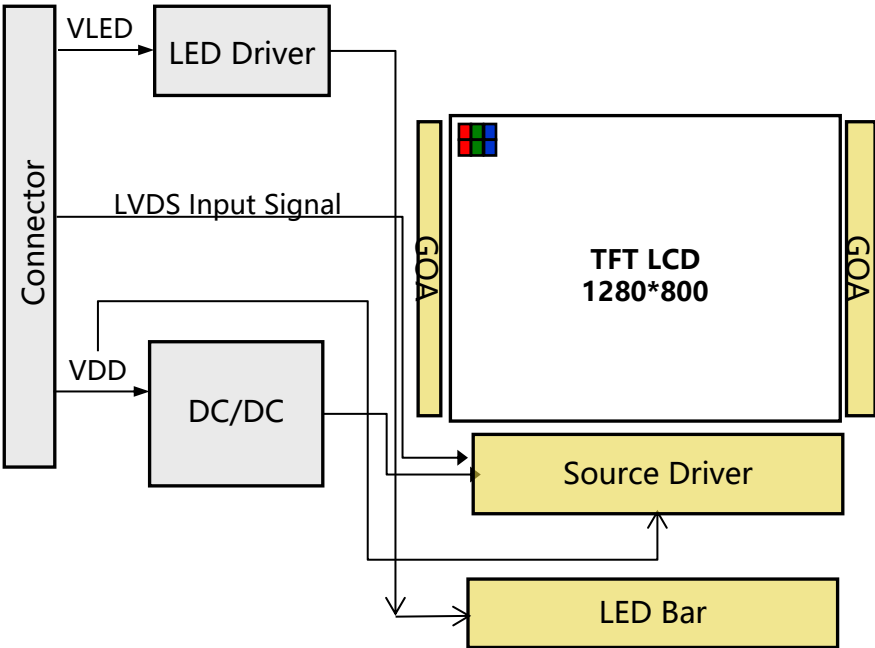


BOE	PRODUCT GROUP	REV	ISSUE DATE
	TFT LCD PRODUCT	0	2025.03.10

1.0 GENERAL DESCRIPTION

1.0.1 Introduction

GV101WXB-N83 is a color active matrix TFT LCD module using amorphous silicon TFT's (Thin Film Transistors) as an active switching devices. This module has a 10.1 inch diagonally measured active area with XGA resolutions (1280 horizontal by 800 vertical pixel array). Each pixel is divided into RED, GREEN, BLUE dots which are arranged in vertical stripe and this module can display 16.7 M colors.



1.0.2 Features

- LED back-light
- LVDS interface
- RoHS Compliant

1.0.3 Application

- Video Phone/IP Phone/Smart Key/ e-cigarettes etc.

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1.0.4 General Specification

< Table 1. General Specifications >

Parameter	Specification (15inch 参考)	Unit	Remarks
Active area	216.96 (H) × 135.6(V)	mm	
Number of pixels	1280(H) × 800(V)	Pixels	
Pixel pitch	0.1695(H) × 0.1695 (V)	mm	
Pixel arrangement	RGB Vertical stripe		
Display colors	16.7M	Colors	8bit
Display mode	Normally Black		
Dimensional outline	221.96±0.2(H) x 143.8±0.2(V) x 1.06±0.1	mm	
Weight	TBD(max.)	g	
Surface treatment	Hard Coating , 3H		

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2.0 ABSOLUTE MAXIMUM RATINGS

The followings are maximum values which, if exceed, may cause faulty operation or damage to the unit. The operational and non-operational maximum voltage and current values are listed in Table 2.

< Table 2. Environment Absolute Maximum Ratings> [Ta =25 ± 2 °C]

Parameter	Symbol	Min.	Max.	Unit	Remarks
LCD Power Supply Voltage	VDD	-0.3	4	V	
LED Driver Power Supply Voltage	V _{LED}	5	24	V	Ta = 25 °C Note 1&2
Operating Temperature	T _{OP}	-20	70	°C	Environment Temperature
Storage Temperature	T _{ST}	-30	80	°C	
Operating Ambient Humidity	Hop	10	90	%RH	
Storage Humidity	Hst	10	90	%RH	
Heat Release Requirement	Trls	15		°C	Note3 仅适用于Q/Sin gle/FOG出货项 目

- Note:
- These range above is maximum value not the actual operating temperature . Actual Operating temperature is no more than 40°C and temperature refers to the LCM surface temperature ;
 - BOE is not responsible for product problems beyond the use conditions.
 - When the ambient temperature is T °C, the surface temperature of Panel can not exceed (T+15)°C.

