

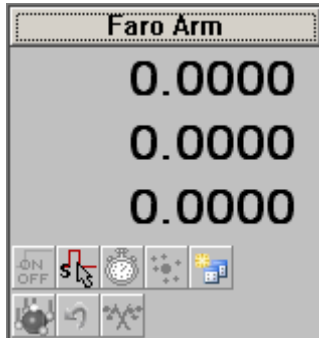


Verisurf Device Interface™_{REV A1}

For Faro USB 5.0 Arm

VERISURF DEVICE INTERFACE	2
DOWNLOADING AND INSTALLING THE VDI.....	3
VERISURF DEVICE INTERFACE MENU	6
MM / IN TOGGLE	6
PRESET XYZ / SHOW ABSOLUTE	7
PROGRAM SETTINGS	7
PROGRAM SETTINGS	8
<i>Display Setup</i>	8
<i>Sound Settings</i>	8
HARDWARE SETUP.....	9
<i>Temperature Settings Material Tab</i>	9
<i>Temperature Settings Scale Bar Tab</i>	10
<i>Change Device</i>	11
<i>Auto Start Pocket PC Server</i>	11
<i>Auto Start DataXPort Utility</i>	11
<i>Auto Start Remote Server</i>	11
TOOLBARS.....	12
<i>Show Smart Point Tools</i>	12
<i>Show Recording Toolbar</i>	13
<i>Measure Mode Settings</i>	14
DEVICE ALIGNMENTS.....	15
MOVE WINDOW	15
? ABOUT.....	15
HIDE WINDOW / EXIT.....	15
FARO USB ARM CONTROLS.....	16
<i>Options</i>	16
<i>About</i>	17
PROBE RAD: X.XXX	17

Verisurf Device Interface



The VDI is used to transfer points from the device to Verisurf. It is software that runs separately from Verisurf / Mastercam. When the device records a hit the VDI takes those X,Y,Z coordinate and transfers it through the alignment matrix and sends those coordinates to Verisurf. As you have noticed the VDI is a constantly evolving software application. This is due to two factors.

1. Tweaking of changes to each individual device. As of this writing there are 20 different devices that Verisurf can interface to.
2. In-house and customer requests for enhancement and bug fixes.

There are 3 areas of the VDI screen.

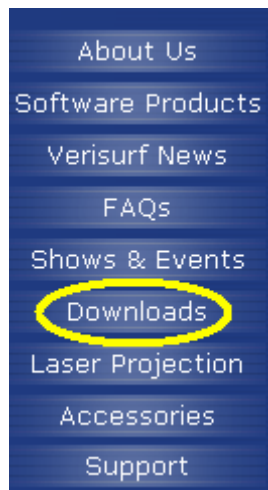
1. The **TOOLBAR** when clicked will access the VDI menu.
2. The **DIGITAL READOUT** which shows the X,Y,Z and, if selected, the 3D position of the probe. These coordinates are always aligned to your device coordinate system.
3. **ICONS** that quickly launch different VDI functions

The Verisurf VDI can handle 4 devices running simultaneously.

Downloading and installing the VDI

Due to upgrading of the VDI Verisurf strongly recommends that users check the Verisurf website for VDI updates and determine if they should download any new revisions. The criteria to determine if a user should download are: a) any revision that has updated your particular device and, b) any revision that has updated the VDI for all devices.

To download the VDI go the following web address www.verisurf.com . There you will enter the download section.



From there will enter the following information that Verisurf uses to track which users are downloading software.

