US Micro Products

Electronic Products for the OEM

TFT-LCD PRODUCT SPECIFICATION

PART NUMBER:	**USMP-TT080S-01C**
DESCRIPTION:	8.0" TFT LCD with 800 x 600 resolution, Digital 24-bits RGB Interface and 6 O'Clock Viewing Direction

ISSUE DATE	APPROVED BY (Customer Use Only)	CHECKED BY	PREPARED BY
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History of Version

Date (mm / dd / yyyy)	Ver.	Edi.	Description	Page	Design by
11/09/2010	01	001	First Sample	-	Yuan

Total: 28 Page

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Appendix：LCM Drawing

1. SPECIFICATIONS

1.1 Features

Item	Standard Value
Display Type	800 * 3 (RGB) * 600 Dots
LCD Type	a-Si TFT , Normally white , Transmissive type
Screen size(inch)	8.0 inch
Viewing Direction	6 O'clock
Color configuration	RGB-Strip
Backlight Type	LED B/L
Interface	Digital 24-bits RGB

1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	183.0(W) x 141.0(L) x 5.6 (H)	mm

LCD panel

Item	Standard Value	Unit
Active Area	162.0 (W) * 121.5 (L)	mm

Note : For detailed information please refer to LCM drawing

1.3 Absolute Maximum Ratings

Module

Item	Symbol	Condition	Min.	Max.	Unit
Digital Supply Voltage	VCC	-	-0.5	5	V
Analog Power Supply Voltage	AVDD	-	-0.5	15	V
TFT Device on voltage	VGH	-	-0.3	42	V
TFT Device off voltage	VGL	-	VGH-42	0.3	V
Operating Temperature	T_{OP}	-	-20	70	°C
Storage Temperature	T_{ST}	-	-30	80	°C

1.4 DC Electrical Characteristics

Module GND = 0V, Ta = 25°C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Digital Power Supply Voltage	VCC	-	3.0	3.3	3.6	V
Analog Power Supply Voltage	AVDD	-	10.2	10.4	10.6	V
Frame Frequency	F_{Frame}	-		60		V
TFT Device on voltage	VGH	-	15.3	16	16.7	V
TFT Device off voltage	VGL	-	-7.7	-7	-6.3	V
Common Power Supply Voltage	VCOM	-		3.6		V
Logic High Input Voltage	VIH	-	0.7 VCC	-	VCC	V
Logic Low Input Voltage	VIL	-	0	-	0.3 VCC	V
Digital Operating Current	I_{CC}	VCC = 3.3 V Pattern= Full display	-	6	15	mA
Analog Operating Current	I_{AVDD}	AVDD = 10.4 V Pattern= Full display	-	25	-	mA

1.5 Optical Characteristics

TFT LCD Module VCC = 3.3 V, Ta=25°C

Item		Symbol	Condition	Min.	Typ.	Max.	unit	
Response time	Rise	Tr	Ta = 25°C θX, θY = 0°	-	10		ms	Note 2
	Fall	Tf		-	15			
Viewing angle	Top	θY+	CR ≥ 10	60	70	-	Deg.	Note 4
	Bottom	θY-		60	70	-		
	Left	θX-		40	50	-		
	Right	θX+		60	70	-		
Contrast ratio		CR	Ta = 25°C θX , θY = 0°	400	500	-		Note 3
Color of CIE Coordinate （With B/L）	White	X		0.26	0.31	0.36	-	Note1
		Y		0.28	0.33	0.38		
	Red	X		0.578	0.628	0.678		
		Y		0.294	0.344	0.394		
	Green	X		0.289	0.339	0.389		
		Y		0.538	0.588	0.638		
	Blue	X		0.104	0.154	0.204		
		Y		0.081	0.131	0.181		
Average Brightness Pattern=white display (Without Barrier)*1		IV	-	200	250		cd/m^2	Note1
Uniformity (Without Barrier)*2		△B	-	70	-	-	%	Note1

Note 1:

*1：△B=B(min) / B(max) * 100%

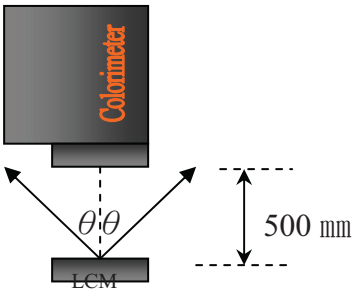
*2：Measurement Condition for Optical Characteristics:

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

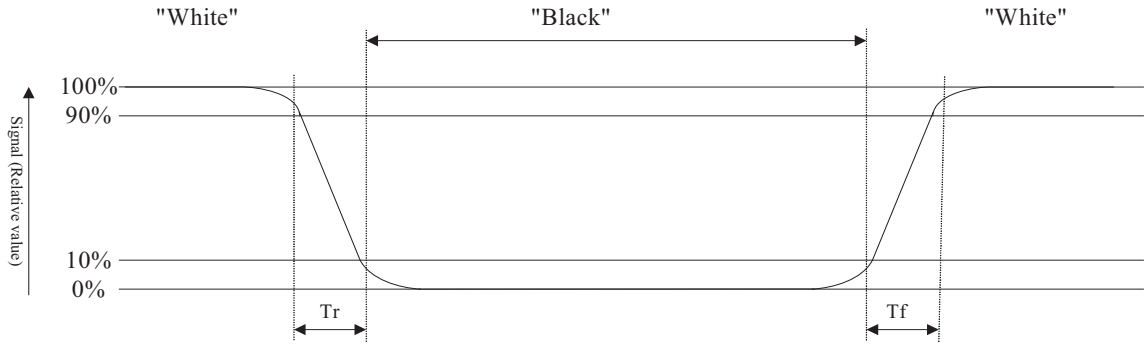
To be measured at the center area of panel with a viewing cone of 1° by Topcon luminance meter BM-7, after 10 minutes operation (module)

Note2: Definition of response time:

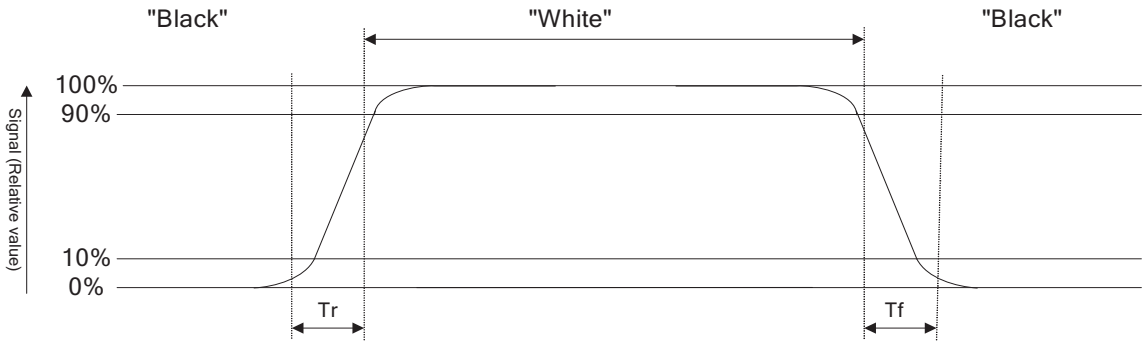
The output signals of photo detector are measured when the input signals are changed from “black” to “white”(falling time) and from “white” to “black”(rising time), respectively. The response time is defined as the time interval between the 10% and 90% of Amplitudes.

