

Application

This specification is applied to the 7 inch WVGA supported TFT-LCD module, and can display true 16M colors(8 bit/ color). This module is composed of a 7" TFT-LCD panel, a driver circuit and LED backlight unit and used as the input devices for general electric appliances via both finger and Capacitive stylus pen.

Features

- WVGA (800×480 pixels) resolution.
- Support Raspberry Pi MIPI DSI Interface
- LED driver circuit is built in this module to provide PWM Dimmer function.
- Projected Capacitive Touch
 - ☐ USB Interface
 - ☐ Multi Touch (Ten points)
 - ☐ 2048 x 2048 resolution

General Specifications

Item	Specifications	Unit
Screen Size	7 (Diagonal)	inch
Display Format	800RGB(H)×480(V)	dot
Active Area	154.08(H)×85.92(V)	mm
Pixel Pitch	0.1926(H)×0.1790(V)	mm
Pixel Configuration	RGB Vertical Stripe	-
Display Mode	TN Type / Transmissive Mode / Normally White	-
Surface Treatment	Clear(7H)	-
Viewing Direction	6 O'clock (The Gray Inversion will appear at this direction)	-
Outline Dimension	164.9(W)×100.0(H)×14.9 (D)	mm
Weight	(249.5)	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, GND=V_{SS}=0V)

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Digital Power Supply Voltage	V _{CC}	-0.3	5.0	V	-

LED Driver Absolute Maximum Ratings

(Ta=25±2°C)

Item	Symbol	Value		Unit	Note
		Min.	Max.		
LED Driver Supply Voltage	VBLIN	-0.3	13	V	(1)
LED Driver PWM	BLEN	-0.3	6	V	(1)

Note (1) Permanent damage to the device may occur if maximum values are exceeded or reverse voltage is loaded.

Electrical Characteristics

TFT-LCD Module

(Ta=25±2°C)

Item	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Power Supply Voltage	V _{CC}	3.0	3.3	3.6	V	-
Power Supply Current	I _{CC}	-	120	168	mA	(1)
Power Consumption	P _L	-	396.0	554.4	mW	(1)
Input High Threshold Voltage	V _{IH}	0.7 V _{CC}	-	V _{CC}	V	-
Input Low Threshold Voltage	V _{IL}	0	-	0.3 V _{CC}	V	-
VSYNC Frequency	F _V	-	60	-	Hz	-

Note (1) The specified power consumption is under the conditions at V_{CC}=3.3V, F_V=60Hz, whereas a power dissipation check pattern below is displayed.

Black Pattern / 0 Gray



Active Area

LED Driver Unit

Ta=25±2°C

Item	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Voltage of LED Driver Unit	VBLIN	3.1	-	12.5	V	-
Backlight Driver Current	IBL	-	790	1106	mA	VBLIN=3.3V
Backlight Driver Current	IBL	-	480	672	mA	VBLIN=5V
Backlight Driver Current	IBL	-	200	280	mA	VBLIN=12V
PWM signal Low voltage	VPWML	0	-	0.4	V	-
PWM signal High voltage	VPWMH	1.5	-	5	V	-
PWM frequency	fPWM	100	-	1000	Hz	-
LED Life Time(25°C)	-	20000	-	-	hr	(1)

Note (1) : LED life time is defined as under 25±2°C , when the average brightness decrease to 50% of original brightness

Projected Capacitive Touch

(Ta=25±2°C)

Item	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Power Supply Voltage	V _{TP}	4.8	5.0	5.2	V	-
Power Supply Current	I _{TP}	-	32.0	45.0	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	-	160	225	mW	@5.0V
Report Rate	R _R	-	60	-	Hz	-
Interface	USB					-
Function	Multi Touch					-

Note (1) This test condition is touched with 10 points.

Input / Output Terminals Pin Assignment

TFT-LCD Module

Connector: CVILUX CF25151D0R0-10 or equivalent

No.	Symbol	I/O	Description
1	GND	I	Ground
2	MDA1-	I/O	MIPI D-PHY Data Lane 1-
3	MDA1+	I/O	MIPI D-PHY Data Lane 1+
4	GND	I	Ground
5	MCLK-	I/O	MIPI D-PHY Clock Lane -
6	MCLK+	I/O	MIPI D-PHY Clock Lane +
7	GND	I	Ground
8	MDA0-	I/O	MIPI D-PHY Data Lane 0-
9	MDA0+	I/O	MIPI D-PHY Data Lane 0+
10	GND	I	Ground
11	SCL	I	I2C clock signal
12	SDA	I/O	I2C data signal
13	GND	I	Ground
14	V _{CC}	-	Power supply voltage
15	V _{CC}	-	Power supply voltage

LED Driver Unit

Connector: CVILUX CI4406M2HR0-LF or equivalent

No.	Symbol	I/O	Functions
1	VBLIN	P	LED driver power supply
2	VBLIN	P	LED driver power supply
3	BLEN	I	Note 1
4	NC	-	Not Connected
5	GND	I	Ground
6	GND	I	Ground

Note 1: On/Off Control Input and Dimming Command Input.

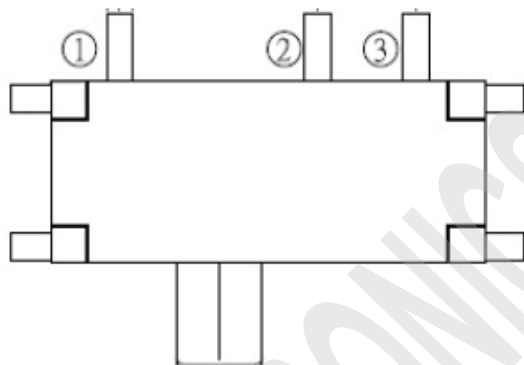
A voltage greater than 0.7V will turn on the chip.

When the BLEN pin voltage rises from 0.7V to 1.4V, The LED current will change from 0% to 100% of the maximum LED current.

To use PWM dimming, apply a 100Hz to 1kHz square wave signal with amplitude greater than 1.4V to this pin.

Slider Switch for Backlight(S2)

Pin	Description	Note
1-2	PWM Dimmer	Default
2-3	Backlight Turn On	-



Improved Projected Capacitive Touch

Connector: Mini USB Connector

No.	Symbol	Functions
1	V_{TP}	+5V power supply for PCT
2	D-	USB data- for PCT
3	D+	USB data+ for PCT
4	ID	A type : connect to GND B type : keep floating
5	GND	Ground

Outline Drawing

