



# A Test Lab Techno Corp.

No.140-1, Chang-an St., Bade City, Tao-Yuan County 334, Taiwan (R.O.C.)  
Tel : +886-3-2710188 / Fax : +886-3-2710190

## Part 15 C Measurement Report



<b>Report No.</b>	: 0901FR13
<b>Applicant</b>	: Motorola Inc
<b>Product Type</b>	: Universal Bluetooth Headset
<b>Trade Mark</b>	: Motorola
<b>Model No</b>	: H17
<b>FCC ID</b>	: IHDT6KW1
<b>Dates of Test</b>	: Jan. 16 ~ Jan. 19, 2009
<b>Test Specification</b>	: Part 15 Subpart C (15.247)  <b>PUBLIC NOTICE :DA 00-705 Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems</b>
<b>Location of Test Lab.</b>	: Chang-an Lab.

1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of A Test Lab Techno Corp. A Test Lab Techno Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
3. The measurement report has to be written approval of A Test Lab Techno Corp. It may only be reproduced or published in full.

**Country Huang** 20090210  
Measurement Center Manager

**John Cheng** 20090210  
Testing Engineer



# CERTIFICATION

We here by verify that:

The test data, data evaluation, test procedures and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4:2003. All test were conducted by *A Test Lab Techno Corp. No.140-1, Chang-an St., Bade City, Tao-Yuan County 334, Taiwan (R.O.C.)* Also, we attest to the accuracy of each.

We further submit that the energy emitted by the sample EUT tested as described in the report is in compliance with Class B radiated and conducted emission limit of FCC Rules Part 15 Subpart C (15.247).

EUT : Universal Bluetooth Headset  
Applicant : Motorola Inc  
Mobile Devices 600 N.U.S. Highway 45 Libertyville Illinois  
60048-5343  
Trade Mark : Motorola  
Model No : H17  
FCC ID : IHDT6KW1

Approved by :   
Country Huang 2009/01/22

Prepared by :   
John Cheng 2009/01/22

***A Test Lab Techno Corp.***

*No.140-1, Chang-an St., Bade City, Tao-Yuan County 334, Taiwan (R.O.C.)  
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## 1. GENERAL

### 1.1 Description of Equipment under Test (EUT)

**Applicant :** **Motorola Inc**  
**IMobile Devices 600 N.U.S. Highway 45 Libertyville Illinois 60048-5343**

**Manufacturer :** Fu Gang(Dong Guan) Electronic Co., Ltd  
**Manufacturer Address :** Industry Street,Dongkeng Town,Dongguan City,  
Guangdong Province,China  
**Trade Mark :** Motorola  
**Product Model :** H17  
**Product Type :** Universal Bluetooth Headset  
**FCC ID :** IHDT6KW1  
**Frequency of Channel :** See Table 1  
**Type of Modulation :** Frequency Hopping Spread Spectrum  
**Type of Antenna :** Internal Antenna  
**Antenna Gain :** 1.07 dBi

During testing the EUT was operated at Tx or Rx mode for each emission measured. This was done in order to ensure that maximum emission levels were attained.

CH No.	Freq.	CH No.	Freq.	CH No.	Freq.	CH No.	Freq.
0	2402.00	20	2422.00	40	2442.00	60	2462.00
1	2403.00	21	2423.00	41	2443.00	61	2463.00
2	2404.00	22	2424.00	42	2444.00	62	2464.00
3	2405.00	23	2425.00	43	2445.00	63	2465.00
4	2406.00	24	2426.00	44	2446.00	64	2466.00
5	2407.00	25	2427.00	45	2447.00	65	2467.00
6	2408.00	26	2428.00	46	2448.00	66	2468.00
7	2409.00	27	2429.00	47	2449.00	67	2469.00
8	2410.00	28	2430.00	48	2450.00	68	2470.00
9	2411.00	29	2431.00	49	2451.00	69	2471.00
10	2412.00	30	2432.00	50	2452.00	70	2472.00
11	2413.00	31	2433.00	51	2453.00	71	2473.00
12	2414.00	32	2434.00	52	2454.00	72	2474.00
13	2415.00	33	2435.00	53	2455.00	73	2475.00
14	2416.00	34	2436.00	54	2456.00	74	2476.00
15	2417.00	35	2437.00	55	2457.00	75	2477.00
16	2418.00	36	2438.00	56	2458.00	76	2478.00
17	2419.00	37	2439.00	57	2459.00	77	2479.00
18	2420.00	38	2440.00	58	2460.00	78	2480.00
19	2421.00	39	2441.00	59	2461.00		

**Table 1. Bluetooth Frequency of Each Channel (Working Frequency)**



## 1.2 Introduction

The following measurement report is submitted on behalf of **Motorola Inc.** In support of a Class B Digital Device certification in accordance with Part 2 Subpart J and Part 15 Subpart A And B&C of the Commission's and Regulations.

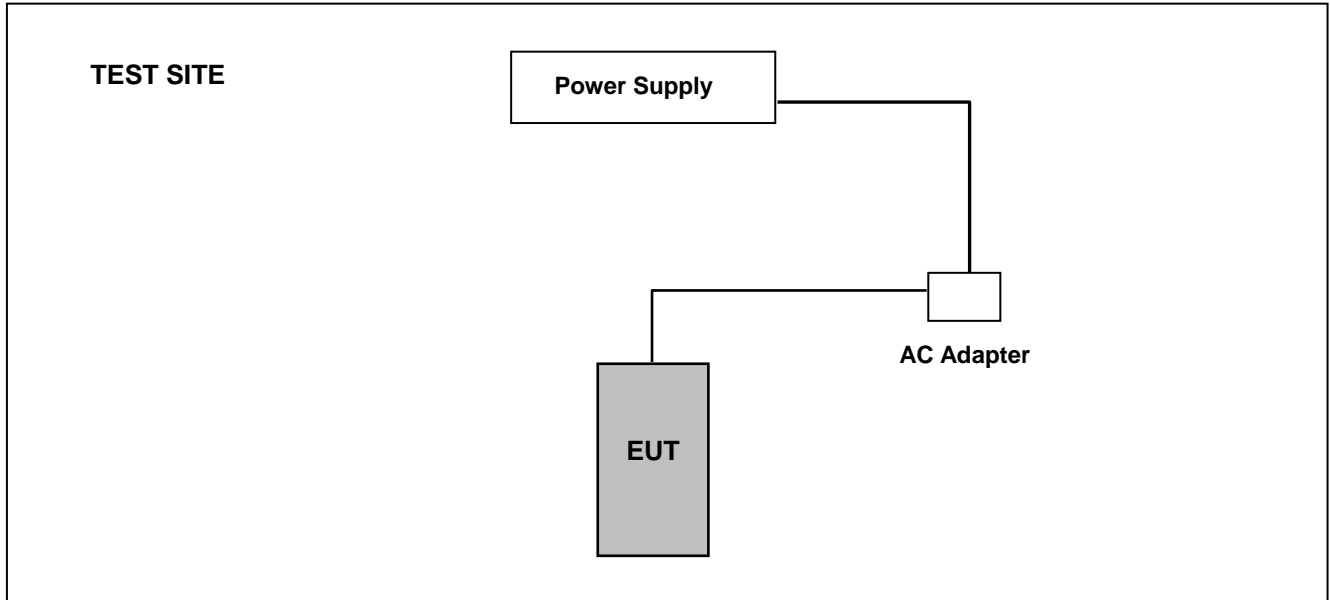
## 1.3 Summary of Tests

47 CFR Part 15 Subpart C			
Reference	Test	Results	Note
15.107	AC Power Conducted Emission	PASS	
15.247(c)	Transmitter Radiated Emissions	PASS	
15.247(b)	Max. Output Power	PASS	
15.247(a)(1)	20dB RF Bandwidth	PASS	
15.247(a)(1)(ii)	Carrier Frequency Separation	PASS	
15.247(a)(1)(i)	Number of Hopping	PASS	
15.247(a)(1)(i)	Time of Occupancy (Dwell Time)	PASS	
15.247(c)	Out of Band Conducted Spurious Emission	PASS	
15.247(c)	Band Edge Measurement	PASS	
15.203	Antenna Requirement	PASS	

## 1.4 Description of Support Equipment

Describe	Manufacturer	Model	Serial No.	FCC ID
N/A	-----	-----	-----	-----

## 1.5 Configuration of System under Test



**Figure 1. Configuration of System Under Test for PC USB Link**

During EMI testing (LINK) the EUT (Universal Bluetooth Headset)'s Power port was connected to AC Adapter.

## 1.6 Test Procedure

All measurements contained in this report were performed according to the techniques described in Measurement procedure ANSI C63.4-2003 "Measurement of un-Intentional Radiators."

## 1.7 General Test Condition

The conditions under which the EUT operates were varied to determine their effect on the equipment's emission characteristics. The final configuration of the test system and the mode of operation used during these tests were chosen as that which produced the highest emission levels. However, only those conditions which the EUT was considered likely to encounter in normal use were investigated. The systems radiated and conducted emissions were investigated while the computer alternately transferred data to the EUT as well as to the monitor and printer. Using a test program which sent a continuous data and transferred data to and from the EUT was proven to worst case emissions. The system's physical layout and cabling was randomly arranged to ensure that maximum emission levels were attained.



## 2. Conducted Emissions Requirements

### 2.1 General & Setup:

The power line conducted emission measurements were performed in a shielded enclosure. The EUT was assembled on a wooden table which is 80 centimeters high, was placed 40 centimeters from the back wall and at least 1 meter from the sidewall.

Power was fed to the EUT from the public utility power grid through a line filter and EMCO Model 3162/2 SH Line Impedance Stabilization Networks (LISN). The LISN housing, measuring instrumentation case, ground plane, etc., were electrically bonded together at the same RF potential. The Spectrum analyzer was connected to the AC line through an isolation transformer. The 50-ohm output of the LISN was connected to the spectrum analyzer directly. Conducted emission levels were in the CISPR quasi-peak detection mode. The analyzer's 6 dB bandwidth was set to 9 KHz. No post-detector video filter was used.

The spectrum was scanned from 150 KHz to 30 MHz. The physical arrangement of the test system and associated cabling was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude and frequency. All spurious emission frequencies were observed. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in paragraph 2.6.

### 2.2 Test Equipment List:

Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
Spectrum Analyzer	Advantest	R3132	160300103	Mar. 06, 2008	Mar. 06, 2009
Test Receiver	R&S	ESCI	100367	Jun. 05, 2008	Jun. 05, 2009
LISN	EMCO	3816/2 SH	00060110	Jun. 03, 2008	Jun. 03, 2009
LISN	EMCO	3816/2 SH	00060111	Jun. 30, 2008	Jun. 30, 2009
Transient Limiter	ELECTRO-METRICS	EM-7600	777	Jun. 26, 2008	Jun. 26, 2009



## 2.3 Test condition:

EUT tested in accordance with the specifications given by the Manufacturer, and exercised in the most unfavorable manner.

## 2.4 Conducted Emissions Limits:

Frequency range (MHz)	Limits (dBuV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5.0	56	46
5.0 to 30	60	50

## 2.5 Measurement Data of Conducted Emissions:

### 2.5.1 Conducted Emissions (Subpart C)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : Motorola Inc  
Model No : H17  
EUT : Universal Bluetooth Headset  
Test Mode : Charger Mode  
Test Date : 01/16/2009

Please refer to next pager of detail testing data.

Notes:

1. L1: One end & Ground L2: The other end & Ground
2. Height of table on which the EUT was placed: 0.8 m.
3. The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
4. The above test results are obtained under the normal condition.



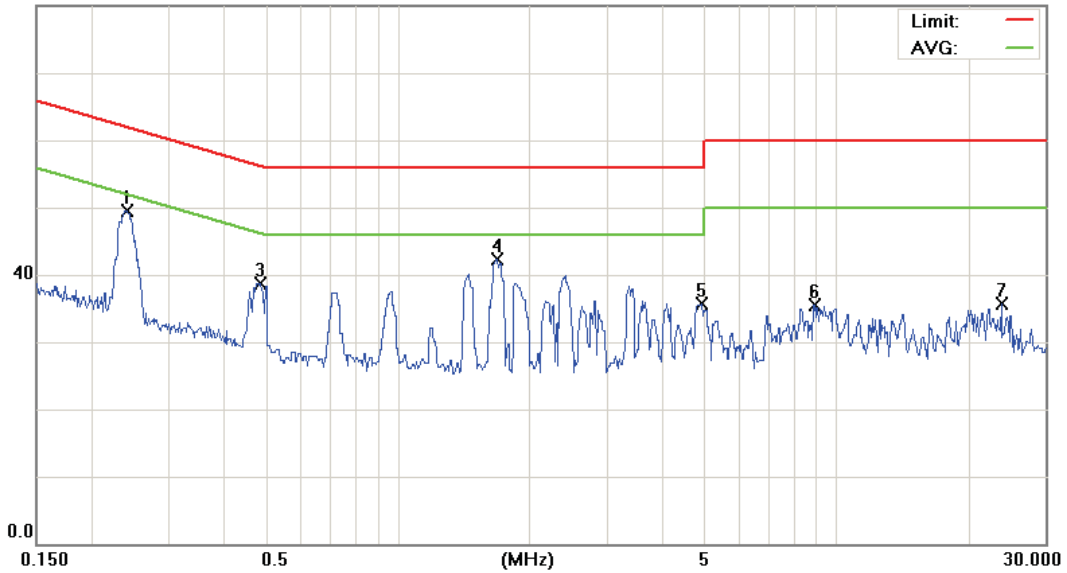
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Date: 2009-1-16

Time: 上午 11:39:19

80.0 dBuV



Site site #1

Phase: **L1**

Temperature: 26 °C

Limit: CISPR22 Class B Conduction(QP)

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

RBW: 10 KHz VBW: 100

M/N: 09-0007-E

Mode: Charge

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.2410	39.84	9.75	49.59	62.06	-12.47	peak	
2		0.2410	17.85	9.75	27.60	52.06	-24.46	AVG	
3		0.4860	28.84	9.78	38.62	56.24	-17.62	peak	
4		1.6880	32.45	9.83	42.28	56.00	-13.72	peak	
5		4.9100	25.65	10.06	35.71	56.00	-20.29	peak	
6		8.9000	25.38	10.09	35.47	60.00	-24.53	peak	
7		23.7500	25.30	10.32	35.62	60.00	-24.38	peak	

\*:Maximum data x:Over limit !:over margin

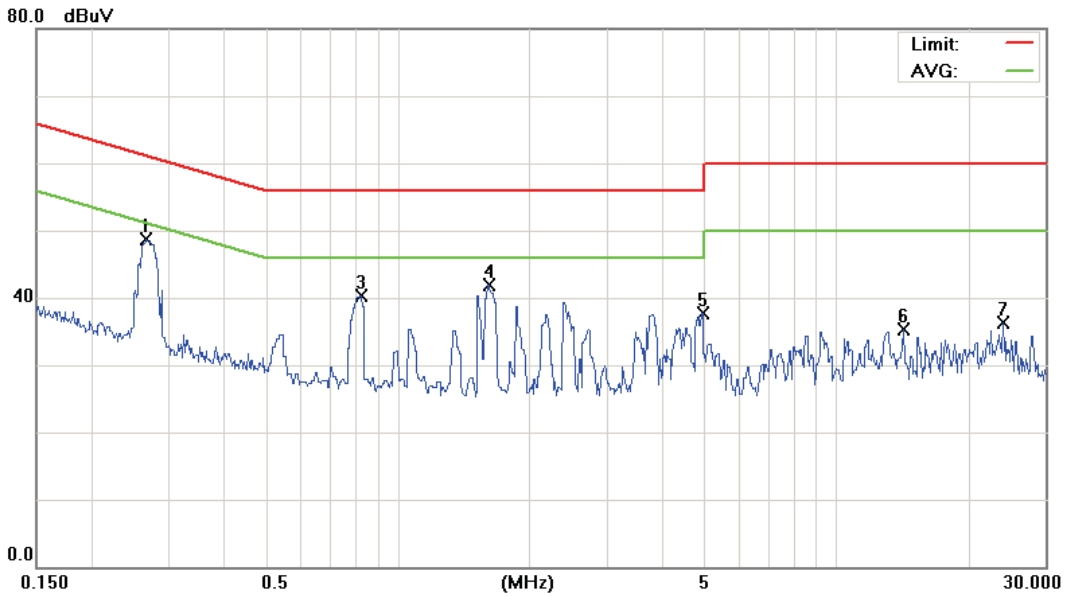


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Site site #1  
 Limit: CISPR22 Class B Conduction(QP)  
 EUT:  
 M/N: 09-0007-E  
 Mode: Charge  
 Note:

Phase: **L2**  
 Power: AC 110V/60Hz

Temperature: 26 °C  
 Humidity: 55 %  
 RBW: 10 KHz VBW: 100

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.2669	38.87	9.76	48.63	61.21	-12.58	peak	
2		0.2669	17.34	9.76	27.10	51.21	-24.11	AVG	
3		0.8240	30.47	9.80	40.27	56.00	-15.73	peak	
4		1.6069	32.09	9.82	41.91	56.00	-14.09	peak	
5		4.9279	27.71	10.07	37.78	56.00	-18.22	peak	
6		14.2000	25.13	10.20	35.33	60.00	-24.67	peak	
7		23.9500	25.92	10.30	36.22	60.00	-23.78	peak	

\*:Maximum data x:Over limit !:over margin



### **3. Radiated Emissions Requirements**

#### **3.1 Final radiation measurements were made on a three-meter:**

Final radiation measurements were made on a three-meter, Semi Anechoic Chamber. The EUT system was placed on a nonconductive turntable which is 0.8 meters height, top surface 1.0 x 1.5 meter. The spectrum was examined from 250 MHz to 2.5 GHz in order to cover the whole spectrum below 10th harmonic which could generate from the EUT. During the test, EUT was set to transmit continuously & Measurements spectrum range from 30 MHz to 26.5 GHz is investigated.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

A nonconductive material surrounded the EUT to supporting the EUT for standing on three orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

SCHWARZBECK MESS-ELEKTRONIK Biconilog Antenna (model VULB9163) at 3 Meter and the SCHWARZBECK Double Ridged Guide Antenna (model BBHA9120D&9170) was used in frequencies 1 – 26.5 GHz at a distance of 1 meter. All test results were extrapolated to equivalent signal at 3 meters utilizing an inverse linear distance extrapolation Factor (20dB/decade).

For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.

The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.



The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in micro volts per meter (uV/m).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro volts per meter (dBuV/m).

The actual field intensity in decibels referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

$$(1) \text{ Amplitude (dBuV/m)} = \text{FI (dBuV)} + \text{AF (dBuV)} + \text{CL (dBuV)} - \text{Gain (dB)}$$

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

$$(2) \text{ Actual Amplitude (dBuV/m)} = \text{Amplitude (dBuV)} - \text{Dis(dB)}$$

The FCC specified emission limits were calculated according the EUT operating frequency and by following linear interpolation equations:

(a) For fundamental frequency :

Transmitter Output < +30dBm

(b) For spurious frequency :

Spurious emission limits = fundamental emission limit /10



### 3.2 Test Equipment List:

Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
Spectrum Analyzer	Agilent	E4408B	MY45107753	Jun. 05, 2008	Jun. 05, 2009
Pre Amplifier	Agilent	8449B	3008A02237	Jun. 03, 2008	Jun. 03, 2009
Pre Amplifier	Agilent	8447D	2944A10961	Jun. 10, 2008	Jun. 10, 2009
Test Receiver	R&S	ESCI	100367	Jun. 05, 2008	Jun. 05, 2009
Biconilog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	Jun. 26, 2008	Jun. 26, 2009
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	Jun. 26, 2008	Jun. 26, 2009
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	Jun. 09, 2008	Jun. 09, 2009
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120E	0899	Jun. 26, 2008	Jun. 26, 2009



### 3.3 Test condition:

EUT tested in accordance with the specifications given by the manufacturer, and exercised in the most unfavorable manner.

### 3.4 Radiated Emissions Limits:

Frequency range (MHz)	Peak(dBuV)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960	54



### 3.5 Measurement Data of Radiated Emissions:

#### 3.5.1 Open Field Radiated Emissions (Subpart C)

The highest peak values of radiated emissions from the EUT at various antenna heights, antenna polarization, EUT orientation, etc. are recorded on the following.

Applicant : Motorola Inc  
Model No : H17  
EUT : Universal Bluetooth Headset  
Test Mode : Link Mode \_ Bluetooth 2.0 Low CH / Middle CH / Light CH  
Test Date : 01/19/2009

Please refer to next pager of detail testing data.

Notes:

1. Margin= Amplitude - Limits
2. Distance of Measurement: 3 Meter (30-1000MHz) & (1-10GHz), 1 Meter (10-26.5GHz)
3. Height of table for EUT placed: 0.8 Meter.
4. ANT= Antenna height.
5. Amplitude= Reading Amplitude – Amplifier gain + Cable loss + Antenna factor  
(Auto calculate in spectrum analyzer)
6. The EUT was worst case on X axis after pretest on X & Y & Z axis setting.
7. The testing data only show below 18GHz's data because measure data above 18GHz was only ambient noise.
8. All frequencies from 30MHz to 26.5GHz have been tested



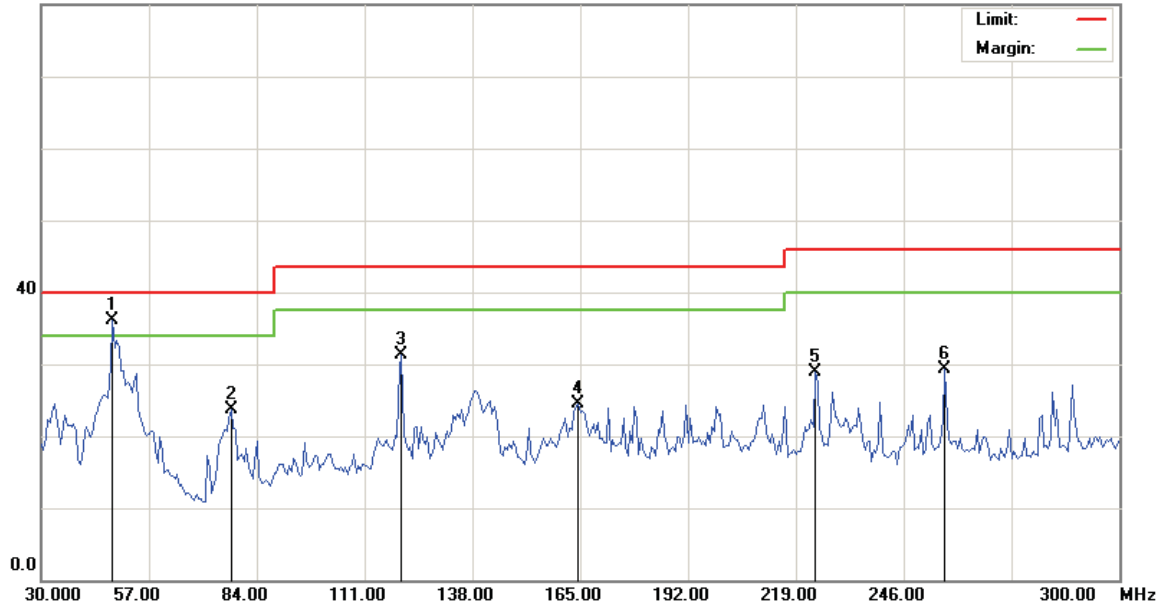
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Date: 2009/1/19

Time: 下午 05:16:00

80.0 dBuV



Site Polarization: *Vertical* Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2402MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	47.8200	48.11	-12.02	36.09	40.00	-3.91			peak
2		77.5200	40.58	-16.86	23.72	40.00	-16.28			peak
3		120.1800	45.54	-14.23	31.31	43.50	-12.19			peak
4		164.4600	39.79	-15.32	24.47	43.50	-19.03			peak
5		223.8600	41.09	-12.19	28.90	46.00	-17.10			peak
6		256.2600	40.44	-11.17	29.27	46.00	-16.73			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



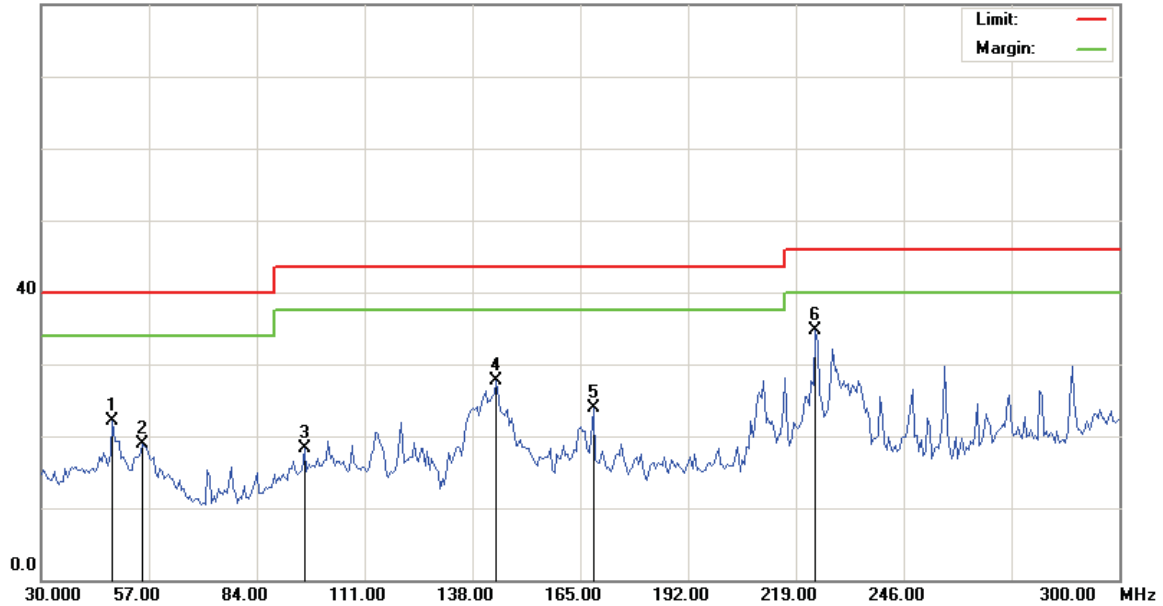
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Data :#3

Date: 2009/1/19

Time: 下午 05:24:25

80.0 dBuV



Site Polarization: **Horizontal** Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2402MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		47.8200	34.06	-12.02	22.04	40.00	-17.96			peak
2		55.3800	31.24	-12.24	19.00	40.00	-21.00			peak
3		95.8800	30.28	-11.99	18.29	43.50	-25.21			peak
4		143.9400	43.85	-16.22	27.63	43.50	-15.87			peak
5		168.2400	39.18	-15.37	23.81	43.50	-19.69			peak
6	*	223.8600	46.95	-12.19	34.76	46.00	-11.24			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



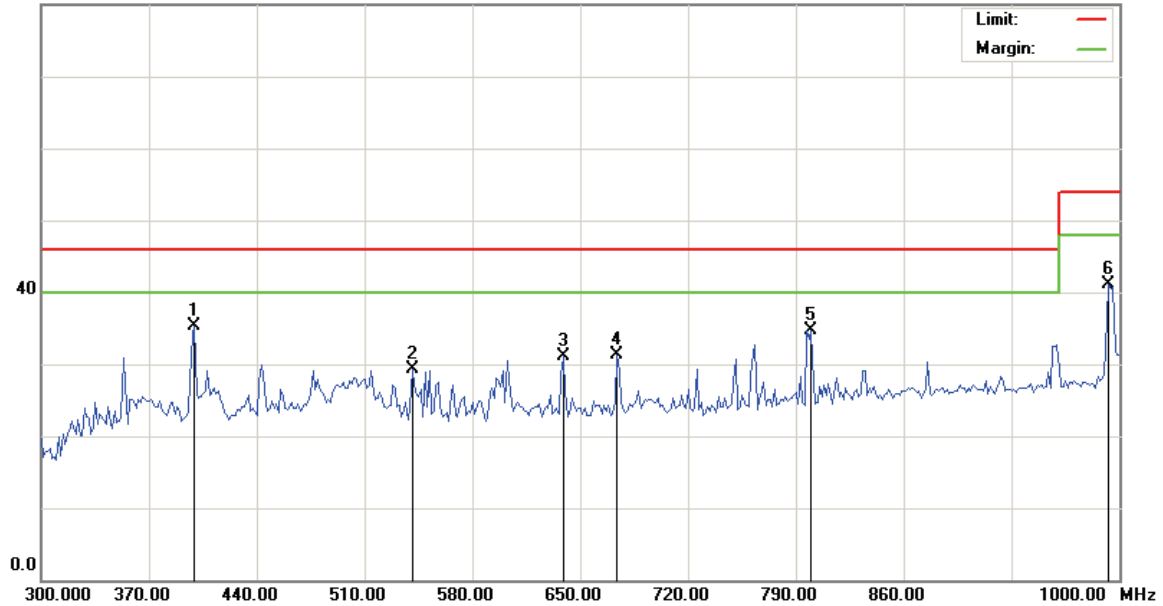
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Date: 2009/1/19

Time: 下午 05:20:12

80.0 dBuV



Site Polarization: *Vertical* Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2402MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	399.4000	43.55	-8.34	35.21	46.00	-10.79			peak
2		540.8000	35.29	-6.04	29.25	46.00	-16.75			peak
3		638.8000	35.48	-4.43	31.05	46.00	-14.95			peak
4		673.8000	35.63	-4.28	31.35	46.00	-14.65			peak
5		799.8000	37.11	-2.32	34.79	46.00	-11.21			peak
6		993.0000	40.17	0.84	41.01	54.00	-12.99			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



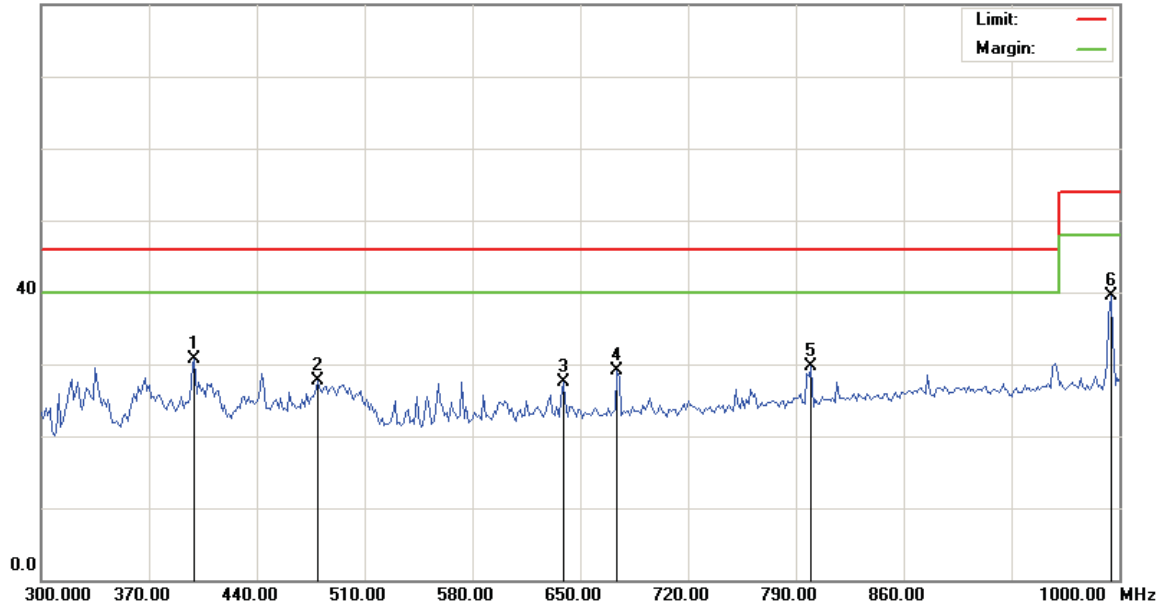
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Data :#4

Date: 2009/1/19

Time: 下午 05:28:38

80.0 dBuV



Site Polarization: **Horizontal** Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2402MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		399.4000	39.08	-8.34	30.74	46.00	-15.26			peak
2		479.2000	35.29	-7.60	27.69	46.00	-18.31			peak
3		638.8000	31.92	-4.43	27.49	46.00	-18.51			peak
4		673.8000	33.35	-4.28	29.07	46.00	-16.93			peak
5		799.8000	31.93	-2.32	29.61	46.00	-16.39			peak
6	*	994.4000	38.78	0.79	39.57	54.00	-14.43			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



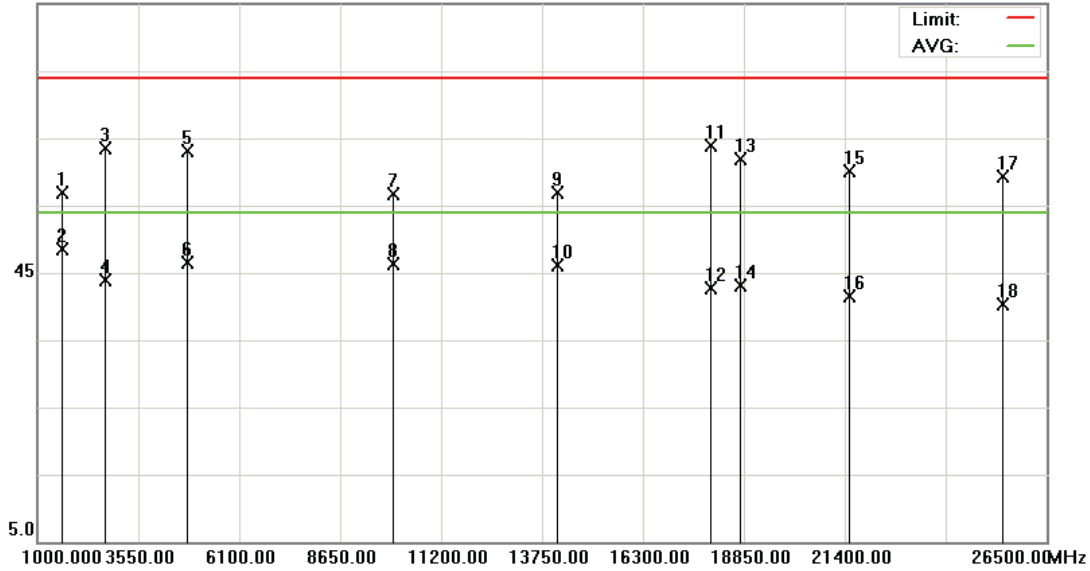
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Date: 2009-1-19

Time: 上午 11:49:35

85.0 dBuV



Site site #1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: 09-0007-E

Mode: BT

Note: 2402MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		1595.000	60.60	-3.78	56.82	74.00	-17.18			peak
2	*	1595.000	52.22	-3.78	48.44	54.00	-5.56			AVG
3		2700.000	41.01	22.58	63.59	74.00	-10.41			peak
4		2700.000	21.27	22.58	43.85	54.00	-10.15			AVG
5		4798.750	55.87	7.29	63.16	74.00	-10.84			peak
6		4798.750	39.22	7.29	46.51	54.00	-7.49			AVG
7		9981.750	38.88	17.88	56.76	74.00	-17.24			peak
8		9981.750	28.47	17.88	46.35	54.00	-7.65			AVG
9		14120.00	38.04	18.87	56.91	74.00	-17.09			peak
10		14120.00	27.17	18.87	46.04	54.00	-7.96			AVG
11		18000.00	38.43	25.57	64.00	74.00	-10.00			peak
12		18000.00	17.05	25.57	42.62	54.00	-11.38			AVG
13		18743.75	38.86	23.13	61.99	74.00	-12.01			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



Site site #1 Polarization: **Vertical** Temperature: 22 °C  
 Limit: FCC part 15 (PK) Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2402MHz, 接NB05

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
14		18743.75	19.89	23.13	43.02	54.00	-10.98	AVG			
15		21527.50	38.77	21.35	60.12	74.00	-13.88	peak			
16		21527.50	20.18	21.35	41.53	54.00	-12.47	AVG			
17		25373.75	40.34	19.05	59.39	74.00	-14.61	peak			
18		25373.75	21.17	19.05	40.22	54.00	-13.78	AVG			

\*:Maximum data x:Over limit !:over margin

●Reference Only



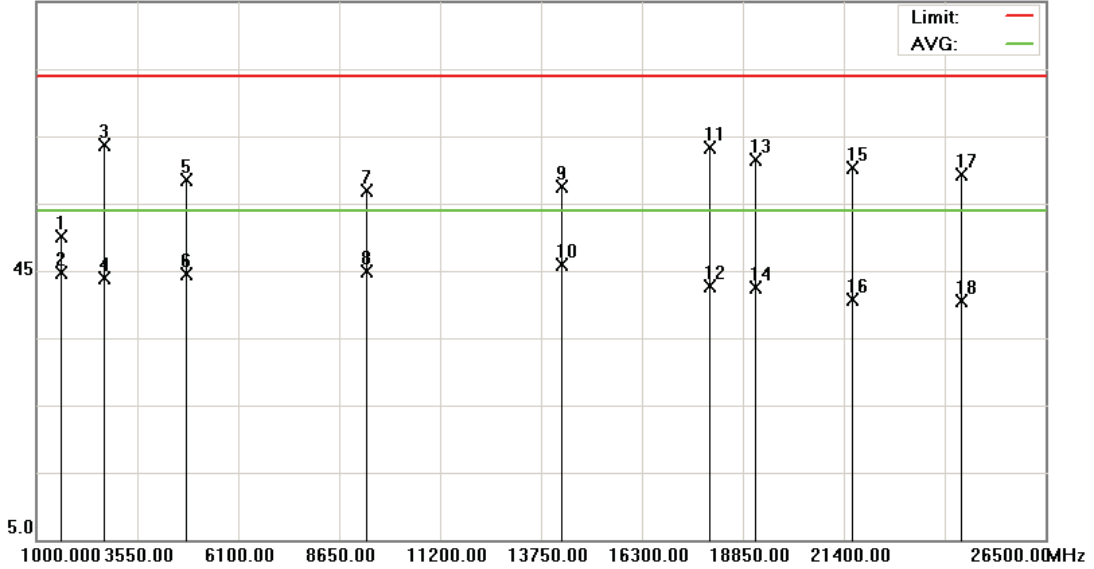
File :Vesurlus(2402)\_tmp

Data :#5

Date: 2009-1-19

Time: 上午 11:53:16

85.0 dBuV



Site site #1

Polarization: *Horizontal*

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: 09-0007-E

Mode: BT

Note: 2402MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		1601.800	53.76	-3.73	50.03	74.00	-23.97			peak
2		1601.800	48.52	-3.73	44.79	54.00	-9.21			AVG
3		2700.000	41.16	22.58	63.74	74.00	-10.26			peak
4		2700.000	21.33	22.58	43.91	54.00	-10.09			AVG
5		4798.750	51.18	7.29	58.47	74.00	-15.53			peak
6		4798.750	37.17	7.29	44.46	54.00	-9.54			AVG
7		9324.750	39.94	16.91	56.85	74.00	-17.15			peak
8		9324.750	27.91	16.91	44.82	54.00	-9.18			AVG
9		14240.00	29.16	28.25	57.41	74.00	-16.59			peak
10	*	14240.00	17.74	28.25	45.99	54.00	-8.01			AVG
11		18000.00	28.15	35.11	63.26	74.00	-10.74			peak
12		18000.00	7.51	35.11	42.62	54.00	-11.38			AVG
13		19168.75	38.64	22.95	61.59	74.00	-12.41			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only





