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APPLICANT: J COMMUNICATIONS CO., LTD.

FCC ID: OAJGMRS2200XTM

TEST REPORT:

EXHIBITS CONTAINING:

GENERAL INFORMATION REQUIRED
FOR CERTIFICATION

2.1033(c)(1)(2) J COMMUNICATIONS CO., LTD. will manufacture the FCCID: OAJGMRS2200XTM GMRS/FRS COMBINATION TRANSCEIVER in quantity, for use under FCC RULES PART 95.

J COMMUNICATIONS CO., LTD.
124-4 OJEON-DONG,
UIWANG-CITY KYUNGKI-DO KOREA

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: 10K5F3E
95.631

Bn = 2M + 2DK
M = 3000
D = 2250
K = 1
Bn = 2(3000)+2(2250) = 10.5 kHz

GMRS Authorized Bandwidth 20.0 kHz
2.1033(c)(5) GMRS Frequency Range: 462.5500 - 462.7250 MHz
95.621

2.10311c)(6)(7) The Maximum Output Power Rating:
HIGH - 2.0 Watts
LOW - 0.5 Watts

FRS Authorized Bandwidth 12.5 kHz

2.1033(c)(5) FRS Frequency Range: 1. 462.5625 8. 467.5625
95.627 2. 462.5875 9. 467.5875
3. 462.6125 10. 467.6125
4. 462.6375 11. 467.6375
5. 462.6625 12. 467.6625
6. 462.6875 13. 467.6875
7. 462.7125 14. 467.7125 MHz

2.1033(c)(6)(7) Power Output shall not exceed 0.50 Watts effective
95.639 radiated power. There can be no provisions for
95.649 increasing the power or varying the power.

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

FOR LOW POWER SETTING INPUT POWER: (6.0V)(.250A) = 1.50 Watts
FOR HIGH POWER SETTING INPUT POWER: (6.0V)(.600A) =3.60 Watts

2.1033(c)(9) Tune-up procedure. The tune-up procedure is included as EXHIBIT # 8.

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

2.1033(c)(11) A photograph or a drawing of the equipment identification label is included as EXHIBIT 1A.

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 2A-3D.

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

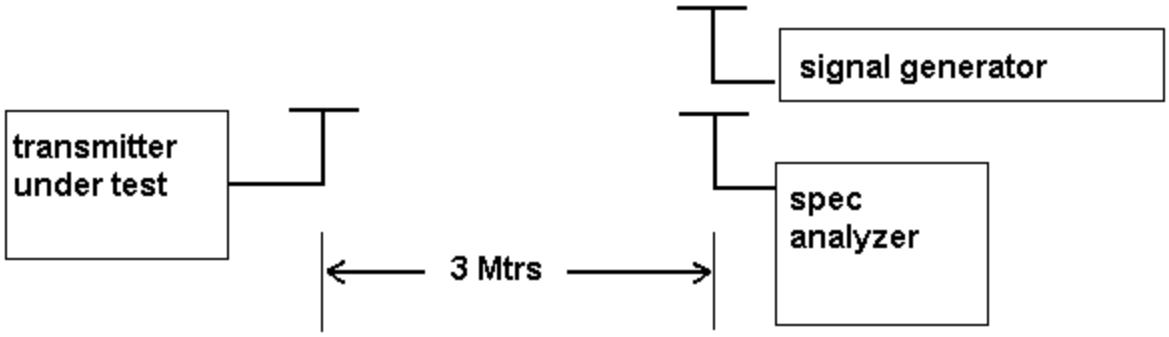
2.1033(c)(14) The data required by 2.1046 through 2.1057 is submitted below.

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.

2.1046(a) RF power is measured by the substitution method as outlined in TIA/EIA - 603. With a nominal battery voltage of 6.0 V, and the transmitter properly adjusted the RF output measures:

OUTPUT POWER: HIGH 2.0 Watts ERP
FRS: 0.5 Watts ERP

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

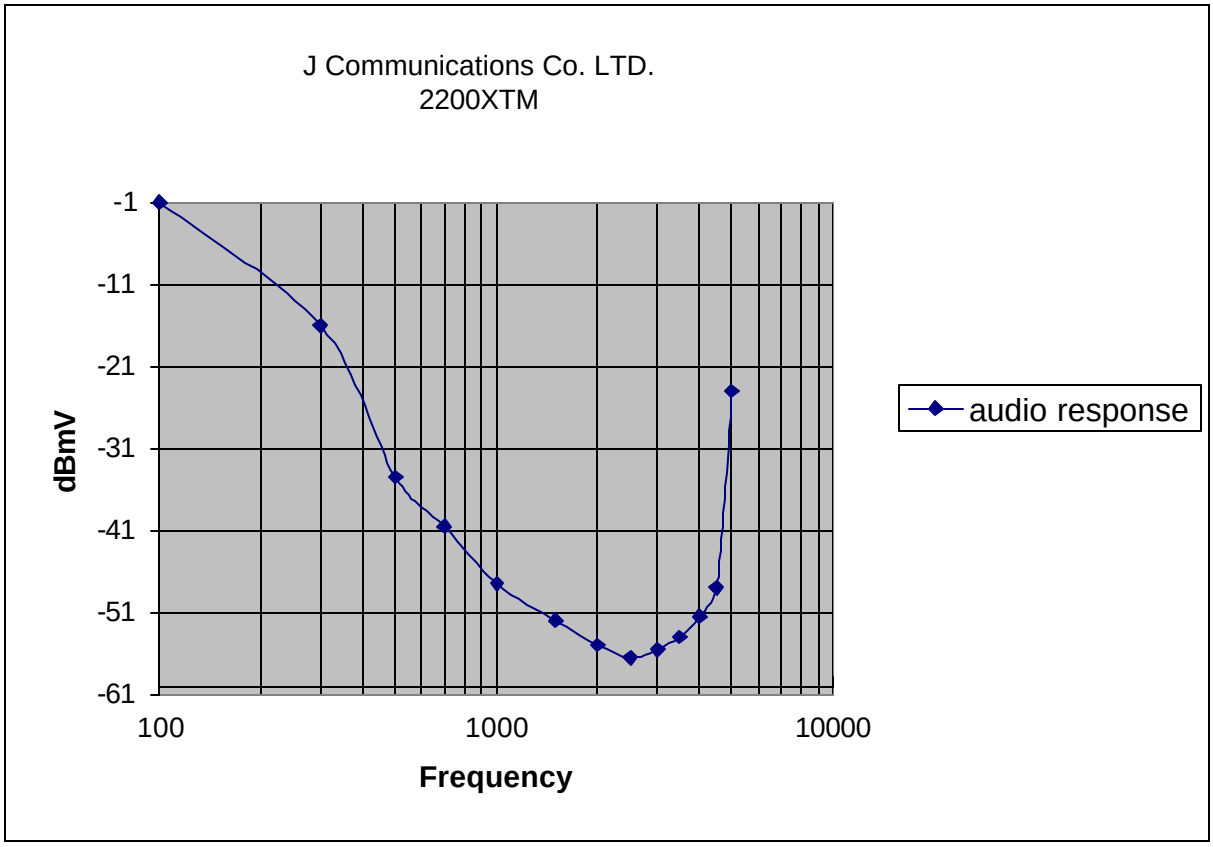


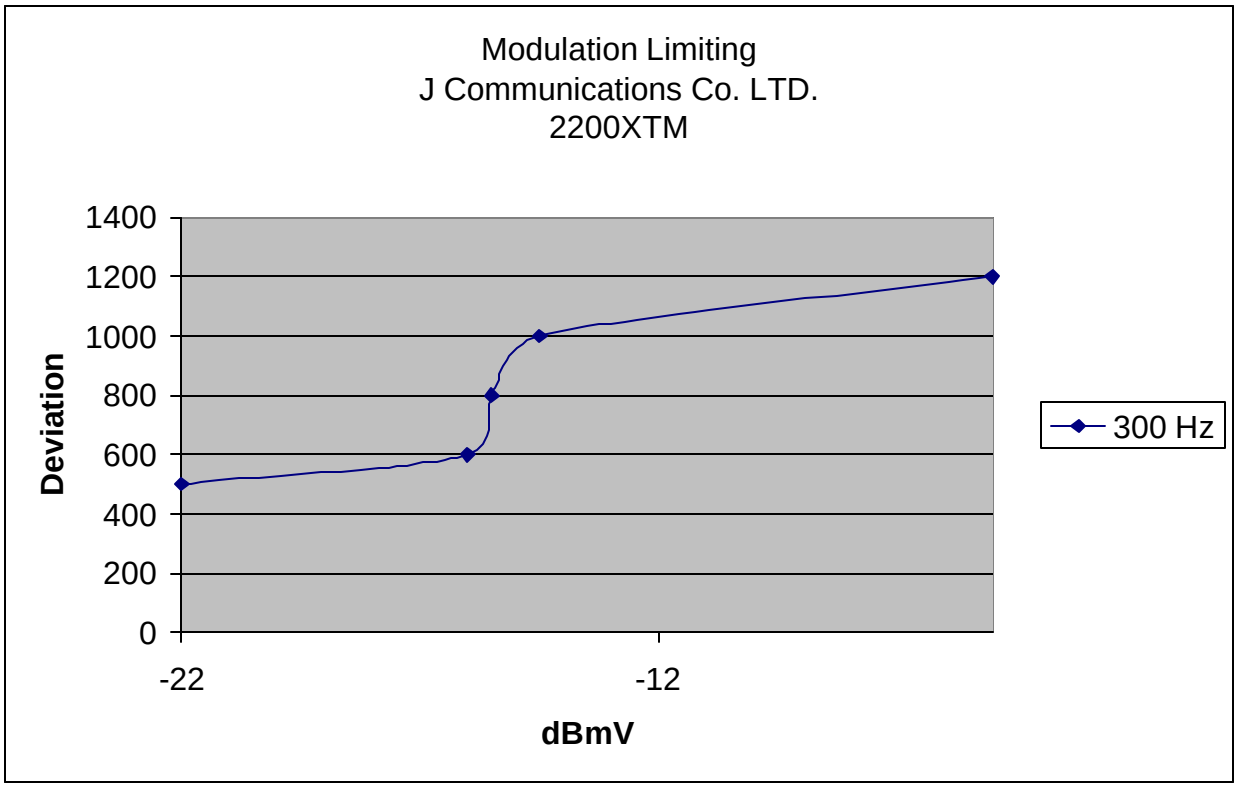
2.1047(a)(b) Modulation characteristics:

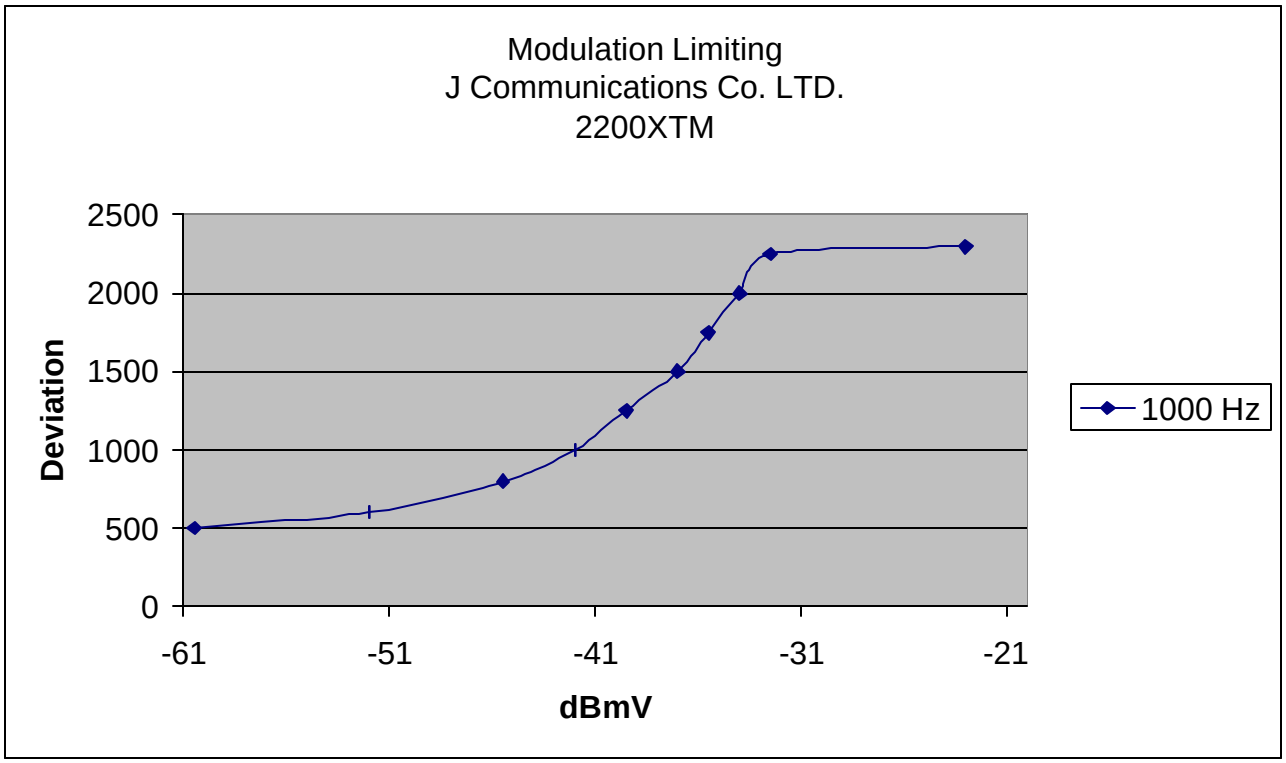
AUDIO FREQUENCY RESPONSE
The audio frequency response was measured in accordance with TIA/EIA Specification 603. The audio frequency response curve is shown on the next page. The audio signal was fed into a dummy microphone circuit and into the microphone connector. The input required to produce 30 percent modulation level was measured. See Page 5 of report.

