AGD-315P

15” XGA Rugged Touch Display
On Screen Display Control
5-wire Resistive Touch Screen

Industrial LCD Display

AGD-315P Manual 1st Ed
April 2012

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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-315P
- 1 Utility CD-ROM
  Contains User Manual (in PDF format), Drivers and Utilities
- 1 Power adapter
- 1 VGA cable
- 1 Cable RS-232

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 70° C (158° 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 **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、上述部件物质触控模块为选购品。

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Chapter

1

General Information

1.1 Introduction

Thank you for purchasing the AGD-315P Industrial Display Panel TFT LCD monitor - a marvelous contribution of cutting-edge technology.

The LCD monitor has been designed with serious thoughts to present the best performance for most applications. Symbol of elegance, its compact and slim profile are well suited in working locations where space is at a premium.

The TFT LCD monitor displays sharper, more brilliant, crisper and flicker-free images. Complying with the power management regulations of VESA DPMS, the LCD monitor is extremely energy efficient and power saving. Additionally, the LCD monitor has extremely low radiation emissions and near zero electromagnetic fields, which are supreme benefits.

Fully compatible with PC system, the LCD monitor provides full interface for all sorts of related standards. Supported by “Plug & Play” complying with DDC1/DDC2B, installing the LCD monitor is absolutely trouble free.

The On Screen Display menu provides the user a convenient interface to make the necessary adjustments for optimum display performance.

1.2 Features

- 15” XGA (1024 x 768) TFT LCD Display
- Sunlight Readable: 250 Nits CCFL Backlight
- Reliable On Screen Display (OSD) button
- Flexible Touch Screen Interface: RS-232 or USB
- Panel/ VESA/ Wallmount/ Desktop mountable

1.3 General Specification

- **Type** Color TFT
- **Size** 15" TFT LCD
- **Construction** Open Frame Steel
- **Mounting** Panel/ VESA/ Wallmount
- **Input signal** VGA, DVI
- **Control** OSD (On Screen Display) on the rear panel
- **Power Supply** External AC/DC power adapter
- **Dimension** **AGD-315P**
  16.34" (W) x 12.48" (H) x 1.93"(D) (415mm x 317mm x 49mm)
- **Gross Weight** 19.14 lb (8.7 kg)
- **Power Consumption** Input: DC 12V with lock
- **Brightness** HTT : 250 cd/m^2 (TYP)
- **MTBF** 30,000 hrs
- **Pixel Pitch** HTT: 0.3075(H)x0.3075(V)
- **Viewing Angle** HTT: 85°(H)/80°(V)
- **Resolution** 1024 x 768
- **Display Modes** Full Screen in 640x480, 800x600, 1024x768 Modes
- **Color** 16.2M colors

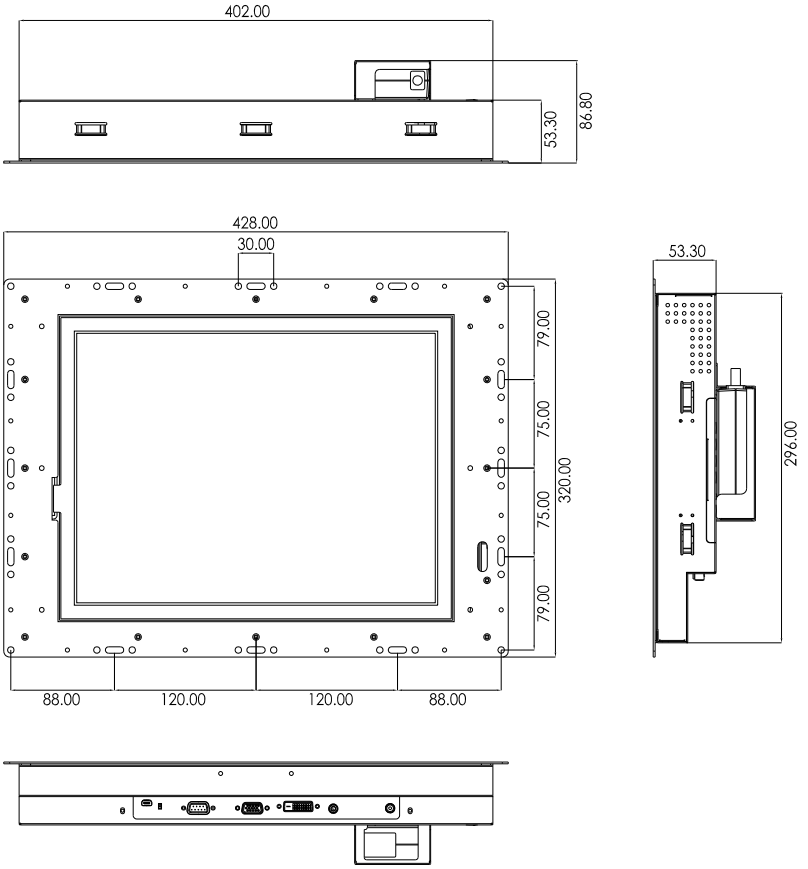
Touchscreen

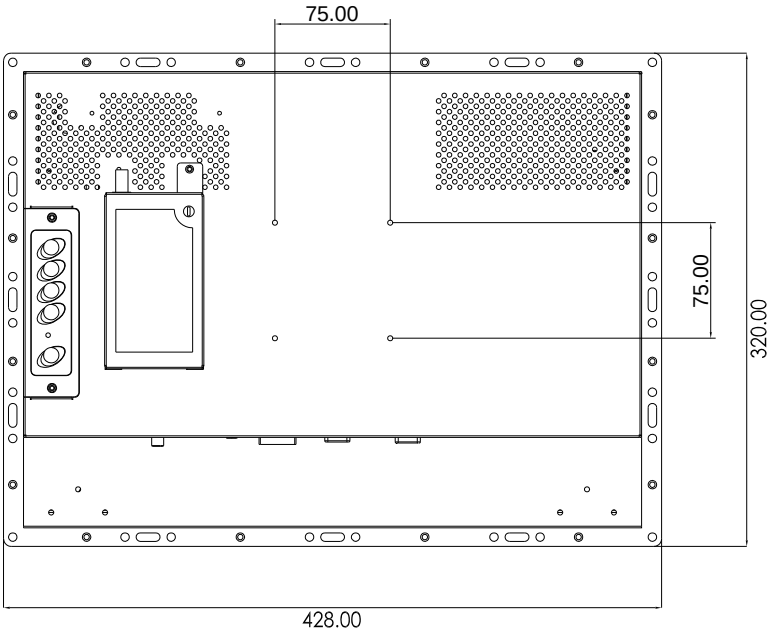
- **Type** 5-wire resistive
- **Resolution** 2048 x 2048
- **Light transmission** 88 ± 2% (Pure)
- **Controller** RS-232 & USB interface (optional)

