




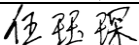

SPECIFICATION FOR CTP MODULE

MODULE NO: CDS-TG1280800C93A-C-A0

Doc.Version:02

Customer Approval:

☐ Accept ☐ Reject

YEEBO	NAME	SIGNATURE	DATE
Prepare	Electronic Engineer	喻军	2024-12-18
Check	Mechanical Engineer		2025-02-25
Verify			2025-02-26
Approval			2025-02-26

■ APPROVAL FOR SPECIFICATIONS ONLY

☐ APPROVAL FOR SPECIFICATIONS AND SAMPLE

WIMRD005-02-D

1. Revision History

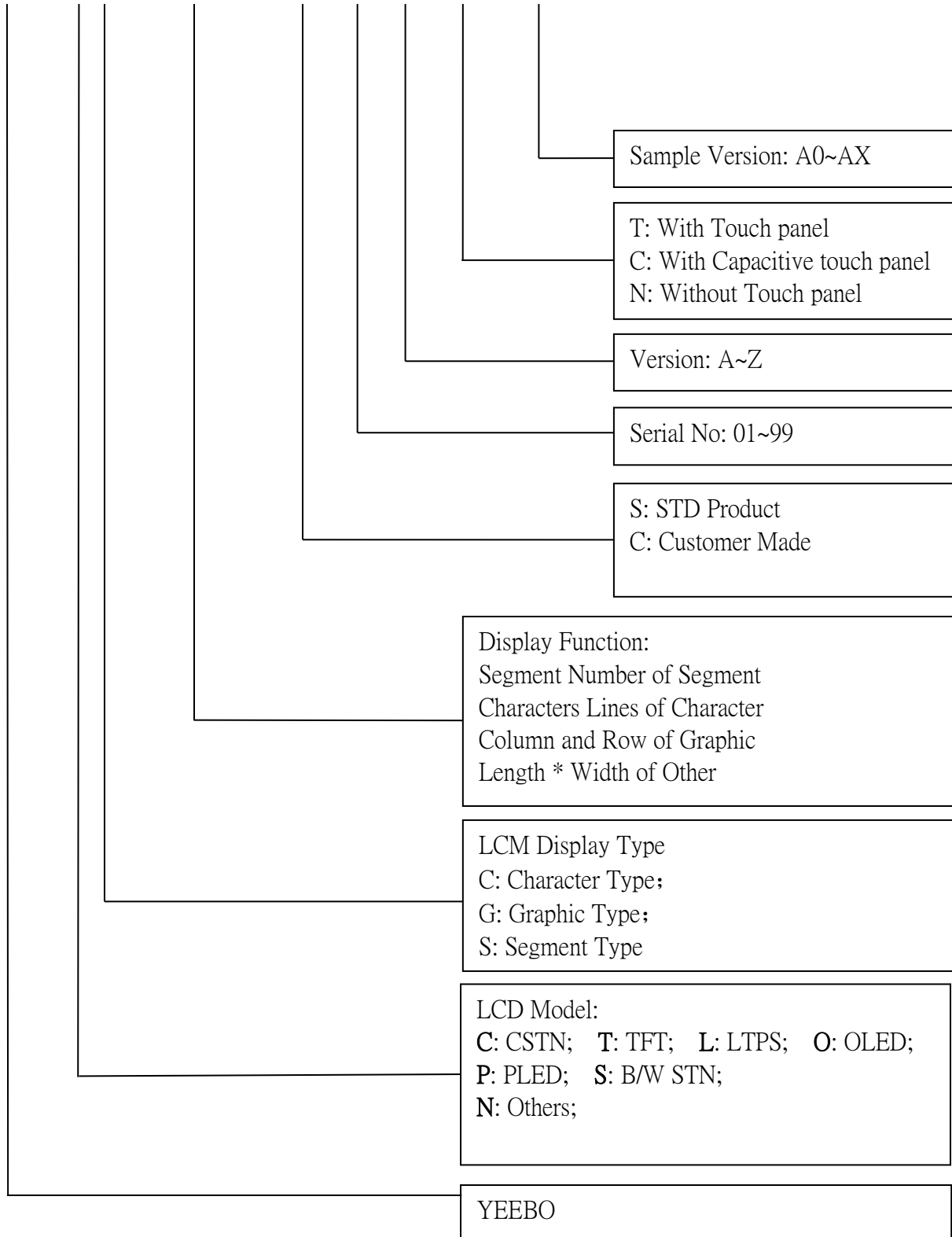
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2. General Specification:

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3. Module Numbering System: (example)

CDS- TG 1280800C 93 A -C – A0

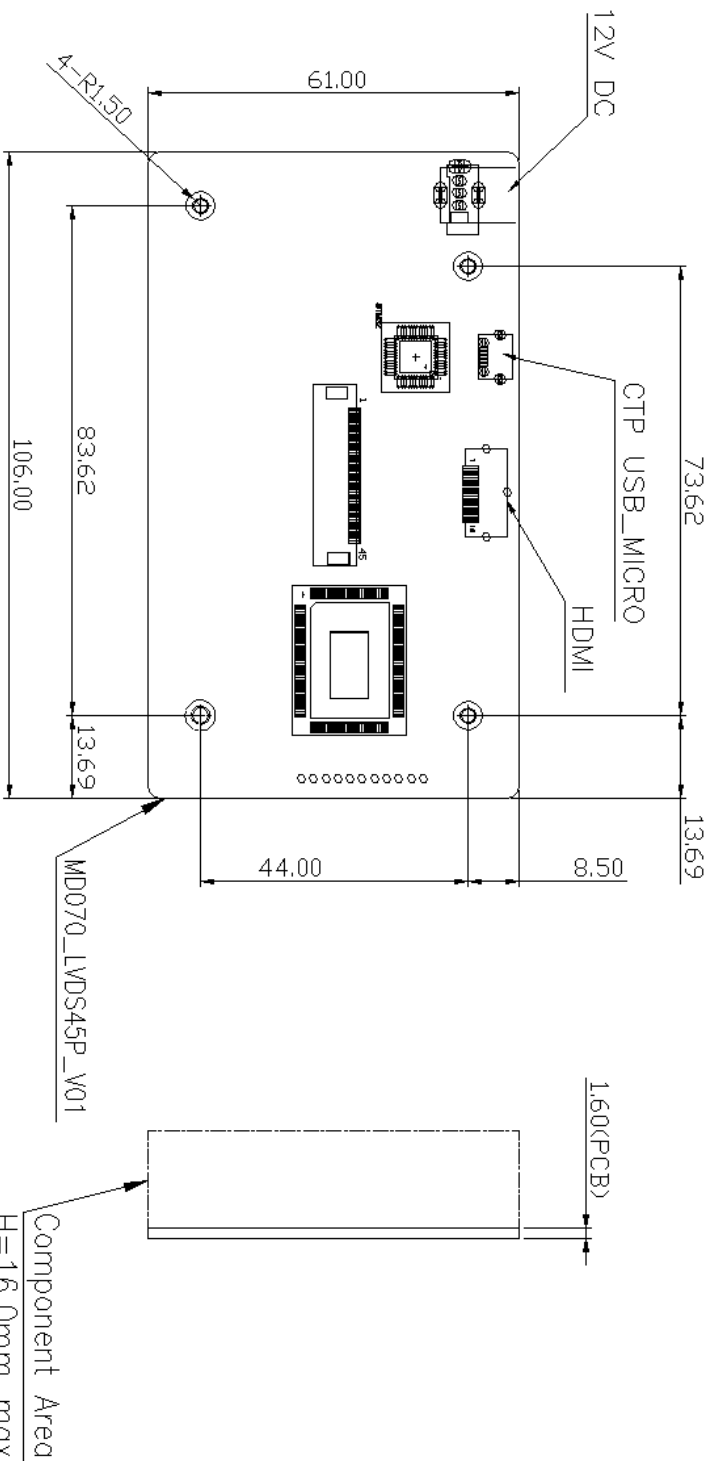


4. General Specification:

ITEM	CONTENTS
Module Size	241.96(W) * 175(H) * 6.49(T) mm
Display Size(Diagonal)	10.1 inch
Display Format	1280(RGB)* 800 Pixels
Active Area	216.96(W) *135.60(H) mm
View Area	217.96*136.60mm
Pixel Pitch	0.1695 * 0.1695mm
LCD Type	TFT(16.7M) / Transmissive / Normally Black
Viewing Direction:	Free
Drive IC	EK79202
CTP IC	ILI2511
Weight	TBD
CTP Interface	I ² C

