Project No. 项目编号	TXW500066S0
Customer 客户名称	
Module No. 客户型号	
Product type 产品内容	**Standard LCD Module** **TFT：480*RGBx854Dots** **5.0”TFT LCD**

客户确认Customer Approval	
项目负责人Project Manager	
品质主管Director of Quality	
采购工程师Purchasing Engineer	

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REVISION HISTORY

REVISION	DATE	DESCRIPTION	PREPARED BY	APPROVED BY
00	2019.05.07	First Release.	MR.Y	

1. General Description

TXW500066S0 is a transmissive type color active matrix TFT (Thin Film Transistor) liquid crystal display (LCD) that uses amorphous silicon TFT as a switching device. This model is composed of a TFT-LCD module (TFT-LCD panel, driver IC and FPC), a back-light unit and. The resolution of 5.0" contains 480RGBX854 pixels and can display up to 16.7M colors.

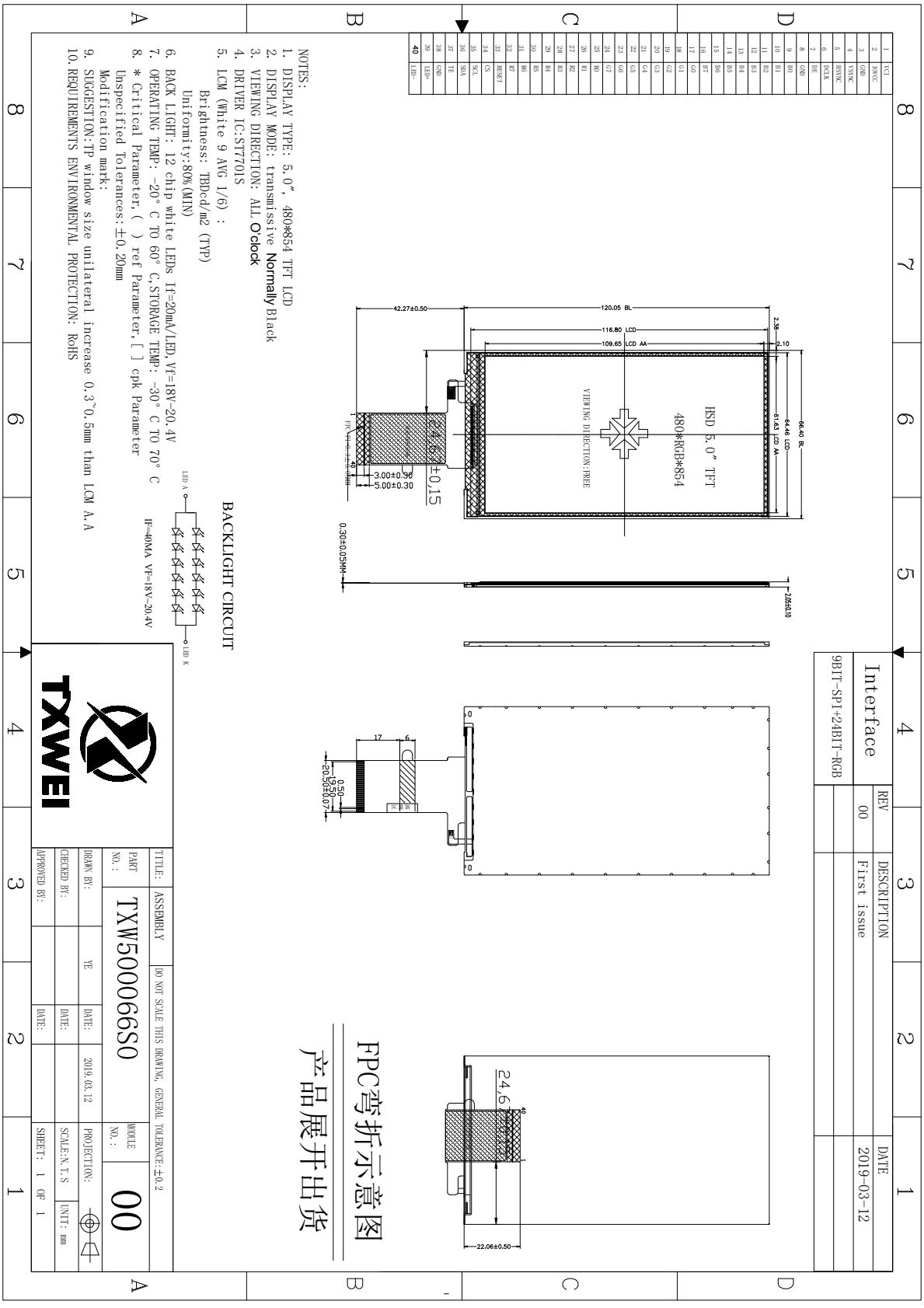
2. Features

Display Mode	Transmissive
	a-TFT
Display Format	Graphic 480RGB*854Dot-matrix
Viewing Direction	ALL o'clock
LCD Input Data	24BIT-RGB+9bit_SPI
TP Input Data	
LCD Drive	ST7701S
TP Drive	

3. Mechanical Specifications

Parameter		Specifications	Unit
Main LCD Panel Color TFT 480RGBx854	Outline dimensions	66.4(W) x120.5(H) X2.05(D)	mm
	TP view area		mm
	LCD active area	61.632 (W) x109.6536(H)	mm
	Color configuration	RGB stripes	-
	Dot pitch	0.1284x0.1284	mm
Weight		TBD	grams

4. Mechanical Dimens



5.Absolute Maximum Rating

(Ta=25±2°C, Vss=GND=0V)

Characteristics	Symbol	Min.	Max.	Unit	Notes
LCM Analog Voltage	VDD	2.5	3.6	V	
LCM I/O Voltage	IOVCC	1.65	3.3	V	
TP Power Supply	TP_VDD			V	
Backlight Forward Current	I_F	-	40	mA	
LCM Operating Temperature	T_{OPR}	-20	+60	°C	(1), (3)
