

SPECIFICATION FOR TFT MODULE

MODULE NO: YB-TG480272S27A-N-A0

Doc.Version:00

Customer Approval:

<input type="checkbox"/> Accept	<input type="checkbox"/> Reject
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YEEBO	NAME	SIGNATURE	DATE
Prepare	Electronic Engineer	黄松	2025-03-18
Check	Mechanical Engineer	张雷	2025/3/18
Verify			
Approval		孙五南	2025/3/18

■ APPROVAL FOR SPECIFICATIONS ONLY

□ APPROVAL FOR SPECIFICATIONS AND SAMPLE

WIMRD005-02-D

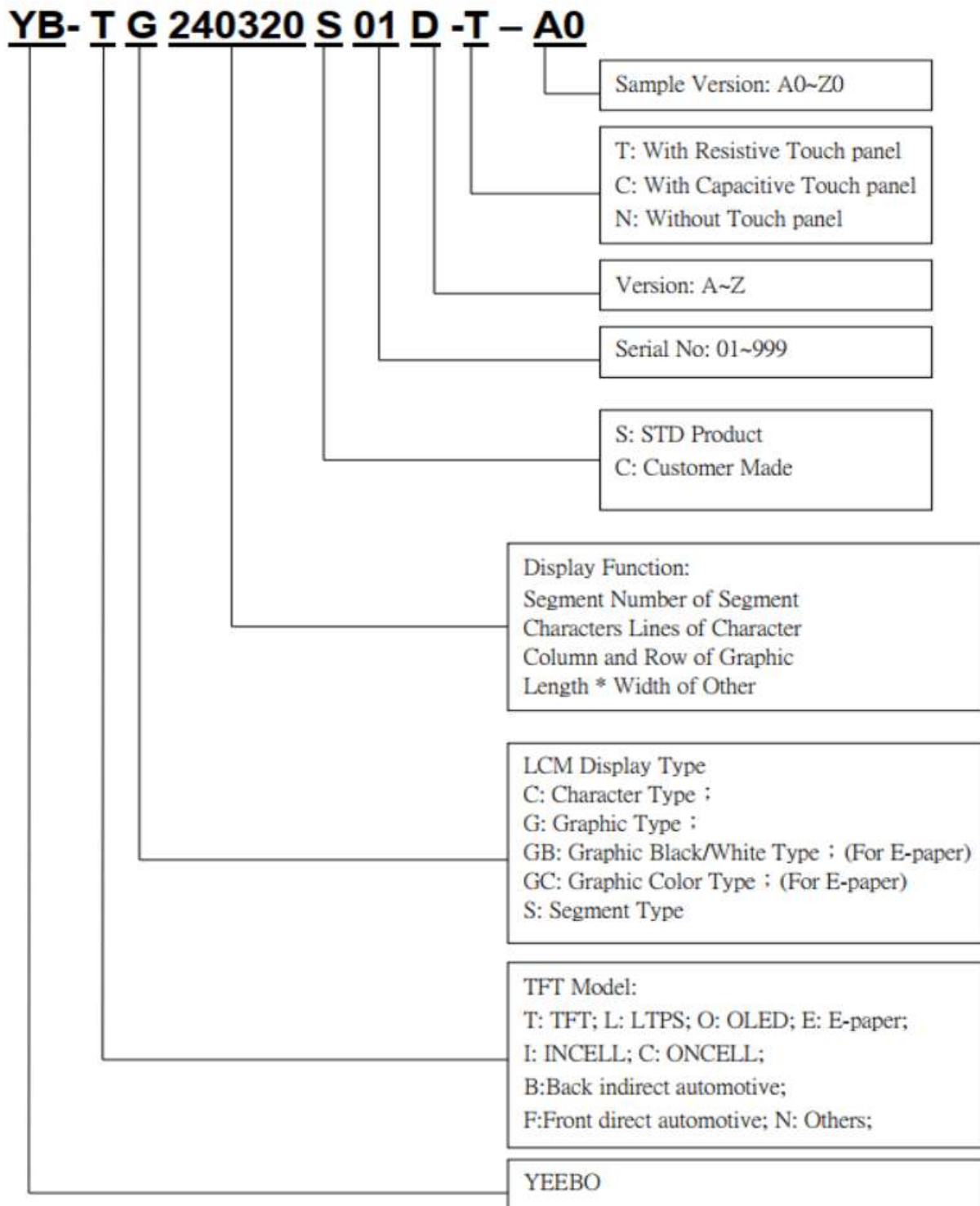
1. Revision History

Sample Version	DOC. Version	DATE	DESCRIPTION		CHANGED BY
A0	00	2025-03-18	SPEC ONLY	First issue	H.S

2. . Table of Contents:

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3.Module Numbering System: (Example)



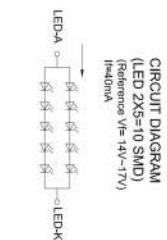
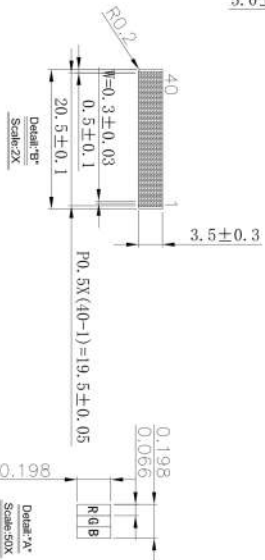
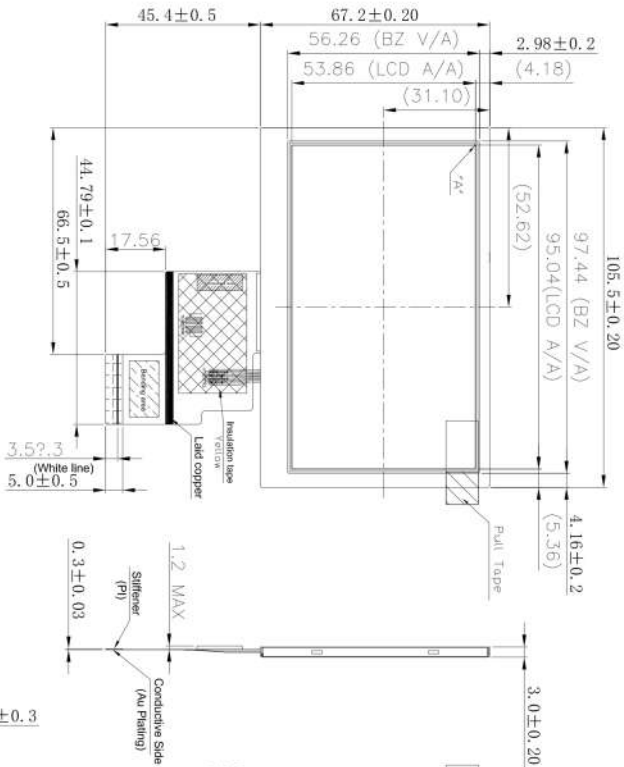
4. General Specification:

ITEM	CONTENTS
Module Size	105.5 (W) *67.2 (H) *3.0 (T) mm
Module Size(With FPC)	105.5 (W) * 112.6(H) * 3.0(T) mm
Display Size(Diagonal)	4.3 inch
Display Format	480(RGB)* 272 Pixels
Active Area	95.04(W) * 53.86(H) mm
Dots Pitch	0.198*0.198 mm
LCD Type	TFT (16.7M)/ Transmissive / Normal Black
Viewing Angle	Free
Controller IC	ST7282A-G6-E8A
Weight	TBD

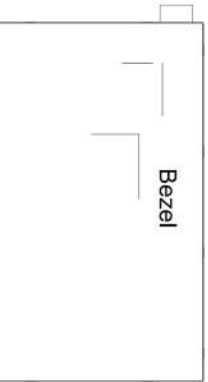
5. LCM drawing:

Count drawing & Spec.revision record during discussion with customer	Date
Revision content: description	2025-03-17
01	FIRST ISSUE

