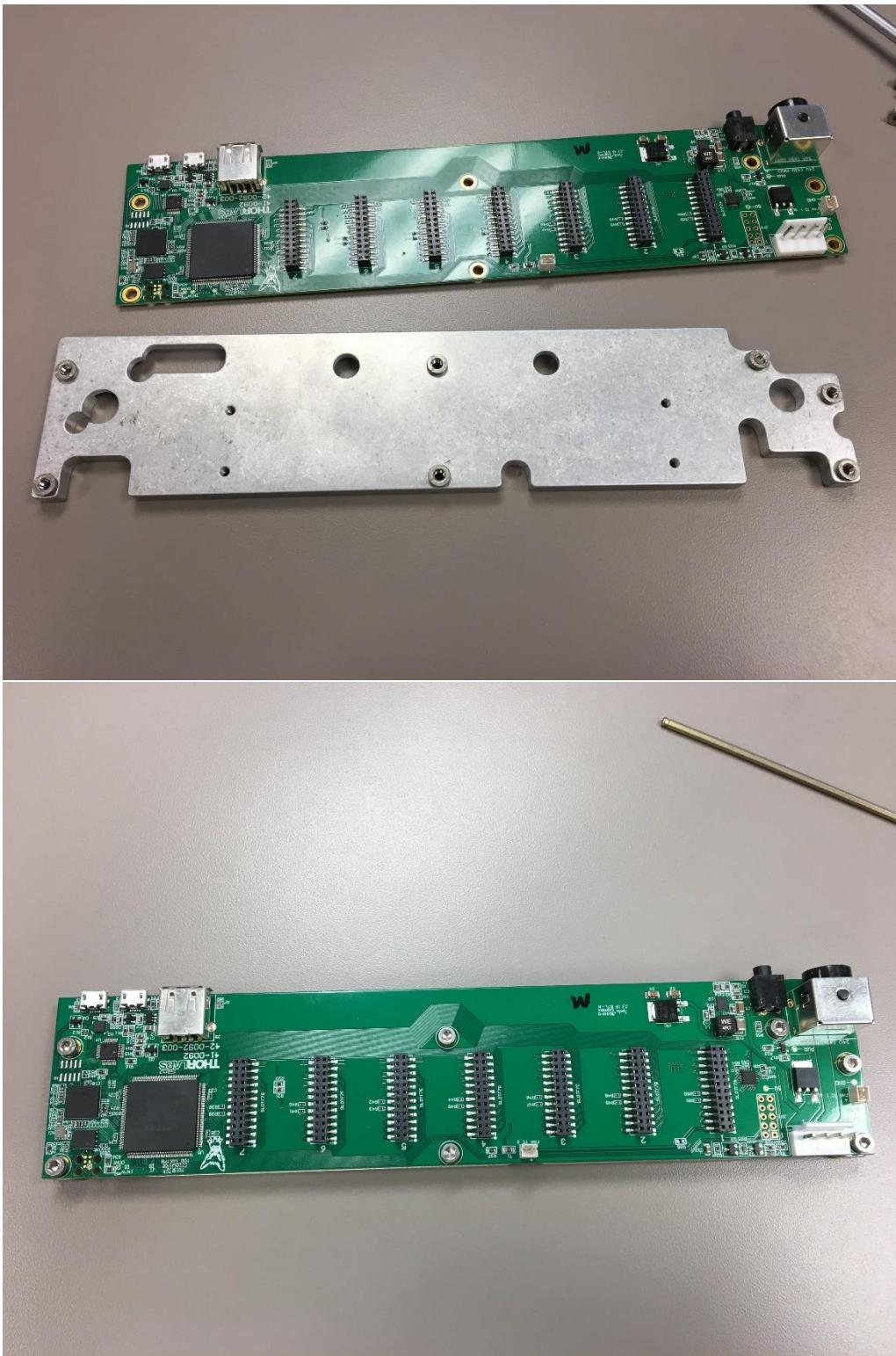
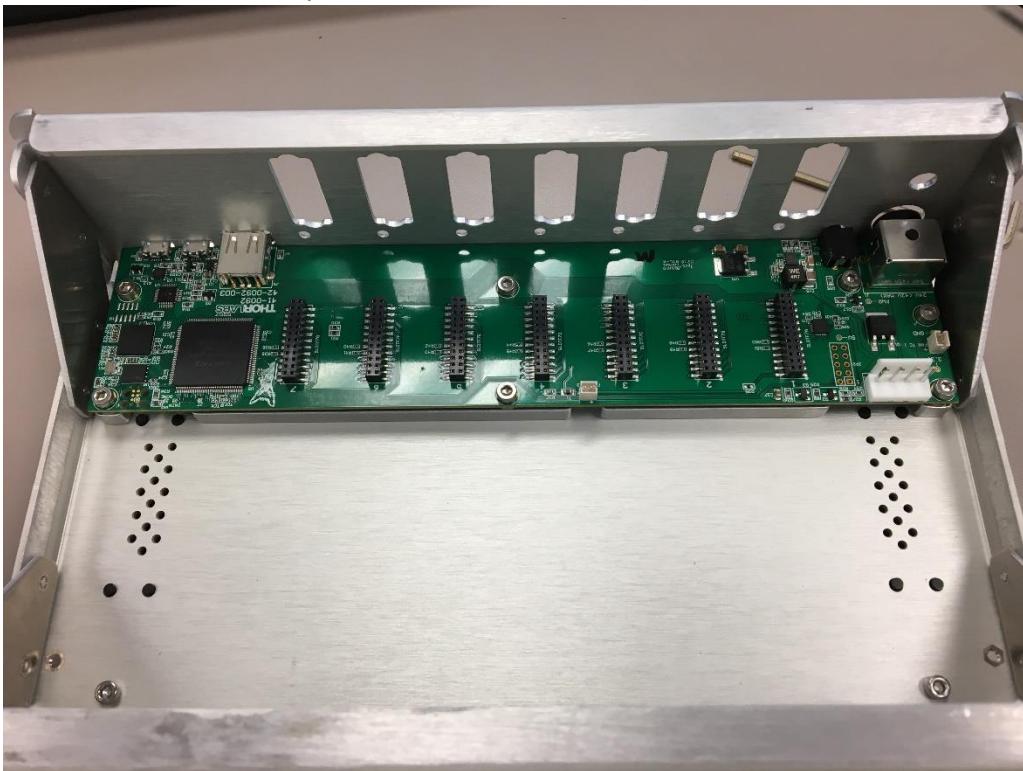


