# TFT LCD

# multicomp PRO



## RoHS Compliant

### Description

MP010831 is a 7.0 (16:9) inch diagonally measured active display with high resolution WXGA 1024x600 display and high brightness. This model is composed of a TFT LCD panel, backlight system and HDMI. It is designed to make Raspberry Pi usage easy. You can simply use this TFT display with your Raspberry Pi, or also you can use this as computer display with any device which has HDMI output. This 7.0" TFT model comes in 1024x600 resolution that would be great for embedded computing usage too.

### Features

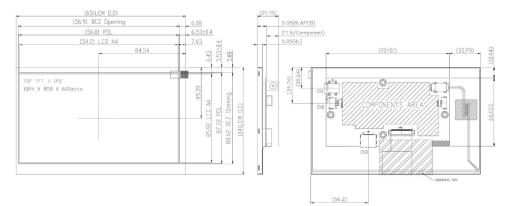
No.	ltem	Specification	Unit
1	Panel Size	7"	Inch
2	Number of Pixels	1024 (W) × RGB × 600 (H)	Pixels
3	Active Area	154.21 (W) ×85.92 (H)	mm
4	Pixel Pitch	0.1506 (W) × 0.1432 (H)	mm
5	Outline Dimension	165 (W) × 104 (H) × 21.15 (T)	mm
6	Number of Colours	16.7M	
7	Display Mode	IPS / Normally Black / Transmissive	
8	View Direction	Free direction	
9	Display Format	RGB vertical stripe	
10	Surface Treatment	Anti-Glare	
11	Contrast Ratio	600 (Тур.)	
12	Luminance (cd/m^2)	1600 (Тур.)	cd/m2
13	Video Input Interface	HDMI (Compliance HDMI V1.4)	
14	Backlight	White LED	
15	Operation Temperature	-20 to 70	°C
16	Storage Temperature	-30 to 80	°C
17	Weight	(160)	g



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### **Mechanical Specification**



### **Pin Description**

Power Input(CN1) [DC JACK:SCD480CCS000B00GE or compatible]

Pin No.	Symbol	I/O	Function	Note
1	12V	Р	Power Supply +12V	12V
2	GND	Р	Ground	$\bigcirc - \textcircled{\bullet} - \textcircled{\bullet}$

#### Back-light Control(CN2) [WAFER P2.0mm:2001S-03-RTE or compatible]

Pin No.	Symbol	I/O	Function	Note
1	GND	Р	Ground	
2	PWM	I	Back-light Dimming control (internal pull up to 3.3V)	*1
3	N.C.	-	N.C.	

\*1: When PWM not connected, back-light default is typical brightness.

### **Absolute Maximum Ratings**

## Electrical Absolute Rating

HDMI TFT LCD Module

ltom	Symbol	Val	ues	Unit
Item	Symbol	Min	Max.	Unit
Power supply voltage	12V	10	14	V

### **Environment Absolute Rating**

ltem	Symbol	Val	ues	Unit	Note
item	Symbol	Min	Max.	Unit	Note
Operating Temperature	Тор	-20	70	°C	Ambient
Storage Temperature	Tst	-30	80	C	temperature



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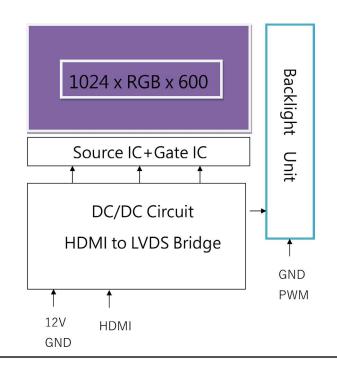
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### HDMI (CN3) [HDMI A TYPE:PHD0911A2301E or compatible]

