4 Wire / 5 Wire Resistive Touchscreen

Table of Contents

Chapter 1 Introduction

Thank you for choosing ATouch Touch Screen. It's our great honor to present the most advanced touch screen to you. This User Guide will lead you through the installation of 4 Wire/ 5 Wire e Resistive. Please follow the instruction and enjoy the technologies with ATouch Touch Screen.

1.1 4 Wire Resistive Touch Screen

1.1.1 4 Wire Resistive Touch Sensor

ATouch's 4 Wire Resistive Touch Screen is of the most extensive application. It is capable of working by any kind of physical touches, such as finger, gloved hand (any kind of gloves). It is liquid resistance and contamination proof and even works in bad environment such as foul, dirt, greasiness. 4 Wire Resistive touch screen is also noted for its high accuracy and reliability with low cost advantage. Therefore it becomes the most popular touch screen in applications, especially in handset device uses.

ATouch 4 Wire Resistive Touch Screen supports RS-232 & USB interfaces for :

LCD Display : 6..4" – 19"

CRT Flat Display : 17"-21"

4 Wire Resistive Touchscreen Features:

- Low cost

- Finger, gloved hand and stylus activation

- High accuracy and sensitivity

- High durability and reliability

- Contaminant proof and liquid resistance.

1.1.2 4 Wire Resistive Controller

ATocuh's 4 Wire Controllers provide the drive signals for the touchscreen, convert analog signals into digital touch coordinates, and send coordinates to the host.

ATouch provides RS-232 and USB interfaces for 4 Wire Controllers. RS-232 controllers are designed two kinds of serial connectors for customers to choose different kinds of serial cables.

1.2 5 Wire Resistive Touch Screen

1.2.1 5 Wire Resistive Touch Sensor

ATouch's 5 Wire Resistive Touch Screen is a most extensively various application. It works by any kind of physical touch, not only by fingers, gloved hands (any kind of gloves). It is liquid resistance and contamination proof. It works even in bad environment, such as foul, dirt, greasiness.

ATouch 5 Wire products are the most reliable available, and have the expected life performance for more than 35 million touches in one location without failure.

ATouch 5 Wire Resistive Touch Screen support RS-232 and USB interface for :

LCD Displays: 10.4" – 19"

CRT Flat Displays: 17"-21"

1.2.2　5 Wire Resistive Controller

ATocuh's 5 Wire Controllers provide drive signals for the touchscreen, convert analog signals into digital touch coordinates, and send coordinates to the host.

ATouch provides RS-232 and USB interfaces for 5 Wire Controllers. RS-232 controllers are designed two kinds of serial connectors for customers to choose different kinds of serial cables.

1.3　Software Drivers

Drivers supporting operating system are as follow :

Windows : 95/98/Me/2000/XP/NT

Linux : Red Hat 9.0, Mandrake 9.1

1.4　Agency Approvals

FCC

CE

1.5　Warranty

4 Wire Resistive Touch Sensor: 1 years

4 Wire Resistive Controller (RS-232 or USB) : 1 years

5 Wire Resistive Touch Sensor: 5 years

5 Wire Resistive Controller (RS-232 or USB) : 5 years

Chapter 2   Touchscreen Installation

2.1 CRT Monitor Installation

CRT monitor installation process as following steps :

1. **Incoming inspection**

    ・CRT monitor : please check if the monitor works well.

    ・Touchscreen : please unpack the touchscreen, connect your
       touchscreen with the controller on your PC and test if the
       touchscreen works well.

    ・After testing the monitor and touchscreen, you can start to install
       touchscreen into your monitor by the following steps.

2. **Disassembling CRT monitor**

    ・Remove the back side plastic housing of your CRT monitor.

    ・Discharge the CRT tube from the front bezel (usually there are 4
       screws on the 4 corners need to be released).

    ・Check if the electronic board needs to be removed or not.

    ・Verify the fit position on the CRT tube for the touchscreen.

    ・After verifying the position, you can attach the touch sensor onto
       the CRT. You can use the double side high tack adhesive tape (as
       3M) to attach the touch sensor onto the CRT display

    ・After this process, check the space between the touch
       sensor and the front bezel. If the space is not enough, you may
       need to add rubber spacers between the touch sensor and the front
       bezel (the 4 corners on which the CRT and the front bezel is

screwed).

· Installing Touchscreen Controller

Connect all cables / connectors in right places and fix the
controller at the monitor chassis.

· Power Supply

If you use internal power supply +5VDC, connect the power
cord (from touchscreen RS-232 controller) to the CRT monitor
electronic board +5VDC.

