# AGD-312D V2

## Industrial Touch Display

User's Manual 1st Ed

*Last Updated: March 14, 2016*

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## Packing List

Before setting up your product, please make sure the following items have been shipped:

| Item | Quantity |
|---|---|
| ● AGD-312D V2 | 1 |
| ● VGA cable | 1 |
| ● USB cable | 1 |
| ● Product CD with User's Manual (in pdf) and drivers | 1 |

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

## About this Document

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the AAEON.com for the latest version of this document.

## Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. All cables and adapters supplied by AAEON are certified and in accordance with the material safety laws and regulations of the country of sale. Do not use any cables or adapters not supplied by AAEON to prevent system malfunction or fires.
3. Make sure the power source matches the power rating of the device.
4. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
5. Always completely disconnect the power before working on the system's hardware.
6. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
7. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
8. Always disconnect this device from any AC supply before cleaning.
9. While cleaning, use a damp cloth instead of liquid or spray detergents.
10. Make sure the device is installed near a power outlet and is easily accessible.
11. Keep this device away from humidity.
12. Place the device on a solid surface during installation to prevent falls
13. Do not cover the openings on the device to ensure optimal heat dissipation.
14. Watch out for high temperatures when the system is running.
15. Do not touch the heat sink or heat spreader when the system is running
16. Never pour any liquid into the openings. This could cause fire or electric shock.

17. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.

18. If any of the following situations arises, please the contact our service personnel:

    i. Damaged power cord or plug

    ii. Liquid intrusion to the device

    iii. Exposure to moisture

    iv. Device is not working as expected or in a manner as described in this manual

    v. The device is dropped or damaged

    vi. Any obvious signs of damage displayed on the device

19. DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.

## FCC Statement

This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

*Caution:*

*There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.*

*Attention:*

*Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte.*
*Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.*

## China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

AAEON Display

| 部件名称 | 有毒有害物质或元素 | | | | | |
|---|---|---|---|---|---|---|
| | 铅 (Pb) | 汞 (Hg) | 镉 (Cd) | 六价铬 (Cr(VI)) | 多溴联苯 (PBB) | 多溴二苯醚 (PBDE) |
| 印刷电路板及其电子组件 | O | O | O | O | O | O |
| 外部信号连接器及线材 | O | O | O | O | O | O |
| 外壳 | O | O | O | O | O | O |
| 液晶模块 | O | O | O | O | O | O |
| 触控模块 | O | O | O | O | O | O |
| 电源 | O | O | O | O | O | O |

**O：表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。**

**X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。**

**备注：**
**一、此产品所标示之环保使用期限，系指在一般正常使用状况下。**
**二、上述部件物质中央处理器、内存、硬盘、光驱、触控模块为选购品。**

## China RoHS Requirement (EN)

Poisonous or Hazardous Substances or Elements in Products

AAEON Display

| Component | Poisonous or Hazardous Substances or Elements | | | | | |
|---|---|---|---|---|---|---|
| | Lead (Pb) | Mercury (Hg) | Cadmium (Cd) | Hexavalent Chromium (Cr(VI)) | Polybrominated Biphenyls (PBB) | Polybrominated Diphenyl Ethers (PBDE) |
| PCB & Other Components | O | O | O | O | O | O |
| Wires & Connectors for External Connections | O | O | O | O | O | O |
| Chassis | O | O | O | O | O | O |
| LCD | O | O | O | O | O | O |
| Touchscreen | O | O | O | O | O | O |
| PSU | O | O | O | O | O | O |

O：The quantity of poisonous or hazardous substances or elements found in each of the component's parts is below the SJ/T 11363-2006-stipulated requirement.

X: The quantity of poisonous or hazardous substances or elements found in at least one of the component's parts is beyond the SJ/T 11363-2006-stipulated requirement.

Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only

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# Chapter 1

Product Specifications

## 1.1 Specifications

### LCD

| | |
|---|---|
| Size | 12″ |
| Display Type | Color TFT |
| Display Mode | Fullscreen in 640x480, 800x600, 1024x768 |
| Color | 16.2 M |
| Pixel Pitch | 0.3075 (H) x 0.3075 (V) |
| Resolution | 1024 x 768 |
| Input Signal | VGA<br>DVI |
| Control | Rear panel OSD (Onscreen Display) |
| Brightness | 500 cd/m2 (TYP.) |
| Viewing Angle | 160° (H), 160° (V) |
| MTBF | 50,000 |

### Touchscreen

| | |
|---|---|
| Type | 5-wire resistive |
| Resolution | 1024 x 768 |
| Light Transmission | 88 ± 2% (Pure) |
| Controller | RS-232 |

## Power

- **Power Supply** — External power adapter
- **DC Input** — DC 9 ~ 30 V, 1.2 ~ 4 A

## Mechanical

- **Construction** — IP65 Aluminum die cast front bezel
- **Mounting** — VESA mounted
  Panel mounted
  Wall mounted
- **Dimension (W x H x D)** — 345.8 x 265.8 x 108.8mm (13.61 x 10.46 x 4.28")
- **Cutout Size (W x H)** — 333 x 253 mm (13.11 x 9.96")
- **Gross Weight** — 4.1 kg (9 lb)

## Environmental

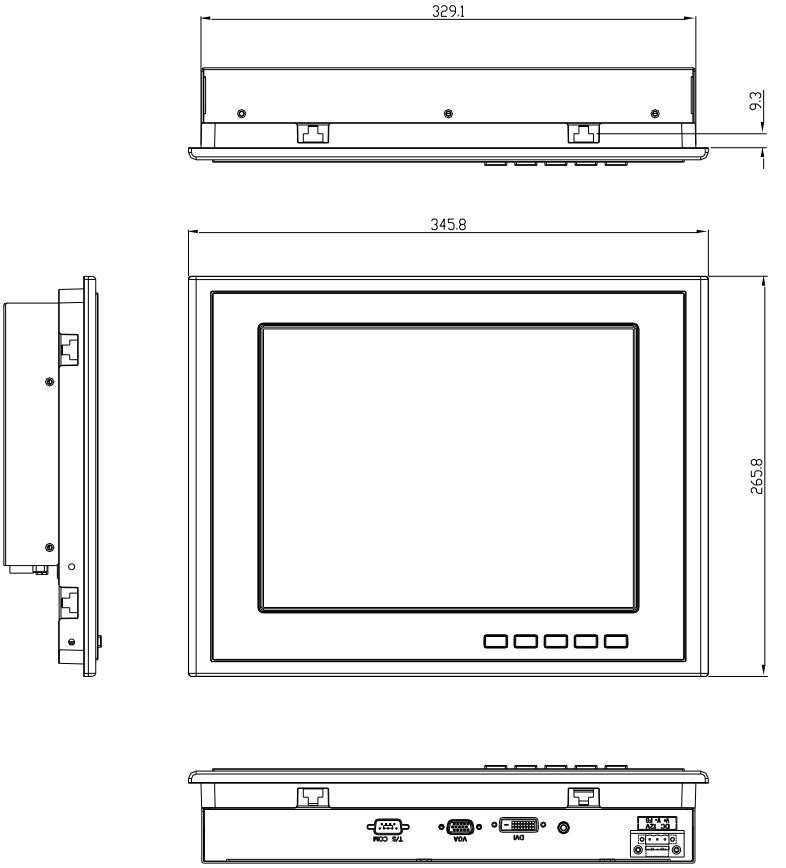
- **Operating Temperature** — -20 ~ 60°C (-4~ 140°F)
- **Anti-Vibration** — 1 Grms / 5-500Hz/ random operation
- **Anti-Shock** — 10 G peak acceleration (11 msec. duration)
- **EMC** — CE/FCC Class A

