



Product Specification

Customer: _____

Model Name: GX070-30RB-A1

Date: _____

Version: _____

Preliminary Specification

Final Specification

For Customer's Acceptance

Approved by	Comment

Approved by	Reviewed by	Prepared by



Contents

1.Record of Revision	3
2 .General Specifications	4
3 .Input/Output Terminals.....	5
4. Absolute Maximum Ratings	6
5 .Electrical Characteristics	6
6 .Interface Timing	7
7. Optical Characteristics	8
8 . Environmental / Reliability Tests.....	11
9. Mechanical Drawing	12
1 0.Packing.....	13
11. Precautions For Use of LCD modules	14



2 General Specifications

	Feature	Spec
Characteristics	Size	7.0 inch
	Resolution	280(horizontal)*1424(Vertical)
	Interface	MIPI
	Connect type	Connector
	Color Depth	16.7M
	Technology type	a-Si
	Pixel pitch (mm)	0.12x0.12
	Pixel Configuration	R.G.B. Vertical Stripe
	Display Mode	Normally Black
	LCD Driver IC	-
	Viewing Direction	ALL
	Gray Scale Inversion Direction	ALL
Mechanical	LCM (W x H x D) (mm)	38.20*181.47*3.5
	Active Area(mm)	33.6 x 170.88
	With /Without TSP	Without TSP
	Weight (g)	TBD
	LED Numbers	8 LED

Note 1: Viewing direction is following the data which measured by optics equipment.

Note 2: Requirements on Environmental Protection: RoHS

Note 3: LCM weight tolerance: +/- 5%



3 Input/Output Terminals

No.	Symbol	Description
1-2	LEDA	back light power supply positive
3	VGH	Gete OFF Voltage
4	VGL	Gete OFF Voltage
5	U/D	Vertical inversion
6	L/R	Horizontal inversion
7-8	LEDK	back light power supply negative
9	AVDD	Power for Anglog Circuit
10	GND	Ground
11	3P	Mipi Data input
12	3N	Mipi Data input
13	GND	Ground
14	2P	Mipi Data input
15	2N	Mipi Data input
16	GND	Ground
17	CLKP	Mipi Data input
18	CLKN	Mipi Data input
19	GND	Ground
20	1P	Mipi Data input
21	1N	Mipi Data input
22	GND	Ground
23	0P	Mipi Data input
24	0N	Mipi Data input
25	GND	Ground
26	STBYB	Ting controller
27	RESET	Global reset pin
28-29	VDD	Power ground
30	VCOM	Common Volttage



4 Absolute Maximum Ratings

Item	Symbol	MIN	MAX	Unit	Remark
Supply Voltage	V_{DD}	-0.3	5.0	V	
Input Signal Voltage	V_{in}	-0.3	$V_{DD}+0.3$	V	
Logic Output Voltage	V_{OUT}	-0.3	$V_{DD}+0.3$	V	
Operating Temperature	T_{OPR}	-20	70	°C	
Storage Temperature	T_{STG}	-30	80	°C	

5 Electrical Characteristics

5.1 Operating conditions:

Parameter	Symbol	MIN	TYP	MAX	Unit	Remark
Power Voltage	V_{CC}	3	3.3	3.6	V	
Digital Operation Current	I_{CC}		8.6		mA	
Gate On Power	V_{GH}	--	15	--	V	
Gate Off Power	V_{GL}	--	-10.0	--	V	
Vcom		TBD	--	TBD	V	Note1

5.2 Driving Backlight

Item	Symbol	MIN	TYP	MAX	Unit	Remark
LED current	I_F	-	40	-	mA	Note 1 Note 2,3
Power Consumption			-	-	mW	
LED Voltage	V_F	11.6	12	12.4	V	
LED Life Time	W_{BL}	25000		-	Hr	

