version 0.1

March 31, 2016

Updating Firmware VAXMIDI

Introduction

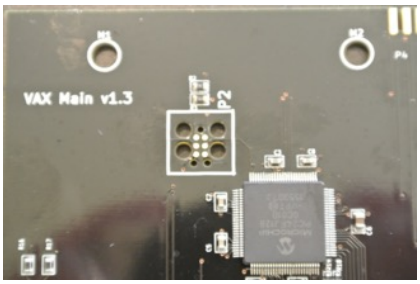
The latest version of VAXMIDI firmware is always available at www.vaxmidi.com. There is a different program for each circuit board: Main; Controls; Sensor. Whether you have 2, 3 or 4 Sensor boards in you system, each Sensor board uses the same Sensor firmware.

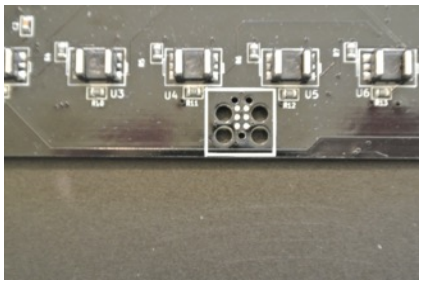
Hardware Requirements

You need a Mac, Windows, or Linux PC to update VAXMIDI firmware. You will also need to purchase an in-circuit programming module. These modules range from the very inexpensive PICKIT3 ($20-$50 depending on where you buy it) to the mid range MPLAB ICD3 ($200), to the very capable MPLAB Real ICE ($1000). Unless you plan to do some serious firmware development, the PICKIT3 is all you will ever need.

Programming Port

Every circuit board in VAXMIDI has a programming port that looks like this.





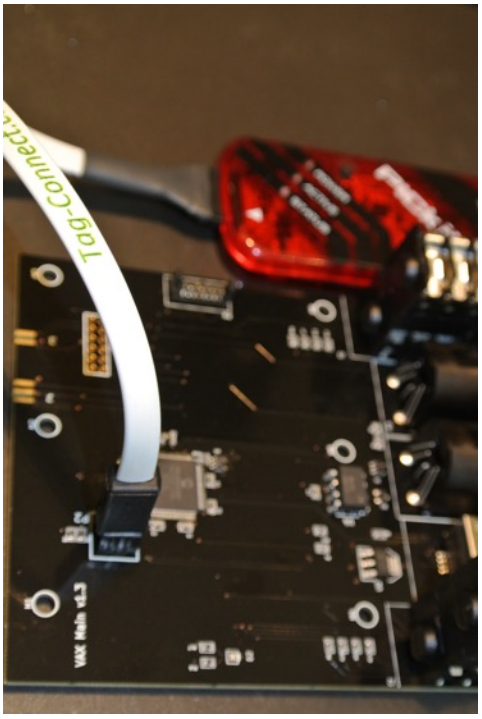
It is called a TAG-CONNECT port and you connect to it with a special cable. You can order it directly from the manufacturer.

www.tag-connect.com/pickit3

They also make a cable for the in-circuit emulators ICE3 and Real ICE.

www.tag-connect.com/TC2030-MCP

Use the appropriate cable to connect the programming module to a VAXMIDI circuit board.

