



Surenno STP0350A3-320480 Series TFT LCD Panel User Manual

[Home](#) » [Surenno](#) » Surenno STP0350A3-320480 Series TFT LCD Panel User Manual



Model No.: STP0350A3-320480
STP0350A3-320480 Series
TFT LCD PANEL USER MANUAL
IPS Mode

Contents [[hide](#)]

- 1 STP0350A3-320480 Series TFT LCD Panel
- 2 General Description
- 3 Mechanical Specification
- 4 Mechanical Dimension (With RTP)
- 5 Electrical Maximum Ratings
- 6 Brightness characteristic & Power dissipation
- 7 Module Function Description
- 8 Response time& Contrast ratio
- 9 Viewing Angle
- 10 Reliability Trial
- 11 Inspection standards
- 12 Package Method
- 13 Documents / Resources
 - 13.1 References
- 14 Related Posts

Please click the following image to buy the sample



STP0350A3-320480-IPS-CTP

STP0350A3-320480-IPS-NTP

<https://www.aliexpress.com/item/4000549728489.html>

General Description

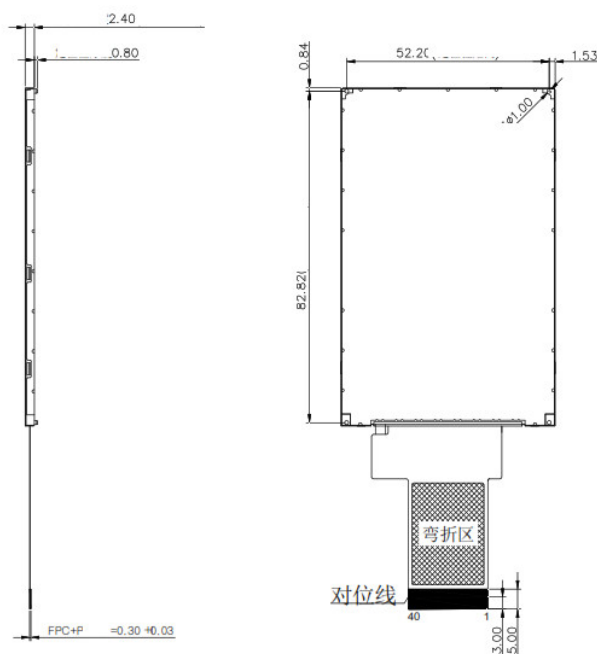
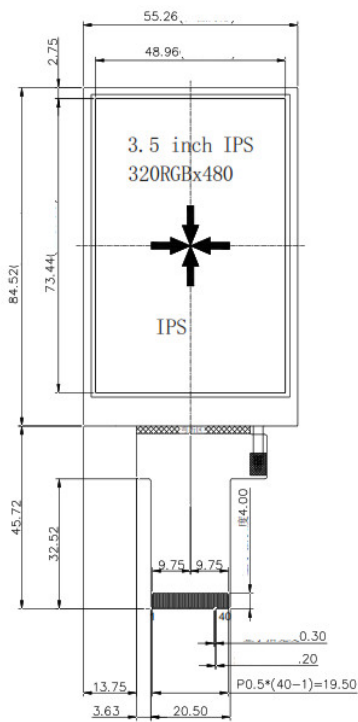
MODEL NO	STP0350A3-320480-IPS
Display Mode	Transmissive
Display Format	Graphic 320RGB*480 Dot-matrix
Input Data	3 Line-SPT/4 Line-SPI/8bit/16bit interface
Viewing Direction	IPS Full View Angle
Drive	ST7796S CTP: GT911

Mechanical Specification

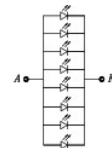
Item	Specifications	Unit
Dimensional outline	CTP: 55.26(W)*84.52(H)*3.83(T) NTP: 55.26(W)*84.52(H)*2.40(T)	mm
Resolution	320RGB*480	dots
LCD Active area	48.96(W)*73.44 (H)	mm
Pixel size	0.153(W)*0.153(H)	mm

Mechanical Dimension (With RTP)

