



PRODUCT SPECIFICATION

KADI Model: **KD101ZWX104FP**

CUSTOMER Model: **-**

Description: **10.1 " TFT-LCD Module with CTP**

Version: **1.0**

KADI	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE			
DATE	2026.3.12	2026.3.12	2026.3.12

CUSTOMER APPROVAL	SIGNATURE	DATE

Record of Revisions

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1. General Specifications

1.1 LCM General Information

Item	Specification	Unit
LCD Size	10.1	inch
Number of Pixels	1280 (H) RGB x 720 (V)	pixels
Display Mode	Normally Black	-
Viewing Direction	Free	o' clock
Interface	MIPI	-
Display Colors	16.7M	colors
Outline Dimension	236.06 (H) x 142.96 (V) x 5.2 (D)	mm
Active Area	224.64 (H) x 126.36 (V)	mm
Pixel Pitch	0.1755 (H) x 0.1755 (V)	mm
Driver IC	EK79202D	-
Operation Temperature	-30~70	°C
Storage Temperature	-30~80	°C

Note1:Requirements on environmental protection RoHS compliant.



2. Absolute Maximum Ratings

Item	Symbol	MIN.	MAX.	Unit	Note
Analog Supply voltage	VDD	-0.5	4.0	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. 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}	-	-	-	mA	VDD=3.3V
Logic input voltage	V _{IH}	0.7*VDD	-	VDD	V	
	V _{IL}	GND	-	0.3*VDD	V	

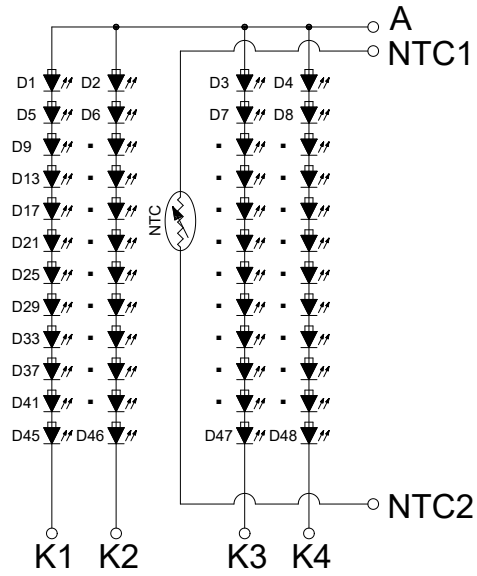
3.2 Recommended Driving Condition for Backlight

Item	Symbol	Min.	Typ.	Max.	Unit	Note
Driving Current	I _F	-	280	-	mA	
Driving Voltage	V _F	32.4	-	39.6	V	
Power consumption	W _{BL}	9.072	-	11.088	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 :