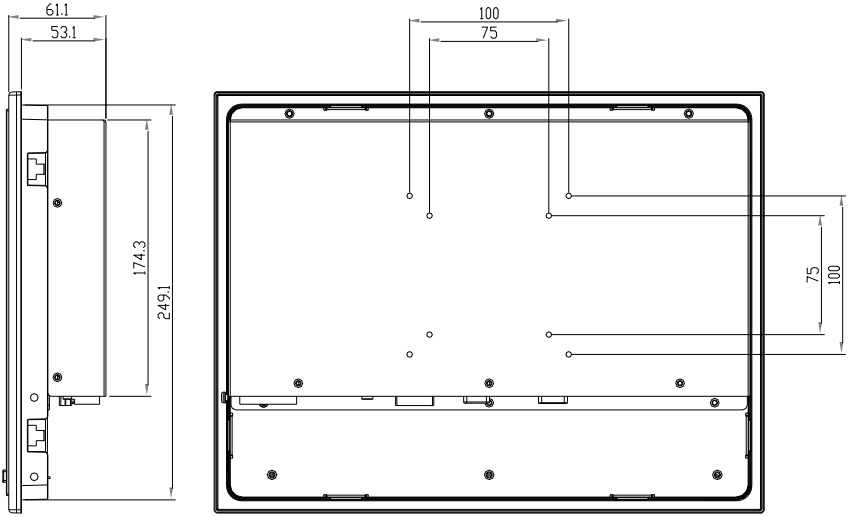
# Chapter 2

Hardware Information

## 2.1 Dimensions

### DC 12 V Model




61.1
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174.3
249.1
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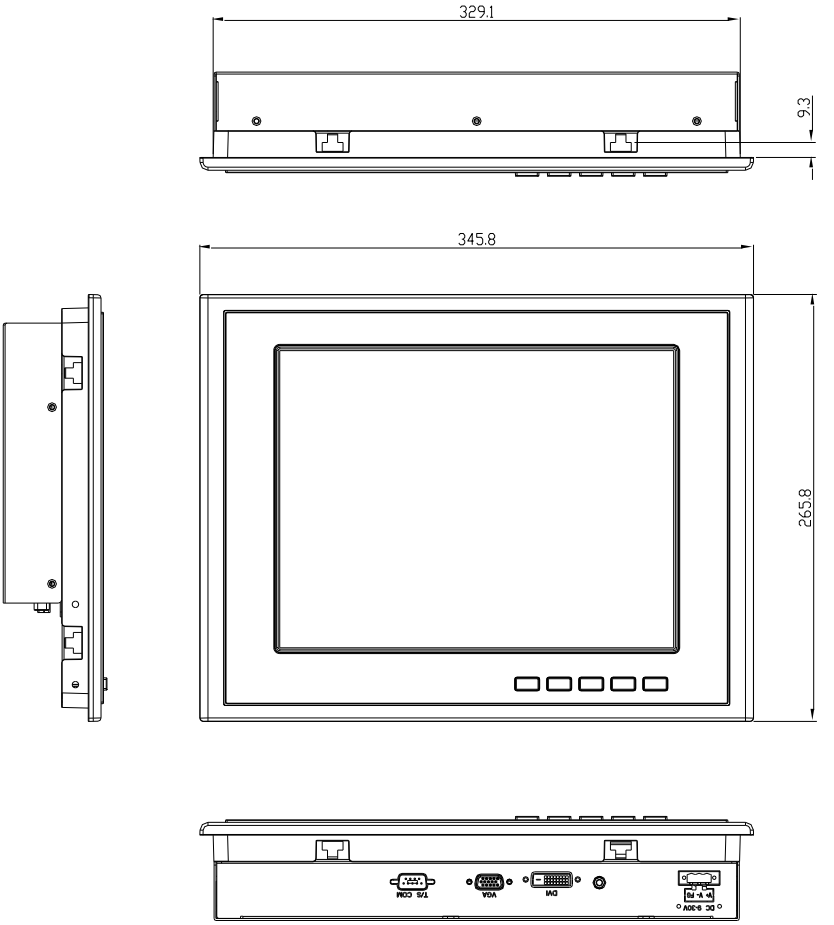
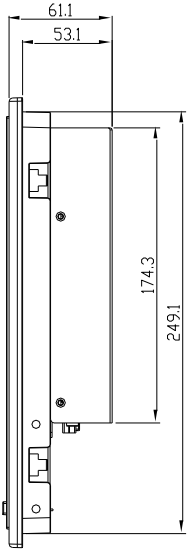
75
100

DC 9 ~ 30 V Model

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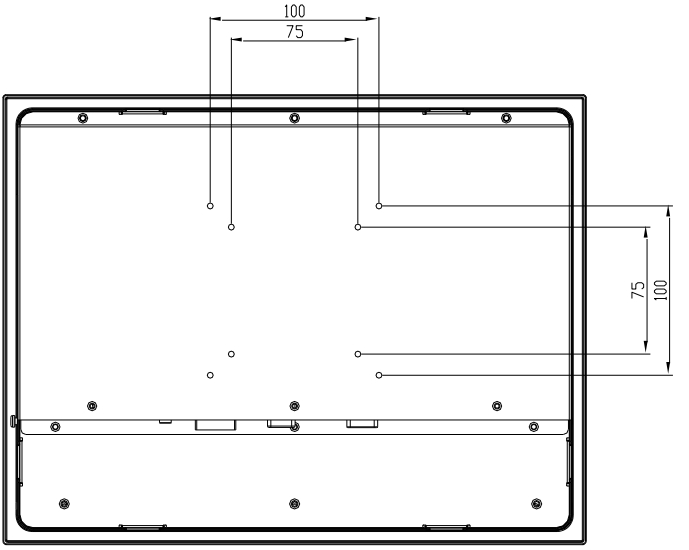
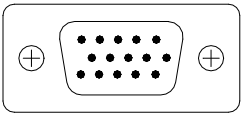

100
75
75
100

## 2.2 Pin Definitions

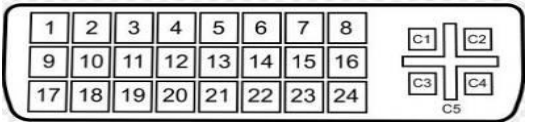
This section details all the pins definition of all the connectors associating with the AGD-312D v2 to aid your setup

### 2.2.1 VGA Port Connector



| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 1 | Red | 2 | Green |
| 3 | Blue | 4 | N.C. |
| 5 | GND | 6 | GND |
| 7 | GND | 8 | GND |
| 9 | N.C. | 10 | GND |
| 11 | N.C. | 12 | SDA |
| 13 | HSYNC | 14 | VSYNC |
| 15 | SCL | | |

### 2.2.2 DVI Port Connector




| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 1 | N.C. | 2 | TMDS Data 2+ |
| 3 | TMDS Data 2/4 shield | 4 | TMDS Data 4- |

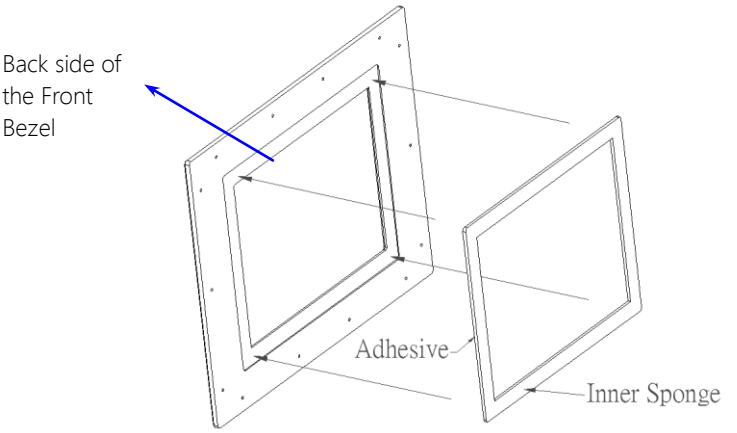
| | | | |
|---|---|---|---|
| 5 | TMDS Data 4+ | 6 | DDC clock |
| 7 | DDC data | 8 | N.C. |
| 9 | TMDS Data 1- | 10 | TMDS Data 1 |
| 11 | TMDS Data 1/3 shield | 12 | TMDS Data 3- |
| 13 | TMDS Data 3+ | 14 | +5V |
| 15 | Ground | 16 | Hot plug detect |
| 17 | TMDS data 0- | 18 | TMDS data 0+ |
| 19 | TMDS data 0/5 shield | 20 | TMDS data 5- |
| 21 | TMDS data 5+ | 22 | TMDS clock shield |
| 23 | TMDS clock+ | 24 | TMDS clock- |
| C1 | N.C. | C2 | N.C. |
| C3 | N.C. | C4 | N.C. |
| C5 | N.C. | | |

