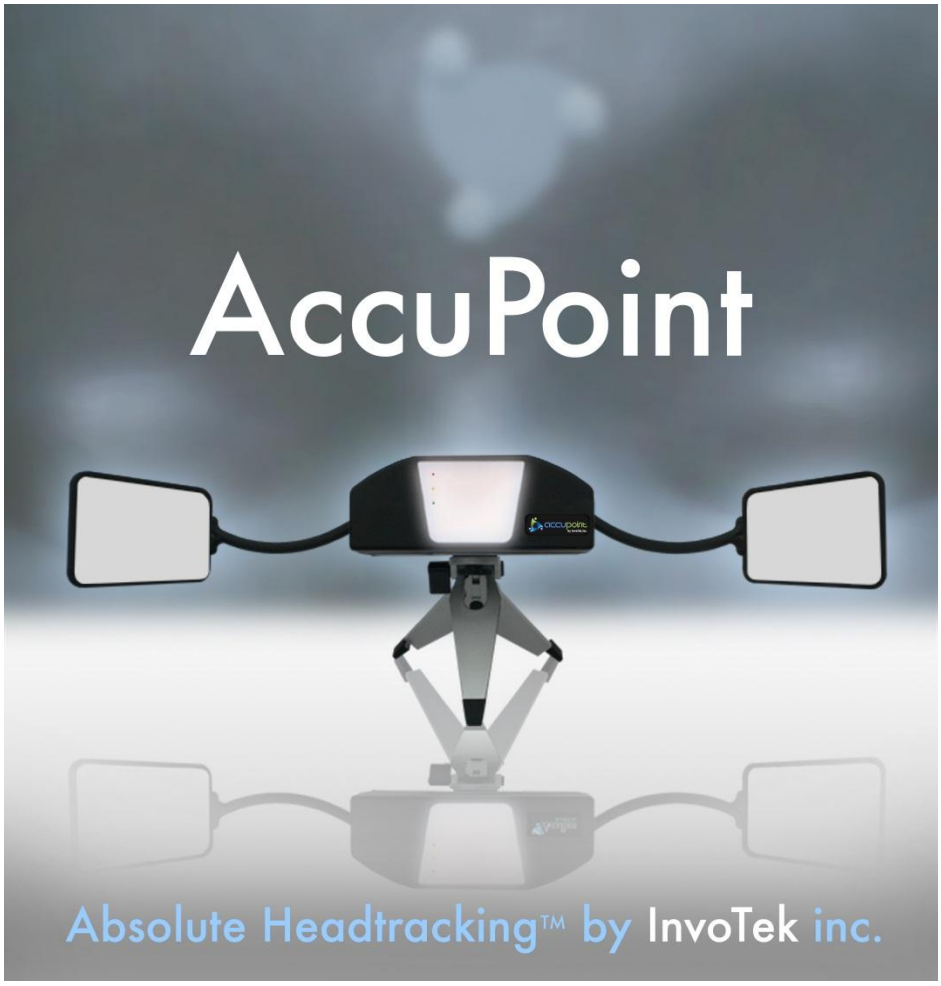
AccuClick User's Manual



1026 Riverview Drive
Alma, AR 72921
(479) 632-4166
info@invotek.org

version 2.7.7

AccuClick User's Manual

October 16, 2012

Starting AccuClick

Before you begin,
Ensure that the AccuPoint hardware is plugged into a USB port on your PC.
Attach the provided reflective dot cluster to your forehead or glasses.
Position the AccuPoint hardware so that you can see your dot cluster in the center mirror. For best results, you should be about 30 inches from the AccuPoint hardware.

Start the AccuClick software by double-clicking on the AccuClick icon on the Desktop.

When the program loads, you will see an onscreen keyboard at the top of your computer screen similar to this one:

Within a second or two, AccuClick will check the InvoTek website for program updates. If a new version is available online, you will be notified immediately after the Calibration process is completed.

The onscreen keyboard is not active yet. The AccuClick system must be aligned or "calibrated" to the dot cluster on your head first.

Calibration

If you have previously configured AccuClick to AutoStart Tracking, it will display the Calibration Form, as shown below. If you have not previously configured AccuClick to AutoStart Tracking, you will need to click on the "Run" button when you are ready to calibrate. The AccuClick software will display the Calibration Form, as shown below.

Note that the system is now watching the dot cluster and is moving the mouse cursor in sync with your head movements. To get AccuClick to complete the calibration process, hold your head as still as possible in a comfortable position while looking at the center of the target. Don't try to put the mouse cursor in the target – AccuClick will do that for you. When the AccuClick software sees that you are not moving your head, it will snap the mouse cursor to the center of the Calibration Form target. It will repeat this process every time it notes that your head is not moving. When you are comfortable with the calibration settings, move the mouse cursor over the "Point here when done" button or hold head still till the counter has finished. The Calibration Form will go away, and then you can use AccuClick' onscreen keyboard.

After AccuClick has completed its calibration process, as described above, try moving your head from side to side and up and down to see that you can position the mouse cursor to all

four corners of the screen comfortably. If you can’t reach some part of the computer screen with the mouse cursor, click on the “Cal” button to restart the calibration process and let AccuClick adjust the mouse cursor again.

Using the AccuClick System

While using the AccuClick system, three colored lights (LED's) in the center mirror on the AccuPoint hardware will turn on and off to let you know how the system is working:
Green –indicates that the system can see the dot cluster and is working correctly
Yellow –indicates that the system is performing its internal startup functions
Red –indicates that the system is on, but it cannot see the dot cluster and therefore cannot use your head movements to control the mouse cursor.

In addition, you will notice a black rectangle on the far left side of the AccuClick window. This is called the Camera View Window, and it provides feedback to you as to what the AccuClick system sees. When the system is working properly, you will see two sets of three colored dots, each inside a rectangle of the same color. The blue rectangle and dots indicate what the right camera sees, and the red rectangle and dots indicate what the left camera sees. As you move your head, you'll see the rectangles and dots move around within the black window. If you move your head so that some of the dots disappear, then the AccuClick system cannot see all the dots in your dot cluster, and the onscreen mouse cursor will stop moving until you move your head so that the entire dot cluster is again visible to the AccuClick system.

Controlling AccuClick

The left side of the AccuClick window contains a number of displays and controls that are designed to help you use AccuClick and configure it to the way you want to work. The functions performed by each button are described here.

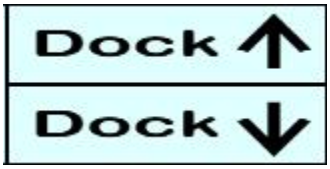
Run – Click on this key to start the head-tracking operation so that you can control the onscreen mouse cursor with your head movements. You must use a standard mouse to click on this button.

Cal – Click on this button to perform a new Calibration. This can be necessary if a different person is using AccuClick or if the dot cluster has been removed and replaced since the last time you used AccuClick.

Prefs – Click on this button to access the Settings form. See AccuClick Settings below for details on the Settings form and its contents.

Exit – Click on this button to stop the head-tracking operation and close the AccuClick window. You will be asked to confirm this choice before it actually closes.

On the right side of the AccuClick window are two smaller controls that can be used to move the AccuClick window to the top or bottom of the computer screen.



Dock Up Arrow – Click on this button to move the AccuClick window to the top of your computer screen.

Dock Down Arrow – Click on this button to move the AccuClick window to the bottom of your computer screen.

