

# YB-TG1280800S10A-C-A0

10,1" | 1280\*800 pixels | 420cd/m<sup>2</sup> | CTP



Symbolbild

**PRODUCTCARD**

## IHR VORTEIL - UNSERE STÄRKEN



- Asiatischer Premium Hersteller (seit 1988) unter Berücksichtigung von ISO 9001, ISO 14001, IATF16949 und AEO Certificate.
- Qualitätssystem IECQ QC 080000 und ANSI/ESD S20.0.-2021
- **Individualisierung** nach Kundenwunsch (Custom Size, Custom Print, Curved, Edge-Less, Edge-Round, etc.), bzw. Anpassung von Formfaktor, Konnektivität und Leistung möglich.
- **TFT** (Thin-Film Transistor-Display) und **CTP** (Capacitive Touch Panel)  
**LCM** (Liquid Crystal Modul)  
**LCD** (Liquid Crystal Display)
- Industrie und Automotiv - Varianten
- Lange Produktverfügbarkeit
- **Standard** TFT + CTP Displays in den Größen von 1,33“ bis 15,6“.
- Kundenspezifisch ab 1,33“ bis 15,6“
- Kurze Lieferkette für Standard Displays - prompt verfügbar mittels Lager innerhalb Europas.
- Kundenreferenzen: ABB, Bayer & Bayer, brother, DeLonghi, Fisher&Paykei, Honeywell, HP, Philips, LG, Siemens, T-Mobile, etc..
- Design-In, Vertrieb und Abnahme durch das Ingenieurbüro **GLASER Engineering**

# SPECIFICATION FOR CTP MODULE

MODULE NO: YB-TG1280800S10A-C-A0

**Doc.Version:00**

Customer Approval:

<input type="checkbox"/> Accept	<input type="checkbox"/> Reject
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YEEBO	NAME	SIGNATURE	DATE
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Check	Mechanical Engineer	李凯	2022-09-09
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Approval		孙亚南	2022-09-13

APPROVAL FOR SPECIFICATIONS ONLY

APPROVAL FOR SPECIFICATIONS AND SAMPLE

WIMRD005-02-D

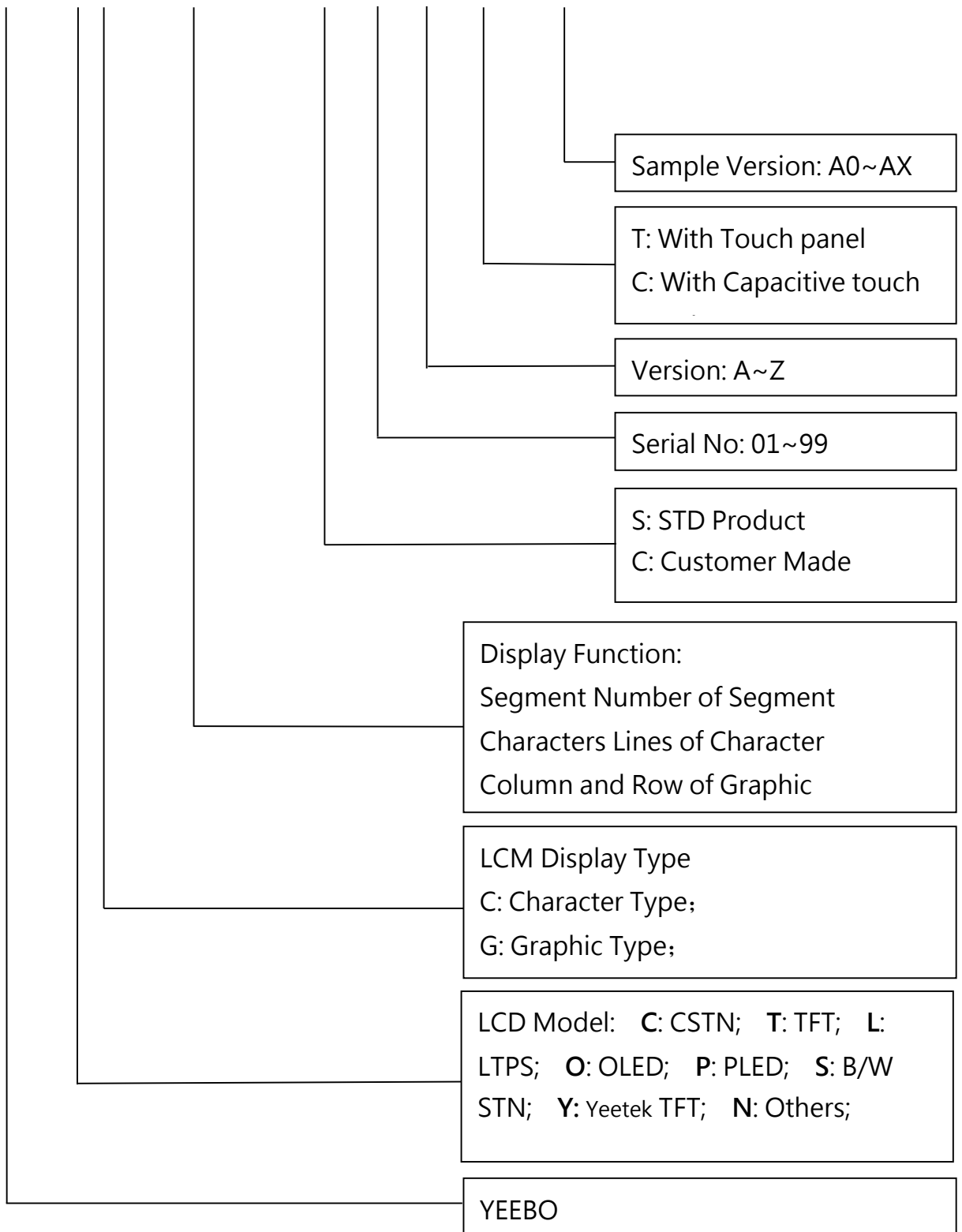


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**3. Module Numbering System:**

**YB- TG 1280800 S 10 A -C – A0**



#### **4. General Specification:**

ITEM	CONTENTS
Module Size (Without Component)	241.96(W) * 175(H) * 8.95(T) mm
Display Size(Diagonal)	10.1inch
Display Format	1280(RGB)x800 Pixels
Pixel Pitch	0.1695 (W) * 0.1695 (H) mm
LCD Type	Transmissive /Normally Black
Active Area	216.66 (W) * 135.60(H) mm
View direction	Free
CTP IC	EXC80W46
TFT/CTP Interface	I2C
Weight(g)	TBD
Fireware	TBD
Test Configuration	TBD





## 6. Electrical Characteristics

### 6-1 Absolute Maximum Ratings

#### 6-1-1 TFT Absolute Maximum Ratings (Ta=25°C VSS=0V)

Item	Symbol	Min.	Type	Max.	Unit	Remark
Supply Voltage	VDD	-0.3	-	+3.6	Volt	Note1
Operating Temperature	Topr	-20	-	+70	°C	-
Storage Temperature	Tstg	-30	-	+80	°C	-

