



Specification For Approval

- Preliminary specification
- Final specification

Title	AV101FHT-T10-28P0 (TLCM) (COG-PVLSZT034-03)
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Buyer	
Model	

Supplier	Cheng Du BOE Optoelectronics Technology CO., LTD
Model	AV101FHT-T10-28P0 (COG-PVLSZT034-03)

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DOCUMENT REVISION HISTORY

DOCUMENT REVISION FROM TO	DATE	DESCRIPTION	PREPARED BY	CHECKED BY
01	2018.11.01	首次发布	ZHU YANG NA	ROC CHEN
02	2019.04.25	更改 1.1mm CG,更新模组标签	Peng han	Deng Yong
03	2019.07.02	更改 6.5.3 VP, fclk	Feng nan	Deng Yong

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**Preliminary Specification
Of
LCD Module Type
Model No.: AV101FHT-T10-28P0
(COG-VLSZT034-03)**

Note: The characteristics and performance index listed in this preliminary specification are subjected to final verification and validation. It's aimed for sample build and evaluation only, not yet for mass production. The ultimate design performance in final specification may change.

1. General Description

- 10.1" (diagonal) FHD, 16:9, Landscape, Transmissive, Normally black, ADS , with mutual Capacitive touch panel
- Display resolution: 1920 x RGB x 1080
- Viewing direction: All directions
- Display up to 16.7M colours
- Dual LVDS interface
- Driver IC: Source HX8290-A06 /Gate HX8691-A
- TFT-LCD logic voltage (VDD): 3.3V (TYP.)
- White LED backlight
- Connection HRS"FH28-60S-0.5SH"
- On-Cell Solution
- Mutual Type Projected Capacitive Touch Panel (with Synaptics S7882 controller)
- TP Logic voltage (TP_VDD): 3.3V
- I2C interface for touch panel
- Chemical Strengthen Cover Glass with AGLRAF coating on Film
- Optically bonded touch panel to TFT

2. Mechanical Specifications

The mechanical detail is shown in Fig. 1 and summarized in Table 1 below.

Table 1: Module mechanical detail

Parameters		Specifications	Unit
Outline dimensions		244.85(W) x 159.25(H) x 7.14(D) (Exclude FPC, cables & component and mounting screws)	mm
Color TFT 1920 x RGB x 1080	Ink printing opening	224.488(W) x 126.712(H)	mm
	Active area	223.488(W) x 125.712(H)	mm
	Display format	1920 x RGB x 1080	-
	Color configuration	RGB vertical stripes	mm
	Dot pitch	0.1164 (W) x 0.1164(H)	mm
Projected capacitive Touch Panel	Cover Lens dimension	244.85(W) x 159.25(H) x 1.1(D)	mm
	Cover Lens material	Soda Lime Glass	-
	Viewing area	225.488 (W)x 127.712(H)	mm
	Black mask opening	224.488 (W)x 126.712(H)	mm
	Active area	225.488 (W)x 127.712 (H)	mm
AGLRAF Film	Film dimension	243.85(W) x 158.25(H) x 0.09(D)	Mm
	Haze	10	%
	Film surface reflectance	2.2	%
	Surface hardness	≥3 (JIS-K-5600 (500g))	H
Backlight		White LED	-
Weight		380±10%	gram

3. Touch Panel Characteristics

Table 2: Touch panel features

Item	Contents	Unit
Type	Mutual type projected capacitive touch panel	-
Interface	I2C (Up to 400kbits/sec)	-
Function	Provide (X, Y) coordinates and number of touch points	-
No. of touch	10 touch	-
Sensing area	Ø8 (Typ.) finger touch	mm
Resolution	1920 x 1080	-
Orientation	(0,0) in the upper left corner	
Input mode	Finger or capacitive pen	-

4. Interface Signals

4.1 TFT-LCD Panel and Backlight Driving

Recommended connector model: HRS: FH28-60S-0.5SH

Table 3: Connector Pin Assignments

Pin No.	Symbol	I/O	Description	Remarks
1	LED K1	P	Cathode1 of LED backlight.	
2	LED K2	P	Cathode2 of LED backlight.	
3	LED K3	P	Cathode3 of LED backlight.	
4	NC	-	Dummy Pin	
5	NC	C	Dummy Pin	
6	NC	C	Dummy Pin	
7	NC	-	Dummy Pin	
8	LED A+	P	Anode of LED backlight.	
9	LED A+	P	Anode of LED backlight.	
10	NC	-	Dummy Pin	
11	GND	P	Ground	
12	OD0N	I	Odd Data channel 0 -	
13	OD0P	I	Odd Data channel 0 +	
14	GND	P	Ground	
15	OD1N	I	Odd Data channel 1 -	
16	OD1P	I	Odd Data channel 1 +	
17	GND	P	Ground	
18	OCLKN	I	Odd Clock channel -	
19	OCLKP	I	Odd Clock channel +	
20	GND	P	Ground	
21	OD2N	I	Odd Data channel 2 -	
22	OD2P	I	Odd Data channel 2 +	
23	GND	P	Ground	
24	OD3N	I	Odd Data channel 3 -	

25	OD3P	I	Odd Data channel 3 +	
26	GND	P	Ground	
27	ED0P	I	Even Data channel 0 +	
28	ED0N	I	Even Data channel 0 -	
29	GND	P	Ground	
30	ED1N	I	Even Data channel 1 -	
31	ED1P	I	Even Data channel 1 +	
32	GND	P	Ground	
33	ECLKN	I	Even Clock channel -	
34	ECLKP	I	Even Clock channel +	
35	GND	P	Ground	
36	ED2N	I	Even Data channel 2 -	
37	ED2P	I	Even Data channel 2 +	
38	GND	P	Ground	
39	ED3N	I	Even Data channel 3 -	
40	ED3P	I	Even Data channel 3 +	
41	GND	P	Ground	
42	VDD	P	Power pin	3.3V typ.
43	VDD	P	Power pin	3.3V typ.
44	ID1(GND)	O	ID1 Output pin	
45	ID2(GND)	O	ID2 Output pin	
46	RESET	I	Reset Pin	L: reset H: Normal
47	STB	I	Standby Pin	L: Standby H: Normal
48	CS	I	SPI chip select pin	User set it to "1"
49	SCL	I	SPI Clock pin	User set it to "0"
50	SDA	I/O	SPI Data pin	User set it to "0"
51	TP_GND	P	GND for touch panel	
52	TP_VDDBUS	P	Voltage for touch panel	
53	TP_/ATTN	O	Interrupt pin	
54	TP_/XRESB	I	Reset pin for touch panel	
55	TP_SDA	I/O	I2C data pin	
56	TP_GND	P	GND for touch panel	
57	TP_SCL	I	I2C clock input pin	
58	ID3(GND)	O	ID3 Output pin	
59	TP_VDDH	P	Voltage for touch panel	
60	TP_GND	P	GND for touch panel	

Remarks: For I/O, "I" is Input, "O" is Output. "P" is for Power, and "C" is for passive

5. Absolute Maximum Ratings

The absolute maximum ratings are list on table as follows. When used out of the absolute maximum ratings, the LSI may be permanently damaged. Using the LSI within the following electrical characteristics limit is strongly recommended for normal operation. If these electrical characteristic conditions are exceeded during normal operation, the LSI will malfunction and cause poor reliability.

Table 4: Absolute Maximum Ratings & Environmental Conditions

Item	Symbol	Min.	Max.	Unit
Power Supply voltage	VDD3.3V	-0.3	+3.96	V
Single LED forward current	I _F	-	150	mA
Total LED forward current	I _F (Total)	-	450	mA
Relative Humidity (at 60°C,)	RH		90	%
Operating Temperature (Note 2, Note 3)	Topr	-30	+85	°C
Storage Temperature	Tstg	-40	+90	°C

Note 1: If the absolute maximum rating of even is one of the above parameters is exceeded even momentarily, the quality of the product may be degraded. Absolute maximum ratings, therefore, specify the values exceeding which the product may be physically damaged. Be sure to use the product within the range of the absolute maximum ratings.

Note 2: No optical performance guarantee under -30°C

Note 3: Panel surface temperature should not exceed 85°C.

Note 4: No condensation allowed under any condition.

Note 5: GND = 0V.

[Caution]

Do not display fixed pattern for prolonged hours because it may develop image sticking on the display.

6. Electrical Specifications

6.1 Block Diagram

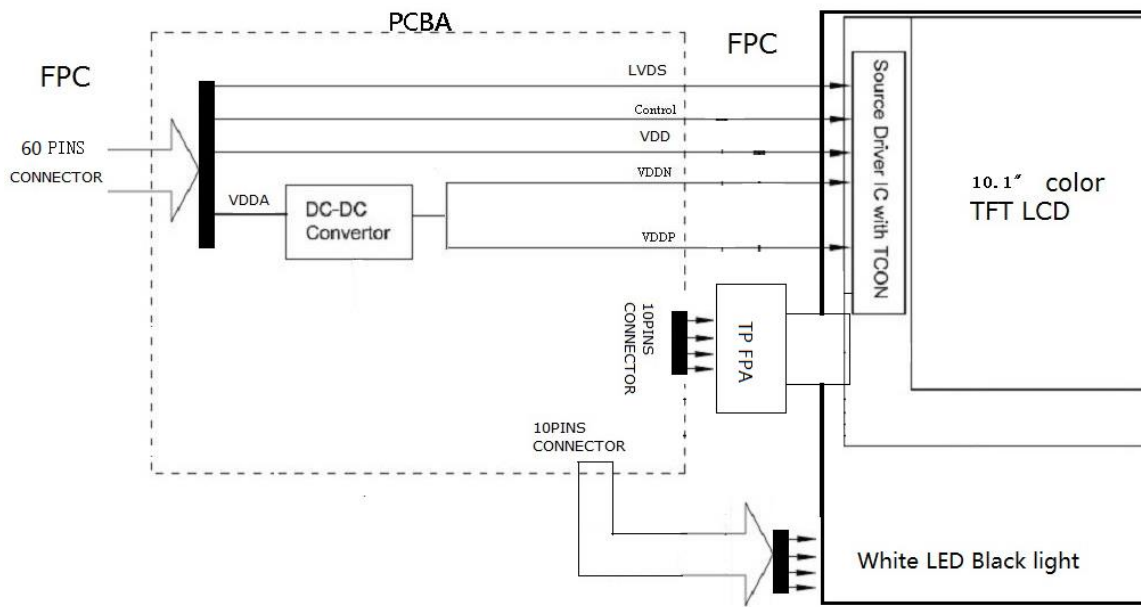


Figure 2: Block diagram

6.2 TFT LCD Module DC Characteristics

Table 5: DC characteristic

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	VCC	3.15	3.3	3.45	V
Power supply current	ICC(Note 2)	-	220	330	mA
Driver input high signal voltage (Note 3)	VIH	0.7*VCC	-	VCC	V
Driver input low signal voltage (Note 3)	VIL	GND		0.3*VCC	

Note 1: The supply voltage is measured and specified at the interface connector of LCM..