3.1 LCD Panel



IM2	IM1	IM0	MCU interface Mode	Data pin
0	1	0	80-16bit parallel I/F	DB15-DB0
0	1	1	80-8bit parallel I/F	DB7-DB0
1	0	1	3-line 9bit serial I/F	SDA: in SDO: out
1	1	1	4-line 8bit serial I/F	SDA: in SDO: out



CIRCUIT DIAGRAM
(I=120MA V=2.9-3.3V)

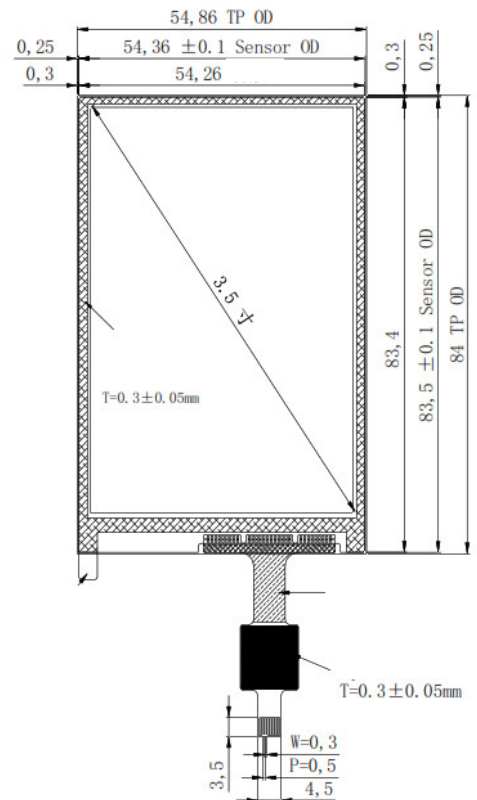
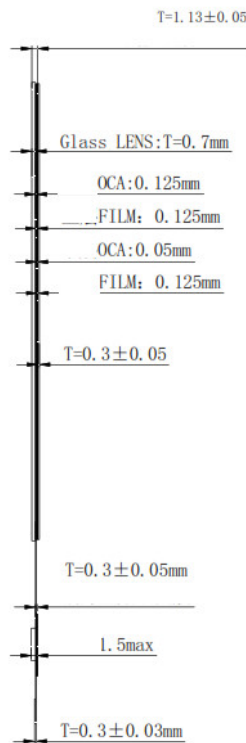
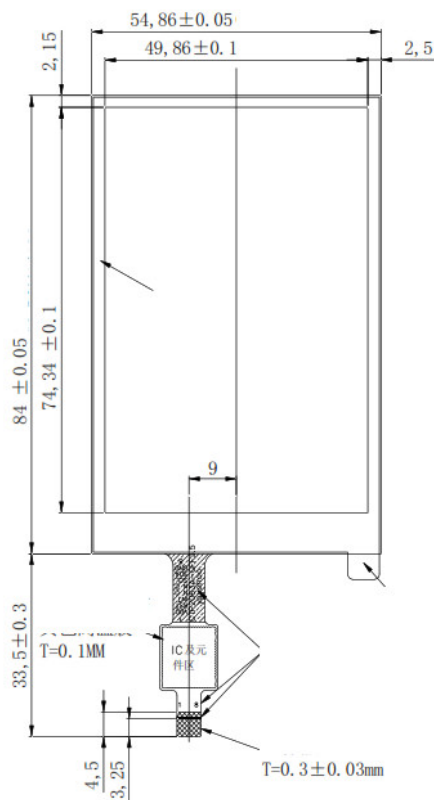
1	NC
2	NC
3	NC
4	NC
5	GND
6	VDDI
7	VDDA
8	TE
9	CSX/SP1_CS
10	DCX/SP14_DC
11	WRX/SP1_SCLK
12	RDX
13	SP1_MOSI
14	SP1_MISO
15	RESET
16	GND
17	DB0
18	DB1
19	DB2
20	DB3
21	DB4
22	DB5
23	DB6
24	DB7
25	DB8
26	DB9
27	DB10
28	DB11
29	DB12
30	DB13
31	DB14
32	DB15
33	LED-A
34	LED-K
35	LED-K
36	LED-K
37	GND
38	IM0
39	IM1
40	IM2