Pin No.	Symbol	I/O	Function
1	TMDS 2+	I	TMDS Data2+
2	GND	Р	TMDS Data2 Shield
3	TMDS 2-	I	TMDS Data2–
4	TMDS 1+	I	TMDS Data1+
5	GND	Р	TMDS Data1 Shield
6	TMDS 1-	I	TMDS Data1–
7	TMDS 0+	I	TMDS Data0+
8	GND	Р	TMDS Data0 Shield
9	TMDS 0-	I	TMDS Data0–
10	TMDS CLK+	I	TMDS Clock+
11	GND	Р	TMDS Clock Shield
12	TMDS CLK-	I	TMDS Clock-
13	N.C.	-	N.C.
14	N.C.	-	N.C.
15	DDC_SCL	Ι	IIC SCL to EDID ROM
16	DDC_SDA	I/O	IIC SDA to EDID ROM
17	GND	Р	DDC/CEC Ground
18	HD_5V	Р	+5V Power
19	HPD	0	Hot Plug Detect

## **Block Diagram**

TFT LCD Module





### **Electrical Characteristics**

### HDMI TFT LCD Module

Item	Symbol	Values			Unit	Note
nem	Symbol	Min	n Typ. Max.		Onit	NOLE
Supply Voltage	12V	11	12	13	V	
PWM frequency		100	-	10K	Hz	
PWM Duty		17	-	100	%	<17%=OFF
PWM Dimming	Vpwm-ih	3.3	-	8	V	
Voltage	Vpwm-il	-	0.3	-	V	
Supply Current	ICC(12V)	-	590	610	mA	
LED life time		70000	-	-	Hr	(1)

Note

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

### **Optical Characteristics**

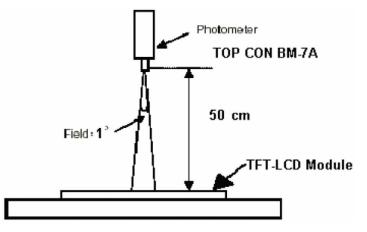
Ite	m	Symbol	Condition	Min.	Тур.	Max.	Unit
Bright	ness			1280	1600		cd/m2
Unifor	mity	B-uni	Note1,	70	75	-	%
Contras	t Ratio	CR	Note 3,	400	600		
Boopong	Response Time		(θ= 0°, Normal Viewing		4	8	ma
Respons					12	24	ms
Colour	White	Wx	Angle)	0.26	0.31	0.36	
Chromaticity	white	Wy		0.28	0.33	0.38	
	Horizontal	θx+			85		
View angle	TIONZONIA	θx-	Center	80			
View angle	Vertical	θΥ+	CR≥10				
	vertical	θΥ-					

Note: The following optical specifications shall be measured in a darkroom or equivalent state (ambient luminance  $\leq 1 \text{ lux}$ , and at room temperature). The operation temperature is  $25^{\circ}\text{C}\pm2^{\circ}\text{C}$ . The measurement method is shown in Note1.





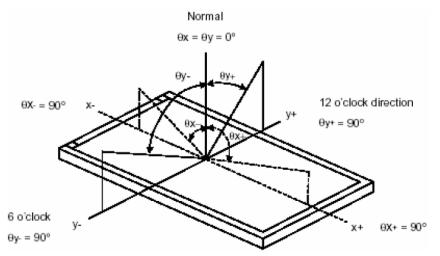
Note1: The method of optical measurement



Note2: Measured at the center area of the panel and at the viewing angle of the  $\theta x=\theta y=0^{\circ}$ Note3: Definition of Contrast Ratio (CR):

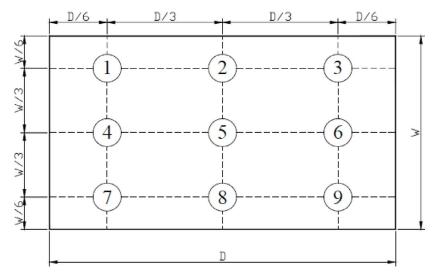
CR = Luminance with all pixels in white state ÷ Luminance with all pixels in Black state

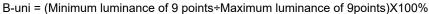
### **Definition of Viewing Angle**





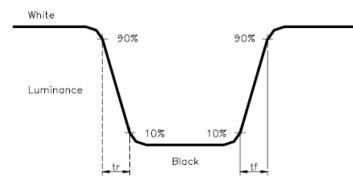
#### Definition of Brightness Uniformity (B-uni)





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 color 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, 7.0", HDMI, 1024 × 600	MP010831

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