



DM-TFT50-318

**5.0" RESISTIVE TOUCH TFT DISPLAY
WITH 16/18/24 BIT RGB INTERFACE**

Contents

1	Revision History	3
2	Main Features	3
3	Pin Description.....	4
4	Mechanical Drawing	5
5	Electrical Characteristics.....	6
6	Optical Characteristics.....	6
7	Timing Characteristics	7
7.1	Horizontal Input Timing	7
7.2	Vertical input Timing.....	8
8	Driver/Controller Information.....	8
9	Reliability.....	9
10	Warranty and Conditions	10

1 Revision History

Date	Changes
2015-01-21	First release

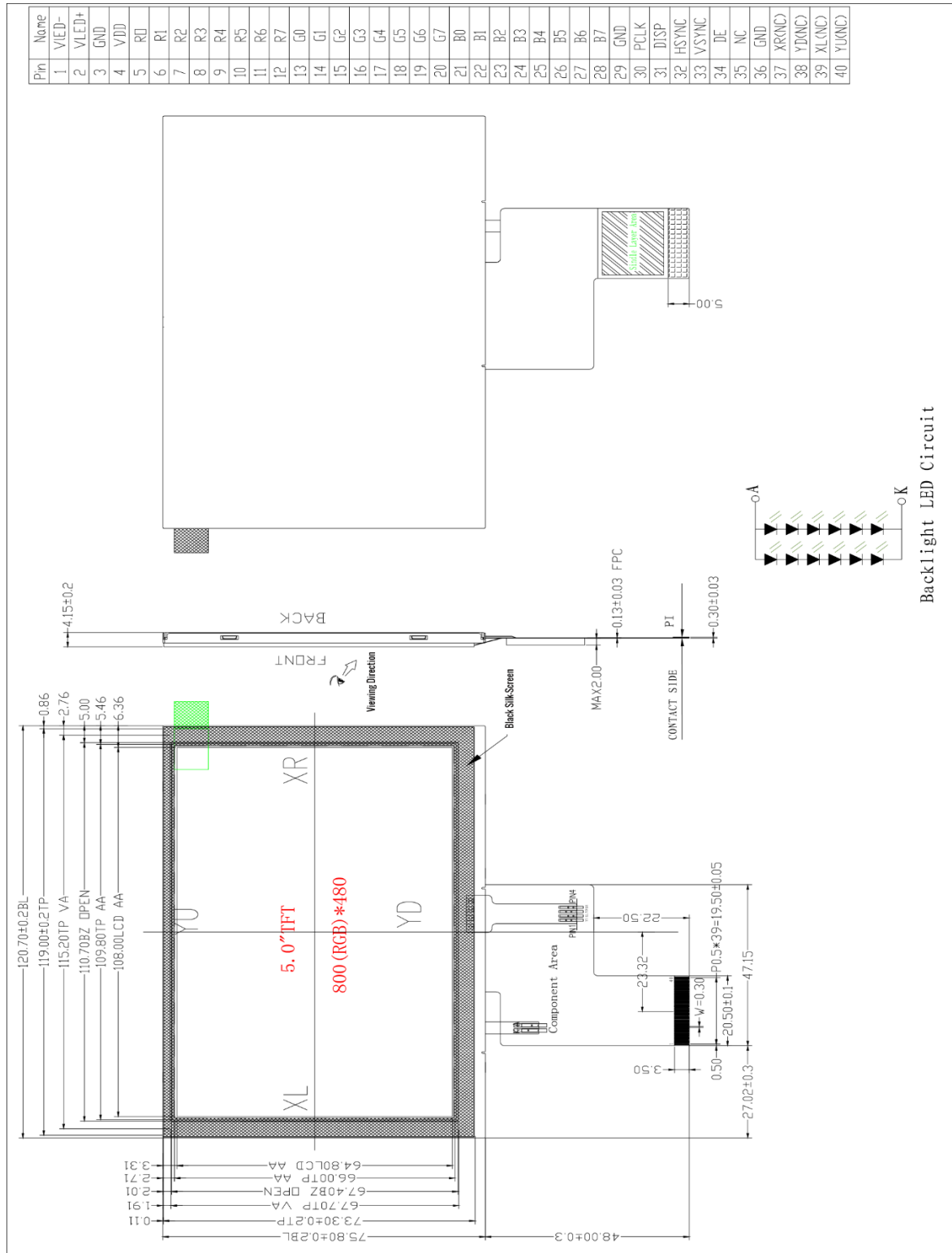
2 Main Features

Item	Specification	Unit
Screen Size	5.0	inch
Driver Mode	Transmissive	-
Display Colors	65K/262K/16.7M	colors
Resolution	800 x 480	dots
Controller IC	ILI5960/ILI6122	-
Interface	16/18/24 bit RGB	-
Power Supply	3.3	V
View Direction	12 o'clock	-
Background LED	12 LED Normally White	-
Weight	72.9	g