4. Interface Pin Assignment

4.1 LCM Pin Assignment

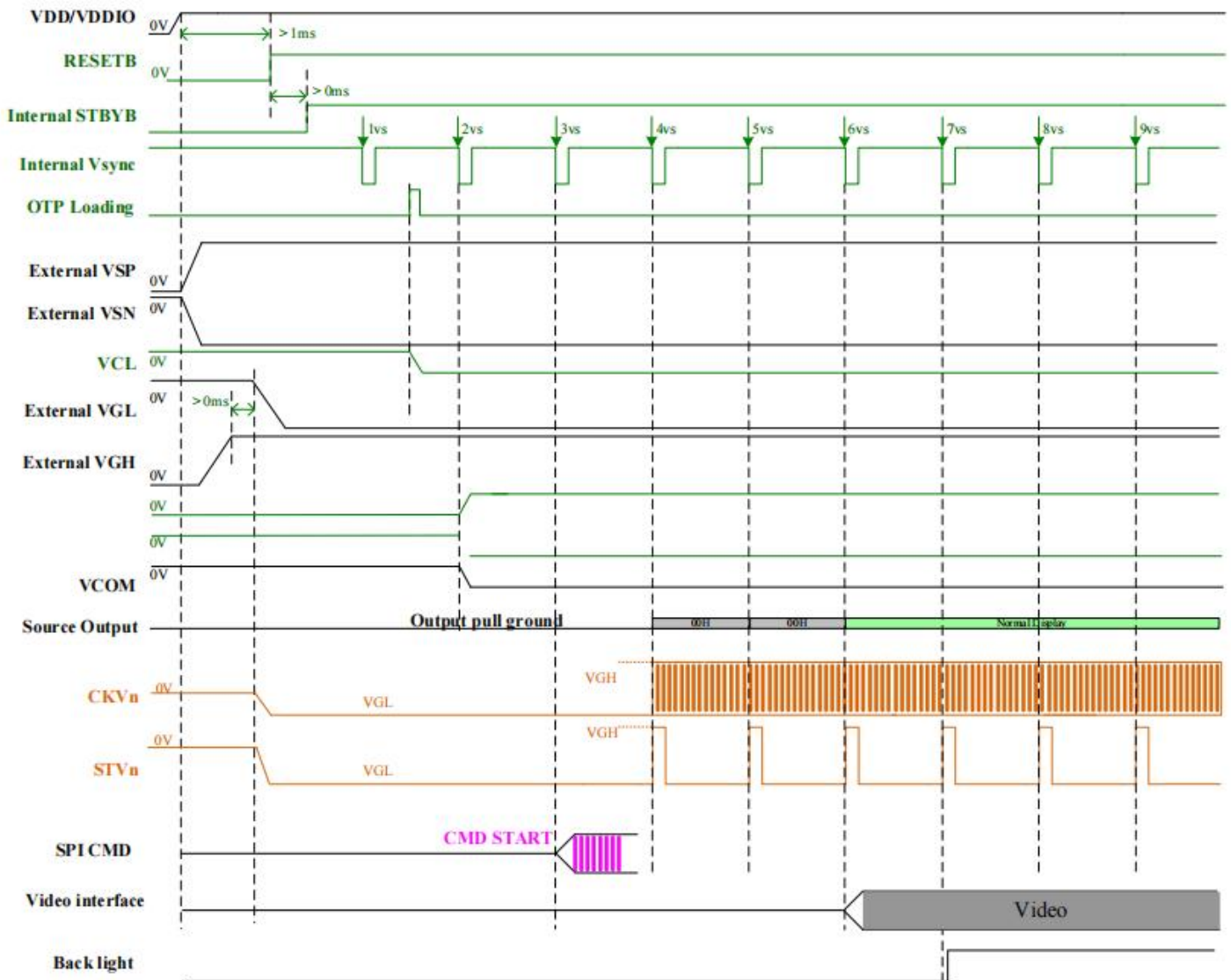
No.	Symbol	Description
1	NC	No connection
2-3	VDD(3.3)	Power supply(3.3V)
4	NC	No connection
5	RST(3.3V)	Global reset pin(3.3V)
6	NC	No connection
7	GND	Ground
8	MIPI_D2N	MIPI Negative data signal(-)
9	MIPI_D2P	MIPI Positive data signal(+)
10	GND	Ground
11	MIPI_D1N	MIPI Negative data signal(-)
12	MIPI_D1P	MIPI Positive data signal(+)
13	GND	Ground
14	MIPI_CKN	MIPI Negative clock signal(-)
15	MIPI_CKP	MIPI Positive clock signal(+)
16	GND	Ground
17	MIPI_D0N	MIPI Negative data signal(-)
18	MIPI_D0P	MIPI Positive data signal(+)
19	GND	Ground
20	MIPI_D3N	MIPI Negative data signal(-)
21	MIPI_D3P	MIPI Positive data signal(+)
22	GND	Ground
23-24	NC	No connection
25	GND	Ground
26	NC	No connection
27	NTC1	Thermistor pin1
28	NTC2	Thermistor pin2
29	NC	No connection
30	GND	Ground
31	LED-	Power for LED backlight (Cathode)
32	LED-	Power for LED backlight (Cathode)
33-38	NC	No connection
39	LED+	Power for LED backlight (Anode)
40	LED+	Power for LED backlight (Anode)