LCM Storage Temperature	T_{STG}	-30	+70	°C	(2), (3)
TP Operating Temperature & Humidity(20%～90%RH)				°C	
TP SStorage Temperature & Humidity(20%～90%RH)				°C	
Humidity	RH	-	90	%	Max. 60 °C

Notes:

(1) In case of below 0°C, the response time of liquid crystal (LC) becomes slower and the color of panel becomes darker than normal one. Level of retardation depends on temperature, because of the LC characteristics.

(2) If product is exposed to high temperatures for extended time, there is a possibility of the polarizer film damage which could degrade the optical characteristics.

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

Functional operation should be restricted to the conditions described under normal operating conditions.

6.Electrical Characteristics

6.1 LCM DC CHARACTERISTICS

(Ta=25±2°C)

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Note
Power Supply Voltage 1	VDDIO	1.65	1.8	3.3	V	
Power Supply Voltage 2	VDD	2.5	2.8	3.6	V	

6.3 Back-Light Unit Characeristics

The back-light system is an edge-lighting type with 12 white LEDs. The characteristics of the back-light are shown in the following tables.

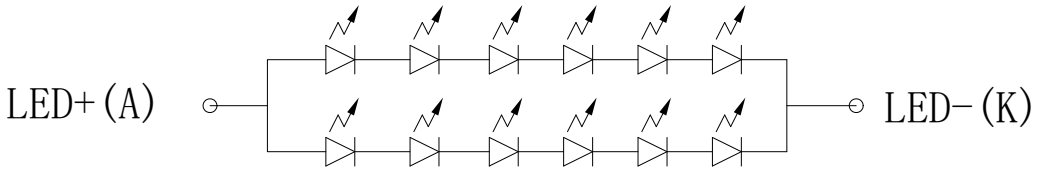
(Ta=25±2°C)

Characteristics	Symbol	Condition	Min.	Type	Max.	Unit	Notes
Forward Voltage	Vf	I_L=40mA	17.5	--	20	V	-
Forward current	I_L		--	40	-	mA	-
Luminance(With LCD)	Lv	I_L=40mA		400	--	cd/m^2	-
LED life time	-	I_L=40mA	--	30,000	--	Hr	Note 1

Note:

(1) The "LED life time" is defined as the module brightness decrease to 50% of original brightness at I_L=20mA. The LED life time could be decreased if operating I_L is larger than 40mA.

