Preliminary

Ver.: 0.04

TFT LCD Specification

Model Name: TD170WGCA1

Customer Signature
Date

This technical specification is subjected to change without notice

Table of Contents

Record of Reversion

Rev	Issued Date	Description
0.00	Sep 19, 2003	New Create
0.01	Sep 22, 2003	Modify as below: 1. Vsync Frequency changes from 75(Typ.) to 60(Typ.) on page 7. 2. Hsync Frequency changes from 80(Typ.) to 64(Typ.) on page 7. 3. Main Frequency changes from 135(Typ.) to 108(Typ.) on page 7. 4. Shock (non-operation) condition: Shock level change from 50G to 70G on page 18. 5. Surface Discharge (non-operation) condition: Description is changed from “Discharge: Air: ± 8kV; Contact: ± 6kV” to “Discharge: Air: ± 15kV; Contact: ± 8kV” on page 18. 6. Add an explanatory note 8-2: Temperature and relative humidity range are show in the figure below. Wet bulb temperature should be 39℃ max. and no condensation of water. 7. Update the connected data of “Timing Parameters Table” on page 11. 8. Update the connected illustration of “Timing definition” on page 12. 9. Add the connected section of “6.5 Power ON/OFF Sequence” on page 13. Add 1. Page 23 Module Label Drawing & Definition
0.02	Sep 26, 2003	Modify as below: 1. Page 6: LVDS Interface 2. Page 8: Light Source 3. Page 14: Color Chromaticity
0.03	Oct 30, 2003	Add 1. Page 4: Color Saturation 2. Page 5: Connector Diagram 3. Page 16: Cross Talk spec Modify 1. Page 10: Driving Backlight 2. Page 16: Optical Specification 3. Page 23: Mechanical Drawing 4. Page 25: Module Label Drawing & Definition

0.04	Jan 13, 2004	Modify 1. Page 2: Table of Contents 2. Page 10: 5.1TFT LCD Module 3. Page 14: a. Timing Parameters 4. Page 17: Gray level transmittance 5. Page 26:Package Drawing

1. FEATURES

TD170WGCA1 is a color active matrix TFT (Thin Film Transistor) liquid crystal display (LCD) that uses amorphous silicon TFTs as a switching device. This mode is composed of a TFT LCD panel, a driver circuit and a back-light system. The resolution of a 17.0" contains 1280 x 1024 pixels and can display up to 16.2 millions colors.

(1) 17.0" SXGA (1280 x RGB x 1024 pixels) display size for PC

(2) LVDS interface system

(3) Thin and light weight

(4) High contrast ratio

2. GENERAL SPECIFICATIONS

Item	Description	Unit
Display Size (Diagonal)	17.0 (43.2)	Inch (cm)
Driver Element	TFT-LCD Active Matrix	
Active Area (HxV)	337.92 (H) x 270.336 (V)	mm
Number of Dots (HxV)	1280 x RGB x 1024	dot
Pixel Pitch (HxV)	0.088 x 0.264	mm
Color Arrangement	RGB Vertical Stripe	
Color Numbers	16,194,227 (6 bits+FRC)	
Color Saturation	72 (NTSC)	%
Outline Dimension (HxVxT)	358.5 x 296.5 x 17.0 (Typ)	mm
Weight	1900(Typ) +/- 50	g
Display Mode	Normally White	
Surface Treatment	Anti Glare and Hard-Coating（3H）	

3. INPUT/OUTPUT TERMINALS

3.1 TFT LCD Panel

Connector Name/ Designation: Interface Connector/ Interface Card

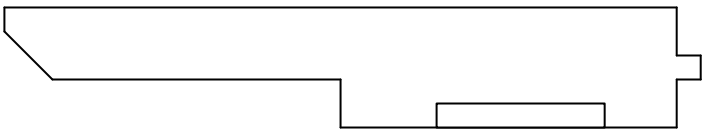
Type Part Number: JAE FI-XB30S-H or Equivalent

Mating Housing Part Number: JAE FI-X30S-H or Equivalent

Pin No	Symbol	Function	Remark
1	R1IN0-	Receiver signal of Odd side pixels (-)	LVDS
2	R1IN0+	Receiver signal of Odd side pixels (+)	LVDS
3	R1IN1-	Receiver signal of Odd side pixels (-)	LVDS
4	R1IN1+	Receiver signal of Odd side pixels (+)	LVDS
5	R1IN2-	Receiver signal of Odd side pixels (-)	LVDS
6	R1IN2+	Receiver signal of Odd side pixels (+)	LVDS

7	GND		
8	CK1IN-	Receiver signal of Odd side pixels (-)	LVDS
9	CK1IN+	Receiver signal of Odd side pixels (+)	LVDS
10	R1IN3-	Receiver signal of Odd side pixels (-)	LVDS
11	R1IN3+	Receiver signal of Odd side pixels (+)	LVDS
12	R2IN0-	Receiver signal of Even side pixels (-)	LVDS
13	R2IN0+	Receiver signal of Even side pixels (+)	LVDS
14	GND		
15	R2IN1-	Receiver signal of Even side pixels (-)	LVDS
16	R2IN1+	Receiver signal of Even side pixels (+)	LVDS
17	GND		
18	R2IN2-	Receiver signal of Even side pixels (-)	LVDS
19	R2IN2+	Receiver signal of Even side pixels (+)	LVDS
20	CK2IN-	Clock signal of Even side pixels (-)	LVDS
21	CK2IN+	Clock signal of Even side pixels (+)	LVDS
22	R2IN3-	Receiver signal of Even side pixels (-)	LVDS
23	R2IN3+	Receiver signal of Even side pixels (+)	LVDS
24	GND		
25	NC		
26	NC		
27	NC		
28	V_{DD}	+5 power supply	Power
29	V_{DD}	+5 power supply	Power
30	V_{DD}	+5 power supply	Power

3.2 Connector Diagram



Rear view of LCM

3.3 LVDS Interface (Tx: DS90C383 or DS90C385 Equivalent)

1st LVDS Transmitter (***DS90C383, DS90C385***) Signal Interface						
Device Input Pin		Device Input Signal		Output Signal	To TD170WGCA1 Interface(J101)	
No	Symbol	Symbol	Function		Terminal	Symbol
51	TXIN0	RO0	Red Odd Pixel Data (LSB)	TXOUT0- TXOUT0+	No. 1 No. 2	RXO0- RXO0+
52	TXIN1	RO1	Red Odd Pixel Data			
54	TXIN2	RO2	Red Odd Pixel Data			
55	TXIN3	RO3	Red Odd Pixel Data			
56	TXIN4	RO4	Red Odd Pixel Data			
2	TXIN5	RO7	Red Odd Pixel Data (MSB)	TXOUT3- TXOUT3+	No. 10 No. 11	RXO3- RXO3+
3	TXIN6	RO5	Red Odd Pixel Data	TXOUT0- TXOUT0+	No. 1 No. 2	RXO0- RXO0+
4	TXIN7	GO0	Green Odd Pixel Data (LSB)			
6	TXIN8	GO1	Green Odd Pixel Data	TXOUT1- TXOUT1+	No. 3 No. 4	RXO1- RXO1+
7	TXIN9	GO2	Green Odd Pixel Data			
8	TXIN10	GO6	Green Odd Pixel Data	TXOUT3- TXOUT3+	No. 10 No. 11	RXO3- RXO3+
10	TXIN11	GO7	Green Odd Pixel Data (MSB)			
11	TXIN12	GO3	Green Odd Pixel Data	TXOUT1- TXOUT1+	No. 3 No. 4	RXO1- RXO1+
12	TXIN13	GO4	Green Odd Pixel Data			
14	TXIN14	GO5	Green Odd Pixel Data			
15	TXIN15	BO0	Blue Odd Pixel Data (LSB)			
16	TXIN16	BO6	Blue Odd Pixel Data	TXOUT3- TXOUT3+	No. 10 No. 11	RXO3- RXO3+
18	TXIN17	BO7	Blue Odd Pixel Data (MSB)			
19	TXIN18	BO1	Blue Odd Pixel Data	TXOUT1- TXOUT1+	No. 3 No. 4	RXO1- RXO1+
20	TXIN19	BO2	Blue Odd Pixel Data	TXOUT2- TXOUT2+	No. 5 No. 6	RXO2- RXO2+
22	TXIN20	BO3	Blue Odd Pixel Data			
23	TXIN21	BO4	Blue Odd Pixel Data			
24	TXIN22	BO5	Blue Odd Pixel Data			
50	TXIN27	RO6	Red Odd Pixel Data	TXOUT3- TXOUT3+	No. 10 No. 11	RXO3- RXO3+

