

FCC Part 95 & IC RSS-210 Test Report

For

UHF FM TRANSCEIVER

Model Name: SC1000

Brand Name: SCRAMBLER

FCC ID: B4HSC1000

IC: 3064A-SC1000

Report No.: AGC10081004SZ07E6

Date of Issue: May 05, 2010

Prepared For

PORTA PHONE CO., INC

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VERIFICATION OF COMPLIANCE

Applicant:	PORTA PHONE CO., INC
	145 DEAN KNAUSS DRIVE NARRAGANSETT, RI, 02882
Manufacturer:	PORTA PHONE CO., INC
	145 DEAN KNAUSS DRIVE NARRAGANSETT, RI, 02882
Product Description:	UHF FM TRANSCEIVER
Brand Name:	SCRAMBLER
Model Number:	SC1000
File Number:	AGC10081004SZ07E6
Date of Test:	Apr. 25 to May 05, 2010

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance Co., Ltd. The data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C 63.4:2009 and TIA/EIA 603 and IC RSS-210. The sample tested as described in this report is in compliance with the FCC Rules Part 95

The test results of this report relate only to the tested sample identified in this report.

Checked By: Jekey Zhang
Jekey Zhang May 05, 2010

Authorized By King Zhang
King Zhang May 05, 2010

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

The EUT is a single channel Two-way Radio designed for voice communication. It is designed by way of utilizing the FM modulation achieves the system operating.

A major technical description of EUT is described as following:

Communication Type	Voice / Tone only
Modulation	FM(F3E)
Emission Type	10K5F3E
Emission Bandwidth	10.09KHz/ (Limite:11.25KHz)
Peak Frequency Deviation	1.07 KHz for 12.5 KHz Channel Separation (Limit \leq \pm 2.5 KHz)
Audio Frequency Response	1.76 KHz (Limit \leq 3.125 KHz)
Maximum Transmitter Power	0.38W(25.8 dBmw)for 12.5 KHz Channel Separation
Output power Modification	0.5W (It was fixed by the manufacturer, any individual can't arbitrarily change it)
Antenna Designation	Internal Antenna, It isn't detachable
Power Supply	DC 7.2V by battery
Battery Endpoint	DC 7.2V
Operation Frequency Range and Channel	Frequency Range: 462.5625MHz to 467.7125MHz
	Top Channel: 467.7125MHz Centre Channel:467.5625MHz Bottom Channel:462.5625MHz
Frequency Tolerance	1.014 ppm for 12.5 KHz Channel Separation

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for FCC ID: **B4HSC1000**, filing to comply with the FCC Part 95 IC: 3064A-SC1000, filing to comply with RSS-210.

1.3 TEST METHODOLOGY

The radiated emission testing was performed according to the procedures of ANSI C 63.4: 2009; TIA/EIA 603 and FCC CFR 47 Rules of 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057 ; RSS-210.

1.4 TEST FACILITY

The test site used to collect the radiated data is located on the address of Shenzhen EMTEK Technology Co., Ltd. The test site is 3m anechoic chamber and calibrated to meet the FCC requirements in documents ANSI C63.4: 2009.

1.5 SPECIAL ACCESSORIES

Not available for this EUT intended for grant.

1.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

2. SYSTEM TEST CONFIGURATION

2.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT EXERCISE

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

2.3 CONFIGURATION OF TESTED SYSTEM

Fig. 2-1 Configuration of Tested System



Table 2-1 Equipment Used in Tested System

Item	Equipment	Model No.	Identifier	Note
1	UHF FM TRANSCEIVER	SC1000	FCC ID: B4HSC1000	EUT
--	--	--	--	--
--	--	--	--	--

3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.207	Conducted Emission	Compliant
§95.621	Frequency Tolerance	Compliant
§2.1047	Modulation Characteristic	Compliant
§95.635	Emission Bandwidth	Compliant
§95.635	Unwated Radiation	Compliant
§2.1033	RF Power output	Compliant
§15.209	Radiated Emission on Receiving Mode	Compliant

4. DESCRIPTION OF TEST MODES

The EUT (UHF FM TRANSCEIVER) has been tested under normal operating condition. The top channel, the middle channel and the bottom channel are chosen for testing at each channel separation (12.5 KHz).

EMISSION DESIGNATOR AND FREQUENCIES

2.1033(c) (4) Type of Emission: 10K5F3E

95.631

$B_n = 2M + 2DK$

$M = 3000$

$D = 2.25K$

$B_n = 2(3000) + 2(2250) = 10.5K$

FRS Authorized Bandwidth 12.5 kHz

2.1033(c)(5) FRS Frequency Range:

95.627

- | | |
|-------------|------------------|
| 1. 462.5625 | 8. 467.5625 |
| 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 |

5. CONDUCTED LIMITS

5.1 PROVISIONS APPLICABLE

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the, the radio frequency voltage that is conducted back onto the AC power line on any frequencies within the band 150 KHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50uH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequencies ranges.

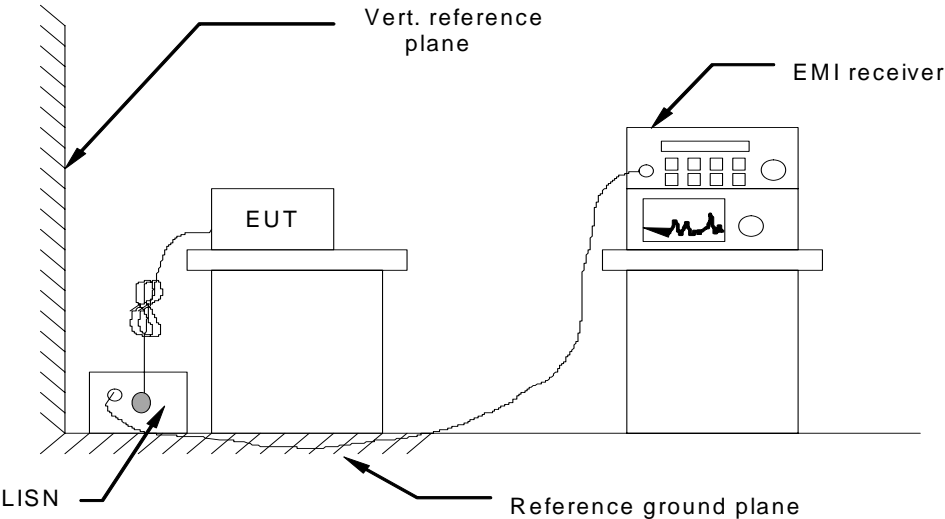
Frequency of Emission (MHz)	Conducted Limit(dBuV)	
	Quasi-Peak	Average
0.15 – 0.5	66 to 56 *	56 to 46 *
0.5 – 5	56	46
5 – 30	60	50

* Decreases with the logarithm of the frequency.

5.2 MEASUREMENT PROCEDURE

- (1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- (2) Support equipment, if needed, was placed as per ANSI C63.4.
- (3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- (4) The EUT received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- (5) All support equipments received AC power from a second LISN, if any.
- (6) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- (7) Analyzer / Receiver scanned from 150kHz to 30MHz for emissions in each of the test modes.
During the above scans, the emissions were maximized by cable manipulation.

