



FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

ShenZhen Horn Audio Co.,Ltd

HP Wireless Headset

Model Number: WL188

FCC ID: ZXCWL188

Prepared for : ShenZhen Horn Audio Co.,Ltd
Block5&17,Tongfuyu Ind.Zone.Dalang,Baoan,Shenzhen,
P.R.China

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Report Number : ACS-F11223
Date of Test : Aug.22~Oct.24, 2011
Date of Report : Nov.29, 2011

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FCC ID: ZXCWL188

TEST REPORT CERTIFICATION

Applicant : ShenZhen Horn Audio Co.,Ltd
 Manufacturer : ShenZhen Horn Audio Co.,Ltd
 EUT Description : HP Wireless Headset
 FCC ID : ZXCWL188
 (A) MODEL NO. : WL188
 (B) SERIAL NO. : N/A
 (C) POWER SUPPLY : DC 3.7V
 (D) TEST VOLTAGE : DC 3.7V

Tested for comply with:
 FCC Rules and Regulations Part 15 Subpart C:2008

Test procedure used:
 ANSI C63.10:2009

The device described above is tested by AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. to confirm comply with all the FCC Part 15 Subpart C requirements.

The test results are contained in this test report and AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. is assumed full responsibility for the accuracy and completeness of these tests. This report contains data that are not covered by the NVLAP accreditation. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This Report is made under FCC Part 2.1075. No modifications were required during testing to bring this product into compliance.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : Aug.22~Oct.24 Report of date: Nov.29, 2011

Prepared by : Cerry He Reviewer by : Sunny Lu
 Cerry He / Assistant Audix Technology (Shenzhen) Co., Ltd. Sunny Lu / Supervisor

AUDIX 信華科技(深圳)有限公司
 Audix Technology (Shenzhen) Co., Ltd.
 EMC 部門報告專用章
 Stamp only for EMC Dept. Report
 Signature: Ken Lu

Approved & Authorized Signer : Ken Lu
 Ken Lu / Manager

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	Standard	Results
Power Line Conducted Emission Test	FCC Part 15C: 15.207 ANSI C63.10-2009	N/A
Radiated Emission Test	FCC Part 15C: 15.209 FCC Part 15C: 15.249 ANSI C63.10-2009	PASS
Band Edge Compliance Test	FCC Part 15: 15.249 ANSI C63.10-2009	PASS
20dB Bandwidth Test	FCC Part 15: 15.215 ANSI C63.10-2009	PASS

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product Name	: HP Wireless Headset
Model Number	: WL188
FCC ID	: ZXCWL188
Operation frequency	: 2404MHz~2476MHz
Antenna	: Integrated PCB Antenna 2.0dBi Gain
Modulation	: GFSK
Power Supply	: DC 3.7V (Note: Batteries were full charged for all the test.)
Applicant	: ShenZhen Horn Audio Co.,Ltd Block5&17,Tongfuyu Ind.Zone.Dalang,Baoan,Shenzhen, P.R.China
Manufacturer	: ShenZhen Horn Audio Co.,Ltd Block5&17,Tongfuyu Ind.Zone.Dalang,Baoan,Shenzhen, P.R.China
USB Cable	: Unshielded, Detachable, 1.3m
Date of Test	: Aug.22~Oct.24, 2011
Date of Receipt	: Aug.18, 2011
Sample Type	: Prototype production

2.2. EUT Configuration and operation conditions for test.

EUT

(EUT: HP Wireless Headset)

2.3. Test Facility

Site Description

Name of Firm : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Ke Feng Rd., 52 Block, Shenzhen
Science & Industrial Park, Nantou,
Shenzhen, Guangdong, China

3m Anechoic Chamber : Certificated by FCC, USA
Registration Number: 90454
Valid Date: Mar.31, 2012

3m & 10m Anechoic Chamber : Certificated by FCC, USA
Registration Number: 794232
Valid Date: Dec.30, 2012

EMC Lab. : Certificated by Industry Canada
Registration Number: IC 5183A-1
Valid Date: Jun.13, 2014

Certificated by DAkkS, Germany
Registration No: D-PL-12151-01-01
Valid Date: Feb.01, 2014

Accredited by NVLAP, USA
NVLAP Code: 200372-0
Valid Date: Mar.31, 2012

2.4. Measurement Uncertainty (95% confidence levels, k=2)

Test Item	Uncertainty
Uncertainty for Radiation Emission test in 3m chamber	3.6 dB(30~200MHz, Polarize: H)
	3.7 dB(30~200MHz, Polarize: V)
	4.0 dB(200M~1GHz, Polarize: H)
	3.7 dB(200M~1GHz, Polarize: V)
Uncertainty for Bandwidth test	83 kHz
Uncertainty for DC power test	0.038 %
Uncertainty for test site temperature and humidity	0.6°C
	3%

3. POWER LINE CONDUCTED EMISSION TEST

According to Paragraph (c) of FCC Part 15 section 15.207, Tests to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

4. RADIATED EMISSION TEST

4.1. Test Equipment

Frequency rang: 30~1000MHz

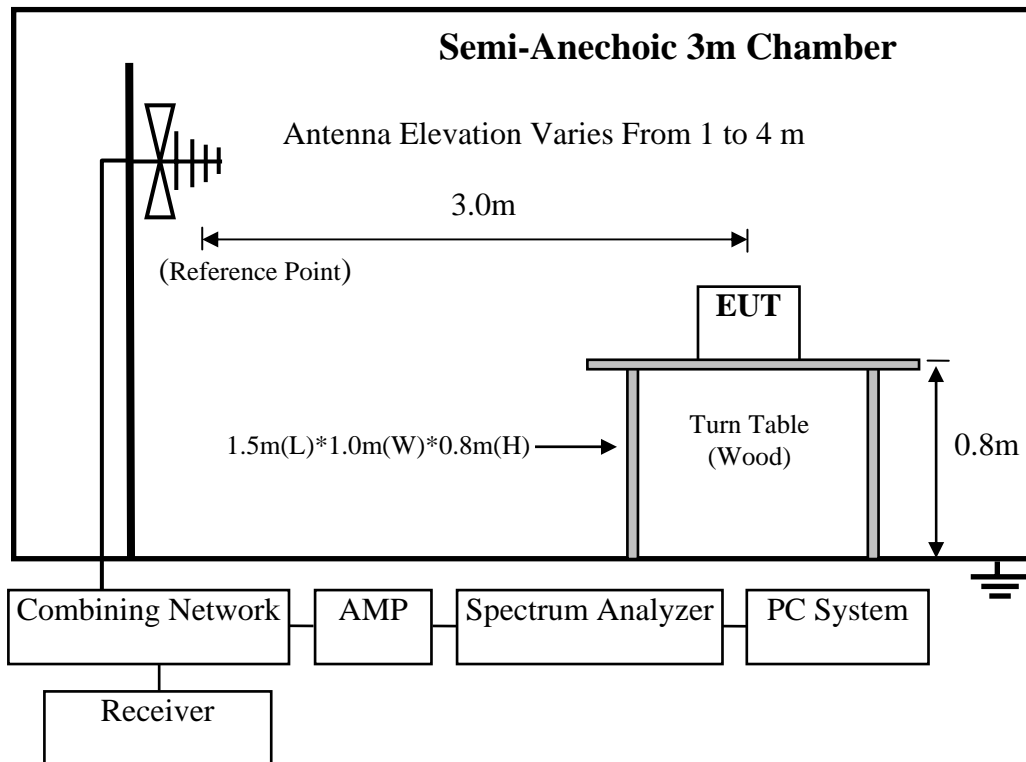
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	3#Chamber	AUDIX	N/A	N/A	Dec.05,10	1 Year
2	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 11	1 Year
3	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 11	1 Year
4	Amplifier	HP	8447D	2648A04738	May.08, 11	1 Year
5	Bilog Antenna	Schaffner	CBL6111C	2597	May.25, 11	1 Year
6	RF Cable	MIYAZAKI	8D-FB	3# Chamber No.1	May.08, 11	1 Year
7	Coaxial Switch	Anritsu	MP59B	M73989	May.08, 11	1 Year

Frequency rang: above 1000MHz

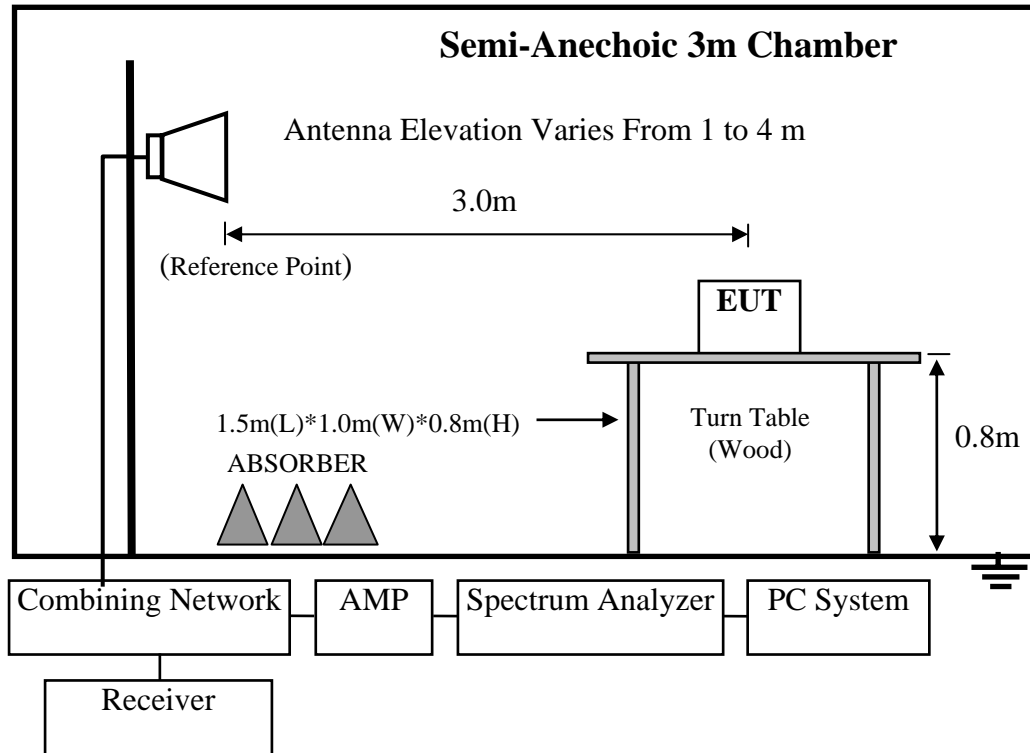
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4407B	MY41440292	May.08, 11	1 Year
2	Horn Antenna	EMCO	3115	9607-4877	July.01, 11	1 Year
3	Amplifier	Agilent	8449B	3008A00863	May.08, 11	1 Year
4	RF Cable	Hubersuhner	SUCOFLEX102	28622/2	May.08, 11	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX102	29091/2	May.08, 11	1 Year

4.2. Block Diagram of Test Setup

For frequency range 30MHz-1000MHz



For frequency range above 1GHz



4.3. Radiated Emission Limit Standard: FCC 15.209 and 15.249

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000MHz	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	
Field Strength of fundamental emissions for 2.4GHz-2.4835GHz	3	114.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 94.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

- Remark :
- (1) Emission level $\text{dB}\mu\text{V} = 20 \log$ Emission level $\mu\text{V}/\text{m}$
 - (2) The smaller limit shall apply at the cross point between two frequency bands.
 - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.
 - (4) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

4.4.EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.4.1. HP Wireless Headset (EUT)

Model Number : WL188

Serial Number : N/A

4.4.2. Support Equipment : As Tested Supporting System Detail, in Section 2.4

4.5.Operating Condition of EUT

4.5.1. Setup the EUT and simulator as shown as Section 4.2.

4.5.2. Turned on the power of all equipment.

4.5.3. Let EUT work in Tx mode.

4.6.Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10-2009 on radiated emission Test.

