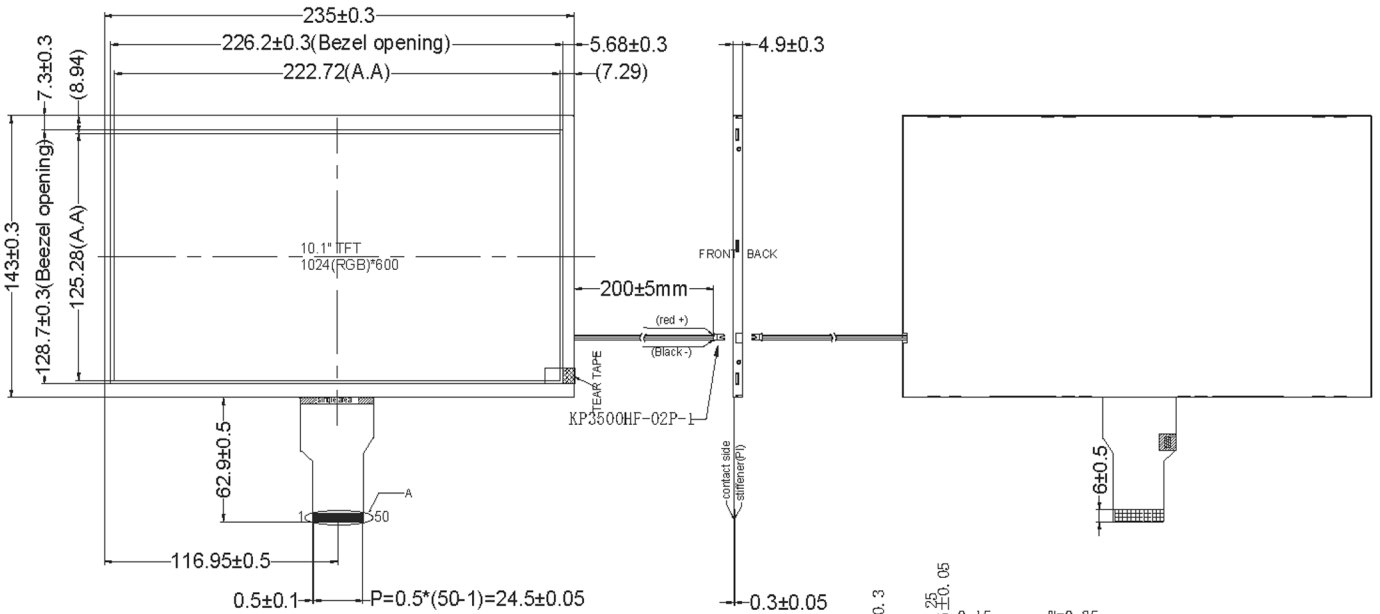
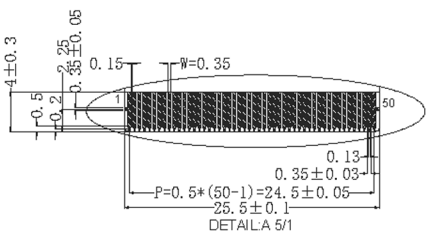
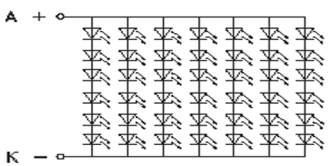






Circuit Diagram (LED 6X7=42)

PIN	ASSIGMENT
PIN	SYMBOL
1.	VLED+
2.	VLED+
3.	VLED-
4.	VLED-
5.	GND
6.	VCOM
7.	DVDD
8.	MODE
9.	DE
10.	VS
11.	HS
12.	B7
13.	B6
14.	B5
15.	B4
16.	B3
17.	B2
18.	B1
19.	B0
20.	G7
21.	G6
22.	G5
23.	G4
24.	G3
25.	G2
26.	G1
27.	G0
28.	R7
29.	R6
30.	R5
31.	R4
32.	R3
33.	R2
34.	R1
35.	R0
36.	GND
37.	DCLK
38.	GND
39.	L/R
40.	U/D
41.	VGH
42.	VGL
43.	AVDD
44.	RESET
45.	NC
46.	VCOM
47.	D1THB
48.	GND
49.	NC
50.	NC

NOTES:
1.Display size:10.1"TFT
2.Viewing direction:Full Viewing
3.Display mode:Transmissive/Normal Black/Glare
4.Operation temperature:-20°C~+70°C
5.Storage temperature:-30°C~+80°C
6.Backlight :White(42 LED)/18.6V(TYP)/140mA
Luminance:350cd/m2(TYP)
LED Life:30 Khous(TYP)
7.Driver IC:HX8282-A01&HX8696-A01
8.ROHS must be complied
* Unspecification tolerance are ±0.3mm

Compliance: RohS III(2015/863/EU)

Tolerances:			Date	Name
			08/24	dr
Modifications	Date	Name		

YDP LCD I 1010 R

knitter-switch

30 54 82

Page 1/24

PRODUCT SPECIFICATION

10.1” TFT LCD MODULE
MODEL: YDP LCD I 1010 R Ver:1.1

ROHS

< ◇> Preliminary Specification

< ◆> Finally Specification

CUSTOMER’S APPROVAL	
CUSTOMER :	
SIGNATURE:	DATE:

APPROVED BY	PM REVIEWED	PD REVIEWED	PREPARED BY
TFT X.B 20231027	TFT S.G.H 20231027	TFT 周福云 20231027	TFT L.Q 20231027

Revision History

Revision	Date	Originator	Detail	Remarks
1.0	2018.12.12	ZDT	Initial Release	
1.1	2023.10.27	LQ	Add Weight Add Idd Add CIE Value	P4 P5 P6

Table of Contents

1. General Description

The specification is a transmissive type color active matrix liquid crystal display (LCD) which uses amorphous thin film transistor (TFT) as switching devices. This product is composed of a TFT-LCD panel, driver ICs and a backlight unit.

2. Module Parameter

Features	Details	Unit
Display Size(Diagonal)	10.1"	
LCD type	IPS TFT	
Display Mode	Transmissive /Normally Black	
Resolution	1024 RGB x 600	Pixels
View Direction	Full viewing	Best Image
Module Outline	235(H) x 143(V) x4.9(T) (Note1)	mm
Active Area	222.72(H) x125.28(V)	mm
Pixel Pitch	217.5(H) x 208.8(V)	um
Pixel Arrangement	RGB Vertical stripe	
Polarizer Surface Treatment	Glare	
Display Colors	16.7M	
Interface	24-Bit RGB Interface	
Driver IC	HX8282-A01 & HX8696-A01	
With or without the touch panel	Without	
Operating Temperature	**-20～70**	ºC
Storage Temperature	**-30～80**	ºC
Weight	253	g

Note 1: Inclusive hooks, posts, FFC/FPC tail etc.