Please give your information to download Verisurf updates

Name

Company

Email

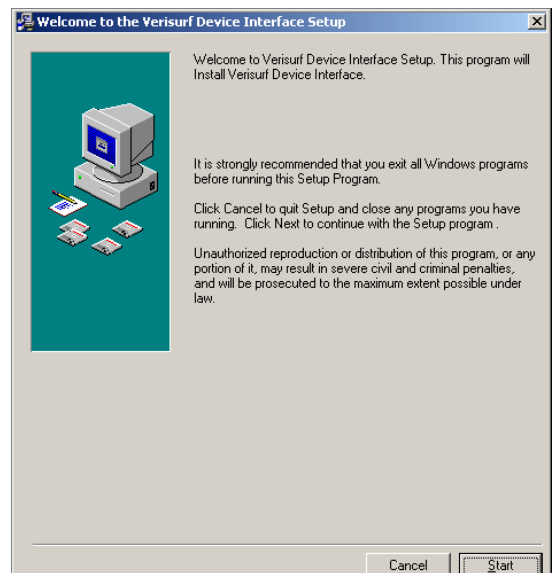
You will then enter our download page where you should look for this area.



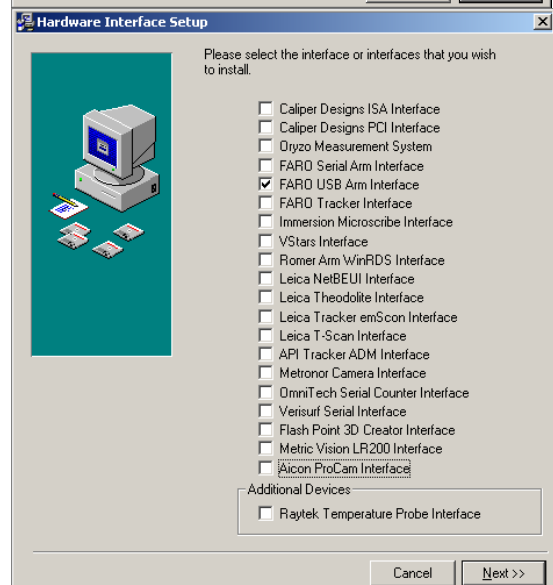
From here enter the hyperlink to VDI Version History screen to determine if you need to download the latest revision. If you need to download the latest revision enter the hyperlink to VDI_Setup and download onto your desktop or a folder you have to store VDI downloads. Verisurf recommends that you SAVE the file and not attempt to RUN the file from the website.

Once the file is on your computer RUN the install where you will be presented with the following screens.

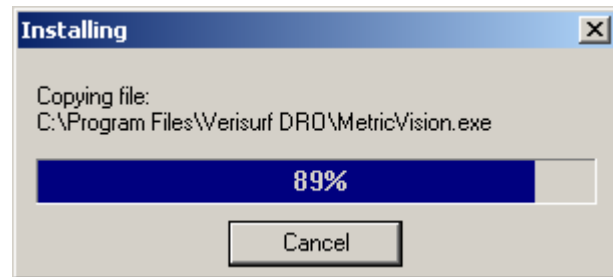
CHOOSE Start.



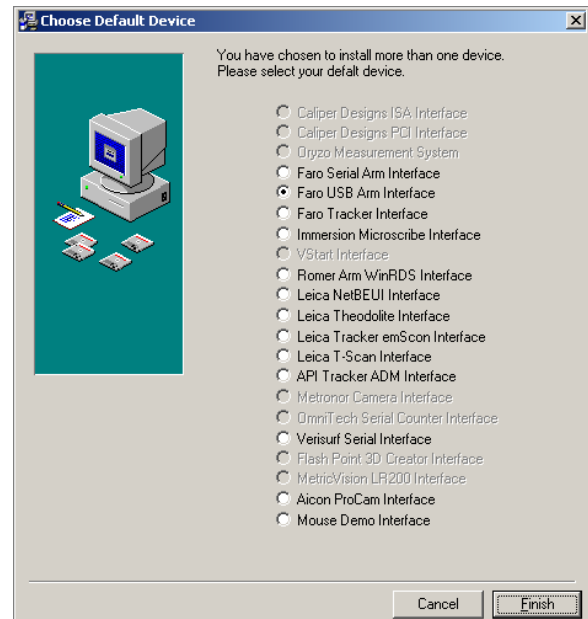
Choose the device you require.



