

SMARTLINC MULTI-STRAND QUICK START GUIDE

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Description:

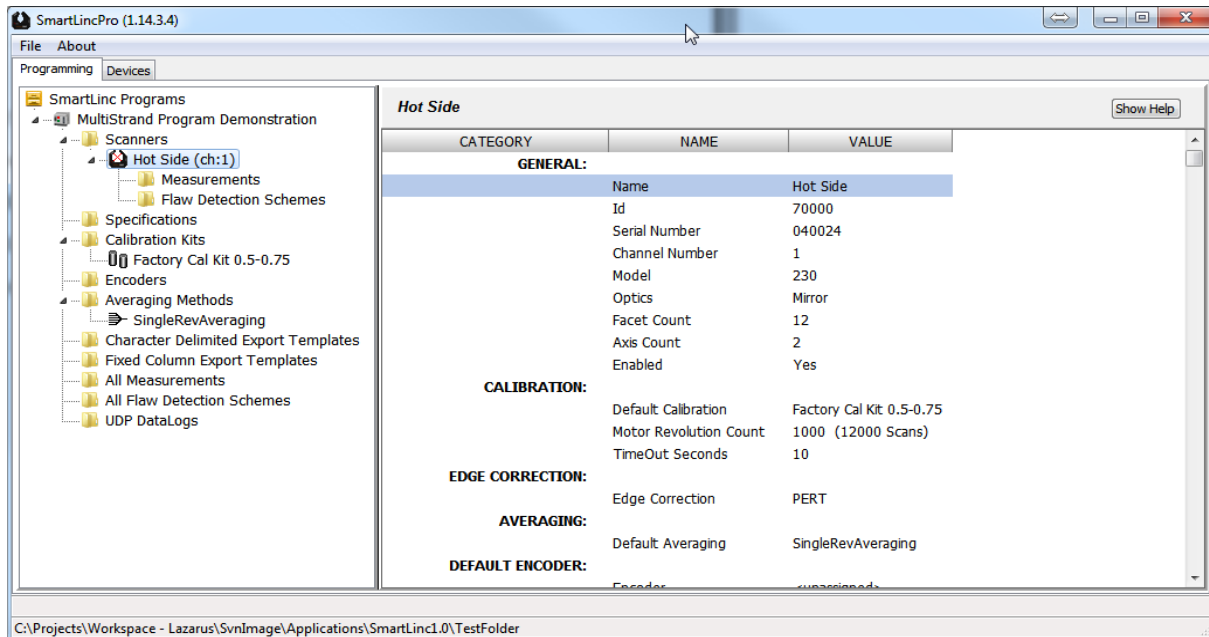
This guide requires the user to have created a program with at least one scanner, a calibration and an averaging method. Further, the calibration and averaging method must be assigned to the calibration and averaging method properties of the scanner. For instructions on creating and configuring a SmartLinc program, see the SmartLinc Quick Start Guide.

The multi-strand configuration interface of SmartLinc Exec enables the SmartLinc device to detect and measure multiple parts in the scanner window. Measurement of transparent parts is also supported.

To enable the SmartLinc device to properly identify multiple strands in the scanner window a multi-strand profile is implemented which identifies the boundaries of the parts and resulting zones, where each strand is expected. An interactive utility is provided which captures the profile and allows the user to adjust the zone boundaries. The ability to modify the zones is required for establishing the profile of transparent parts.

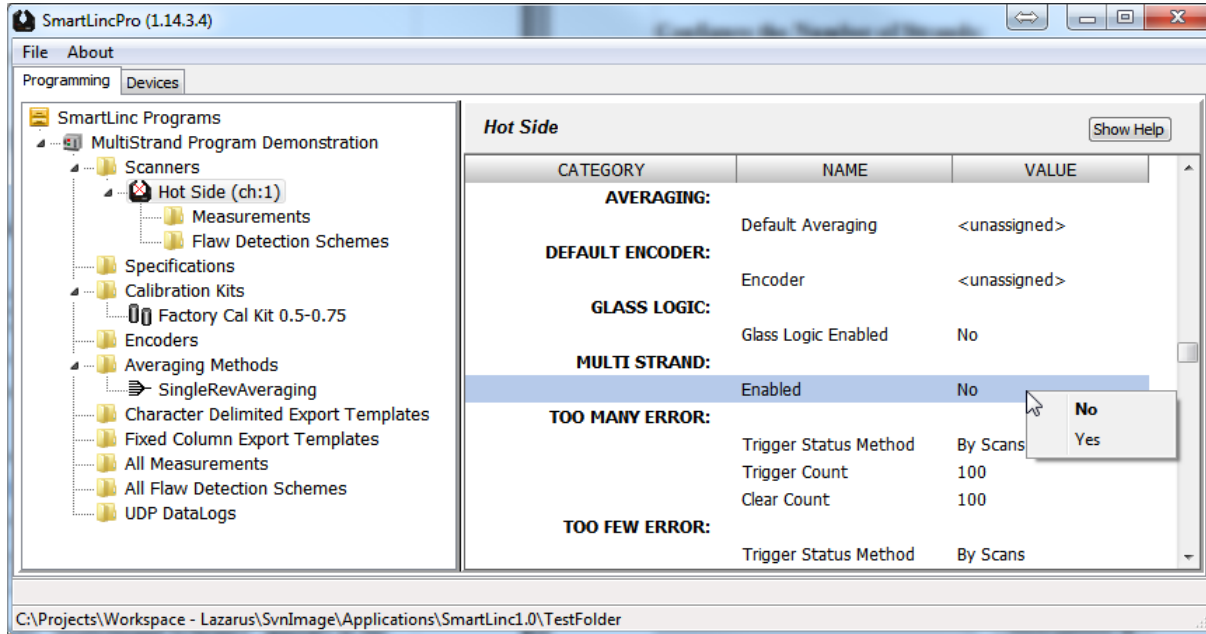
Initial Configuration:

As previously stated, the program example below has a single 2-axis scanner with a calibration and averaging method assigned to the scanner's respective calibration and averaging method properties. Measurements have not been created for the scanner. See below....

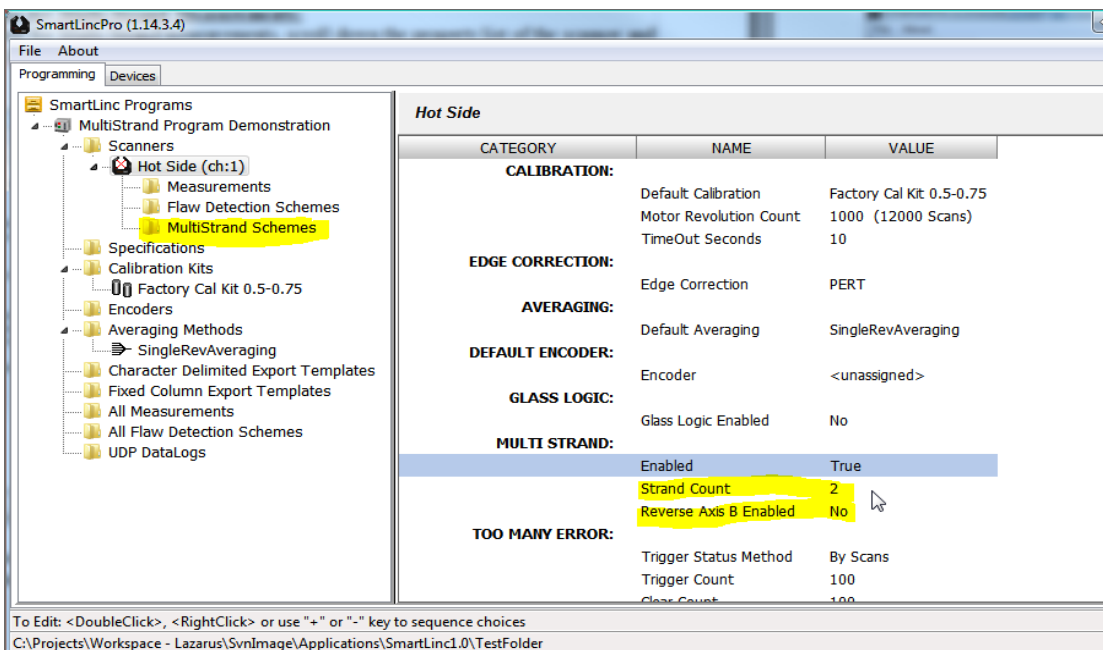


Enabling the Scanner for Multi-Strand Measurements:

To enable a scanner for multi-strand measurements, scroll down the property list of the scanner and enable the MultiStrand property.

