
**EELY© Touch Board General Driver for
Windows© & DOS Family**

User's Manual

Version 1.0

User's Licenses

Hardware & Software Installation

Troubleshooting & Specification

By EELY©



EELY Touch

EELY Chunghua-Enterprise-Group

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1 End User Licenses Agreement

EELY-ECW, CO.

EELY® EELY-TOUCH™ TOUCH SYSTEM END USER LICENSE AGREEMENT

IMPORTANT: THIS TOUCHSYSTEM END USER LICENSE AGREEMENT ("EULA") IS A LEGAL AGREEMENT BETWEEN YOU AND EELY. READ IT CAREFULLY BEFORE COMPLETING THE INSTALLATION PROCESS AND USING THE TOUCHSYSTEM. IT PROVIDES A LICENSE TO USE THE TOUCHSYSTEM AND CONTAINS WARRANTY INFORMATION AND LIABILITY DISCLAIMERS. BY INSTALLING AND USING THE TOUCHSYSTEM, YOU ARE CONFIRMING YOUR ACCEPTANCE OF THE TOUCHSYSTEM AND AGREEING TO BECOME BOUND BY THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO BE BOUND BY THESE TERMS, THEN SELECT THE "CANCEL" BUTTON, DO NOT INSTALL THE TOUCHSYSTEM AND RETURN THE TOUCHSYSTEM TO YOUR PLACE OF PURCHASE FOR A FULL REFUND.

1. Definitions

- (a) "EELY" means EELY, Co. and its suppliers and licensors, if any.
- (b) "Not for Resale (NFR) Version" means a version of the Touch-System, so identified, to be used to review and evaluate the Touch-System, only.
- (c) "Touch-System" means the EELY® EELY-Touch™ Touch-System supplied by EELY herewith, which may also include hardware, associated software, and online and electronic documentation.
- (d) "Touch-System Software" means the EELY® EELY-Touch™ Driver, Utility Software, and Development Software.
- (e) "Controller" means the EELY® EELY-Touch™ Electronic Hardware and the Firmware inside The MCU Chip.
- (f) "Glass Board" means the EELY® EELY-Touch™ Physical Glass Touch Panel and any part of it.

2. License Agreement

This EULA allows you to:

- (a) Install and use the Touch-System on a single computer or install and uses it on other compatible computer-like system. A license for the Touch-System Software may not be shared or used concurrently on different computers.
- (b) Make one copy of the Touch-System Software in machine-readable form solely for backup purposes. You must not reproduce on any such copy all copyright notices and any other proprietary legends on the original copy of the Software.

3. License Restrictions

- (a) You **MAY NOT** make or distribute copies of the Touch-System Software, or electronically transfer the Software from one computer to another or over a network.
- (b) You **MAY NOT** copy or photograph the design of our Controller, and copy the photograph of our controller.
- (c) You **MAY NOT** copy or photograph the design of our Glass Touch Board or analysis the chemical component or physical structure or electronic parameters of it.
- (d) You **MAY NOT** try to read or analysis the firmware inside the Controller chip, or analysis the electronic design of our Controller.
- (e) You **MAY NOT** decompile, reverse engineer, disassemble, or otherwise reduce the Touch-System Software to a human-perceivable form.
- (f) You **MAY NOT** sell, rent, lease, transfer or sublicense the any part of our Touch-System.
- (g) You **MAY NOT** modify the Software, Glass Board or Controller or create derivative works based upon EELY® Touch-System.

4. Upgrades

If this copy of the Touch-System is an upgrade from an earlier version of the Touch-System, it is provided to you on a license exchange basis. You agree by your installation and use of this copy of the Touch-System to voluntarily terminate your earlier EULA and that you will not continue to use the earlier version of the Touch-System or transfer it to another person or entity.

5. Ownership

The foregoing license gives you limited rights to use the Touch-System. EELY® and its suppliers retain all right, title and interest, including all copyrights, in and to the Touch-System and all copies thereof. All rights not specifically granted in this EULA, including any International Copyrights, are reserved by EELY® and its suppliers.

EELY®, EELY-Touch™ are trademarks or registered trademarks of EELY®, Co. in the China and/or other countries. Other marks are the properties of their respective owners.

EELY® EELY-Touch™ Touch-System End User License Agreement
(2002-9-9)

2 EELY-Touch System Support

2.1 Touch Panel Support

- 4-Wire-Resistive Panel
- 5-Wire-Resistive Panel
- 8-Wire-Resistive Panel

2.2 Controller Support

- 4-Wire-Resistive-RS232 Controller
- 5-Wire-Resistive-RS232 Controller
- 8-Wire-Resistive-RS232 Controller
- 4-Wire-Resistive-USB Controller
- 5-Wire-Resistive-USB Controller
- 8-Wire-Resistive-USB Controller

2.3 Software Driver Support

Software Driver for Windows 95, Windows NT, Windows 98, Windows Me, Windows 2K, Windows XP with RS232 & USB Interface

2.4 Device Driver Support

Device Driver for MS-DOS with RS232 Interface, Windows 95, Windows NT, Windows 98, Windows Me, Windows 2K, Windows XP with RS232 & USB Interface

2.5 Future Supporting

- 9-Wire-Resistive Panel

- 4-Wire-Resistive-PS/2 Controller
- 5-Wire-Resistive-PS/2 Controller
- 8-Wire-Resistive-PS/2 Controller
- 9-Wire-Resistive-PS/2 Controller

- 9-Wire-Resistive-RS232 Controller
- 9-Wire-Resistive-USB Controller

Device Driver for Windows 95, NT, 98, 2K, Me, XP with PS/2 Interface

Device Driver for DOS with PS/2 & USB Interface

Software Driver for Linux with RS232, USB & PS/2 Interface

Device Driver for Linux with RS232, USB & PS/2 Interface

3 Package Contents

One ET-CD2.04 Driver & Software CD-ROM

One EELT-Touch Controller

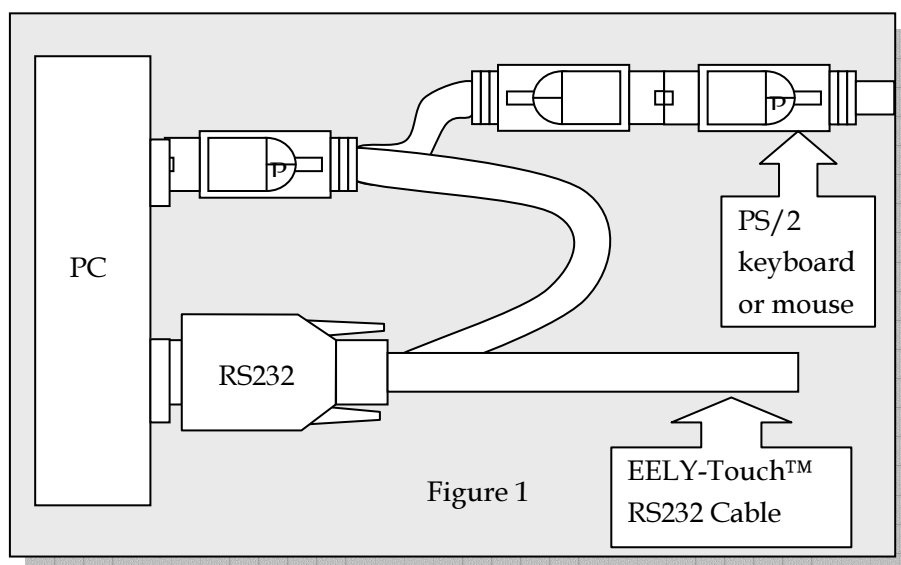
One Connection Cable from Controller to Computer

One Connection Cable from Controller to Touch Panel (optional)

4 Hardware Installation

4.1 RS232 Controller Connection to PC

Please refer to Figure 1.

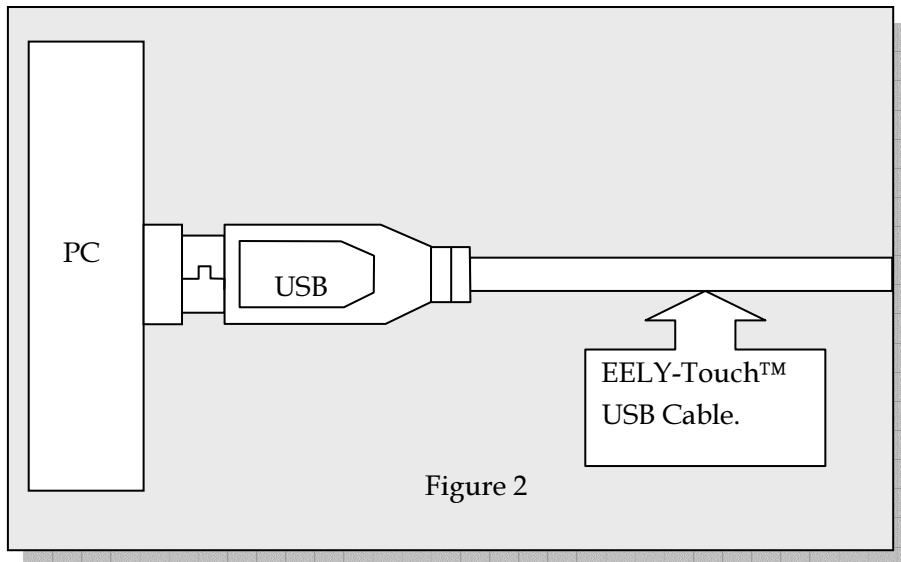


Note:

The EELY-Touch™ Controller to PC RS232 Connection cable requires power from PS/2 Port. After connecting EELY-Touch Screen with the RS232 Cable, connect EELY PS /2 device into the corresponding PC socket. Next, connect the original PS /2 device (keyboard or mouse) to the EELY PS /2 plug.

4.2 USB Controller Connection to PC

Please refer to Figure 2.

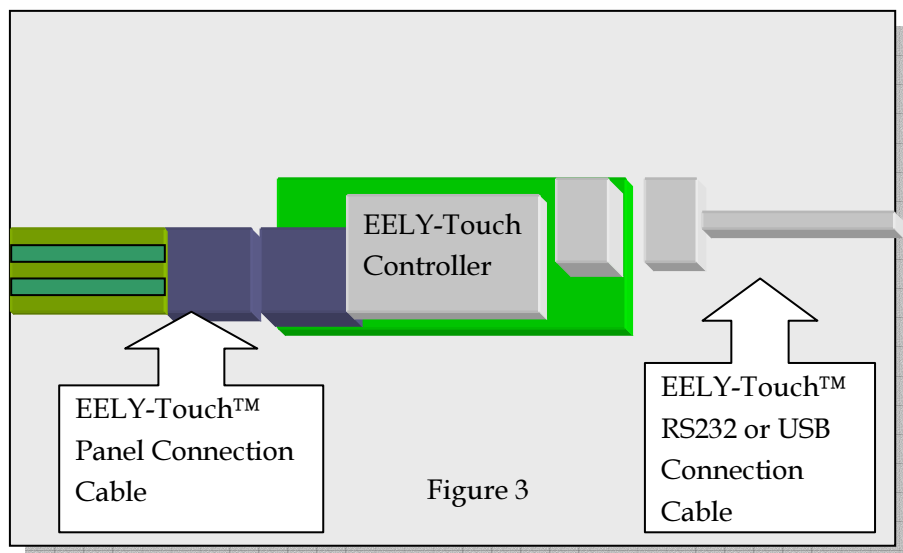


Note:

Connect the EELY-Touch™ USB Cable to the PC USB Port.

4.3 Touch Board Connection to Controller

Please refer to Figure 3.



Note:

The EELY-Touch™ Panel Connection Cable has a black plug, which is connected into the black port of the Controller, and the EELY-Touch™ RS232 or USB Connection cable has a white plug, which is connected into the white port on the Controller.

5 SoftDriver Installation

Note: **SoftDriver** is the older version that has been used in the previous EELY driver package.

We recommend using the latest version of our software as presented from section 8, **DeviceDriver Installation**, which is also the default installation.

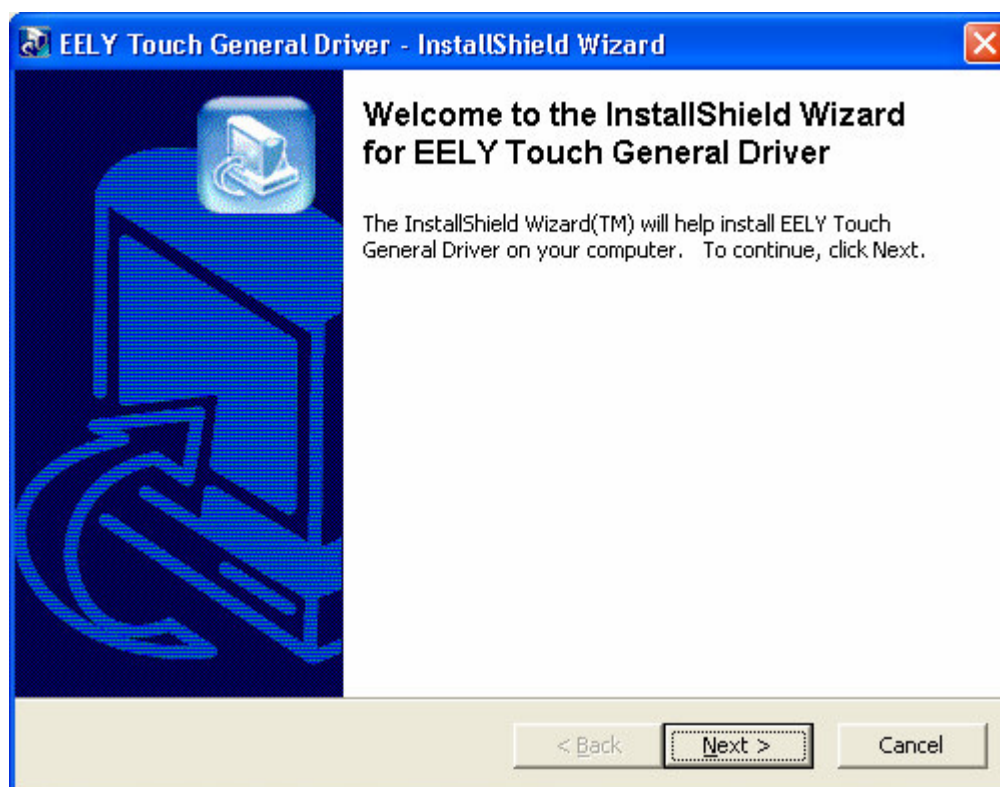
5.1 SoftDriver for Windows

Currently, the Windows SoftDriver for EELY-Touch is compatible with Windows95, Windows NT, Windows 98, Windows 2K, Windows ME, Windows XP & later versions of Windows. (We will support Windows CE & Linux in our future driver release.)

5.2 SoftDriver Installation under Windows OS

Note: The images in the following installations are from Windows XP. Different images may appear if different operation systems are used. However, there is no fundamental difference in the installation.

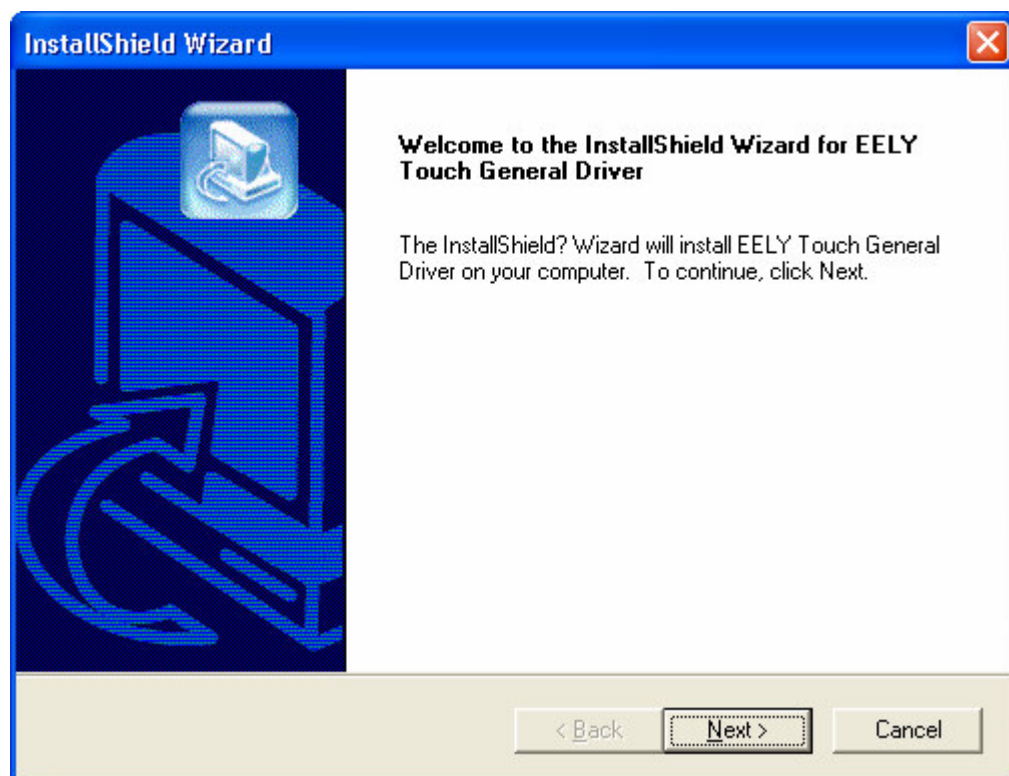
1. Double-Click the installation file, then click "Next" button.



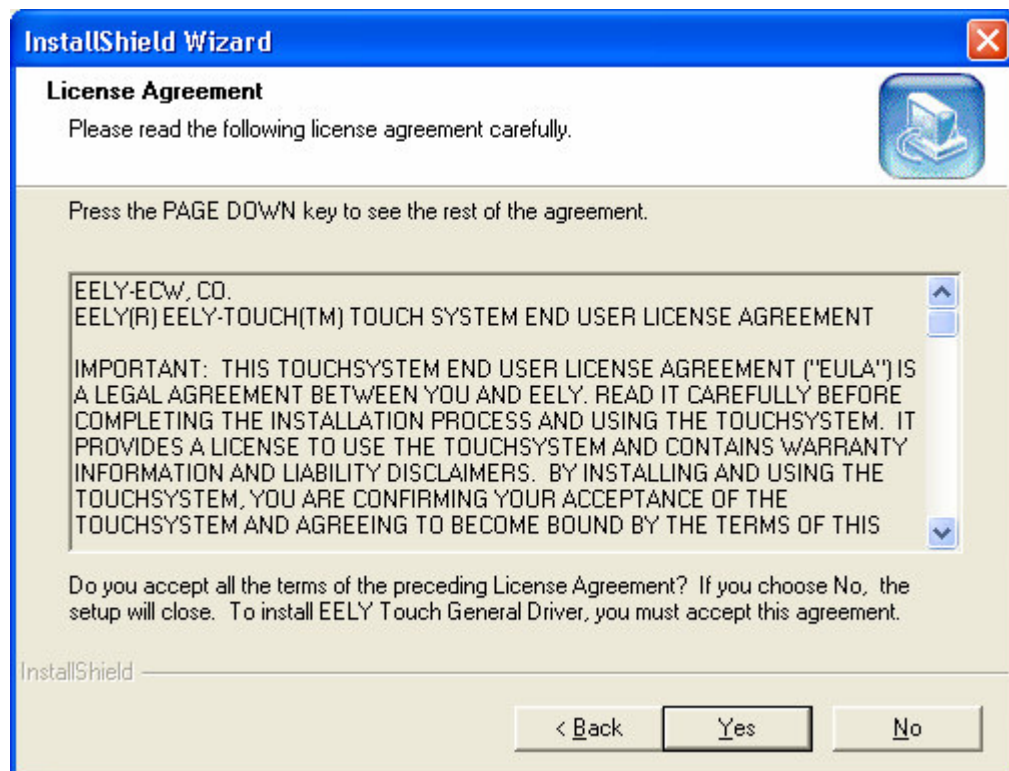
2. A screen like this will appear.



