

FCC TEST REPORT

for

Shenzhen Toopo Electronic Co.,Ltd

Wireless Module

Model Number: YZ9602

Prepared for : Shenzhen Toopo Electronic Co.,Ltd
Address : Baigong'ao Industrial Zone,Xikeng New Village,GuanLan Town,
Bao'an District,Shenzhen City,Guangdong Province,China
Prepared By : NS Technology Co., Ltd.
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Report Number : NSE-F10115465
Date of Test : Nov. 9~ Nov. 12, 2010
Date of Report : Nov. 15, 2010



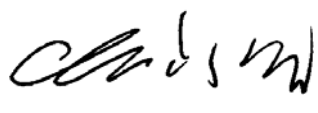


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NS Technology Co., Ltd.

Applicant:	Shenzhen Toopo Electronic Co.,Ltd		
Address:	Baigong'ao Industrial Zone,Xikeng New Village,GuanLan Town, Bao'an District,Shenzhen City,Guangdong Province,China		
Manufacturer:	Shenzhen Toopo Electronic Co.,Ltd		
Address:	Baigong'ao Industrial Zone,Xikeng New Village,GuanLan Town, Bao'an District,Shenzhen City,Guangdong Province,China		
E.U.T:	Wireless Module		
Model Number:	YZ9602		
Trade Name:	TOOPO	Operating Frequency:	2403MHz~2479MHz
Date of Receipt:	Nov. 9, 2010	Date of Test:	Nov. 9~ Nov. 12, 2010
Test Specification:	FCC Part 15 Subpart C: July. 10, 2008 ANSI C63.4:2003		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied.		
Issue Date: Nov. 15,2010			
Tested by:	Reviewed by:	Approved by:	
 <hr/>	 <hr/>	 <hr/>	
Jade/ Engineer	Jade Yang / Supervisor	Chris Du / 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.	: Wireless Module
Model No.	: YZ9602
Operating Frequency	: 2403~2479MHz
Number of Channels	: 77 channels
Type of Modulation	: GFSK
Antenna Type	: Integral
System Input Voltage	: DC 5V from PC input AC 120V/60Hz
Temperature Range(Operating)	: 0 ~+ 40°C
USB Cable	: Unshielded, Detachable 0.5m

1.3. Difference between Model Numbers

1.4. Independent Operation Modes

The basic operation modes are:

- 1.4.1. CH1 TX 2403MHz
- 1.4.2. CH38 TX 2440MHz
- 1.4.3. CH77 TX 2479MHz

1.5. Test Supporting System

1.5.1. PC

Model Number	: 5P2PM2X
Serial Number	: 12400120329
Manufacturer	: Dell
Adapter	: M/N:DA90PE1-00
	I/P:AC 100~240V 1.5A
	O/P: DC 19.5V 4.62A
	AC Line: Unshielded, Detachable, 1.0m
	DC Line: Unshielded, Detachable, 1.5m



2. TEST SITES

2.1. Test Facilities

EMC Lab	:	<p>Accredited by TUV Rheinland, Germany Date of registration: July 28, 2003</p> <p>Accredited by CNAS, China Registration No.: L1744 Date of registration: November 25, 2004</p> <p>Accredited by Intertek ETL SEMKO Registration No.: TMP-013 Date of registration: June 11, 2005</p> <p>Accredited by TUV/PS, Hong Kong Date of registration: December 1, 2005</p> <p>Accredited by ATCB, USA Date of registration: August 3, 2006</p> <p>Accredited by VCCI, Japan Member No.: 2115 Registration No.: R-2527, R-3012 & C-2770 Date of registration: March 23, 2007</p> <p>Accredited by FCC, USA Registration No.: 502831 Date of registration: February 9, 2009</p> <p>Accredited by Industry Canada Registration No.: 5936A Date of registration: March 4, 2009</p> <p>Accredited by American Association for Laboratory Accreditation (A2LA), USA Certificate No.: 2951.01 Date of registration: March 31, 2010</p>
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 conducted emission at the mains terminals test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCS30	100340	May 30,10	May 30,11
Artificial Mains Network	Rohde&Schwarz	ESH2-Z5	100071	May 30,10	May 30,11
Artificial Mains Network (AUX)	Kyoritsu	KNW-407	8-1579-1	May 30,10	May 30,11
RF Cable	FUJIKURA	3D-2W	844 Cable	May 2,10	May 2,11

2.2.2. For radiated emission test (30MHz-1GHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Agilent	E7405A	MY45118807	May 30,10	May 30,11
EMI Test Receiver	Rohde&Schwarz	ESVS10	841431/004	May 30,10	May 30,11
Bilog Antenna	Schwarzbeck	VULB 9168	9168-160	Apr.27,10	Apr.27,11
10m Semi-anechoic Chamber	ETS-LINDGREN	21.4m*12.1m*8.8m	NSEMC006	May 2,10	May 2,11
RF Cable	IMRO	IMRO-400	10m Cable 1#10m	May 2,10	May 2,11
RF Cable	IMRO	IMRO-400	10m Cable 2#3m	May 2,10	May 2,11
Signal Amplifier	Agilent	8447D	2944A11174	May 2,10	May 2,11

2.2.3. For radiated emission test(Above 1GHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Agilent	E7405A	MY45118807	May 30,10	May 30,11
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 2,10	May 2,11

2.2.4. For Band edge compliance and 20dB bandwidth test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Agilent	E7405A	MY45118807	May 30,10	May 30,11
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 2,10	May 2,11

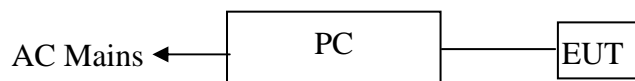
3. TEST SET-UP AND OPERATION MODES

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. Block Diagram of Test Set-up

System Diagram of Connections Between EUT and Simulators



(EUT : Wireless Module)

3.3. Test Operation Mode and Test Software

Refer to clause 1.4

3.4. Special Accessories and Auxiliary Equipment

None.

3.5. 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	PASS
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.

5. EMISSION TEST RESULTS

5.1. Conducted Emission at The Mains Terminals Test

RESULT : **Pass**
Test procedure : FCC Part 15 Subpart C
Frequency range : 0.15~30MHz
Test Site : Shielded Room
Limits : FCC Part 15 Subpart C

Test Setup

Date of test : Nov. 10, 2010
Model No. : Wireless Module
Input Voltage : DC 5V from PC input AC 120V/60Hz
Operation Mode : TX Mode

The EUT was put on a wooden table which was 0.8metre high above the ground and connected to the AC mains through a Artificial Mains Network (A.M.N). The mains lead in excess of 1 m separating the EUT from the AMN was folded at the cable centre into a bundle no longer than 0.4 m.

The EUT was kept 0.4m from any other earthed conducting surface. Both sides of AC line were checked to find out the maximum conducted emission levels according to the test procedure during conducted emission test.

The bandwidth of the test receiver (R&S ESCS30) was set at 9 kHz.

The frequency range from 150 kHz to 30 MHz was investigated.

The test data of the worst case condition(s) was reported on the following page.

Note: Test uncertainty: $\pm 2.54\text{dB}$ at a level of confidence of 95%.

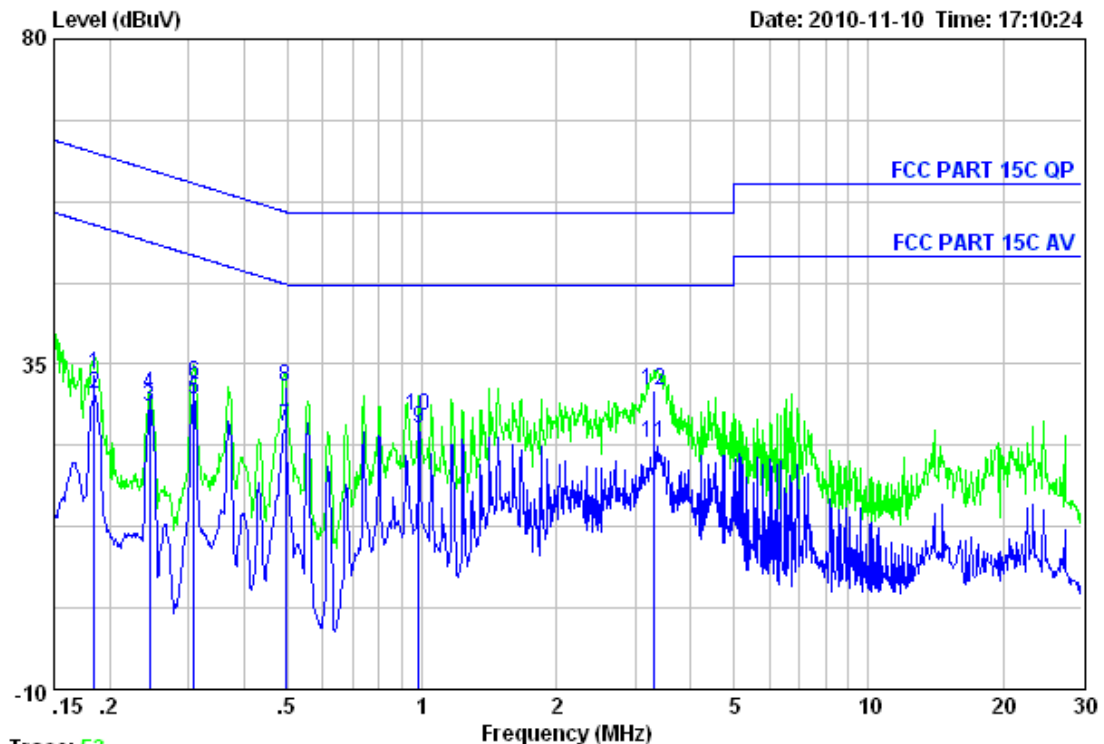
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Data: 54

File: \\844pc-9a4192bbc\844 data\Conduction\T\Toopo.EMI (56)

Date: 2010-11-10 Time: 17:10:24



Test Site : 844 Shielded Room
Limit : FCC PART 15C QP LISN Phase: LINE
EUT : Wireless Module
Power : DC 5V From PC Input AC 120V/60Hz
M/N : YZ9602
Test Engineer : Jade
Comment : Temp: 25.3°C Humi: 55% Press: 101.51kPa
Test Mode : TX Mode

Emission					
	Freq. (MHz)	Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.18	33.50	64.28	30.78	QP
2	0.18	30.95	54.28	23.33	Average
3	0.25	29.11	51.91	22.80	Average
4	0.25	30.80	61.91	31.11	QP
5	0.31	30.22	50.02	19.80	Average
6	0.31	32.40	60.02	27.62	QP
7	0.49	26.28	56.10	29.82	Peak
8	0.49	31.80	56.10	24.30	QP
9	0.98	26.06	46.00	19.94	Average
10	0.98	27.90	56.00	28.10	QP
11	3.31	24.00	46.00	22.00	Average
12	3.31	31.30	56.00	24.70	QP