Refer to figure as below:

Normally White



Normally Black



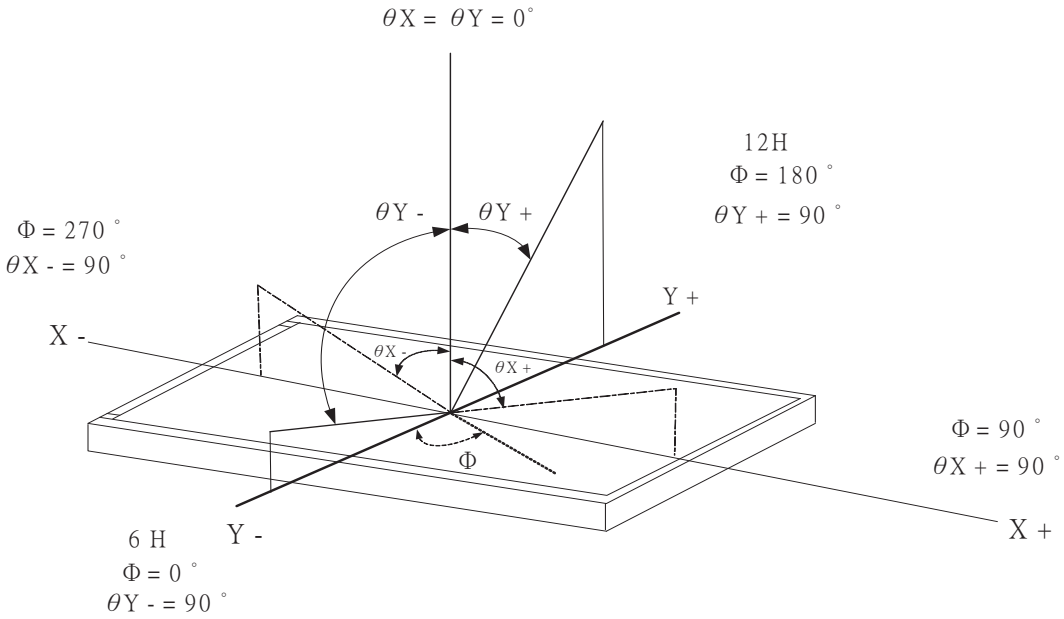
Note3: Definition of contrast ratio:

Contrast ratio is calculated with the following formula

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

Note4: Definition of viewing angle:

Refer to figure as below:

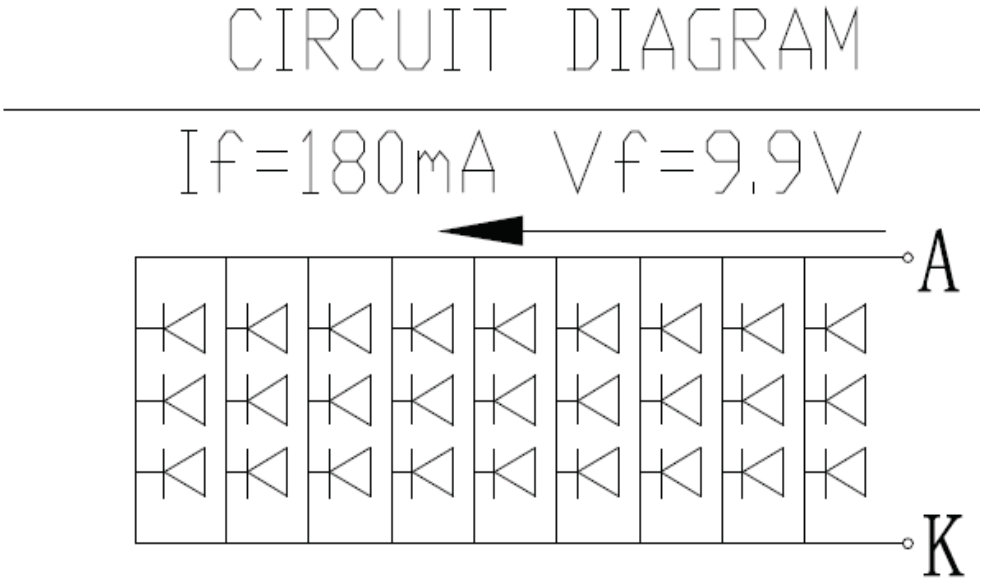


1.6 Backlight Characteristics

Backlight Characteristics

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Power Consumption	P_{BL}	-		1782	2362.5	mW
LED current	ILED		-	180	225	mA
LED voltage	VLED		-	9.9	10.5	V
Color	White					

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



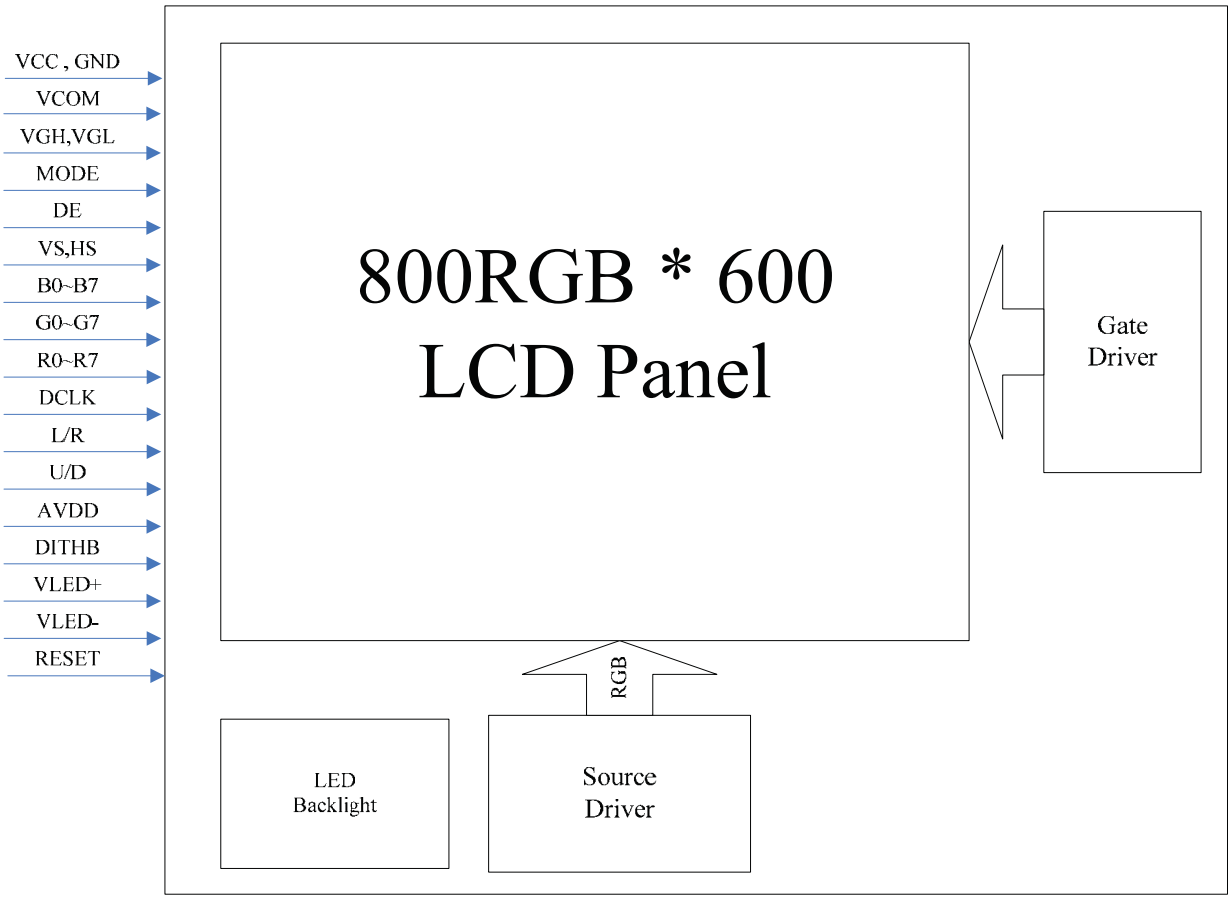
2. MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 LCM Mechanical Diagram