3. Absolute Maximum Ratings

V_{SS}=0V, Ta=25ºC

Item	Symbol	Min.	Max.	Unit
Supply Voltage	DVDD	-0.5	+3.96	V
	AVDD	-0.5	+14.85	V
	VGH	-0.3	+42.0	V
	VGL	VGH-42	+0.3	V
Storage temperature	T_{stg}	-30	+80	ºC
Operating temperature	T_{op}	-20	+70	ºC

Note 1: If Ta below 50ºC, the maximal humidity is 90%RH, if Ta over 50ºC, absolute humidity should be less than 60%RH.

Note 2: The response time will be extremely slow when the operating temperature is around -10℃, and the back ground will become darker at high temperature operating.

4. DC Characteristics

Item	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	DVDD	2.3	-	3.6	V
	AVDD	-	9.6	-	V
	VGH	-	18	-	V
	VGL	-	-6	-	V
TFT Common Electrode Voltage	VCOMH	-	3.3	-	V
	VCOML	-	3.1	-	V
Logic Low input voltage	V_{IL}	0	-	0.57	V
Logic High input voltage	V_{IH}	1.32	-	1.89	V
Current Consumption All White	Idd	-	8	-	mA

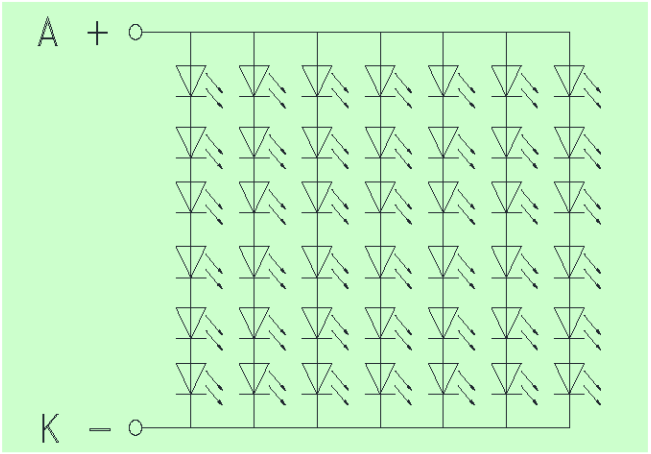
5. Backlight Characteristic

5.1. Backlight Characteristic

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	Ta=25 ºC, I_F=20mA/LED	16.8	**18.6**	20.4	V
Forward Current	I_F	Ta=25 ºC, V_F=3.1V/LED	-	**140**	-	mA
Power dissipation	P_D	-	-	**2604**	-	mW
Uniformity	Avg	-	-	80	-	%
LED working life(25℃)	-		-	30000	-	Hrs
Drive method	**Constant current**					
LED Configuration	42 White LEDs (6 LEDs in one string and 7 groups in parallel)					

Note1： LED life time defined as follows: The final brightness is at 50% of original brightness.
The environmental conducted under ambient air flow, at Ta=25±2 ºC,60%RH±5%, I_F=20mA/LED.

5.2. Backlighting circuit



6. Optical Characteristics

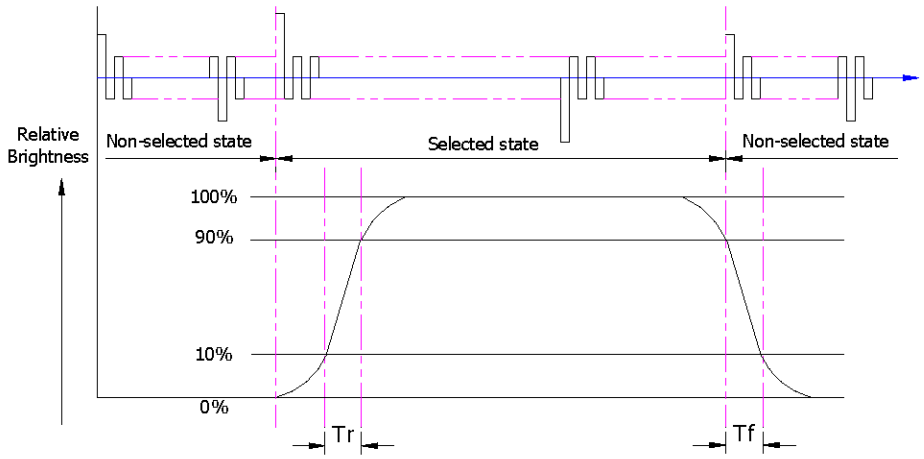
6.1. Optical Characteristics

Ta=25ºC, DVDD=3.3V

	Item		Symbol	Condition	Specification			Unit
					Min.	Typ.	Max.	
Backlight On (Transmissive Mode)	Luminance on TFT(I_f =20mA/LED)		Lv		**280**	**350**	-	cd/m²
	Contrast ratio(See 6.3)		CR		-	800	-	
	Response time (See 6.2)		TR+TF		-	30	40	ms
	Chromaticity Transmissive (See 6.5)	Red	XR		**0.555**	**0.605**	**0.655**	
			YR		**0.288**	**0.338**	**0.388**	
		Green	XG		**0.290**	**0.340**	**0.390**	
			YG		**0.552**	**0.602**	**0.652**	
		Blue	XB		**0.106**	**0.156**	**0.206**	
			YB		**0.096**	**0.146**	**0.196**	
		White	Xw		**0.259**	**0.309**	**0.359**	
			Yw		**0.311**	**0.361**	**0.411**	
	Viewing Angle (See 6.4)	Horizontal	θX+	Center CR≥10	**-**	**85**	-	Deg.
			θX-		**-**	**85**	-	
		Vertical	φY+		**-**	**85**	-	
			φY-		**-**	**85**	-	
	NTSC ratio（Color gamut）				-	50	-	%