5. Interface Characteristics

5.1 Power Sequence

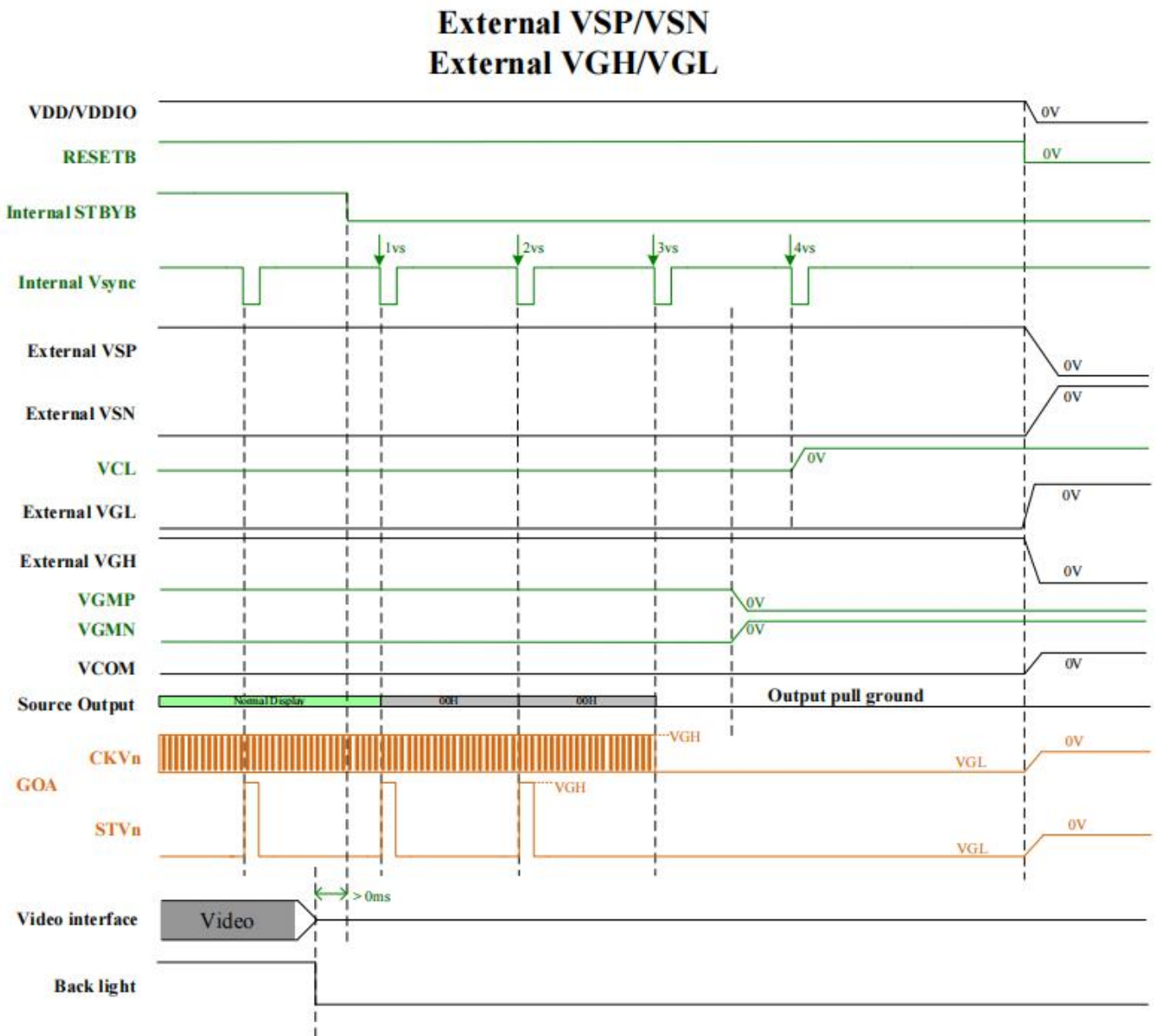
Power on sequence



Note: Before Power on process is have to check all power input of external that is Gnd.