* See Appendix

2.1.2 Block Diagram



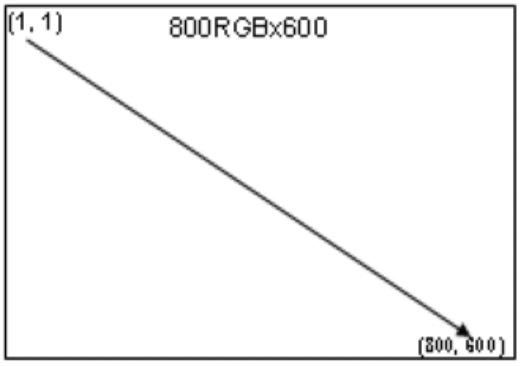
2.2 Interface Pin Description

Pin NO.	SYMBOL	DESCRIPTION	Remark
1	NC	No connection	
2	NC	No connection	
3	NC	No connection	
4	NC	No connection	
5	GND	Power Ground	
6	VCOM	Common voltage	
7	Vcc	Power Supply for Digital circuit	
8	MODE	DE/SYNC mode select	Note1
9	DE	Data Input Enable	
10	VS	Vertical Sync Input	
11	HS	Horizontal Sync Input	
12	B7	Blue Data 7 (MSB)	
13	B6	Blue Data 6	
14	B5	Blue Data 5	
15	B4	Blue Data 4	
16	B3	Blue Data 3	
17	B2	Blue Data 2	
18	B1	Blue Data 1	
19	B0	Blue Data 0 (LSB)	
20	G7	Green Data 7 (MSB)	
21	G6	Green Data 6	
22	G5	Green Data 5	
23	G4	Green Data 4	
24	G3	Green Data 3	
25	G2	Green Data 2	
26	G1	Green Data 1	
27	G0	Green Data 0 (LSB)	
28	R7	Red Data 7 (MSB)	
29	R6	Red Data 6	
30	R5	Red Data 5	
31	R4	Red Data 4	
32	R3	Red Data 3	
33	R2	Red Data 2	
34	R1	Red Data 1	
35	R0	Red Data 0 (LSB)	
36	GND	Power Ground	
37	DCLK	Sample clock	

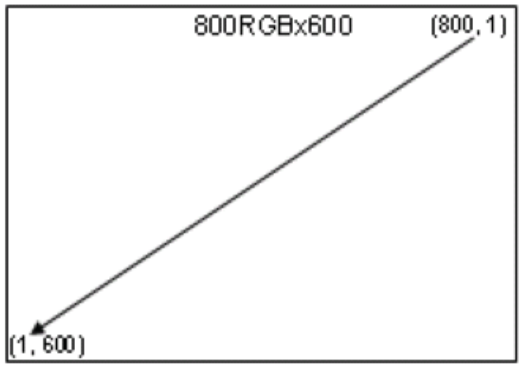
38	GND	Power ground	
39	L/R	Right/ left selection	Note4
40	U/D	Up/down selection	Note4
41	VGH	Gate ON voltage	
42	VGL	Gate OFF voltage	
43	AVDD	Power for Analog circuit	
44	RESET	Global reset pin.	Note2
45	NC	No connection	
46	VCOM	Common voltage	
47	DITHB	Dithering function	Note3
48	GND	Power ground	
49	NC	No connection	
50	NC	No connection	

Note 1: DE/SYNC mode select, normally pull high.
High: DE mode
Low: SYNC mode
Note 2: Global reset pin. Active low to enter reset state. Suggest to connecting with an RC reset circuit for stability. Normally pull high.
Note 3: Dithering function enable control. Normally pull high:
DITHB="1". Disable internal dithering function. For 18 bits RGB interface, connect two LSB bits of all the R/G/B data buses to GND.
DITHB="0". Enable internal dithering function. For 24 bits RGB interface.
Note 4:The 39 and 40pin(L/R_U/D) scanning direction set section.

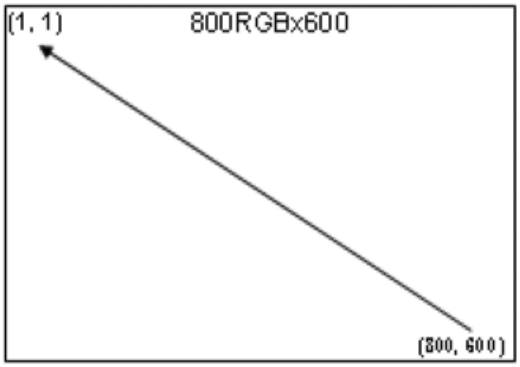
Setting of scan control input		**Scanning direction**
U/D	L/R	
GND	VCC	Up to down, left to right
VCC	GND	Down to up, right to left
GND	GND	Up to down, right to left
VCC	VCC	Down to up, left to right



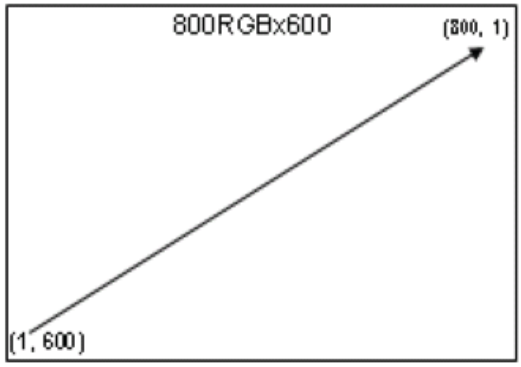
U/D=GND ; L/R=VCC



U/D=GND ; L/R=GND



U/D=VCC ; L/R=GND



U/D=VCC ; L/R=VCC

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Backlight Driving Part

Pin NO.	SYMBOL	DESCRIPTION
1	VLED+	LED_ Anode (Red)
2	VLED-	LED_ Cathode (Black)

