TEST REPORT

of

FCC Part 2, Part 95
FCC ID : ZSFX1SLIM

Equipment Under Test	:	Chatter Box
Model Name	:	X1 Slim
Serial No.	:	N/A
Applicant	:	Vigor Sports, Inc.
Manufacturer	:	Vigor Sports, Inc.
Date of Test(s)	:	2011.07.01 ~ 2011.011.04
Date of Issue	:	2011.11.04

In the configuration tested, the EUT complied with the standards specified above.

Tested By: **Date** 2011.11.04

Duke Ko

Approved By **Date** 2011.11.04

Feel Jeong

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1. General information

1.1. Testing laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)
- 705, Dongchun-Dong Sooji-Gu, Yongin-Shi, Kyungki-Do, South Korea.
- Wireless Div. 2FL, 18-34, Sanbon-dong, Gunpo-si, Gyeonggi-do, Korea 435-040

www.ee.sgs.com/korea
Telephone : +82 +31 428 5700
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1.2. Details of applicant

Applicant : Vigor Sports, Inc.
Address : 16918 Edwards Road Cerritos, CA 90703, USA
Contact Person : Mike Lee
Phone No. : +1 +562 407 2184 (x311)
Fax No. : +1 +213 949 4190

1.3. Description of EUT

Kind of Product	Chatter Box
Model Name	X1 Slim
Serial Number	N/A
Power Supply	DC 3.7 V
Rated Power	GMRS : 27 dBm E.R.P. FRS : 22 dBm E.R.P.
RF output power	GMRS : 26.62 dBm E.R.P. FRS : 21.97 dBm E.R.P.
Frequency Range	Bluetooth : 2 402 ㎒ ~ 2 480 ㎒ GMRS : 462.55 ㎒ ~ 462.725 ㎒ FRS : 462.5625 ㎒ ~ 467.7125 ㎒
Number of channel	Bluetooth : 79 GMRS : 8 FRS : 14

1.4. Declaration by the manufacturer

- The EUT does not do anything at charging mode.
- Manufacturer declares operating temperature : -10 ~ 55 degree C

1.4. Test equipment list

Equipment	Manufacturer	Model	S/N	Cal Due.
Signal Generator	Agilent	E4438C	MY42082477	Mar. 31, 2012
Spectrum Analyzer	R & S	FSV30	100768	Mar. 31, 2012
Spectrum Analyzer	Agilent	E4440A	MY43362142	May 18, 2012
Frequency Counter	Anritsu	MF2414B	6200264513	Jul. 04. 2012
Temperature Chamber	Hangil Technics	HGTP-4050	HGTP-4050-04-01	Sep. 27. 2012
Audio Analyzer	H.P.	8903B	3011A08987	Jul. 04. 2012
Modulation Analyzer	H.P.	8901B	3226A04314	Sep. 27. 2012
High Pass Filter	Mini-Circuits	NHP-800	V8207600724	Mar. 30, 2012
DC power Supply	Agilent	U8002A	MY49030063	Jan. 05, 2012
Preamplifier	H.P.	8447F	2944A03909	Jul. 04, 2012
Preamplifier	Agilent	8449B	3008A01932	Mar. 31, 2012
Test Receiver	R & S	ESU26	100109	Feb. 21, 2012
Bilog Antenna	SCHWARZBECK MESSELEKTRONIK	VULB9163	390	Apr. 27, 2013
Horn Antenna	R & S	HF 906	100326	Oct. 08, 2013
Horn Antenna	SCHWARZBECK	BBHA 9120D	138	Nov. 09, 2011
Dipole Antenna	SCHWARZBECK	VHA 9103	9103-2817	May 24, 2013
Dipole Antenna	SCHWARZBECK	UHA 9105	9105-2514	May 24, 2013
Antenna Master	EMCO	1050	N.C.R.	N.C.R.
Turn Table	Daeil EMC	DI-1500	N.C.R.	N.C.R.
Anechoic Chamber	SY Corporation	L × W × H (9.6 m × 6.4 m × 6.6 m)	N.C.R.	N.C.R.

1.6. Summary of test results

The EUT has been tested according to the following specifications:

APPLIED STANDARD : FCC Part 2, 95		
Section in FCC part	**Test Item**	**Result**
§2.1053 §95.639(a),(d) §95.635(b)	RF Output Power and Unwanted Radiation	Complied
§2.1047 §95.637	Modulation Characteristics	Complied
§2.1049 §95.633(a),(c)	Emission Bandwidth	Complied
§2.1055 §95.621(b) §95.627(b)	Frequency Tolerance	Complied
§2.201 §2.1033(c)(4) §95.631(a),(d)	Emission types	Complied

1.8. Conclusion of worst-case for each mode of representative channel respectively

The EUT has 2 type of mode (GMRS and FRS). Each conducted output power as following:

Mode	Rated Power (W)	Channel	Frequency (㎒)	Output power (W)
FRS	0.5	1	462.5625	0.23
		2	462.5875	0.23
		3	462.6125	0.22
		4	462.6375	0.21
		5	462.6625	0.21
		6	462.6875	0.21
		7	462.7125	0.23
GMRS	2.0	8	462.5750	0.66
		9	**462.6250**	**0.86**
		10	462.6750	0.79
		11	462.5500	0.75
		12	462.6000	0.76
		13	462.6500	0.77
		14	462.7000	0.78
		15	462.7250	0.70
FRS	0.5	**16**	**467.5625**	**0.29**
		17	467.5875	0.29
		18	467.6125	0.29
		19	467.6375	0.26
		20	467.6625	0.27
		21	467.6875	0.21
		22	467.7125	0.22

Therefore all applicable requirements were tested to the two channels, the 9th for GMRS and the 16th for FRS. The field strength of spurious emission was measured in three orthogonal EUT positions(x-axis, y-axis and z-axis). Worst case is z-axis.