Count drawing & Spec. revision record during discussion with customer		
Rev.	Revision content description	Date
01	FIRST ISSUE	2024-12-13
02	Changed MOD. structures	2025-01-02
03	Changed MOD. name	2025-02-22

Customer Model



No.	HDMI Symbol	6	Diarr+	12	Diarr-	13	CEC	19	Hot plug detect
2	Diarr+ shield	9	Diarr+ shield	14	HEC (E88-)				
3	Diarr-	9	Diarr-	15	8CL				
4	Diarr+	10	Diarr+	16	8DA				
5	Diarr+ shield	11	Diarr+ shield	17	Ground				

2	Diarr shield	8	Diarr shield	14	HEC	15	HEC	16	BDA
3	Diarr-	9	Diarr-	15	BDA	16	BDA	17	Ground
4	Diarr+	10	Diarr+	16	Ground	17	Ground	18	+5V Power
5	Diarr shield	11	Diarr shield	17	Ground	18	+5V Power	19	Hot plug detect

CTP USB_MICRO INTERFACE	NO.	SYMBOL
1	VDI 6V	D-
2	D-	D+
3	D+	D-GND
4	D-GND	
5	GND	

YEEBO		
MOD. Name	CDS-TG12800C93A-C-A	
DESIGNED	CHECKED	VERIFIED
文荣梓		
2025-02-22		
FILE NAME	Count Dwg.	



6. Electrical Characteristics

6-1 Absolute Maximum Ratings

6-1-1 Absolute Maximum Ratings (TFT)

(Ta=25°C GND=0V)

Item	Symbol	Values		Unit	Remark
		Min.	Max.		
Power voltage	VDD	-0.5	4	V	
	AVDD	-0.3	18	V	
	V _{GH}	-0.5	V _{GL} +32	V	
	V _{GL}	-17	-0.3	V	
	V _{GH} -V _{GL}	12	32	V	
Operation Temperature	T _{OP}	-20	70	°C	
Storage Temperature	T _{ST}	-30	80	°C	

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

6-1-2 Absolute Maximum Ratings (TP)

Table 5-1: Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
USB 5V input power supply voltage	V _{DD5V}	-0.3	6.0	V
V _{DD3A} to GND	V _{DD3A}	-0.3	3.6	V
V _{DD3D} to GND	V _{DD3D}	-0.3	3.6	V
V _{DDIO} to GND	V _{DDIO}	-0.3	3.6	V
V _{DD16} to GND	V _{DD16}	-0.3	1.65	V
V _{GH} to GND	V _{GH}	-0.3	32	V
V _{TX} to GND	V _{TX}	-0.3	32	V
ESD Susceptibility HBM (Human Body Mode)(Note 1)	HBM		4000	V
ESD Susceptibility MM (Machine Mode)	MM		400	V

Note 1: Devices are ESD sensitive. Handling precaution is recommended.

6-2 Operating Conditions

6-2-1 Operating Conditions (TFT)

(Ta=25°C GND=0V)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply voltage	VDD	-	2.3	3.3	3.6	Volt
	AVDD	-	8	8.2	8.4	Volt
	VGH	-	14.5	15	15.5	Volt
	VGL	-	-13.5	-13	-12.5	Volt
Ripple voltage	VRP			150		mv
Input Logic high Voltage	VIH		0.8VDD	-	VDD	Volt
Input Logic low Voltage	VIL		0	-	0.2VDD	Volt

Current consumption(white pattern)

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Current for Driver	IGH	1.0	1.4	1.8	mA	V _{GH} =15V
	IGL	1.0	1.4	1.8	mA	V _{GL} = -13V
	IV _{DD}	26	31	36	mA	V _{DD} =2.5V
	IAV _{DD}	17	22	27	mA	AV _{DD} =8.2V

6-2-2 Operating Conditions (TP)

(Ta=25°C)

Table 5-2: Recommended Operating Conditions

Parameter	Symbol	Min	Max	Unit
USB 5V input power supply voltage	V _{DD5V}	4.4	5.5	V
V _{DD3A} to GND	V _{DD3A}	3.0	3.6	V
V _{DD3D} to GND	V _{DD3D}	3.0	3.6	V
V _{DDIO} to GND	V _{DDIO}	1.8	3.6	V
V _{GH} to GND	V _{GH}	-0.3	32	V
V _{TX} to GND	V _{TX}	-0.3	32	V
Operating Ambient Temperature Range	T _A	-40	105	°C
Operating Junction Temperature Range	T _J	-40	125	°C
Storage Ambient Temperature Range	T _{ST}	-40	150	°C

Note: The device is not guaranteed to function outside its operating conditions.

AC Electrical Characteristics:

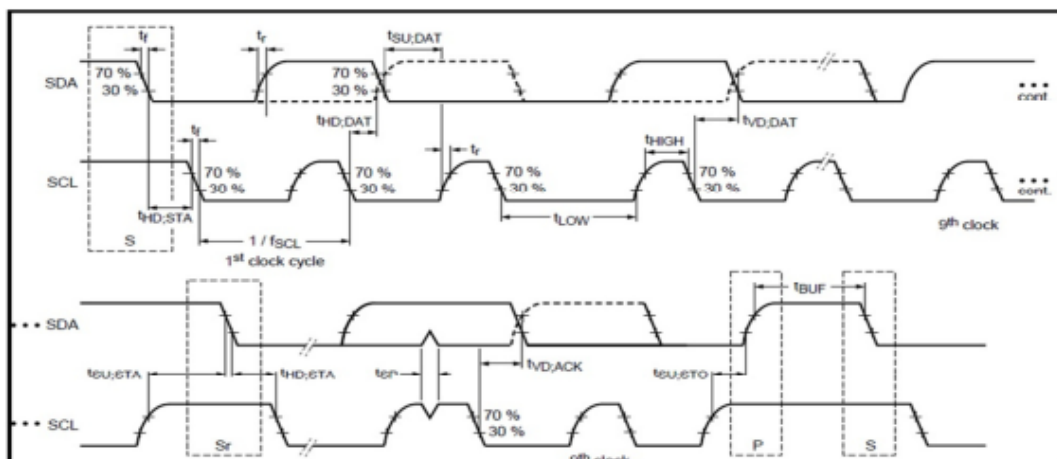


Table 5-7: I2C AC Characteristics

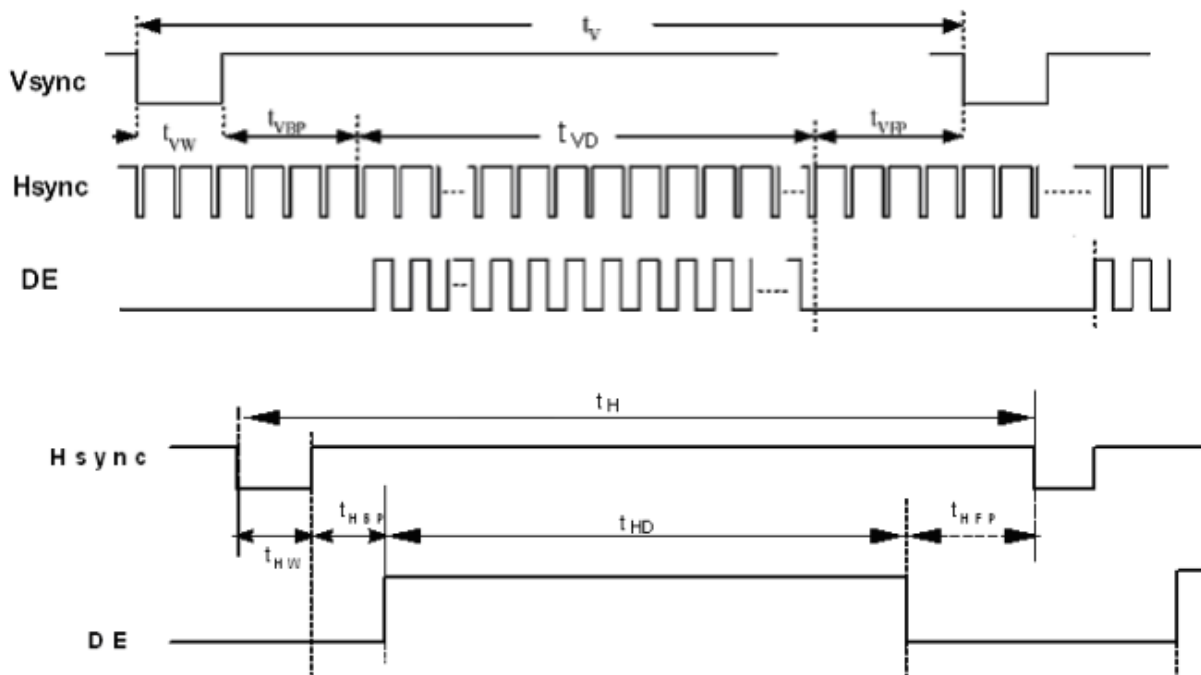
Parameter	Symbol	Standard-mode		Fast-mode		Unit
		Min	Max	Min	Max	
SCL clock frequency	f_{SCL}	0	100	0	400	kHz
Hold time START condition	$t_{HD;STA}$	4.0	-	0.6	-	us
LOW period of the SCL clock	t_{Low}	4.7	-	1.3	-	us
HIGH period of the SCL clock	t_{High}	4.0	-	0.6	-	us
Set-up time for a repeated START condition	$t_{SU;STA}$	4.7	-	0.6	-	us
Data hold time	$t_{HD;DAT}$	300	-	300	-	ns
Data set-up time	$t_{SU;DAT}$	250	-	100	-	ns
Rise time of both SDA and SCL signals (30% to 70%)	t_r	-	1000	20	300	ns
Fall time of both SDA and SCL signals (70% to 30%)	t_f	-	300	20	300	ns
Set-up time for STOP condition	$t_{SU;STO}$	4.0	-	0.6	-	us
Bus free time between a STOP and START condition	t_{BUF}	4.7	-	1.3	-	us
Capacitive load for each bus line	C_b	-	400	-	400	pF
Noise margin at the LOW level for each connected device	V_{nL}	$0.1V_{DD}$	-	$0.1V_{DD}$	-	V
Noise margin at the HIGH level for each connected device	V_{nH}	$0.2V_{DD}$	-	$0.2V_{DD}$	-	V

6-3 Timing Characteristics of input signals

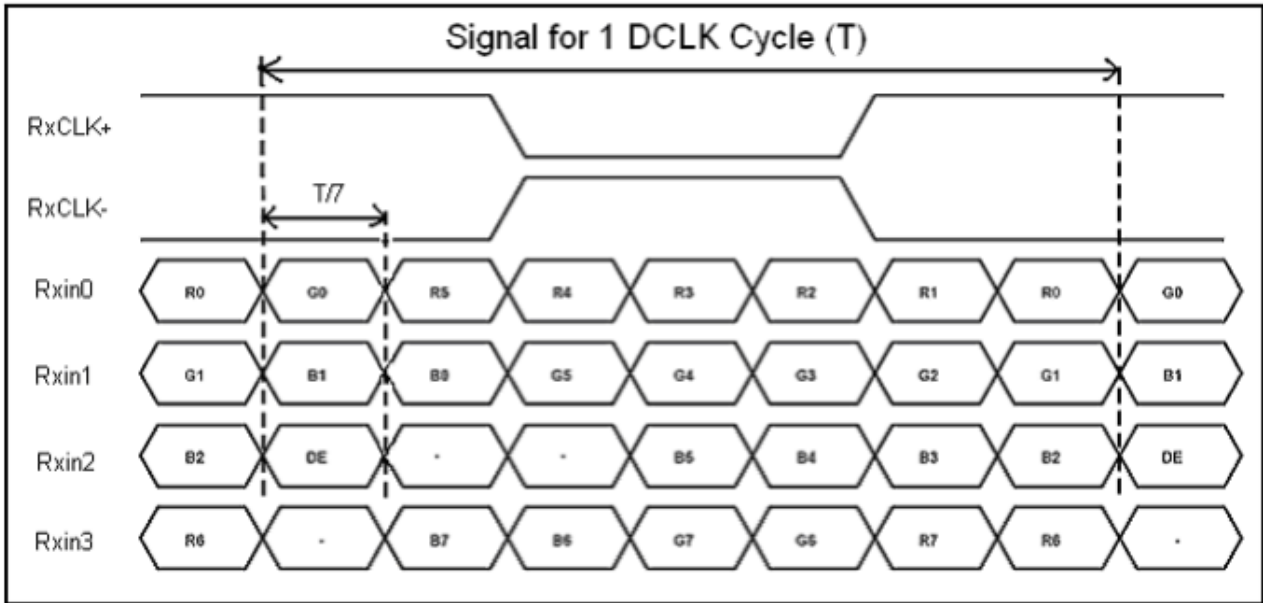
Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Clock Frequency	1/Tc	66.3	72.4	78.9	MHz	Frame rate =60Hz
Horizontal display area	t _{HD}	1280			Tc	
HSYNC pulse width	t _{HPW}	2	-	40	Tc	
HSYNC back porch(with pulse width)	t _{HBP}	88	88	88	Tc	
HSYNC front porch	t _{HFP}	12	72	132	Tc	
Vertical display area	t _{VD}	800			t _H	
VSYNC pulse width	t _{VPW}	2	-	20	t _H	
VSYNC back porch(with pulse width)	t _{VBP}	23	23	23	t _H	
VSYNC front porch	t _{VFP}	1	15	49	t _H	

Note1: Frame rate is $60 \pm 5\text{Hz}$, $\text{PCLK} = \text{Vtotal} * \text{Htotal} * \text{Frame Rate}$;

Note2: All the above conditions must be met.

