TABLE OF CONTENTS LIST

APPLICANT: COBRA ELECTRONICS CORPORATION

FCC ID: BBOPR900DX

TEST REPORT:

EXHIBITS CONTAINING:

GENERAL INFORMATION REQUIRED
FOR CERTIFICATION

2.1033(c)(1)(2) COBRA ELECTRONICS CORPORATION will manufacture the FCCID: BBOPR900DX GMRS CHANNELS TRANSCEIVER in quantity, for use under FCC RULES PART 95.

COBRA ELECTRONICS CORPORATION
6500 WEST CORTLAND STREET
CHICAGO IL 60707

2.1033 (c) TECHNICAL DESCRIPTION

2.1033(c)(3) Instruction book. A draft copy of the instruction manual is included as EXHIBIT 6.

2.1033(c) (4) Type of Emission: 9K5F3E
95.631

Bn = 2M + 2DK
M = 3000
D = 1.75K
Bn = 2(3.0)+2(1.75) = 9.5K

Authorized Bandwidth 20.0KHz
2.1033(c)(5) Frequency Range: 462.5625 - 462.7250 MHz
95.621

2.10311(c)(6)(7) The Maximum Output Power Rating:

2 Watts effective radiated power.

2.1033(c)(8) DC Voltages and Current into Final Amplifier:
FINAL AMPLIFIER ONLY

INPUT POWER: (6.0V)(.625A) =3.75 Watts

2.1033(c)(9) Tune-up procedure. The tune-up procedure is included 7a-e.

2.1033(c)(10) Complete Circuit Diagrams: The circuit diagram is included as EXHIBIT 5 of this report. The block diagram is included as exhibits 4 of this report.

2.1033(c)(11) A photograph or a drawing of the equipment identification label is included as exhibit No. 1.

2.1033(c)(12) Photographs(8"X10") of the equipment of sufficient clarity to reveal equipment construction and layout, including meters, labels for controls, including any view under shields. See exhibits 3a-3f.

2.1033(c)(13) Digital modulation is not allowed.

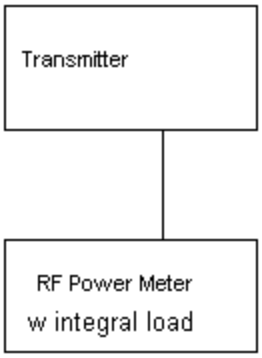
2.1033(c)(14) The data required by 2.1046 through 2.1057 is submitted below.

95.639 Power Output shall not exceed 50.0 Watts effective radiated power. There can be no provisions for
95.649 increasing the power or varying the power output.

2.1046(a) RF power is measured by connecting a 50 ohm, resistive watt meter to the RF output connector. With a nominal battery voltage of 8.4 V, and the transmitter properly adjusted the RF output measures:

OUTPUT POWER: 2 Watts

2.1046(a) RF power output. The test procedure used was TIA/EIA-603 S2.2.1.



2.1047(a)(b) Modulation characteristics:

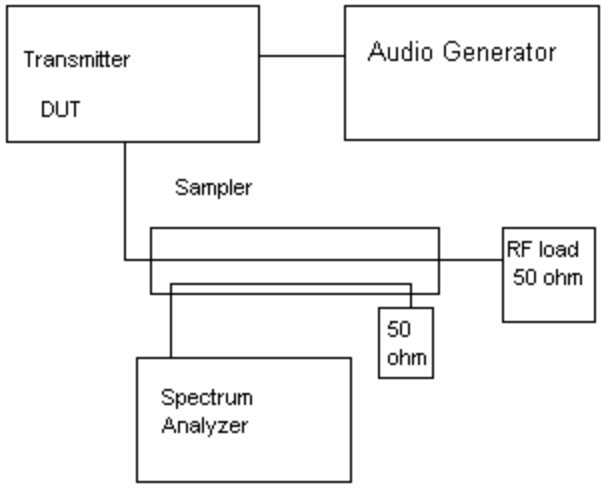
AUDIO FREQUENCY RESPONSE
The audio frequency response was measured in accordance with TIA/EIA Specification 603. The audio frequency response curve is shown as Exhibit 10. The audio signal was fed into a dummy microphone circuit and into the microphone connector. The input required to produce 30 percent modulation level was measured.

