AGD-315D

15” XGA Rugged Touch Display
On Screen Display Control
IP-65 Front Bezel
5-wire Resistive Touch Screen

AGD-315D Manual 2nd Ed
June 22, 2015

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Packing List

The LCD monitor comes with the following standard parts shown as below. Check and make sure they are included and in good condition. If anything is missing or damaged, contact the dealer immediately.

- 1 AGD-315D
- 1 Utility CD-ROM
  Contains User's Manual (in PDF format), Drivers and Utilities
- 1 VGA Cable
- 1 USB Cable
- 1 RS-232 Cable

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

Safety & Warranty

1. Read these safety instructions carefully.
2. Keep this user's manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. **Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.**
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
12. Never pour any liquid into an opening. This could cause fire or electrical shock.
13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.

14. If any of the following situations arises, get the equipment checked by service personnel:

a. The power cord or plug is damaged.

b. Liquid has penetrated into the equipment.

c. The equipment has been exposed to moisture.

d. The equipment does not work well, or you cannot get it to work according to the users manual.

e. The equipment has been dropped and damaged.

f. The equipment has obvious signs of breakage.

15. DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4°F) OR ABOVE 60°C (140° F). IT MAY DAMAGE THE EQUIPMENT.

FCC

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:

It may cause the danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer.

Below Table for China RoHS Requirements
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	×	○	○	○	○	○
外部信号连接器及线材	×	○	○	○	○	○
外壳	×	○	○	○	○	○
液晶模块	×	○	○	○	○	○
触控模块	×	○	○	○	○	○
电源	×	○	○	○	○	○

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 **SJT 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 **SJT 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、上述部件物质触控模块为选购品。

Contents

Chapter 1 General Information

1.1 Introduction..... 1-2
1.2 Features 1-3
1.3 General Specification 1-4
1.4 Dimension 1-6
1.5 Waterproof Sponge Position 1-8

Chapter 2 Hardware Installation

2.1 Before Unpacking..... 2-2
2.2 Connecting Power..... 2-3
2.3 Connecting to the Computer 2-4
2.4 VGA Port Connector..... 2-5
2.5 DVI Port Connector 2-6
2.6 Serial Port Connector For Touch Screen..... 2-7
2.7 Mini USB Connector For Touch Screen..... 2-8
2.8 Panel Mounting 2-9
2.9 Easy Stand, Swing-ARM Mounting..... 2-11
2.10 VESA Wall Mounting..... 2-12

Chapter 3 On Screen Display Control

3.1 On Screen Display (OSD) Board Description. 3-2
3.2 OSD Main Menu: Push The MENU Keys..... 3-3
3.3 Select Input Source. 3-4

3.4 Contrast/ Brightness- Submenu. 3-5
3.5 Geometry Menu..... 3-6
3.6 Color Temperature- Submenu OSD Main Menu: Push The MENU Keys..... 3-7
3.7 RGB Color- Submenu. 3-8
3.8 Language- Submenu..... 3-9
3.9 Auto Config- Submenu..... 3-10
3.10 Mode Resolution- Submenu Chapter..... 3-11
3.11 Exit Menu- Submenu..... 3-12

Chapter 4 Touch Screen Driver Installation

4.1 Introduction..... 4-2
4.2 Resistive Touch screen Driver Installation..... 4-5
4.3 Installing Driver for Windows® XP/ Windows® 7 / Linux 4-7

Chapter

1

General Information

1.1 Introduction

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

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

1.2 Features

- 15” XGA (1024 x 768) TFT LCD Display
- Wide Temperature Operation (0 ~ 55°C)
- Front USB Ports for Easy Access
- Rugged IP-65 Aluminum Die Cast Front Bezel
- Reliable On Screen Display (OSD) button
- Wide Power Input Range: 9-30V DC With 3-Pin Terminal Block
- Flexible Touch Screen Interface: RS-232 or USB
- Panel/ VESA/ Wallmount: VESA 75/100 standard

1.3 General Specification

- **Type** Color TFT
- **Size** 15" TFT LCD
- **Construction** IP-65 Aluminum Die Cast Front Bezel
- **Mounting** Panel/ VESA/ Wallmount
- **Input signal** VGA, DVI
- **Control** OSD (On Screen Display) on the front cover
- **Power Supply** External power adapter
- **Dimension** **AGD-315D**
  15.35" (W) x 12.74"(H) x 4.91"(D) (390mm x 323.5mm x 124.7mm)
  Cutout Size
  14.8"(W) x 12.03"(H) (376mm x 305.5mm)
- **Gross Weight** 9 lb (4.1 Kg)
- **Power Consumption** Input : 9V~30V DC, 4~1.2A
  Output: 3.33A @ DC 12V (Max.)
- **Brightness** HTT : 450 cd/m^2 (TYP.)
- **MTBF** 100,000 hrs
- **Viewing Angle** HTT:160°(H)/140°(V)
- **Resolution** 1024 x 768
- **Color** 16.7M colors