You will witness the software being installed.

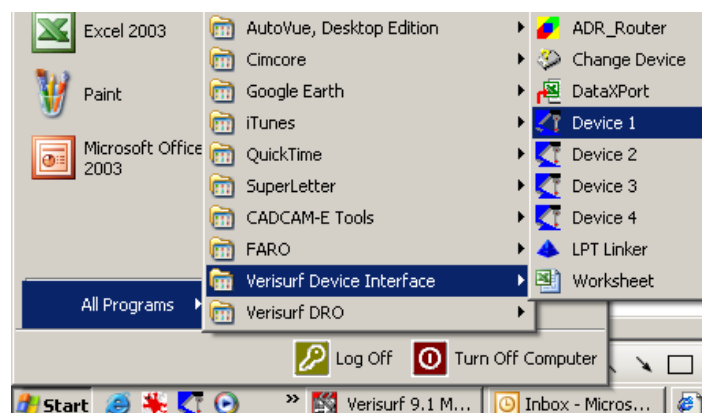


If you have chosen more than one device you will have to choose the default device from this screen and select Finish.



That will end the installation and the VDI can then be run separately or in tandem with Verisurf.

Verisurf also recommends that you place the VDI startup both in your Quicklaunch toolbar and on your desktop by dragging and dropping the icon.



Verisurf Device Interface Menu

Click on the VDI toolbar to see the menu.

There are 12 selections on the menu that are common to all VDI menus for any device. There will also be 2-3 other selections that are device specific.

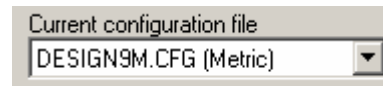
This manual will cover the common selections first and then follow with the device specific selections.



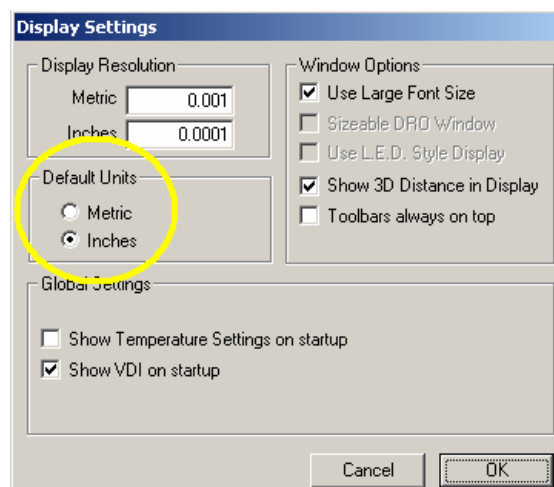
MM / IN toggle



This toggle is used to change from one unit of measurement to another. This toggle will only affect the VDI. It will not change the Verisurf unit of measurement. To change Verisurf unit of measurement there are 2 places to change units and both must be considered. Go to Screen > Configure and change the configuration.



Go to Display Settings screen and change Default Units.

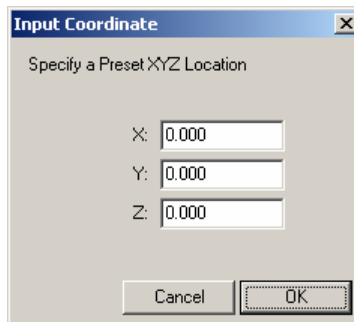


Preset XYZ / Show Absolute

Preset X Y Z
☒ Show Absolute

Selecting the **Preset XYZ** will bring up a screen that you can enter an X,Y,Z coordinate and that is what will be displayed in your digital readout. This will not affect any measurements in your part coordinate system of Verisurf.

The **Show Absolute** toggle will toggle you between your device zero (absolute) and any preset XYZ you may have entered.



