

# **RP-7000C**

## **User manual**

**RichPOS 7000C Series**  
**15"/17"**  
**Fanless POS System**

# Copyright Notice

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## Safety and 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.**

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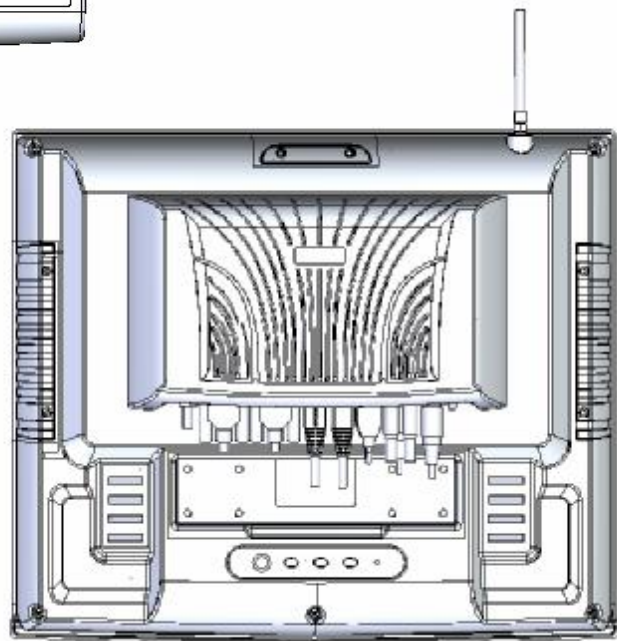
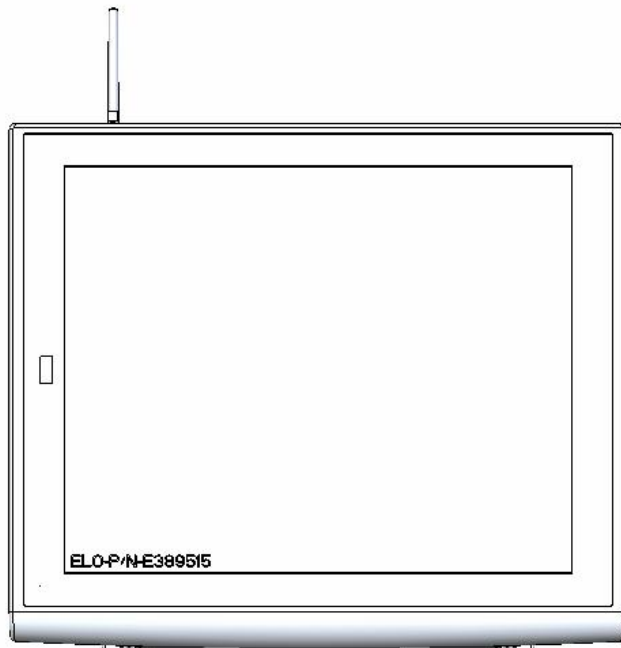
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## Chapter 1

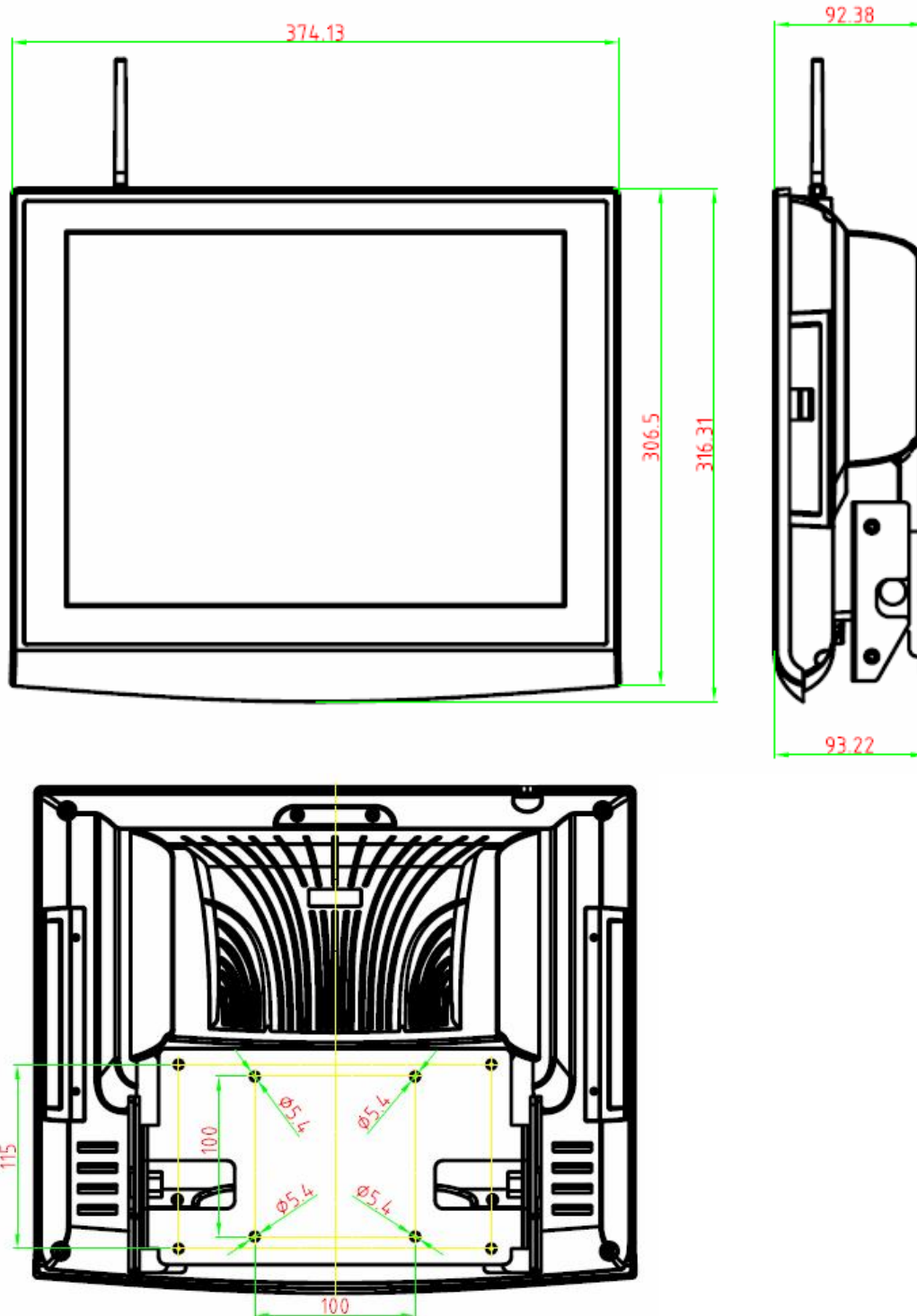
# *Introduction*

### **A Quick Tour of RP-7000C**

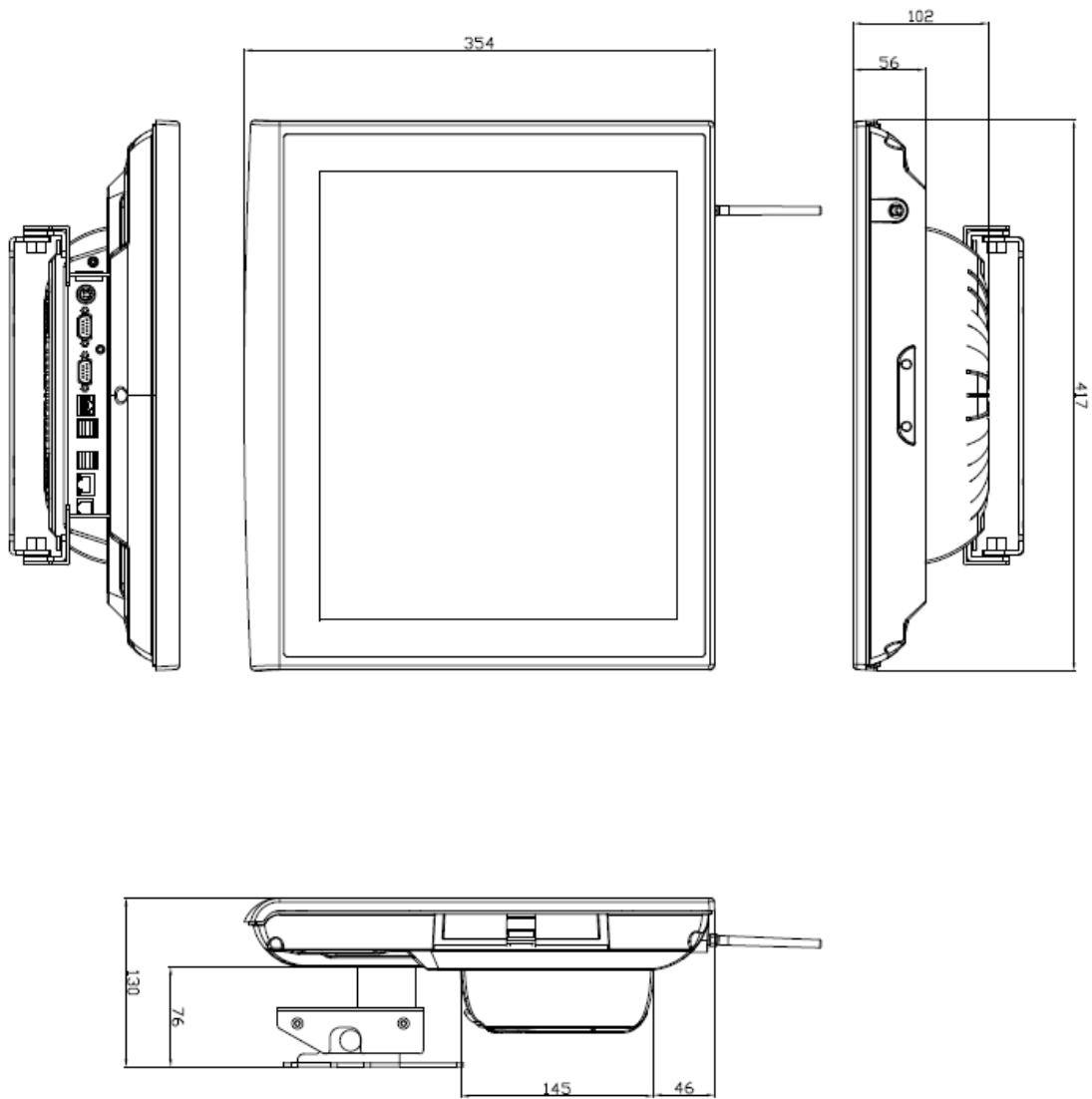
Before you start, take a moment to become familiar with **RP-7000C**.