Backlight circuit diagram shown in below:



7. Module Function Description

7.1 LCM Pin Descriptions

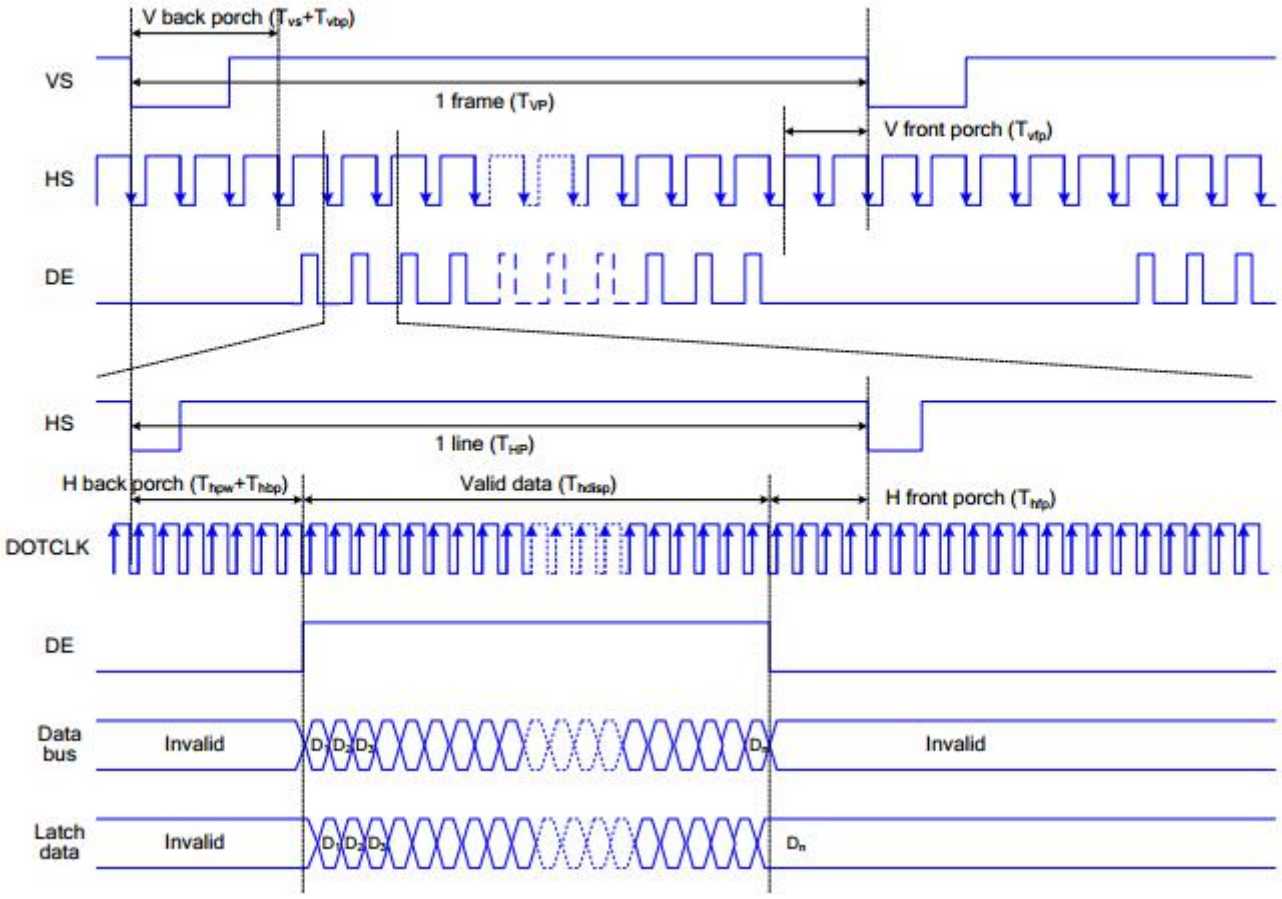
Pin No.	Symbol	Functional	Notes
1	VCI	Power supply	
2	IOVCC	Power supply I/O Voltage	
3	GND	Power Ground	
4	VSYNC	Vertical (Frame) synchronizing input signal for RGB interface operation.	
5	HSYNC	Horizontal (Line) synchronizing input signal for RGB interface	
6	DCLK	Dot clock signal for RGB interface operation.	
7	DE	Data enable signal for RGB interface operation.	
8	GND	Power Ground	
9-16	B0-B7	RGB interface data bus.	
17-24	G0-G7	RGB interface data bus.	
25-32	R0-R7	RGB interface data bus.	
33	/RESET	Reset signal input terminal. Active at 'L'.	
34	/CS	Chip select signal input pin	
35	SCL	Serial interface clock	
36	SDA	Input/Output signal pin	
37	TE	Tearing effect output pin to synchronize MPU to frame writing	