Undock – Click on this button to allow AccuKeys to float and be moved by clicking and dragging the form.

Finally, the four buttons in the center of the AccuClick window are the dwell-control group. These control the AccuClick dwell clicker. When the dwell clicker is disabled, all these buttons will be grayed out. Dwell detection can be enabled by holding the mouse cursor over any of these four buttons for the same amount of time that is selected for desktop mouse clicks. The dwell clicker can be disabled by clicking on the selected (outlined) button in this group.

Left – Dwell over this button to tell the dwell clicker to perform a mouse Left Click the next time you hold the onscreen mouse cursor still. Clicking on this button when it is active (yellow background) will disable the dwell clicker.

Double – Click on this button to tell the Dwell Clicker to perform a mouse Left Double Click the next time you hold the onscreen mouse cursor still. Clicking on this button when it is active (yellow background) will disable the dwell clicker.

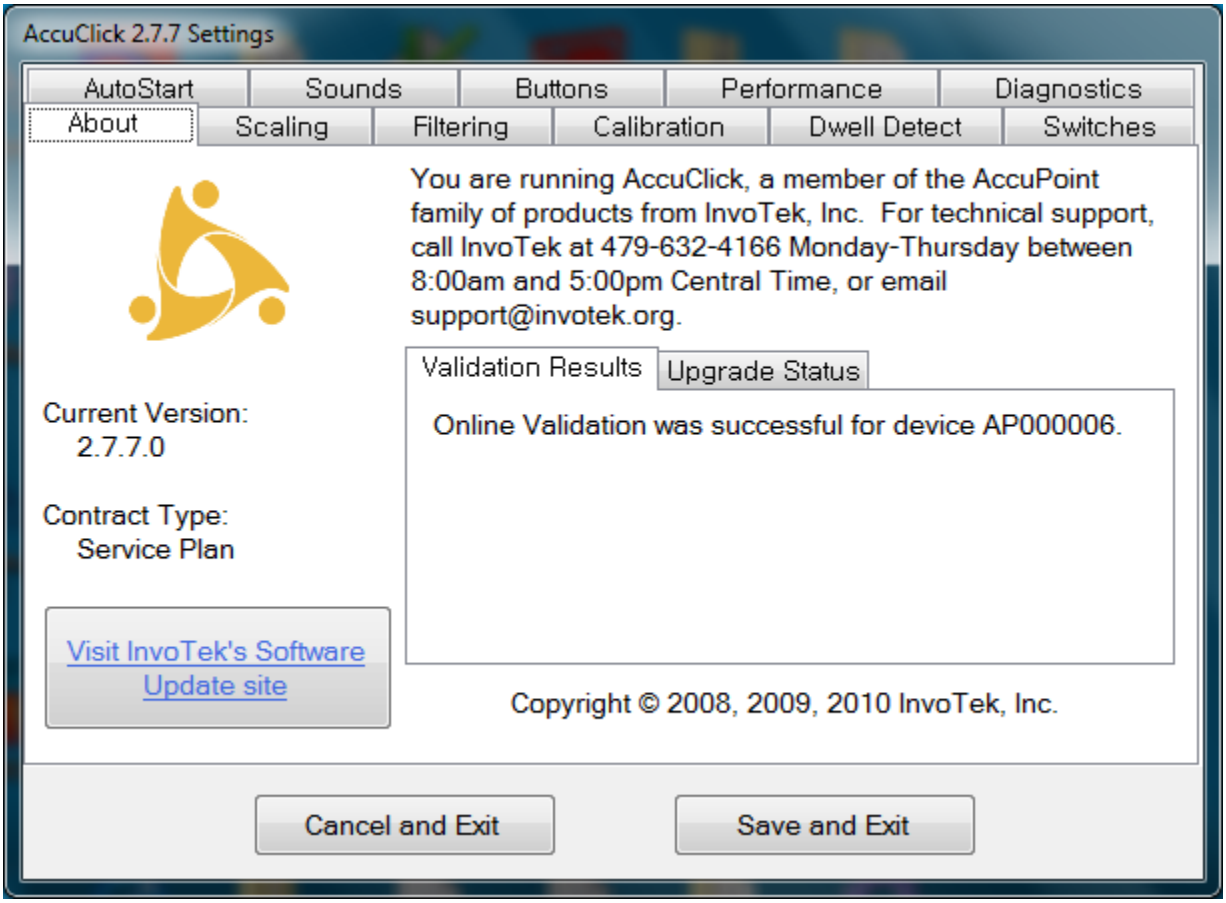
Right – Click on this button to tell the Dwell Clicker to perform a mouse Right Click the next time you hold the onscreen mouse cursor still. Clicking on this button when it is active (yellow background) will disable the dwell clicker.

Drag - Click on this button to tell the Dwell Clicker to perform a mouse Left Click and Drag. The next time you hold the onscreen mouse cursor still, the Dwell Clicker will perform a Mouse Down event and hold that until the mouse cursor moves and then becomes still again. Then it will release the Mouse Down to complete the Drag and Drop operation. Clicking on this button when it is active (yellow background) will disable the dwell clicker.

AccuClick Settings

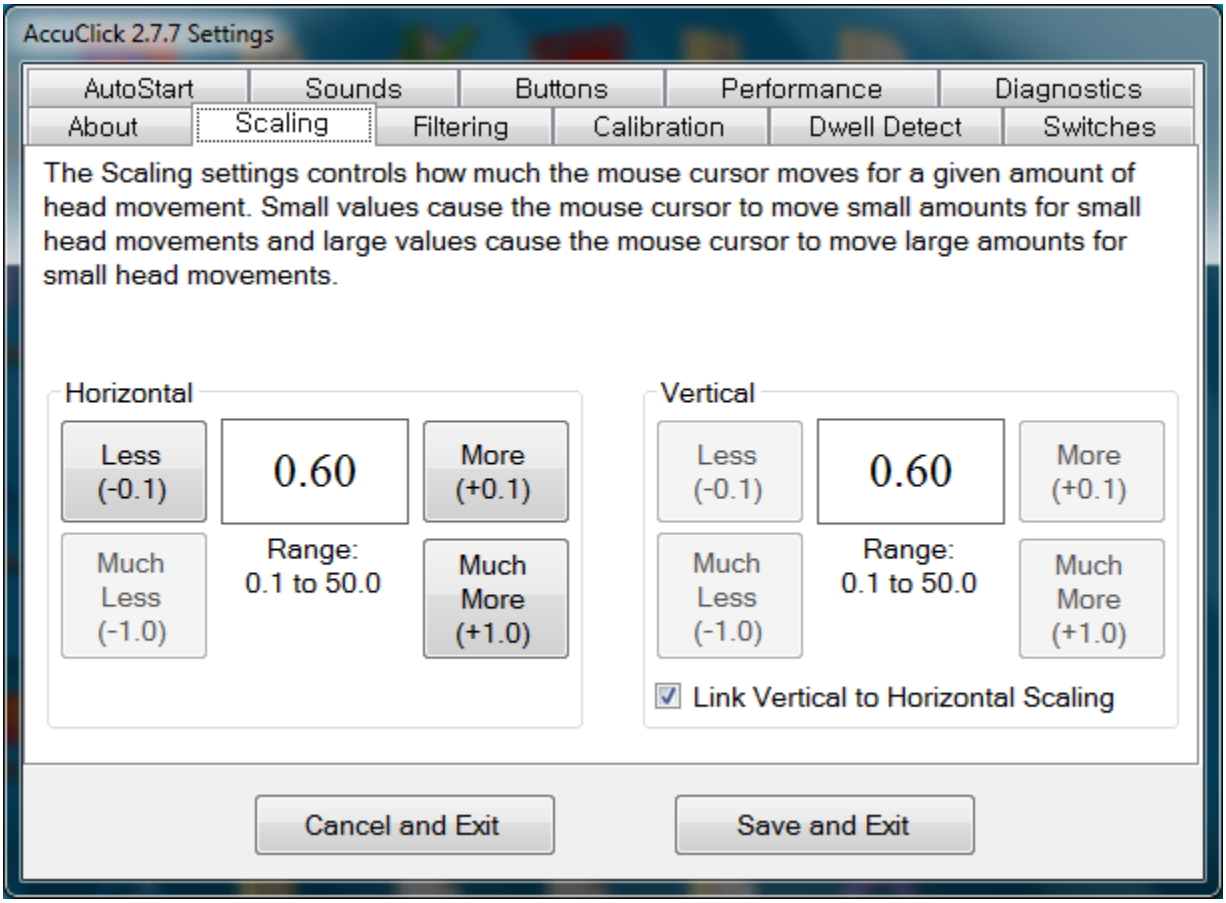
AccuClick' user options can be set by clicking on the "Prefs" button. This will open the AccuClick Settings form with a tab for each of the categories below. Click on the appropriate tab to view and/or change those settings.