## Mesoscope Assembly:

1. Mount PCB to chassis with (7) M3x5 screws.



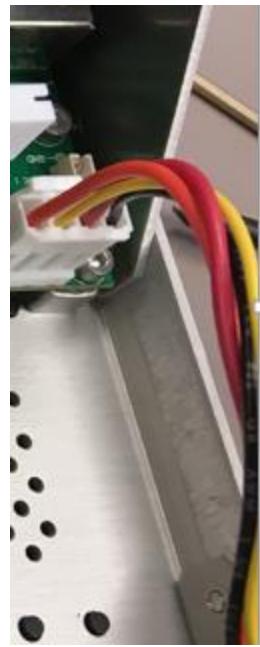
2. Install the above assembly into the enclosure. With (4) flat screw M3x6



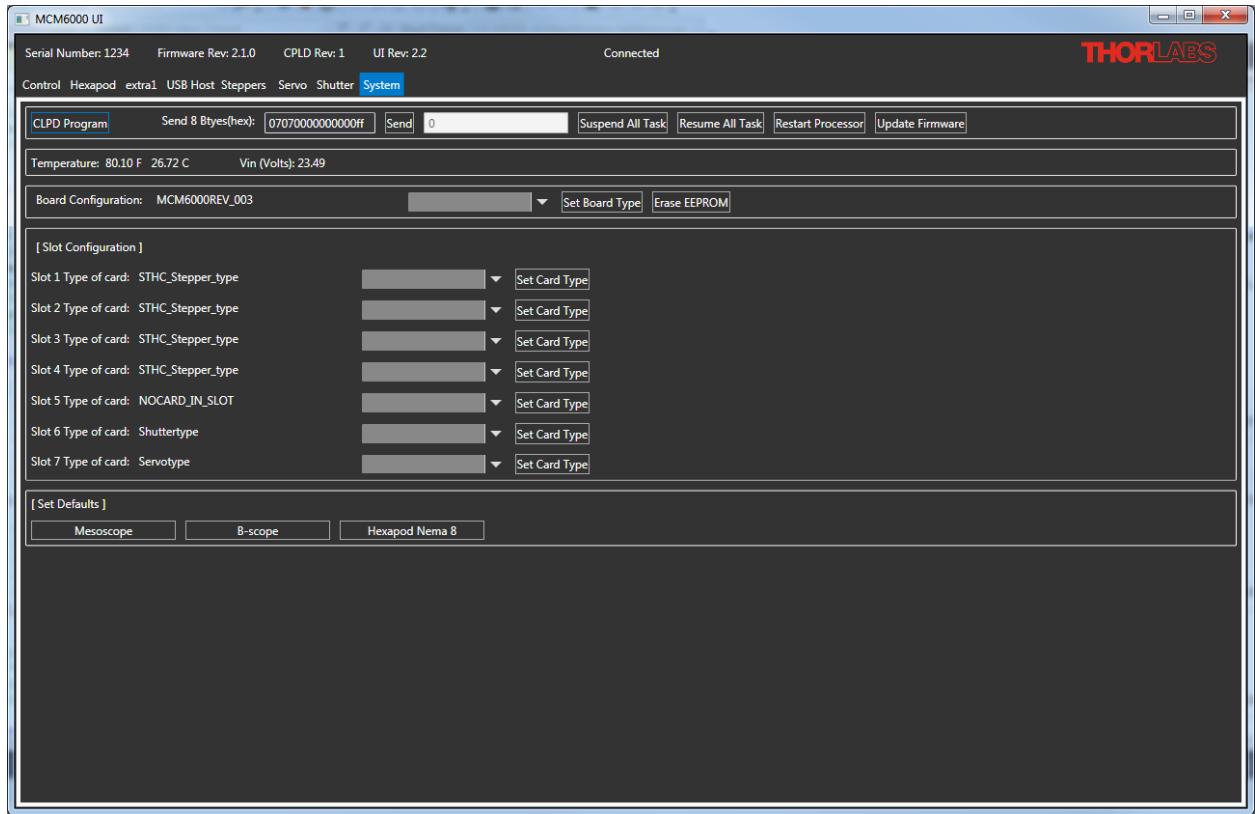
3. Make sure all the screws on the enclosure are tight because sometimes we have seen them loose from the manufacturer.
4. Install the front graphic overlay.



5. Slide the power switch through the front panel with the LED on top and connect the power switch to the PCB connector JP1.



6. Connect power and USB cable on the rear.
7. Power on switch the power switch to on.
8. Program the microcontroller bootloader 70-0048.hex using Atmel Studio.
9. Program microcontroller firmware through USB using the Thorlabs MCM Updater utility.
10. Start the MCM6000 UI, then go to the “System” tab. Then click on “CPLD Program” to program the CPLD making sure none on the cards are installed yet.