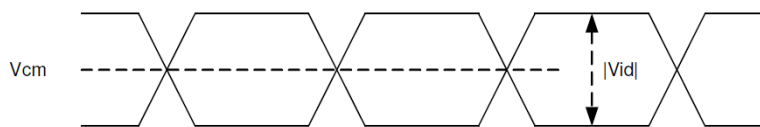
Note 2: column inversion, Frame rate =60Hz. Tested value is RMS value.

Note 3: For SDA, SCL, CS, STBYB, RESET signal.

Table 6: LVDS DC Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Differential input high Threshold voltage	R _{TH}	-	-	+0.1	V
Differential input low threshold voltage	R _{TL}	-0.1	-	-	V
Differential input common Mode voltage	R _{CM}	1	1.2	1.7- V _{ID} /2	V
LVDS input voltage	V _{INLV}	0.7		1.7	V
Differential input voltage	V _{ID}	0.1		0.6	V
Differential input leakage Current	R _{VXIZ}	-10	-	+10	uA

Single-ended:
 LVCLKP(R),
 LVCLKN(R),
 LVD[3:0]P(R),
 LVD[3:0]N(R)



Differential:
 LVCLKP(R)-LVCLKN(R),
 LVD[3:0]P(R)-
 LVD[3:0]N(R)

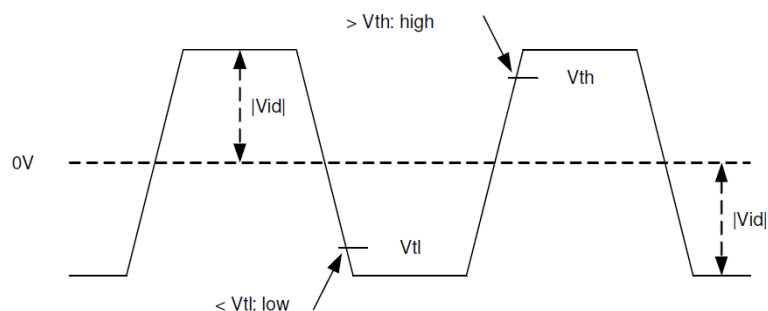


Figure 3: LVDS DC character

6.3 Typical Electrical Characteristics for Touch Panel

At Ta = 25°C, TP_VDD(TP_VDDH & TP_VDDBUS)=3.3V, TP_GND=0V.

Table 7: DC characteristics of touch panel

Parameter	Symbol	Min.	Typ.	Max.	Unit
Touch panel supply voltage	AVDD/DVDD	3.2	3.3	3.4	V
Touch panel supply current	TP_HIDD1	-	-	40	mA
Touch panel supply current	TP_BIDD2	-	-	2	mA

6.4 Recommended Driving Condition for LED Backlight

Table 8: DC characteristics of LED backlight

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Supply voltage of LED backlight	V _{LED}	Backlight current = 240 mA Number of LED = 30 pcs		30		V	Note 1
Supply current of LED backlight	I _{LED1/3}	Per LED string	-	80	-	mA	Note 2
Total Supply current of LED backlight	I _{LEDTotal}	I _{LED1} + I _{LED2} + I _{LED3}	-	240	-	mA	Note 2
Backlight Power Consumption	P _{LED}	-	-	7.2	-	W	Note 3
LED Life time	LIFE	Ta=25 °C, I _{LED} =80mA	30000			Hrs	Note 4

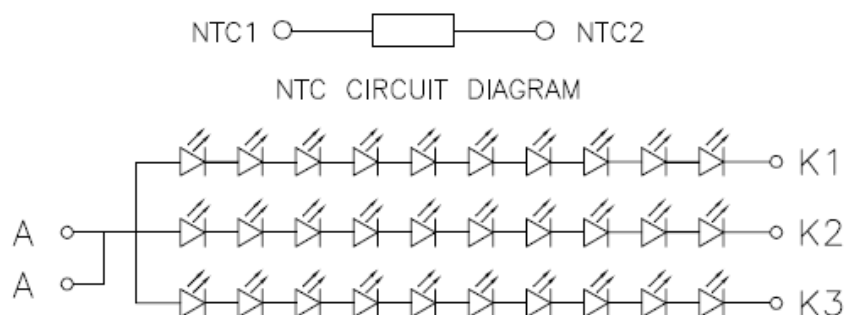
Note 1: Backlight Circuit Diagram

Note 2: The LED driving condition is defined for each LED module.

Total input current = 80 x 3= 240 mA

Note 3: Backlight power consumption is calculated by I_{LED} (Total) x V_{LED}

Note 4: The LED Life-time define as the estimated time to 50% of initial luminous



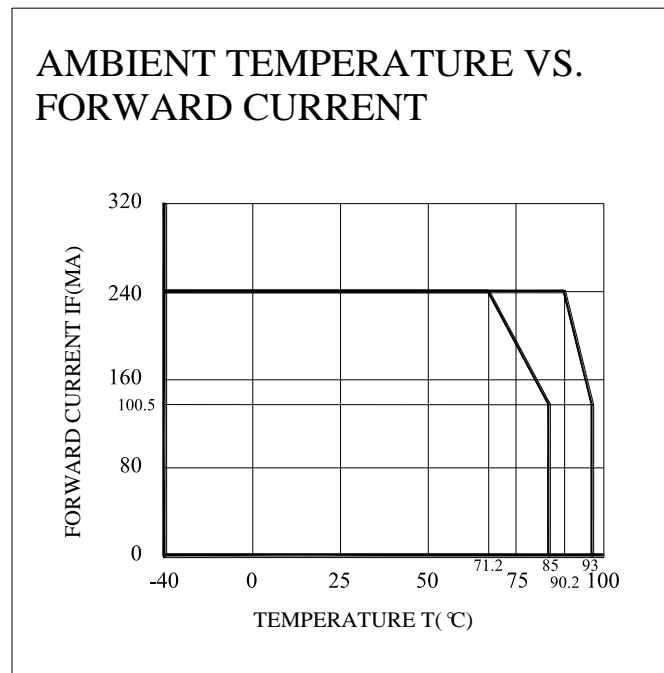


Figure 4. Recommended derating curve

6.5 Signal Specification

6.5.1 LVDS AC electrical characteristics

Table 9: AC characteristics of LVDS

Parameter	Symbol	Min.	Typ.	Max.	Unit
Clock frequency	FLVCYC	20	-	85	MHz
Clock period	TLVCYC	11.76	-	-	ns
1 data bit time	UI	-	1/7	-	TLVCYC
Clock high time	TLVCH	2.8	4	4.2	UI
Clock low time	TLVCL	2.8	3	4.2	UI
Position 1	TPOS1	-0.2	0	0.2	UI
Position 0	TPOS0	0.8	1	1.2	UI
Position 6	TPOS6	1.8	2	2.2	UI
Position 5	TPOS5	2.8	3	3.2	UI
Position 4	TPOS4	3.8	4	4.2	UI
Position 3	TPOS3	4.8	5	5.2	UI
Position 2	TPOS2	5.8	6	6.2	UI
Input eye width	TEYEW	0.6	-	-	UI
Input eye border	TEX	-	-	0.2	UI
LVDS wake up time	TENLVDS	-	-	150	us

