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Ultra filtered power supply for the RadioJove receiver

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I experienced quite strong interference over the power line, so I decided to dump my "wall wart" power supply and develop my own. First tests have shown that the baseline of the receiver noise drops quite a bit with this ultra filtered supply.

One of the main components is the power line filter (shown on the right). This filter contains some inductors and capacitors to filter radio frequency interference from the the power line, so that it doesn't contaminate the following circuitry.

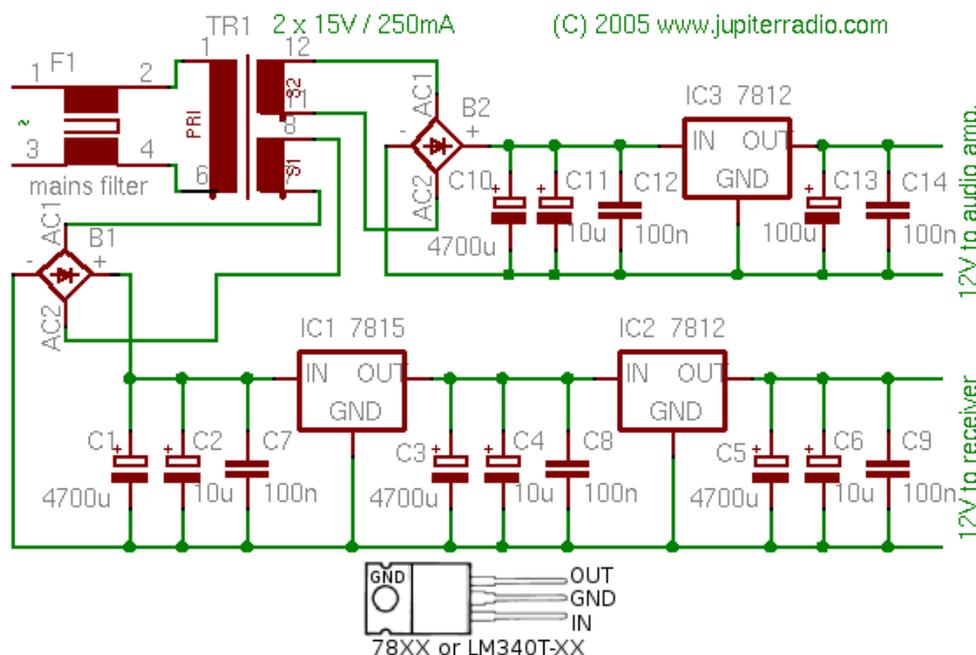


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The power supply itself is pretty straightforward:

- Transformer: 2 x 15V / min. 200mA
- Rectifiers: i.e. B80C1000 (= 80V / 1A)
- Electrolytic capacitors: min. 35V
- The 100n's are ceramic capacitors



One part of the power supply is for the receiver (7815 & 7812 voltage regulators) - the second part (optional) is for the small audio amplifier. My tests have shown that if the audio subsystem is supplied by an unfiltered power supply, the RF interference will enter the receiver via the audio jack. So if you also want to listen to Jupiter or the Sun, it is recommended to use the audio amp. supply. If you need another voltage for the audio amplifier, just exchange the 7812 with another voltage regulator. There is no fuse included in the schematic - include one either on the primary or two on the secondary side of the transformer, dependent on the actual currents you're drawing.

NOTE: Be careful when handling voltages bigger than 50V! Only attempt to build this power supply if you have experience with mains voltage! I cannot be held liable for any sort of damage!

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