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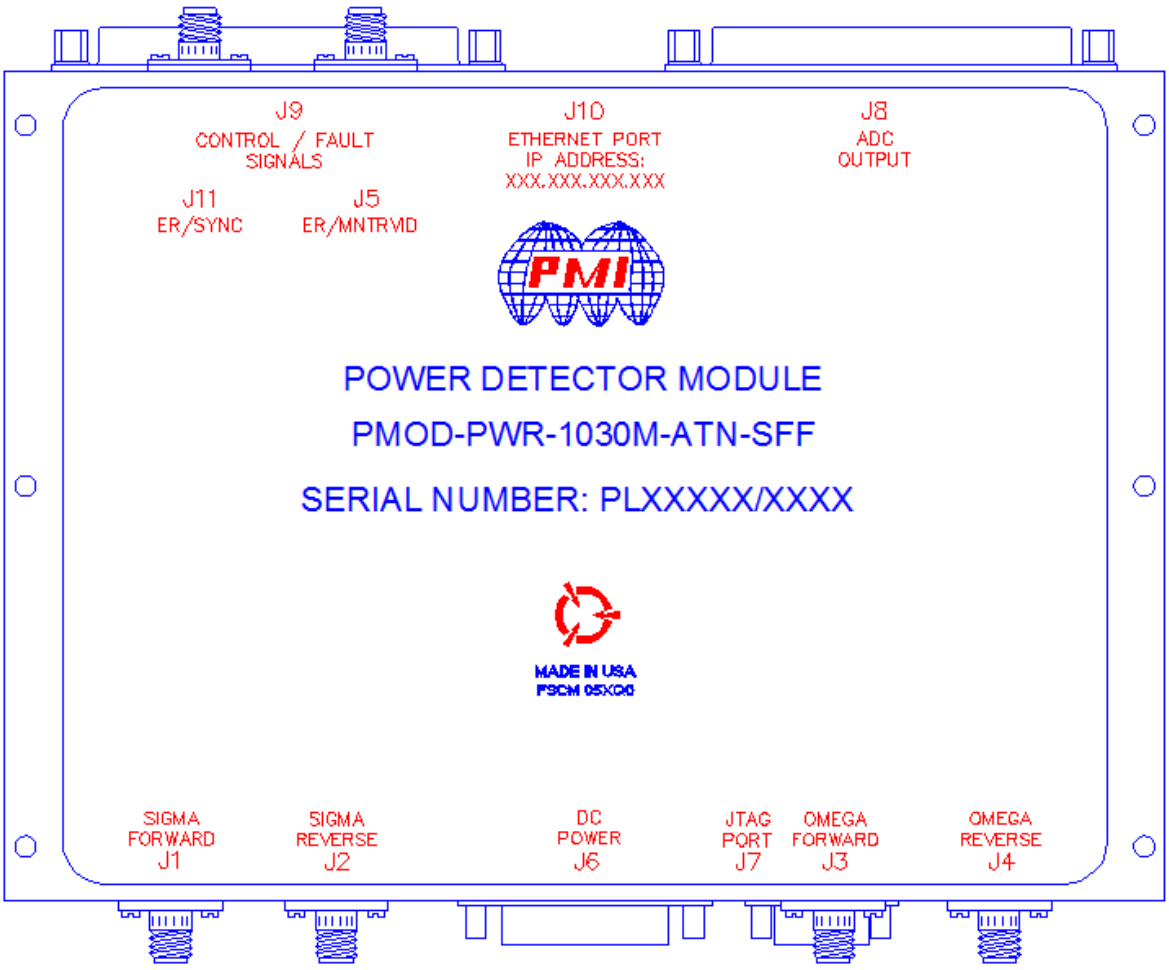
1030 MHz POWER DETECTOR

PMOD-PWR-1030M-ATN-SFF

Software and Firmware Update Instructions



May 18, 2016

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Reprogramming the FPGA:

The power detector module uses the A3P250PQ208 FPGA. To program the FPGA, the JTAG interface is used (J7).

