Product Specifications

Customer	
Model	**NTSP240XXXB V500**

* X = A~Z, 0~9 (Depends on options)

Records of Revision			
Vision	**Modifying**	**Old Description**	**New Description**
V2002.1	Preliminary Specifications		
V2002.2	**Revise Model Number of Surface Film**		

Features

★ The NTSP240XXXB is a barebone of 24" PCAP touch bonded on 24" TFT LCD.
★ 1920x1080 (FHD) Resolution, LVDS interface.
★ True Flat USB Projected Capacitive Touch Screen
★ 7H Hardness Tempered Cover Glass
★ 10 points Multi-touch , Supports Active Stylus
★ Metal Cabinet with Diverse Combine Options
★ Made in Taiwan, 3 Years Warranty
★ Designed for Harsh Environments
★ Optional High Brightness/Sunlight Readable
★ Optional AG/AR/AF/AS Film
★ **Optional Antibacterial Film Option, disinfects 99.99% of Harmful Bacteria**



PSE BSMI FCC CE RoHS ISO9001

Display Specifications

Model Name	**NTSP240XXXB-XXXXX-500***	Display Mode	**TN Type, Normally White**
Screen Diagonal	**609.7mm (24.0 inch)**	Response Time	**5 msec.**
Display Area	**531.36x298.89 mm**	Backlight Unit	**LED (white LED)**
Resolution	**1920x1080 (FHD)**	Viewing Angle (L/R, U/D)	**170°/160° (CR=10)**
Contrast Ratio	**1000:1**	Backlight Lifetime	**30000 HRS**
Display Ratio	**16:9**	Operating Temp.	**0~50℃**
Support Color	**16.7M Colors**	Storage Temp.	**-20~60℃**
Pixel Pitch	**276.75x276.75 um**	Surface Treatment	**Anti-glare, Hardness 3H**

* X = A~Z, 0~9 (Depends on options)

General Options

Brightness			
	Brightness	**Environment**	**Model Name**
Standard	**250nits**	**General (Indoor Environment)**	**NTSP240NXXB-XXXXX-500**
Option 1	600nits	High Brightness	NTSP2406XXB-XXXXX-500
Option 2	1000nits	Outdoor Environment	NTSP240AX2B-XXXXX-500
Option 3	1500nits	Sunlight Readable	NTSP240FX2B-XXXXX-500

* Check the data sheet NTSP240XB-2

Material of Cabinet		
	Description	**Model Name**
Standard	**Galvanized steel (SECC)**	**NTSP240XXXB-XXXXS-500**
Option 1	Stainless Steel	NTSP240XXXB-XXXXL-500
Option 2	Aluminum	NTSP240XXXB-XXXXA-500

Color of Cabinet		
	Description	Model Name
Standard	**Sliver**	**NTSP240XXXB-XXSXX-500**
Option 1	Black	NTSP240XXXB-XXBXX-500
Option 2	White	NTSP240XXXB-XXWXX-500
Options	Other Color	NTSP240XXXB-XXXXX-500

* X = A~Z, 0~9 (Depends on Color)

TFT-LCD Module

LVDS Pin Assignment			
Pin #	**Symbol**	**Description**	**Remark**
1	RxO0-	Negative LVDS Differential Data Input (Old Data)	
2	RxO0+	Positive LVDS Differential Data Input (Old Data)	
3	RxO1-	Negative LVDS Differential Data Input (Old Data)	
4	RxO1+	Positive LVDS Differential Data Input (Old Data)	
5	RxO2-	Negative LVDS Differential Data Input (Old Data)	
6	RxO2+	Positive LVDS Differential Data Input (Old Data)	
7	GND	Ground	
8	RxOCLK-	Negative LVDS Differential Clock Input (Old Clock)	
9	RxOCLK+	Positive LVDS Differential Clock Input (Old Clock)	
10	RxO3-	Negative LVDS Differential Data Input (Old Data)	
11	RxO3+	Positive LVDS Differential Data Input (Old Data)	
12	RxE0-	Negative LVDS Differential Data Input (Even Data)	
13	RxE0+	Positive LVDS Differential Data Input (Even Data)	
14	GND	Ground	
15	RxE1-	Negative LVDS Differential Data Input (Even Data)	
16	RxE1+	Positive LVDS Differential Data Input (Even Data)	
17	GND	Ground	
18	RxE2-	Negative LVDS Differential Data Input (Even Data)	
19	RxE2+	Positive LVDS Differential Data Input (Even Data)	
20	RxECLK-	Negative LVDS Differential Clock Input (Even Clock)	*
21	RxECLK+	Positive LVDS Differential Clock Input (Even Clock)	
22	RxE3-	Negative LVDS Differential Data Input (Even Data)	
23	RxE3+	Positive LVDS Differential Data Input (Even Data)	
24	GND	Ground	
25	NC	No Connection	
26	NC	No Connection	
27	NC	No Connection	
28	VDD	Power Supply Input Voltage	
29	VDD	Power Supply Input Voltage	
30	VDD	Power Supply Input Voltage	

* Connector : P-TWO AL230F-A0G1D-P or STM MSCKT2407P30HB

* Mating Connector : JAE FI-X30HL Locked Type or Compatible.