1.9. Test report revision

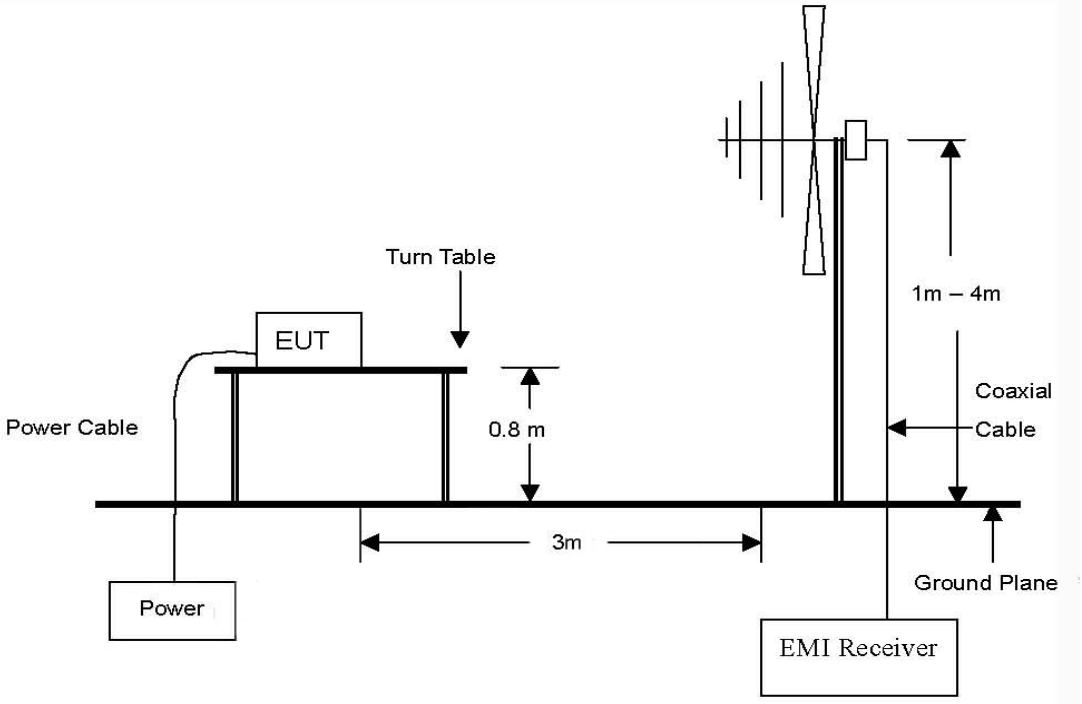
Revision	Report number	Description
0	F690501/RF-RTL004855	Initial
1	F690501/RF-RTL004855-1	- Change Rated power p.3 - Record audio input signal p.8 - Remove RF Exposure
2	F690501/RF-RTL004855-2	- Change Rated power p.3 - Update test procedure p.10 - Retest and record conducted unwanted radiation p.13

2. RF Output Power and Unwanted Radiation

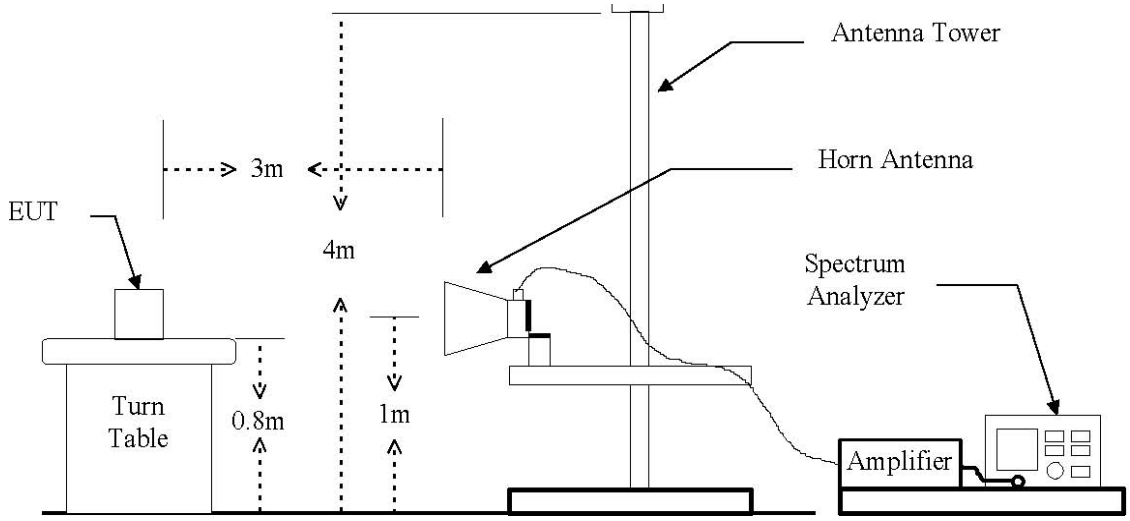
2.1. Test setup

2.1.1. RF Output Power and Unwanted Radiation ERP

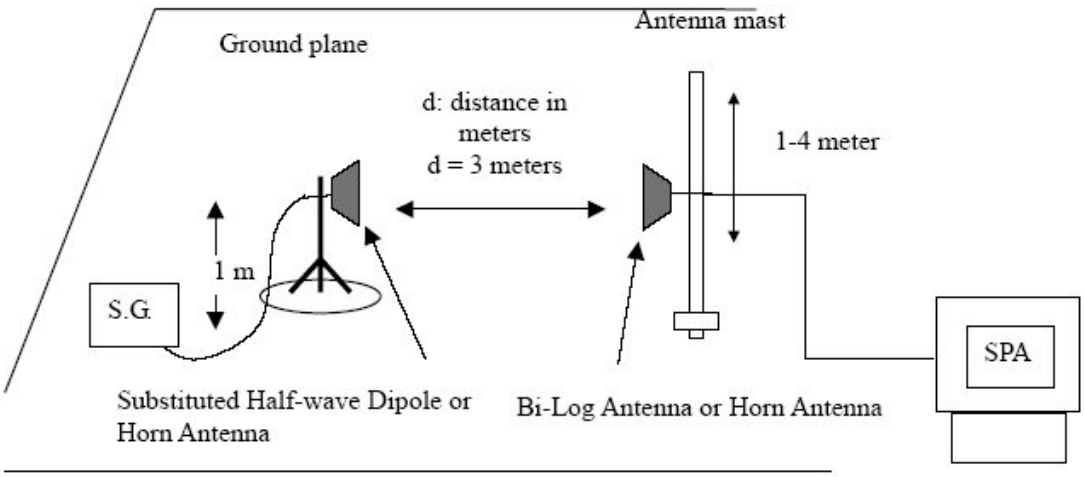
The diagram below shows the test setup that is utilized to make the measurements for emission from 30 ㎒ to 1 ㎓ Emissions.



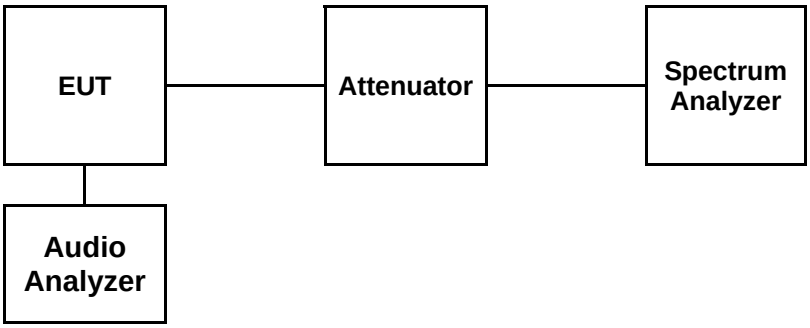
The diagram below shows the test setup that is utilized to make the measurements for emission from 1 ㎓ to 18 ㎓ Emissions.



