



# 深圳市卡迪显示科技有限公司

Shenzhen Kadi Display Technology., Ltd

<b>Model Name</b>	KD101BWS05NG-DR02
<b>Description</b>	1024(RGB)x600 Dots 10.1" TFT LCD
<b>Date</b>	2023/08/07
<b>Revision</b>	1.0

<b>Approved by/Date</b>	<b>Check by/Date</b>	<b>Prepared by/Date</b>
ZHP 2023/08/07	HZX 2023/08/07	Yigui.Han 2023/08/07

<b>Customer Approval</b>	
<b>Date</b>	



## Record of Revisions

Rev	Issued Date	Description	Editor
1.0	2023/08/07	First Release.	ZHP



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## 1. General Specifications

	Feature	Spec
<b>Characteristics</b>	Size	10.1 inch
	LCD Type	TFT/TRANSMISSIVE
	Resolution	1024*600(Vertical)
	Interface Type	System RGB interface
	Color Depth	16.7M
	Pixel pitch (mm)	0.0725(H) × 0.2088(V)
	Pixel Configuration	R.G.B. Vertical Stripe
	Driver IC	EK79001+EK73215BCGA
	Viewing Direction	ALL
<b>Mechanical</b>	LCM (W x H x D) (mm)	235(W)× 143(L)× 5.07(H)
	Active Area(mm)	222.72(W)× 125.28(L)
	Weight (g)	TBD
	LED Numbers	27 LEDs

Note 1: Requirements on Environmental Protection: RoHS

Note 2: LCM weight tolerance: +/- 5%



## 2. Input/Output Terminals

### LCM Pin Assignment

No.	Symbol	Description
1	VLED+	Power for LED backlight (Anode)
2	VLED+	Power for LED backlight (Anode)
3	VLED-	Power for LED backlight (Cathode)
4	VLED-	Power for LED backlight (Cathode)
5	GND	Power ground
6	VCOM	Common Voltage
7	DVDD	Digital Power
8	MODE	DE/SYNC mode select.
9	DE	Data Enable signal
10	VS	Vertical sync input
11	HS	Horizontal sync input
12	B7	Blue data (MSB)
13	B6	Blue data
14	B5	Blue data
15	B4	Blue data
16	B3	Blue data
17	B2	Blue data
18	B1	Blue data
19	B0	Blue data (LSB)
20	G7	Green data (MSB)
21	G6	Green data
22	G5	Green data
23	G4	Green data
24	G3	Green data
25	G2	Green data
26	G1	Green data
27	G0	Green data (LSB)
28	R7	Red data(MSB)
29	R6	Red data
30	R5	Red data
31	R4	Red data
32	R3	Red data
33	R2	Red data
34	R1	Red data



35	R0	Red data (LSB)
36	GND	Power ground
37	DCLK	Clock input
38	GND	Power ground
39	L/R	Left / Right Selection
40	U/D	Up / Down Selection
41	VGH	Gate ON Voltage
42	VGL	Gate OFF Voltage
43	AVDD	Power for Analog Circuit
44	RESET	Global reset pin
45	NC	Not connection
46	VCOM	Common Voltage
47	DITHB	Dithering function enable control
48	GND	Power ground
49	NC	Not connection
50	NC	Not connection

Note: The voltage power of the interface logic pin depend on “VDDI” and “GND” , Such as DBn, IMn and function pins.

### 3. Absolute Maximum Ratings

Electrical Absolute Maximum Ratings.

Item	Symbol	Min	Max	Unit
Operating Temperature	T <sub>OP</sub>	-10	60	°C
Storage Temperature	T <sub>ST</sub>	-20	70	°C
Humidity	RH	-	90%(Max60 °C)	RH

Notes:

1. If the module is above these absolute maximum ratings. It may become permanently damaged. Using the module within the following electrical characteristic conditions are also exceeded, the module will malfunction and cause poor reliability.
2. VDD>VSS must be maintained.