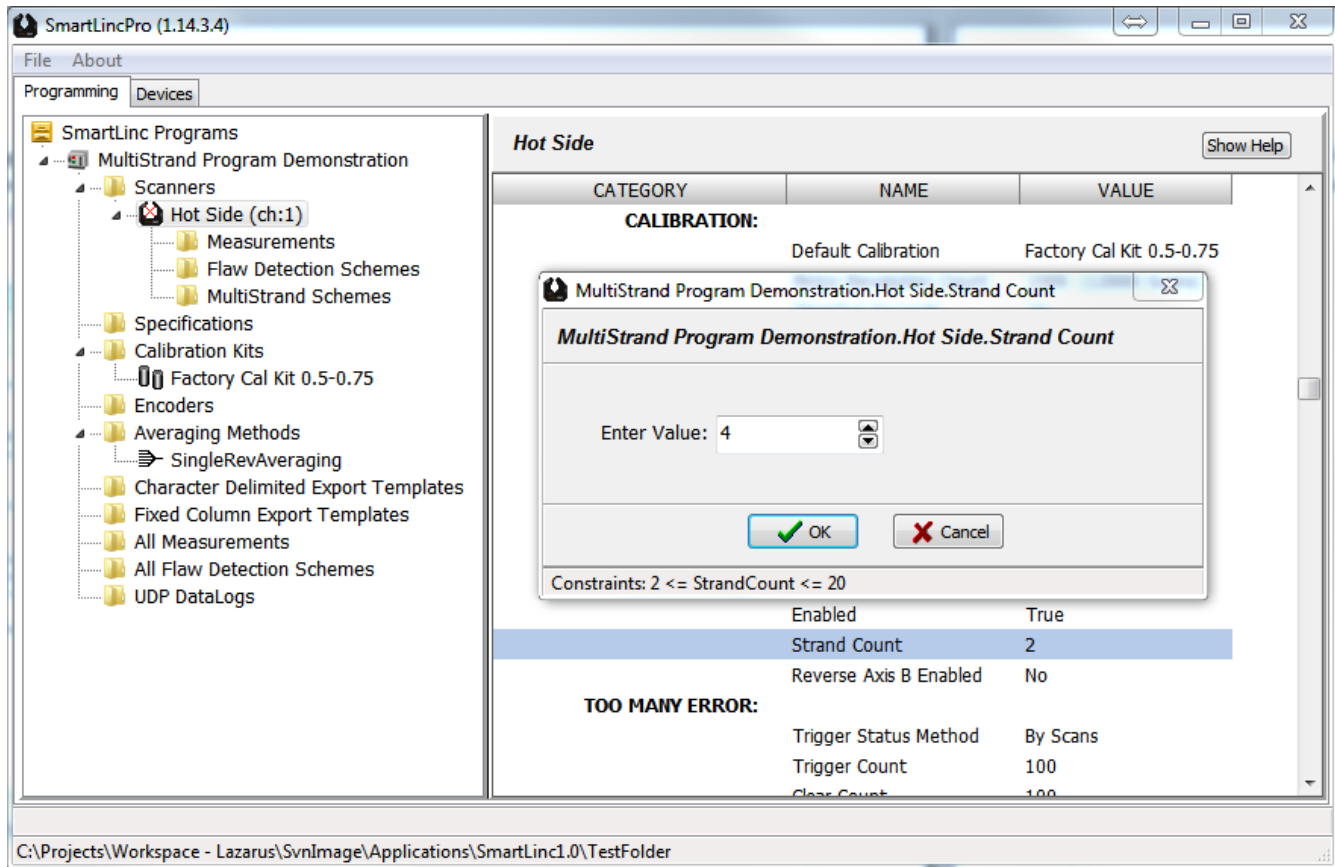


Upon enabling the MultiStrand property, the file category “MultiStrand Schemes” appears in the left hand explorer pane under the Hot Side scanner and additional multi-strand properties appear in the right hand detail pane.



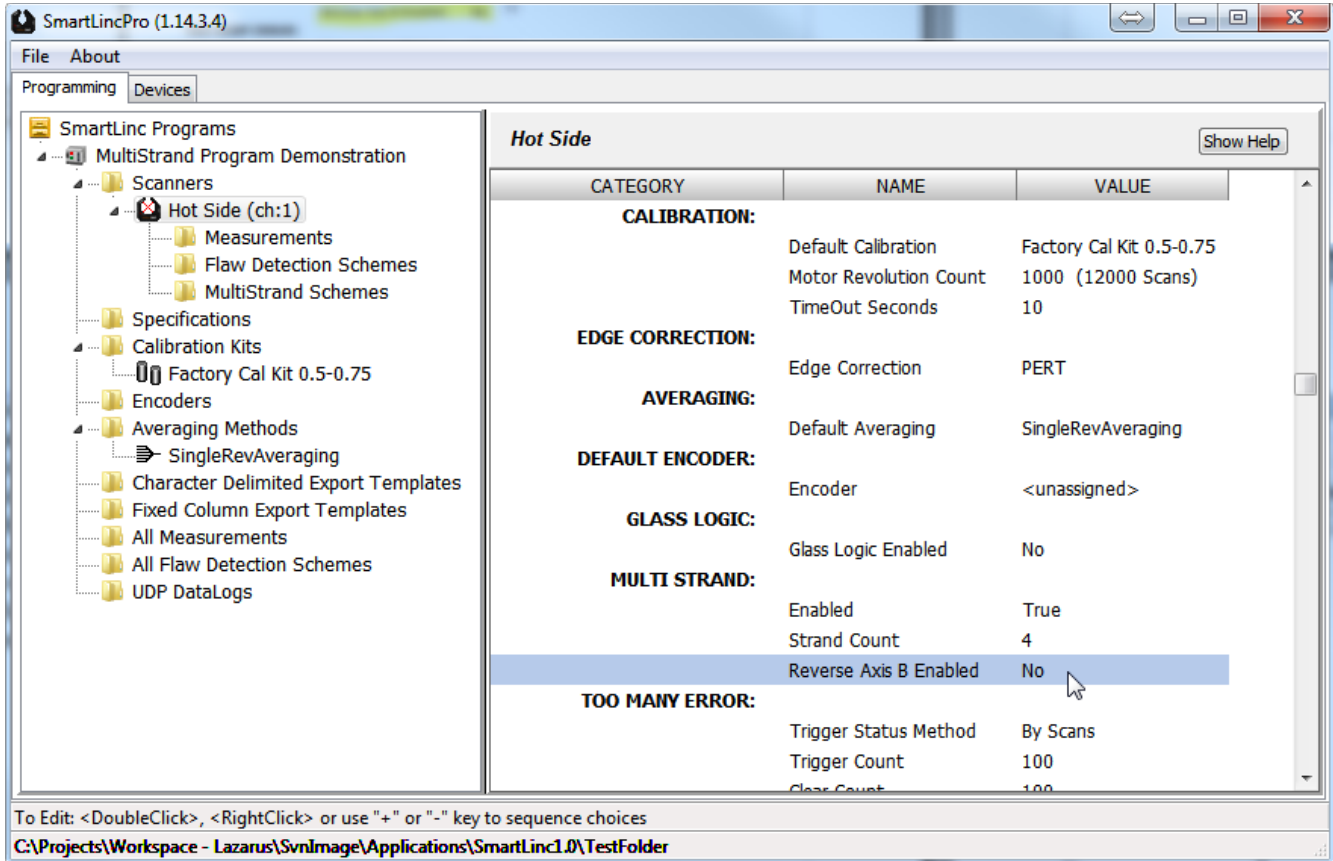
Configure the Number of Strands:

Set the “Strand Count” property to the number of strands to be measured.