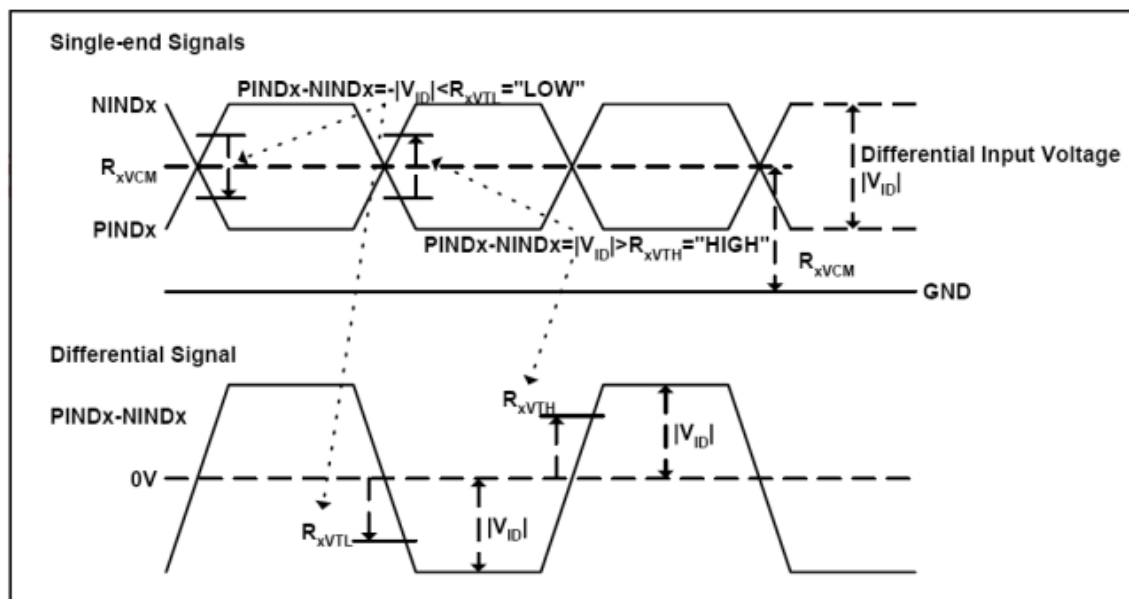


3.5.3. LVDS Data Input Format

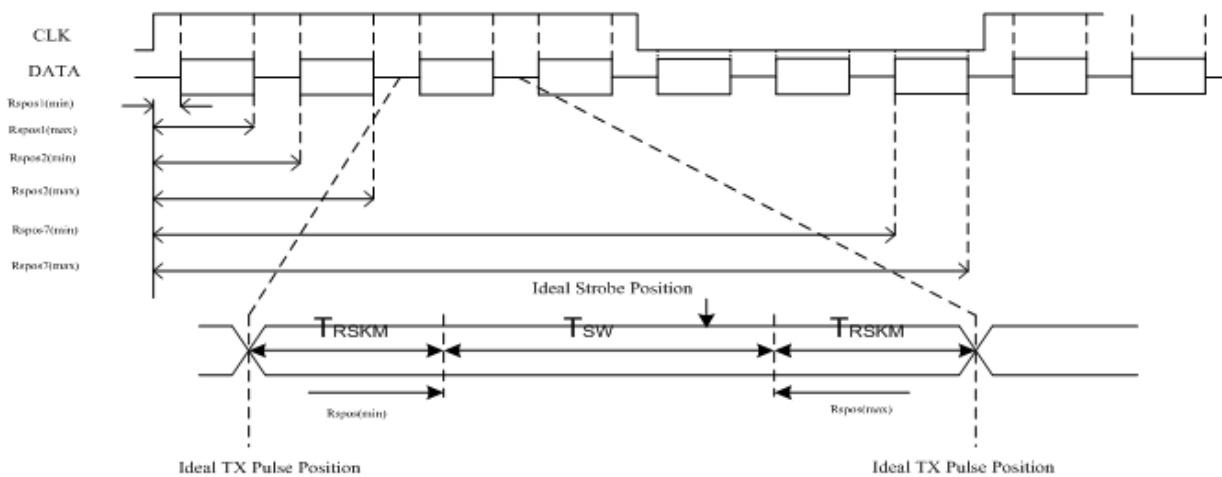
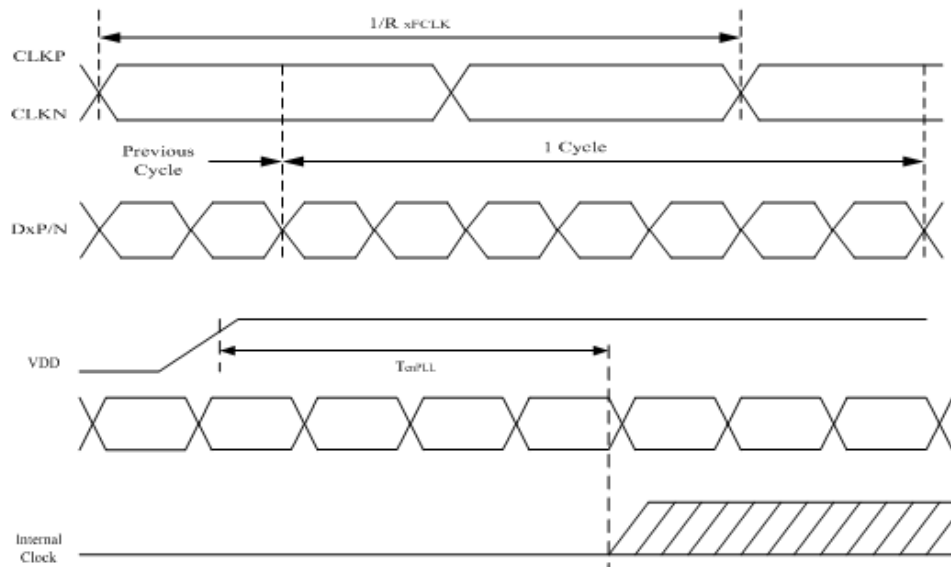


LVDS AC Timing Specification:

Parameter	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
LVDS Differential input high Threshold voltage	R_{xVTH}	-	-	+200	mV	$R_{xVCM}=1.2V$
LVDS Differential input low Threshold voltage	R_{xVTL}	-200	-	-	mV	
LVDS Differential input common mode voltage	R_{xVCM}	0.7	-	1.6	V	
LVDS Differential voltage	$ V_{ID} $	200	-	600	mV	



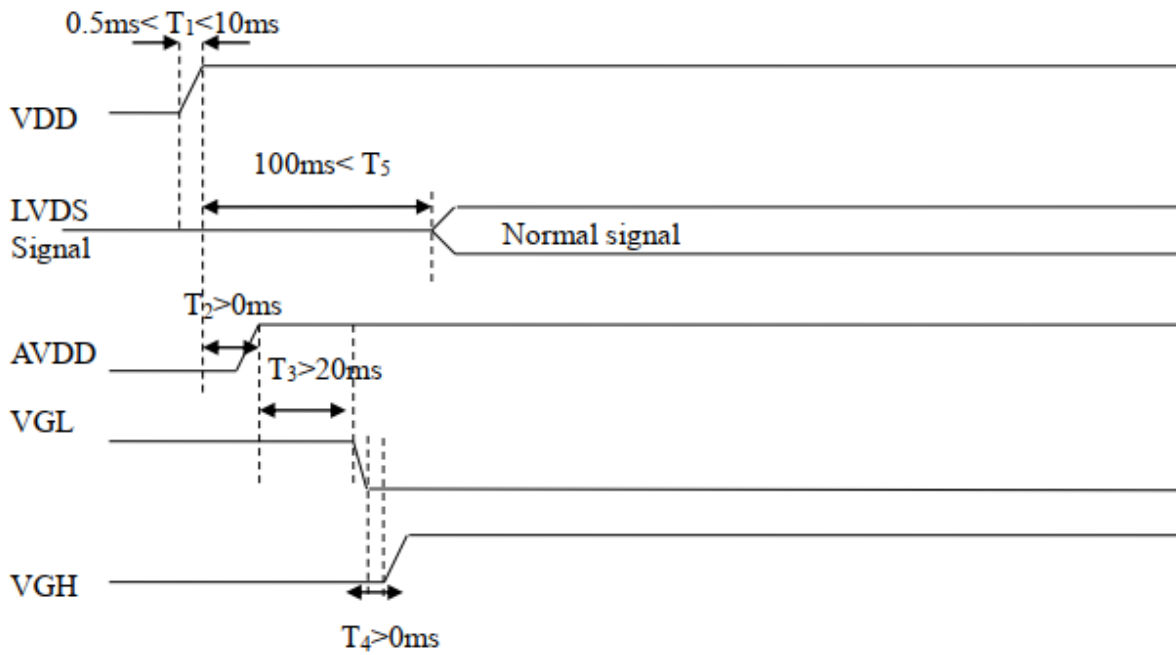
Interface timing Parameter:



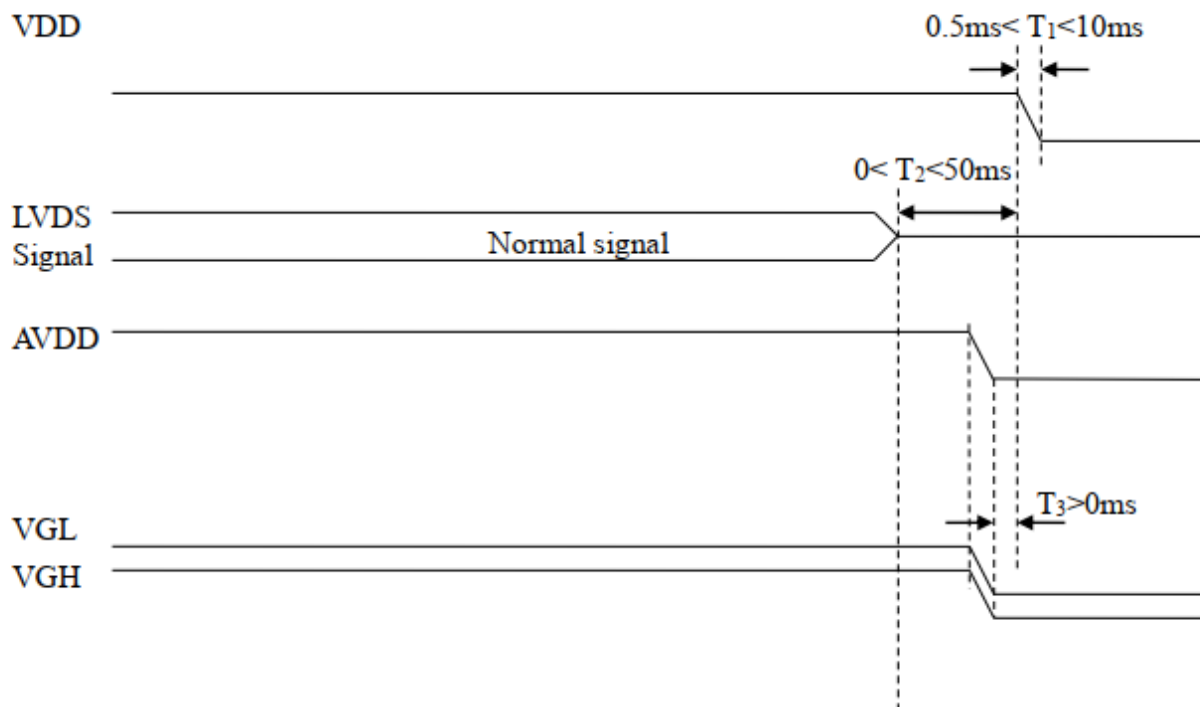
T_{RSKM} : Receiver strobe margin
 R_{spos} : Receiver strobe position
 T_{SW} : Strobe width (internal data sampling window)

6-4 Power Sequence

Power on sequence



Power off sequence



Note: VGH 電壓先于 VGL 下電或同時下電。

7. Optical Characteristics:

Item		Symbol	Conditions	Specifications			Unit	Note
				Min	Typ	Max		
Transmittance		T(%)	-	5.2	5.85	-	%	-
Contrast Ratio		CR	$\Theta=0$ Normal Viewing angle	600	800	-	-	(2)
Viewing angle	Hor.	Θ_{x+}	CR>10	75	80	-	deg.	(1)
		Θ_{x-}		75	80	-		
	Ver.	Θ_{y+}		75	80	-		
		Θ_{y-}		75	80	-		

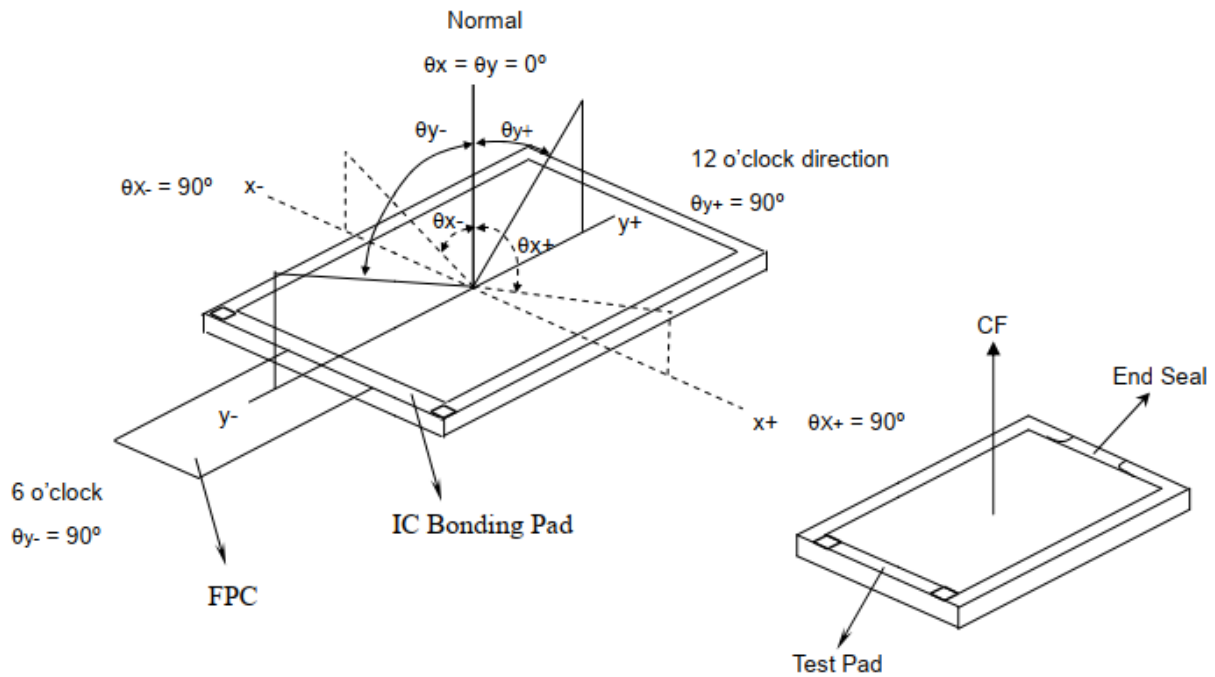
Measuring Condition

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	$\theta = \phi = 0^{\circ}$ LED 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

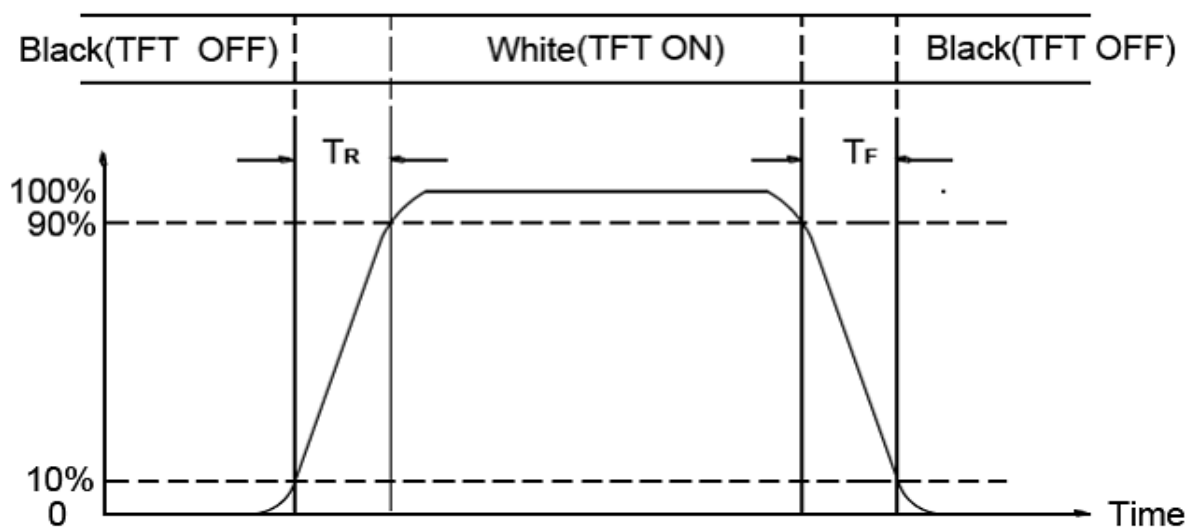
Note 1: Definition of viewing angle range