If the external power supply is used, the +5VDC will be
supplied from the keyboard through the RS-232 cable provided by
ATouch.

· Fixing Cables

Cables should be fixed well and not movable.

· After above processes, test if the touch monitor works normally.

3. **Reassembling CRT Monitor**

After the installation of the touchscreen, reassemble the CRT
monitor back side plastic housing and test if the function of the
touch monitor works well.

4. **Sealing**

Sealing should be even around the front bezel. The material is
special sponges from ATouch. The adhesive side of the sponge is
stuck on the front bezel, and the special plastic side on the touch
sensor.

Or use the material manufactured by VOLTEK.

(Suggest from VOLTEK : 2A/2E//4A/4E black flame retardant
material)
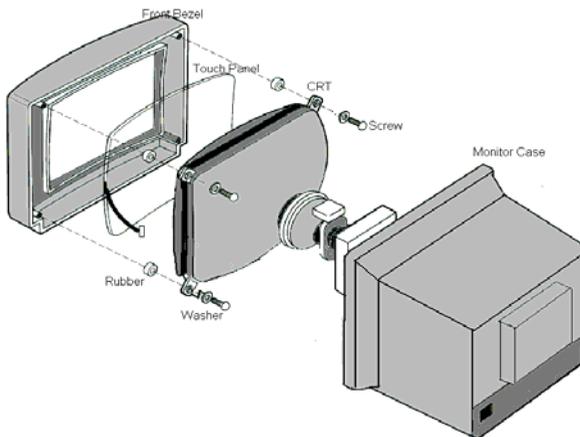
2.2 LCD Monitor Installation

1. Incoming inspection

‧LCD monitor : check if the monitor works well.

‧Touchscreen : Unpack the touchscreen, connect the touchscreen
with the controller on your computer and test if the touchscreen
works well.

‧After testing the monitor and touchscreen, you can start to install
touchscreen into your monitor by the following steps.

2. Disassembling LCD monitor

‧Remove the rear side plastic housing of your LCD monitor.

‧Remove the LCD display from the front bezel and kindly be
attention to disassemble the LCD control board and the OSD

board.

・Verify the fit position on the LCD display for the touchscreen.

・After verifying the position, attach the touchscreen sensor on the LCD. Use the double side high tack adhesive tape (as 3M) to attach touchscreen sensor on the LCD display.

・After this process, check the space between the touchscreen sensor and the front bezel if there is any gape (You can use the special sponge provided by ATouch to fulfill it).

・Installing Touchscreen Controller

Connect all cables / connectors in the right places and fix the controller at the right position on the monitor rear side metal or plastic case.

　・Power supply

　　If you use internal power supply +5VDC, connect the power cord (from touchscreen RS-232 controller) to the LCD control board +5VDC.

　　If the external power supply is used, the +5VDC will be supplied from the keyboard through the RS-232 cable provided by ATouch.

　・Fixing Cables

　　　Cables should be fixed well and not movable. Please note that cables do not get close to the inverter or the power supply.

・After above processes, test if the touch monitor works well.

3. Reassembling LCD Monitor

　・After the processes mentioned above, reassemble the rear side

plastic housing of the LCD monitor.

・Seal the monitor if you need to seal it before you reassemble the

front bezel of the LCD monitor.

・Test if the touch monitor function works well.

4. Sealing

Sealing should be even around the front bezel. The material is

the special sponges from ATouch. The adhesive side of the sponge

is stuck on the front bezel, and the special plastic side on the touch

sensor.

Or use the material manufactured by VOLTEK

(Suggest from VOLTEK : 2A/2E//4A/4E black flame retardant

material).

