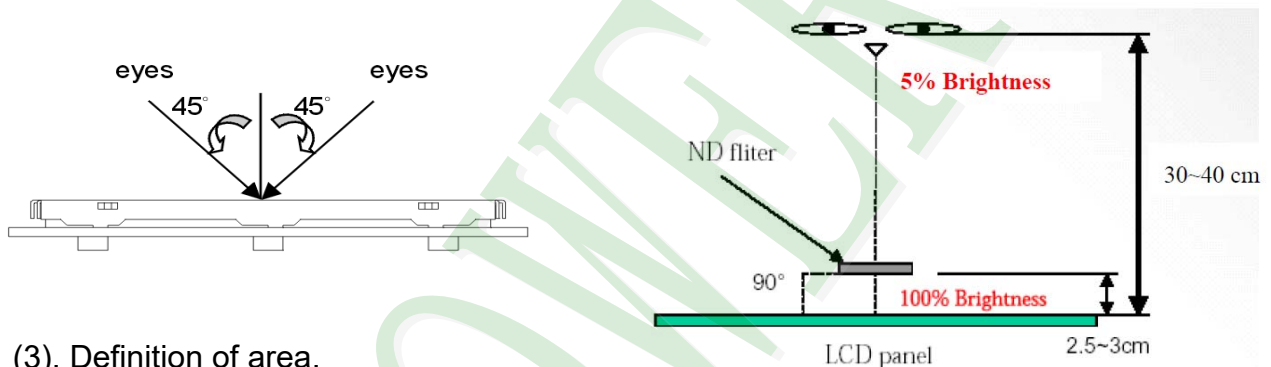
(3). Definition of area.
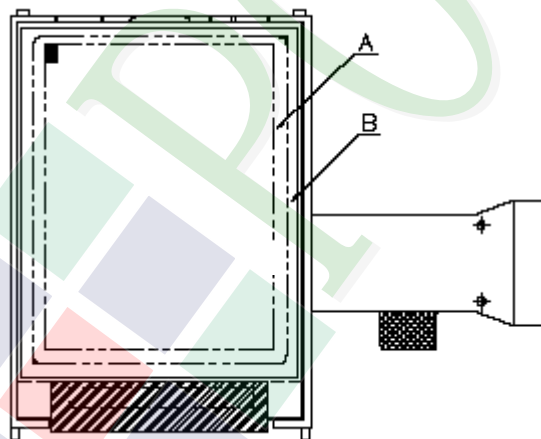
A area: viewing area