Note :

- (1) Maximum Wet-Bulb temperature should be 39 degree C and no condensation.
- (2) When you apply the LCD module for OA system. Please make sure to keep the temperature of LCD module is less than 70°C
- (3) Storage / Operating temperature

#### 6-1-2 TP Absolute Maximum Ratings

(Ta=25°C VSS=0V)

Item	Symbol	Min.	Max.	Unit	Remark
Digital Supply Voltage	VDD	-0.3	4.0	V	
VIN Voltage	VLED	-0.3	50	V	
Operating Temperature	TOP	-30	80	°C	
Storage Temperature	TST	-30	80	°C	

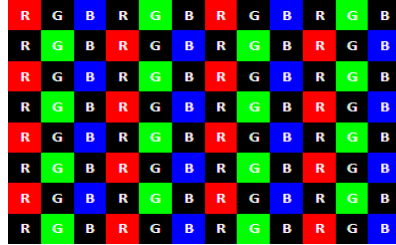
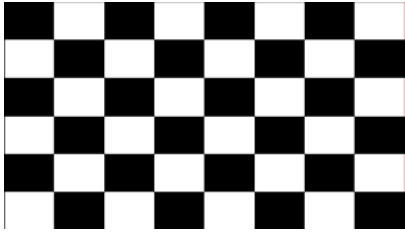
Note1: Absolute maximum rating is the limit value beyond which the IC may be broken. They do not assure operations.

## 6-2 Operating Conditions

### 6-2-1 TFT Operating Conditions

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply voltage	VDD	-	3.0	3.3	3.6	Volt
Input Voltage	V <sub>IH</sub>	-	0.7 IOV <sub>CC</sub>	-	IOV <sub>CC</sub>	V
	V <sub>IL</sub>	-	VSS	-	0.3 IOV <sub>CC</sub>	V
Output Voltage	V <sub>OH</sub>	-	0.8 IOV <sub>CC</sub>		IOV <sub>CC</sub>	
	V <sub>OL</sub>	-	VSS		0.2 IOV <sub>CC</sub>	
Power Supply Current for LCM	I <sub>DD</sub>	VDD=3.3V	-	127	343	mA

Notes : 1. The supply voltage is measured and specified at the interface connector of LCM.  
 The current draw and power consumption specified is for VDD=3.3V, Frame rate  $f_v=60\text{Hz}$  and Clock frequency = 72.4MHz. Test Pattern of power supply current  
 a)Typ : Mosaic 8 x 6 Pattern(L0/L255)                      b) Max : skip subPixel(L255)



### 6-2-2 DC Characteristics(CTP)

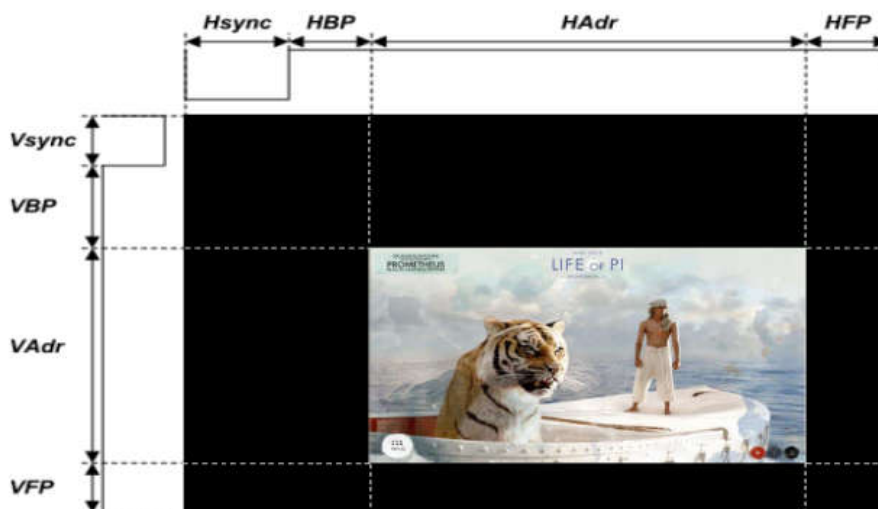
Symbol	Parameter	Condition	Min	TYP	Max	Unit
DVDD	Digital Power	-	3.0	3.3	3.6	V
AVDD	Analog Power	-	3.0	3.3	3.6	V
Crystal Clock	Crystal Clock	-	-	12	-	MHz
VIH	Input high level voltage	-	0.8VDD	-	-	V
VIL	Input Low level	-	-	-	0.4	V
VOH	Output high voltage	I = 2mA	VDD-0.4	-	-	V
VOL	Output low voltage	I = 2mA	-	-	0.4	V
VDDH	High Voltage Power	-	-	-	26	V
DVDD15	1.5V Power	-	1.4	1.5	1.7	V

Symbol	Parameter	Min	Max	Unit
VDD-GND	Maximum Power Supply Voltage	-0.3	3.6	V
Vin	Input I/O Pin Voltage	GND-0.3	4	V
IVDD	Total current at power	-	200	mA
IGND	Total current at Gnd	-	200	mA
Vesd	Electrostatics Discharge Voltage(HBM) <sup>(1)</sup>	2000	-	V
DVDD15	Maximum 1.5V Power	-	1.8	V