Chapter 3   Software Driver Installation

3.1   RS-232 Software Driver Installation for Windows

The following installation is applied to
Windows 95/98/Me/2000/XP/NT

3.1.1   Installing the Touch Driver

1. Launch Windows operating system, and exit all Windows programs
   before continuing with the installation.

2. Insert the ATouch utility diskette into the floppy disk drive.

3. Run "A Touch-2.0.exe". The following dialog box will appear.
   Click [Next].
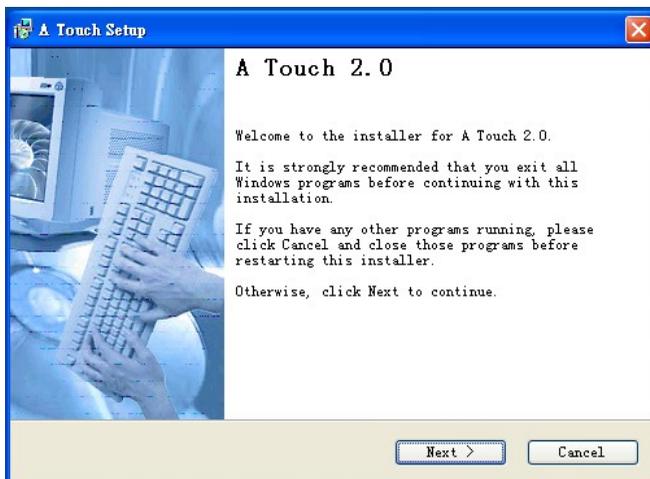
4. Select Installation Folder and click [Next] to continue the next step.
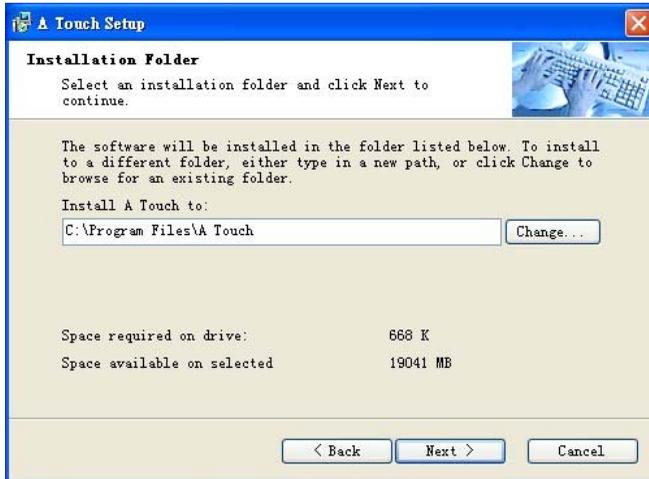
5. Select Shortcut Folder and click [Next] to continue the next step.
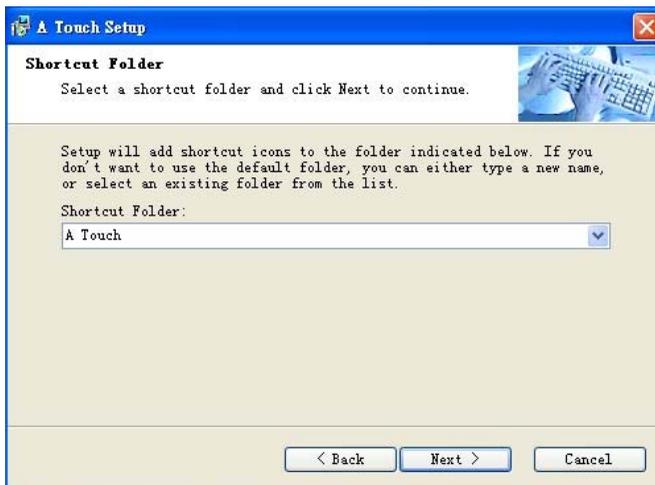
6. Now the ATouch touchscreen setting is completed. Please check the installation setting. If you accept the setting, please click [Next] to install the driver.

7. After the driver installation, a dialog box will launch for you to choose the serial port which your touch monitor is currently connected to.

8. Select the serial port and click [Finish] to start the four-point calibration.

9. Touch each center of the point sequentially. Four calibration points in total.
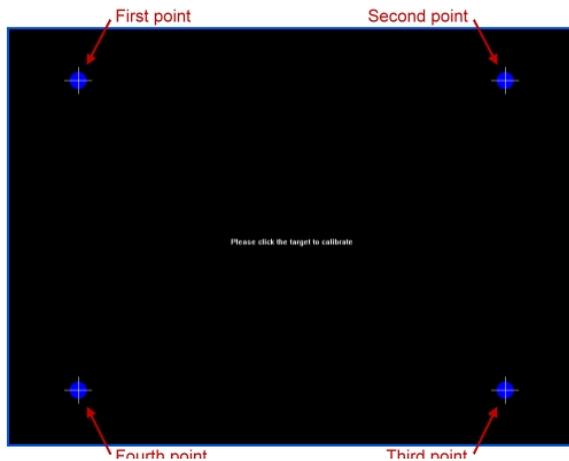
10. The installation completes.

3.1.2 Uninstalling the Touch Driver

There are two ways to remove the touch driver.

1. Use the Add/Remove Programs feature in the Control Panel.

・Open the Control Panel

・Click Start, hover over Settings, click Control Panel

・Double-click the Add/Remove Programs icon

・Choose the A Touch 2.0 item.

・Click the Change/Remove button.

・Click the Yes button

・The ATouch driver will be removed. No computer restart is
required.