Note 1 : There are 4*2 Groups LED

Note 2 : $T_a = 25^{\circ}C$

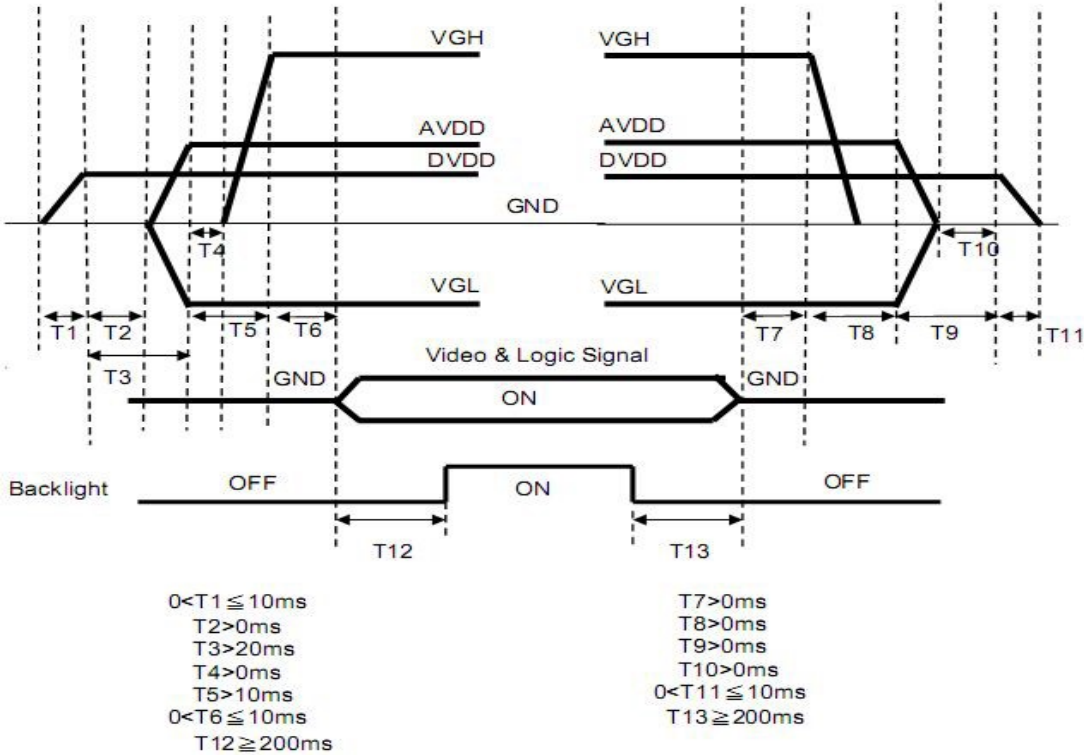
Note 3 : Brightness to be decreased to 50% of the initial value

6. Interface Timing

6.1 Power Sequence



Power On : DVDD→AVDD/VGL →VGH →Video & Logic Signal→Backlight
 Power Off : Backlight→Video & Logic Signal→ VGH→AVDD/VGL→DVDD



6.2 Resolution

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
MIPI(4 lane)		-	386	-	Mbps	
MIPI(3 lane)		-	515	-	Mbps	
DCLK Frequency	fclk	-	64.4	-	MHz	
HSYNC Period time	Th	-	1200	-	DCLK	
Horizontal display area	Thd	-	280	-	DCLK	
HSYNC pulse width	Thpw	-	24	-	DCLK	
HSYNC back porch	Thbp	-	160	-	DCLK	
HSYNC front porch	Tfbp	-	160	-	DCLK	
VSYNC Period time	Th	-	1920	-	H	
Vertical display area	Tvd	-	1424	-	H	
VSYNC pulse width	Tvpw	-	2	-	H	
VSYNC back porch	Tvbp	-	10	-	H	
VSYNC front porch	Tvfp	-	10	-	H	