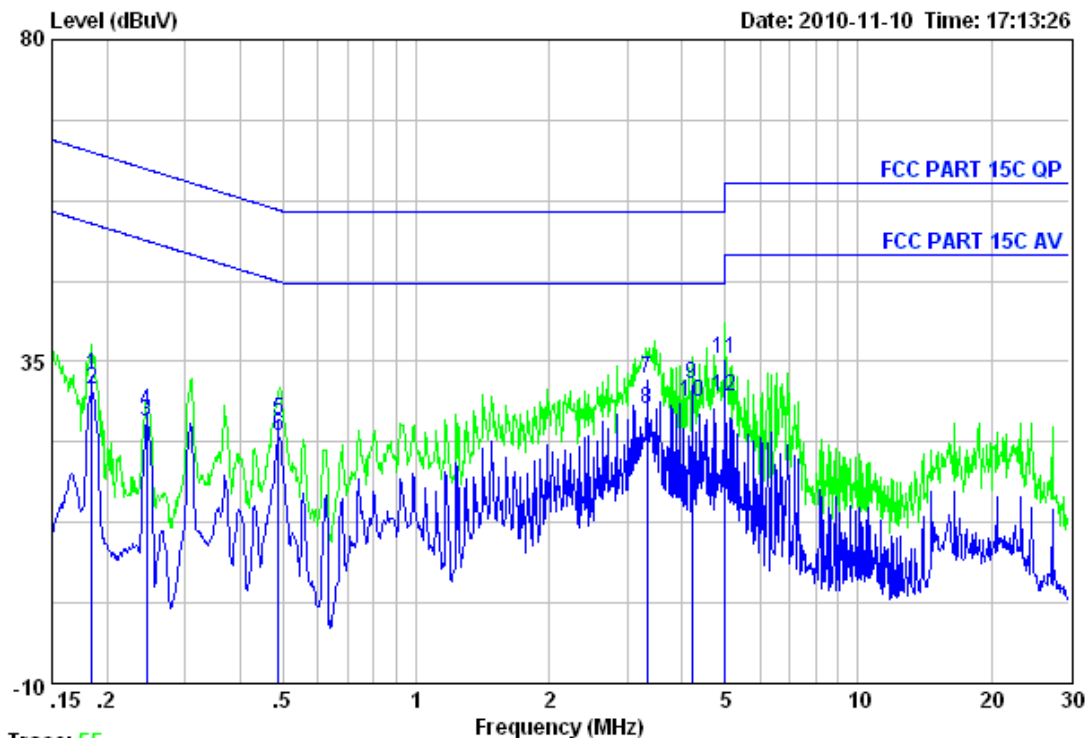
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Data: 56

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Date: 2010-11-10 Time: 17:13:26



Trace: 55

Test Site : 844 Shielded Room
Limit : FCC PART 15C QP LISN Phase: LINE
EUT : Wireless Module
Power : DC 5V From PC Input AC 120V/60Hz
M/N : YZ9602
Test Engineer : Jade
Comment : Temp: 25.3°C Humi: 55% Press: 101.51kPa
Test Mode : TX Mode

Emission					
	Freq. (MHz)	Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.18	33.20	64.28	31.08	QP
2	0.18	31.12	54.28	23.16	Average
3	0.25	26.66	51.91	25.25	Average
4	0.25	28.20	61.91	33.71	QP
5	0.49	26.90	56.19	29.29	QP
6	0.49	24.51	46.19	21.68	Average
7	3.33	32.50	56.00	23.50	QP
8	3.33	28.24	46.00	17.76	Average
9	4.20	31.80	56.00	24.20	QP
10	4.20	29.30	46.00	16.70	Average
11	5.00	35.50	60.00	24.50	QP
12	5.00	30.11	50.00	19.89	Average



5.2. Radiated Emission

5.2.1. Test limits

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

5.2.2. 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 10GHz, 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.

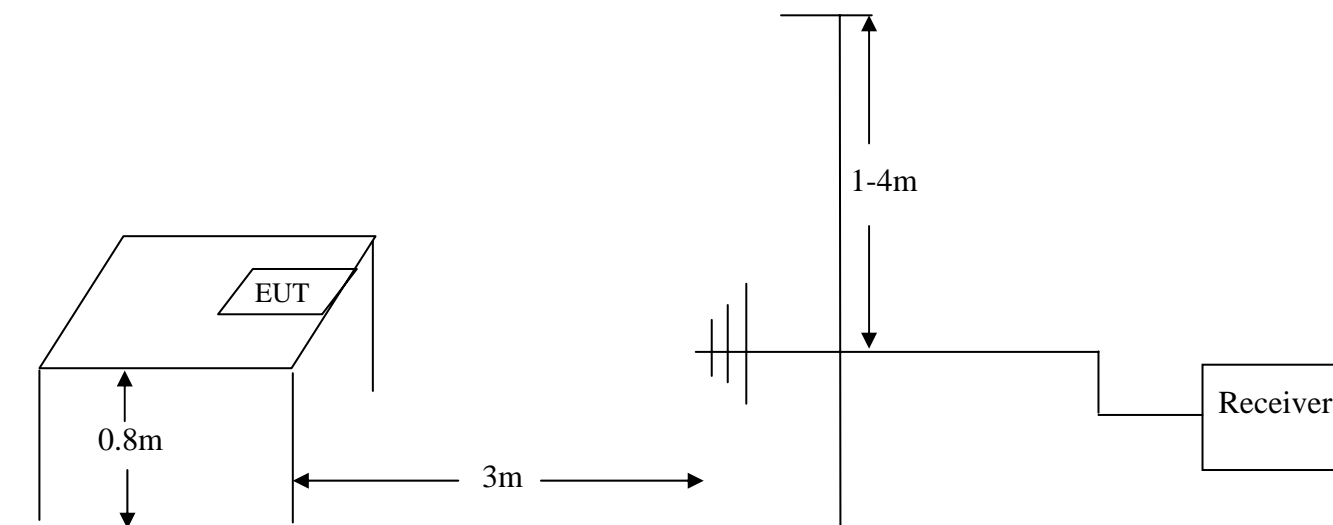
In 18GHz to 25GHz, The EUT was checked by Horn ANT . But the test result is background.

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

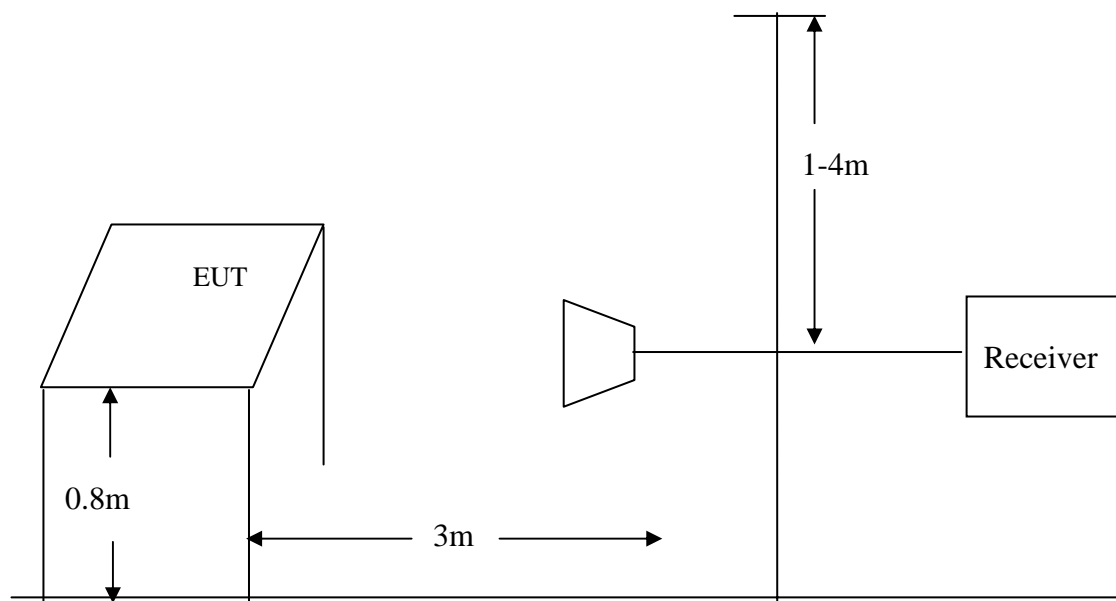
The EUT was tested in Chamber Site.

5.2.3. Test Setup Diagram

5.1.3.1. Frequency range: 30MHz-1000MHz



5.1.3.2. Frequency range: 1 GHz -25GHz

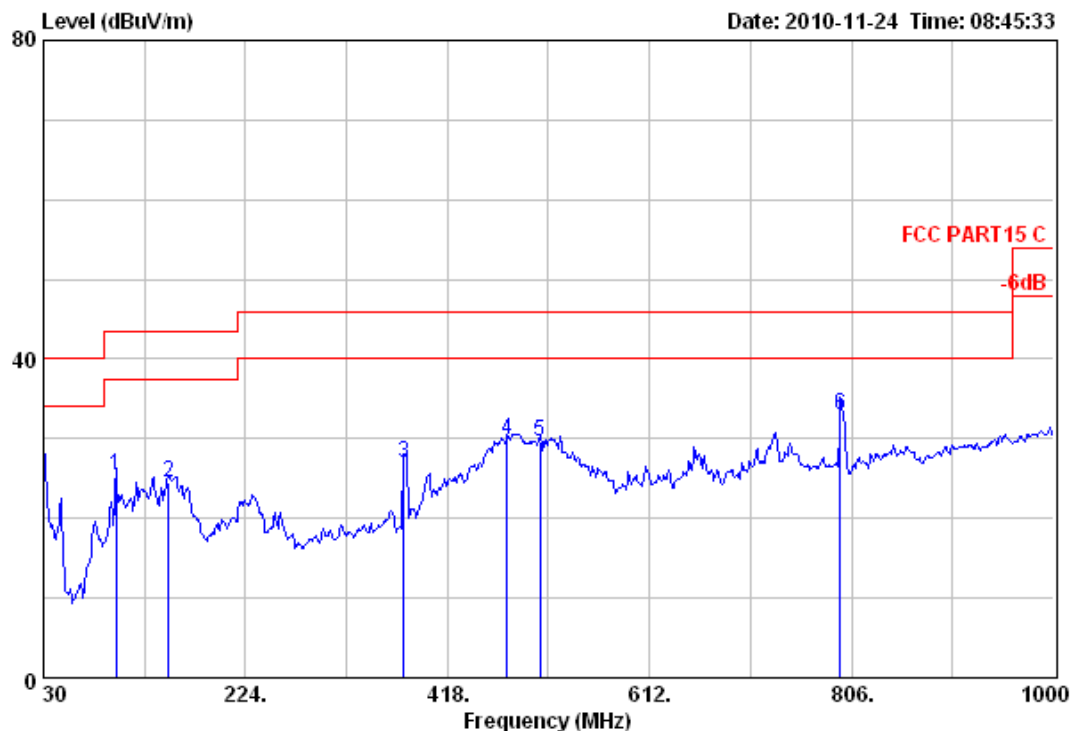


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Data: 111 File: D:\Radiation data\T\Toopo.EMI (112)

Date: 2010-11-24 Time: 08:45:33



Test Site : 10m Chamber
Limit : FCC PART15 C
Dis. / Ant. : 3m 25758-3 Ant. Pol.: VERTICAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX Mode

	Emission				Ant. Cable			
	Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1	99.84	25.32	43.50	18.18	13.96	10.30	1.06	QP
2	150.28	24.62	43.50	18.88	12.12	11.20	1.30	QP
3	376.29	26.87	46.00	19.13	9.02	15.76	2.09	QP
4	475.23	29.87	46.00	16.13	9.45	18.05	2.37	QP
5	507.24	29.54	46.00	16.46	8.48	18.58	2.48	QP
6	795.33	32.87	46.00	13.13	7.36	22.35	3.16	QP



