



A Test Lab Techno Corp.

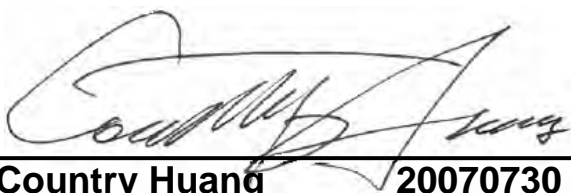
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Measurement Report




Report No.	: 0707FR11
Applicant	: GN Netcom Inc
Trade Mark	: Jabra
Product Model	: A330
Product Type	: Bluetooth Dongle
FCC ID	: BCE-A330
Dates of Test	: Jul. 13 ~ 16, 2007
Test Specification	: FCC Part 15 Subpart C (15.247) Canada RSS-210 Issue 6(September 2005) Canada RSS-Gen Issue 1(September 2005) ANSI C63.4-2003
Location of Test Lab.	: Chang-an Lab.

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



Country Huang 20070730
Measurement Center Manager



John Cheng 20070730
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) & Canada RSS-210 Issue 6(September 2005) & Canada RSS-Gen Issue 1(September 2005).

EUT : Bluetooth Dongle
Applicant : GN Netcom Inc
77 Northeastern Blvd, Nashua, NH03062, U.S.A
Trade Mark : Jabra
Model No : A330
FCC ID : BCE-A330

Approved by :  Prepared by : 
Country Huang John Cheng

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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Contents

1. GENERAL	4
2. Conducted Emissions Requirements.....	9
3. Radiated Emissions Requirements	18
4. Maximum Conducted Output Power Requirements.....	57
5. Minimum 20dB RF Bandwidth Requirements.....	61
6. Carrier Frequency Separation Requirements	64
7. Number of Hopping Requirements.....	66
8. Time of Occupancy (Dwell Time) Requirements	69
9. Out of Band Conducted Emissions Requirements	73
10. Band Edges Requirements	90
11. Antenna Requirements.....	97
Appendix A - EUT Test SETUP.....	98



1. GENERAL

1.1 Description of Equipment under Test (EUT)

Applicant :

GN Netcom Inc
77 Northeastern Blvd, Nashua, NH03062, U.S.A

Trade Mark : Jabra
Product Model : A330
Product Type : Bluetooth Dongle
FCC ID : BCE-A330
Battery Type : Powered By USB interface
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 **GN Netcom Inc.** In support of a Class B Digital Device certification in accordance with Part 2 Subpart J and Part 15 Subpart A, B & C and RSS-210, RSS-Gen of the Commission's and Regulations.

1.3 Summary of Tests

Applied Standard : FCC Part 15, Subpart C (Section 15.247); RSS-210; RSS-Gen				
Reference		Test	Results	Note
RSS-Gen	FCC Part 15			
7.2.2	15.207	AC Power Conducted Emission	PASS	
6	-	Receiver Radiated Emissions Rss-Gen Limit Table 1	PASS	
Reference		Test	Results	Note
RSS-210	FCC Part 15			
A8.5	15.247(c),15.209	Transmitter Radiated Emissions	PASS	
A8.4 (2)	15.247(b)(1)	Max. Output Power	PASS	
A8.1 (1)	15.247(a)(1)	20dB RF Bandwidth	PASS	
A8.1 (2)	15.247(a)(1)	Carrier Frequency Separation	PASS	
A8.1 (4)	15.247(a)(1)(iii)	Number of Hopping	PASS	
A8.1 (4)	15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	PASS	
A8.5	15.247(c),15.209	Out of Band Conducted Spurious Emission	PASS	
A8.5	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