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

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

Note (3) Definition of Response Time : Sum of T_R and T_F



8. Interface Pin Assignment:

8-1 LCM FPC interface

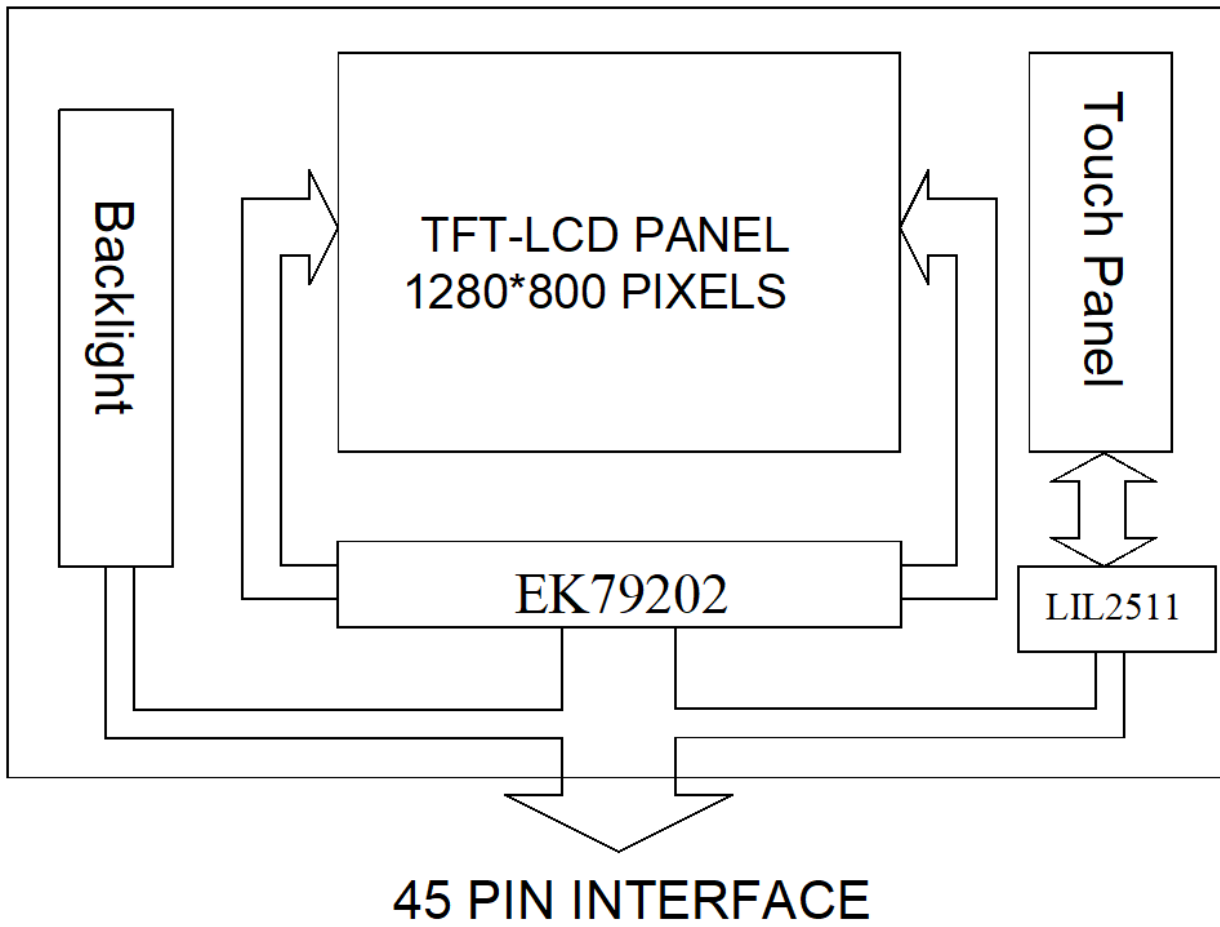
No.	Symbol	Function
1	VCOM	Common Voltage
2	VDD	Power Voltage
3	VDD	Power Voltage
4	BIST	Normal Operation/BIST pattern select. Normally pull low BIST = H : BIST(DCLK input is not needed) BIST = L : Normal Operation
5	RESET	Global reset pin. Active Low to enter Reset State. Normally pull high.
6	STBYB	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	Power Ground
8	RXIN0-	-LVDS differential data input
9	RXIN0+	+LVDS differential data input
10	GND	Power Ground
11	RXIN1-	-LVDS differential data input
12	RXIN1+	+LVDS differential data input
13	GND	Power Ground
14	RXIN2-	-LVDS differential data input
15	RXIN2+	+LVDS differential data input
16	GND	Power Ground
17	RXCLKIN-	-LVDS differential clock input
18	RXCLKIN+	+LVDS differential clock input
19	GND	Power Ground
20	RXIN3-	-LVDS differential data input
21	RXIN3+	+LVDS differential data input
22	GND	Power Ground
23	NC	No Connect
24	NC	No Connect
25	GND	Power Ground
26	NC	No Connect
27	DIMO	Backlight dimmer signal for external controller. DIMO = "0", Turn off external backlight controller DIMO = "1", Logical control signal to turn on external backlight controller
28	SELB	6 bit/8 bit mode select Note1

29	AVDD	Power for Analog Circuit	
30	GND	Power Ground	
31	LED_K	LED Cathode	
32	LED_K	LED Cathode	
33	L/R	Horizontal inversion	Note2
34	U/D	Vertical inversion	Note2
35	VGL	Gate OFF Voltage	
36	VGH	Gate on Voltage	
37	LED_A	LED Anode	
38	LED_A	LED Anode	
39	GND	Power Ground	
40	VDD-CTP	Voltage for digital circuit	
41	INT-CTP	Indicate coordinate data ready	
42	SCL-CTP	I2C Serial Clock Power	
43	SDA-CTP	I2C Serial Data	
44	RESET-CTP	System reset signal input, active low	
45	GND-CTP	Power Ground	

Note1: 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.

Note2: When L/R="0", set right to left scan direction.
When L/R="1", set left to right scan direction.
When U/D="0", set top to bottom scan direction.
When U/D="1", set bottom to top scan direction.

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:

(Ta=25°C)

PARAMETER	Sym.	Min.	Typ.	Max.	Unit	Test Condition	Note
Supply Current	I	-	300	-	mA	-	-
Voltage of the Backlight	V _{BL}	18.9	20	22.4	V	If=300mA	-
Luminous Intensity for LCM+CTP	IV	630	720	-	cd/m ²		2
Uniformity for LCM+CTP	-	75	-	-	%		3
LED Life Time	-	20000	-	-	Hr		4
Color	White						

NOTE:

1. Operating temperature 25°C , humidity 50%.

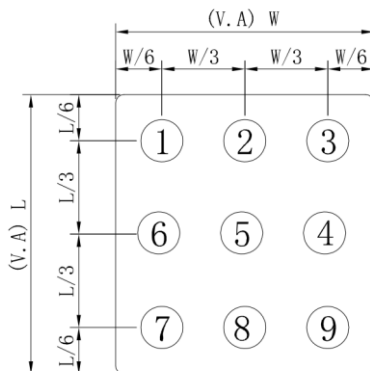
2. Average Luminous Intensity of P1-P13

3. Uniformity = Min/Max * 100%

4. LED life time defined as follows: The final brightness is at 50% of original brightness

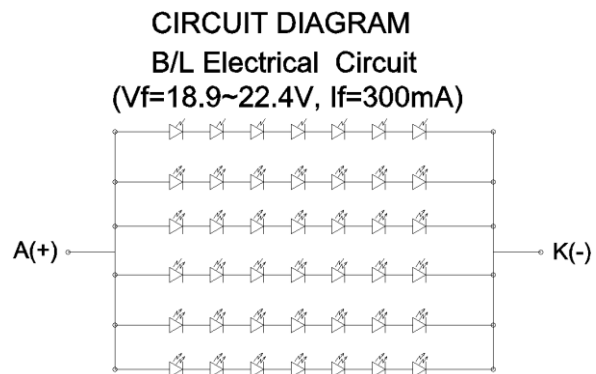
Measured Method: (X*Y: Light Area)

Internal Circuit Diagram



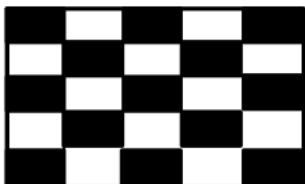
(Effective spatial Distribution)

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 120 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 120 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 10 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: ±6KV 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.