### 6-3 Timing Characteristics

#### 6.3.1 LVDS Timing Parameter

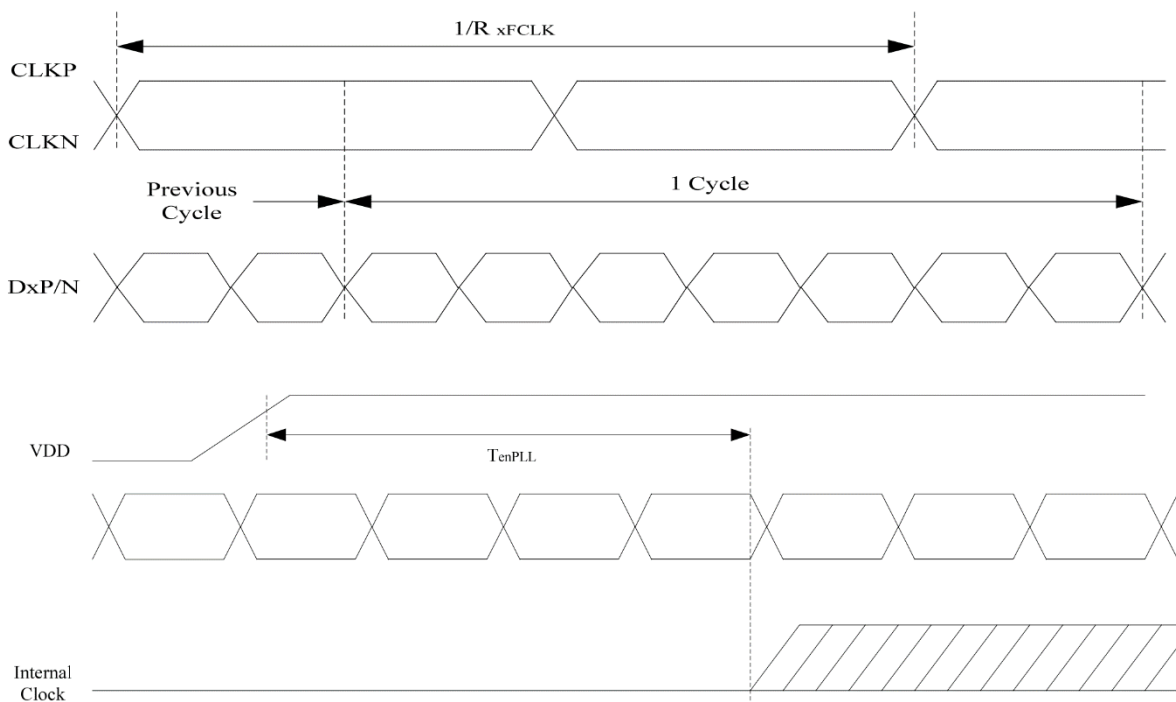
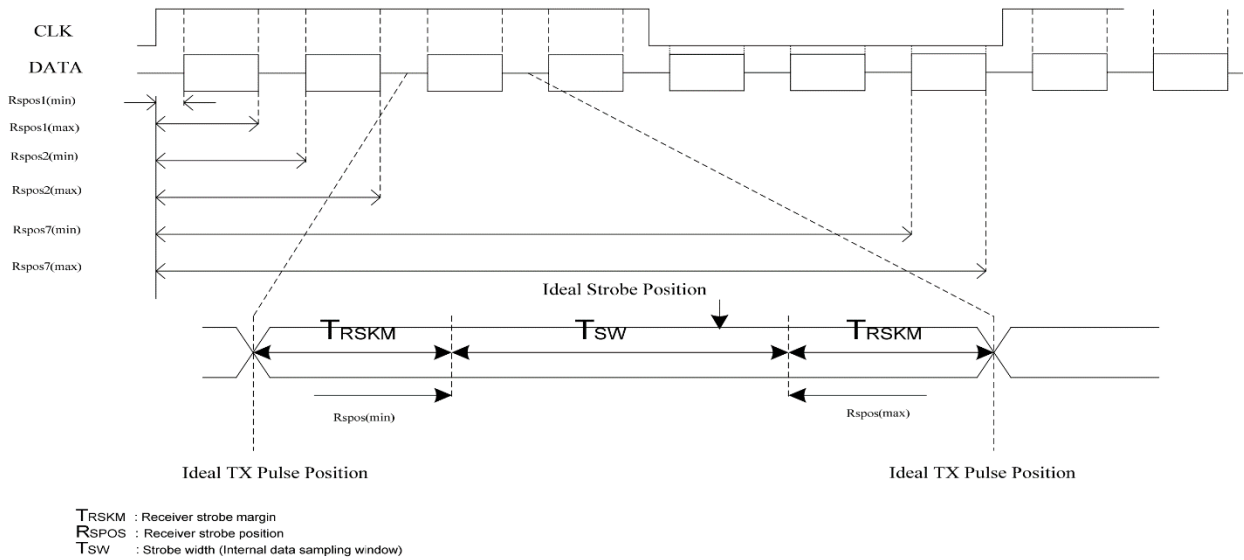
Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
DCLK Frequency	Fdclk	66.3	72.4	78.9	MHz
Horizontal display area	Thd	1280			pixel
HSYNC period time	Th	1380	1440	1500	pixel
HSYNC blanking	thbp+ thfp	100	160	220	pixel
Vertical display area	Tvd	800			H
Frequency	fV	55	60	65	Hz
VSYNC period time	Tv	824	838	872	H
VSYNC blanking	Tvbp+ Tvfp	24	38	72	H



### 6.3.2 LVDS AC Timing Specification

Item	Symbol	Min	Typ	Max	Unit	Remark
Clock frequency	RxFCLK	30	60	74.5	MHz	Refer to input timing table for each display resolution
Input data skew margin	TRSKM	500	-	-	ps	VID  = 200mV RxVCM = 1.2V RxFCLK = 81MHz
Clock high time	TLVCH	-	$4/(7 * RxFCLK)$	-	ns	
Clock low time	TLVCL	-	$3/(7 * RxFCLK)$	-	ns	