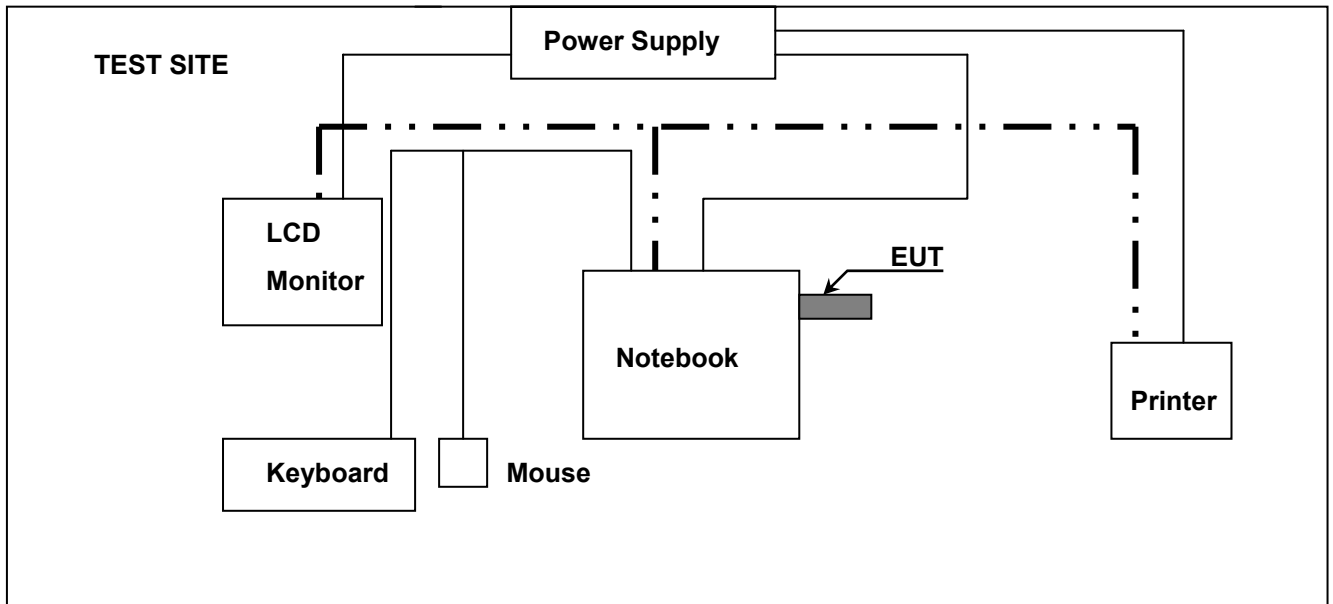


Figure 1. Configuration of System Under Test for PC USB Link

During EMI testing (LINK & Stand by Mode) the EUT (Bluetooth Dongle)'s USB port connected to AE's Notebook.

A mouse was connected to the USB port of Notebook. And a keyboard & printer were connected to the USB ports of Notebook. An external LCD monitor connected the VGA port on AE' Notebook.



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. 23, 2007	Mar. 23, 2008
Test Receiver	R&S	ESCI	100367	May. 23, 2007	May. 23, 2008
LISN	EMCO	3816/2 SH	00060110	Jun. 06, 2007	Jun. 05, 2008
LISN	EMCO	3816/2 SH	00060111	Jun. 13, 2007	Jun. 12, 2008
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

