

Sherwood Engineering HF Test Results

Model: IC-7800

Serial # 0201058

Test Date: 7/10/2004

IF BW 6000, -6 / -60, Hz	Ultimate		dB
IF BW 2400 -6 / -60, Hz	Ultimate	85	dB
IF BW 1800 -6 / -60, Hz	Ultimate		dB
IF BW 500 -6 / -60, Hz	Ultimate	85	dB
Front End Selectivity (A - F)			
IF Rejection, 14.2 MHz @ kHz IF			dB
First IF Rejection @ MHz IF			dB
Dynamic Range 100 kHz	dB	IP3	dBm
Dynamic Range 20 kHz 103/101*	dB	IP3	+30 dBm
Dynamic Range 10 kHz 96/97*	dB	IP3	
Dynamic Range 5 kHz ^/90*	dB	IP3	dBm
Dynamic Range 2 kHz, noise limited ~80	dB	IP3	dBm
Dynamic Range 1 kHz, noise limited ~80	dB	IP3	dBm
Blocking above noise floor at 100 kHz spacing		>132	dB
Phase noise (normalized) at 10 kHz spacing:			dBc
Noise floor, SSB bandwidth 14 MHz, Preamp Off		-120	dBm
Noise floor, SSB bandwidth 14 MHz, Preamp On			dBm
Sensitivity at 14 MHz, Preamp Off		0.6	uV
Sensitivity at 14 MHz, Preamp 1 On		0.15	uV
Sensitivity at 14 MHz, Preamp 2 On		0.10	uV
Noise floor, 500 Hz, 14.2 MHz, Preamp Off		-125	dBm
Noise floor, 500 Hz, 14.2 MHz, Preamp On			dBm
Sensitivity, 50.125 MHz, Preamp Off		0.55	uV
Sensitivity, 50.125 MHz, Preamp 1 On		0.15	uV
Sensitivity, 50.125 MHz, Preamp 2 On		0.12	uV
Signal for S9, Preamp Off		75	uV
Preamp, dB gain,			dB
AGC threshold at -3 dB, Preamp Off		4.5	uV
AGC threshold at -3 dB, Preamp 1 ON		1.2	uV
AGC threshold at -3 dB, Preamp 2 On		0.6	uV

* Note, dynamic range numbers listed on the low side / high side

^ Note, intermod product did not change properly. No number quoted.

Note: At 5 kHz and lower test spacings, the spectrum display caused birdies.

This sample had the 3-kHz roofing filter upgrade installed by Icom America before it was shipped to the original owner. While the filter is advertised as being 3-kHz wide, the measured bandwidth was 5.3 kHz at -6 dB. The nominal 6 kHz roofing filter was over 10-kHz wide.

Addendum:

AGC threshold numbers measured when the S meter started to move off of S0. All in SSB, 2.4 kHz filter bandwidth.

- 3 dB audio ref -33 dBm		S meter moves to S 0.5 (approximately)
15 kHz roofing filter		
No preamp	4 uV	5.6 uV
Preamp 1	1.1 uV	1.6 uV
Preamp 2	0.5 uV	0.7 uV
6 kHz roofing filter		
No preamp	5 uV	8.0 uV
Preamp 1	1.4 uV	2.2 uV
Preamp 2	0.7 uV	1.0 uV
3 kHz roofing filter		
No preamp	7 uV	11 uV
Preamp 1	2 uV	3.2 uV
Preamp 2	0.8 uV	1.3 uV

Due to the added loss of the nominal 3-kHz roofing filter, the AGC threshold is rather high without a preamp enabled. It is assumed that on the higher frequencies that most hams will run the radio with Preamp 1 enabled all the time for proper AGC operation. This reduces the IP3 by 10 dB.