FCC&IC Test Report

Report No.: AGC05C110301F1

TEST NAME	:	FCC Part 95
FCC ID	:	N3E74047
IC		3675A-74047
PRODUCT DESIGNATION	:	Long range walkie talkie
BRAND NAME	:	N/A
TEST MODEL	:	74047
CLIENT	:	Wild Planet Entertainment, Inc
DATE OF ISSUE	:	Mar.31, 2011
STANDARD(S)	:	FCC Part 95 Rules IC RSS-210 Rules

Attestation of ***G***lobal ***C***ompliance Co., Ltd.

VERIFICATION OF COMPLIANCE

Applicant:	Wild Planet Entertainment, Inc
	225 BUSH STREET 13TH FLOOR, SAN FRANCISCO, CA94104, USA
Manufacturer:	Wild Planet Entertainment, Inc
	225 BUSH STREET 13TH FLOOR, SAN FRANCISCO, CA94104, USA
Product Description:	Long range walkie talkie
Brand Name:	--
Model Number:	74047
File Number:	AGC05C110301F1
Date of Test:	Mar. 26 to Mar. 31, 2011

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 63.4:2003 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 Mar. 31, 2011

Authorized By Randy He

Randy He Mar. 31, 2011

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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	10K9F3E for FRS 10K26F3E for GMRS
Audio Frequency Response	1.76 KHz (Limit<3.125 KHz)
Output power Modification	0.5W (It was fixed by the manufacturer, any individual can't arbitrarily change it)
Maximum Transmitter Power	0.38w(25.8 dBm)for FRS 0.37w(25.7dBm) for GMRS
Transmitter spurious worst case	68.05 dBuV/m for FRS 66.83 dBuV/m for GMRS
Receiver spurious worst case	34.67dBuV/m
99% occupied bandwidth	9.01KHz for FRS 9.13KHz for GMRS
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 Antenna Gain: 1.2dBi
Power Supply	DC 4.5V by battery
Battery Endpoint	DC 3.825V
Operation Frequency Range	Frequency Range: 462.5500MHz to 467.7125MHz (See 4. DESCRIPTION OF TEST FREQUENCY RANGE)
Channel Number	22

NOTE: For more details, please refer to the User's manual of the EUT.

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for FCC ID: N3E74047, filing to comply with the FCC Part 95
IC: 3675A-74047, 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: 2003; 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 Attestation of Global Compliance Co., Ltd. 2F., No.2 Building, Huafeng No.1 Technical Industrial Park, Sanwei, Xixiang, Baoan District, Shenzhen. The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003.
FCC register No.: 259865 and IC register No.: 9083A

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with preselectors and quasi-peak detectors are used to perform radiated measurements.

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	Long range walkie talkie	74047	**FCC ID: N3E74047** **IC: 3675A-74047**	EUT
--	--	--	--	--
--	--	--	--	--

3. SUMMARY OF TEST RESULTS

FCC Rules	RSS-210	Description Of Test	Result
§95.621	A6.1.6	Frequency Tolerance	Compliant
§2.1047	A6.1.2	Modulation Characteristic	Compliant
§95.633	A6.1.3	Emission Bandwidth	Compliant
§95.635	A6.1.5	Unwated Radiation	Compliant
§95.639	A6.1.4	RF Power output	Compliant
§15.209	RSS-Gen	Radiated Emission on Receiving Mode	Compliant

4. DESCRIPTION OF TEST FREQUENCY RANGE

The EUT 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 .

EMISSION DESIGNATOR AND FREQUENCIES

2.1033(c) (4) Type of Emission: 10K9F3E

95.631

Bn = 2M + 2DK

M = 3000

D = 2.45K

Bn = 2(3000)+2(2450) = 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

GMRS Authorized Bandwidth 20.0 kHz

2.1033(c)(5) GMRS Frequency Range:

95.621

15. 462.5500
16.462.5750
17.462.6000
18.462.6250
19.462.6500
20.462.6750
21.462.7000
22.462.7250 MHz

5. FREQUENCY STABITITY

5.1 PROVISIONS APPLICABLE

Rule Parts. No.: Part 95.627(b)

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

Each GMRS unit must be maintained within a frequency tolerance of 0.0005%.

Rule RSS 210 A6.1.6 The carrier frequency tolerance shall be better than ±5 ppm.

5.2 MEASUREMENT PROCEDURE

5.2.1 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 50□. 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.

5.2.2 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 4.5 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.

5.3TEST SETUP BLOCK DIAGRAM

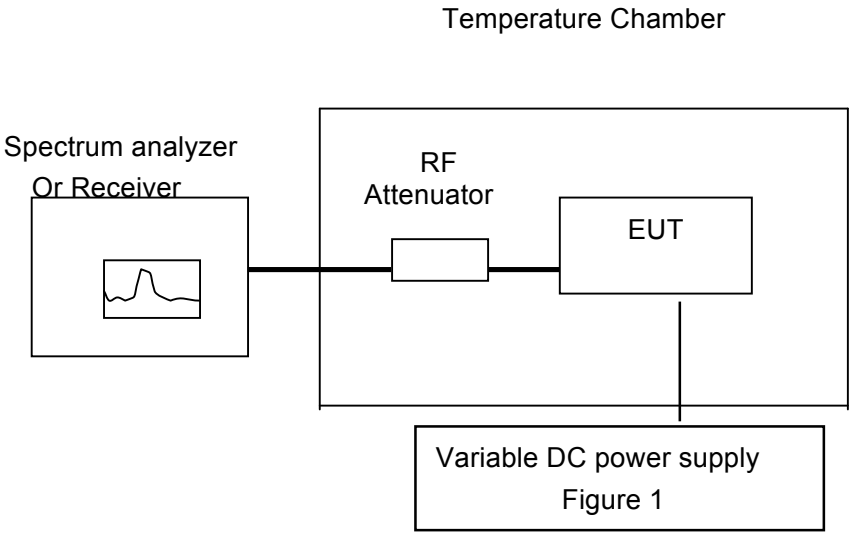


Figure 1

5.4 TEST EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL. DATE
Receiver	R&S	ESIB26	A0304218	2011.06
Climate Chamber	Albatross	--	--	2011.12

5.5 TEST RESULT

(1)Frequency stability versus ambient temperature

FRS:

Bottom Channel

Reference Frequency:	462.5625 MHz	Limit:		5ppm
Envionment Temperature	Power Supply	Frequency Deviation		
(℃)	(V)	(MHz)	ppm	%
50	4.5	462.562371	-0.2789	-0.0000279
40	4.5	462.562278	-0.4799	-0.0000480
30	4.5	462.562201	-0.6464	-0.0000646
20	4.5	462.562171	-0.7113	-0.0000711
10	4.5	462.562169	-0.7156	-0.0000716
0	4.5	462.562143	-0.7718	-0.0000772
-10	4.5	462.562101	-0.8626	-0.0000863
-20	4.5	462.562042	-0.9901	-0.0000990
-30	4.5	462.562031	-1.0139	-0.0001014

Middle Channel

Reference Frequency:	467.5625 MHz	Limit:		5ppm
Envionment Temperature	Power Supply	Frequency Deviation		
(℃)	(V)	(MHz)	ppm	%
50	4.5	467.562376	-0.2652	-0.0000265
40	4.5	467.562282	-0.4662	-0.0000466
30	4.5	467.562231	-0.5753	-0.0000575
20	4.5	467.562175	-0.6951	-0.0000695
10	4.5	467.562166	-0.7143	-0.0000714
0	4.5	467.562141	-0.7678	-0.0000768
-10	4.5	467.562121	-0.8106	-0.0000811
-20	4.5	467.562099	-0.8576	-0.0000858
-30	4.5	467.562042	-0.9795	-0.0000980