About



The About tab provides information about the Validation Results for your AccuPoint device and Upgrade Status for AccuClick. Each time you run AccuClick, it will attempt to contact the InvoTek website to validate your AccuPoint hardware and to check for upgrades to AccuClick. The results of both these processes will be available to you on this tab. In addition, the version of AccuClick that you are currently using will be displayed on the left, and the method you used to acquire the AccuPoint system will be noted below the version number. These are for information only. Finally, the button in the lower left corner of the tab will open the default web browser to the InvoTek Software Update site for you to download the latest update to AccuClick.

Scaling

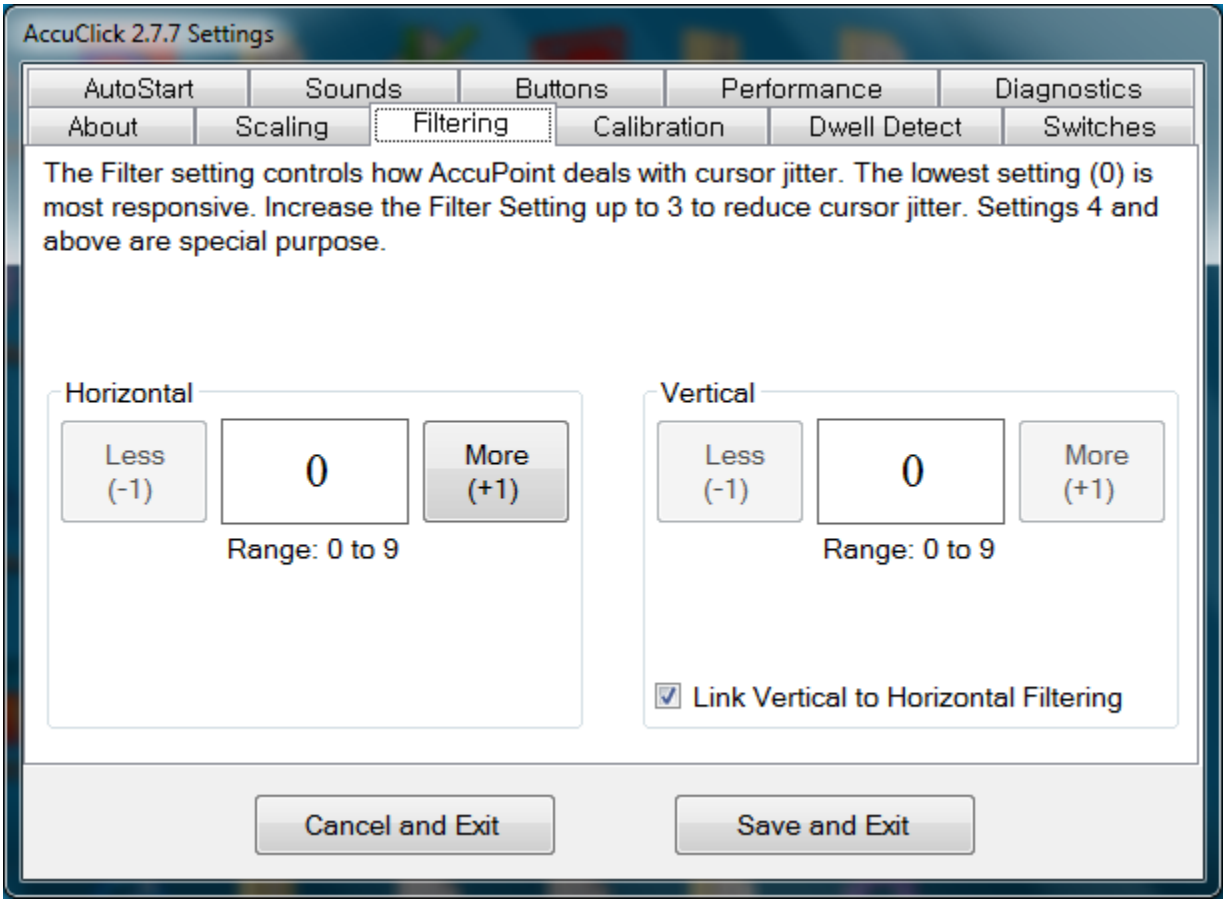


Selecting the Scaling tab opens a set of controls for adjusting the amount of head movement required to move the mouse cursor across the screen in both the horizontal and vertical directions. Selecting small numbers means you will have to move your head a lot to move the mouse cursor. Conversely, selecting a larger number means you will have to move your head only a small amount to move the mouse cursor. The default setting is 1.0, but it can be set to any value between 0.1 and 50.0. Values higher than 3.0 are for people who have very limited head movement. Values higher than 6.0 require a larger cluster of dots for accurate head tracking. Contact your distributor or InvoTek (support@invotek.org or 479-632-4166) for more information. You will probably need to experiment with these settings to find the values that work best for you.

In most cases, the checkbox labeled “Link Vertical to Horizontal Scaling” should be checked so that only the Horizontal scaling controls are active, and the Vertical scaling value always matches the Horizontal scaling value. Uncheck this box to set the two values independently.

The Scaling settings cannot be changed while AccuClick is actively tracking your head movements. If you change either of these settings, AccuClick will stop tracking your head movements and restart with the new Scaling settings as soon as you exit the Settings form by clicking on the Save button.

