PRODUCT SPECIFICATION

KADI Model: **KD101HWU85EP**

CUSTOMER Model: -

Description: **10.1 ” TFT-LCD Module**

Version: **1.0**

KADI	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE			
DATE	2025.7.2	2025.7.2	2025.7.2

	SIGNATURE	DATE
CUSTOMER APPROVAL		

Record of Revisions

Version	Revise Date	Description	Page
1.0	2025-7-2	First Release	-

Contents

1. General Specifications

1.1 LCM General Information

Item	Specification	Unit
LCD Size	10.1	inch
Number of Pixels	1920 (H) RGB x 1200 (V)	pixels
Display Mode	Normally Black	-
Viewing Direction	Free	-
Interface	EDP	-
Display Colors	16.7M	colors
Outline Dimension	228.56 (H) x 148.36 (V) x 2.63 (D)	mm
Active Area	216.58 (H) x 135.36 (V)	mm
Pixel Pitch	0.1128 (H) x 0.1128 (V)	mm
Driver IC	-	-
Operation Temperature	-20~60	℃
Storage Temperature	-30~70	℃

Note1:Requirements on environmental protection RoHS compliant.

2. Absolute Maximum Ratings

Item	Symbol	MIN.	MAX.	Unit	Note
Analog Supply voltage	LCD_VCC	-0.3	5.0	V	Note 1

Note 1:Permanent damage may occur to the LCD module if beyond this specification.
Functional operation should be restricted to the conditions described under normal operating conditions.

3. Elecrical Characteristics

3.1 Recommended Operating Condition for TFT LCD

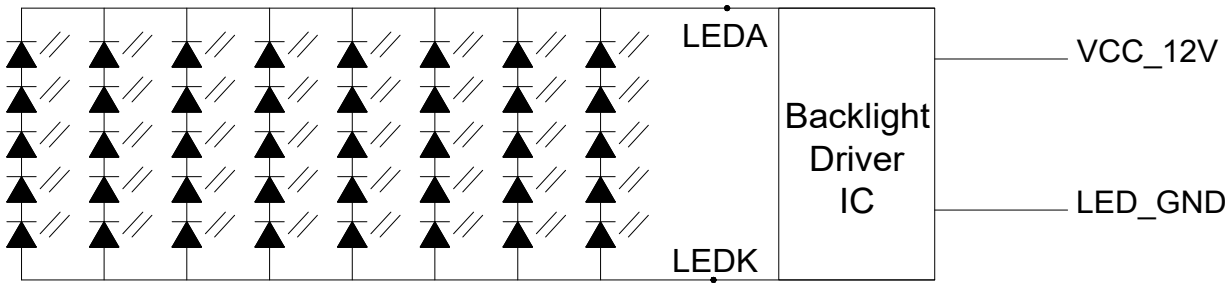
Item	Symbol	Min.	Typ.	Max.	Unit	Note
Analog Supply voltage	LCD_VCC	3.0	3.3	3.6	V	
Analog supply current	I_{LCD_VCC}	440	620	800	mA	LCD_VCC=3.3V（RED）
Logic input voltage	VIH	0.7*LCD_VCC	-	LCD_VCC	V	
	VIL	GND	-	0.3*LCD_VCC	V	

3.2 Recommended Driving Condition for Backlight

Item	Symbol	Min.	Typ.	Max.	Unit	Note
Driving Current	I_{BLU}	-	460	-	mA	
Driving Voltage	V_{BLU}	-	12	-	V	
Power consumption	W_{BLU}	-	5.52	-	W	
LED Life-Time	N/A	-	30,000	-	Hours	Ta=25℃ Note 1

Note 1:LED lifetime is defined as the module brightness decay 50% of original brightness at Ta=25 degree, typical current.

Note 2:LED circuit :



