



A Test Lab Techno Corp.

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Part 15 C Measurement Report

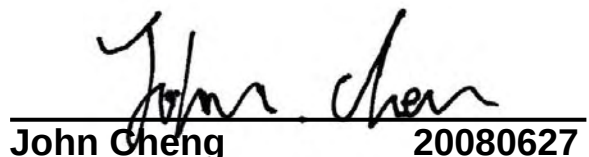


Report No.	: 0806FR12
Applicant	: Motorola Inc
Trade Mark	: Motorola
Product Type	: Universal Bluetooth Headset
Model No	: H780
FCC ID	: IHDP6JT1
Dates of Test	: Jun. 23, ~ Jun. 26, 2008
Test Specification	: Part 15 Subpart C (15.247) PUBLIC NOTICE :DA 00-705 Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems
Location of Test Lab.	: Changan

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 20080627
Measurement Center Manager



John Cheng 20080627
Testing Engineer



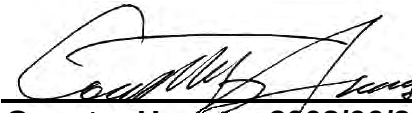
CERTIFICATION

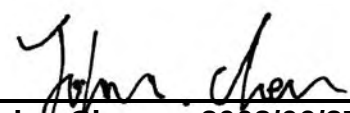
We here by verify that:

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 : H780
FCC ID : IHDP6JT1

Approved by : 
Country Huang 2008/06/27

Prepared by : 
John Cheng 2008/06/27

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
Mobile 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 : H780
Product Type : Universal Bluetooth Headset
FCC ID : IHDP6JT1
Frequency of Channel : See Table 1
Type of Modulation : Frequency Hopping Spread Spectrum
Type of Antenna : Internal Type

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

Computer	: DELL
Model No.	: PP49L
Serial No.	: UF230 A03
FCC ID	: E2KWM3945ABC
Keyboard	: DELL
Model No.	: SK-8115
Serial No.	: MY-0DJ325-71619-7113-1366
FCC ID	: FCC DOC
Monitor	: DELL
Model No.	: E177FPc
Serial No.	: CN-0FJ179-64180-6BT-4LYS
FCC ID	: FCC DOC
Mouse	: DELL
Model No.	: M056U0A
Serial No.	: F1F026E1
FCC ID	: FCC DOC
Printer	: EPSON
Model No.	: C60
Serial No.	: DR3K041323
FCC ID	: FCC DOC

1.5 Configuration of System under Test

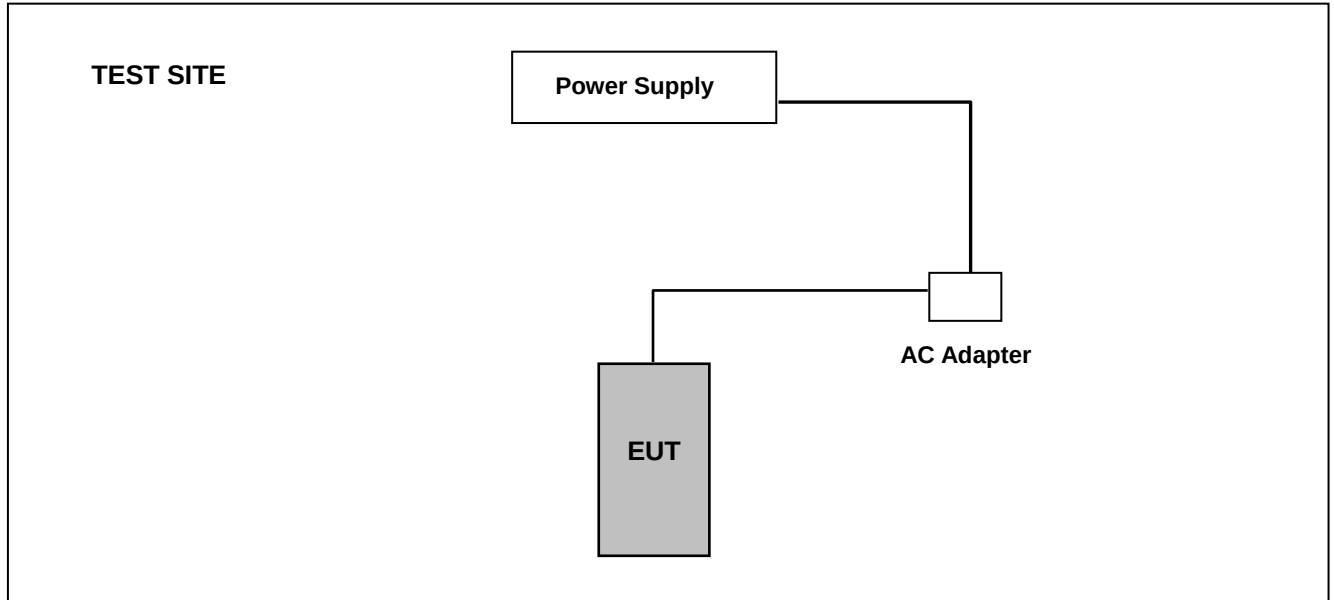


Figure 1. Configuration of System Under Test for PC USB Link

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. 04, 2008	Jun. 04, 2009
LISN	EMCO	3816/2 SH	00060111	Jun. 13, 2008	Jun. 13, 2009
Transient Limiter	ELECTRO-METRICS	EM-7600	777	Jun. 26, 2007	Jun. 26, 2008

2.3 Test Configuration:



Figure 2. Front View of the Test Configuration

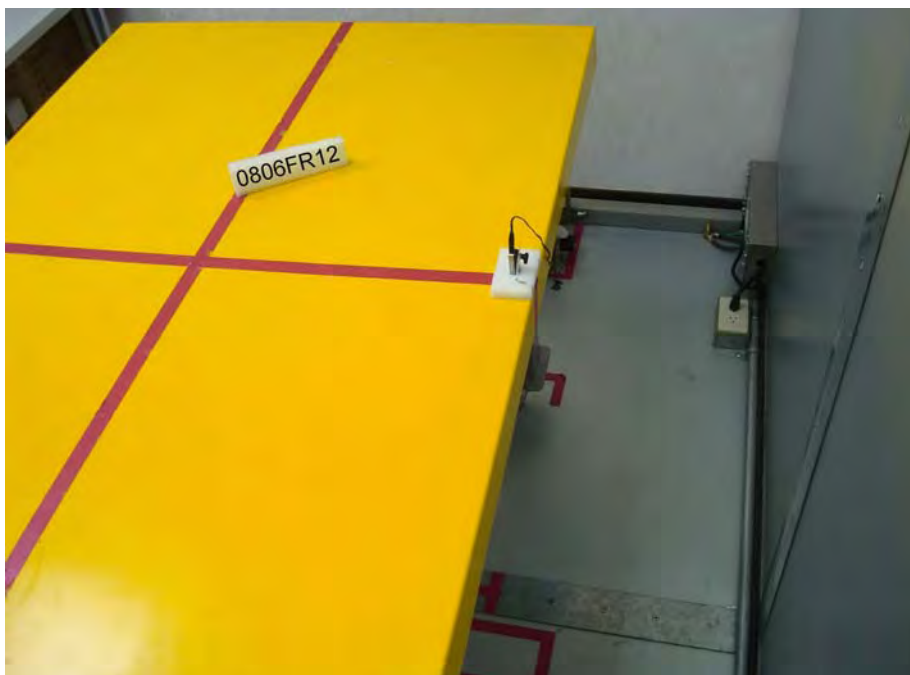


Figure 3. Rear View of the Test Configuration



2.4 Test condition:

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

2.5 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



2.6 Measurement Data of Conducted Emissions:

2.6.1 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 : H780
EUT : Universal Bluetooth Headset
Test Mode : Stand By _ Bluetooth 2.0
Test Date : 06/25/2008

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.



Conducted Emission Measurement

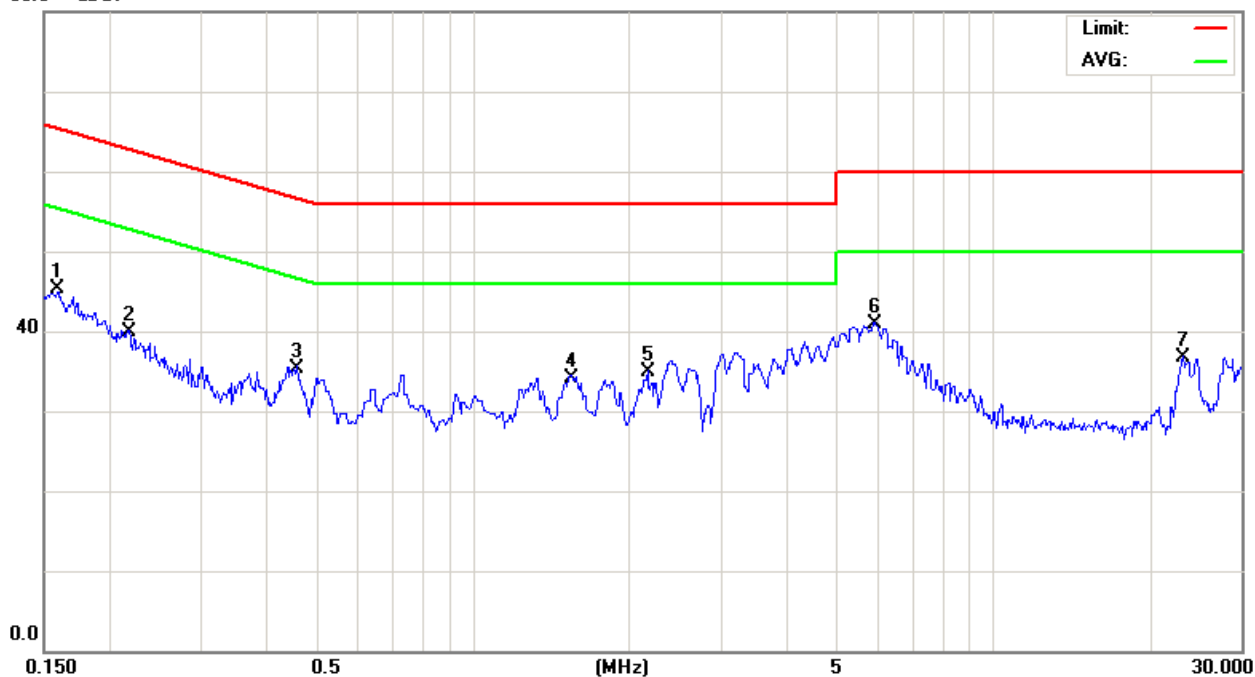
File :H780(IDEL)

Data :#1

Date: 2008/6/25

Time: 下午 03:09:22

80.0 dBuV



Site site#1

Phase: **L1**

Temperature: 26 °C

Limit: CISPR22 Class B Conduction(QP)

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

M/N: H780

Mode: AC

Note: 美規ADAPTER FMP5334A

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1590	35.56	9.73	45.29	65.51	-20.22	peak	
2		0.2179	30.13	9.74	39.87	62.89	-23.02	peak	
3		0.4576	25.57	9.78	35.35	56.74	-21.39	peak	
4		1.5439	24.39	9.81	34.20	56.00	-21.80	peak	
5		2.1648	25.03	9.88	34.91	56.00	-21.09	peak	
6	*	5.9000	30.92	10.07	40.99	60.00	-19.01	peak	
7		23.1000	26.25	10.38	36.63	60.00	-23.37	peak	

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

●Reference Only



Conducted Emission Measurement

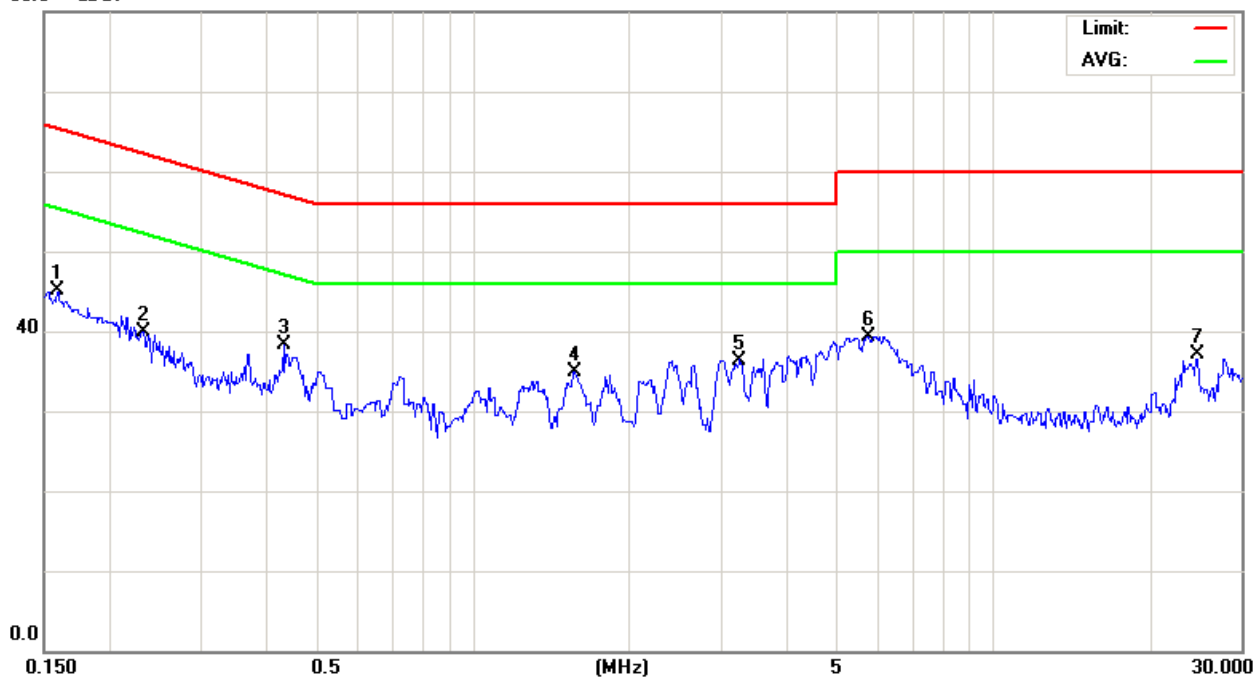
File :H780(IDEL)

Data :#2

Date: 2008/6/25

Time: 下午 03:11:13

80.0 dBuV



Site site#1

Phase: **L2**

Temperature: 26 °C

Limit: CISPR22 Class B Conduction(QP)

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

M/N: H780

Mode: AC

Note: 美規ADAPTER FMP5334A

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1590	35.32	9.73	45.05	65.51	-20.46	peak	
2		0.2318	30.13	9.75	39.88	62.38	-22.50	peak	
3	*	0.4313	28.59	9.78	38.37	57.23	-18.86	peak	
4		1.5619	25.14	9.81	34.95	56.00	-21.05	peak	
5		3.2538	26.36	9.91	36.27	56.00	-19.73	peak	
6		5.7500	29.32	10.06	39.38	60.00	-20.62	peak	
7		24.5500	26.83	10.34	37.17	60.00	-22.83	peak	

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

●Reference Only



2.6.2 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 : H780
EUT : Universal Bluetooth Headset
Test Mode : Link Mode _ Bluetooth 2.0 CH00-2402MHz
Test Date : 06/25/2008

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.



Conducted Emission Measurement

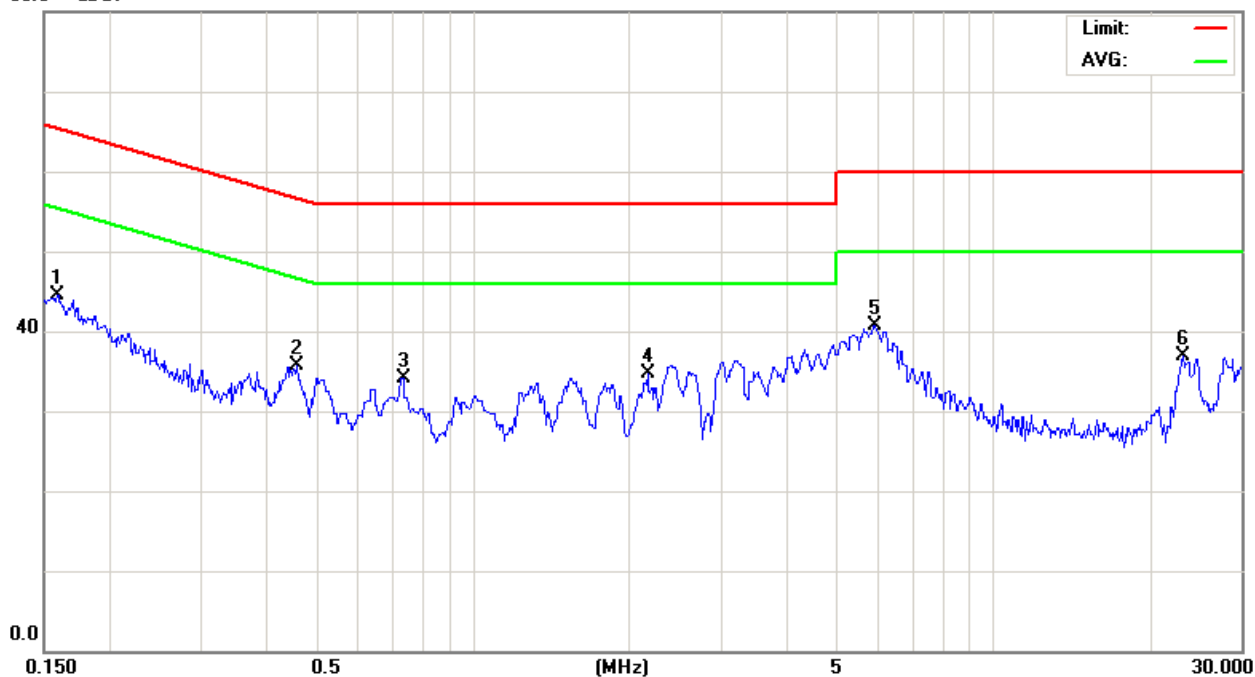
File :H780

Data :#5

Date: 2008/6/25

Time: 下午 03:09:22

80.0 dBuV



Site site#1

Phase: **L1**

Temperature: 26 °C

Limit: CISPR22 Class B Conduction(QP)

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

M/N: H780

Mode: AC

Note: 美規ADAPTER FMP5334A

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1590	34.68	9.73	44.41	65.51	-21.10	peak	
2		0.4580	25.91	9.78	35.69	56.73	-21.04	peak	
3		0.7340	24.25	9.80	34.05	56.00	-21.95	peak	
4		2.1650	24.74	9.88	34.62	56.00	-21.38	peak	
5	*	5.9000	30.57	10.07	40.64	60.00	-19.36	peak	
6		23.1000	26.49	10.38	36.87	60.00	-23.13	peak	

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

●Reference Only



Conducted Emission Measurement

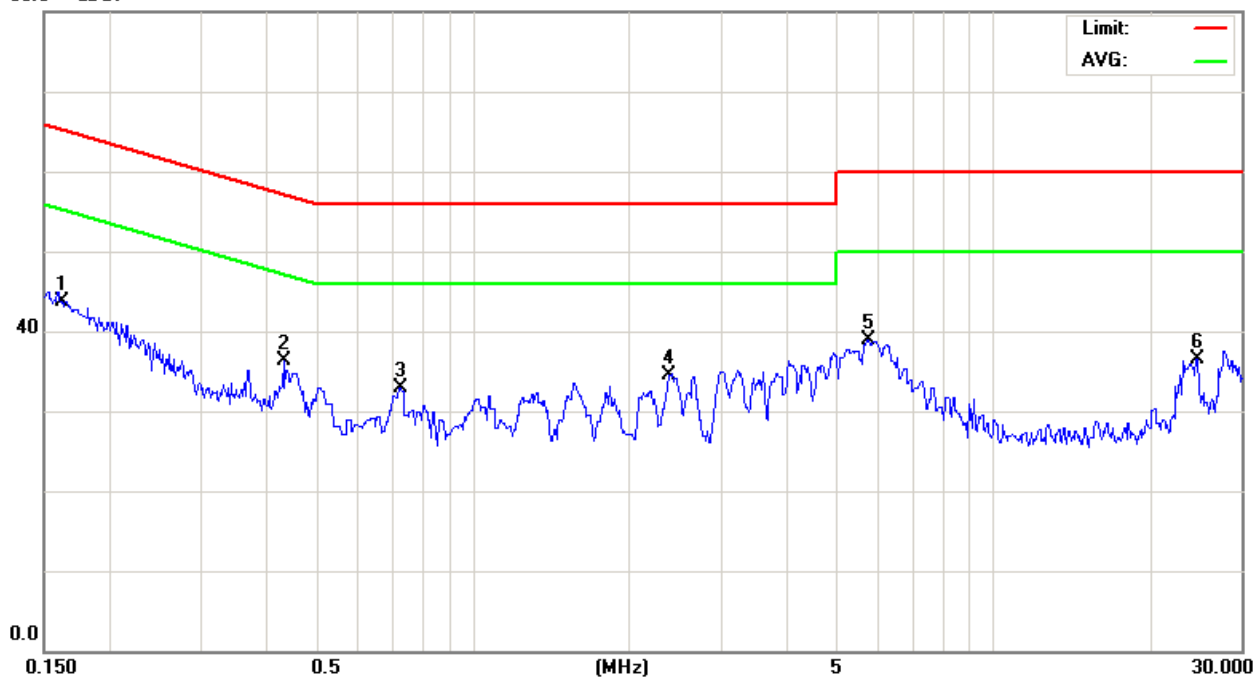
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Data :#6

Date: 2008/6/25

Time: 下午 03:11:13

80.0 dBuV



Site site#1

Phase: **L2**

Temperature: 26 °C

Limit: CISPR22 Class B Conduction(QP)

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

M/N: H780

Mode: AC

Note: 美規ADAPTER FMP5334A

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1619	33.96	9.73	43.69	65.36	-21.67	peak	
2	*	0.4314	26.49	9.78	36.27	57.23	-20.96	peak	
3		0.7250	23.03	9.80	32.83	56.00	-23.17	peak	
4		2.3809	24.68	9.84	34.52	56.00	-21.48	peak	
5		5.7500	28.83	10.06	38.89	60.00	-21.11	peak	
6		24.5500	26.21	10.34	36.55	60.00	-23.45	peak	

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

●Reference Only



2.6.3 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 : H780
EUT : Universal Bluetooth Headset
Test Mode : Stand By_ Bluetooth EDR
Test Date : 06/26/2008

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.



Conducted Emission Measurement

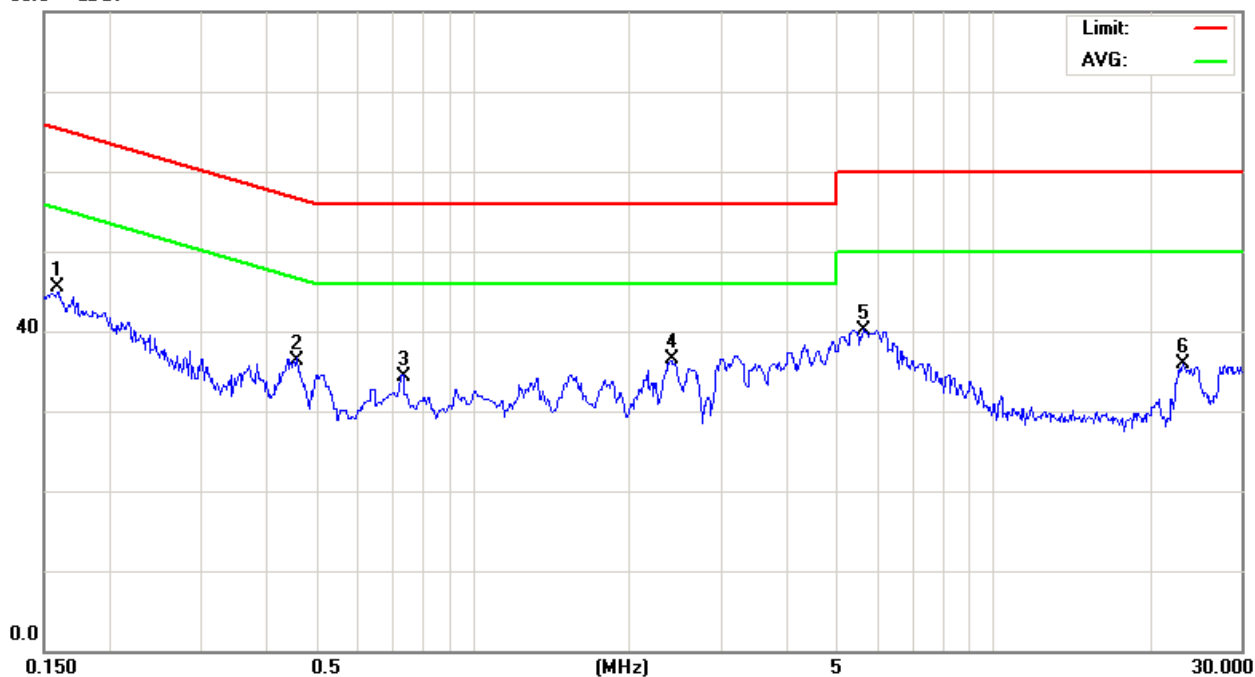
File :H780(IDEL)

Data :#1

Date: 2008/6/26

Time: 下午 05:35:12

80.0 dBuV



Site site#1

Phase: L1

Temperature: 26 °C

Limit: CISPR22 Class B Conduction(QP)

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

M/N: H780

Mode: BT+EDR

Note: AC mode;美規ADAPTER FMP5334A

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1590	35.73	9.73	45.46	65.51	-20.05	peak	
2		0.4576	26.59	9.78	36.37	56.74	-20.37	peak	
3		0.7338	24.54	9.80	34.34	56.00	-21.66	peak	
4	*	2.3988	26.63	9.84	36.47	56.00	-19.53	peak	
5		5.6500	30.06	10.05	40.11	60.00	-19.89	peak	
6		23.1000	25.61	10.38	35.99	60.00	-24.01	peak	

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

●Reference Only



Conducted Emission Measurement

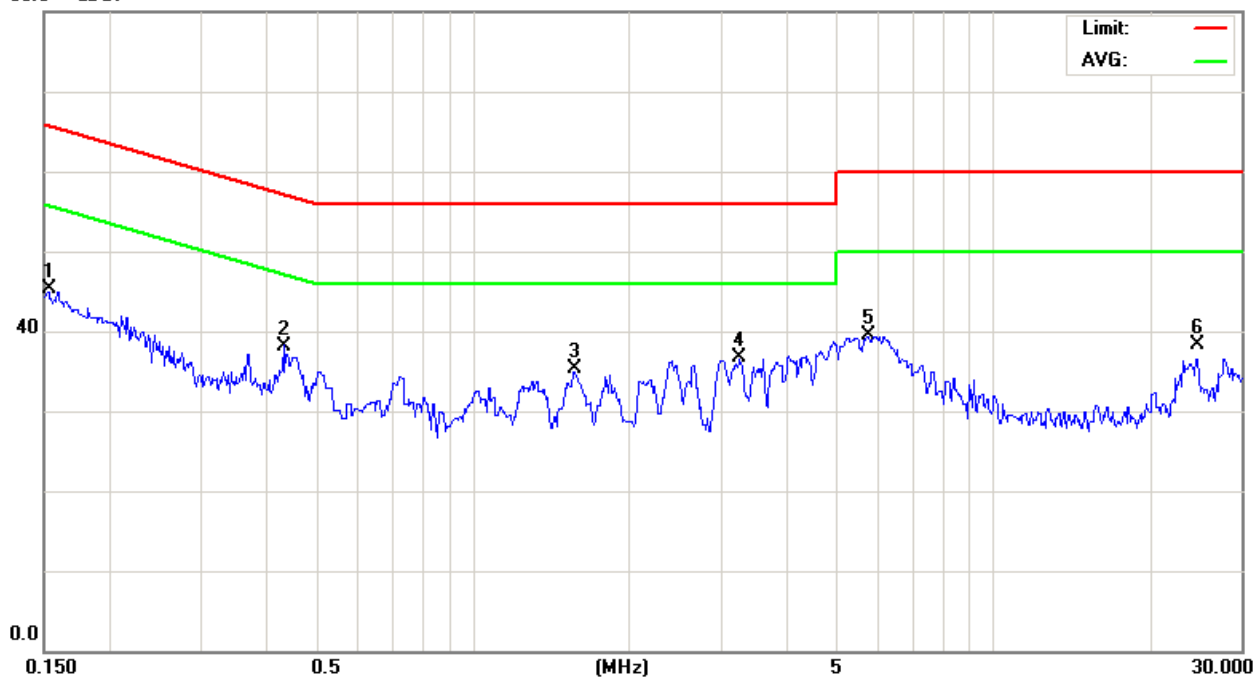
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Data :#2

Date: 2008/6/26

Time: 下午 05:42:12

80.0 dBuV



Site site#1

Phase: **L2**

Temperature: 26 °C

Limit: CISPR22 Class B Conduction(QP)

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

M/N: H780

Mode: BT+EDR

Note: AC mode;美規ADAPTER FMP5334A

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1527	35.59	9.73	45.32	65.85	-20.53	peak	
2	*	0.4313	28.23	9.78	38.01	57.23	-19.22	peak	
3		1.5619	25.57	9.81	35.38	56.00	-20.62	peak	
4		3.2538	26.72	9.91	36.63	56.00	-19.37	peak	
5		5.7500	29.53	10.06	39.59	60.00	-20.41	peak	
6		24.5500	27.91	10.34	38.25	60.00	-21.75	peak	

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

●Reference Only



2.6.4 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 : H780
EUT : Universal Bluetooth Headset
Test Mode : Link Mode _ Bluetooth EDR CH00-2402MHz
Test Date : 06/26/2008

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.



Conducted Emission Measurement

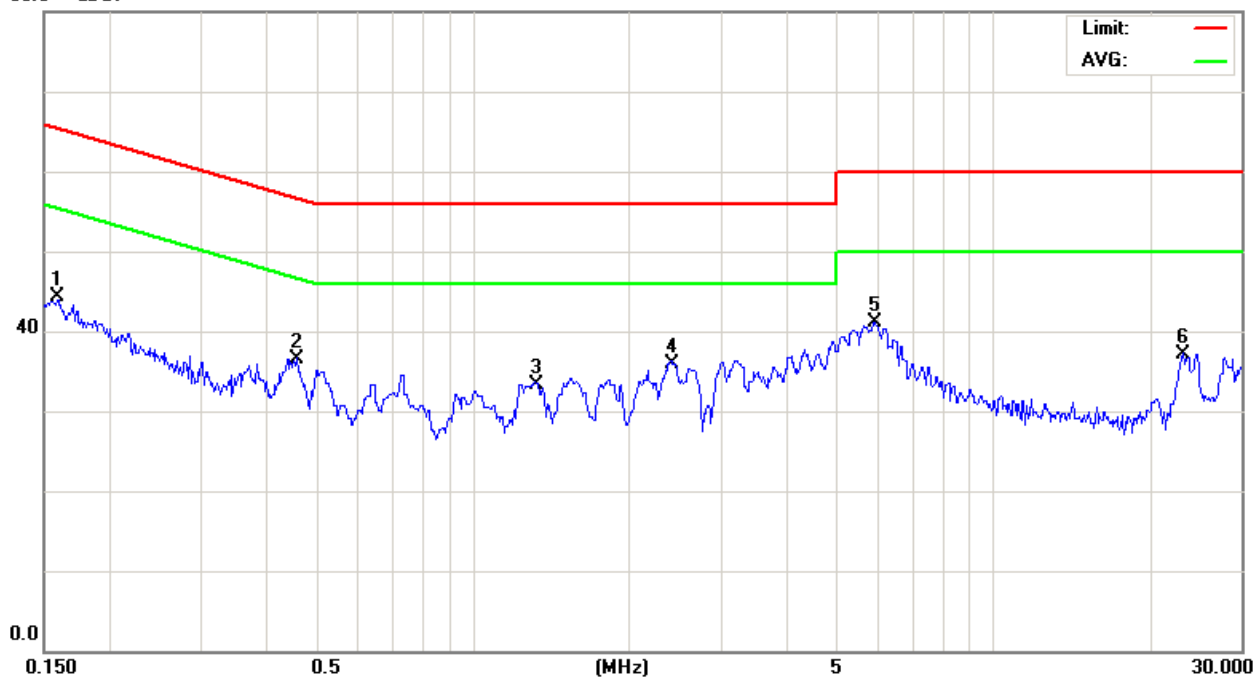
File :H780

Data :#1

Date: 2008/6/26

Time: 下午 05:13:53

80.0 dBuV



Site site#1

Phase: **L1**

Temperature: 26 °C

Limit: CISPR22 Class B Conduction(QP)

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

M/N: H780

Mode: BT+EDR

Note: AC mode ;美規ADAPTER FMP5334A

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1590	34.52	9.73	44.25	65.51	-21.26	peak	
2		0.4576	26.68	9.78	36.46	56.74	-20.28	peak	
3		1.3185	23.57	9.82	33.39	56.00	-22.61	peak	
4		2.3988	26.13	9.84	35.97	56.00	-20.03	peak	
5	*	5.9000	31.01	10.07	41.08	60.00	-18.92	peak	
6		23.1000	26.73	10.38	37.11	60.00	-22.89	peak	

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

●Reference Only



Conducted Emission Measurement

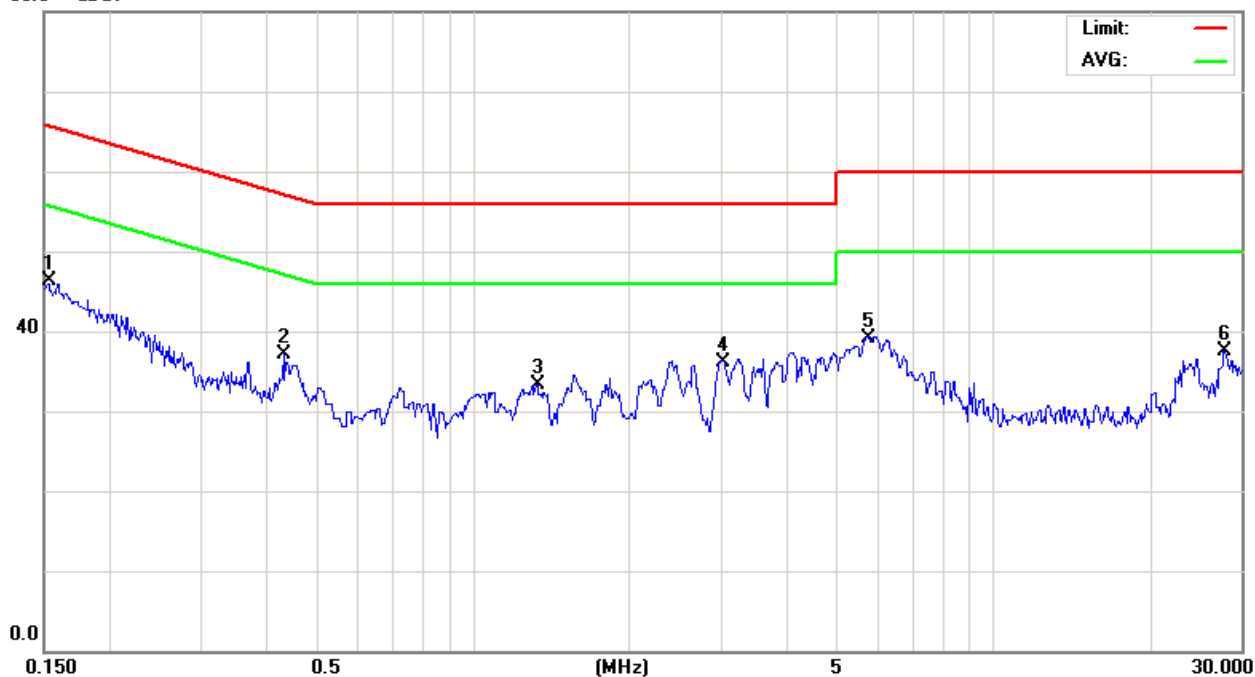
File :H780

Data :#2

Date: 2008/6/26

Time: 下午 05:23:42

80.0 dBuV



Site site#1

Phase: **L2**

Temperature: 26 °C

Limit: CISPR22 Class B Conduction(QP)

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

M/N: H780

Mode: BT+EDR

Note: AC mode;美規ADAPTER FMP5334A

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1527	36.57	9.73	46.30	65.85	-19.55	peak	
2		0.4313	27.42	9.78	37.20	57.23	-20.03	peak	
3		1.3278	23.53	9.82	33.35	56.00	-22.65	peak	
4		3.0108	26.24	9.89	36.13	56.00	-19.87	peak	
5		5.7500	29.06	10.06	39.12	60.00	-20.88	peak	
6		27.7500	27.19	10.41	37.60	60.00	-22.40	peak	

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

●Reference Only



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 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.

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

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

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

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, 2007	Jun. 26, 2008
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	Jun. 26, 2007	Jun. 26, 2008
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	Jun. 09, 2008	Jun. 09, 2009
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120E	0899	Jun. 26, 2007	Jun. 26, 2008

3.3 Test Configuration:



Figure 4. Front View of the Test Configuration



Figure 5. Rear View of the Test Configuration



Figure 6. Front View of the Test Configuration



Figure 7. Rear View of the Test Configuration



3.4 Test condition:

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

3.5 Radiated Emissions Limits:

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



3.6 Measurement Data of Radiated Emissions:

3.6.1 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 : H780
EUT : Universal Bluetooth Headset
Test Mode : Stand by_Bluetooth 2.0
Test Date : 06/23/2008

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



Radiated Emission Measurement

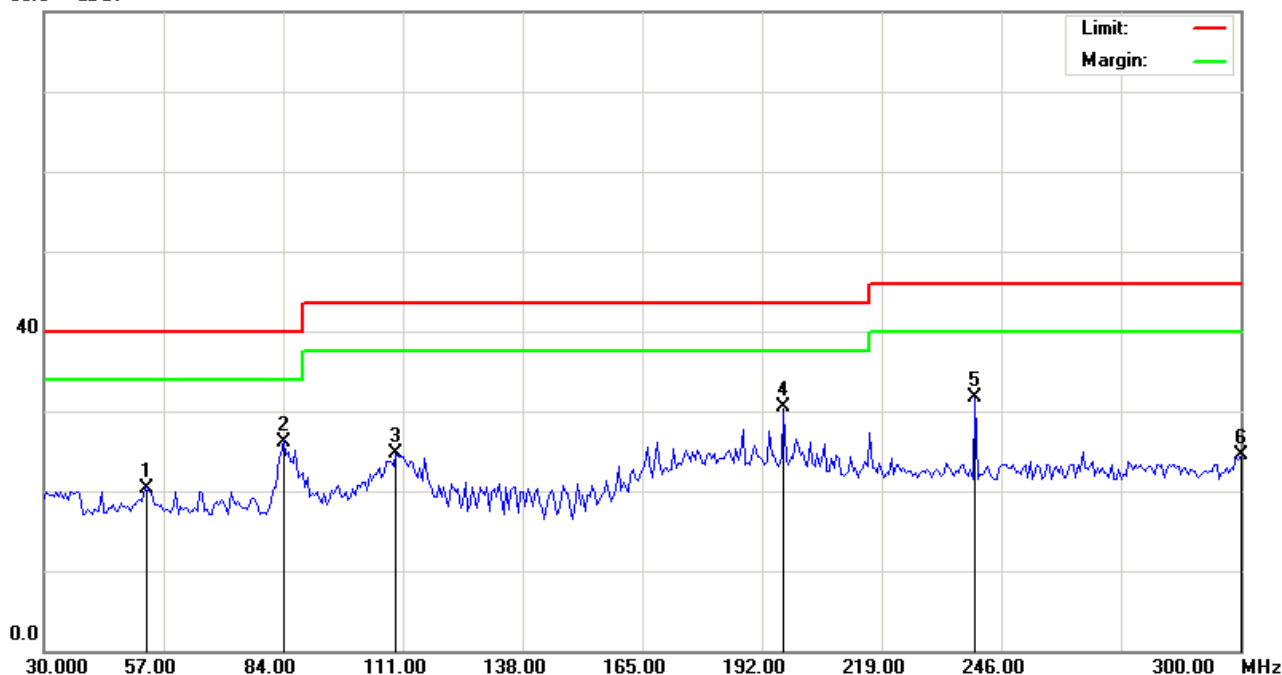
File :H780(IDEL)

Data :#1

Date:2008-6-23

Time: 下午 07:38:12

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: IDEL

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		53.2200	32.53	-12.19	20.34	40.00	-19.66	peak		
2		84.0000	41.28	-15.09	26.19	40.00	-13.81	peak		
3		109.3800	37.19	-12.45	24.74	43.50	-18.76	peak		
4	*	196.8600	43.67	-13.12	30.55	43.50	-12.95	peak		
5		240.0600	43.12	-11.43	31.69	46.00	-14.31	peak		
6		300.0000	34.43	-9.98	24.45	46.00	-21.55	peak		

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

●Reference Only



Radiated Emission Measurement

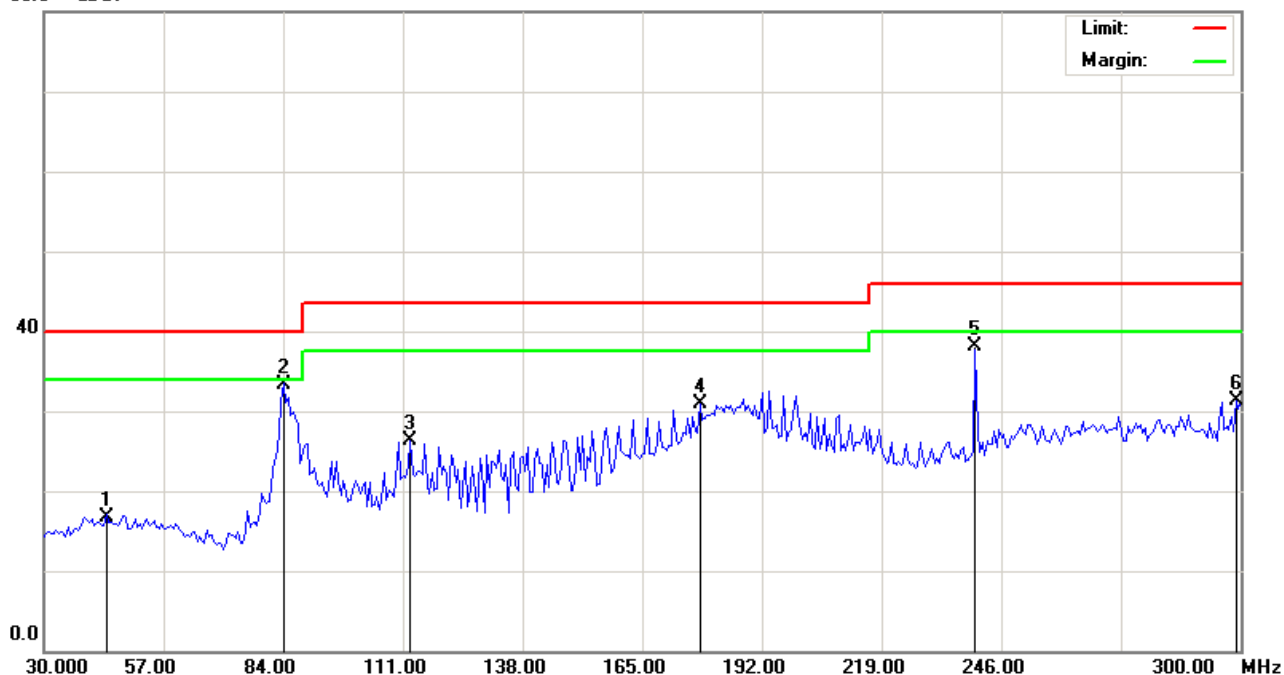
File :H780(IDEL)

Data :#3

Date:2008-6-23

Time: 下午 07:43:36

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: IDEL

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		44.0400	28.63	-11.84	16.79	40.00	-23.21	peak		
2	*	84.0000	48.37	-15.09	33.28	40.00	-6.72	peak		
3		112.6200	39.19	-12.94	26.25	43.50	-17.25	peak		
4		177.9600	45.34	-14.44	30.90	43.50	-12.60	peak		
5		240.0600	49.59	-11.43	38.16	46.00	-7.84	peak		
6		298.9200	41.28	-10.03	31.25	46.00	-14.75	peak		

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

●Reference Only



Radiated Emission Measurement

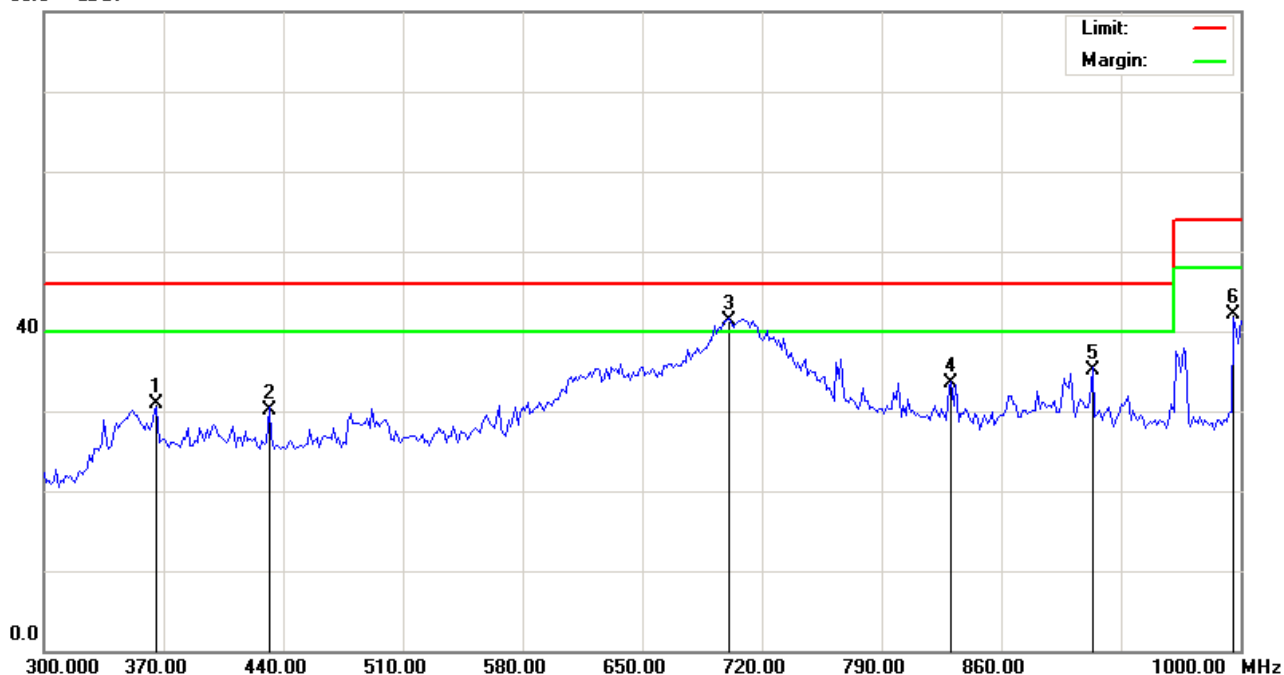
File :H780(IDEL)

Data :#2

Date:2008-6-23

Time: 下午 07:40:23

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: IDEL

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		365.8000	39.56	-8.63	30.93	46.00	-15.07	peak		
2		431.6000	38.21	-8.03	30.18	46.00	-15.82	peak		
3	*	700.4000	45.18	-3.88	41.30	46.00	-4.70	peak		
4		830.6000	35.19	-1.60	33.59	46.00	-12.41	peak		
5		913.2000	35.37	-0.19	35.18	46.00	-10.82	peak		
6		995.8000	41.29	0.75	42.04	54.00	-11.96	peak		

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

●Reference Only



Radiated Emission Measurement

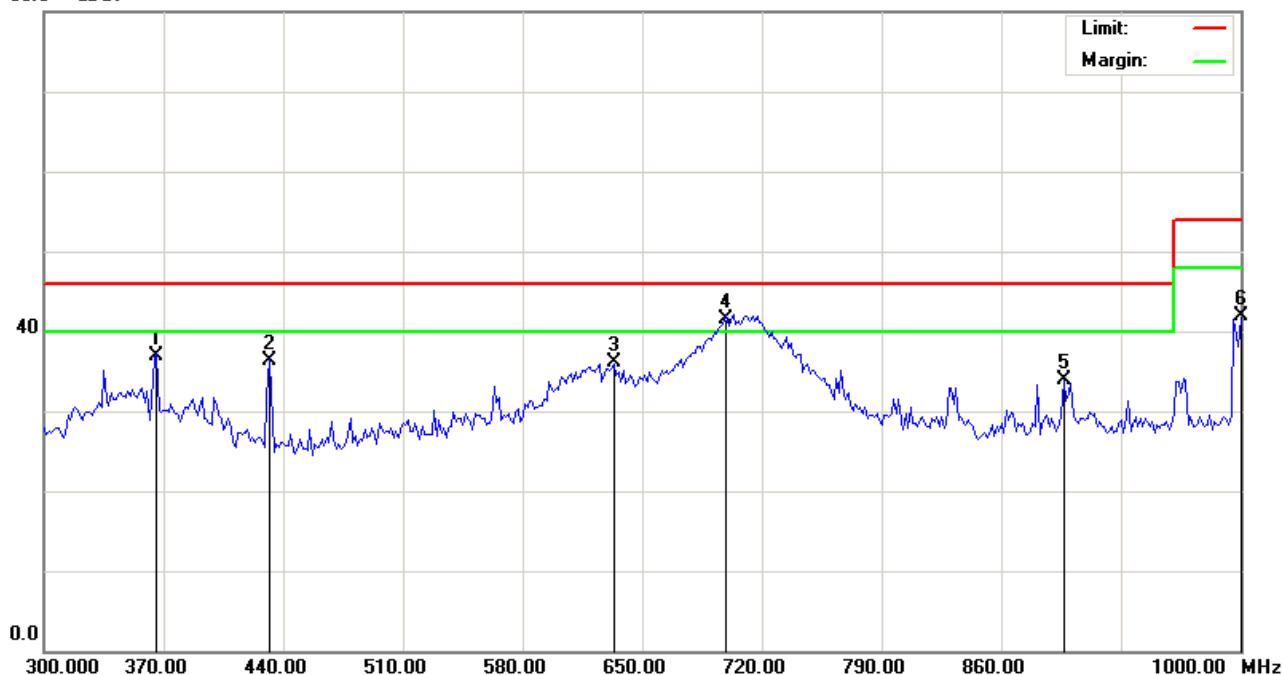
File :H780(IDEL)

Data :#4

Date:2008-6-23

Time: 下午 07:46:48

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: IDEL

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		365.8000	45.62	-8.63	36.99	46.00	-9.01	peak		
2		431.6000	44.39	-8.03	36.36	46.00	-9.64	peak		
3		633.2000	40.41	-4.36	36.05	46.00	-9.95	peak		
4	*	699.0000	45.32	-3.85	41.47	46.00	-4.53	peak		
5		896.4000	34.29	-0.47	33.82	46.00	-12.18	peak		
6		1000.000	41.38	0.62	42.00	54.00	-12.00	peak		

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

●Reference Only



3.6.2 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 : H780
EUT : Universal Bluetooth Headset
Test Mode : Link Mode_Bluetooth 2.0 CH00 2402.000 (Local Frequency: 2402.000 MHz)
Test Date : 06/23/2008

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 ambit noise.
8. All frequencies from 30MHz to 26.5GHz have been tested



Radiated Emission Measurement

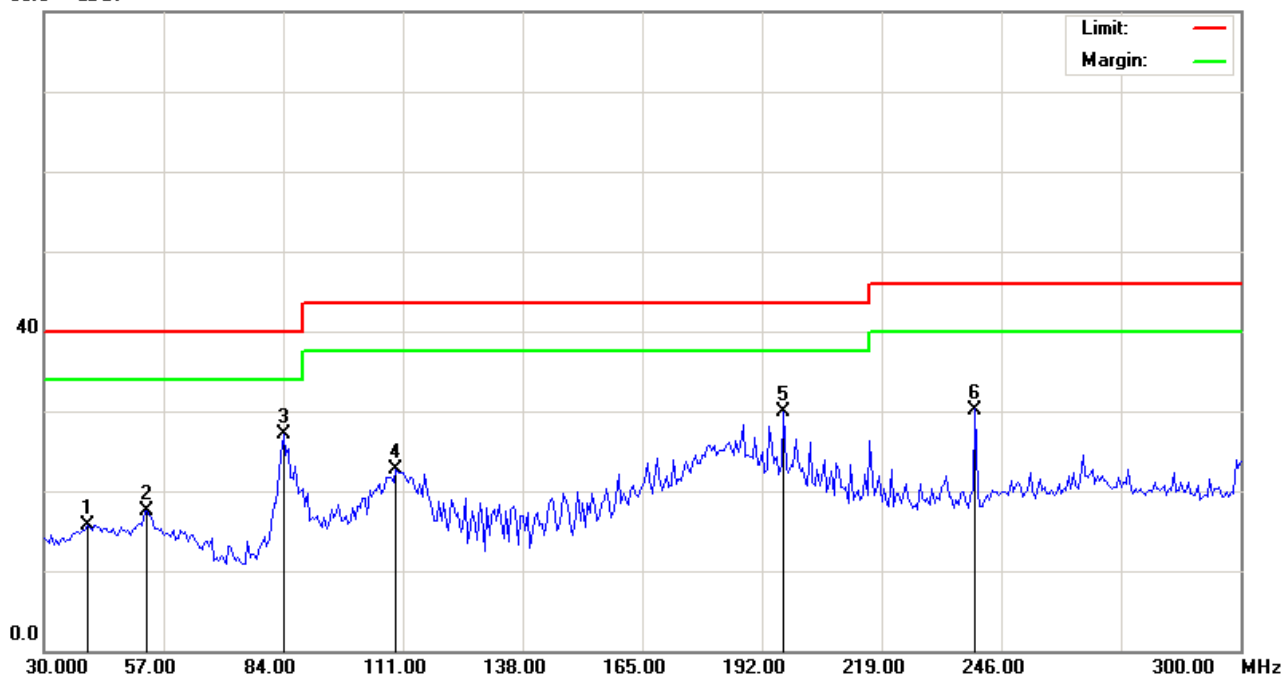
File:H780(CH2402)

Data :#1

Date:2008-6-23

Time: 下午 04:58:08

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: CH00(2402MHz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		39.7200	27.72	-11.96	15.76	40.00	-24.24	peak		
2		53.2200	29.76	-12.19	17.57	40.00	-22.43	peak		
3	*	84.0000	42.14	-15.09	27.05	40.00	-12.95	peak		
4		109.3800	35.08	-12.45	22.63	43.50	-20.87	peak		
5		196.8600	43.01	-13.12	29.89	43.50	-13.61	peak		
6		240.0600	41.63	-11.43	30.20	46.00	-15.80	peak		

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

●Reference Only



Radiated Emission Measurement

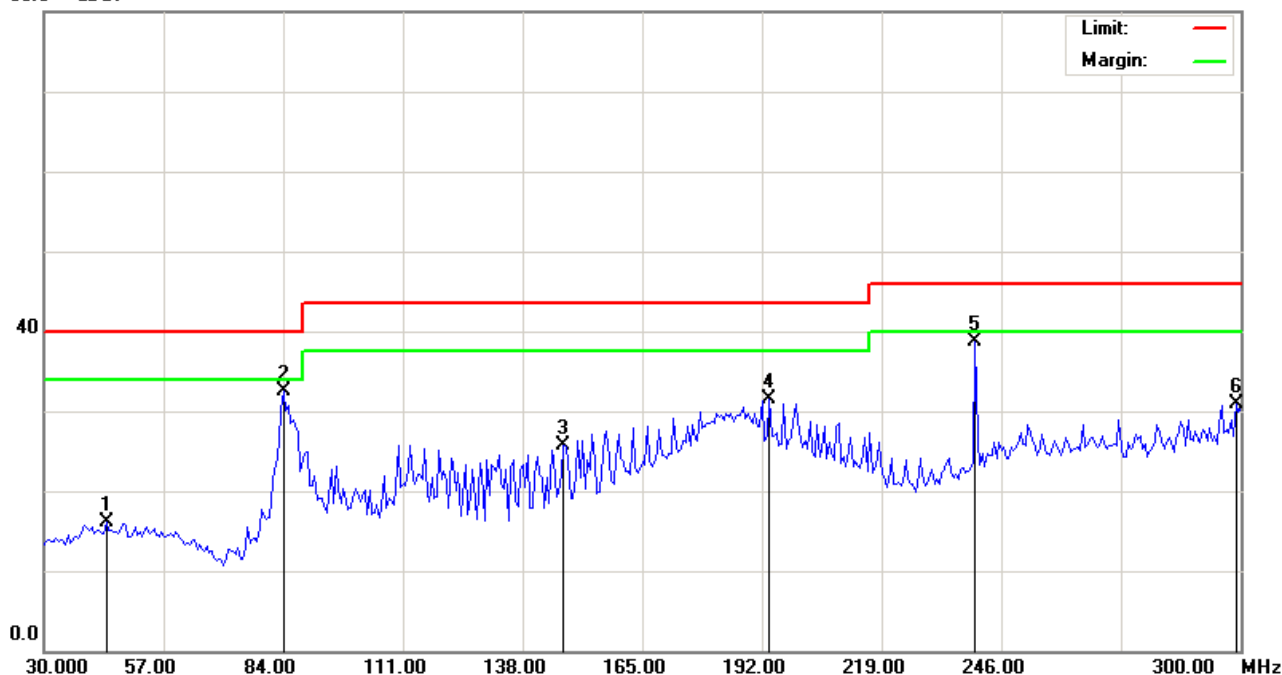
File:H780(CH2402)

Data :#3

Date:2008-6-23

Time: 下午 05:06:44

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: CH00(2402MHz)

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		44.0400	27.88	-11.84	16.04	40.00	-23.96	peak		
2		84.0000	47.62	-15.09	32.53	40.00	-7.47	peak		
3		147.1799	41.83	-16.11	25.72	43.50	-17.78	peak		
4		193.6200	44.60	-13.17	31.43	43.50	-12.07	peak		
5	*	240.0600	50.20	-11.43	38.77	46.00	-7.23	peak		
6		298.9200	40.86	-10.03	30.83	46.00	-15.17	peak		

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

●Reference Only



Radiated Emission Measurement

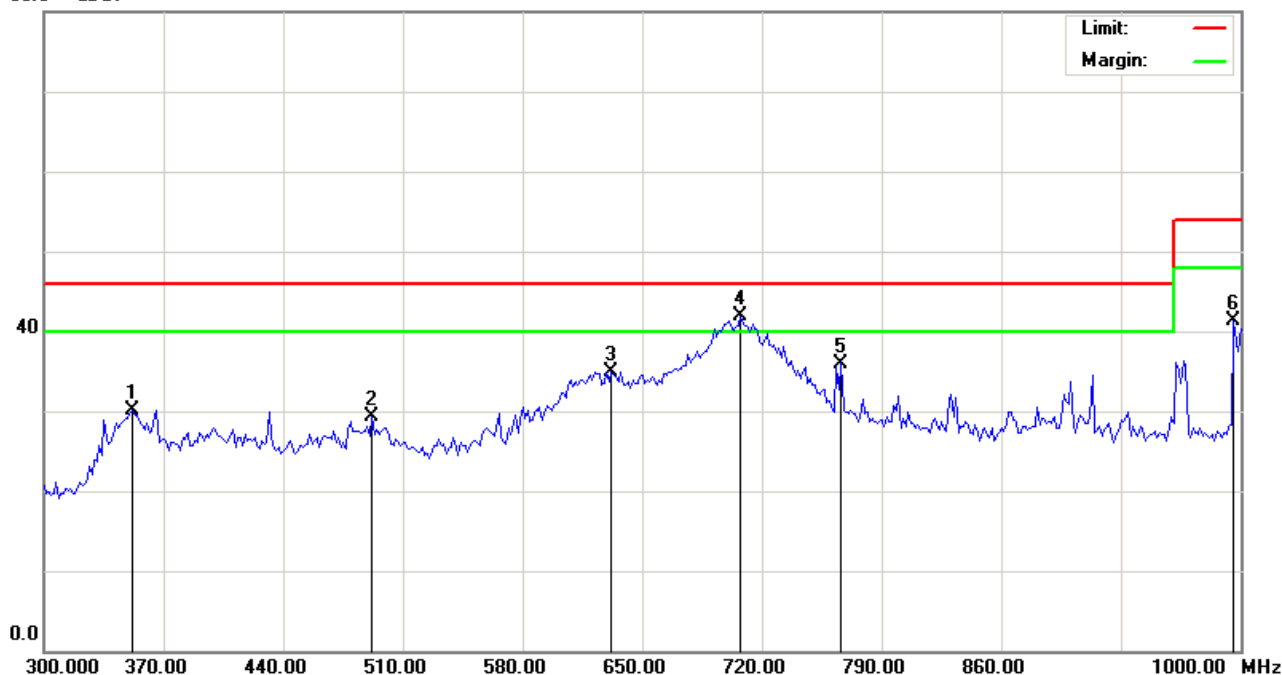
File:H780(CH2402)

Data :#2

Date:2008-6-23

Time: 下午 05:02:27

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: CH00(2402MHz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		351.8000	38.93	-8.90	30.03	46.00	-15.97	peak		
2		491.8000	36.47	-7.20	29.27	46.00	-16.73	peak		
3		631.8000	39.28	-4.37	34.91	46.00	-11.09	peak		
4	*	707.4000	45.80	-3.98	41.82	46.00	-4.18	peak		
5		766.2000	38.78	-2.78	36.00	46.00	-10.00	peak		
6		995.8000	40.51	0.75	41.26	54.00	-12.74	peak		