Environmental

- **Operating temperature** 32°F~ 122°F (0°C to 50°C)
- **Vibration** 1g rms/5-500Hz/random operation
- **Shock** 20 G peak acceleration (11 msec. duration)
- **EMC** CE/FCC Class A

1.4 Dimension




75.00
75.00
320.00
428.00

Chapter

2

Hardware Installation

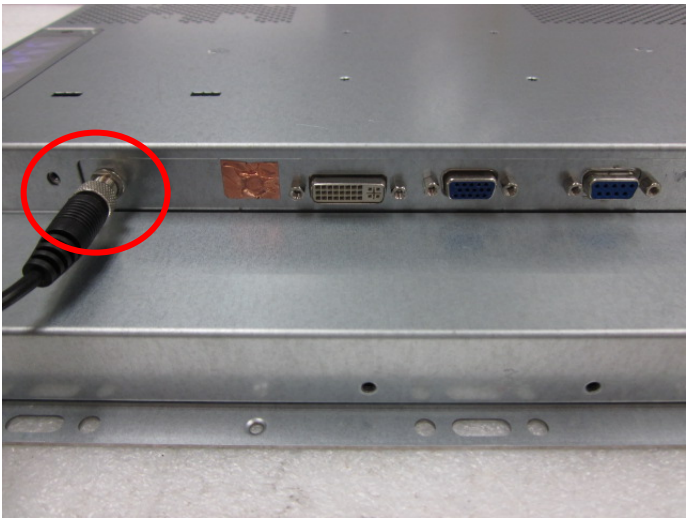
2.1 Before Unpacking

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

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

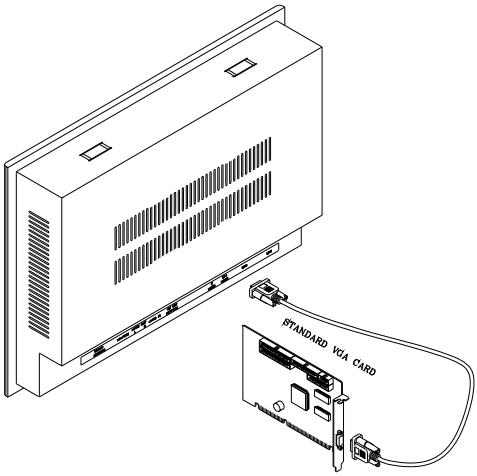
2.2 Connecting Power

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



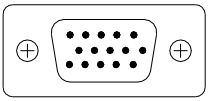
A “Surge Protection” device plugged between the AC-DC adapter and the wall outlet is recommended to prevent the effects of sudden current variations from reaching the LCD monitor. The sudden peaks of electricity may harm the LCD monitor.

- Turn off the computer and the LCD monitor before connecting them.
- Use the monitor-to-PC VGA cable to connect the LCD monitor to your computer. The cable heads are the same on either side.
- Fasten the connections securely.


STANDARD VGA CARD

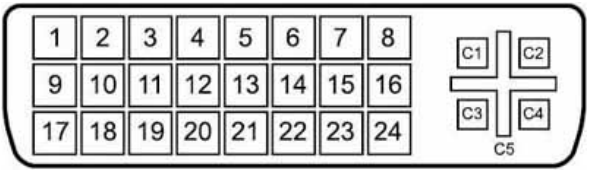
2.3 VGA Port Connector

It is a DB-15 VGA connector. The following table shows the pin-out assignments of this 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		

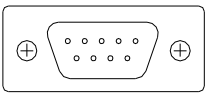
2.4 DVI Port Connector



Pin	Signal	Pin	Signal
1	RX2-	13	N.C.
2	RX2+	14	+5V DDC
3	SHLD2/4	15	GND
4	N.C.	16	HPD
5	N.C.	17	RX0-
6	SCL_DDC	18	RX0+
7	SCL_DDC	19	SHLD0/5
8	N.C.	20	N.C.
9	RX1-	21	N.C.
10	RX1+	22	SHLDCLK
11	SHLD1/3	23	RXC+
12	N.C.	24	RXC-

2.5 Serial Port Connector for Touch

It is a DB-9 COM Port connector. The following table shows the pin-out assignments of this connector.



Pin	Signal	Pin	Signal
1	Not Used	2	RXD, Receive Data

LCD Display		AGD-315P	
3	TXD, Transmit Data	4	Not Used
5	GND, Ground	8	Not Used
4	Not Used	9	Not Used
5	Not Used	10	Not Used

2.6 VESA Wall Mounting

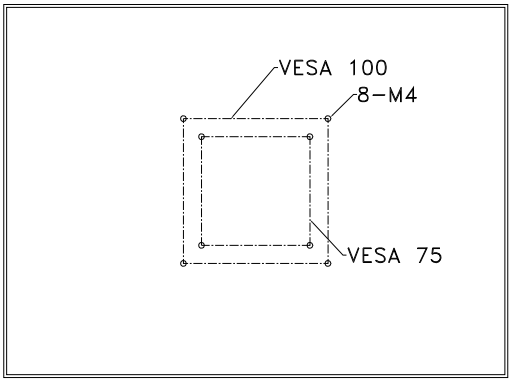
Mounting the Panel PC (Optional) for use only with UL Listed Wallmount Bracket. The Panel PC can be mounted on a monitor arm or wallmount plate.

Caution:

When mounting the monitor, take care to tighten the retention screws or bolts until fully secured, but do not over tighten. Over tightening the retention screws or bolts may cause them to become stripped, rendering them useless.