3 Pin Description

Pin No.	Symbol	Function Description
1	VLED-	Cathode pin of backlight.
2	VLED+	Anode pin of backlight.
3	GND	Ground.
4	VDD	Supply voltage (3.3V).
5	R0	Red data input.
6	R1	Red data input.
7	R2	Red data input.
8	R3	Red data input.
9	R4	Red data input.
10	R5	Red data input.
11	R6	Red data input.
12	R7	Red data input.
13	G0	Green data input.
14	G1	Green data input.
15	G2	Green data input.
16	G3	Green data input.
17	G4	Green data input.
18	G5	Green data input.
19	G6	Green data input.
20	G7	Green data input.
21	B0	Blue data input.
22	B1	Blue data input.
23	B2	Blue data input.
24	B3	Blue data input.
25	B4	Blue data input.
26	B5	Blue data input.
27	B6	Blue data input.
28	B7	Blue data input.
29	GND	Ground.
30	PCLK	Dot clock signal for RGB interface operation. Fix this pin at VCI or GND when not in use.
31	DISP	Standby setting for testing, it should be connected to VDDIO in normal operation mode. If connected to GND, the IC is in standby mode.
32	HSYNC	Line synchronizing signal for RGB interface operation.
33	VSNC	Frame synchronizing signal for RGB interface operation.
34	DE	Data enable signal for RGB interface operation.
35	NC	NC.
36	GND	Ground.
37	XR	Touch panel Right Glass Terminal.
38	YD	Touch panel Bottom Film Terminal.
39	XL	Touch panel Lift Glass Terminal.
40	YU	Touch panel Top Film Terminal.

4 Mechanical Drawing



5 Electrical Characteristics

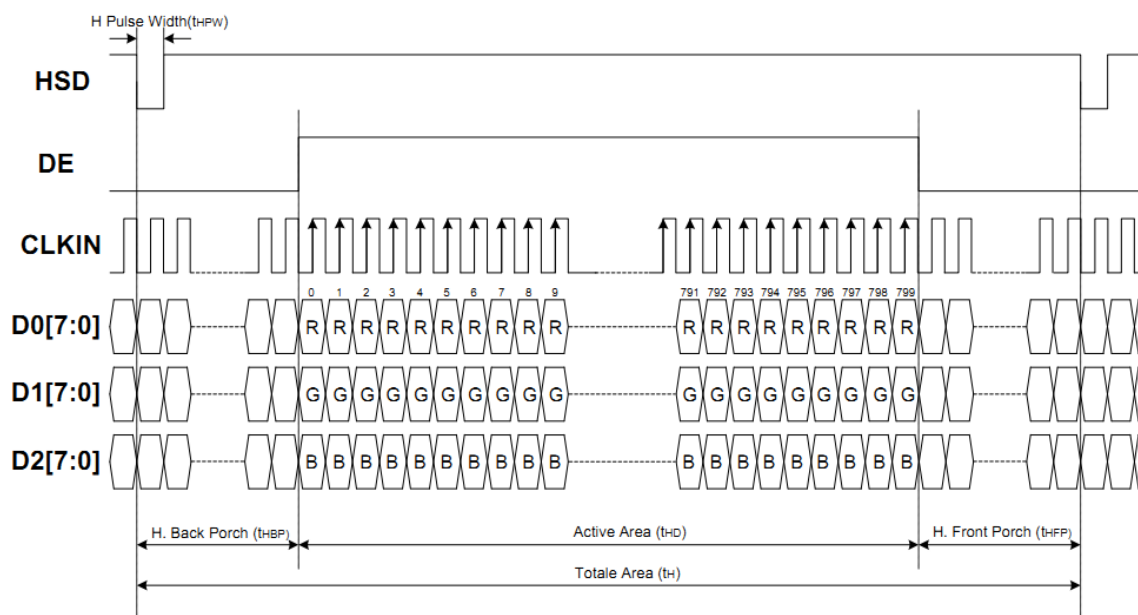
Item	Symbol	Condition	Min	Typ.	Max	Unit
Supply Voltage For Logic	VDD		3.0	3.3	4.2	V
Digital Operation Current	IDD	VDD=3.3V	-	200	-	mA
Low Level Input Voltage	V _{IL}		GND	-	0.3VDD	V
High Level Input Voltage	V _{IH}		0.7VDD	-	VDD	V
Low Level Output Voltage	V _{OL}		GND		0.2VDD	V
High Level Output Voltage	V _{OH}		0.8VDD		VDD	V
Backlight Forward Voltage	V _{LED}		-	19.2	-	V
Backlight Forward Current	I _{LED}	-	30	40	-	mA
Operating Temperature	TOP	Absolute Max	-20	-	+70	°C
Storage Temperature	TST	Absolute Max	-30	-	+80	°C