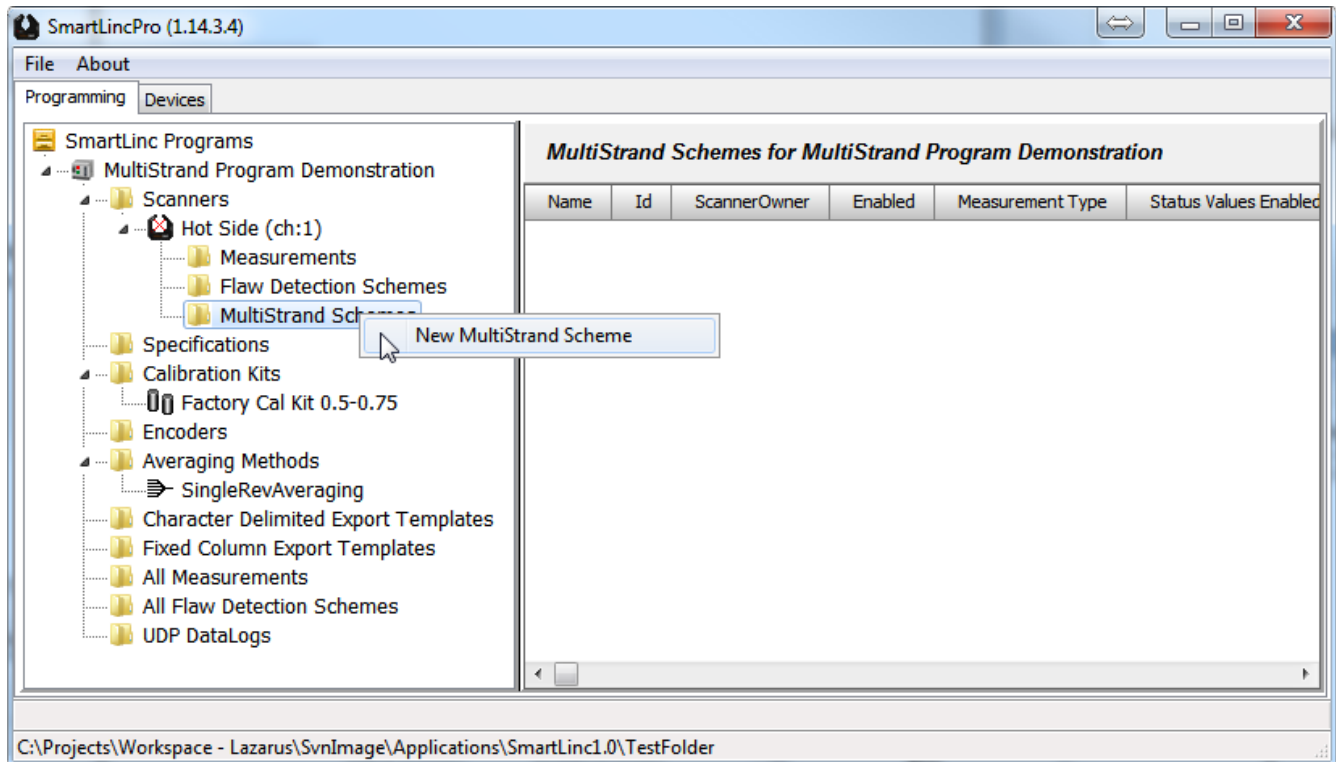
Configuring the Reversed Axes Property:

When using a scanner with two or more axes, the strands must be positioned diagonally to each axes in order to be detected by all axes. Reversing axes is required since the beam for Axis 2 and/or Axis 3 may strike the last strand of the Axis 1 first, depending on the implemented diagonal orientation of the strand row. If this is the case, Axis 2 and/or Axis 3 must be reversed for multi-axis measurements such as AverageXY or AverageABC to report the correct value. Therefore a 2-axis scanner can have Axis 2 reversed and a 3-axis scanner can have the Axis 2, Axis 3, or both reversed. Make careful note of the orientation of the strand row within the scanner field and set this property appropriately. This property does not appear for a single axis scanner.



Creating A Multi-Strand Scheme:

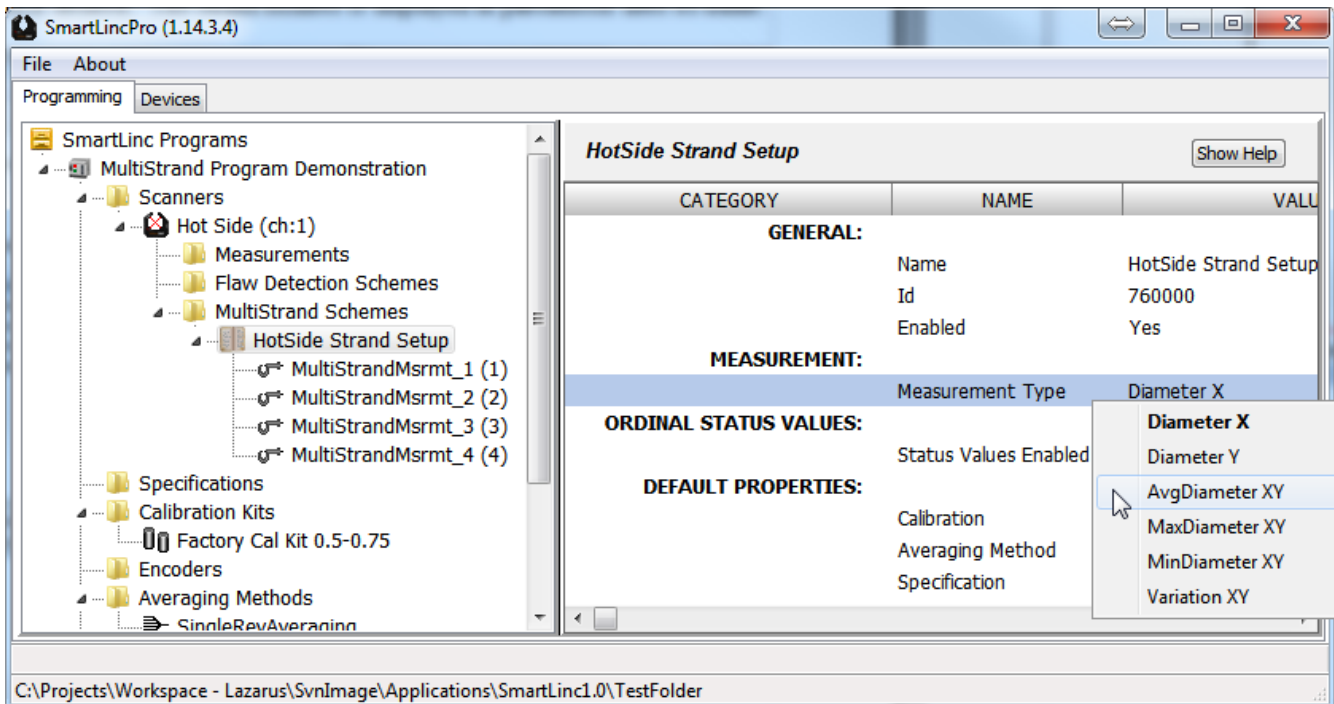
In the left explorer pane, right click the “MultiStrand Scheme” folder icon and select “New MultiStrand Scheme” from the menu. Rename the scheme if desired.