## 2.3 Waterproof Sponge

**Inside sponge:**

1 Tear off the protection paper on the self-adhesive side of the inside sponge.

2 Stick the sponge on the recessed area of the Aluminum bezel or customer's own bezel.

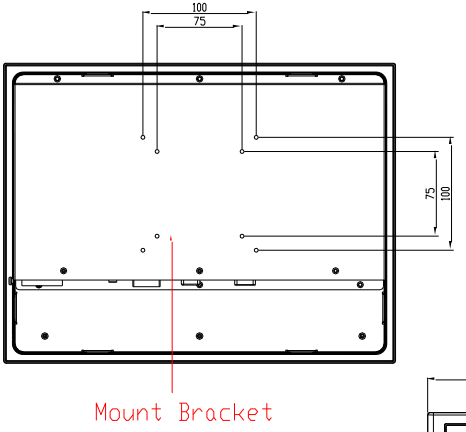


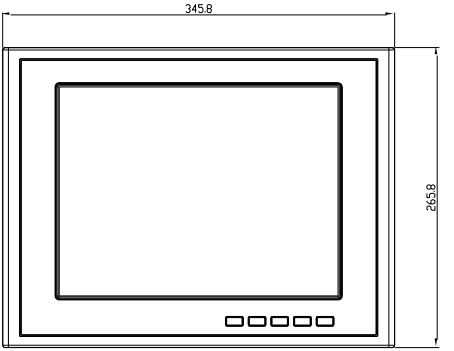
## 2.4 Mounting

This section details the steps in fitting the various mounting brackets onto the AGD-312D v2 to aid your setting up.

### 2.4.1 Panel Mounting

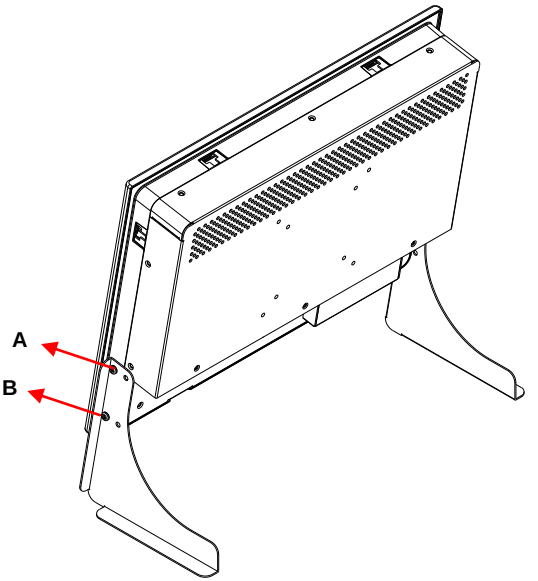
To mount this panel onto a wall, refer to the diagram below to install the mounting brackets



## 2.4.2 Stand and Swing Arm Mounting

To attach the Stand onto the device, remove screws A and B, attach the stand and secure it by using screw A on point B. There should be no screw at point A



## 2.4.3 VESA Mounting

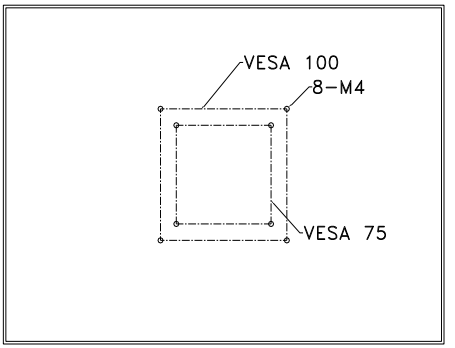
Mounting the LCD Display with UL Listed Wallmount Bracket only. The LCD Display can be mounted on a monitor arm or wallmount plate.

*Caution:*

*When mounting the LCD Display, take care to tighten the retention screws or bolts until fully secured, but do not over tighten. Overtightening the retention screws or bolts may cause them to become stripped, rendering them useless.*

### Monitor Arm or Wallmount Plate Installation

The LCD Display has Video Electronics Standards Association (VESA) standard mounting holes tapped into the rear panel. The standard holes are M4 set at 100mm x 100mm apart.




### VESA Mounting Holes

To mount the LCD Display onto a monitor arm or wallmount plate, please follow the steps below.

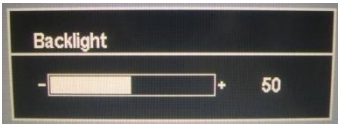
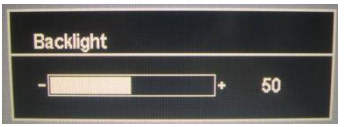
**Step 1:** Line up the threaded holes on the monitor rear panel with the screw holes on the monitor arm or wallmount plate.

**Step 2:** Secure the monitor to the arm or stand with the retention screws supplied with the monitor arm or stand.

# Chapter 3

Onscreen Display Control

## 3.1 Functional Buttons

| Button | Function (Outside Menu) | Function (Inside Menu) |
|---|---|---|
| Power | ● Turn the monitor ON or OFF. | - |
| Auto | ● Auto adjustment (VGA only) | ● Return to last menu |
| Menu | ● Activate the OSD menu | ● Confirm the selected option. |
| UP | ● Increase backlight brightness (Default: 50, range: 0 ~ 100)   | ● Move up<br>● Increase the gauge value of the selected option. |
| Down | ● Decrease backlight brightness (Default: 50, range: 0 ~ 100)   | ● Move down<br>● Decrease the gauge value of the selected option. |

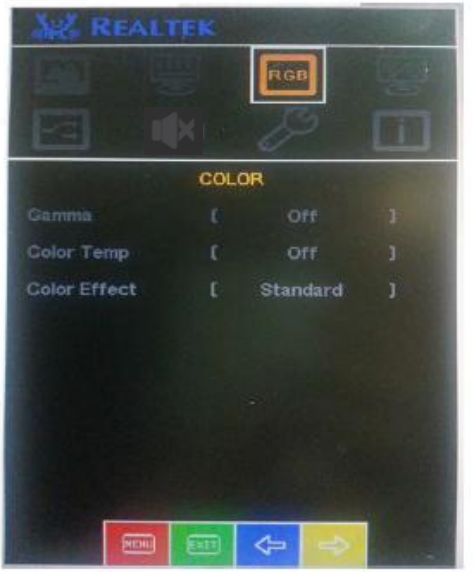
## 3.2 Picture Menu

| Button | Function |
|---|---|
| ⏻ | Power On/Off the LCD Monitor |
| AUTO | Return to last menu |
| MENU | Select to confirm |
| ▲ | Increase the gauge value of the selected option |
| ▼ | Decrease the gauge value of the selected option |

## 3.3 Display Adjustment

| Button | Function |
|---|---|
| ⏻ | Power On/Off the LCD Monitor |
| AUTO | Return to last menu |
| MENU | Select to confirm |
| ▲ | Increase the gauge value of the selected option |
| ▼ | Decrease the gauge value of the selected option |

## 3.4 Color Adjustment




| Button | Function |
|---|---|
| ⏻ | Power On/Off the LCD Monitor |
| AUTO | Return to last menu |
| MENU | Select to confirm |
| ▲ | Increase the gauge value of the selected option |
| ▼ | Decrease the gauge value of the selected option |

## 3.5 Advanced Menu

| Button | Function |
|---|---|
| ⏻ | Power On/Off the LCD Monitor |
| AUTO | Return to last menu |
| MENU | Select to confirm |
| ▲ | Increase the gauge value of the selected option |
| ▼ | Decrease the gauge value of the selected option |

## 3.6 Display Source Selection

| Button | Function |
|---|---|
| ⏻ | Power On/Off the LCD Monitor |
| AUTO | Return to last menu |
| MENU | Select to confirm |
| ▲ | Increase the gauge value of the selected option |
| ▼ | Decrease the gauge value of the selected option |

## 3.7 Other Adjustments

| Button | Function |
|---|---|
| ⏻ | Power On/Off the LCD Monitor |
| AUTO | Return to last menu |
| MENU | Select to confirm |
| ▲ | Increase the gauge value of the selected option |
| ▼ | Decrease the gauge value of the selected option |

## 3.8 Information Menu

| Button | Function |
|---|---|
| ⏻ | Power On/Off the LCD Monitor |
| AUTO | Return to last menu |
| MENU | Select to confirm |
| ▲ | Increase the gauge value of the selected option |
| ▼ | Decrease the gauge value of the selected option |

# Chapter 4

Touchscreen and Driver Installation

## 4.1 Introduction

The optional AGD-312D V2 Series touch screen uses 5-wire resistive technology to provide more accurate sensing capacity than other technologies. The touch screen is specially designed for tough industrial environments, and has been approved by FCC Class A standards.