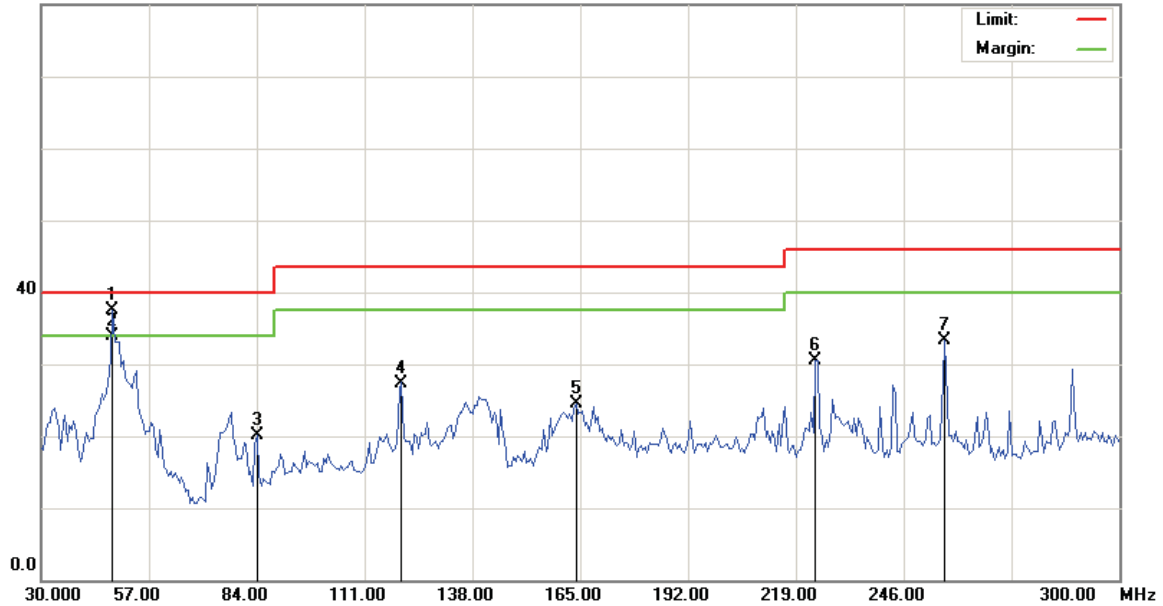
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Data :#1

Date: 2009/1/19

Time: 下午 03:45:41

80.0 dBuV



Site Polarization: *Vertical* Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2441MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	47.8200	49.43	-12.02	37.41	40.00	-2.59			peak
2		47.8200	45.90	-12.02	33.88	40.00	-6.12			QP
3		84.0000	35.11	-15.09	20.02	40.00	-19.98			peak
4		120.1800	41.63	-14.23	27.40	43.50	-16.10			peak
5		163.9200	39.81	-15.34	24.47	43.50	-19.03			peak
6		223.8600	42.75	-12.19	30.56	46.00	-15.44			peak
7		256.2600	44.46	-11.17	33.29	46.00	-12.71			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



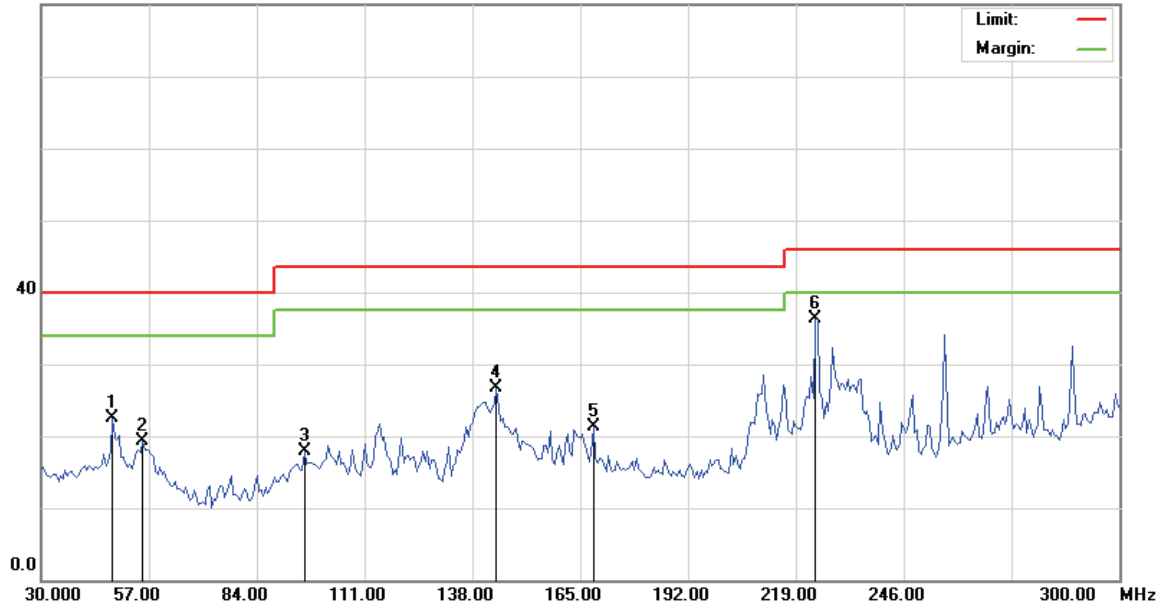
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Data :#3

Date: 2009/1/19

Time: 下午 03:54:07

80.0 dBuV



Site Polarization: **Horizontal** Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2441MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		47.8200	34.53	-12.02	22.51	40.00	-17.49			peak
2		55.3800	31.46	-12.24	19.22	40.00	-20.78			peak
3		95.8800	29.89	-11.99	17.90	43.50	-25.60			peak
4		143.9400	42.95	-16.22	26.73	43.50	-16.77			peak
5		168.2400	36.76	-15.37	21.39	43.50	-22.11			peak
6	*	223.8600	48.49	-12.19	36.30	46.00	-9.70			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



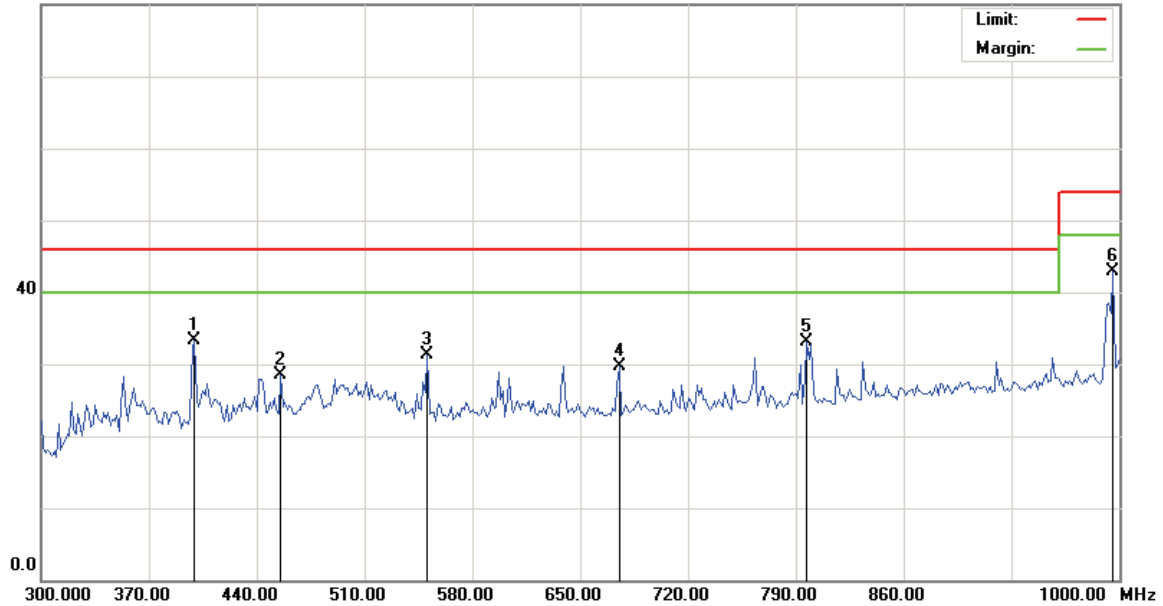
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Data :#2

Date: 2009/1/19

Time: 下午 03:49:54

80.0 dBuV



Site Polarization: *Vertical* Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2441MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		399.4000	41.56	-8.34	33.22	46.00	-12.78			peak
2		455.4000	36.48	-8.03	28.45	46.00	-17.55			peak
3		550.6000	37.32	-5.98	31.34	46.00	-14.66			peak
4		675.2000	33.95	-4.27	29.68	46.00	-16.32			peak
5		797.0000	35.50	-2.34	33.16	46.00	-12.84			peak
6	*	995.8000	42.16	0.75	42.91	54.00	-11.09			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



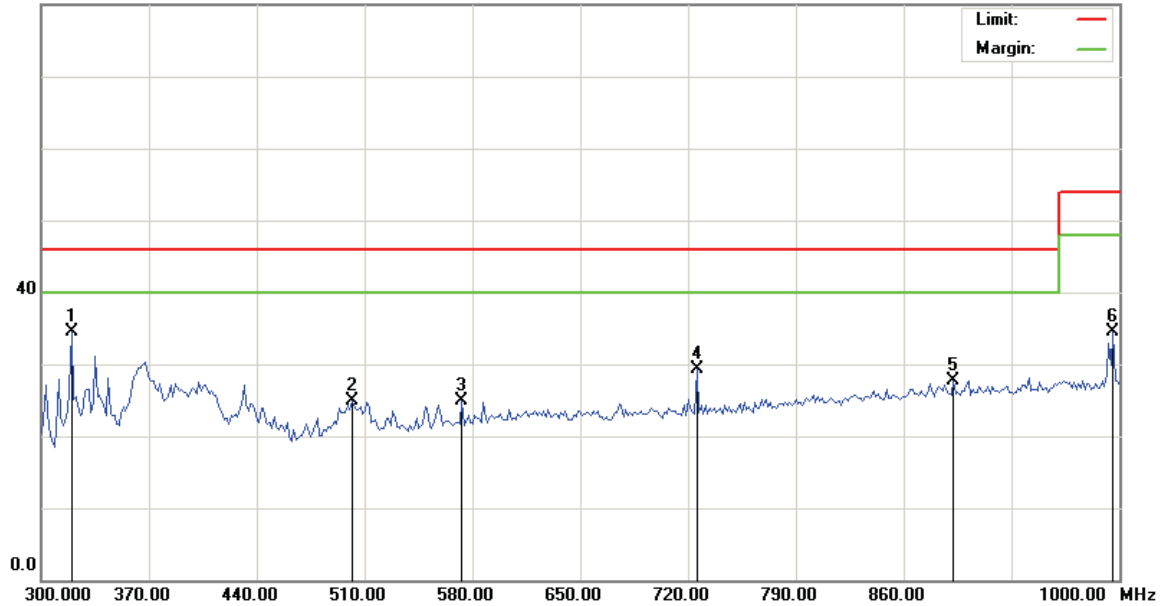
File :Vesurlus(2441)

Data :#4

Date: 2009/1/19

Time: 下午 03:58:20

80.0 dBuV



Site Polarization: **Horizontal** Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2441MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree
1	*	319.6000	44.36	-9.82	34.54	46.00	-11.46	peak	Comment
2		501.6000	32.00	-7.04	24.96	46.00	-21.04	peak	
3		573.0000	30.31	-5.42	24.89	46.00	-21.11	peak	
4		725.6000	32.80	-3.54	29.26	46.00	-16.74	peak	
5		892.2000	28.45	-0.70	27.75	46.00	-18.25	peak	
6		995.8000	33.77	0.75	34.52	54.00	-19.48	peak	

\*:Maximum data x:Over limit !:over margin

●Reference Only



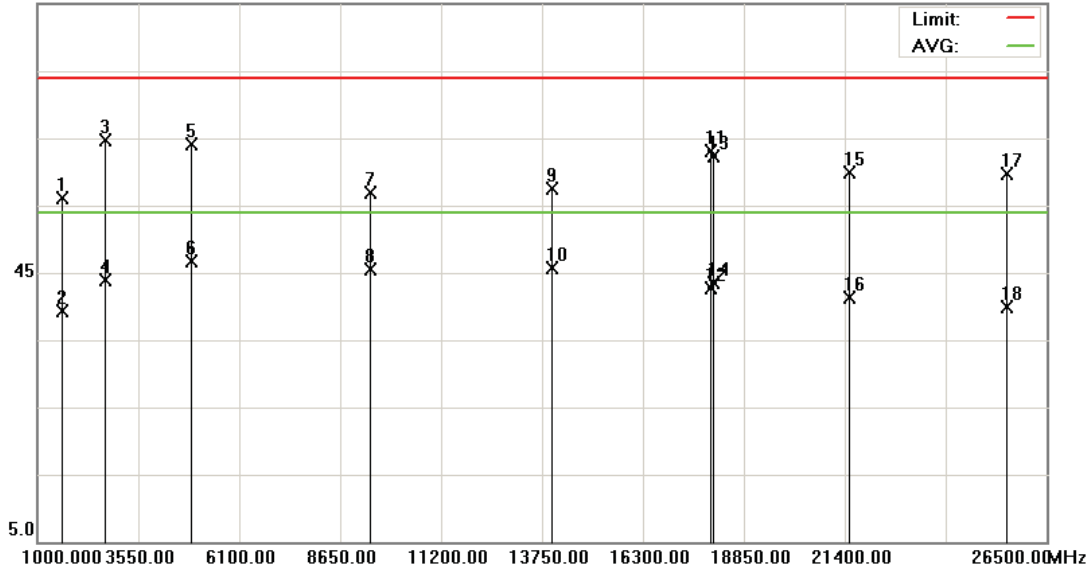
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Data :#14

Date: 2009-1-19

Time: 上午 11:46:10

85.0 dBuV



Site site #1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: 09-0007-E

Mode: BT

Note: 2441MHz, 接NB05

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1595.000	59.90	-3.78	56.12	74.00	-17.88			peak
2		1595.000	43.17	-3.78	39.39	74.00	-34.61			peak
3		2700.000	42.03	22.58	64.61	74.00	-9.39			peak
4		2700.000	21.27	22.58	43.85	54.00	-10.15			AVG
5		4890.000	56.31	7.73	64.04	74.00	-9.96			peak
6	*	4890.000	38.99	7.73	46.72	54.00	-7.28			AVG
7		9397.750	39.83	17.08	56.91	74.00	-17.09			peak
8		9397.750	28.40	17.08	45.48	54.00	-8.52			AVG
9		13980.000	38.83	18.62	57.45	74.00	-16.55			peak
10		13980.000	27.17	18.62	45.79	54.00	-8.21			AVG
11		18000.000	37.54	25.57	63.11	74.00	-10.89			peak
12		18000.000	17.13	25.57	42.70	54.00	-11.30			AVG
13		18085.000	39.00	23.25	62.25	74.00	-11.75			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only





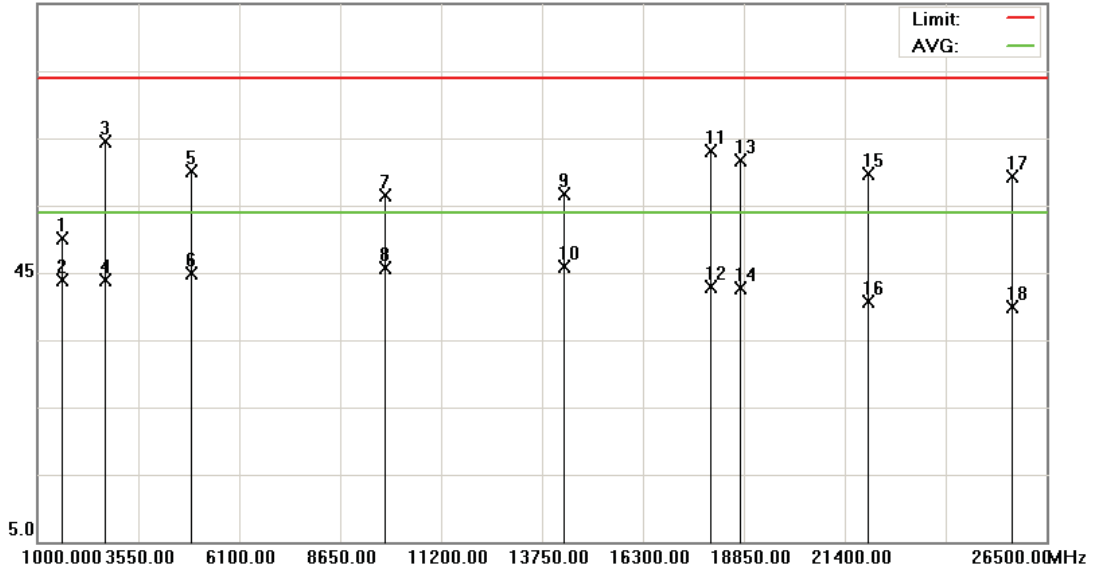
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Data :#5

Date: 2009-1-19

Time: 上午 11:56:35

85.0 dBuV



Site site #1  
 Limit: FCC part 15 (PK)  
 EUT:  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2441MHz, 接NB05

Polarization: **Horizontal**  
 Power:  
 Distance: 3m

Temperature: 22 °C  
 Humidity: 60 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	x	1625.600	54.04	-3.87	50.17	74.00	-23.83			peak
2	x	1625.600	47.76	-3.87	43.89	54.00	-10.11			AVG
3	x	2700.000	42.01	22.58	64.59	74.00	-9.41			peak
4	x	2700.000	21.29	22.58	43.87	54.00	-10.13			AVG
5	x	4890.000	52.30	7.73	60.03	74.00	-13.97			peak
6	x	4890.000	37.11	7.73	44.84	54.00	-9.16			AVG
7	x	9762.750	38.86	17.70	56.56	74.00	-17.44			peak
8	x	9762.750	27.99	17.70	45.69	54.00	-8.31			AVG
9	x	14300.000	28.59	28.15	56.74	74.00	-17.26			peak
10	x	14300.000	17.77	28.15	45.92	54.00	-8.08			AVG
11	x	18000.000	28.02	35.11	63.13	74.00	-10.87			peak
12	x	18000.000	7.72	35.11	42.83	54.00	-11.17			AVG
13	x	18765.000	38.67	23.13	61.80	74.00	-12.20			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



Site site #1 Polarization: **Horizontal** Temperature: 22 °C  
 Limit: FCC part 15 (PK) Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2441MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	
14		18765.00	19.67	23.13	42.80	54.00	-11.20	AVG		
15		21973.75	38.50	21.13	59.63	74.00	-14.37	peak		
16		21973.75	19.48	21.13	40.61	54.00	-13.39	AVG		
17		25628.75	40.43	18.89	59.32	74.00	-14.68	peak		
18		25628.75	21.11	18.89	40.00	54.00	-14.00	AVG		

\*:Maximum data x:Over limit !:over margin

●Reference Only



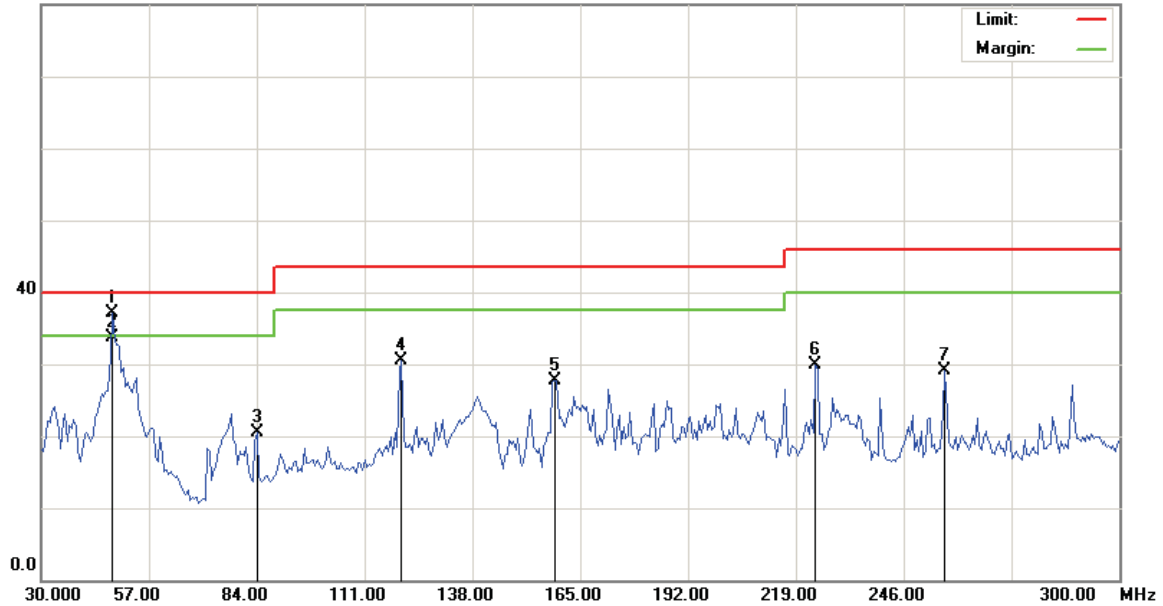
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Data :#1

Date: 2009/1/19

Time: 下午 04:34:49

80.0 dBuV



Site Polarization: *Vertical* Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2480MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	47.8200	49.03	-12.02	37.01	40.00	-2.99			peak
2		47.8200	45.82	-12.02	33.80	40.00	-6.20			QP
3		84.0000	35.57	-15.09	20.48	40.00	-19.52			peak
4		120.1800	44.83	-14.23	30.60	43.50	-12.90			peak
5		158.5200	43.26	-15.61	27.65	43.50	-15.85			peak
6		223.8600	42.13	-12.19	29.94	46.00	-16.06			peak
7		256.2600	40.26	-11.17	29.09	46.00	-16.91			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



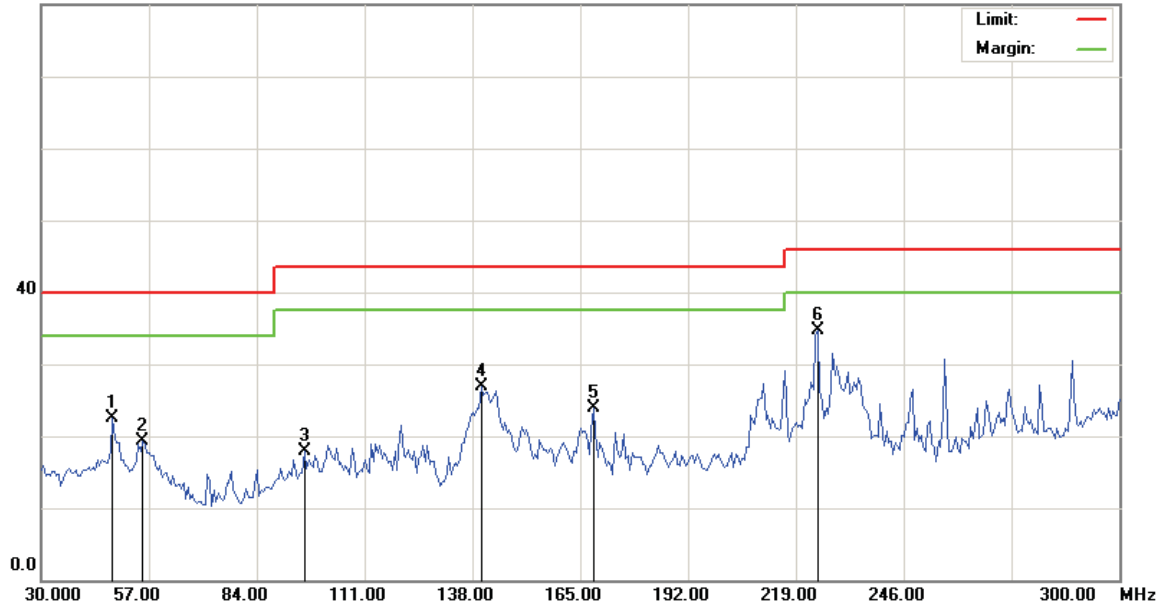
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Data :#3

Date: 2009/1/19

Time: 下午 04:43:13

80.0 dBuV



Site Polarization: **Horizontal** Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2480MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		47.8200	34.56	-12.02	22.54	40.00	-17.46			peak
2		55.3800	31.63	-12.24	19.39	40.00	-20.61			peak
3		95.8800	29.94	-11.99	17.95	43.50	-25.55			peak
4		140.1600	43.19	-16.35	26.84	43.50	-16.66			peak
5		168.2400	39.23	-15.37	23.86	43.50	-19.64			peak
6	*	224.4000	46.84	-12.16	34.68	46.00	-11.32			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



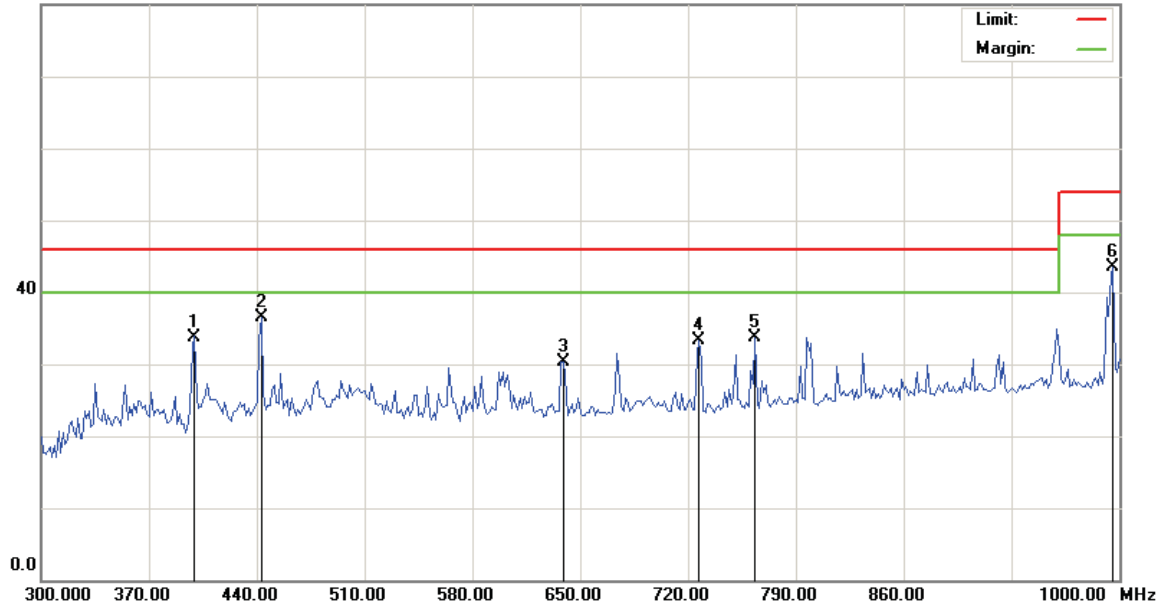
File :Vesurlus(2480)

Data :#2

Date: 2009/1/19

Time: 下午 04:39:01

80.0 dBuV



Site Polarization: *Vertical* Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2480MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		399.4000	42.14	-8.34	33.80	46.00	-12.20			peak
2	*	442.8000	44.59	-8.02	36.57	46.00	-9.43			peak
3		638.8000	34.80	-4.43	30.37	46.00	-15.63			peak
4		727.0000	36.76	-3.54	33.22	46.00	-12.78			peak
5		763.4000	36.61	-2.87	33.74	46.00	-12.26			peak
6		995.8000	42.77	0.75	43.52	54.00	-10.48			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



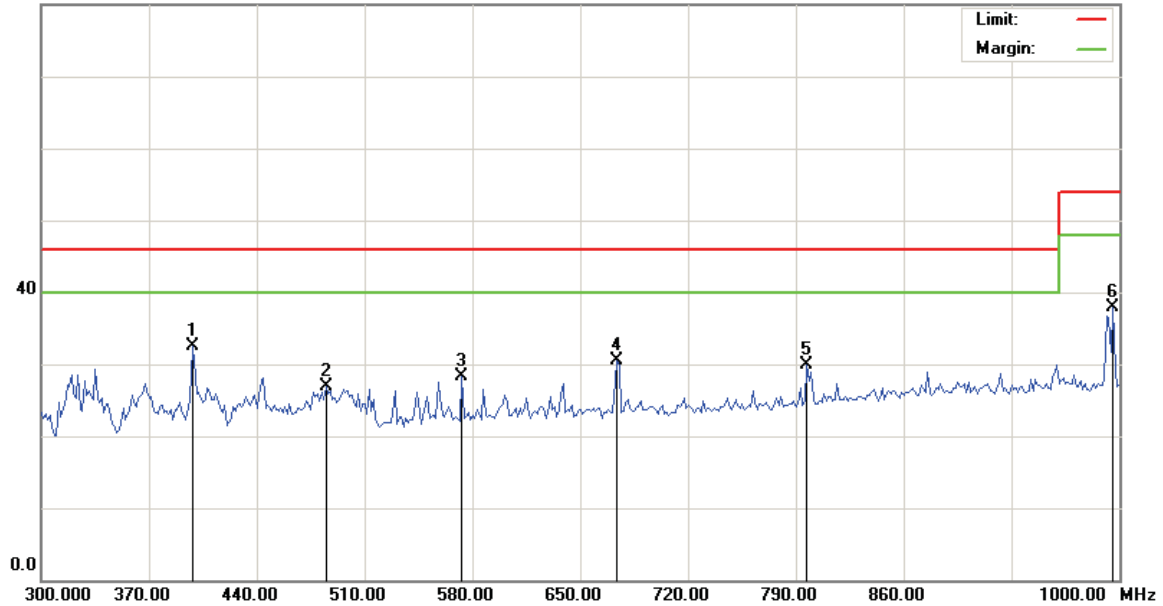
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Data :#4

Date: 2009/1/19

Time: 下午 04:47:26

80.0 dBuV



Site Polarization: *Horizontal* Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2480MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree
1	*	398.0000	40.98	-8.39	32.59	46.00	-13.41	peak	
2		484.8000	34.37	-7.47	26.90	46.00	-19.10	peak	
3		573.0000	33.65	-5.41	28.24	46.00	-17.76	peak	
4		673.8000	34.69	-4.28	30.41	46.00	-15.59	peak	
5		797.0000	32.31	-2.34	29.97	46.00	-16.03	peak	
6		995.8000	37.23	0.75	37.98	54.00	-16.02	peak	

\*:Maximum data x:Over limit !:over margin

●Reference Only



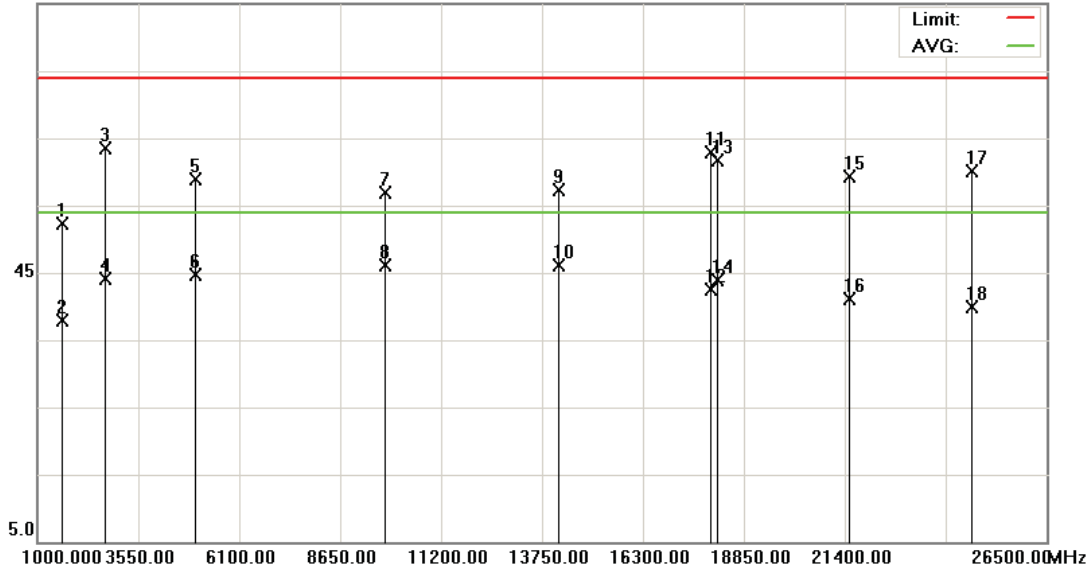
File :Vesurlus(2480)

Data :#14

Date: 2009-1-19

Time: 上午 11:42:58

85.0 dBuV



Site site #1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: 09-0007-E

Mode: BT

Note: 2480MHz, 接NB05

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1598.400	55.96	-3.75	52.21	74.00	-21.79			peak
2		1598.400	41.65	-3.75	37.90	54.00	-16.10			AVG
3		2700.000	41.00	22.58	63.58	74.00	-10.42			peak
4		2700.000	21.48	22.58	44.06	54.00	-9.94			AVG
5		4963.000	50.99	7.82	58.81	74.00	-15.19			peak
6		4963.000	36.88	7.82	44.70	54.00	-9.30			AVG
7		9781.000	39.29	17.69	56.98	74.00	-17.02			peak
8	*	9781.000	28.40	17.69	46.09	54.00	-7.91			AVG
9		14160.00	38.53	18.83	57.36	74.00	-16.64			peak
10		14160.00	27.22	18.83	46.05	54.00	-7.95			AVG
11		18000.00	37.35	25.57	62.92	74.00	-11.08			peak
12		18000.00	16.95	25.57	42.52	54.00	-11.48			AVG
13		18170.00	38.52	23.23	61.75	74.00	-12.25			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only





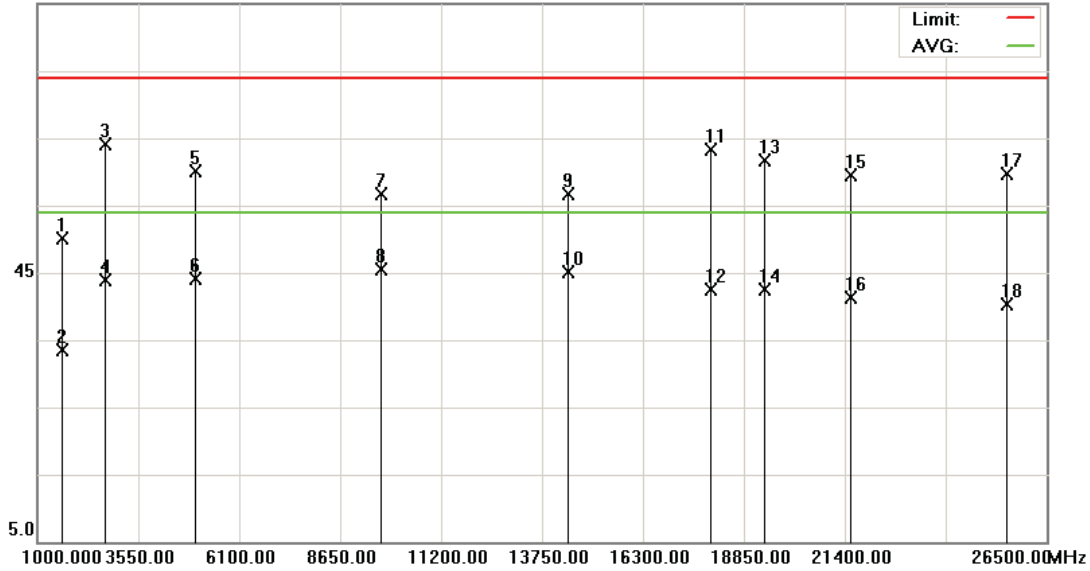
File :Vesurlus(2480)\_tmp

Data :#5

Date: 2009-1-19

Time: 上午 11:59:18

85.0 dBuV



Site site #1

Polarization: *Horizontal*

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: 09-0007-E

Mode: BT

Note: 2480MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		1595.000	53.79	-3.78	50.01	74.00	-23.99			peak
2		1595.000	37.22	-3.78	33.44	54.00	-20.56			AVG
3		2700.000	41.50	22.58	64.08	74.00	-9.92			peak
4		2700.000	21.28	22.58	43.86	54.00	-10.14			AVG
5		4963.000	52.24	7.82	60.06	74.00	-13.94			peak
6		4963.000	36.38	7.82	44.20	54.00	-9.80			AVG
7		9689.750	39.39	17.35	56.74	74.00	-17.26			peak
8	*	9689.750	28.09	17.35	45.44	54.00	-8.56			AVG
9		14400.000	29.29	27.48	56.77	74.00	-17.23			peak
10		14400.000	17.71	27.48	45.19	54.00	-8.81			AVG
11		18000.000	28.16	35.11	63.27	74.00	-10.73			peak
12		18000.000	7.43	35.11	42.54	54.00	-11.46			AVG
13		19360.000	38.96	22.84	61.80	74.00	-12.20			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



Site site #1 Polarization: **Horizontal** Temperature: 22 °C  
 Limit: FCC part 15 (PK) Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2480MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	
14		19360.00	19.68	22.84	42.52	54.00	-11.48	AVG		
15		21548.75	38.18	21.33	59.51	74.00	-14.49	peak		
16		21548.75	20.06	21.33	41.39	54.00	-12.61	AVG		
17		25501.25	40.63	18.98	59.61	74.00	-14.39	peak		
18		25501.25	21.25	18.98	40.23	54.00	-13.77	AVG		

\*:Maximum data x:Over limit !:over margin

●Reference Only



### 3.5.2 Open Field Radiated Emissions (Subpart C)

The highest peak values of radiated emissions from the EUT at various antenna heights, antenna polarization, EUT orientation, etc. are recorded on the following

Applicant : Motorola Inc  
Model No : H17  
EUT : Universal Bluetooth Headset  
Test Mode : Link Mode \_ Bluetooth EDR Low CH / Middle CH / Light CH  
Test Date : 01/19/2009

Please refer to next pager of detail testing data.