During the pretest the EUT was rotated through three orthogonal axes to determine the attitude that maximizes the emissions.

After that the EUT was manually handled to find the orientation that has the maximum emission, which is the orientation show in the test setup photos.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's RBW is set at 1MHz and VBW is set at 3MHz for peak emissions measurement above 1GHz

The duty cycle of the signal is 100%,All emission which comply with PEAK limit are Deemed to also comply with the AV limit.

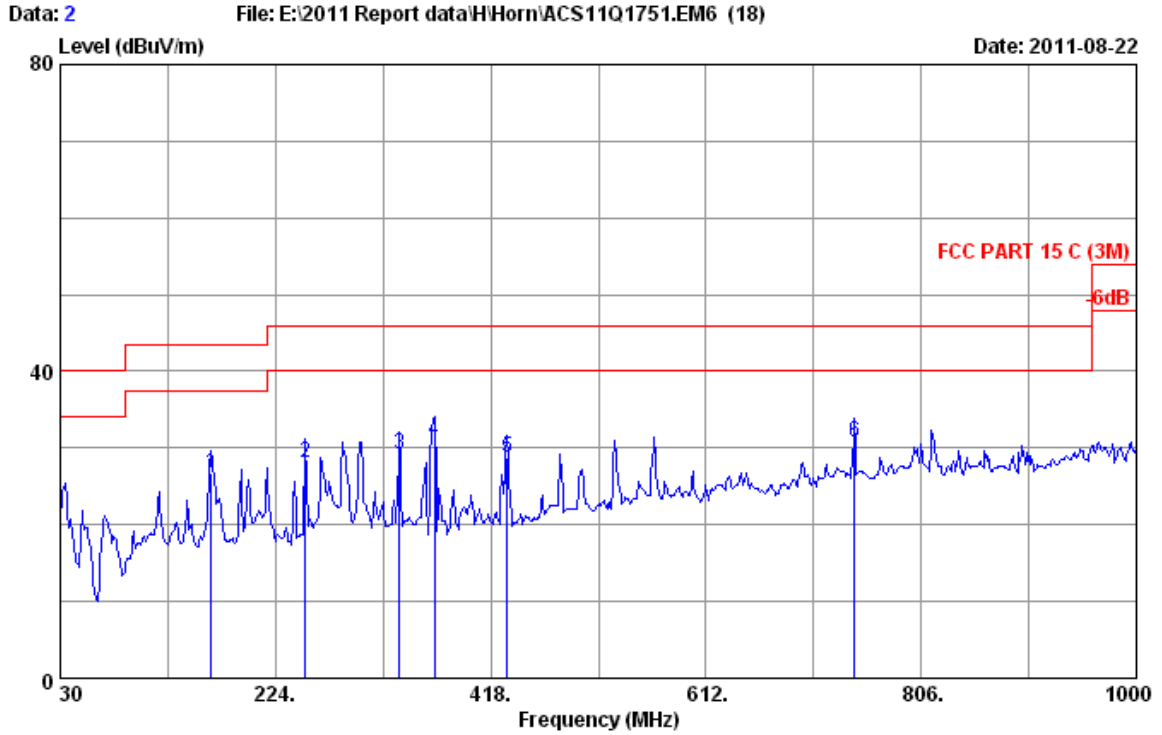
The frequency range from 30MHz to 10th harmonic (up to 40GHz) are checked. and no any emissions were found from 18GHz to 40 GHz, So the radiated emissions from 18GHz to 40GHz were not record.

4.7.Radiated Emission Test Results

PASS.

All the emissions from 30MHz to 40GHz were comply with the 15.209 Limit.

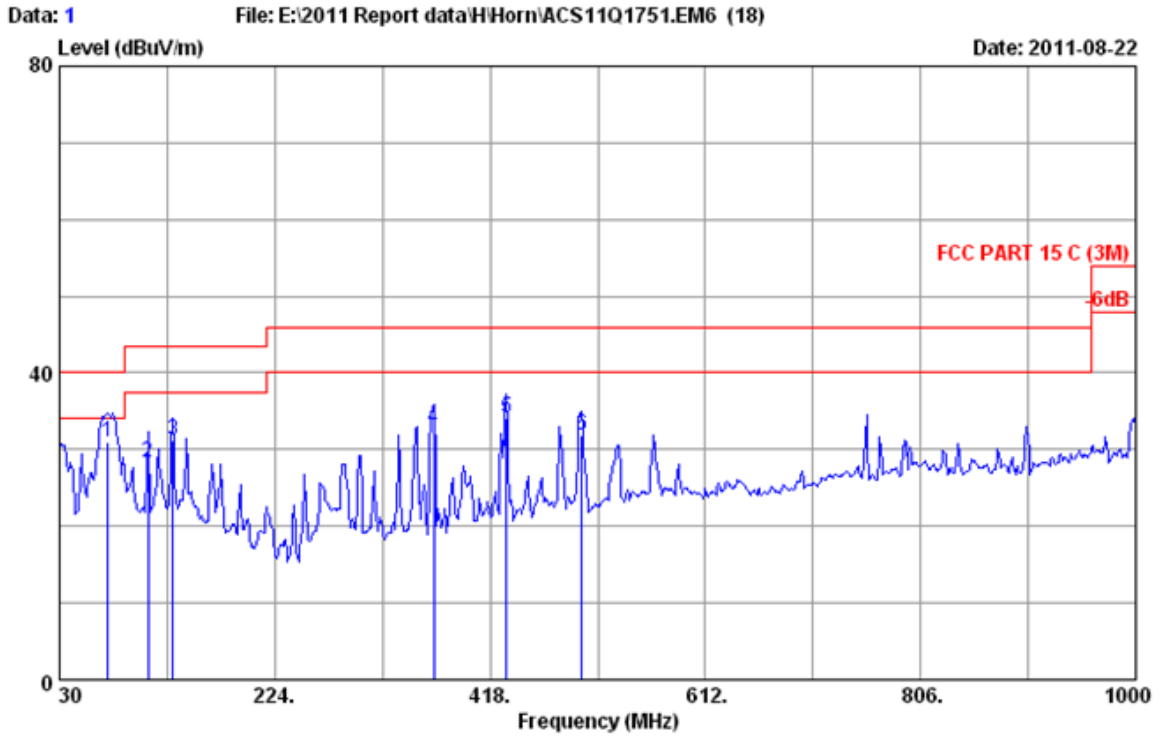
Frequency: 30MHz~1GHz



Site no. : 3m Chamber Data no. : 2
 Dis. / Ant. : 3m 2597 FACTOR 3M Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24°C/56% Engineer : Leo_Li
 EUT : HP Wireless Headset M/N:WL188
 Power rating : DC 3.7V
 Test Mode : Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	165.800	11.60	1.61	13.53	26.74	43.50	16.76	QP
2	251.160	12.02	2.43	13.68	28.13	46.00	17.87	QP
3	335.550	14.03	3.12	12.02	29.17	46.00	16.83	QP
4	367.560	15.00	3.22	12.79	31.01	46.00	14.99	QP
5	432.550	16.30	3.55	8.89	28.74	46.00	17.26	QP
6	745.860	21.30	5.23	4.26	30.79	46.00	15.21	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

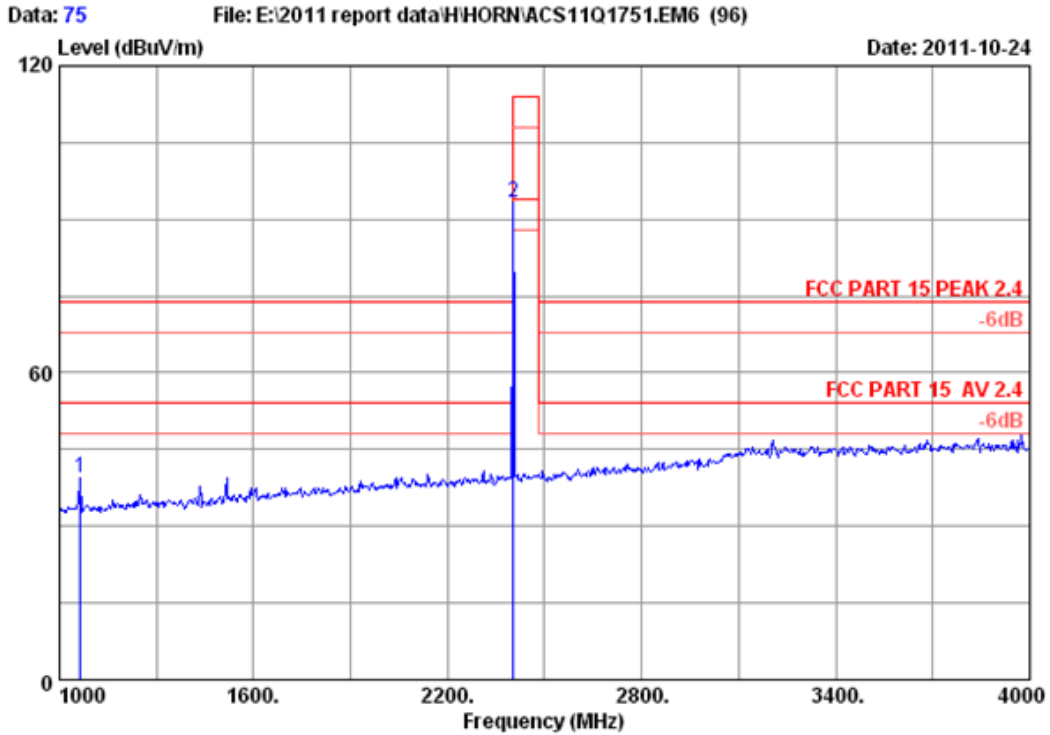


Site no. : 3m Chamber Data no. : 1
 Dis. / Ant. : 3m 2597 FACTOR 3M Ant. pol. : VERTICAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24°C/56% Engineer : Leo_Li
 EUT : HP Wireless Headset M/N:WL188
 Power rating : DC 3.7V
 Test Mode : Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	73.650	8.60	0.99	21.28	30.87	40.00	9.13	QP
2	109.540	12.70	1.24	14.27	28.21	43.50	15.29	QP
3	131.850	13.30	1.38	16.42	31.10	43.50	12.40	QP
4	367.560	15.00	3.22	14.64	32.86	46.00	13.14	QP
5	432.550	16.30	3.55	14.32	34.17	46.00	11.83	QP
6	500.450	17.80	4.00	10.17	31.97	46.00	14.03	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

