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.

![Serial Port Hub](image)

**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

![Serial Port slot #1](image)
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:

![DAQ Device Image](image1.jpg)

**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 Image]

**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.

Pictures:

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.

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.