6.2. Definition of Response Time

6.2.1. Normally Black Type (Negative)

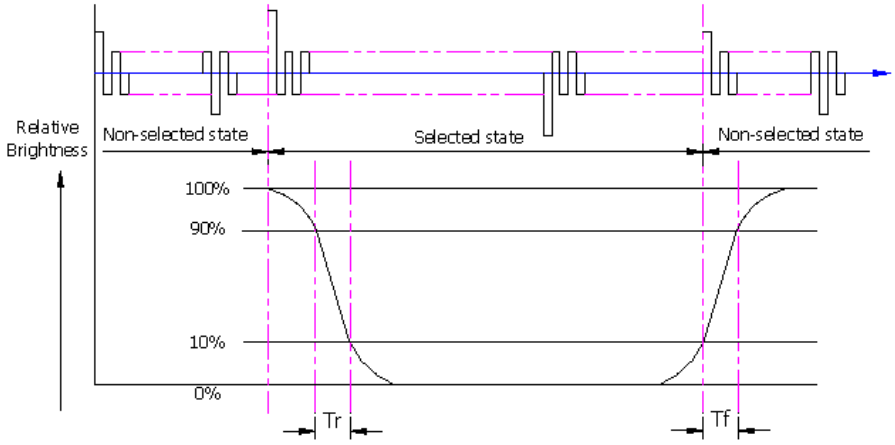


Tr is the time it takes to change form non-selected stage with relative luminance 10% to selected state with relative luminance 90%;

Tf is the time it takes to change from selected state with relative luminance 90% to non-selected state with relative luminance 10%.

Note: Measuring machine: LCD-5100

6.2.2. Normally White Type (Positive)



Tr is the time it takes to change form non-selected stage with relative luminance 90% to selected state with relative luminance 10%;

Tf is the time it takes to change from selected state with relative luminance 10% to non-selected state with relative luminance 90%;

Note: Measuring machine: LCD-5100 or EQUI

6.3. Definition of Contrast Ratio

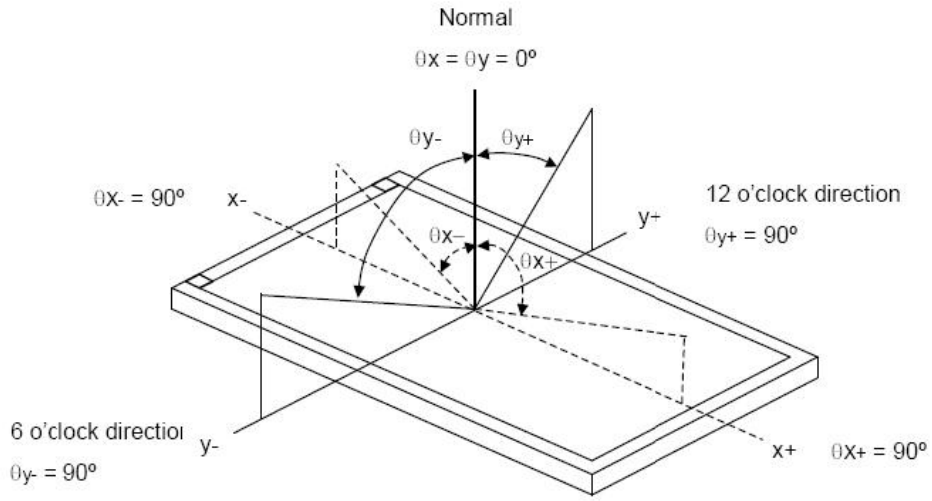
Contrast is measured perpendicular to display surface in reflective and transmissive mode.

The measurement condition is:

Measuring Equipment	Eldim or Equivalent
Measuring Point Diameter	3mm//1mm
Measuring Point Location	Active Area centre point
Test pattern	A: All Pixels white
	B: All Pixel black
Contrast setting	Maximum

Definitions: CR (Contrast) = Luminance of White Pixel / Luminance of Black Pixel

6.4. Definition of Viewing Angles



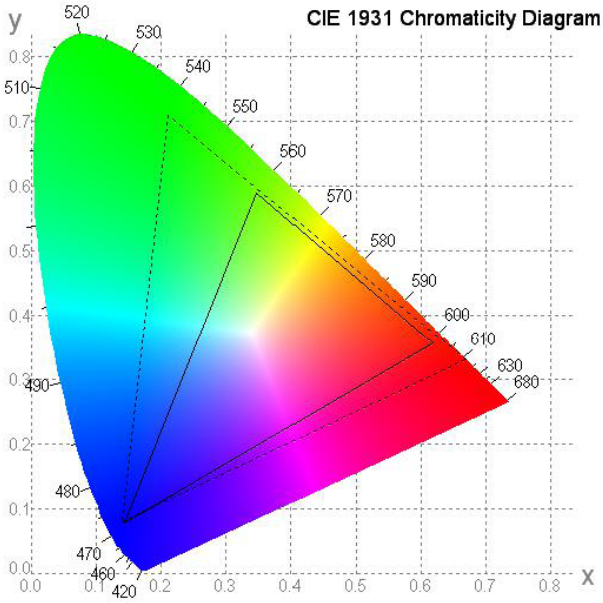
Measuring machine: LCD-5100 or EQUI

6.5. Definition of Color Appearance

R,G,B and W are defined by (x, y) on the IE chromaticity diagram

NTSC=area of RGB triangle/area of NTSC triangleX100%

Measuring picture: Red, Green, Blue and White (Measuring machine: BM-7)



6.6. Definition of Surface Luminance, Uniformity and Transmittance

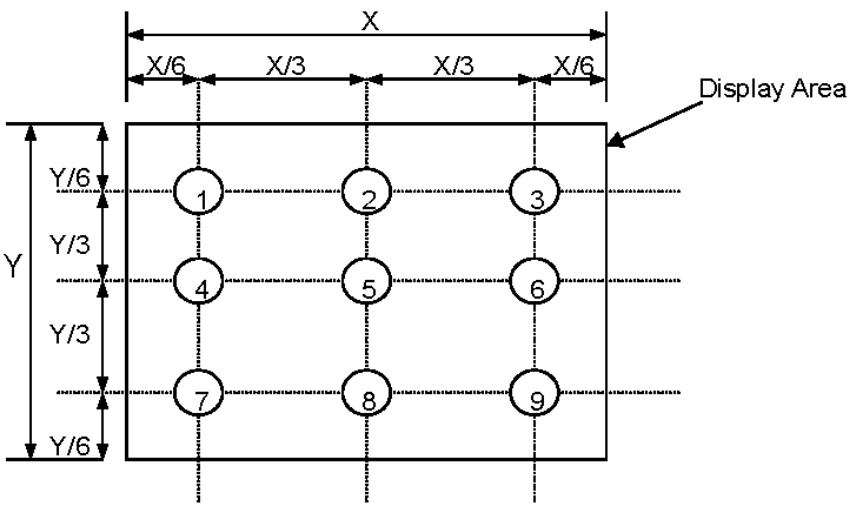
Using the transmissive mode measurement approach, measure the white screen luminance of the display panel and backlight.