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

●Reference Only



Radiated Emission Measurement

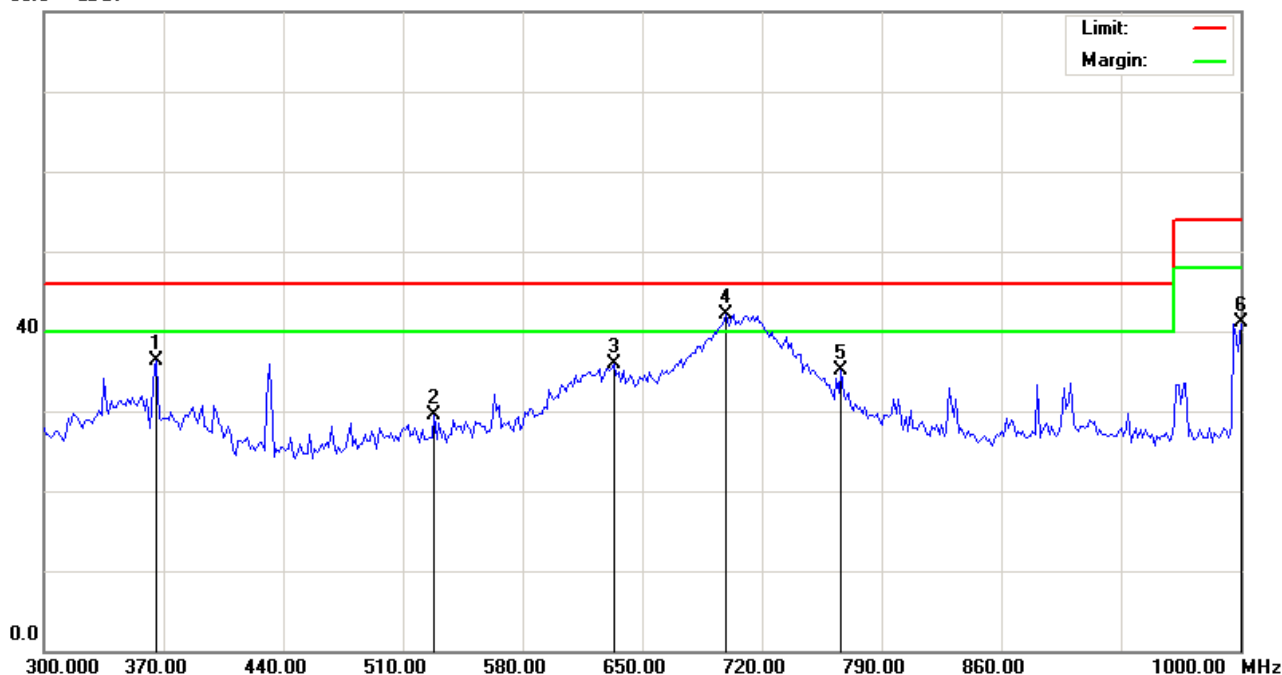
File :H780(CH2402)

Data :#4

Date:2008-6-23

Time: 下午 05:11:01

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: CH00(2402MHz)

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		365.8000	44.94	-8.63	36.31	46.00	-9.69	peak		
2		528.2000	35.90	-6.34	29.56	46.00	-16.44	peak		
3		633.2000	40.22	-4.36	35.86	46.00	-10.14	peak		
4	*	699.0000	46.03	-3.85	42.18	46.00	-3.82	peak		
5		766.2000	37.95	-2.78	35.17	46.00	-10.83	peak		
6		1000.000	40.52	0.62	41.14	54.00	-12.86	peak		

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

●Reference Only



Radiated Emission Measurement

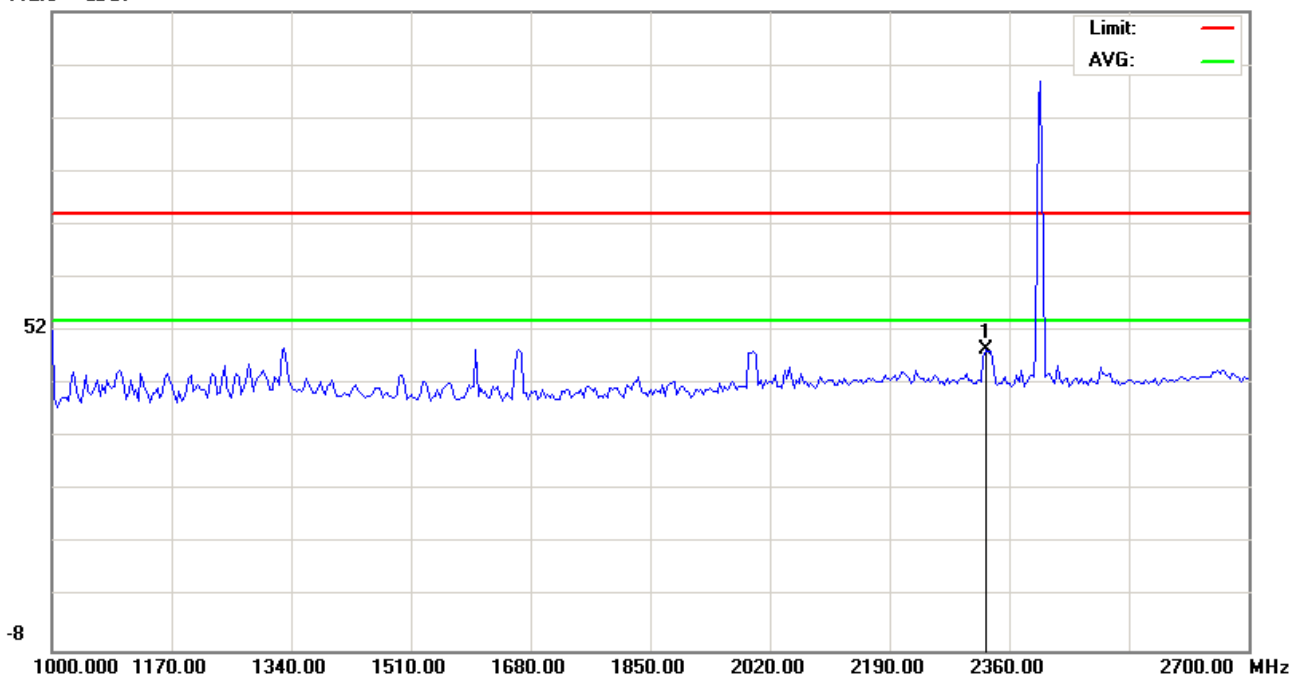
File :H780(CH2402(X軸))

Data :#1

Date: 2008/06/23

Time: 上午 09:37:57

112.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: 2402MHz,天線在1米,NB02接右邊下方USB孔

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1	*	2326.000	48.15	0.28	48.43	74.00	-25.57	peak		

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

●Reference Only



Radiated Emission Measurement

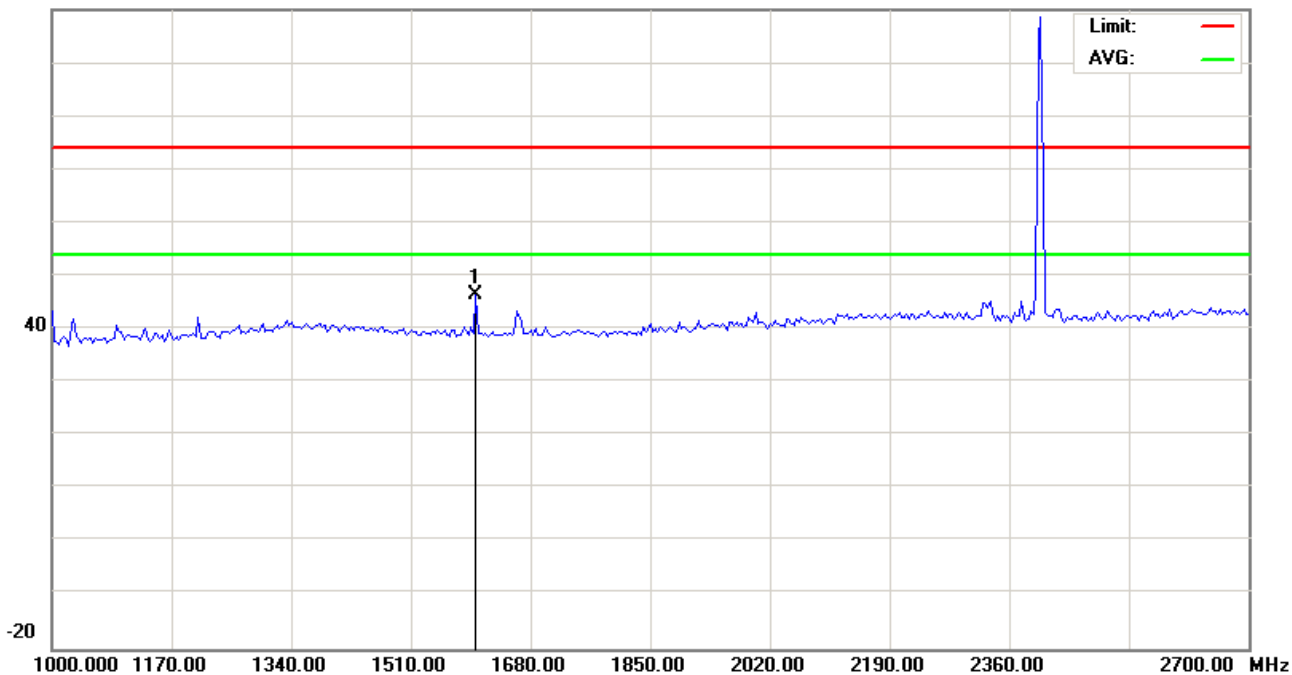
File :H780(CH2402(X軸))

Data :#3

Date:2008-6-23

Time: 上午 10:38:33

100.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: 2402MHz,天線在1米

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1	*	1601.800	50.07	-3.73	46.34	74.00	-27.66	peak		

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

●Reference Only



Radiated Emission Measurement

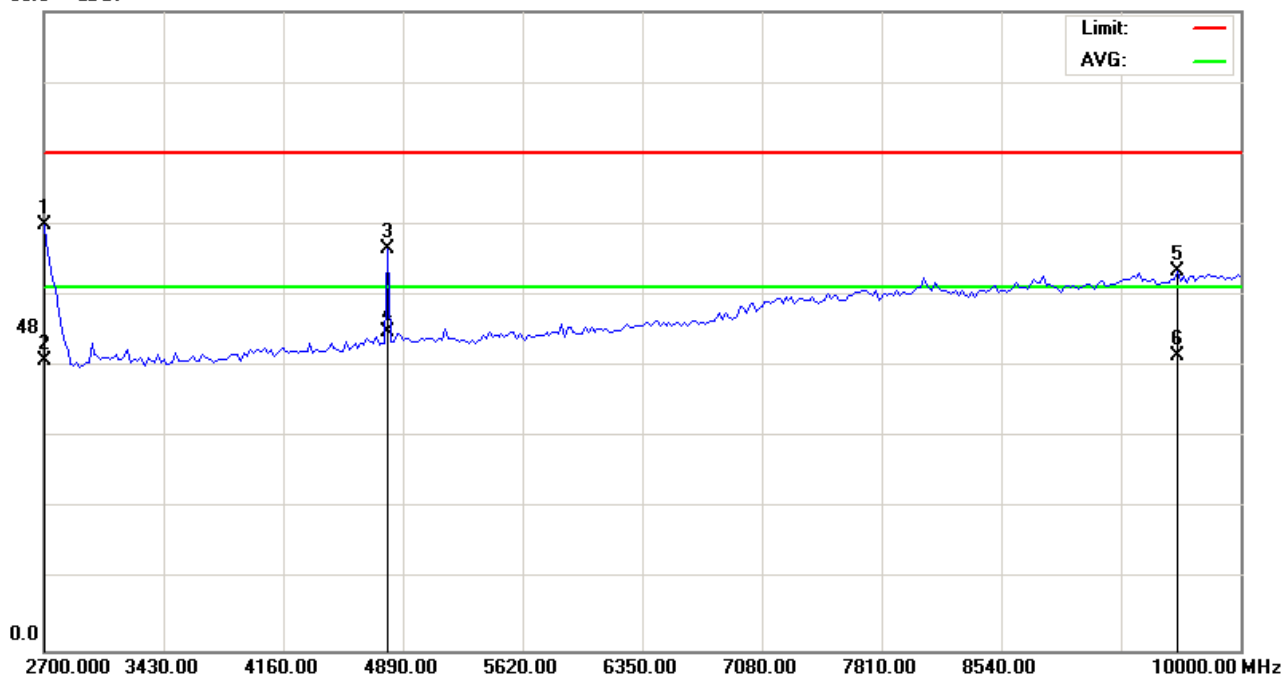
File :H780(CH2402(X軸))

Data :#5

Date:2008-6-23

Time: 上午 11:39:11

95.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: 2402MHz,天線在102.5

2.7G-10G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		2700.000	40.81	22.58	63.39	74.00	-10.61	peak		
2		2700.000	20.45	22.58	43.03	54.00	-10.97	AVG		
3		4798.750	52.48	7.29	59.77	74.00	-14.23	peak		
4	*	4798.750	40.05	7.29	47.34	54.00	-6.66	AVG		
5		9616.750	39.09	17.25	56.34	74.00	-17.66	peak		
6		9616.750	26.51	17.25	43.76	54.00	-10.24	AVG		

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

●Reference Only



Radiated Emission Measurement

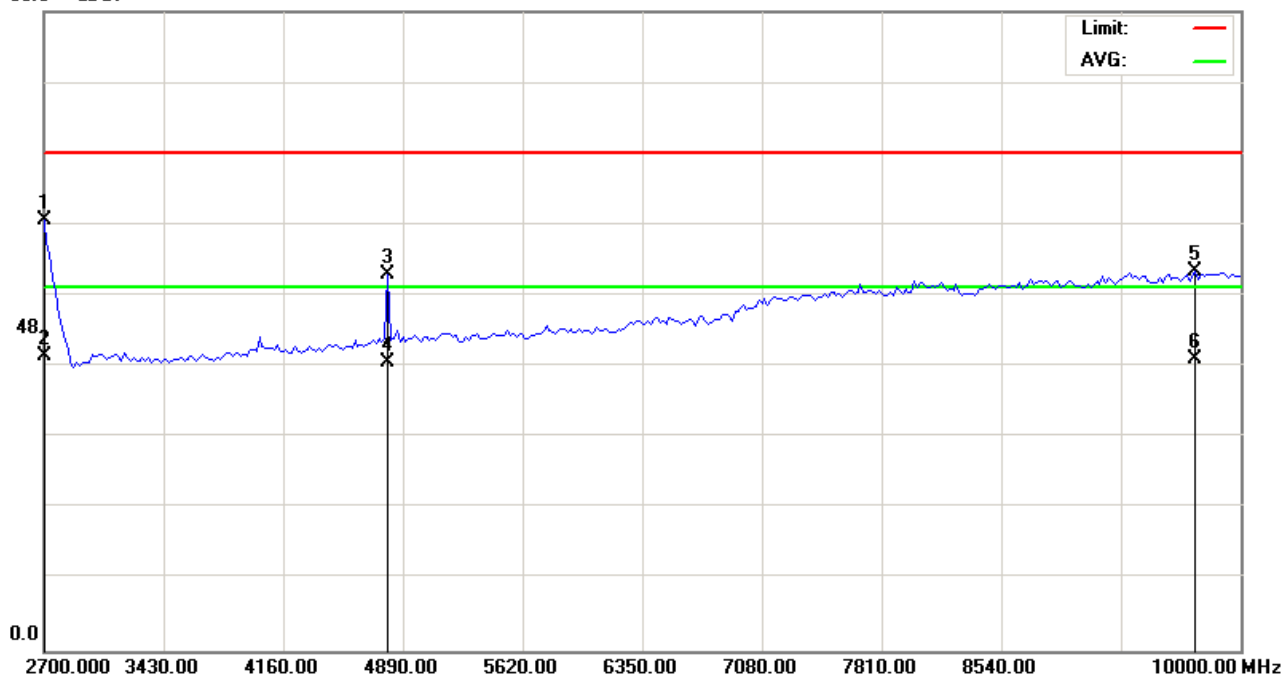
File :H780(CH2402(X軸))

Data :#7

Date:2008-6-23

Time: 下午 01:46:38

95.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: 2402MHz,天線在1米

2.7G-10G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	2700.000	41.47	22.58	64.05	74.00	-9.95	peak		
2		2700.000	21.22	22.58	43.80	54.00	-10.20	AVG		
3		4798.750	48.72	7.29	56.01	74.00	-17.99	peak		
4		4798.750	35.56	7.29	42.85	54.00	-11.15	AVG		
5		9726.250	38.81	17.60	56.41	74.00	-17.59	peak		
6		9726.250	25.79	17.60	43.39	54.00	-10.61	AVG		

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

●Reference Only



Radiated Emission Measurement

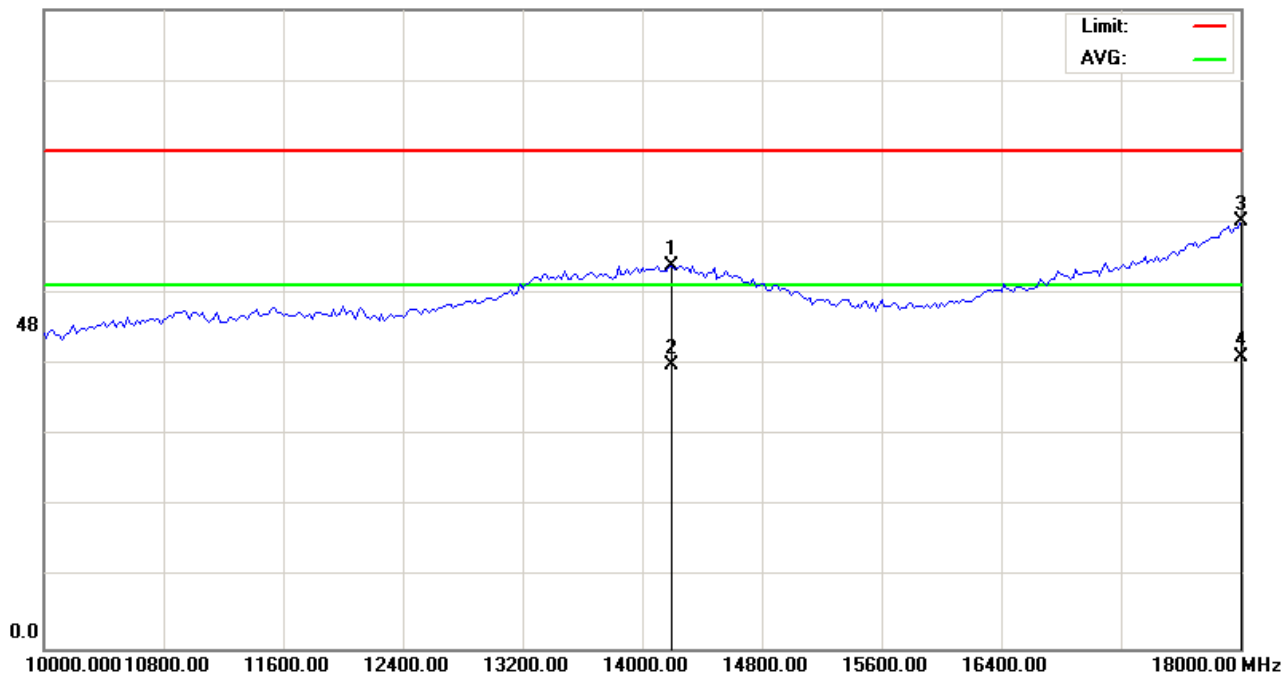
File :H780(CH2402(X軸))

Data :#9

Date:2008-6-23

Time: 下午 03:26:40

95.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT

Note: 2402MHz

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		14200.00	38.05	18.86	56.91	74.00	-17.09	peak		
2		14200.00	23.29	18.86	42.15	54.00	-11.85	AVG		
3	*	18000.00	38.05	25.57	63.62	74.00	-10.38	peak		
4		18000.00	17.83	25.57	43.40	54.00	-10.60	AVG		

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

●Reference Only



Radiated Emission Measurement

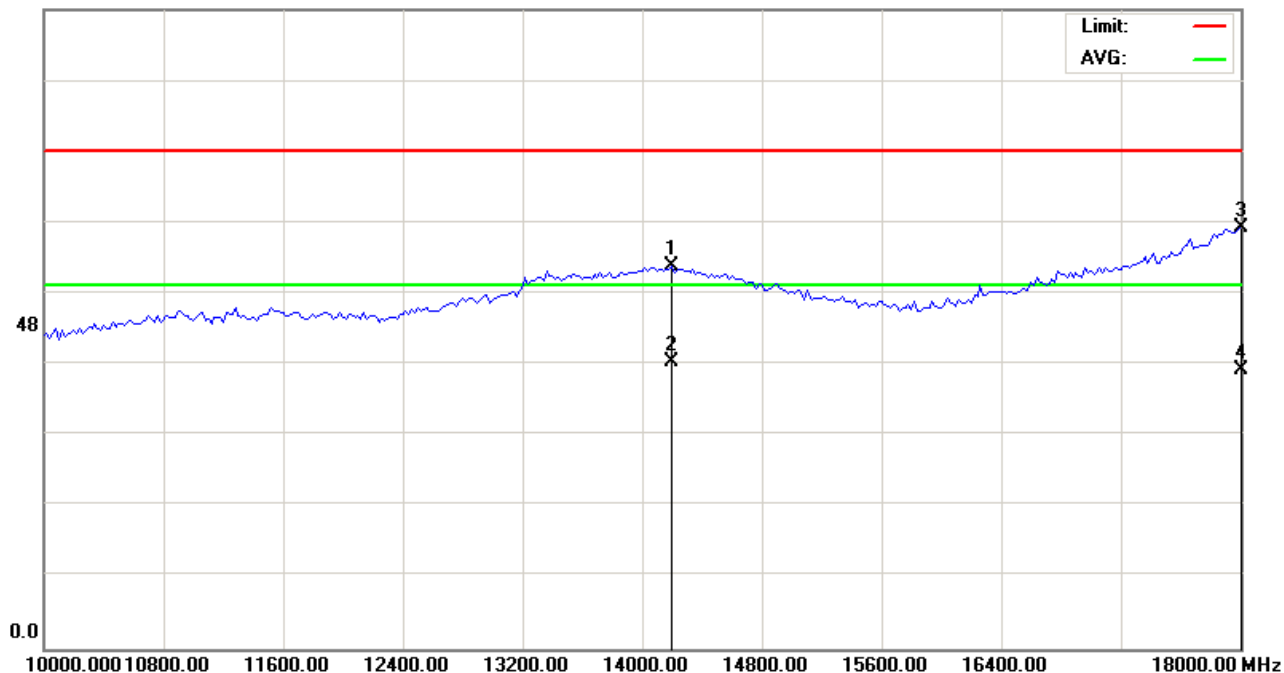
File :H780(CH2402(X軸))

Data :#11

Date:2008-6-23

Time: 下午 04:06:34

95.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT

Note: 2402MHz

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

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		14200.00	37.99	18.86	56.85	74.00	-17.15	peak		
2	*	14200.00	23.78	18.86	42.64	54.00	-11.36	AVG		
3		18000.00	36.96	25.57	62.53	74.00	-11.47	peak		
4		18000.00	15.88	25.57	41.45	54.00	-12.55	AVG		

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

●Reference Only



Radiated Emission Measurement

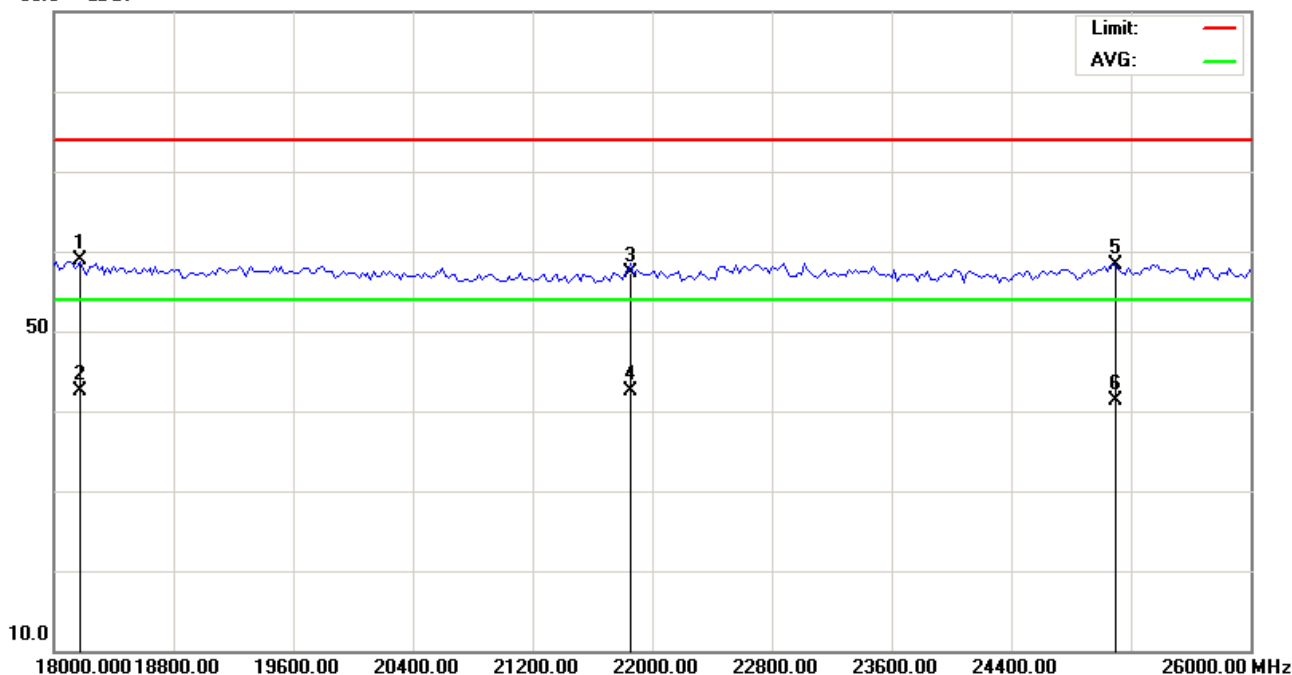
File :H780(CH2402(X軸))

Data :#13

Date:2008-6-23

Time: 下午 04:13:45

90.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT

Note: 2402MHz

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		18180.00	24.57	34.34	58.91	74.00	-15.09	peak		
2	*	18180.00	8.26	34.34	42.60	54.00	-11.40	AVG		
3		21860.00	26.42	30.94	57.36	74.00	-16.64	peak		
4		21860.00	11.53	30.94	42.47	54.00	-11.53	AVG		
5		25100.00	29.49	28.73	58.22	74.00	-15.78	peak		
6		25100.00	12.67	28.73	41.40	54.00	-12.60	AVG		

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

●Reference Only



Radiated Emission Measurement

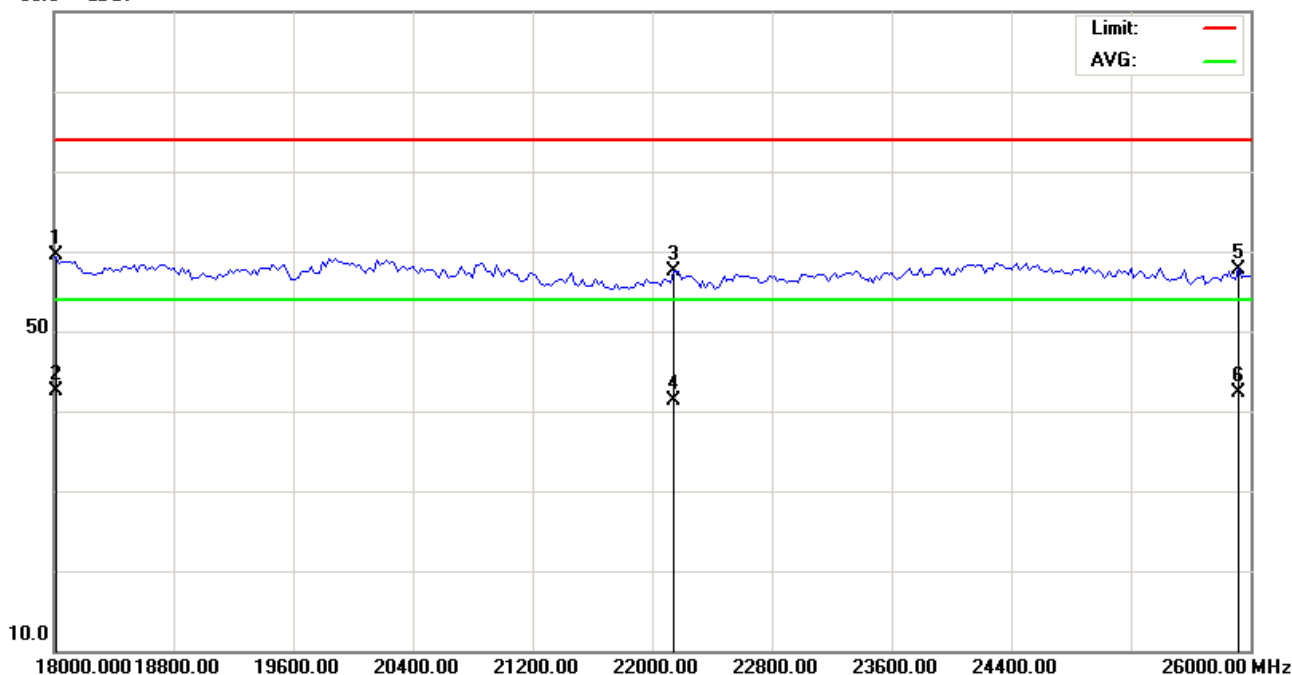
File :H780(CH2402(X軸))

Data :#14

Date:2008-6-23

Time: 下午 04:15:12

90.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT

Note: 2402MHz

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		18020.00	25.56	33.99	59.55	74.00	-14.45	peak		
2	*	18020.00	8.43	33.99	42.42	54.00	-11.58	AVG		
3		22140.00	26.82	30.76	57.58	74.00	-16.42	peak		
4		22140.00	10.63	30.76	41.39	54.00	-12.61	AVG		
5		25920.00	29.51	28.17	57.68	74.00	-16.32	peak		
6		25920.00	14.07	28.17	42.24	54.00	-11.76	AVG		

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

●Reference Only



3.6.3 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 : H780
EUT : Universal Bluetooth Headset
Test Mode : Link Mode_Bluetooth 2.0 CH39 2441.000 (Local Frequency: 2441.000 MHz)
Test Date : 06/23/2008

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 ambit noise.
8. All frequencies from 30MHz to 26.5GHz have been tested



Radiated Emission Measurement

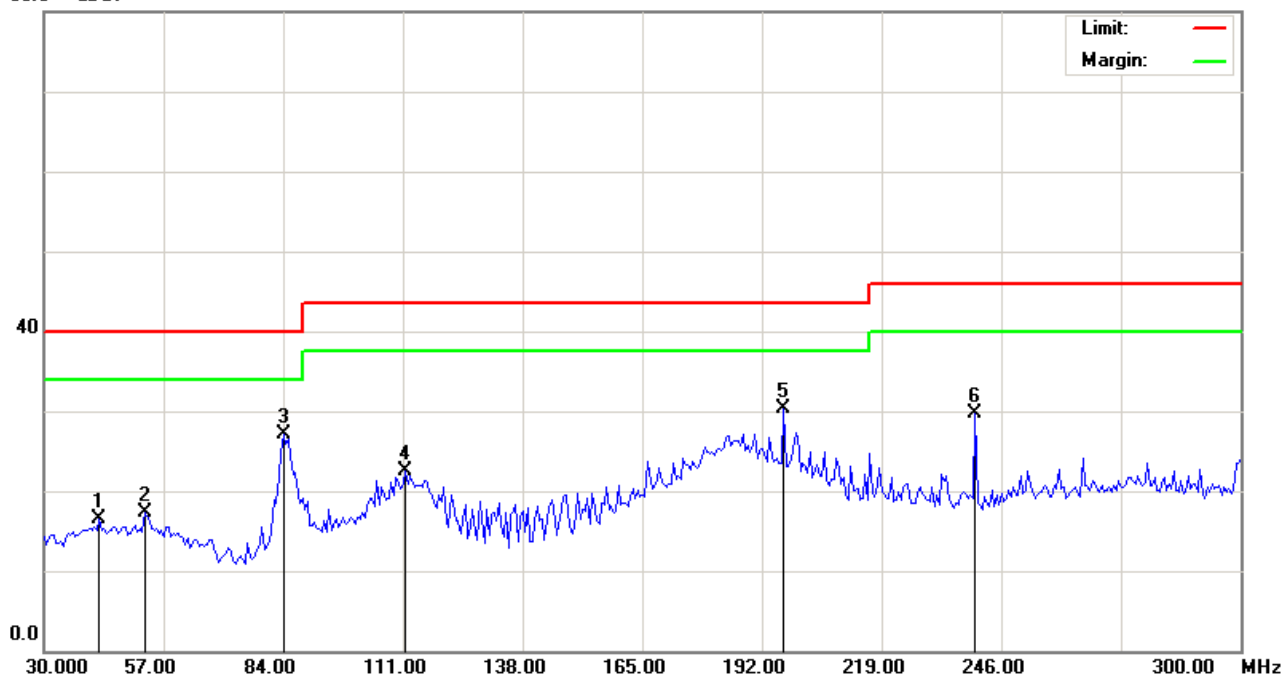
File:H780(CH2441)

Data :#1

Date:2008-6-23

Time: 下午 06:17:41

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: CH39(2441MHz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		42.4199	28.39	-11.86	16.53	40.00	-23.47	peak		
2		52.6800	29.48	-12.18	17.30	40.00	-22.70	peak		
3	*	84.0000	42.18	-15.09	27.09	40.00	-12.91	peak		
4		111.5400	35.23	-12.76	22.47	43.50	-21.03	peak		
5		196.8600	43.33	-13.12	30.21	43.50	-13.29	peak		
6		240.0600	41.07	-11.43	29.64	46.00	-16.36	peak		

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

●Reference Only



Radiated Emission Measurement

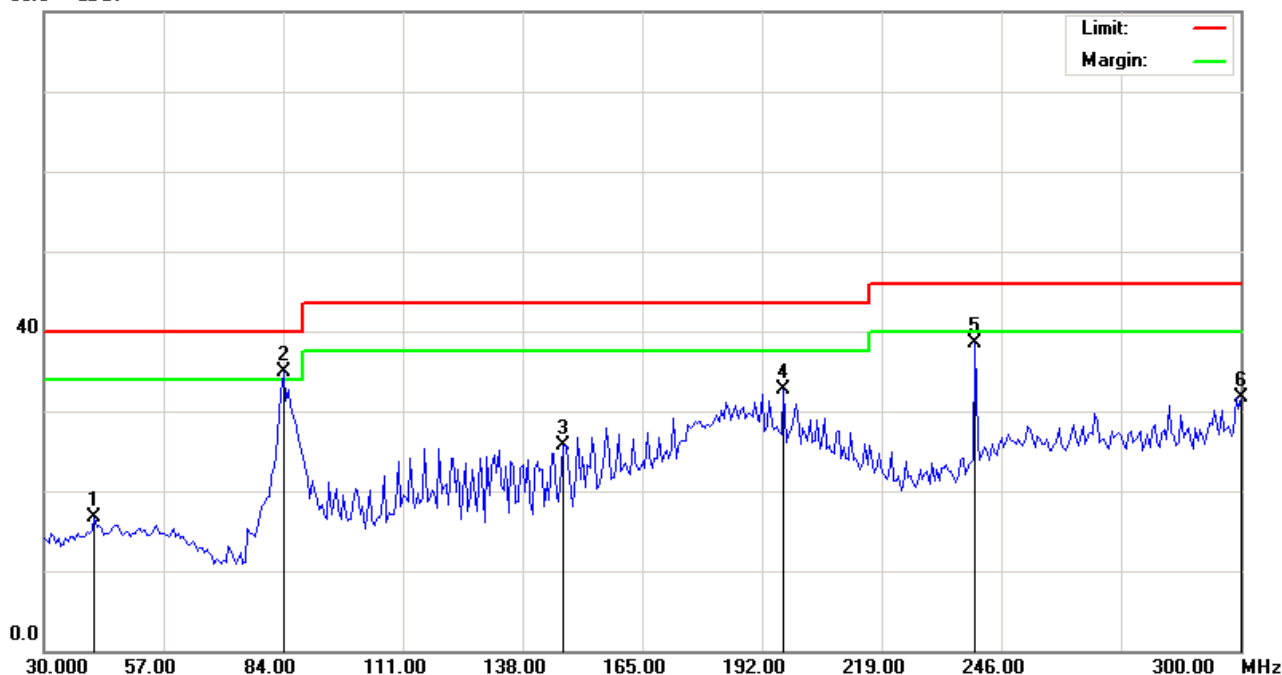
File:H780(CH2441)

Data :#3

Date:2008-6-23

Time: 下午 06:26:14

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: CH39(2441MHz)

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		41.3400	28.65	-11.88	16.77	40.00	-23.23	peak		
2	*	84.0000	50.00	-15.09	34.91	40.00	-5.09	peak		
3		147.1799	41.89	-16.11	25.78	43.50	-17.72	peak		
4		196.8600	45.76	-13.12	32.64	43.50	-10.86	peak		
5		240.0600	49.96	-11.43	38.53	46.00	-7.47	peak		
6		300.0000	41.69	-9.98	31.71	46.00	-14.29	peak		

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

●Reference Only



Radiated Emission Measurement

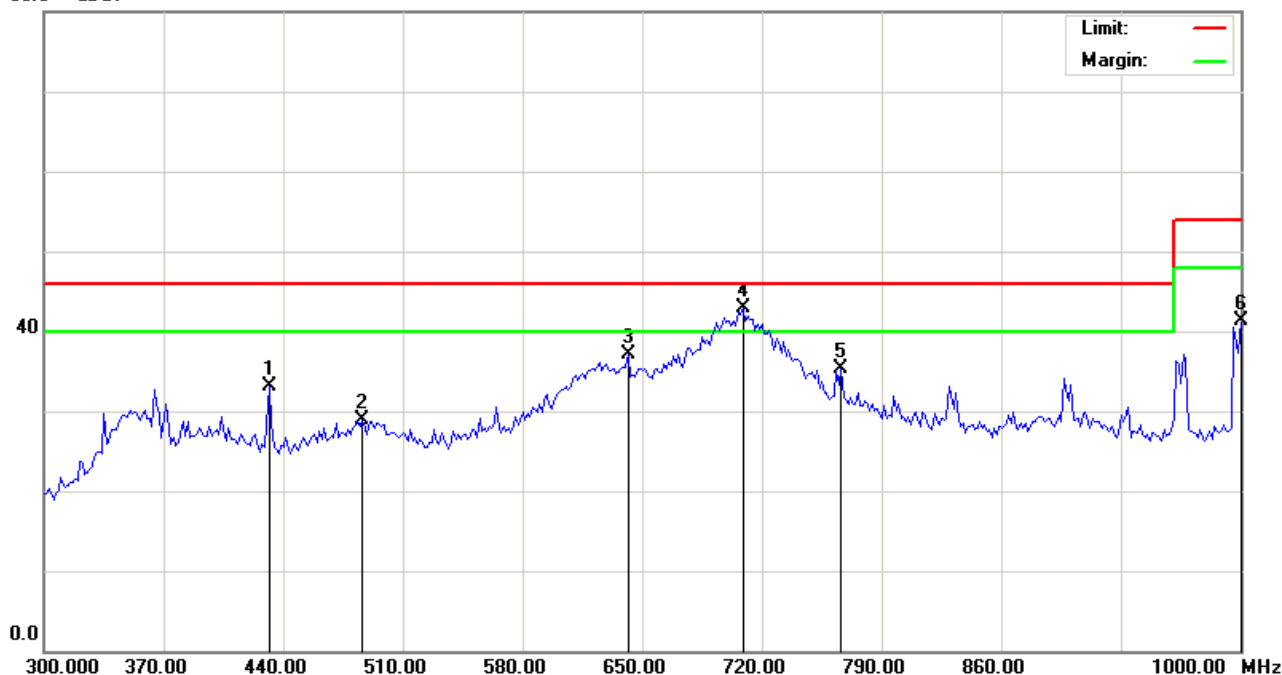
File:H780(CH2441)

Data :#2

Date:2008-6-23

Time: 下午 06:21:57

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: CH39(2441MHz)

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		431.6000	41.07	-8.03	33.04	46.00	-12.96	peak		
2		486.2000	36.33	-7.42	28.91	46.00	-17.09	peak		
3		641.6000	41.51	-4.48	37.03	46.00	-8.97	peak		
4	*	708.8000	46.92	-3.95	42.97	46.00	-3.03	peak		
5		766.2000	38.04	-2.78	35.26	46.00	-10.74	peak		
6		1000.000	40.66	0.62	41.28	54.00	-12.72	peak		

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

●Reference Only



Radiated Emission Measurement

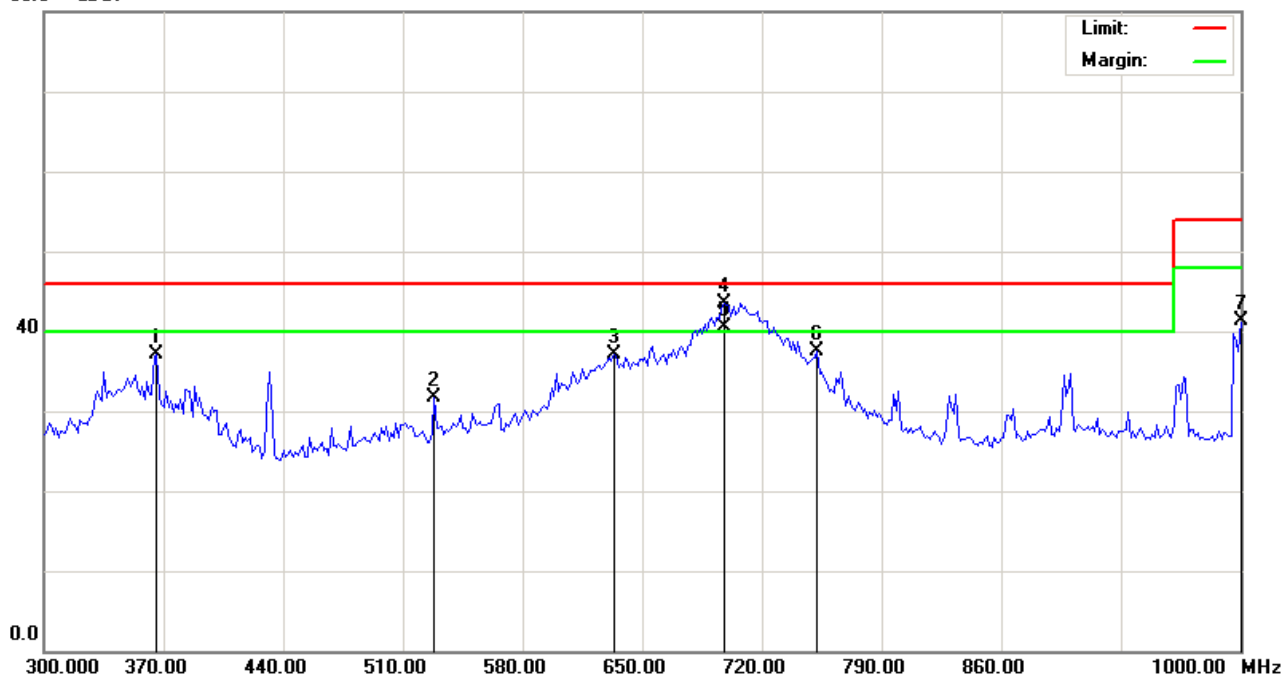
File:H780(CH2441)

Data :#4

Date: 2008/6/23

Time: 下午 06:30:31

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: CH39(2441MHz)

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		365.8000	45.75	-8.63	37.12	46.00	-8.88	peak		
2		528.2000	38.08	-6.34	31.74	46.00	-14.26	peak		
3		633.2000	41.41	-4.36	37.05	46.00	-8.95	peak		
4	*	697.6000	47.40	-3.86	43.54	46.00	-2.46	peak		
5	!	697.6000	44.27	-3.86	40.41	46.00	-5.59	QP		
6		752.2000	40.65	-3.15	37.50	46.00	-8.50	peak		
7		1000.000	40.73	0.62	41.35	54.00	-12.65	peak		

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

●Reference Only



Radiated Emission Measurement

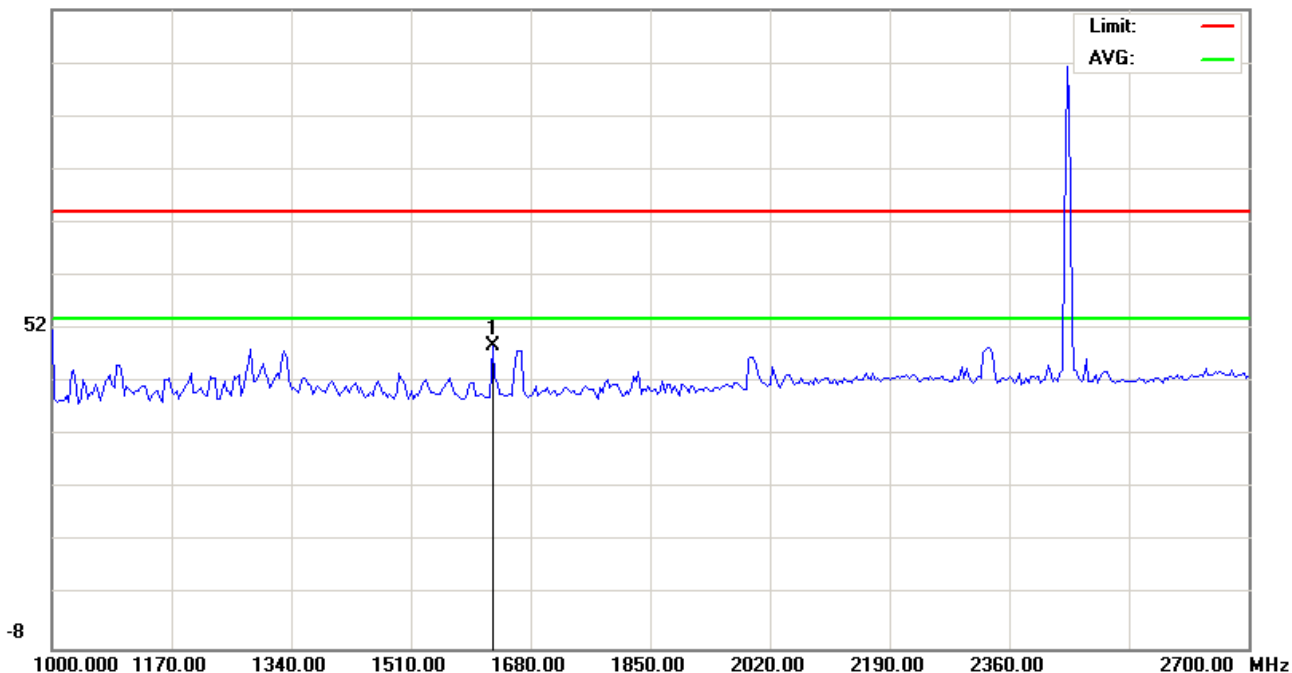
File:H780(CH2441)

Data :#1

Date:2008/06/23

Time: 上午 09:46:40

112.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: 2441MHz,天線1米,NB02接右邊下方USB孔

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1	*	1625.600	52.65	-3.87	48.78	74.00	-25.22	peak		

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

●Reference Only



Radiated Emission Measurement

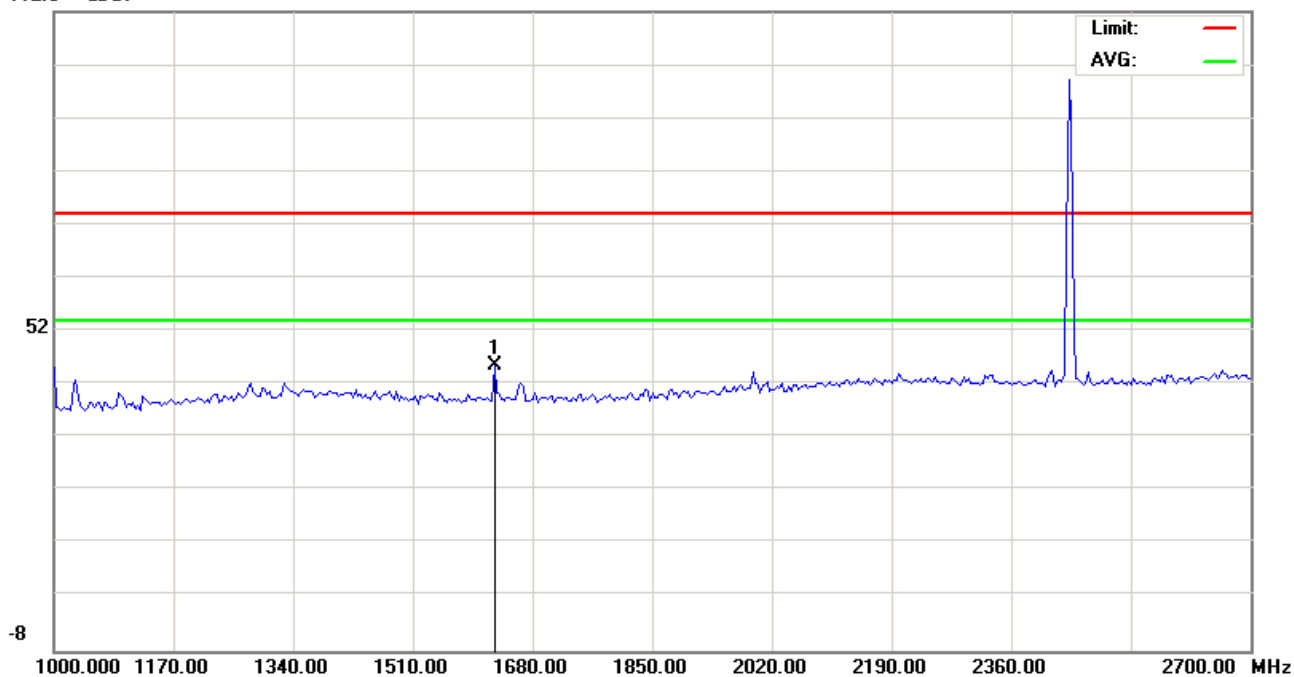
File:H780(CH2441)

Data :#3

Date:2008/06/23

Time: 上午 10:09:26

112.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: 2441MHz,天線在1米

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1	*	1625.600	49.46	-3.87	45.59	74.00	-28.41	peak		Comment

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

●Reference Only



Radiated Emission Measurement

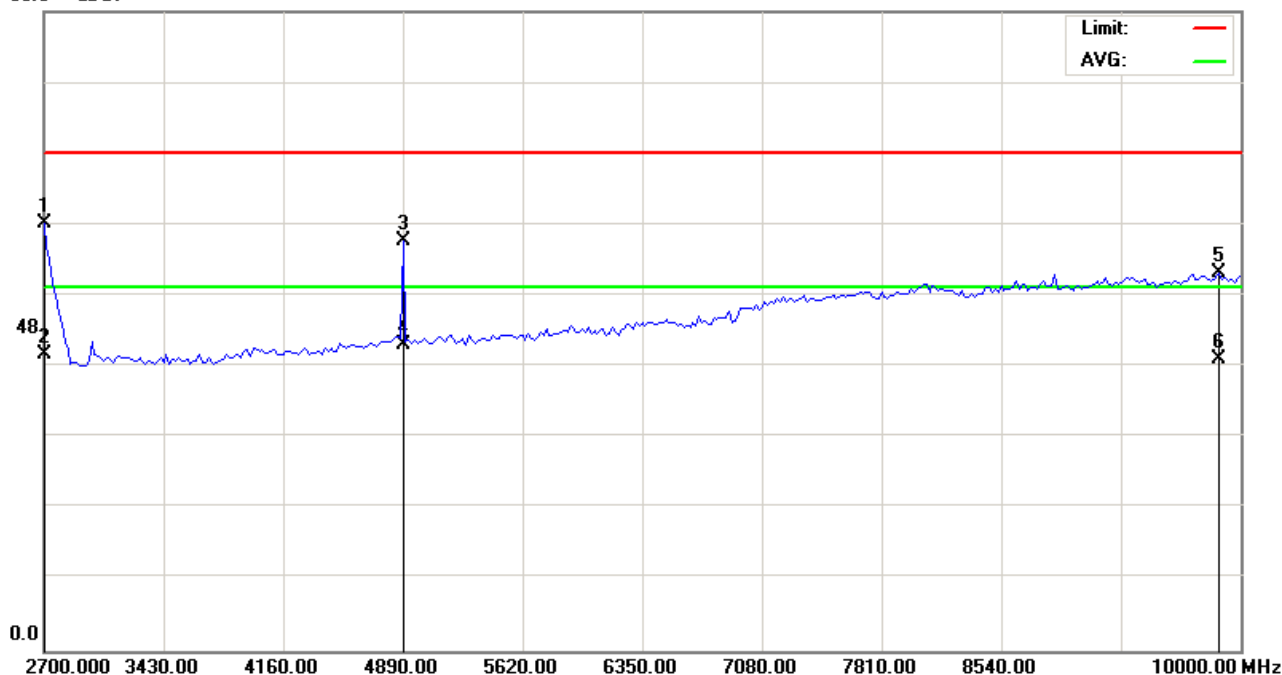
File:H780(CH2441)

Data :#5

Date:2008-6-23

Time: 上午 11:48:00

95.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: 2441MHz,天線在1米

2.7G-10G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		2700.000	41.03	22.58	63.61	74.00	-10.39	peak		
2		2700.000	21.36	22.58	43.94	54.00	-10.06	AVG		
3		4890.000	53.13	7.73	60.86	74.00	-13.14	peak		
4	*	4890.000	37.87	7.73	45.60	54.00	-8.40	AVG		
5		9872.250	38.39	17.84	56.23	74.00	-17.77	peak		
6		9872.250	25.42	17.84	43.26	54.00	-10.74	AVG		

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

●Reference Only



Radiated Emission Measurement

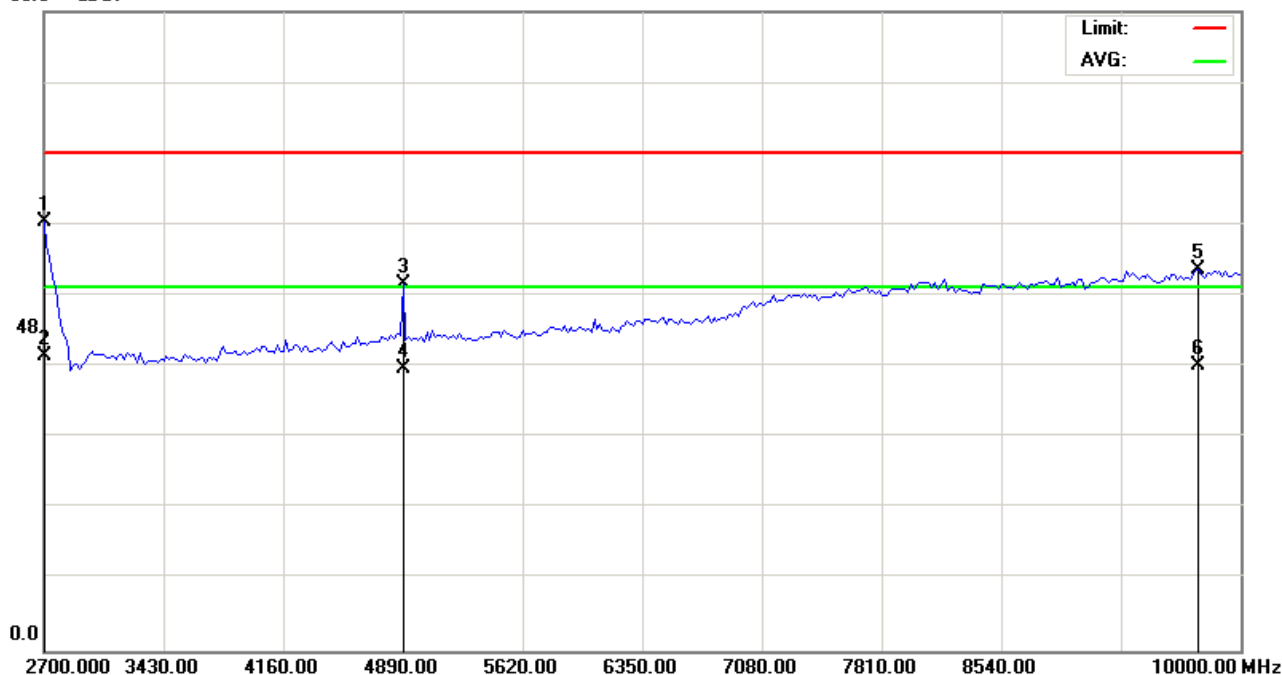
File:H780(CH2441)

Data :#7

Date:2008-6-23

Time: 下午 01:33:40

95.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: 2441MHz,天線1米

2.7G-10G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		2700.000	41.08	22.58	63.66	74.00	-10.34	peak		
2	*	2700.000	21.35	22.58	43.93	54.00	-10.07	AVG		
3		4890.000	46.88	7.73	54.61	74.00	-19.39	peak		
4		4890.000	34.19	7.73	41.92	54.00	-12.08	AVG		
5		9744.500	39.03	17.69	56.72	74.00	-17.28	peak		
6		9744.500	24.73	17.69	42.42	54.00	-11.58	AVG		

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

●Reference Only



Radiated Emission Measurement

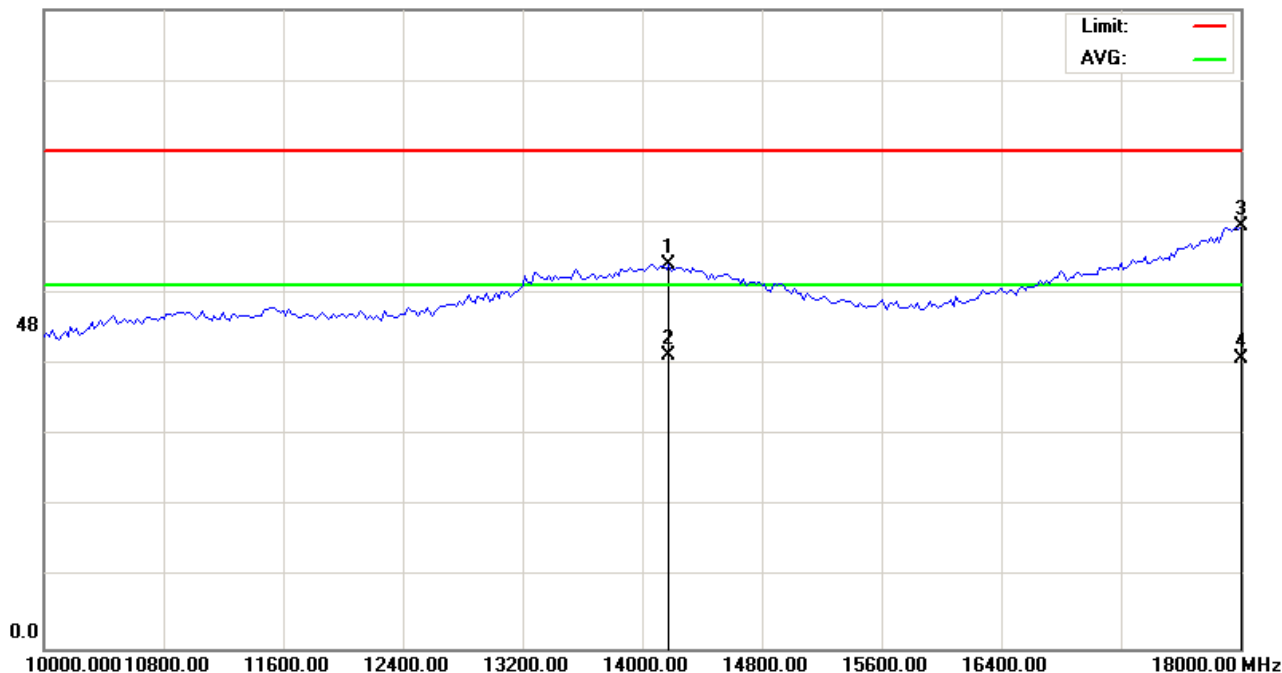
File:H780(CH2441)

Data :#9

Date:2008-6-23

Time: 下午 03:34:48

95.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT

Note: 2441MHz

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

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		14180.00	38.24	18.85	57.09	74.00	-16.91	peak		
2	*	14180.00	24.80	18.85	43.65	54.00	-10.35	AVG		
3		18000.00	37.22	25.57	62.79	74.00	-11.21	peak		
4		18000.00	17.47	25.57	43.04	54.00	-10.96	AVG		

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

●Reference Only



Radiated Emission Measurement

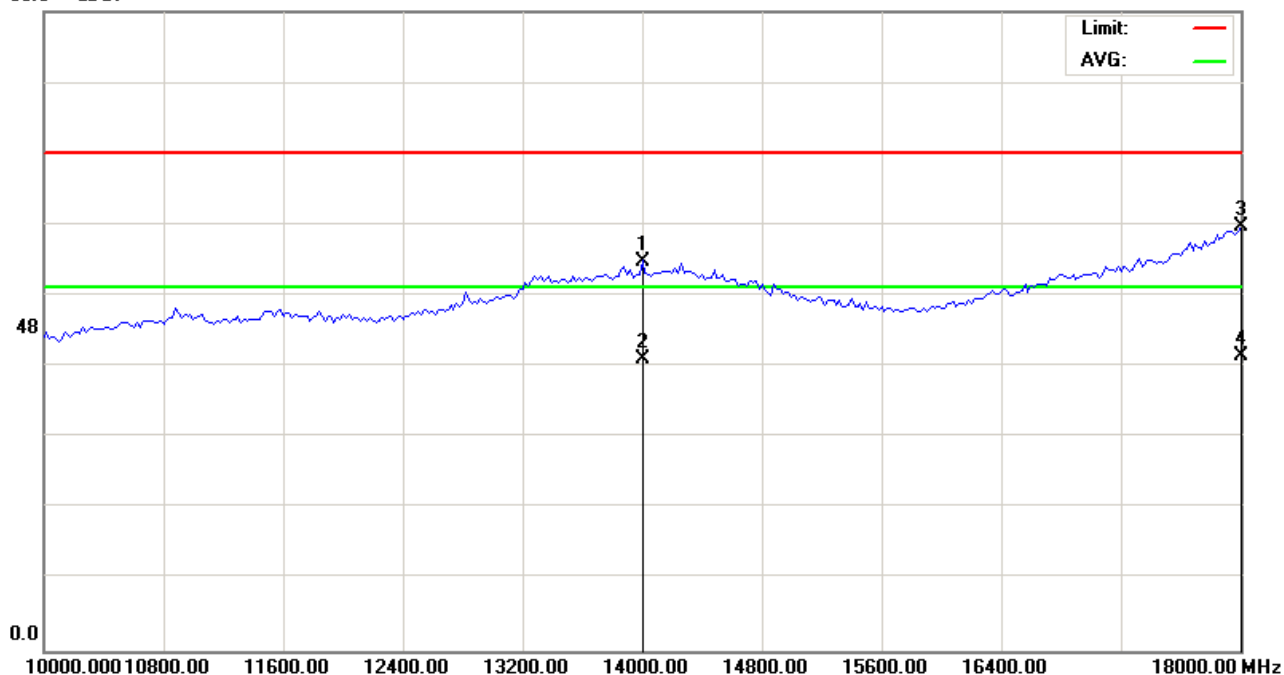
File:H780(CH2441)