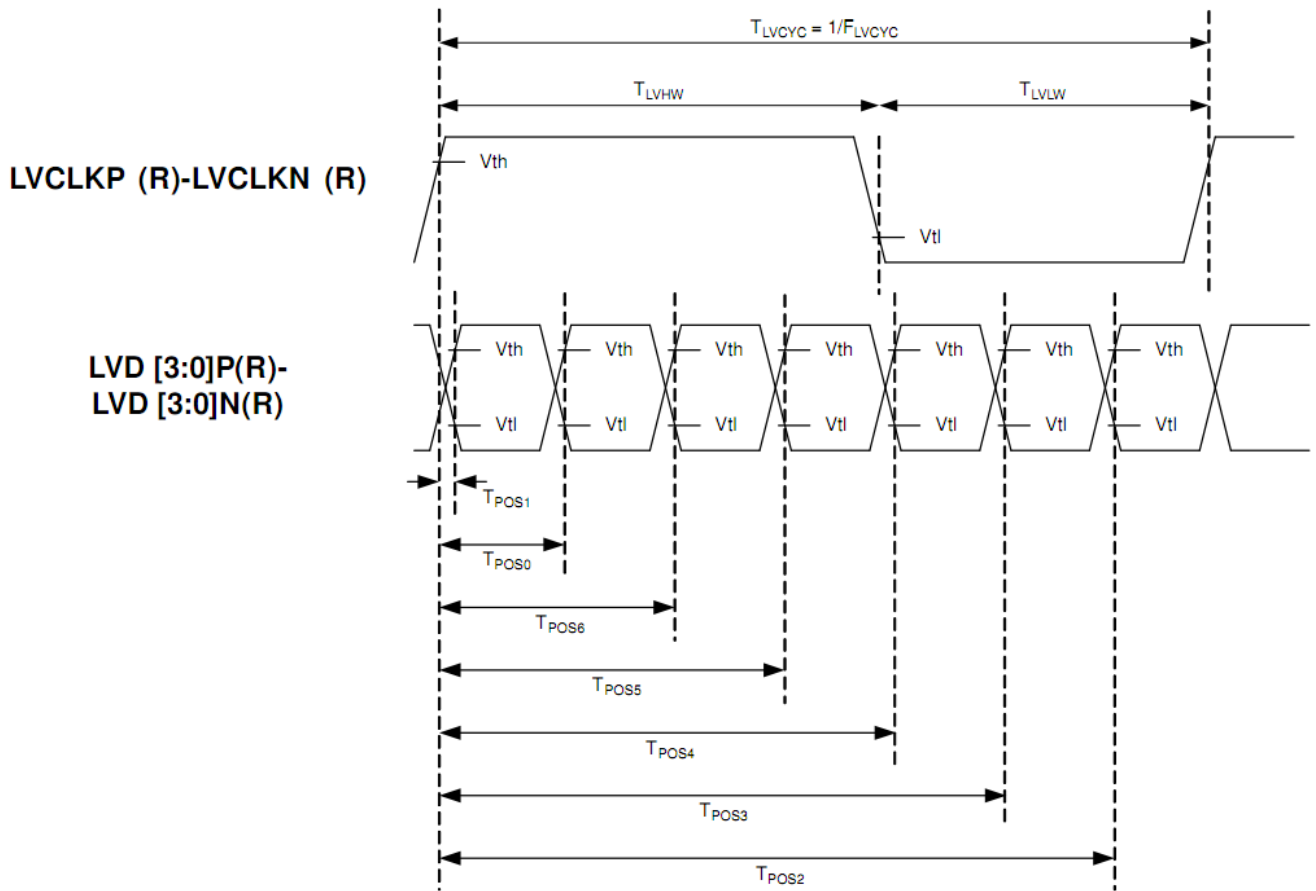
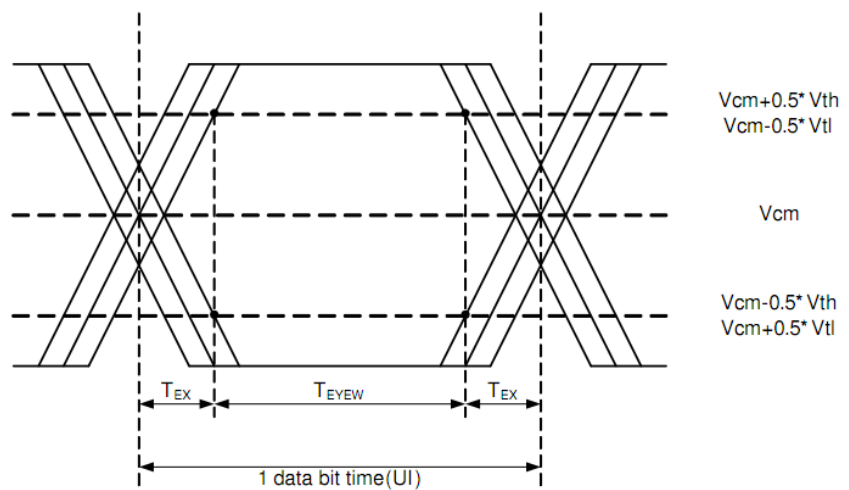


Figure 5

Single-ended:
 LVD [3:0]P,
 LVD [3:0]N



**Differential:
 LVD [3:0]P-LVD [3:0]N**

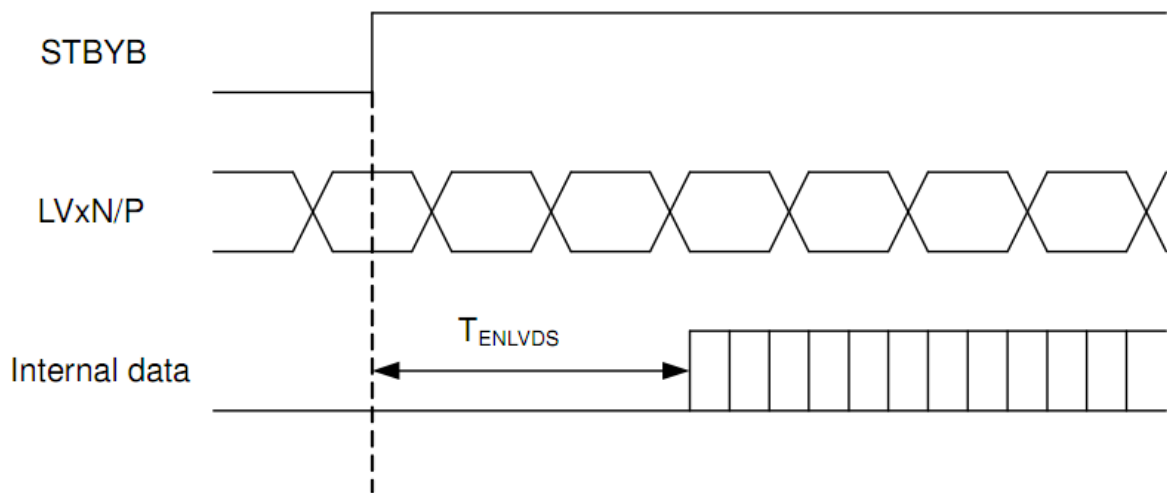
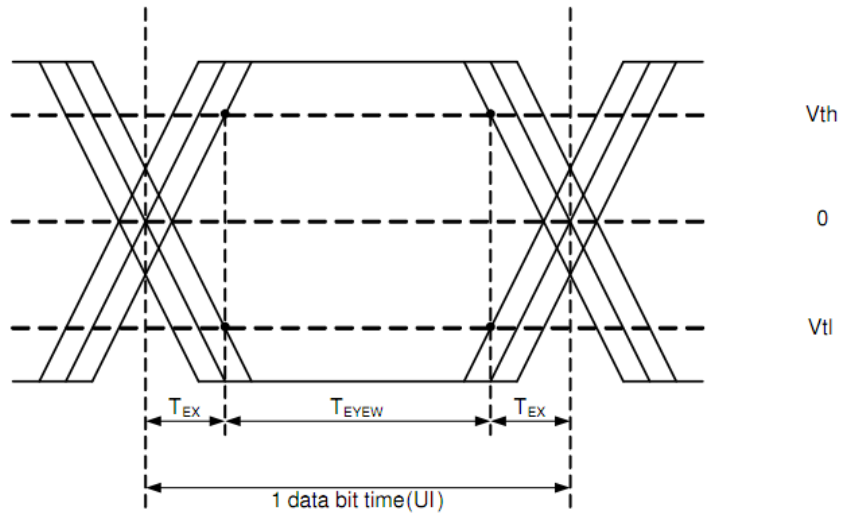


Figure 6

6.5.2 LVDS Input Format (VESA 8bit)

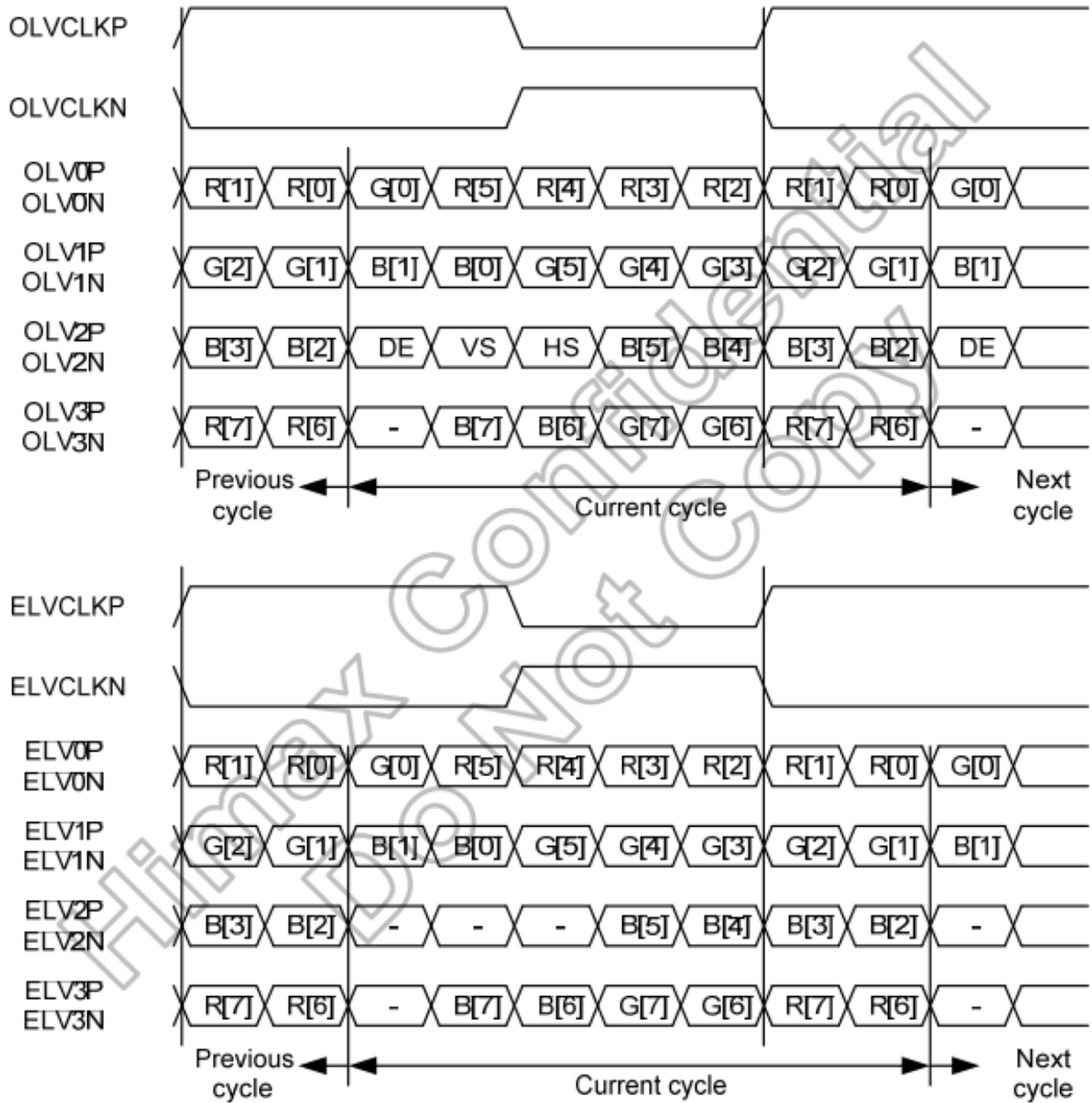


Figure 7: LVDS input data format (VESA format)