Power off sequence





5.2 DC Characteristics

MIPI DC electrical characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
MIPI Characteristics for High Speed Receiver					
Single-ended input low voltage	V_{ILHS}	-40	-	-	mV
Single-ended input high voltage	V_{IHHS}	-	-	460	mV
Common-mode voltage	V_{CMRXDC}	70	-	330	mV
Differential input impedance	Z_{ID}	80	100	120	ohm
HS transmit differential voltage ($V_{OD}=V_{DP}-V_{DN}$)	$ V_{OD} $	100	200	250	mV
MIPI Characteristics for Low Power Mode					
Pad signal voltage range	V_I	-50	-	1350	mV
Ground shift	V_{GNDSH}	-50	-	50	mV
Logic 0 input threshold	V_{IL}	0	-	550	mV
Logic 1 input threshold	V_{IH}	1000	-	1350	mV
Input hysteresis	V_{HYST}	25	-	-	mV
Output low level	V_{OL}	-50	-	50	mV
Output high level	V_{OH}	1.1	1.2	1.3	V
Output impedance of Low Power Transmitter	Z_{OLP}	110			ohm
Logic 0 contention threshold	$V_{ILCD,MAX}$	-	-	200	mV
Logic 1 contention threshold	$V_{IHCD,MIN}$	450	-	-	mV