Monitor Arm or Wallmount Plate Installation

The Panel PC 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 Panel PC 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

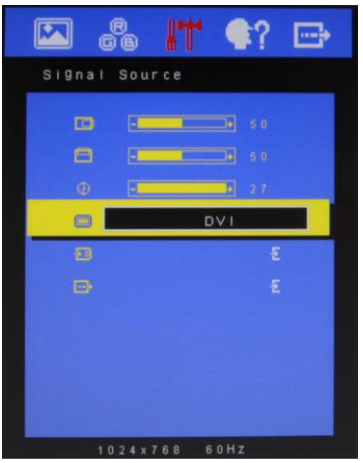
Buttons	Description
Power	➢ Turn the monitor power ON or OFF.
Menu / Enter	➢ Activate the OSD menu. ➢ Enter/confirm the selected option.
UP / Right / Increase / Input select	➢ Move the selector to the next option. ➢ Increase the gauge value of the selected option. ➢ Change input source.
Down/ Left / 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

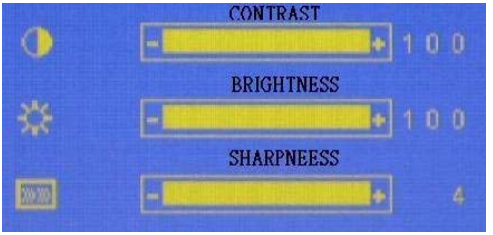
3.3 Select Input Source



• 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

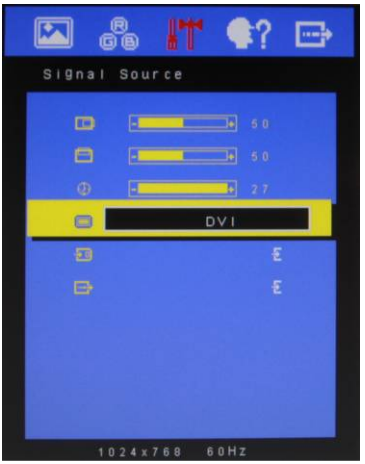
3.4 Contrast/ Brightness- Submenu

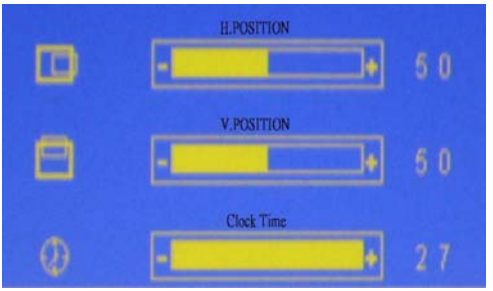


Available Key Functions

⏻	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

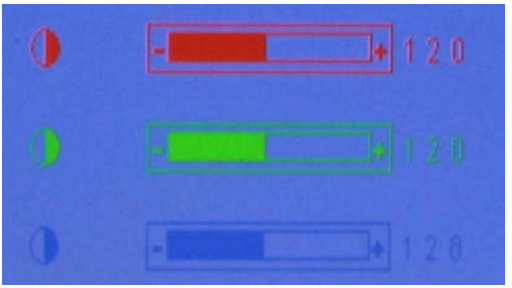
⏻	Power On/Off the LCD Monitor
AUTO	Return to last menu
MENU	Selected to confirm
▲	Increase the gauge value of the selected option
▼	Decrease the gauge value of the selected option

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 AGD-315P 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 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.

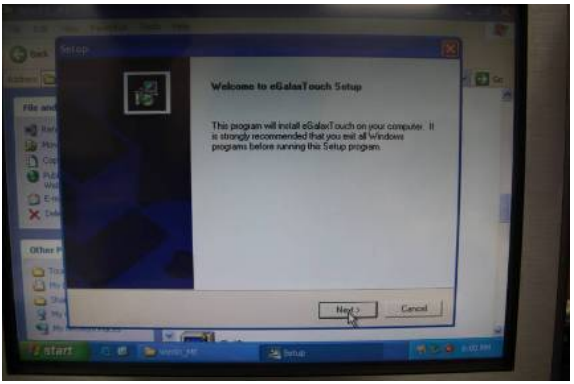
Note 2: Please make sure that the OS of your computer supports Windows® XP/ Windows® 7 while installing Windows® XP/ Windows® 7 drivers in the CD-ROM to the system.

For Windows® XP OS, please execute:

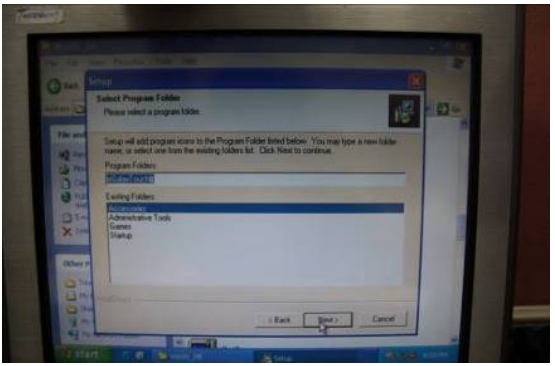
CD-ROM:

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

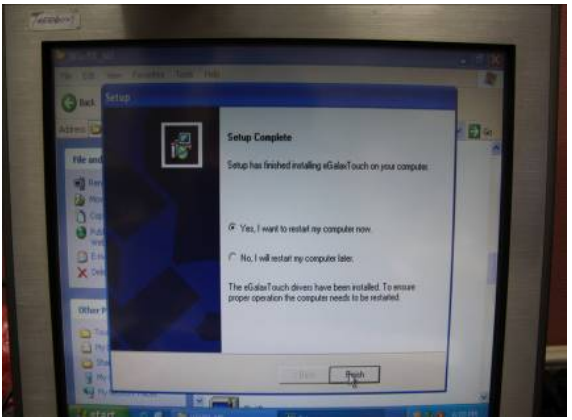
1. Click on the "**Next**" button on the Welcome window screen