### Resistive Type

#### Supply Voltage and Current

- +5 Vdc, nominal (+4.90 Vdc to +5.10Vdc) Self powered only.
- 50 mA standby, typical at +5 Vdc; during touch 70 mA average, 100 mA max
- Average power dissipation is 0.5 W, typical.
- Supply must be capable of sourcing 100mA, max
- Total noise and ripple requirement must be less than 100 mV (p-p) for frequencies below 1 MHz, and less than 50 mV (p-p) for frequencies above 1 MHz.

### Communication Parameters

- Baud Rate 9600 bps
- 8 Data bits, 1 stop bit, no parity only.

### Interface - USB

Compliant to USB Revision 1.1. If the USB is connected to the controller, the controller will communicate over the USB and not over the serial port. However, the USB will never supply the power to the touch screen control board. The touch screen control board can be powered on automatically.

Operating Modes

Full Touch Smart Set protocol. Emulation of E281A-4002 protocol can be selected by Smart Set command.

Initial/ Stream/ Un touch/ Z-axis Enable Modes.

**Touch Resolution:** 1024 x 768, size independent.

**Conversion Time:** Approximately 20 ms per coordinate set.

## 4.2 Resistive Touchscreen Driver Installation

### Hardware

Touch screen controllers must be configured for the driver prior to installation. EETI typically ships controllers in a default setup that is compatible with this driver. Controller requirements are:

### Serial

Serial controllers must conform to these minimum requirements:

Baud rate: 9600 Baud

Data mat: SMARTSET

It is desirable for a full handshaking connection to be established between the touch screen controller and the computer, but it is not required. The controller will function with this driver in a "two-wire," Receive Data and Ground (RxD and Gnd) configuration. The consequences of a two-wire connection are:

+ Automatic detection of the controllers on serial ports during setup is not possible。

+ Controller information will not be registered in the Property Page of the Control Panel。

### USB

* USB controllers require no configuration prior to installation.

*EETI USB controllers are Human Interface Device (HID) compliant. The Windows® XP and Windows® 7 operating systems have native HID drivers that provide low-level support for EETI touch screen controller. An EETI touch monitor with a USB touch screen controller installed will provide the following limited operation with these native HID drivers. Operation of the controller will be limited without the installation of the software discussed in the next section:

- The mouse cursor will move on the display in response to touch
- The direction of motion on the display will depend on the orientation of the touch screen and the defaults programmed into the controller and the driver
- No "beep" will be heard when the screen is touched
- No Control Panel application is available to configure the operation of the driver.

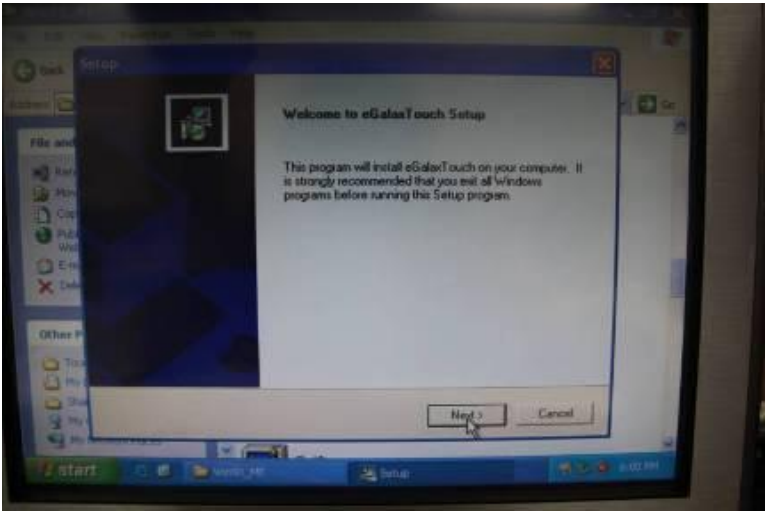
## 4.3 Installing Driver for Windows® and Linux

The touch screen has drivers for Windows® XP, Windows® 7, Windows® 8.1, and Linux . You should read the instructions in this chapter carefully before installation.

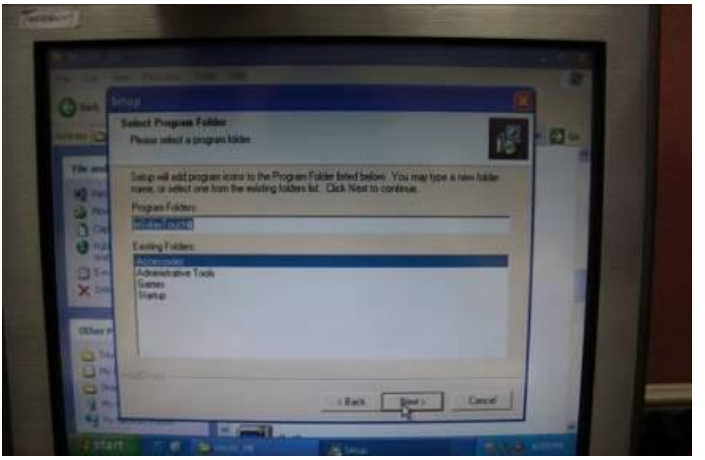
Note 1: The following windows illustrations are examples only. You must follow the flow chart instructions and pay attention to the instructions which appear on your screen.

For Windows® XP, please execute setup.exe

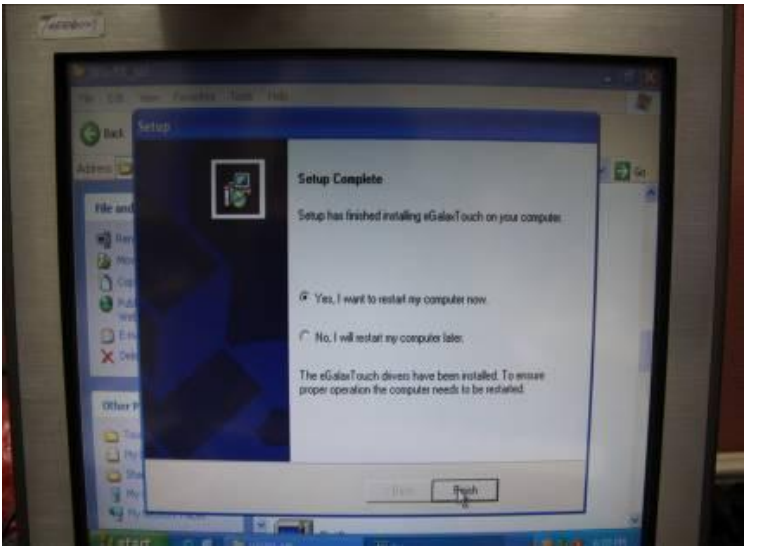
1. Click on the "Next" button on the Welcome window screen



2. Click the "**Next**" button on the screen




3. Click on the "**Finish**" button and restart your system

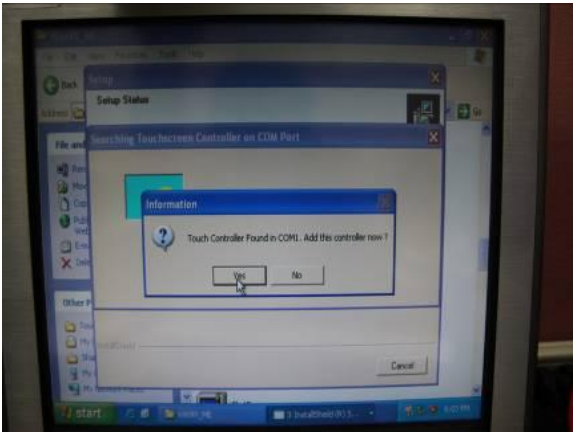


### Single monitor, Serial Port controller

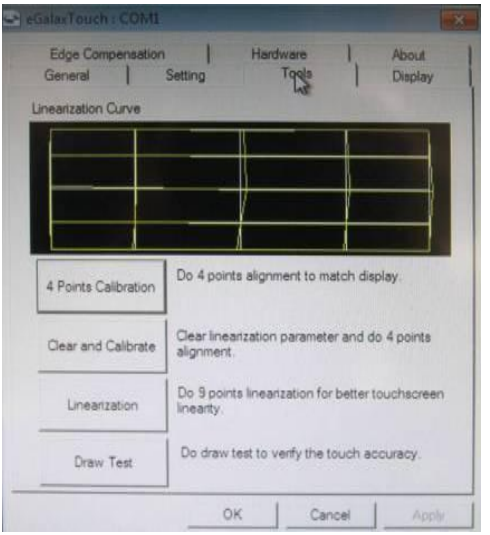
The driver files will install automatically. When the "Setup Complete" screen appears, you may choose to run calibration immediately or later. If you choose not to run this program now, you can run it from the EETI Control Panel application.