5.3 TEST SETUP BLOCK DIAGRAM

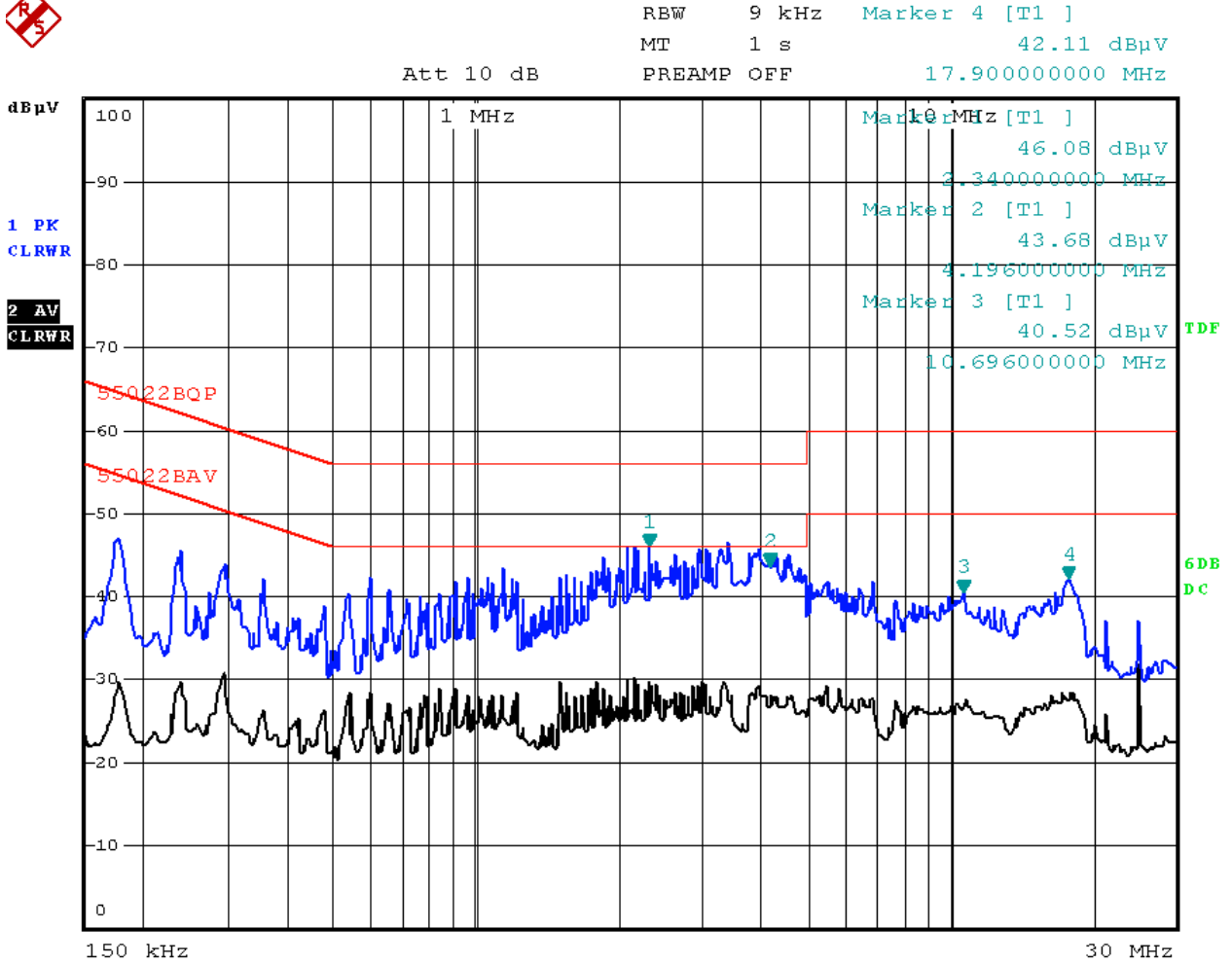


5.4 TEST EQUIPMENT USED

Conducted Emission Test Site				
Name of Equipment	Manufacturer	Model	Serial Number	Cal. Date
TEST RECEIVER	R&S	FCKL1528	A0304230	2010.06
LISN	SCHWARZBECK	NSLK8127	A0304233	2010.06

5.5 TEST RESULT

LINE CONDUCTED EMISSION TEST-L



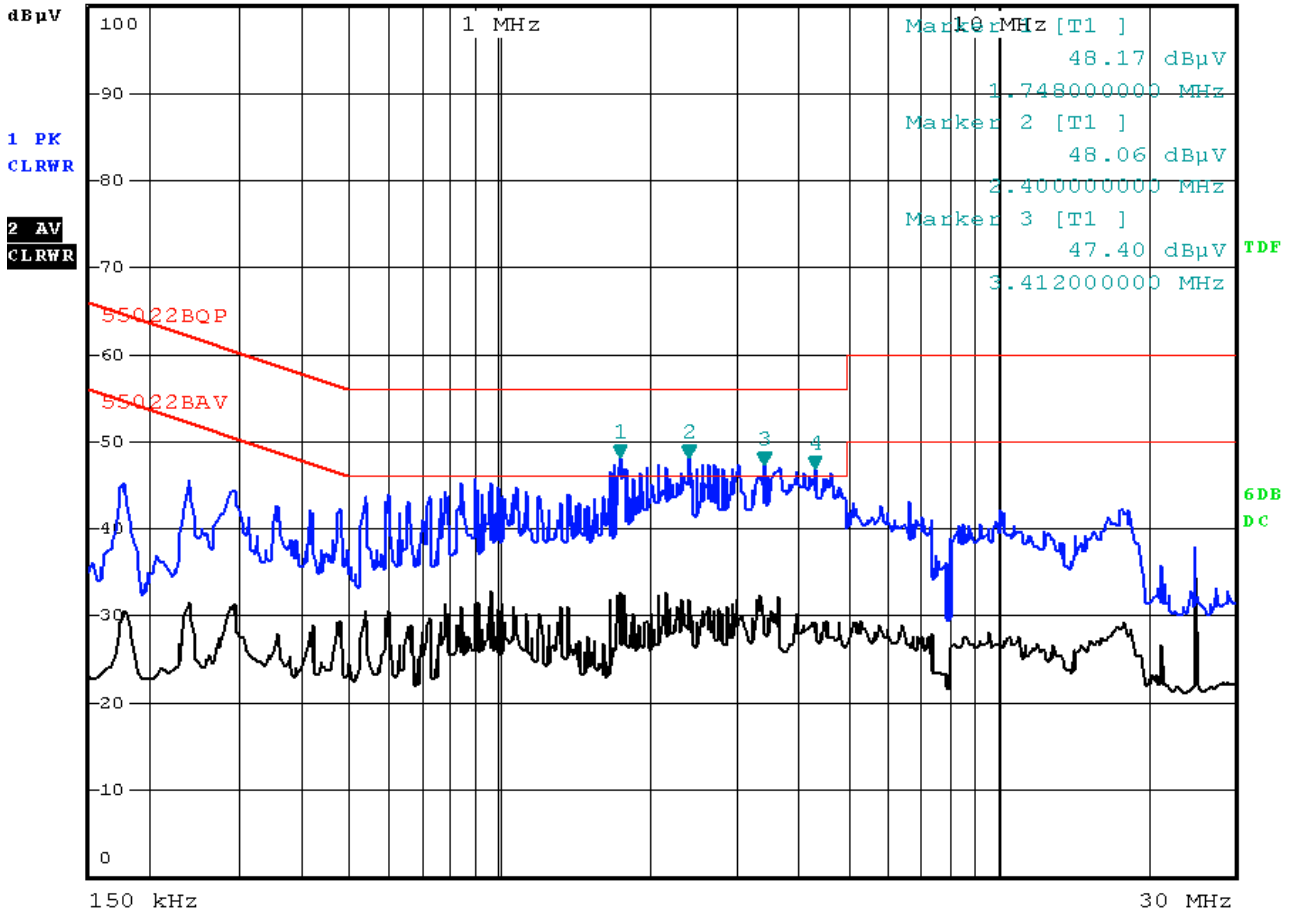
SC1000-L

Date: 22.May.2010 10:40:47

LINE CONDUCTED EMISSION TEST-N



RBW 9 kHz Marker 4 [T1]
 MT 1 s 46.93 dBµV
 PREAMP OFF 4.312000000 MHz



SC1000-N

Date: 22.May.2010 10:42:47

6. FREQUENCY STABILITY

6.1 PROVISIONS APPLICABLE

Rule Parts. No.: Part 95.627(b)