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



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

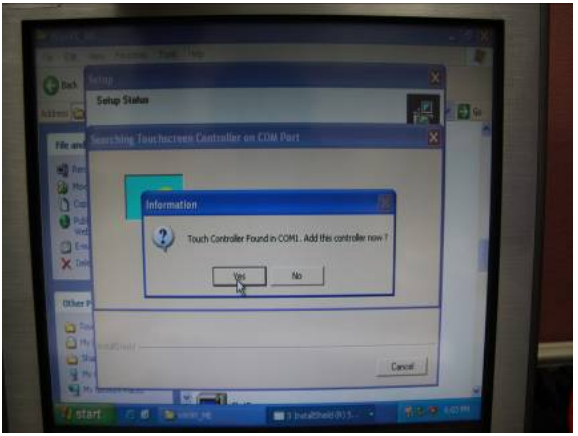


Single monitor, Serial Port controller

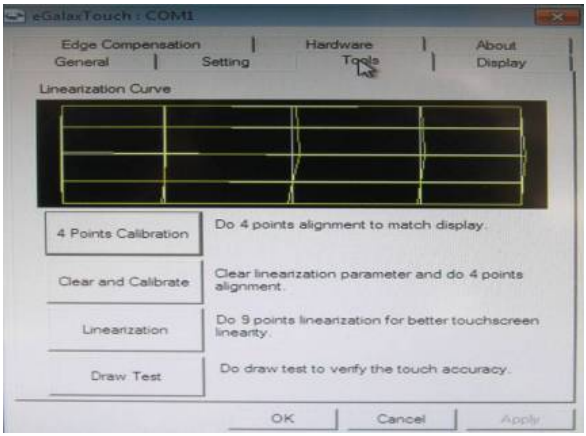
The driver files will install automatically. When the "Setup Complete" screen appears, you may choose to run calibration immediately or later. If you choose not to run this program now, you can run it from the EETI Control Panel application.

1. Executing **eGalax** on Desktop

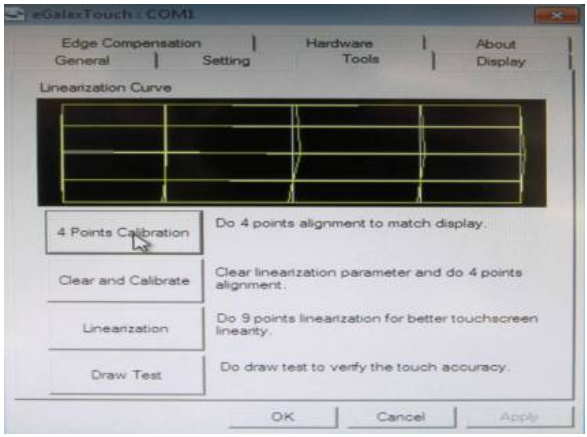
2. Recognition devices choose to run calibration immediately



3. Choose **Tools** to calibrate



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



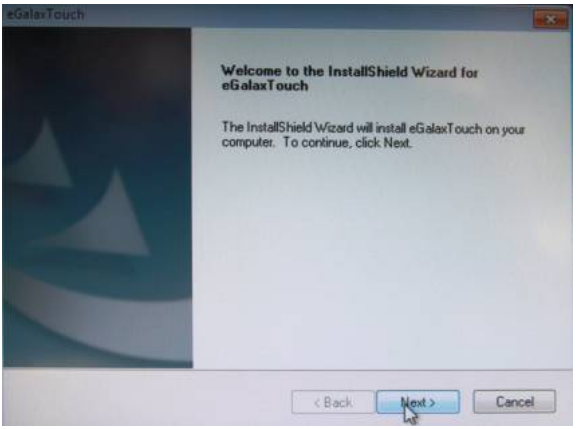
Note: If the alignments do not match display by 4 Points Calibration, please use 9 Ports or more to calibrate.

For Windows® 7 OS please execute:

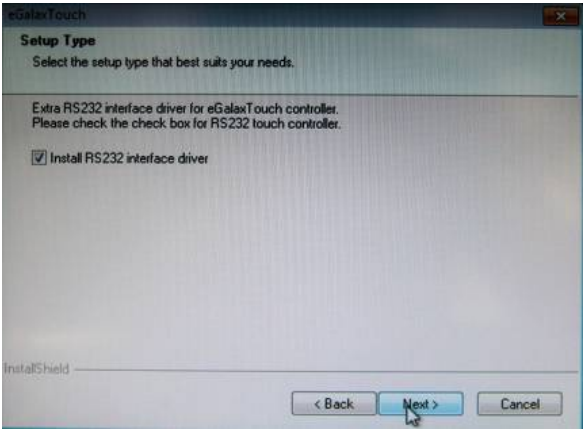
CD-ROM:

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

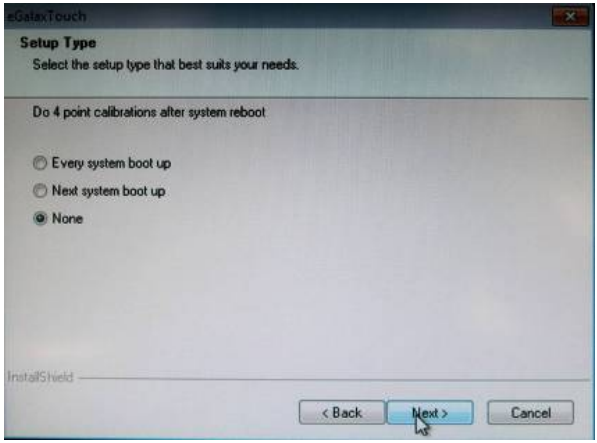
1. Click on the "**Next**" button



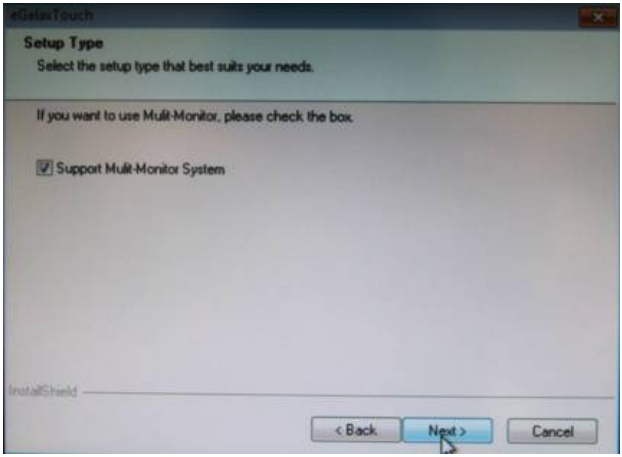
2. Click on the "**Next**" button



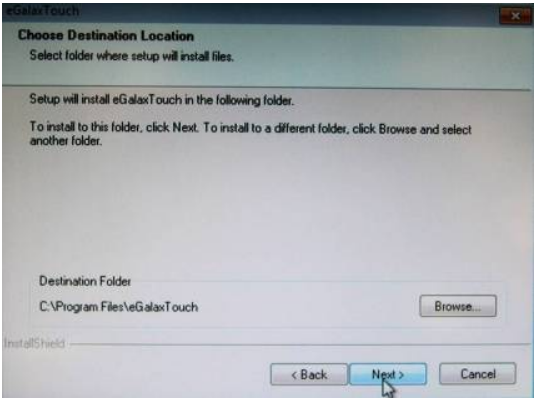
3. Tick “**None**” if the system did not start 4 points calibrating after reboot. Click on the “**Next**” button.



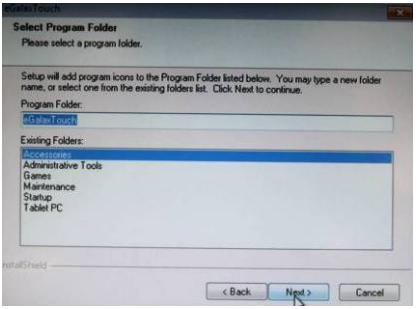
4. Tick “**Support Multi-Monitor System**,” and click on the “**Next**” button



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



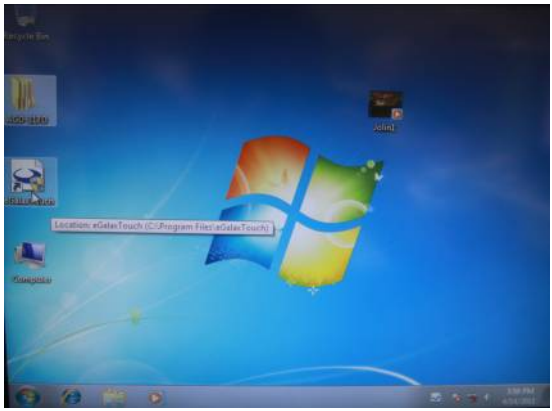
6. Click on the “**Next**” button



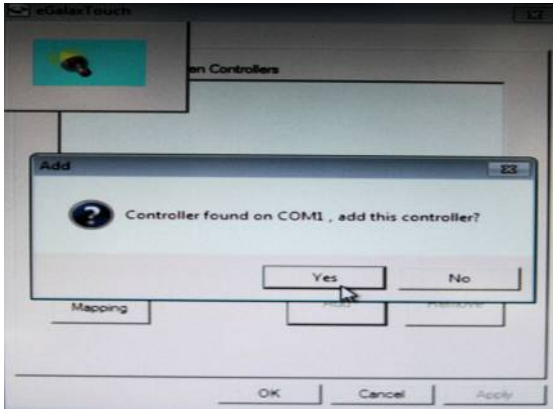
Single monitor, Serial Port controller

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.

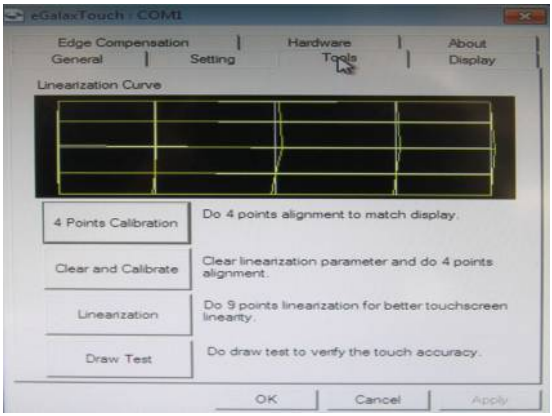
1. Executing **eGalax** on Desktop



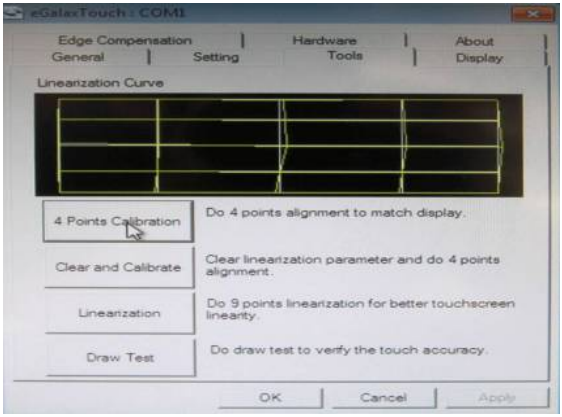
2. Recognition devices choose to run calibration immediately



3. Choose **Tools** to run calibration



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



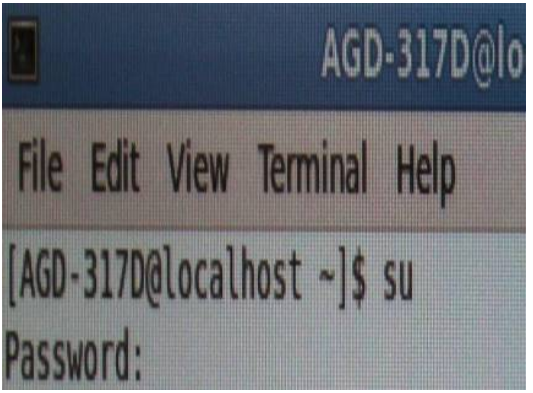
Note: If the alignments do not match display by 4 Points Calibration, please use 9 Ports or more to calibrate.