The diagram below shows the test setup for substituted metho;d



2.1.2. Conducted Unwanted Radiation



Audio Signal input : -21.4 dBm

2.2. Limit

2.2.1. RF Output Power

FCC §95.639

(a) No GMRS transmitter, under any condition of modulation, shall exceed:

(1) 50 W *Carrier power* (average TP during one unmodulated RF cycle) when transmitting emission type A1D, F1D, G1D, A3E, F3E or G3E.

(d) No FRS unit, under any condition of modulation, shall exceed 0.500 W effective radiated power (ERP).

2.2.2. Unwanted Radiation

FCC §95.635

(b) The power of each unwanted emission shall be less than TP as specified in the applicable paragraphs listed :

(1) At least 25 dB (decibels) on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 100% of the authorized bandwidth.
(3) At least 35 dB on any frequency removed from the center of the authorized bandwidth by more than 100% up to and including 250% of the authorized bandwidth.
(7) At least 43 + 10 log10(T) dB on any frequency removed from the center of the authorized bandwidth by more than 250%.

2.3. Test Procedures

Radiated emissions from the EUT were measured according to the dictates of ANSI C63.4:2003.

Conducted Unwanted Emission were measured according to the dictates of ANSI TIA-603-D.

2.3.1. RF Output Power and Unwanted Radiation ERP

1. On a test site, the EUT shall be placed at 80cm height on a turn table, and in the position close to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarization located 3 m from EUT to correspond to the fundamental frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.
4. During the measurement of the EUT, the resolution bandwidth was to 1 ㎒ and the video bandwidth was set to 1 ㎒.
5. The transmitter shall be switched on; the measuring receiver shall be tuned to the frequency of the transmitter under test.
6. The test antenna shall be raised and lowered through the specified range of height until the maximum signal level is detected by the measuring receiver.
7. The transmitter shall be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
8. The test antenna shall be raised and lowered again through the specified range of height until the maximum signal level is detected by the measuring receiver.
9. The maximum signal level detected by the measuring receiver shall be noted.
10. The EUT was replaced by half-wave dipole or horn antenna connected to a signal generator.
11. In necessary, the input attenuator setting on the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
12. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
13. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring received, which is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
14. The input level to the substitution antenna shall be recorded as power level in ㏈m, corrected for any change of input attenuator setting of the measuring receiver.
15. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.

2.3.2. Conducted Unwanted Radiation

1. The transmitter output was connected to the spectrum analyzer.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Modulation Analyzer.
3. Connect the microphone of EUT to the Audio Analyzer.
4. Standard test modulation is a 2500 Hz input signal at a level that produce 50 % of rated system deviation.
5. Change a input level to 16 dB greater than that produce 50 % of rated system deviation.
6. Repeat Step 4 respectively.

2.4. RF radiated output power

Ambient temperature : (24 ± 2) ℃
Relative humidity : 47 % R.H.

2.4.1. GMRS

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + AMP (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
462.625 0	V	31.71	3.78	-1.31	26.62	459.20
462.625 0	H	18.10	3.78	-1.31	13.02	20.04

2.4.2. FRS

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + AMP (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
467.562 5	V	26.99	3.79	-1.23	21.97	157.40
467.562 5	H	12.66	3.79	-1.23	7.65	5.82

Remark:
1. E.R.P. = [S.G level + Amp.](dBm) - Cable loss(dB) + Ant. gain (dBd)
2. The E.R.P. was measured in three orthogonal EUT position(x-axis, y-axis and z-axis). Worst case is z-axis.

2.5. Unwanted Radiation ERP

2.5.1. GMRS

- Channel : 18 (462.625 ㎒)
- Measured output Power : 26.62 ㏈m = 0.46 W
- Distance : 3 meters
- Limit : -(43 + 10log$_{10}$(W)) = -39.62 ㏈c

Frequency (㎒)	Ant. Pol. (H/V)	S.G level +Amp. (㏈m)	Cable loss (㏈)	Ant. gain (㏈d)	E.R.P. (㏈m)	㏈c	Margin (㏈)
1 387.90	V	-70.59	4.17	5.44	-69.32	-95.94	56.32
1 387.90	H	-71.48	4.17	5.44	-70.21	-96.83	57.21
1 850.84	V	-75.45	4.87	6.97	-73.35	-99.97	60.35
1 850.84	H	-78.06	4.87	6.97	-75.96	-102.58	62.96
Above 1 900.00	Not detected	-	-	-	-	-	-

2.5.2. FRS

- Channel : 8 (467.5625 ㎒)
- Measured output Power : 21.97 ㏈m = 0.16 W
- Distance : 3 meters
- Limit : -(43 + 10log$_{10}$(W)) = -34.97 ㏈c

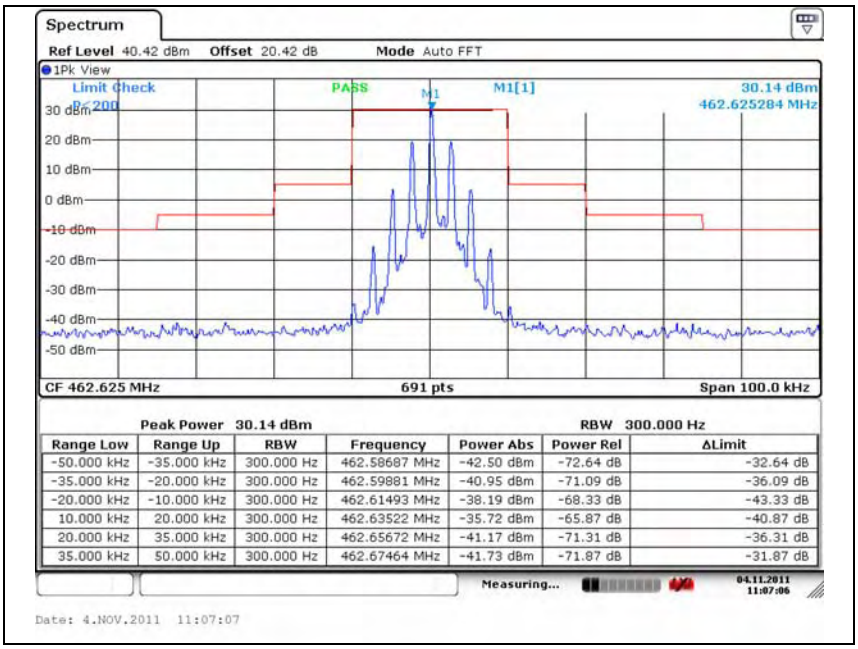
Frequency (㎒)	Ant. Pol. (H/V)	S.G level (㏈m)	Cable loss (㏈)	Ant. gain (㏈d)	E.R.P. (㏈m)	㏈c	Margin (㏈)
1 402.80	V	-75.83	4.19	5.52	-74.50	-101.12	61.50
1 402.80	H	-73.92	4.19	5.52	-72.59	-99.21	59.59
1 870.25	V	-79.22	4.89	7.02	-77.09	-103.71	64.09
1 870.25	H	-80.58	4.89	7.02	-78.45	-105.07	65.45
Above 1 900.00	Not detected	-	-	-	-	-	-