3. Please be sure users are grounded when handing LCD Module.

## 4. Electrical Specifications

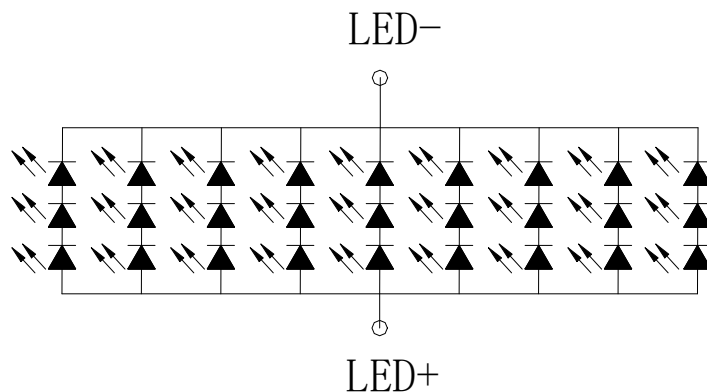
### 4.1 TFT LCD Module

Item	Symbol	Min	Typ	Max	Unit
Analog Power Supply Voltage	AVDD	9.4	9.7	10.0	V
Analog Power Supply Voltage	VGH	17	18	20	V
Analog Power Supply Voltage	VGL	-7	-6	-5	V
Analog Power Supply Voltage	VCOM	4.0	4.2	4.4	V
Power Supply	VCC	3.0	3.3	3.6	V
Input Current	I <sub>dd</sub>	-	TBD	TBD	mA
Input Voltage 'H' level	V <sub>IH</sub>	0.7IOVCC	-	IOVCC	V
Input Voltage 'L' level	V <sub>IL</sub>	VSSI	-	0.3IOVCC	V
Output Voltage 'H' level	V <sub>OH</sub>	0.8IOVCC	-	IOVCC	V
Output Voltage 'L' level	V <sub>OL</sub>	VSSI	-	0.2IOVCC	V

### 4.2 Back-light Unit:

Parameter	Sym.	Min.	Typ.	Max.	Unit	Condition
Forward Voltage	V <sub>f</sub>	8.4	9.3	10.2	V	I <sub>f</sub> =180mA
Number of LED	-	-	27	-	Piece	-
Connection mode	3S9P	-	-	-	-	-

Note:Using condition: constant current driving method I<sub>f</sub>=180mA(+/-10%).