Notes:

1. Margin= Amplitude - Limits
2. Distance of Measurement: 3 Meter (30-1000MHz) & (1-10GHz), 1 Meter (10-26.5GHz)
3. Height of table for EUT placed: 0.8 Meter.
4. ANT= Antenna height.
5. Amplitude= Reading Amplitude – Amplifier gain + Cable loss + Antenna factor  
(Auto calculate in spectrum analyzer)
6. The EUT was worst case on X axis after pretest on X & Y & Z axis setting.
7. The testing data only show below 18GHz's data because measure data above 18GHz was only ambient noise.
8. All frequencies from 30MHz to 26.5GHz have been tested



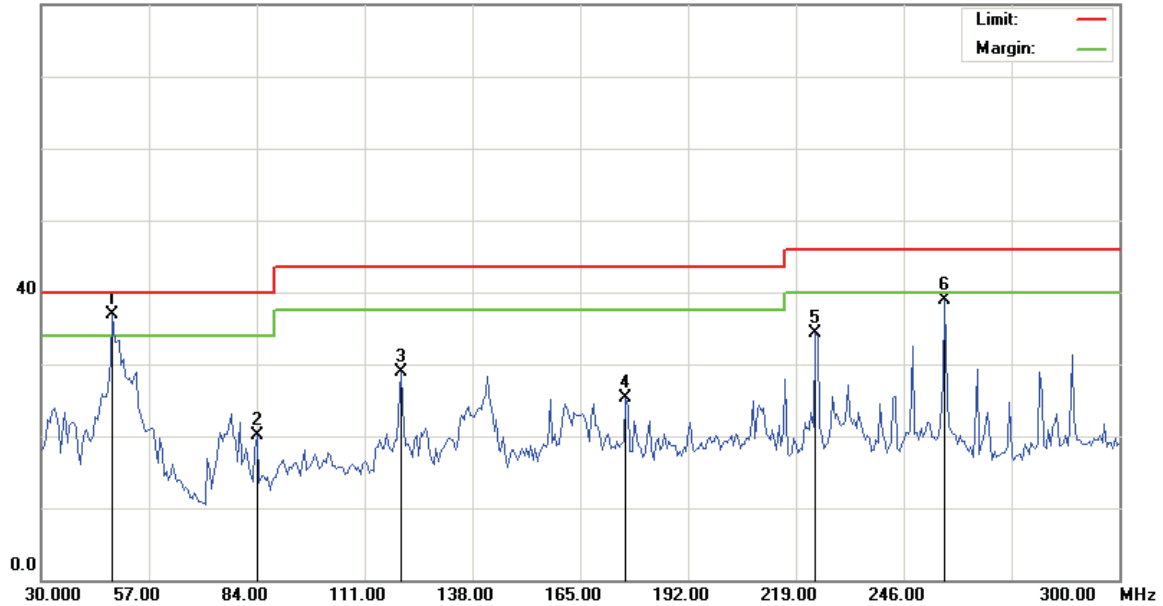
File :Vesurlus(2402)

Data :#1

Date: 2009/01/19

Time: 下午 01:44:23

80.0 dBuV



Site Polarization: *Vertical* Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2402MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	47.8200	48.86	-12.02	36.84	40.00	-3.16			peak
2		84.0000	35.21	-15.09	20.12	40.00	-19.88			peak
3		120.1800	43.15	-14.23	28.92	43.50	-14.58			peak
4		176.3400	39.93	-14.55	25.38	43.50	-18.12			peak
5		223.8600	46.49	-12.19	34.30	46.00	-11.70			peak
6		256.2600	50.02	-11.17	38.85	46.00	-7.15			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



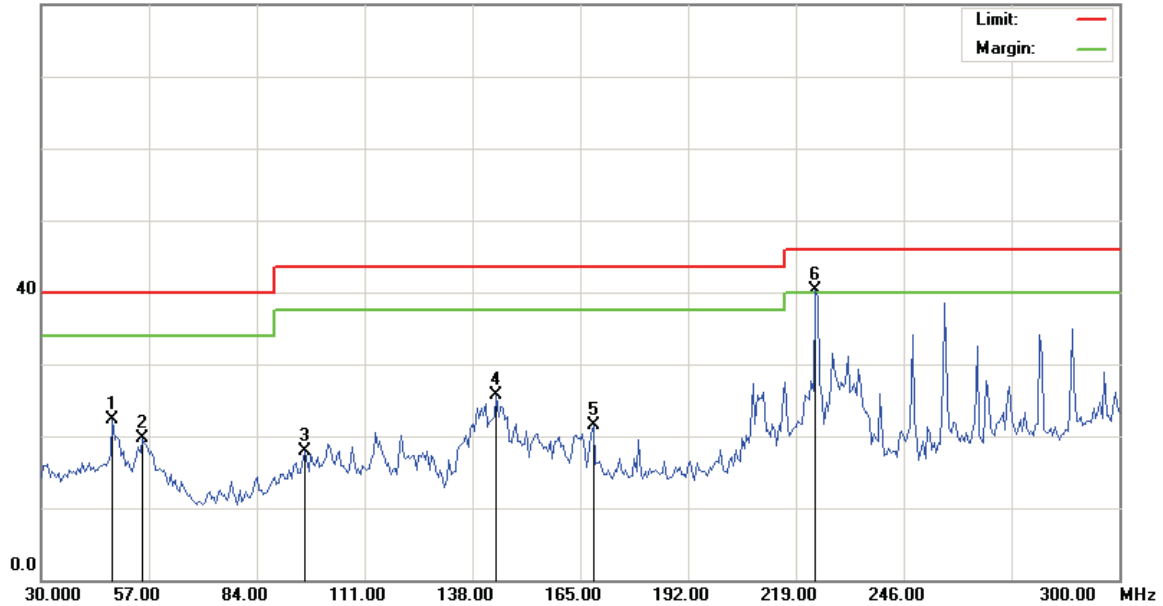
File :Vesurlus(2402)

Data :#3

Date: 2009/01/19

Time: 下午 01:52:49

80.0 dBuV



Site Polarization: **Horizontal** Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2402MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		47.8200	34.30	-12.02	22.28	40.00	-17.72			peak
2		55.3800	31.89	-12.24	19.65	40.00	-20.35			peak
3		95.8800	29.94	-11.99	17.95	43.50	-25.55			peak
4		143.9400	41.84	-16.22	25.62	43.50	-17.88			peak
5		168.2400	36.90	-15.37	21.53	43.50	-21.97			peak
6	*	223.8600	52.46	-12.19	40.27	46.00	-5.73			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



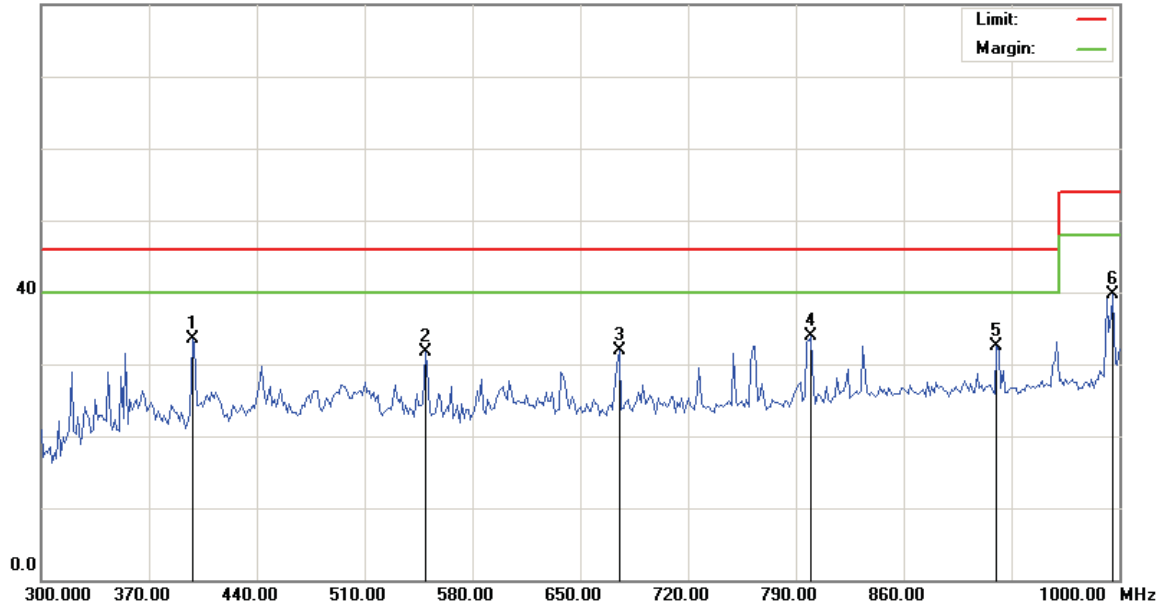
File :Vesurlus(2402)

Data :#2

Date: 2009/01/19

Time: 下午 01:48:37

80.0 dBuV



Site Polarization: *Vertical* Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2402MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		398.0000	41.83	-8.39	33.44	46.00	-12.56			peak
2		549.2000	37.71	-6.01	31.70	46.00	-14.30			peak
3		675.2000	36.16	-4.27	31.89	46.00	-14.11			peak
4	*	799.8000	36.23	-2.32	33.91	46.00	-12.09			peak
5		920.2000	32.71	-0.29	32.42	46.00	-13.58			peak
6		995.8000	38.98	0.75	39.73	54.00	-14.27			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



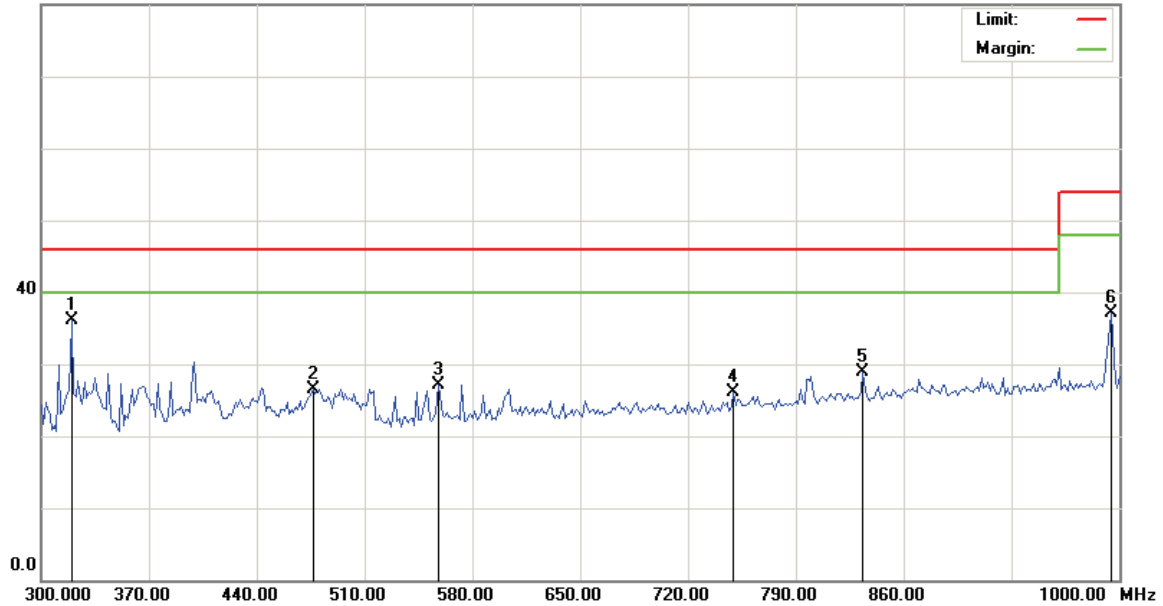
File :Vesurlus(2402)

Data :#4

Date: 2009/01/19

Time: 下午 01:57:03

80.0 dBuV



Site Polarization: *Horizontal* Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2402MHz, 接NB05

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Comment
1	*	319.6000	45.86	-9.82	36.04	46.00	-9.96	peak		
2		476.4000	34.31	-7.86	26.45	46.00	-19.55	peak		
3		557.6000	32.81	-5.73	27.08	46.00	-18.92	peak		
4		749.4000	29.22	-3.11	26.11	46.00	-19.89	peak		
5		833.4000	30.34	-1.46	28.88	46.00	-17.12	peak		
6		994.4000	36.23	0.79	37.02	54.00	-16.98	peak		

\*:Maximum data x:Over limit !:over margin

●Reference Only



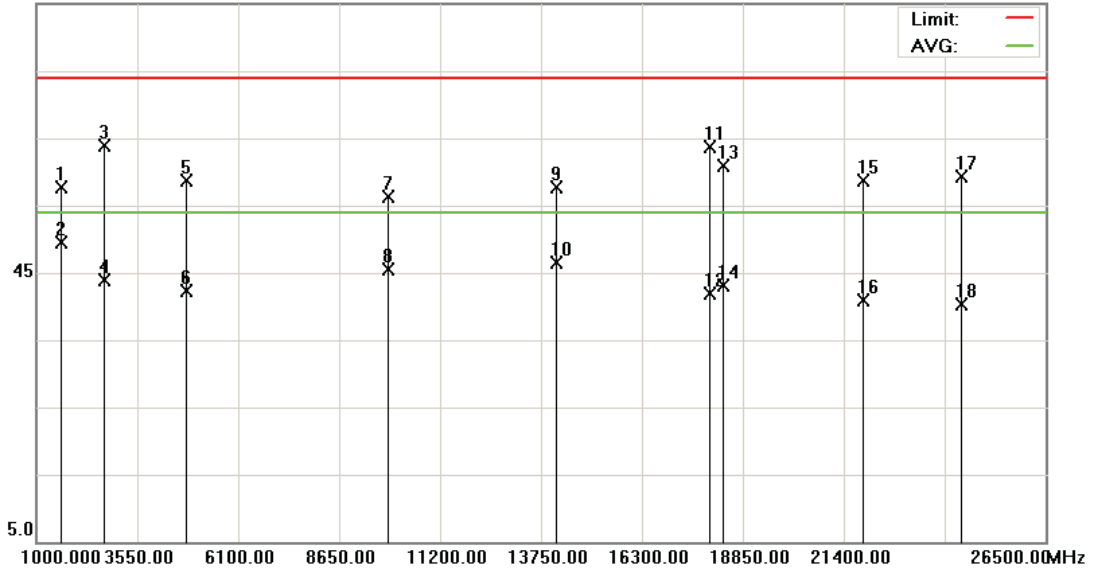
File :Vesurlus(2402)

Data :#14

Date: 2009-1-19

Time: 上午 11:30:40

85.0 dBuV



Site site #1 Polarization: **Vertical** Temperature: 22 °C  
 Limit: FCC part 15 (PK) Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2402MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		1595.000	61.46	-3.78	57.68	74.00	-16.32			peak
2	*	1595.000	53.21	-3.78	49.43	54.00	-4.57			AVG
3		2700.000	41.38	22.58	63.96	74.00	-10.04			peak
4		2700.000	21.23	22.58	43.81	54.00	-10.19			AVG
5		4798.750	51.39	7.29	58.68	74.00	-15.32			peak
6		4798.750	35.07	7.29	42.36	54.00	-11.64			AVG
7		9872.250	38.45	17.84	56.29	74.00	-17.71			peak
8		9872.250	27.73	17.84	45.57	54.00	-8.43			AVG
9		14120.000	38.91	18.87	57.78	74.00	-16.22			peak
10		14120.000	27.59	18.87	46.46	54.00	-7.54			AVG
11		18000.000	38.05	25.57	63.62	74.00	-10.38			peak
12		18000.000	16.35	25.57	41.92	54.00	-12.08			AVG
13		18361.250	37.77	23.16	60.93	74.00	-13.07			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only





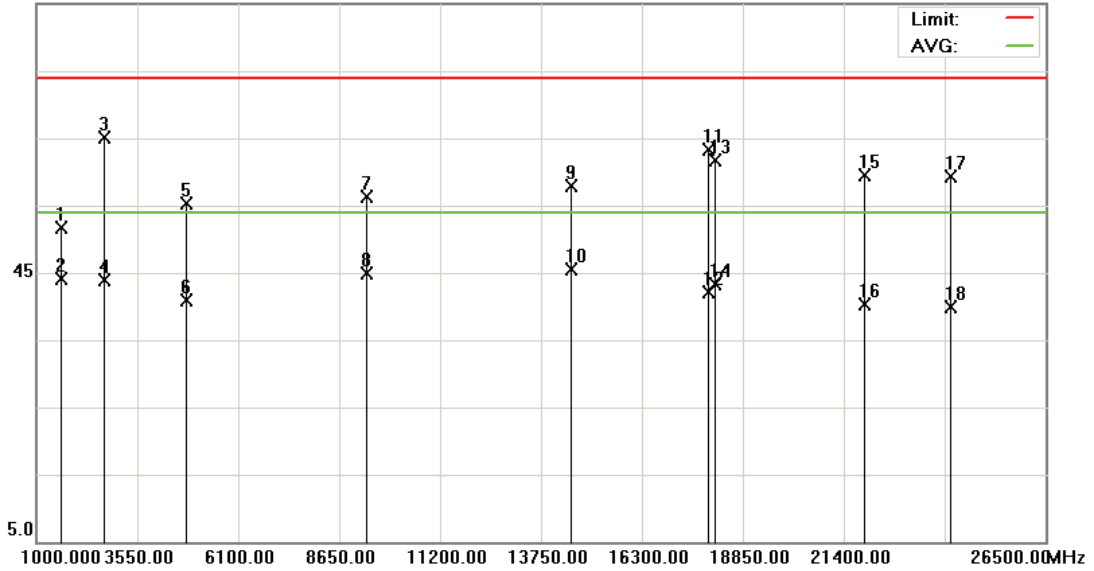
File :Vesurlus(2402)\_tmp

Data :#5

Date: 2009-1-19

Time: 下午 12:08:59

85.0 dBuV



Site site #1

Polarization: *Horizontal*

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: 09-0007-E

Mode: BT+EDR

Note: 2402MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		1601.800	55.45	-3.73	51.72	74.00	-22.28			peak
2		1601.800	47.87	-3.73	44.14	74.00	-29.86			peak
3		2700.000	42.52	22.58	65.10	74.00	-8.90			peak
4		2700.000	21.37	22.58	43.95	54.00	-10.05			AVG
5		4798.750	48.03	7.29	55.32	74.00	-18.68			peak
6		4798.750	33.62	7.29	40.91	54.00	-13.09			AVG
7		9324.750	39.48	16.91	56.39	74.00	-17.61			peak
8		9324.750	27.90	16.91	44.81	54.00	-9.19			AVG
9		14500.00	30.60	27.36	57.96	74.00	-16.04			peak
10	*	14500.00	18.14	27.36	45.50	54.00	-8.50			AVG
11		17980.00	28.63	34.75	63.38	74.00	-10.62			peak
12		17980.00	7.27	34.75	42.02	54.00	-11.98			AVG
13		18127.50	38.53	23.23	61.76	74.00	-12.24			peak

\*:Maximum data x:Over limit !:over margin

●:Reference Only





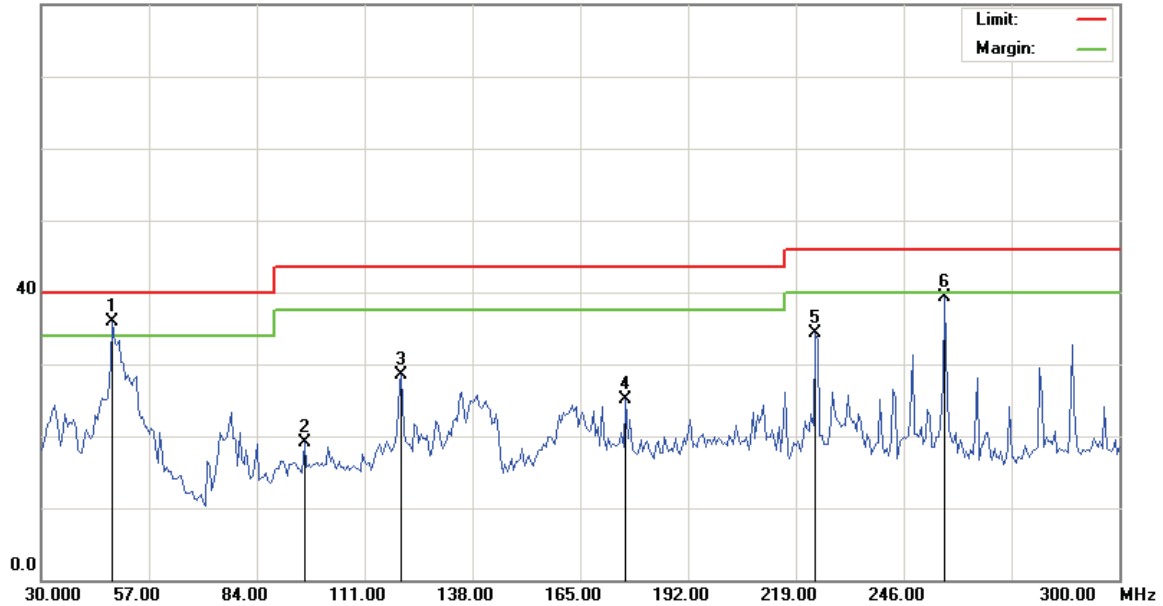
File :Vesurlus(2441)

Data :#1

Date: 2009/01/19

Time: 下午 02:24:56

80.0 dBuV



Site Polarization: *Vertical* Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2441MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	47.8200	48.02	-12.02	36.00	40.00	-4.00			peak
2		95.8800	31.10	-11.99	19.11	43.50	-24.39			peak
3		120.1800	42.79	-14.23	28.56	43.50	-14.94			peak
4		176.3400	39.74	-14.55	25.19	43.50	-18.31			peak
5		223.8600	46.41	-12.19	34.22	46.00	-11.78			peak
6		256.2600	50.45	-11.17	39.28	46.00	-6.72			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



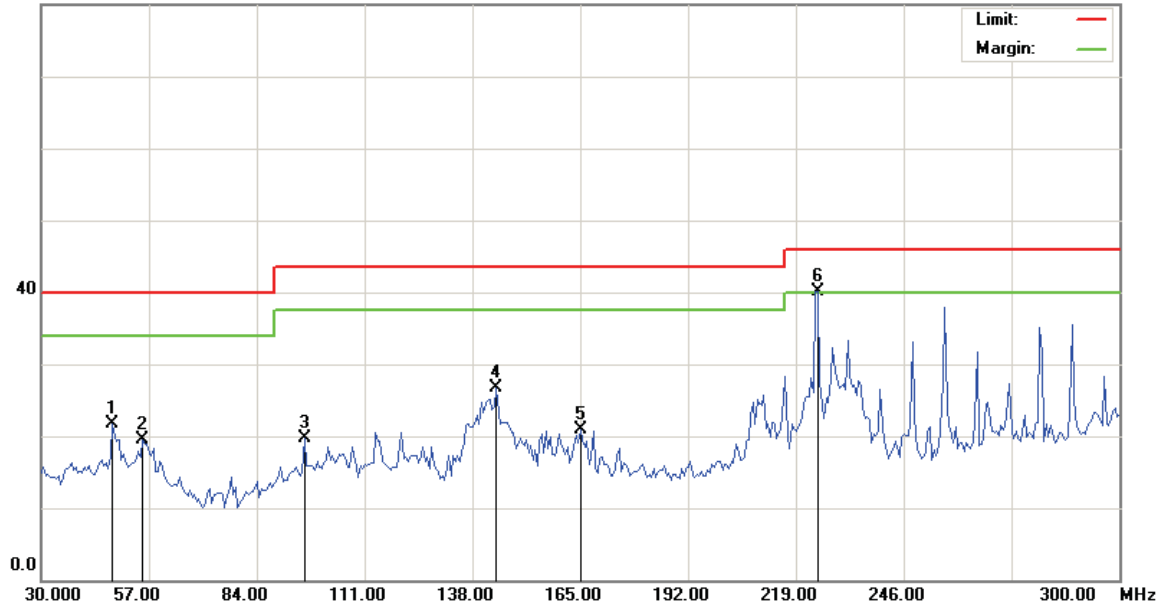
File :Vesurlus(2441)

Data :#3

Date: 2009/01/19

Time: 下午 02:33:19

80.0 dBuV



Site Polarization: **Horizontal** Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2441MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		47.8200	33.74	-12.02	21.72	40.00	-18.28			peak
2		55.3800	31.76	-12.24	19.52	40.00	-20.48			peak
3		95.8800	31.73	-11.99	19.74	43.50	-23.76			peak
4		143.9400	42.99	-16.22	26.77	43.50	-16.73			peak
5		165.0000	36.11	-15.30	20.81	43.50	-22.69			peak
6	*	224.4000	52.26	-12.16	40.10	46.00	-5.90			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



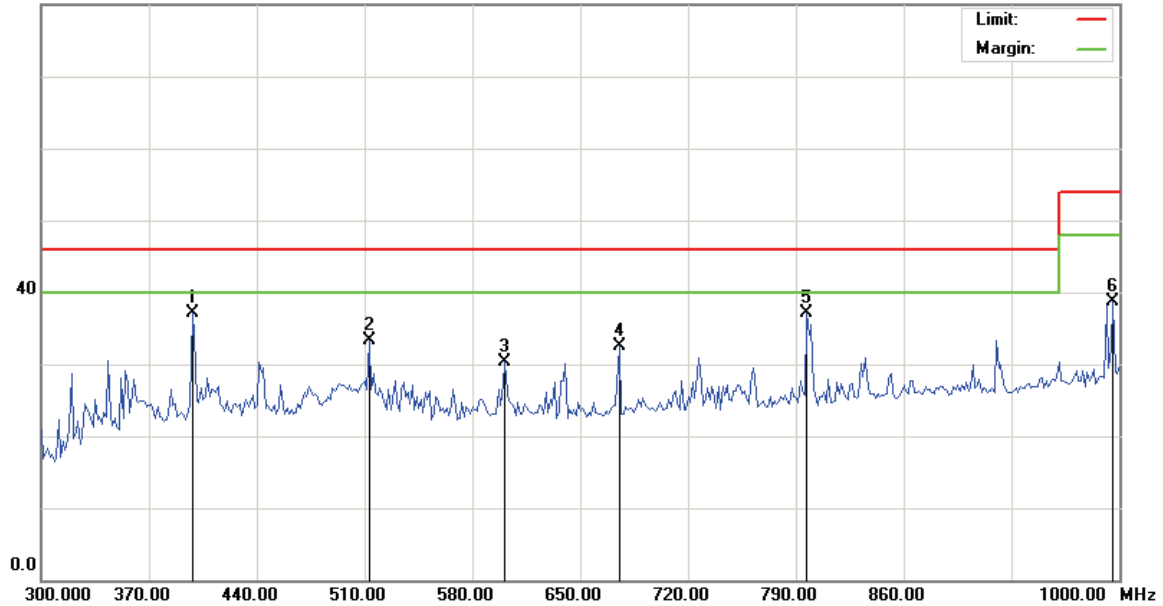
File :Vesurlus(2441)

Data :#2

Date: 2009/01/19

Time: 下午 02:29:07

80.0 dBuV



Site Polarization: *Vertical* Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2441MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	398.0000	45.53	-8.39	37.14	46.00	-8.86			peak
2		512.8000	39.79	-6.58	33.21	46.00	-12.79			peak
3		601.0000	35.20	-4.85	30.35	46.00	-15.65			peak
4		675.2000	36.74	-4.27	32.47	46.00	-13.53			peak
5		797.0000	39.45	-2.34	37.11	46.00	-8.89			peak
6		995.8000	37.96	0.75	38.71	54.00	-15.29			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



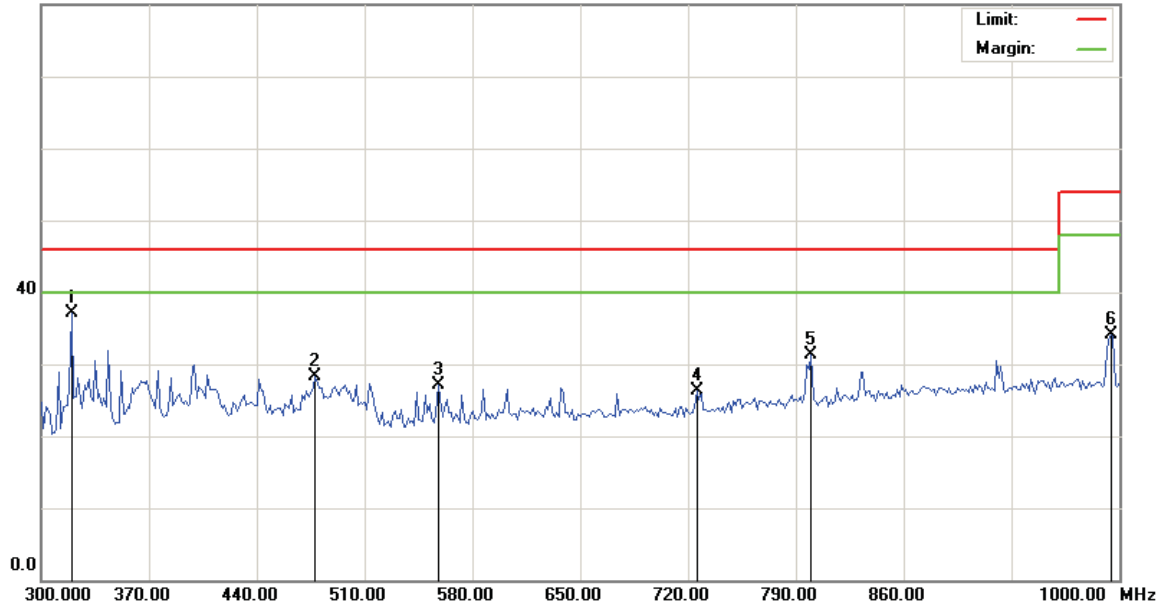
File :Vesurlus(2441)

Data :#4

Date: 2009/01/19

Time: 下午 02:37:32

80.0 dBuV



Site Polarization: **Horizontal** Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2441MHz, 接NB05

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	319.6000	46.98	-9.82	37.16	46.00	-8.84	peak			
2		477.8000	36.08	-7.72	28.36	46.00	-17.64	peak			
3		557.6000	32.75	-5.73	27.02	46.00	-18.98	peak			
4		725.6000	29.89	-3.54	26.35	46.00	-19.65	peak			
5		799.8000	33.63	-2.32	31.31	46.00	-14.69	peak			
6		994.4000	33.27	0.79	34.06	54.00	-19.94	peak			

\*:Maximum data x:Over limit !:over margin

●Reference Only



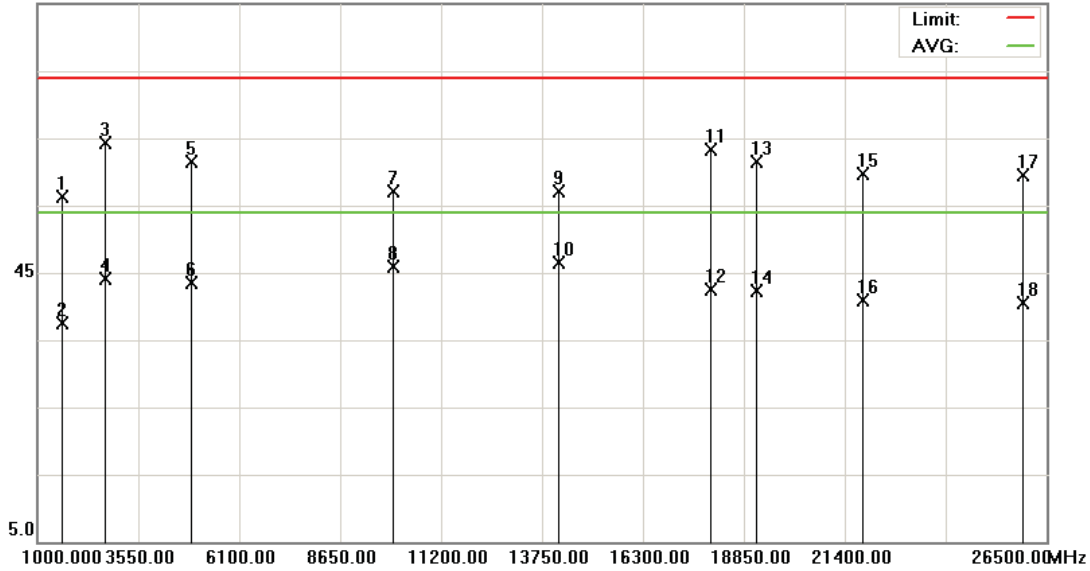
File :Vesurlus(2441)

Data :#14

Date: 2009-1-19

Time: 上午 11:36:12

85.0 dBuV



Site site #1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: 09-0007-E

Mode: BT+EDR

Note: 2441MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		1591.600	60.08	-3.80	56.28	74.00	-17.72			peak
2		1591.600	41.28	-3.80	37.48	54.00	-16.52			AVG
3		2700.000	41.64	22.58	64.22	74.00	-9.78			peak
4		2700.000	21.54	22.58	44.12	54.00	-9.88			AVG
5		4890.000	53.86	7.73	61.59	74.00	-12.41			peak
6		4890.000	35.82	7.73	43.55	54.00	-10.45			AVG
7		9981.750	39.17	17.88	57.05	74.00	-16.95			peak
8		9981.750	28.05	17.88	45.93	54.00	-8.07			AVG
9		14160.00	38.24	18.83	57.07	74.00	-16.93			peak
10	*	14160.00	27.62	18.83	46.45	54.00	-7.55			AVG
11		18000.00	37.78	25.57	63.35	74.00	-10.65			peak
12		18000.00	17.00	25.57	42.57	54.00	-11.43			AVG
13		19147.50	38.58	22.97	61.55	74.00	-12.45			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only





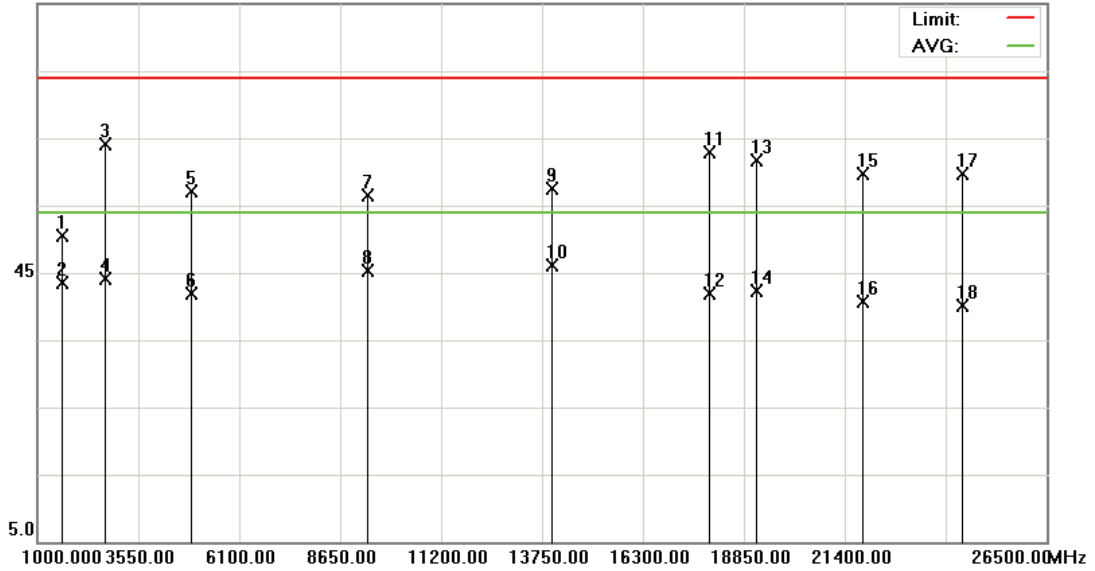
File :Vesurlus(2441)\_tmp

Data :#5

Date: 2009-1-19

Time: 下午 12:06:04

85.0 dBuV



Site site #1 Polarization: *Horizontal* Temperature: 22 °C  
 Limit: FCC part 15 (PK) Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2441MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		1625.600	54.38	-3.87	50.51	74.00	-23.49			peak
2		1625.600	47.44	-3.87	43.57	54.00	-10.43			AVG
3		2700.000	41.44	22.58	64.02	74.00	-9.98			peak
4		2700.000	21.45	22.58	44.03	54.00	-9.97			AVG
5		4890.000	49.44	7.73	57.17	74.00	-16.83			peak
6		4890.000	34.18	7.73	41.91	54.00	-12.09			AVG
7		9324.750	39.61	16.91	56.52	74.00	-17.48			peak
8		9324.750	28.41	16.91	45.32	54.00	-8.68			AVG
9		13980.00	29.39	28.16	57.55	74.00	-16.45			peak
10	*	13980.00	18.03	28.16	46.19	54.00	-7.81			AVG
11		17960.00	28.60	34.38	62.98	74.00	-11.02			peak
12		17960.00	7.48	34.38	41.86	54.00	-12.14			AVG
13		19147.50	38.82	22.97	61.79	74.00	-12.21			peak

\*:Maximum data x:Over limit !:over margin

●:Reference Only



Site site #1  
 Limit: FCC part 15 (PK)  
 EUT:  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2441MHz, 接NB05

Polarization: **Horizontal**  
 Power:  
 Distance: 3m

Temperature: 22 °C  
 Humidity: 60 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
14		19147.50	19.25	22.97	42.22	54.00	-11.78	AVG			
15		21846.25	38.54	21.20	59.74	74.00	-14.26	peak			
16		21846.25	19.59	21.20	40.79	54.00	-13.21	AVG			
17		24353.75	39.97	19.76	59.73	74.00	-14.27	peak			
18		24353.75	20.43	19.76	40.19	54.00	-13.81	AVG			

\*:Maximum data x:Over limit !:over margin

●Reference Only



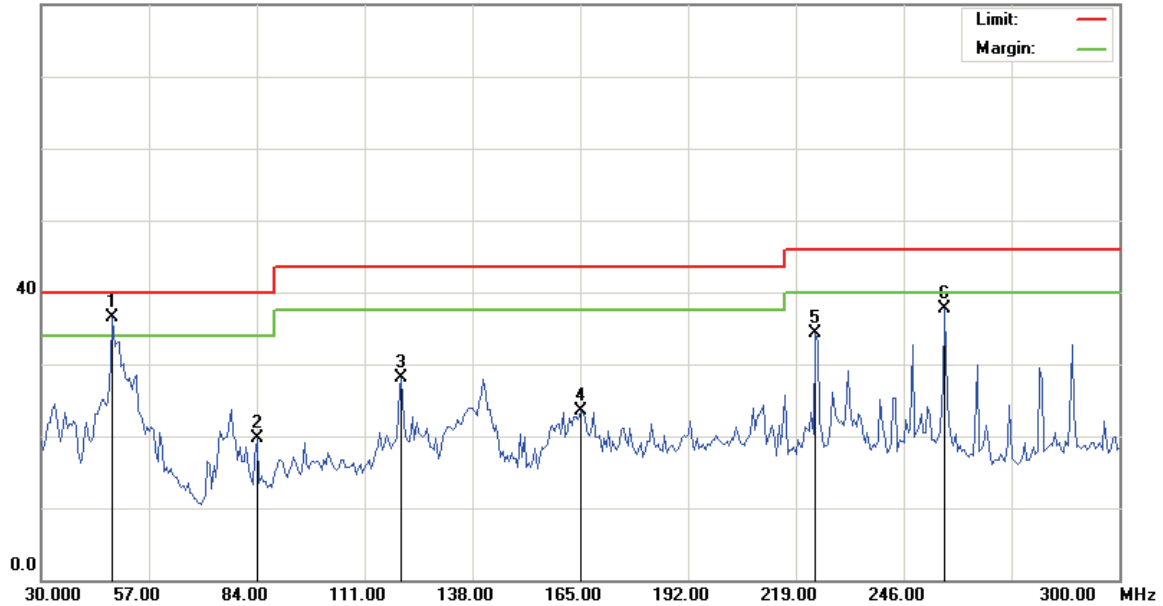
File :Vesurlus(2480)

Data :#1

Date: 2009/01/19

Time: 下午 02:06:42

80.0 dBuV



Site Polarization: *Vertical* Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2480MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	47.8200	48.44	-12.02	36.42	40.00	-3.58			peak
2		84.0000	34.78	-15.09	19.69	40.00	-20.31			peak
3		120.1800	42.32	-14.23	28.09	43.50	-15.41			peak
4		165.0000	38.83	-15.30	23.53	43.50	-19.97			peak
5		223.8600	46.49	-12.19	34.30	46.00	-11.70			peak
6		256.2600	48.95	-11.17	37.78	46.00	-8.22			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



