AEx-1XXP(H)

15”, 15.6”, 19”, and 21.5” Full IP66 Stainless Steel Designed with M12 waterproof connector of Display Series.

User Manual

Release Date	Revision
Mar.2022	V1.7

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Revision History

Reversion	Date	Description
0.1	2017/11/24	For Preliminary Release
1.0	2017/11/29	Official version
1.1	2018/05/16	Modify power pin description
1.2	2018/06/22	Add Warning
1.3	2020/11/03	Modify 1.1, 1.2 and 2.3 pics.
1.4	2021/06/23	Add IECEX/ATEX Standards in P5 Modify Markings in P4
1.5	2021/11/25	Add Pin define information in 1.2
1.6	2022/01/20	Modify ATEX Standards and Notice, Certification information
1.7	2022/03/10	Add UKCA LOGO and Standards

Warning!

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, it may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Electric Shock Hazard – Do not operate the machine with its back cover removed. There are dangerous high voltages inside.

If you need to connect or reconnect M12 cables, please make sure turning off the power before all the replacement procedures and must in normal environment, Recommend use ATEx certificated IO cables.

Disclaimer

This information in this document is subject to change without notice. In no event shall Aplex Technology Inc. be liable for damages of any kind, whether incidental or consequential, arising from either the use or misuse of information in this document or in any related materials.

ATEX Instruction Guide

SAFETY INSTRUCTIONS

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Digital Electronics Corporation for any consequences arising out of the use of this material. A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

SCOPE

This present document applies when AEx-1XXP(H) Series bears  marking. They are supplied only with DC 9~36 V. This documentation has to be kept and always refer to those instructions for installation, operation, maintenance or evolution of your system.

Permitted zones of application

Refer to the section titled "Markings" to get information about the permitted zones of protection and the types of protection.

- AEx-1XXP(H) Series is installed in zone 2/22 hazardous areas must be certified and bear the  marking.
- Ensure with the marking that the terminals are compatible with the conditions permitted for the hazardous area at the site where it is being used.

Notice

1. Under certain extreme circumstances, the label may generate an ignition-capable level of electrostatic charge. Therefore the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on the label. In addition, the label shall only be cleaned with a damp cloth.

2. Warning – in locations where high external humidity and internal temperature variations (e.g. frequent on-off cycles) may cause condensation inside the equipment, the interior should be periodically inspected.

3. When the device is mounted in a hazardous area, connection and disconnection of external connectors while live is only permitted if the potentially explosive atmosphere is shown to be absent.

4. The "9-36" Vdc rated supply shall be protected such that transients are limited to a maximum of 119 V; no such protection is required for the signal lines.

5. Equipotential bonding facilities on the outside of enclosure are assessed as providing effective connection of a conductor with a cross-sectional area of at least 4 mm2, 10AWG, 600V wire

6. The equipment is suitable for use in Class I, division 2, groups A, B, C, D, Class II, Division2, Group F,G, T135℃, Class III OR non-hazardous locations only.

7. Warning- Do not use USB while the circuit is live unless the area is known to be non-hazardous.

8. Electrostatic charging hazard - Clean only with a damp cloth.

Markings

Markings applied to the AEx-1XXP(H) Series Graphic Operator Interface, are as follows:

AEx-1XXP(H) Series
Ex ec ic IIC T4 Gc **CID2, CIID2, CIII, IP66** **Ex tc IIIC T135°C Dc** **Power Input Voltage: DC 9~36V** WARNING: Read instruction manual before installation and use

Below designated standards were certified with conforming the relevant regulations:

New standards		
II 3GD	Ex ec ic IIC T4 Gc Ex tc IIIC T135°C Dc	
IECEx	ATEX	UKCA
IEC 60079-0:2017	EN 60079-0:2018	BS 60079-0:2018
IEC 60079-11:2011	EN 60079-11:2012	BS 60079-11:2012
IEC 60079-7:2015 +AMD1:2017	EN 60079-7:2015/A1:2018	BS 60079-7:2015/A1:2018
IEC 60079-31:2013	EN 60079-31:2014	BS 60079-31:2014

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Chapter 1 Getting Started

1.1 Features

- Full Flat Bezel and Fanless Design
- Total IP66 Grade with M12 Waterproof connector
- Wide range DC 9~36V Power Input
- Support Panel & VESA mount
- Stainless steel OSD Function Key
- High Brightness LCD for optional (only for 15” and 19”)
- SUS 316 Stainless Steel
- ATEX Zone2/22, IECEx and C1D2/C2D2/C3/UKCA Certified

1.2 Specifications

<table>
<tr><th></th><th colspan="2">AEx-1XXP(H)</th></tr>
<tr><td colspan="3">Outside I/O Port</td></tr>
<tr><td>VGA</td><td colspan="2">1 x M12 / VGA with Waterproof cover and chain</td></tr>
<tr><td>USB</td><td>1 x M12 8-pin for 2 x USB2.0 for Touch Control with Waterproof cover and chain
<table>
<tr><th>CN1</th><th>Pin Define</th></tr>
<tr><td>1</td><td>USB1 5V</td></tr>
<tr><td>3</td><td>D1-</td></tr>
<tr><td>4</td><td>D1+</td></tr>
<tr><td>7</td><td>GND</td></tr>
<tr><td>2</td><td>USB2 5V</td></tr>
<tr><td>5</td><td>D2-</td></tr>
<tr><td>6</td><td>D2+</td></tr>
<tr><td>8</td><td>GND</td></tr>
</table></td><td> 
</td></tr>
<tr><td>OSD control</td><td colspan="2">1 x M12 8-pin for OSD cable and external BOX design with waterproof cover and cahin</td></tr>
<tr><td>Power</td><td>1 x M12 3-pin DC Power connector with Waterproof cover and chain</td><td></td></tr>
<tr><td colspan="3">Power</td></tr>
<tr><td>Power Input</td><td colspan="2">DC 9~36V</td></tr>
</table>

Touch Screen	
Type	Projected capacitive touch screen
Interface	USB
Light Transmission	Projected capcitive touch screen: over 90%
altitude elevationMechanical	
Construction	316 Stainless Steel Chassis
Mounting	Panel mount (option) / VESA mount 100 x 100 (default)
IP Rating	Full IP66 designed
Environmental	
Operating temperature	-20~60°C
Storage temperature	-30~70°C
Altitude limit for application	Under 2000m
Overvoltage category	CAT II
Pollution degree	2
Humidity	10 to 95% @ 40°C, non- condensing
Certification	CE / FCC Class A IECEx Certification: Ex ec ic IIC T4 Gc Ex tc IIIC T135°C Dc ATEX Certification: Ⓔx II 3 GD Certification: Class I, Division2, Group A,B,C,D,T4 Class II, Division2, Group F,G, T135℃ Class III ANSI/ISA 12.12.01-2013 CSA Std.C22.2 No213-1987 CSAE 22UKEX 1073X

- **Power Consumption and Mechanical Specifications**

	AEx-115P(H)	AEx-116P	AEx-119P(H)	AEx-121P
Power Consumption				
Power Consumption	MAX: 17W	MAX: 17W	MAX: 21W	MAX: 24W
Mechanical				
Dimensions(mm)	399 x 324 x 70	440 x 290 x 75	470 x 388.6 x 75	571 x 362 x 75.1
Net Weight(kg)	8.5	9.6	11.5	12.3
Dipslay				

Display Type	15” color TFT LCD		15.6” color TFT LCD	19” color TFT LCD		21.5” color TFT LCD
Max. Resolution	1024 x 768		1920 x 1080	1280 x 1024		1920 x 1080
Max. Colors	16.2M/ 262K-STD	16.2M/ 262K-HB	16.7M	16.7M		16.7M
Contrast Ratio	800: 1		700: 1	1000: 1		5000: 1
Luminance(cd/m^2)	450	1000	400	350	1000	300
Viewing Angle	160(H) / 150(V)		160(H) / 140(V)	170(H) / 160(V)		178(H) / 178(V)
Backlight Lifetime	70,000hrs	50,000hrs	50,000hrs	70,000hrs	50,000hrs	50,000 hrs

1.3 Dimensions

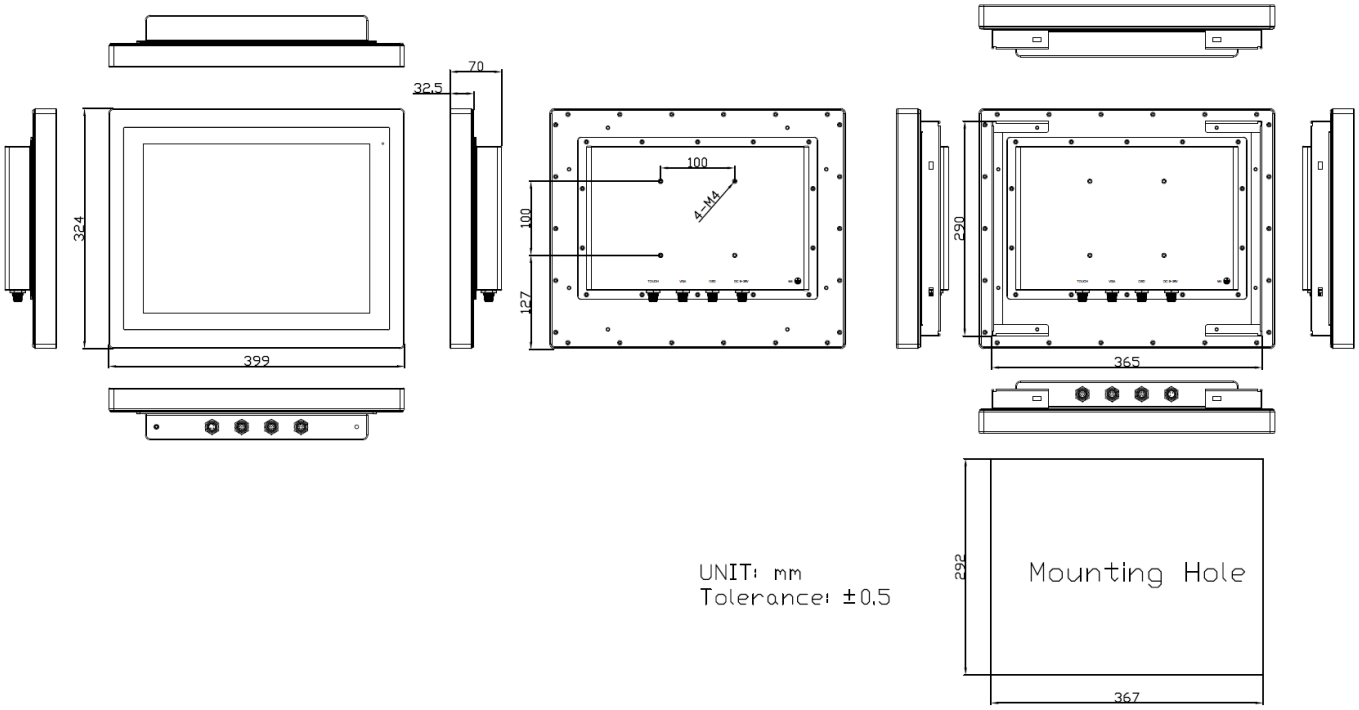


Figure 1.1: Dimensions of AEx-115P(H)

