



PRODUCT SPECIFICATION

KADI Model: **KD075WXLVD01**

CUSTOMER Model: **-**

Description: **7.5' Display Module With LVDS To
MIPI Board**

Version: **1.1**

KADI	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE			
DATE	2024.6.9	2024.6.9	2024.6.9

CUSTOMER APPROVAL	SIGNATURE	DATE

[illegible]



Contents

1. General Specifications	4
2. Interface	5
3. Elecrical Characteristics	7
4. Interface Characteristic	8
5. Optical Specifications	11
6. Reliability Test Items	15
7. Mechanical Drawing	16
8. Packing	17
9. Precautions for Use of LCD modules	18



1. General Specifications

1.1 LCM General Information

Item	Specification	Unit
LCD Size	7.5	inch
Number of Pixels	800 (H) RGB x 800 (V)	pixels
Display Mode	Normally Black	-
Viewing Direction	Free	o' clock
Interface	LVDS	-
Display Colors	16.7M	colors
Outline Dimension	142.52 (H) x 148.20 (V) x 9.84 (D)	mm
Active Area	135.36 (H) x 135.36 (V)	mm
Pixel Pitch	0.1692 (H) x 0.1692(V)	mm
Operation Temperature	-20~70	°C
Storage Temperature	-30~80	°C

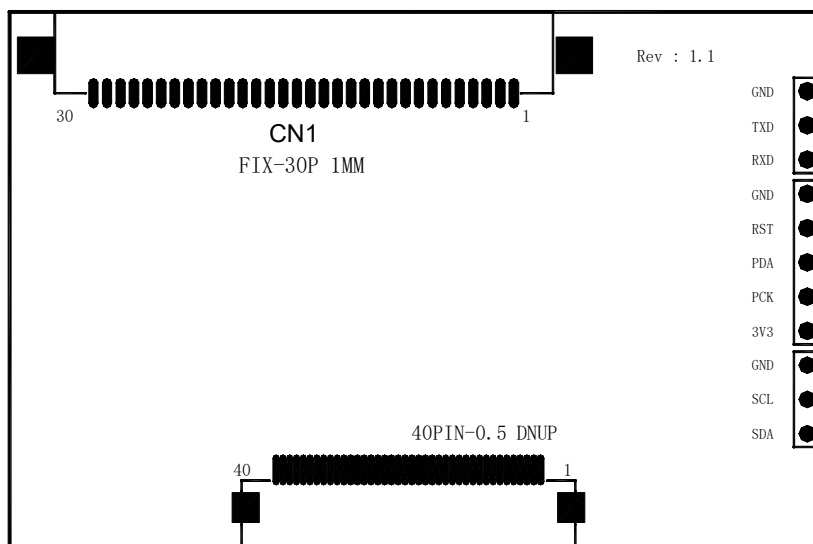
Note1:Requirements on environmental protection RoHS compliant.



2. Interface

2.1 PCB overview

Picture below shows the connectors exact placement and their descriptions.



2.2 Connector Description

Item	Type	Description
CN1	LVDS	LVDS Interface (30P-1.0mm)

2.3 CN1(LVDS Interface) 30PIN-1.0mm

Pin No.	Symbol	Description
1	RX00-	LVDS ODD 0- Signal
2	RX00+	LVDS ODD 0+ Signal
3	RX01-	LVDS ODD 1- Signal
4	RX01+	LVDS ODD 1+ Signal
5	RX02-	LVDS ODD 2- Signal
6	RX02+	LVDS ODD 2+ Signal
7	GND	Ground
8	RXCLK-	LVDS ODD Clock- Signal



深圳市卡迪显示科技有限公司

SHENZHEN KADI DISPLAY

9	RXCLK+	LVDS ODD Clock+ Signal
10	RX03-	LVDS ODD 3- Signal
11	RX03+	LVDS ODD 3+ Signal
12	NC	No connection
13	NC	No connection
14	NC	No connection
15	NC	No connection
16	NC	No connection
17	NC	No connection
18	NC	No connection
19	NC	No connection
20	NC	No connection
21	NC	No connection
22	NC	No connection
23	NC	No connection
24	GND	Ground
25	NC	No connection
26	NC	No connection
27	NC	No connection
28	VDD	Power supply +5V
29	VDD	Power supply +5V
30	VDD	Power supply +5V