Touchscreen

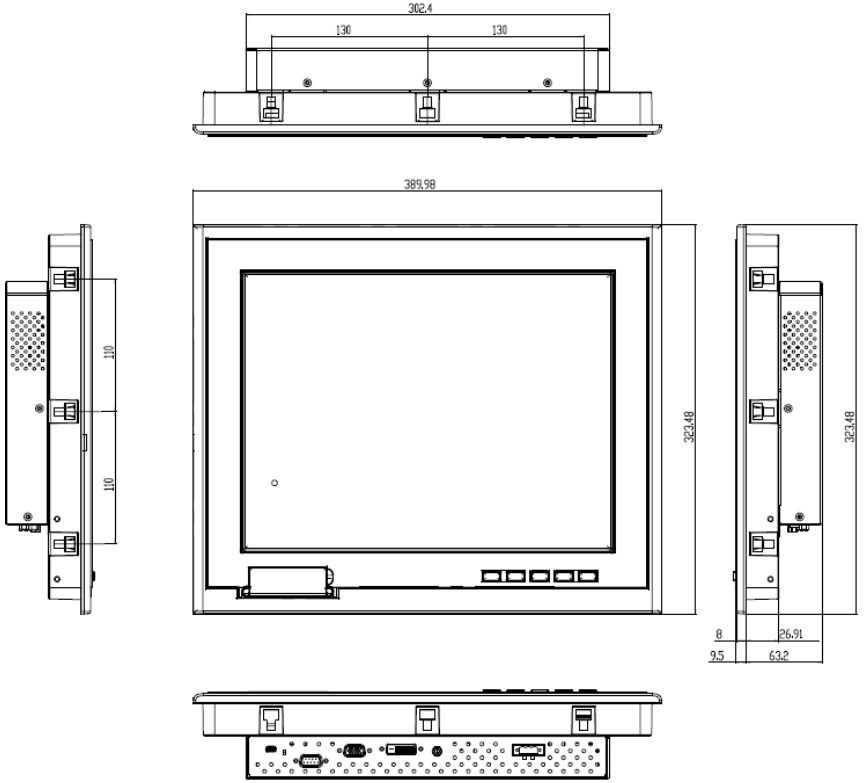
- **Type** 5-wire resistive

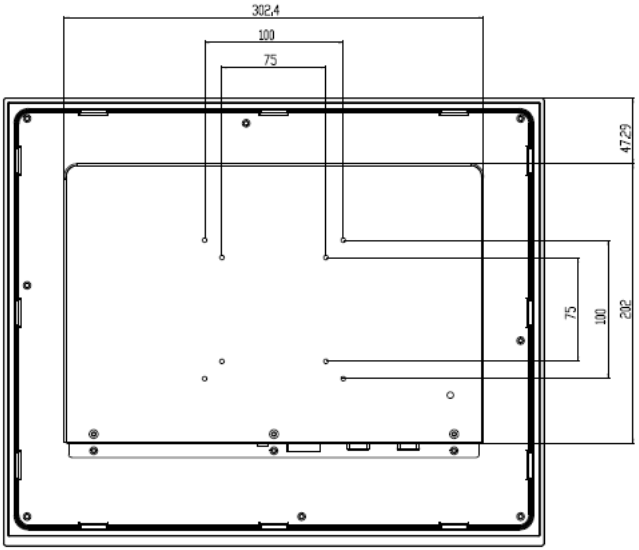
- **Resolution** 2048 x 2048
- **Light transmission** 88 ± 2% (Pure)
- **Controller** RS-232 & USB interface (optional)

Environmental

- **Operating temperature** 32°F~ 131°F (0°C to 55°C)
- **Vibration** 1g rms/5-500Hz/random operation
- **Shock** 20 G peak acceleration (11 msec. duration)
- **EMC** CE/FCC Class A

1.4 Dimension



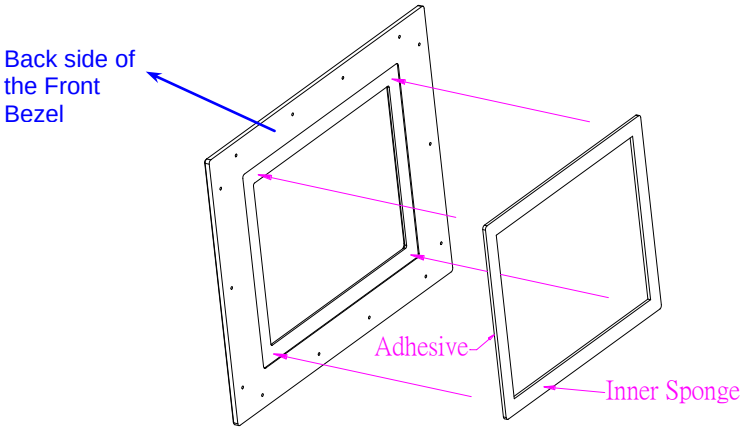

302.4
100
75
47.29
75
100
202

1.5 Waterproof Sponge Position

Inside sponge:

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

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



Chapter

2

Hardware Installation

2.1 Before Unpacking

It is very important to place the LCD Display in a suitable environment.

- The surface for placing the LCD Display should be stable and level.
- Make sure the place has good ventilation, and out of direct sunlight; away form sources of excessive dust, dirt, heat, water, moisture and vibration.
- Convenience for connecting the LCD Display the related facilities should be well considered too.

2.2 Connecting Power

To power on the LCD Display, use the provided AC-DC adapter and the power cord to connect to the power output socket of the monitor. Fasten the connector securely.

A ”Surge Protection” device plugged between the AC-DC adapter and the wall outlet is recommended to prevent the effects of sudden current variations from reaching the LCD Display. The sudden peaks of electricity may harm the LCD Display.

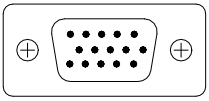
2.3 Connecting to the Computer

Turn off the computer and the LCD Display before connecting.

- Use the Monitor-to-PC VGA、DVI cable to connect the LCD Display to your computer. The cable heads are the same on either side.
- Fasten the connectors securely.

2.4 VGA Port Connector

This DB-15 connector can be connected to the system via the external 15-pin DB-15 connector through the I/O from this unit.

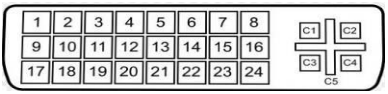


Pin	Signal	Pin	Signal
1	Red	2	Green
3	Blue	4	N.C.
5	GND	6	GND
7	GND	8	GND
9	N.C.	10	GND
11	N.C.	12	SDA
13	HSYNC	14	VSYNC
15	SCL		

2.5 DVI Port Connector

Connecting a standard DVI-D connector through I/O port of this unit.

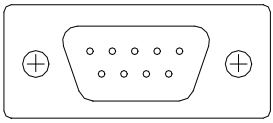
This connector supports digital signals only



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.		

2.6 Serial Port Connector For Touch Screen

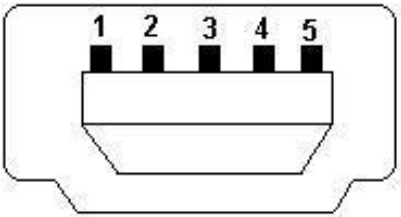
This pin definition of the connector will be referred when a touch screen has been installed. It must be connected to the RS-232 port of the PC. The touch screen cable is included with all orders which include the optional RS-232 Touch Screen.



Pin	Signal	Pin	Signal
1	Not Used	2	RXD, Receive Data
3	TXD, Transmit Data	4	Not Used
5	GND, Ground	6	Not Used
7	Not Used	8	Not Used
9	Not Used	10	Not Used

2.7 Mini USB Connector For Touch Screen

This pin definition of the connector will be referred when a touch screen has been installed. It must be connected to the Mini USB port of the PC. The touch screen cable is included with all orders which include the optional Mini USB Touch Screen.



Pin	Signal	Pin	Signal
1	+5V	2	DATA (-)
3	DATA (+)	4	N.C.
5	GND, Ground		

Note: Touch Screen can be switched to USB or COM by adjusting the DIP-switch

2.8 Panel Mounting

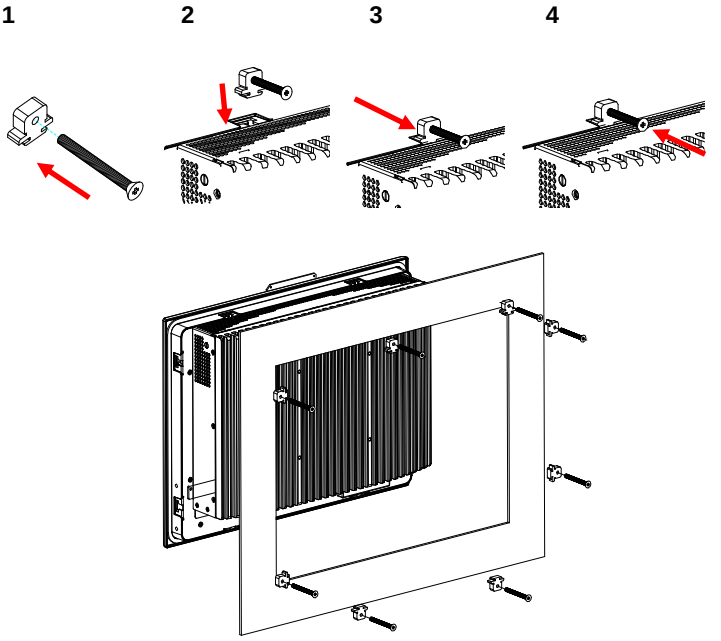
To mount the panel onto a wall, you will need screws along the mounting brackets, which are packed in the accessory box. Follow the steps below:

Step 1: Insert the screw through the mounting bracket.

