

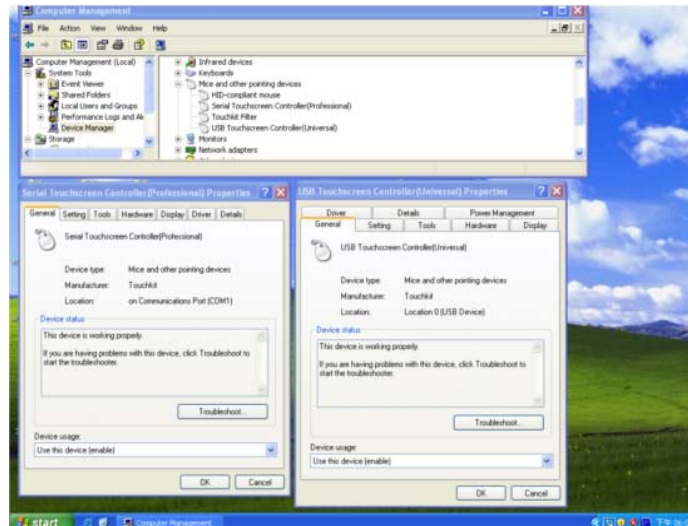
Touchkit Manual(for Windows2000/XP)

HYUNDAI IT Co.,LTD

Homepage: <http://www.hyundaiit.com>

1. Touchkit Devices in Windows Device Manager

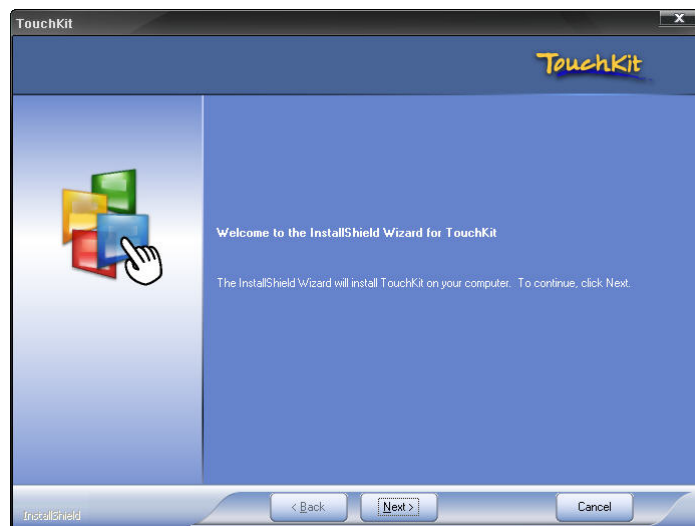
After driver installation completed, all of Touchkit touchscreen controller devices will be list in the “Mice and other pointing devices” folder in Windows Device Manager. Click on the specified Touchkit touchscreen controller device and select the properties on the pop up context menu, the device property pages will show as below



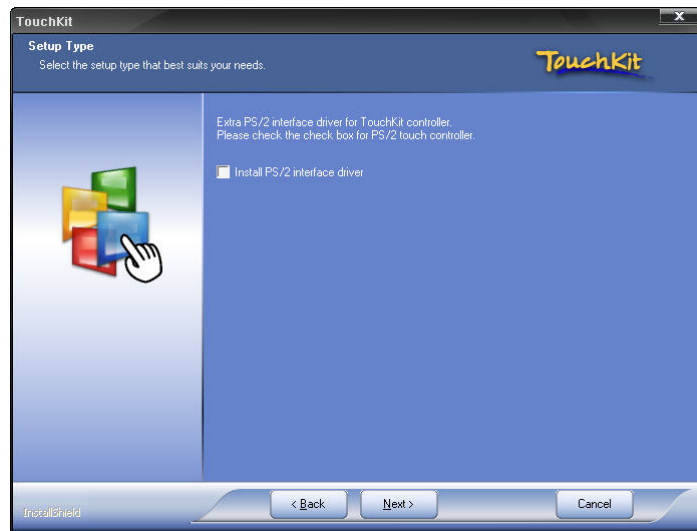
In addition to some system provided property pages for mice function setting, there are some other property pages in this property sheet for touchkit touchscreen controller specific configuration setting. If user got the driver files(.inf, .sys) from Microsoft via Internet, user can do configuration and calibration for the devices with this property pages. If user got the complete software driver installation package to install the software, Touchkit also provides another software utilities for advanced setting for some advanced application.