SHENZHEN SURENOO TECHNOLOGY CO.,LTD.			
		STP0350A3-320480	
		v0.0	MM
		2021-6-6	1:1
UNMRKED TOLERANCE:±0.20 mm		1 OF 1	

NOTES:

1. DISPLAY TYPE:TFT
2. OPERATING TEMP: -20° C~70° C
3. STORAGE TEMP: —30° C~80° C
4. LCD DRIVER: COG(IC:ST7796U);
5. BACKLIGHT:
6. CHIP-WHITE LED(Parallel)
7. GENERAL TOLERANCE: 0.20
8. ROHS

3.2 Touch Screen



PIN NO.	Definition
1	VDD_3.3V
2	RST
3	INT_3.3V
4	NC
5	NC
6	SCL
7	MA
8	CND

Note: CTP driver. GT911

SHENZHEN SURE NO0 TECHNOLOGY CO., LTD.					
CTP2063A-GFF3.5					
UNMRKED TOLERA NCE: ±0.20 mm	2021.09.06				1 OF 1

3.3 LCD with Capacitive Touch Screen

Item	Symbol	Min	Typical	Max	Unit
LED module Forward voltage	VL ED	3.	3.	3.	V
LED module current	km	–	120	–	mA
LCD Surface Luminance	Ls	360	380		Cern'
LCM Surface brightness uniform	LD	80	–	–	%
LCD power dissipation	PLOD	–	0.462	–	W

NOTE: $PLCD-VDD \cdot (I_{LED} + I_{LCD})$

Module Function Description

PM No.	Symbol	Description	Notes
1	XL	Touch panel Logical foot	–
2	YU	Touch panel Logical foot	–
3	XR	Touch panel Logical foot	–
4	YD	Touch panel Logical foot	–
5	GND	Ground	–
6	VDDI	Power Supply for I/O System.	–
7	NUM	Power Supply for Analog, Digital System and Booster Circuit.	–
8	FMARIC(TE)	Tearing effect signal is used to synchronize MCU to frame memory	–
9	CKUSPICS	-Chip selection pin Low enable. High disable.	–
10	DCX/RS(SPI-4)	– Display data/command selection pin in MCU interface. DCX=" 1' : display data or parameter. DCX=. 0' : command data	–
11	WILX/SPI SCL	– Write enable in MCU parallel interface. – In SPI mode, this pin is used as SCL.	–