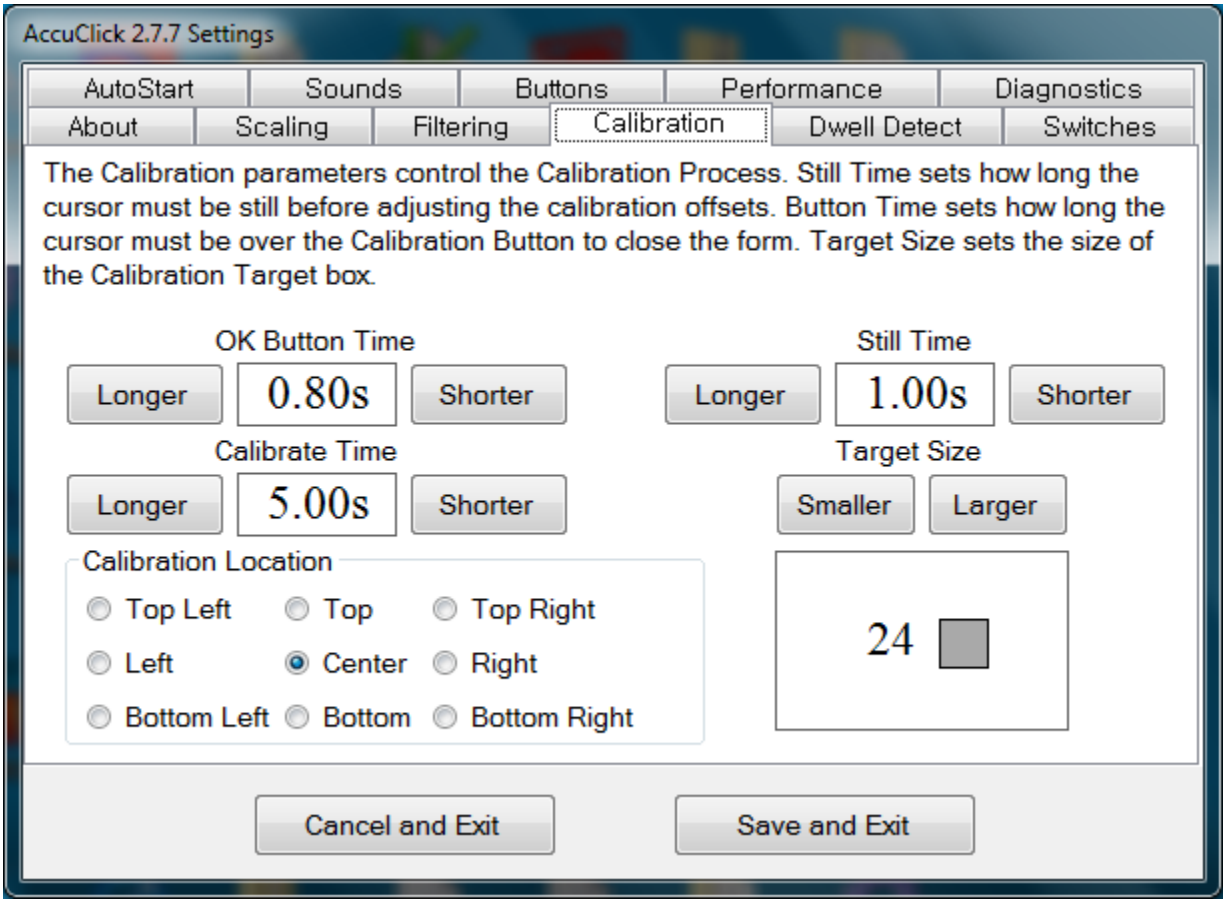
Filtering



Selecting the Filter menu item allows you to increase and decrease the amount of jitter filtering that AccuClick applies to mouse cursor movements in both the horizontal and vertical directions. The amount of filtering being applied is indicated by a single digit 0-9 between the “More” and “Less” buttons. Increasing this filter value applies more filtering, and decreasing it applies less filtering. People with very good fine motor control of their head movements should use small filtering values, while people with less precise head control or with tremors should use larger filtering values. Settings of 0-2 work well for people with typical head control. Higher settings are designed to help people that have involuntary head movements that interfere with head pointing. Experiment with several values to determine which works best for you.

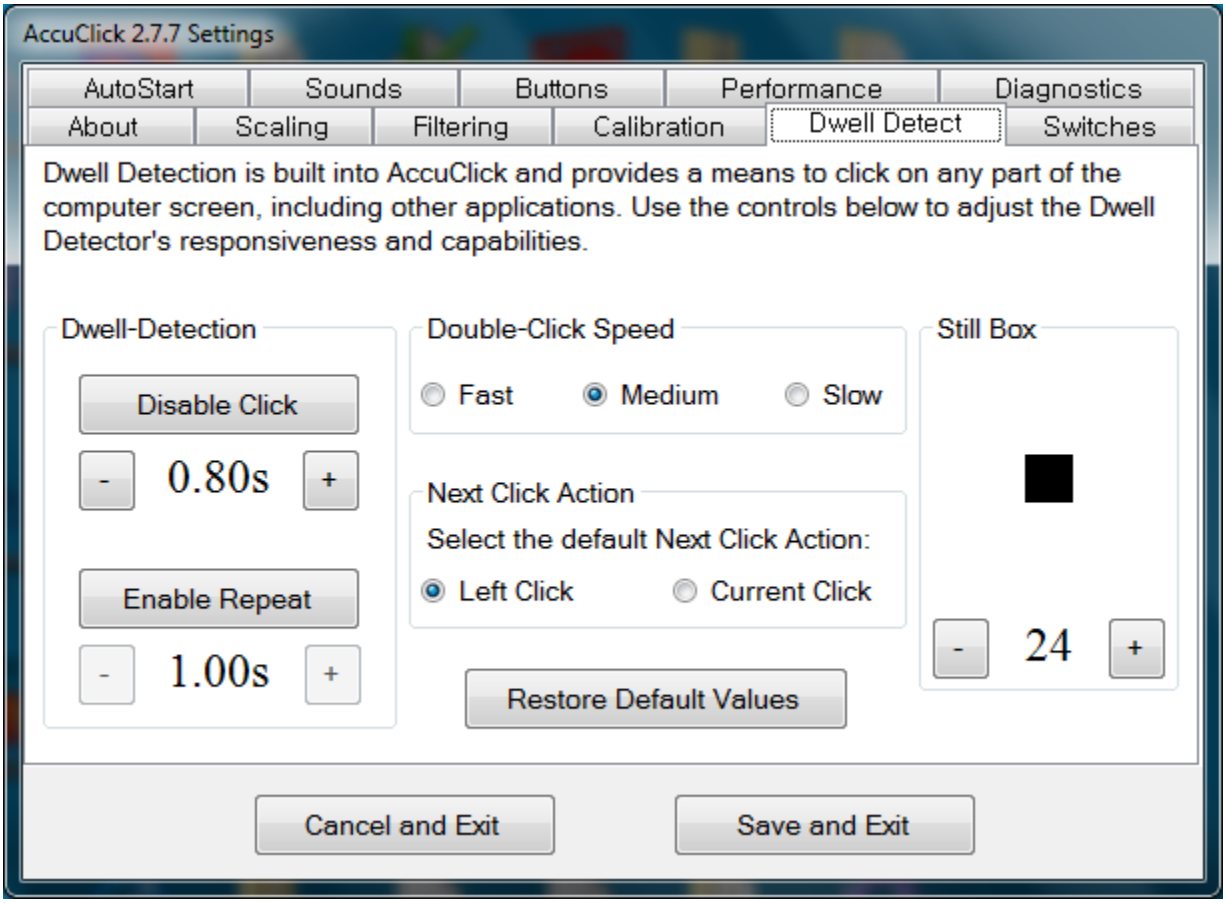
In most cases, the checkbox labeled “Link Vertical to Horizontal Filtering” should be checked so that only the Horizontal filtering controls are active, and the Vertical filtering value always matches the Horizontal filtering value. Uncheck this box to set the two values independently.