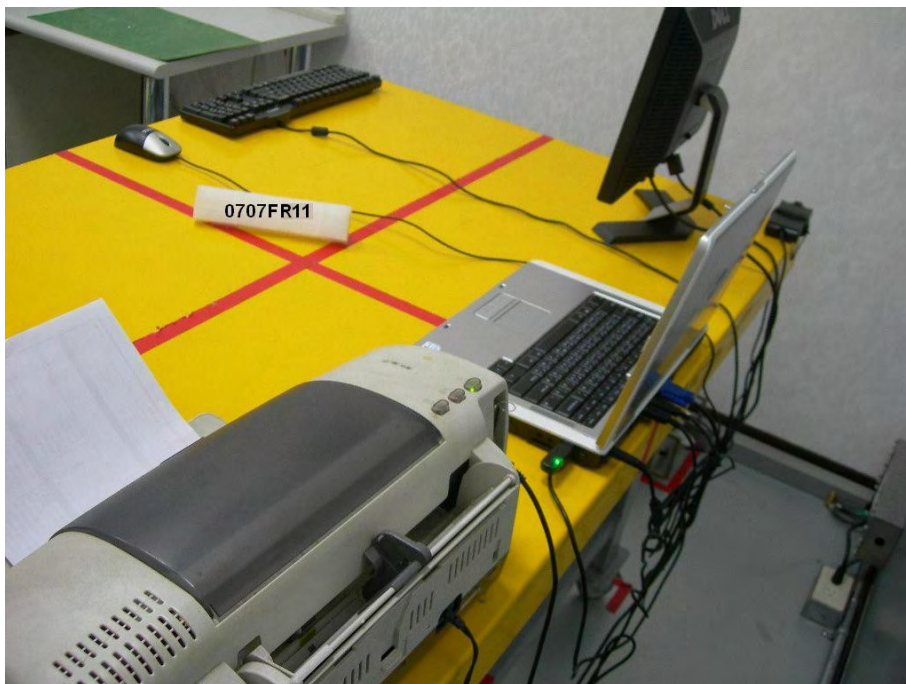


Figure 3. Rear View of the Test Configuration



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 B)

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 : GN Netcom Inc
Model No : A330
EUT : Bluetooth Dongle
Test Mode : PC USB LINK _ Stand by
Test Date : 07/17/2007

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 :KS10(conduction)(110V)

Data :#3

Date: 2007/07/17

Time: 下午 12:31:25

80.0 dBuV



Site site #1

Phase: **L1**

Temperature: 26 °C

Limit: CISPR22 Class B Conduction(QP)

Power: AC 110V/60Hz

Humidity: 55 %

EUT: Bluetooth dongle

M/N: A330

Mode:

Note: stand by

加high pass filter(HPM50111)

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1604	36.43	9.73	46.16	65.44	-19.28	peak	
2		0.3235	30.12	9.77	39.89	59.61	-19.72	peak	
3		1.0939	30.40	9.80	40.20	56.00	-15.80	peak	
4	*	3.6500	32.27	9.93	42.20	56.00	-13.80	peak	
5		11.2000	33.47	10.11	43.58	60.00	-16.42	peak	
6		18.7500	35.02	10.27	45.29	60.00	-14.71	peak	

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

●Reference Only



Conducted Emission Measurement

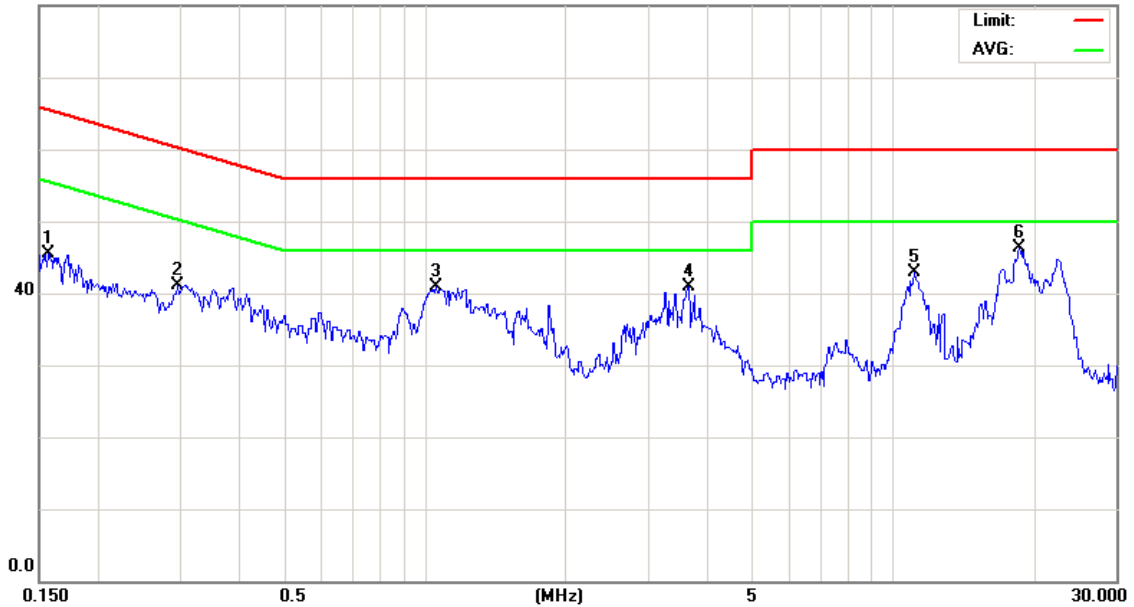
File :KS10(conduction)(110V)