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

6.2 MEASUREMENT PROCEDURE

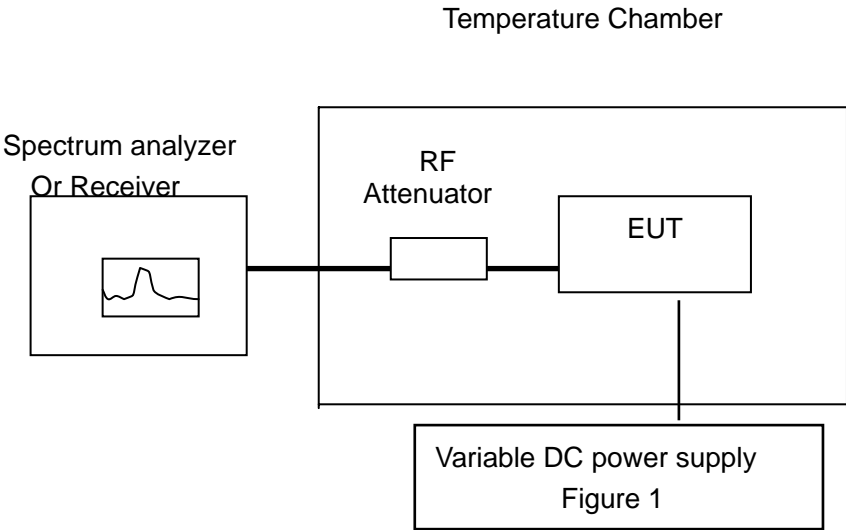
6.2.1 Frequency stability versus environmental temperature

1. Setup the configuration per figure 1 for frequencies measurement inside an environment chamber, Install new battery in the EUT.
2. Turn on EUT and set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 1KHz and Video Resolution Bandwidth to 1KHz and Frequency Span to 50KHz. Record this frequency as reference frequency.
3. Set the temperature of chamber to 60 . Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. While maintaining a constant temperature inside the chamber, turn the EUT on and measure the EUT operating frequency.
4. Repeat step 2 with a 10 decreased per stage until the lowest temperature -30 is measured, record all measured frequencies on each temperature step.

6.2.2 Frequency stability versus input voltage

1. Setup the configuration per figure 1 for frequencies measured at temperature if it is within 15 to 25 . Otherwise, an environment chamber set for a temperature of 20 shall be used. The EUT shall be powered by DC 7.2 V
2. Set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 1 KHz and Video Resolution Bandwidth to 1KHz. Record this frequency as reference frequency.
3. Supply the EUT primary voltage at the operating end point which is specified by manufacturer and record the frequency.

6.3 TEST SETUP BLOCK DIAGRAM



6.4 TEST EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL. DATE
Receiver	R&S	ESIB26	A0304218	2010.06
Climate Chamber	Albatross	--	--	2010.12

6.5 TEST RESULT

(1) Frequency stability versus input voltage (battery operation end point voltage is 7.2V)

Measurement Result for Channel Separation

Channel	Reference Frequency (MHz)	Frequency Measured (MHz)	Frequency Deviation (ppm)	Limit (ppm)
Bottom	462.5625	462.562171	-0.711	2.5
Middle	467.5625	467.562175	-0.695	2.5
Top	467.7125	467.712272	-0.487	2.5

(2)Frequency stability versus ambient temperature

Bottom Channel

Reference Frequency:	462.5625	Limit:	2.5ppm
Environment Temperature	Power Supply	Frequency Deviation	
()	(V)	(MHz)	ppm
50	7.2	462.562371	-0.279
40	7.2	462.562278	-0.480
30	7.2	462.562201	-0.646
20	7.2	462.562171	-0.711
10	7.2	462.562169	-0.716
0	7.2	462.562143	-0.772
-10	7.2	462.562101	-0.863
-20	7.2	462.562042	-0.990
-30	7.2	462.562031	-1.014

Middle Channel

Reference Frequency:	467.5625	Limit:	2.5ppm
Environment Temperature	Power Supply	Frequency Deviation	
()	(V)	(MHz)	ppm
50	7.2	467.562376	-0.265
40	7.2	467.562282	-0.466
30	7.2	467.562231	-0.575
20	7.2	467.562175	-0.695
10	7.2	467.562166	-0.714
0	7.2	467.562141	-0.768
-10	7.2	467.562121	-0.811
-20	7.2	467.562099	-0.858
-30	7.2	467.562042	-0.980

Top Channel

Reference Frequency:	467.7125	Limit:	2.5ppm
Environment Temperature	Power Supply	Frequency Deviation	
()	(V)	(MHz)	ppm
50	7.2	467.712402	-0.210
40	7.2	467.712323	-0.378
30	7.2	467.712301	-0.425
20	7.2	467.712272	-0.487
10	7.2	467.712192	-0.659
0	7.2	467.712178	-0.688
-10	7.2	467.712101	-0.853
-20	7.2	467.712098	-0.860
-30	7.2	467.712041	-0.981

7. EMISSION BANDWIDTH

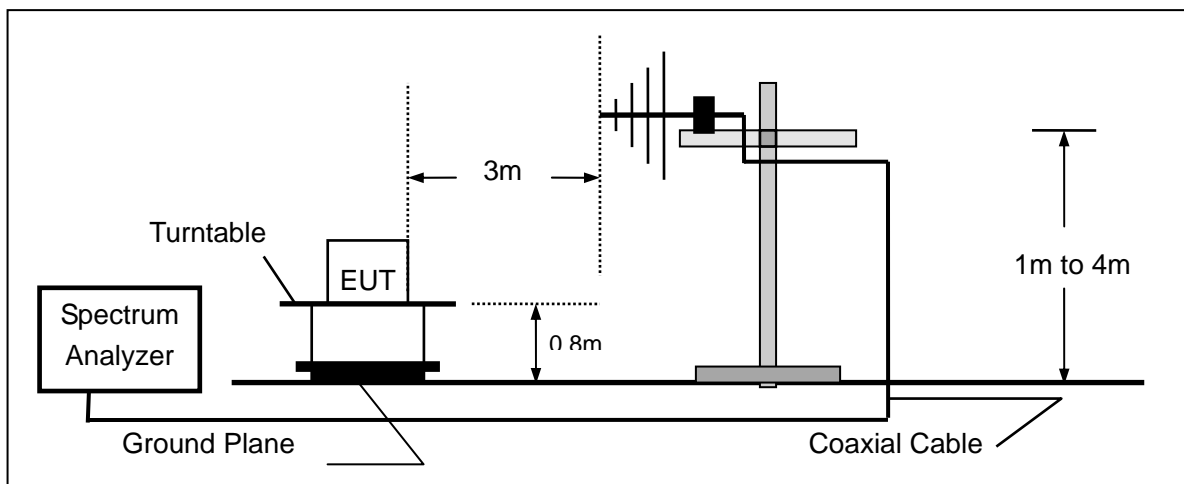
7.1 PROVISIONS APPLICABLE

According to FCC Part 95 Section 95.635b (1) (3) (7): At least 25 dB 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 $43 + \log_{10}(TP)$ dB on any frequency removed from the center of the authorized bandwidth by more than 250%. See the following plot.