CIRCUIT DIAGRAM
VF =27~34V; IF=160mA

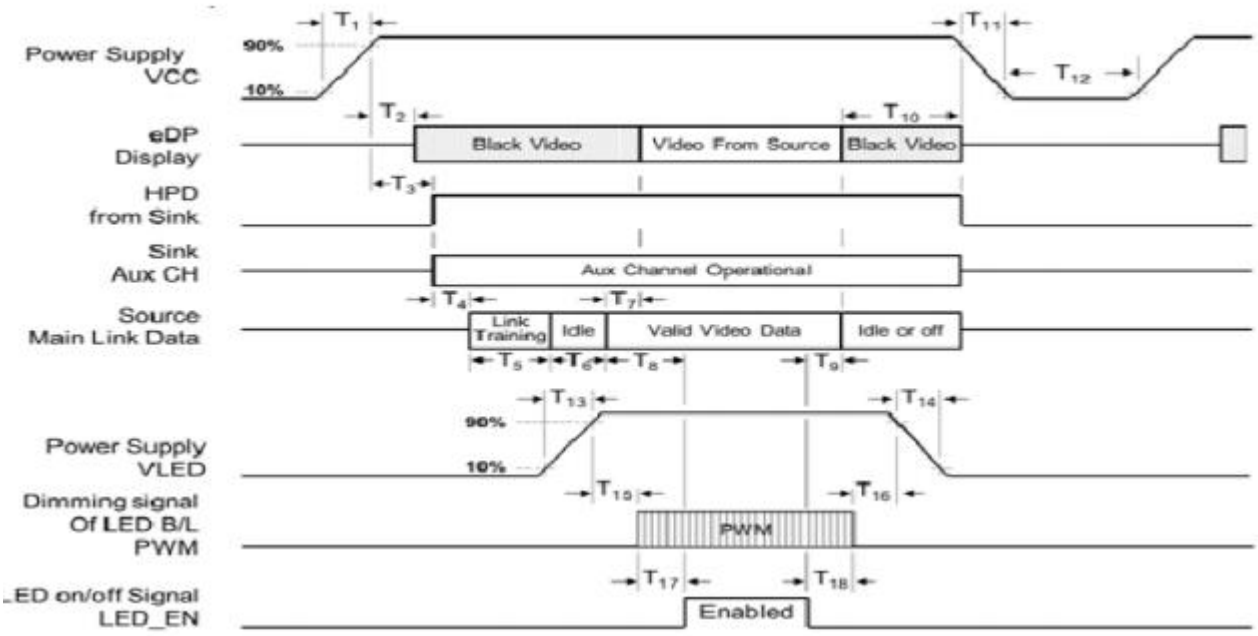
4. Interface Pin Assignment

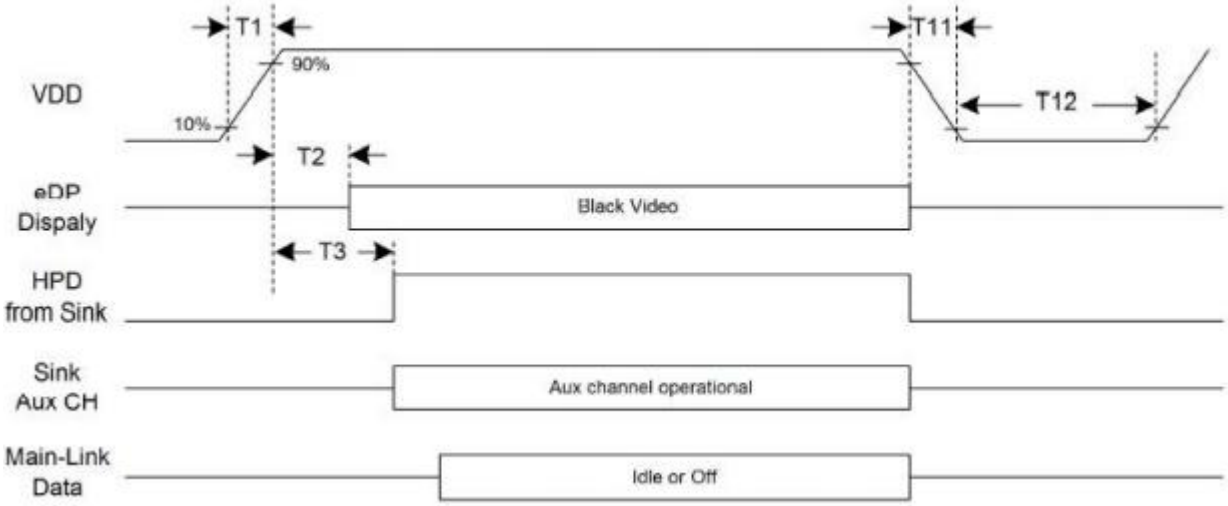
4.1 LCM Pin Assignment

No.	Symbol	Description
30	NC	No connection
29	H_GND	High Speed ground
28	Lane1_N	Complement signal link Lane1
27	Lane1_P	True signal Link Lane1
26	H_GND	High Speed ground
25	Lane0_N	Complement signal link Lane0
24	Lane0_P	True signal Link Lane0
23	H_GND	High Speed ground
22	AUX_CH_P	True signal Auxiliary channel
21	AUX_CH_N	Complement signal Auxiliary channel
20	H_GND	High Speed ground
19	LCD_VCC	LCD logic and driver Power
18	LCD_VCC	LCD logic and driver Power
17	LCD_Self_Test	Bist mode
16	LCD_GND	LCD logic and driver ground
15	LCD_GND	LCD logic and driver ground
14	HPD	Hpd signal Pin