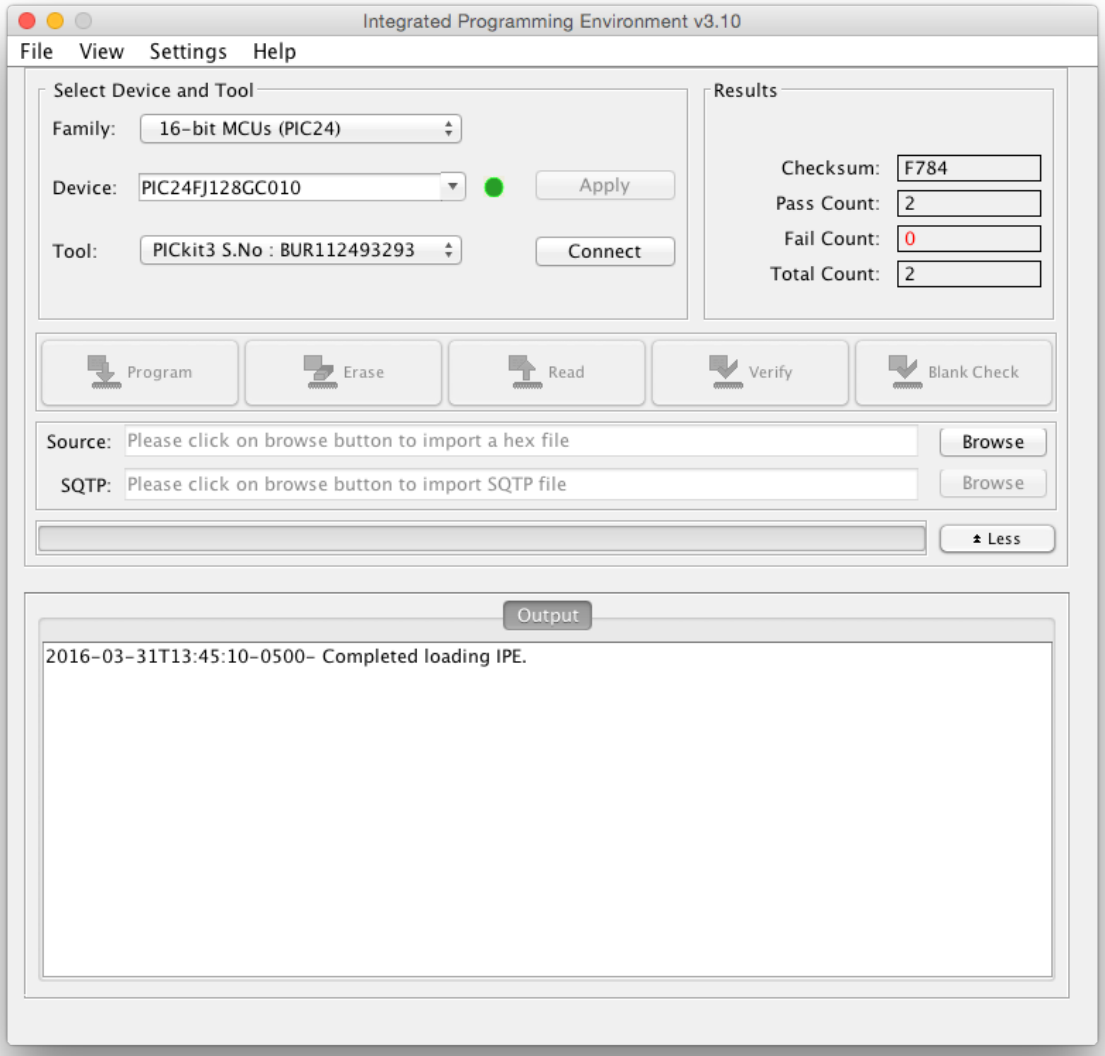


In-Circuit Programming Software

Download and install the MPLAB development system from Microchip. Click the Downloads tab. There are separate downloads for Mac, Windows, and Linus.

http://www.microchip.com/mplab/mplab-x-ide

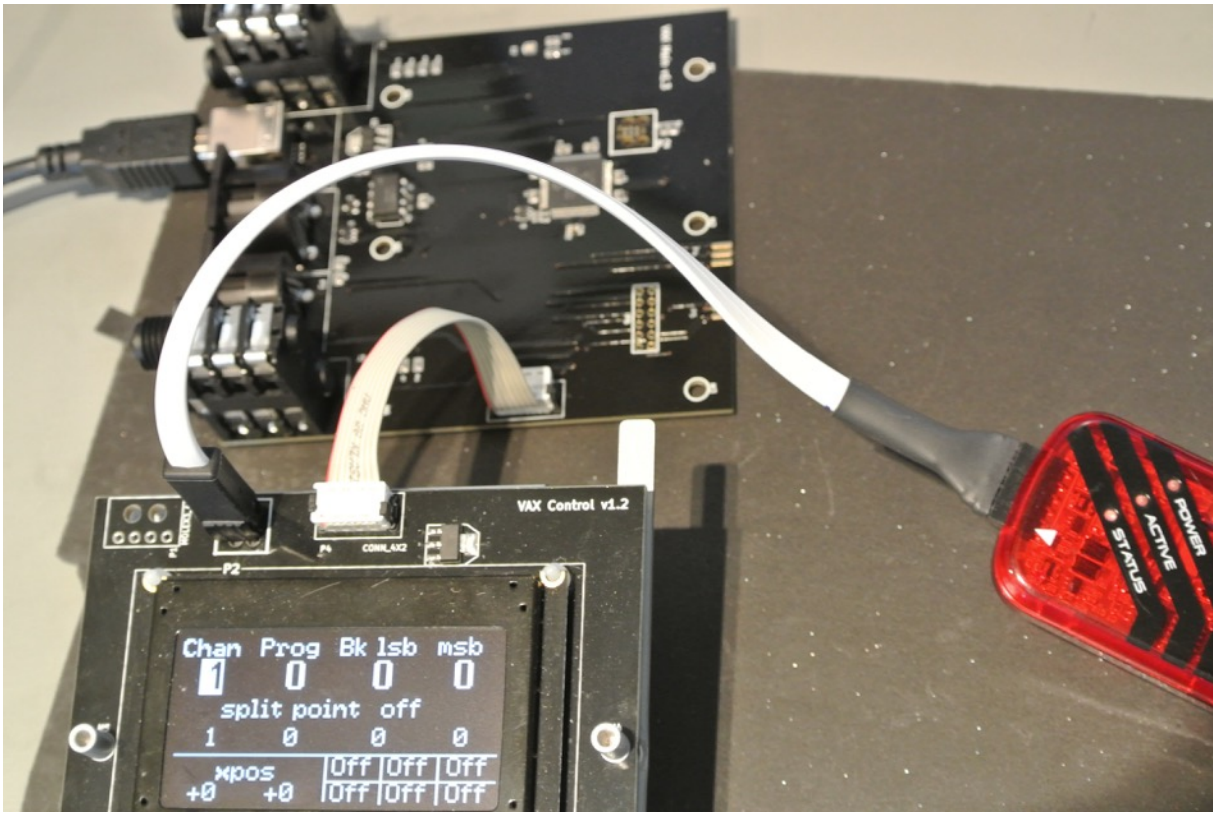
This will install 2 different packages, the Integrated Development Environment (IDE) and the Integrated Programming Environment (IPE). Unless you are developing firmware for VAXMIDI, you will launch the IPE.