The pinout matches the FlashPro4 or 5 device programmer as shown in Figure 1 below:

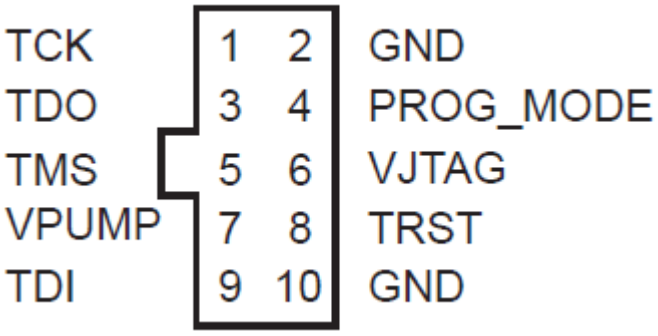


Figure 1: JTAG Pinout

Connect the programmer to the JTAG port using an interface cable to the micro-d female connector (female cable mating end shown in Figure 2) and program the device.

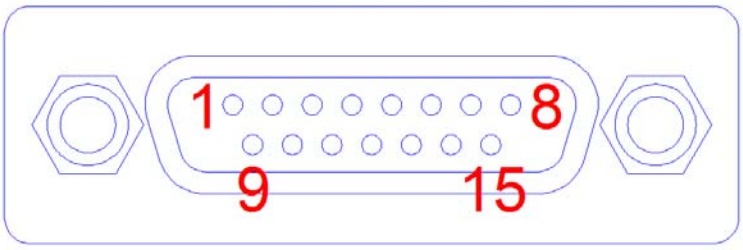
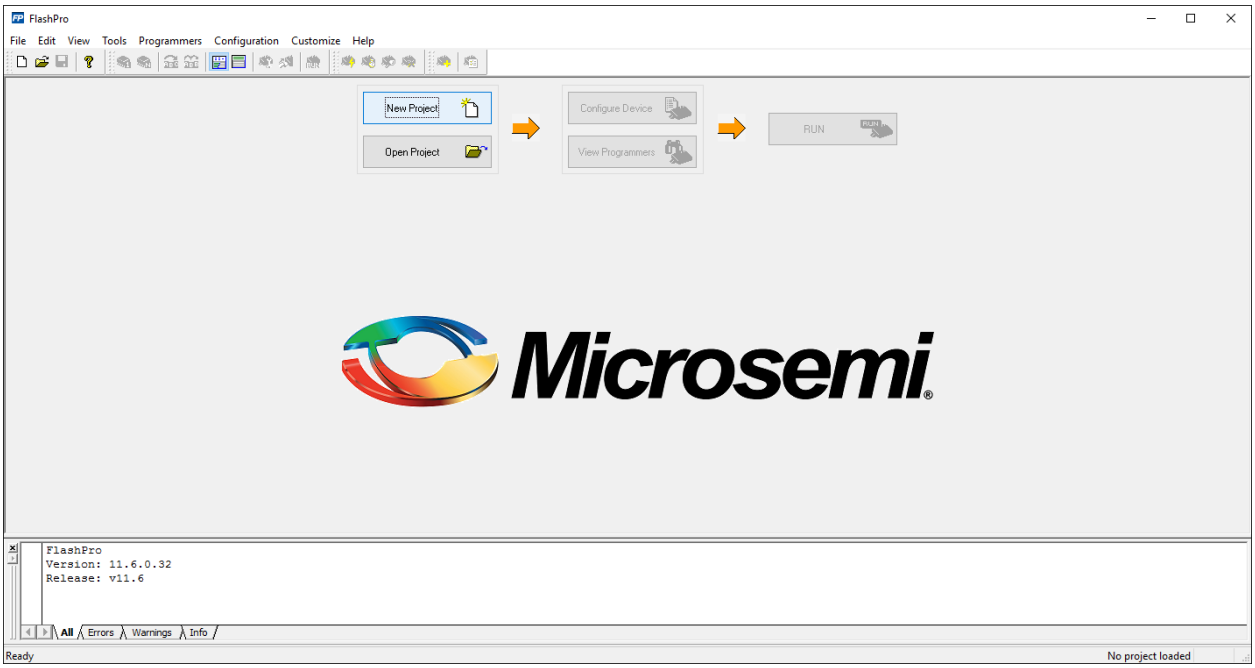
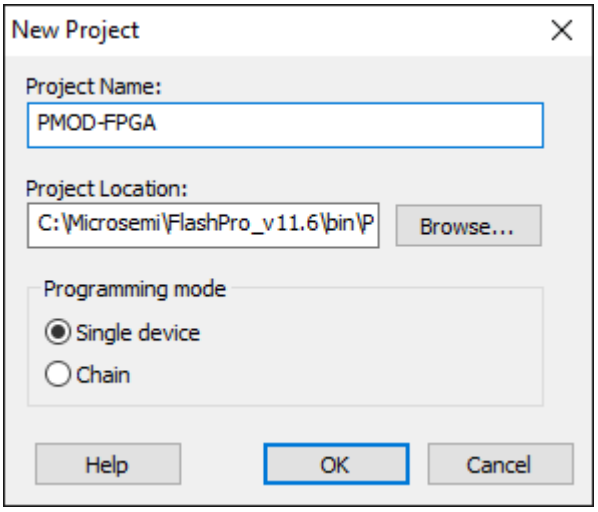


