Leica AT901

Prerequisites

- Newer emScon controllers require a Leica dongle. Ensure that the dongle is installed on the controller's parallel port.
- All Leica trackers are shipped with 192.168.0.1 as the IP address as default. To learn more about configuring IP addresses, see the IP Address Basics section.

Compensation

The AT901 is an emScon tracker and accessories can be compensated per Leica through emScon (Figure 14-72). EmScon can be accessed via the shortcut on the desktop or use the following address http://192.168.0.1:8099/emscon/default.aspx. If your tracker address is not the standard 192.168.0.01, change that component of the address in your browser.

Figure 14-72. The main EmScon window.

- Compensation Password: Expert (Full and Intermediate, ADM, Reflector Definition, Camera Compensation, etc.)
- Server Settings Password: Administrator (TCP/IP address, Time/Date, etc.)

Starting the Interface

1. Select **Instrument > Add** and choose the respective Leica Tracker from the ***Add Instrument to SA*** dialog.

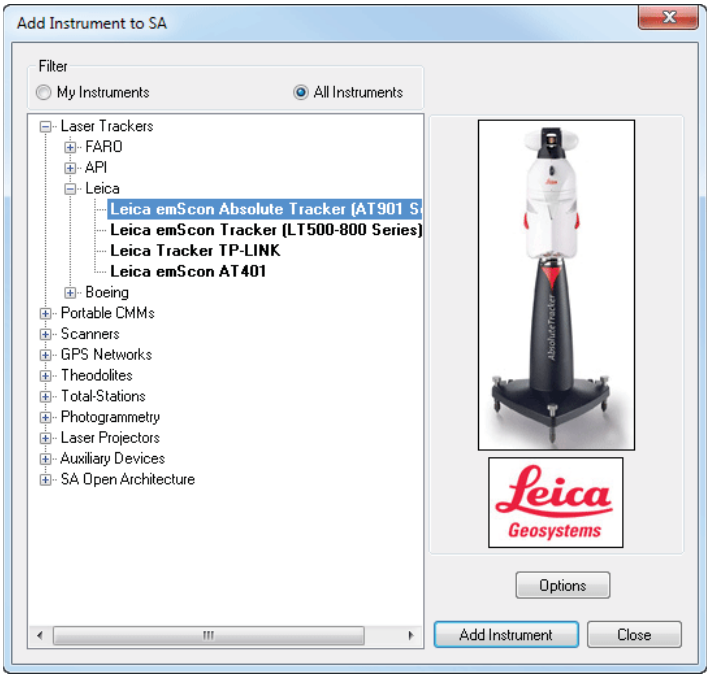

Figure 14-73. Adding a Leica tracker.

2. Now run the instrument interface module under **Instrument >**

Run Interface Module and choose **Laser Trackers**.

3. Enter the tracker's IP address and use the Ping button to test the connection if needed. Once satisfied, press OK. The next time the interface is started, you can simply click the Run Interface and Connect icon. This will use the last saved settings and automatically connect the instrument. The AT960/930 also offers an IP discover utility.

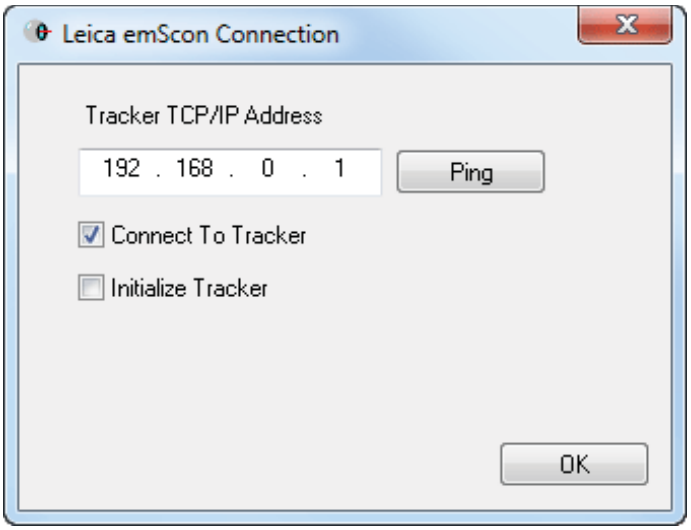

Figure 14-74. The Leica Tracker connection window.