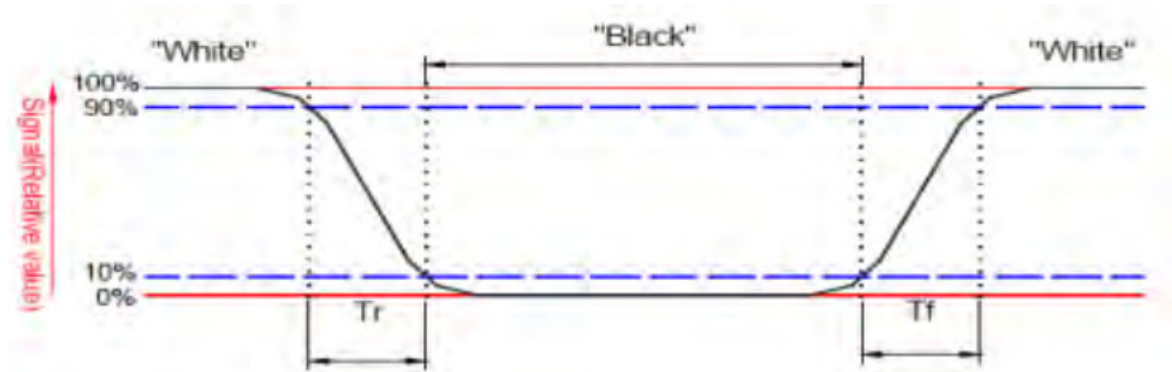
12	RDX	-Read enable in 8080 MCU parallel interface. -If not used please fix this pin at VDDI or GYP.	—																									
13	SPI SDI/SDA	— SPI interface input pin. — The data is latched on the rising edge of the SCL signal. — If not used, please fix this pin at VDDI or DGND level.	—																									
14	SPI SDO	-SPI interface output pin. -The data is output on the falling edge of the SCL signal. - If not used let this pin open.																										
15	RESET	-This signal will reset the device and it must be applied to properly initialize the chip. -Signal is active low.																										
16	GND	Ground																										
17-24	DB0-DB7	MCU parallel interface data bus.	—																									
25-32	DB8-DB15	MCU parallel interface data bus.	—																									
33	LED-A	Anode of Backlight (2.9V-3.3V Typical:3.1V)																										
34-36	LED-K	Cathode of Backlight																										
37	GND	Ground																										
38	IMO	-The MCU interface mode select. (MCU	—																									
39	IM1	<table><tr><td>IM2</td><td>IM1</td><td>IMC</td><td>MCU interface Mode</td><td>Data pin</td></tr><tr><td>0</td><td>1</td><td>0</td><td>80-16bit parallel I/F</td><td>DB15-DB0</td></tr><tr><td>0</td><td>1</td><td>1</td><td>80-8bit parallel I/F</td><td>DB7-DB0</td></tr><tr><td>1</td><td>0</td><td>1</td><td>3-line 9bit serial I/F</td><td>SDA: in SDO: out</td></tr><tr><td>1</td><td>1</td><td>1</td><td>4-line 8bit serial I/F</td><td>SDA: in SDO: out</td></tr></table>	IM2	IM1	IMC	MCU interface Mode	Data pin	0	1	0	80-16bit parallel I/F	DB15-DB0	0	1	1	80-8bit parallel I/F	DB7-DB0	1	0	1	3-line 9bit serial I/F	SDA: in SDO: out	1	1	1	4-line 8bit serial I/F	SDA: in SDO: out	
IM2	IM1	IMC	MCU interface Mode	Data pin																								
0	1	0	80-16bit parallel I/F	DB15-DB0																								
0	1	1	80-8bit parallel I/F	DB7-DB0																								
1	0	1	3-line 9bit serial I/F	SDA: in SDO: out																								
1	1	1	4-line 8bit serial I/F	SDA: in SDO: out																								
40	1M2		—																									

6.2 CTP Interface Description

NO:	Symbol	I/O	DESCRIPTION
1	YDD	Power supply	CTP Power input
2	RESET	I	CTP external reset signal, Low is active
3	INT	0	CTP External interrupt to the host
4	NC	–	No Connection
5	NC	–	No Connection
6	SCL	I	C77" I2C clock input
7	SDA	I/O	CTP I2C data input and output
8	GND	Poi ver supply	Poi ver ground

Response time& Contrast ratio

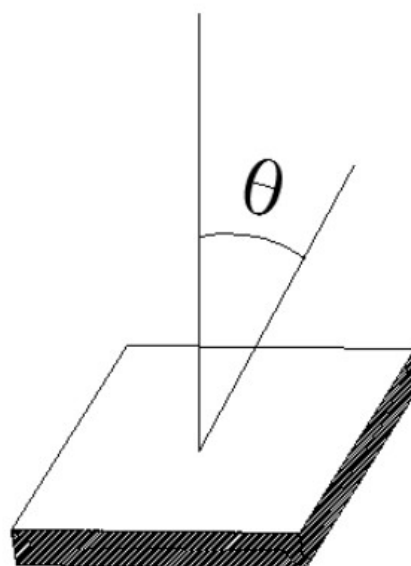
Item	Symbol	Condition	Remark			Unit
			Min.	Typ.	Max.	
Response time	Tr+Tf			30	40	ms
Contrast ratio	CR	0 =0"		1000		–



Contrast ratio (CR)=	Brightness on the “white” state
	Brightness on the “black” state

