

FCC COMPLIANCE REPORT

for

AAMP of America

iSimple REMOTE

Model Number: RFREM1

Prepared for : AAMP of America

Address : 13160 56th Court, Clearwater, FL33760, USA.

Prepared By : NS Technology Co., Ltd.

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Report Number : NSE-F09073488

Date of Test : Jun. 26~Jul. 10, 2009

Date of Report : Jul. 10, 2009



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NS Technology Co., Ltd.

Applicant:	AAMP of America		
Address:	13160 56th Court, Clearwater, FL33760, USA.		
Manufacturer:	SHENZHEN TAILING TECHNOLOGY CO., LTD.		
Address:	NO.D OA-04 DISTRICT, THIRD INDUSTRIAL ESTATE, FENG HUANG, FU YONG, SHENZHEN, CHINA		
E.U.T:	iSimple REMOTE		
Model Number:	RFREM1		
Trade Name:	-----	Operating Frequency:	2410MHz
Date of Receipt:	Jun. 10, 2009	Date of Test:	Jun. 26~Jul. 10, 2009
Test Specification:	FCC PART 15: 2008 Section 15.249 ANSI C63.4:2003		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied.		
			Issue Date: Jul. 10, 2009
Tested by:	Reviewed by:	Approved by:	
<u>Madison</u>	<u>Iceman Hu</u>	<u>Steven Lee</u>	
Madison / Engineer	Iceman Hu / Supervisor	Steven Lee / Manager	
Other Aspects:	None.		
Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested			
This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of NS Technology Co., Ltd.			



1. GENERAL PRODUCT INFORMATION

1.1. Product Function

Details please refer to Technical Construction Form and User Manual.

1.2. Description of Device (EUT)

E.U.T.	: iSimple REMOTE
Model No.	: RFREM1
Operating Frequency	: 2410MHz
Modulation type	: ASK
Output power	: -9.728dBm
Antenna Assembly Gain	: 0dBi (maximum)
System Input Voltage	: Nominal Voltage: DC 3V
Temperature Range(Operating)	: 0 ~ +35°C

1.3. Independent Operation Modes

The tested modes are:

1.3.1. TX Mode 2410MHz



2. TEST SITES

2.1. Test Facilities

EMC Lab : Certificated by TUV Rheinland, Germany.
Date of registration: July 28, 2003

Certificated by FCC, USA
Registration No.: 502831
Date of registration: February 09, 2009

Certificated by VCCI, Japan
Registration No.: R-2527 & C-2770
Date of registration: March 23, 2007

Certificated by CNAL, CHINA
Registration No.: L1744
Date of registration: November 25, 2004

Certificated by Intertek ETL SEMKO
Registration No.: TMP-013
Date of registration: June 11, 2005

Certificated by TUV/PS, Hong Kong
Date of registration: December 1, 2005

Certificated by Industry Canada
Registration No.: 5936A
Date of registration: March 4, 2009

Certificated by ATCB, America
Date of registration: August 03, 2006

Name of Firm : NS Technology Co., Ltd.

Site Location : Chenwu Industrial Zone, Houjie Town, Dongguan City,
Guangdong, China



2.2. List of Test and Measurement Instruments

2.2.1. For radiated emission test (30MHz-1GHz, 10m Chamber)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESVS10	841431/004	Jan.19, 09	Jan.19,10
Spectrum Analyzer	HP	E7405A	MY45118807	May 31,09	May 31,10
Bilog Antenna	Teseq	CBL 6111D	25758	Oct. 15,08	Oct. 15,09
Signal Amplifier	Agilent	8447D	2944A11174	Jan.19,09	Jan.19,10
50Ω Coaxial Switch	ANRITSU	MP59B	6200530579	Jan.19,09	Jan.19,10
RF Cable	IMRO	IMRO-400	10m Cable 1#10m	Jan.19,09	Jan.19,10
RF Cable	IMRO	IMRO-400	10m Cable 1#3m	Jan.19,09	Jan.19,10
RF Cable	DRAKA	M17/84-RG223	10m Cable 3#	Jan.19,09	Jan.19,10

2.2.2. For radiated emission test(1GHz-18GHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	HP	8593E	3448U00806	May 31,09	May 31,10
Horn Antenna	EMCO	3117	00062558	Jan. 19,09	Jan. 19,11
Signal Amplifier	BURGEON	PEC-38-30M18G -12-SFF	NSEMC001	May 31,09	May 31,11
RF Cable	DRAKA	M06/25-RG102	966Cable 3#24G	May 2,09	May 2,10

2.2.3. For 20dB bandwidth test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Rohde & Schwarz	ESPI	100302	May 31,09	May 31,10

2.2.4. For Band edge compliance test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESCS30	100199	May 31,09	May 31,10
Spectrum Analyzer	HP	8593E	3448U00806	May 31,09	May 31,10
Signal Amplifier	Agilent	8447D	2944A10488	May 2,09	May 2,10
Horn Antenna	EMCO	3117	00062558	Jan. 13,09	Jan. 13,11

3. TEST SET-UP AND OPERATION MODES

3.1. Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its highest possible radiated level. The test modes were adapted accordingly in reference to the Operating Instructions.

3.2. Test Operation Mode and Test Software

Refer to clause 1.4

3.3. Special Accessories and Auxiliary Equipment

None.

3.4. Countermeasures to Achieve EMC Compliance

None.



4. TEST SUMMARY

Test items and result lists

No.	Item	Standard	Results
1	Conduction Emission Test	FCC Part15C: 15.209 ANSI C63.4-2003	N/A
2	Radiated Emission Test	FCC Part15C: 15.249 ANSI C63.4-2003	PASS
3	Band Edge Compliance Test	FCC Part15: 15.249	PASS
4	20dB Bandwidth Test	FCC Part 15: 15.215	PASS

Note: N/A is an abbreviation for Not Applicable.



4.1. Radiated Emission

4.1.1. Test limits

- 1) FCC part 15C section 15.209
- 2) FCC part 15C section 15.249(a)

4.1.2. Test procedure

The EUT was placed on a turn table which was 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna which was mounted on a antenna tower. At the frequency band of 30MHz to 1GHz, The measuring antenna moved up and down to find out the maximum emission level. It moved from 1 to 4 m for horizontal and vertical polarizations. The broadband antenna (calibrated by dipole antenna) was used as a receiving antenna. At the frequency band of 1GHz to 25GHz, The measuring antenna moved from 1 to 4 m for horizontal and vertical polarization. The horn antenna was used as a receiving antenna.