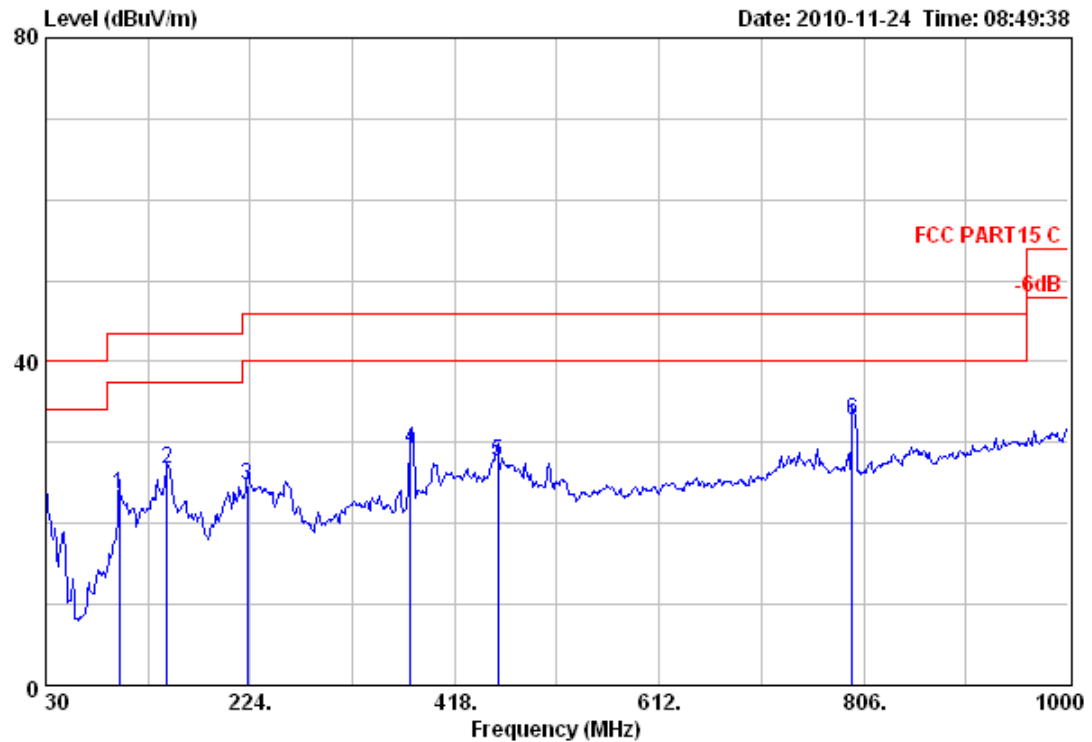
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Data: 112

File: D:\Radiation data\T\Toopo.EMI (112)

Date: 2010-11-24 Time: 08:49:38



Test Site : 10m Chamber
Limit : FCC PART15 C
Dis. / Ant. : 3m 25758-3 Ant. Pol.: HORIZONTAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX Mode

		Emission				Ant. Cable		
	Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1	99.84	23.68	43.50	19.82	12.32	10.30	1.06	QP
2	145.43	26.85	43.50	16.65	13.89	11.68	1.28	QP
3	221.09	24.68	46.00	21.32	13.13	9.94	1.61	QP
4	376.29	29.26	46.00	16.74	11.41	15.76	2.09	QP
5	458.74	27.68	46.00	18.32	7.78	17.59	2.31	QP
6	795.33	32.86	46.00	13.14	7.35	22.35	3.16	QP



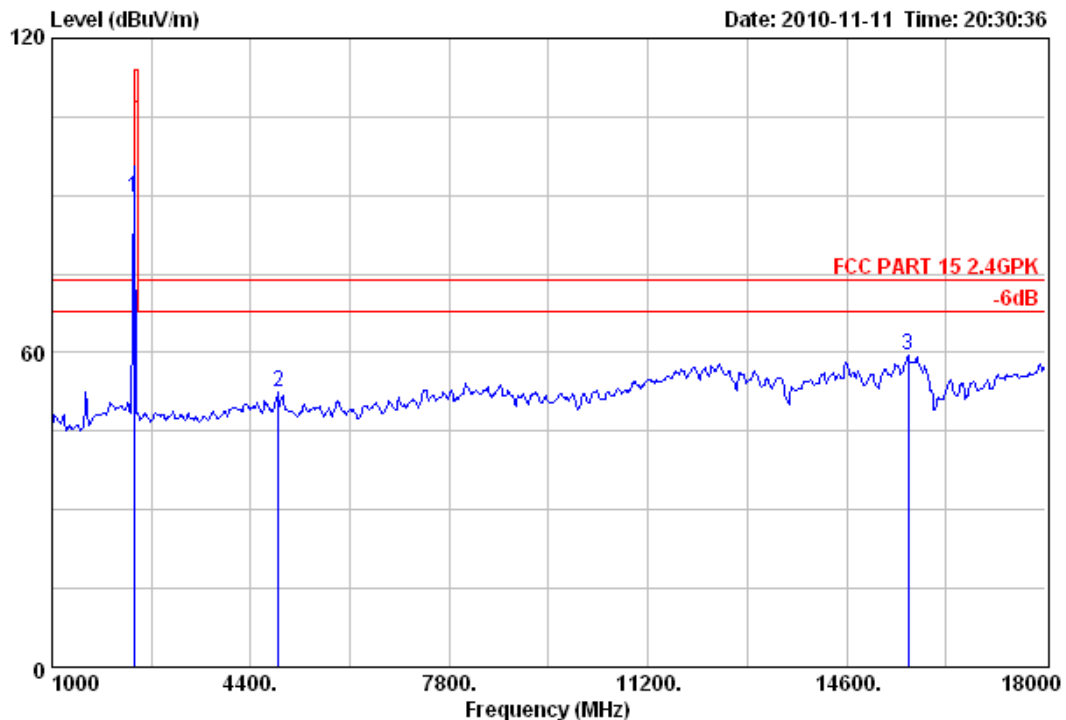
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Data: 91

File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:30:36



Test Site : 10m Chamber
Limit : FCC PART 15 2.4GPK
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH1 2403MHz

Freq. (MHz)	Emission		Limits (dBUV/m)	Margin (dB)	Reading (dBuV)	Ant.	Cable	Remark
	Level (dBUV/m)					Factor (dB/m)	Loss (dB)	
1 2403.00	89.55	114.00	24.45	55.82	31.50	2.23	Peak	
2 4876.00	52.52	74.00	21.48	15.52	34.62	2.38	Peak	
315654.00	59.39	74.00	14.61	14.43	41.92	3.04	Peak	



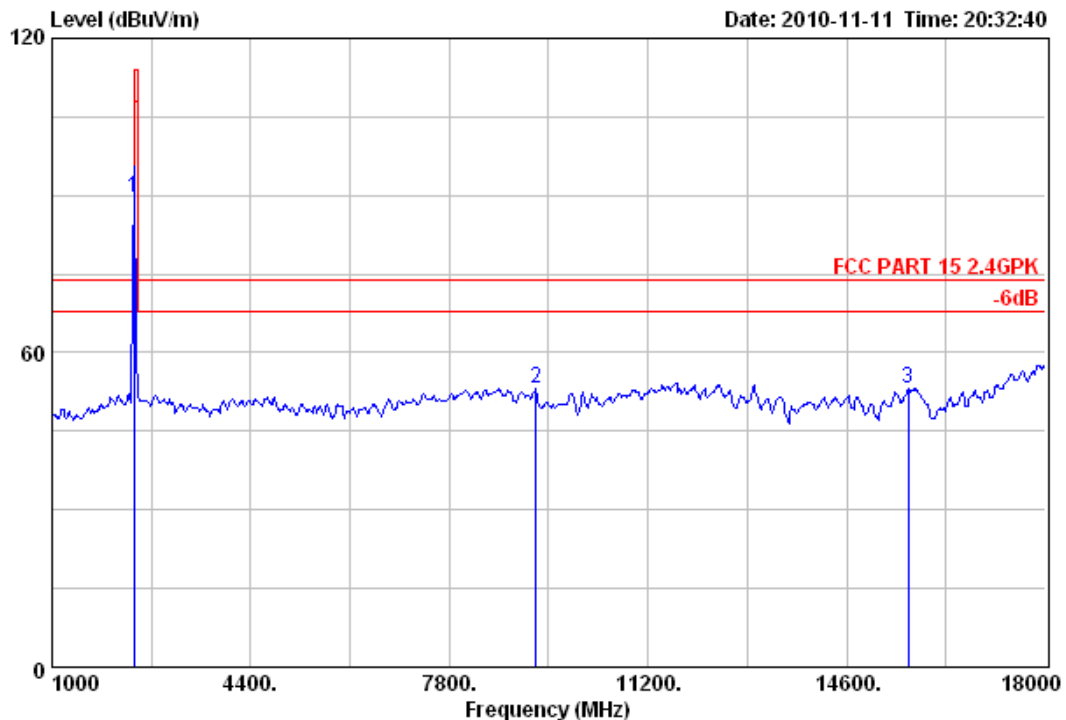
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Data: 92

File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:32:40



Test Site : 10m Chamber
Limit : FCC PART 15 2.4GPK
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH1 2403MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBUV)	Ant. Cable		Remark
	Level (dBUV/m)	Limits (dBUV/m)				Factor (dB/m)	Loss (dB)	
1 2403.00	89.64	114.00	24.36	55.91	31.50	2.23		Peak
2 9279.00	53.31	74.00	20.69	13.32	37.33	2.66		Peak
3 31565.00	53.16	74.00	20.84	8.20	41.92	3.04		Peak



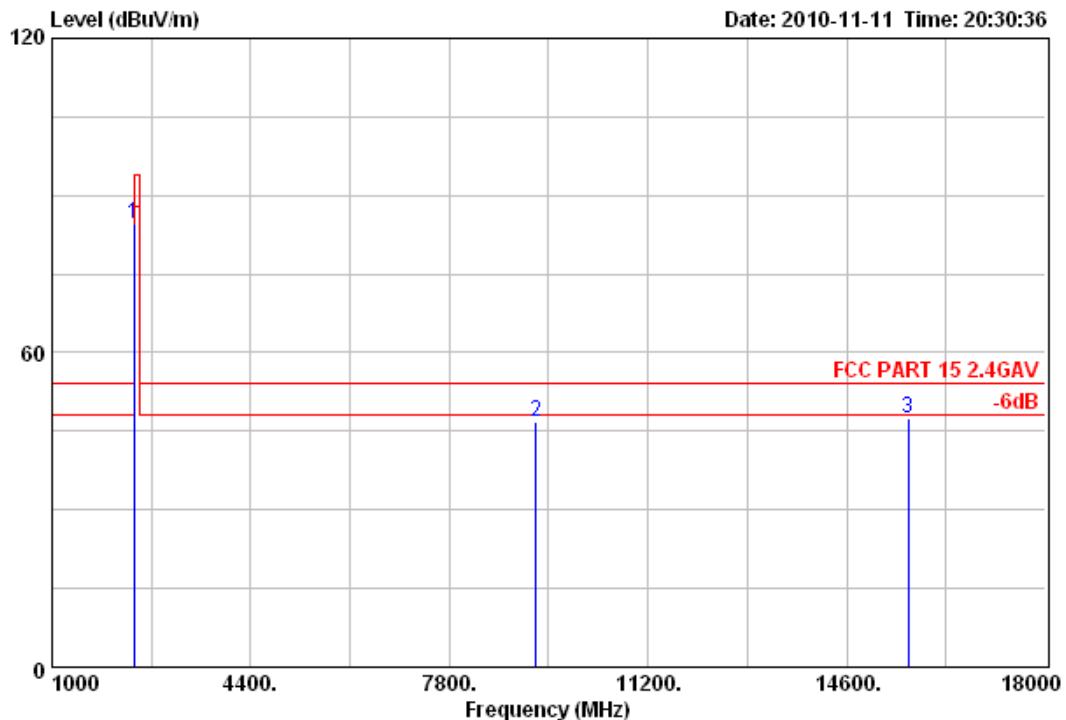
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Data: 93

File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:30:36



Test Site : 10m Chamber
Limit : FCC PART 15 2.4GAV
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH1 2403MHz

	Emission				Reading	Ant.	Cable	Remark
	Freq.	Level	Limits	Margin		Factor	Loss	
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)		(dB/m)	(dB)	
1	2403.00	84.55	94.00	9.45	50.82	31.50	2.23	Average
2	9279.00	46.74	54.00	7.26	6.75	37.33	2.66	Average
3	31565.00	47.39	54.00	6.61	2.43	41.92	3.04	Average