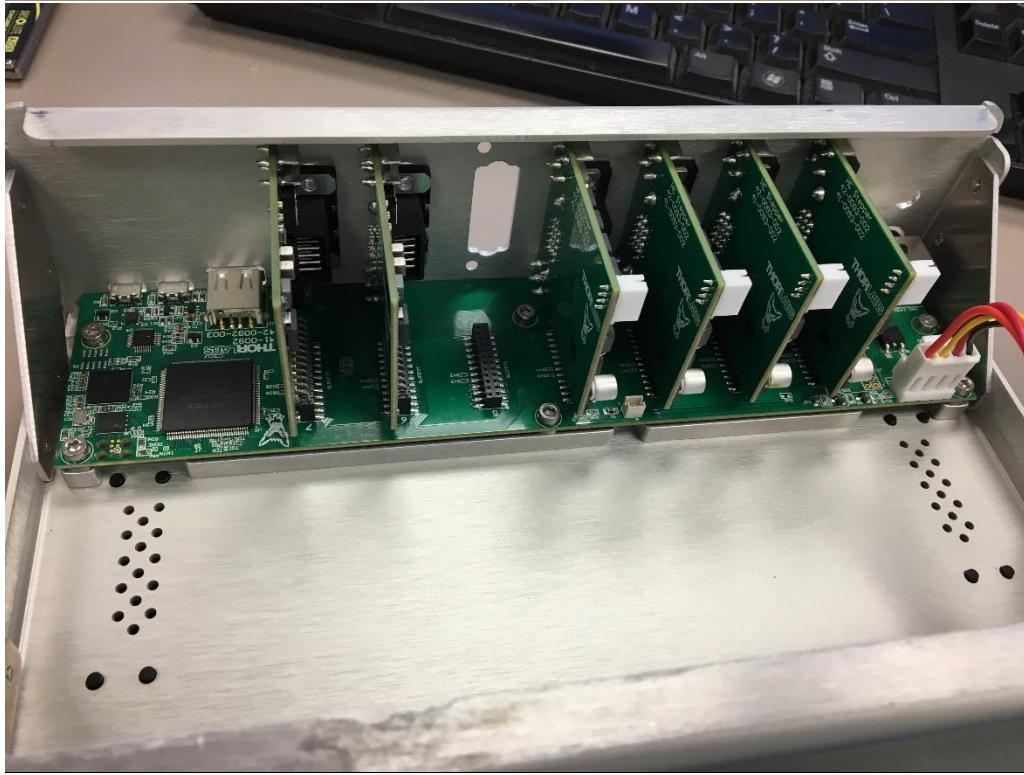
11. With power off, install (4) stepper cards 41-0093-002 in slots 1-4 using (2) 4-40x ¼" flat screws.

**Warning: Make sure the correct type of card is installed in each slot.**



12. With power off, install (2) Servo