

Assembly Guidance

Hardware Setup



Setup the unit following the manufacturer's directions with an unrestricted view of the work area.

Software Setup

You can download and install the latest drivers from <http://www.kinematics.com/ftp/SA/Install/Driver%20Downloads/Projectors/AssemblyGuidance%20LaserProjector/>. You will need the following files:

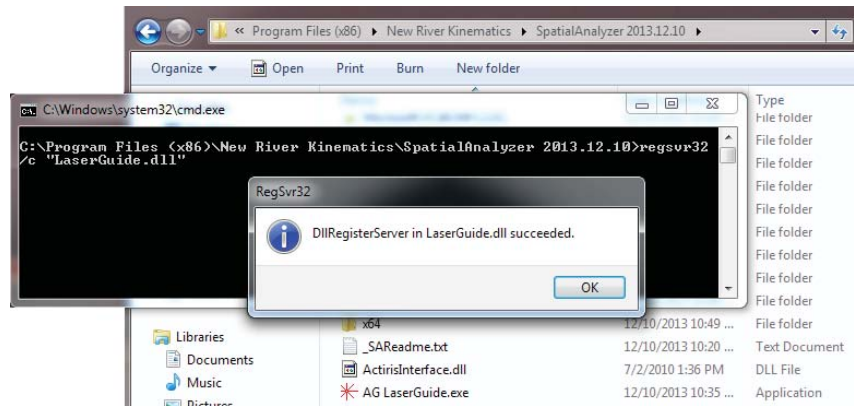
- LASERGUIDESDK_3_04_18.exe or later
- Register LaserGuide dll.bat
- Unregister LaserGuide dll.bat

Installation

1. Run the file LASERGUIDESDK_3_04_18.exe or later on your machine. This will walk you through the installation process of the LaserGuideSDK used by SA to communicate with the device.
2. Restart your computer.
3. Move the Register LaserGuide dll.bat into the SA install folder typically located here: C:\Program Files (x86)\New River Kinematics\SpatialAnalyzer XXXX
4. Double click "Register LaserGuide dll" to run the file from this directory. If you have previously registered from a different directory you will need to run the Unregister LaserGuide dll.bat utility first.

NOTE: On Win10 pc's, you will likely have to right-click on the *.bat file, and select "Run as Administrator". If this does not work, you'll have to consult your IT Department for help.

Figure 20-3. Windows registration.



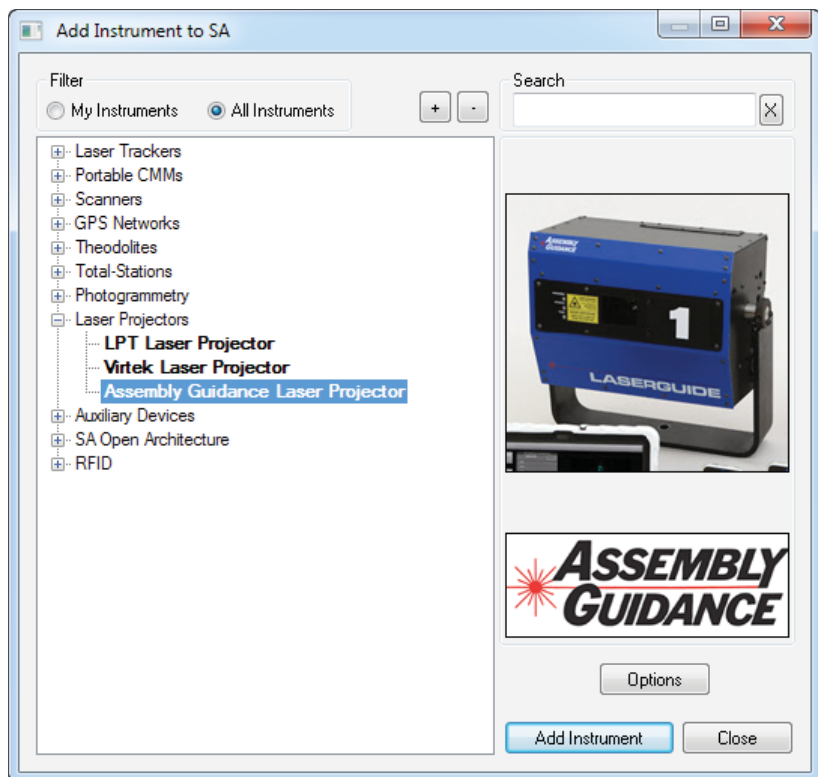
Network Configuration

Be sure to create a fixed IP address on your computer that will be compatible with the IP address of your projector(s). The default address should be stamped on the front of your projector. For example, if your projector's IP address is 10.1.1.1, then you need to change your computer's IP address to 10.1.1.X; where X is between 1 and 255.

Starting the Interface

1. Select **Instrument>Add** and choose the Assembly Guidance Laser Projector.

Figure 20-4. Adding an Assembly Guidance Projector to SA.



2. Now run the instrument interface module under **Instrument>Run Interface Module and Connect**.
3. Enter the projector's IP address and click the **Connect** >> but-

ton on the *AG LaserGuide* (see [Figure 20-5](#)) dialog. For more detailed connection information, you click on the *Show Projector Window* (see [Figure 20-6](#)) button to bring up the Assembly Guidance Control Utilities.

Figure 20-5. AG LaserGuide dialog.