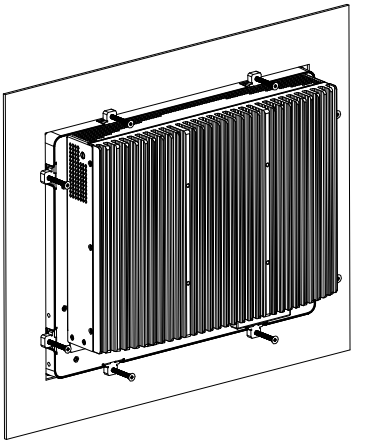
Step 2: Align the bracket at the tracks on the monitor.

Step 3: Push the bracket in, secure by tightening the screws.

Step 4: A bracket is now installed. Repeat the steps above and install all the brackets around the monitor until it is firmly mounted.



Complete Illustration

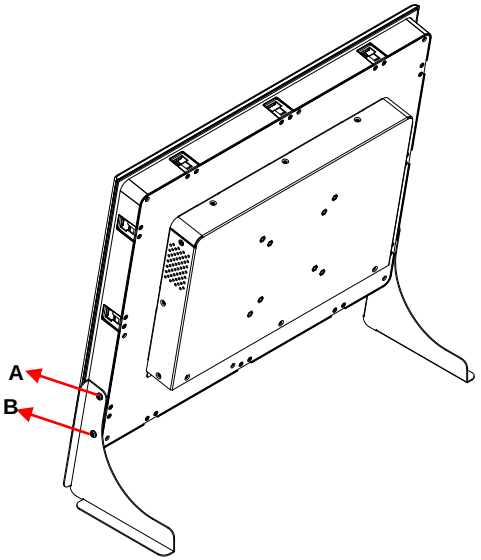


2.9 Easy Stand, Swing-ARM Mounting

The AGD-315D series can be mounted in different ways. You can place the desktop stand for desktop use or attach it on a swing-arm bracket.

Easy Stand

The brackets of easy stand are attached to the rear of AGD-315D. First of all, loosen the screw of point A. Then, unscrew the screw of point B. Pull down the bracket and use the screw got from point A to fasten the bracket in point B. There should be no screw in point A.



2.10 VESA Wall Mounting

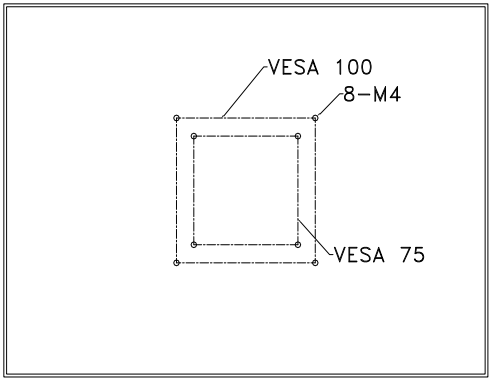
Mounting the LCD Display with UL Listed Wallmount Bracket only. The LCD Display can be mounted on a monitor arm or wallmount plate.

Caution:

When mounting the LCD Display, take care to tighten the retention screws or bolts until fully secured, but do not over tighten. Over tighting 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

On Screen Display Control

3.1 On Screen Display (OSD) Board Description

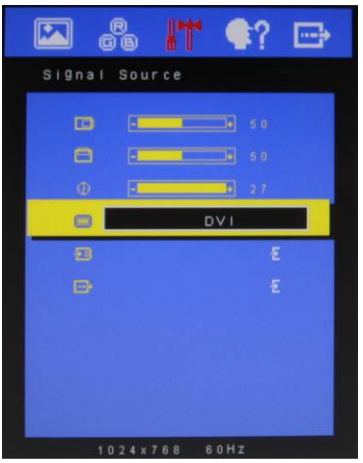
Buttons	Description
Power	➢ Turn the monitor power ON or OFF.
Menu / Enter	➢ Activate the OSD menu. ➢ Enter/confirm the selected option.
UP / Right / Increase / Input select	➢ Move the selector to the next option. ➢ Increase the gauge value of the selected option. ➢ Change input source.
Down/ Left / Decrease	➢ Move the selector to the previous option. ➢ Decrease the gauge value of the selected option.
Auto	➢ Automatically adjust the clock, phase, H-position and V-position. ➢ Value to the most optimal settings. Use full screen when enabling this function.