## RP-7000C Dimension-15"

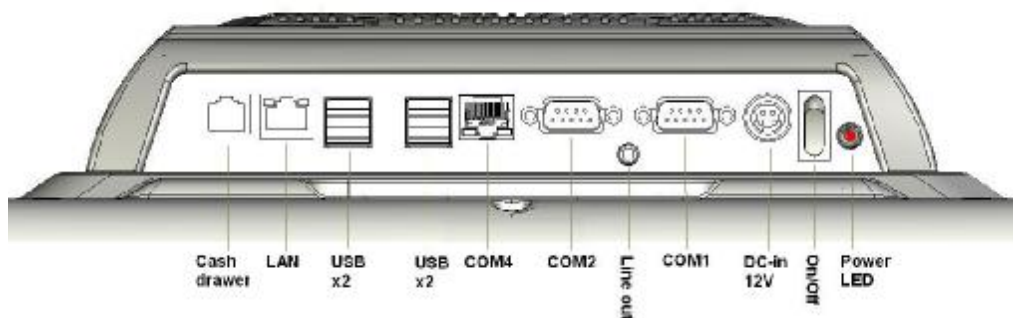









## RP-7000C Dimension-17"





## Rear I/O Panel



I/O Port	Connector Type	Description
	COM1/COM2 D-sub 9 connector	Connect serial devices such as a serial printer or a fax/modem.
	Line-Out Earphone Connector	Connect the speakers to this port
	Cash Drawer RJ11 Connector	Connect cash drawer, 12V actuation support
	GigaLAN RJ45 Connector	Connect RP-7000C to the Ethernet
	USBx4 USB Type A Connector	Connect external USB devices
	RJ45 Connector with LED Indicators (5V/12V)	Connect the VFD customer display or serve as an additional serial port (switching cable can be requested by order). (Green LED for 5V/ Orange LED for 12V/ None for RI.)
	DC-in Power Connector	Connect the 12V DC adaptor

## Packing List

- RP-7000C system unit x 1
- 150W Power Adapter x 1
- Driver & Manual CD x 1
- AC Power Cord x 1
- RAM Heat-sink Module  
(for RAM height = 30mm type only)

### Optional:

- Identification Module (MSR/ RFID/ IC Card Reader/ Fingerprint Selectable)
- Wireless LAN Module

## Chapter 2

# ***Hardware Installation and Upgrading***

**Warning!**

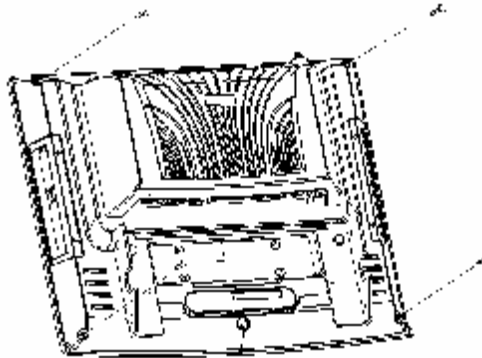


*Do not remove the rear cover until you have verified that no power is flowing within the system. Power must be switched off and the power cord must be unplugged. Every time you service the system, you should be aware of this.*

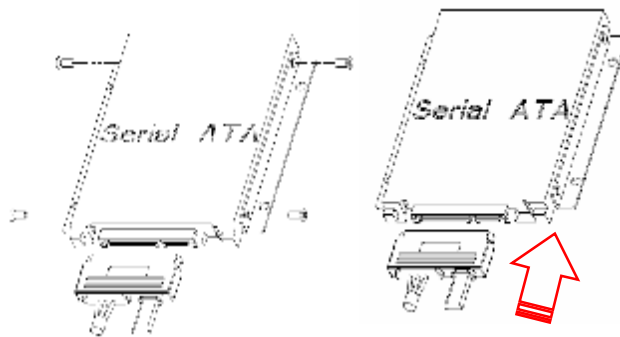
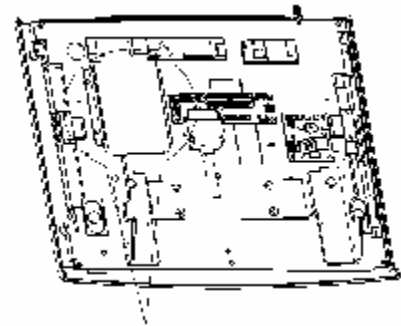
## 2.5" Hard Disk / SSD Drive Installation

1. Turn off power and remove power cord from the system

2. Remove 4 screws and slightly separate the LCD front frame from the rear housing.



3. Use the 4 screws provided to mount the HDD into the brackets and connect the SATA cable to the HDD.



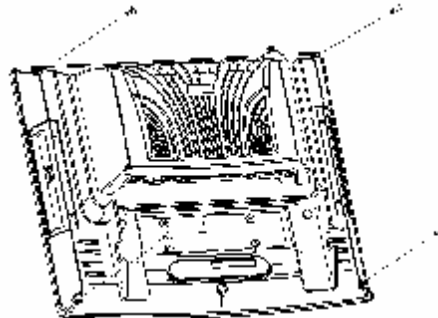
4. Re-install the LCD front frame onto rear housing.

**Note:** If the HDD does not work normally, please refer to [troubleshooting](#)

## Jumper Setting Adjustment & Memory Installation

1. Turn off the system power.

2. Remove 4 screws and slightly separate the LCD front frame from the rear housing.



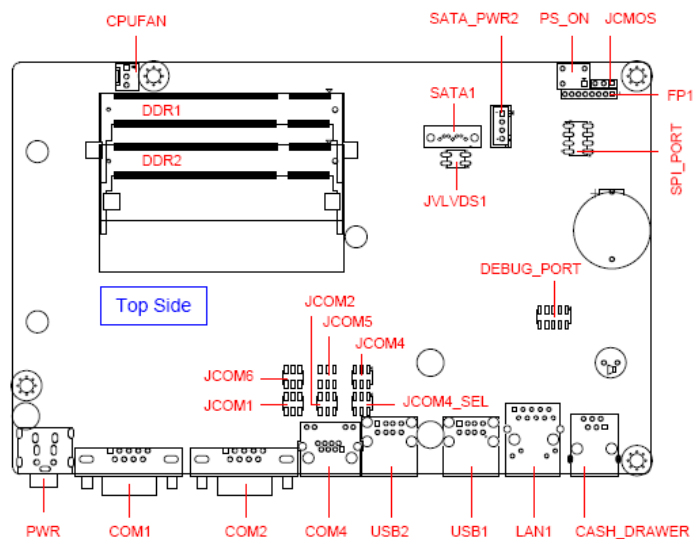
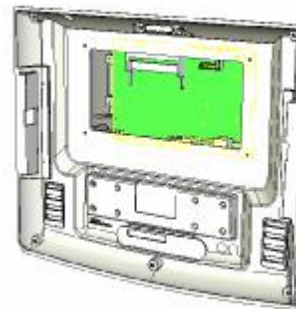
3. Remove the LCD front frame, you may access the RAM sockets and COM port jumpers.

### COM ports jumper setting:

Please reference to Motherboard FEB-9457 manual chapter 1 for detail information.

### RAM installation:

When RAM x 2 are applied, the upper RAM is recommended to be installed with the RAM heat-sink.



Re-install the LCD front frame onto rear housing.

## MCR Parameter Modification

This option is for users who need to customize the MCR configurations for a particular task. To enter the Configuration Mode, please execute text editor program (such as Microsoft Word, Notepad...etc.) first, and then press [Ctrl] + [Alt] + [F10]. The following menu will appear accordingly.

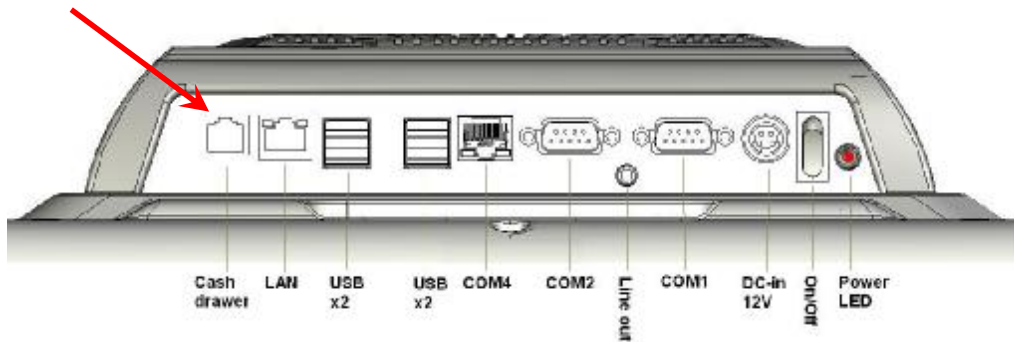
```
**** CONFIGURATION MODE ****  
  
1:SET INTERFACE  
2:SET MAGNETIC STRING  
3:SET STRING EDITING  
4:SET BUZZER  
5:RESET TO DEFAULT  
6:SHOW STATUS  
7:SET KEYBOARD CONFIGURATION  
0:EXIT SETUP MODE
```

For detailed instruction, please refer to the MSR212 Programmer's Manual under the path below in the driver CD: \Utility\MCR\MCR util\Uniform\MSR212(Uniform) USER MANUAL(ENGLISH)

## Cash Drawer Installation

Before connecting the cash drawer to the **RP-7000C**, please make sure the drive voltage and cable pin assignment of the cash drawer matches the definition of the cash drawer port of **RP-7000C**. Please refer to the mother board manual GPIO part for more information.

Plug cash drawer cable into the cash drawer port.



**Note:** If the cash drawer cannot be detected by the system, please refer to [troubleshooting](#).

Up to two cash drawers may be driven from this port. Driving voltage of the solenoid is DC+12V. I/O port 2F is used for drawer operation. A test program is supplied, for Linux and Windows, source code of which is available on request by software developers. OPOS driver, test software and sample dll files can be found under the Utility folder in the system driver CD attached

(DLL Library: Utilities\Cash Drawer\cashdrawer.dll\  
Test Program: \Utilities\Cash Drawer\cashdrawertest\)

To test for drawer open, read port **2F**, if bit 0=1 then drawer is open, if bit 0=0 drawer is closed. Before testing the cash drawer function, ensure to initiate the GPIO port first referring to the command sets below:

```
initGPIO=2e,87,2e,87,2e,07,2f,07,2e,f1
```

( 2e stands for the address while '87', '07', 'f1' stands for the value to the address. All the values here are hexadecimal.)

## Chapter 3

# Software Installation and Setup

## Driver Installation

**RP-7000C** comes with a variety of drivers for different operating systems.

You will find the CD with **RP-7000C** which has all necessary drivers for this system.

## Please follow this installation sequence.

Driver installation sequence:

Chipset Driver -> VGA Driver -> LAN Driver -> Audio Driver -> Touch Tools

The reason to follow our sequence is that IRQ settings will be changed by Windows 2000 and XP to non supported values, and you may encounter unnecessary problems later.