The resolution bandwidth and video bandwidth of the test receiver was 120 KHz and 300KHz for Quasi-peak detection at frequency below 1GHz.

The resolution bandwidth and video bandwidth of the test receiver was 1MHz and 1MHz for Peak detection at frequency above 1GHz.

For Average measurement at frequency above 1GHz. The resolution bandwidth of the test receiver was 1MHz ; due to the shortest pulse width T is 116us, according the video bandwidth should not smaller than $1/T$, so the video bandwidth is 10Hz.

In 18GHz to 25GHz, The EUT was checked by Horn ANT . But the test result is background.

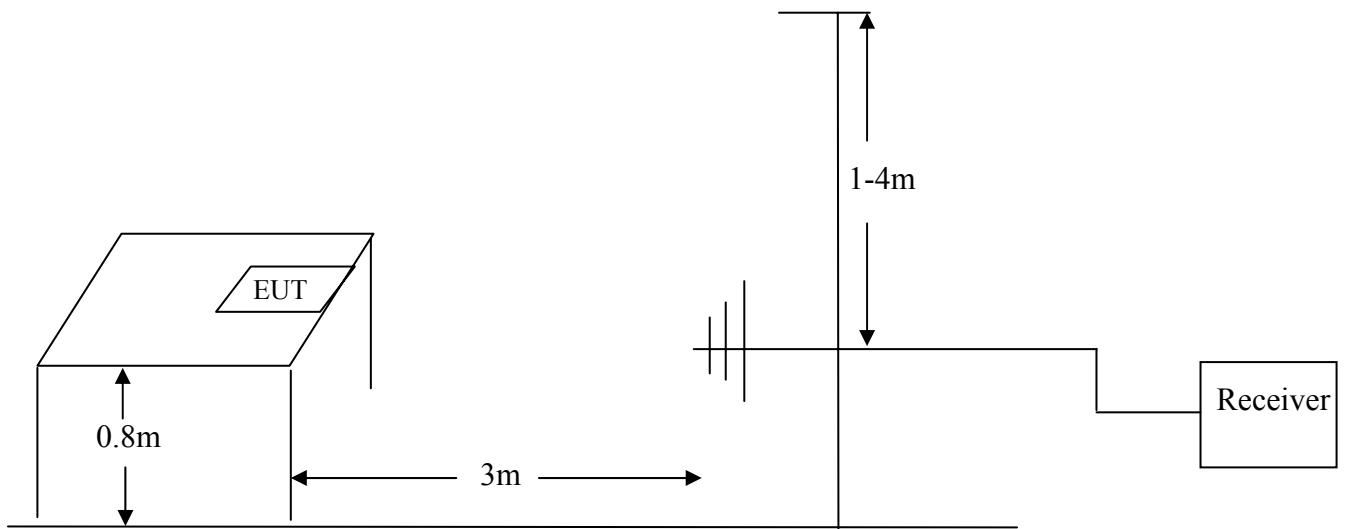
The EUT position(X. Y. Z) were checked and worse case was happened in Y position. So Y position was chose for find measurement.

The EUT was tested in Chamber Site.