Data :#11

Date:2008-6-23

Time: 下午 03:59:30

95.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT

Note: 2441MHz

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		14000.00	39.28	18.67	57.95	74.00	-16.05	peak		
2		14000.00	24.65	18.67	43.32	54.00	-10.68	AVG		
3		18000.00	37.54	25.57	63.11	74.00	-10.89	peak		
4	*	18000.00	18.23	25.57	43.80	54.00	-10.20	AVG		

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

●Reference Only



Radiated Emission Measurement

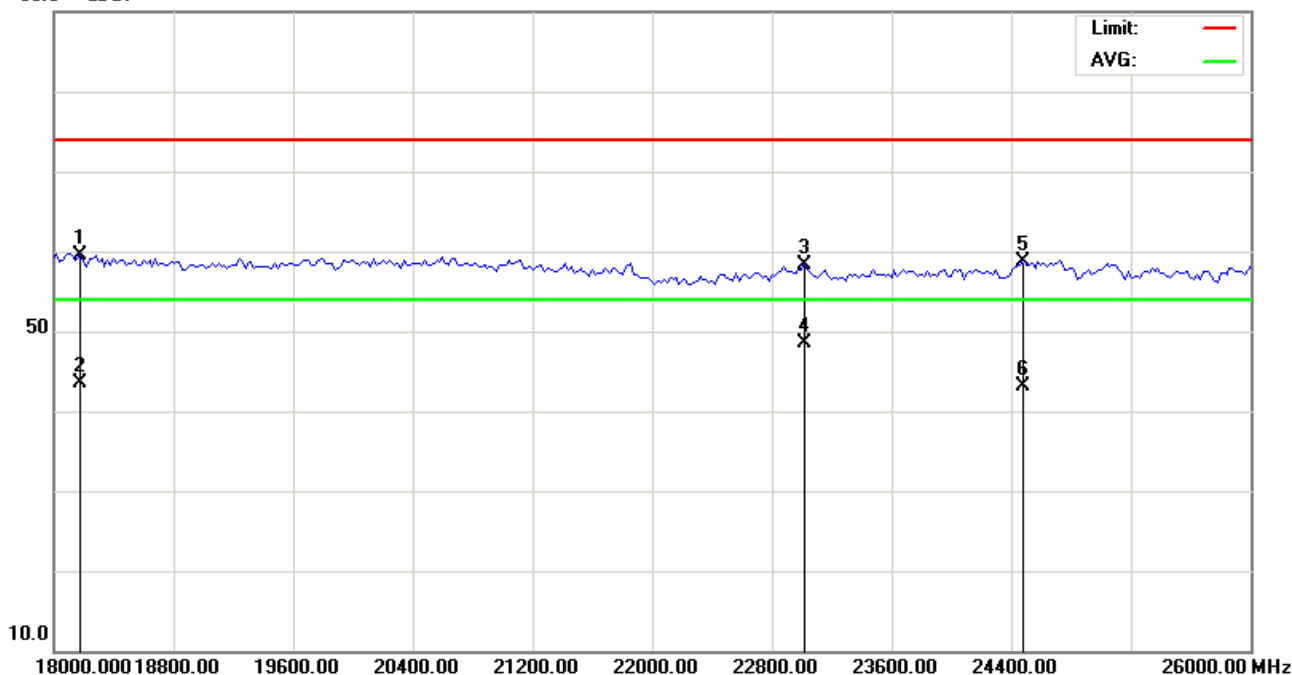
File:H780(CH2441)

Data :#13

Date:2008-6-23

Time: 下午 04:17:24

90.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT

Note: 2441MHz

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		18180.00	25.16	34.34	59.50	74.00	-14.50	peak		
2		18180.00	9.07	34.34	43.41	54.00	-10.59	AVG		
3		23020.00	28.13	30.15	58.28	74.00	-15.72	peak		
4	*	23020.00	18.34	30.15	48.49	54.00	-5.51	AVG		
5		24480.00	29.61	29.16	58.77	74.00	-15.23	peak		
6		24480.00	13.97	29.16	43.13	54.00	-10.87	AVG		

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

●Reference Only



Radiated Emission Measurement

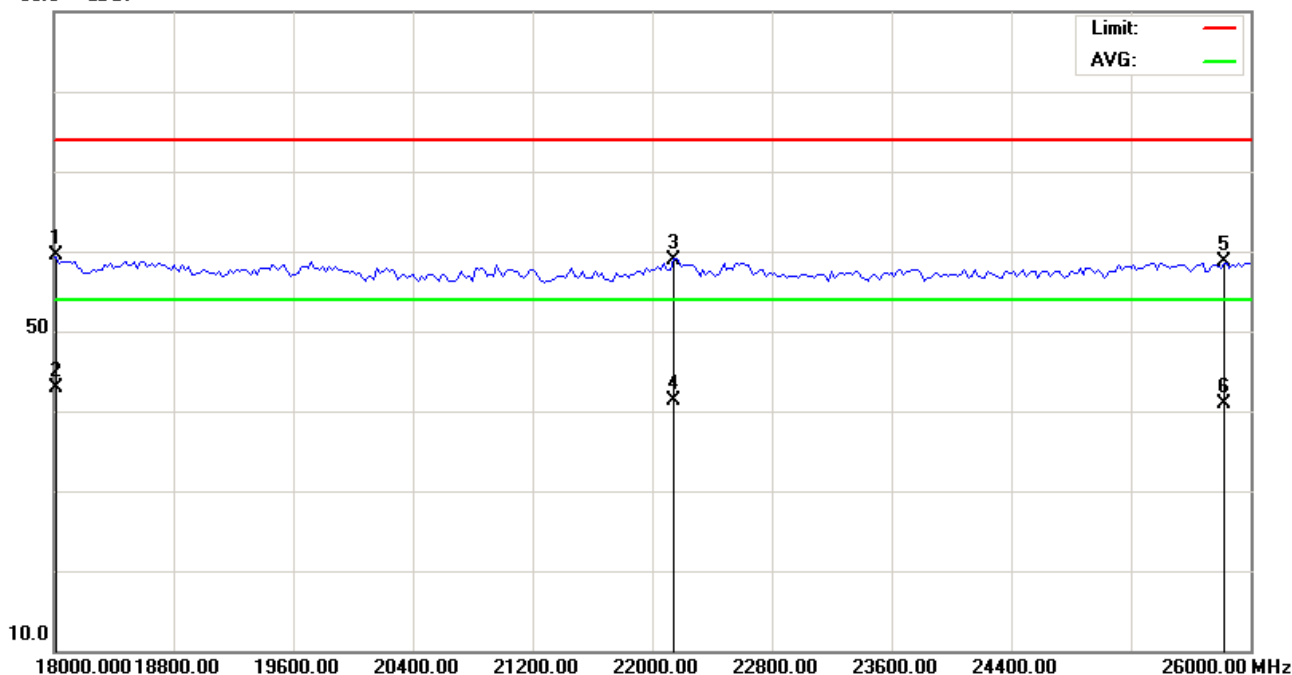
File:H780(CH2441)

Data :#14

Date:2008-6-23

Time: 下午 04:19:53

90.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT

Note: 2441MHz

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		18020.00	25.56	33.99	59.55	74.00	-14.45	peak		
2	*	18020.00	8.94	33.99	42.93	54.00	-11.07	AVG		
3		22140.00	28.17	30.76	58.93	74.00	-15.07	peak		
4		22140.00	10.49	30.76	41.25	54.00	-12.75	AVG		
5		25820.00	30.53	28.25	58.78	74.00	-15.22	peak		
6		25820.00	12.74	28.25	40.99	54.00	-13.01	AVG		

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

●Reference Only



3.6.4 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 : H780
EUT : Universal Bluetooth Headset
Test Mode : Link Mode_Bluetooth 2.0 CH78 2480.000 (Local Frequency: 2480.000 MHz)
Test Date : 06/23/2008

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 ambit noise.
8. All frequencies from 30MHz to 26.5GHz have been tested



Radiated Emission Measurement

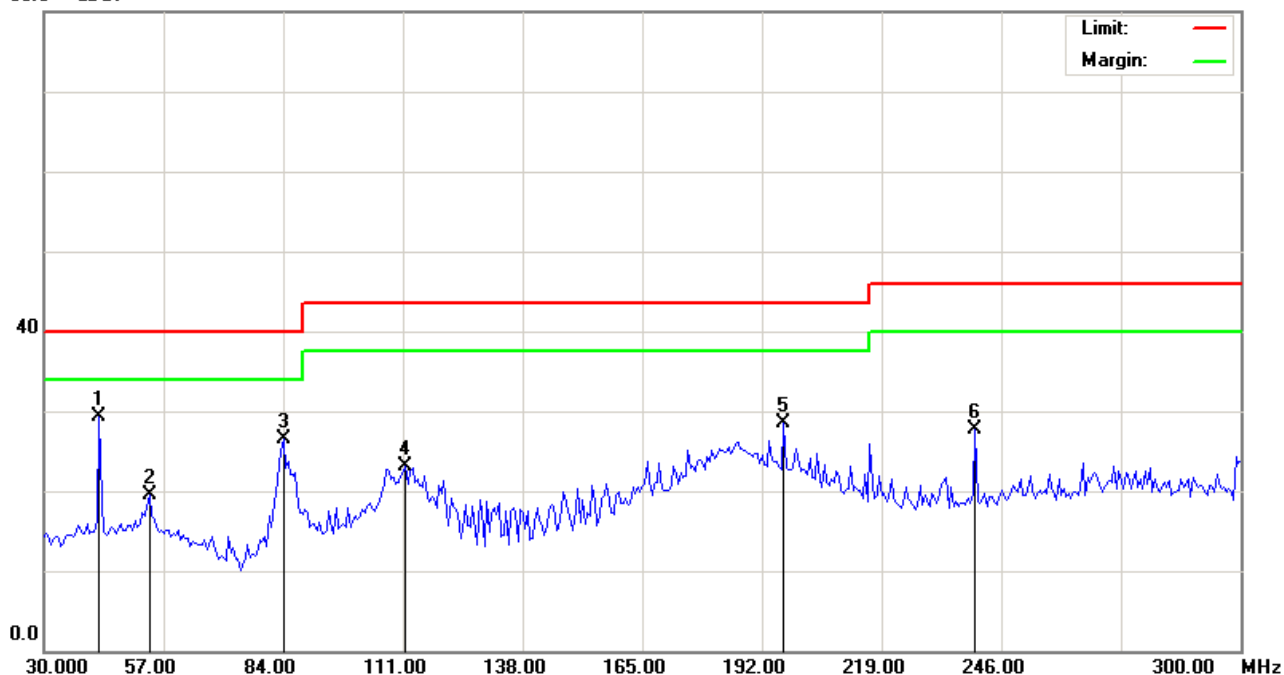
File:H780(CH2480)

Data :#1

Date: 2008/6/23

Time: 下午 06:40:42

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: CH78(2480MHz)

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	*	42.4199	41.23	-11.86	29.37	40.00	-10.63	peak		
2		53.7600	31.60	-12.19	19.41	40.00	-20.59	peak		
3		84.0000	41.58	-15.09	26.49	40.00	-13.51	peak		
4		111.5400	35.80	-12.76	23.04	43.50	-20.46	peak		
5		196.8600	41.71	-13.12	28.59	43.50	-14.91	peak		
6		240.0600	39.13	-11.43	27.70	46.00	-18.30	peak		

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

●Reference Only



Radiated Emission Measurement

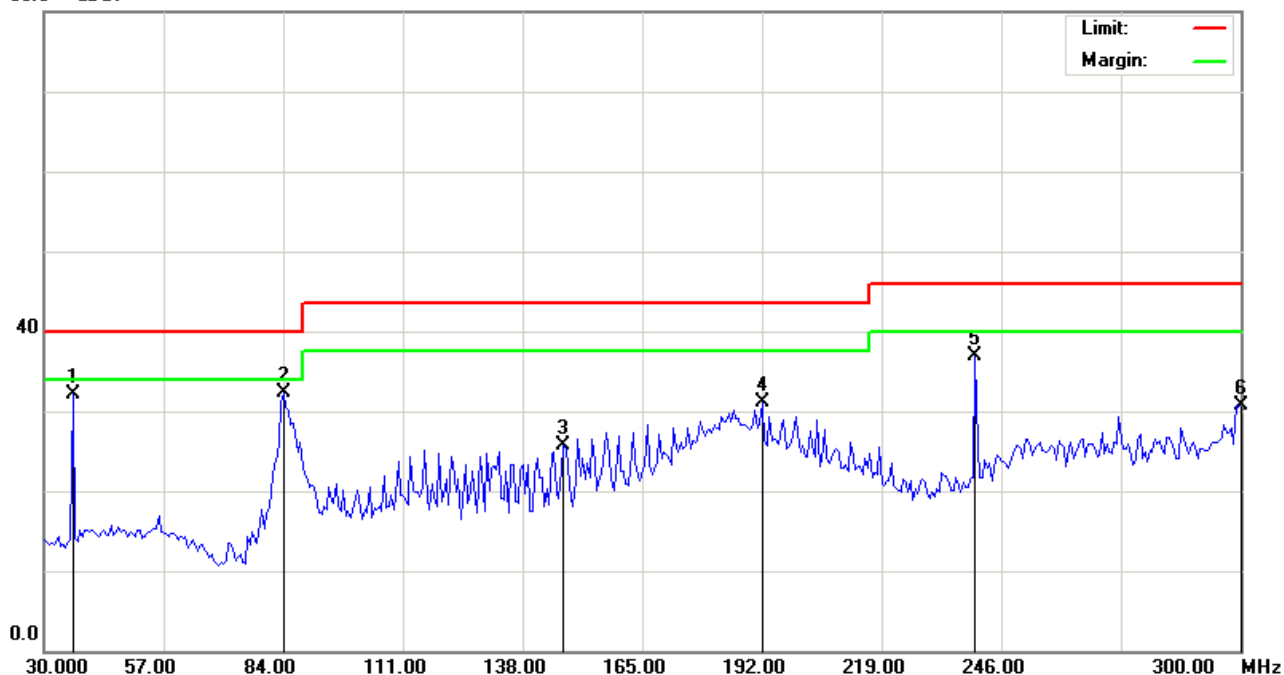
File:H780(CH2480)

Data :#3

Date: 2008/6/23

Time: 下午 06:49:14

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: CH78(2480MHz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1		36.4800	44.87	-12.80	32.07	40.00	-7.93	peak		
2	*	84.0000	47.33	-15.09	32.24	40.00	-7.76	peak		
3		147.1799	41.81	-16.11	25.70	43.50	-17.80	peak		
4		192.0000	44.45	-13.26	31.19	43.50	-12.31	peak		
5		240.0600	48.30	-11.43	36.87	46.00	-9.13	peak		
6		300.0000	40.67	-9.98	30.69	46.00	-15.31	peak		

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

●Reference Only



Radiated Emission Measurement

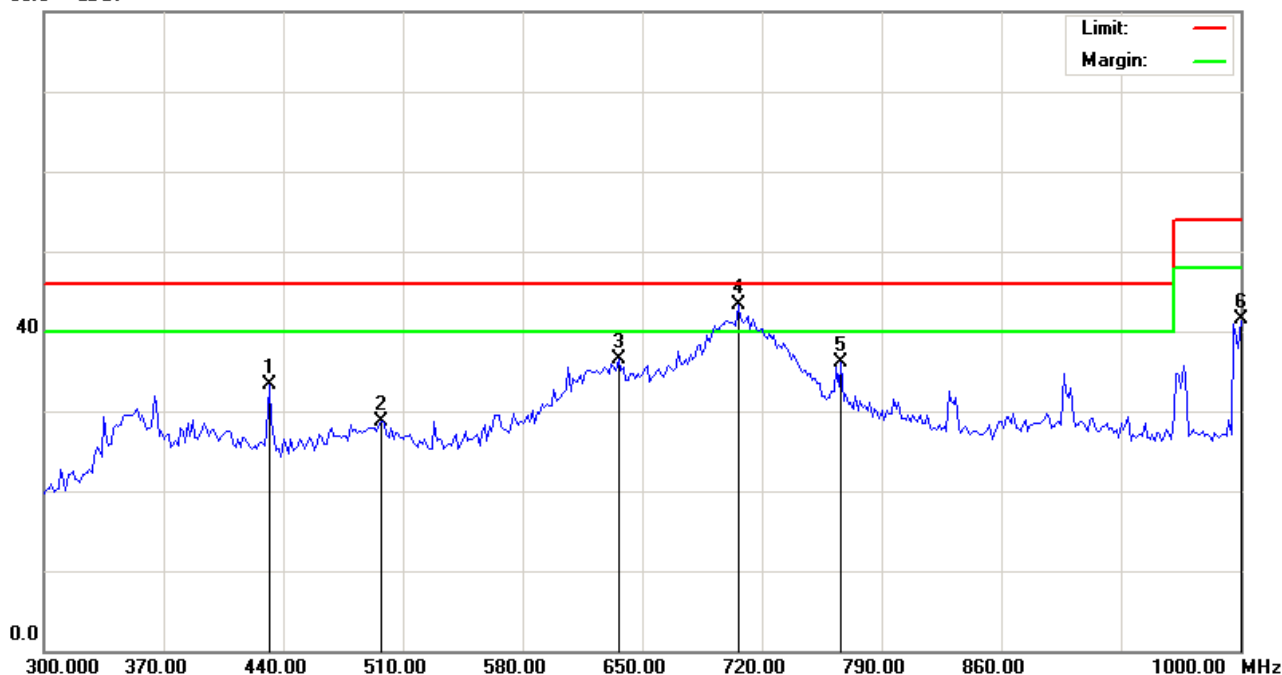
File :H780(CH2480)

Data :#2

Date: 2008/6/23

Time: 下午 06:44:57

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: CH78(2480MHz)

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		431.6000	41.30	-8.03	33.27	46.00	-12.73	peak		
2		497.4000	35.82	-7.12	28.70	46.00	-17.30	peak		
3		636.0000	40.83	-4.38	36.45	46.00	-9.55	peak		
4	*	706.0000	47.30	-4.00	43.30	46.00	-2.70	peak		
5		766.2000	38.95	-2.78	36.17	46.00	-9.83	peak		
6		1000.000	40.91	0.62	41.53	54.00	-12.47	peak		

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

●Reference Only



Radiated Emission Measurement

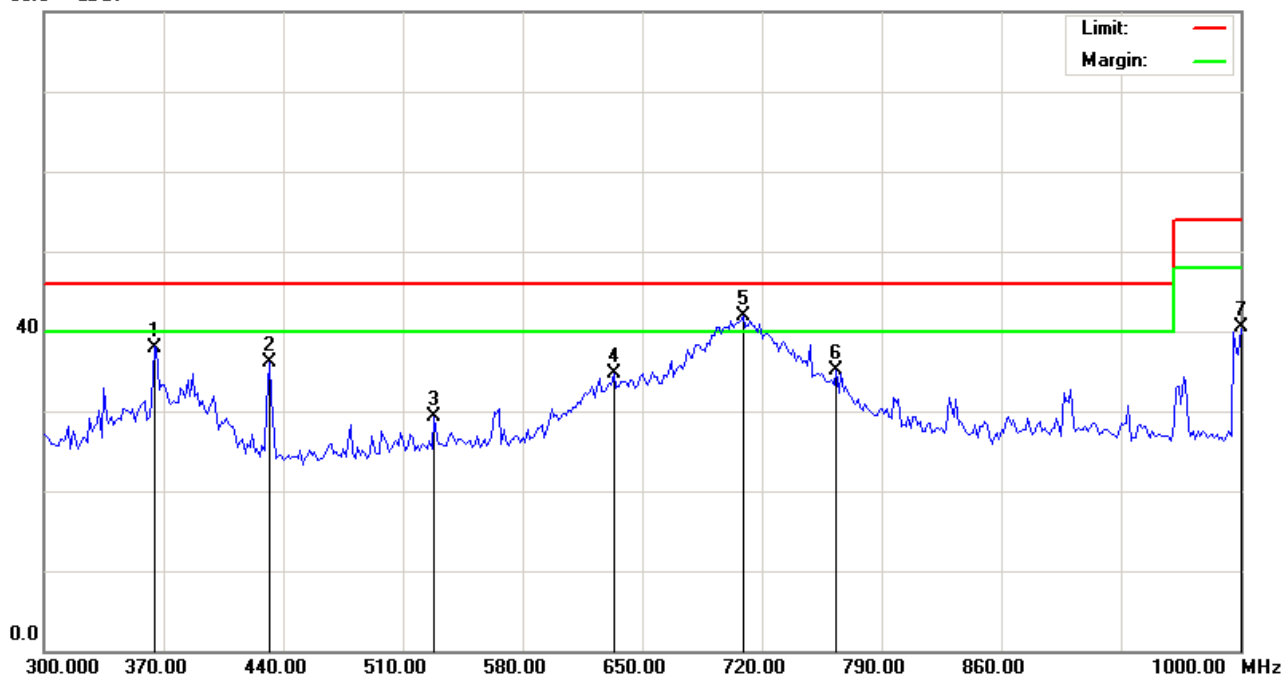
File :H780(CH2480)

Data :#4

Date: 2008/6/23

Time: 下午 06:53:31

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: CH78(2480MHz)

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		364.4000	46.65	-8.65	38.00	46.00	-8.00	peak		
2		431.6000	44.19	-8.03	36.16	46.00	-9.84	peak		
3		528.2000	35.57	-6.34	29.23	46.00	-16.77	peak		
4		633.2000	39.10	-4.36	34.74	46.00	-11.26	peak		
5	*	708.8000	45.91	-3.95	41.96	46.00	-4.04	peak		
6		763.4000	38.03	-2.87	35.16	46.00	-10.84	peak		
7		1000.000	39.94	0.62	40.56	54.00	-13.44	peak		

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

●Reference Only



Radiated Emission Measurement

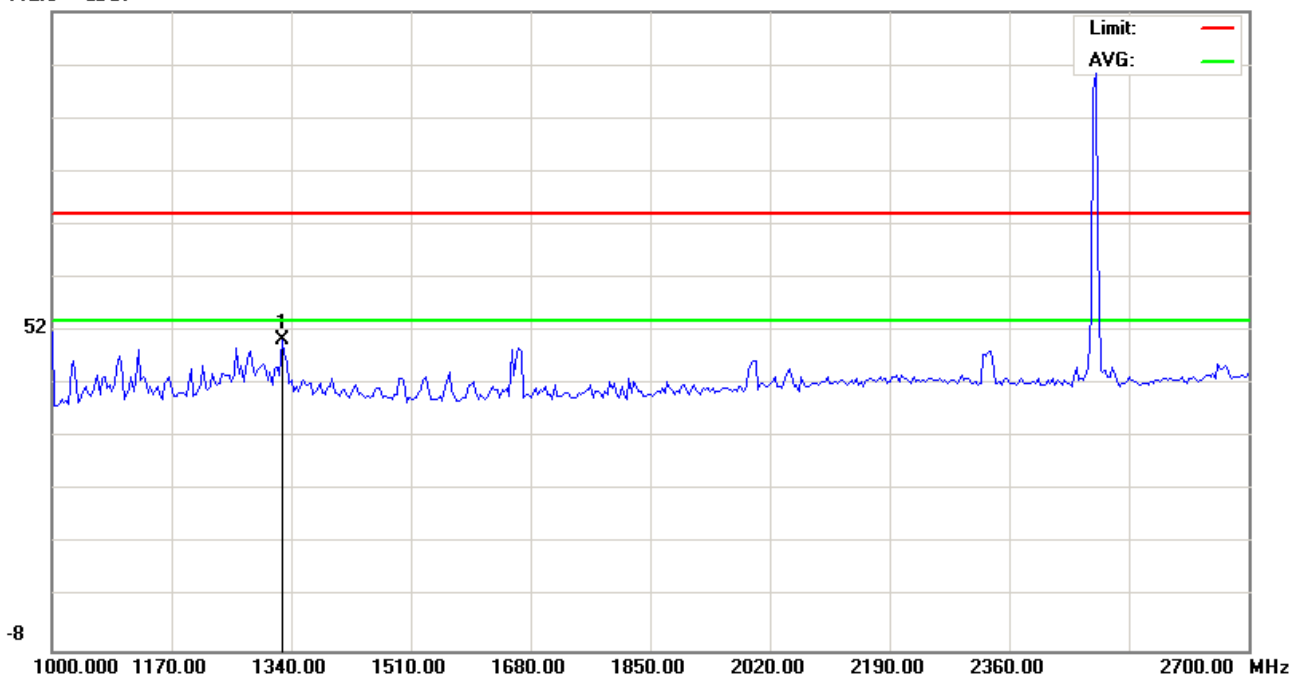
File:H780(CH2480)

Data :#1

Date:2008/06/23

Time: 上午 09:55:11

112.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: 2480MHz,天線在1米,NB02接右邊下方USB孔

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	1326.400	54.32	-3.90	50.42	74.00	-23.58	peak		

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

●Reference Only



Radiated Emission Measurement

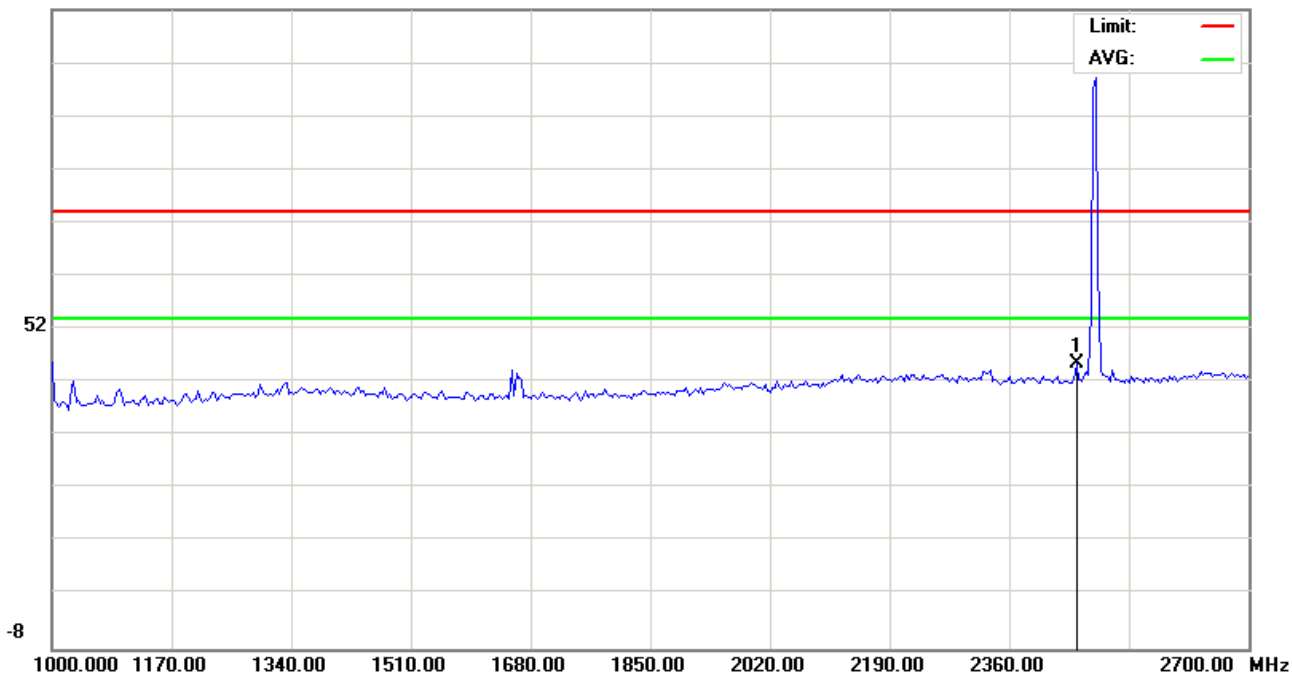
File:H780(CH2480)

Data :#3

Date:2008/06/23

Time: 上午 10:01:08

112.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: 2480MHz,天線在1米

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1	*	2455.200	45.42	0.14	45.56	74.00	-28.44	peak		Comment

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

●Reference Only



Radiated Emission Measurement

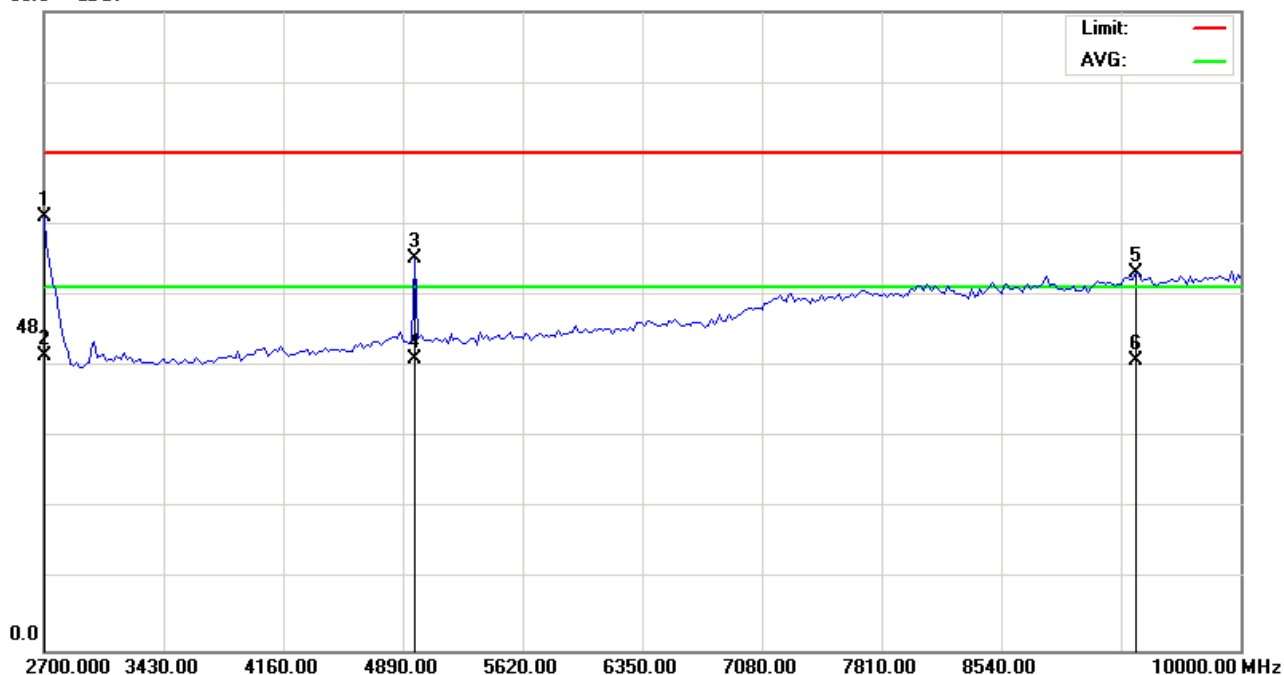
File:H780(CH2480)

Data :#5

Date:2008-6-23

Time: 下午 12:01:48

95.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: 2480MHz ,天線在1米

2.7G-10G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	2700.000	41.84	22.58	64.42	74.00	-9.58	peak		
2		2700.000	21.32	22.58	43.90	54.00	-10.10	AVG		
3		4963.000	50.57	7.82	58.39	74.00	-15.61	peak		
4		4963.000	35.64	7.82	43.46	54.00	-10.54	AVG		
5		9361.250	39.18	16.98	56.16	74.00	-17.84	peak		
6		9361.250	26.15	16.98	43.13	54.00	-10.87	AVG		

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

●Reference Only



Radiated Emission Measurement

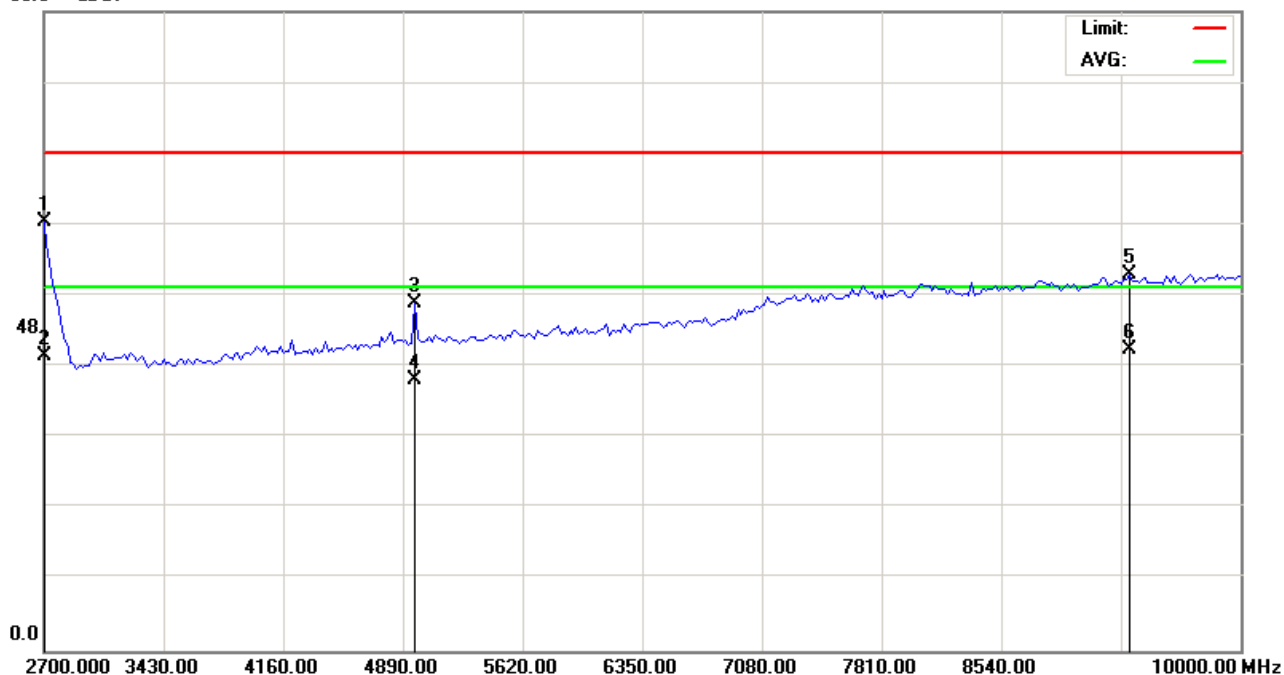
File:H780(CH2480)

Data :#7

Date:2008-6-23

Time: 下午 12:19:25

95.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT

Note: 2480MHz

2.7G-10G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		2700.000	41.22	22.58	63.80	74.00	-10.20	peak		
2		2700.000	21.16	22.58	43.74	54.00	-10.26	AVG		
3		4963.000	43.75	7.82	51.57	74.00	-22.43	peak		
4		4963.000	32.52	7.82	40.34	54.00	-13.66	AVG		
5		9324.750	39.09	16.91	56.00	74.00	-18.00	peak		
6	*	9324.750	27.95	16.91	44.86	54.00	-9.14	AVG		

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

●:Reference Only



Radiated Emission Measurement

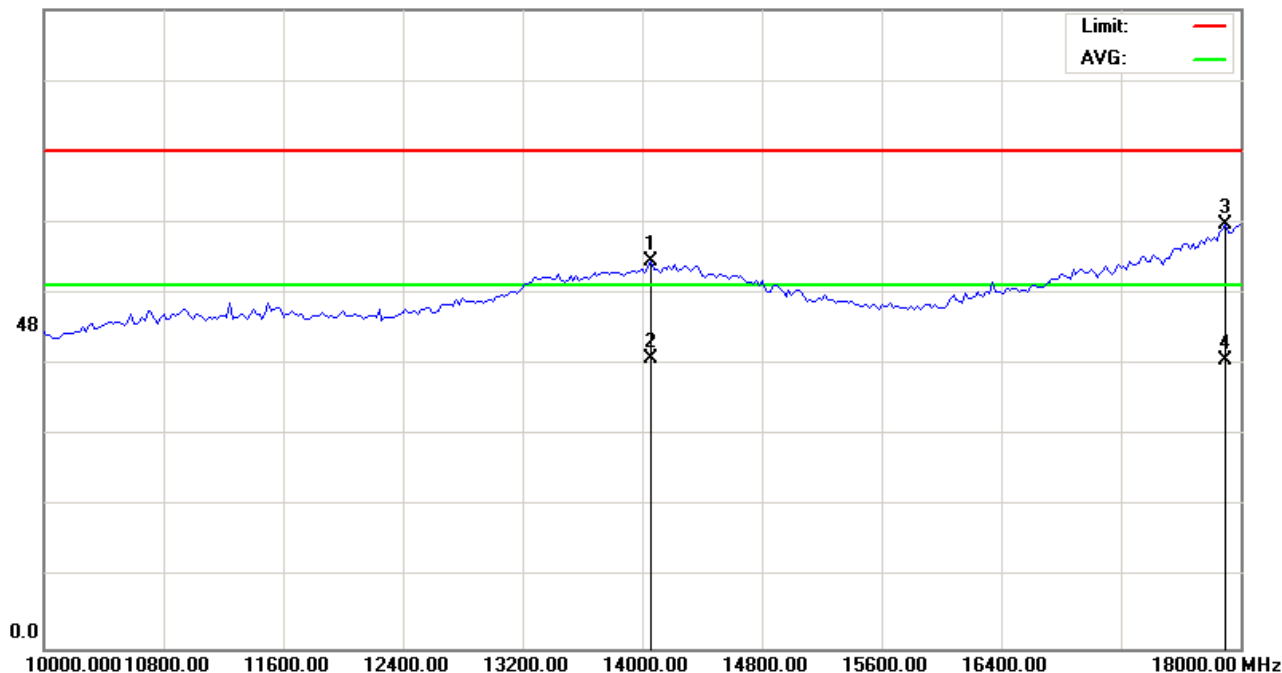
File:H780(CH2480)

Data :#9

Date:2008-6-23

Time: 下午 03:44:31

95.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT

Note: 2480MHz

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		14060.00	38.81	18.72	57.53	74.00	-16.47	peak		
2	*	14060.00	24.39	18.72	43.11	54.00	-10.89	AVG		
3		17900.00	38.11	24.96	63.07	74.00	-10.93	peak		
4		17900.00	18.01	24.96	42.97	54.00	-11.03	AVG		

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

●:Reference Only



Radiated Emission Measurement

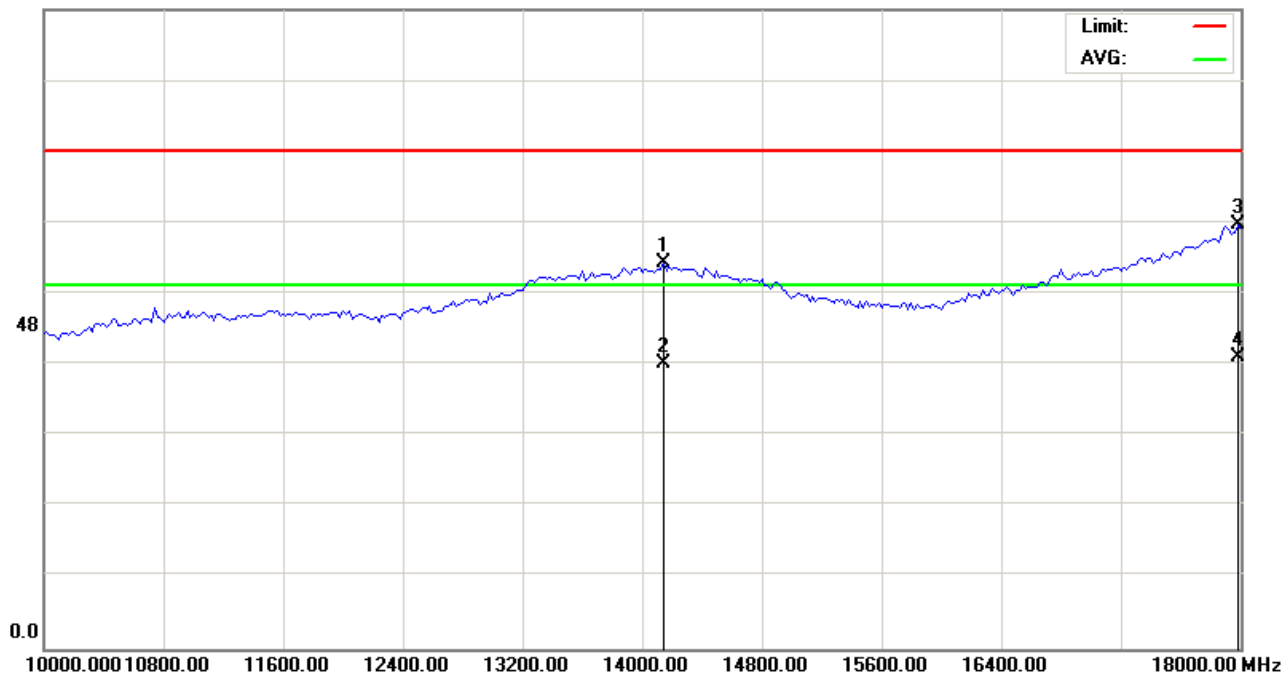
File:H780(CH2480)

Data :#11

Date:2008-6-23

Time: 下午 03:52:12

95.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT

Note: 2480MHz

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

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		14140.00	38.44	18.84	57.28	74.00	-16.72	peak		
2		14140.00	23.59	18.84	42.43	54.00	-11.57	AVG		
3		17980.00	37.84	25.21	63.05	74.00	-10.95	peak		
4	*	17980.00	18.13	25.21	43.34	54.00	-10.66	AVG		

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

●Reference Only



Radiated Emission Measurement

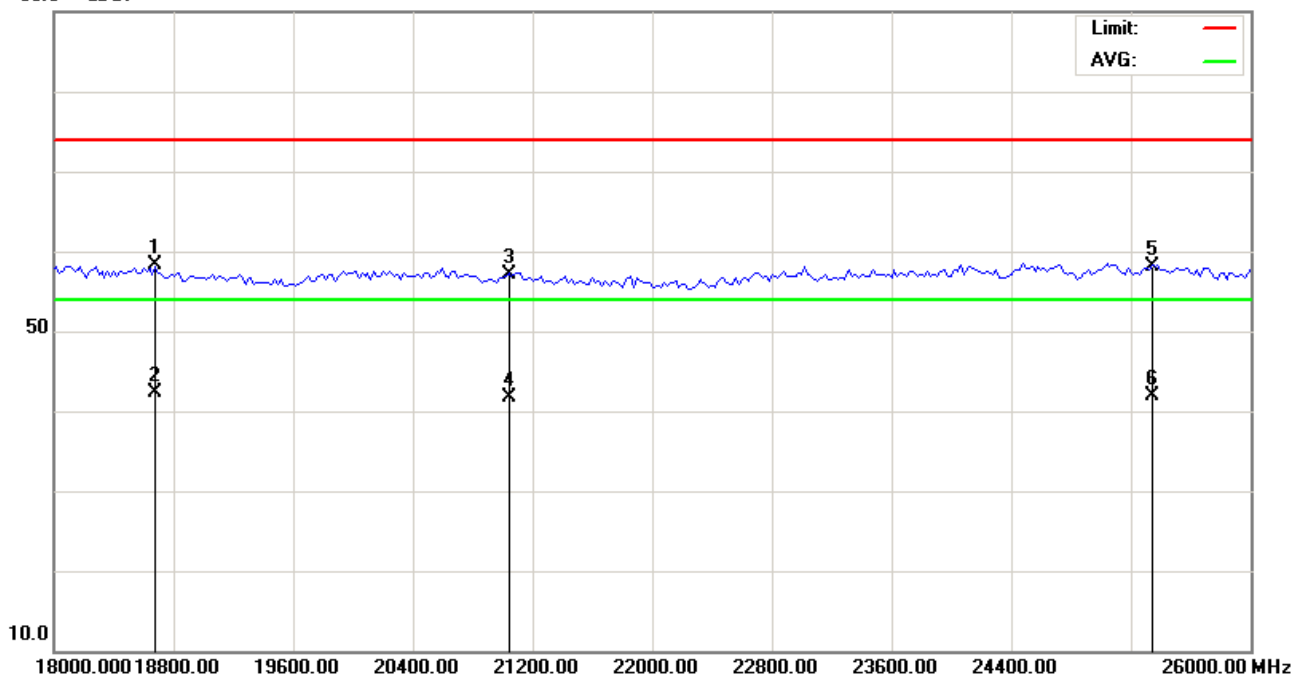
File:H780(CH2480)

Data :#13

Date:2008-6-23

Time: 下午 04:23:12

90.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT

Note:

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		18680.00	25.14	33.11	58.25	74.00	-15.75	peak		
2	*	18680.00	9.13	33.11	42.24	54.00	-11.76	AVG		
3		21040.00	25.59	31.51	57.10	74.00	-16.90	peak		
4		21040.00	10.23	31.51	41.74	54.00	-12.26	AVG		
5		25340.00	29.46	28.57	58.03	74.00	-15.97	peak		
6		25340.00	13.39	28.57	41.96	54.00	-12.04	AVG		

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

●Reference Only



Radiated Emission Measurement

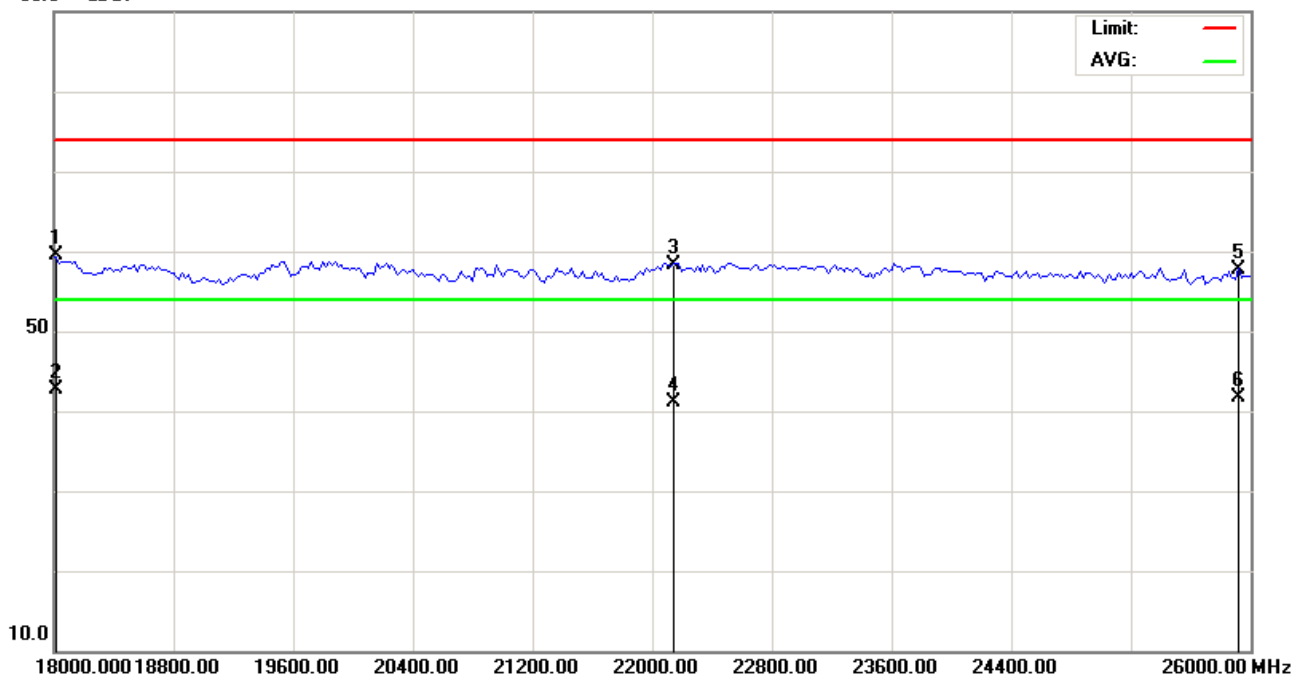
File:H780(CH2480)

Data :#14

Date:2008-6-23

Time: 下午 04:25:29

90.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT

Note:

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		18020.00	25.53	33.99	59.52	74.00	-14.48	peak		
2	*	18020.00	8.74	33.99	42.73	54.00	-11.27	AVG		
3		22140.00	27.63	30.76	58.39	74.00	-15.61	peak		
4		22140.00	10.41	30.76	41.17	54.00	-12.83	AVG		
5		25920.00	29.54	28.17	57.71	74.00	-16.29	peak		
6		25920.00	13.57	28.17	41.74	54.00	-12.26	AVG		

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

●Reference Only



3.6.5 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 : H780
EUT : Universal Bluetooth Headset
Test Mode : Stand by_Bluetooth EDR
Test Date : 06/23/2008

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 ambit noise.
8. All frequencies from 30MHz to 26.5GHz have been tested



Radiated Emission Measurement

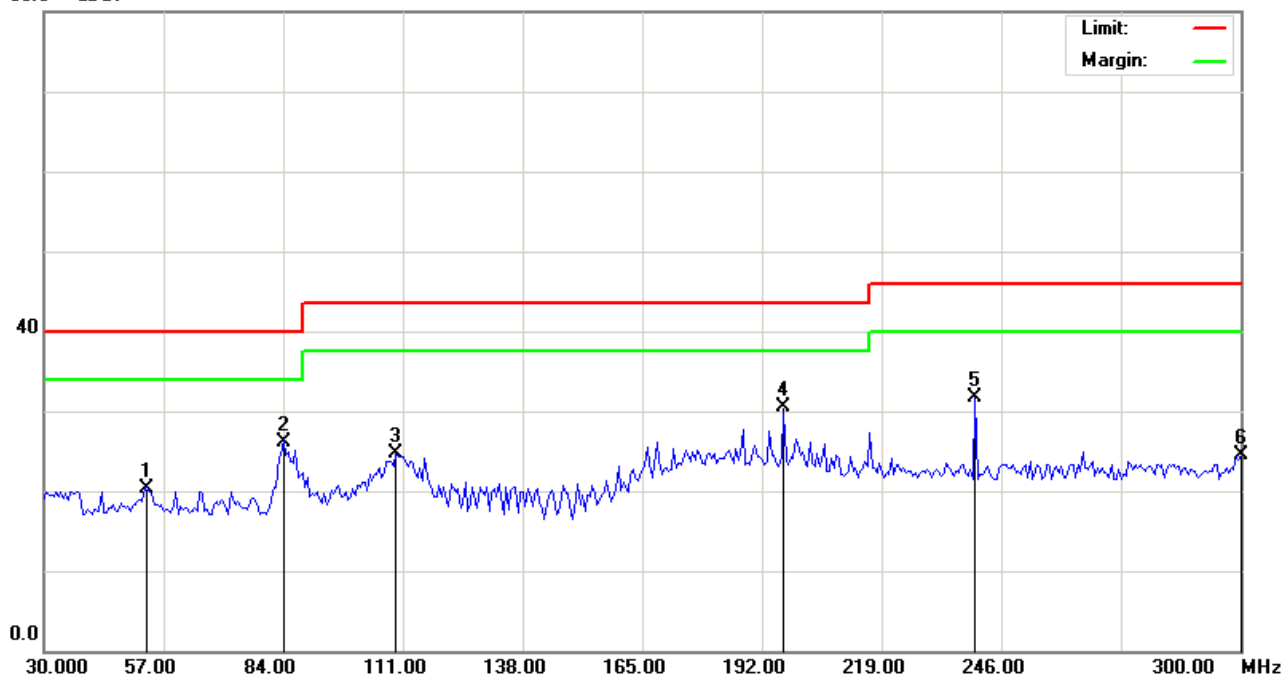
File :H780(IDEL)

Data :#1

Date:2008-6-23

Time: 下午 07:38:12

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: IDEL

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1		53.2200	32.53	-12.19	20.34	40.00	-19.66	peak		Comment
2		84.0000	41.28	-15.09	26.19	40.00	-13.81	peak		
3		109.3800	37.19	-12.45	24.74	43.50	-18.76	peak		
4	*	196.8600	43.67	-13.12	30.55	43.50	-12.95	peak		
5		240.0600	43.12	-11.43	31.69	46.00	-14.31	peak		
6		300.0000	34.43	-9.98	24.45	46.00	-21.55	peak		

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

●Reference Only



Radiated Emission Measurement

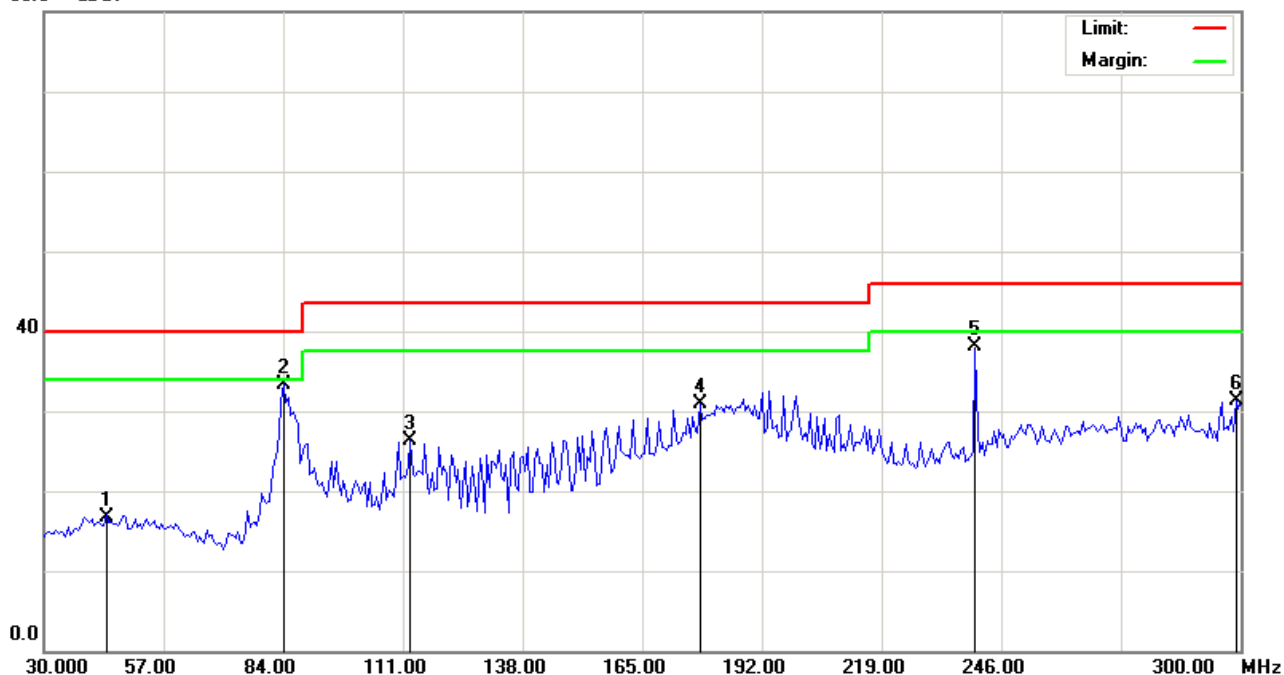
File :H780(IDEL)

Data :#3

Date:2008-6-23

Time: 下午 07:43:36

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: IDEL

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		44.0400	28.63	-11.84	16.79	40.00	-23.21	peak		
2	*	84.0000	48.37	-15.09	33.28	40.00	-6.72	peak		
3		112.6200	39.19	-12.94	26.25	43.50	-17.25	peak		
4		177.9600	45.34	-14.44	30.90	43.50	-12.60	peak		
5		240.0600	49.59	-11.43	38.16	46.00	-7.84	peak		
6		298.9200	41.28	-10.03	31.25	46.00	-14.75	peak		

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

●Reference Only



Radiated Emission Measurement

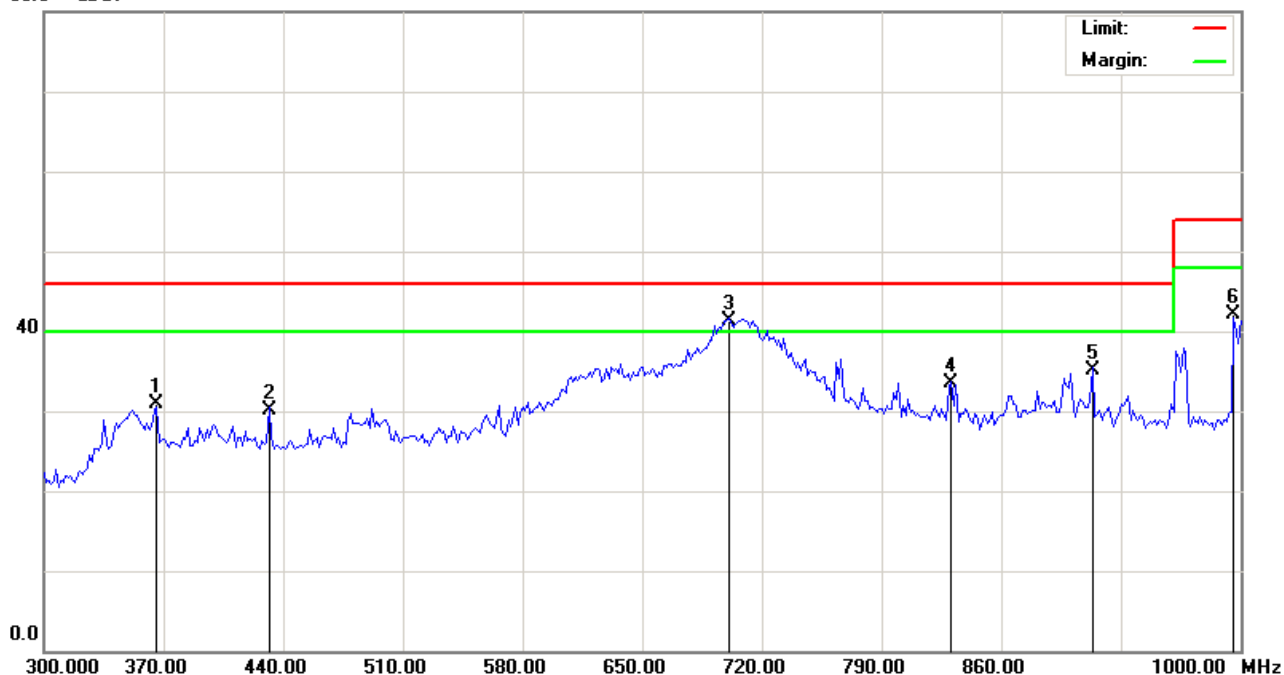
File :H780(IDEL)

Data :#2

Date:2008-6-23

Time: 下午 07:40:23

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: IDEL

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		365.8000	39.56	-8.63	30.93	46.00	-15.07	peak		
2		431.6000	38.21	-8.03	30.18	46.00	-15.82	peak		
3	*	700.4000	45.18	-3.88	41.30	46.00	-4.70	peak		
4		830.6000	35.19	-1.60	33.59	46.00	-12.41	peak		
5		913.2000	35.37	-0.19	35.18	46.00	-10.82	peak		
6		995.8000	41.29	0.75	42.04	54.00	-11.96	peak		

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

●Reference Only



Radiated Emission Measurement

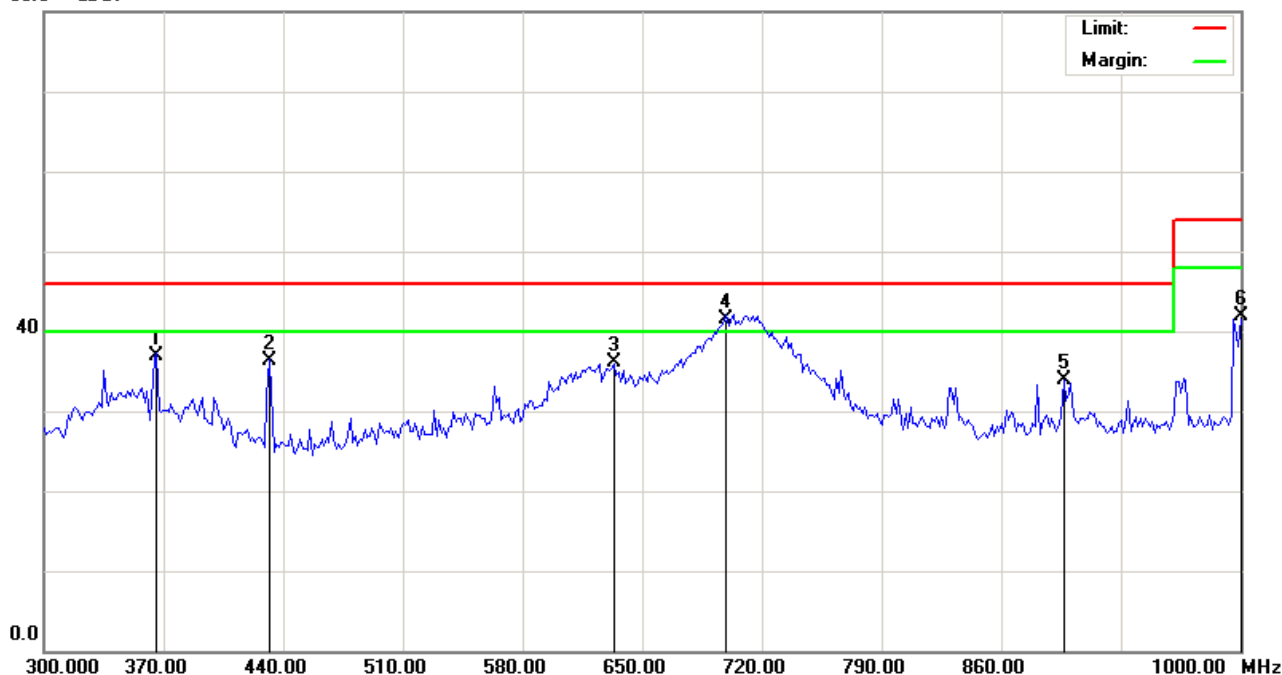
File :H780(IDEL)