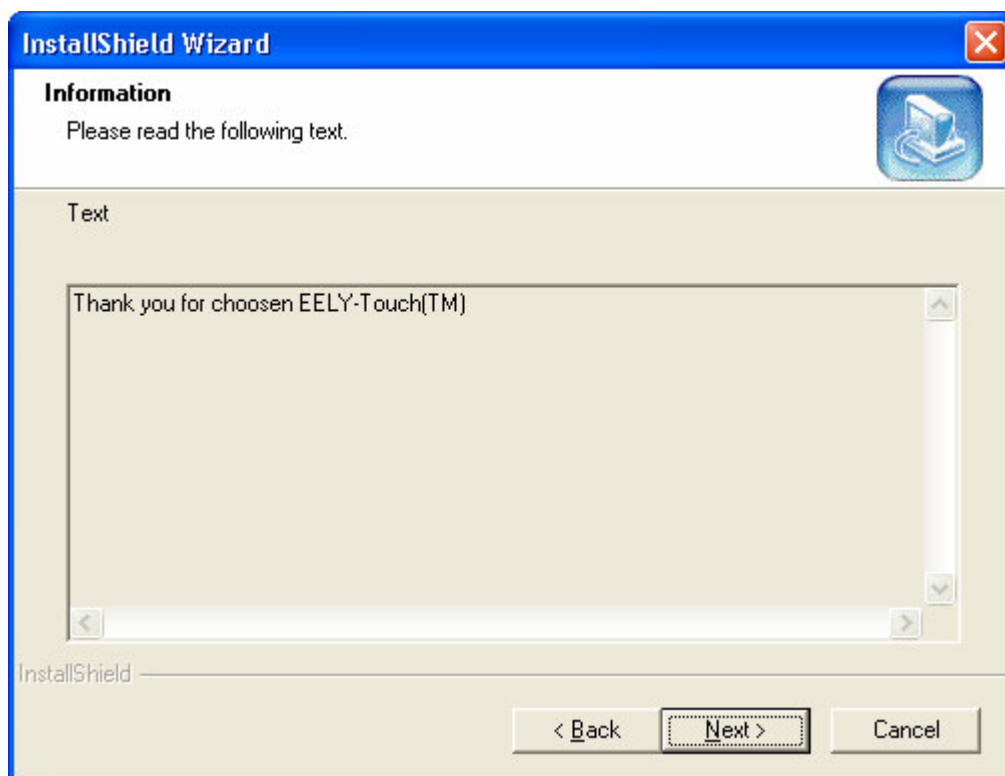
3. The installation Welcome window will appear. Click the "Next" button.



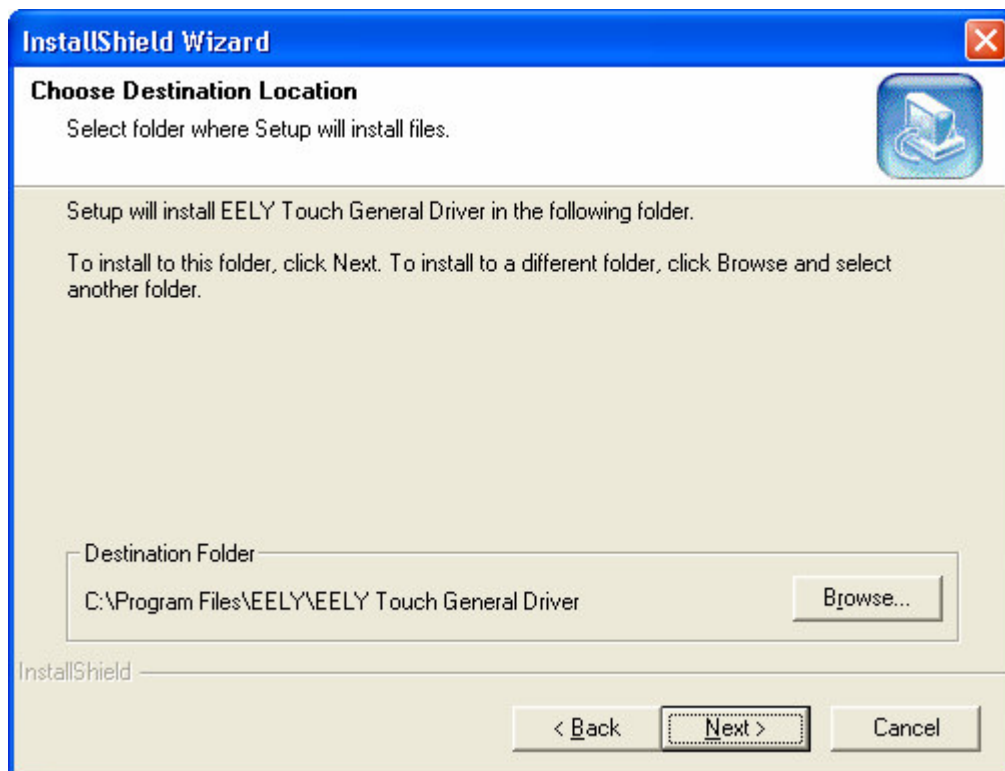
4. The License agreement screen will appear, Click “Yes” to accept the terms.



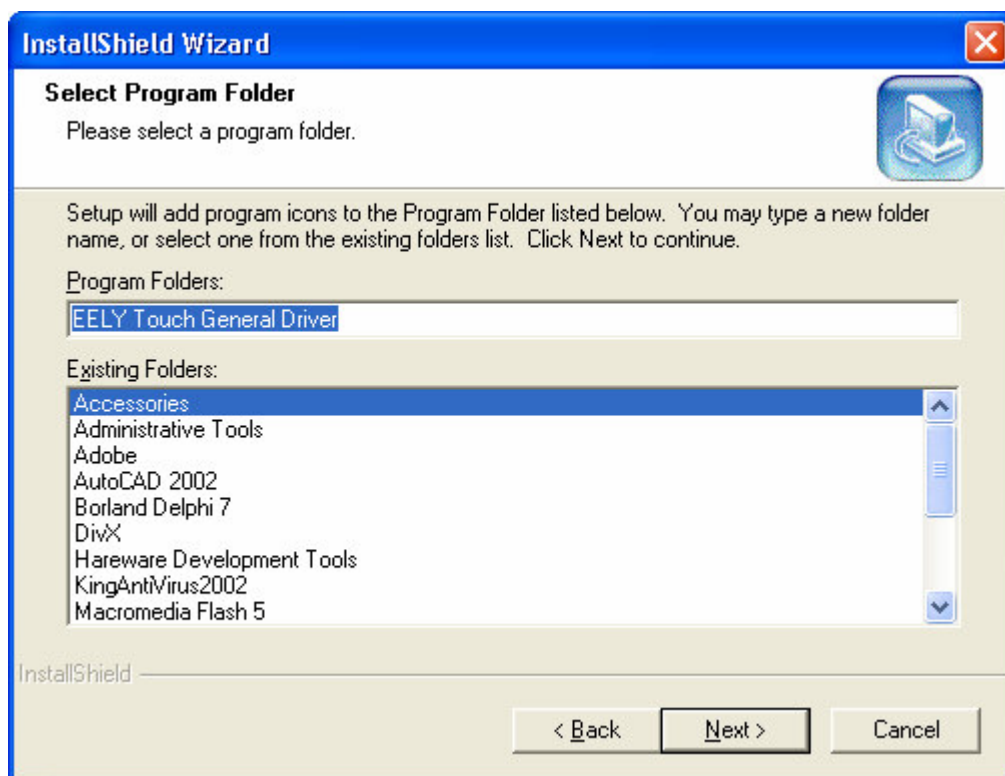
5. Click “Next” to start the installation.



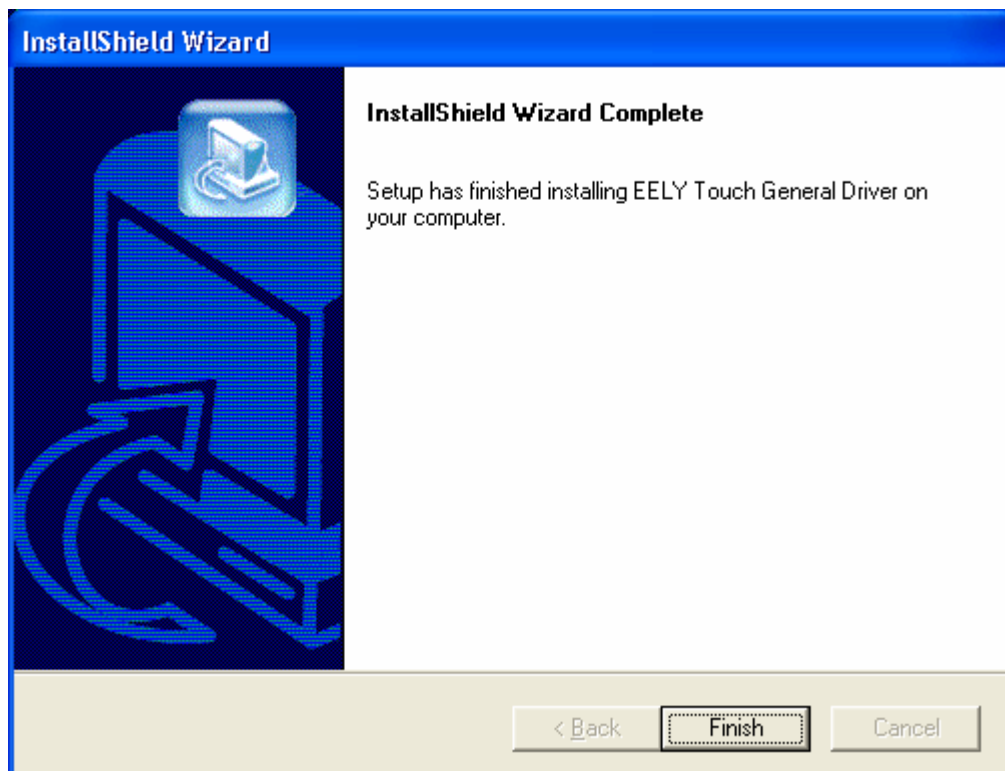
6. Choose the destination location and click "Next."



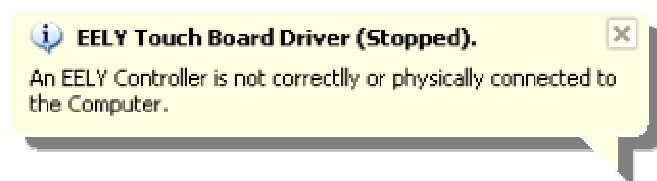
7. Choose the desired Program Folder, and click "Next."



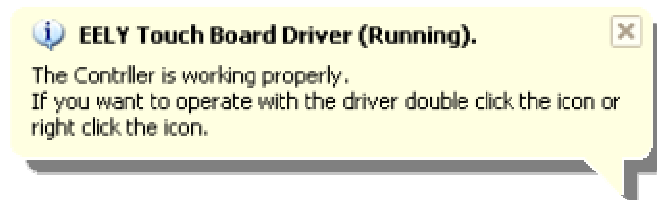
8. Click "Finish" to complete the installation.



If your operation system is Window Me/2000/XP, a balloon-style tool tip (see below) will appear to show the status of the driver.



Or (if the driver is running):



If your operation system is Windows 95/98/NT, a classic style tool-tip will appear when the mouse pointer is positioned over the icon on status bar (see below):

EELY Touch Board Driver (Stopped).

Or (if the driver is running):

EELY Touch Board Driver (Running).

5.3 SoftDriver for DOS

The compatibility of the DOS driver has been tested only on MS-DOS 7.0.

5.4 SoftDriver Installation Under DOS

Under MS-DOS console, if your CD-ROM is on E: Drive, type the following:

C:>E:

E:>cd DOS

E:\DOS>Install Destination-Directory

This will install the DOS Device Driver at any **Destination-Directory**.

For example:

E:\DOS>Install C:\EELY

This will install the DOS Device Driver to C:\EELY directory.

6 SoftDriver Specification

6.1 Note

Note: The images in the following installations are from Windows XP. Different images may appear if different operation systems are used. However, there is no fundamental difference in the installation.

6.2 Special Features

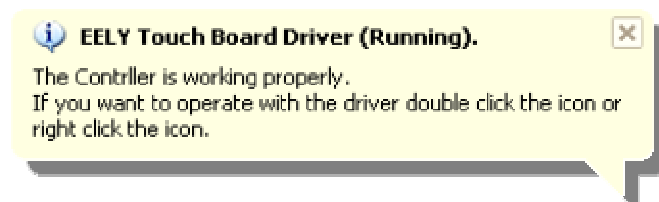
6.2.1 Complete Auto Controller Detected™

EELY-Touch™ Driver features Complete Auto-Controller-Detected™ (CACD™). The driver will detect any controllers connected to the computer and automatically use the correct driver.

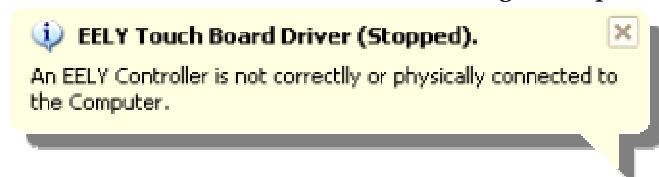
6.2.2 User -Friendly GUI tool-tip under Windows Me/2K/XP OS

The driver uses balloon styled tool-tips to inform the user that the driver has found a controller.

If driver has found a controller, the following tool-tip will appear:



If a controller is not found, the following tool-tip will appear:



6.2.3 Transparent Easy Button on Windows 2K/XP

If a controller is found and the Easy Button function is enabled, the Easy Button will appear automatically. The button will gradually turn to transparent picture as below:



The Easy Button is transparent so that underlying pictures and text may still be seen.

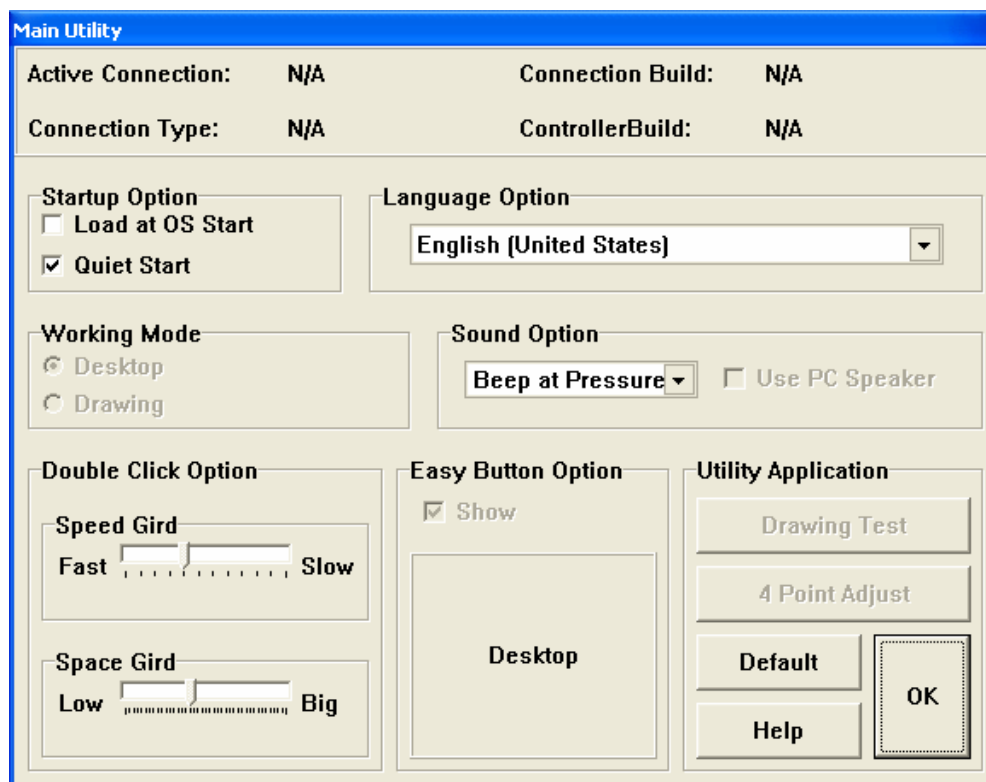
6.3 Operational Features


6.3.1 Driver Status: Inactive

If the controller is not correctly installed, the driver will not start and Welcome picture of the Main Utility Console will appear as a gray image as below.



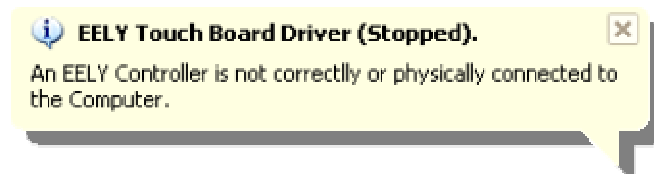
The Main Utility Console may also appear as follows



The cursor on the status bar will appear as: 

The tool-tip will appear as: EELY Touch Board Driver (Stopped).

For Windows Versions 5.0 or later (Windows Me, Windows 2000 or Windows XP), the following balloon style tool-tip message will appear:




6.3.2 Driver Status: Active


If the controller is correctly installed on the computer, then the driver will automatically start and the Welcome picture of Main Utility Console will appear as follows:



The Main Utility Console may also appear as follows :

Main Utility			
Active Connection:	USB Connection	Connection Build:	0
Connection Type:	Resistance	ControllerBuild:	0
Startup Option <input type="checkbox"/> Load at OS Start <input checked="" type="checkbox"/> Quiet Start		Language Option English (United States)	
Working Mode <input checked="" type="radio"/> Desktop <input type="radio"/> Drawing		Sound Option Beep at Pressure <input type="checkbox"/> Use PC Speaker	
Double Click Option Speed Gird Fast <input type="text"/> <input type="text"/> Slow		Easy Button Option <input type="checkbox"/> Show Desktop	
Space Gird Low <input type="text"/> <input type="text"/> Big		Utility Application Drawing Test 4 Point Adjust Default Help OK	

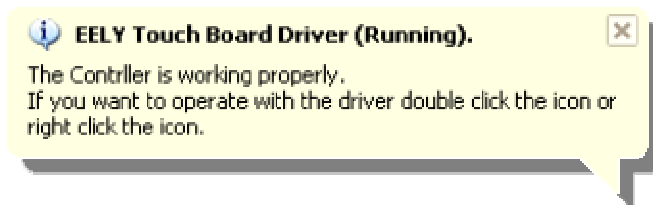
The cursor on the status bar will appear as: 

The tool-tip will appear as: 

If the Easy Button option is selected, the Easy Button will appear immediately on the top window.



For Windows Versions 5.0 or later (Windows Me, Windows 2000 or Windows XP), the following balloon style tool-tip message will appear:



6.3.3 To Display the Main Utility Console

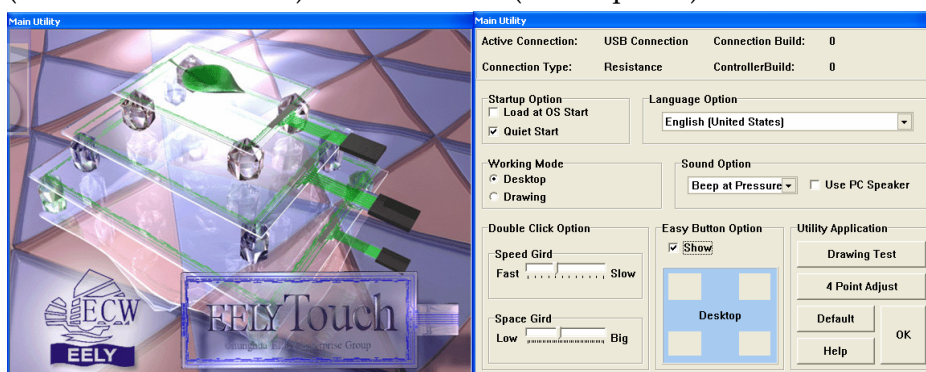
If the Main Utility Console is not displayed, single click on the icon (or) on the status bar with the left or right mouse button. The Main Utility Console will appear.

