

Sherwood Engineering HF Test Results

Model IC-7300

Serial # 02001408

Test Date: 4/5/2016

IF BW 2400 –6 / -60, Hz 2344 / 3469	Ultimate	85	dB
IF BW 500 –6 / -60, Hz 515 / 666	Ultimate	85	dB
Front End Selectivity (A – F)	15 bandpass filters	B	
Dynamic Range with radio, no preamp			
Dynamic Range 20 kHz		81	dB
Dynamic Range 10 kHz		81	dB
Dynamic Range 5 kHz		81	dB
Dynamic Range 2 kHz		81	dB
Dynamic Range of radio with IP+ dynamic-range enhancement enabled			
Dynamic Range 20 kHz		103	dB
Dynamic Range 10 kHz		101	dB
Dynamic Range 5 kHz		95	dB
Dynamic Range 2 kHz		94	dB
Blocking above noise floor, 1uV signal @ 100 kHz, AGC On, See notes below on blocking, limited by ADC clip point.		123	dB
Phase noise (normalized) at 2.5 kHz spacing:		-127	dBc
Phase noise (normalized) at 5 kHz spacing:		-132	dBc
Phase noise (normalized) at 10 kHz spacing:		-137	dBc
Phase noise (normalized) at 20 kHz spacing:		-140	dBc
Phase noise (normalized) at 30 kHz spacing:		-144	dBc
Phase noise (normalized) at 40 kHz spacing:		-145	dBc
Phase noise (normalized) at 50 kHz spacing:		-147	dBc
Phase noise (normalized) at 80 kHz spacing:		-144	dBc
Phase noise (normalized) at 100 kHz spacing:		-140	dBc
Phase noise (normalized) at 200 kHz spacing:		-149	dBc
Phase noise (normalized) at 300 kHz spacing:		-149	dBc
Phase noise (normalized) at 400 kHz spacing:		-149	dBc
Phase noise (normalized) at 500 kHz spacing:		-149	dBc
Noise floor, SSB bandwidth 14 MHz, IP+ enabled		-116	dBm
Noise floor, SSB bandwidth 14 MHz, no preamp		-128	dBm
Noise floor, SSB bandwidth 14 MHz, Preamp 1 On		-136	dBm
Noise floor, SSB bandwidth 14 MHz, Preamp 2 On		-137	dBm

Sensitivity SSB at 14 Mhz, IP+ enabled			1.0	uV
Sensitivity SSB at 14 MHz, no preamp			0.27	uV
Sensitivity SSB at 14 MHz, Preamp 1 On			0.11	uV
Sensitivity SSB at 14 MHz, Preamp 2 On			0.10	uV
Noise floor, 500 Hz, 14.2 MHz, IP+ enabled			-122	dB,
Noise floor, 500 Hz, 14.2 MHz, no preamp			-133	dBm
Noise floor, 500 Hz, 14.2 MHz, Preamp 1 On			-141	dBm
Noise floor, 500 Hz, 14.2 MHz, Preamp 2 On			-142	dBm
Noise floor, SSB, 50.125 MHz, no preamp			-125	dBm
Noise floor, SSB, 50.125 MHz, Preamp 1			-134	dBm
Noise floor, SSB, 50.125 MHz, Preamp 2			-135	dBm
Sensitivity, SSB, 50.125 MHz, no preamp			0.37	uV
Sensitivity, SSB, 50.125 MHz, Preamp 1			0.13	uV
Sensitivity, SSB, 50.125 MHz, Preamp 2			0.113	uV
Noise floor, 500 Hz, 50.125 MHz, no preamp			-131	dBm
Noise floor, 500 Hz, 50.125 MHz, Preamp 1 On			-139	dBm
Noise floor, 500 Hz, 50.125 MHz, Preamp 2 On			-140	dBm
Signal for S9, no preamp	-73	dBm	50	uV
Signal for S9, Preamp 1	-80	dBm	22	uV
Signal for S9, Preamp 2	-85	dBm	12	uV
Gain of preamp(s)				
Preamp 1			7	dB
Preamp 2			11	dB
AGC threshold at 3 dB, no preamp			1.9	uV
AGC threshold at 3 dB, Preamp 1 On			0.85	uV
AGC threshold at 3 dB, Preamp 2 On			0.5	uV

Notes:

Blocking measurement was limited by the ADC overload indicator “OVF”

Overload with a single signal occurs at -10 dBm

While dynamic range is increased significantly with IP+ enabled, the overload point remains -10 dBm.

S meter linearity

S1 - S5: 2.8 dB / S unit

S5 - S9: 3.3 dB / S unit

From S9 to S9+60, each 10 dB reading was actually +9.5 dB

Rev A