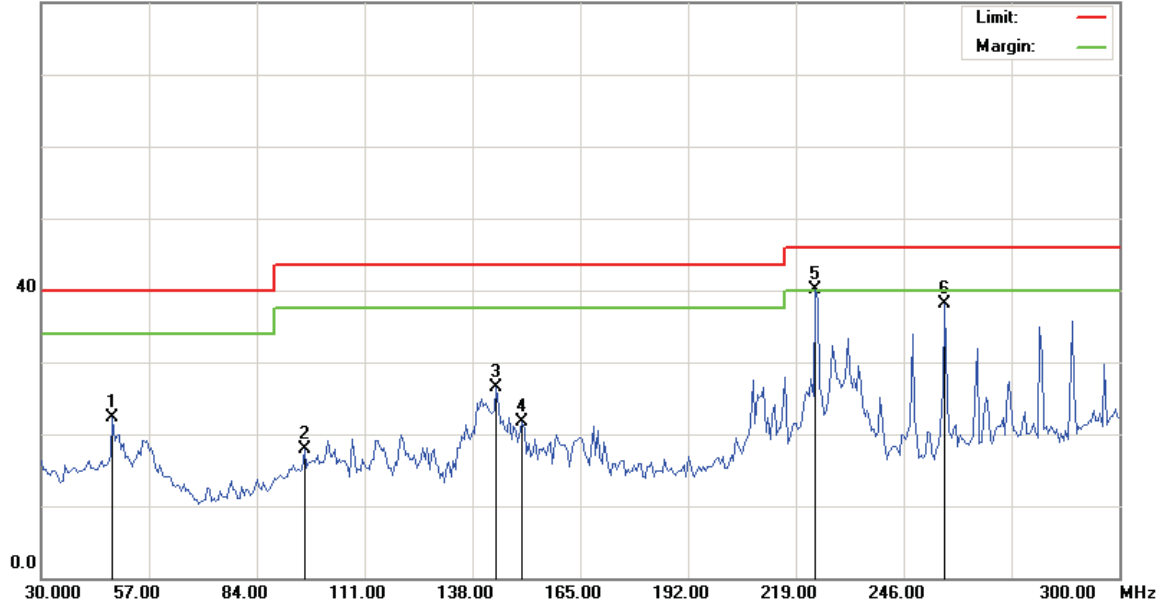
File :Vesurlus(2480)

Data :#3

Date: 2009/01/19

Time: 下午 02:15:03

80.0 dBuV



Site Polarization: **Horizontal** Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2480MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		47.8200	34.24	-12.02	22.22	40.00	-17.78			peak
2		95.8800	29.82	-11.99	17.83	43.50	-25.67			peak
3		143.9400	42.68	-16.22	26.46	43.50	-17.04			peak
4		150.4200	37.74	-16.00	21.74	43.50	-21.76			peak
5	*	223.8600	52.21	-12.19	40.02	46.00	-5.98			peak
6		256.2600	49.27	-11.17	38.10	46.00	-7.90			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



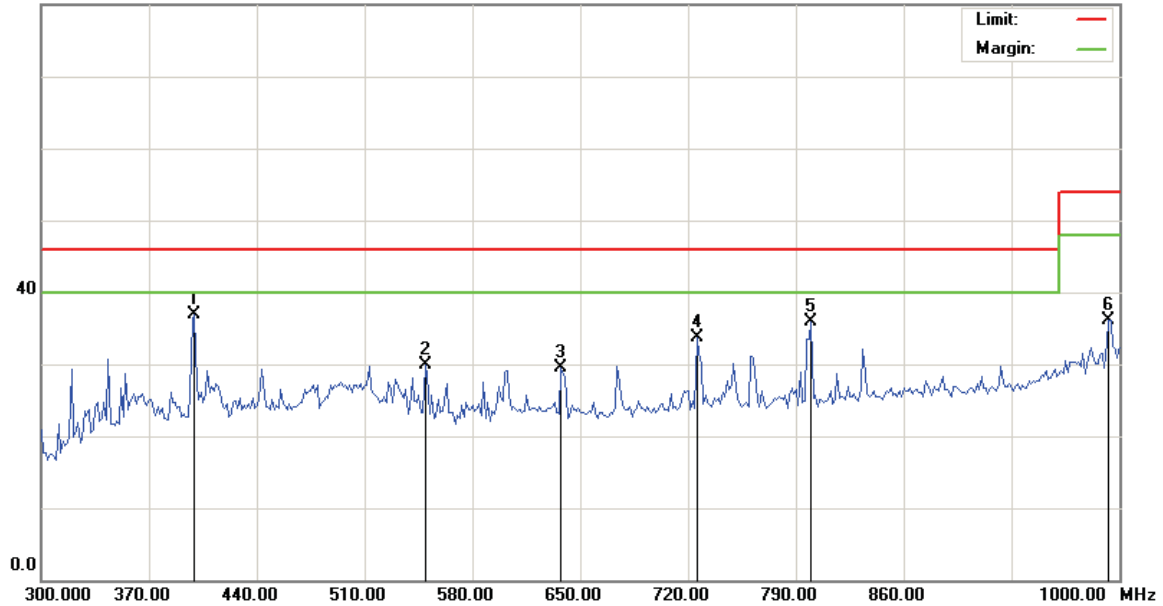
File :Vesurlus(2480)

Data :#2

Date: 2009/01/19

Time: 下午 02:10:54

80.0 dBuV



Site Polarization: *Vertical* Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2480MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	399.4000	45.25	-8.34	36.91	46.00	-9.09			peak
2		549.2000	35.96	-6.01	29.95	46.00	-16.05			peak
3		637.4000	33.89	-4.41	29.48	46.00	-16.52			peak
4		725.6000	37.16	-3.54	33.62	46.00	-12.38			peak
5		799.8000	38.23	-2.32	35.91	46.00	-10.09			peak
6		993.0000	35.26	0.84	36.10	54.00	-17.90			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



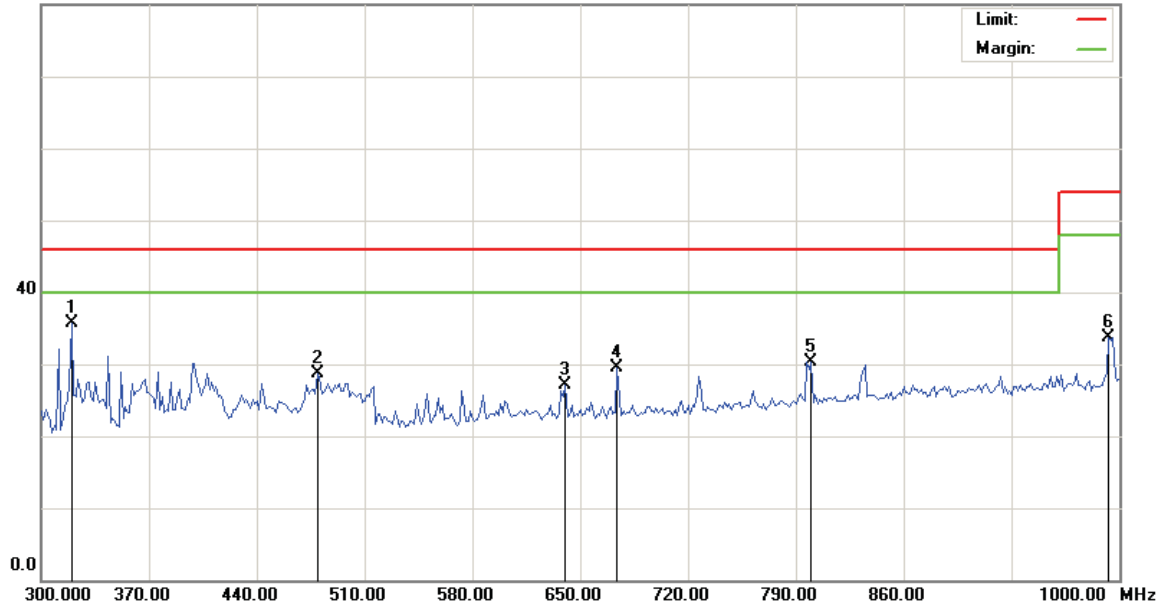
File :Vesurlus(2480)

Data :#4

Date: 2009/01/19

Time: 下午 02:19:10

80.0 dBuV



Site Polarization: **Horizontal** Temperature: 22 °C  
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2480MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	319.6000	45.56	-9.82	35.74	46.00	-10.26			peak
2		479.2000	36.24	-7.60	28.64	46.00	-17.36			peak
3		640.2000	31.48	-4.46	27.02	46.00	-18.98			peak
4		673.8000	33.81	-4.28	29.53	46.00	-16.47			peak
5		799.8000	32.62	-2.32	30.30	46.00	-15.70			peak
6		993.0000	32.78	0.84	33.62	54.00	-20.38			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



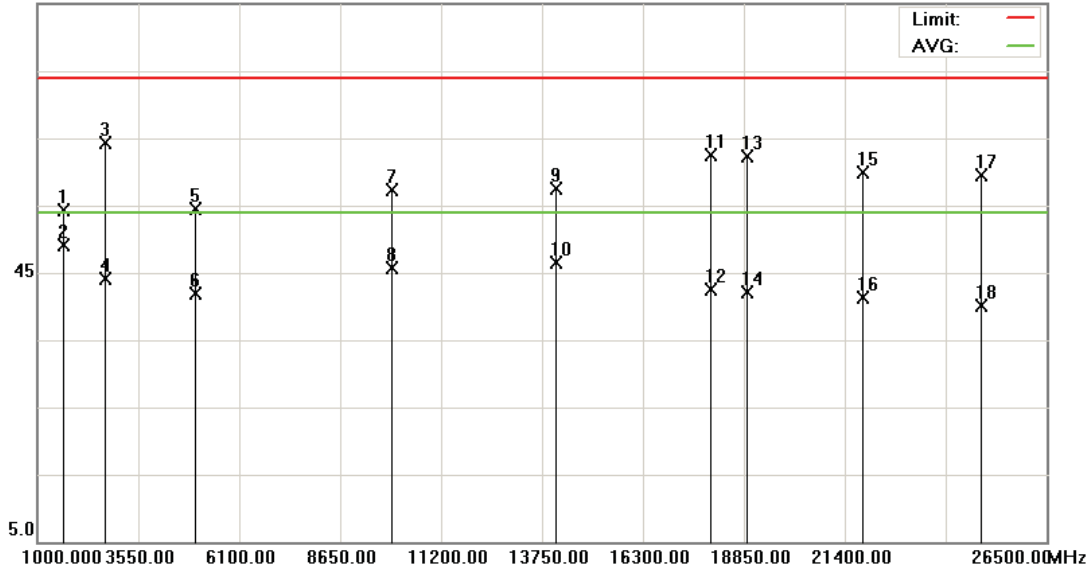
File :Vesurlus(2480)

Data :#14

Date: 2009-1-19

Time: 上午 11:39:41

85.0 dBuV



Site site #1 Polarization: **Vertical** Temperature: 22 °C  
 Limit: FCC part 15 (PK) Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2480MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		1652.800	58.01	-3.80	54.21	74.00	-19.79			peak
2	*	1652.800	52.90	-3.80	49.10	54.00	-4.90			AVG
3		2700.000	41.74	22.58	64.32	74.00	-9.68			peak
4		2700.000	21.51	22.58	44.09	54.00	-9.91			AVG
5		4963.000	46.75	7.82	54.57	74.00	-19.43			peak
6		4963.000	34.05	7.82	41.87	54.00	-12.13			AVG
7		9945.250	39.47	17.79	57.26	74.00	-16.74			peak
8		9945.250	28.00	17.79	45.79	54.00	-8.21			AVG
9		14100.00	38.52	18.90	57.42	74.00	-16.58			peak
10		14100.00	27.56	18.90	46.46	54.00	-7.54			AVG
11		18000.00	36.95	25.57	62.52	74.00	-11.48			peak
12		18000.00	16.84	25.57	42.41	54.00	-11.59			AVG
13		18913.75	39.25	23.14	62.39	74.00	-11.61			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



Site site #1  
 Limit: FCC part 15 (PK)  
 EUT:  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2480MHz, 接NB05

Polarization: **Vertical**  
 Power:  
 Distance: 3m

Temperature: 22 °C  
 Humidity: 60 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
14		18913.75	18.87	23.14	42.01	54.00	-11.99	AVG			
15		21846.25	38.74	21.20	59.94	74.00	-14.06	peak			
16		21846.25	20.15	21.20	41.35	54.00	-12.65	AVG			
17		24821.25	40.07	19.53	59.60	74.00	-14.40	peak			
18		24821.25	20.63	19.53	40.16	54.00	-13.84	AVG			

\*:Maximum data    x:Over limit    !:over margin

●Reference Only



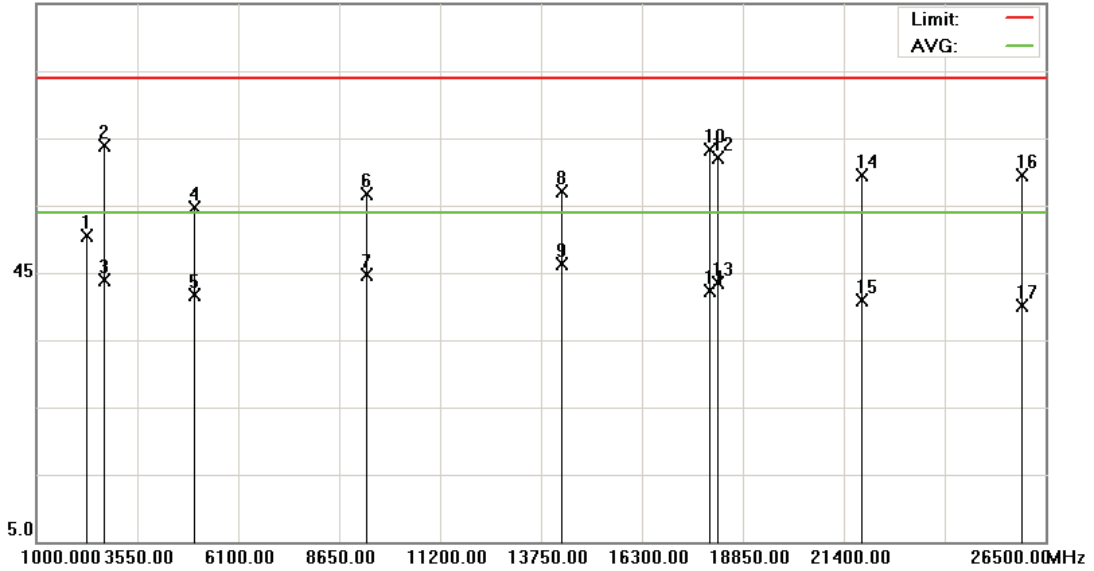
File :Vesurlus(2480)\_tmp

Data :#5

Date: 2009-1-19

Time: 下午 12:02:29

85.0 dBuV



Site site #1

Polarization: *Horizontal*

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: 09-0007-E

Mode: BT+EDR

Note: 2480MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree		
1		2275.000	50.03	0.44	50.47	74.00	-23.53			peak	
2		2700.000	41.23	22.58	63.81	74.00	-10.19			peak	
3		2700.000	21.33	22.58	43.91	54.00	-10.09			AVG	
4		4963.000	46.93	7.82	54.75	74.00	-19.25			peak	
5		4963.000	33.89	7.82	41.71	54.00	-12.29			AVG	
6		9324.750	39.78	16.91	56.69	74.00	-17.31			peak	
7		9324.750	27.89	16.91	44.80	54.00	-9.20			AVG	
8		14240.000	28.81	28.25	57.06	74.00	-16.94			peak	
9	*	14240.000	18.08	28.25	46.33	54.00	-7.67			AVG	
10		18000.000	28.12	35.11	63.23	74.00	-10.77			peak	
11		18000.000	7.29	35.11	42.40	54.00	-11.60			AVG	
12		18212.500	38.95	23.22	62.17	74.00	-11.83			peak	
13		18212.500	20.24	23.22	43.46	54.00	-10.54			AVG	

\*:Maximum data x:Over limit !:over margin

●Reference Only



Site site #1 Polarization: **Horizontal** Temperature: 22 °C  
 Limit: FCC part 15 (PK) Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2480MHz, 接NB05

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	
14		21846.25	38.30	21.20	59.50	74.00	-14.50			peak
15		21846.25	19.67	21.20	40.87	54.00	-13.13			AVG
16		25905.00	40.90	18.63	59.53	74.00	-14.47			peak
17		25905.00	21.50	18.63	40.13	54.00	-13.87			AVG

\*:Maximum data x:Over limit !:over margin

●Reference Only

## 4. Maximum Conducted Output Power Requirements

### 4.1 Test Condition & Setup:

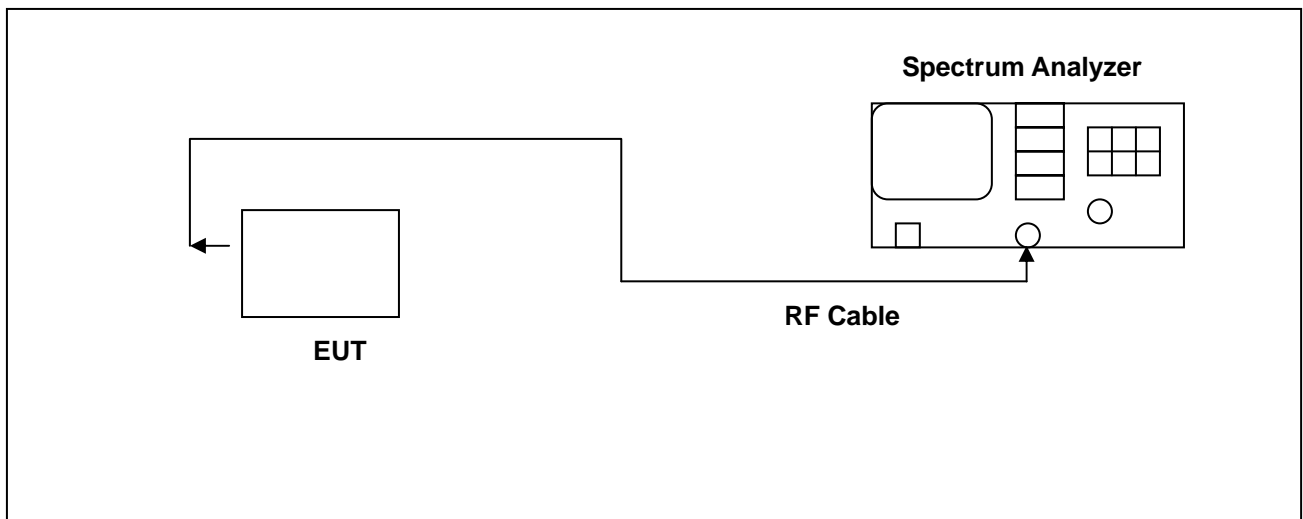
The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to spectrum analyzer. The maximum peak output power shall not exceed 1 watt.

Use a direct connection between the antenna port of transmitter and the spectrum Analyzer, for prevent the spectrum analyzer input attenuation 40-50 dB. Set the RBW Bandwidth of the emission or use a channel power meter mode.

For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm). For antennas with gains greater than 6 dBi, transmitter output level must be decreased by an amount equal to  $(\text{GAIN} - 6)/3$  dBm.

The antenna port of the EUT was connected to the input of a power meter. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

### 4.2 Test Instruments Configuration:





### 4.3 Test Equipment List:

Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
Spectrum Analyzer	Agilent	E4445A	MY46181986	May. 07, 2008	May. 07, 2009

### 4.4 Test Result

#### Bluetooth 2.0

Frequency (MHz)	Output (dBm)	Required Limit
2402	3.910	<30dBm
2441	3.806	<30dBm
2480	3.673	<30dBm

#### Bluetooth EDR

Frequency (MHz)	Output (dBm)	Required Limit
2402	3.829	<30dBm
2441	3.740	<30dBm
2480	3.504	<30dBm

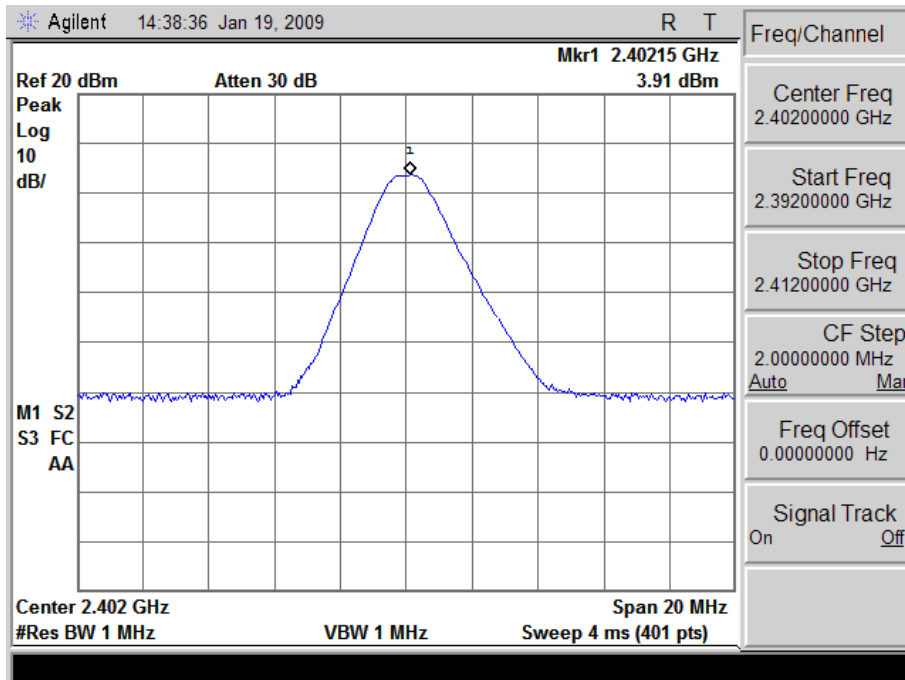
Note: Test Graphs See next page.



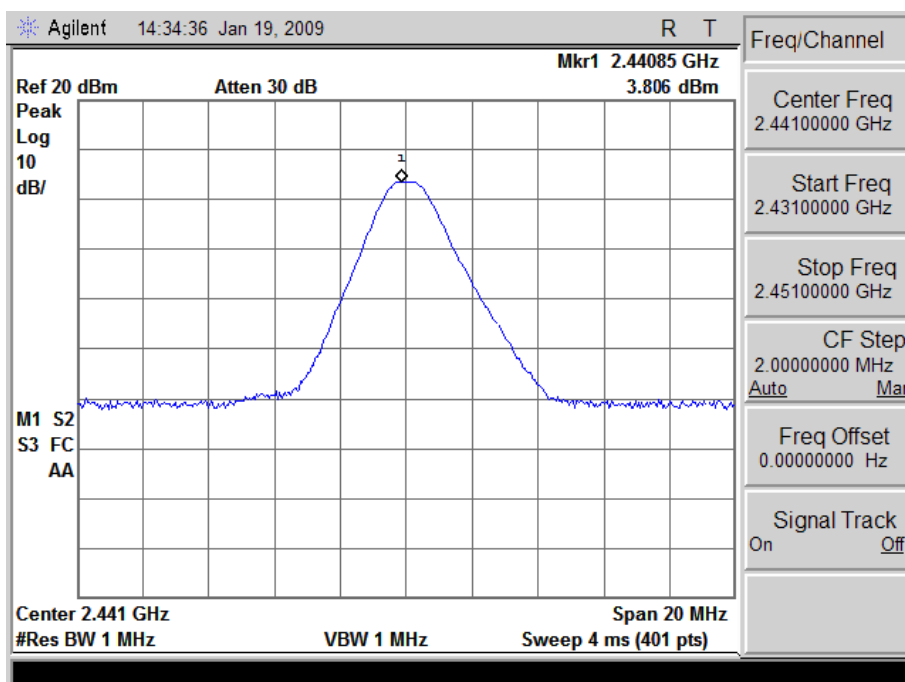
## 4.5 Test Graphs

### 4.5.1 Bluetooth 2.0 Mode:

#### Bluetooth 2.0 CH00 (2402MHz)

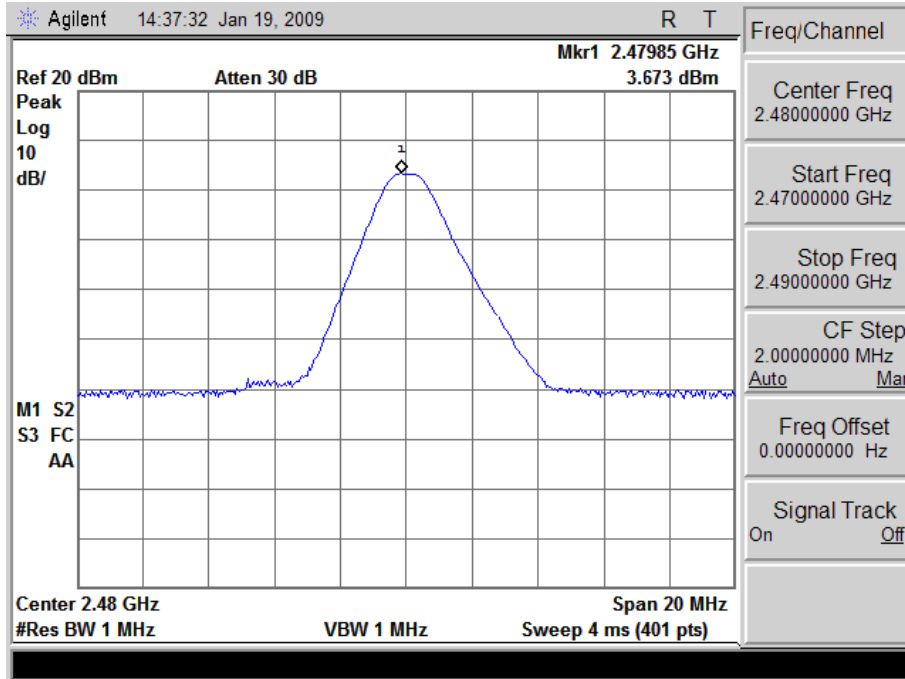


#### Bluetooth 2.0 CH39 (2441MHz)





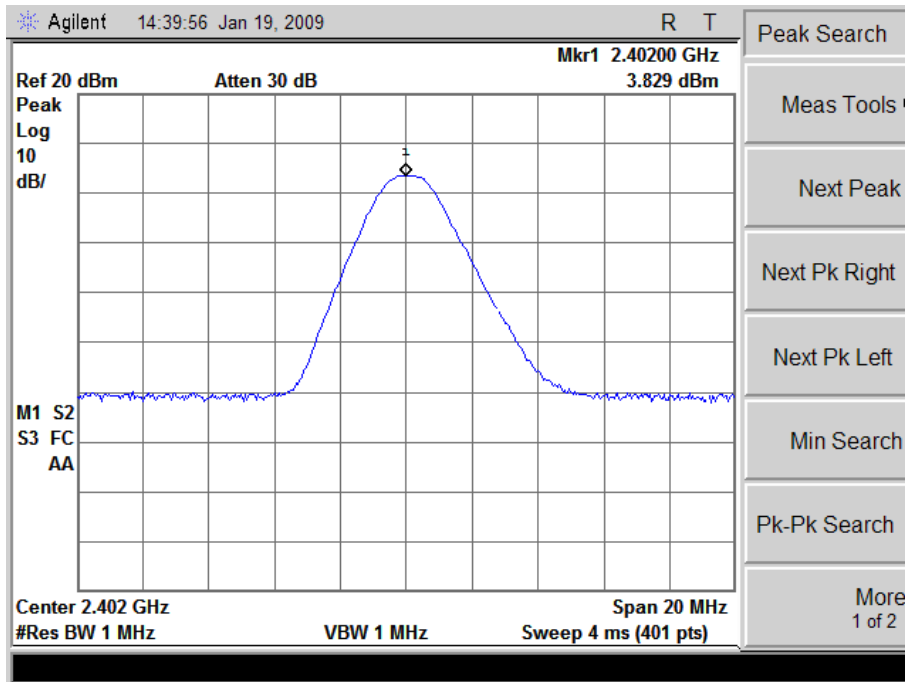
**Bluetooth 2.0 CH78 (2480MHz)**



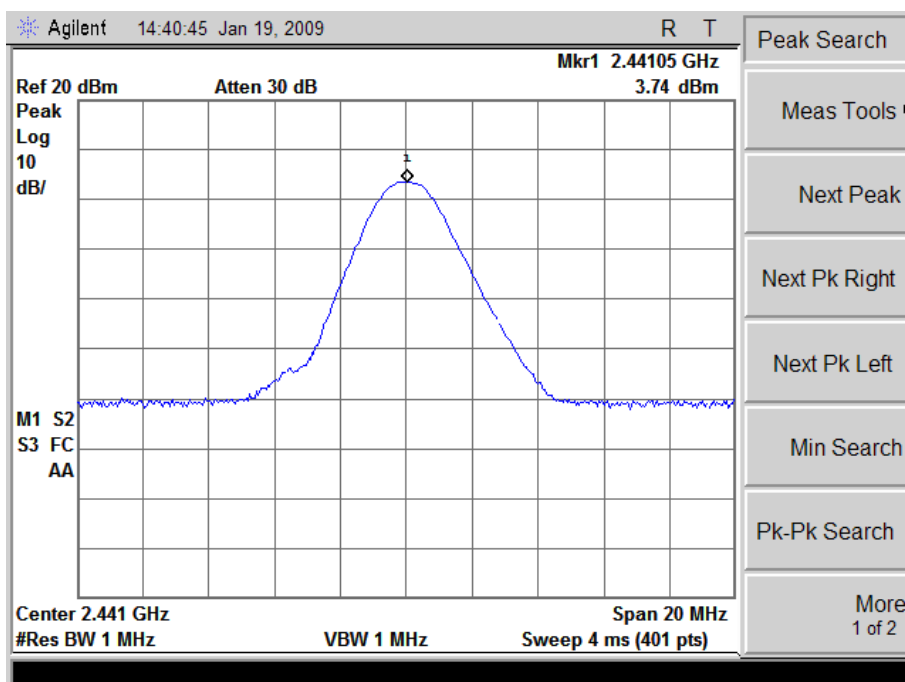


#### 4.5.2 Test Graphs \_ Bluetooth EDR Mode:

##### Bluetooth EDR CH00 (2402MHz)

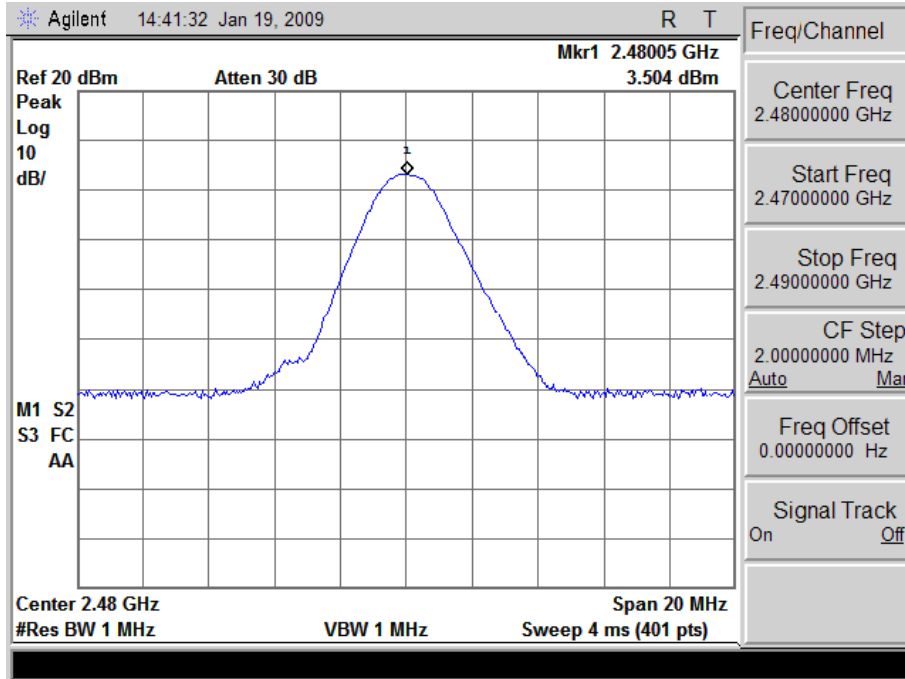


##### Bluetooth EDR CH39 (2441MHz)





### Bluetooth EDR CH78 (2480MHz)



## 5. Minimum 20dB RF Bandwidth Requirements

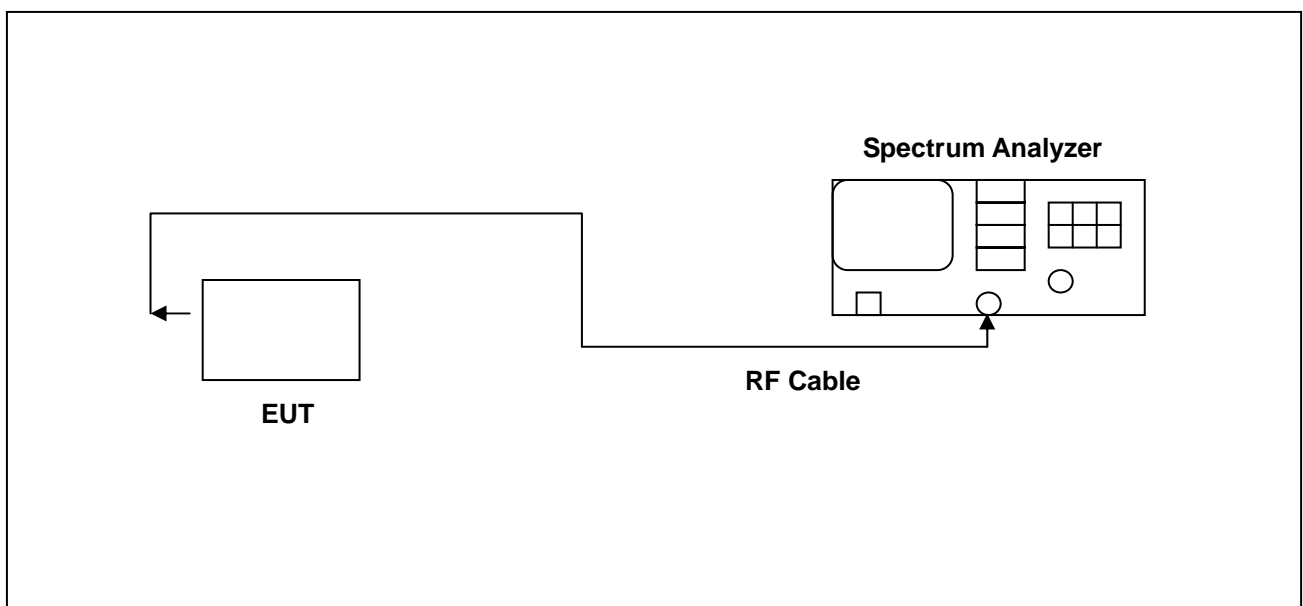
### 5.1 Test Condition & Setup:

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer used the following settings:

1. Span = approx. 2 to 3 times the 20dB bandwidth, centered on a hopping frequency
2. RBW  $\geq$  1% of the 20dB span
3. VBW  $\geq$  RBW
4. Sweep = auto
5. Detector function = peak
6. Trace = max hold

The trace was allowed to stabilize. The EUT was transmitting at its maximum data rate. The marker-to-peak function was used to set the marker to the peak of the emission. The marker-delta function was used to measure 20dB down one side of the emission. The marker-delta function and marker was moved to the other side of the emission until it was even with the reference marker. The marker-delta reading at this point was the 20dB bandwidth of the emission.