- Specification:**
1. Display mode: 4.3" TFT (16.7M) Normally Black / Transmissive
 2. Viewing direction: Full Viewing
 3. Operating temperature: -20°C to +70°C
Storage temperature: -30°C to +80°C
 4. Drive IC is: ST7282A-G6-E8A
 5. Backlight: 10 CHIP WHITE LED
 6. Unspecified tolerance: ±0.30mm
 7. ROHS compliant
 8. Luminous Intensity for LCM: 300cd/m²(min), 350cd/m²(typ)
 9. 产品结构: TFT



		MOD. Name	YB-TG480272S27A-N-A	Sheet	1
UNIT	mm	DESIGNED	张雷	OR	1
SIZE	A4	CHECKED		FILE NAME	Count Dwg.
SCALE	N-T-S	VERIFIED			
		APPROVED			



PIN	FUNCTION
1	VLED-
2	VLED+
3	GND
4	VDD
5	RD
6	R1
7	R2
8	R3
9	R4
10	R5
11	R6
12	R7
13	R8
14	G1
15	G2
16	G3
17	G4
18	G5
19	G6
20	G7
21	B0
22	B1
23	B2
24	B3
25	B4
26	B5
27	B6
28	B7
29	GND
30	PCLK
31	DISP
32	HSYNC
33	VSYNC
34	DE
35	NC
36	GND
37	XR (NC)
38	YD (NC)
39	YL (NC)
40	YU (NC)

6. Electrical Characteristics

6-1 Absolute Maximum Ratings

(Ta=25°C VSS=0V)

Item	Symbol	Min.	Type	Max.	Unit	Remark
Power Supply voltage	VDD	-0.5		+4.0	Volt	
Operating Temperature	Topr	-20	-	70	°C	
Storage Temperature	Tstg	-30	-	80	°C	

Note1: Absolute maximum rating is the limit value beyond which the IC maybe broken.
 They do not assure operations.

6-2 Operating Conditions

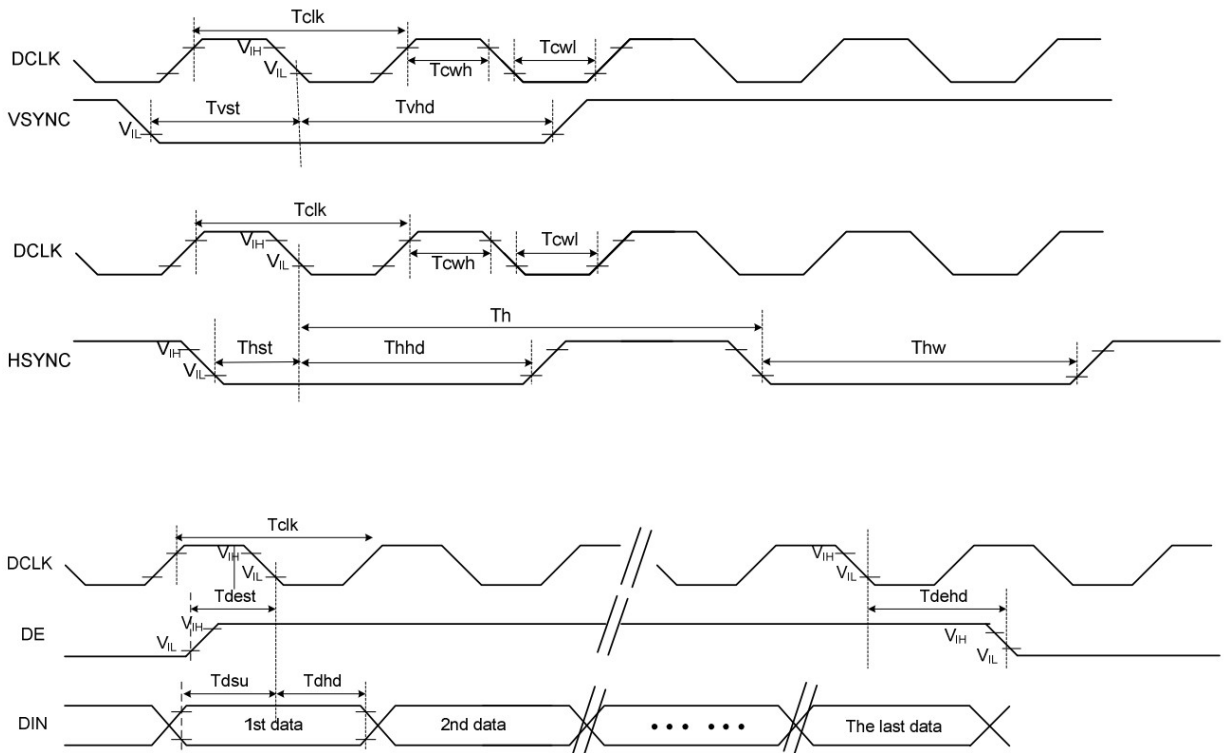
(Ta=25°C)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply voltage	VDD	-	3.0	3.3	3.6	Volt
Level Input Voltage	VIH	-	0.7*VDD	-	VDD	Volt
	VIL	-	GND		0.3*VDD	Volt
Power Supply Current for LCM	IDD	-	-	TBD		mA

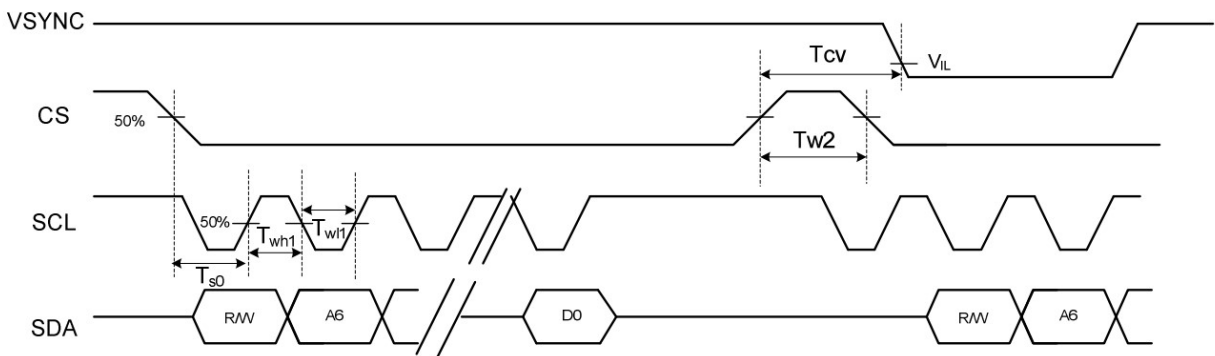
Note1:GND=0V

6-3 Timing Characteristics

6-3-1 Clock and data input timing diagram



6-3-2 3-Wire Communication Timing Diagram



6-3-3RGB input timing table

6-3-3-1 Parallel 24-bit RGB timing table

Item	Symbol	Min.	Typ.	Max.	Unit	Remark	
DCLK Frequency	Fclk	8	9	12	MHz		
DCLK Period	Tclk	83	111	125	ns		
HSYNC	Period Time	Th	485	531	598	DCLK	
	Display Period	Thdisp		480		DCLK	
	Back Porch	Thbp	3	43	43	DCLK	By H_Blanking setting
	Front Porch	Thfp	2	8	75	DCLK	
	Pulse Width	Thw	2	4	75	DCLK	
VSYNC	Period Time	Tv	276	292	321	H	
	Display Period	Tvdisp		272		H	
	Back Porch	Tvbp	2	12	12	H	By V_Blanking setting
	Front Porch	Tvfp	2	8	37	H	
	Pulse Width	Tvw	2	4	37	H	