Calibration



These settings determine how long AccuClick waits to declare the calibration process to be complete. The Still Time value sets how long AccuClick requires the mouse cursor to be still or nearly still, and the Button Time value sets how long AccuClick requires the mouse cursor to be over the OK button on the Calibration Form before declaring the calibration process to be complete and closing the Calibration Form. The Calibrate Time settings set how long a user must stay still over the target to finish the calibration instead of moving the mouse pointer to the OK button. The Target Size setting determines the size of the box that the mouse cursor must remain in to be called “still”. The Calibration Location setting sets where the calibration form will be displayed on your screen. Normally, this location will be center but can be changed to make it easier for you to calibrate in certain situations.

Dwell Detect



These settings control how long AccuClick waits to declare the mouse cursor to be still or nearly still. This tab includes a number of settings, as follows:

Enable/Disable Click – Enables or Disables the initial mouse click when the user holds the mouse cursor still.

Click Time – Length of time, in seconds, that the mouse cursor must be held still for an initial mouse click.

Enable/Disable Repeat – Enables or Disables the repeat mouse click when the user holds the mouse cursor still for an extended period of time.

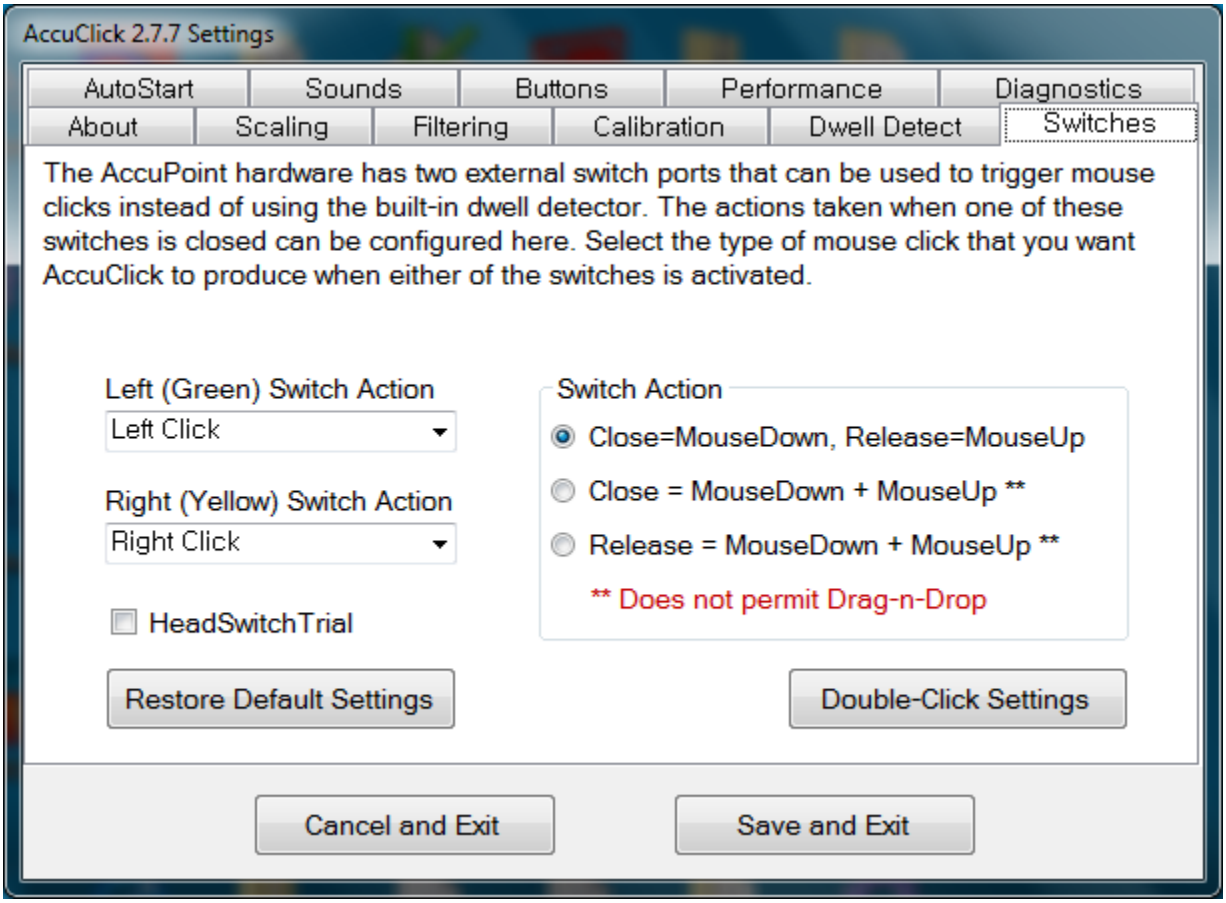
Repeat Time – Length of time, in seconds, that the mouse cursor must be held still for the second and succeeding mouse clicks.

Double-Click Speed – select how fast AccuClick issues the two clicks of a Double-Click when the dwell clicker performs a Double-Click. In most cases, the Medium or Very fast settings will work fine, but some programs, when running with AccuClick will need the Very slow setting.

Next Click Action – select whether AccuClick will repeat the current click type or revert back to Left Click after completing the current click action.

Still Box –determines how large an area the user must hold the mouse cursor within for it to be considered still enough to perform a mouse click.

