

# Product Specifications

<b>Customer</b>	
<b>Model</b>	<b>NTSP150XXXB V500</b>

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



Records of Revision			
Vision	Modifying	Old Description	New Description
V2002.1	Preliminary Specifications		
<b>V2002.2</b>	<b>Revise Model Number of Surface Film</b>		

## Features

- ★ The NTSP150XXXB is a barebone of 15" PCAP touch bonded on 15" TFT LCD.
- ★ 1024x768 (XGA) Resolution, LVDS interface.
- ★ IPS Wide Viewing Angle Technology (176°/176°)
- ★ Wide Working Temperature (-30°~70°)
- ★ 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	<b>NTSP150XXXB-XXXXX-500*</b>	Display Mode	<b>IVA Mode, Normally Black</b>
Screen Diagonal	<b>15.0 inch</b>	Response Time	<b>21 msec.</b>
Display Area	<b>304.1x228.1</b>	Backlight Unit	<b>LED (white LED)</b>
Resolution	<b>1024x768</b>	Viewing Angle (L/R, U/D)	<b>176°/176°</b>
Contrast Ratio	<b>2500:1</b>	Backlight Lifetime	<b>70000 HRS</b>
Display Ratio	<b>4:3</b>	Operating Temp.	<b>-30~70°C</b>
Support Color	<b>16.7M Colors</b>	Storage Temp.	<b>-40~70°C</b>
Pixel Pitch	<b>297x297 um</b>	Surface Treatment	<b>Anti-glare, Hardness 3H</b>

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

## Electrical Absolute Ratings

TFT LCD Module		
Item	Min.	Max.
Power Supply Voltage (VCC)	<b>-0.3V</b>	<b>4V</b>

Backlight Unit		
Item	Min.	Max.
Converter Voltage (Vi)	<b>-0.3V</b>	<b>18V</b>
Enable Voltage (EN)	<b>---</b>	<b>5.5V</b>
Backlight Adjust (ADJ)	<b>---</b>	<b>5.5V</b>



## Electrical Characteristics

TFT LCD Module			
Item	Min.	Typ.	Max.
Power Supply Voltage (VCC)	-3.0 V	3.3 V	3.6 V
Ripple Voltage (VRP)	-	-	100mVp-p
Rush Current (IRUSH)	-	-	(TBD)
Power Supply Current (ICC) White	-	(TBD)	(TBD)
Power Supply Current (ICC) Black	-	(TBD)	(TBD)
LVDS Differential Input Voltage (VID)	200mV	-	600mV
LVDS Common Input Voltage (VIC)	1.0V	1.2V	1.4V
Differential Input Voltage for LVDS Receiver Threshold "H" Level (VIH)	-	-	100mV
Differential Input Voltage for LVDS Receiver Threshold "L" Level (VIL)	-100mV	-	-
Terminating Resistor (RT)	-	100Ohm	-

Backlight Unit			
Item	Min.	Typ.	Max.
Converter Power Supply Voltage (VI)	10.8V	12.0V	13.2V
Converter Power Supply Current @VI=12V	(0.57A)	(0.67A)	(0.77A)
Rush Current (IRUSH)	-	-	(5V)
Backlight Power Consumption (PBL) @VI=12V	-	-	(8.04W)
EN Control Level Backlight On	2.0V	3.3V	5.0V
EN Control Level Backlight Off	0	-	0.8V
PWM Control Level PWM High Level	2.0V	3.3V	5.0V
PWM Control Level PWM Low Level	0	-	0.15V
PWM Control Duty Ratio @200Hz	1%	-	100%
PWM Control Frequency (FPWM)	190Hz	200Hz	20KHz



## Input Terminal Pin Assignment

TFT LCD Module			
Pin No.	Function	Polarity	Note
1 VCC	Power Supply +3.3V (Typical)		
2 VCC	Power Supply +3.3V (Typical)		
3 GND	Ground		
4 LR/UD	Reverse Scan Control H or NC = Normal Mode. L = Horizontal / Vertical Reverse Scan.		
5 RX0-	LVDS Differential Data Input	Negative	
6 RX0+	LVDS Differential Data Input	Positive	
7 GND	Ground		
8 RX1-	LVDS Differential Data Input	Negative	
9 RX1+	LVDS Differential Data Input	Positive	
10 GND	Ground		
11 RX2-	LVDS Differential Data Input	Negative	
12 RX2+	LVDS Differential Data Input	Positive	
13 GND	Ground		
14 RXCLK-	LVDS Differential Data Input	Negative	
15 RXCLK+	LVDS Differential Data Input	Positive	
16 GND	Ground		
17 RX3-	LVDS Differential Data Input	Negative	
18 RX3+	LVDS Differential Data Input	Positive	
19 GND	Ground		
20 SEL68	LVDS 6/8 bit Select Function Control High : 6 bit Input Mode Low or NC : 8 bit Input Mode		*