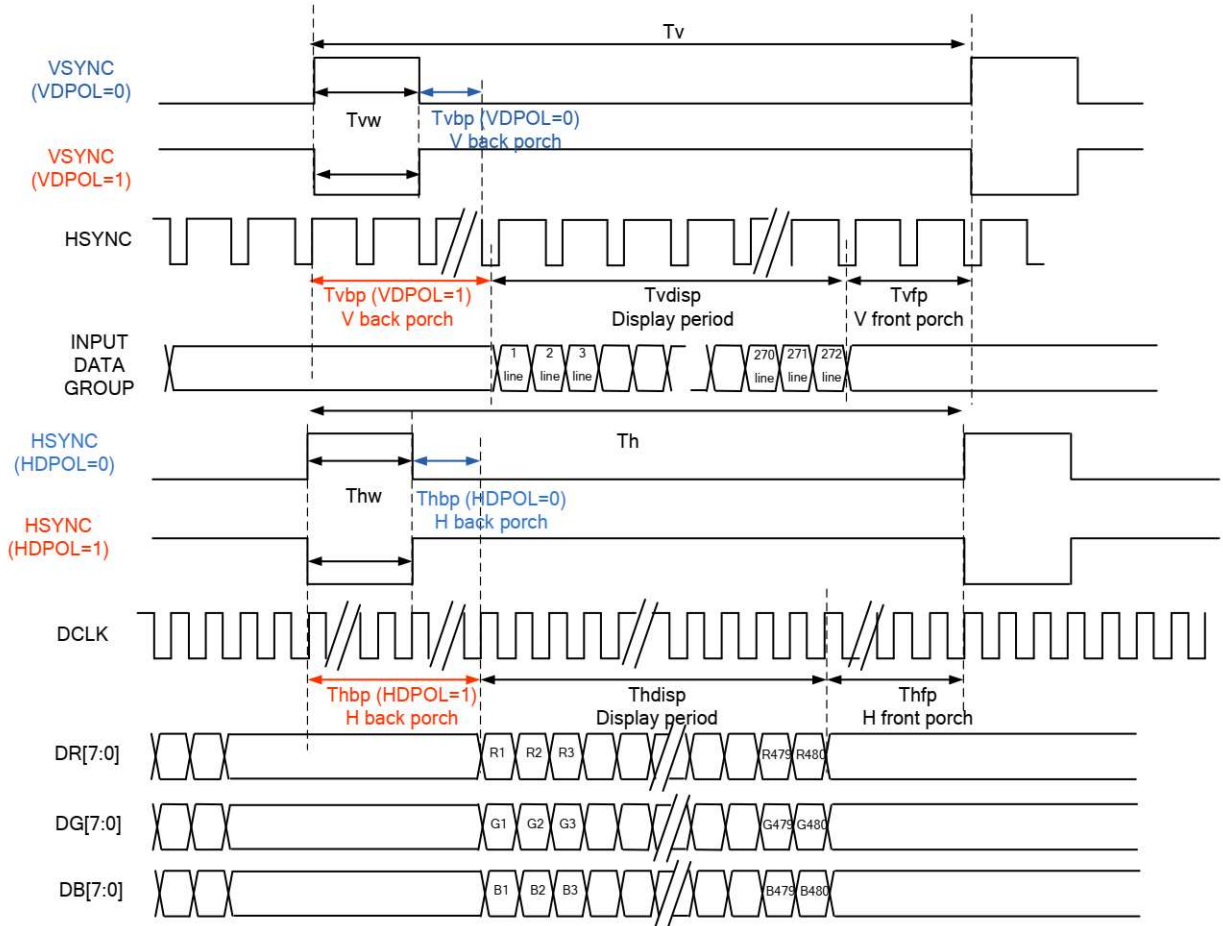
Note: It is necessary to keep Tvbp =12 and Thbp =43 in sync mode. DE mode is unnecessary to keep it.

6-3-3-2 Serial 8-bit RGB Timing Table

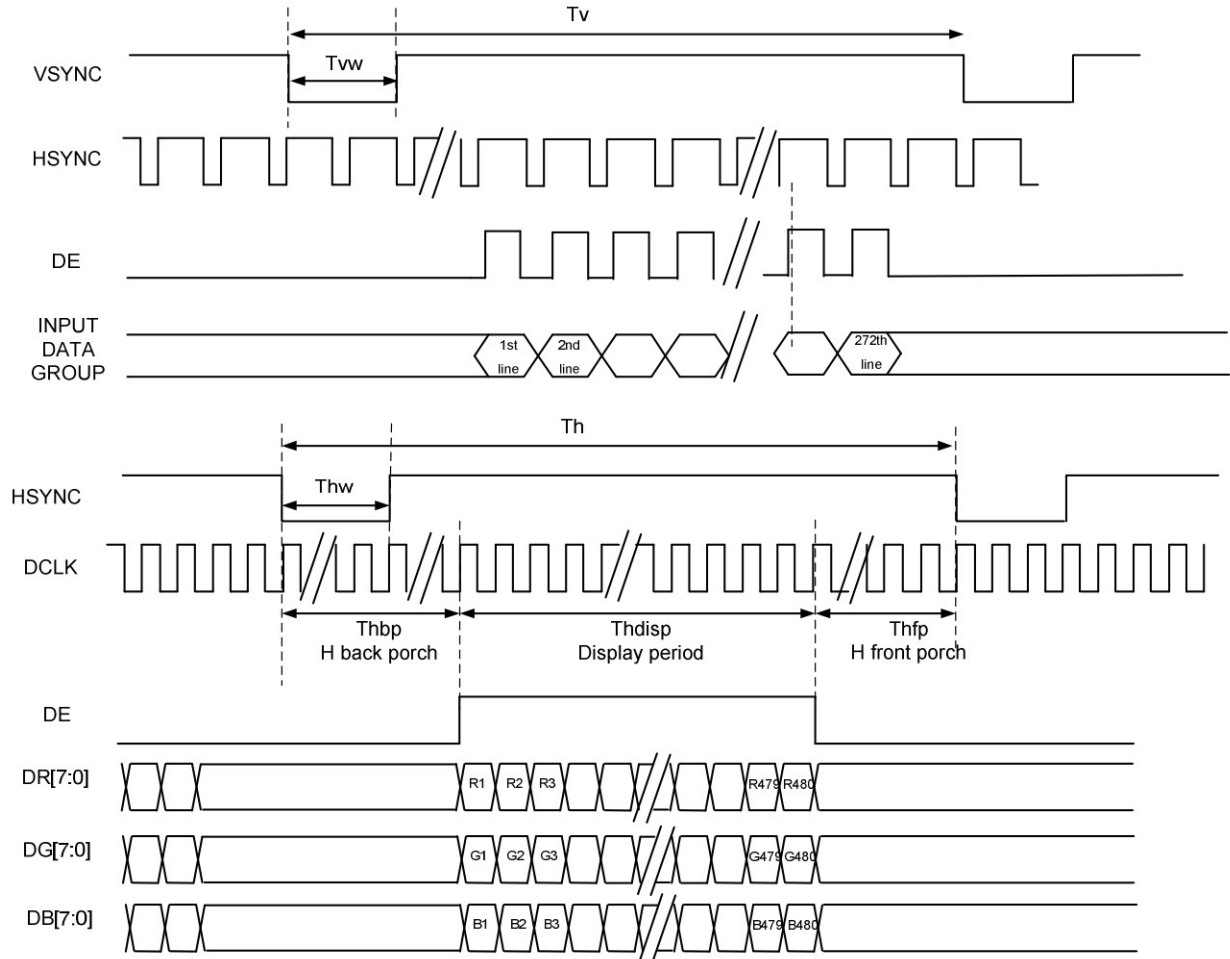
Item	Symbol	Min.	Typ.	Max.	Unit	Remark	
DCLK Frequency	Fclk	24	27	30	MHz		
DCLK Period	Tclk	33	37	42	ns		
HSYNC	Period Time	Th	1445	1491	1558	DCLK	
	Display Period	Thdisp		1440		DCLK	
	Back Porch	Thbp	3	43	43	DCLK	By H_Blanking setting
	Front Porch	Thfp	2	8	75	DCLK	
	Pulse Width	Thw	2	4	75	DCLK	
VSYNC	Period Time	Tv	276	292		H	
	Display Period	Tvdisp		272		H	
	Back Porch	Tvbp	2	12	12	H	By V_Blanking setting
	Front Porch	Tvfp	2	8	37	H	
	Pulse Width	Tvw	2	4	37	H	

Note: It is necessary to keep Tvbp =12 and Thbp =43 in sync mode. DE mode is unnecessary to keep it.