4. The interface is now connected and ready for use. Please refer to the Laser Tracker section for details on the laser tracker interface ("Laser Tracker Interface" on page 320).

Tracker Settings

To access the custom settings, use **Settings > Tracker > General Settings** or press the button. Then press the tracker specific button at the bottom. This will expose the Tracker options (Figure 14-75). These options reflect those that can be set in emScon. This dialog gives you access without having to enter emScon directly.

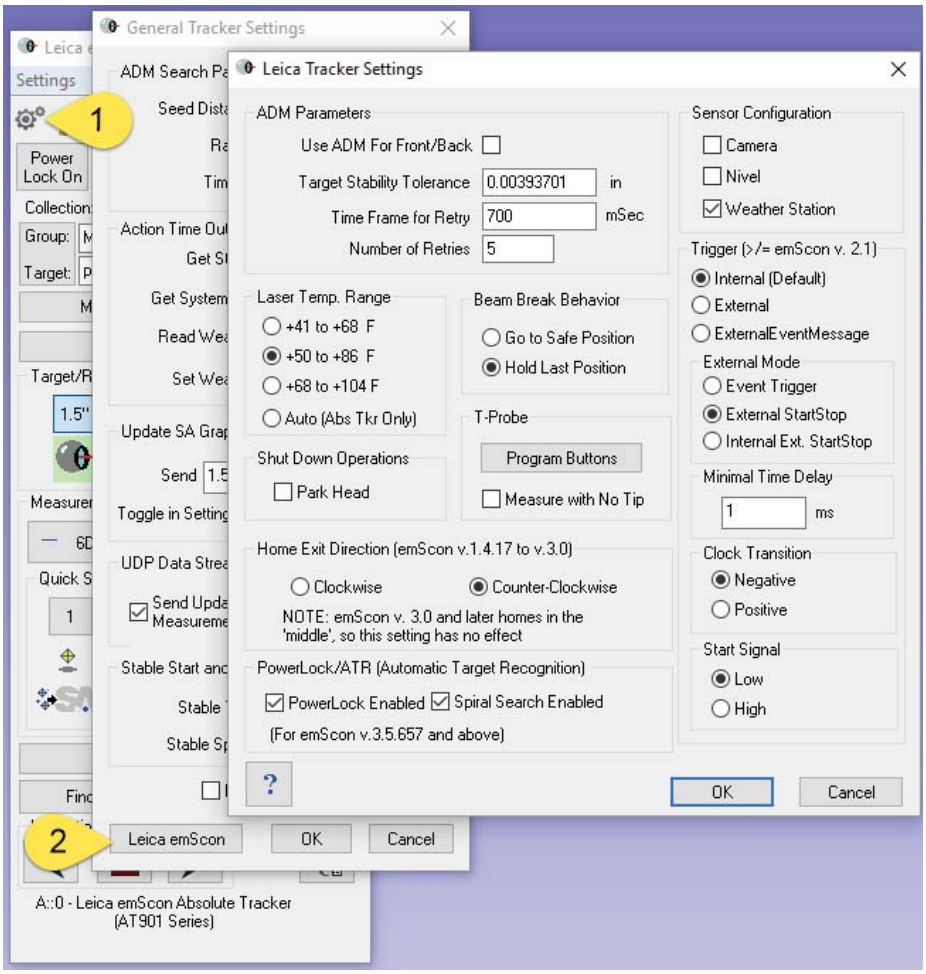

Figure 14-75. EmScon-specific tracker settings.