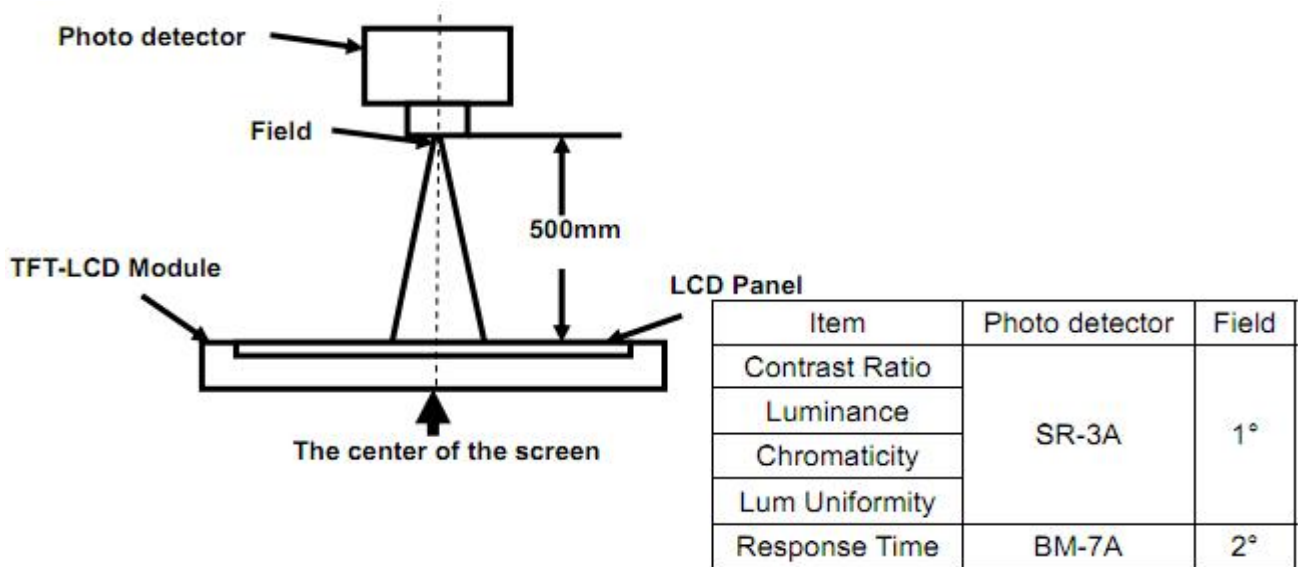
### 5. Optical Characteristics

Items	Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Viewing angles	$\theta_U$	Center CR $\geq$ 10	-	85	-	Degree.	Note2
	$\theta_D$		-	85	-		
	$\theta_L$		-	85	-		
	$\theta_R$		-	85	-		
Contrast Ratio	CR		600	800	-	-	Note1 Note3
Luminance	L <sub>v</sub>	$\theta=0^\circ$ $\psi=0^\circ$	200	250		cd/m <sup>2</sup>	Note1 Note7
Luminance Uniformity	$\delta$ (WHITE)	I <sub>f</sub> =20mA /LED	75	-	-	%	Note1 Note6
Response Time	T <sub>r</sub> +T <sub>f</sub>		-	30	40	ms	Note4
Color Chromaticity CIE (x, y)	X <sub>w</sub>	$\theta=0^\circ$ $\psi=0^\circ$ T <sub>a</sub> =25 $^\circ$ C	0.270	0.300	0.330	-	Note1 Note5
	Y <sub>w</sub>		0.300	0.330	0.360		
NTSC Ratio	-		-	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.





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).