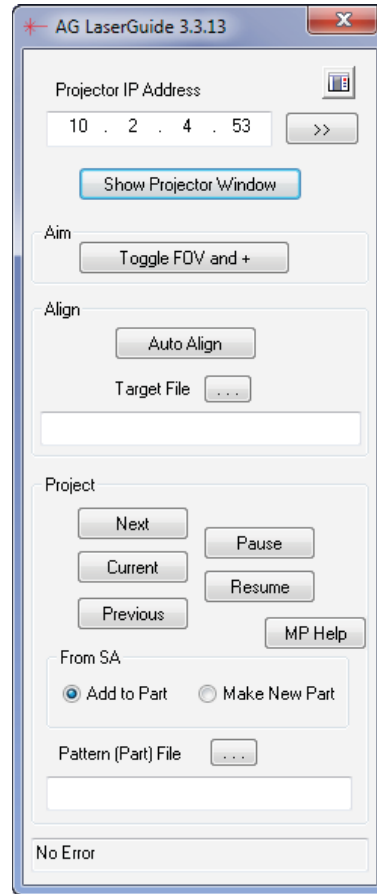
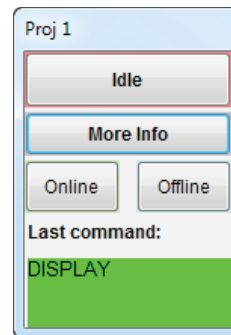


Figure 20-6. Projector window.



Aligning the Projector

There are two methods of aligning the projector in SA.: automatic and manual. To perform an auto alignment, use the browse button in the *AG LaserGuide* dialog (see [Figure 20-7](#)) to find a preexisting registra-

tion file to use. Click the **Auto Align** button, and the projector will auto measure the alignment points and the transformation from the measured points to the current point locations will be used to align the projector within SA.

To Perform a Manual Alignment

1. Measure six reflector positions with a separate instrument within the field of view of the projector. Located in the *Aim* section of the instrument interface is the **Toggle FOV and +** button. This can be used to display the projector region and also to import a set of known location points.
2. Select **Instrument>Laser Projector>Alignment**.
3. Select the instrument to align and then the measured point group for alignment.
4. Browse to a location to save a Registration data file in .txt format.
5. Use the manual alignment utility pictured in (Figure 20-7) to point the laser at each registration point in order by name. To do so, click and hold while dragging the mouse. This drives the laser pointer relative to the cross hairs in the dialog and, in turn, drives the projector beam to the reflector point. Once aimed correctly, right-click to scan the target.

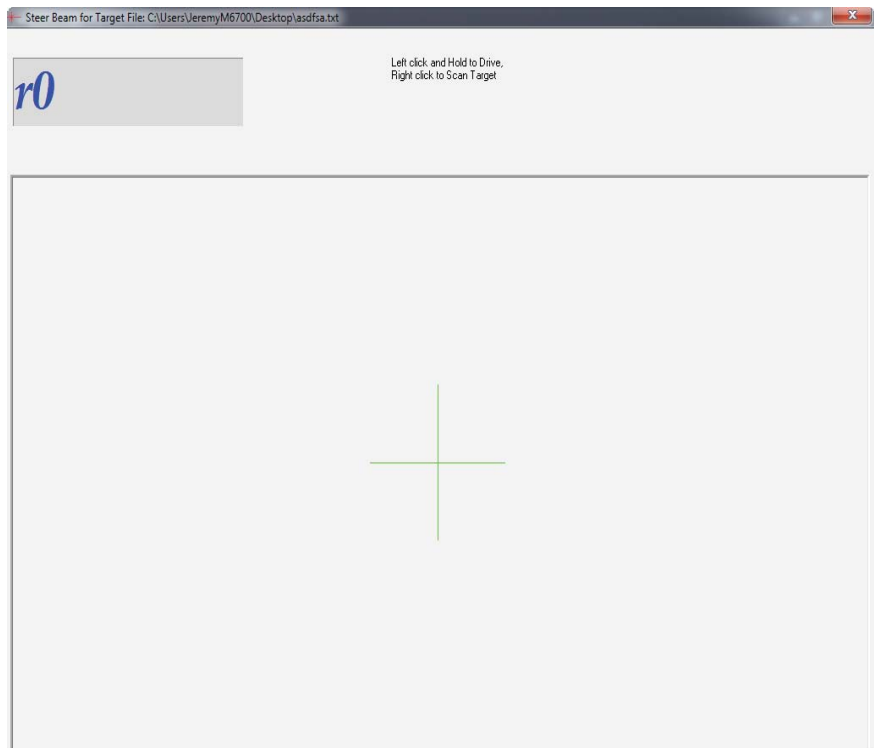


Figure 20-7. Steer Beam for Target dialog.


6. After each of the individual target locations have been identified in this fashion, these points will automatically measured

and the alignment will be performed.

Point and Object Projection


The Assembly Guidance Interface provides the tools to project points as well as objects in SA. To project an object it must be added to a part file. These part files are then used to build the laser path definition for the projector. A single part may contain several patterns and additional patterns can be added to an existing part file.

Projecting Part Files

1. In order to project patterns from a previously created part file, simply browse to the file using the **Pattern (Part) File** button  in the interface.
2. Click **Current** to project the part shown in the selection path. You can utilize the **Pause** and **Resume** buttons to control projection of the current part file and the patterns it contains.
3. Select **Next** and **Previous** to toggle through part files in the same folder as the current part shown in the *Part File Edit* box.

Building/Editing Part Files and Projecting Objects

1. In the *From SA* section of the interface, select **Add to Part** or **Make New Part**.
2. Select **Instrument>Laser Projector>Project Objects**. You will then be prompted to select the instrument (if you have more than one in the job).
3. Now select the objects you wish to project. Doing so will create a file using the name of the first object selected for projection if you have **Make New Part** selected. If you chose **Add to Part**, it will add the selected objects to the current part file.

 **Tip:** Objects cannot be removed from a part file through SA.