Configuring the Multi-Strand Scheme:

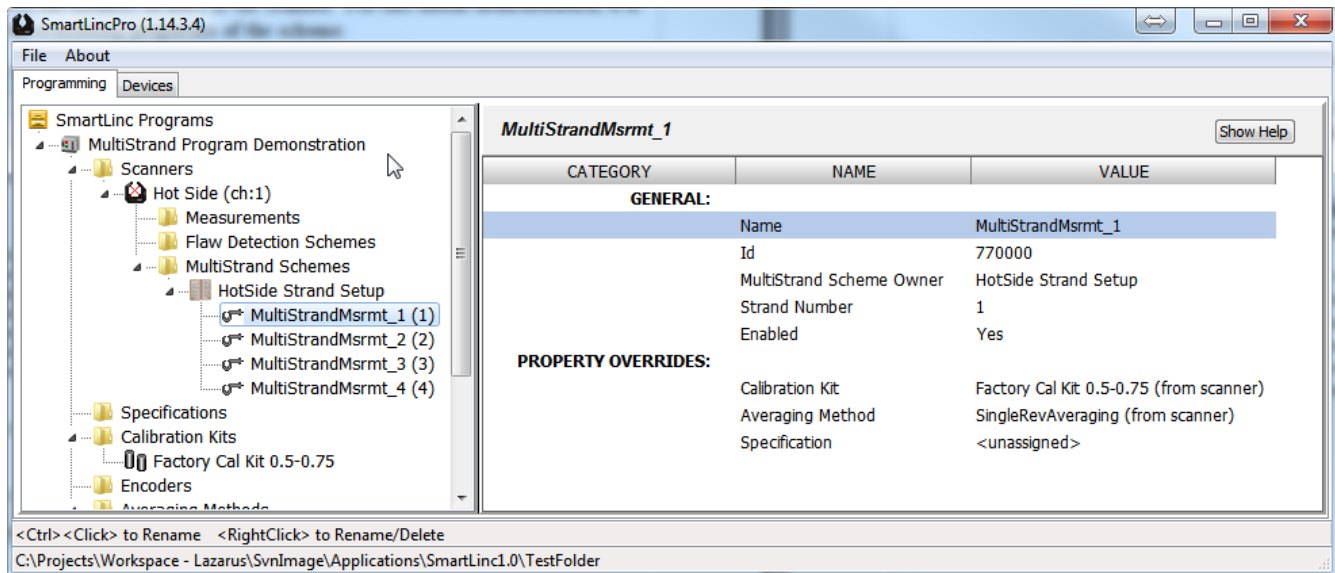
In the left hand explorer pane, expand and select the multi-strand scheme just created. The scheme properties, visible in the right hand detail pane, establish the common properties of its strands.

In the right hand detail pane, select the “Measurement Type” which is applied to all strands. “Measurement Type” entries are limited by the number of axes of the scanner. For this demonstration, it is not necessary to modify the remaining properties of the scheme.



Configuring Strand Properties:

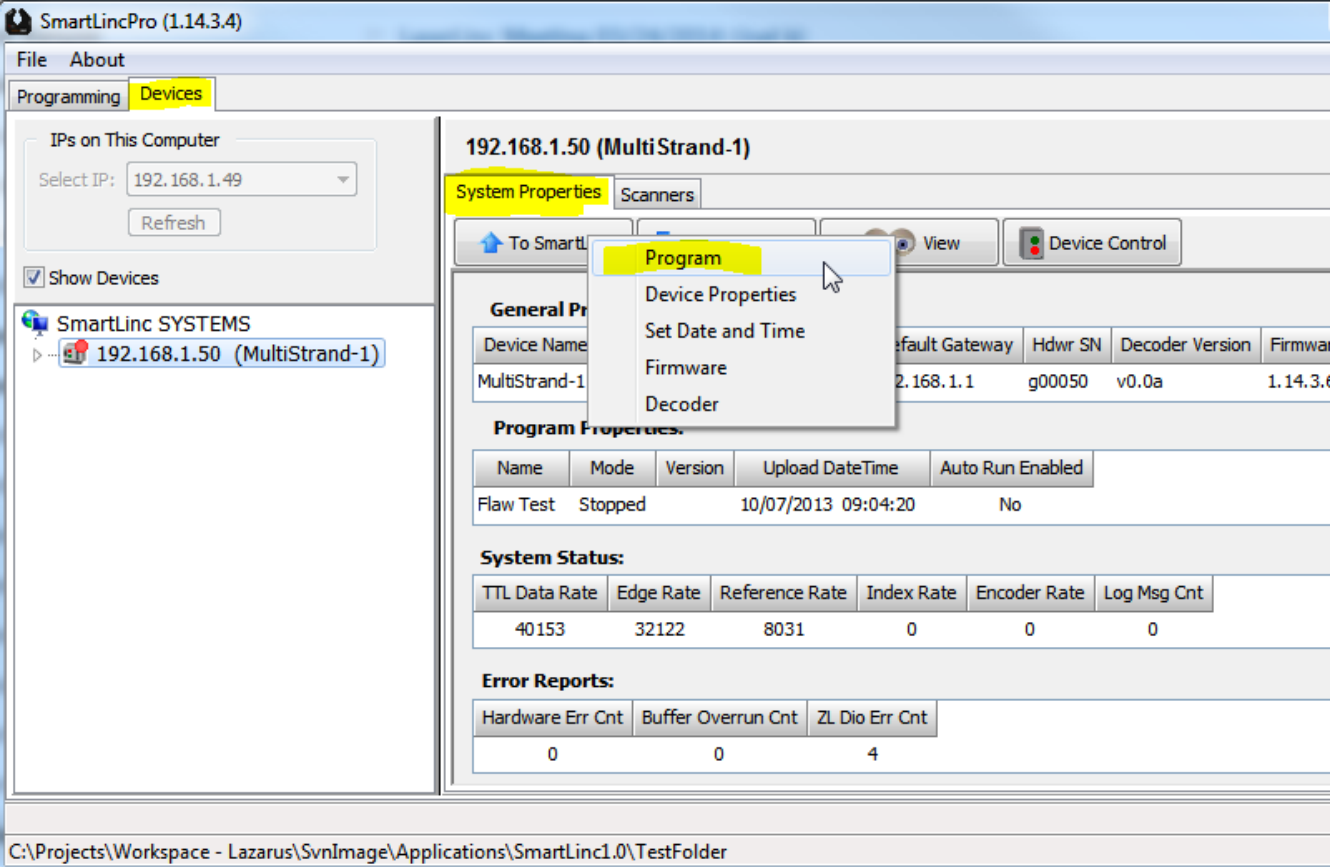
Each strand can have its own calibration and averaging method which override the default calibration and averaging method of the parent scanner. For this demonstration, both the calibration and averaging method will be inherited from the scanner and no further property changes will be required for each strand.



Performing a Multi-Strand Profile:

Performing a multi-strand profile requires the device be connected and communicating with SmartLinc Exec. Please follow the procedure in the SmartLinc Quick Start Guide to connect to the SmartLinc device if necessary.

Before performing the profile procedure, upload the MultiStrand program just created to the device by selecting the “Devices” tab in the left hand explorer pane and the “System Properties” tab in right hand pane. Click the “To SmartLinc” button and follow the prompts to upload the program to the SmartLinc device. As previously stated, the scanner must be calibrated using SmartLinc Exec before profiling can be performed. Follow the calibration procedure in the SmartLinc Quick Start Guide if necessary.



The screenshot displays the SmartLincPro (1.14.3.4) application window. The interface is divided into several sections:

- Left Panel:** Shows "IPs on This Computer" with a dropdown menu set to "192.168.1.49" and a "Refresh" button. Below this is a "Show Devices" checkbox which is checked. A tree view shows "SmartLinc SYSTEMS" expanded to "192.168.1.50 (MultiStrand-1)".
- Right Panel:** Titled "192.168.1.50 (MultiStrand-1)", it has tabs for "System Properties" (selected) and "Scanners". A "To SmartLinc" button is highlighted, and a context menu is open over it, listing "Program", "Device Properties", "Set Date and Time", "Firmware", and "Decoder".
- General Properties Table:**

Device Name	Default Gateway	Hdwr SN	Decoder Version	Firmware
MultiStrand-1	192.168.1.1	g00050	v0.0a	1.14.3.6
- Program Properties Table:**

Name	Mode	Version	Upload DateTime	Auto Run Enabled
Flaw Test	Stopped		10/07/2013 09:04:20	No
- System Status Table:**

TTL Data Rate	Edge Rate	Reference Rate	Index Rate	Encoder Rate	Log Msg Cnt
40153	32122	8031	0	0	0
- Error Reports Table:**