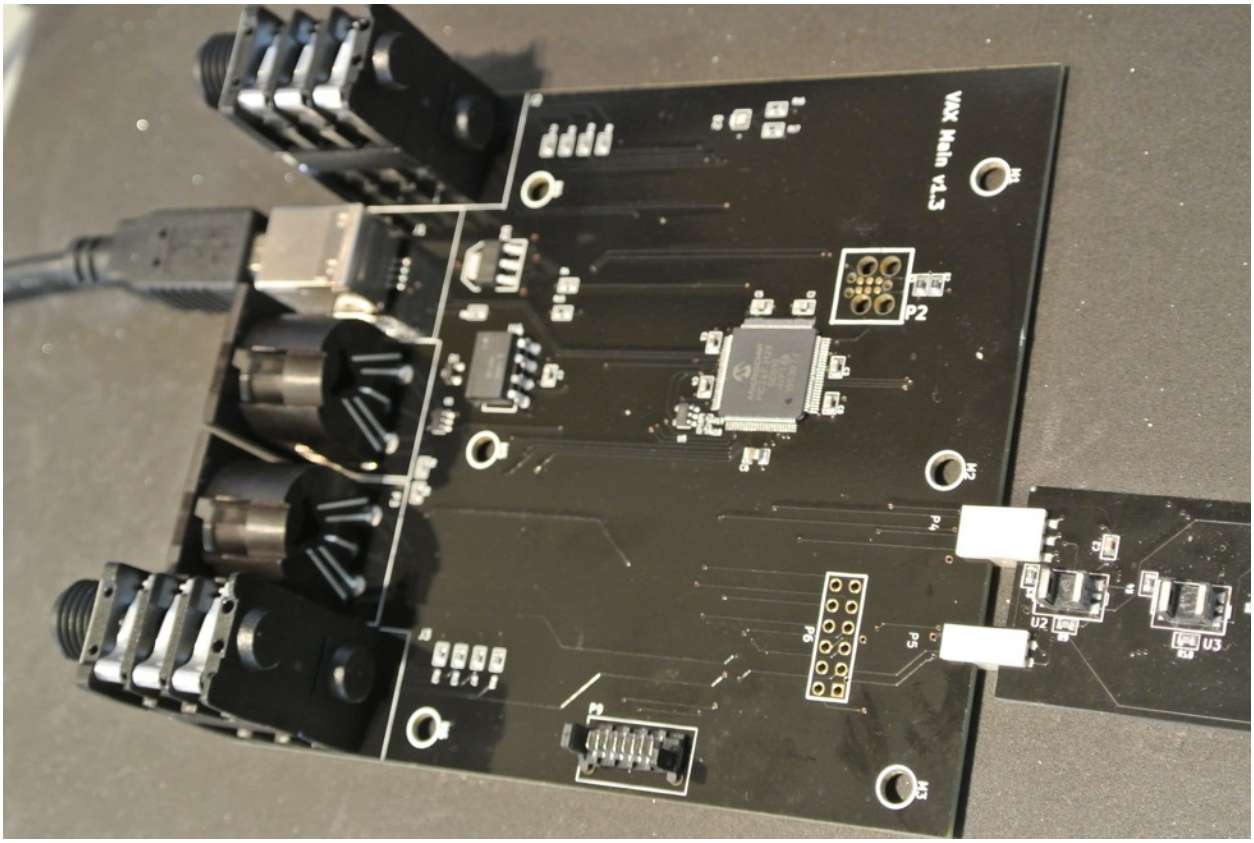
Select the Family and Device as shown above for Main and Sensor board programming. If you are programming the Controls circuit board, select this Device: PIC24FJ64GA004 from the drop down list.

