PENMOUNT DEVICE DRIVER
USERS' GUIDE
FOR MICROSOFT WINDOWS

Version 2.4

16/Sep/'15

Preface

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Revision Table

Date	Revision	Changes
17/Feb/2011	1.0	Initial Release
08/Aug/2013	2.0	Revised Layout
22/Nov/2013	2.1	Add descriptions of Microsoft Windows 8.1 Chapter 3: Adds function summary of PenMount Control Panel
01/Jan/2015	2.2	Add support information for new PenMount controllers. Add description for PenMount Universal Driver V2.4.3.
16/Sep/2015	2.4	Add support information for new PenMount controllers. Add description for Windows 10 support.

Table of Content

1. Introduction

This document is the device driver users' guide for PenMount touch screen controllers.

1.1. Supported Device Driver Version

The contents in this document is based on the PenMount Windows Universal Driver V2.4.

1.2. Supported Device

The supported control boards and interfaces are listed in the table below.

Series	Product Name	USB	RS-232 / UART	I²C
PenMount 1100 Series	PM1100		v	
PenMount 1200 Series	PM1200	v	v	
	PM1201	v	v	
PenMount 1300 Series	PM1300A	v		
	PM1302	v	v	
PenMount 1400 Series	PM1400A	v	v	
	PM1401	v	v	
PenMount 1500 Series	PM1500	v	v	
PenMount 2100 Series	PM2101		v	
	PM2102	v	v	
PenMount 2200 Series	PM2201	v	v	
	PM2202	v	v	
P2-06 Series	PM1110		v	
	PM1210	v	v	
	PM2103	v	v	
	PM2203	v	v	
	PM2300	v	v	
P2-08 Series	PM1310	v	v	
	PM1410	v	v	
	PM1710	v	v	
PenMount 5000 Series	PM5126	v		
	PM51A5	v		
PenMount 6000 Series	PM6200	v	v	
	PM6202	v	v	
	PM6300	v		
	PM6500	v	v	
	PM6005	v	v	
PenMount 9000 Series	PM9026		v	
	PM9036		v	

1.3. Supported Systems

The PenMount Windows Universal Driver supports the following Windows operating systems. The PenMount device driver can be installed as digitizer on systems that provides Tablet PC support.

	Operating System	Tablet PC Support
Windows Desktop	Windows 2000	No
	Windows XP	No
	Windows XP Tablet PC Edition 2005	Yes
	Windows Vista	Yes
	Windows 7	Yes
	Windows 8 / 8.1	Yes[1]
	Windows 10 / Pro	Yes
Windows Server	Windows Server 2003 / 2003 R2	No
	Windows Server 2008 / 2008 R2	Yes[2]
	Windows Server 2012 / 2012 R2	Yes
Windows Embedded	Windows XP Embedded	No
	Windows Embedded Standard / POSReady 2009	No
	Windows Embedded Standard / POSReady 7	Yes[3]
	Windows 8 / 8.1 Embedded Standard / Industry	Yes

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[1] For Windows 8 / 8.1 with OEM Licenses, only mouse mode is supported
[2] Need manual install the tablet pc service from control panel.
[3] Only WES7P SKU provides Tablet PC support.

2. Installing Device Driver

This chapter describes how to install the PenMount Windows Universal Driver on Microsoft Windows systems.

2.1. Installation Options

PenMount provide several ways for customizing driver installation.

2.1.1. Silent Install

For installing the device driver without using GUI, please run setup.exe with following parameter:

```
setup.exe /S
```

Please notice that "S" must be capital.

2.1.2. Setup.ini

The options in the setup.ini provide switches for installing device driver, utility and gesture AP.

Section	Option	Value	Description
Setup	Driver	1	Install the device driver files
		0	Do not install the device driver files
	Utility	1	Install the utility files
		0	Do not install the utility files
	Gesture	1	Install the gesture recognizer files
		0	Do not install the gesture recognizer files
Option	ShowInfo	1	Show the PenMount contact information in the "PenMount Control Panel"
		0	Do not show the PenMount contact information in the "PenMount Control Panel"
	DebugFlag	1	Save installer debug messages to C:\PenMount.log
		0	Do not save installer debug messages

2.1.3. Install.ini

The install.ini file is located in driver directory. It provide options that affects the behavior of the PenMount device driver installer. The following table lists the supported options in install.ini, and the values in blue color are the default settings.

| Section	Option	Value	Description
Install	USB	1	Install the PenMount USB driver.
		0	Skip the PenMount USB driver installation.
	COM	1	Install PenMount RS232 driver.
		0	Skip the PenMount RS232 driver installation
	MMonitor	1	Install PenMount for multiple monitor mapping
		0	Disable the PenMount multiple monitor support
	ENUM	1	Install PenMount non-PnP RS-232 device detection
		0	Disable PenMount non-PnP RS-232 device detection
Option	TouchReport[4]	1	Install device as mouse device.
		2	If system supports Tablet PC Input, install device as touch digitizer device; if not, install as mouse device
	EdgeOffset	0	The value used by edge compensation
		5	
		10	
		15	
		20	
		25	
		30	
	Smoothing	1	Enables line smoothing, might affect performance
		0	Disables line smoothing
	Operation[5]	**0**	Touch operates in "Pen Input Emulation" mode
		1	Touch operates in "Click on Touch" mode
		2	Touch operates in "Mouse Emulation" mode
		3	Touch operates in "Click on Release" mode

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[4] The Windows XP Tablet PC Edition / Windows Vista / Windows 7 / Windows 8 supports digitizer devices.
[5] These options will only work when installed as mouse device.

		1	Enables press and hold for right button
	RBtnPressNHold[6]	0	Disables press and hold for right button
Serial	ScanAllPorts	1	Scans all available COM ports for detecting PenMount RS-232 devices.

The detection on some systems might take a few time to finish. |
| | | 0 | Do not scan ports |
| | COMx | <mode> ,<baud> | Manually set up a PenMount non-PnP RS-232 on a specific COM port, operates in the baud rate specified.

For example, "COM1=6000,19200" means installing PenMount 6000 with 19200 bps on COM1. |

2.2. Installation Process

Please follow the steps below to install PenMount Windows Universal Driver. Please notice that if PenMount device driver has already been installed on the system, a waning message box will appear when trying to install a new device driver. Please click the OK button and perform device driver uninstallation before proceeding.
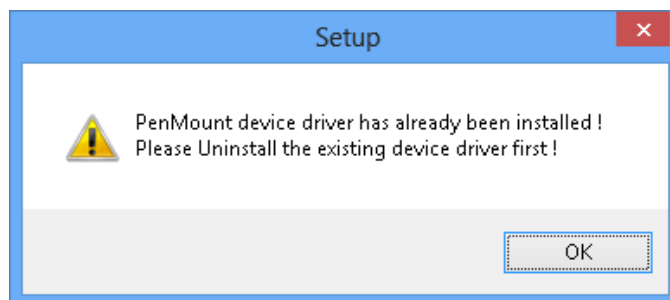
1. Connect the PenMount control board.
2. Run Setup.exe program.

[6] These options will only work when installed as mouse device.