Figure 2: Female Micro-D 15 pin connector

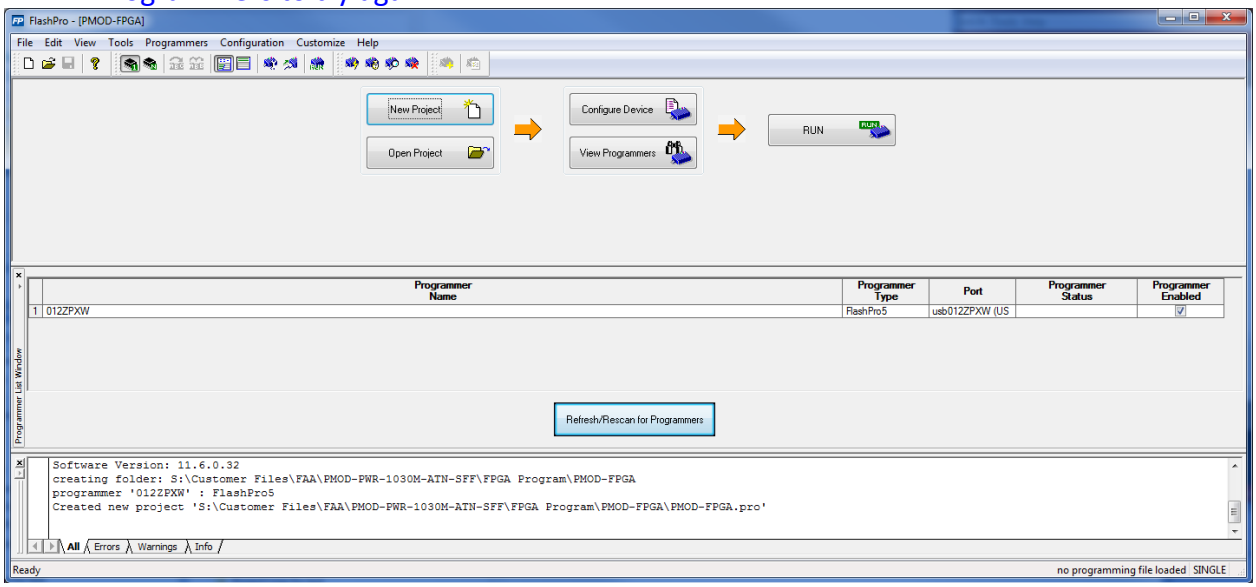
To program, use the FlashPro software (at the time of printing the latest version is v11.6 available to download at:
http://soc.microsemi.com/download/reg/download.aspx?p=f=FlashProv11_6_WIN)