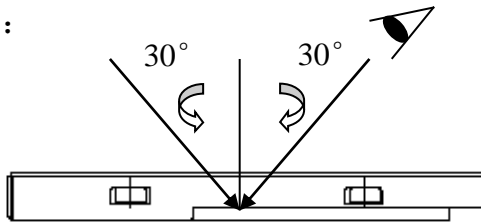
(ii) To be a distance about 30 ± 5 cm in front of LCD unit, viewing line should be perpendicular to the surface of the module judge the visual appearance with human's eyes.

(iii) Scope of inspection perspective:

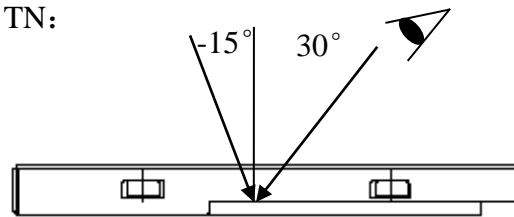
The inspection angle of IPS screen is within $\pm 30^\circ$ of the vertical line on the product surface; The TN screen inspection angle is -15° from the vertical line of the product surface in the 12 o'clock direction to 30° from the vertical line of the product surface in the 6 o'clock direction.

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

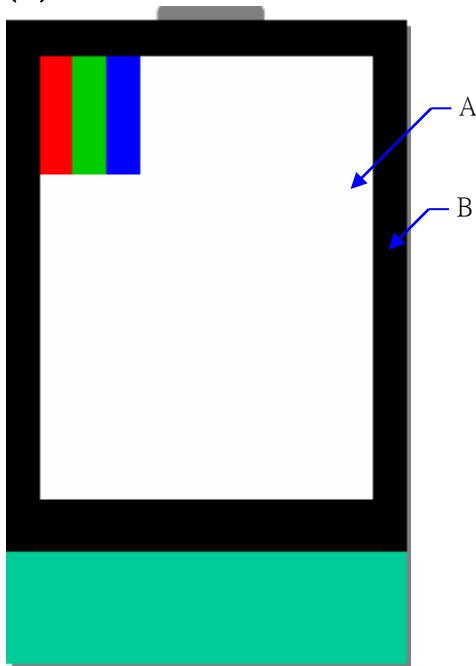
IPS:



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 can not be described.

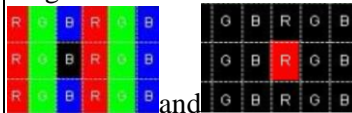
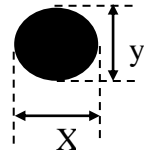
(ii) The sample of the lowest acceptable quality level must be discussed by both supplier and customer when any dispute happened.

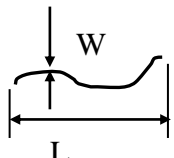
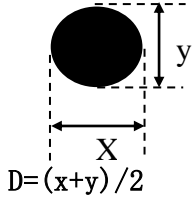
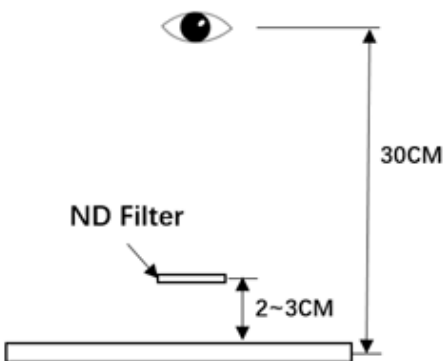
(iii) Must add new item on time when it is necessary.

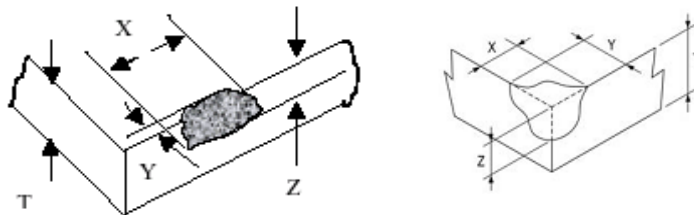
c. Standard of inspection: (Unit: mm)

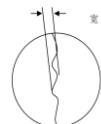
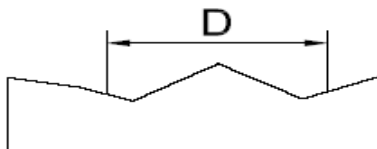
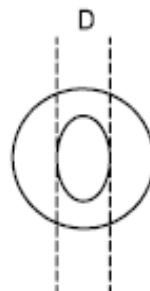

12-6. Inspection specification

Defect out of viewing area can be neglected.

NO	Item	Specification	Unit : mm	AQL														
01	Electrical Testing	1.1 Open 1.2 Short 1.3 T/P failure 1.4 Missing vertical, horizontal segment, segment contrast defect. 1.5 Missing character, dot or icon. 1.6 Display malfunction. 1.7 No function or no display. 1.8 Current consumption exceeds product specifications. 1.9 LCD viewing angle defect. 1.10 Mixed product types.		0.65														
02	Pixel Defect	<p>Bright and Black dot define:</p>  <p>Pixel Defect as below drawing:</p> <table><tr><th>Type</th><th>Acceptable Q'ty</th></tr><tr><td>Bright Dot</td><td>$N \leq 2$</td></tr><tr><td>Two bright dots</td><td>$N \leq 0$</td></tr><tr><td>Dark Dot</td><td>$N \leq 4$</td></tr><tr><td>Two Dark dots</td><td>$N \leq 1$</td></tr><tr><td>Three Dark dots</td><td>$N \leq 0$</td></tr><tr><td>Total(Bright+Dark dot)</td><td>$N \leq 4$</td></tr></table> <p>*Densely spaced: No more than two spots within 10mm.</p>	Type	Acceptable Q'ty	Bright Dot	$N \leq 2$	Two bright dots	$N \leq 0$	Dark Dot	$N \leq 4$	Two Dark dots	$N \leq 1$	Three Dark dots	$N \leq 0$	Total(Bright+Dark dot)	$N \leq 4$		2.5
Type	Acceptable Q'ty																	
Bright Dot	$N \leq 2$																	
Two bright dots	$N \leq 0$																	
Dark Dot	$N \leq 4$																	
Two Dark dots	$N \leq 1$																	
Three Dark dots	$N \leq 0$																	
Total(Bright+Dark dot)	$N \leq 4$																	
03	LCD , Touch Panel and Backlight Black a nd white spots/lin es contamination IR Hole (Foreign Material)	<p>3.1 Round type: As following drawing.</p> <table><tr><th>D(mm)</th><th>Acceptable numbers</th></tr><tr><td>$D \leq 0.20$</td><td>Accept no dense</td></tr><tr><td>$0.20 < D \leq 0.50$</td><td>3</td></tr><tr><td>$0.50 < D$</td><td>0</td></tr></table>  <p>$D = (x+y) / 2$</p> <p>3 1 1 Not visible through 5% ND filter 3.1.2 Product's front side checked according to this specification, backside ignored, but light leakage is not allowed. 3.1.3 Printing ink peel off is not allowed. 3.1.4 This is acceptable when surface dirt can be removed by wiping. 3.1.5 Densely spaced: No more than two spots within 5mm.</p>	D(mm)	Acceptable numbers	$D \leq 0.20$	Accept no dense	$0.20 < D \leq 0.50$	3	$0.50 < D$	0		2.5						
D(mm)	Acceptable numbers																	
$D \leq 0.20$	Accept no dense																	
$0.20 < D \leq 0.50$	3																	
$0.50 < D$	0																	

