



Surenno STP0400B-320480 Series TFT LCD Panel User Manual

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SHENZHEN SURENOO TECHNOLOGY CO.,LTD.
Model No.: STP0400B-320480
STP0400B-320480 Series
TFT LCD PANEL USER MANUAL
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Reference Controller Datasheet
TFT LCD Panel Selection Guide
ST7796S

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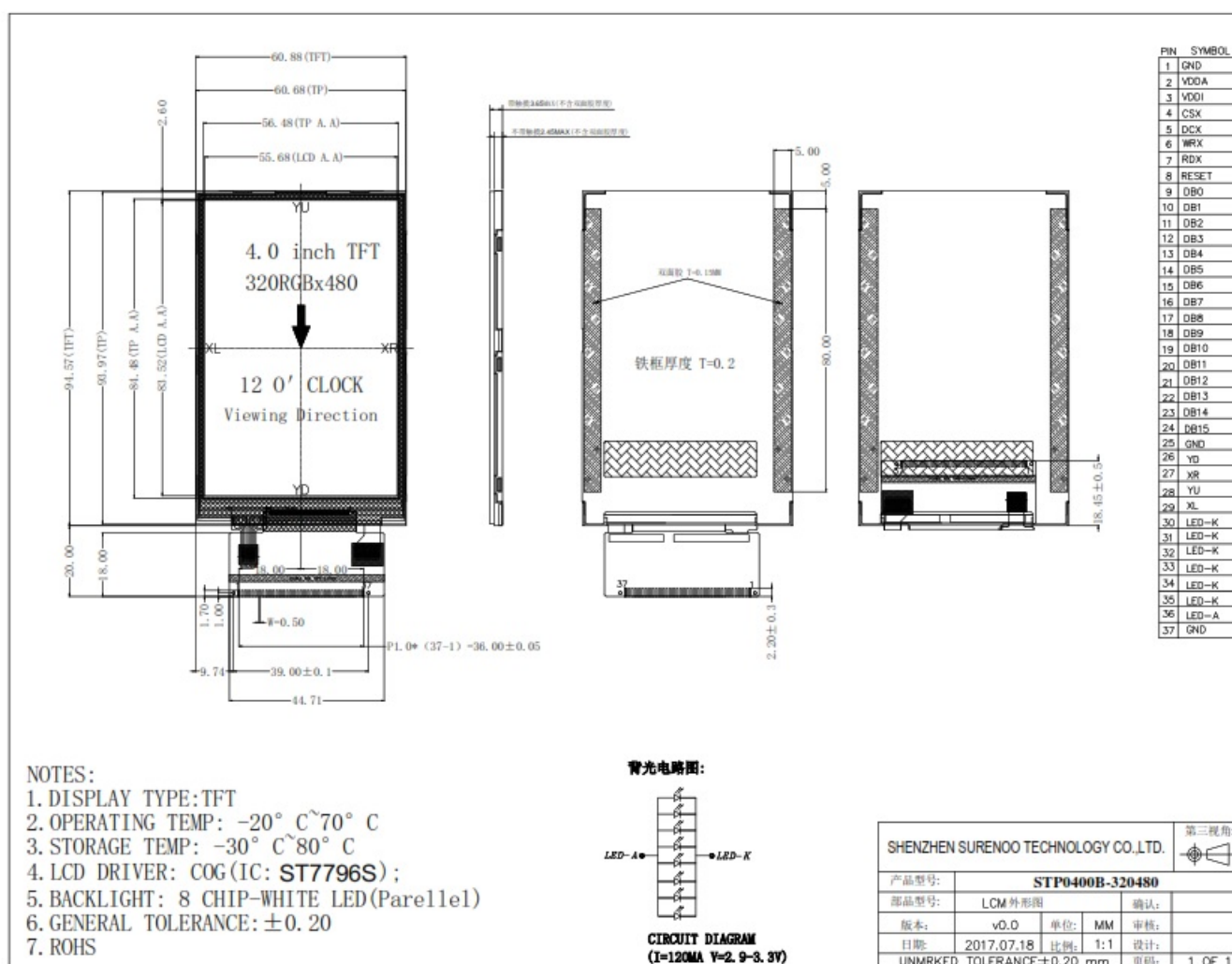
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General Description

MODEL NO	STP0400B-320480
Display Mode	Transmissive
Display Format	Graphic 320RGB*480 Dot-matrix 320xRGBx480
Input Data	8bit/16bit interface 8
Viewing Direction	12 o'clock 12
Drive	ST7796S