6.6.1. Surface Luminance: L_V = average (L_{P1}:L_{P9})

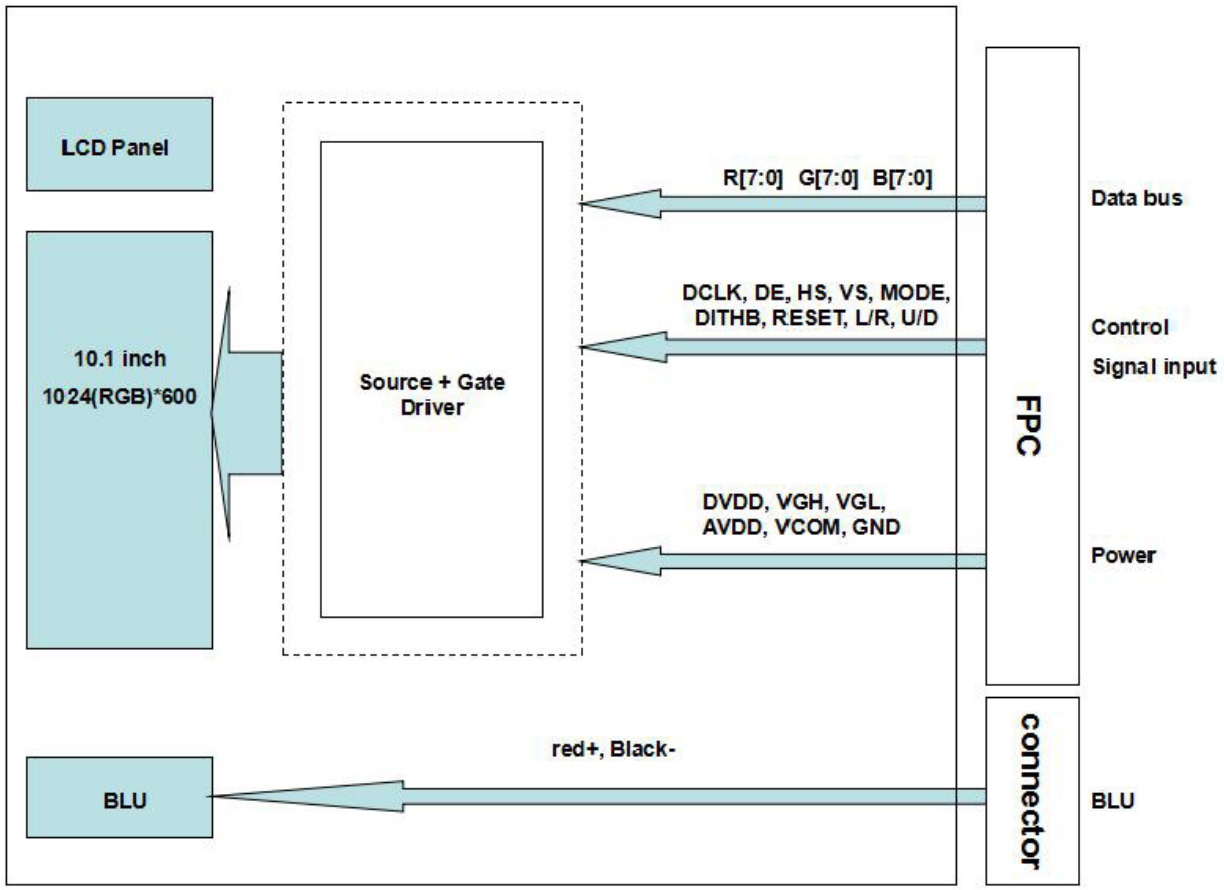
6.6.2. Uniformity = Minimal (L_{P1}:L_{P9}) / Maximal (L_{P1}:L_{P9}) * 100%

6.6.3. Transmittance = L_V on LCD / L_V on Backlight * 100%

Note: Measuring machine: BM-7



7. Block Diagram and Power Supply



8. Interface Pins Definition

No.	Symbol	Function
1	VLED+	NC
2	VLED+	NC
3	VLED-	NC
4	VLED-	NC
5	GND	Ground
6	VCOM	Comman voltage
7	DVDD	Power Voltage for digital circuit
8	MODE	DE/SYNC Mode selection.Normally pull high When Mode=H,DE Mode When Mode=L,SYNC Mode
9	DE	Data input enable for TTL mode
10	VS	Vertical sync. Signal in RGB I/F mode
11	HS	Horizontal sync. Signal in RGB I/F mode
12	B7	Blue data
13	B6	Blue data
14	B5	Blue data
15	B4	Blue data
16	B3	Blue data
17	B2	Blue data
18	B1	Blue data
19	B0	Blue data
20	G7	Green data
21	G6	Green data
22	G5	Green data
23	G4	Green data
24	G3	Green data
25	G2	Green data
26	G1	Green data
27	G0	Green data
28	R7	Red data
29	R6	Red data
30	R5	Red data
31	R4	Red data
32	R3	Red data
33	R2	Red data
34	R1	Red data
35	R0	Red data
36	GND	Ground
37	DCLK	In TTL Mode ,DLCK for clock input
38	GND	Ground
39	L/R	Lift/Right scan control

40	U/D	Up/Down scan control
41	VGH	Gate On Voltage
42	VGL	Gate OFF Voltage
43	AVDD	Power for Analog circuit
44	RESET	Reset signal
45	NC	No connection
46	VCOM	Comman voltage
47	DITHB	Dither function enable control. Normally pull Low When DITHB=H,Enable internally Dithering function. When DITHB=L,Disable internally Dithering function.
48	GND	Ground
49	NC	No connection
50	NC	No connection

2)

