Sherwood Engineering HF Test Results

Model CommRadio CTX-10 Serial # 0155 Test Date: 11/24/2020

Dynamic Range of radio, no preamp		
Dynamic Range 20 kHz	50	dB
Dynamic Range 10 kHz		dB
Dynamic Range 5 kHz	45	dB
Dynamic Range 2 kHz		dB
Blocking above noise floor, 1uV signal @ 100 kHz, AGC On, See notes below on blocking.	49	dB
Phase noise (normalized) at 2.5 kHz spacing:		dBc
Phase noise (normalized) at 5 kHz spacing:		dBc
Phase noise (normalized) at 10 kHz spacing:		dBc
Phase noise (normalized) at 20 kHz spacing:		dBc
Phase noise (normalized) at 30 kHz spacing:		dBc
Phase noise (normalized) at 40 kHz spacing:		dBc
Phase noise (normalized) at 50 kHz spacing:		dBc
Phase noise (normalized) at 80 kHz spacing:		dBc
Phase noise (normalized) at 100 kHz spacing:		dBc
Phase noise (normalized) at 200 kHz spacing:		dBc
Phase noise (normalized) at 300 kHz spacing:		dBc
Phase noise (normalized) at 400 kHz spacing:		dBc
Phase noise (normalized) at 500 kHz spacing:		dBc
Noise floor, SSB bandwidth 14 MHz, no preamp	-110	dBm
Noise floor, SSB bandwidth 14 MHz, Preamp 1 On	-120	dBm
Sensitivity SSB at 14 MHz, no preamp	5	uV
Sensitivity SSB at 14 MHz, Preamp 1 On	1	uV
Noise floor, 500 Hz, 14.2 MHz, no preamp	-120	dBm
Noise floor, 500 Hz, 14.2 MHz, Preamp 1 On	-134	dBm
Gain of preamp(s)		
Preamp	20	dB
AGC threshold at 3 dB, no preamp	5.5	uV
AGC threshold at 3 dB, Preamp 1 On	0.7	uV

Notes:

The CTX-10 has the lowest blocking and dynamic range I have ever measured.

Except for measuring noise floor and sensitivity, data is with the LNA OFF.

The CTX-10 overloads when an out-of-passband signal is approximately S9.

Dynamic range values are actually the point where blocking begins.

With the LNA (preamp) ON, there are lots of spurious noises and birdies.

There was no practical reason to try to measure LO phase noise since blocking dominates the entire operation of the radio.

Sensitivity measurements are approximate since the radio does not quiet 10 dB with a strong signal, only about 8 dB. (Sensitivity definition 10 dB S+N/N ratio)

Preamp gain is estimated at approximately 20 dB.

All tests were run with AGC ON, and AGC set to medium.

Tested with firmware 1342.