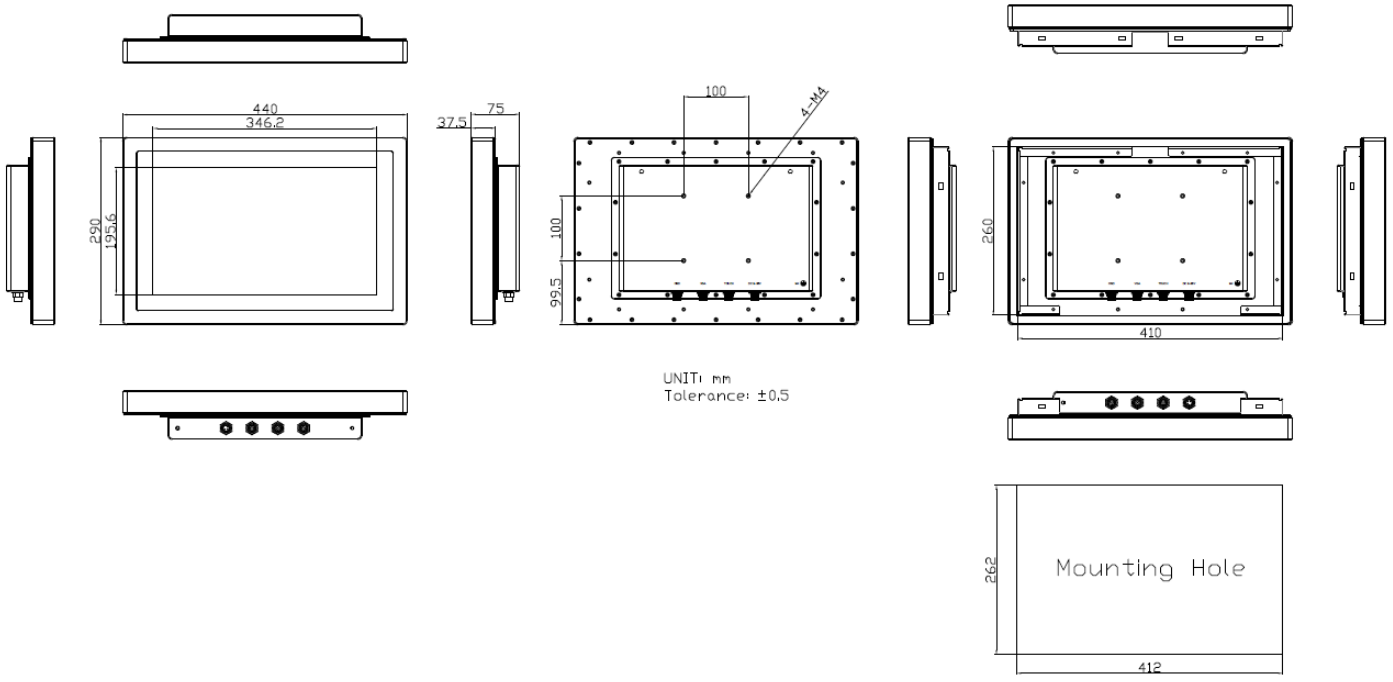


Figure 1.2: Dimensions of AEx-116P

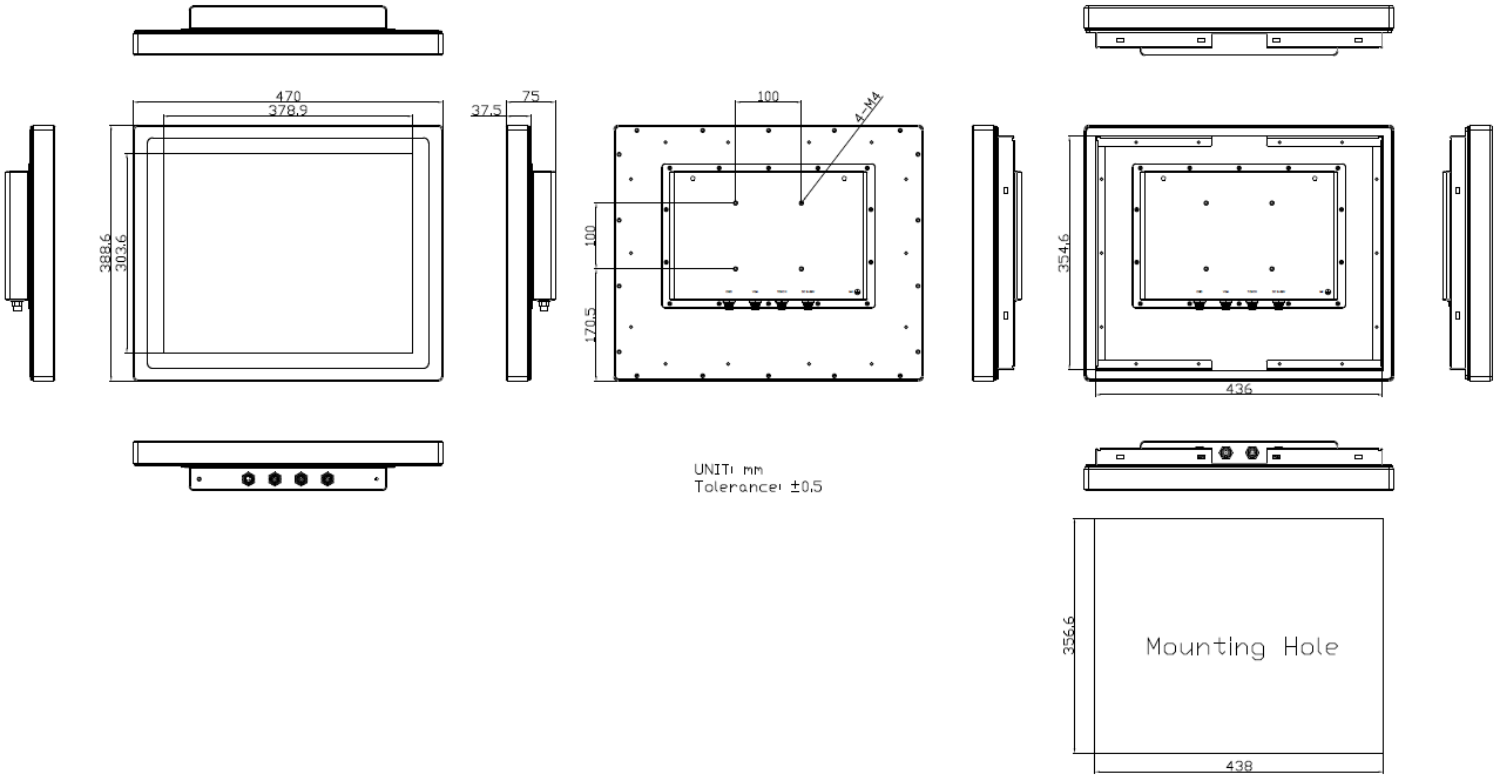


Figure 1.3: Dimensions of AEx-119P(H)

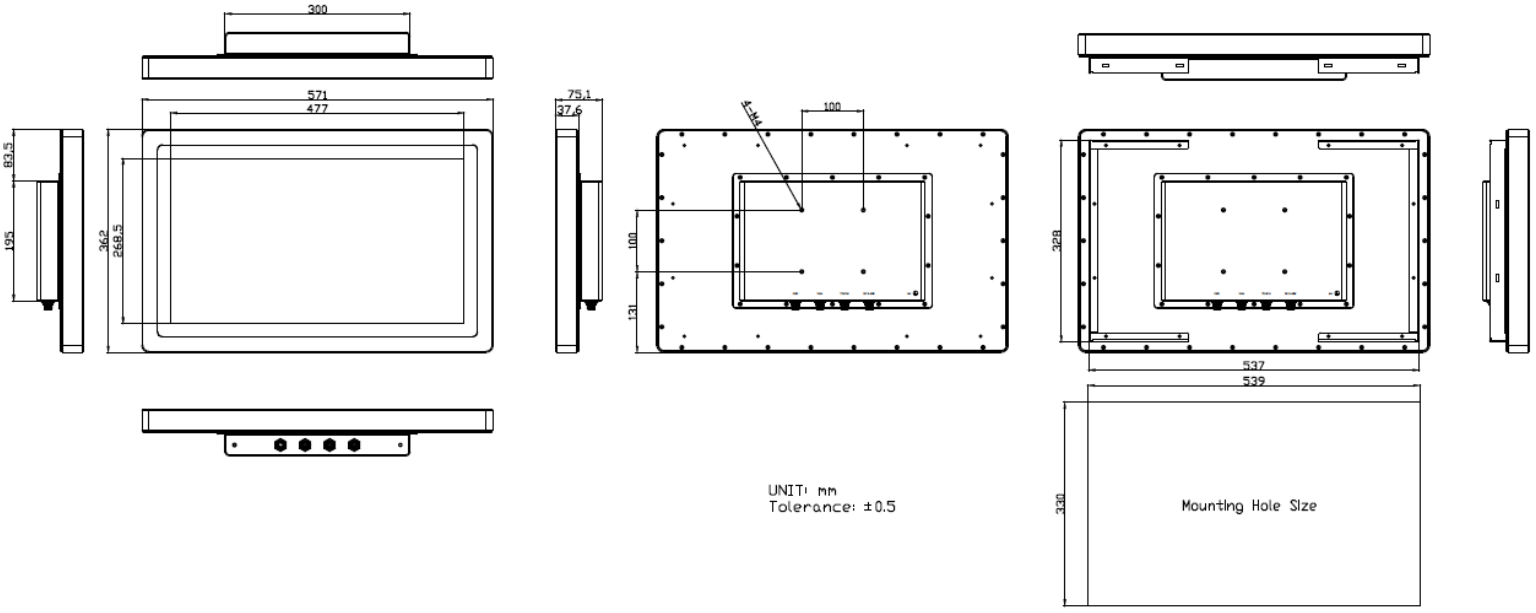


Figure 1.4: Dimensions of AEx-121P

1.4 Brief Description of AEx-1XXP(H) Series

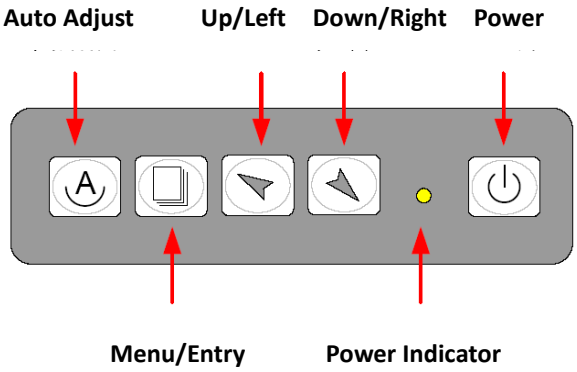
AEx-1XXP(H) Series with TB-6029 AD board is an full IP66 designed by Stainless Steel chassis display, which comes with 15”, 15.6”, 19”, and 21.5” color TFT LCD. The optional high brightness 1,000nits LCD is ideal for sunlight readable semi-outdoor applications but only for 15” and 19”. Furthermore, AEx-1XXP(H) series are designed by full waterproof, dust-proof and with M12 connector. The model series supports VGA, USB, OSD, power input, and it can be VESA 100 x 100 mounted. AEx-1XXP(H) series has more outstanding features, thus you can use it in some difficult environment and give the best in monitoring and control applications.

Figure 1.5: Front View of AEx-1XXP(H)

Figure 1.6: Rear View of AEx-1XXP(H)

Chapter 2 OSD

2.1 AD Board OSD Functions



Power switch: To turn ON or OFF the power

Shift the icon to the right side or shift it up

Shift the icon to the left side or shift it down

Menu: To enter OSD menu for related icon and item.

Auto Button: One-touch auto adjustment

1.) Getting into Burn-in Mode

Before setting into a burn-in mode, first disconnect the AC power cord. Then press (don't let them go) the buttons until the AC power cord is connected and the "RGB" appears on the top left corner of your screen. Now it can be put into the burn-in mode for changing colors.