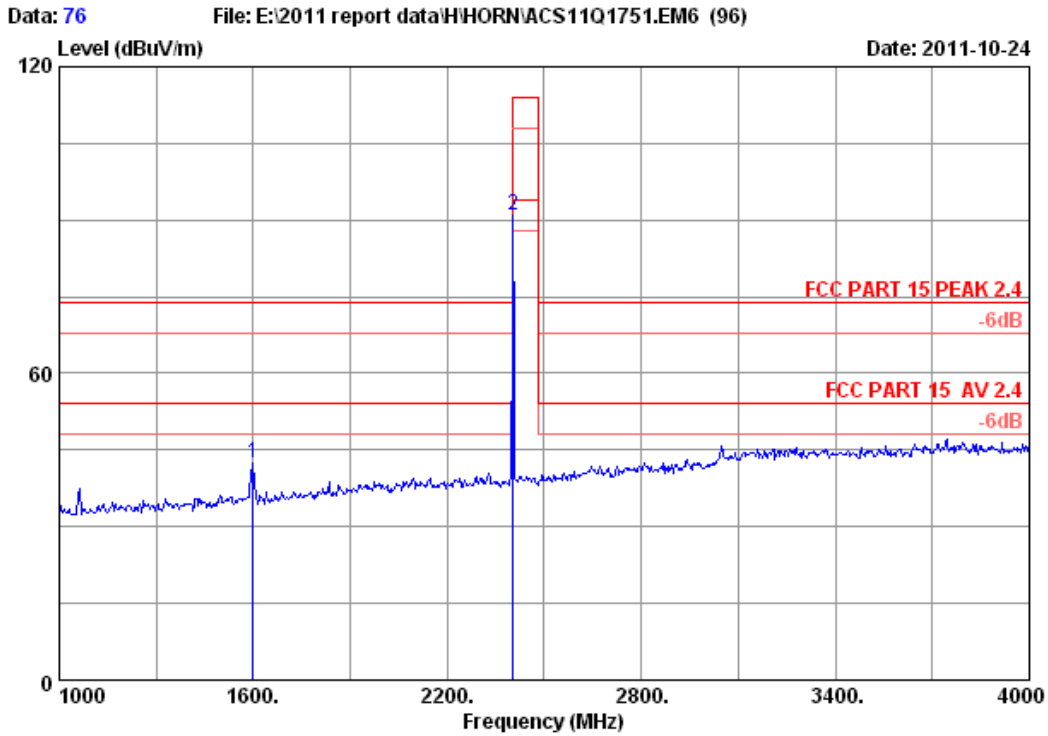
Frequency: 1GHz~18GHz



Site no. : 3m Chamber
 Dis. / Ant. : 3m 2011 3115 4580
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54%
 EUT : HP Wireless Headset
 Power : DC 3.7V
 Test mode : Tx 2404MHz
 M/N : WL188
 Data no. : 75
 Ant. pol. : HORIZONTAL
 Engineer : Leo-Li

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1066.000	24.01	4.45	34.86	45.81	39.41	74.00	34.59	Peak
2	2404.000	27.98	6.75	34.44	93.07	93.36	114.00	20.64	Peak

Remarks:
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



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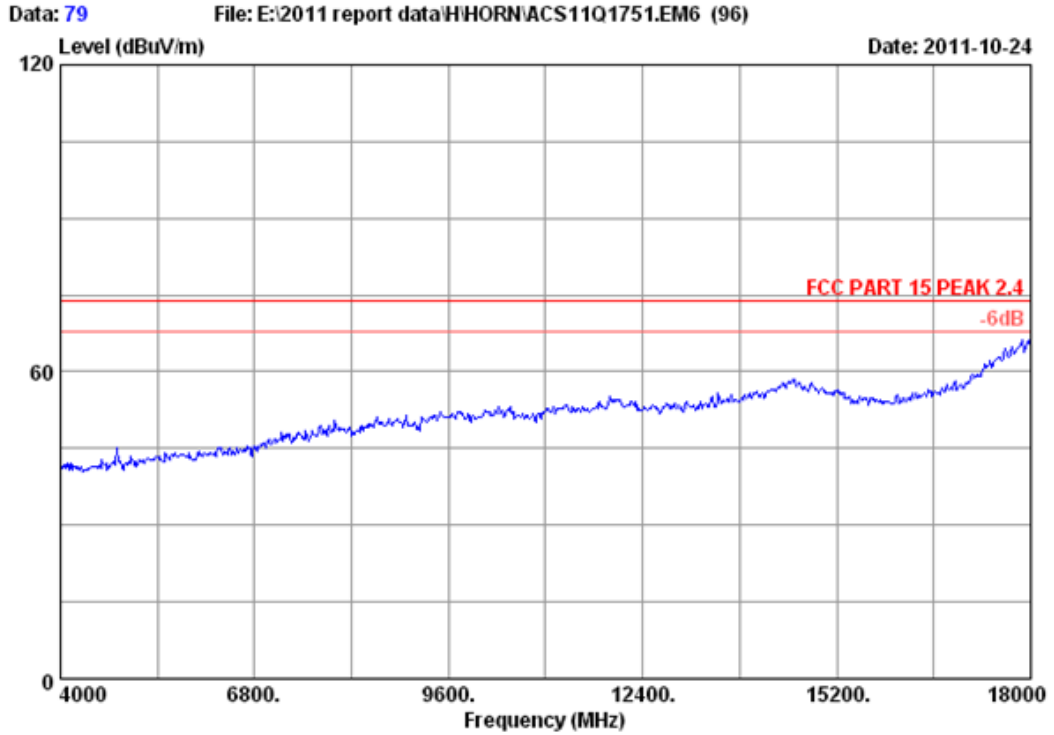
Site no.      : 3m Chamber
Dis. / Ant.   : 3m 2011 3115 4580
Limit         : FCC PART 15 PEAK 2.4
Env. / Ins.   : 23°C/54%
EUT           : HP Wireless Headset
Power        : DC 3.7V
Test mode     : Tx 2404MHz
M/N          : WL188

Data no.     : 76
Ant. pol.    : VERTICAL
Engineer     : Leo-Li
    
```

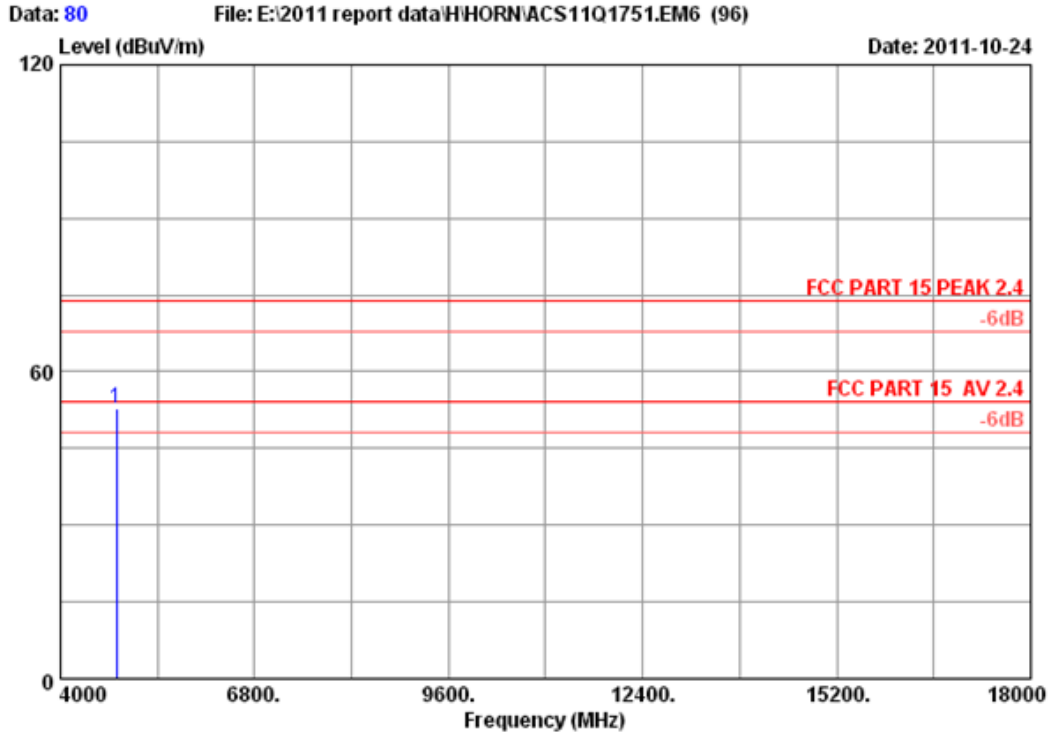
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1600.000	25.72	5.35	34.60	45.87	42.34	74.00	31.66	Peak
2	2404.000	27.98	6.75	34.44	90.78	91.07	114.00	22.93	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no. :	79
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	HORIZONTAL
Limit	: FCC PART 15 PEAK 2.4		
Env. / Ins.	: 23°C/54%	Engineer :	Leo-Li
EUT	: HP Wireless Headset		
Power	: DC 3.7V		
Test mode	: Tx 2404MHz		
M/N	: WL188		



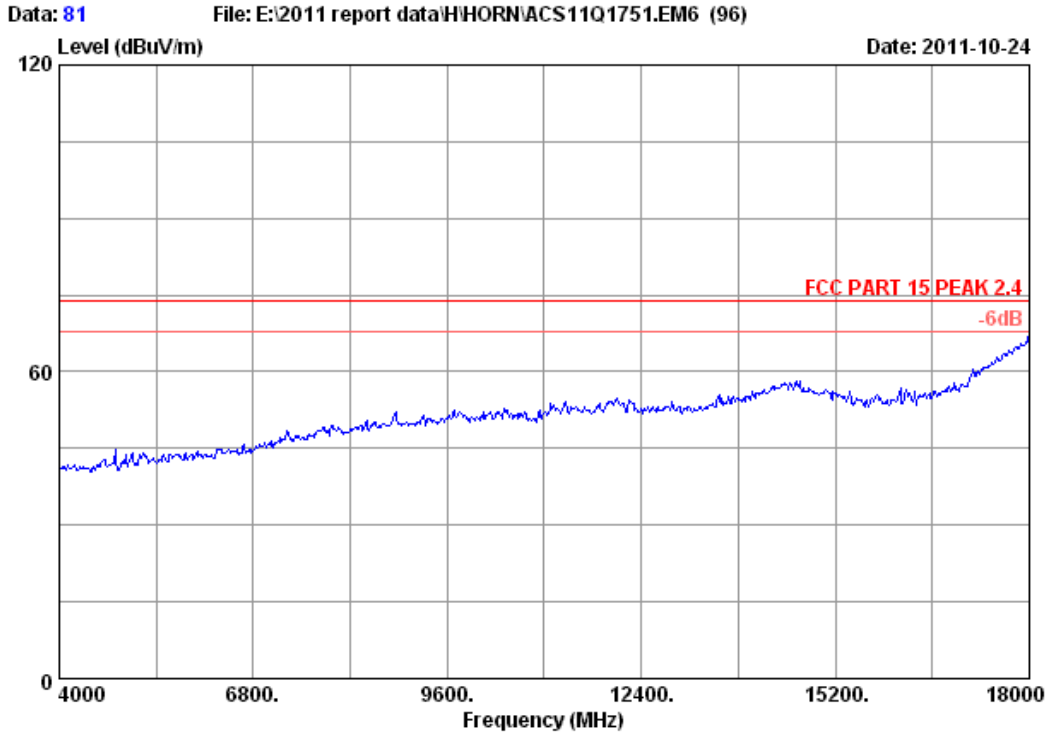
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Site no.      : 3m Chamber           Data no. : 80
Dis. / Ant.  : 3m 2011 3115 4580    Ant. pol.: HORIZONTAL
Limit        : FCC PART 15 PEAK 2.4
Env. / Ins.  : 23°C/54%             Engineer : Leo-Li
EUT          : HP Wireless Headset
Power        : DC 3.7V
Test mode    : Tx 2404MHz
M/N         : WL188
    
```

