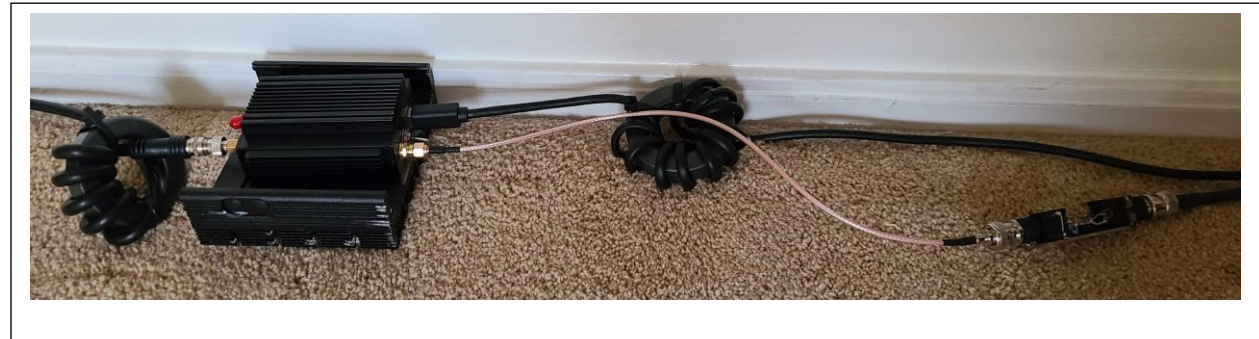


MW recording setup for Scott Newell, N5TNL

Picture of the RX888 wiring:



Picture of the antenna:



The antenna is stepped off at about 80' from the southwest fencepost to the window sill. Antenna run is WSW. 2' inside the window the antenna and ground wire connect to a dual binding post to BNC adapter, then a BNC female to SMA male adapter to the Turn Island lowpass filter. The shelving filters were disabled. The filter output to an SMA male to F female adapter, then 25' of RG6 CATV coax (feels like direct burial quad shield, as I probably got it from the Cox truck) feedline. The feedline runs north through a bedroom into a hallway. 6? turns through a type 43 2.4" toroid, F female to SMA male adapter to the RX888 antenna port.

The RX888 is sitting on a chunk of scrap heatsink from a Protectli FW2B mini-pc.

I'm using a TAPR Trimble Thunderbolt GPSDO for a 10 MHz reference. It's been running more or less continuously for years. There's a 12' BNC cable (I think it's actually 75 ohm 'thinnet' network cable!) with 7 or 8 turns through another type 43 toroid. Then the AC coupled transformer isolation board (dead-bug style construction visible in the attached picture) with

BNC connectors. A 12" BNC female to SMA male pigtail connects the dead-bug transformer board to the RX888 ref in.

Internally I've added a 12" U.FL to SMA female pigtail for the RX888 reference input and a SPST switch to select internal/external reference. The switch is set to use the external reference.

I'm using the USB3 cable that came with the RX888. It was fairly long; maybe 6-10'? About 11 turns through another toroid, then to the PC, which is a Dell Optiplex 9020, service tag 0N4YC8. It's currently an Intel(R) Core(TM) i7-4790 CPU @ 3.60GHz with 8 GB of (DDR3?) ram. OS and wsprdaemon are installed onto a 300 GB VK0300GDUQV SSD (I think this is actually an Intel SSD, but the part number shows HPE?). I've added a Seagate Barracuda 7200.14 500 GB and a Western Digital WDC WD10EZEX-75M2NA0 1 TB HDD for your recordings. I'm running debian v12.5, with kernel 6.1.0-18-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.76-1 (2024-02-01) x86_64 GNU/Linux. (I don't think this is a real-time kernel; I intended to try one but ran out of time.)

The PC is running NTP, but it does not have a PPS input. The PC is connected to one of my gigabit ethernet switches (nothing special--monoprice?) with a 20' cat5e cable. There are about 5 turns through a toroid. Power is about 20' of cable + extension cord, with about 10 turns through a toroid.

Here's my ka9q-radio config:

```
[global]
# these next two establish defaults for all demod sections
hardware = rx888 # use built-in rx888 driver, configured in [rx888]
status = hf.local    # DNS name for receiver status and commands
data = hf-pcm.local
samprate = 12k      # default output sample rate
mode = usb          # default receive mode
# rest are defaults
ttl = 0             # multicast data doesn't leave source host!
fft-threads = 4
```

```
[rx888]
device = "rx888" # required so it won't be seen as a demod section
description = "N5TNL rx888 80 ft longwire no shelving filters, 10 MHz GPSDO ref in"
```

gain = 16 # dB
reference=10m

[WWV-IQ]
disable = no
data = wwv-iq.local
agc = 0
gain = 60
samprate = 16k
#samprate = 200
mode = iq
freq = "60k000 2m500000 5m000000 10m000000 15m000000 20m000000 25m000000
3m330000 7m850000 14m670000" ### Added the three CHU frequencies
low=-7950
high=7950

[WSPR]
Bottom of 200 Hz WSPR segments on each band. Center is 1500 Hz higher
sample rate must be 12 kHz as required by wsprd
disable = no
data = wspr-pcm.local
agc = 0
gain = 60
samprate = 12k
mode = usb
low = 100.0
high = 5k
freq = "136k000 474k200 1m836600 3m568600 3m592600 5m287200 5m364700 7m038600
10m138700 13m553900 14m095600 18m104600 21m094600 24m924600 28m124600"

[WSPR-IQ]
disable = no
data = wspr-iq.local
agc = 0

```
gain = 60
samprate = 16k
mode = iq
low=-7950
high=7950
#freq = "136k000 474k200 1m836600 3m568600 3m592600 5m287200 5m364700 7m038600
10m138700 13m553900 14m095600 18m104600 21m094600 24m924600 28m124600"
# If you were to want to center IQ recordings of WSPR bands on the center frequency, not the
Upper Sideband tuning frequency, then use this line:
freq = "137k500 475k700 1m838100 3m570100 3m594100 5m288700 5m366200 7m040100
10m140200 13m555400 14m097100 18m106100 21m096100 24m926100 28m126100"
```

[FT8]

```
data = ft8-pcm.local
freq = "1m840 3m573 5m357 7m074 10m136 14m074 18m100 21m074 24m915 28m074"
```

[HF MANUAL]

```
data = hf-pcm.local
freq = 0
```

[BCB-IQ]

```
disable = no
mode = iq
data = bcb-iq.local
agc = no
gain = 0
samprate = 1536k
freq = "1m115000"
low = -768k
high = 768k
```

(Note that AGC was disabled for the recordings.)

I was recording in 5 minute chunks with a "bcb-record -vv -s 1115000 -c2 -S1536000 -m5 bcb-iq.local" command. bcb-record is my hacked up version of wsprdaemon's wd-record, modified to add an auxi chunk to the wav file to pass center freq and start/stop times to SDR Console, to record for more than one minute at a time, and to account for the sample rate and number of channels in the diagnostic messages.