Symbol	Color	Function
red+	Red	LED Anode
Black-	Black	LED Cathode

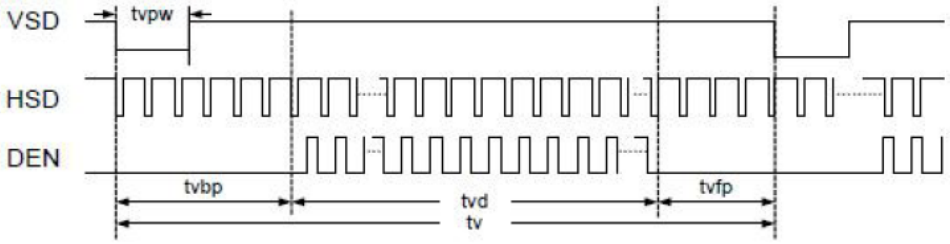
9. AC Characteristics

9.1. AC electrical characteristics

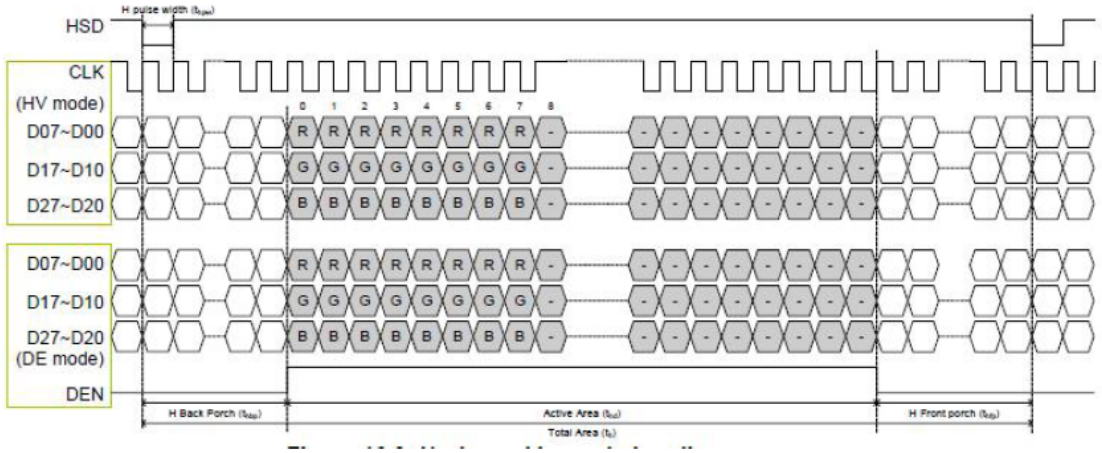
Parameter	Symbol	Spec. Min.	Spec. Typ.	Spec. Max.	Unit	Condition
VDD Power On Slew rate	T_{POR}	-	-	20	ms	From 0V to 90% VDD
GRB pulse width	T_{Rst}	50	-	-	µs	DCLK=65MHz
DCLK cycle time	T_{cph}	14	-	-	ns	-
DCLK pulse duty	T_{cwh}	40	50	60	%	-
VSD setup time	T_{vst}	5	-	-	ns	-
VSD hold time	T_{vhd}	5	-	-	ns	-
HSD setup time	T_{hst}	5	-	-	ns	-
HSD hold time	T_{hhd}	5	-	-	ns	-
Data set-up time	T_{dsu}	5	-	-	ns	D0[7:0], D1[7:0], D2[7:0] to DCLK
Data hold time	T_{dhd}	5	-	-	ns	D0[7:0], D1[7:0], D2[7:0] to DCLK
DE setup time	T_{esu}	5	-	-	ns	-
DE hold time	T_{ehd}	5	-	-	ns	-
Output stable time	T_{sst}	-	-	6	µs	10% to 90% target voltage. CL=90pF, R=10K ohm (Cascade)
				3		Dual gate

9.2. Data input format

Vertical timing



Horizontal timing



9.3. Parallel RGB input timing table

DE mode

Parameter	Symbol	Spec.			Unit
		Min.	Typ.	Max.	
DCLK Frequency	fclk	40.8	51.2	67.2	MHz
Horizontal Display Area	thd		1024		DCLK
HSD Period	th	1114	1344	1600	DCLK
HSD Blanking	thb+ thfp	90	320	376	DCLK
Vertical Display Area	tvd		600		T_H
VSD Period	tvbp	610	635	800	T_H
VSD Blanking	tvbp+ tvfp	10	35	200	T_H

HV mode

Horizontal timing

Parameter	Symbol	Spec.			Unit
		Min.	Typ.	Max.	
DCLK Frequency	fclk	44.9	51.2	63	MHz
Horizontal Display Area	thd		1024		DCLK
HSD Period	th	1200	1344	1400	DCLK
HSD Pulse Width	thpw	1	-	140	DCLK
HSD Back Porch	thbp		160		DCLK
HSD Front Porch	thfp	16	160	216	DCLK

Vertical Timing

Parameter	Symbol	Spec.			Unit
		Min.	Typ.	Max.	
Vertical Display Area	tvd		600		T_H
VSD Period	tv	624	635	750	T_H
VSD Pulse Width	tvpw	1	-	20	T_H
VSD Back Porch	tvbp		23		T_H
VSD Front Porch	tvfp	1	12	127	T_H

10. Quality Assurance

10.1.Purpose

This standard for Quality Assurance assures the quality of LCD module products supplied to customer.

10.2.Standard for Quality Test

10.2.1. Sampling Plan:

GB2828.1-2012

Single sampling, general inspection level II

10.2.2. Sampling Criteria:

Visual inspection: AQL 1.5.

Electrical functional: AQL 0.65.

10.2.3. Reliability Test:

Detailed requirement refer to Reliability Test Specification.

10.3.Nonconforming Analysis & Disposition

10.3.1. Nonconforming analysis:

10.3.1.1. Customer should provide overall information of non-conforming sample for their complaints.

10.3.1.2. After receipt of detailed information from customer, the analysis of nonconforming parts usually should be finished in one week.