13-10	BL_GND	Backlight Ground
9	VLED_EN	Backlight control on/off
8	VLED_PWM	Backlight PWM control brightness
7	NC	No connection
6	NC	No connection
5-2	V_{BLU} 12V	Backlight Power
1	NC	No connection

5. Interface Characteristics

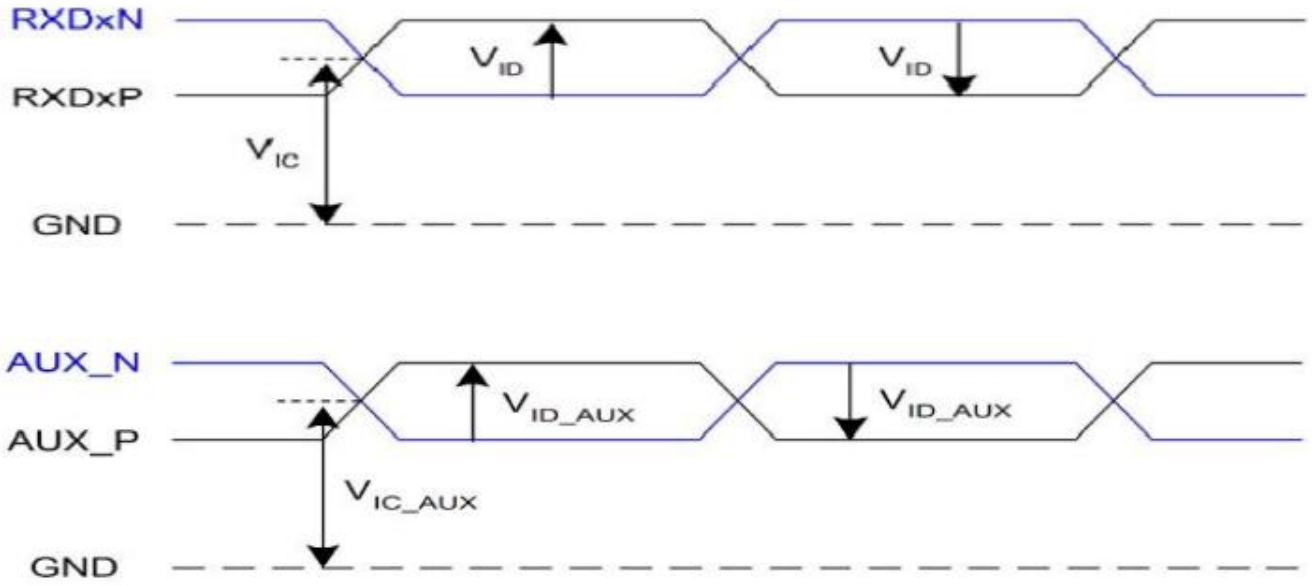
5.1 Power On/Off Sequence





5.2 Signal Timing Diagram of Interface Signal

Input signals shall be low or High-impedance state when VDD is off. Signal electrical characteristics are as follows;



Parameter	Symbol	Condition	Min.	Max,	Unit
Main link common mode voltage	V_{IC}	---	0	2.0	V
Main link swing voltage	V_{ID}	2.7Gbps	±100	±600	mV
		1.62Gbps	±100	±600	mV
AUX common mode voltage	V_{IC_AUX}	---	0	2.0	V
AUX swing voltage	V_{ID_AUX}	Transmitting	±0.195	±0.69	V
		Receiving	±0.16	±0.68	V

