TFT LCD Display

multicomp PRO

RoHS Compliant

Description

The specification is model MP015132 is a colour active matrix thin film transistor (TFT) liquid crystal display (LCD) that uses amorphous silicon TFT as a switching device. This model is composed of a TFT LCD panel, a driving circuit, a backlight system and projected capacitive touch panel. This TFT LCD has a 10.1 inch diagonally measured active display area with WSVGA (1024 horizontal by 600 vertical pixels) resolution.

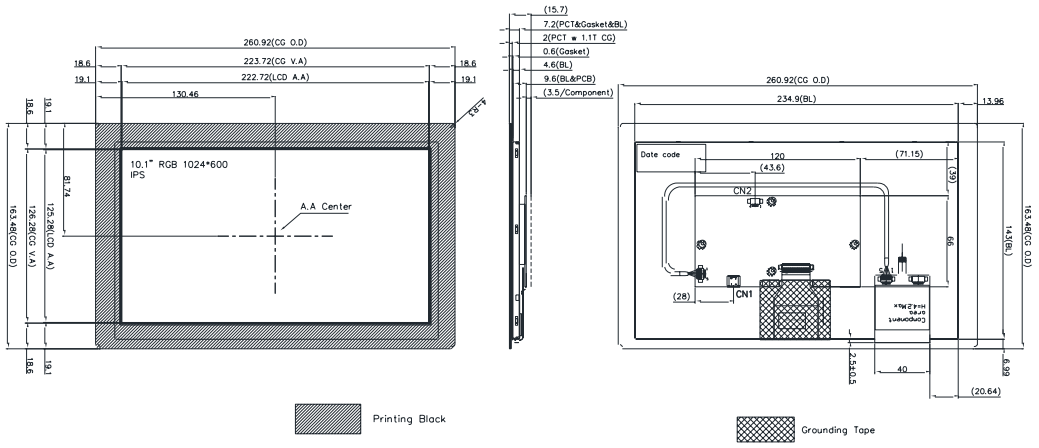
Features

- Supports VESA DisplayPort Alt. Mode 1a
- DisplayPort 1.3
- Build-in OSD function.

Specification

No.	Item	Specification	Unit
1	Panel Size	10.1”	Inch
2	Number of Pixels	1024 (W) × RGB × 600 (H)	Pixels
3	Active Area	222.72 (W) × 125.28 (H)	mm
4	Pixel Pitch	0.2175 (W) × 0.2088 (H)	mm
5	Outline Dimension	260.92 (W) × 163.48 (H) × 15.7 (T)	mm
6	Number of Colours	16.7M	- -
7	Display Mode	IPS / Normally Black / Transmissive	- -
8	Viewing Direction	Free direction	- -
9	Display Format	RGB vertical stripe	- -
10	Surface Treatment	Clear (7H)	- -
11	Contrast Ratio	1000 (Typ.)	- -
12	Luminance (cd/m^2)	550 (Typ.)	cd/m^2
13	Interface	Type-C (5V/3A)	- -
14	Backlight	White LED	- -
15	Operation Temperature	0 to 70	°C
16	Storage Temperature	-30 to 80	°C
17	Weight	TBD	g

Mechanical Specification



No.	Pin Name	No.	Pin Name
A1	GND	B12	GND
A2	Tx1+	B11	Rx1+
A3	Tx1-	B10	Rx1-
A4	VBUS	B9	VBUS
A5	CC1	B8	SBU2
A6	D+	B7	D-
A7	D-	B6	D+
A8	SBU1	B5	CC2
A9	VBUS	B4	VBUS
A10	Rx2-	B3	Tx2-
A11	Rx2+	B2	Tx2+
A12	GND	B1	GND

Pin Description

Pin No.	Symbol	I/O	Function
A1	GND	P	Ground
A2	TX1+	I/O	High speed data path TX for DP Alt Mode.
A3	TX1-	I/O	
A4	VBUS	P	Cable bus power +5V only.
A5	CC1	I/O	Type-C Port Configuration Channel
A6	D+	I/O	USB 2.0 Interface.
A7	D-	I/O	
A8	SBU1	I/O	USB Type-C Sideband Use 1
A9	VBUS	P	Cable bus power +5V only.
A10	RX2-	I/O	High speed data path RX for DP Alt Mode.
A11	RX2+	I/O	

A12	GND	P	Ground
B1	GND	P	Ground
B2	TX2+	I/O	High speed data path TX for DP Alt Mode.
B3	TX2-	I/O	
B4	VBUS	P	Cable bus power +5V only.
B5	CC2	I/O	Type-C Port Configuration Channel
B6	D+	I/O	USB 2.0 Interface.
B7	D-	I/O	
B8	SBU2	I/O	USB Type-C Sideband Use 2
B9	VBUS	P	Cable bus power +5V only.
B10	RX1-	I/O	High speed data path RX for DP Alt Mode.
B11	RX1+	I/O	
B12	GND	P	Ground