Top Channel

Reference Frequency:	467.7125 MHz	Limit:		5ppm
Envionment Temperature	Power Supply	Frequency Deviation		
(℃)	(V)	(MHz)	ppm	%
50	4.5	467.712402	-0.2095	-0.0000210
40	4.5	467.712323	-0.3784	-0.0000378
30	4.5	467.712301	-0.4255	-0.0000425
20	4.5	467.712272	-0.4875	-0.0000487
10	4.5	467.712192	-0.6585	-0.0000659
0	4.5	467.712178	-0.6885	-0.0000688
-10	4.5	467.712101	-0.8531	-0.0000853
-20	4.5	467.712098	-0.8595	-0.0000860
-30	4.5	467.712041	-0.9814	-0.0000981

GMRS:

Bottom Channel

Reference Frequency:	462.5500 MHz	Limit:		5ppm
Envionment Temperature	Power Supply	Frequency Deviation		
(℃)	(V)	(MHz)	ppm	%
50	4.5	462.549771	-0.4951	-0.0000495
40	4.5	462.549778	-0.4799	-0.0000480
30	4.5	462.549712	-0.6226	-0.0000623
20	4.5	462.549712	-0.6226	-0.0000623
10	4.5	462.549669	-0.7156	-0.0000716
0	4.5	462.549643	-0.7718	-0.0000772
-10	4.5	462.549601	-0.8626	-0.0000863
-20	4.5	462.549742	-0.5578	-0.0000558
-30	4.5	462.549831	-0.3654	-0.0000365

Middle Channel

Reference Frequency:	462.6250 MHz	Limit:		5ppm
Envionment Temperature	Power Supply	Frequency Deviation		
(℃)	(V)	(MHz)	ppm	%
50	4.5	462.624902	-0.2118	-0.0000212
40	4.5	462.624623	-0.8149	-0.0000815
30	4.5	462.624631	-0.7976	-0.0000798
20	4.5	462.624672	-0.7090	-0.0000709
10	4.5	462.624692	-0.6658	-0.0000666
0	4.5	462.624678	-0.6960	-0.0000696
-10	4.5	462.624601	-0.8625	-0.0000862
-20	4.5	462.624798	-0.4366	-0.0000437
-30	4.5	462.624641	-0.7760	-0.0000776

Top Channel

Reference Frequency:	462.7250 MHz	Limit:		5ppm
Envionment Temperature	Power Supply	Frequency Deviation		
(℃)	(V)	(MHz)	ppm	%
50	4.5	467.724902	-0.2095	-0.0000210
40	4.5	467.724923	-0.1646	-0.0000165
30	4.5	467.724901	-0.2117	-0.0000212
20	4.5	467.724927	-0.1561	-0.0000156
10	4.5	467.724921	-0.1689	-0.0000169
0	4.5	467.724938	-0.1326	-0.0000133
-10	4.5	467.724912	-0.1881	-0.0000188
-20	4.5	467.724998	-0.0043	-0.0000004
-30	4.5	467.7249941	-0.0126	-0.0000013

(2)The manufacturer specified battery end point 3.825V

channel	Frequency MHz	Test Frequency MHz	frequency tolerance %	frequency tolerance ppm
4	462.6375	462.637423	-0.0000166	-0.166
18	462.6250	462.624917	-0.0000179	-0.179

Remark:

1) Each FRS unit must be maintained within a frequency tolerance of 0.00025%.
2) Each GMRS unit must be maintained within a frequency tolerance of 0.0005%.
3) Rule RSS 210 A6.1.6 The carrier frequency tolerance shall be better than ±5 ppm.

6. EMISSION BANDWIDTH

6.1 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 than100 % 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 the following plot.

6.2 MEASUREMENT PROCEDURE

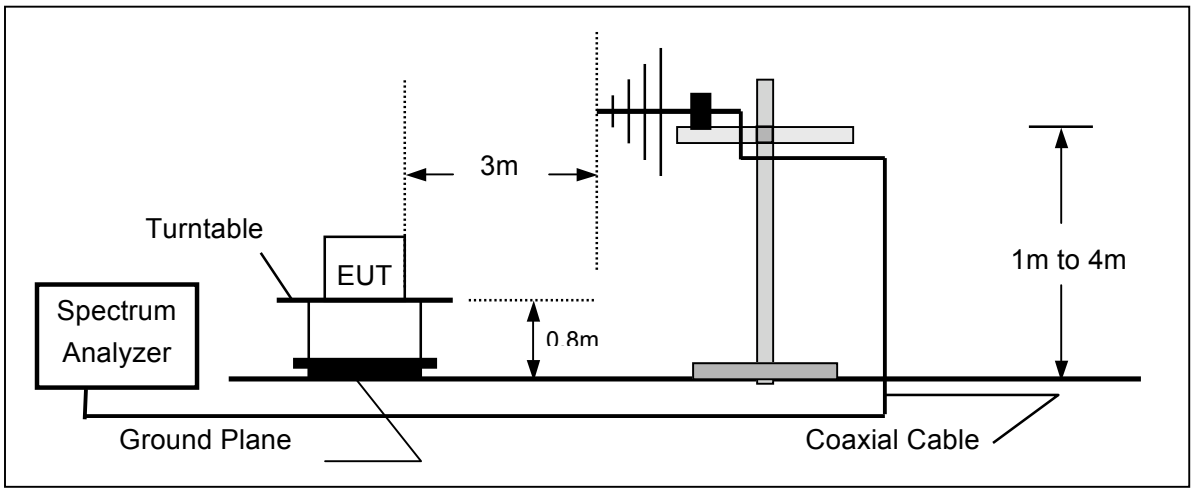
1). The EUT was placed on a turn table which is 0.8m above ground plane.

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.