2nd LVDS Transmitter (***DS90C383, DS90C385***) Signal Interface						
Device Input Pin		Device Input Signal		Output Signal	To TD170WGCA1 Interface(J101)	
No	Symbol	Symbol	Function		Terminal	Symbol
51	TXIN0	RE0	Red Even Pixel Data (LSB)	TXOUT0- TXOUT0+	No. 12 No. 13	RXE0- RXE0+
52	TXIN1	RE1	Red Even Pixel Data			
54	TXIN2	RE2	Red Even Pixel Data			
55	TXIN3	RE3	Red Even Pixel Data			
56	TXIN4	RE4	Red Even Pixel Data			
2	TXIN5	RE7	Red Even Pixel Data (MSB)	TXOUT3- TXOUT3+	No. 22 No. 23	RXE3- RXE3+
3	TXIN6	RE5	Red Even Pixel Data	TXOUT0- TXOUT0+	No. 12 No. 13	RXE0- RXE0+
4	TXIN7	GE0	Green Even Pixel Data (LSB)			
6	TXIN8	GE1	Green Even Pixel Data	TXOUT1- TXOUT1+	No. 15 No. 16	RXE1- RXE1+
7	TXIN9	GE2	Green Even Pixel Data			
8	TXIN10	GE6	Green Even Pixel Data	TXOUT3- TXOUT3+	No. 22 No. 23	RXE3- RXE3+
10	TXIN11	GE7	Green Even Pixel Data (MSB)			
11	TXIN12	GE3	Green Even Pixel Data	TXOUT1- TXOUT1+	No. 15 No. 16	RXE1- RXE1+
12	TXIN13	GE4	Green Even Pixel Data			
14	TXIN14	GE5	Green Even Pixel Data			
15	TXIN15	BE0	Blue Even Pixel Data (LSB)			
16	TXIN16	BE6	Blue Even Pixel Data	TXOUT3- TXOUT3+	No. 22 No. 23	RXE3- RXE3+
18	TXIN17	BE7	Blue Even Pixel Data (MSB)			
19	TXIN18	BE1	Blue Even Pixel Data	TXOUT1- TXOUT1+	No. 15 No. 16	RXE1- RXE1+
20	TXIN19	BE2	Blue Even Pixel Data	TXOUT2- TXOUT2+	No. 18 No. 19	RXE2- RXE2+
22	TXIN20	BE3	Blue Even Pixel Data			
23	TXIN21	BE4	Blue Even Pixel Data			
24	TXIN22	BE5	Blue Even Pixel Data			
50	TXIN27	RE6	Red Even Pixel Data	TXOUT3- TXOUT3+	No. 22 No. 23	RXE3- RXE3+

3.4 Light Source

Connector Name/ Designation: Lamp Connector/ Backlight Lamp

Type Part Number: BHSR-02VS-1 or Equivalent

Mating Type Part Number: SM02B-BHSS-1 or Equivalent

Pin NO.	Symbol	Input	Color	Function
1	Pin 1	HOT	Pink & Blue	High Voltage
2	Pin 2	COLD	White	Low Voltage

4. ABSOLUTE MAXIMUM RATINGS

GND =0V

Item	Symbol	MIN	MAX	Unit	Remark
Power Supply Voltage	Vcc	+4.7	+5.5	V	
Lamp Current	I_L	--	10	mA rms	
Lamp Frequency	F_L	--	100	KHz	
Operating Temperature	Topr	0	+50	℃	
Storage Temperature	Tstg	-20	+60	℃	
Storage Humidity	Hstg	10	90	%RH	Note 4-1

Note 4-1: Maximum wet – bulb temperature at 39℃ or less. (Ta＞40℃) No condensation

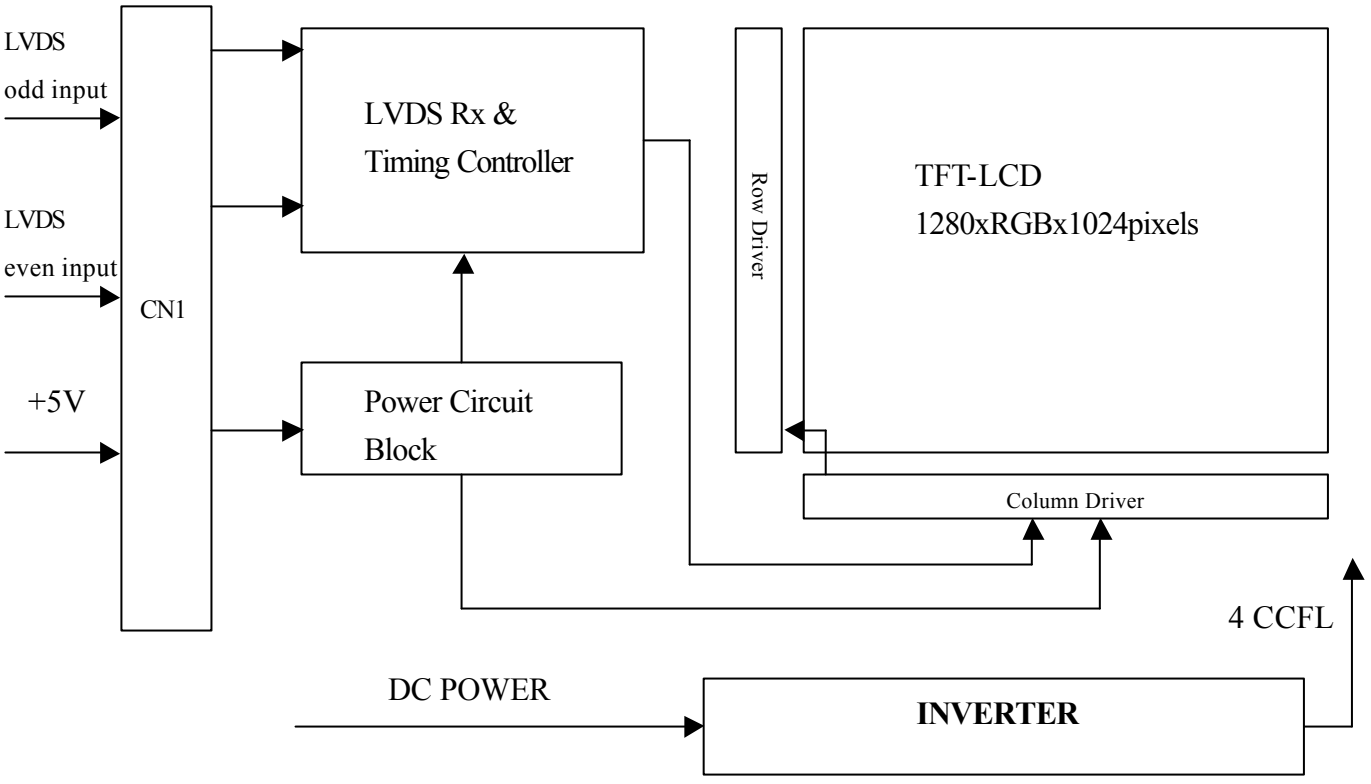
5. ELECTRICAL CHARACTERISTICS

5.1 TFT LCD Module

Ta=25℃

Item		Symbol	MIN	TYP	MAX	Unit	Remark
Voltage of power supply		V_{DD}	4.7	5.0	5.5	V	
Differential Input Threshold Voltage	High	V_{HIH}	--	--	100	mV	V_{CM} = +1.2V
	Low	V_{HIL}	-100	--	--	mV	
Rush Current	I_{RUSH}		--	--	--	3.75	A	
Vsync Frequency		f_V	--	60	75	Hz	
Hsync Frequency		f_H	62	64	80	KHz	
Main Frequency		f_{DCLK}	42	54	67.5	MHz	
Current of Power Supply		White	--	940	--	mA	
		Mosaic	--	940	--	mA	
		Max Pattern (One dot inversion)	--	940	1200	mA	

5.2 Driving TFT LCD Module Block Diagram



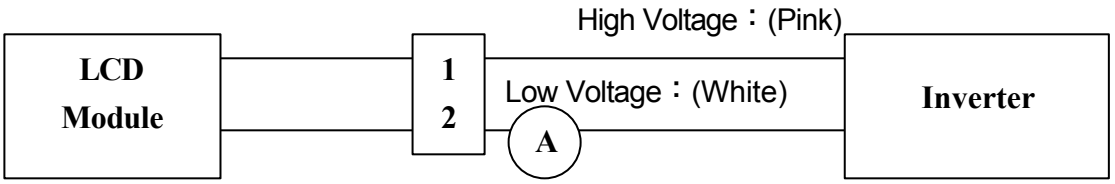
5.3 Driving Backlight

The backlight system is an edge – lighting type with a single CCFL (Cold Cathode Fluorescent Lamp). The characteristics of a single lamp are shown in the following tables.