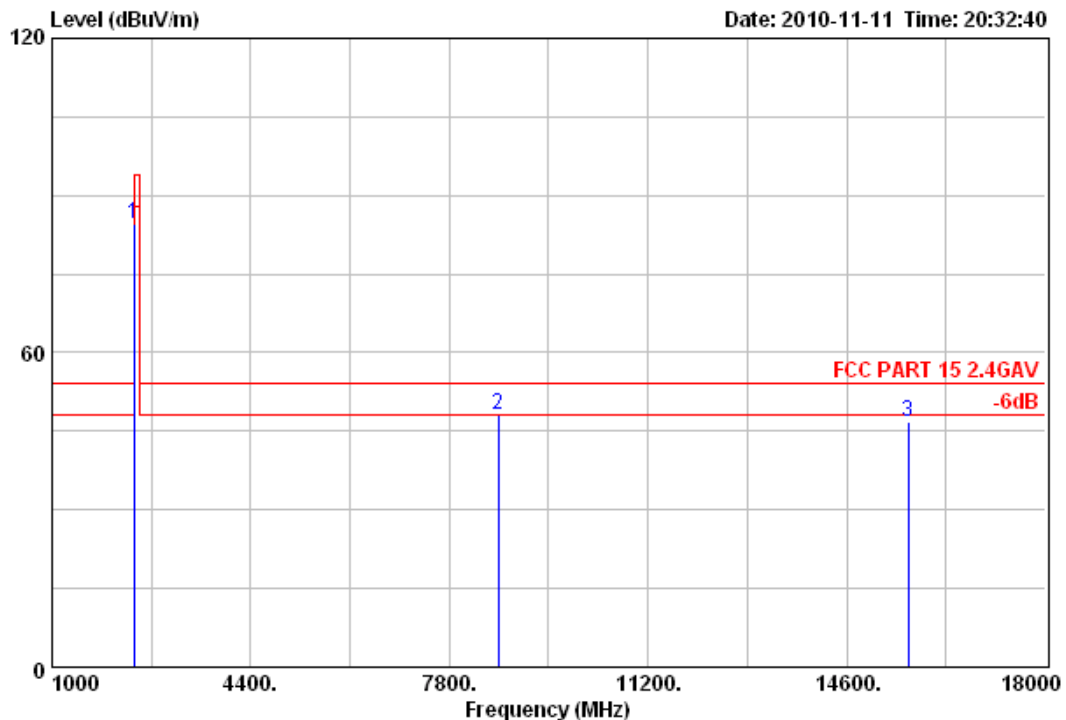
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File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:32:40



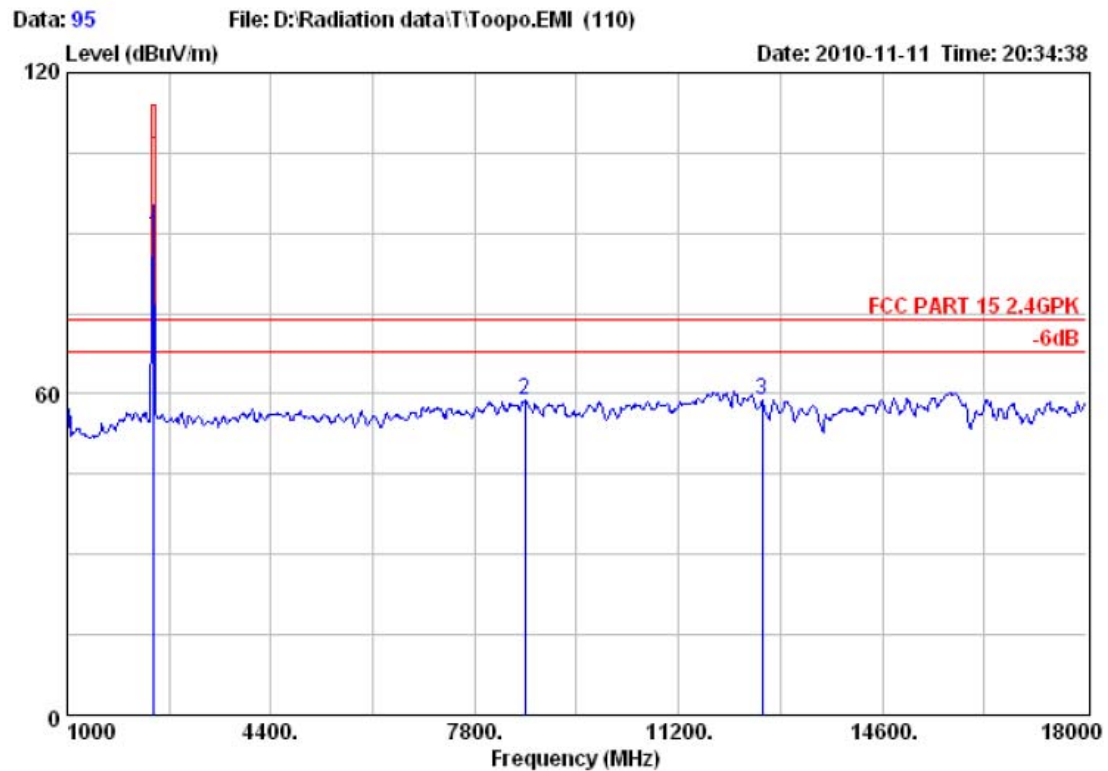
Test Site : 10m Chamber
Limit : FCC PART 15 2.4GAV
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH1 2403MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)	Limits (dBuV/m)				Factor (dB/m)	Loss (dB)	
1 2403.00	84.64	94.00	9.36	50.91	31.50	2.23		Average
2 8633.00	48.08	54.00	5.92	8.51	36.95	2.62		Average
31565.4.00	46.67	54.00	7.33	1.71	41.92	3.04		Average



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Test Site : 10m Chamber
Limit : FCC PART 15 2.4GPK
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH38 2440MHz

Freq. (MHz)	Emission		Limits (dBUV/m)	Margin (dB)	Reading (dBUV)	Ant. Cable		Remark
	Level (dBUV/m)					Factor (dB/m)	Loss (dB)	
1 2440.00	89.62		114.00	24.38	55.85	31.54	2.23	Peak
2 8633.00	58.69		74.00	15.31	19.12	36.95	2.62	Peak
3 31259.40	58.98		74.00	15.02	16.06	40.06	2.86	Peak

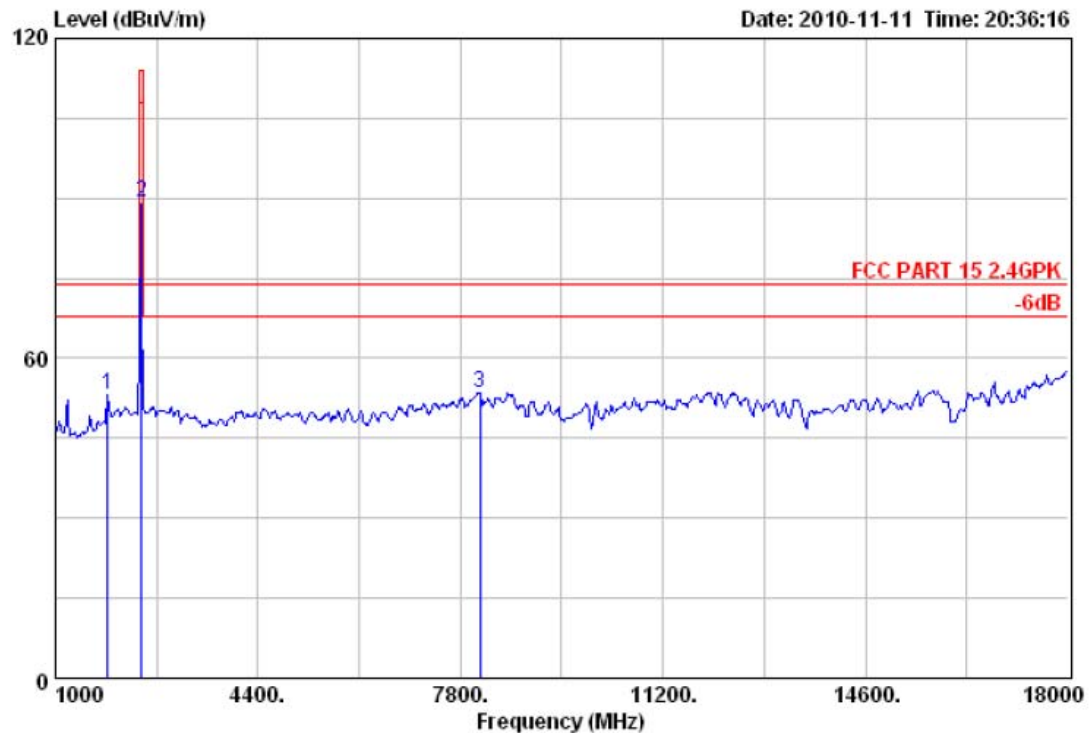


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Data: 96 File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:36:16



Test Site : 10m Chamber
Limit : FCC PART 15 2.4GPK
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH38 2440MHz

	Emission				Ant. Cable			Remark
	Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	
1	1884.00	53.12	74.00	20.88	20.59	30.34	2.19	Peak
2	2440.00	89.27	114.00	24.73	55.50	31.54	2.23	Peak
3	8123.00	53.46	74.00	20.54	13.91	36.97	2.58	Peak



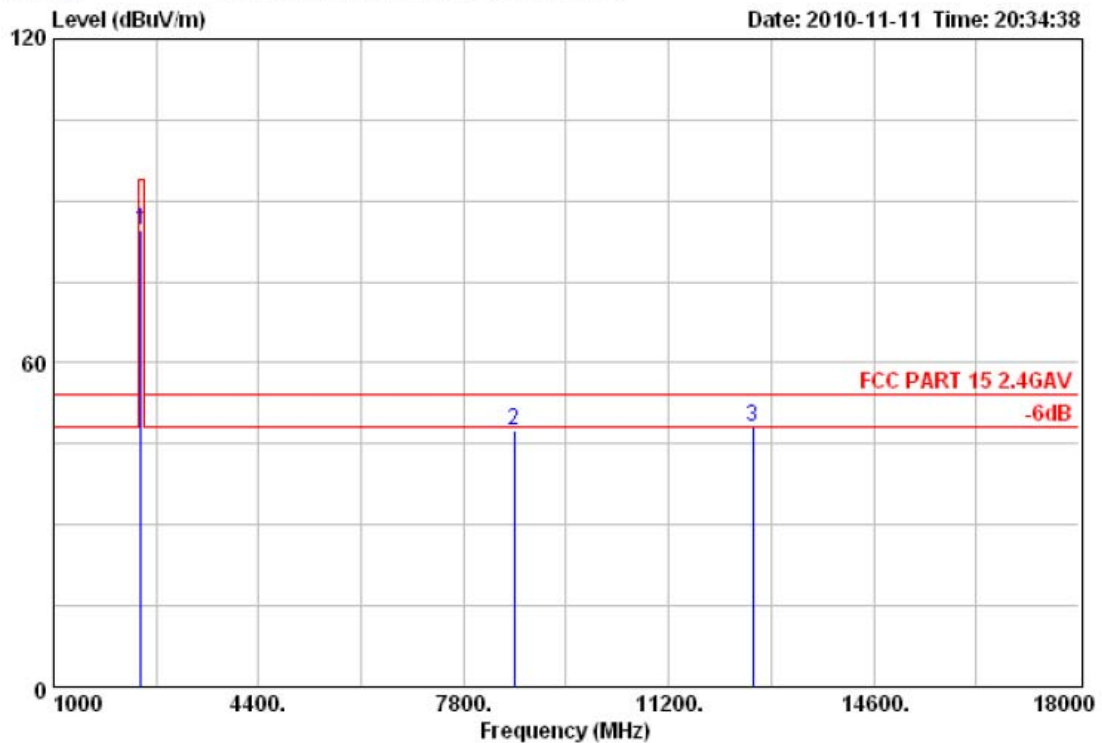
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Data: 97

File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:34:38



Test Site : 10m Chamber
Limit : FCC PART 15 2.4GAV
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH38 2440MHz

Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1 2440.00	84.62	94.00	9.38	50.85	31.54	2.23	Average
2 8633.00	47.37	54.00	6.63	7.80	36.95	2.62	Average
3 12594.00	48.19	54.00	5.81	5.27	40.06	2.86	Average



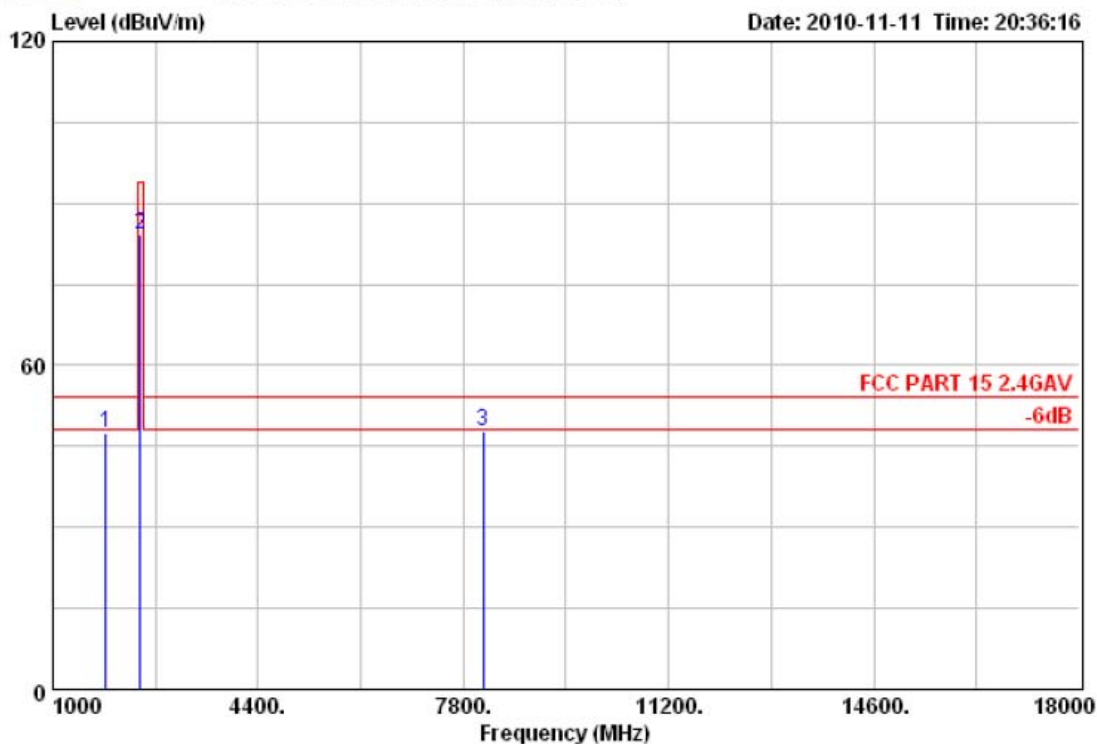
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Data: 98

File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:36:16



Test Site : 10m Chamber
Limit : FCC PART 15 2.4GAV
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH38 2440MHz

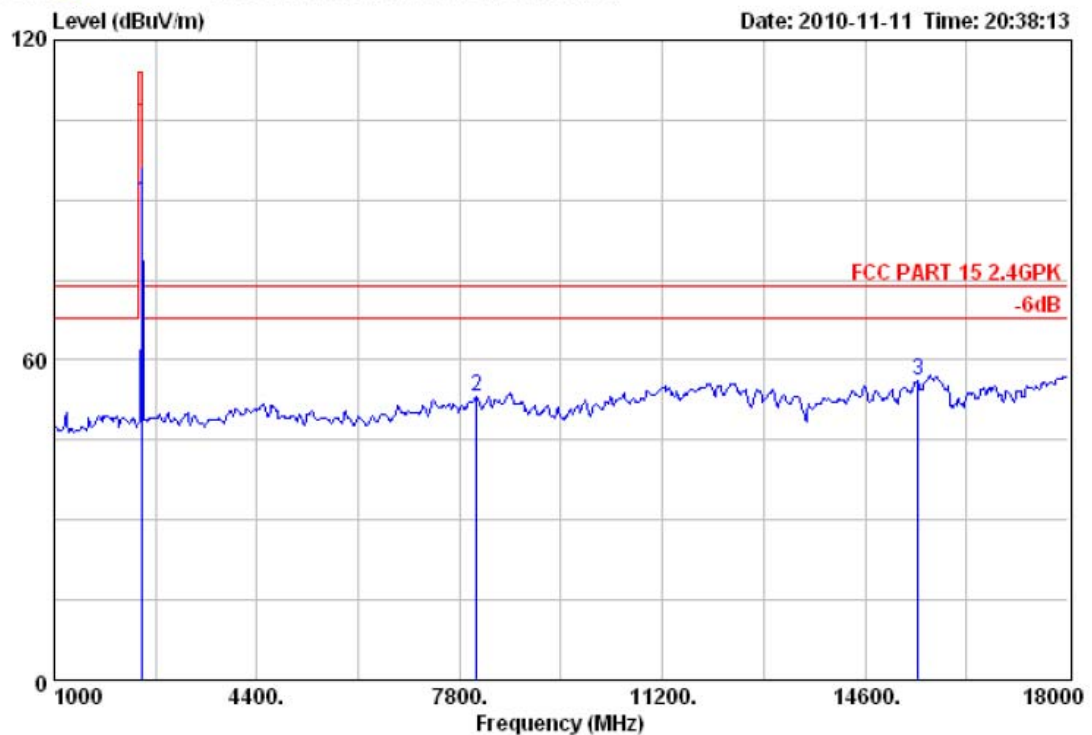
Freq. (MHz)	Emission		Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)					Factor (dB/m)	Loss (dB)	
1 1884.00	47.33		54.00	6.67	14.80	30.34	2.19	Average
2 2440.00	84.27		94.00	9.73	50.50	31.54	2.23	Average
3 8123.00	47.91		54.00	6.09	8.36	36.97	2.58	Average



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Data: 99 File: D:\Radiation data\T\Toopo.EMI (110)



Test Site : 10m Chamber
Limit : FCC PART 15 2.4GPK
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH77 2479MHz

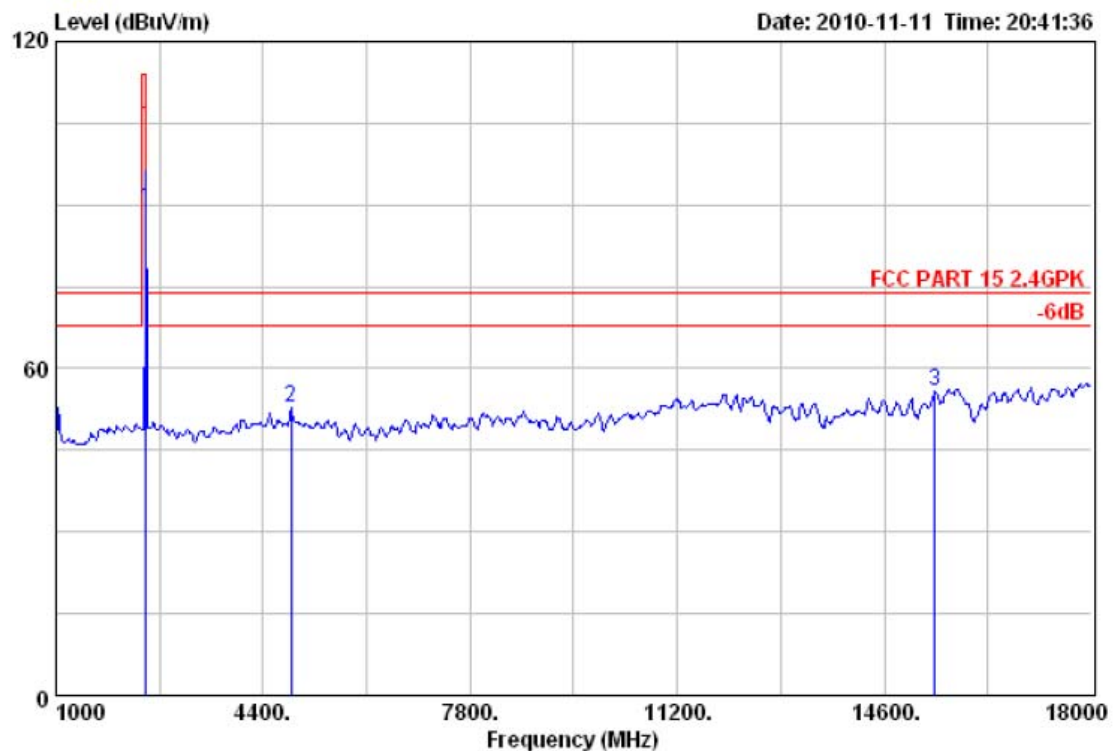
Freq. (MHz)	Emission		Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)					Factor (dB/m)	Loss (dB)	
1 2479.00	89.65	114.00	24.35	55.84	31.58	2.23		Peak
2 8089.00	53.13	74.00	20.87	13.57	36.98	2.58		Peak
3 15484.00	56.27	74.00	17.73	11.57	41.67	3.03		Peak



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Data: 100 File: D:\Radiation data\T\Toopo.EMI (110)



Test Site : 10m Chamber
Limit : FCC PART 15 2.4GPK
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH77 2479MHz

Freq. (MHz)	Emission		Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)					Factor (dB/m)	Loss (dB)	
1 2479.00	89.10	114.00	24.90	55.29	31.58	2.23		Peak
2 4859.00	52.95	74.00	21.05	15.96	34.61	2.38		Peak
3 15433.00	55.78	74.00	18.22	11.13	41.62	3.03		Peak

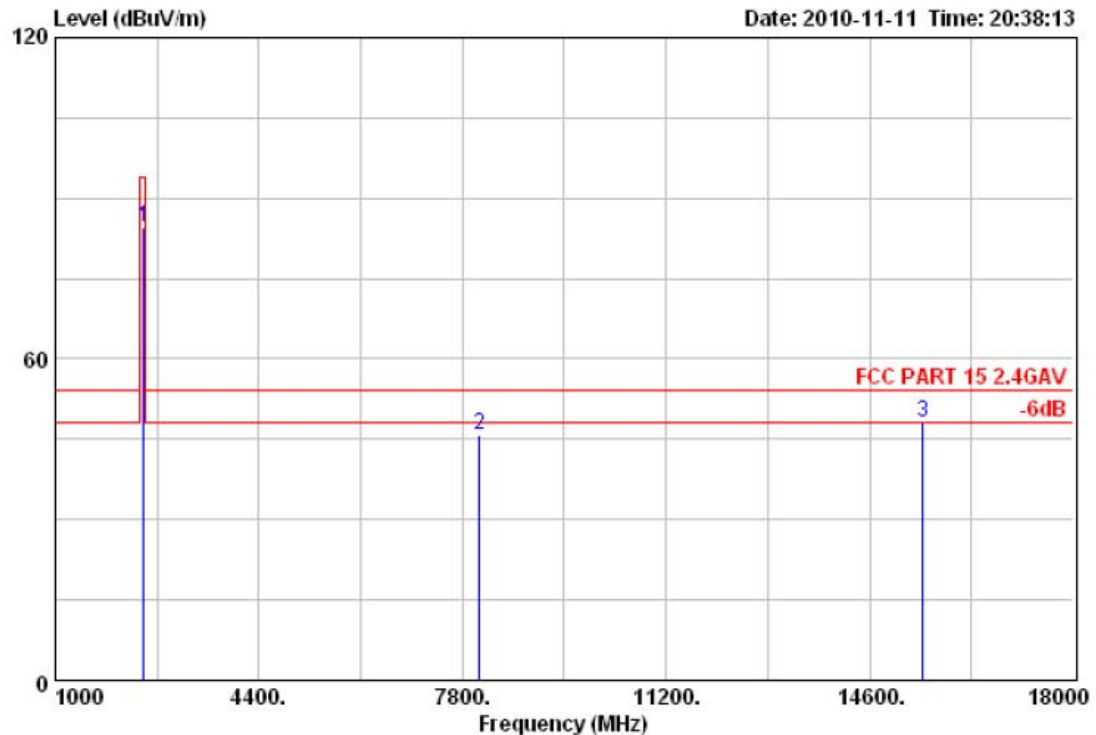


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Data: 101 File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:38:13