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

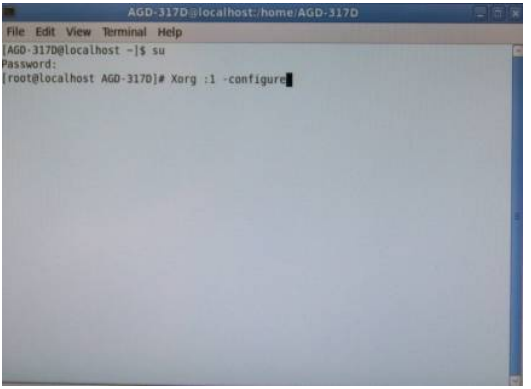
CD-ROM:

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

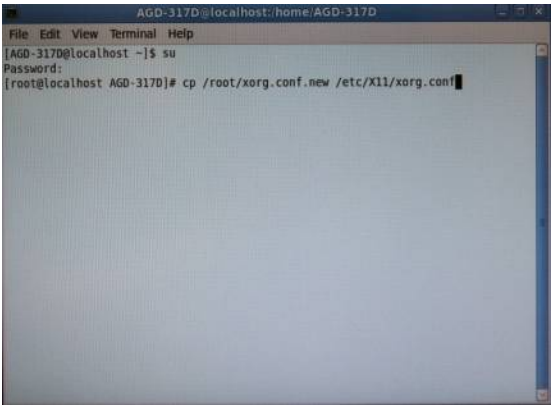
1. Open System Input Command (su) and System Password



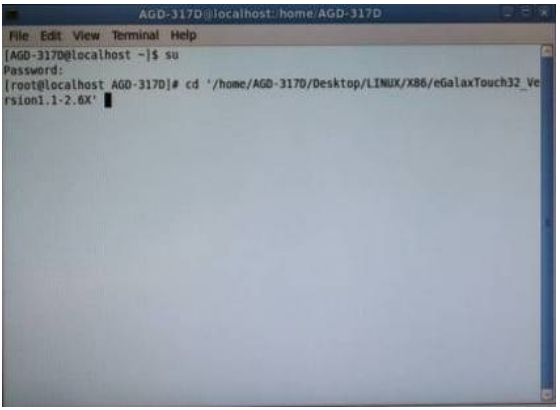
2. Input command (Xorg : l –configure)



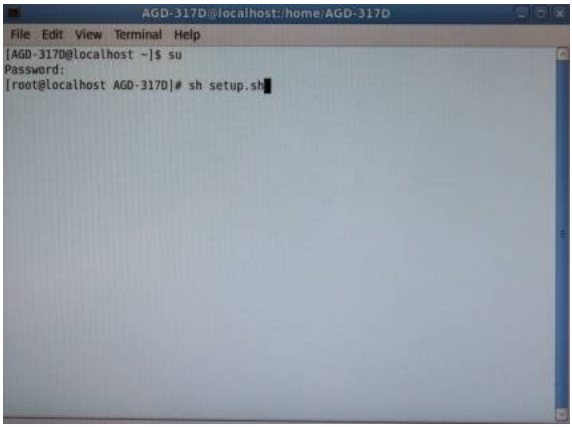
3. Input command (cp /root/xorg.conf.new /etc/X11/xorg.conf)



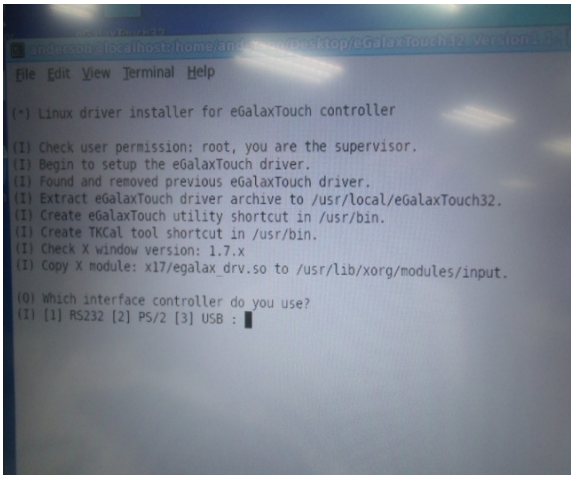
4. Load Linux Folder Touch Driver



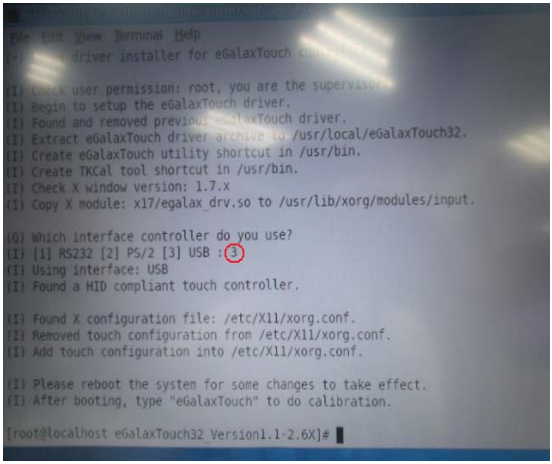
5. Executive Touch Driver



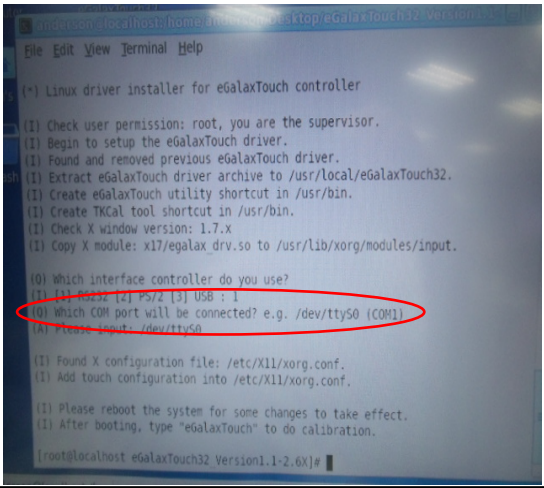
6. Which interface controller do you use?