2.) Getting Out of Burn-in Mode

Before getting out of the burn-in mode, please first disconnect the AC power cord. Then press the button (If not workable, press the button and don't let them go) until the AC power cord is connected. Please don't let your fingers go until the AC power cord is connected again and the wording of "RGB" appears on the top left corner of your screen, and wait for 3 second. Under the non-signal entry situation, if **Cable Not Connected** is seen, exit is thus successfully made.

When the Burn-in Mode is Unable to Eradicate…

1.) If the “RGB” is still on the top left corner of the screen, press to enter “Miscellaneous” and choose “Reset”, and then **Yes,** and press . When the screen goes black, disconnect power and repeat the above steps.

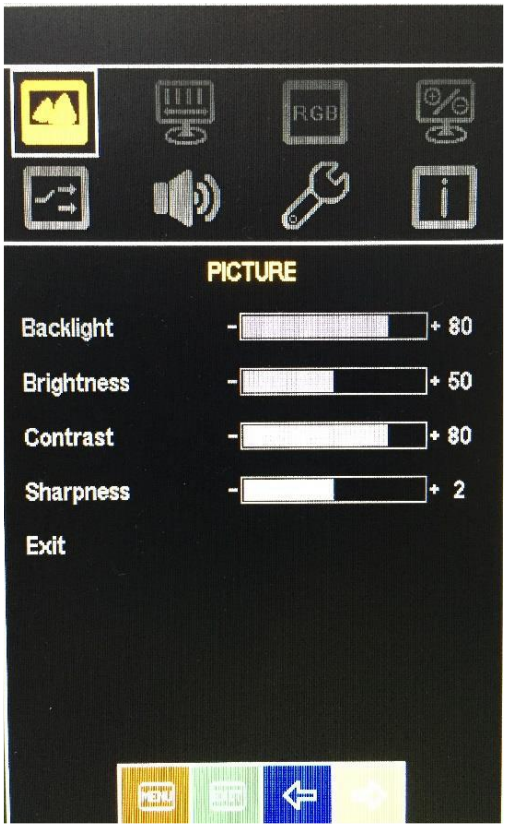
2.) If the “RGB” is not found, disconnect the AC power cord first. Then press the buttons (don’t let them go) until the AC power cord is connected, and wait for 2 to 3 seconds. When “RGB” appears, repeat the above steps.

2.2 OSD Controls

To make any adjustment, select the following:

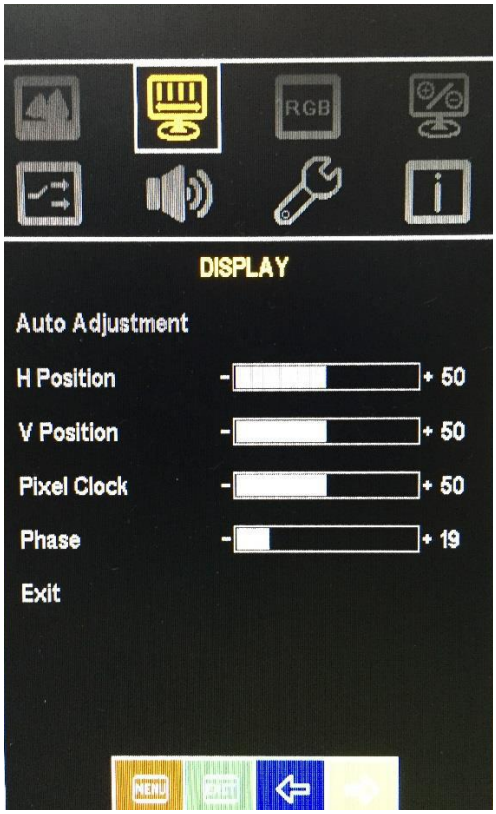
1. Press (Menu) to show the OSD menu or disable the OSD menu.
2. Select the icon that you wish to adjust with the (/ or +/-) key in the menu.
3. Press (Menu) and then choose the item with the (/ or +/-) key.
4. Press (Menu) and then adjust the quality with the (/ or +/-) key.

2.3 Main Menu



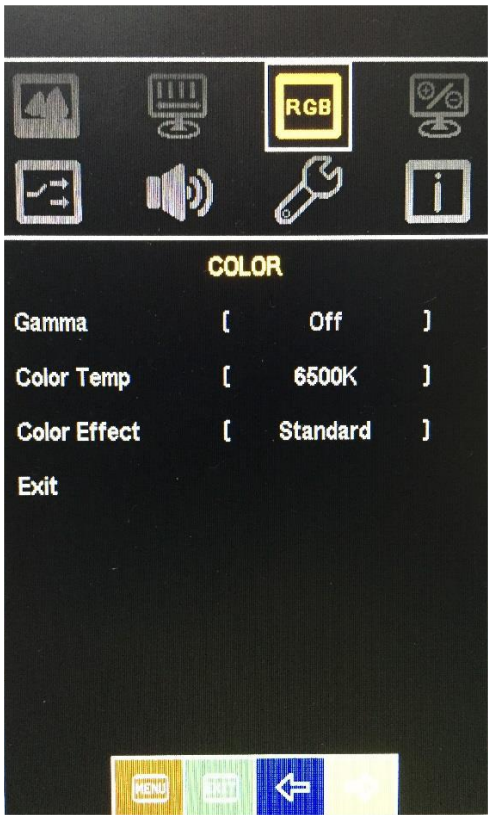
In the **PICTURE**, there are the following items:

- Backlight
- Brightnaess
- Contrast
- Sharpness
- Exit



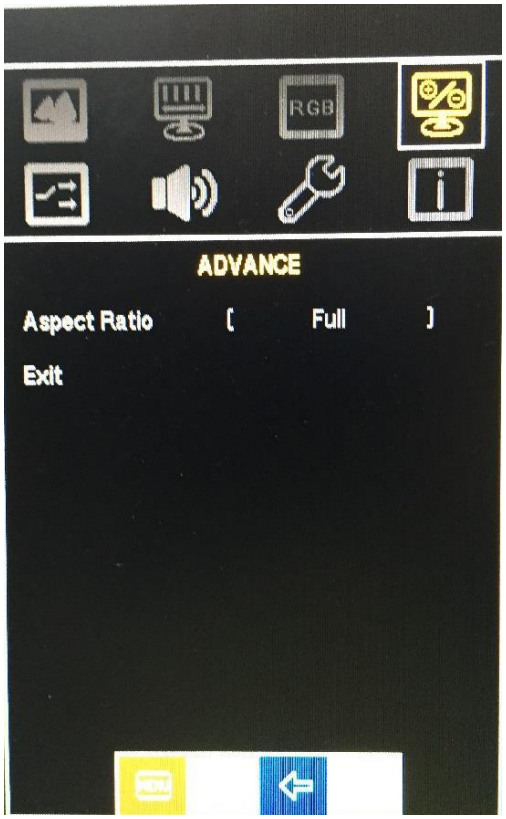
In the **DISPLAY**, there are the following items:

- AutoAdjustment
- H Position
- V Position
- Pixel Clock
- Phase
- Exit



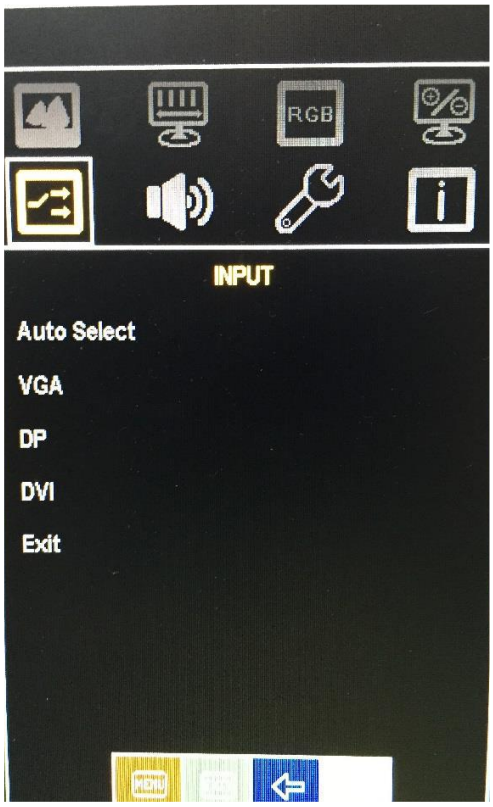
In the **COLOR**, there are the following items:

- Gamma
- Color Temp
- Color Effect
- Exit



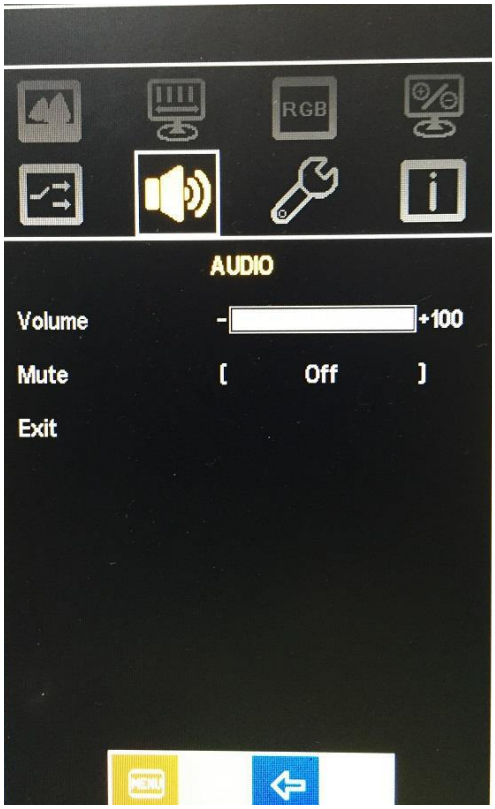
In the **ADVANCE**, there are the following item

- Aspect Ratio
- Exit



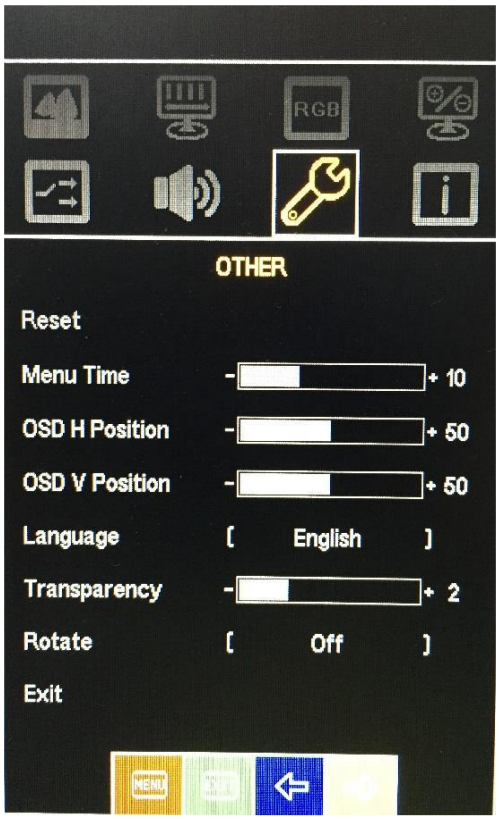
In the **INPUT**, there are the following items:

- Auto Select
- VGA
- DP
- DVI
- Exit



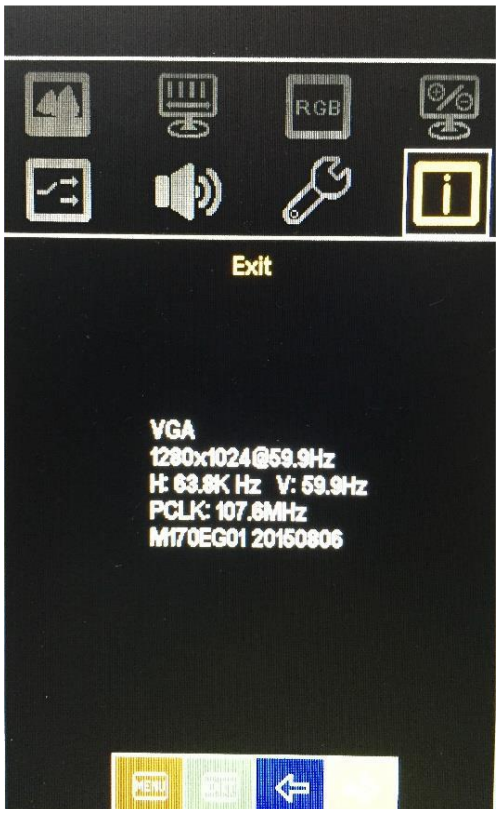
In the **AUDIO**, there are the following items:

- Volume
- Mute
- Exit



In the **OTHER**, there are the following items:

- Reset
- Menu Time
- OSD H Position
- OSD V Position
- Language
- Transparency
- Rotate
- Exit



Exit part.

