



Mr. William Graff
ATCB
RELM/BK Radio Comments 6/15/2004

- 1.) The Grantee code information at the FCC website does not match the Form 731. Please address both the company name, address and the contact information. Kindly update as necessary with the FCC and our Form 731.

The corrected form 731 has been corrected and uploaded.

- 2.) Please confirm: this device is switchable between 2 and 5 watts – it is not designed to be variable in power.

It is switchable, but the method used to switch to the lower power is equivalent to a variable power design.

- 3.) Please provide justification for this equipment to be included in the Part 80 maritime services.

At this time, RELM would like to remove the Part 80 Maritime Services approval. The report has been modified to address this.

- 4.) Were the modulation plots for both 25KHz and 12.5KHz settings representative of both positive and negative peak deviation?

Yes.

Can you please define any audio bandpass settings used with the HP8901A Modulation Analyzer? FYI: No calibration information could be found for the HP8901A.

No filters were on

Audio Frequency Response

Test Method: TIA/EIA-603-A 2.2.6

Equipment Used: HP8901B Modulation Analyzer(12-11-04), HP35670A Signal Analyzer (12-22-04).

- 5.) It is unclear if all the Occupied Bandwidth plots were set up correctly without any reference to an unmodulated carrier. Please provide the unmodulated state for all emission plots, showing both high and low power settings. FYI: The unmodulated carrier power should match the reference level on the spectrum analyzer and the readings obtained with the power meter.

The top line on the graphs is the unmodulated carrier power. The power level is lower because we attenuated the signal to lower the power to a value that is safe for the spectrum analyzer. The attenuator does not affect the results. The occupied bandwidth is independent of transmit power level. So the spectrum will be the same in low power mode.

- 6.) It is required that a plot be presented for each emission type and at each power setting for which approval is sought. Please provide high and low power plots for 11K0F3E, 16K0F3E, and all applicable APCO 25 modulations. The exact same settings for the unmodulated case should be used for all of these emission plots.

Should we measure the occupied bandwidth in low power mode? RELM asks this again because this measurement is independent of the transmit power. If possible, they would elect to follow this reasoning, rather than provide the additional data.

- 7.) Please describe the APCO 25 encryption/scrambling scheme employed with this equipment. (See 2.1033(c)(13)).

RELM does not have scrambling at this time. Will a permissive change be necessary if scrambling is added at a later time?

- 8.) Was a notch or high pass filter tuned to the transmitter fundamental employed for

measurement of transmitter harmonics? If not, please identify how the spectrum analyzer was protected from excess RF input. The reason for my question is to insure measurement accuracy.

A high pass filter , tuned to the transmitter fundamental was employed for measurement of transmitter Harmonics. If required, we can provide the make and model number, along with calibration information, of the filter.

- 9.) Please provide cable loss data for cable used in the conducted transmitter spurious data to 2GHz.
- 10.) Test data for both frequency vs. voltage and frequency stability over temperature was provided by the manufacturer. Please provide a complete description of the test procedure including calibration data, and how the equipment was tested.

Frequency Stability

Test Method: TIA/EIA-603-A 2.2.2

Equipment Used: HP8920A RF Communications Test Set(12-15-04)

- 11.) Please provide complete details on the transient frequency response test. By sure to include a test setup diagram and details on the threshold trigger levels used, and calibration data on the equipment.

Please see TIA/EIA-603-A 2.2.19.3 for the test setup diagram. This test method doesn't specify what power level to trigger on. RELM triggered at approximately 50% power.

Transient Frequency Behavior

Test Method: TIA/EIA-603-A 2.2.19.3

Equipment Used: HP 8920A Communications Test Set(12-15-04), Tek TDS3034B Scope(12-3-04), Rohde&Schwarz SME02 Signal generator(12-13-04)

- 12.) Please remove references to your SAR report on pp. 96 of the Test Report. TCBs cannot at this time evaluate SAR reports below 300MHz. Instead a short report showing how SAR testing should not apply to this filing must be completed.

The report has been modified accordingly.

- 13.) Please provide an audio response plot, and a low pass filter plot. Please provide details on how these measurements are performed. Again, test setup, instrumentation and calibration data must be provided.

This information has been provided under the attachment "DPHW 21", uploaded.

- 14.) Per Part 2.1033(c)(8) of the Rules the voltage and current through the finals must be provided.

RELM provided this in the table showing the transmit power.

- 15.) This equipment has a provision for an external microphone/speaker. This device must be tested with the speaker/microphone whenever any radiated spurious emissions are tested. Please review your findings and your test setup photographs. The external speaker/microphone should be extended straight up over this hand held radio during testing.

US Technologies has re-tested the unit with the external microphone/speaker in the proper position. A full re-test was conducted, and the new results have been provided in the modified report.

Sincerely,



Louis A. Feudi

Operations Manager