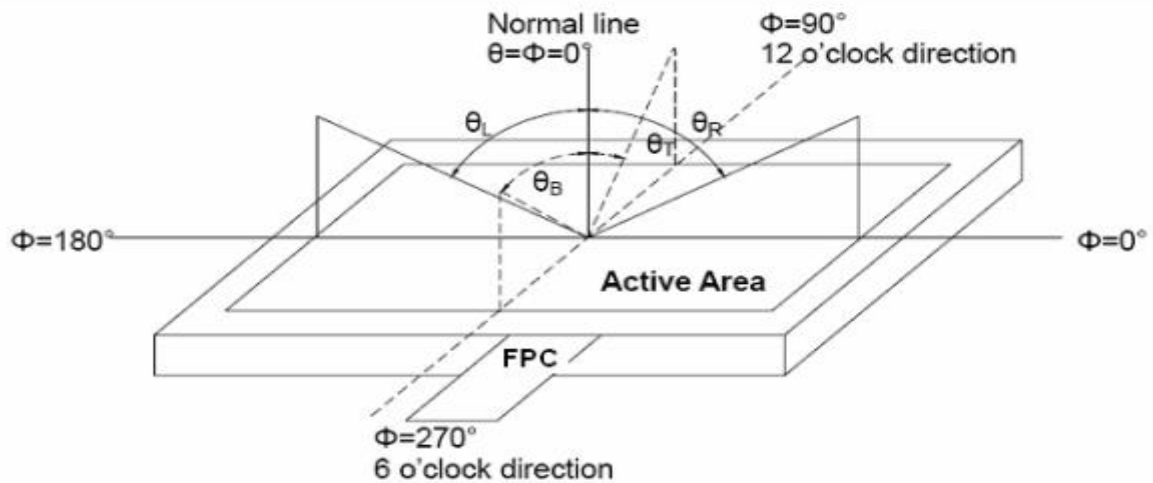


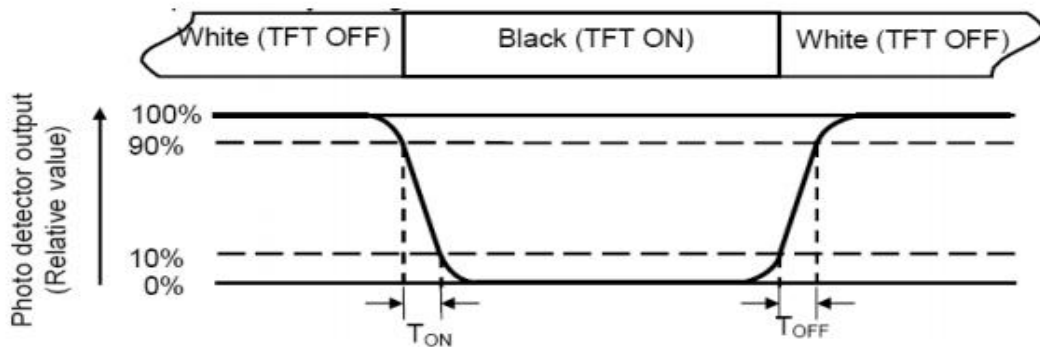
Fig. 1 Definition of viewing angle

Note 3: Definition of contrast ratio

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

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.2.

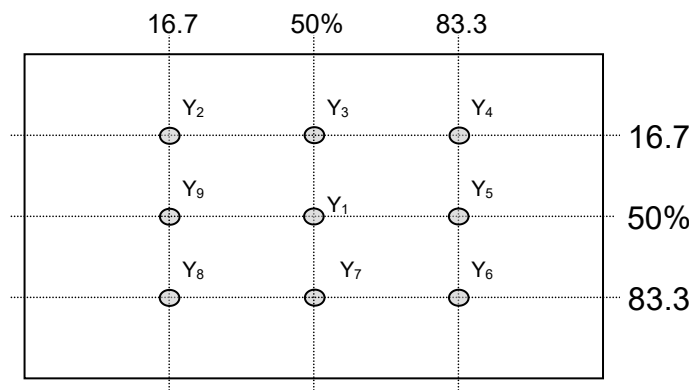


Fig. 2 Definition of points

Note 7: Definition of Luminance (Refer Fig. 2)

Surface luminance is the luminance with all pixels displaying white.