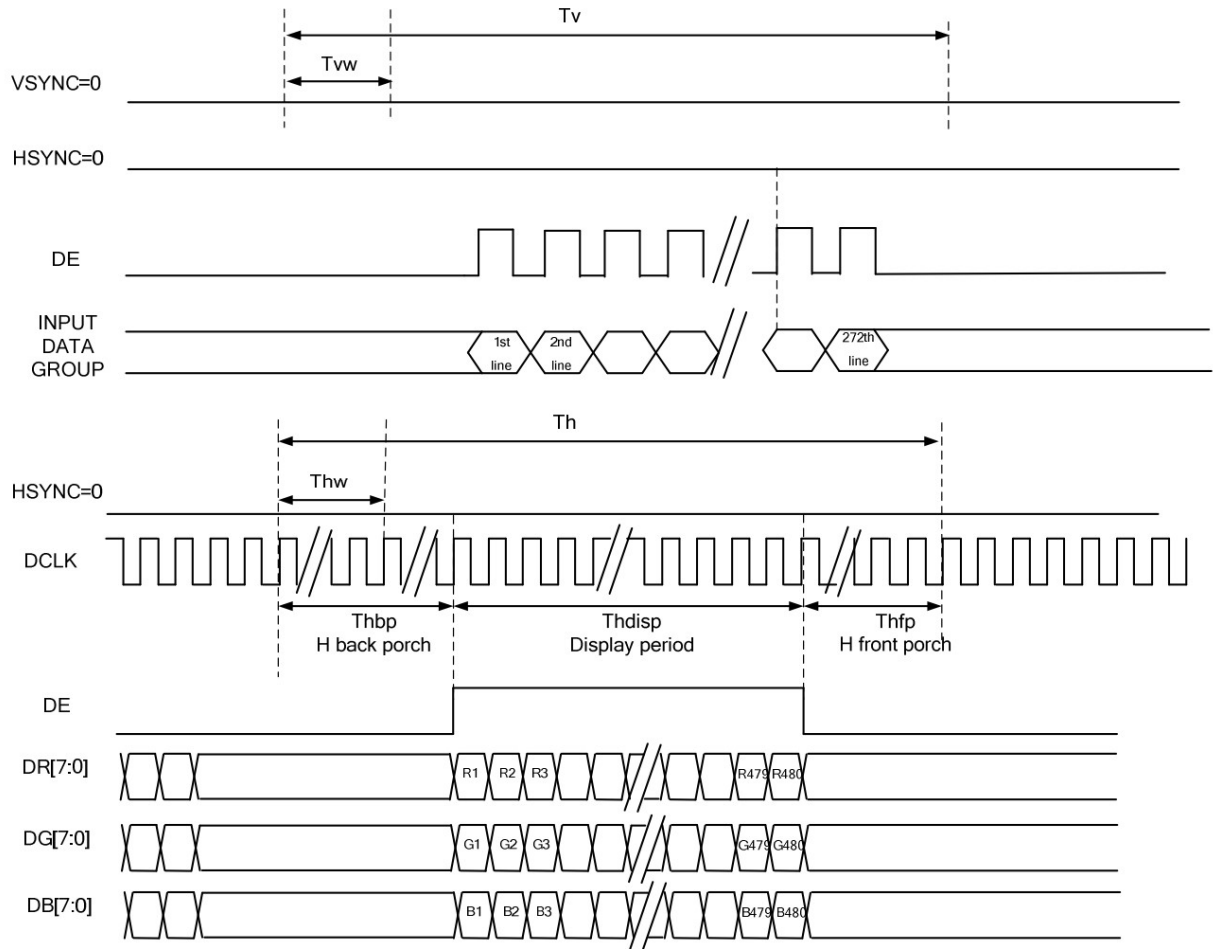
6-3-4 SYNC Mode Timing Diagram



6-3-5 SYNC-DE Mode Timing Diagram



6-3-6 DE mode timing diagram



7. Optical Characteristics:

Item	Symbol	Conditions	Specifications			Unit	Note	
			Min	Typ	Max			
Transmittance	T(%)	-	5.2	6.2	-	-	-	
Contrast Ratio	CR	$\Theta = 0$ Normal Viewing angle	800	1000	-		(1) (2)	
Response time	TR+TF	-	-	30	35	ms	(1) (3)	
Viewing angle	Hor.	Θ_{x+}	CR ≥ 10	80	85	-	deg.	-
		Θ_{x-}		80	85	-		
	Ver.	Θ_{y+}		80	85	-		
		Θ_{y-}		80	85	-		

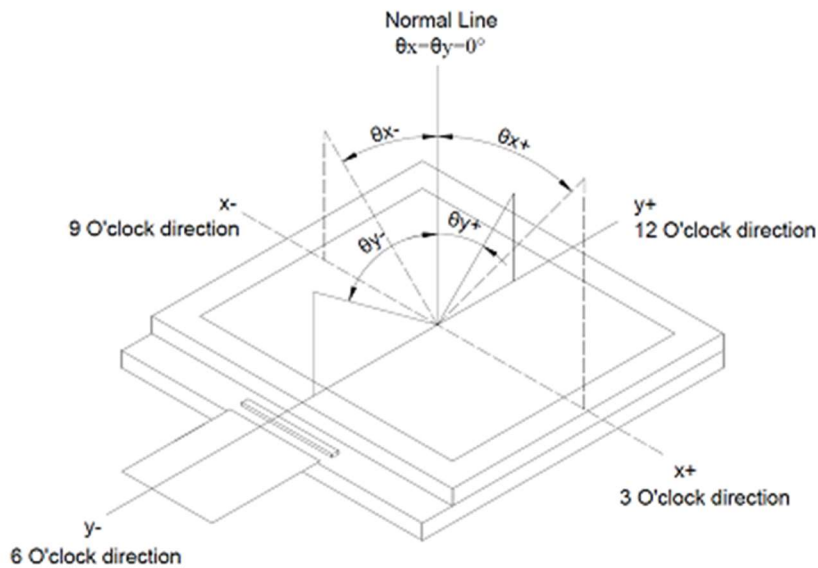
Measuring Condition

1. Measuring surrounding: dark room
2. Ambient temperature: $25 \pm 2^{\circ}\text{C}$
3. 30 min. Warm-up time.

Color of CIE Coordinate:

Item		Symbol	Condition	Min.	Typ.	Max.
Chromaticity Coordinates (Transmissive)	Red	x	$\theta = 0^{\circ}$ Backlight Color Degree	TBD	TBD	TBD
		y		TBD	TBD	TBD
	Green	x		TBD	TBD	TBD
		y		TBD	TBD	TBD
	Blue	x		TBD	TBD	TBD
		y		TBD	TBD	TBD
	White	x		TBD	TBD	TBD
		y		TBD	TBD	TBD

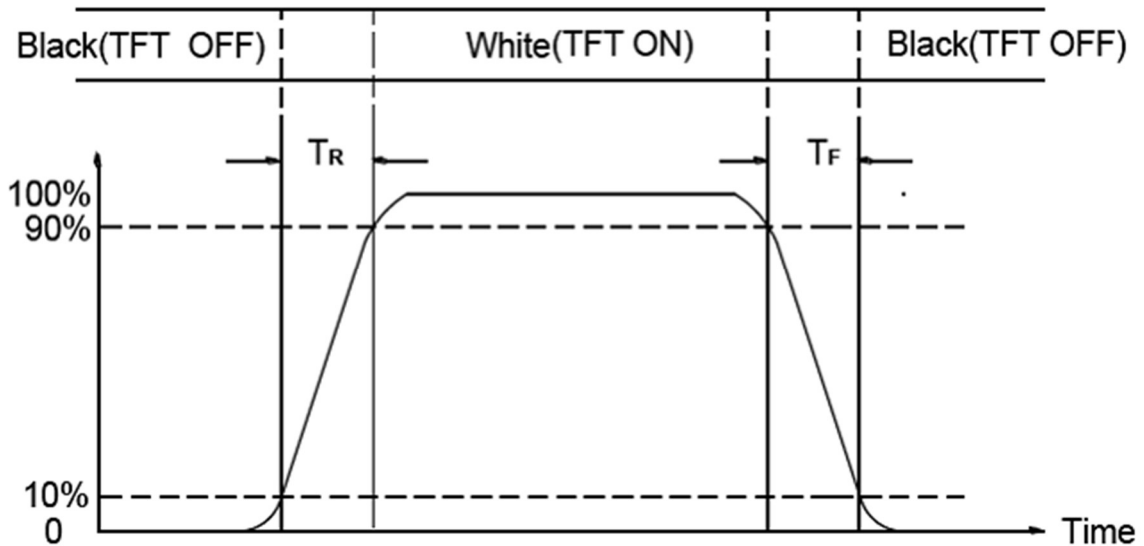
Note (1) Definition of Viewing Angle :



