

Application

This specification is applied to the 13.3 inch FHD supported TFT-LCD module, and can display true 16.7M colors(RGB 8-bits data driver). The module is designed for OA, Car TV application and other electronic products which require flat panel display of digital signal interface. This module is composed of a 13.3" TFT-LCD panel, a driver circuit and backlight unit.

Features

- FHD 16:9(1920×1080 pixels) resolution.
- eDP interface: 2 Lane
- Projected Capacitive Touch
 - USB Interface
 - Multi Touch (Five points)
 - 4096 x 4096 resolution

General Specifications

Item	Specifications	Unit
Screen Size	13.3 (Diagonal)	inch
Display Format	1920RGB(H)×1080(V)	dot
Active Area	293.76(H)×165.24(V)	mm
Pixel Pitch	0.153(H)×0.153(V)	mm
Pixel Configuration	RGB Vertical Stripe	-
Display Mode	IPS Type / Transmissive Mode / Normally Black	-
Surface Treatment	Clear (7H)	-
Viewing Direction	Full Angle	-
Outline Dimension	309.5(W)×187.0(H)×10.4(D)	mm
Weight	(736)	g
RoHS Compliance	RoHS Compliance	-

▼ Absolute Maximum Ratings

Absolute Ratings of Environment

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Storage Temperature	T _{ST}	-30	+80	°C	(1)(2)
Operating Ambient Temperature	T _{OP}	-20	+70	°C	(1)(2)

Note1: Background color changes slightly depending on ambient temperature.

This phenomenon is reversible.

Note2: Please refer to item of RELIABILITY.

▼ Electrical Absolute Ratings

TFT-LCD Module

(Ta=25±2°C)

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Digital Power Supply Voltage	VDD	-0.3	4.0	V	-
	VI	-0.3	1.5	V	eDP-signal

Electrical Characteristics

TFT-LCD Module

(Ta=25±2°C)

Parameter	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Power Supply Voltage	VDD	3.0	3.3	3.6	V	-
Power Supply Current	IDD	-	180	260	mA	
Ripple Voltage	V _{RP}	-	-	100	mV _{P-P}	VDD=+3.3V

Note (1) The ambient temperature is Ta = 25 ± 2 °C.

White Pattern / 255 Gray



Active Area

eDP AUX Channel Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
Unit Interval for AUX channel	UI _{AUX}	0.4	0.5	0.6	μS	
Peak-to-peak voltage at TP1	V _{AUX-DIFF-PP}	0.32	-	1.36	V	
AUX DC Common mode Voltage	V _{AUX-DC-CM}	0	-	2.0	V	
AUX Short current limit	I _{AUX SHORT}	-	-	90	mA	
AUX CH terminationDCresistor	R _{AUX TERM}	-	100	-	Ω	Differential input
AUX AC coupling capacitor	C _{AUX}	75	-	200	nF	
Number of pre-charge pulses	Pre-charge pulses	10	-	16		

Edp Main Link Receiver Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
Link clock down spreading	Down_Spread_Amplitude	0		0.5	%	
Differential Peak-to-peak Input Voltage at Rx package pins	$V_{RX-DIFFp-p}$	90	-	1200	mV	
Differential Return Loss at 1.35GHz at Rx package pins	$RL_{RX-DIFF}$	9	-	-	dB	
Differential termination resistance	$R_{RX-TERM}$	-	100	-	Ω	
RX short circuit Current Limit	$I_{RX-SHORT}$	-	-	50	mA	
Lane Intra-pair Skew at RX package pins	$T_{RX-SKEW-INTRA-PAIR-High-Bit-Rate}$	-	-	50	ps	

Backlight Unit

($T_a=25\pm 2^\circ C$)

Item	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Current of Backlight Unit	I_B	-	400	-	mA	-
Voltage of Backlight Unit	V_B	28	30	33	V	
LED Life Time($25^\circ C$)	-	-	50000	-	hr	(1)

Note (1) : LED life time is defined as under $25\pm 2^\circ C$, when the average brightness decrease to 50% of original brightness

Projected Capacitive Touch

Item	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Power Supply Voltage	VDD	4.8	5.0	5.2	V	-
Power Supply Current	IDD	-	34.5	48.3	mA	(1)
Output High Threshold Voltage	V_{OH}	2.8	-	-	V	-
Output Low Threshold Voltage	V_{OL}	-	-	0.8	V	-
Differential Input Sensitivity (D+)-(D-)	V_{DI}	0.2	-	-	V	-
Differential Input Common Mode Range	V_{CM}	0.8	-	2.5	V	
Power Consumption	P_L	-	173.5	241.5	mW	@5.0V
Report Rate	R_R	-	60	-	Hz	-

Note (1) This test condition is touched with 5 points.

Input / Output Terminals Pin Assignment TFT-LCD Module

Pin No.	Symbol	Function
1	NC	Keep the NC pin open.
2	H_GND	High Speed Ground
3	Lane1_N	Comp Signal Lane 1
4	Lane1_P	True Signal Link Lane 1
5	H_GND	High Speed Ground
6	Lane0_N	Comp Signal Link Lane 0
7	Lane0_P	True Signal Link Lane 0
8	H_GND	High Speed Ground
9	AUX_CH_P	True Signal Auxiliary Ch.
10	AUX_CH_N	Comp Signal Auxiliary Ch.
11	H_GND	High Speed Ground
12	VDD	LCD logic and driver power
13	VDD	LCD logic and driver power
14	NC	Keep the NC pin open
15	LCD GND	LCD logic and driver ground
16	LCD GND	LCD logic and driver ground
17	HPD	HPD signale pin
18	NC	Keep the NC pin open.
19	NC	Keep the NC pin open.
20	NC	Keep the NC pin open.
21	NC	Keep the NC pin open.
22	NC	Keep the NC pin open.
23	NC	Keep the NC pin open.
24	NC	Keep the NC pin open.
25	NC	Keep the NC pin open.
26	NC	Keep the NC pin open.
27	NC	Keep the NC pin open.
28	NC	Keep the NC pin open.
29	NC	Keep the NC pin open.
30	NC	Keep the NC pin open.

Note 1:

CN1 Connector used :20455-030E-76 (I-PEX) , Corresponding connector : 20453-030T (I-PEX)

Projected Capacitive Touch

Connector: CVILUX CF25101D0R0-05

Pin No.	Symbol	I/O	Description
1	GND	I	System ground.
2	VDD	I	+5.0V power supply.
3	NC	-	Not Connection
4	NC	-	Not Connection
5	NC	-	Not Connection
6	NC	-	Not Connection
7	NC	-	Not Connection
8	D-	I/O	USB D-
9	D+	I/O	USB D+
10	GND	I	System ground.

Backlight Unit

Connector: JST BHSR-02VS-1(N)

Pin No.	Symbol	I/O	Description	Wire Color
1	VLEDA	I	Backlight LED Anode.	Black
2	VLEDC	I	Backlight LED Cathode.	White

Outline Drawing