6.3.4 To Display the Options hide behind the Welcome Picture

Simply click on the Welcome Picture, the Options of Main Utility Console will appear.

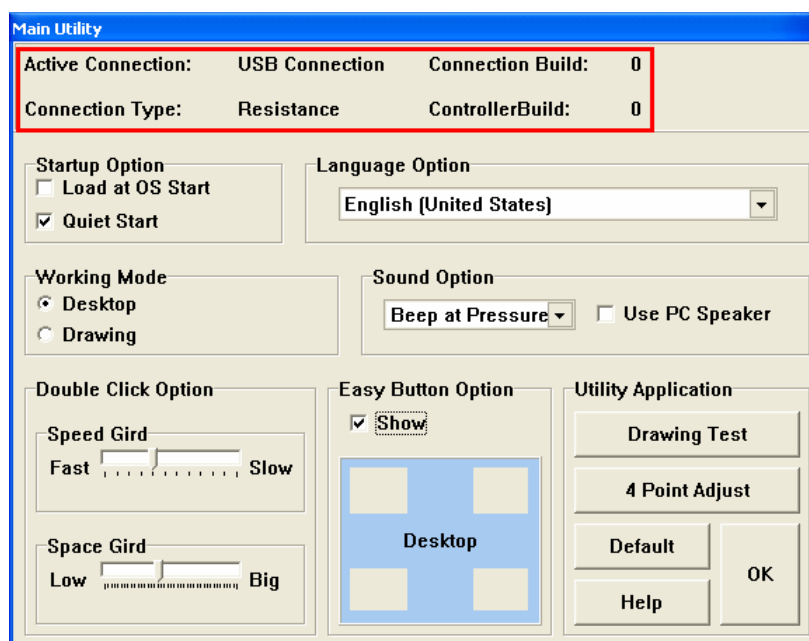
(With Welcome Picture)

(With Options)



6.3.5 Main Utility Functions

6.3.5.1 Obtaining information about the connected controller



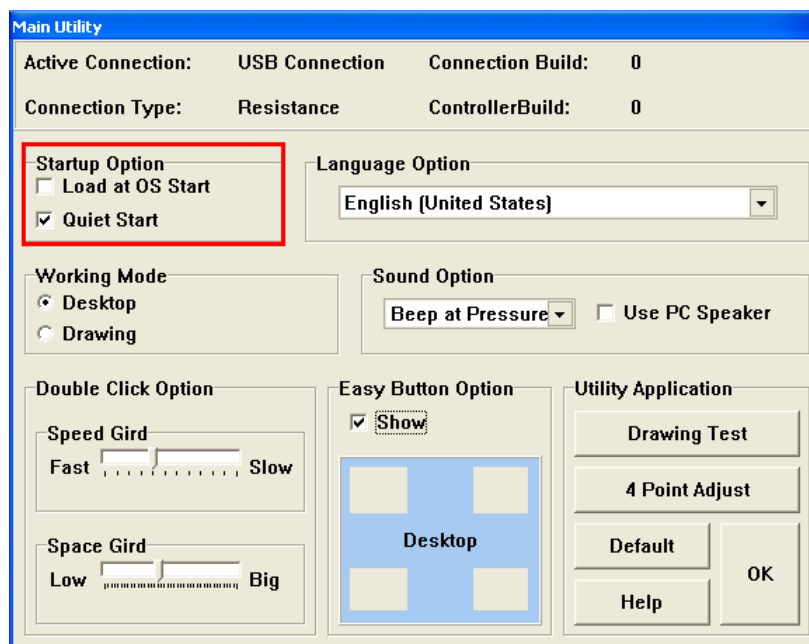
The red rectangular area shows information about the connected controller.

“Active Connection” shows the connected controller name.

“Connection Type” shows the type of the touch board.

“Connection Build” and “Controller Build” display the controller and its corresponding driver versions.

6.3.5.2 Set Startup Options

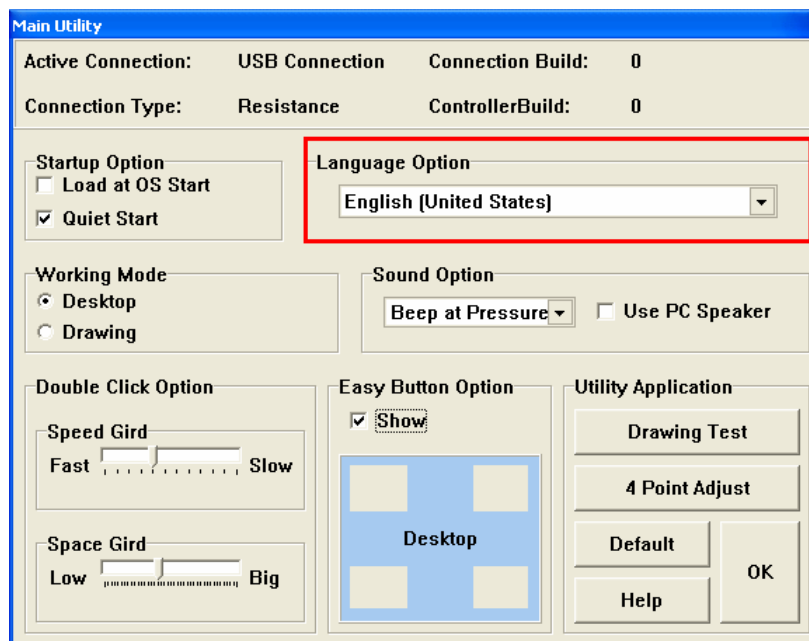


The red rectangular area shows information about Startup Options.

“Load at OS Start”: If this item is checked, EELY-Touch Driver will auto launch at the Startup of Windows. Only Administrators can select this option.

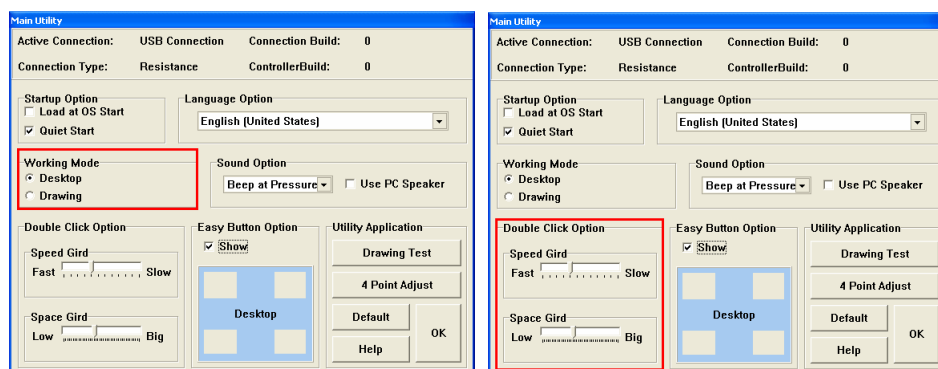
“Quiet Start”: If this item is checked, EELY-Touch will not automatically display the Main Utility Console when it is launched.

6.3.5.3 Select the Language



The red rectangular area shows the position of the Language Setting List Box. To change the GUI Interface Language, select the language from the pull-down menu.

6.3.5.4 Working Mode



The two Working Modes are the Desktop Mode and the Drawing Mode.

Desktop Mode enables Extra Double Click Function and ensure fast and close clicks are always registered at the first pressure point. Because it is difficult to maintain the exact same position when attempting to double click a touch screen, the Desktop Mode is designed to solve this problem.

Drawing Mode: Drawing Mode is to ensure the accuracy of each pressure, so the Extra Double Click function is not available.

Note: In order to draw out smooth lines, it is best to use Drawing Mode.

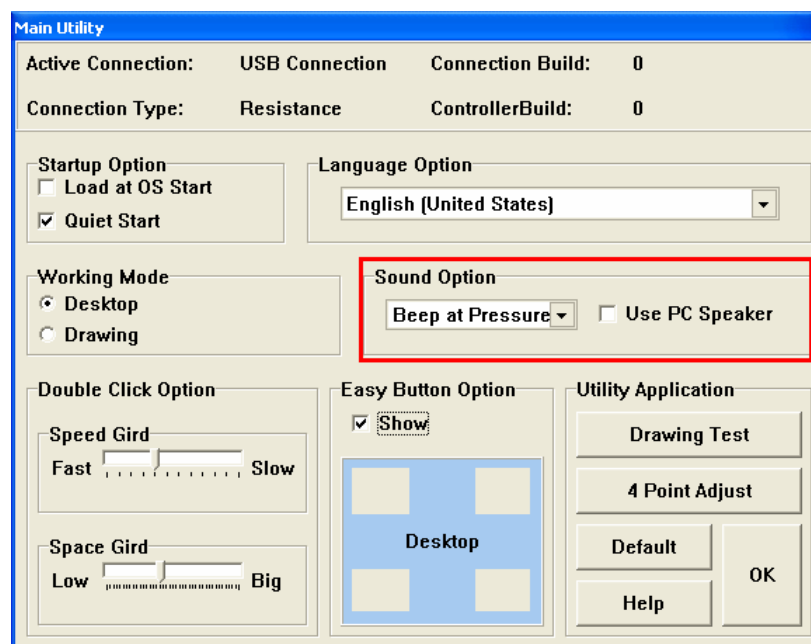
6.3.5.4.1 Setting up the Double Click Option

The Extra Double Click Options are available if you have chosen Desktop Mode.
There are two parameters to setup: speed and space.

Speed: Slower settings allow for slower double clicks.

Space: Larger settings allow for easier double clicks.

6.3.5.5 Select the Sound Option



The “Sound Option” allows for a beep through audio speaker or PC speaker at pressure or release.

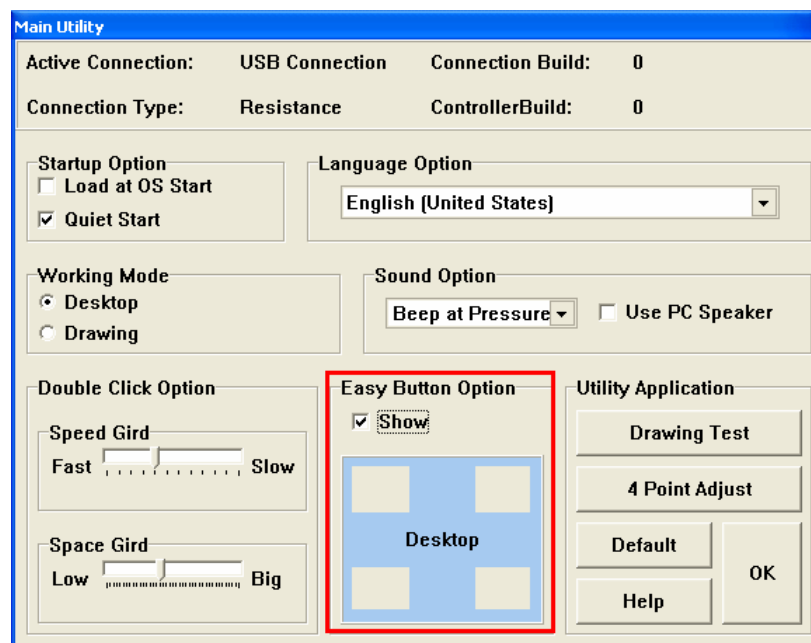
“No Beep”: No Sound will be made during operation.

“Beep at Pressure”: a sound will be made when the touch screen is pressed

“Beep at Release”: a sound will be made when the touch screen is released

“Use PC Speaker”: if this item is checked, the driver will generate beeping from the PC speaker. This may be necessary for computers without sound cards or for older versions of Windows.

6.3.5.6 Easy Button

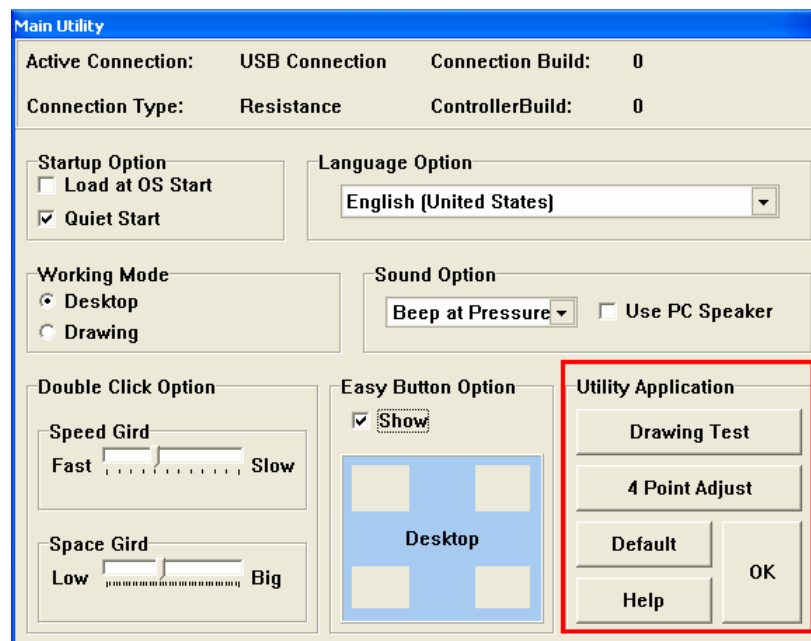


Easy Button is a small top window that enables easy use of the right mouse button and switching between Drawing Mode and Desktop Mode without the need to open the Main Utility.

“Show”: If the check box is checked and the driver is in Active status, the Easy Button will appear. Otherwise it will be invisible.

“Desktop” Position Button: There are four small buttons on the corner of the Desktop, By clicking on any of the corners, the Easy Button will be positioned to the corresponding corner of the Desktop.

6.3.5.7 Utility Applications



The Utility Applications enable additional tasks.

“4 Point Adjust”: This is the most important task because it is necessary to calibrate the Touch Screen corners relative to the Desktop corners. This way pressure on the Touch Board will appear on the corresponding position of the Desktop.

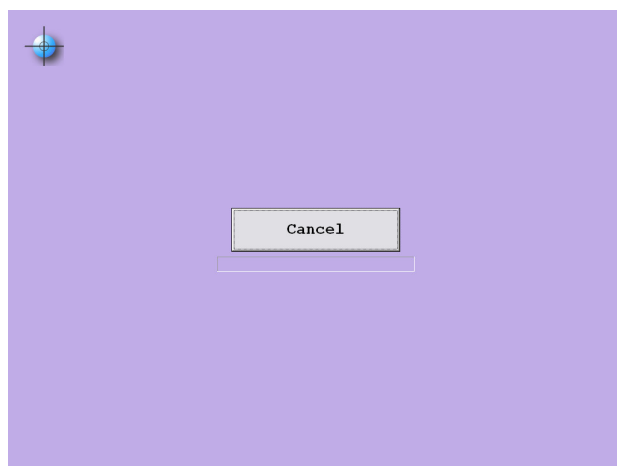
“Drawing Test”: Enables testing of precision of Touch Screen relative to Desktop.

“Default”: Using this button resets the settings to Default values.

“Help”: Allows instant access to the User’s Manual.

“OK”: Saves the settings and closes the Main Utility within a few seconds.

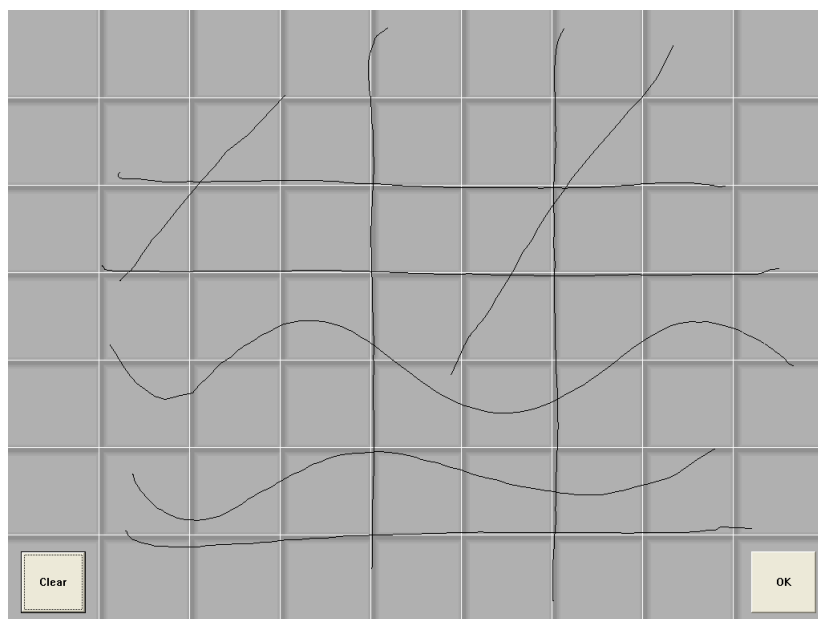
6.3.5.7.1 4 Point Adjust



Clicking on the 4 Point Adjust Button will produce the screen at left. It allows calibration of the four corners of the Touch Screen relative to the Desktop. For best results, pressure on the Touch Screen must be firm and accurate. Clicking on the “Cancel” button or pressing the ESC key on your keyboard will cancel the operation and restore the previous 4 Point setting. Note: If the Touch Screen does not work

properly or is inaccurate, it may be necessary to perform repeat the 4 Point calibration.

6.3.5.7.2 Drawing Test



Clicking on the “Drawing Test” button will produce the above screen. This screen is divided by several horizontal and vertical light gray lines. After completing the calibration, you may draw additional lines on the Touch Screen to check the result. Lines drawn are shown in black.

To clear the screen, click the “Clear” button (on the left bottom of the screen) or press “Enter” on the keyboard.

To exit the drawing test, click “OK” (on the right bottom of the screen) or press “ESC” on the keyboard.

Note: When drawing in Desktop Mode, lines may not be smooth. It is best to change

to Drawing Mode to make the lines smooth.

6.3.5.7.3 Help

Clicking the “Help” button will open the User’s Manual.

6.3.5.7.4 Confirm and Save Settings

Clicking “OK” will save the selected settings and close the Main Utility dialogue box.

6.3.5.7.5 Restore to Default Settings

Clicking the “Default” button will restore default settings for: Double Click Speed, Double Click Space, Load at OS Start, Quiet Start and Easy Button position.

6.4 Knowing SoftDriver Bugs under Windows OS

- 1> The Software Driver will not run until a user has logged on.
- 2> If the 4 Point calibration is cancelled while using a RS232 Controller under the Windows 98 Operation System, the Software Driver will disable the controller and enable it again after in about one minute.
- 3> The Software Driver may not run on very slow machines with limited memory.
- 4> The Software Driver cannot transfer the input data to Microsoft DirectDraw.