Note (2) Definition of Contrast Ratio(CR) :
measured at the center point of panel

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

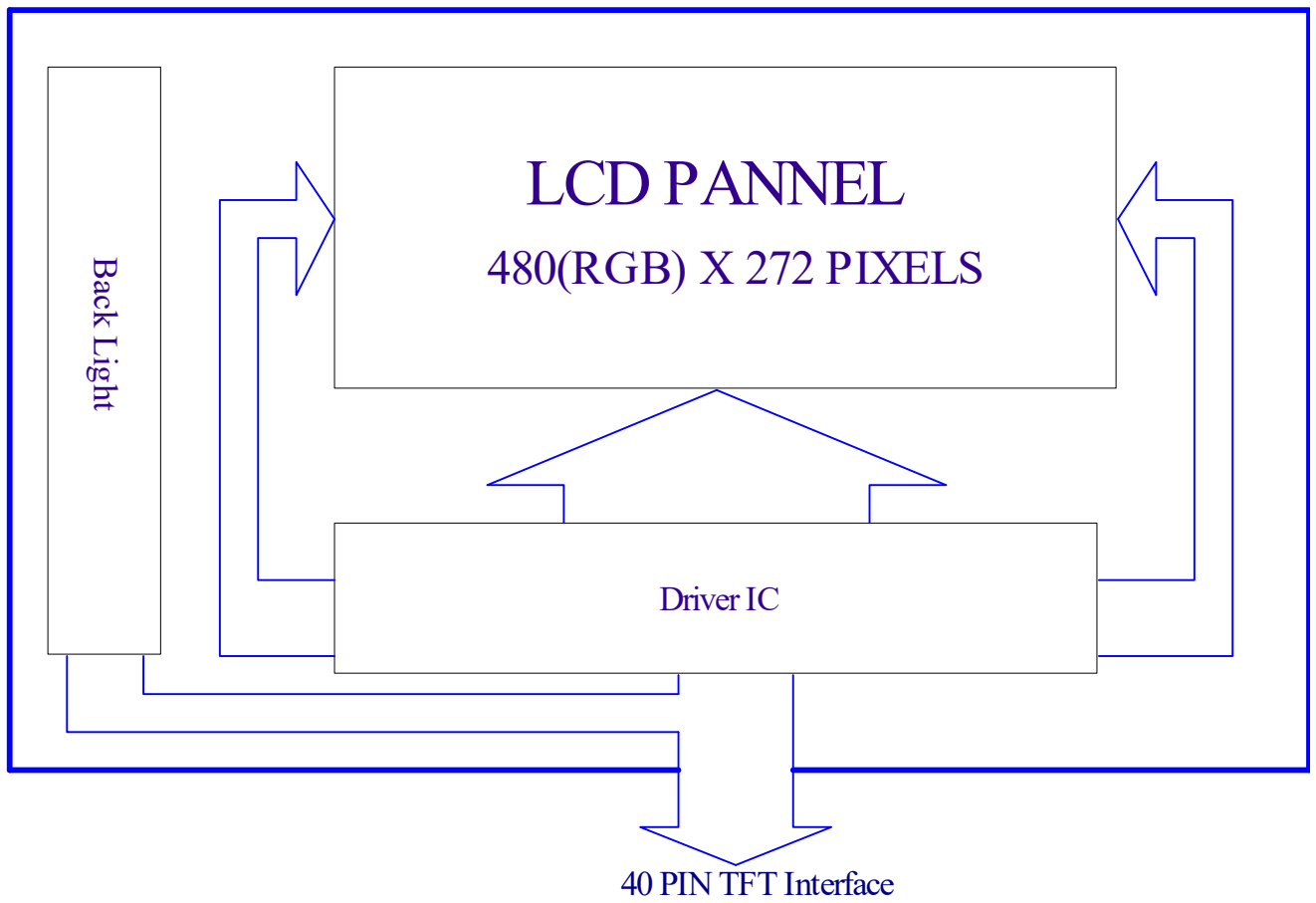
Note (3) Definition of Response Time : Sum of TR and TF



8. Interface Pin Assignment:

No.	Symbol	Function
1	LEDK	Cathode of LED backlight
2	LEDA	Anode of LED backlight
3	GND	GND Power ground
4	VDD	Power voltage.
5~12	R0~ R7	Digital data input.R0(LSB),R7(MSB)
13~20	G0~ G7	Digital data input.G0(LSB),G7(MSB)
21~28	B0~ B7	Digital data input.B0(LSB),B7(MSB)
29	GND	Power ground
30	DCLK	Data clock signal input
31	DISP	Display on/off mode control. (a) DISP=L, standby mode. (b) DISP=H, normal display mode.
32	HSYNC	Horizontal sync signal input
33	VSYNC	Vertical sync signal input
34	DE	Data enable input.
35	NC	No connection
36	GND	Power ground
37	NC/XR	No connection, reserve for TP interface.
38	NC/YD	No connection, reserve for TP interface.
39	NC/XL	No connection, reserve for TP interface.
40	NC/YU	No connection, reserve for TP interface.

9. Block Diagram:



10. Backlight:

1. Standard Lamp Styles (Edge Lighting Type):
The LED chips are distributed over the edge light area of the illumination unit, which gives the less power consumption:
2. The Main Advantages of the LED Backlight are as following:
 - 2.1 The brightness of the backlight can simply be adjusted.
By a resistor or a potentiometer.

3. Data About LED Backlight:

($T_a=25^\circ$)

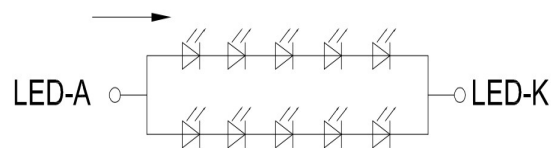
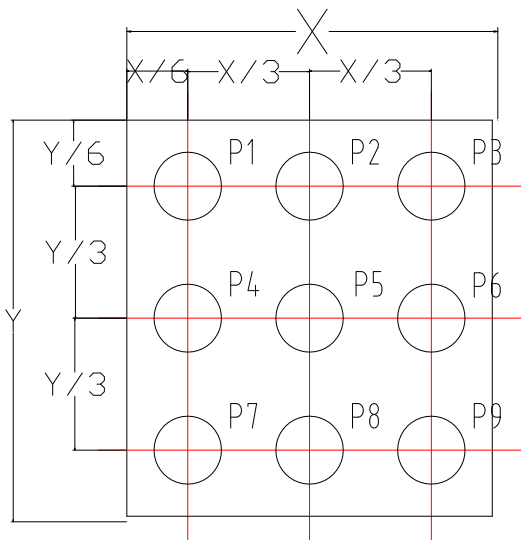
PARAMETER	Sym.	Min.	Typ.	Max.	Unit	Test Condition	Note
Supply Current	I	-	40	-	mA	-	
Supply Voltage	V	14.0	15.5	17.0	V	If=40mA	
Luminous Intensity for LCM	I_v	300	350	-	Cd/m ²	If=40mA	2
Uniformity for LCM	-	70	-	-	%		3
Life Time	-	20000	-	-	Hr.		4
Color	White						

NOTE:

1. Backlight Only
2. Average Luminous Intensity of P1-P9
3. Uniformity = Min/Max * 100%
4. LED life time defined as follows: The final brightness is at 50% of original brightness

Measured Method: (X*Y: Light Area)

Internal Circuit Diagram

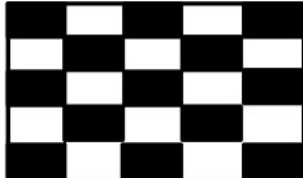


(Effective spatial Distribution)

Using aperture of 1°, distance 50cm.

