

Renishaw InVia Reflex MicroRaman Troubleshooting Guide:

**General rule(s) for troubleshooting the Raman:**

- If you encounter an error that is not specifically listed in this guide, close the software, turn the Raman system completely off (it's ok to leave the argon laser on) and reboot the computer.
- If you are in the middle of using the system and functions no longer work (or work as they should) or you observe any odd or unusual things happening, close the software, turn the system completely off (argon laser ok to leave on) and reboot the computer.
- This will fix 99% off all problems with the system. If this does not, contact Tim Prusnick, our technical support contact from Renishaw.

**Other troubleshooting fixes:**

The following issues will be indicated in the recommended action dialog box after running a health check.

**Important note:** When performing the recommended action specified in the health check box, perform the first one listed first, and then re-run the health check. Often, when the first alignment/calibration is done it will fix the subsequent issues found in the health check. (Most commonly, when the laser is not correctly aligned in the crosshairs, this causes the CCD area and slit alignment to be reported as misaligned as well. In reality, the alignment of the CCD and slits is still fine, and re-aligning the laser in the crosshairs usually "fixes all three issues".)

All actions, with the exception of Quick Calibration, will be done by going to Tools-->Autoalign-->Align. This will bring up an alignment dialog box with 4 buttons in this order (top to bottom) "Auto Align Silicon Reference Sample", "Auto Align Laser", "Auto Align CCD Area", "Auto Align Slits" and "OK". **IMPORTANT: When running any alignment, you must always start from the top most button and work your way down. When you have run the required alignment, you do not need to go any further. If the alignments are accidentally performed out of order, simply re-run them starting from the top.**

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**Most common issue:** Test failed because laser is not centered in (or is too far from) the crosshairs.

**What needs to be done:** The laser is not centered in the crosshairs and needs to be re-aligned by running the "Auto Align Laser" function.

**Fix:** Go to Tools-->Autoalign-->Align First run "Auto Align Silicon Reference Sample". If that is finished successfully, Accept the changes then run "Auto Align Laser". When the laser alignment is finished successfully, accept the changes then hit "OK" on the Auto Align dialog box. \*It is not necessary to run "Auto Align CCD Area", "Auto Align Slits".\* Re-run the health check.

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**Issue:** Test failed because silicon reference sample is not properly aligned.

**What needs to be done:** Calibration could not be done because the laser is not properly aligned with the silicon reference sample. The silicon reference sample needs to be re-aligned by running the "Auto Align Silicon Reference Sample" function.

**Fix:** Go to Tools-->Autoalign-->Align Run "Auto Align Silicon Reference Sample". If that is finished successfully, Accept the changes then hit "OK" on the Auto Align dialog box. \*It is not necessary to run "Auto Align Laser", "Auto Align CCD Area" or "Auto Align Slits".\* Re-run the health check.

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**Issue:** Test failed because CCD area is not properly aligned.

**What needs to be done:** The laser beam is not centered in CCD detector grid and needs to be re-aligned by running the "Auto Align CCD Area" function.

**Fix:** Go to Tools-->Autoalign-->Align First run "Auto Align Silicon Reference Sample". If that is finished successfully, Accept the changes then run "Auto Align Laser". If that is finished successfully, Accept the changes then run "Auto Align CCD Area". When the alignment is finished successfully, accept the changes then hit "OK" on the Auto Align dialog box. \*It is not necessary to run "Auto Align Slits".\* Re-run the health check.

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**Issue:** Test failed because slits are not properly aligned.

**What needs to be done:** The laser beam is not aligned properly with the system's slits and needs to be re-aligned by running the "Auto Align Slits" function.

**Fix:** Go to Tools-->Autoalign-->Align First run "Auto Align Silicon Reference Sample". If that is finished successfully, Accept the changes then run "Auto Align Laser". If that is finished successfully, Accept the changes then run "Auto Align CCD Area". If that is finished successfully, Accept the changes then run "Auto Align Slits". When the alignment is finished successfully, accept the changes then hit "OK" on the Auto Align dialog box.

If any of the alignments fail, close the software, shut down the system completely, reboot the computer and try again. If the alignments still fail after this is done it is a sign that there is likely a physical/mechanical problem with either the laser or one of the motors in the system, contact Tim Prusnick.

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**Issue:** Test failed because laser brightness is not greater than 0.

**What needs to be done:** The system can not detect the laser intensity. One of two problems has occurred: either the laser is not turned on, or the system has encountered an error.

**Fix:** Make sure that you know which laser is being tested. (This information is displayed in the middle of the bottom toolbar.) Ensure that the laser is on. The red laser (785nm) is automatically turned on when the system is powered on. The green laser (514nm) must be turned on manually.

- If you are using the green laser, make sure that the laser is in "run" and not "standby".
  - If the laser is still in "standby", switch to "run" and re-run the health check.
  - If the laser is running and the error still occurred, close the software, shut down the system completely, reboot the computer and try again.
  
- If you are using the red laser, close the software, shut down the system completely, reboot the computer and try again. If this does not fix the problem, contact Tim Prusnick.