Ta=25℃

Item	Symbol	MIN	TYP	MAX	Unit	Remark
Lamp Current	I_L	3.0	7.0	7.5	mArms	Note 5-1
Lamp Voltage	V_L	580	650	780	Vrms	I_L=7mA
Power Consumption	P_L	--	18.2	--	W	Note 5-2
Frequency	F_L	40	50	80	kHz	Note 5-3
Operating Life time	Hr	30000	50000	--	Hour	Note 5-4
Lamp starting voltage	Vs	--	--	1120（25℃） 1460（0℃）	Vrms	Note 5-5

Note 5-1: Lamp current is measured with a high frequency current meter as show below.



Switching Frequency：(40~80)KHz

Note 5-2: $W = I_L \times V_L \times 4$

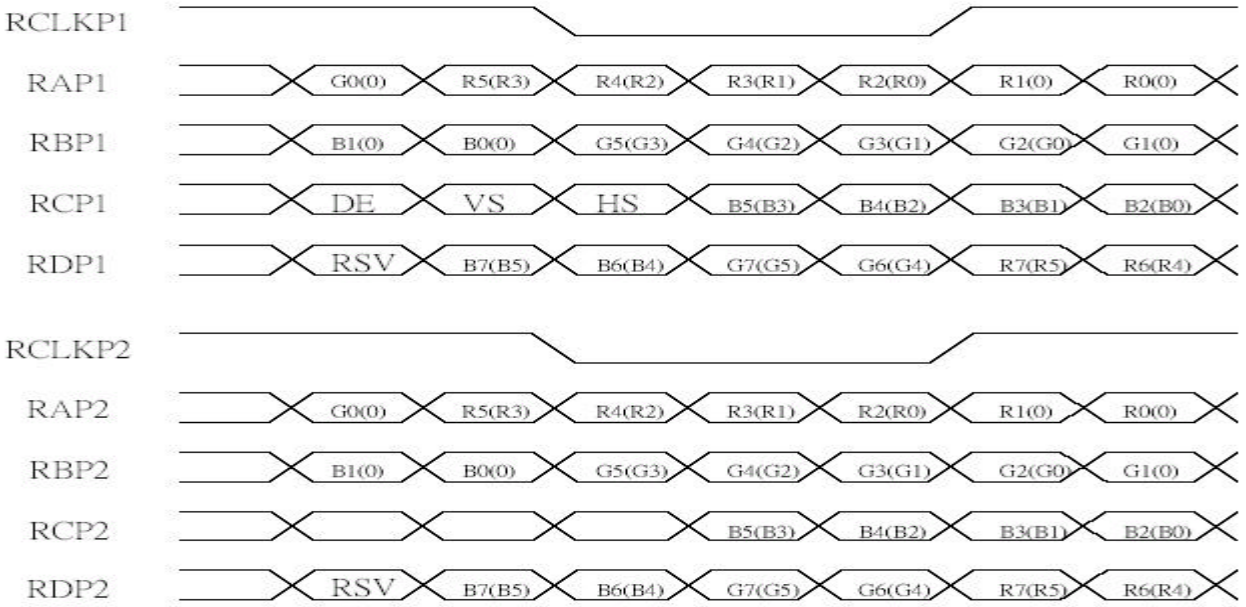
Note 5-3: Lamp frequency may produce interference with horizontal synchronous frequency and this may cause line flow on the display. Therefore lamp frequency shall be detached from the horizontal synchronous frequency and its harmonics as far as possible in order to avoid interference.

Note 5-4: Brightness is decreased to the 50% of the initial value.

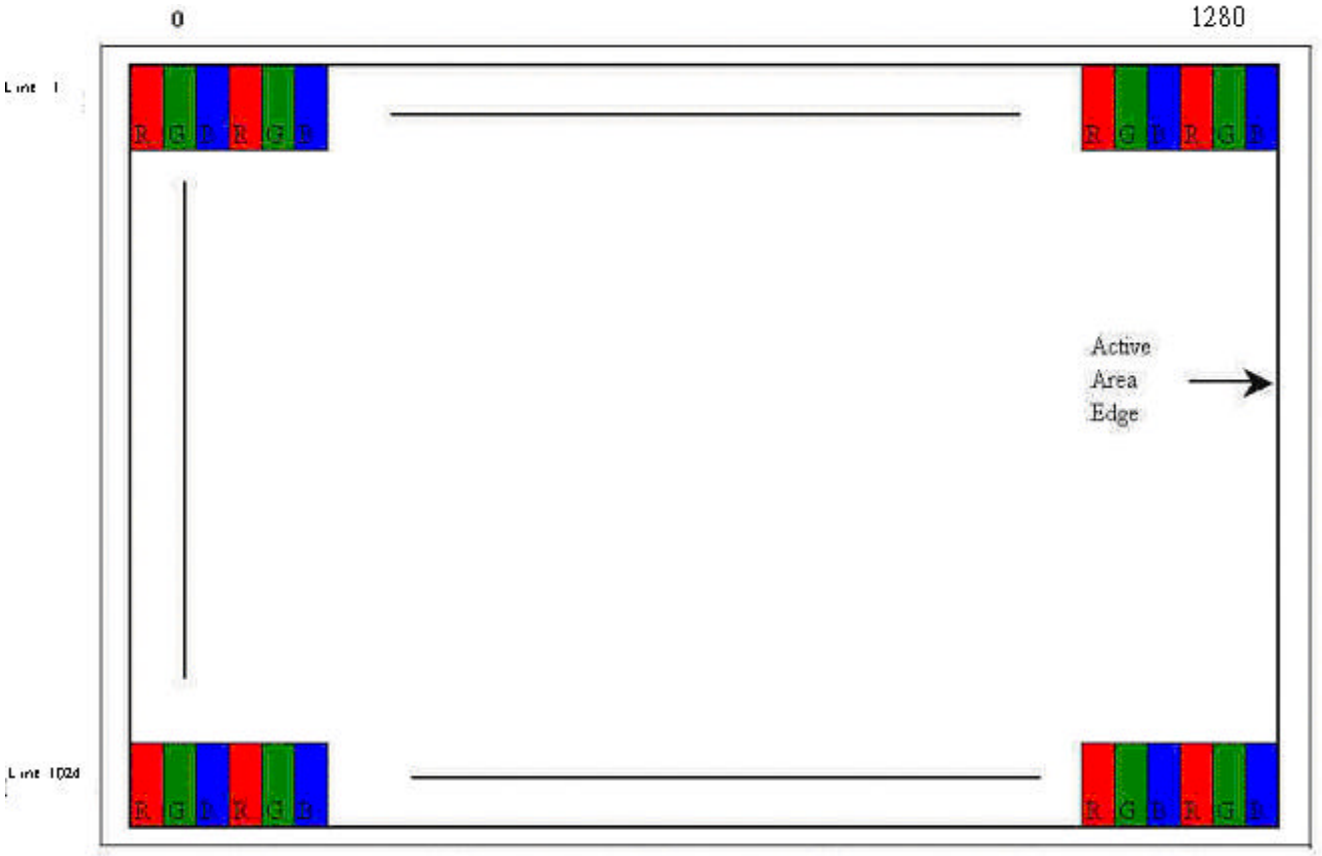
Note 5-5: Above this value should be applied to the lamp for more than 1 second to startup, otherwise the lamp may be not to turn on.