### 5.2 Test Instruments Configuration:





### 5.3 Test Equipment List:

Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
Spectrum Analyzer	Agilent	E4445A	MY46181986	May. 07, 2008	May. 07, 2009

### 5.4 Test Result

#### Bluetooth 2.0

Frequency (MHz)	Max 20dB Bandwidth (MHz)
2402	0.780
2441	0.810
2480	0.805

#### Bluetooth EDR

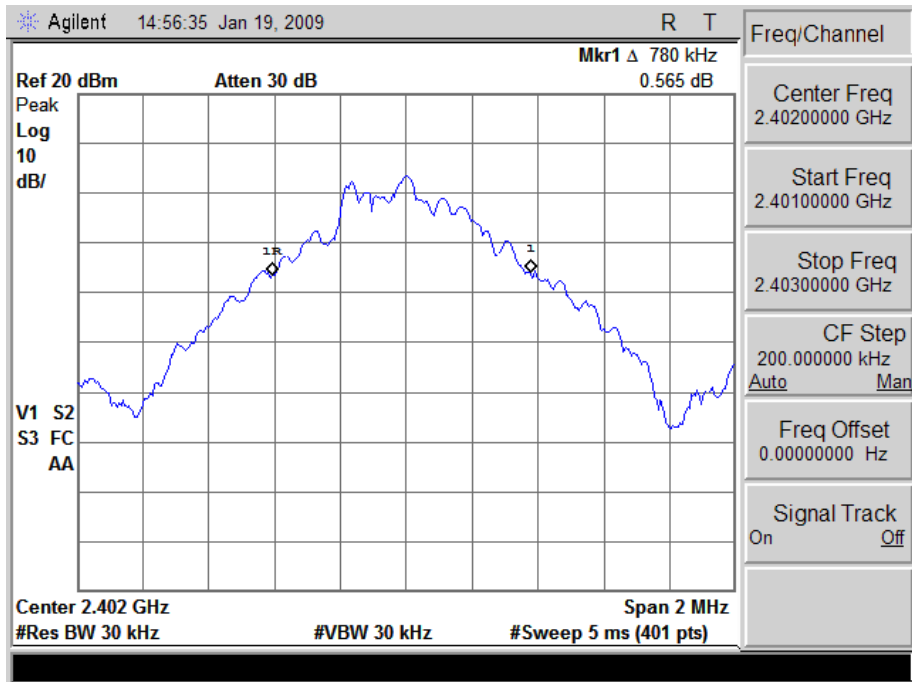
Frequency (MHz)	Max 20dB Bandwidth (MHz)	2/3 Max 20dB Bandwidth (MHz)
2402	1.215	0.810
2441	1.215	0.810
2480	1.215	0.810



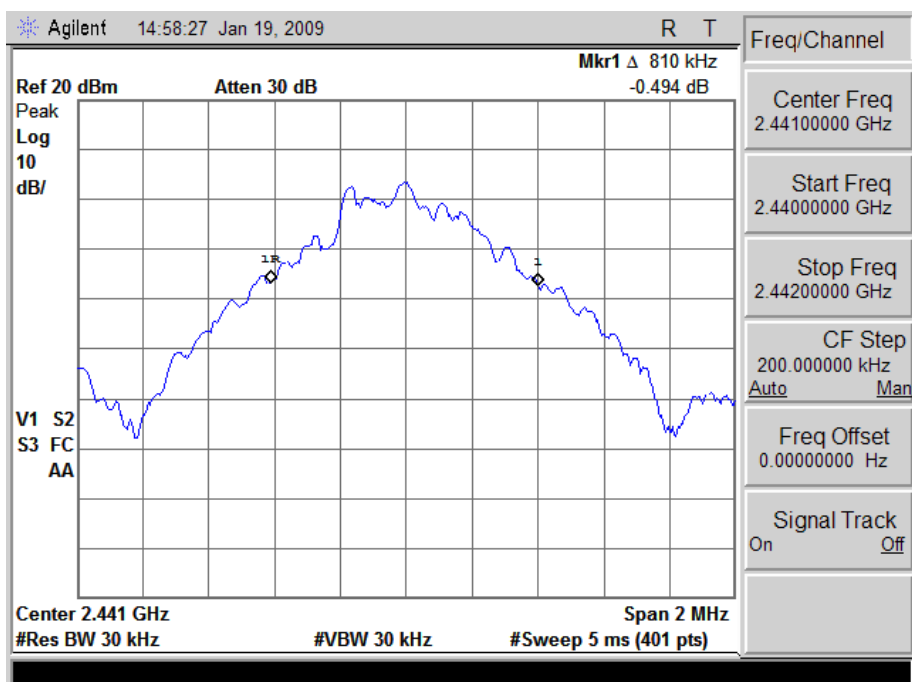
## 5.5 Test Graphs

### 5.5.1 Bluetooth 2.0 Mode:

#### Bluetooth 2.0 CH00 (2402MHz)

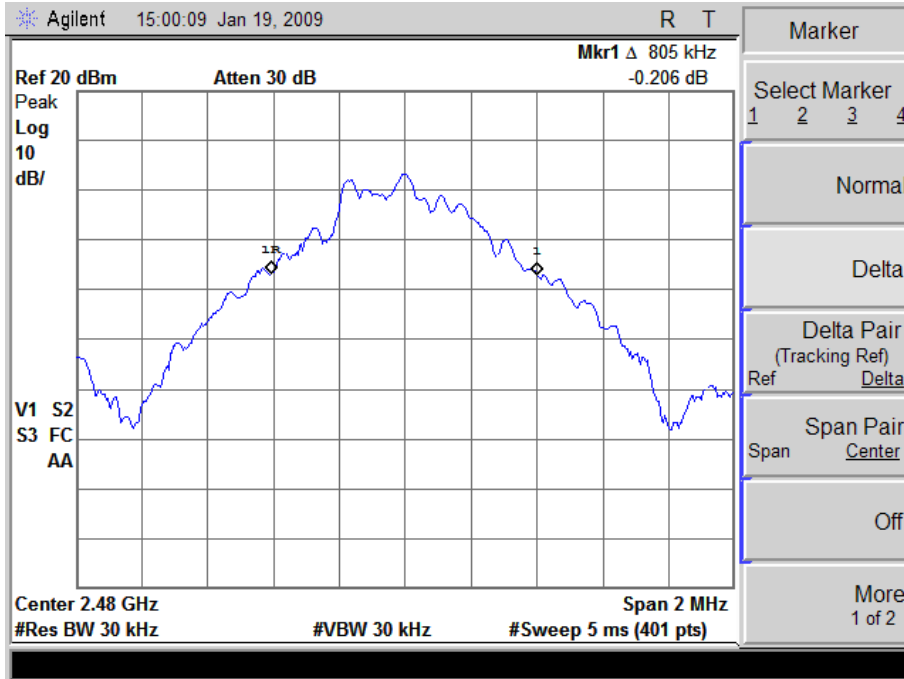


#### Bluetooth 2.0 CH39 (2441MHz)





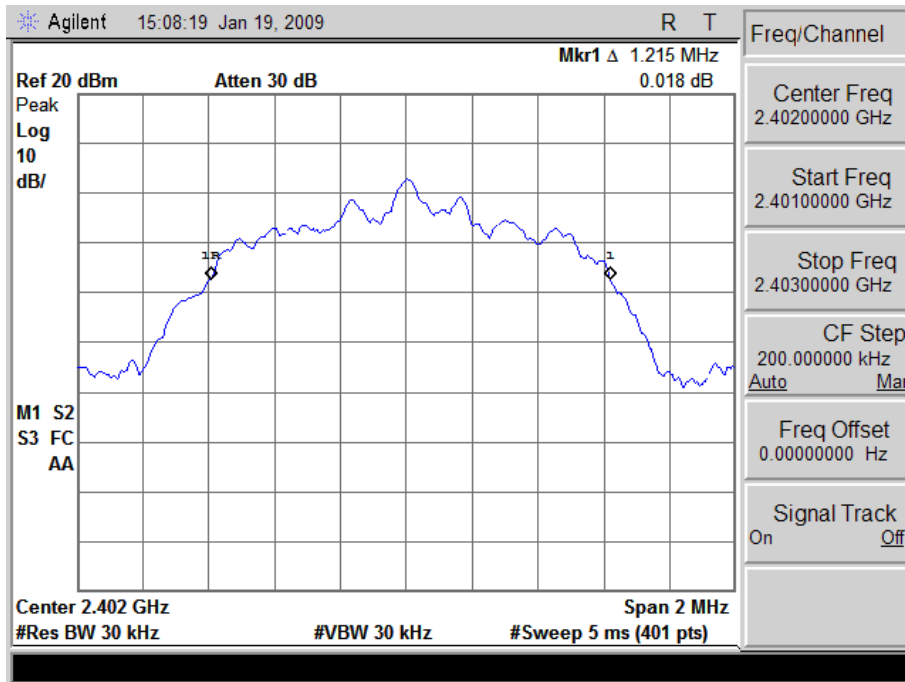
**Bluetooth 2.0 CH78 (2480MHz)**



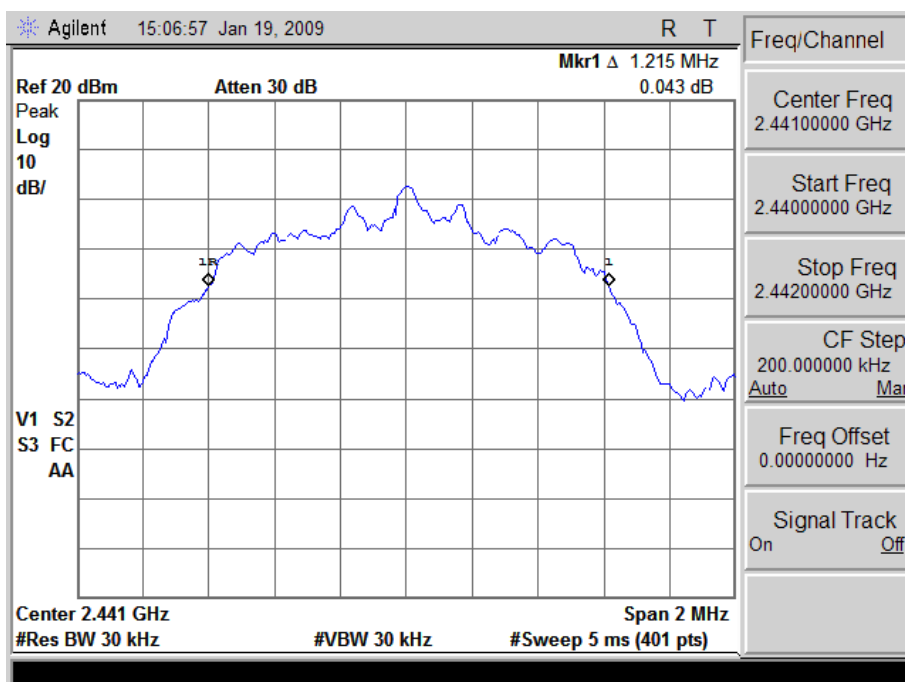


5.5.2 Bluetooth EDR Mode:

Bluetooth EDR CH00 (2402MHz)

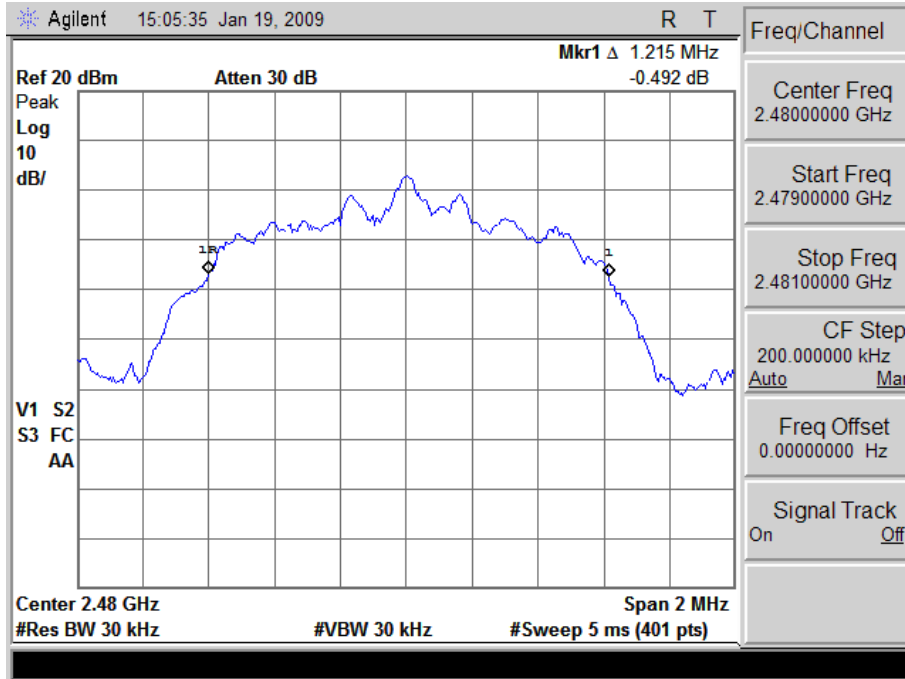


Bluetooth EDR CH39 (2441MHz)





**Bluetooth EDR CH78 (2480MHz)**



## 6. Carrier Frequency Separation Requirements

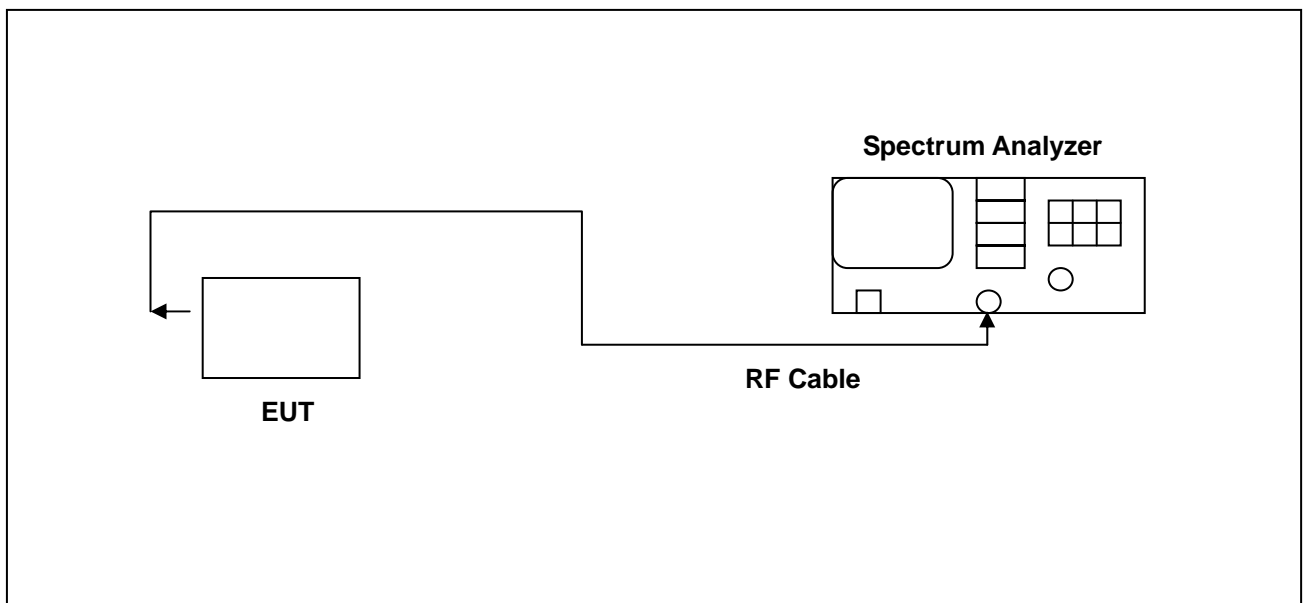
### 6.1 Test Condition & Setup:

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth transmitter of the V6 had its hopping function enabled. The following spectrum analyzer settings were used:

1. Span = wide enough to capture the peaks of two adjacent channels
2. Resolution (or IF) Bandwidth (RBW)  $\geq$  1% of the span
3. Video (or Average) Bandwidth (VBW)  $\geq$  RBW
4. Sweep = auto
5. Detector function = peak
6. Trace = max hold

The trace was allowed to stabilize. The marker-delta function was used to determine the separation between the peaks of the adjacent channels.

### 6.2 Test Instruments Configuration:





### 6.3 Test Equipment List:

Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
Spectrum Analyzer	Agilent	E4445A	MY46181986	May. 07, 2008	May. 07, 2009
Attenuator	RADIALL	R41572000	0603033073	NA	NA

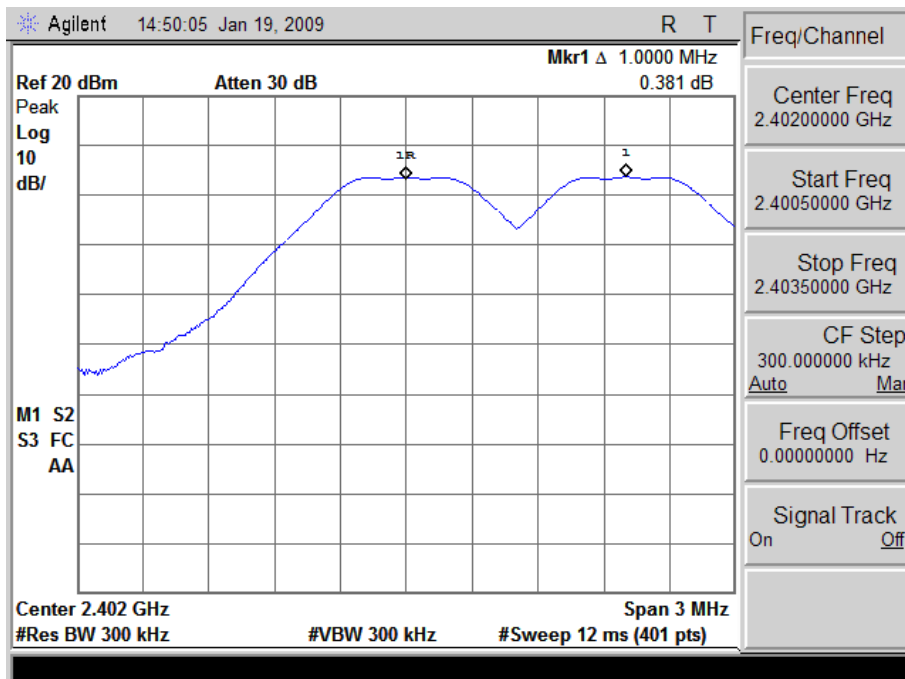
### 6.4 Test Result:

Carrier Frequency Separation Measure:	1 MHz
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### 6.5 Test Graphs

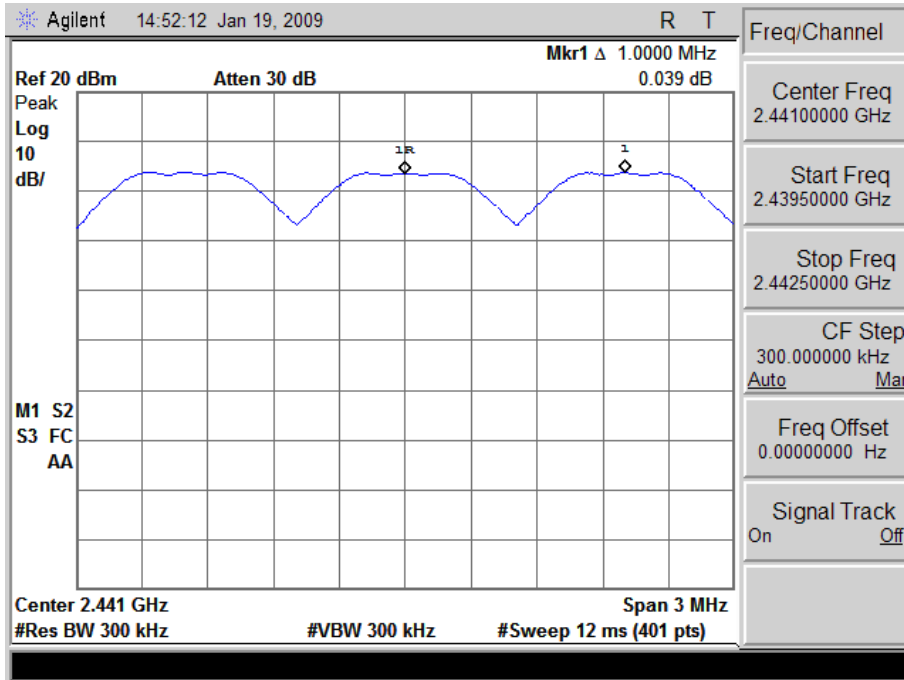
#### 6.5.1 Bluetooth 2.0 Mode:

##### Bluetooth 2.0 CH00 (2412MHz)

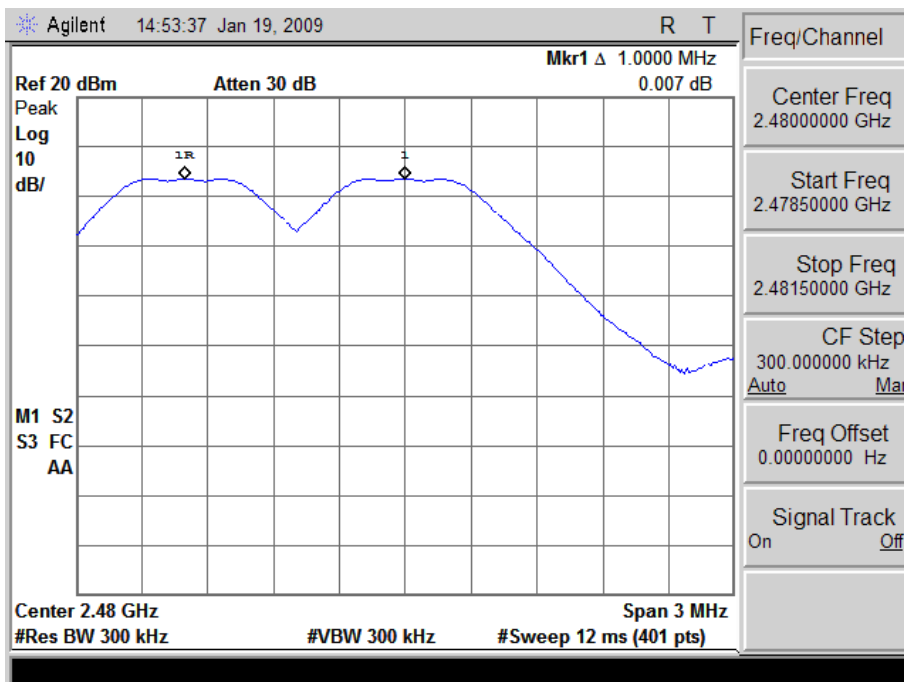




**Bluetooth 2.0 CH39 (2441MHz)**



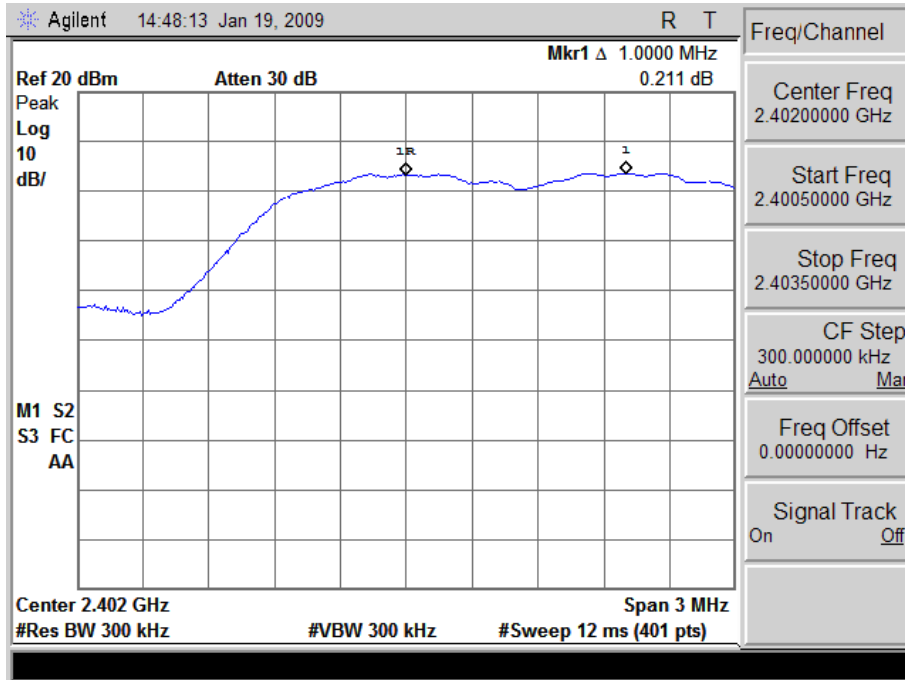
**Bluetooth 2.0 CH78 (2480MHz)**



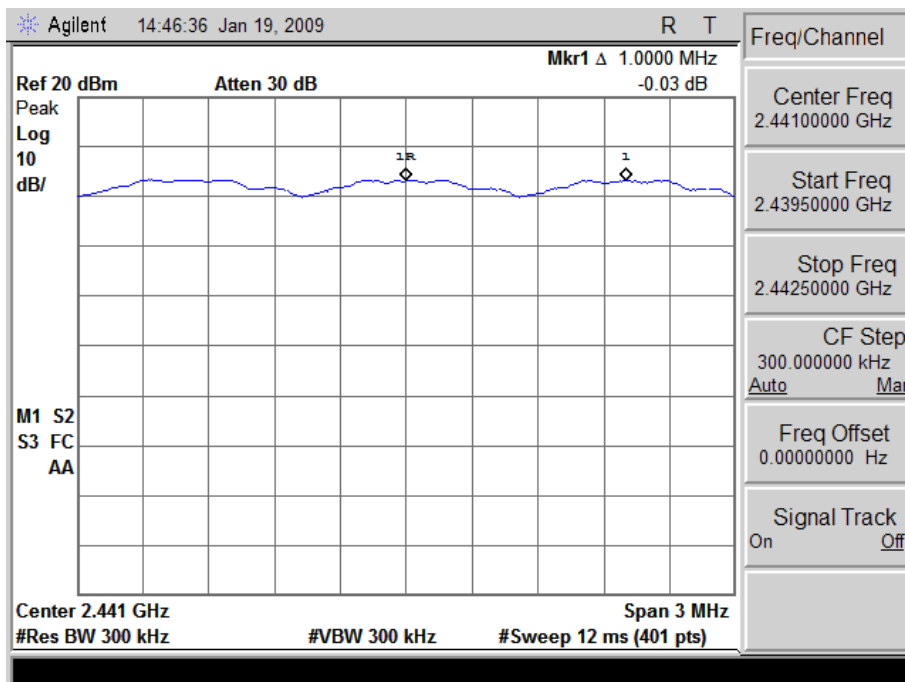


6.5.2 Bluetooth EDR Mode:

Bluetooth EDR CH00 (2412MHz)

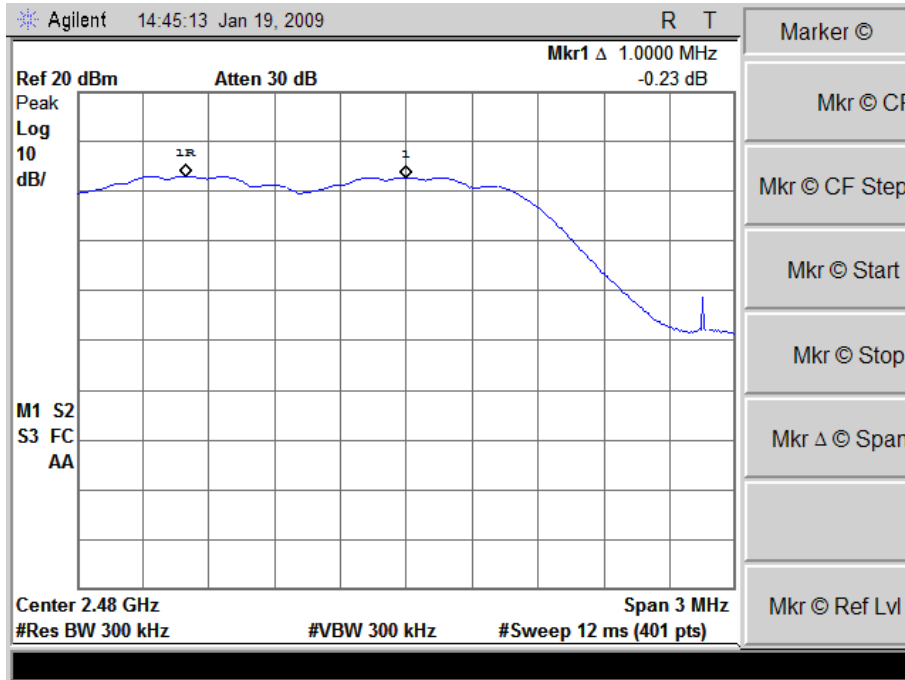


Bluetooth EDR CH39 (2441MHz)





### Bluetooth EDR CH78 (2480MHz)



## 7. Number of Hopping Requirements

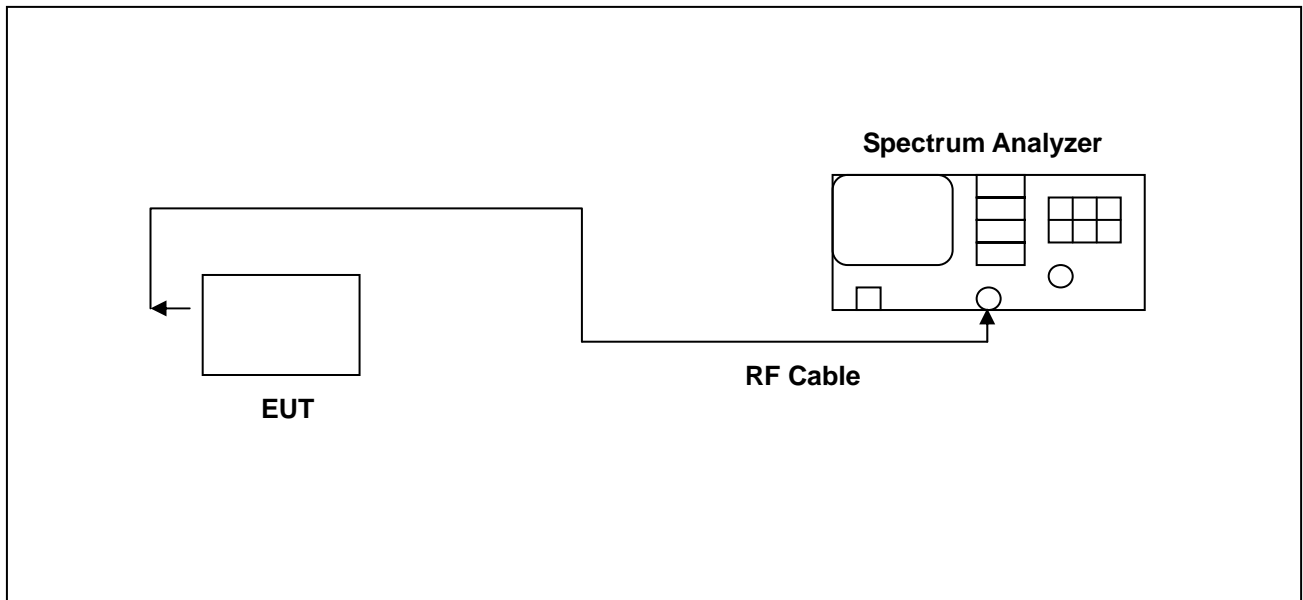
### 7.1 Test Condition & Setup:

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer used the following settings:

1. Span = the frequency band of operation
2. RBW  $\geq$  1% of the span
3. VBW  $\geq$  RBW
4. Sweep = auto
5. Detector function = peak
6. Trace = max hold

The trace was allowed to stabilize.

### 7.2 Test Instruments Configuration:





### 7.3 Test Equipment List:

Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
Spectrum Analyzer	Agilent	E4445A	MY46181986	May. 07, 2008	May. 07, 2009
Attenuator	RADIALL	R41572000	0603033073	NA	NA

### 7.4 Test Result:

Number of Hopping Measure:	79 CH
----------------------------	-------

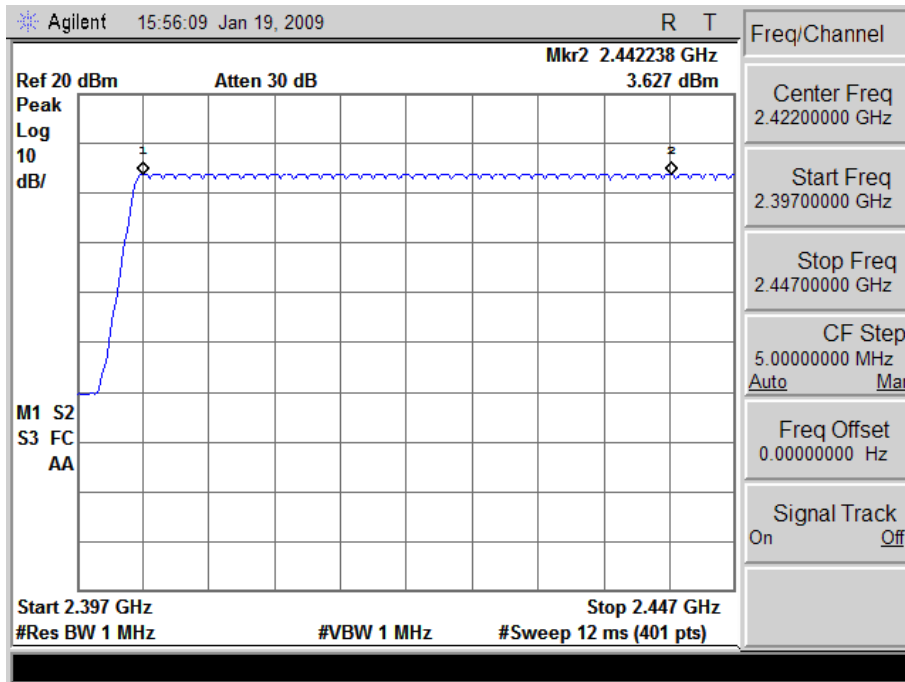
Note: Test Graphs See next page.



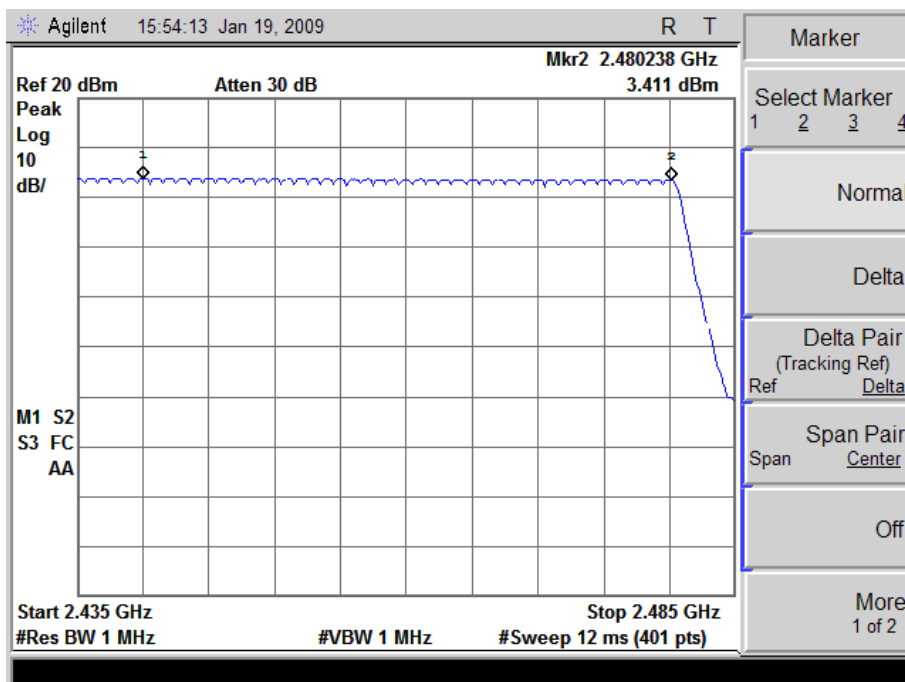
## 7.5 Test Graphs

### 7.5.1 Bluetooth 2.0 Mode:

#### Bluetooth 2.0 Mode CH0~CH39



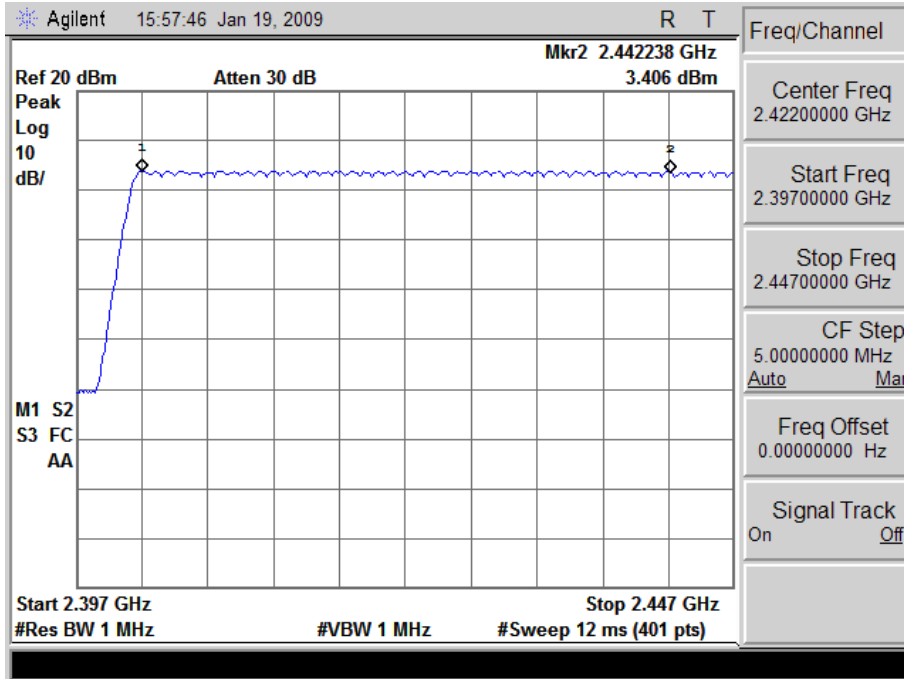
#### Bluetooth 2.0 Mode CH40~CH78



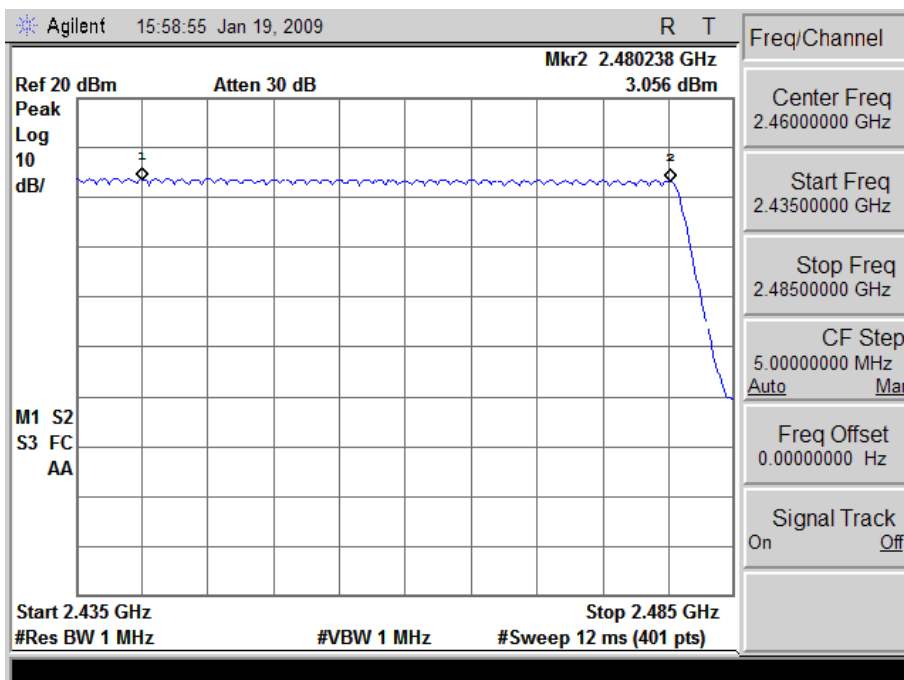


7.5.2 Bluetooth EDR Mode:

Bluetooth EDR Mode CH0~CH39



Bluetooth EDR Mode CH40~CH78



## 8. Time of Occupancy (Dwell Time) Requirements

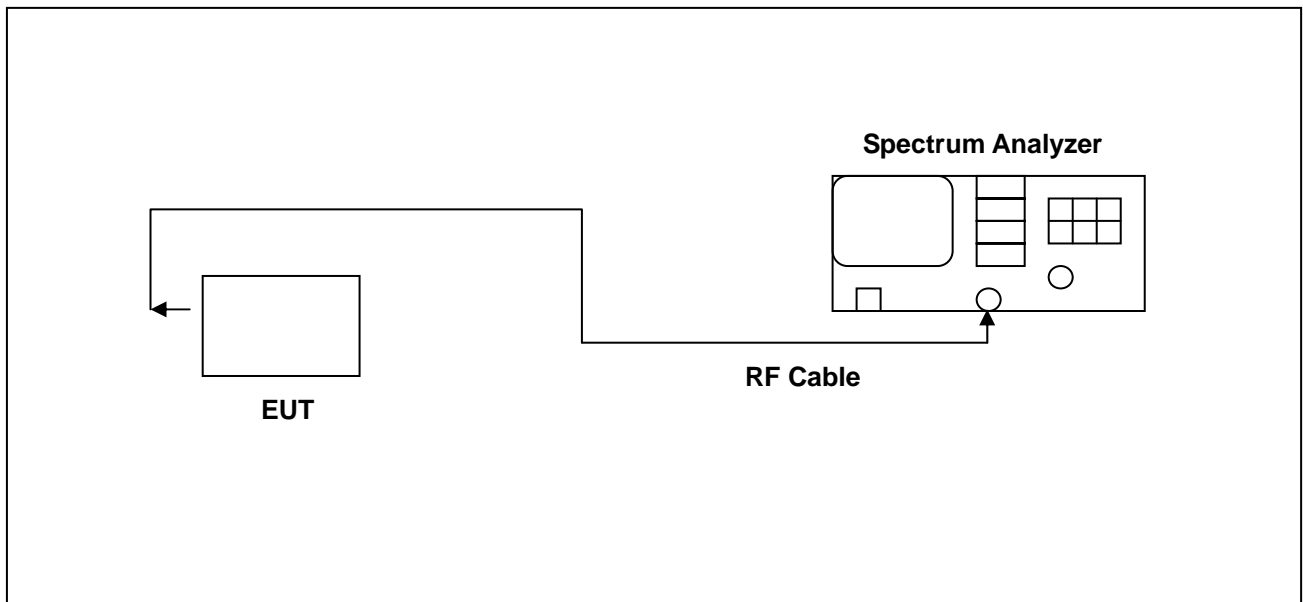
### 8.1 Test Condition & Setup:

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth hopping function of the EUT was enabled. The following spectrum analyzer settings were used:

1. Span = zero span, centered on a hopping channel
2. RBW = 1 MHz
3. VBW  $\geq$  RBW
4. Sweep = as necessary to capture the entire dwell time per hopping channel
5. Detector function = peak
6. Trace = max hold

The marker-delta function was used to determine the dwell time.