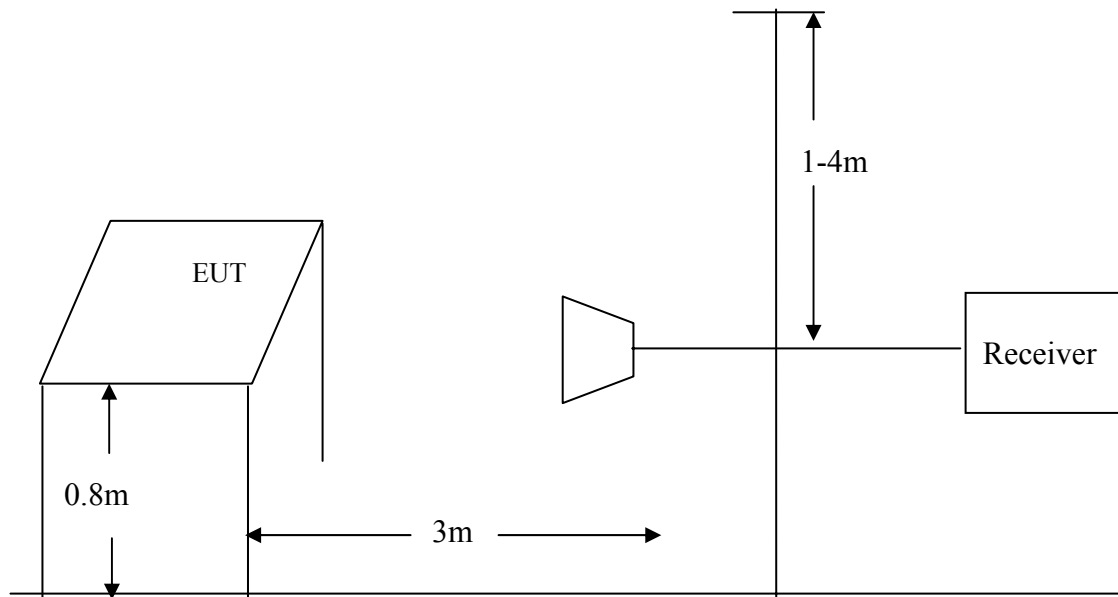


4.1.3. Test Setup Diagram

4.1.3.1. Frequency range: 30MHz-1000MHz



4.1.3.2. Frequency range: 1 GHz -25GHz

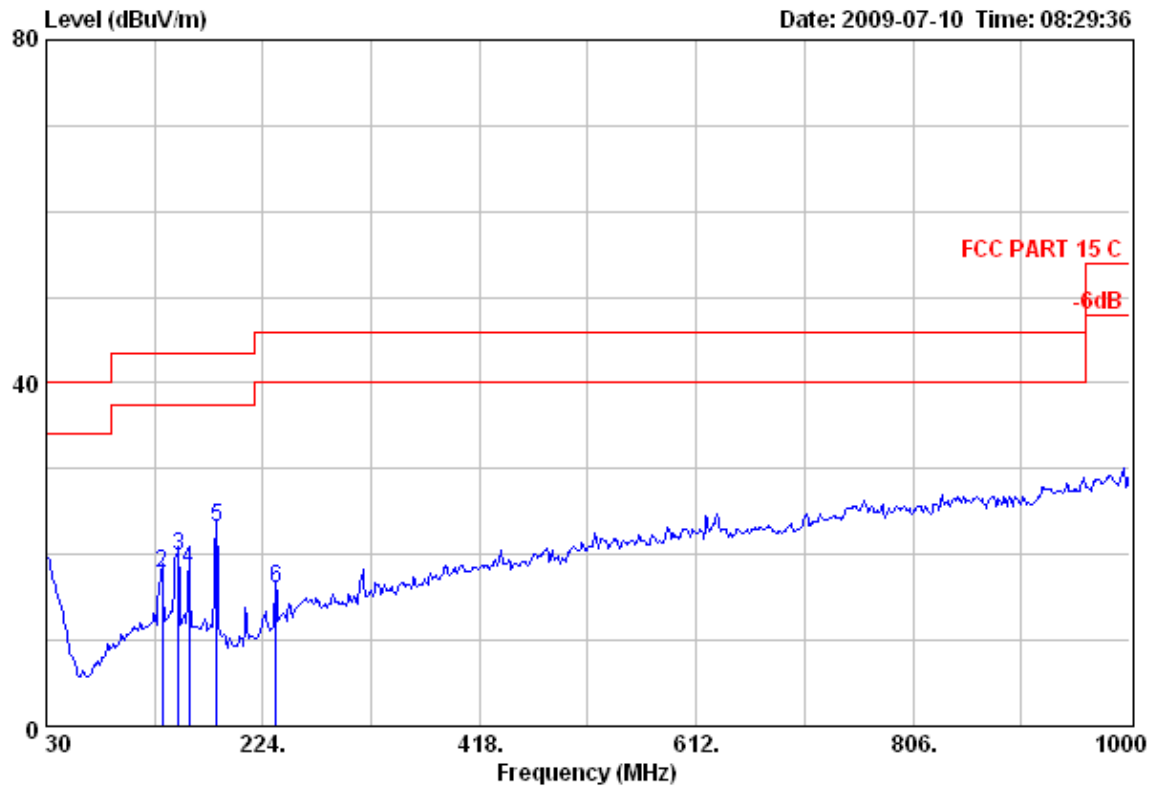


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Data: 5 File: \\966pc2\\Radiation\\A\\AAMP.emi (8)

Date: 2009-07-10 Time: 08:29:36



Test Site : 966 Chamber
Limit : FCC PART 15 C
Dis. / Ant. : 3m 25758 Ant. Pol.: HORIZONTAL
EUT : iSimple REMOTE
Power : DC 3V
M/N : RFREM1
Test Engineer : Madison
Comment : Temp:25.3'C Humi:55%
Test Mode : TX Mode

		Emission				Ant.	Cable	
	Freq.	Level	Limits	Margin	Reading	Factor	Loss	Remark
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB/m)	(dB)	
1	30.00	18.69	40.00	21.31	0.56	17.60	0.53	QP
2	133.79	17.89	43.50	25.61	5.10	12.04	0.75	QP
3	148.34	19.85	43.50	23.65	7.45	11.61	0.79	QP
4	158.04	18.30	43.50	25.20	6.55	10.94	0.81	QP
5	182.29	23.13	43.50	20.37	13.01	9.27	0.85	QP
6	235.64	15.94	46.00	30.06	4.48	10.52	0.94	QP

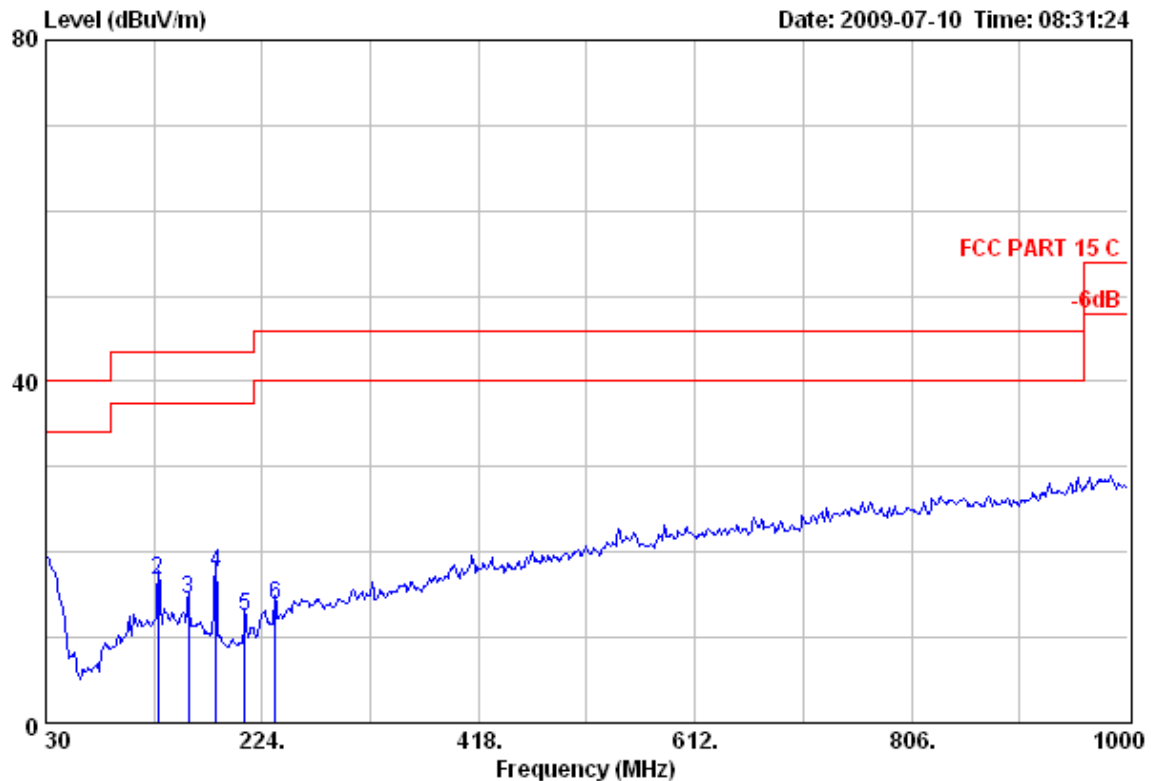


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Data: 6 File: \\966pc2\\Radiation\\A\\AAMP.emi (8)

Date: 2009-07-10 Time: 08:31:24



Test Site : 966 Chamber
Limit : FCC PART 15 C
Dis. / Ant. : 3m 25758 Ant. Pol.: VERTICAL
EUT : iSimple REMOTE
Power : DC 3V
M/N : RFREM1
Test Engineer : Madison
Comment : Temp:25.3'C Humi:55%
Test Mode : TX Mode