Test Site : 10m Chamber
Limit : FCC PART 15 2.4GAV
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH77 2479MHz

Freq. (MHz)	Emission		Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant.	Cable	Remark
	Level (dBuV/m)					Factor (dB/m)	Loss (dB)	
1 2479.00	84.65	94.00	9.35	50.84	31.58	2.23	Average	
2 8089.00	45.84	54.00	8.16	6.28	36.98	2.58	Average	
315484.00	48.05	54.00	5.95	3.35	41.67	3.03	Average	

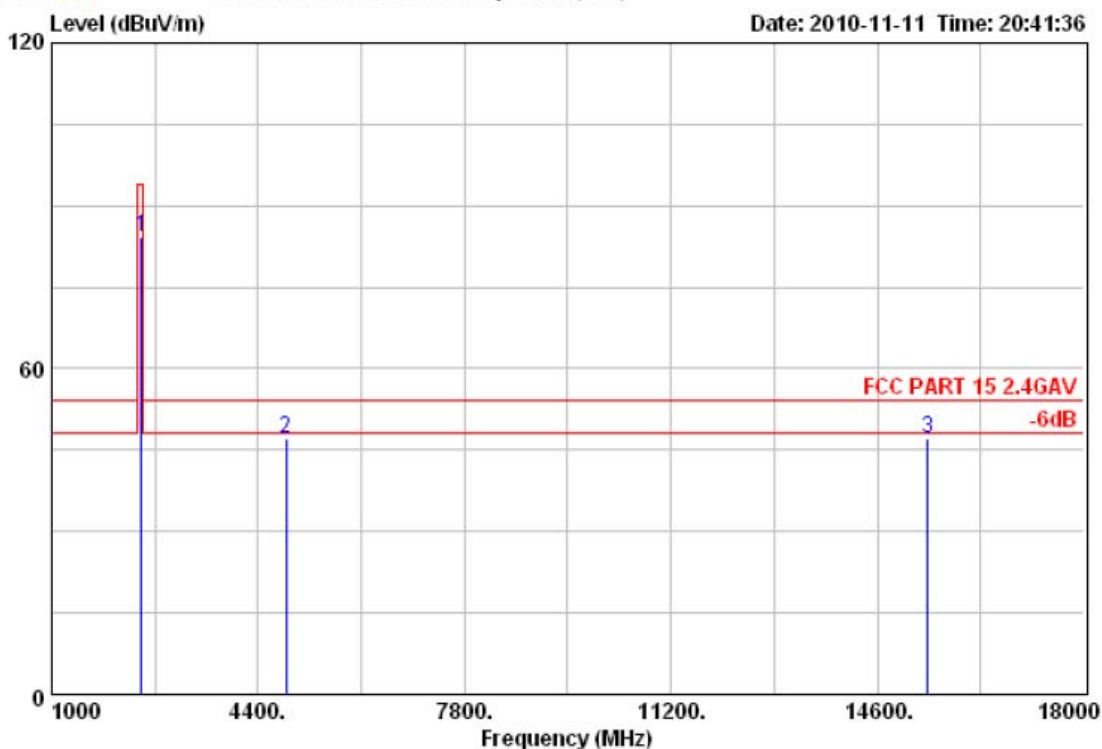


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Data: 102 File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:41:36



Test Site : 10m Chamber
Limit : FCC PART 15 2.4GAV
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH77 2479MHz

Freq. (MHz)	Emission		Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)					Factor (dB/m)	Loss (dB)	
1 2479.00	84.10		94.00	9.90	50.29	31.58	2.23	Average
2 4859.00	47.17		54.00	6.83	10.18	34.61	2.38	Average
3 15433.00	47.22		54.00	6.78	2.57	41.62	3.03	Average



5.3. 20dB Bandwidth

5.3.1. Test limits

No requirement.

5.3.2. 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=120kHz,VBW=300kHz.
4. Set SA trace max hold, then view.

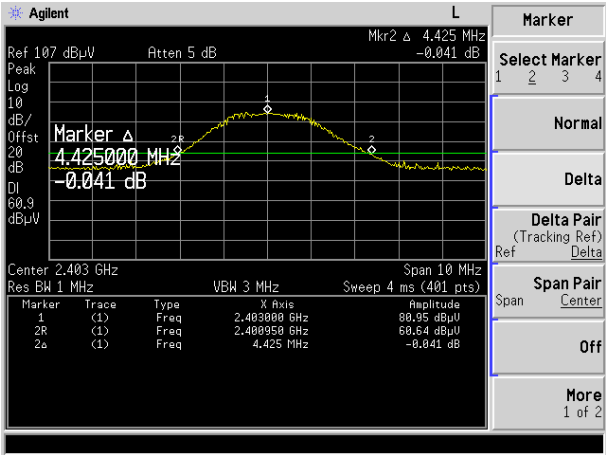
5.3.3. Test result

Pass

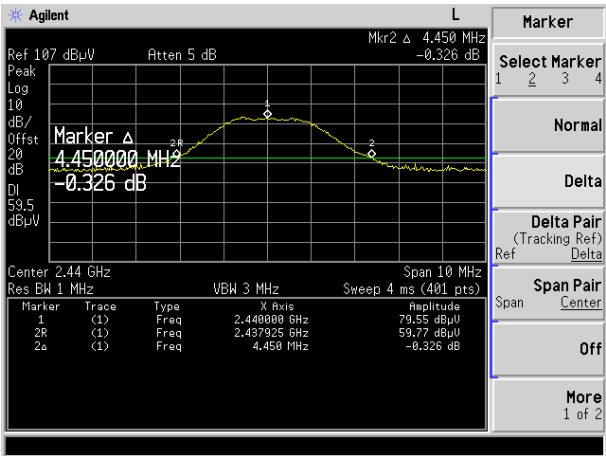
Test CH	Frequency MHz	20dB bandwidth MHz
CH1	2403	4.425
CH38	2440	4.450
CH77	2479	4.675

The test plots as following:

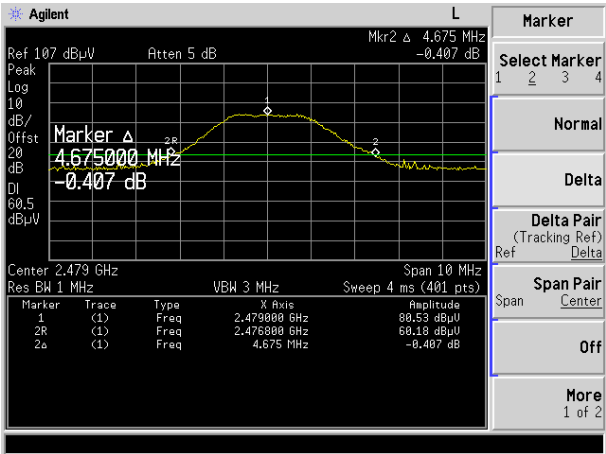
CH1 2403MHz



CH38 2440MHz



CH77 2479MHz



5.4. Band Edge

5.4.1. 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.

5.4.2. Test procedure

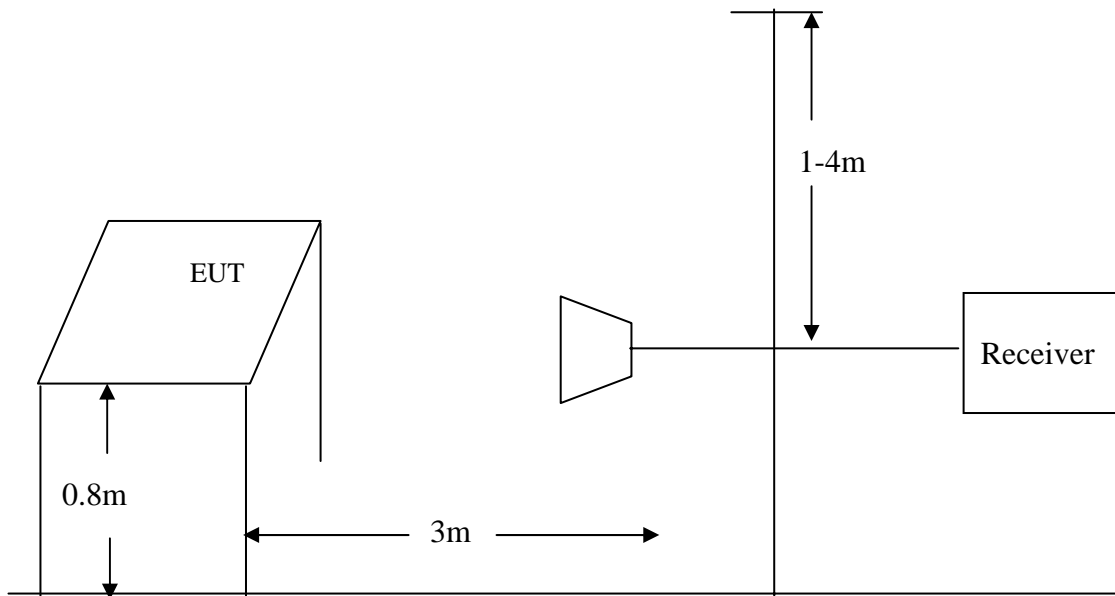
The EUT was placed on a turn table which was 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna which was mounted on a antenna tower. At the frequency band above 1GHz, The measuring 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 1MHz and 1MHz for Peak detection at frequency above 1GHz.

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.

5.4.3. Test Setup Diagram



5.4.4. Test result

PASS.

The test plots as following:

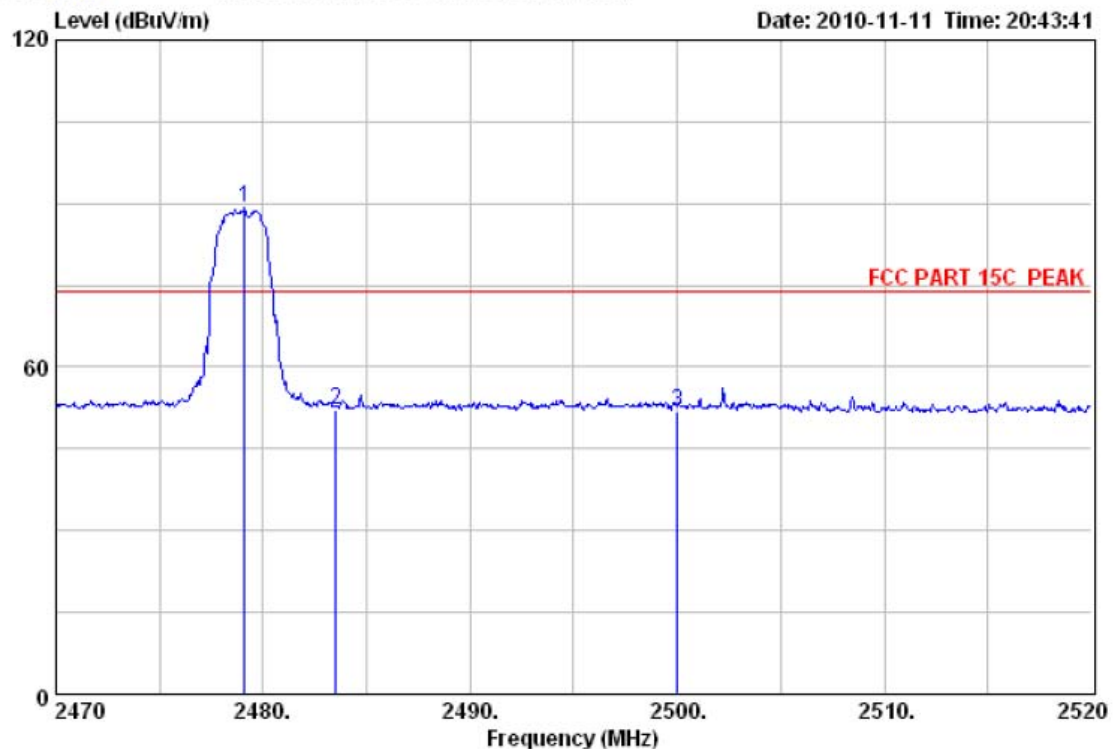
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Data: 103