6. TIMING CHART

6.1 LVDS Channel Interface Data Mapping Diagram



6.2 Pixel Format in Display



6.3 Input Signals, Basic Display Color and Gray Scale of Each Color

Color & Gray Scale		Red data								Green data								Blue data							
		R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0
Basic Colors	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	Green	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	Cyan	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Red	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Magenta	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
	Yellow	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	White	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gray Scale Of Red	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	△	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Darker	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	△					↑								↑								↑			
	▽					↓								↓								↓			
	Brighter	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	▽	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gray Scale Of Green	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	△	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	Darker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	△					↑								↑								↑			
	▽					↓								↓								↓			
	Brighter	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0
	▽	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
	Green	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
Gray Scale Of Blue	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	△	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Darker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	△					↑								↑								↑			
	▽					↓								↓								↓			
	Brighter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1
	▽	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0
	Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

Gray Scale Of White & Black	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	△	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Darker	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
	△	↑								↑								↑													
	▽	↓								↓								↓													
	Brighter	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1
	▽	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0
	White	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

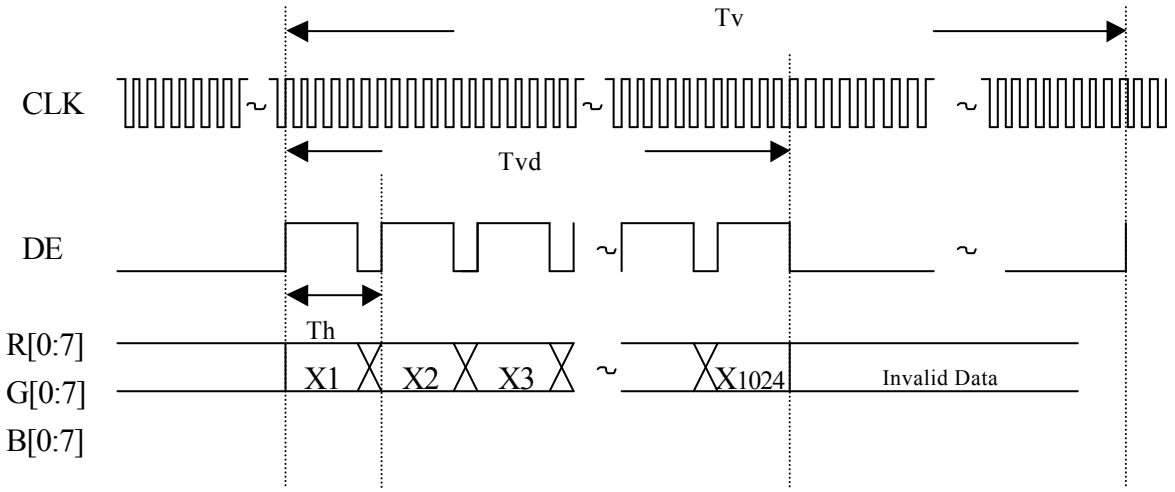
6.4 Interface Timing

a. Timing Parameters

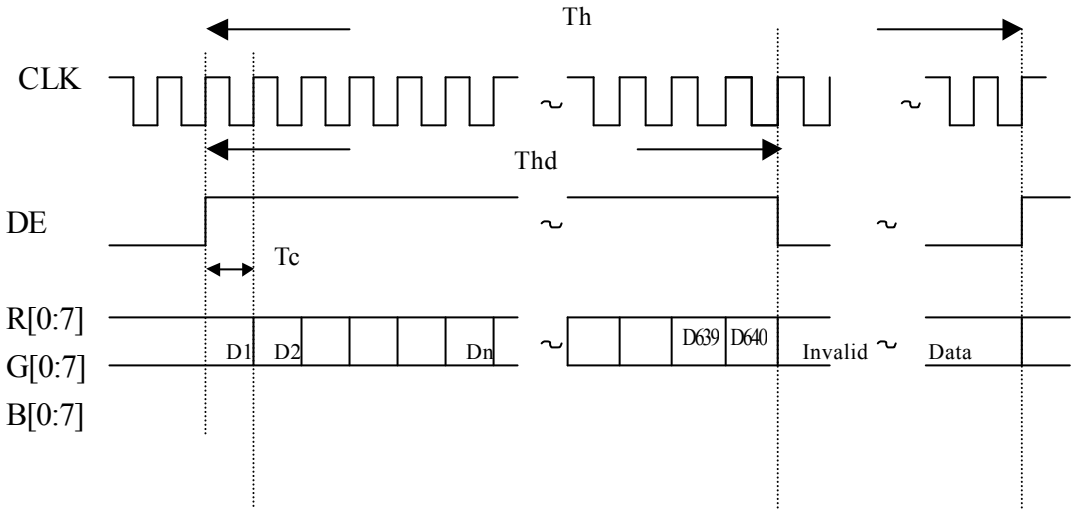
Signal	Item	Symbol	MIN	TYP	MAX	Unit	Note
Clock	Frequency	T_V	42	54	67.5	Mhz	
	High Time	TCH	4	--	--	nsec	
	Low Time	TCL	4	--	--	nsec	
Data	Setup Time	TDS	4	--	--	nsec	
	Hold Time	TDH	4	--	--	nsec	
Data Enable	Setup Time	TES	4	--	--	nsec	
Frame Frequency	Cycle	TV	--	16.7	--	msec	
			1030	1066	1530	Lines	
Vertical Active Display Term	Display Period	T_{VD}	--	1024	--	Lines	
	Vertical Blank Period	TVB	6	--	--	Lines	
One Line Scanning Time	Cycle	T_H	688	844	1022	Clocks	
Horizontal Active Display Term	Display Period	T_{HD}	640	640	640	Clocks	