1. Begin a New Project and check the Single device option in Programming mode

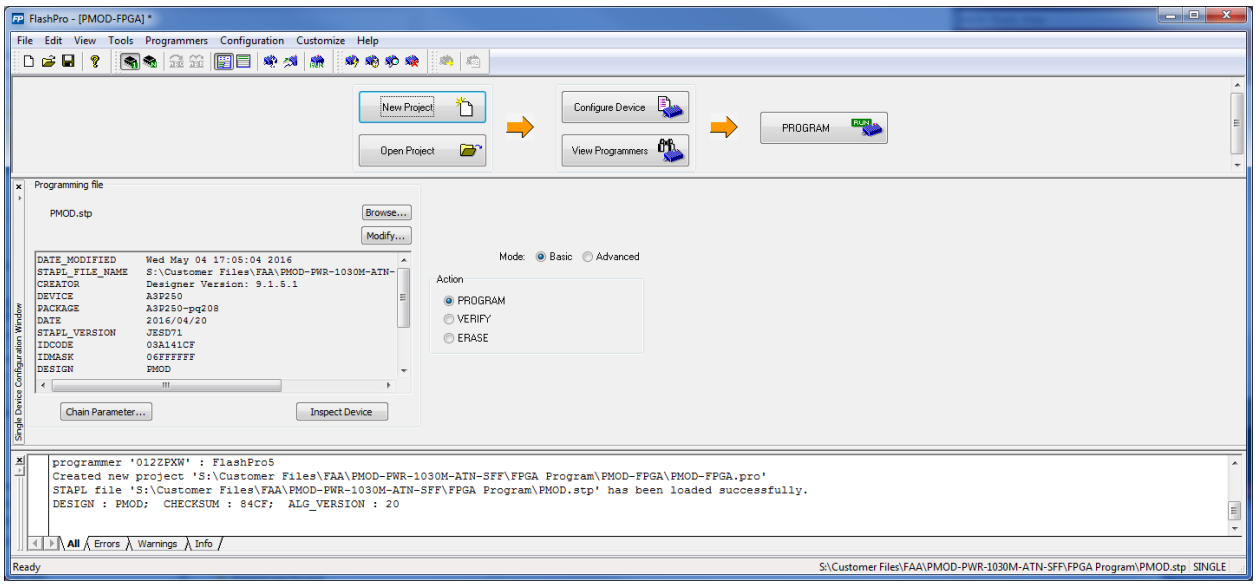




2. With the unit powered on, and the FlashPro connected to the USB port on the PC and the programming connector on the unit, the programmer should show up on the programmer list. Otherwise, check all the connections and click Refresh/Rescan for Programmers to try again.



3. Click on Configure Device and then Browse to load the PMOD.stp file



4. Click on Program and the FPGA will be programmed.

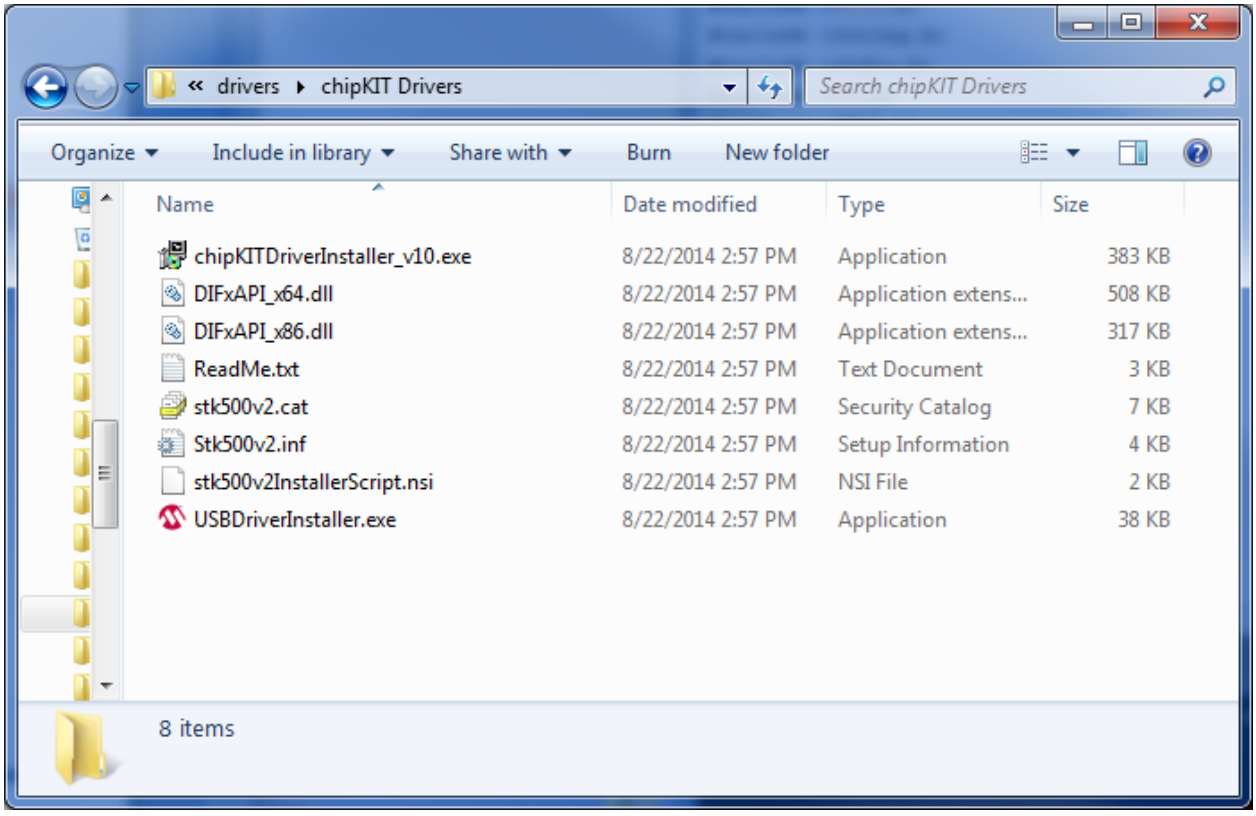
Programming the Microcontroller:

The power detector module uses the Fubarino SD v1.5 board populated with the PIC32MX795F512H Microcontroller. To program the Microcontroller, the test board is needed to interface to the power detector.

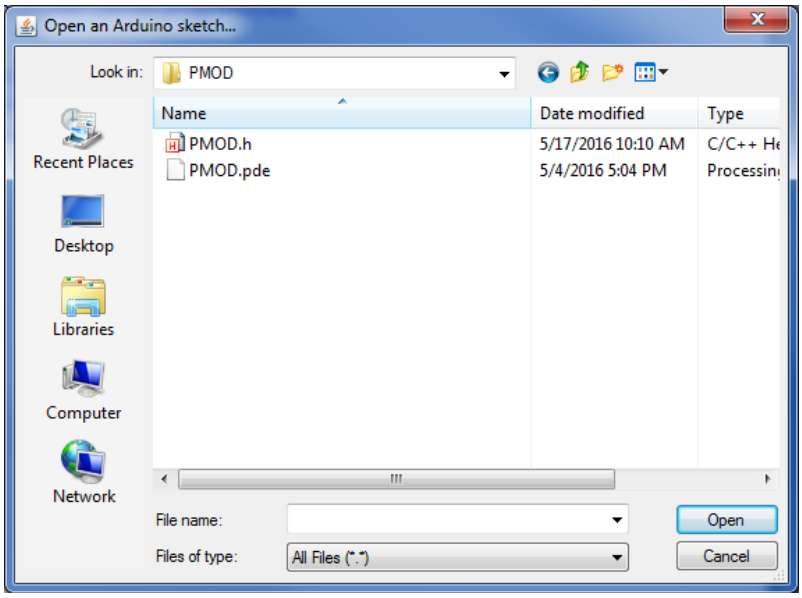
Once the test board is connected to the power detector module, the USB connector can be connected to a PC and the microcontroller can be programmed.

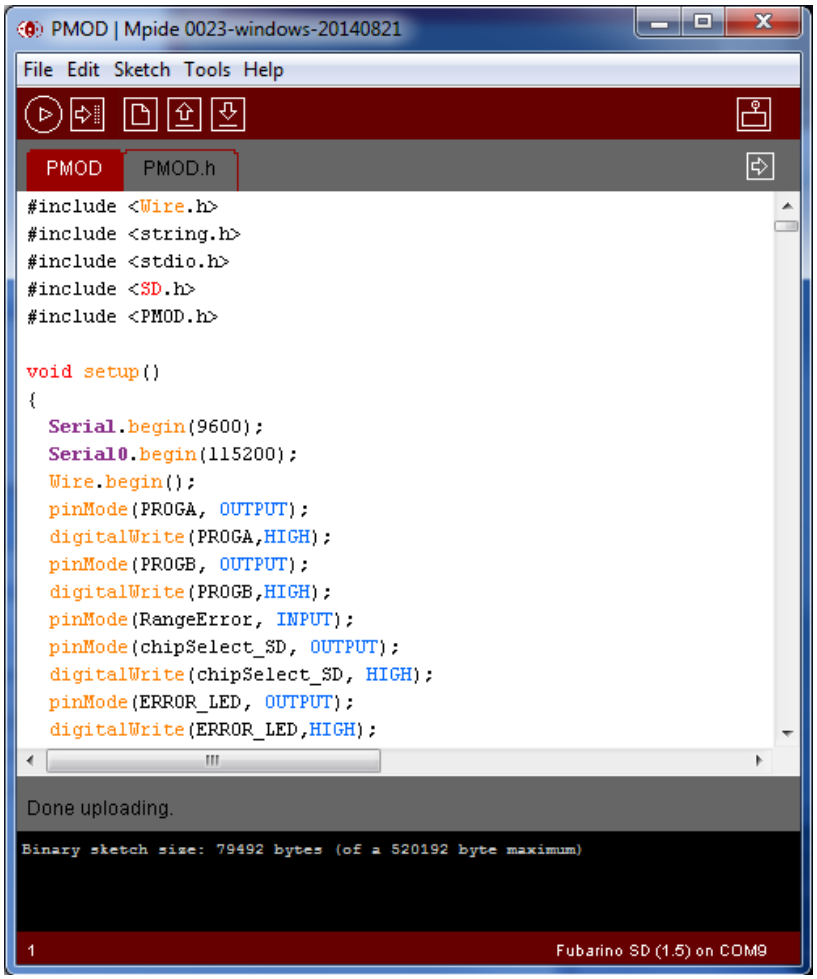
1. To begin, MPIDE Release Build 2014-08-21 - 0023 must be used as the compiler and programmer. Newer versions of MPIDE will not correctly compile the code. The software is available for download at (http://chipkit.net/wiki/index.php?title=MPIDE)