7 DeviceDriver Installation

7.1 Windows Family Compatibility

Currently, the DeviceDriver for EELY-Touch supports Windows95, Windows NT, Windows 98, Windows 2K, Windows ME, Windows XP & later versions based on NT systems

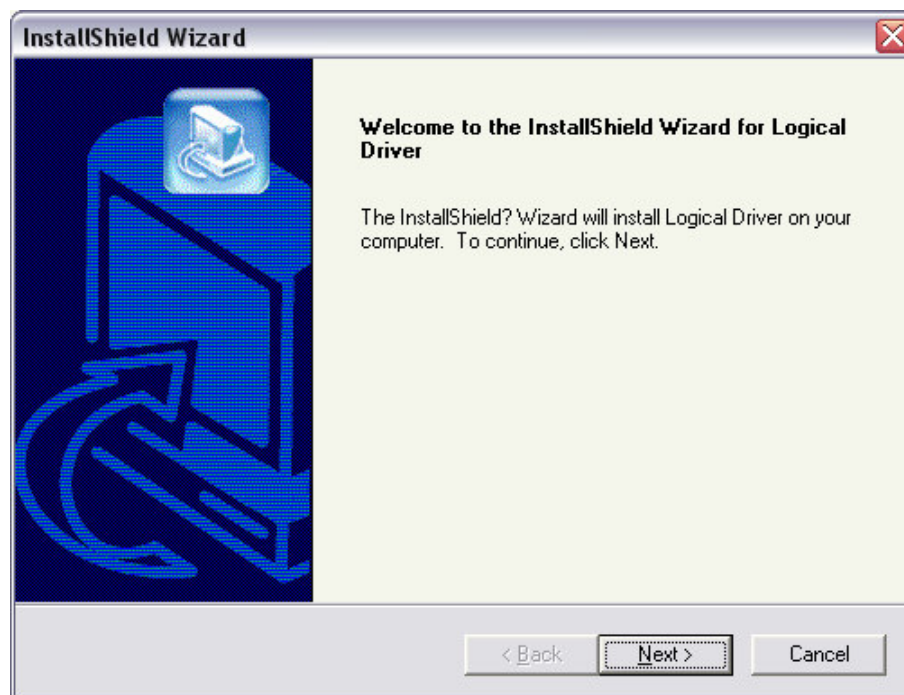
7.2 DeviceDriver Installation under Windows OS

Note: The images in the following installations are from Windows XP. Different images may appear if different operation systems are used. However, there is no fundamental difference in the installation.

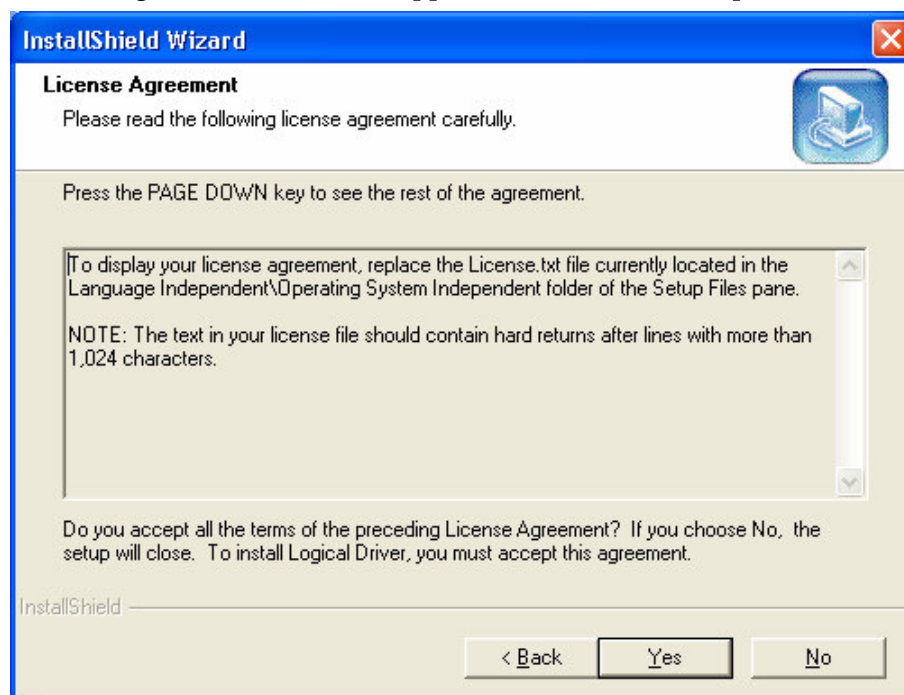
1. Double-click the installation file.



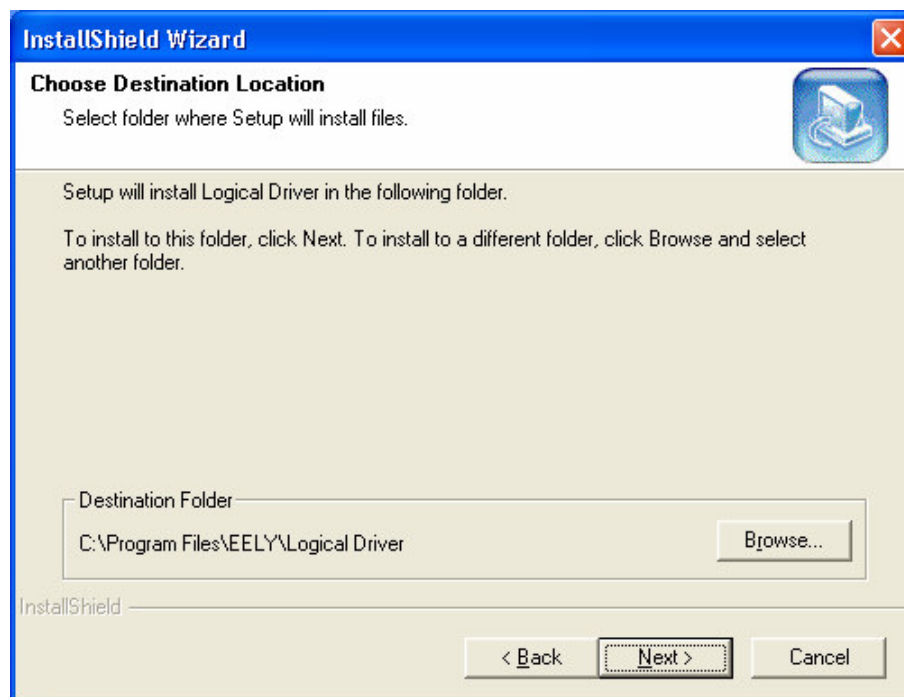
2. This is the installation Welcome window. Click "Next".



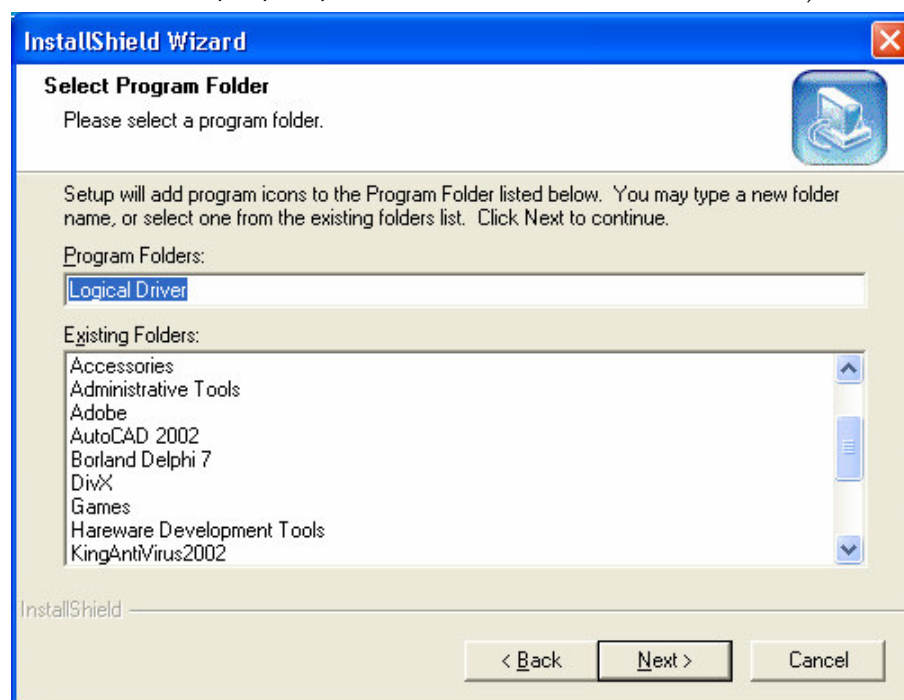
3. The License agreement screen will appear. Click “Yes” to accept the terms.



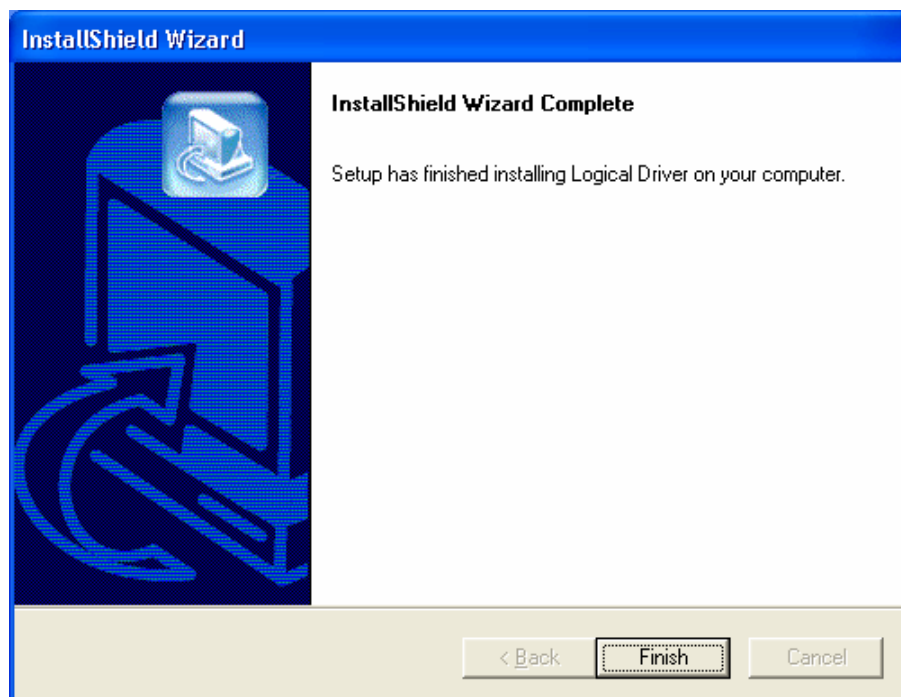
4. Choose the destination location and click “Next” button.



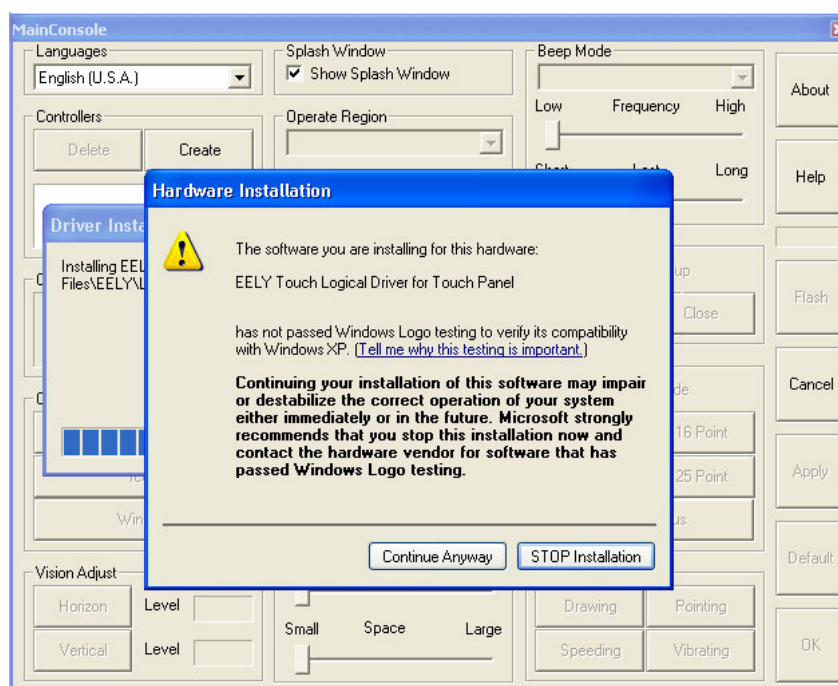
5. Choose the desired Program Folder and click "Next". The default name is Logical Driver. (Under Window 95/98/NT/Me, the default name is MainConsole.)



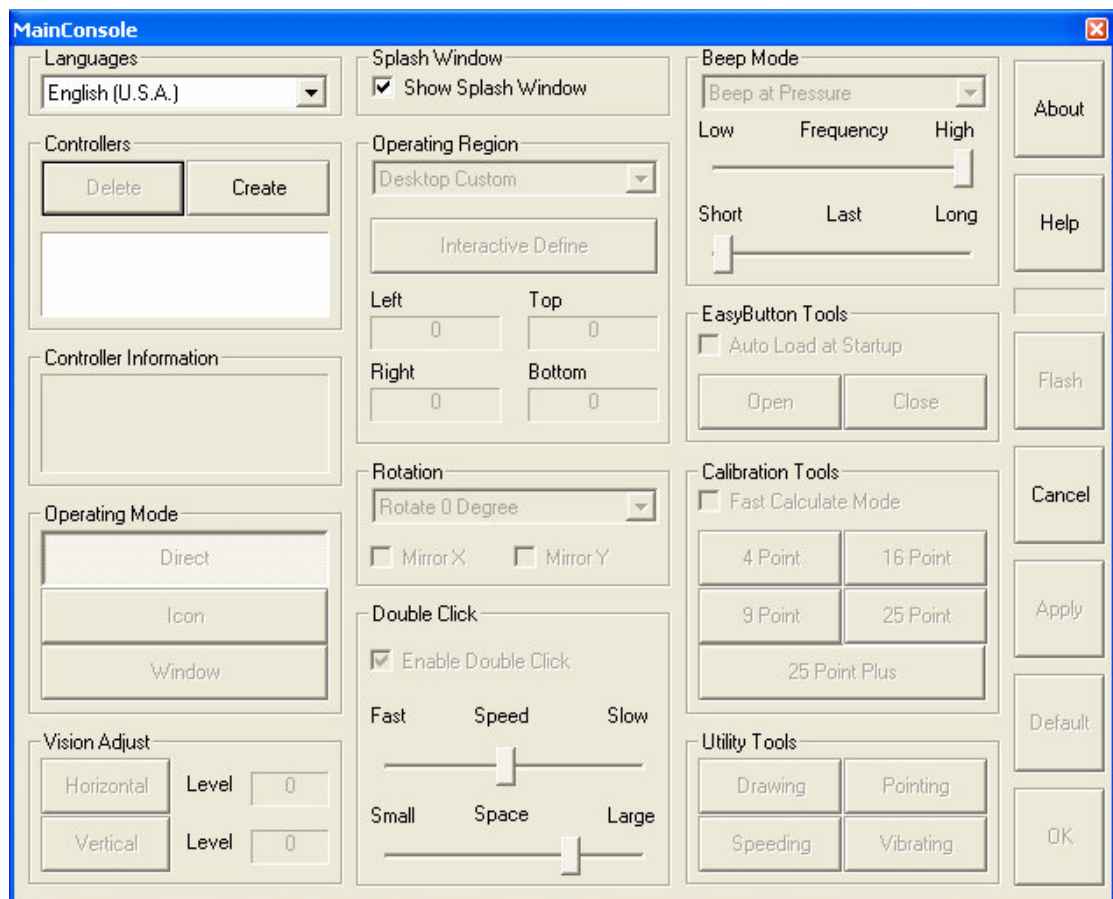
6. Click "Next" to begin the installation.



7. Click “Finish”. If you use Windows 95, Windows NT, Windows 98 and Windows Me, it’s necessary to restart your computer to complete the installation. However, if you use Windows 2000 or Windows XP, a hardware installation caution message like below should appear.



Click “Continue Anyway.” After several seconds, the main console of EELY-Touch Device Driver will appear.



8 DeviceDriver Specification

8.1 Note

1. DeviceDriver is the latest driver version, which contains more features than the older driver version under the name of SoftDriver.. The main purpose of the following information is to explain new additional features and the features, which have been explained in “SoftDriver Specifications (Chapter 7 & 8)”, may not show in the following manual again.

2. The images in the following installations are from Windows XP. Different images may appear if different operation systems are used. However, there is no fundamental difference in the installation.

8.2 Special Features

8.2.1 The Device Driver

When the device driver is installed successfully and the necessary settings are established, you may use the touch screen without logging on.

8.2.2 Multi-Controller and Multi-Display Support

Device drivers for EELY-Touch can connect with multiple controllers and support multiple displays.

Note: The device driver may not support multi-display if you use Windows NT, Windows 98 and Windows Me. Please check www.eelyecw.com for newest driver release.

8.2.3 Multiple Operating Modes Support

Operating modes available are “Direct Mode,” “Icon Mode,” and “Window Mode.” The modes can be conveniently switched. For more details, please see “Operating Features.”

8.2.4 Customizing the Operating Region

The device driver is able to customize the operating region according to the user requirements. For more details, please check the “Operating Features.”

8.2.5 Vision Adjustment, Rotation and Mirror Tools

Because different heights lead to different view angles, a “vision adjustment” tool is available to solve this problem. In addition, some settings must be adjusted for Tablet PC, so rotation and mirror tools are also available. These tools effectively improve the pointing accuracy.

8.2.6 Additional Calibration Tools for Greater Accuracy

The new device driver provides with 4 Point, 9 Point, 16 Point, 25 Point and 25 Point plus calibrations for different accuracy according to different application requirement. In general, 4 point calibrations is suitable for most of the touch screen applications. You may choose more than 4 point calibrations for high accuracy required applications, such as writing and drawing.

8.2.7 Utility Tools

Utility Tools includes Drawing, Pointing, Speeding and Vibrating. Drawing is used to test linearity, Pointing is used to test real time response, Speeding is used to test maximum speed, and Vibrating is used to test pointing vibrating.

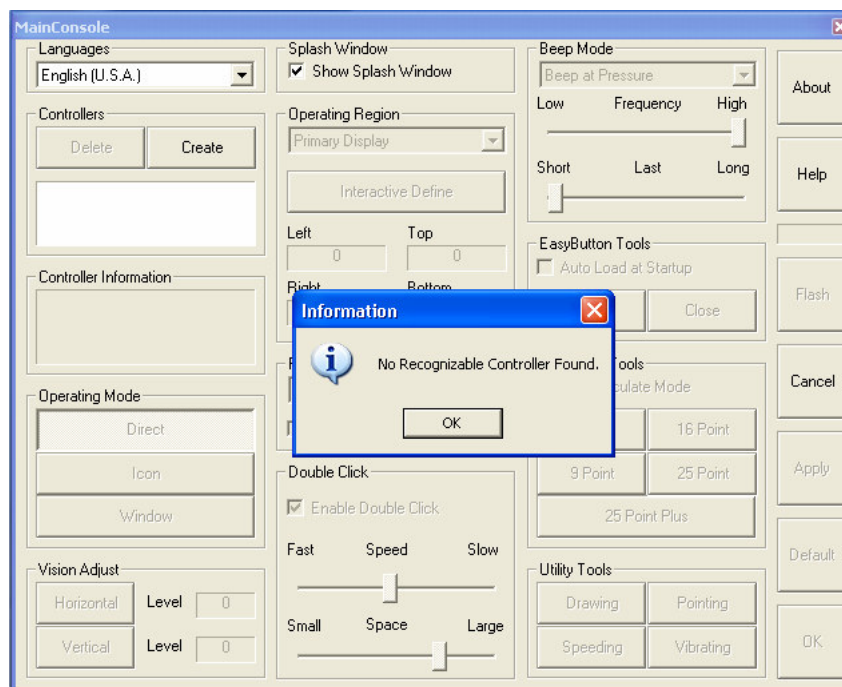
8.2.8 The New EasyButton Supporting Tablet PC

For Tablet PCs, switching between Desk PC and Tablet PC is frequent. The new EasyButton is designed to make this task easy.