11. Standard Specification for Reliability .:

11-1. Standard Specifications for Reliability of LCD Module

No	Item	Description
01	High temperature operation	The sample should be allowed to stand at 70°C for 240 hours under driving condition and then returning it to normal temperature condition, and allowing it stand for 2 hours.
02	Low temperature operation	The sample should be allowed to stand at -20°C for 240 hours under driving condition and then returning it to normal temperature condition, and allowing it stand for 2 hours.
03	High temperature storage	The sample should be allowed to stand at 80°C for 240 hours under no-load condition, and then returning it to normal temperature condition, and allowing it stand for 2 hours.
04	Low temperature storage	The sample should be allowed to stand at -30°C for 240 hours under no-load condition, then returning it to normal temperature condition, and allowing it stand for 2 hours.
05	Moisture storage	The sample should be allowed to stand at 60°C,90%RH MAX for 240 hours under no-load condition, then taking it out and drying it at normal temperature for 2 hours.
06	Thermal shock storage	The sample should be allowed to stand the following 50 cycles : -30°C for 30 minutes → normal temperature for 5 minutes → +80°C for 30 minutes → normal temperature for 5 minutes, as one cycle.
07	Packing vibration	Frequency range : 10Hz ~ 55Hz Amplitude of vibration : 1.5mm Sweep time: 12 min X,Y,Z 2 hours for each direction.
08	Packing drop test	According to ISTA 1A 2001.
09	Electrical Static Discharge	Air: ±8KV 150pF/330Ω 5 times
		Contact: ±4KV 150pF/330Ω 5 time
10	Imaging sticking	Burn in:5*5 Chess,1h@25C. Inspection Pattern:50% grey, Perpendicular view, after 5 Min,the mura must disappear 

*Sample size for each test item is 3~5pcs

11 - 2. Testing Conditions and Inspection Criteria

For the final test the testing sample must be stored at room temperature for 24 hours, after the tests listed in Table 12.2, Standard specifications for Reliability have been executed in order to ensure stability.

No	Item	Test Model	In section Criteria
01	Current Consumption	Refer To Specification	The current consumption should conform to the product specification.
02	Contrast	Refer To Specification	After the tests have been executed, the contrast must be larger than half of its initial value prior to the tests.
03	Appearance	Visual inspection	Defect free.

11- 3. MTBF

MTBF	Functions, performance, appearance, etc. shall be free from remarkable deterioration within 50,000 hours under ordinary operating and storage conditions room temperature ($25\pm 5^{\circ}\text{C}$), normal humidity ($50\pm 10\%$ RH), and in area not exposed to direct sun light.
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12. Specification of Quality Assurance:

12-1. Purpose

This standard for Quality Assurance should affirm the quality of LCD module products to supply to purchaser by YEEBO CORPORATION (Supplier).

12-2. Standard for Quality Test

a. Inspection:

Before delivering, the supplier should take the following tests, and affirm the quality of product.

b. Electro-Optical Characteristics:

According to the individual specification to test the product.

c. Test of Appearance Characteristics:

According to the individual specification to test the product.

d. Test of Reliability Characteristics:

According to the definition of reliability on the specification for testing products.

e. Delivery Test:

Before delivering, the supplier should take the delivery test.

(i) Test method: According to **ISO2859-1**. General Inspection Level II take a single time.

(ii) The defects classify of AQL as following:

Major defect: AQL =0.65

Minor defect: AQL =2.5

Total defects: AQL =2.5

12-3. Non- conforming Analysis & Deal with Manners

a. Non- conforming Analysis:

(i) Purchaser should supply the detail data of non- conforming sample and the non-conforming.

(ii) After accepting the detail data from purchaser, the analysis of non- conforming should be finished in two weeks.

(iii) If supplier can not finish analysis on time, must announce purchaser before 3 days.

b. Disposition of non- conforming:

(i) If find any product defect of supplier during assembly time, supplier must change the good product for every defect after recognition.

(ii) Both supplier and customer should analyze the reason and discuss the disposition of non- conforming when the reason of nonconforming is not sure.

12-4. Agreement items

Both sides should discuss together when the following problems happen.

a. There is any problem of standard of quality assurance, and both sides should think that must be modified.

b. There is any argument item which does not record in the standard of quality assurance.

c. Any other special problem.

12-5. Standard of the Product Appearance Test

a. Manner of appearance test:

(i) Illumination: External Appearance Inspection : 1000 ± 200 Lux ; Light on inspection : 200 ± 50 Lux.

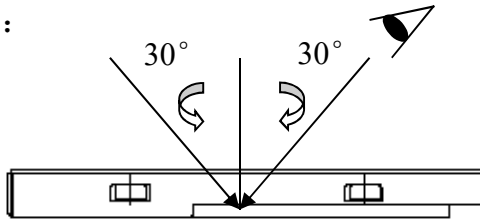
(ii) To be a distance about 30 ± 5 cm in front of LCD unit, viewing line should be perpendicular to the surface of the module judge the visual appearance with human's eyes.

(iii) Scope of inspection perspective:

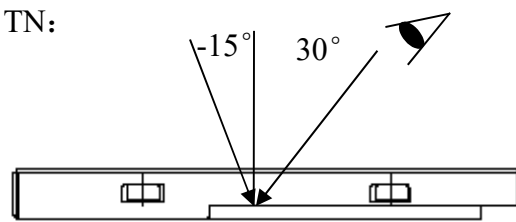
The inspection angle of IPS screen is within $\pm 30^\circ$ of the vertical line on the product surface; The TN screen inspection angle is -15° from the vertical line of the product surface in the 12 o'clock direction to 30° from the vertical line of the product surface in the 6 o'clock direction.

(iii) Temperature: $25 \pm 5^\circ\text{C}$ Humidity: $60 \pm 10\% \text{RH}$

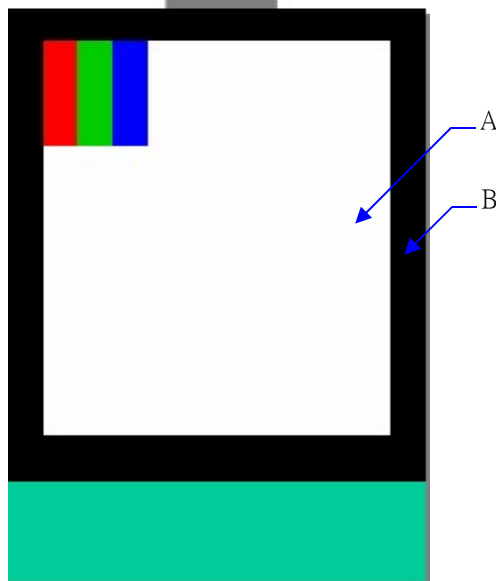
IPS:



TN:



(iv) Definition of area:



A. Area: Viewing area.

B. Area: Out of viewing area.

(Outside viewing area)

b. Basic principle:

(i) It will accord to the AQL when the standard cannot be described.

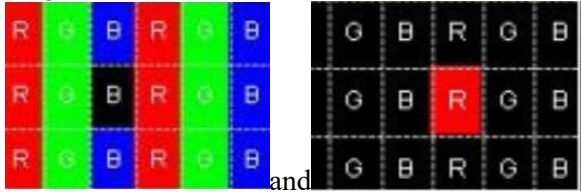
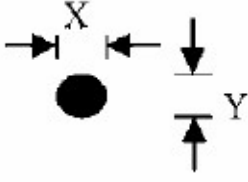
(ii) The sample of the lowest acceptable quality level must be discussed by both supplier and customer when any dispute happened.