Switches

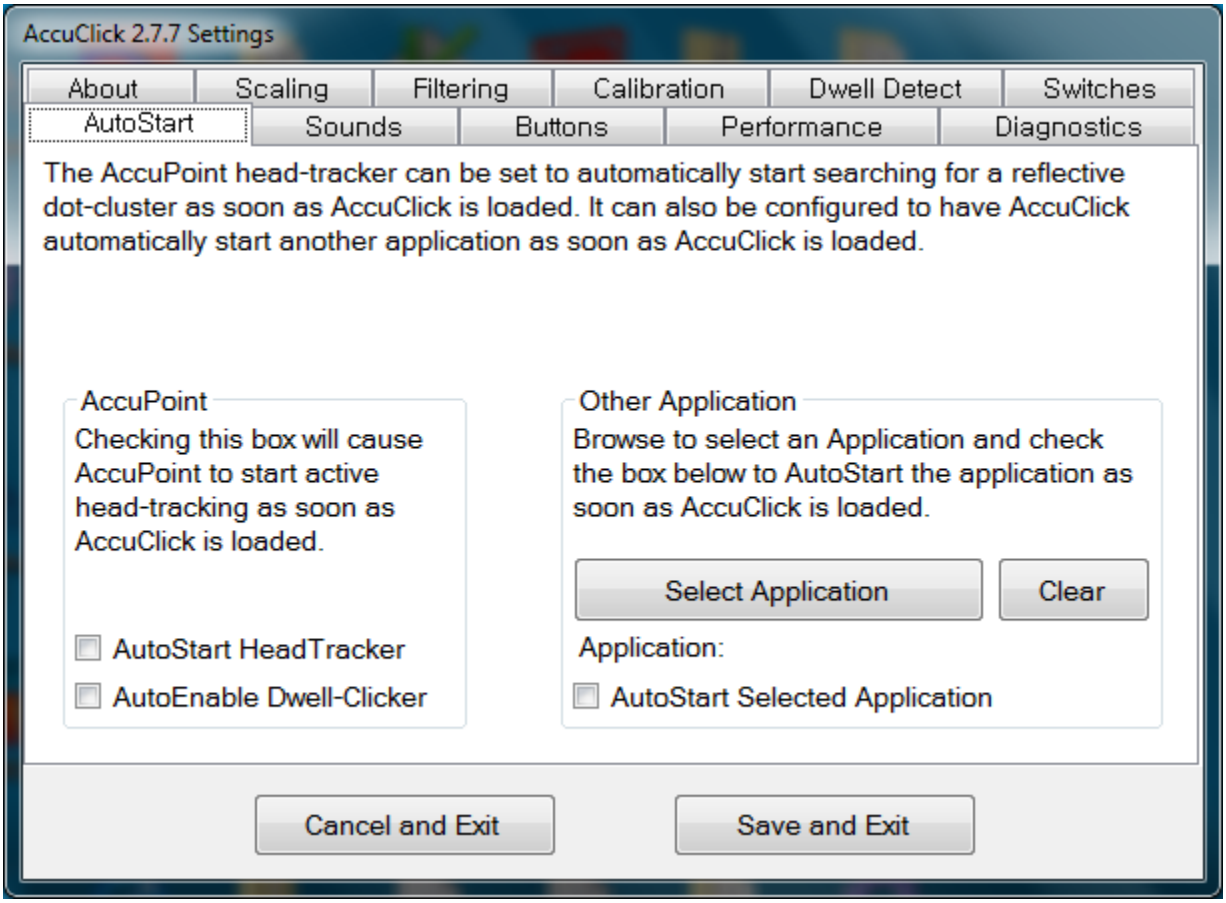


If external switches are connected to the AccuPoint hardware, this tab determines how the activation of those external switches is interpreted by AccuClick. Either external switch (left or right) can be configured to perform as a normal mouse's left click, middle click, or right click. The color identifiers (Green and Yellow) in this tab match colored stickers on the switch inputs to the AccuPoint hardware.

Note that if you select a Switch Action other than the first one (Close = MouseDown, Release=MouseUp), you will not be able to perform Drag-and-Drop actions.

Clicking the Double-Click Settings allows you to lengthen the time between clicks for the system to consider it a double click. This will make it easier to double click while using switches instead of dwelling.

AutoStart

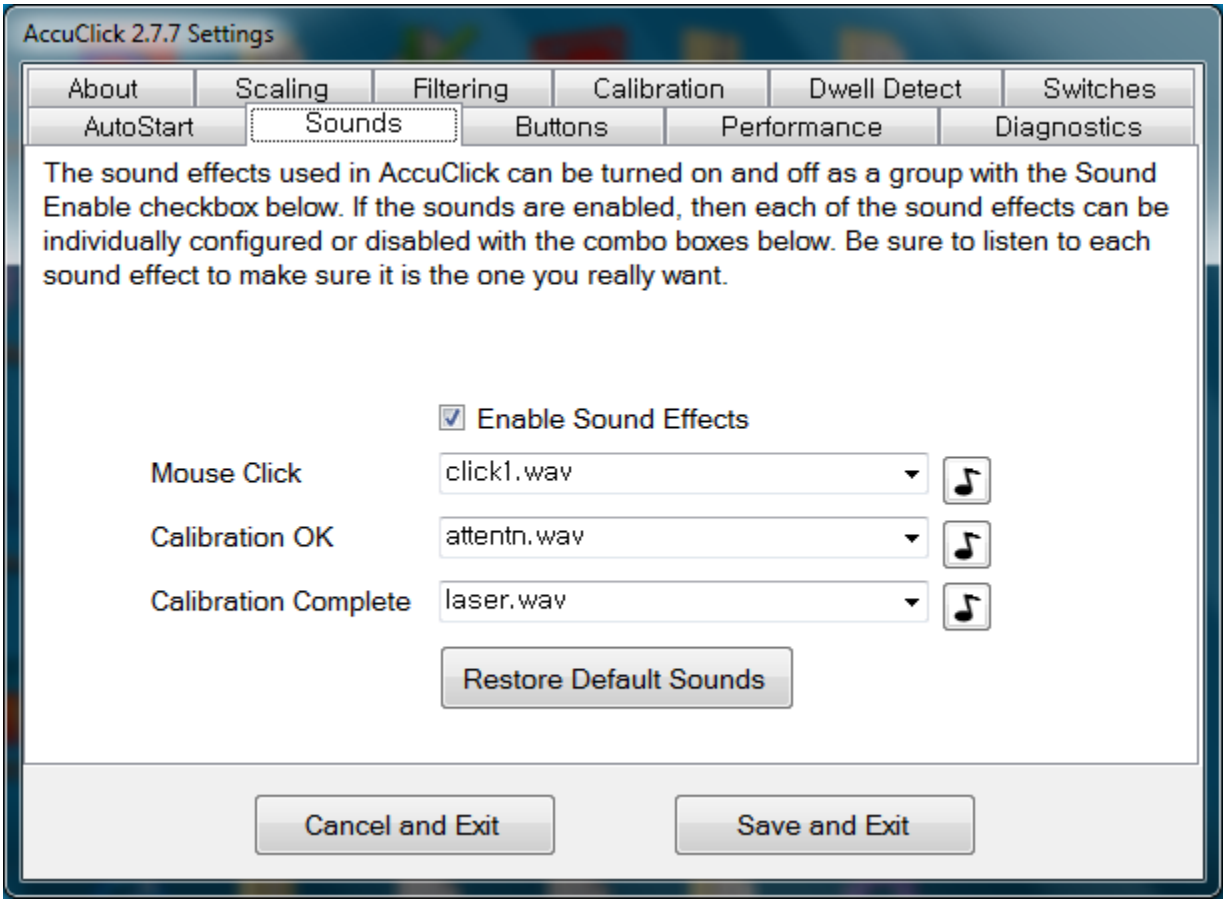


The AccuPoint AutoStart option, when checked, will cause AccuClick to automatically begin its head-tracking and Calibration processes as soon as AccuClick is loaded without waiting for someone to click on the “Run” button.

The AutoEnable Dwell-Clicker option, when checked, will cause the dwell-clicker to be enabled to perform Left Clicks as soon as AccuClick completes Calibration.

The Other Application AutoStart option allows you to select a program that you want to automatically start every time that AccuClick is started. Just click on Select Application to browse for a program’s exe file to enable this feature. To disable it, click on the Clear button or uncheck the AutoStart Selected Application box.

Sounds



AccuClick normally alerts you to various events with a sound. There are three such events that can have an audible alert, and this tab allows you to configure what alert sounds should be used.