2. Touchkit Software Installation Guide for Windows 2000/XP

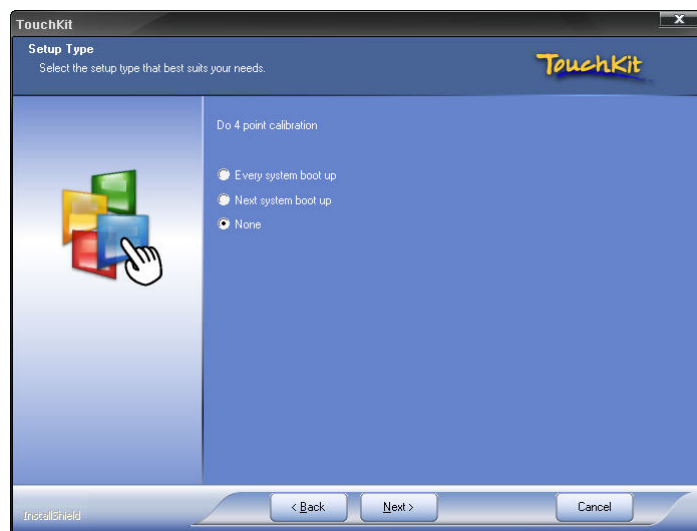
Double click at the setup.exe file to start software driver installation. Then, the setup program will guide user to complete software installation.



Press Next button to continue installation, then, a new dialog popped up as below,



This dialog shows to ask user if the PS2 filter driver for touch screen to be installed. User can check this check for PS2 filter driver installation. The standard PS2 mice can still work well after this filter driver installed because Touchkit PS2 filter driver can work with both standard PS2 mice and PS2 touchscreen. But, this filter driver may does not work with other devices with the PS2 mouse port. After check or uncheck this check box, press Next button to continue installation. Then, it shows new dialog as below,

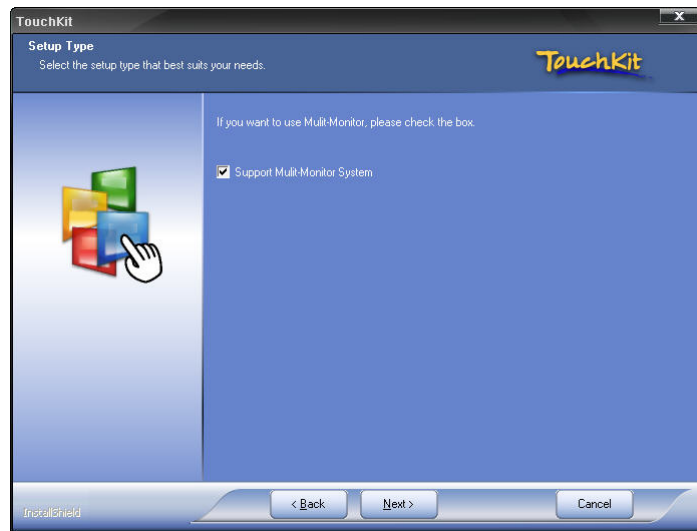


Also, Touchkit software provides user with a fast 4 points calibration. If the system needs 4 points calibration to make sure the touch accuracy every system reboot, user can check this check box. The 4 points calibration window will be popped up for calibration whenever system boot up if this check box was checked during driver software installation.

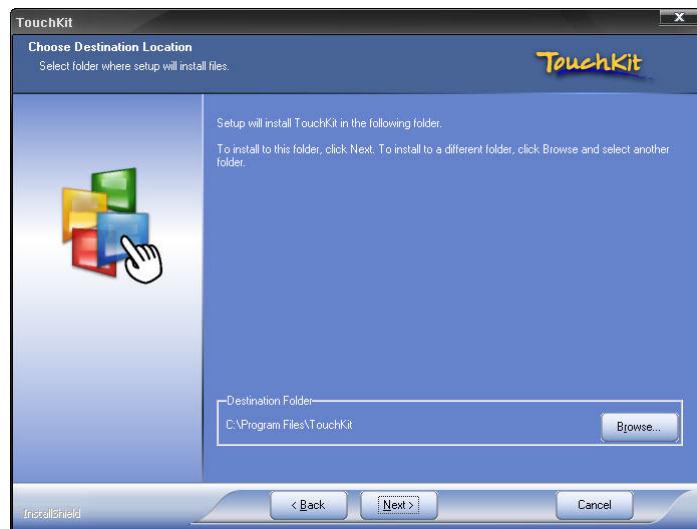
Press Next button to continue installation. The setup program prompts a message box to hint