5.3 Interface DE mode

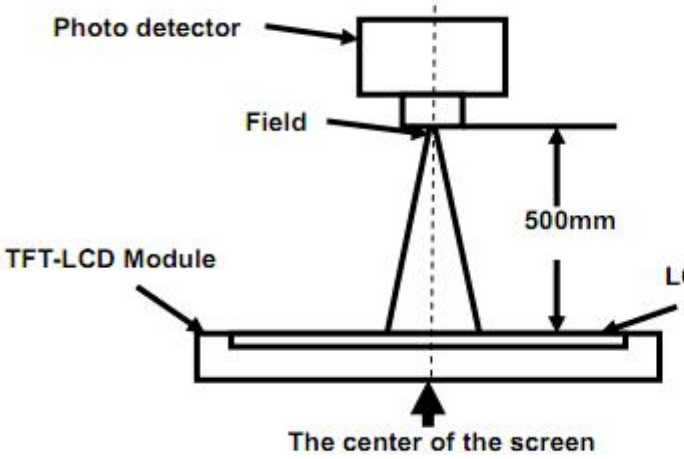
Item	Min.	Typ.	Max.	Unit
Frame Rate	58	60	62	Hz
Frame Period	1230	1250	1270	line
Vertical Display Time		1200		line
Vertical Blanking Time	30	50	70	line
1 Line Scanning Time	2040	2060	2080	clock
Horizontal Display Time		1920		clock
Horizontal Blanking Time	120	140	160	clock
Clock Rate	153.21	154.5	155.57	MHz

6. Optical Specifications

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	Note
Viewing Angle (CR≥10) B/L ON	θ_T	Φ=90°(12 o'clock)	80	85	-	deg	Note2
	θ_B	Φ=270°(6 o'clock)	80	85	-	deg	Note2
	θ_L	Φ=180°(9 o'clock)	80	85	-	deg	Note2
	θ_R	Φ=0°(3 o'clock)	80	85	-	deg	Note2
Response Time	T_{ON}	Normal θ=Φ=0°	-	15	17	msec	Note4
	T_{OFF}		-	15	17	msec	Note4
Contrast Ratio	CR		800	1000	-	-	Note1 Note3
Color Chromaticity	W_X		TBD	TBD	TBD	-	Note1 Note5
	W_Y		TBD	TBD	TBD	-	Note1 Note5
Luminance	L		800	900	-	cd/m²	Note1 Note7
Luminance Uniformity	Y_U		75	80	-	%	Note1 Note6
NTSC	-		-	50	-	%	-

Note 1:Definition of optical measurement system

The optical characteristics should be measured in dark room. After 5 minutes operation, the optical properties are measured at the center point of the LCD screen. All input terminals LCD panel must be ground when measuring the center area of the panel.



Item	Photo detector	Field
Contrast Ratio	SR-3A	1°
Luminance		
Chromaticity		
Lum Uniformity		
Response Time	BM-7A	2°

Fig 1

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).

