From Tom W7SUA...

Hi Rick. Thanks for your note.

I would add that before the fldigi FMT modem came out I used the
fldigi "freq measurement" modem to collect data on CHU and WWV before and
after the FMT runs then used spread sheets and paper plots to try to
interpolate the FMT data and guess and the actual transmitted frequency.

I would still like to set up a multichannel receiver to watch WWV and CHU
during the FMT, record all the data and guess the affects of Doppler. Not
sure that will work. I will have to set up a broad band receiving antenna,
use splitters to feed the signal to each channel and a combiner following an
an attenuator to mix the reference signal into the same channel being used to
watch the FMT signal.

For my fldigi FMT Modem set up I feed the GPS controlled sig gen signal
into a dummy load in which I have put a pickup loop that feeds my K3's
receive loop via a Tee connector. This drops the signal level down to where I
can match the incoming over the air signal but I do get a 3 dB loss on the RF
side when I switch in the receive loop. Usually that has not been a problem.

Eventually I plan to have a directional coupler with something like 20-30 dB
attenuation and skip the dummy load and pickup loop. During the FMT I watch
the call up of the FMT, adjust levels and frequency of the reference tone
then record the reference and the unknown signal. This takes out completely
the short term K3 Freq Locked Loop wobbles and has let me get under 1 Hz error.
This all works to get me in the green box assuming that the average Doppler
during the 60 second FMT is less than 1 Hz. When I measure the WWV 2.5 MHz
signal during the day or night my system errors are down to 1-10 milli-hertz,
so I presume that the Doppler from Colorado to Arizona at 2.5 MHz is quite
small unlike the path to the FMT transmitters or to CHU.

I picked up two RSPduo receivers, a dual output Bodnar GPSDO, and several
splitters. And have a second Siglent 2042X sig gen. One of the Bodnar outputs
will be for the RSPduo and the other for the sig gen.

That will be my receiving station.

Work in progress!!!

73, tom w7sua