Data :#4

Date:2008-6-23

Time: 下午 07:46:48

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: IDEL

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		365.8000	45.62	-8.63	36.99	46.00	-9.01	peak		
2		431.6000	44.39	-8.03	36.36	46.00	-9.64	peak		
3		633.2000	40.41	-4.36	36.05	46.00	-9.95	peak		
4	*	699.0000	45.32	-3.85	41.47	46.00	-4.53	peak		
5		896.4000	34.29	-0.47	33.82	46.00	-12.18	peak		
6		1000.0000	41.38	0.62	42.00	54.00	-12.00	peak		

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

●Reference Only



3.6.6 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 : H780
EUT : Universal Bluetooth Headset
Test Mode : Link Mode_Bluetooth EDR CH00 2402.000 (Local Frequency: 2402.000 MHz)
Test Date : 06/24/2008

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 ambit noise.
8. All frequencies from 30MHz to 26.5GHz have been tested



Radiated Emission Measurement

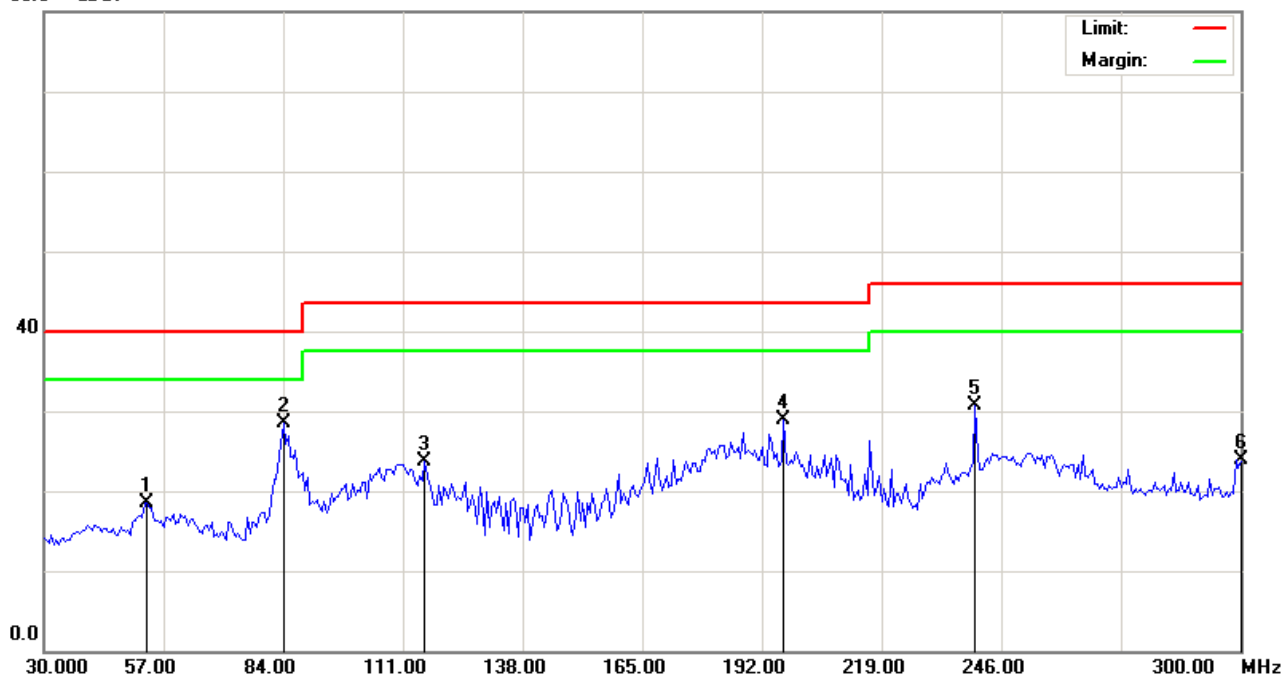
File :H780(CH2402)

Data :#1

Date:2008-6-24

Time: 下午 04:32:14

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: CH00(2402MHz)

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		53.2200	30.76	-12.19	18.57	40.00	-21.43	peak		
2	*	84.0000	43.64	-15.09	28.55	40.00	-11.45	peak		
3		115.8600	37.17	-13.49	23.68	43.50	-19.82	peak		
4		196.8600	42.01	-13.12	28.89	43.50	-14.61	peak		
5		240.0600	42.13	-11.43	30.70	46.00	-15.30	peak		
6		300.0000	33.89	-9.98	23.91	46.00	-22.09	peak		

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

●Reference Only



Radiated Emission Measurement

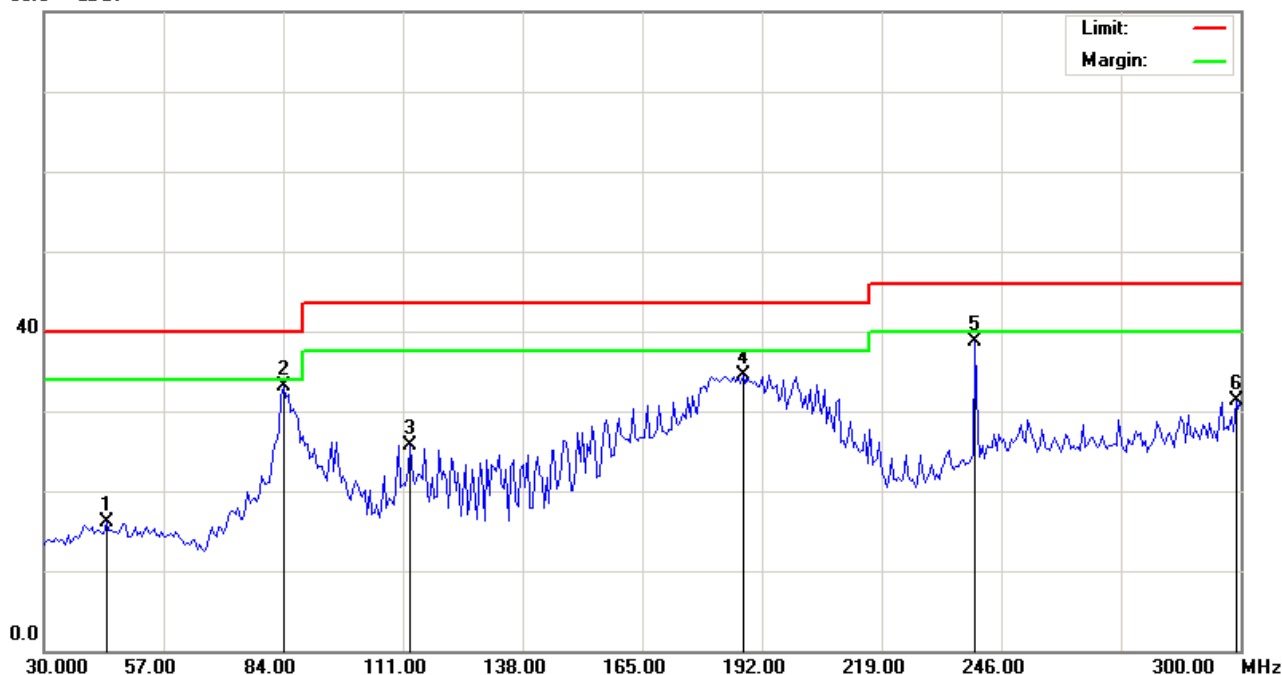
File:H780(CH2402)

Data :#3

Date:2008-6-24

Time: 下午 04:58:22

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: CH00(2402MHz)

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		44.0400	27.88	-11.84	16.04	40.00	-23.96	peak		
2	*	84.0000	48.12	-15.09	33.03	40.00	-6.97	peak		
3		112.6200	38.65	-12.94	25.71	43.50	-17.79	peak		
4		187.6799	48.16	-13.57	34.59	43.50	-8.91	peak		
5		240.0600	50.20	-11.43	38.77	46.00	-7.23	peak		
6		298.9200	41.36	-10.03	31.33	46.00	-14.67	peak		

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

●Reference Only



Radiated Emission Measurement

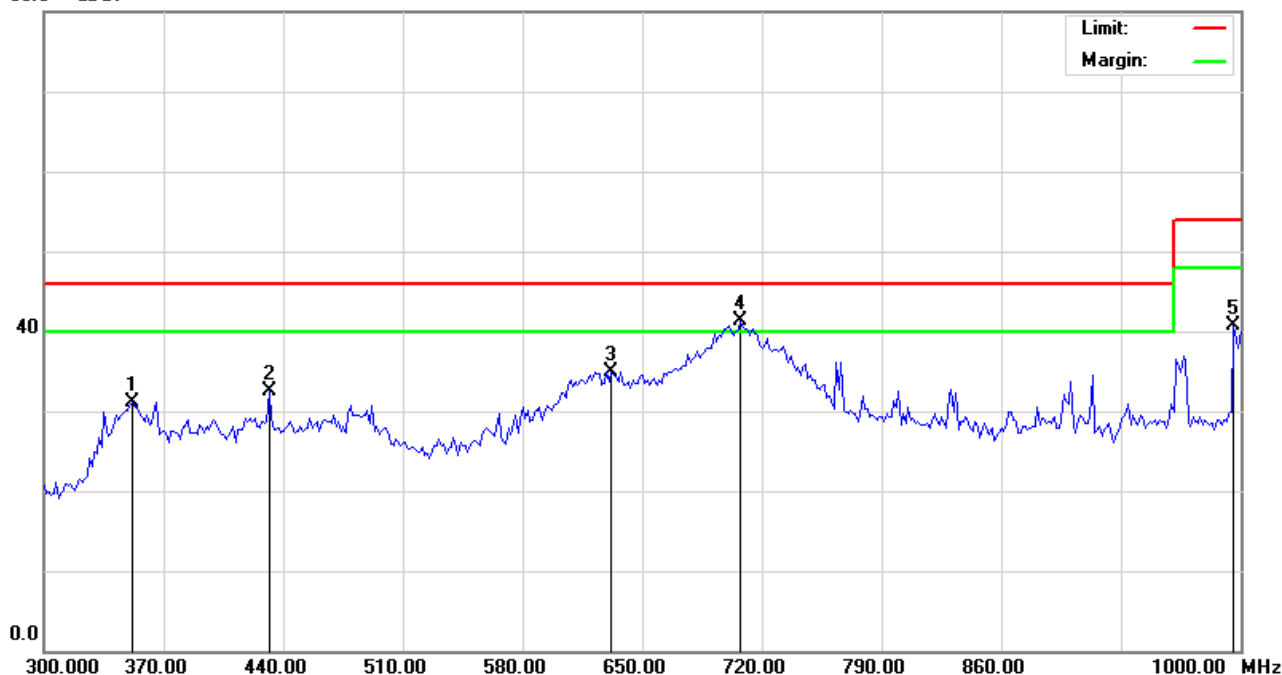
File:H780(CH2402)

Data :#2

Date:2008-6-24

Time: 下午 04:35:37

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: CH00(2402MHz)

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		351.8000	39.93	-8.90	31.03	46.00	-14.97	peak		
2		431.6000	40.50	-8.03	32.47	46.00	-13.53	peak		
3		631.8000	39.28	-4.37	34.91	46.00	-11.09	peak		
4	*	707.4000	45.30	-3.98	41.32	46.00	-4.68	peak		
5		995.8000	40.01	0.75	40.76	54.00	-13.24	peak		

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

●Reference Only



Radiated Emission Measurement

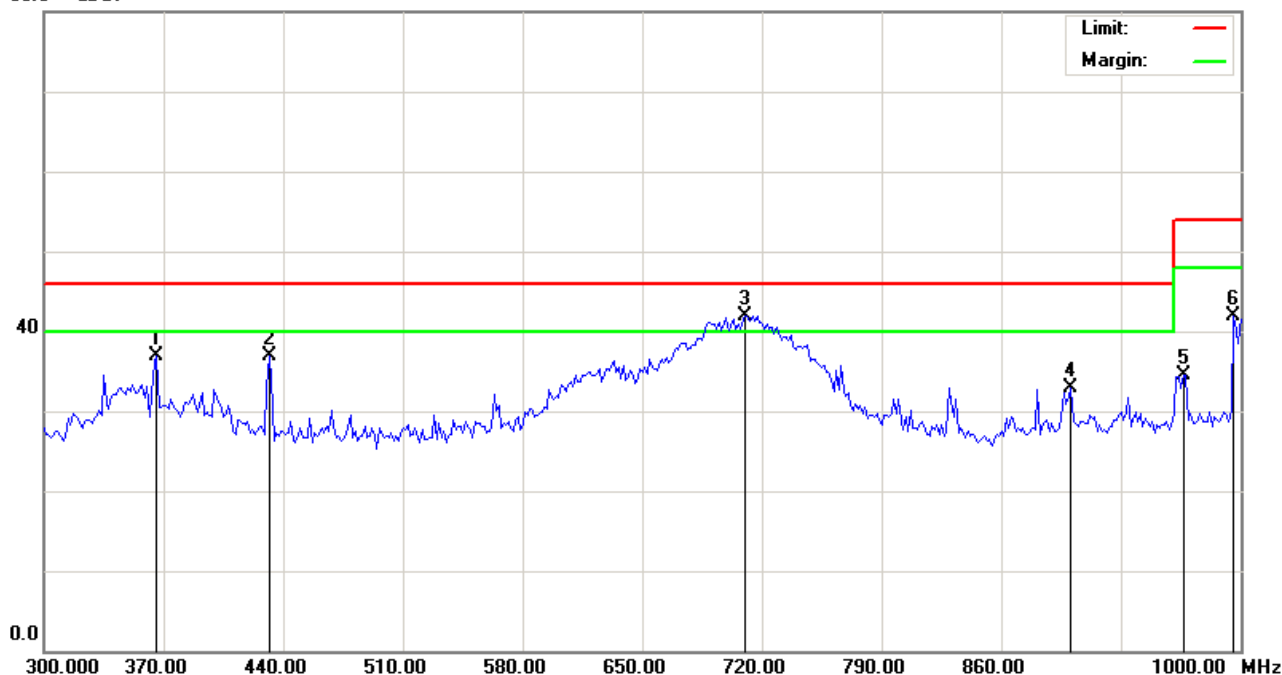
File:H780(CH2402)

Data :#4

Date:2008-6-24

Time: 下午 05:28:11

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: CH00(2402MHz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		365.8000	45.44	-8.63	36.81	46.00	-9.19	peak		
2		431.6000	45.00	-8.03	36.97	46.00	-9.03	peak		
3	*	710.2000	45.78	-3.91	41.87	46.00	-4.13	peak		
4		900.6000	33.33	-0.36	32.97	46.00	-13.03	peak		
5		966.4000	33.81	0.69	34.50	54.00	-19.50	peak		
6		995.8000	41.18	0.75	41.93	54.00	-12.07	peak		

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

●Reference Only



Radiated Emission Measurement

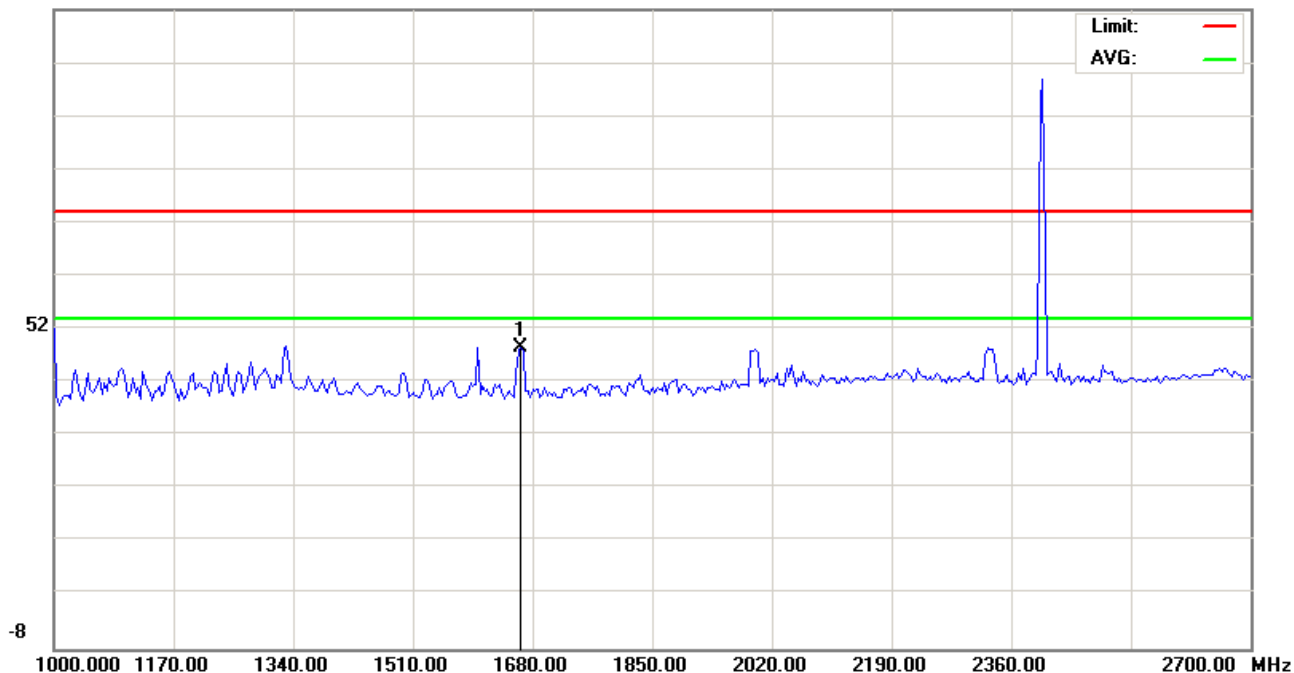
File :H780(CH2402(X軸))

Data :#1

Date:2008/06/24

Time: 上午 08:01:52

112.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: 2402MHz,天線在1米,NB02接右邊下方USB孔

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1	*	1663.000	52.28	-3.83	48.45	74.00	-25.55	peak		

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

●Reference Only



Radiated Emission Measurement

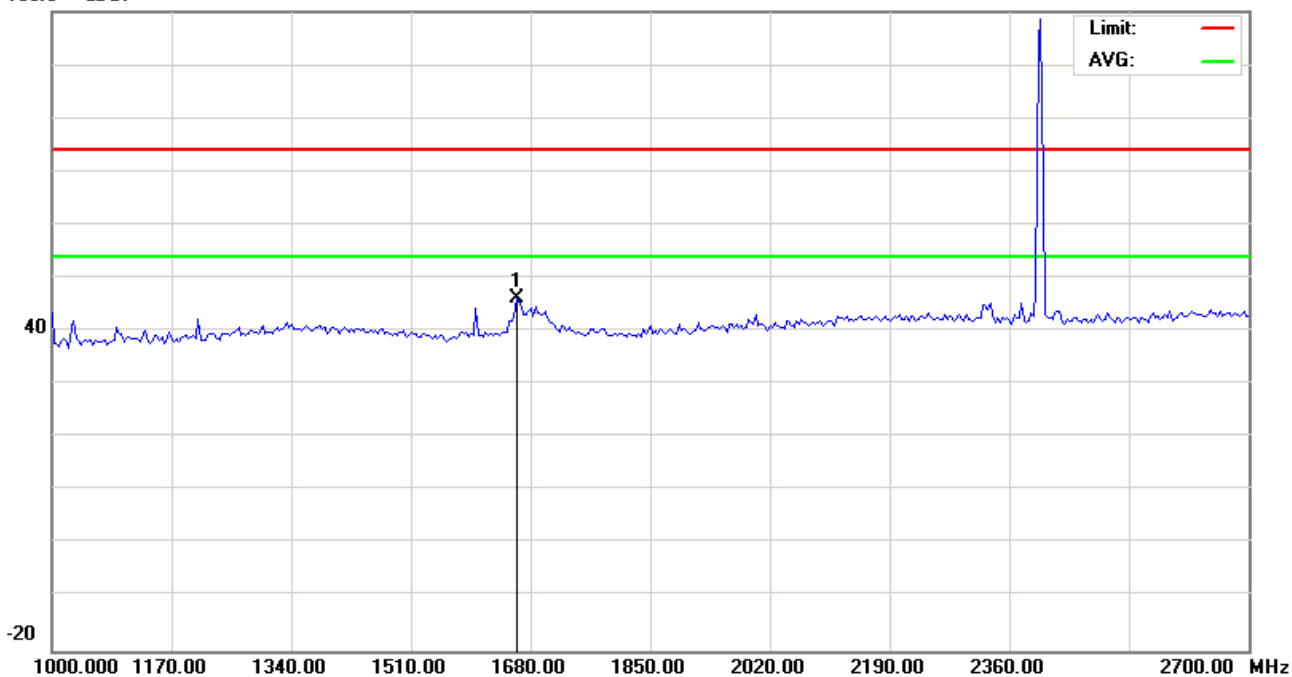
File :H780(CH2402(X軸))

Data :#3

Date: 2008/06/24

Time: 上午 08:12:35

100.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: 2402MHz,天線在1米

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1	*	1659.600	49.90	-3.81	46.09	74.00	-27.91	peak		Comment

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

●Reference Only



Radiated Emission Measurement

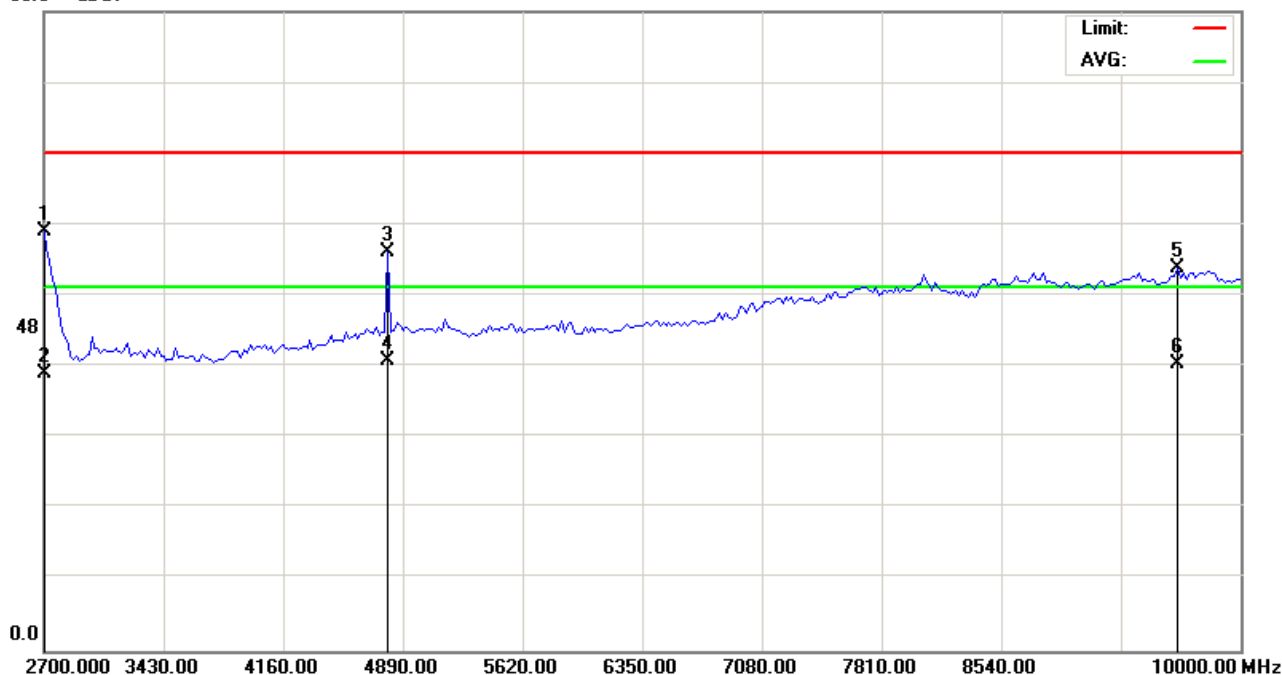
File :H780(CH2402(X軸))

Data :#5

Date: 2008/06/24

Time: 上午 08:15:28

95.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: 2402MHz,天線在102.5

2.7G-10G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		2700.000	39.81	22.58	62.39	74.00	-11.61	peak		
2		2700.000	18.53	22.58	41.11	54.00	-12.89	AVG		
3		4798.750	51.98	7.29	59.27	74.00	-14.73	peak		
4	*	4798.750	35.70	7.29	42.99	54.00	-11.01	AVG		
5		9616.750	39.59	17.25	56.84	74.00	-17.16	peak		
6		9616.750	25.50	17.25	42.75	54.00	-11.25	AVG		

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

●Reference Only



Radiated Emission Measurement

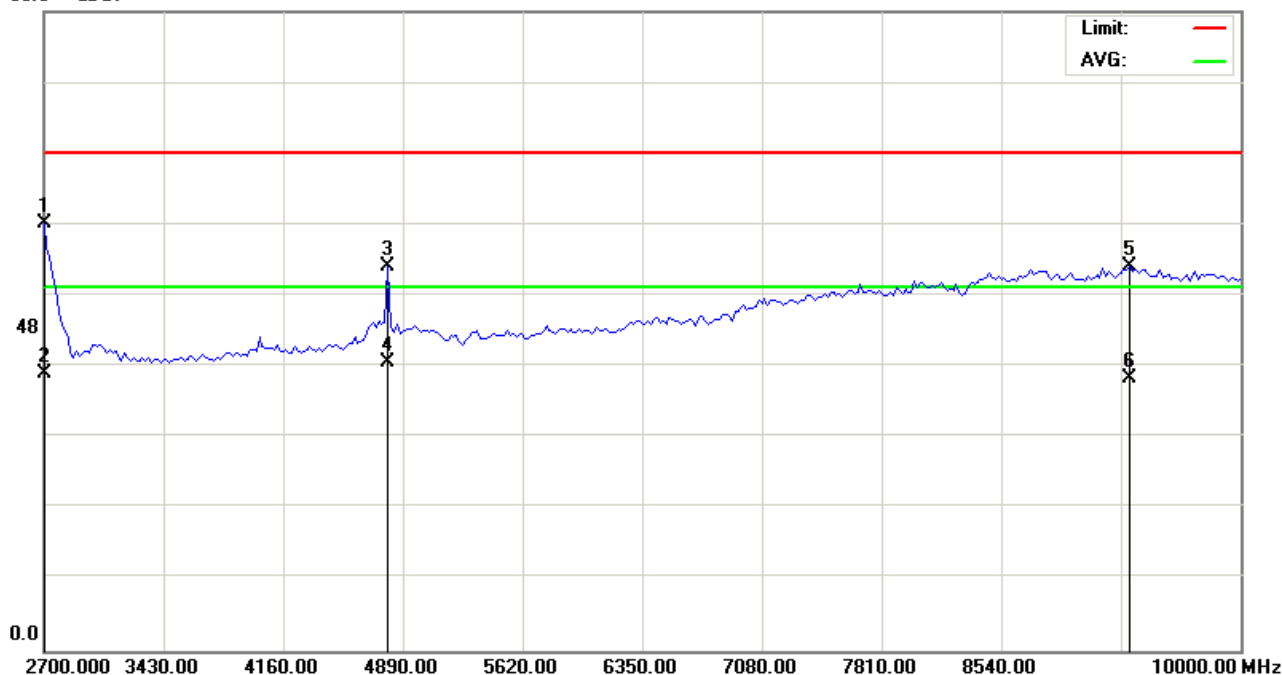
File :H780(CH2402(X軸))

Data :#7

Date: 2008/06/24

Time: 上午 08:23:12

95.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: 2402MHz,天線在1米

2.7G-10G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	2700.000	40.97	22.58	63.55	74.00	-10.45	peak		
2		2700.000	18.53	22.58	41.11	54.00	-12.89	AVG		
3		4798.750	49.72	7.29	57.01	74.00	-16.99	peak		
4		4798.750	35.60	7.29	42.89	54.00	-11.11	AVG		
5		9324.750	40.18	16.91	57.09	74.00	-16.91	peak		
6		9324.750	23.67	16.91	40.58	54.00	-13.42	AVG		

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

●Reference Only



Radiated Emission Measurement

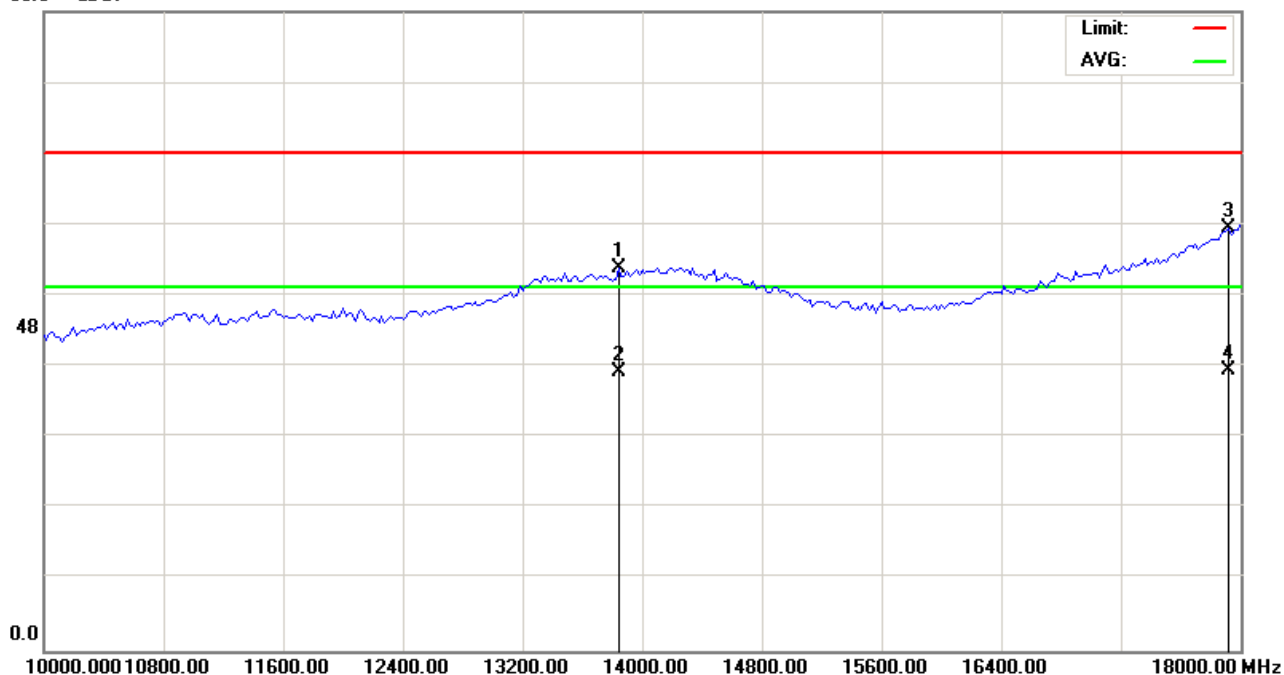
File :H780(CH2402(X軸))

Data :#9

Date: 2008/06/24

Time: 上午 08:26:35

95.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT+EDR

Note: 2402MHz

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

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		13840.00	38.69	18.09	56.78	74.00	-17.22	peak		
2		13840.00	23.28	18.09	41.37	54.00	-12.63	AVG		
3	*	17920.00	37.89	24.84	62.73	74.00	-11.27	peak		
4		17920.00	16.85	24.84	41.69	54.00	-12.31	AVG		

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

●Reference Only



Radiated Emission Measurement

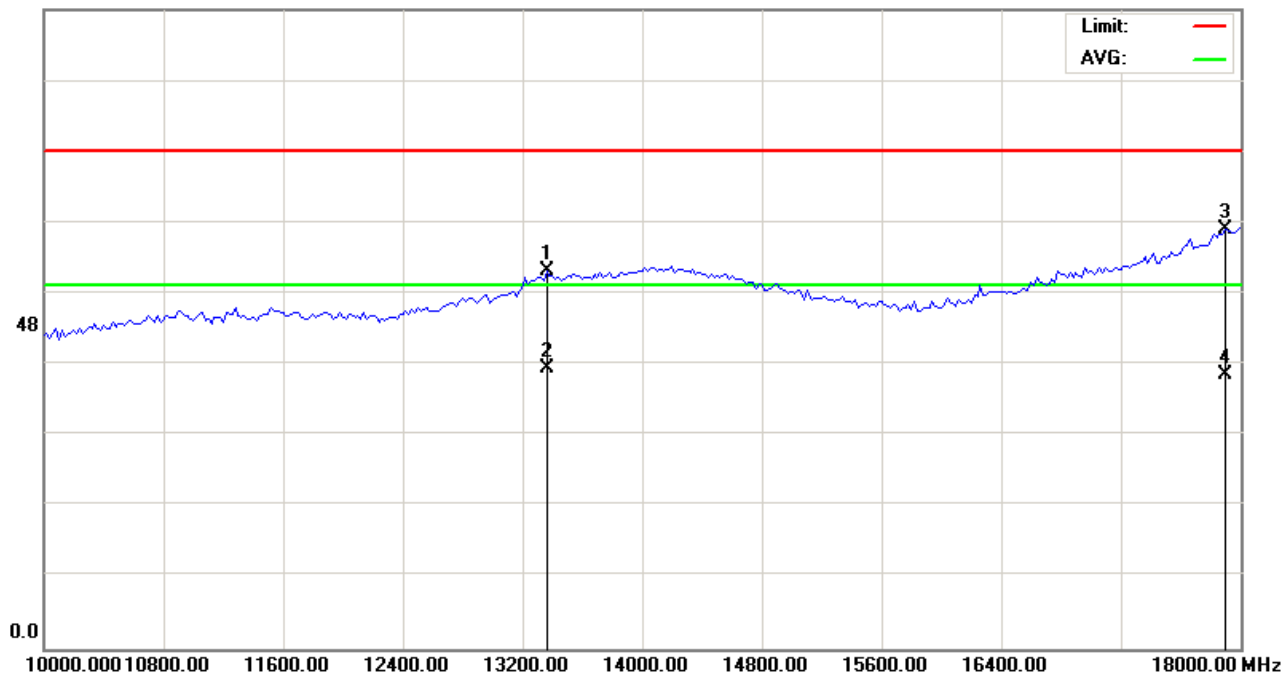
File :H780(CH2402(X軸))

Data :#11

Date: 2008/06/24

Time: 上午 08:39:18

95.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT+EDR

Note: 2402MHz

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

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		13360.00	38.62	17.59	56.21	74.00	-17.79	peak		
2		13360.00	24.10	17.59	41.69	54.00	-12.31	AVG		
3	*	17900.00	37.38	24.96	62.34	74.00	-11.66	peak		
4		17900.00	15.89	24.96	40.85	54.00	-13.15	AVG		

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

●Reference Only



Radiated Emission Measurement

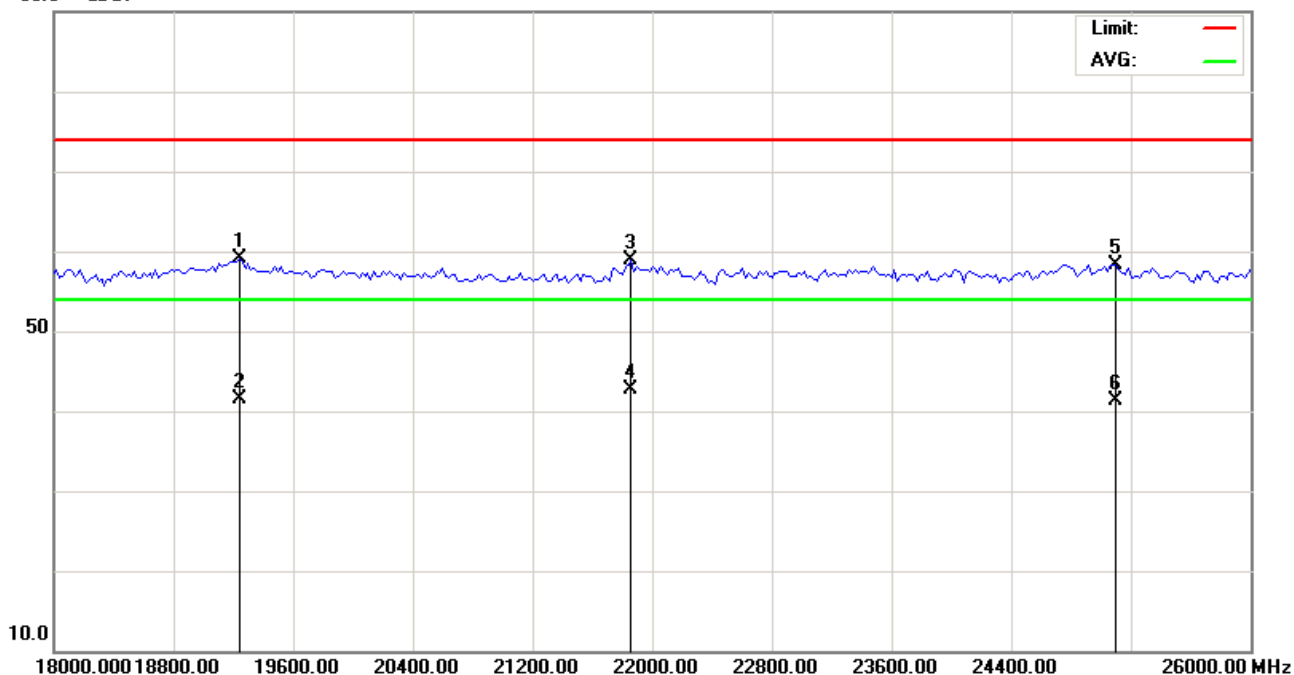
File :H780(CH2402(X軸))

Data :#13

Date: 2008/06/24

Time: 上午 08:44:27

90.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT+EDR

Note: 2402MHz

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		19240.00	26.31	32.73	59.04	74.00	-14.96	peak		
2		19240.00	8.84	32.73	41.57	54.00	-12.43	AVG		
3		21860.00	28.03	30.94	58.97	74.00	-15.03	peak		
4	*	21860.00	11.72	30.94	42.66	54.00	-11.34	AVG		
5		25100.00	29.67	28.73	58.40	74.00	-15.60	peak		
6		25100.00	12.66	28.73	41.39	54.00	-12.61	AVG		

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

●Reference Only



Radiated Emission Measurement

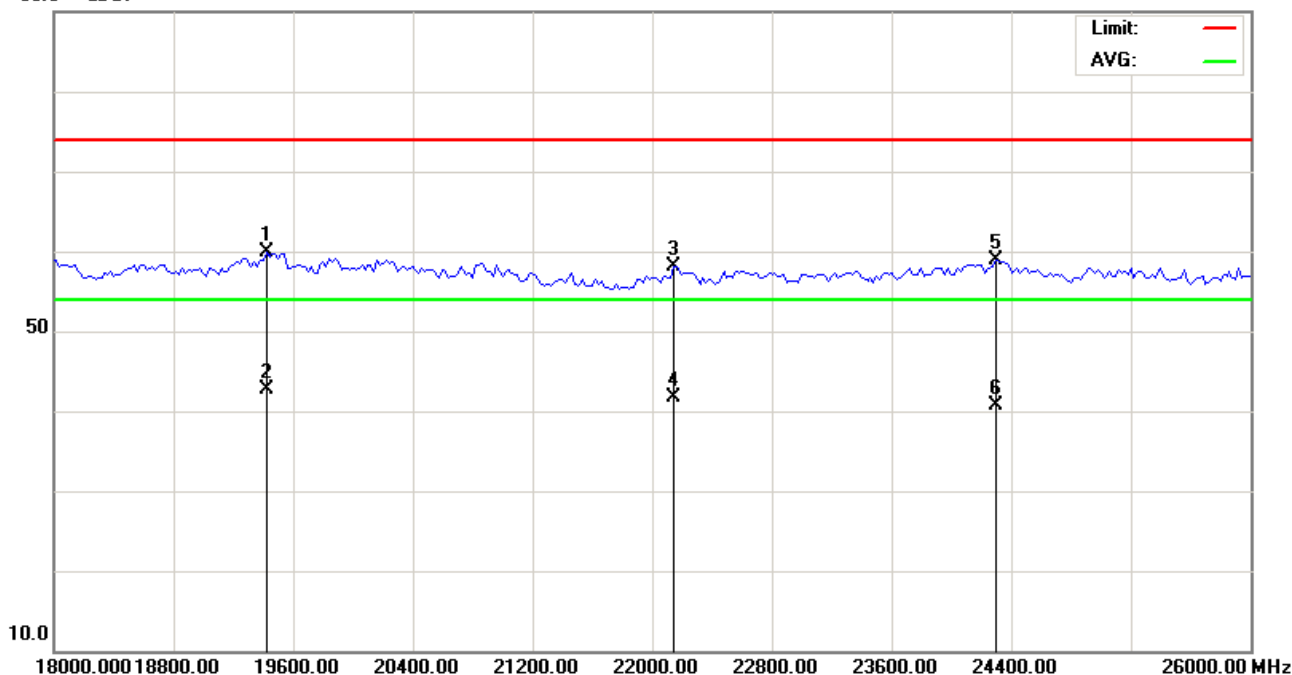
File :H780(CH2402(X軸))

Data :#14

Date: 2008/06/24

Time: 上午 08:49:35

90.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT+EDR

Note: 2402MHz

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		19420.00	27.20	32.61	59.81	74.00	-14.19	peak		
2	*	19420.00	10.14	32.61	42.75	54.00	-11.25	AVG		
3		22140.00	27.32	30.76	58.08	74.00	-15.92	peak		
4		22140.00	10.92	30.76	41.68	54.00	-12.32	AVG		
5		24300.00	29.72	29.28	59.00	74.00	-15.00	peak		
6		24300.00	11.44	29.28	40.72	54.00	-13.28	AVG		

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

●Reference Only



3.6.7 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 : H780
EUT : Universal Bluetooth Headset
Test Mode : Link Mode_Bluetooth EDR CH39 2441.000 (Local Frequency: 2441.000 MHz)
Test Date : 06/24/2008

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 ambit noise.
8. All frequencies from 30MHz to 26.5GHz have been tested



Radiated Emission Measurement

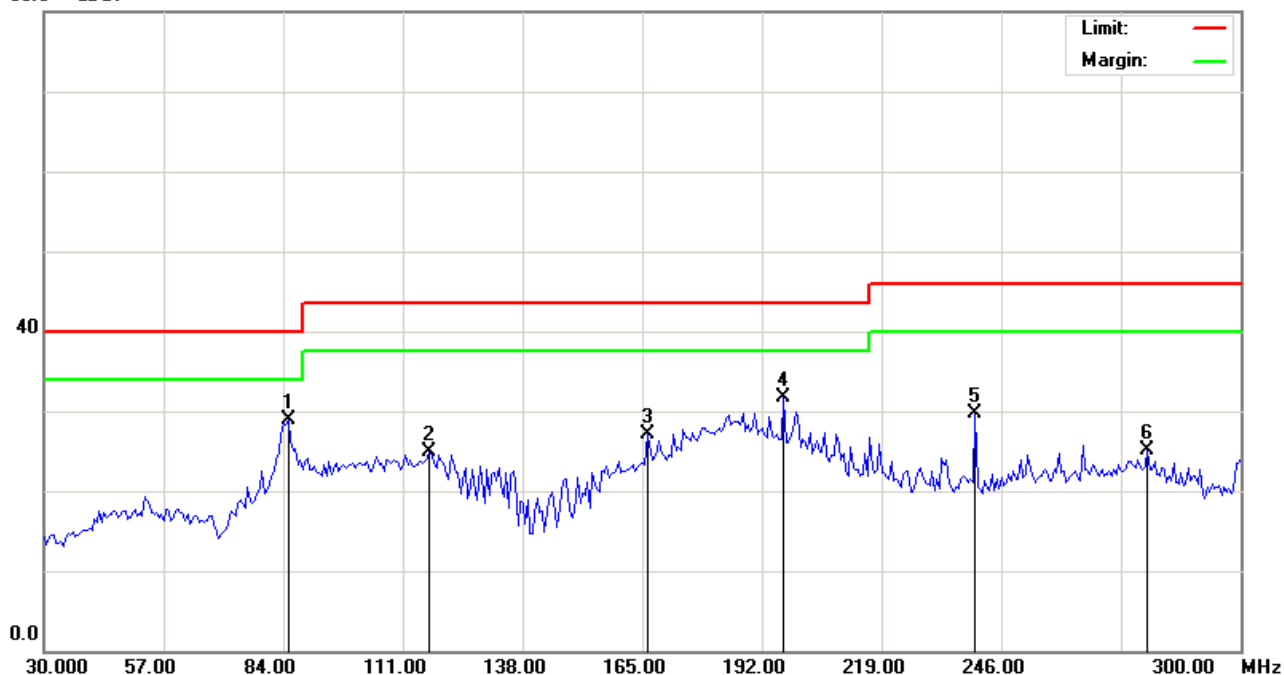
File:H780(CH2441)

Data :#1

Date:2008-6-24

Time: 下午 07:03:48

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: CH39(2441MHz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	85.0800	43.69	-14.70	28.99	40.00	-11.01	peak		
2		116.9400	38.55	-13.68	24.87	43.50	-18.63	peak		
3		166.0800	42.45	-15.33	27.12	43.50	-16.38	peak		
4		196.8600	44.83	-13.12	31.71	43.50	-11.79	peak		
5		240.0600	41.07	-11.43	29.64	46.00	-16.36	peak		
6		278.9400	35.58	-10.49	25.09	46.00	-20.91	peak		

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

●Reference Only



Radiated Emission Measurement

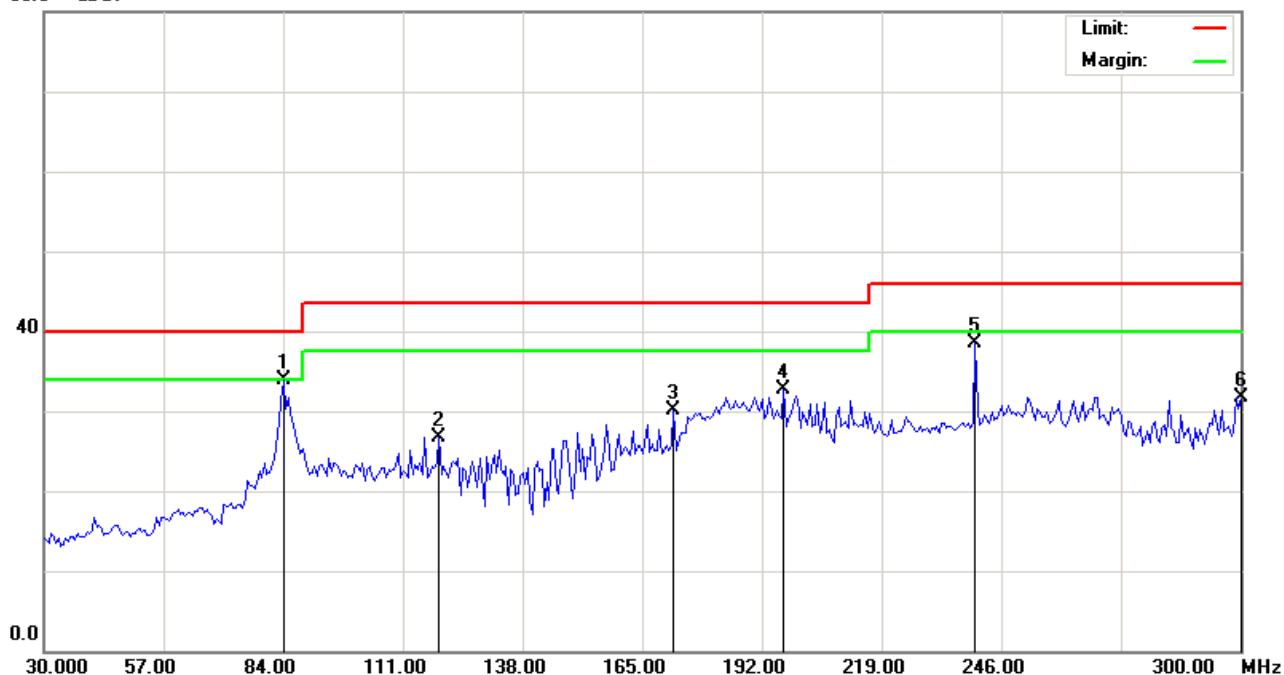
File:H780(CH2441)

Data :#3

Date:2008-6-24

Time: 下午 07:22:18

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: CH39(2441MHz)

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	84.0000	49.00	-15.09	33.91	40.00	-6.09	peak		
2		119.1000	40.80	-14.05	26.75	43.50	-16.75	peak		
3		172.0200	45.21	-15.11	30.10	43.50	-13.40	peak		
4		196.8600	45.76	-13.12	32.64	43.50	-10.86	peak		
5		240.0600	49.96	-11.43	38.53	46.00	-7.47	peak		
6		300.0000	41.68	-9.98	31.70	46.00	-14.30	peak		

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

●Reference Only



Radiated Emission Measurement

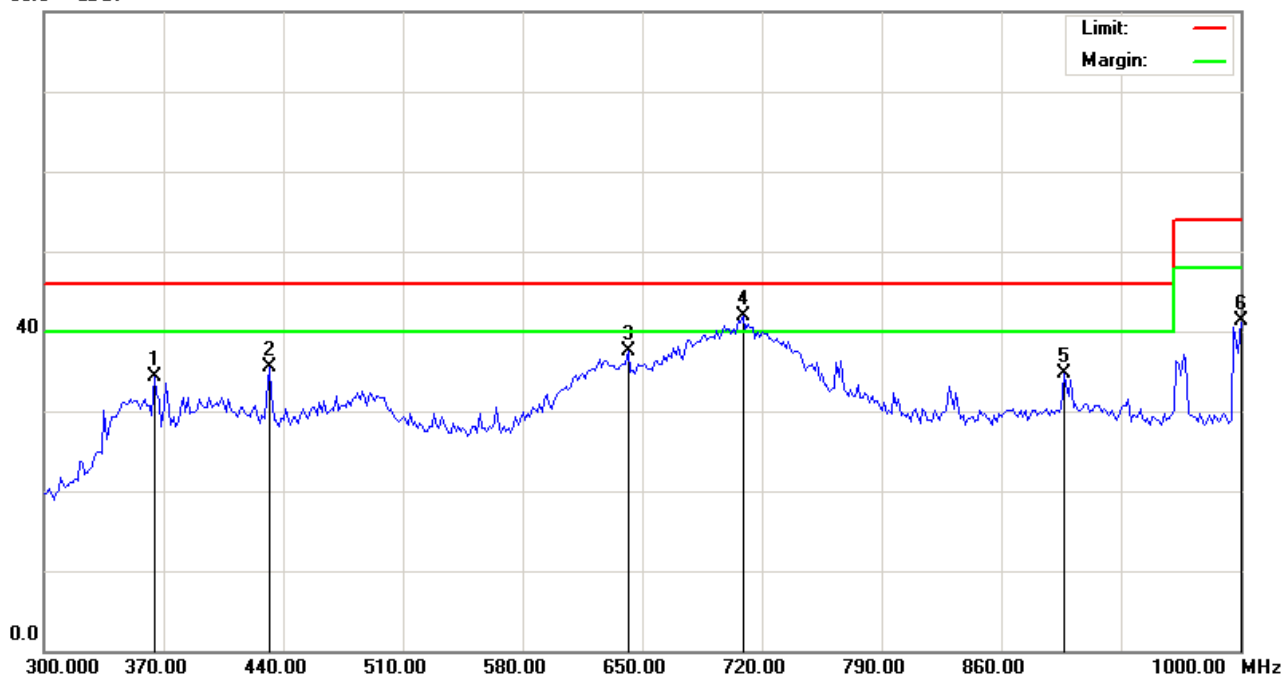
File:H780(CH2441)

Data :#2

Date:2008-6-24

Time: 下午 07:17:35

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: CH39(2441MHz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		364.4000	42.95	-8.65	34.30	46.00	-11.70	peak		
2		431.6000	43.57	-8.03	35.54	46.00	-10.46	peak		
3		641.6000	42.01	-4.48	37.53	46.00	-8.47	peak		
4	*	708.8000	45.92	-3.95	41.97	46.00	-4.03	peak		
5		896.4000	35.10	-0.47	34.63	46.00	-11.37	peak		
6		1000.000	40.66	0.62	41.28	54.00	-12.72	peak		

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

●Reference Only



Radiated Emission Measurement

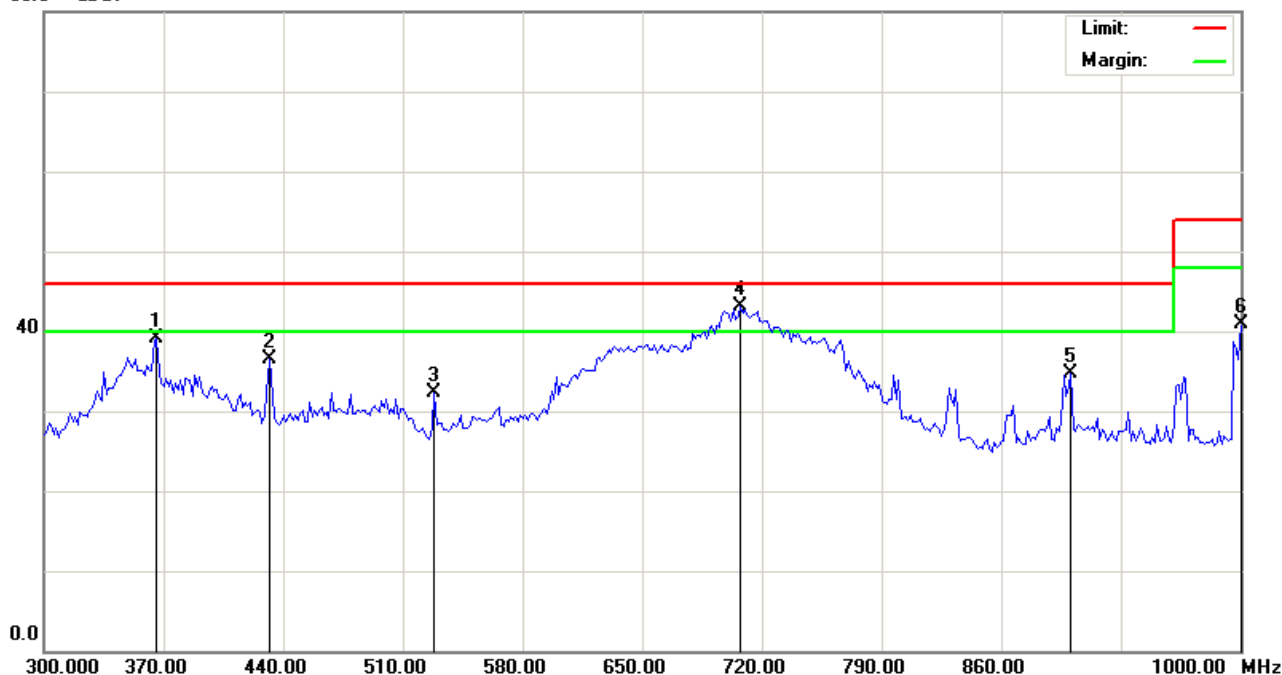
File:H780(CH2441)

Data :#4

Date:2008-6-24

Time: 下午 07:49:45

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: CH39(2441MHz)

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		365.8000	47.75	-8.63	39.12	46.00	-6.88	peak		
2		431.6000	44.50	-8.03	36.47	46.00	-9.53	peak		
3		528.2000	38.58	-6.34	32.24	46.00	-13.76	peak		
4	*	707.4000	47.01	-3.98	43.03	46.00	-2.97	peak		
5		900.6000	35.11	-0.36	34.75	46.00	-11.25	peak		
6		1000.000	40.23	0.62	40.85	54.00	-13.15	peak		

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

●Reference Only



Radiated Emission Measurement

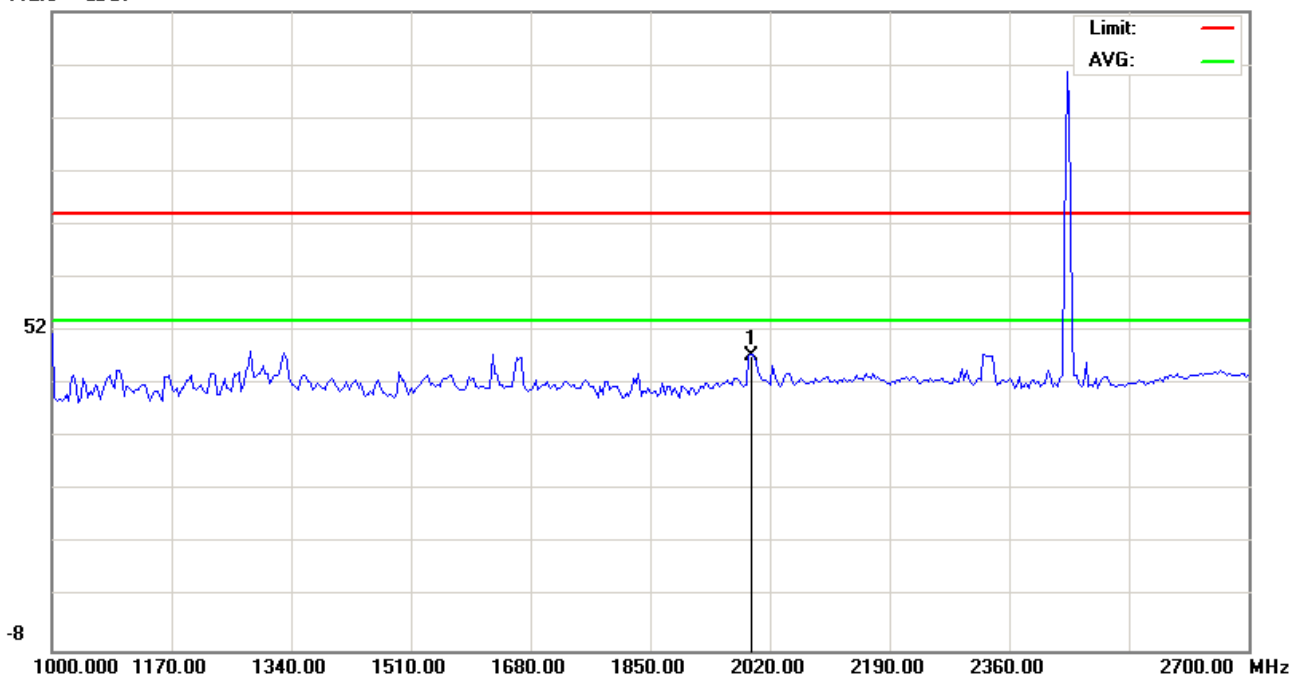
File:H780(CH2441)

Data :#1

Date:2008/06/24

Time: 上午 08:53:17

112.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: 2441MHz,天線1米,NB02接右邊下方USB孔

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1	*	1992.800	49.27	-1.77	47.50	74.00	-26.50	peak		Comment

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

●Reference Only



Radiated Emission Measurement

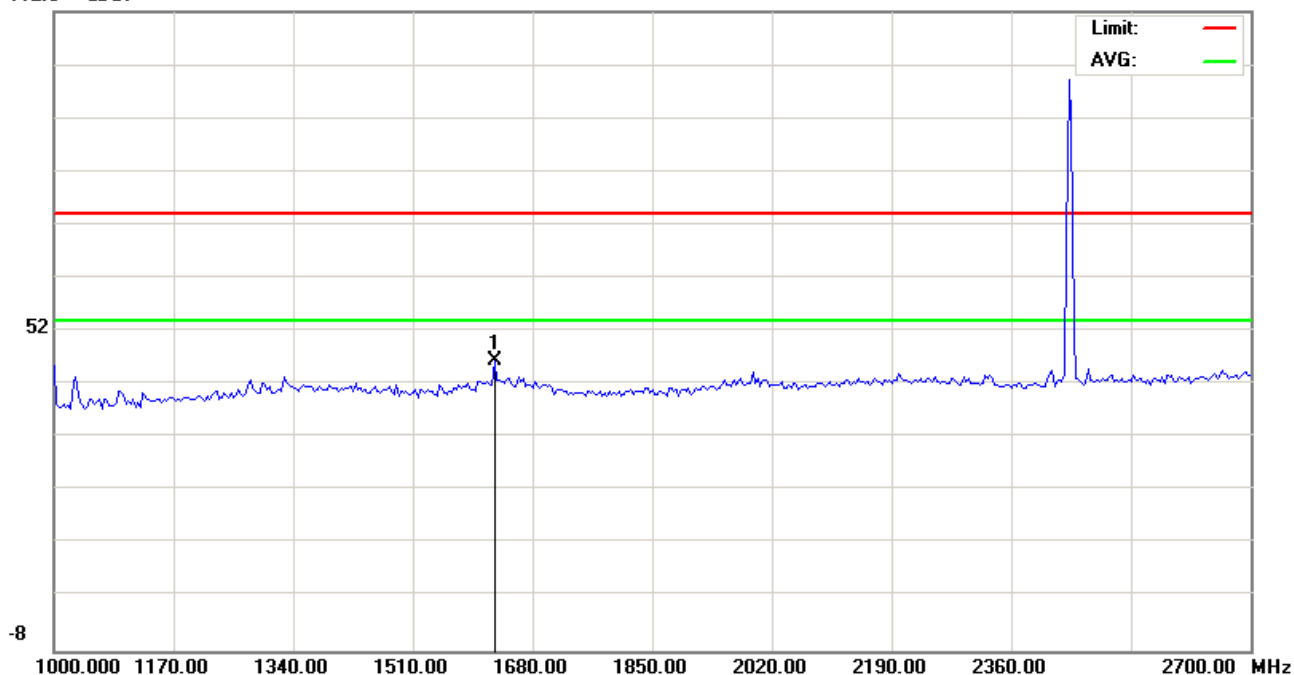
File:H780(CH2441)

Data :#3

Date:2008/06/24

Time: 上午 08:57:26

112.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: 2441MHz,天線在1米

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1	*	1625.600	50.29	-3.87	46.42	74.00	-27.58	peak		

