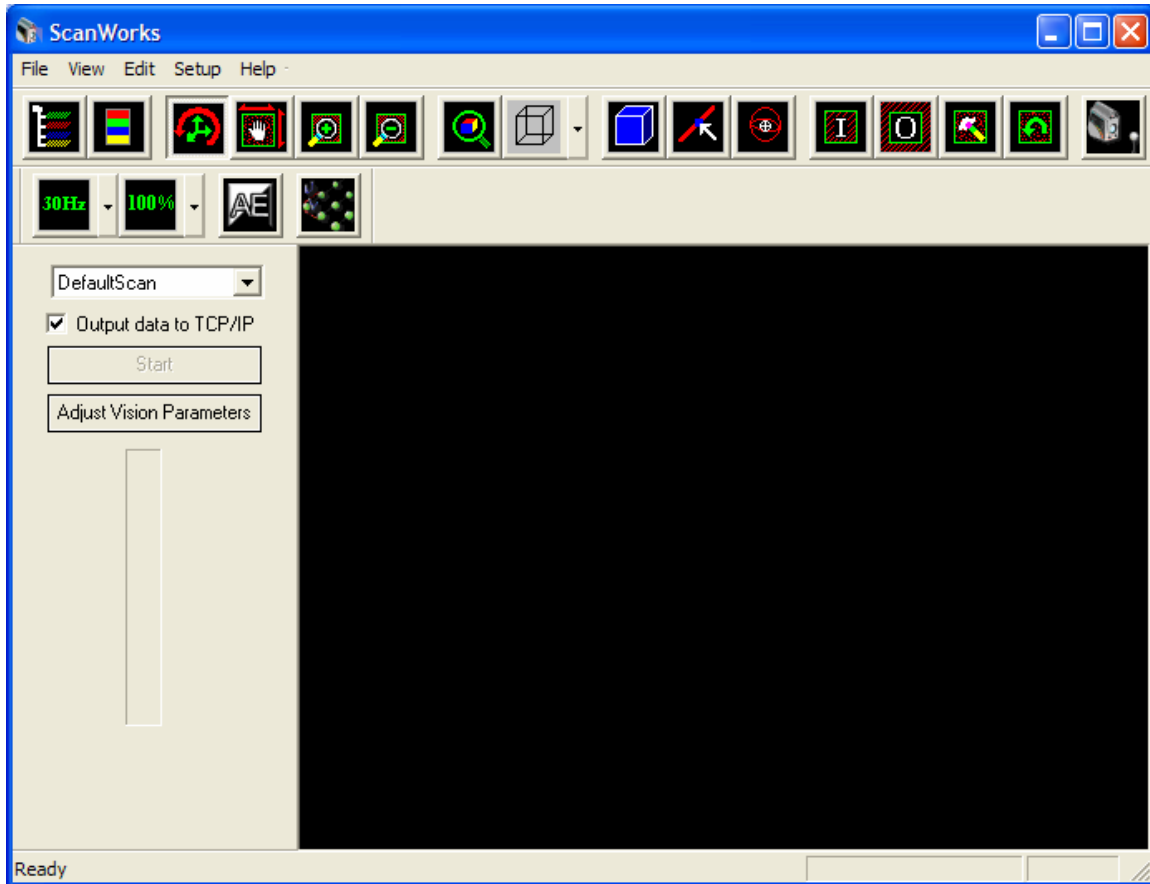


Scanner Measurement:

Perceptron Contour Scanner for CimCore:

The Perceptron interface requires that you install and run Perceptron's ScanWorks application. Make certain the scanner is connected to the arm, and the power to the scanner is on. Run ScanWorks. Shown here is ScanWorks version 4.4a.082:

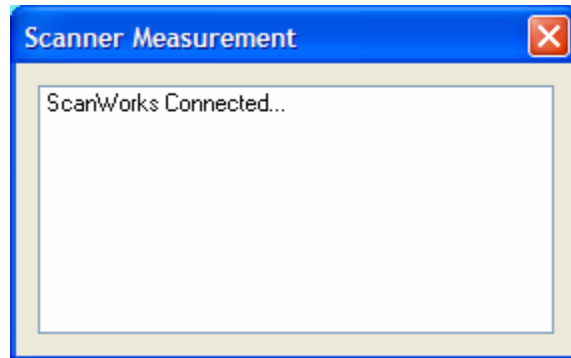


Note the 'Output data to TCP/IP' setting is checked. This MUST be checked in order for the interface to receive data. In older versions of ScanWorks, you must go to the Set up menu, and select User Options. There, you must check 'Output data to TCP/IP', and select 'Inches' as the units. In ScanWorks v. 4.4 and later, the SA interface sets the units in ScanWorks automatically.

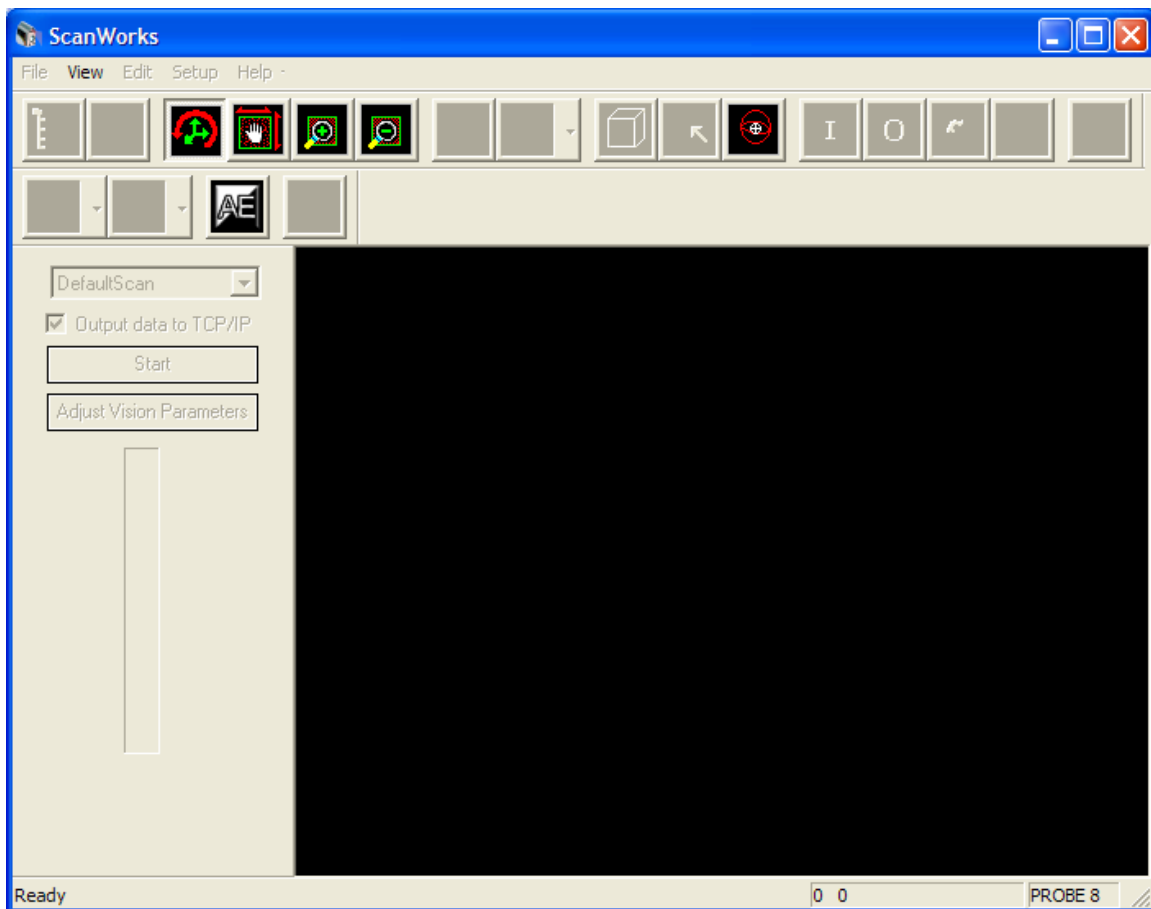


Minimize ScanWorks to preserve screen space. In the SA interface, select the scanner measurement mode icon to start the scanner measure mode. As with any measure mode, this is normally done by pressing the 'Record / Accept' button for a short duration to iterate through the measure modes (buttons will appear pressed as you iterate through.) Or you can press the 'Delete Last / Cancel' button to iterate back the other way through the measure modes. Then, a long button press on the 'Record / Accept' button will start the selected measure