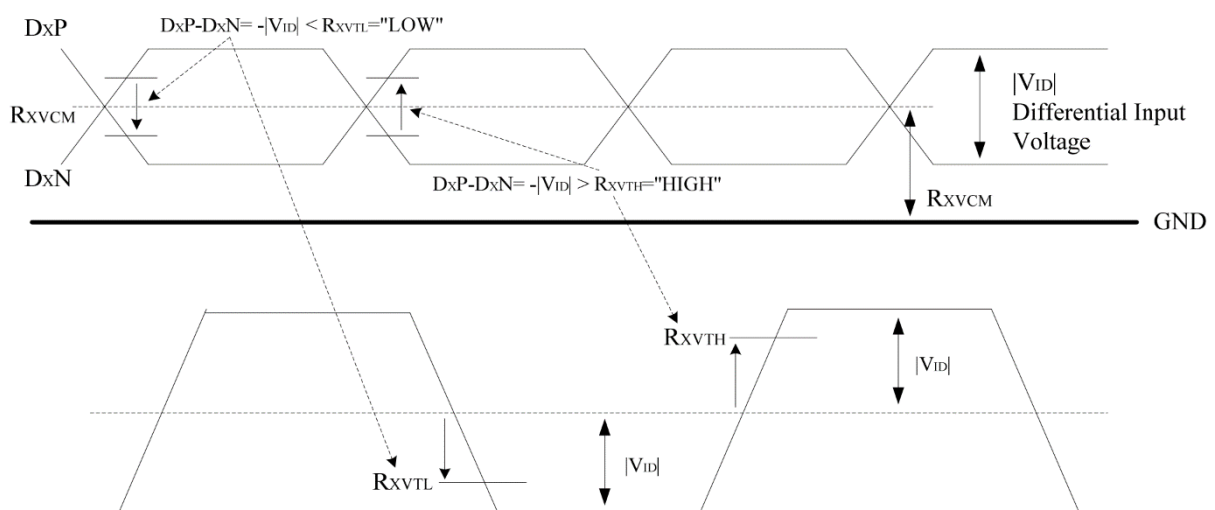
### 6.3.3 Interface Timing Parameter



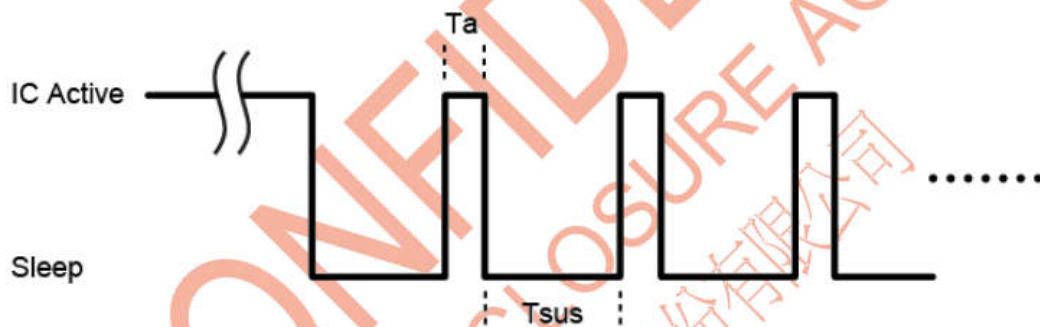
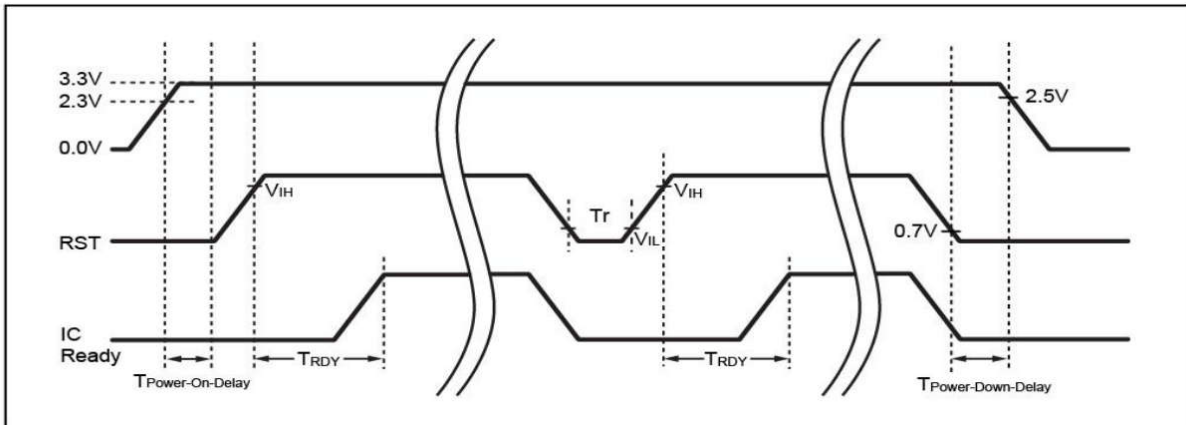
### 6.3.4 LVDS DC Timing Specification

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Differential input high threshold voltage	RXVTH	+0.1	0.2	0.3	V	RXVCM=1.2V
Differential input low threshold voltage	RXVTL	-0.3	-0.2	-0.1	V	
Input voltage range (singled-end)	RXVIN	0.7	-	1.7	V	
Differential input common mode voltage	RXVCM	1	1.2	1.4	V	VID =0.2
Differential input impedance	ZID	80	100	125	ohm	
Differential input voltage	VID	0.2	-	0.6	V	
Differential input leakage current	ILCLVDS	-10	-	+10	uA	
LVDS Digital Operating Current	IVDDMIP I	-	15	20	mA	FDCLK=80MHz, VDD=3.3V, Input pattern: 55h->Aah->55h->Aah
LVDS Digital Stand-by Current	ISTMIPI	-	-	250	uA	Clock & all Functions are stopped

Single-end Signals



### 6-3-1 AC Characteristics of the SDA and SCL on I2C interface



Symbol	Parameter	Condition	Min	TYP	Max	Unit
$T_r$	Host pull low period	-	1	-	-	ms
$T_{RDY}$	IC ready to communication	-	-	65	-	ms
$T_a$	IC active period	-	-	5	-	ms
$T_{sus}$	IC suspend period	-	-	10	-	ms
$T_{Power-On-Delay}$	Power-on delay	-	100	-	-	us
$T_{Power-Down-Delay}$	Power-down delay	-	0	-	-	ms
$V_{IL}$	RST input low Voltage	-	-	-	0.4	V
$V_{IH}$	RST input high Voltage	-	0.8VDD	-	-	V

NOTE :

If host needs to control RST pin or connect any GPIO pins, please make sure Host's GPIO is configured to open-drain mode and pull-up(3.3V) resistor should be at touch IC side.

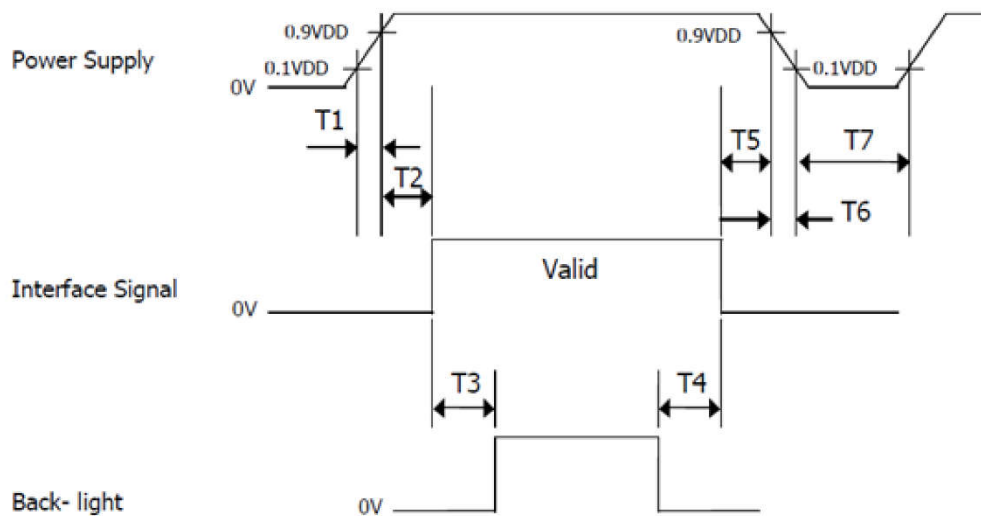
NOTE :

If host needs to reset EXC80W46, drive low voltage, after 'Tr' time, please pull high again.

NOTE :

Incorrect power sequence may cause IC damage.