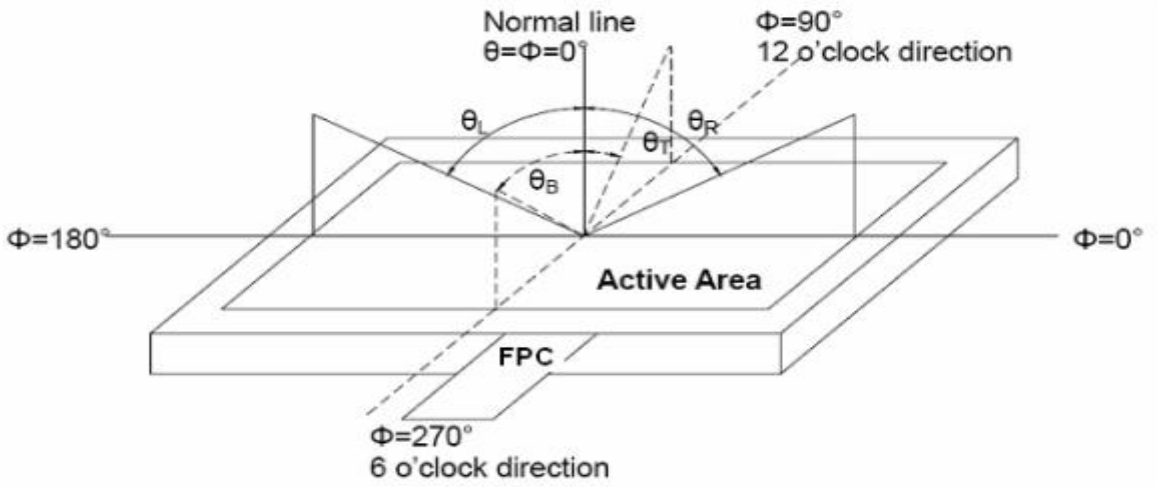


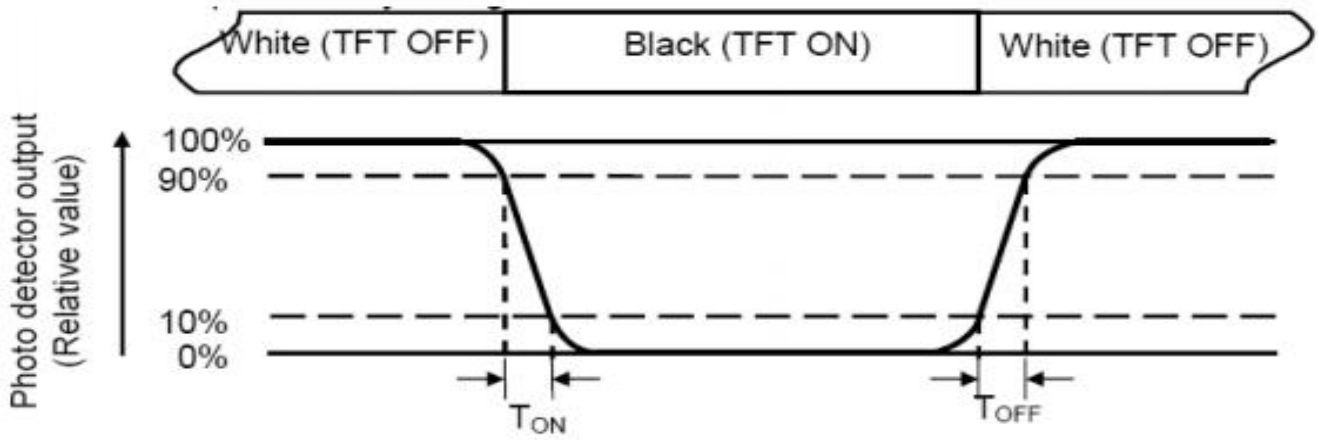
Fig 2 Definition of viewing angle

Note 3: Definition of contrast ratio

$$CR = \frac{\text{Luminance with all pixels white}}{\text{Luminance with all pixels black}}$$

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

The luminance uniformity in surface luminance is determined by measuring luminance at each test position 1 through n, and then dividing the maximum luminance of n points luminance by minimum luminance of n points luminance.For more information see FIG.3-a/b

Note 7:Surface luminance is the luminance with all pixels displaying white.

Lv = Average Surface Luminance with all white pixels(P1,P2,P3, ...,Pn)

For more information see FIG.3-a/b

Note 8:

H,V : Active area(see Figure b)

Light spot size ⌀ =5mm(BM-5) or ⌀ =7.7mm (BM-7)50cm distance or compatible distance from the LCD surface to detector lens. test spot position : see Figure b.

measurement instrument : TOPCON's luminance meter SR-3A or BM-7 or compatible (see Figure 1).