2. Use Shortcut Folder icon in the Start Menu.

・Click Start, hover over Programs, choose A Touch folder and
click Uninstall.

3.1.3 Calibration

Calibration ensures that the cursor appears at the position of touch.

ATouch uses a four-point calibration sequence that will accept touchscreens with any orientation of the X or Y axis.

Once calibrated, the touchscreen will be ready to use automatically each time the system is restarted.

• Options to Launch

The Calibration Program may be launched by three different ways.

‧Double-click the ATouch icon on the desktop. Choose Calibrate tab and click the Calibration button.

‧Click Start, hover over Programs, choose ATouch folder and click Calibration.

‧Click right mouse button on the ATouch icon in the Windows task bar at the bottom right of the display and click the Calibration.

• **Running the Calibration Program**

1. When you run the calibration program using one of the options
   above, touch the center of the four targets as they appear
   sequentially.

2. When you release your finger on each point, you will hear a beep.

3. After the calibration completes, you can
   - press ENTER or touch the touchscreen to save and exit.
   - press SPACE to calibrate again.
   - press ESC to discard the result and exit.

3.1.4   Control Center

The control Center application allows configuration of the driver to suit the application programs, and present system and diagnostic information to the user.

Each of the five tabs in the Control Center is described below.

1. Running the Control Center

The Control Center may be launched by four different ways to adjust the properties.

・Double-click the ATouch icon on the desktop.

・Click Start, hover over Programs, choose ATouch folder and click Control Center.

・Click the ATouch icon in the Windows task bar at the bottom right of the display.

・Click right mouse button on the ATouch icon in the Windows task bar at the bottom right of the display and click Show Control Center.

2. Calibrate
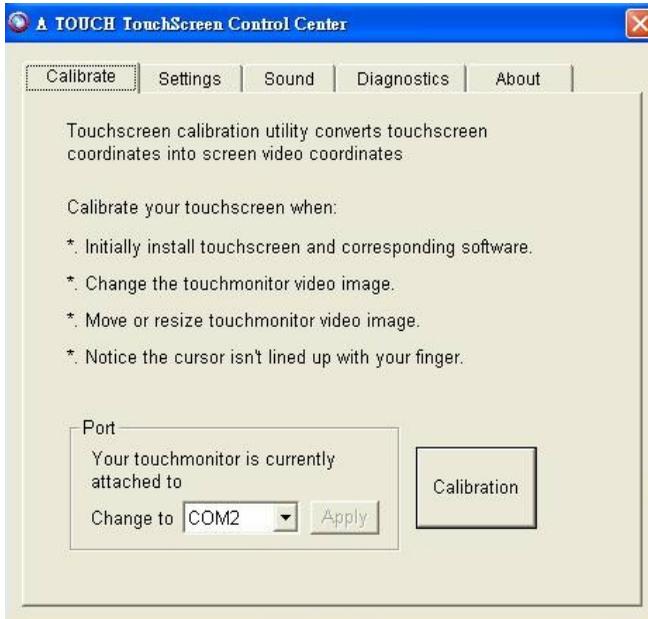
・The Calibrate tab is displayed when the Control Center is launched.

・Serial port is changeable. Choose the right serial port with which

the touchscreen connects, and click Apply button.

・Click the Calibration button to calibrate.

3. Settings
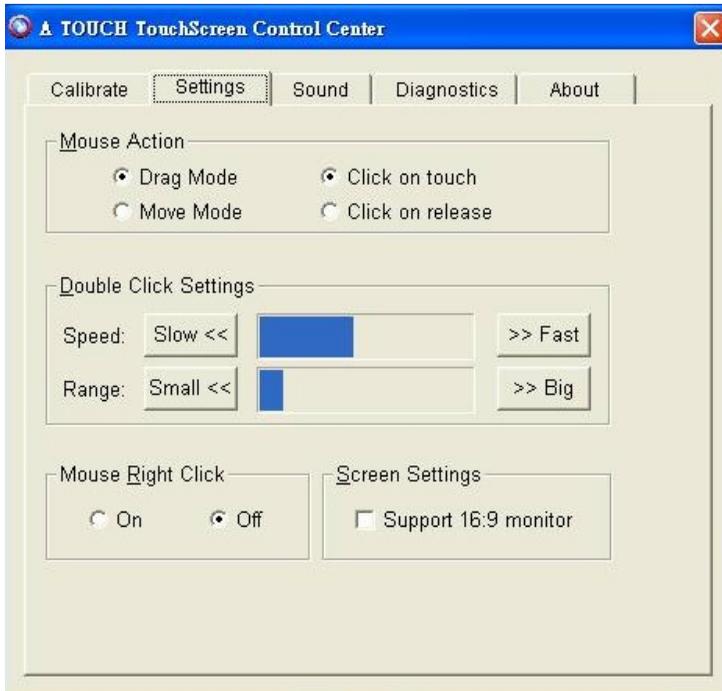
- **Mouse Action**

  There are three combinations for this function.