B area: Outside of viewing area

(4). Standard of inspection： (Unit：mm)
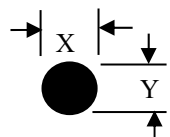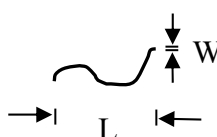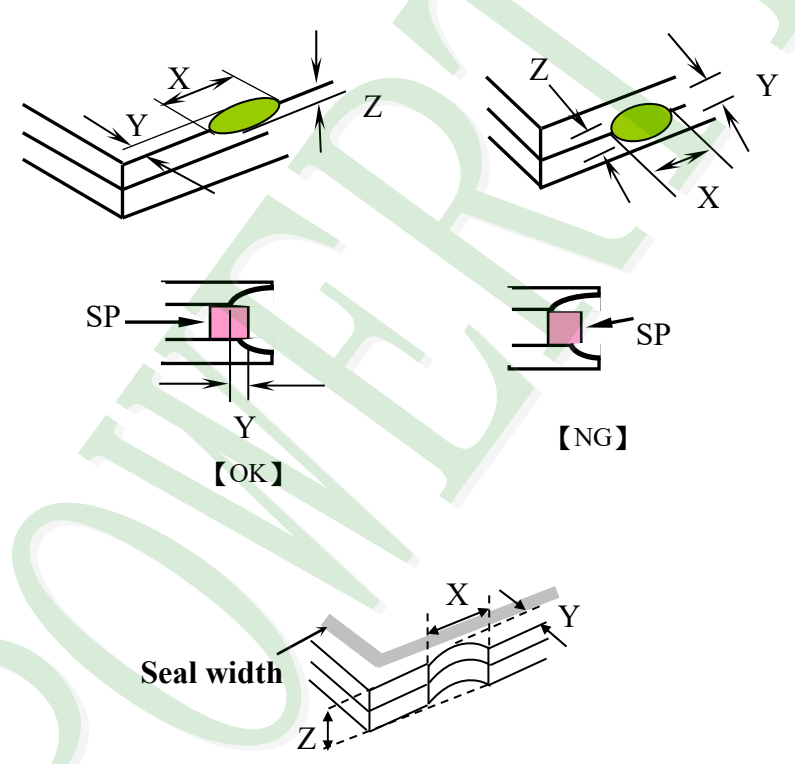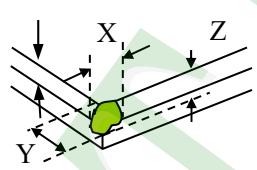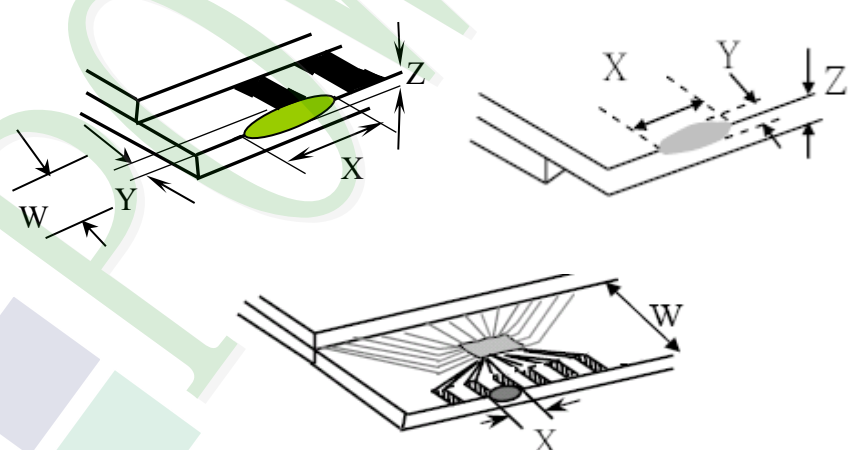
NO	Item	Criterion	Level
01	Product condition	1.1 The part number is inconsistent with work order of production.	Major
		1.2 Mixed product types.	Major
		1.3 Assembled in inverse direction.	Major
02	Quantity	2.1 The quantity is inconsistent with work order of production.	Major
03	Outline dimension	3.1 Product dimension and structure must conform to structure diagram.	Major
04	Electrical Testing	4.1 Missing line character and icon.	Major
		4.2 No function or no display.	Major
		4.3 Display malfunction.	Major
		4.4 LCD viewing angle defect.	Major
		4.5 Current consumption exceeds product specifications.	Major
		4.6 Mura cannot be seen through 5% ND filter at 50% Gray, should be judged by the viewing angle of 90 degree.	Minor
05	Dot defect (Bright dot, Dark dot) On -display	(see table and notes below)	Minor

	Item	Acceptance (Q'ty)
Dot Defect	Bright Dot	≤ 4
	Dark Dot	≤ 5
	Joint Dot	≤ 3
	Total	≤ 7