3. Electrical Characteristics

3.1 Recommended Operating Condition for TFT LCD

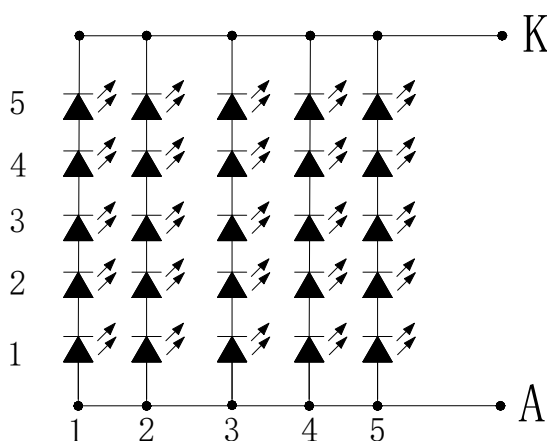
Item	Symbol	Min.	Typ.	Max.	Unit	Note
Analog Supply voltage	VDD	3.0	3.3	3.6	V	
Analog supply current	I _{VDD}	-	TBD	-	mA	VDD=3.3V
Logic input voltage	VIH	0.7*VDD	-	VDD	V	
	VIL	GND	-	0.3*VDD	V	

3.2 Recommended Driving Condition for Backlight

Item	Symbol	Min.	Typ.	Max.	Unit	Note
Driving Current	I _{BLU}	-	225	-	mA	
Driving Voltage	V _{BLU}	13.5	-	17	V	
Power consumption	W _{BLU}	3.0375		3.8250	W	
LED Life-Time	N/A	-	50,000	-	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