### 6-4 Power Sequence



< Table8. Sequence Table >

Parameter	Values			Units
	Min	Typ	Max	
T1	0	-	10	ms
T2	0	-	50	ms
T3	200	-	-	ms
T4	500	-	-	ms
T5	0	-	50	ms
T6	0	-	10	ms
T7	500	-	-	ms

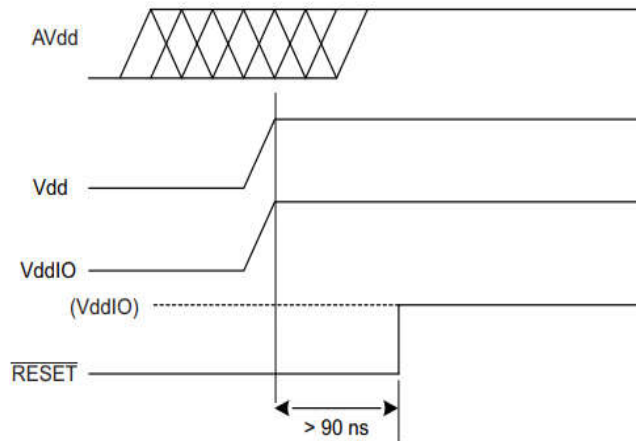
## 6-4 TP I<sup>2</sup>C interface

### Power-up / Reset Requirements

There is an internal Power-on Reset (POR) in the device.

If an external reset is to be used the device must be held in  $\overline{\text{RESET}}$  (active low) while the digital (Vdd) analog (AVdd) and I/O (VddIO) power supplies are powering up. The supplies must have reached their nominal values before the  $\overline{\text{RESET}}$  signal is deasserted (that is, goes high). This is shown in Figure 6-1. See Section 13.2 on page 53 for nominal values for Vdd, VddIO, and AVdd.

Figure 6-1. Power Sequencing on the MXT1066T2



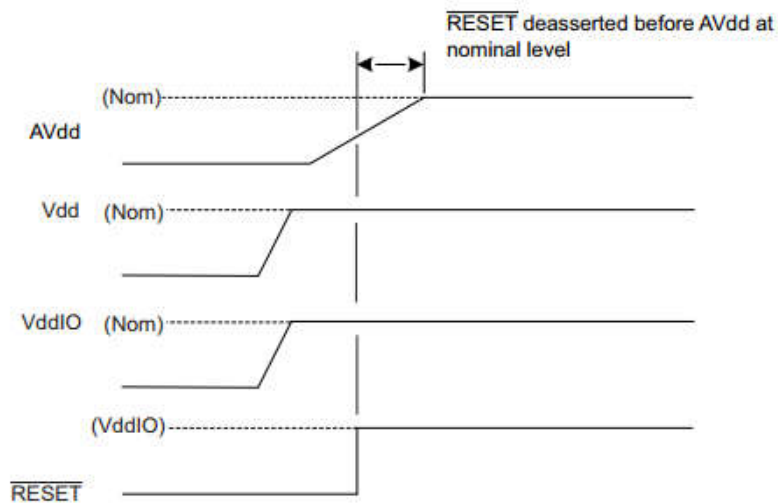
Note: When using external  $\overline{\text{RESET}}$  at power-up, VddIO must not be enabled after Vdd

After power-up, the device typically takes 91 ms before it is ready to start communications.

If the  $\overline{\text{RESET}}$  line is released before the AVdd supply has reached its nominal voltage (see Figure 6-2 on page 30), then some additional operations need to be carried out by the host. There are two options open to the host controller:

- Start the part in deep sleep mode and then send the command sequence to set the cycle time to wake the part and allow it to run normally. Note that in this case a calibration command is also needed.
- Send a reset command.

Figure 6-2. Power Sequencing on the MXT1066T2 – Late rise on AVdd





The  $\overline{\text{RESET}}$  pin can be used to reset the device whenever necessary. The  $\overline{\text{RESET}}$  pin must be asserted low for at least 90 ns to cause a reset. After releasing the  $\overline{\text{RESET}}$  pin the device typically takes 85 ms before it is ready to start communications. It is recommended to connect the  $\overline{\text{RESET}}$  pin to a host controller to allow it to initiate a full hardware reset without requiring a power-down.

Make sure that any lines connected to the device are below or equal to Vdd during power-up. For example, if  $\overline{\text{RESET}}$  is supplied from a different power domain to the VddIO pin, make sure that it is held low when Vdd is off. If this is not done, the  $\overline{\text{RESET}}$  signal could parasitically couple power via the  $\overline{\text{RESET}}$  pin into the Vdd supply.

Note that the voltage level on the  $\overline{\text{RESET}}$  pin of the device must never exceed VddIO (digital supply voltage).

A software reset command can be used to reset the chip (refer to the Command Processor T6 object in the *mXT1066T2 1.5 Protocol Guide*). A software reset takes typically 106 ms. After the chip has finished it asserts the  $\overline{\text{CHG}}$  line to signal to the host that a message is available. The reset flag is set in the Message Processor object to indicate to the host that it has just completed a reset cycle. This bit can be used by the host to detect any unexpected brownout events. This allows the host to take any necessary corrective actions, such as reconfiguration.

A checksum check is performed on the configuration settings held in the nonvolatile memory. If the checksum does not match a stored copy of the last checksum, then this indicates that the settings have become corrupted. This is signaled to the host by setting the configuration error bit in the message data for the Command Processor T6 object (refer to the *mXT1066T2 1.5 Protocol Guide* for more information).

Note that the  $\overline{\text{CHG}}$  line is briefly set as an input during power-up or reset. It is therefore particularly important that the line should be allowed to float high via the  $\overline{\text{CHG}}$  line pull-up resistor during this period. It should not be driven by the host (see [Table 13.7.3 on page 62](#)).

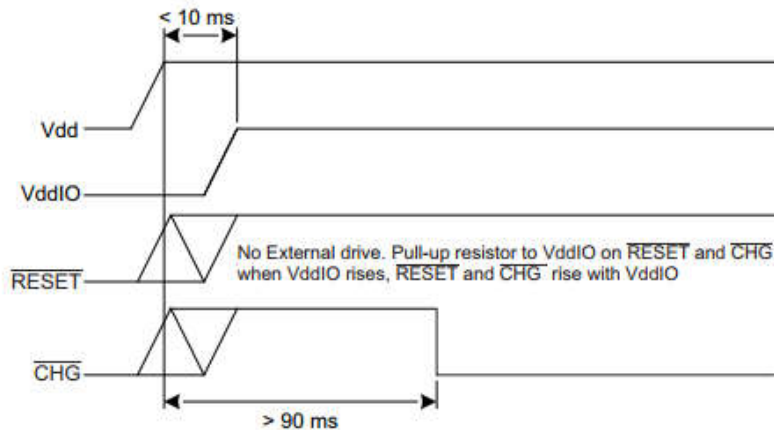
At power-on, the device performs a self-test routine to check for shorts that might cause damage to the device. Refer to the Self Test T25 object in the *mXT1066T2 1.5 Protocol Guide* for more details about this process.

### Power-up and Reset Sequence – VddIO Enabled after Vdd

The Power-up sequence that can be used in applications where VddIO must be powered up after Vdd, is shown in [Figure 6-3](#).

