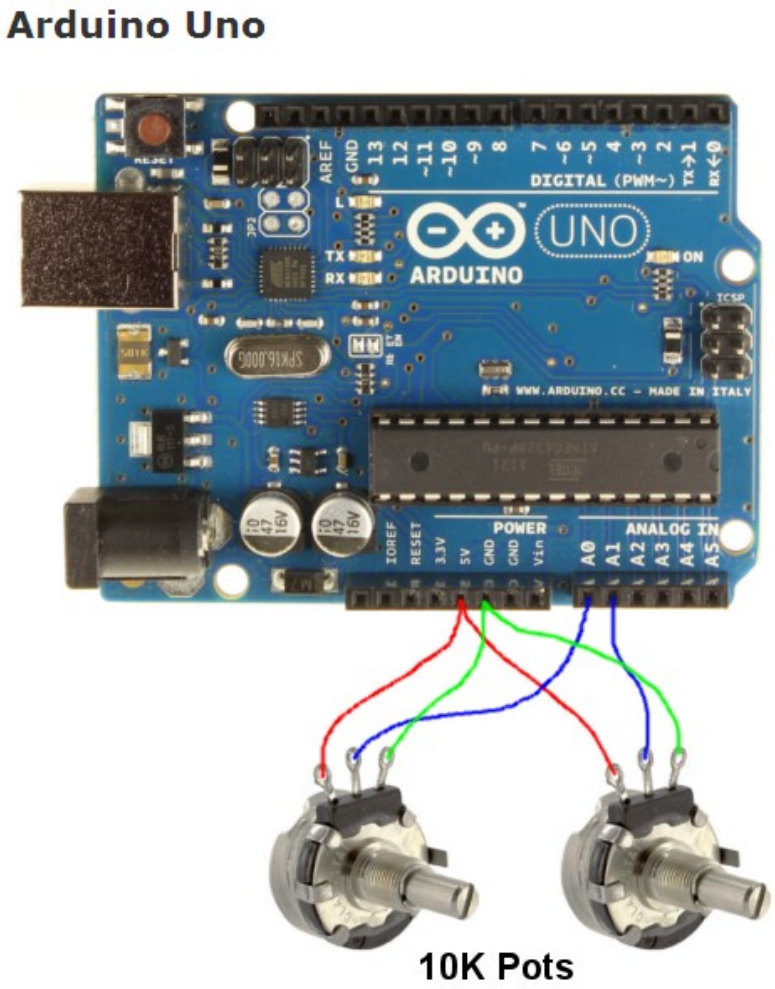
Introduction

Here's a tutorial about how to get analog inputs in Mach3 with Arduino. It is assumed that you are familiar with what Arduino is and how to put sketches on it with the arduino software. Details about it can be found at http://www.arduino.cc. It is also assumed that you have fair amount of experience with setting Mach3 installation and setup. Information about Mach3 can be found at http://www.machsupport.com.

Here I will demonstrate how to use two potentiometers to adjust the Feed Rate Override (FRO) and Spindle Speed Override (SSO) in Mach3.

