

# The Latest

## Microwave Contest May 2023

[Up](#)

Posted by AG6QV Frank

Tags:

The PNW Microwave group was out in the field, operating microwave equipment from 902MHz to 122GHz. This is a summary of the events. There are two contests today. The Microwave Spring from 8am to 2PM pacific time and the SBMS 2GHz & Up contest on both Saturday and Sunday. The day started with W7FY, John showing up at my QTH just after 8am. I was not quite ready and started out by making coffee and bringing out equipment. John traveled to a location 1.6 km south of my location to attempt 10 GHz and 122 GHz contacts. The 10 GHz contact was made quite easily with the short distance. The 122 GHz contact was not possible because of leaves on the trees in the path. A week ago the leaves was not as far along and it was possible to find a path trough the trees. John returned to my back yard and W7GLF, Ray showed up as well. WA4OSH, Konrad was on his way to Vashon to attempt a repeat of the test we did last weekend. It was an easy contact so John and Ray wanted to test their rigs with horn antennas and was able to connect with Konrad without any problems. We also mad contact between the 3 of us in the back yard on both 10GHz and 122GHz. These contacts does not give any distance points but in the SBMS contest we each get 100 points for the fist contact with each station on each band :-)

WA4OSH mad his way back to the ferry terminal where we tried another contact on 10 GHz. As shown on the image below we did not have a clear line of sight:

Vashon Burien 10 GHz

I noticed the ferry was leaving the terminal so I asked Konrad to point his antenna in that direction and we were able to work each other with 59 signals in both directions. Ferry scatter is a thing. They do not move as fast as airplanes :-)

Konrad moved on to the Olympic peninsula where we made a final contact from Manchester to Burien ~16km distance. We are slowly increasing the distances while getting used to the new equipment and how to operate on the microwave bands. W7GLF, Ray had moved to the south beach to operate to lower frequency bands with bounces off of Mt. Rainer. I was listening from my shack on an indoor antenna and was able to hear Ray on the back of his beam. It was only 1.6 km away and I'm only running 10W on 1296 MHz but we gave it a try and was able to complete a QSO on SSB, using the home made ZigZag antenna shown below.

## 1296 MHz Zig Zag antenna

Finally I moved to the south beach where Ray was setting up his 10 GHz station. My station is very portable and after a few minutes I was ready to try a contact with KD7UO, Dale. He started out by sending CW beacon towards Mt. Rainer and I was able to find his signal and point my antenna towards maximum signal strength. We then switched to SSB and was able to hear each other with 55 signals in both directions. The mountain was not visible today, but 10GHz radio wave did not have any issues coming through.

10GHz contact via Mt. Rainer

**Link to this Post**



## 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.

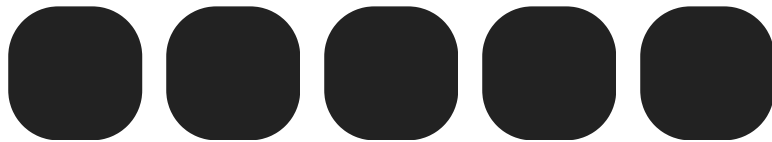
## Front

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.

### Link to this Post



# 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.

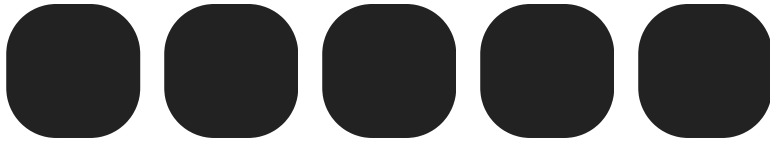
## MRF300 2m

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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