

This is the explanation on the RF amplifier:

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The purpose of this amplifier is to lower output energy from output transistor inside the radio and give strong modulation at higher deadkey than a power peaked radio with less modulation.

I tell you something I have 2 of these amplifier and I have sold one and results are very honest (big audio with nice output power) But I know it's not 250 watts, however it's better than a peaked radio with low modulation)

12Volts: connect power source here

Radio in: connect the radio here

Out/ant: connect antenna here

Power on indicator:

Led1 and R1 are used to indicate to user that 12 volt is applied to amplifier

RF detection and switching system:

C3 block any DC path between radio and RF amplifier

D1 and D2: these diodes rectifiers the RF voltage to produce DC voltage in conjunction with C5, C4

R2 is a current limiter to prevent to smoke T1

T1 activate the relay dpdt 12Volts

RF circuit:

T2: RF power transistor, this is the central unit, this device is the amplifier (MRF 455 → 60 watts max rf power or MRF 454 → 80 watts rf power)

R4 and R5: these resistor network is used to applied the desired carrier amplitude to the RF power transistor (T2)

C7,C6,L3 are used to filter and make a bandpass network at the input of T1

L2, R3 used to make class C operation

L1, it's a RF choke, block RF energy to take path in DC supply

C10, C11, C12,C13 and L4 are used to make and resonant circuit to produce an output waveform with no distorsion.

C8 and C9 these capacitors block DC voltage

Tips and tricks about this amplifier:

You have to connect your power supply ground to case of your amplifier
Of course the shield of your coax will be connected via the PL259 to your Amplifier. Also make a good connection to power supply ground to your RF circuit (if you want that your circuit being supply ;))

If you want to adjust sensitivity of your RF power transistor spread more or least L3. Mine key with 0.6 watt, it's preserve my output transistor on my 2950.

Note: When L3 is tight the sensibility is at the maximum.

And vice-versa

It's possible to add a two stage variable power, check on the schematic (Low and High)

Fuse should be set to 8 amp.

Don't put higher fuse because it will not protect your amplifier

Great modulation appear at 35 watts and swing up to 55-60 watts

On my side it's really loud and clear.

MRF455 is a 60 device and needs a lower deadkey than the MRF454 (80 watts)

I recommend to buy a MRF455 if you want real evil modulation.
Because with Mrf454 you will get to put more power with
your radio and will lost the evil modulation.

DO WANT YOU WANT ;)

Adjust the RF radio output to desired output level with amplifier.

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For question email me to *guerette@vlsi.polymtl.ca*