Viewing Angle

Item	Symbol	Condition	Remark			Unit
			Min.	Typ.	Max.	
Viewing angle	Top	CR≥10	70			Deg.
	Bottom	CR≥10	70	80	—	
	Left	CR≥10	70	80	—	
	Right	CR≥10	70	80	—	

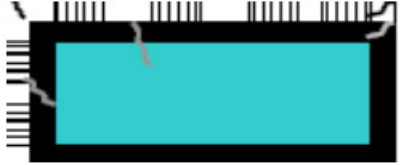
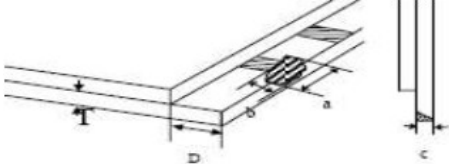


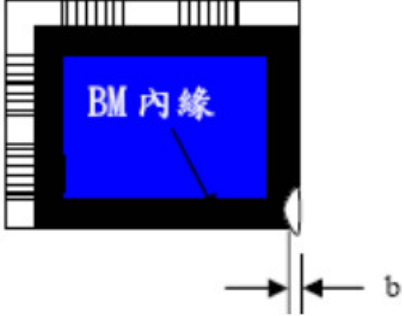
Reliability Trial

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

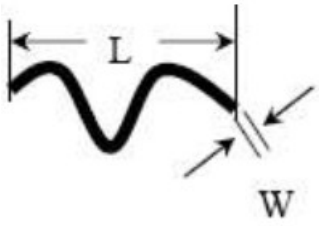
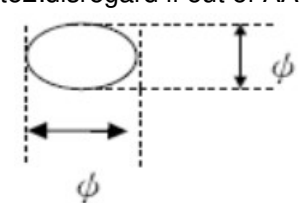
Inspection standards

10.1 Glass defect

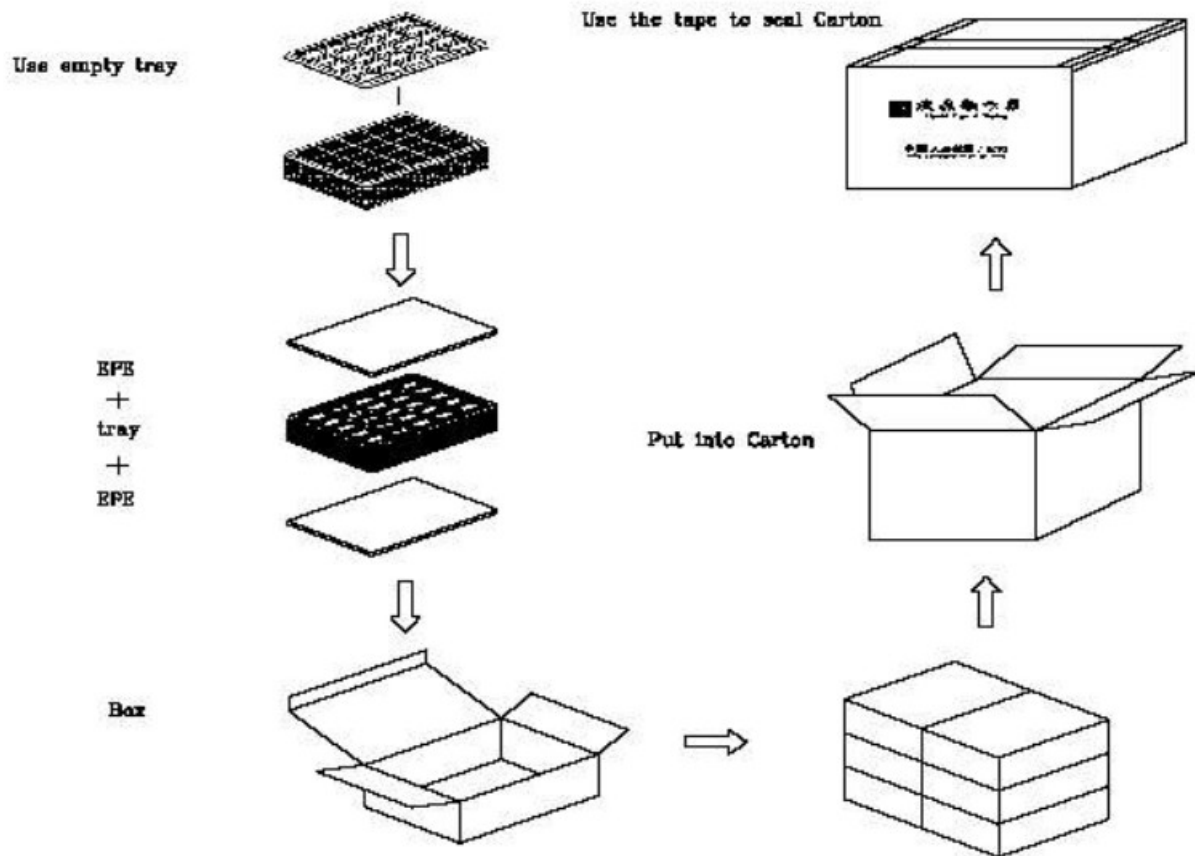
NO	Defect item	Criteria	Remark
1	Dimension Unconformity (Major defect)	By Engineering Drawing	
2	Cracks (Major defect)	1.Linear cracks panel (Reject) 2.Nonlinear crack contrast by limited sample	
3	Glass extrude the conductive area (minor defect)	a: disregards and no influence on assembly. 1) $b \leq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