38	GND	Power Ground	
39	LED+	Power supply for backlight anode input terminal.	
40	LED-	Power supply for backlight cathode input terminal.	

8. Timing Characteristics

8.1 RGB Interface Timing Characteristics of IC

The timing chart of RGB interface DE mode is shown as follows.



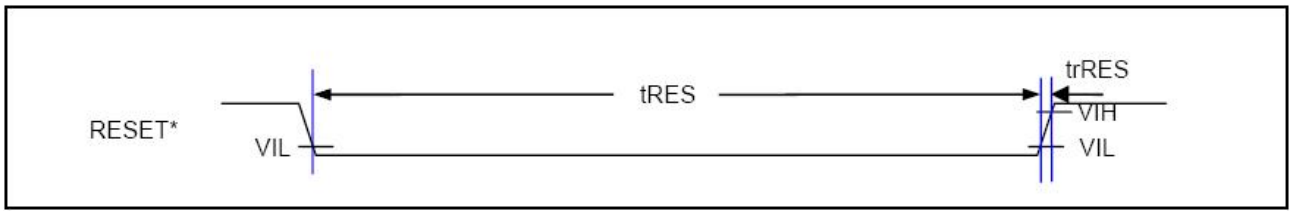
Please refer to the following table for the setting limitation of RGB interface signals.

Parameter	Symbol	Min.	Typ.	Max.	Unit
Horizontal Sync. Width	hpw	1	-	255	Clock
Horizontal Sync. Back Porch	hbp	1	--	255	Clock
Horizontal Sync. Front Porch	hfp	1	--	-	Clock
Vertical Sync. Width	vs	1	--	254	Line
Vertical Sync. Back Porch	vbp	1	--	254	Line
Vertical Sync. Front Porch	vfp	2	--	--	Line

8.2 Reset Operation of IC

Reset Timing Characteristics (VCC = IOVCC=2.4~3.3V)

Item	Symbol	Unit	Min.	Typ.	Max.
Reset low-level width	tRES	ms	1	-	-
Reset rise time	trRES	μs	-	-	10



Reset Timing

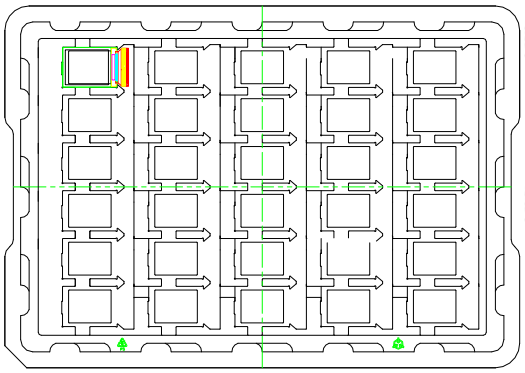
9. Reliability Test Item

Test Item	Sample Type	Test Condition	Test result determinant gist
High temperature storage	Normal temperature	70±3°C;200H	the inspection of appearance and function character.
	Wide temperature	70±3°C;200H	
Low temperature storage	Normal temperature	-20±3°C;200H	
	Wide temperature	-20±3°C;200H	
High temperature /humidity storage	Normal temperature	60°C±3°C,90%±3%RH;120 H	
	Wide temperature	60°C±3°C,90%±3%RH;120 H	
High temperature operation	Normal temperature	60±3°C;120H	no objection of the function character; no fatal objection of the appearance.
	Wide temperature	60±3°C;120H	
Low temperature operation	Normal temperature	-10±3°C;120H	
	Wide temperature	-10±3°C;120H	
High temperature /humidity operation	Normal temperature	50°C±3°C,90%±3%RH;120 H	
	Wide temperature	50°C±3°C,90%±3%RH;120 H	
Temperature Shock	Normal temperature	-10±3°C,30min→25-60±3°C ,30min;10cycle	inspect the objections appearance、function & the whole structure
	Wide temperature	-10±3°C,30min 60±3,30min;10cycle	The inspection of appearance、function & the whole structure

10. Packing (Reference only)

Packing Method

(1)



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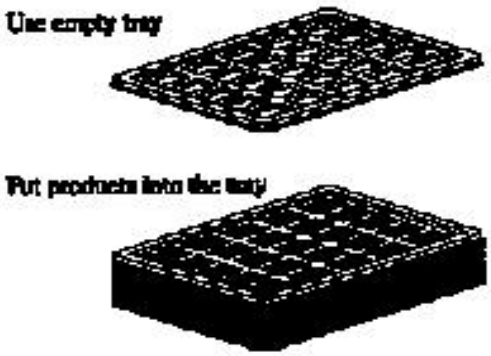

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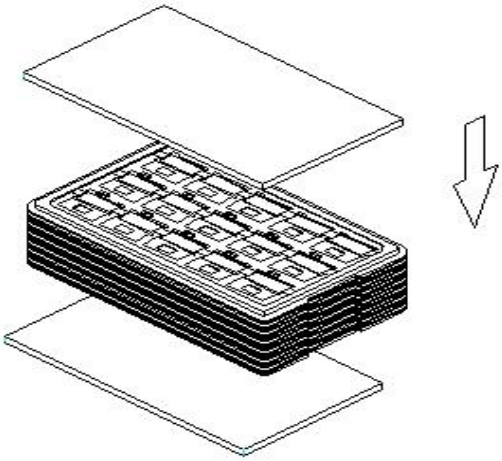

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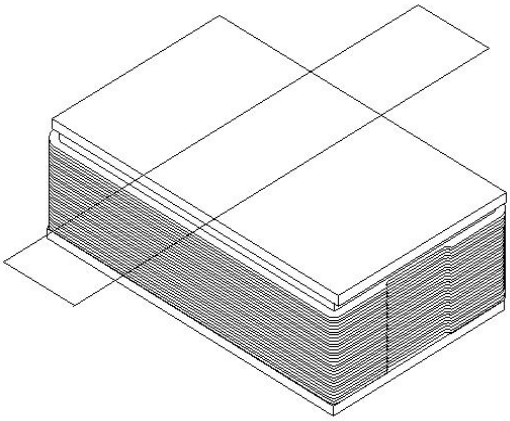

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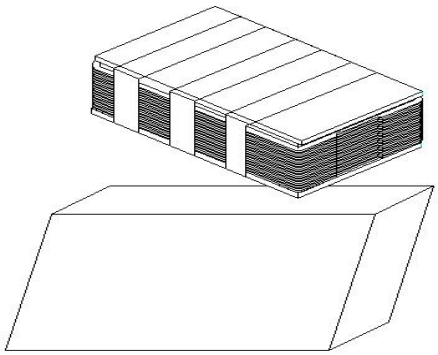

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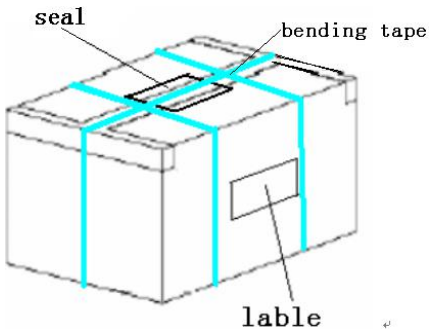

1. Put module into tray cavity :
2. Tray stacking
3. Put 1 cardboard under the tray stack and 1 cardboard above:
4. Fix the cardboard to the tray stack with adhesive tape:
5. Put the tray stack into carton.
6. Carton sealing with adhesive tape.

- END -