3. In the License Agreement window, click on the "I Agree" button proceed.
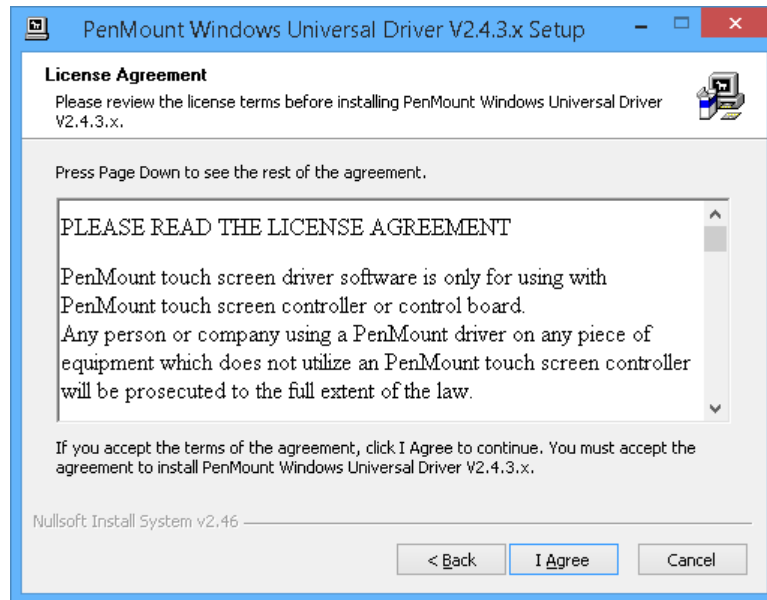

4. The setup program will install the device driver files to the Program Files directory by default. Please click on the "**Install**" button to confirm installation.
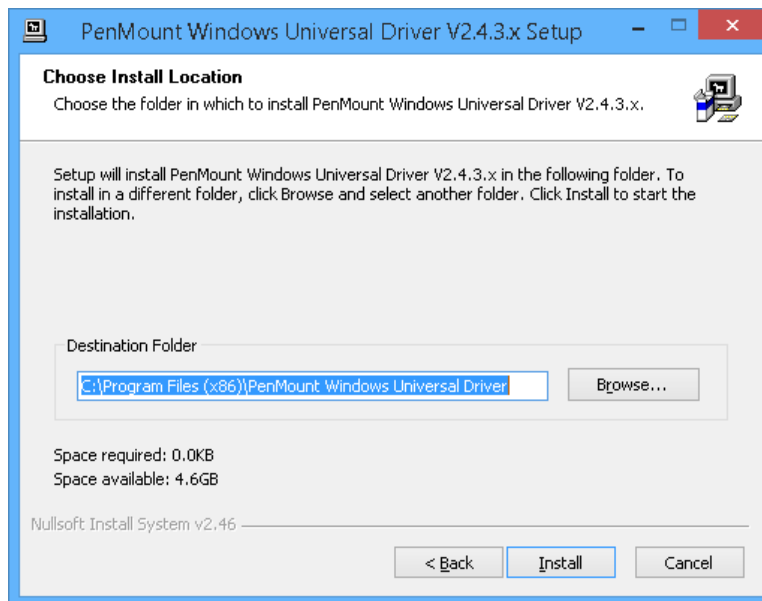
5. Starting from PenMount Universal Driver V2.4, the setup program will allow user to choose to install the device as "Mouse Device" or "Digitizer Device" on systems that supports Digitizer. A message box will show up.
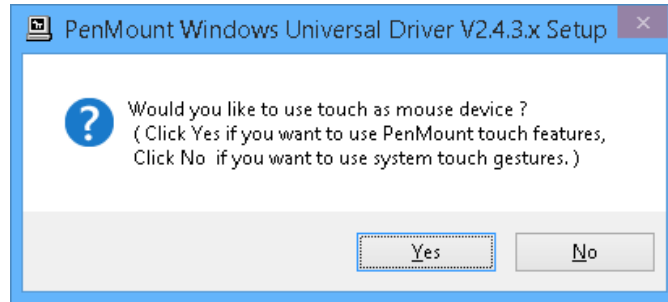
6. Please select "Yes" for installing PenMount as **mouse mode**; select "no" for **digitizer mode**. The later section describes more detail on these two modes.
7. The device driver installation will take some time.
8. When installing PenMount device driver without WHQL, a warning message box might appear. Please click the "**Continue Anyway**" button to proceed.
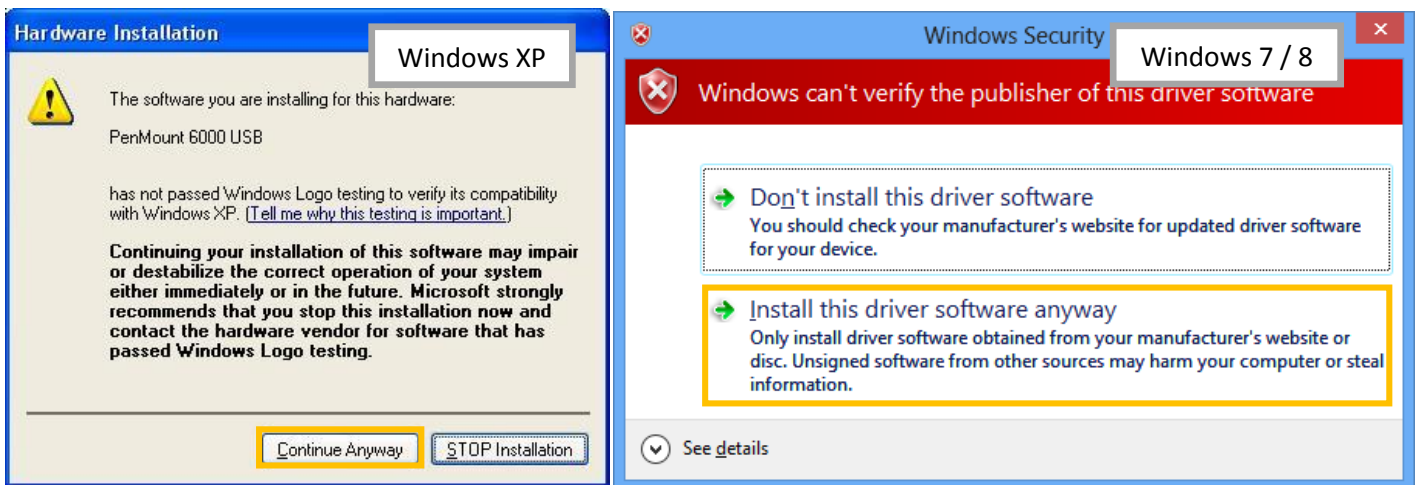
9. A window notifying of installation completion appears. Please click on the "Finish" button.
10. Please restart the operating system.

2.3. Installation Types

The PenMount device driver supports two types of device type configurations: mouse and digitizer. The moues device type is compatible to all Windows operating systems, while the digitizer device only works on systems that supports Tablet PC Input.

In general, installing the PenMount controller as mouse device is recommended. If you wish to use the Tablet PC Input features on Windows 7 / 8, you may need to choose to install the PenMount device as digitizer type.

For more information on Windows 7 / 8 Tablet PC features, please check the following web page.

http://windows.microsoft.com/en-US/windows7/help/videos/using-windows-touch

This section compares several differences between installing the PenMount controller as mouse and digitizer devices.

2.3.1. Comparison

| Device Type	Mouse Device	Digitizer Device
Supported Operating System	Windows 2000/XP/Vista/7/8/10	Windows XPT/ Vista/7/8/10
PenMount Control Panel	Launch in PenMount Monitor Menu	Launch with desktop icon
Calibration	Supported PenMount 4/9/16/25 calibration	
Multiple Monitor	Supported (Use PenMount monitor mapping)	Supported (Configured in Tablet PC Settings)
Flicks (Windows Vista / 7)	Not supported	Supported
Right Button	Supported (Use PenMount Press and Hold / Right Click utility)	Supported (Use system Press and Hold gesture)
Edge Compensation	Supported	
Touch Beep Sound	Supported	
Operating Modes	Supported	Not Supported

2.3.2. Differences in PenMount Monitor
The PenMount Monitor is a utility designed for quickly launching other touch features.

PenMount Monitor will automatically be launched when system starts, and the icon ![pm] will appear in the notification area.

| Windows XP | | Windows 7 / 8 |
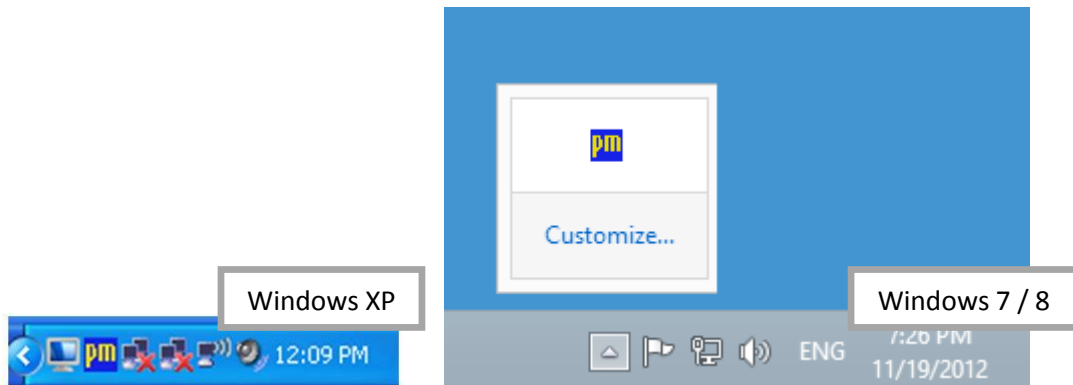
By clicking on the ![pm] icon, a shortcut menu will appear as below:

| Digitizer Version | | Mouse Version |
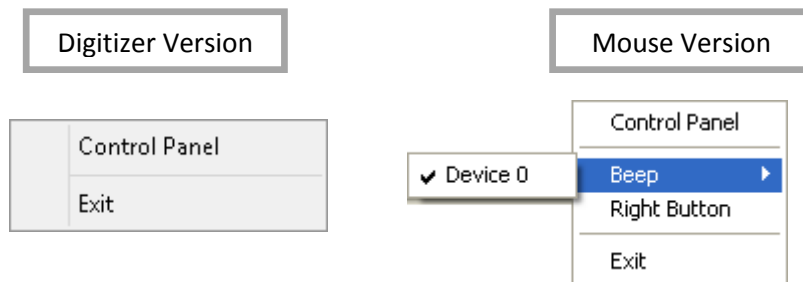
Menu Item	Description
Control Panel	Open PenMount Control Panel.
Beep	Setting Beep function for each device.
Right Button	When you select this function, a mouse icon appears in the right-bottom of the screen. Click this icon to switch between Right and Left Button functions.
Exit	Exits the PenMount Monitor function.

2.3.3.   Differences in PenMount Control Panel

The PenMount Control Panel is the utility for configuring touch settings. Please refer to Chapter 4 for more detailed information on configuring PenMount.

There are several difference between the mouse version and the digitizer version PenMount Control Panel.

When installed as digitizer, a shortcut icon will be created on the Windows Desktop.

There is a "Multiple Monitor" tab in the mouse version for configuring monitor mapping.

For digitizer devices, please check the "Tablet PC Settings" in the system Control Panel for mapping
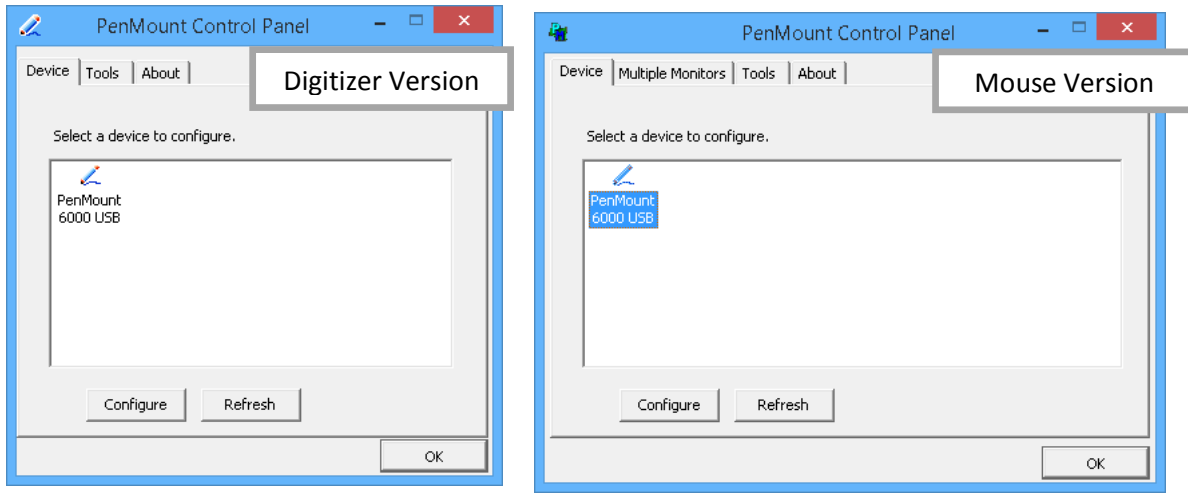

monitors.