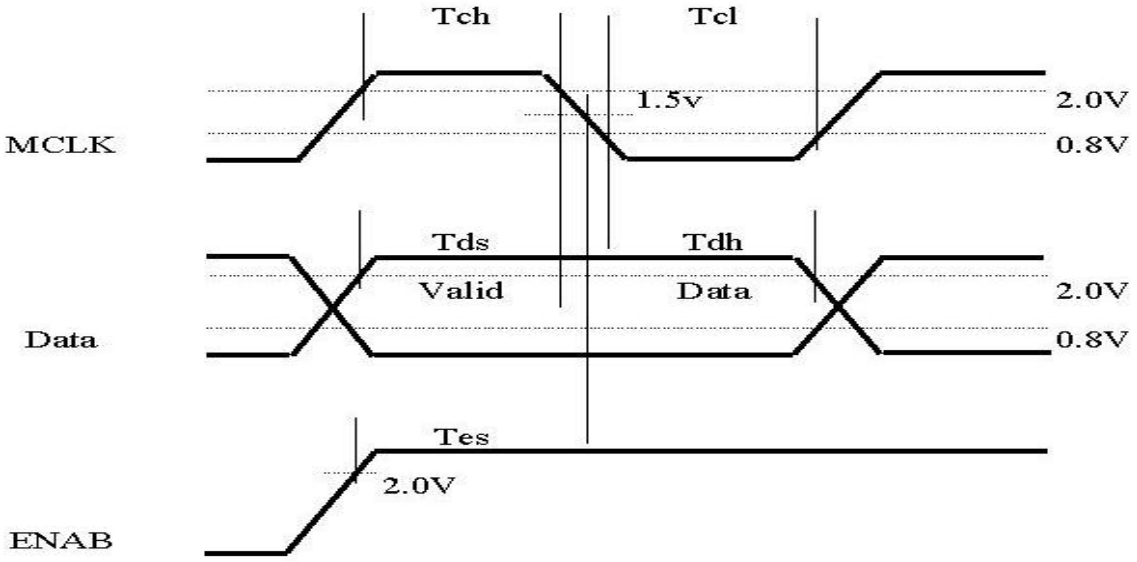
b. Timing definition

- Vertical timing

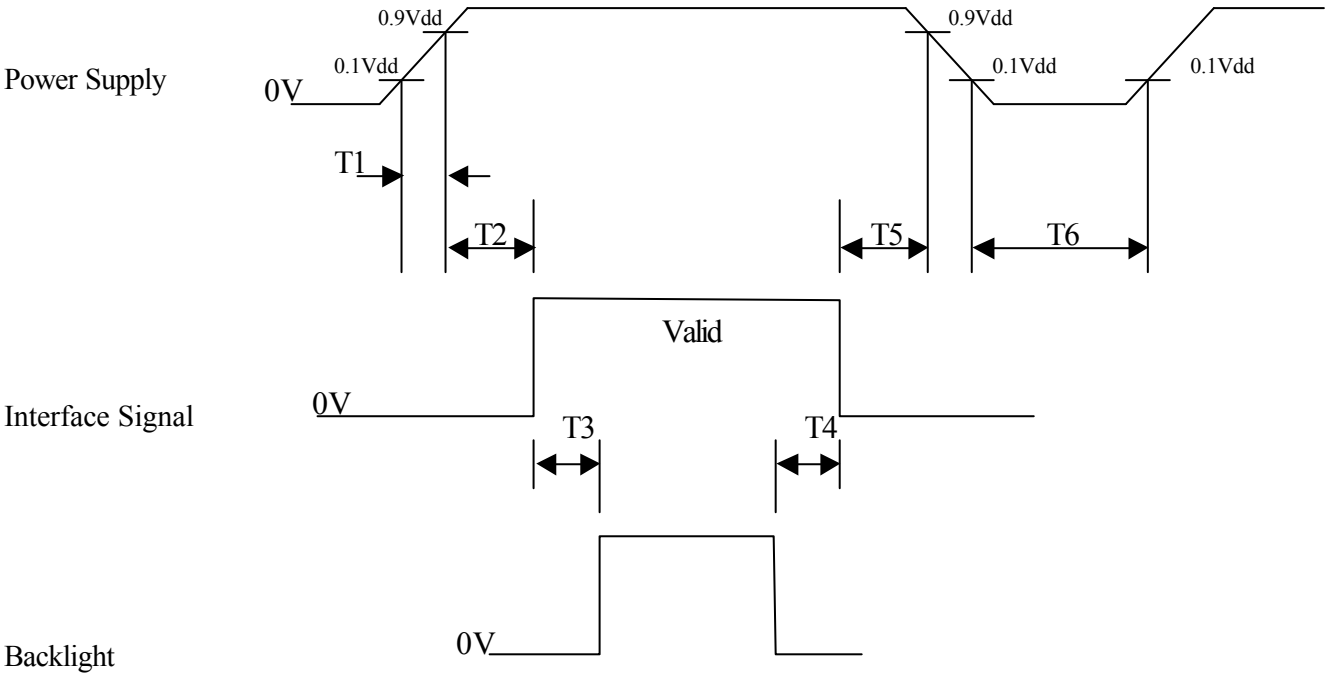


- Horizontal timing





6.5 Power ON/OFF Sequence



a. 0<T1≦10ms
b. 0<T2≦50ms
c. 500≦T3
d. 100ms≦T4
e. 0<T5≦50ms
f. 1sec≦T6

7. OPTICAL CHARACTERISTICS

7.1 Optical Specification

Ta=25℃

Item		Symbol	Condition	MIN	TYP	MAX	Unit	Remarks
Viewing Angle	Hor.	Θ11	CR=10 (At center point)	65	75	--	degree	Note 7-1
		Θ12		65	75	--		
	Ver.	Θ21		65	75	--		
		Θ22		50	60	--		
Contrast ratio (Center point)		CR	Θ=0° Φ=0° Normal Viewing Angle	300	450	--		Note 7-2
Response time	Rising	Tr		--	4	5	ms	Note 7-4
	Falling	Tf		--	12	15		
Luminance of White (Center Point)		Y_L		200	260	--	cd/m^2	Note 7-5
Color Chromaticity (CIE1931)	Red	R_X		0.622	0.652	0.682		Note 7-6
		R_Y		0.303	0.333	0.363		
	Green	G_X		0.247	0.277	0.307		
		G_Y		0.599	0.629	0.659		
	Blue	B_X		0.111	0.141	0.171		
		B_Y		0.024	0.054	0.084		
	White	W_X		0.28	0.31	0.34		
		W_Y		0.30	0.33	0.36		
9 Points White Variation		δ_L		0.7	0.8	--		Note 7-3
Cross Talk		CT		--	--	2.0	%	Note 7-7

Gray level transmittance:

Gray level	Transmittance (%)
0	0.19
31	0.57
63	3.89
95	10.97
127	23.2
159	38.19
191	55.81
223	79.07
255	100

7.2 Basic measure condition

(1) Ambient temperature: Ta=25+/-2℃

(2) Vcc = 5.0V

(3) Fv = 75Hz

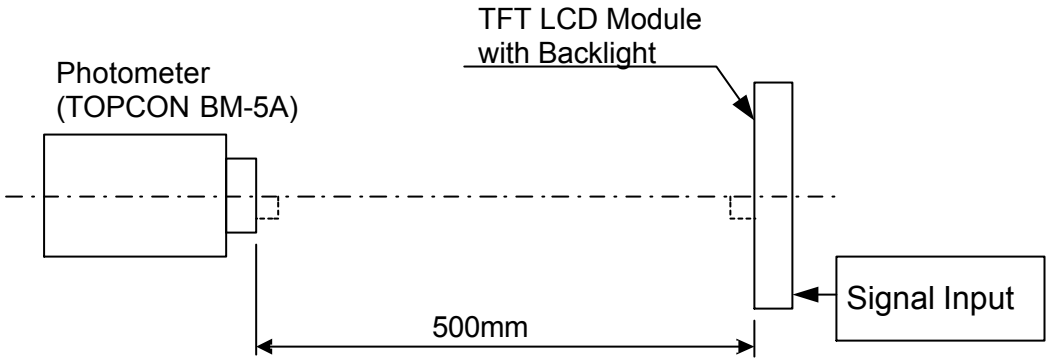
(4) f_{DCLK} = 135MHz

(5) I_L = 7mA

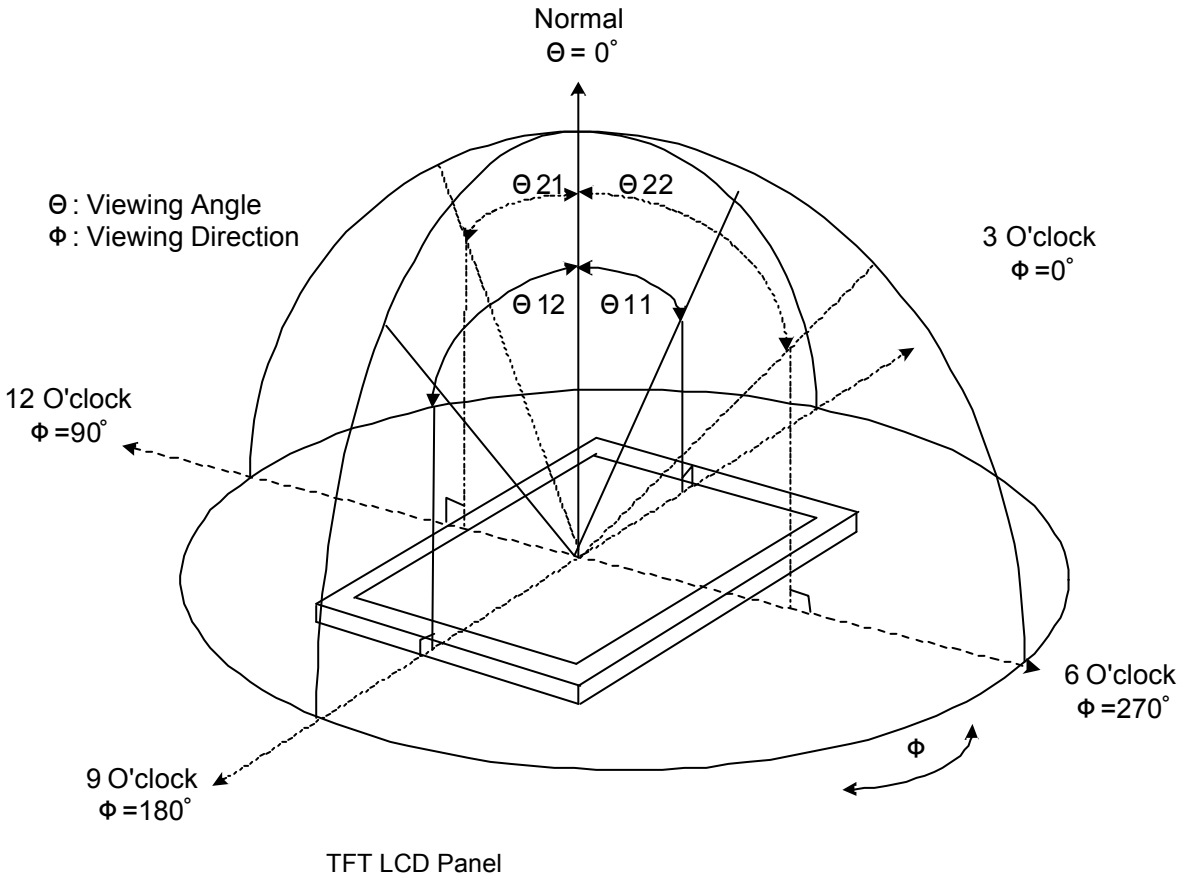
(6) Inverter model: PLCD1717418A/E-MAX

Environmental illumination ≦1 Lux

(7) Testing facility



Note 7-1: Viewing angle diagrams:

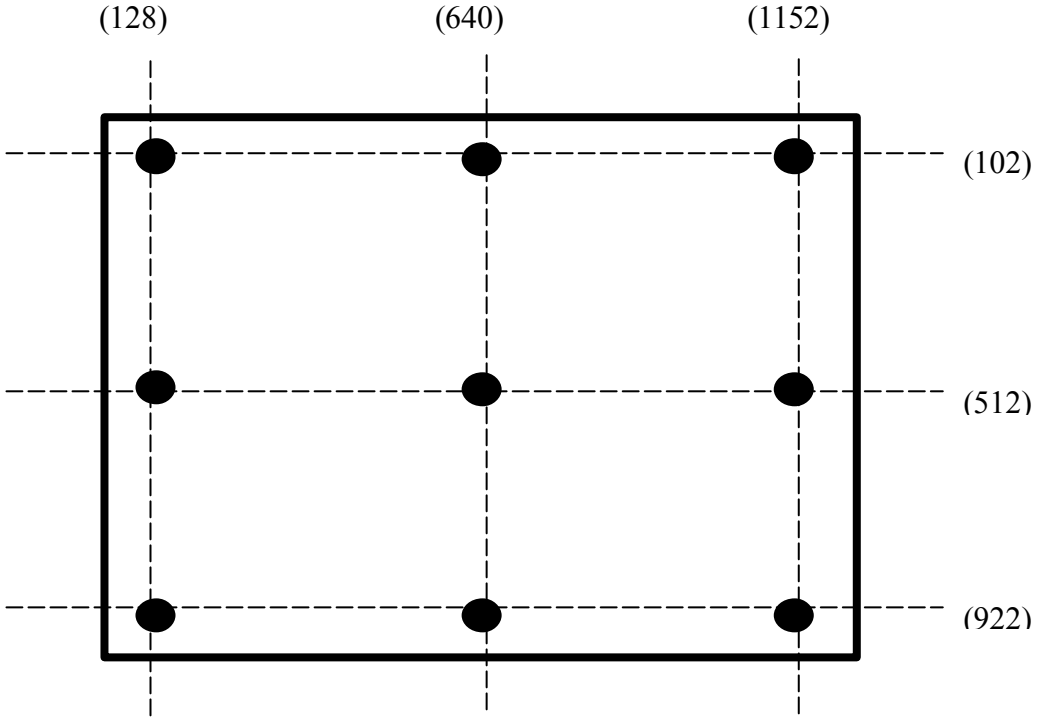


Note 7-2: Definition of Contrast ratio：Ratio of gray max (Gmax), gray min (Gmin) at the center point of the panel.

$$CR = \frac{Gmax}{Gmin}$$

Gmax：Luminance with all pixels white

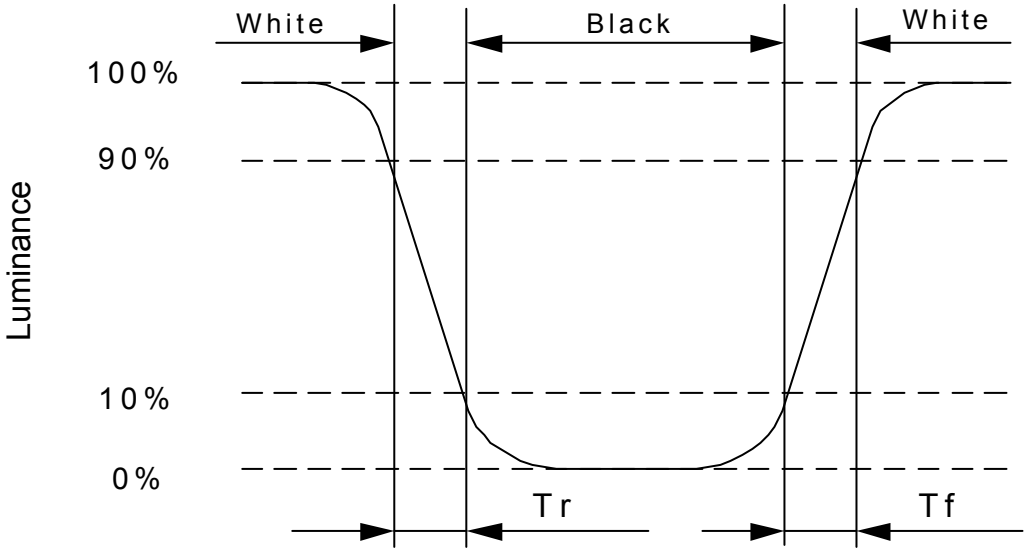
Gmin：Luminance with all pixels black



Note 7-3: Definition of uniformity; 9 point, Test point as Note 8-2

$$\delta_L = \frac{\text{Minimum Luminance of 9 point}}{\text{Maximum Luminance of 9 point}}$$

Note 7-4: Definition of response time:



Note 7-5: Definition of Luminance of White：measure the luminance of white at the center point of the panel.

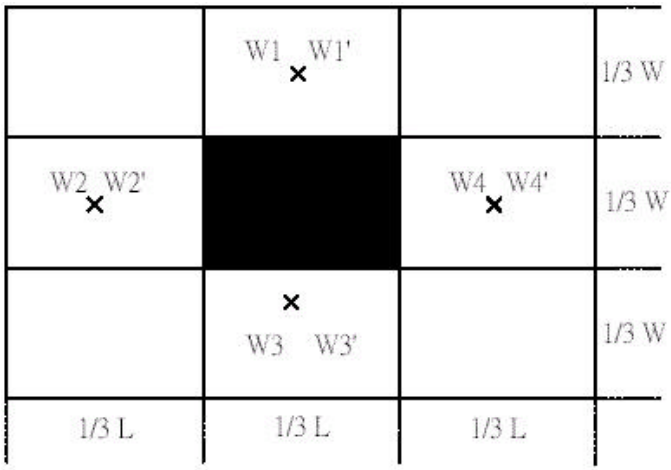
Note 7-6: To be measured in dark room environment and after lighting the backlight for 30 minutes.

Note 7-7: Wn: Grey level L31 luminance of measurement area

Wn': Subsequent dark-window luminance of measurement area

The location measured will be exactly the same in both patterns.

$$\text{Cross Talk} = \left| \frac{Wn' - Wn}{Wn} \right| * 100\ \%$$



8. RELIABILITY

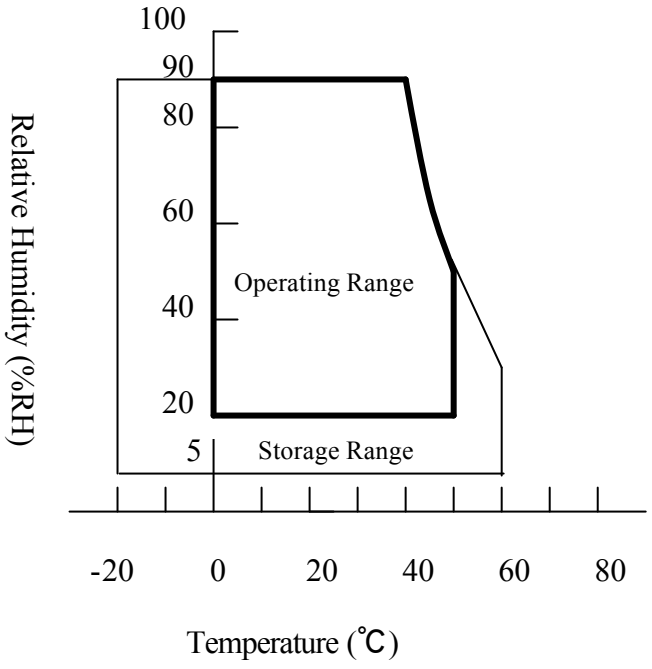
No	Test Item	Condition
1	High Temperature Operation	Ta=+50℃, 240hrs
2	High Temperature & High Humidity Operation No Condensation	Ta=+40℃, 90% RH, 240hrs
3	Low Temperature Operation	Ta=0℃, 240hrs
4	High Temperature Storage	Ta=+60℃, 240hrs
5	Low Temperature Storage	Ta=-20℃, 240hrs
6	Surface Discharge (non-operation)	C=150pF, R=330Ω; Discharge: Air: ± 15kV; Contact: ± 8kV 5 Times / Point; 9 Points / Panel
7	Vibration (non-operation)	Frequency: 10~300~10Hz 1.5 x 9.8m/s^2 constant Amplitude: 1.5mm; Sweep Time: 15min Test Time: 0.5 hr for each direction of X, Y, Z
8	Shock (non-operation)	Shock level: 70G Waveform: Half sine wave, 11ms Direction: ±X, ±Y, ±Z; One time for each axis

Ta: Ambient Temperature

Note 8-1: Evaluation should be tested after one hour of room temperature storage.