\* "Low" stands for 0V. "High" stands 3.3V. "NC" stands for "No Connection"



## Input Terminal Pin Assignment (Continued)

Backlight Unit (Converter Connector Pin)		
Pin No.	Function	Note
1 VI	Converter Input Voltage	12V
2 VGND	Converter Ground	Ground
3 EN	Enable Pin	3.3V
4 ADJ	Backlight Adjust	PWM Dimming (Hi:3.3Vdc, Lo:0Vdc)
5 NC-	Not Connect	

\* Connector : 3808K-F05N-03L (Entry) or Equivalent

\* User' s Connector : H208K-P05N-02B (Entry) or Equivalent.

## Interface Timing

Signal	Item	Min.	Typ.	Max.	Note
LVDS Clock	Frequency (FC)	53.35Mhz	65Mhz	80Mhz	
	Period (TC)	12.5ns	15.38ns	18.75ns	
	Input Cycle to Cycle Jitter (TRCL)	---	---	(100ns)	
	Input Clock to Data Skew (TLVCCS)	-0.02*TC ps	-	0.02*TC ps	
	Spread Spectrum Modulation Range	-	-	1.05*FC Mhz	
	Spread Spectrum Modulation Freq.	-	-	200Khz	
Vertical Display Term	Frame Rate (FR)	--	60Hz	--	
	Total (TV)	780Th	806Th	1200Th	
	Active Display (TVD)	768Th	768Th	768Th	
	Blank (TVB)	(TV-TVD)Th	38Th	(TV-TVD)Th	
Horizontal Display Term	Total	1140TC	1344TC	1600TC	
	Active Display	1024TC	1024TC	1024TC	
	Blank	(TH-THD)TC	320TC	(TH-THD)TC	



## General Options

Brightness			
	Brightness	Environment	Model Name
<b>Standard</b>	<b>300nits</b>	<b>General (Indoor Environment)</b>	<b>NTSP150NXXB-XXXXX-500</b>
Option 1	1000nits	Outdoor Environment	NTSP150AXXB-XXXXX-500
Option 2	1500nits	Sunlight Readable	NTSP150FXXB-XXXXX-500

Material of Cabinet		
	Description	Model Name
<b>Standard</b>	<b>Galvanized steel (SECC)</b>	<b>NTSP150XXXB-XXXXS-500</b>
Option 1	Stainless Steel	NTSP150XXXB-XXXXL-500
Option 2	Aluminum	NTSP150XXXB-XXXXA-500

Color of Cabinet		
	Description	Model Name
<b>Standard</b>	<b>Black</b>	<b>NTSP150XXXB-XXBXX-500</b>
Option 1	White	NTSP150XXXB-XXWXX-500
Option 2	Sliver	NTSP150XXXB-XXSXX-500
Options	Other Color	NTSP150XXXB-XXXXX-500

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

## Supported OS

Windows	<b>Win7, Win8, Win10 ↑</b>
Linux	<b>Kernel 2.6.24 ↑</b>
Android	<b>3.0 ↑</b>
Mac	<b>10.5.x ↑ (Intel CPU)</b>

## Touch Specifications

Touch Technology	<b>Projected Capacitive</b>	Transparency	<b>≥87%</b>
Allowed Touch Points	<b>10 points</b>	Accuracy	<b>99.00%</b>
Interface	<b>USB/RS232 (Optional)</b>	Thickness of Cover Lens	<b>2.2±0.2mm</b>
Hardness of Cover Lens	<b>7H</b>		