ADM Parameters

Parameters for recapturing the beam in ADM.

Sensor Configuration

Choose which peripheral devices are being used. Overview camera, Nivel Level and Weather Station.

Laser Temperature Range

Select the temperature range in which the tracker will be operating.

Beam Break Behavior

- **Go to Safe Position.** The head will point directly up toward the overview camera when the beam is broken.
- **Hold Last Position.** The beam will sit still when the beam is broken. This is needed for ADM beam break reset mode to work. If not, each time the beam is broken the tracker will return to its safe position.

T-Probe

- **Program Buttons.** This button brings up a control panel to

allow the operator to define what each button on the probe does. These buttons can be set to perform different operations as needed.

- Measurements without a tip are not allowed unless the check box in the properties pannel is checked.

Home Exit Direction

- Choose which direction for the tracker head to unwrap when leaving the birdbath.

PowerLock/ATR settings

Ability to turn on/off PowerLock and Spiral Search.

Tracker Status

To view the tracker status (Figure 14-76) go to **Utility>Tracker Status**.

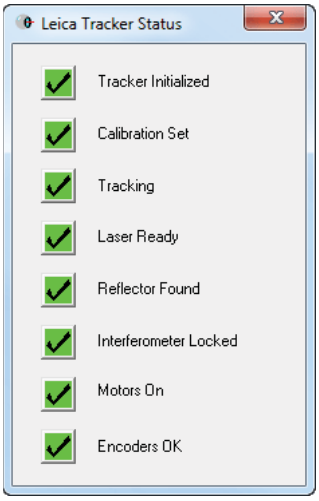

Figure 14-76. The Leica Tracker Status dialog.

T-Probe

If you get a 'usage conflict' error when trying to use the T-Probe, run the emScon BUI. In it, there is a setting for stylus usage:

- Stylus required
- Stylus not required
- Compensated shank

For standard T-Probe usage, you MUST select 'stylus required'.

External Trigger Configuration

The external trigger settings are found within the Tracker specific properties dialog. These settings are shown conceptually in Figure 14-77 and as they appear in the tracker settings dialog in Figure 14-78.

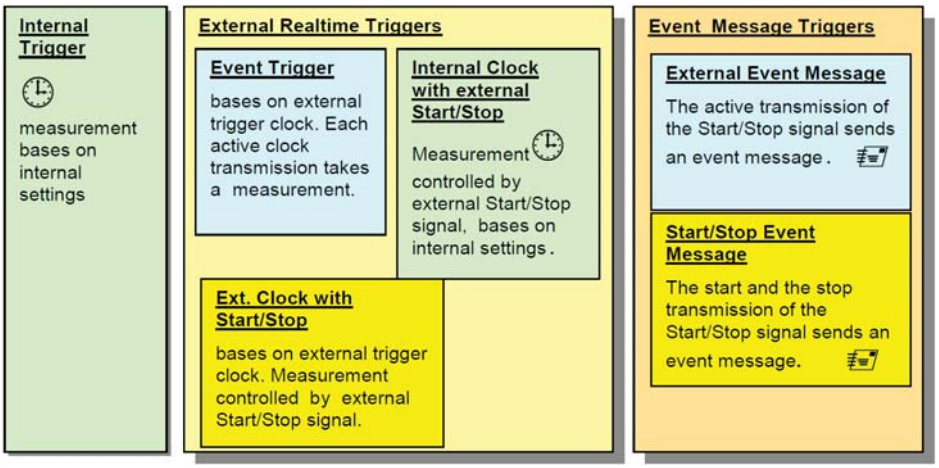

Figure 14-77. External Trigger Configuration

Trigger Settings

These settings enable external triggering and define the trigger type.

- **Internal.** Normal Operations (no external trigger set)
- **External.** Used to take "realtime" measurements triggered by external signal. Use this trigger type with Event Trigger if you want fastest response by running a Temporal Scan, and having the trigger grab a single-sample.
- **ExternalEventMessage.** This setting does not really measure, but instead it sends an event message to the application to trigger a measurement. For example, use this trigger type with Event Trigger to initiate an averaged discrete points when the trigger is activated.