mode. The scanner laser line will turn on, and the Scanner Measurement Dialog will appear:



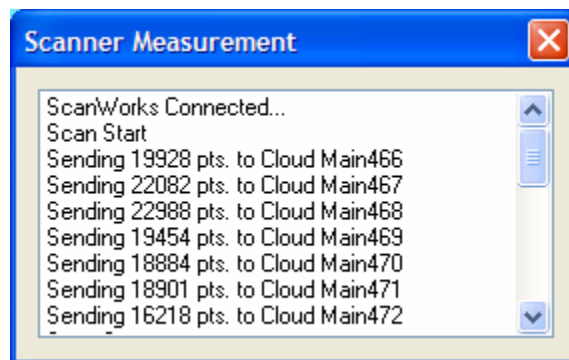
If the ScanWorks window is visible, you'll notice most controls are greyed out in ScanWorks, denoting that control has been taken by the SA CMM Arm interface.



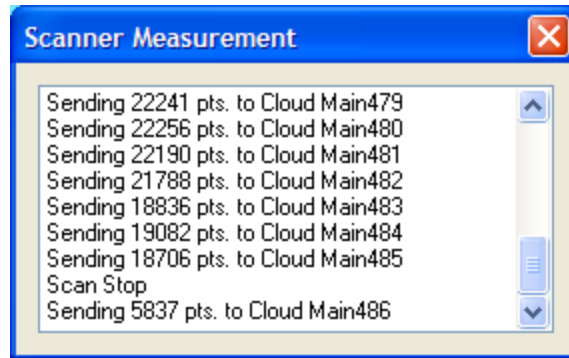
You'll also notice that ScanWorks will pop a scanner distance indicator bar to help determine whether you are a good distance from the surface to be scanned:




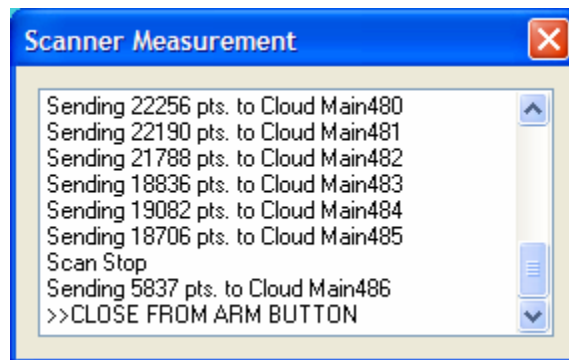
You'll also hear a variable frequency beep giving an audible scanner-to-part distance indication. Both these features can be toggled in the ScanWorks Setup menu under User Options. When you reach a good starting position, simply press and release the scan start/stop button on the arm (this is determined by ScanWorks. For example, on a 7 dof arm with a trigger style handle, the start scan button will be the center, or trigger, button.). During the scan, Scanner Measurement dialog will indicate that a scan has started, and will display progress indicating number of cloud data points and Cloud Name being sent to SA.



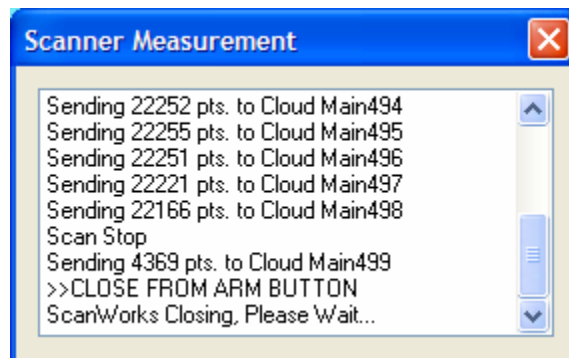
End a scan by again pressing and releasing the arm scan button. When this happens, the Scanner Measurement dialog will indicate the scan stop, and will send and report any left over buffered cloud points.