Mechanical Specification

Item	Specifications	Unit
Dimensional outline	60.88(W)*94.57(H)*2.45(T) 60.88(W)*94.57(H)*3.65(T) (FPC not include)	mm
Resolution	320RGB*480	dots
LCD Active area	55.68(W)*83.52 (H)	mm
Pixel size	0.174(W)*0.174(H)	mm



Electrical Maximum Ratings

Item	Symbol	Min	Max	Unit	Note
Supply voltage VDDI (VDDI)	V	1.8	3.3	V	–
Supply voltage VDDA (VDD)	V	2.8	3.3	V	–
Operating temperature	TOPR	-20	70	°C	–
Storage temperature	TSTR	-30	80	°C	–

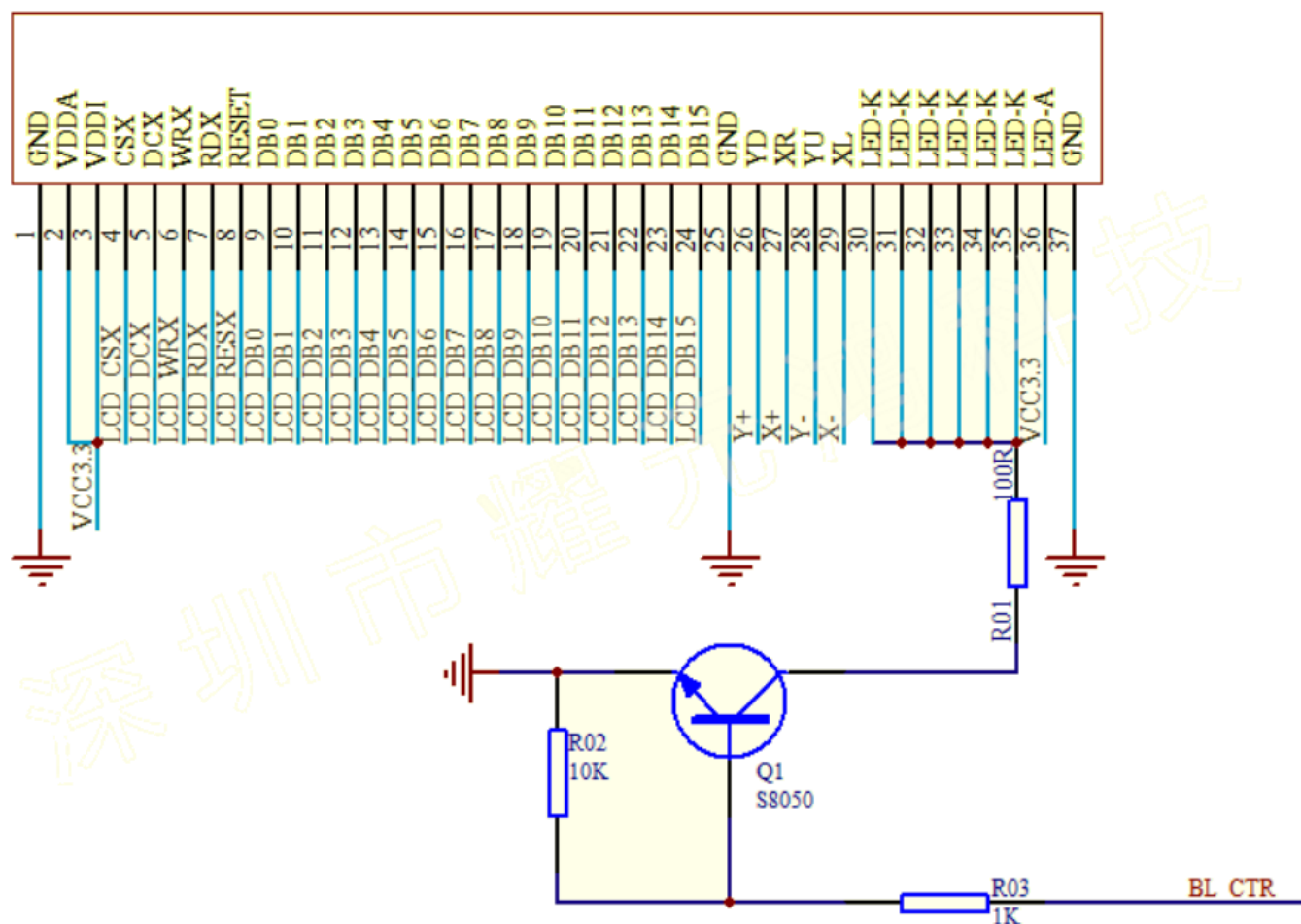
Brightness characteristic&Power dissipation