Hardware Err Cnt	Buffer Overrun Cnt	ZL Dio Err Cnt
0	0	4

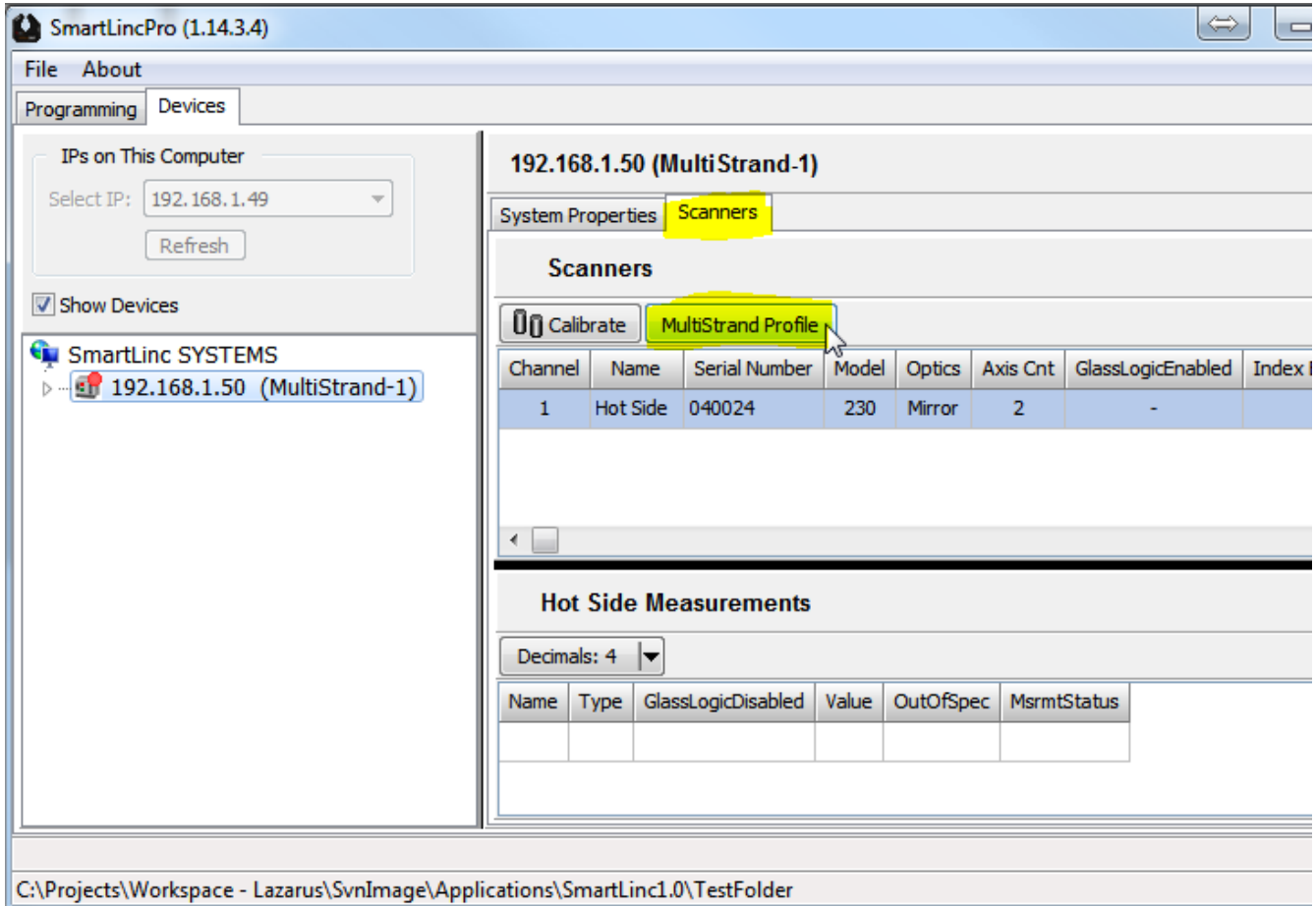
The status bar at the bottom shows the file path: C:\Projects\Workspace - Lazarus\SvnImage\Applications\SmartLinc1.0\TestFolder

(continued...)

(Performing a Multi-Strand Profile:...continued)

Position the product strands within the scanner detection area such that each strand is individually visible to the beam of each axes.

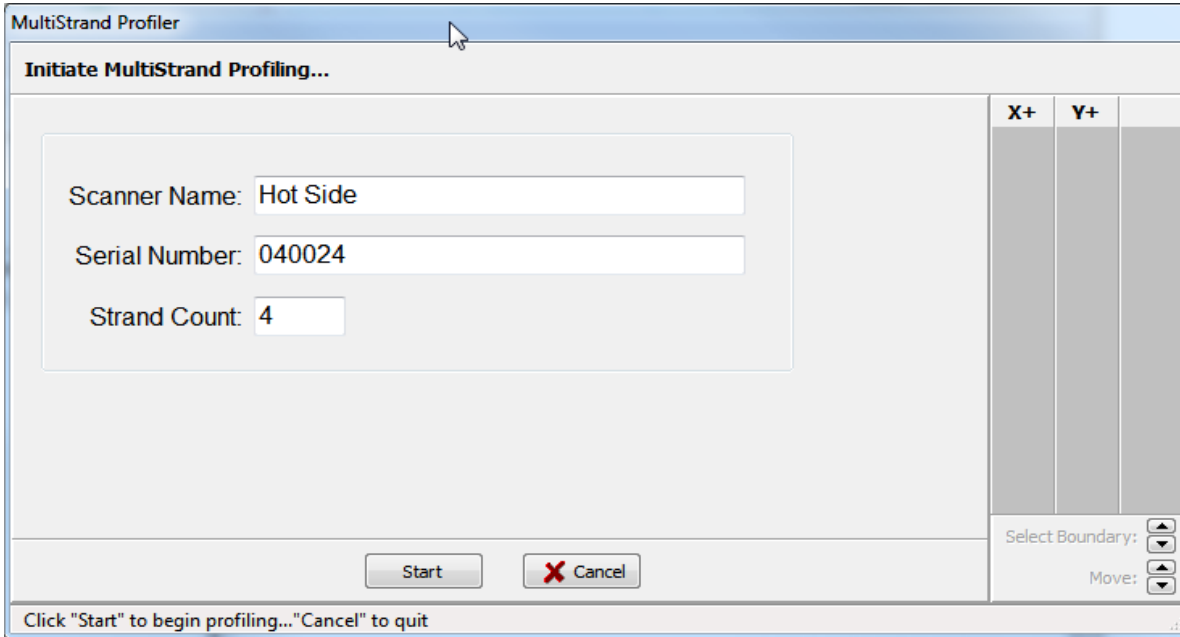
Click the “Scanners” tab sheet, then click the highlighted “MultiStrand Profile”.



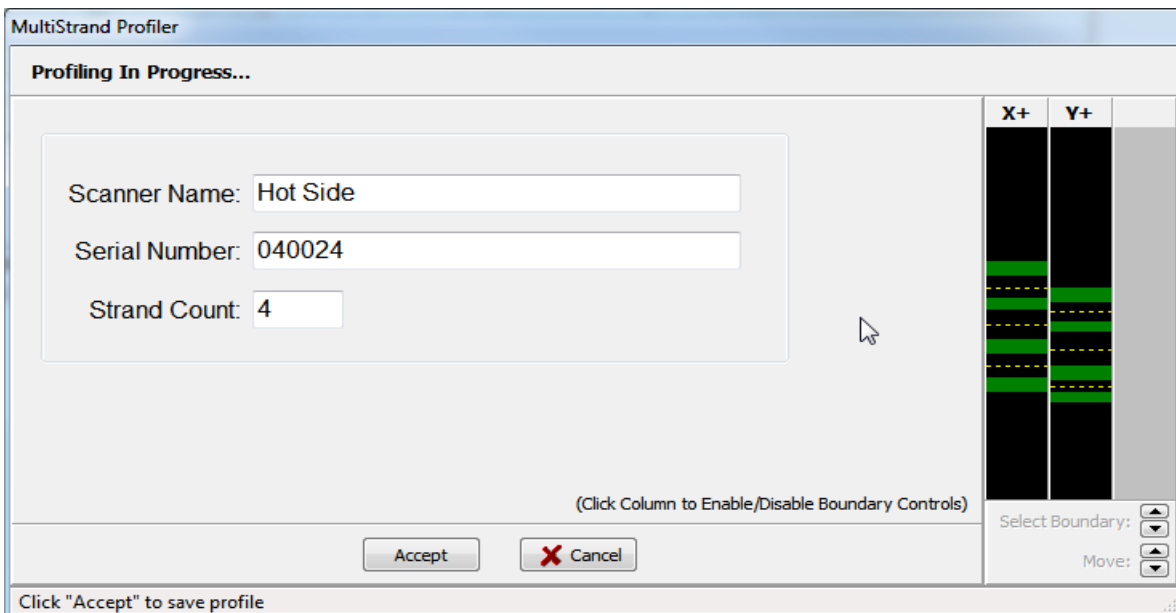
(continued...)