3.2 key Pad CN2 (50271-0040L-002 or compatible)

Pin	Symbol	I/O	Function
1	Power on/off	I	Power On/Off control.
2	Brightness increased	I	Brightness Increase.
3	Brightness decrease	I	Brightness decrease.
4	GND	P	Ground

4. Absolute Maximum Ratings

4.1 Electrical Absolute Rating

4.1.1 TFT LCD Module

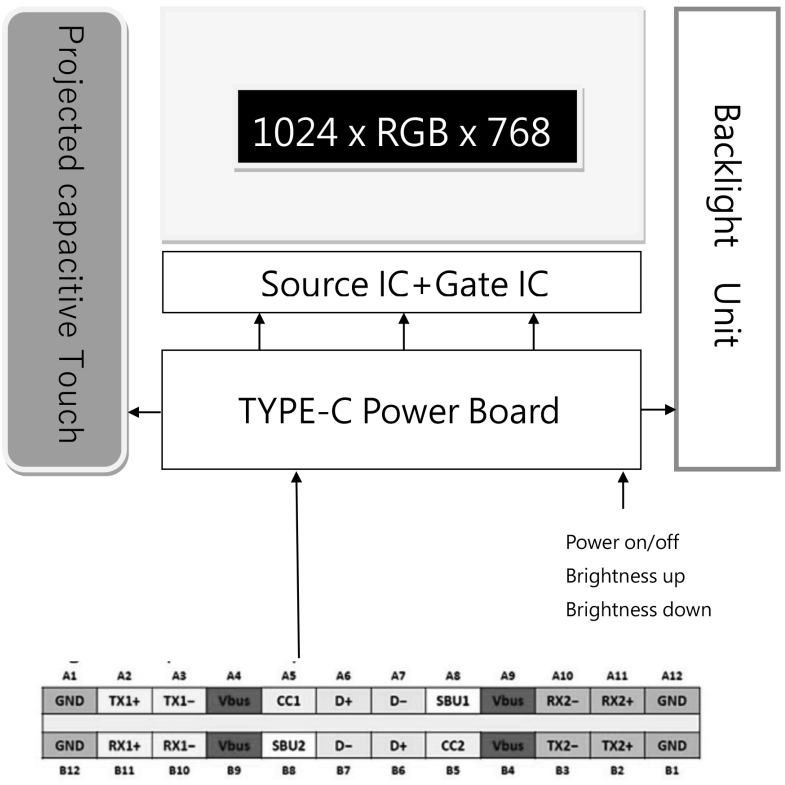
Item	Symbol	Values		Unit
		Min	Max.	
Power supply voltage	VBUS	-0.3	6	V

4.1.2 Environment Absolute Rating

Item	Symbol	Values			Unit	Note
		Min	Typ	Max.		
Operating Temperature	Topa	0		70	°C	Ambient temperature
Storage Temperature	Tstg	-30		80	°C	

5. Block Diagram

5.1 TFT LCD Module



6. Electrical Characteristics

6.1 TFT LCD Module

Item	Symbol	Values			Unit	Note
		Min.	Typ.	Max.		
Supply Voltage	VBUS	-	5	5.5	V	
Required current	IBUS	-	970	1070	mA	(1)
LED life time	-	-	50000	-	Hr	(2)

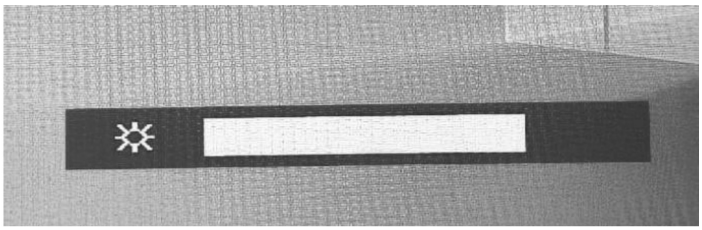
Note 1: condition: projected capacitive touch panel active, and under brightness 100%

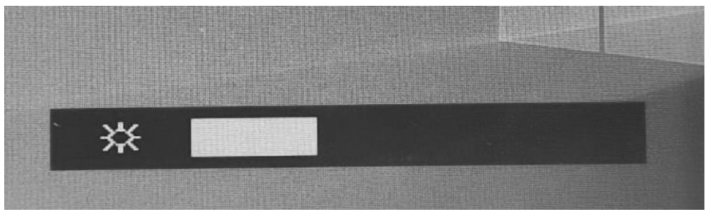
Note 2: The “LED life time” is defined as the module brightness decrease to 50% original brightness that the ambient temperature is 25°C 60% RH.

6.2 OSD Function

Built-in OSD function, connected to the external key pad to CN2, can control the screen switch On/Off and backlight brightness control.

The adjusted brightness level will be automatically memorized.