6.3 TEST SETUP BLOCK DIAGRAM

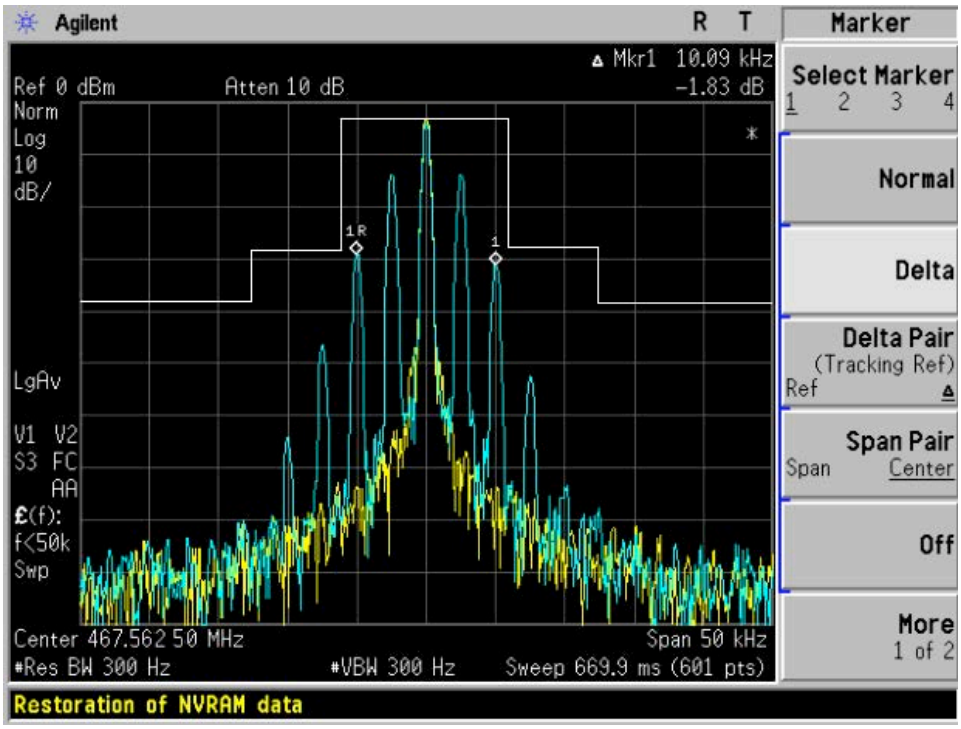


6.4 MEASUREMENT EQUIPMENT USED:

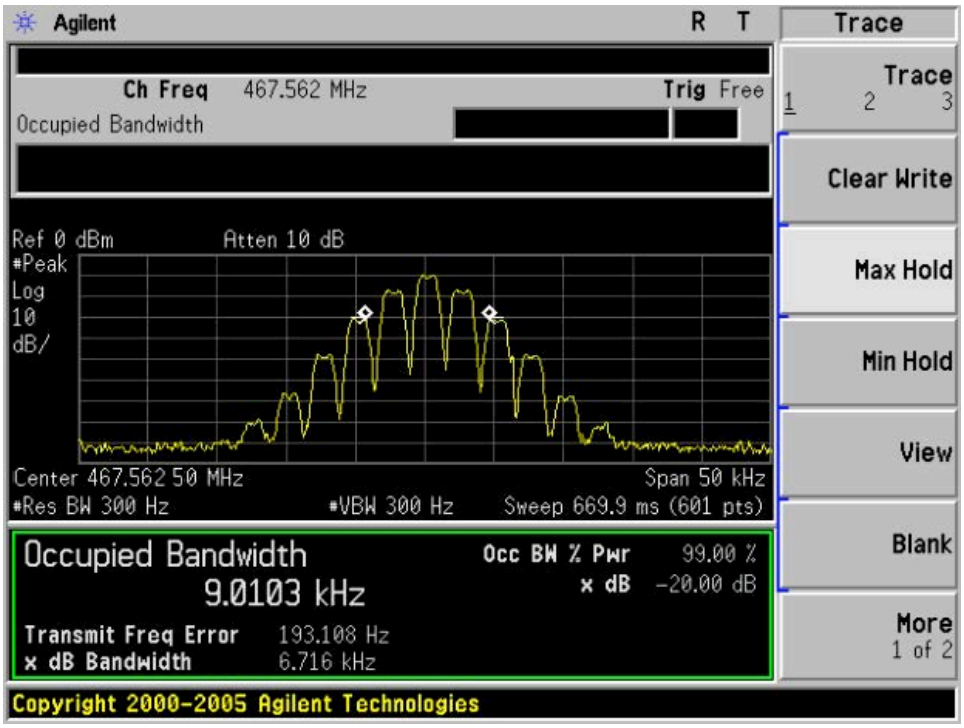
NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL. DATE
SPECTRUM ANALYZER	AGILENT	E4440A	US44300399	2011.06
MODULATION ANALYZER	HP	8901B	3104A03367	2011.06
BROADBAND ANT.	R&S	HL562	A0304224	2011.06

Occupied bandwidth plot

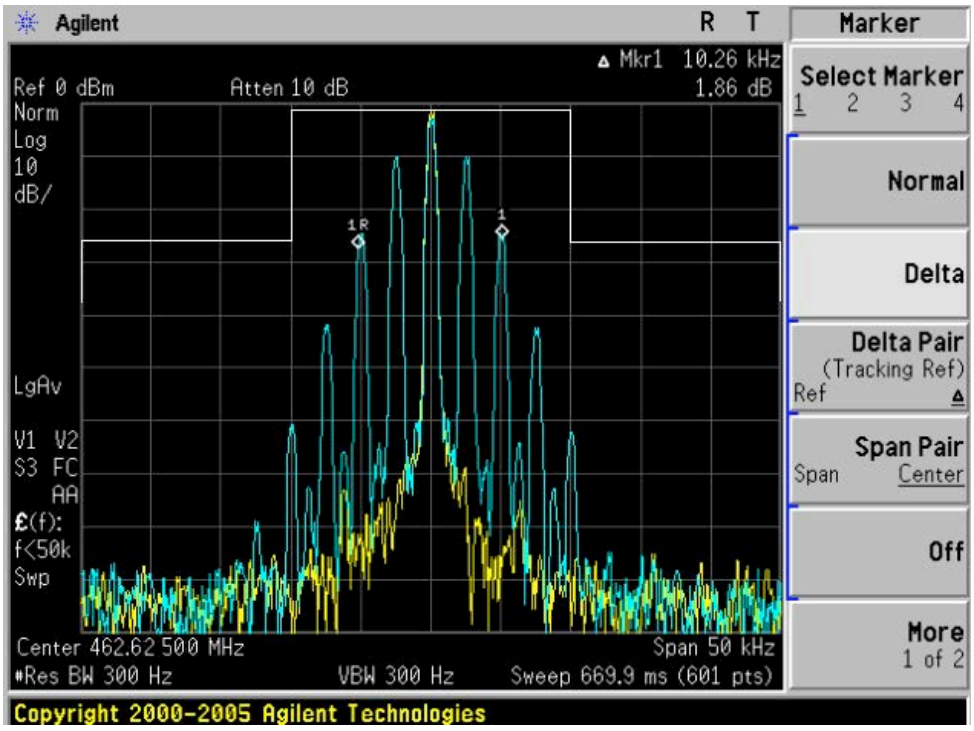
FCC 95.635 MASK (1) (3)(7) FOR FRS



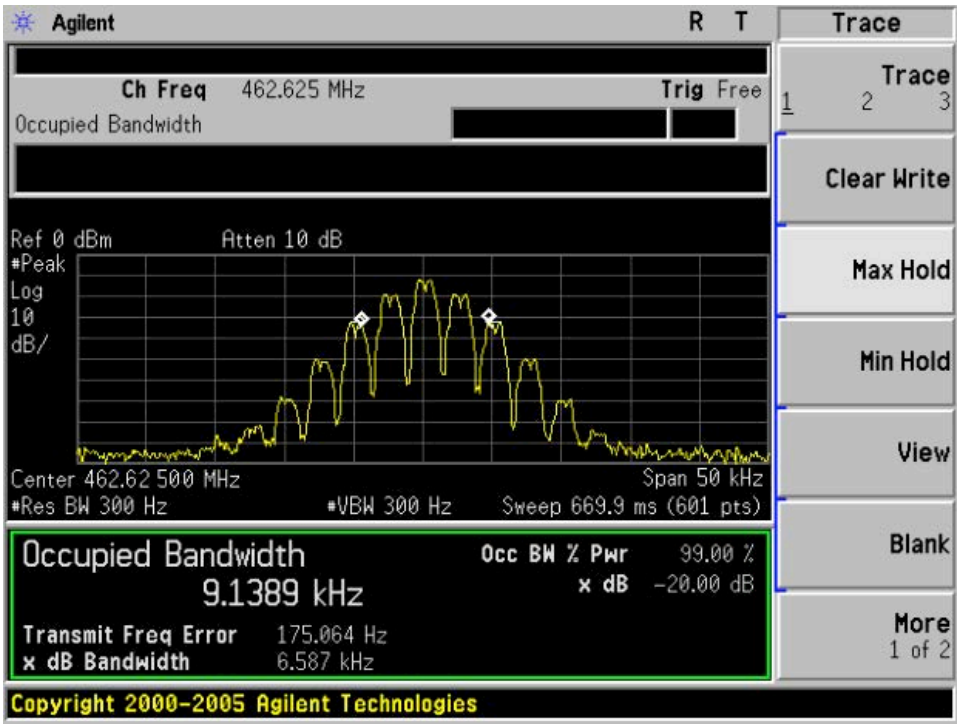
99% Occupied bandwidth FOR FRS



FCC 95.635 MASK (1) (3)(7) FOR GMRS



99% Occupied bandwidth FOR GMRS



7. UNWANTED RADIATION

7.1 PROVISIONS APPLICABLE

According to FCC Part 95 Section 95.635b (7) and RSS 210 A6.2.5: At least 43 + 10 log10 (T) dB on any frequency removed from the center of the authorized bandwidth by more than 250%.

