

BOE	PRODUCT GROUP	REV	ISSUE DATE
	TFT LCD PRODUCT	P0	2020.7.28

1.0 GENERAL DESCRIPTION

1.0.1 Introduction

QV133FHB-N81 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 13.3 inch diagonally measured active area with XGA resolutions (1024 horizontal by 768 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.

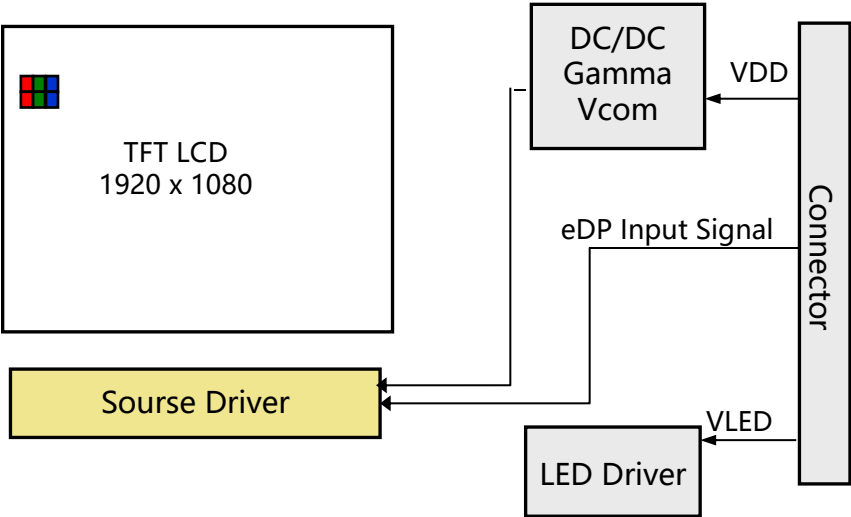


Figure 1. Drive Architecture

1.0.2 Features

- 2 lane eDP interface with 2.7Gbps link rates
- Thin and light weight
- 16.7M color depth, color gamut 72%

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	293.76 (H) x 165.24 (V)	mm	
Number of pixels	1920 (H) x 1080 (V)	Pixels	
Pixel pitch	0.153 (H) X 0.153 (V)	mm	
Pixel arrangement	RGB Vertical stripe		
Display colors	16.7M	Colors	8Bit
Display mode	Normally Black		
Dimensional outline	298.36 (H) x 199.72(V) x 1.086 (D) typ.	mm	
Weight	150	g	
Surface treatment	FineAG		

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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
Back-light Power Supply Voltage	HV _{DDOUT}	-	-	V	Ta = 25 °C Note 1&2
Back-light LED Current	I _{HVDD}	-	-	mA	
Back-light LED Reverse Voltage	V _R	-	-	V	
Operating Temperature	T _{OP}	0	50	°C	Environment Temperature
Storage Temperature	T _{ST}	-20	60	°C	
Operating Ambient Humidity	Hop	-	90	%RH	
Storage Humidity	Hst	-	90	%RH	
Heat Release Requirement	Trls	15		°C	Note3 仅适用于Q/Sin gle/FOG出货项 目

Note:

1. These range above is maximum value not the actual operating temperature . Actual Operating temperature is no more than 50°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

< Table3. LCD Module Electrical Specifications >

[Ta =25 ± 2 °C]

Parameter	Symbol	Values			Unit	Notes
		Min	Typ	Max		
Power Supply Input Voltage	V _{DD}	3.0	3.3	3.6	V	Note 1
Power Supply Current	I _{DD}	-	-	-	mA	
LED Driver Power Supply Voltage	H _{VDD}	-	TBD	-	V	
LED Driver Power Supply Current	I _{HVDD}	-	TBD	-	mA	
LED Power Consumption	P _{LED}	-	TBD	-	W	
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}		TBD		V	

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
Max value at Black Pattern

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

4.0 INTERFACE CONNECTION.**4.0.1 Electrical Interface Connection**

The electronics interface connector is DF40C-40DP-0.4V(Hirose).