### 8.2 Test Instruments Configuration:





### 8.3 Test Equipment List:

Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
Spectrum Analyzer	Agilent	E4445A	MY46181986	May. 07, 2008	May. 07, 2009
Attenuator	RADIALL	R41572000	0603033073	NA	NA



## 8.4 Test Result

### 8.4.1 Bluetooth 2.0 Mode:

#### Bluetooth 2.0 DH1 Mode

Cycle Calculate	$79\text{CH} * 0.4 = 31.6 \text{ (sec)}$
The EUT Hopping Number per Sec	1600 times/sec
Each Channel Dwell Times per Sec	$800/79\text{CH} = 10.13(\text{times/sec})$
Each Channel Dwell Times (1)	<b>0.400</b> ms (sec)
Each Channel Dwell Times on Cycle(2)	$31.6 * 10.13 = 320.108(\text{times})$
Dwell Times on Cycle (1) * (2)	<b>128.0432</b> ms (sec)
LIMIT(msec)	$\leq 400$

#### Bluetooth 2.0 DH3 Mode

Cycle Calculate	$79\text{CH} * 0.4 = 31.6 \text{ (sec)}$
The EUT Hopping Number per Sec	1600 times/sec
Each Channel Dwell Times per Sec	$400/79\text{CH}=5.1(\text{times/sec})$
Each Channel Dwell Times (1)	<b>1.620</b> ms (sec)
Each Channel Dwell Times on Cycle(2)	$31.6*5.1=161.16(\text{times})$
Dwell Times on Cycle (1) * (2)	<b>261.0792</b> ms (sec)
LIMIT(msec)	$\leq 400$

#### Bluetooth 2.0 DH5 Mode

Cycle Calculate	$79\text{CH} * 0.4 = 31.6 \text{ (sec)}$
The EUT Hopping Number per Sec	1600 times/sec
Each Channel Dwell Times per Sec	$266.7/79\text{CH}=3.37 \text{ (times/sec)}$
Each Channel Dwell Times (1)	<b>2.880</b> ms (sec)
Each Channel Dwell Times on Cycle(2)	$31.6*3.37=106.492 \text{ (times)}$
Dwell Times on Cycle (1) * (2)	<b>306.69696</b> ms (sec)
LIMIT(msec)	$\leq 400$

Note: RB=1MHz; VB=1MHz; SPAN=0MHz; Sweep Time=20msec



#### 8.4.2 Bluetooth EDR Mode:

##### Bluetooth EDR 3DH1 Mode

Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
The EUT Hopping Number per Sec	1600 times/sec
Each Channel Dwell Times per Sec	$800/79CH = 10.13(\text{times/sec})$
Each Channel Dwell Times (1)	<b>0.410</b> ms (sec)
Each Channel Dwell Times on Cycle(2)	$31.6 * 10.13 = 320.108(\text{times})$
Dwell Times on Cycle (1) * (2)	<b>131.24428</b> ms (sec)
LIMIT(msec)	$\leq 400$

##### Bluetooth EDR 3DH3 Mode

Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
The EUT Hopping Number per Sec	1600 times/sec
Each Channel Dwell Times per Sec	$400/79CH=5.1(\text{times/sec})$
Each Channel Dwell Times (1)	<b>1.66</b> ms (sec)
Each Channel Dwell Times on Cycle(2)	$31.6*5.1=161.16(\text{times})$
Dwell Times on Cycle (1) * (2)	<b>267.5256</b> ms (sec)
LIMIT(msec)	$\leq 400$

##### Bluetooth EDR 3DH5 Mode

Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
The EUT Hopping Number per Sec	1600 times/sec
Each Channel Dwell Times per Sec	$266.7/79CH=3.37 \text{ (times/sec)}$
Each Channel Dwell Times (1)	<b>1.862</b> ms (sec)
Each Channel Dwell Times on Cycle(2)	$31.6*3.37=106.492 \text{ (times)}$
Dwell Times on Cycle (1) * (2)	<b>198.288104</b> ms (sec)
LIMIT(msec)	$\leq 400$

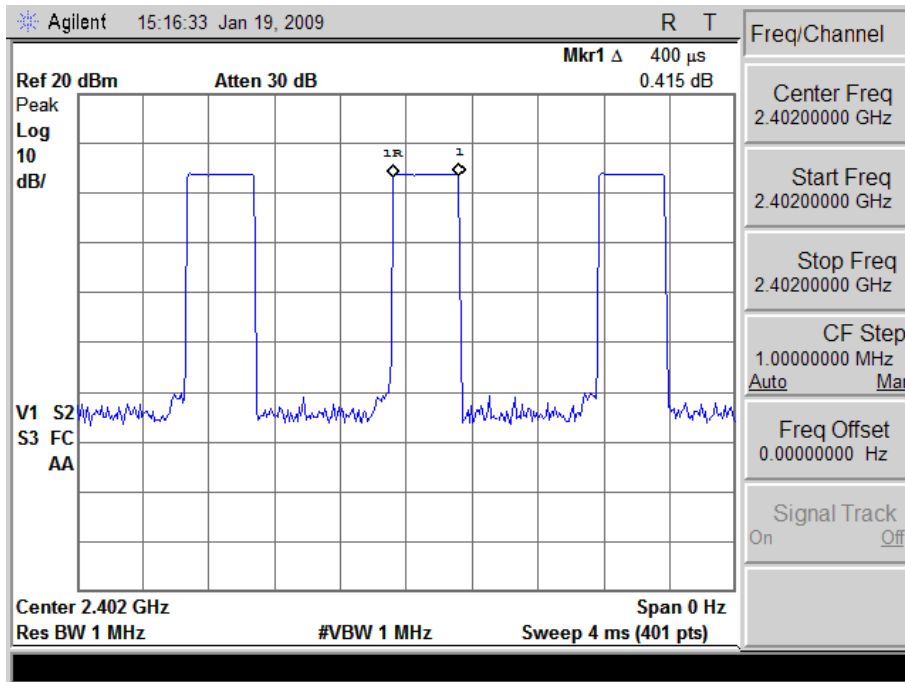
Note: RB=1MHz; VB=1MHz; SPAN=0MHz; Sweep Time=20msec



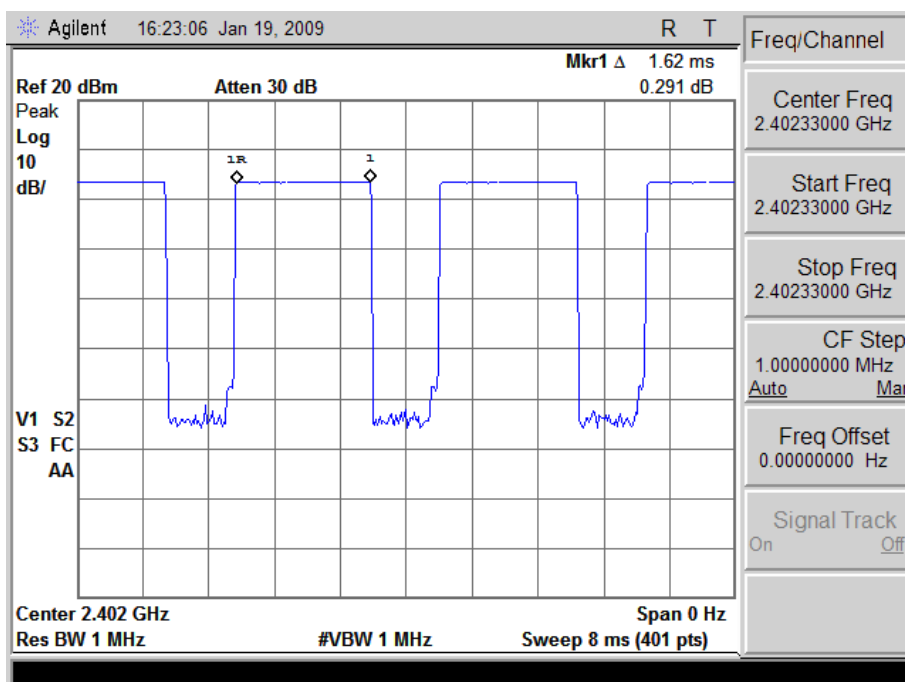
## 8.5 Test Graphs

### 8.5.1 Bluetooth 2.0 Mode:

#### Bluetooth 2.0 DH1

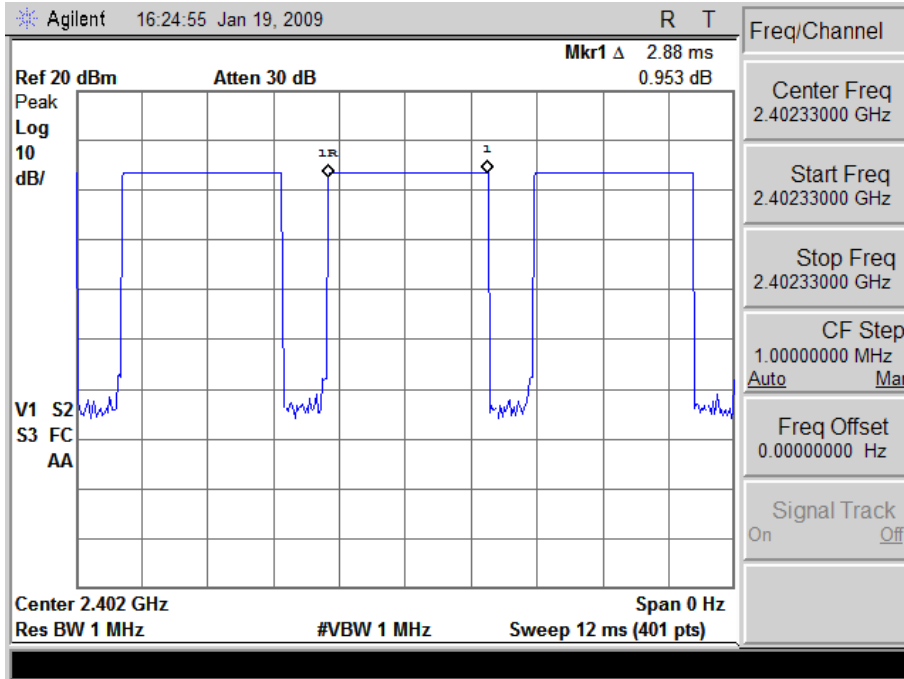


#### Bluetooth 2.0 DH3





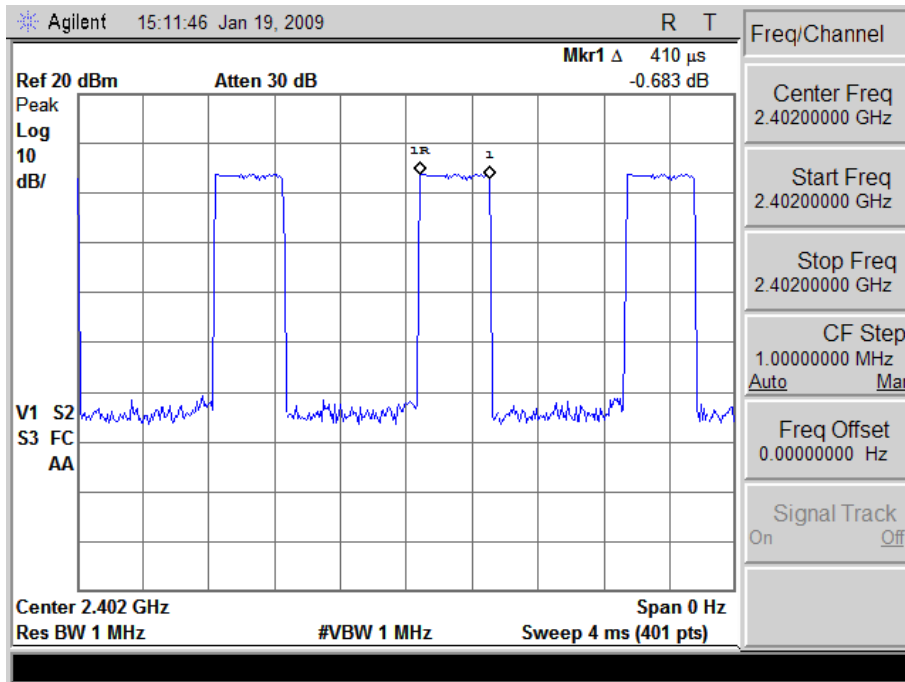
### Bluetooth 2.0 DH5



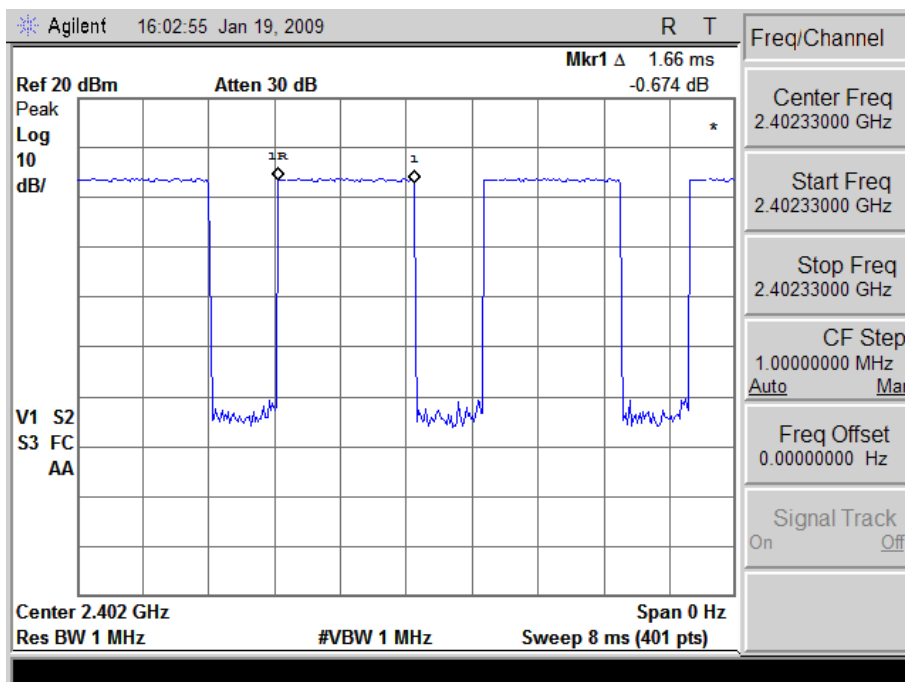


### 8.5.2 Bluetooth EDR Mode:

#### Bluetooth EDR 3DH1

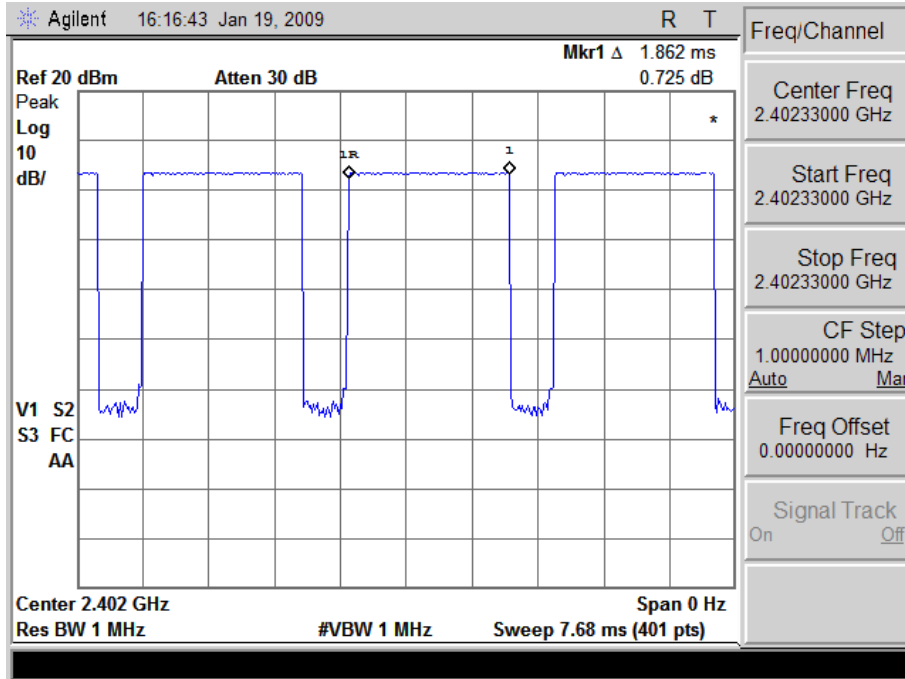


#### Bluetooth EDR 3DH3





**Bluetooth EDR DH5**



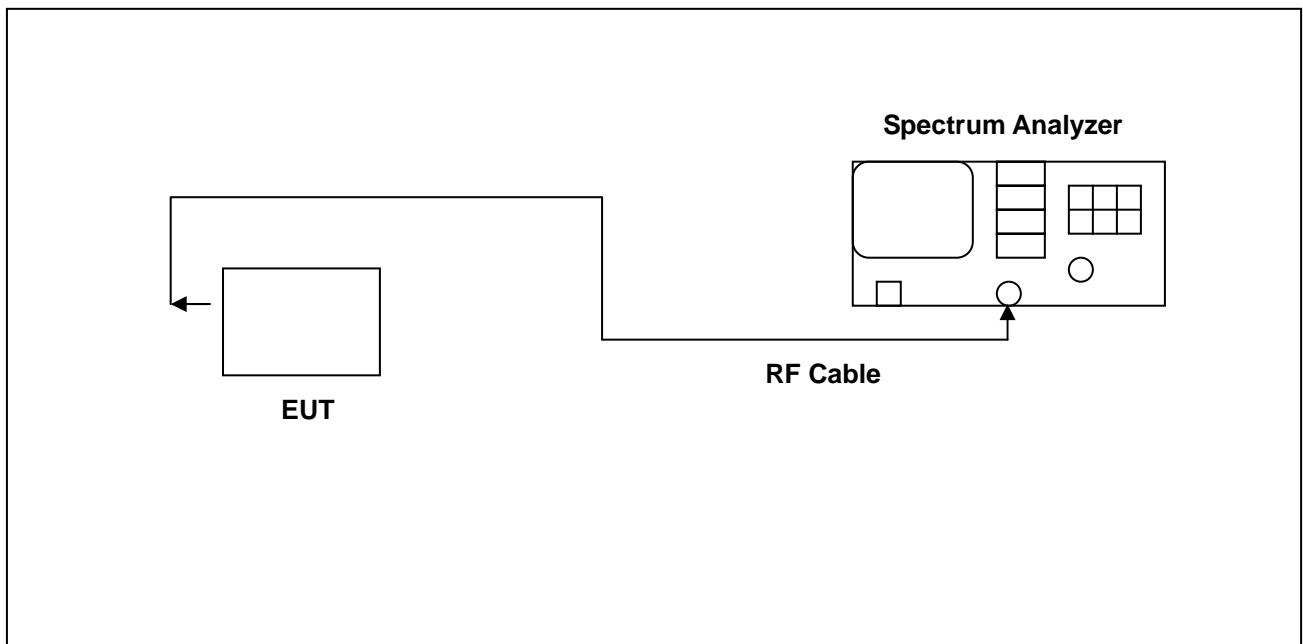
## 9. Out of Band Conducted Emissions Requirements

### 9.1 Test Condition & Setup:

In any 100 kHz bandwidth outside the EUT pass band, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 20 dB below that of the maximum in-band 100 kHz emission, antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the pass band. The test was performed at 3 channels (Channel 1, 6, 11)

### 9.2 Test Instruments Configuration:



### 9.3 Test Equipment List:

Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
Spectrum Analyzer	Agilent	E4445A	MY46181986	May. 07, 2008	May. 07, 2009



## 9.4 Test Result:

Refer to attached data sheets. Data shows out of band emissions are suppressed well below the -20 dBc minimum required by the Rules.

## 9.5 Test Graphs

### 9.5.1 Bluetooth 2.0 Mode:

Applicant : Motorola Inc  
Model No : H17  
EUT : Universal Bluetooth Headset  
Test Mode : Bluetooth 2.0  
Test Date : 01/19/2009

Please refer to next pager of detail testing data.

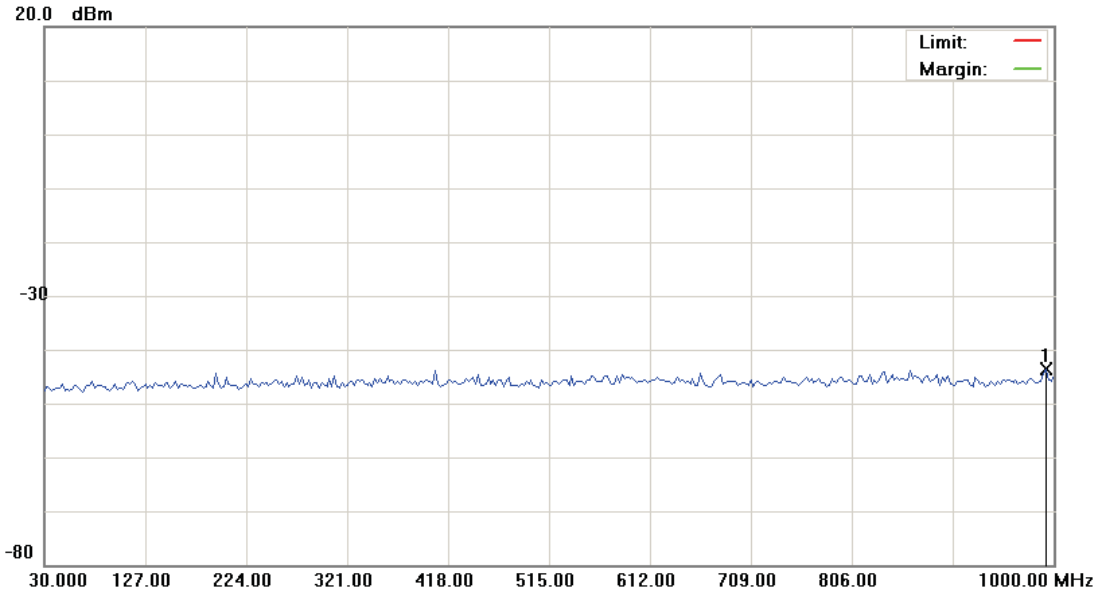


File :Vesurlus(2402)

Data :#1

Date: 2009/01/19

Time: 下午 05:39:24



Site site #1

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N: 09-0007-E

Mode: BT+EDR

Note: 2402

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree		
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	992.7250	-43.72	0.00	-43.72			peak			

\*:Maximum data x:Over limit !:over margin

●Reference Only



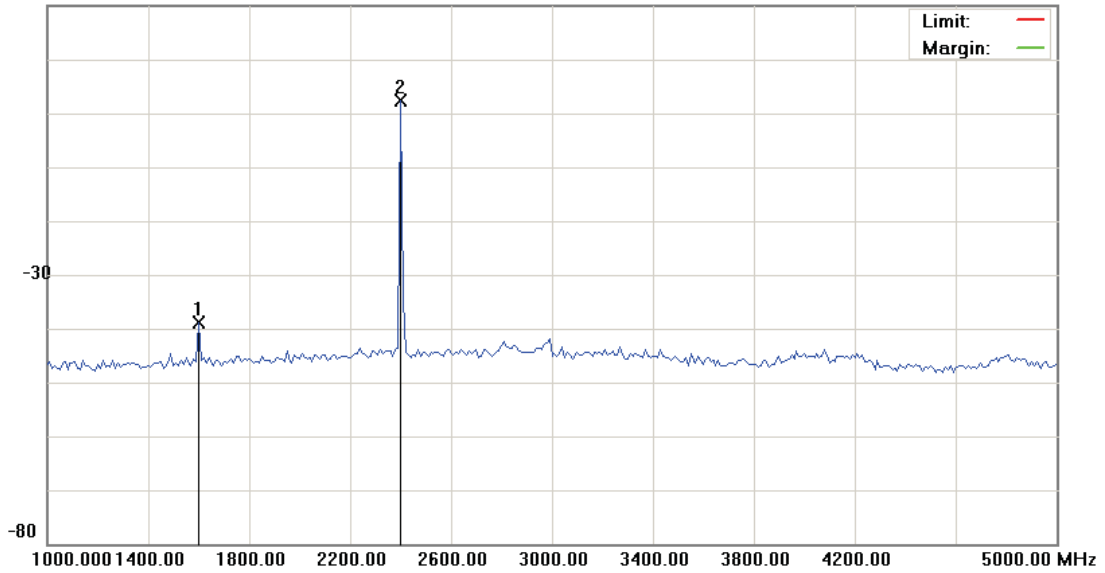
File :Vesurlus(2402)

Data :#2

Date: 2009/01/19

Time: 下午 05:39:36

20.0 dBm



Site site #1

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N: 09-0007-E

Mode: BT+EDR

Note: 2402

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1600.000	-38.99	0.00	-38.99					peak
2	*	2400.000	2.42	0.00	2.42					peak

\*:Maximum data x:Over limit !:over margin

●Reference Only

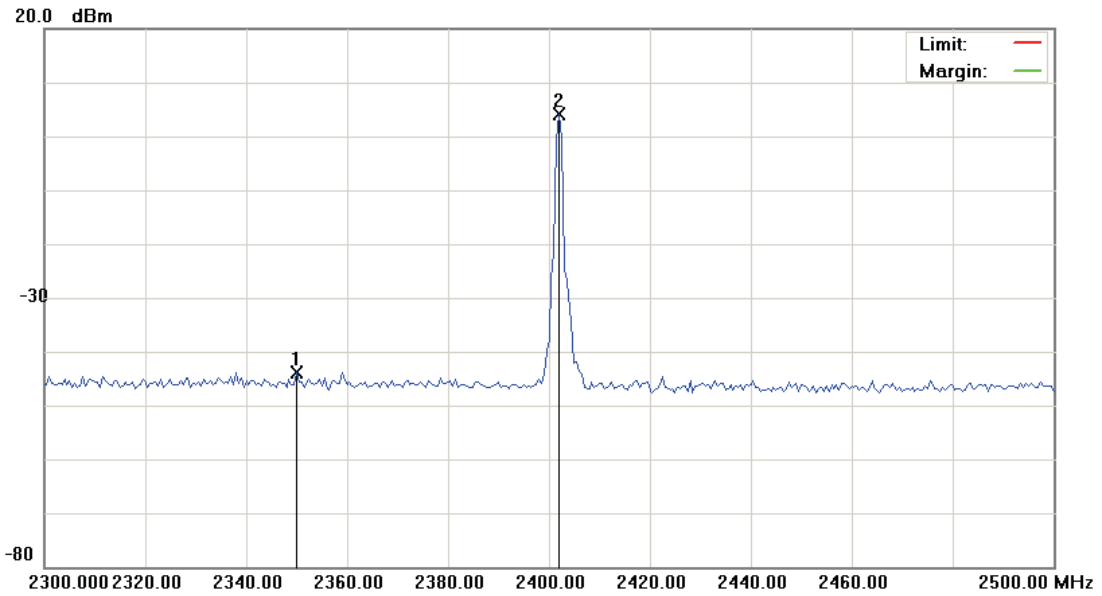


File :Vesurlus(2402)

Data :#3

Date: 2009/01/19

Time: 下午 05:39:49



Site site #1  
 Limit:  
 EUT:  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2402

Polarization:  
 Power: AC 110V/60Hz  
 Distance:

Temperature: 22 °C  
 Humidity: 60 %

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2350.000	-43.86	0.00	-43.86					peak
2	*	2402.000	4.10	0.00	4.10					peak

\*:Maximum data x:Over limit !:over margin

●Reference Only

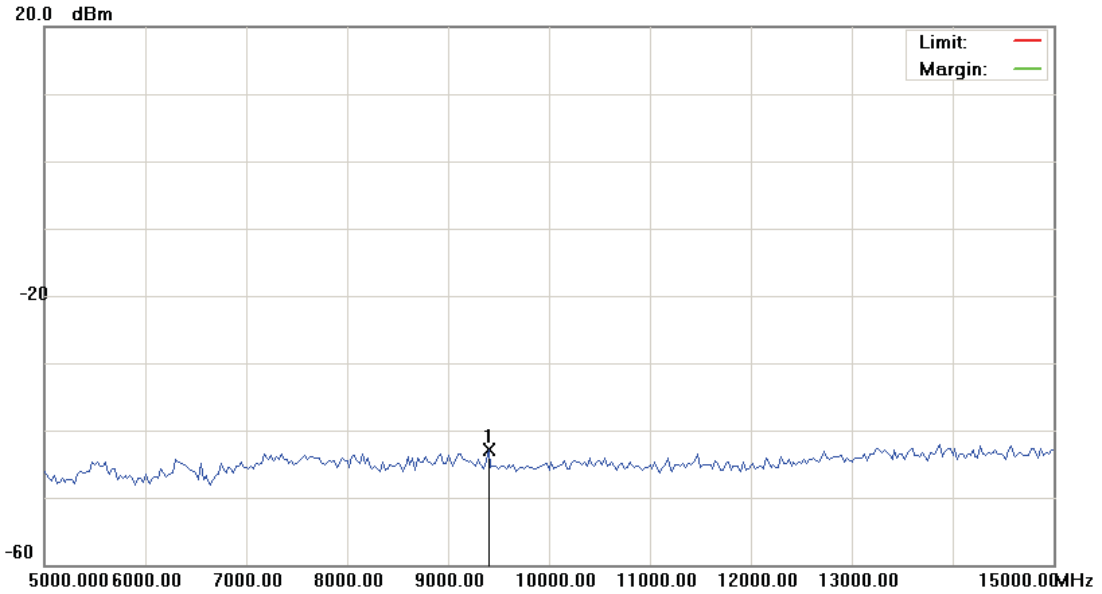


File :Vesurlus(2402)

Data :#6

Date: 2009/01/19

Time: 下午 05:40:01



Site site #1	Polarization:	Temperature: 26 °C
Limit:	Power: AC 110V/60Hz	Humidity: 60 %
EUT:	Distance:	
M/N: 09-0007-E		
Mode: BT+EDR		
Note: 2402		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	cm	degree
1	*	9400.000	-42.83	0.00	-42.83		peak		

\*:Maximum data x:Over limit !:over margin

●Reference Only



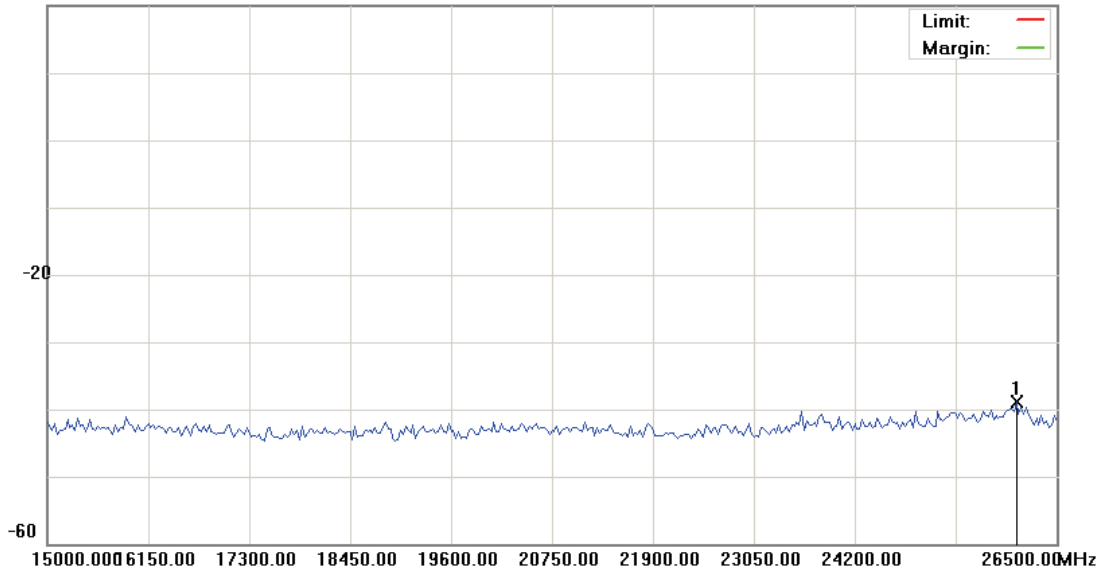
File :Vesurlus(2402)

Data :#7

Date: 2009/01/19

Time: 下午 05:40:14

20.0 dBm



Site site #1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N: 09-0007-E

Mode: BT+EDR

Note: 2402

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree	Detector	Comment
1	*	26040.00	-38.89	0.00	-38.89						peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



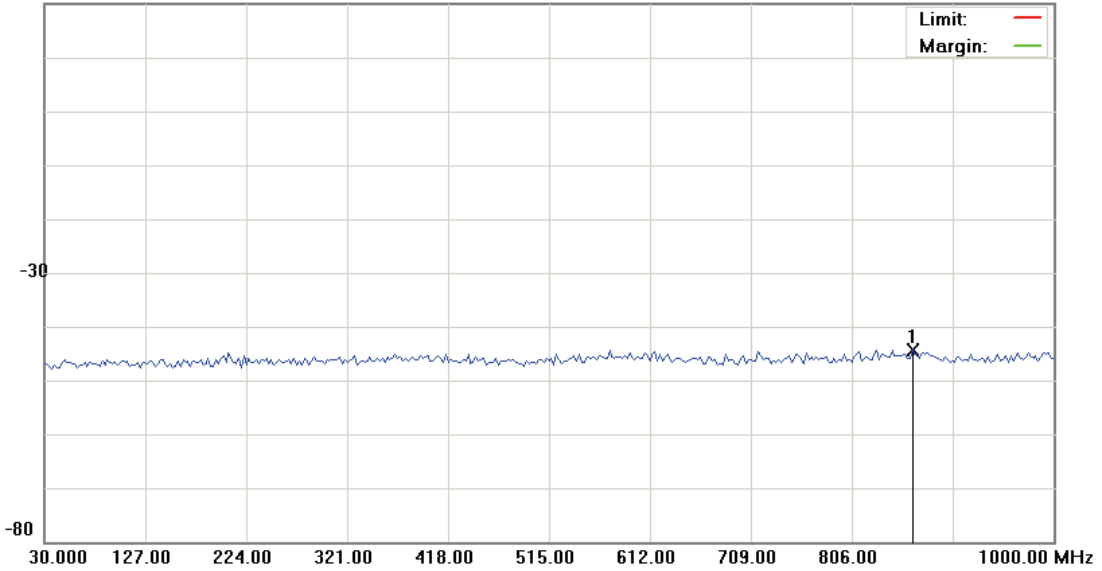
File :Vesurlus(2441)

Data :#1

Date: 2009/01/19

Time: 下午 05:41:34

20.0 dBm



Site site #1

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N:

Mode: BT+EDR

Note: 2441

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree		
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	864.2000	-44.25	0.00	-44.25			peak			

\*:Maximum data x:Over limit !:over margin

●Reference Only



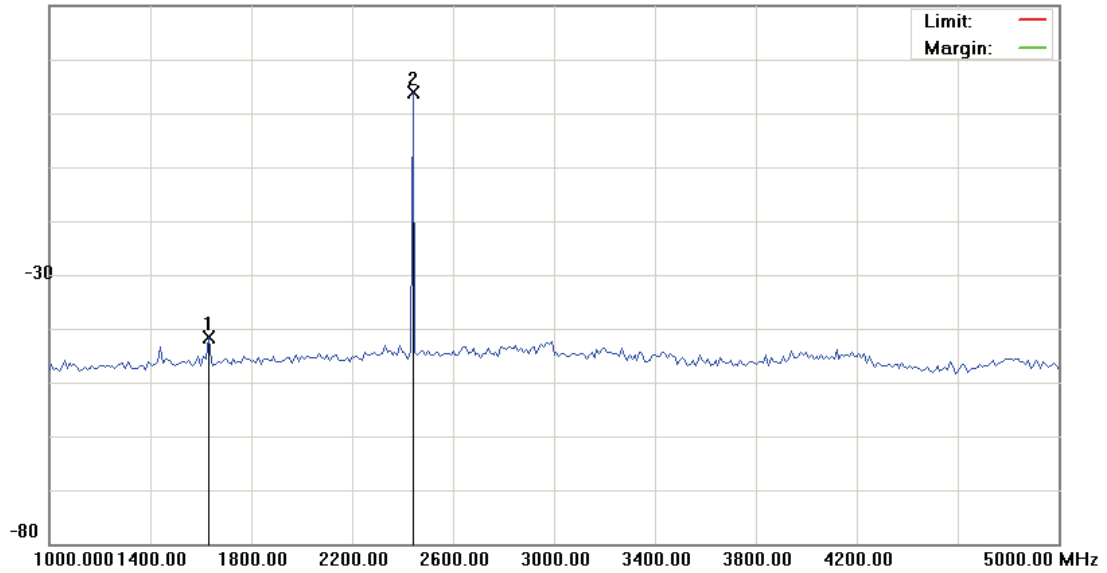
File :Vesurlus(2441)

Data :#2

Date: 2009/01/19

Time: 下午 05:41:47

20.0 dBm



Site site #1

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N:

Mode: BT+EDR

Note: 2441

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1630.000	-41.62	0.00	-41.62					peak
2	*	2440.000	3.83	0.00	3.83					peak

\*:Maximum data x:Over limit !:over margin

●Reference Only

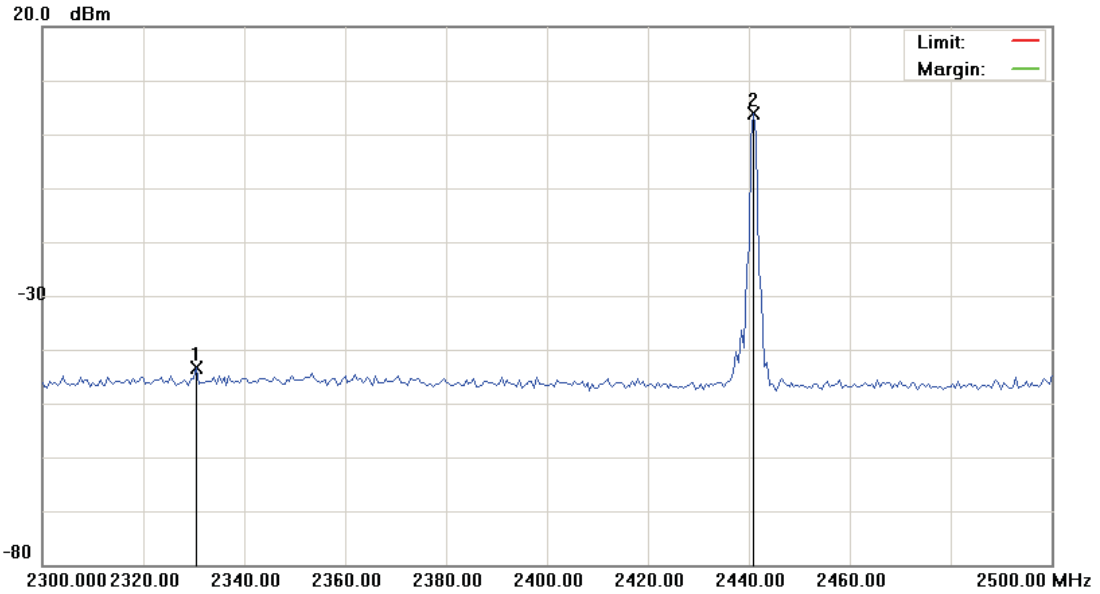


File :Vesurlus(2441)

Data :#3

Date: 2009/01/19

Time: 下午 05:41:59



Site site #1  
 Limit:  
 EUT:  
 M/N:  
 Mode: BT+EDR  
 Note: 2441

Polarization:  
 Power: AC 110V/60Hz  
 Distance:

Temperature: 22 °C  
 Humidity: 60 %

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree	Detector	Comment
1		2330.500	-43.39	0.00	-43.39					peak	
2	*	2441.000	3.87	0.00	3.87					peak	