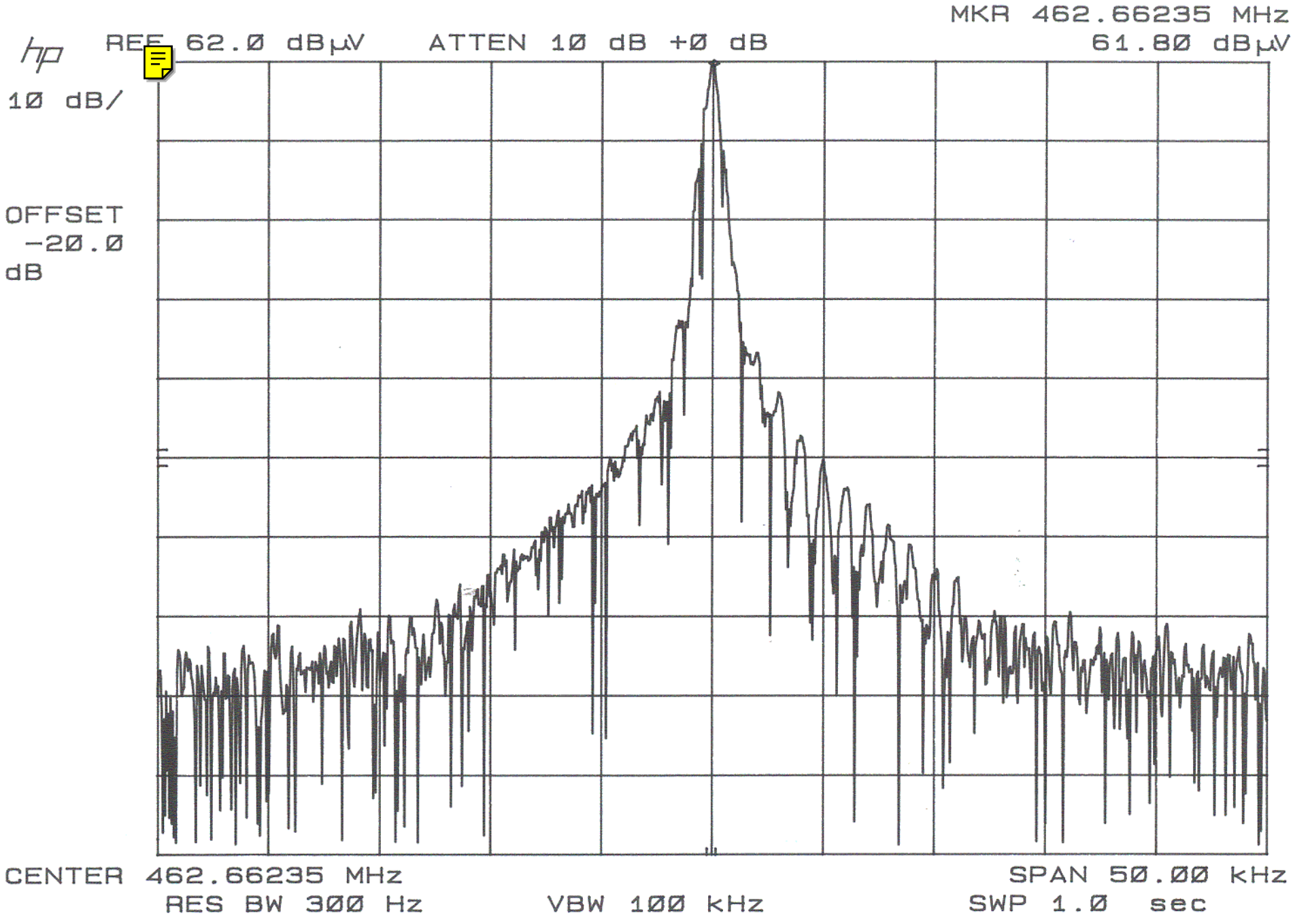
2.1047(b) Audio input versus modulation
The audio input level needed for a particular per-percentage of modulation was measured in accordance with TIA/EIA Specification 603. The audio input curves versus modulation are on the following pages. Curves are provided for audio input frequencies of 300, 1000, and 3000 Hz. See Exhibits 9A-9C.