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

●Reference Only



Radiated Emission Measurement

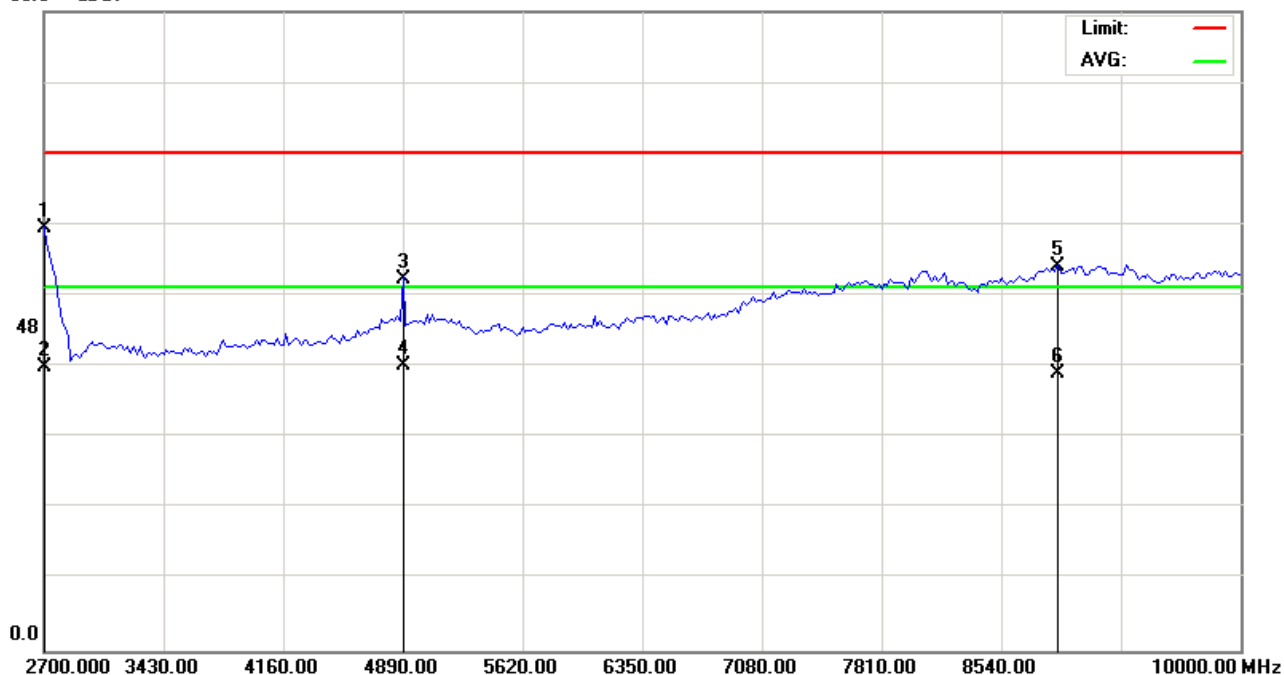
File:H780(CH2441)

Data :#7

Date: 2008/06/24

Time: 上午 09:13:57

95.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: 2441MHz,天線1米

2.7G-10G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	2700.000	40.29	22.58	62.87	74.00	-11.13	peak		
2		2700.000	19.53	22.58	42.11	54.00	-11.89	AVG		
3		4890.000	47.51	7.73	55.24	74.00	-18.76	peak		
4		4890.000	34.62	7.73	42.35	54.00	-11.65	AVG		
5		8886.750	41.73	15.49	57.22	74.00	-16.78	peak		
6		8886.750	25.67	15.49	41.16	54.00	-12.84	AVG		

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

●Reference Only



Radiated Emission Measurement

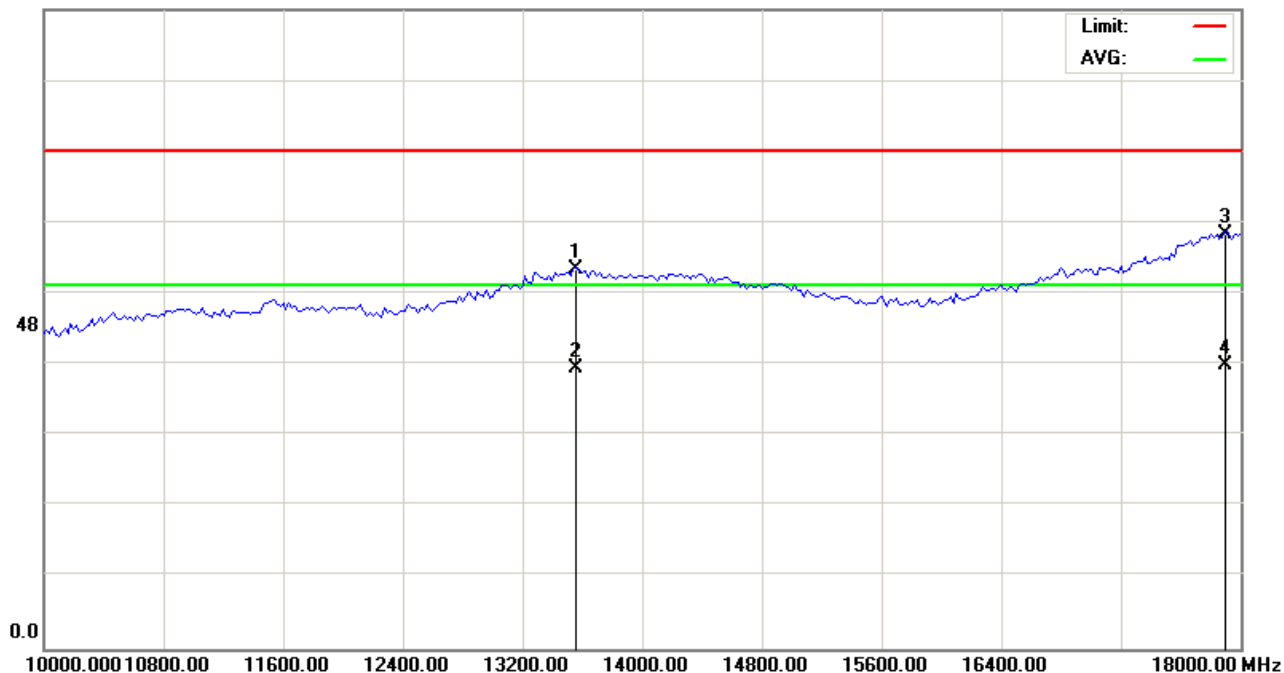
File:H780(CH2441)

Data :#9

Date: 2008/06/24

Time: 上午 09:19:42

95.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT+EDR

Note: 2441MHz

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

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		13560.00	38.52	17.98	56.50	74.00	-17.50	peak		
2		13560.00	23.69	17.98	41.67	54.00	-12.33	AVG		
3		17900.00	36.64	24.96	61.60	74.00	-12.40	peak		
4	*	17900.00	17.31	24.96	42.27	54.00	-11.73	AVG		

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

●Reference Only



Radiated Emission Measurement

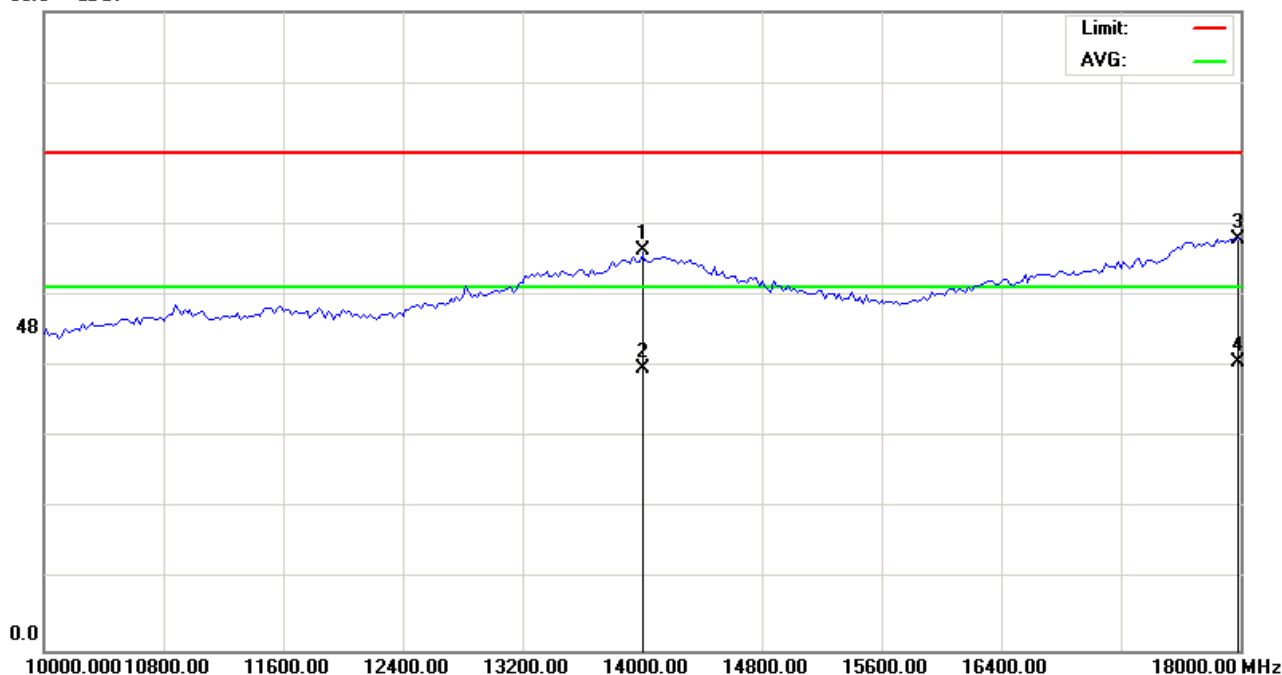
File:H780(CH2441)

Data :#11

Date: 2008/06/24

Time: 上午 09:23:19

95.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT+EDR

Note: 2441MHz

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1		14000.00	40.72	18.67	59.39	74.00	-14.61	peak		
2		14000.00	23.36	18.67	42.03	54.00	-11.97	AVG		
3		17980.00	36.04	25.21	61.25	74.00	-12.75	peak		
4	*	17980.00	17.63	25.21	42.84	54.00	-11.16	AVG		

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

●Reference Only



Radiated Emission Measurement

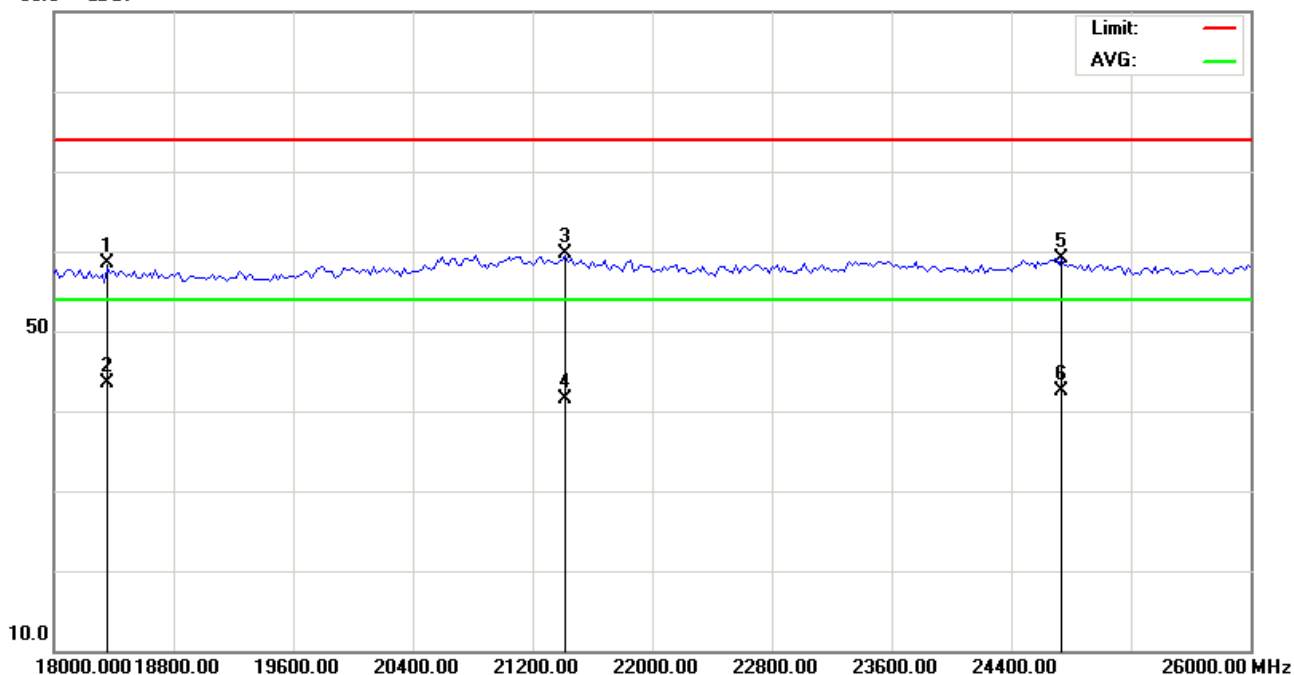
File:H780(CH2441)

Data :#13

Date: 2008/06/24

Time: 上午 09:29:54

90.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT+EDR

Note: 2441MHz

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		18360.00	24.51	33.92	58.43	74.00	-15.57	peak		
2	*	18360.00	9.53	33.92	43.45	54.00	-10.55	AVG		
3		21420.00	28.49	31.25	59.74	74.00	-14.26	peak		
4		21420.00	10.27	31.25	41.52	54.00	-12.48	AVG		
5		24740.00	30.19	28.98	59.17	74.00	-14.83	peak		
6		24740.00	13.51	28.98	42.49	54.00	-11.51	AVG		

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

●Reference Only



Radiated Emission Measurement

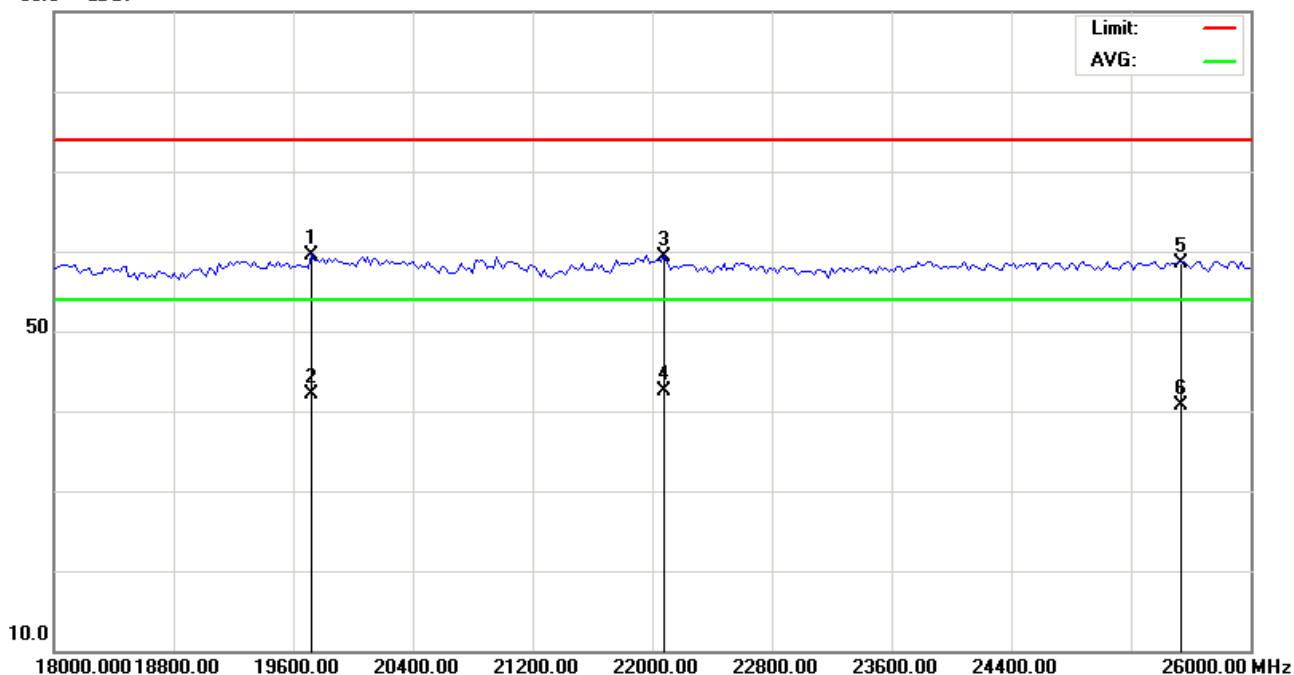
File:H780(CH2441)

Data :#14

Date: 2008/06/24

Time: 上午 09:32:23

90.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT+EDR

Note: 2441MHz

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		19720.00	27.05	32.41	59.46	74.00	-14.54	peak		
2		19720.00	9.67	32.41	42.08	54.00	-11.92	AVG		
3		22080.00	28.52	30.80	59.32	74.00	-14.68	peak		
4	*	22080.00	11.68	30.80	42.48	54.00	-11.52	AVG		
5		25540.00	30.03	28.43	58.46	74.00	-15.54	peak		
6		25540.00	12.27	28.43	40.70	54.00	-13.30	AVG		

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

●Reference Only



3.6.8 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 : H780
EUT : Universal Bluetooth Headset
Test Mode : Link Mode_Bluetooth EDR CH78 2480.000 (Local Frequency: 2480.000 MHz)
Test Date : 06/24/2008

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 ambit noise.
8. All frequencies from 30MHz to 26.5GHz have been tested



Radiated Emission Measurement

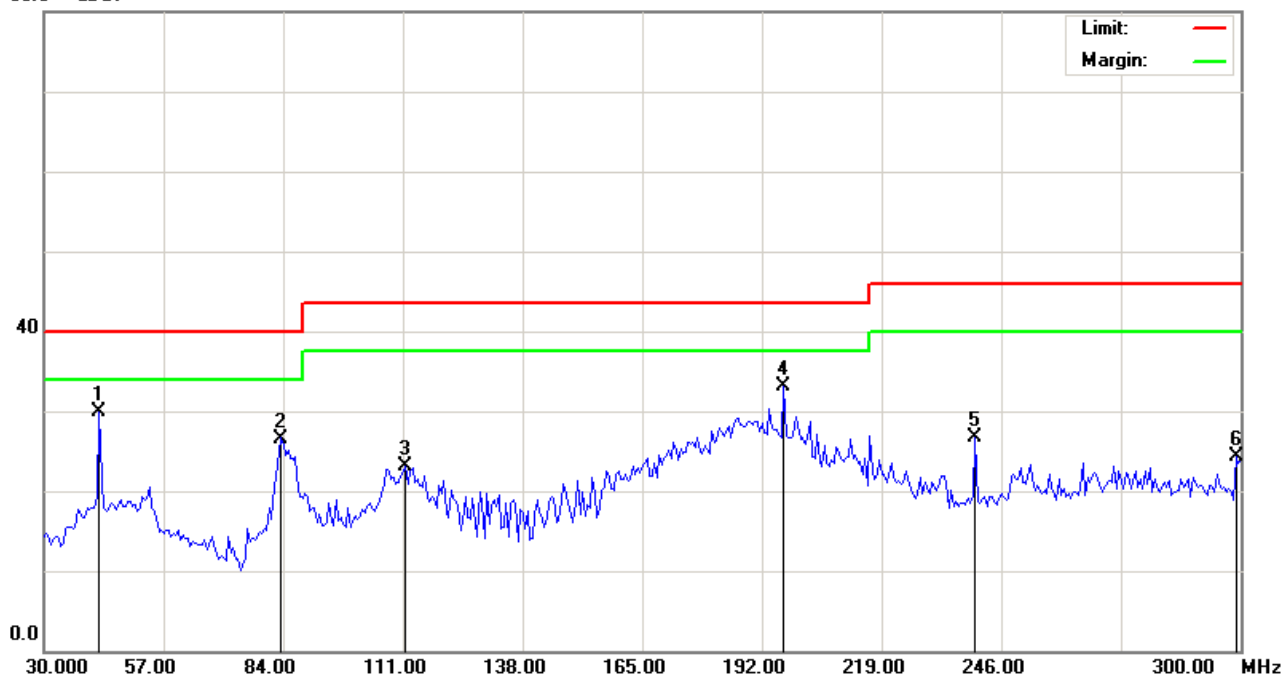
File :H780(CH2480)

Data :#1

Date: 2008/6/24

Time: 下午 08:11:43

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: CH78(2480MHz)

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	*	42.4199	41.73	-11.86	29.87	40.00	-10.13	peak		
2		83.4600	41.90	-15.30	26.60	40.00	-13.40	peak		
3		111.5400	35.80	-12.76	23.04	43.50	-20.46	peak		
4		196.8600	46.21	-13.12	33.09	43.50	-10.41	peak		
5		240.0600	38.13	-11.43	26.70	46.00	-19.30	peak		
6		298.9200	34.33	-10.03	24.30	46.00	-21.70	peak		

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

●Reference Only



Radiated Emission Measurement

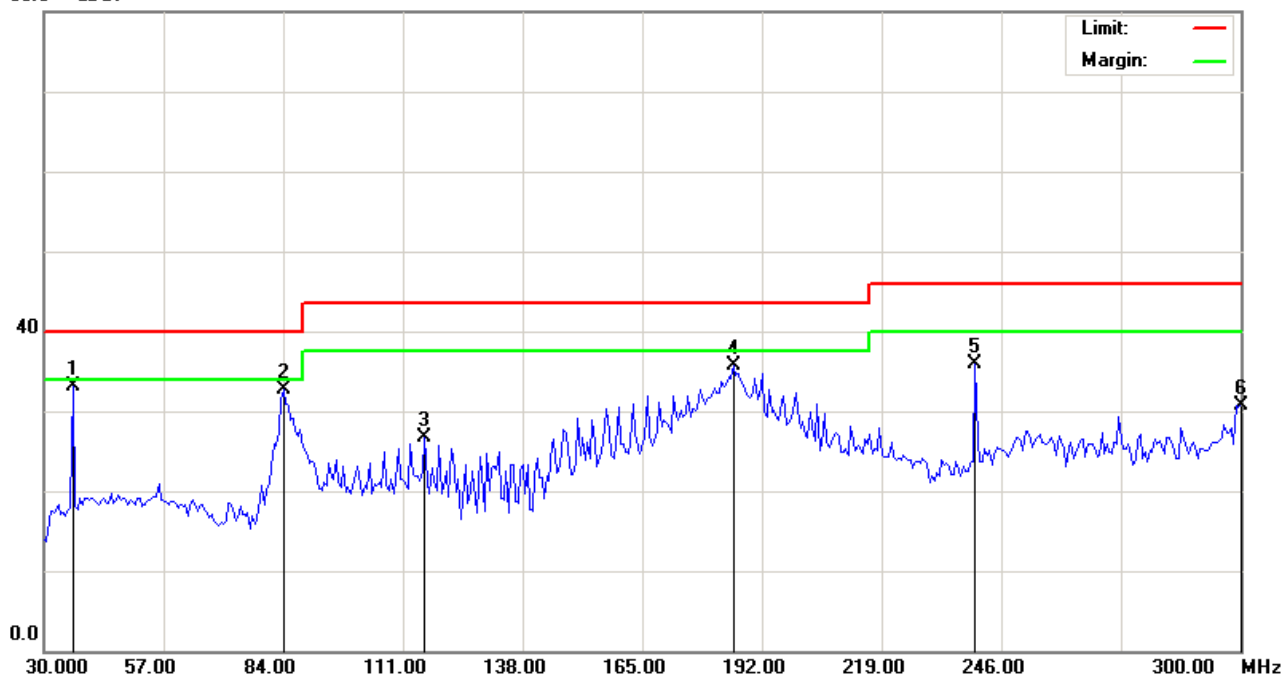
File:H780(CH2480)

Data :#3

Date: 2008/6/24

Time: 下午 08:41:26

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: CH78(2480MHz)

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	*	36.4800	45.87	-12.80	33.07	40.00	-6.93	peak		
2		84.0000	47.83	-15.09	32.74	40.00	-7.26	peak		
3		115.8600	40.18	-13.49	26.69	43.50	-16.81	peak		
4		185.5200	49.45	-13.76	35.69	43.50	-7.81	peak		
5		240.0600	47.30	-11.43	35.87	46.00	-10.13	peak		
6		300.0000	40.67	-9.98	30.69	46.00	-15.31	peak		

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

●Reference Only



Radiated Emission Measurement

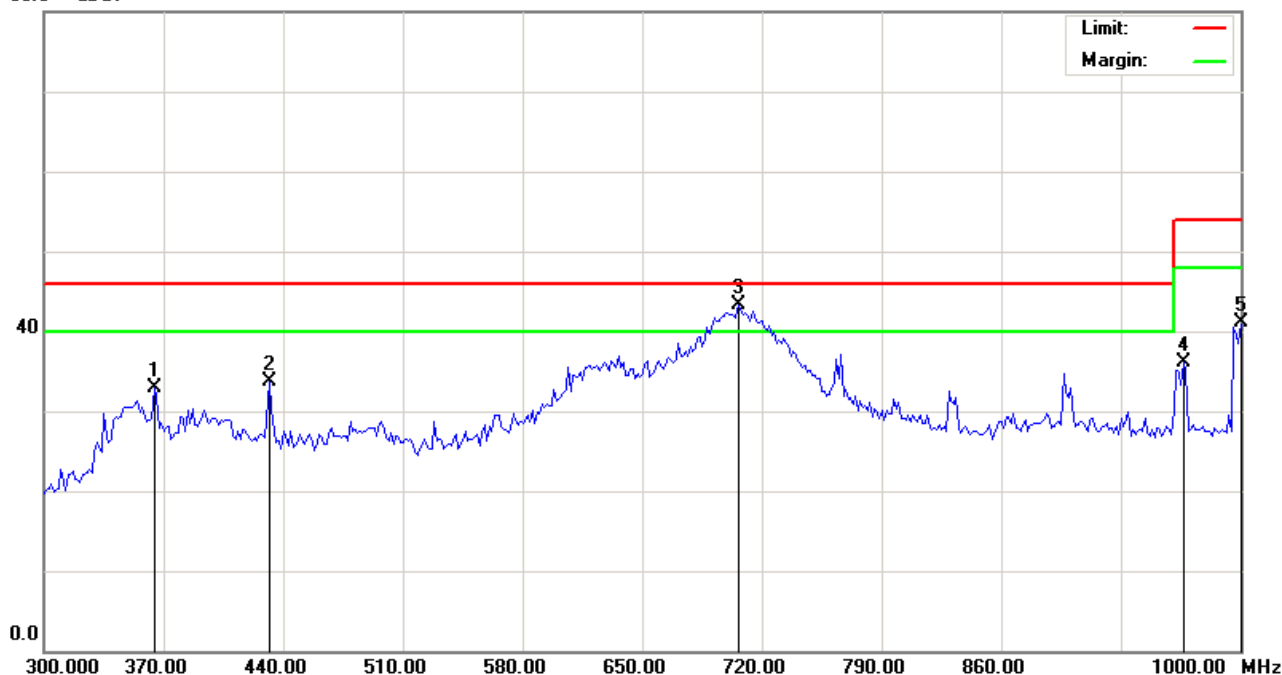
File:H780(CH2480)

Data :#2

Date: 2008/6/24

Time: 下午 08:23:18

80.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: CH78(2480MHz)

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		364.4000	41.65	-8.65	33.00	46.00	-13.00	peak		
2		431.6000	41.80	-8.03	33.77	46.00	-12.23	peak		
3	*	706.0000	47.30	-4.00	43.30	46.00	-2.70	peak		
4		966.4000	35.50	0.69	36.19	54.00	-17.81	peak		
5		1000.000	40.41	0.62	41.03	54.00	-12.97	peak		

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

●Reference Only



Radiated Emission Measurement

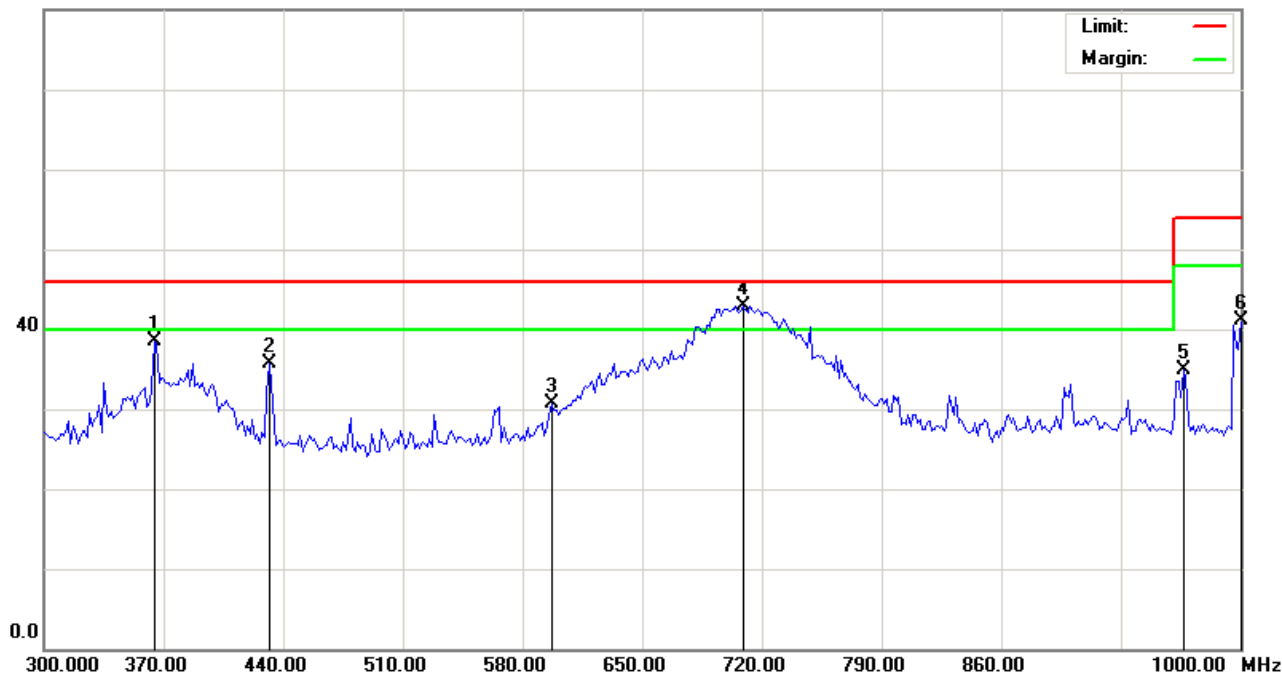
File :H780(CH2480)

Data :#4

Date: 2008/6/24

Time: 下午 08:58:15

80.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: CH78(2480MHz)

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		364.4000	47.15	-8.65	38.50	46.00	-7.50	peak		
2		431.6000	43.69	-8.03	35.66	46.00	-10.34	peak		
3		596.8000	35.64	-4.88	30.76	46.00	-15.24	peak		
4	*	708.8000	46.91	-3.95	42.96	46.00	-3.04	peak		
5		966.4000	34.19	0.69	34.88	54.00	-19.12	peak		
6		1000.000	40.44	0.62	41.06	54.00	-12.94	peak		

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

●Reference Only



Radiated Emission Measurement

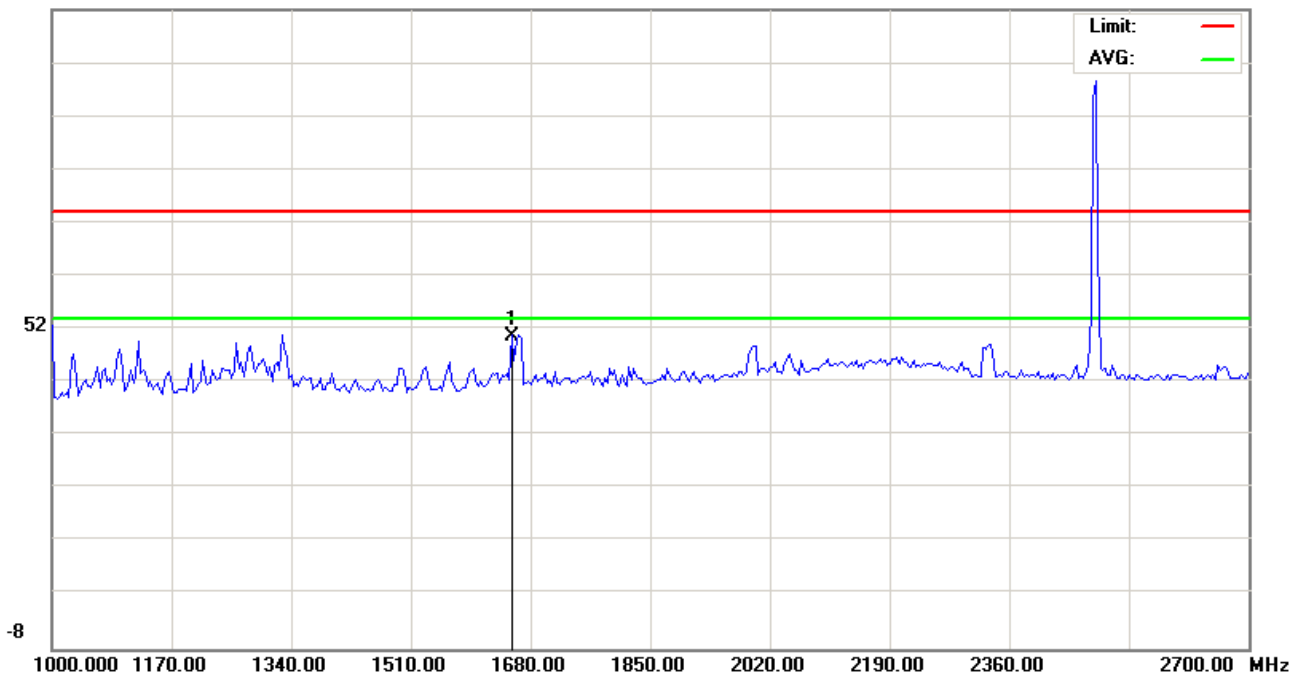
File:H780(CH2480)

Data :#1

Date: 2008/06/24

Time: 上午 09:39:53

112.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: 2480MHz,天線在1米,NB02接右邊下方USB孔

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1	*	1652.800	54.51	-3.80	50.71	74.00	-23.29	peak		

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

●Reference Only



Radiated Emission Measurement

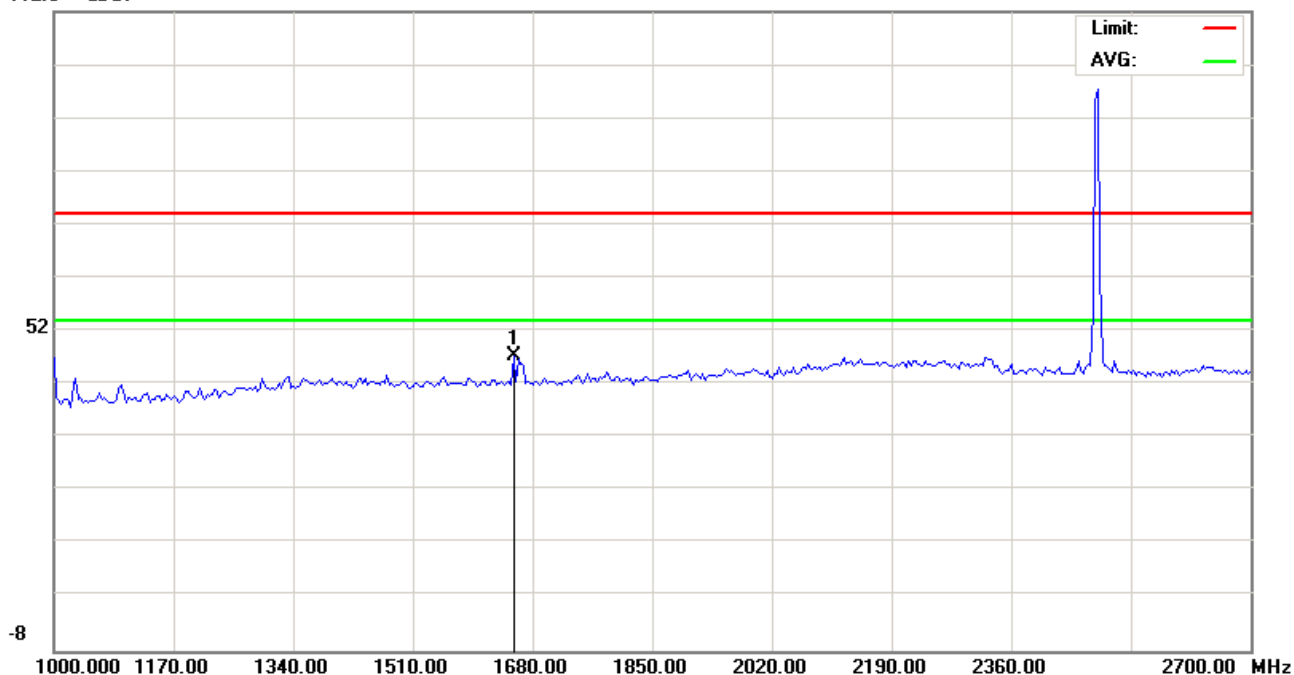
File:H780(CH2480)

Data :#3

Date: 2008/06/24

Time: 上午 09:42:16

112.0 dBuV



Site site#1

Polarization: Horizontal

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: 2480MHz,天線在1米

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1	*	1652.800	51.04	-3.80	47.24	74.00	-26.76	peak		Comment

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

●Reference Only



Radiated Emission Measurement

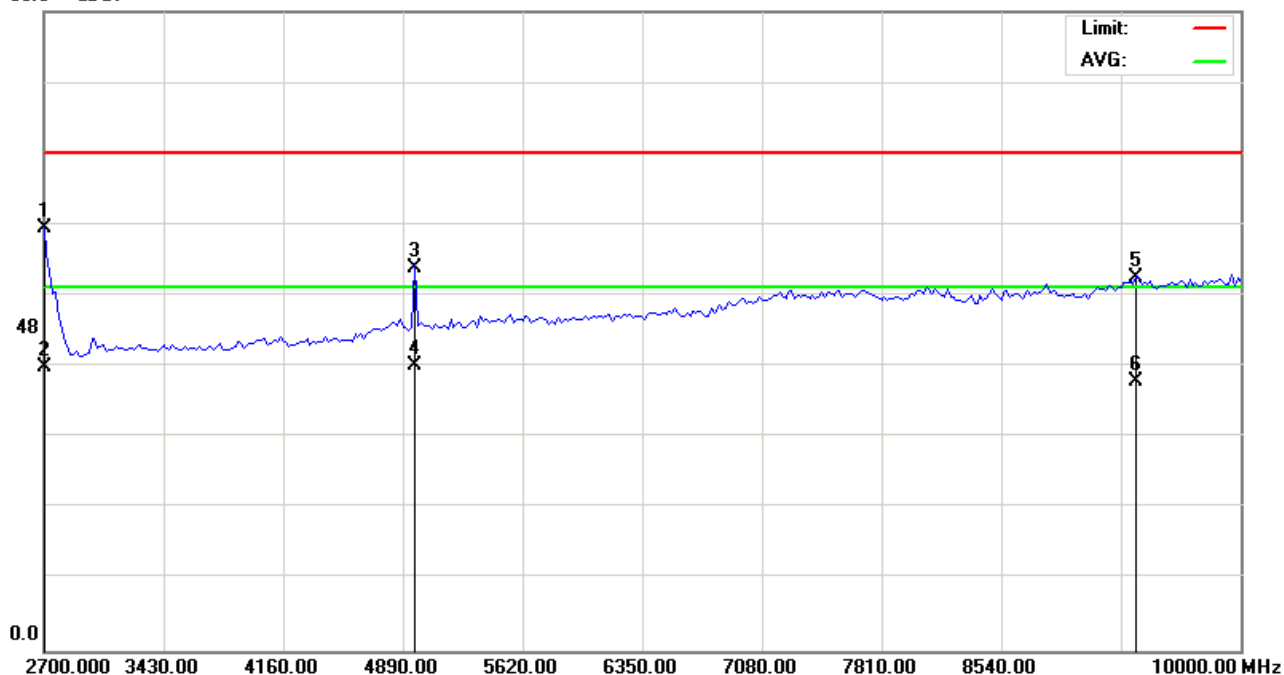
File:H780(CH2480)

Data :#5

Date: 2008/06/24

Time: 上午 09:53:14

95.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: 2480MHz ,天線在1米

2.7G-10G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	2700.000	40.27	22.58	62.85	74.00	-11.15	peak		
2		2700.000	19.61	22.58	42.19	54.00	-11.81	AVG		
3		4963.000	49.13	7.82	56.95	74.00	-17.05	peak		
4		4963.000	34.57	7.82	42.39	54.00	-11.61	AVG		
5		9361.250	38.52	16.98	55.50	74.00	-18.50	peak		
6		9361.250	23.13	16.98	40.11	54.00	-13.89	AVG		

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

●Reference Only



Radiated Emission Measurement

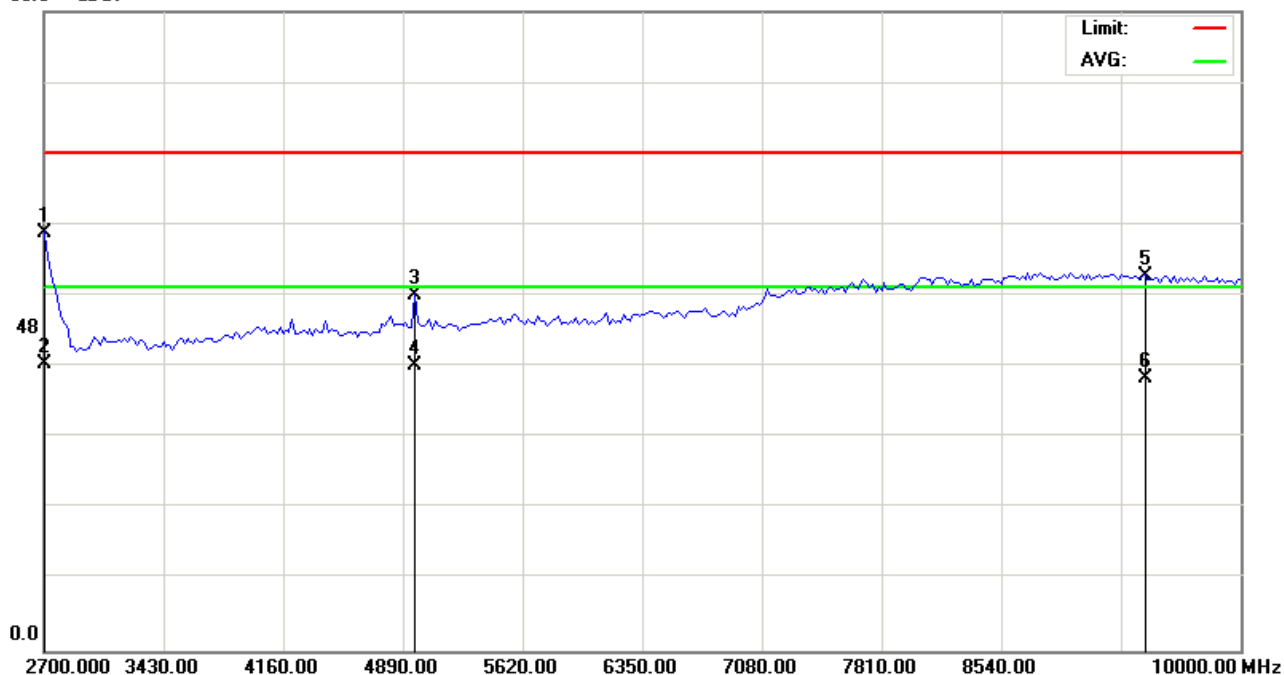
File:H780(CH2480)

Data :#7

Date:2008/06/24

Time: 上午 10:06:54

95.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: 2480MHz

2.7G-10G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		2700.000	39.64	22.58	62.22	74.00	-11.78	peak		
2	*	2700.000	20.13	22.58	42.71	54.00	-11.29	AVG		
3		4963.000	45.09	7.82	52.91	74.00	-21.09	peak		
4		4963.000	34.57	7.82	42.39	54.00	-11.61	AVG		
5		9416.000	38.68	17.07	55.75	74.00	-18.25	peak		
6		9416.000	23.36	17.07	40.43	54.00	-13.57	AVG		

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

●Reference Only



Radiated Emission Measurement

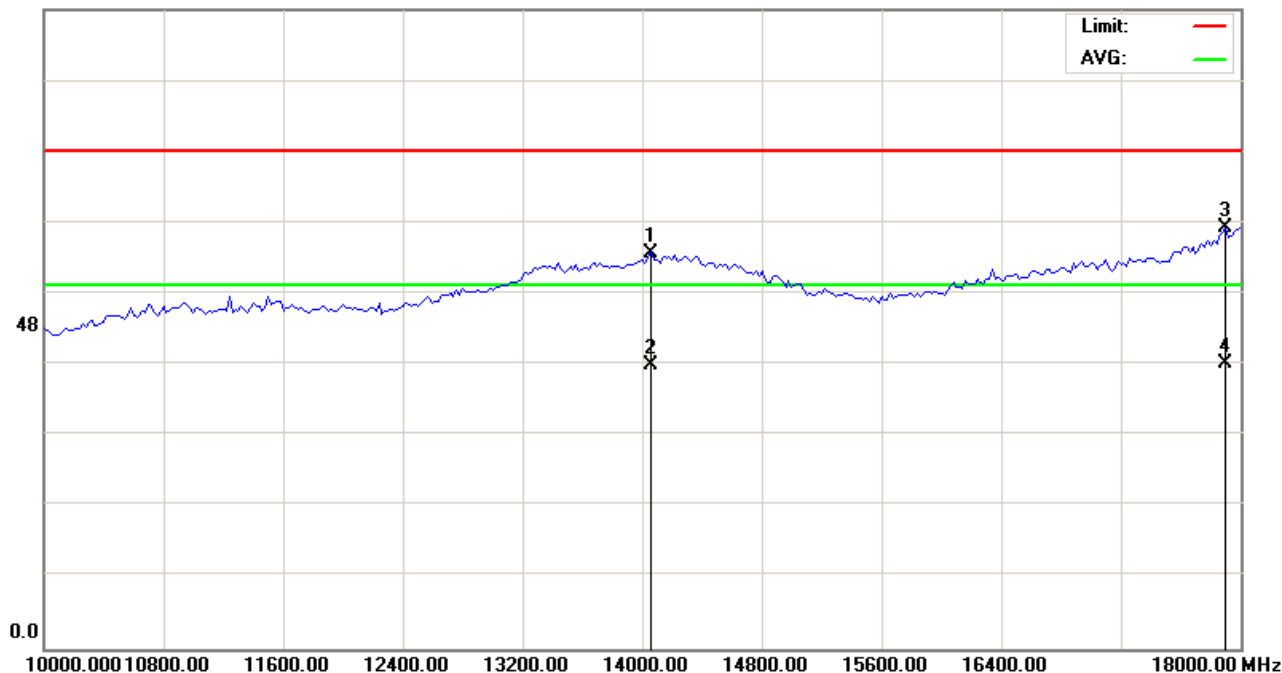
File :H780(CH2480)

Data :#9

Date: 2008/06/24

Time: 上午 10:17:23

95.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT+EDR

Note: 2480MHz

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		14060.00	40.01	18.72	58.73	74.00	-15.27	peak		
2		14060.00	23.32	18.72	42.04	54.00	-11.96	AVG		
3	*	17900.00	37.57	24.96	62.53	74.00	-11.47	peak		
4		17900.00	17.43	24.96	42.39	54.00	-11.61	AVG		

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

●Reference Only



Radiated Emission Measurement

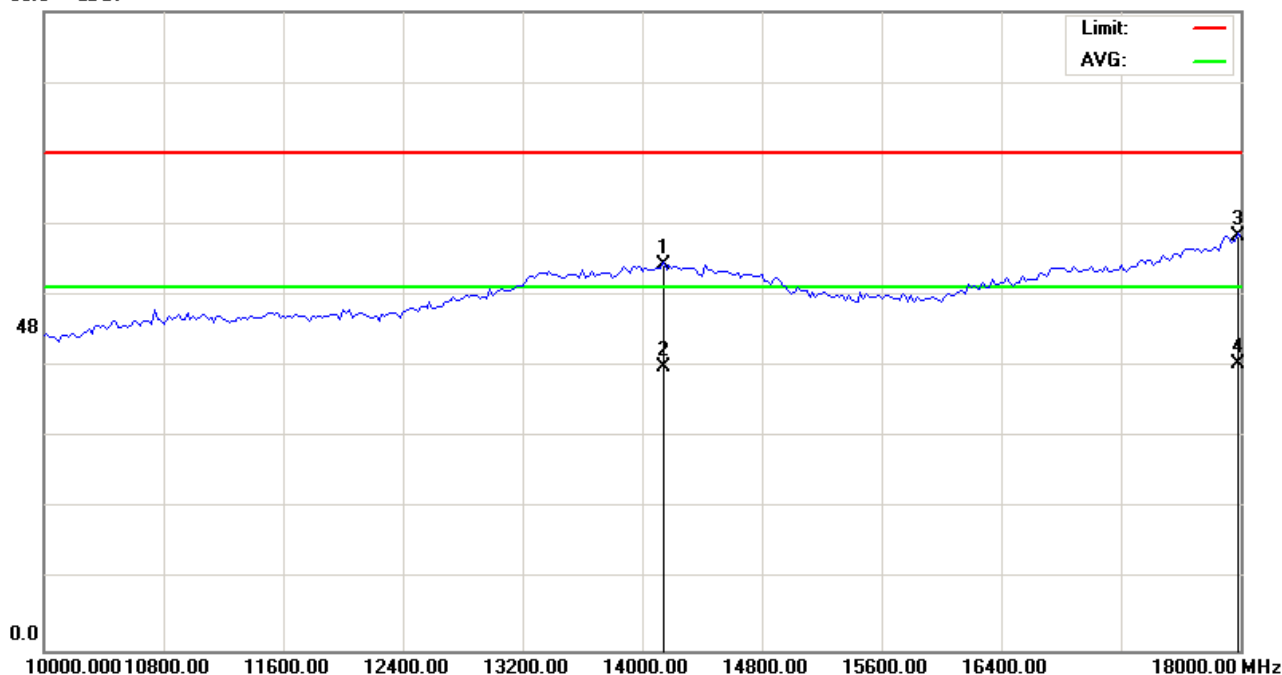
File:H780(CH2480)

Data :#11

Date:2008/06/24

Time: 上午 10:24:51

95.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT+EDR

Note: 2480MHz

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		14140.00	38.52	18.84	57.36	74.00	-16.64	peak		
2		14140.00	23.31	18.84	42.15	54.00	-11.85	AVG		
3		17980.00	36.47	25.21	61.68	74.00	-12.32	peak		
4	*	17980.00	17.33	25.21	42.54	54.00	-11.46	AVG		

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

●Reference Only



Radiated Emission Measurement

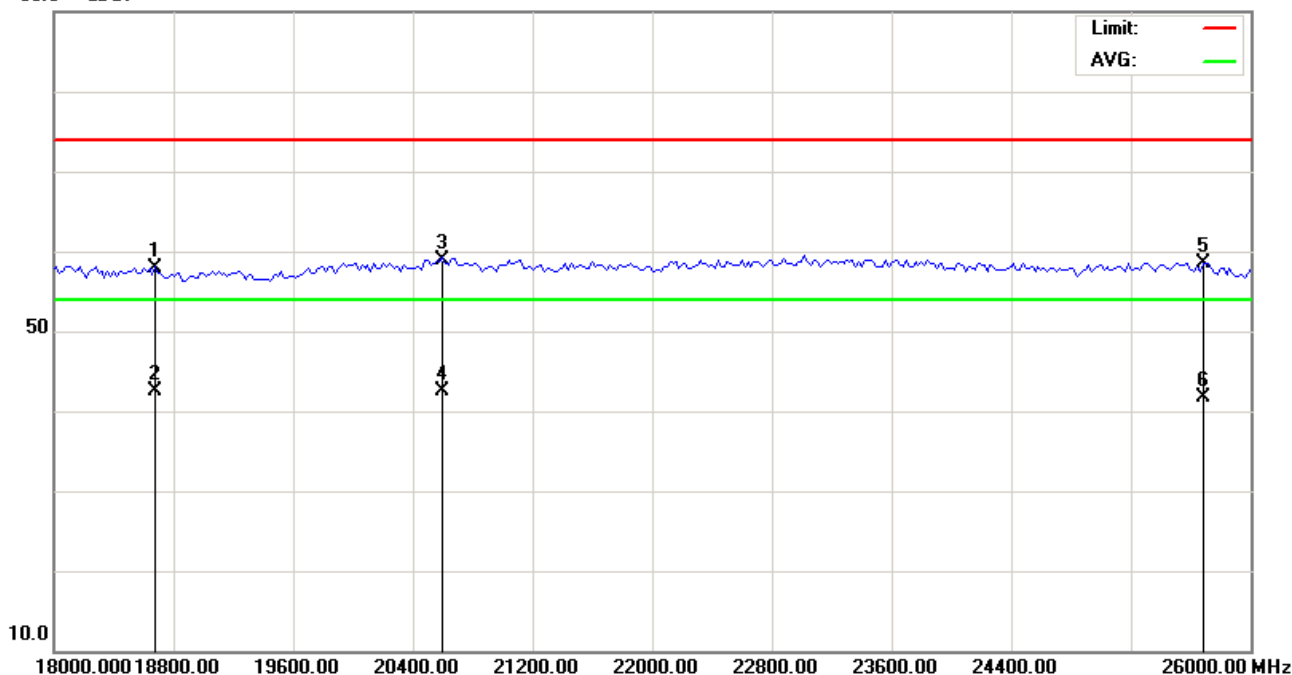
File :H780(CH2480)

Data :#13

Date: 2008/06/24

Time: 上午 10:29:23

90.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT+EDR

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1		18680.00	24.87	33.11	57.98	74.00	-16.02	peak		
2		18680.00	9.34	33.11	42.45	54.00	-11.55	AVG		
3		20600.00	27.06	31.80	58.86	74.00	-15.14	peak		
4	*	20600.00	10.73	31.80	42.53	54.00	-11.47	AVG		
5		25680.00	30.19	28.33	58.52	74.00	-15.48	peak		
6		25680.00	13.45	28.33	41.78	54.00	-12.22	AVG		

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

●Reference Only



Radiated Emission Measurement

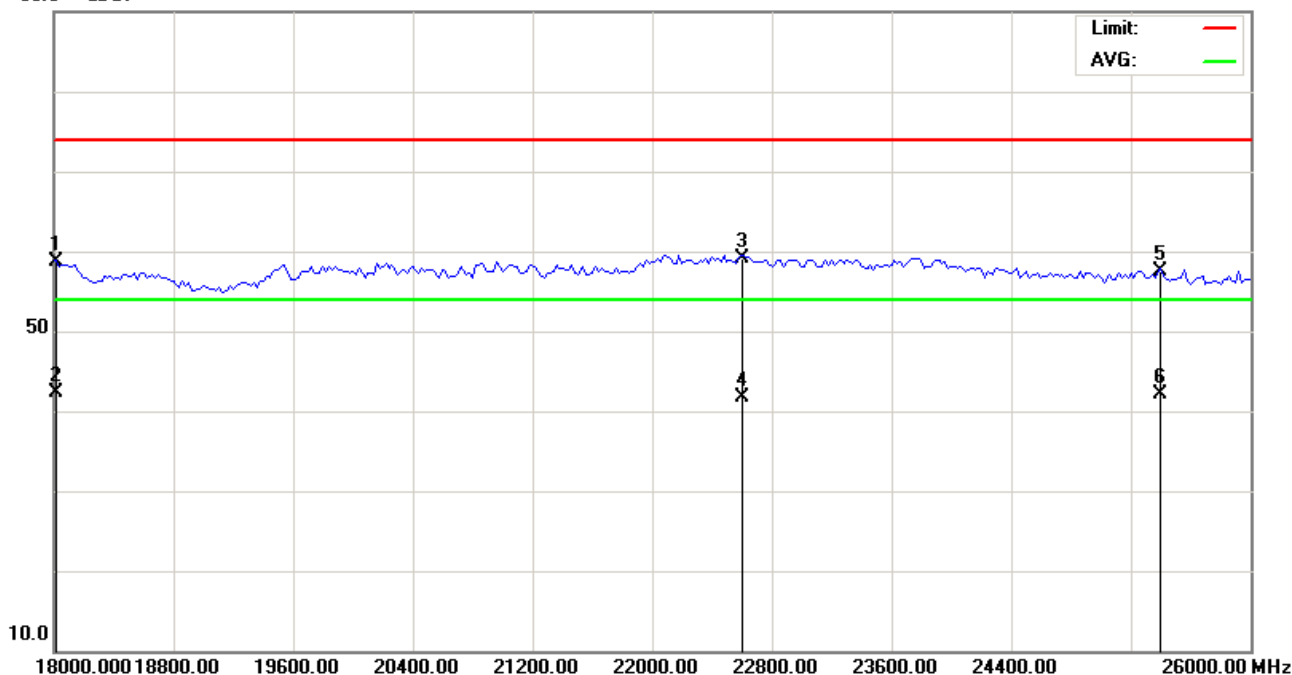
File:H780(CH2480)

Data :#14

Date:2008/06/24

Time: 上午 10:32:14

90.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: H780

Mode: BT+EDR

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		18020.00	24.67	33.99	58.66	74.00	-15.34	peak		
2	*	18020.00	8.35	33.99	42.34	54.00	-11.66	AVG		
3		22600.00	28.74	30.44	59.18	74.00	-14.82	peak		
4		22600.00	11.23	30.44	41.67	54.00	-12.33	AVG		
5		25400.00	29.06	28.53	57.59	74.00	-16.41	peak		
6		25400.00	13.67	28.53	42.20	54.00	-11.80	AVG		

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

●Reference Only

4. Maximum Conducted Output Power Requirements

4.1 Test Condition & Setup:

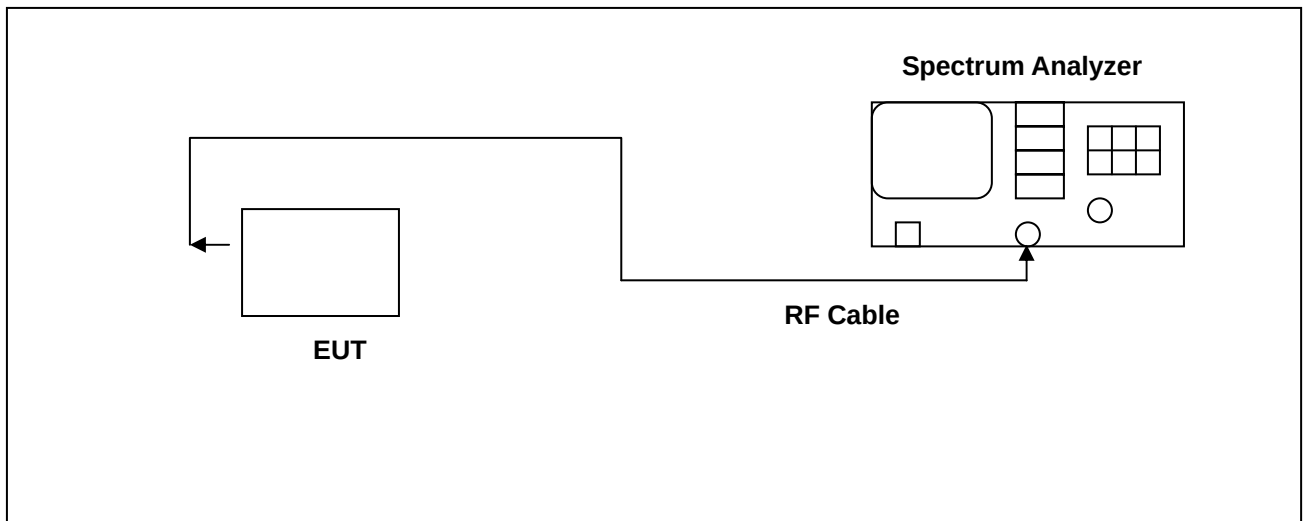
The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to spectrum analyzer. 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	MY45300744	Nov. 29, 2008	Nov. 29, 2009

4.4 Test Result

Bluetooth 2.0

Frequency (MHz)	Output (dBm)	Required Limit
2402	3.520	<30dBm
2441	3.579	<30dBm
2480	3.523	<30dBm

Bluetooth EDR

Frequency (MHz)	Output (dBm)	Required Limit
2402	3.220	<30dBm
2441	3.294	<30dBm
2480	3.938	<30dBm

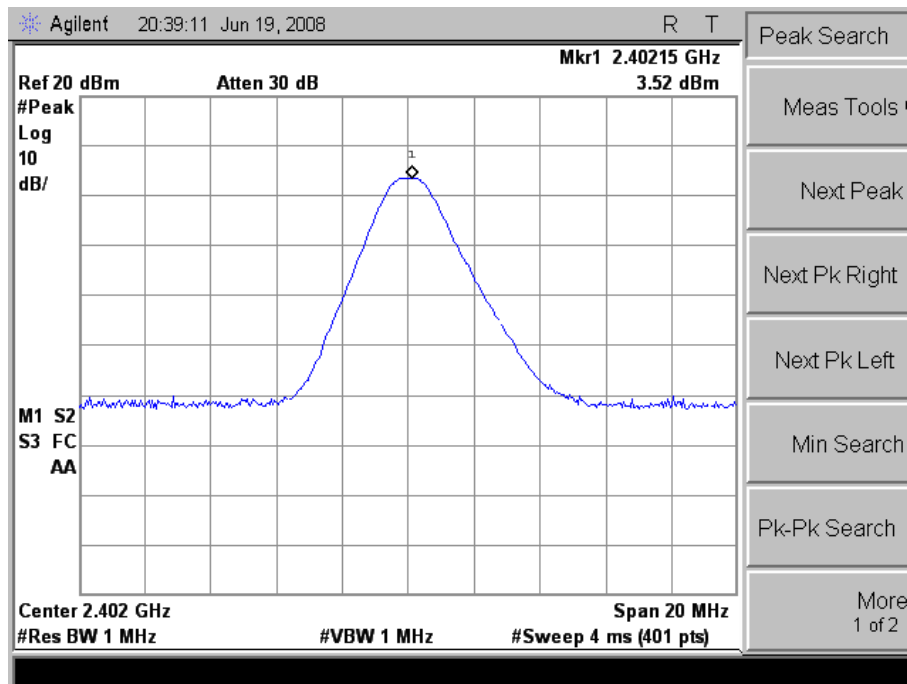
Note: Test Graphs See next page.