3.2 OSD Main Menu: Push The MENU Keys

Available Key Functions

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

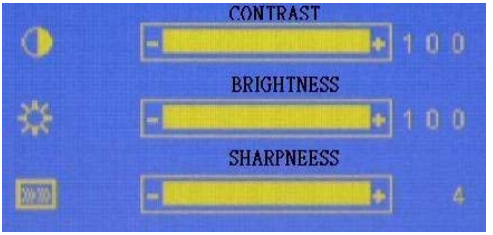
3.3 Select Input Source



• Available Key Functions

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

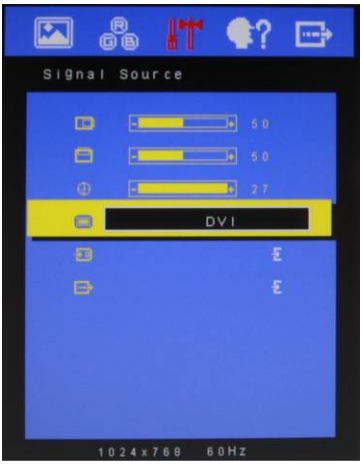
3.4 Contrast/ Brightness- Submenu

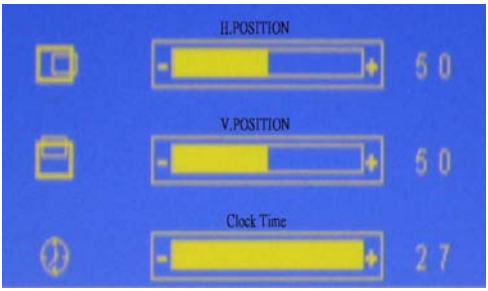


Available Key Functions

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

3.5 Geometry Menu

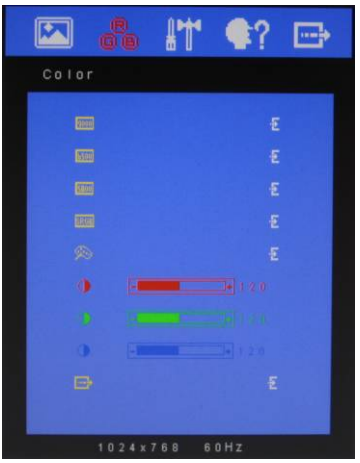




Available Key Functions

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

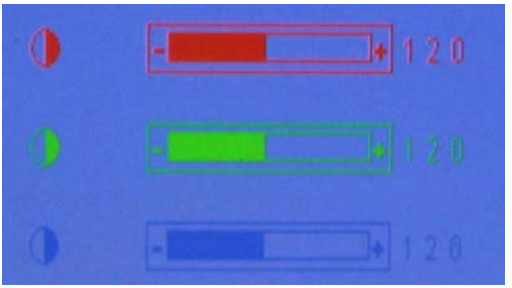
3.6 Color Temperature- Submenu



Available Key Functions

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

3.7 RGB Color- Submenu



Available Key Functions

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

3.8 Language- Submenu

Available Key Functions

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

3.9 Auto Config- Submenu

Available Key Functions

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

3.10 Mode Resolution- Submenu

Available Key Functions

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

3.11 Exit Menu- Submenu

Available Key Functions

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

Chapter

4

Touch Screen Driver Installation

4.1 Introduction

The optional AGD-315D 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.

Note: For A1 version, if you connect the RS-232 and USB touch screen interfaces to the system simultaneously, the USB mode will be the priority. For A2 version, the connection will be switched by software.

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.

Serial Interface

- EIA 232E (Serial RS-232), DCE configuration. 8 Data Bits, 1 Stop Bit, No Parity, Full Duplex.
- Hardware handshaking: RTS/CTS.
- DSR is pulled HIGH (>+3V) by the touch screen control board when connected and powered. DTR can be asserted by the host to interrupt the flow of data from the controller. Note that if the application does not monitor CTS, then an interval of approximately 5 seconds should be inserted between the issuance of a reset command and any other command.

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: 2048 x 2048, size independent.

Conversion Time: Approximately 20 ms per coordinate set.

4.2 Resistive Touch screen 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® XP/ Windows® 7 / Linux

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

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

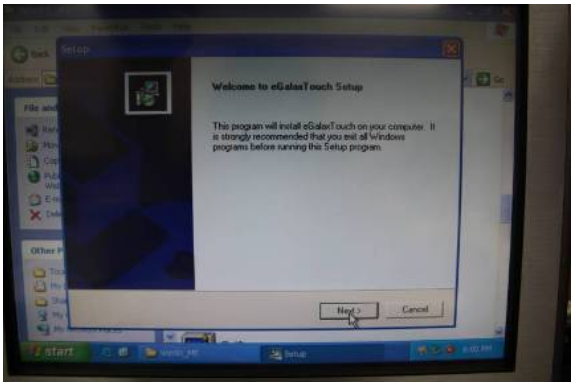
Note 2: Please make sure that the OS of your computer supports Windows® XP/ Windows® 7 while installing Windows® XP/ Windows® 7 drivers in the CD-ROM to the system.

For Windows® XP OS, please execute:

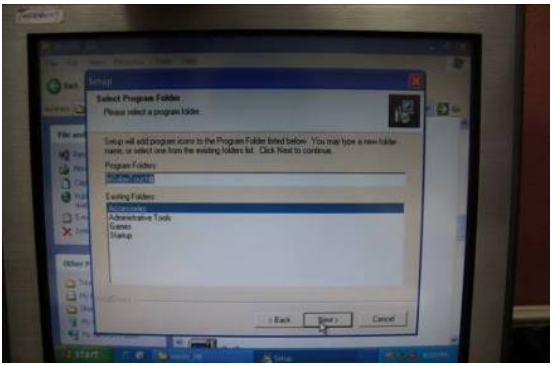
CD-ROM:

\\TouchScreen-DRV\eGalax Touch \Win XP\Setup.exe

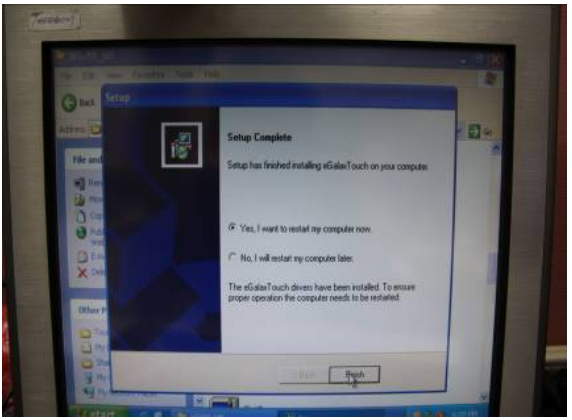
1. Click on the "**Next**" button on the Welcome window screen



2. Click the “**Next**” button on the screen



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

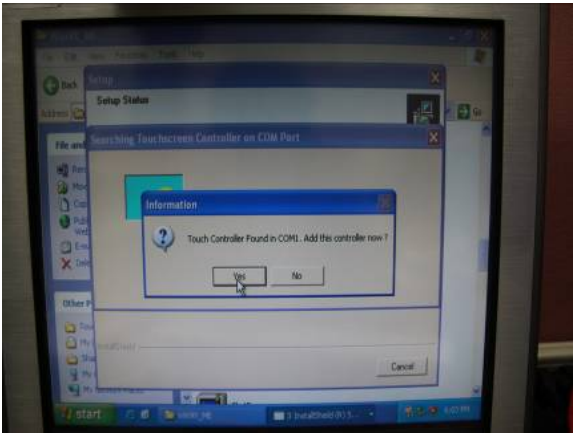


Single monitor, Serial Port controller

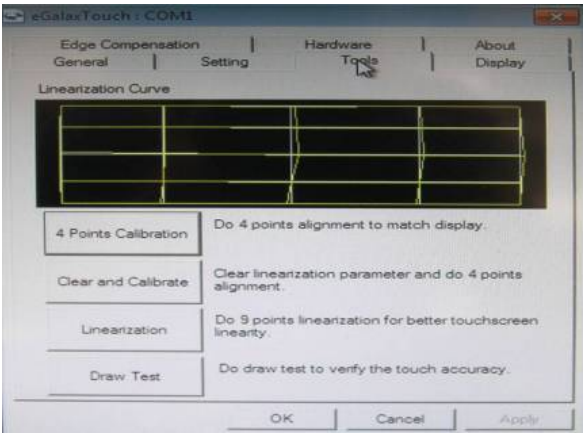
The driver files will install automatically. When the "Setup Complete" screen appears, you may choose to run calibration immediately or later. If you choose not to run this program now, you can run it from the EETI Control Panel application.