File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:43:41



Test Site : 10m Chamber
Limit : FCC PART 15C PEAK
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH77 2479MHz

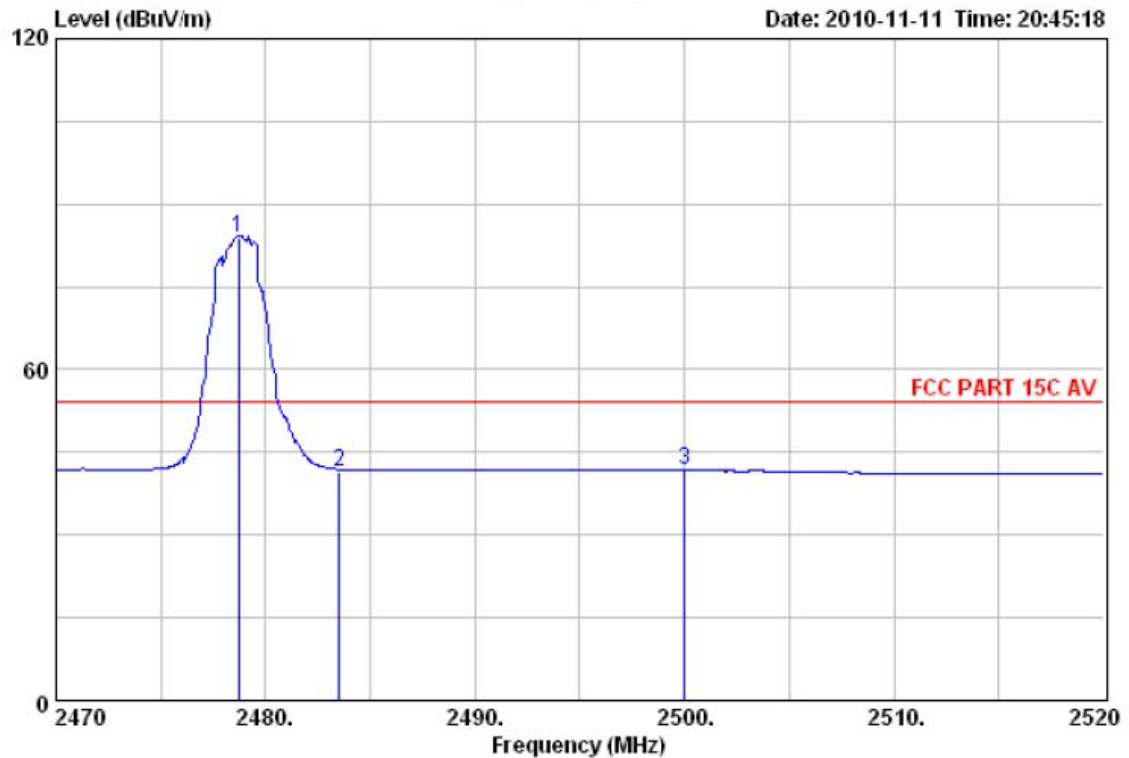
Freq. (MHz)	Emission		Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Cable		Remark
	Level (dBuV/m)					Factor (dB/m)	Loss (dB)	
1 2479.10	89.11		74.00	-15.11	55.30	31.58	2.23	Peak
2 2483.50	52.24		74.00	21.76	18.43	31.58	2.23	Peak
3 2500.00	51.87		74.00	22.13	18.04	31.60	2.23	Peak

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Data: 104 File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:45:18



Test Site : 10m Chamber
Limit : FCC PART 15C AV
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH77 2479MHz

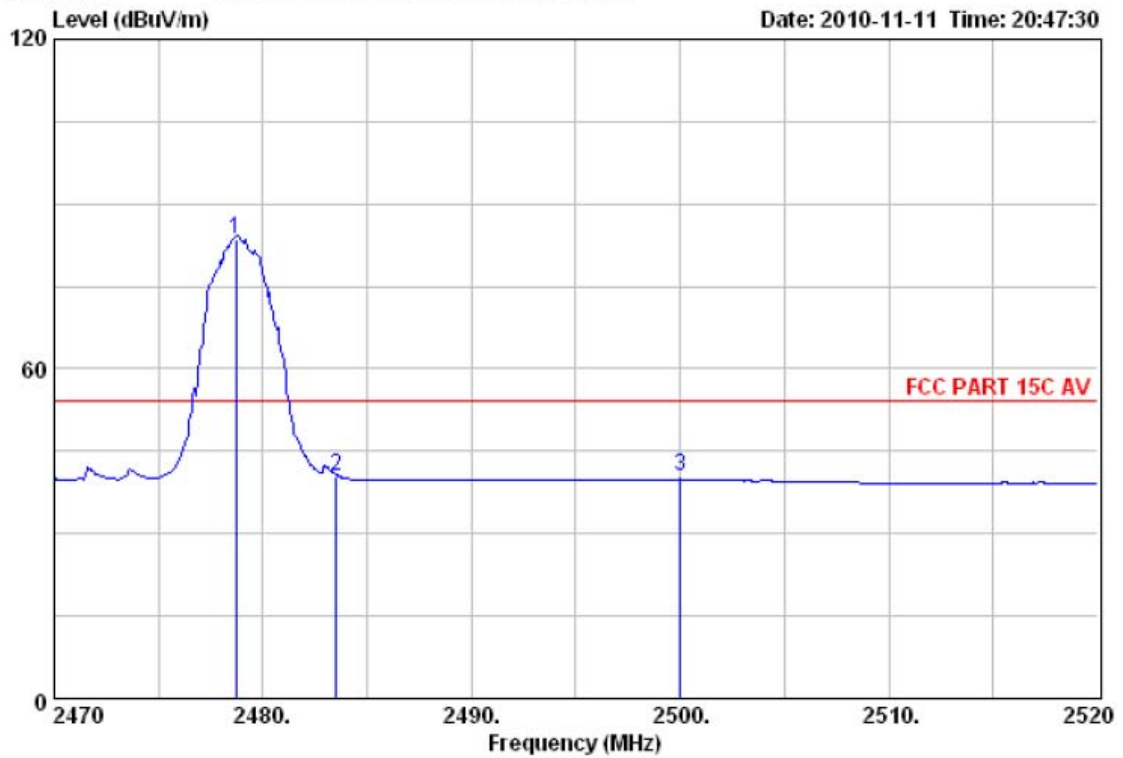
	Emission				Ant. Cable		
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1 2478.70	83.87	54.00	-29.87	50.06	31.58	2.23	Average
2 2483.50	41.51	54.00	12.49	7.70	31.58	2.23	Average
3 2500.00	41.85	54.00	12.15	8.02	31.60	2.23	Average

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Data: 105 File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:47:30



Test Site : 10m Chamber
Limit : FCC PART 15C AV
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH77 2479MHz

	Emission				Ant. Cable		
Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Factor (dB/m)	Loss (dB)	Remark
1 2478.70	83.68	54.00	-29.68	49.87	31.58	2.23	Average
2 2483.50	40.61	54.00	13.39	6.80	31.58	2.23	Average
3 2500.00	40.36	54.00	13.64	6.53	31.60	2.23	Average

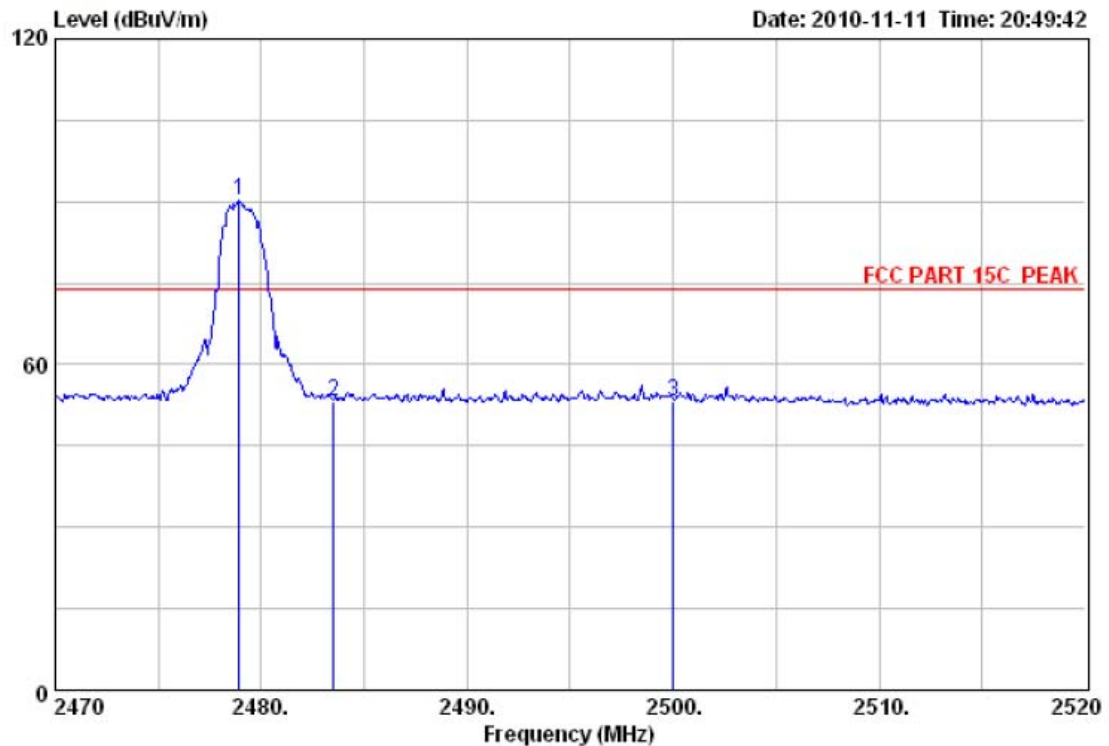
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Data: 106

File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:49:42



Test Site : 10m Chamber
Limit : FCC PART 15C PEAK
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH77 2479MHz

	Emission				Reading	Ant. Cable		Remark
	Freq. (MHz)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)		Factor (dB/m)	Loss (dB)	
1	2478.95	90.12	74.00	-16.12	56.31	31.58	2.23	Peak
2	2483.50	53.26	74.00	20.74	19.45	31.58	2.23	Peak
3	2500.00	53.29	74.00	20.71	19.46	31.60	2.23	Peak