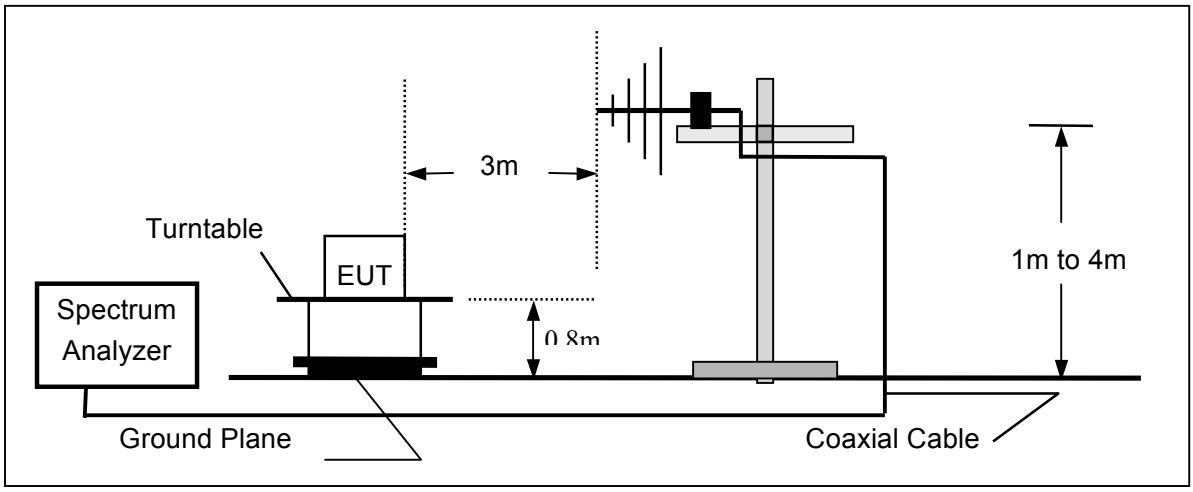
7.2 MEASUREMENT PROCEDURE

1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

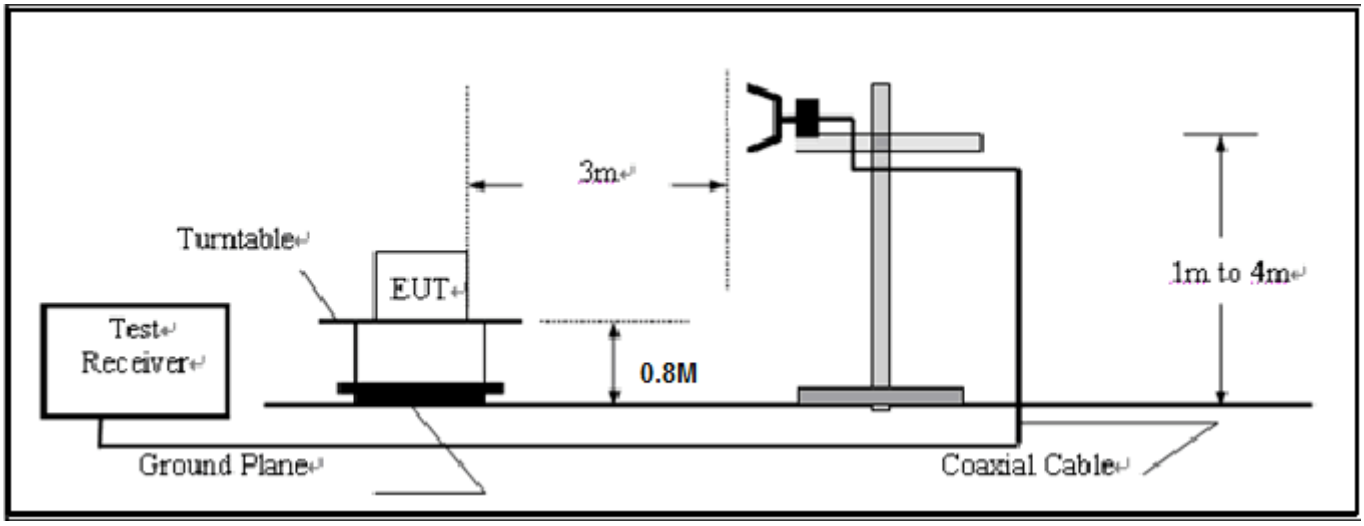
7.3 TEST SETUP BLOCK DIAGRAM

SUBSTITUTION METHOD: (Radiated Emissions)

Radiated Below 1GHz



Radiated Above 1 GHz



7.4 MEASUREMENT EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL. DATE
SPECTRUM ANALYZER	AGILENT	E4440A	US44300399	2011.06
TEST RECEIVER	R&S	ESIB26	A0304218	2011.06
LOOP ANTENNA	R&S	HFH2-Z2	A0304220	2011.06
HORN ANT.	R&S	HF906	100150	2011.06
BROADBAND ANT.	R&S	HL562	A0304224	20011.06

7.5 MEASUREMENT RESULTS:

Calculation: Limit = 43+10log10 (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+10log 10 (0.38) = 38.8

Radiated emissions of the middle Channel

Emission Frequency (MHz)	Ant. Polarity(H/V)	Radiated emissions PK(dBuV/m)	Radiated emissions AV(dBuV/m)	Measurement Result Below carrier(dBc)	Limit	Result(P/F)
467.56	V	120.91	--	0	--	Pass
935.13	V	67.46	48.24	53.45	38.8	Pass
1402.69	V	68.05	49.78	52.86	38.8	Pass
1870.25	V	64.30	45.47	56.61	38.8	Pass
2337.81	V	57.96	39.97	62.95	38.8	Pass
2805.38	V	49.74	--	--	38.8	Pass
3272.94	V	47.16	--	--	38.8	Pass
3740.50	V	48.40	--	--	38.8	Pass
4208.06	V	46.80	--	--	38.8	Pass
4675.63	V	43.30	--	--	38.8	Pass

Limit =-43+10log 10 (0.36) = 38.6

Radiated emissions of the bottom Channel

Emission Frequency (MHz)	Ant. Polarity(H/V)	Radiated emissions PK(dBuV/m)	Radiated emissions AV(dBuV/m)	Measurement Result Below carrier(dBc)	Limit	Result(P/F)
462.56	V	120.51	--	0	--	Pass
925.12	V	64.74	45.56	55.74	38.8	Pass
1387.68	V	67.72	48.97	52.79	38.8	Pass
1850.24	V	64.77	45.22	55.74	38.8	Pass
2312.8	V	55.86	36.78	64.65	38.8	Pass
2775.36	V	48.78	--	--	38.8	Pass
3237.92	V	46.87	--	--	38.8	Pass
3700.48	V	48.40	--	--	38.8	Pass
4163.04	V	46.97	--	--	38.8	Pass
4625.61	V	39.64	--	--	38.8	Pass

Limit =-43+10log 10 (0.37) = 38.7

Radiated emissions of the top Channel

Emission Frequency (MHz)	Ant. Polarity(H/V)	Radiated emissions PK(dBuV/m)	Radiated emissions AV(dBuV/m)	Measurement Result Below carrier(dBc)	Limit	Result(P/F)
467.725	V	120.21	--	0	--	Pass
925.45	V	63.89	44.44	56.32	38.8	Pass
1388.175	V	66.83	47.67	53.38	38.8	Pass
1850.9	V	65.79	46.41	54.42	38.8	Pass
2313.625	V	56.22	37.33	63.99	38.8	Pass
2776.35	V	47.24	--	--	38.8	Pass
3239.075	V	45.99	--	--	38.8	Pass
3701.8	V	44.87	--	--	38.8	Pass
4164.525	V	41.09	--	--	38.8	Pass
4627.25	V	37.76	--	--	38.8	Pass

Note: Transmitter spurious worst one case was showed.

8. MODULATION CHARACTERISTICS

8.1 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.

8.2 MEASUREMENT METHOD

8.2.1 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.

8.2.2 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 = 20log10 (Deviation of test frequency/Deviation of 1 KHz reference).