8.3 Operating Features

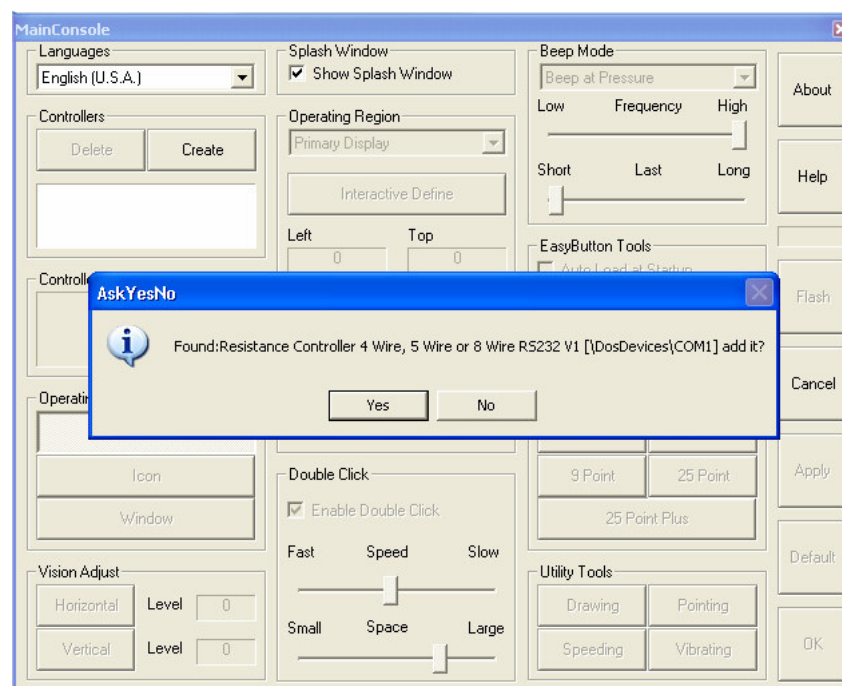
8.3.1 Device Driver with an Improperly Installed Controller

After finishing installation and clicking on “Create,” the device driver will not start if the computer and controller are not well connected. The following screen will appear:

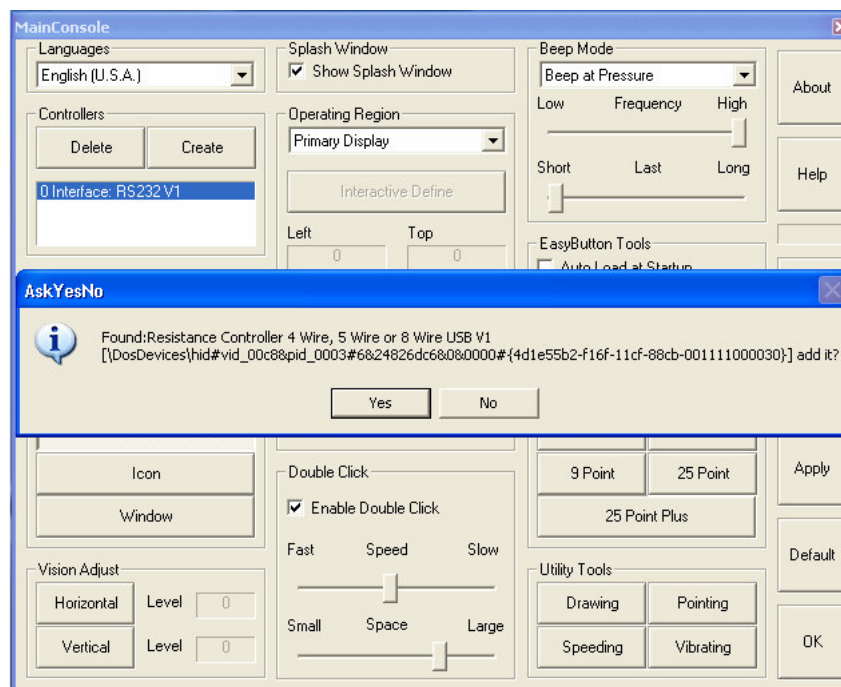


8.3.2 Device Driver with a Correctly Installed Controller

If the connection between the computer and the controller is free from faults, clicking the “Create” button will produce the following screen (assuming controller type is RS232):

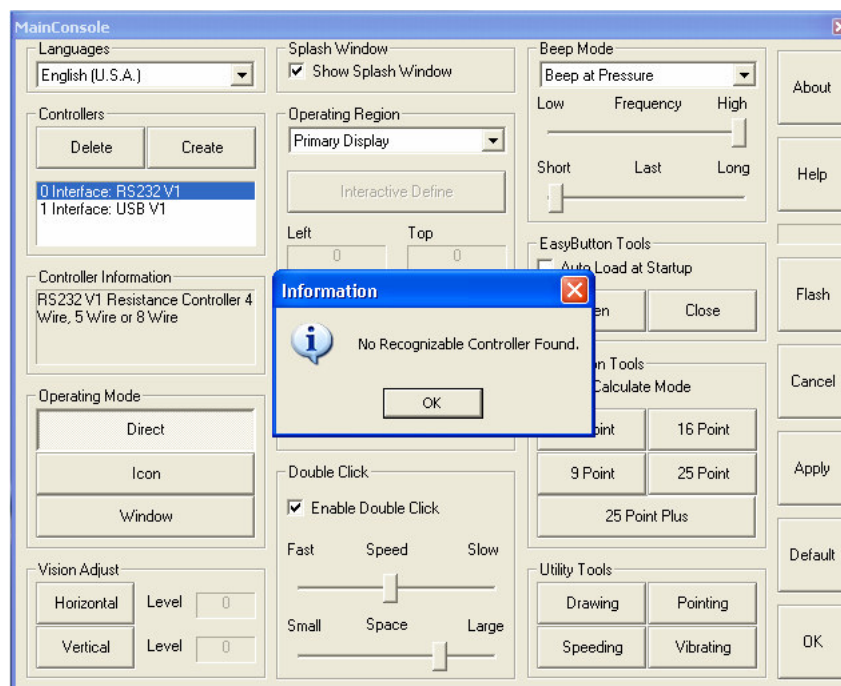


For USB types, the following screen will appear:



Click “Yes” to enable the controller.

If all the controllers connected to the computer have been found, clicking on the “Create” button result in the Main Console message: “No Recognizable Controller found”.



By clicking “Open” in the EasyButton Tools on the console, the EasyButton will be displayed on the top window, as shown below:



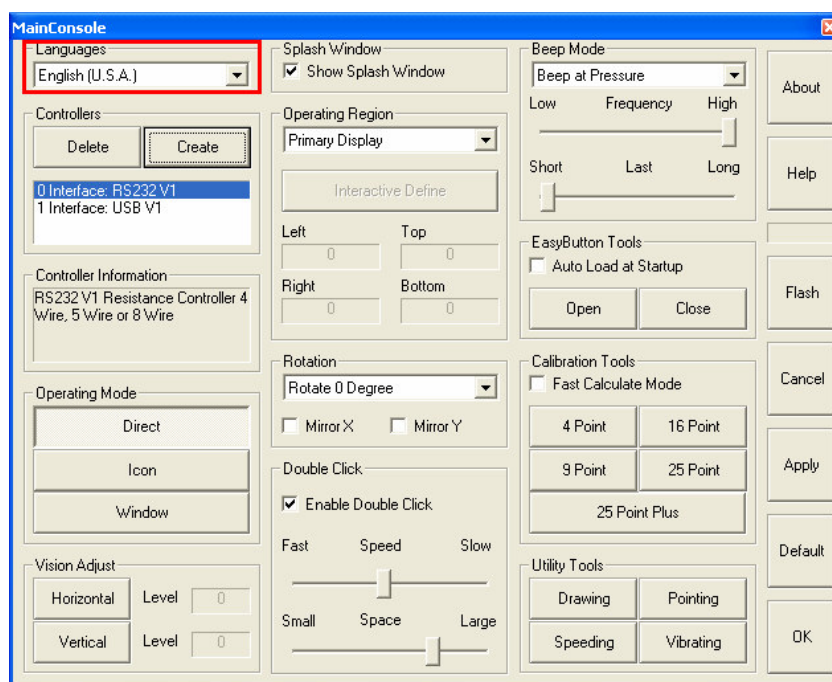
Accordingly, there is an icon on the taskbar.

Positioning the mouse pointer over this icon for a moment, the following tool-tip will appear: EasyButton is enabled, controller: 0. Easy Button is Enabled Controller:0.

By clicking "Close," the EasyButton and taskbar icon will disappear.

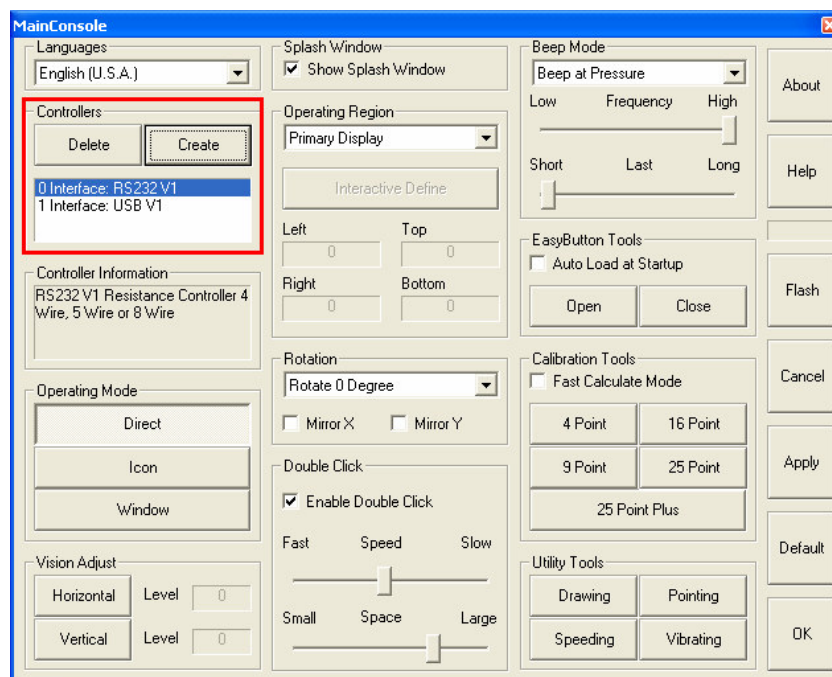
8.3.3 Main Console Functions

8.3.3.1 Language Setting

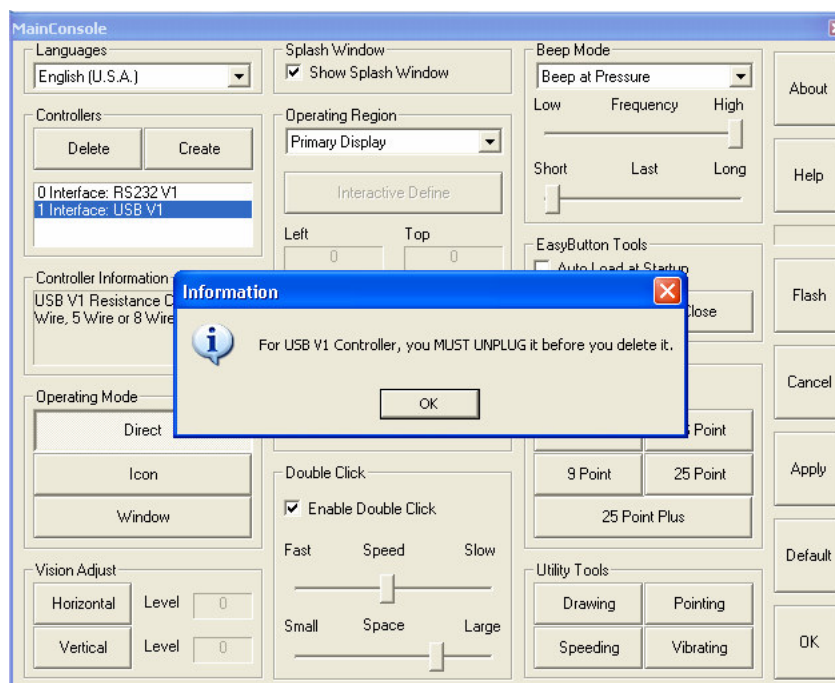


The device driver currently supports three languages: English (U.S.A.), Chinese (Simplified), Chinese (Traditional). To avoid language code display errors, all languages in the pull-down menu are displayed in English.

8.3.3.2 Creating or Deleting Controller

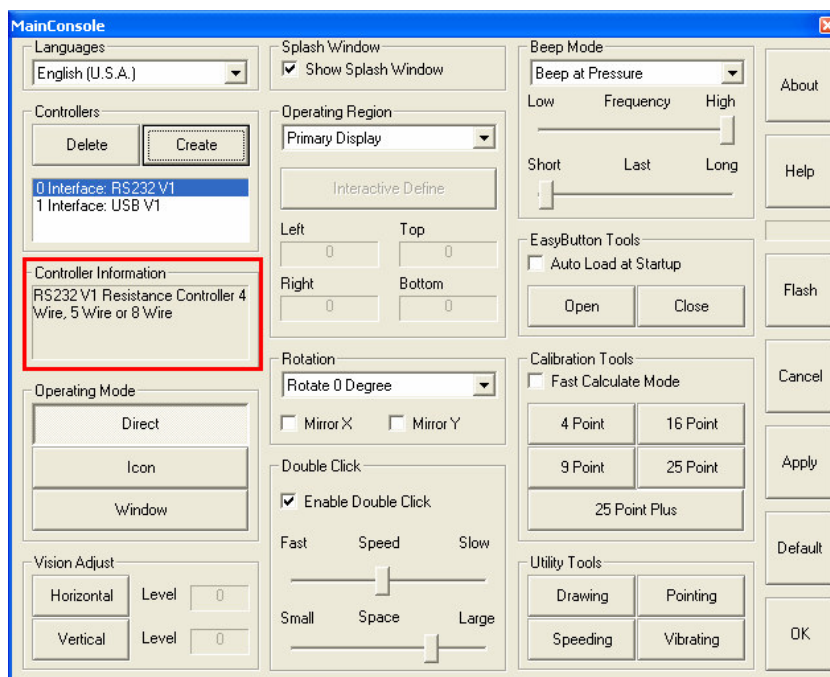


Please refer to section 8.3.2 for details regarding creating a controller. In order to delete a loaded controller, choose the name of the controller for deletion and click 'Delete' button. However, under Windows 2000 or Windows XP, for USB type, clicking the "Delete" button will popup this message



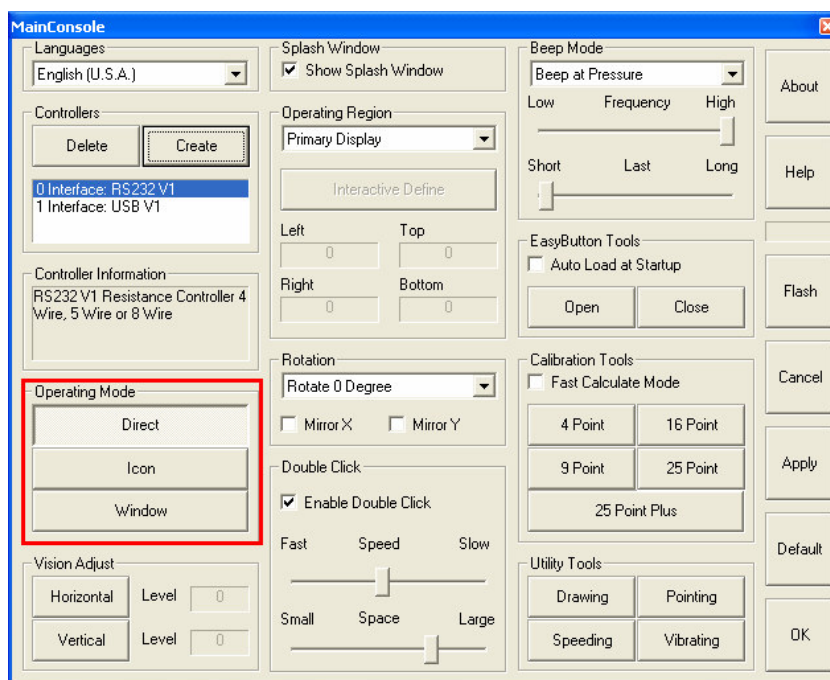
You need disconnect the controller and computer, and then click OK button. It may be necessary to restart the computer to complete this process.

8.3.3.3 Controller Information



Controller Information shows the status of the current controller as in the above rectangular box.

8.3.3.4 Operating Mode



The Device Driver supports three operating modes.

Direct Mode: Pressing the Touch Screen is equivalent to clicking the mouse button.

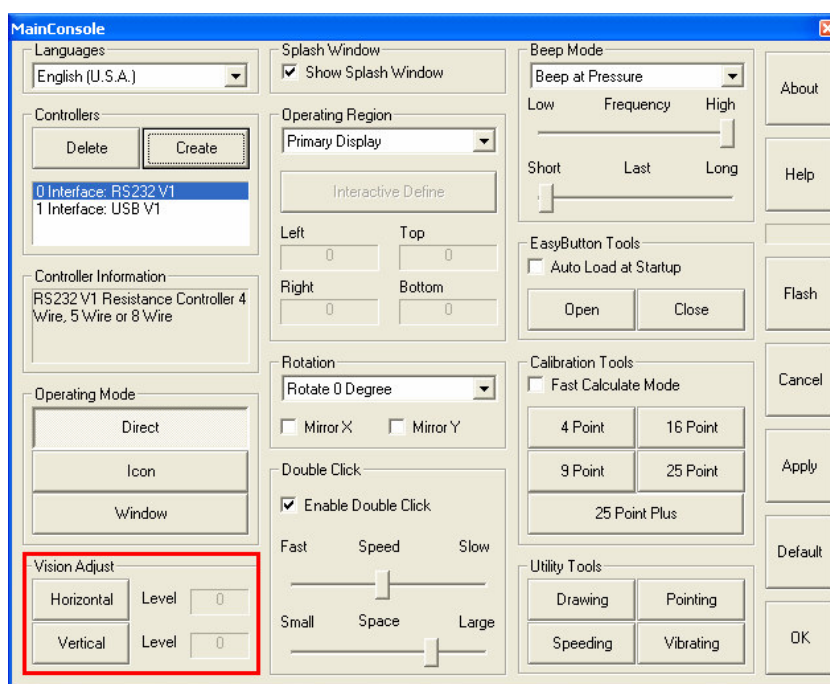
Scoring on the Touch Screen is equivalent to moving the mouse with the button depressed. Releasing pressure from the Touch Screen is equivalent to releasing the mouse button.

Icon Mode: Mostly is the same as Direct Mode, but the Cursor will stick on the pressure point if your movements has not exceed the speed and space tolerance of Double Click Space settings.

Window Mode: When you pressure on the Touch Panel and moving your finger, the Cursor will also move with your finger, but the Mouse Button is not down immediately. When you slow down your movements and stop at a point for one or two seconds the Mouse Button will down and the Cursor will move with Mouse Button Down at your following movements. If you release your finger from the Touch Panel before the Mouse Button has been down, you make a click at the place you release your finger; if you release your finger after the Mouse Button has been down then you make a Mouse Button up at the place your release your finger.

Note: When the operating mode is switched, click on “Apply” to save changes to the controller.