Recommended Operating Condition					
Symbol	Description	Min.	Typ.	Max.	Remark
VDD	Power Supply Input Voltage	4.5V	5.0V	5.5V	
IDD	Power Supply Input Current (RMS)	-	0.65A	0.94A	VDD=5V, Black Pattern, Fv=60Hz
			0.8A	1.15A	VDD=5V, Black Pattern, Fv=75Hz
PDD	VDD Power Consumption	-	3.25W	4.7W	VDD=5V, Black Pattern, Fv=60Hz
			4W	5.75W	VDD=5V, Black Pattern, Fv=75Hz
IRush	Inrush Current	-	-	3.0A	
VDDrp	Allowable VDD Ripple Voltage	-	-	500mV	VDD=5V, Black Pattern, Fv=75Hz

Input Timing							
Symbol	Description		Min.	Typ.	Max.	Unit	Remark
Tv	Vertical Section	Period	1092	1130	1895	Th	
Tdsip (v)		Active	1080	1080	1080	Th	
Tblk (v)		Blanking	12	50	815	Th	
Fv		Frequency	30	60	76	Hz	
Th	Horizontal Section	Period	1034	1050	1100	Tclk	
Tdisp (h)		Active	960	960	960	Tclk	
Tblk (h)		Blanking	74	90	140	Tclk	
Fh		Frequency	55	68	91	KHz	
Tclk	LVDS Clock	Period	10.6	14.0	17.7	ns	I/Fclk
Fclk		Frequency	56.5	71.2	94.0	MHz	

Input Timing					
Symbol	Min.	Typ.	Max.	Unit	Remark
T1	0.5	-	10	ms	
T2	0	-	50	ms	
T3	500	-	-	ms	
T4	100	-	-	ms	
T5	0		50	ms	
T6	0		200	ms	
T7	1000	-	-	ms	

Backlight Unit

Connector Assignment			
Pin #	**Symbol**	**Description**	**Remark**
1	**Ch1**	**LED Current Feedback Terminal (Channel 1)**	
2	**Ch2**	**LED Current Feedback Terminal (Channel 2)**	
3	**V_{SLED}**	**LED Power Supply Voltage Input Terminal**	
4	**V_{SLED}**	**LED Power Supply Voltage Input Terminal**	
5	**Ch3**	**LED Current Feedback Terminal (Channel 3)**	
6	**Ch4**	**LED Current Feedback Terminal (Channel 4)**	

* Connector : Entry Industrial 3707K-S06N-21 (Black) (Locking type, Wire Harness)

Recommended Operating Condition					
Symbol	**Description**	**Min.**	**Typ.**	**Max.**	**Remark**
Is	LED String Current	-	90mA	99mA	100% Duty Ratio of LED Chip.
Vs	LED String Voltage	22.5V	25.2V	27.9V	Is=90mA@100% Duty Ratio.
△Vs	Maximum Vs Voltage Deviation of Light Bar	-	-	1.8V	Is=90mA@100% Duty Ratio.
P_{BLU}	LED Light Bar Power Consumption	-	9.1W	10.0V	
LT_{LED}	LED Lifetime	30,000 Hours			
OVP	Over Voltage Protection in System Board	110% Vsmax Volt			

Supported OS

Windows	**Win7, Win8, Win10 ↑**
Linux	**Kernel 2.6.24 ↑**
Android	**3.0 ↑**
Mac	**10.5.x ↑ (Intel CPU)**

Touch Specifications

Touch Technology	**Projected Capacitive**	Transparency	**≧87%**
Allowed Touch Points	**10 points**	Accuracy	**99.00%**
Interface	**USB/RS232 (Optional)**	Thickness of Cover Lens	**2.9±0.2mm**
Hardness of Cover Lens	**7H**		

