

Laboratory Results

Receiver:

Sensitivity: Input level required to give 12dB SINAD:

144MHz: 0.19 μ V pd
145MHz: 0.18 μ V pd
146MHz: 0.21 μ V pd

Image Rejection: Increase in level of signal at first IF image frequency over level of on-channel signal to give identical 12dB SINAD signals:

57dB

Adjacent Channel Selectivity: Measured as increase in level of interfering signal, modulated with 400Hz at 1.5kHz deviation, above 12dB SINAD ref. level to cause 6dB degradation in 12dB on-channel signal:

+ 12.5kHz: 54.0dB
- 12.5kHz: 53.0dB
+ 25kHz: 70.5dB
- 25kHz: 72.0dB

Blocking: Increase over 12dB SINAD level of interfering signal modulated with 400Hz at 1.5kHz deviation to cause 6dB degradation in 12dB SINAD on-channel signal:

+ 100kHz: 88.0dB
+ 1MHz: 96.5dB
+ 10MHz: 98.5dB

Intermodulation Rejection: Increase over 12dB SINAD level of two interfering signals giving identical 12dB SINAD on-channel 3rd order intermodulation product:

25/50kHz spacing: 67.0dB
50/100kHz spacing: 68.0dB

Maximum Audio Output: Measured at 1kHz on the onset of clipping:

3 ohm load: 1.60W RMS
8 ohm load: 910mW RMS
15 ohm load: 540mW RMS

Squelch Sensitivity:

Threshold: <0.05 μ V pd (<2dB SINAD)
Maximum: 0.23 μ V pd (16dB SINAD)

S-Meter Linearity:

Indication	Sig.Level	Rel.Level
S1	0.72 μ V pd	- 7.6dB
S2	0.72 μ V pd	- 5.8dB
S5	1.05 μ V pd	- 4.2dB
S7	1.31 μ V pd	- 2.5dB
S9	1.72 μ V pd	0dB ref.
S9 +	2.11 μ V pd	+ 1.8dB
S9 + +	2.47 μ V pd	+ 3.1dB

Transmitter

TX Power and Current Consumption:

Freq MHz	Power	10.8V Supply	13.8V Supply	15.6V Supply
145	High	34.3W/8.1A	45.6W/9.2A	48.6W/9.1A
	Low	4.81W/3.1A	4.82W/3.1A	4.81W/3.1A
145	High	33.5W/8.1A	45.6W/9.1A	46.3W/9.6A
	Low	4.75W/3.1A	4.68W/3.1A	4.76W/9.6A
146	High	32.3W/8.0A	43.0W/9.1A	45.0W/9.2A
	Low	4.70W/3.1A	4.68W/3.1A	4.67W/3.1A

Harmonics/Spurii:

2nd Harmonic: -74dBc
3rd Harmonic: -85dBc
4th Harmonic: <-90dBc
5th Harmonic: <-90dBc
6th Harmonic: <-90dBc
7th Harmonic: <-90dBc
Spurii: <-90dBc

Frequency Accuracy:

-180Hz

Peak Deviation:

5.42kHz

Toneburst Deviation:

2.92kHz

means but a few dB down on one or two other 45W mobiles. Of note though was the very good 12.5kHz adjacent channel rejection, this should allow the set to operate very well in areas where this is commonly used due to congestion. The S-meter dynamic range, as found on air, was very limited.

On transmit, the power output was accurately set and well regulated

across the band, the low power output also being a reproducible level for external transverter driving and the like if required. The harmonics were very well suppressed. The peak deviation was set a shade higher than the recommended 5kHz absolute maximum, although this should not cause problems with 25kHz channeling as is generally used. This would normally need to be reduced of course by an internal 'tweak' for 12.5kHz operation if this is adopted in the future.

Conclusions

Overall, a good value transceiver for the amateur looking for a high power set to use when mobile. The set is small enough to allow fitment in many nooks and crannies, the flying power and aerial leads also reducing the effective depth needed to mount the set.

The well placed controls and easy to read display simplify operation when on the move, and the set offers very good receive performance on 12.5kHz channel spacing for use in busy areas of the country. Some amateurs who travel about a lot may find the 14 memory channels a limitation, but for many users these are often quite sufficient.

Our thanks go to Waters and Stanton Electronics for the loan of the review transceiver.