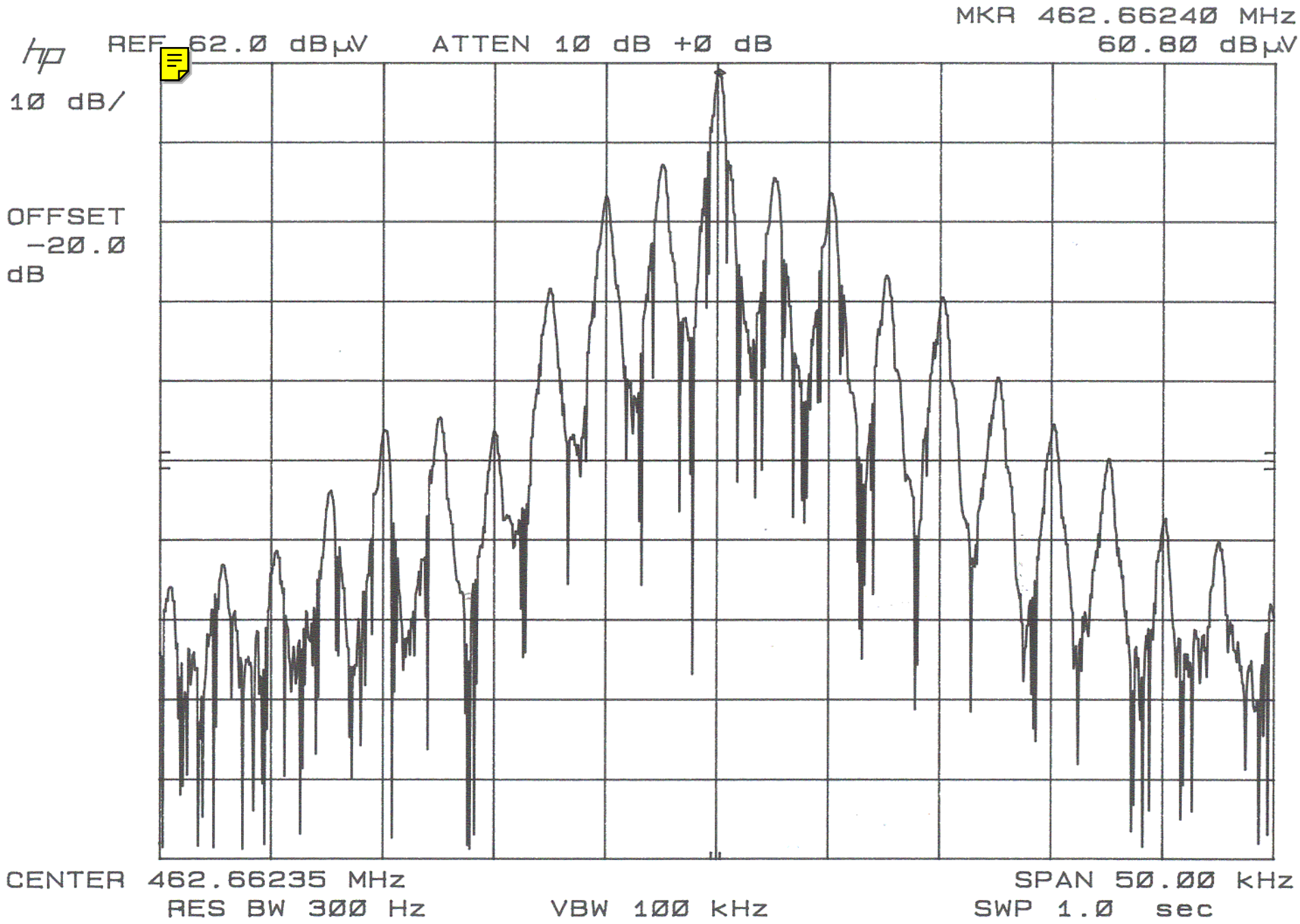
95.637 Post Limiter Filter Each GMRS transmitter, except a mobile station transmitter with a power of 2.5Watts or less, must be equipped with an audio low pass filter. At any frequency between 3 & 20KHz the filter must have an attenuation of 60log (f/3) greater than the attenuation at 1KHz. See Exhibit 8.

2.1049 Occupied bandwidth:
95.635(b)(1)(3)(7)
At least 25dB on any frequency removed from the center of the authorized bandwidth by more than 50%up to and including 100% of the authorized bandwidth. At least 35 dB on any frequency removed from the center of the authorized BW by more than 100% up to and including 250% of the authorized BW. At least 43+log10(T) on any frequency removed from the center of the authorized bandwidth by more than 250%. The plots are shown on pages 4 and 5.