7.2 MEASUREMENT PROCEDURE

- 1). The EUT was placed on a turntable which is 0.8m above ground plane.
- 2). The EUT was modulated by 2.5 KHz Sine wave audio signal, The level of the audio signal employed is 16 dB greater than that necessary to produce 50% of rated system deviation. Rated system deviation is 2.5 kHz (12.5 kHz channel spacing) and 5 kHz (25 kHz channel spacing).
- 3). Set SPA Center Frequency = fundamental frequency, RBW=VBW= 300 Hz, Span =50 KHz.
- 4). Set SPA Max hold. Mark peak, -26 dB.

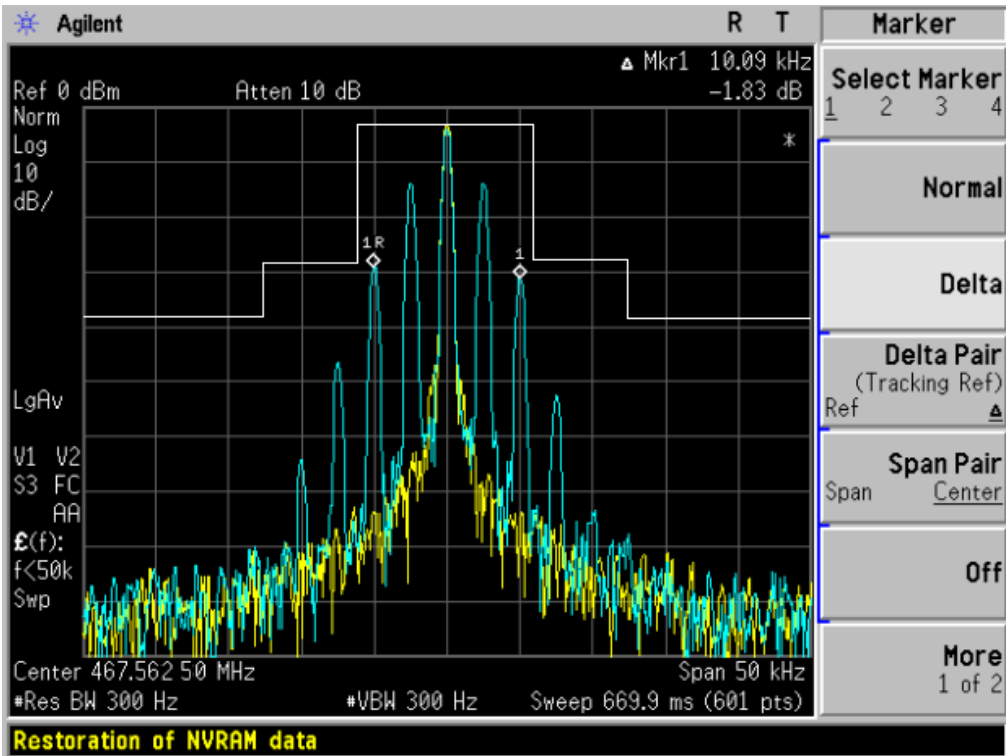
7.3 TEST SETUP BLOCK DIAGRAM



7.4 MEASUREMENT EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL. DATE
SPECTRUM ANALYZER	AGILENT	E4440A	US44300399	2010.06
MODULATION ANALYZER	HP	8901B	3104A03367	2010.06
BROADBAND ANT.	R&S	HL562	A0304224	2010.06

**Occupied bandwidth plot
FCC 95.635 MASK (1) (3)(7)**



8. UNWANTED RADIATION

8.1 PROVISIONS APPLICABLE

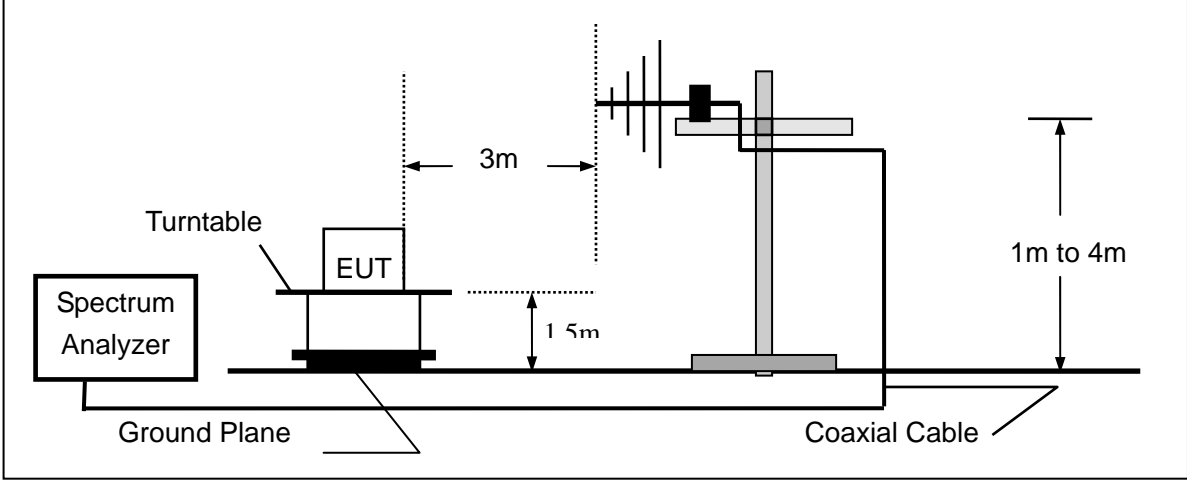
According to FCC Part 95 Section 95.635b (7): At least 43 + 10 log₁₀ (T) dB on any frequency removed from the center of the authorized bandwidth by more than 250%.

8.2 MEASUREMENT PROCEDURE

- (1) On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.
- (2) The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- (3) The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- (4) The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
- (5) The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
- (6) The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- (7) The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.