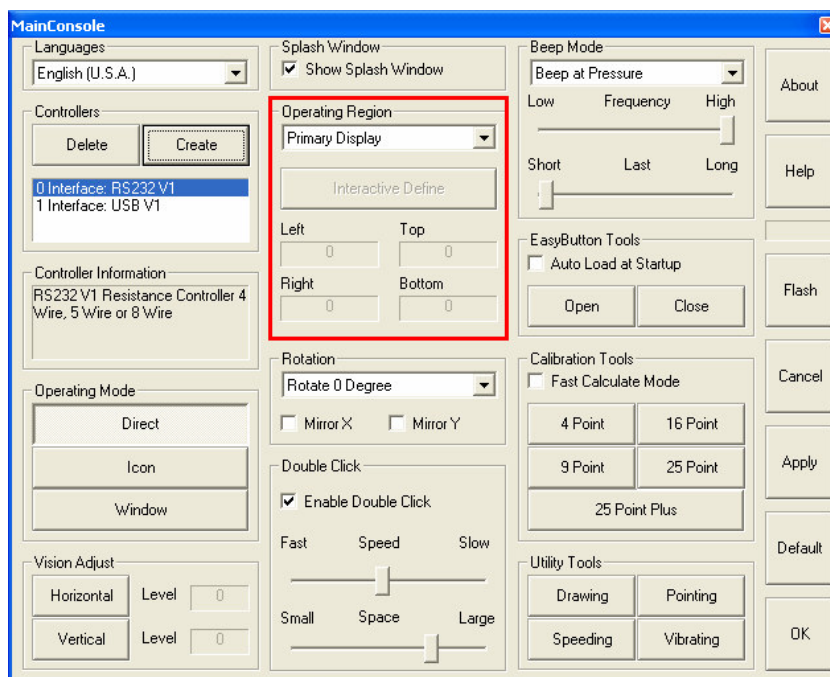
8.3.3.5 Vision Adjust



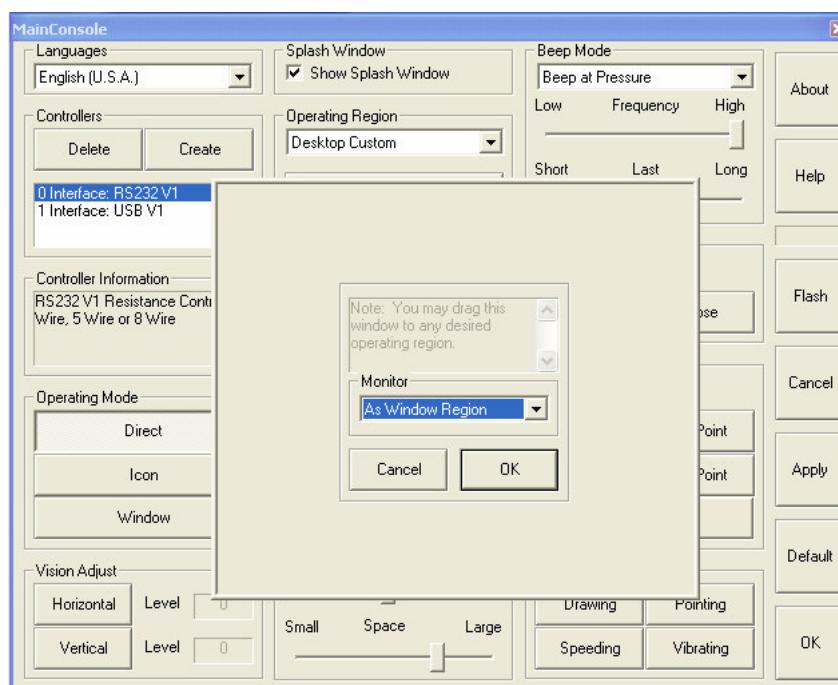
“Vision Adjust” is a personalized tool that is useful to adjust viewing angles according to height or posture difference of each user.

Vision Adjust includes Horizontal Adjust and Vertical Adjust. The two items can cooperate or they can be solely adjusted. The “Horizontal” or “Vertical” buttons can be clicked and the adjusting value can be entered in the Level Edit Box (the input value range is between -4096 and +4096). Click “Apply” after above settings have been finished to save changes.

8.3.3.6 Setting the Operating Region



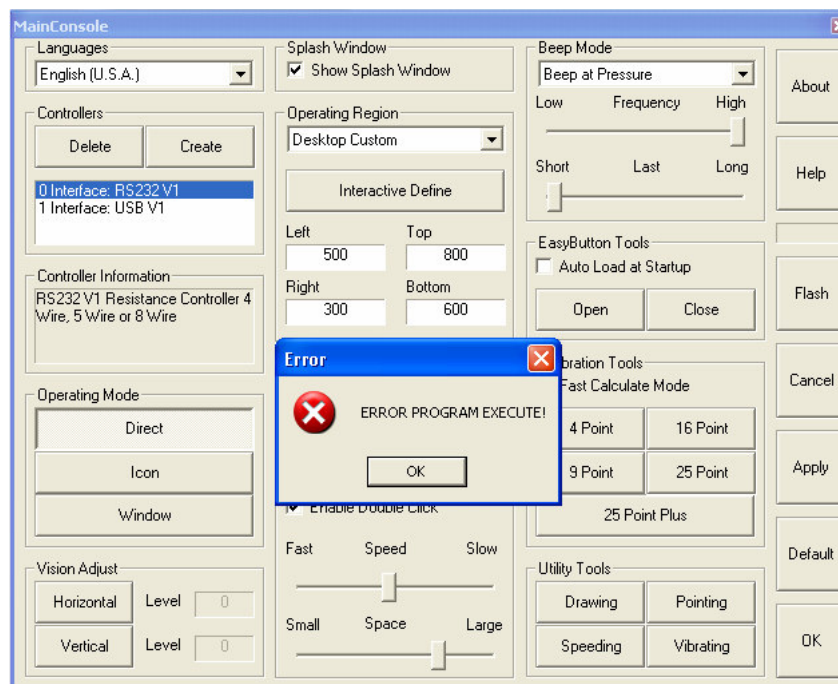
The device driver allow user to customize the Operating Region according to requirements. The first step is to click Operating Region list box, and then choose the Operating Region from the pull-down menu. The Interactive Define button is enabled when you choose Desktop Custom. Selecting it will result in the following window:



Drag this window to any position on the Desktop and define the Operating region by changing the size and position of the window. Click "OK" and "Apply" on the console. You can point accurately in your defined region after calibration.

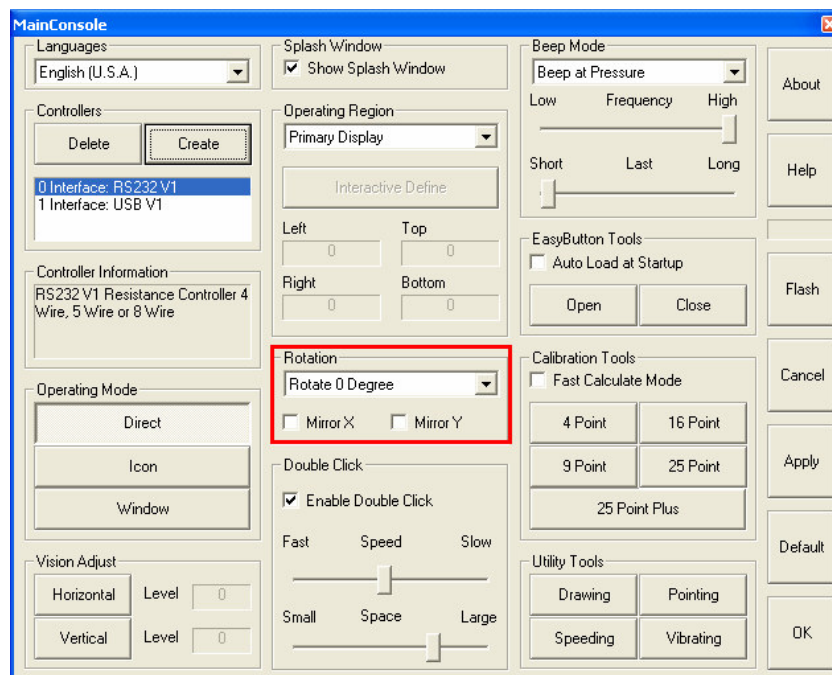
Define the accurate range of Operating region by defining the left-top point and the

right-bottom point. The value must be between 0 and 65535, with the left value less than the right value and the top value less than the bottom value. Otherwise, the system will display an error message (see below).



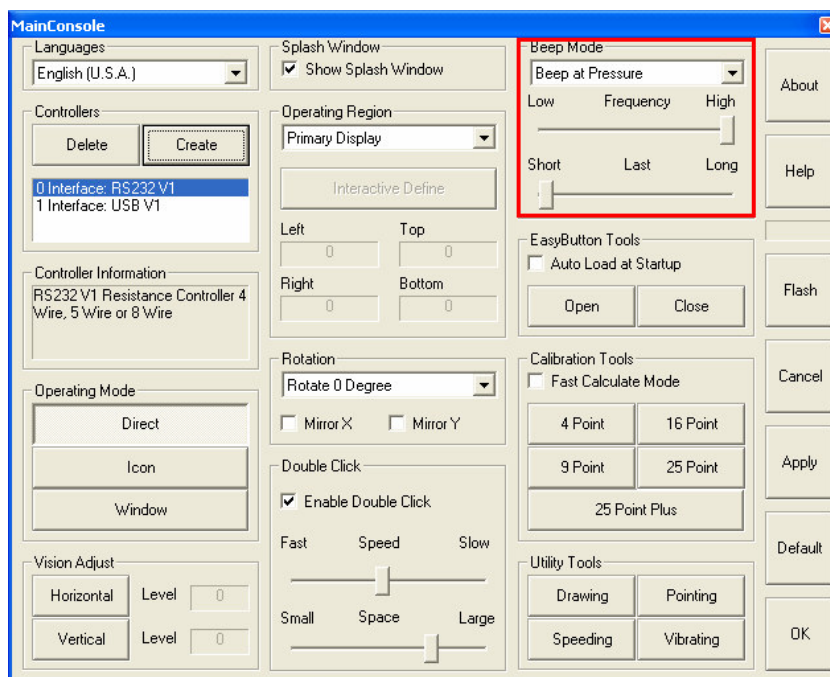
Note: “Desktop Custom” function may result unexpected consequence and it is for advanced users who has sophisticate knowledge regarding to the Operating Region. .

8.3.3.7 Rotation



Rotation features is a useful tool when you are using Tablet PC . You can use this tool to adjust the operating angle when rotating the touch screen.

8.3.3.8 Setting Beep Mode



Beep Mode has the added “Beep at Button Down” feature based on a previous edition. Just as the name implies, the function is to sound when the mouse button clicked down. The beep mode can make your operation easier if you use Window Mode.

8.3.3.9 EasyButton Tools

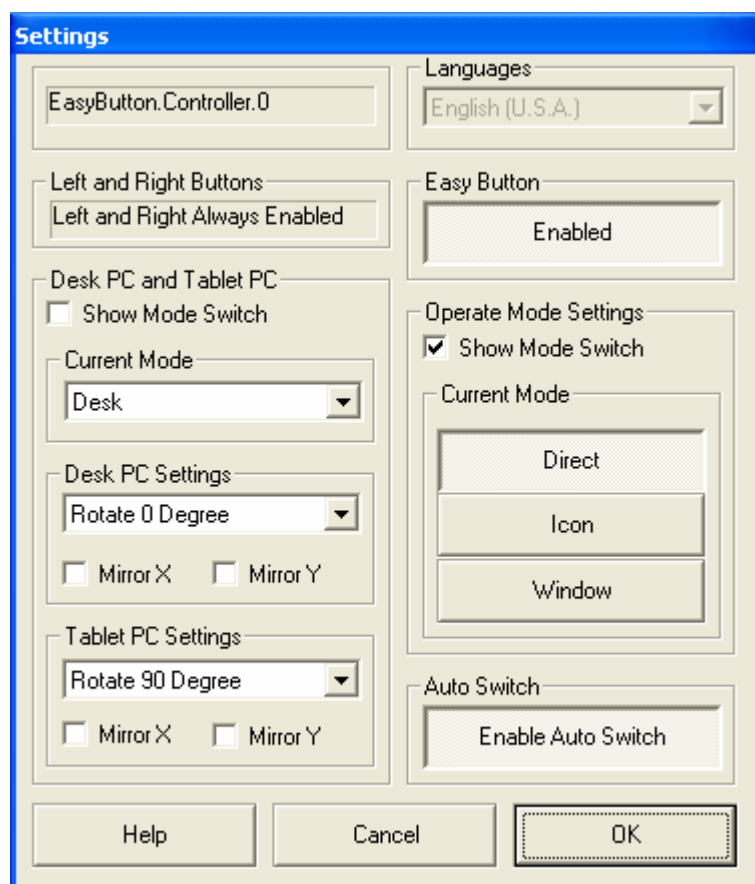


The EasyButton appears if you click on “Open”. Its default pattern is shown in the figure above. Its size changes along with the size of Operating region you define. Click “Close” to hide the EasyButton. The EasyButton will automatically display at startup if you have checked “Auto Load at Startup.”

The device driver supports multi-controllers and multi-displays; each controller has a corresponding EasyButton, and each EasyButton has a corresponding colored task icon on the Status Bar. The hint will indicate the associated controller for each EasyButton.

By right clicking the task icon on status bar, four options will appear. The options are: Enable, Settings, Default and Exit. If Enable is not chosen, the color of the EasyButton icon will become gray. If Exit is chosen, the EasyButton and task icon will disappear. If Default is chosen, the EasyButton settings will return to default settings. If Settings is

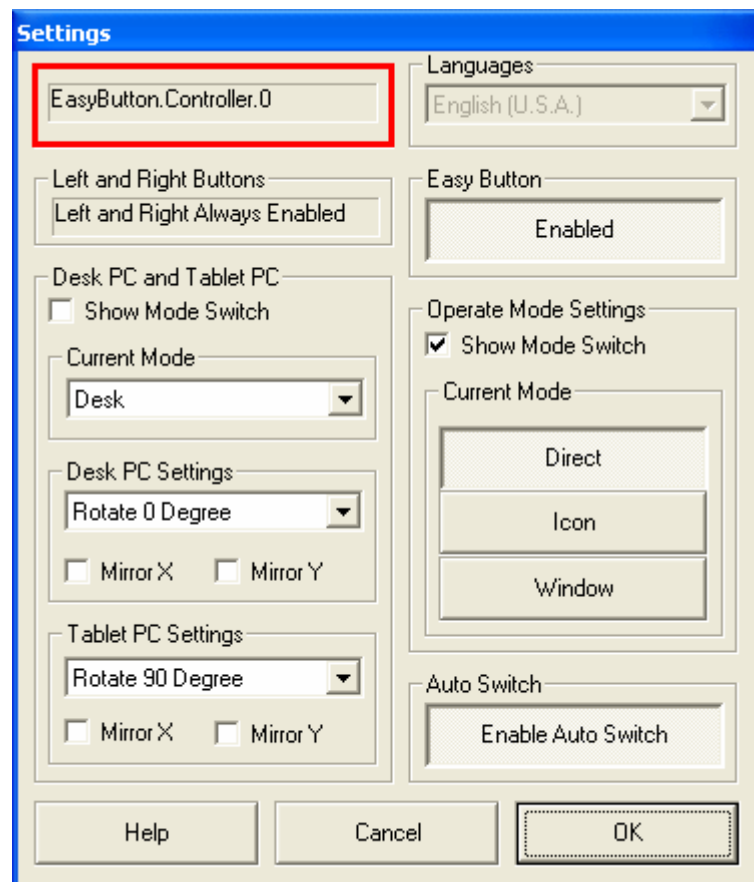
chosen, the Settings dialogue box will appear as shown below.



This driver features the introduction of multi-controllers and multi-displays, with each controller having an associated EasyButton and Status Bar icon. If there are several EasyButtons at the same time, how to know the corresponding relationship between these EasyButtons and controllers? The answer is by checking the Right Button calling function of the EasyButton, only the right Controller can satisfy the Right Button request. This brings us two new questions: A. How is the relationship between Controllers and Displays set-up? B. How is the relationship between Controllers and the items in hardware list on the Main Console set-up? The answer to A is that you should choose "Desktop Custom" in Operating Region and Enable the Interactive Define function. In the window which appears immediately after, choose the appropriate monitor from the list box. Finally, use 4 Point Calibration and when the settings are finished, only the monitor which corresponds to the controller can do 4 Point Calibration. Only the controller which has been chosen in the hardware list box will be able to perform the 4 Point Calibration.

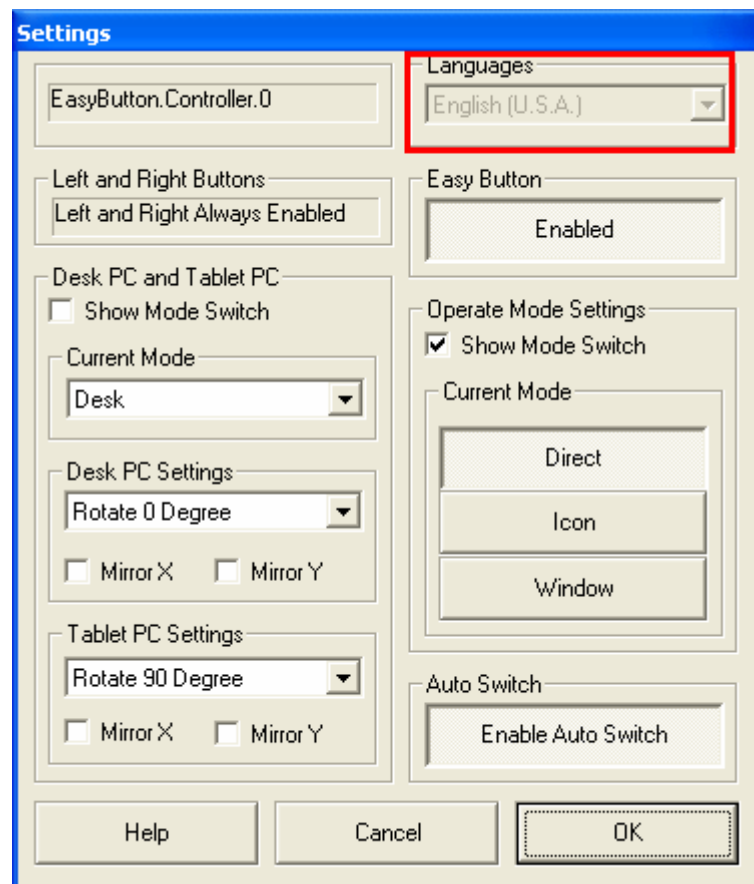
Next let's introduce the function of the Settings Window.

8.3.3.9.1 Show the relation between EasyButton and Controller



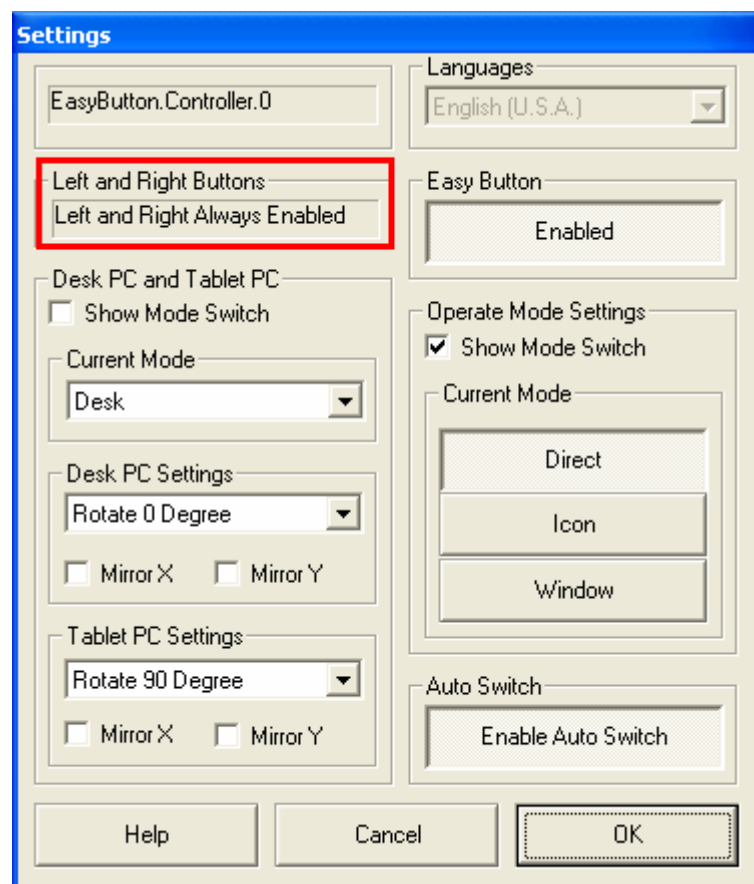
The red rectangular box shows the controller name that corresponds to the current EasyButton.