The image shows a software dialog box titled "Input Coordinate". Inside the dialog, the text "Specify a Preset XYZ Location" is displayed. Below this text are three input fields labeled "X:", "Y:", and "Z:". Each field contains the value "0.000". At the bottom of the dialog, there are two buttons: "Cancel" and "OK".

Program Settings



Display Setup

Selecting the **Display Setup** will bring up this screen.

Display Resolution

This is used to change your resolution, or decimal places, that will be displayed in the digital readout of the VDI.

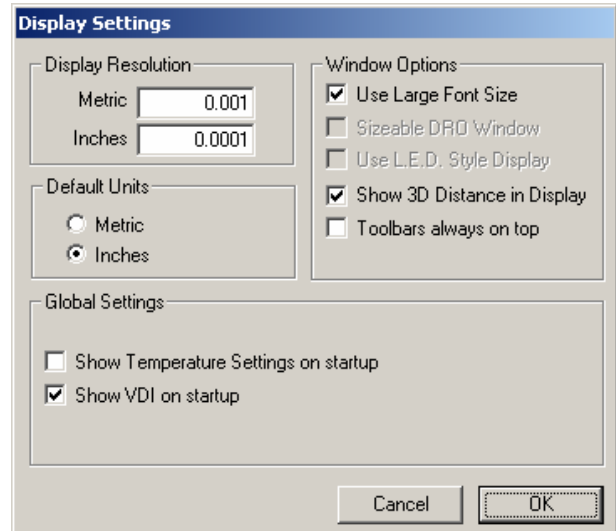
Default Units

Change this to the units you will be measuring in.

Global Settings

Checking the **Show Temperature Settings on Startup** will cause the Temperature Settings dialog to start each time you start Verisurf or start the VDI without Verisurf.

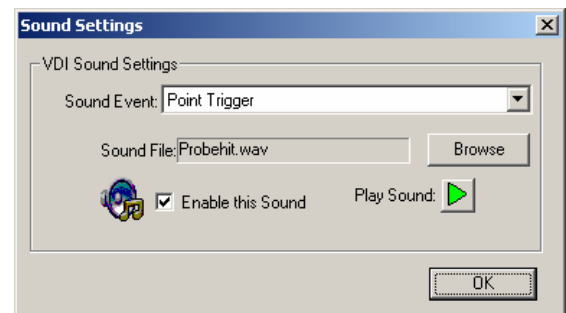
Checking the **Show VDI on startup** cause the VDI to be displayed on your screen. Unchecking it will still start the VDI but it will be hidden.



Sound Settings

Selecting the **Sound Settings** will bring up this screen.

This feature was created so that the user can customize the VDI sounds. It is not to change sounds that Verisurf makes. These sounds are .wav files located in the C:\PROGRAMFILES\VERISURF DRO



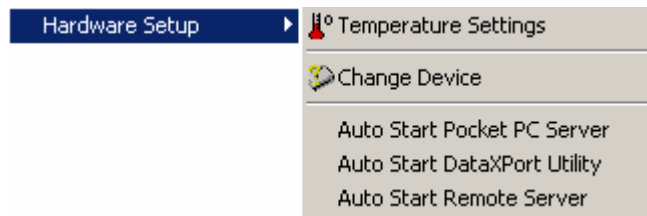
To change any sound.

1. Use the Sound Event pull down menu select the sound you would like to change.
2. Go to Browse and choose the .wav file you would like to associate with the Sound Event.

If any of the sounds are not desired to be heard simply deactivate the sound by unchecking the Enable this Sound.

You can test the sound for each Sound Event by Choosing the Play Sound button.

Hardware Setup



Temperature Settings Material Tab

This selection will bring up temperature controls to scale your points based on the expansion coefficient of the selected material.