1. Executing **eGalax** on Desktop

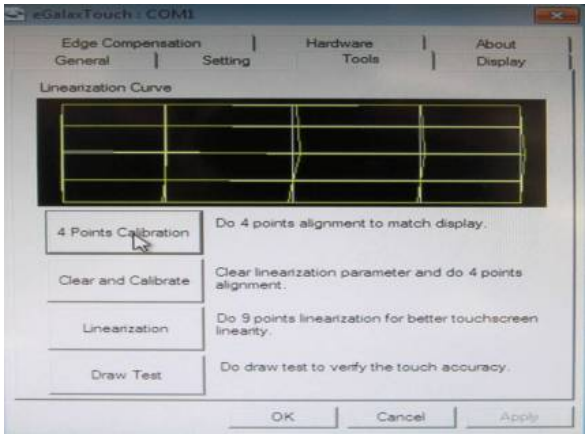
2. Recognition devices choose to run calibration immediately



3. Choose **Tools** to calibrate



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



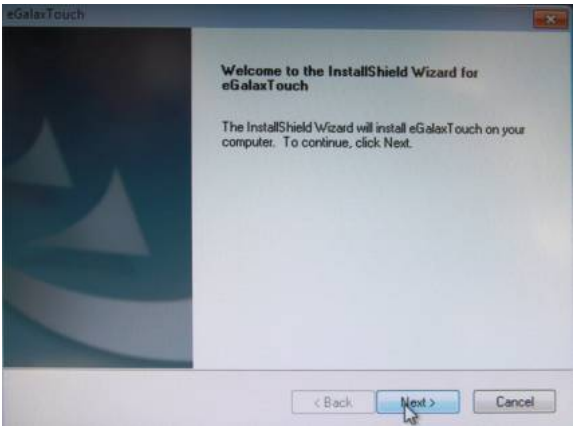
Note: If the alignments do not match display by 4 Points Calibration, please use 9 Ports or more to calibrate.

For Windows® 7 OS please execute:

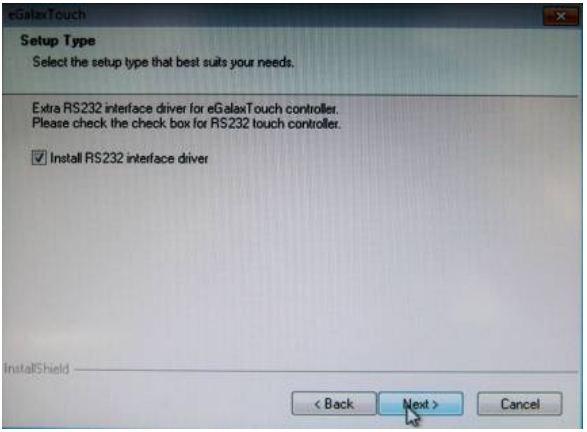
CD-ROM:

\\TouchScreen-DRV\eGalax Touch \Win 7 \Setup.exe

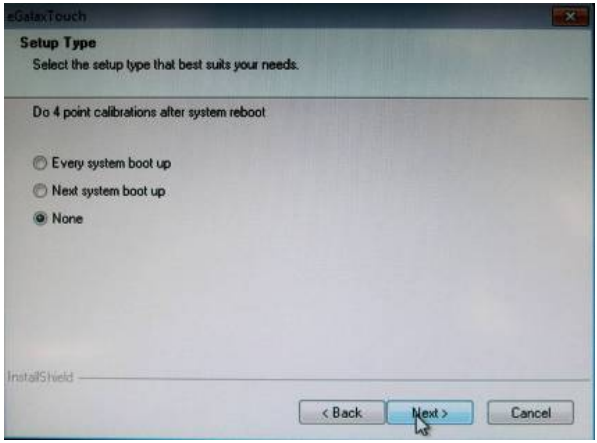
1. Click on the "**Next**" button



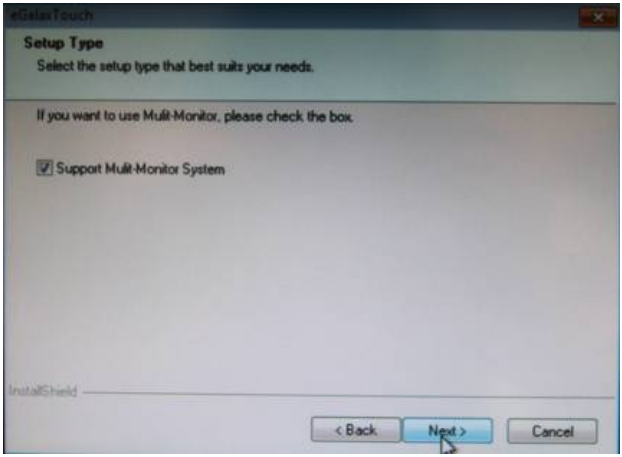
2. Click on the "**Next**" button



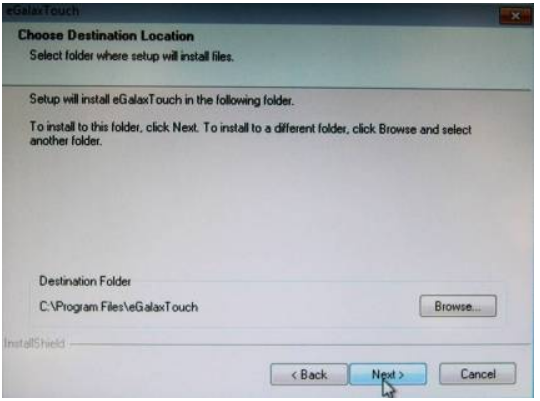
3. Tick “**None**” if the system did not start 4 points calibrating after reboot. Click on the “**Next**” button.



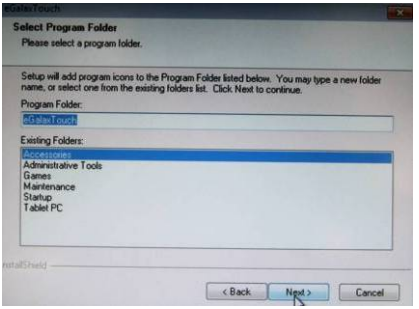
4. Tick “**Support Multi-Monitor System**,” and click on the “**Next**” button



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



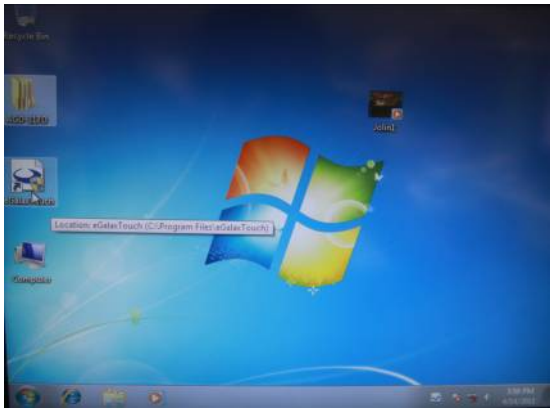
6. Click on the "**Next**" button



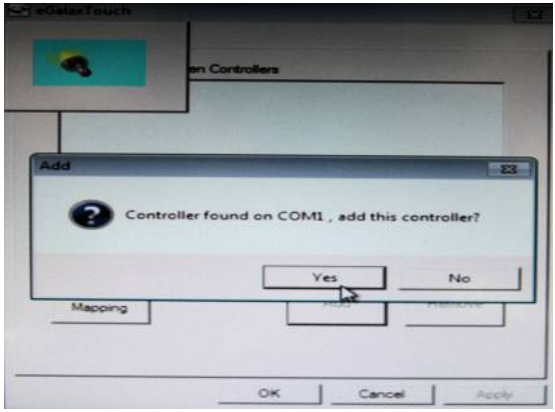
Single monitor, Serial Port controller

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.

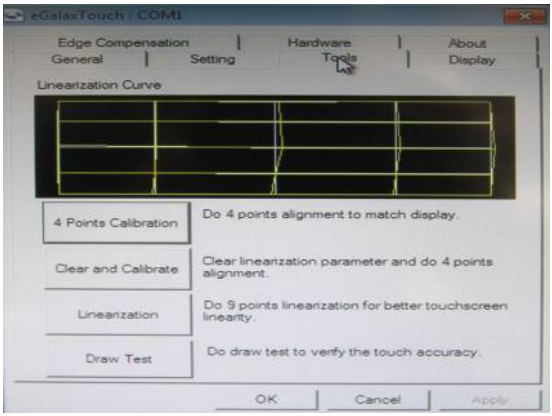
1. Executing **eGalax** on Desktop



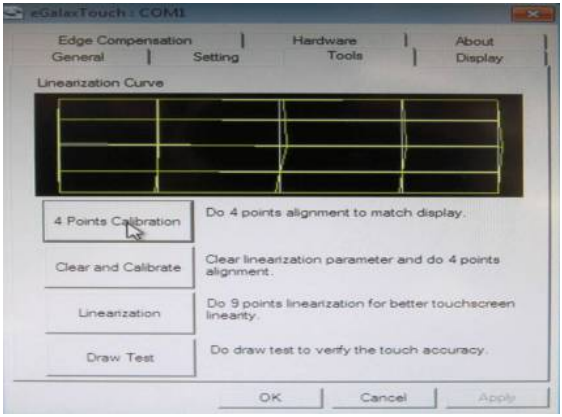
2. Recognition devices choose to run calibration immediately



3. Choose **Tools** to run calibration



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



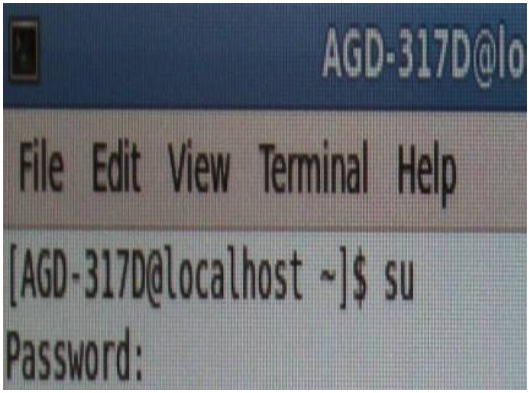
Note: If the alignments do not match display by 4 Points Calibration, please use 9 Ports or more to calibrate.

For Linux Fedora 14 kernel 2.6.35.6-45.fc14 OS please execute:

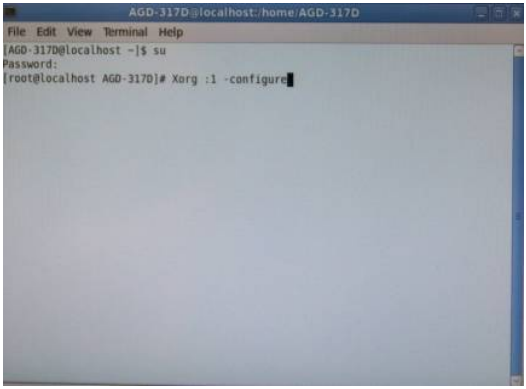
CD-ROM:

\\TouchScreen-DRV\eGalax Touch \Linux\eGalaxTouch 32

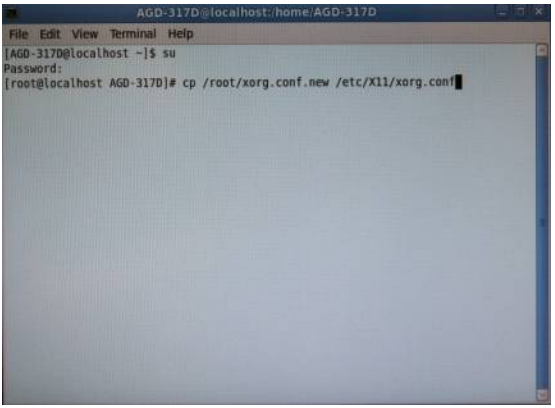
1. Open System Input Command (su) and System Password



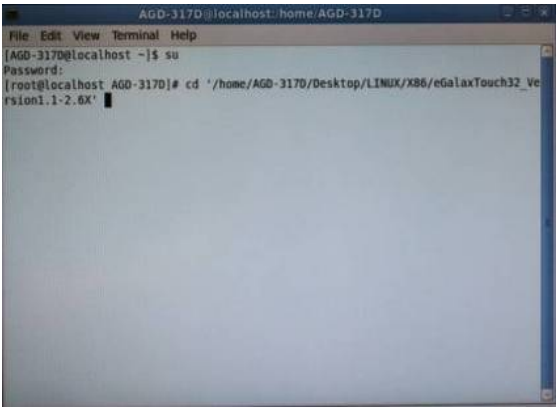
2. Input command (Xorg : l –configure)



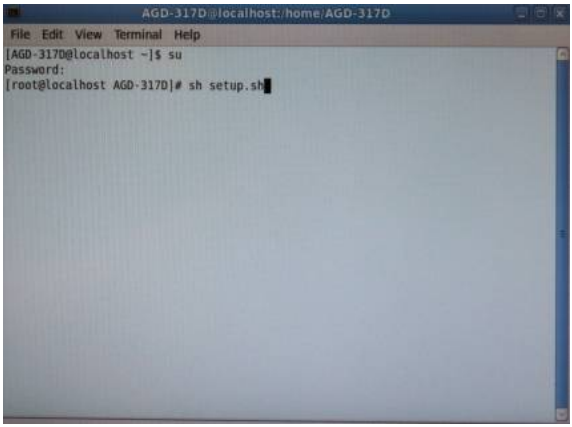
3. Input command (cp /root/xorg.conf.new /etc/X11/xorg.conf)