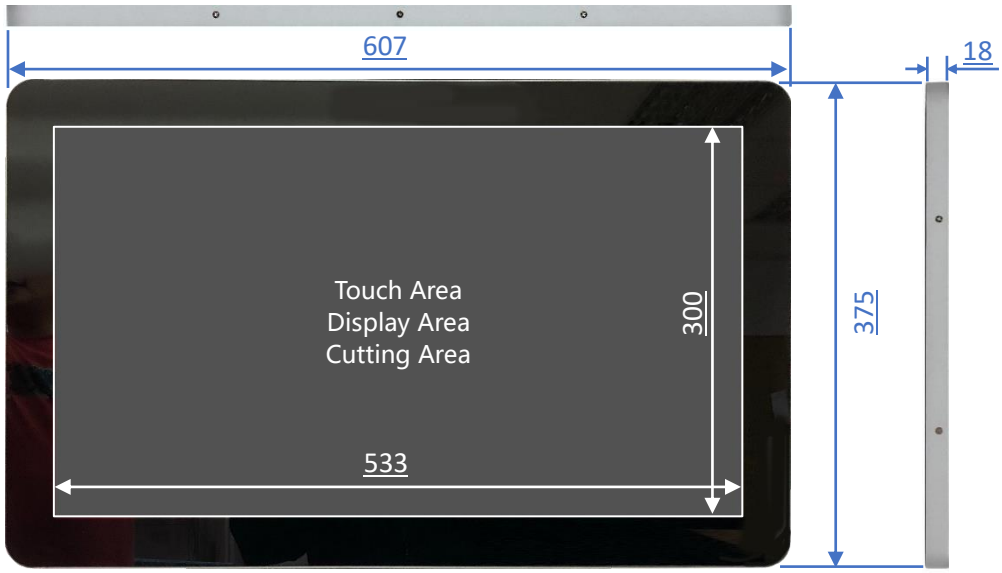
* True Flat, 1mm Bezel

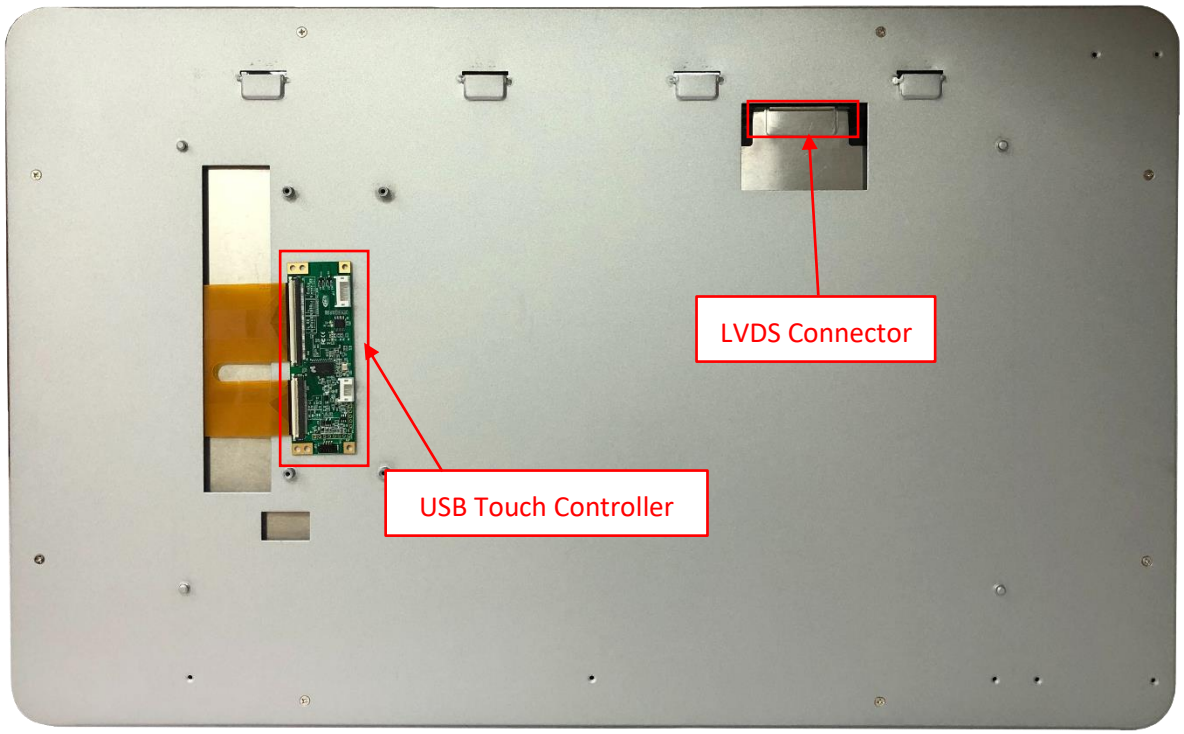
Active Stylus Option	
Technology	**Active Capacitive Coupled**
Working Frequencies	**90~250 KHZ**
Pressure Level	**256~1024 Levels**
Side Buttons	**2 Side Buttons (Eraser, Barrel)**
Active Tip Force	**5~25g**
Max. Tip Force	**400g**