Standard Temp

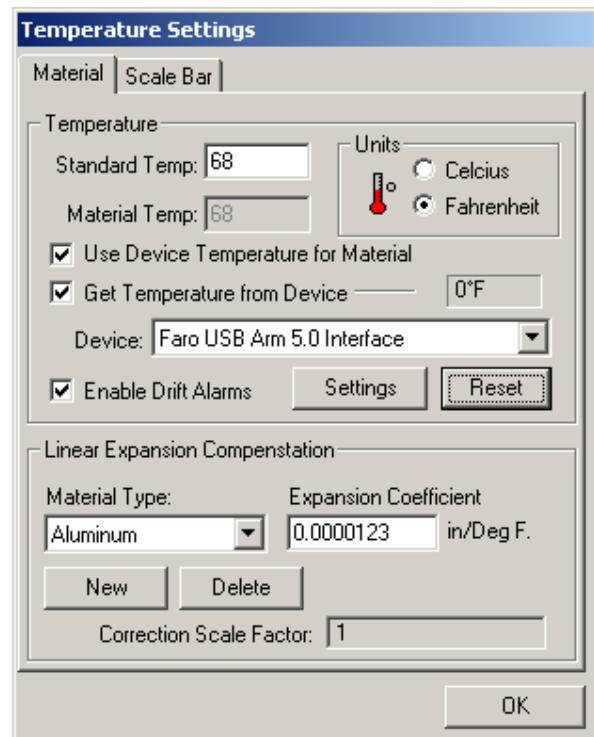
This is the temperature that is used as a standard to compute any compensation. If Material Temp is equal to Standard Temp then there will be no compensation.

Material Temp

This is where you can enter the material temperature. It can be entered manually right from the keyboard. It can also be automatically entered through a temperature sensor.

Use Device Temperature for Material

With this box checked the temperature will automatically be entered in the Material Temp entry field. With it unchecked you will have to manually enter the temperature.



Get Temperature from Device

With this box checked your device will supply the temperature from the device sensor. The temperature will automatically be entered in the Material Temp entry field if Use Device Temperature for Material is checked.

Device Pulldown

This will allow you to choose any temperature sensor device you have available to your measurement device.

Enable Drift Alarms

When this is checked the VDI will monitor the temperature and give an Alarm if the temperature changes by a temperature deviation you specify. It is only available if you have **Get Temperature from Device** enabled. Once enabled you can go into settings and change the deviation. The **Reset** button is to reset the alarm while the **Set** button will re-establish any changes.

The alarm given is determined by the **Alarm Condition** pulldown. The 5 choices for alarms are Display Message, Show temperature settings, Sound Alarm once, Sound Fast Alarm, Sound Slow Alarm.

The 'Temperature Alarm Settings' dialog box contains the following elements:

- Set Point:** A text box with the value '68' and a unit dropdown set to '°F'.
- Deviation:** A text box with the value '5' and a unit dropdown set to '°F'.
- Buttons:** 'Reset' and 'Set' buttons are located to the right of the Set Point and Deviation fields respectively.
- Alarm Condition:** A pulldown menu currently showing 'Display Message'.
- OK Button:** Located at the bottom right of the dialog.

Linear Expansion Compensation

This pulldown allows you change the material that you are monitoring. There are a number of predefined material types. If your material type is not shown you can add a NEW type. You may also DELETE any types that are in the database.

Temperature Settings Scale Bar Tab

You can adjust your measurement readings through the use of a calibrated scale bar.

To use this you must checkmark the **Enable Scale Bar Compensation**. Once enabled input your scale bar length, choose Start and measure the 2 nests on your scale bar. The observed length will be displayed and the VDI will calculate the Correction Scale Factor and display it.