\*:Maximum data x:Over limit !:over margin

●Reference Only



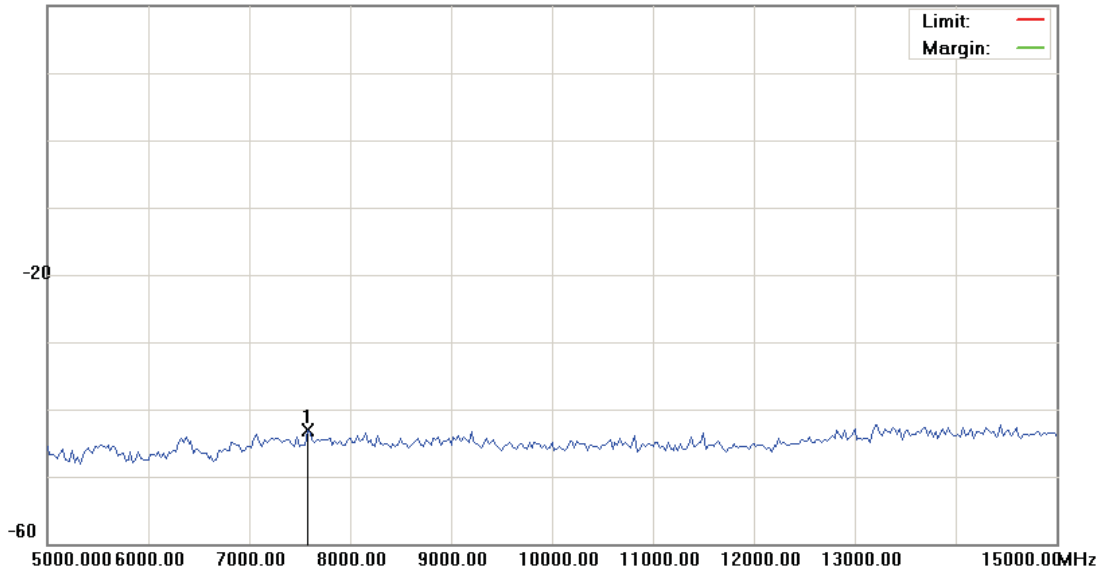
File :Vesurlus(2441)

Data :#6

Date: 2009/01/19

Time: 下午 05:42:12

20.0 dBm



Site site #1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N:

Mode: BT+EDR

Note: 2441

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	Detector	cm	degree	Comment
		MHz	dBm	dB	dBm	dBm	dB						
1	*	7575.000	-43.03	0.00	-43.03								peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



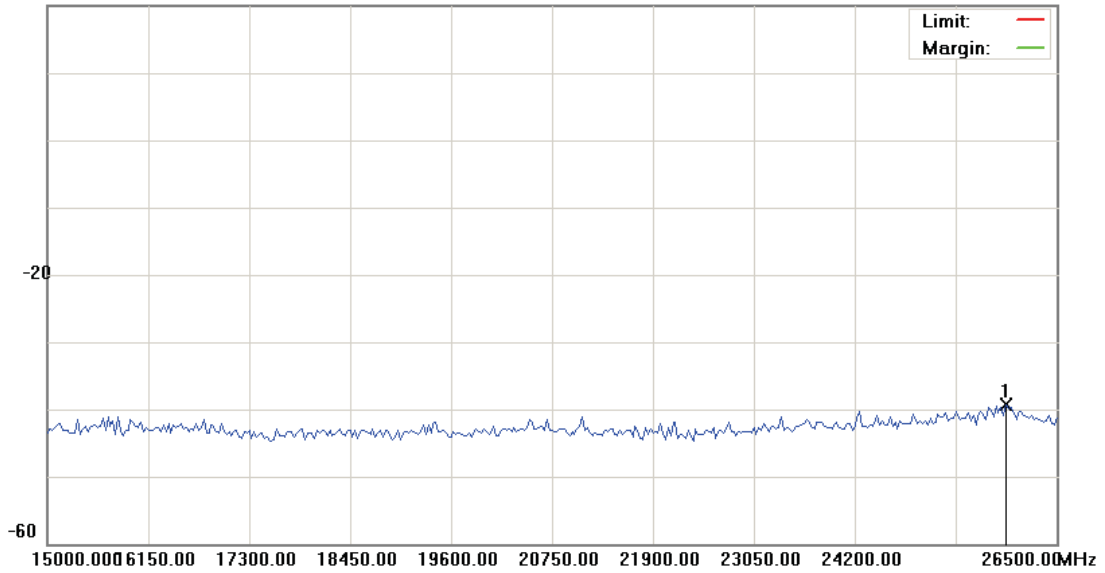
File :Vesurlus(2441)

Data :#7

Date: 2009/01/19

Time: 下午 05:42:25

20.0 dBm



Site site #1	Polarization:	Temperature: 26 °C
Limit:	Power: AC 110V/60Hz	Humidity: 60 %
EUT:	Distance:	
M/N:		
Mode: BT+EDR		
Note: 2441		

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1	*	25925.00	-39.29	0.00	-39.29					peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



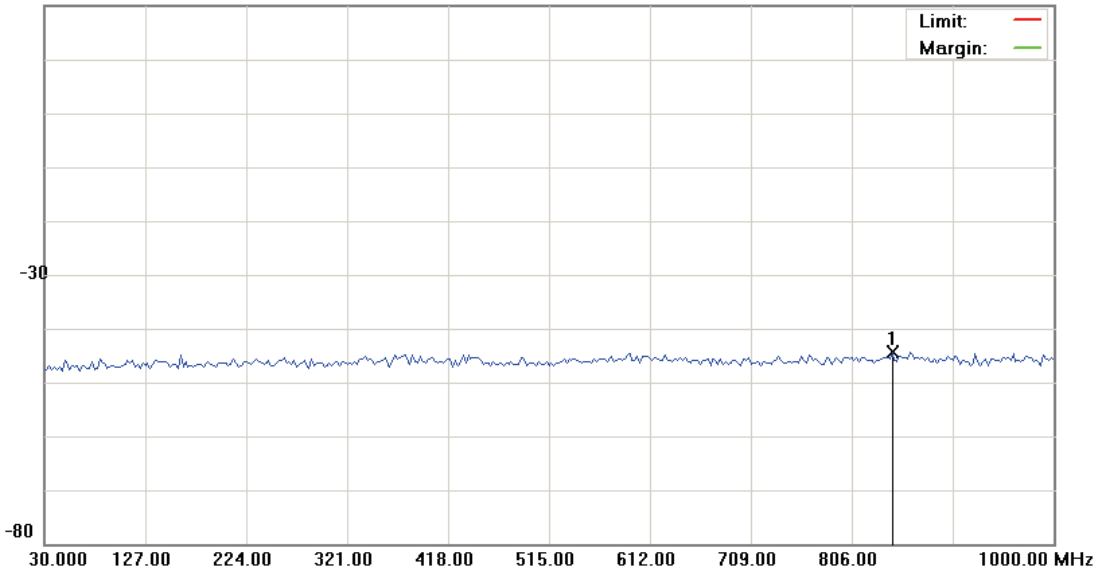
File :Vesurlus(2480)

Data :#1

Date: 2009/01/19

Time: 下午 05:43:02

20.0 dBm



Site site #1

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N: 09-0007-E

Mode: BT+EDR

Note: 2480

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	844.8000	-44.27	0.00	-44.27					peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



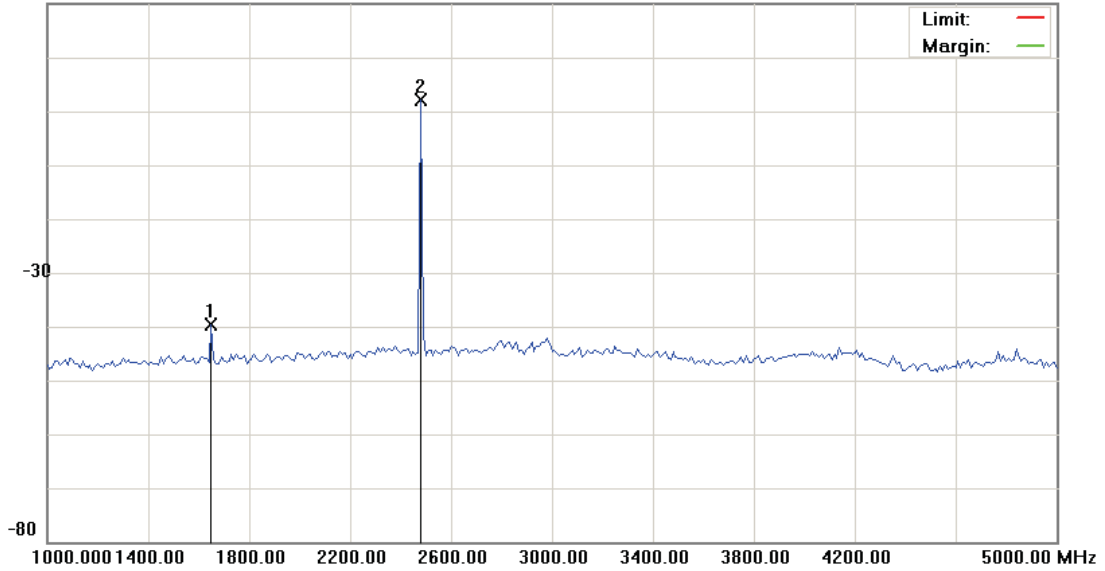
File :Vesurlus(2480)

Data :#2

Date: 2009/01/19

Time: 下午 05:43:15

20.0 dBm



Site site #1

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N: 09-0007-E

Mode: BT+EDR

Note: 2480

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1650.000	-39.58	0.00	-39.58					peak
2	*	2480.000	2.22	0.00	2.22					peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



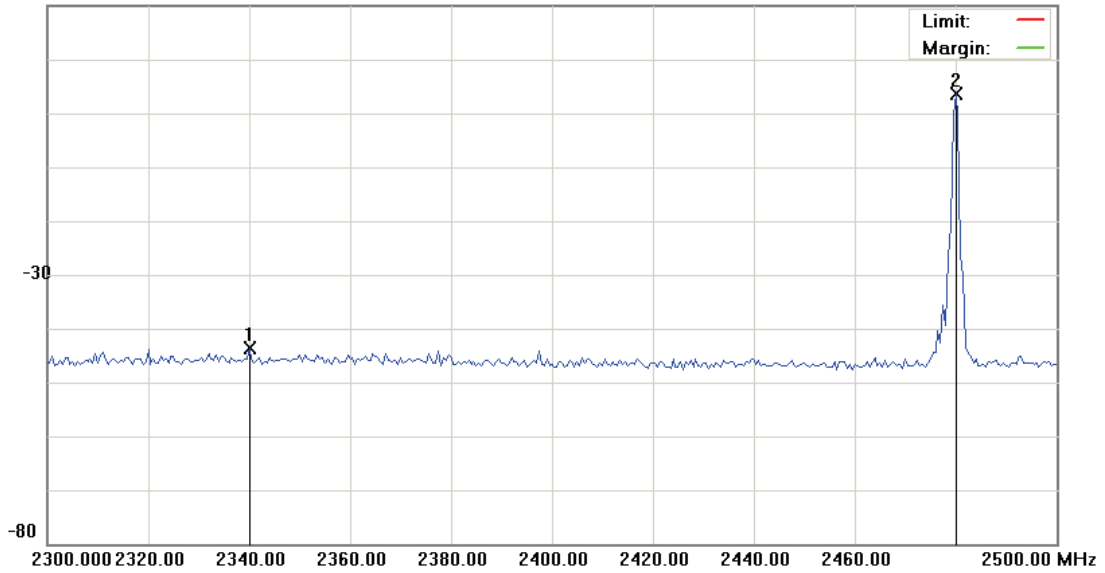
File :Vesurlus(2480)

Data :#3

Date: 2009/01/19

Time: 下午 05:43:27

20.0 dBm



Site site #1

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N: 09-0007-E

Mode: BT+EDR

Note: 2480

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2340.000	-43.69	0.00	-43.69					peak
2	*	2480.000	3.54	0.00	3.54					peak

\*:Maximum data x:Over limit !:over margin

●Reference Only

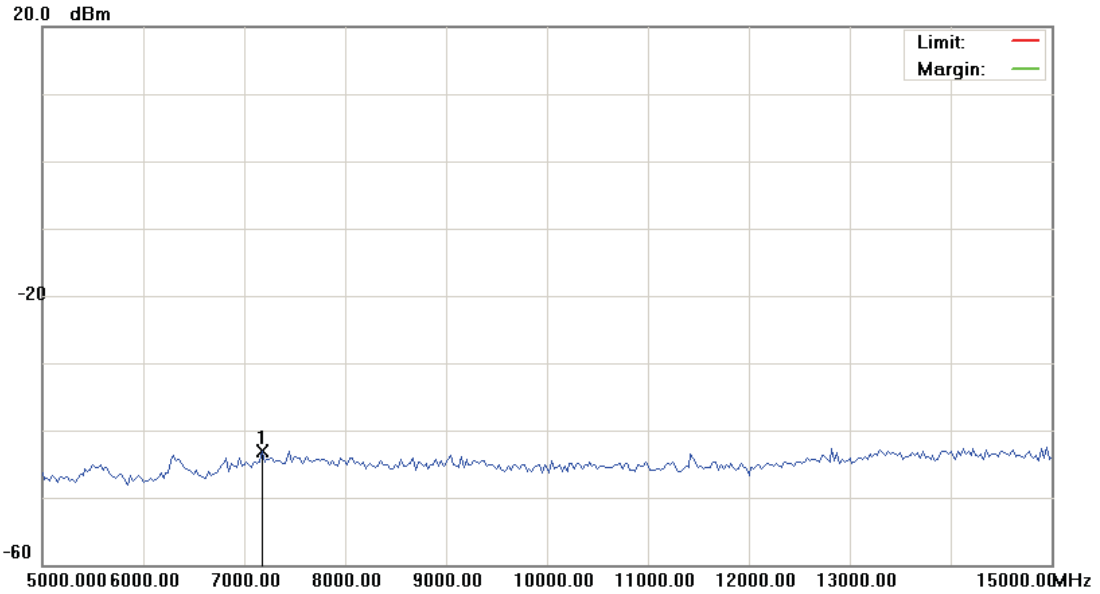


File :Vesurlus(2480)

Data :#6

Date: 2009/01/19

Time: 下午 05:43:40



Site site #1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N: 09-0007-E

Mode: BT+EDR

Note: 2480

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	7175.000	-43.05	0.00	-43.05					peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



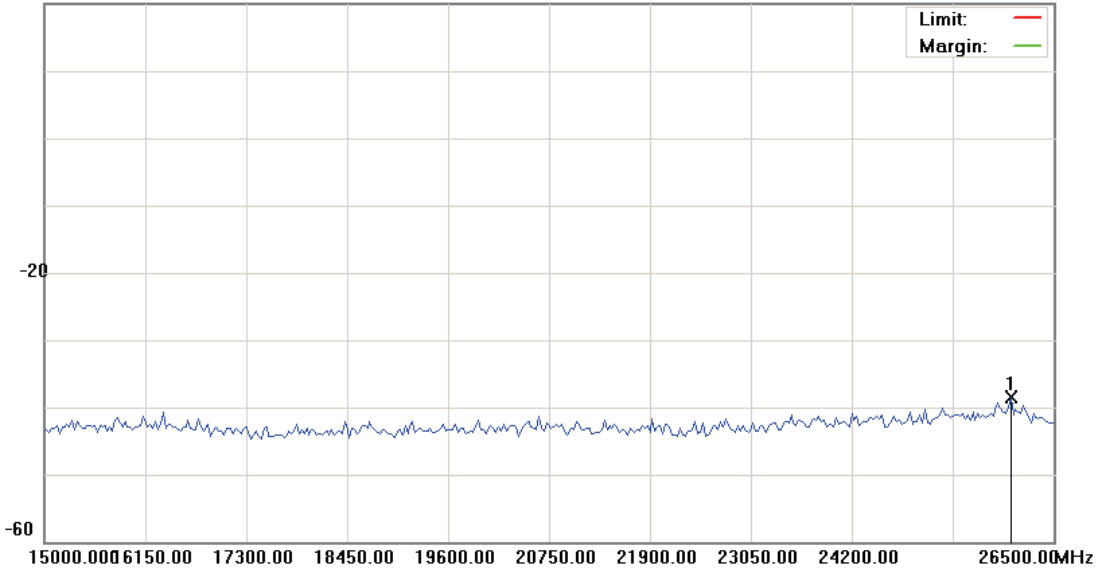
File :Vesurlus(2480)

Data :#7

Date: 2009/01/19

Time: 下午 05:43:53

20.0 dBm



Site site #1	Polarization:	Temperature: 26 °C
Limit:	Power: AC 110V/60Hz	Humidity: 60 %
EUT:	Distance:	
M/N: 09-0007-E		
Mode: BT+EDR		
Note: 2480		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	cm	degree
1	*	26011.25	-38.55	0.00	-38.55		peak		

\*:Maximum data x:Over limit !:over margin

●Reference Only



### **9.5.2 Bluetooth EDR Mode:**

Applicant : Motorola Inc  
Model No : H17  
EUT : Universal Bluetooth Headset  
Test Mode : Bluetooth EDR  
Test Date : 01/19/2009

Please refer to next pager of detail testing data.

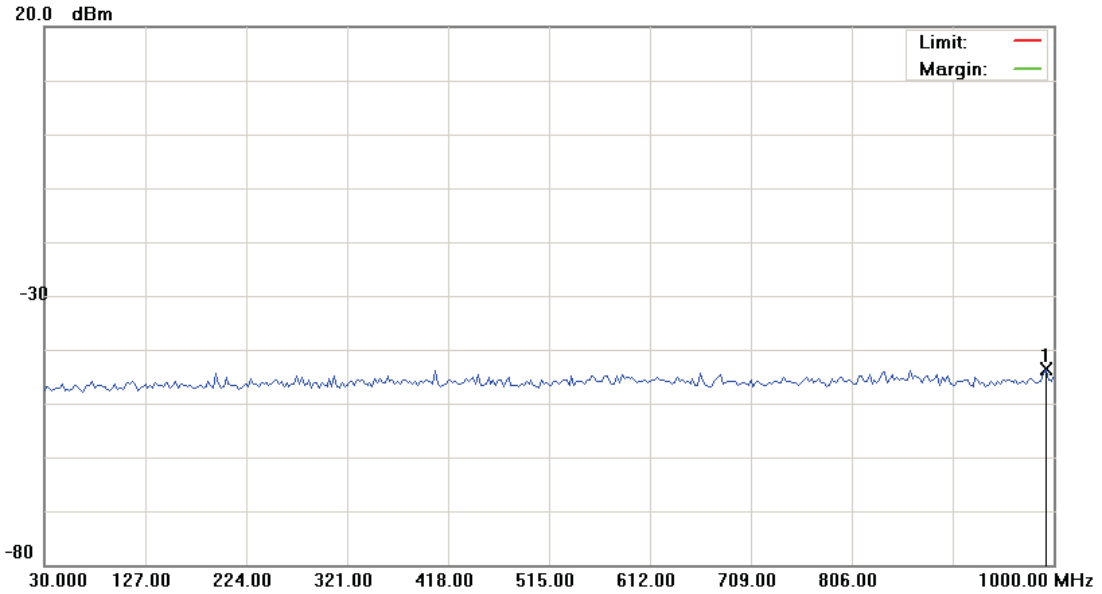


File :Vesurlus(2402)

Data :#1

Date: 2009/01/19

Time: 下午 05:39:24



Site site #1  
 Limit:  
 EUT:  
 M/N: 09-0007-E  
 Mode: BT+EDR  
 Note: 2402

Polarization:  
 Power: AC 110V/60Hz  
 Distance:

Temperature: 22 °C  
 Humidity: 60 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	992.7250	-43.72	0.00	-43.72			peak		

\*:Maximum data x:Over limit !:over margin

●Reference Only



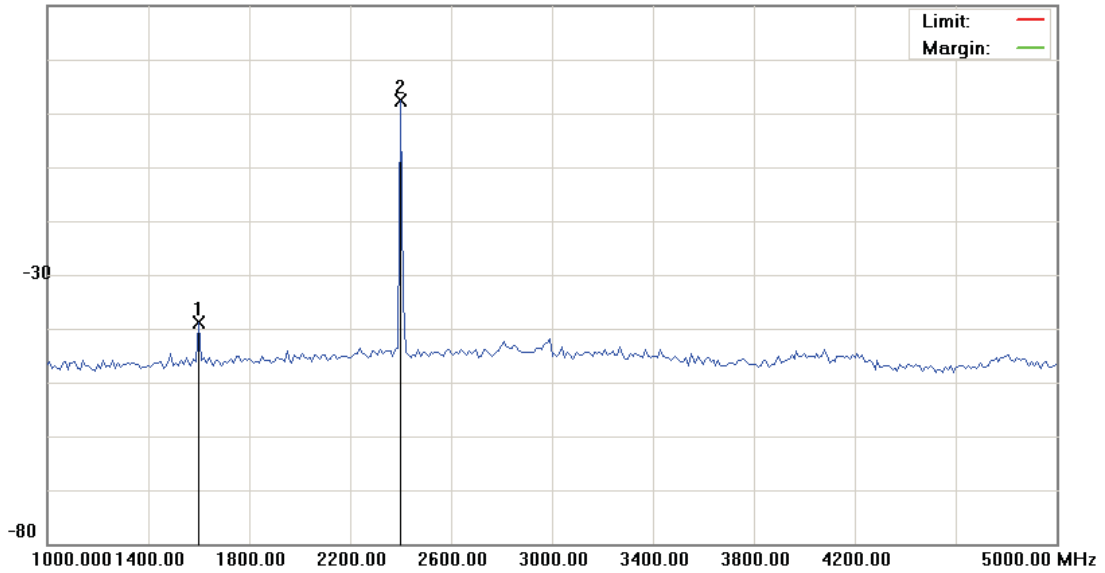
File :Vesurlus(2402)

Data :#2

Date: 2009/01/19

Time: 下午 05:39:36

20.0 dBm



Site site #1

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N: 09-0007-E

Mode: BT+EDR

Note: 2402

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1600.000	-38.99	0.00	-38.99					peak
2	*	2400.000	2.42	0.00	2.42					peak 主頻TX

\*:Maximum data x:Over limit !:over margin

●Reference Only



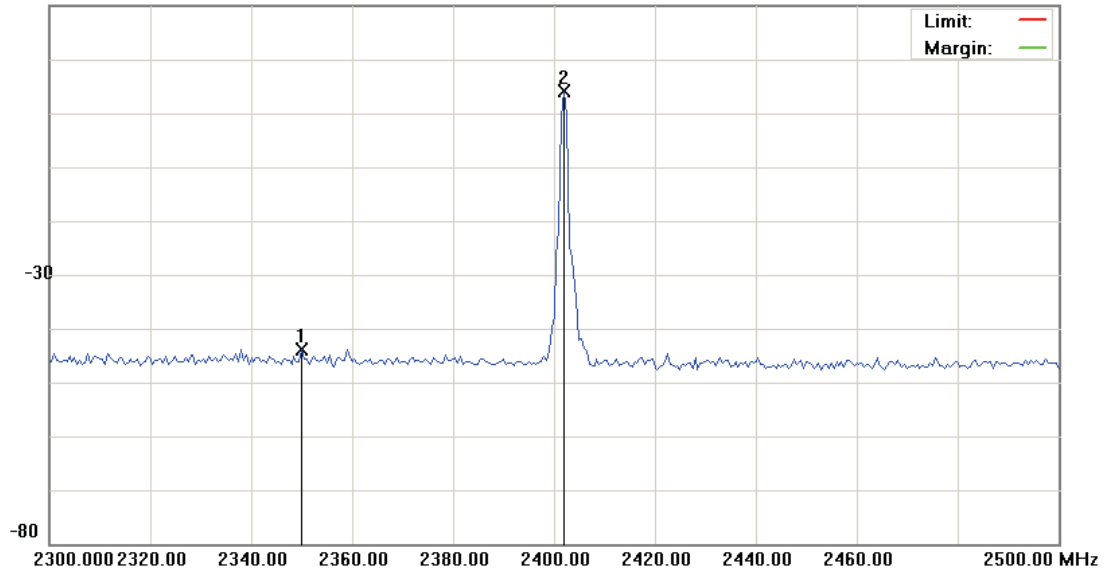
File :Vesurlus(2402)

Data :#3

Date: 2009/01/19

Time: 下午 05:39:49

20.0 dBm



Site site #1

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N: 09-0007-E

Mode: BT+EDR

Note: 2402

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2350.000	-43.86	0.00	-43.86					peak
2	*	2402.000	4.10	0.00	4.10					peak 主頻TX

\*:Maximum data x:Over limit !:over margin

●Reference Only

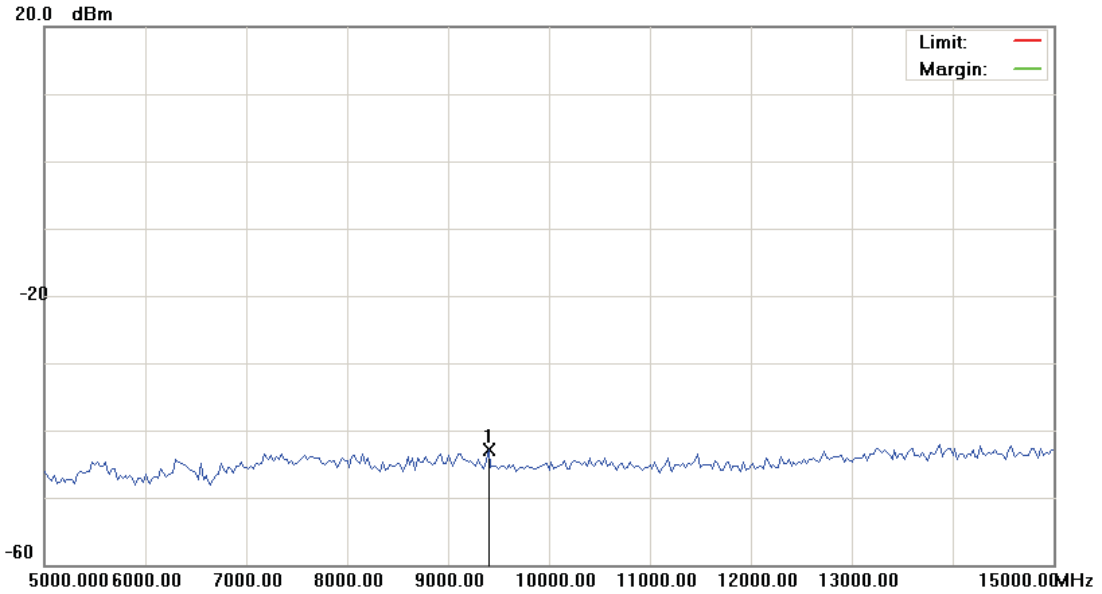


File :Vesurlus(2402)

Data :#6

Date: 2009/01/19

Time: 下午 05:40:01



Site site #1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N: 09-0007-E

Mode: BT+EDR

Note: 2402

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree		
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	9400.000	-42.83	0.00	-42.83			peak			

\*:Maximum data x:Over limit !:over margin

●Reference Only



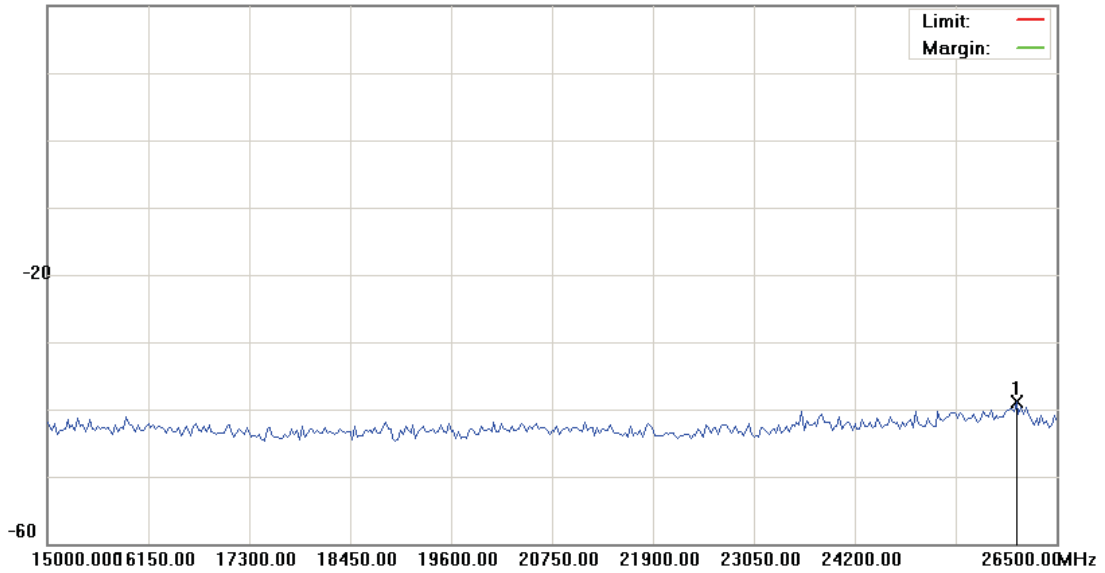
File :Vesurlus(2402)

Data :#7

Date: 2009/01/19

Time: 下午 05:40:14

20.0 dBm



Site site #1	Polarization:	Temperature: 26 °C
Limit:	Power: AC 110V/60Hz	Humidity: 60 %
EUT:	Distance:	
M/N: 09-0007-E		
Mode: BT+EDR		
Note: 2402		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	26040.00	-38.89	0.00	-38.89					peak

\*:Maximum data x:Over limit !:over margin

●Reference Only

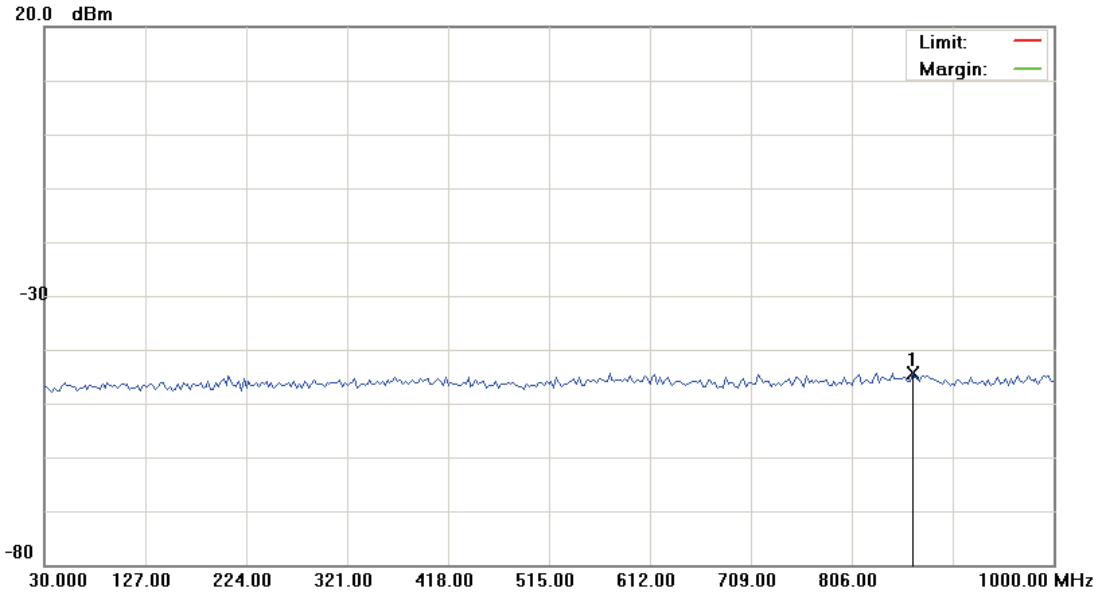


File :Vesurlus(2441)

Data :#1

Date: 2009/01/19

Time: 下午 05:41:34



Site site #1

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N:

Mode: BT+EDR

Note: 2441

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	864.2000	-44.25	0.00	-44.25		peak			

\*:Maximum data x:Over limit !:over margin

●Reference Only



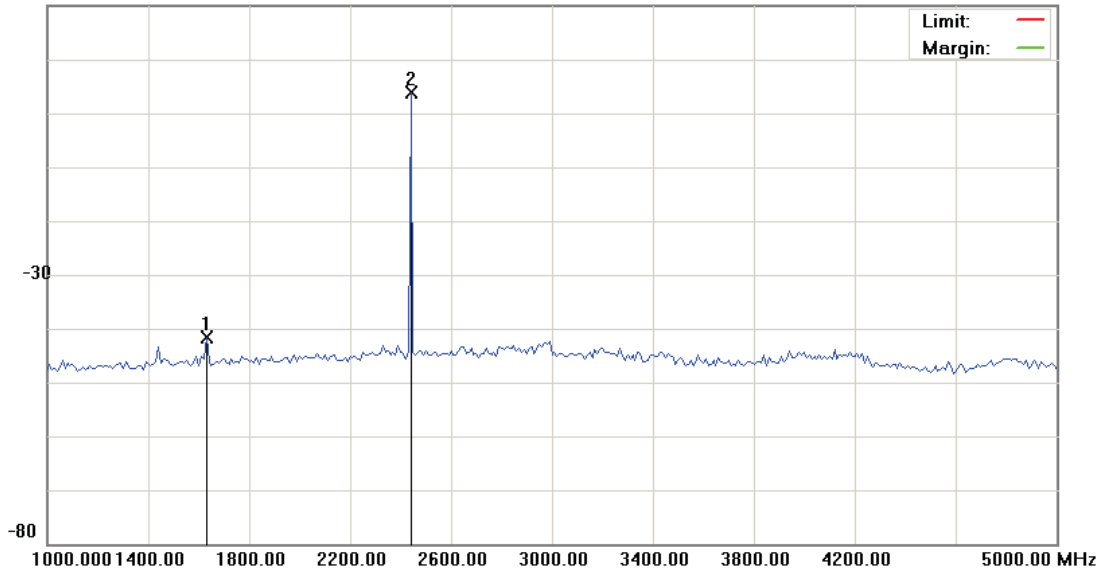
File :Vesurlus(2441)

Data :#2

Date: 2009/01/19

Time: 下午 05:41:47

20.0 dBm



Site site #1

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N:

Mode: BT+EDR

Note: 2441

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1630.000	-41.62	0.00	-41.62					peak
2	*	2440.000	3.83	0.00	3.83					peak 主頻TX

\*:Maximum data x:Over limit !:over margin

●Reference Only

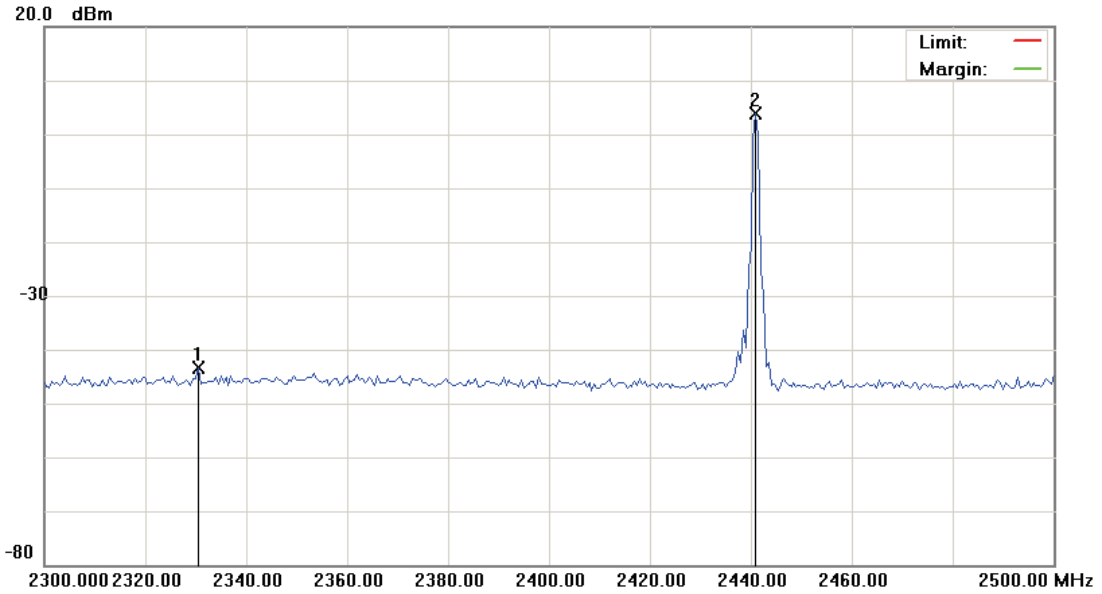


File :Vesurlus(2441)

Data :#3

Date: 2009/01/19

Time: 下午 05:41:59



Site site #1

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N:

Mode: BT+EDR

Note: 2441

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree	Detector	Comment
1		2330.500	-43.39	0.00	-43.39					peak	
2	*	2441.000	3.87	0.00	3.87					peak	主頻TX

\*:Maximum data x:Over limit !:over margin

●Reference Only

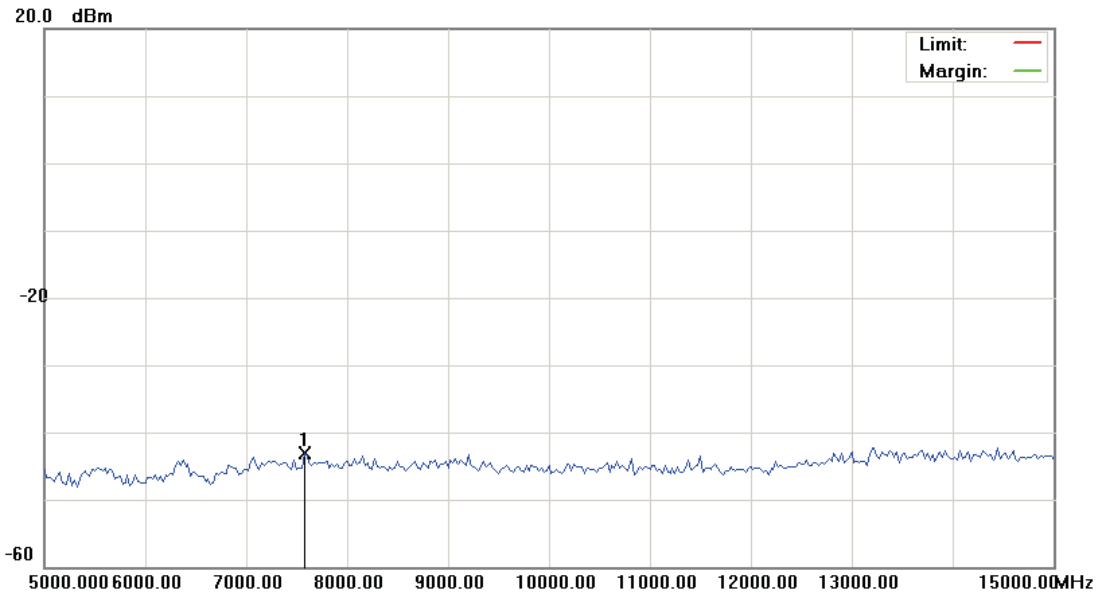


File :Vesurlus(2441)

Data :#6

Date: 2009/01/19

Time: 下午 05:42:12



Site site #1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N:

Mode: BT+EDR

Note: 2441

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	7575.000	-43.03	0.00	-43.03			peak		Comment