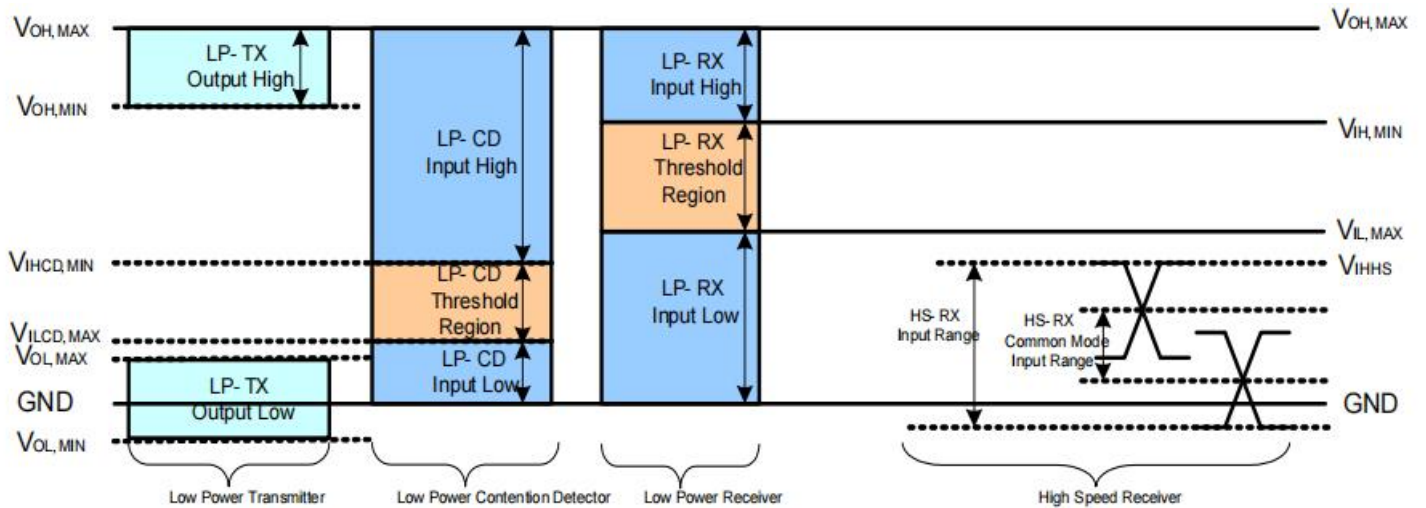


Figure 5.2 : MIPI signaling and contention voltage levels

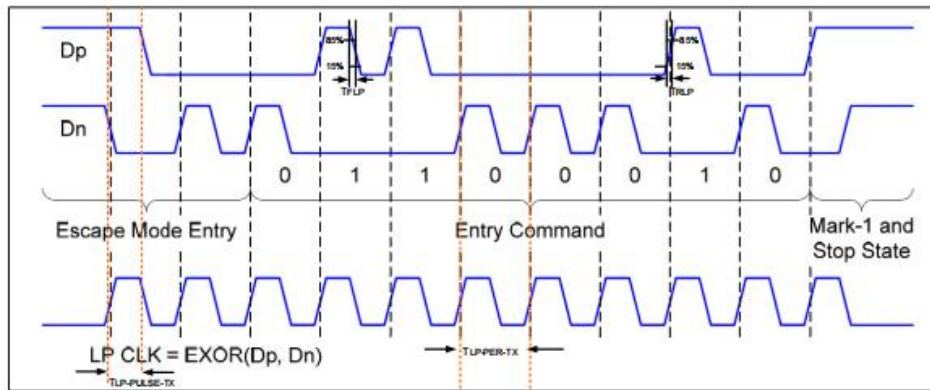


5.3 AC Characteristics

MIPI AC characteristic

LP Transmitter AC Specification

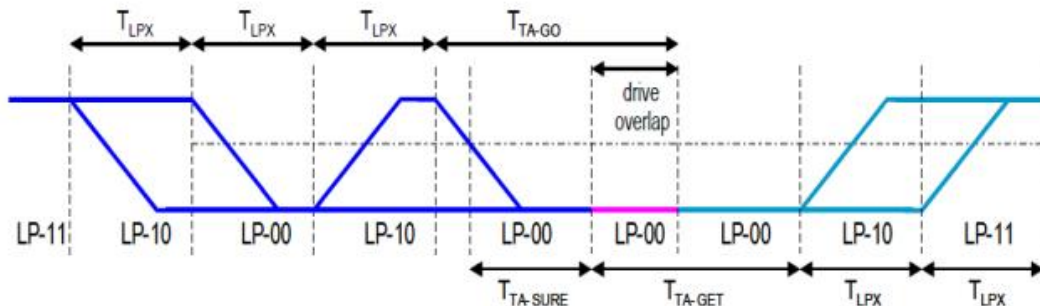
Parameter	Symbol	Min	Typ	Max	Units	Notes
15%~85% rising time and falling time	T_{RLP} / T_{FLP}	-	-	25	ns	-
30%~85% rising time and falling time	T_{REOT}	-	-	35	ns	-
Pulse width of LP exclusive-OR clock	$T_{LP-PULSE-TX}$	50	-	-	ns	-
Period of the LP EXOR clock(LP Speed)	$T_{LP-PER-TX}$	100	200	-	ns	-
Slew Rate @CLOAD =0pF	$\delta V / \delta t_{SR}$	20	-	500	mV/ns	-
Slew Rate @CLOAD =5pF		20	-	200	mV/ns	-
Slew Rate @CLOAD =20pF		20	-	150	mV/ns	-
Slew Rate @CLOAD =70pF		20	-	100	mV/ns	-
Load Capacitance	T_{RLP}	-	-	70	pF	-



Turnaround Procedure

● Turnaround Procedure Operation Timing Parameters

Parameter	Symbol	Min	Typ	Max	Units
Length of any Low-Power state period	T_{LPX}	50	-	-	ns
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





5.4 Reset Timing

When RESETB of the reset pin equals to Low, it will be in the condition of reset.
When it is in the condition of reset, it will make the device recover the initial set.

However, in order to avoid the reset noise cause reset, there is a mechanism to judge about whether the reset is needed or not.

The closed interval of Low can be shown as the following.

(Test condition: VDDIO=2.3V~3.6V, VSS=0V, T_A=-30 ~+85)

Parameter	Symbol	Conditions	Spec.			Unit
			Min.	Typ.	Max	
Reset low pulse width	Trst		20	-	-	μs

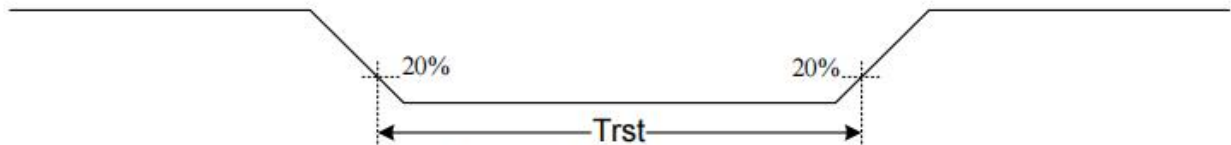


Figure 13.5: Reset timing

5.5 Input Timing Table

For 1280RGBx720

Parameter		Symbol	Value			Unit
			Min.	Typ.	Max.	
DCLK frequency @Frame rate=60Hz (LVDS)		F _{DCLK}	61.6	65.5	71.3	MHz
HSYNC period time		T _H	1380	1440	1500	DCLK
Horizontal display area		T _{HD}	1280			DCLK
HSYNC pulse width	Min.	T _{HPW}	2			
	Typ.		-			
	Max.		40			
HSYNC back porch(with pulse width)		T _{HBP}	88	88	88	DCLK
HSYNC front porch		T _{HFP}	12	72	132	DCLK
VSYNC period time		T _V	744	758	792	H
Vertical display area		T _{VD}	720			H
VSYNC pulse width	Min.	T _{VPW}	2			H
	Typ.		-			
	Max.		20			
VSYNC back porch(with pulse width)		T _{VBP}	23	23	23	H
VSYNC front porch		T _{VFP}	1	15	49	H



