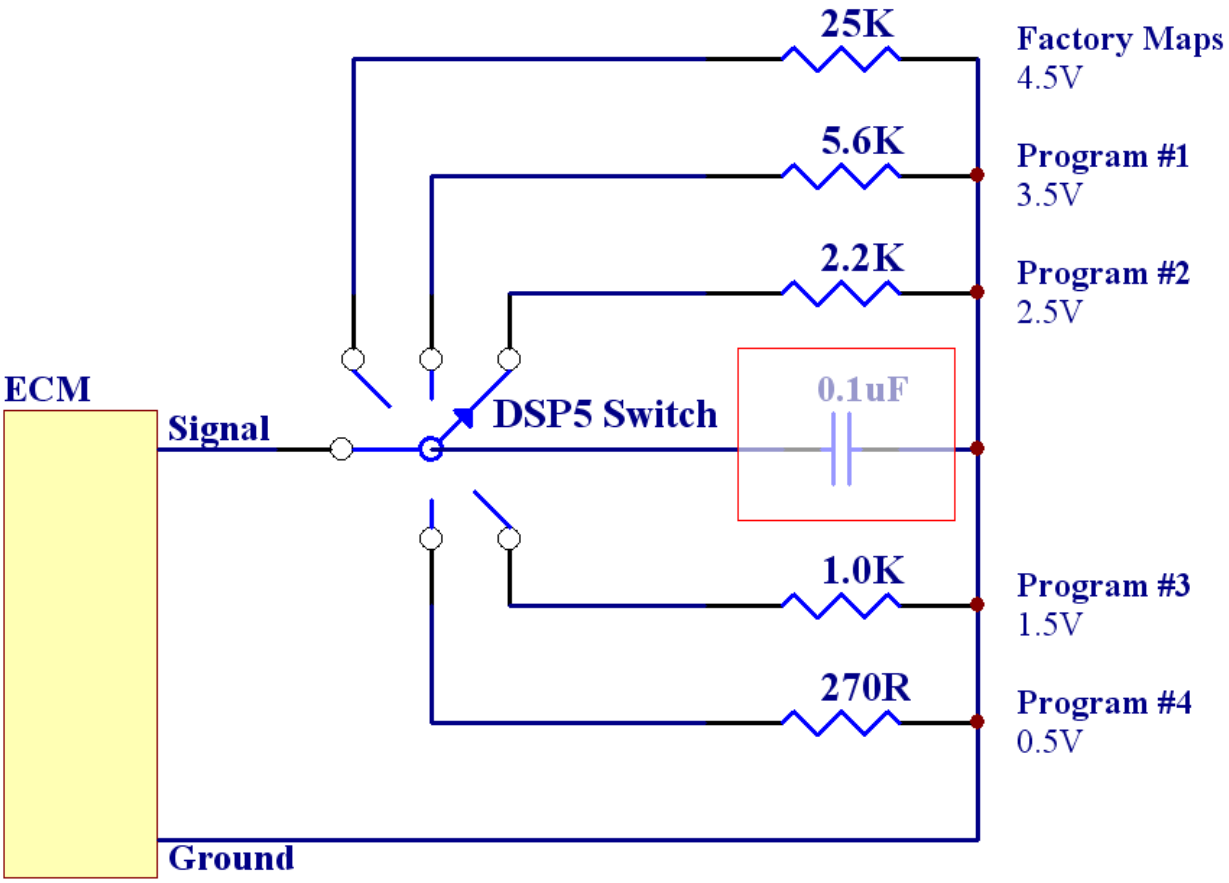
Wiring the DSP5 Switch

The DSP5 switch works by selecting different voltages for the ECM to measure, from these voltages the ECM can determine which program you wish to run.

Below is the suggested resistance to be used for any DSP5 switch you may wish to design. Also shown is the approx voltage the ECM will measure for each resistance. The switching voltages are configurable within EFILive, however, the values below give a good even separation of switch points.

The 0.1uF capacitor shown in red is optional, it is used to reduce switch bounce.