Remark:
1. E.R.P. = S.G level (㏈m) - Cable loss (㏈) + Ant. gain (㏈d)

2.5. Conducted Unwanted Radiation

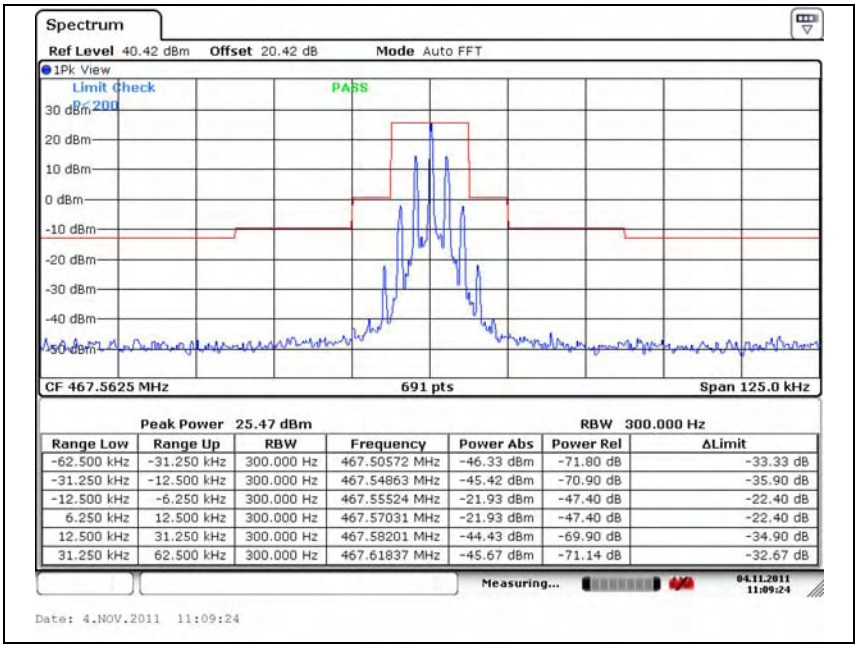
2.5.1. Emission Mask

2.5.1.1 GMRS



Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-50.000 kHz	-35.000 kHz	300.000 Hz	462.58687 MHz	-42.50 dBm	-72.64 dB	-32.64 dB
-35.000 kHz	-20.000 kHz	300.000 Hz	462.59881 MHz	-40.95 dBm	-71.09 dB	-36.09 dB
-20.000 kHz	-10.000 kHz	300.000 Hz	462.61493 MHz	-38.19 dBm	-68.33 dB	-43.33 dB
10.000 kHz	20.000 kHz	300.000 Hz	462.63522 MHz	-35.72 dBm	-65.87 dB	-40.87 dB
20.000 kHz	35.000 kHz	300.000 Hz	462.65672 MHz	-41.17 dBm	-71.31 dB	-36.31 dB
35.000 kHz	50.000 kHz	300.000 Hz	462.67464 MHz	-41.73 dBm	-71.87 dB	-31.87 dB

2.5.1.2 FRS

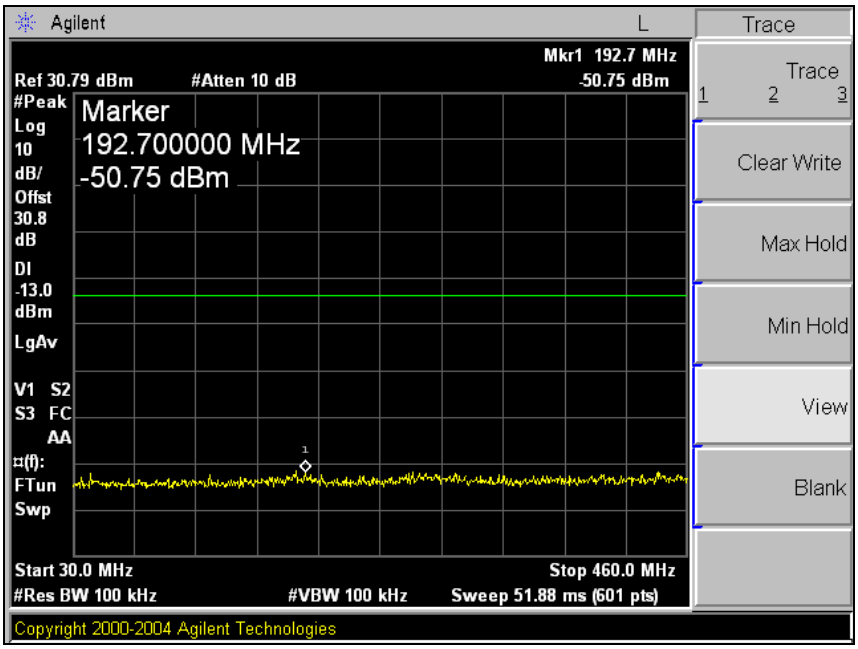


Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-62.500 kHz	-31.250 kHz	300.000 Hz	467.50572 MHz	-46.33 dBm	-71.80 dB	-33.33 dB
-31.250 kHz	-12.500 kHz	300.000 Hz	467.54863 MHz	-45.42 dBm	-70.90 dB	-35.90 dB
-12.500 kHz	-6.250 kHz	300.000 Hz	467.55524 MHz	-21.93 dBm	-47.40 dB	-22.40 dB
6.250 kHz	12.500 kHz	300.000 Hz	467.57031 MHz	-21.93 dBm	-47.40 dB	-22.40 dB
12.500 kHz	31.250 kHz	300.000 Hz	467.58201 MHz	-44.43 dBm	-69.90 dB	-34.90 dB
31.250 kHz	62.500 kHz	300.000 Hz	467.61837 MHz	-45.67 dBm	-71.14 dB	-32.67 dB