Trigger Mode

These settings define the response to the trigger event.

- **Event Tigger.** In the event trigger mode each positive or negative transition (depending on the configuration) of the clock signal will take a measurement. In event trigger mode the Start/Stop signal will be ignored.
- **External StartStop (External Clock with Start/Stop Signal).** The measurement will be controlled by a start/stop signal on the trigger board. One transition of the clock signal (positive or negative depends on the configuration) triggers a measurement if the Start/Stop signal is active.
- **Internal Ext StartStop (Internal Clock with External Start/Stop Signal).** Measurements will be controlled by the external start/stop signal on the trigger board. The continuous measurement will be taken based on internal settings and is not synchronized to an external signal.

Trigger Definition

These settings control the signal definition used for the trigger.

- **Minimal Time Delay.** This defines the maximum rate at which measurements can be taken (minimal delay between two consecutive measurements). Additional trigger signals sent faster than this preset delay will be ignored.
- **Clock Transition.** This defines the change in clock signal used for the trigger (negative transition or positive transition).
- **Start Signal.** The start/stop signal can be set either low or high active (for example, low active means that events are being generated as long as the start/stop signal remains low).

* Both the above also apply to the TMAC Inspect touch probe, which must be run via the Leica Automation Interface.

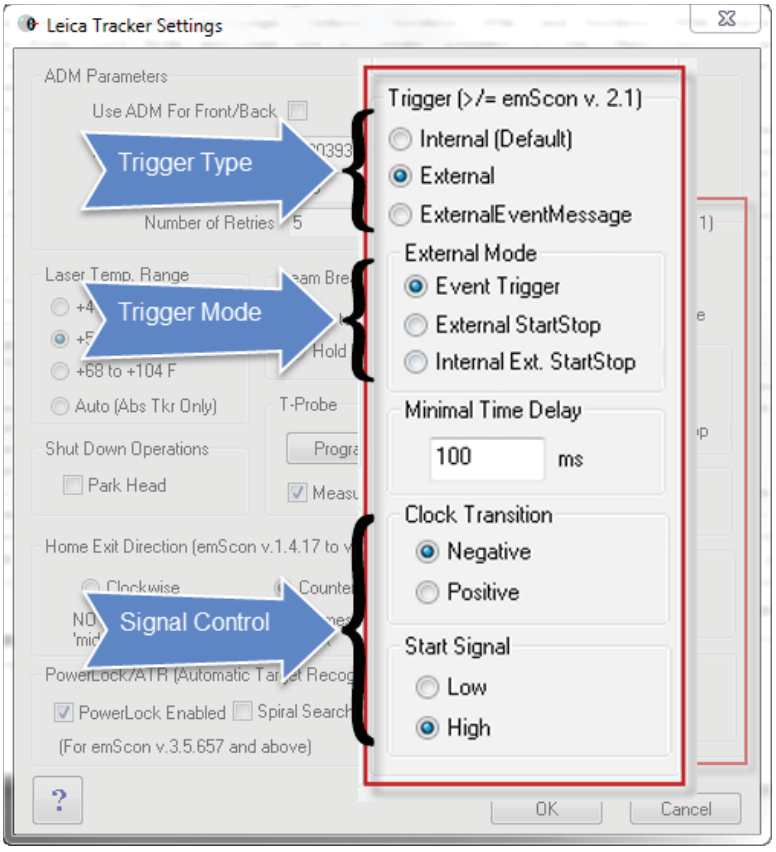

Figure 14-78. Trigger Settings

Additional Connections

The AT901 can be used with a number of peripheral devices. For more information refer to the following quickstart guides:

- "T-Scan Interface" on page 401
- "Leica Absolute Scanner (LAS) 20-8" on page 412