Item	Symbol	Min	Typical	Max	Unit
LED module Forward voltage LED	VLED	2.9	3.1	3.3	V
LED module current LED	ILED	–	145	–	mA
LCD Surface Luminance	LS	330	350	–	Cd/m2
LCM Surface brightness uniform LED	LD	80	–	–	%
LCD power dissipation	PLCD	–	0.45	–	W

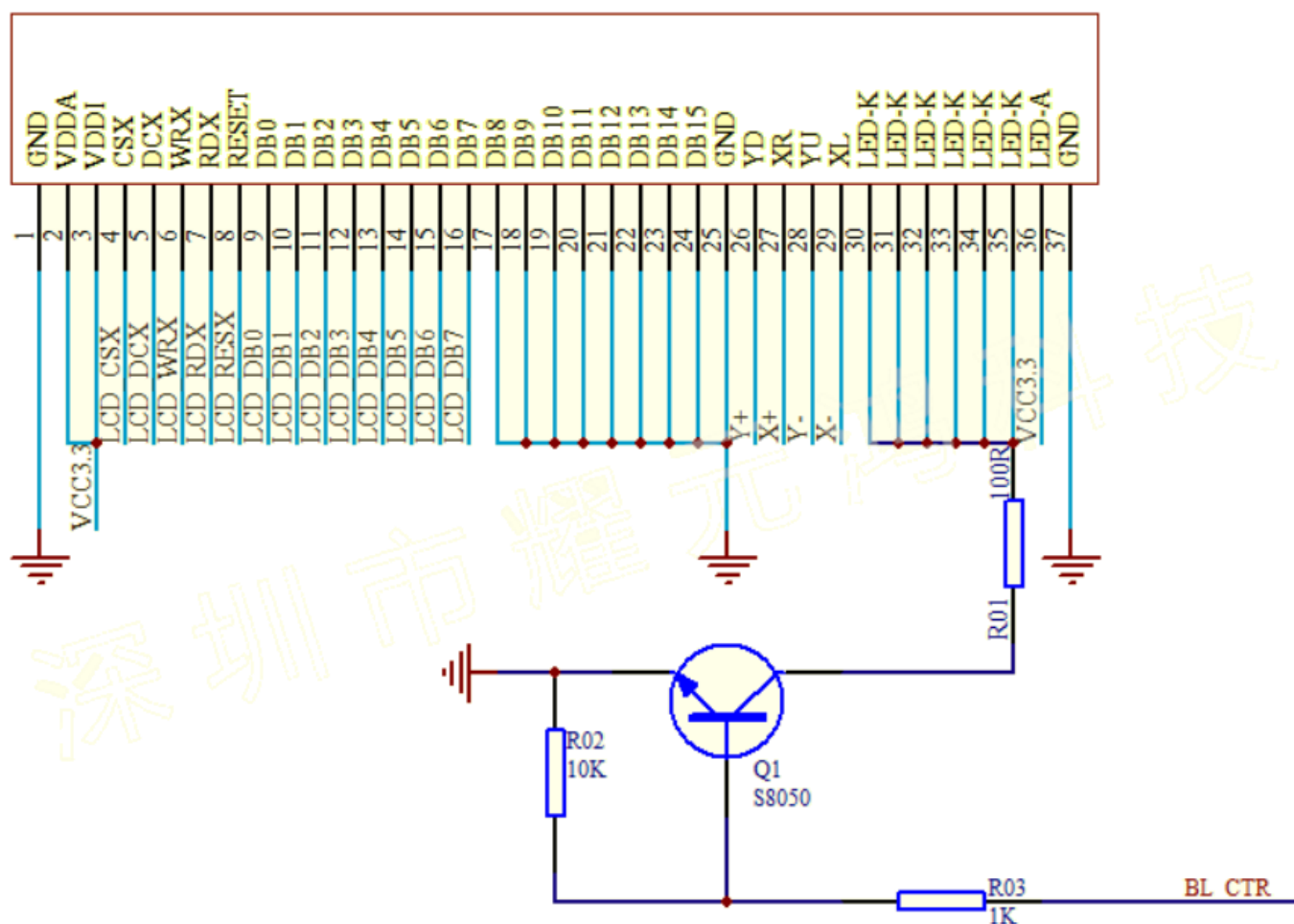
※NOTE:PLCD=VDD * (ILED+ILCD)