Data :#4

Date: 2007/07/17

Time: 下午 12:38:15

80.0 dBuV



Site site #1

Phase: **L2**

Temperature: 26 °C

Limit: CISPR22 Class B Conduction(QP)

Power: AC 110V/60Hz

Humidity: 55 %

EUT: Bluetooth dongle

M/N: A330

Mode:

Note: stand by

加high pass filter(HPM50111)

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1570	35.75	9.73	45.48	65.62	-20.14	peak	
2		0.2954	31.36	9.76	41.12	60.37	-19.25	peak	
3		1.0579	31.15	9.80	40.95	56.00	-15.05	peak	
4		3.6500	30.93	9.93	40.86	56.00	-15.14	peak	
5		11.1000	32.83	10.11	42.94	60.00	-17.06	peak	
6	*	18.6000	35.97	10.27	46.24	60.00	-13.76	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 : GN Netcom Inc
Model No : A330
EUT : Bluetooth Dongle
Test Mode : PC USB Link _ Bluetooth 2.0 CH00 (2402MHz)
Test Date : 07/17/2007

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

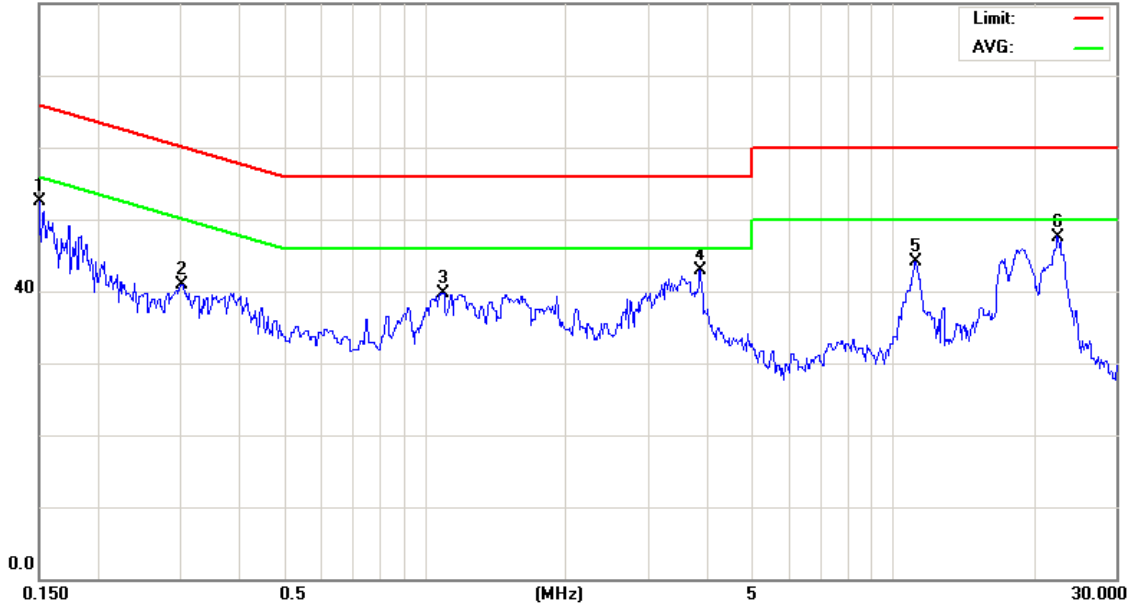
File :KS10(conduction)(110V)

Data :#1

Date: 2007/07/17

Time: 下午 12:25:28

80.0 dBuV



Site site #1

Phase: **L1**

Temperature: 26 °C

Limit: CISPR22 Class B Conduction(QP)

Power: AC 110V/60Hz

Humidity: 55 %

EUT: Bluetooth dongle

M/N: A330

Mode:

Note: BT mode

加high pass filter(HPM50111)

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	42.73	9.73	52.46	65.99	-13.53	peak	
2		0.3004	31.20	9.77	40.97	60.23	-19.26	peak	
3		1.0939	29.88	9.80	39.68	56.00	-16.32	peak	
4		3.8658	32.99	9.95	42.94	56.00	-13.06	peak	
5		11.1500	34.02	10.11	44.13	60.00	-15.87	peak	
6	*	22.4500	37.28	10.32	47.60	60.00	-12.40	peak	