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3.0 ELECTRICAL SPECIFICATIONS

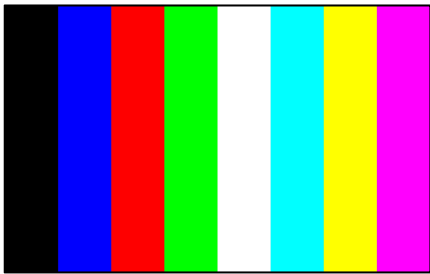
3.0.1 TFT LCD Module

< Table 3. LCD Module Electrical Specifications > [Ta =25 ± 2 °C]

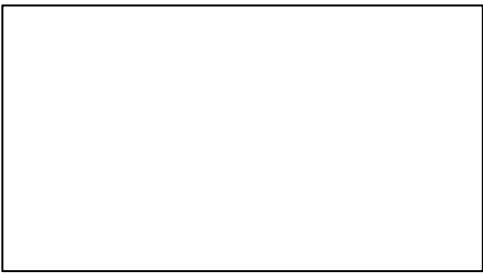
Parameter	Symbol	Values			Unit	Notes
		Min	Typ	Max		
Power Supply Input Voltage	V _{DD}	3.3	3.3	3.6	V	Note 1
Power Supply Current	I _{DD}	-	330	420	mA	
LED Driver Power Supply Voltage	V _{LED}	10.8	12	13.2	V	Note 2
LED Driver Power Supply Current	I _{LED}	-	275	300	mA	
Positive-going Input Threshold Voltage	V _{IT+}	-	-	+100	mV	
Negative-going Input Threshold Voltage	V _{IT-}	-100	-	-	mV	
Differential input common mode voltage	V _{com}	0.6	1.2	2.4- VID /2	V	
Differential input voltage	VID	0.2	0.4	0.6		

Notes : 1. The supply voltage is measured and specified at the interface connector of LCM.
The current draw and power consumption specified is for 3.3V at 25 °C, Typ value at colorbar Pattern, Max value at L255 Pattern

2. Calculated value for reference $I_{LED} \times V_{LED} \div 0.85 = P_{LED}$



colorbar



L255

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3.2 Back-light Driving Unit

< Table 4. LED Driving guideline specifications > Ta=25+/-2°C

Parameter			Min.	Typ.	Max.	Unit	Remarks
Power supply voltage for L ED Driver		V _{LED}	-	21	23.1	V	
Power supply Current for B ack light		I _{LED}	-	120	-	mA	
Power supply for Back light		P _{LED}	-	2.52	2.8	W	Note 1
EN Control Level	Backlight on	V _{ENH}	1.4	-	3.3	V	EN logic high v oltage
	Backlight off	V _{ENL}	-	-	0.6	V	EN logic low vol tage
PWM Cont rol Level	PWM High L evel	V _{PML}	1.4	-	3.3	V	
	PWM Low Le vel	V _{PML}	-	-	0.6	V	
PWM Control Frequency		F _{PWM}	2	-	25	KHz	
Duty Ratio		-	10	-	100	%	

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4.0 INTERFACE CONNECTION.

4.0.1 Electrical Interface Connection

The electronics interface connector is 20455-040E-12.
The connector interface pin assignments are listed in Table 6

<Table 6. Pin Assignments for the Interface Connector>

Terminal	Symbol	Functions
Pin No.	Symbol	Description
1	NC	No Connection
2	VDDIN	Power Supply,3.3V(typical)
3	VDDIN	Power Supply,3.3V(typical)
4	VDC	EDID,3.3V(typical)
5	NC	No Connection
6	CLK_EDID	EDID时钟
7	Data_EDID	EDID data读取
8	RIN0-	-LVDS differential data lane0 input
9	RIN0+	+LVDS differential data lane0 input
10	GND	Ground
11	RIN1-	-LVDS differential data lane1 input
12	RIN1+	+LVDS differential data lane1 input
13	GND	Ground
14	RIN2-	-LVDS differential data lane2 input
15	RIN2+	+LVDS differential data lane2 input
16	GND	Ground
17	LVDS_CLK-	-LVDS differential clock input
18	LVDS_CLK+	+LVDS differential clock input
19	GND	Ground
20	RIN3-	-LVDS differential data lane3 input
21	RIN3+	+LVDS differential data lane3 input
22	NC	No Connection

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4.0 INTERFACE CONNECTION.

4.0.1 Electrical Interface Connection

The electronics interface connector is 20455-040E-12.