The LED connector is 3808K-F05N-03L

The TP connector is MASK24037P9

The connector interface pin assignments are listed in Table 4

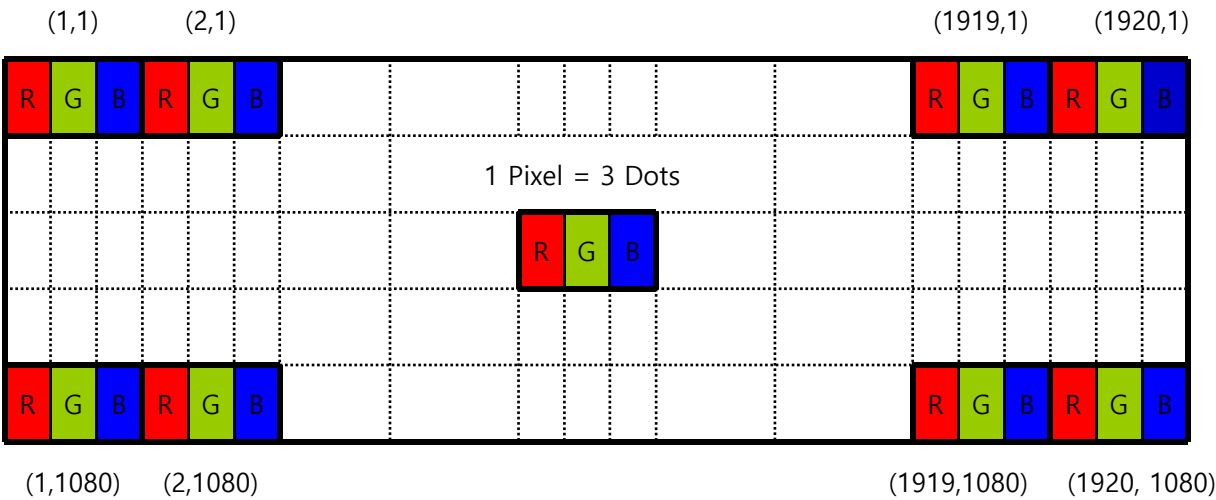
<Table 4. Pin Assignments for the Interface Connector>

PIN #	Symbol	Description Remark	PIN #	Symbol	Description Remark
1	CABC-EN	CABC-EN	16	GND	Power Ground
2	GND	Power Ground	17	HPD	Hot plug detect output
3	LANE1-N	eDP RX channel 1 negative	18	BL-GND	Power Ground
4	LANE1-P	eDP RX channel 1 positive	19	BL-GND	Power Ground
5	GND	Power Ground	20	BL-GND	Power Ground
6	LANE0-N	eDP RX channel 0 negative	21	BL-GND	Power Ground
7	LANE0-P	eDP RX channel 0 positive	22	BL-ENABLE	BL-ENABLE
8	GND	Power Ground	23	BL-PWM	Reset low active
9	AUX-CH-P	eDP AUX CH positive	24	MSCL	FOR DEBUG
10	AUX-CH-N	eDP AUX CH negative	25	MSDA	FOR DEBUG
11	GND	Power Ground	26	BL-POWER	BL-POWER
12	LDC-VCC	3.3V	27	BL-POWER	BL-POWER
13	LCD-VCC	3.3V	28	BL-POWER	BL-POWER
14	LCD-TEST	Panel self test enable	29	BL-POWER	BL-POWER
15	GND	Power Ground	30	NC	NC

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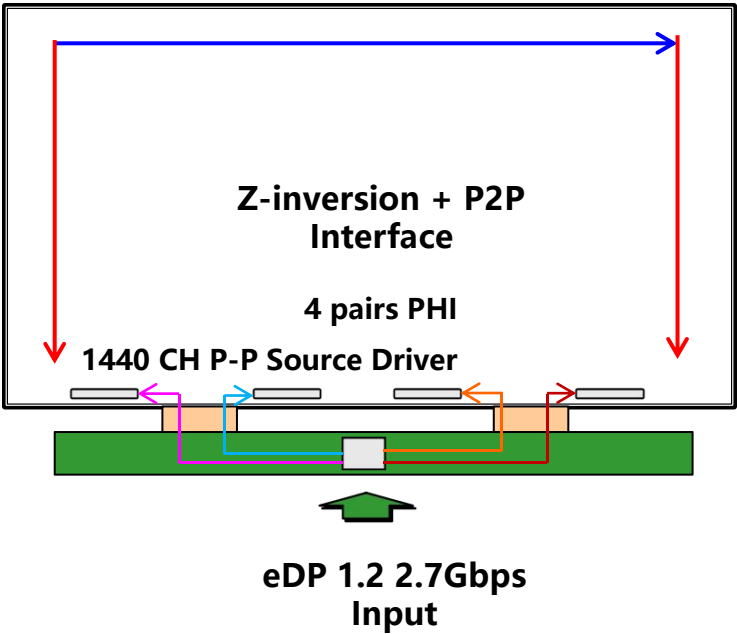
4.2 Data Input Format

Figure 2. Pixel Format



Display Position of Input Data (V-H)

Figure 3. Scan direction



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