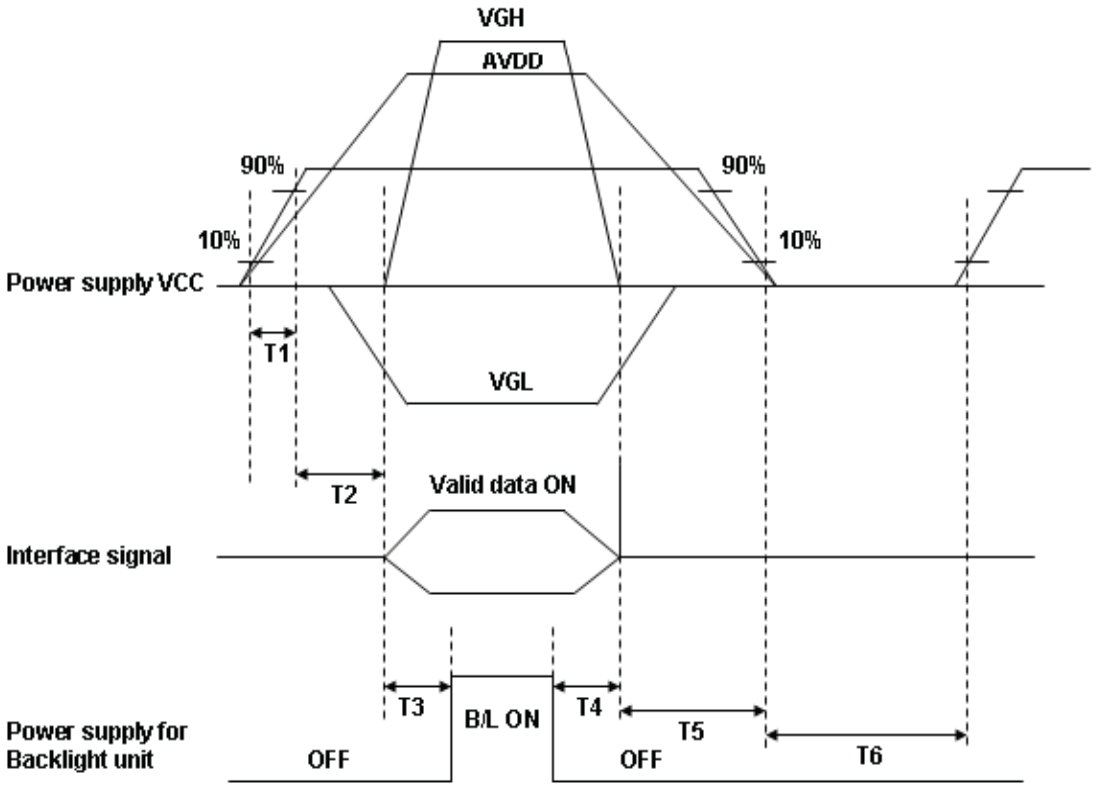
Note:

The backlight interface connector is a model **BHSR-20VS-1** manufactured by JST or equivalent.

The matching connector part number is **SM02B-BHSS-1-TB** manufactured by JST or equivalent.

2.3 Timing Characteristics

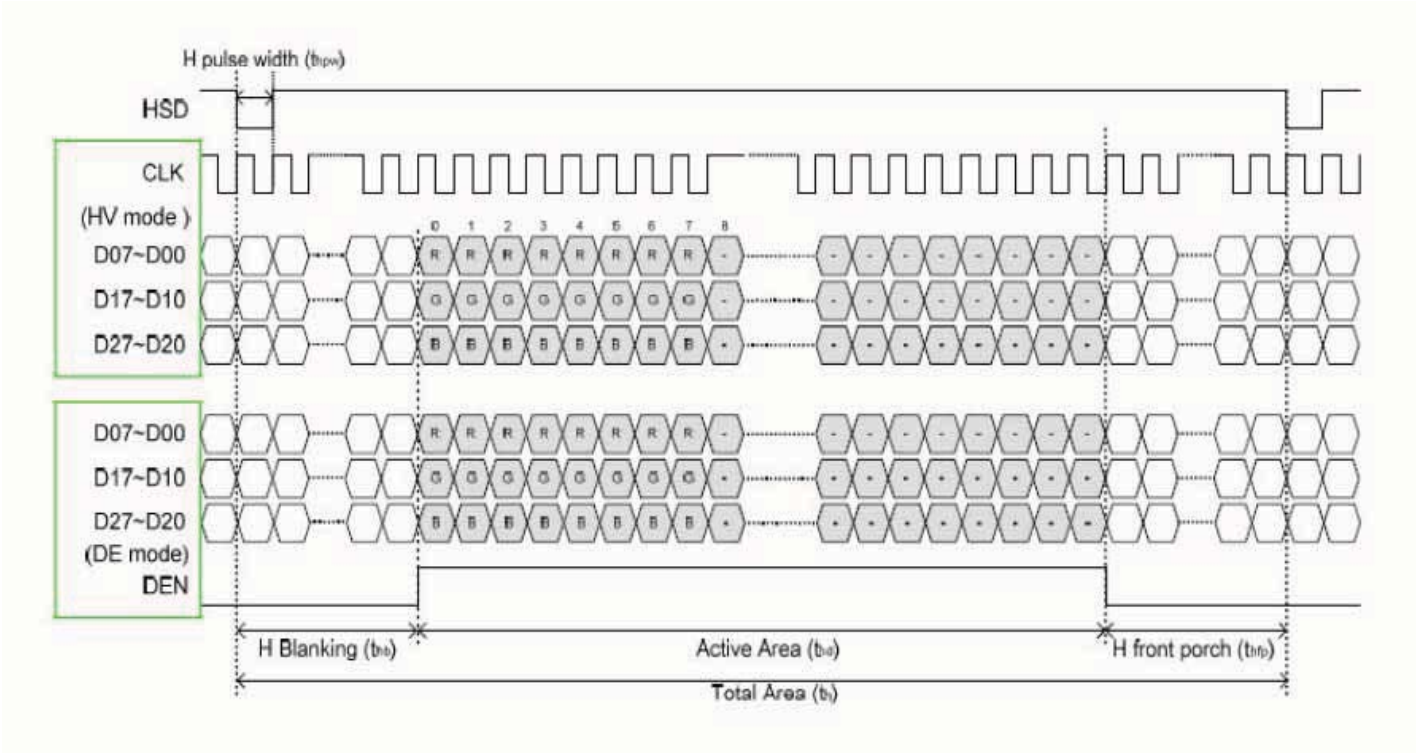
2.3.1 Power On/Off Sequence



Parameter	Rating			Unit
	Min.	Typ.	Max.	
T1	1		2	ms
T2	0	60		ms
T3	200			ms
T4	200			ms
T5	1			ms
T6	1000			ms

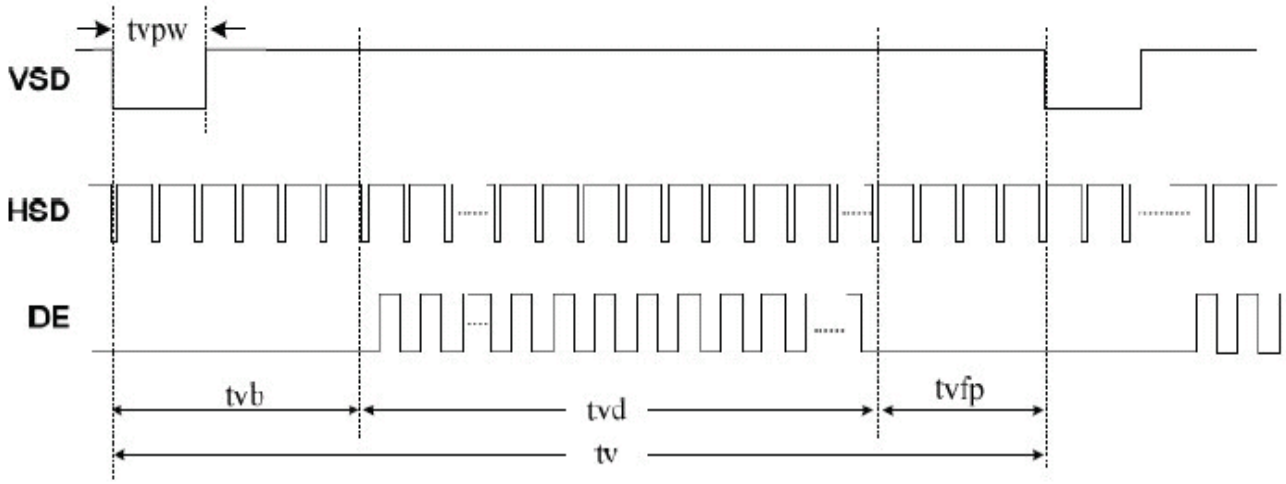
2.3.2 Timing Characteristics

Horizontal Timing



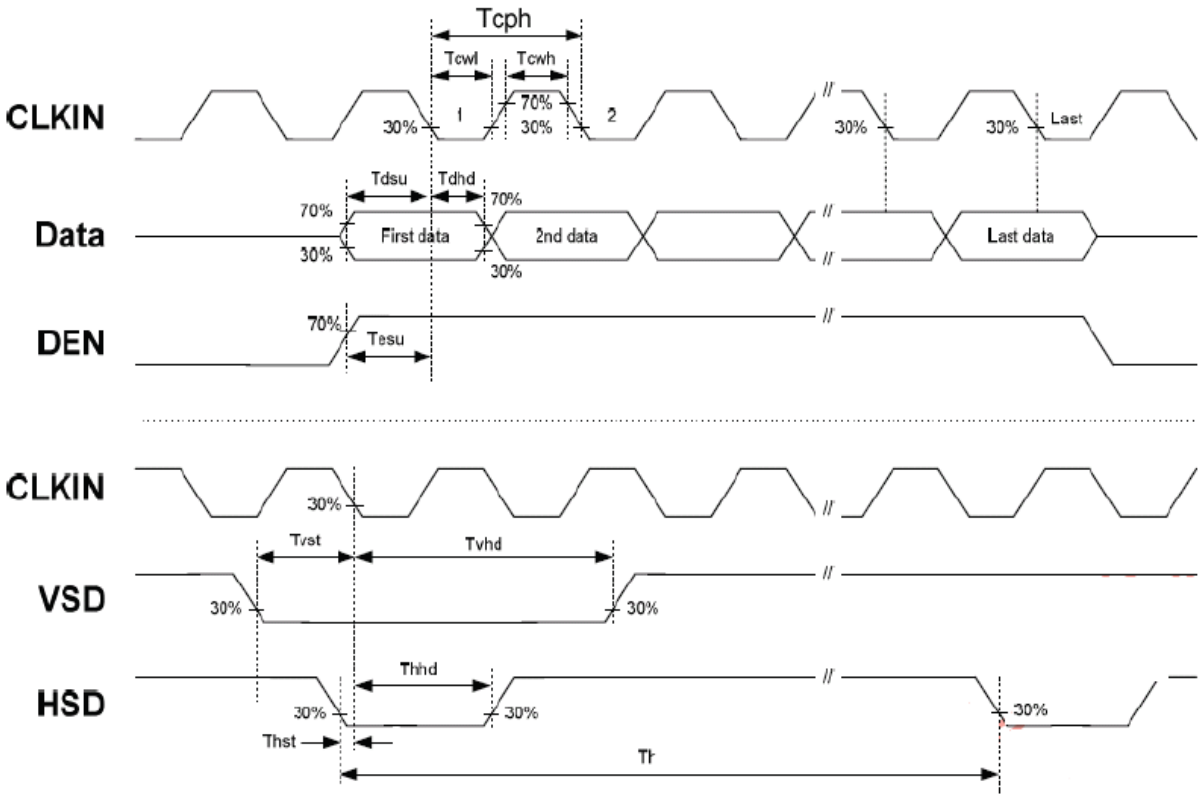
Parameter	Symbol	Rating			Unit
		Min.	Typ.	Max.	
Horizontal Display Area	thd	-	800	-	CLK
CLK Frequency	fclk	-	40	50	MHZ
One Horizontal Line	th	862	1056	1200	CLK
HS Pulse Width	thpw	1	-	40	CLK
HS Back Porch	Thb	46			CLK
HS Front Porch	Thfp	16	210	354	CLK

Vertical Timing



Parameter	Symbol	Rating			Unit
		Min.	Typ.	Max.	
Vertical Display Area	thd		600		CLK
VS Period Time	tv	624	635	700	CLK
VS Pulse Width	tvpw	1		20	CLK
VS Back Porch	Tvb		23		CLK
VS Front Porch	Tvfp	1	12	77	CLK

2.3.3 AC Electrical Characteristics

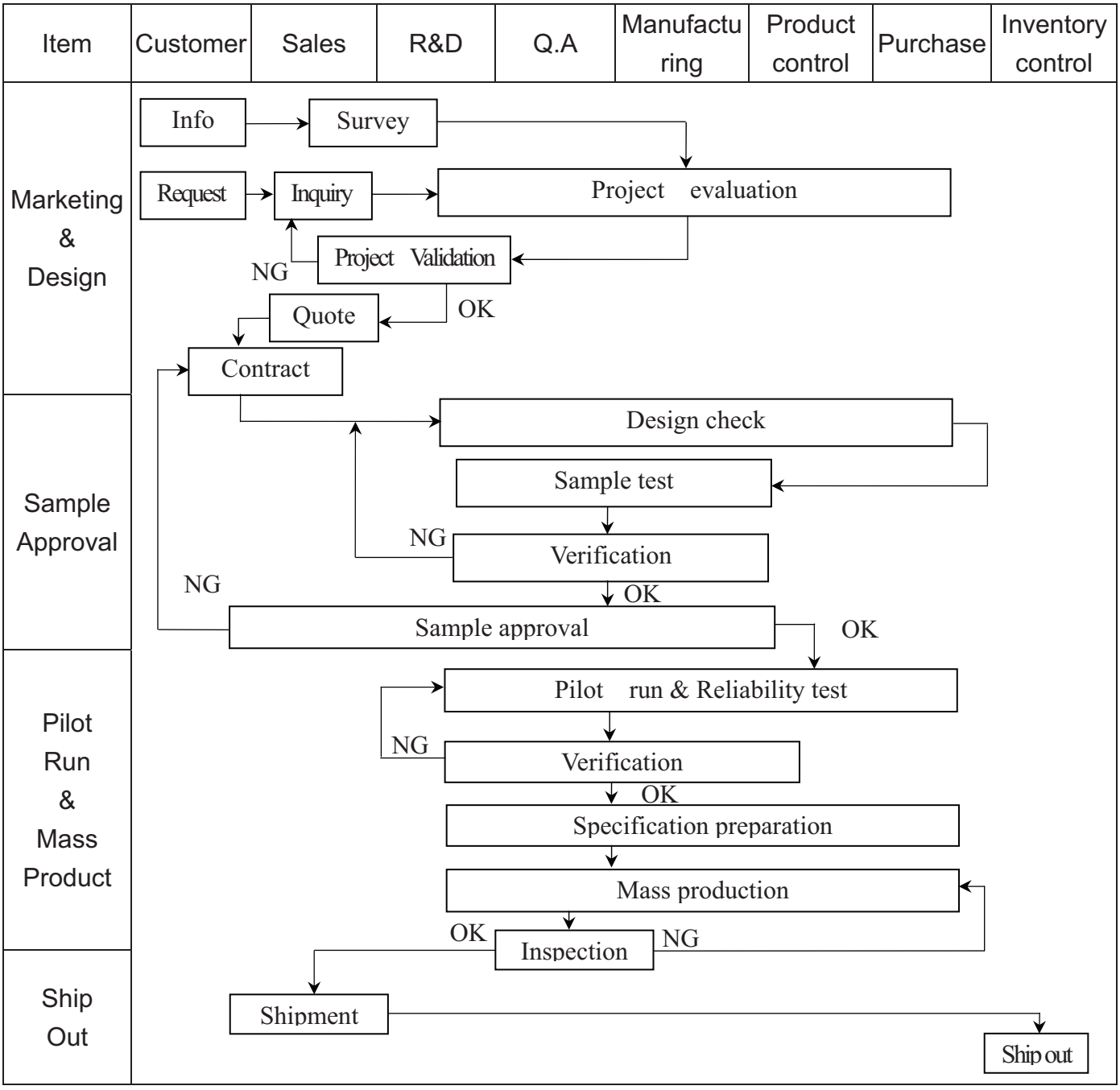


(VCC= 3.0 to 3.6V, AVDD= 6.5 to 13.5V, GND=AGND= 0V, TA= -20 to +80°C)

Parameter	Symbol	Rating			Unit	Condition
		Min.	Typ.	Max.		
CLKIN cycle time	Tcph	20	-		ns	
CLKIN pulse duty	Tcwh	40	50	60	%	
VSD setup time	Tvst	8	-	-	ns	
VSD hold time	Tvhd	8			ns	
HSD setup time	Thst	8			ns	
HSD hold time	Thhd	8	-	-	ns	
Data set-up time	Tdsu	8	-	-	ns	D0[7:0], D1[7:0], D2[7:0] to CLKIN
Data hold time	Tdhd	8	-	-	ns	D0[7:0], D1[7:0], D2[7:0] to CLKIN
DEN setup time	Tesu	8	-	-	ns	
DEN hold time	Tehd	8	-	-	ns	

3. QUALITY ASSURANCE SYSTEM

3.1 Quality Assurance Flow Chart



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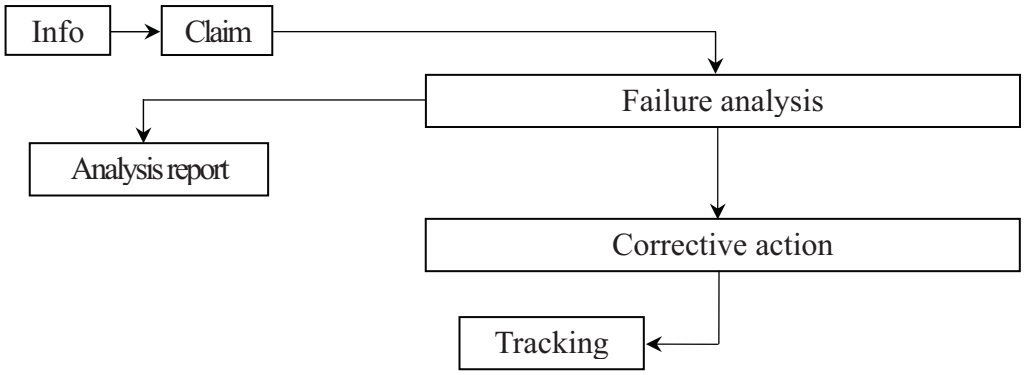
Item	Customer	Sales	R&D	Q.A	Manufacturing	Product control	Purchase	Inventory control
Sales Service								
Q.A Activity	1. ISO 9001 Maintenance Activities 3. Equipment calibration 5. Standardization Management			2. Process improvement proposal 4. Education And Training Activities				

3.2 Inspection Specification

1. Inspection Specification

◆Scope ：The document shall be applied to TFT-LCD Module for 3.5" ~10" (Ver. 02).

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

◆Equipment：Gauge、MIL-STD、Sample

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

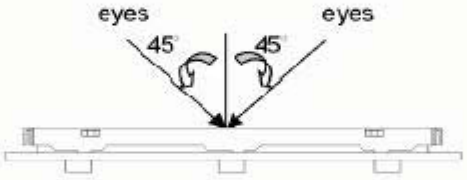
◆OUT Going Defect Level：Sampling.

◆Standard of the product appearance test：

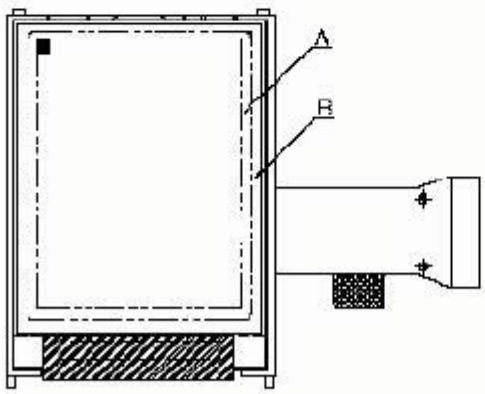
a. Manner of appearance test：

(1). The test best be under 20W×2 fluorescent light，and distance of view must be at 30 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)

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◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver.B01)

<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td rowspan="3">01</td><td rowspan="3">Product condition</td><td>1.1The part number is inconsistent with work order of production.</td><td>Major</td></tr>
<tr><td>1.2 Mixed product types.</td><td>Major</td></tr>
<tr><td>1.3 Assembled in inverse direction.</td><td>Major</td></tr>
<tr><td>02</td><td>Quantity</td><td>2.1The quantity is inconsistent with work order of production.</td><td>Major</td></tr>
<tr><td>03</td><td>Outline dimension</td><td>3.1 Product dimension and structure must conform to structure diagram.</td><td>Major</td></tr>
<tr><td rowspan="5">04</td><td rowspan="5">Electrical Testing</td><td>4.1 Missing line character and icon.</td><td>Major</td></tr>
<tr><td>4.2 No function or no display.</td><td>Major</td></tr>
<tr><td>4.3 Display malfunction.</td><td>Major</td></tr>
<tr><td>4.4 LCD viewing angle defect.</td><td>Major</td></tr>
<tr><td>4.5 Current consumption exceeds product specifications.</td><td>Major</td></tr>
<tr><td>05</td><td>Dot defect
(Bright dot、Dark dot)
On -display</td><td>
<table>
<tr><th colspan="2">Item</th><th>Acceptance (Q'ty)</th></tr>
<tr><td rowspan="4">Dot Defect</td><td>Bright Dot</td><td>≦ 4</td></tr>
<tr><td>Dark Dot</td><td>≦ 5</td></tr>
<tr><td>Joint Dot</td><td>≦ 3</td></tr>
<tr><td>Total</td><td>≦ 7</td></tr>
</table>
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.
</td><td>Minor</td></tr>
</table>

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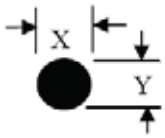
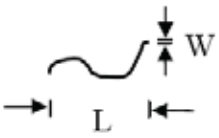
◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver.B01)

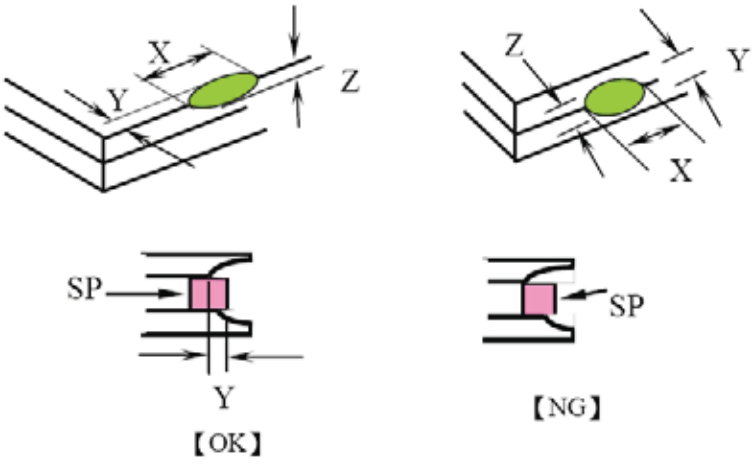
<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td>06</td><td>Black or white dot、scratch、contamination

Round type
 

Φ=(x+y) / 2

Line type
 
</td><td>6. 1 Round type (Non-display or display) :
<table><tr><th rowspan="2">Dimension (diameter : Φ)</th><th colspan="2">Acceptance (Q'ty)</th></tr><tr><th>A area</th><th>B area</th></tr><tr><td>Φ ≦ 0.25</td><td>Ignore</td><td rowspan="4">Ignore</td></tr><tr><td>0.25 < Φ ≦ 0.50</td><td>5</td></tr><tr><td>Φ > 0.50</td><td>0</td></tr><tr><td>Total</td><td>5</td></tr></table>
6. 2 Line type(Non-display or display) :
<table><tr><th rowspan="2">Length (L)</th><th rowspan="2">Width (W)</th><th colspan="2">Acceptance (Q'ty)</th></tr><tr><th>A area</th><th>B area</th></tr><tr><td>---</td><td>W ≦ 0.03</td><td>Ignore</td><td rowspan="5">Ignore</td></tr><tr><td>L ≦10.0</td><td>0.03 < W ≦ 0.05</td><td>4</td></tr><tr><td>L ≦5.0</td><td>0.05 < W ≦ 0.10</td><td>2</td></tr><tr><td>---</td><td>W >0.10</td><td>As round type</td></tr><tr><td colspan="2">Total</td><td>5</td></tr></table></td><td>Minor</td></tr>
<tr><td>07</td><td>Polarizer Bubble</td><td><table><tr><th rowspan="2">Dimension (diameter : Φ)</th><th colspan="2">Acceptance (Q'ty)</th></tr><tr><th>A area</th><th>B area</th></tr><tr><td>Φ ≦ 0.25</td><td>Ignore</td><td rowspan="4">Ignore</td></tr><tr><td>0.25 < Φ ≦ 0.50</td><td>4</td></tr><tr><td>0.50 < Φ ≦ 0.80</td><td>1</td></tr><tr><td>Φ > 0.80</td><td>0</td></tr><tr><td>Total</td><td>5</td></tr></table></td><td>Minor</td></tr>
</table>

◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver:B01)

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
≦ a	Crack can't enter viewing area	≦1/2 t
≦ a	Crack can't exceed the half of SP width.	1/2 t < Z ≦2 t

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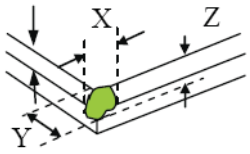
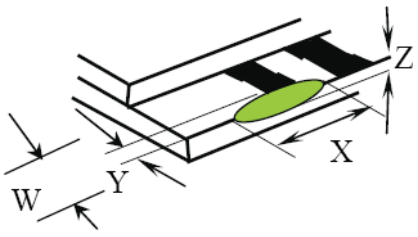
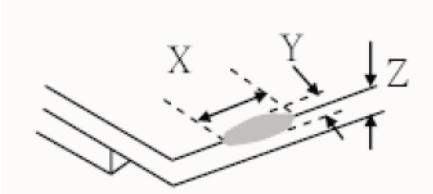
◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver.B01)

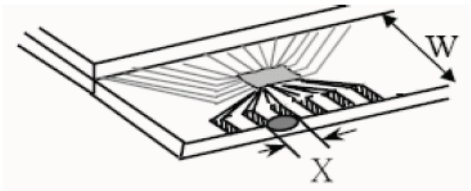
<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td rowspan="2">08</td><td rowspan="2">The crack of glass</td><td>
Symbols :

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 :


<table>
<tr><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>≦1/5 a</td><td>Crack can't enter viewing area</td><td>Z ≦ 1/2 t</td></tr>
<tr><td>≦1/5 a</td><td>Crack can't exceed the half of SP width.</td><td>1/2 t < Z ≦ 2 t</td></tr>
</table>
</td><td rowspan="2">Minor</td></tr>
<tr><td>
8.2 Protrusion over terminal :
8.2.1 Chip on electrode pad :






<table>
<tr><th></th><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>Front</td><td>≦ a</td><td>≦ 1/2 W</td><td>≦ t</td></tr>
<tr><td>Back</td><td>≦ a</td><td>≦ W</td><td>≦ 1/2 t</td></tr>
</table>
</td></tr>
</table>

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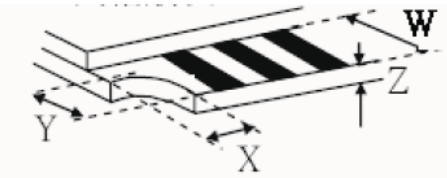
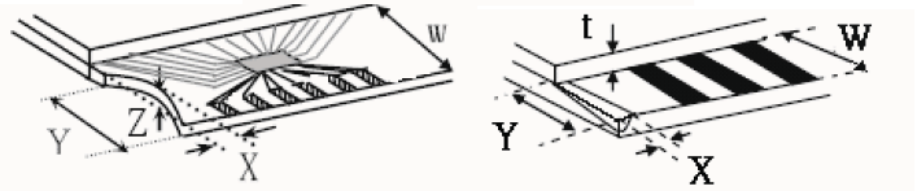
◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver.B01)