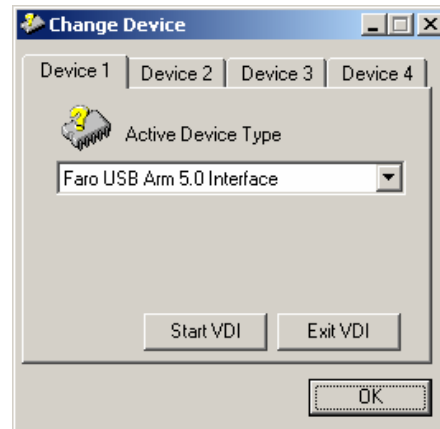
The 'Temperature Settings' dialog box, Scale Bar tab, contains the following elements:

- Material / Scale Bar:** Two tabs at the top, with 'Scale Bar' currently selected.
- Calibration Settings:**
 - ☒ **Enable Scale Bar Compensation**
 - Standard Length:** Text box with '12.0000' and unit 'Inches'.
 - Observed Length:** Text box with '12.0000' and unit 'Inches'.
- Measurements:**
 - Point 1:** X: 0.0000, Y: 0.0000, Z: 0.0000
 - Point 2:** X: 0.0000, Y: 0.0000, Z: 0.0000
- Instructions:** 'Click Start to Measure the Scale Bar'.
- Buttons:** 'Cancel' and 'Start >>' buttons.
- Correction Scale Factor:** Text box with the value '1'.
- OK Button:** Located at the bottom right of the dialog.

Change Device

This button is used to either change the device you are using or start another VDI for another device you may have connected.

If you are running only one device Verisurf recommends that it be run from the Device 1 tab or default device. To change the device choose **Exit VDI**, use the pulldown to select the new device and then **Start VDI**. To connect to a second device select Device 2, use the pulldown to select the new device and then **Start VDI**.



Auto Start Pocket PC Server

Please consult the Verisurf Pocket Readout Installation Guide. This is a little used device and has its own manual.

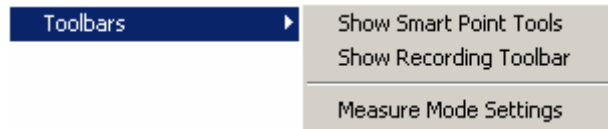
Auto Start DataXPort Utility

N/A

Auto Start Remote Server

N/A

Toolbars



Show Smart Point Tools

This selection will bring up the Smart Point Tools dialog. Smart Points are a Verisurf method of collecting points without having to trigger the device to measure the point. The VDI will automatically take a point when you hold the device stable within a specified distance for a period of time that you specify.

There are 2 types of Smart Points, a point smart point that creates a point at center of the probe and a sphere Smart Point that creates a point at the center of a measured sphere or tooling ball. Both will create only a point.

SETTINGS FOR POINT TAB

OFF/ ON

This is used to see if Smart Point is active or not. You can also make it active from this button.

More / Less

This button is used to show or unshow the parameter settings in the dialog.

Pts / s

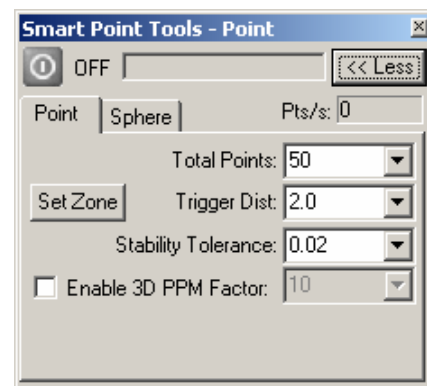
This shows how many Points per second your device is reading.

Total Points

This pulldown is where you set how many points you want the VDI to count up before it averages them and creates a point. Keep in mind that if your Pts/s is reading around 100 and your Total Points is set at 50 it will take about .5 seconds to count up 50 points.

Trigger Distance

After a point is taken the VDI will not immediately begin counting up again to take a second point until you move the device this distance. It is a reset to let the VDI begin another Smart Point when you are ready.



Stability Tolerance

This is the distance parameter that you will have to hold the device steady for the VDI to begin its count up. If you move out of the set distance the count up will reset to 1 and begin again until you hold the device steady for the Total Points required to record a Smart Point.