cards 41-0098-001 in slots 6&7 using (2) 4-40x  $\frac{1}{4}$ " flat screws.

**Warning: Make sure the correct type of card is installed in each slot.**



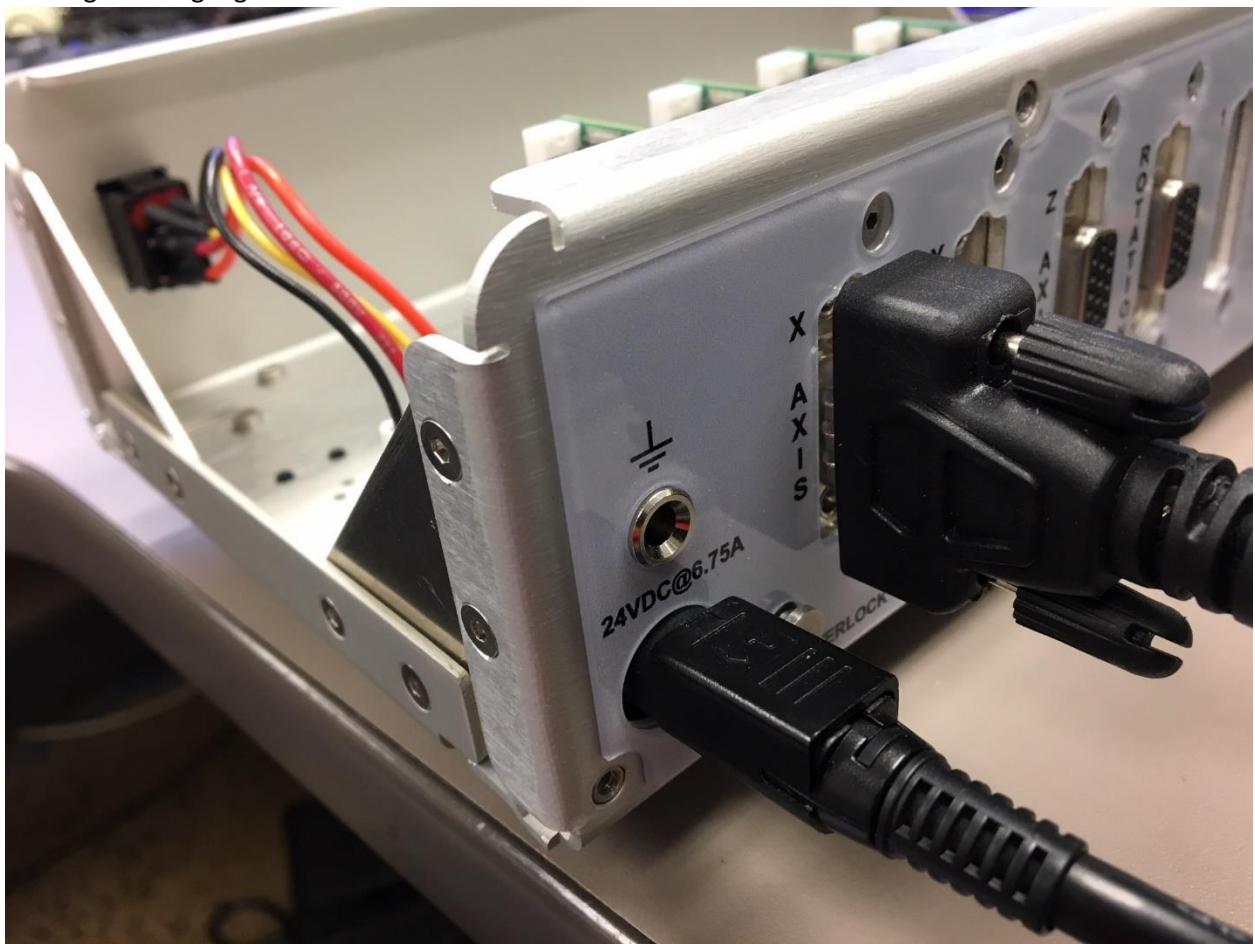
13. Install a slot blank on slot 5 using (2) 4-40x ¼" flat screws.