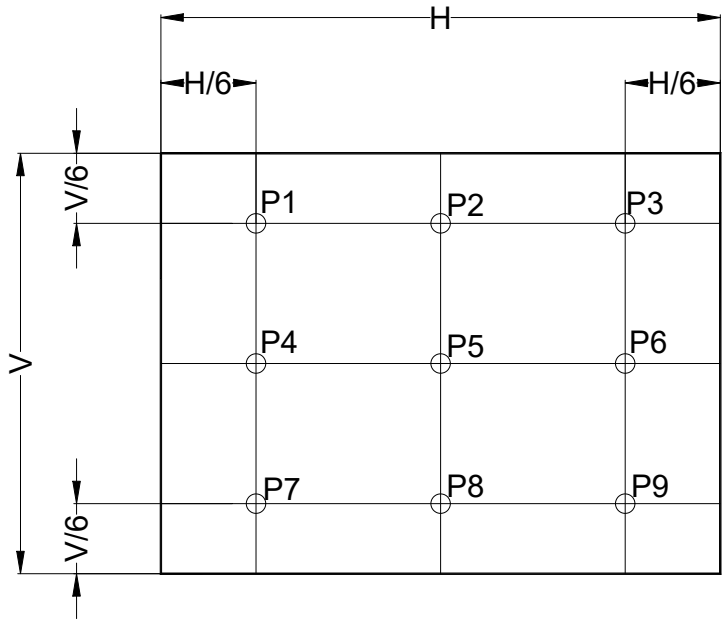


Fig. 3-b Definition of points

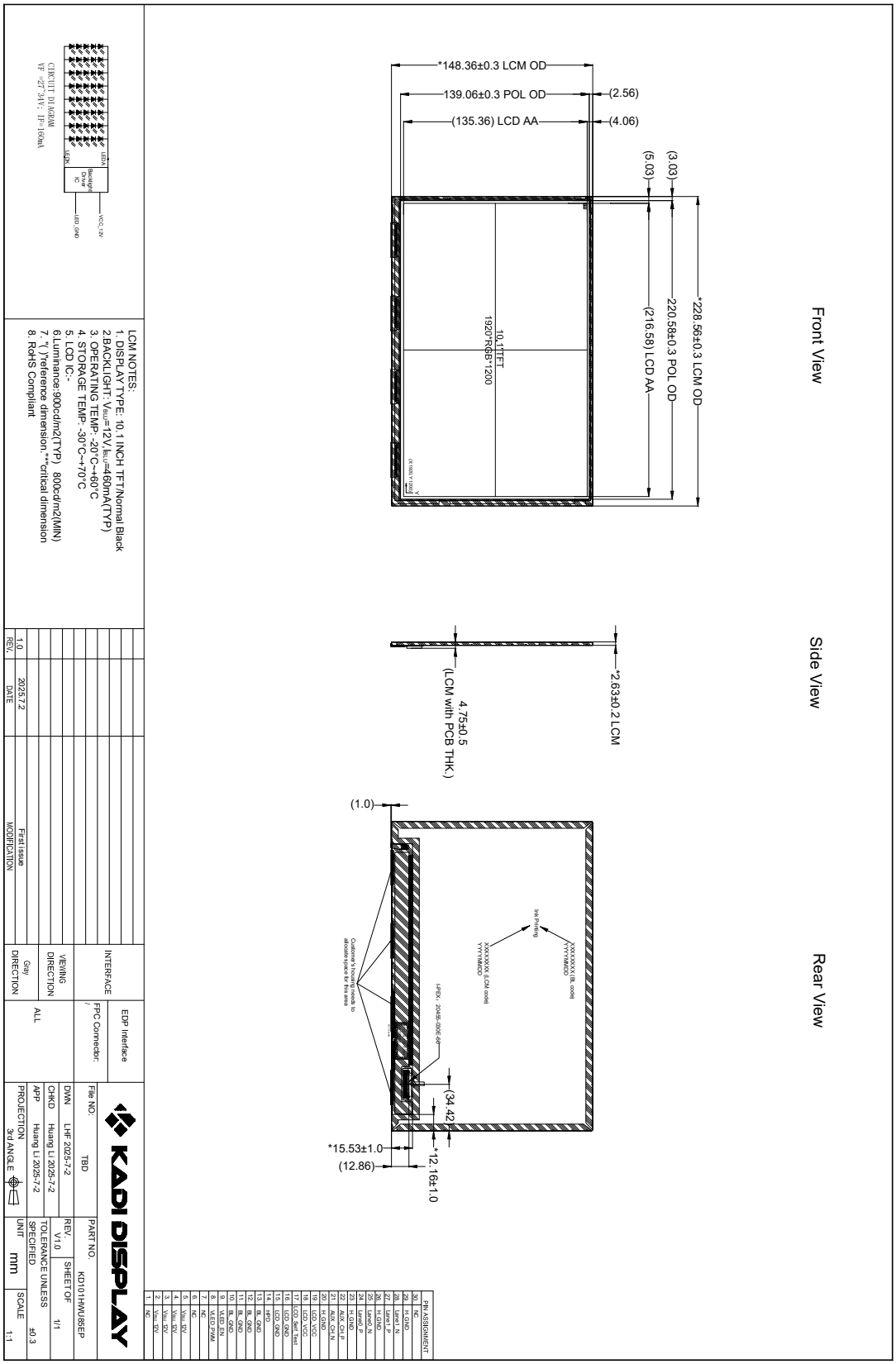
7. Reliability Test Items

Test Item	Test Conditions	
High Temperature Storage	Ta= +70℃	96hrs
Low Temperature Storage	Ta= -30℃	96hrs
High Temperature Operation	Ta= +60℃	96hrs
Low Temperature Operation	Ta= -20℃	96hrs
High Temperature and Humidity Storage	Ta= +60℃, 90% RH	96hrs
Thermal Shock (Non-operation)	-30℃/30 min ~ +70℃/30 min for 20 cycles Start with cold temperature end with high temperature	
Electro Static Discharge	Contact = ± 4 kV, class B Air = ± 8 kV, class B R=330Ω,C=150pF	
Vibration	Sweep: 10Hz~55Hz~10Hz Stroke: 1.5mm 2 hrs for each direction of X .Y. Z.	
Mechanical Shock	60G 6ms,±X,±Y,±Z 3 times for each direction	
Package Drop Test	Height: 60 cm 1 corner, 3 edges, 6 surfaces	