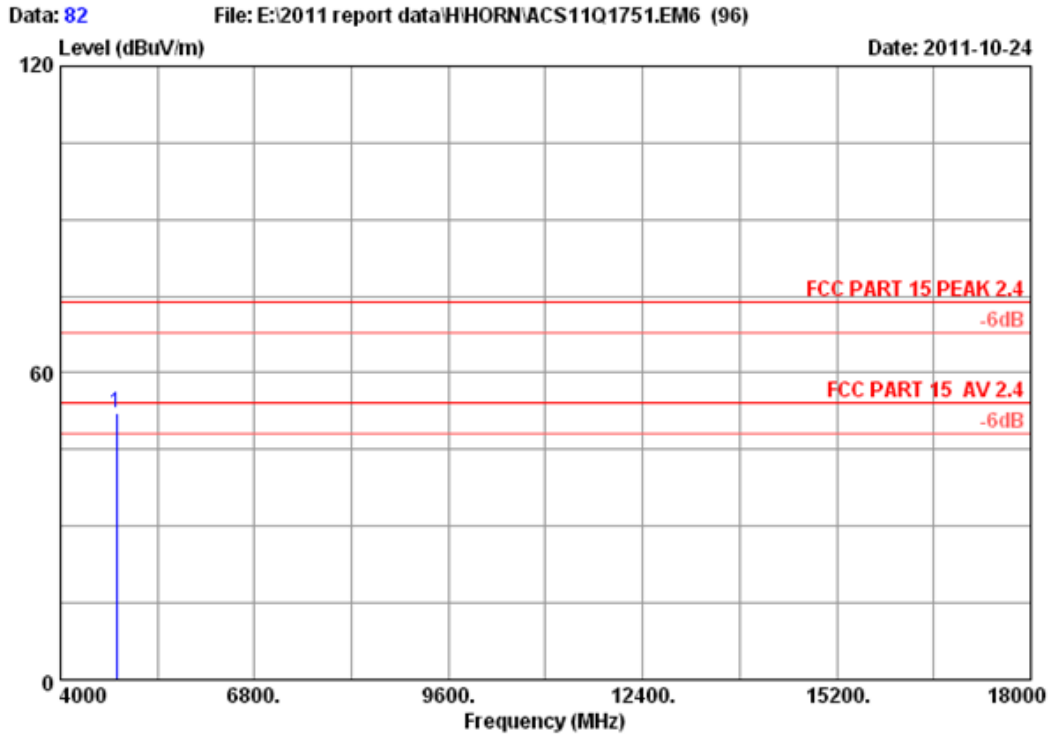
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	4808.000	32.86	9.55	34.60	45.12	52.93	74.00	21.07	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no.	: 81
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol.	: VERTICAL
Limit	: FCC PART 15 PEAK 2.4		
Env. / Ins.	: 23°C/54%	Engineer	: Leo-Li
EUT	: HP Wireless Headset		
Power	: DC 3.7V		
Test mode	: Tx 2404MHz		
M/N	: WL188		



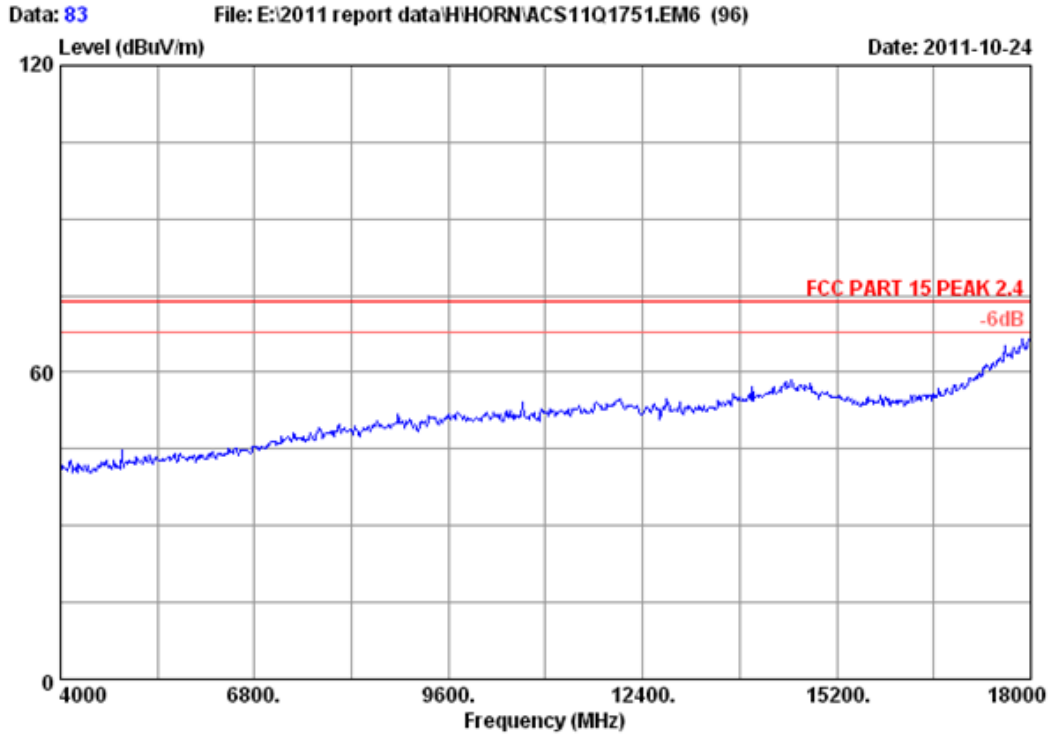
```

Site no.      : 3m Chamber           Data no. : 82
Dis. / Ant.  : 3m 2011 3115 4580    Ant. pol.: VERTICAL
Limit        : FCC PART 15 PEAK 2.4
Env. / Ins.  : 23°C/54%             Engineer : Leo-Li
EUT          : HP Wireless Headset
Power        : DC 3.7V
Test mode    : Tx 2404MHz
M/N         : WL188
    
```

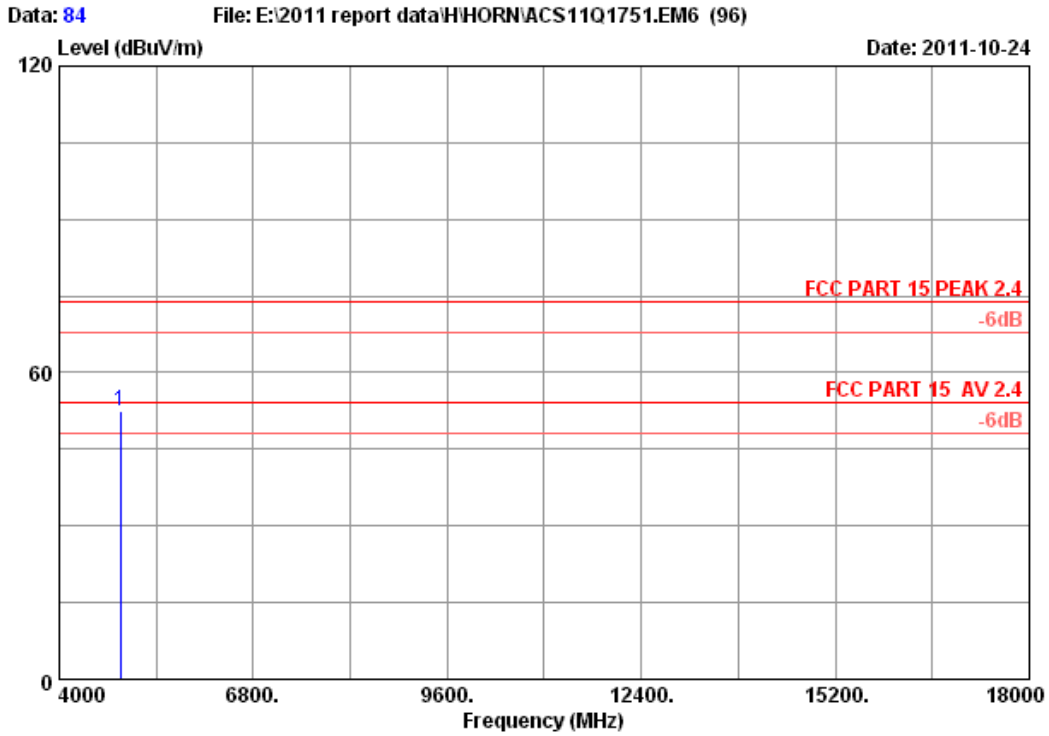
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	4808.000	32.86	9.55	34.60	44.35	52.16	74.00	21.84	Peak

Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no. :	83
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	VERTICAL
Limit	: FCC PART 15 PEAK 2.4		
Env. / Ins.	: 23°C/54%	Engineer :	Leo-Li
EUT	: HP Wireless Headset		
Power	: DC 3.7V		
Test mode	: Tx 2442MHz		
M/N	: WL188		



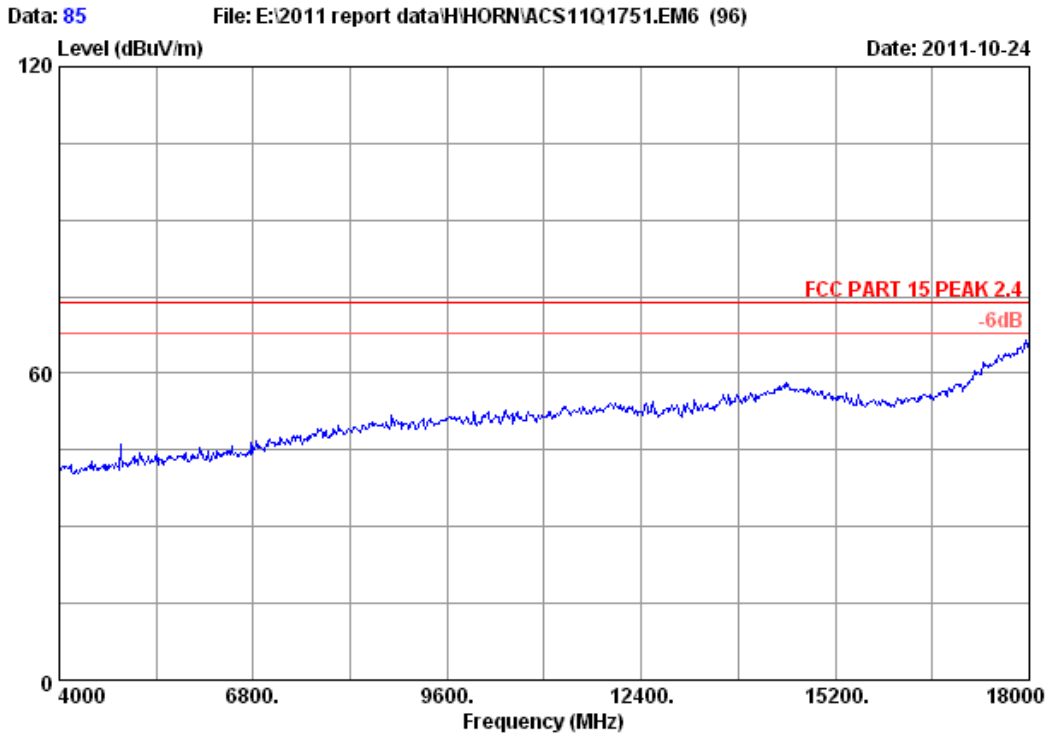
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Site no.      : 3m Chamber           Data no. : 84
Dis. / Ant.   : 3m 2011 3115 4580    Ant. pol. : VERTICAL
Limit        : FCC PART 15 PEAK 2.4
Env. / Ins.   : 23*C/54%           Engineer  : Leo-Li
EUT          : HP Wireless Headset
Power        : DC 3.7V
Test mode    : Tx 2442MHz
M/N         : WL188
    
```

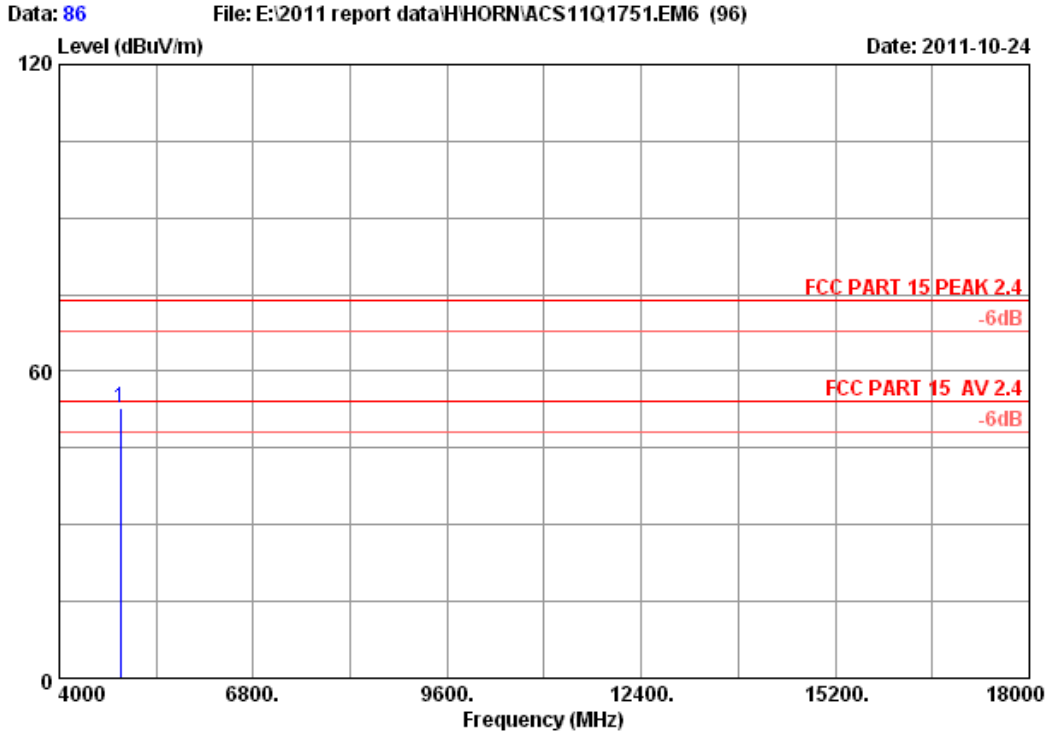
	Ant.	Cable	Amp.	Emission				
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	dBuV/m	(dB)	
1 4884.000	32.98	9.62	34.60	44.35	52.35	74.00	21.65	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no. :	85
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	HORIZONTAL
Limit	: FCC PART 15 PEAK 2.4		
Env. / Ins.	: 23°C/54%	Engineer :	Leo-Li
EUT	: HP Wireless Headset		
Power	: DC 3.7V		
Test mode	: Tx 2442MHz		
M/N	: WL188		



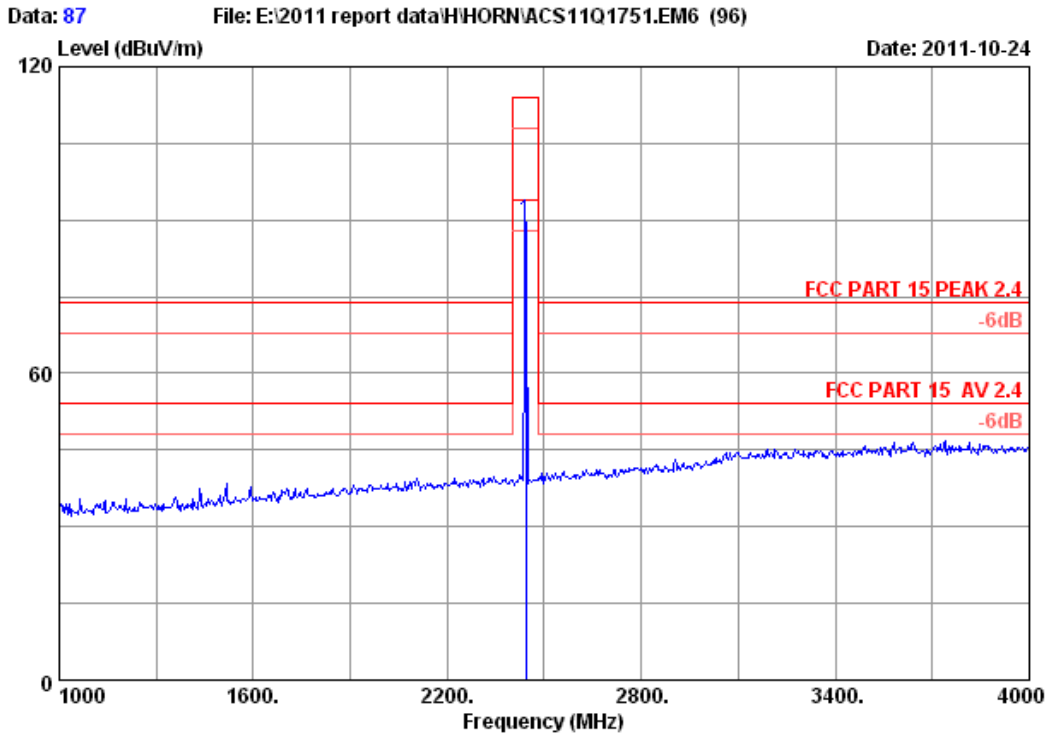
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Site no.      : 3m Chamber           Data no. : 86
Dis. / Ant.  : 3m 2011 3115 4580    Ant. pol. : HORIZONTAL
Limit        : FCC PART 15 PEAK 2.4
Env. / Ins.  : 23*C/54%             Engineer  : Leo-Li
EUT          : HP Wireless Headset
Power        : DC 3.7V
Test mode    : Tx 2442MHz
M/N         : WL188
    
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission			Remark
						Level (dBUV/m)	Limits dBUV/m)	Margin (dB)	
1	4884.000	32.98	9.62	34.60	44.80	52.80	74.00	21.20	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

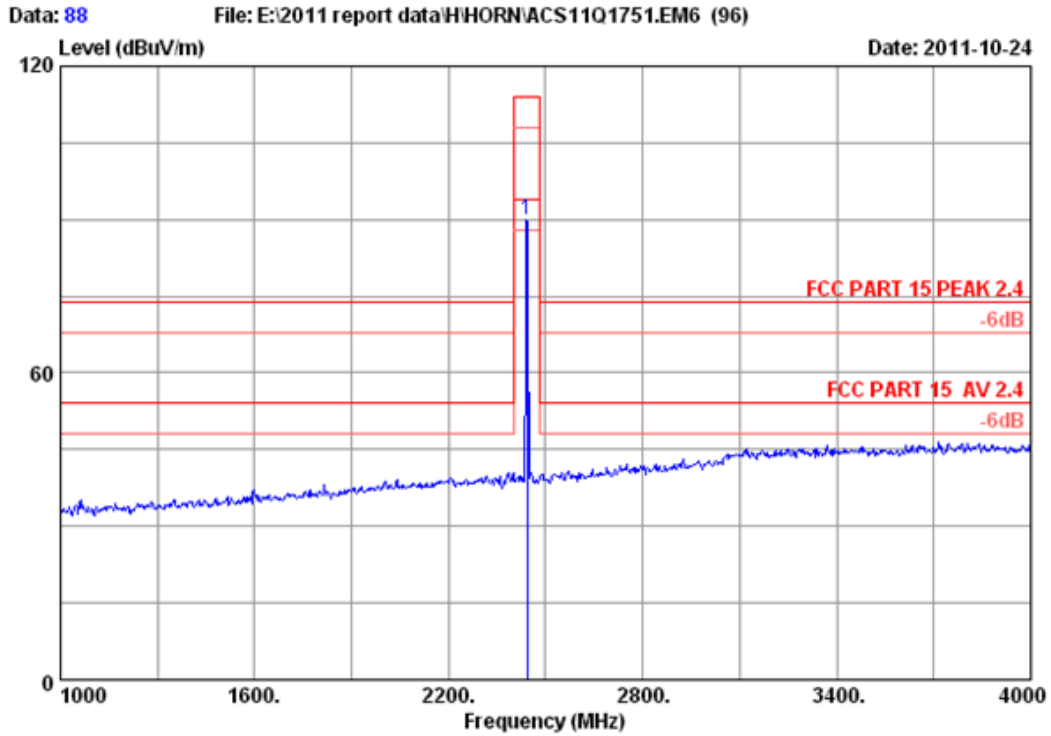


Site no. : 3m Chamber Data no. : 87
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : HP Wireless Headset
 Power : DC 3.7V
 Test mode : Tx 2442MHz
 M/N : WL188

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2442.000	28.03	6.81	34.44	89.68	90.08	114.00	23.92	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

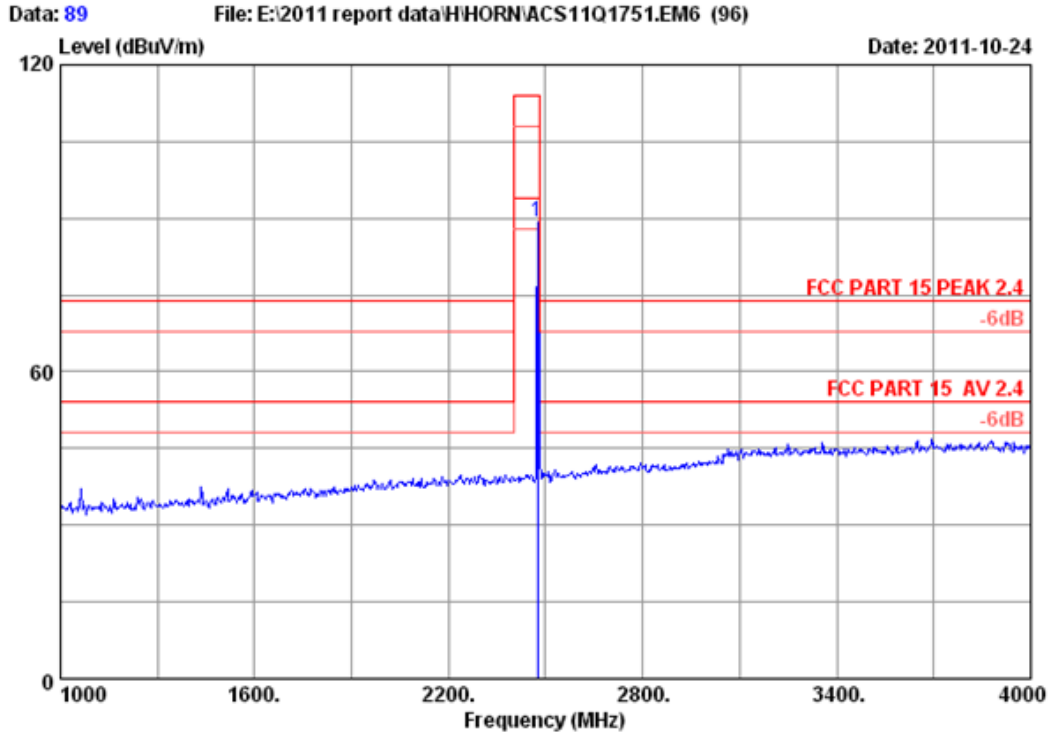


Site no. : 3m Chamber Data no. : 88
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : HP Wireless Headset
 Power : DC 3.7V
 Test mode : Tx 2442MHz
 M/N : WL188

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2442.000	28.03	6.81	34.44	89.60	90.00	114.00	24.00	Peak

Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.

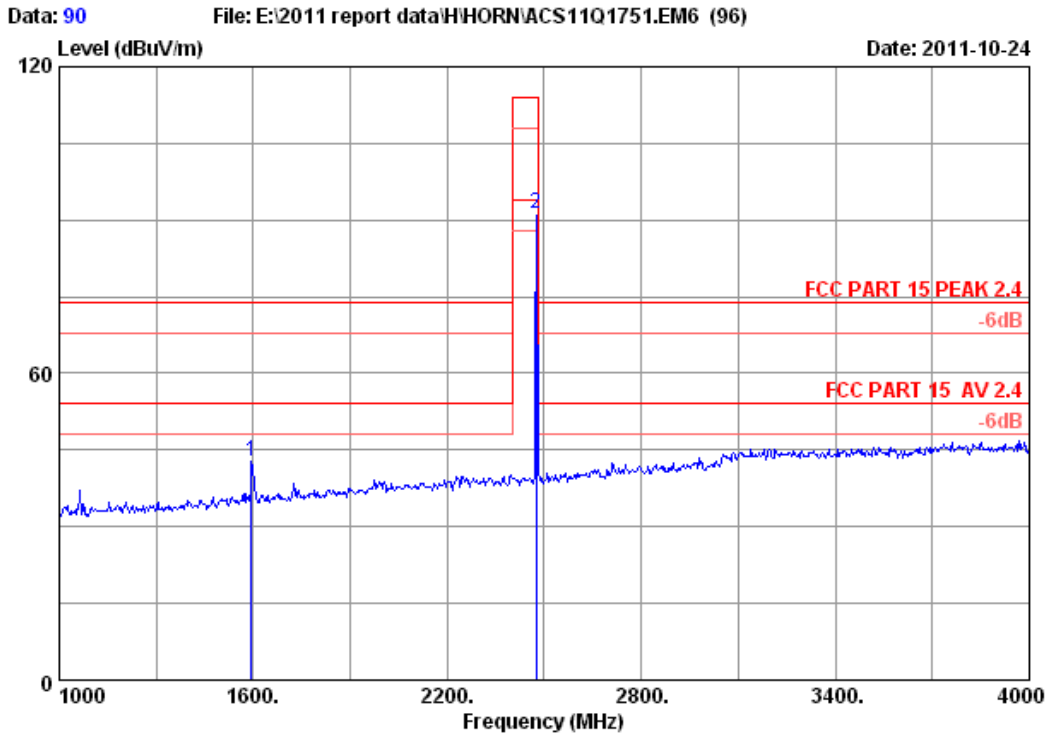


Site no.	: 3m Chamber	Data no. :	89
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	HORIZONTAL
Limit	: FCC PART 15 PEAK 2.4		
Env. / Ins.	: 23°C/54%	Engineer :	Leo-Li
EUT	: HP Wireless Headset		
Power	: DC 3.7V		
Test mode	: Tx 2476MHz		
M/N	: WL188		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2476.000	28.08	6.87	34.45	88.86	89.36	114.00	24.64	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