6. Optical Specifications

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	Note
Viewing Angle (CR≥10) B/L ON	θ_T	$\Phi=90^\circ$ (12 o'clock)	75	85	-	deg	Note2
	θ_B	$\Phi=270^\circ$ (6 o'clock)	75	85	-	deg	Note2
	θ_L	$\Phi=180^\circ$ (9 o'clock)	75	85	-	deg	Note2
	θ_R	$\Phi=0^\circ$ (3 o'clock)	75	85	-	deg	Note2
Response Time	T_{ON}	Normal $\theta=\Phi=0^\circ$	-	10	15	msec	Note4
	T_{OFF}		-	10	15	msec	Note4
Contrast Ratio	CR		900	1200	-	-	Note1 Note3
Color Chromaticity	W_x		TBD	TBD	TBD	-	Note1 Note5
	W_y		TBD	TBD	TBD	-	Note1 Note5
Luminance	L		-	1700	-	cd/m ²	Note1 Note7
Luminance Uniformity	Y_U		75	80	-	%	Note1 Note6
NTSC	-		67	70	-	%	-

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.

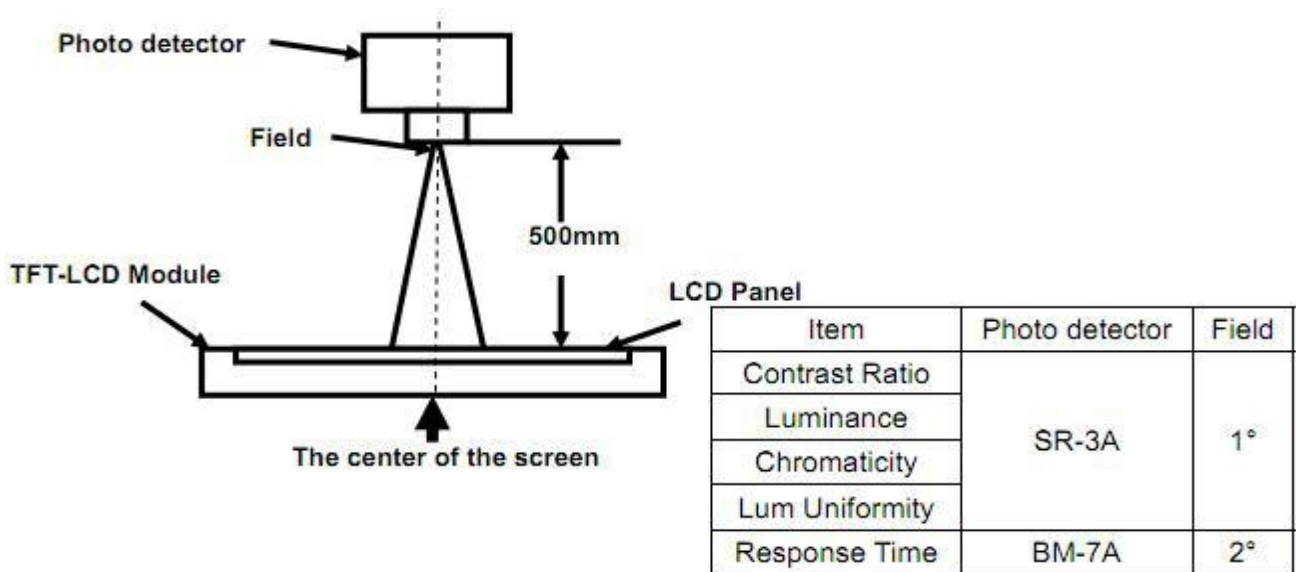


Fig 1

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).

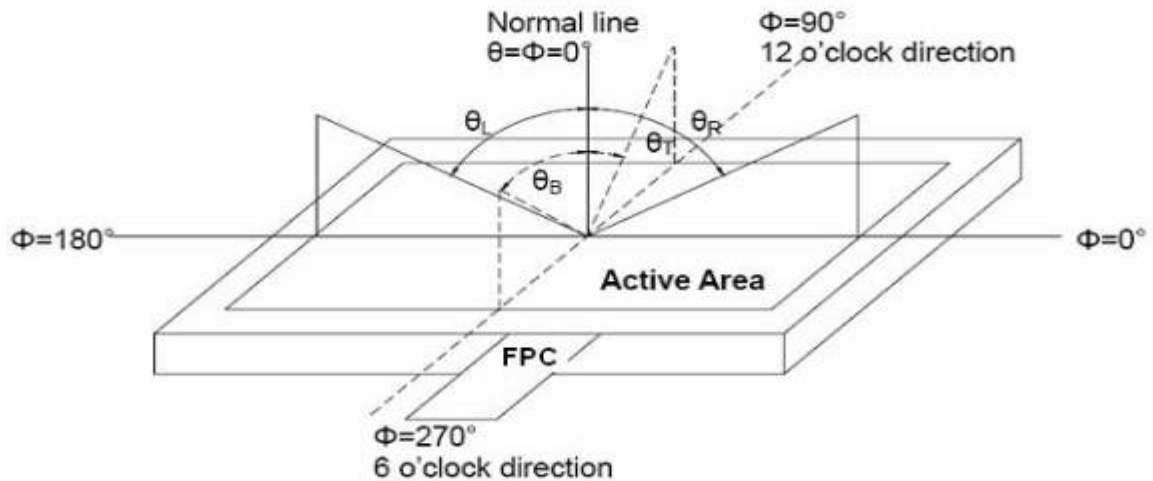


Fig 2 Definition of viewing angle

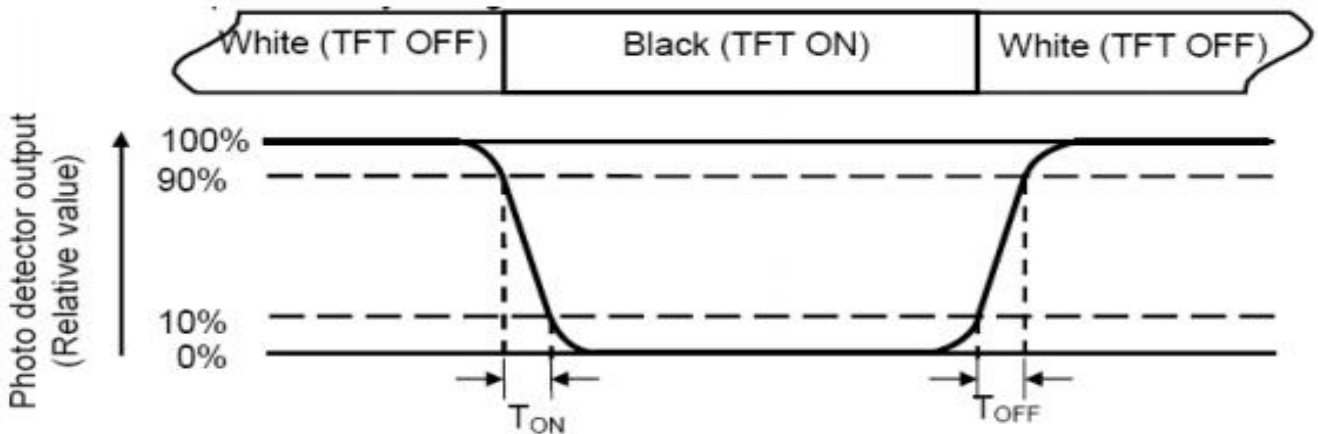
Note 3: Definition of contrast ratio

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



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 (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.

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:

H,V : Active area(see Figure b)

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).

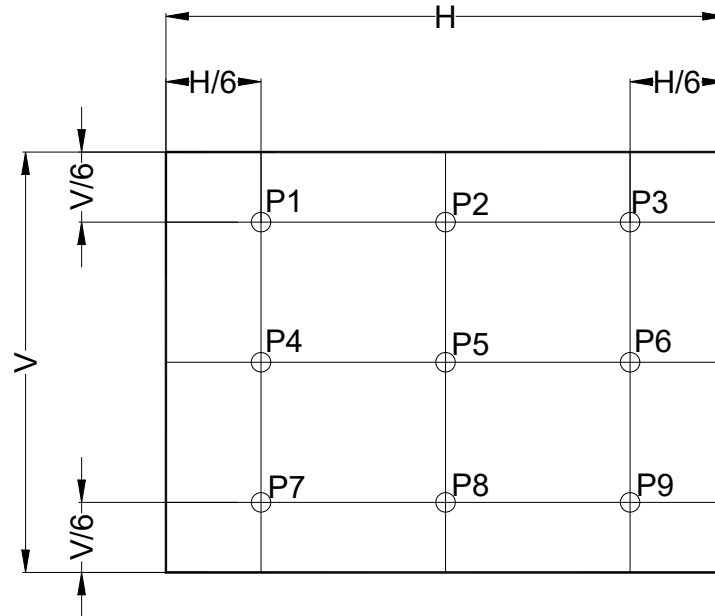


Fig. 3-b Definition of points



7. Reliability Test Items

Test Item	Test Conditions
High Temperature Storage	Ta= +80℃ 96hrs
Low Temperature Storage	Ta= -30℃ 96hrs
High Temperature Operation	Ta= +70℃ 96hrs
Low Temperature Operation	Ta= -30℃ 96hrs
High Temperature and Humidity Storage	Ta= +60℃, 90% RH 96hrs
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 = ± 8 kV, class B Air = ±15 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%



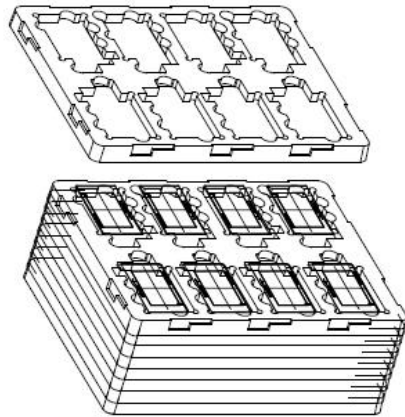
8. Mechanical Drawing



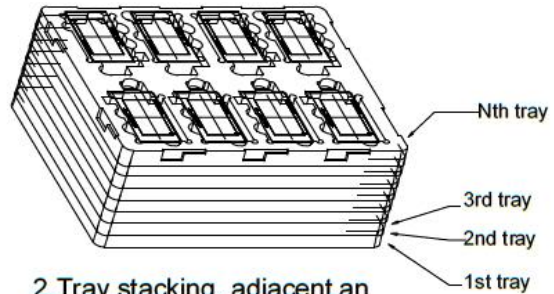


9. Packing

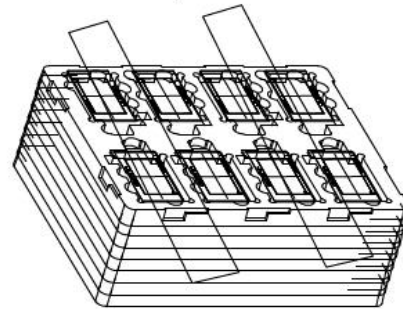
Packing Method



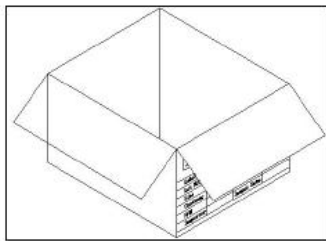
1. Put LCD module into tray cavity



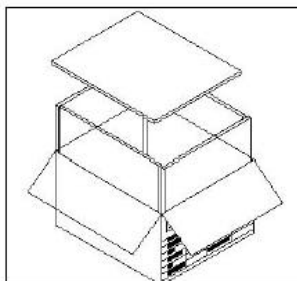
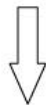
2. Tray stacking, adjacent an upper lower layer with a 180-degree rotation



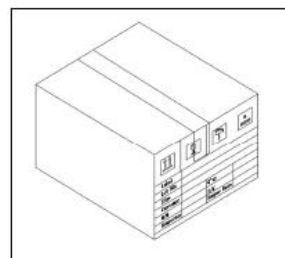
3. Medium Carton: Fix the tray stack with stretch film
Large Carton: Fix the tray stack with stretch film, then place it into a transparent PE antistatic bag



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°C ~40°C 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.