Surface Film Options		
	Description	**Model Name**
Standard	**(none)**	**NTSP240XXXB-00XXX-500**
Option	Antibacterial (AB Film)	NTSP240XXXB-ABXXX-500
Option	Anti-Glare +UV-Cut (AG+UV Film)	NTSP240XXXB-GUXXX-500
Option	Anti-Glare +Fouling/Fingerprint (AG+AFP Film)	NTSP240XXXB-GPXXX-500
Option	Anti-Reflective +Fouling/Fingerprint (AR+AFP Film)	NTSP240XXXB-RPXXX-500
Option	Anti-Glare +Reflective +Fouling/Fingerprint (AG+AR+AFP Film)	NTSP240XXXB-GRXXX-500
Option	Anti-Spy (AS Film)	NTSP240XXXB-SFXXX-500

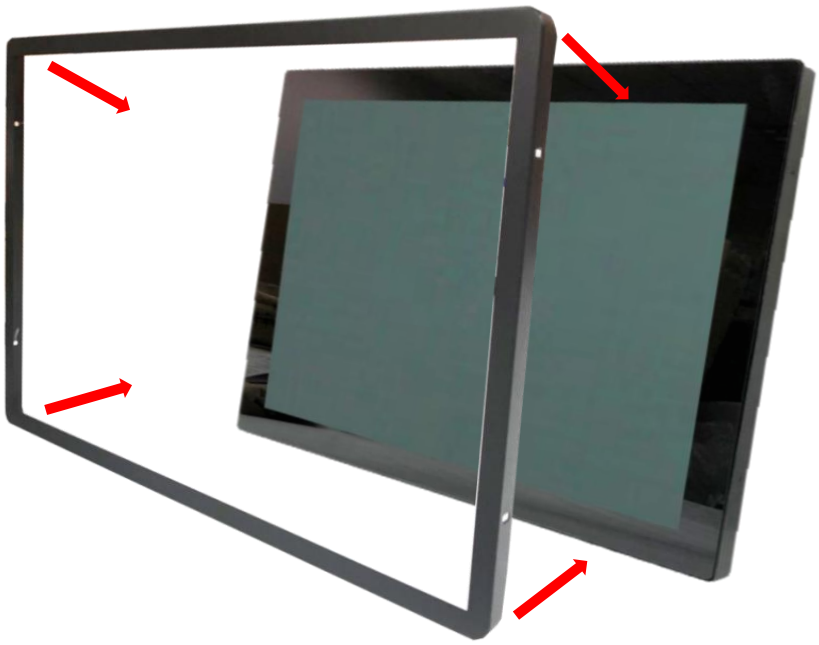
Physical Specifications

Dimension (Max)	**607x375x18(±1)mm**	Net Weight	**≦4.4 KG**
		Gross Weight	**≦5.6 KG**



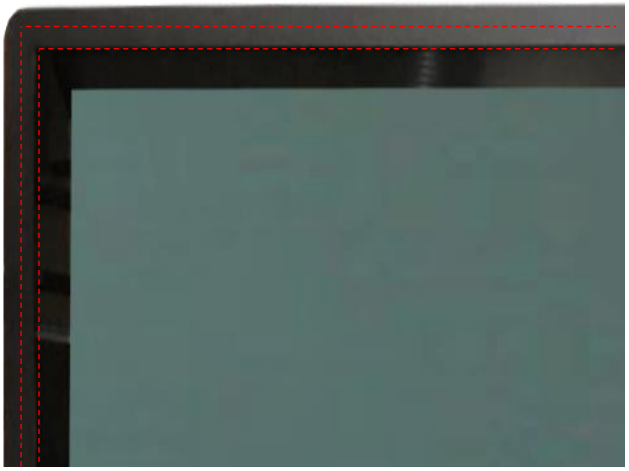


Optional Accessories (Front Cover)



The standard **NTSP240** is true flat surface, with only 1mm metal bezel.
To protect the corners of the touch screen, the **Front Cover** can be added.

The watertight gasket can be added between the **Front Cover** and **NTSP240.**
It complies IP65 on front.



Optional Accessories (Open-frame Brackets)