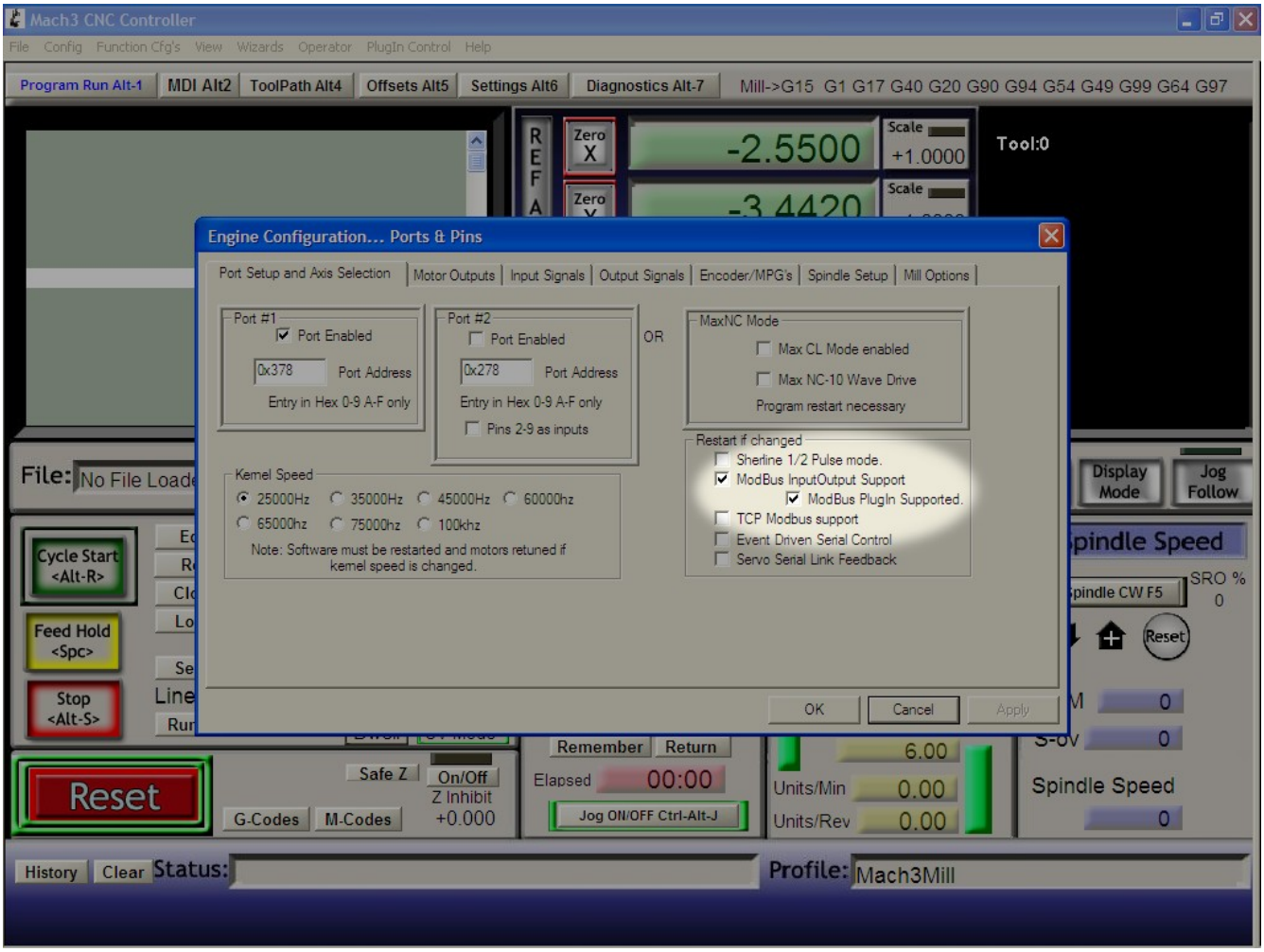
Setup the Arduino

An example of how to attach potentiometers to the Arduino board is shown in the figure below. Arduino UNO is used in this example. Arduino software version is 1.0.1. The sketch file can be downloaded from Mach3 support forum (http://www.machsupport.com/forum/index.php/topic,22981.0.html). That's all with the arduino side. On we go to Mach3 and set it up for our analog inputs.