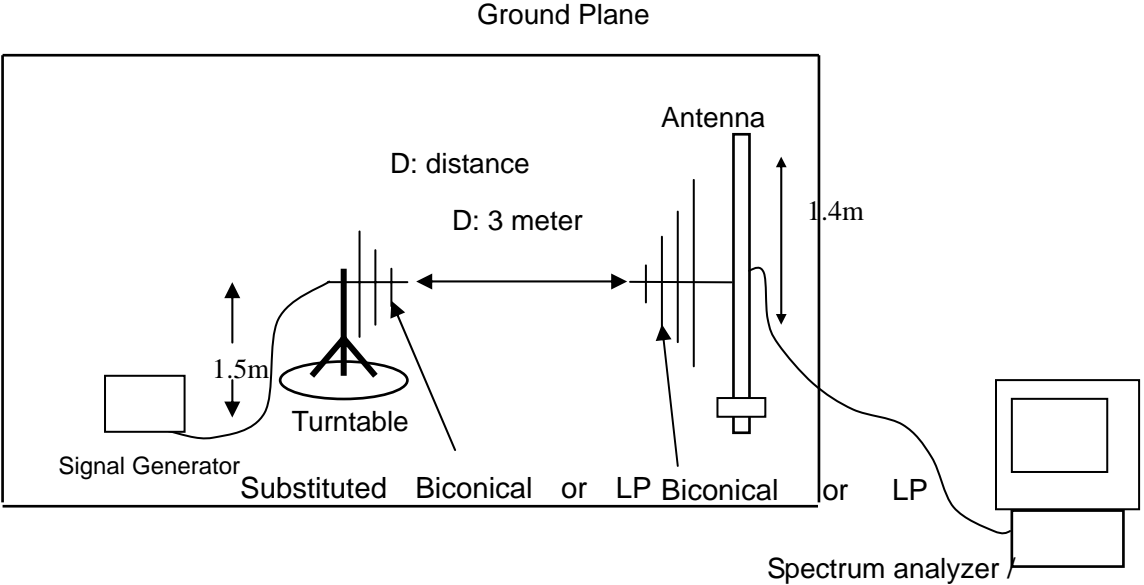
- (8) The maximum signal level detected by the measuring receiver shall be noted.
- (9) The measurement shall be repeated with the test antenna set to horizontal polarization.
- (10) Replace the antenna with a proper Antenna (substitution antenna).
- (11) The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
- (12) The substitution antenna shall be connected to a calibrated signal generator.
- (13) If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- (14) The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
- (15) The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
- (16) The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
- (17) The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

8.3 TEST SETUP BLOCK DIAGRAM

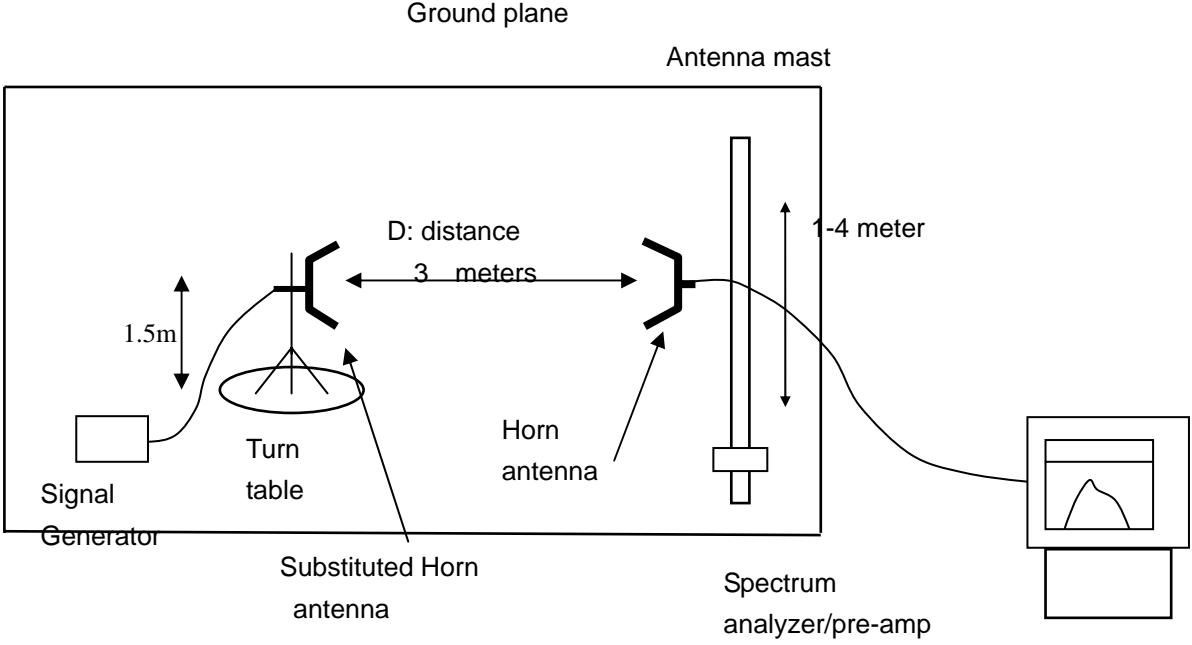


SUBSTITUTION METHOD: (Radiated Emissions)

Radiated Below 1GHz



Radiated Above 1 GHz



8.4 MEASUREMENT EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL. DATE
SPECTRUM ANALYZER	AGILENT	E4440A	US44300399	2009.06
TEST RECEIVER	R&S	ESIB26	A0304218	2009.06
LOOP ANTENNA	R&S	HFH2-Z2	A0304220	2009.06
HORN ANT.	R&S	HF906	100150	2009.06
BROADBAND ANT.	R&S	HL562	A0304224	2009.06

8.5 MEASUREMENT RESULTS:

Measurement Result for 12.5 KHz Channel Separation

Calculation: Limit = $43 + 10 \log_{10}(TP)$

Notes:

EL is the emission level of the Output Power expressed in dBm,, in this application, the EL is 0.38 (25.8 dBm).

Limit = $-43 + 10 \log_{10}(0.38) = 38.8$

Radiated emissions of the middle Channel

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result Below carrier(dBc)	Limit	Result(P/F)
467.56	V	0	--	Pass
935.13	V	53.44	38.8	Pass
1402.69	V	50.86	38.8	Pass
1870.25	V	56.61	38.8	Pass
2337.81	V	58.95	38.8	Pass
2805.38	V	63.17	38.8	Pass
3272.94	V	63.75	38.8	Pass
3740.50	V	69.51	38.8	Pass
4208.06	V	71.01	38.8	Pass
4675.63	V	72.61	38.8	Pass

Limit = $-43 + 10 \log_{10} (0.36) = 38.6$

Radiated emissions of the bottom Channel

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result Below carrier(dBc)	Limit	Result(P/F)
462.56	V	0	--	Pass
925.12	V	56.44	38.6	Pass
1387.68	V	57.31	38.6	Pass
1850.24	V	58.67	38.6	Pass
2312.8	V	60.31	38.6	Pass
2775.36	V	61.21	38.6	Pass
3237.92	V	65.42	38.6	Pass
3700.48	V	70.41	38.6	Pass
4163.04	V	73.21	38.6	Pass
4625.61	V	74.09	38.6	Pass

Limit = $-43 + 10 \log_{10} (0.37) = 38.7$

Radiated emissions of the top Channel

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result Below carrier(dBc)	Limit	Result(P/F)
467.71	V	0	--	Pass
935.42	V	55.21	38.7	Pass
1403.13	V	52.21	38.7	Pass
1870.84	V	57.32	38.7	Pass
2338.55	V	60.95	38.7	Pass
2806.26	V	67.23	38.7	Pass
3273.97	V	69.31	38.7	Pass
3741.68	V	72.51	38.7	Pass
4209.39	V	73.07	38.7	Pass
4677.1	V	75.09	38.7	Pass

9. MODULATION CHARACTERISTICS

9.1 PROVISIONS APPLICABLE

According to CFR 47 section 2.1047(a), for Voice Modulation Communication Equipment, the frequency response of the audio modulation circuit over a range of 100 to 5000Hz shall be measured.

9.2 MEASUREMENT METHOD

9.2.1 Modulation Limit

- (1). Configure the EUT as shown in figure 1, adjust the audio input for 60% of rated system deviation at 1KHz using this level as a reference (0dB) and vary the input level from -20 to +20dB. Record the frequency deviation obtained as a function of the input level.
- (2). Repeat step 1 with input frequency changing to 300, 1000, 1500 and 3000Hz in sequence.