5.1 Inspection pattern: full white, full black, Red, Green and blue screens.
5.2 It is defined as dot defect if defect area $> 1/2$ dot.
5.3 The distance between two dot defect ≥ 5 mm.
5.4 Bright dot : Dots appear bright and unchanged in visible with 5% ND filter is defined.
5.5 Tiny bright dot: bright dot area $\leq 1/2$ dot.
    a. Dots appear bright and unchanged in visible with 5% ND filter is defined defect and is judged in accordance with 6.1
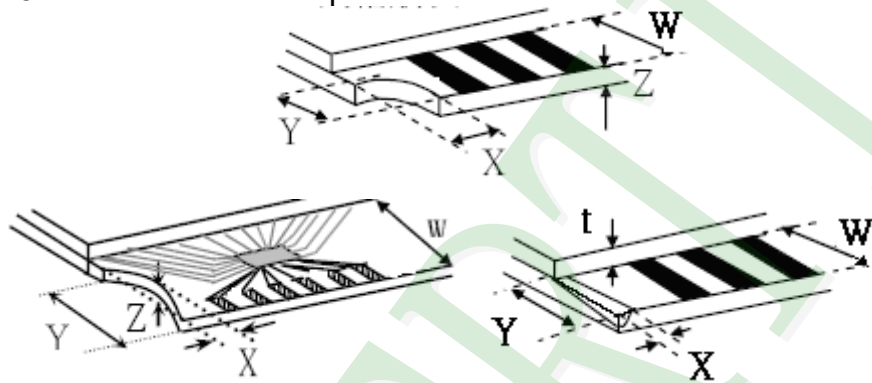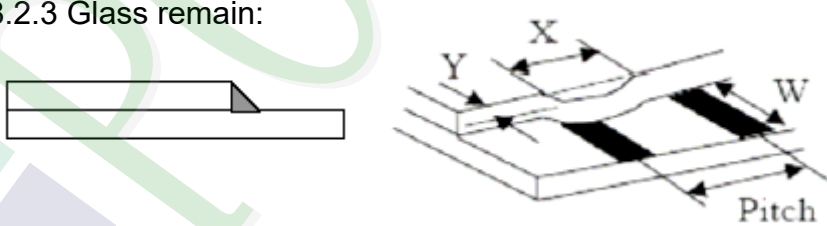   b. Dots invisible with 5% ND Filter is Ignored

NO	Item	Criterion			Level
06	Black or white Dot, scratch, contamination Round type $\Phi = (x+y)/2$ Line type 	6.1 Round type (Non-display or display):			Minor

6.1 Round type (Non-display or display):

Dimension (diameter: Φ)	Acceptance (Q'ty)	
	A area	B area
Φ ≦ 0.25	Ignore	Ignore
0.25 ＜ Φ ≦ 0.50	5	
Φ ＞ 0.50	0	
Total	5	

6.2 Line type(Non-display or display):

module size	Length (L)	Width (W)	Acceptance (Q'ty)	
			A area	B area
3.5" to less 9"	---	W ≦ 0.03	Ignore	Ignore
	L ≦ 10.0	0.03 ＜W ≦ 0.05	4	
	L ≦5.0	0.05 ＜W ≦ 0.10	2	
	---	W ＞0.10	As round type	
		Total	5	
9" to 15"	---	W ≦ 0.05	Ignore	Ignore
	L ≦ 10.0	0.05 ＜W ≦ 0.10	5	
	---	W ＞0.10	As round type	
		Total	5	

NO	Item	Criterion			Level
07	Polarizer Bubble				Minor

Dimension (diameter: Φ)	Acceptance (Q'ty)	
	A area	B area
Φ ≦ 0.25	Ignore	Ignore
0.25 ＜ Φ ≦ 0.50	4	
0.50 ＜ Φ ≦ 0.80	1	
Φ ＞0.80	0	
Total	5	

NO	Item	Criterion	Level
08	The crack of glass	Symbols： X: The length of crack Y: The width of crack. Z: The thickness of crack W: terminal length T: The thickness of glass a : LCD side length 8.1 General glass chip: 8.1.1 Chip on panel surface and crack between panels: 	Minor

X	Y	Z
$\leqq$ a	Crack can't enter viewing area	$\leqq 1/2$ t
$\leqq$ a	Crack can't exceed the half of SP width.	$1/2$ t $<$ Z $\leqq 2$ t

NO	Item	Criterion	Level
08	The crack of glass	Symbols： X: The length of crack　　　Y: The width of crack. Z: The thickness of crack　　W: terminal length t: The thickness of glass　　 a: LCD side length 8.1.2 Corner crack: *8.1.2 corner crack table below* 8.2 Protrusion over terminal: 8.2.1 Chip on electrode pad: *8.2.1 table below*	Minor

8.1.2 Corner crack table:

X	Y	Z
$\leqq$ 1/5 a	Crack can't enter viewing area	$Z \leqq 1/2\,t$
$\leqq$ 1/5 a	Crack can't exceed the half of SP width.	$1/2\,t < Z \leqq 2\,t$

8.2.1 table:

	X	Y	Z
Front	$\leqq$ a	$\leqq$ 1/2 W	$\leqq$ t
Back	$\leqq$ a	$\leqq$ W	$\leqq$ 1/2 t