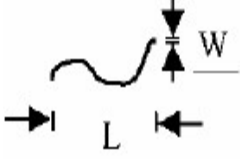
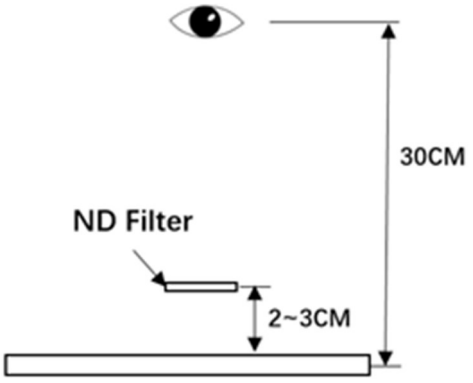
(iii) Must add new item on time when it is necessary.

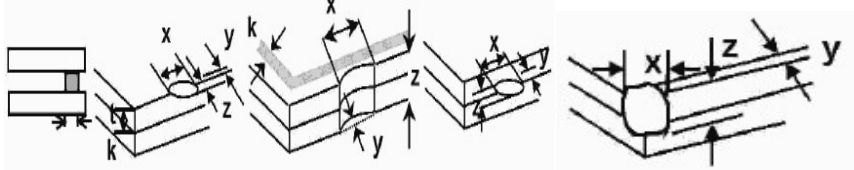
c. Standard of inspection: (Unit: mm)

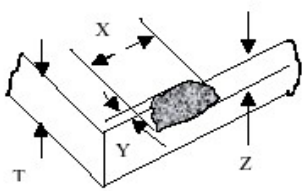
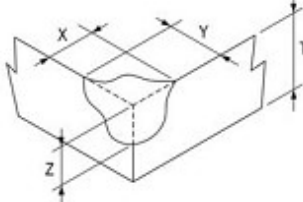
12-6. Inspection specification

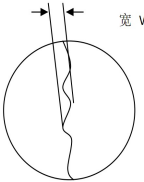
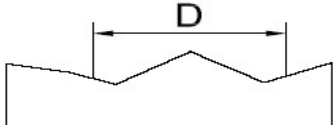
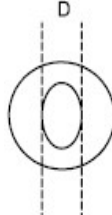
Defect out of viewing area can be neglected.

NO	Item	Criterion	AQL														
01	Electrical Testing	1.1 Missing vertical, horizontal segment, segment contrast defect. 1.2 Missing character, dot or icon. 1.3 Display malfunction. 1.4 No function or no display. 1.5 Current consumption exceeds product specifications. 1.6 LCD viewing angle defect. 1.7 Mixed product types.	0.65														
02	Pixel Defect	Bright and Black dot define:  and Pixel Defect as below drawing: <table border="1" data-bbox="451 882 1120 1155"> <thead> <tr> <th>Type</th> <th>Acceptable Q'ty</th> </tr> </thead> <tbody> <tr> <td>Bright Dot</td> <td>$N \leq 1$</td> </tr> <tr> <td>Two bright dots</td> <td>$N \leq 0$</td> </tr> <tr> <td>Dark Dot</td> <td>$N \leq 2$</td> </tr> <tr> <td>Two Dark dots</td> <td>$N \leq 0$</td> </tr> <tr> <td>Three Dark dots</td> <td>$N \leq 0$</td> </tr> <tr> <td>Total(Bright+Dark dot)</td> <td>$N \leq 2$</td> </tr> </tbody> </table> *Densely spaced: No more than two spots within 10mm.	Type	Acceptable Q'ty	Bright Dot	$N \leq 1$	Two bright dots	$N \leq 0$	Dark Dot	$N \leq 2$	Two Dark dots	$N \leq 0$	Three Dark dots	$N \leq 0$	Total(Bright+Dark dot)	$N \leq 2$	2.5
Type	Acceptable Q'ty																
Bright Dot	$N \leq 1$																
Two bright dots	$N \leq 0$																
Dark Dot	$N \leq 2$																
Two Dark dots	$N \leq 0$																
Three Dark dots	$N \leq 0$																
Total(Bright+Dark dot)	$N \leq 2$																
03	LCD , Touch Panel and Backlight Black and white spots/lines contamination (Foreign Material)	3.1 Dot type: As following drawing $\Phi = (X+Y) / 2$  <table border="1" data-bbox="879 1344 1414 1496"> <thead> <tr> <th>Size(mm)</th> <th>Acceptable Q'ty</th> </tr> </thead> <tbody> <tr> <td>$\Phi \leq 0.10$</td> <td>Accept no dense</td> </tr> <tr> <td>$0.10 < \Phi \leq 0.30$</td> <td>2</td> </tr> <tr> <td>$0.30 < \Phi$</td> <td>0</td> </tr> </tbody> </table> 3.1.1 Not visible through 5% ND filter 3.1.2 Densely spaced: No more than two spots within 5mm. 3.1.3 This is acceptable when surface dirt can be removed by wiping.	Size(mm)	Acceptable Q'ty	$\Phi \leq 0.10$	Accept no dense	$0.10 < \Phi \leq 0.30$	2	$0.30 < \Phi$	0	2.5						
Size(mm)	Acceptable Q'ty																
$\Phi \leq 0.10$	Accept no dense																
$0.10 < \Phi \leq 0.30$	2																
$0.30 < \Phi$	0																
		3.2 Tiny bright dot、Dense tiny highlights: Definition of Tiny bright dot: $\Phi < 0.10\text{mm}$; Ignore, clustered is not allowed($N \leq 5, D \leq 5$) *Not visible through 5% ND filter	2.5														

NO	Item	Criterion	AQL												
03	LCD , Touch Panel and Backlight Black and white spots/lines contamination(Foreign Material)	3.3 Line type: (As following drawing)  <table border="1" data-bbox="774 309 1348 526"> <thead> <tr> <th>Length(mm)</th> <th>Width(mm)</th> <th>Acceptable Q'ty</th> </tr> </thead> <tbody> <tr> <td>---</td> <td>$W \leq 0.03$</td> <td>Accept no dense</td> </tr> <tr> <td>$L \leq 5.0$</td> <td>$0.03 < W \leq 0.075$</td> <td>2</td> </tr> <tr> <td>---</td> <td>$0.075 < W$</td> <td>Rejection</td> </tr> </tbody> </table> <p>* Densely spaced: No more than two spots within 5mm.</p>	Length(mm)	Width(mm)	Acceptable Q'ty	---	$W \leq 0.03$	Accept no dense	$L \leq 5.0$	$0.03 < W \leq 0.075$	2	---	$0.075 < W$	Rejection	2.5
Length(mm)	Width(mm)	Acceptable Q'ty													
---	$W \leq 0.03$	Accept no dense													
$L \leq 5.0$	$0.03 < W \leq 0.075$	2													
---	$0.075 < W$	Rejection													
04	Polarizer bubbles	If bubbles are visible, Judge using black spot specifications, not easy to find, must check in specify direction. <table border="1" data-bbox="813 683 1348 851"> <thead> <tr> <th>Size Φ(mm)</th> <th>Acceptable Q'ty</th> </tr> </thead> <tbody> <tr> <td>$\Phi \leq 0.15$</td> <td>ignored (Dense NG)</td> </tr> <tr> <td>$0.15 < \Phi \leq 1.00$</td> <td>2</td> </tr> <tr> <td>$1.00 < \Phi$</td> <td>0</td> </tr> </tbody> </table> <p>* Densely spaced: No more than two spots within 5mm. * Outside of the V.A. is disregard.</p>	Size Φ (mm)	Acceptable Q'ty	$\Phi \leq 0.15$	ignored (Dense NG)	$0.15 < \Phi \leq 1.00$	2	$1.00 < \Phi$	0	2.5				
Size Φ (mm)	Acceptable Q'ty														
$\Phi \leq 0.15$	ignored (Dense NG)														
$0.15 < \Phi \leq 1.00$	2														
$1.00 < \Phi$	0														
05	Mura	Not visible through 5% ND filter.  <p>*ND card is 2~3cm from the panel, human eye is 30±5cm from the panel;</p> <p>The line of sight is moved to the ND card for judgment: if it is not visible for 2-3 seconds - OK, visible – NG</p>	2.5												