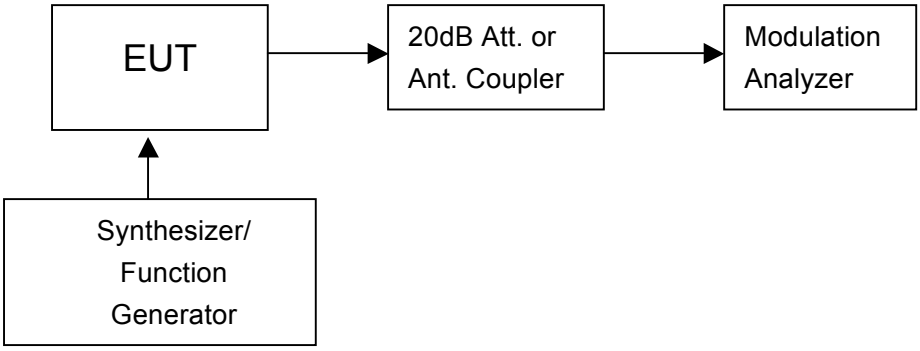


Figure 1: Modulation characteristic measurement configuration

8.3 MEASUREMENT INSTRUMENTS

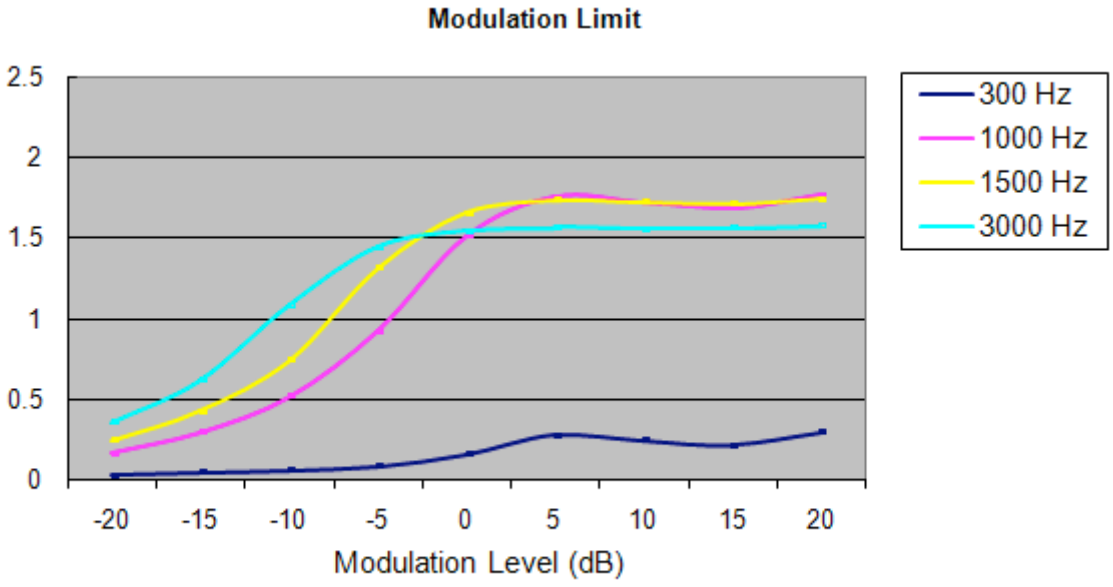
NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL. DATE
Modulation Analyzer	HP	8901B	3104A03367	2011.06

8.4 MEASUREMENT RESULT

(a). Modulation Limit:

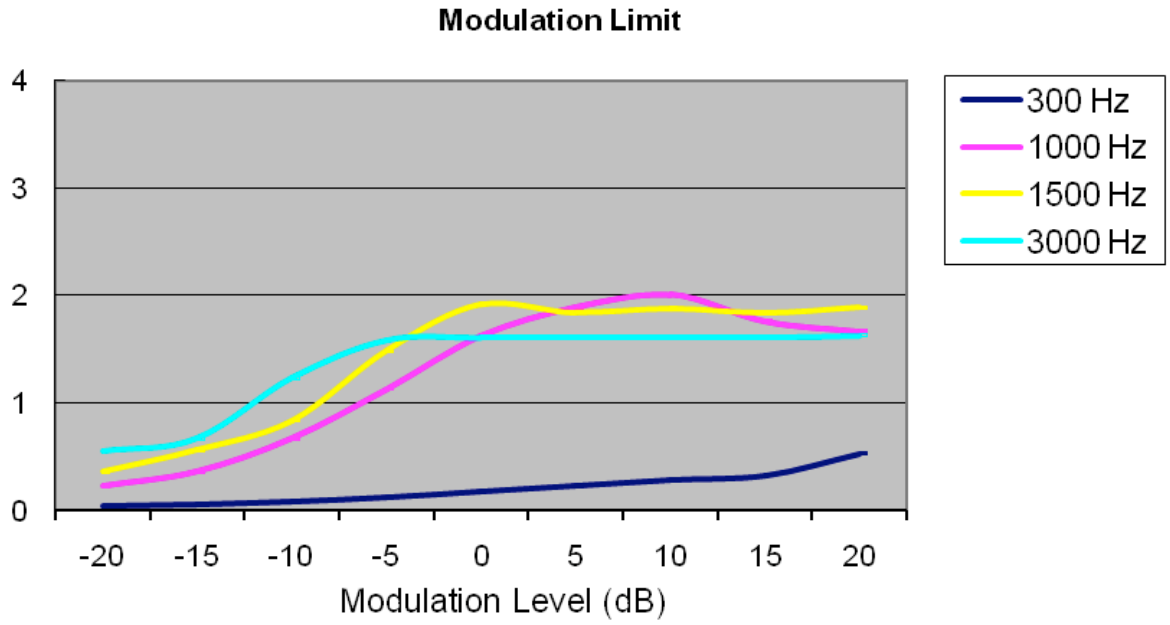
Middle Channel @ 12.5 KHz Channel Separations

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



Middle Channel @ 20 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	0.04	0.23	0.36	0.56
-15	0.06	0.36	0.56	0.67
-10	0.09	0.67	0.84	1.23
-5	0.12	1.13	1.49	1.59
0	0.18	1.62	1.92	1.61
+5	0.23	1.89	1.84	1.61
+10	0.29	2.01	1.88	1.61
+15	0.33	1.76	1.84	1.61
+20	0.53	1.67	1.89	1.63

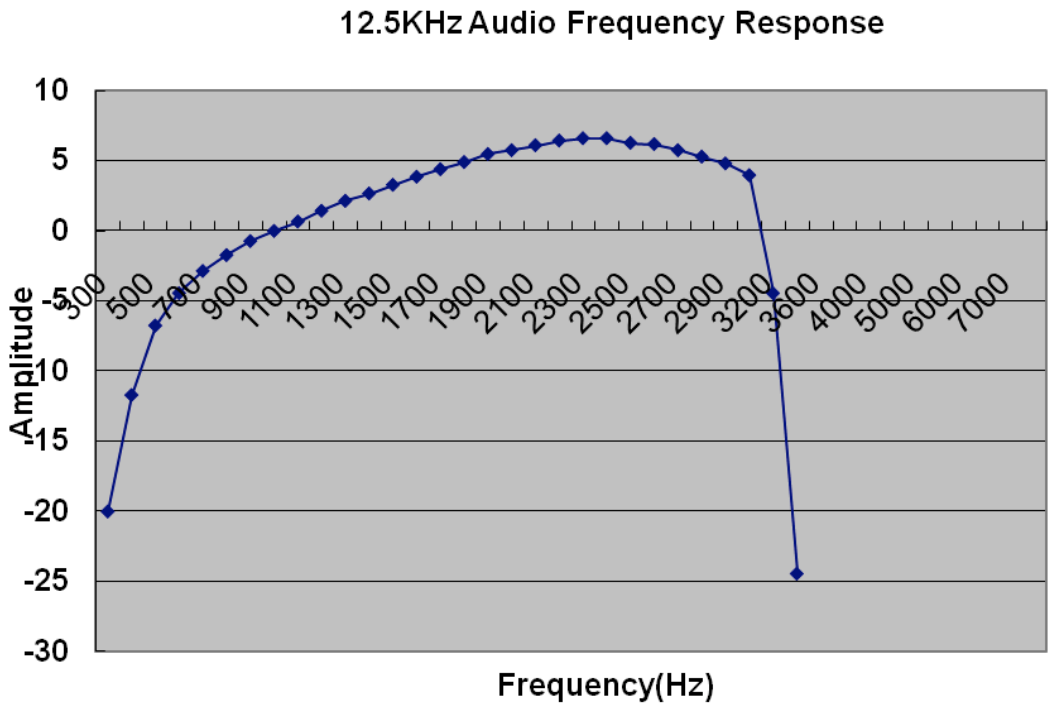


(b). Audio Frequency Response:

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	--

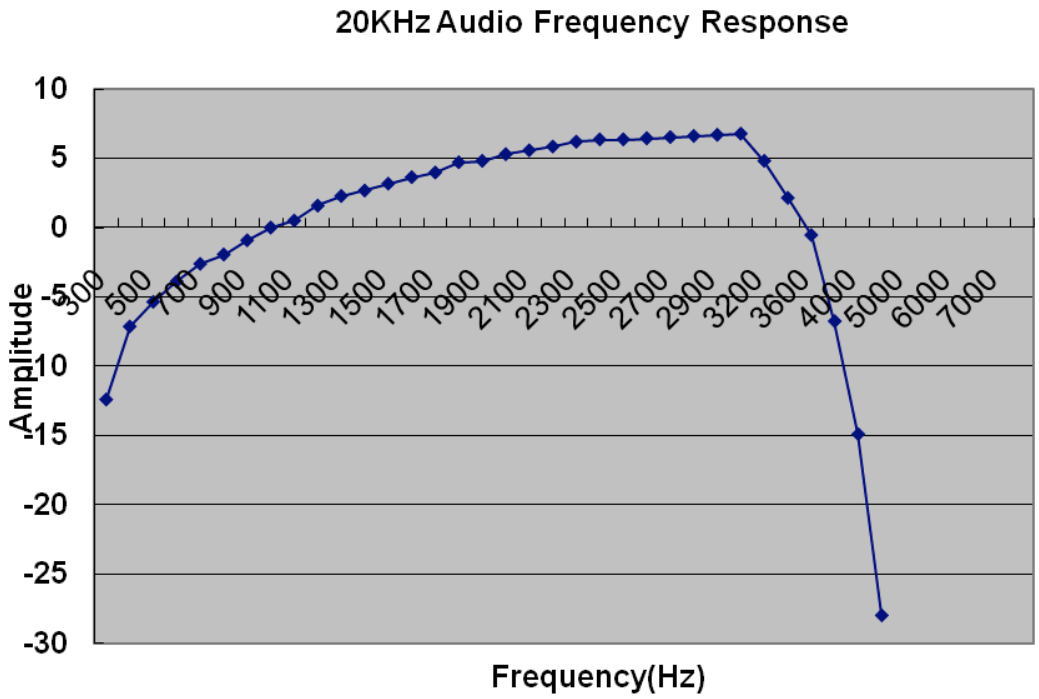
Frequency Response of Middle Channel



20 KHz Channel Separation

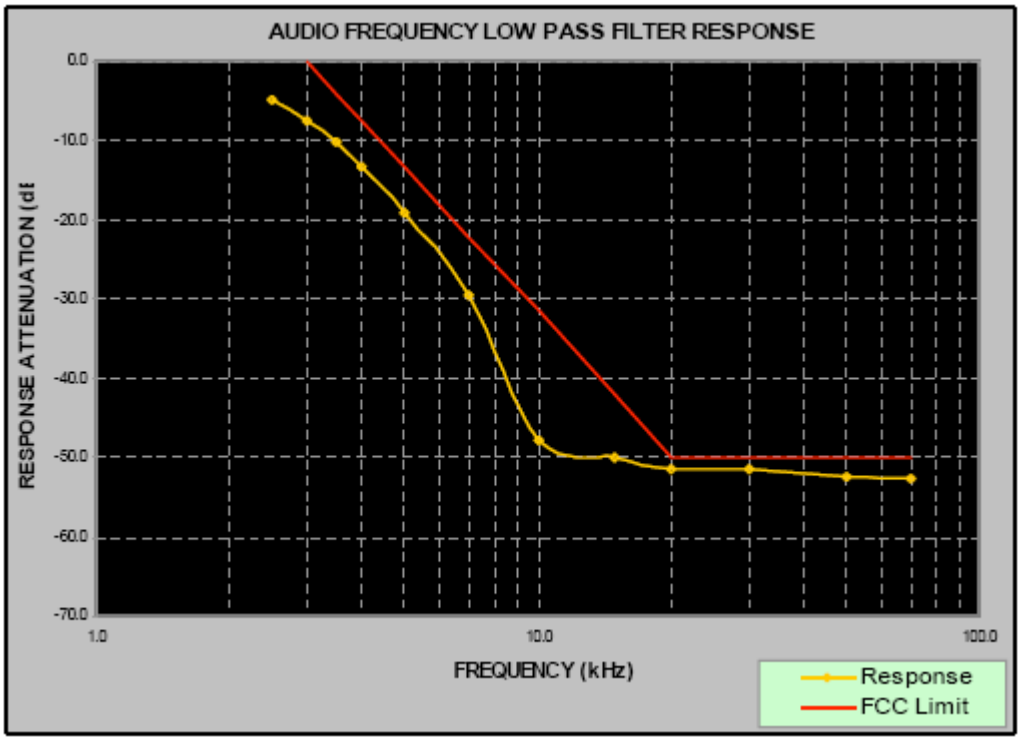
Frequency (Hz)	Deviation (KHz)
100	--
200	--
300	0.12
400	0.22
500	0.27
600	0.32
700	0.37
800	0.4
900	0.45
1000	0.5
1100	0.53
1200	0.6
1300	0.65
1400	0.68
1500	0.72
1600	0.76
1700	0.79
1800	0.86
1900	0.87
2000	0.92
2100	0.95
2200	0.98
2300	1.02
2400	1.04
2500	1.04
2600	1.05
2700	1.06
2800	1.07
2900	1.08
3000	1.09
3200	0.87
3400	0.64
3600	0.47
3800	0.23
4000	0.09
4500	0.02
5000	--
5500	--
6000	--
6500	--
7000	--
7500	--
8000	--
8500	--
9000	--
9500	--

Frequency Response of Middle Channel



(c). Audio Frequency low Pass Filter Response :

Audio Frequency	Response Attenuation (dB)	FCC Limit (dB)
2.5	-4.90	
3.0	-7.38	0.0
3.5	-10.20	-4.0
4.0	-13.24	-7.5
5.0	-19.04	-13.3
7.0	-29.36	-22.1
10.0	-47.72	-31.4
15.0	-50.05	-42.0
20.0	-51.34	-50.0
30.0	-51.43	-50.0
50.0	-52.26	-50.0
70.0	-52.67	-50.0



9. RF POWER OUTPUT

9.1 PROVISIONS APPLICABLE

Rule Part No.: §95.639

Requirements: Power output shall not exceed 0.50 Watts effective radiated power for the FRS channels.

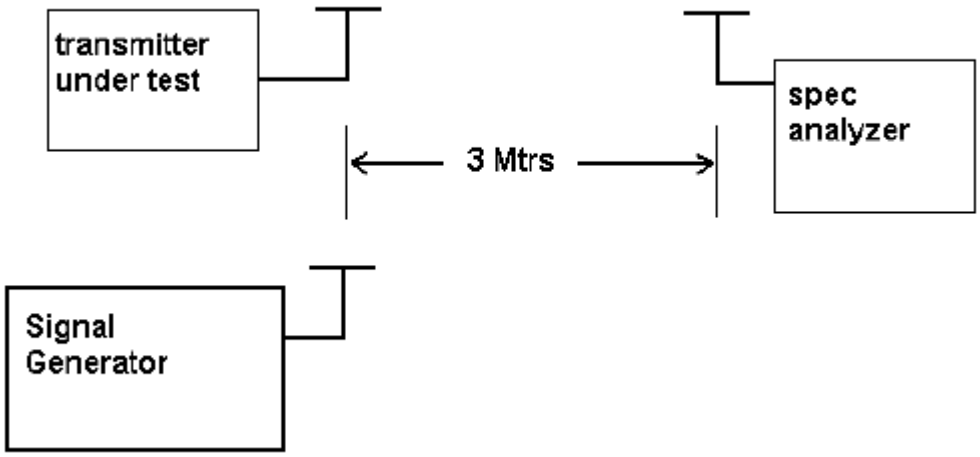
There can be no provisions for increasing the power or varying the power. No GMRS channel, under any condition of modulation, shall exceed:

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

9.2 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:



9.3 TEST RESULT

Power Measurement Results		
Channel	**Channel**	**Measurement Result For 0.5W**
		ERP
FRS	462.5625MHz	0.36w(25.5dBm)
	467.5625MHz	0.38w(25.8dBm)
	467.7125MHz	0.37w (25.7dBm)
GMRS	462.5500MHz	0.34w(25.3dBm)
	462.7250MHz	0.37w(25.7dBm)

NOTE: The DUT was measured in 3 orientations with respect to the receive antenna and the orientation with the highest radiated power results is shown (Vertical Polarization).