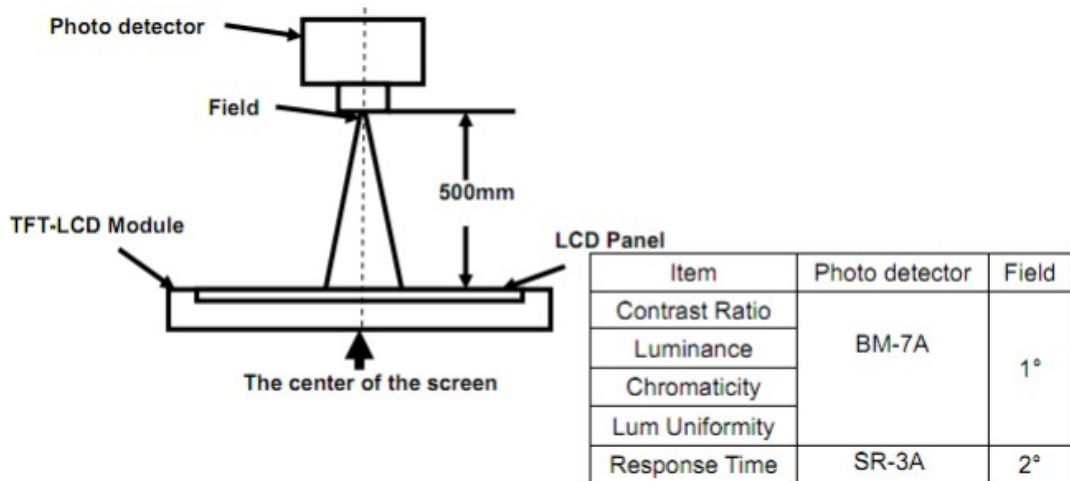


7. Optical Characteristics

Items	Symbol	Condition	Min.	Typ.	Max.	Unit	Remark		
Viewing angles	θ_T	Center CR \geq 10	75	80	-	Degree.	Note2		
	θ_B		75	80	-				
	θ_L		75	80	-				
	θ_R		75	80	-				
Contrast Ratio	CR	$\Theta = 0$	800	1000	-	-	Note1, Note3		
Response Time	T_{ON}	25°C	-	30	40	ms	Note1, Note4		
	T_{OFF}		-	30	40				
Chromaticity	White	Backlight is on	-0.02	+0.02	-	-	Note1, Note5		
								X_W	0.319
	Y_W							0.343	
	Red							X_R	0.644
								Y_R	0.332
	Green							X_G	0.324
								Y_G	0.566
	Blue							X_B	0.137
Y_B		0.125							
Uniformity	U		80	-	-	%	Note1, Note6		
NTSC				60		%	Note5		
Luminance	L		250	300			Note1, Note7		

Test Conditions:

1. IF= 20mA (one channel),the ambient temperature is 25°C.
2. The test systems refer to Note 1 and Note 2.



Note 2: Definition of viewing angle range and measurement system.

Viewing angle is measured at the center point of the LCD by CONOSCOPE (ergo-80).

