

Connection Setup for PV Lab – PHYS 4580 PHYS 6/7280

Serial Port Hub – 4 port hub for various Serial pin cables that interacts with the Monochromator, the Keithley and the Lock in Amp. The port numbers are labeled on the hub itself, and follow the numbering/ designation scheme outlined below.

Picture:



Serial Port slot #1 – Monochromator

Name: Digikrom CM 110 Monochromator / Spectrograph

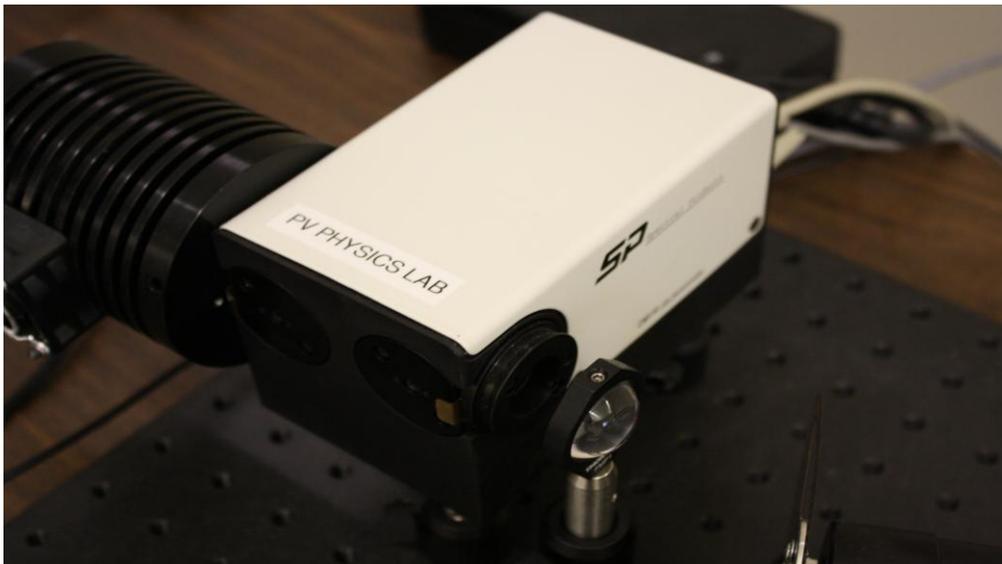
Name on Computer: Com 4

Configuration: Communication verified with the LabView program goToLambda.vi e.g., full control through various LabView programs. Turn on AFTER Computer.

Power Source: Power directly from plug in console

Other Connections: Halogen lamp light source, Keithley

Picture:



Serial Port slot # 2 – Keithley

Name: Keithley 2401

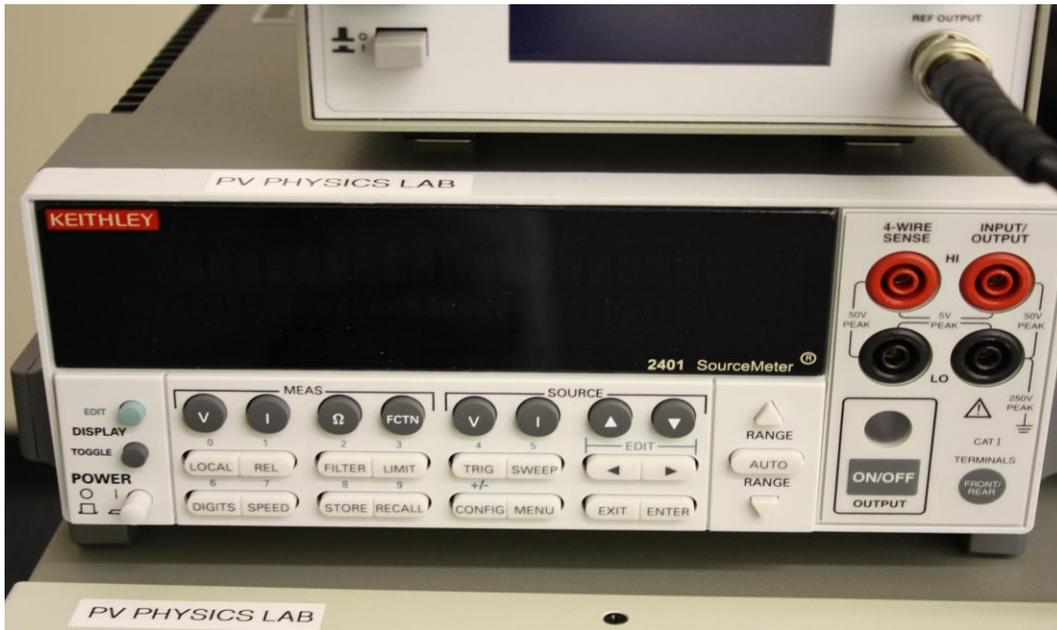
Name on Computer: Com 5

Configuration: Communicates with MAX, need to confirm with LabView. Turn on AFTER computer On, but does not matter.

Power Source: Plug on Main Console

Other Connections: various

Picture:



Serial Port slot #3, # 4 – EMPTY

Name on Computer: Com 5, 6

Comments: Can be used as a replacement port if one of the other ports is not functioning.

Other Devices

DAQ

Name: NI 6009 Data Acquisition Device

Name on Computer: DAQ NI – 6009

Configuration: Attached to the computer via USB-2 and to probes via electrical wires

Power source: Computer

Comments: Primary measurement tool, communicates through MAX and LabView

Picture:



Low Noise Amplifier/ Scrubber

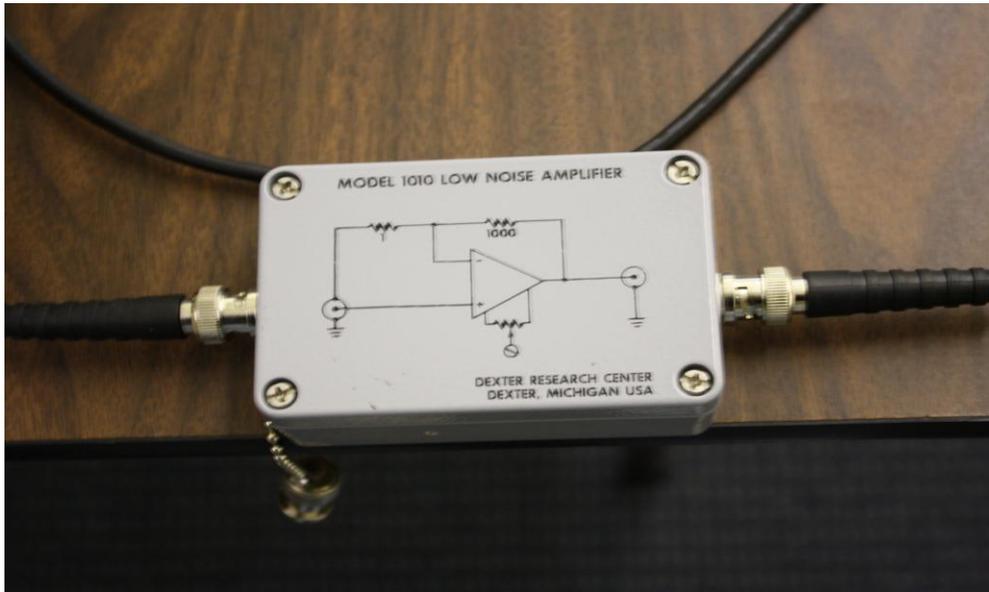
Name: 1010 Low Noise Amplifier

Name on Computer : N/A

Configuration: Attached on lead from coaxial into Lock in Amp analogue in.

Power source: Battery powered, batteries changed beginning of August 2013

Picture:



Halogen Lamp

Name: ASB - W - 030

Name on Computer: N/A

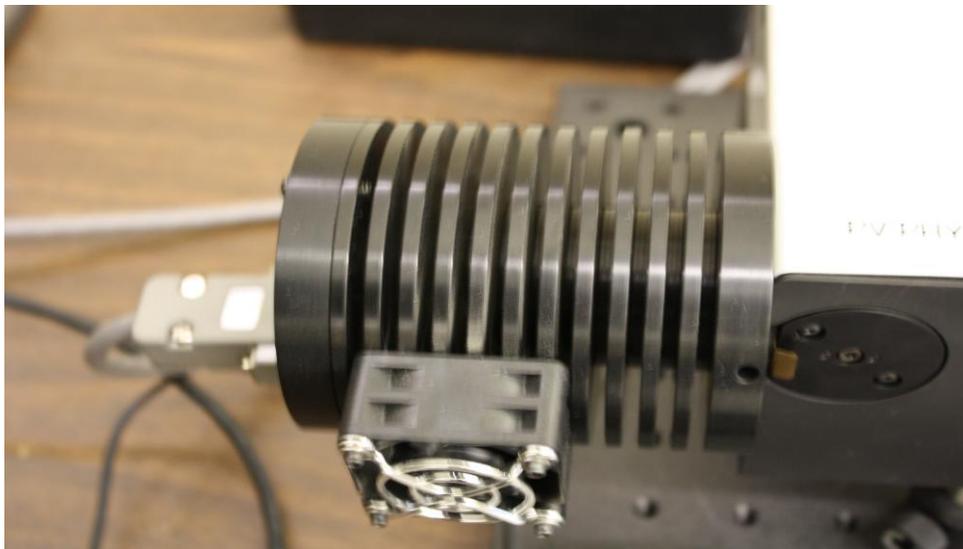
Configuration: Attached to variable intensity controller

Power Source: Halogen Lamp Power Supply

Other Connections: Monochromator, Halogen Lamp Power Supply

Comments: Its a lamp, pretty straight forward

Picture:



Halogen Lamp Power Supply

Name: ASB - W - 030

Name on Computer: N/A

Configuration: Attached to Halogen lamp

Power Source: Plug in the back

Other connections: Halogen Lamp

Comments: Variable power supply with manual dial. One unit was repaired and does not follow dial labels, but all are easy to figure out.

Picture:



Optical Chopper

Name: ThorLabs MC 2000

Name on Computer: N/A

Configuration: Main unit and chopping mechanism

Power source: Plug in back

Other connections: Physical Chopper and the Lock in Amplifier

Comments: The physical chopping mechanism is simple but rather fragile, take care if moving by hand. The console has a lead to the Lock in Amplifier as a reference frequency, the frequency itself can be manipulated from the front panel of the console.

Pictures:



Lock-in (LI) Amplifier

Name:

Name on Computer: N/A

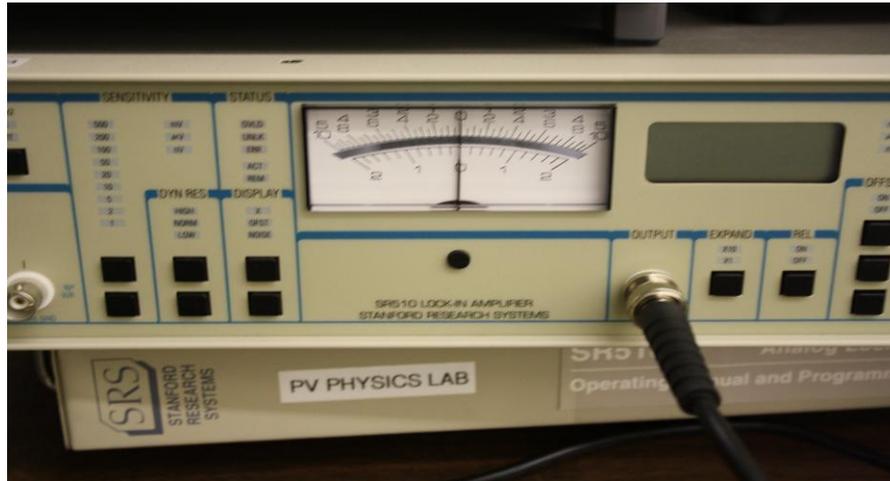
Configuration: Connects via coaxial cable to thermopile input signal, via coaxial cable to the optical chopper and via coaxial cable to the DAQ (potentially).

Power Source: Plug in the back

Other connections: DAQ, thermopile, optical chopper, Keithley

Comments: LI amplifier is used to isolate signals from instances of high noise, amplifying the desired signal and allowing for better measurements.

Picture:



If there are any further technical questions please see the associated manual located in the lab folder. All manuals are named as the official equipment name.