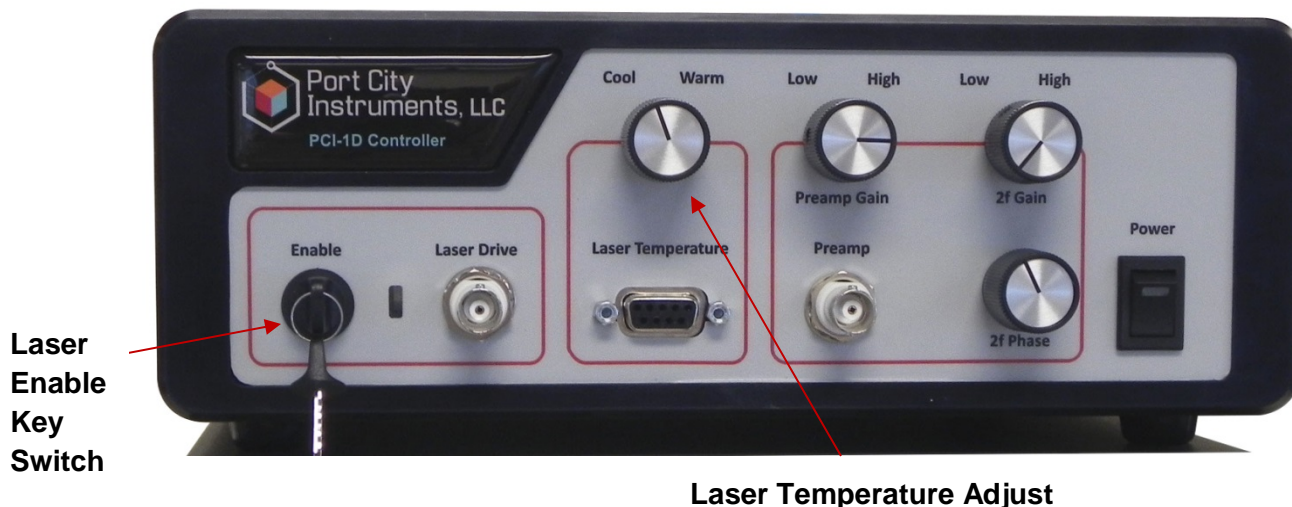


PCI-1D Quick Start Guide

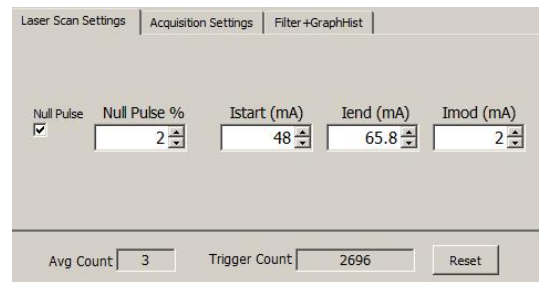
- 1) Unpack the controller and confirm that there is no shipping damage. The package should contain the controller, one U.S. 120 VAC power cord, a standard A/B USB cable for connection to a PC, and a USB "thumb" drive containing the application software. Print out the user manual or have it available on screen for steps 3 and 5 below (available at <http://www.portcityinstruments.com/downloads>).
- 2) Set the power switch (located on the right of the front panel) to the down (OFF) position, connect the power cord, and plug the unit into a 120 VAC standard wall outlet. Do not power up the controller or connect the USB cable to a PC until the software is installed. **DO NOT YET CONNECT A LASER TO THE SYSTEM !!**



Laser Temperature Adjust

- 3) Install the software by inserting the USB drive into a Windows™ PC (XP service pack 3, Vista, or (preferred) Windows 7). Double click the setup.exe file and follow the instructions to install the software.
- 4) Power up the controller by setting the rocker switch on the front panel to the up (ON) position. The red LED in the power switch should illuminate. *Note that the Rev B version of the PCI-1D unit requires a voltage input from an external preamp to the "Preamp" BNC connector. Do not connect bare detector leads to this input.* The reason for this modification was to allow compatibility with a wider range of detector types ... any detector/preamp combination that produces an output in the 0-10V range can now be used.
- 5) Connect the USB cable between the controller's rear panel USB port and the PC. Windows™ should recognize the internal I/O board and install the driver (wait for driver to install). Start the control program by double clicking the icon created at installation. Follow the instructions in the manual for changing the device number if necessary, and confirm that the control program is running (graphs will update according to the default acquisition settings, but the data should be only noise at this point as there is no laser connected).
- 6) When the control program is running, note the value of the parameter "Laser T_Set" in the **Data** section of the main GUI shown on page 2 of this Quickstart Guide. This is the laser set point temperature. If you are operating the laser TEC using another controller, then skip to step 7. If you plan to control the laser temperature with the PCI-1D controller then use the front panel knob in the "Laser Temperature" section to set a value appropriate for the laser (default to 25C if uncertain).
- 7) Click on the "Laser Scan Settings" tab at the upper left of the GUI and set the laser starting and ending scan currents to safe values for the laser being used. These values are saved when the program exits and used for the next time the program starts. The null pulse percentage and modulation amplitude (Imod) can be set to zero initially, or to known values (see manual for a description of "null pulse"). *Note that the modulation amplitude ("Imod") must be a nonzero value for a 2f signal to be produced.*

8) With the laser temperature set point defined, and the laser scan currents at safe values, EXIT the control program and power down the controller. It is now safe to connect the laser to the front panel BNC laser drive output, and the laser TEC and thermistor leads to the front panel 9-pin D connector. See the manual for pinout information and precautions, and ensure an ESD safe environment when making laser connections. Double check the TEC polarity and only power up the system when the TEC and thermistor connections are verified to be correct.



9) With the laser connected, set the key switch at the left side of the front panel to the OFF position (vertical, or turned full counterclockwise). Power up the unit and start the control program, and double check the laser temperature and laser current settings. If OK, turn the front panel key switch clockwise (90 degrees) to enable laser current. The green LED should illuminate and the laser should turn on. Proceed to the user manual for full details on operation of the controller, detector connection, spectrum manipulation, etc.

10) To power down the system, first always turn the front panel laser enable/disable key switch to the counterclockwise direction (OFF), then EXIT the control program and power down the unit.

Dynamic Data TDL 2f Spectroscopy Interface

Scan Period (ms)	#Points/Spectrum	#Scans Averaged
500	1024	4

Aggregate Sampling Rate: 20480

Aggregate sampling rate is too high, must be below 250,000. Try new values.

Aggregate sampling rate = 10 * # Pts/Spectrum * 1000/Scan Period where 10 = Number of channels and 1000 is used to translate ms to seconds

Avg Count: 2 Trigger Count: 139

Spectra Capture and Save

Capture Spectra Save Spectra Omit P/T

Data

Pressure	1023.0 mbar
Laser T_Set	26.63 C
Laser T_Act	26.62 C
Therm 1	20.04 C
Therm 2	22.22 C
PRTD	26.92 C
2f Amplitude	2.865
2f Position	229

Reset Cursors

Dynamic Data

Cursors	X	Y
X1	315	0.00073
X2	790	0.00287

Captured Spectra

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