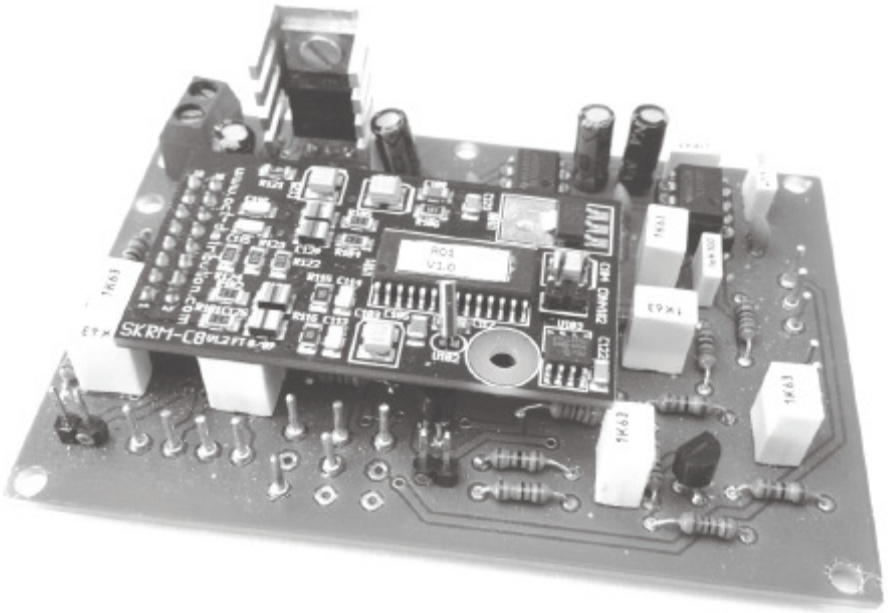
Power Supply Noise Filter For Arduino Automation

eTap2hw

A VINTAGE ECHO EMULATION



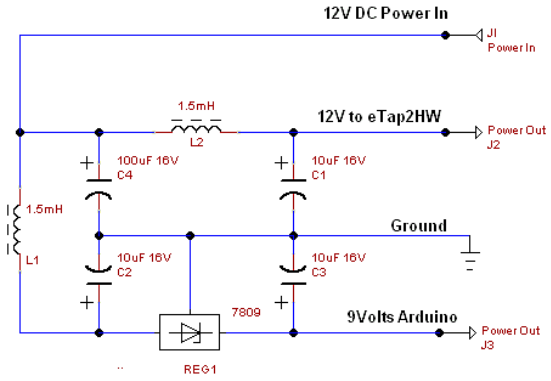
Building an Inductor-Capacitor Filter for Arduino Automation:

This bulletin is targeted at builders of Automation eTap2hw and will remove the Arduino noise imposed onto the power supply rails of the motherboard. Without the filter noise will be heard at the echo unit output due to the Arduino sending patch set/change voltages to the SKRM daughter board.

The filter schematic is shown below and can be built on a small piece of Veroboard.

The prototype circuit did not require a heat–sink on the 9V regulator.

The nominal 12V output from the 'wall wart' type eTap2hw power supply is fed to 'J1-Power In' and power to the eTap2hw then taken from 'J2-Power Out'. The 12V supply is reduced to 9V by the regulator after inductive/capacitive filtering for the Arduino, which helps the Arduino to run cooler. The inductors and capacitors filter any noise from the eTap2hw power rail.



Inductors L1, L2 = Ferrite core 1.5mH Spiratronics Ebay £1.26

7809 Standard 3-terminal 1 Amp Regulator

10uF miniature electrolytic capacitors 16V working or greater

Built on Veroboard

Amendment 1: 21-1-2014

1) Inductor Type Change to 1.5mH 330mA current

2) C4 100uF 16V added to form Pi type Filter

* Inductance: 1.5mH
* Self Resonant Frequency: 1.6MHz
* DC Current Max: 330mA
* DC Resistance: 1.5R
* Q Factor: 106
* Body Width: 13.7mm
* Body Height: 15.9mm
* Lead Pitch: 7.2mm