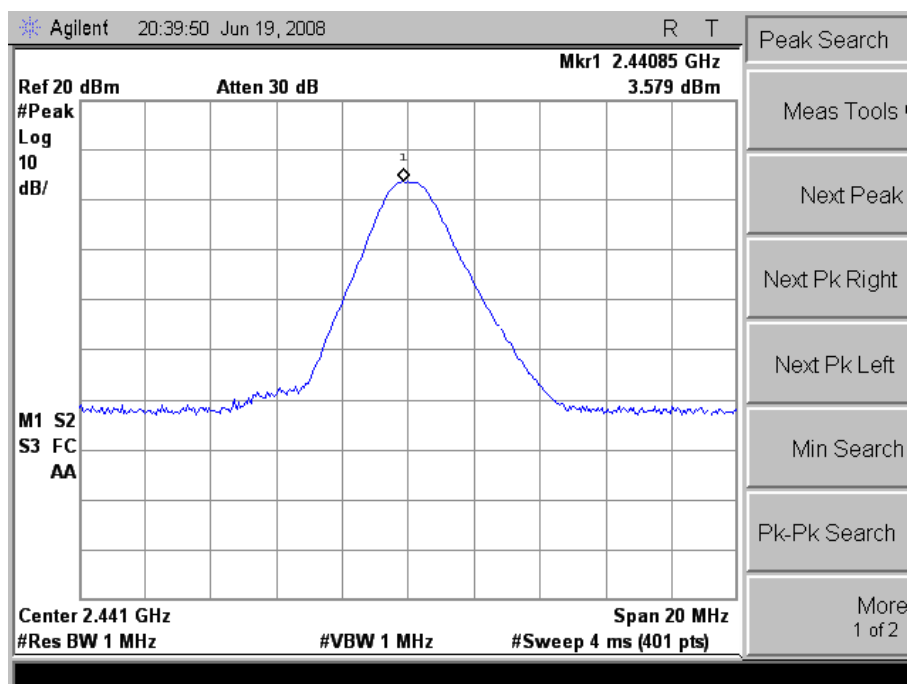
4.5 Test Graphs

4.5.1 Bluetooth 2.0 Mode:

Bluetooth 2.0 CH00 (2402MHz)

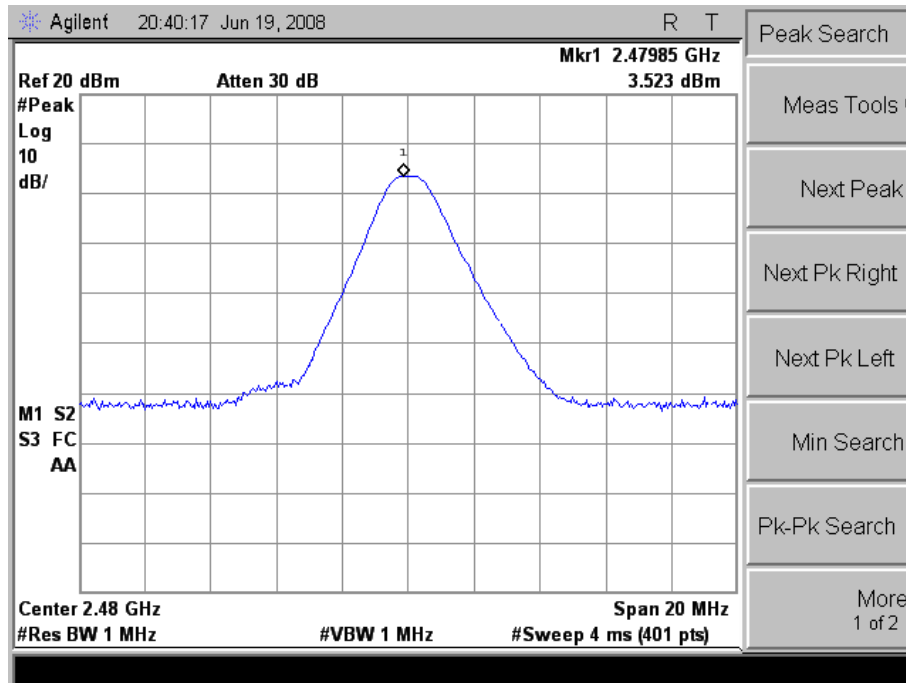


Bluetooth 2.0 CH39 (2441MHz)





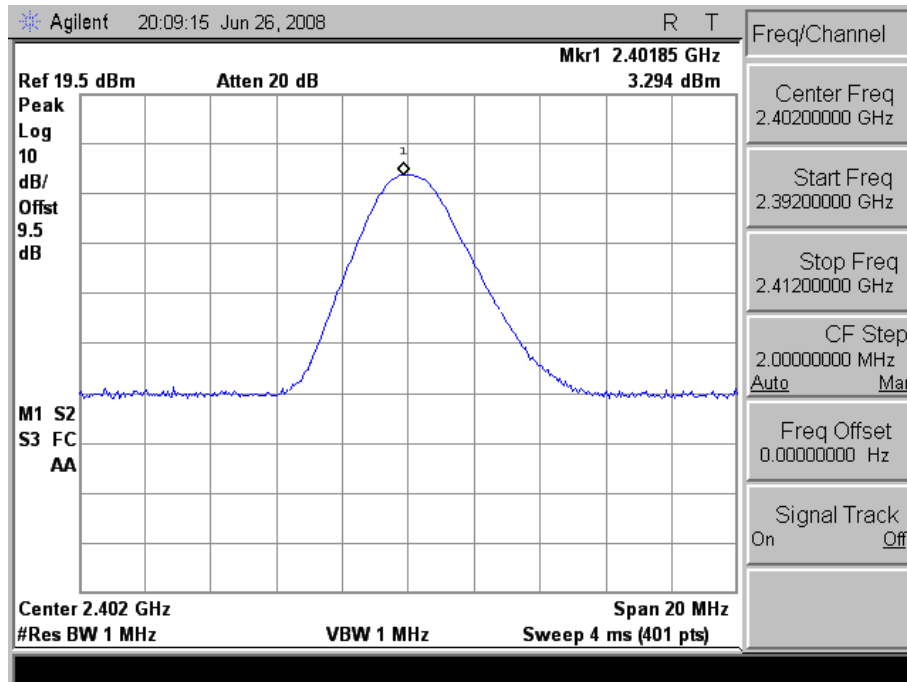
Bluetooth 2.0 CH78 (2480MHz)



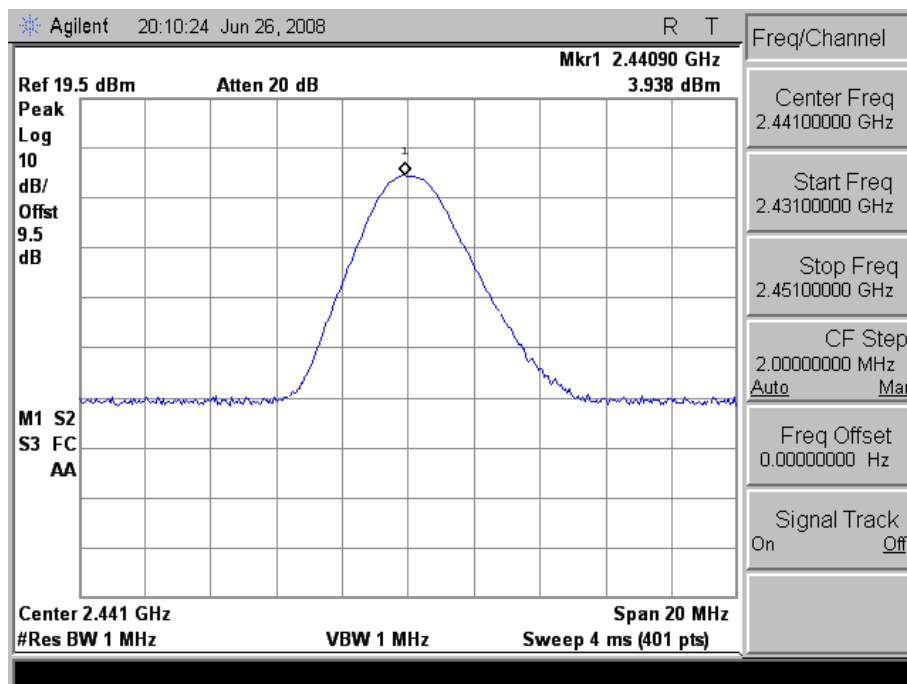


4.5.2 Test Graphs _ Bluetooth EDR Mode:

Bluetooth EDR CH00 (2402MHz)

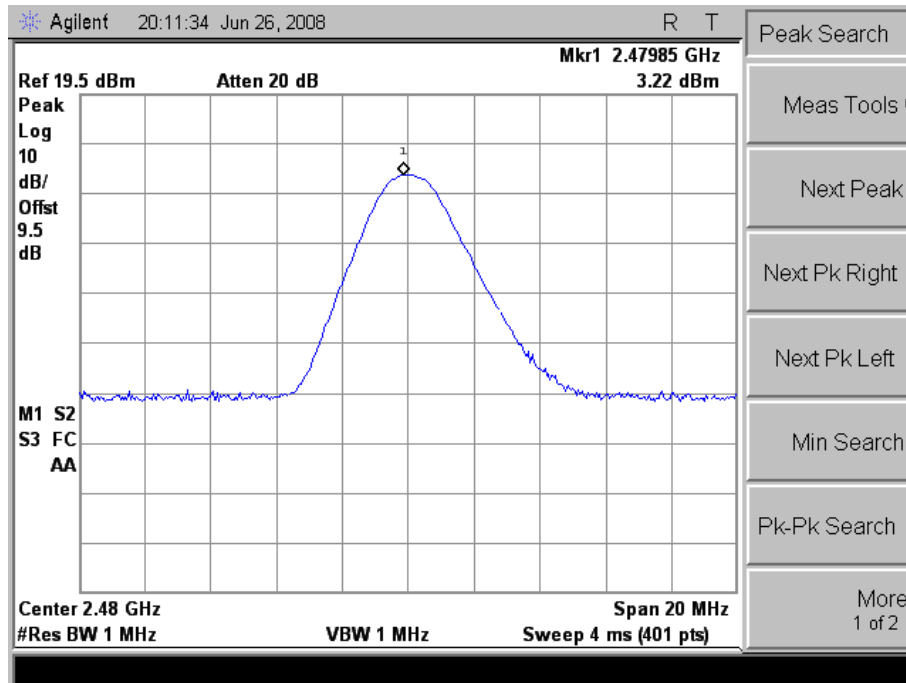


Bluetooth EDR CH39 (2441MHz)





Bluetooth EDR CH78 (2480MHz)



5. Minimum 20dB RF Bandwidth Requirements

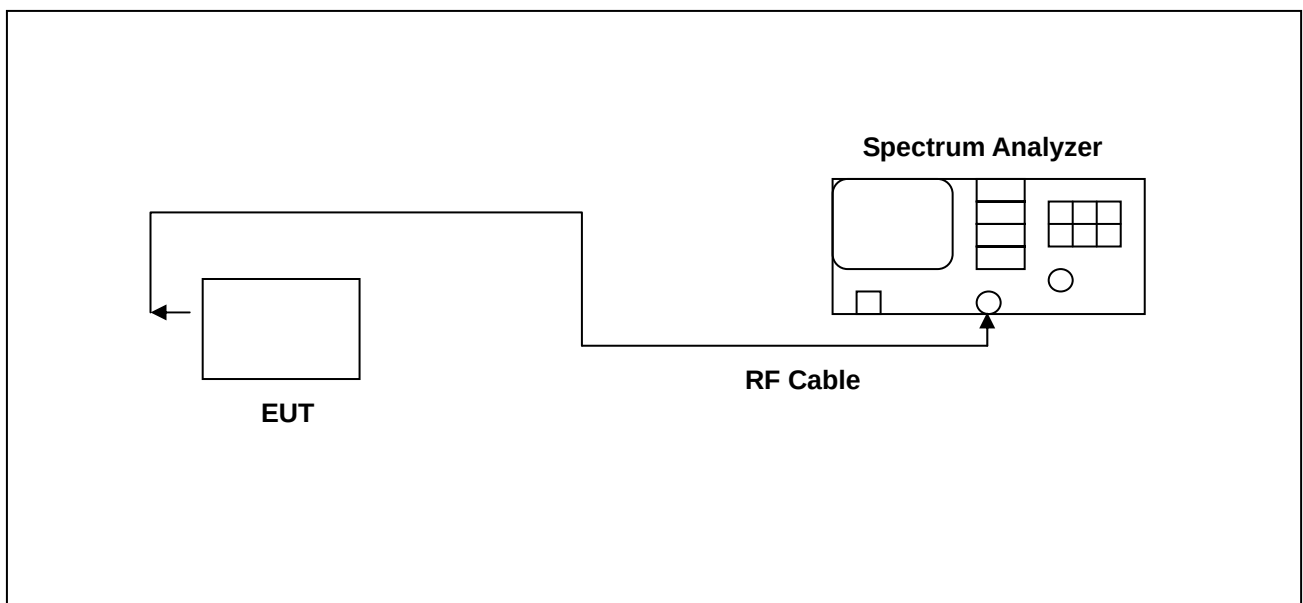
5.1 Test Condition & Setup:

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	MY45300744	Nov. 29, 2008	Nov. 29, 2009

5.4 Test Result

Bluetooth 2.0

Frequency (MHz)	Max 20dB Bandwidth (MHz)	Required Limit
2402	0.645	<1MHz
2441	0.715	<1MHz
2480	0.665	<1MHz

Bluetooth EDR

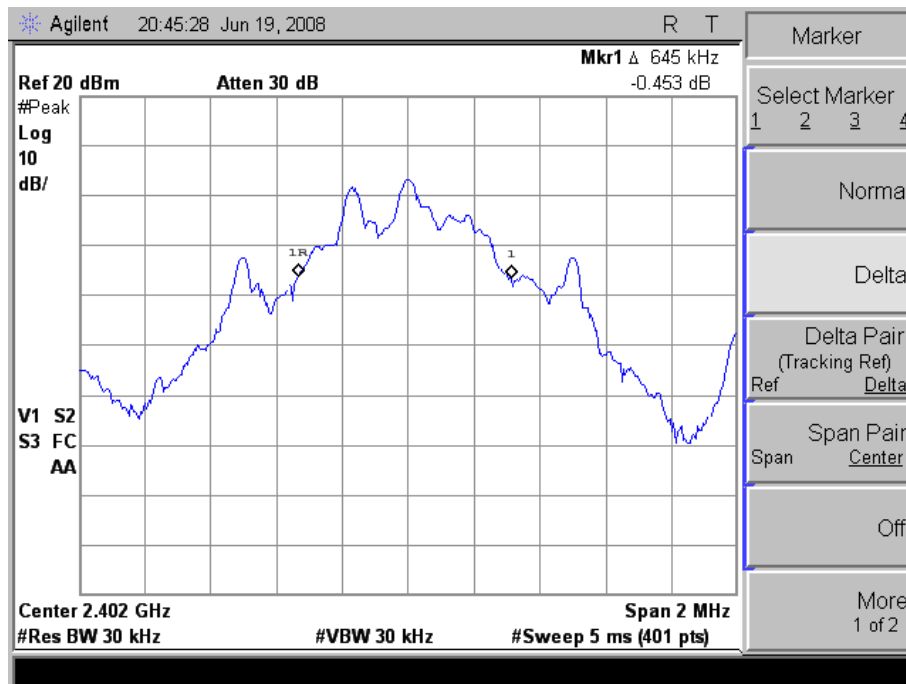
Frequency (MHz)	Max 20dB Bandwidth (MHz)	2/3 Max 20dB Bandwidth (MHz)	Required Limit
2402	1.215	0.810	<1MHz
2441	1.220	0.813	<1MHz
2480	1.210	0.807	<1MHz



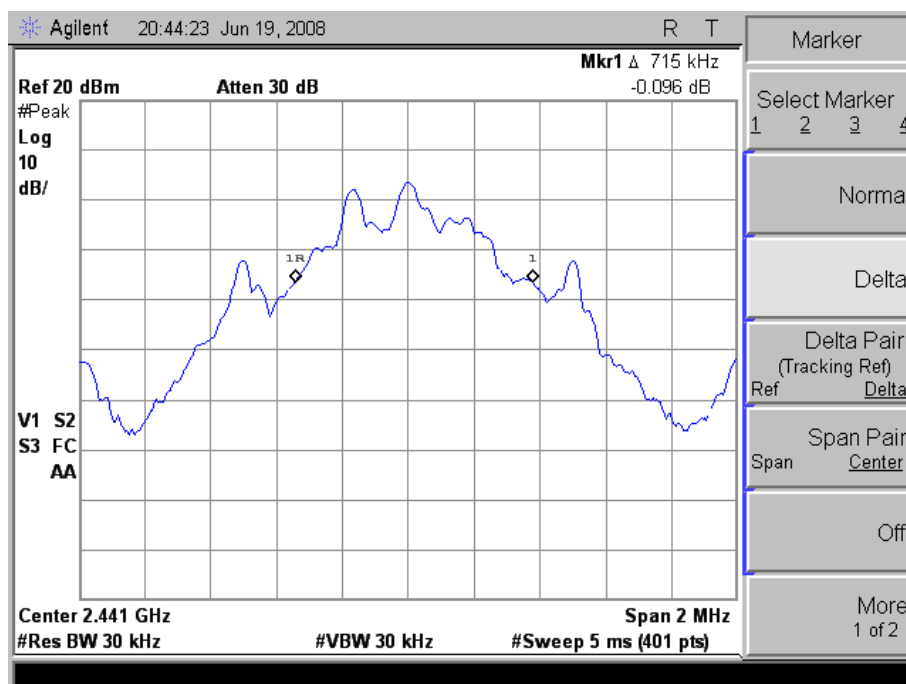
5.5 Test Graphs

5.5.1 Bluetooth 2.0 Mode:

Bluetooth 2.0 CH00 (2412MHz)

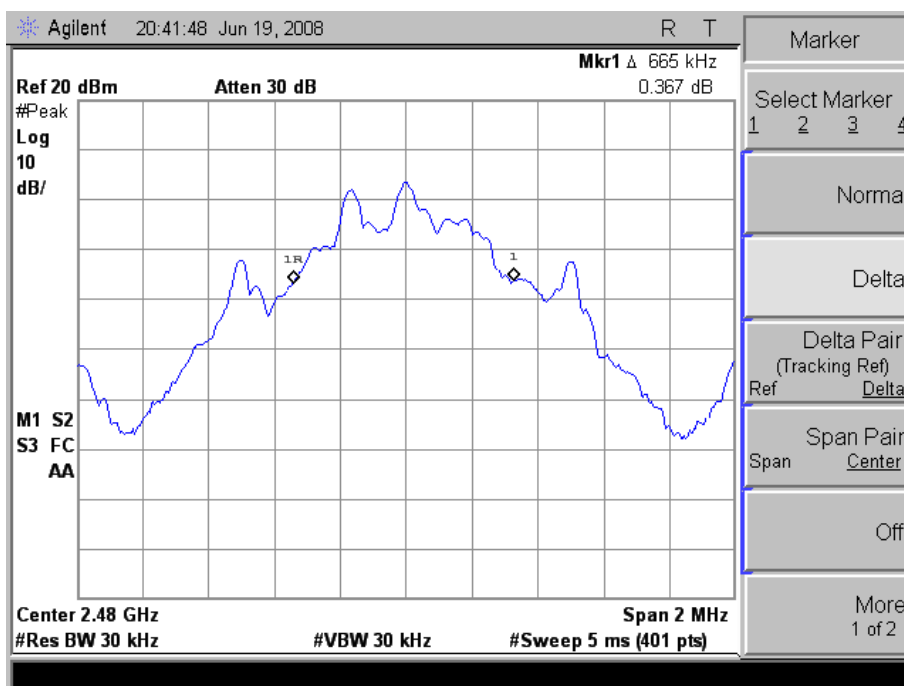


Bluetooth 2.0 CH39 (2441MHz)





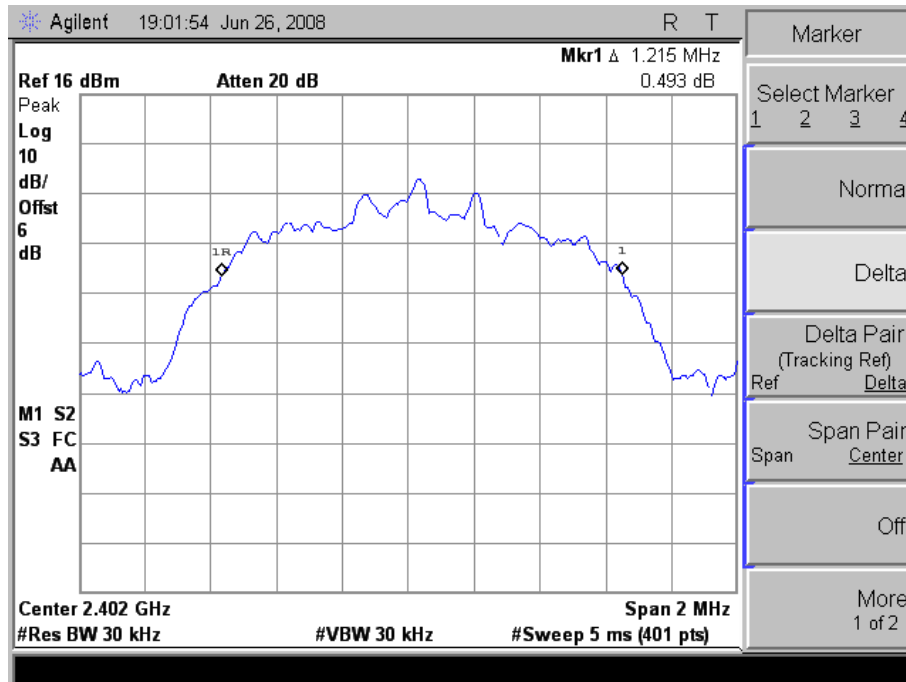
Bluetooth 2.0 CH78 (2480MHz)



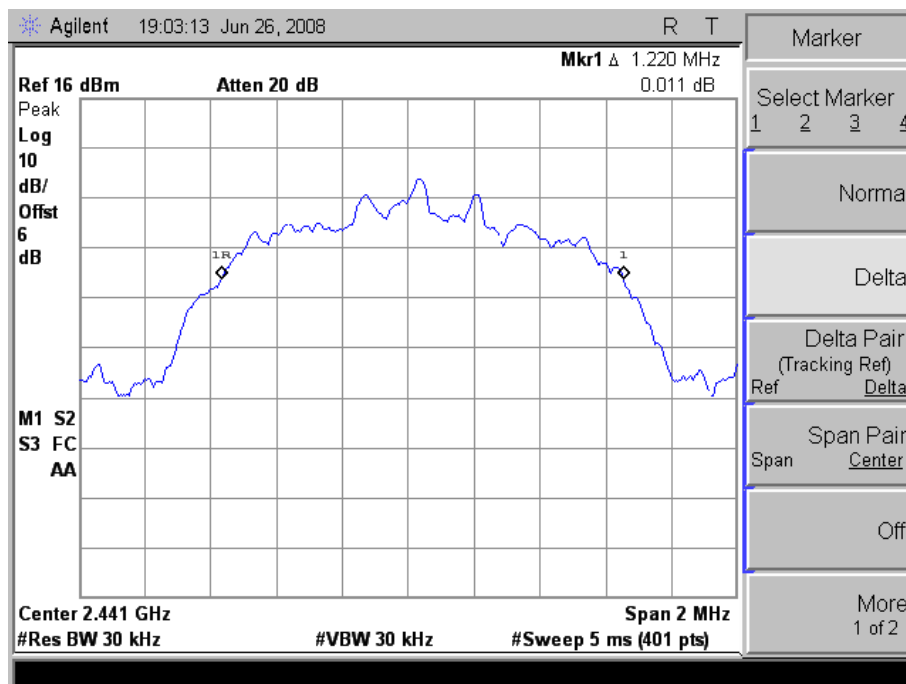


5.5.2 Bluetooth EDR Mode:

Bluetooth EDR CH00 (2412MHz)

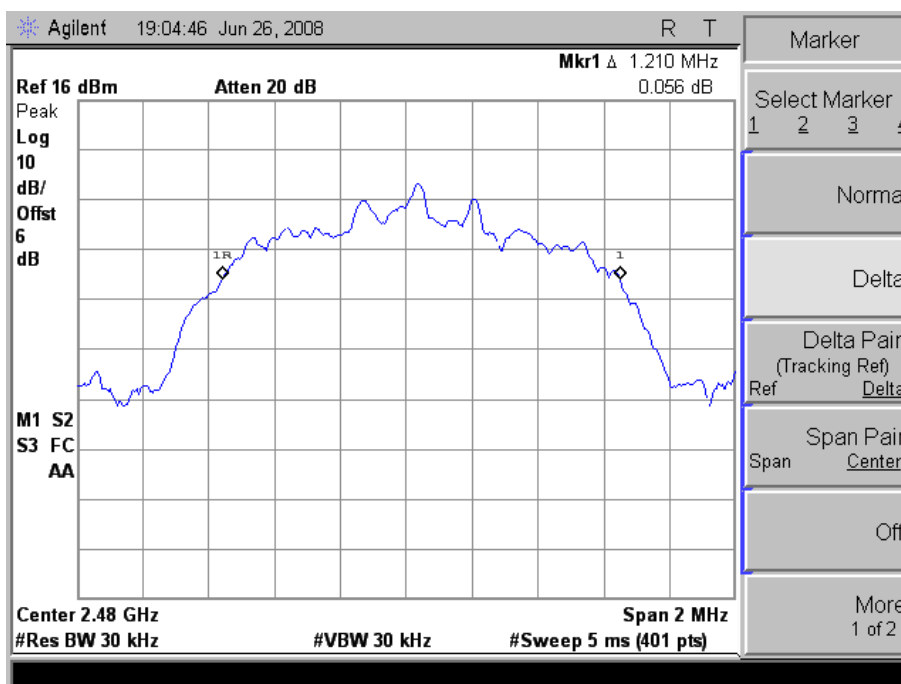


Bluetooth EDR CH39 (2441MHz)





Bluetooth EDR CH78 (2480MHz)



6. Carrier Frequency Separation Requirements

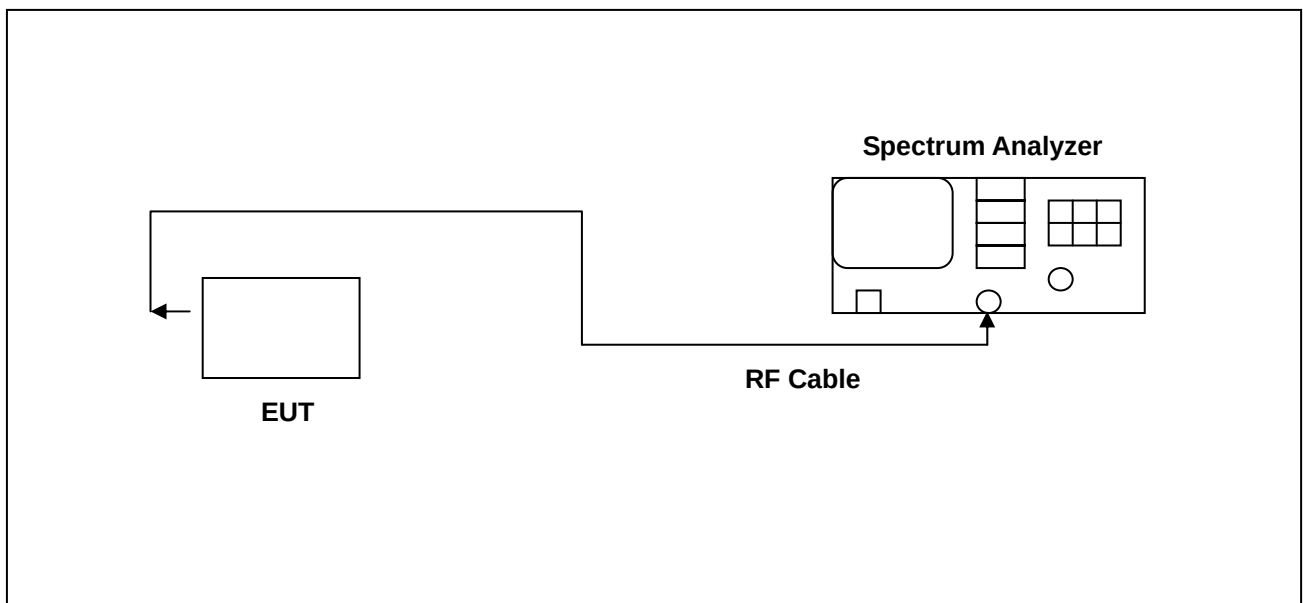
6.1 Test Condition & Setup:

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	MY45300744	Nov. 29, 2007	Nov. 29, 2008
Attenuator	RADIALL	R41572000	0603033073	NA	NA

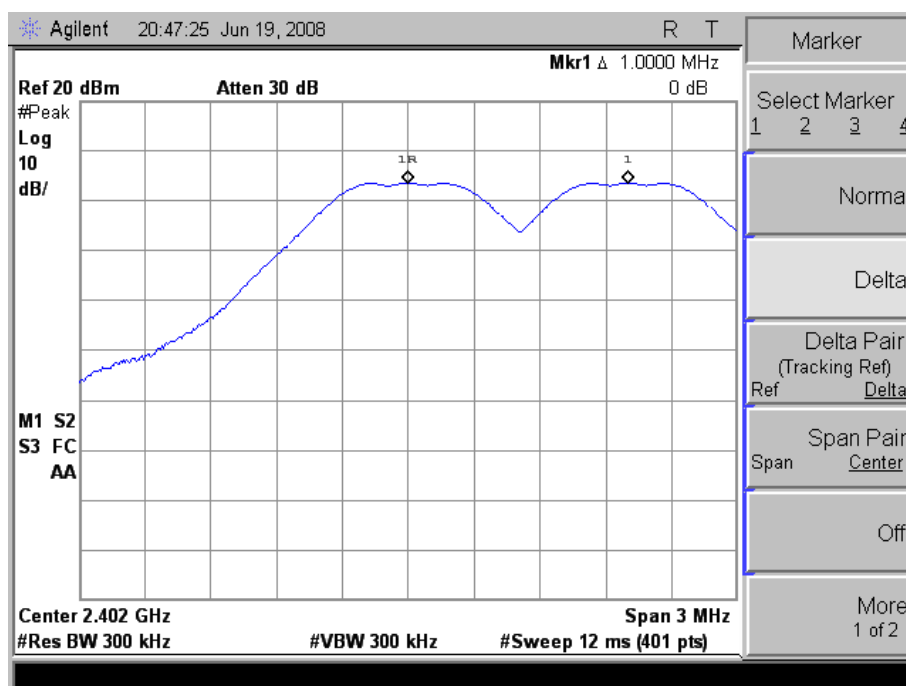
6.4 Test Result:

Carrier Frequency Separation Measure:	1 MHz
---------------------------------------	-------

6.5 Test Graphs

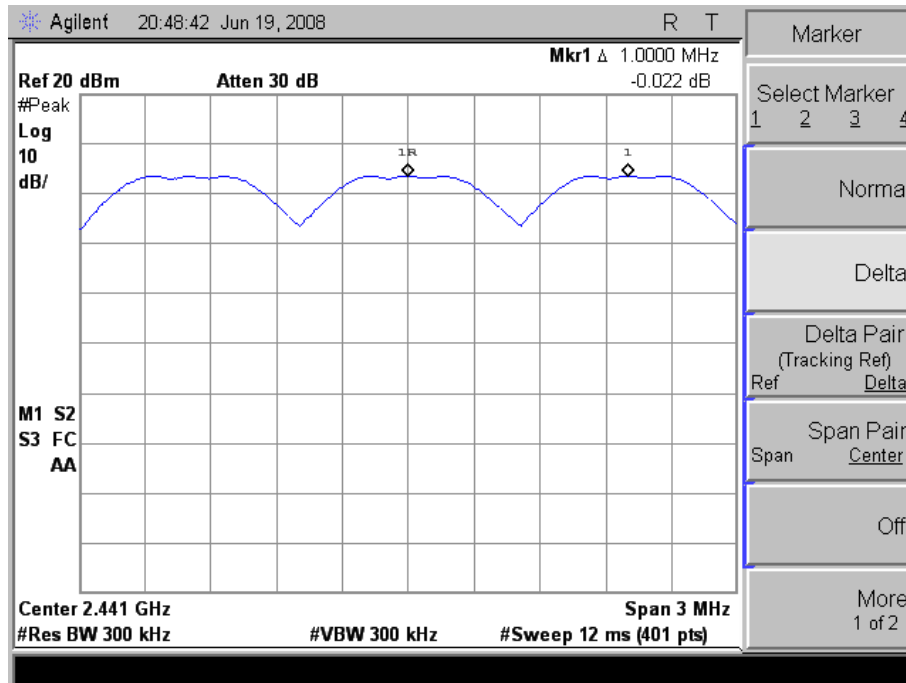
6.5.1 Bluetooth 2.0 Mode:

Bluetooth 2.0 CH00 (2412MHz)

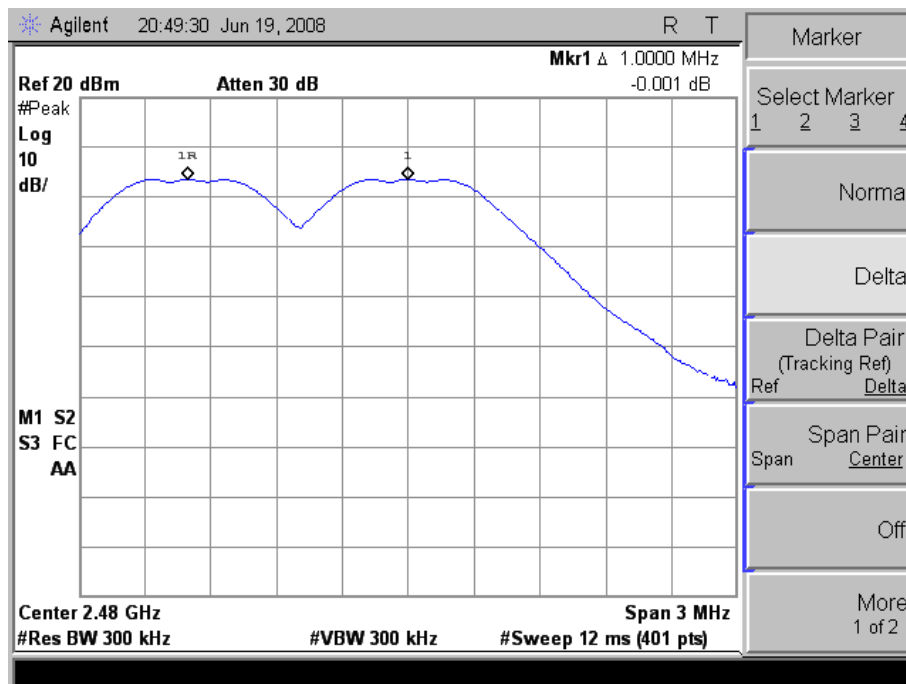




Bluetooth 2.0 CH39 (2441MHz)



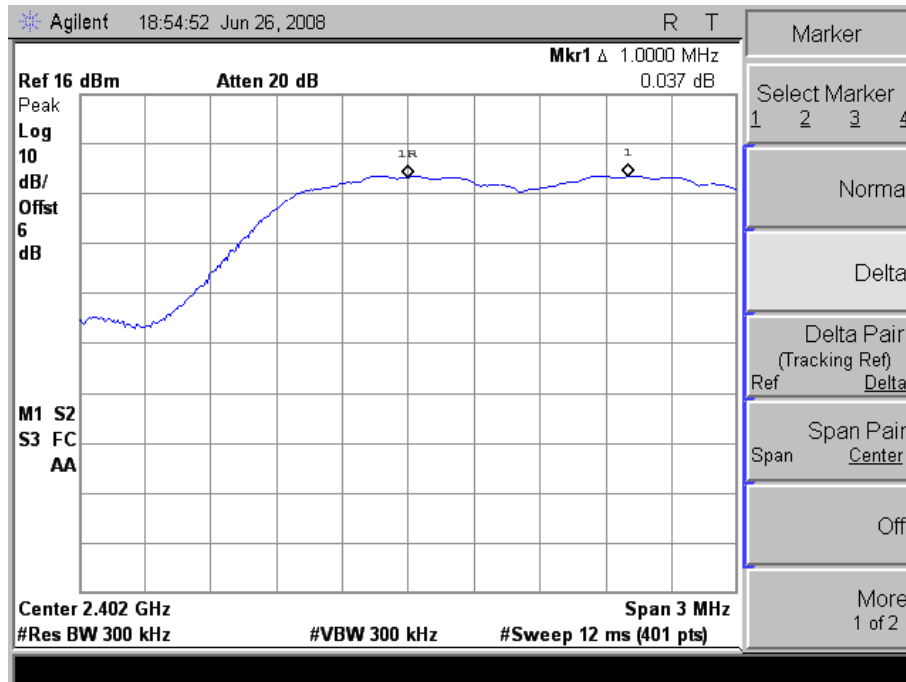
Bluetooth 2.0 CH78 (2480MHz)



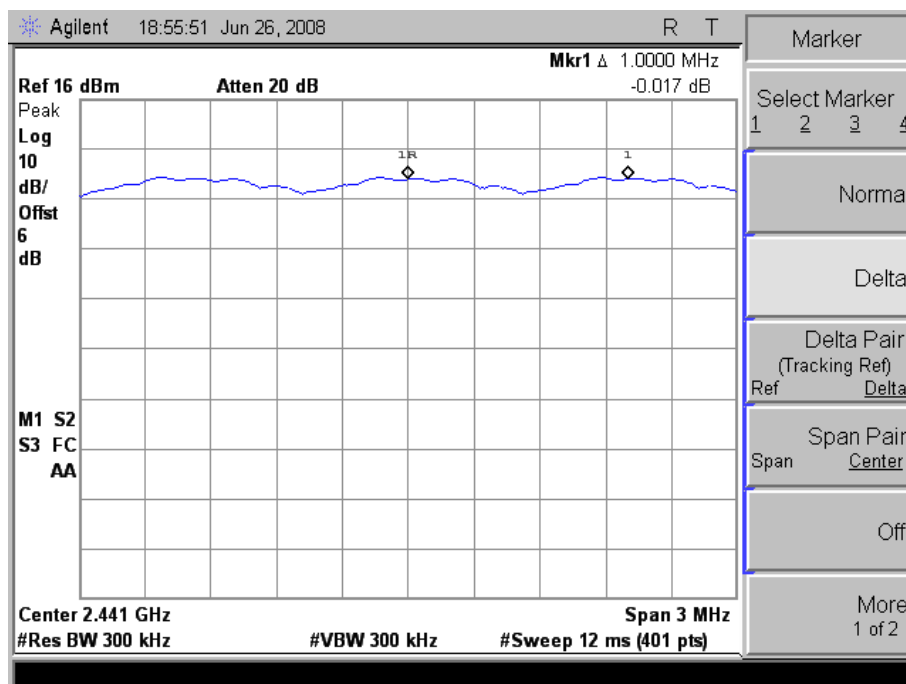


6.5.2 Bluetooth EDR Mode:

Bluetooth EDR CH00 (2412MHz)

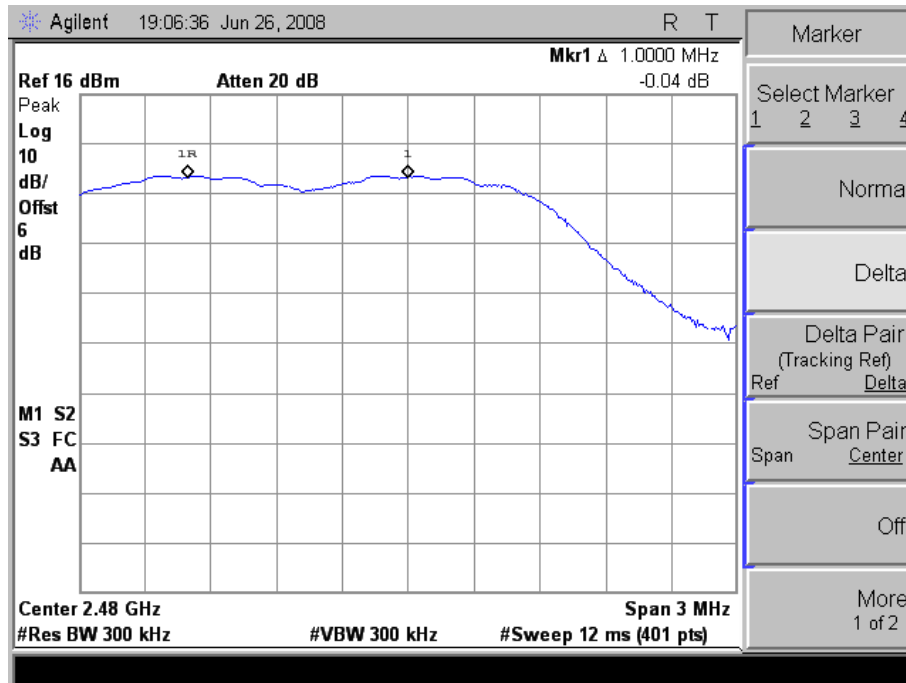


Bluetooth EDR CH39 (2441MHz)





Bluetooth EDR CH78 (2480MHz)



7. Number of Hopping Requirements

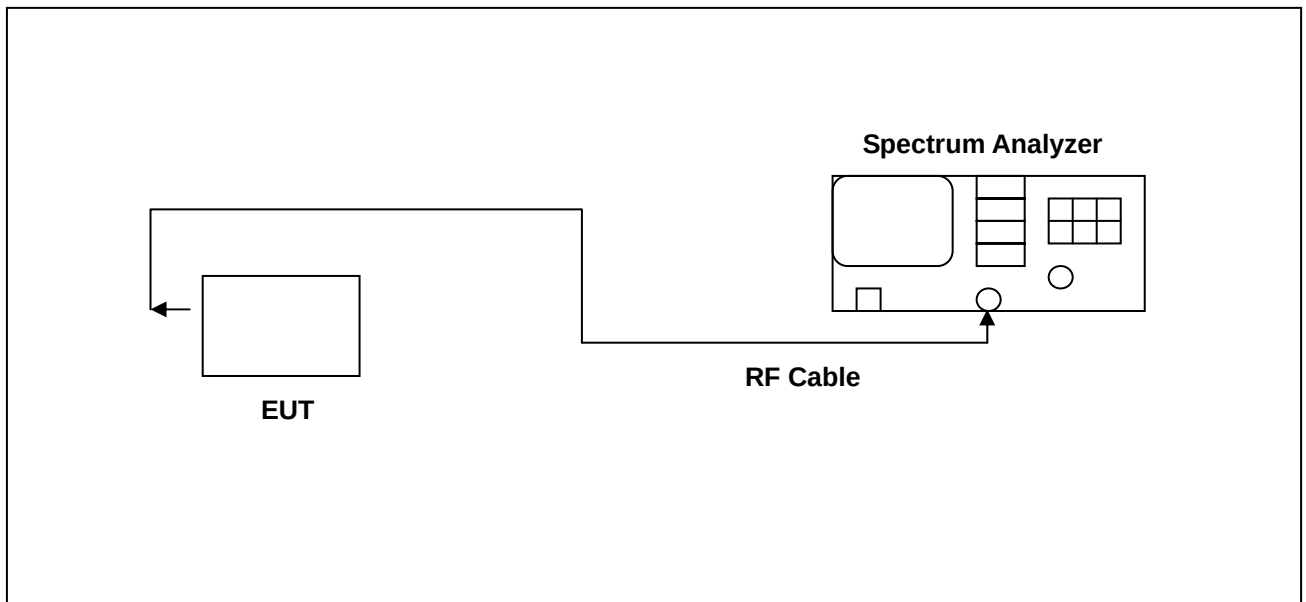
7.1 Test Condition & Setup:

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	MY45300744	Nov. 29, 2007	Nov. 29, 2008
Attenuator	RADIALL	R41572000	0603033073	NA	NA

7.4 Test Result:

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

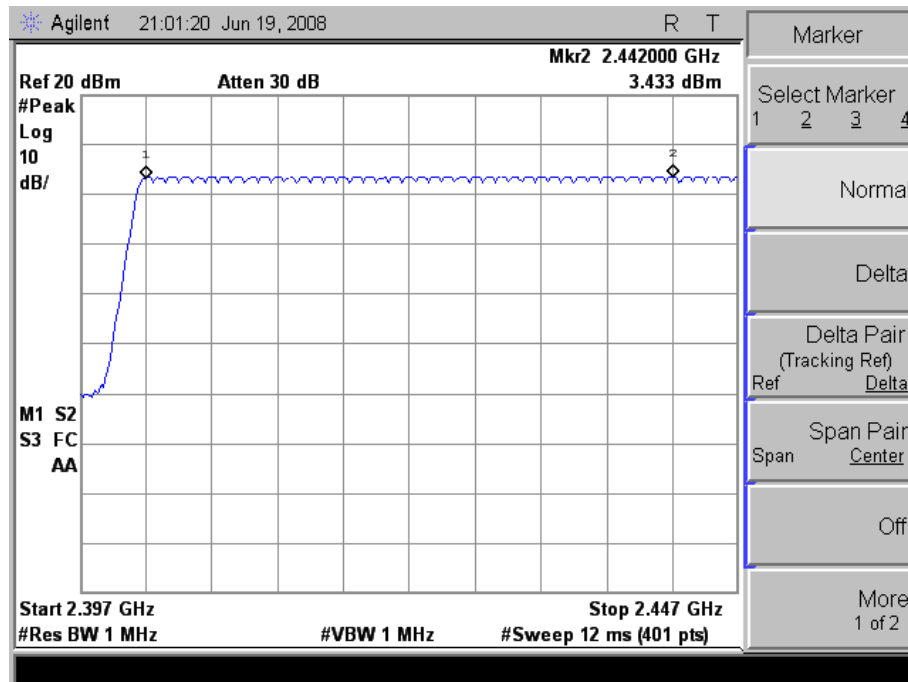
Note: Test Graphs See next page.



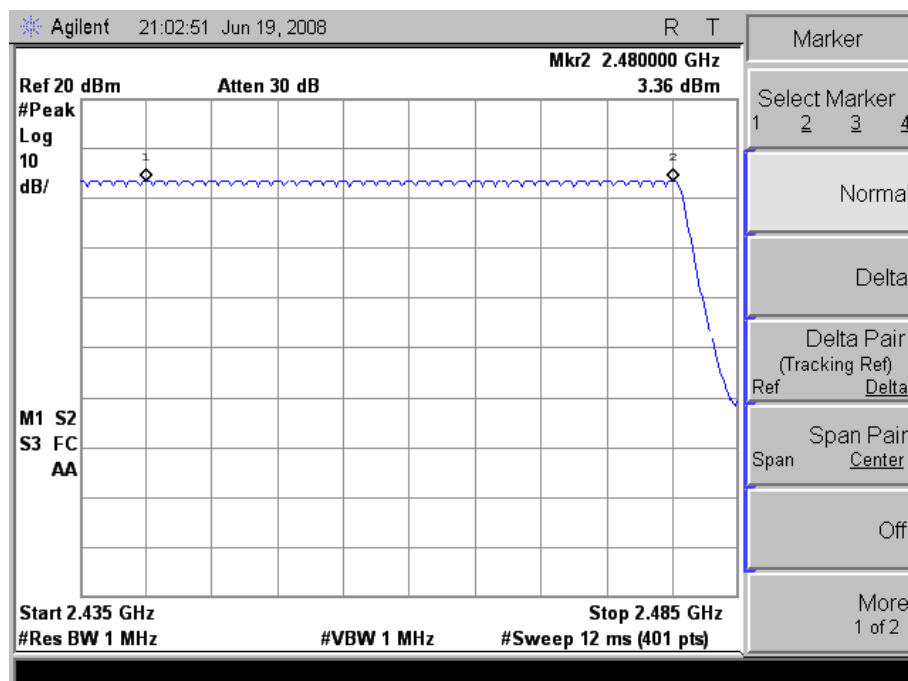
7.5 Test Graphs

7.5.1 Bluetooth 2.0 Mode:

Bluetooth 2.0 Mode CH0~CH39



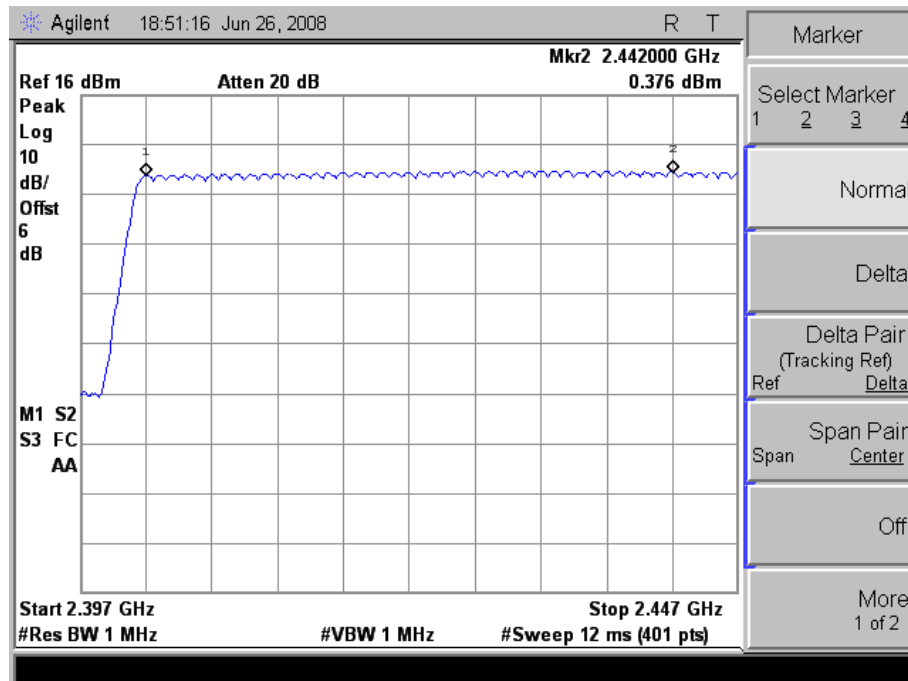
Bluetooth 2.0 Mode CH40~CH78



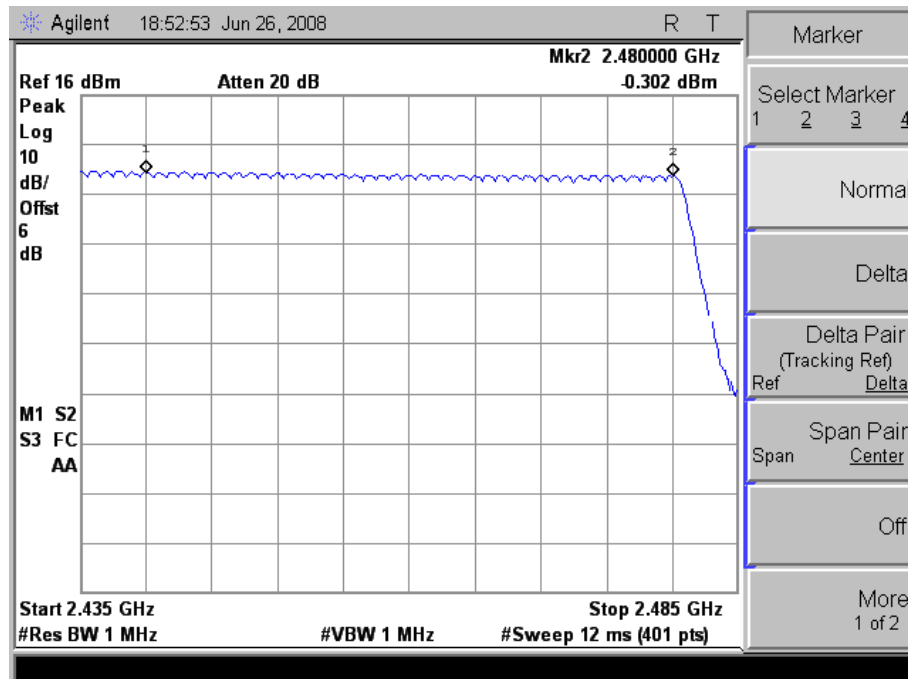


7.5.2 Bluetooth EDR Mode:

Bluetooth EDR Mode CH0~CH39



Bluetooth EDR Mode CH40~CH78



8. Time of Occupancy (Dwell Time) Requirements

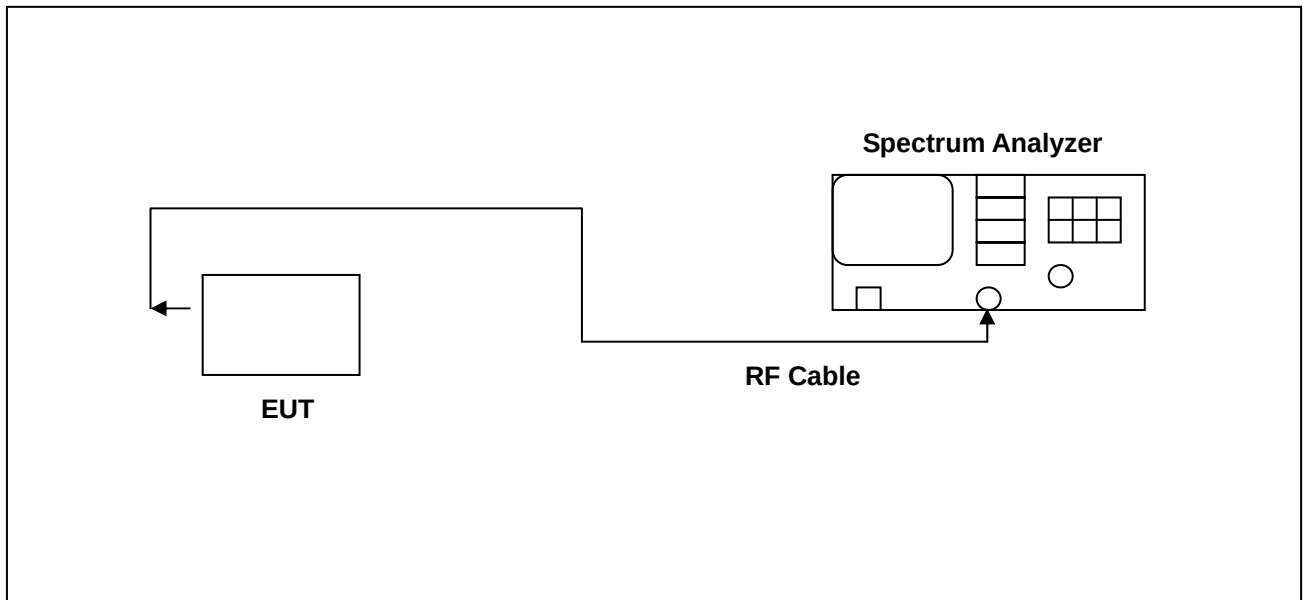
8.1 Test Condition & Setup:

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	MY45300744	Nov. 29, 2007	Nov. 29, 2008
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)	0.3875 ms (sec)
Each Channel Dwell Times on Cycle(2)	$31.6 * 10.13 = 320.108(\text{times})$
Dwell Times on Cycle (1) * (2)	124.04185 ms (sec)
LIMIT(msec)	≤ 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)	1.64 ms (sec)
Each Channel Dwell Times on Cycle(2)	$31.6*5.1=161.16(\text{times})$
Dwell Times on Cycle (1) * (2)	264.30240 ms (sec)
LIMIT(msec)	≤ 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)	2.91 ms (sec)
Each Channel Dwell Times on Cycle(2)	$31.6*2.82=106.492 \text{ (times)}$
Dwell Times on Cycle (1) * (2)	309.89172 ms (sec)
LIMIT(msec)	≤ 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)	0.39 ms (sec)
Each Channel Dwell Times on Cycle(2)	$31.6 * 10.13 = 320.108 \text{ (times)}$
Dwell Times on Cycle (1) * (2)	124.84212 ms (sec)
LIMIT(msec)	≤ 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)	1.64 ms (sec)
Each Channel Dwell Times on Cycle(2)	$31.6 * 5.1 = 161.16 \text{ (times)}$
Dwell Times on Cycle (1) * (2)	264.3024 ms (sec)
LIMIT(msec)	≤ 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)	2.88 ms (sec)
Each Channel Dwell Times on Cycle(2)	$31.6 * 2.82 = 106.492 \text{ (times)}$
Dwell Times on Cycle (1) * (2)	306.69696 ms (sec)
LIMIT(msec)	≤ 400

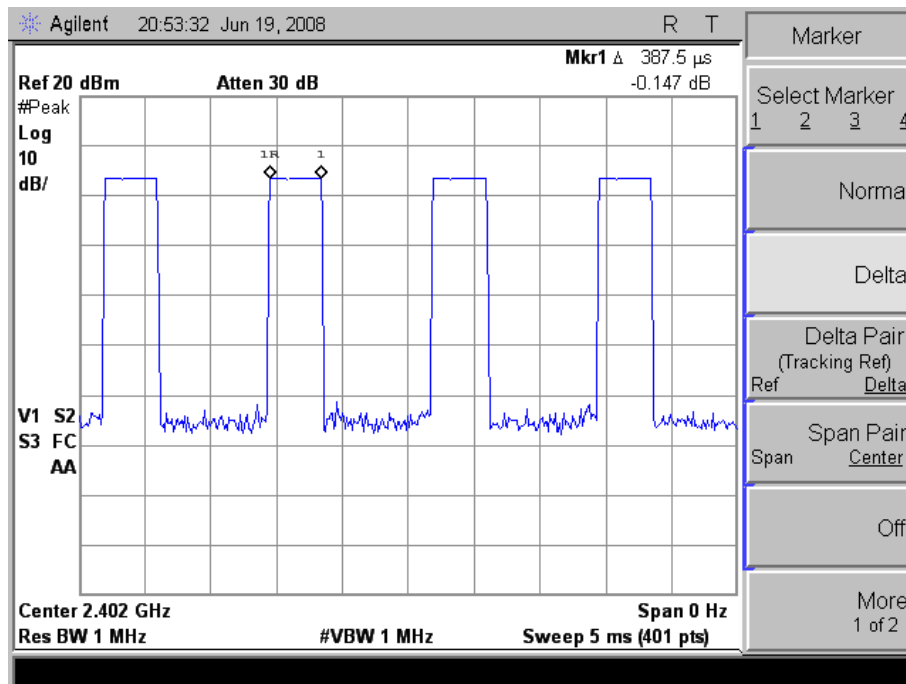
Note: RB=1MHz; VB=1MHz; SPAN=0MHz; Sweep Time=20msec