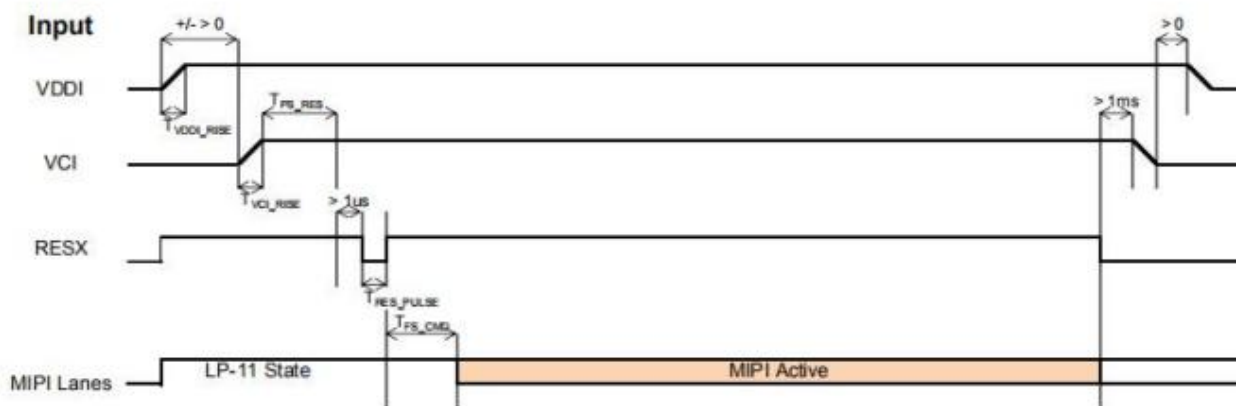


4. Interface Characteristic

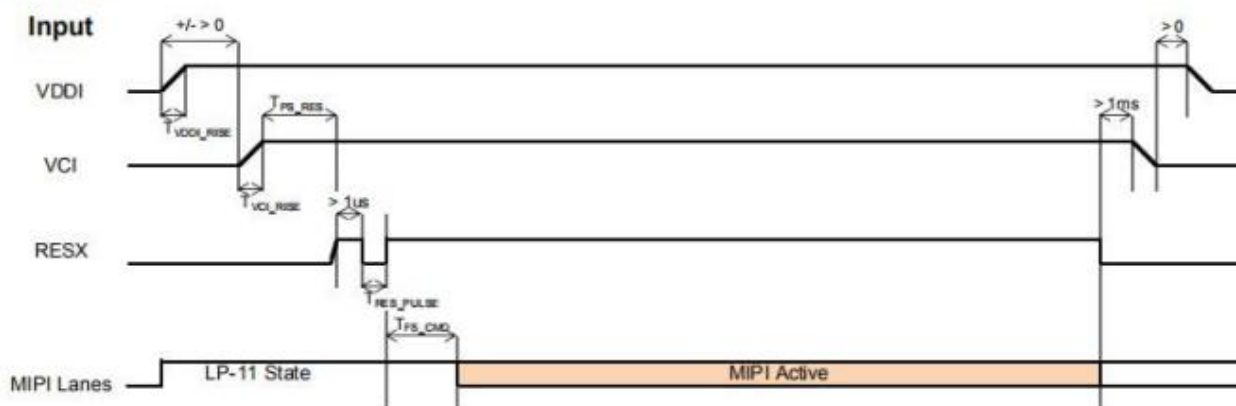
4.1 POWER ON/OFF SEQUENCE

To prevent the device damage from latch up and Improve subjective display effect,the power ON/OFF sequence shown below must be followed.

Case A:



Case B:

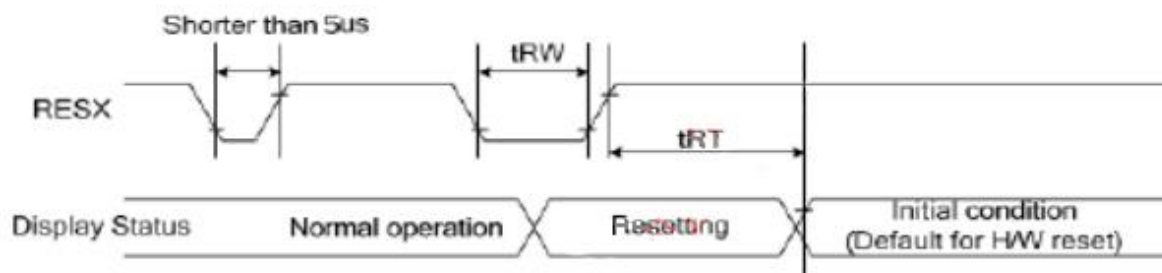


Symbol	Characteristics	Min.	Typ.	Max.	Units
T_{VDDI_RISE}	VDDI Rise time	10	-	-	us
T_{VCI_RISE}	Case A: VCI Rise time	130	-	-	us
	Case B: VCI Rise time	40			
T_{PS_RES}	VDDI/VCI on to Reset high	5	-	-	ms
T_{RES_PULSE}	Reset low pulse time	10	-	-	us
T_{FS_CMD}	Reset to first command	10	-	-	ms

Figure 93: Power on/off sequence with Power Mode 3



4.2 Reset Timing Characteristics



Reset Timing

Reset Timing

Signal	Symbol	Parameter	Min	Max	Unit
RESX	tRW	Reset pulse duration	10		uS
	tRT	Reset cancel		TBD (note 1,5) TBD (note 1,6,7)	mS

Notes:

1. The reset cancel also includes required time for loading ID bytes, VCOM setting and other settings from EEPROM to registers. This loading is done every time when there is HW reset cancel time (tRT) within 5 ms after a rising edge of RESX.
2. Spike due to an electrostatic discharge on RESX line does not cause irregular system reset according to the
- 3.