  ‧Drag Mode and Click on touch

  　Click on touch sends, immediately upon touch, a mouse

  down/up message at the point of touch on the touchscreen. The

  user's finger must be removed from the touchscreen before a

  new touch at any location is recognized. The cursor or selected

objects can be dragged on the screen in this mode.

・Move Mode and Click on touch

Click on touch sends, immediately upon touch, a mouse down/up message at the point of touch on the touchscreen. The user's finger must be removed from the touchscreen before a new touch at any location will be recognized. The cursor or selected objects cannot be dragged on the screen in this mode.

・Move Mode and Click on release

Click on release sends, at the time of release, a mouse down/up message at the point that the screen was last touched. Dragging across objects on the screen will not highlight or select them unless untouch occurs when the touch is over the object.

- **Double Click Settings**
  ・Speed : To set the appropriate speed to achieve double-click that is identical to the speed of a successful double-click with the mouse.
  ・Range : To set the dimensions of the location around each clickable icon or object on the screen which will be recognized by Windows.

- **Mouse Right Click**
  ・Allow a Windows right mouse button simulation on the touchscreen.

・When this function is set On, a representation of a typical two-button mouse is displayed in a small window on the desktop, named Right Mouse Button Window (RMBW). The initial presentation of the RMBW shows the left button blue, indicating that the left button is active. Any touch on the desktop or an application will make a left button click constantly.
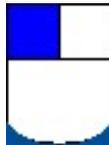
・A touch in the RMBW changes to show the right mouse button blue and make it active. At that time any touch on this monitor will make a right button click constantly.
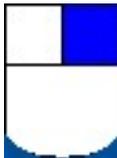
・When the RMBW is right button active, click it again to change to left button active.

・When the mouse cursor is moved to the RMBW and stays on it
for five seconds, the RMBW is shutdown automatically.

・The position of the RMBW is fixed in the bottom right of the
display.
・The RMBW cannot be resized.

● **Screen Settings**

Putting a check in the box supports 16:9 monitor, otherwise
supports standard 4:3 monitor.

4. Sound
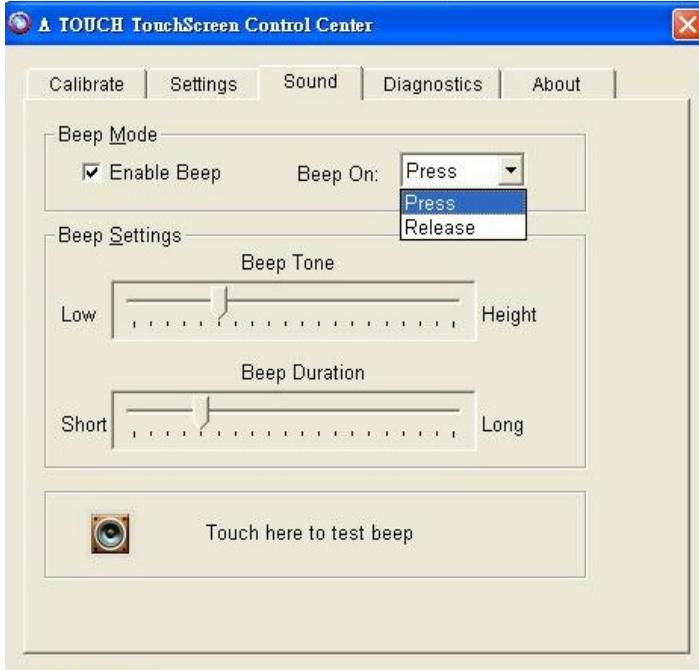
● **Beep Mode**

・The Sound tab sends a single-frequency tone, or "Beep" to the
   system speaker each time that a valid touch occurs.

・The beep is enabled by default when the driver is installed. It is
   able to be turned off by unchecking the Beep on the check box
   in this tab.

・Choose the Beep by clicking on touch or release.

• **Beep Settings**

・The frequency (Tone) and the Duration of the beep can be

adjusted by moving the appropriate slider in this tab with the

touchscreen or mouse, or by using the keyboard arrow keys.