(Performing a Multi-Strand Profile:...continued)

Select the scanner in the grid (there is only one in this example) and click the “Select” button to display the multi-strand profile dialog.



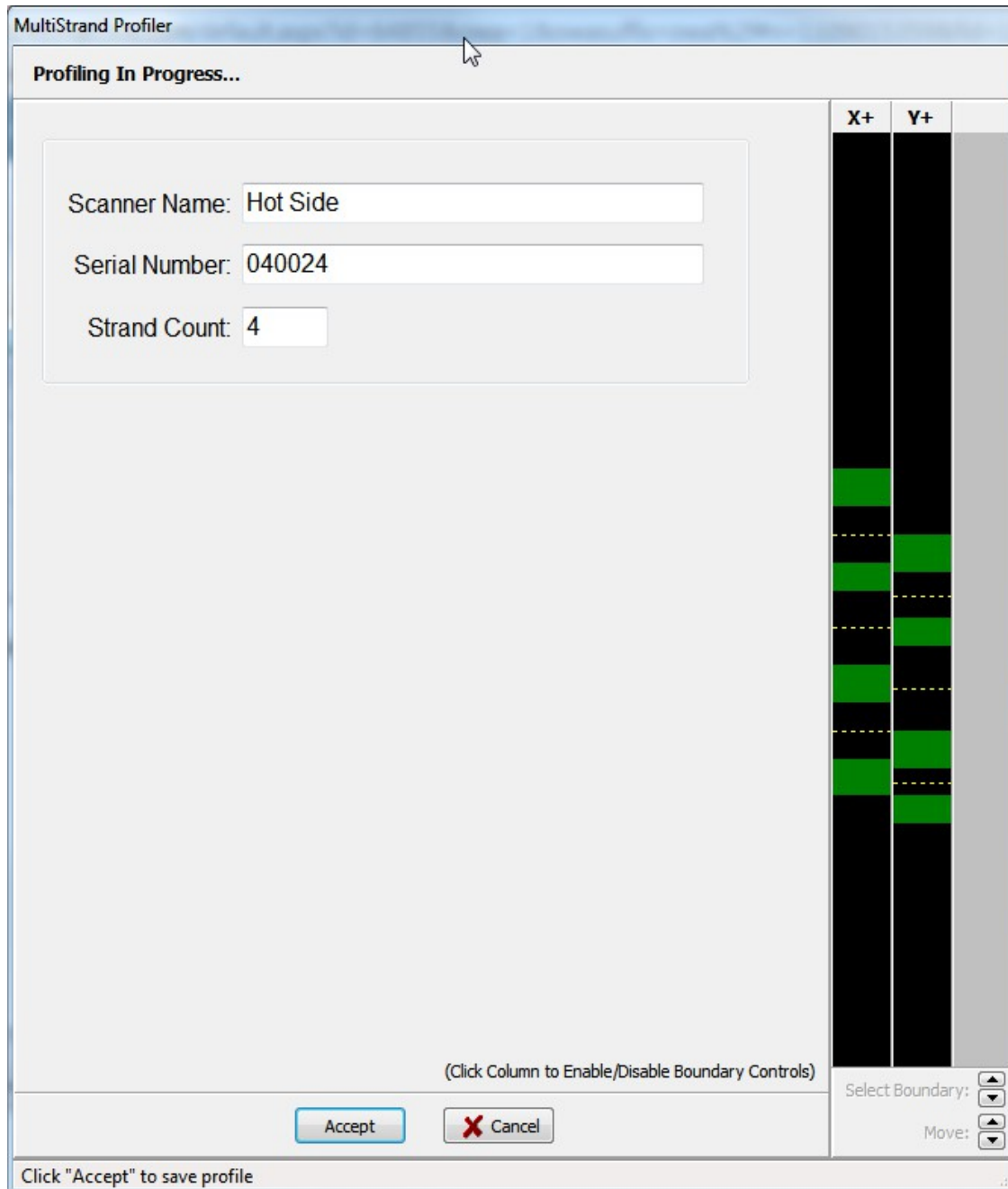
Click the “Start” button to initiate the detection of the strands. The strands will appear in the axes columns and the “Start” button will switch to an “Accept” button.



(continued...)

(Performing a Multi-Strand Profile:...continued)

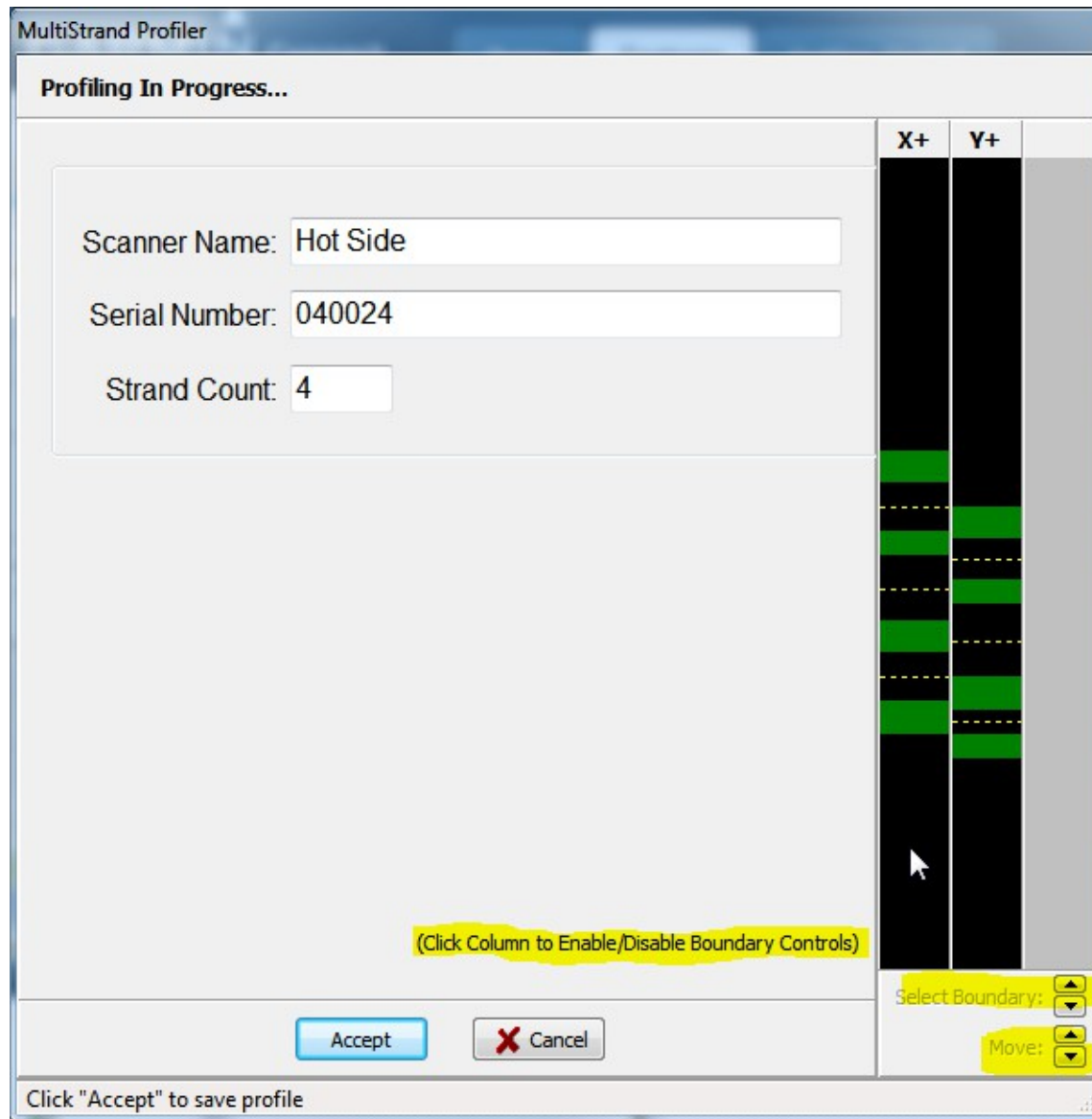
By default, the dialog will place the dotted boundary line(s) halfway between each strand. For closely placed strands, vertically expand the window which will allow improved differentiation of the strands and zone boundary lines. Strands are indicated by the green bars and zone boundaries by yellow dotted lines.