10.3.1.3. If cannot finish the analysis on time, customer will be notified with the progress status.

10.3.2. Disposition of nonconforming:

10.3.2.1. Non-conforming product over PPM level will be replaced.

10.3.2.2. The cause of non-conformance will be analyzed. Corrective action will be discussed and implemented.

10.4.Agreement Items

Shall negotiate with customer if the following situation occurs:

10.4.1. There is any discrepancy in standard of quality assurance.

10.4.2. Additional requirement to be added in product specification.

10.4.3. Any other special problem.

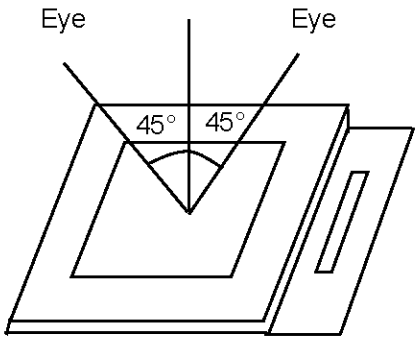
10.5. Standard of the Product Visual Inspection

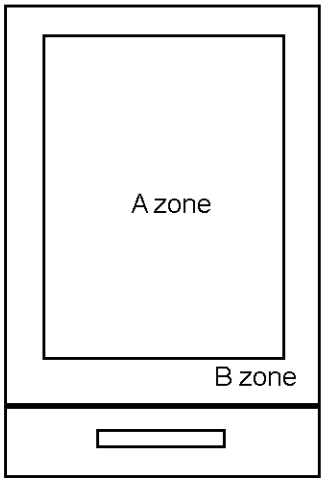
10.5.1. Appearance inspection:

10.5.1.1. The inspection must be under illumination about 1000 – 1500 lx, and the distance of view must be at 30cm ± 2cm.

10.5.1.2. The viewing angle should be 45° from the vertical line without reflection light or follows customer's viewing angle specifications.

10.5.1.3. Definition of area: A Zone: Active Area, B Zone: Viewing Area,



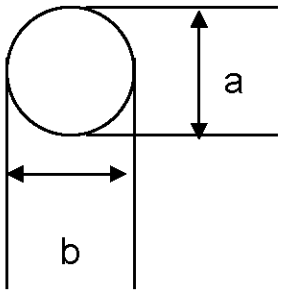


10.5.2. Basic principle:

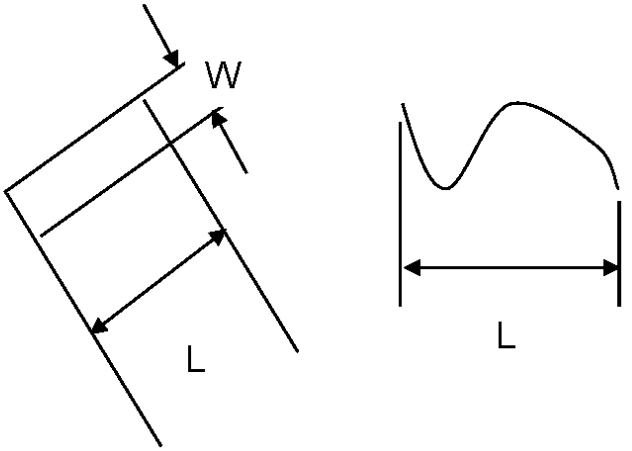
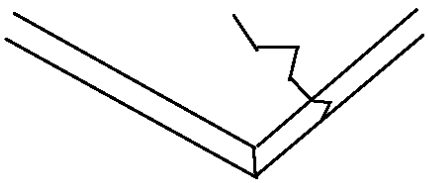
10.5.2.1. A set of sample to indicate the limit of acceptable quality level must be discussed by both us and customer when there is any dispute happened.

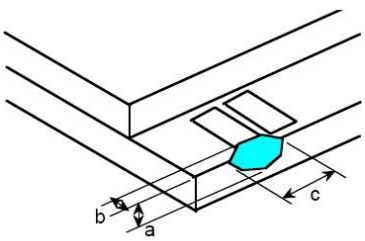
10.5.2.2. New item must be added on time when it is necessary.

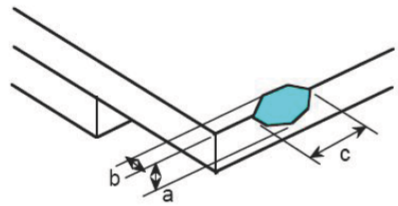
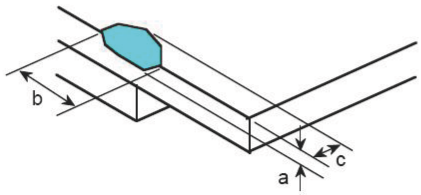
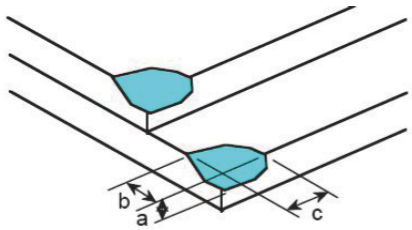
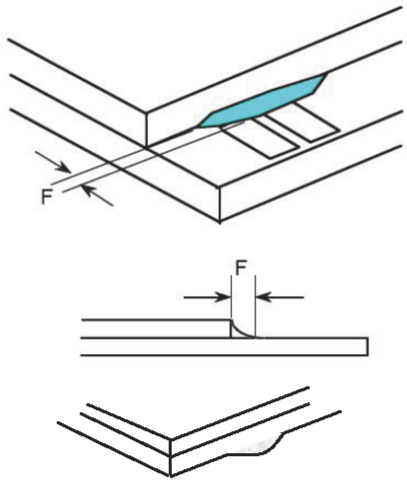
10.6.Inspection Specification

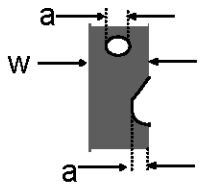
<table>
<tr><th>No.</th><th>Item</th><th>Criteria (Unit: mm)</th></tr>
<tr><td>01</td><td>Black / White spot
Foreign material
(Round type)
Pinholes
Stain
Particles inside cell.
(Minor defect)</td><td>


<table>
<tr><th>Area / Size</th><th>Acc. Qty</th></tr>
<tr><td>φ≤0.20</td><td>Ignore</td></tr>
<tr><td>0.20<φ≤0.50</td><td>N≤3</td></tr>
<tr><td>0.50<φ</td><td>0</td></tr>
</table>
φ= (a + b) /2
Distance between 2 defects should more than 5mm apart.
</td></tr>
<tr><td>02</td><td>Electrical Defect
(Minor defect)</td><td>
<table>
<tr><td rowspan="2">Bright dot</td><td>Display Area</td><td>Total</td><td rowspan="4">Note1</td></tr>
<tr><td>N≤2</td><td>N≤2</td></tr>
<tr><td>Dark dot</td><td>N≤4</td><td>N≤4</td></tr>
<tr><td>Total dot</td><td>N≤4</td><td>N≤4</td></tr>
<tr><td>Mura</td><td colspan="2">Not visible through 5% ND filters.</td><td>Note 2</td></tr>
</table>
Remark:
1. Bright dot caused by scratch and foreign object accords to item 1.
</td></tr>
</table>

03	Black and White line Scratch Foreign material (Line type) (Minor defect)	 Length / Width / Acc. Qty / / W ≦ 0.1 / Ignore L ≦ 2.5 / 0.1 < W ≦ 0.2 / 3 L>2.5 / 0.2 < W / 0 Total / 3 Distance between 2 defects should more than 3mm apart. Scratches not viewable through the back of the display are acceptable.
04	Glass Crack (Minor defect)	 Crack is potential to enlarge, any type is not allowed.