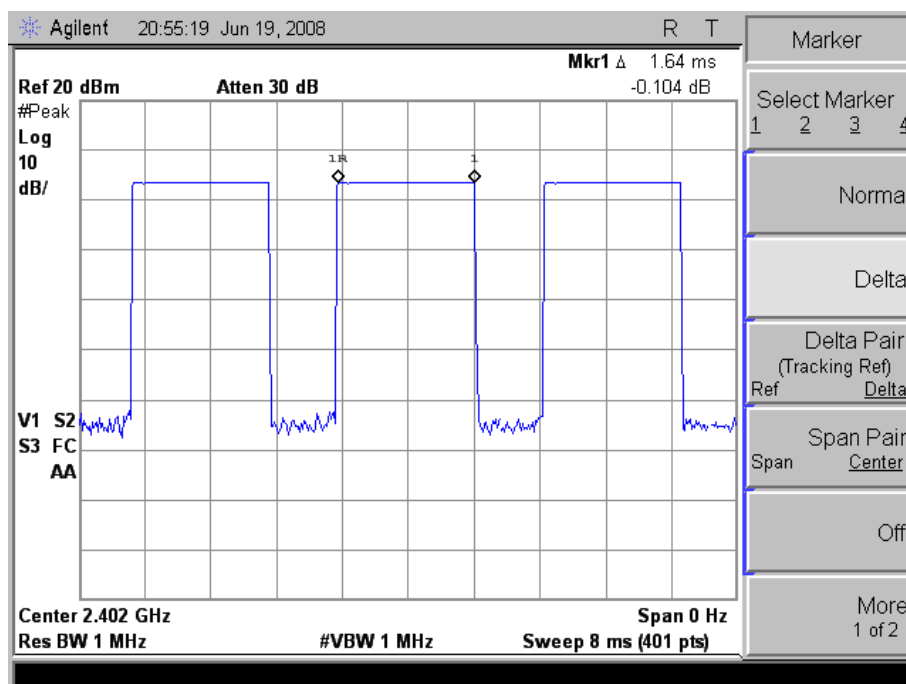
8.5 Test Graphs

8.5.1 Bluetooth 2.0 Mode:

Bluetooth 2.0 DH1

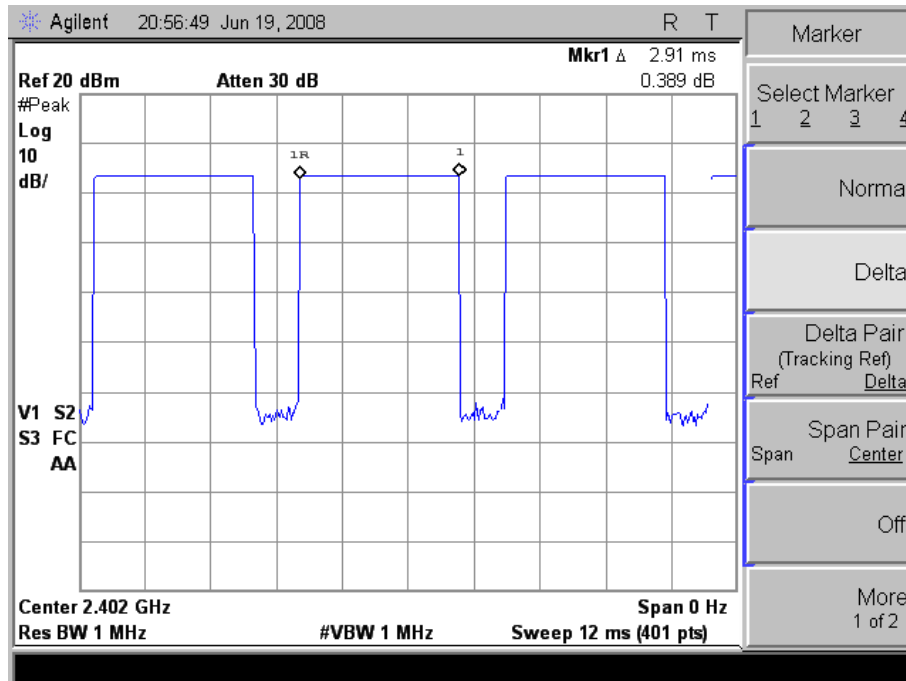


Bluetooth 2.0 DH3





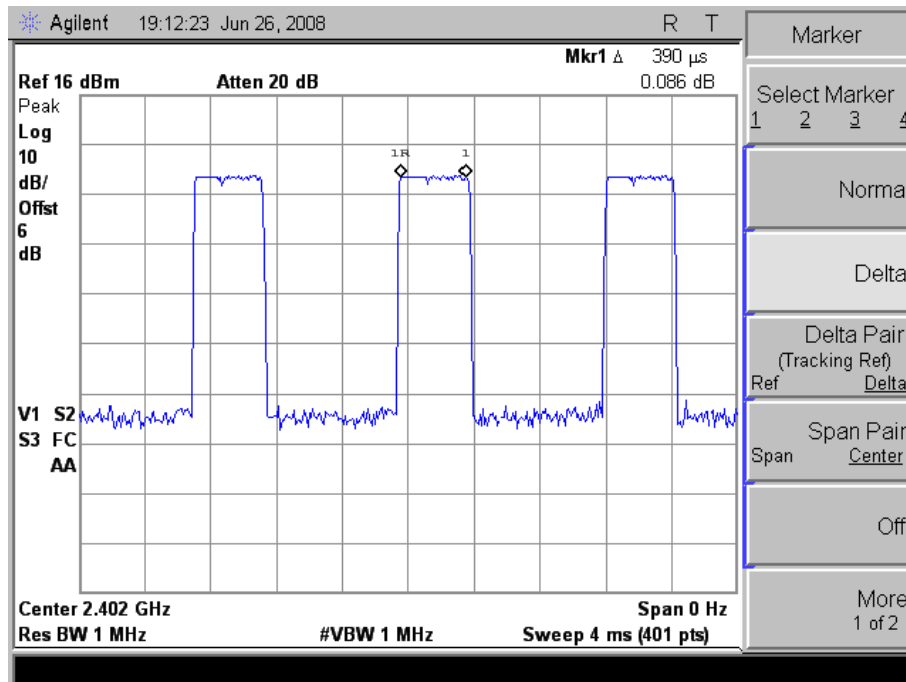
Bluetooth 2.0 DH5



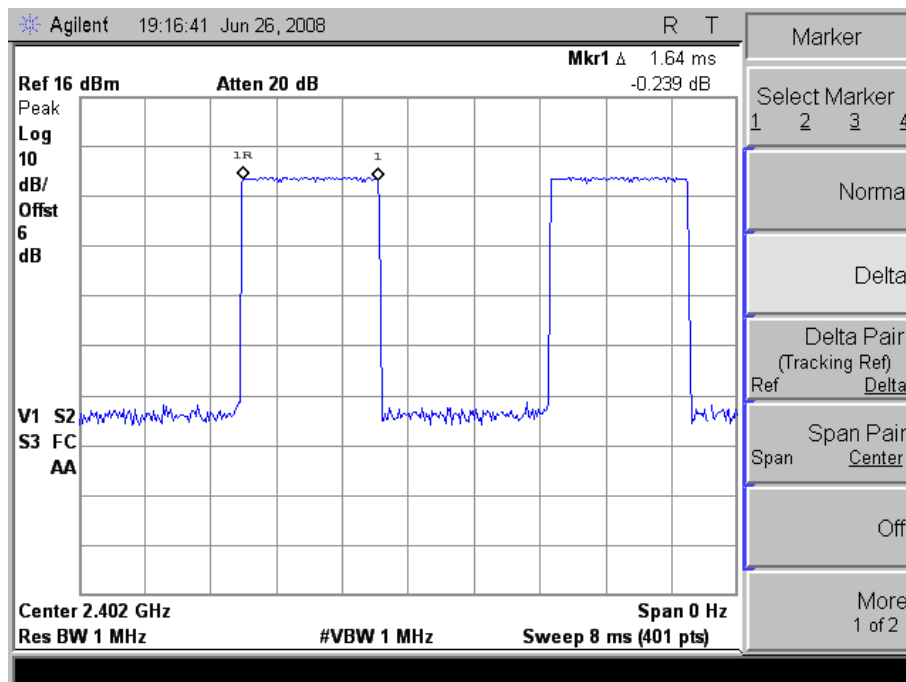


8.5.2 Bluetooth EDR Mode:

Bluetooth EDR 3DH1

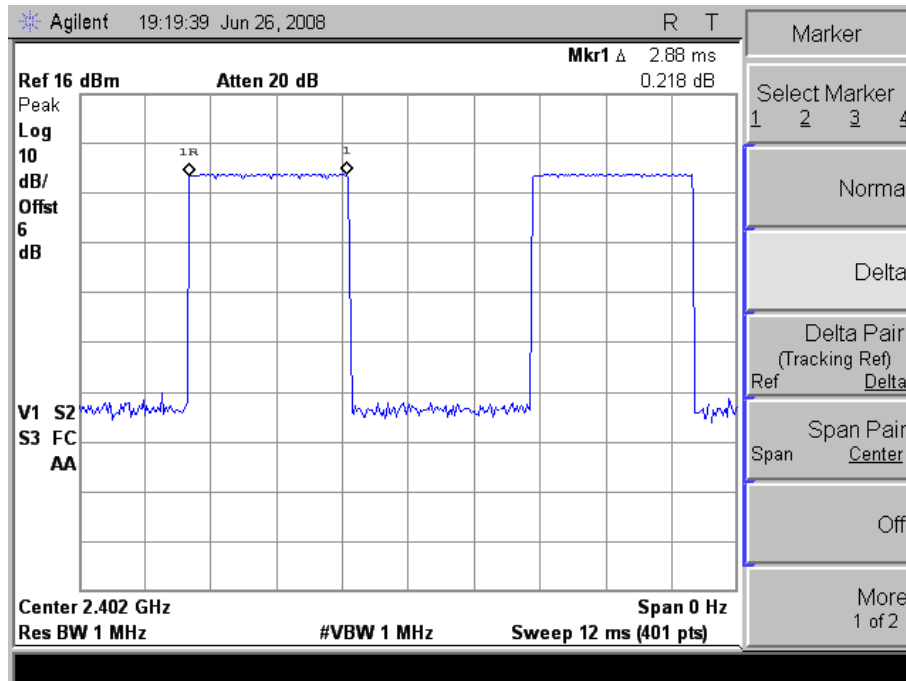


Bluetooth EDR 3DH3





Bluetooth EDR DH5



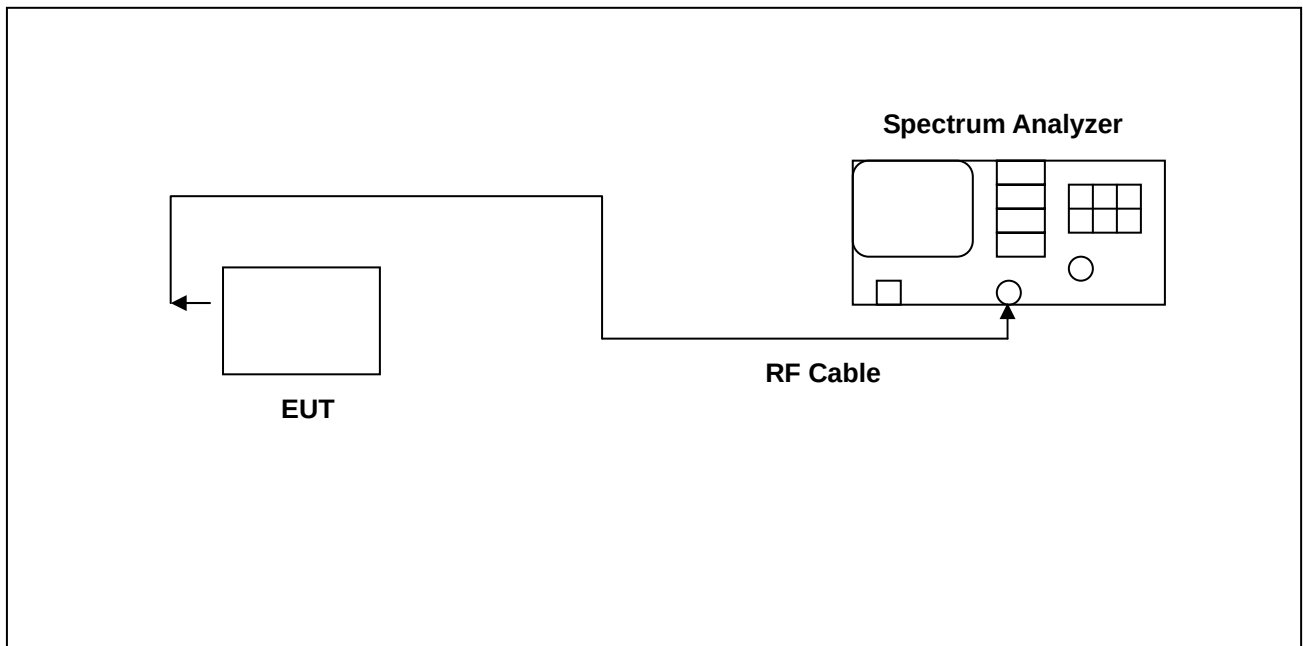
9. Out of Band Conducted Emissions Requirements

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	MY45300744	Nov. 29, 2007	Nov. 29, 2008

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.

Note: Test Graphs See next page.



9.5 Test Graphs

9.5.1 Bluetooth 2.0 Mode:

Applicant : Motorola Inc
Model No : H780
EUT : Universal Bluetooth Headset
Test Mode : Bluetooth 2.0
Test Date : 06/19/2008
Please refer to next pager of detail testing data.



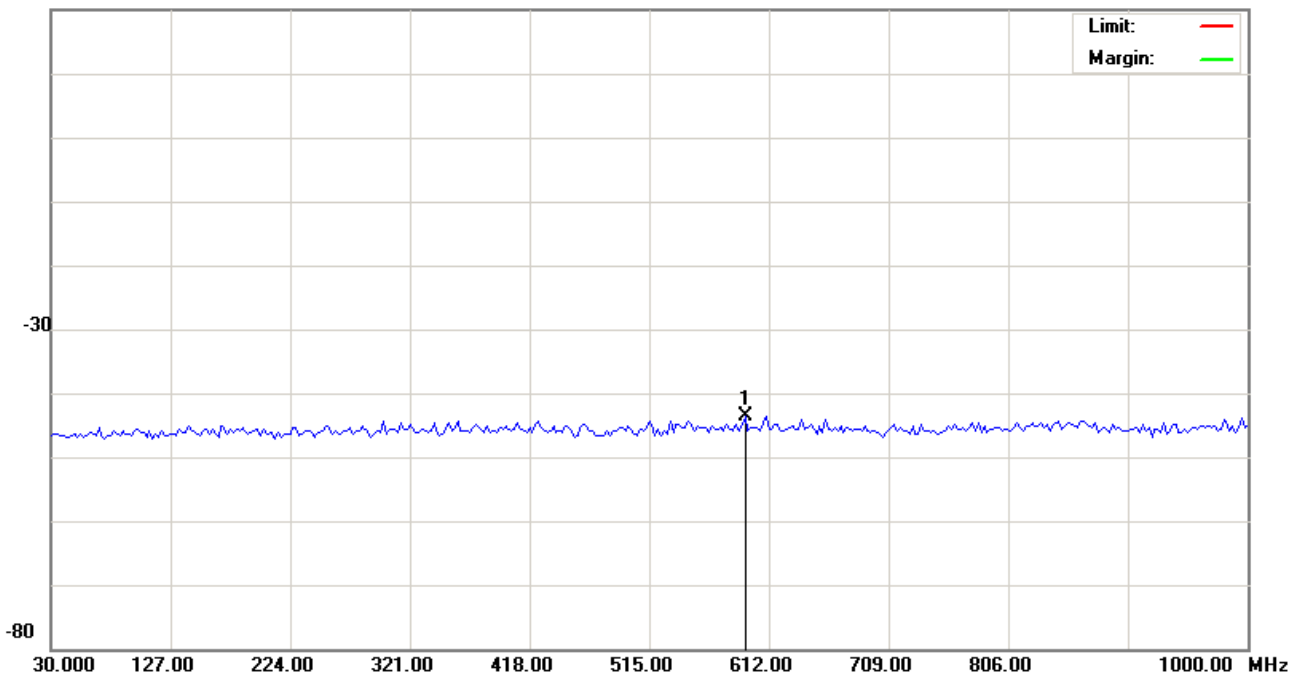
File :H780(20dB)

Data :#1

Date: 2008/06/19

Time: 下午 09:12:21

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode: BT

Note: 2402

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	592.6000	-44.51	1.00	-43.51			peak		Comment

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

●Reference Only



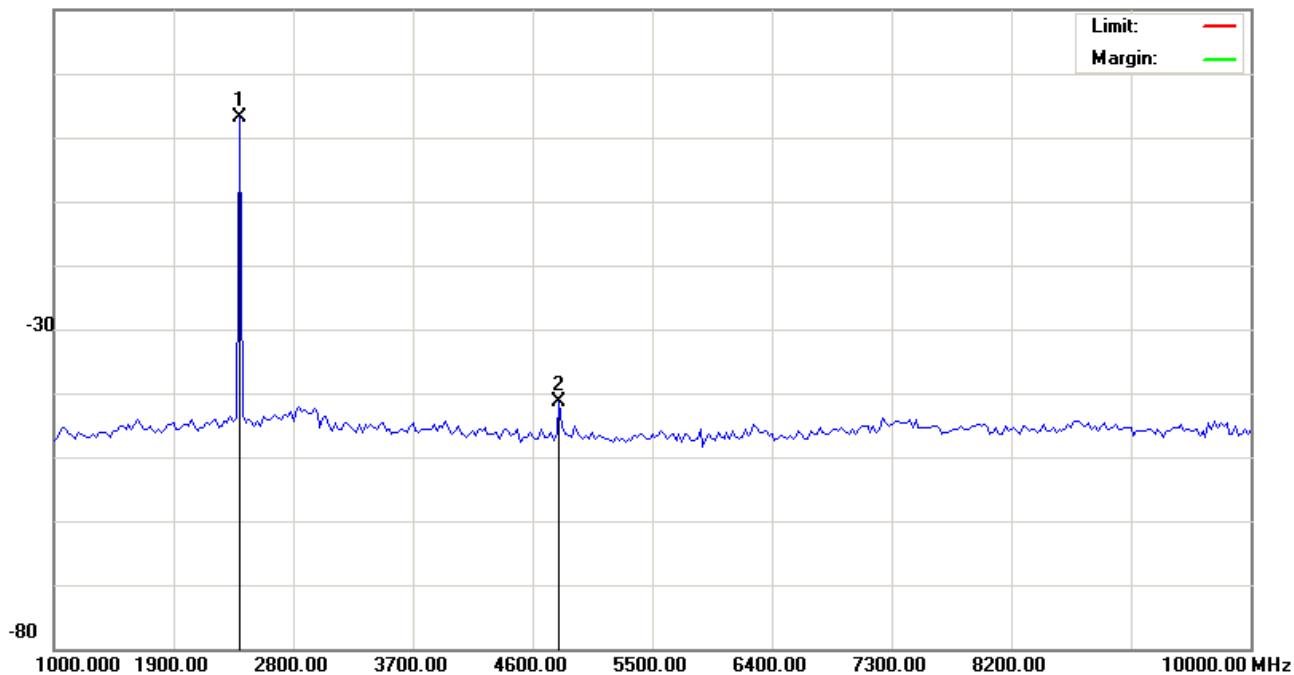
File :H780(20dB)

Data :#2

Date: 2008/06/19

Time: 下午 09:12:34

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode: BT

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	*	2395.000	2.18	1.01	3.19					peak
2		4802.500	-42.31	1.02	-41.29					peak

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

●Reference Only



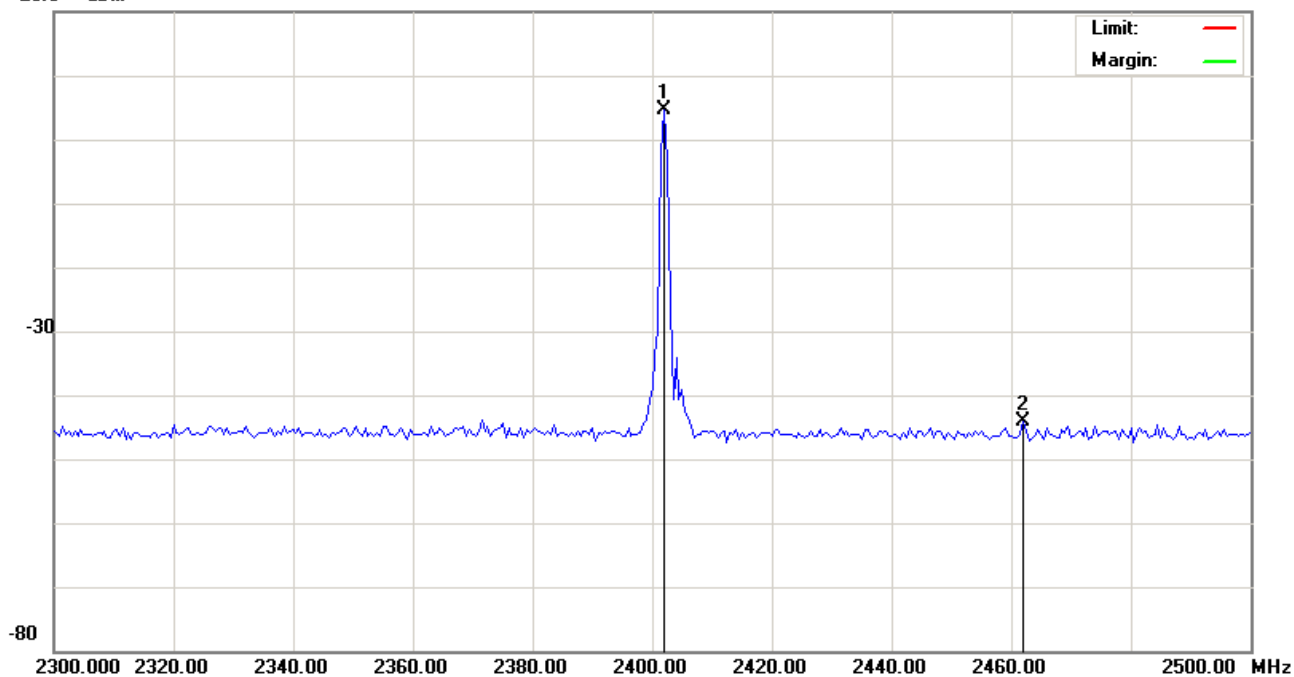
File :H780(20dB)

Data :#3

Date:2008/06/19

Time: 下午 09:12:47

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode: BT

Note: 2402

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	2402.000	3.66	1.01	4.67			peak		
2		2462.000	-45.24	1.01	-44.23			peak		

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

●Reference Only



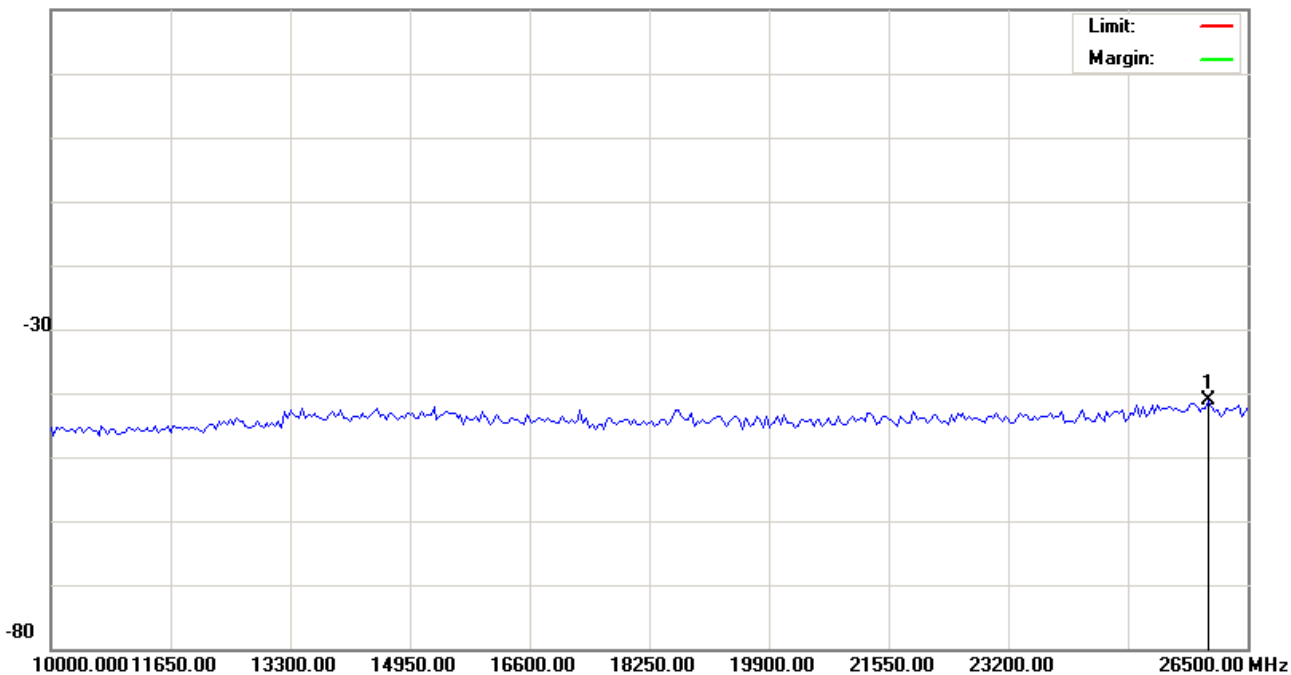
File :H780(20dB)

Data :#4

Date: 2008/06/19

Time: 下午 09:13:00

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode: BT

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
1	*	25963.75	-42.12	1.11	-41.01			peak		

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

●Reference Only



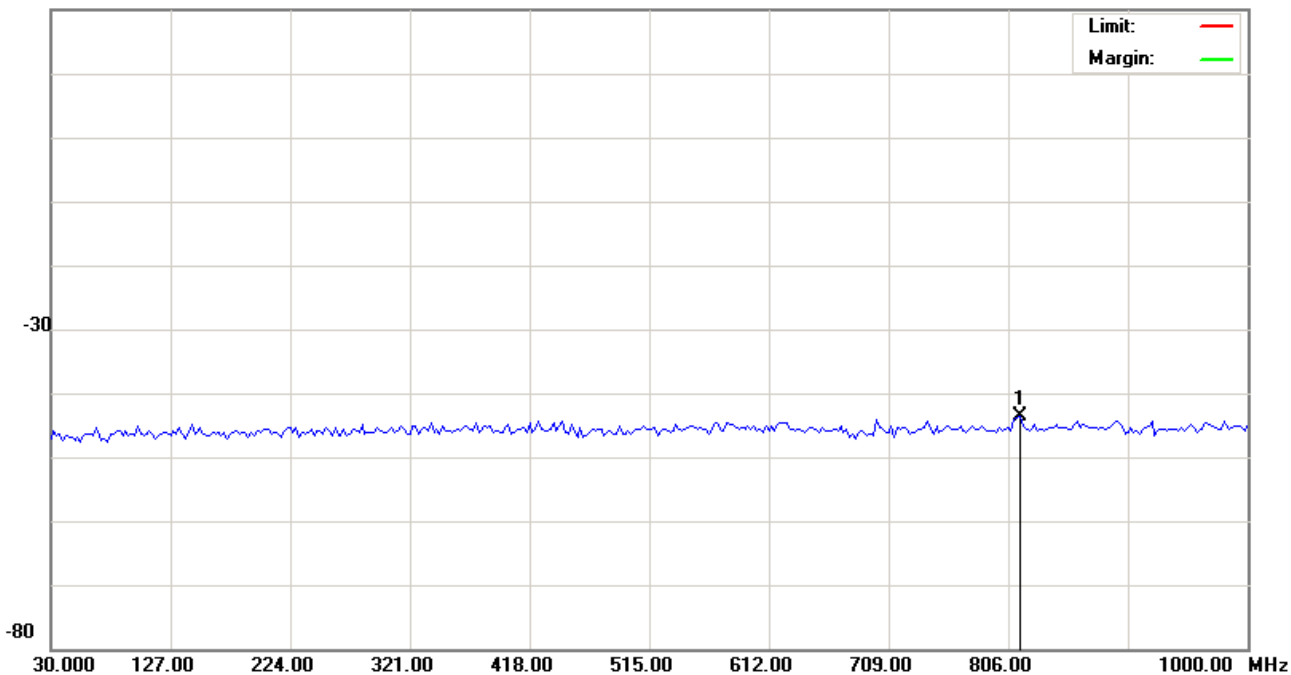
File :H780(20dB)

Data :#5

Date: 2008/06/19

Time: 下午 09:14:40

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode: BT

Note: 2441

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	815.7000	-44.68	1.00	-43.68			peak		Comment

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

●Reference Only



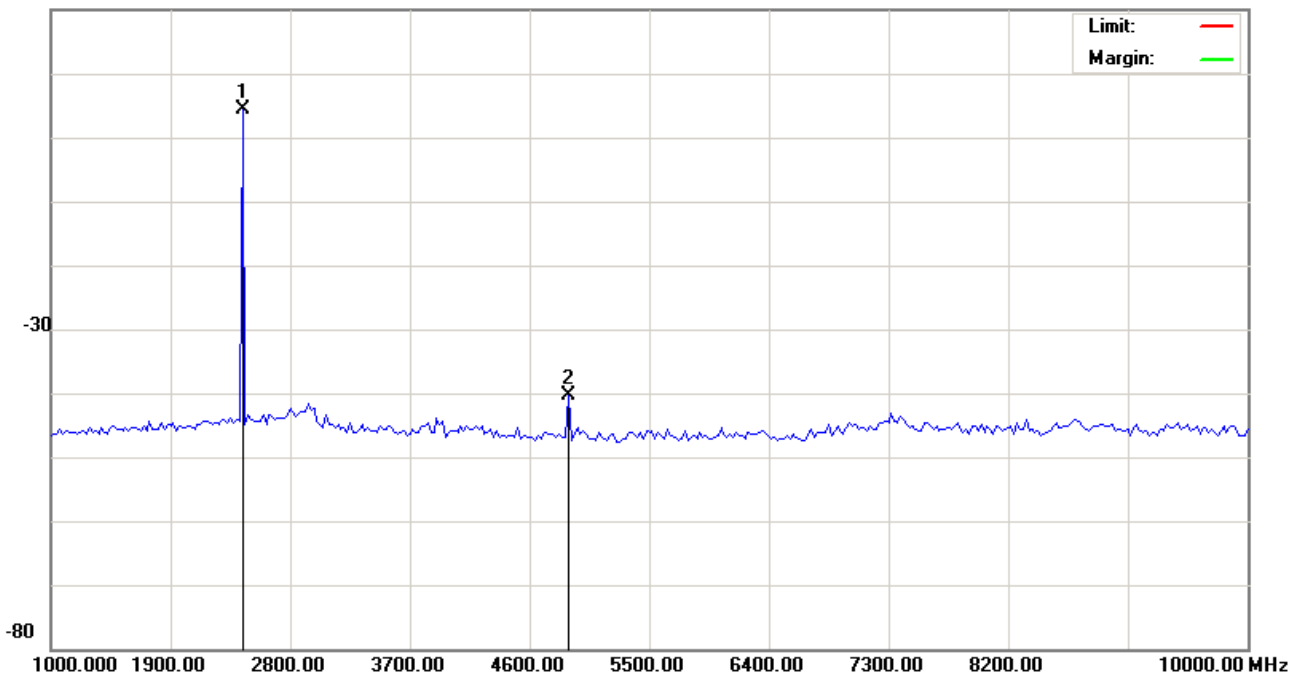
File :H780(20dB)

Data :#6

Date: 2008/06/19

Time: 下午 09:14:53

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode: BT

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	*	2440.000	3.40	1.01	4.41					peak
2		4892.500	-41.46	1.02	-40.44					peak

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

●Reference Only



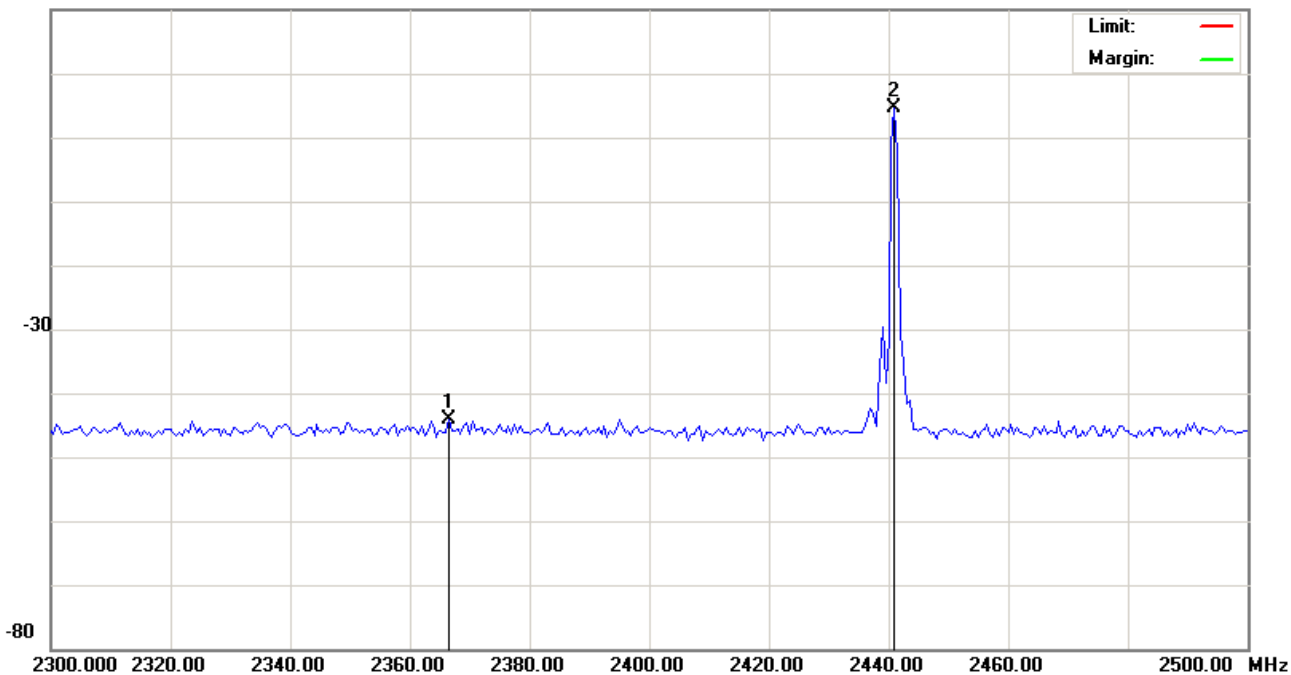
File :H780(20dB)

Data :#7

Date:2008/06/19

Time: 下午 09:15:06

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode: BT

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		2366.500	-45.15	1.01	-44.14					peak
2	*	2441.000	3.73	1.01	4.74					peak

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

●Reference Only



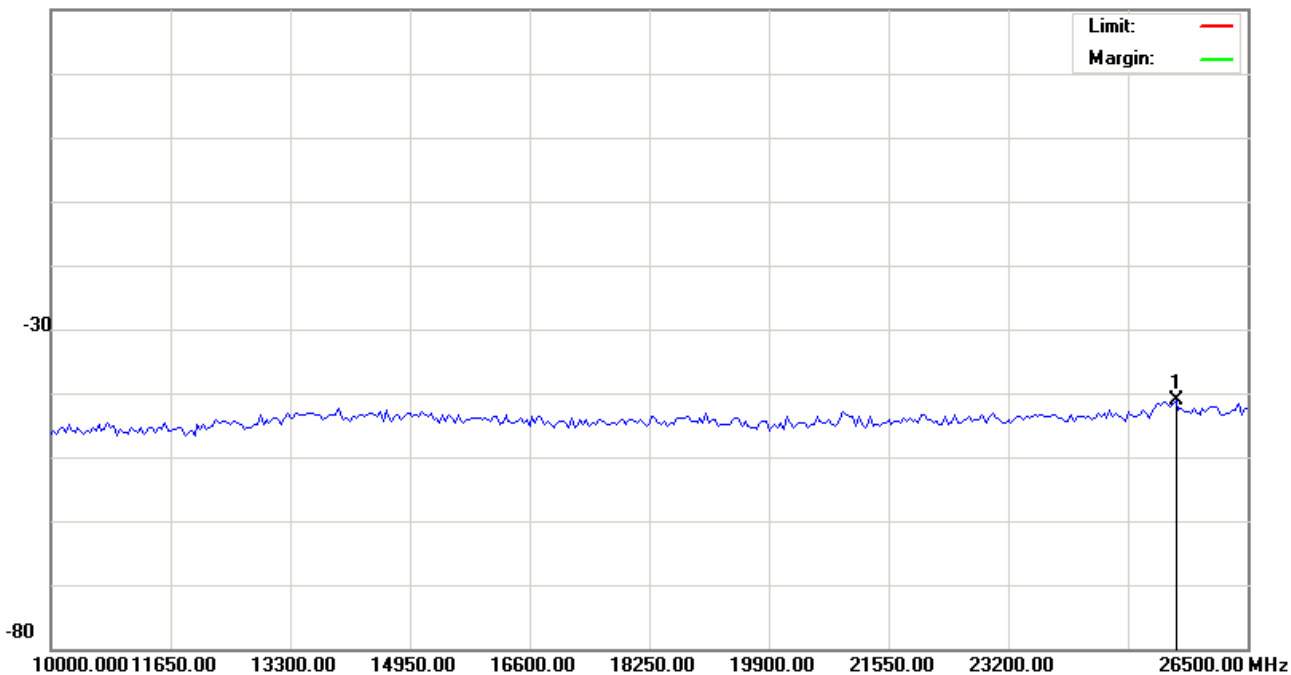
File :H780(20dB)

Data :#8

Date: 2008/06/19

Time: 下午 09:15:19

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode: BT

Note: 2441

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	25510.00	-42.30	1.11	-41.19			peak		

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

●Reference Only



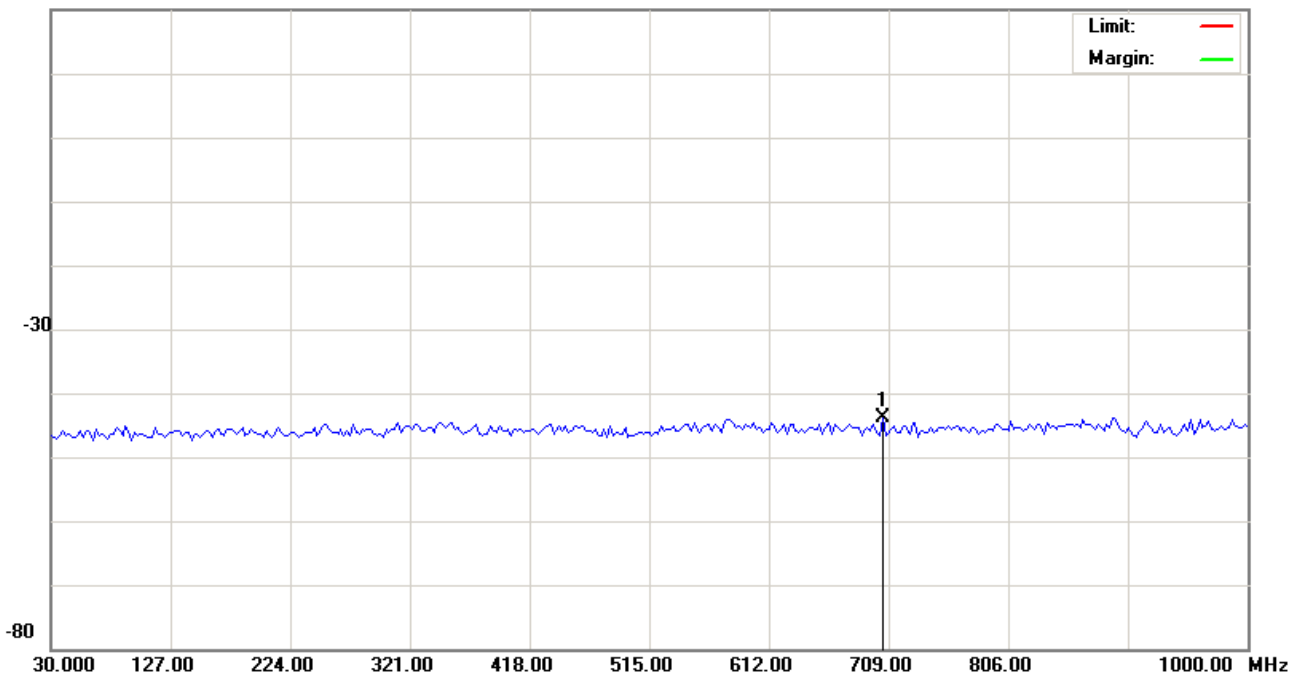
File :H780(20dB)

Data :#9

Date:2008/06/19

Time: 下午 09:17:43

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode: BT

Note: 2480

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	704.1500	-44.84	1.00	-43.84			peak		Comment

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

●Reference Only



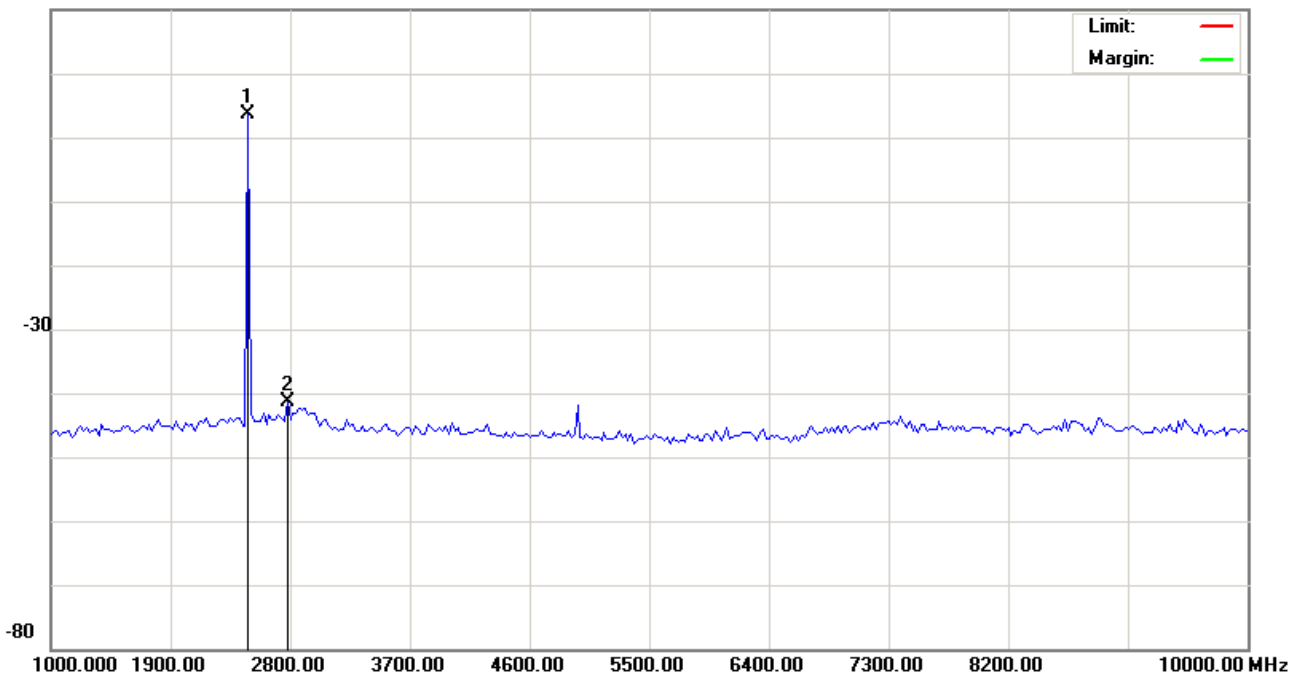
File :H780(20dB)

Data :#10

Date: 2008/06/19

Time: 下午 09:17:56

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode: BT

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	*	2485.000	2.67	1.01	3.68					peak
2		2777.500	-42.39	1.01	-41.38					peak

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

●Reference Only



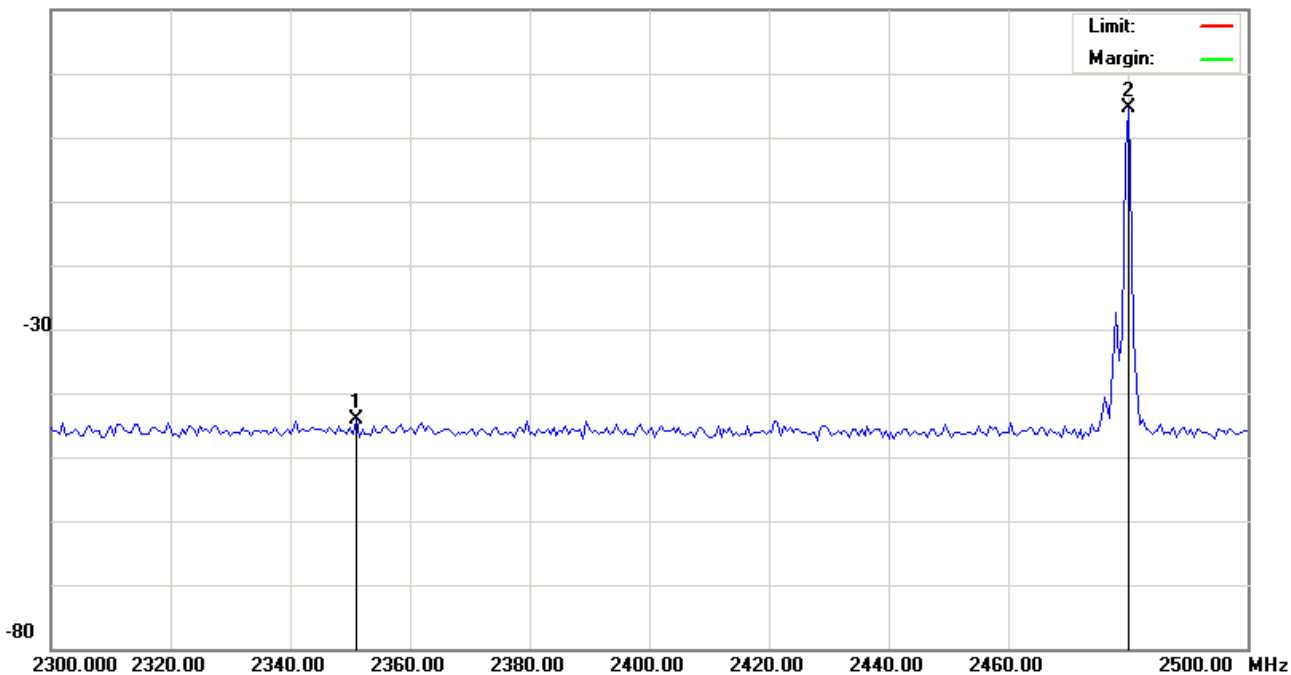
File :H780(20dB)

Data :#11

Date:2008/06/19

Time: 下午 09:18:09

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode: BT

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		2351.000	-45.16	1.01	-44.15					peak
2	*	2480.000	3.63	1.01	4.64					peak

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

●Reference Only



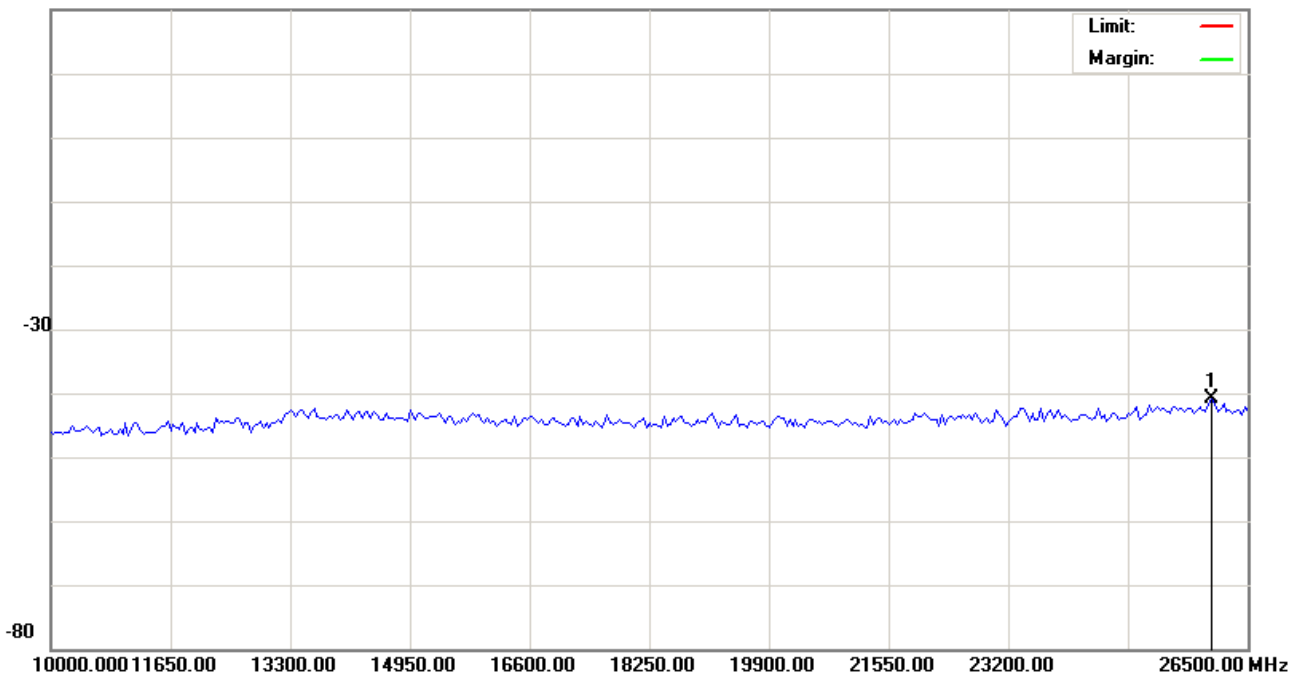
File :H780(20dB)

Data :#12

Date: 2008/06/19

Time: 下午 09:18:22

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode: BT

Note: 2480

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	26005.00	-41.92	1.11	-40.81			peak		

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

●Reference Only



9.5.2 Bluetooth EDR Mode:

Applicant : Motorola Inc
Model No : H780
EUT : Universal Bluetooth Headset
Test Mode : Bluetooth EDR
Test Date : 06/26/2008

Please refer to next pager of detail testing data.



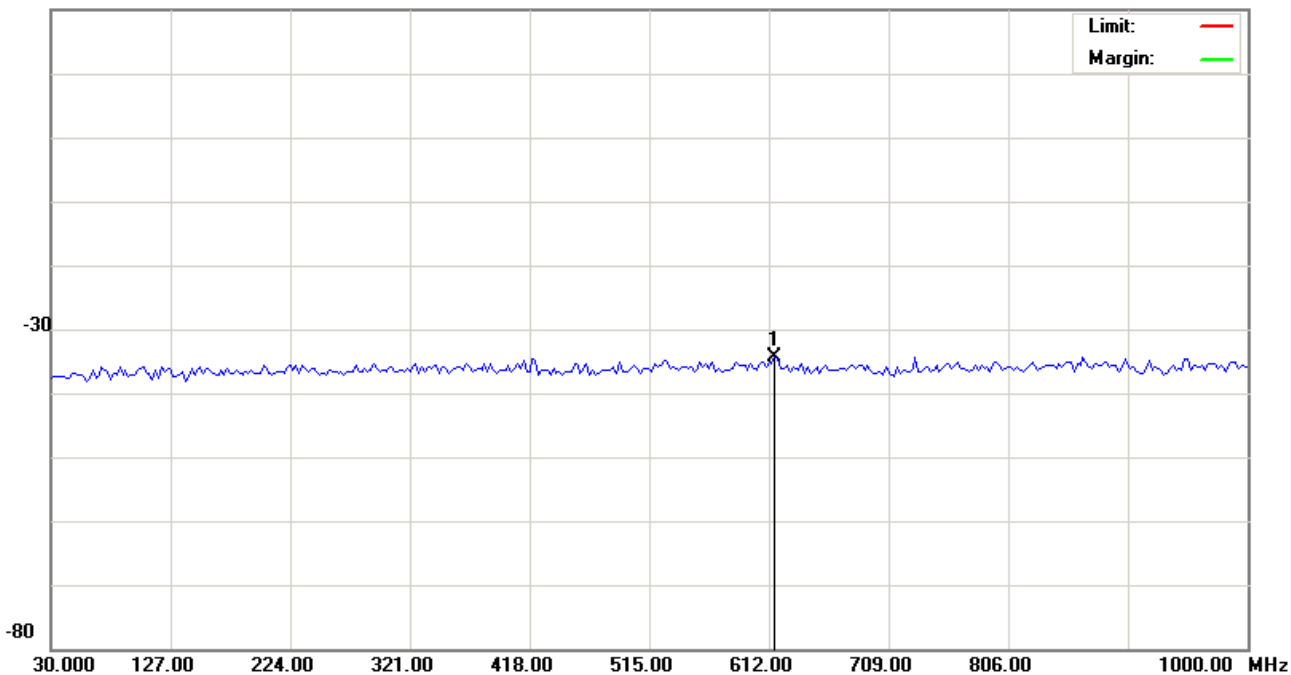
File :H780(20DB)

Data :#1

Date: 2008/6/26

Time: 下午 07:39:58

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode:

Note: CH0,2402

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	616.8500	-40.31	6.02	-34.29			peak		Comment

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

●Reference Only



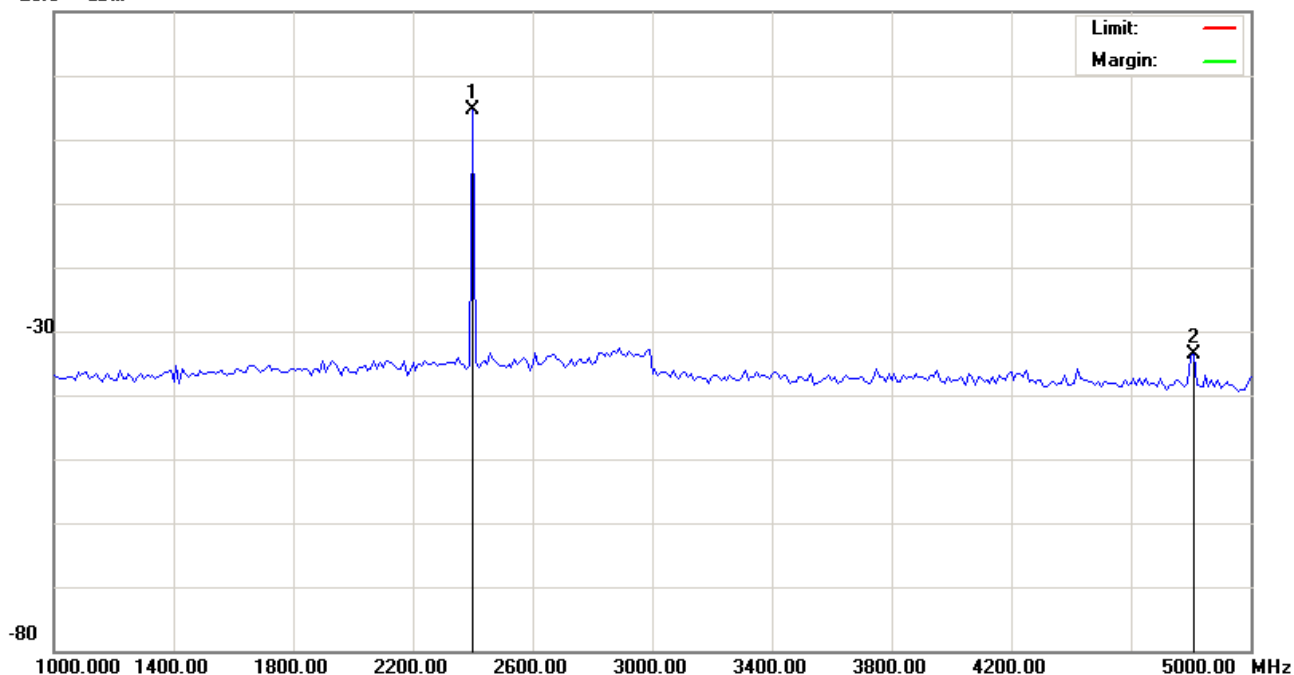
File :H780(20DB)

Data :#2

Date: 2008/6/26

Time: 下午 07:40:11

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode:

Note: CH0,2402

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	*	2400.000	-1.38	6.09	4.71					peak
2		4810.000	-39.73	6.18	-33.55					peak

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

●Reference Only



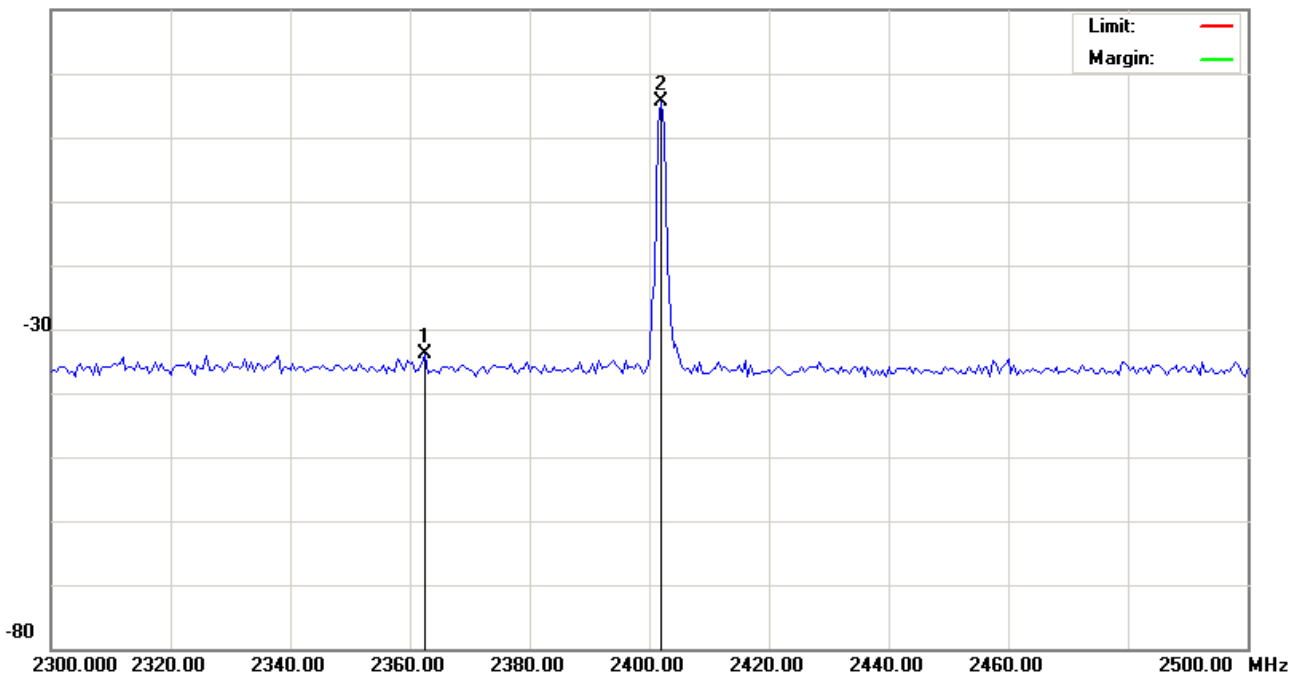
File :H780(20DB)

Data :#3

Date: 2008/6/26

Time: 下午 07:40:24

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode:

Note: CH0,2402

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1		2362.500	-39.91	6.09	-33.82			peak		
2	*	2402.000	-0.55	6.09	5.54			peak		

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

●Reference Only



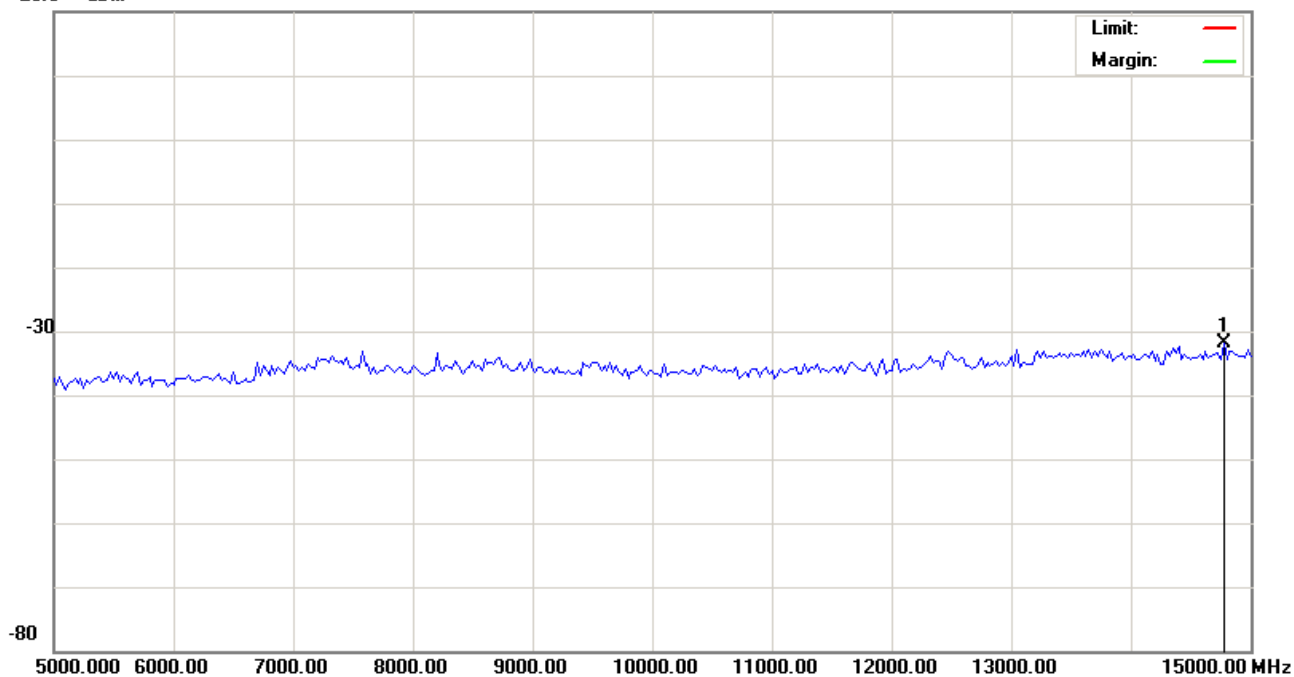
File :H780(20DB)

Data :#4

Date: 2008/6/26

Time: 下午 07:40:37

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode:

Note: CH0,2402

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	14775.00	-38.46	6.56	-31.90			peak		

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

●Reference Only



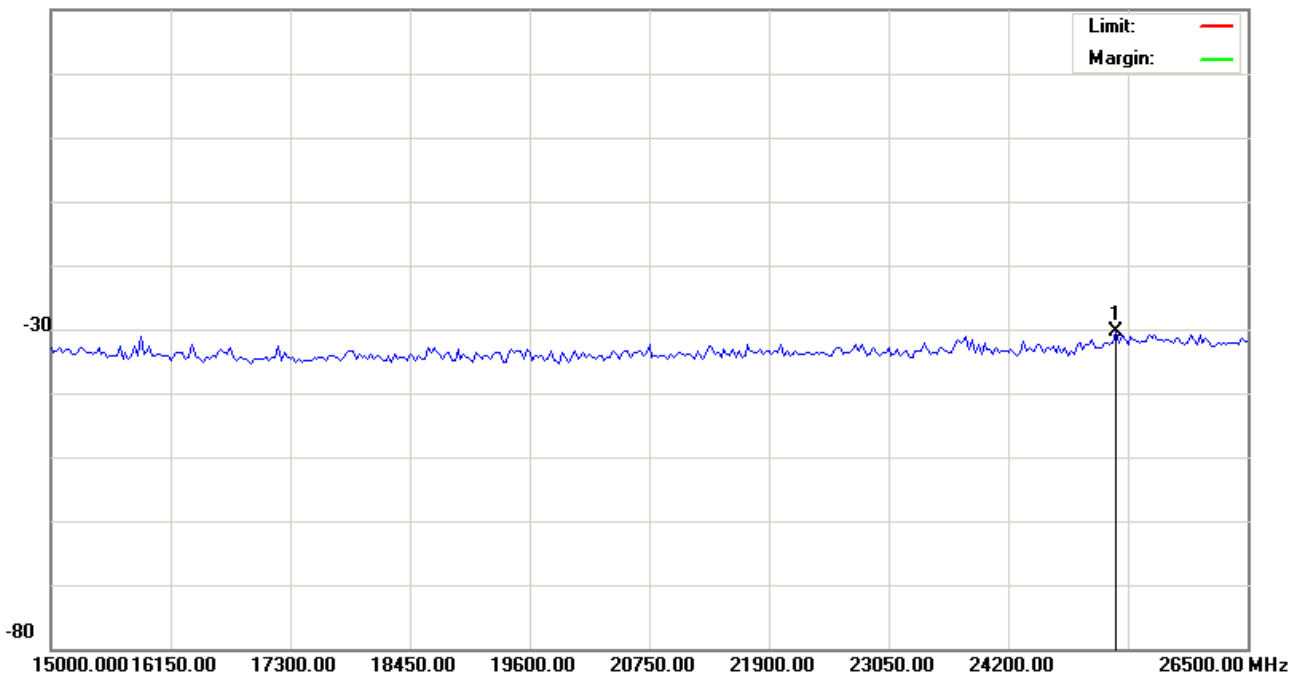
File :H780(20DB)

