Section not finished (see included design). Note : all parts mounted on etched side, do not drill holes.

Other amplifiers
Section not finished (see included design).

Harmonic Filters

Harmonic filters or low pass filters are used to filter out unwanted signals generated in the oscillation or power amplification stages. If 100MHz signal is generated or amplified there is a very good chance that you would get signals at 200MHz, 300MHz and just about every other multiple of 100MHz. If you designed a low pass filter for 100MHz it would let any signal 100MHz or below pass the filter with very little attenuation. Higher frequencies would be attenuated at a much higher rate.

For any transmitter that puts out over 25mw it is recommended that you do some filtering. For higher outputs the better the filtering you will probably need. It is recommended that you keep the harmonics at least 40db below the main (fundamental) frequency. This is hard to measure without an expensive piece of equipment called a spectrum analyzer but in practice you can be relatively sure that your harmonics are suppressed enough by selecting the appropriate filter for your power level.
(section not finished, see diagrams)

Power Supply

There are a number of different options when it comes to power supplies. You could use a car battery, CB radio power supply, or build your own. You need to use a regulated power supply or a battery. This is very important. An unregulated power supply will cause a nasty 60-hz tone to be introduced in your transmitted signal. This sounds real bad, and no one will listen to you.

Figure 12 shows a simple regulated power supply you can build from easily obtainable parts. It will deliver about 1.5 amps at 12 volts. This is enough power to run a transmitter of up to 1.5 to 2 watts output. It is ideal for using in a design that incorporates the FM-10 and the 800mw or 350mw amplifier in one case.

Be very careful when messing with AC Line power, it can kill! Cover all AC soldered connections with heat shrink tubing. A 1 amp 250 volt fuse is also advised to be run in line with the switch.

B1 is a full wave bridge rectifier. This converts AC to DC. C1, C2 and C3 are filter capacitors. They smooth out the saw blade DC output of B1. The 7812 chops the voltage down to 12 volts and regulates it there. C4 filters out any 60-hz component that may still be present. The output will be smooth DC perfect for supplying a transmitter.

If you need a power supply that will supply more current, or has different specifications than the one shown here, consult the ARRL handbook for detailed information on power supplies.

Studio Setup

- mixing equipment
- live -vs- tape
- call in/mixer to phone line project/phone loop pairs