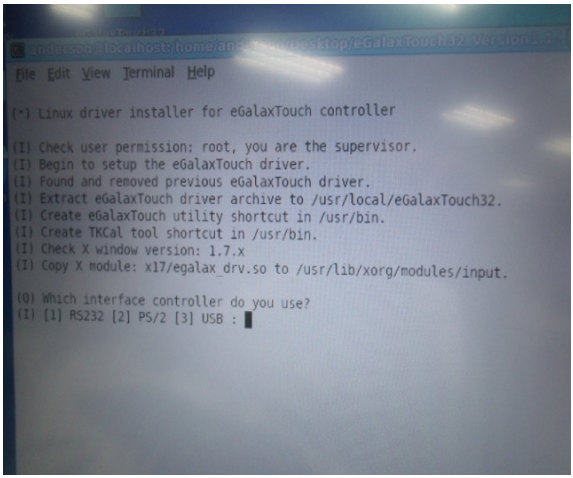
4. Load Linux Folder Touch Driver



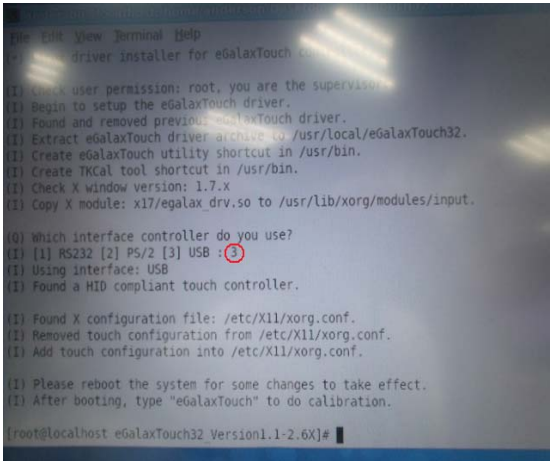
5. Executive Touch Driver



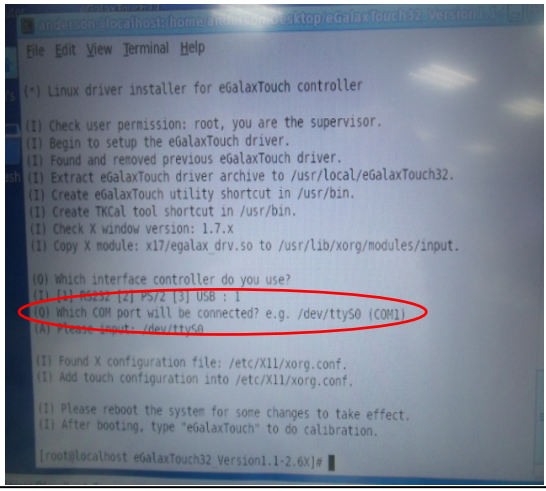
6. Which interface controller do you use?



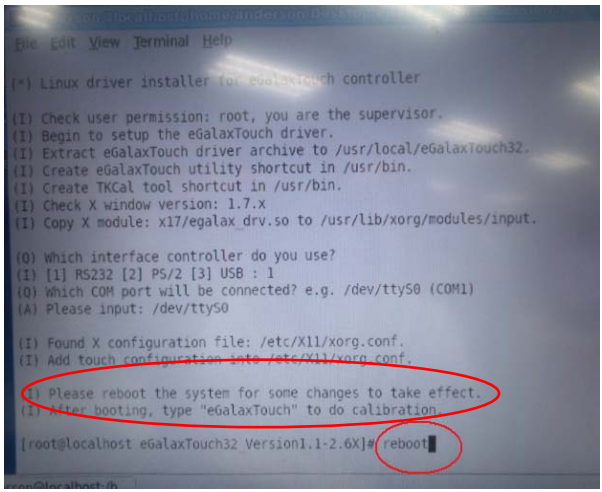
7. Select the " **3** " USB interface. (Select the USB interface and press "**Enter**" key of the keyboard to start the installation)



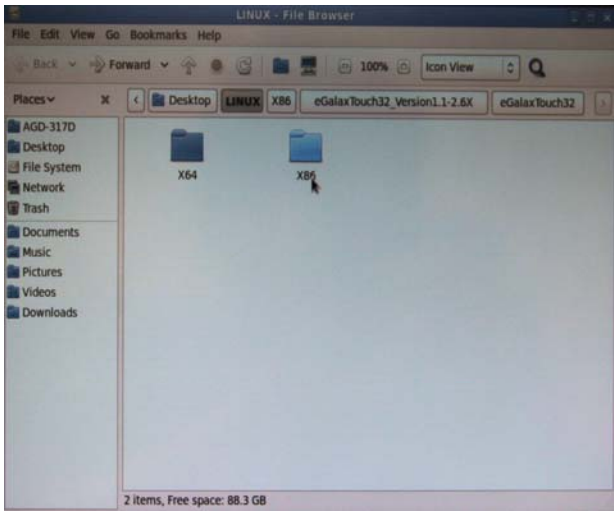
8. Select the "**1**" COM interface (Select the COM interface and input command: ***/dev/ttyS0 (COM1)***, and press the "**Enter**" key of the keyboard to start the installation)



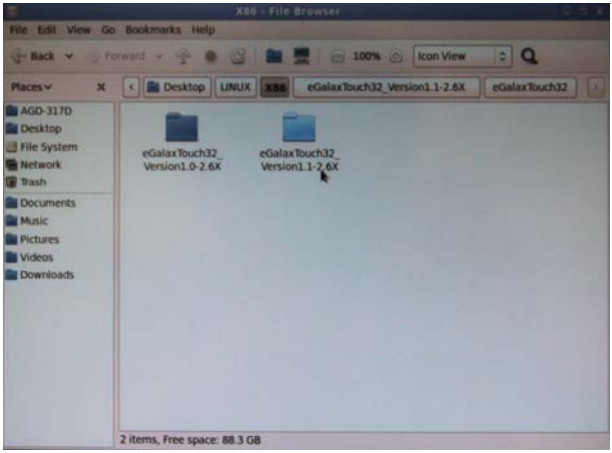
9. Reboot the system to activate the changes



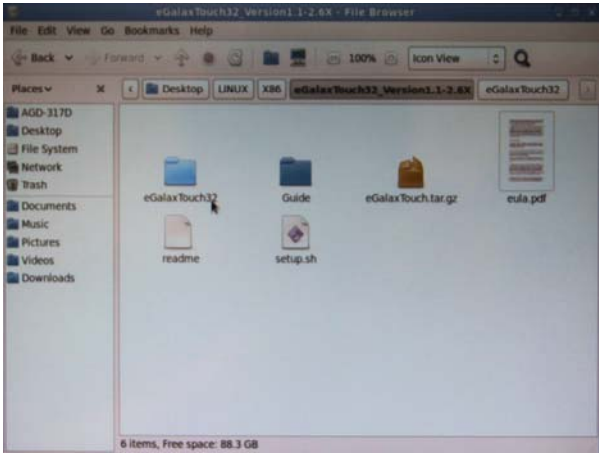
10. Select the **X86** Folder (Because Linux is 32 bit)