Perform as many scans as are desired in this way. To end the Scanner Measurement Mode, you must press the 'end scan session' button on the arm. Like the start/stop scan button, this is determined by ScanWorks. For example, on a 7 dof arm with a trigger style handle, the end scan session button will be either of the outside buttons on the trigger handle. Note that if you try to simply close the Scanner Measurement dialog with the , it will not close, and the dialog will instruct you to end the scan session from the arm:



Once you do press the appropriate arm button to end the ScanWorks scan session, the Scanner Measurement will report that the ScanWorks connection is closing:



...and will close once ScanWorks is disconnected. If the ScanWorks window is visible, you'll notice that its controls are re-enabled, indicating that scanner control has been passed back to it.

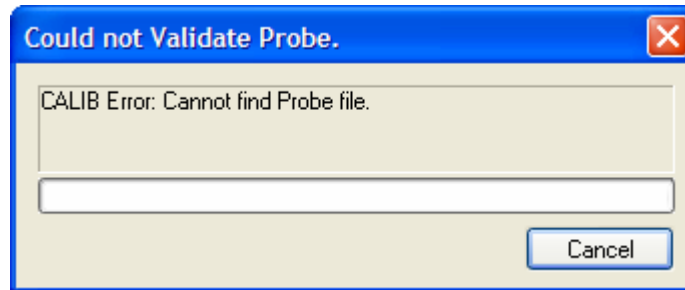
Scanner Settings:

You can edit the scan data handling and naming in the Arm Settings dialog. Press



to edit arm settings.

Note that if you still have the Perceptron scanner connected, you will briefly see an error message from CimCore:



This is expected, since the CimCore Validate Probe function is called, and CimCore has no knowledge of the Contour Scanner as a valid probe definition. Indeed, this error will be generated any time a measurement other than scanning is attempted while the scanner is connected to the arm.

The arm Options dialog will appear.