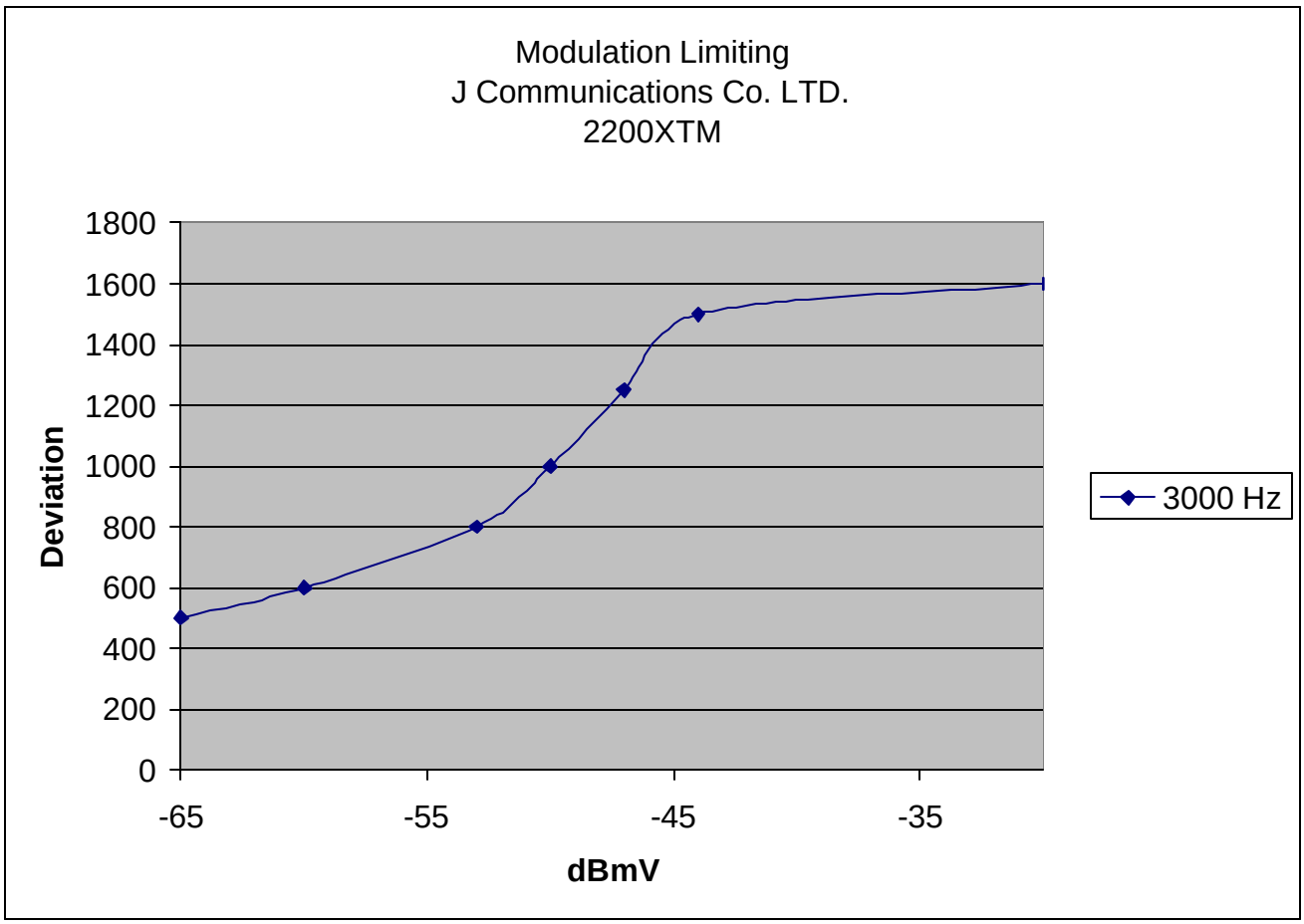
2.1047(b) Audio input versus modulation
The audio input level needed for a particular per-percentage of modulation was measured in accordance with TIA/EIA Specification 603. The audio input curves versus modulation are on the following pages. Curves are provided for audio input frequencies of 300, 1000, and 3000 Hz. See Pages 6,7 & 8 of report.

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 & 20 kHz the filter must have an attenuation of 60log (f/3) greater than the attenuation at 1KHz. See Page 9 of report.