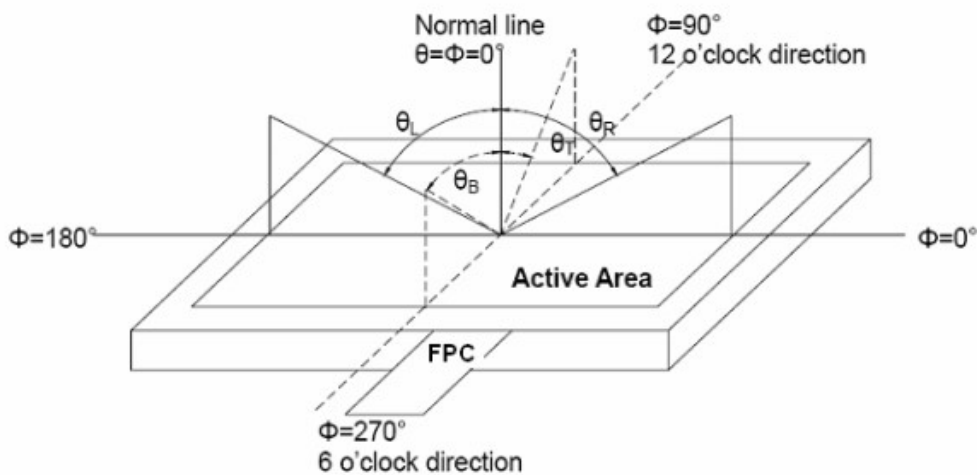


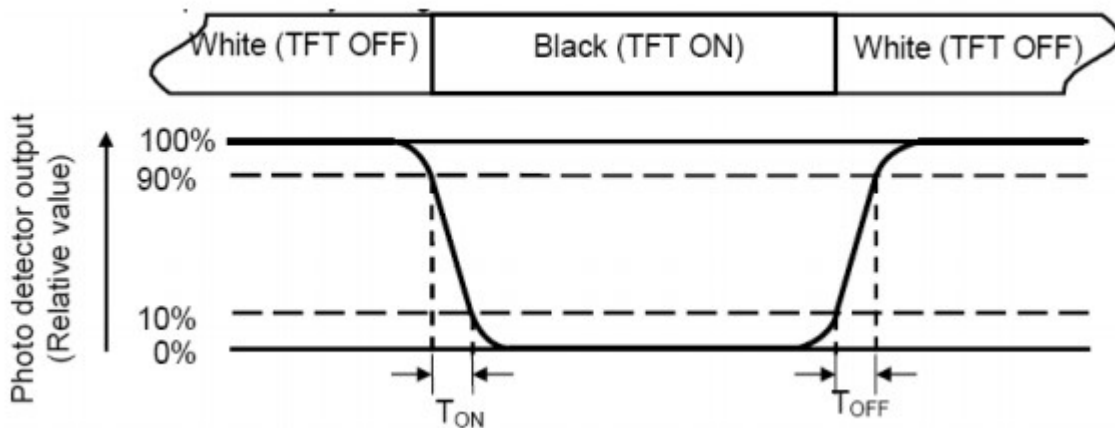
Fig. 1 Definition of viewing angle

Note 3: Definition of contrast ratio

$$\text{Contrast ratio (CR)} = \frac{\text{Luminance measured when LCD is on the "White" state}}{\text{Luminance measured when LCD is on the "Black" state}}$$

Note 4: Definition of Response time

The response time is defined as the LCD optical switching time interval between "White" state and "Black" state. Rise time (TON) is the time between photo detector output intensity changed from 90% to 10%. And fall time (TOFF) is the time between photo detector output intensity changed from 10% to 90%.



Note 5: Definition of color chromaticity (CIE1931)

Color coordinates measured at center point of LCD.

Note 6: Definition of Luminance Uniformity

Active area is divided into 9 measuring areas (Refer Fig. 2). Every measuring point is placed at the Center of each measuring area

Luminance Uniformity (U) = $L_{min} / L_{max} \times 100\%$

L-----Active area length W----- Active area width

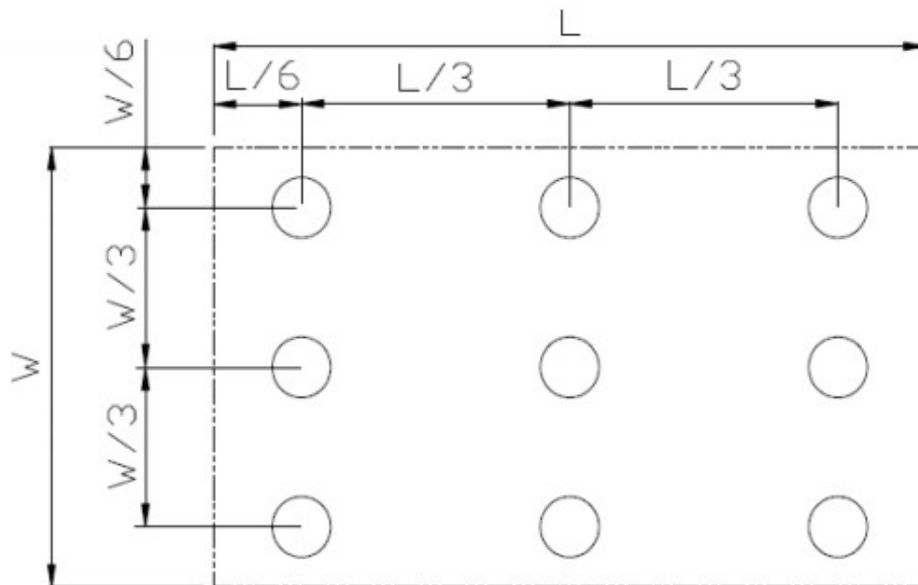


Fig. 2 Definition of uniformity

L_{max} : The measured maximum luminance of all measurement position.