5. Diagnostics
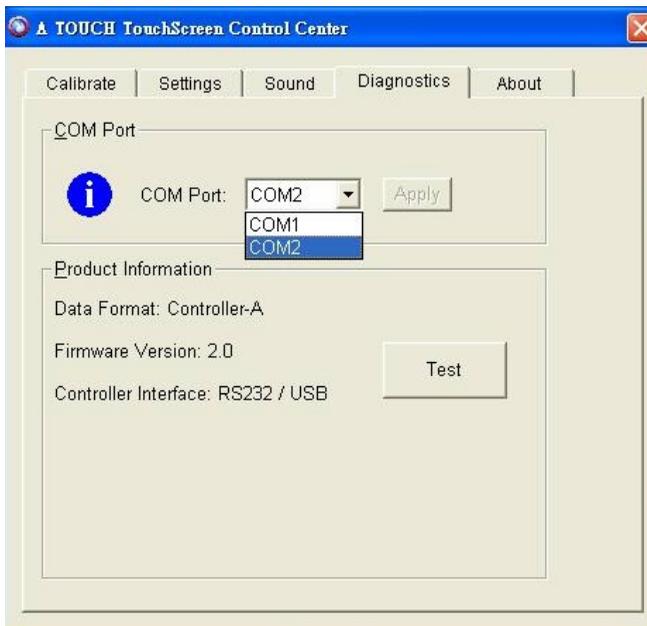
・Choose the right serial port with which the touchscreen connects,

and click Apply button.

・Showing the product information.

6. About

The About tab shows the version of the driver and provides the link to ATouch's web site.

3.2   USB Software Driver Installation for Windows

The following installation is applied to

Windows 95/98/Me/2000/XP/NT

The complete procedure is divided into two parts: CP2101

and ATouch-2.0.exe.

Step1. Run self-extract file "ATouch USB Drivers.exe" in the driver diskette.

Step2: Installing the "CP2101 USB-to-UART Bridge Controller" driver.

(Use Windows XP for example)

1. When your operating system is detected a new USB device, please choose the "Install form a list or specific location [Advanced]" item to install the CP2101 driver.

2. Please tick the "include this location in the search" item and click the Browse button to specify the correct path of its directory.
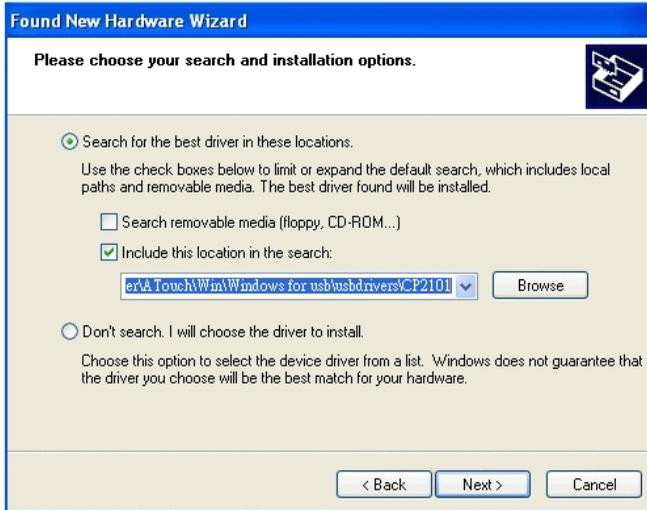
3. The Hardware Wizard found the device driver and installing it.

4. After these three steps, the USB touch screen has been activated.

Step3 : Installing the ATouch-2.0 touch screen driver.