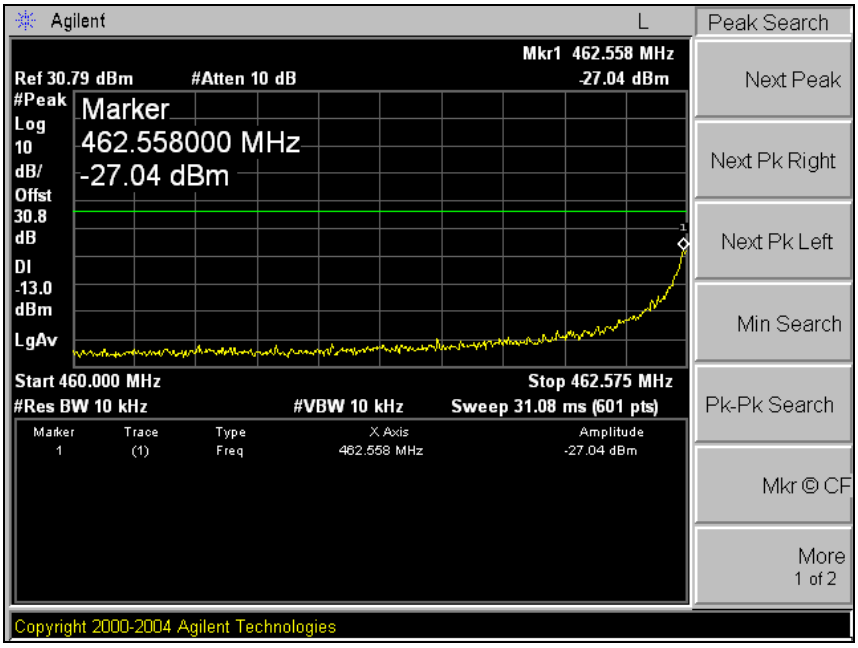
2.5.2. Spurious Emission

2.5.2.1 GMRS

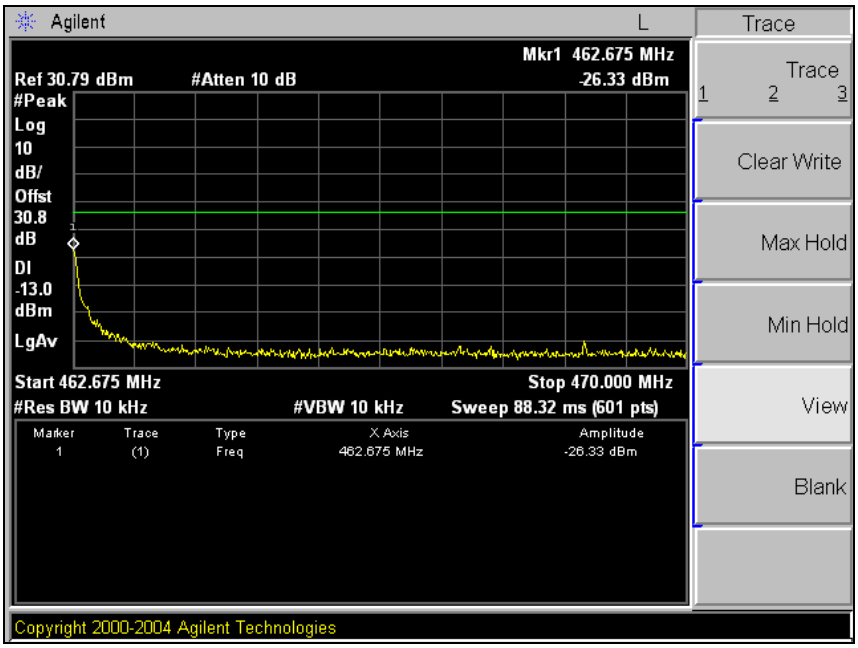
30 MHz ~ 460 MHz



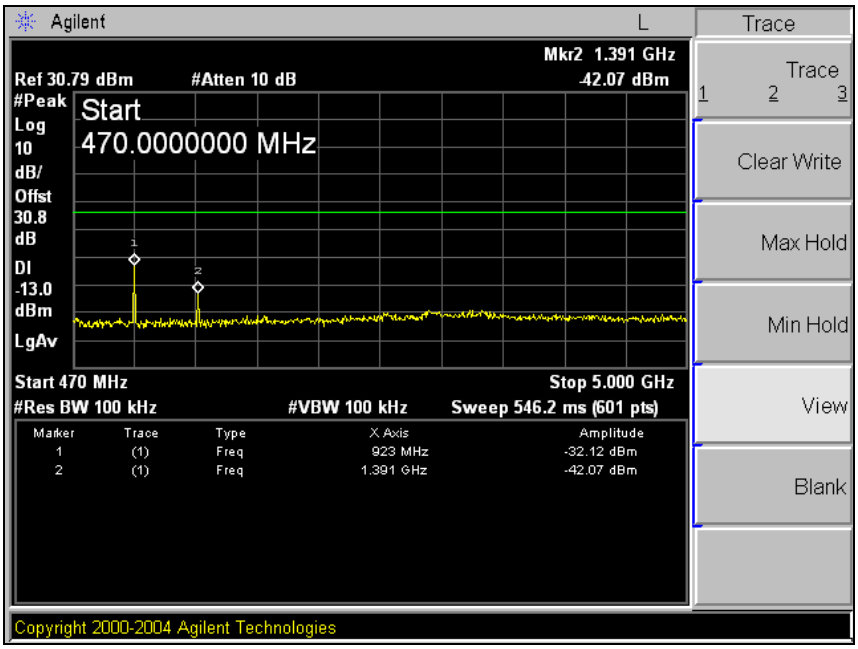
460 MHz ~ 462.575 MHz



462.675 MHz ~ 470 MHz

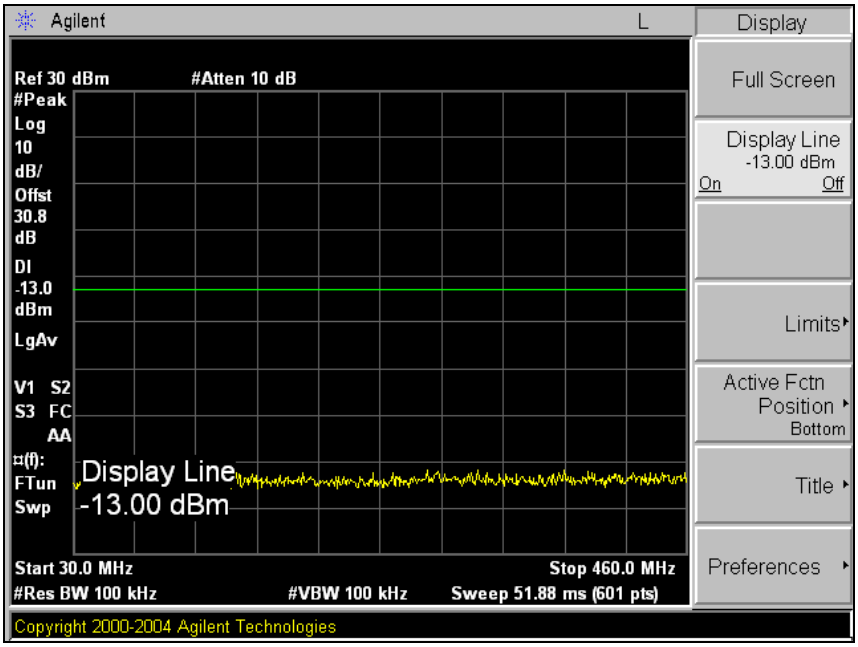


470 MHz ~ 5 GHz

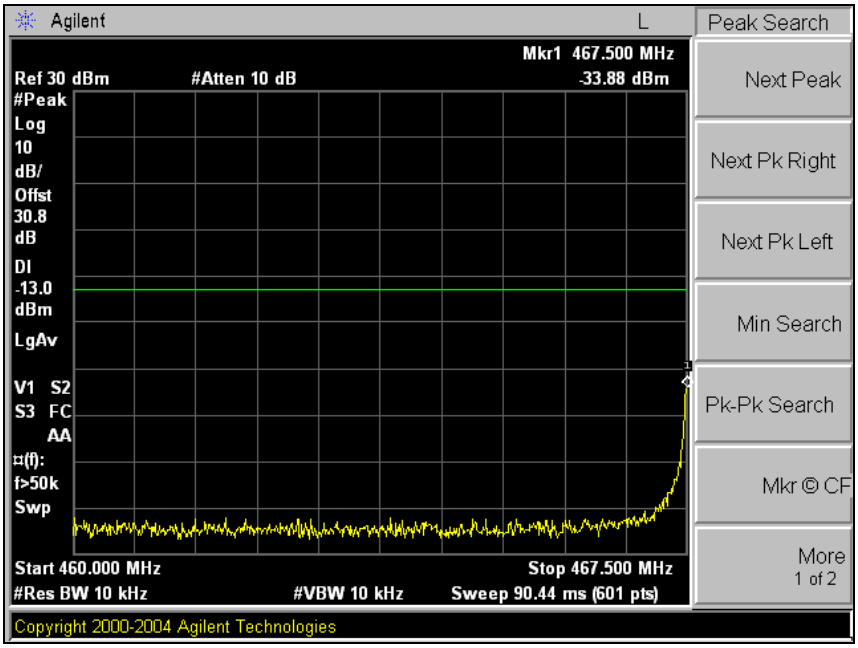


2.5.2.2. FRS

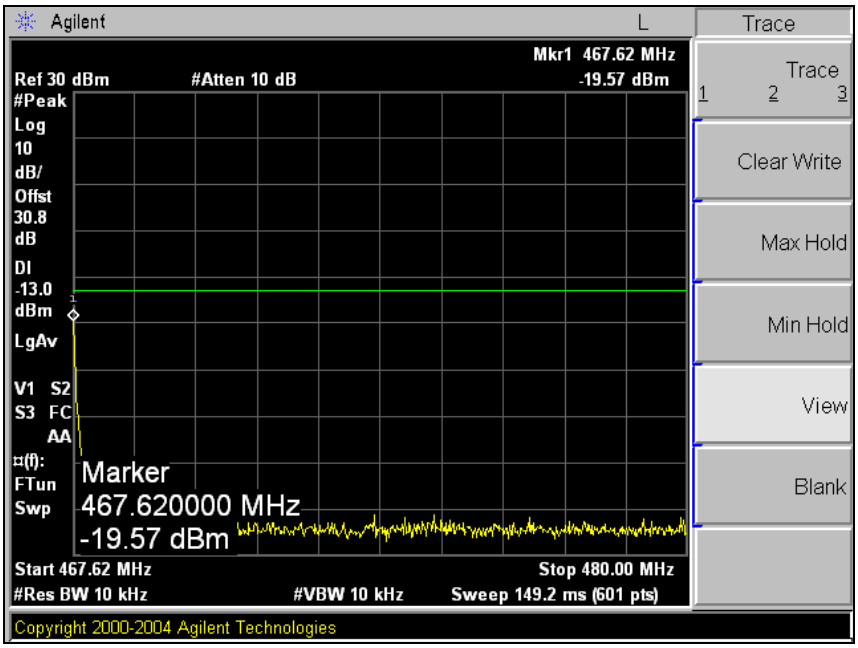
30 MHz ~ 460 MHz



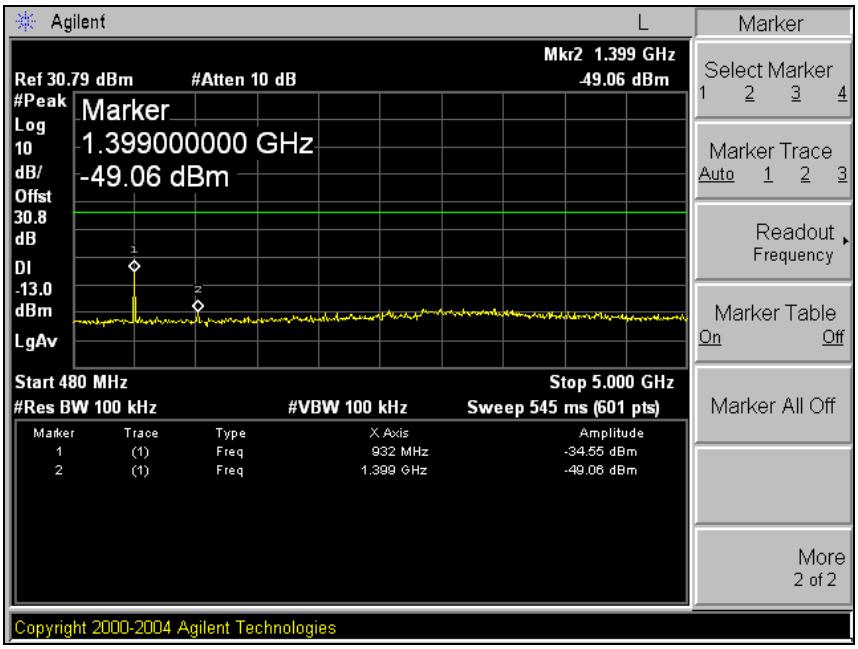
460 MHz ~ 467.500 MHz



467.620 MHz ~ 480 MHz



480 MHz ~ 5 GHz