In this case the communication interface to the maXTouch device is not driven by the host system. The  $\overline{\text{RESET}}$  and  $\overline{\text{CHG}}$  pins are connected to VddIO using suitable pull-up resistors. Vdd is powered up, followed by VddIO, no more than 10 ms after Vdd. Due to the pull-up resistors,  $\overline{\text{RESET}}$  and  $\overline{\text{CHG}}$  will rise with VddIO. The internal POR system ensures reliable boot up of the device and the  $\overline{\text{CHG}}$  line will go low approximately 91 ms after Vdd to notify the host that the device is ready to start communication.

Figure 6-3. Power-up Sequence



### Summary

The Power-up and reset requirements for the maXTouch devices are summarized in [Table 6-1](#).

Table 6-1. Power-up and Reset Requirements

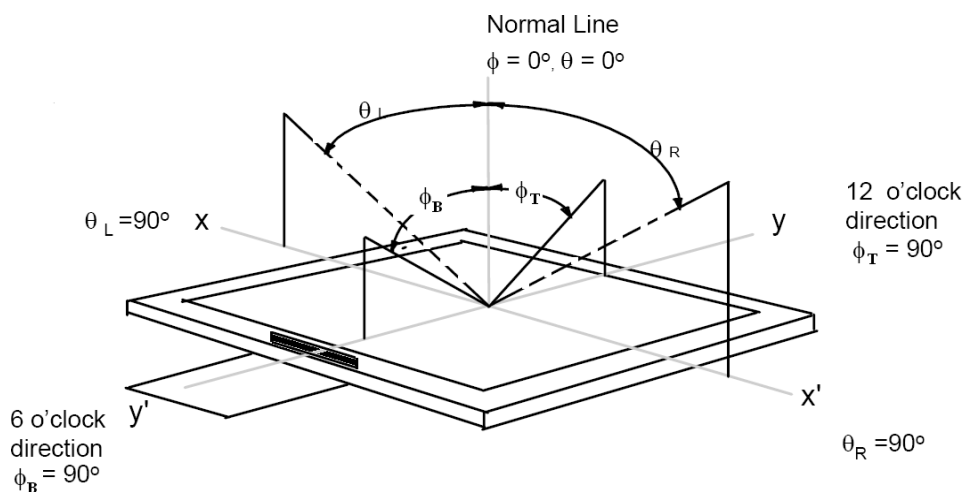
Condition	External $\overline{\text{RESET}}$	VddIO Delay (After Vdd)	AVdd Power-Up	Comments
1	Low at Power-up	0 ms	Before $\overline{\text{RESET}}$ is released	If AVdd bring-up is delayed then additional actions will be required by the host. See notes in <a href="#">Figure 6-1 on page 29</a>
2	Not driven	<10 ms	Before VddIO	

## 7. Optical Characteristics:

Item	Symbol	Condition	Min	Typ.	Max	Unit	Note
Viewing Angle	$\theta_L$	$Cr \geq 10$	70	80	--	deg	Note 1
	$\theta_R$		70	80	--		
	$\psi_T$		70	80	--		
	$\psi_B$		70	80	--		
Contrast Ratio	Cr	$\theta=0^\circ$	--	1000		-	Note 2
Response Time	$T_r+T_f$	FF=0°	--	30	35	ms	Note 3
Color Coordinate of CIE1931	Rx	$\theta=0^\circ$	0.588	0.618	0.648	-	Note 4 @C光
	Ry		0.299	0.329	0.359		
	Gx		0.253	0.283	0.313		
	Gy		0.512	0.542	0.572		
	Bx		0.109	0.139	0.169		
	By		0.134	0.164	0.194		
	Wx		0.269	0.299	0.329		
	Wy		0.309	0.339	0.369		
NTSC Ratio	NTSC	CIE1931	45	50	--	%	Note 5
Polarization Direction of Front Polarizer	PdF	-		0		deg	Absorption axis Note 7
Polarization Direction of Rear Polarizer	PdR			90		deg	

### Note 1: The definition of Viewing Angle

Refer to the graph below marked by  $\theta$  and  $\Phi$ .



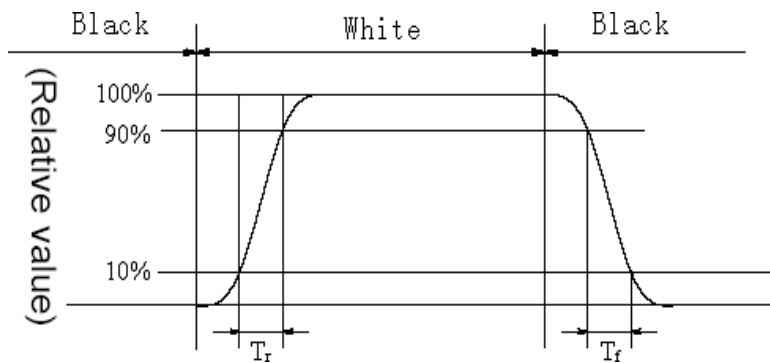
**Note2: The definition of Contrast Ratio**

$$\text{Contrast Ratio (CR)} = \frac{\text{Luminance When LCD is at "White" state}}{\text{Luminance When LCD is at "Black" state}}$$

(Contrast Ratio is measured in optimum common electrode voltage)

**Note3: Definition of Response time.** (Test LCD using RD80S or similar equipments):

The output sign also photo detector are measured when the input sign also are changed from “black” to “white”(Voltage falling time) and from “white” to “black” (Voltage rising time), respectively. The response time is defined as the time interval between the 10% and 90% of amplitudes. Refer to figures below.



**Note 4: Color Coordinates of CIE 1931**

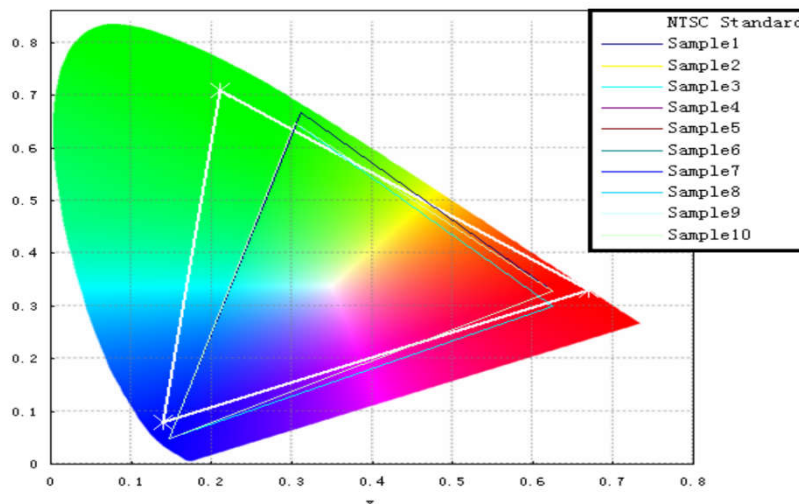
The test condition is at ILED=20mA and measured on the surface of LCD module at 25°C.

Measurement equipment: CS2000 or similar equipments

The Color Coordinate (CIE 1931) is the measurement of the center of the display shown in below figure.