Chapter 3 Installation

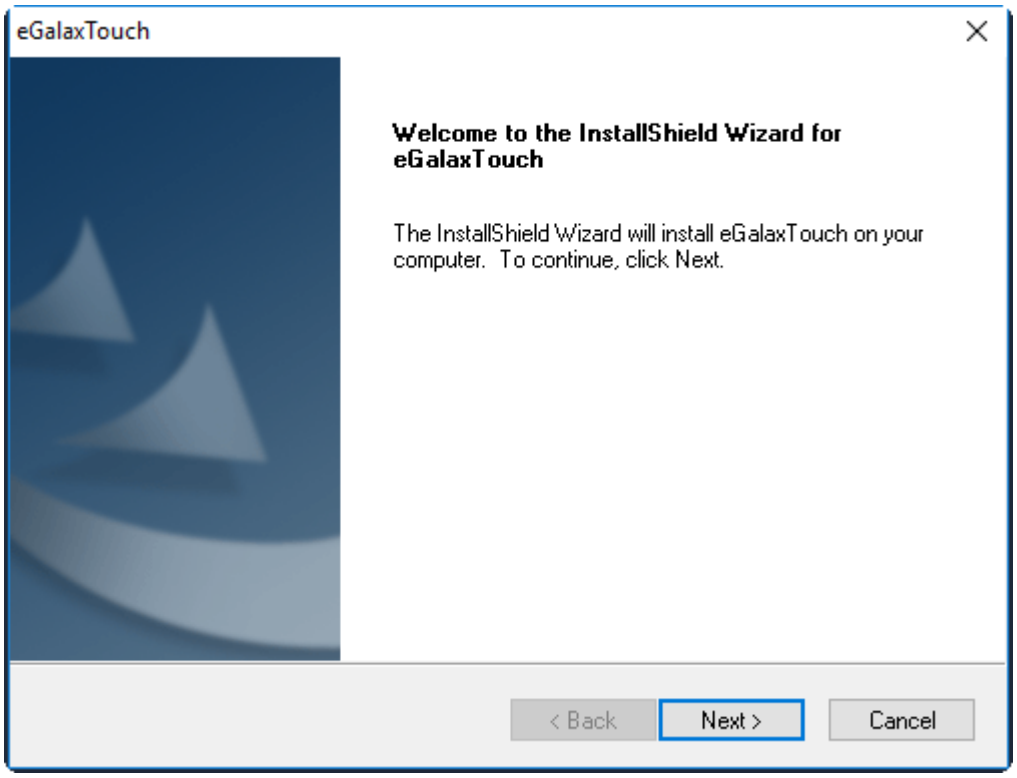
This chapter describes how to install drivers and other software that will allow your touch screen work with different operating systems.

3.1 Windows 7 Universal Driver Installation for PenMount 6000 Series

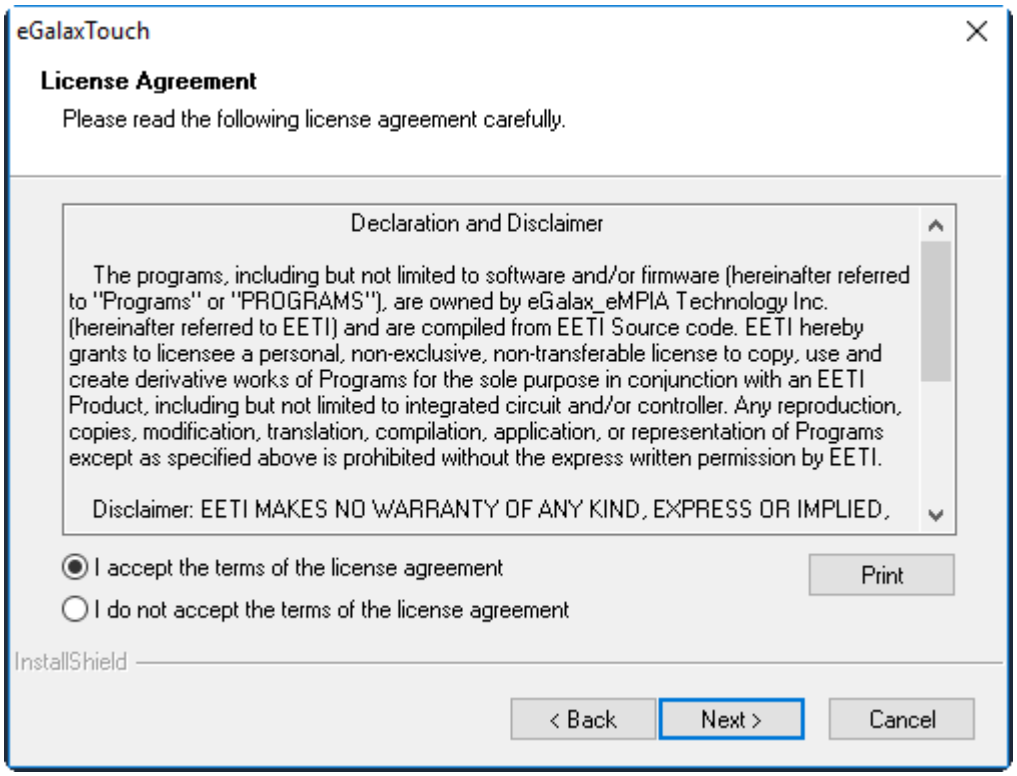
Before installing the Windows 7 driver software, you must have the Windows 7 system installed and running on your computer. You must also have one of the following PenMount 6000 series controller or control boards installed: PM6500, PM6300.

3.1.1 Installing Software (Projected Capacitive)

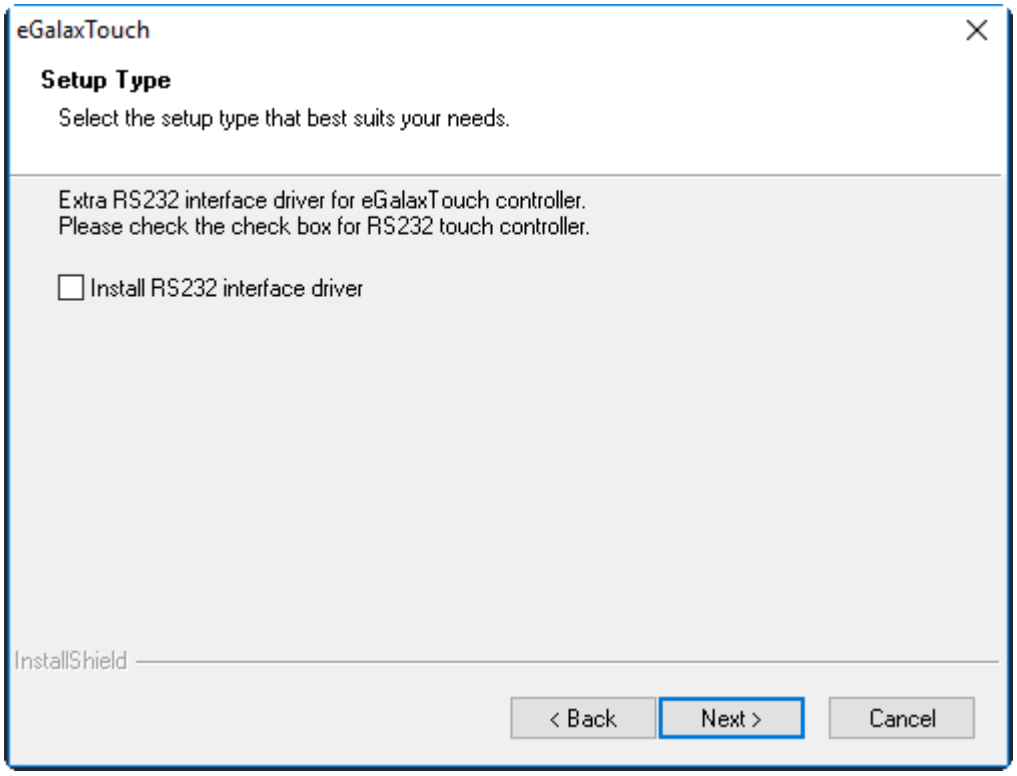
Step 1. Click **Next** to continue.



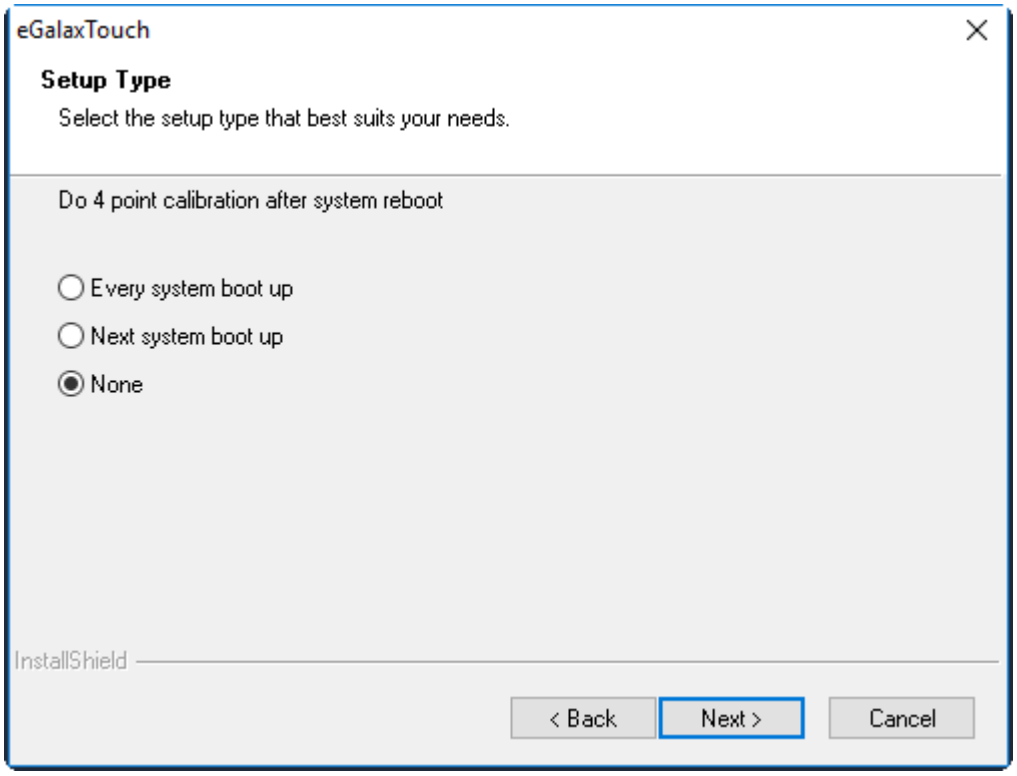
Step 2. Select **I accept the terms of the license agreement**. Click **Next.**



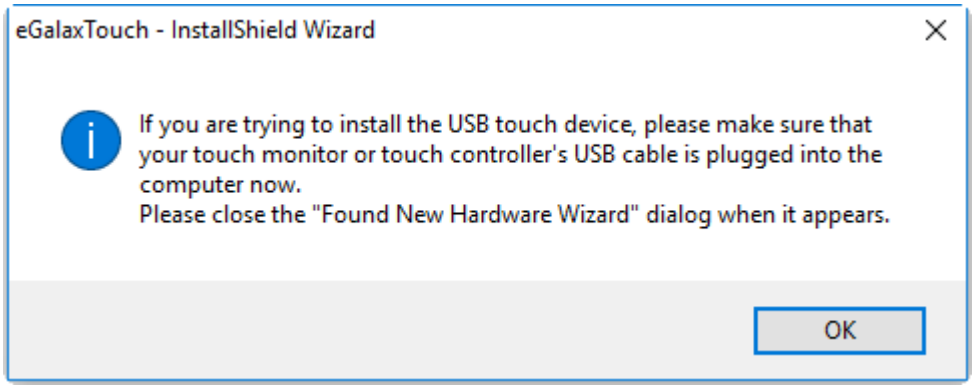
Step 3. Click **Next** to Install RS232 interface driver without choose the button ☐.



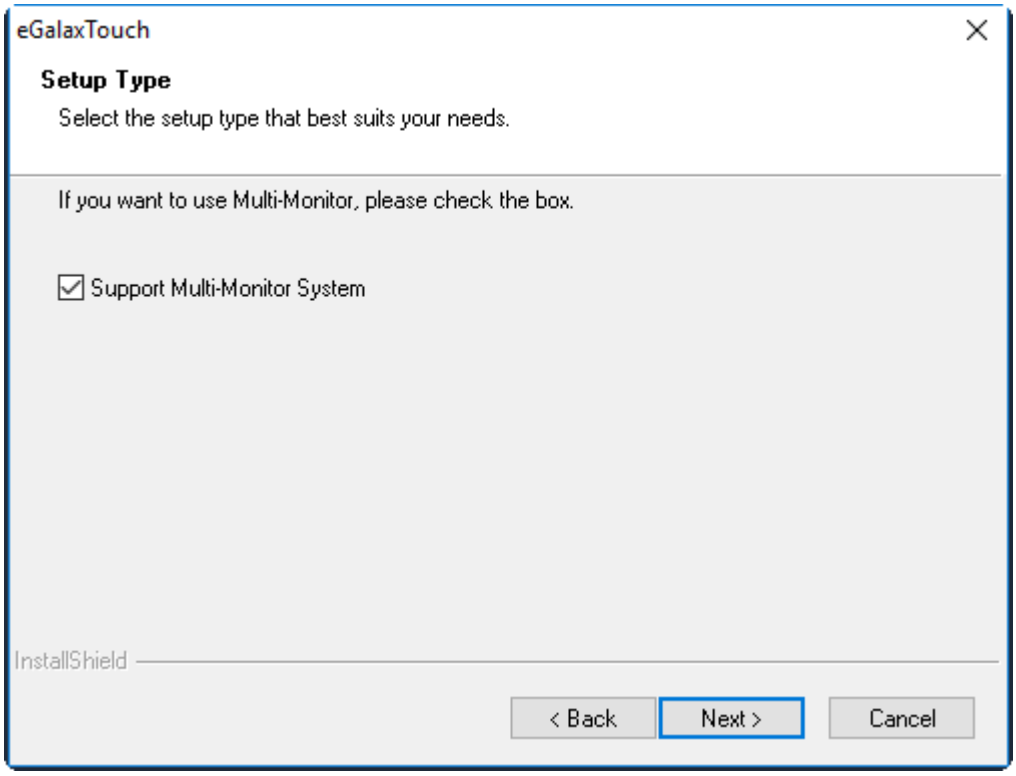
Step 4. Select **None**. Click **Next**.



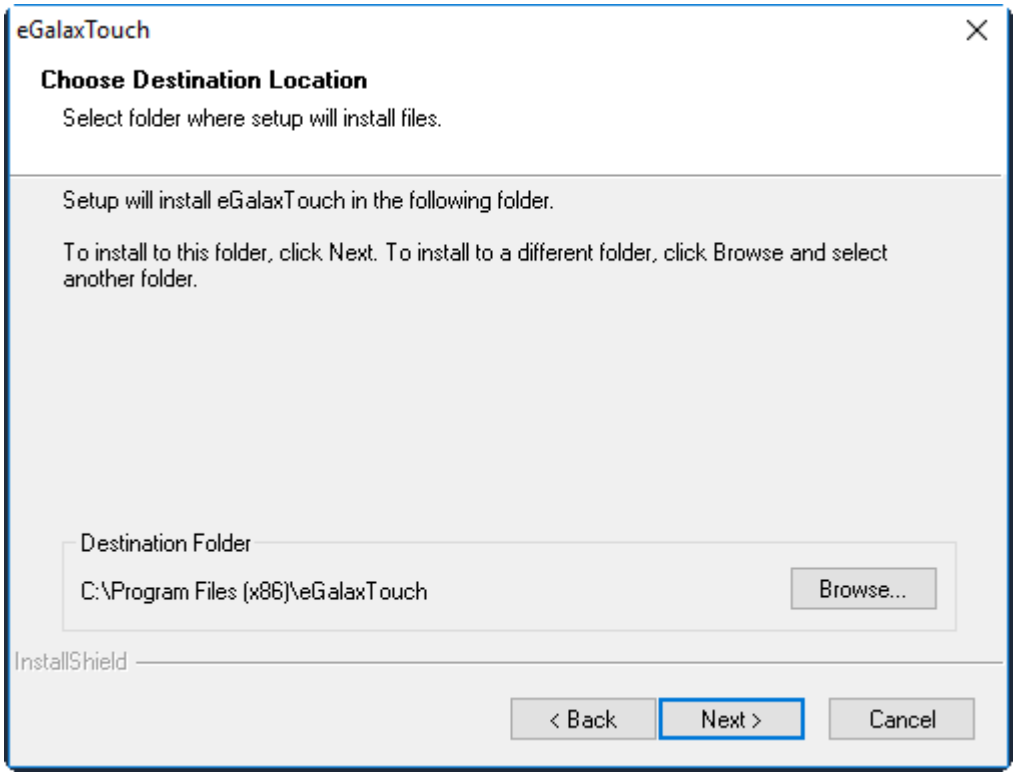
Step 5. Click **OK.**



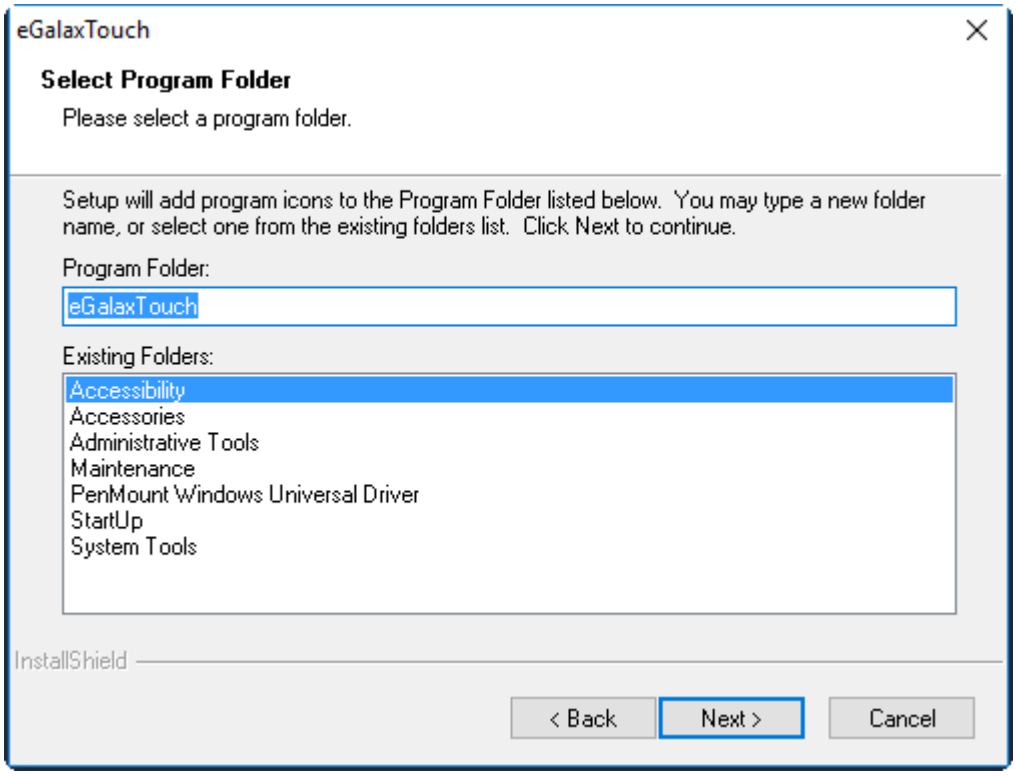
Step 6. Click **Support Muti-Monitor System**. Click **Next.**



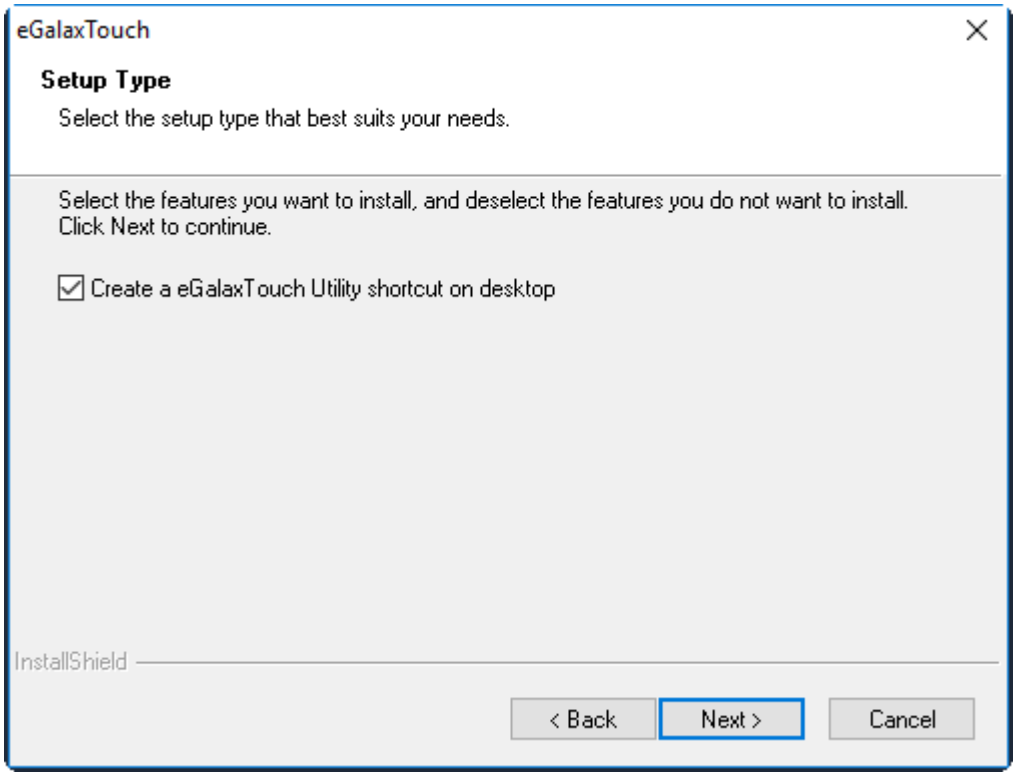
Step 7. Go to **C:\Program Files (x86)\eGalaxTouch**. Click **Next**.



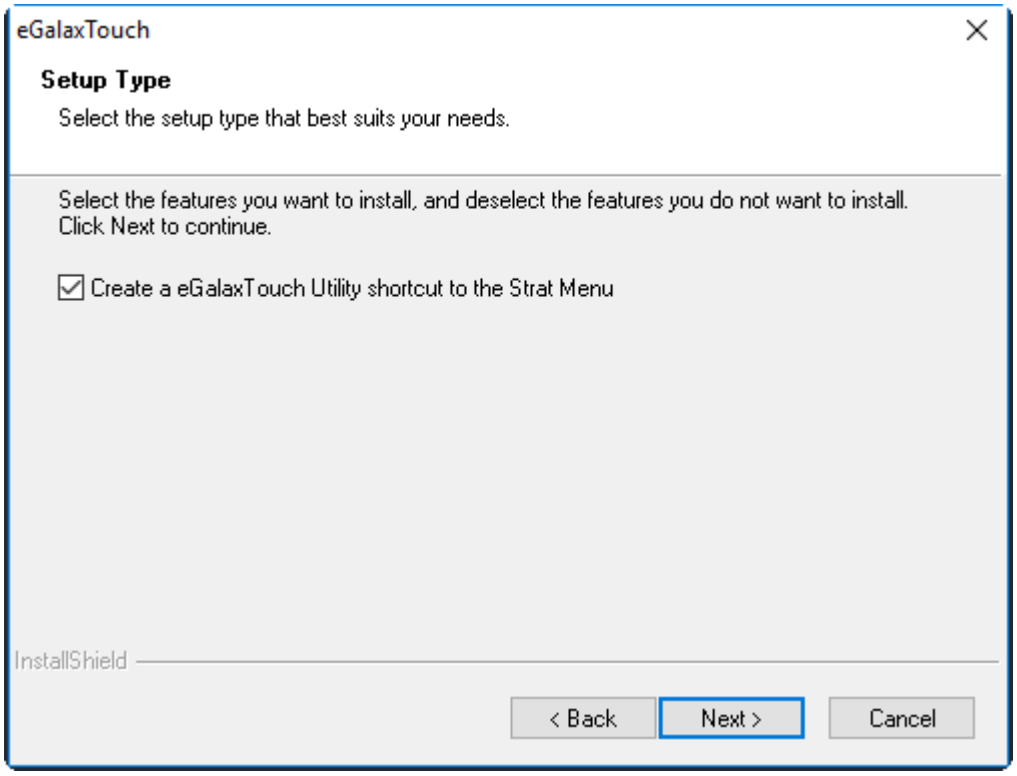
Step 8. Click **Next.**



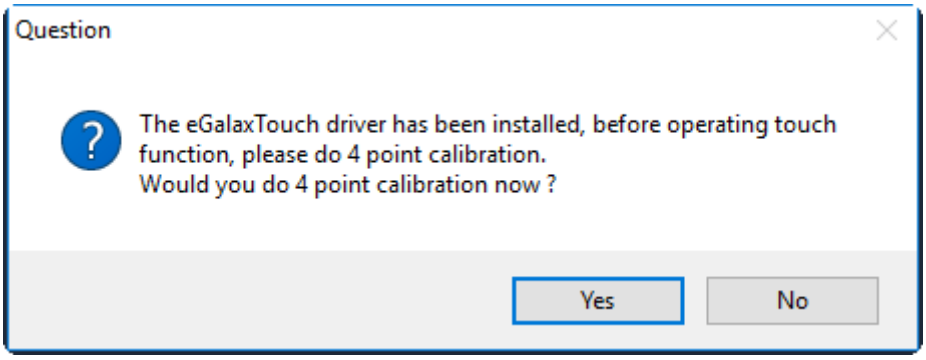
Step 9. Click **Create a eGalaxTouch Utility shortcut on desktop**. Click **Next**.



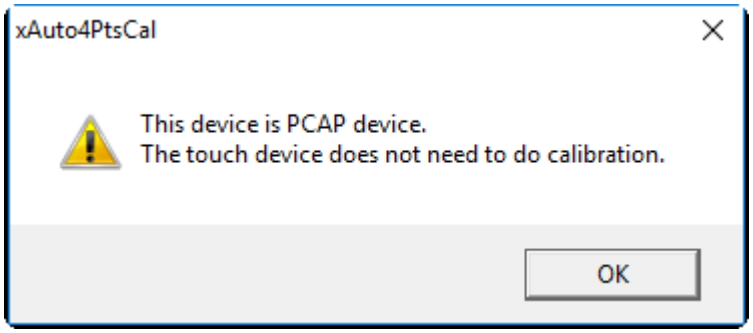
Step 10. Click **Creare a eGalax Touch Utility shortcut to the Start Menu**. Click **Next.**



Step 11. Click **Yes** to do 4 point calibration.



Step 12. Click **OK** to accept the calibration notice.

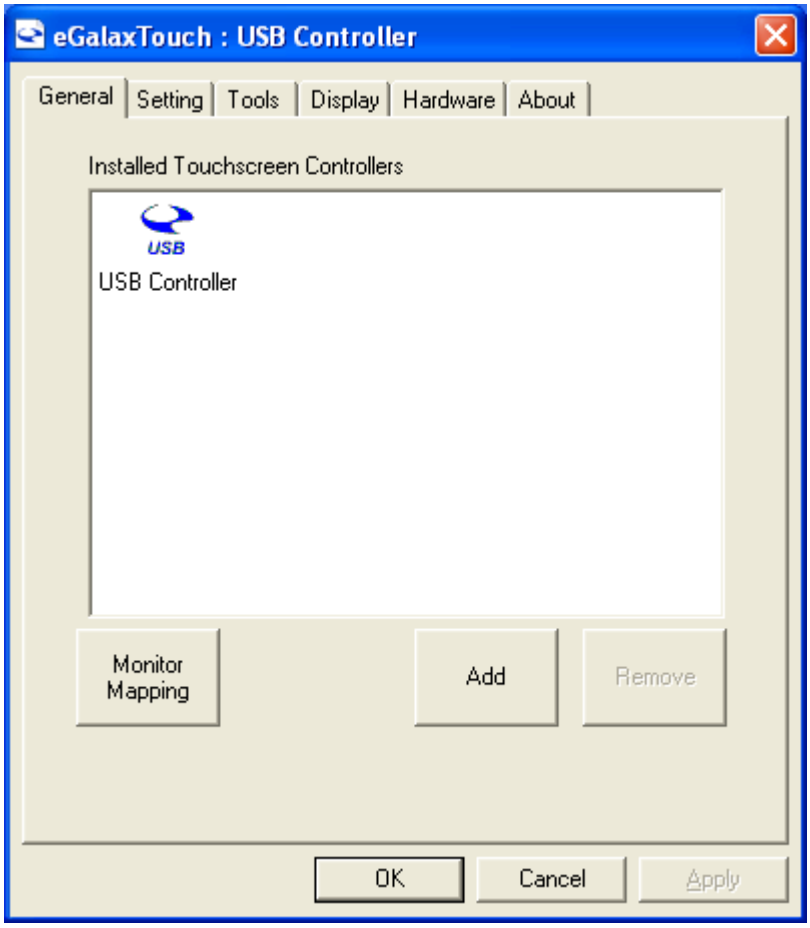


3.2 Software Functions

3.2.1 Software Functions(Projected Capacitive)

General

In this window, you can see there is USB Controller. Click **OK** to continue.



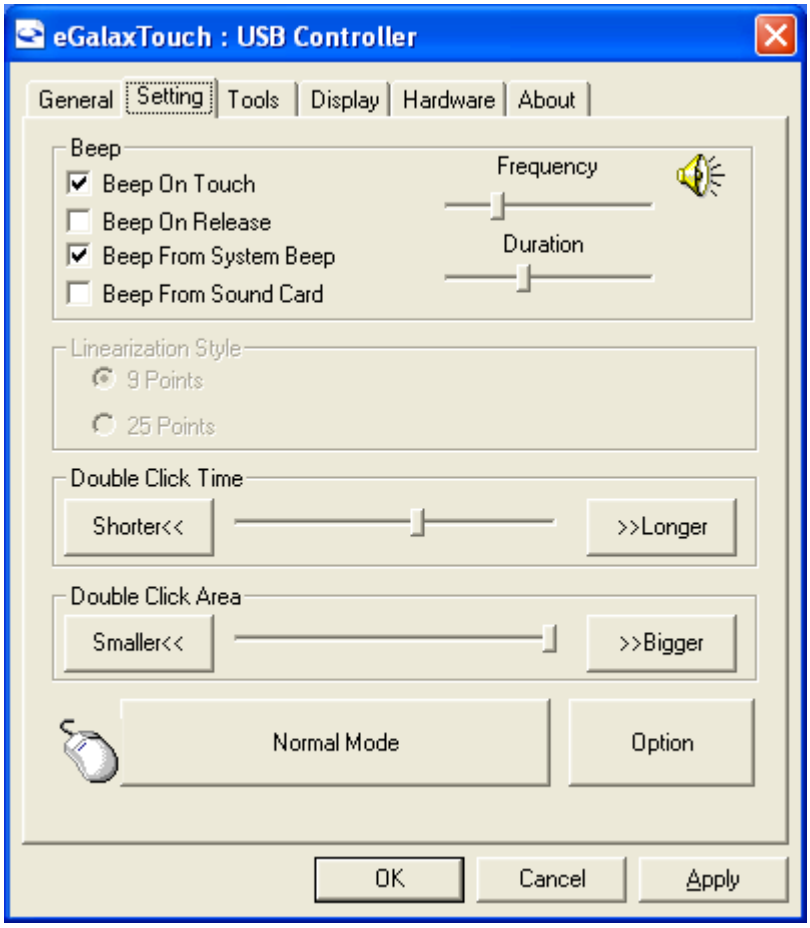
Monitor Mapping

to adjust touch panel

Add

to search for device

Setting



Beep

Beep On Touch

Beep On Release

Beep From System Beep

Beep From Sound Card

Linearization Style

9 points

25 points

Double Click Time

Shorter

Longer

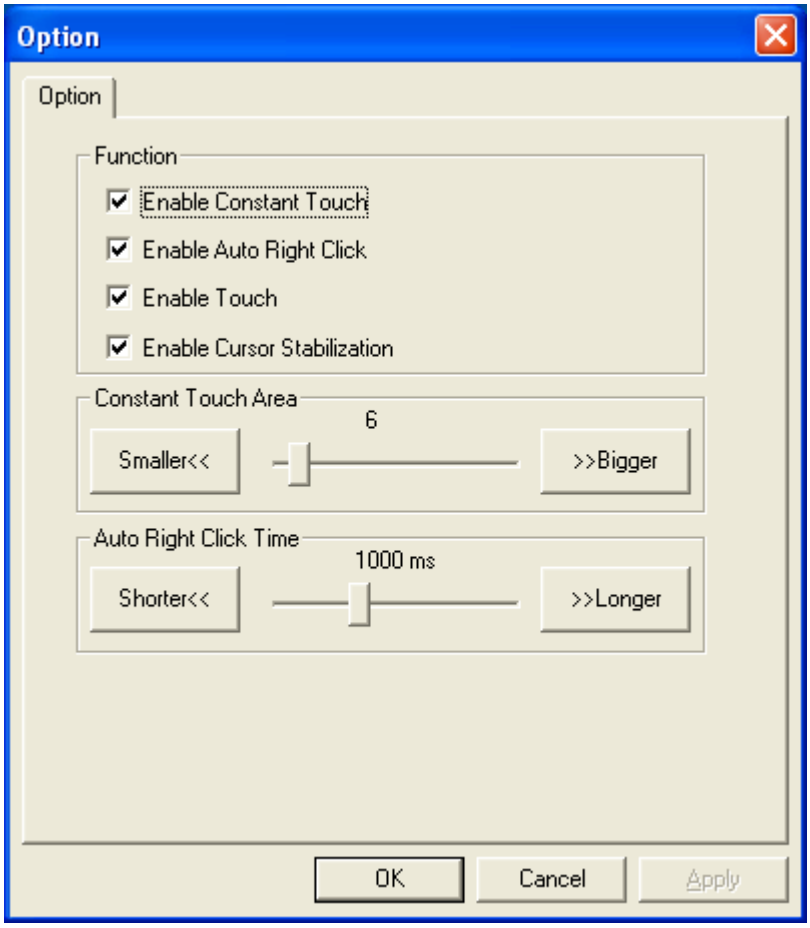
Double Click Area

Smaller

Bigger

Normal mode

Simulate the mouse mode



Option

Function

Enable Constant Touch

Enable Auto Right Click

Enable Touch

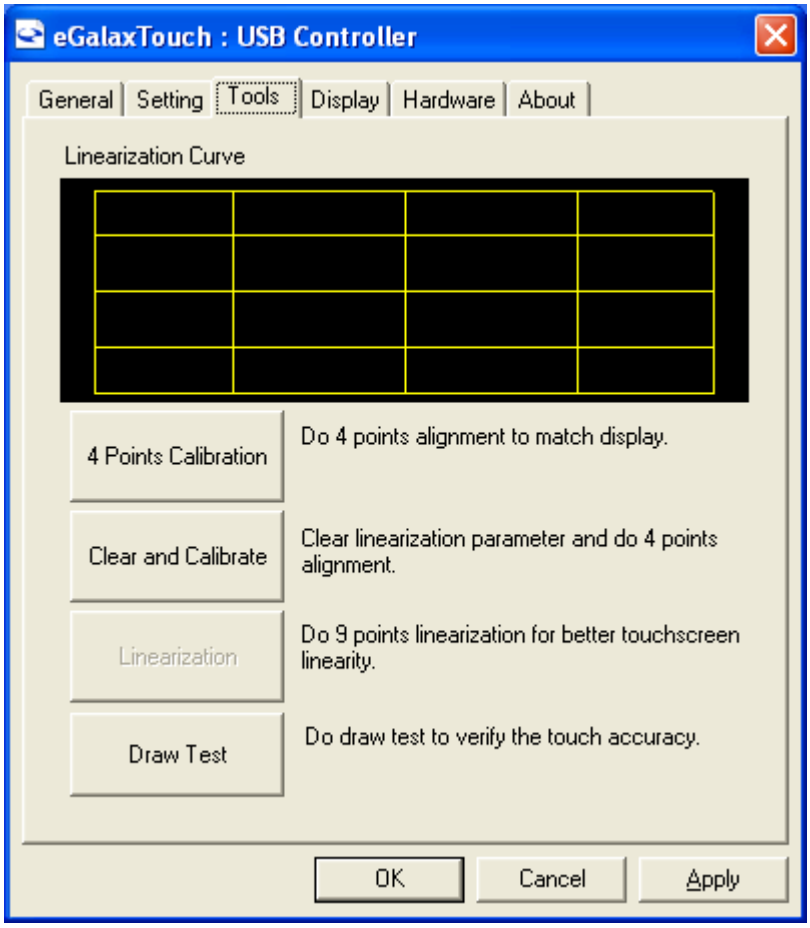
Enable Cursor Stabilization

Constant Touch Area

Auto Right Click Time

Tools

Click **OK** to continue the settings.



4 Points Calibration

Do 4 points alignment to match display.

Clear and Calibrate

Clear linearization parameter and do 4 points alignment.

Linearization

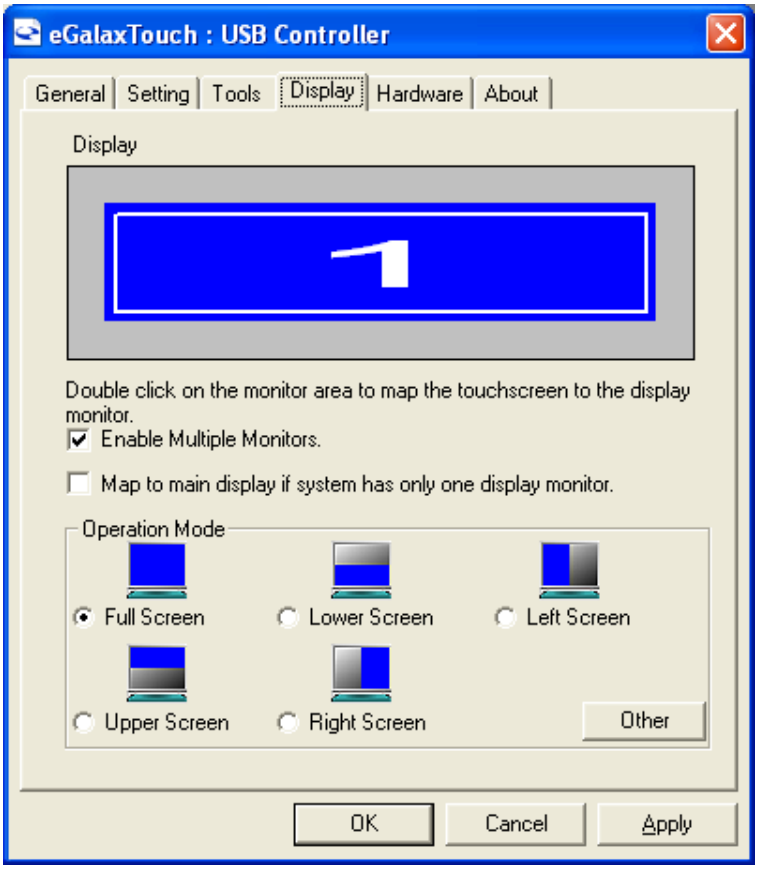
Do 9 points linearization for better touchscreen linearity.

Draw Test

Do draw test to verify the touch accuracy.

Display

In this window, it shows the mode of display.



Enable Multiple Monitors.

Map to main display if system has only one display monitor

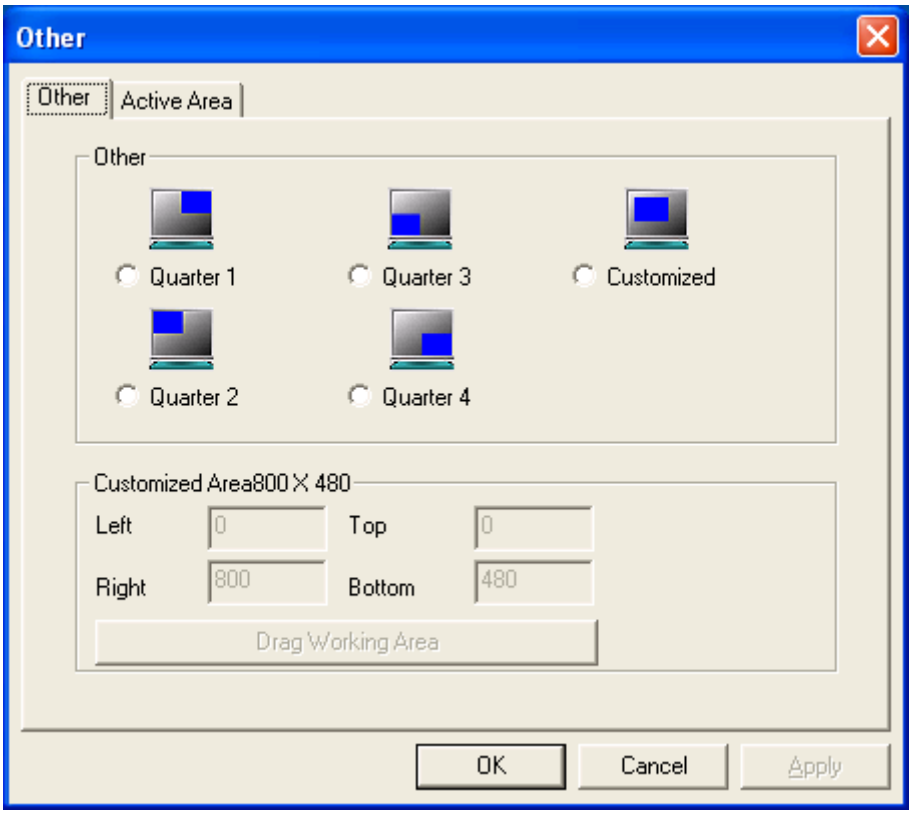
Full Screen

Lower Screen

Left Screen

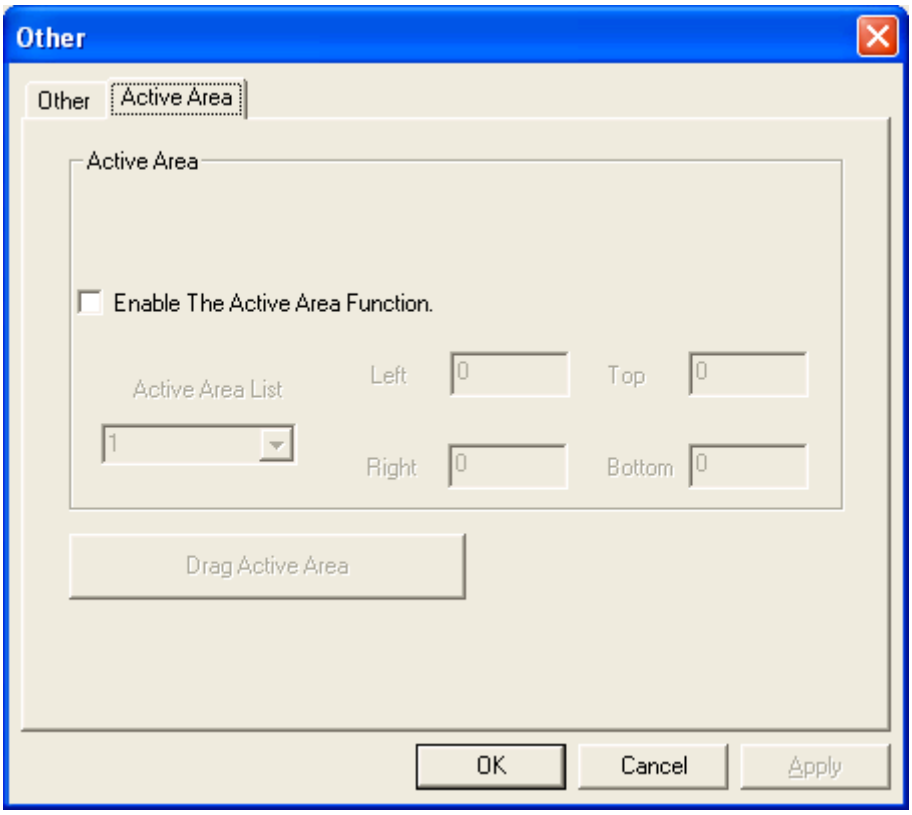
Upper Screen

Right Screen



Other

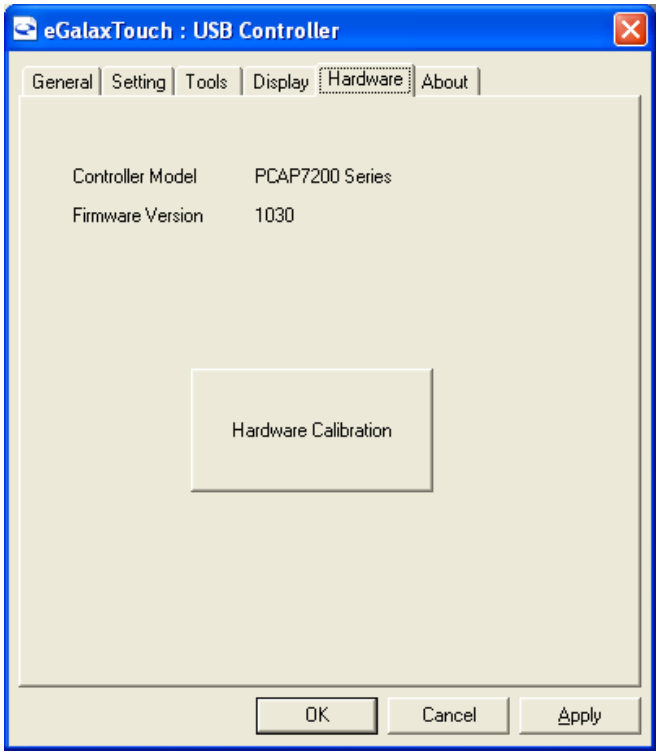
Other mode of display. Quarter1~4 and Customized area.



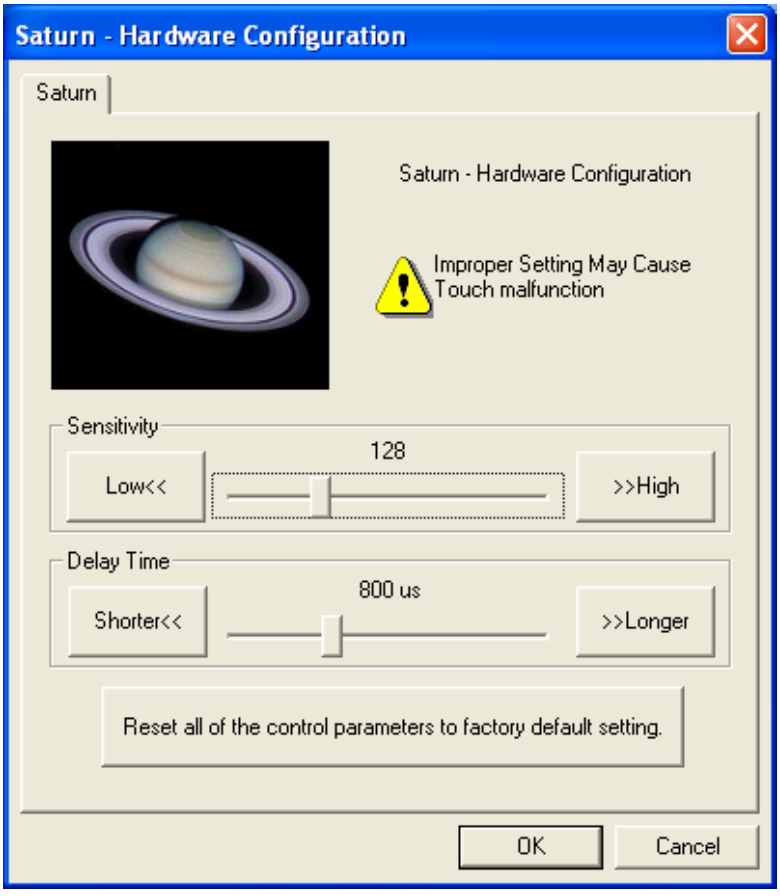
Active Area

Drag active area to enable Active Area Function.

Hardware

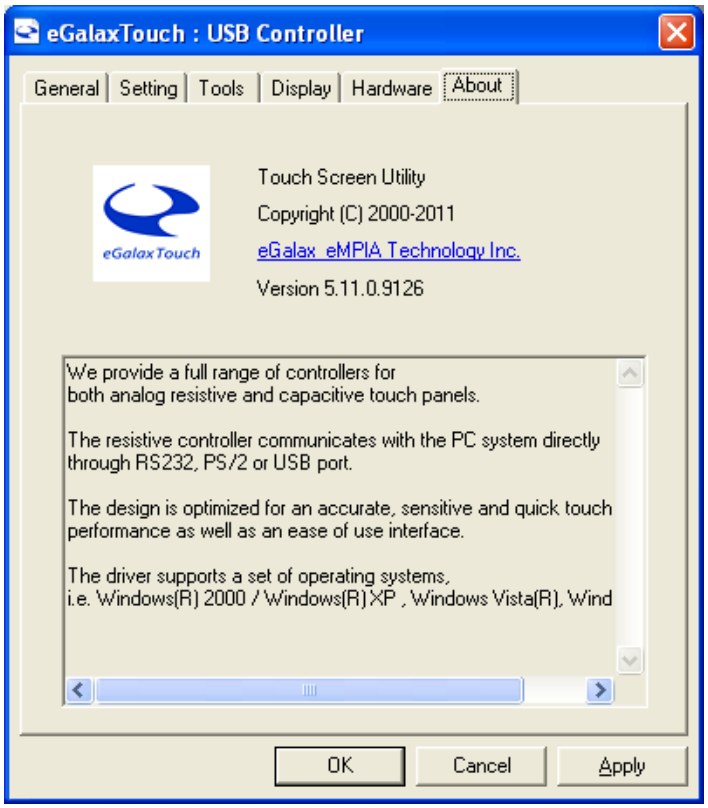


Saturn Hardware Configuration



About

To display information about eGalaxTouch and its version.



Appendix A: Board Dimensions

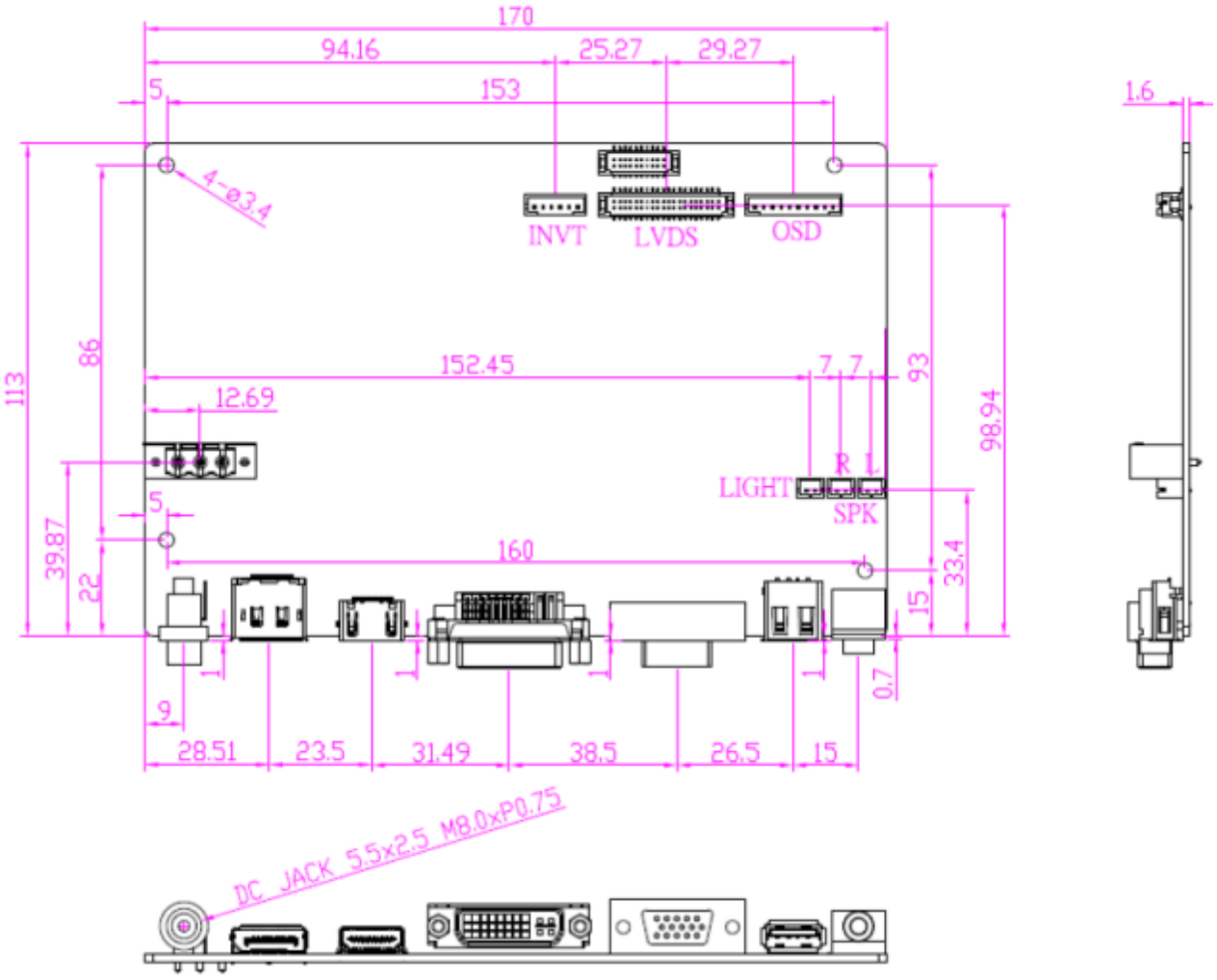


Figure A: Dimensions of TB-6029

Appendix B: Panel Mounting and VESA Mounting

The AEx-1XXP(H) is designed to be panel-mounted and VESA mounted as shown in Picture. Just carefully place the unit through the hole and tighten the given screws from the rear to secure the mounting.

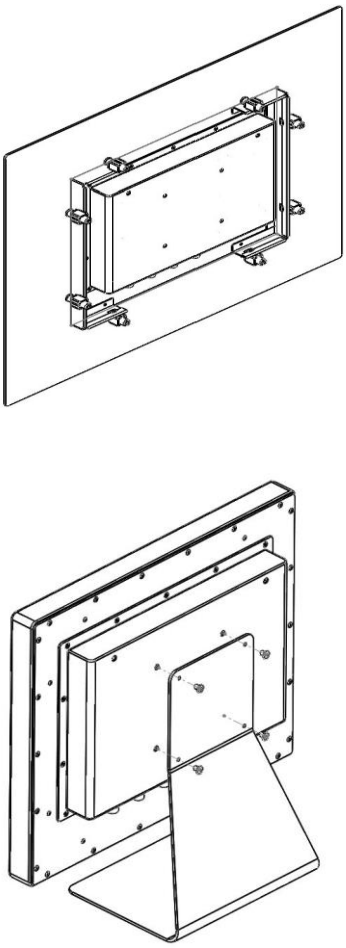


Figure B: Panel mounting and VESA mounting

***Notice：**

Tighten the mounting clip screws by hand until the gasket seal contacts the mounting surface uniformly.

Tighten the mounting clips screws to a torque of 8 ~ 10 kgf-cm by using the specified sequence, making sure not to overtighten.

*Tighten the mounting clips to the specified torque to provide a proper seal and to prevent damage to the product. Aplex assumes no responsibility for water or chemical damage to the product or other equipment within the enclosure due to improper installation.