3. Modulation Characteristics

3.1. Limit

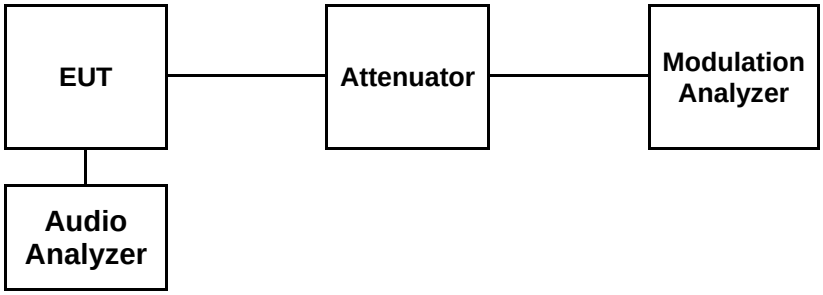
FCC §95.637

(a) A GMRS transmitter that transmits emission types F1D, G1D, or G3E must not exceed a peak frequency deviation of plus or minus 5 kHz. A GMRS transmitter that transmits emission type F3E must not exceed a peak frequency deviation of plus or minus 5 kHz. A FRS unit that transmits emission type F3E must not exceed a peak frequency deviation of plus or minus 2.5 kHz, and the audio frequency response must not exceed 3.125 kHz .