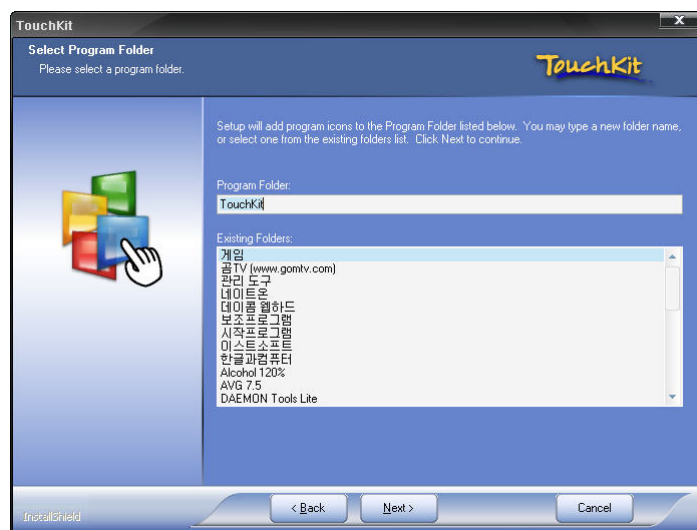
user to make sure that the Touchkit USB controller devices were well connected with system USB ports to guarantee the USB touchkit device drivers updated after driver installation. Then, just press OK to continue,



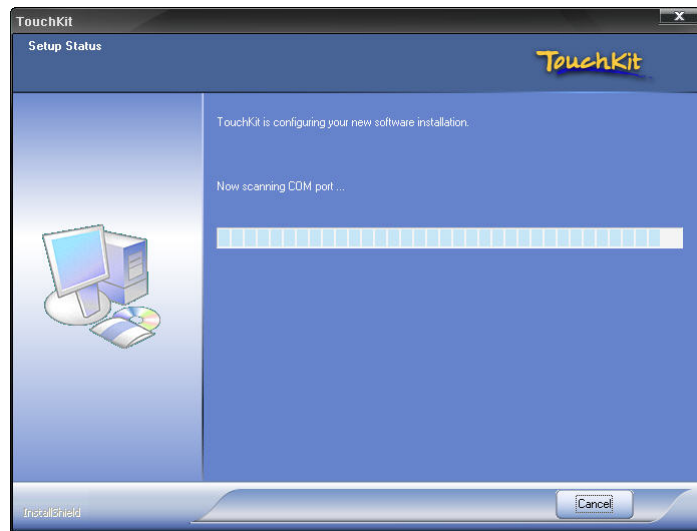
TouchKit supports multi monitors. And the TouchKit is used as the primary monitor and can be variedly used thru the mapping function.



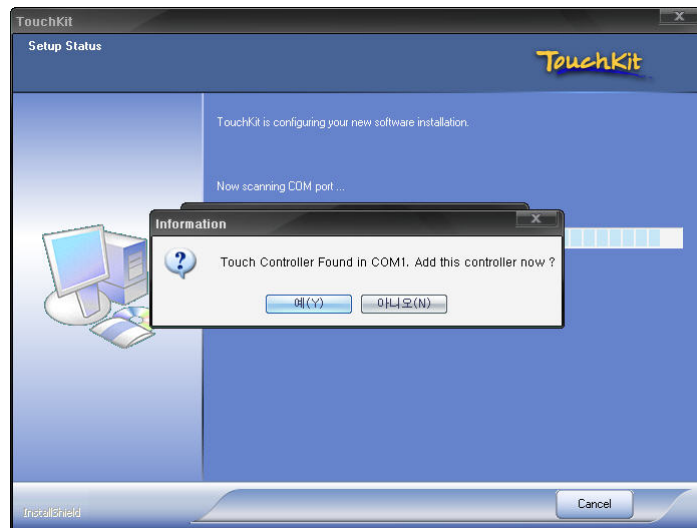
A pop up window for user to choose the target path the files will be copied to. Then, Press Next to continue,



A dialog popped up for user to assign the target program folder. Press Next

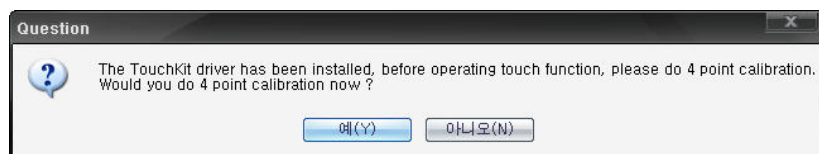


The setup program will scan system COM ports to detect if any Touchkit serial device was connected. If yes, it also pops up a message box for user to make sure if setup program install driver for this new found device.



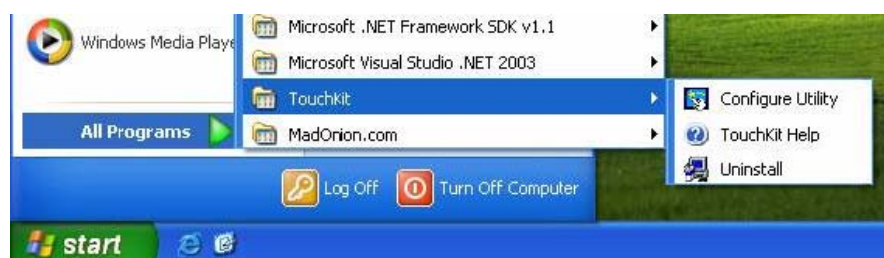
Just Press Yes or No to confirm driver installation for this new found device. After installation, Touchkit utility is executed and then the dialogue window and 4-point calibration window pop up.