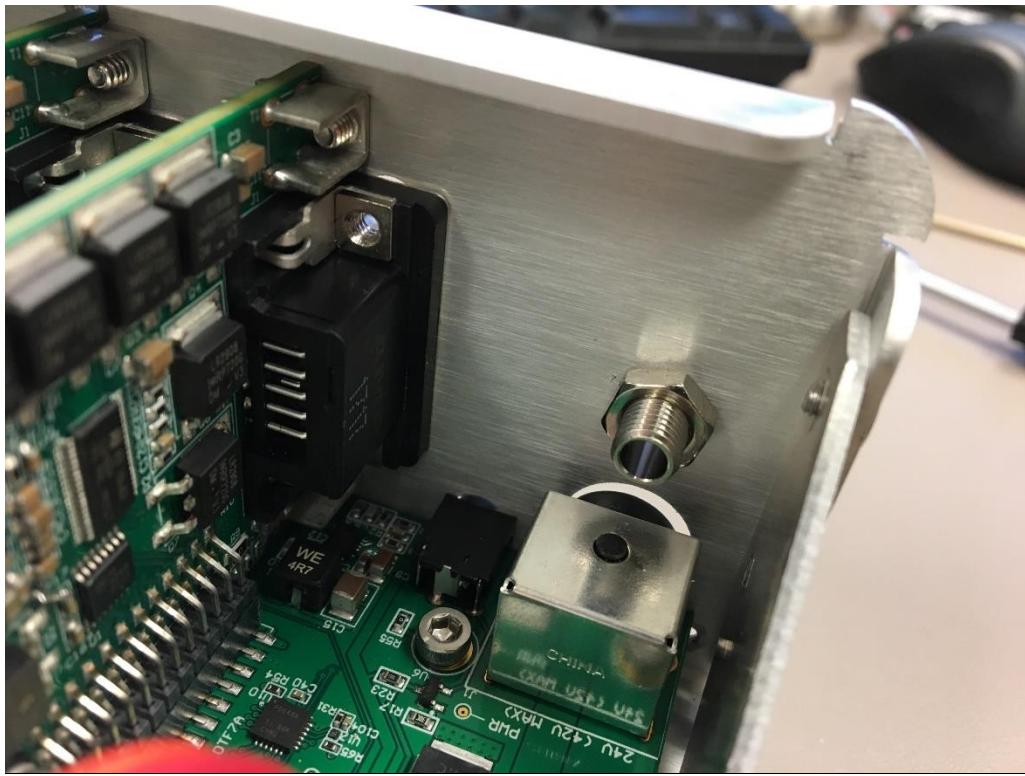


14. Install the rear graphic overlay.



15. Install grounding lug.





16. Plug in a safety interlock pin into the rear safety interlock jack.

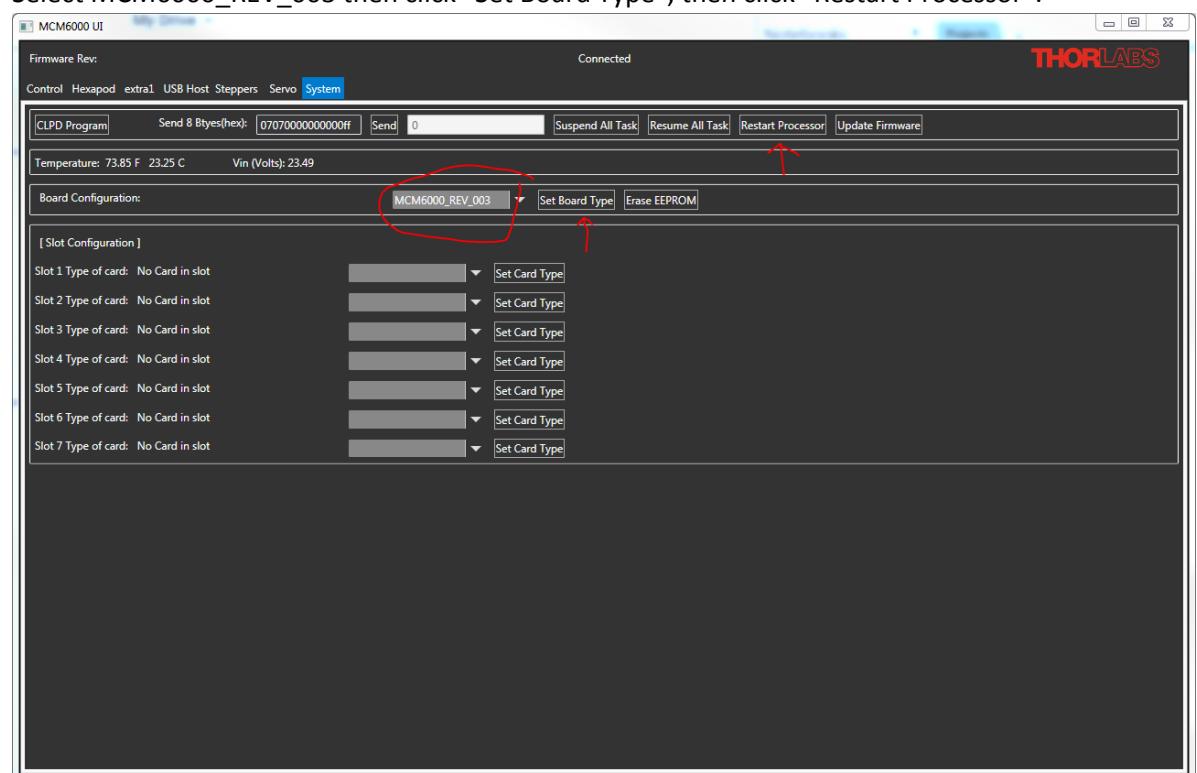


17. Connect power and USB cable on the rear.

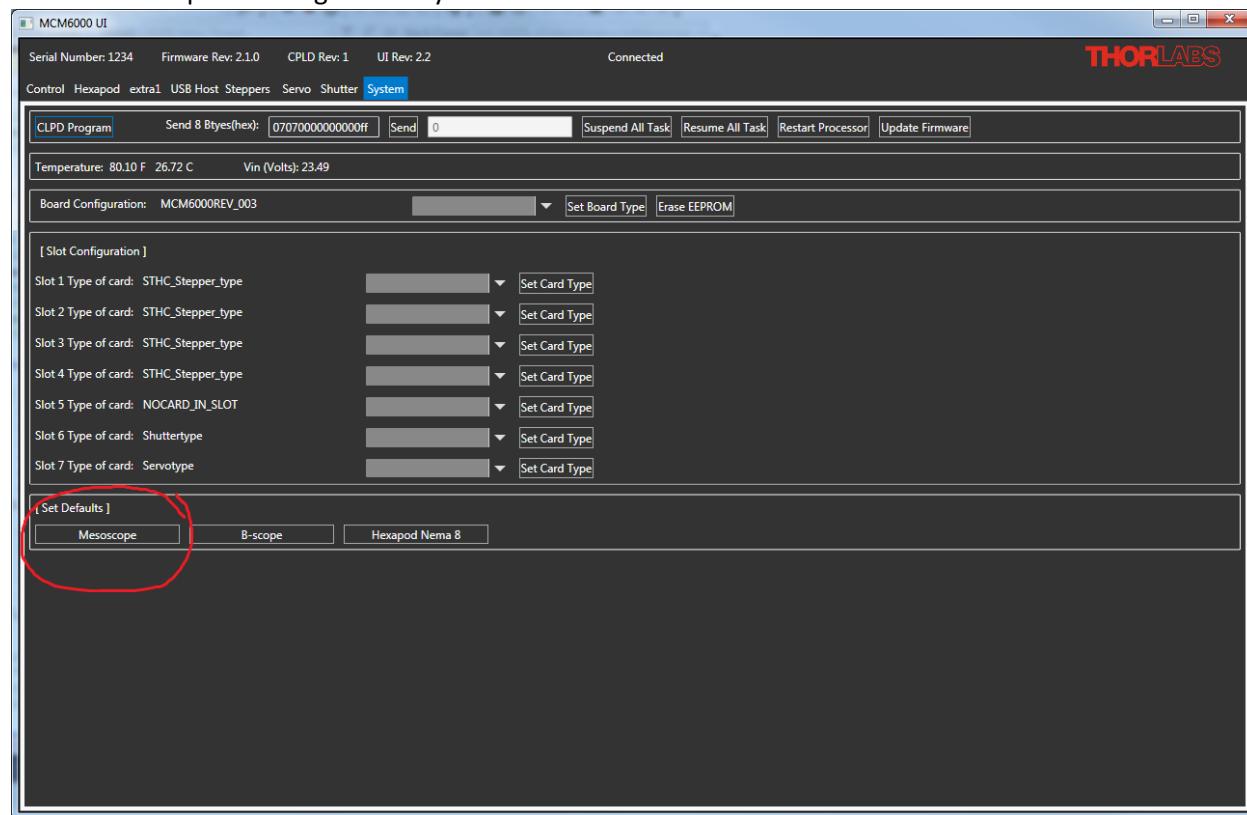


18. Power up the unity. Using the utility program the board type and each card as follows.

- a. In the utility, click on the “System” tab.
- b. Select MCM6000\_REV\_003 then click “Set Board Type”, then click “Restart Processor”.



19. Next, click on Mesoscope to configure the system.



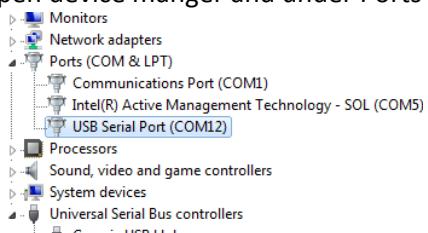
a.

20. Test