(continued...)

(Performing a Multi-Strand Profile:...continued)

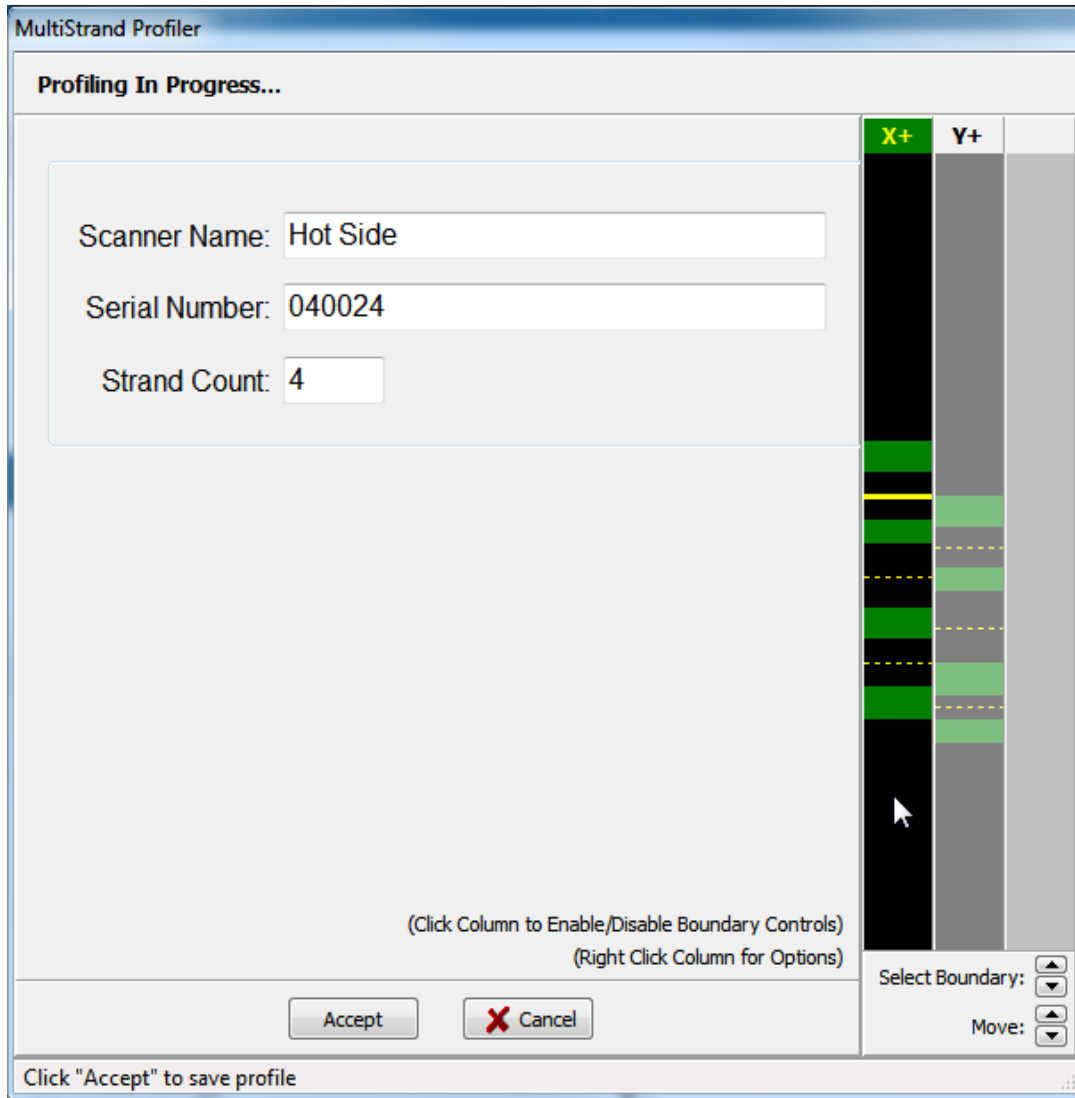
To move a boundary line, click the desired axis column to select it for modification...



(continued...)

(Performing a Multi-Strand Profile:...continued)

Enabling an axis column causes the other columns to be grayed, the boundary manipulation buttons to be enabled, and the currently selected boundary line to be emphasized.



Select the desired boundary line by using the “Select Boundary” up/down buttons.

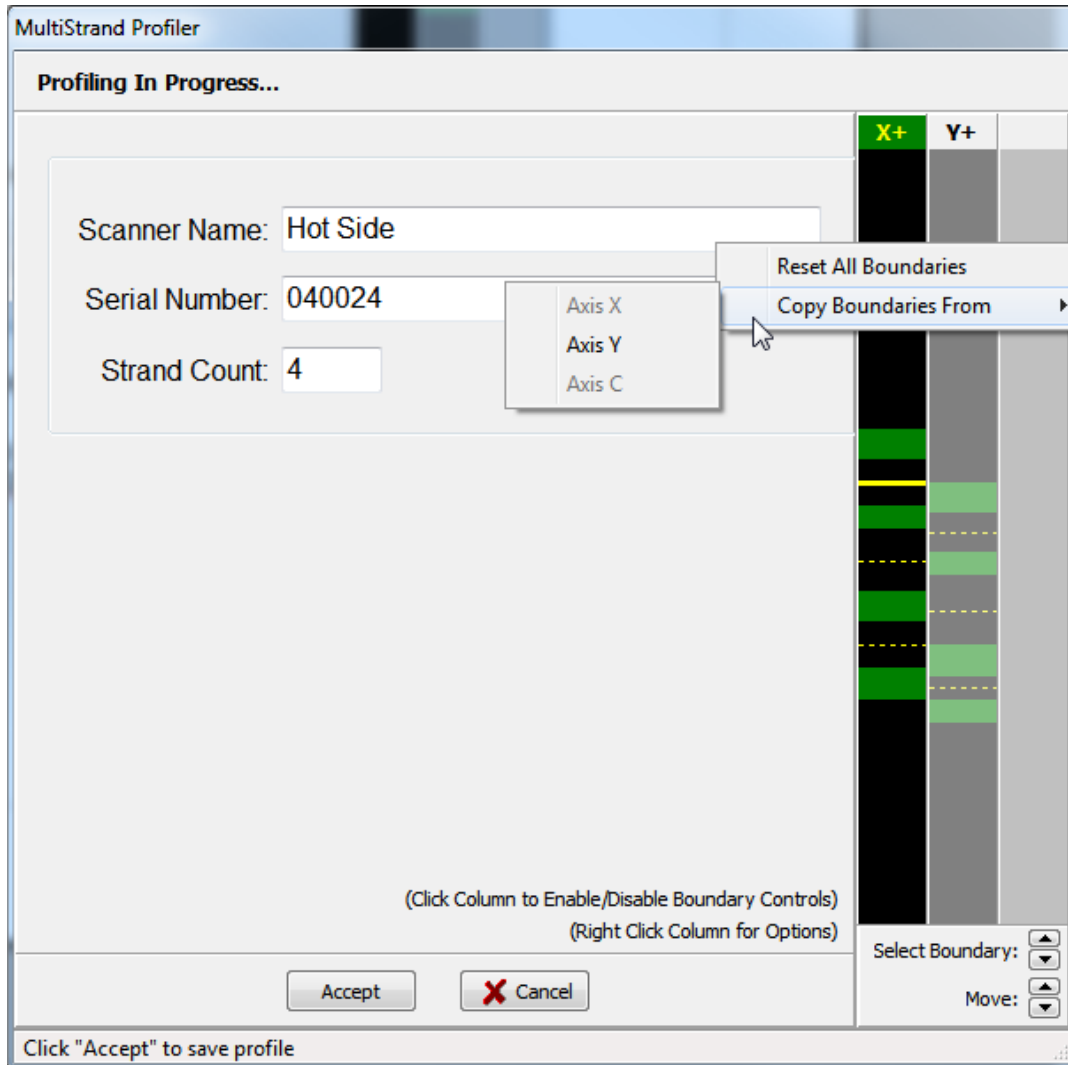
Move the selected boundary by using the “Move” up/down button or the up/down arrow keys or the PageUp/PageDn key. The Page(Up/Dn) keys move the boundary in larger increments than the up/down buttons or arrow keys.