L_{min} : The measured minimum luminance of all measurement position.

Note 7: Definition of Luminance:

Measure the luminance of white state at center point.



8. Environmental / Reliability Tests

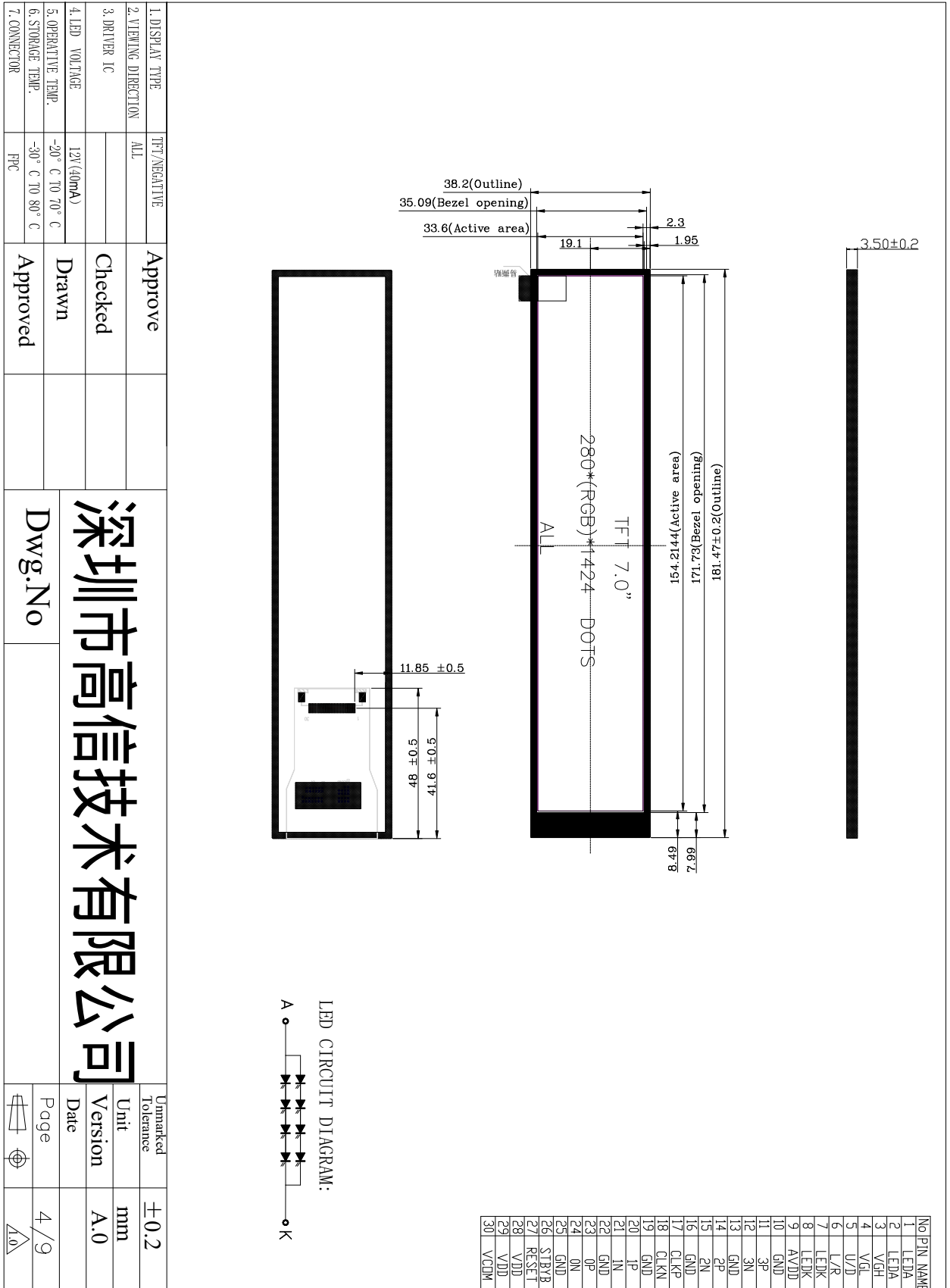
No	Test Item	Condition	Remarks
1	High Temperature Operation	T _s = +70°C, 240hrs	Note 1 IEC60068-2-2, GB2423. 2-89
2	Low Temperature Operation	T _a = -20°C, 240hrs	Note 2 IEC60068-2-1 GB2423.1-89
3	High Temperature Storage	T _a = +80°C, 240hrs	IEC60068-2-2 GB2423. 2-89
4	Low Temperature Storage	T _a = -30°C, 240hrs	IEC60068-2-1 GB/T2423.1-89
5	High Temperature & Humidity Storage	T _a = +60°C, 90% RH max, 160 hours	IEC60068-2-3 GB/T2423.3-2006
6	Thermal Shock (Non-operation)	-30°C 30 min ~ +80°C 30 min Change time: 5min, 30 Cycle	Start with cold temperature, end with high temperature IEC60068-2-14, GB2423.22-87
7	Electro Static Discharge (Operation)	C=150pF, R=330 Ω, 5 points/panel Air:±8KV, 5 times; Contact: ±4KV, 5 times; (Environment: 15°C ~ 35°C, 30% ~ 60%, 86Kpa ~ 106Kpa)	IEC61000-4-2 GB/T17626.2-1998
8	Vibration (Non-operation)	Frequency range: 10~55Hz, Stroke: 1.mm Sweep: 10Hz~55Hz~10Hz 2 hours for each direction of X .Y. Z. (package condition)	IEC60068-2-6 GB/T2423.5-1995
9	Shock (Non-operation)	60G 6ms, ± X, ±Y , ± Z 3 times for each direction	IEC60068-2-27 GB/T2423.5-1995
10	Package Drop Test	Height: 80 cm, 1 corner, 3 edges, 6 surfaces	IEC60068-2-32 GB/T2423.8-1995