1. Executing **eGalax** on Desktop

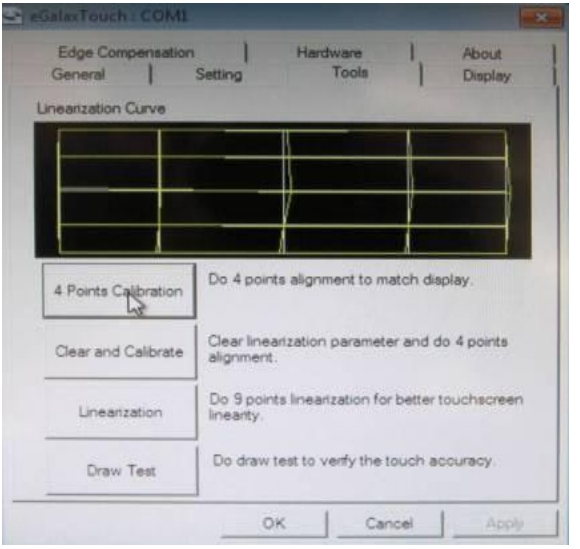
2. Recognition devices choose to run calibration immediately



3. Choose **Tools** to calibrate



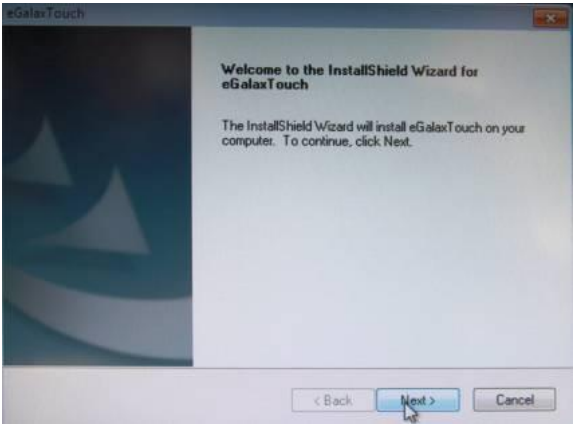

4. Click on **4 Points Calibration** to execute calibration



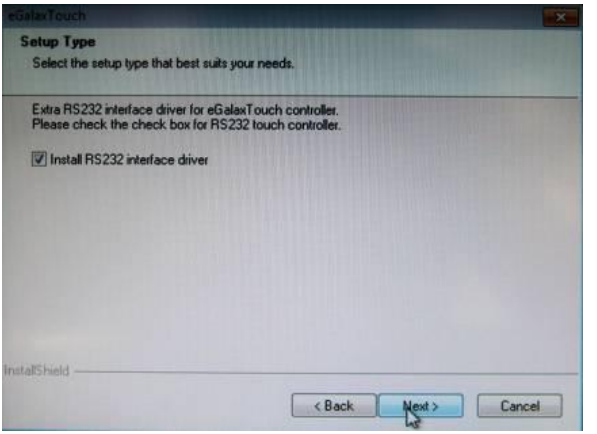

**Note:** If the alignments do not match display by 4 Points Calibration, please use 9 Ports or more to calibrate.

For Windows® 7/8.1, please execute Setup.exe

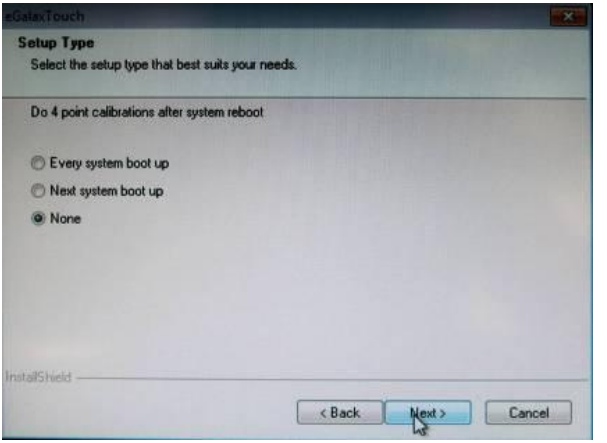
1. Click on the "Next" button



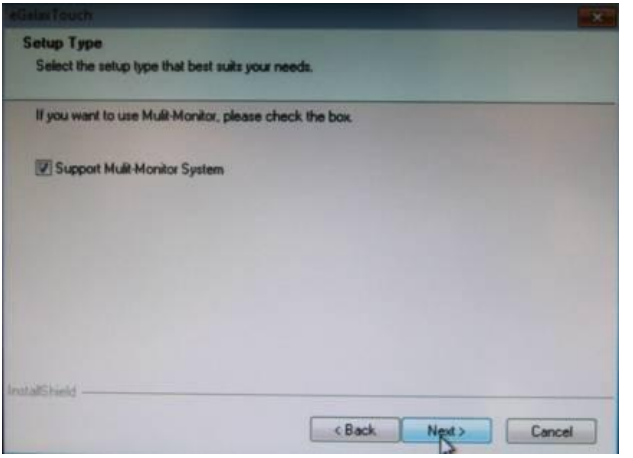

2. Click on the "Next" button



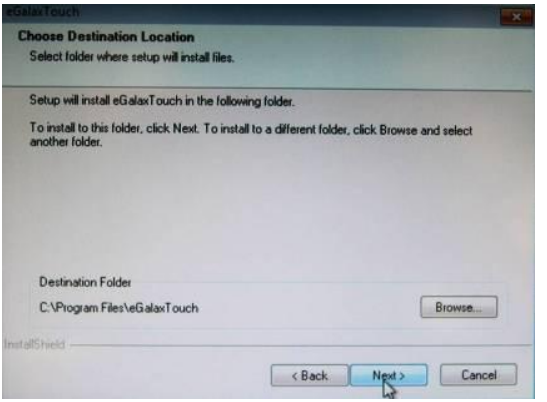
3. Tick "**None**" if the system did not start 4 points calibrating after reboot. Click on the "**Next**" button.