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

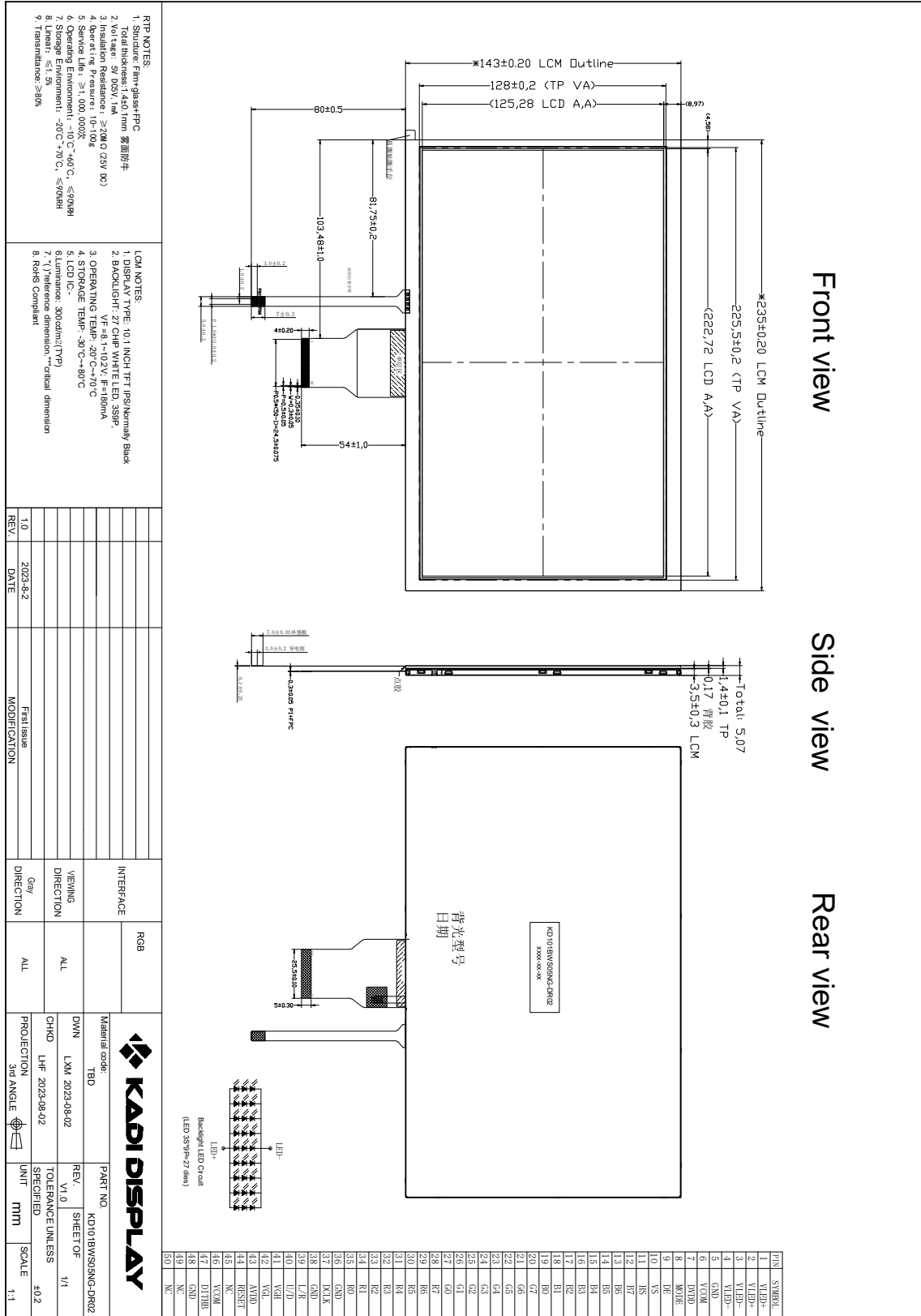
### 6. Reliability test items

No	Test Item	Condition	Remarks
1	High Temperature Operation	Ts= 60℃, 96hrs	IEC60068-2-1:2007 GB2423. 2-2008
2	Low Temperature Operation	Ta= -10℃, 96hrs	IEC60068-2-1:2007 GB2423.1-2008
3	High Temperature Storage	Ta= +70℃,96hrs	IEC60068-2-1:2007 GB2423. 2-2008
4	Low Temperature Storage	Ta= -20℃, 96hrs	IEC60068-2-1:2007 GB2423.1-2008
5	High temperature and high humidity	60℃±5℃×90%RH/48 hours	IEC60068-2-78:2001 GB/T2423.3-2006
6	Temperature Cycle	-10±2℃(30min.)~60(30min.)±2℃ ×48 cycles	Start with cold temperature, end with high temperature IEC60068-2-14:1984, GB2423.22-2002
7	ESD	R: 330Ω C: 150pF , 10time Air discharge: ±6KV Contact discharge: ±4KV	IEC61000-4-2:2001 GB/T17626.2-2006
8	Vibration Test	Frequency: 10Hz~55Hz~10Hz Amplitude: 1.5mm, X, Y, Z direction for total 0.5hours (Packing condition)	IEC60068-2-6:1982 GB/T2423.10-1995
9	Dropping test	Drop to the ground from 1.0m height,one time, every side of carton.(Packing condition)	IEC60068-2-27:1987 GB/T2423.5—1995

Note: All tests above are practiced at module type.

There is no display function NG issue occurred, All the cosmetic specification is judged before the reliability stress.

### 7. Drawing





## 8. Packing

Packing Method  
TBD

## 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 :



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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.