8.3.3.9.2 Setting Language



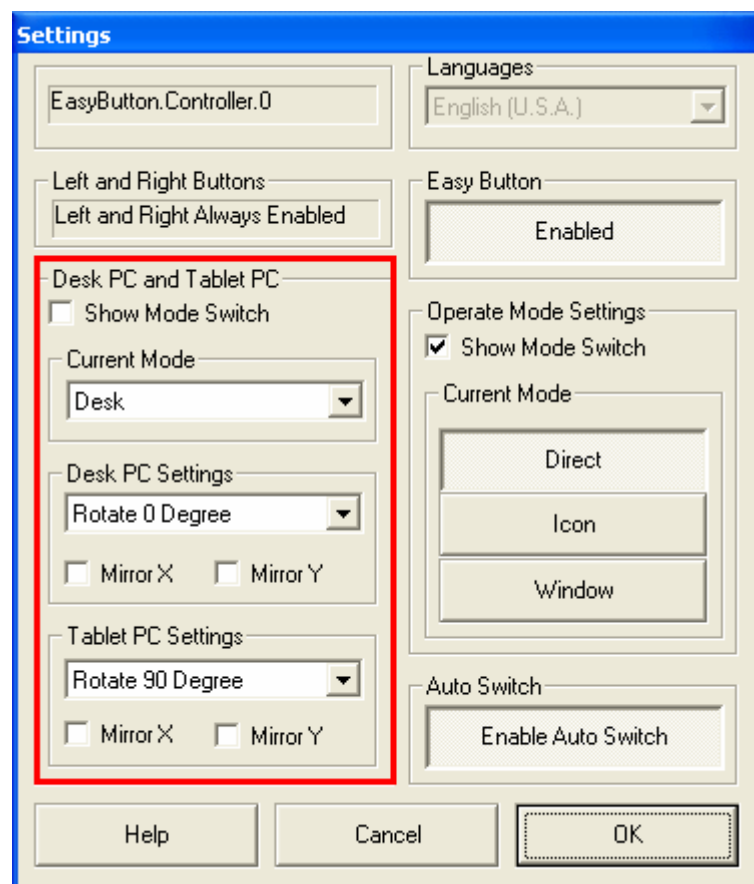
The Language list box is disabled to prevent accidental switching of languages. To change languages, please do so from the Main Console.

8.3.3.9.3 Enable left-click and right-click



The default setting is always enabled and cannot be changed in this driver release.

8.3.3.9.4 Desk PC and Tablet PC



8.3.3.9.4.1 Terms

Desk PC: Refers to desktop computers that have horizontal and vertical display ratios of 4:3. This will be the case for most Desk PCs.

Tablet PC: Refers to Tablet PCs that may rotate the horizontal and vertical display.

8.3.3.9.4.2 Show Mode Switch (Check box)

By default, this switch is not checked. The current display mode will be indicated at the bottom of the EasyButton box if you the check box is chosen.



8.3.3.9.3 Setting Current Mode

The driver supports two modes: Desk PC and Tablet PC. Desk PC is default.

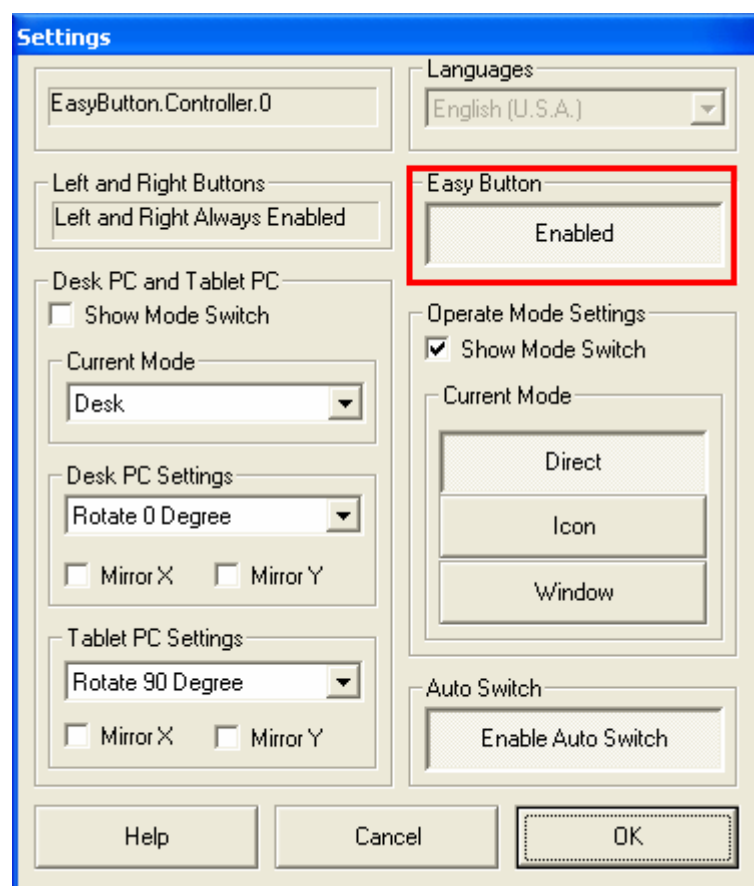
8.3.3.9.4 Setting Desk PC

You can switch rotation automatically by switching between Desk and Tablet after setting up your rotation value and mirror.

8.3.3.9.5 Setting Tablet PC

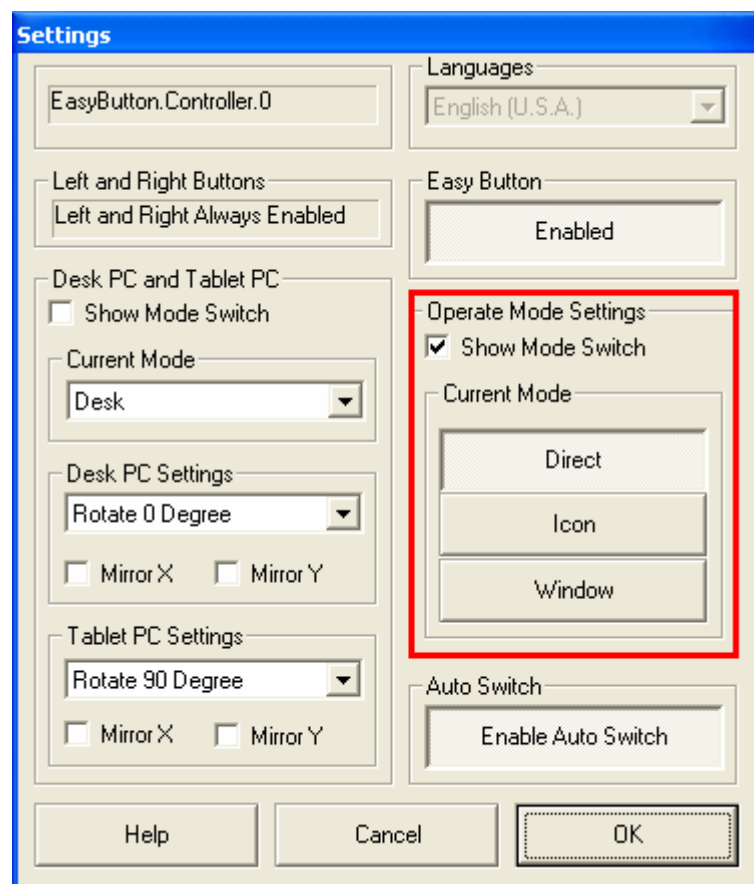
You can switch rotation automatically by switching between Desk and Tablet after setting up your rotation value and mirror.

8.3.3.9.5 EasyButton



The EasyButton disappears immediately when you cancel Enabled mode. The colored icon on the taskbar changes to gray accordingly. The Enabled button in the Settings window is same as the function of Enabled item in the taskbar right click popup menu.

8.3.3.9.6 Operating Mode Setting

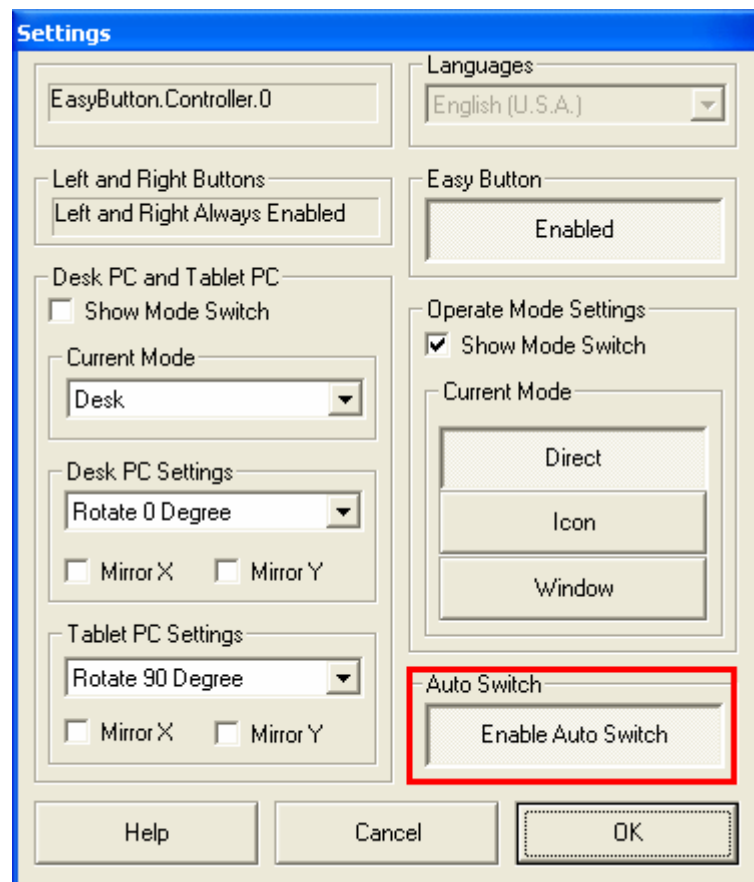


The Show Mode Switch check box is the default setting. Therefore, the default display of the EasyButton is shown in the figure at left. However, if the Show Mode Switch is not selected, the display is shown in the figure at right.



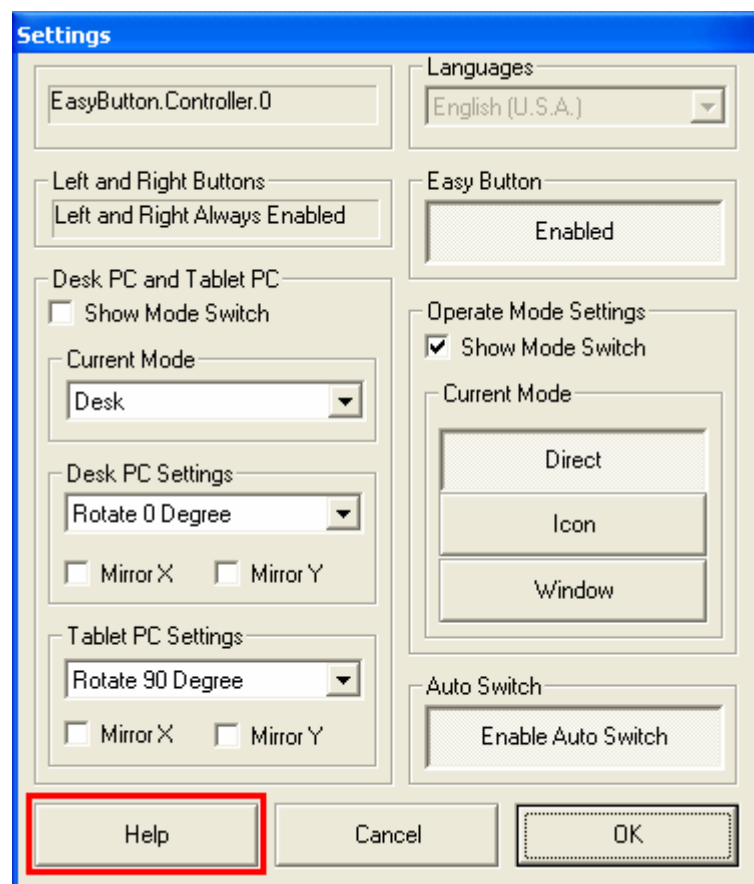
In the Current Mode area, Direct, Icon and Window Modes perform the same functions as found in the Main Console.

8.3.3.9.7 Setting Auto Switch to Enhance the Right-click Function



In some application software such as Microsoft Office and Adobe Photoshop, Unexpected window focus switching may occur when applying the right-click function. The “Auto Switch” feature is to solve the issue and ensure the right-click function by adding the “Enable Auto Switch” to the default setting.

8.3.3.9.8 Get Help



Please click Help button if you have difficulty in using DeviceDriver.

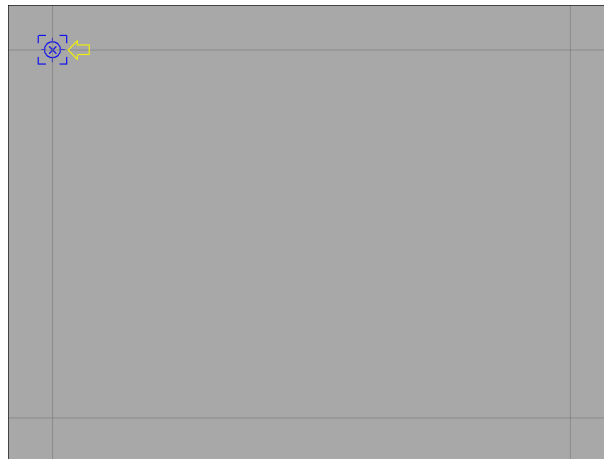
8.3.3.10 Calibration Tools

8.3.3.10.1 Fast Calculate Mode

This function is located in the Main Console and this feature can help reduce the CPU memory requirements and may be necessary for computers with limited memory. Click “Apply” to activate this mode.

8.3.3.10.2 4 Point Calibration

The gray interface is drawn with two horizontal faint gray lines and two vertical faint gray lines, making four intersections which act as Calibration Points.



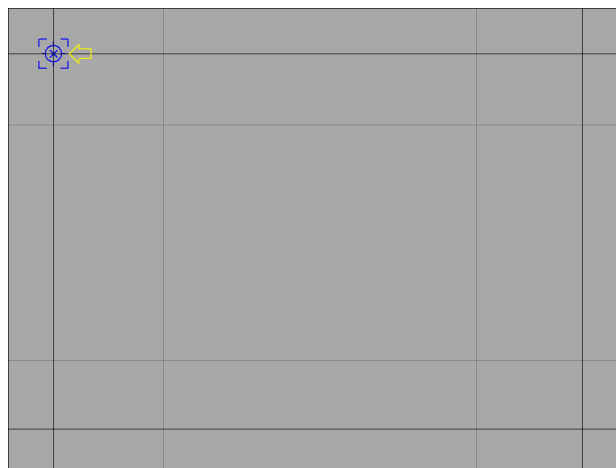
The new driver has added a yellow arrow to indicate the Calibration Point.
Please see SoftDriver Specification for additional details regarding the calibration process.

Press ESC to cancel 4 Point Calibration or any other calibration program.

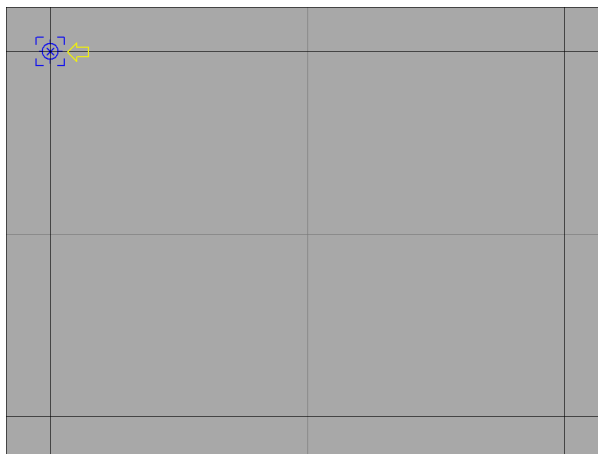
8.3.3.10.3 16 Point Calibration

Similar to 4 Point Calibration, the interface of 16 Point Calibration is drawn with four horizon and four vertical faint gray lines, making sixteen intersections which act as Calibration Points.

The calibration accuracy of 16 Point Calibration is higher than 4 Point Calibration.

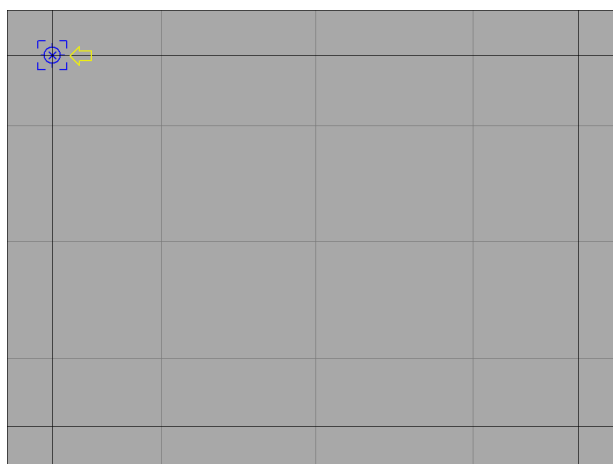


8.3.3.10.4 9 Point Calibration



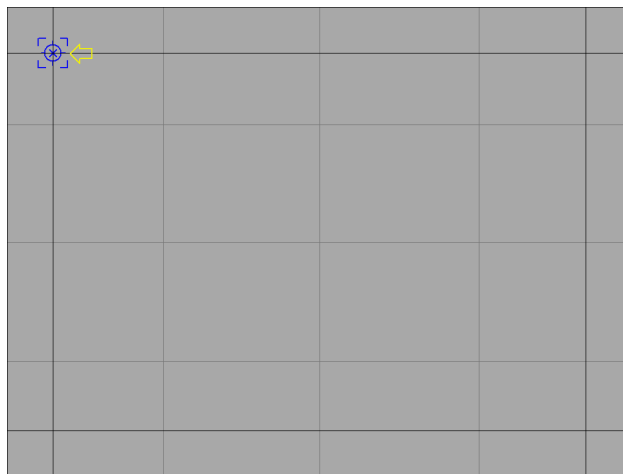
The 9 Point Calibration has an accuracy between 4 Point Calibration and 16 Point Calibration.

8.3.3.10.5 25 Point Calibration



The 9 or 16 or 25 Point Calibration is strongly recommended if your Touch Screen is 5 Wire type.