NO	Item	Specification	Unit : mm	AQL									
03	LCD , Touch Panel and Backlight Black and white spots/lines contamination IR Hole (Foreign Material)	3.2 Tiny bright dot、 Dense tiny highlights: Definition of Tiny bright dot: $\Phi < 0.20\text{mm}$; Ignore, clustered is not allowed($N \leq 5, D \leq 5$)		2.5									
		*Not visible through 5% ND filter											
		3.3 Line type: As following drawing.											
		<table><tr><th>Width (mm)</th><th>Length (mm)</th><th>Acceptable numbers</th></tr><tr><td>$W \leq 0.05$</td><td>---</td><td>Accept no dense</td></tr><tr><td>$0.05W \leq 0.15$</td><td>$L \leq 5$</td><td>3</td></tr><tr><td>$W > 0.15$</td><td>---</td><td>NG</td></tr></table> 	Width (mm)	Length (mm)	Acceptable numbers	$W \leq 0.05$	---	Accept no dense	$0.05W \leq 0.15$	$L \leq 5$	3	$W > 0.15$	---
Width (mm)	Length (mm)	Acceptable numbers											
$W \leq 0.05$	---	Accept no dense											
$0.05W \leq 0.15$	$L \leq 5$	3											
$W > 0.15$	---	NG											
		The reverse side scratches, not affect to the electronic circuit, cannot find the scratches from the front side is acceptable											
		* Densely spaced: No more than two spots within 5mm.											
04	Bubbles	<table><tr><th>D(mm)</th><th>Acceptable numbers</th></tr><tr><td>$D \leq 0.25$</td><td>Accept no dense</td></tr><tr><td>$0.25 < D \leq 1.50$</td><td>3</td></tr><tr><td>$D > 1.50$</td><td>NG</td></tr></table> 	D(mm)	Acceptable numbers	$D \leq 0.25$	Accept no dense	$0.25 < D \leq 1.50$	3	$D > 1.50$	NG		2.5	
		D(mm)	Acceptable numbers										
		$D \leq 0.25$	Accept no dense										
		$0.25 < D \leq 1.50$	3										
$D > 1.50$	NG												
<table><tr><th></th><th>Bubble size</th><th>Area</th></tr><tr><td>Cover Lens</td><td>The unconnected linear bubbles in the non- viewing area are ignored.</td><td>Out of VA</td></tr><tr><td>Transpa rent Cover</td><td>The unconnected linear bubbles in the no n- viewing area are ignored.</td><td>Out of VA</td></tr></table>		Bubble size	Area	Cover Lens	The unconnected linear bubbles in the non- viewing area are ignored.	Out of VA	Transpa rent Cover	The unconnected linear bubbles in the no n- viewing area are ignored.	Out of VA				
	Bubble size	Area											
Cover Lens	The unconnected linear bubbles in the non- viewing area are ignored.	Out of VA											
Transpa rent Cover	The unconnected linear bubbles in the no n- viewing area are ignored.	Out of VA											
4.1 Densely spaced: No more than two spots within 5mm.													
4.2 Outside of the V.A. is disregard.													
4.3 Air bubbles between the rubber and the debonding of paper: According to $\Phi \leq 20\text{mm}$, allowing five, but between adjacent bubbles over $> 10\text{mm}$.													
05	Mura	Not visible through 5% ND filter.		2.5									
		 <p>*ND card is 2~3cm from the panel, human eye is $30 \pm 5\text{cm}$ from the panel; 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>											

NO	Item	Specification	Unit : mm	AQL				
06	Scratches	Follow NO.3 -3 Line Type.		2.5				
07	Chipped glass	<div>Edge breakage can' t affect visual effection (edge breakage can' t cause damage to circuit); over lens have no visual damage</div> <table><tr><td>conditions</td><td>Acceptable numbers</td></tr><tr><td>$X\leqslant3.0\text{mm},Y\leqslant2\text{mm},Z\leqslant T$</td><td>2</td></tr></table> <div></div>	conditions	Acceptable numbers	$X\leqslant3.0\text{mm},Y\leqslant2\text{mm},Z\leqslant T$	2		2.5
conditions	Acceptable numbers							
$X\leqslant3.0\text{mm},Y\leqslant2\text{mm},Z\leqslant T$	2							
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, acceptalbe limit of grade 2.		2.5 2.5 2.5 2.5 0.65 0.65 2.5				

NO	Item	Specification	Unit : mm	AQL								
12	FPC	Affect function rejection, do not affect function acceptance.		2.5								
13	Soldering	14.1 No cold solder joints, missing solder connections, oxidation or icicle. 14.2 No short circuits in components on PCB or FPC.		2.5 0.65								
14	V/A printed edges sawtooth inspected according to this standard LOGO's sawtooth	<div> <div>Some contentious defect judged according to samples.</div> <table> <tr> <th>Product type</th> <th>Conditions</th> </tr> <tr> <td>Same size</td> <td>1、 width below 5mm (included) ignored, above 5mm NG 2、 Length not accounted</td> </tr> </table> </div> 	Product type	Conditions	Same size	1、 width below 5mm (included) ignored, above 5mm NG 2、 Length not accounted		2.5				
Product type	Conditions											
Same size	1、 width below 5mm (included) ignored, above 5mm NG 2、 Length not accounted											
15	Fish eye、 dent and bubble on film	<table> <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>$0.2 < D \leq 0.70$</td> <td>3</td> </tr> <tr> <td>$0.70 < D$</td> <td>0</td> </tr> </table> <div>   </div>	SIZE(mm)	Acceptable Q'ty	$\Phi \leq 0.2$	Accept no dense	$0.2 < D \leq 0.70$	3	$0.70 < D$	0		2.5
SIZE(mm)	Acceptable Q'ty											
$\Phi \leq 0.2$	Accept no dense											
$0.2 < D \leq 0.70$	3											
$0.70 < D$	0											
16	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								
17	Touch Panel Linearity	Less than 2.5% is acceptable.		2.5								
18	LCD Ripple	Touch the touch panel, cannot see the LCD ripple.		2.5								
19	General appearance	19.1 Product packaging must the same as specified on packaging specification sheet. 19.2 Product dimension and structure must conform to product Specification sheet.		0.65 0.65								
20	Glue overflow/Frame	Glue overflow exceed 0.2mm to the black frame is not allowed. 		2.5								

13. Handling Precaution:

13.1 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 3months from YEEBO production.
5. 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 CTP which is found defective electrically or visually when inspected in accordance with YB GENERAL CTP INSPECTION STANDARD.

13.2. Precautions in Use of CTP Module

13.2-1. Handling of CTP Module

13.2-1-1 Please operate the capacitive touch panel by touch the panel surface with finger or electric pen

13.2-1-2 Store the products at the temperature and humidity mentioned in the specification in a good package do not expose the products under direct sunlight.

13.2-1-3 Do not hit the capacitive touch panel in strong force , or drop it down, it is made of glass and friable.

13.2-1-4 Put on finger coats , gloves or mask to protect the products from fingerprint of stain. Do not upload/unload the touch panel by holding the FPC cable. Do not bend the FPC cable often or pull it hard when installing, as FPC cable is soft and connected to touch panel body.

13.2-1-5 Pay attention to the prevention from high voltage and static electricity.

13.2-2 Storage

13.2-2-1 Store in ambient temperature of $25 \pm 5^{\circ}\text{C}$, and relative humidity of $50 \pm 10\% \text{RH}$. Do not expose to sunlight or fluorescent light.

13.2-2-2 Storage in a clean environment, free from dust, active gas, and solvent.

13.2-2-3 Store in anti-static electricity container.

13.2-2-4 Store without any physical load.

13.2-2-5 Appearance, 3months; Function, 1year; within the validity, failed CTP can be replaced 1 to 1

13.3 Guarantee

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