If your programming module is connected to the USB port of your PC, it will appear in the Tool window. Connect the target circuit board to the programming module with the TAG-CONNECT cable.

In order to program the board, the board must have power. If you are programming Main, connect the USB connector on Main to a wall charger. If you are programming one of the other boards, it must be connected to Main to get power. Use the 8 pin cable to connect Controls.

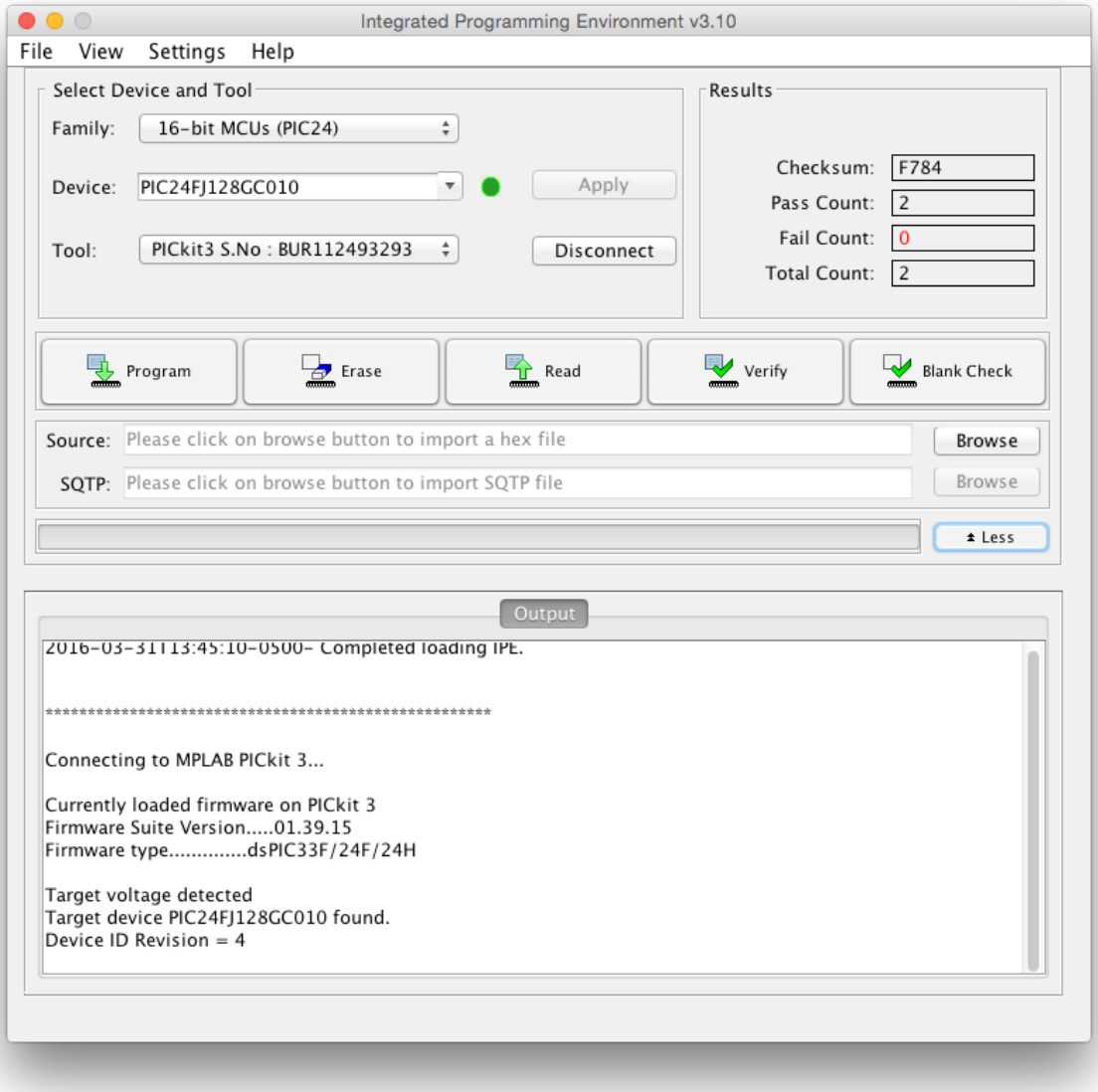


Use the board to board connectors to connect Sensor.