Take PenMount 6000 for example, the device configuration window will appear by clicking on the "PenMount 6000 USB" or "PenMount 6000 RS232" icon in the PenMount Control Panel.
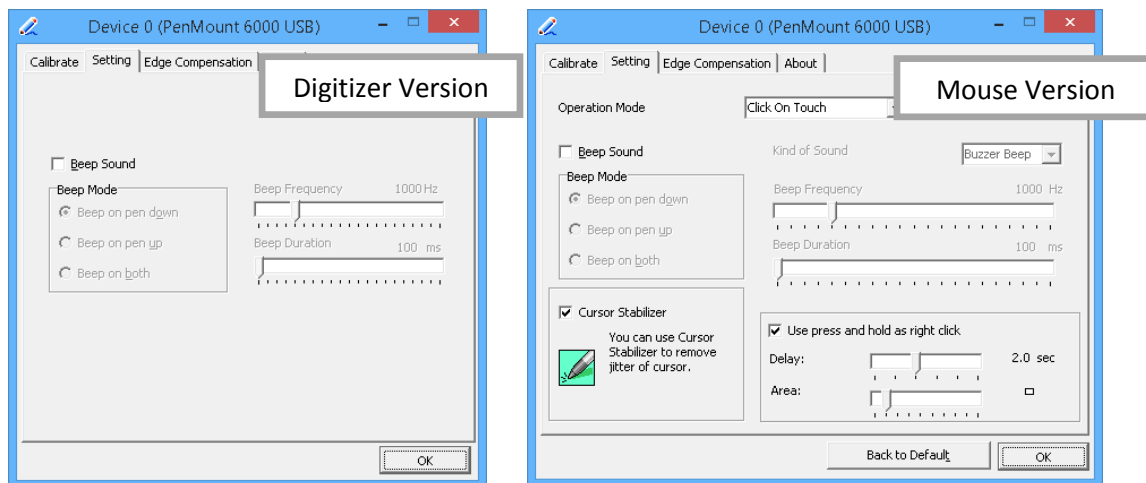
Only the mouse version has the "Setting" Tab.

2.4. Checking Installation Result

To check whether the installation finishes successfully, please launch the "Device Manager" from Control Panel, and check the device name under "Human Interface Devices" and "Mice and other pointing devices"
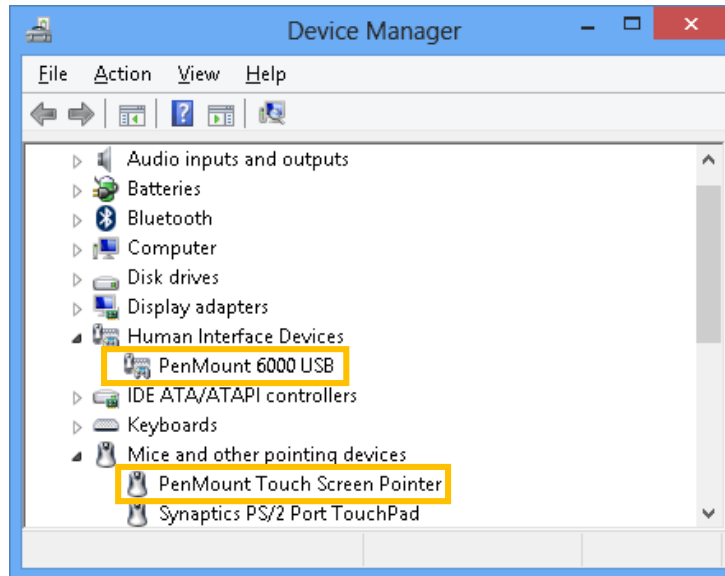
Possible device names are listed in the table below.

Device Name	Description
USB Input Device	The PenMount device driver is not installed yet
PenMount 5000 USB	The PenMount 5000 USB device driver has been installed
PenMount 6000 USB	The PenMount 6000 USB device driver has been installed
PenMount P2 USB	The PenMount P2 USB device driver has been installed
PenMount 9000 Serial	The PenMount 9000 RS-232 device driver has been installed
PenMount 6000 Serial	The PenMount 6000 RS-232 device driver has been installed
PenMount P2 Serial	The PenMount P2 RS-232 device driver has been installed
PenMount Touch Screen Pointer	The PenMount HID mouse device driver has been installed It only exist when PenMount is installed as mouse device

2.5. Refreshing Device

If a PenMount device is not attached during device driver installation, user can still install by using the **Refresh** feature in the PenMount Control Panel.
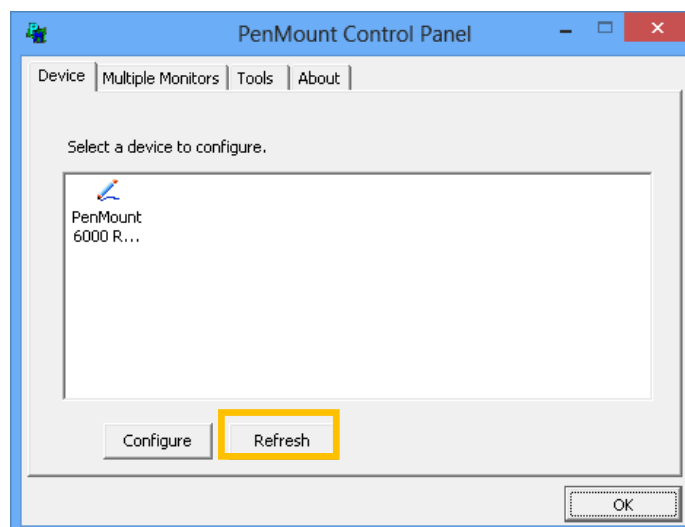
2.6. Uninstall Driver

For uninstalling device driver, please go to the Control Pane, and launch "Add/Remove program". Please select"PenMount Windows Universal Driver", and click on the "Change/Remove" (Windows XP) or "Uninstall/Change" (Windows 7 / 8) button.
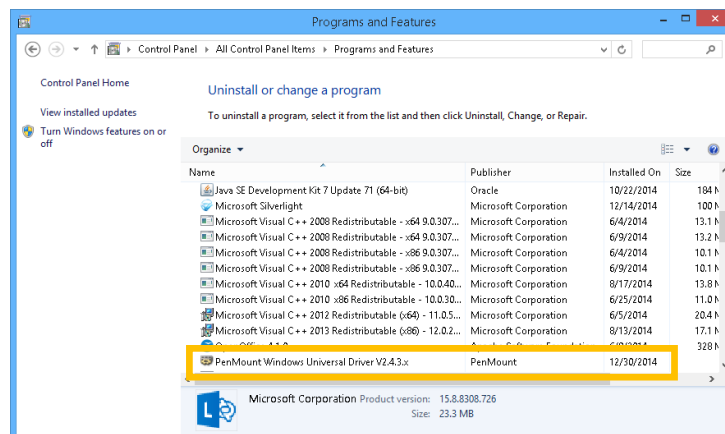
Please select 'Uninstall' to remove PenMount Windows Universal Driver.

3. Using Software

This section provides descriptions on using the utilities for changing device settings. The main utility is the PenMount Control Panel, and can be launched from the start menu. The following tables summarizes the functions that PenMount Control Panel provides.

- The Main Window

	Main Item	Sub Item	Mode	Remarks
1	Device Tab	Refresh Device		Install device drivers for newly connected touch controllers, require administrator
		Configure Device		Opens Device Setting Window
2	Multiple Monitors Tab	Enable Multiple Monitor Support		Can Switch between enable or disable states
		Map Touch Screens		Interactively maps touch controller to a certain monitor
3	Tools Tab	Draw	Show Grid	Shows grid in Draw Utility
			Show Pen Location	Shows touch location in Draw Utility
			Clear Screen	Clears current screen
		Right Button Icon	Desktop	Launches the right button utility, display icon on desktop
			System Tray	Launches the right button utility, display icon in the notification area of system tray
		Double Click Speed		Adjusts double click speed, from 200ms to 900ms
4	About Tab	Utility Version		Displays the version of the PenMount Control Panel utility
		Installed Devices		Lists the installed PenMount touch controllers
		Contact Information		Displays the email and website information

- The Device Setting Window

|	Main Item	Sub Item	Mode	Remarks
1	Calibrate Tab	Standard Calibration	4	Performs standard 4 point calibration
		Advanced Calibration	9	Performs standard 9 point calibration
			16	Performs standard 16 point calibration
			25	Performs standard 25 point calibration