## Intel Chipset Driver Installation

1. Insert the CD into your CD ROM Drive.
2. Locate the folder of **D:\Driver\Chipset\XP2KVISTA**
3. Open **Setup.exe**

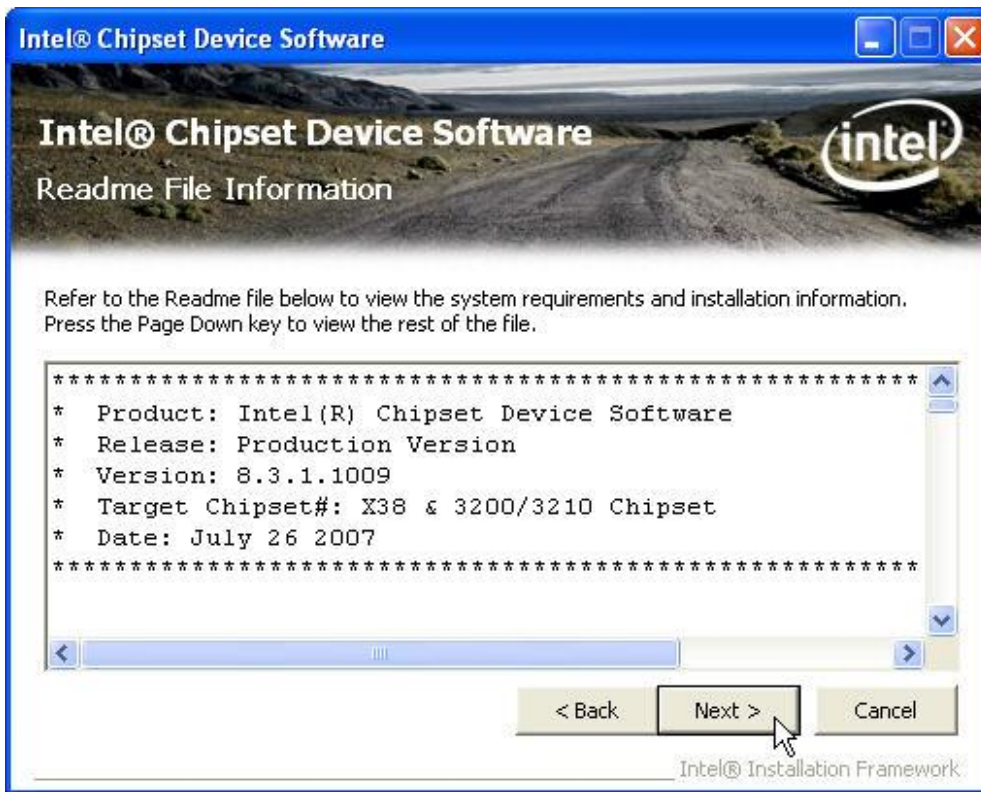




4. Click **Next**.



5. Read the License Agreement and click **Yes**.





6. Click **Next** and the drivers for the Intel Chip set will install.



7. Please wait while the setup program processing.

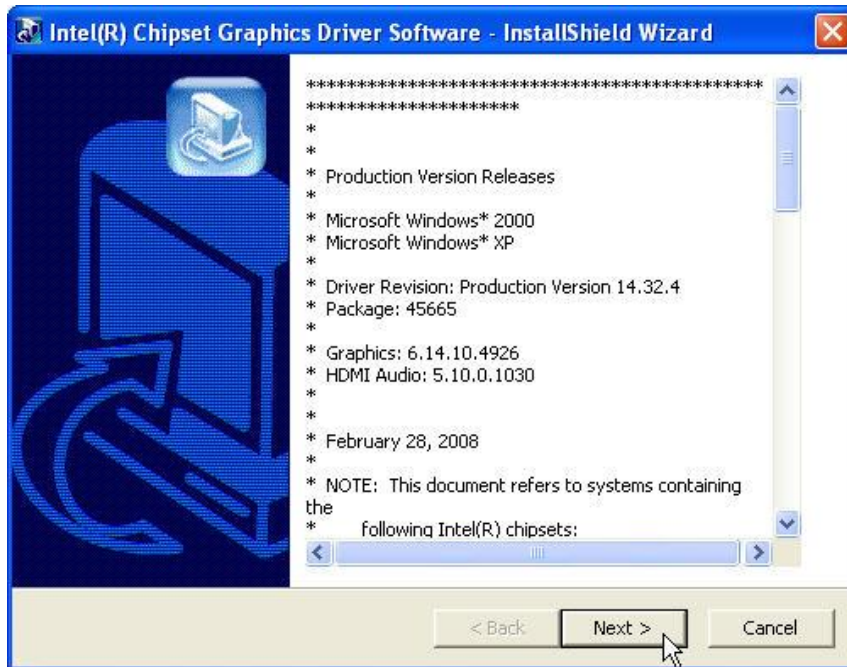


8. When the 'Setup COMPLETE' message appears click **Finish** to restart your computer.

## VGA Driver Installation

### 945GME driver installation for Windows XP

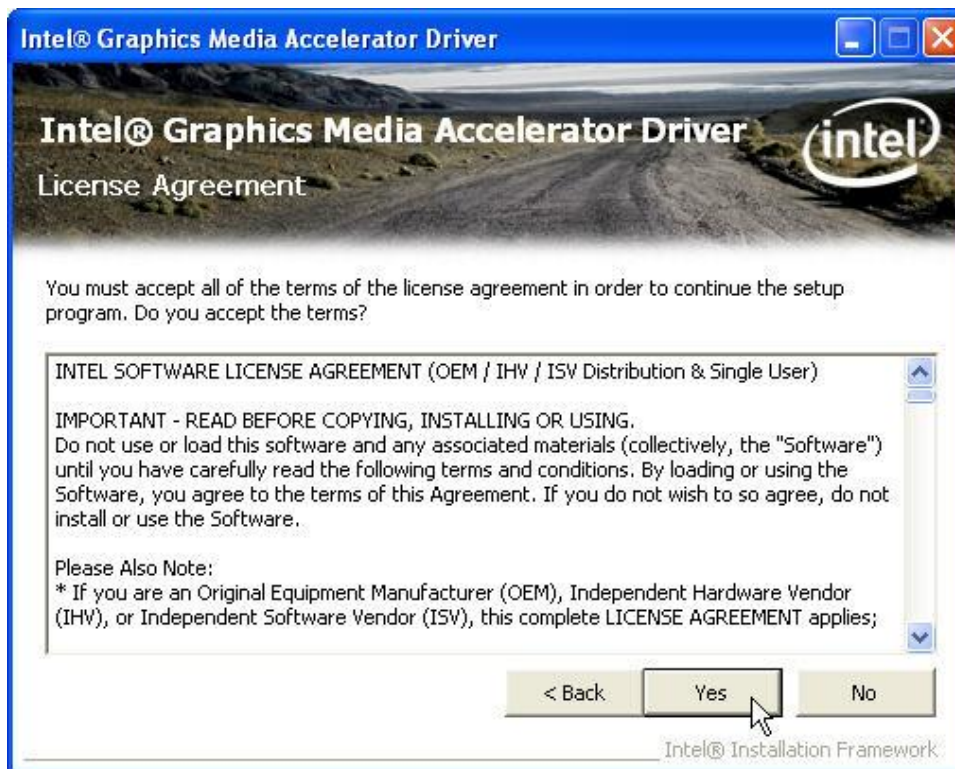
1. Locate the folder of D:\Driver\VGA\XP2K
2. Open winxp\_14324.exe



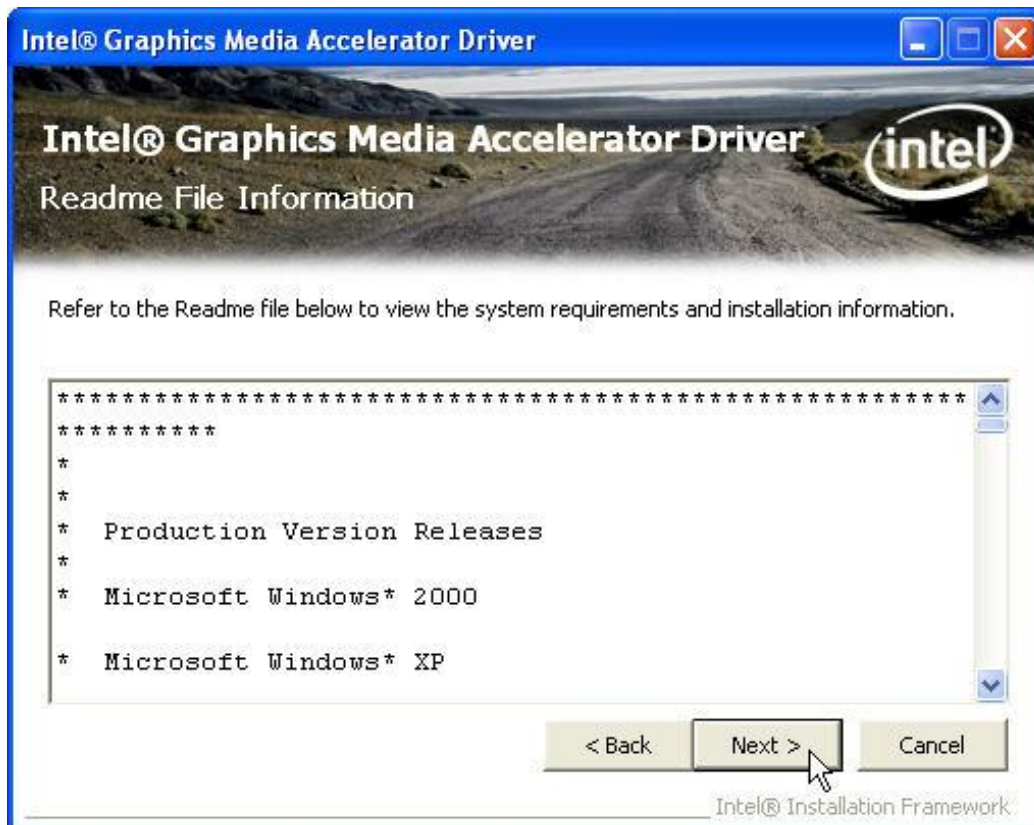
1. Select **Next** to continue.



2. Select **Next** to continue.

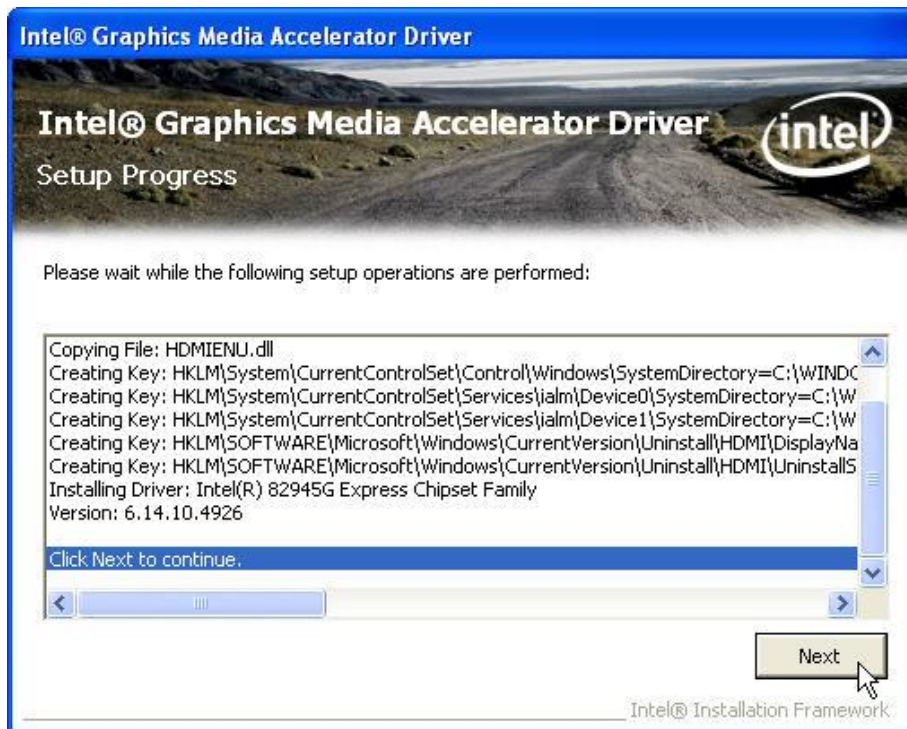


3. Read the License Agreement and click **Yes**.





4. Click **Next** to see the setup progress.



5. Select **Next** to continue.

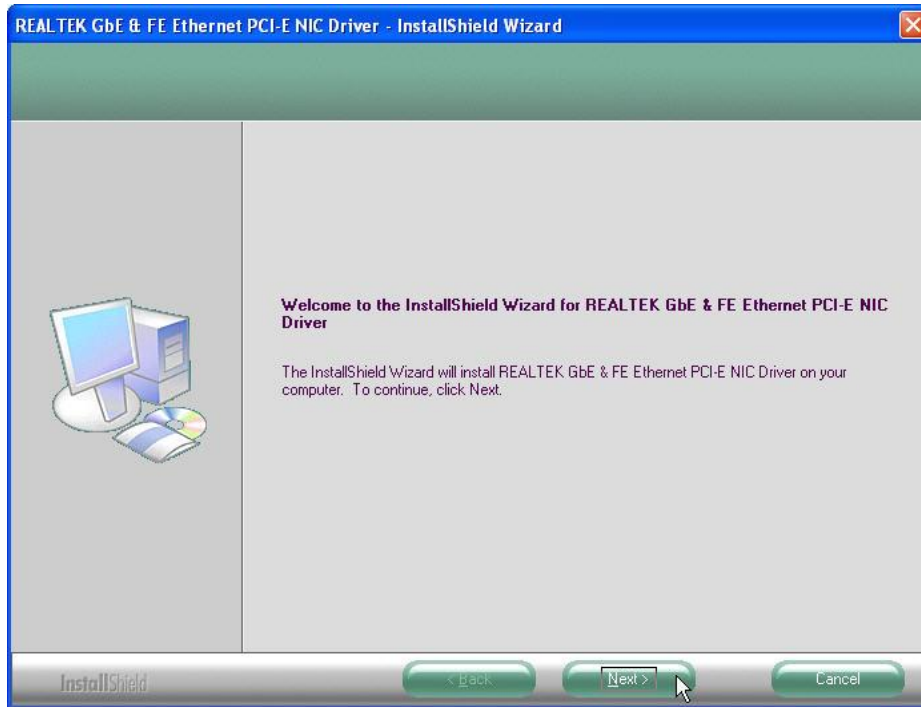


6. Click **Finish** to complete the installation procedure and restart the system.

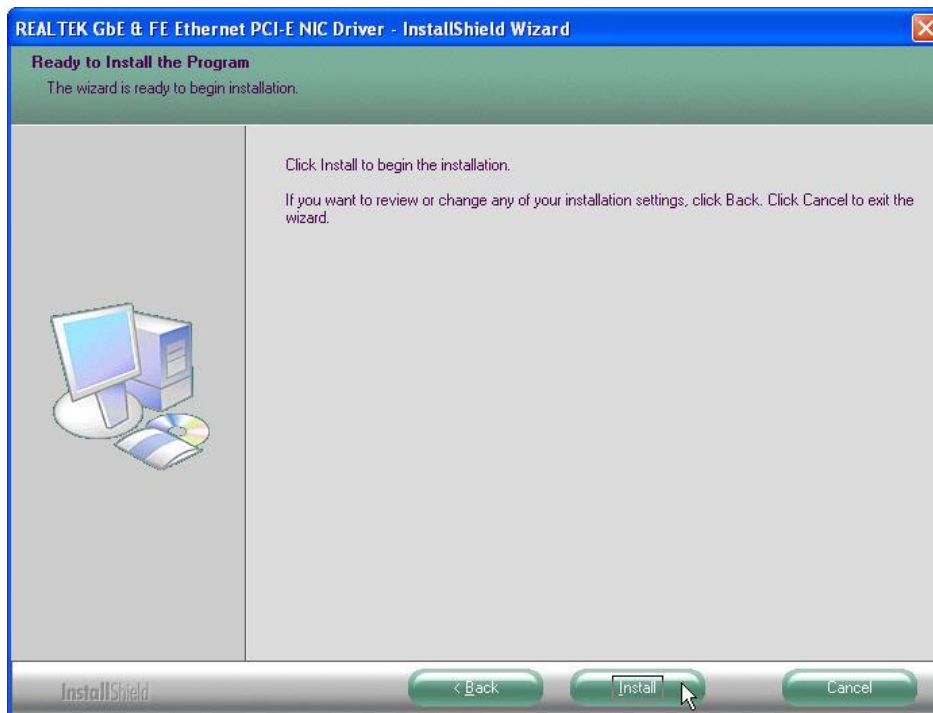
## LAN Driver Installation

### LAN Driver Installation for Windows XP

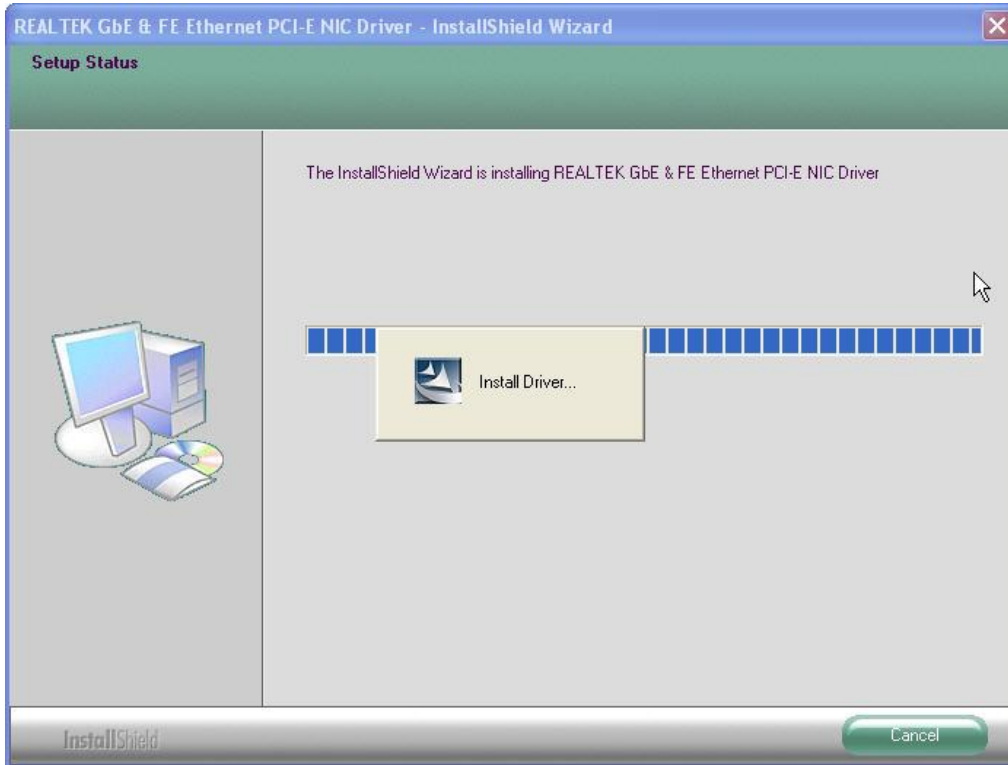
1. Locate **D:\Driver\LAN\XP2K\**
2. Double click **Setup.exe**.



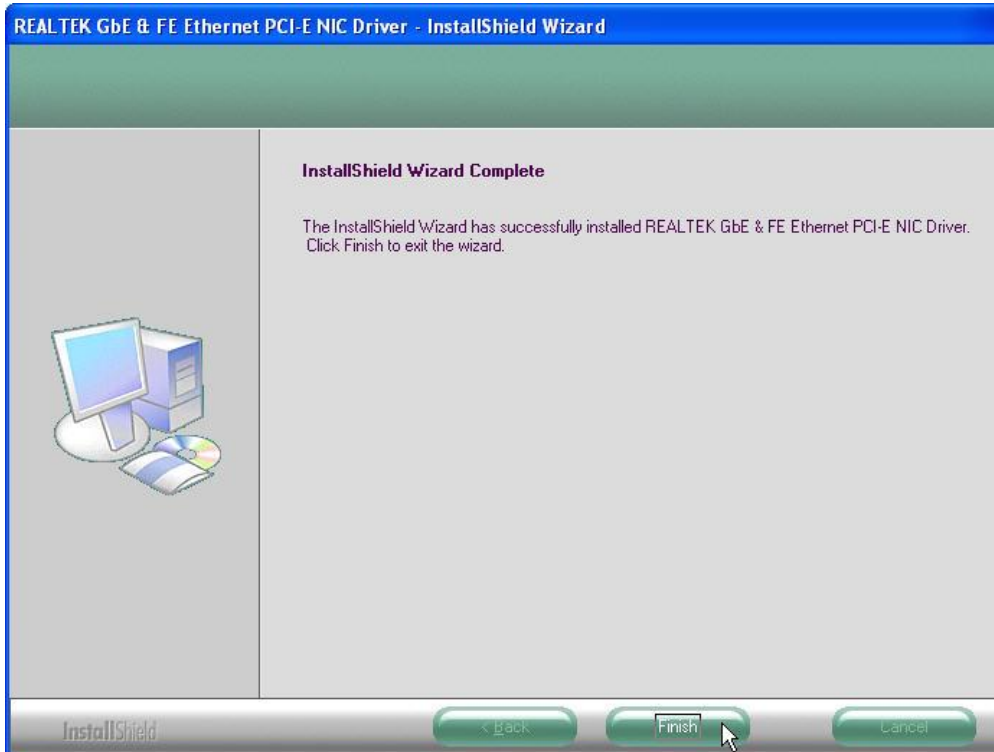
3. Click **Next** to continue



4. Click **Next** to continue



5. Please wait while processing.

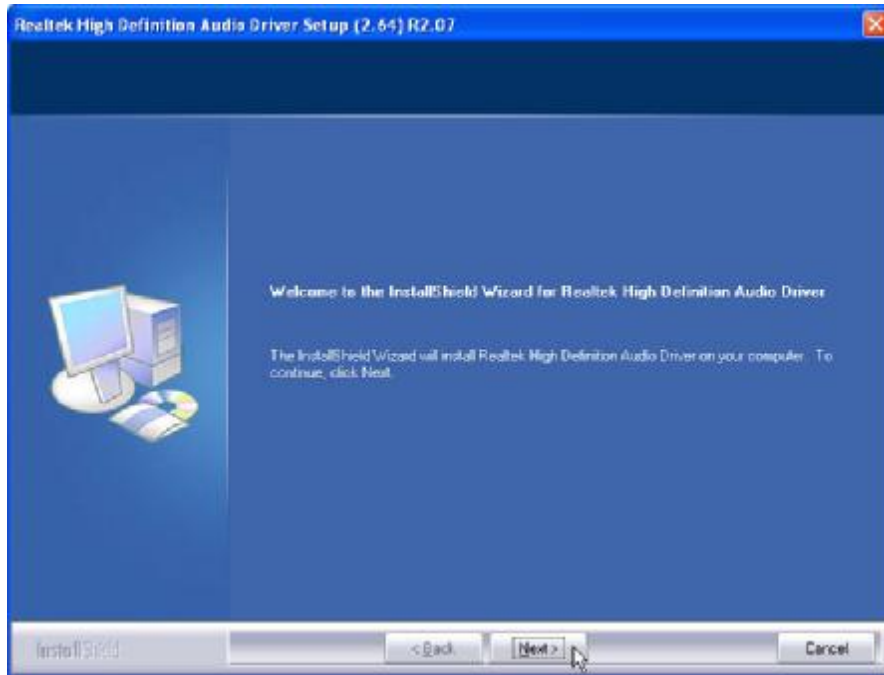


6. Click **Finish** to complete the installation procedure.

## Audio Driver Installation

### Audio Driver Installation for Windows XP

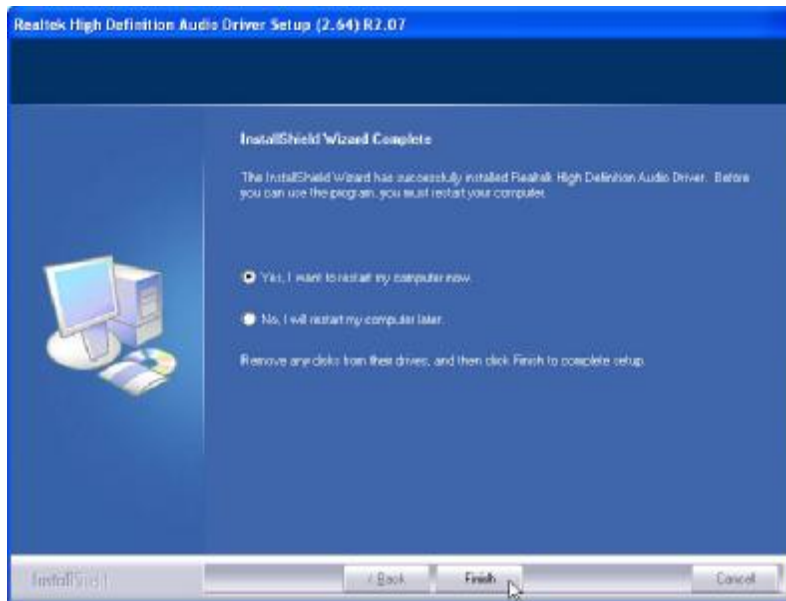
1. Locate **D:\Driver\Audio\XP2K\**
2. Double click **Setup.exe**.



3. Click **Next** to continue.



4. Click **Next** to continue.



5. Click **Finish** and restart the system.



## ELO Touch Tools Installation

### ELO Touch Tools Installation for Windows XP

1. Locate **D:\Utility\Touch Screen\ELO Touch\XP\_Vista**
2. Open **SW600650.exe**



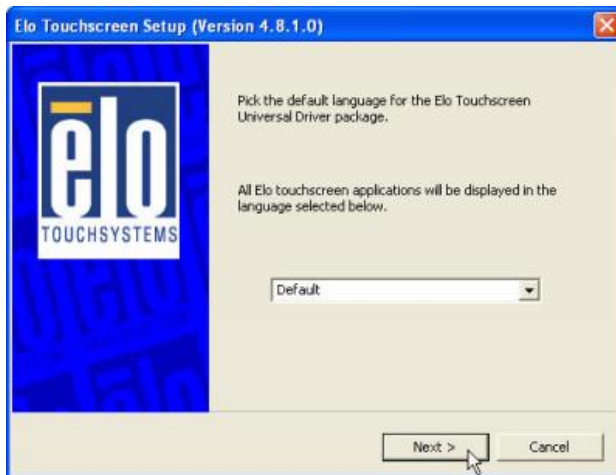
3. Click **OK** to continue.



4. Click **Unzip** to continue the installation.



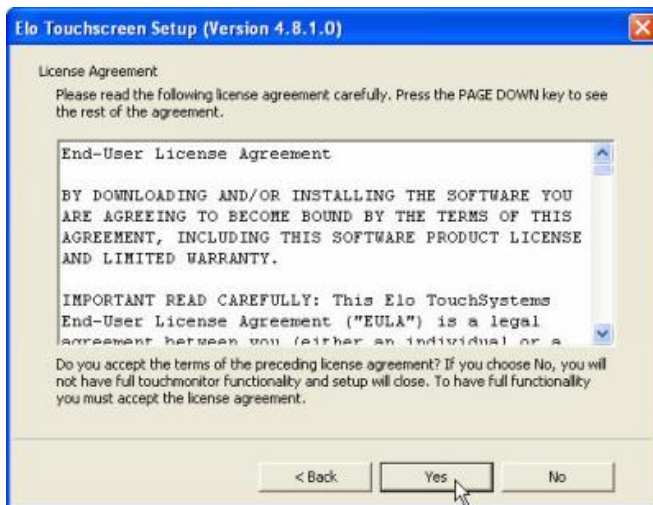
5. Click **OK** to continue.



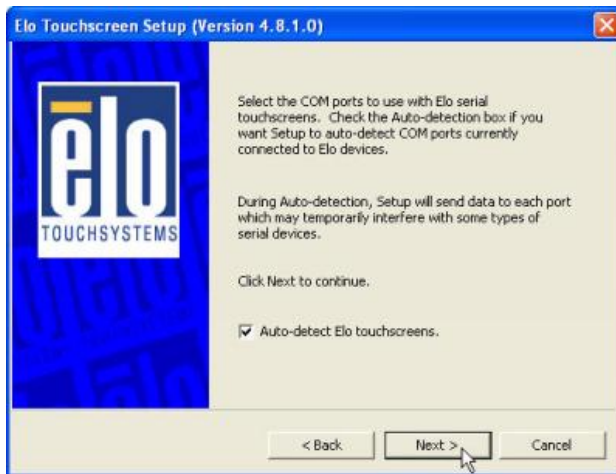
6. Pick the default language for the Elo Touchscreen and click **Next** to continue.



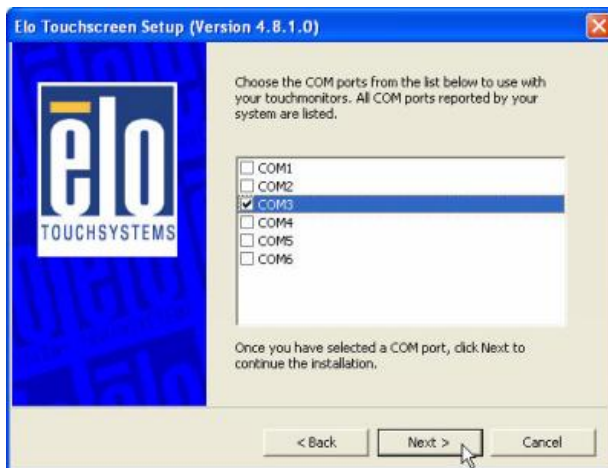
7. Check "Install serial Touchscreen Drivers" And click **Next**.



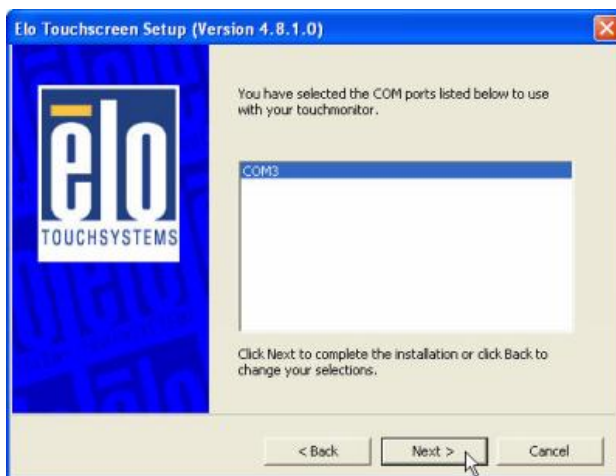
8. Read the **“License Agreement”** and click **Yes** if you accept it.



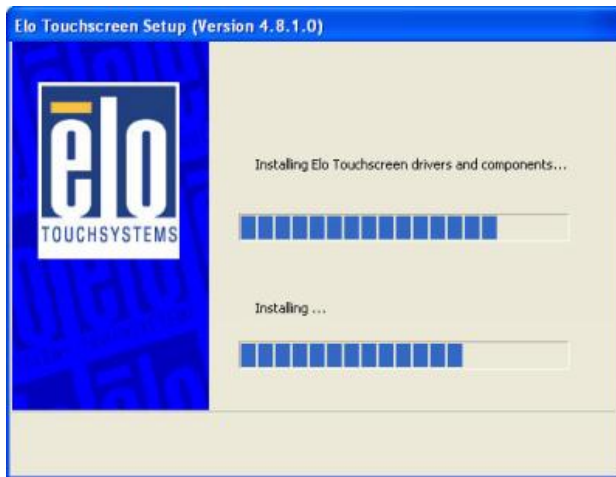
9. Select “Auto-detect Elo touchscreens” and click **Next**.



10. Select the COM port for the touch monitor. It is recommended that you select **COM3** for the touch screen, as this port is internally configured for touch operation. And click **Next** to continue.



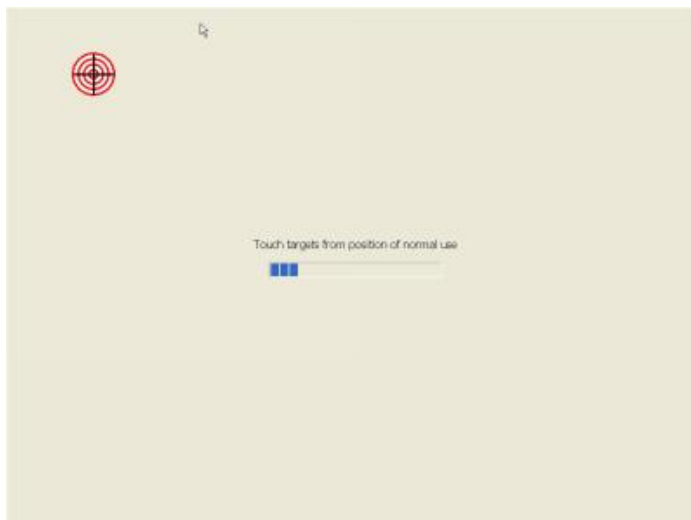
11. Make sure the COM port listed is the one you chose for your touch monitor. Press **Next** to continue.



12. Wait until the ELO Touch Tools installation finished.





13. Select “Calibrate ELO Touchscreen monitors” and click **Finish**.



14. Start calibrating the touchscreen by touch the targets showed on the screen.



15. If the cursor is working fine, click  to finish the setting; if not, click  to calibrate the screen again.

**IT MAY BE NECESSARY TO RESTART YOUR COMPUTER TO UTILIZE YOUR TOUCHSCREEN FEATURES.**



16. Click **Restart** to reboot your computer again.

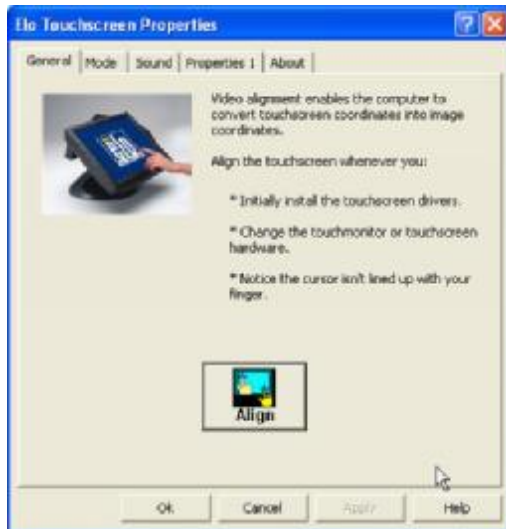
# ELO Control Panel

This section explains the different options in the ELO control Panel.

## General tab

The general tab allows you to:

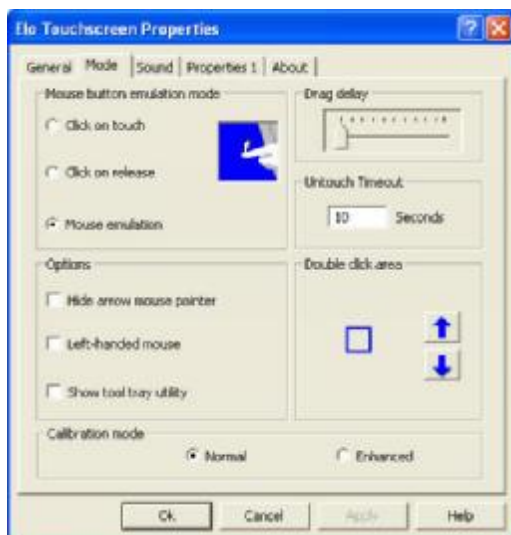
- Change the COM port your touch screen is set to.
- Calibrate the touch screen with the **Align** button.



## Mode tab

The Buttons tab allows you to:

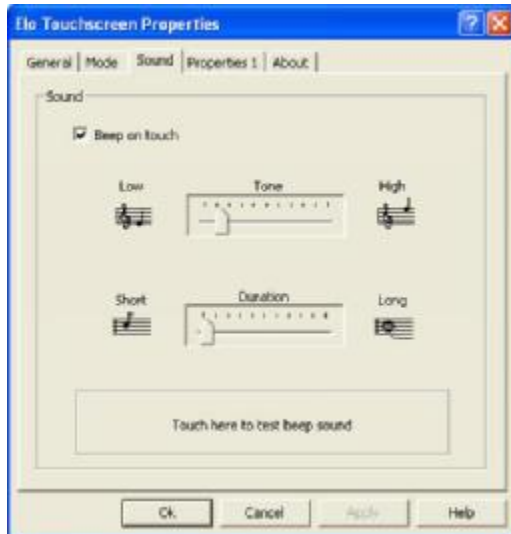
- Adjust all mouse emulation controls.
- Change cursor properties
- Enable or disable right mouse button utility.



### **Sound tab**

The Sound tab allows you to:

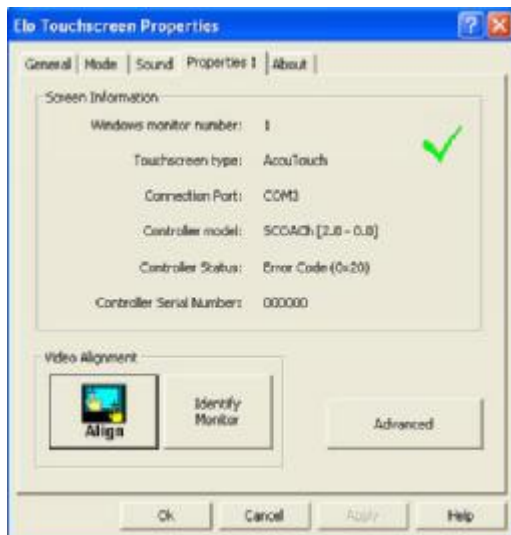
- To change sound properties for ELO touch tools.



### **Properties tab**

The Diagnostics tab allows you to:

- View Controller Information.



### **About tab**

The About tab displays Information about ELO Touch systems

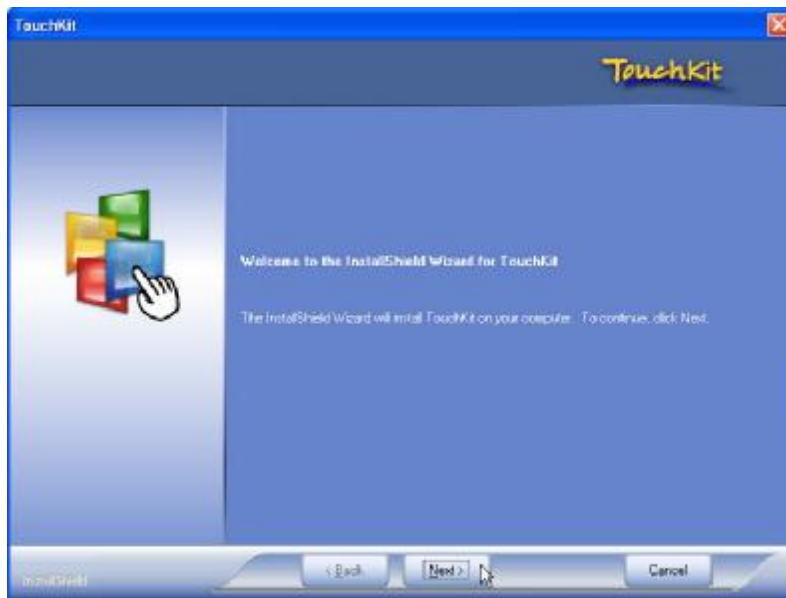




## TouchKit Tools Installation

### Fujitsu TouchKit Installation for Windows XP

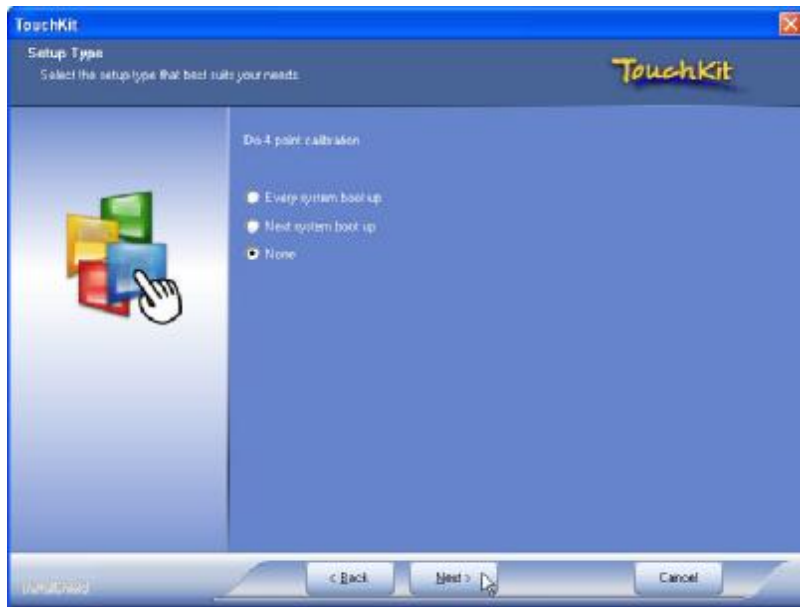
1. Locate **D:\Utility\TouchScreen\TouchKit(Fujitsu)\Windows 2000 XP\**
2. Select the relevant folder for the operating system that you are using.
3. Open **Setup.exe**



4. Click **Next**



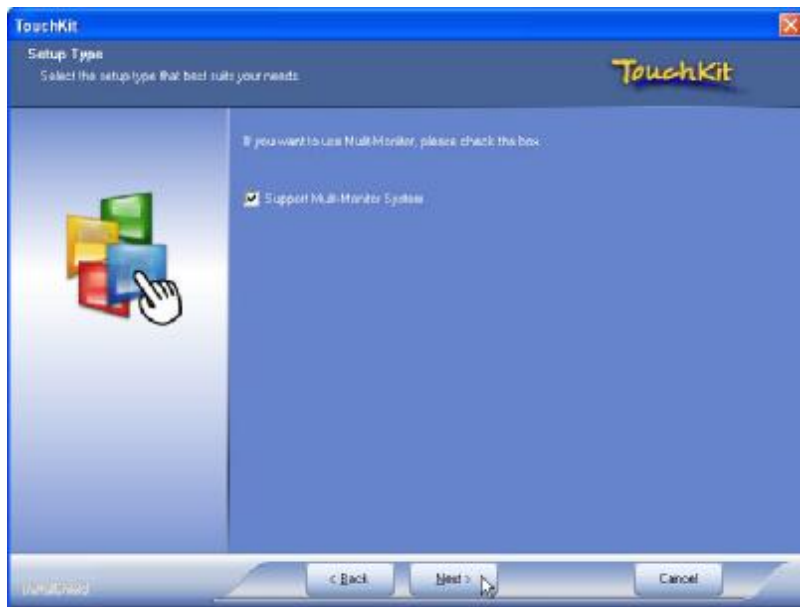
5. Click **Next**



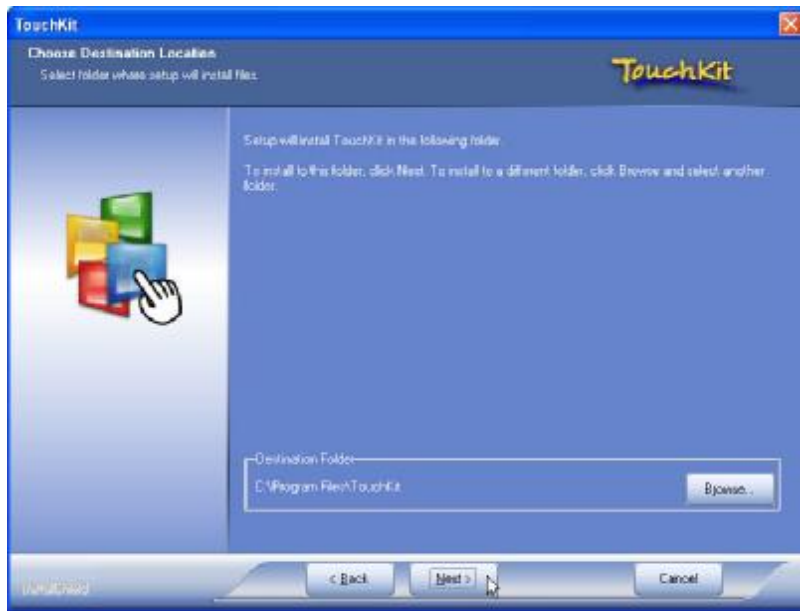
6. Click **Next**



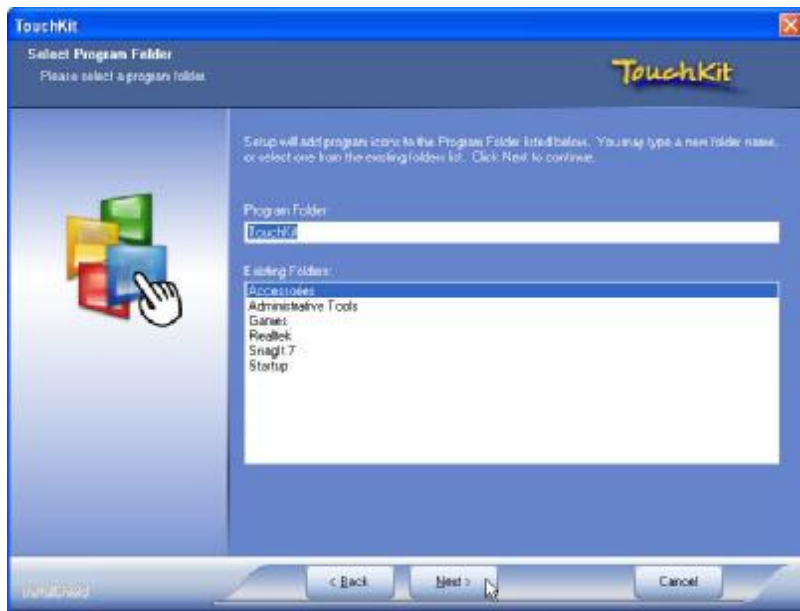
7. Click **OK** to close the pop-up dialog.



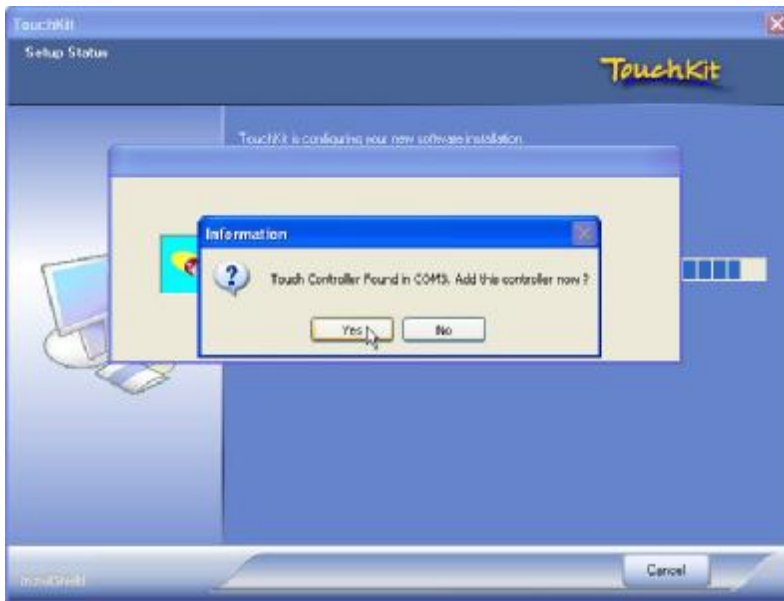
8. Click **“Support Multi-Monitor System”** and then **Next** to continue.



9. Click **Next**



10. Click **Next**



11. Click **Yes**



12. Click **OK** and turn off the computer to restart your system again.

After the system finish rebooting follow the directions to calibrate the Touch screen.

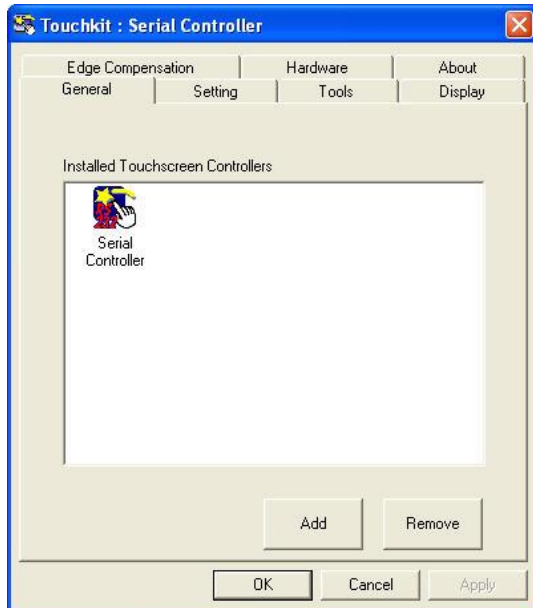
# TouchKit Control Panel

This section explains the different options in the TouchKit control Panel.

## General tab

The general tab allows you to:

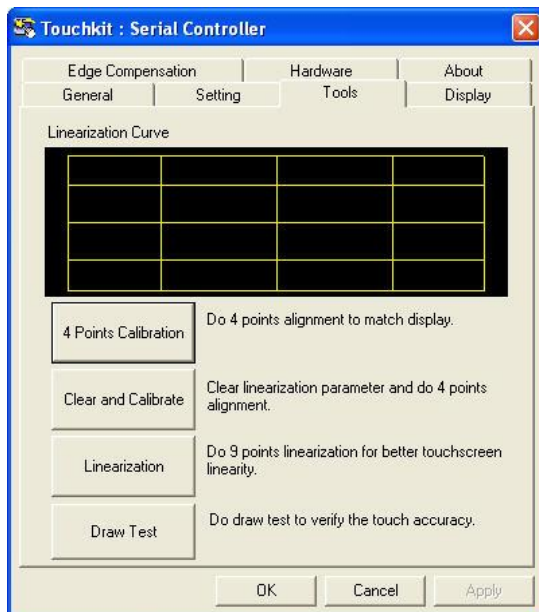
- Manage the touch screen controller you installed.



## Tools tab

The tools tab allows you to:

- Calibrate the touch screen with the **4 Points Calibration** button.

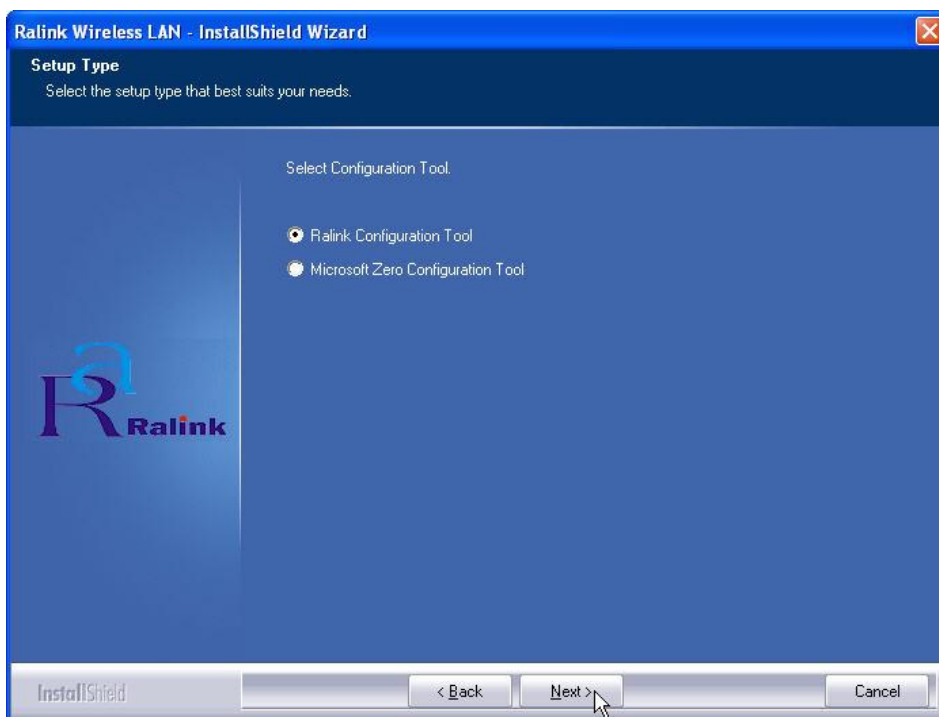


## Wireless LAN Driver Installation

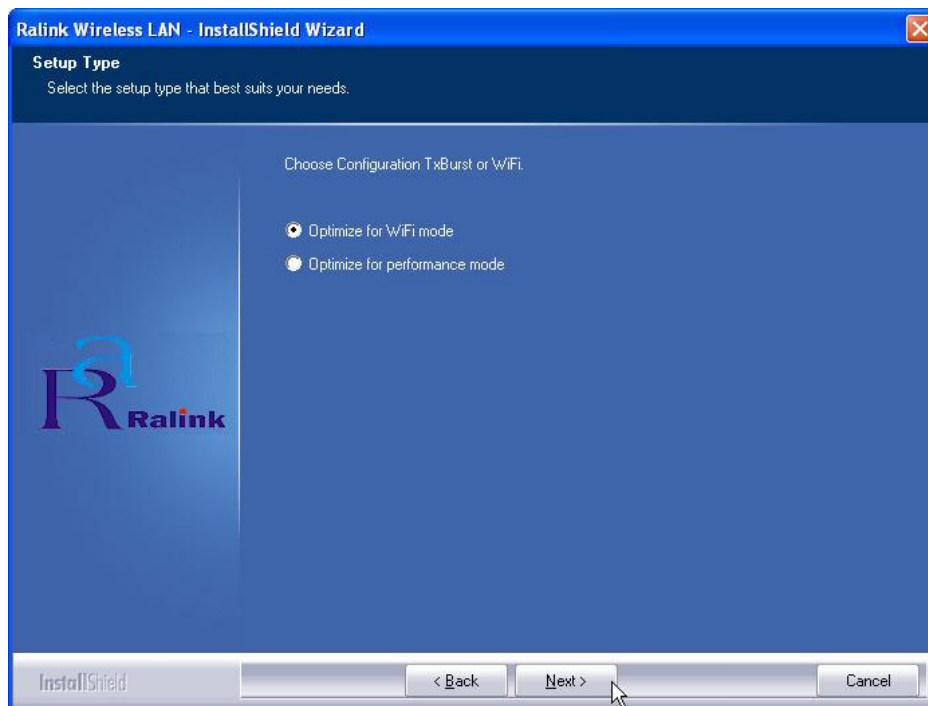
1. Locate **D:\Utility\Wireless Lan\Ralink**
2. Open **RALINK(3.0.7.0).exe**



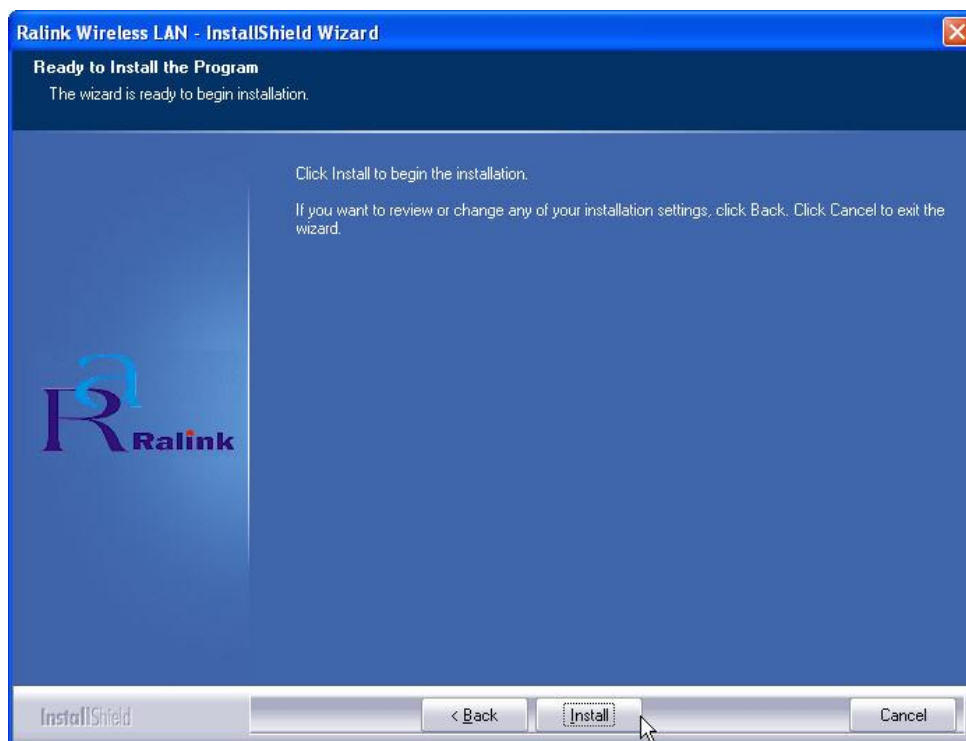
3. Click **“Next”** and start the installation



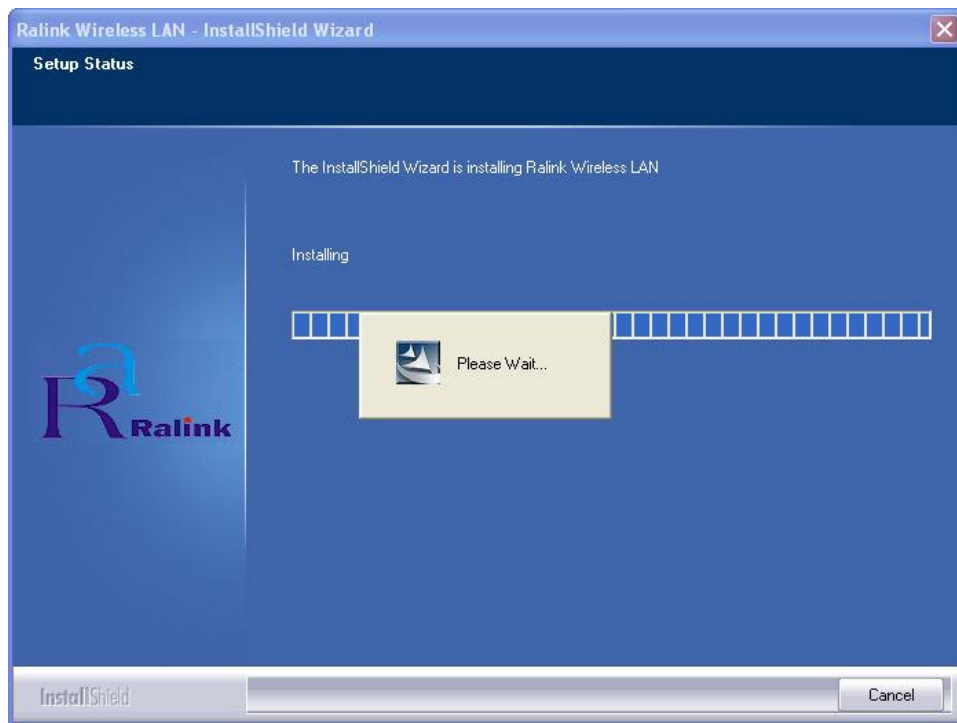
4. Select **“Ralink Configuration Tool”** and click **Next** to continue.



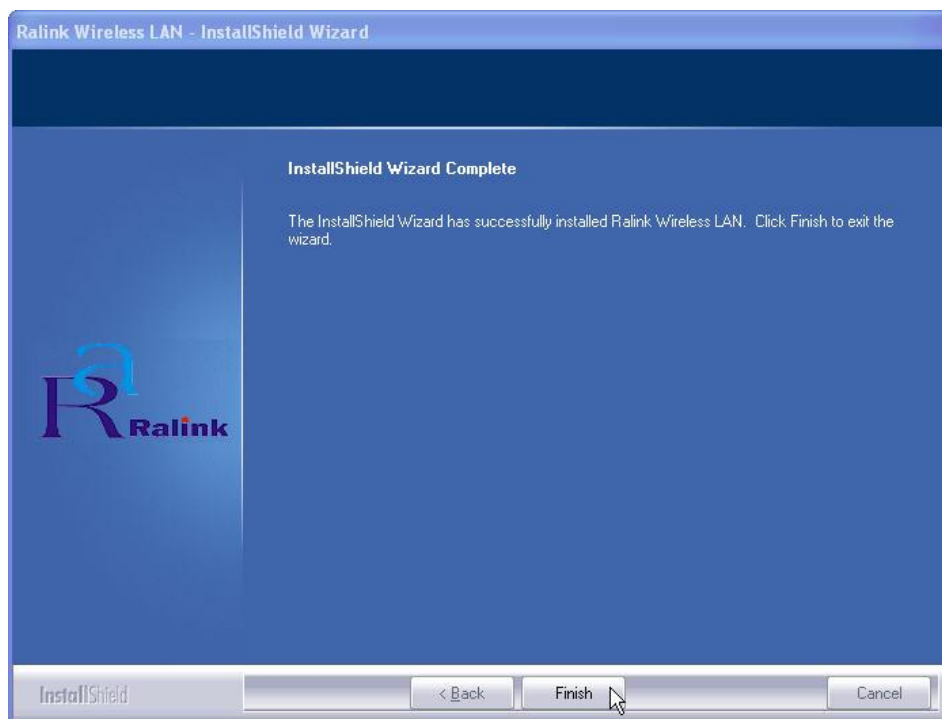
5. Select “**Optimize for WiFi mode**” and click **Next** to continue.



6. Click **Install** to continue.



7. Wait while the installation is processing.



8. Click “Finish” to complete the installation.



## Chapter 4

# Specifications

## RP-7000C Specifications

System Configuration	
<b>CPU (BGA)</b>	INTEL ATOM N270 (1.6GHz with 512K L2 cache)
<b>Chipset</b>	INTEL 945GME
<b>South Bridge</b>	INTEL ICH7-M
<b>Memory</b>	Two 200-pin SODIMM support DDRII SDRAM up to 4GB
<b>VGA controller</b>	GMA950 Integrated in 945GME, shares system memory up to 224MB
<b>Primary LCD Panel</b>	17"/15" TFT LCD Panel (800X600/1024x768)
<b>Primary Touch Panel</b>	17" with 5 wire resistive touch (RS-232 interface) 15" with 4 or 5 wire resistive touch panel (RS-232 interace)
<b>Storage</b>	Internal 2.5" SATA hard disk drive or 2.5" SATA SSD
<b>Power</b>	12VDC-150 watt external power adapter
I/O Port	
<b>Serial Port</b>	3 User available COM ports (COM1 / 2 / 4) Ø D-SUB9 (RS-232): COM1 and COM2 Ø RJ-45 (VFD or RS-232): COM4 for VFD or RS-232 device. (LED Indicators: Green for 5V / Orange for 12V / Non for RI) 1 System assigned COM port (COM3) Ø COM3: for primary touch screen
<b>USB port</b>	8 USB 2.0 ports (4*Internal, 4*External)
<b>Cash drawer port</b>	RJ11 Cash drawer port,12V actuation. Controlled through GPIO port 2F

<b>LAN Port</b>	10/100/1000Mbps Ethernet Controller, Realtek RTL8111C
<b>Audio Port</b>	Integrated Sound Blaster compatible, AC97 Audio Codec. (Realtek ALC662)/Built-in stereo speakers
<b>Optional Features</b>	
<b>MSR</b>	External Magnetic Stripe Card Reader track 1/2/3
<b>Identification Device</b>	External Finger Print Receiver or RFID receiver(USB)
<b>Wireless</b>	Internal Wireless Module(USB)
<b>Power Consumption</b>	
<b>Power consumption</b>	60W Idle (Standard system with secondary LCD panel while accessing HDD).
<b>Operating temperature</b>	
<b>Operating temperature</b>	0 <sup>0</sup> C ~ 40 <sup>0</sup> C

## Chapter 5

# Troubleshooting

Please note that the following troubleshooting guide is designed for people with strong computer hardware knowledge such as System Administrators and Engineers.

### Power is on, but there is no Panel Display

- A) Check if the motherboard Power LED is on when the power adapter is connected properly.
- B) If the LCD backlight is on but no content showed on the screen, please make sure the SATA cable is properly connected to the HDD.
- C) Reset CMOS DATA by shorting motherboard JCMOS PIN2 and PIN3 for a few seconds (Please refer to **page 10** in the **FEB-9457** User's Manual).
- D) Check if the system is beeping.
  - D-1) A single long beep indicates that a DRAM error has occurred. Please make sure the DRAM is properly installed, or please replace the DRAM.
  - D-2) One short beep after power on means the system works normally, but the LCD panel or LVDS interface could be defective.
    - D-2-1) The Boot Display setting in COMS setup should be set to [CRT+LFP1].
    - D-2-2) LVDS board connection to motherboard LVDS1 could be defective..
    - D-2-3) The LCD cable could be defective.
    - D-2-4) The Inverter is not working.
    - D-2-5) The LCD panel could be defective.

#### To check where the problem could be:

Please connect a VGA monitor to the VGA port. If the VGA monitor displays normally, one of the problems above is occurring, otherwise the motherboard may not function properly.

### Cannot Detect HDD

- A) Check if the SATA cable is connected properly to the motherboard SATA Connector or it could be defective.
- B) Check CMOS setup, and set SATA HDD to [Auto].
- C) On-board SATA port could be defective.

## Touch Panel Does Not Work

- A) Check CMOS settings, COM3 needs to be "Enabled". The correct settings are "3E8h" and "IRQ10".
- B) Check if there are any conflicts between COM3 IRQ10 and other devices.
- C) Check if the ELO driver or the TouchKit driver has been properly installed. Or try to re-install the driver (Please refer to the ELO driver installation or the TouchKit part).
- D) Check if the ELO controller or the TouchKit driver on COM3 has been detected during the ELO driver or the TouchKit driver installation. If yes, then check whether the flat cable from the ELO touch screen or the TOUCHKIT touch screen has been properly connected to the ELO controller or the TouchKit controller (**Attention:** Pin1 mark should be on the same side as the ELO controller).
- E) Check if the ELO controller or the TouchKit controller Green LED is blinking.  
If not, there is no DC+5V support for the ELO controller or the TouchKit controller from the motherboard.
  - E-1) Check if the COM3 cable is properly connected between the motherboard and the Touch screen controller.
- F) Touch screen controller could be defective or the touch panel could be defective.

## Touch Panel Cannot Calibrate Correctly

- A) Please replace the touch controller, and re-calibrate. If this works, change back to the original touch controller, and re-calibrate.
- B) If the touch panel still cannot calibrate correctly after changing to a new touch controller, the touch panel may not be installed properly or it could be defective.

## MCR Is Not Functioning Properly

- A) Check if the green MCR LED is on.
  - A-1) Check if the MCR is properly connected to the MCR connector board on main system.
  - A-2) Make sure the MSR cable is properly connected between RG9000CB0880 I/O board MSR1 and the MCR connector board.
  - A-3) The MCR connector board could be defective.
  - A-4) The MCR module could be defective.

## **LAN Is Not Functioning Properly**

- A) Check if the LAN driver is installed properly. (Please refer to the LAN driver installation)
- B) Check if there are any IP Address conflicts.
- C) Check if the RJ45 cable is properly connected.
- D) The on board LAN chip could be defective.

## **COM1 and COM2 Are Not Functioning Properly**

- A) Check if the I/O ports are enabled in the CMOS setup.
- B) Check if there are any IRQ conflicts.
- C) The motherboard could be defective.

## **Cash Drawer Port Is Not Functioning Properly**

- A) Make sure the pin assignment matches between the cash drawer and the RJ11 cash drawer port.
- B) Verify the GPIO port address and the bit is "2F". Check other details from the system manual **page 10** and **FEB-9457** User's Manual **page 50**.
- C) The motherboard could be defective.

## **USB device is not functioning properly**

- A) Ensure that the USB controller is "enabled" in the CMOS setup.
- B) Ensure that the USB Legacy is "enabled" in the CMOS setup. (Windows 98 、 Windows 2000 、 Window XP Professional)
- C) Ensure that the USB Legacy is "Disabled" in the CMOS setup. (Embedded OS: Windows XP Embedded 、 Window CE. NET 、 Linux RedHat 9)