```

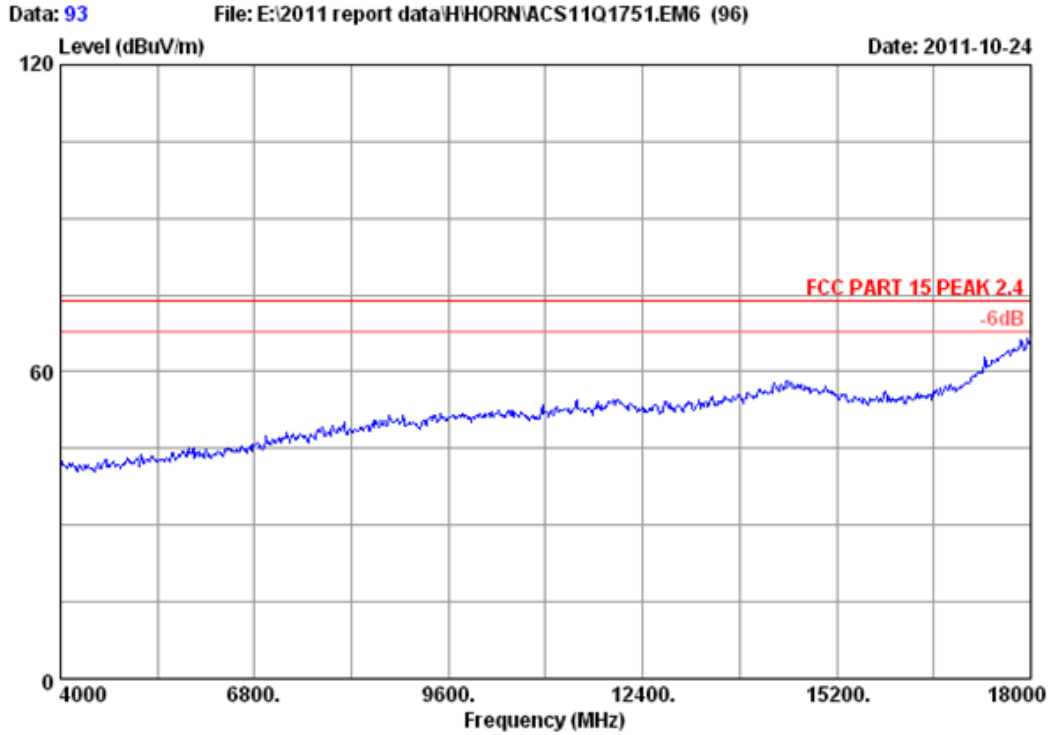
Site no.      : 3m Chamber
Dis. / Ant.  : 3m 2011 3115 4580
Limit        : FCC PART 15 PEAK 2.4
Env. / Ins.  : 23°C/54%
EUT          : HP Wireless Headset
Power        : DC 3.7V
Test mode    : Tx 2476MHz
M/N         : WL188

Data no.     : 90
Ant. pol.    : VERTICAL
Engineer     : Leo-Li
    
```

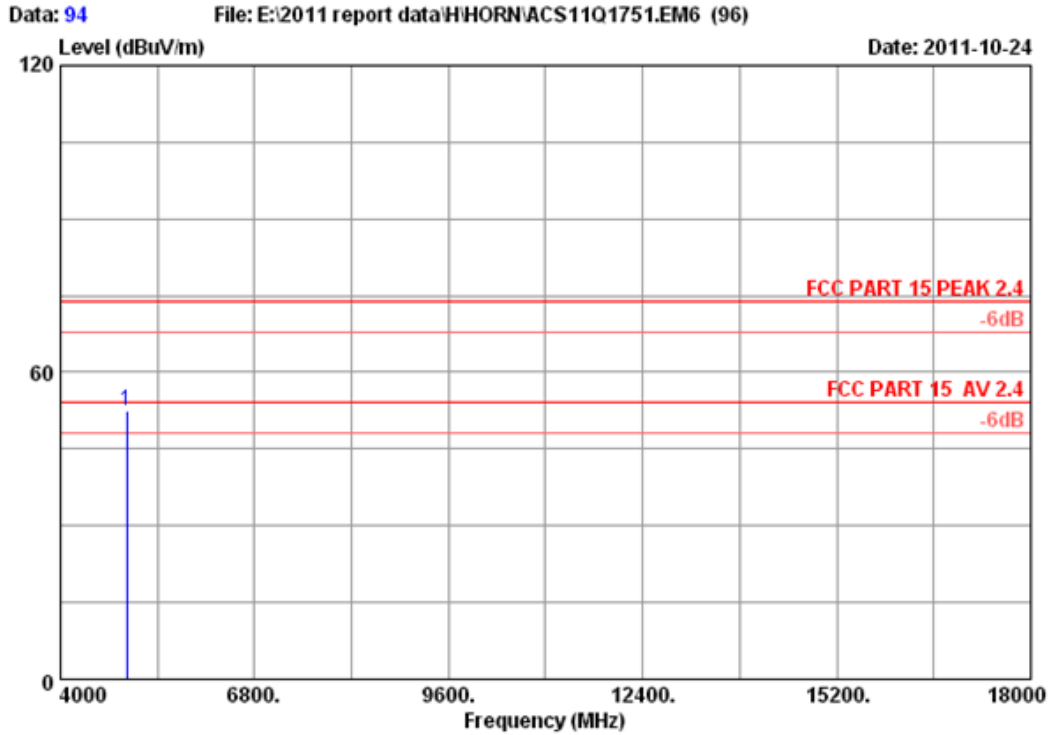
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1594.000	25.72	5.35	34.60	46.43	42.90	74.00	31.10	Peak
2	2476.000	28.08	6.87	34.45	90.66	91.16	114.00	22.84	Peak

Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.



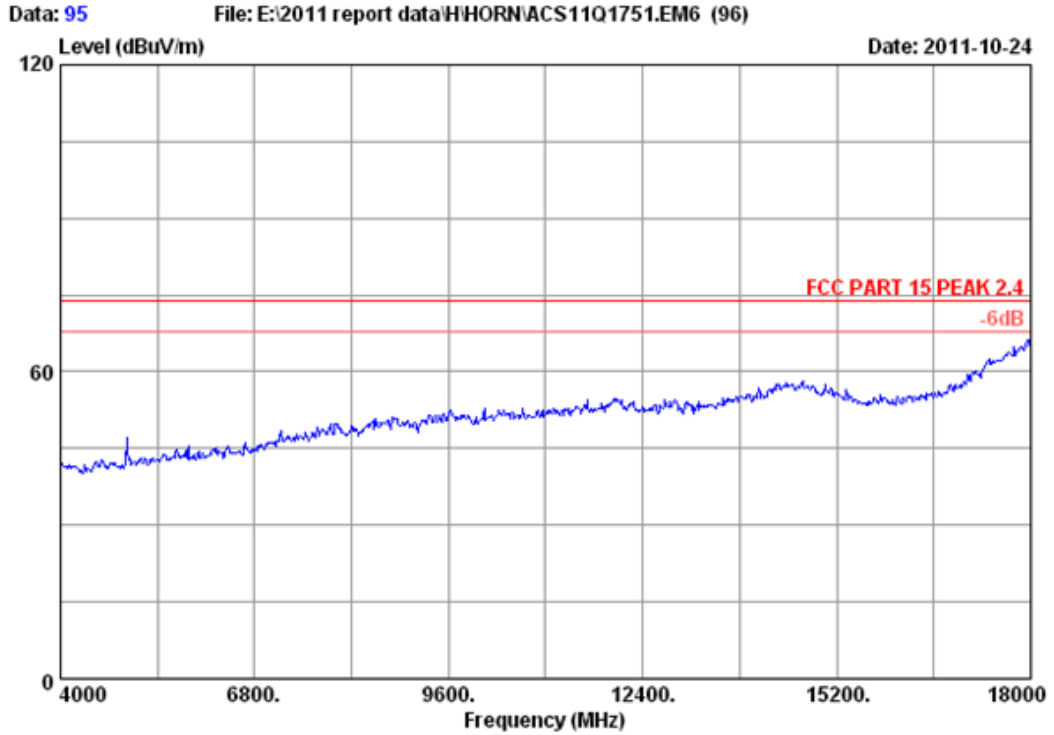
Site no.	: 3m Chamber	Data no. :	93
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	HORIZONTAL
Limit	: FCC PART 15 PEAK 2.4		
Env. / Ins.	: 23°C/54%	Engineer :	Leo-Li
EUT	: HP Wireless Headset		
Power	: DC 3.7V		
Test mode	: Tx 2476MHz		
M/N	: WL188		



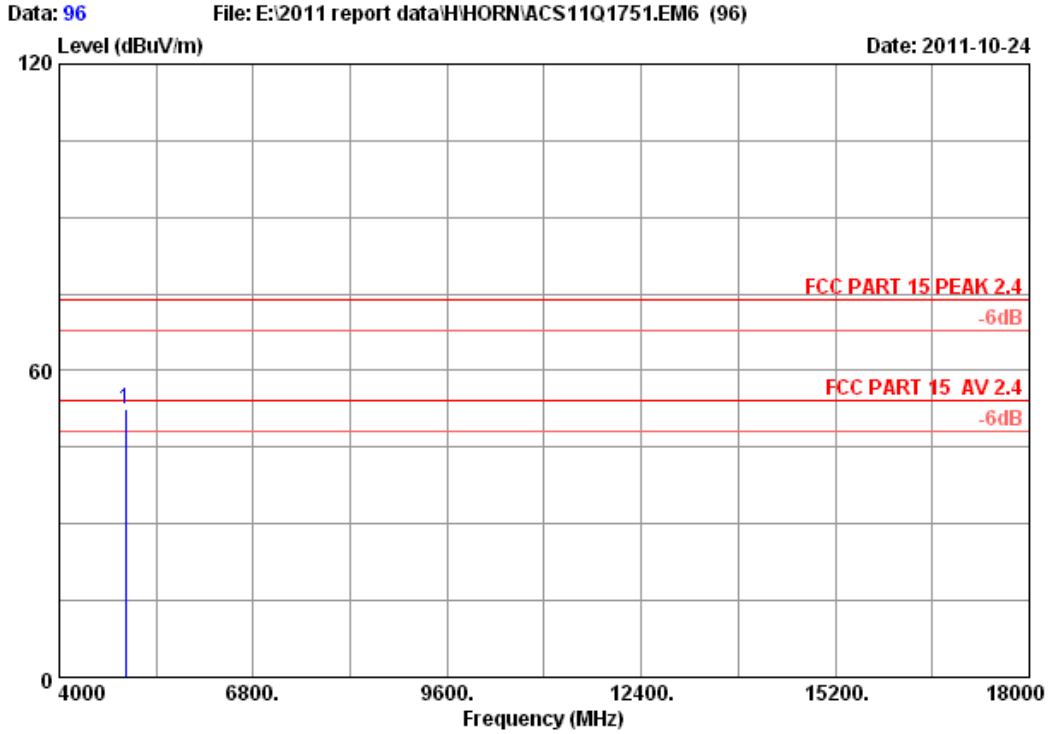
Site no. : 3m Chamber Data no. : 94
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : HP Wireless Headset
 Power : DC 3.7V
 Test mode : Tx 2476MHz
 M/N : WL188

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	4952.000	33.11	9.69	34.60	44.23	52.43	74.00	21.57	Peak

- Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no. :	95
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	VERTICAL
Limit	: FCC PART 15 PEAK 2.4		
Env. / Ins.	: 23°C/54%	Engineer :	Leo-Li
EUT	: HP Wireless Headset		
Power	: DC 3.7V		
Test mode	: Tx 2476MHz		
M/N	: WL188		