Notes: The test result shall be evaluated after the sample has been left at room temperature and humidity for 2 hours without load. No condensation shall be accepted. The sample will not be accepted if appear these defects:

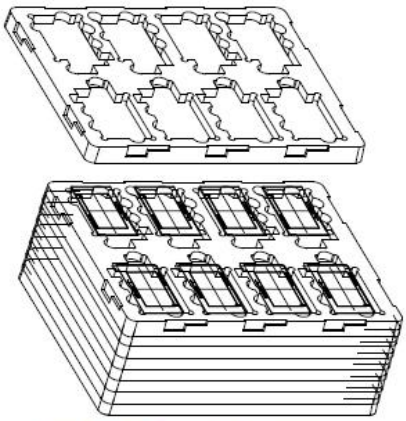
1). Air bubble in the LCD
2). Seal leak or Glass crack
3). Non display or abnormal display
4). Brightness reduction >50%

8. Mechanical Drawing

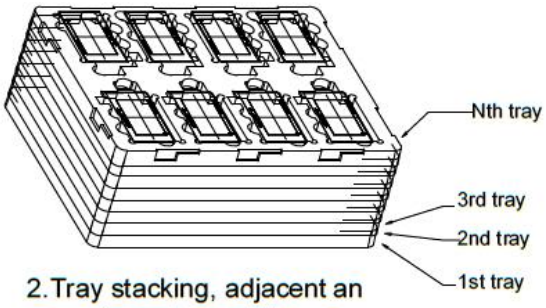


9. Packing

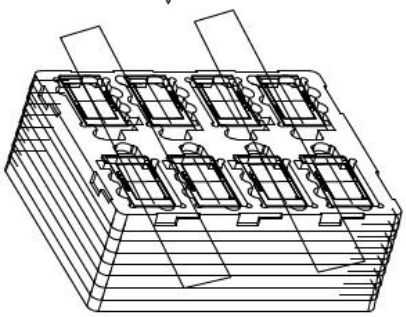
Packing Method



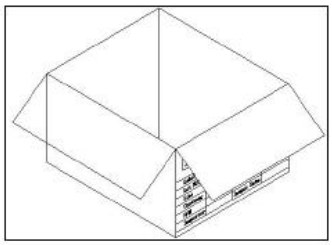
1.Put LCD module into tray cavity



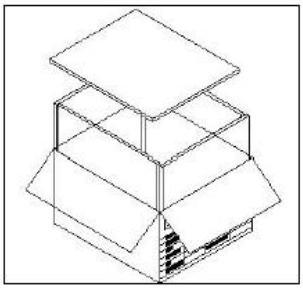
2.Tray stacking, adjacent an upper lower layer with a 180-degree rotation



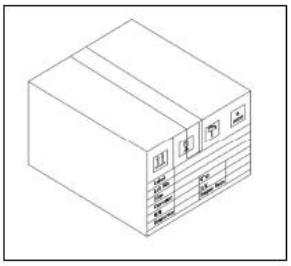
3.Medium Carton: Fix the tray stack with stretch film
Large Carton： Fix the tray stack with stretch film, then place it into a transparent PE antistatic bag



4. put the tray stack into carton



5. 6 sides of white foams inside the box



6. Carton sealing with adhesive tape

10. Precautions for Use of LCD modules

10.1 Handling Precautions

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

10.1.2. 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.

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

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

10.1.5. 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

10.1.6. Do not attempt to disassemble the LCD Module.

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

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

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

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

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

10.1.8.4. 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.

10.2 Storage Precautions

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

10.2.2.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℃ ~40℃ Relatively humidity: ≤80%

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

10.3 Transportation Precautions

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

10.4 Packaging instructions

When the customers using trays, they have to stack the adjacent trays in a 180° staggered to prevent pressure that could cause product damage.