6 Optical Characteristics

Item	Symbol	Min	Typ	Max	Unit	Note
View Angles Top		60	70		°	
View Angles Bottom		40	60		°	
View Angles Left		60	70		°	
View Angles Right		60	70		°	
Response Time (25°C)	Tr + Tf		16	32	ms	
Uniformity		80			%	
Contrast Ratio	CR	560	700			
Luminance	L _v	350	-		cd/m ²	

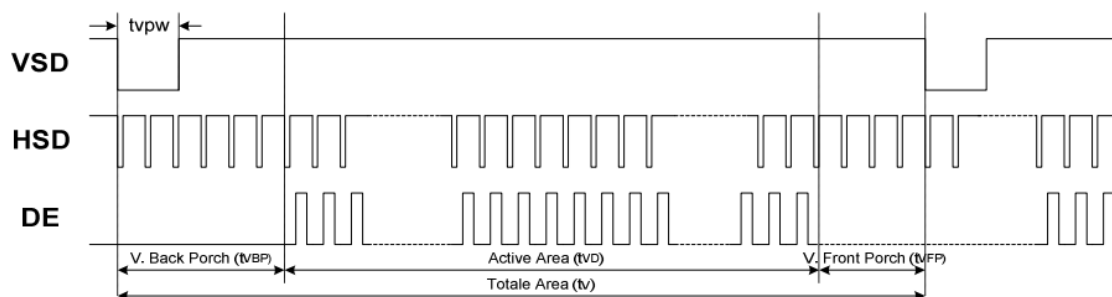
7 Timing Characteristics

7.1 Horizontal Input Timing



Horizontal Input Timing						
Parameter		Symbol	Min.	Value Typ.	Max.	Unit
Horizontal display area		t_{HD}	--	800	--	CLKIN
CLKIN frequency		f_{CLK}	--	33.3	50	MHz
1 Horizontal line period		t_H	862	1056	1200	CLKIN
HSD pulse width	Min.	t_{HPW}	--	1	--	CLKIN
	Typ.		--	--	--	CLKIN
	Max.		--	40	--	CLKIN
HSD back porch	SYNC	t_{HBP}	46	46	46	CLKIN
HSD front porch	SYNC	t_{HFP}	16	210	354	CLKIN

7.2 Vertical input Timing



Vertical Input Timing					
Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Vertical display area	t_{VD}	--	480	--	HSD
VSD period time	t_V	510	525	650	HSD
VSD pulse width	t_{VPW}	1	--	20	HSD
VSD back porch	t_{VBP}	23	23	23	HSD
VSD front porch	t_{VFP}	7	22	147	HSD

8 Driver/Controller Information

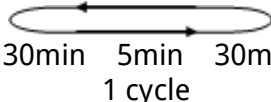
Built-in ILI5960 Gate Driver:

<https://drive.google.com/file/d/0B0U8oRNRy9XuS0k2QV9PS0tZSTg/view?usp=sharing>

Built-in ILI6122 Source Driver:

<https://drive.google.com/file/d/0B0U8oRNRy9XuSU8tU0xQTEZvczg/view?usp=sharing>

9 Reliability

Test Item	Content of Test	Test Condition	Note
High Temperature Storage	Endurance test applying the high storage temperature for a long time.	80°C 200hrs	2
Low Temperature Storage	Endurance test applying the high storage temperature for a long time.	-30°C 200hrs	1,2
High Temperature Operation	Endurance test applying the electric stress (Voltage & Current) and the thermal stress to the element for a long time.	70°C 200hrs	-
Low Temperature Operation	Endurance test applying the electric stress under low temperature for a long time.	-20 °C 200hrs	1
High Temperature/ Humidity Operation	The module should be allowed to stand at 60°C,90%RH max, for 96hrs under no-load condition excluding the polarizer. Then taking it out and drying it at normal temperature.	60°C,90%RH 96hrs	1,2
Thermal Shock Resistance	The sample should be allowed stand the following 10 cycles of operation. <div style="text-align: center;">  <p>-20°C 25°C 70°C 30min 5min 30min 1 cycle</p> </div>	-20°C/70°C 10 cycles	-
Vibration Test	Endurance test applying the vibration during transportation and using.	Total fixed amplitude: 15mm; Vibration: 10~55Hz; One cycle 60 seconds to 3 directions of X, Y, Z, for each 16 minutes.	3
Static Electricity Test	Endurance test apply the electric stress to the terminal.	VS=800V, RS=1.5kΩ, CS=100pF, 1 time.	-

Note1: No dew condensation to be observed.

Note2: The function test shall be conducted after 4 hours storage at the normal. Temperature and humidity after remove from the rest chamber.

Note3: The packing have to including into the vibration testing.

10 Warranty and Conditions

<http://www.displaymodule.com/pages/faq>