(b) Each GMRS transmitter, except a mobile station transmitter with a power output of 2.5 W or less, must automatically prevent a greater than normal audio level from causing overmodulation. The transmitter also must include audio frequency low pass filtering, unless it complies with the applicable paragraphs of §95.631 (without filtering.) The filter must be between the modulation limiter and the modulated stage of the transmitter. At any frequency (f in kHz) between 3 and 20 kHz, the filter must have an attenuation of at least 60 log10(f/3) dB greater than the attenuation at 1 kHz. Above 20 kHz, it must have an attenuation of at least 50 dB greater than the attenuation at 1 kHz.

3.2. Test Procedure

1. Set up the test equipment in the following configuration :



2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Modulation Analyzer.
3. Connect the microphone of EUT to the Audio Analyzer.

3.2.1. Frequency Deviation

1. Standard test modulation is a 1000 Hz input signal at a level that produces 60 % of full rated system deviation.
2. Change a input level from -25 dB to 25 dB as 5 dB scale and record the frequency deviation.
3. Generate audio signal 300 Hz and 3 kHz.
4. Repeat Step 2 respectively.

3.2.2. Audio Frequency Response

1. Standard test modulation is a 1000 Hz input signal at a level that produces 20 % of full rated system deviation.
2. Generate audio signal from 100 Hz to 5 kHz and record the frequency deviation.
3. Calculate and record the audio frequency response at the present frequency as :

audio frequency response = 20 log ($DEV_{Freq.}$/$DEV_{Ref.}$)

3.3. Test Result

Ambient temperature : (24 ± 2) ℃
Relative humidity : 47 % R.H.

3.3.1. Frequency Deviation

3.3.1.1. GMRS

Audio Input Level Relative (dB)	Positive Peak Deviation (㎑)			Negative Peak Deviation (㎑)		
	300 ㎐	1 000 ㎐	3 000 ㎐	300 ㎐	1 000 ㎐	3 000 ㎐
-20	0.09	0.19	0.27	0.10	0.19	0.28
-15	0.13	0.32	0.45	0.13	0.31	0.46
-10	0.15	0.52	0.74	0.15	0.50	0.75
-5	0.23	0.87	1.24	0.23	0.90	1.24
0	0.37	1.50	1.56	0.38	1.50	1.57
5	0.62	2.08	1.50	0.63	2.10	1.51
10	1.03	2.15	1.51	1.00	2.14	1.50
15	2.01	2.19	1.55	2.02	2.18	1.55
20	2.46	2.15	1.51	2.48	2.14	1.56

3.3.1.2. FRS

Audio Input Level Relative (dB)	Positive Peak Deviation (㎑)			Negative Peak Deviation (㎑)		
	300 ㎐	1 000 ㎐	3 000 ㎐	300 ㎐	1 000 ㎐	3 000 ㎐
-20	0.10	0.21	0.06	0.09	0.20	0.06
-15	0.12	0.33	0.07	0.12	0.32	0.06
-10	0.15	0.51	0.07	0.16	0.51	0.07
-5	0.23	0.91	0.07	0.23	0.89	0.07
0	0.36	1.50	1.39	0.36	1.50	1.41
5	0.61	1.97	1.41	0.62	1.98	1.43
10	1.22	2.02	1.41	1.24	2.02	1.40
15	2.32	2.04	1.40	2.34	2.04	1.41
20	2.25	2.01	1.42	2.26	2.02	1.41

3.2.2. Audio Frequency Response for FRS

Modulation Frequency (㎐)	Deviation (㎑)	Response (㏈)
100	0.02	-27.96
200	0.02	-27.96
300	0.11	-13.15
400	0.19	-8.40
500	0.26	-5.68
600	0.31	-4.15
700	0.36	-2.85
800	0.41	-1.72
900	0.45	-0.92
1 000	0.50	0.00
1 250	0.61	1.73
1 500	0.72	3.17
1 750	0.83	4.40
2 000	0.93	5.39
2 250	0.99	5.93
2 500	1.00	6.02
2 750	0.92	5.30
3 000	0.71	3.05
3 125	0.56	0.98
3 250	0.42	-1.51
3 500	0.18	-8.87
4 000	0.02	-27.96
5 000	0.02	-27.96

4. Emission Bandwidth

4.1. Limit

FCC §90.379,

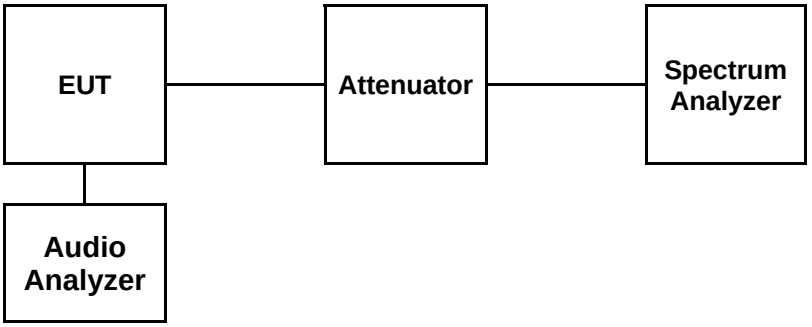
(a) The *authorized bandwidth* (maximum permissible bandwidth of a transmission) for emission type H1D, J1D, R1D, H3E, J3E or R3E is 4 kHz. The authorized bandwidth for emission type A1D or A3E is 8 kHz. The authorized bandwidth for emission type F1D, G1D, F3E or G3E is 20 kHz.

(c) The authorized bandwidth for emission type F3E or F2D transmitted by a FRS unit is 12.5 kHz.