Reset Descript

RESX Pulse	Action
Shorter than 5us	Reset Rejected
Longer than 10us	Reset
Between 5us and 10us	Reset starts

4. During the Resetting period, the display will be blanked (The display enters the blanking sequence, which maximum time is 120 ms, when Reset Starts in the Sleep Out mode. The display remains the blank state in the Sleep In mode.) and then return to Default condition for Hardware Reset.



4.3 Interface Timing Characteristics

Parameter		Symbol	Value			Unit
			Min	Typ	Max	
DCLK frequency @Frame rate=60Hz		F_{DCLK}	-	45	-	MHz
HSYNC period time		T_H		912	-	DCLK
Horizontal display area		T_{HD}	800			DCLK
HSYNC pulse width	Min	T_{HPW}	1			
	Typ		-			
	Max		40			
HSYNC back porch(with pulse width)		T_{HBP}	-	60	-	DCLK
HSYNC front porch		T_{HFP}	-	40	-	DCLK
VSYNC period time		T_V	-	830	-	H
Vertical display area		T_{VD}	800			H
VSYNC pulse width	Min	T_{VPW}	1			H
	Typ		-			
	Max		20			
VSYNC back porch(with pulse width)		T_{VBP}	-	20	-	H
VSYNC front porch		T_{VFP}	-	10	-	H



5. Optical Specifications

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	Note
Viewing Angle (CR $\geq$ 10) B/L ON	θ_T	$\Phi=90^\circ$ (12 o'clock)	75	80	-	deg	Note2
	θ_B	$\Phi=270^\circ$ (6 o'clock)	75	80	-	deg	Note2
	θ_L	$\Phi=180^\circ$ (9 o'clock)	75	80	-	deg	Note2
	θ_R	$\Phi=0^\circ$ (3 o'clock)	75	80	-	deg	Note2
Response Time	T_{ON}	Normal $\theta=\Phi=0^\circ$	-	15	-	msec	Note4
	T_{OFF}		-	15	-	msec	Note4
Contrast Ratio	CR		800	1000	-	-	Note1 Note3
Color Chromaticity	W_X		0.254	0.304	0.354	-	Note1 Note5
	W_Y		0.270	0.320	0.370	-	Note1 Note5
Luminance	L		900	1000	-	cd/m ²	Note1 Note7
Luminance Uniformity	Y_U		75	80	-	%	Note1 Note6
NTSC	-		55	60	-	%	-

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.

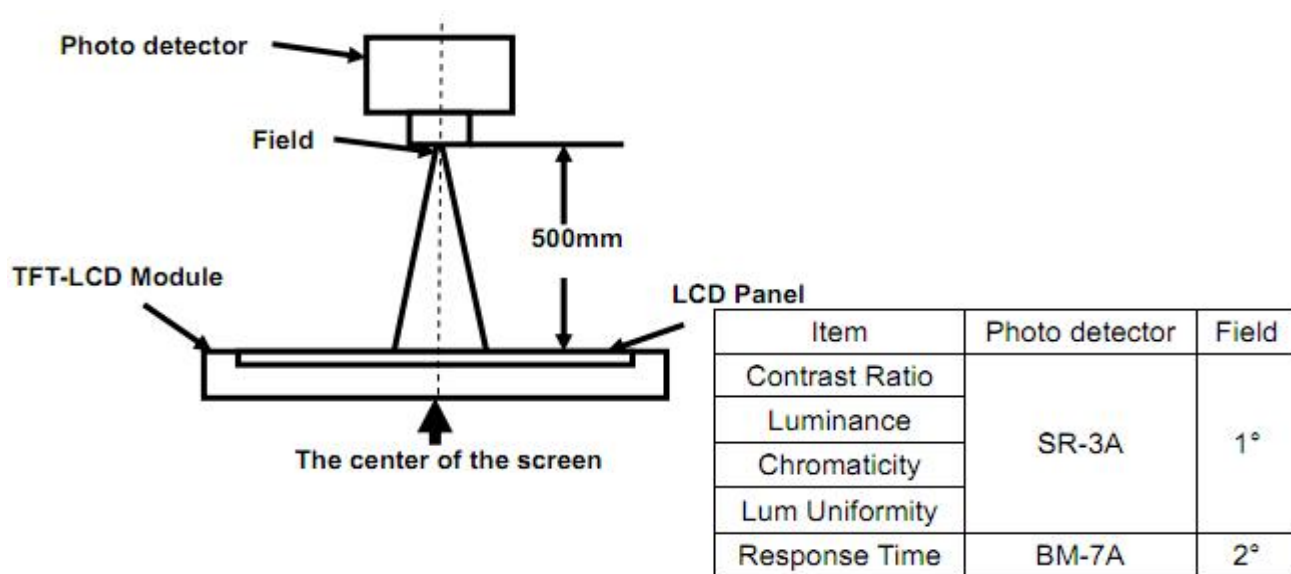


Fig 1

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).

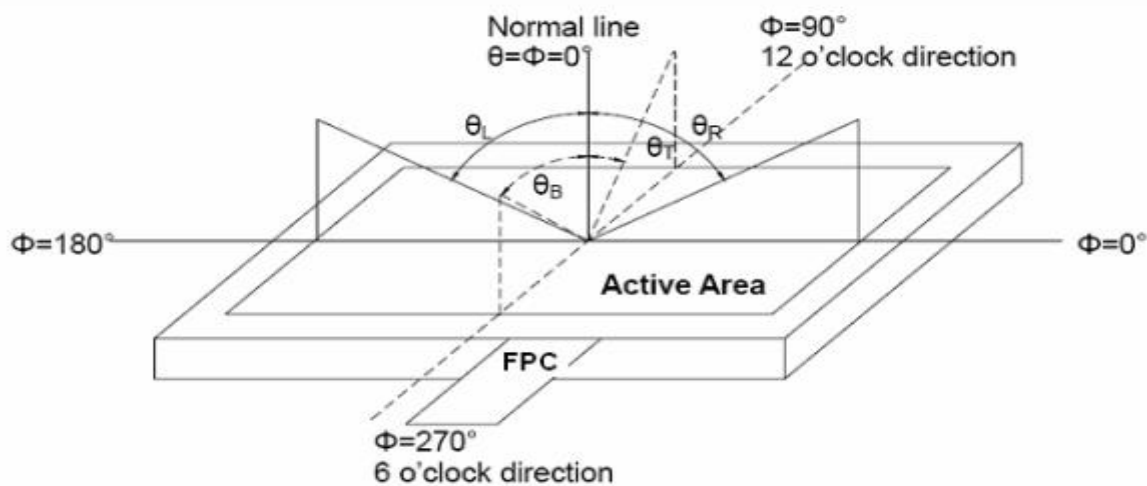


Fig 2 Definition of viewing angle

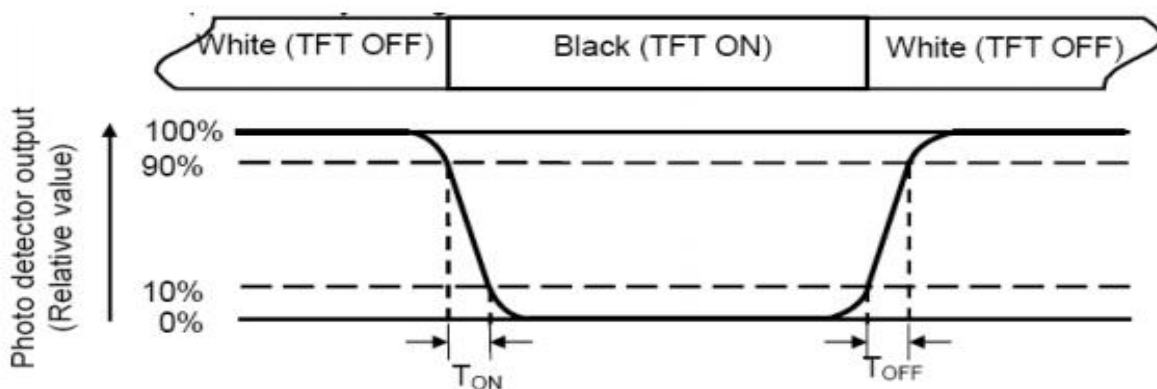
Note 3: Definition of contrast ratio

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



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 (T_{ON}) is the time between photo detector output intensity changed from 90% to 10%. And fall time (T_{OFF}) 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.

L_v = Average Surface Luminance with all white pixels ($P_1, P_2, P_3, \dots, P_n$)

For more information see FIG.3-a/b

Note 8: Size : $S \leq 5"$ (see Figure a) A : 5 mm B : 5 mm. H, V : Active area

Light spot size $\varnothing = 5\text{mm}$ (BM-5) or $\varnothing = 7.7\text{mm}$ (BM-7) 50cm distance or test spot position : see Figure a.

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

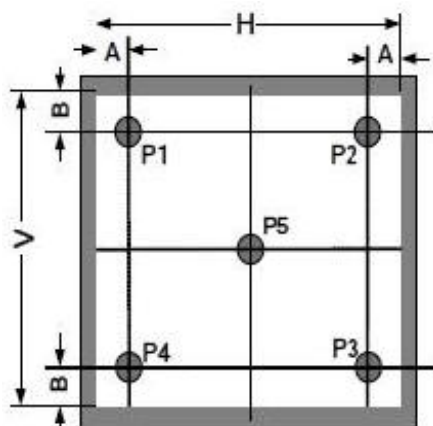


Fig. 3-a Definition of points



$5'' < S \leq 12.3''$ (see Figure b) . H,V : Active area

Light spot size $\varnothing = 5\text{mm}$ (BM-5) or $\varnothing = 7.7\text{mm}$ (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).

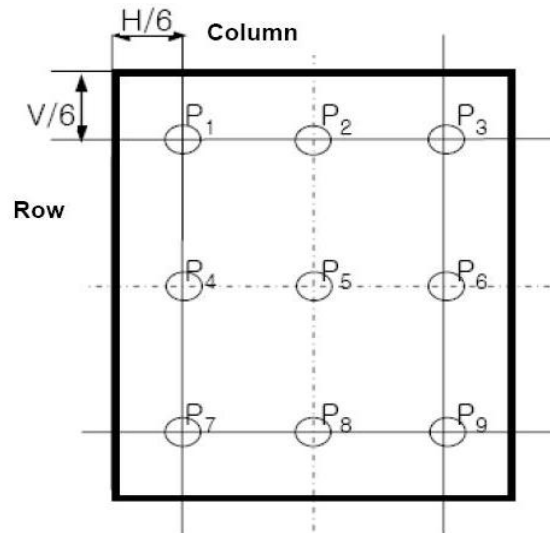


Fig. 3-b Definition of points



6. Reliability Test Items

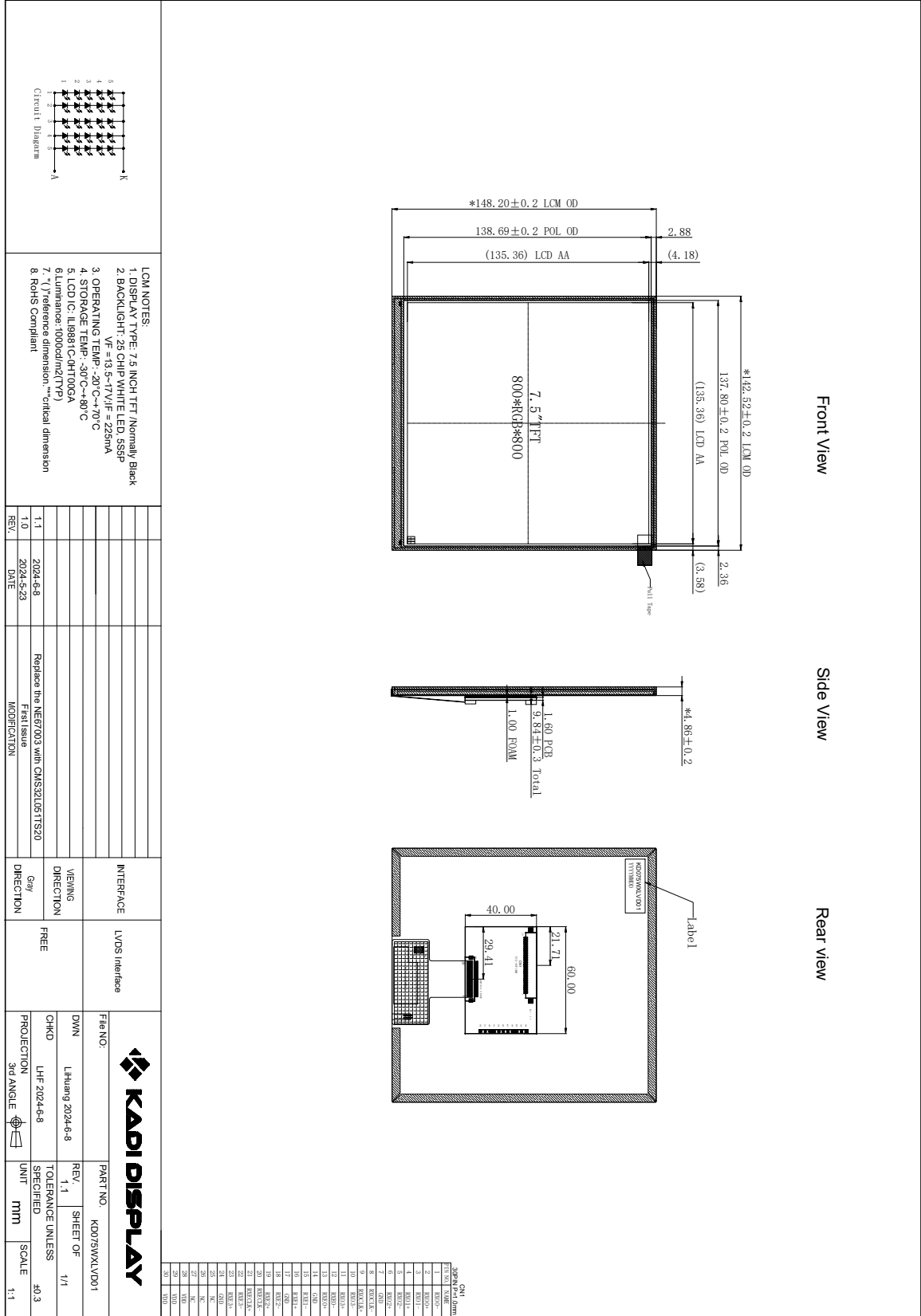
Test Item	Test Conditions
High Temperature Storage	Ta= +80℃ 120hrs
Low Temperature Storage	Ta= -30℃ 120hrs
High Temperature Operation	Ta= +70℃ 120hrs
Low Temperature Operation	Ta= -20℃ 120hrs
High Temperature and Humidity Storage	Ta= +60℃, 90% RH 120hrs
Thermal Shock (Non-operation)	-30℃/30 min ~ +80℃/30 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%



7. Mechanical Drawing





8. Packing

Packing Method

TBD

Steps:

1. Put module into tray cavity
2. Tray stacking
3. Put 1 cardboard under the tray stack and 1 cardboard above
4. Fix the cardboard to the tray stack with adhesive tape
5. Put the tray stack into carton
6. Carton sealing with adhesive tape



9. Precautions for Use of LCD modules

9.1 Handling Precautions

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

9.1.2. 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.

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

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

9.1.5. 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

9.1.6. Do not attempt to disassemble the LCD Module.

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

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

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

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

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

9.1.8.4. 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.

9.2 Storage Precautions

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

9.2.2. 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%

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

9.3 Transportation Precautions

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