J Communications Co. LTD.
2200XTM
-1
-11
-21
-31
-41
-51
-61
dBmV
100
1000
10000
Frequency
audio response

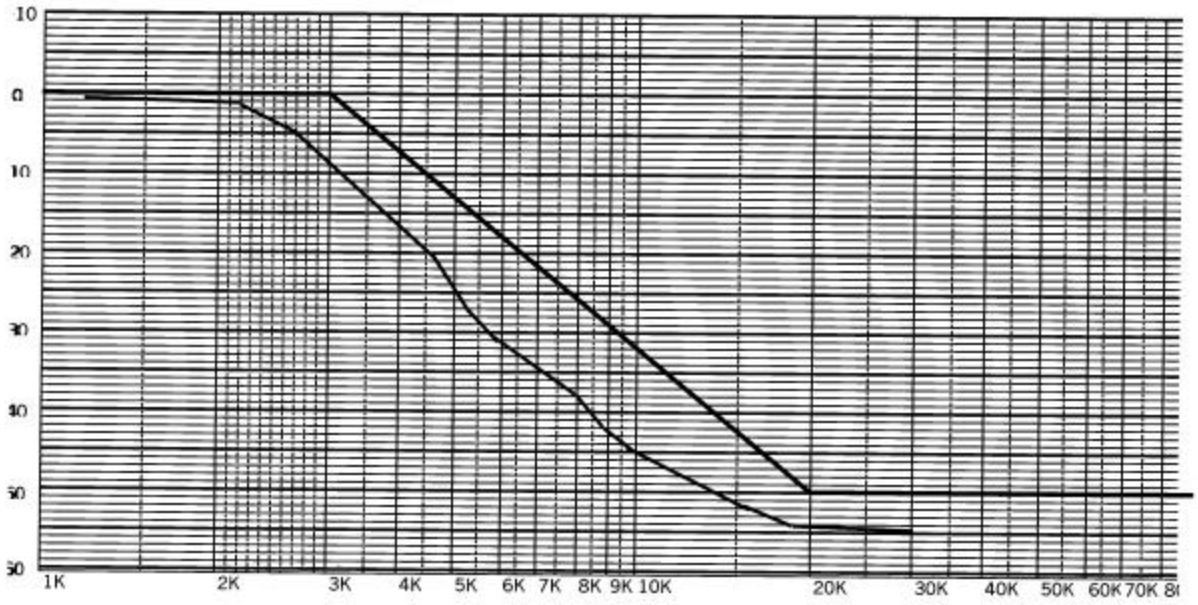

Modulation Limiting
J Communications Co. LTD.
2200XTM
1400
1200
1000
800
600
400
200
0
Deviation
-22
-12
dBmV
300 Hz


Modulation Limiting
J Communications Co. LTD.
2200XTM
2500
2000
1500
1000
500
0
Deviation
-61
-51
-41
-31
-21
dBmV
1000 Hz


Modulation Limiting
J Communications Co. LTD.
2200XTM
Deviation
1800
1600
1400
1200
1000
800
600
400
200
0
-65
-55
-45
-35
dBmV
3000 Hz

Audio Lowpass Filter

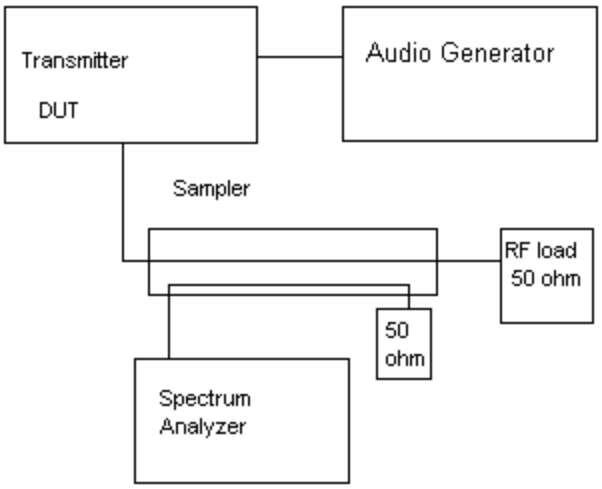
Model : GMRS-2200XTM
Date : 02. 02. 04
Test By : J. Y. Moon

