

TECH TIP – Using the Mouse to Simulate Measurements

You can use the Mouse as the Measurement Device when you do not have the Verisurf Device Interface (VDI) installed, or a measuring device is not available. We can simulate measurement tasks using the mouse.

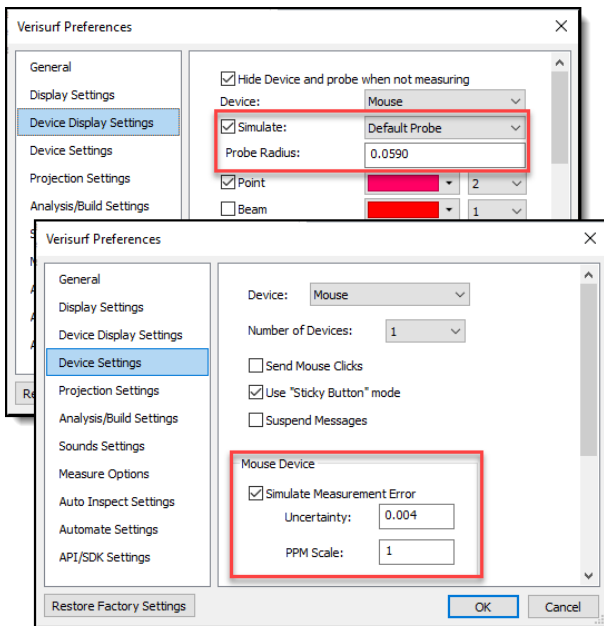
Simulate a Device and Measurement Error

When using the Mouse as a Measuring Device, you can simulate both the type of Device and Measurement Uncertainty.

Using **Verisurf Preferences – Device Display Settings** allows you to select from a list of Devices to graphically simulate. Use the Probe Radius to control the size of the Probe to be used. Both of these settings are useful in providing graphical visualization of the measurement process.

Using **Verisurf Preferences – Device Settings** allows you to activate the Simulate Measurement Error function and to enter an Uncertainty value that applies to every measurement initiated by the Mouse. Using the PPM Scale (Parts per million) value applies measurement error based on distance from the simulated device; the higher the value, the larger the error the further from the device origin the measurement is taken.

Device simulation is excellent for learning and practice, but it has limitations. For all but the simplest tasks, you must use a CAD model. The Position of the cursor defines the Probe coordinates; therefore, measurements are perfect, making deviation analysis somewhat unrealistic. Also, although alignments can be performed using simulation, the transformation has no real meaning.



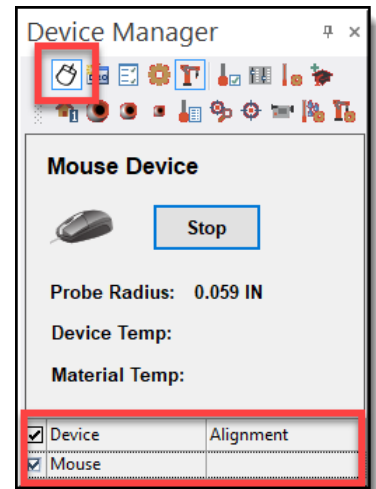
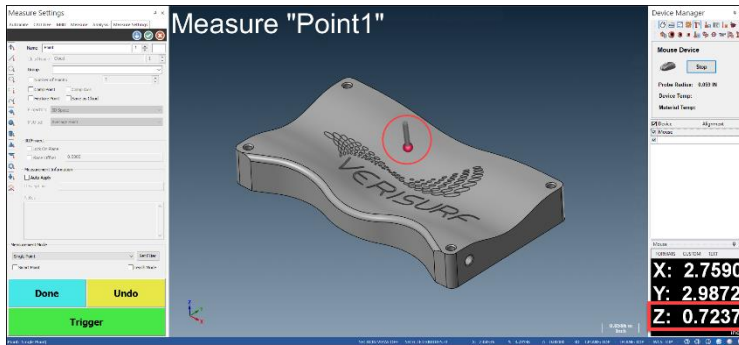
Using a CAD Model with the Mouse

Choose the Toggle Mouse button to start the Mouse Device.

- The Mouse Device is added to the Device Manager list and selected by default.

1. Choose the measure Point button and then move the cursor into the Graphics window.

- Notice that when we move the cursor over the model, Z now changes along with X and Y.

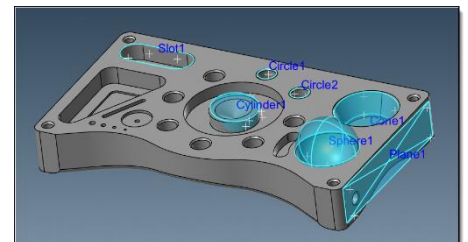
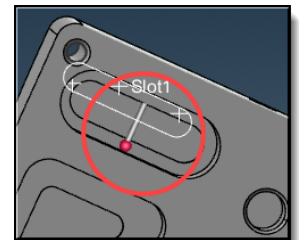


- Verisurf projects the cursor onto the model and places the simulated probe tangent to the surface.
- Recorded Point values are at the Probe center, which is offset from the surface of the model by the probe radius.

You can simulate Feature Measurement with the mouse, displaying the Probe Shank makes it easy to see the direction of the Probe.

2. When Inspect/Build is active, and you move the mouse cursor over the model, Verisurf displays the deviation from the probe to the surface.

- All measurements are simulated based on the model.

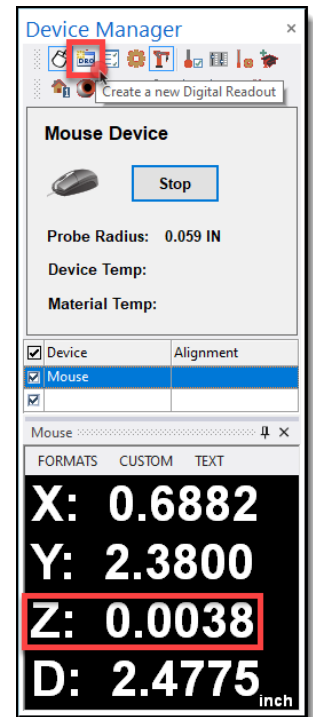
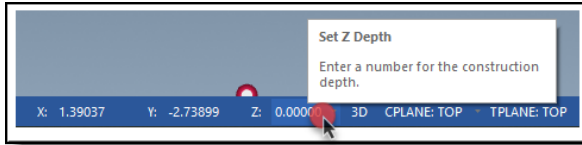


Using the Mouse without a CAD Model

1. Click on the DRO tool button to display the position of the Mouse.
 2. Select the Measure Manager and click the Point button.
- When the Mouse cursor moves into the Graphics Window, Verisurf displays a red sphere representing the probe at the cursor location and displays the probe coordinates in the DRO.
 - Notice that the Z-value is very close to 0.000 (depending on your Measurement Uncertainty Setting). If we do not measure a model, the mouse device measures relative to the C-Plane, which is Z=0.0. If we

change the Z-depth to 1.0 inch, the Z-value in the DRO changes to 1.0. The Z value remains static even if we rotate the view.

- To change the C-Plane, click on Z in the Status Bar and Enter a depth.



- To measure a point at the position of the cursor, click the mouse.
- Notice that with each click, the points appear in the data tree. If we rotate the view, we can see that the points lie in the C-Plane plane.