		Emission				Ant.	Cable	
	Freq.	Level	Limits	Margin	Reading	Factor	Loss	Remark
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB/m)	(dB)	
1	30.00	18.48	40.00	21.52	0.35	17.60	0.53	QP
2	130.88	16.79	43.50	26.71	4.03	12.01	0.75	QP
3	158.04	14.45	43.50	29.05	2.70	10.94	0.81	QP
4	182.29	17.71	43.50	25.79	7.59	9.27	0.85	QP
5	208.48	12.46	43.50	31.04	2.71	8.86	0.89	QP
6	235.64	13.84	46.00	32.16	2.38	10.52	0.94	QP



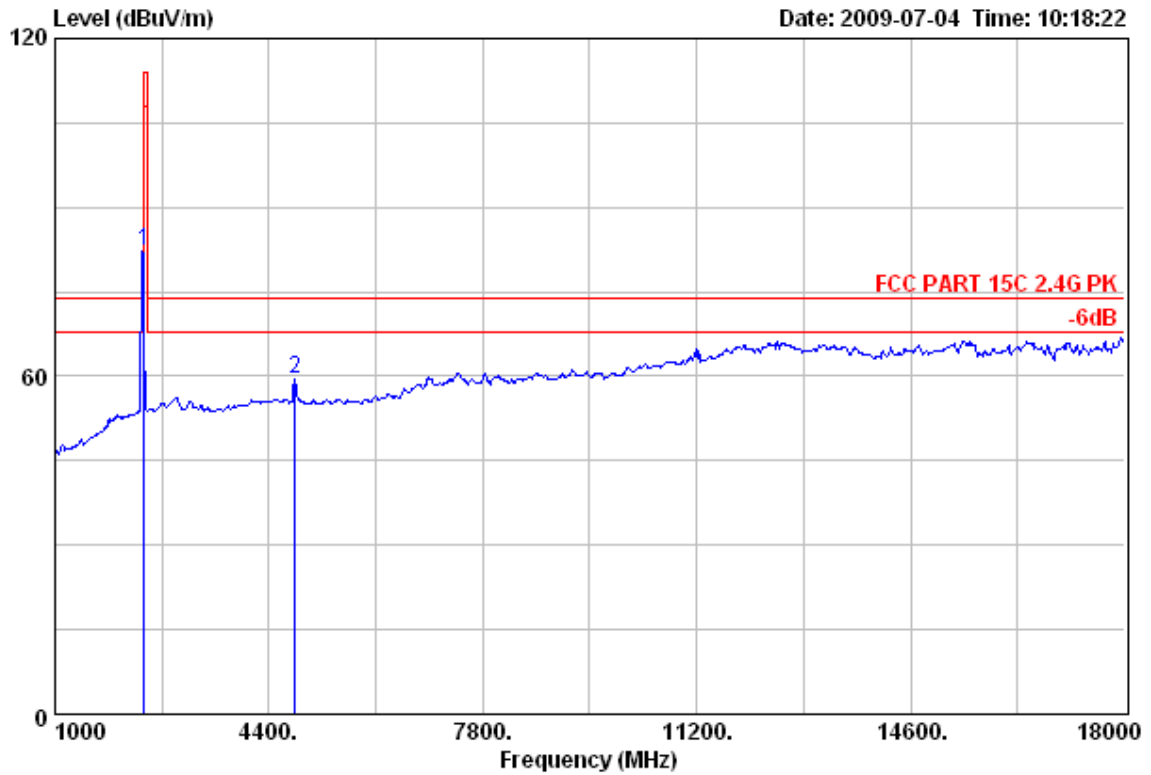
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Data: 48

File: D:\Radiation 10m data\A\AAMP.EMI (51)

Date: 2009-07-04 Time: 10:18:22



Test Site : 10m Chamber
Limit : FCC PART 15C 2.4G PK
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : iSimple REMOTE
M/N : RFREM1
Power : DC 3V
Test Engineer : Madison
Comment : Temp.:25.8'C Humi.:55%
Test Mode : TX Mode 2410MHz

	Emission				Ant.	Cable	
	Freq. (MHz)	Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Reading (dBUV)	Factor (dB/m)	Loss (dB)
Remark							
1	2410.00	82.25	114.00	31.75	48.52	31.50	2.23
Peak							
2	4820.00	59.63	74.00	14.37	22.66	34.59	2.38
Peak							



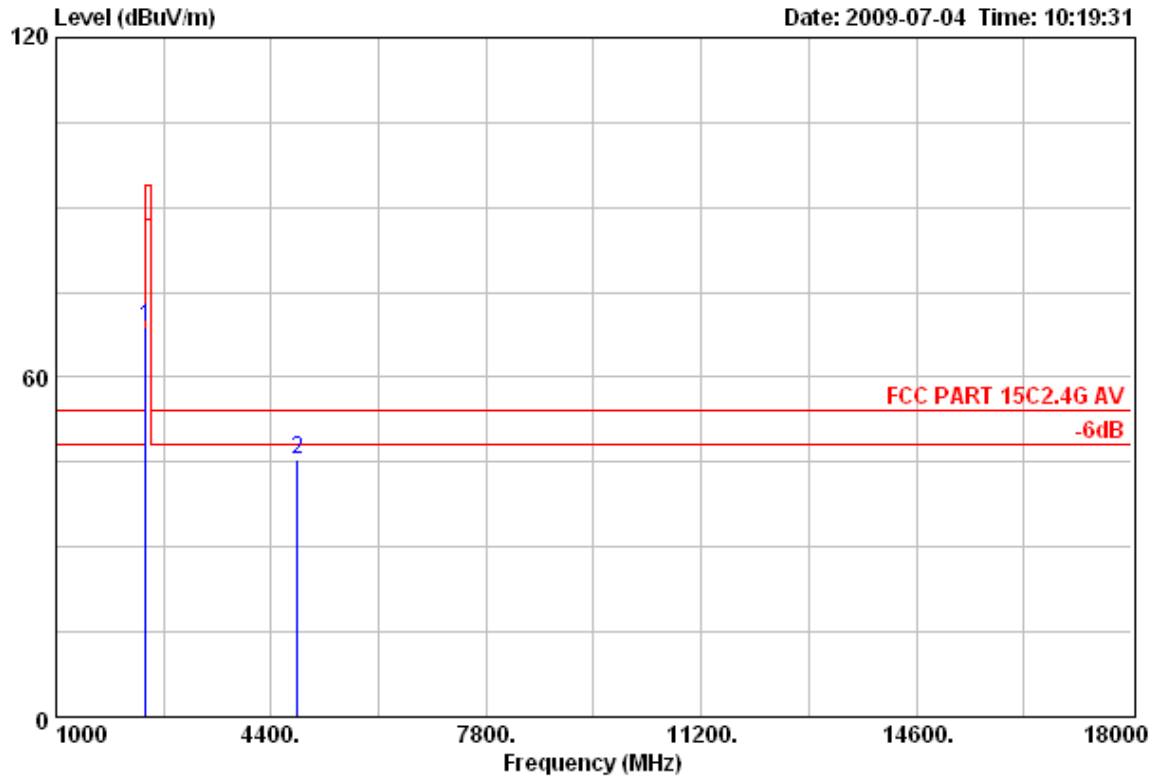
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Data: 49