05	Glass Chipping Pad Area: (Minor defect) 	Length and Width / Acc. Qty c > 3.0, b< 1.0 / 1 c< 3.0, b< 1.0 / 3 a<Glass Thickness

<table>
<tr>
<td>06</td>
<td>Glass Chipping Rear of Pad Area:
(Minor defect)
 
</td>
<td><table>
<tr><th>Length and Width</th><th>Acc. Qty</th></tr>
<tr><td>c > 3.0, b< 1.0</td><td>1</td></tr>
<tr><td>c< 3.0, b< 1.0</td><td>2</td></tr>
<tr><td>c< 3.0, b< 0.5</td><td>4</td></tr>
<tr><td colspan="2">a<Glass Thickness</td></tr>
</table></td>
</tr>
<tr>
<td>07</td>
<td>Glass Chipping Except Pad Area:
(Minor defect)
 
</td>
<td><table>
<tr><th>Length and Width</th><th>Acc. Qty</th></tr>
<tr><td>c > 3.0, b< 1.0</td><td>1</td></tr>
<tr><td>c< 3.0, b< 1.0</td><td>2</td></tr>
<tr><td>c< 3.0, b< 0.5</td><td>4</td></tr>
<tr><td colspan="2">a<Glass Thickness</td></tr>
</table></td>
</tr>
<tr>
<td>08</td>
<td>Glass Corner Chipping:
(Minor defect)
 
</td>
<td><table>
<tr><th>Length and Width</th><th>Acc. Qty</th></tr>
<tr><td>c < 3.0, b< 3.0</td><td>Ignore</td></tr>
<tr><td colspan="2">a<Glass Thickness</td></tr>
</table></td>
</tr>
<tr>
<td>09</td>
<td>Glass Burr:
(Minor defect)
 
</td>
<td><table>
<tr><th>Length</th><th>Acc. Qty</th></tr>
<tr><td>F < 1.0</td><td>Ignore</td></tr>
</table>
Glass burr don’t affect assemble and module dimension.</td>
</tr>
</table>

<table>
<tr><td>10</td><td>FPC Defect:
(Minor defect)
 
</td><td>10.1 Dent, pinhole width a<w/3.
(w: circuitry width.)
10.2 Open circuit is unacceptable.
10.3 No oxidation, contamination and distortion.</td></tr>
<tr><td>11</td><td>Bubble on Polarizer
(Minor defect)</td><td><table><tr><td>Diameter</td><td>Acc. Qty</td></tr><tr><td>φ≤0.30</td><td>Ignore</td></tr><tr><td>0.30 <φ≤0.50</td><td>N≤2</td></tr><tr><td>0.50 < φ</td><td>N=0</td></tr></table></td></tr>
<tr><td>12</td><td>Dent on Polarizer
(Minor defect)</td><td><table><tr><td>Diameter</td><td>Acc. Qty</td></tr><tr><td>φ≤0.25</td><td>Ignore</td></tr><tr><td>0.25 <φ≤0.50</td><td>N≤4</td></tr><tr><td>0.50 < φ</td><td>None</td></tr></table></td></tr>
<tr><td>13</td><td>Bezel</td><td>13.1 No rust, distortion on the Bezel.
13.2 No visible fingerprints, stains or other contamination.</td></tr>
<tr><td>14</td><td>PCB</td><td>14.1 No distortion or contamination on PCB terminals.
14.2 All components on PCB must same as documented on the BOM/component layout.
14.3 Follow IPC-A-600F.</td></tr>
<tr><td>15</td><td>Soldering</td><td>Follow IPC-A-610C standard</td></tr>
<tr><td>16</td><td>Electrical Defect
(Major defect)</td><td>The below defects must be rejected.
16.1 Missing vertical / horizontal segment,
16.2 Abnormal Display.
16.3 No function or no display.
16.4 Current exceeds product specifications.
16.5 LCD viewing angle defect.
16.6 No Backlight.
16.7 Dark Backlight.
16.8 Touch Panel no function.</td></tr>
</table>

Remark: LCD Panel Broken shall be rejected. Defect out of LCD viewing area is acceptable.

10.7.Classification of Defects

10.7.1. Visual defects (Except no / wrong label) are treated as minor defect and electrical defect is major.

10.7.2. Two minor defects are equal to one major in lot sampling inspection.

10.8.Identification/marking criteria

Any unit with illegible / wrong /double or no marking/ label shall be rejected.

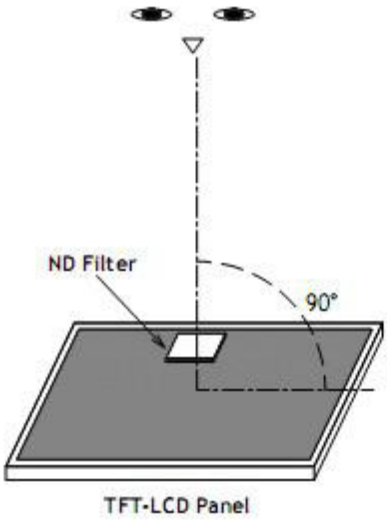
10.9.Packing

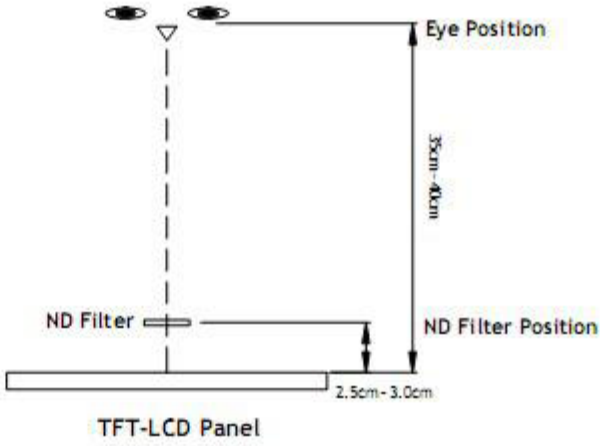
10.9.1. There should be no damage of the outside carton box, each packaging box should have one identical label.