Enable 3D PPM Factor

For users of trackers this option allows you to use the PPM factor of the device as a substitute for the stability tolerance. When enabled the stability tolerance is disabled and the user will use the dropdown to input the PPM factor of the tracker device.

SETTINGS FOR SPHERE TAB

Sphere Points

The amount of points the VDI will take before calculating the sphere.

Separation Distance

This is the distance the probe will need to travel before taking another point.

Reset Distance

After a sphere is measured the VDI won't reset to measure another until the probe has moved this amount.

Sphere Tol

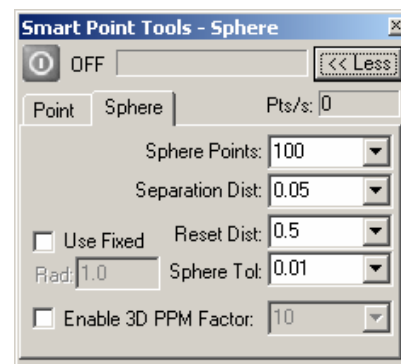
After the probe has picked up the required points and creates the sphere in background the VDI checks that the created sphere has used no points further from the average sphere than this distance. If there are the sphere fails and has to be re-measured.

Use Fixed

This toggle allows the VDI to solve the sphere using a known radius such as a hidden ball bar for trackers. Check this and input your hidden ball bar length.

Enable 3D PPM Factor

For users of trackers this option allows you to use the PPM factor of the device as a substitute for the stability tolerance. When enabled the stability tolerance is disabled and the user will use the dropdown to input the PPM factor of the tracker device.



Show Recording Toolbar

N/A

Measure Mode Settings

The Measure Mode Settings are used to change the way your device will pick up points. There are four choices for smart points and parameters for smart sphere.

The **Point Settings** choices are as follows:

- **Continuous** – Allows points to be taken in a stream or drag mode. This is also known as scanning.
- **Single Shot** – Takes one point right where the probe tip is at.
- **Timer Mode** – This mode will take a point at each time increment. If set at .5 sec a point will be taken every .5 seconds.
- **Average Mode** – You enter the amounts of points you will have to trigger before the VDI averages them all together to output one point.

Measure Mode Settings

Point Settings

- ☐ Continuous
- ☒ Single Shot
- ☐ Timer Mode
- ☐ Average Mode

Delay: 0.5 sec

Total Points: 50

Measure Sphere Settings

Auto Finish Number of Points: 5

Show Results Data: (D) Diameter

Show Results Timer: 3 Sec.

☒ Enable Fit Tolerance: 0.01969 IN

Cancel OK

The **Measure Sphere Settings** are for measuring a sphere from the sphere icon in the VDI and are as follows:


- Auto Finish Number of Points – This is how many points you will have to take to measure a sphere.
- The Show Results Data is to report the measured sphere in the VDI window as a Radius, Diameter, Std Dev or Max Dev.
- The Show Results Timer is how long the Results Data will be displayed.
- Enable Fit Tolerance enables that after the probe has picked up the required points and creates the sphere in background the VDI checks that the created sphere has used no points further from the average sphere than this distance. If there are the sphere fails and has to be re-measured.

Device Alignments

Device Alignments


Please consult the Verisurf Device Alignments Manual. This is a lengthy discussion and has its own manual.

Move Window

 Move Window

The move window selection is used to position the VDI window to another position on your desktop.

? About


 About

Use this selection to check the VDI revision you are currently running.

Hide Window / Exit

Hide Window

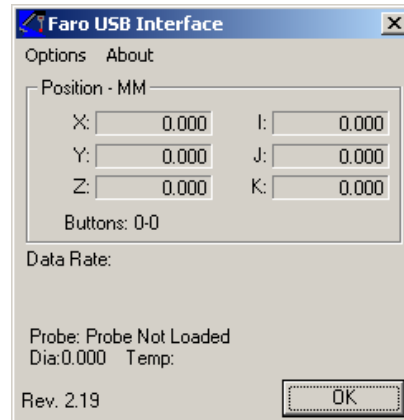
Exit

Use the Hide Window selection to hide the VDI window. This is nice for arms where limited interaction with the VDI is required. To unhide go to the lower right corner of your Taskbar and click this icon. 