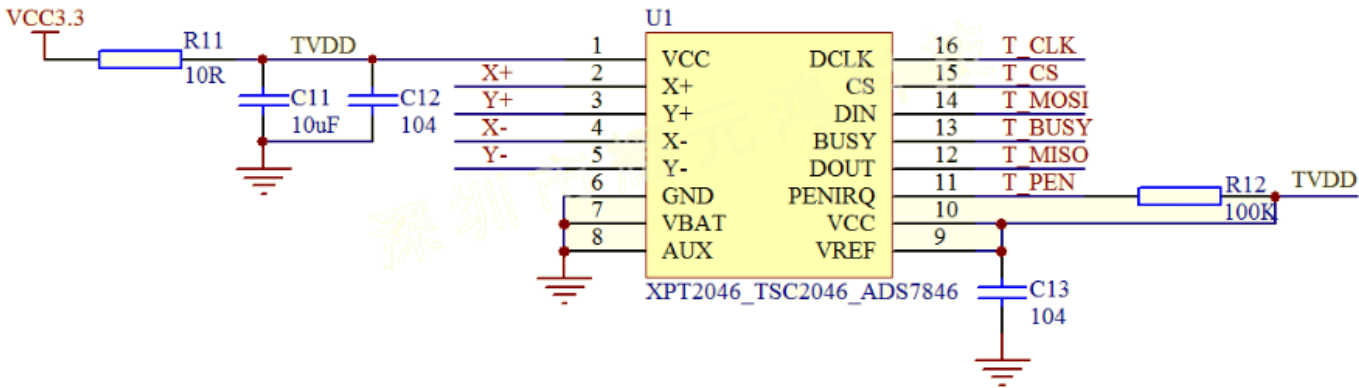
PIN No.	Symbol	Description	Notes
1	GND	Ground	—
2	VDDA	Power Supply for Analog, Digital System and Booster Circuit. 2.8-3.3V)	—
3	VDDI	Power Supply for I/O System. 1.8-3.3V)	—
4	CSX	-Chip selection pin Low enable. High disable.	—
5	DCX	-Display data/command selection pin in parallel interface. DCX='1': display data or parameter. (DCX=1:DCX='0': command data (DCX=0:	—
6	WRX	-Write enable in MCU parallel interface.	—
7	RDX	-Read enable in 8080 MCU parallel interface. -If not used, please fix this pin at VDDI or GND. (VDDI GND	—
8	RESET	-This signal will reset the device and it must be applied to properly initialize the chip. -Signal is active low.	—
9-16	DB0-DB7	MCU parallel interface data bus. MCU	—
17-24	DB8-DB15	MCU parallel interface data bus. MCU	—
25	GND	Ground	—

26	YD	Touch panel Logical foot	—
27	XR	Touch panel Logical foot	—
28	YU	Touch panel Logical foot	—
29	XL	Touch panel Logical foot	—
30	LED-K	Cathode of Backlight	—
31	LED-K	Cathode of Backlight	—
32	LED-K	Cathode of Backlight	—
33	LED-K	Cathode of Backlight	—
34	LED-K	Cathode of Backlight	—
35	LED-K	Cathode of Backlight	—
36	LED-A	Anode of Backlight (2.9V-3.3V Typical:3.1V)	—
37	GND	Ground	—



6-2 STP0400B_8

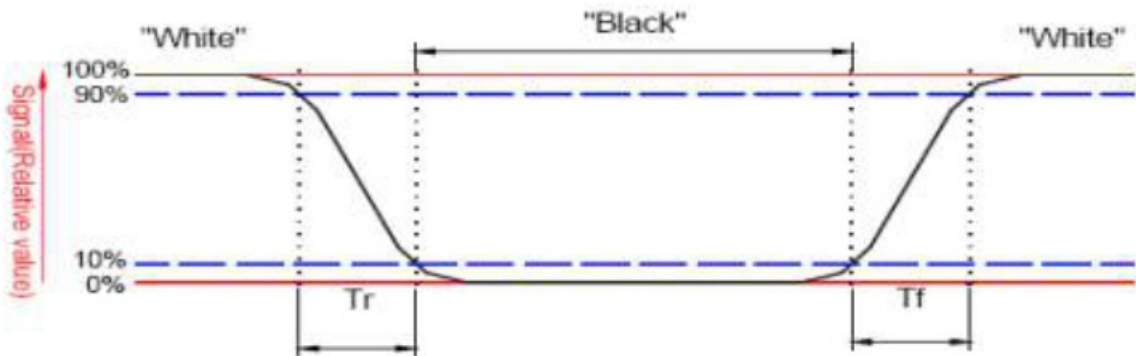




※NOTE:

Response time&Contrast ratio

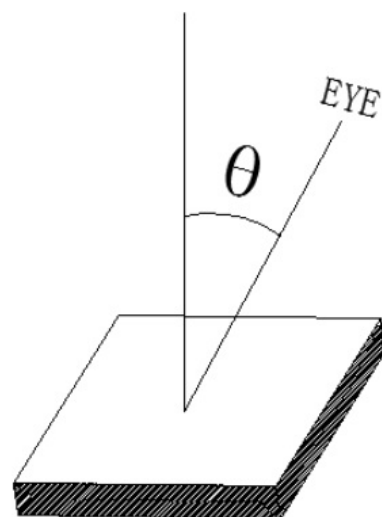
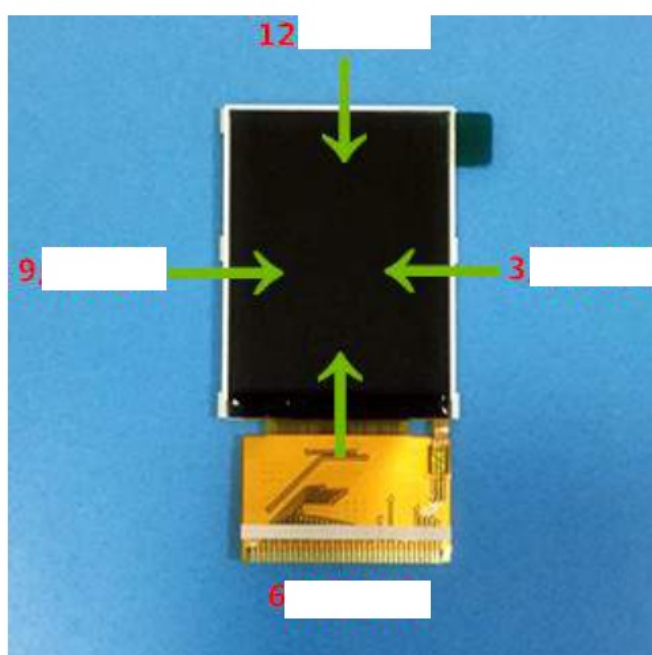
Item	Symbol	Condition	Remark			Unit
			Min.	Typ.	Max.	
Response time	Tr+Tf	$\theta=0^{\circ}$	—	30	—	ms
Contrast ratio	CR	$\theta=0^{\circ}$	—	500	—	—



Contrast ratio (CR)= $\frac{\text{Brightness on the "white" state}}{\text{Brightness on the "black" state}}$

Viewing Angle

Item	Symbol	Condition	Remark			Unit
			Min.	Typ.	Max.	
Viewing angle	Top	$CR \geq 10$	60	65	—	Deg.
	Bottom	$CR \geq 10$	60	65	—	
	Left	$CR \geq 10$	65	70	—	
	Right	$CR \geq 10$	65	70	—	



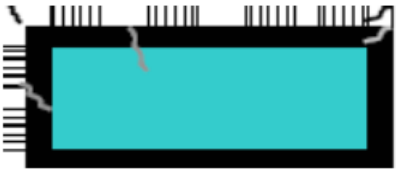
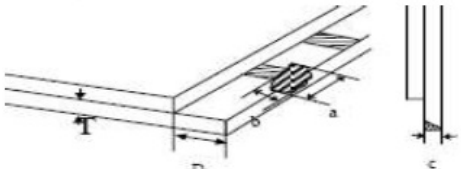
NOTE:3