```

Site no.      : 3m Chamber           Data no. : 96
Dis. / Ant.   : 3m 2011 3115 4580    Ant. pol. : VERTICAL
Limit         : FCC PART 15 PEAK 2.4
Env. / Ins.   : 23*C/54%           Engineer  : Leo-Li
EUT           : HP Wireless Headset
Power         : DC 3.7V
Test mode     : Tx 2476MHz
M/N           : WL188
    
```

	Ant.	Cable	Amp.	Emission				
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	dBuV/m)	(dB)	
1 4952.000	33.11	9.69	34.60	44.37	52.57	74.00	21.43	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

5. 20 DB BANDWIDTH TEST

5.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08,11	1 Year

5.2. Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

5.3. Test Results

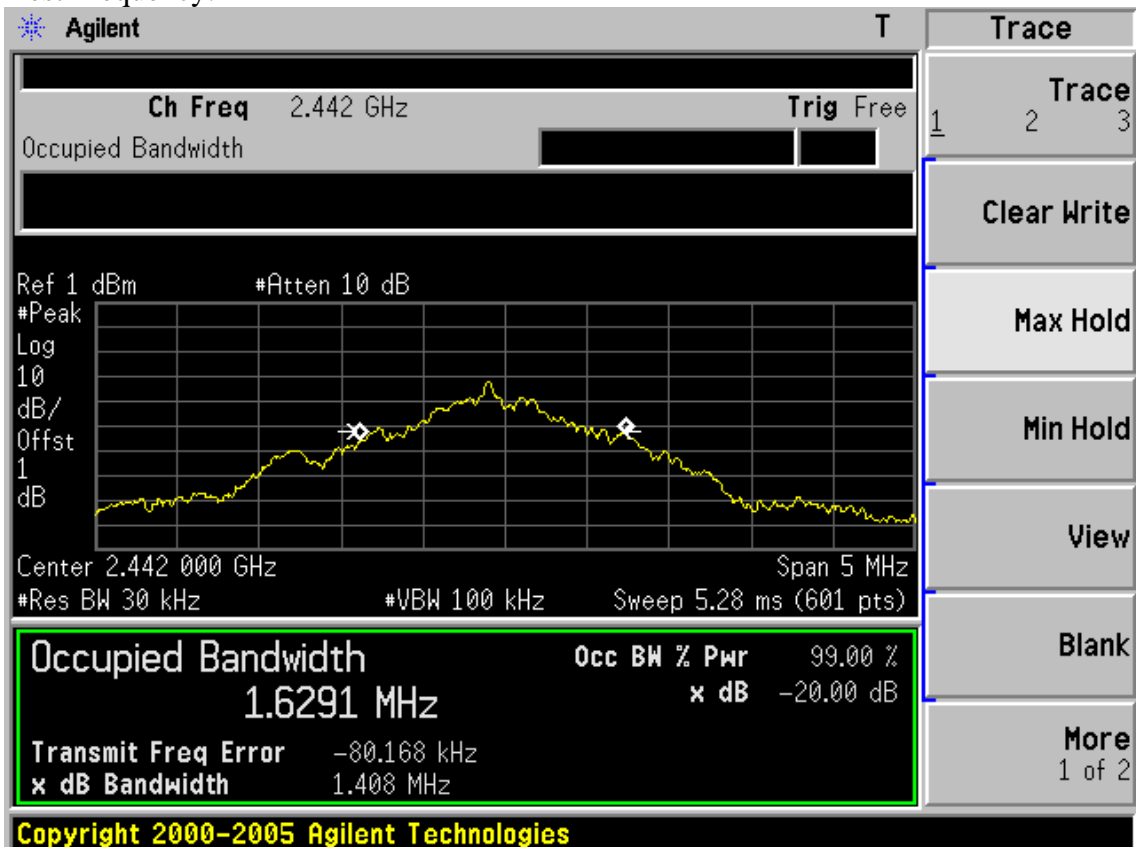
EUT: HP Wireless Headset		
M/N: WL188		
Test date:2011-09-28	Pressure: 101.8 kpa	Humidity: 52.3 %
Tested by: Leo-Li	Test site: RF site	Temperature : 25.6 °C

Frequency	20dB Bandwidth (KHz)	Limit (KHz)
2404MHz	1408	N/A
2442MHz	1408	N/A
2476MHz	1406	N/A
Conclusion : PASS		

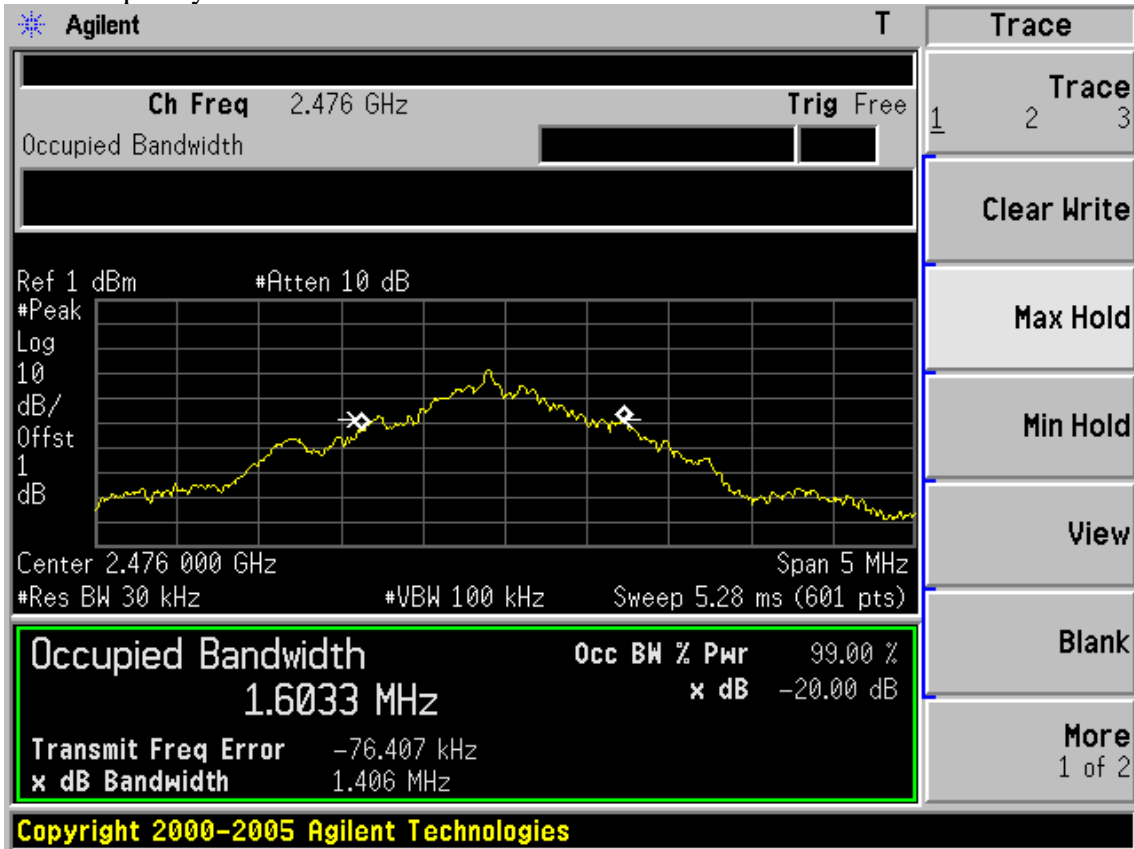
Test Frequency: 2404MHz



Test Frequency: 2442MHz



Test Frequency: 2476MHz



6. BAND EDGE COMPLIANCE TEST

6.1. Test Equipment

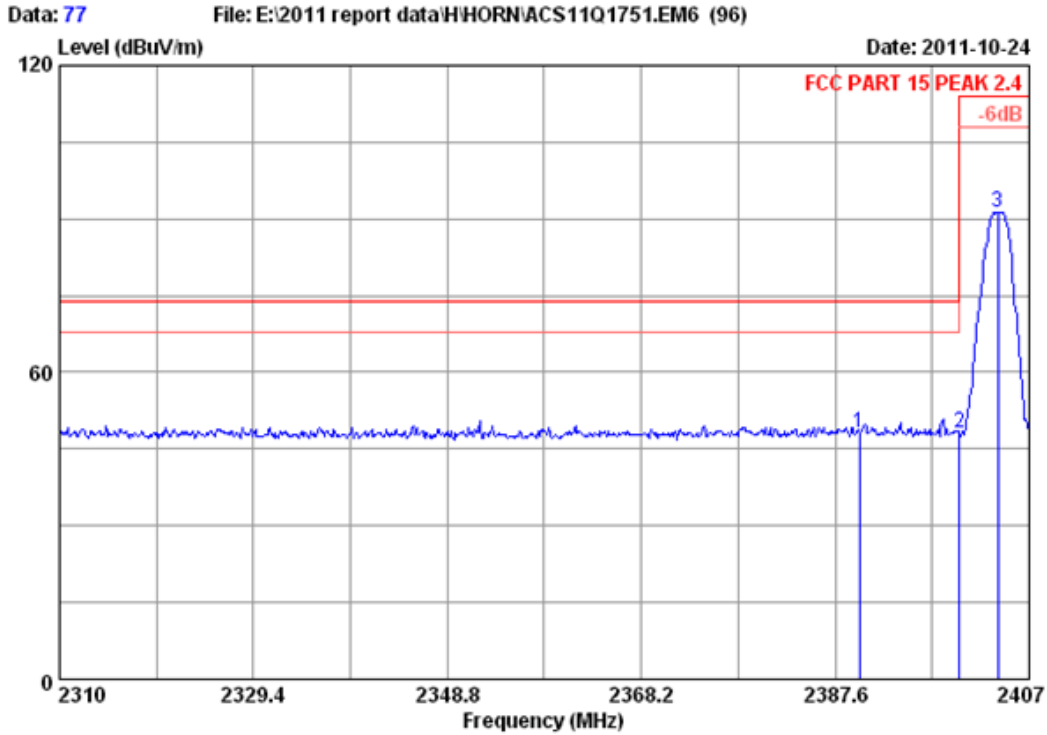
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08,11	1 Year
2.	Horn Antenna	EMCO	3115	9607-4877	Nov.25, 10	1.5 Year
3.	Amplifier	Agilent	8449B	3008A02495	May.08, 11	1 Year
4.	RF Cable	Hubersuhner	SUCOFLEX102	28620/2	May.08,11	1 Year
5.	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.08,11	1 Year
6.	RF Cable	Hubersuhner	SUCOFLEX102	28610/2	May.08,11	1 Year

6.2. Limit

All the lower and upper band-edges emissions shall comply with the limit in 15.209.

6.3. Test Produce

1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upperband-edges of the emission:
 - (a) PEAK: RBW=1MHz ;VBW=3MHz, PK detector, Sweep=AUTO
 - (b)AV: RBW=1MHz; VBW=10Hz, Sweep=AUTO

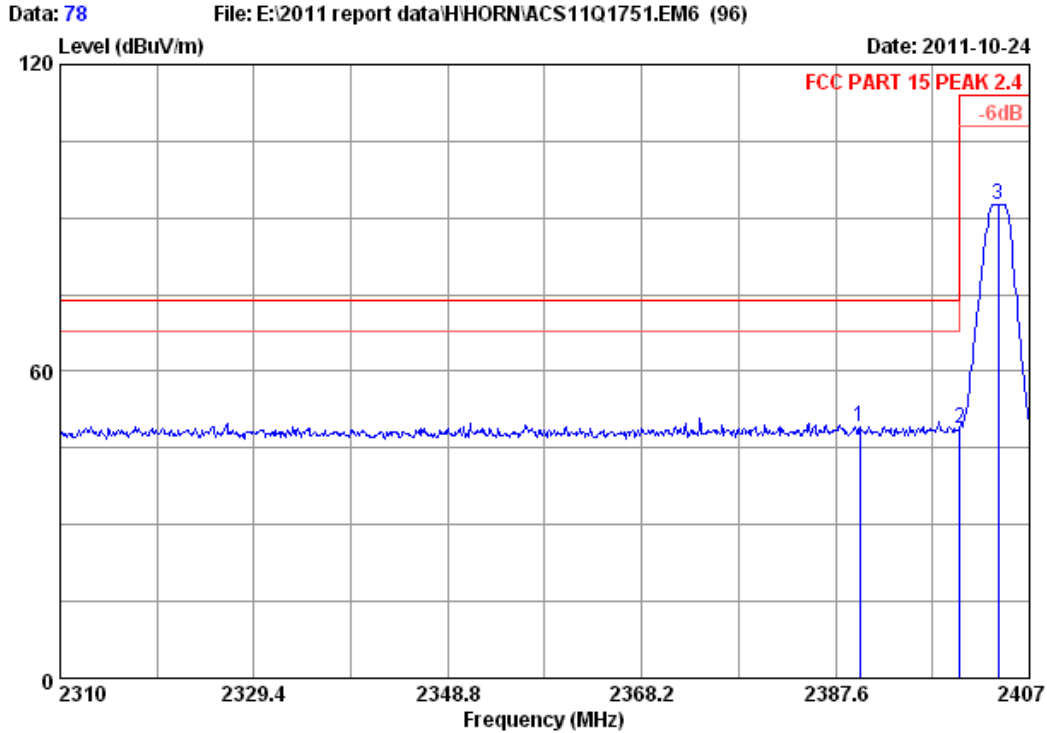


Site no.	: 3m Chamber	Data no. :	77
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	VERTICAL
Limit	: FCC PART 15 PEAK 2.4	Engineer :	Leo-Li