File: D:\Radiation 10m data\A\AAMP.EMI (51)

Date: 2009-07-04 Time: 10:19:31



Test Site : 10m Chamber
Limit : FCC PART 15C2.4G AV
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : iSimple REMOTE
M/N : RFREM1
Power : DC 3V
Test Engineer : Madison
Comment : Temp.:25.8'C Humi.:55%
Test Mode : TX Mode 2410MHz

		Emission			Ant.	Cable	
Freq.	Level	Limits	Margin	Reading	Factor	Loss	Remark
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB/m)	(dB)	
1 2410.00	68.93	94.00	25.07	35.20	31.50	2.23	Average
2 4820.00	45.57	54.00	8.43	8.60	34.59	2.38	Average



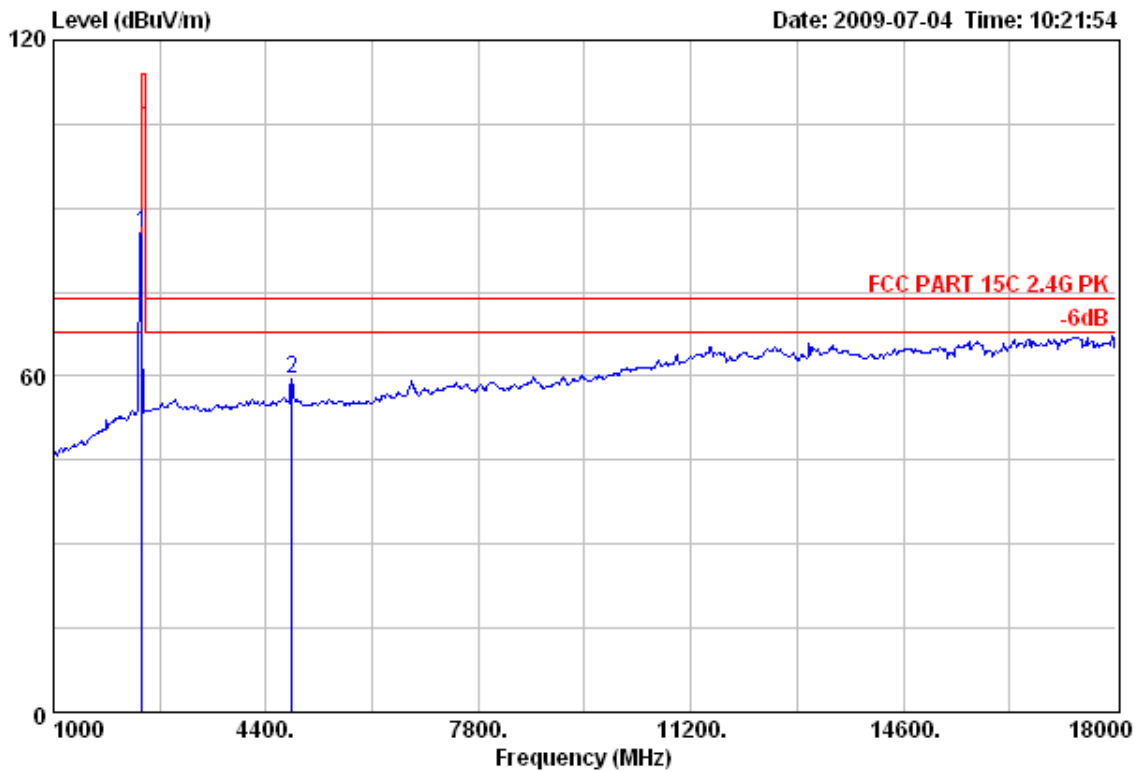
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Data: 50

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Date: 2009-07-04 Time: 10:21:54



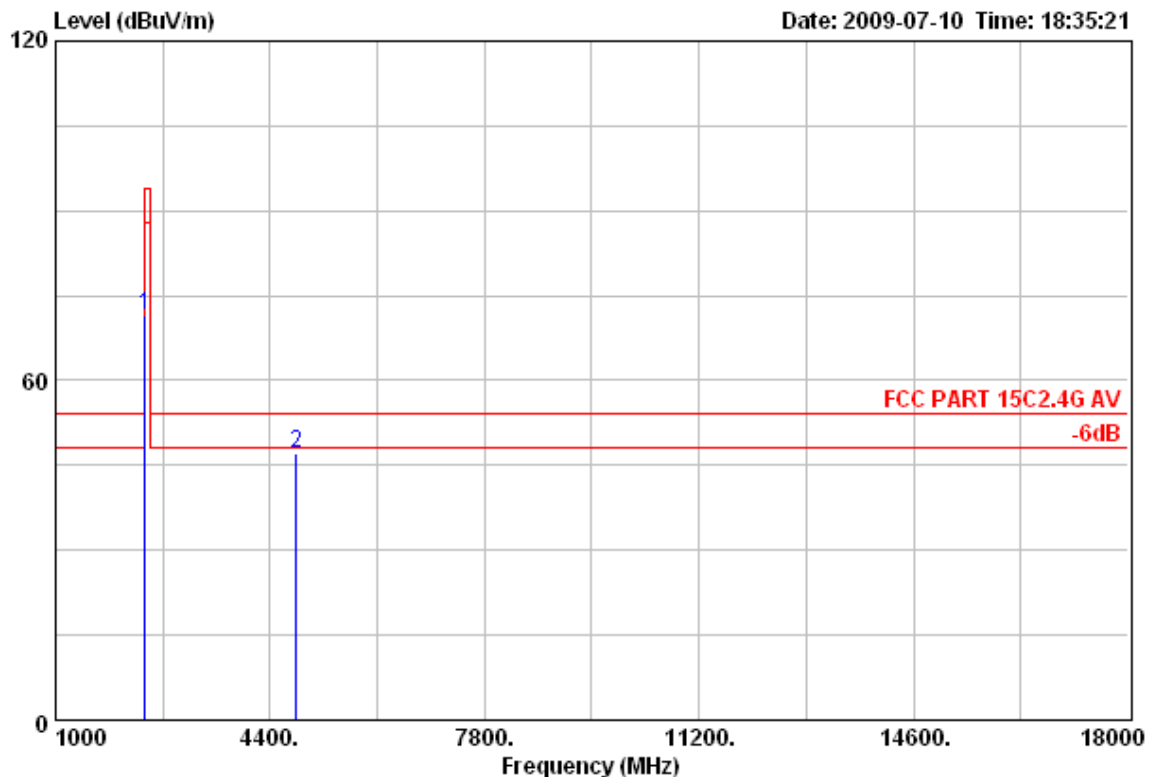
Test Site : 10m Chamber
Limit : FCC PART 15C 2.4G PK
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : iSimple REMOTE
M/N : RFREM1
Power : DC 3V
Test Engineer : Madison
Comment : Temp.:25.8'C Humi.:55%
Test Mode : TX Mode 2410MHz