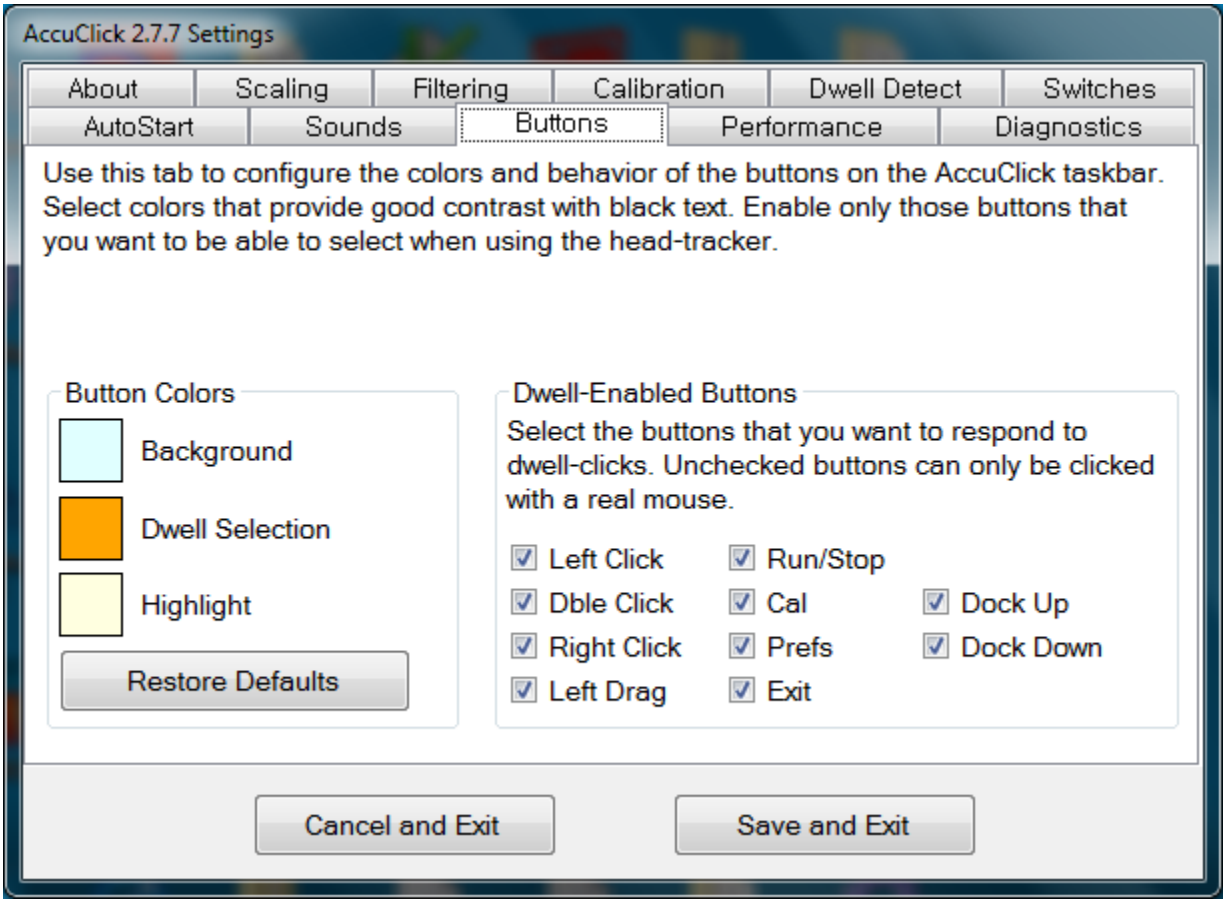
Enable Sound Effects – when checked, all the sounds will be played as selected below. When unchecked, no sound alerts will be used.

Mouse Click – selects the sound to be played when a mouse click is generated by the dwell clicker.

Calibration OK – selects the sound to be played when the calibration process detects the mouse cursor being still over the calibration target.

Calibration Complete – selects the sound to be played when the calibration process detects the mouse cursor being still over the calibration form's "OK" button.

Buttons



The AccuClick buttons' appearance and behavior can be customized to your own preferences with the settings on this tab.

Button Colors

Background – determines the color to use when drawing each button's background color.

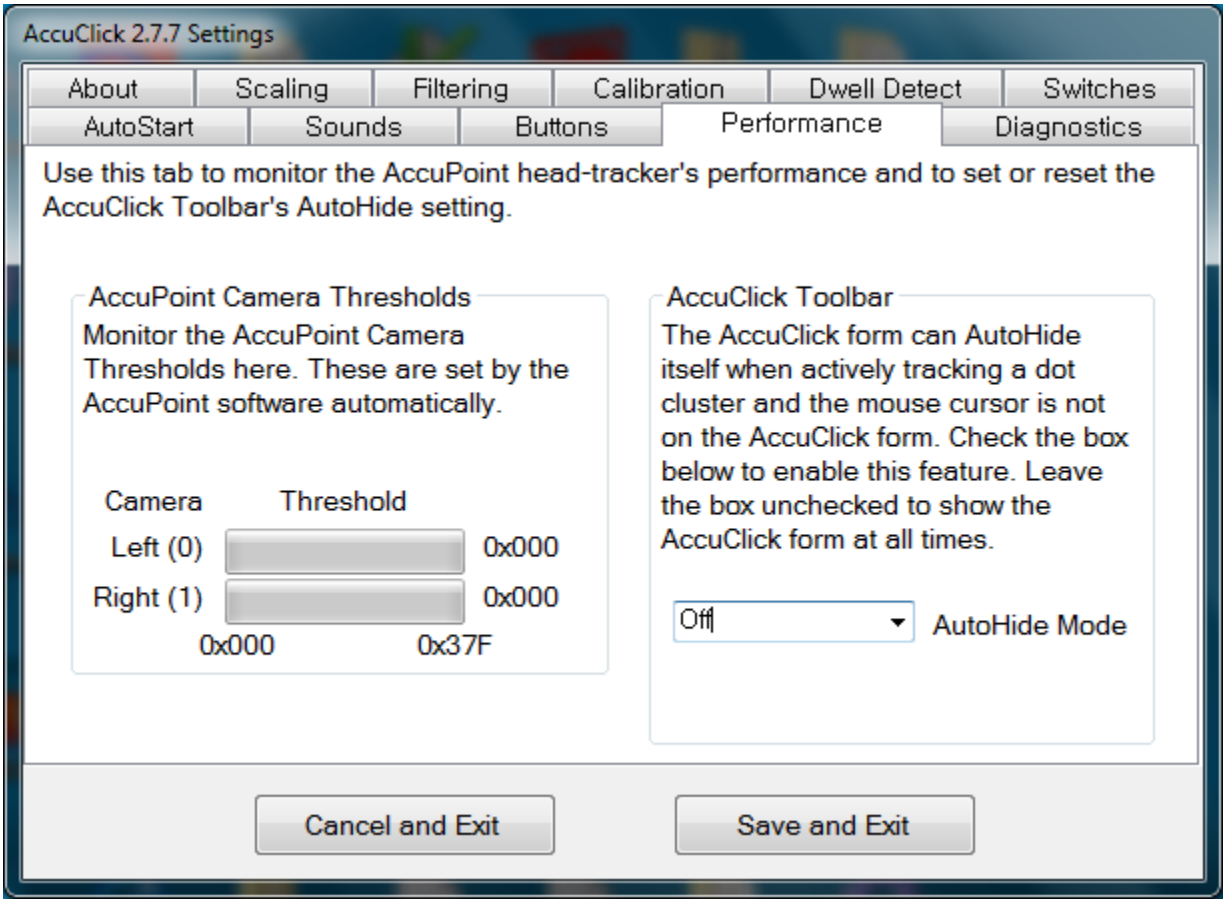
Dwell Selection – determines the color to use when drawing the border of the currently selected dwell control button

Highlight – determines the color to be used to highlight a button when the mouse cursor is hovering over the button.

Dwell-Enabled Buttons

Individual buttons can be enabled and disabled for dwell-clicking to prevent a user from performing tasks that could cause problems, e.g. stopping head-tracking or running an untested program. Check the box for each button that should be enabled for dwell-clicking, and uncheck the box for each button that should be disabled for dwell-clicking. By default, all buttons are dwell enabled.