The connector interface pin assignments are listed in Table 6

<Table 6. Pin Assignments for the Interface Connector>

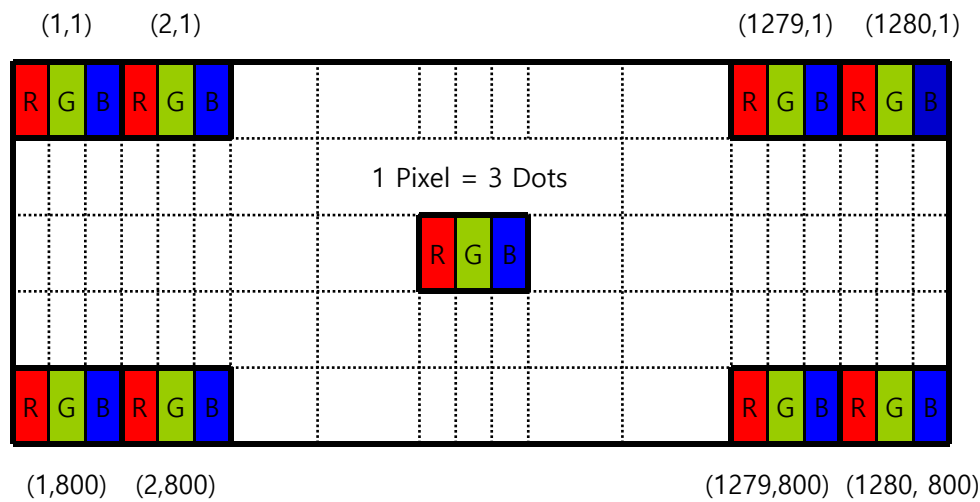
Terminal	Symbol	Functions
Pin No.	Symbol	Description
23	NC(SPI_CSB)	No Connection (SPI 片选)
24	NC(SPI_SCL)	No Connection (SPI 时钟)
25	GND	Ground
26	NC(SPI_SDAO)	No Connection (SPI Data output)
27	NC(SPI_SDAI)	No Connection (SPI Data input)
28	GND	Ground
29	NC	No Connection
30	NC	No Connection
31	LED_GND	Ground
32	LED_GND	Ground
33	LED_GND	Ground
34	NC	No Connection
35	LED_PWM	LED Driver PWM dimming control pin
36	LED_EN	LED Driver Chip Enable pin (Active High)
37	NC	No Connection
38	VLED	LED Driver Power supply input
39	VLED	LED Driver Power supply input
40	VLED	LED Driver Power supply input

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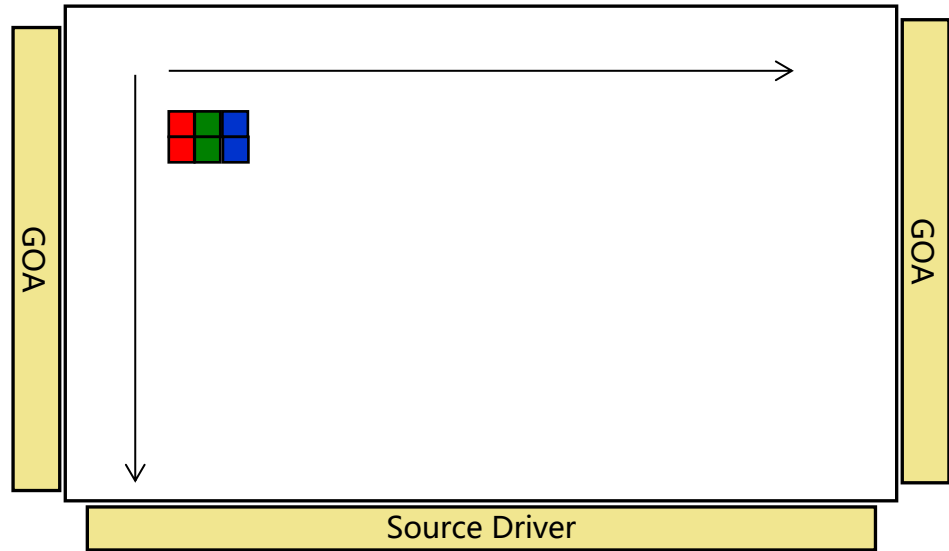
4.2 Data Input Format

Figure 5. Pixel Format



Display Position of Input Data (V-H)