Occupied BW Test Equipment Setup

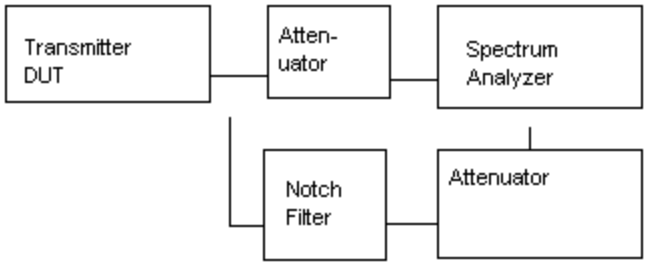



MKR 462.66235 MHz
61.80 dBµV
REF 62.0 dBµV
ATTEN 10 dB +0 dB
10 dB/
OFFSET
-20.0
dB
CENTER 462.66235 MHz
SPAN 50.00 kHz
RES BW 300 Hz
VBW 100 kHz
SWP 1.0 sec


MKR 462.66240 MHz
REF 62.0 dBµV
ATTEN 10 dB +0 dB
60.80 dBµV
10 dB/
OFFSET
−20.0
dB
CENTER 462.66235 MHz
SPAN 50.00 kHz
RES BW 300 Hz
VBW 100 kHz
SWP 1.0 sec

2.1051 Spurious emissions at antenna terminals(conducted): The following data shows the level of conducted spurious responses at the antenna terminal. The test procedure used was TIA/EIA 603 S2.2.13 with the exception that the emissions were recorded in dBc. The spectrum was scanned from 0.4 to at least the 10th harmonic of the fundamental.

Spurious Emissions at
Antenna Terminals



Method of Measuring Conducted Spurious Emissions

2.1051 Spurious emissions at the Antenna Terminals

NAME OF TEST: SPURIOUS EMISSIONS AT ANTENNA TERMINALS

REQUIREMENTS: Emissions must be 43 +10log(Po) dB below the mean power output of the transmitter.

HIGH POWER 43 + 10log(2.0) = 46.01 dB OR 70dB whichever is the lessor.

LOW POWER 43 + 10log(0.30) = 37.77 dB

EMISSION FREQUENCY MHz	dB BELOW CARRIER	EMISSION FREQUENCY MHz	dB BELOW CARRIER
HIGH POWER		LOW POWER	
462.60	00.0	462.50	00.0
925.20	57.5	925.20	57.5
1387.80	61.8	1387.80	61.8
1850.40	73.3	1850.40	73.3
2313.00	69.9	2313.00	69.9
2775.60	77.2	2775.60	77.2
3238.20	71.1	3238.20	71.1
3700.80	61.1	3700.80	61.1
4163.40	76.5	4163.40	76.5
4626.00	77.0	4626.00	77.0

*** THE HIGH POWER AND LOW POWER ARE THE SAME ON THIS DEVICE ***

2.1053
95.635(b)(7)

UNWANTED RADIATION:

The tabulated Data shows the results of the radiated field strength emissions test. The spectrum was scanned from 30 to at least the 10th harmonic of the fundamental. This test was conducted per ANSI C63.4-1992.

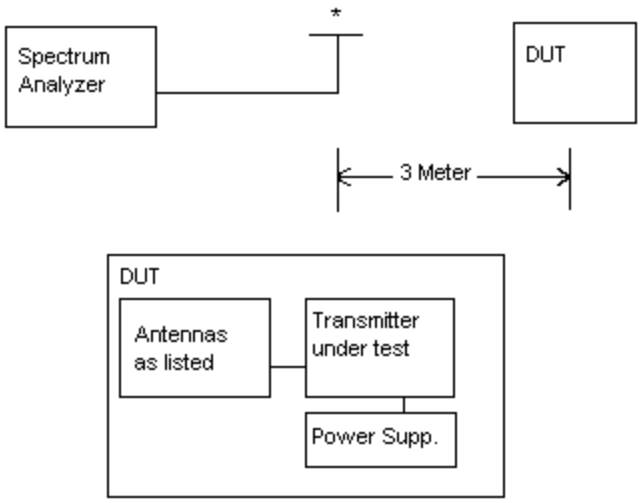
REQUIREMENTS: 43 + 10log(2.0) = 46.01 dB

TEST DATA:

EMISSION FREQUENCY MHz	MR @ 3m dBuV	COAX LOSS Db	ACF dB	FIELD STRENGTH dBuV/m	ATTN dB	MARGIN dB	ANT. POL
462.60	107.40	1.60	18.44	127.44	0.00	0.00	V
925.20	39.80	2.90	24.10	66.80	60.64	14.63	V
1387.80	51.00	1.00	25.55	77.55	49.89	3.88	V
1850.40	36.90	1.01	27.40	65.31	62.13	16.12	V
2313.00	32.80	1.08	28.78	62.66	64.78	18.77	V
2775.60	29.10	1.15	29.94	60.19	67.25	21.24	V
3238.20	36.80	1.22	31.10	69.11	58.33	12.32	V
3700.80	40.40	1.29	32.25	73.94	53.50	7.49	V
4163.40	23.40	1.35	33.18	57.94	69.50	23.49	H
4626.00	21.10	1.42	33.70	56.23	71.21	25.20	V

METHOD OF MEASUREMENT: The procedure used was TIA/EIA 603. The measurements were made at the test site located at TIMCO ENGINEERING INC. 849 NW State Road 45 Newberry, Florida 32669.