4.2. Test Procedure

1. The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

2. The resolution bandwidth of the spectrum analyzer was set. Occupied Bandwidth 99 % was tested under



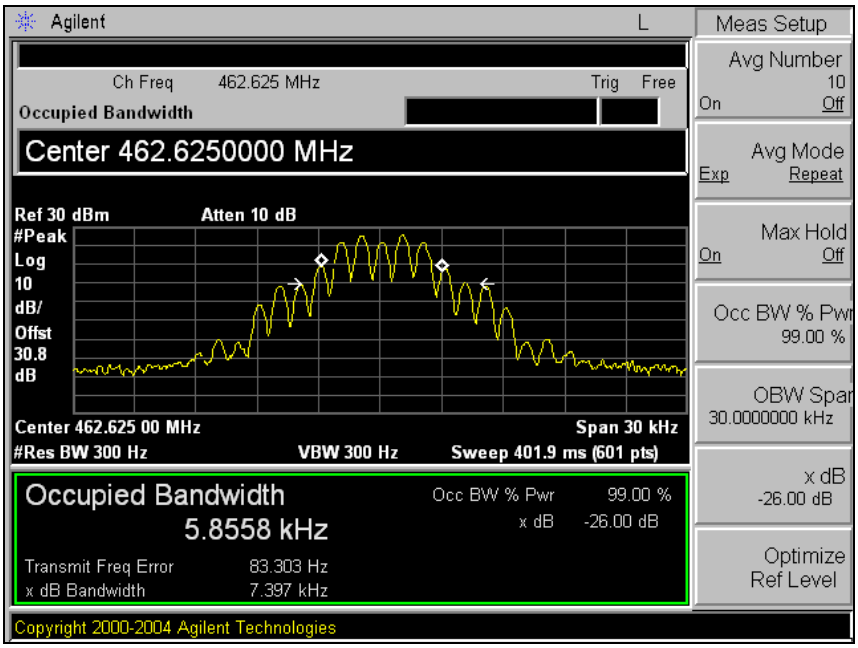
4.3 Test Results

Ambient temperature : (24 ± 2) ℃
Relative humidity : 47 % R.H.

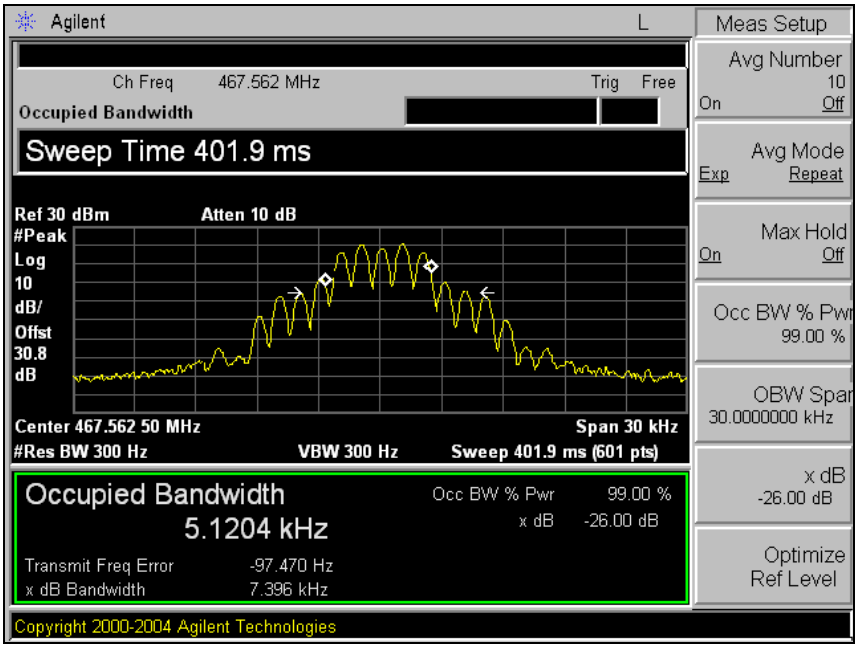
Mode	Frequency (㎒)	Occupied Bandwidth (㎑)
GMRS	462.625 0	5.86
FRS	467.562 5	5.12

Please refer to the following plots.

GMRS : 462.625 ㎒



FRS : 467.5625 ㎒



5. Frequency Tolerance

5.1. Limit

FCC §95.621,

(b) Each GMRS transmitter for mobile station, small base station and control station operation must be maintained within a frequency tolerance of 0.0005%. Each GMRS transmitter for base station (except small base), mobile relay station or fixed station operation must be maintained within a frequency tolerance of 0.00025%.

FCC §95.627,

(b) Each FRS unit must be maintained within a frequency tolerance of 0.00025%.

5.2. Test Procedure

1. Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to a frequency counter via feed-through attenuators.
2. The EUT was placed inside the temperature chamber.
3. After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the counter.

5.3. Test Results

Ambient temperature : (24 ± 2) ℃
Relative humidity : 47 % R.H.

5.3.1. GMRS

Extreme test at middle channel (462.625 0 ㎒)

Frequency Stability versus Temperature			
Environment Temperature (℃)	**Power Supplied (Vdc)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**%**
50	3.7	462.625 099	0.000 021
40		462.625 138	0.000 029
30		462.625 178	0.000 038
24		462.625 216	0.000 047
10		462.625 168	0.000 036
0		462.625 086	0.000 019
-10		462.625 044	0.000 010
-20		462.624 923	-0.000 017
-30		462.624 965	-0.000 008
Frequency Stability versus power Supply			
Environment Temperature (℃)	**Power Supplied (Vdc)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**%**
24	4.255	462.625 215	0.000 046
	3.01 (batt. End point)	462.624 092	0.000 196

5.3.2. FRS

Extreme test at middle channel (467.562 5 ㎒)

Frequency Stability versus Temperature			
Environment Temperature (℃)	**Power Supplied (Vdc)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**%**
50	3.7	467.562 597	0.000 021
40		467.562 645	0.000 031
30		467.562 678	0.000 038
24		467.562 700	0.000 043
10		467.562 668	0.000 036
0		467.562 602	0.000 022
-10		467.562 491	-0.000 002
-20		467.562 440	-0.000 013
-30		467.562 547	0.000 010
Frequency Stability versus power Supply			
Environment Temperature (℃)	**Power Supplied (Vdc)**	**Frequency Measure with Time Elapse**	
		Frequency Error (Hz)	**ppm**
24	4.255	467.562 702	0.000 043
	3.01 (batt. End point)	467.561 856	-0.000 138

6. Emission Designator

6.1. Definition

FCC §2.201,

The following system of designating emission, modulation, and transmission characteristics shall be employed.

(a) Emissions are designated according to their classification and their necessary bandwidth.

(b) Three symbols are used to describe the basic characteristics of emissions. Emissions are classified and symbolized according to the following characteristics:

(1) First symbol—type of modulation of the main carrier;
(2) Second symbol—nature of signal(s) modulating the main carrier;
(3) Third symbol—type of information to be transmitted.

FCC §2.202,

B_n = Necessary bandwidth in hertz
M = Maximum modulation frequency in hertz
D = Peak frequency deviation, i.e., half the difference between the maximum and minimum values of the instantaneous frequency. The instantaneous frequency in hertz is the time rate of change in phase in radians divided by 2
K = An overall numerical factor which varies according to the emission and which depends upon the allowable signal distortion.

6.2. Type of Emission

- First symbol : Frequency modulation - F
- Second symbol : A single channel containing analogue information - 3
- Third symbol : Telephony (including sound broadcasting) - E

Bn = 2M + 2DK

K = 1 (typically), M = 3 k, D = 2.5 k

Bn = 2 * 3000 + 2 * 2500 = 11 k

Therefore, the emission designator is : **11K0F3E**