6.5.3 Video Signal Timing

Table 10: Video signal timing

Symbol	Parameter	Conditions	Related Pins	Min.	Typ.	Max.	Unit
VP	Vertical Total	-	VSYNC	1087	1118	1404	Line
VS	VSYNC Low Pulse Width	-	VSYNC	1	3	20	Line
VBP	Vertical Back Porch	-	VSYNC	2	30	255	Line
VFP	Vertical Front Porch	-	VSYNC	5	8	260	Line
VDISP	Vertical Active Area	-	VSYNC	-	1080	-	Line
HP	Horizontal Total	-	HSYNC	989	1002	1248	DCK
HS	HSYNC Low Pulse Width	-	HSYNC	10	12	255	DCK
HBP	Horizontal Back Porch	-	HSYNC	5	16	255	DCK
HFP	Horizontal Front Porch	-	HSYNC	24	26	260	DCK
HDISP	Horizontal Active Area	-	HSYNC	-	960	-	DCK
F _{frame}	Frame Frequency	-	CLK	-	60	-	Hz
f _{CLK}	CLK frequency	-	CLK	64.5	67.2	85	MHz

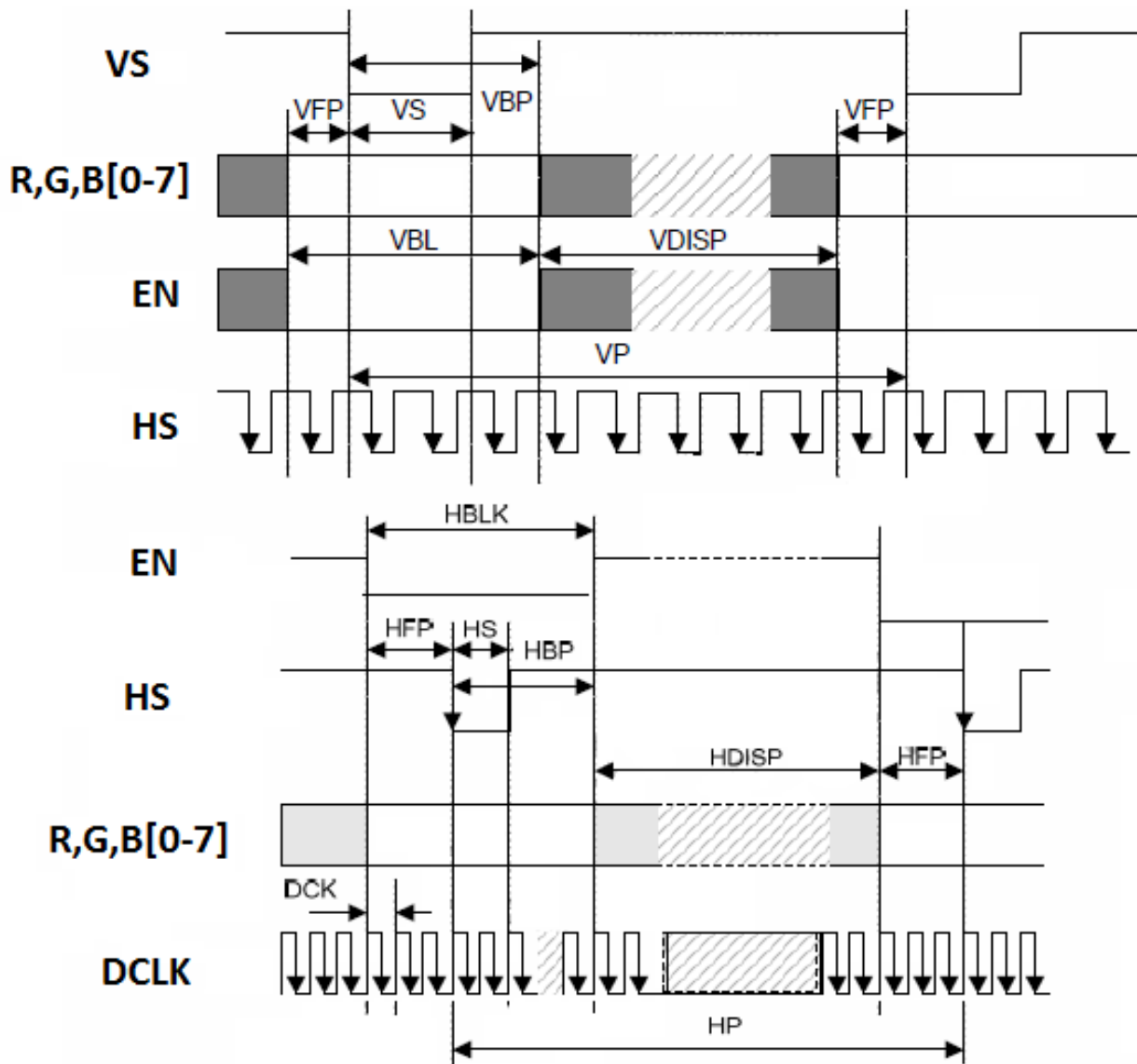


Figure 8

6.5.4 SPI interface (3 wires)

SPI interface is used to read and write the setting registers of the TFT module.

All registers setting have been OTP in driver IC.

So no need to using the SPI to initialize module, just pull high SPI pins at customer’s system side.

When write register, customer should write the same data to all source driver ICs .

ID[1:0]=0, correspond to Master IC

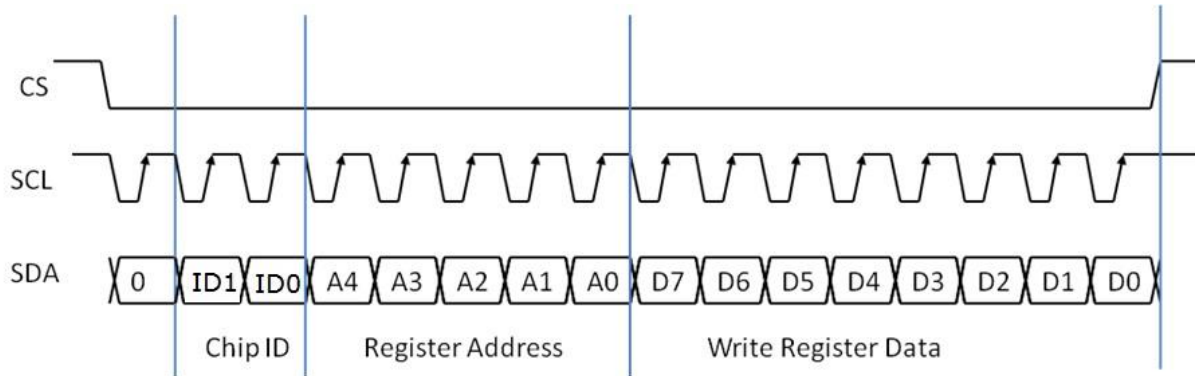


Figure 9: SPI write data format

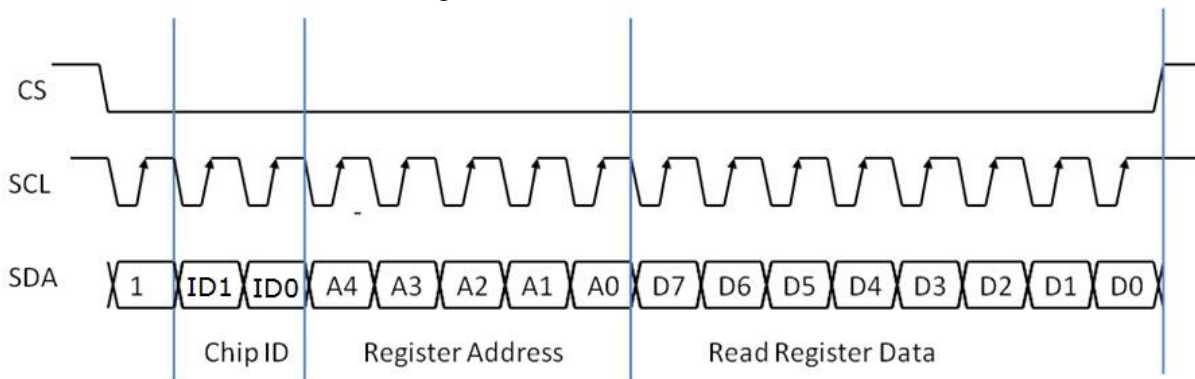


Figure 10: SPI read data format

6.5.5 SPI interface timing chart

Table 11: AC Characteristic of SPI interface

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Setup Time	tS0	CS to SCL	60	-	-	ns
	tS1	SDA to SCL	60	-	-	ns
Hold Time	tH0	CS to SCL	60	-	-	ns
	tH1	SDA to SCL	60	-	-	ns
Pulse Width	tW1L	SCL Negative cycle	75	-	-	ns
	tW1H	SCL Positive cycle	75	-	-	ns
	tW2	CS pulse width	1	-	-	us
Clock duty	-	SCL	40	50	60	%

