

Sherwood Engineering HF Test Results

Model Flex 6400 Serial # 1618-2092-6400-5342 Test Date: 3/23/2019

Front End Selectivity (A – F) (Bandpass) B

Dynamic Range of radio using preamp +16 dB	(20 meters)		
Dynamic Range 20 kHz		100	dB
Dynamic Range 10 kHz		100	dB
Dynamic Range 5 kHz		100	dB
Dynamic Range 2 kHz		100	dB

ADC overload above noise floor reference a 1uV signal @ 100 kHz, AGC On,		119	dB
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Reciprocal Mixing Dynamic Range (RMDR)

Spacing kHz	No Preamp	+16 dB Preamp	
2	115 dB	113	dB
5	117 dB	116	dB
10	118 dB	117	dB
20	119 dB	118	dB

Phase noise, no preamp

Phase noise (normalized) at 2 kHz spacing:	-142	dBc/Hz
Phase noise (normalized) at 5 kHz spacing:	-144	dBc/Hz
Phase noise (normalized) at 10 kHz spacing:	-145	dBc/Hz
Phase noise (normalized) at 20 kHz spacing:	-146	dBc/Hz

Noise floor, SSB bandwidth 14 MHz, no preamp	-105	dBm
Noise floor, SSB bandwidth 14 MHz, Preamp +16 dB	-120	dBm
Noise floor, SSB bandwidth 14 MHz, Preamp +32 dB	-130	dBm

Sensitivity SSB at 14 MHz, no preamp	-95 dBm	4.0	uV
Sensitivity SSB at 14 MHz, Preamp +16 dB	-111 dBm	0.63	uV
Sensitivity SSB at 14 MHz, Preamp +32 dB	-120 dBm	0.22	uV

Noise floor, 500 Hz, 14.2 MHz, no preamp	-112	dBm
Noise floor, 500 Hz, 14.2 MHz, Preamp +16 dB	-127	dBm
Noise floor, 500 Hz, 14.2 MHz, Preamp +32 dB	-136	dBm

Noise floor, SSB, 50.125 MHz, no preamp	-106	dBm
Noise floor, SSB, 50.125 MHz, Preamp +16 dB	-122	dBm
Noise floor, SSB, 50.125 MHz, Preamp +32 dB	-130	dBm

Sensitivity, SSB, 50.125 MHz, no preamp	-97 dBm	3.2	uV
Sensitivity, SSB, 50.125 MHz, Preamp +16 dB	-113 dBm	0.5	uV
Sensitivity, SSB, 50.125 MHz, Preamp +32 dB	-120 dBm	0.22	uV

Noise floor, 500 Hz, 50.125 MHz, no preamp	-114	dBm
Noise floor, 500 Hz, 50.125 MHz, Preamp +16 dB	-130	dBm
Noise floor, 500 Hz, 50.125 MHz, Preamp +32 dB	-137	dBm

Signal for S9, no preamp	-73 dBm	50	uV
Signal for S9, Preamp 1	-73 dBm	50	uV
Signal for S9, Preamp 2	-73 dBm	50	uV

Gain of preamps

Preamp 1	16	dB
Preamp 2	32	dB

There is an 8 dB attenuator that can be inserted for 8 dB gain steps.

No measurements were made gain settings other than 0, +16 and +32 dB.

AGC-T set to 50

AGC threshold at -3 dB, no preamp	9	uV
AGC threshold at -3 dB, Preamp +16	1.4	uV
AGC threshold at -3 dB, Preamp +32	0.44	uV

Transmit Composite Noise

Offset kHz	dBc/Hz @ 100 watts	dBc/Hz @ 30 watts
2 kHz	-113	-110
5 kHz	-117	-114
10 kHz	-122	-120
20 kHz	-127	-125
50 kHz	-135	-133
100 kHz	-139	-137

Notes:

The reason for testing the Flex 6400 was to compare my lab measurements of transmit composite noise to those of the QST February 2019 product review. I believe that data in QST is in error.

Rev A