NO	Item	Criterion	Level
08	The crack of glass	Symbols: X: The length of crack Y: The width of crack. Z: The thickness of crack W: terminal length t: The thickness of glass a: LCD side length 8.2.2 Non-conductive portion: 表1 If the chipped area touches the ITO terminal, over 2/3 of the ITO must remain and be inspected according to electrode terminal specifications. 8.2.3 Glass remain: 表2 8.2.4 Cracking: Not Allowed	Minor

8.2.2 table:

$\underline{X}$	$\underline{Y}$	$\underline{Z}$
$\leqq 1/3\ a$	$\leqq W$	$\leqq t$

8.2.3 table:

$\underline{X}$	$\underline{Y}$	$\underline{Z}$
$\leqq a$	$\leqq 1/3\ W$	$\leqq t$

NO	Item	Criterion	Level
09	Backlight elements	9.1 Backlight can't work normally.	Major
		9.2 Backlight doesn't light or color is wrong.	Major
		9.3 Illumination source flickers when lit.	Major
10	General appearance	10.1 Pin type, quantity, dimension must match type in structure diagram.	Major
		10.2 No short circuits in components on PCB or FPC.	Major
		10.3 Parts on PCB or FPC must be: no wrong parts, missing parts or excess parts.	Major
		10.4 Product packaging must the same as specified on packaging specification sheet.	Minor
		10.5 The folding and peeled off in polarizer are not acceptable.	Minor
		10.6 The PCB or FPC between B/L assembled distance (PCB or FPC) is ≦1.5 mm.	Minor

4. Reliability Test

4.1 Reliability Test Condition   (Ver.B01)

NO.	TEST ITEM	TEST CONDITION
1	High Temperature Storage Test	Keep in 80 ±5℃ 240 hrs
2	High Temperature Operating Test	Keep in 70 ±5℃ 240 hrs
3	Low Temperature Storage Test	Keep in -30 ±5℃ 240 hrs
4	Low Temperature Operating Test	Keep in -20 ±5℃ 240 hrs
5	High Temperature / High Humidity Storage Test	Keep in 60 ℃ / 90% R.H duration for 240 hrs (Excluding the polarizer)
6	Temperature Cycling Storage Test	-30℃ → +25℃ → 80℃ → +25℃ (30mins) (5mins) (30mins) (5mins) 20 Cycle
7	ESD Test	**Air Discharge:** Apply 2 KV with 5 times Discharge for each polarity +/- **Contact Discharge:** Apply 250 V with 5 times discharge for each polarity +/- 1. Temperature ambiance: 15℃～35℃ 2. Humidity relative: 30%～60% 3. Energy Storage Capacitance(Cs+Cd): 150pF±10% 4. Discharge Resistance(Rd): 330Ω±10% 5. Discharge, mode of operation: Single Discharge (time between successive discharges at least 1 sec) (Tolerance if the output voltage indication: ±5%)
8	Vibration Test (Packaged)	1. Sine wave 10～55 Hz frequency (1 min/sweep) 2. The amplitude of vibration: 1.5 mm 3. Each direction (X, Y, Z) duration for 2 hrs
9	Drop Test (Packaged)	(see table below)

Packing Weight (Kg)	Drop Height (cm)
0 ~ 45.4	122
45.4 ~ 90.8	76
90.8 ~ 454	61
Over 454	46

Drop Direction :※1 corner / 3 edges / 6 sides each 1time

◎Result Evaluation Criteria :
Under the display quality test conditions with normal operations with normal operation state.
Do not change these conditions as such changes may affect practical display function.
(Normal operation state)
Temperature：+20~30°C, Humidity：50~70%, Atmospheric pressure：86~106Kpa

5. PRECAUTION RELATING PRODUCT HANDLING

5.1 SAFETY

5.1.1   If the LCD panel breaks, be careful not to get the liquid crystal to touch your skin.

5.1.2   If the liquid crystal touches your skin or clothes, please wash it off immediately by using soap and water.

5.2 HANDLING

5.2.1   Avoid any strong mechanical shock which can break the glass.

5.2.2   Avoid static electricity which can damage the CMOS LSI—When working with the module, be sure to ground your body and any electrical equipment you may be using.