2	Setting Tab			
		Plot Calibration Data		Draws the linearity of the calibrated touch screen
		Turn off EEPROM Storage		Disable or Enable writing back the calibration data to controller
		Operation Mode	Mouse Emulation	Let the device driver sends pen down on touch and pen up on release
			Pen Input Emulation	The device driver will not send pen down on touch unless it has moved out of a predefined offset, and pen up on release
			Click on Touch	Let the device driver sends pen down and pen up on touch
			Click on Release	Let the device driver sends pen down and pen up on release
		Enable Beep Sound		Enables or disables beep function
		Kind of Sound	Buzzer Beep	Beep sound output from buzzer
			Audio Beep	Beep sound output from audio speaker
		Beep Mode	Beep on Pen Down	Beep occurs when pen down
			Beep on Pen Up	Beep occurs when pen up
			Beep on Both	Beep occurs when pen down and pen up
		Beep Frequency		Changes the frequency of buzzer beep
		Beep Duration		Changes the duration of buzzer beep
		Cursor Stabilizer		Make the touch cursor more stable when holding on a certain position
		Enable use press and hold as right click		Enable of disable the press and hold gesture for right click
		Right Click Delay		The press and hold duration for generating right click event
		Right Click Area		The valid range for holding, dragging out of this area will cancel the gesture
3	Edge Compensation Tab	Left		Adjust the compensation value on the left side of touch panel
		Right		Adjust the compensation value on the right side of touch panel
		Top		Adjust the compensation value on the top side of touch panel
		Bottom		Adjust the compensation value on the bottom side of touch panel
4	About Tab	ADBit		Displays the AD bit supported
		Baudrate		Displays the baud rate used by RS-232 device

|	Driver Version	Displays the driver version
	Firmware Version	Displays the firmware version
	Firmware Parameters	Displays the parameters used by firmware
5	Back to Default	Restores the device driver settings back to default

3.1. Touch Calibration

For resistive touch screens, the most important feature that PenMount Control Panel provides is calibration. This feature is disabled for projected capacitive touch screens, since they usually don't need calibration.

Take PenMount 6000 for example, please click on the "PenMount 6000 USB" or "PenMount 6000 RS232" icon, and then click the "Configure" button to open the device specific configuration window.
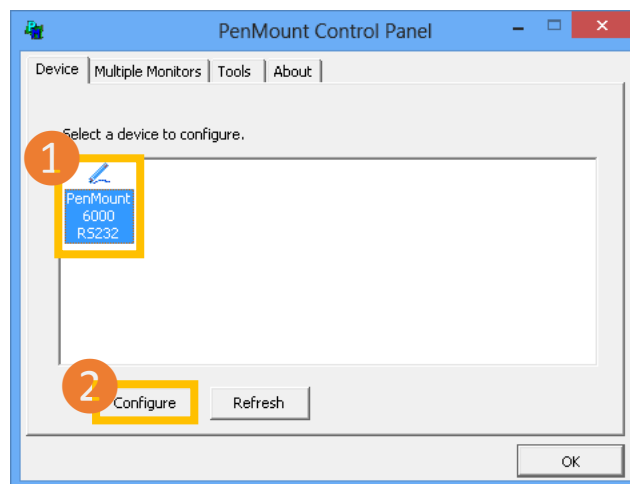
The first tab is the calibration tab, which consists four features: "Standard Calibration", "Advanced Calibration", "Plot calibration data" and "Turn off EEPROM storage".
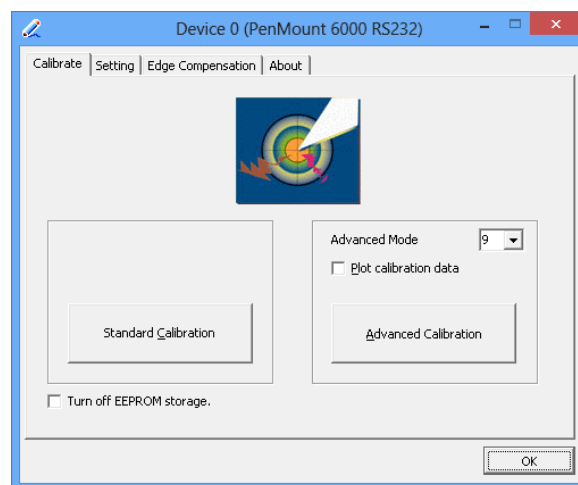
3.1.1.   Standard Calibration

The Standard calibration function uses four points for calibration and one point for confirmation. Under normal circumstances, the standard calibration is all you need to perform an accurate calibration.
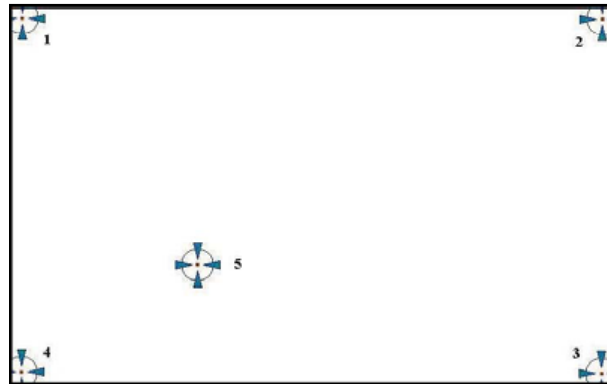
For better calibration result, please use a stylus and press on the red dot until the program prompts "Lift off to proceed". Using finger often gives bad result.
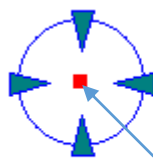
The last point is called the **verification point**, and it will only pass the verification when the calibrated position is located within a predefined range.

If it does not pass verification, the calibration process will show a dialog box as below:

Do you want to save calibration data?

Yes   No
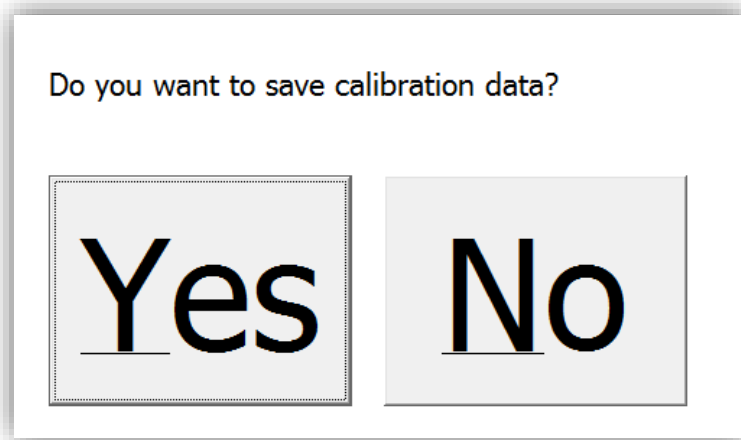
Please use keyboard to choose Yes or No. Press the "Y" key for Yes if you really can accept the inaccurate result. Press the "N" key for No and it will restart from point #1 again.

After three times of retry, the calibration process will fail, please press the "Esc" key to exit. If this happens, please consider using **advanced calibration**.

Calibration failed.
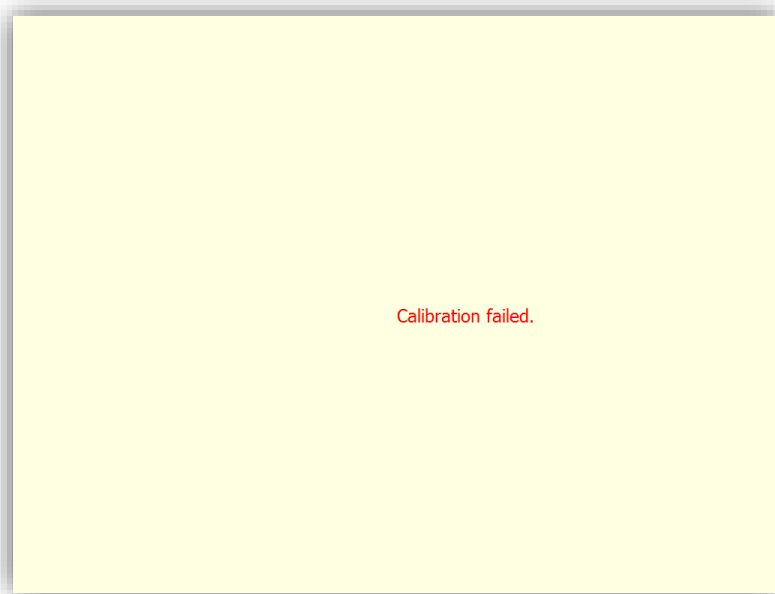
3.1.2.   Advanced Calibration

The advanced Calibration function improves the accuracy of calibration by using more complex algorithms, and is good for lesser accurate touch panels.
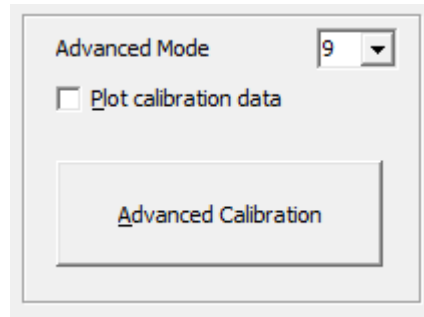
The advanced calibration supports 9, 16 or 25 point modes. Please scroll down the "Advanced Mode" drop down list for choosing a desired mode.

The following diagram shows the points for 9 point calibration. Please notice that the 10th point is used for verification, which is similar to the case of standard calibration.
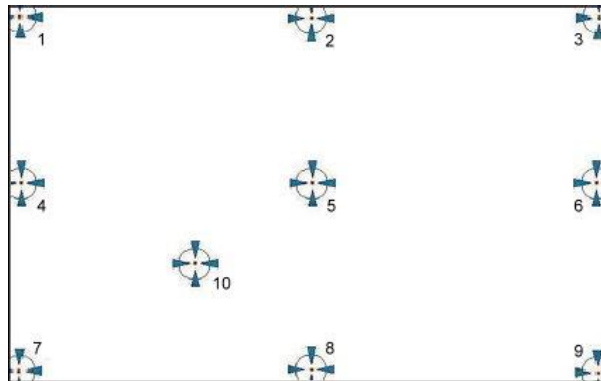
The more points used for calibration, the greater the accuracy. Errors in calibration may occur due to viewing angle, or individual skill, and there may be little difference in using 16 or 25 points. Note that a stylus is recommended for the most accurate results.

3.1.3.   Plot Calibration Data

Check this function to have touch panel linearity comparison graph appear when you finish Advanced Calibration.

The black lines reflect the ideal linearity assumed by PenMount application program while the blue lines show the approximate linearity calculated by PenMount application program as the result of user's execution of Advance Calibration.
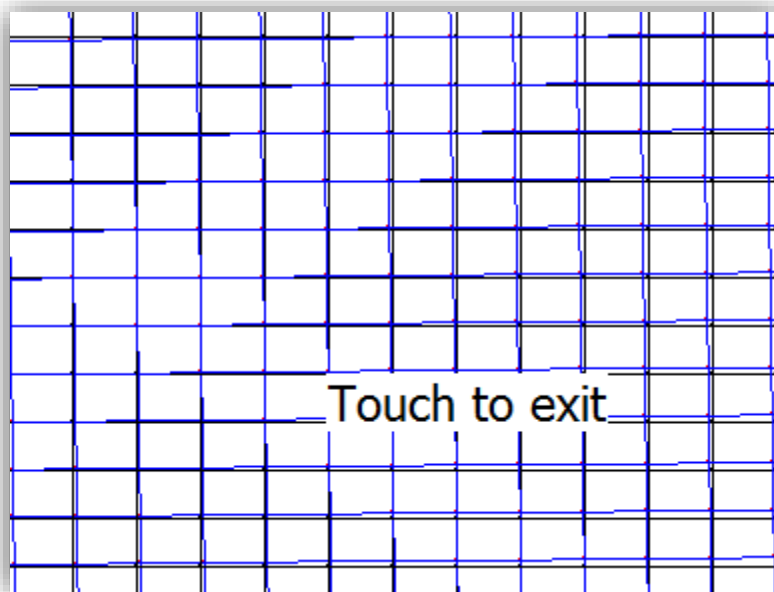
3.1.4. Turn off EEPROM storage

Some of the PenMount controller support onboard storage (EEPROM or flash), and the device driver will use the calibration data in it if available.

The PenMount Control Panel allows user to turn this feature off. If the EEPROM storage is disabled, the calibration process will only update the registry data after it finishes successfully.

3.1.5. Calibration with Command Line

In some cases, users might want to launch calibration directly in command line. Please use the following command:

%PROGRAMFILES%\PenMount Universal Driver\DMCCtrl.exe -calibration <mode>

Mode	Description
4	4 point standard calibration
9	9 point advanced calibration
16	16 point advanced calibration
25	25 point advanced calibration

Please notice that is multiple monitors are connected to the host PC, the calibration process will prompt for choosing a desired display first.

Touch this screen to start its calibration
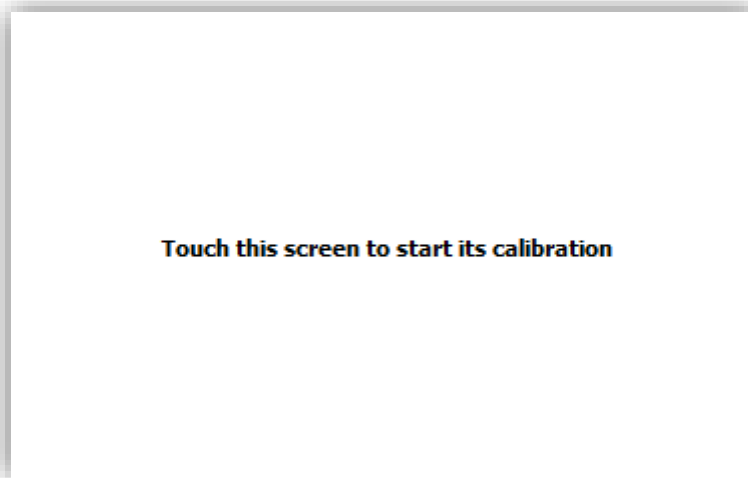
3.1.6.　　Avoid Using Inbox Calibration

Windows Vista / 7 / 8 also provides its own calibration utility, which can be launch in the Control Panel.
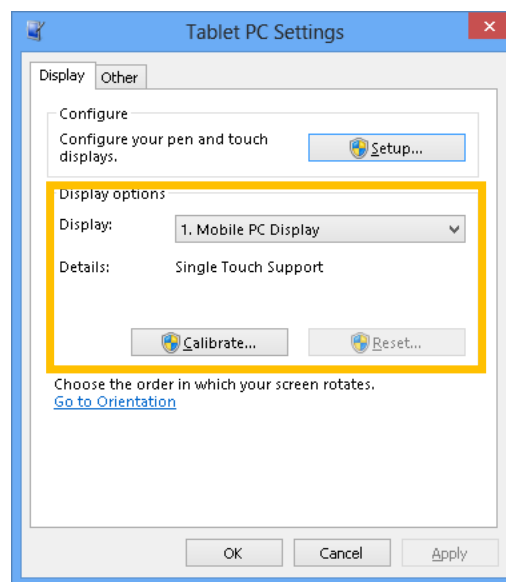
The inbox calibration process prompts for clicking on the 16 points located in the four corners of the screen. If clicking on wrong places, please use the Press and hold on a certain point will return to the previous position.

To provide calibration samples, tap the crosshair each time that it appears on the screen.

Right-click anywhere on the screen to return to the last calibration point. Press the Esc button to close the tool. Do not change your screen orientation until you have completed the calibration process.

Please notice that for accuracy and compatibility reason, we strongly suggest using the PenMount calibration utilities instead. If you have used the inbox calibration before, please click on the "Reset …" button to disable the inbox calibration.

3.2. Using with Multiple Monitors

PenMount supports two or more touchscreen displays for one system. Each monitor requires its own PenMount touchscreen control board, either installed inside the display or in a central unit. Multiple Monitors supports the following modes:

- Windows Extend Monitor Function
- Matrox DualHead Multi-Screen Function
- nVidia nView Function

NOTE: The Multiple **Monitors** function will be disabled if there is only one touchscreen display. Once this function is enabled, the **Rotation** function will be disabled.

3.2.1.   Mouse Mode

This section provide information on mapping PenMount device to monitors as a mouse device. When more than one monitors are connected to the host PC, touch will be mapped to the whole virtual screen before it is mapped to a certain monitor with the PenMount Control Panel, so it is necessary to perform
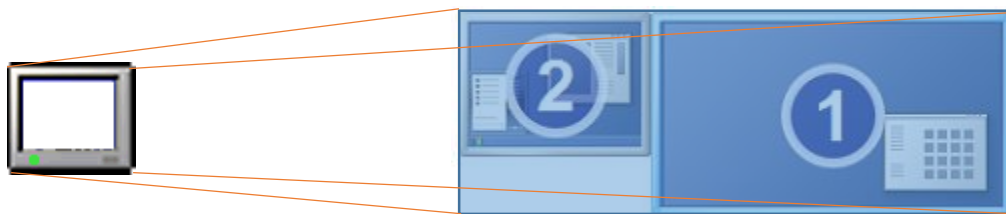
monitor mapping.

Please follow the steps below to enable the multiple display function:

1. In PenMount Control Panel, under Multiple Monitors tag, check the "Multiple Monitor Support" box.
2. Click on the "Map Touch Screens" button to start assigning touch controllers to displays.
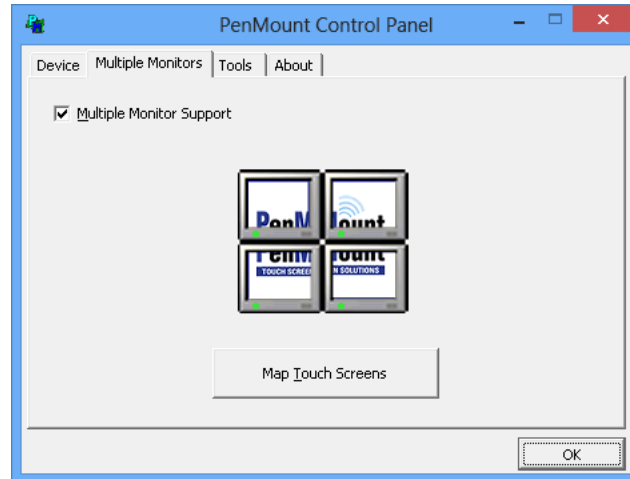
3. If there is only one monitor attached, a warning message box will show up.
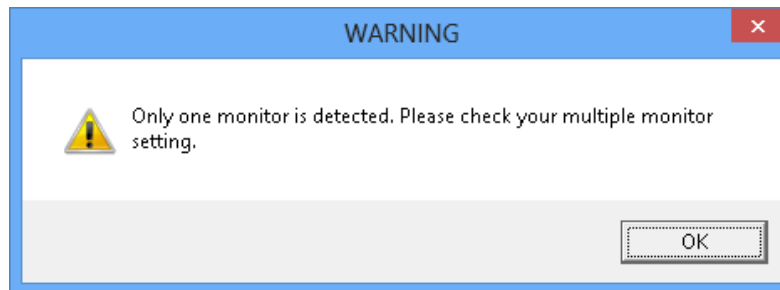
4. Touch each screen as it displays "Please touch this monitor. Press the 'S' key to skip", or wait for 10 seconds to skip automatically. Press the Esc key if you want to cancel the mapping process.

Please touch this monitor. Press 'S' to skip.

5. After the setting procedure is finished, maybe you need to calibrate for each panel and controller.

3.2.2.　　　Digitizer Mode

When a PenMount device is installed as digitizer, the device will be mapped to the main display by default. To map to other display monitors, please launch the "Tablet PC Settings" in the Control Panel.
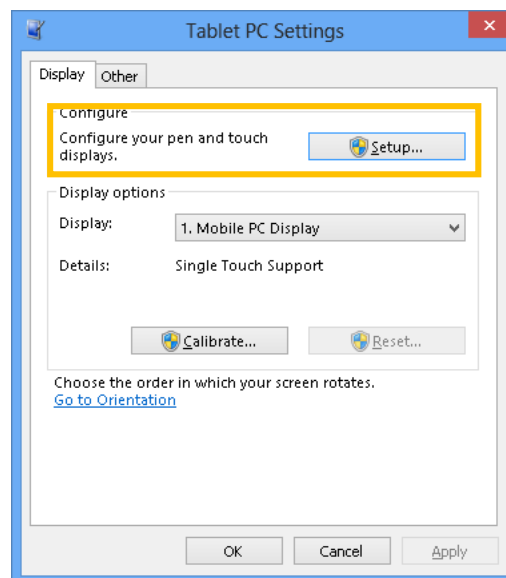
1. Press the "Setup…" button.
2. Touch the display that shows the following messages.

Touch this screen to identify it as the touchscreen.

If this is not the Tablet PC screen, press Enter to move to the next screen. To close the tool, press Esc.

3. Press the Enter key when the above message is shown on other displays that is not mounted with touch.

3.3. Screen Rotation

There are currently a number of software packages on the market that support rotating monitors 0°, 90°, 180°, and 270°. However you will not be able to use a touchscreen unless it is matched to the appropriate rotation. Our rotation configuration function allows you to easily match the touchscreen when you rotate your monitor.

If you use a rotating monitor you will need a display card such as from **nVidia**, **Intel**, **SMI** or **ATI** and software such as **Portrait Pivot Pro**. For software operation and features, please refer to your software manual.

PenMount supports rotation detection of 90, 180 and 270 degrees, and automatically adjust the touch position.

3.3.1.   Windows XP 64bit Support

On Windows XP 64 bit systems, however, users still need to manually turn on the rotation detection support with the instructions described below.

1. There is a "Screen Rotation Monitor" button that appears only in the PenMount driver utilities for Windows XP 64bit system.
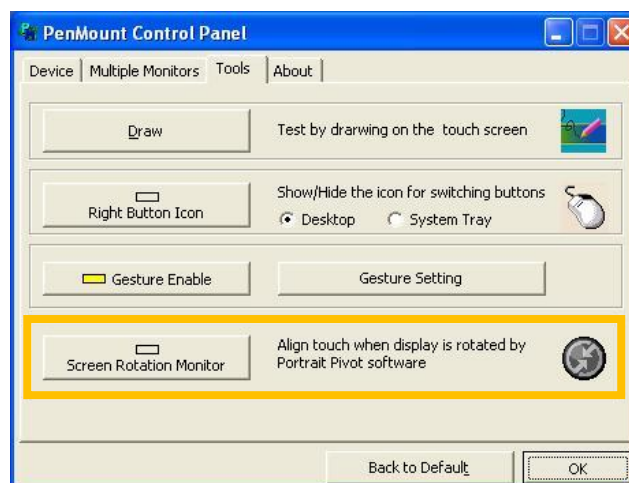
2. On enabling "Screen Rotation Monitor", you will see a screen like below:
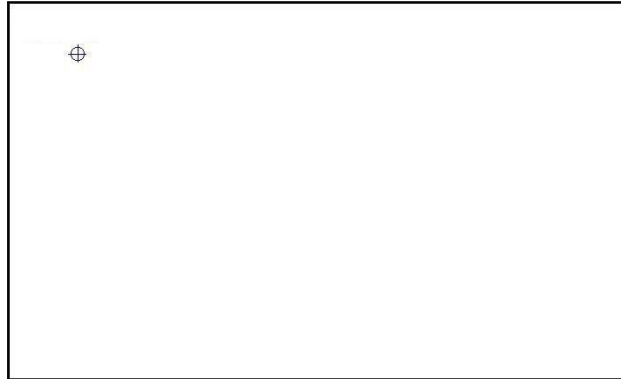
3. Choose rotate function (0°, 90°, 180°, 270°) in the 3rd party software. The calibration screen will appear automatically. Touch this point and rotation is mapped.

3.4. Operation Mode

This option is for mouse mode devices only. By specifying different operation modes, users can changes the input mode for different application usages.
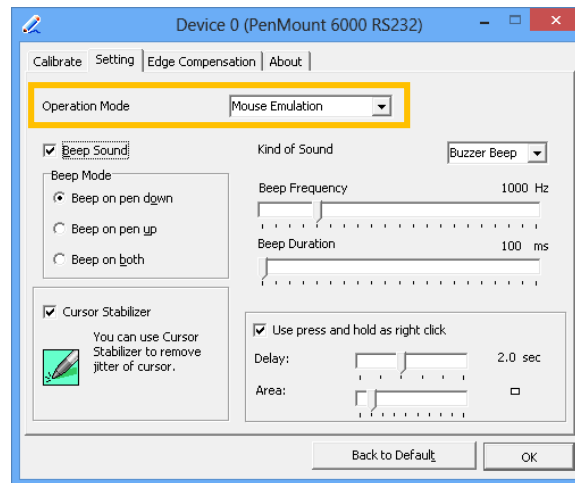
Operation Mode	Description
Pen Input Emulation	Select this mode and mouse will emulate Windows Vista pen input device operation, by which no mouse event will be sent until the touch is dragged out of range or released from the screen.
Mouse Emulation	Select this mode and mouse functions as normal and allows dragging of icons.
Click on Touch	Select this mode and mouse only provides a click function, and dragging is disabled.

Click on Release	Select this mode and mouse only provides a click function when the touch is released.

3.5. Beep Sound

All of PenMount device drivers support the beep sound function; however, some PC systems may only offer a fixed buzzer sound, and only mouse mode devices support buzzer adjustment.
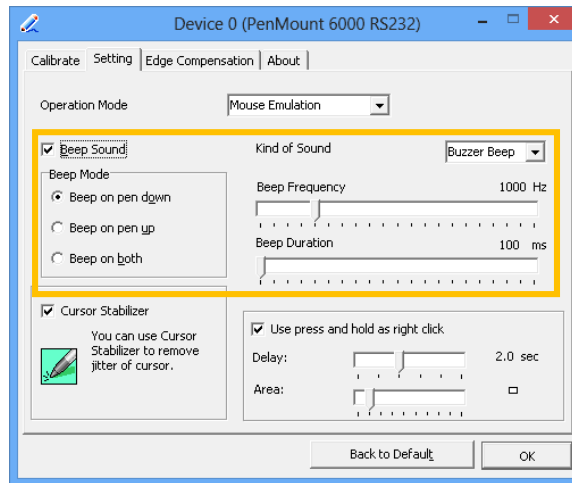
Beep Settings	Description
Enable Beep Sound	Turns beep function on and off
Beep Mode	Change the beep timing on pen down, pen up, or both.
Kind of Sound	Choose beep from Buzzer or Audio. Choose Audio beep requires PC Speaker.
Beep Frequency	Choose the desired beep frequency.
Beep Duration	Choose the desired beep duration.

3.6. Right Button

In Windows, users frequently use right mouse button for showing the popup menu. For this reason, the PenMount device driver supports sending right mouse button event with touch.

3.6.1.   Mouse Mode

For mouse devices, the PenMount supports two ways for simulating right mouse button.

1. Press and Hold as Right Click

The press and hold delay and allowed area is adjustable in the "Settings" tab of the PenMount Control Panel.
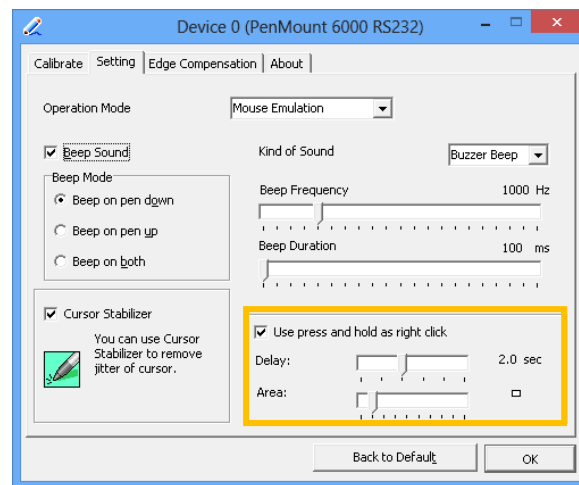
2. Use Right Button Utility

The right button utility can be launched in PenMount Monitor, PenMount Control Panel, or by the shortcuts in the start menu.
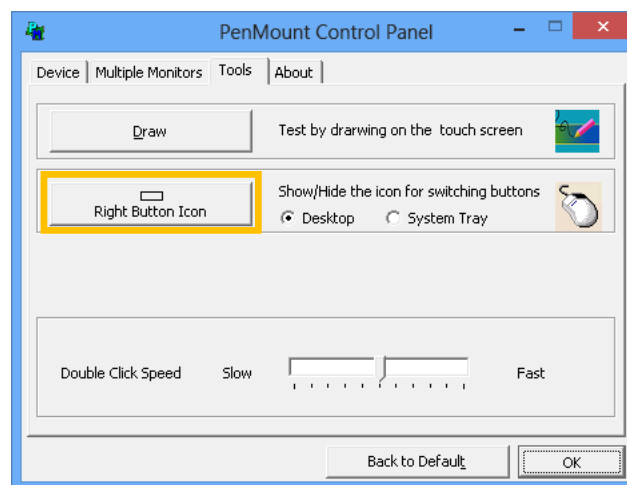
A mouse icon as below will show up on the Windows desktop or in the system tray. Touching on the icon will trigger the right click mode in device driver, and next touch will become a right mouse click.
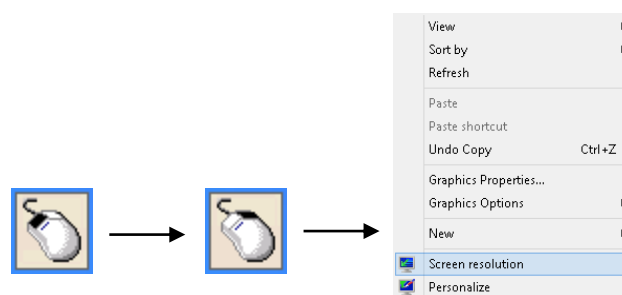
3.6.2.　　Digitizer Mode

For digitizer devices, the system already supports the press and hold gesture for simulating right button. The settings can be changed in "Pen and Touch" of the Control Panel.

1. Please touch the "Press and hold" in the Touch action list, and then click the "Settings …" button.
2. The "press and hold" gesture can be disabled in this dialog box. The activation and durations can also be changed.
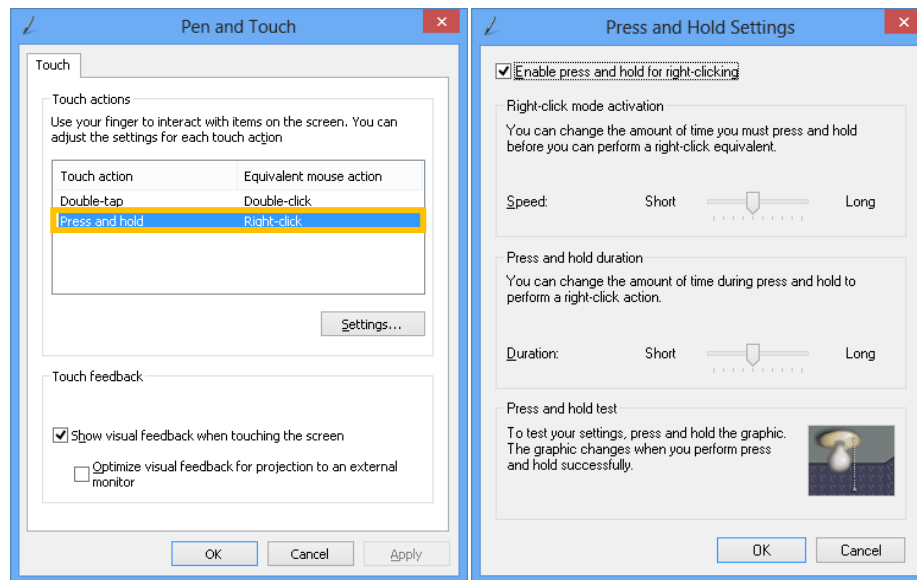
3.7. Edge Compensation

The edge compensation settings can be found in the "Edge Compensation" Tab in the PenMount Control Panel.

You can adjust the settings from 0 to 30 for accommodating the difference of each touch panel.
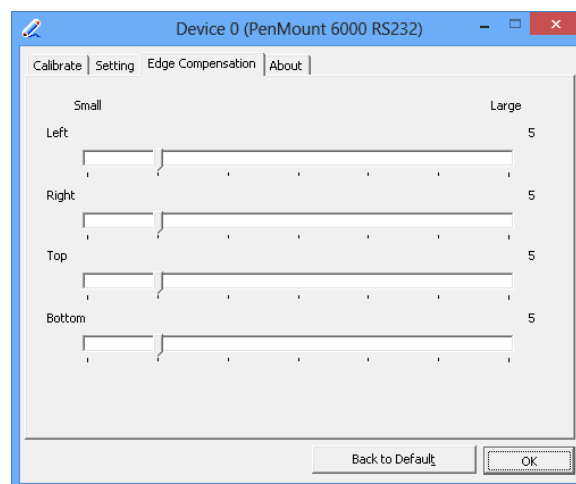
The larger the value, the easier that the touch point reaches the edge of screen.
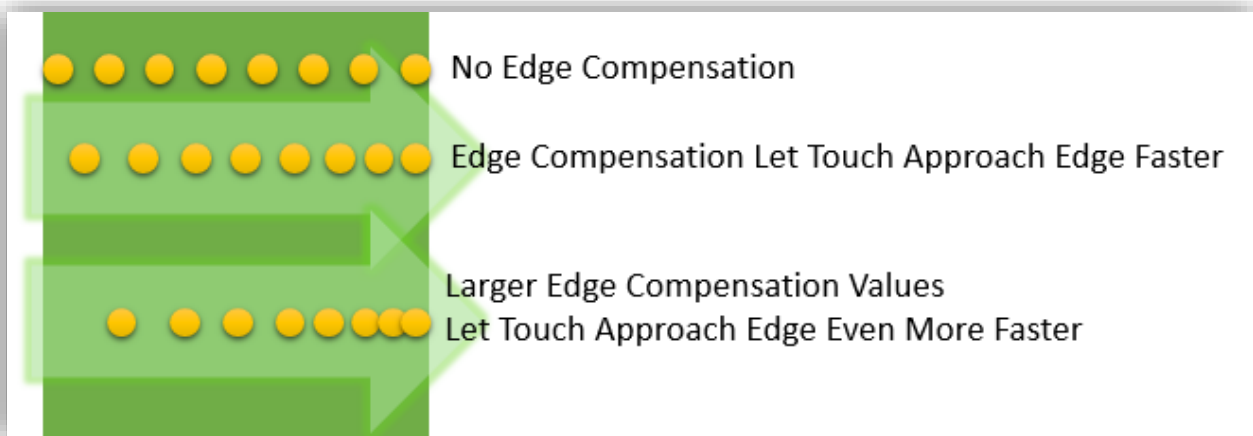
3.8. The Device Information

The "About" Tab in the device configuration table shows information about the PenMount device, such as baud rate used, firmware version, and firmware configuration data.
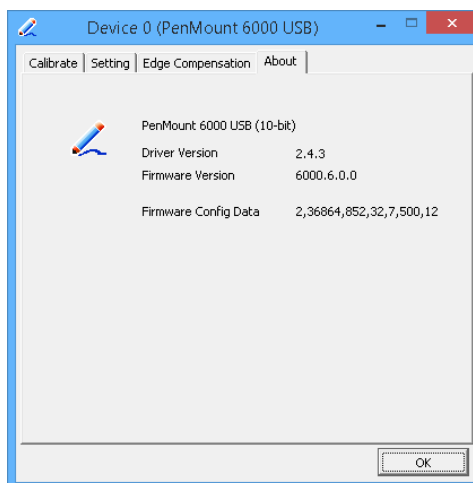
If there is touch issues with PenMount controllers, please print out this page and send provide the screenshot to us.

3.9. Draw Utility

This utility is for testing or demonstration of touch operations. The display shows touch location. Click on the Draw button to start.
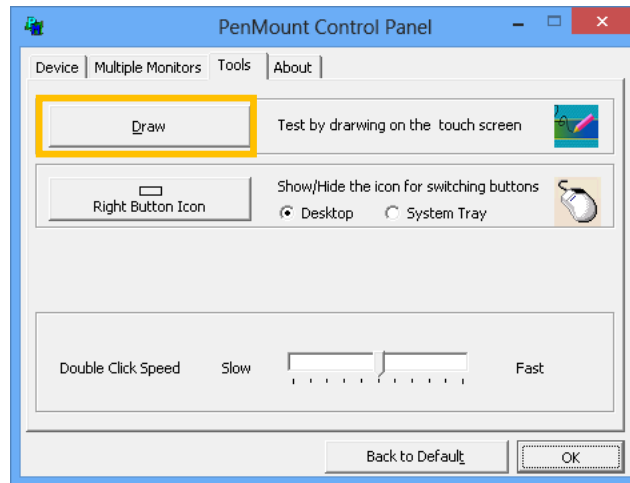
Touch the screen with your finger or a stylus and the drawing screen registers touch activity such left down, left up, right down and right up.

The draw utility also provide several options to help testing. Please click on the "Menu" button on the top left corner, and choose one of the options in the pop up menu.
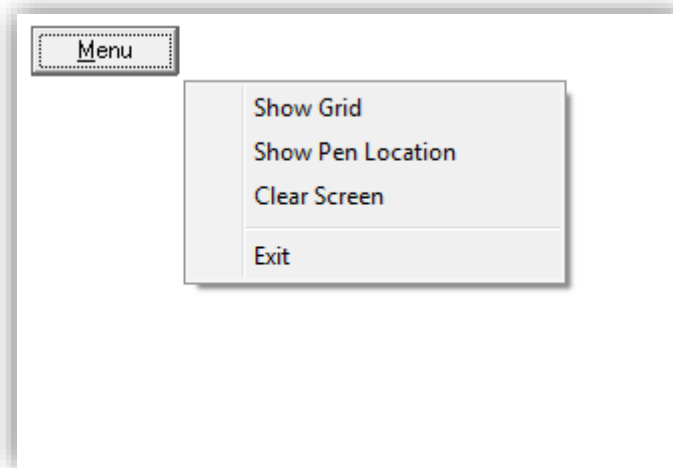
- Show Grid

  The "Show Grid" option displays grid on screen for help testing.
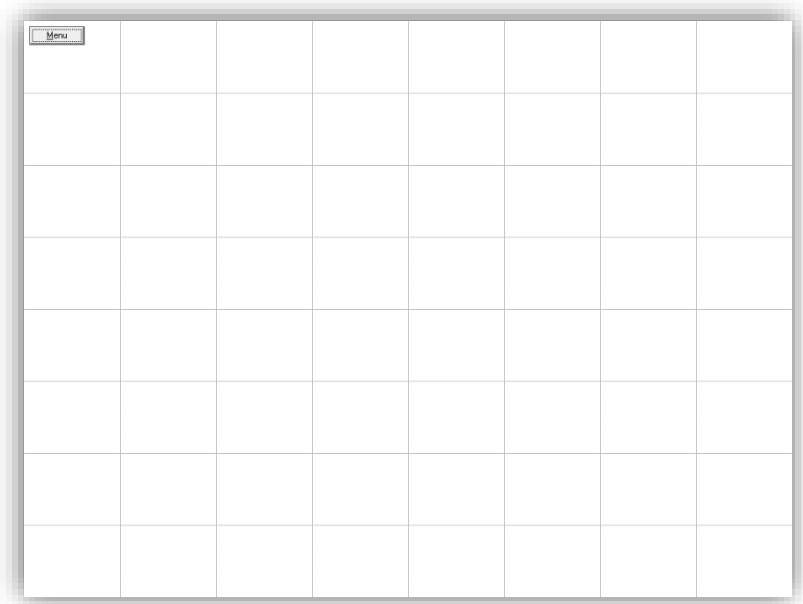
- Show Pen Location

  The "Show Pen Location" option displays the mouse cursor position for mouse down, mouse move and mouse up.