1. Execute "ATouch-2.0.exe" in your diskette or other folder, and follow its
   instructions to complete the installation.
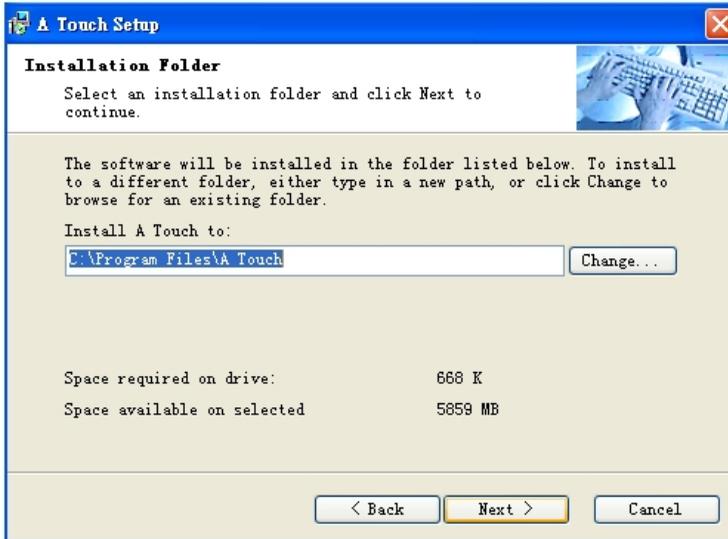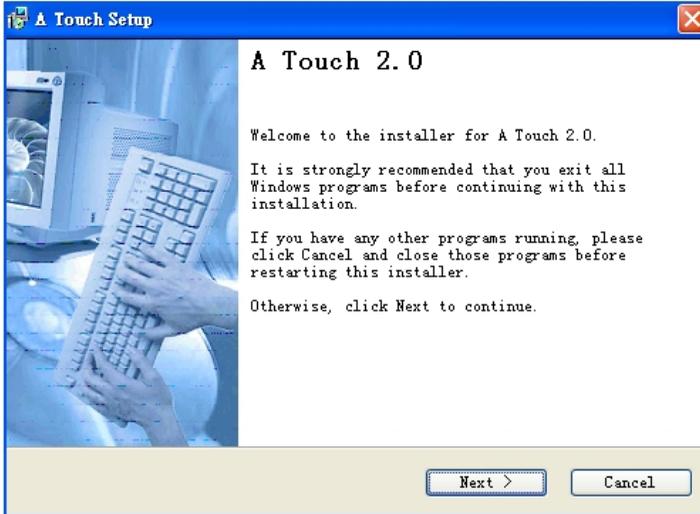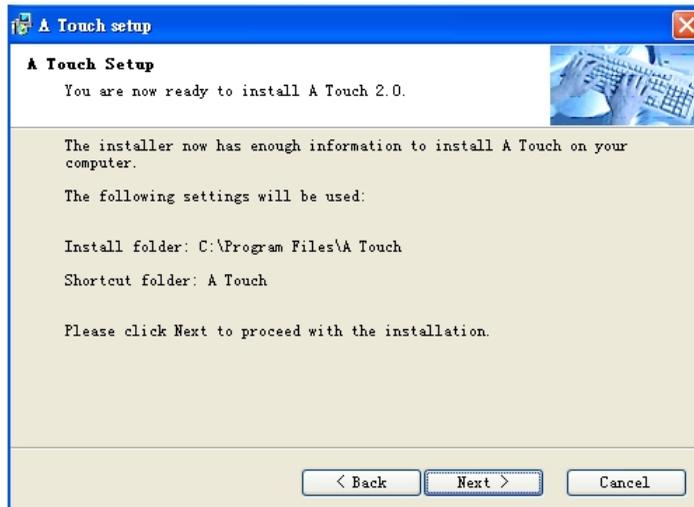
2. Please select the COM3 or COM4 port.
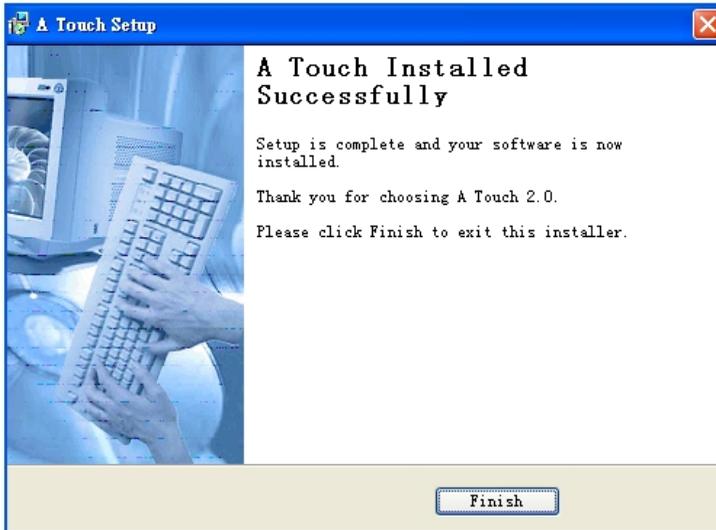
3. Touch each center of the point sequentially. Four calibration points in total.
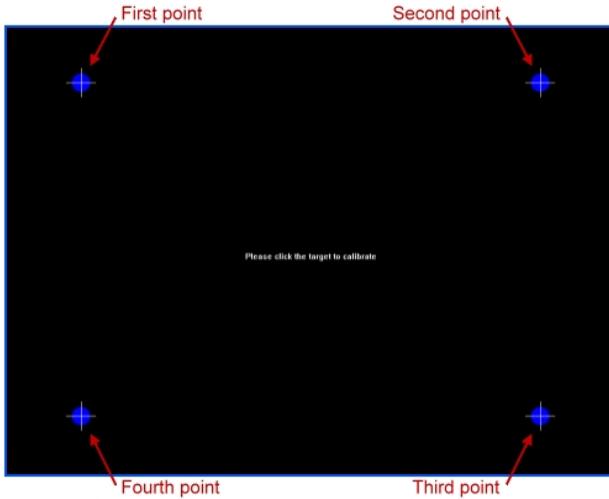
4. The installation completes.