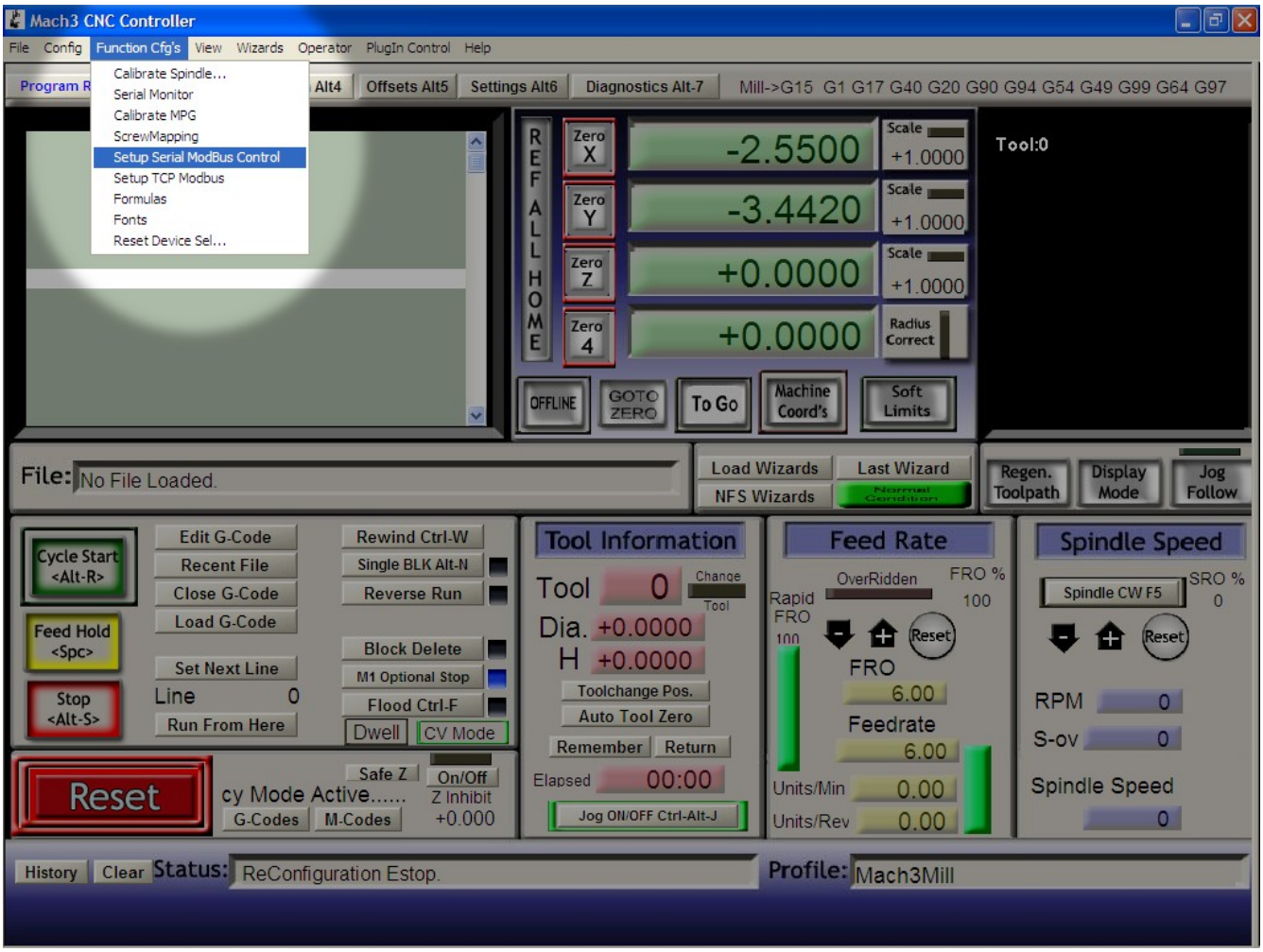


Setting Mach3 for Modbus

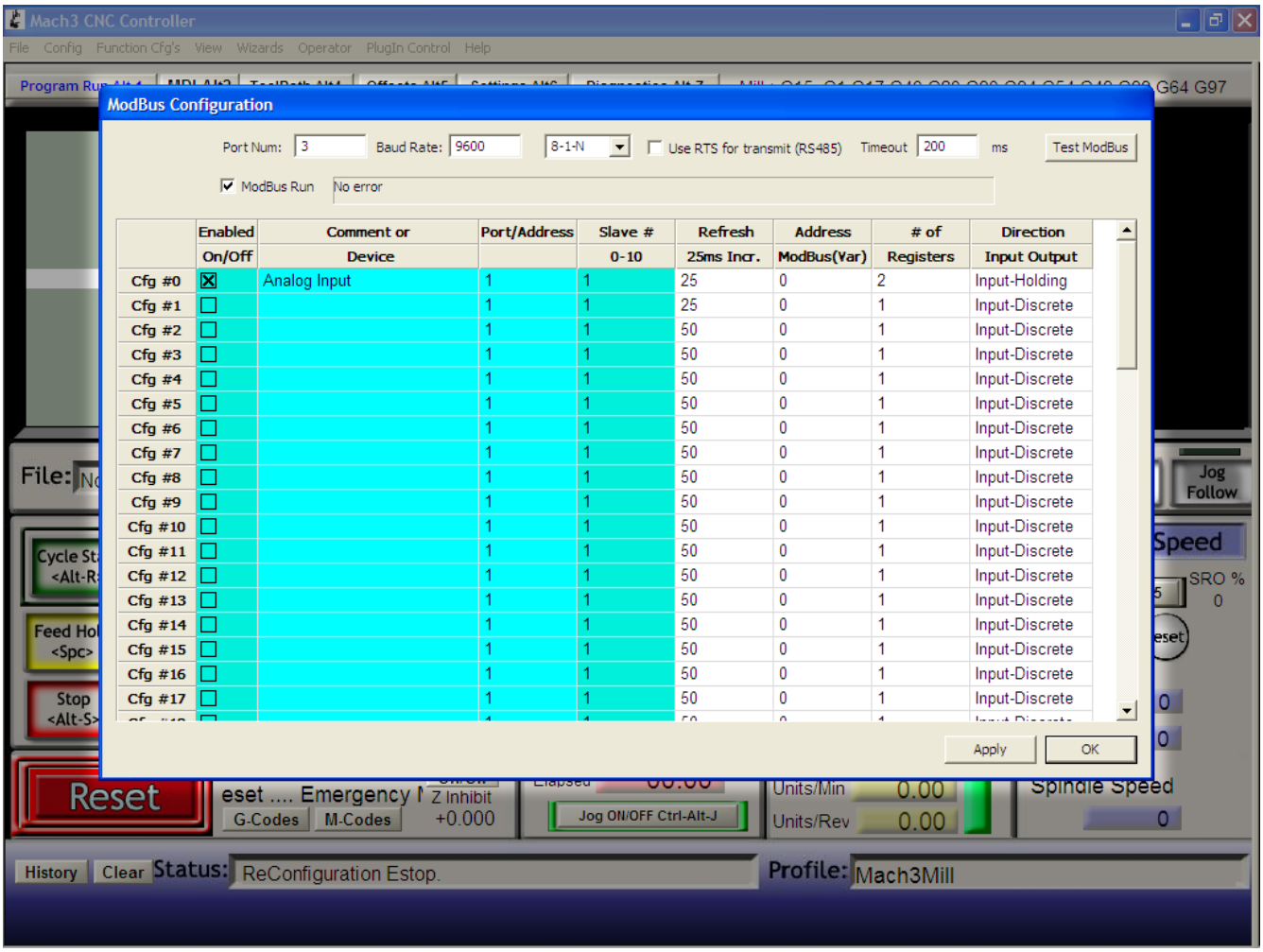
First we'll have to enable modbus in Mach3. Do the following settings in Config/Ports & Pins menu of Mach3. You'll have to restart Mach3 after applying these settings.



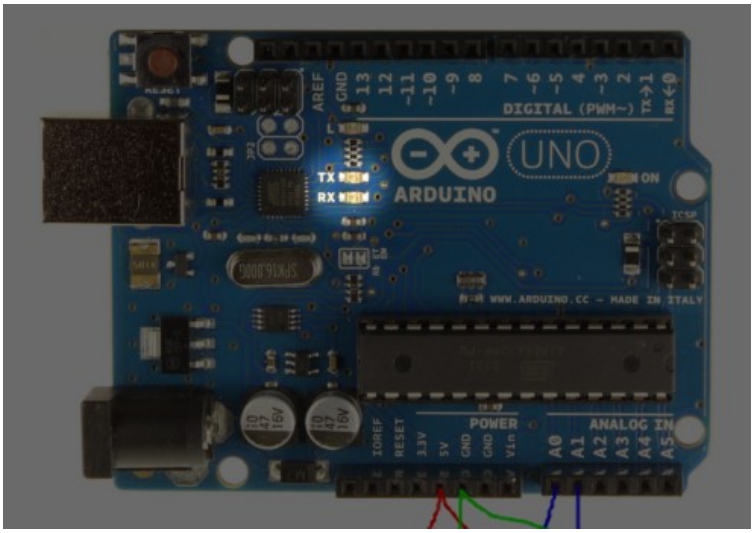
Now go to the Function Cfg's menu and select “Setup Serial Modbus Control” from there



A screen similar to this will appear. Do the settings as shown in the figure below.

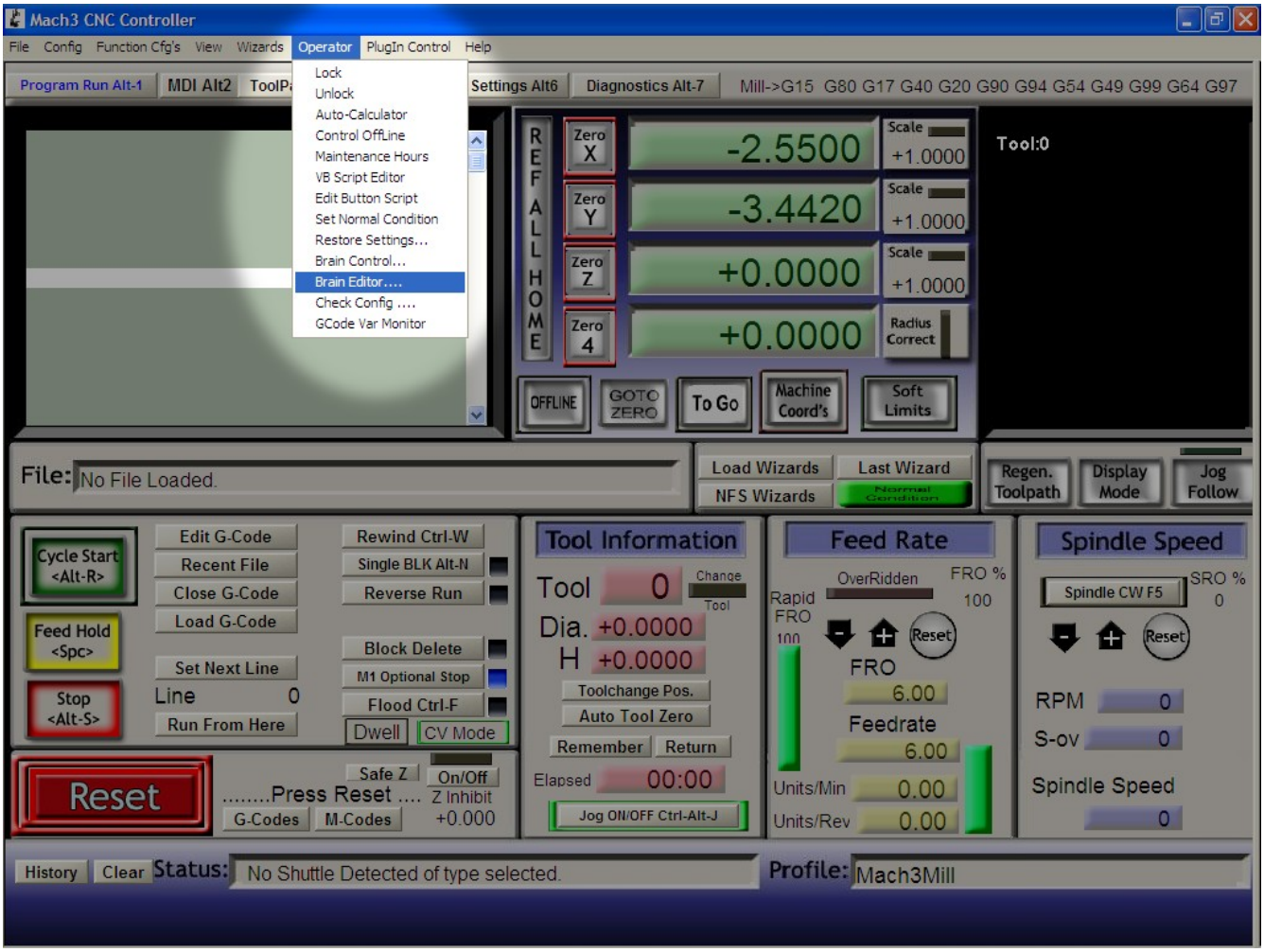


Please note the Port Num: might be other than 3 on your PC for the arduino. You can check the port number on which Arduino is installed in the arduino software. When you click on Apply button on this window the communication between Mach3 and Arduino should begin. You should see the TX and RX Led's on the Arduino board blinking at a rapid rate.

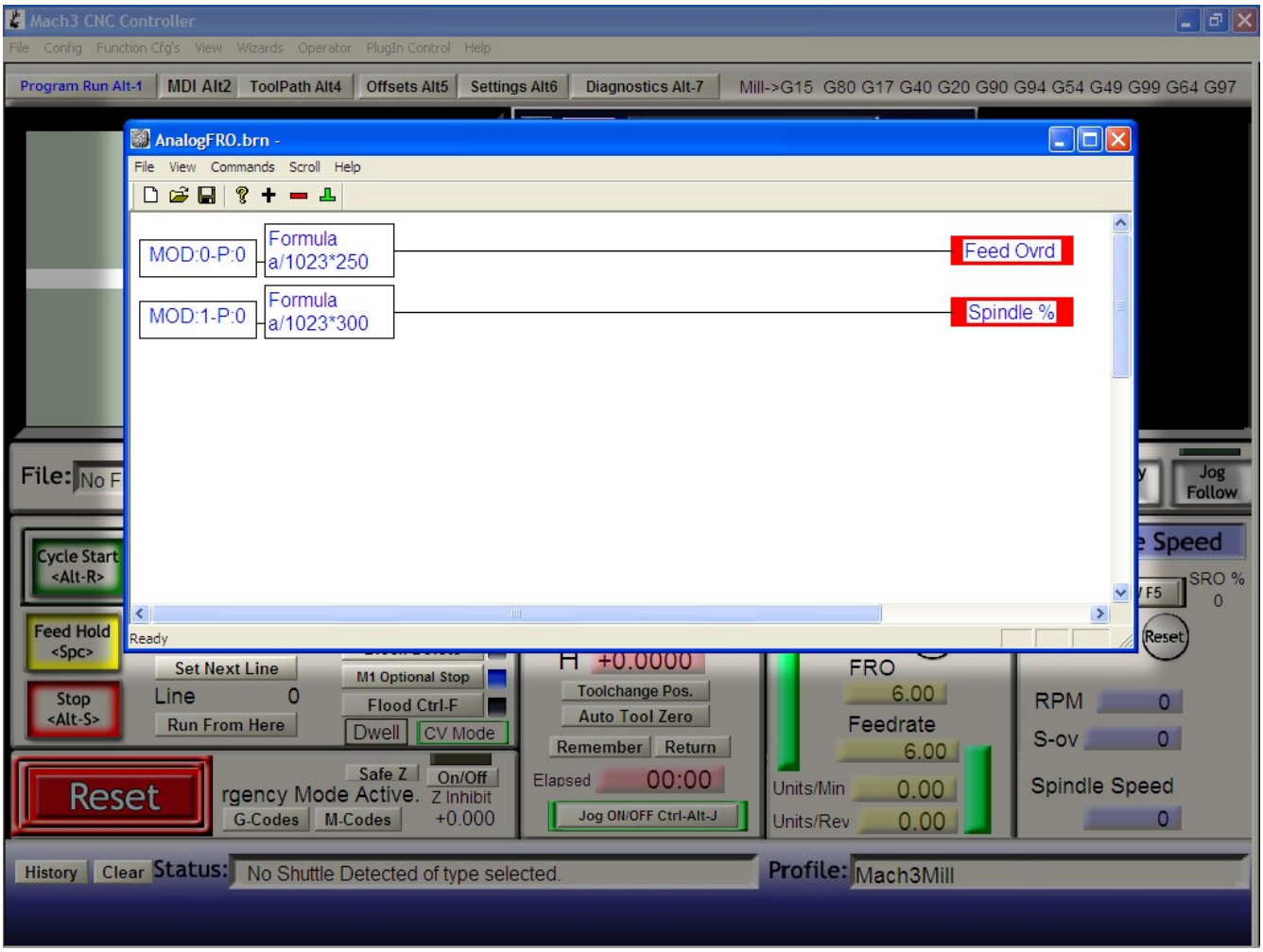


Brain

Next step is to write the brain that will change the FRO and SSO dro's based on the input from Arduino. Open the brain editor from the Operator menu