(continued...)

(Performing a Multi-Strand Profile:...continued)

Two actions are available from a drop down menu by right clicking on the active axis column.

1. To reset the boundaries to their default midpoint positions, click “Reset All Boundaries”.
2. If, by design, the strands are positioned identically in all axes, the boundary locations can be copied from another axis by clicking “Copy Boundaries From” -> <source axis>

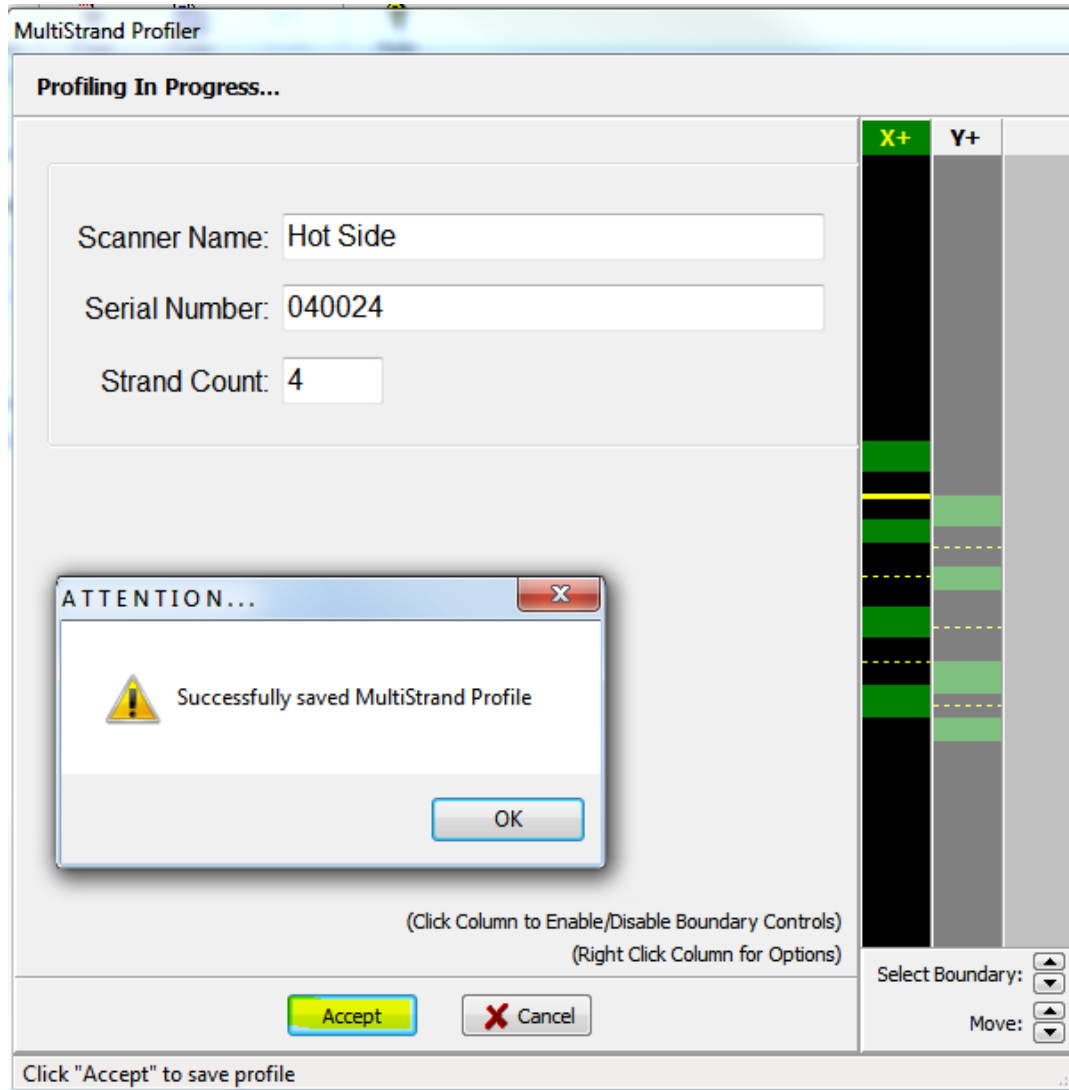


Adjust other axis boundary positions by first clicking on the appropriate column and following the same procedure.

(continued...)

(Performing a Multi-Strand Profile:...continued)

To save the current boundary positions to the SmartLine device, click the “Accept” button...

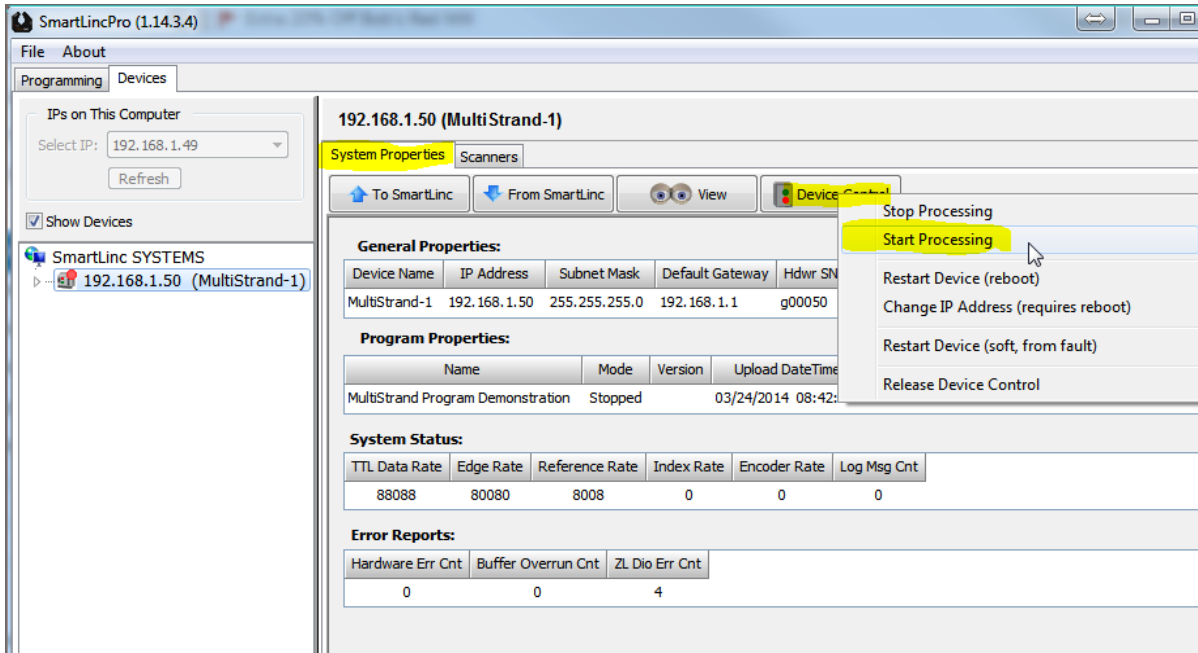


The SmartLine device is now fully configured to measure multi-strand product.

(continued...)

(Performing a Multi-Strand Profile:...continued)

To view strand measurements, click the “System Properties” tab, the “Device Control” button and select “Start Processing” from the drop down menu. Confirm the start processing action with the dialog box that follows the menu selection below...



Next, click the “Scanners” tab and view the strand measurements in the lower grid...