Freq. (MHz)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Reading (dBUV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1 2410.00	85.50	114.00	28.50	51.77	31.50	2.23	Peak
2 4820.00	59.57	74.00	14.43	22.60	34.59	2.38	Peak



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Date: 2009-07-10 Time: 18:35:21



```

Test Site      : 10m Chamber
Limit         : FCC PART 15C2.4G AV
Dis. / Ant.   : 3m   3117           Ant. Pol.: HORIZONTAL
EUT           : iSimple REMOTE
M/N           : RFREM1
Power         : DC 3V
Test Engineer  : Madison
Comment       : Temp.:25.8'C   Humi.:55%
Test Mode     : TX Mode 2410MHz

```

	Emission				Reading (dBuV)	Ant.	Cable	Remark
	Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)		Factor (dB/m)	Loss (dB)	
1	2410.00	71.43	94.00	22.57	37.70	31.50	2.23	Average
2	4820.00	47.17	54.00	6.83	10.20	34.59	2.38	Average

4.2. 20dB Bandwidth

4.2.1. Test limits

No requirement.

4.2.2. Test procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Connect EUT RF output port to the spectrum analyzer through an RF attenuator.
3. Set SA Center Frequency = Operation frequency, RBW=1MHz,VBW=1MHz.
4. Set SA trace max hold, then view.

4.2.3. Test setup diagram



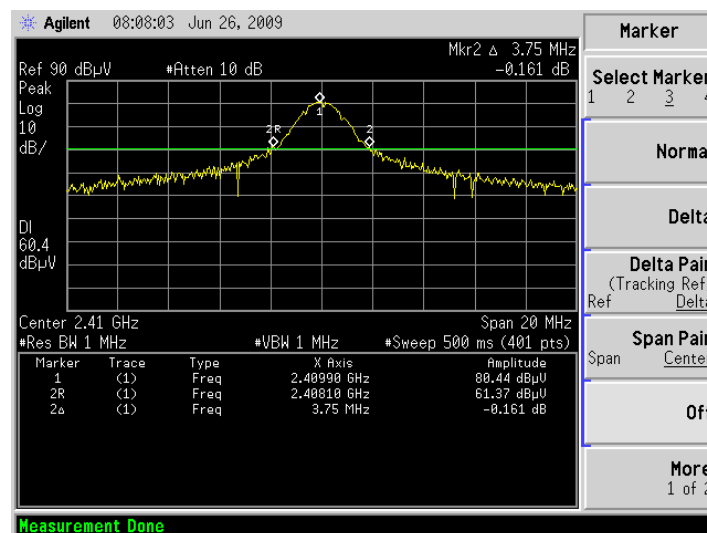
4.2.4. Test result

Pass

Frequency MHz	20dB bandwidth MHz
2410	3.75

The test plots as following:

TX Mode 2410MHz



4.3. Band Edge

4.3.1. Test limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

4.3.2. Test procedure

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=VBW=1MHz / Sweep=AUTO
 - (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

4.3.3. Test result

PASS.

The test plots as following:

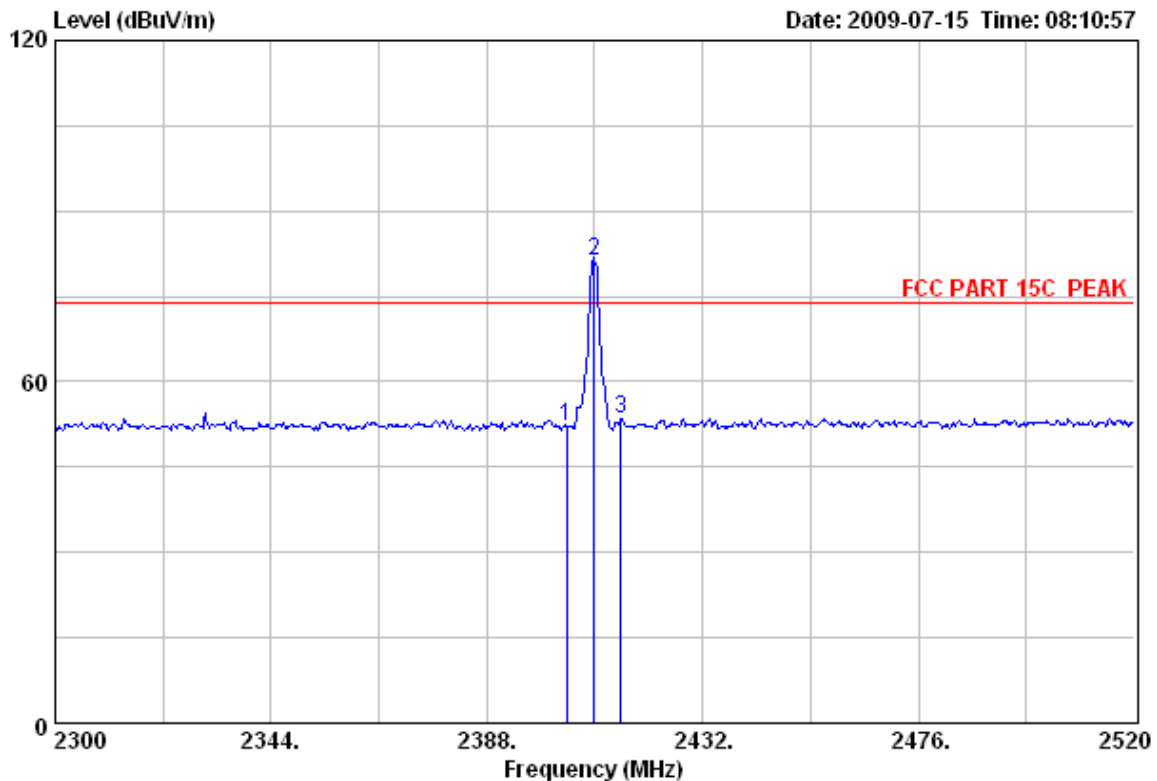
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Data: 56

