

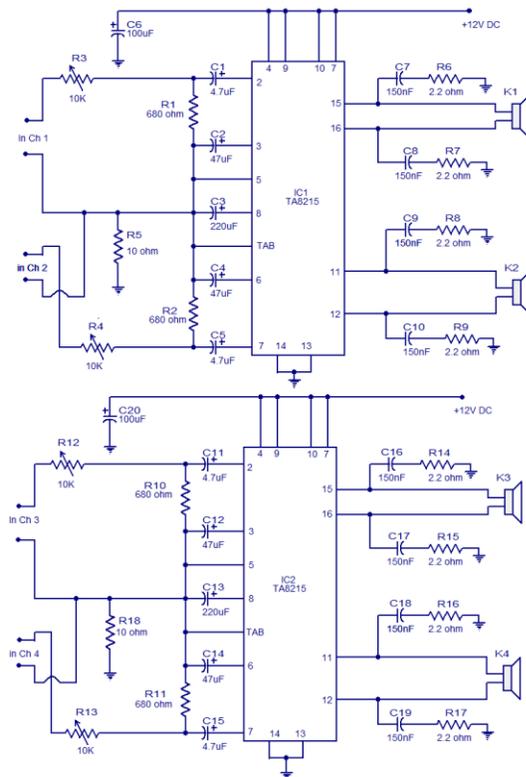
# 4 X 15 WATT POWER AMPLIFIER

## Description.

A lot of electronic circuits in the domain of audio amplifiers are already been published here. This circuit is a little different because it is a four channel amplifier. Each channel of this amplifier can deliver an output of 15Watts into a 4 ohm speaker. The amplifier can be operated from a single 12V DC supply and this makes it possible to use this amplifier in car audio applications too.

The circuit is based on the 15W BTL X 2 channel audio power amplifier IC TA8215 from Toshiba. Even though chip is specifically designed for car audio applications it can be also used for home audio applications. Two TA8215 ICs are used here in order to obtain a 4 channel amplifier system. The circuit is designed almost exactly as per the application diagram in the ICs datasheet. Pins 7 and 19 are the Vcc pins of the ICs internal integrated power amplifier stages and these pins are connected to the positive supply. Pin 9 is the Vcc pin for ICs internal preamplifier and it is also connected to the positive supply. Pins 13 and 14 are the internal power amplifiers ground pins and they are tied together and connected to the ground. The internal preamplifier's ground pin (pin5) is connected to the common ground through a 10 Ohm resistor which makes the input ground separated from the common ground by a resistance of 10 ohms and this improves the noise rejection. The 100uF capacitor works as a power supply de-coupler. The resistor networks connected to the output lines of each amplifier improves the high frequency stability. The variable resistors (R3, R4, R12 and R13) works as the volume controller for the corresponding channels.

## Circuit diagram.



## Notes.

- Assembling the circuit on a good quality PCB is a must for obtaining optimum sound quality.
- Use 12V DC for powering the circuit.
- The ICs must be fitted with adequately sized heat sinks.
- R3, R4, R12 and R13 serves as volume controllers.
- K1 to K4 can be 4 Ohm, 20W speakers.
- This amplifier circuit can be used in a variety of applications such as car audio systems, home theater systems, personal audio systems, public address systems etc.

Source : <http://todayscircuits.blogspot.com/2011/06/4-x-15-watt-power-amplifier.html#.VUCFndKqqko>