



ASI-T-700JB5MP6/W

No	Item	Specification	Remark
1	Type	Transmissive	--
2	Display Mode	Normally Black	--
3	Pixel Element	a-Si TFT	--
4	Screen Size	7.0inch	--
5	Resolution	1024(RGB) x 600	--
6	Active Area	154.2144 (W) x 85.92(L) (mm)	--
7	Pixel Size	0.1506 x 0.1432 (mm)	--
8	Color Arrangement	RGB-stripe	--
9	Assembly Type	COG	--
10	Back Light	LED	--
11	Viewing Direction	Free	--
12	Weight	TBD	g
13	Module Dimension	179.5(W) x 111.5(L) x 5.8(H) (mm)	--
14	Touch Panel Mode	Self-capacitance for Single Touch	--
15	Touch Panel Resolution	1024 x 600	--

RECORD OF REV

DATE	REV.	PAGE	SUMMARY
2020/3/23	2 (<u>1</u>)	P.1	Add the Item 17: INITIALIZATION BY INSTRUCTIONS
		P.1~26	Modify the Page number,Please refer to <u>1</u>
		P.4	5.Modify the Power supply voltage, please refer to <u>1</u>
		P.5	6.1.Modify the Logic Supply Voltage, please refer to <u>1</u>
		P.10	8.Modify the Outline dimension, please refer to <u>1</u>
		P.11	9.Modify the Block diagram, please refer to <u>1</u>
		P.12	10 Modify the Input Terminal Pin Assignment, please refer to <u>1</u>
		P.14~16	10 Modify the Timing Characteristics, please refer to <u>1</u>
		P.26	Add the Item 17: INITIALIZATION BY INSTRUCTIONS
2020/12/15	2 (<u>2</u>)	P.1~25	Modify the Page number,Please refer to <u>2</u>
		P.1	Delete the Item 13: ASSEMBLY CAPACITIVE TOUCH PANEL REGISTERS
		P.5	6.1.Modify the Analog Supply Voltage, please refer to <u>2</u>
			6.2.Modify the Analog Supply Voltage, please refer to <u>2</u>
P.10	8.Modify the Outline dimension, please refer to <u>2</u>		
2021/10/4	3 (<u>3</u>)	P.3	4. Modify the Module Dimension for clerical error, Please refer to <u>3</u>
2021/10/18	4 (<u>4</u>)	P.3	4. Modify the Module Dimension, Please refer to <u>4</u>
		P.10	8. Modify the Outline dimension, please refer to <u>4</u>

3. General specifications

3.1 General specifications

It is a color active matrix TFT (Thin Film Transistor) liquid crystal display (LCD) that uses the amorphous silicon TFT as a switching devices. This model is composed of a Transmissive type TFT-LCD Panel, a driver circuit and a back-light unit.

3.2 Features

- High image quality a-Si TFT LCD module.
- 16.7M color number.
- High contrast, high brightness.
- Low power consumption.

4. Mechanical data

No	Item	Specification	Remark
1	Type	Transmissive	--
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5	Resolution	1024(RGB) x 600	--
6	Active Area	154.2144 (W) x 85.92(L) (mm)	--
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9	Assembly Type	COG	--
10	Back Light	LED	--
11	Viewing Direction	Free	--
12	Weight	TBD	g
△ 13	Module Dimension	179.5(W) x 111.5(L) x 5.8(H) (mm)	--
14	Touch Panel Mode	Self-capacitance for Single Touch	--
15	Touch Panel Resolution	1024 x 600	--

5. Absolute maximum ratings

5.1 Electrical absolute maximum ratings

(a) TFT-LCD Panel Absolute Maximum Ratings

Ta=25°C

Item	Symbol	Condition	Standard Value		Unit	Remark
			Min.	Max.		
Power supply voltage	VDD	GND=0V	\triangle -0.3	\triangle 2.0	V	--
	AVDD	GND=0V	-0.5	15.0	V	--

- If the LSI is used above these absolute maximum ratings, it may become permanently damaged. Using the LSI within the following electrical characteristics limit is strongly recommended for normal operation. If these electrical characteristic conditions are also exceeded, the LSI will malfunction and cause poor reliability.

(b) Back-Light Unit

Ta=25°C

Item	Symbol	Min.	Max.	Unit	Remark
Current	I _B	--	315	mA	--

(c) Touch Panel Controller IC

Ta=25°C

Parameter	Symbol	Ratings (VSS=0V)	unit	Remarks
Supply voltage	V _{DD}	-0.3 ~ +6	V	--
Input voltage	V _{IN}	-0.3 ~ +6	V	--

5.2 Environmental absolute maximum ratings

Item	Symbol	Min.	Max.	Unit	Remark
Operation temperature range	Top	-20	70	°C	Ambient
Storage temperature range	Tst	-30	80	°C	Ambient

- (a) Corrosive gas environment is not acceptable.
 (b) TFT-LCD color will change slightly depending on environment temperature.
 This phenomenon is reversible.

6. Electrical characteristics

6.1 TFT-LCD Module

Ta=25°C

Item	Symbol	Min.	Typ.	Max.	Unit	Remark
Logic Supply Voltage	VDD	\triangleup 1.71	\triangleup 1.8	\triangleup 1.89	V	--
Logic Supply Current	IDD	--	TBD	--	mA	--
Analog Supply Voltage	AVDD	\triangleleft 8.9	\triangleleft 9.0	\triangleleft 9.1	V	--
Gate ON Voltage	VGH	17	18	19	V	--
Gate OFF Voltage	VGL	-6.5	-6.0	-5.5	V	--
Common Voltage	VCOM	--	3.5	--	V	--
Hight level input voltage	VIH	0.7VDD	--	VDD	V	--
Low level input voltage	VIL	0	--	0.3VDD	V	

NOTE(1) : Use Vcom Offset Circuit to supply the common voltage for LCD.

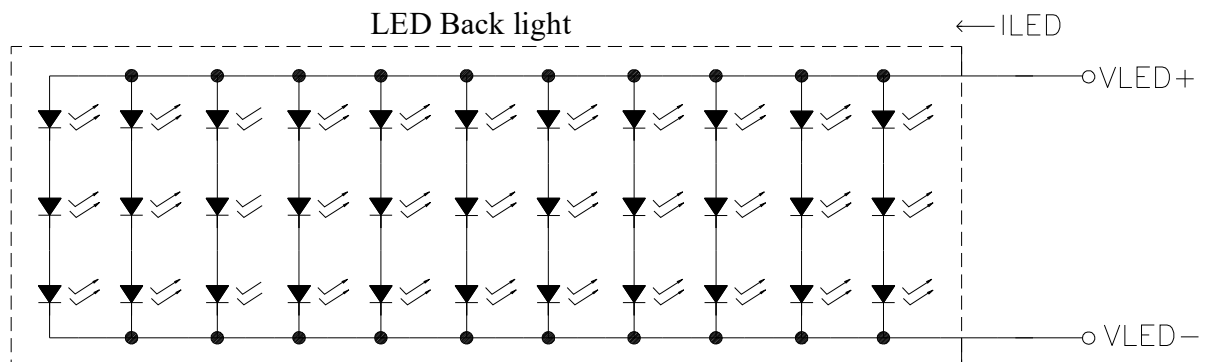
6.2 Back-Light Unit

Ta=25°C

Item	Symbol	Min.	Typ.	Max.	Unit	Remark
Forward Voltage	V _{LED}	8.4	\triangleleft 9.3	10.2	V	--
Forward current	I _{LED}	--	220	--	mA	--
Life Time	Lf	20,000	--	--	hrs	NOTE(1)

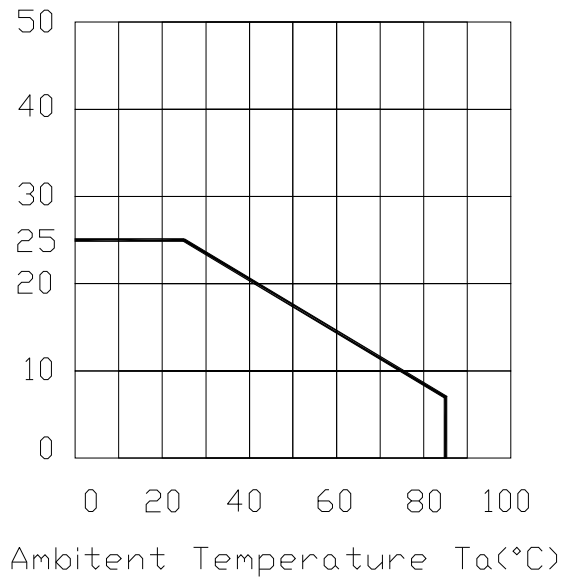
NOTE(1): The “LED life time” is defined as the module brightness decreases to 50% of original brightness that the ambient temperature is 25°C and I_{LED}=20mA .The LED lifetime could be decreased if operating I_{LED} is lager than 20mA.

\triangleleft NOTE(2): Back-light circuit :



NOTE(3): Current reduction rate of LED backlight is according to the graph indicated below :

Allowable Forward Current



6.3 Touch Panel Controller IC

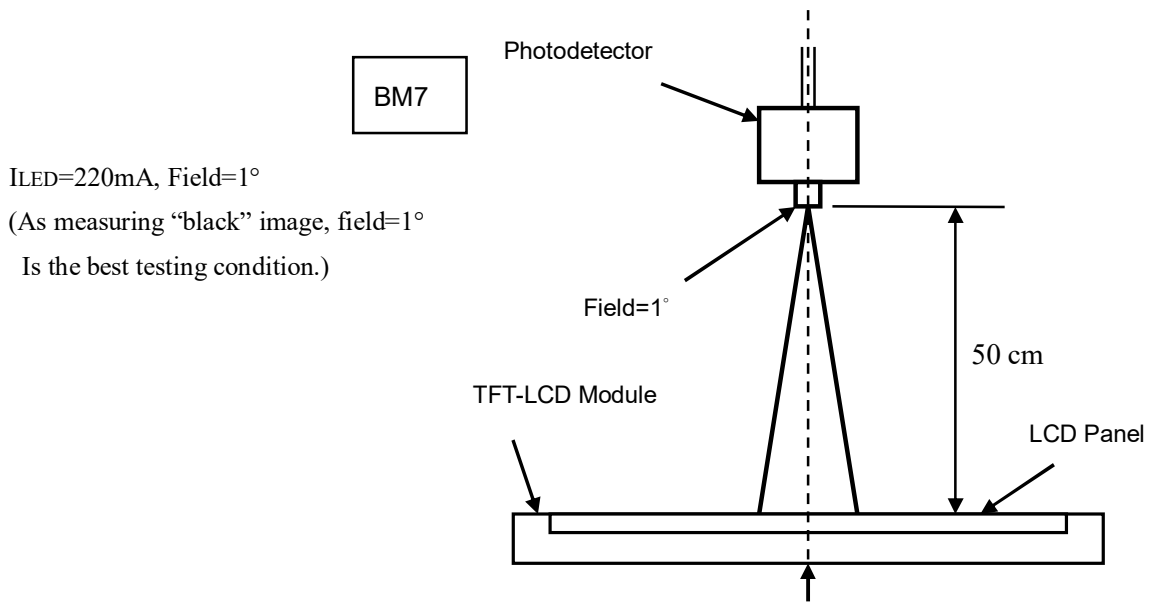
Item	Symbol	Min.	Typ.	Max.	Unit	Remark
Power Supply	VDD	2.7	3.3	3.5	V	--
Low Power Reset	VLVR	--	--	2.3	V	--

7. Optical characteristics

Ta=25°C , ILED=220mA

Item		Symbol	Condition	Min.	Typ.	Max.	Unit	Note
Brightness		B	$\theta=0^\circ$ Normal viewing angle At the center of panel	500	550	--	cd/m ²	(1)
Contrast Ratio		C/R		600	800	--	--	(2)
Response Time		Tr+Tf		--	28	45	ms	(3)
Color chromaticity	White	Wx		(0.289)	(0.319)	(0.349)	--	--
		Wy		(0.311)	(0.341)	(0.371)		
	Red	Rx		(0.584)	(0.614)	(0.644)	--	--
		Ry		(0.296)	(0.326)	(0.356)		
	Green	Gx		(0.305)	(0.335)	(0.365)	--	--
		Gy		(0.506)	(0.536)	(0.566)		
	Blue	Bx		(0.107)	(0.137)	(0.167)	--	--
		By	(0.115)	(0.145)	(0.175)			
Viewing Angle	Top	θ_U	$C/R \geq 10$ Backlight On	80	85	--	Deg.	(4)
	Bottom	θ_D		80	85	--		(4)
	Left	θ_L		80	85	--		(4)
	Right	θ_R		80	85	--		(4)
Uniformity		Un	$\theta=0^\circ$ Normal viewing angle	70	75	--	%	(5)

Note (1): The brightness test equipment setup

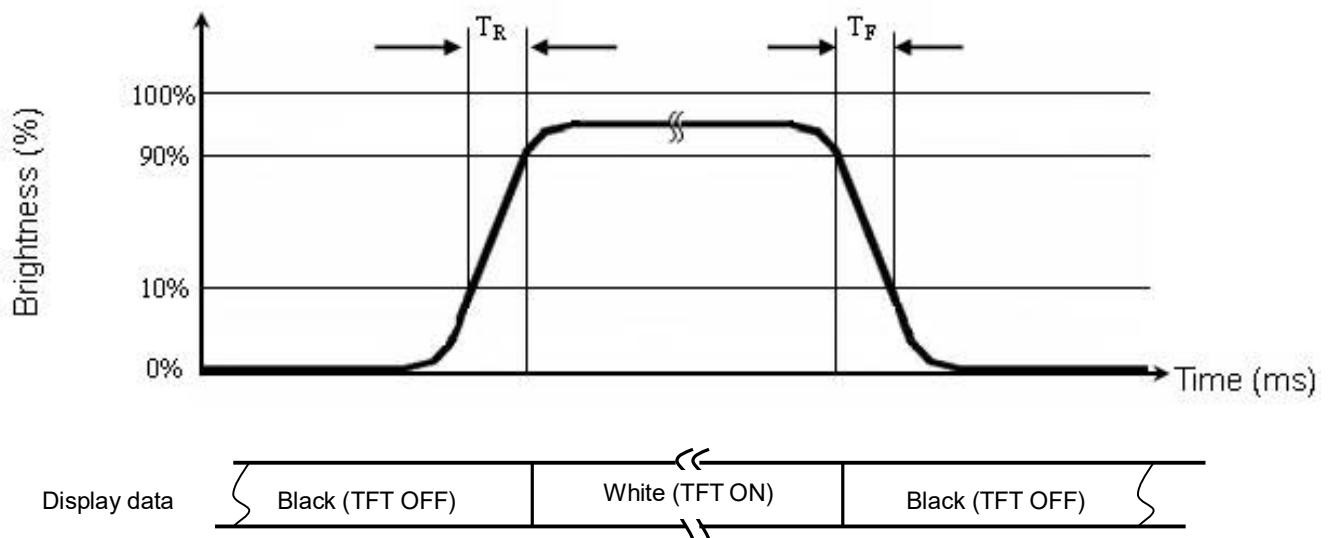


I_{LED}=220mA, Field=1°
 (As measuring “black” image, field=1°
 Is the best testing condition.)

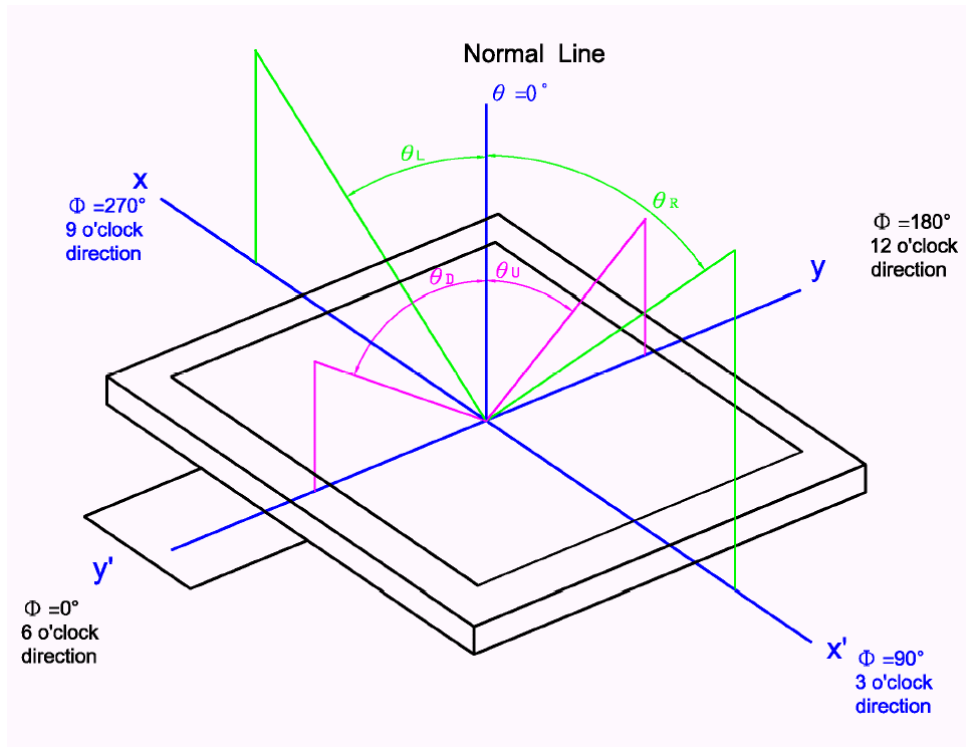
Note (2): Definition of contrast Ratio (C/R)

$$C/R = \frac{\text{Brightness When LCD is at "White" State}}{\text{Brightness When LCD is at "Black" State}}$$

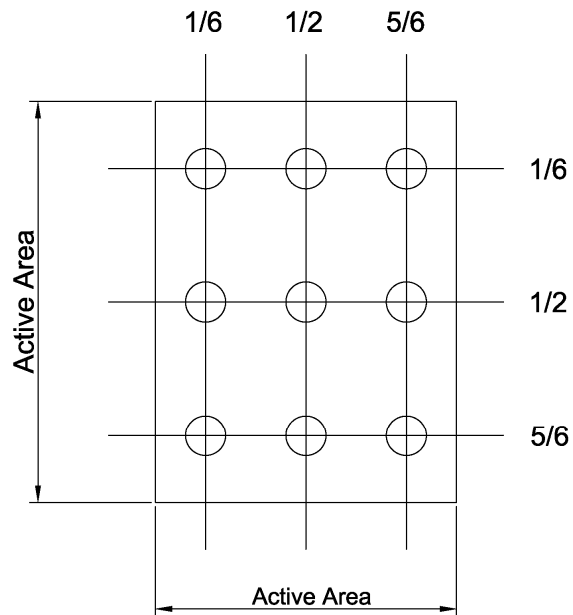
Note (3): Definition of response time



Note (4): Definition of viewing angle



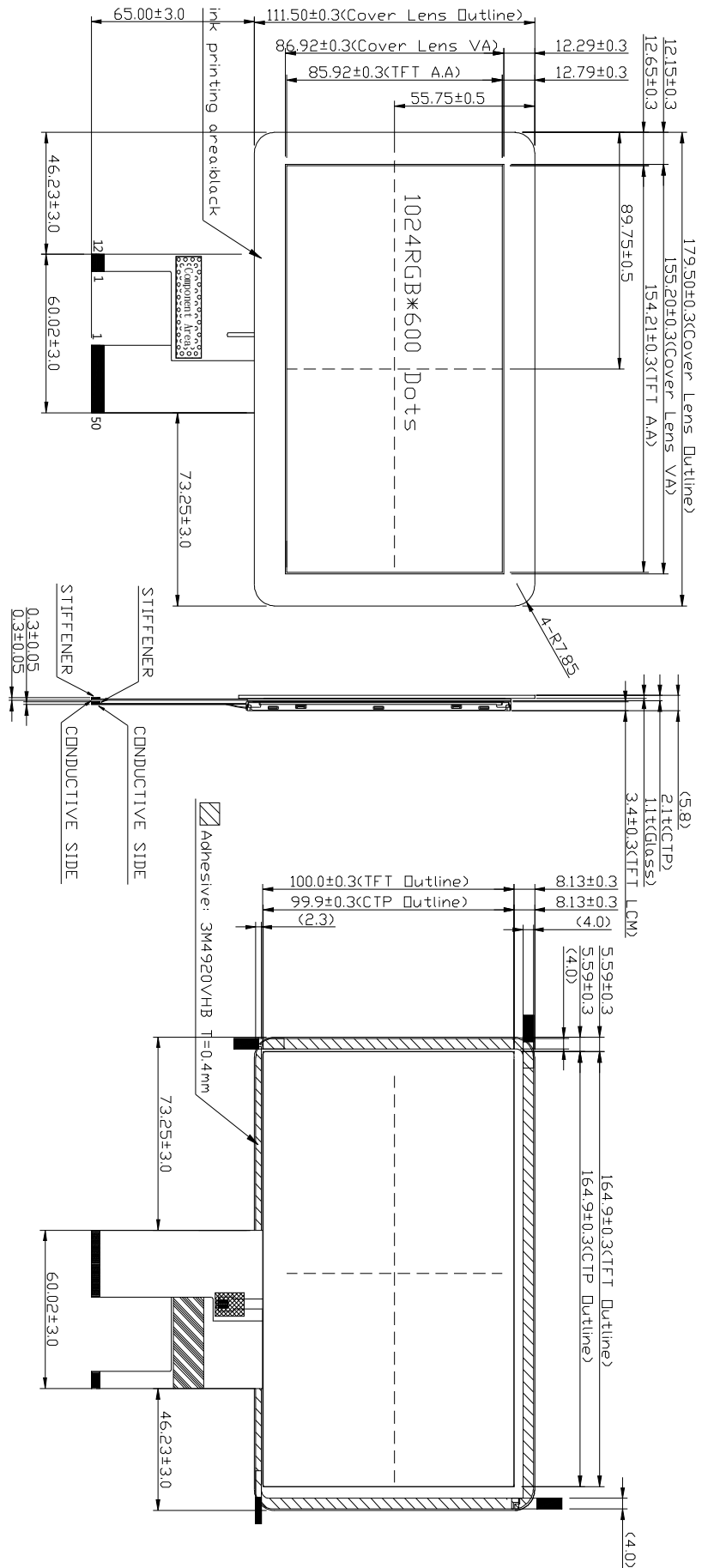
Note (5): Definition of uniformity (Un)



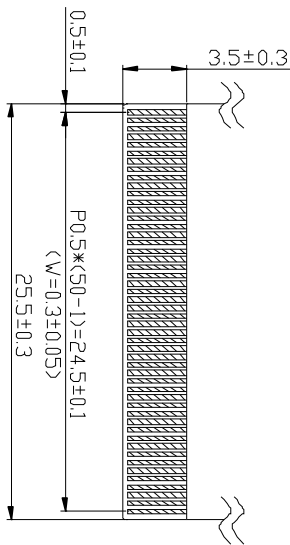
$$U_n = \frac{B_{min}}{B_{max}} \times 100\%$$

4

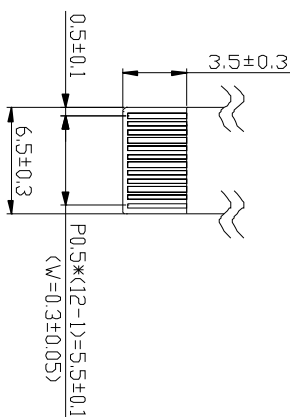
8. Outline dimension



Detail A:



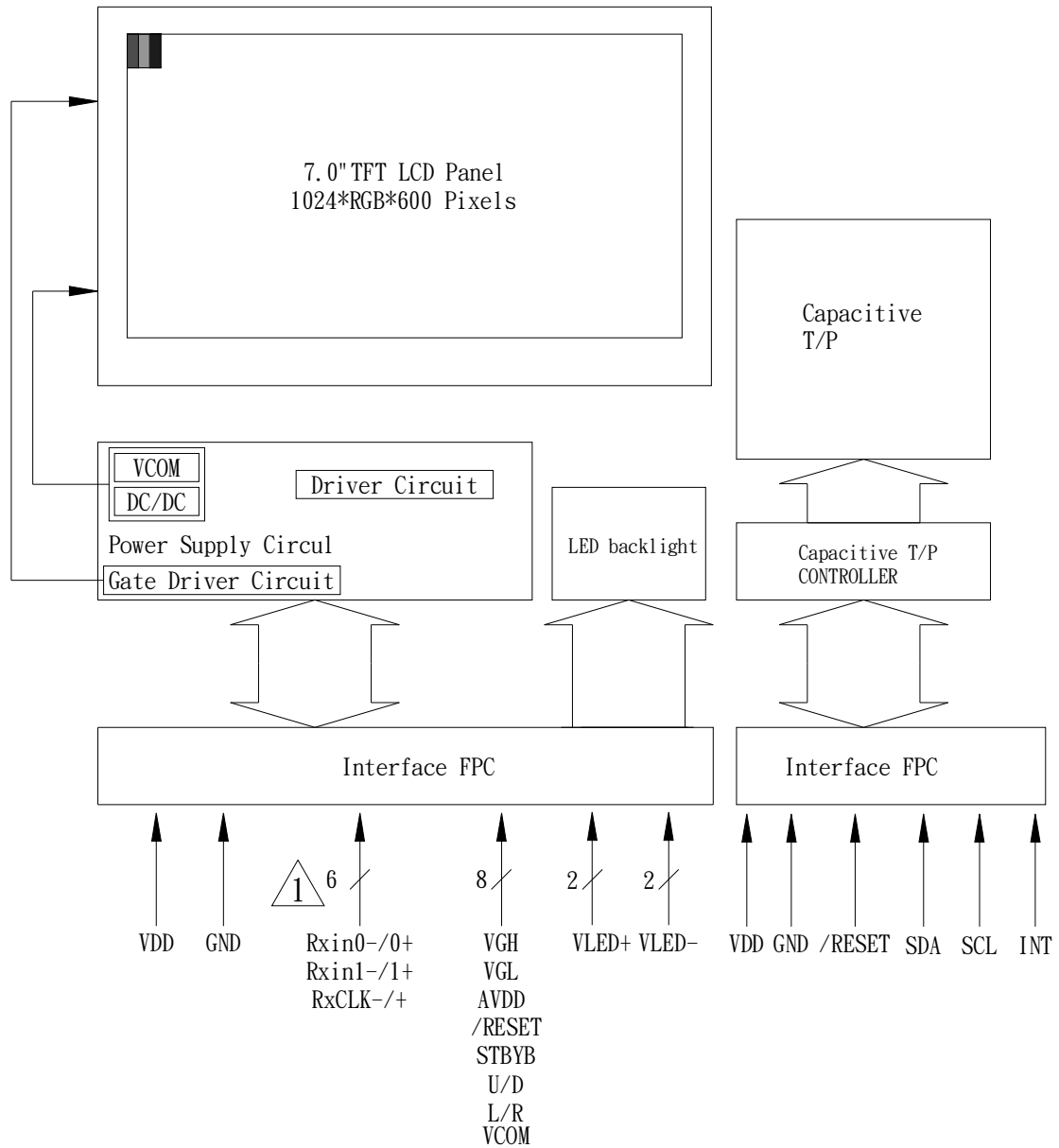
Detail B:



- NOTE:
1. UNIT:mm
 2. SCALE:NTS
 3. Cover Glass and Spacer (default) specification suggest customer design data

9. Block diagram

9.1 TFT-LCD Module (Interface System Structure)



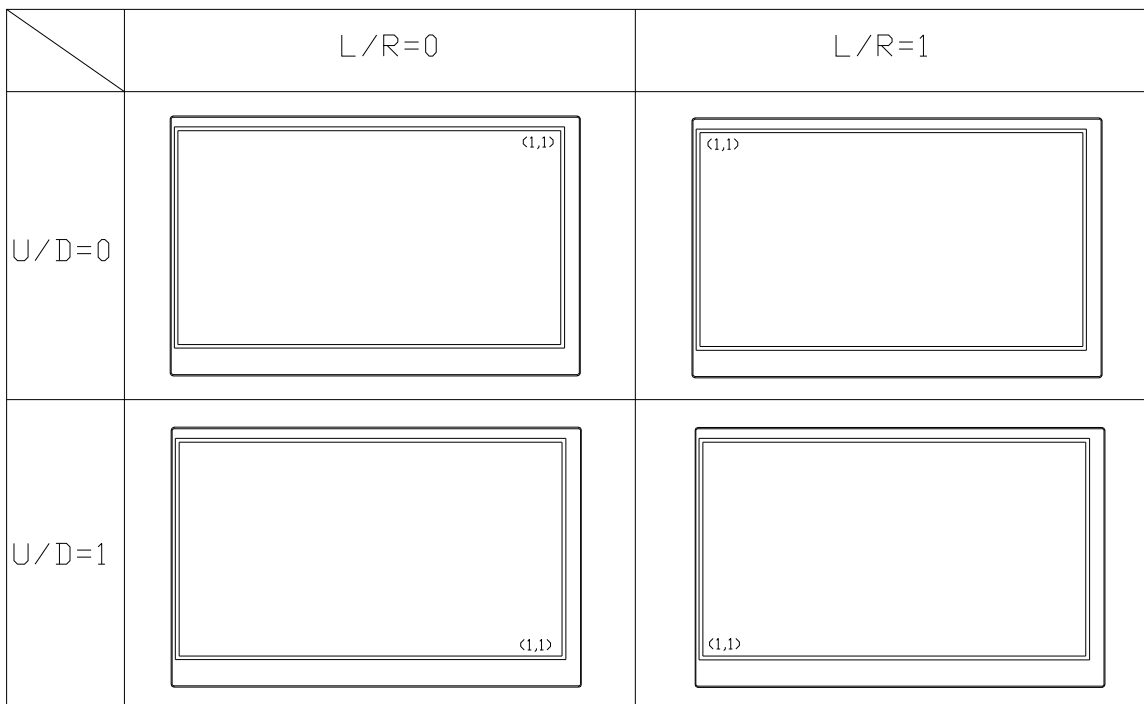
10. Input Terminal Pin Assignment

10.1 Input Signal & Power(LCM)

Pin no	Symbol	Description	Remark
1	GND	Power Ground	Power
2	VCOM	Common Voltage	Input
3	NC	No connection	-
4	VDD	Power Supply for Digital Circuit	Power
5	U/D	Vertical Inversion (Normally pull low, U→D scan)	Input
6	L/R	Horizontal Inversion (Normally pull high, L→R scan)	Input
7	RESET	Hardware global reset and low active	Input
8	STBYB	Standby mode, Normally pulled high STBYB="1", normal operation STBYB="0", timing controller, source drive will turn off, all output are High-Z	Input
9	GND	Power Ground	Power
10	Rxin0-	Data Lane 0N	Input
11	Rxin0+	Data Lane 0P	Input
12	GND	Power Ground	Power
13	Rxin1-	Data Lane 1N	Input
14	Rxin1+	Data Lane 1P	Input
15	GND	Power Ground	Power
16	RxCLK-	CLK Lane N	Input
17	RxCLK+	CLK Lane P	Input
18	GND	Power Ground	Power
19	Rxin2-	Data Lane 2N	Input
20	Rxin2+	Data Lane 2P	Input
21	GND	Power Ground	Power
22	Rxin3-	Data Lane 3N	Input
23	Rxin3+	Data Lane 3P	Input
24	GND	Power Ground	Power
25~37	NC	No connection	-
38	GND	Power Ground	Power
39	AVDD	Power for Analog Circuit	Input
40	GND	Power Ground	Power
41	VGH	TFT Gate On Voltage	Power
42	NC	No connection	-
43	VGL	TFT Gate Off Voltage	Power
44	NC	No connection	-

45~46	VLED-	LED Cathode	Power
47~48	NC	No connection	-
49~50	VLED+	LED Anode	Power

SCAN DIRECTION :

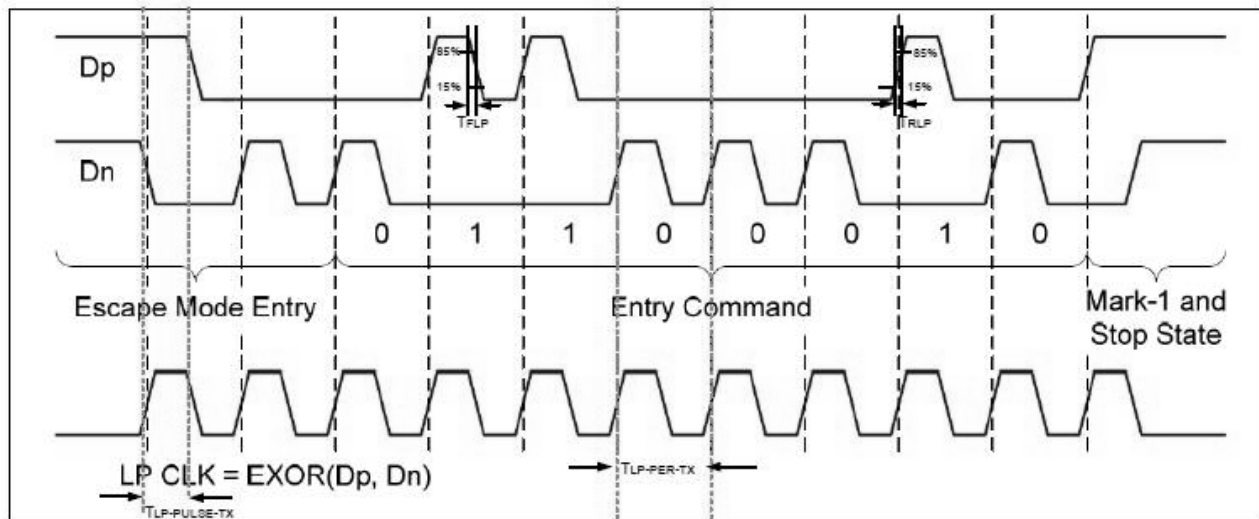


11. Timing Characteristics

11.1 AC Characteristics

11.1.1 LP Transmitter AC Specification

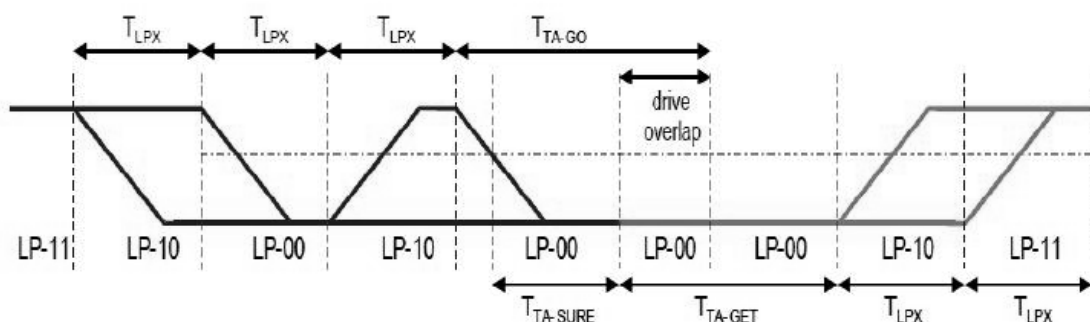
Parameter	Symbol	Min	Typ	Max	Units	Notes
15%~85% rising time and falling time	T_{RLP} / T_{FLP}	-	-	25	ns	-
30%~85% rising time and falling time	T_{REOT}	-	-	35	ns	-
Pulse width of LP exclusive-OR clock	First LP EXOR clock pulse after STOP state or Last pulse before stop state	$T_{LP-PULSE-TX}$	40	-	-	ns
Period of the LP EXOR clock	$T_{LP-PER-TX}$	90	-	-	mV/ns	-
Slew Rate @CLOAD =0pF	$\delta V/\delta t_{SR}$	30	-	500	mV/ns	-
Slew Rate @CLOAD =5pF		30	-	200	mV/ns	-
Slew Rate @CLOAD =20pF		30	-	150	mV/ns	-
Slew Rate @CLOAD =70pF		30	-	100	mV/ns	-
Load Capacitance	T_{RLP}	-	-	70	pF	-



11.1.2 Turnaround Procedure

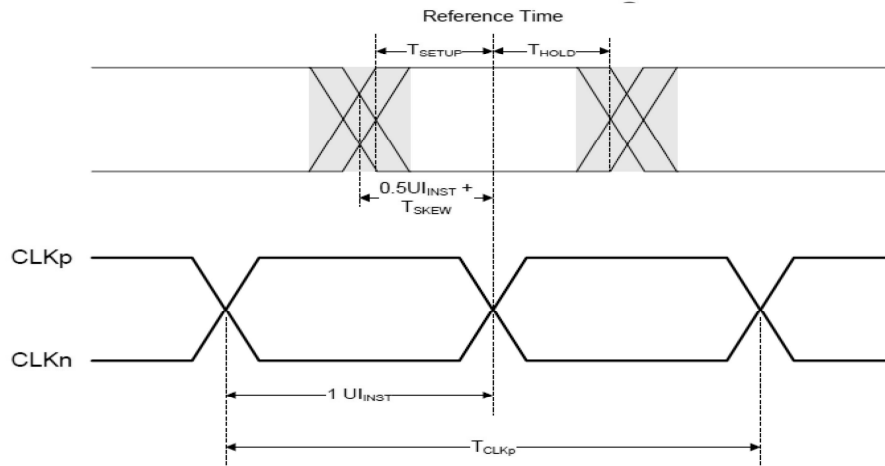
Turnaround Procedure Operation Timing Parameters

Parameter	Symbol	Min	Typ	Max	Units
Length of any Low-Power state period: Master side	T_{LPX}	50	-	75	ns
Length of any Low-Power state period: Slave side	T_{LPX}	50	55.56	58.34	ns
Ratio of T_{LPX} (Master)/ T_{LPX} (Slave) between Master and Slave side	Ratio T_{LPX}	2/3	-	3/2	
Time-out before new TX side start driving	$T_{TA-Sure}$	T_{LPX}	-	$2T_{LPX}$	ns
Time to drive LP-00 by new TX	T_{TA-GET}	-	$5T_{LPX}$	-	ns
Time to drive LP-00 after Turnaround Request	T_{TA-GO}	-	$4T_{LPX}$	-	ns



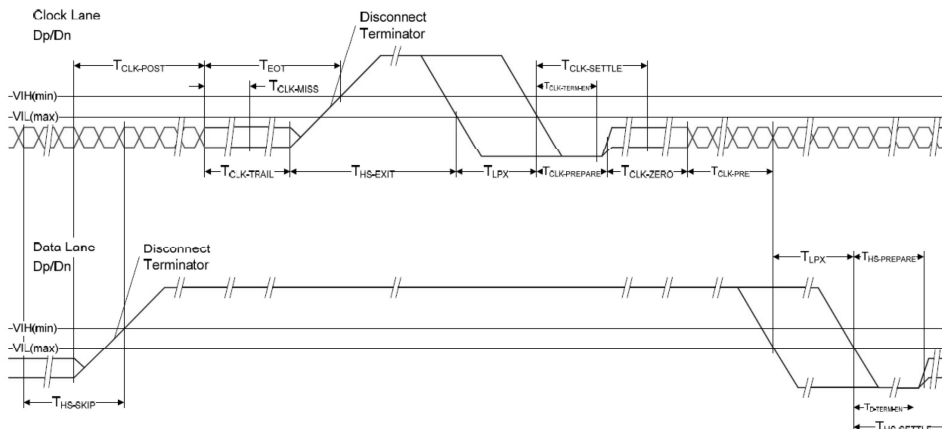
11.1.3 High speed transmission

Parameter	Symbol	Min	Typ	Max	Units
UI instantaneous	U_{INST}	2	-	12.5	ns
Data to Clock Skew(measured at transmitter)	$T_{SKEW(TX)}$	-0.15	-	0.15	U_{INST}
Data to Clock Setup time(measured at receiver)	$T_{SETUP(RX)}$	0.15	-	-	U_{INST}
Data to Clock Hold time(measured at receiver)	$T_{HOLD(RX)}$	0.15	-	-	U_{INST}
20%~80% rise time and fall time	T_R, T_F	150	-	-	ps
		-	-	0.3	U_{INST}



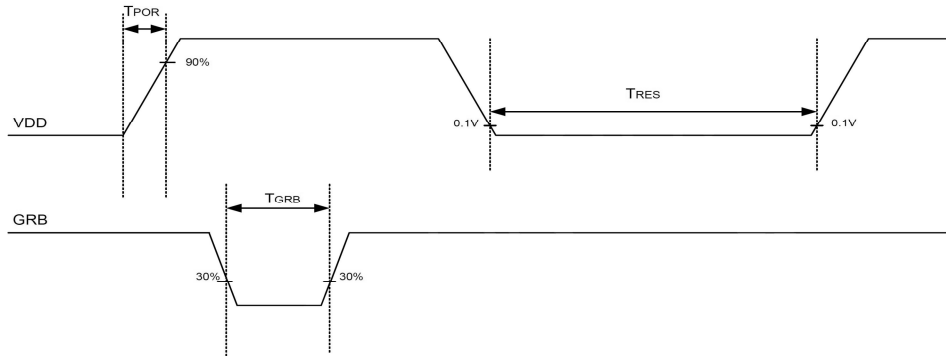
11.1.4 High speed Clock Transmission

Parameter	Symbol	Min	Typ	Max	Units
Time that the transmitter shall continue sending HS clock after the last associated Data Lane has transitioned to LP mode	TCLK-POST	60+52UI	-	-	ns
Detection time that the clock has stopped toggling	TCLK-MISS	-	-	60	ns
Time to drive LP-00 to prepare for HS clock transmission	TCLK-PREPARE	38	-	95	ns
Minimum lead HS-0 drive period before starting clock	TCLK-PREPARE + TCLK-ZERO	300	-	-	ns
Time to enable Clock Lane receiver line termination measured from when Dn cross $V_{IL,MAX}$	THS-TERM-EN	-	-	38	ns
Minimum time that the HS clock must be prior to any associated data lane beginning the transmission from LP to HS mode	TCLK-PRE	8	-	-	UI
Time to drive HS differential state after last payload clock bit of a HS transmission burst	TCLK-TRAIL	60	-	-	ns

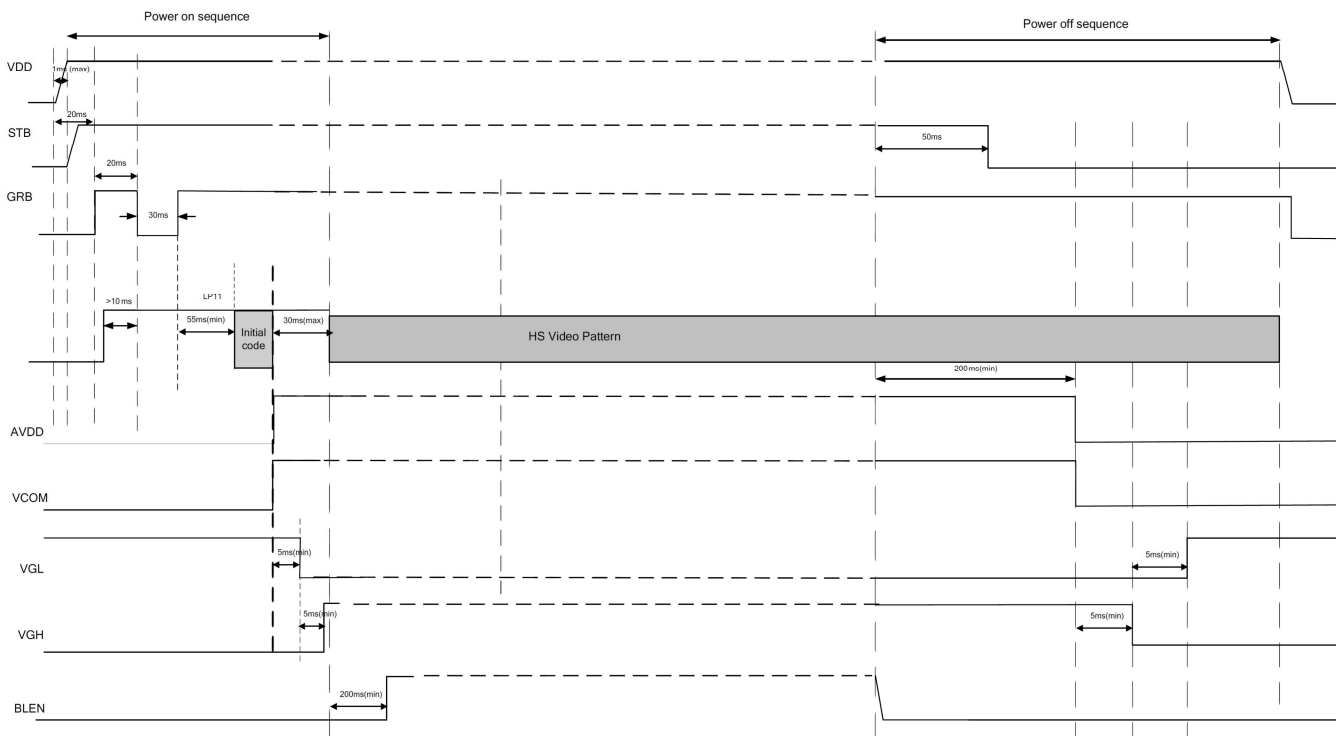


⚠ 11.1.5 VDD/GRB(RESET) AC Characteristic

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
VDD power slew rate	T _{POR}	-	-	20	ms	From 0 to 90% VDD
GRB active pulse width	T _{GRB}	1	-	-	ms	VDD=VDD_IF=1.8V
VDD resettle time	T _{RES}	1	-	-	s	



⚠ 11.2 Power On/Off Sequence



⚠ 11.3 Input Timing Table

DE mode

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
DCLK frequency @Frame rate=60hz	fclk	40.8	51.2		Mhz
Horizontal display area	thd	1024			DCLK
HSYNC period time	th	1114	1344		DCLK
HSYNC blanking	thb+thfp	90	320		DCLK
Vertical display area	Tvd	600			H
VSYNC period time	Tv	610	635		H
VSYNC blanking	Tvb+Tvfp	10	35		H

HV mode

Horizontal input timing

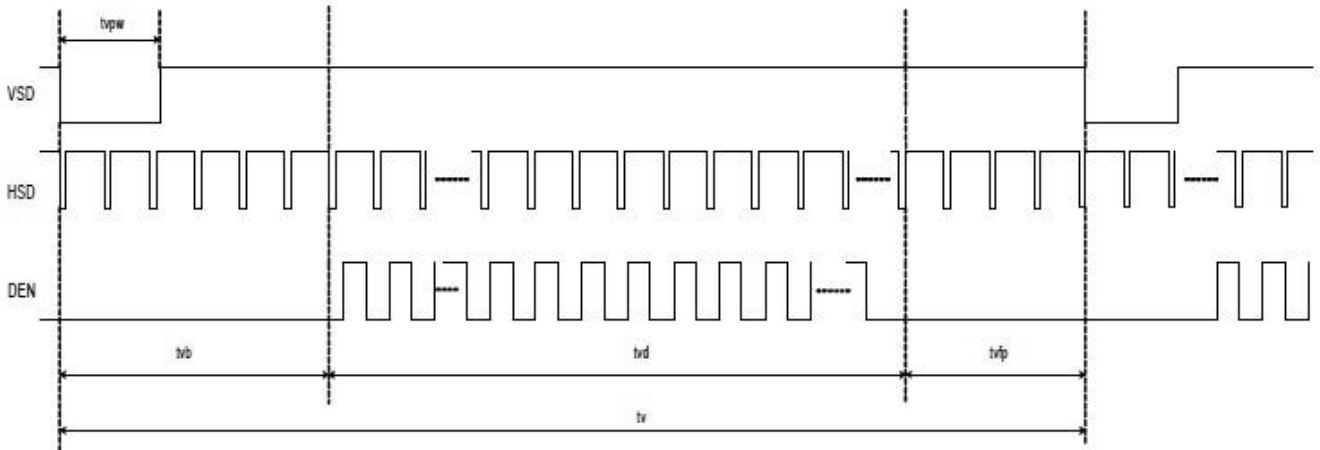
Parameter		Symbol	Value			Unit
Horizontal display area		thd	1024			DCLK
DCLK frequency@ Frame rate=60hz		fclk	Min.	Typ.	Max.	Mhz
			44.9	51.2		
1 Horizontal Line		th	1200	1344		DCLK
HSYNC pulse width	Min.	thpw	1			
	Typ.		70			
	Max.		140			
HSYNC blanking		thb	160	160		
HSYNC front porch		thfp	16	160		

HV mode

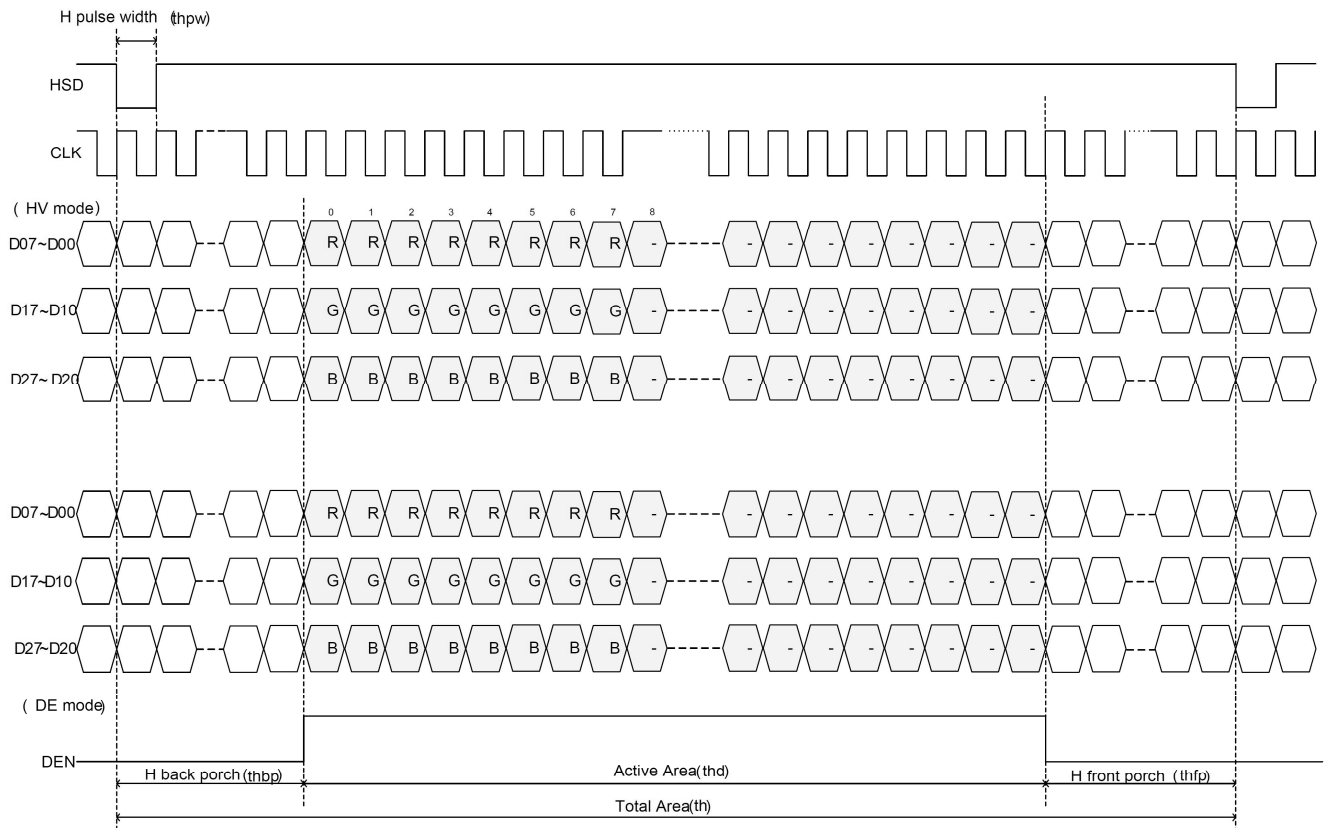
Vertical input timing

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Vertical display area	tvd	600			H
VSYNC period time	tv	624	635		H
VSYNC pulse width	tvpw	1	20		H
VSYNC back porch	tvb	23	23		H
VSYNC front porch	tvfp	1	12		H

Vertical input timing



Horizontal input timing



12. Capacitive touch panel programming guide

12.1 Communication Interface (CN2)

Pin no	Symbol	I/O	Description	Remark
1	Shielding_GND	--	Shielding Ground	--
2	GND	I	Ground	--
3	VDD	I	Power supply (+3.3V)	--
4	/RESET	I	System reset signal input, active low	--
5	NC	--	No connection	--
6	NC	--	No connection	--
7	NC	--	No connection	--
8	IIC_INT	I	Indicate coordinate data ready	--
9	IIC_SDA	I/O	I2C Serial data	--
10	IIC_SCL	I	I2C Serial clock	--
11	GND	I	Ground	--
12	Shielding_GND	--	Shielding Ground	--

※I2C Slave address is 0x55(7-bits address) for Touch IC.

12.2 Command Table

Reg. Addr.	Name	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0x12	XY0 Coord. (High Byte)	Valid 0 (RO)	X0_H (RO)			Reserved	Y0_H (RO)		
0x13	X0 Coord. (Low Byte)	X0_L (RO)							
0x14	Y0 Coord. (Low Byte)	Y0_L (RO)							

XY Coordinate Registers represent the XY coordinates for each touch point ID. Valid bit field tells that this point ID is valid and the XY information represents a real touch point on touch sensor.



13. Reliability Test Items

No.	Test items	Conditions	Remark
1	High temperature operation	70°C , 240hours	--
2	Low temperature operation	-20°C , 240hours	--
3	High temperature storage	80°C , 240hours	--
4	Low temperature storage	-30°C , 240hours	--
5	High temperature & high humidity storage	40°C , 90% RH , 240hours	--
6	Thermal Shock storage	-20°C , 30min. ~ 70°C , 30min. , 100 Cycles	--
7	Vibration test	Sweep frequency : 10~55~10 Hz, Amplitude : 0.75mm Test direction : X, Y, Z 3 axis, and duration Test time : 0.5hr for each axis	Non-operation

Criterion: There should be no change which might affect the practical display function when the display quality test is conducted under normal operating condition.



14. General Precautions

Please pay attentions to the followings as using the LCD module.

14.1 Handling

- (a) Do not apply strong mechanical stress like drop, shock or any force to LCD module. It may cause improper operation, even damage.
- (b) Because the polarizer is very fragile and easy to be damaged, do not hit, press or rub the display surface with hard materials.
- (c) Do not put heavy or hard material on the display surface, and do not stack LCD modules.
- (d) If the display surface is dirty, please wipe the surface softly with cotton swab or clean cloth.
- (e) Avoid using Ketone type materials (e.g. Acetone), Toluene, Ethyl acid or Methyl chloride to clean the display surface. It might damage the polarizer permanently. The recommended solvents are water and Isopropyl alcohol.
- (f) Wipe off water droplets or oil immediately.
- (g) Protect the LCD module from ESD. It will damage the LSI and the electronic circuit.
- (h) Do not touch the output pins directly with bare hands.
- (i) Do not disassemble the LCD module.

14.2 Storage

- (a) Do not leave the LCD modules in high temperature, especially in high humidity for a long time.
- (b) Do not expose the LCD modules to sunlight directly.
- (c) The liquid crystal is deteriorated by ultraviolet. Do not leave it in strong ultraviolet ray for a long time.
- (d) Avoid condensation of water. It may cause improper operation.
- (e) Please stack only up to the number stated on carton box for storage and transportation. Excessive weight will cause deformation and damage of carton box.

14.3 *Operation*

- (a) When mounting or dismantling the LCD modules, turn the power off.
- (b) Protect the LCD modules from electric shock.
- (c) The Driver IC control algorithms should always be obeyed to avoid damaging the LSI and electronic circuit.
- (d) Be careful to avoid mixing up the polarity of power supply for backlight.
- (e) Absolute maximum rating specified above has to be always kept in any case. Exceeding it may cause non-recoverable damage of electronic components or, nevertheless, burning.
- (f) When a static image is displayed for a long time, remnant image is likely to occur.
- (g) Be sure to avoid bending the FPC to an acute shape, it might break FPC.

14.4 *Others*

- (a) If the liquid crystal leaks from the panel, it should be kept away from the eyes or mouth.
- (b) For the fragility of polarizer, it is recommended to attach a transparent protective plate over the display surface.
- (c) It is recommended to peel off the protection film on the polarizer slowly so that the electrostatic charge can be minimized.

15. Quality and reliability

15.1 Test condition

Test should be conducted under the following conditions:

- (a) Ambient temperature: $25 \pm 5^{\circ}\text{C}$
- (b) Humidity: $55 \pm 10\% \text{ RH}$

15.2 Sampling plan

Sampling method shall be in accordance with MIL-STD-105D, inspection level II, normal inspection, and single sampling plan tables for normal tightened and reduced inspection.

15.3 Acceptable quality level

A major defect is a defect that could result in failure or materially reduce that the usability of the unit of product for its intended purpose.

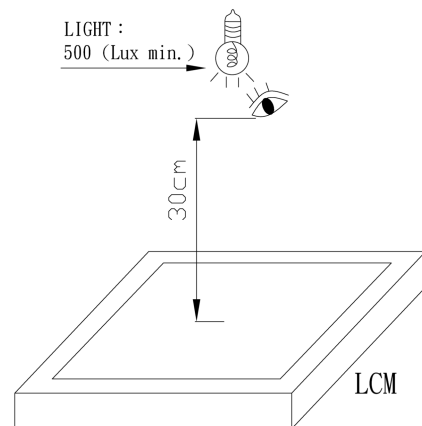
A minor defect is one that does not materially reduce the usability of the unit of product for its intended purpose or is a departure from established standards having no significant bearing on the effective use or operation of the unit.

15.4 Appearance

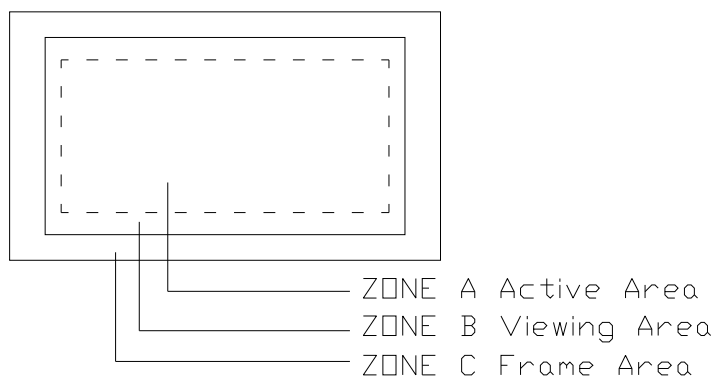
Appearance test is to be conducted by human eyes at approximately 30cm distance from LCD module under the single fluorescent light without reflection.

Condition:

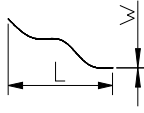
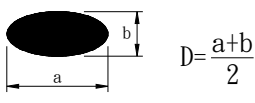
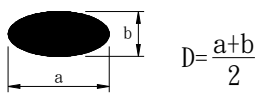
- (a) Illumination: 500 Lux min
- (b) Inspect determination: 30cm
- (c) Inspect direction: above the LCM
- (d) View angle: $\pm 30^{\circ}$



The inspection area of LCD panel shall be within the range of following limits.



15.5 Inspection quality criteria for TFT LCM

ITEM	DESCRIPTION OF DEFECTS	Zone	Acceptable level (%)																					
DIMENSION	Refer to individual acceptance specification	A,B,C	2.5																					
LINE DEFECT ON SURFACE (SCRATCHES, BLACK/ WHITE LINE)	(a) $L \leq 2\text{mm} \ \& \ W \leq 0.03\text{mm}$, disregard (b) $L \leq 3\text{mm} \ \& \ 0.03\text{mm} < W \leq 0.05\text{mm}$, $N \leq 3$ (c) $L \leq 2.5\text{mm} \ \& \ 0.05\text{mm} \leq W \leq 0.1\text{mm}$, $N \leq 1$ (d) $W > 0.1\text{mm}$, as SPOT DEFECT ON SURFACE 	A	2.5																					
SPOT DEFECT ON SURFACE (BLACK/ WHITE SPOT)	Average diameter, D (a) $D \leq 0.2\text{mm}$, disregard (b) $0.2\text{mm} < D \leq 0.5\text{mm}$, $N \leq 6$.ACC (c) $D > 0.5\text{mm}$, REJ (d) Distance between 2 spots $\geq 10\text{mm}$ 	A	2.5																					
PROTRUDE DOT/ DENT ON SURFACE	Average diameter D (a) $D \leq 0.2\text{mm}$, disregard (b) $0.2\text{mm} < D \leq 0.3\text{mm}$, $N \leq 3$.ACC (c) $0.3\text{mm} < D \leq 0.5\text{mm}$, $N \leq 1$.ACC (d) $D > 0.5\text{mm}$, REJ 	A	2.5																					
POLARIZER EDGE	BUBBLES · DENTS · RESIDUAL GLUE · DECKLE EDGE : Active Area outside area don't care.	A,B	2.5																					
BRIGHT/ DARK POINT	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Item</th> <th>Allow number in Area A</th> </tr> </thead> <tbody> <tr> <td rowspan="4" style="text-align: center;">(a) Bright point</td> <td>Single point</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Two adjacent point</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Three adjacent point</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Total point</td> <td style="text-align: center;">2</td> </tr> <tr> <td rowspan="4" style="text-align: center;">(b) Dark point</td> <td>Single point</td> <td style="text-align: center;">3</td> </tr> <tr> <td>Two adjacent point</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Three adjacent point</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Total point</td> <td style="text-align: center;">3</td> </tr> </tbody> </table> <p>※ Point : A sub pixel 1R or 1G or 1B ※ The distance of bright or dark point > 5mm</p>	Item		Allow number in Area A	(a) Bright point	Single point	2	Two adjacent point	0	Three adjacent point	0	Total point	2	(b) Dark point	Single point	3	Two adjacent point	0	Three adjacent point	0	Total point	3	A	2.5
Item		Allow number in Area A																						
(a) Bright point	Single point	2																						
	Two adjacent point	0																						
	Three adjacent point	0																						
	Total point	2																						
(b) Dark point	Single point	3																						
	Two adjacent point	0																						
	Three adjacent point	0																						
	Total point	3																						
CHROMA MURA	Mura and leak are defined through transmission ND 5% filter	A	2.5																					
DISPLAY ABNORMAL	(a) Non display (b) Line defect (c) Response time, contrast ratio, brightness or viewing angle abnormal (d) Water ripple (e) Flicker	A	0.65																					

NOTE : (1) ACC : Accept (2) REJ : Reject



16. Initialization by instructions

MIPI CLK Speed:520Mbps(260MHZ)

H back porch:60

H front porch:60

H pulse width:10

V back porch:5

V front porch:10

V pulse width:2

MIPI command:

regw(0xB2,0x10);

regw(0x80,0x99);

regw(0x81,0xB8);

regw(0x82,0xE9);

regw(0x83,0x38);

regw(0x84,0x50);

regw(0x85,0xD2);

regw(0x86,0xE6);