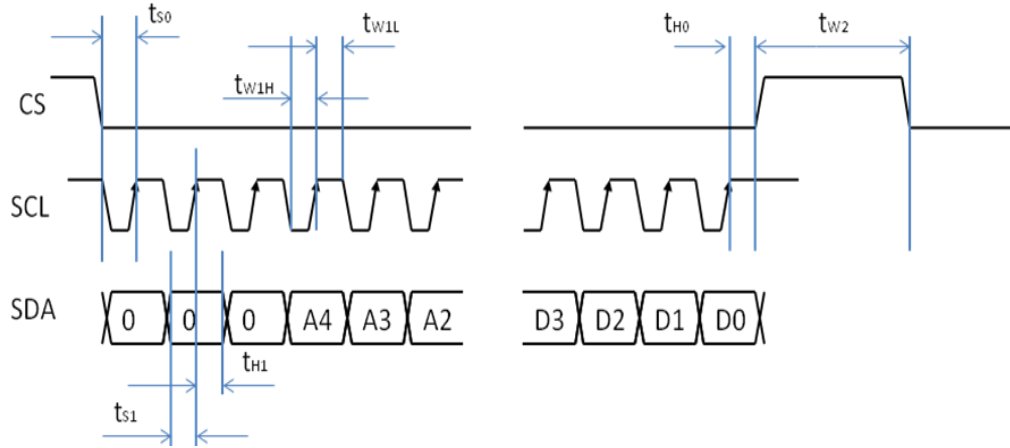


Figure 11: SPI timing

6.5.6 Reset Timing

Table 12

Symbol	Parameter	Min.	Typ.	Max.	Unit
tRW	Reset pulse width	10(note1)	-	-	us
tRT	Reset complete time	-	-	5	us
tNNS	Negative spike noise width	-	-	100	ns

Note1: There is a RC filter on STB and RESET signal line. R=10K ohm , C=0.1uF.

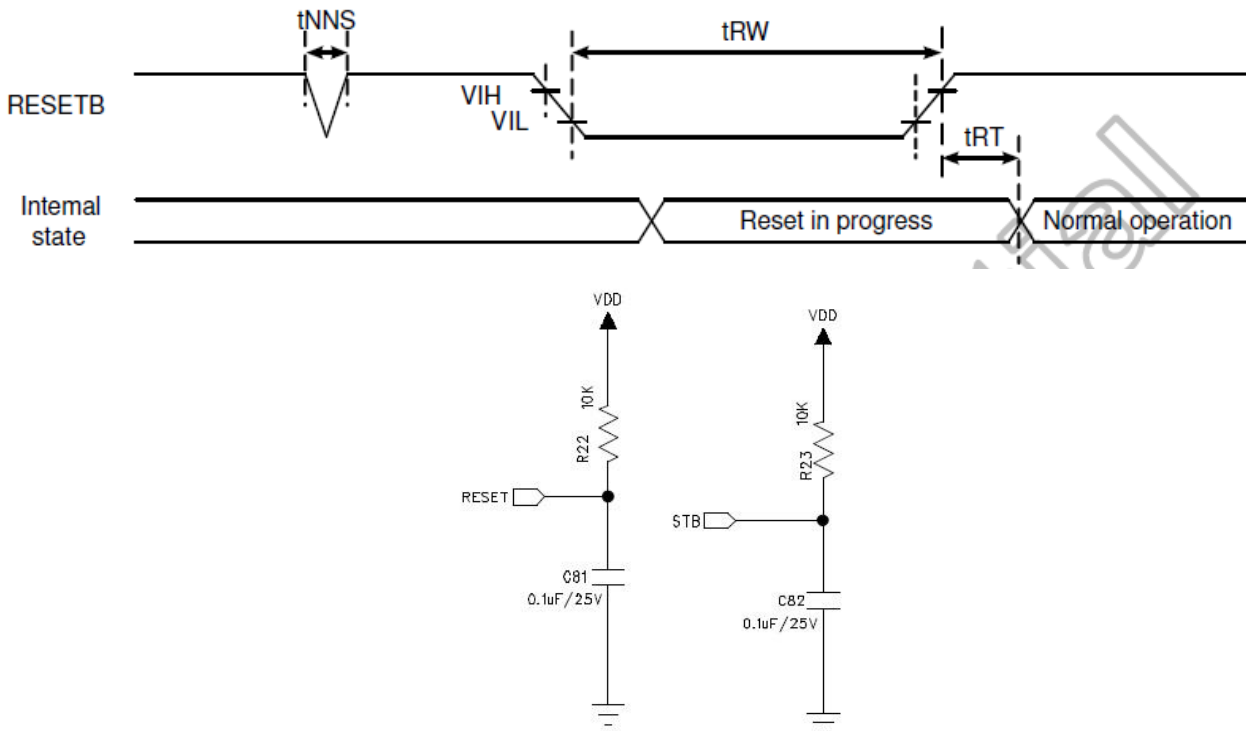


Figure 12

6.5.7 Power On/ Off Sequence

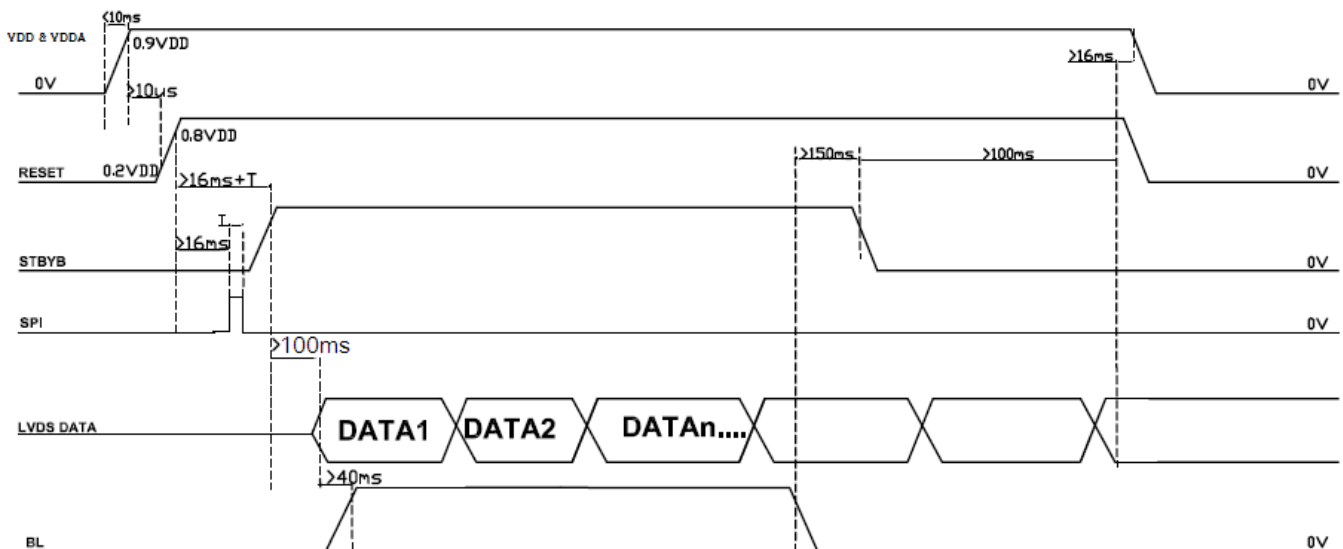


Figure 13: Power on/off sequence

6.5.8 Pxl Arrangement

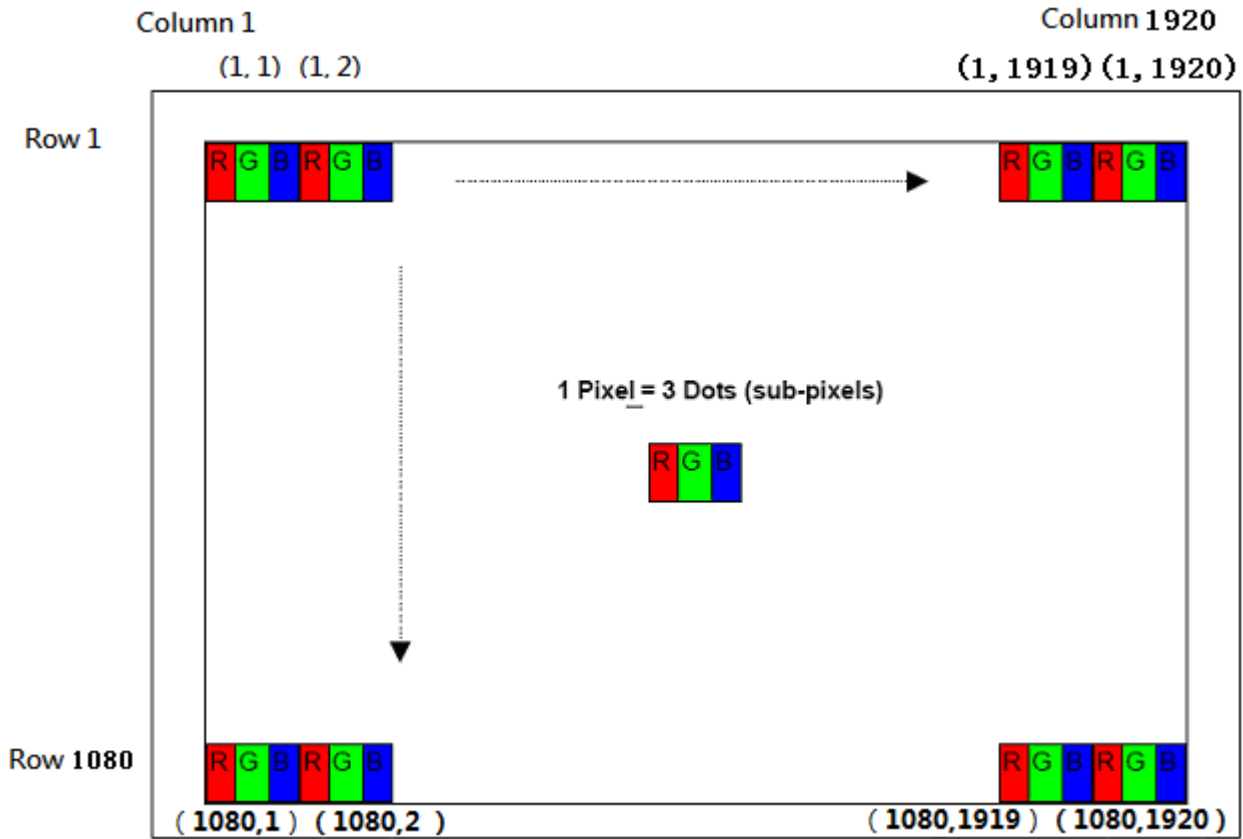


Figure 14:

6.6 Touch Panel Timing Characteristics

6.6.1 Power Up/Reset

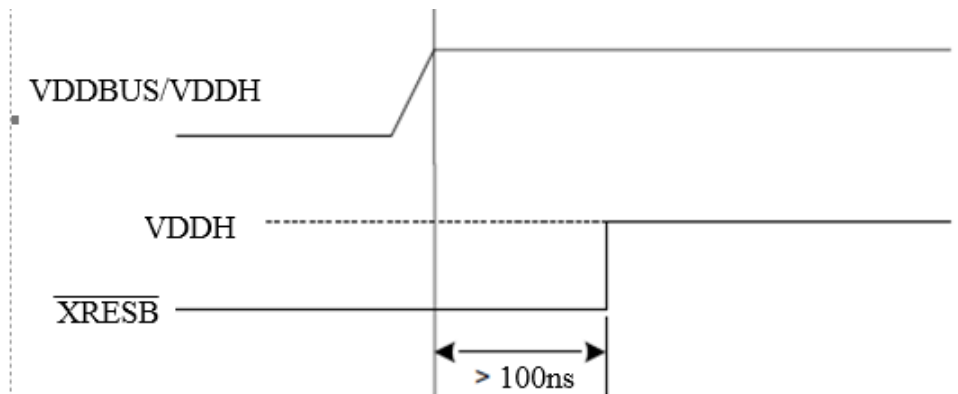


Figure 15: Power sequencing on the S7882

Note: VDDBUS/VDDH can be powered up in any order.

The XRESB pin can be used to reset the device whenever necessary. The XRESB pin must be asserted low for at least 100ns to cause a reset. After releasing the XRESB pin the device takes 45ms before it is

ready to start communications. It is recommended to connect the XRESB pin to a host controller to allow it to initiate a full hardness reset without requiring a power-down.

6.6.2 I2C Device Address for the Touch IC

Table 13: Format of SLA+W and SLA+R

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Device Address: 0x30							Read/Write

6.6.3 I2C Compatible Specification

Table 14

Parameter	Operation
Addresses	0x30
Maximum bus speed (SCL)	400kHz
I ² C specification	Version 2.1

6.6.4 I2C host interface

To ensure software compatibility, full details of the Synaptics register-mapped interface protocol can be found in the Synaptics RMI4 Specification (PN: 511-000405-01 and 511-000405-02).

7. Optical Characteristics

Conditions unless specified otherwise:

- Ta = 25 °C, dark room
- TFT-LCD supply voltage = 3.3 volts
- Elapsed time from switch on is greater than 30 minutes
- RGB, white and black test patterns only
- Factory settings
- Luminance = 100% unless specified
- Measurements are conducted at ambient temperature and perpendicular unless specified

Table 15: Optical Specifications

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit	Remark	
Viewing Angle	Horizontal	Θ3	70	85		°		
		Θ9	70	85		°		
	Vertical	Θ12	70	85		°		
		Θ6	70	85		°		
Contrast Ratio	CR	Θ= 0°	800	1000			Note 1	
Luminance(on the cover lens surface)	L	Θ= 0°	600	700		cd/m ²	Note 2	
Uniformity	%	Θ= 0°	75	80			Note 3	
NTSC	%	Θ= 0°	65	70				
Reproduction Of color	Red	Rx	Θ= 0°	-0.03	0.634	+0.03		Note 4 * Module
		Ry		-0.03	0.322	+0.03		
	Green	Gx		-0.03	0.332	+0.03		
		Gy		-0.03	0.623	+0.03		
	Blue	Bx		-0.03	0.149	+0.03		
		By		-0.03	0.076	+0.03		
White	Wx	Θ= 0°	-0.03	0.290	+0.03			
	Wy		-0.03	0.317	+0.03			
Response Time	Tr +Tf	Ta=25 °		30	40	ms	Note 5	
		Ta=-30 °		600	700	ms		
Gamma			1.9	2.2	2.5		Ta=25 °	
Cross talk					3.0%			
Image sticking	Level				2		Note 6	

Note:

1. Contrast measurements shall be made at viewing angle of Θ= 0, and at the center of the LCD surface. Luminance shall be measured with all pixels in the view field set first to white, then to the dark (black) state. Luminance Contrast Ratio (CR) is defined mathematically.

$$CR = \frac{\text{Luminance when displaying a white raster}}{\text{Luminance when displaying a black raster}}$$

2. Surface luminance is the center point across the LCD surface 50cm from the surface with all pixels displaying white. This measurement shall be taken at the locations shown in FIG. 16.

3. Uniformity measurement shall be taken at the locations shown in FIG. 17, for a total of the measurements per display, measure surface luminance of these nine points across the LCD surface 50cm from the surface with all pixels displaying white.

$$\text{Uniformity} = \frac{\text{Min Luminance of 9 points}}{\text{Max Luminance of 9 points}} \times 100\%$$

4. The color chromaticity coordinates specified in Table15 shall be calculated from The spectral data measured with all pixels first in red, green, blue and white. Measurements shall be made at the center of the Module.

5. The electro-optical response time measurements shall be made as FIG. 18 by switching the “data” input signal ON and OFF.

The times needed for the luminance to change from 10% to 90% is T_{rand} and 90% to 10% is T_f .

6. Image Sticking<LEVEL 2

60degC,1hr,<Level2. Test pattern: Chess, Inspection pattern: 50% grey. (FIG.19)

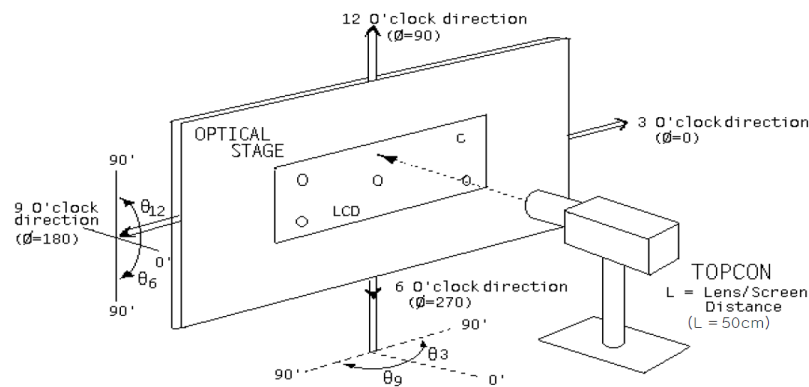


Figure 16: Measurement Set Up

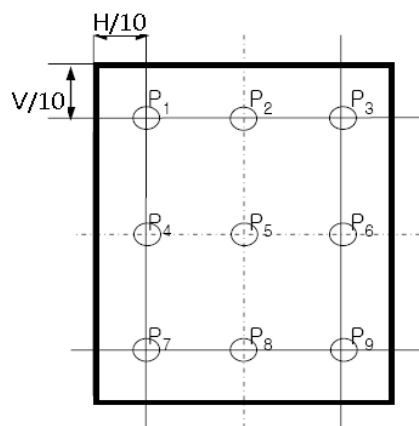


Figure 17: Uniformity Measurement Locations

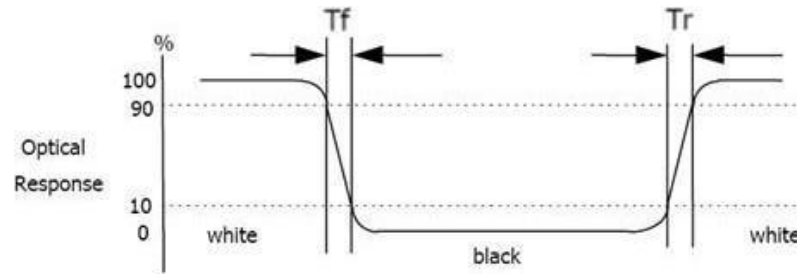


Figure 18: Response Time Testing



Figure 19: Image Sticking

8. Reliability Tests / Environmental

8.1 Reliability Test Conditions

Table 16: List of reliability tests

NO.	Test Item	Test Condition	Duration
1	High temperature, high humidity operation test(THO)	60°C, 90%RH 240hrs	4PCS
2	Low temperature operation test(LTO) Note 2	-30°C, 240hrs	4PCS
3	High temperature operation test(HTO) Note 1	85°C 240hrs	4PCS
4	High temperature storage test(HTS)	90°C 240hrs	4PCS
5	Low temperature storage test(LTS)	-40°C 240hrs	4PCS
6	Mechanical Shock	3 directions: X,Y,Z axes Repeats:6 Peak acc.:100 G Pulse duration: 6 ms (half sine wave) Non-Operating	4PCS
7	Mechanical Vibration	3 directions: X,Y,Z axes Sweep time: 10 (1Oct/ min) Frequency: 10 -> 150->10 Hz 10-58 Hz: constant amplitude 0.75mm peak. 58-150Hz: constant acceleration 10g peak Sinusoidal, Non-Operating	4PCS
8	Temperature shock	-30°C(15mins)~85°C(15mins) , 100cycles	4PCS
9	ESD	R = 330ohm, C = 330pF, · Air discharge: ±15 KV to display surface · Contact discharge: ±8 KV to side BZ class B	2PCS
10	Package Drop	Height 0.8m, 1corner, 3edges, 6surface	2PCS

Note 1: Panel surface temperature should not exceed 85 °C.