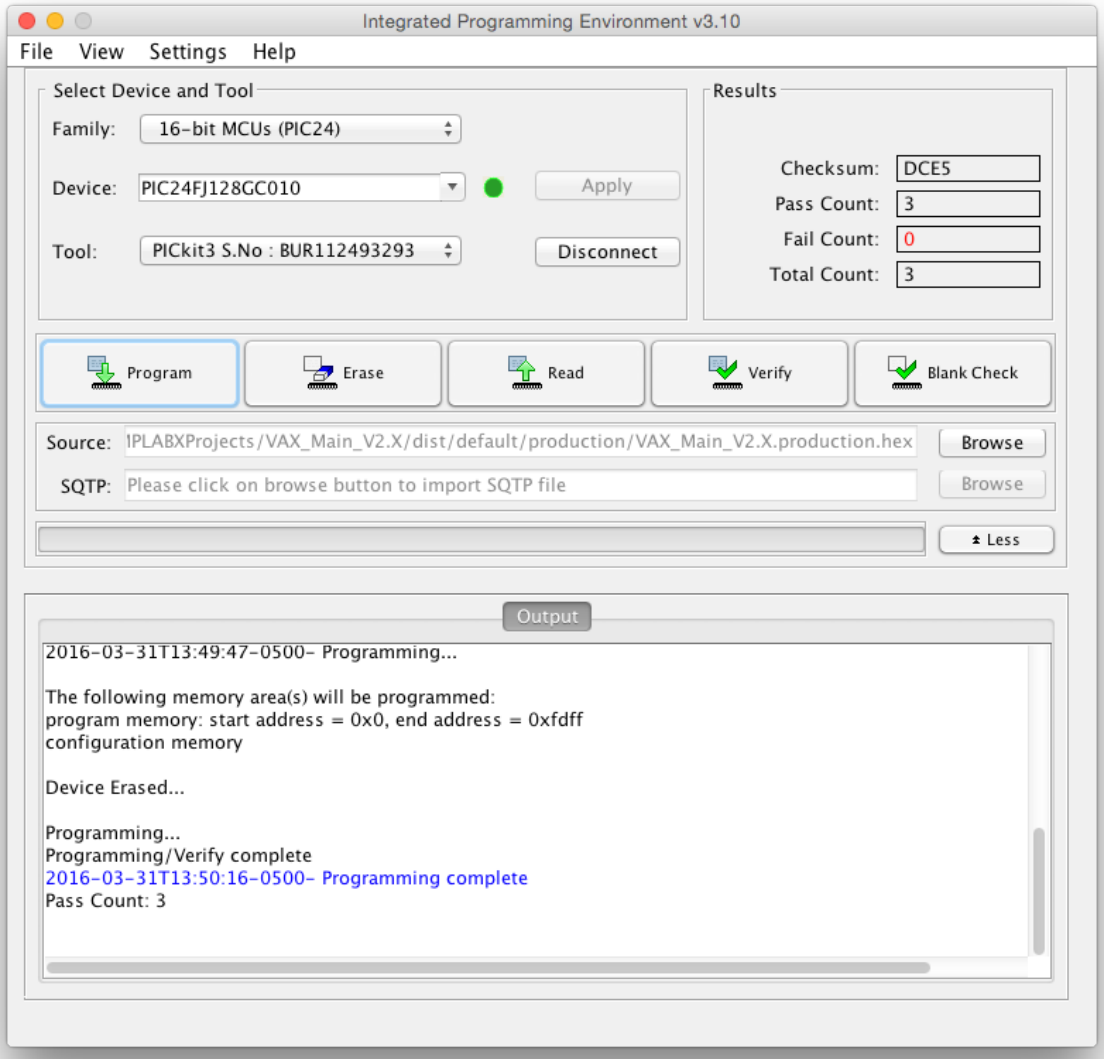


Click *Connect*.

If the programming module is found you will see output similar to this:



Download the firmware from www.vaxmidi.com then click browse to locate the file. The file extension will be .hex (for example, VAXMIDI MAIN vers2_3.hex)

Click the Program button.

If programming is successful you will see output similar to this: