



SGS-CSTC Standards Technical Services Co., Ltd.

No. 1 Workshop, M-10, Middle Section, Science & Technology Park,
District Shenzhen, China 518057

Telephone: +86 (0) 755 2601 2053
Fax: +86 (0) 755 2671 0594
Email: sgs_internet_operations@sgs.com

Report No: SZEMO081206092RFF
Page: 1 of 25
FCC ID : WYQ-BT-860509

TEST REPORT

Application No: SZEMO081206092RF
Applicant/ Manufacturer: SPECIALTHING INTERNATIONAL CO, LTD
SPECIALTHING INTERNATIONAL CO, LTD
Factory: SPECIALTHING ELECTRONICS MANUFACTORY
FCC ID: WYQ-BT-860509
Fundamental Carrier Frequency : 462.5625-467.7125 MHz
462.5500-467.7250 MHz♣
♣ Please refer to section 2 of this report which indicates which Fundamental Carrier Frequency was actually tested.

Equipment Under Test (EUT):

Name: MULTI-FUNCTION HEADSET
Model: BT-10K/BT-20K
Trade mark: SPG, Dr. Owl, Noble Music, Sports, APG
Standards: FCC Part 95
Date of Receipt: 10 December 2008
Date of Test: 23 to 30 June 2009
Date of Issue: 01 July 2009

Test Result :	PASS *
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* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Lo
Lab Manager

This report refers to the General Conditions for Inspection and Testing Services, printed overleaf
This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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2 Test Summary

Test	Test Requirement	Standard Paragraph	Result
Conducted Emission	FCC Part 15	15.207	Pass
Effective Radiated Power	FCC Part 95	95.639(d)	Pass
Frequency Stability	FCC Part 95	2.1055 & 95.627	Pass
Emission Bandwidth	FCC Part 95	95.633	Pass
Audio Frequency Response	FCC Part 95	95.637	Pass
Modulation Standards	FCC Part 95	95.637	Pass
Audio Low Pass Filter Response	FCC Part 95	95.637	Pass
Radiated Spurious Emission	FCC Part 95	2.1051 & 95.635(b)	Pass

Remark:

The tested Fundamental Carrier Frequency are channel 4 (462.6375MHz) and channel 11 (467.6375MHz)



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4 General Information

4.1 Client Information

Applicant Manufacturer: SPECIALTHING INTERNATIONAL CO, LTD
Address of Applicant: Unit 7, 7/F, Block A, Veristrong Ind Centre, 34-36 Au Pui Wan Street, Fotan, Shatin, N.T, Hong Kong
Factory: SPECIALTHING ELECTRONICS MANUFACTORY
Address of Factory: TANGJIAN IND. DISTRICT, CHA SHAN TOWN, DONGGUAN, CHINA

4.2 General Description of E.U.T.

EUT Name:	MULTI-FUNCTION HEADSET
Model:	BT-10K/BT-20K
FCC ID:	WYQ-BT-860509
FCC Rule Parts:	Part 95
Operation Frequency:	FRS: 467.5625MHz, 467.5875MHz, 467.6125MHz, 467.6375MHz, 467.6625MHz, 467.6875MHz, 467.7125MHz FRS and GMRS: 462.5625MHz, 462.5875MHz, 462.6125MHz, 462.6375MHz, 462.6625MHz, 462.6875MHz, 462.7125MHz GMRS: 462.5500MHz, 462.5750MHz, 462.6000MHz, 462.6250MHz, 462.6500MHz, 462.6750MHz, 462.7000MHz, 462.7250MHz
Number of Channels:	22 channels total. (7 channels FRS/GMRS, 7 channels FRS Only, 8 channels GMRS only)
Modulation:	FM
au-thorized bandwidth	FRS type: 12.5KHz GMRS type: 20.0KHz
Keying:	Manual
Type of Information:	Voice
Power Output Level:	Fixed
Antenna Type:	Permanently attached
Interface Cables:	External microphone input
Power Source & Voltage:	3*1.5V(AAA)=4.5V
Voltage:	3.5V-4.5V
Current:	100-500mA

4.3 Description of Support Units

The EUT was tested as an independent unit.

4.4 Standards Applicable for Testing

The standard used was PART 2. PART 95. ANSI C63.4:2003 and TIA 603C:2004.

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4.5 Other Information Requested by the Customer

None.

4.6 Test Location

All tests were performed at:

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, District Shenzhen, China
518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

4.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L2929)**
CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.
- **VCCI**
The 3m Semi-anechoic chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2197 and C-2383 respectively.
Date of Registration: September 29, 2008. Valid until September 28, 2011.
- **FCC – Registration No.: 556682**
SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 556682, June 27, 2008.
- **Industry Canada (IC)**
The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1.

4.8 Measurements

4.8.1 References

ANSI C63.2 Specifications for Electromagnetic Noise and Field Strength Instrumentation

ANSI C63.4 American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

Land Mobile FM or PM Communications Equipment Measurement and Performance Standards (ANSI/TIA603C:2004)

5 Test Results

5.1 Test Instruments

RE in Chamber						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	16-06-2008	15-06-2010
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	12-12-2008	11-12-2009
3	EMI Test software	AUDIX	E3	SEL0050	N/A	N/A
4	Coaxial cable	SGS	N/A	SEL0028	18-06-2009	17-06-2010
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0014	12-08-2008	11-08-2009
6	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	18-06-2009	17-06-2010
7	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0005	12-08-2008	11-08-2009
8	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	12-08-2008	11-08-2009
9	Pre-amplifier (1-18GHz)	Rohde & Schwarz	AFS42-00101 800-25-S-42	SEL0081	18-06-2009	17-06-2010
10	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33- 18002650-30- 8P-44	SEL0080	18-06-2009	17-06-2010
11	Band filter	Amindeon	82346	SEL0094	18-06-2009	17-06-2010
12	Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	15-06-2009	14-06-2010
13	Audio Analyzer	Rohde & Schwarz	UPL 16	SEL0093	18-06-2009	17-06-2010

Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	Shielding Room	ZhongYu Electron	GB-88	SEL0042	N/A	N/A
2	LISN	ETS-LINDGREN	3816/2	SEL0021	18-06-2009	17-06-2010
3	ISN	Rohde & Schwarz	ENY 22 1109	EMC0114	18-06-2009	17-06-2010
4	ISN	Rohde & Schwarz	ENY 41 1110	EMC0115	18-06-2009	17-06-2010
5	EMI Test Receiver	Rohde & Schwarz	ESCI	SEL0022	18-06-2009	17-06-2010
6	Coaxial Cable	SGS	N/A	SEL0024	18-06-2009	17-06-2010



5.2 E.U.T. Operation

Input voltage: 4.5V DC (3 x 'AAA' Size Batteries).

Operating Environment:

Temperature: 24.0 °C

Humidity: 56 % RH

Atmospheric Pressure: 1012 mbar

5.3 Test procedure & Measurement Data

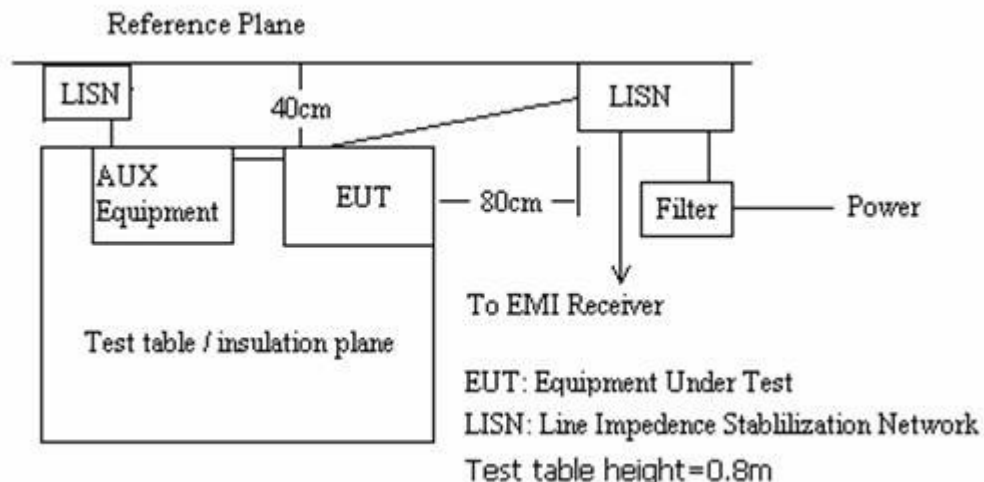
5.3.1 Conducted Emissions at Mains Terminals 150 kHz to 30MHz

Test Requirement: FCC Part 15.207
 Test Method: ANSI C63.4: 2003
 Frequency Range: 150KHz to 30MHz
 Detector: Peak for pre-scan (9kHz Resolution Bandwidth)
 Quasi-Peak if maximised peak within 6dB of Quasi-Peak limit
 EUT Operation: Pretest the EUT in charging mode

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Plan View of Test Setup

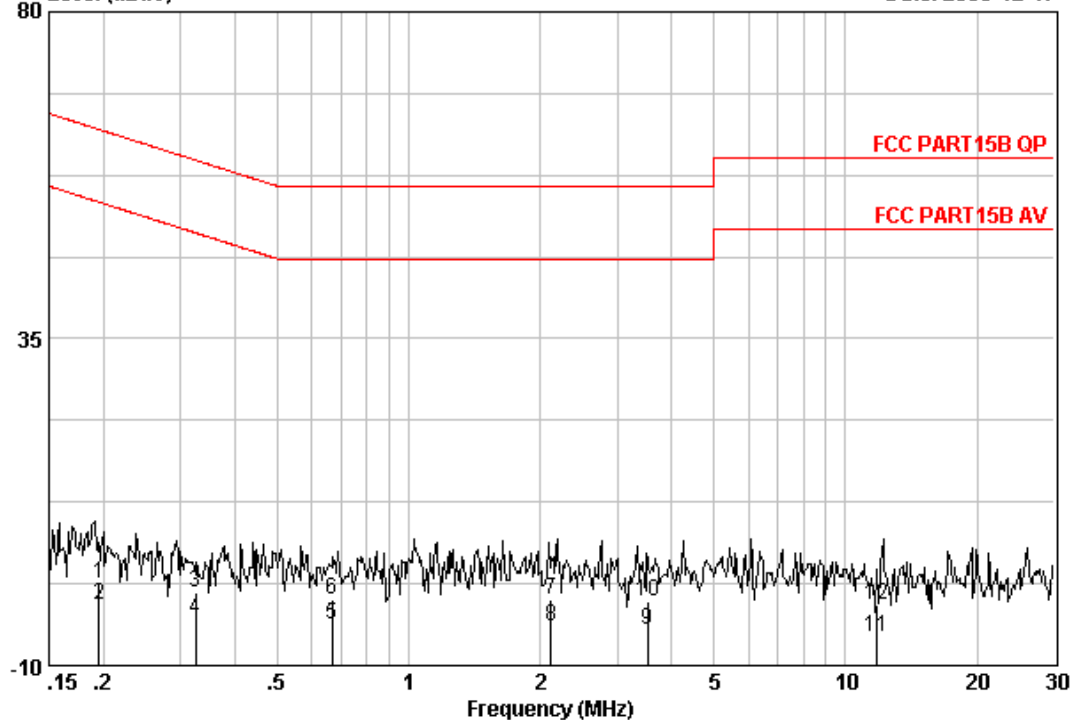


Charging mode

Live line

Data: 1
Level (dBuV)

Date: 2008-12-17



Site : Shielding Room
Condition : FCC PART15B QP CE LINE
EUT : MULTI-FUNCTION HEADSET
Job No. : 6092RF
MODE : CHARGE

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.19550	0.04	-0.05	1.21	1.21	63.80	-62.59	QP
2	0.19550	0.04	-0.05	-1.64	-1.65	53.80	-55.45	AVERAGE
3	0.32512	0.05	-0.04	0.07	0.08	59.57	-59.50	QP
4	0.32512	0.05	-0.04	-3.64	-3.63	49.57	-53.21	AVERAGE
5 @	0.66832	0.06	-0.05	-4.45	-4.44	46.00	-50.44	AVERAGE
6	0.66832	0.06	-0.05	-1.01	-1.00	56.00	-57.00	QP
7	2.121	0.12	-0.06	-0.95	-0.89	56.00	-56.89	QP
8	2.121	0.12	-0.06	-4.68	-4.62	46.00	-50.62	AVERAGE
9	3.528	0.15	-0.08	-5.28	-5.21	46.00	-51.21	AVERAGE
10	3.528	0.15	-0.08	-1.18	-1.11	56.00	-57.11	QP
11	11.745	0.23	-0.37	-5.90	-6.04	50.00	-56.04	AVERAGE
12	11.745	0.23	-0.37	-1.56	-1.70	60.00	-61.70	QP

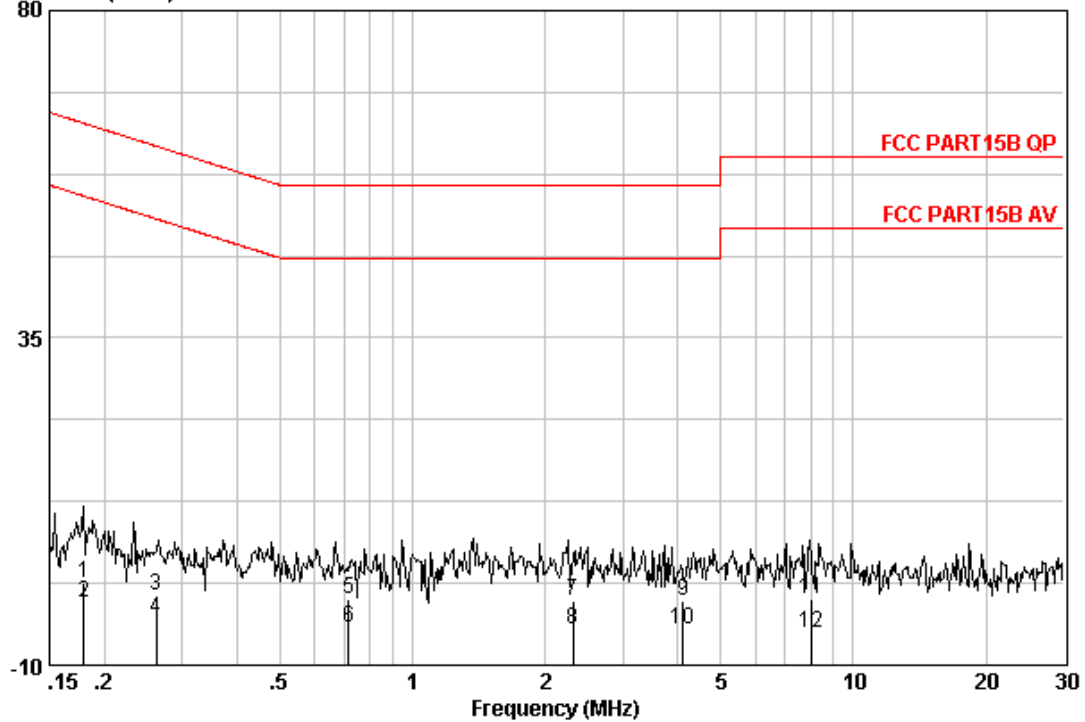


Neutral line

Data: 2

Level (dBuV)

Date: 2008-12-17



Site : Shielding Room
Condition : FCC PART15B QP CE NEUTRAL
EUT : MULTI-FUNCTION HEADSET
Job No. : 6092RFF
MODE : CHARGE

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.17961	0.04	-0.04	1.39	1.38	64.50	-63.12	QP
2	0.17961	0.04	-0.04	-1.50	-1.51	54.50	-56.01	AVERAGE
3	0.26164	0.05	-0.04	-0.35	-0.34	61.38	-61.72	QP
4	0.26164	0.05	-0.04	-3.75	-3.75	51.38	-55.12	AVERAGE
5	0.71597	0.06	-0.04	-0.88	-0.86	56.00	-56.86	QP
6	0.71597	0.06	-0.04	-4.80	-4.78	46.00	-50.78	AVERAGE
7	2.309	0.13	-0.07	-1.18	-1.12	56.00	-57.12	QP
8	2.309	0.13	-0.07	-5.07	-5.02	46.00	-51.02	AVERAGE
9	4.114	0.16	-0.10	-1.11	-1.05	56.00	-57.05	QP
10	4.114	0.16	-0.10	-5.21	-5.15	46.00	-51.15	AVERAGE
11	8.062	0.20	-0.22	-1.02	-1.03	60.00	-61.03	QP
12	8.062	0.20	-0.22	-5.68	-5.70	50.00	-55.70	AVERAGE



5.3.2 EFFECTIVE RADIATED POWER (FCC part 95.639)

5.3.2.1 Test procedure

Effective radiated power was measured using the substitution method described in TIA603C:2004. The unit was placed on an open area test site at a test distance of 3m. The EUT was placed on a nonconductive turntable approximately 0.8 meters above the ground plane. The spectrum was examined from 30MHz to 1000 MHz

At each frequency, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters in order to determine the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarizations. The spectrum analyzer's 6 dB bandwidth was set to 120 kHz, and the analyzer was operated in the CISPR quasi-peak detection mode. No video filter less than 10 times the resolution bandwidth was used. When any clock exceeds 108 MHz, the EUT was tested between 1 to 2 Gigahertz in peak mode with the resolution bandwidth set at 1 MHz as stated in ANSI C63.4. The highest emission amplitudes relative to the appropriate limit were measured and recorded in this report.

5.3.2.2 Test data

Emission Frequency (MHz)	Signal Generator reading (dBm)	Cable Loss and Tx Antenna gain Correction(dB)	Corrected Signal Generator Level ERP(dBm)	Watt	Limit (Watt)
462.6375	17.87	-1.75	16.12	0.041	0.5
467.6375	18.46	-1.75	16.71	0.047	0.5



5.3.3 Frequency Tolerance (FCC part 95.627)

Frequency as a function of temperature and voltage variation shall be maintained within the 2.5ppm limit for the FRS transmitter.

5.3.3.1 Test procedure

ANSI/TIA603C:2004.

The carrier frequency stability is the ability of the transmitter to maintain an assigned carrier frequency.

The EUT was evaluated over the temperature range -30° C to +50° C.

The temperature was initially set to -30° C and a 2-hour period was observed for stabilization of the EUT.

The frequency stability was measured within one minute after application of primary power to the transmitter.

The temperature was raised at intervals of 10 degrees centigrade through the range. A ½ an hour period was observed to stabilize the EUT at each measurement step and the frequency stability was measured within one minute after application of primary power to the transmitter.

Additionally, the power supply voltage of the EUT was varied from 85% to 115% of the nominal voltage.

5.3.3.2 Limit

Type	Limit
FRS	±2.5ppm
GMRS	±5ppm



5.3.3.3 Test data

Channel 4 (462.6375MHz)

Because the channel is belong to FRS and GMRS type. The following data correspond to the limit of the worse case type which it is FRS.

Frequency tolerance Limit: $462.6375\text{MHz} \times (\pm 2.5\text{ppm}) = \pm 1157\text{Hz}$

Voltage Frequency Stability (Temperature=20°C)

Voltage (V)	Frequency(MHz)	Frequency drift(Hz)	Limit (Hz)	Margin(Hz)	Result
3.825	462.637460	-400	± 1157	757	Pass
4.500	462.637540	+400	± 1157	757	Pass
5.175	462.637520	+200	± 1157	957	Pass

Temperature Frequency Stability (Voltage=4.5V)

Temperature (°C)	Frequency(MHz)	Frequency drift(Hz)	Limit (Hz)	Margin(Hz)	Result
-30°C	462.637250	-250	± 1157	907	Pass
-20°C	462.637260	-240	± 1157	917	Pass
-10°C	462.637220	-280	± 1157	877	Pass
0°C	462.637140	-360	± 1157	797	Pass
10°C	462.637260	-240	± 1157	917	Pass
20°C	462.637350	-150	± 1157	1007	Pass
30°C	462.637560	+60	± 1157	1097	Pass
40°C	462.637520	+20	± 1157	1137	Pass
50°C	462.637480	-20	± 1157	1137	Pass



Channel 11(467.6375MHz)

Frequency tolerance Limit: $467.6375\text{MHz} \times (\pm 2.5\text{ppm}) = \pm 1169\text{Hz}$

Voltage Frequency Stability (Temperature=20℃)

Voltage (V)	Frequency(MHz)	Frequency drift(Hz)	Limit (Hz)	Margin(Hz)	Result
3.825	467.636894	-606	± 1169	563	Pass
4.500	467.636854	-646	± 1169	523	Pass
5.175	467.636824	-676	± 1169	493	Pass

Temperature Frequency Stability (Voltage=4.5V)

Temperature (℃)	Frequency(MHz)	Frequency drift(Hz)	Limit (Hz)	Margin(Hz)	Result
-30℃	467.636544	-956	± 1169	213	Pass
-20℃	467.636790	-710	± 1169	459	Pass
-10℃	467.636860	-640	± 1169	529	Pass
0℃	467.637020	-480	± 1169	689	Pass
10℃	467.637020	-480	± 1169	689	Pass
20℃	467.636854	-646	± 1169	523	Pass
30℃	467.636988	-512	± 1169	657	Pass
40℃	467.636844	-656	± 1169	513	Pass
50℃	467.636772	-728	± 1169	441	Pass

5.3.4 Emission Bandwidth (FCC part 95.633)

5.3.4.1 Test procedure

ANSI/TIA603C:2004

Device with audio modulation: Transmitter is modulated with a 2500 Hz sine wave at an input level of 16 dB greater than that required to produce 50% of rated system deviation at 1000 Hz.

5.3.4.2 Limit

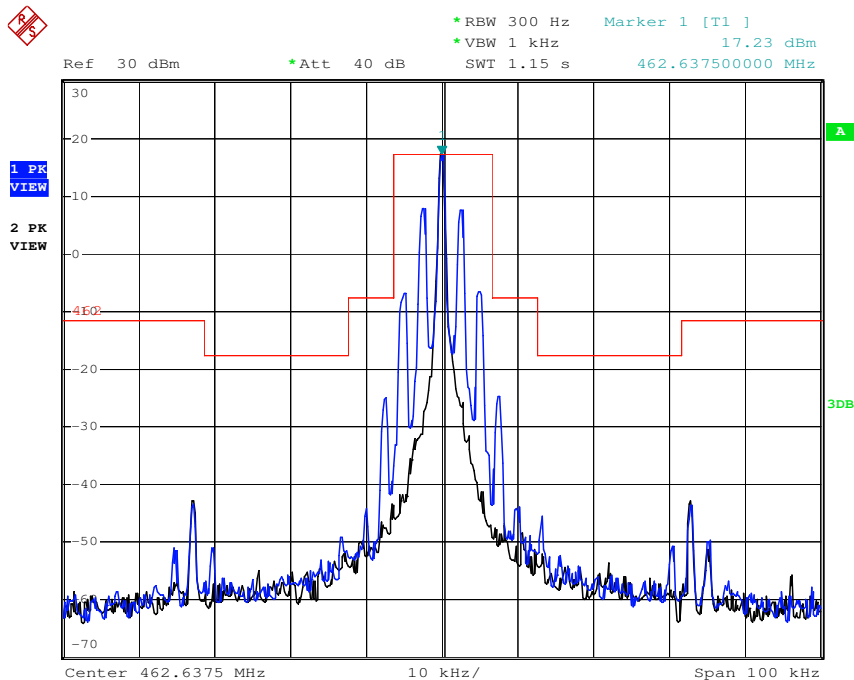
- (1) At least 25 dB (decibels) on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 100% of the authorized bandwidth.
- (2) At least 35 dB on any frequency removed from the center of the authorized bandwidth by more than 100% up to and including 250%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

Remark: channel 4, $T=0.041W$; channel 11, $T=0.047W$.

5.3.4.3 Test data

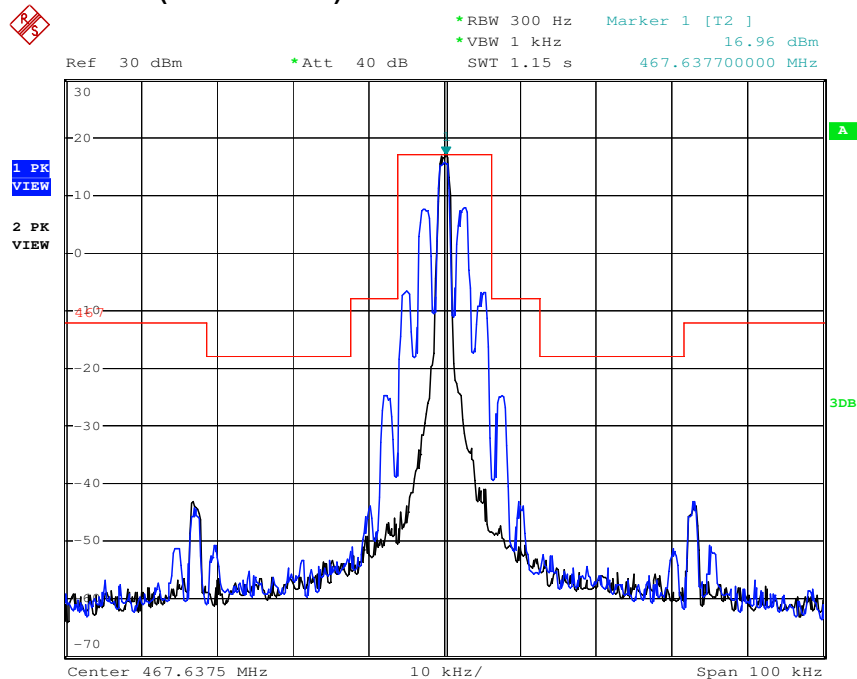
Channel 4 (462.6375MHz)

Because the channel is belong to FRS and GMRS type. The following data correspond to the limit of the worse case type which it is FRS



Date: 1.JUL.2009 12:38:53

Channel 11 (467.6375MHz)



Date: 1.JUL.2009 12:47:13

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5.3.5 Emission Designator

The emission designator is determined from the necessary bandwidth, the type of modulation and the information conveyed in the signal.

For the subject unit, the following Emission Designator has been determined according to Section 2.201 of the FCC Rules.

- First Symbol, type of modulation of the main carrier: F-Frequency Modulation
- Second Symbol, nature of signal(s) modulating the main carrier: 3
- Third Symbol, type of information to be transmitted: E

The necessary bandwidth, B_n , is calculated as:

FRS type:

$$B_n = 2M + 2DK$$

$$M = 3$$

$$D = 2.5$$

$$K = 1$$

$$B_n = (2 \times 3) + (2 \times 2.5) = 11k$$

Hence, the emission designator is: 11KOF3E

GMRS type:

$$B_n = 2M + 2DK$$

$$M = 3$$

$$D = 5$$

$$K = 1$$

$$B_n = (2 \times 3) + (2 \times 5) = 16K$$

Hence, the emission designator is: 16KOF3E



5.3.6 Modulation Standards (FCC part 95.637)

This section summarizes the results of the testing of the modulation characteristics of the EUT.

5.3.6.1 Modulation Characteristics- Modulation Limiting

Modulation limiting was performed in accordance with the procedure of TIA603C:2004. Per Section 95.637(a) the modulation deviation shall not exceed 2.5kHz for a FRS radio and 5KHz for GMRS radio.

5.3.6.2 Test procedure

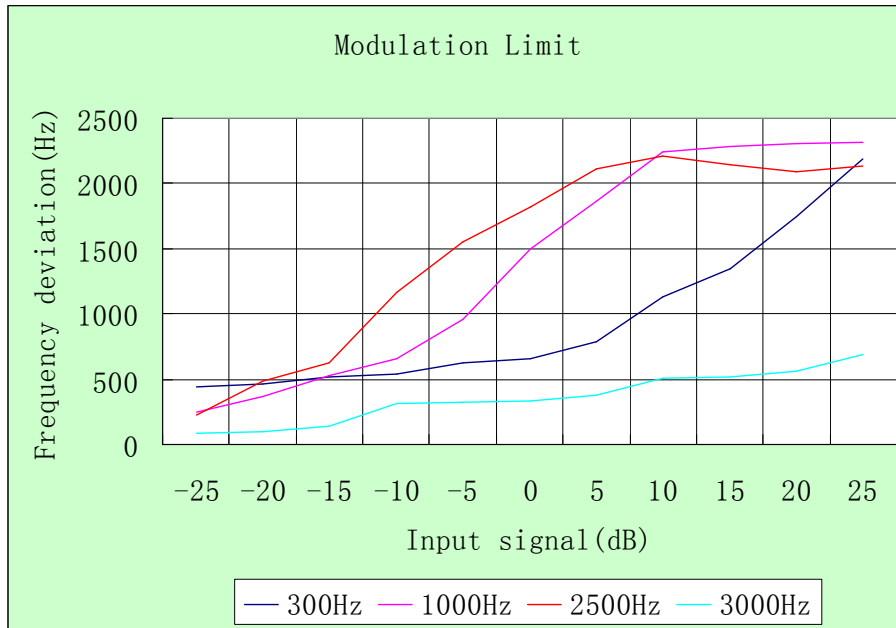
The transmitter is adjusted for full rated system deviation. The audio input level is adjusted for 60% of rated system deviation at 1000Hz. Using this level as a reference (0dB) the audio input level is varied from the reference to a level +25 dB above it and -25 dB under it, for modulation frequencies of 300Hz, 1,000Hz, and 2,500Hz. The system deviation obtained as a function of the input level is recorded

5.3.6.3 Test data

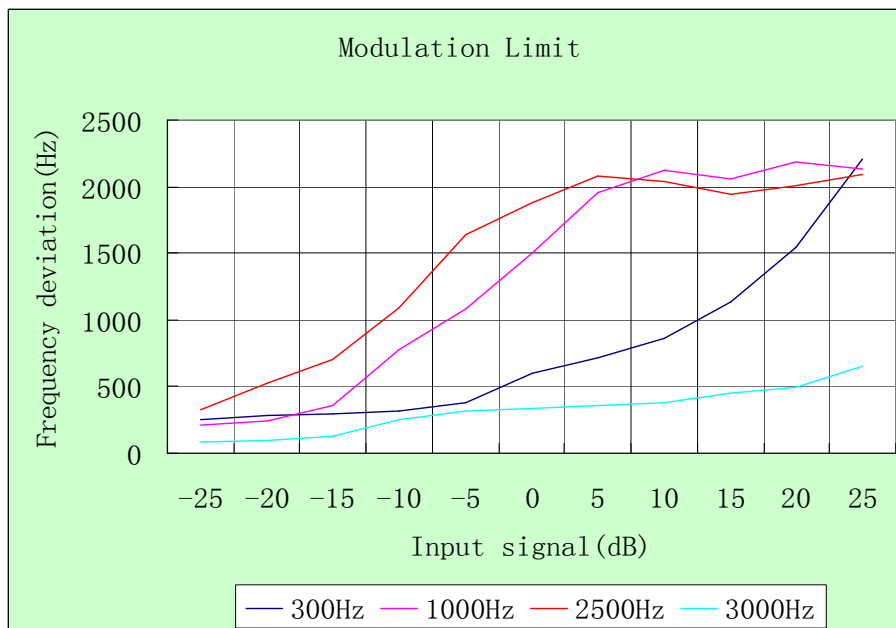
Channel 4 (462.6375MHz)

Because the channel is belong to FRS and GMRS type. The following data correspond to the limit of the worse case type which it is FRS

Modulation Limiting Positive Peak

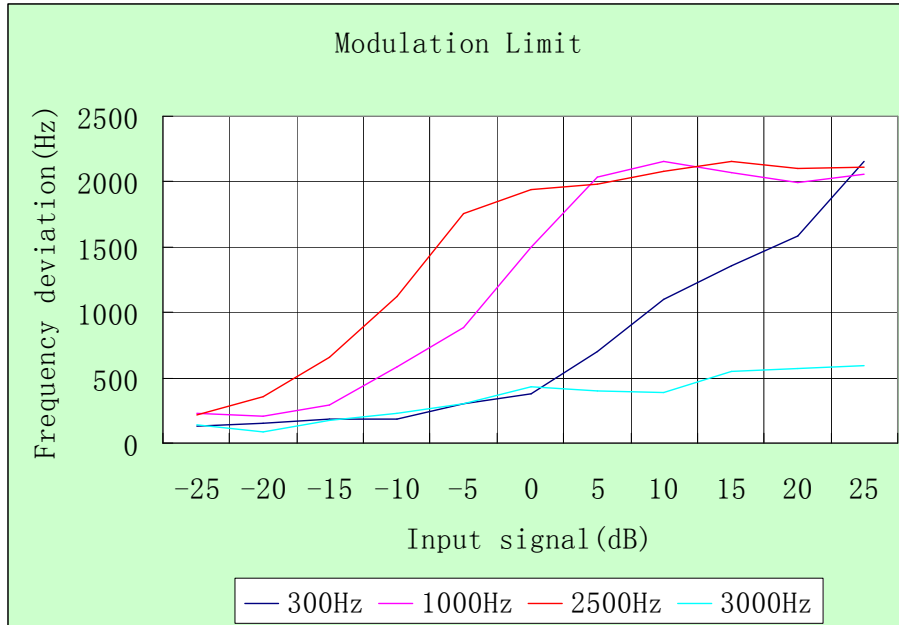


Modulation Limiting Negative Peak

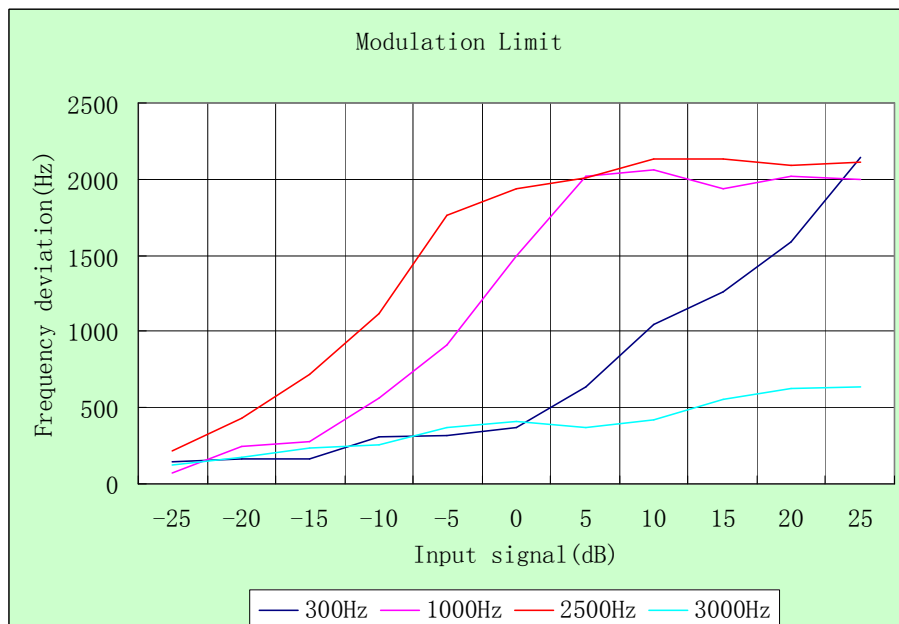


Channel 11 (467.6375MHz)

Modulation Limiting Positive Peak



Modulation Limiting Negative Peak



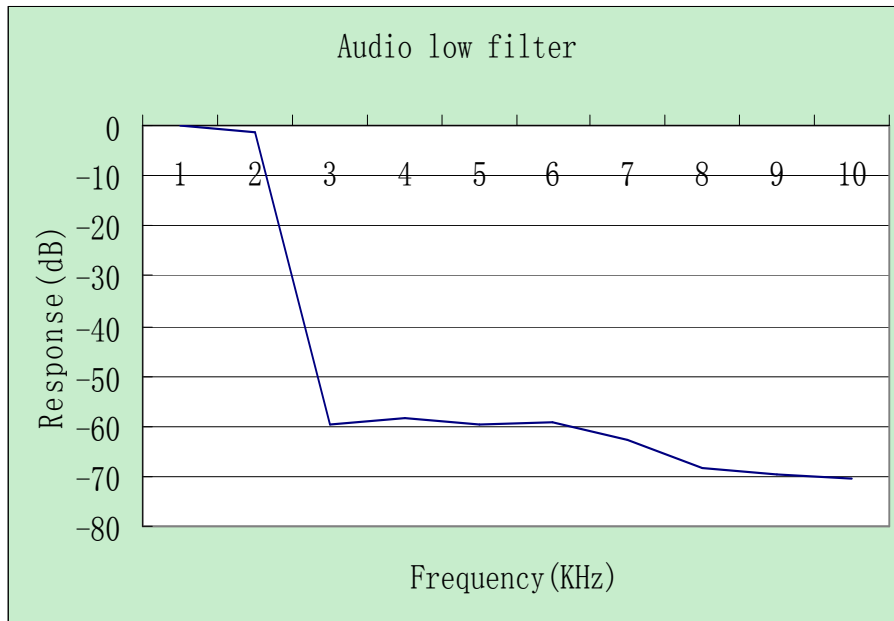
5.3.6.4 Audio Low Pass Filter Response

5.3.6.4.1 Test procedure

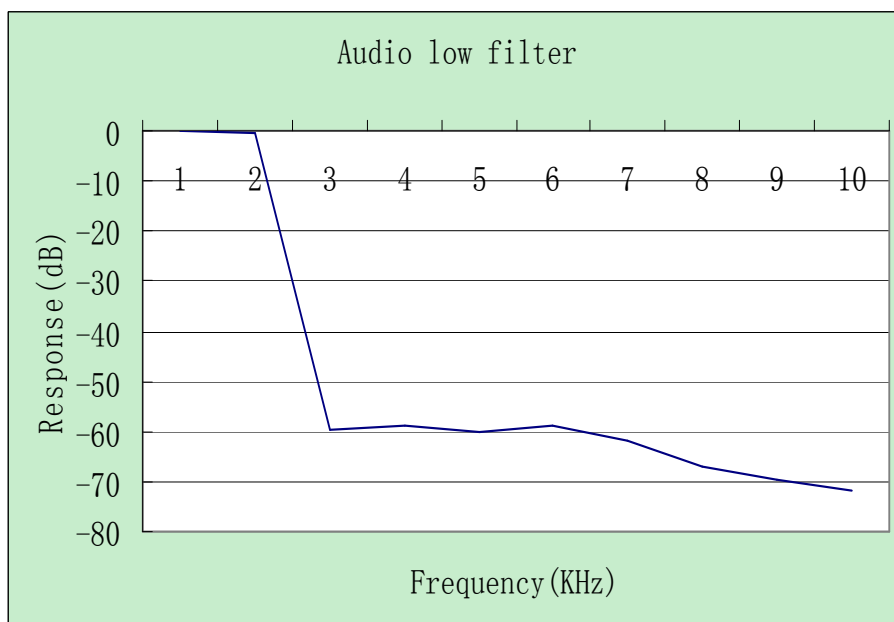
The Audio Low Pass Filter Response is the frequency response of the post limiter low pass filter circuit above 3000 Testing was performed per the method given in TIA603C:2004.

5.3.6.4.2 Test data

Channel 4 (462.6375MHz)



Channel 11(467.6375MHz)





5.3.6.5 Audio Frequency Response

The audio frequency response was measured in accordance with TIA603C:2004. The audio signal was fed into an external dummy microphone circuit and supplied to the microphone connector.

5.3.6.5.1 Test procedure

The input audio level at 1000 Hz is set to produce 20% of the rated system deviation. This point is shown as the 0dB reference level, noted DEVref.

The audio signal generator was varied from 100Hz to 5kHz with the input level held constant.

The deviation in kHz was recorded using a modulation analyzer as DEVfreq.

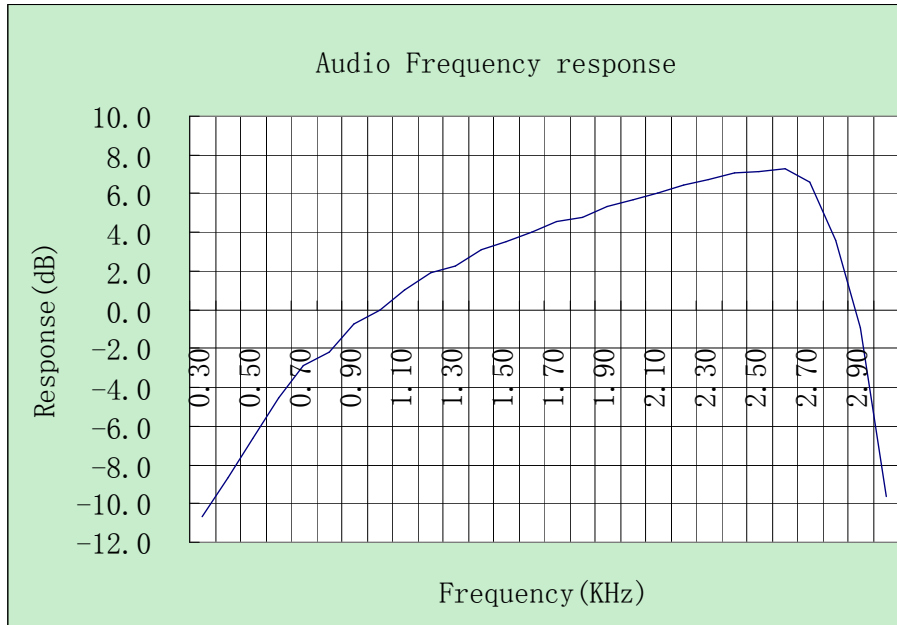
The response in dB relative to 1 kHz was calculated as follows:

$$\text{Audio Frequency Response} = 20 \text{ LOG (DEVfreq/DEVref)}$$

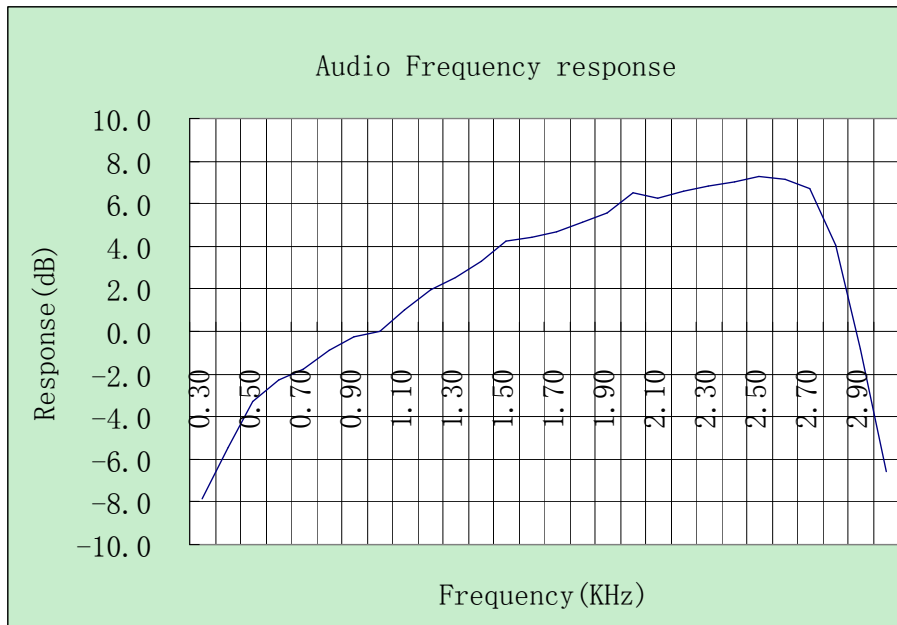
5.3.6.5.2 Test data

Channel 4 (462.6375MHz)

Because the channel is belong to FRS and GMRS type. The following data correspond to the limit of the worse case type which it is FRS



Channel 11 (467.6375MHz)





5.3.7 Radiated Spurious Emissions

The EUT must comply with requirements for radiated spurious emissions. The limits are as specified in Section 5.3.5

5.3.7.1 Test procedure

The EUT was placed on motorized turntable for radiated testing on a 3-meter open field test site. The emissions from the EUT were measured continuously at every azimuth by rotating the turntable. Receiving antennas were mounted on an antenna mast to determine the height of maximum emissions. The height of the antenna was varied between 1 and 4 meters.

The Effective Radiated Power (ERP) levels were measured and compared with the limit of §95.635(b). The limit of -13dBm is derived from the formula of $43+10\text{LOG}(P)$ dB per §95.635(b)(7).

Emissions were scanned up to the 10th harmonic of the fundamental. Worst case measurements are reported. The signal substitution method procedure as given in TIA603C:2004 was used to obtain ERP levels.

5.3.7.2 Test data:
Channel 4 (462.6375MHz)

Frequency	Spurious Emission Level				Limit of Table 3	Over limit
(MHz)	(m)	(Deg)	Polaxis	(dBm)	dBm	(dB)
388.90	1.50	299	V	-39.55	-13.00	-26.55
924.34	1.82	346	V	-17.94	-13.00	-4.94
1384.00	1.50	185	V	-25.50	-13.00	-12.50
1850.00	2.10	127	V	-31.84	-13.00	-18.84
2313.00	3.05	254	V	-34.35	-13.00	-21.35
3238.50	1.45	180	V	-25.96	-13.00	-12.96
242.43	2.35	305	H	-41.59	-13.00	-28.59
924.34	3.76	284	H	-19.02	-13.00	-6.02
1384.00	1.35	353	H	-26.22	-13.00	-13.22
1850.00	2.56	205	H	-29.21	-13.00	-16.21
2775.80	1.85	165	H	-33.95	-13.00	-20.95
3238.50	3.15	277	H	-25.68	-13.00	-12.68

Channel 11 (467.6375MHz)

Frequency	Spurious Emission Level				Limit of Table 3	Over limit
(MHz)	(m)	(Deg)	Polaxis	(dBm)	dBm	(dB)
308.39	1.45	180	V	-41.30	-13.00	-28.30
934.07	2.48	146	V	-16.83	-13.00	-3.83
1402.00	2.85	146	V	-26.09	-13.00	-13.09
1870.00	2.17	227	V	-30.95	-13.00	-17.95
2805.80	3.42	242	V	-33.14	-13.00	-20.14
3273.50	1.42	185	V	-26.26	-13.00	-13.26
296.75	2.46	328	H	-43.37	-13.00	-30.37
934.07	3.05	254	H	-16.55	-13.00	-3.55
1402.00	1.45	180	H	-27.79	-13.00	-14.79
1870.00	2.35	305	H	-29.22	-13.00	-16.22
2805.80	3.76	284	H	-32.97	-13.00	-19.97
3273.50	3.05	254	H	-25.73	-13.00	-12.73