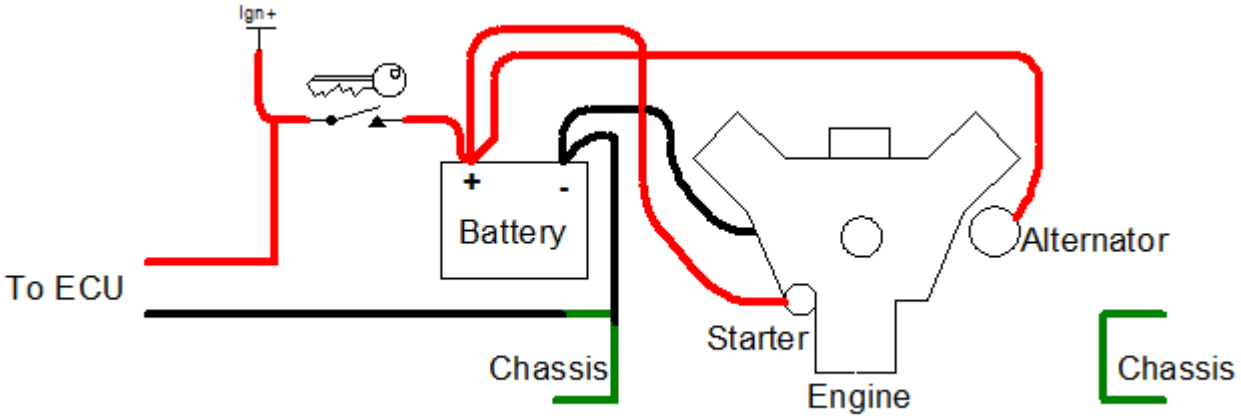
Power Connection

When an ECU does not have proper connections to Power or Earth it will generate spikes and erratic behavior. The starter and alternator need to be wired correctly.

Earth straps can cause interference and is usually a problem during cranking. The starter draws around 60 amp during cranking. Its current flow is a thick strap from battery negative directly to the engine. Then form battery positive to the starter solenoid to the starter motor. You do not want to share these wires common with sensitive electronics. The chassis also needs to be earthed. The best way is another earth strap from battery negative to the chassis. Do not earth the chassis and engine to each other to simplify wiring. This causes a common wire that will share the starter spikes and will cause interference. The Alternator is also a source of interference. It is best to connect the charge wire which is the thick one directly to the battery positive. Remember the battery acts as a damping source for interference. So, it is best to connect all different supplies to the poles.



Testing for earth problems.

1. Make sure all earth points are properly earthed. Sometimes paint of the chassis will prevent a good electrical connection.

2. Ensure that the thick black earth wire from the ECU is earthed properly. Also make sure that the thin black wires coming from the harnesses is also tied to this point. We call this junction **Test point A**

3. First ensure that the setup in Hyperspace is done according to the Startup procedure. This means you will only have P1 connecter on the ECU. The other connecters must be open except the comms cable.

4. Now use a multi meter and put it on AC volts. Now measure on test point a to battery negative pole. Now crank the engine. The reading should be less than 0.2 volt. If it is higher, it means a bad earth. See the advice above.

5. Now do the same test for the ECU positive. Measure between the ECU power pin 10 that comes from the key to battery positive terminal. Here you may find a slightly more voltage due to other electronics that draw current from the ignition. Again, if the volts are more than 1volt then you may need to put a relay in to bypass ignition key voltage drops. Remember

the key does not supply much current and is only low amperage power to activate relays. Below is a circuit of a bypass relay.