3.3   Linux Drivers

Please contact with your distributor or contact with ATouch

Technical Support Dept. (info@a-touch.com.tw)

Chapter 4   Troubleshooting

Before you start troubleshooting, check the following.

‧ Make sure your computer and monitor are working normally.

‧ Check that the touchscreen connectors are all inserted correctly.

Touch location and cursor position are reversed.

‧ Calibration is not run during the processes of driver installation. Please run the function of Calibration.

Cursor constantly stays in a fixed position on the screen edges or corners.

‧ During touchscreen installation, the display front bezel on that position presses active area of touchscreen. Please stick sponges on the inner four sides of the front bezel in order to prop the frame up.

‧ If sponges are already stuck, try to add one more layer, but the gap between the touchscreen and the front bezel may be too big to influence the appearance.

‧ If the cursor fixed position is on one of the four corners, try to loose screws of the display on four corners.

Cursor shakes at a certain fixed position.

‧ Power supply or other high frequency device influences the display or the touchscreen controller. First, make sure to keep the

touchscreen's tail away from display's inverter and insulate against the display device; Second, make sure that the touchscreen controller is insulated, and keep it away from the display's inverter.

Cursor shakes before the touchscreen controller is installed in display.

・Maybe the touch sensor's tail contacts the display's inverter. Check if the tail's position is changeable. If it is hard to change tail's position, then stick thick insulating tape around the tail or stick a copper slice with insulation on one side and electric conduction on the other side to insulate the tail from the inverter.

Touch position is not accurate.

・Use the Calibration function of the ATouch Control Center program to re-align.

・If the touch position is not accurate after the calibration, please check whether the touchscreen driver you use is the newest version.

Chapter 5   Contact

For any question, please contact with your distributor or contact with A Touch Technical Support Dept.:

info@a-touch.com.tw

Appendix Jumper Definition

4WR232L			
Support TouchKit driver mode			
Jump1	Jump2	Jump3	Jump4
Close	Open	Open	Open
Support Elo driver mode(no support SmartSet)			
Jump1	Jump2	Jump3	Jump4
Close	Close	Open	Open
Support ATouch 2.0 driver mode			
Jump1	Jump2	Jump3	Jump4
Close	Close	Open	Open
Support 3M MicroTouch driver mode(under developing)			
Jump1	Jump2	Jump3	Jump4
Close	Open	Close	Open

5WR232L			
Support TouchKit driver mode			
Jump1	Jump2	Jump3	Jump4
Open	Open	Open	Open
Support Elo driver mode(no support SmartSet)			
Jump1	Jump2	Jump3	Jump4
Open	Close	Open	Open

Support ATouch 2.0 driver mode			
Jump1	Jump2	Jump3	Jump4
Open	Open	Open	Open
Support 3M MicroTouch driver mode(under developing)			
Jump1	Jump2	Jump3	Jump4
Open	Open	Close	Open

4WRUSBL			
Support TouchKit driver mode(install CP2101 driver first)			
Jump1	Jump2	Jump3	Jump4
Close	Open	Open	Open
Support Elo driver mode(no support SmartSet) (install CP2101 driver first)			
Jump1	Jump2	Jump3	Jump4
Close	Close	Open	Open
Support ATouch 2.0 driver mode(install CP2101 driver first)			
Jump1	Jump2	Jump3	Jump4
Close	Close	Open	Open
Support 3M MicroTouch driver mode(under developing) (install CP2101 driver first)			
Jump1	Jump2	Jump3	Jump4
Close	Open	Close	Open

5WRUSBL			
Support TouchKit driver mode(install CP2101 driver first).			
Jump1	Jump2	Jump3	Jump4
Open	Open	Open	Open
Support Elo driver mode(no support SmartSet) (install CP2101 driver first).			
Jump1	Jump2	Jump3	Jump4
Open	Close	Open	Open
Support ATouch 2.0 driver mode(install CP2101 driver first).			
Jump1	Jump2	Jump3	Jump4
Open	Close	Open	Open
Support 3M MicroTouch driver mode(under developing) (install CP2101 driver first).			
Jump1	Jump2	Jump3	Jump4
Open	Open	Close	Open

4WR232S/5WR232S	
Open	Support TouchKit driver mode.
Close	Support ATouch 2.0 and Elo driver mode, but SmartSet.