Finally, if PS2 filter driver was installed during this software installation, a reboot dialog is popped up for system reboot request to complete driver installation.



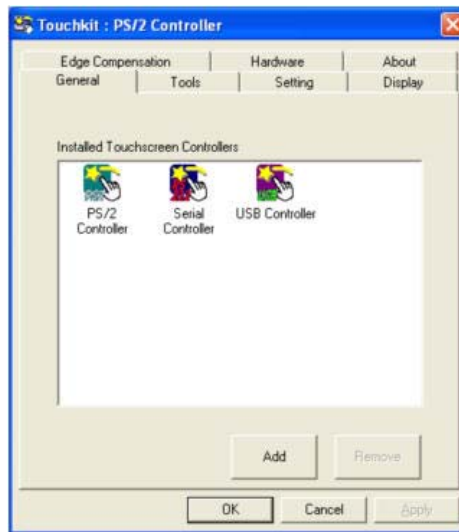
Note : To keep touch accuracy, you must do calibration.

After driver installation, a shortcut will be generated and shown on the desktop. And, a new file group generated for Touchkit as below,

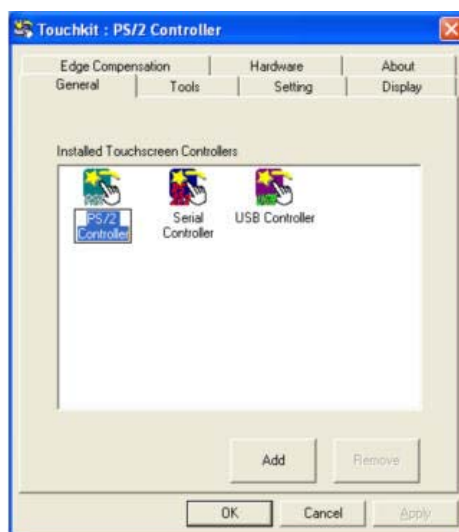


3. Touchkit Utility

3-1. General Property Page The general property page in Touchkit utility shows all of touchkit touchscreen controllers installed as below, including RS232, USB and PS2 interfaces.



User can select the controller list in the window to do configuration for it. When user use a mouse or other input device to select the controller device in the controller list window, The controller name will be shown in the title bar of the main window(the property sheet). Also, all of the other property pages will be updated for this selected controller. In some application, user may in place edit and change the controller name for easy identification.



In addition, there are 2 function push buttons in this property page.

3-1-1. Add

The function button is used for serial RS232 controllers only. Press this button to search the Touchkit serial controllers connected with the system COM ports. Whenever it finds a new Touchkit serial controller, a new serial controller icon object will be shown in the controller list window automatically.

USB touchkit device supports plug and play, the icon object for USB controller will be shown in the controller list window automatically when the USB controller is connected with the system USB port. And, the icon object for the USB controller will disappear automatically as soon as the device was removed from the system USB port.

Touchkit PS2 driver support PS2 mice and Touchkit touchscreen controller. It can works with both PS2

mice and touchkit touchscreen PS2 controller. After the Touchkit PS2 driver was installed, this utility assumes the PS2 touchscreen controller exists and is always shown in the controller list window.

3-1-2. Remove

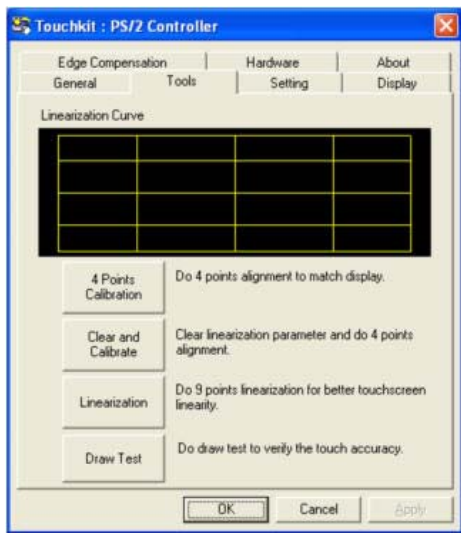
This function button is used for serial RS232 controllers only. This button will be greyed and disabled automatically when the selected controller in the controller list window is not RS232 type. Press to remove and uninstall the selected serial RS232 controller from the system. Then, this serial RS232 icon object in controller list window disappears automatically.

USB touchkit device supports plug and play, the icon object for USB controller will be shown in the controller list window automatically when the USB controller is connected with the system USB port. And, the icon object for the USB controller will disappear automatically as soon as the device was removed from the system USB port.