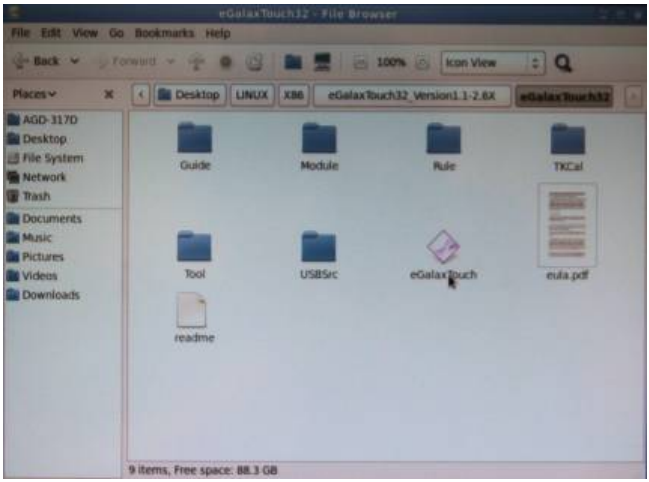
11. Select "**eGalax Touch32_Version1.1-2.6X**" Folder



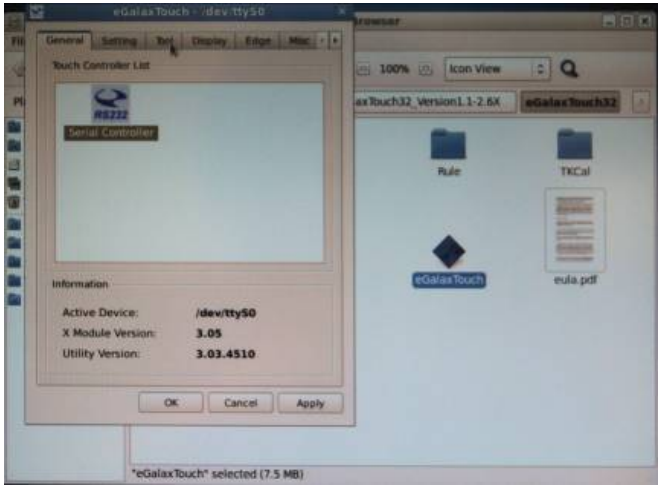
12. Select **"eGalax Touch32"** Folder



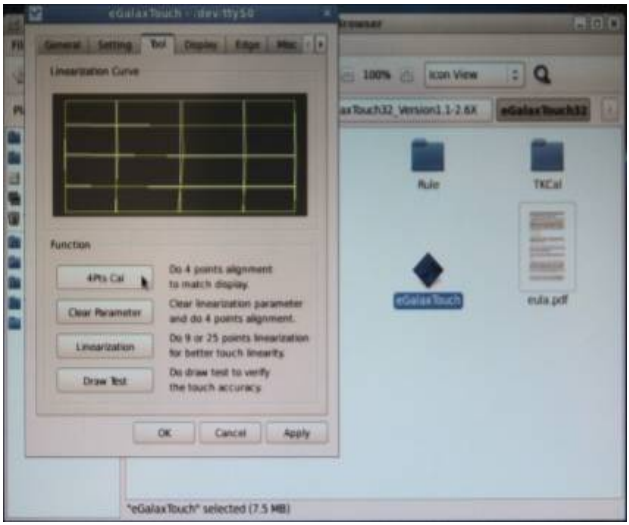
13. Click on the "**eGalax Touch**" to calibrate immediately



14. Choose "**Tool**" to calibrate

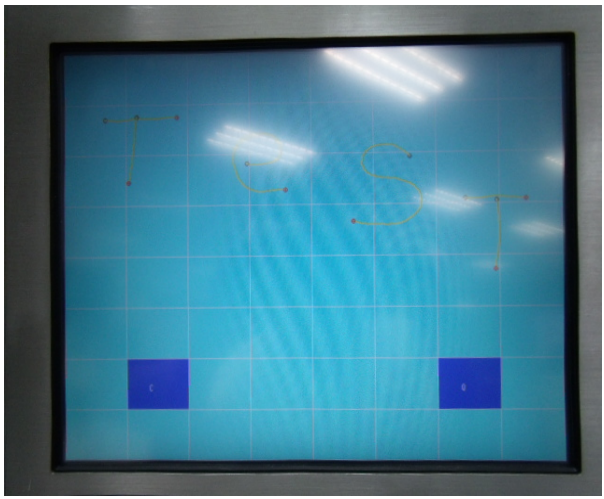


15. Execute 4 Points Calibration

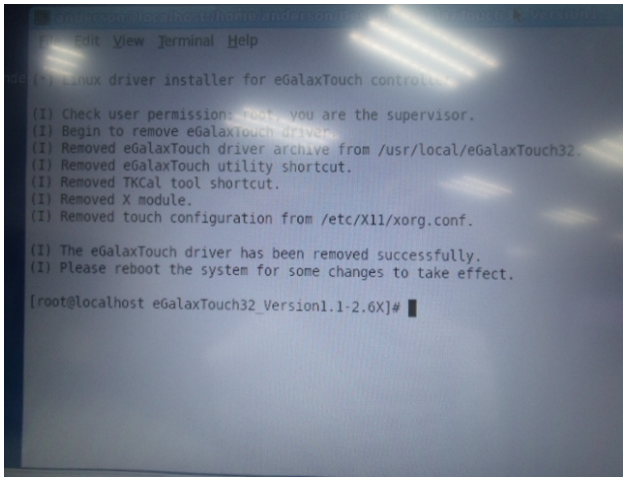
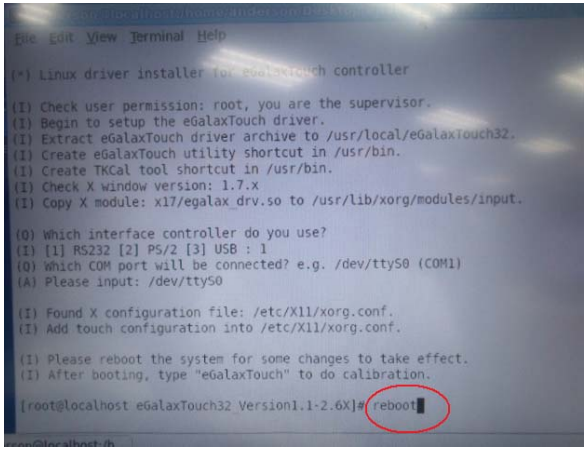


Note: If the alignments do not match display by 4 Points Calibration, please use 9 Ports or more to calibrate.

16. Draw and test (Drawing、Writing)



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



18. Reboot the system