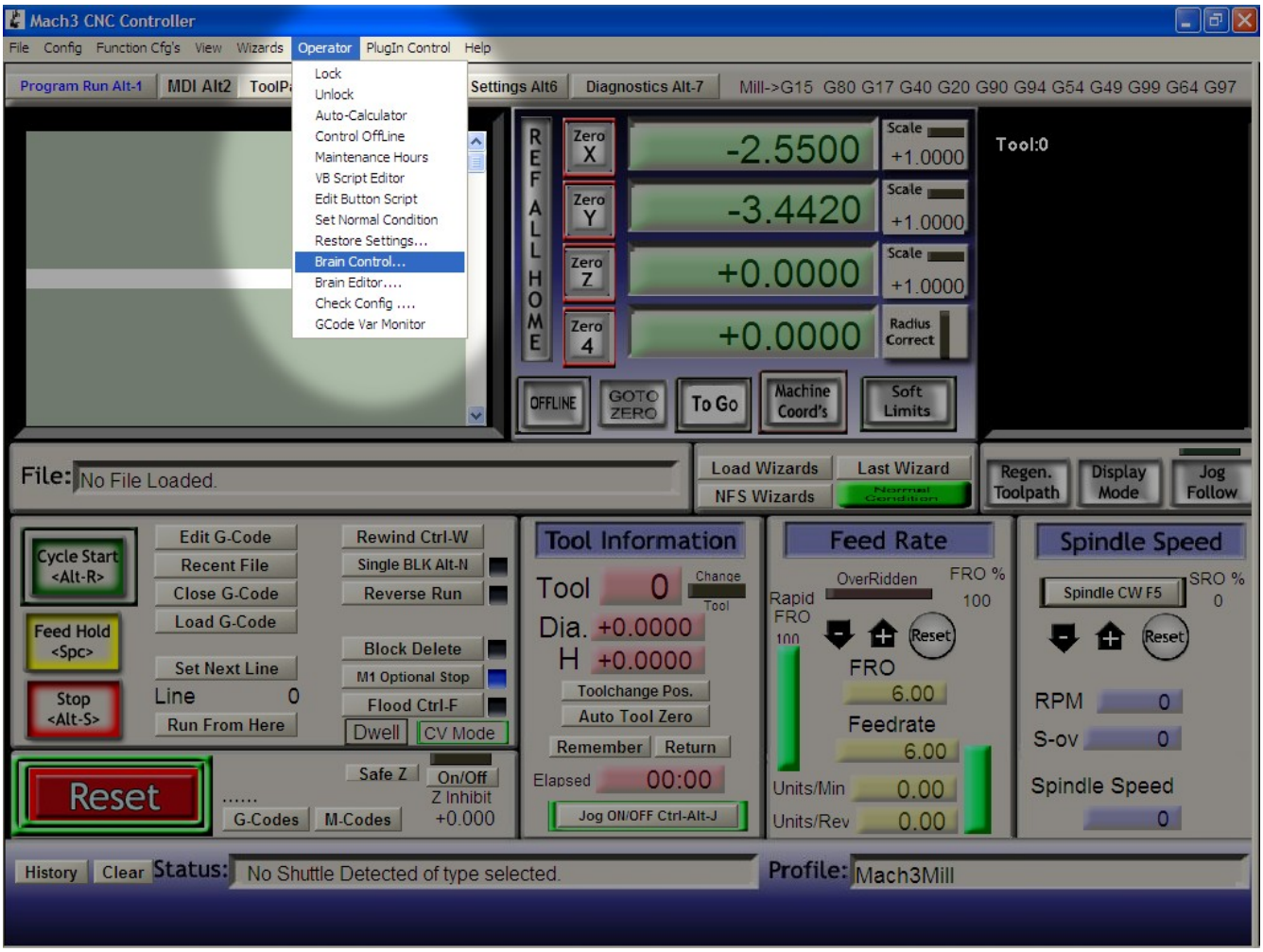


Now write a brain as shown in the figure below and save it as AnalogFRO.brn

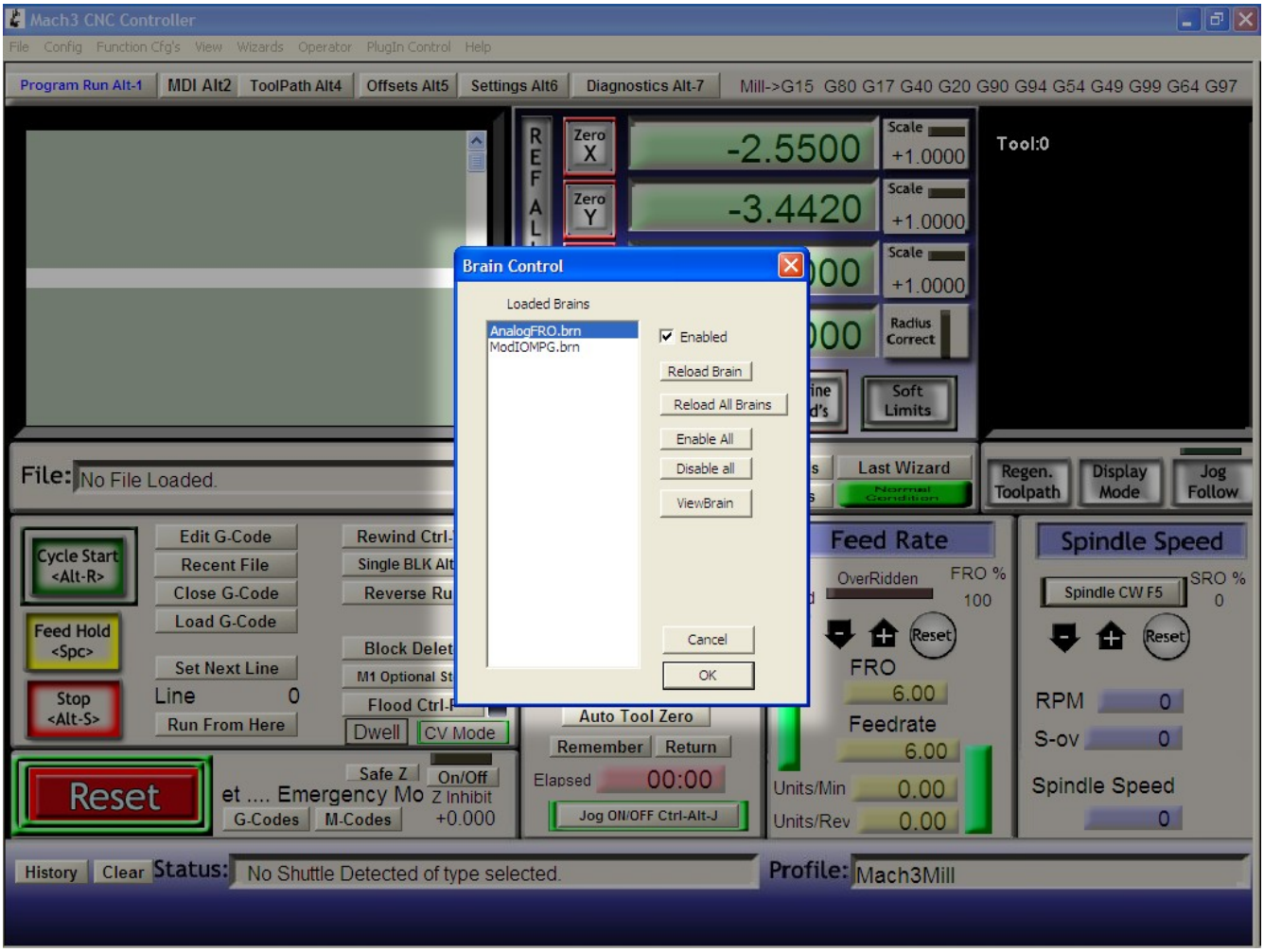


If you find it difficult to write it then you can download it from Mach3 support forum (http://www.machsupport.com/forum/index.php/topic,22980.0.html) and save it in your brains folder in Mach3.

Next we'll have to enable the brain. To enable it click on Operator menu and then on “Brain Control”



Now select the AnalogFRO.brn in the Loaded Brains window and click on the Enabled checkbox to enable it. In the end click on the button labeled “Reload All Brains” to activate it. You should be able to see the response of your FRO and SSO potentiometers on the Mach3 screen.



Disclaimer

In the end the usual disclaimer with translates in plain English that you are responsible for all the stupid actions you do with these devises and if anything good comes out of it then the credit goes to me. Anyways, play safe, take care and have a nice day.

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