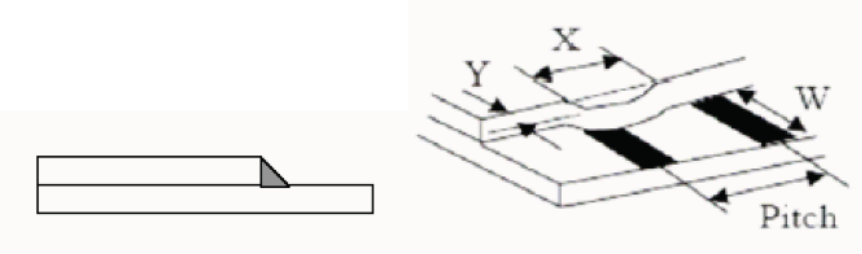
<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td>08</td><td>The crack of glass</td><td>
Symbols :

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 :




<table>
<tr><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>≦ 1/3 a</td><td>≦ W</td><td>≦t</td></tr>
</table>
⊙ 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 :


<table>
<tr><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>≦ a</td><td>≦ 1/3 W</td><td>≦t</td></tr>
</table>
</td><td>Minor</td></tr>
</table>

◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver.B01)

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 the same as on the production characteristic chart .There should 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 ±2℃ 96 hrs Surrounding temperature, then storage at normal condition 4hrs.
2	Low Temperature Storage Test	Keep in -30 ±2℃ 96 hrs Surrounding temperature, then storage at normal condition 4hrs.
3	High Temperature / High Humidity Storage Test	Keep in 60 ℃ / 90% R.H duration for 96 hrs Surrounding temperature, then storage at normal condition 4hrs. (Excluding the polarizer)
4	Temperature Cycling Storage Test	-30℃ → +25℃ → 80℃ → +25℃ (30mins) (5mins) (30mins) (5mins) 10 Cycle Surrounding temperature, then storage at normal condition 4hrs.
5	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%)
6	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
7	Drop Test (Packaged)	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

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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℃and 3-5 sec.

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

5.3 STORAGE

5.3.1 Store the panel or module in a dark place where the temperature is 25℃ ±5℃ 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.

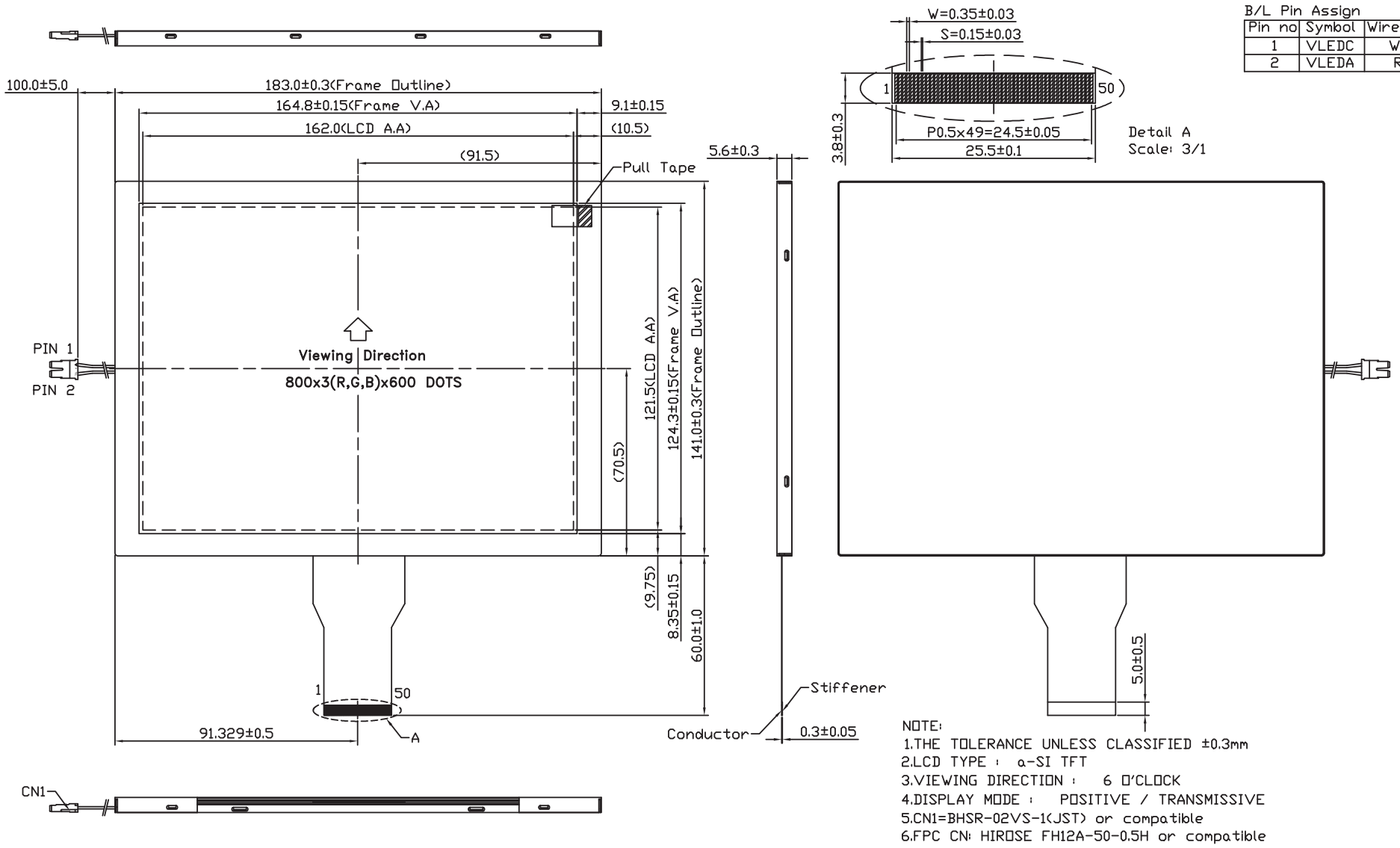
5.4 TERMS OF WARRANTY

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.



B/L Pin Assign

Pin no	Symbol	Wire color
1	VLEDC	White
2	VLEDA	Red

NOTE:
1.THE TOLERANCE UNLESS CLASSIFIED ±0.3mm
2.LCD TYPE : a-SI TFT
3.VIEWING DIRECTION : 6 O'CLOCK
4.DISPLAY MODE : POSITIVE / TRANSMISSIVE
5.CN1=BHSR-02VS-1(JST) or compatible
6.FPC CN: HIROSE FH12A-50-0.5H or compatible

REV	REV BY	REVISER	DATE
007			
006			
005			
004			
003			
002			
001	NEW DRAWING	Mag	2010/11/12

PART NO: USMP-TT080S-01C

DRAWING NAME : USMP-TT080S-01C

TITLE: LCD MODULE DRAWING

US Micro Products
Electronic Products for the OEM
6207 Bee Caves Rd., Ste. 330; Austin, TX 78746 USA
Tel: (800) 741-7755, sales@usmicroproducts.com
www.usmicroproducts.com

Design	Mag	(3)	Surface		
Check	Stone	Unit	MM	Material	
Approve	Linda	Scale	1:2	Thickness	
		Page	1/1	Quantity	

Precision / Tolerance Length(Min) (mm)	Precision Level
1 ~ 4	-
4 ~ 16	-
16 ~ 63	-
63 ~ 250	-
250 ~ 1000	-

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