Projected Capacitive Touch Panel

Main Feature

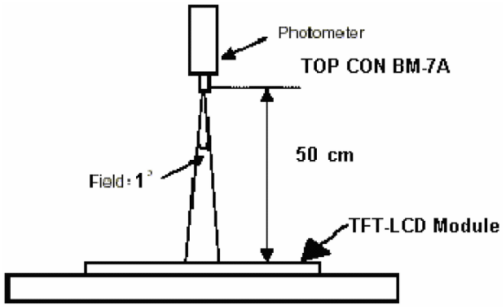
Item	Specification	Unit
Screen Size	10.1 inch	Diagonal
Type	Transparent Type Projected Capacitive	--
Input Mode	Human's Finger	--
Finger	10	--
Interface	USB	--
Cover glass pencil-hardness	7H	--
Response time	25	ms
Driver IC	ILI2511	

Optical Characteristics

Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Brightness		--	Note1, Note 3, (θ= 0°, Normal Viewing Angle)	440	550	--	cd/m2
Uniformity		B-uni		70	75	--	%
Contrast Ratio		CR		800	1000	--	--
Response Time		Tr+Tf		--	25	35	ms
Colour Chromaticity	White	Wx		0.26	0.31	0.36	--
		Wy		0.28	0.33	0.38	
View angle	Horizontal	θx+	Center CR≥10	80	85	--	
		θx-					
	Vertical	θY+					
		θY-					

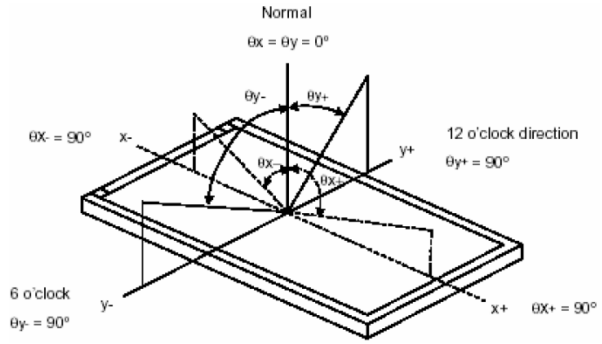
Note: The following optical specifications shall be measured in a darkroom or equivalent state (ambient luminance ≤1 lux, and at room temperature). The operation temperature is 25°C±2°C. The measurement method is shown in Note1.

Note 1: The method of optical measurement:

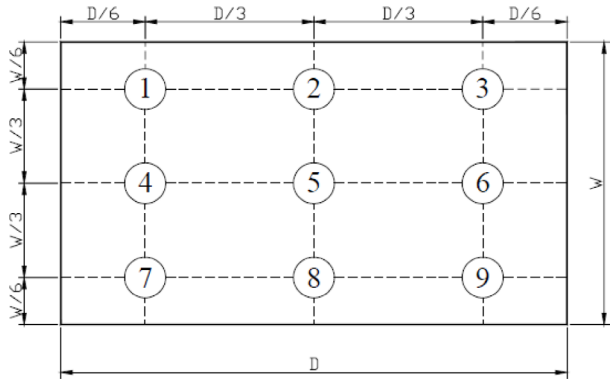


Note2: Measured at the center area of the panel and at the viewing angle of the θx=θy=0°
Note3: Definition of Contrast Ratio (CR):
CR = Luminance with all pixels in white state ÷ Luminance with all pixels in Black state

Definition of Viewing Angle

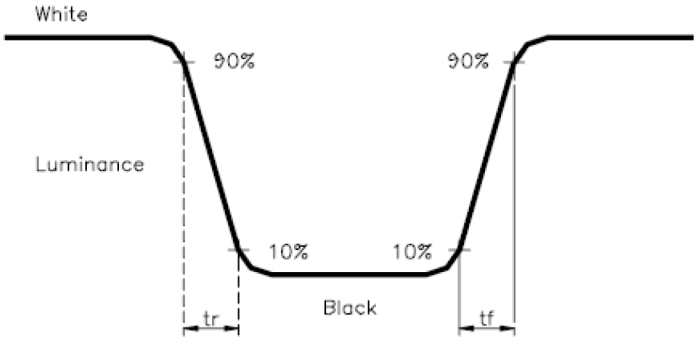


Definition of Brightness Uniformity (B-uni)



B-uni = (Minimum luminance of 9 points÷Maximum luminance of 9points)X100%

Note 6: Definition of Response Time:
The Response Time is set initially by defining the “Rising Time (Tr)” and the “Falling Time (Tf)” respectively. Tr and Tf are defined as following figure



Note 7: Definition of Chromaticity:
The colour coordinates (Wx,Wy),(Rx,Ry),(Gx,Gy),and (Bx,By) are obtained with all pixels in the viewing field at white, red, green, and blue states, respectively.

Part Number Table

Description	Part Number
TFT LCD Display, USB C, 10”, 1280 × 800, PCAP	MP015132