Env. / Ins.	: 23°C/54%		
EUT	: HP Wireless Headset		
Power	: DC 3.7V		
Test mode	: Tx 2404MHz		
M/N	: WL188		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2390.000	27.96	6.72	34.44	47.78	48.02	74.00	25.98	Peak
2	2400.000	27.96	6.75	34.44	47.73	48.00	74.00	26.00	Peak
3	2403.896	27.98	6.75	34.44	90.94	91.23	114.00	22.77	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

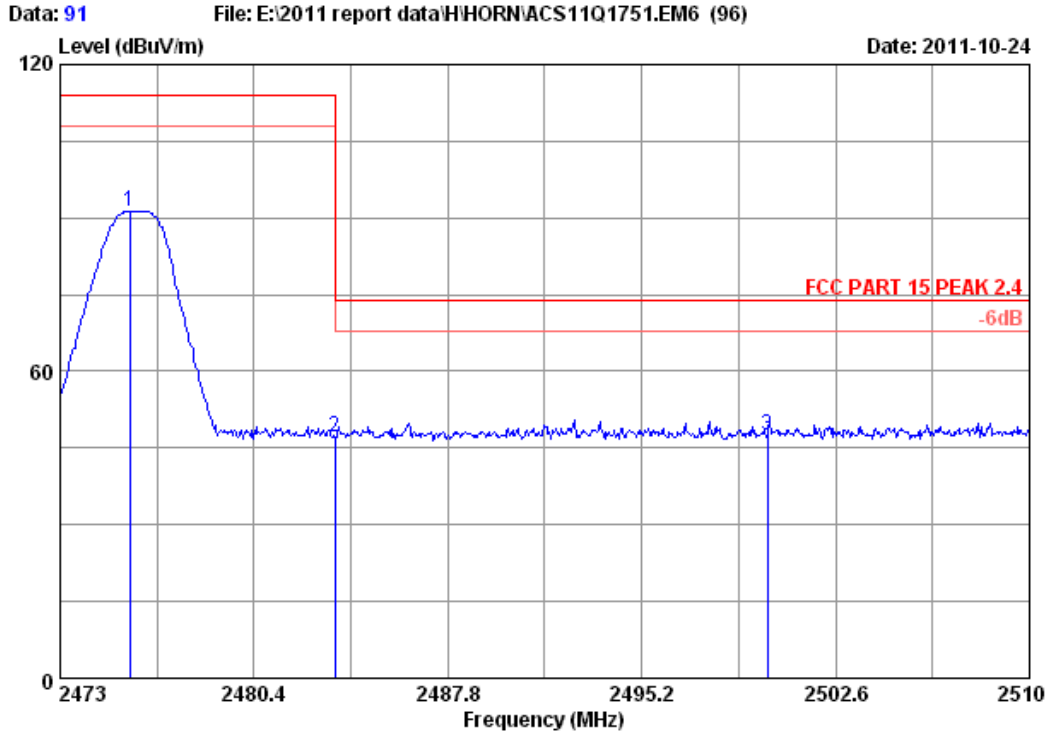


Site no.	: 3m Chamber	Data no. :	78
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	HORIZONTAL
Limit	: FCC PART 15 PEAK 2.4	Engineer :	Leo-Li
Env. / Ins.	: 23°C/54%		
EUT	: HP Wireless Headset		
Power	: DC 3.7V		
Test mode	: Tx 2404MHz		
M/N	: WL188		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission			Remark
						Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	
1	2390.000	27.96	6.72	34.44	48.76	49.00	74.00	25.00	Peak
2	2400.000	27.96	6.75	34.44	48.69	48.96	74.00	25.04	Peak
3	2403.896	27.98	6.75	34.44	92.46	92.75	114.00	21.25	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

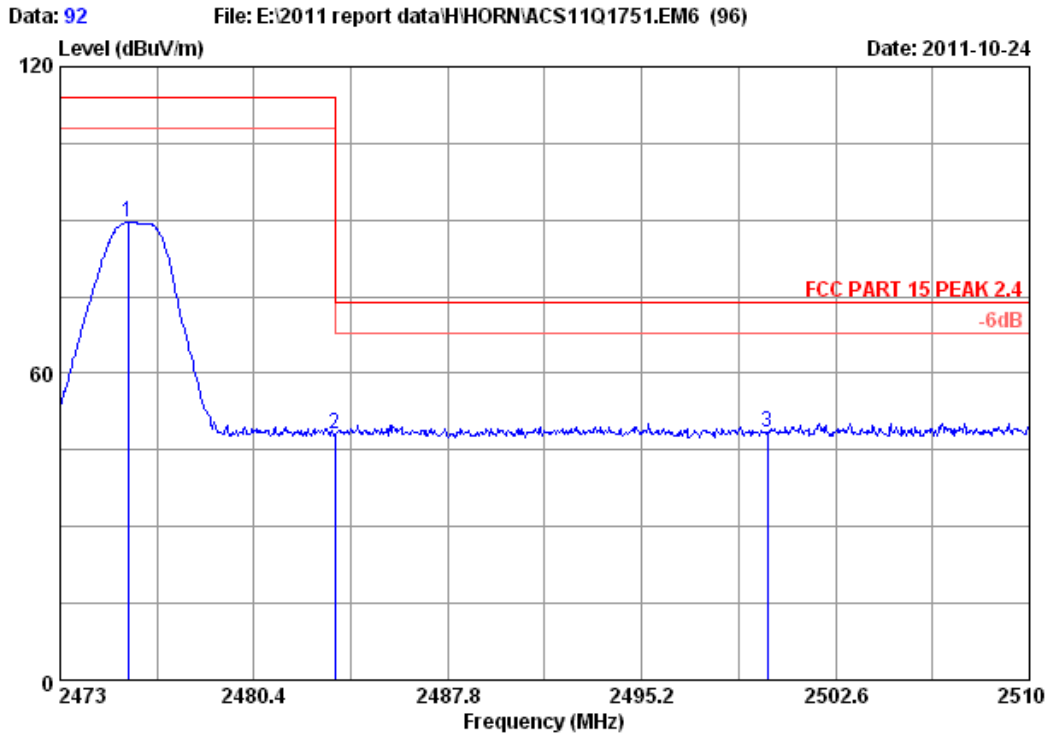


Site no. : 3m Chamber Data no. : 91
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23*C/54% Engineer : Leo-Li
 EUT : HP Wireless Headset
 Power : DC 3.7V
 Test mode : Tx 2476MHz
 M/N : WL188

	Ant.	Cable	Amp.	Emission				
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
(MHz)	(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	dBUV/m)	(dB)	
1 2475.664	28.08	6.87	34.45	90.68	91.18	114.00	22.82	Peak
2 2483.500	28.08	6.90	34.45	46.69	47.22	74.00	26.78	Peak
3 2500.000	28.10	6.90	34.45	46.77	47.32	74.00	26.68	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 92
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : HP Wireless Headset
 Power : DC 3.7V
 Test mode : Tx 2476MHz
 M/N : WL188

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2475.590	28.08	6.87	34.45	88.96	89.46	114.00	24.54	Peak
2	2483.500	28.08	6.90	34.45	47.62	48.15	74.00	25.85	Peak
3	2500.000	28.10	6.90	34.45	47.93	48.48	74.00	25.52	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

7. DEVIATION TO TEST SPECIFICATIONS

[NONE]