Touchkit utility does not allow user to remove/uninstall the PS2 device driver dynamically. To uninstall the Touchkit PS2 driver, user needs to go to Windows Device Manager to do un-installation. In addition, after PS2 un-installation, it needs to system reboot to complete un-installation.

3-2. Tool Property Page

Calibration, draw test tools and the linearity curve of the touchscreen were list in this property page shown as below for user to do touchscreen calibration and touch position test.



User can do calibration or draw test by pressing the function push buttons.

3-2-1. Linearization Curve

Linearization curve of the touchscreen is list in this page for reference and trouble shooting purpose.

3-2-2. 4 points calibration

It needs calibration before the touchscreen can work accurately. Whenever the user feel the accuracy lost, user can do calibration again to get a more accuracy touch function.

Pressing this button, a new window will be popped-up at the location when the touchscreen was mapped to area for this touch system to guide the user do 4 points calibration.

User should follows the guide to touch and hold the blinking X symbol in the calibration window until it does

not blink to make sure that the utility can gather enough data for computation. In addition, a time line bar is shown in the bottom of the window to indicate time elapsed. If the touchscreen was not touched before the time line bar going to right end, the calibration task will be terminated automatically.



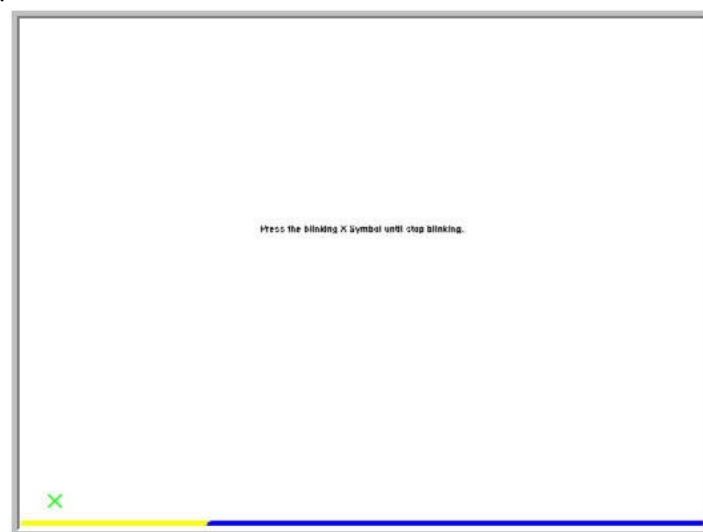
3-2-3. Clear and Calibration

Press this button to erase the 25 points calibration/linearization parameters and force user to do 4 points calibration again. After 25 points calibration data was clear, the 4 points calibration data will be invalid. It needs to do 4 points calibration.

3-2-4. Linearization

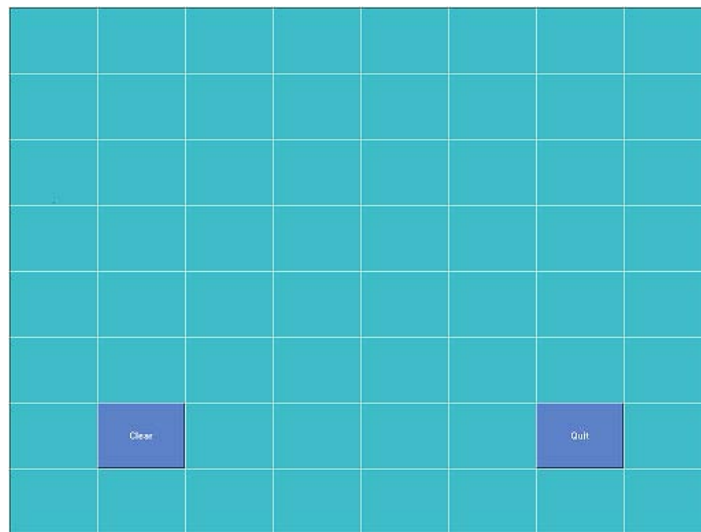
Linearization (25 or 9 points calibration) function is used to compensate the touchscreen linearity. After linearization completed, the linearity of the touchscreen will be shown in the Linearity curve window.

Pressing this button, a new window will be popped-up at the location when the touchscreen was mapped to area for this touch system to guide the user do 25 points calibration. User should follows the guide to touch and hold the blinking X symbol in the calibration window until it does not blink to make sure that the utility can gather enough data for computation. In addition, a time line bar is shown in the bottom of the window to indicate time elapsed. If the touchscreen was not touched before the time line bar going to right end, the calibration task will be terminated automatically.