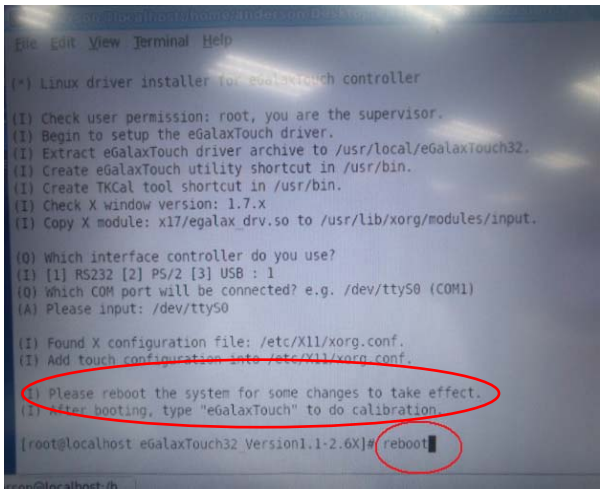
7. Select the "**3**" USB interface. (Select the USB interface and press the "**Enter**" key of the keyboard to start the installation)



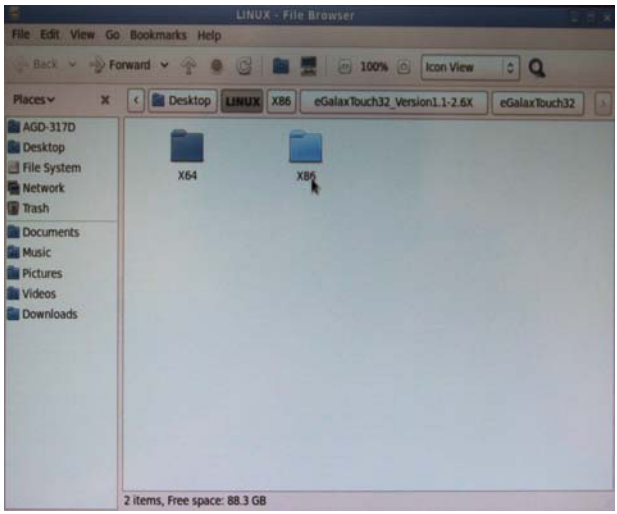
8. Select the "**1**" COM interface (Select the COM interface and input command: ***/dev/ttyS0 (COM1)***, and press the "**Enter**" key of the keyboard to start the installation)



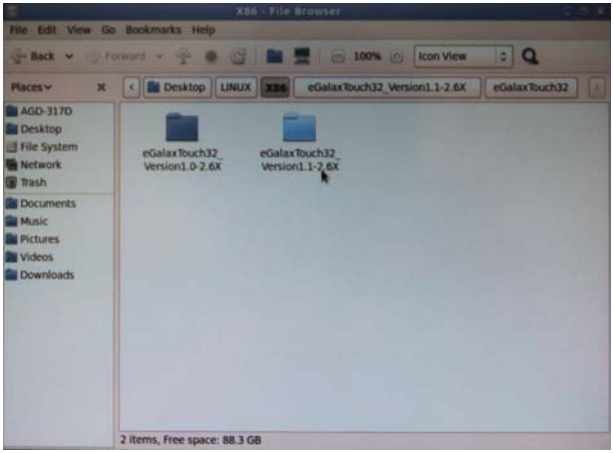
9. Reboot the system to activate the changes



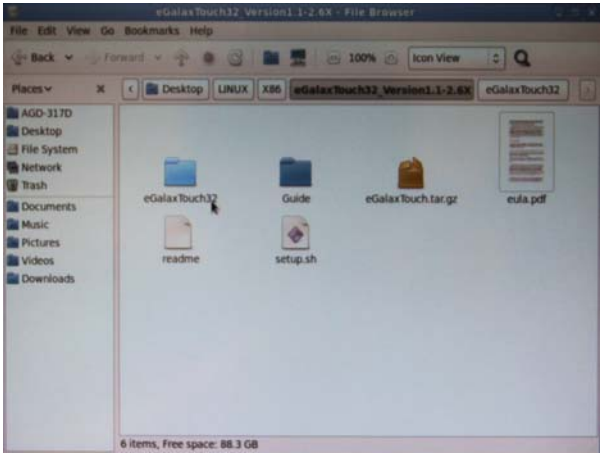
10. Select the **X86** Folder (Because Linux is 32 bit)



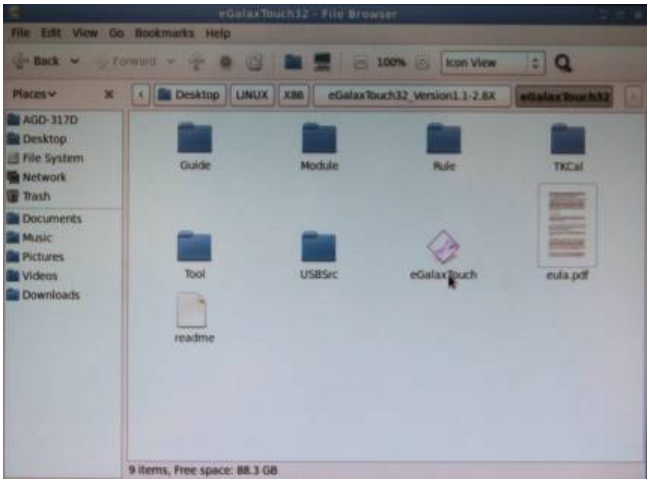
11. Select "**eGalax Touch32_Version1.1-2.6X**" Folder