\*:Maximum data x:Over limit !:over margin

●Reference Only



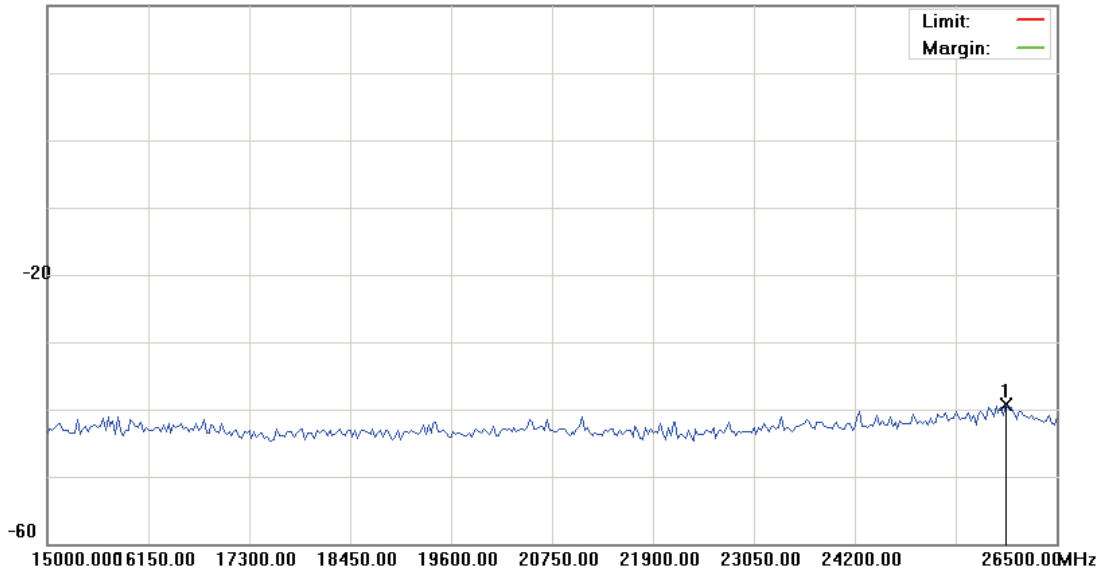
File :Vesurlus(2441)

Data :#7

Date: 2009/01/19

Time: 下午 05:42:25

20.0 dBm



Site site #1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N:

Mode: BT+EDR

Note: 2441

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1	*	25925.00	-39.29	0.00	-39.29					peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



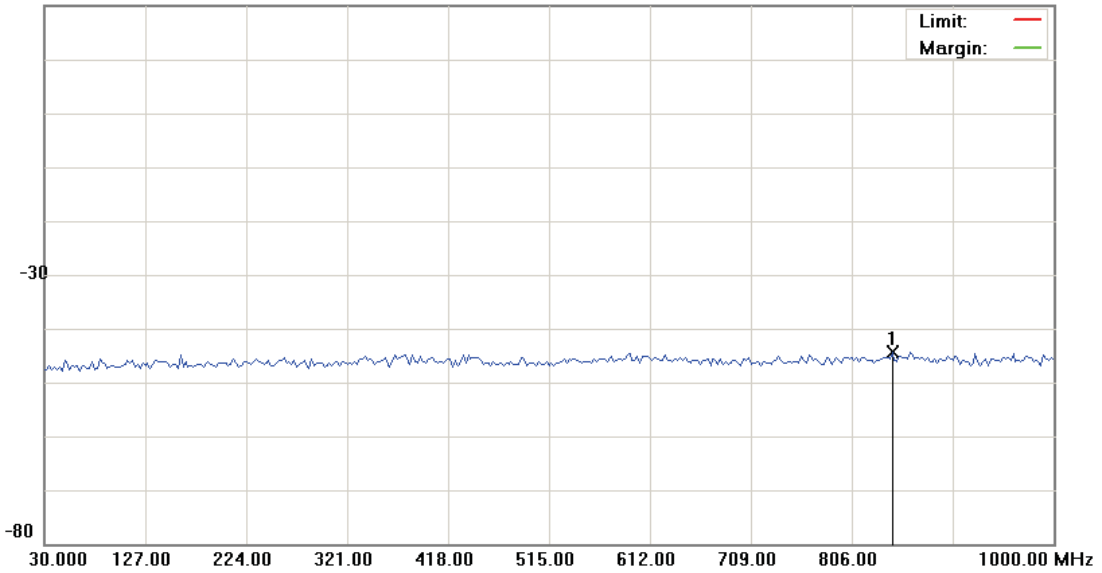
File :Vesurlus(2480)

Data :#1

Date: 2009/01/19

Time: 下午 05:43:02

20.0 dBm



Site site #1

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N: 09-0007-E

Mode: BT+EDR

Note: 2480

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	844.8000	-44.27	0.00	-44.27					peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



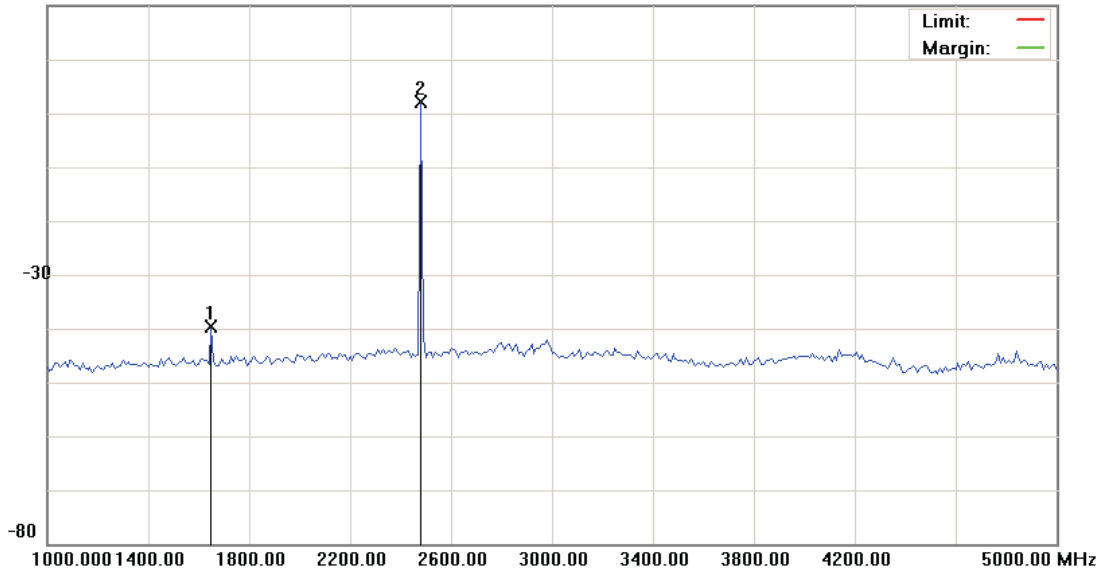
File :Vesurlus(2480)

Data :#2

Date: 2009/01/19

Time: 下午 05:43:15

20.0 dBm



Site site #1

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N: 09-0007-E

Mode: BT+EDR

Note: 2480

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1650.000	-39.58	0.00	-39.58					peak
2	*	2480.000	2.22	0.00	2.22					peak 主頻TX

\*:Maximum data x:Over limit !:over margin

●Reference Only



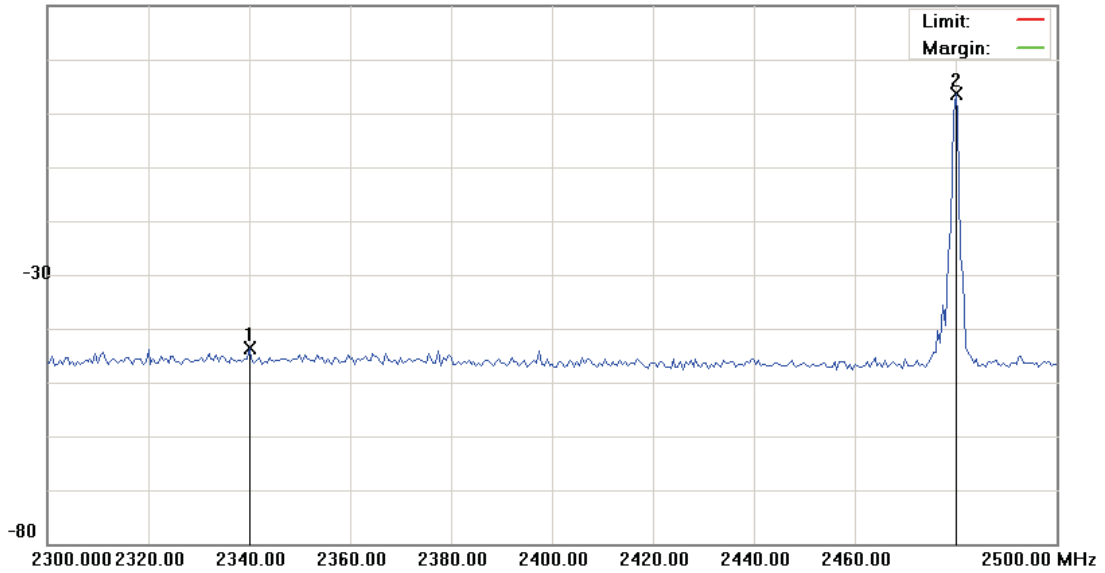
File :Vesurlus(2480)

Data :#3

Date: 2009/01/19

Time: 下午 05:43:27

20.0 dBm



Site site #1

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N: 09-0007-E

Mode: BT+EDR

Note: 2480

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2340.000	-43.69	0.00	-43.69					peak
2	*	2480.000	3.54	0.00	3.54					peak 主頻TX

\*:Maximum data x:Over limit !:over margin

●Reference Only



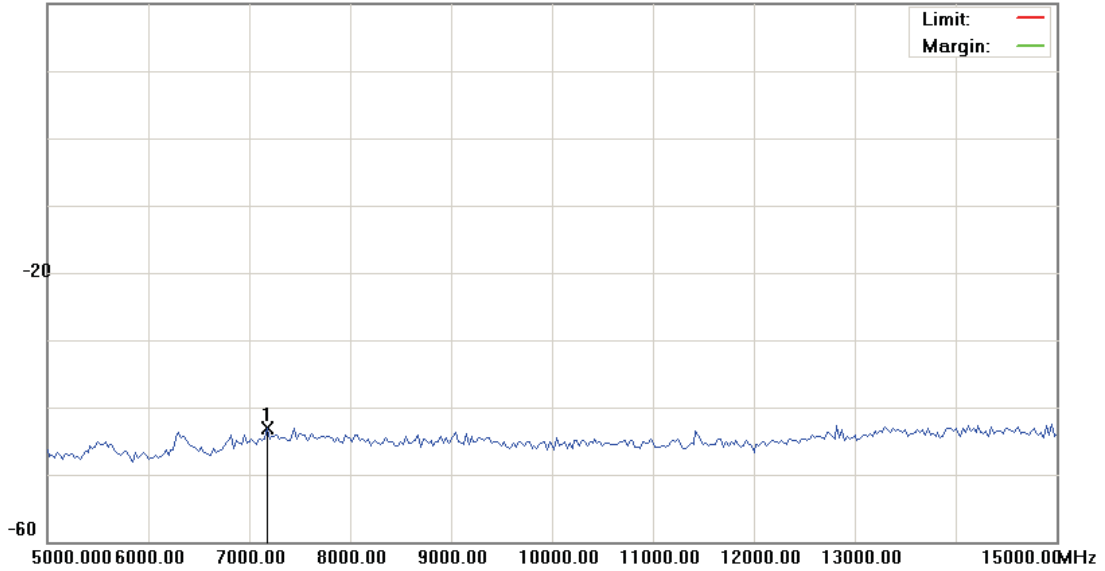
File :Vesurlus(2480)

Data :#6

Date: 2009/01/19

Time: 下午 05:43:40

20.0 dBm



Site site #1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N: 09-0007-E

Mode: BT+EDR

Note: 2480

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	7175.000	-43.05	0.00	-43.05			peak		

\*:Maximum data x:Over limit !:over margin

●Reference Only



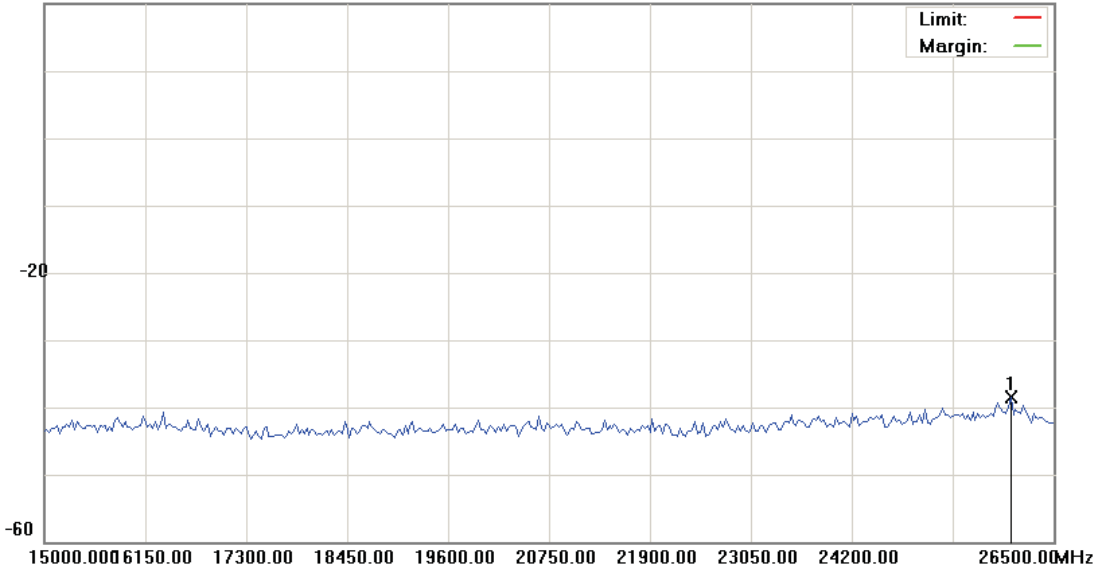
File :Vesurlus(2480)

Data :#7

Date: 2009/01/19

Time: 下午 05:43:53

20.0 dBm



Site site #1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance:

M/N: 09-0007-E

Mode: BT+EDR

Note: 2480

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1	*	26011.25	-38.55	0.00	-38.55					peak

\*:Maximum data x:Over limit !:over margin

●Reference Only

## 10. Band Edges Requirements

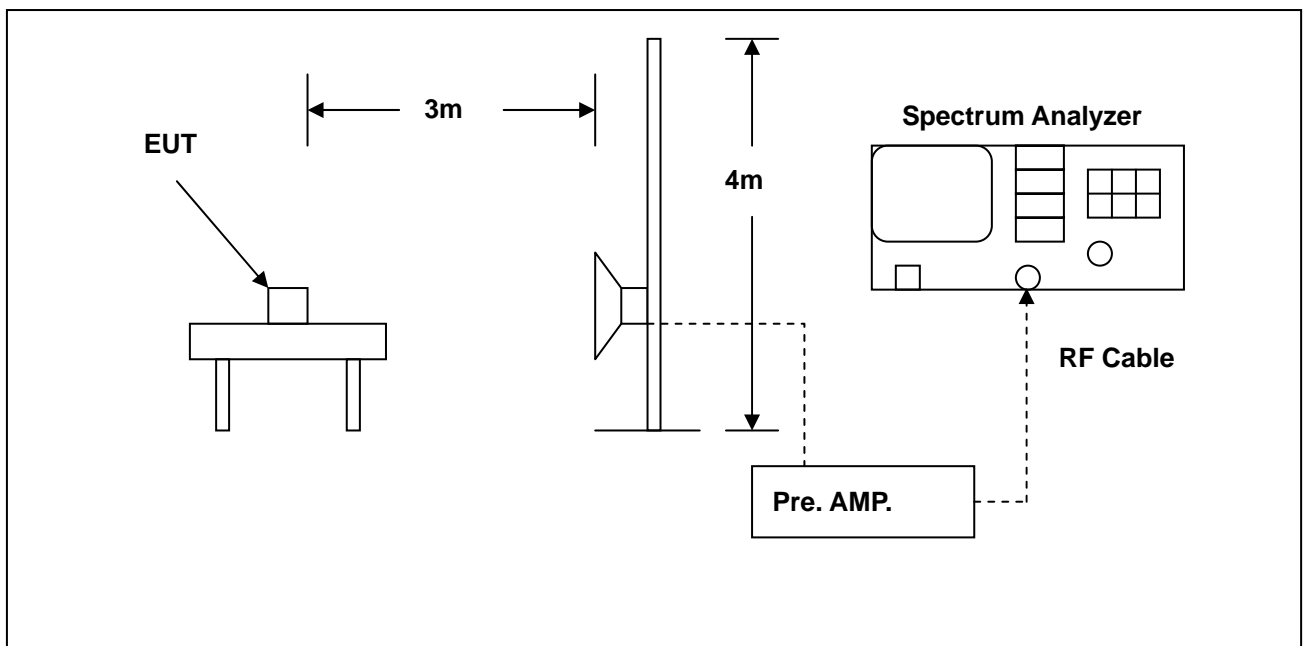
### 10.1 Test Condition & Setup:

The emissions on the harmonics frequencies, the limits, and the margin of compliance are presented. These tests were made when the transmitter was in full radiated power. The additional test was performed to show compliance with the requirement at the band-edge frequency 2483.5 MHz and up to 2500 MHz and at 2390.0 MHz.

The transmitter was configured with the worst case antenna and setup to transmit at the highest channel. Then the field strength was measured at 2483.5 MHz.

The transmitter was then configured with the worst case antenna and setup to transmit at the lowest channel. Then the field strength was measured at 2390.0 MHz. These tests were performed at 4 different bit rates.

### 10.2 Test Instruments Configuration:





### 10.3 Test Equipment List:

Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
Spectrum Analyzer	Agilent	E4408B	MY45107753	Jun. 05, 2008	Jun. 05, 2009
Pre Amplifier	Agilent	8449B	3008A02237	Jun. 03, 2008	Jun. 03, 2009
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	Jun. 26, 2008	Jun. 26, 2009

### 10.4 Test Result

#### 10.4.1 Bluetooth 2.0 Mode:

Applicant : Motorola Inc  
Model No : H17  
EUT : Universal Bluetooth Headset  
Test Mode : Bluetooth 2.0 Link Mode \_ Low CH & High CH  
Test Date : 01/17/2009

Test Graphs See next page.

Notes:

1. Margin= Amplitude - Limits
2. Height of table for EUT placed: 0.8 Meter.
3. ANT= Antenna height.
4. Duty= Duty cycle correction factor.
5. Dis= Distance extrapolation factor.
6. Amplitude= Reading Amplitude – Amplifier gain + Cable loss + Antenna factor  
(Auto calculate in spectrum analyzer)
7. Actual Amp= Amplitude – Duty – Dis.



#### 10.4.2 Bluetooth EDR Mode:

Applicant : Motorola Inc  
Model No : H17  
EUT : Universal Bluetooth Headset  
Test Mode : Bluetooth EDR Link Mode \_ Low CH & High CH  
Test Date : 01/17/2009

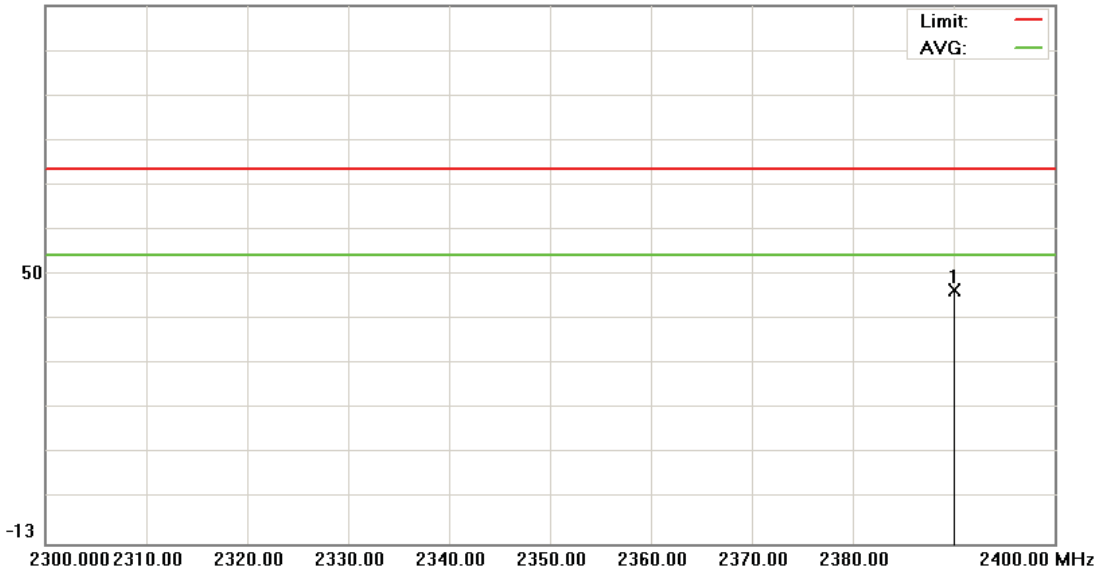
Test Graphs See next page.

#### Notes:

1. Margin= Amplitude - Limits
2. Height of table for EUT placed: 0.8 Meter.
3. ANT= Antenna height.
4. Duty= Duty cycle correction factor.
5. Dis= Distance extrapolation factor.
6. Amplitude= Reading Amplitude – Amplifier gain + Cable loss + Antenna factor  
(Auto calculate in spectrum analyzer)
7. Actual Amp= Amplitude – Duty – Dis.



File :Vesurlus(BandEdge) Data :#1 Date: 2009-1-17 Time: 上午 10:09:30  
 112.0 dBuV



Site site #1 Polarization: **Vertical** Temperature: 22 °C  
 Limit: FCC part 15 (PK) Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2402(Antenna 100cm)

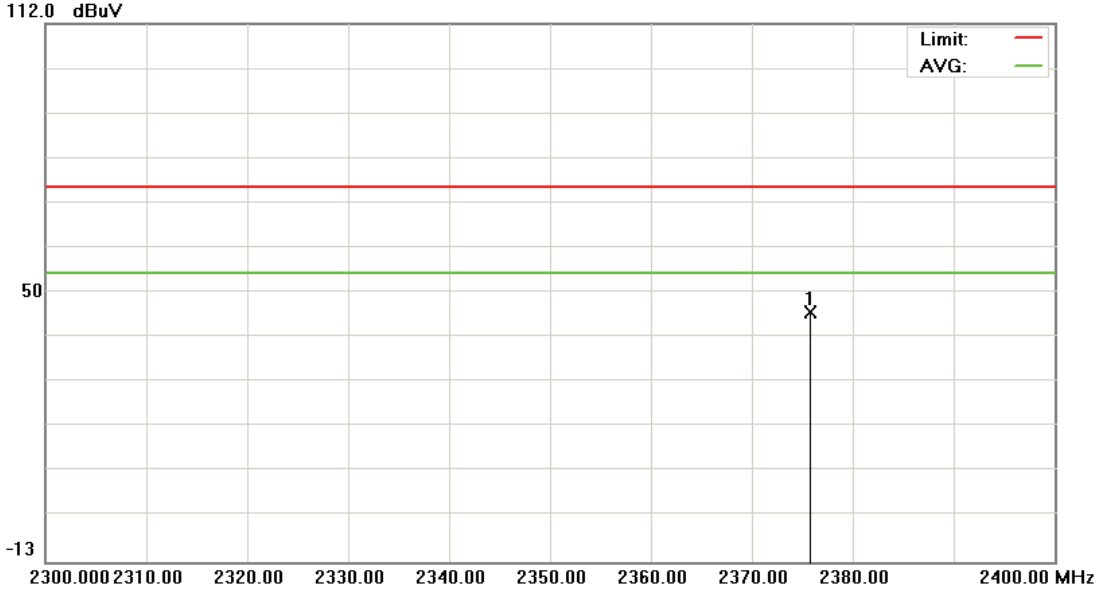
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	2390.000	45.62	0.19	45.81	74.00	-28.19			peak

\*:Maximum data x:Over limit !:over margin

●Reference Only



File :Vesurlus(BandEdge)      Data :#5      Date: 2009-1-17      Time: 上午 10:34:34



Site site #1      Polarization: *Horizontal*      Temperature: 22 °C  
 Limit: FCC part 15 (PK)      Power:      Humidity: 60 %  
 EUT:      Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2402(Antenna 100cm)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	2375.800	44.77	0.17	44.94	74.00	-29.06	peak		

\*:Maximum data    x:Over limit    !:over margin

●Reference Only



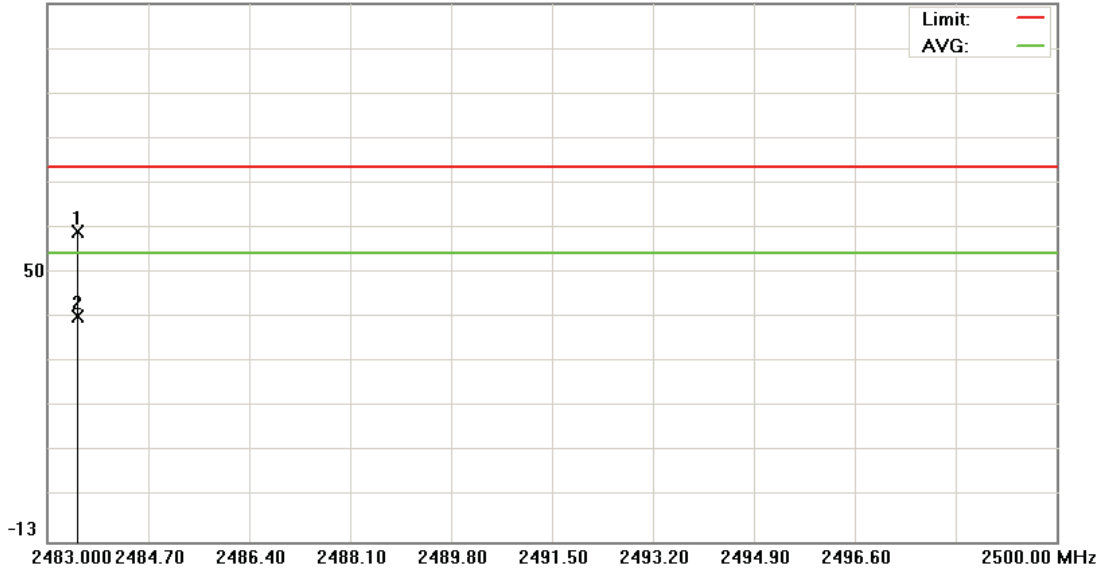
File :Vesurlus(BandEdge)

Data :#3

Date: 2009-1-17

Time: 上午 10:23:00

112.0 dBuV



Site site #1 Polarization: **Vertical** Temperature: 22 °C  
 Limit: FCC part 15 (PK) Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2480(Antenna 100cm)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		2483.510	58.92	0.25	59.17	74.00	-14.83			peak
2	*	2483.510	39.08	0.25	39.33	54.00	-14.67			AVG

\*:Maximum data x:Over limit !:over margin

●Reference Only



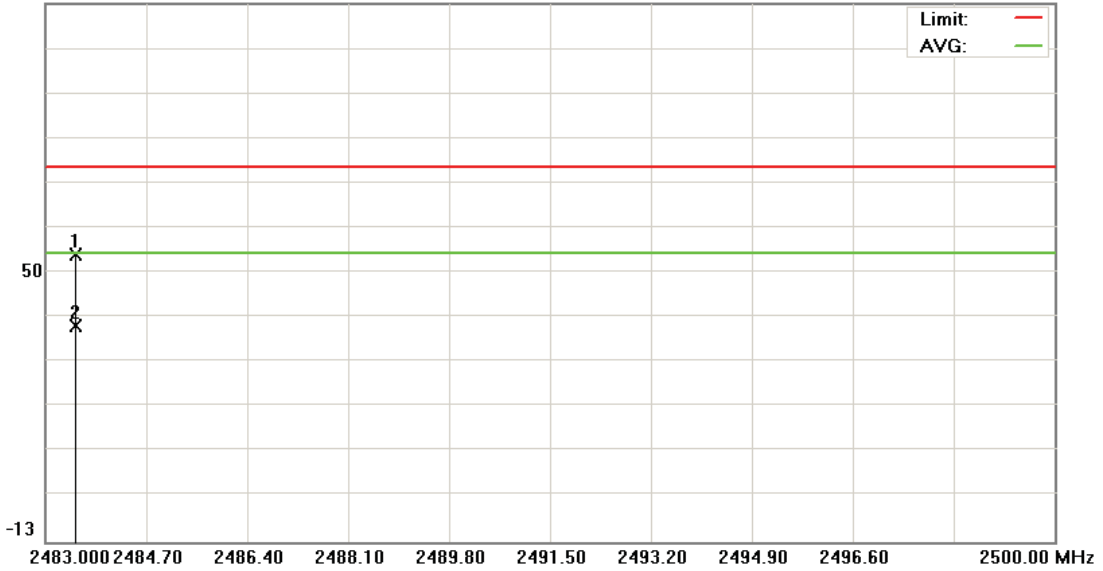
File :Vesurlus(BandEdge)

Data :#7

Date: 2009-1-17

Time: 上午 10:43:11

112.0 dBuV



Site site #1 Polarization: *Horizontal* Temperature: 22 °C  
 Limit: FCC part 15 (PK) Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BT  
 Note: 2480(Antenna 100cm)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		2483.510	53.38	0.25	53.63	74.00	-20.37			peak
2	*	2483.510	37.03	0.25	37.28	54.00	-16.72			AVG

\*:Maximum data x:Over limit !:over margin

●Reference Only



## **11. Antenna Requirements**

### **11.1 Standard Applicable:**

For intentional device, according to 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

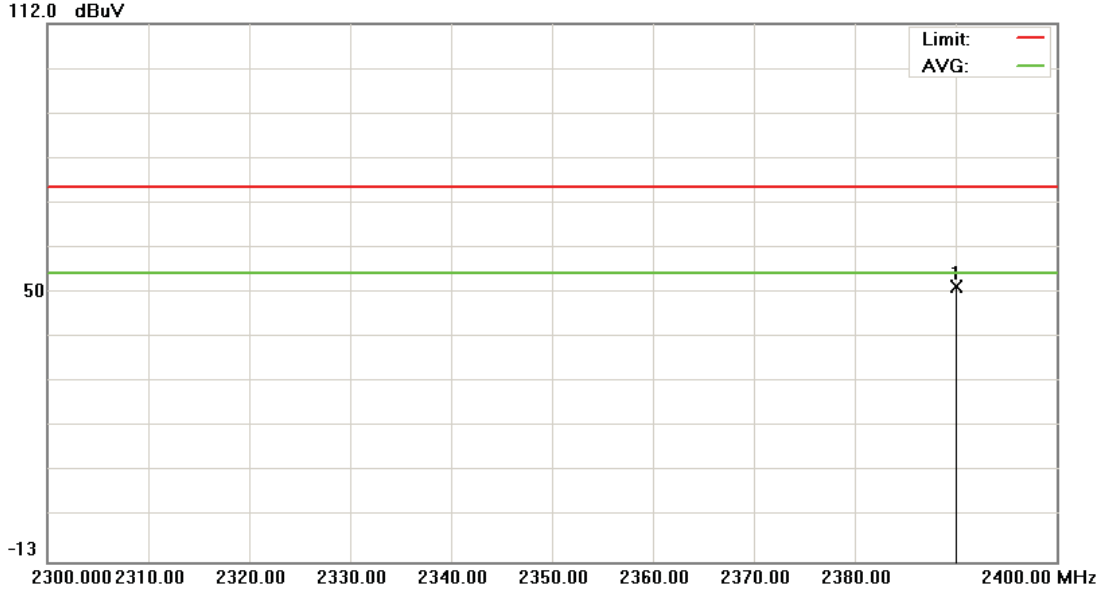
And According to 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### **11.2 Antenna Connector Construction**

The antenna used in this product is internal antenna. And the maximum Gain of this antenna is only **1.07dBi**.



File :Vesurlus(BandEdge)      Data :#1      Date: 2009-1-17      Time: 上午 10:59:15



Site site #1      Polarization: **Vertical**      Temperature: 22 °C  
 Limit: FCC part 15 (PK)      Power:      Humidity: 60 %  
 EUT:      Distance: 3m  
 M/N: 09-0007-E  
 Mode: BAND EDGE  
 Note: 2402(Antenna 100cm)

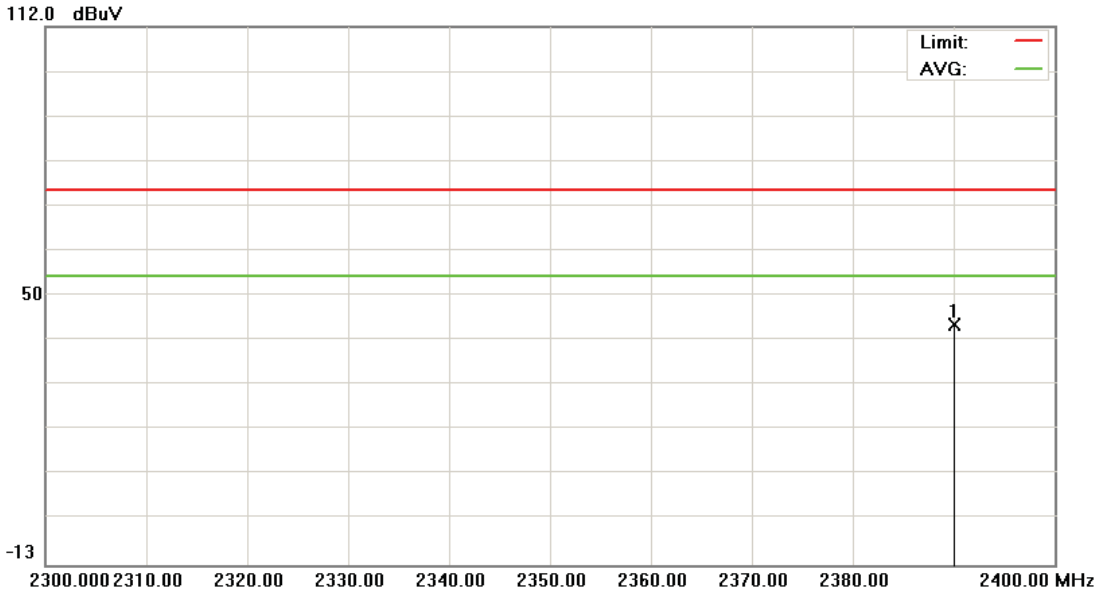
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	2390.000	50.57	0.19	50.76	74.00	-23.24			peak

\*:Maximum data    x:Over limit    !:over margin

●Reference Only



File :Vesurlus(BandEdge)      Data :#5      Date: 2009-1-17      Time: 上午 11:14:05



Site site #1	Polarization: <i>Horizontal</i>	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power:	Humidity: 60 %
EUT:	Distance: 3m	
M/N: 09-0007-E		
Mode: BAND EDGE		
Note: 2480(Antenna 100cm)		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	2390.000	42.51	0.19	42.70	74.00	-31.30			peak

\*:Maximum data    x:Over limit    !:over margin

●Reference Only





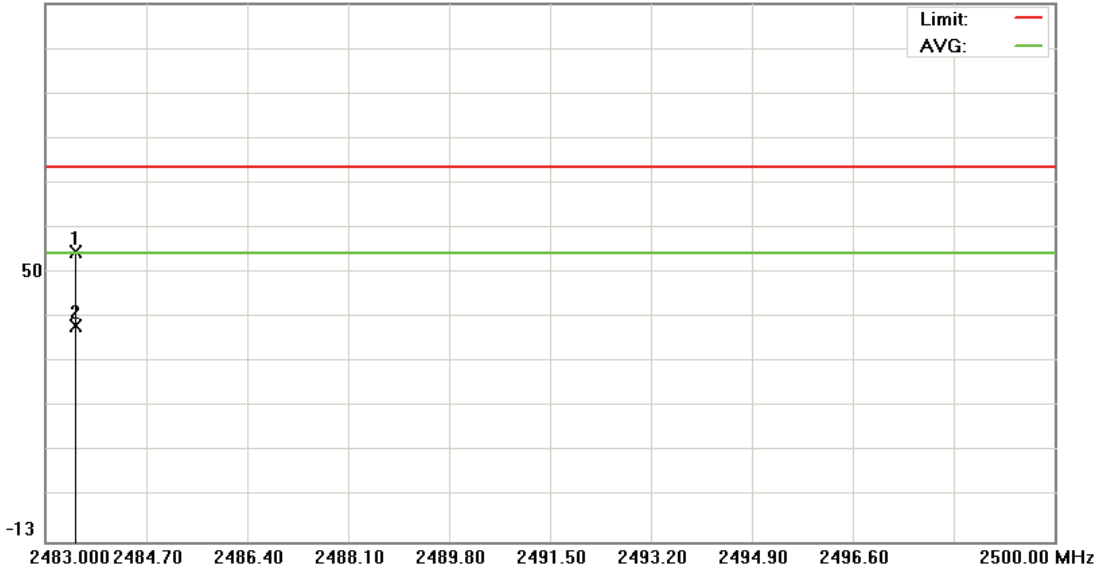
File :Vesurlus(BandEdge)

Data :#7

Date: 2009-1-17

Time: 上午 11:17:57

112.0 dBuV



Site site #1 Polarization: *Horizontal* Temperature: 22 °C  
 Limit: FCC part 15 (PK) Power: Humidity: 60 %  
 EUT: Distance: 3m  
 M/N: 09-0007-E  
 Mode: BAND EDGE  
 Note: 2480(Antenna 100cm)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		2483.510	53.97	0.25	54.22	74.00	-19.78			peak
2	*	2483.510	36.97	0.25	37.22	54.00	-16.78			AVG

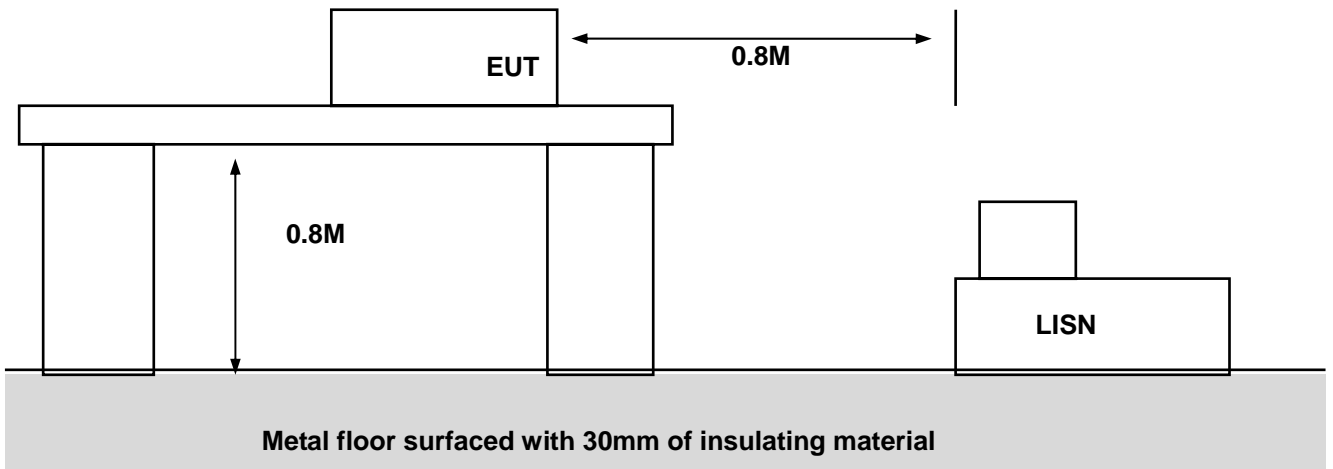
\*:Maximum data x:Over limit !:over margin

●Reference Only



**Appendix A - EUT Test SETUP**

**MEASUREMENT OF POWER LINE CONDUCTED RFI VOLTAGE**



## MEASUREMENT OF RADIATED EMISSION

