Intelligent Transceiver Unit transmitters is 15 watts.

4.1.2 PROCEDURES: The power transmitted directly into the antenna was measured by connecting the output of the test item into a spectrum analyzer through the Terion antenna match/attenuator (AM/A). The measured loss through the AM/A at 15.0MHz was 37.15dB. The readings were made with peak detection. A 10kHz bandwidth was used, which exceeded the emissions bandwidth of the test signal.

4.1.3 RESULTS: Data page 12 shows the results of the output power measurements. As can be seen from this data page, the maximum output power at the fundamental (15.0MHz) was 40.15dBm or 10.4 watts, which is below the 15 watt limit.

4.2 OCCUPIED BANDWIDTH MEASUREMENTS:

4.2.1 REQUIREMENTS: In accordance with FCC Document DA 97-1451, Appendix B, the authorized bandwidth of the Intelligent Transceiver Unit transmitter is 3.0 kHz. The power of emissions outside of the authorized bandwidth must be attenuated below the power of the unmodulated carrier wave in accordance with the following schedule:

(1) On any frequency removed from the carrier frequency by 50% up to 150% of the authorized bandwidth, at least 25dB.

(2) On any frequency removed from the carrier frequency by 150% up to 250% of the authorized bandwidth, at least 35dB.

(3) On any frequency removed from the carrier frequency by 250% or more of the authorized bandwidth, at least 43dB.

4.2.2 PROCEDURES: The measurement equipment was connected to the test item's antenna port through the Terion antenna match network (AM/A). The unit was set to transmit continuously. The test item signal was modulated at the maximum level available. The

measurement bandwidth was set to 30 Hz (1% of authorized bandwidth of 3kHz). The emissions near the fundamental frequency were plotted.

4.2.3 RESULTS: The plot of the emissions near the fundamental frequency are presented on data page 13. As can be seen from this data page, the transmitter met the occupied bandwidth requirements.

4.3 ANTENNA CONDUCTED EMISSIONS:

4.3.1 REQUIREMENTS: This test determines whether the test item produces excessive spurious emissions at the antenna terminals.

In accordance with FCC Document DA 97-1451, Appendix B, emissions on any frequency removed from the carrier frequency by 250% or more of the authorized bandwidth, shall be at least 43dB below the power of the unmodulated carrier wave. The peak power of the emissions shall be measured at the antenna terminal up to the 10th harmonic of the fundamental frequency.

4.3.2 PROCEDURES:

This test will measure spurious emissions at the antenna terminals.

(a) The test item was connected to the spectrum analyzer through the Terion antenna match/attenuator (AM/A).

(b) The frequency span was adjusted to cover 1MHz up to 30MHz. The emission levels over this frequency range were measured and recorded.

(c) Next, the emissions over the frequency range from 30MHz up to 200MHz were measured and recorded. This range covers up through the 10th harmonic.

4.3.3 RESULTS: The plots of the antenna conducted output

measurements are presented on data pages 14 and 15.

As can be seen from the data, the test item did not produce spurious emissions in excess of 43dB below unmodulated carrier level with the nominal output power of 10.4 watts.

4.4 FREQUENCY STABILITY:

4.4.1 REQUIREMENTS: In accordance with FCC Document DA 97-1451, Appendix B,Paragraph 95.629(b), an Intelligent Transceiver Unit transmitter must be maintained within a frequency stability of ±10 parts per million (ppm) over the temperature range of -20 to +70 degrees C.

4.4.2 PROCEDURES: Two separate procedures were performed for each of the two tests which are as follows:

(a) Frequency Stability vs. Temperature

(1) The test item was placed in a Thermotron temperature chamber. The test item was powered up.

(2) The measurement equipment was set to monitor the transmitted frequency.

(3) The ambient room temperature was recorded and a reference frequency was recorded.

(4) The temperature was varied from -20 to +70 degrees centigrade in 10 degree increments. The test item was allowed to soak from 30 to 45 minutes at each temperature.

(5) After this time period, the transmit frequency was recorded.

4.4.3 RESULTS: The results of the frequency stability tests can be found on data pages 16. As can be seen from the data, the frequency is within the ±10 ppm (±168Hz) tolerance.

5.0 CONCLUSION:

It was found that the Terion, Inc. Intelligent Transceiver Unit (ITU) transmitter, Model No. DHFM-1, does meet the RF Power, the occupied bandwidth, the antenna conducted emissions and the frequency stability requirements of the FCC "Code of Federal Regulations", Title 47, Part 2 and FCC Document DA 97-1451, Appendix B.

6.0 CERTIFICATION:

Elite Electronic Engineering Incorporated certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the test specification.

The data presented in this test report pertains only to the test item at the test date as operated by Terion, Inc. personnel. Any electrical or mechanical modification made to the test item subsequent to the specified test date will serve to invalidate the data and void this certification.

7.0 ENDORSEMENT DISCLAIMER:

This report must not be used to claim product endorsement by NVLAP or any agency of the US Government.

TABLE I: TEST EQUIPMENT LIST

ELITE ELECTRONIC ENG. INC. Page: 1

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Cal Inv	Due Date
Equipment Type: ACCESSORIES, MISCELLANEOUS								
XZG1	ATTENUATOR/SWITCH DRIVER	HEWLETT PACKARD	11713A	3439A02724	---	02/28/00	N/A	
Equipment Type: AMPLIFIERS								
APK1	PRE-AMPLIFIER	HEWLETT PACKARD	8449B	3008A01243	1-26.5GHZ	02/16/01	12	02/16/02
Equipment Type: ATTENUATORS								
T2D6	20DB, 25W ATTENUATOR	WEINSCHEL	46-20-43	AY9245	DC-18GHZ	02/04/01	12	02/04/02
Equipment Type: CHAMBERS (ENV)								
ETYA	TEMPERATURE RECORDER	HONEYWELL	455X21-BE-00	8348-3844470	-100 TO +200 C	04/12/01	12	04/12/02
ETYC	CONTROLLER/PROGRAMMER	TENNEY	TENTROL II	---	---		NOTE 1	
Equipment Type: CONTROLLERS								
CDD2	COMPUTER	HEWLETT PACKARD	D4171A#ABA	US61654645	---		N/A	
Equipment Type: METERS								
MFC0	MICROWAVE FREQ. COUNTER	HEWLETT PACKARD	5343A	2133A00591	10HZ-26GHZ	06/02/01	12	06/02/02
Equipment Type: PRINTERS AND PLOTTERS								
HRE1	LASER JET 5P	HEWLETT PACKARD	C3150A	USHB061052	---		N/A	
Equipment Type: RECEIVERS								
RACC	RF PRESELECTOR	HEWLETT PACKARD	85685A	2648A00507	20HZ-2GHZ	01/15/01	12	01/15/02
RAE5	SPECTRUM ANALYZER	HEWLETT PACKARD	8566B	2532A02136	100HZ-22GHZ	05/09/01	12	05/09/02

Cal. Interval: Listed in Months I/O: Initial Only N/A: Not Applicable

Note 1: For the purpose of this test, the equipment was calibrated over the specified frequency range, pulse rate, or modulation prior to the test or monitored by a calibrated instrument.