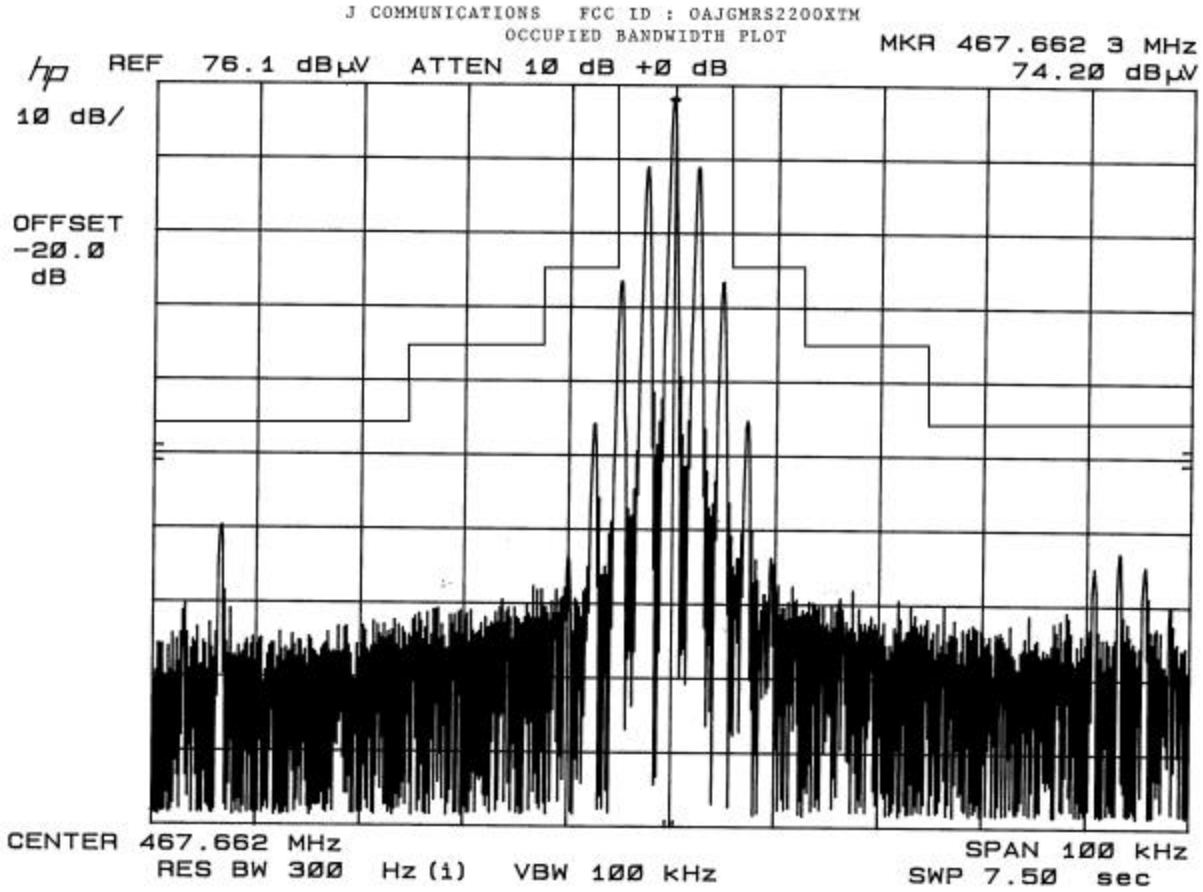


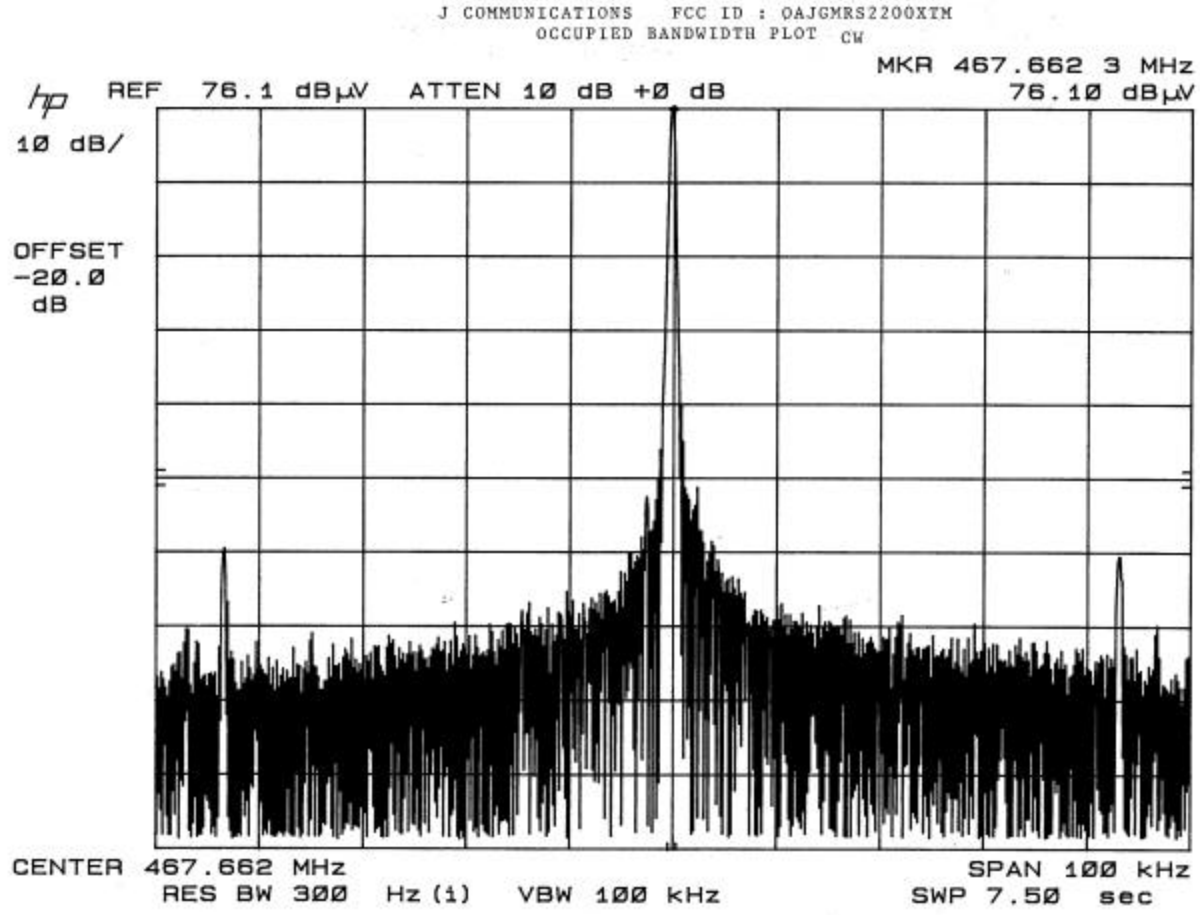
2.1049 Occupied bandwidth:
95.635(b)(1)(3)(7)