10. Radiated Emission on Receiving Mode

10.1 PROVISIONS APPLICABLE

FCC Part 15 Subpart B Section 15.109

10.2 TEST METHOD

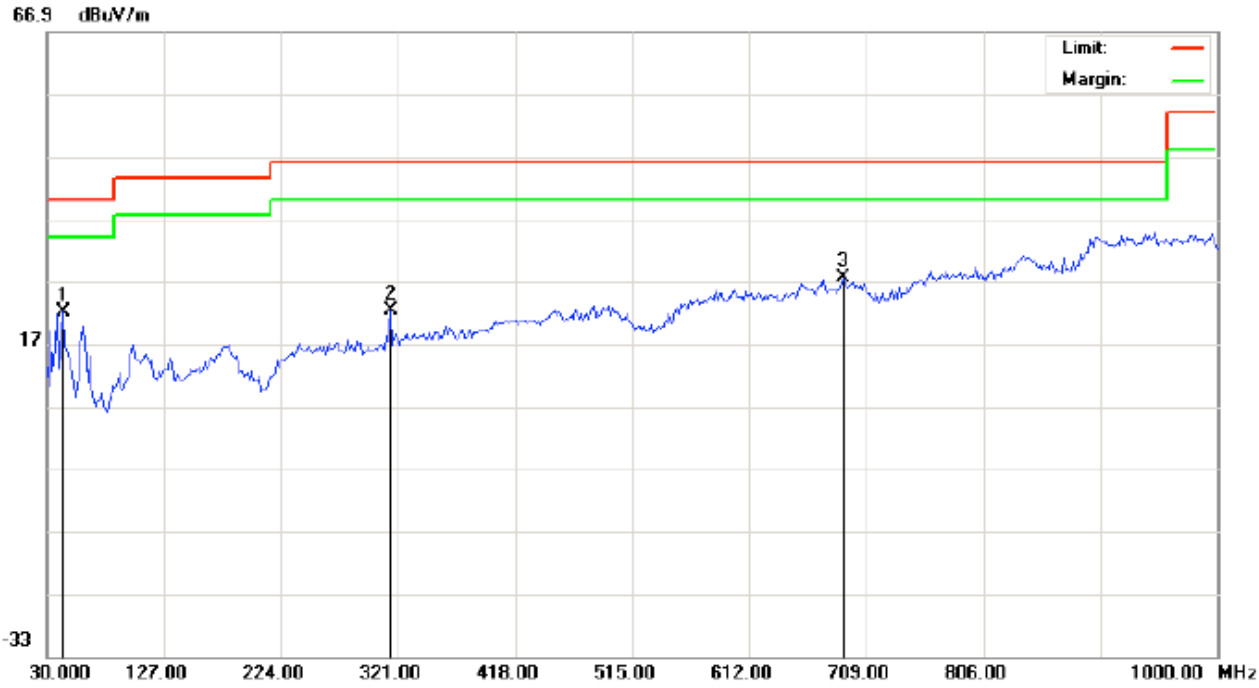
ANSI C 63.4: 2009

10.3 TEST INSTRUMENTS

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL. DATE
SPECTRUM ANALYZER	AGILENT	E4440A	US44300399	2011.06
TEST RECEIVER	R&S	ESIB26	A0304218	2011.06
LOOP ANTENNA	R&S	HFH2-Z2	A0304220	2011.06
HORN ANT.	R&S	HF906	100150	2011.06
BROADBAND ANT.	R&S	HL562	A0304224	2011.06

10.4 MEASURE RESULT (MEASURED AT 3M USING FCC PART15 B LIMITS)

RADIATED EMISSION TEST RESULTS – Vertical



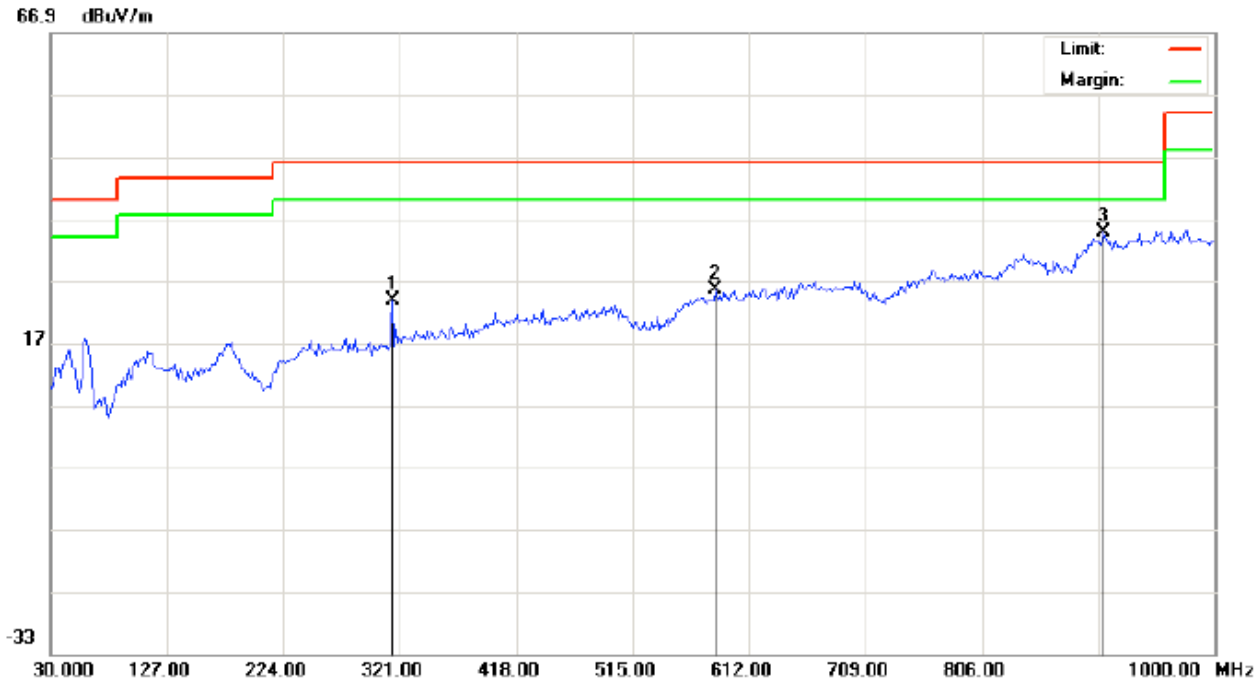
Site: site #1
Limit: FCC Class B 3M Radiation
EUT:long rang walkie talkie
M/N: 74047
Mode: RX
Note:

Polarization: *Vertical*
Power: DC4.5V
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	42.9333	6.04	15.94	21.98	40.00	-18.02	peak			
2		314.5333	4.28	17.95	22.23	46.00	-23.77	peak			
3		689.6000	1.33	26.21	27.54	46.00	-18.46	peak			