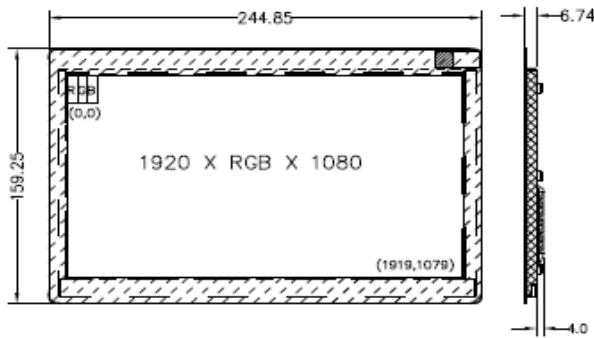
Note 2: No optical performance guarantee below -30°C.

Note 3: For module internal structure robustness test purpose only. Customer application design should take care of overall mounting robustness with module

9. Packing Specification

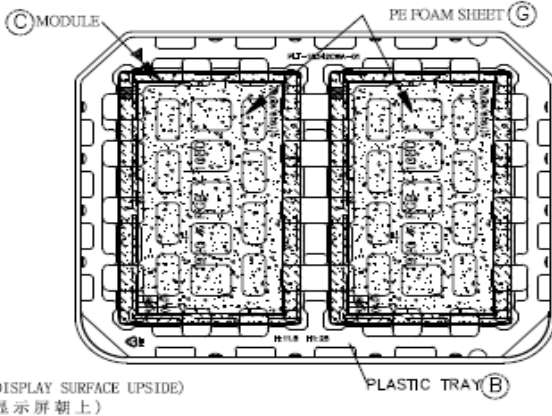
PD DRAWING IS BASED ON PD-AV101FHT-T10-28P0, ONLY THE MODULE IS DIFFERENT.

CONFIGURATION:
MS: AV101FHT-T10-28P0

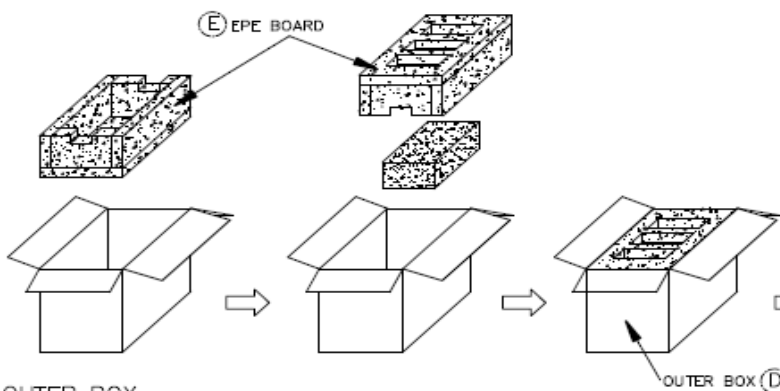
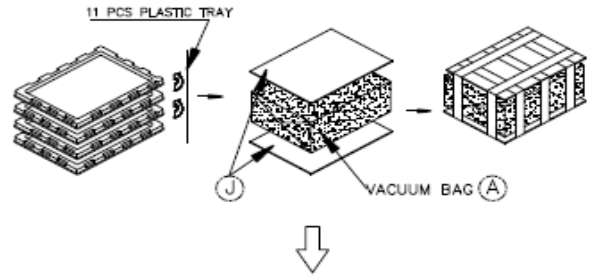


REV	AMENDMENT					DATE
1	Change the F-Label size, Add the material No.					2019.06.04
L	44-9241054	OUTER BOX LABEL	16	PCS	0.0500	102X36
K	44-9241053	OUTER BOX LABEL	16	PCS	0.0500	102X36
J	44-9312132	PLASTIC SHEET	32	PCS	0.1000	390X290X4.0
I	44-9441220	PALLET	1	PCS	0.0032	1100X900
H	44-9451019	HARD EDGES	8	PCS	0.0250	700X60X60
G	44-9312303	PE FOAM SHEET	320	PCS	1.0000	242X157X2.0
F	44-9241058	OUTER BOX LABEL	16	PCS	0.0500	152X102
E	44-9321838	EPE BOARD	32	PCS	0.1000	480X380X140
D	44-9301643	OUTER BOX	16	PCS	0.0500	500X400X300
C	AV101FHT-T10-28P0	MODULE	320	PCS		244.85X159.25X6.74
B	44-9432519	PLASTIC TRAY	176	PCS	0.5500	420X320X25
A	44-9331264	VACUUM BAG	16	PCS	0.0500	700X615
NO.	ITEM NO.	DESCRIPTION	QTY/ PALETTE	BAAN UNIT	BOM DOSAGE	SIZE

PLASTIC TRAY
ONE TRAY FOR 2 PCS MODULE
ITEM NO.: 44-9432519
MATERIAL: TRANSPARENT PET T=1.2mm
PLASTIC TRAY SIZE: 420(L) X 320(W) X 25(H)mm



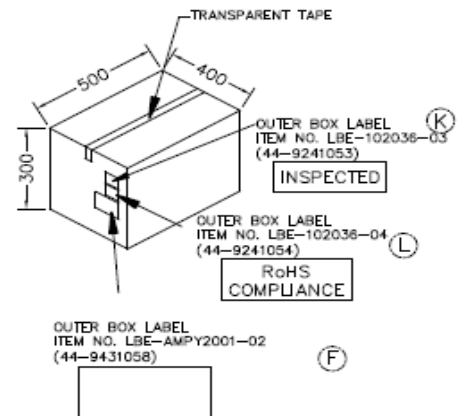
- 2 PCS/TRAY X 10 TRAYS/OUTER BOX = 20 PCS/OUTER BOX.
- EMPTY TRAY ADD ON TOP FOR ANTI-STATIC PURPOSE.
(最上层吸塑盘为空盘)
- EACH TRAY SHOULD BE ROTATED 180°.
(每层吸塑盘需旋转180度摆放)
- AFTER PUT THE TRAY INTO VACUUM BAG, SEAL THE OPENING BY TRANSPARENT TAPE
(把吸塑盘装入真空袋后先用透明胶纸封住)
- EACH BOX SHOULD BE PLACED ONE ANTI-STATIC PLASTIC SHEET ON THE TOP&BOTTOM.
(每个纸箱之吸塑盘最上面&最下面须各放 1 块防静电胶板)



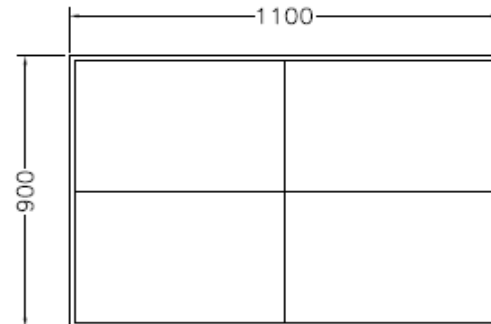
OUTER BOX ITEM:
44-9301643

OUTER BOX

- 2 PCS/TRAY X 10 TRAYS/OUTER BOX = 20 PCS/OUTER BOX.
- PUT THE TRAYS WITH VACUUM BAGS INTO THE OUTER BOX
(把吸塑盘装入纸箱)
- EACH BOX SHOULD BE PLACED AN EPE BOARD ON THE TOP & BOTTOM.
(每个纸箱的最上面 & 最下面须各放 1 块珍珠棉)



PALLET: 44-9441220



> 4 BOXES PER LEVEL (每层放4个BOX)
> 4 LEVEL PER PALLET (每卡板放4层)

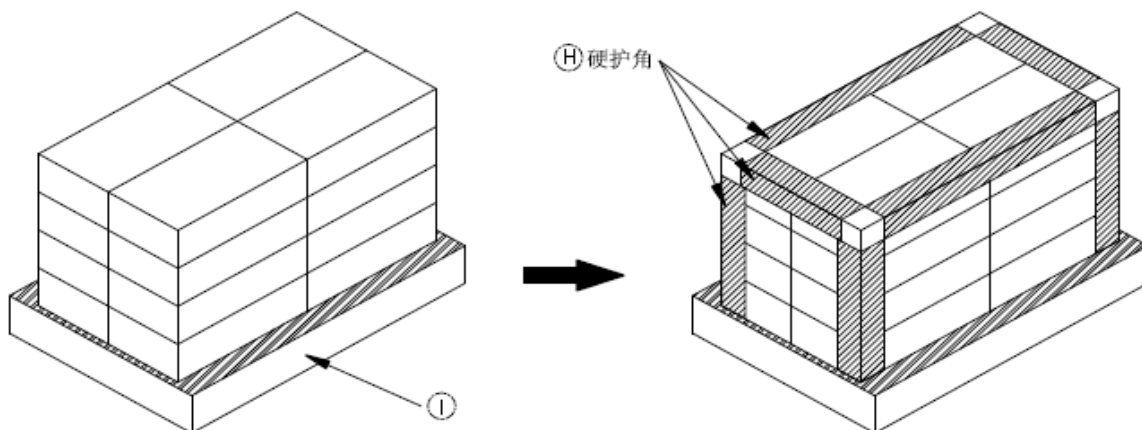
2 PCS/TRAY X10 TRAYS/OUTER BOX X4 OUTER BOX/LEVEL X 4 LEVEL/PALLET = 320 PCS/PALLET.