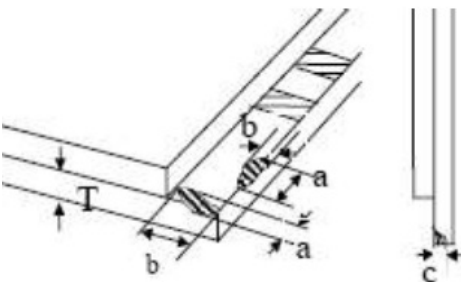
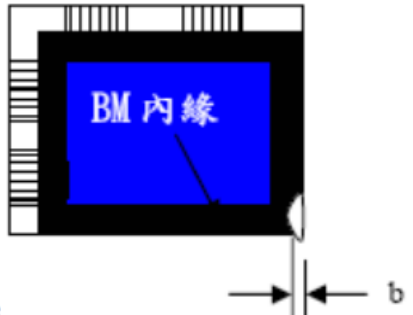
Reliability Trial

NO.	ITEM	CONDITION	CRITERION
1	High Temperature Non-Operating Test	80°C*120Hrs	No Defect Of
			Operational
2	Low Temperature Non-Operating Test	-30°C*120Hrs	Function In Room
			Temperature Are
3	High Temperature/Humidity Non Operating Test	60°C*90%RH*120Hrs	Allowable
4	High Temperature Operating Test	70°C*72Hrs	
5	Low Temperature Operating Test	-20°C*72Hrs	
6	Thermal Shock Test	-20 °C (30Min) n 70 °C	
		(30Min) *10CYCLES	

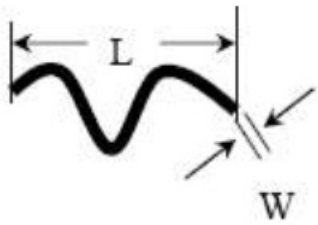
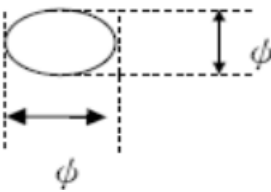
Inspection standards

10.1Glass defect

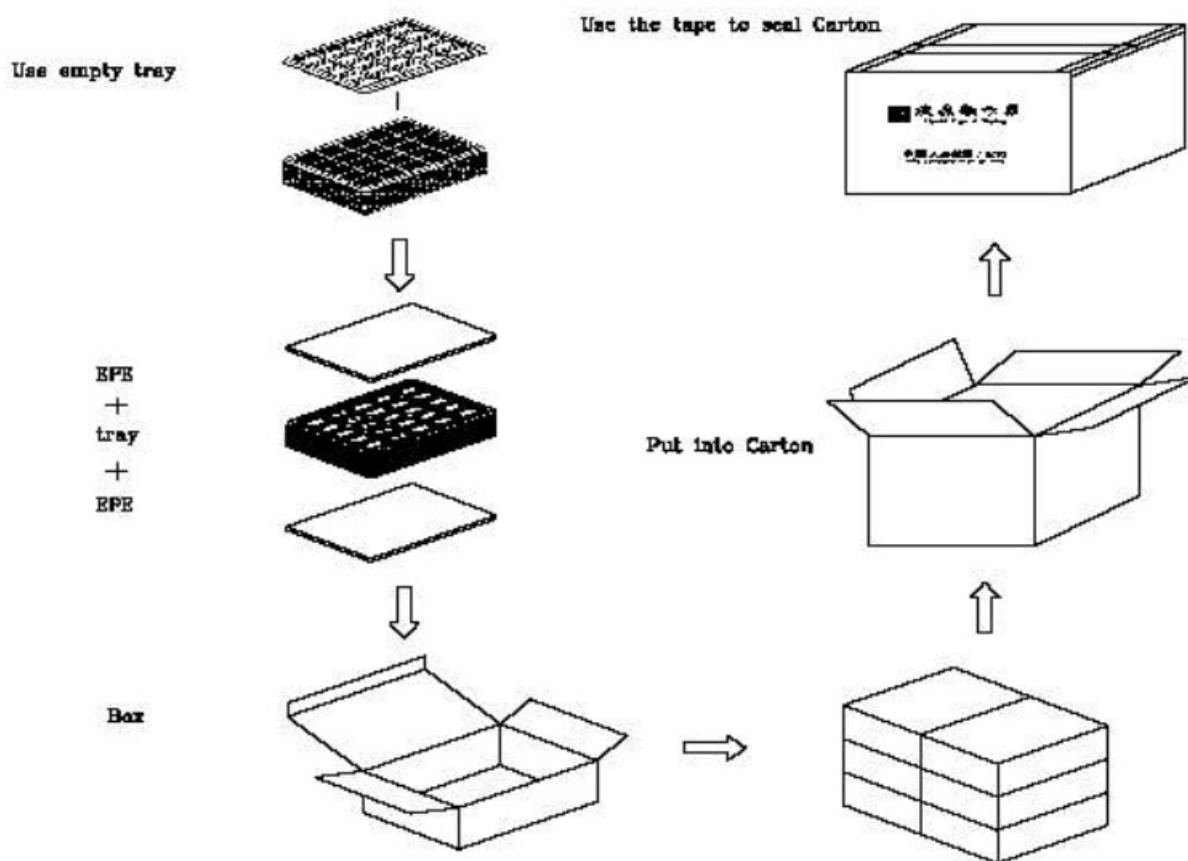
NO	Defect item	Criteria	Remark
1	Dimension Unconformity (Major defect)	By Engineering Drawing	
2	Cracks (Major defect)	1. Linear cracks panel Reject 2. Nonlinear crack contrast by limited sample	
3	Glass extrude the conductive area (minor defect)	a: disregards and no influence on assembly. 1) $b \leq 1/3$ Pin width (non bonding area) Accept 2) bonding area $\leq 0.5\text{mm}$ Accept	A: Length, b: Width
4	Pin-side ,conductive area damaged (minor defect)	(a c: disregards) $b \leq 1/3$ of effective length for bonding electrode Accept	a: length, b: Width, c: Thickness 
5	Pin-side, non-conductive area damaged	1) Damage area don't touch the ITO (Including contraposition mark,	a: Length, b: Width c: Thickness