RADIATED EMISSION TEST RESULTS – Horizontal



Site: site #1
Limit: FCC Class B 3M Radiation
EUT:long range walkie talkie
M/N: 74047
Mode: RX
Note:

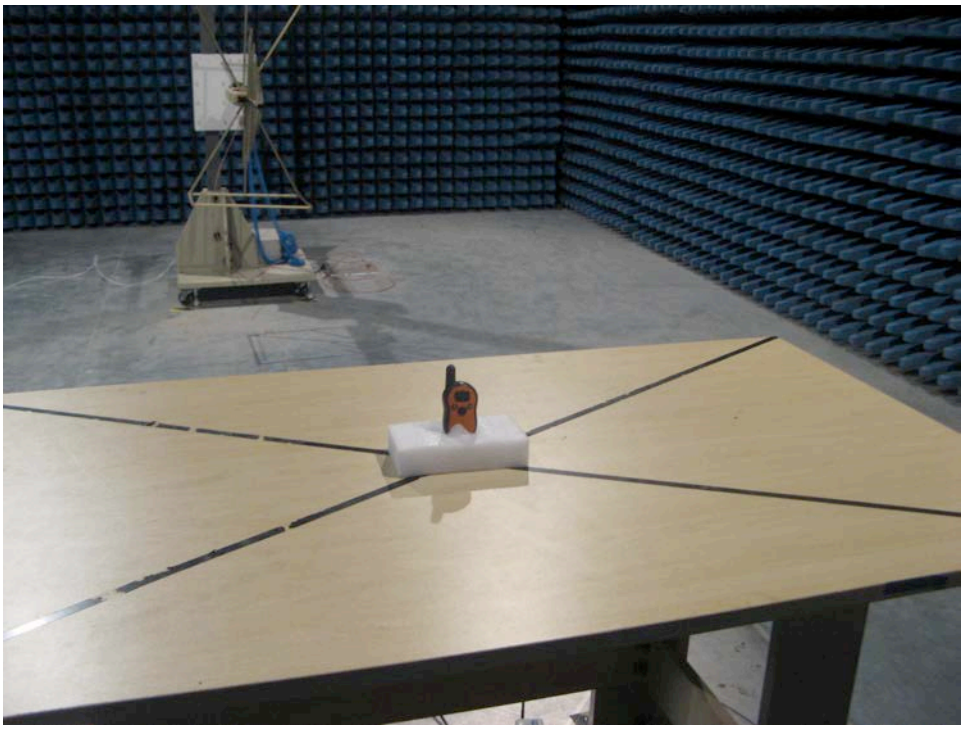
Polarization: *Horizontal*
Power: DC4.5V
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		314.5333	5.89	17.95	23.84	46.00	-22.16	peak			
2		584.5167	0.92	24.72	25.64	46.00	-20.36	peak			
3	*	907.8500	1.43	33.24	34.67	46.00	-11.33	peak			

APPENDIX I
PHOTOGRAPHS OF SETUP

RADIATED TEST SETUP



APPENDIX II
EXTERNAL VIEW OF EUT

TOP VIEW OF EUT

BOTTOM VIEW OF EUT

LEFT VIEW OF EUT

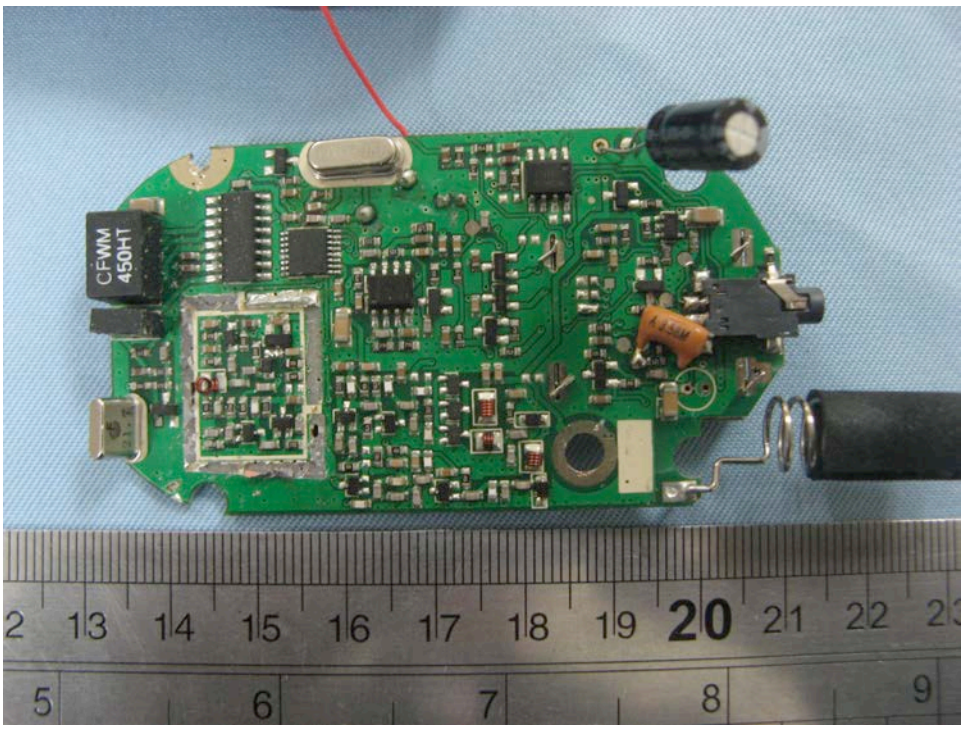
RIGHT VIEW OF EUT

FRONT VIEW OF EUT

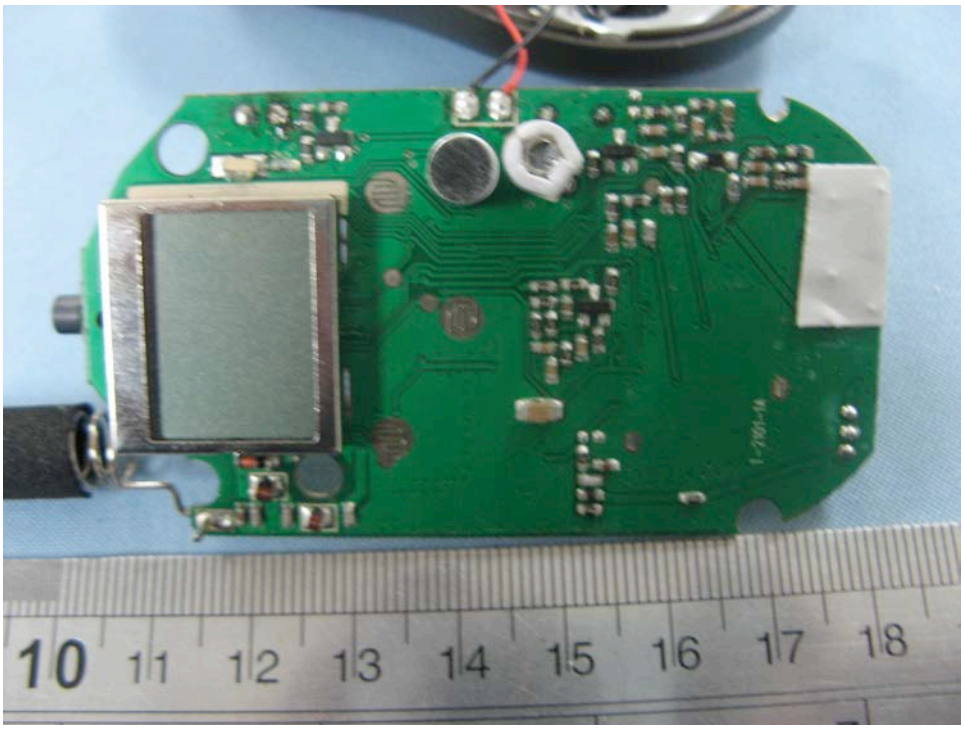
BACK VIEW OF EUT

INTERNAL VIEW OF EUT - 1

INTERNAL VIEW OF EUT - 2



INTERNAL VIEW OF EUT - 3



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