

The Latest

MRF 300 HF/6m Amp

Up

Posted by AG6QV Frank

Tags: [HAM](#) | [HF](#)

I'm living in a forest with a tool hill of trees to the east, north and south. The 30-50W I use when operating FT8 will usually result in a 10 - 20 dB difference in signal received vs sent. So I figured I would increase the output a bit to perhaps 100 or 150W when operating FT8 and 600W for SSB/CW. The MRF 300 transistors are relatively cheap (\$52 per transistor) and boards are available assembled or as a kit for about \$100. I decided to go with a board from [DX World-e](#) in Greece. Today I started on mounting the components into a small box.

The image below shows the top half of the cabinet with the amp, TX relay and connectors for input and antenna 1 and 2 on the back.

Top 2

When the box is turned upside down the heatsink will sit on the top left and there is room at the bottom for the low pass filters and the front plate with switches and SWR instruments.

Front

The back of the cabinet has input and output as well as a place for the power cord to be attached. The bias circuit and relays require 12V and the MRF 300 transistors will operate on 52-57V to get to the full 600W power. I have not yet decided if I want to use an external 12V source or build a step down converter and regulator from the 54V line.

Back

There is still a bit more work until I can power it up and after that there is a similar version for 2m to put into a second enclosure.

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MRF 300 2m Amp

Up

Posted by AG6QV Frank

Tags: [2m](#)

My Kenwood TS-2000X delivers 100W on HF, 6m and 2m bands and that is fine for most local communication. Getting a bit more power for weak signal work would make it a bit more fun. I purchased a kit on eBay that should be able to deliver 500W+ with 5W drive. Today installed it on a heat sink and applied 32V just to verify that it is working as expected.

MRF300 2m

The system is designed to work at 50V. I have a 28V and a 24V switching power supply that I will be using eventually, but the test with a handheld and a dummy load proved that the system is working as expected.

At 32V and 400mA drain current the system was tested with 5W in and 110W out. At this voltage the total current draw is 5.5A.

The kit was \$47 plus shipping and the two LDMOS transistors were ~\$50 each on mouser.com.

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Triangle loop antenna for 2m

Up

Posted by AG6QV Frank

Tags: [2m](#) | [HAM](#)

The January 2023 edition of the QEX magazine includes an article about a horizontally polarized triangle antenna for the 2m HAM band. This looked to be an easy build and since I was able to work some FT8 contacts on my vertical dual band antenna a few weeks back I decided to go ahead and try the build. It started with a trip to the hardware store to purchase a 36" ruler and some nylon screws and nuts. While I was there I also picked up a 36" aluminum strip that was 1/2 inch wide and 1/16 inch thick. My thought was to test the build with two different versions.

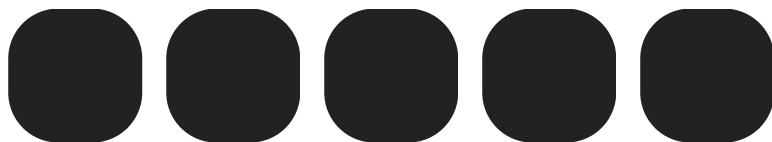
The first step was to drill holes for the connectors and screws to attached the mounting wire etc. Then it was off to bending the metal at 60 and 120 degree angles to form a triangle open at one end. The open end are kept at a fixed distance with the nylon screw and nuts. Soldering the feed wire to the connector and the antenna is complete. The version with the small aluminum strip has an SMA connector and the version with the ruler uses an N connector, both female.

Next step was the antenna analyzer. Both version needed a bit of adjustment at the gap but that was easy to do. The analyzer showed that the resonance (low SWR) was a few MHz below the band edge. Increasing the gap 1-2mm moved the resonance up to about 144.2 MHz, right where I wanted it for FT8 operations. The SWR is around 1.2:1 and the antenna has a wide tuning area.

One of the antennas are now mounted about 5 feet above my garage and ready for testing tomorrow evening.

2m triangle antenna

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