6	Non-pin-side damage (minor defect)	$c < T$ 1)b exceeds $1/3$ Bm [Reject] $c = T$ b not touch the seal glue [Reject]	c: Thickness b: width of damage 
---	------------------------------------	---	---

2LCD appearance defect(View area)

NO	Defect item	Criteria		Remark
1	Fiber, glass cratch, polarizer scratc h/folded (minor defect)	Specification	Allowable	notel : L: Length, W: Width note2: disregard if out of AA 
		Wg0 03 mm	disregard	
		0.03mm<W g O. 05mm; L g 3. 0mm	2	
		0.05mm<W g0. 1mm; L ' .– 3. Omni	1	
		W>0.1mm;L>3.0min	0	
N	Polarizer bubble, conc ave and convex (minor defect)	4) g 0.2mm	disregard	notel: 4) = (L+W) /2, L :Length, W :Width note2:disregard if out of AA 
		0.2mm< 4) g O. 3mm	2	
		0.3mm< 4) g 0. 5mm	1	
		0 5mm< 4)	0	
3	Black dots, dirty dots, impurities, eye winker (minor defect)	4) g 0.15mm	disregard	note2:disregard if out of AA
		0.15mm< 4) g 0. 25mm	2	
		0.25mm< 4) g 0. 3mm	1	
		0 3mm< 4)	0	
4	Polarizes prick (minor defect)	4) g 0.1mm	disregard	notel: 4) = (L+W) /2, L=Length, W=Width note2:the distance between two dots>5nun
		0.1mm<4 ' 0. 25mm	3	
		4) >O. 25mm	0	

Package Method



MECARD:TEL:0086-17820607849;URL:

<http://www.surenoo.com>

EMAIL:info@surenoo.com

N:Potter Hao; ORG: Surenoo Technology;

<https://wa.me/qc/4GGOIDYZ2PXXN1>

<http://qr.kakao.com/talk/THom9tzJN5OMzvx1vTL1V.LvnEc->

<https://line.me/ti/p/oas8BmVLVd>

Shenzhen Surenoo Technology Co.,Ltd.

www.surenoo.com

Skype: Surenoo365

Reference Controller Datasheet

TFT LCD Panel Selection Guide

ST7796S

GT911

Documents / Resources



[Surenoo STP0350A3-320480 Series TFT LCD Panel](#) [pdf] User Manual
STP0350AA3 3-320480, STP0350A3-320480-IPS-CTP, STP0350A3-320480-IPS-NTP,
STP0350A3-320480 Series, STP0350A3-320480 Series TFT LCD Panel, TFT LCD Panel, LCD
Panel, Panel

References

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