

Restarting Coherent Axon Lasers After Prolonged Power Loss or Incorrect Startup Procedure

Overview

As part of their laser safety design, when Coherent Axon lasers are powered on with their key turned to the Laser Enable position, the laser will not be enabled until a software command is given. This document explains how to recognize the situation and correct it on Microscoop Mint systems.

Causes and Symptoms

If the Axon laser controller powers on with the key out of the standby position, the controller will power up in a safety mode that prevents accidental laser emission. This most often occurs when power is restored after a loss that exceeds the capacity of the UPS, or a user turns on the power switch at the back of the controller, with the key in the Laser Enable position. This is not a system fault and will not cause a red status light unless other issues are present. In fact, the controller looks nearly identical to a system in standby. The only visible difference is the key position.



Controller front panel in normal standby mode.



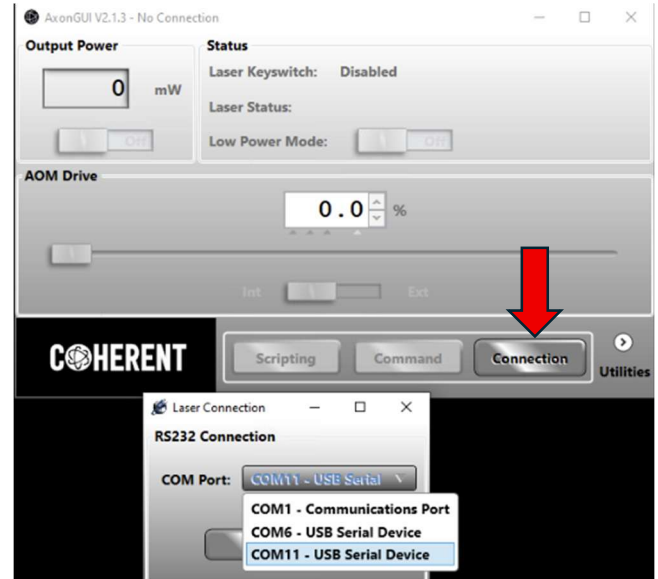
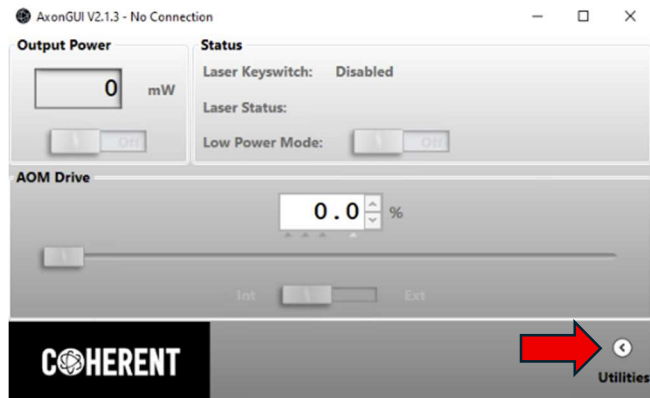
Controller front panel after incorrect power up. Note key position.

Enabling the Laser

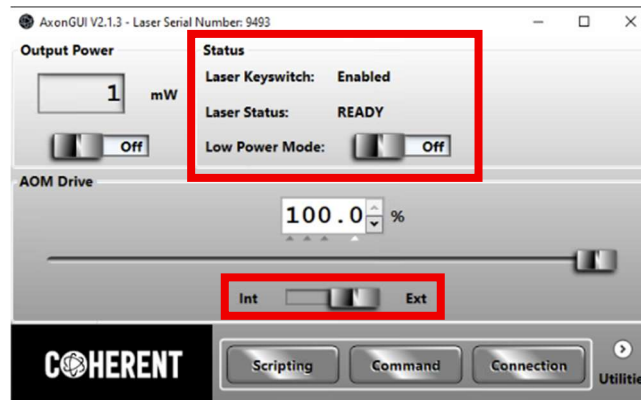
1. With the controller fully powered on (no blinking lights) and the key turned to Laser Enable, open the AxonGUI software from the desktop shortcut:



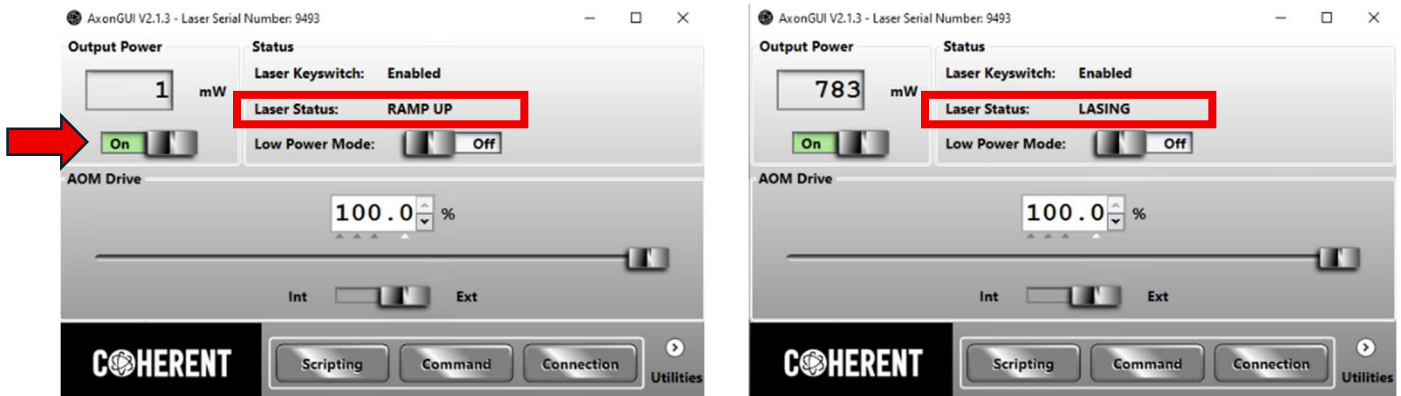
2. Connect to the laser controller by clicking the Utilities (<) button, clicking the Connection button that appears next to it, choosing the appropriate COM port from the drop-down menu in the new window, then clicking the Connect button. The correct COM port varies by system, but will be labeled “USB Serial Device.” If you choose the incorrect port, an error message appears and you can try a different port.



- After connecting, check that the status panel indicates the Laser Keyswitch is Enabled, the Laser Status is READY, Low Power Mode is Off, and AOM Drive is switched to Ext. If the Laser Keyswitch status is Disabled, ensure the key in the controller is turned to Laser Enable. If Laser Status indicates FAULT, contact Syncell for support. If Low Power Mode is On, click its switch in the software to turn it Off. If AOM Drive is switched to Int, click its switch to Ext.



- After confirming all items in step 3, click the switch in the Output Power area to turn it from off to On. The Laser Status should change to RAMP UP, and the indicated Output Power will begin to rise after a few seconds. Once the laser reaches its normal power levels, the Laser Status will change to LASING. For best Microscope performance, remember to wait 2 hours after LASING is indicated before performing any calibrations or photolabeling experiments.



- Close the AxonGUI software by clicking the X button in the upper right corner of the window. There is no need to disconnect or save settings before closing the program.

If you have followed this procedure due to a power failure, ensure that you restart the Microscope controller according to the manual. If it has powered up with its key in the On position instead of Standby, it will have a fault that prevents usage of the system. It is also recommended to recalibrate the system after the laser has stabilized for 2 hours.