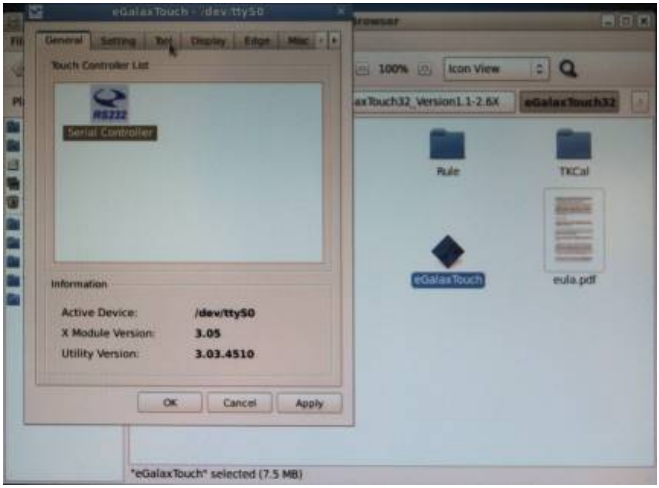
12. Select **"eGalax Touch32"** Folder



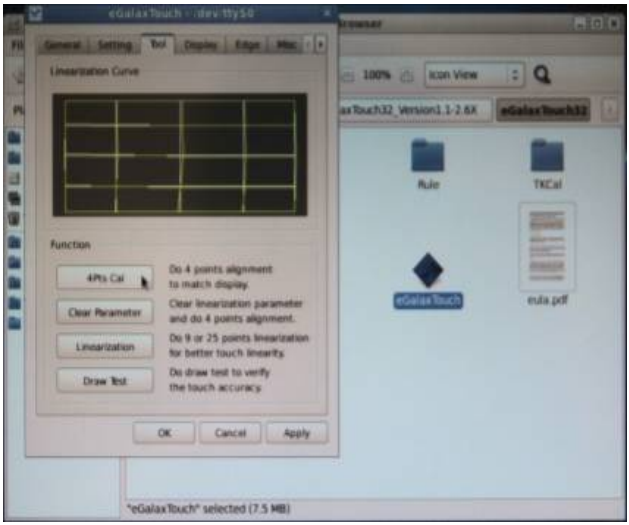
13. Click on the "**eGalax Touch**" to calibrate immediately



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

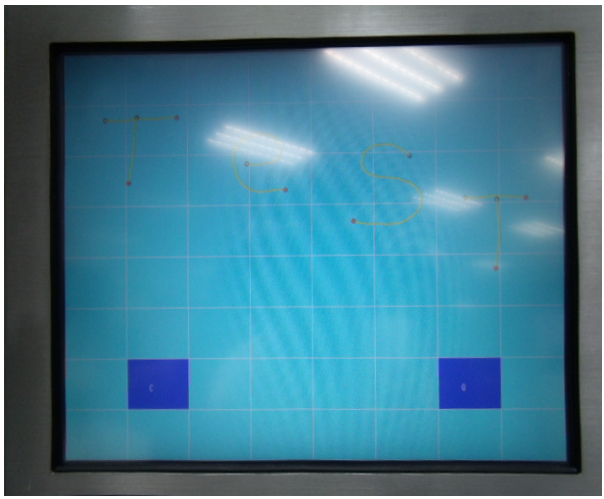


15. Execute 4 Points Calibration

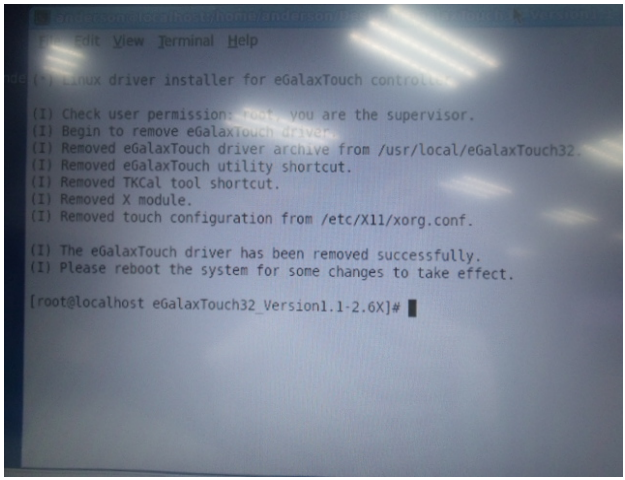


Note: If the alignments do not match display by 4 Points Calibration, please use 9 Ports or more to calibrate.

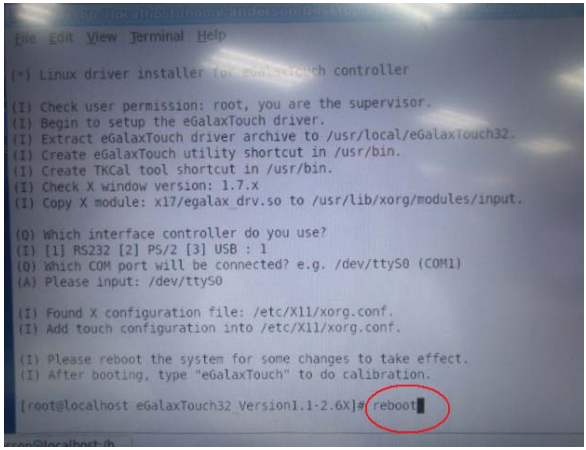
16. Draw and test (Drawing、Writing)



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



Appendix

A

Troubleshooting

A.1 Troubleshooting

To solve the following problems, you may need to refer to **Appendix A Standard Timing** for compatible display specifications.

- **Problem: Unclear or Unsteady Display**

Actions:

Activate the **AUTO** button. You might need to repeat to find balanced values for a good quality.

If the **AUTO** button cannot solve the problem, try to manual fine tune following steps below:

1. If the image size does not fit the screen, adjust the **Size** setting value under "**Quality**" menu.
2. If there is image pixel noise appears, adjust the **Phase** setting value under "**Quality**" menu. Pull and adjust the value bar to find out what is the best clarity range for your LCD display.
3. If the image is not centered after step 1 and 2, adjust **Image Position** under **"Position"** menu to center the image.
4. If you still have problem to fine-tune the image, call your local technical support for assistance.

- **Problem: No Display is shown on the LCD monitor.**

Actions:

1. Make sure the LCD monitor is powered on by checking if the Power LED is lit. Check if all the connections are secure and the system is running correctly.
2. If the power LED lights up green, but there is still nothing

displayed; connect your PC with another external monitor. If your PC works properly with that monitor, then it is possible that the VGA card timing of the system may be outside the LCD monitor's synchronous range. You may need a qualified technician for help.

- **Problem: "Not Supported Mode" is shown on the display.**

Action:

This could be a mistake made in the OSD menu while choosing the INPUT SOURCE: RGB or VEDIO. Or, it is possible that you have chosen a timing that is outside the LCD monitor's synchronous range. Recall the factory default values may help to bring the screen back to normal.

- **Problem: The LCD monitor does not work properly under Windows, but it functions all right in DOS mode.**

Action:

Make sure the display mode that you chose in Windows® matches the LCD monitor.