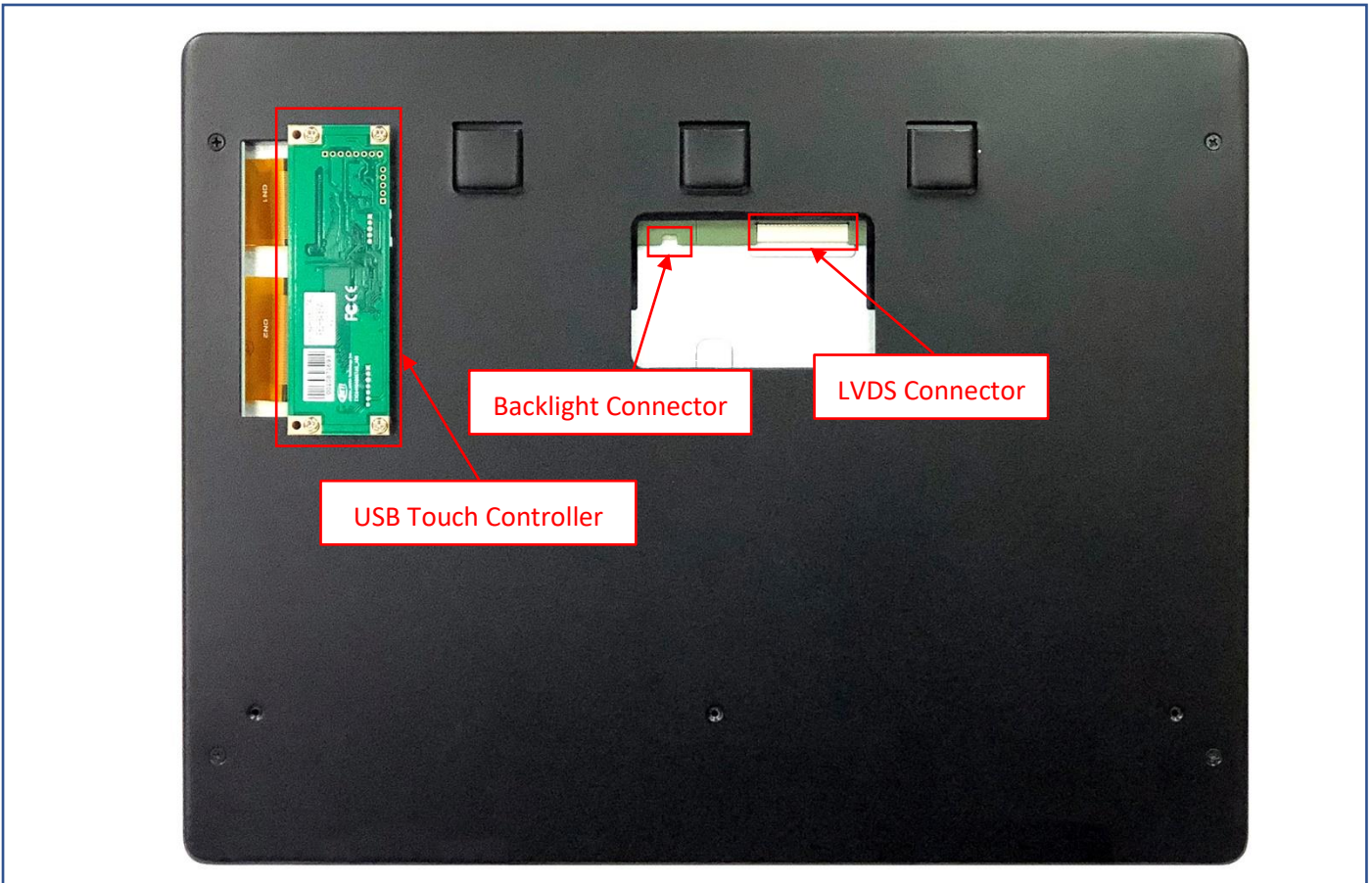
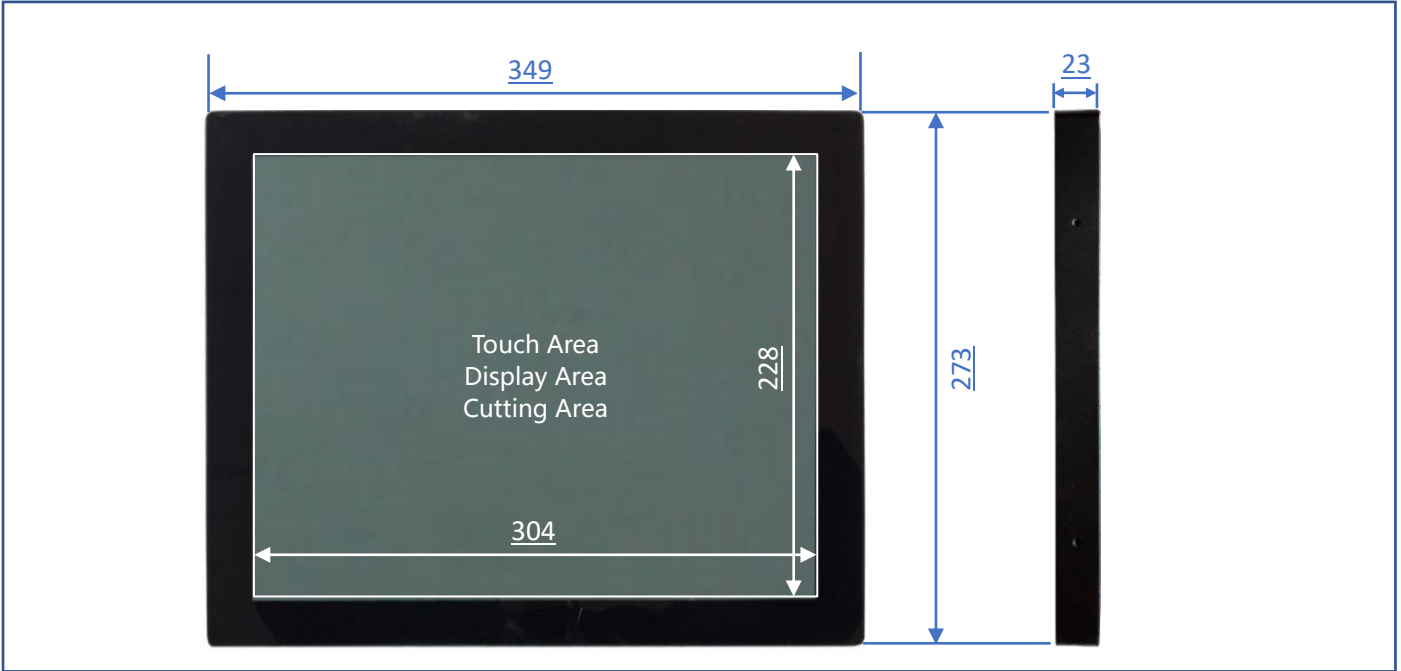


Active Stylus Option	
Technology	<b>Active Capacitive Coupled</b>
Working Frequencies	<b>90~250 KHZ</b>
Pressure Level	<b>256~1024 Levels</b>
Side Buttons	<b>2 Side Buttons (Eraser, Barrel)</b>
Active Tip Force	<b>5~25g</b>
Max. Tip Force	<b>400g</b>

Color of Cabinet		
	Description	Model Name
<b>Standard</b>	<b>(none)</b>	<b>NTSP150XXXB-<u>00</u>XXX-500</b>
Option	Antibacterial (AB Film)	NTSP150XXXB- <u>AB</u> XXX-500
Option	Anti-Glare +UV-Cut (AG+UV Film)	NTSP150XXXB- <u>GU</u> XXX-500
Option	Anti-Glare +Fouling/Fingerprint (AG+AFP Film)	NTSP150XXXB- <u>GP</u> XXX-500
Option	Anti-Reflective +Fouling/Fingerprint (AR+AFP Film)	NTSP150XXXB- <u>RP</u> XXX-500
Option	Anti-Glare +Reflective +Fouling/Fingerprint (AG+AR+AFP Film)	NTSP150XXXB- <u>GR</u> XXX-500
Option	Anti-Spy (AS Film)	NTSP150XXXB- <u>SF</u> XXX-500

## Physical Specifications

Dimension (Max)	<b>349x273x23(±1)mm</b>	Net Weight	≤ <b>2.8 KG</b>
		Gross Weight	≤ <b>3.6 KG</b>



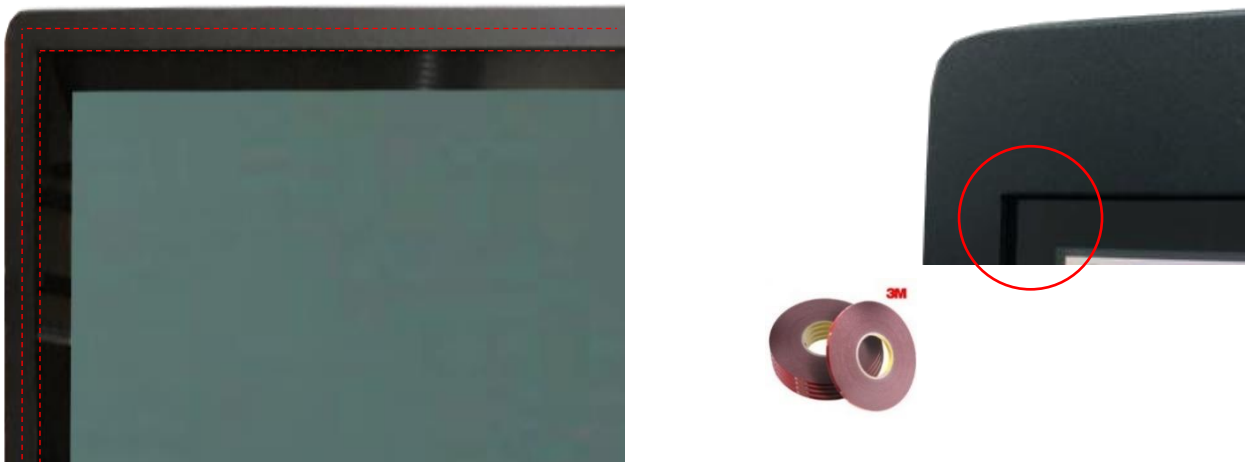
## Optional Accessories (Front Cover)



The standard **NTSP150** 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 **NTSP150**.  
It complies IP65 on front.



### Optional Accessories (Open-frame Brackets)