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(TP) dB on any frequency removed from the center of the authorized bandwidth by more than 250%. See plots on pages 11 and 12.

Occupied BW Test Equipment Setup

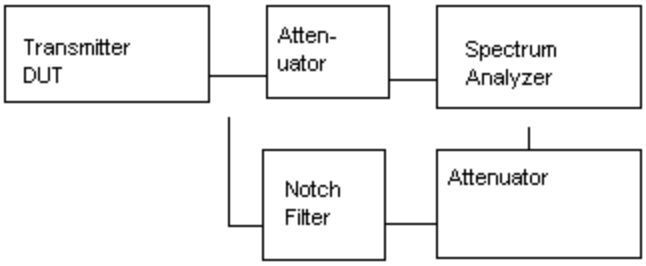



J COMMUNICATIONS FCC ID : OAJGMRS2200XTM
OCCUPIED BANDWIDTH PLOT
MKR 467.662 3 MHz
74.20 dBµV
REF 76.1 dBµV ATTEN 10 dB +0 dB
10 dB/
OFFSET
-20.0
dB
CENTER 467.662 MHz
RES BW 300 Hz (i) VBW 100 kHz
SPAN 100 kHz
SWP 7.50 sec


J COMMUNICATIONS FCC ID : OAJGMRS2200XTM
OCCUPIED BANDWIDTH PLOT CW
MKR 467.662 3 MHz
REF 76.1 dBµV ATTEN 10 dB +0 dB
76.10 dBµV
10 dB/
OFFSET
-20.0
dB
CENTER 467.662 MHz
SPAN 100 kHz
RES BW 300 Hz (i) VBW 100 kHz
SWP 7.50 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

2.1051 Not Applicable, no antenna terminal allowed.

2.1053 UNWANTED RADIATION:
95.635(b)(7)

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

TEST DATA:

Emission Frequency MHz	ATTN dBc	Margin dB
HIGH POWER		
462.50	00.00	00.00
925.10	78.70	32.69
1,387.70	83.38	37.37
1,850.30	77.10	31.09
2,312.80	86.22	40.21
2,775.40	77.90	31.89
3,238.00	83.56	37.55
3,700.60	73.79	27.78
4,163.10	72.83	26.82
4,625.70	75.97	29.96

METHOD OF MEASUREMENT: The tabulated data shows the results of the radiated field strength emissions test. The spectrum was scanned from 30 to at least the tenth harmonic of the fundamental. This test was conducted per TIA/EIA STANDARD 603 using the substitution method. Measurements were made at the open field test site of TIMCO ENGINEERING, INC. located at 849 NW State Road 45, Newberry, FL 32669.

2.1053 UNWANTED RADIATION:
95.635(b)(7)

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.

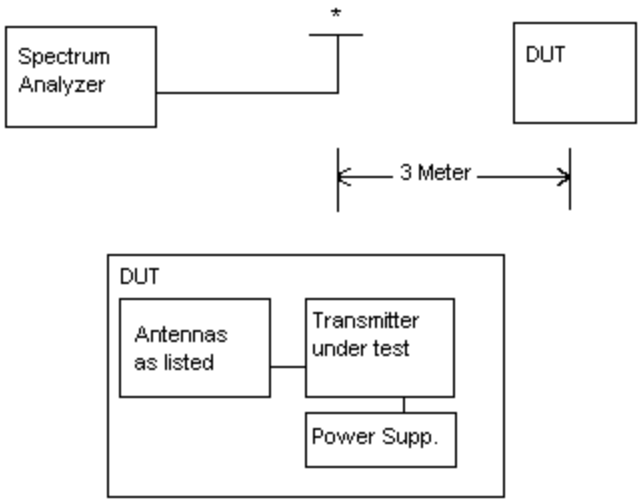
REQUIREMENTS: LOW: 43 + 10log(.50) = 39.99 dB