3-2-5. Draw Test

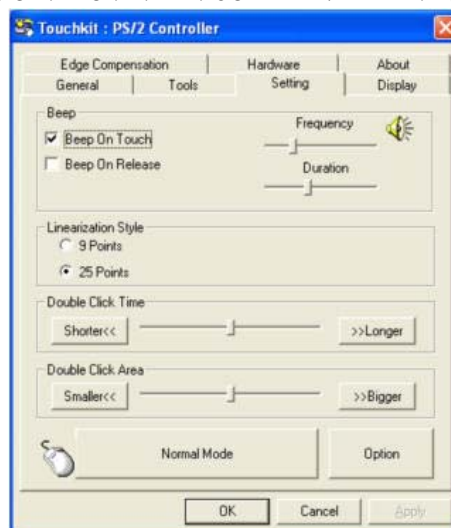
This function is used for accuracy and performance check. Press this button and a new pop up window will be popped up in the location where the touchscreen was mapped to the touch system as below,



User can press the Clear button to clear the window. Press Quit button to terminate this draw test.

3-3. Touchkit Setting Property Page

The Setting property page can be shown both in Windows Device Manager and Touchkit Utility as below,



There are function buttons and check boxes described as below

3-3-1. Beep

3-3-1-1. Beep On Touch

Check this check box to enable driver to generate a beep sound when touch touchscreen state is switched from untouched to touched state.

3-3-1-2. Beep On Release

Check this check box to enable driver to generate a beep sound when touchscreen state is switched from touched state to untouch state.

3-3-1-3. Frequency

Adjust this frequency to control the beep sound frequency generated by the driver.

3-3-1-4. Duration

Adjust this duration to control the beep sound duration.

3-3-2. Linearization Style

Touchkit utility provides user with both 9 points and 25 points calibration for linearization. User can select the suitable kind of linearization type.

3-3-3. Double Click Time

The double Click Time group is used to set system double click time. Change this value will affects the double click behavior for all of the mice devices in the system. Two continuous clicks at the same area within this specified time period will be recognized as a double click event.

3-3-4. Double Click Area

The double click area group is used to set the system double click area. Change this value will affects the double click behavior for all of the mice devices in the system. Two continuous click with this specified area in the specified double click time will be recognized as a double click event.

3-3-5. Mouse Emulation mode

There are 5 mouse emulation modes for Touchkit touchscreen controllers. Press on the button to change the emulation mode,

3-3-5-1. Normal Mode Normal mode behaves mouse button down and mouse move. User can select this mode to select object, and dragging the object.

3-3-5-2. Click On Touch With this Click On Touch mode, the driver emulates a mouse click event when the touchscreen state was switched from un-touched state to touched state. Then, the driver always generate mouse move event and is tracking the touch position until the touchscreen state switched to un-touch state.

3-3-5-3. Click On Release With this Click On Release mode, the driver emulates a mouse click event when the touchscreen state was switched from touched state to un-touched state.

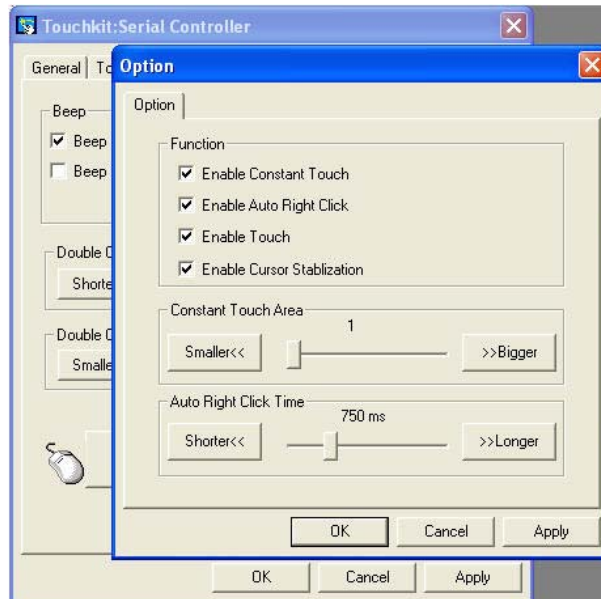
3-3-5-4. Click On Touch without moving cursor With this mode, the driver behaves similar as Click On Touch mode. The cursor does not move to the touch position except the first touch point.

3-3-5-4. Click On Release without moving cursor With this mode, the driver behaves similar as Click On Release mode. The cursor does not move to the touch position except the lift-off point.

3-3-6 Option

User can set configuration for some advanced functions with this option button. Press this button, a pop up

property sheet window will be popped up and shown as below.



The advanced functions are

3-3-6-1) Enable Constant Touch(Hold)

Constant Touch is the function to check if the most recent touched position is same as the previous touched point. If the points difference is smaller than the defined area, the driver does not generate any mouse event to reduce system loading. Check this check box to enable this function (Hold) and un-check it to disable this function.