Method of Measuring Radiated Spurious Emissions



Equipment placed 80cm above ground
on a rotatable platform.

* Appropriate antenna raised from 1 to 4 M.

2.1055 Frequency stability:
95.621(b)

Temperature and voltage tests were performed to verify that the frequency remains within the 0.0005%, 5 ppm specification limit. The test was conducted as follows: The transmitter was placed in the temperature chamber at 25 degrees C and allowed to stabilize for one hour. The transmitter was keyed ON for one minute during which four frequency readings were recorded at 15 second intervals. The worse case number was taken for temperature plotting. The assigned channel frequency was considered to be the reference frequency. The temperature was then reduced to -30 degrees C after which the transmitter was again allowed to stabilize for one hour. The transmitter was keyed ON for one minute, and again frequency readings were noted at 15 second intervals. The worst case number was recorded for temperature plotting. This procedure was repeated in 10 degree increments up to + 50 degrees C.

Readings were also taken at plus and minus 15% of the battery voltage of 6.0 VDC.

MEASUREMENT DATA:

Assigned Frequency (Ref. Frequency): 462.662500

TEMPERATURE_C	FREQUENCY_MHz	PPM
REFERENCE_____	462.662500	00.00
-30C_____	462.663110	1.32
-20C_____	462.663185	1.48
-10C_____	462.664035	3.32
0C_____	462.664015	3.28
10C_____	462.663900	3.03
20C_____	462.663256	1.64
30C_____	462.662444	-0.12
40C_____	462.661909	-1.28
50C_____	462.661802	-1.51

BATT. %	BATT. DATA	VOLTS	BATT. PPM
-15%	462.662208	5.1V	-0.63
+15%	462.661993	6.9V	-1.10

RESULTS OF MEASUREMENTS: The maximum frequency variation over the temperature range was –1.51 to 3.32ppm. The maximum frequency variation with voltage was 3.32 ppm.

TEST EQUIPMENT LIST

1._X_Spectrum Analyzer: HP 8566B-Opt 462, S/N 3138A07786, w/ preselector HP 85685A, S/N 3221A01400, Quasi-Peak Adapter HP 8565OA, S/N 3303A01690 & Preamplifier HP 8449B-OPT H02, S/N 3008A00372 Cal. 10/17/99
2._X_Biconnical Antenna: Eaton Model 94455-1, S/N 1057
3.___Biconnical Antenna: Electro-Metrics Model BIA-25, S/N 1171
4._X_Log-Periodic Antenna: Electro-Metrics Model EM-6950, S/N 632
5.___Log-Periodic Antenna: Electro-Metrics Model LPA-30, S/N 409
6._X_Double-Ridged Horn Antenna: Electro-Metrics Model RGA-180, 1-18 GHz, S/N 2319
7.___18-26.3GHz Systron Donner Standard Gain Horn #DBE-520-20
8.___Horn 40-60GHz: ATM Part #19-443-6R
9.___Line Impedance Stabilization Network: Electro-Metrics Model ANS-25/2, S/N 2604 Cal. 2/9/00
10.___Temperature Chamber: Tenney Engineering Model TTRC, S/N 11717-7
11.___Frequency Counter: HP Model 5385A, S/N 3242A07460 Cal 10/6/99
12.___Peak Power Meter: HP Model 8900C, S/N 2131A00545
13._X_Open Area Test Site #1-3meters Cal. 12/22/99
14.___Signal Generator: HP 8640B, S/N 2308A21464 Cal. 9/23/99
15.___Signal Generator: HP 8614A, S/N 2015A07428
16.___Passive Loop Antenna: EMCO Model 6512, 9KHz to 30MHz, S/N 9706-1211 Cal. 6/10/00
17.___Dipole Antenna Kit: Electro-Metrics Model TDA-30/1-4, S/N 153 Cal. 11/24/99
18.___AC Voltmeter: HP Model 400FL, S/N 2213A14499 Cal. 9/21/99
19.___Digital Multimeter: Fluke Model 8012A, S/N 4810047 Cal 9/21/99
20.___Digital Multimeter: Fluke Model 77, S/N 43850817 Cal 9/21/99
21.___Oscilloscope: Tektronix Model 2230, S/N 300572 Cal 9/23/99