Figure 6. Scan direction



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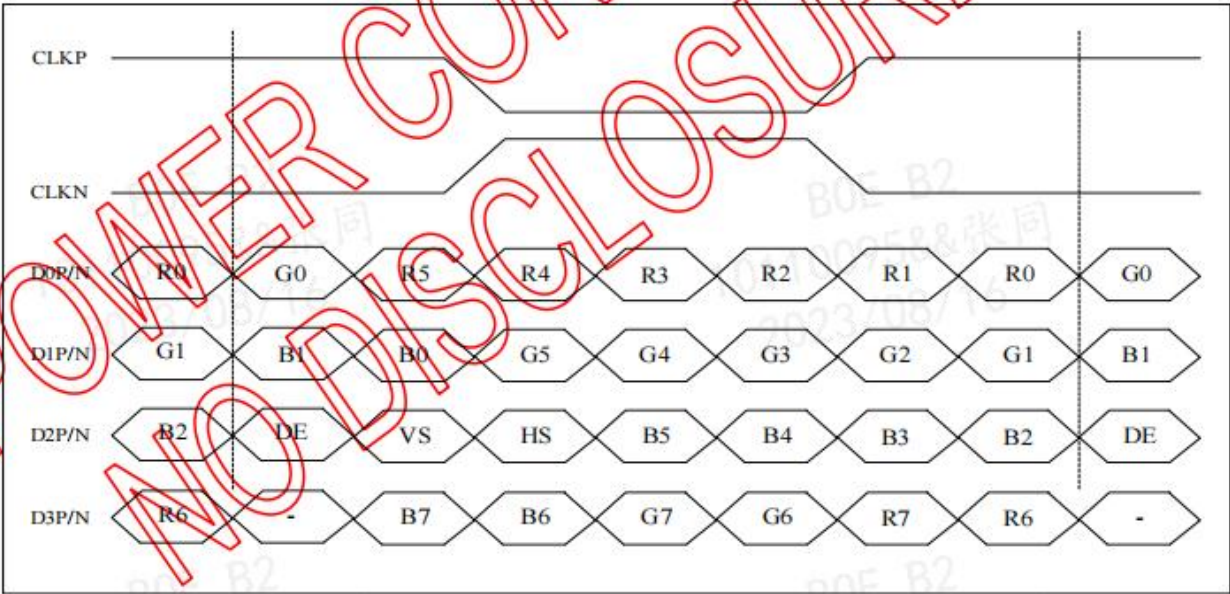
5.0 SIGNAL TIMING SPECIFICATION

5.0.1 The GV101WXM-N80 is operated by the DE only.

Item	Symbols		Min	Typ	Max	Unit	Note
DCLK	Frequency	-	68.1	69.3	70.4	MHz	以Typ Porch timing 点屏
Frame rate	Frequency	HZ	59	60	61	Hz	
Hsync	Period	tHP	1368	1408	1448	tCLK	
	Horizontal Valid	tHV	-	1280	-	tCLK	
	Horizontal Blank	tHB	88	128	168	tCLK	
	Horizontal Front Porch	tHP	40	68	80	tCLK	
	Horizontal Sync Width	tHS	20	32	60	tCLK	
Vsync	Period	tVP	818	820	847	line	
	Vertical Valid	tVV	-	800	-	line	
	Vertical Blank	tVB	18	20	47	line	
	Vertical Front Porch	tVP	8	10	20	line	
	Vertical Sync Width	tVS	3	3	20	line	

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5.02 LVDS data input format

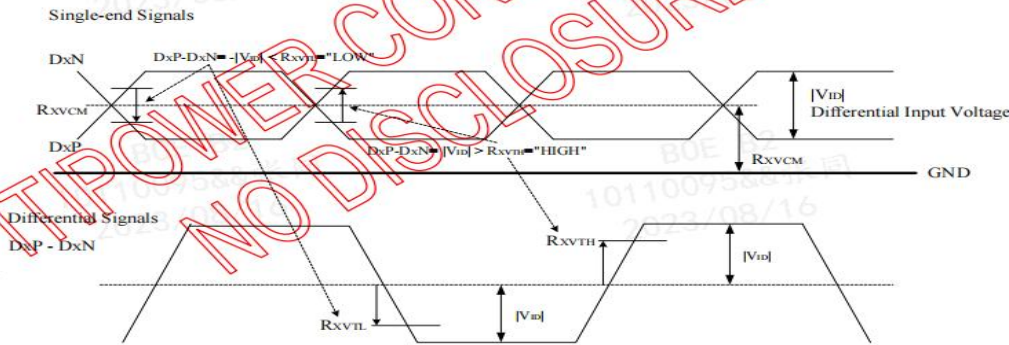


8-bit RGB LVDS VESA input timing

5.03 LVDS DC electrical characteristic

(Test condition: VDD=3.0V~3.6V, VSS=0V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Differential input high threshold voltage	RxVTH			+100	mV	1. RxVCM- V _{ID} ≤1400mV. 2. RxVCM- V _{ID} ≥400mV.
Differential input low threshold voltage	RxVTL	-100			mV	
Input voltage range (singled-end)	RxVIN	400	-	1400	mV	
Differential input common mode voltage	RxVCM	600	1200	1400	mV	
Differential input voltage	V _{ID}	200	400	600	mV	
Differential input impedance	Z _{ID}	85	100	115	ohm	
Differential input leakage current	I _{LCLVDS}	-10		+10	uA	



5.04 LVDS AC electrical characteristic

Parameter	Symbol	Spec.			Unit	Condition
		Min.	Typ.	Max.		
Clock frequency	R_{XCLK}	20	-	96	MHz	Refer to input timing table for each display resolution
Input data skew margin	T_{RSKM}	-0.2	-	0.2	UI	$ VID = 200mV$ $RxVCM = 1.2V$ $1UI = 1/(R_{XCLK} \times 7)$
Clock high time	T_{LVCH}	-	$3.5/(7 \times R_{XCLK})$	-	ns	
Clock low time	T_{LVCL}	-	$3.5/(7 \times R_{XCLK})$	-	ns	
PLL wake-up time	T_{enPLL}	-	-	150	us	

Table : LVDS mode AC electrical characteristics

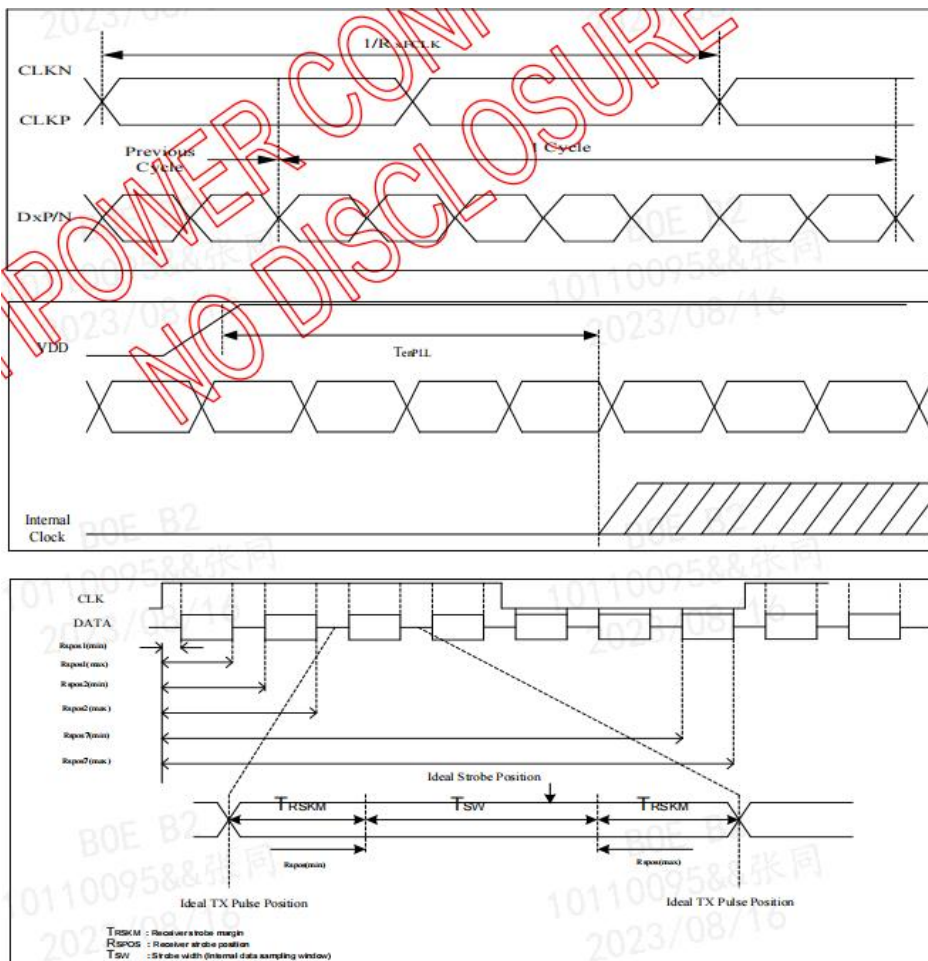


Figure : LVDS figure