Faro USB Arm Controls

Faro USB Arm Controls

The Faro USB Arm Controls will bring up the Faro USB Interface. This is a Verisurf program that links you to all available Faro utilities. It shows a number of areas. There is an X-Y-Z-I-J-K readout display. It shows the rate at which data is being taken. It shows which probe is loaded with the diameter and it shows the current temperature the device is recording.

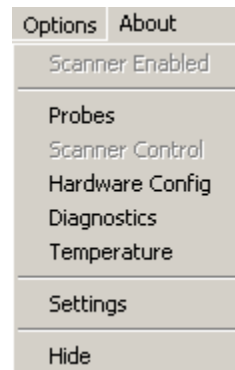


Options

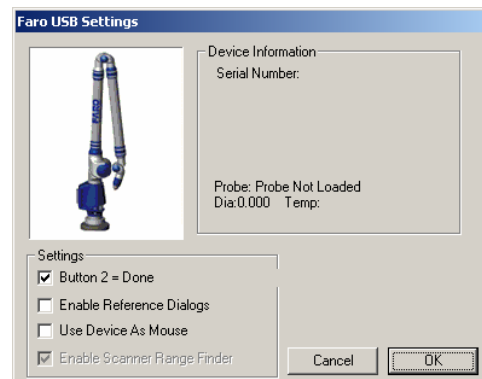
The OPTIONS pulldown will expose this window.

Here there are a number of choices that will take you, through a link, to the Faro software.

The option of probes will bring up the probe calibration window from Faro. This window is the same window you will get when you choose **Probe Rad: x.xxx** which is discussed in the next section.

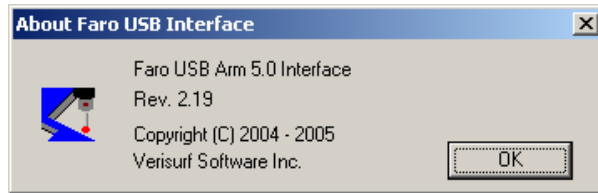


The **Hardware Config** and **Diagnostics**, **Temperature** and **Settings** selections will take you to Faro menus which have documentation in the Faro manuals. One item of note though that Verisurf recommends is un-checking **Enable Reference Dialogs** in the Settings menu. This will stop the Faro alarm from popping up everytime you place the arm in its home position.



About

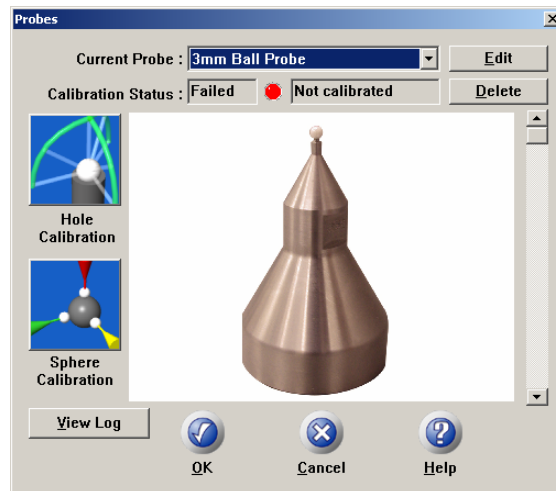
The About selection will bring up this screen.



Probe Rad: x.xxx

 Probe Rad: 0.2500

This selection allows the user to calibrate probes. Please refer to the Faro manual on the settings for this.



Verisurf recommends that when calibrating probes the Guidance should be turned off to aid in the calibration.