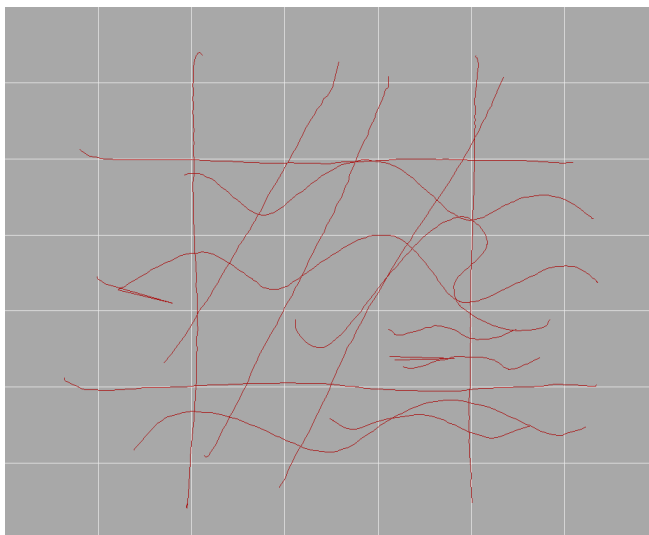
8.3.3.10.6 25 Point Calibration Plus



The interface of the 25 Point Calibration Plus is the same as the 25 Point Calibration. However, there are four more calibration points. Essentially, 25 Point Calibration Plus is the combination of 4 Point Calibration and 25 Point Calibration.

8.3.3.11 Utility Tools

8.3.3.11.1 Drawing Test



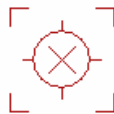
To clear the screen, press Enter.

To exit or cancel the drawing test, press ESC or double-click on the touch panel. The exit command is the same for the following utility tools.

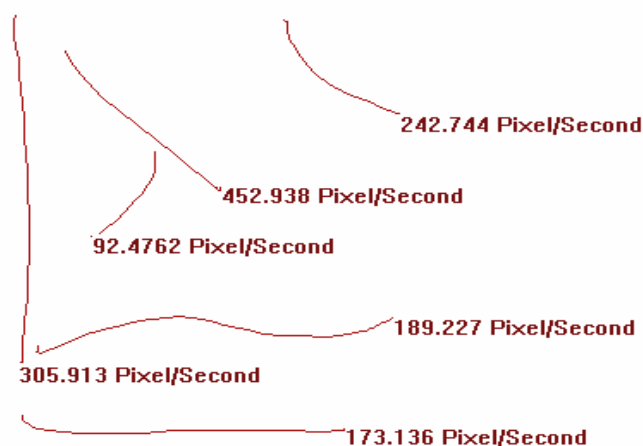
8.3.3.11.2 Pointing Test

The Pointing Test occurs on a blank interface. A red mark as shown below appears

when the touch panel is contacted. The mark will follow any movements and if performance is good, the performance of the controller response to pointing is also good.



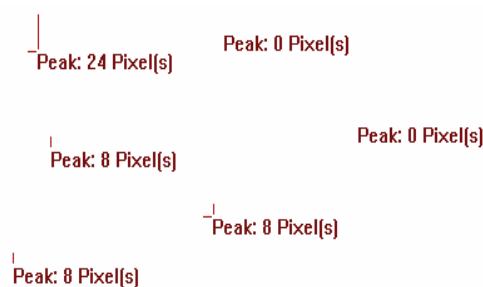
8.3.3.11.3 Speeding Test



This tool is used to test the maximum speed of drawing line. The value indicates the average speed and depends on the computer and the size of the touch panel. Comparisons of testing results are valid only if the results are obtained under the same testing environment (same type of touch screen or controller).

8.3.3.11.4 Vibrating Test

The vibrating test has been introduced to test controller response to pointing under vibration and contact bounce. Comparisons of testing results are valid only if the results are obtained under the same testing environment (same type of touch screen or controller).



Shown above is a Vibrating Test interface. A blank screen will appear after clicking the “Vibrating Test” and the red information will appear only if the touch panel is contacted. The following rules must be observed during the vibrating test: 1. Your finger must be straight and stationary when you press on the touch panel. 2. Once your finger lies at a point, your pressure on the touch panel must be firm. 3. Slowly release your finger from the touch panel. Release direction must be opposite to the pressure direction.

The information is displayed after each pressure point. The values are relative to the vibrating strength. Larger values imply stronger vibration and smaller values imply weaker vibration. Values depend on the computer and the size of the touch panel. Comparisons of testing results are valid only if the results are obtained under the same testing environment.

8.3.3.12 About

Click “About” and a screen will appear with information about the EELY-TOUCH Device Driver. It disappears after 4 seconds.



8.3.3.13 Flash

Click “Flash” if you want to re-collect the data in the controller.

8.3.3.14 Apply

Click “Apply” to save your changes in controller. Please note “Language”, “EasyButton Tools”, “Calibration” (Fast calculate Mode is excluded), and “Utility Tools” take effect without clicking “Apply”. About, Flash, and Default also do not require clicking “Apply”.

8.3.3.15 Default

Clicking “Default” will restore all settings to default.

9 . DeviceDriver for DOS

9.1 Running Script Utility

First, access the directory in which the DOS DeviceDriver was installed.

Type **Script + Enter**, and the **Script Utility for DOS** will run.

Type **Help** for the command information or, type **help** followed by the command to receive more information. For example, for the **detect** command, type **help detect** to receive more information.

9.2 Detect Controller

In the EELY-Touch Script Utility Environment, typing **detect + enter** will result in the following:

```
ET>Detect
```

```
Detecting COM Port 1:  V  V  V  V  Found Controller!
```

```
ET>
```

Or alternatively, the following:

```
ET>Detect
```

```
Detecting COM Port 1:  V  X  Nothing Recognizable Found.
```

```
Detecting COM Port 2:  V  V  V  V  Found Controller!
```

```
ET>
```

If the following message appears, the Device Driver cannot find the Controller.

```
ET>Detect
```

```
Detecting COM Port 1:  V  X  Nothing Recognizable Found.
```

```
Detecting COM Port 2:  V  X  Nothing Recognizable Found.
```

```
ET>
```

9.3 Calibration 4 Point

Type **Calibration 4 Point** to perform the 4 Point Calibration test.

9.4 Calibration 5 Point

This function will be available at a future release.

9.5 Calibration 25 Point

This function will be available at a future release.

9.6 Drawing Test

Type:

ET>Drawing Test

The drawing test interface screen will appear. See the **Script Utility Command Reference** Section for more details.

9.7 Pointing Test

Type:

ET>Pointing Test

The pointing test interface screen will appear. See the **Script Utility Command Reference** Section for more details.

9.8 Set Resolution for Driver

Type:

ET>Set Resolution Width, Height

The driver will be set for the specified resolution after rebooting the computer.

9.9 Exit the Script Utility

Type:

ET>Exit

The system will return to DOS and the device driver will recognize the new settings after rebooting the computer.

9.10 Script Utility Command Reference

9.10.1 Help

9.10.1.1 Syntax

help

help default

help display

help select

help detect

help set

help calibration

2003-04-25

help drawing
help pointing
help exit

9.10.1.2 Usage

Type **help** + **command** to receive more information about the command.

9.10.2 Default

9.10.2.1 Syntax

default

9.10.2.2 Usage

This command will set to the default settings which are as follows:

Com Port Address: COM1=0X3F8, COM2=0X2F8.

Com Port IRQ: COM1=4, COM2=3.

Sound Frequency: 1500 Hz.

Sound During: 100 ms.

Sound Option: Pressure.

Easy Button: Off.

Resolution: 640*200

9.10.3 Display

9.10.3.1 Syntax

display port address
display information

9.10.3.2 Usage

display port address:

The above command will list the address for COM1 & COM2.

display information:

The above command will display information about the connected port, connected port address, sound frequency, sound duration, sound option, resolution, easy button option and 4 point calibration data.

9.10.4 Select

9.10.4.1 Syntax

```
select port ? address 0x??  
select port ? irq ?  
select work port ?
```

9.10.4.2 Usage

select port ? address 0x??:

The ? or 0x?? is the desired port number or port address. This command will assign the address you entered to the specified port number.

select port ? irq ?:

The first ? is the desired port number. The second ? is the irq number.

select work port ?:

The first ? is the desired port number. This command will designate the working port.

9.10.5 Detect

9.10.5.1 Syntax

```
detect
```

9.10.5.2 Usage

This is the most important command and the execution of this command will search the ports COM1 & COM2 and their corresponding addresses. If there is a controller detected, then the corresponding port will automatically become the working port. If there is more than one controller detected, it will be necessary to choose one.

9.10.6 Set

9.10.6.1 Syntax

```
set resolution ???,???  
set sound none/pressure/release
```

set easy button on/off
set sound frequency ???
set sound during ???

9.10.6.2 Usage

set resolution ???,???:

The ??? is the desired resolution. This driver will be set for the specified resolution. For example, for a resolution of 600x800, type **set resolution 600,800**

set sound none/pressure/release:

By choosing **none**, **pressure** or **release** as the parameter, there will be no touch sound for **none**, beep at pressure for **pressure** & beep at release for **release**.

set easy button on/off:

By choosing **on** or **off** as the parameter, the EasyButton will be displayed for **on** and hidden for **off**.

set sound frequency ???:

The ??? is the desired sound frequency value. This affects the beep sound tone.

set sound during ???:

The above command sets the sound duration.

9.10.7 Calibration

9.10.7.1 Syntax

calibration 4 point
calibration 5 point
calibration 25 point

9.10.7.2 Usage

calibration 4 point:

This is the calibration 4 point utility application command.

calibration 5 point:

This is the calibration 5 point utility application command.

calibration 25 point:

This is the calibration 25 point utility application command.

9.10.7.3 Note:

Press **ESC** to cancel **Calibration**.

9.10.8 Drawing

9.10.8.1 Syntax

drawing test [??,??]
drawing test raw [??,??]
drawing test mouse [??,??]

9.10.8.2 Usage

Drawing test [??,??]:

This command is used to perform the drawing test. The items inside the [] brace are optional and represent the vertical and horizontal lines.

Drawing test raw:

This command is used to perform a drawing test without calibration. The items inside the [] brace are optional and represent the vertical and horizontal lines.

Drawing test mouse:

This command is used to perform a drawing test using the mouse driver. The items inside the [] brace are optional and represent the vertical and horizontal lines.

9.10.8.3 Note

Press **ESC** to cancel testing.

Press **Enter** to clear the screen.

9.10.9 Pointing

9.10.9.1 Syntax

Pointing test

9.10.9.2 Usage

The above command is for the pointing test.

9.10.9.3 Note

Press **ESC** to cancel testing.

9.10.10Exit

9.10.10.1 Syntax

Exit

9.10.10.2 Usage

The above command returns to DOS.

9.11DeviceDriver Bugs under DOS

The Right Click function is not implemented yet.

The Text Mode cursor can only handle 25x80 mode currently.

The Graphic Mode cursor is not implemented yet.

10 Electronic & Mechanical Specifications

10.1 Touch Board Interface

4 Wire Resistive Type 2.8'~21'

5 Wire Resistive Type 2.8'~21'

8 Wire Resistive Type 8.4'~18.1'

10.2 Computer Communication Interface

RS232 Serial Port Interface

USB V1.1 Low Speed

10.3 Power Supply

Voltage: +5V

Current: 50mA~100mA (depends on different Glass Touch Panel specifications)

10.4 Sampling Speed

Sampling Speed: 45~100 times per second.

10.5 Resolution

4096x4096 pixels logical

10.6 Maximum Pressure Time Delay

Delay: <0.02 seconds

10.7 Maximum Release Time Delay

Delay: <0.02 seconds

10.8 Maximum Moving Inaccuracy

Moving Inaccuracy: <= 5%

10.9 Maximum Static Inaccuracy

Static Inaccuracy: $\leq 1\%$

10.10 Working Environment

Main Features		4-Wire-Resistance	5-Wire-Resistance
Linear		$<1.5\%$	$<1.5\%$
Transparency		$77\% \sim 83\%$	$77\% \sim 83\%$
Haze		$H < 6\%$	$H < 6\%$
Clarity		$C > 82\%$	$C > 82\%$
Life	Minimum Hitting Life	1,000,000 Times	35,000,000 Times
	Minimum Scoring Life	100,000 Times	5,000,000 Times
Resistance Range		$100 \sim 1K\Omega$	$100 \sim 1K\Omega$
Temperature		$-10 \sim +60^{\circ}\text{C}$	$-10 \sim +60^{\circ}\text{C}$
Humidity		$0 \sim 90\%$	$0 \sim 90\%$
Altitude		$<4500\text{m}$	$<4500\text{m}$

10.11 Controller Detection Time

Under Normal or Fast System:

The Controller detection time (for both connection and disconnection) is less than 20 seconds.

Under Slow or Unknown System:

The Controller detection time is not specified.

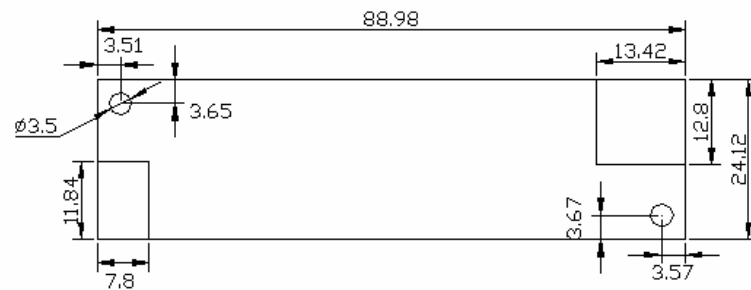
10.12 Controller Mechanical Characteristics

10.12.1 Unit

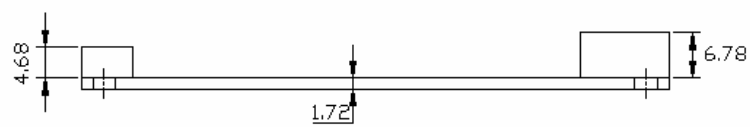
Unit: mm

10.12.2 Type A Controller

10.12.2.1 ET-R4-RS232/USB

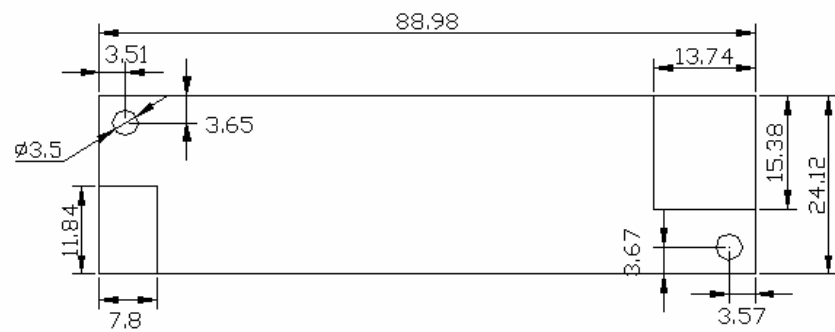


ET-4 Top View

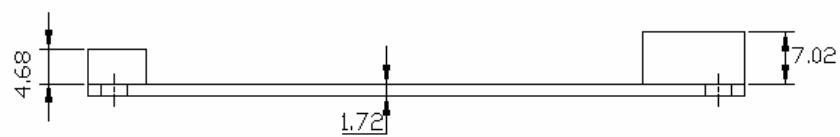


ET-4 Front View

10.12.2.2 ET-R5-RS232/USB



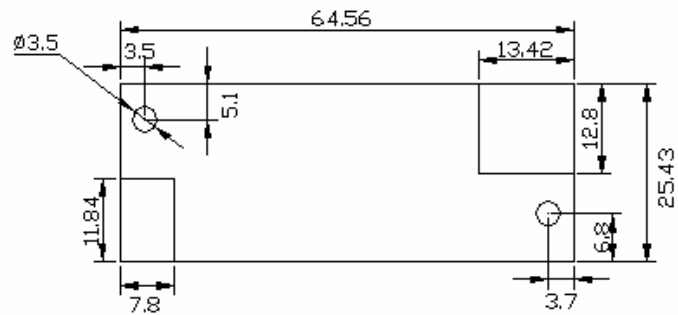
ET-5 Top View



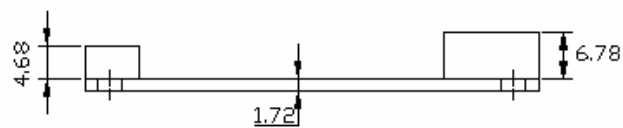
ET-5 Front View

10.12.3Type B Controller

10.12.3.1 ET-R4-RS232/USB

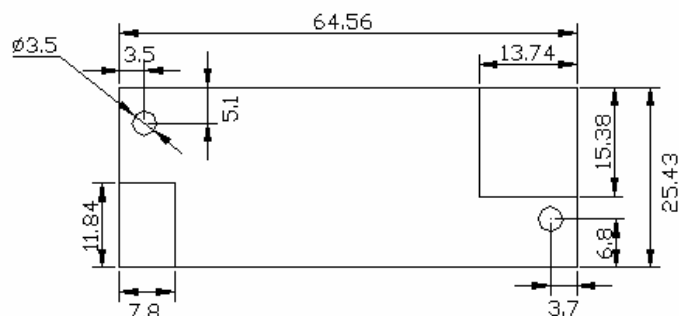


ET-4 Top View

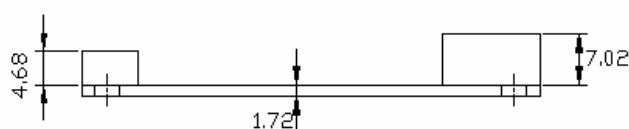


ET-4 Front View

10.12.3.2 ET-R5-RS232/USB



ET-5 Top View



ET-5 Front View

10.13 Controller Note

When installing the Software Driver on Windows systems, please note the following:

The RS232 Controller LED will flash every 2 or 3 second even if you do not touch the Touch Panel. This indicates that the controller is correctly connected with the Software Driver. On the contrary, if the RS232 Controller does not flash during Windows Software Driver installation, the Controller may not be recognized.

The USB Controller LED will flash once connected and retain a low light level even when the Touch Panel is not in use. This indicates that the Controller is correctly connected to the Software Driver. On the contrary, if the controller LED does not have a low light level or it retains a high light level, the Controller may not be correctly connected to the Software Driver.

11 Troubleshooting

11.1 My Touch Board does not work.

If your Touch Board is RS232 type, remember to plug the additional PS/2 Port on your computer.

If the LED on your Controller is bright when you press the Touch Board, but the

driver that is running is not in active status, please check the Connection between Computer and Controller and restart the Computer.

If your Driver is in active status, but when you press on the Touch Board the LED on the Controller is dim, please check the connection between the Touch Board and Controller.

If your Driver is in active status and the LED lights when you press the Touch Board, but the Cursor do not move, please perform the 4 Point Calibration again.

11.2 My Main Utility displays unknown characters.

If you are using Taiwan Characters, please Select the Chinese (Taiwan) which is the fourth selection in the list box.

11.3 My Touch Board does not point to the position of my finger.

Please perform the 4 Point Calibration again.

11.4 My Driver does not auto run at the System startup.

From the System Administrator security level, check the Load at OS Start Check box.

11.5 My Load at OS Start check box is gray.

The gray check box may appear if your operating system is Windows 2000, Windows NT, Windows XP or any future Operation Systems Base on NT Security Policy. The account security level is too low and it may be necessary for a System Administrator to check the Load at OS Start check box.

11.6 My Driver can not save my settings.

This may also happen if you are running the Driver on a NT Security Based System; The account security level is too low to write file objects and it may be necessary for a System Administrator or Power User to save the settings successfully.

11.7 My Driver frequently becomes active and inactive.

The connection between the Controller and Computer may be poor. Re-connect the ports and ensure that all plugs are well-connected.

11.8 My Driver does not draw lines smoothly.

If the Driver is set to Desktop Mode, change it to Drawing Mode and try again.

To change the Mode, open the Main Utility Console and Select Drawing Mode. Alternatively, click the “Desktop” text on the EasyButton to toggle between Desktop and Drawing modes.

11.9 Additional Support

Please contact us at MIS@EELYECW.COM with **Technical Support request of EELY-Touch** as the subject. Please include your company name and contact information.

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