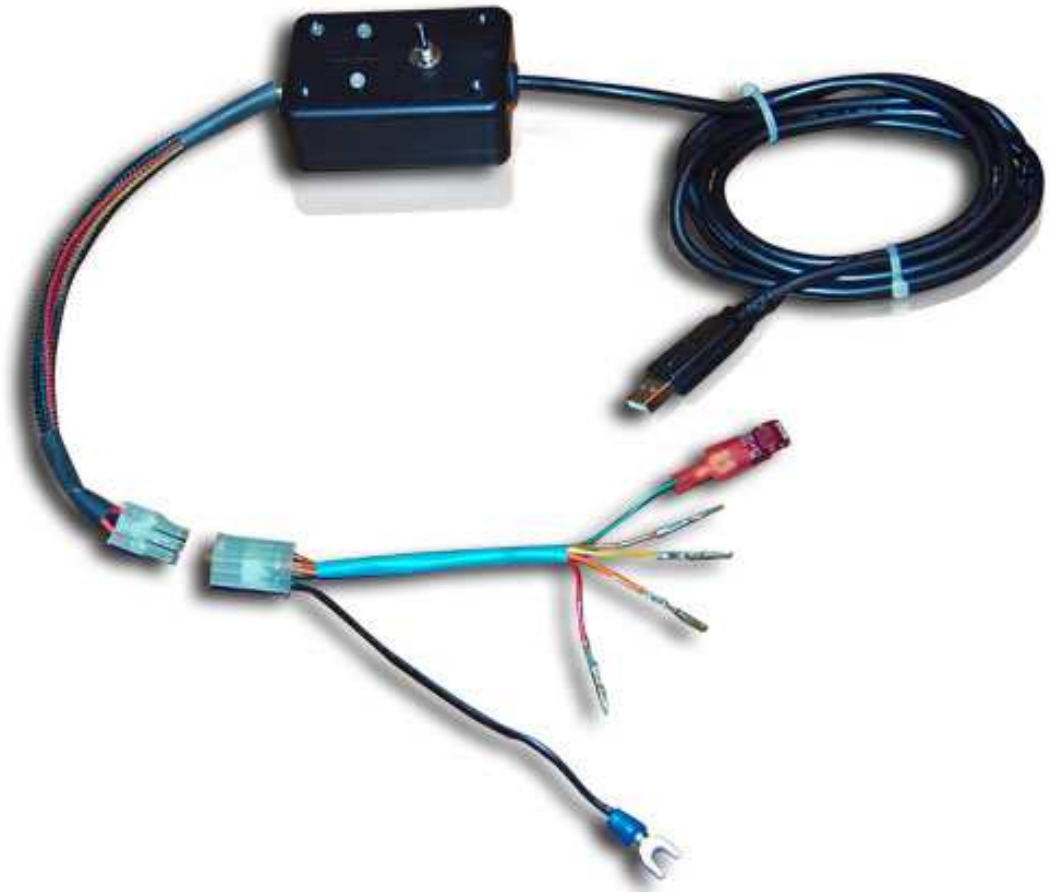
BOOSTBYSMITH'S
ECU FLASHING INTERFACE
ECU1.0



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WARNING!!! **This product is meant for Off-Road use only and is NOT street legal. BoostBySmith is not responsible for mis-use of this product. Owner assumes responsibility for his or her own actions when using this product. You should always obey all traffic laws when on your motorcycle, and should never purposely defeat emissions devices to gain performance.**

ENJOY!

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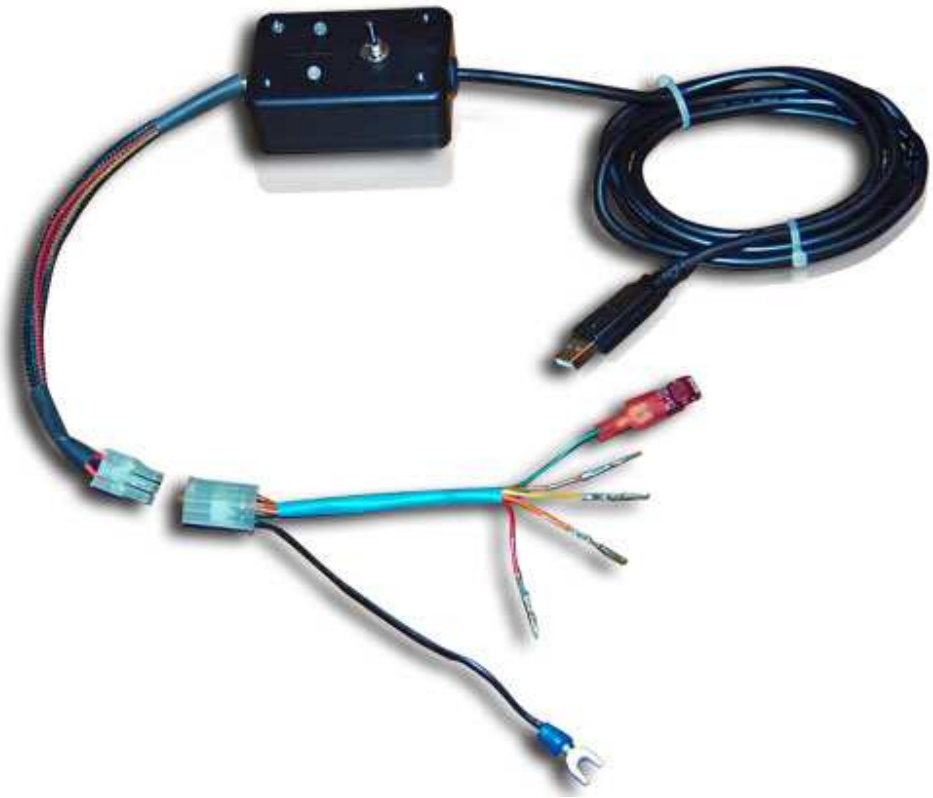
I. Hardware Included:

ECU1.0 Flashing Control Unit
Wire Harness (consists of 4 ecu pins, 1 male spade connector, 1 battery fork or ring terminal)
T- tap (for tapping into the dash data wire)



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II. ECU Flashing Basics

Your 2002-2007 Suzuki Hayabusa is equipped from the factory with a high tech, racing, 32 bit processor to control all of your fuel injection needs. The only problem is that until recently, there hasn't been a product that will let you adjust all of it's variables. This is no longer true, with the ECU Flasher Interface along with PetriK's ECU Editor software you are able to unlock the full potential of your motorcycle's fuel injection system. Some of the tuning parameters are:

- Ability to view all sensors data with a laptop connected
- Ability to datalog all factory sensors on the motorcyle with a laptop connected for use in dyno tuning.
- Ability to change fueling maps (both IAP and TPS maps), ram air compensation
- Ability to change ignition maps (you can add timing in the lower gears like a TRE does without messing up your gear based fuel curves)
- Increase your factory rev limiter (current software supports up to 11,650 RPM, more RPM is possible)
- Remove the 6th gear speed restriction with the click of a button
- Change ram air compensation based on your gearing
- Compensate for larger fuel injectors needed for high hp applications
- Compensate for increased fuel pressure needed for high hp applications
- Increase ignition dwell time (turbo guys will like being able to open the plug gap back up some)
- Disable IAT compensation for dyno testing
- Turn your ECU into an ignition / fuel kill box for use with an air/co2 shifter
- Control a shift light, or any RPM based output using the stock flapper valve circuit
- Switch-able map selection for NOS, different turbo boost levels, fuel types etc
- Share maps with people across the world and contribute to new exciting features constantly being introduced and implemented.

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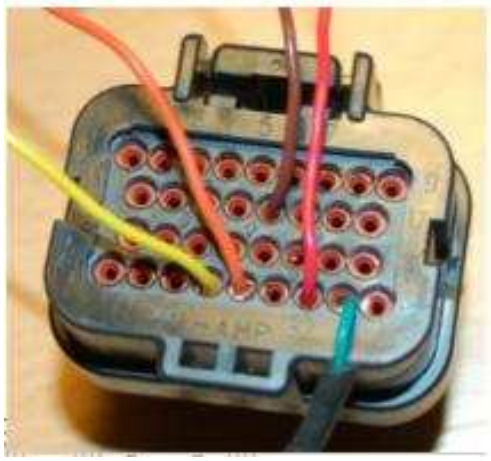
III. Hardware Installation Directions

The installation is very simple if you follow the directions below. The ECU flashing interface is setup so that you can install the harness on your bike, and simply plug in the interface box when you need to make changes or view gauge data, there is no reason to leave it on the motorcycle during normal riding, this will allow you to save space.

Remove the following:
Front and rear seats (or hump)
Disconnect both the 34 pin and 26 pin from your factory ECU located underneath the drivers seat. You only need to access the 34 pin connector, but having both loose will allow you to maneuver the harness easier etc.

There are 6 wires in total on the ECU1.0's harness.
4 of which have ECU terminals pre-crimped on that you need to insert into the 34 pin connector
1 wire which gets hooked directly to the battery ground
1 wire which gets t-tapped or soldered depending on preference into the dash data wire.

Below is the pinout for the wires you need to insert into the factory connector. Start by unlocking the white lock on the bottom of the 34 pin connector, once this is unlocked you can remove and add wires into the connector. Insert the red, brown, yellow, and orange wires into the locations as follows, the bottom row wires are all easy to access, you may have to remove the white plugs with a pair of needle nose, the brown wire is a little more difficult as it has a lot of wires surrounding it you may need to move out of the way to access the hole. The green arrow in the diagram below shows the dash data wire location, crimp the red t-tap onto this wire and plug the green wire's male spade connector into the t-tap. Then hook up the black ground cable to the battery, make sure this is done at the ground location of your main battery (I have had issues with people using other ground sources including secondary batteries for 24V starting setups, and it wouldn't work. Congrats, your wiring is done!



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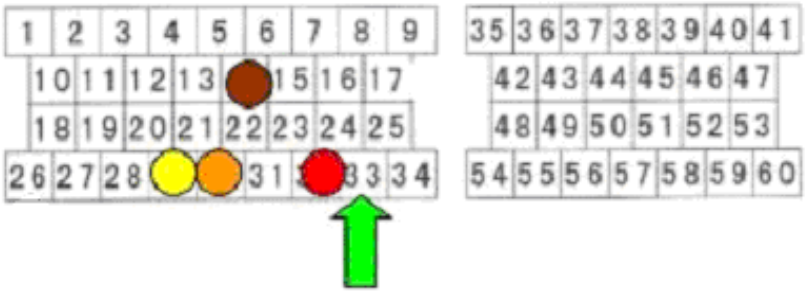

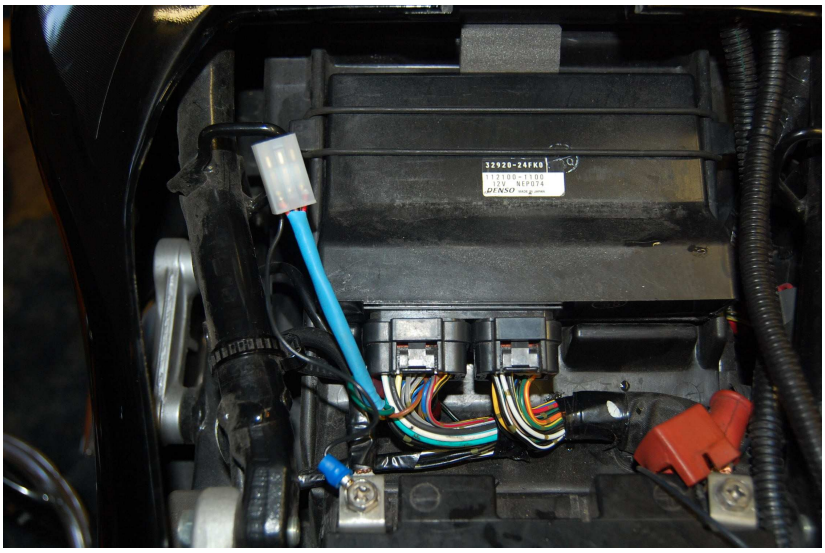

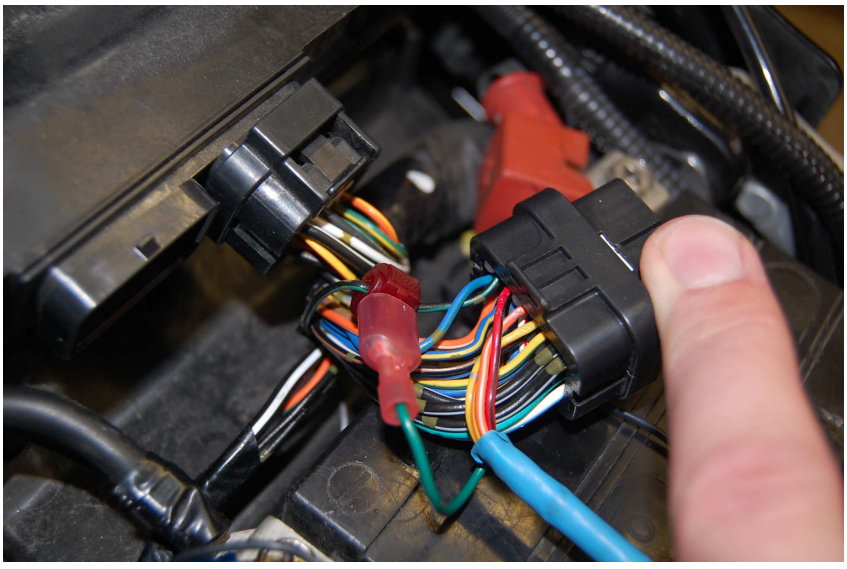

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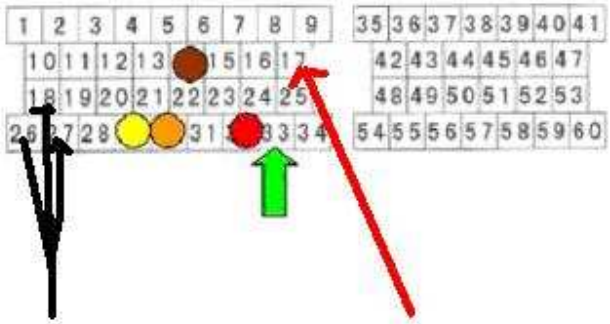
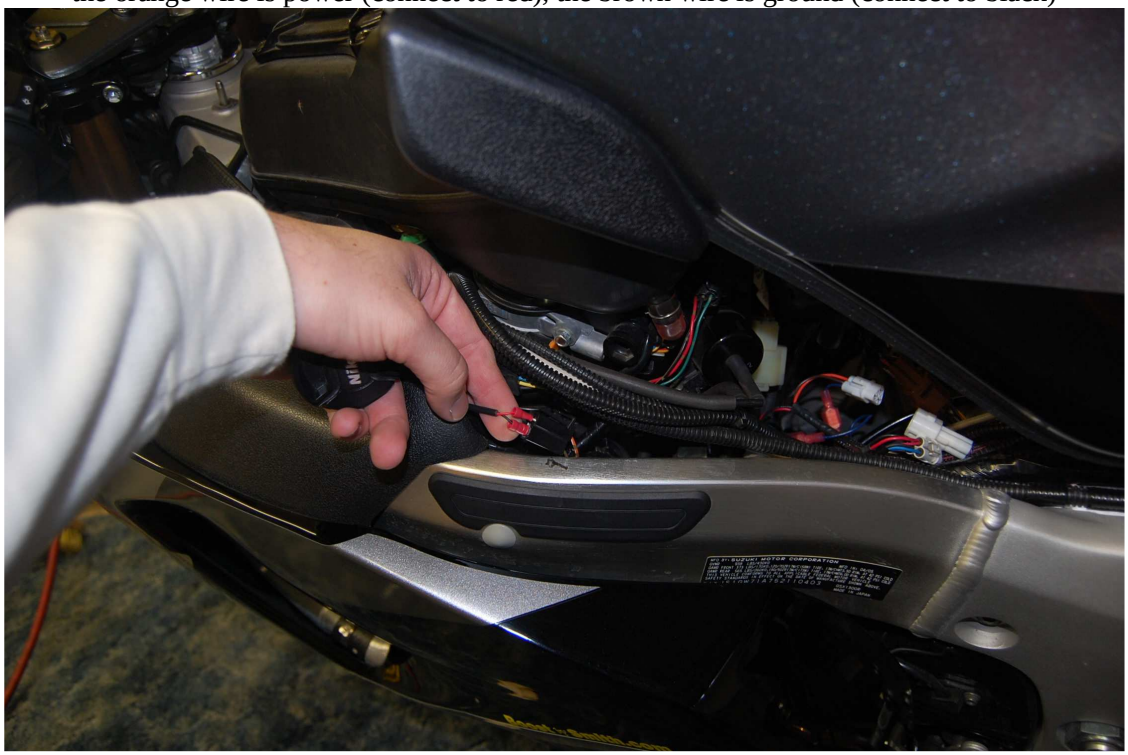
If you wish to flash your ECU on the bench, you must provide power and ground to the ECU (ground has to be tied in with ECU Flasher Ground as well)



For flashing on the bench you need to put 12 Volts and Ground to the Pins listed above.
12 volts: Pin 17
Ground: Pins 18,26,27 (must also be connected to the ground wire that goes into the ECU Flasher Box)

The LED Shift Light plugs into the flapper valve circuit, unplug the connector from the solenoid, the orange wire is power (connect to red), the brown wire is ground (connect to black)



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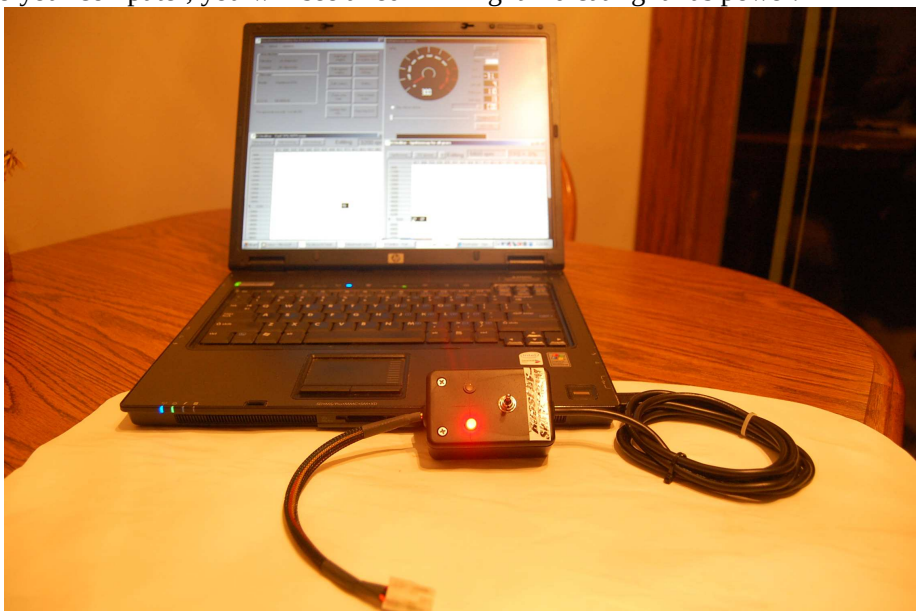
If you plug the ECU flashing interface into the bikes harness, turn the key on, and plug the USB cable into your computer, you will see a red LED light indicating it has power.



The programming toggle switch has 3 positions

- Center: Run Mode, Interface is in-active (Red led only)

- Up: ECU Flash mode (mode led turns Blue) Please note, if they bike's key is off, the blue LED may illuminate dimly with toggle in center position. Turn the key on and you will see it disappear, this is normal.

- Down: Dash Data mode (mode led turns Green)

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*** Depending on if the bike has been recently reflashed and if key is on or off etc you may see one of the LEDs turn blue faintly, this is just the ECU backfeeding a slight ground into the LED, its not actually in flashing mode unless the LED is bright blue.**

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IV. Software Installation

There are 2 pieces of software required to edit and flash ecu settings. The first piece of software needed is ECU Editor, this software is under constant development, please visit this link to get the latest and greatest version of software available completely free from our good friend PetriK. This software will allow you to edit ECU maps, as well as view gauge data.

http://www.ecueditor.com/

For detailed directions regarding this software I have put together 4 tutorial videos which are included on the installation CD. Also, please visit this thread for further information.
http://www.activeboard.com/forum.spark?forumID=99460&p=3&topicID=17725002

In order to flash your newly modified ECU settings, you will need to install FTD, I have included a copy on your installation CD.

For detailed directions while implementing this software please review the 4 tutorial videos on the installation CD, or visit the ecu hack board at this topic.
http://www.activeboard.com/forum.spark?forumID=99460&p=3&topicID=14963290

Choosing a com port 1-4 is ***VERY*** important for FTD flashing to work correctly. On my computers it usually is set to 6 or 7 the first time you plug the device in. You may have to open your control panel. Go to Start, settings, control panel, then system, then hardware, then device manager to view your ports (com and LPT). If you need to change a com port, right mouse click and hit properties, then click port settings, then advanced. Towards the bottom of the window you should be able to select a different com port number from a drop down menu. Click okay to close out this window, unplug the ECU flasher, then plug it back in, you should see the com port show up as a different number now.

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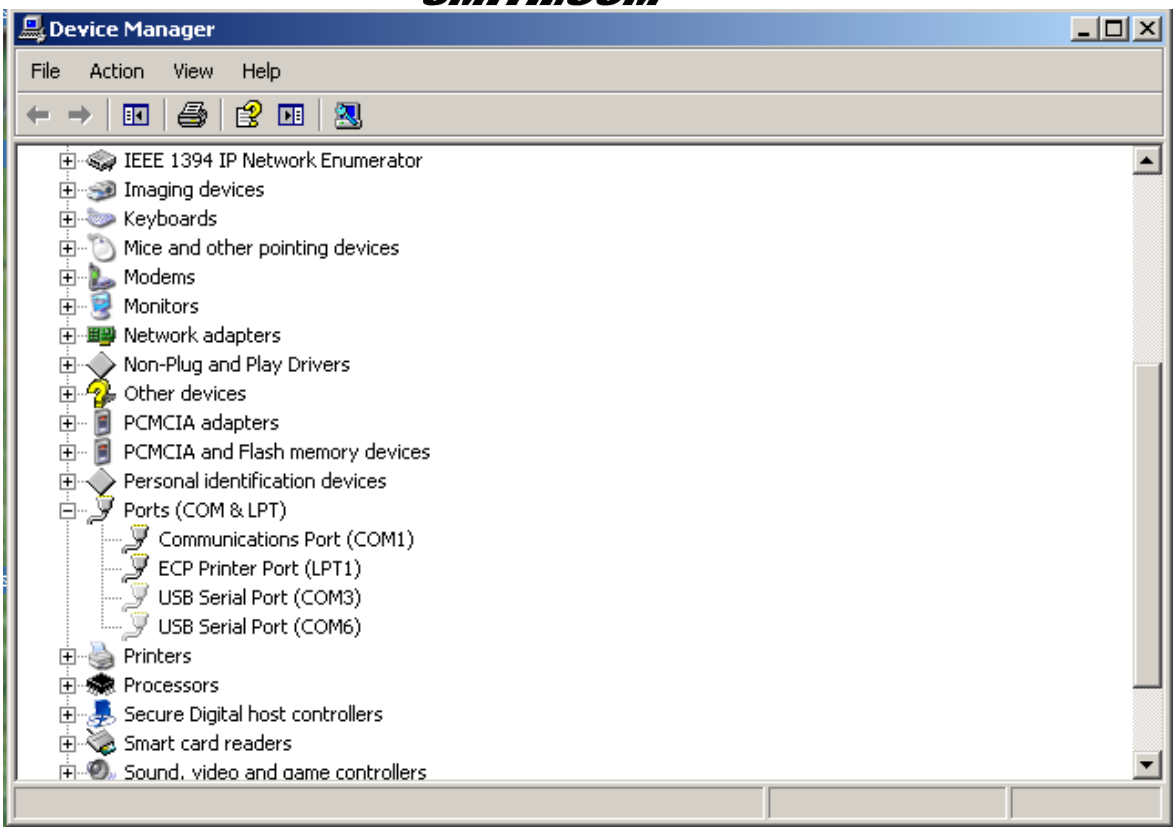

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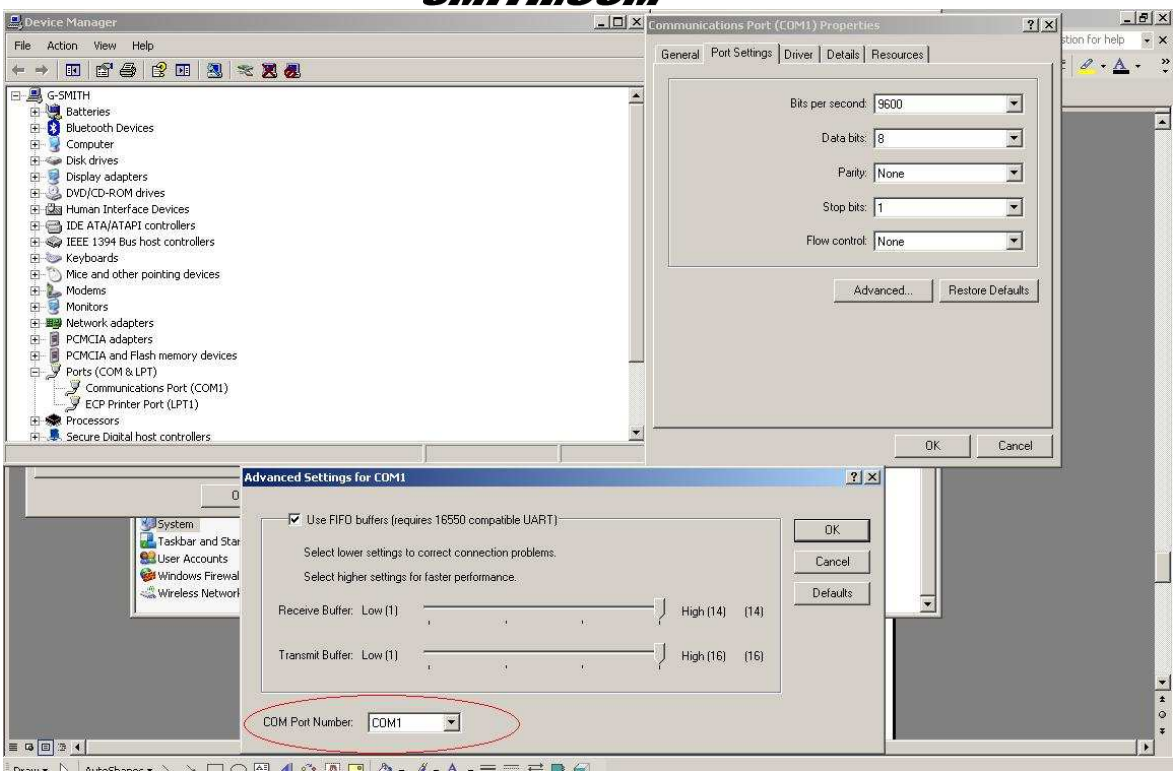

*** For advanced users, it may be necessary to delete some of the current com ports to get flashing working correctly as FTD can be picky on com port settings. You will need to open a command window. Click Start, then Run, then type in CMD
When the dos window pops up type:
set devmgr_show_nonpresent_devices=1 (hit enter)
start devmgmt.msc (hit enter)
this will launch device manager with a nice feature, you can click view, then show hidden devices, this will show all com ports assigned to your computer, simply go in and delete ones you want to remove, then plug ECU flasher back in and re-assign to the proper number, I normally use 2 or 3 with good results. *[see screenshot on previous page]*

With any further technical assistance needed, contact Greg Smith at greg@boostbysmith.com

A big to PetriK for his wonderful ECU Editor software, and for the late Dave Owen for all of his hard work with R&D on this software.

DaveO, you were a great friend and will forever be missed. As a note, a $25 donation from each hardware interface sale goes directly to the DaveO memorial fund to help his family through this very difficult emotional and financial time.

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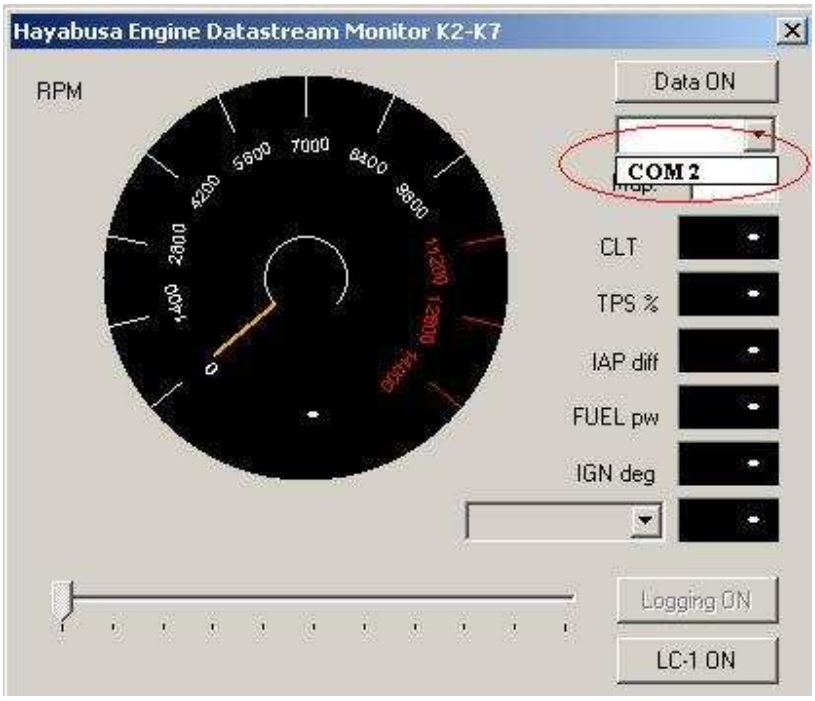
V. Troubleshooting

With any hardware related issues feel free to contact Greg Smith through email greg@boostbysmith.com or call my home phone at 517.743.3666. I am only available in the evening to talk on the phone, but generally check email several times during the day.

Setting the correct com port is what most people have issues with. When you load ECU Editor for the first time it will tell you device needs to be set. Click on the Connect for Engine Data Button, the error message will pop up, click okay. Then pick your com port from the drop down menu.



Also, another common issue is not having the bike in neutral with run switch on. In order for the flasher to work our bike must be in a state that the fuel pump will prime with toggle switch in the center position. Once the switch is placed up with blue LED bright, your fuel pump will not prime. Also, forgetting to cycle the power before flashing, you should turn the key off then back on right before flashing. The ECU always needs to be in a freshly booted up mode in order to connect to it to view engine data or flash it. Shutting power to the ECU off, then turning it back on will ensure its in this mode.

For more information regarding ECU flashing etc please visit the ECU hack forum. http://www.activeboard.com/forum.spark?forumID=99460&p=1

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VI. Warranty

BoostBySmith warranties this product to be free from defects in parts and workmanship for 1 year from date of purchase.

If there is a defect in parts or workmanship BoostBySmith will replace the part or repair the existing part.

Proof of purchase date must be provided when shipping item back to BoostBySmith. Tampering with or abuse of the item will result in voided warranty.

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VII. Windows Vista Users

What I have found is you need to set the "**Hayabusa ECUeditor for K2-K7 models**" program to "**Run as administrator**". Because it's not like other std programs you can't just find the .exe file in a folder and right click and then click "**Run as administrator**" like you will for the Flashing software. You have to go through a few different steps.

1st) Go to the file "**Hayabusa ECUeditor for K2-K7 models**" and open the file the normal way you would do it.

2nd) Once you have it running hold down the keys "**Crtl and Alt and Delete**" then let go and Vista will pull up a screen giving you a few options. You want to click on "**Start Task Manager**".

3rd) The Start Task Manager program opens and usually it will have "Applications" showing 1st that are currently running. You should see "Hayabusa ECU....." under Task. Just to the right of "Applications" tab is a Tab called "Processes" click on that. This will show you all the .exe files. You will find "**Hayabusa ECUeditor.exe**" there. Right click on "Hayabusa ECUeditor" and click on "Properties"

4th) When the "Properties" window opens click on the tab "Compatibility" and down at the bottom left you will see a Box you can click for "Run this program as an administrator" click on the box so it has a check mark and then just click the OK button.

Now you have done all that just close the "Windows Task Manager" window. Close your "Hayabusa ECUeditor....." program and then restart your "HayabusaECUeditor....." again but this time it should have a "User account control" window pop up, just click "Allow" and now your program should be up and running properly.

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