3-3-6-2) Enable Auto Right Click If the touchscreen was kept touched for a specified time, the driver will generate a mouse right button click event if this function was enabled. Check the check box to enable this function and uncheck it to disable this function.

3-3-6-3) Enable Touch The driver read the data input from controller to generate mouse event. However, it can be enabled or disabled to generate the mouse event. Check this check box to make driver to generate the mouse event when it receives the touch point input from Touchkit touchscreen control and un-check it to stop driver generating the mouse event.

3-3-6-4) Enable cursor stabilization

A software filter was implemented inside the driver to filter some noise to stabilize and smooth the touch points. Then, the user can see a more stable cursor. Check this check box to enable this software filter and un-check it to disable this function.

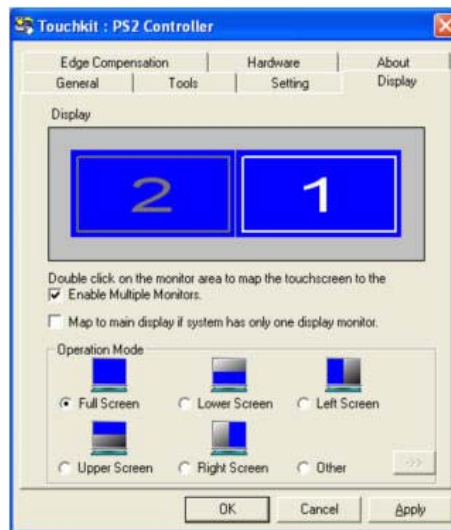
3-3-6-5) Constant Touch Area (Hold area) Adjust the parameter for Constant Touch(Hold) function. This is a criterion to judge if the most recent touched point is same as the previous touched point. If the points difference is within this area, it will be recognized as the same touch point and the driver does not generate new mouse event for this new touch point.

3-3-6-6) Auto Right Click Time Adjust the Right click time for auto right click function. If the touchscreen was touched and hold for this period of time, the driver generates a mouse right click event.

3-4. Monitor Property Page(Display)

Touchkit driver utility supports multiple monitor and display system. To work with multiple monitor system, user

needs to do proper configuration to map the touchscreen working area to the correct system display area. User can do such configuration with this property page shown as below,



The system monitor display geometry was shown in the Monitors window in this page to show the locations of all of the monitors of the system.

Note: xtouchmon.exe is another utility for Touchkit touchscreen system. This tray icon utility can monitor the system monitor display configuration change and correct the touchscreen monitor mapping relationship automatically as soon as the system monitor display configuration changed. We strongly suggest the user to make sure xtouchmon.exe was launched for multiple monitor system.

User can follow below instructions to do the configuration

3-4-1. Enable multiple monitor

Check this check box to enable multiple monitor support and uncheck it to disable multiple monitor support. When this function is disabled, the touchscreen will be mapped to the primary monitor automatically.

When this function is enabled, user can double click on the monitor area in the monitor geometry window to assign the monitor area where the touchscreen will be mapped. In other word, the touchscreen will work with the selected monitor. Then, the selected monitor area rectangle line will be changed to be white and the other monitor rectangles line will be grey.

3-4-2. Map to main monitor when the system has only one monitor

When the multiple monitor function was enabled, and the system has only one monitor, Driver allows user to generate the mouse event for the primary monitor or not when the touchscreens which were not mapped to primary monitor. Check the check box to enable this function, then, the driver will generate the mouse event for the primary monitor even through the touchscreen was configured as other monitor mapping and multiple monitor function enabled.

3-4-3. Operation Mode

Touchkit driver support split display mode for those applications which do not map the touchscreen to the full screen of the monitor.

3-4-3-1. Full screen

The touchscreen will be mapped to the full screen of the specified monitor.

3-4-3-2. Right screen

The touchscreen will be mapped to the right half screen of the specified monitor.

3-4-3-3. Left screen

The touchscreen will be mapped to the left half screen of the specified monitor.

3-4-3-4. Upper screen

The touchscreen will be mapped to the upper half screen of the specified monitor.

3-4-3-5. Lower screen

The touchscreen will be mapped to the lower half screen of the specified monitor.