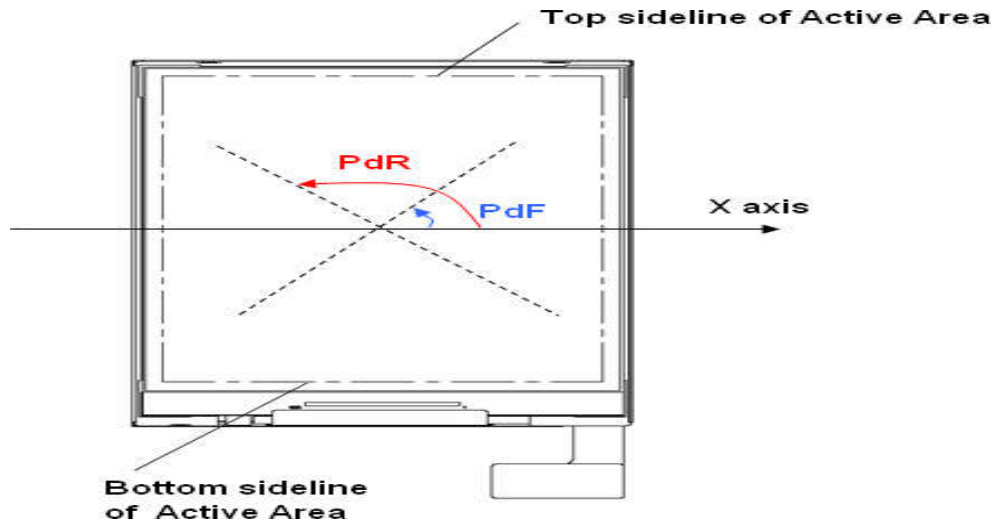
**Note 5: Definition of Color of CIE Coordinate and NTSC Ratio.**

$$S = \frac{\text{area of RGB triangle}}{\text{area of NTSC triangle}} \times 100\%$$



**Note 6: Polarization Direction Definition**

- Viewing direction is normal user viewing direction which is vertical to the display surface
- The polarizer which is closer to viewer is defined as Front Polarizer
- The polarizer which is on the rear side of viewer is defined as Rear Polarizer
- The X axis is defined as parallel line to top & bottom sidelines of the Active Area
- PdF which is marked in blue arrow is polarization degree of Front polarizer
- PdR which is marked in red arrow is polarization degree of Back polarizer
- The polarization degree parameter must be indicated in range of 0deg to 180deg according to above definition



## 8. Interface Pin Assignment:

### 8-1 TFT FPC Interface

Pin No.	Symbol	Description	I/O
1	NC	Non Connection	-
2	VDDIN	Power supply VDDIN=3.3V (Typ.)	P
3	VDDIN		P
4	VDDIN		P
5	NC	Non Connection	-
6	GND	GROUND	P
7	GND	GROUND	P
8	RIN0-	LVDS Negative data signal (-)	I
9	RIN0+	LVDS Positive data signal (+)	I
10	GND	GROUND	P
11	RIN1-	LVDS Negative data signal (-)	I
12	RIN1+	LVDS Positive data signal (+)	I
13	GND	GROUND	P
14	RIN2-	LVDS Negative data signal (-)	I
15	RIN2+	LVDS Positive data signal (+)	I
16	GND	GROUND	P
17	LVDS_CLK-	LVDS Negative CLK signal (-)	I
18	LVDS_CLK+	LVDS Positive CLK signal (+)	I
19	GND	GROUND	P
20	RIN3-	LVDS Negative data signal (-)	I
21	RIN3+	LVDS Positive data signal (+)	I
22	GND	GROUND	P
23	NC	Non Connection	-
24	NC	Non Connection	-
25	GND	GROUND	P
26	SCL_S	Reserved for LCD manufacturer's use , not connection	-
27	SDA_S	Reserved for LCD manufacturer's use , not connection	-
28	GND	GROUND	P
29	NC	Non Connection	-
30	NC	Non Connection	-
31	GND	GROUND	P

32	GND	GROUND	P
33	GND		
34	NC	Non Connection	-
35	NC	Non Connection	
36	NC	Non Connection	-
37	NC	Non Connection	-
38	NC	Non Connection	P
39	NC		P
40	NC		P

### 8-2 TP FPC Intface

No.	Symbol	Function
1	GND	Ground
2	SDA(3.3V)	I2C Serial Data
3	SCL(3.3V)	I2C Serial Clock
4	INT	Interrupt signal/ Supports output open drain type
5	RST	Chip Enable
6	VDD(3.3V)	Power Voltage for digital circuit

## 9. 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	180	220	260	mA	-	
Supply Voltage	V	16	18	21	V	If=220mA	
Luminous Intensity for LCM+CTP	IV	300	425	550	cd/m <sup>2</sup>		2
Uniformity for LCM+CTP	-	70	-	-	%		3
Life Time	-	-	20000	-	Hr.		4
Color	White						

#### NOTE:

1. Backlight Only
2. Uniformity = Min/Max \* 100%
3. LED life time defined as follows: The final brightness is at 50% of original brightness

## 10. Standard Specification for Reliability:

### 10-1. Standard Specifications for Reliability of (LCD+CTP) Module

No	Item	Description
01	High temperature operation	The sample should be allowed to stand at 60°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 -10°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 70°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 -20°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 : -20°C for 30 minutes → normal temperature for 5 minutes → +70°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

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



### 10 - 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 10-1, 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.

### 10- 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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## **11. Specification of Quality Assurance:**

### 11-1. Purpose

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

### 11-2. 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

### 11-3. 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.

### 11-4. 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.

11-5. Standard of The Product Appearance Test

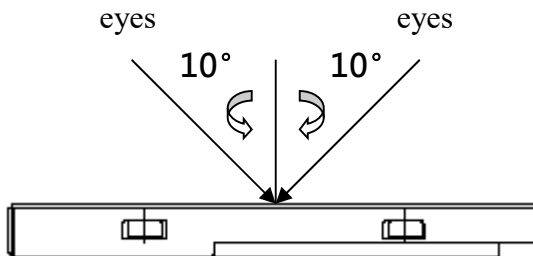
a. Manner of appearance test:

(i) The test must be under 20W × 2 or 40W fluorescent light, and the distance of view must be at 30±5cm.

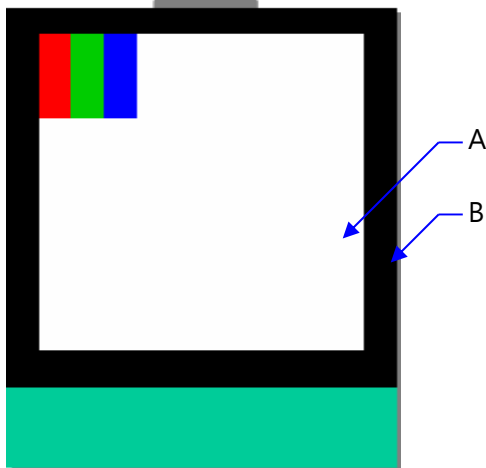
(ii) When test the model of transmissive product must add the reflective plate.