10.9.2. Modules inside package box should have compliant mark.

10.9.3. All direct package materials shall offer ESD protection.

Note1: Bright dot is defined as the defective area of the dot is larger than 50% of one sub-pixel area.





Bright dot: The bright dot size defect at black display pattern. It can be recognized by 2% transparency of filter when the distance between eyes and panel is 350mm±50mm.

Dark dot: Cyan, Magenta or Yellow dot size defect at white display pattern. It can be recognized by 5% transparency of filter when the distance between eyes and panel is 350mm±50mm.

Note2: Mura on display which appears darker / brighter against background brightness on parts of display area.

11. Reliability Specification

No	Item	Condition	Quantity	Criteria
1	High Temperature Operating	**70℃, 96Hrs**	2	GB/T2423.2 -2008
2	Low Temperature Operating	**-20℃, 96Hrs**	2	GB/T2423.1 -2008
3	High Humidity Storage	**60℃, 90%RH, 96Hrs**	2	GB/T2423.3 -2016
4	High Temperature Storage	**80℃, 96Hrs**	2	GB/T2423.2 -2008
5	Low Temperature Storage	**-30℃, 96Hrs**	2	GB/T2423.1 -2008
6	Thermal Cycling Test Storage	**-20℃, 60min~70℃, 60min, 20 cycles.**	2	GB/T2423.22 -2012
7	Packing vibration	Frequency range:10Hz~50Hz Acceleration of gravity:5G X,Y,Z 30 min for each direction.	-	GB/T5170.14 -2009
8	Electrical Static Discharge	Air:±8KV 150pF/330Ω 5 times Contact:±4KV 150pF/330Ω 5 times	2	GB/T17626.2 -2018
9	Drop Test (Packaged)	Height:80 cm,1 corner, 3 edges, 6 surfaces.	-	GB/T2423.8 -1995

Note1. No defection cosmetic and operational function allowable.

Note2. Total current Consumption should be below double of initial value

12. Precautions and Warranty

12.1.Safety

12.1.1. The liquid crystal in the LCD is poisonous. Do not put it in your mouth. If the liquid crystal touches your skin or clothes, wash it off immediately using soap and water.

12.1.2. Since the liquid crystal cells are made of glass, do not apply strong impact on them. Handle with care.

12.2.Handling

12.2.1. Reverse and use within ratings in order to keep performance and prevent damage.

12.2.2. Do not wipe the polarizer with dry cloth, as it might cause scratch. If the surface of the LCD needs to be cleaned, wipe it swiftly with cotton or other soft cloth soaked with petroleum IPA, do not use other chemicals.

12.3.Storage

12.3.1. Do not store the LCD module beyond the specified temperature ranges.

12.3.2. Strong light exposure causes degradation of polarizer and color filter.

12.4.Metal Pin (Apply to Products with Metal Pins)

12.4.1. Pins of LCD and Backlight

12.4.1.1. Solder tip can touch and press on the tip of Pin LEAD during the soldering

12.4.1.2. Recommended Soldering Conditions

Solder Type: Sn96.3~94-Ag3.3~4.3-Cu0.4~1.1

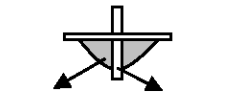
Maximum Solder Temperature: 370℃

Maximum Solder Time: 3s at the maximum temperature

Recommended Soldering Temp: 350±20℃

Typical Soldering Time: ≤3s

12.4.1.3. Solder Wetting



Recommended

Not Recommended

12.4.2. Pins of EL

12.4.2.1. Solder tip can touch and press on the tip of EL leads during soldering.

12.4.2.2. No Solder Paste on the soldering pad on the motherboard is recommended.

12.4.2.3. Recommended Soldering Conditions

Solder type: Nippon Alimit Leadfree SR-34, size 0.5mm

Recommended Solder Temperature: 270～290℃

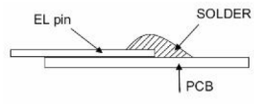
Typical Soldering Time: ≤2s

Minimum solder distance from EL lamp (body):2.0mm

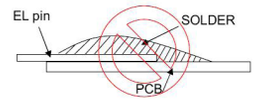
12.4.2.4. No horizontal press on the EL leads during soldering.

12.4.2.5. 180° bend EL leads three times is not allowed.

12.4.2.6. Solder Wetting

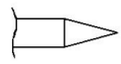


Recommended

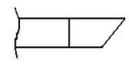


Not Recommended

12.4.2.7. The type of the solder iron:

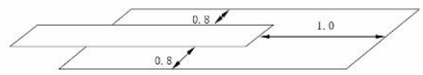


Recommended



Not Recommended

12.4.2.8. Solder Pad



12.5. Operation

12.5.1. Do not drive LCD with DC voltage

12.5.2. Response time will increase below lower temperature

12.5.3. Display may change color with different temperature

12.5.4. Mechanical disturbance during operation, such as pressing on the display area, may cause the segments to appear “fractured”.

12.5.5. Do not connect or disconnect the LCM to or from the system when power is on.

12.5.6. Never use the LCM under abnormal condition of high temperature and high humidity.

12.5.7. Module has high frequency circuits. Sufficient suppression to the electromagnetic interface shall be done by system manufacturers. Grounding and shielding methods may be important to minimize the interference.

12.5.8. Do not display the fixed pattern for long time（we suggest the time not longer than one hour）because it will develop image sticking due to the TFT structure.

12.6. Static Electricity

12.6.1. CMOS LSIs are equipped in this unit, so care must be taken to avoid the electro-static charge, by ground human body, etc.

12.6.2. The normal static prevention measures should be observed for work clothes and benches.

12.6.3. The module should be kept into anti-static bags or other containers resistant to static for storage.

12.7. Limited Warranty

12.7.1. Our warranty liability is limited to repair and/or replacement. We will not be responsible for any consequential loss.

12.7.2. If possible, we suggest customer to use up all modules in six months. If the module storage time over twelve months, we suggest that recheck it before the module be used.

12.7.3. After the product shipped, any product quality issues must be feedback within three months, otherwise, we will not be responsible for the subsequent or consequential events.

13. Packaging

TBD