Note: 1. T_S is the temperature of panel's surface.

2. T_a is the ambient temperature of sample.



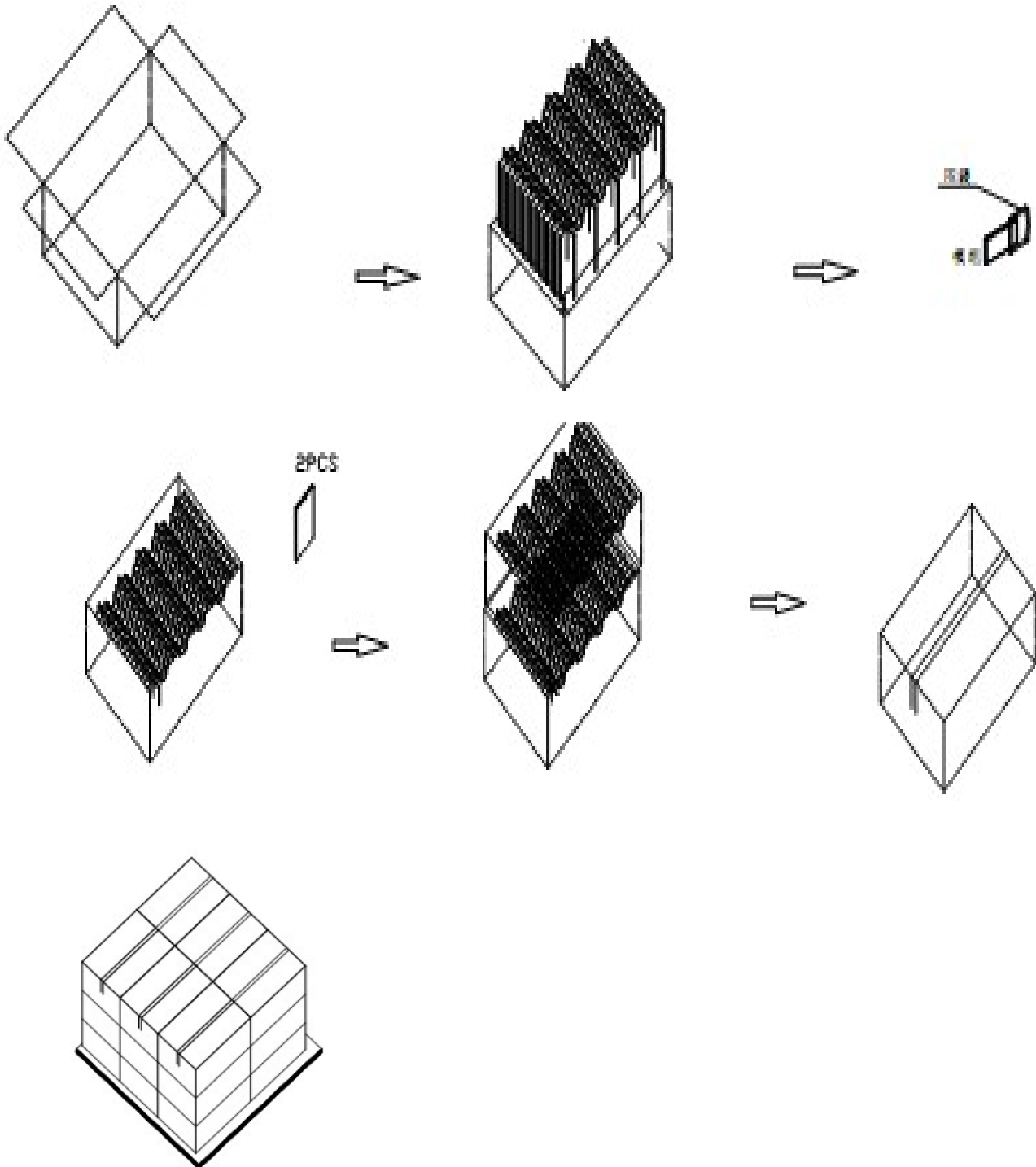
9. Mechanical Drawing





10. Packing

Packing Method



11. Precautions for Use of LCD modules

11.1 Handling Precautions



11.1.1. The display panel is made of glass. Do not subject it to a mechanical shock by dropping it from a high place, etc.

11.1.2. If the display panel is damaged and the liquid crystal substance inside it leaks out, be sure not to get any in your mouth, if the substance comes into contact with your skin or clothes, promptly wash it off using soap and water.

11.1.3. Do not apply excessive force to the display surface or the adjoining areas since this may cause the color tone to vary.

11.1.4. The polarizer covering the display surface of the LCD module is soft and easily scratched. Handle this polarizer carefully.

11.1.5. If the display surface is contaminated, breathe on the surface and gently wipe it with a soft dry cloth. If still not completely clear, moisten cloth with one of the following solvents:

- Isopropyl alcohol
- Ethyl alcohol

Solvents other than those mentioned above may damage the polarizer. Especially, do not use the following:

- Water
- Ketene
- Aromatic solvents

11.1.6. Do not attempt to disassemble the LCD Module.

11.1.7. If the logic circuit power is off, do not apply the input signals.

11.1.8. To prevent destruction of the elements by static electricity, be careful to maintain an optimum work environment.

11.1.8.1. Be sure to ground the body when handling the LCD Modules.

11.1.8.2. Tools required for assembly, such as soldering irons, must be properly ground.

11.1.8.3. To reduce the amount of static electricity generated, do not conduct assembly and other work under dry conditions.

11.1.8.4. The LCD Module is coated with a film to protect the display surface. Be care when peeling off this protective film since static electricity may be generated.

11.2 Storage Precautions

11.2.1. When storing the LCD modules, avoid exposure to direct sunlight or to the light of fluorescent lamps.

11.2.2. The LCD modules should be stored under the storage temperature range. If the LCD modules will be stored for a long time, the recommend condition is:

Temperature : 0°C ~ 40°C Relatively humidity: ≤80%

11.2.3. The LCD modules should be stored in the room without acid, alkali and harmful gas.

11.3 Transportation Precautions

The LCD modules should be no falling and violent shocking during transportation, and also should avoid excessive press, water, damp and sunshine.