Note 8-2: Temperature and relative humidity range are show in the figure below.

Wet bulb temperature should be 39℃ max. and no condensation of water.



9. HANDLING CAUTIONS

9.1 Module assembly working environment should in the clean room.

9.2 The polarizer is easy damaged, handle it carefully and do not press or scratch the surface by sharp material.

9.3 Panel has polarizer protective film in the surface please remove the protection film of polarizer slowly to prevent the electrostatic discharge.

9.4 It is not permitted the pressure or impulse on the module, it may cause LCD panel or Backlight damaged.

9.5 Turn off the power supply before connecting and disconnecting signal input cable.

9.6 The lamp wire is very weak, do not handle panel only by lamp wire.

9.7 As the packing bag open, watch out the environment of the panel storage. High temperature and high humidity environment is prohibited.

9.8 Please to storage the LCD module within the specification condition. High temperature or high humidity environment may reduce the module performance.

9.9 Do not disassemble the module.

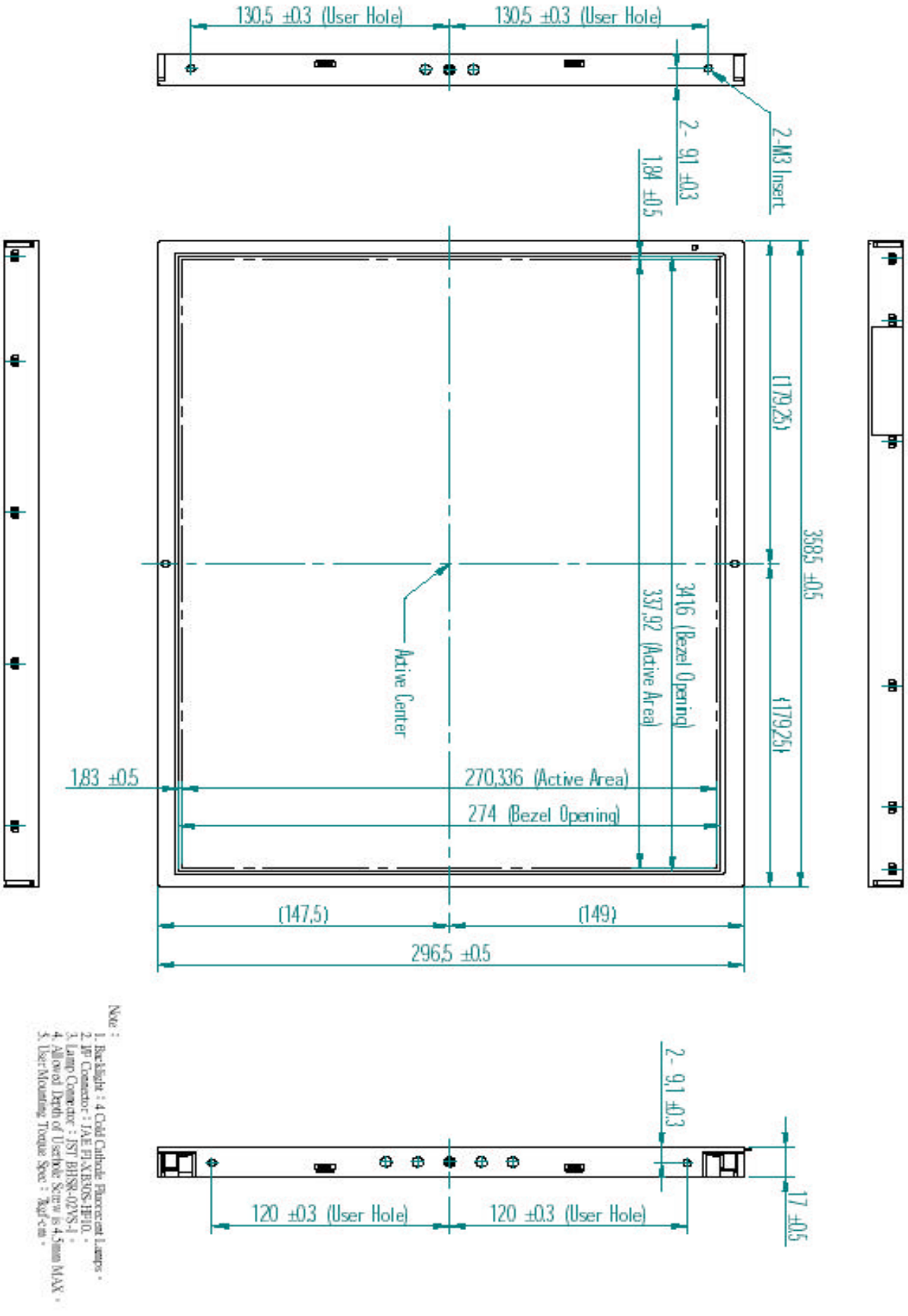
9.10 Do not touch the backlight connecter. The backlight start voltage about 1000Volts.it may cause electrical shock.

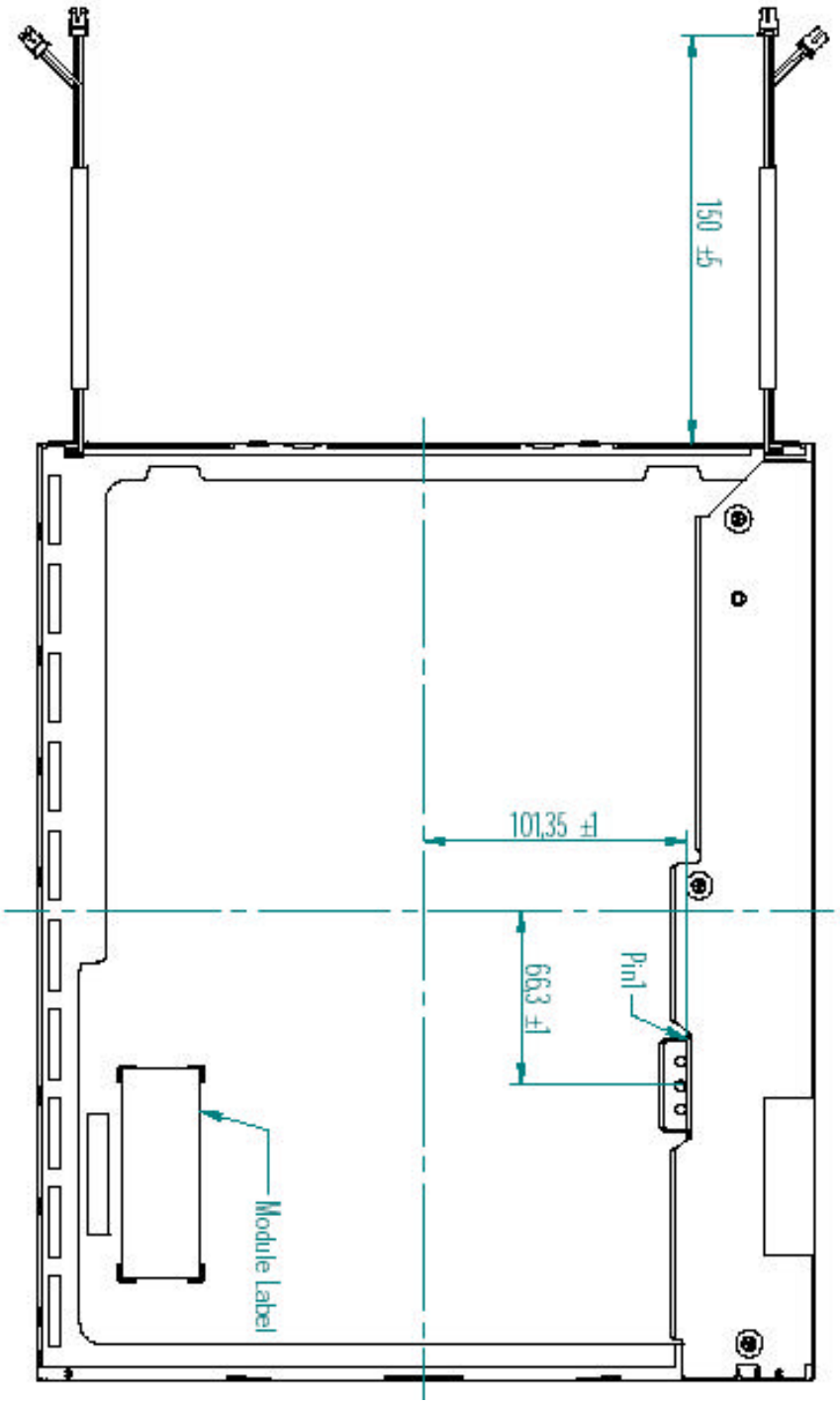
9.11 Do not adjust the variable resistor that is located on the module back side.