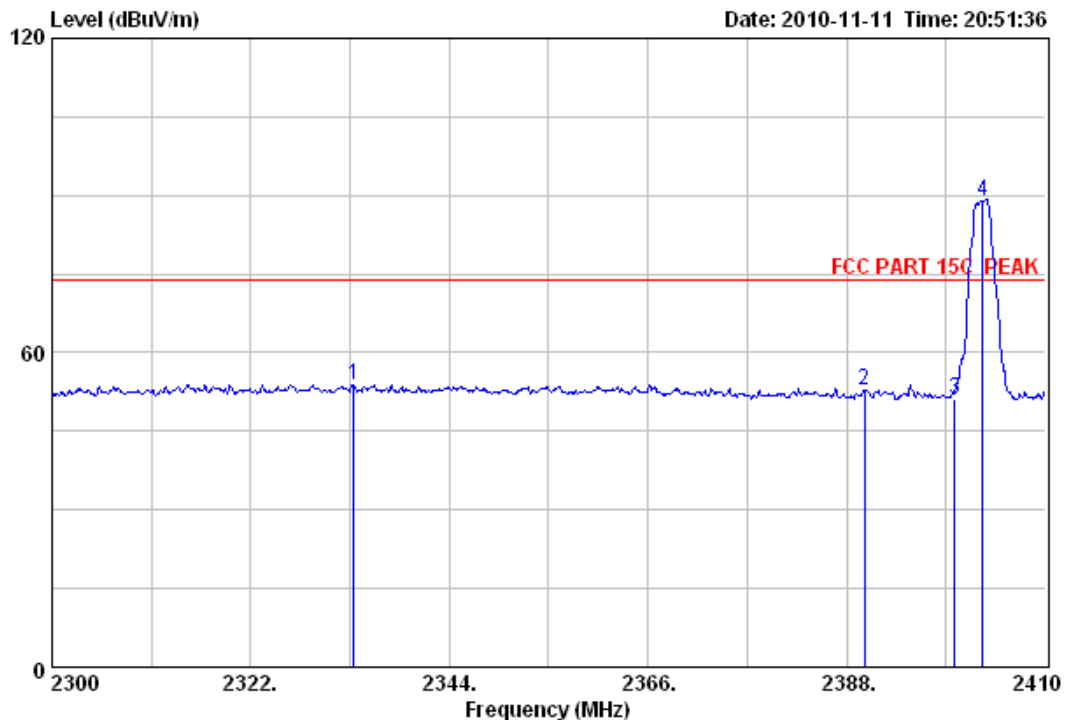
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Data: 107

File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:51:36



Test Site : 10m Chamber
Limit : FCC PART 15C PEAK
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH1 2403MHz

	Emission				Ant. Cable		Remark
	Freq. (MHz)	Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Reading (dBUV)	Factor Loss (dB/m) (dB)	
1	2333.44	53.97	74.00	20.03	20.32	31.43 2.22	Peak
2	2390.00	52.78	74.00	21.22	19.08	31.48 2.22	Peak
3	2400.00	51.21	74.00	22.79	17.48	31.50 2.23	Peak
4	2403.07	89.05	74.00	-15.05	55.32	31.50 2.23	Peak



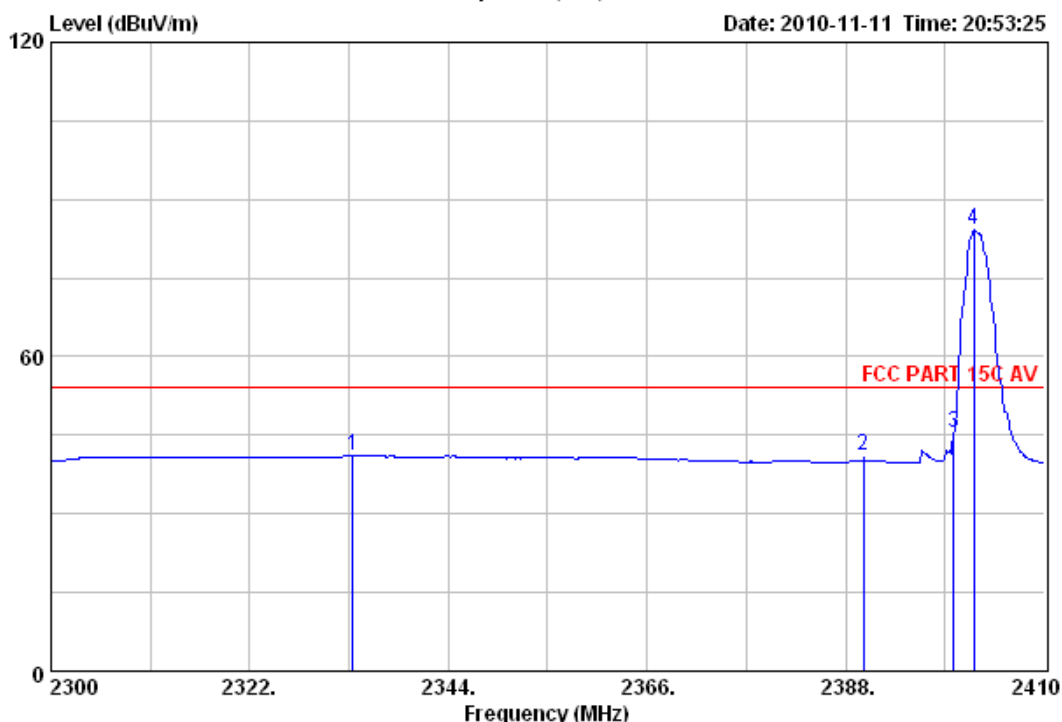
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Data: 108

File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:53:25



Test Site : 10m Chamber
Limit : FCC PART 15C AV
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH1 2403MHz

	Emission				Ant. Cable			Remark
	Freq.	Level	Limits	Margin	Reading	Factor	Loss	
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB/m)	(dB)	
1	2333.44	41.24	54.00	12.76	48.29	31.43	2.22	Average
2	2390.00	41.18	54.00	12.82	48.18	31.48	2.22	Average
3	2400.00	45.36	54.00	8.64	52.33	31.50	2.23	Average
4	2402.19	84.15	54.00	-30.15	91.12	31.50	2.23	Average



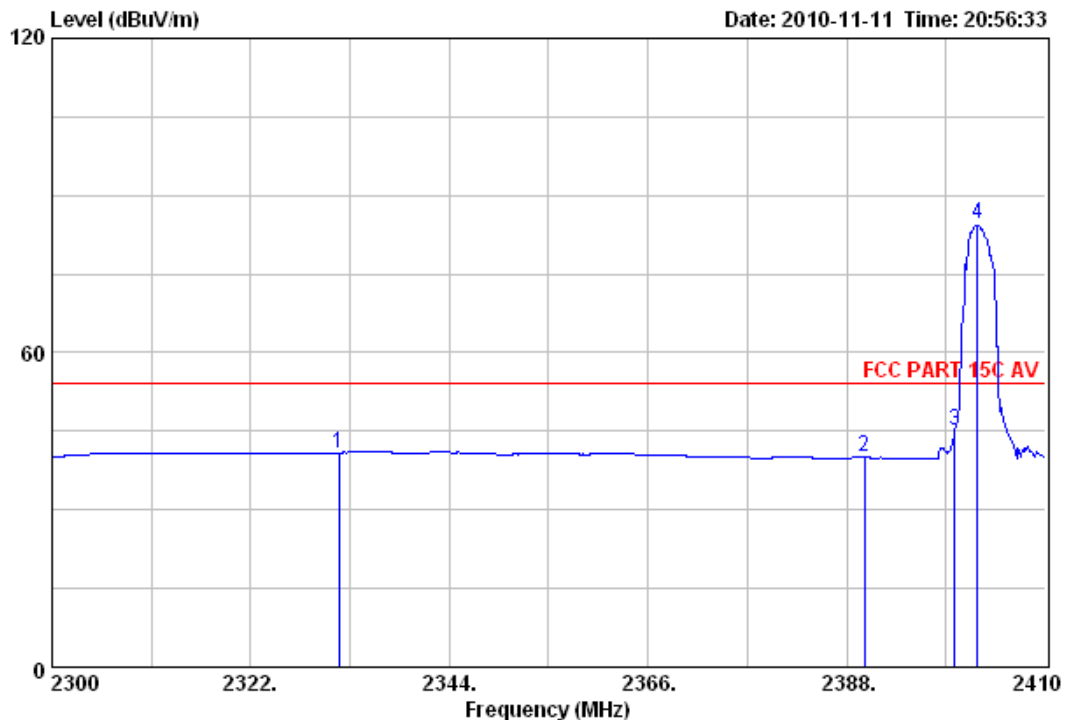
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Data: 109

File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:56:33



Test Site : 10m Chamber
Limit : FCC PART 15C AV
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH1 2403MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBuV)	Ant.	Cable	Remark
	Level (dBuV/m)	Limits (dBuV/m)	Factor (dB/m)			Loss (dB)		
1 2331.79	40.68	54.00	13.32	47.73	31.43	2.22	Average	
2 2390.00	40.12	54.00	13.88	47.12	31.48	2.22	Average	
3 2400.00	45.21	54.00	8.79	52.18	31.50	2.23	Average	
4 2402.52	84.64	54.00	-30.64	91.61	31.50	2.23	Average	



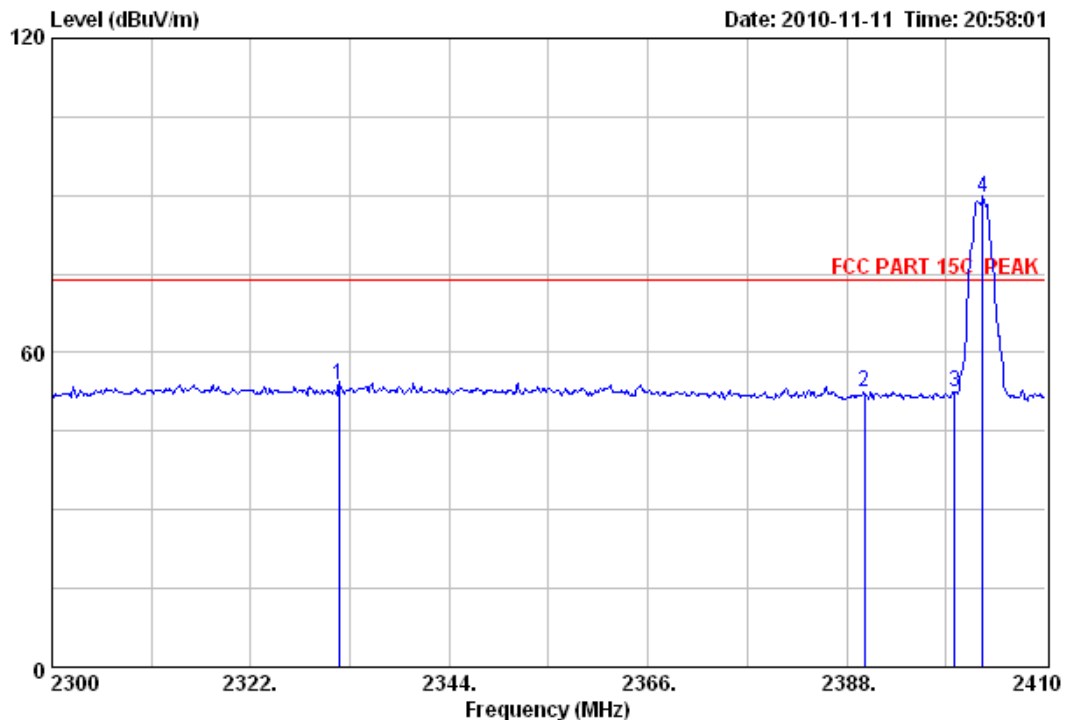
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Data: 110

File: D:\Radiation data\T\Toopo.EMI (110)

Date: 2010-11-11 Time: 20:58:01



Test Site : 10m Chamber
Limit : FCC PART 15C PEAK
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : Wireless Module
M/N : YZ9602
Power : DC 5V From PC Input AC 120V/60Hz
Test Engineer : Jade
Comment : Temp:25.3'C Humi:55% Perss:101.51kPa
Test Mode : TX CH1 2403MHz

Freq. (MHz)	Emission			Margin (dB)	Reading (dBUV)	Ant. Cable		Remark
	Level (dBUV/m)	Limits (dBUV/m)				Factor (dB/m)	Loss (dB)	
1 2331.79	53.87	74.00	20.13	20.22	31.43	2.22		Peak
2 2390.00	52.34	74.00	21.66	18.64	31.48	2.22		Peak
3 2400.00	52.34	74.00	21.66	18.61	31.50	2.23		Peak
4 2403.07	89.67	74.00	-15.67	55.94	31.50	2.23		Peak