Data :#5

Date: 2008/6/26

Time: 下午 07:40:50

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode:

Note: CH0,2402

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	*	25235.00	-37.27	6.95	-30.32					peak

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

●Reference Only



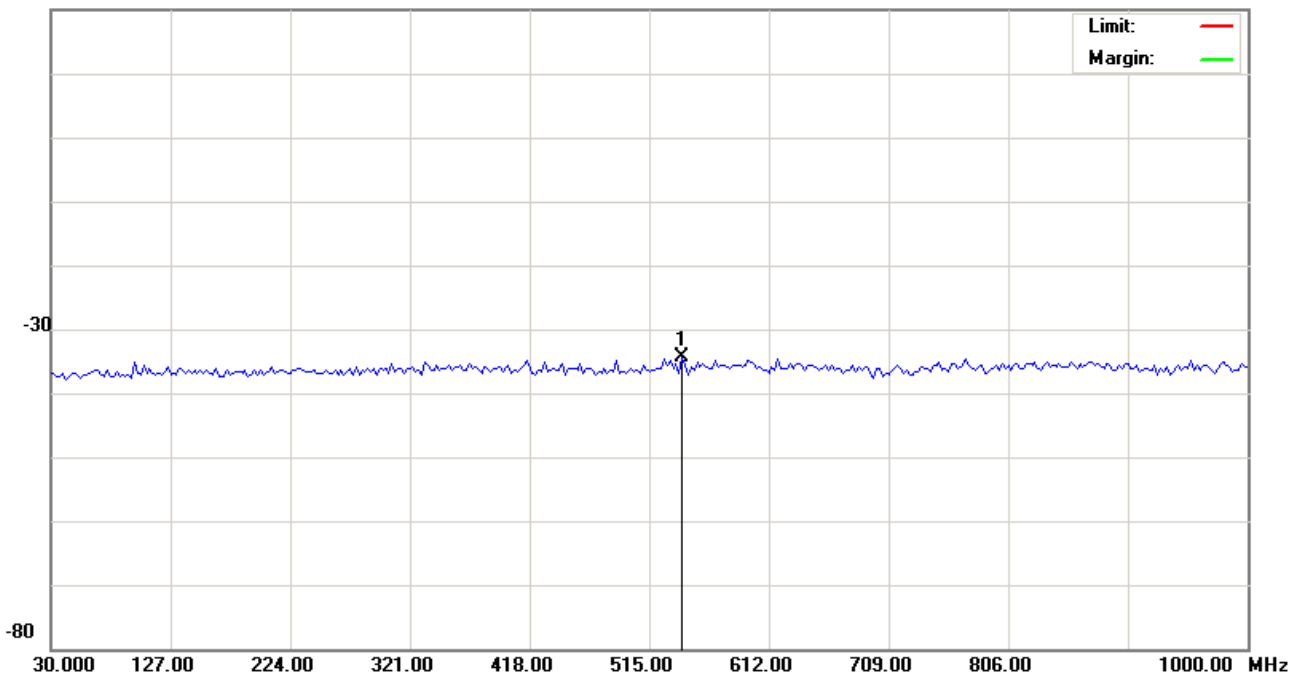
File :H780(20DB)

Data :#6

Date: 2008/6/26

Time: 下午 07:44:38

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode:

Note: CH39,2441

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	541.6750	-40.45	6.02	-34.43			peak		

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

●Reference Only



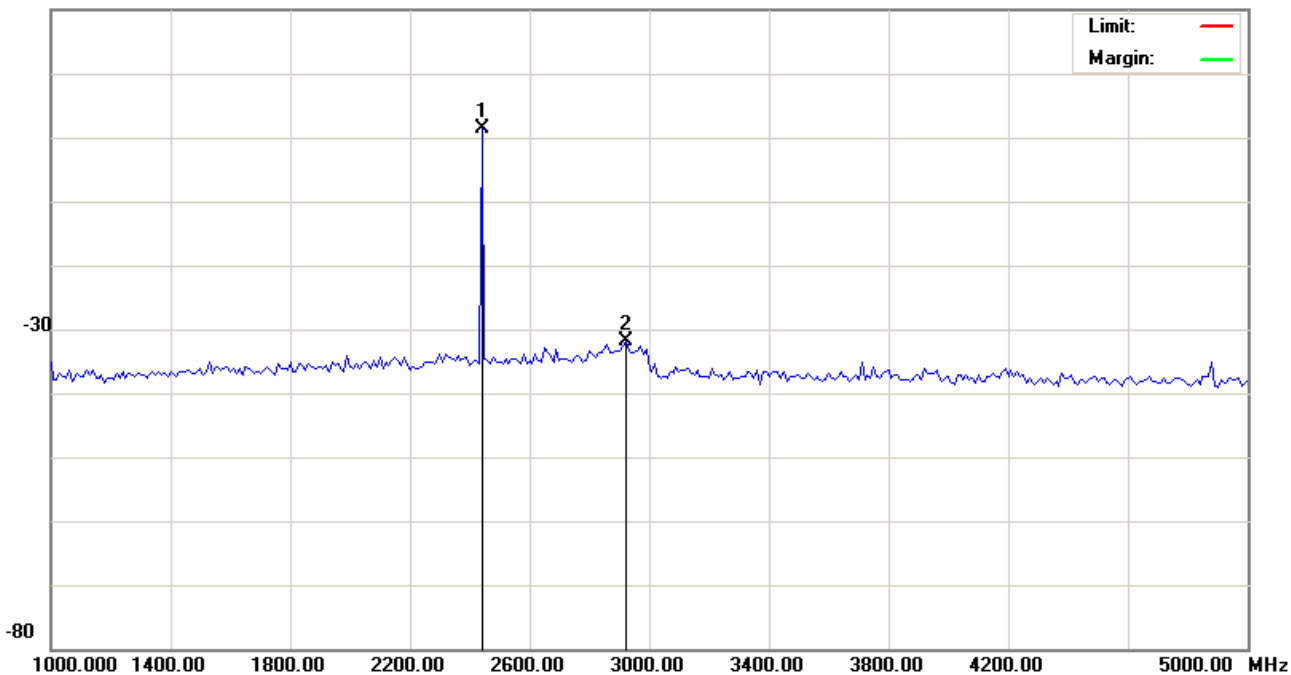
File :H780(20DB)

Data :#7

Date: 2008/6/26

Time: 下午 07:44:51

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode:

Note: CH39,2441

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	*	2440.000	-4.76	6.09	1.33					peak
2		2920.000	-38.03	6.11	-31.92					peak

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

●Reference Only



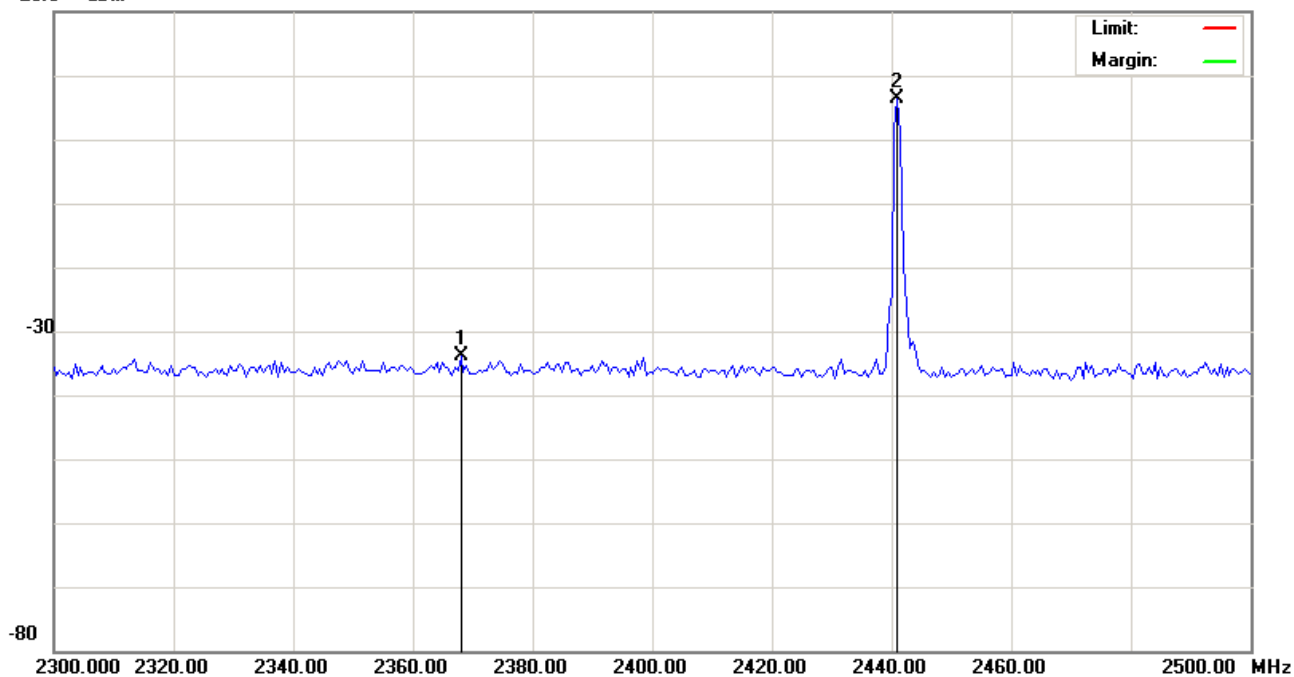
File :H780(20DB)

Data :#8

Date: 2008/6/26

Time: 下午 07:45:04

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode:

Note: CH39,2441

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		2368.000	-40.04	6.09	-33.95					peak
2	*	2441.000	0.17	6.09	6.26					peak

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

●Reference Only



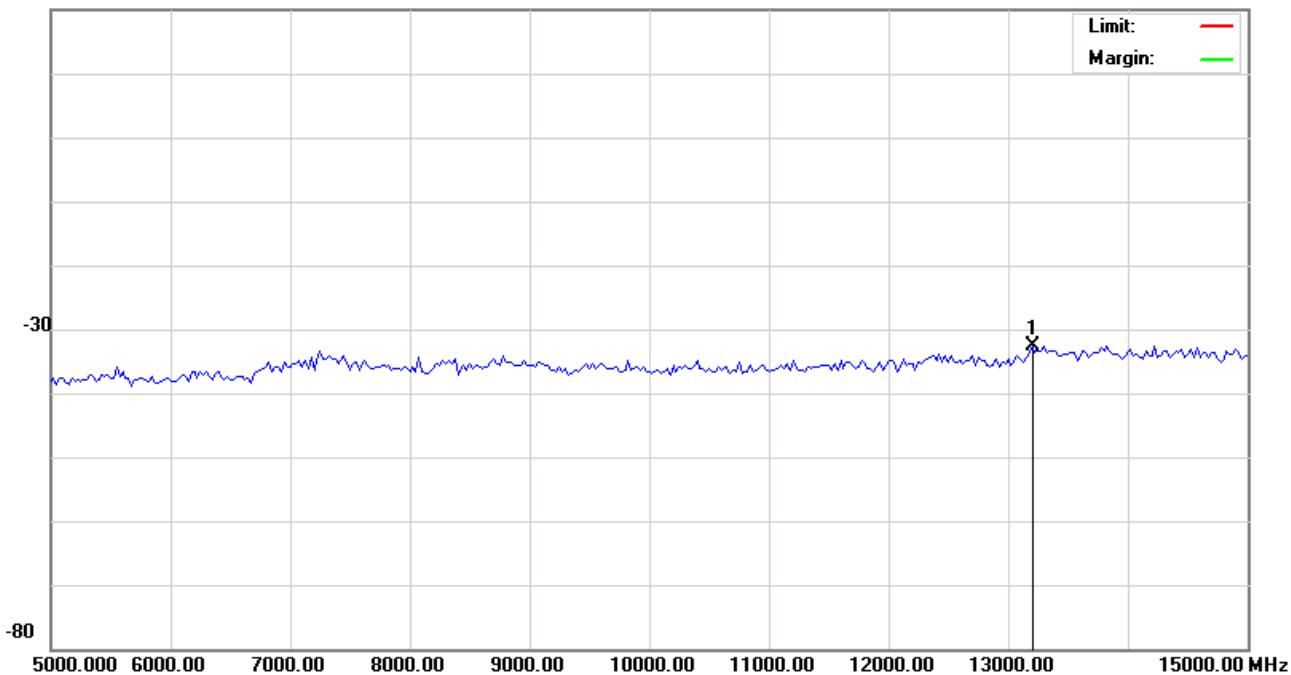
File :H780(20DB)

Data :#9

Date: 2008/6/26

Time: 下午 07:45:17

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode:

Note: CH39,2441

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	13200.00	-39.11	6.50	-32.61			peak		

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

●Reference Only



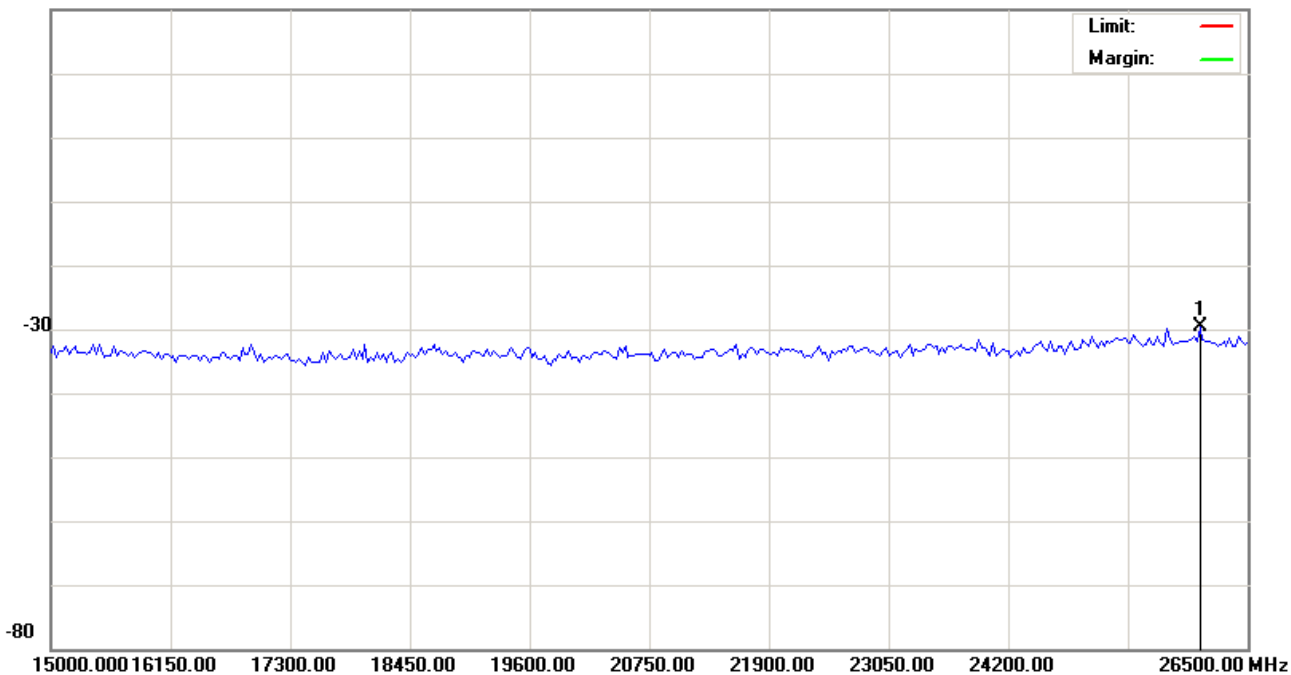
File :H780(20DB)

Data :#10

Date: 2008/6/26

Time: 下午 07:45:30

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode:

Note: CH39,2441

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	26040.00	-36.53	6.98	-29.55			peak		

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

●Reference Only



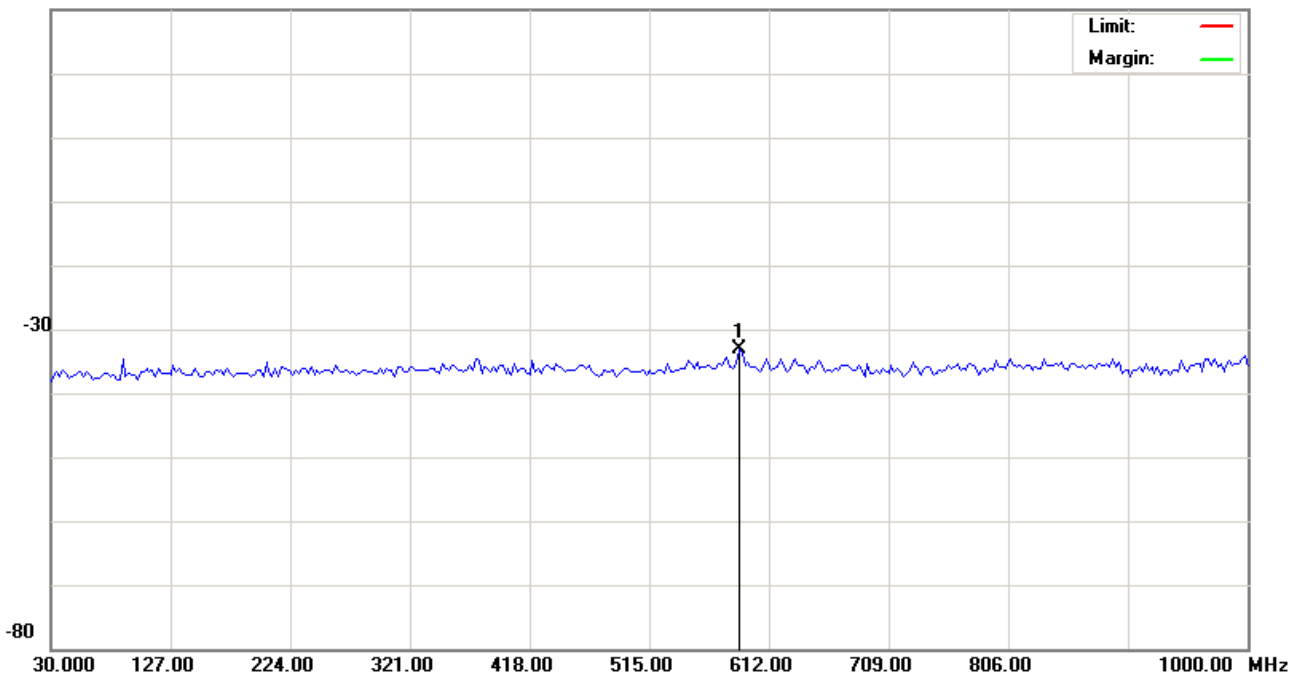
File :H780(20DB)

Data :#11

Date: 2008/6/26

Time: 下午 07:50:32

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode:

Note: CH78,2480

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	587.7500	-39.10	6.02	-33.08			peak		Comment

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

●Reference Only



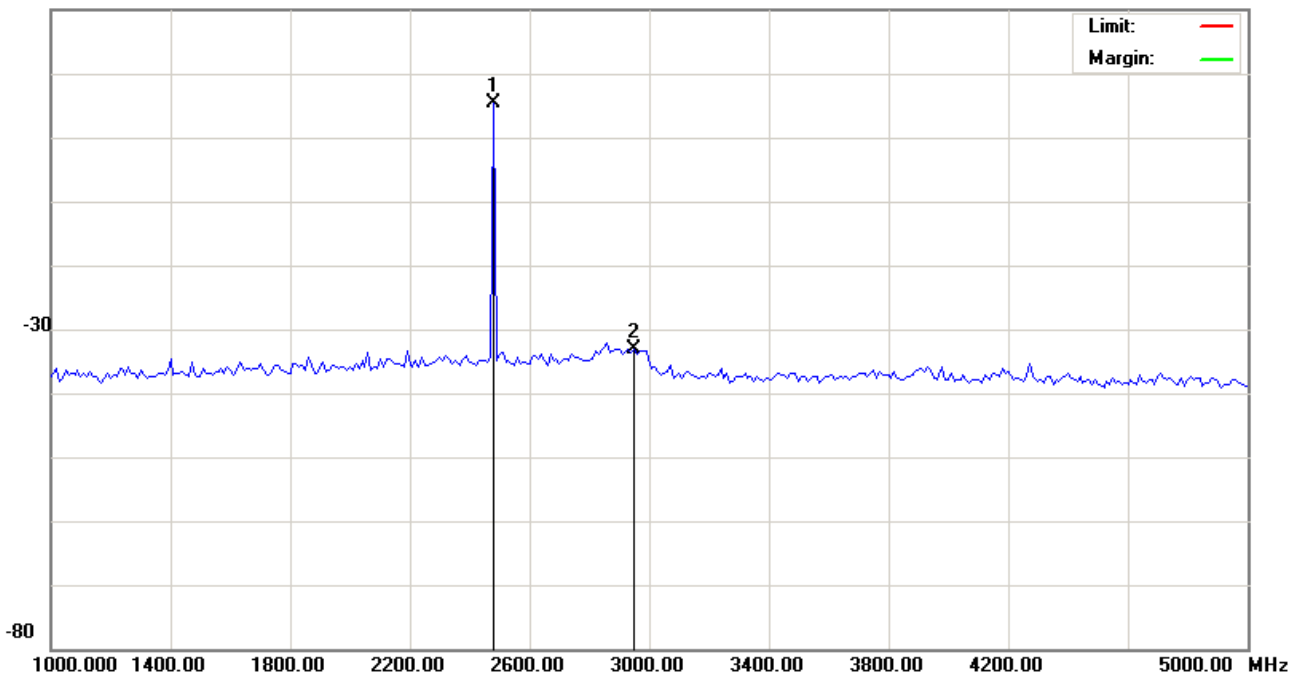
File :H780(20DB)

Data :#12

Date: 2008/6/26

Time: 下午 07:50:45

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode:

Note: CH78,2480

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	2480.000	-0.79	6.09	5.30			peak		
2		2950.000	-39.16	6.11	-33.05			peak		

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

●Reference Only



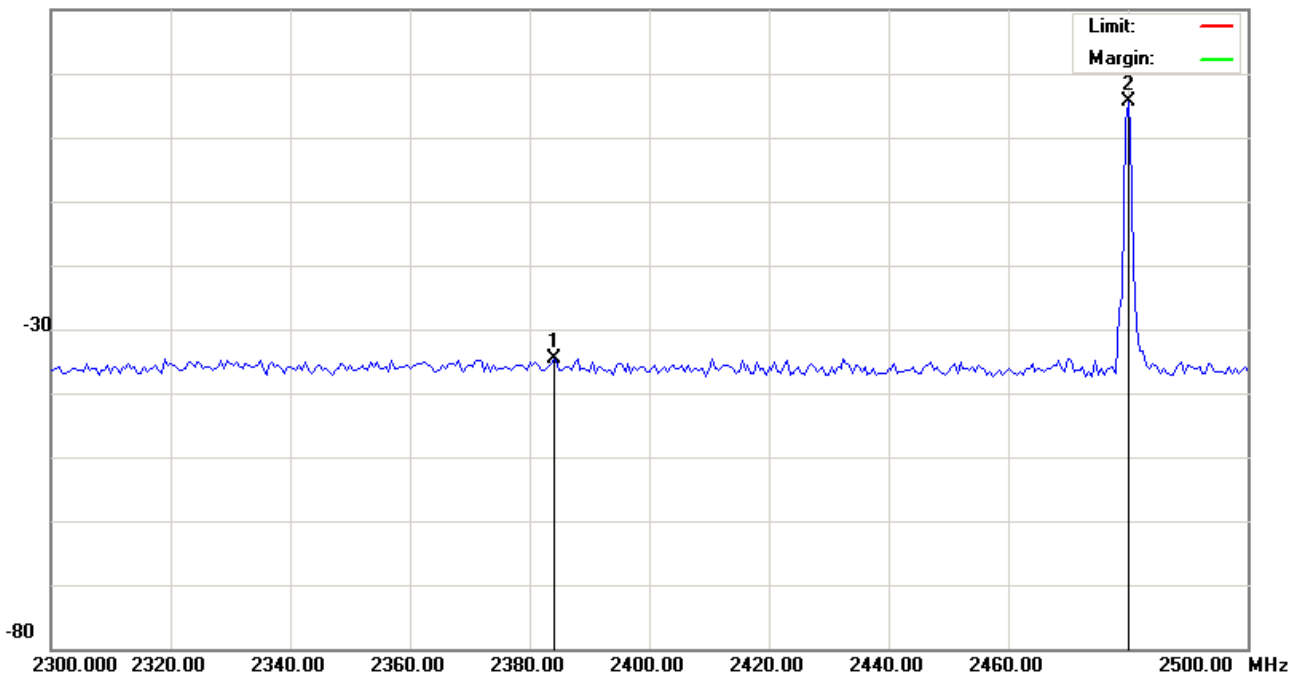
File :H780(20DB)

Data :#13

Date: 2008/6/26

Time: 下午 07:50:58

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode:

Note: CH78,2480

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		2384.000	-40.60	6.09	-34.51					peak
2	*	2480.000	-0.45	6.09	5.64					peak

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

●Reference Only



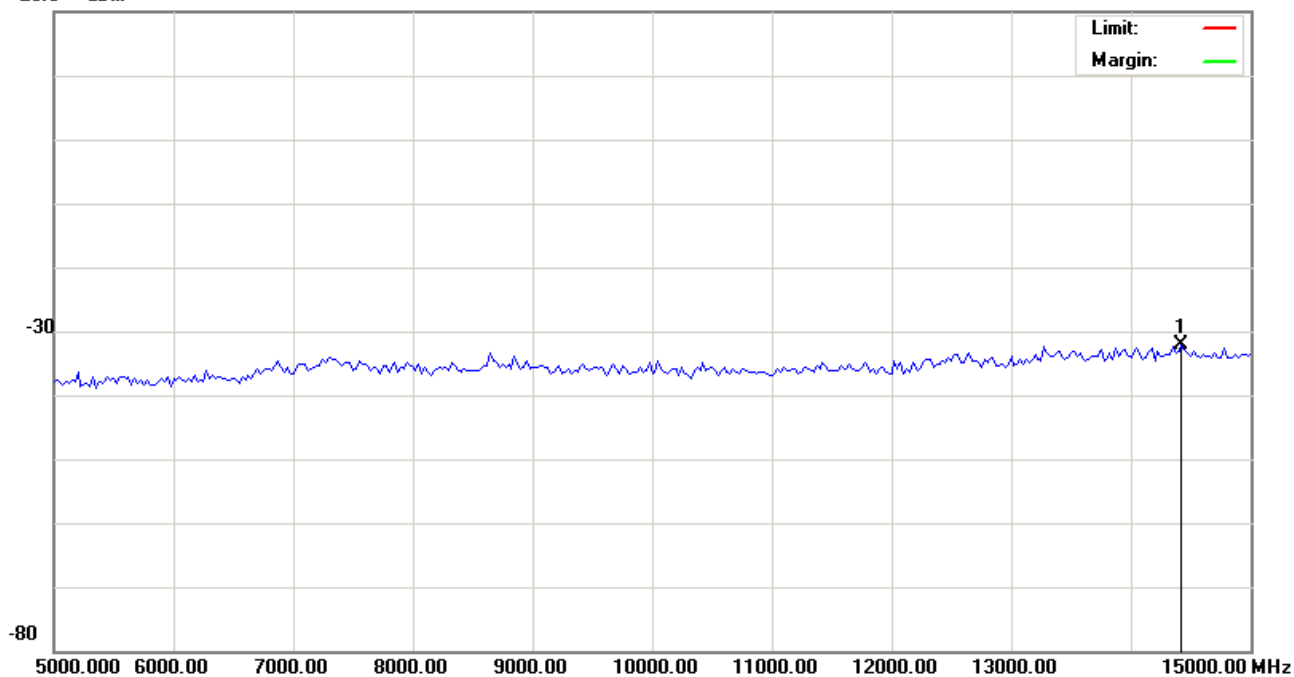
File :H780(20DB)

Data :#14

Date: 2008/6/26

Time: 下午 07:51:11

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode:

Note: CH78,2480

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	14425.00	-38.69	6.54	-32.15			peak		

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

●Reference Only



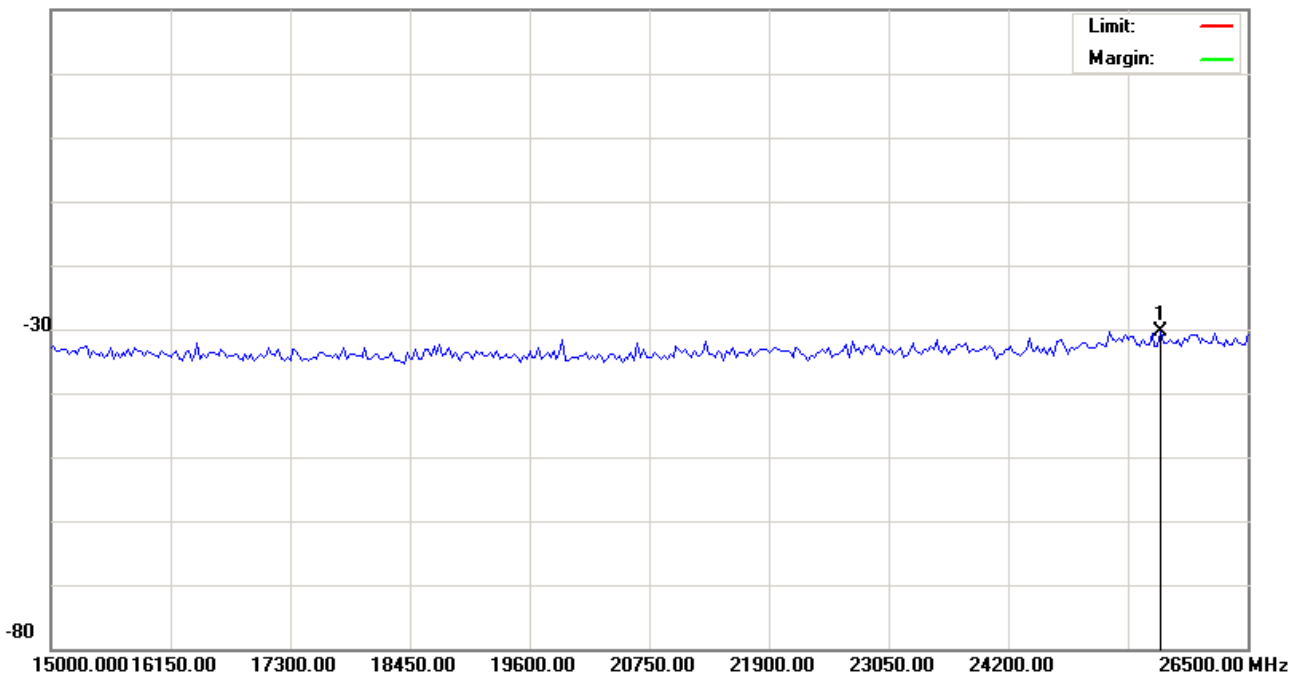
File :H780(20DB)

Data :#15

Date: 2008/6/26

Time: 下午 07:51:24

20.0 dBm



Site site#1

Polarization:

Temperature: 26 °C

Limit:

Power: AC 110V/60Hz

Humidity: 55 %

EUT:

Distance:

M/N: H780

Mode:

Note: CH78,2480

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	25666.25	-37.29	6.97	-30.32			peak		

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

●Reference Only

10. Band Edges Requirements

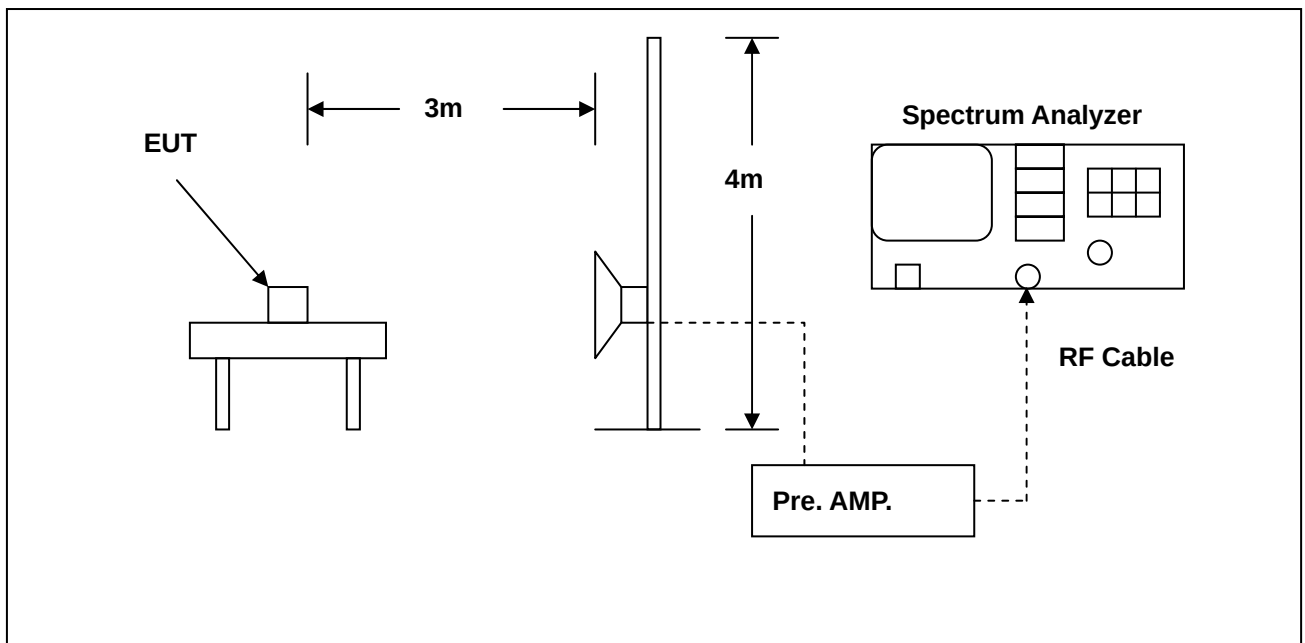
10.1 Test Condition & Setup:

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	Nov. 29, 2007	Nov. 29, 2008
Pre Amplifier	Agilent	8449B	3008A02237	Jun. 03, 2008	Jun. 03, 2009
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	Jun. 26, 2007	Jun. 26, 2008



10.4 Test Result

10.4.1 Bluetooth 2.0 Mode:

Applicant : Motorola Inc
Model No : H780
EUT : Universal Bluetooth Headset
Test Mode : Low CH & High CH
Test Date : 06/20/2008

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.



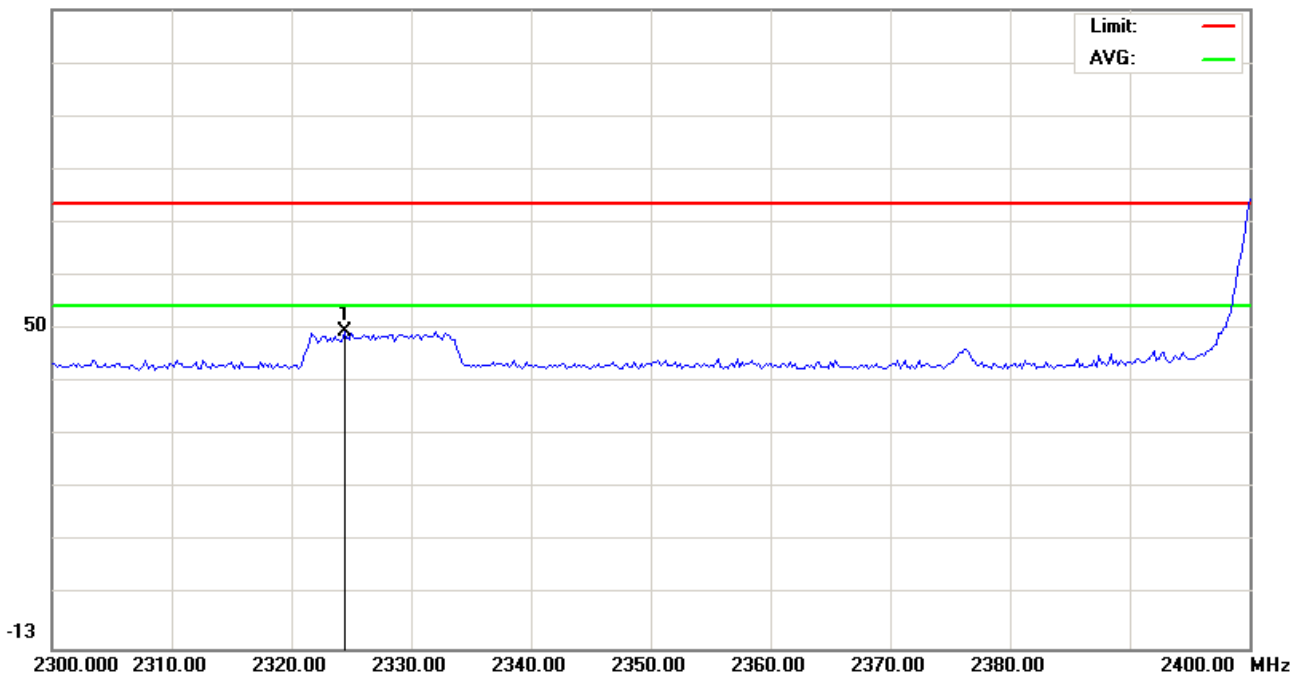
File :BAND EDGE

Data :#1

Date: 2008-6-20

Time: 下午 04:27:50

112.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BAND EDGE

Note: 2402MHZ,天線在1米,NB02接右邊下方USB孔

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	2324.400	48.77	0.15	48.92	74.00	-25.08	peak		

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

●Reference Only



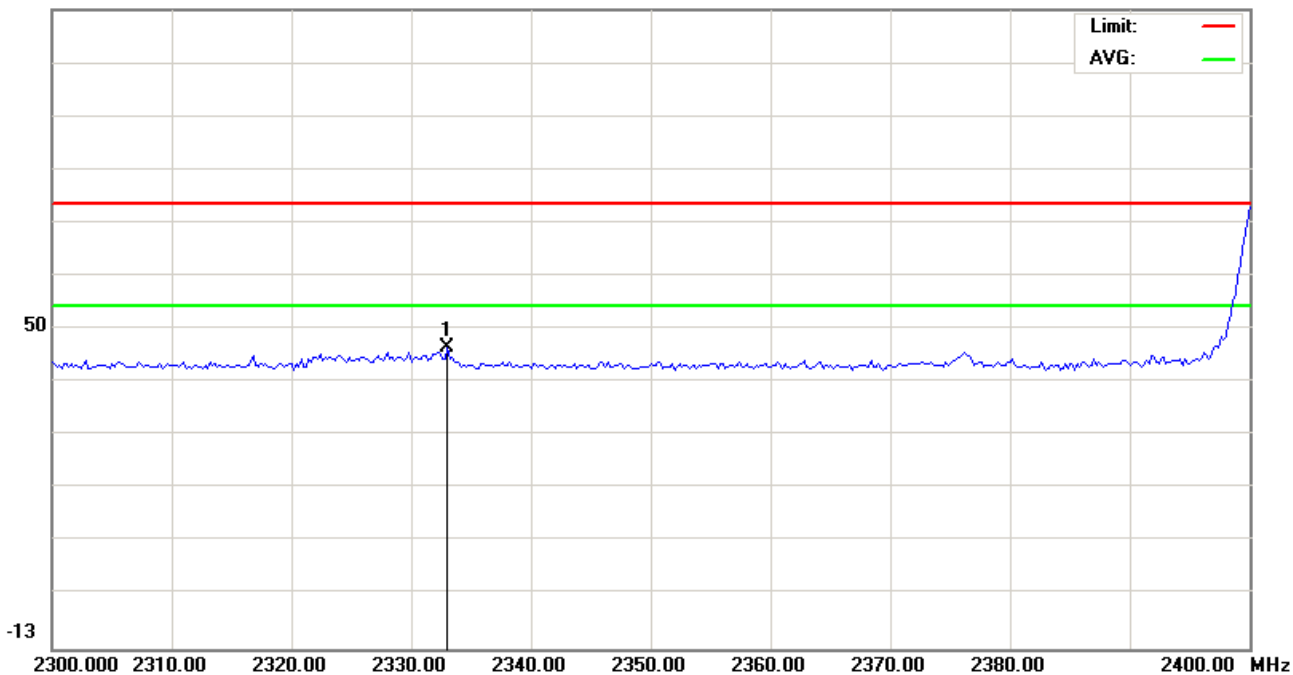
File :BAND EDGE

Data :#5

Date: 2008-6-20

Time: 下午 05:27:24

112.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BAND EDGE

Note: 2402MHZ,天線在1米,NB02接右邊下方USB孔

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1	*	2333.000	45.64	0.19	45.83	74.00	-28.17	peak		

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

●Reference Only



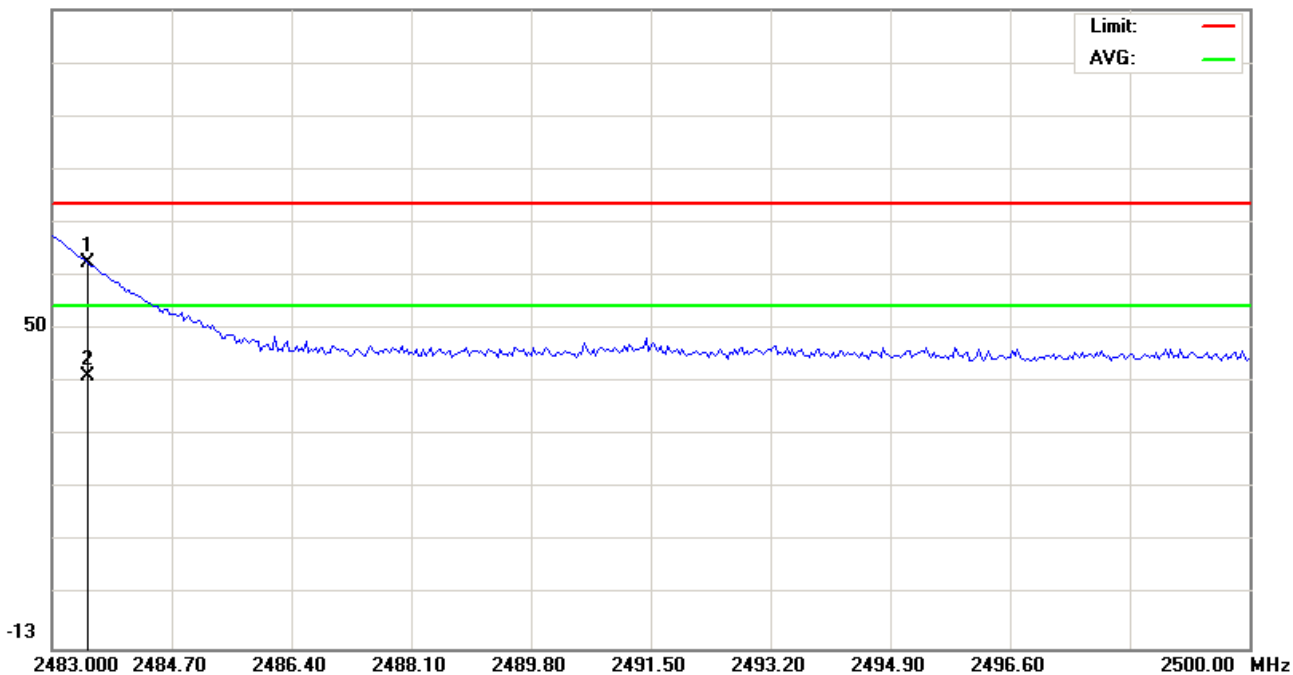
File :BAND EDGE

Data :#3

Date: 2008-6-20

Time: 下午 04:58:26

112.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BAND EDGE

Note: 2480MHZ,天線在1米,NB02接右邊下方USB孔

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	*	2483.510	62.15	0.25	62.40	74.00	-11.60	peak		
2		2483.510	40.03	0.25	40.28	54.00	-13.72	AVG		

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

●Reference Only



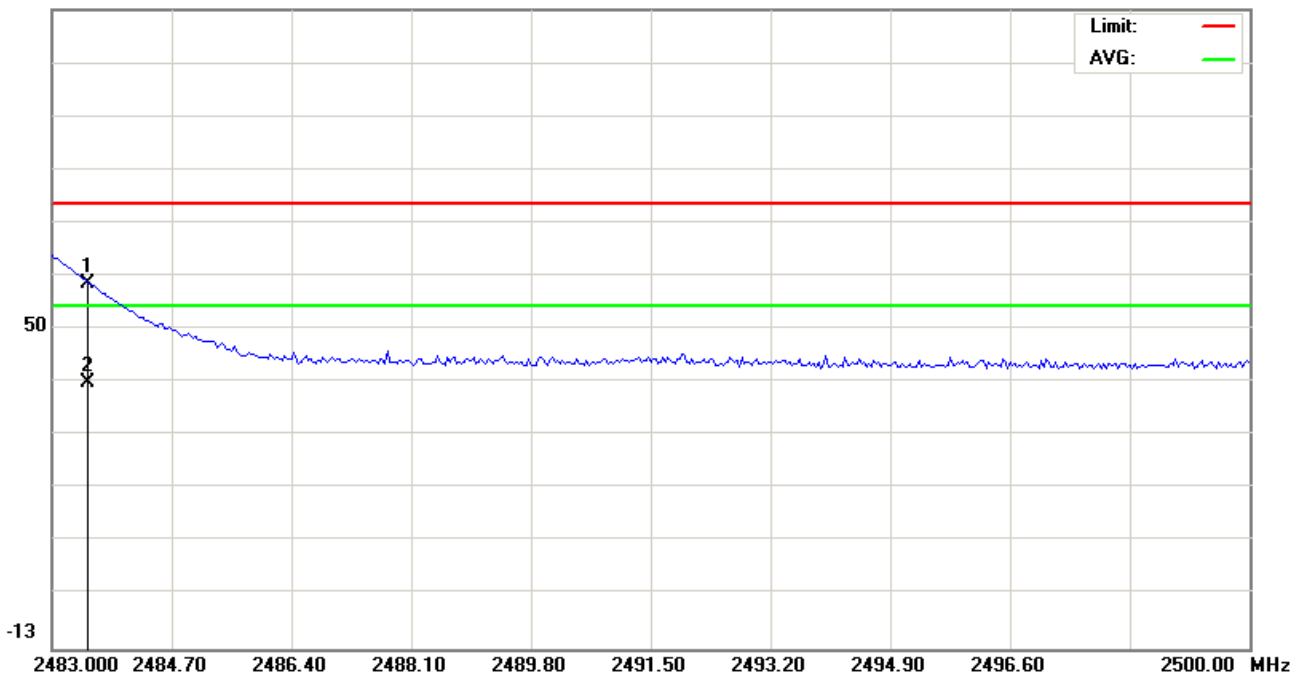
File :BAND EDGE

Data :#7

Date: 2008-6-20

Time: 下午 05:31:25

112.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BAND EDGE

Note: 2480MHZ,天線在1米,NB02接右邊下方USB孔

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		2483.510	58.29	0.25	58.54	74.00	-15.46	peak		
2	*	2483.510	38.85	0.25	39.10	54.00	-14.90	AVG		

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

●Reference Only



10.4.2 Bluetooth EDR Mode:

Applicant : Motorola Inc
Model No : H780
EUT : Universal Bluetooth Headset
Test Mode : Low CH & High CH
Test Date : 06/24/2008

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.



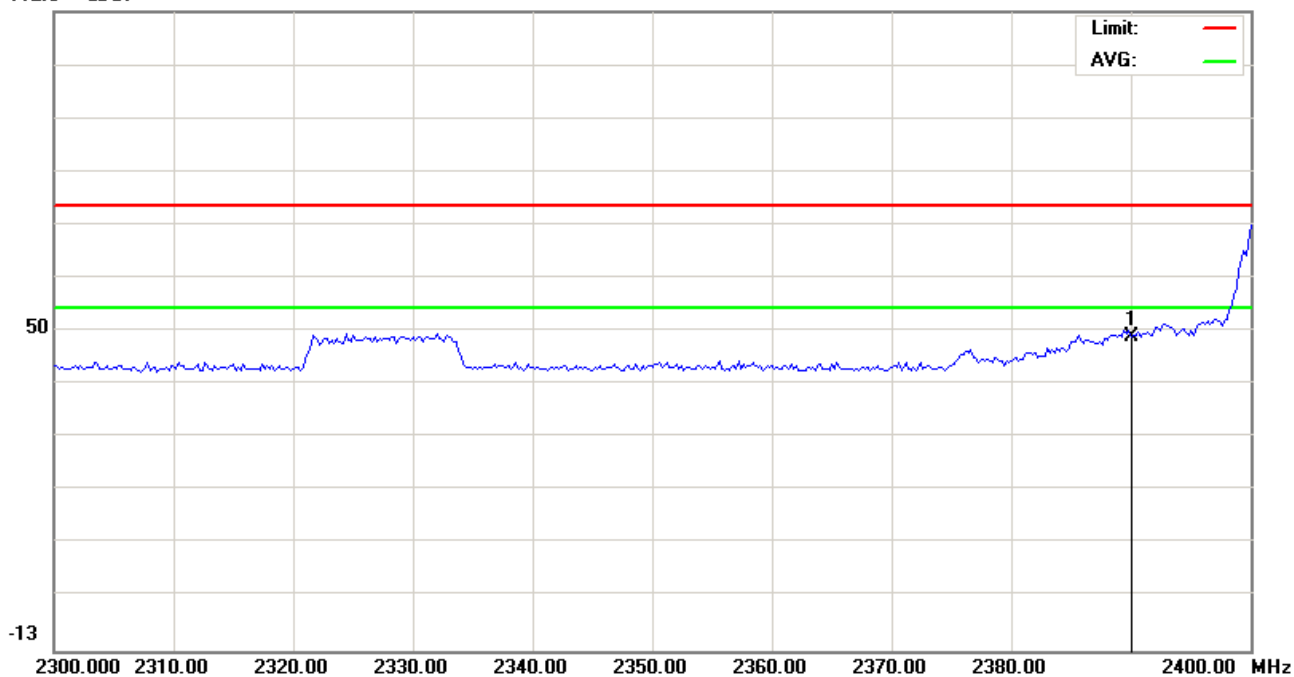
File :H780(BAND EDGE)

Data :#1

Date:2008-6-24

Time: 下午 02:06:35

112.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: 2402MHZ,天線在1米,NB02接右邊下方USB孔

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1	*	2390.000	48.29	0.19	48.48	74.00	-25.52	peak		Comment

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

●Reference Only



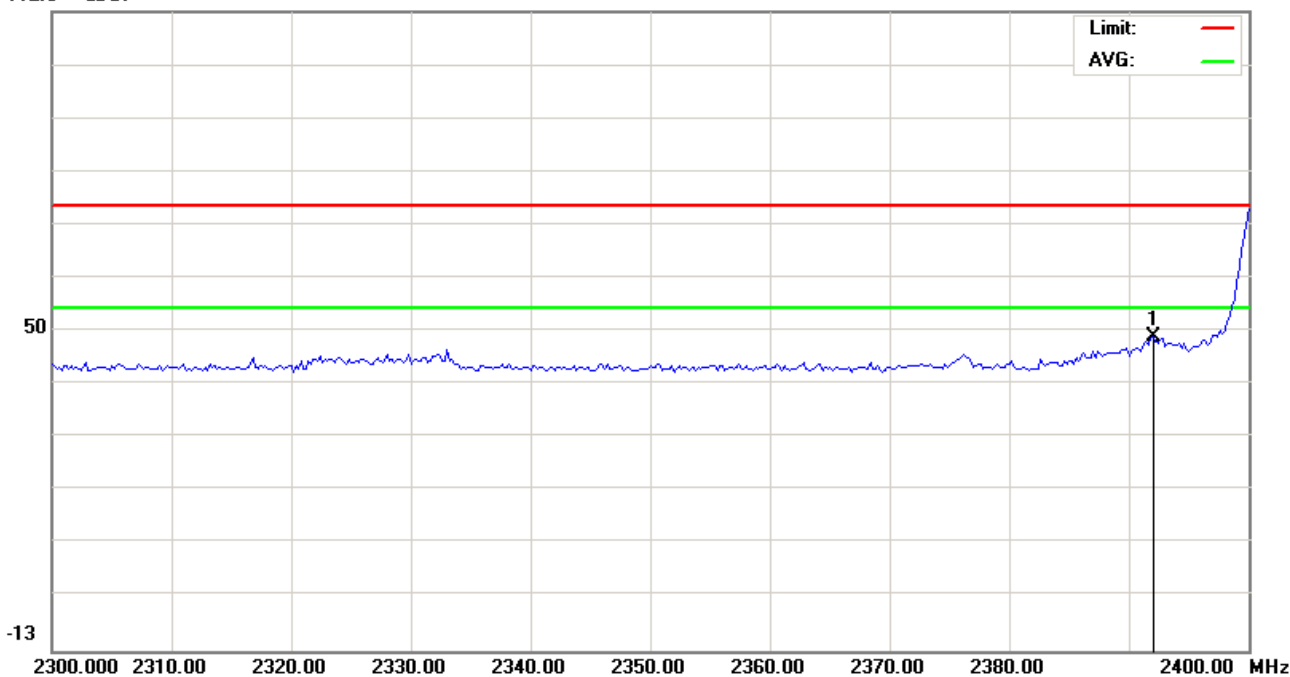
File :H780(BAND EDGE)

Data :#5

Date:2008-6-24

Time: 下午 02:58:26

112.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: 2402MHZ,天線在1米,NB02接右邊下方USB孔

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1	*	2392.000	48.29	0.18	48.47	74.00	-25.53	peak		

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

●Reference Only



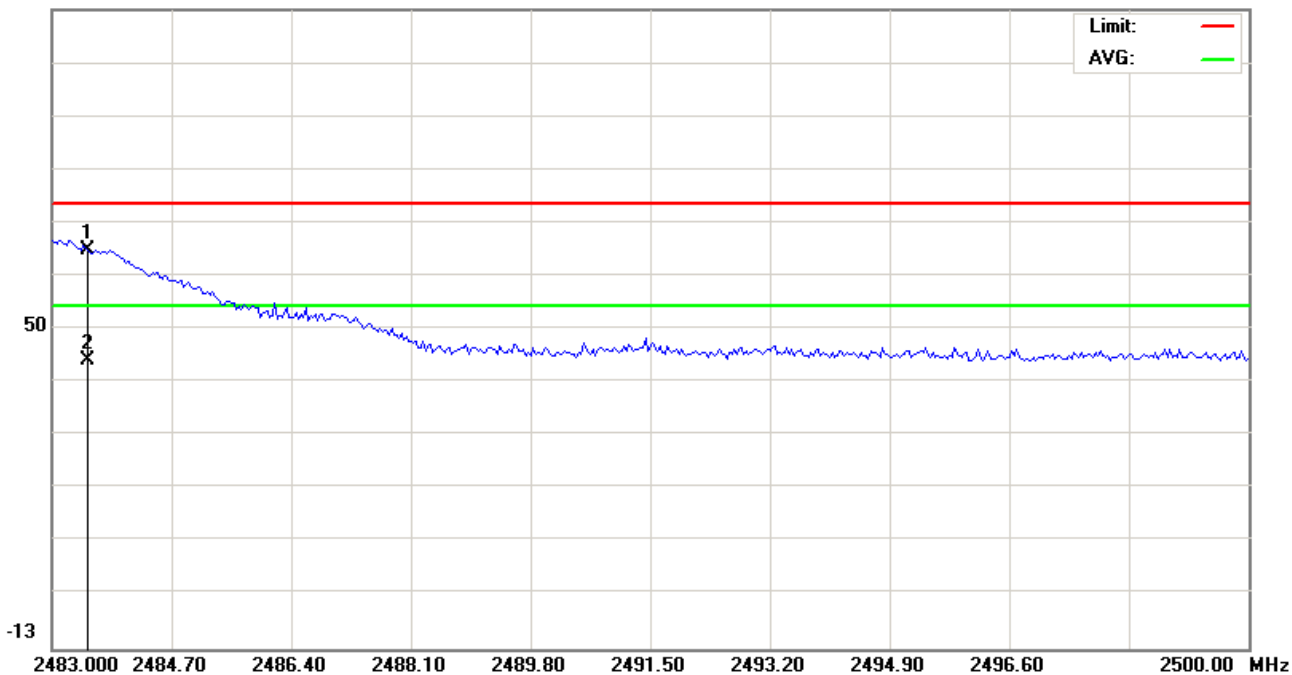
File :H780(BAND EDGE)

Data :#3

Date:2008-6-24

Time: 下午 02:41:28

112.0 dBuV



Site site#1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: 2480MHZ,天線在1米,NB02接右邊下方USB孔

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	*	2483.500	64.65	0.25	64.90	74.00	-9.10	peak		
2		2483.500	43.30	0.25	43.55	54.00	-10.45	AVG		

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

●Reference Only



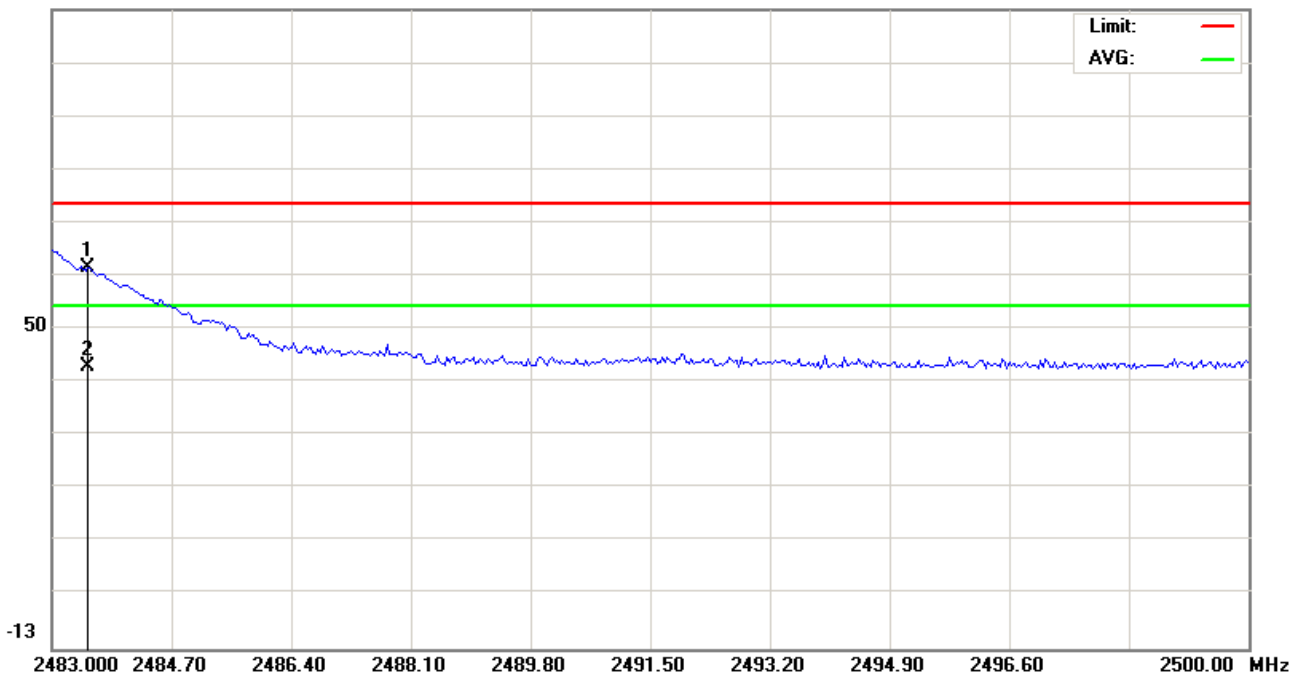
File :H780(BAND EDGE)

Data :#7

Date:2008-6-24

Time: 下午 03:04:11

112.0 dBuV



Site site#1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: H780

Mode: BT+EDR

Note: 2480MHZ,天線在1米,NB02接右邊下方USB孔

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree
1		2483.500	61.29	0.25	61.54	74.00	-12.46	peak		
2	*	2483.500	41.91	0.25	42.16	54.00	-11.84	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.

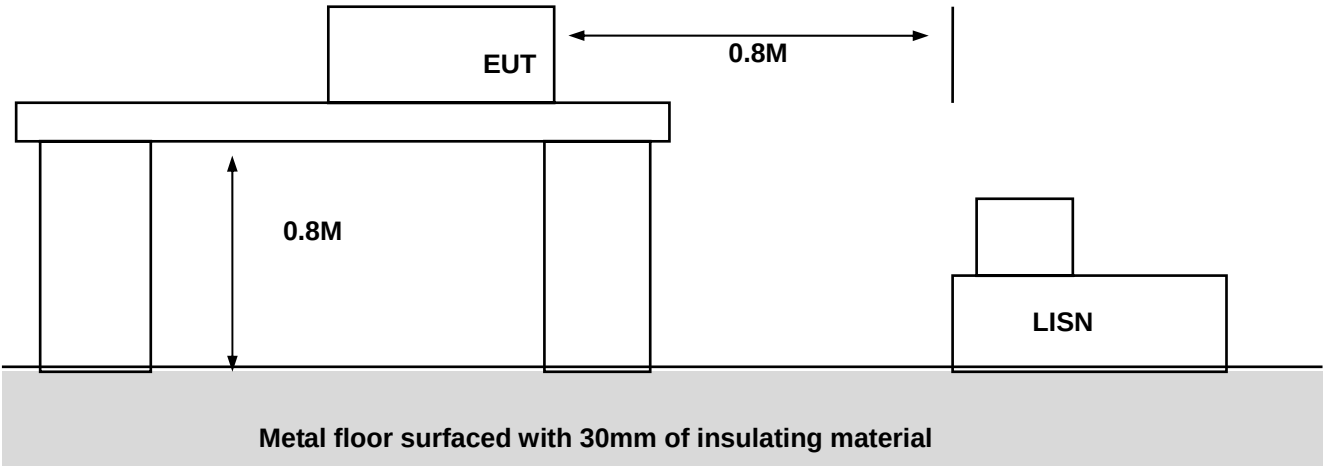
11.2 Antenna Connector Construction

The antenna used in this product is internal antenna. And the maximum Gain of this antenna is only 0 dBi.



Appendix A - EUT Test SETUP

MEASUREMENT OF POWER LINE CONDUCTED RFI VOLTAGE



MEASUREMENT OF RADIATED EMISSION