2. Also install the chipKITDriverInstaller_v10.exe so that MPIDE will recognize when a board is connected. This file is located inside the mpide-0023-windows-20140821/drivers/chipKIT Drivers folder.

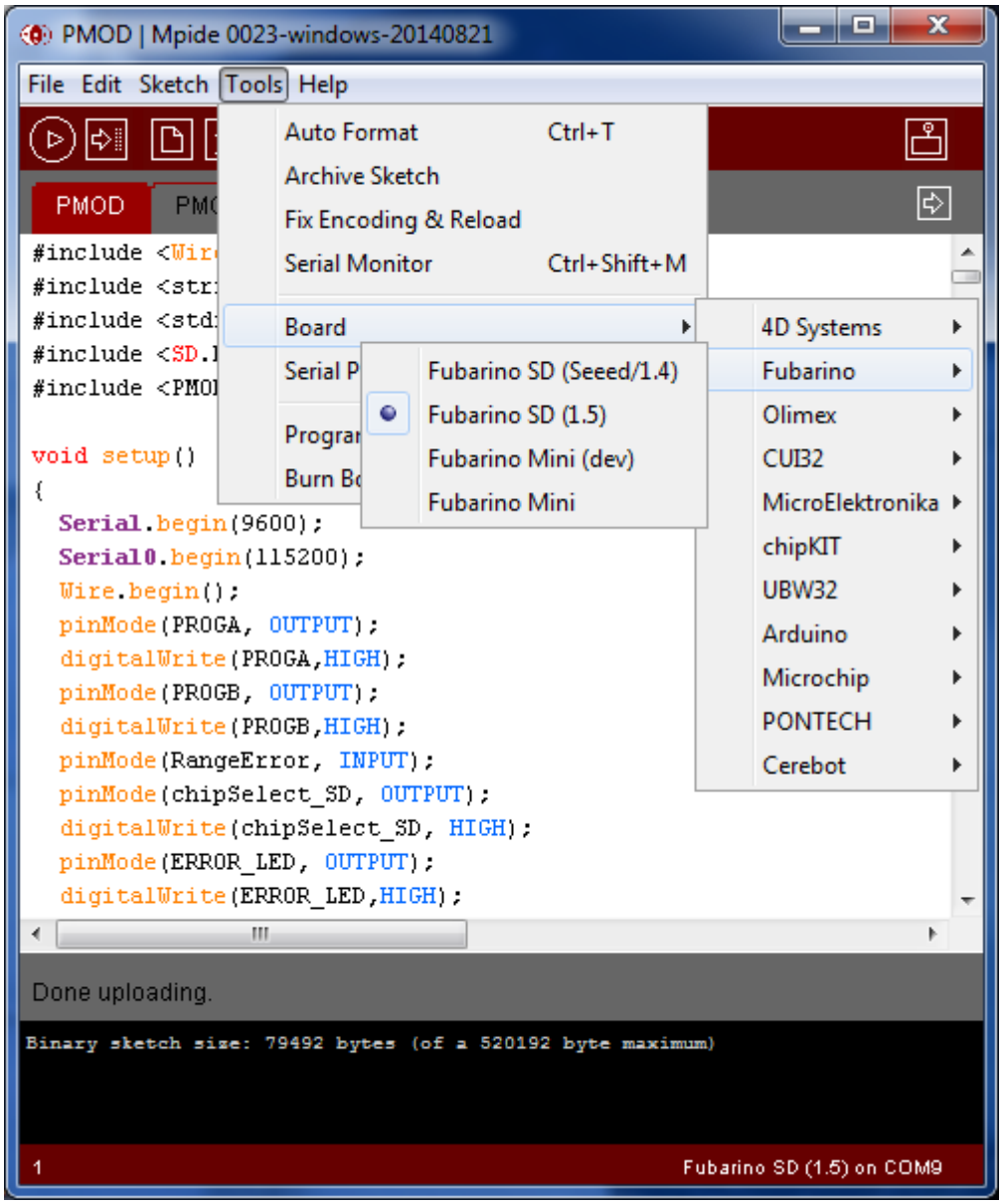


3. Open the PMOD.pde file in MPIDE making sure that both PMOD.pde and PMOD.h are both stored in the same folder.

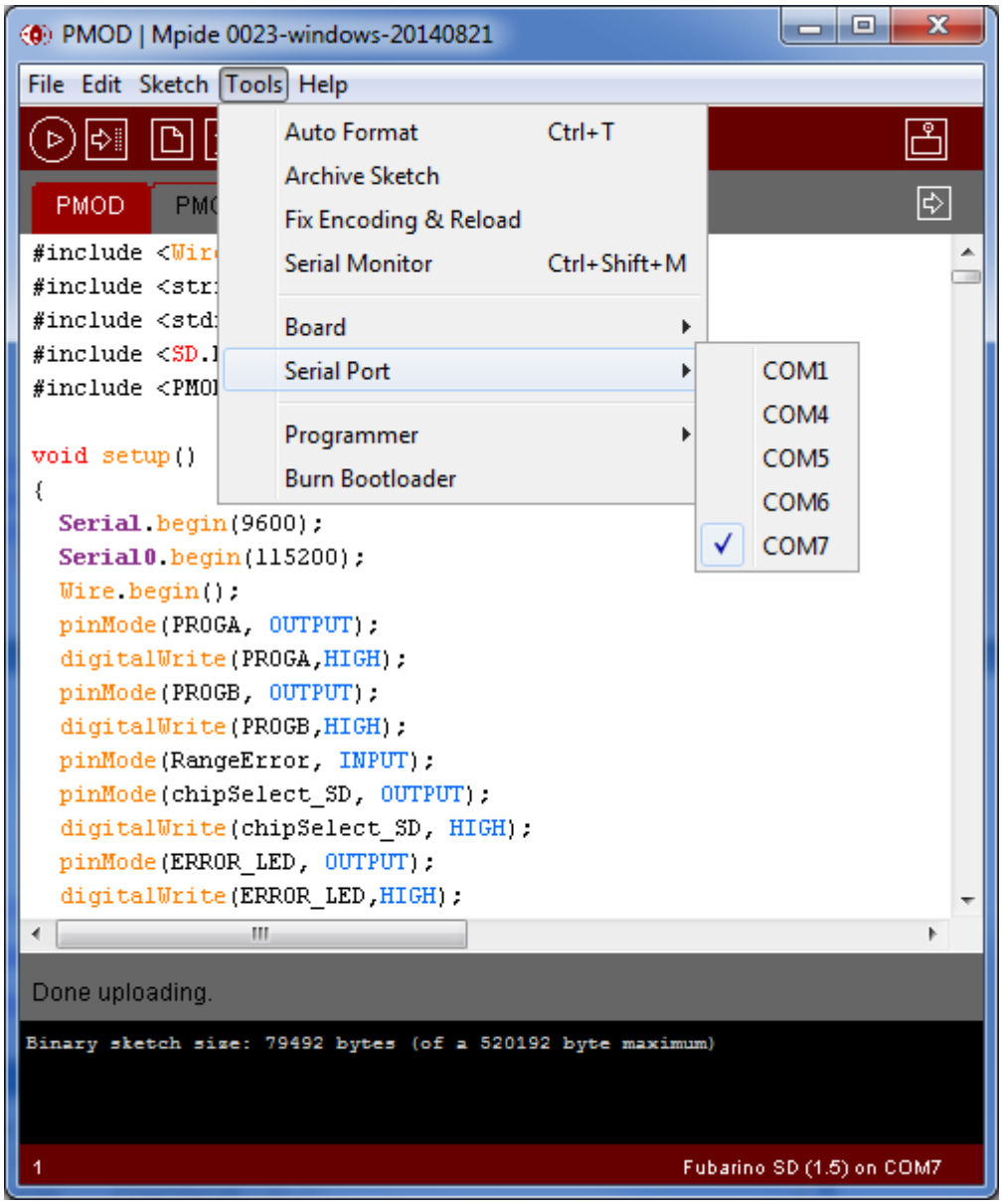