**Warning: FTDI driver must be installed on tablet or PC and the latency timer must be set as indicated below.**

Installing FTDI driver:

1. Open the folder ftdi driver in the software release files.
2. Right click on the file ftdiport.inf and then click Install.
3. Right click on the file ftdibus.inf and then click Install.
4. Plug the tablet or PC into the MCM6000 tablet USB port and power up the MCM6000.
5. Open device manager and under Ports you should see "USB Serial Port"



6. Right click over this and select properties.

7. Set the Latency Timer to 1 and Selective Suspend Idle Timeout to 1 as shown below.



8. Then click OK.

Update firmware:

1. Plug in power
2. Plugin USB cable into the USB PC port on the rear and other end to the PC.
3. Switch the power on.
4. In the MCM6000 UI folder double click MCM6000\_UI.exe
5. Click on the system tab.
6. Click Update Firmware, then Yes on the popup window.
7. In the Thorlabs MCM Updater folder, double click on Thorlabs MCM\_Updater.exe.
8. Click Update in the new window, then in the file browser go to the firmware folder and select the file 70-0059.hex to open. This will update the micron firmware.

Update CPLD:

1. In the MCM6000 UI system tab, click on CPLD Program.
2. Click Update in the new window, then in the file browser go to the "CPLD jed file" folder and select the file mcm\_top\_impl1\_2.0.jed to open. This will update the CPLD firmware.