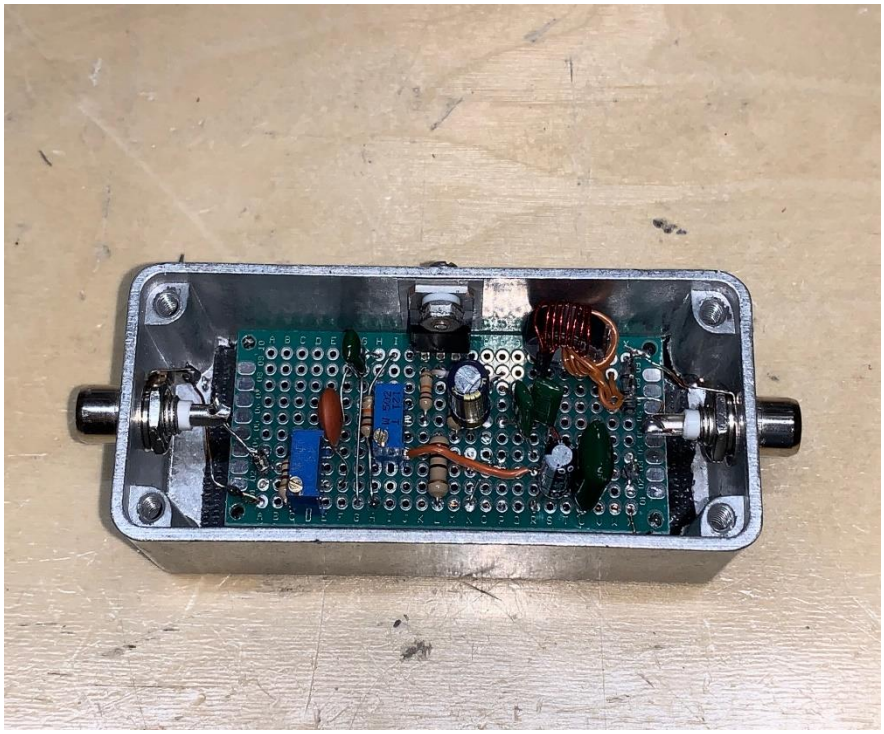
+28DBM DRIVER FOR THE LINEAR AMP.



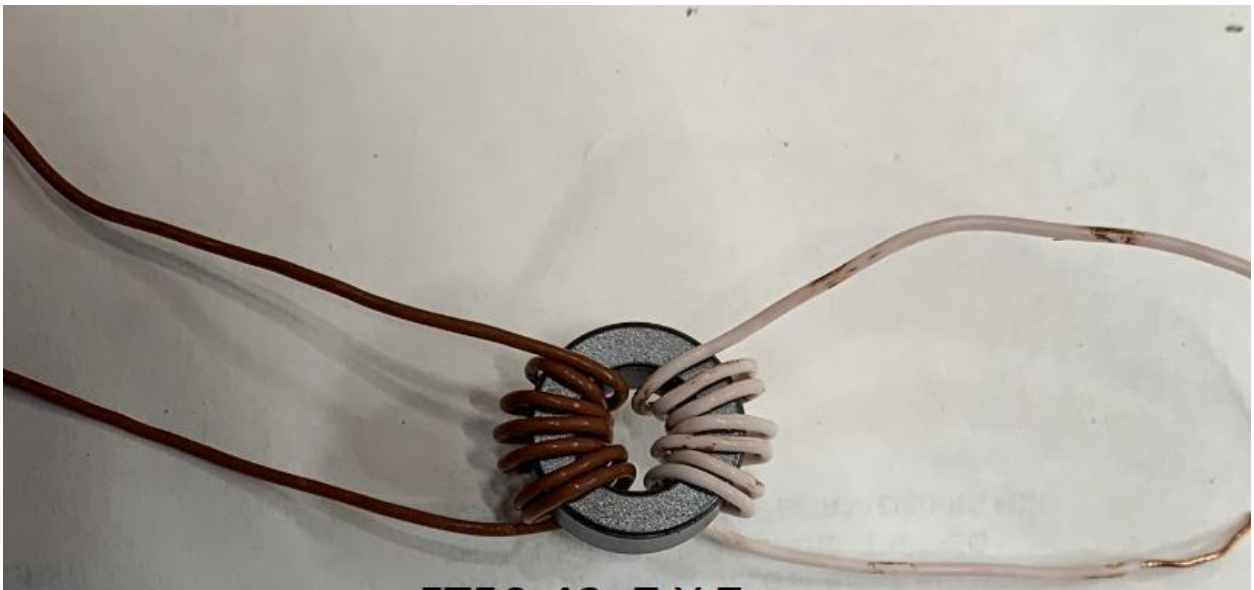
After using the TDA2030 for a driver amplifier, I was not pleased with the high current it took to produce +27dbm output. After trying some online MMIC broadband amplifiers, I decided it was time to build my own amplifier using low cost components. This Driver turned out to be an easy build and it exceeded my expectations.

The amplifier has two adjustments, R1 and R2. The first setup is to adjust R2 for 200ma of current at the DC input connector, or adjust for 2.0 volts on the emitter of the TIP120. I have found that different runs of the TIP120 the current will very slightly so the range of R2 should be adequate.

R1 is used to set the drive level. The maximum input level is around -10dbm, so if driving the amplifier with a 0dbm output from transmitter you must lower the drive with R1. There are many ways to do this, power meter, spectrum analyzer, oscilloscope, or just adjusting R1 until the output is high enough to drive the amplifier to 100 watts out. The correct drive level for my 100-watt linear

amplifier requires around +25dbm, so you still have some headroom left in the amplifier.

Very important to use STMicroelectronics TIP120. They work and some others I tried didn’t work, the output was low.

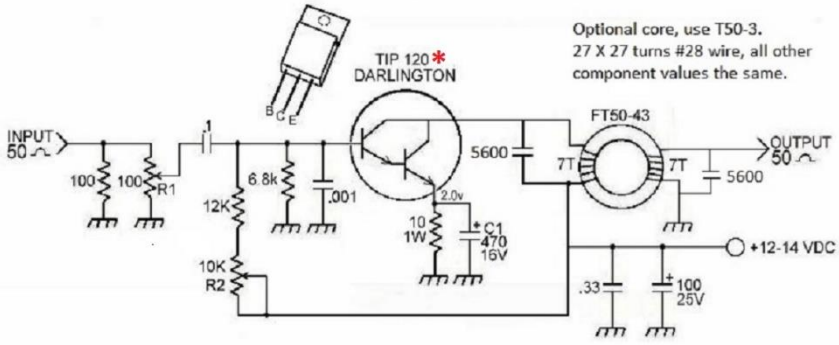


FT50-43, 7 X 7 turns

T50-3 27 X 27 turns # 28 AWG. This core is a slightly better performer in the circuit, but more difficult to wind.

630 METER .6 WATT AMPLIFIER

Use STMicroelectronics device only for the TIP120.



-10 dBm IN +28 dBm OUT

Adjust R2 for 200ma current at the supply voltage or adjust for 2.0 vdc on the emitter of the TIP120.

12-5-19

NOTE

If a little more drive out of the amp is needed, power the amp with 15vdc and set the bias on the emitter to 2.5V or 250ma current draw. This will give you a +30dbm, or 1 watt out.