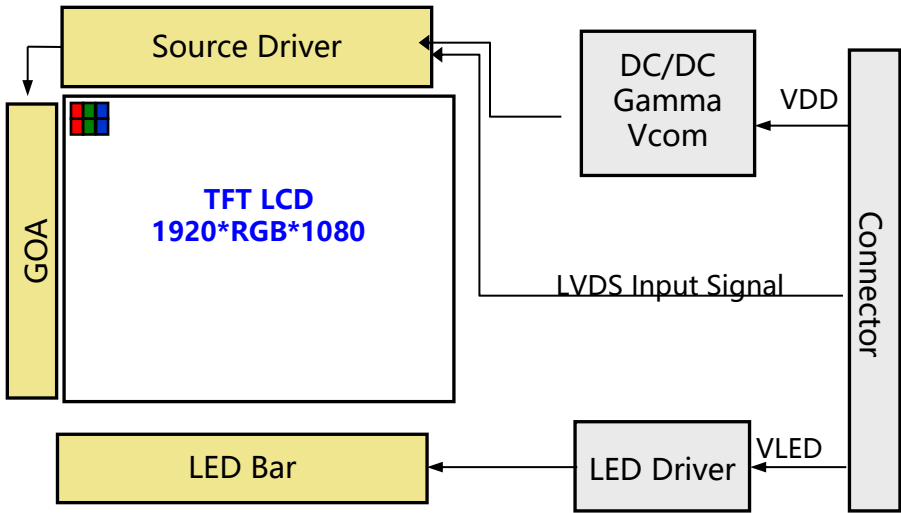


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1.0 GENERAL DESCRIPTION

GV185FHM-N10-3M30 is a color active matrix TFT LCD module using amorphous silicon TFT's (Thin Film Transistors) as active switching devices. This module has a 18.5 inch diagonally measured active area with FHD resolutions (1920 horizontal by 1080 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
- 16.7M color depth

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	Unit	Remarks
Active area	408.96 (H) × 230.04(V)	mm	
Number of pixels	1920(H) × 1080(V)	Pixels	
Pixel pitch	0.213(H) × 0.213 (V)	mm	
Pixel arrangement	RGB Vertical stripe		
Display colors	16.7M(8bit)	Colors	
Display mode	Normally Black		
Dimensional outline	430.4 (H) × 254.6(V) × 12(D) typ.	mm	
Weight	1800	g	
Surface treatment	AG25 , 3H		
Back-light	Edge side, 1-LED Lighting Bar Type		44*LED

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

Parameter	Symbol	Min.	Type.	Max.	Unit	Remarks
Back-light Power Supply Voltage	HV _{DDOUT}	-	33V	-	V	Ta = 25 °C Note 1&2
Back-light LED Current	I _{HVDD}	-	300	360	mA	
Back-light LED Reverse Voltage	V _R	-	-	-	V	
Power Supply Input Voltage	VCC	3.5	5	5.8	V	

Note:

1. 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 ;
- 2.BOE is not responsible for product problems beyond the use conditions.
- 3.When the ambient temperature is T °C, the surface temperature of Panel can not exceed (T+15)°C.

3.0 ELECTRICAL SPECIFICATIONS

3.0.1 TFT LCD Module

< Table 4. LCD Module Electrical Specifications >

[Ta =25±2 °C]

Parameter	Symbol	Values			Unit	Notes
		Min	Typ	Max		
Power Supply Input Voltage	V _{DD}	4	5	5.8	V	Note 1
Power Supply Current	I _{DD}	-	500	-	mA	
LED Driver Power Supply Voltage	H _{VDD}	10.8	12	12.6	V	Note 2
LED Driver Power Supply Current	I _{HVDD}	-	1000	-	mA	
LED Power Consumption	P _{LED}	-	12	-	W	
Positive-going Input Threshold Voltage	V _{IT+}	-		+100	mV	V _{com} = 1.2V typ.
Negative-going Input Threshold Voltage	V _{IT-}	-100		-	mV	
Differential input common mode voltage	V _{com}		1.2		V	V _{IH} =100mV, V _{IL} =-100mV

Notes : 1. The supply voltage is measured and specified at the interface connector of LCM.
The current draw and power consumption specified is for 5V at 25 °C
Max value at Black Pattern

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

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3.1 Back-light Unit

< Table 6. LED Driving guideline specifications > Ta=25+/-2°C

Parameter		Min.	Typ.	Max.	Unit	Remarks	
Power supply voltage for Back light		V _{LED}		33		V	
Power supply Current for Back light		I _{LED}	-	300	-	mA	
Power supply for Back light		P _{LED}	-	10	-	W	Note 1
EN Control Level	Backlight on	V _{ENH}	2.5	-	-	V	EN logic high voltage
	Backlight off	V _{ENL}	-	-	0.8	V	EN logic low voltage
PWM Control Level	PWM High Level	V _{PML}	2.5	-	-	V	
	PWM Low Level	V _{PML}	-	-	0.8	V	
PWM Control Frequency		F _{PWM}	0.15	-	1	KHz	
Duty Ratio		-	5	-	100	%	

- Notes : 1. Calculator Value for reference $I_{LED} \times V_{LED} = P_{LED}$
2. The LED Life-time define as the estimated time to 50% degradation of initial luminous under the condition of the ambient temperature of 25°C.

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4.0 INTERFACE CONNECTION.

4.0.1 Electrical Interface Connection

The electronics interface connector IS100-L30R-C23 (UJU) or equivalent.
The LED connector is CI4205M2HRD-NH or equivalent.
The connector interface pin assignments are listed in Table 7 and 8.

<Table 7. Pin Assignments for the Interface Connector>

Pin No.	Symbol	Description	remark
1	RxOIN0-	LVDS data input	
2	RxOIN0+	LVDS data input	
3	RxOIN1-	LVDS data input	
4	RxOIN1+	LVDS data input	
5	RxOIN2-	LVDS data input	
6	RxOIN2+	LVDS data input	
7	VSS	Ground	
8	RxOCLKIN-	LVDS clock input	
9	RxOCLKIN+	LVDS clock input	
10	RxOIN3-	LVDS data input	
11	RxOIN3+	LVDS data input	
12	RxEIN0-	LVDS data input	
13	RxEIN0+	LVDS data input	
14	VSS	Ground	
15	RxEIN1-	LVDS data input	
16	RxEIN1+	LVDS clock input	
17	VSS	Ground	
18	RxEIN2-	LVDS clock input	
19	RxEIN2+	LVDS clock input	
20	RxECLKIN-	LVDS clock input	
21	RxECLKIN+	LVDS clock input	
22	RxEIN3-	LVDS clock input	
23	RxEIN3+	LVDS clock input	
24	VSS	Ground	

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Pin No.	Symbol	Description	remark
25	SCL	I2C BUS	Only BOE use
26	SDA	I2C BUS	Only BOE use
27	WP	EEPROM write EN	Only BOE use
28	VCC	Power supply(5V)	
29	VCC	Power supply(5V)	
30	VCC	Power supply(5V)	

<Table 8. Pin Assignments for the LED Connector>

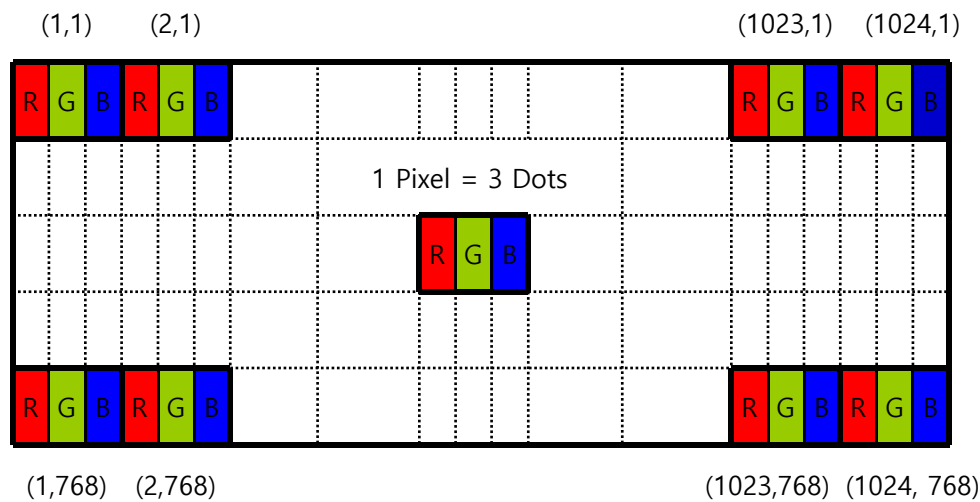
Terminal	Symbol	Functions
Pin No.	Symbol	Description
1	VLED	12V
2	GND	GND
3	Enable	5V-On / 0V-Off
4	Dimming	PWM Dimming
5	NC	No Connection

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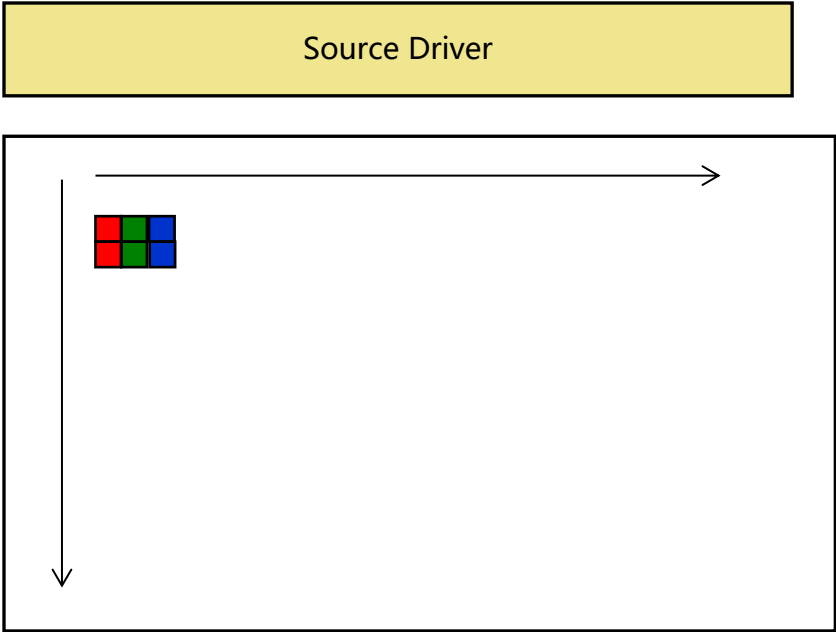
4.2 Data Input Format

Figure 5. Pixel Format



Display Position of Input Data (V-H)

Figure 6. Scan direction



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