5.2.3   Do not remove the panel or frame from the module.

5.2.4   The polarizing plate of the display is very fragile. So, please handle it very carefully, do not touch, push or rub the exposed polarizing with anything harder than an HB pencil lead (glass, tweezers, etc.)

5.2.5   Do not wipe the polarizing plate with a dry cloth, as it may easily scratch the surface of plate.

5.2.6   Do not touch the display area with bare hands, this will stain the display area.

5.2.7   Do not use ketonics solvent & aromatic solvent. Use with a soft cloth soaked with a cleaning naphtha solvent.

5.2.8   To control temperature and time of soldering is 320 ± 10°C and 3-5 sec.

5.2.9   To avoid liquid (include organic solvent) stained on LCM

5.2.10   Caution!(LCM products with Capacitive Touch Panel)
Strong EMI-sources such as switch-mode power supplies (SMPS) can lead to touch malfunction (e.g. ghost-touches).
Therefore, the touch needs to be thoroughly tested inside the target application.

5.2.11   CAUTION: Continuously displaying same static image will result in high possibility of image sticking/image burn-in effect due to TFT panel characteristic.

5.2.12   Double-sided tape designed to be attach with the customer's mechanical device, please follow up the rules and regulations published by the original manufacturer of double-sided tape for the attachment operation.

5.3 STORAGE

5.3.1   Store the panel or module in a dark place where the temperature is 25°C ± 5°C and the humidity is below 65% RH.

5.3.2   Do not place the module near organics solvents or corrosive gases.

5.3.3   Do not crush, shake, or jolt the module.

5.4 TERMS OF WARRANTY

5.4.1   Applicable warrant period The period is within thirteen months since the date of shipping out under normal using and storage conditions.

5.4.2   Unaccepted responsibility
This product has been manufactured to your company's specification as a part for use in your company's general electronic products. It is guaranteed to perform according to delivery specifications. For any other use apart from general electronic equipment, we cannot take responsibility if the product is used in nuclear power control equipment, aerospace equipment, fire and security systems or any other applications in which there is a direct risk to human life and where extremely high levels of reliability are required.

NOTES:
1.LCD TYPE: TFT LCD
2.LCD DISPLAY: Normally Black/TRANSMISSIVE
3.The tolerance unless classified ±0.3mm
4.B:P0.5X39=19.5±0.05; W=0.3±0.05
5.■:FPC Component Area ; ▨ :GND;
  4.B:P0.5X39=19.5±0.05; W=0.3±0.05
  ▨ :Kapton tape; ▨ :EMI Film;
  ▨ :Stiffener(SUS t=0.2mm to GND;
6.FPC suggested connector : HIROSE FH12A-40S-0.5SH or compatible
  TP FPC suggested connector : HIROSE FH34S-6S-0.5SH or compatible

34.62±0.5
115.76(O.D)
86.92(LCM V.A)
10.91
85.92(LCD A.A)
11.41
18.87
19.37
(0,0)
155.21(LCM V.A)
192.96(O.D)
154.21(LCD A.A)
97.96±0.5

PATTERN COLOR
(RAL 9005)

DOTS 1024(R.G.B)X600

1
40
1 6
A
C
Pull Tape

4-R7.88

1.5Max.
Component Height

Stiffener
Conductor
Conductor
Stiffener
0.3±0.05
0.3±0.05

1.5 Max
Component Height

4.84±0.5
0.7(LENS)
(2.75 LCM)

165.75(Frame O.D)
14.76

Print line
3.5±0.1
1
6
1.6±0.5
3.5±0.5
Detail: C
SCALE:3X

0.5±0.1
6
1
2.5
0.35±0.05
P0.5X5=2.5±0.05

BLACK TAPE

5.0±0.5
3.5±0.5
40
1
Print line

0.5±0.1
20.5±0.1
B
3.5
Detail: A
SCALE:2X

67.84±0.5

R G B
0.1506
0.1432
PIXEL Detail
SCALE:150X

44.85±0.5
105.4(Frame O.D)
5.03

REV	001	002	003	004	005	006	007
	NEW DRAWING						

REVISER Tina
DATE 2024/05/30