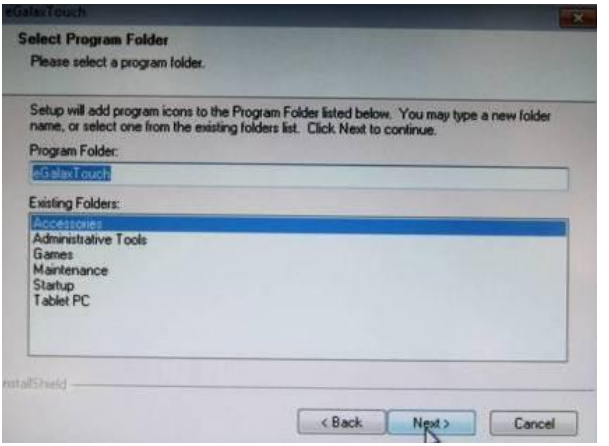

4. Tick "**Support Multi-Monitor System**," and click on the "**Next**" button



5. Select **Destination** Folder, and click on the "**Next**" button



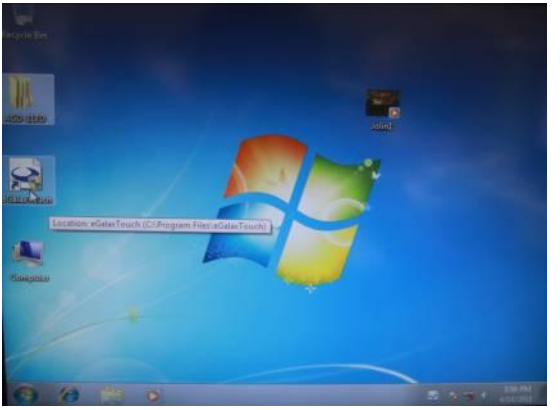

6. Click on the "**Next**" button



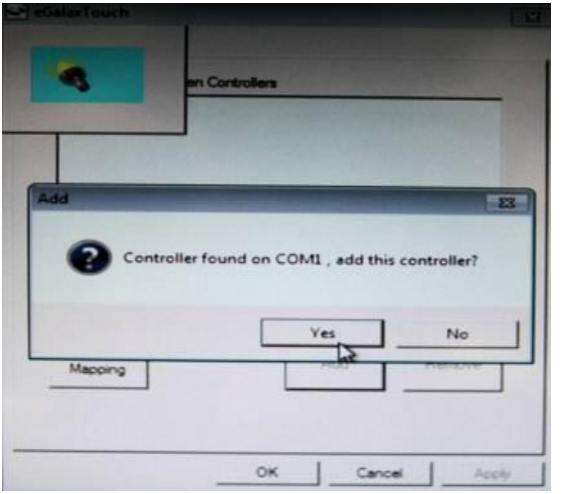
Single monitor, Serial Port controller

The driver files will install automatically. When the "Setup Complete" screen appears, you may choose to run calibration immediately or later. If you choose not to run this program now, you can run it from the EETI Control Panel application.

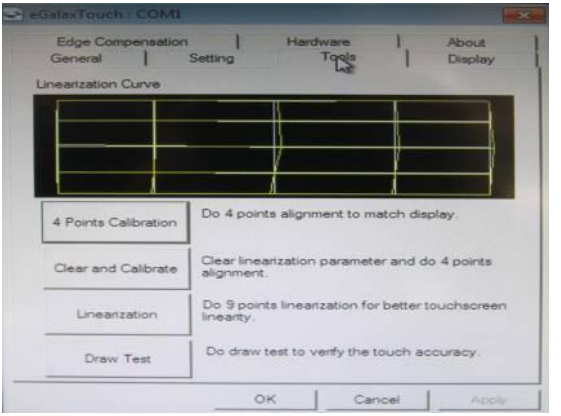
1. Executing eGalax on Desktop



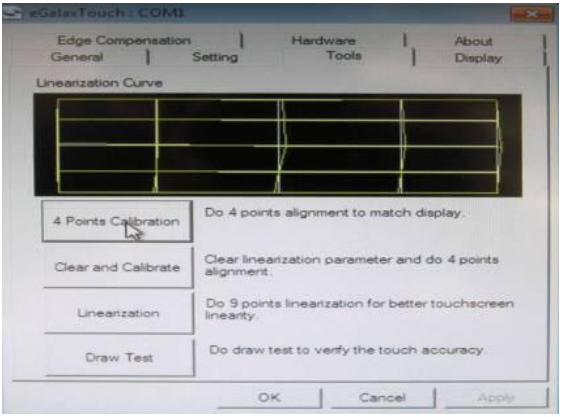
2. Recognition devices choose to run calibration immediately



3. Choose **Tools** to run calibration



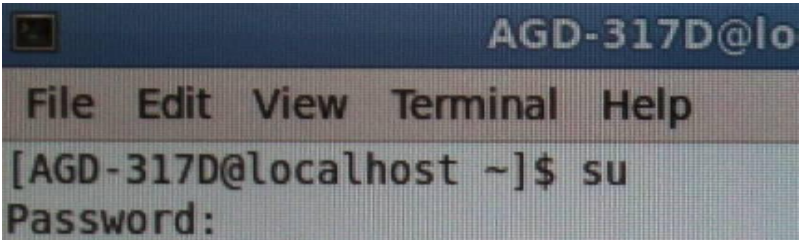

4. Click on **4 Points Calibration** to execute calibration



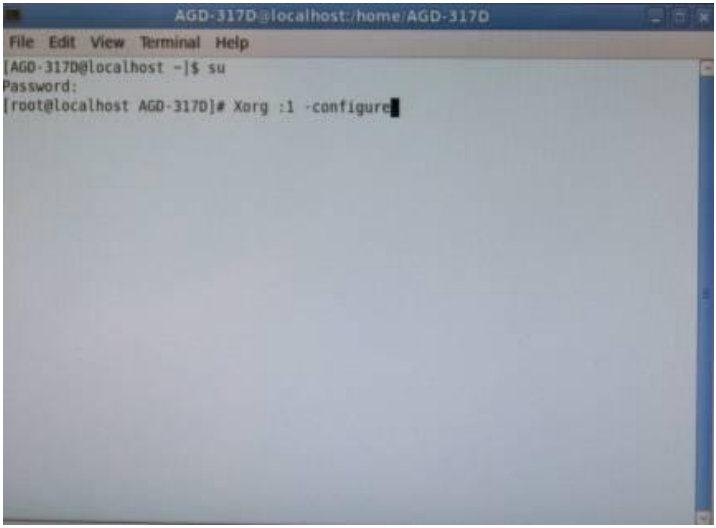

**Note:** If the alignments do not match display by 4 Points Calibration, please use 9 Ports or more to calibrate.

For Linux, please open eGTouch_v2.5.4330.L-x.zip

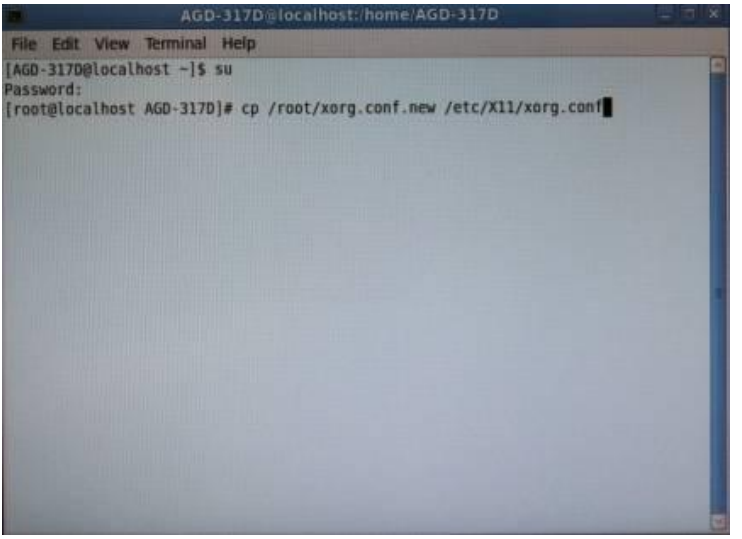
1. Open System Input Command (su) and System Password (Installation is the same as AGD-317D)