TEST DATA:

Emission Frequency MHz	ATTN dBc	Margin dB
LOW POWER		
462.50	00.00	00.00
925.10	73.20	33.21
1,387.70	77.38	37.39
1,850.30	70.50	30.51
2,312.80	80.12	40.13
2,775.40	78.70	38.71
3,238.00	78.26	38.27
3,700.60	71.09	31.10
4,163.10	70.73	30.74
4,625.70	73.57	33.58

METHOD OF MEASUREMENT: The tabulated data shows the results of the radiated field strength emissions test. The spectrum was scanned from 30 to at least the tenth harmonic of the fundamental. This test was conducted per TIA/EIA STANDARD 603 using the substitution method. Measurements were made at the open field test site of TIMCO ENGINEERING, INC. located at 849 NW State Road 45, Newberry, FL 32669.

Method of Measuring Radiated Spurious Emissions



Equipment placed 80 cm 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 for GMRS and 2.5 ppm for FRS . 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° 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° C.

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

MEASUREMENT DATA:

Assigned Frequency (Ref. Frequency): 467.662 930

TEMPERATURE C	FREQUENCY MHz	PPM
REFERENCE	467.662 930	0.00
-30C	467.662 112	-1.75
-20C	467.662 600	-0.71
-10C	467.663 700	1.65
0C	467.663 890	2.05
10C	467.663 550	1.33
20C	467.663 032	0.22
30C	467.662 580	-0.75
40C	467.662 371	-1.20
50C	467.662 490	-0.94

BATT. %	BATT. DATA	VOLTS	BATT. PPM
-15%	467.662 920	5.1	-0.02
+15%	467.662 960	6.9	0.06

RESULTS OF MEASUREMENTS: The maximum frequency variation over the temperature range was –1.75 to +2.05 ppm. The maximum frequency variation with voltage was –0.02 to +0.06 ppm.

Note: This EUT meets the frequency stability requirement for an FRS: +/- 2.5ppm over temp range of -20° C to +50 degrees C. It also meets the GMRS frequency stability requirements: +/- 5ppm over the temp range –30° C to +50° C.

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. 8/31/01 Due 8/31/02
2.__ Biconnical Antenna: Eaton Model 94455-1, S/N 1057, Cal. 10/1/01 Due 10/1/02
3.__ Biconnical Antenna: Electro-Metrics Model BIA-25, S/N 1171 Cal. 4/26/01 Due 4/26/03
4._X_Log-Periodic Antenna: Electro-Metrics Model EM-6950, S/N 632 Char. 10/15/01 Due 10/15/02
5.__ Log-Periodic Antenna: Electro-Metrics Model LPA-30, S/N 409 Char. 10/16/01 Due 10/16/02
6.__ Log-Periodic Antenna: Electro-Metrics Model LPA-25, S/N 1122 Char. 2/10/01 Due 3/10/02
7.__ Double-Ridged Horn Antenna: Electro-Metrics Model RGA-180, 1-18 GHz, S/N 2319 Cal. 12/19/01 Due 12/19/02
8.__ 18-26.3GHz Systron Donner Standard Gain Horn #DBE-520-20 No Cal Required
9.__ Horn 40-60GHz: ATM Part #19-443-6R No Cal Required
10.__ Line Impedance Stabilization Network: Electro-Metrics Model EM-7820, w/NEMA Adapter S/N 2682 Cal. 3/16/01 Due 3/16/02
11._X_Temperature Chamber: Tenney Engineering Model TTRC, S/N 11717-7 Char. 1/22/02 Due 1/22/03
12._X_Frequency Counter: HP Model 5385A, S/N 3242A07460 Char. 12/11/01 Due 12/11/02
13.__ Peak Power Meter: HP Model 8900C, S/N 2131A00545 Char. 1/26/01 Due 1/26/02
14._X_Open Area Test Site #1-3meters Cal. 12/22/99
15.__ Signal Generator: HP 8640B, S/N 2308A21464 Cal. 11/15/01 Due 11/15/02
16.__ Passive Loop Antenna: EMCO Model 6512, 9KHz to 30MHz, S/N 9706-1211 Char. 7/10/01 Due 7/10/02
17.__ Dipole Antenna Kit: Electro-Metrics Model TDA-30/1-4, S/N 152 Cal. 3/21/01 Due 3/21/02
18.__ AC Voltmeter: HP Model 400FL, S/N 2213A14499 Cal. 10/9/01 Due 10/09/02
19._X_Digital Multimeter: Fluke Model 77, S/N 35053830 Char. 1/8/02 Due 1/8/03
20.__ Oscilloscope: Tektronix Model 2230, S/N 300572 Char. 2/1/01 Due 2/1/02