	(minor defect)	except scribing mark) Accept 2) $C < T$ $b \leq 1/3$ of width Accept 3) $c = T$ b not touch the seal glue Accept 4) a disregards	
6	Non-pin-side damage (minor defect)	$c < T$ 1) b exceeds $1/3 B_m$ Reject $c = T$ b not touch the seal glue Reject	c: Thickness b: width of damage 

10.2LCD appearance defect(View area)

NO	Defect item	Criteria		Remark
1	Fiber glass cratch polarizer scratch/folded (minor defect)	Specification	Allowable	note1:L: Length, W: Width note2: disregard if out of AA
		$W \leq 0.03\text{mm}$	disregard	
		$0.03\text{mm} < W \leq 0.05\text{mm};$ $L \leq 3.0\text{mm}$	2	
		$0.05\text{mm} < W \leq 0.1\text{mm};$ $L \leq 3.0\text{mm}$	1	
		$W > 0.1\text{mm}; L > 3.0\text{mm}$	0	
2	Polarizer bubble concave and convex (minor defect)	$\phi \leq 0.2\text{mm}$	disregard	note1: $\phi = (L+W)/2$, L:Length, W :Width note2:disregard if out of AA 
		$0.2\text{mm} < \phi \leq 0.3\text{mm}$	2	
		$0.3\text{mm} < \phi \leq 0.5\text{mm}$	1	
		$0.5\text{mm} < \phi$	0	
3	Black dots dirty dots impurities eye winker (minor defect)	$\phi \leq 0.15\text{mm}$	disregard	note2:disregard if out of AA 
		$0.15\text{mm} < \phi \leq 0.25\text{mm}$	2	
		$0.25\text{mm} < \phi \leq 0.3\text{mm}$	1	
		$0.3\text{mm} < \phi$	0	

4	Polarizer prick (minor defect)	$\phi \leq 0.1\text{mm}$	disregard	note1: $\phi = (L+W)/2$, L =Length, W =Width note2:the distance between two dots>5mm
		$0.1\text{mm} < \phi \leq 0.25\text{mm}$	3	
		$\phi > 0.25\text{mm}$	0	



www.surenoo.com



MECARD:TEL:0086-17820607849;URL:

	
https://wa.me/qr/4GGOIDYZ2PXXN1	http://qr.kakao.com/talk/THor
	
https://line.me/ti/p/oas8BmVLVd	https://u.wechat.com/EA

Shenzhen Surenoo Technology Co.,Ltd.
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Documents / Resources

	Surenoo STP0400B-320480 Series TFT LCD Panel [pdf] User Manual STP0400B-320480 Series TFT LCD Panel, STP0400B-320480 Series, TFT LCD Panel, LCD Panel, Panel
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References

- [Surenoo Tech: Professional LCD Module Supplier Since 2005](#)