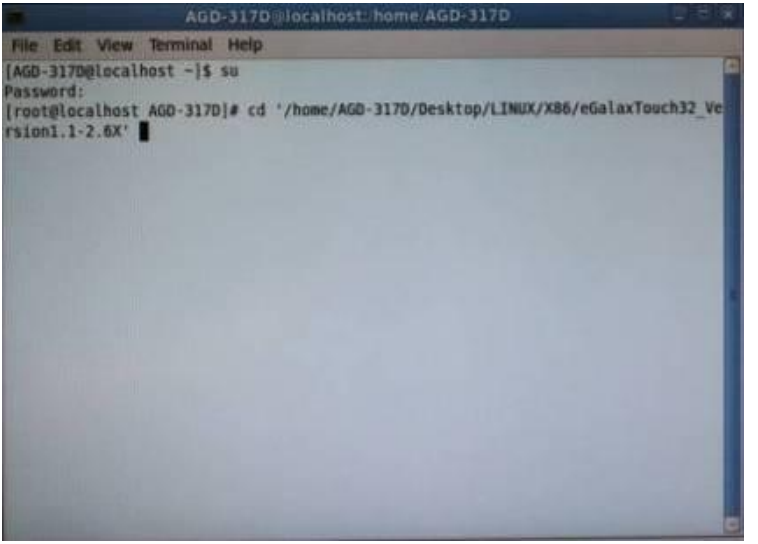

2. Input command ( Xorg : l –configure)



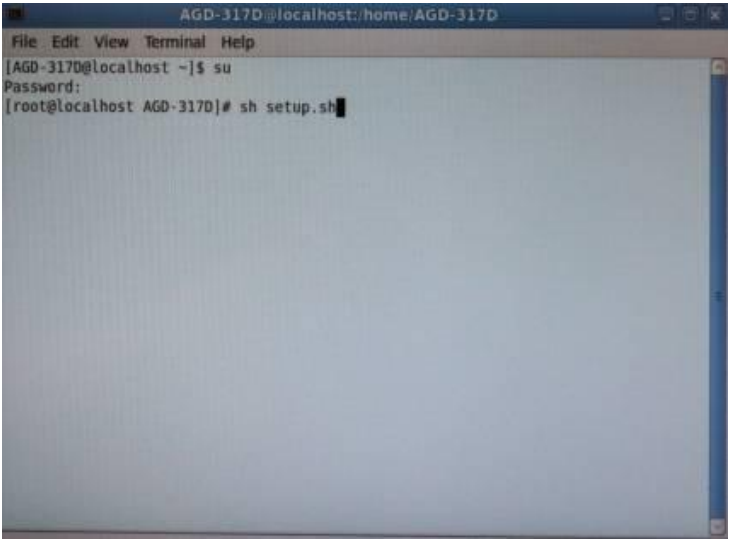
3. Input command ( cp /root/xorg.conf.new /etc/X11/xorg.conf)



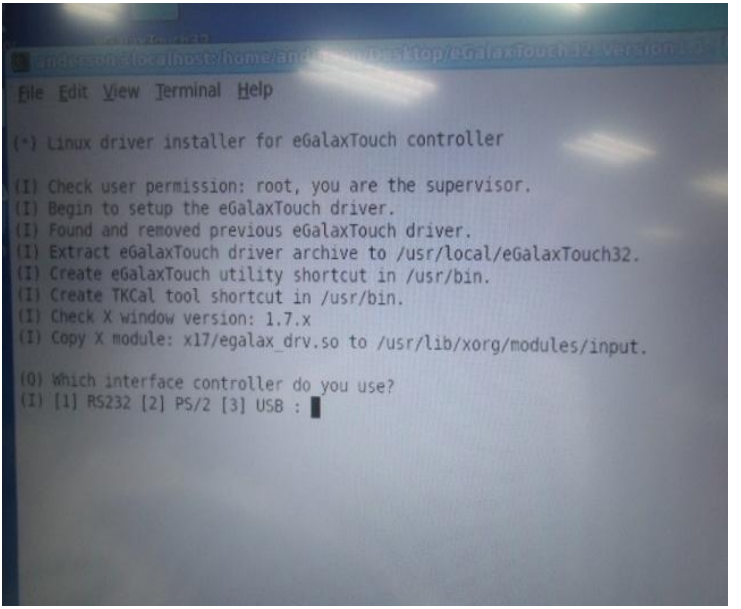

4. Load Linux Folder Touch Driver



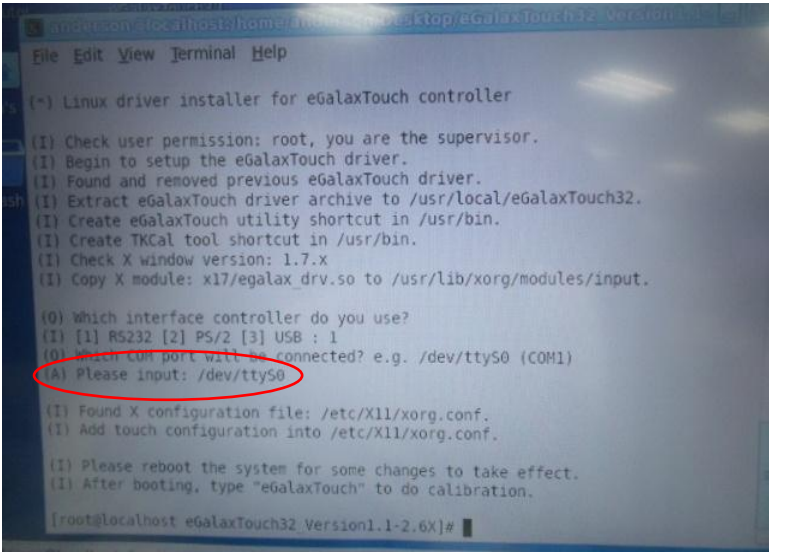
5. Executive Touch Driver



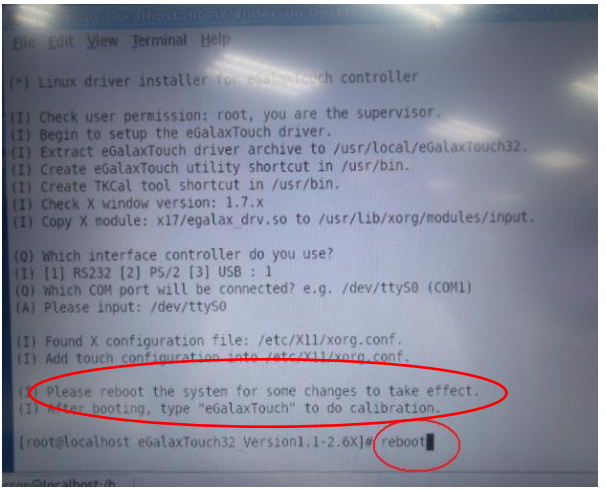

6. Which interface controller do you use?



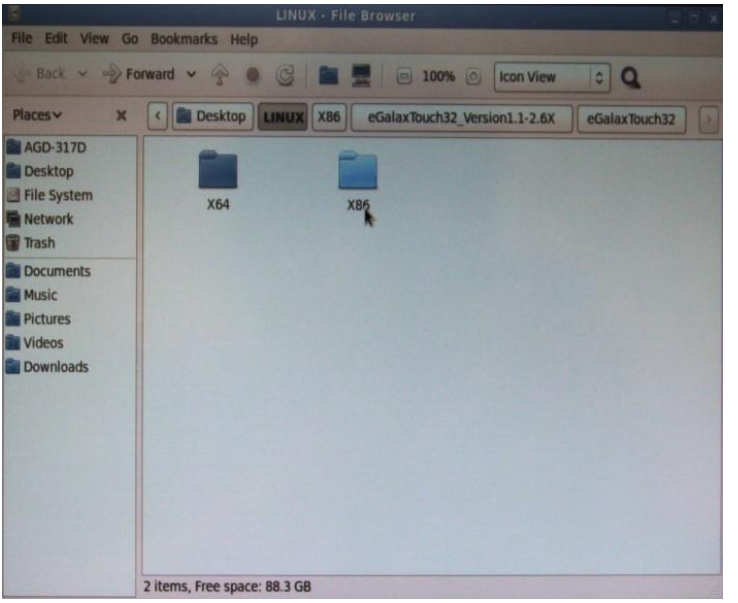
7. Select the "1" COM interface (Select the COM interface and input command: */dev/ttyS0 (COM1 )*, and press the "Enter" key of the keyboard to start the installation)