File: D:\Radiation 10m data\A\AAMP.EMI (60)

Date: 2009-07-15 Time: 08:10:57



Test Site : 10m Chamber
Limit : FCC PART 15C PEAK
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : iSimple REMOTE
M/N : RFREM1
Power : DC 3V
Test Engineer : Madison
Comment : Temp.:25.8'C Humi.:55%
Test Mode : TX Mode 2410MHz

	Emission			Margin	Reading	Ant.	Cable	Remark
	Freq.	Level	Limits			Factor	Loss	
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB/m)	(dB)	
1	2404.28	52.07	74.00	21.93	18.34	31.50	2.23	Peak
2	2410.00	81.28	74.00	-7.28	47.55	31.50	2.23	Peak
3	2415.28	53.59	74.00	20.41	19.86	31.50	2.23	Peak



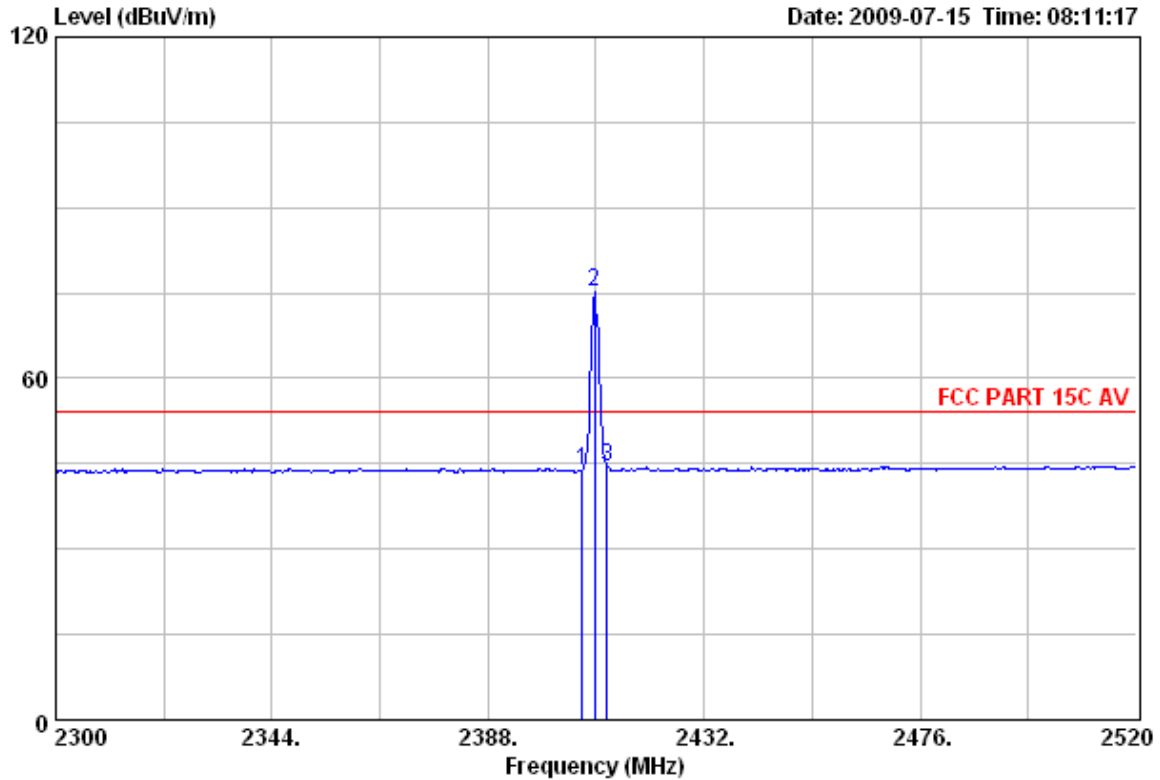
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Data: 57

File: D:\Radiation 10m data\A\AAMP.EMI (60)

Date: 2009-07-15 Time: 08:11:17



Test Site : 10m Chamber
Limit : FCC PART 15C AV
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : iSimple REMOTE
M/N : RFREM1
Power : DC 3V
Test Engineer : Madison
Comment : Temp.:25.8'C Humi.:55%
Test Mode : TX Mode 2410MHz

	Emission				Ant. Factor (dB/m)	Cable Loss (dB)	Remark	
	Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)				
1	2407.14	43.87	54.00	10.13	10.14	31.50	2.23	Average
2	2409.78	75.36	54.00	-21.36	41.63	31.50	2.23	Average
3	2412.20	44.55	54.00	9.45	10.82	31.50	2.23	Average