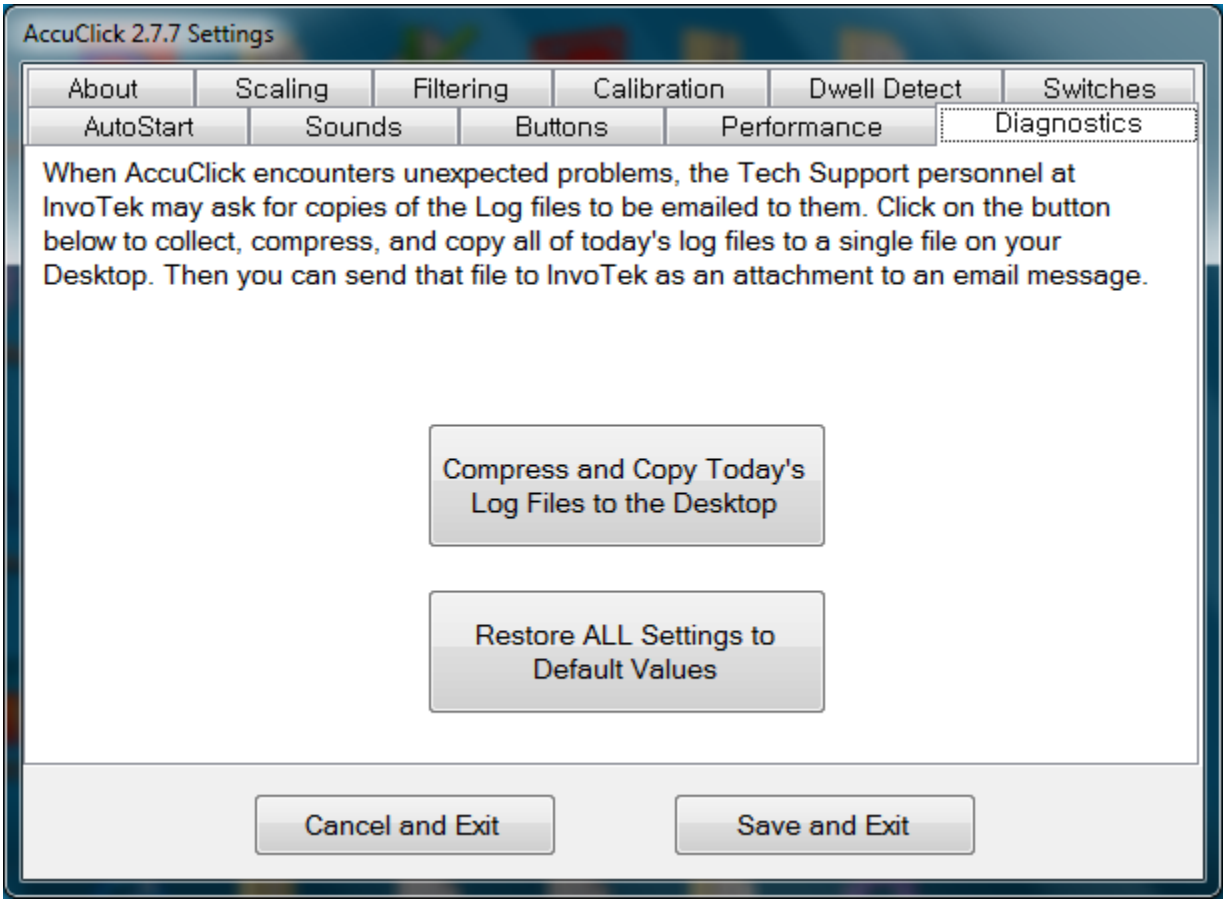
Performance



The left half of this tab is provided only for diagnostic purposes. If the AccuPoint head-tracker has trouble following your head movements, this tab may be of help, especially if you need to call InvoTek for tech support. There are no user settings on this tab – its sole purpose is to display the current lighting thresholds being used by the AccuPoint cameras. Ideally, the camera thresholds should be at least 0x07F, but higher numbers are normally better than lower numbers. If the threshold values are smaller than 0x010F, there may be other reflective objects in the system's field of view or the reflective dots may be losing their reflectivity. Try adjusting your room's lighting to remove bright lights from behind the user or gently wipe the reflective dots with a soft cloth dipped in rubbing alcohol. If a problem persists, please call InvoTek at 479-632-4166 for assistance.

The AutoHide setting on the right side of this tab allows you to tell AccuClick whether to automatically hide itself or not. There are three possible AutoHide Modes: Off, On, and On – The Grid Mode. If AutoHide is off, the toolbar will always be displayed at the top of the screen. If AutoHide is on, the toolbar will hide when the cursor is not over it. A delay can be set to make the toolbar stay unhidden for a time period after the cursor moves off the toolbar. The Grid Mode makes the toolbar hide anytime that it is tracking dots and moving the cursor. In order to unhide the toolbar, you must cover the dots, cover a mirror, or move the dots out of the AccuPoint's view.

Diagnostics



This tab is provided to make it easy to get back to AccuClick's original settings and to make retrieving the logs for InvoTek's Tech Support personnel easier. Restoring ALL settings to Default Values will set all settings to the same as when the application was started for the first time after it was installed.

What to do if the system doesn't work right

Known Issues

Certain applications operate in Full Screen mode, hiding AccuClick.
Some applications, including some games and online YouTube videos, when running in full-screen mode, insist on taking over the entire computer screen and hiding everything else from view, including the TaskBar and AccuClick. AccuClick will continue to operate, actively tracking your head movements and performing dwell clicks, but will not be visible or controllable while the full screen application is running.

If the onscreen mouse cursor quits moving or jumps erratically

Watch the Camera View window in the top left corner of the screen – if you cannot see a red rectangle containing three red dots and a blue rectangle containing three blue dots, the AccuClick system cannot see the dot cluster. Adjust the position of the AccuPoint hardware so that you are within the tracking area, or move so that AccuPoint can see you.

AccuPoint is very tolerant of complex lighting environments, but it is still possible that it can get confused. If you see more than three dots of either color in the Camera View windows, then the AccuClick system is seeing extra reflections. This can happen if one of the cameras is looking out of a window, or with some eyeglasses. Try removing reflective items from the area around your head and turning the AccuPoint hardware so that it isn't pointing at a window.

Occasionally, a dot cluster will wear or in some way lose some of its reflective properties. When this happens, AccuClick will not be able to see the dots consistently, and the cursor will jump erratically. Try wiping the dot cluster gently with a soft cloth dipped in rubbing alcohol. If this does not help, the only solution is to use a different dot cluster. Contact InvoTek at 479-632-4166 for information on replacement dot clusters.

If you can still control the mouse cursor with AccuClick, click on "Cal" to repeat the calibration process. If you have lost control of the mouse cursor with AccuClick, you'll have to get help to click on the "Stop" button using a standard mouse and then click on the "Start" button to go through the calibration process again.

Mouse movement stopped by Windows User Account Control

Windows only allows the cursor to be moved by a physical mouse. To fix this problem, User Account Control must be turned off.

1. Click start button
2. Type "User Account Control" into the search bar and hit Enter

Windows 7:

3. Slide slider all the way to bottom
4. Click OK
5. Restart computer

Windows Vista:

3. Uncheck check box
4. Click OK
5. Restart computer

Error Messages

Internal Error

Make sure the AccuPoint hardware is connected to a working USB port on your computer and that the USB drivers for AccuPoint have been installed. (See installation procedures if you are unsure whether the USB drivers were installed.)

Close and restart the AccuClick software.

If the problem persists, please call InvoTek at 479-632-4166.