The connections to the ECM from the switch are made to the following pins –

LBZ & LMM

Signal = Connector 1 (the larger plug), pin 46, *(next to Grey wire-LBZ,Tan wire-LMM)*.

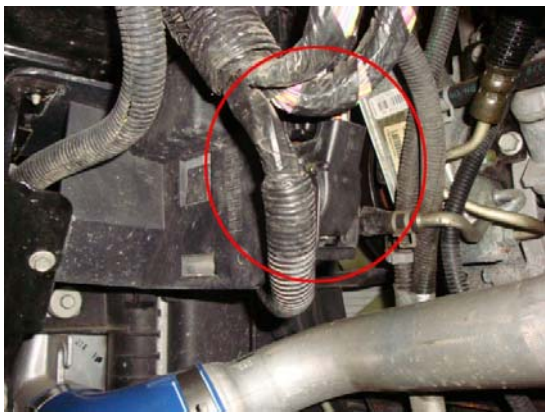
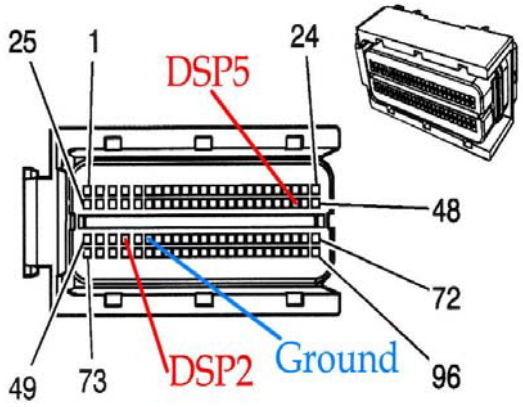
Ground = Connector 1 (the larger plug), pin 54, *(next to Yellow/Black wire)*.

Note: It may also be possible to make the ground connection in the cab rather than the ECM.

(Refer to the connector view on the previous page)

The part number for the connector pins is – Tray #19, 1928498135

LBZ / LMM ECM Connector wiring installation

#1 – Locate ECM Plug	#2 – Remove the Larger Plug
	
#3 – Remove purple locking clip (don't loose it!!)	**#4 – Remove top cover**
	
#5 – Insert new pins/wires **Reverse procedures once done.**	**Pin-out Reference (viewed looking at connector bottom).**
	

Joe Harden has provided an in-depth install guide at the end of this document

Important DSP5 Parameters and Tables

A9136, A9236, A9336, A9436 – DSP5 switching voltages

These parameters set up the switching points for each DSP program to become enabled.

It works by the voltage from the switch for each tune needing to fall between each adjacent parameter for a valid reading. So as an example only, if you set the parameters like so –

A9136 (DSP Program #1) = 4.00V

A9236 (DSP Program #2) = 3.00V

A9336 (DSP Program #3) = 2.50V

A9436 (DSP Program #4) = 1.80V

For the non DSP Program (stock) to become enabled the switch voltage must be above 4.01V.

For DSP Program #1 to become enabled the switch voltage must be between 4.00V and 3.01V.

For DSP Program #2 to become enabled the switch voltage must be between 3.00V and 2.51V.

For DSP Program #3 to become enabled the switch voltage must be between 2.50V and 1.81V.

For DSP Program #4 to become enabled the switch voltage must be between 0.00V and 1.80V.

Check with your DSP5 switch provider for the correct settings.

Monitoring DSP status in the Scantool

You can monitor the DSP switch data using the following PID's –

GM.E35DSP2_DMA (PC) or E35DSP2_M (BBL):

This PID will show if the DSP2 tune is enabled.

GM.E35DSP5_DMA (PC) or E35DSP5_M (BBL):

This PID will show the current tune number the ECM is using for DSP5.

GM.E35DSP5V_DMA (PC) or E35DSP5V_M (BBL):

This will show the measured voltage at the ECM pin when using DSP5, useful for setting up the DSP5 switching voltages, otherwise just use the previous PID to monitor the DSP program switching.