9.12 I/F connector pins shall not to be touched directly with bare hands.

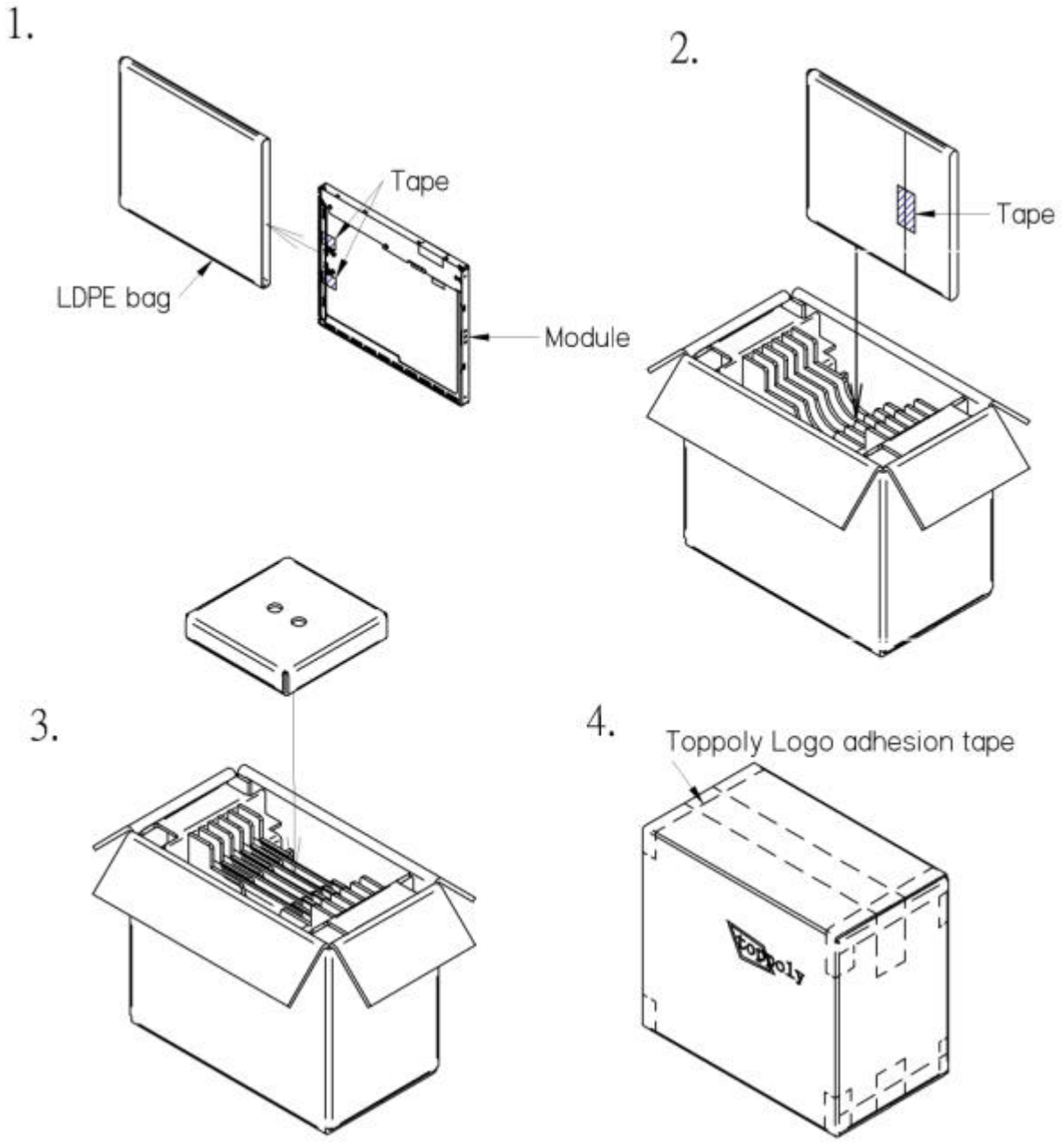
9.13 When the TFT LCD module is broken or liquid crystal leaks from the panel, it should be keep always from the eyes or month. If your hand touches liquid crystal, wash your hand cleanly by water and soap as soon as possible.

10. MECHANICAL DRAWING



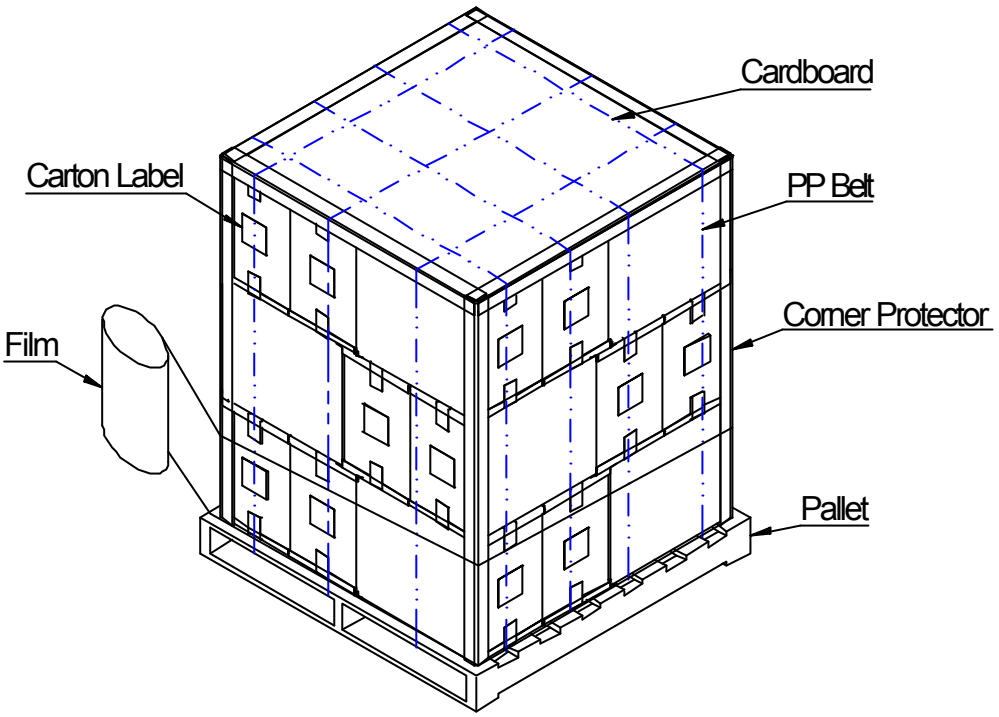


11. PACKING DRAWING



17" Module delivery packing method（Packing Qty=5pcs）

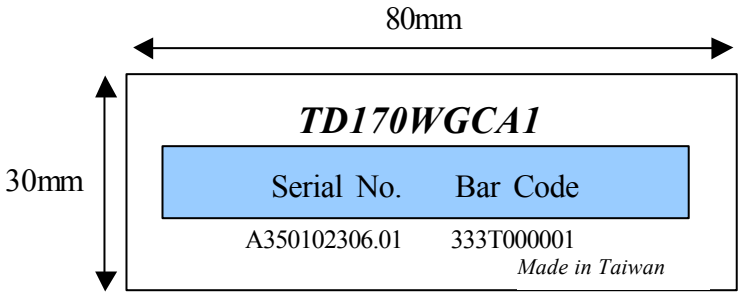
1. Module insert into LDPE bag
2. Module with LDPE bag pack into the corrugated folding cushion unit
3. Top cover by fold corrugated strip into the corrugated folding cushion unit
4. Carton seating with adhesion tape



Corner Protector：L1350mm（50mm×50mm）
Pallet：1140mm×1140mm×130mm
Pallet Stock Total Dimensions：1140mm×1140mm×1350mm
Weight：approx. 300kg

12. Module Label Drawing & Definition

The module Label Drawing & Definition illustration as below:



(a) Module Name: TD170WGCA1

(b) Serial No.: There are 10 symbols as below, Year + Week + Factory + Sequential Number

(1) Year is the last number of A.D.

(2) The expression of Week is 01 ~ 53 in order.

(3) The expression of Factory is one English letter, T for TP01 and N for NJ.

(4) The order of sequential number is 000001~999999➔A00001~A99999➔ B00001~B99999➔ and so on.