(iii) The test direction is base on around 10° of vertical line.

(iiii) Temperature: 25±5°C Humidity: 60±10%RH



(iv) Definition of area:



A. Area: Viewing area.

B. Area: Out of viewing area.

(Outside viewing area)

b. Basic principle:

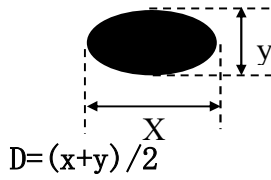
(i) It will accord to the AQL when the standard can not be described.

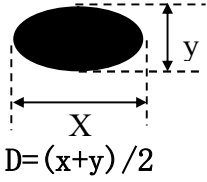
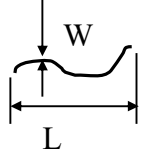
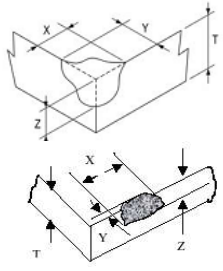
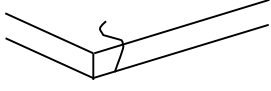
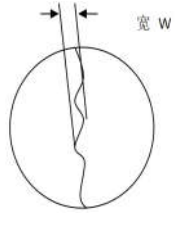
(ii) The sample of the lowest acceptable quality level must be discussed by both supplier and customer when any dispute happened.


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

c. Standard of inspection: (Unit: mm)

11-6. Inspection specification

Item	Specification	Unit : mm	AQL												
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. 1.11 Flicker		0.65												
explosion-proof film bubble/Concave and convex point/indentation / Contamination	<table border="1" style="margin-bottom: 10px;"> <thead> <tr> <th>D</th> <th>Acceptable numbers</th> </tr> </thead> <tbody> <tr> <td><math>\leq 0.3</math></td> <td>ignored (No more than five spots within 5mm G)</td> </tr> <tr> <td><math>0.3 \leq D \leq 0.5</math></td> <td>4</td> </tr> <tr> <td><math>0.5 &lt; D \leq 1.0</math></td> <td>2</td> </tr> <tr> <td><math>1.0 &lt; D \leq 1.5</math></td> <td>2</td> </tr> <tr> <td><math>D &gt; 1.5</math></td> <td>NG</td> </tr> </tbody> </table> <ol style="list-style-type: none"> <li>1、 Product's front side checked</li> <li>2、 according to this specification, back side ignored, but light leakage is not allowed.</li> <li>3、 Printing ink peel off is not allowed.</li> <li>4、 The particle will be ignored when it is removable by cleaning</li> </ol> <p>* Densely spaced: No more than two spots within 10mm</p>	D	Acceptable numbers	$\leq 0.3$	ignored (No more than five spots within 5mm G)	$0.3 \leq D \leq 0.5$	4	$0.5 < D \leq 1.0$	2	$1.0 < D \leq 1.5$	2	$D > 1.5$	NG	 <p style="text-align: center;"><math>D = (x+y) / 2</math></p>	2.5
D	Acceptable numbers														
$\leq 0.3$	ignored (No more than five spots within 5mm G)														
$0.3 \leq D \leq 0.5$	4														
$0.5 < D \leq 1.0$	2														
$1.0 < D \leq 1.5$	2														
$D > 1.5$	NG														

Black spots / White spots /Bright spots/ Color spots /polluted inside/ punctured	D		Acceptable numbers		2.5	
	$\leq 0.2$		ignored (No more than five spots within 5mm)			
	$0.2 < D \leq 0.4$		4			
	$0.4 < D \leq 0.8$		3			
	$D > 0.8$		NG			
<p>1.Product's front side checked according to this specification, back side ignored, but light leakage is not allowed.                  2.Printing ink peel off is not allowed. within 10mm                  3、 The particle will be ignored when it is removable by cleaning                  * Densely spaced: No more than two spots</p>						
Linear Object: Fiber, scurf, scratches and other linear defects (not affecting function)	W		L	Acceptable numbers		2.5
	$\leq 0.05$		$\leq 8$	ignored No more than five lines within 5mm)		
	$0.1 < W \leq 0.3$		$\leq 8$	2		
	$W > 0.3$			NG		
<p>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 lines within 10mm</p>						
Glass edge chipping、edge breakage	Edge breakage can't affect visual effect (edge breakage can't cause damage to circuit); over lens have no visual damage				2.5	
	Product type	conditions				Acceptable numbers
		$X \leq 3mm, Y \leq 2mm, Z \leq T$				5
Glass broken	Visual broken is NG, and there is no potential fault.					0.65
1. V/A printed edges sawtooth inspected according to this standard 2. LOGO's sawtooth	Some contentious defect judged according to samples				2.5	
	Product type	Conditions				
	Same size	1、 width below 0.2 inch (included) ignored, above 0.2 NG 2、 Length not accounted				

Specific dimension	In accordance with product outline drawing or specification (key dimension) or engineering sample.	2.5	
Glue overflow/Frame	1. Glue overflow exceed 0.2mm to the black frame is not allowed. 	2.5	
FPC	Bonding bubble/ Misalignment	FPC golden finger hot pressure's bubble or impurity diameter shall be below 1/2 of the pressed area, pressed deviation shall not exceed 1/2 of the silver line width, and 40X microscope cannot have obvious cracks.	0.65
	Folded mark (minor fault)	Linearity irreversibility folded mark and acute angle folded mark is NG.	2.5
	EMI FILM (minor fault)	Surface broken, scratched $\leq 0.3\text{mm}$ Surface broken below 5mm can be modified by print ink, after modified, the result shall be achieved to EMI	2.5

## **12. Handling Precaution:**

### **12.1 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.

### **12.2. Precautions in Use of CTP Module**

#### **12.2-1. Handling of CTP Module**

12.2-1-1 Please operate the capacitive touch panel by touch the panel surface with finger or electric pen

12.2-1-2 Store the products at the temperature and humidity mentioned in the specification in a good package do not expose the products under direct sunlight.

12.2-1-3 Do not hit the capacitive touch panel in strong force , or drop it down, it is made of glass and friable.

12.2-1-4 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.

12.2-1-5 Pay attention to the prevention from high voltage and static electricity.

#### **12.2-2 Storage**

12.2-2-1 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.

12.2-2-2 Storage in a clean environment, free from dust, active gas, and solvent.

12.2-2-3 Store in anti-static electricity container.

12.2-2-4 Store without any physical load.

12.2-2-5 Appearance,3months;Function,1year;within the validity, failed CTP can be replaced 1 to 1

### **12.3 Guarantee**

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

## ANSPRECHPARTNER



Für Fragen stehe ich Ihnen gerne persönlich zur Verfügung,

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