06	Chipped glass	<p>Symbols: x: Chip length y: Chip width z: Chip thickness k: Seal width t: Single-layer glass thickness a: LCD side length L: Electrode pad length</p> <p>8.1 Chip on panel surface and crack between panels and Corner crack:</p>  <table border="1" data-bbox="395 515 1220 638"> <tr> <td>z: Chip thickness</td> <td>y: Chip width</td> <td>x: Chip length</td> </tr> <tr> <td>$z \leq t$</td> <td>Not over BM glue area</td> <td>$x \leq 1/8a$</td> </tr> </table> <p>⊙ Unit: mm ⊙ If there are 2 or more chips, x is the total length of each chip. ⊙ If there chipped area touches the ITO terminal, over 2/3 of the ITO must remain and do not affect the function.</p>	z: Chip thickness	y: Chip width	x: Chip length	$z \leq t$	Not over BM glue area	$x \leq 1/8a$	2.5
z: Chip thickness	y: Chip width	x: Chip length							
$z \leq t$	Not over BM glue area	$x \leq 1/8a$							
NO	Item	Criterion	AQL						
07	Scratches	Follow NO.3 -3 Line Type.	2.5						
08	Cracked glass	The LCD with extensive crack is not acceptable.	2.5						
09	Backlight elements	9.1 Illumination source flickers when lit. 9.2 Spots or scratches that appear when lit must be judged. Using LCD spot, lines and contamination standards. 9.3 Backlight doesn't light or color is wrong.	2.5 2.5 0.65						
10	Bezel	Bezel must comply with product specifications.	2.5						
11	PCB、COB	11.1 COB seal may not have pinholes larger than 0.2mm or contamination. 11.2 COB seal surface may not have pinholes through to the IC. 11.3 The height of the COB should not exceed the height indicated in the assembly diagram. 11.4 There may not be more than 2mm of sealant outside the seal area on PCB. And there should be no more than three places. 11.5 Parts on PCB must be the same as on the production characteristic chart, There should be no wrong parts, missing parts or excess parts. 11.6 The jumper on the PCB should conform to the product characteristic chart. 11.7 PCBA cosmetic control base on latest IPC standard, IPC-A-610, acceptable limit of grade 2.	2.5 2.5 2.5 2.5 0.65 0.65 2.5						

12	FPC	Affect function rejection, do not affect function acceptance.	2.5								
13	Soldering	13.1 No cold solder joints, missing solder connections, oxidation or icicle. 13.2 No short circuits in components on PCB or FPC.	2.5 0.65								
14	Touch Panel Chipped glass	Edge breakage can't affect visual effect (edge breakage can't cause damage to circuit); over lens have no visual damage   <table border="1" data-bbox="395 728 1295 862"> <tr> <td>x: Chip length</td> <td>y: Chip width</td> <td>z: Chip thickness</td> <td>Acceptable numbers</td> </tr> <tr> <td>$x \leq 1\text{mm}$</td> <td>$Y \leq 0.5\text{mm}$</td> <td>$z \leq t$</td> <td>2</td> </tr> </table>	x: Chip length	y: Chip width	z: Chip thickness	Acceptable numbers	$x \leq 1\text{mm}$	$Y \leq 0.5\text{mm}$	$z \leq t$	2	2.5
x: Chip length	y: Chip width	z: Chip thickness	Acceptable numbers								
$x \leq 1\text{mm}$	$Y \leq 0.5\text{mm}$	$z \leq t$	2								

NO	Item	Criterion	AQL								
15	V/A printed edges sawtooth inspected according to this standard LOGO's sawtooth	<p>Some contentious defect judged according to samples.</p> <table border="1" data-bbox="395 1048 1136 1355"> <tr> <th>Product type</th> <th>Conditions</th> </tr> <tr> <td>Same size</td> <td>1、width below 0.2mm (included) ignored, above 0.2mm NG 2、 Length not accounted</td> </tr> </table> 	Product type	Conditions	Same size	1、width below 0.2mm (included) ignored, above 0.2mm NG 2、 Length not accounted	2.5				
Product type	Conditions										
Same size	1、width below 0.2mm (included) ignored, above 0.2mm NG 2、 Length not accounted										
16	Touch Panel(Fish eye、dent and bubble on film)	<table border="1" data-bbox="395 1467 925 1624"> <tr> <th>SIZE(mm)</th> <th>Acceptable Q'ty</th> </tr> <tr> <td>$\Phi \leq 0.2$</td> <td>Accept no dense</td> </tr> <tr> <td>$0.2 < D \leq 0.40$</td> <td>2</td> </tr> <tr> <td>$0.40 < D$</td> <td>0</td> </tr> </table>  	SIZE(mm)	Acceptable Q'ty	$\Phi \leq 0.2$	Accept no dense	$0.2 < D \leq 0.40$	2	$0.40 < D$	0	2.5
SIZE(mm)	Acceptable Q'ty										
$\Phi \leq 0.2$	Accept no dense										
$0.2 < D \leq 0.40$	2										
$0.40 < D$	0										



17	Touch Panel Newton ring	Newton ring dimension \leq 1/2 touch panel area and not affect font and line distortion (\leq 2.5%) , it is acceptable.	2.5
18	Touch Panel Linearity	Less than 2.5% is acceptable.	2.5
19	LCD Ripple	Touch the touch panel, cannot see the LCD ripple. Pen: R 1.0mm silicon rubber. Operation Force: 80g	2.5
20	General appearance	20.1 Product packaging must the same as specified on packaging specification sheet. 20.2 Product dimension and structure must conform to product Specification sheet.	0.65 0.65

13. Handling Precaution:

13-1 Handling of LCM

- Don't give external shock.
- Don't apply excessive force on the surface.
- Liquid in LCD is hazardous substance. Must not lick and swallow. When the liquid is attach to your hand, skin, cloth etc. Wash it out thoroughly and immediately.
- Don't operate it above the absolute maximum rating.
- Don't disassemble the LCM.
- The operators should be grounded whenever he/she comes into contact with the module. Never touch any of the conductive parts such as the LSI pads, the copper leads on the PCB and the interface terminals with any parts of the human body.
- The modules should be kept in antistatic bags or other containers resistant to static for storage.
- The module is coated with a film to protect the display surface. Be care when peeling off this protective film since static electricity may be generated.

13-2 Storage

- Store in an ambient temperature of $25\pm 10^{\circ}\text{C}$, and in a relative humidity of $50\pm 10\%\text{RH}$. Don't expose to sunlight or fluorescent light.
- Storage in a clean environment, free from dust, active gas, and solvent.
- Store in anti-static electricity container.
- Store without any physical load.

13-3 Soldering

- Use only soldering irons with proper grounding and no leakage.
- Iron: No higher than $310\pm 10^{\circ}\text{C}$ and less than 3 sec during Hand soldering.
- Rewiring: no more than 2 times.

14. Warranty

This product has been manufactured to specifications 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 will not take responsibility if the product is used in medical devices, 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. If the product is to be used in any of the above applications, we will need to enter into a separate product liability agreement.

1. We cannot accept responsibility for any defect arise after additional process of the product (Including disassembly and reassembly), after product delivery.
2. We cannot accept responsibility for any defect, which may arise after the application of strong External force to the product.
3. We cannot accept responsibility for any defect, which may arise due to the application of static Electricity after the product has passed your company's acceptance inspection procedures.
4. We cannot accept responsibility for industrial property, which may arise through the use of your product, with exception to those issues relating directly to the structure or method of manufacturing of our product within one year from YEEBO shipment.
5. For Heatseal Product which required to heatseal by customer side, parts must be used within three months after delivery from factory.
6. For TAB Product which required to solder by customer side, parts must be used within three Months after delivery from factory.
7. The liability of YB is limited to repair or replacement on the terms set forth below. YB will not be responsible for any subsequent or consequential events or injury or damage to any personnel or user including third party personnel and/or user. Unless otherwise agreed in writing between YB and the customer, YB will only replace or repair any of its LCD which is found defective electrically or visually when inspected in accordance with YB GENERAL LCD INSPECTION STANDARD.

15. Guarantee:

Our products meet requirements of the environment.
YEEBO ROHS requirement is based on European Union Directive 2011/65/EU
(ROHS)
Requirements and Update.