9.2.2 Audio Frequency Response

- (1). Configure the EUT as shown in figure 1.
- (2). Adjust the audio input for 20% of rated system deviation at 1 KHz using this level as a reference (0 dB).
- (3). Vary the Audio frequency from 100 Hz to 10 KHz and record the frequency deviation.
- (4). Audio Frequency Response = $20\log_{10}(\text{Deviation of test frequency}/\text{Deviation of 1 KHz reference})$.

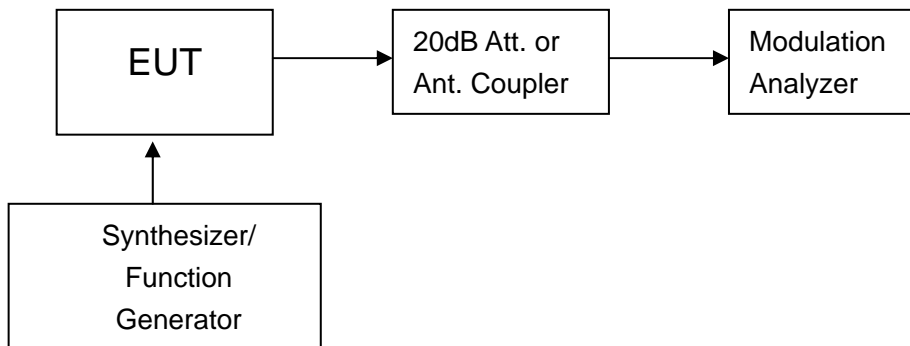


Figure 1: Modulation characteristic measurement configuration

9.3 MEASUREMENT INSTRUMENTS

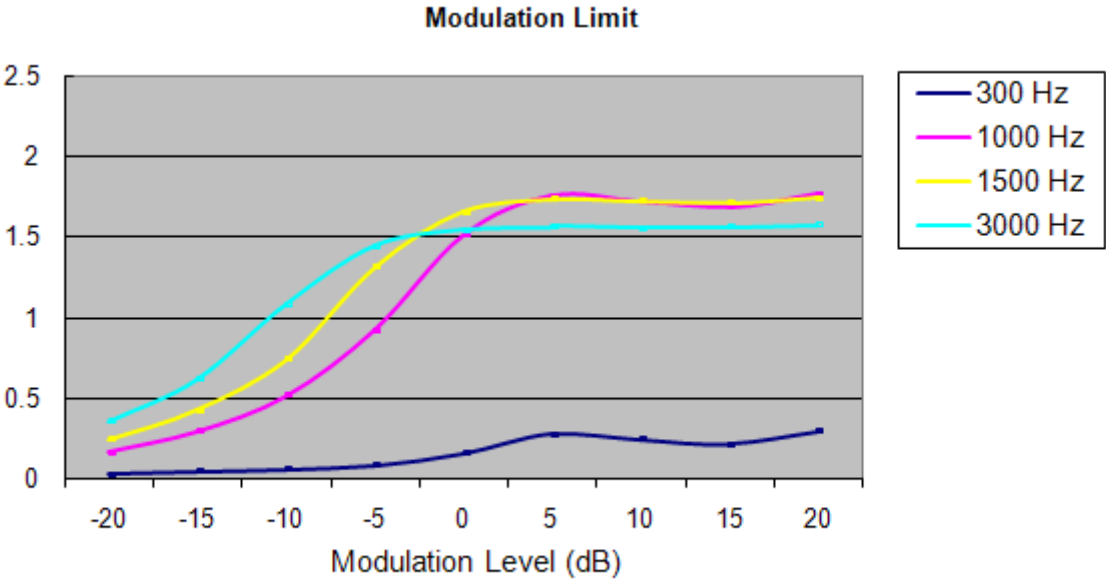
NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL. DATE
Modulation Analyzer	HP	8901B	3104A03367	2009.06

9.4 MEASUREMENT RESULT

(a). Modulation Limit:

Middle Channel @ 12.5 KHz Channel Separations

Modulation Level (dB)	Peak Freq. Deviation At 300 Hz	Peak Freq. Deviation At 1000 Hz	Peak Freq. Deviation At 1500 Hz	Peak Freq. Deviation At 3000 Hz
-20	0.02	0.16	0.24	0.35
-15	0.04	0.29	0.42	0.61
-10	0.05	0.51	0.74	1.08
-5	0.08	0.92	1.31	1.44
0	0.15	1.51	1.65	1.54
+5	0.27	1.75	1.73	1.56
+10	0.24	1.72	1.72	1.55
+15	0.21	1.68	1.71	1.56
+20	0.29	1.76	1.74	1.57

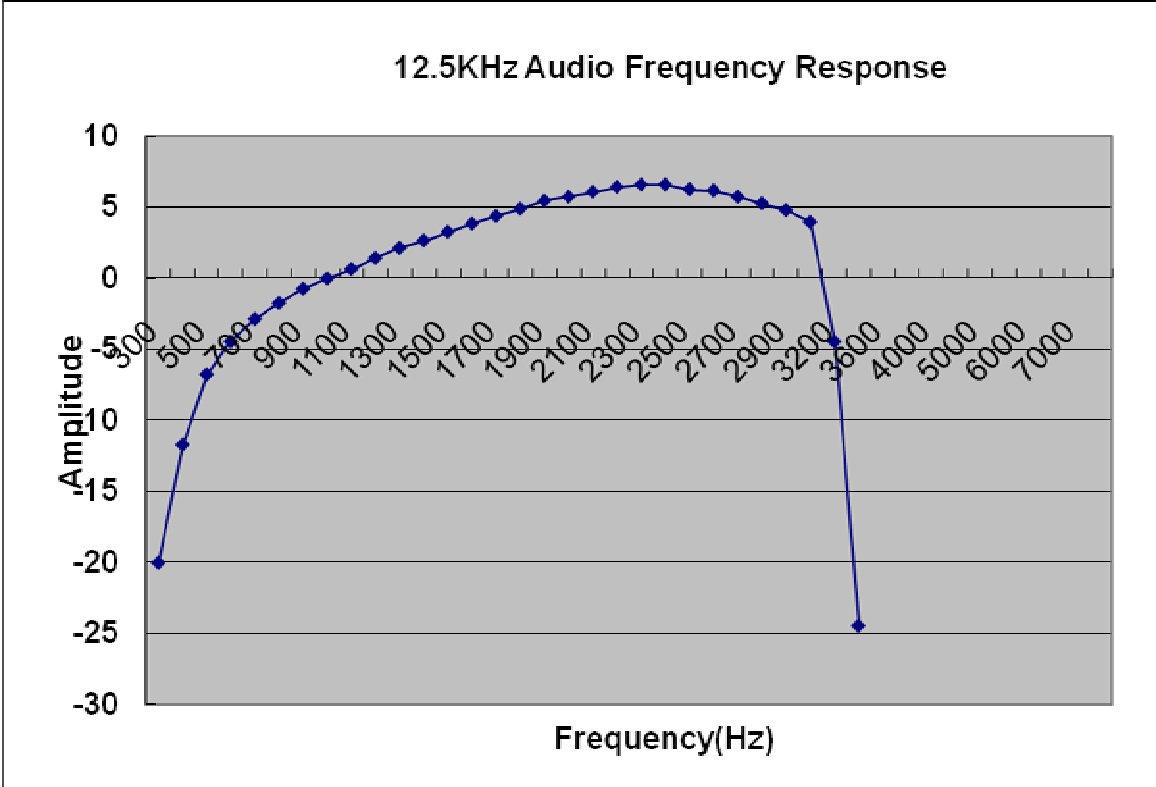


(b). Audio Frequency Response:

12.5 KHz Channel Separation

Frequency (Hz)	Deviation (KHz)
100	--
200	--
300	0.05
400	0.13
500	0.23
600	0.30
700	0.36
800	0.41
900	0.46
1000	0.50
1100	0.54
1200	0.59
1300	0.64
1400	0.68
1500	0.73
1600	0.78
1700	0.83
1800	0.88
1900	0.94
2000	0.97
2100	1.01
2200	1.05
2300	1.07
2400	1.07
2500	1.03
2600	1.02
2700	0.97
2800	0.92
2900	0.87
3000	0.79
3200	0.30
3400	0.03
3600	--
3800	--
4000	--
4500	--
5000	--
5500	--
6000	--
6500	--
7000	--
7500	--
8000	--
8500	--
9000	--
9500	--

Frequency Response of Middle Channel



10. RF POWER OUTPUT

10.1 PROVISIONS APPLICABLE

Rule Part No.: 2.1033(c)(6)(7), 2.1046(a), Part 95

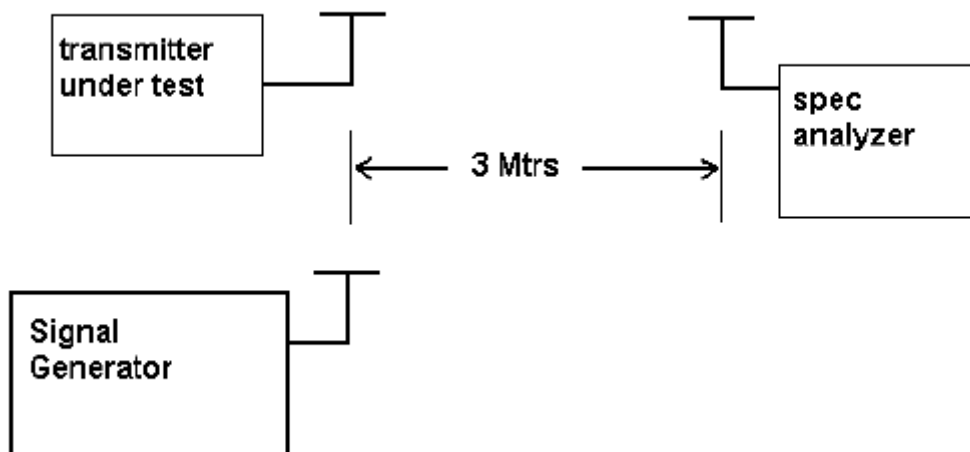
Requirements: Power output shall not exceed 0.50 Watts effective radiated power for the FRS channels. There can be no provisions for increasing the power or varying the power. No GMRS channel, under any condition of modulation, shall exceed:

1. 50W Carrier power (average TP during one modulated RF cycle) when transmitting emissions type A1D, F1D, G1D, A3E, F3E, or G3E.
2. 50W peak envelope TP when transmitting emission type H1D, J1D, R1D, H3E, J3E, or R3E

10.2 TEST PROCEDURE

RF power is measured as ERP as the antenna is permanently attached. The substitution method was used. With a nominal battery voltage, and the transmitter properly adjusted the RF output measures:

Test Setup Diagram:



10.3 TEST RESULT

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result
		For 0.5W
12.5 KHz	Bottom(462.5625MHz)	0.36W(25.5dBmw)
	Middle(467.5625MHz)	0.38W(25.8dBmw)
	Top (467.7125MHz)	0.37W(25.7dBmw)

12. Radiated Emission on Receiving Mode

12.1 PROVISIONS APPLICABLE

FCC Part 15 Subpart B Section 15.109

12.2 TEST METHOD

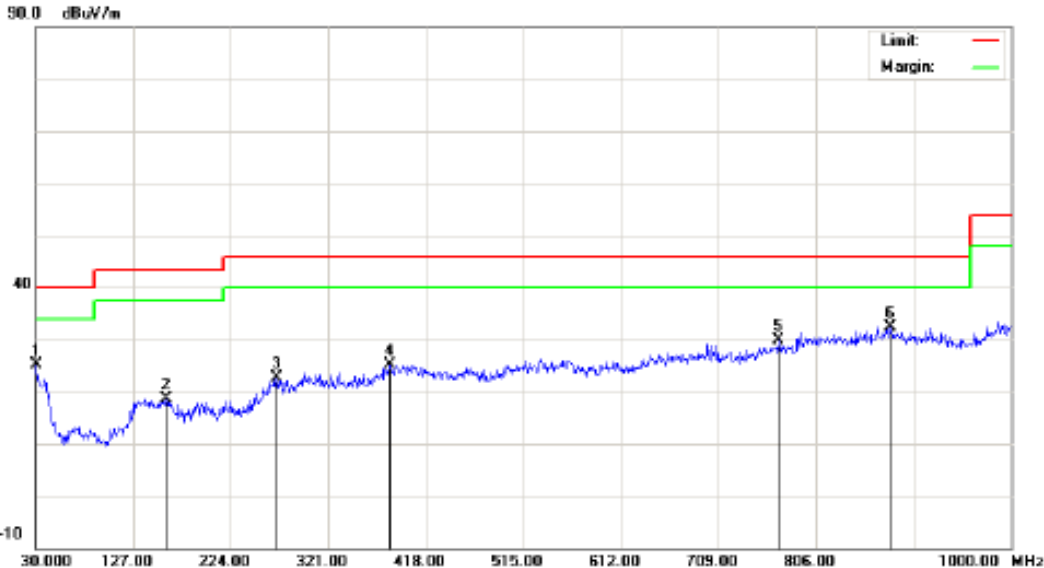
ANSI C 63.4: 2003

12.3 TEST INSTRUMENTS

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL. DATE
SPECTRUM ANALYZER	AGILENT	E4440A	US44300399	2009.06
TEST RECEIVER	R&S	ESIB26	A0304218	2009.06
LOOP ANTENNA	R&S	HFH2-Z2	A0304220	2009.06
HORN ANT.	R&S	HF906	100150	2009.06
BROADBAND ANT.	R&S	HL562	A0304224	2009.06

12.4 MEASURE RESULT (MEASURED AT 3M USING FCC PART15 B LIMITS)
RADIATED EMISSION TEST RESULTS – Vertical

Radiated Emission Measurement



Site: 986 Chamber
 Limit: FCC Part 15B ClassB_RE 3M
 EUT:
 M/N:
 Mode:
 Note:

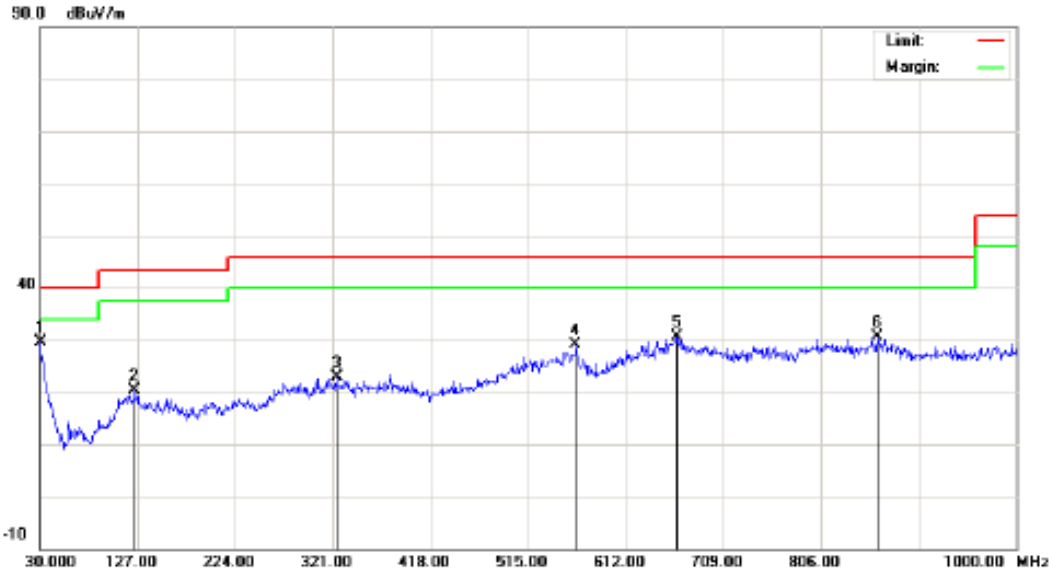
Polarization: *Vertical*
 Power:
 Distance:

Temperature: 26
 Humidity: 60 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		30.0000	23.55	1.47	25.02	40.00	-14.98	QP			
2		159.9800	24.23	-5.60	18.63	43.50	-24.87	QP			
3		289.5900	24.82	-2.18	22.68	48.00	-23.34	QP			
4		382.1099	25.01	0.04	25.05	48.00	-20.95	QP			
5		769.1400	25.44	4.50	29.94	48.00	-16.06	QP			
6	*	879.7200	24.85	7.53	32.38	48.00	-13.62	QP			

RADIATED EMISSION TEST RESULTS – Horizontal

Radiated Emission Measurement



Site 986 Chamber Polarization: *Horizontal* Temperature: 26
Limit: FCC Part 15B ClassB_RE 3M Power: Humidity: 60 %
EUT: Distance:
M/N:
Mode:
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	30.0000	24.59	4.96	29.55	40.00	-10.45	QP			
2		124.0900	25.25	-4.82	20.43	43.50	-23.07	QP			
3		324.8800	25.52	-2.53	22.99	46.00	-23.01	QP			
4		562.5300	26.67	2.53	29.20	46.00	-16.80	QP			
5		663.4099	25.24	5.48	30.72	46.00	-15.28	QP			
6		862.2600	25.88	4.73	30.61	46.00	-15.39	QP			

APPENDIX I

PHOTOGRAPHS OF SETUP

CONDUCTED EMISSION TEST SETUP



RADIATED TEST SETUP



EIRP TEST SETUP



APPENDIX II

EXTERNAL VIEW OF EUT

TOP VIEW OF EUT



BOTTOM VIEW OF EUT



LEFT VIEW OF EUT



RIGHT VIEW OF EUT



FRONT VIEW OF EUT



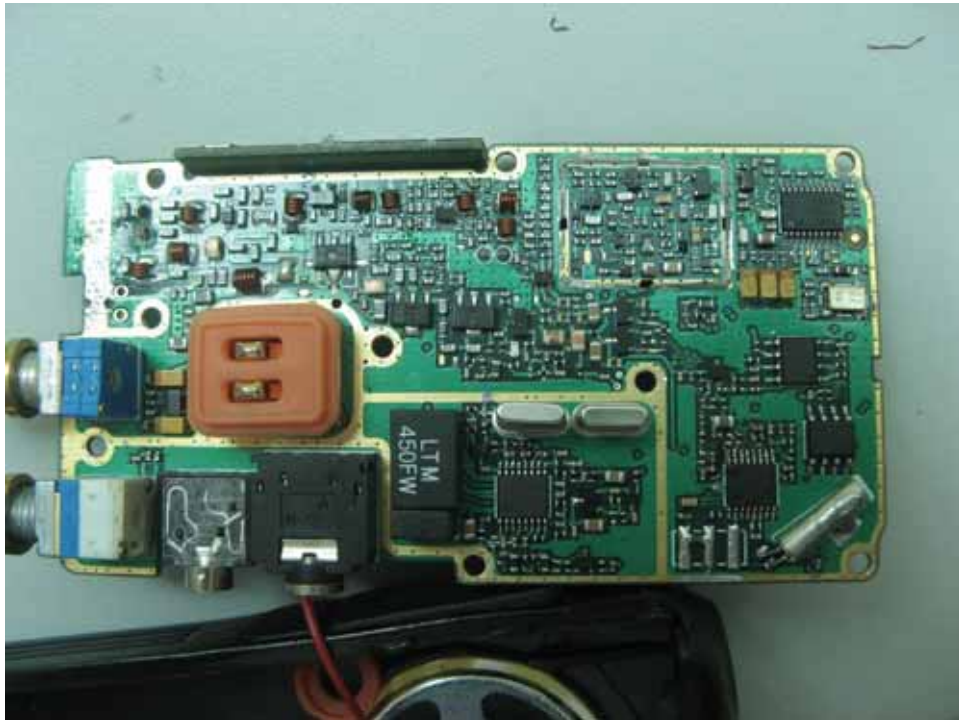
BACK VIEW OF EUT



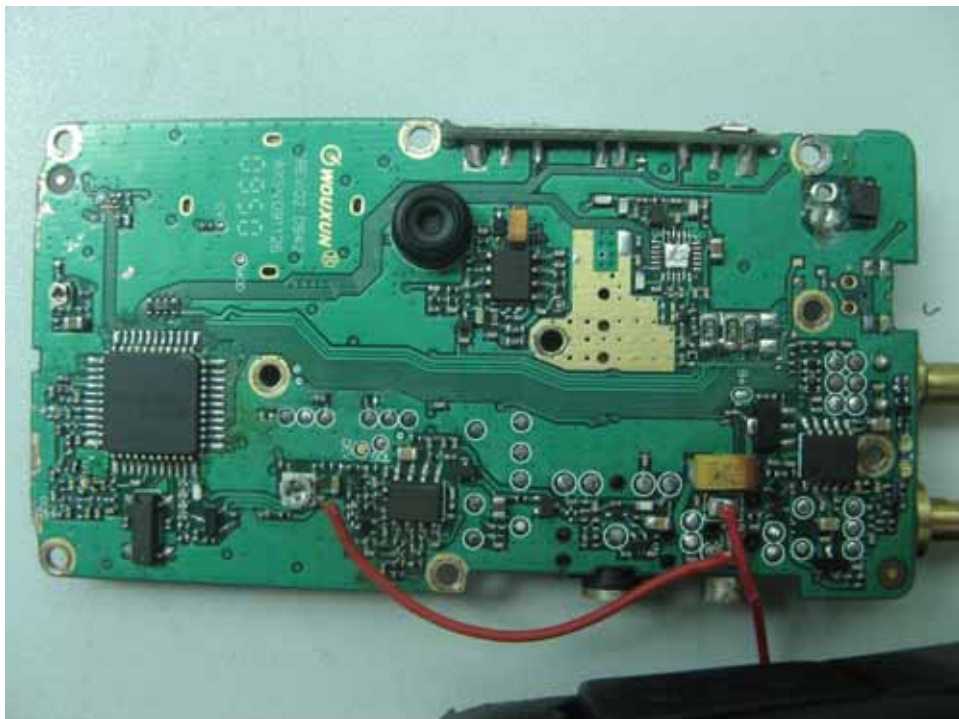
ALL VIEW



INTERNAL VIEW OF EUT - 1



INTERNAL VIEW OF EUT - 2



----END OF REPORT----