Sherwood Engineering HF Test Results

Model Apache ANAN-7000DLE Serial # none Test Date: 2/22/2018

IF BW 2400 –6 / -60, Hz	/	Ultimate	>110	dB
IF BW 500 –6 / -60, Hz	/	Ultimate	>110	dB

Front End Selectivity (A – F)	Bandpass, generally half to octave	B
First IF rejection +/- kHz	Does not apply	dB

Dynamic Range with radio, no preamp *		
Dynamic Range 20 kHz	103	dB
Dynamic Range 10 kHz	103	dB
Dynamic Range 5 kHz	103	dB
Dynamic Range 2 kHz	103	dB

* Preamp is in the circuit all the time. Attenuation can be added.

ADC overload above receiver noise floor, AGC ON	126	dB

Reciprocal Mixing Dynamic Range

Spacing kHz		dB
2.5	109	dB
5	111	dB
10	113	dB
15	114	dB
20	114	dB
25	115	dB
30	115	dB
40	116	dB
50	116	dB
80	117	dB
100	117	dB
200	116	dB
300	120	dB
400	120	dB
500	121	dB

Phase noise (normalized) at 2.5 kHz spacing:		-136	dBc/Hz
Phase noise (normalized) at 5 kHz spacing:		-138	dBc/Hz
Phase noise (normalized) at 10 kHz spacing:		-140	dBc/Hz
Phase noise (normalized) at 20 kHz spacing:		-140	dBc/Hz
Phase noise (normalized) at 25 kHz spacing:		-141	dBc/Hz
Phase noise (normalized) at 30 kHz spacing:		-141	dBc/Hz
Phase noise (normalized) at 40 kHz spacing:		-142	dBc/Hz
Phase noise (normalized) at 50 kHz spacing:		-143	dBc/Hz
Phase noise (normalized) at 80 kHz spacing:		-144	dBc/Hz
Phase noise (normalized) at 100 kHz spacing:		-144	dBc/Hz
Phase noise (normalized) at 200 kHz spacing:		-143	dBc/Hz
Phase noise (normalized) at 300 kHz spacing:		-147	dBc/Hz
Phase noise (normalized) at 400 kHz spacing:		-147	dBc/Hz
Phase noise (normalized) at 500 kHz spacing:		-148	dBc/Hz

Noise floor, SSB bandwidth 14 MHz, no preamp		-124	dBm
Noise floor, SSB bandwidth 14 MHz, Preamp 1 On			dBm
Noise floor, SSB bandwidth 14 MHz, Preamp 2 On			dBm
Sensitivity SSB at 14 MHz, no preamp		0.43	uV
Sensitivity SSB at 14 MHz, Preamp 1 On			uV
Sensitivity SSB at 14 MHz, Preamp 2 On			uV
Noise floor, 500 Hz, 14.2 MHz, no preamp		-131	dBm
Noise floor, 500 Hz, 14.2 MHz, Preamp 1 On			dBm
Noise floor, 500 Hz, 14.2 MHz, Preamp 2 On			dBm
Noise floor, SSB, 50.125 MHz, no preamp		-133	dBm
Noise floor, SSB, 50.125 MHz, Preamp 1			dBm
Noise floor, SSB, 50.125 MHz, Preamp 2			dBm
Sensitivity, SSB, 50.125 MHz, no preamp		0.16	uV
Sensitivity, SSB, 50.125 MHz, Preamp 1			uV
Sensitivity, SSB, 50.125 MHz, Preamp 2			uV
Noise floor, 500 Hz, 50.125 MHz, no preamp		-140	dBm
Noise floor, 500 Hz, 50.125 MHz, Preamp 1 On			dBm
Noise floor, 500 Hz, 50.125 MHz, Preamp 2 On			dBm
Signal for S9, no preamp	-73 dBm	50	uV*
Signal for S9, Preamp 1			uV
Signal for S9, Preamp 2			uV

* Calibration error 2 dB

AGC threshold at 3 dB level drop, AGC gain = 110	0.9	uV
AGC threshold at 3 dB level drop, AGC gain = 105	1.2	uV
AGC threshold at 3 dB level drop, AGC gain = 100	2.2	uV
AGC threshold at 3 dB level drop, AGC gain = 95	3.9	uV
AGC threshold at 3 dB level drop, AGC gain = 90	7.1	uV

Notes:

Tested with software release v3.4.7.0.
Spurious sidebands when measuring a test signal down 72 dB at approximately 180 Hz.
Dither and Random showed no noise floor degradation at all.
LNA on 6 meters does not appear to be switchable. (On all the time)
Bandpass filter also did not appear to be switchable. (On all the time)
dBm calibration of "S meter" read 2 dB low.
Calibration feature not working properly.