- Clear Screen

  The "Clear Screen" option clears the display with white background color.

- Exit

  The "Exit" option allows user to exit the program.

3.10. Contact Information

The "About" tab in PenMount Control Panel shows the version of the utility and the PenMount contact information.
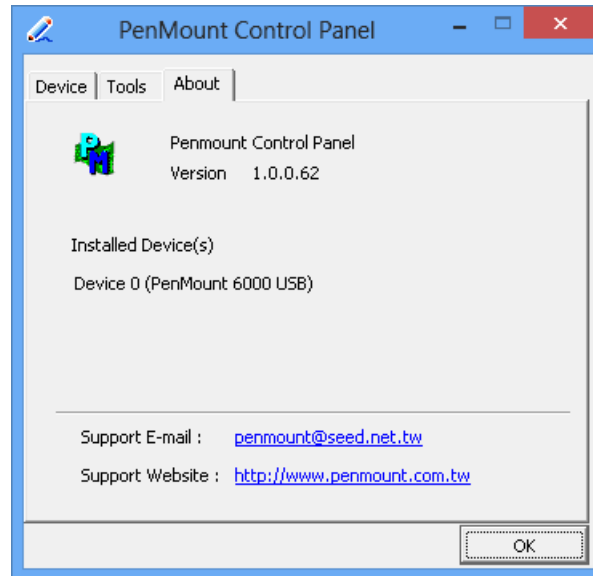
Updated device drivers are available for downloading on the PenMount website at the following website:

> http://www.penmount.com

3.11. Gesture Utility

The PenMount Gesture utility is a standalone tool for recognizing touch gestures and perform predefined actions.

This utility is not installed by default. To enable it, please open setup.ini and set "Gesture=1" before installing the device driver. After installation, the PenMount Gesture utility will automatically start after system start up, and an icon will be shown in the notification area of taskbar.

Icon	State
	Gesture Disabled
	Gesture Enabled

3.11.1.   Enable PenMount Gesture

The PenMount Gesture is disabled by default. To enable it, please click on the icon, and choose "Gesture Setting" from the pop up menu.
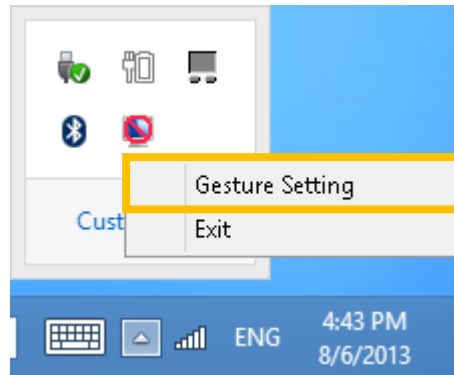
All the options are disabled at first, please click on the "Enable" checkbox to enable PenMount gesture.
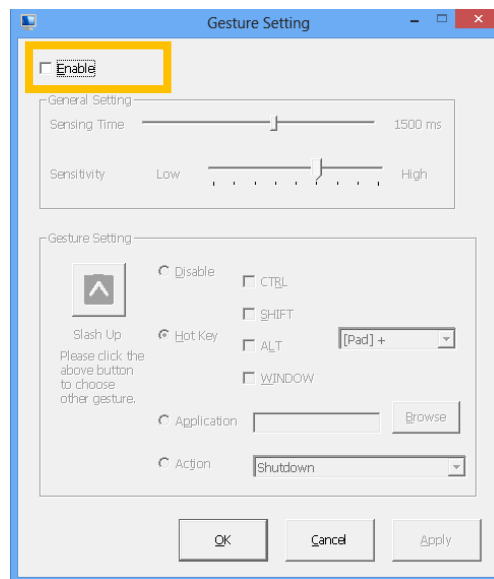
3.11.2.   PenMount Gesture Types

The table below listed the supported gesture types and corresponding actions. When installing device as mouse, PenMount supports 16 types of gestures, when installing as digitizer, however, PenMount only supports a subset of them, and let the system flicks gesture handle them.

Gesture	Default Action	Mouse Mode	Digitizer Mode
↑	Page Up	○	
↓	Page Down	○	
←	Backward (Left Arrow)	○	

→	Forward (Right Arrow)	○	
↗	Copy (Ctrl + C)	○	
↘	Paste (Ctrl + V)	○	
↙	Undo (Ctrl + Z)	○	
↖	Delete	○	
∧	Zoom in ([Pad] +)	○	○
∨	Zoom out ([Pad] -)	○	○
<	Rotate Counter Clockwise (Ctrl + L)	○	○
>	Rotate Clockwise (Ctrl + K)	○	○
△	Open On-Screen Keyboard (Execute OSK.EXE)	○	○
O	Save Document (Ctrl + S)	○	○
⋈	Close Program (Alt + F4)	○	○

3.11.3.   Configuring PenMount Gesture

The PenMount Gesture Settings Dialog box allow users to change the sensitivity on gesture recognition and the action types of a gesture.

3.11.3.1. General Settings

Uses can set up the sensing time and sensitivity from the general settings section.
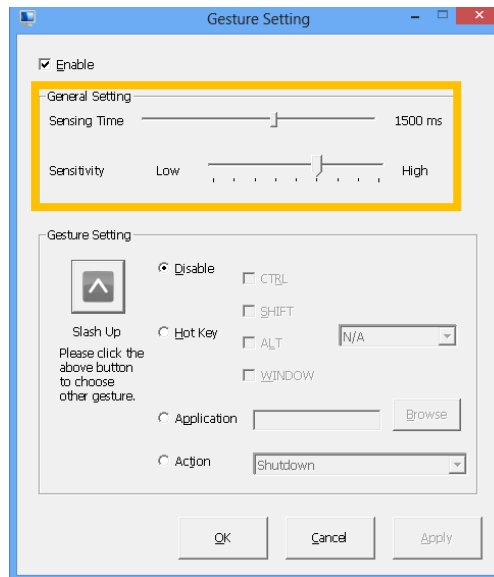
- Sensing Time

  The PenMount gesture starts recognizing a gesture when pen down occurs, and stops after a period of time or pen up. This period of time is adjustable from 500 ms to 2500 ms. The longer the sensing time, the easier a gesture will be recognized, but also increase the chance for misrecognition.

- Sensitivity
  The gestures supported are directional. When sensitivity is set to low, PenMount uses stricter rules for recognizing gestures. Increasing the sensitivity make it easier to generate a gesture action, but also increase the chance for misrecognition.

3.11.3.2. Individual Gesture Settings

The gesture settings section provide change on actions for each gesture. To choose a target action, please click on the gesture icon, and choose one from the dialog box:

Gesture icons in blue color indicates that the gesture is currently enabled, and grey color indicates that the gesture is disabled.
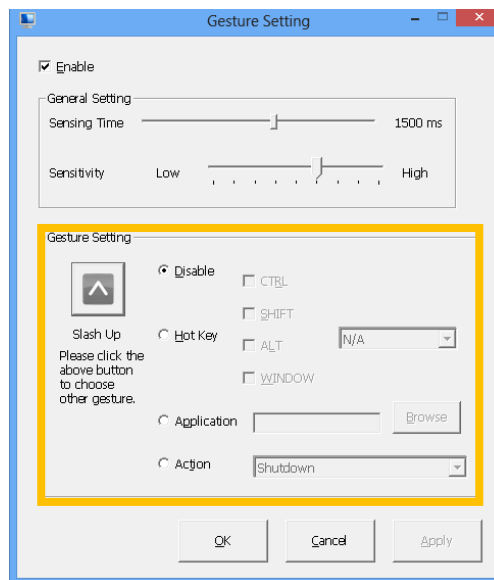
There are four types of gesture actions available.

- Disable
  Disable the gesture.
- Hot Key
  Send a combination of key events when gesture is recognized.
- Application
  Launch a program when gesture is recognized.
- Action
  Run a predefined action when gesture is recognized. The supported actions are listed below.

Action Types	Description
Shutdown	Shutdown the system
Send Right Mouse Click	Sends a right mouse click to the foreground application
Send Middle Mouse Click	Sends a middle mouse click to the foreground application

Mouse Scroll Forward	Sends a mouse wheel scroll forward event to the foreground application
Mouse Scroll Backward	Sends a mouse wheel scroll backward event to the foreground application
Disable Touch Function	Disable mouse events from touch
Enable Touch Function	Enable mouse events from touch

3.11.4.   Using System Gestures

The Flicks gestures are unidirectional gesture happened in a very short time. They are supported in Windows Vista and Windows 7 for touch devices. In Windows 8, however, only pen devices supports flicks gestures.

Their sensitivity and actions are adjustable in the control panel. Setting the sensitivity to "Relaxed" makes it easier for a flicks gesture to be recognized.