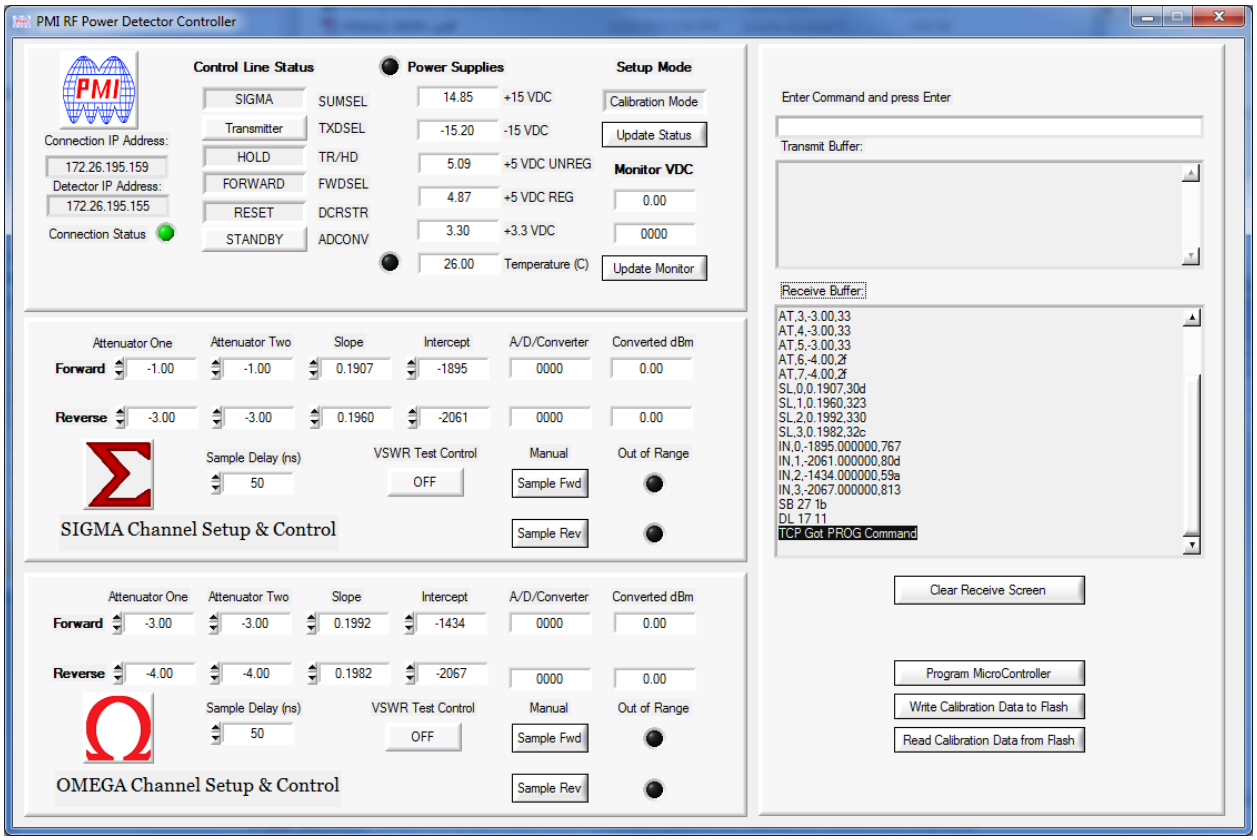
4. In MPIDE select the correct board under Tools → Board → Fubarino → Fubarino SD (1.5).



5. In MPIDE select the correct COM Port under Tools → Serial Port → COMx that the USB is connected to. If unsure, disconnect the USB port and reconnect it. Watch in Control Panel → Device Manager which Port disappears and reappears.



6. Next, start the PMOD GUI and connect to the unit. Once connected click on Operational Mode to switch to Calibration Mode. Then click Program MicroController. In the Receive Buffer window, the last command should read “TCP Got PROG Command”



7. Now compile and then upload the code using MPIDE, and the microcontroller will be programmed. Close the GUI, cycle the power supply to the unit off and on, and then restart the GUI and the unit will be operational.