1. STACK THE CARTON BOXES ON THE PALLET.

(把纸箱放在卡板上)

2. PUT THE HARD EDGES ON THE EIGHT SIDES, USE TRANSPARENT TAPE TO FIX.

(把纸护角放在纸箱的八条侧边，并用透明胶纸固定)

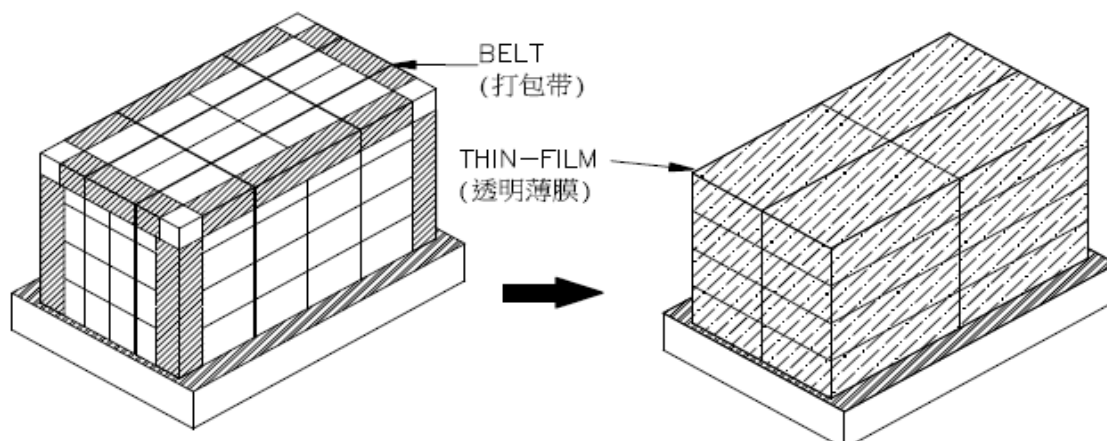


3. WRAP THE CARTONS BOXES WITH BELTS ON THE PALLET.

(用打包带将纸箱及卡板包扎好)

4. USE THE THIN FILM TO WRAP ALL THE CARTON BOXES.

(纸箱外面附上薄膜)



外箱标签说明

1 DID: BOE-20190604-000001 	8 QTY: 20 PCS
2 BYD PN: 12752802-00 	9 COO: CHN
3 Manufaurer: BOE	
4 MPN: AV101FHT-T10-28P0 	
5 CPN: 12752802-00	10 Automotive Grade
6 DC: 1925	7 Lot No: ABCDEFGHIJK

1、DID：输入为 BOE+包装日期（YYYYMMDD）+系列号（000001），系列号为 16 进制，第十箱为 00000 啊，第 17 箱为 000010；

2、BYD PN：为固定 12752802-00；

3、Manufaurer：为固定 BOE；

4、MPN：为产品 Item AV101FHT-T10-28P0；

5、CPN：为固定 12752802-00；

6、D/C：为包装年周(WWYY)；

7、Lot No：物料生产的批次号，要求以工单为单位，即一个工单为一个批次，其批次格式由供应商内部定义，但不能重复







8、QTY：包装数量20；


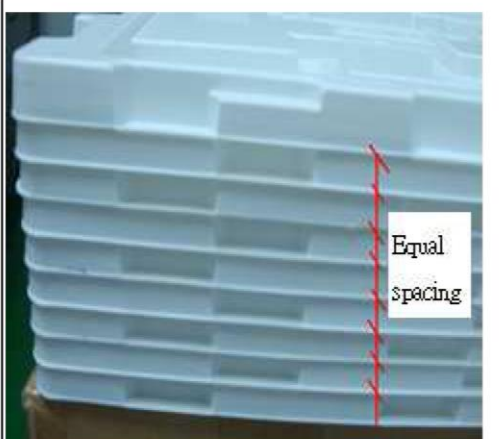
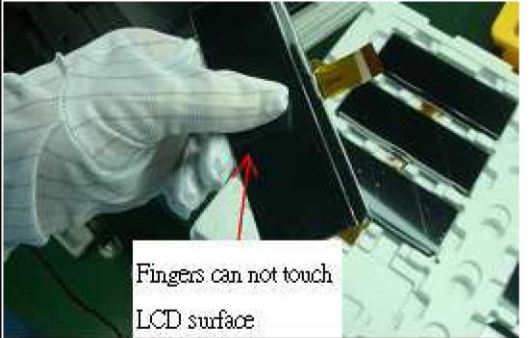
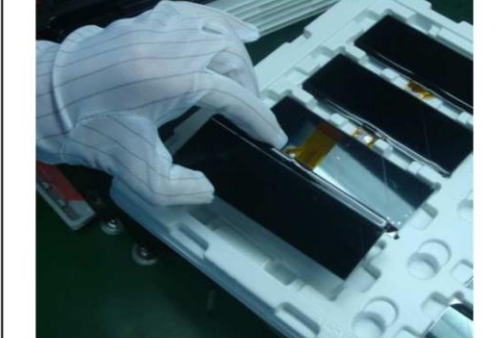
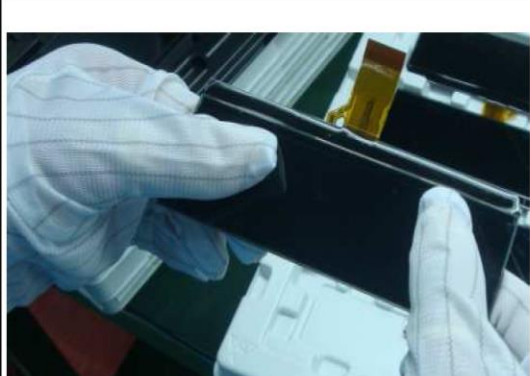
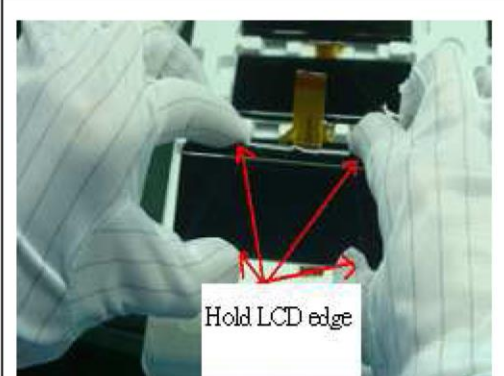
9、COO：为固定 CHN。

10 Automotive Grade;

10. Handling Cautions

10.1 Packing removal and handling requirement

Requirement	Wrong	Correct
<p>Get one package each times & hold the package by both hands with proper ESD shielding</p>	 <p>Without ESD gloves and ESD belt</p> <p>Hold the modules by one hand and without proper ESD shielding (Fail)</p>	 <p>Anti ESD gloves</p> <p>Anti ESD belt</p> <p>Hold the modules by both hands (Pass)</p>
<p>Prohibit to stack inner package over 3 layers</p>	 <p>Over 3 layers (Fail)</p>	 <p>Not exceed 3 layers (Pass)</p>
<p>Total packing tray height must within 40 cm</p>	 <p>packing tray over 40 cm</p> <p>Over 40 cm (Fail)</p>	 <p>40 CM</p> <p>Lower than 40 cm (Pass)</p>

Requirement	Wrong	Correct
Packing tray must rotate 180° in each layer when stack together	 <p>Tray without 180° rotation between each layer</p> <p>Tray without 180° rotation, It will have pressure on the module (Fail)</p>	 <p>Equal spacing</p> <p>Tray with 180° rotation (Pass)</p>
Prohibit to touch LCD surface by fingers	 <p>Fingers can not touch LCD surface</p> <p>Hold LCD and touch its surface (Fail)</p>	 <p>Hold LCD edge by hand (Pass)</p>
During assembly, prohibit to press on LCD surface by fingers, Must hold the LCD edges by both hands	 <p>During assembly, press on LCD surface (Fail)</p>	 <p>Hold LCD edge</p> <p>During assembly, use both hands to hold LCD edge only (Pass)</p>

10.2 Mounting of module

- Please power off the display module before it is disconnected or connected to the application.
- If the connection to the application is not good, following problems may result.
 1. Significant noise on signals between display module and application
 2. Unstable display performance
 3. Parts on the module will be heat up or damaged

- The LCD module must be handled with care.
- Protective film (Laminator) is applied on surface for protection against scratches and dirt. Please avoid electrostatic charge build-up when peeling off the laminator.

10.3 Precautions in Mounting

- When metal part of the LCD module (shielding lid and rear case) is soiled, wipe it with soft dry cloth.
- Wipe off water drops or finger grease immediately when found. Prolonged contact with water may cause discoloration or spots.
- The LCD module contains glass which breaks or cracks easily if dropped or bumped on hard surface. Please handle with care.
- The display and IC on module are sensitive to electrostatic discharge; please make sure equipments and operators are properly ground before and during handling.

10.4 Adjusting module

- Adjusting volumes on the rear face of the module have been set to its optimal before shipment. Therefore, do not change any adjusted values. If adjusted values are changed, the display may not perform to specification.

10.5 Others

- Do not expose the module to direct sunlight or intensive ultraviolet rays for prolonged hours
- Store the module at room temperature condition.
- If LCD panel breaks, liquid crystal may escape from the panel. Avoid bringing it to eyes or mouth contact. When liquid crystal sticks on hands, clothes or feet, wash it out immediately with soap.
- Observe all other precautionary requirements as in handling general electronic components.
- Please adjust the voltage of common electrode as materials of attachment by 1 module.
- Do not expose the display module to harmful gases such as acid and alkali gasses, which will corrode electronic components.
- Do not disassemble the display module because it can cause permanent damage and will void the warranty agreement.

11. Definitions

Data sheet status	
Objective Specification	This data sheet contains target or goal specifications for product development.
Preliminary Specification	This data sheet contains preliminary data; supplementary data may be published later.
Product Specification	This data sheet contains final product specification.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating. Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operating of the device at these or any other conditions above those given in the Characteristics sections of the specification is not implied. Expose to limiting values for extended periods may affect device reliability. Device is functional within the limiting conditions doesn't imply the same performance over the covered conditions, customer is required to decide the best range for the final applications.	

12. Life Support Applications

These products are not designed for use in life saving appliances, devices or systems where malfunctioning of these products can reasonably be expected to result in personal injury. Customers using or selling these products for use in such applications do so at their own risk and agree full non liability of Varitronix Limited for any damages or losses resulting from such improper use or sale.