Options

Button Functions

One: Delete Last / Cancel

Two: Record / Accept

Three: Delete Last / Cancel

Units

inches

Sound Options

Fit/Scan Options

Query rate during measurements: 20 /sec

☐ Send intermediate points with features

☒ Send geometries

☒ Increment Group After Measurements

Increment Point Names by: 1

☒ Update SA Graphics When not measuring

Query rate for updates: 16 /sec

Probe

☒ Auto Detect Probe

Probe Number: 8

Apply

Material Thickness

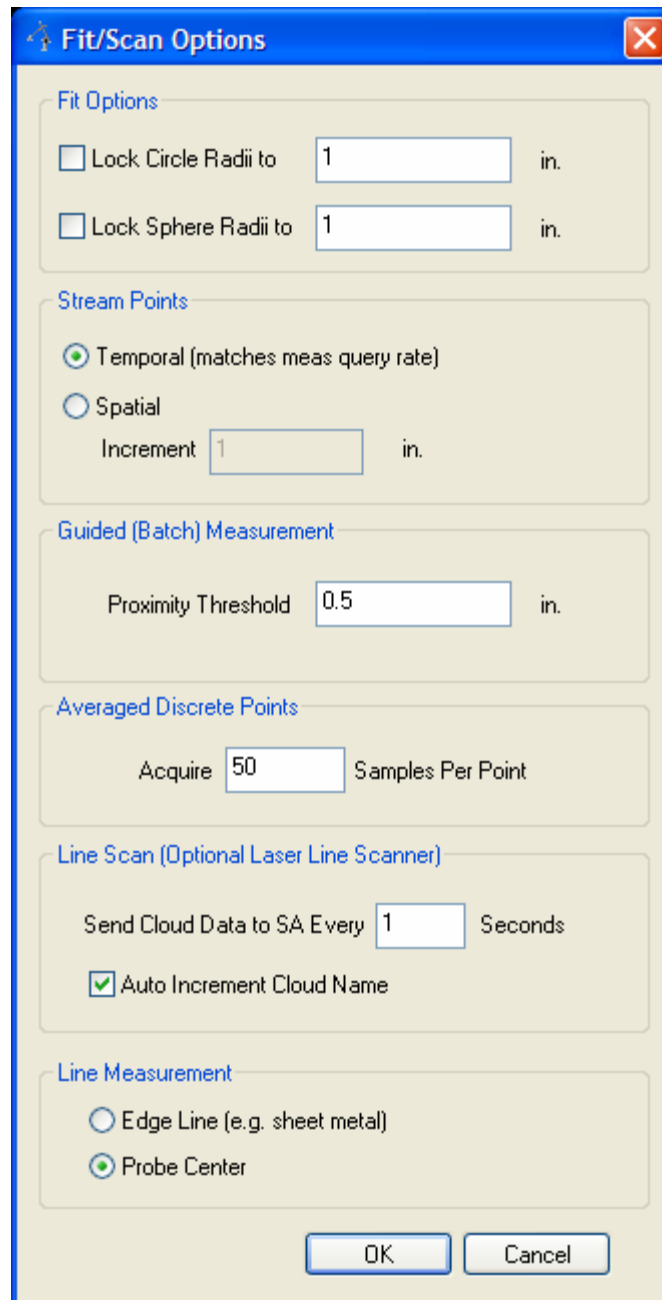
☐ Add Additional Offset to Patches

Offset: 0 in.

Change Language

OK Cancel

Press **Fit/Scan Options** to show the Fit/Scan Options dialog



The image shows a software dialog box titled "Fit/Scan Options". It contains several sections for configuring scan parameters:

- Fit Options:**
 - ☐ Lock Circle Radii to in.
 - ☐ Lock Sphere Radii to in.
- Stream Points:**
 - ☒ Temporal (matches meas query rate)
 - ☐ Spatial
 - Increment in.
- Guided (Batch) Measurement:**
 - Proximity Threshold in.
- Averaged Discrete Points:**
 - Acquire Samples Per Point
- Line Scan (Optional Laser Line Scanner):**
 - Send Cloud Data to SA Every Seconds
 - ☒ Auto Increment Cloud Name
- Line Measurement:**
 - ☐ Edge Line (e.g. sheet metal)
 - ☒ Probe Center

At the bottom of the dialog are "OK" and "Cancel" buttons.

Under 'Line Scan (Optional Laser Line Scanner)', you can control the interval at which scan clouds are sent to SA (Perception Contour can acquire up to ~23kPts/sec), by editing the field labeled 'Send Cloud Data to SA Every ___ Seconds'. The Cloud Name is taken from the current Group Name in the main dialog. If 'Auto Increment Cloud Name' is checked, then the name will automatically increment after each cloud data packet is sent to SA. NOTE: The Scanner Measurement dialog is modeless, meaning the Group Name (and therefore Cloud Name) in the main dialog can be edited any time, even during a scan session. The scanner measurement progress shown earlier in this section was performed with the settings as shown here. To apply settings, simply press OK.

Scanner Calibration:

The ScanWorks User Guide includes detailed instructions for calibrating the scanner to the arm. Read the instructions through before attempting to calibrate the scanner.

If you need to change computers, but will be using the same scanner and arm, you can transfer the existing calibration to the new computer. The calibration file is stored in the ScanWorks install on the application pc. For example, if you used the default location for the ScanWorks install, the calibration file will be stored in

C:\Program Files\Perceptron\ScanWorks\CimCore\data\

or in newer versions of ScanWorks, the calibration will be stored in

C:\Documents and Settings\All Users\Application Data\Perceptron\ScanWorks\caldata

The name of the file is

xform_[scanner serial number].dat

where [scanner serial number] will match the number printed directly on the scanner. Simply copy this file to the same location in the ScanWorks install folder on the new pc, and you are ready to run using the existing scanner calibration.