

A much better pre-emphasis/input circuit is shown in the July 1992 issue of Radio Electronics. Not only do they use 75K ohm resistors in there pre-emphasis, but they filter stray RF signals by inserting a .001 cap between pin 1 (of the BA1404) and ground, and pin 18 and ground.

This mod is not that critical, and it might even sound worse on cheap receivers, since they are mass produced for the world market. They were designed for the European audio standard, which Japan and other Asian countries use.

RF Amplifiers

Aye, mate. I know this is what you have been waiting for. Like most humans you're probably obsessed with power. This is not the first place I would go to increase range (an antenna is), but if you have a good antenna already this is the place to look.

Since most of the decent quality FM transmitter kits have feeble output, an amplifier is almost a necessity. Presented here are several designs that can help you reach out to your audience.

Ramsey PA-1 Modification

The Ramsey PA-1 is a 2-meter amateur radio amplifier kit sold by Ramsey Electronics. With a simple modification it can be converted for 3-meter (FM Broadcast band) use. It is ideal in that it can handle up to 40 watts of output power (subject to the amount of input power), which is plenty for most clandestine radio operations. The modifications are as follows :

L1 - Should be replaced with a 1-turn 1/4" diameter coil, identical to the stock L2 shown in the PA-1 manual.

L2 - Should be replaced with a 2 turn 1/4" diameter coil, one more turn than the above coil. (see the PA-1 manual for info on how to wind these coils.)

Tune up should be the same as in the PA-1 manual. Note that the FM-10 kit cannot be used to drive a PA-1 kit alone. The FM-10 kit doesn't put out enough power to turn on the PA-1 kit running class-c. You have two options. One, you can do the "biased on" (newer kits may call this class-b) modification shown in the PA-1 manual. Doing this you can drive the PA-1 with a stock FM-10, yielding about 250mw of output power. Or two, you can drive the PA-1 with the output of the 350mw or 800mw power amplifier, with the end result about 4 watts and 12 watts respectively.

It should be noted here that running the PA-1 "biased on" (or class-b) produces a much cleaner output signal than running the PA-1 class-c. Class-c amplifier outputs are known to be rich in harmonics and must be filtered out. I would still filter the class-b output though.

350 mw amplifier

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

800 mw amplifier