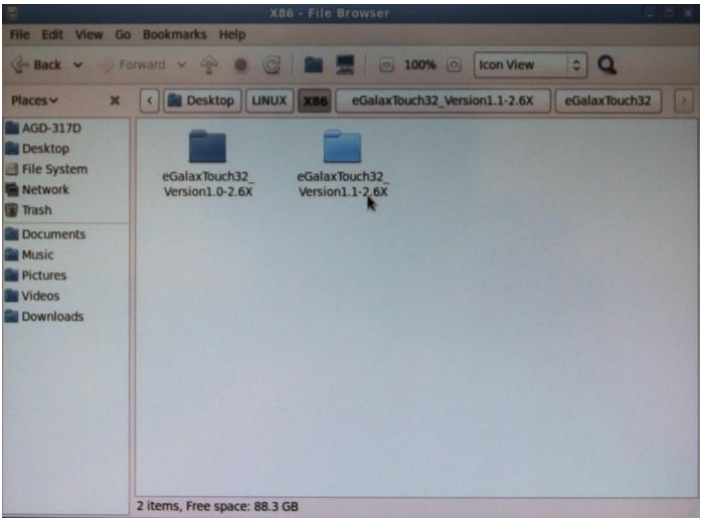

8. Reboot the system to activate the changes



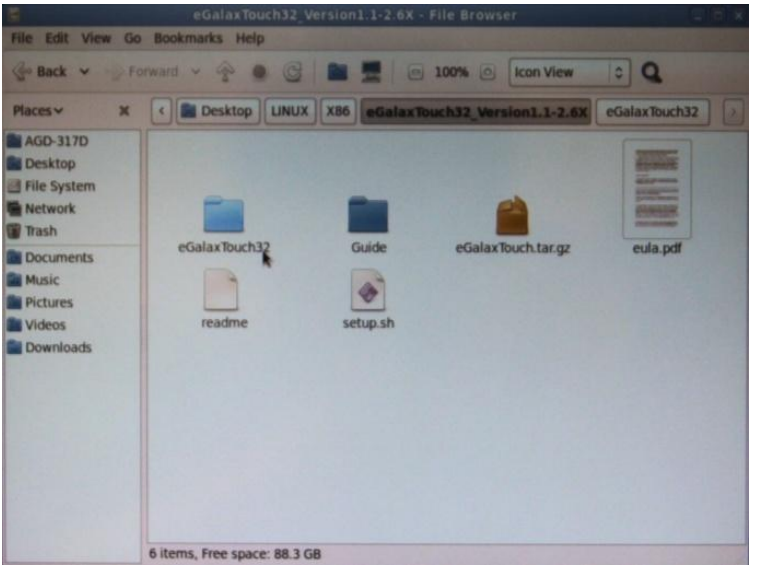
9. Select the **X86** Folder (Because Linux is 32 bit)



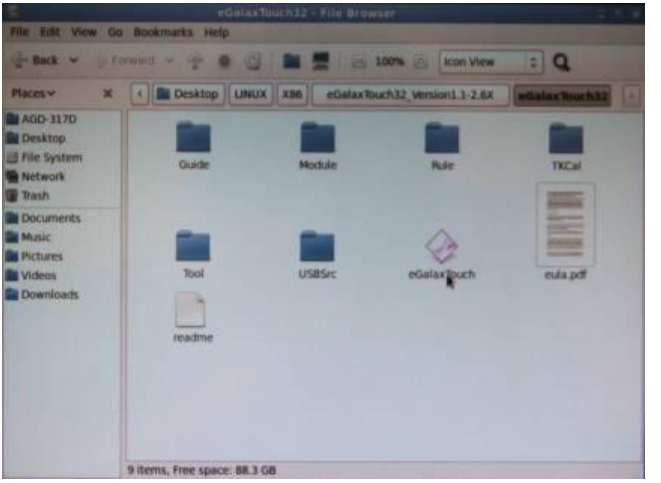

10. Select "**eGalax Touch32_Version1.1-2.6X**" Folder



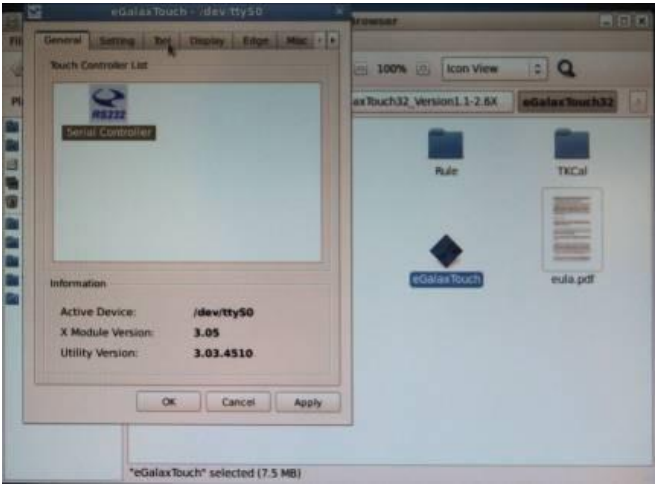
11. Select **"eGalax Touch32"** Folder



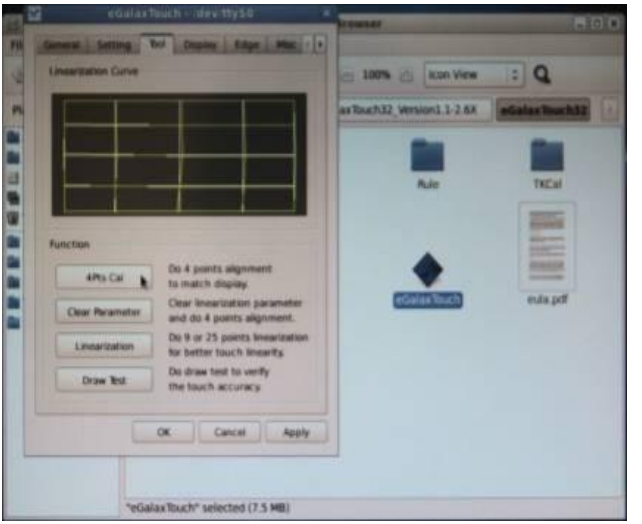

12. Click on the "**eGalax Touch**" to calibrate immediately



13. Choose "Tool" to calibrate



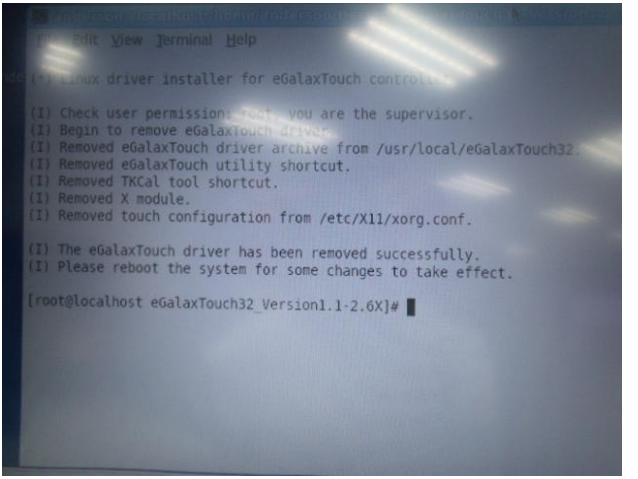
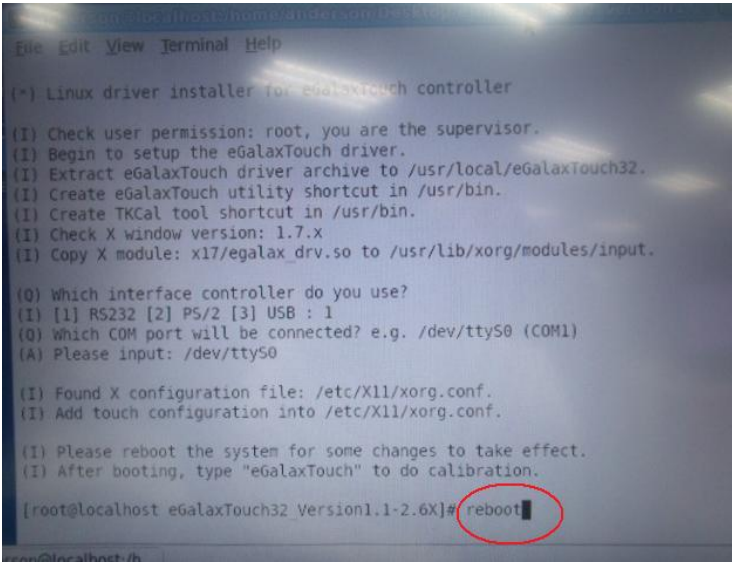

14. Execute 4 Points Calibration




Note: If the alignments do not match display by 4 Points Calibration, please use 9 Ports or more to calibrate.

15. Draw and test (Drawing, Writing)

16. If you are going to replace the Interface, please remove the old Touch Driver (Input command: sh setup.sh uninstall)



17. Reboot the system