3-4-3-6. Other operation mode

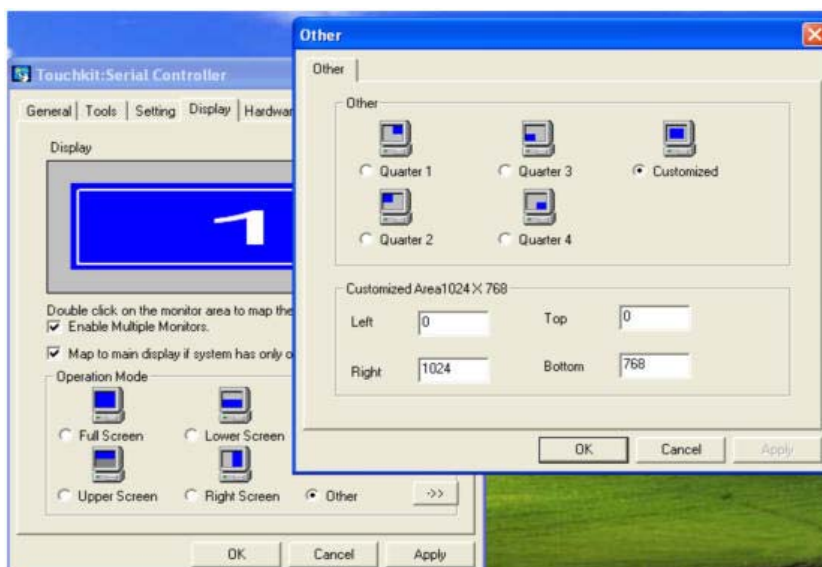
3-4-3-6-1) Quarter 1 The touchscreen will be mapped to the first quarter area of the specified monitor display.

3-4-3-6-2) Quarter 2 The touchscreen will be mapped to the 2nd quarter area of the specified monitor display.

3-4-3-6-3) Quarter 3 The touchscreen will be mapped to the 3rd quarter area of the specified monitor display.

3-4-3-6-4) Quarter 4 The touchscreen will be mapped to the 4th quarter area of the specified monitor display.

3-4-3-6-5) Customized If the touchscreen needs to be mapped the area other than the above area, user can define the mapping area for application. With this mode, the driver does not correct the mapping area when the display resolution changed. It needs to do configuration setting again whenever the display resolution changed.



4. xTouchmon utility

Touchkit software package contains an utility to monitor some events related to touchscreen application. After Touchkit software package installed, a tray icon utility was shown in the system task bar as below. Whenever the mouse cursor moves on the tray icon, a tool tip shows as



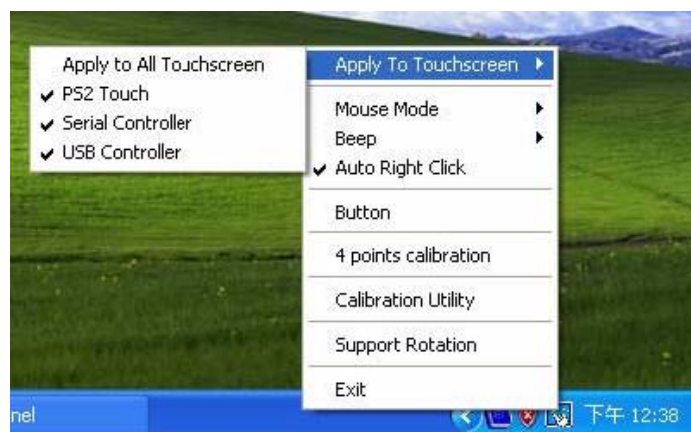
This is a fast tool for user to change some driver setting without launching the Touchkit configuration utility. When user right click on this tray icon, a pop up context menu shows as below,



This pop up menu shows the all of the functions this utility supports.

4-1. Apply To Touchscreen

When user selects this function, the sub-menu shows all of the Touchkit devices installed in the system. User can choose the next function configuration settings will be applied to which devices. xTouchmon allows the configuration settings applied to all of the Touchkit devices or some specified devices.



4-2. Mouse Mode

This Mouse mode has sub-menu as below to show all of the mouse emulation modes the driver supports.



This mouse emulation mode changed will be applied to the specified devices.

4-3. Beep

User can change the Beep Mode with this function menu. And, the change will be applied to the specified devices immediately.

4-4. Auto Right Click

User can enable/disable auto right click function with this function menu. The change will be applied immediately to those specified devices.

4-5. Button This button is designed to show/hide the right button window.

4-6. 4 Points calibration

Select this function to pop up the 4 points calibration window for user to do calibration for those specified devices.

4-7. Touchkit Utility Touchkit configuration utility will be launched if user selects this function.

4-8. Support Rotation

Monitor display rotation support. Enable it, this utility will correct the touchscreen orientation to match with monitor display orientation whenever it detects monitor rotation. This correction will be done automatically if the system video adapter driver supports Microsoft Win32 APIs for monitor rotation. If the video adapter driver does not support Microsoft Win32 API for monitor rotation, the utility will pop up a one point calibration window to correct the orientation mapping.

4-9. Exit

Exit function to terminate the xTouchmon daemon process. After this daemon process terminated, all of functions the utility supports will be disabled.

In addition to above functions, xTouchmon also monitors monitor display setting change. It will correct the coordination mapping automatically except the touchscreen work with customized area mode whenever it detect monitor resolution change, numbers of system monitors change.