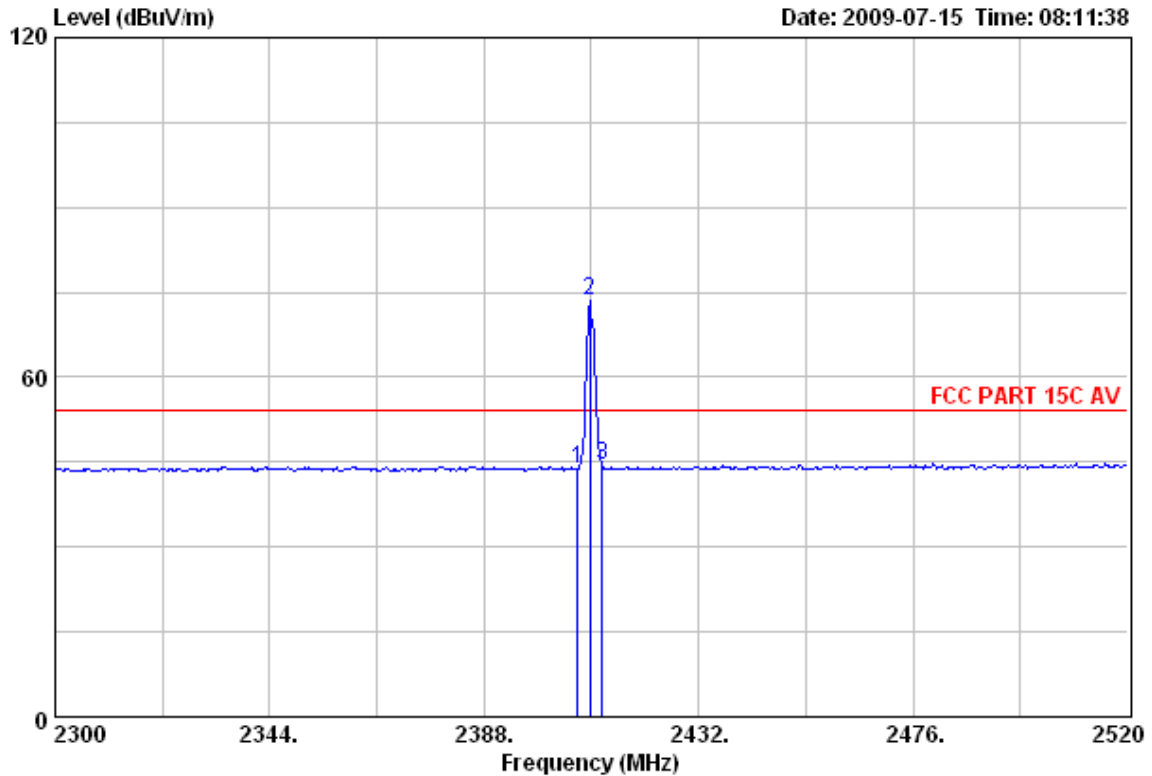
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Data: 59

File: D:\Radiation 10m data\A\AAMP.EMI (60)

Date: 2009-07-15 Time: 08:11:38



Test Site : 10m Chamber
Limit : FCC PART 15C AV
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : iSimple REMOTE
M/N : RFREM1
Power : DC 3V
Test Engineer : Madison
Comment : Temp.:25.8'C Humi.:55%
Test Mode : TX Mode 2410MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant.	Cable	Remark
	Level (dBuV/m)	Limits (dBuV/m)	Factor (dB/m)			Loss (dB)		
1 2407.14	43.70	54.00	10.30	9.97	31.50	2.23	Average	
2 2409.78	73.41	54.00	-19.41	39.68	31.50	2.23	Average	
3 2412.20	44.35	54.00	9.65	10.62	31.50	2.23	Average	



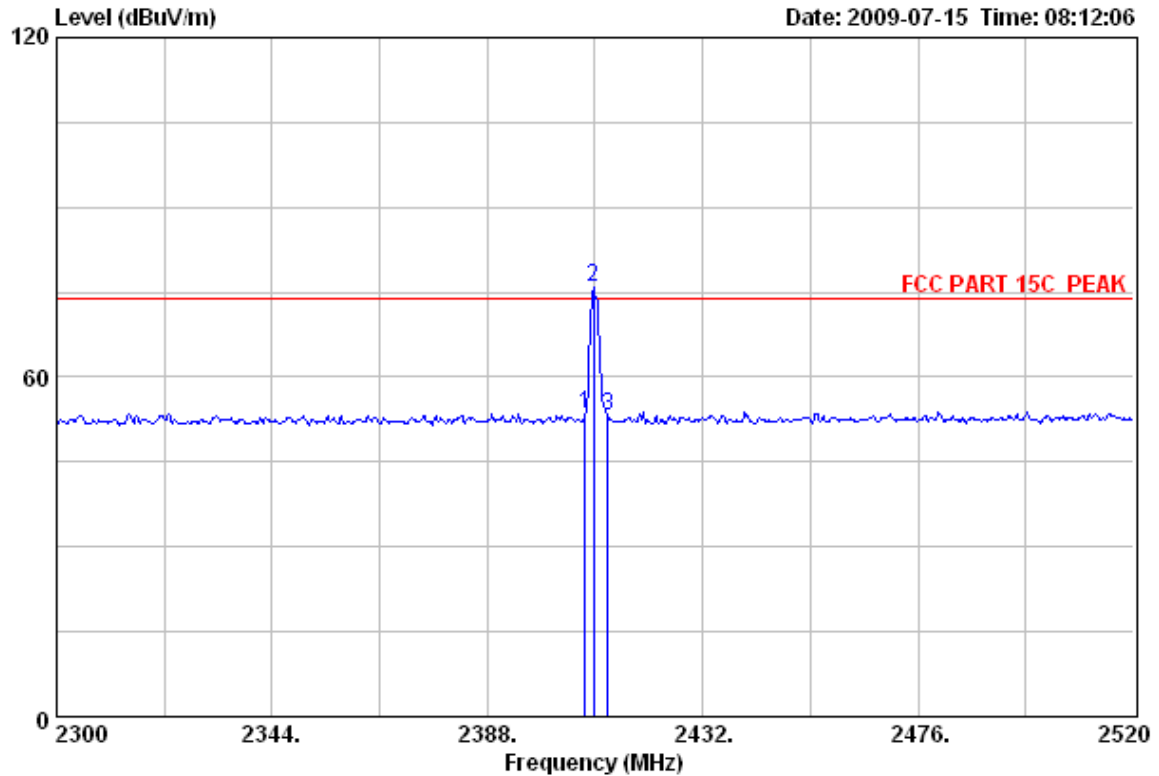
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Data: 60

File: D:\Radiation 10m data\A\AAMP.EMI (60)

Date: 2009-07-15 Time: 08:12:06



Test Site : 10m Chamber
Limit : FCC PART 15C PEAK
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : iSimple REMOTE
M/N : RFREM1
Power : DC 3V
Test Engineer : Madison
Comment : Temp.:25.8'C Humi.:55%
Test Mode : TX Mode 2410MHz

	Emission				Ant.		Cable	Remark
	Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)		
1	2408.02	53.37	74.00	20.63	19.64	31.50	2.23	Peak
2	2409.78	75.72	74.00	-1.72	41.99	31.50	2.23	Peak
3	2412.64	53.00	74.00	21.00	19.27	31.50	2.23	Peak