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

●Reference Only



Conducted Emission Measurement

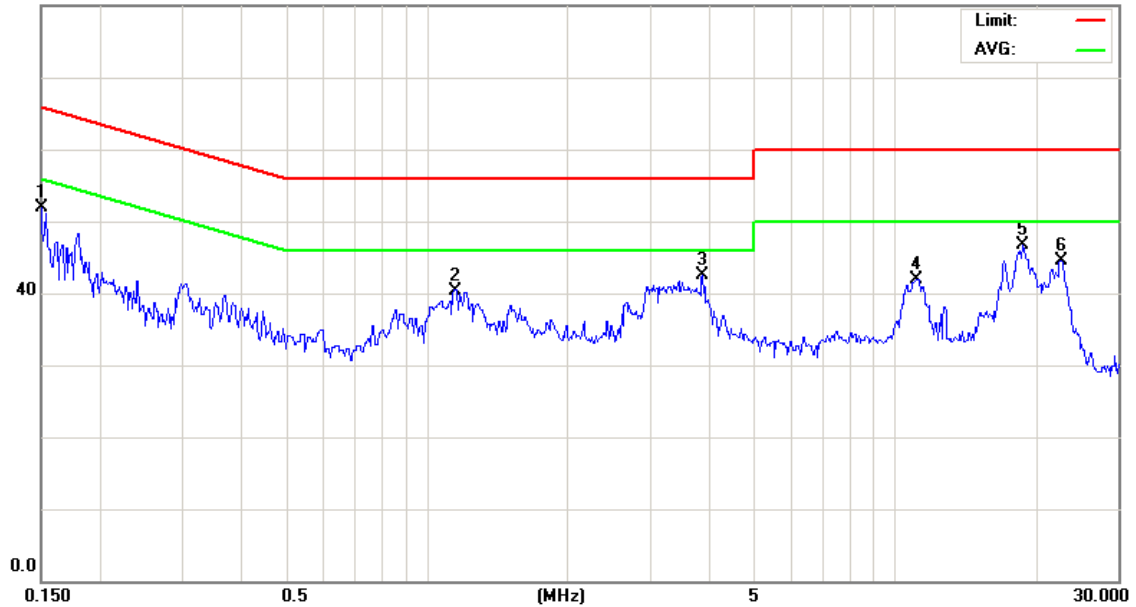
File :KS10(conduction)(110V)

Data :#2

Date: 2007/07/17

Time: 下午 12:28:14

80.0 dBuV



Site site #1

Phase: **L2**

Temperature: 26 °C

Limit: CISPR22 Class B Conduction(QP)

Power: AC 110V/60Hz

Humidity: 55 %

EUT: Bluetooth dongle

M/N: A330

Mode:

Note: BT mode

加high pass filter(HPM50111)

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	42.19	9.73	51.92	65.99	-14.07	peak	
2		1.1475	30.60	9.80	40.40	56.00	-15.60	peak	
3		3.8658	32.46	9.95	42.41	56.00	-13.59	peak	
4		11.1000	31.87	10.11	41.98	60.00	-18.02	peak	
5	*	18.7000	36.48	10.27	46.75	60.00	-13.25	peak	
6		22.5500	34.22	10.31	44.53	60.00	-15.47	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.

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

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

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

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

(a) For fundamental frequency :

Transmitter Output < +30dBm

(b) For spurious frequency :

Spurious emission limits = fundamental emission limit /10



3.2 Test Equipment List:

Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
Spectrum Analyzer	Agilent	E4408B	MY45107753	May. 28, 2007	May. 28, 2008
Pre Amplifier	Agilent	8449B	3008A02237	May. 28, 2007	May. 28, 2008
Pre Amplifier	Agilent	8447D	2944A10961	Aug. 07, 2006	Aug. 07, 2007
Test Receiver	R&S	ESCI	100367	May. 23, 2007	May. 23, 2008
Biconilog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	Jun. 26, 2007	Jun. 25, 2008
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	Jun. 26, 2007	Jun. 25, 2008
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	May. 02, 2007	May. 01, 2008
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120E	0899	Jul. 29, 2006	Jul. 29, 2007

3.3 Test Configuration:



Figure 4. Front View of the Test Configuration



Figure 5. Rear View of the Test Configuration

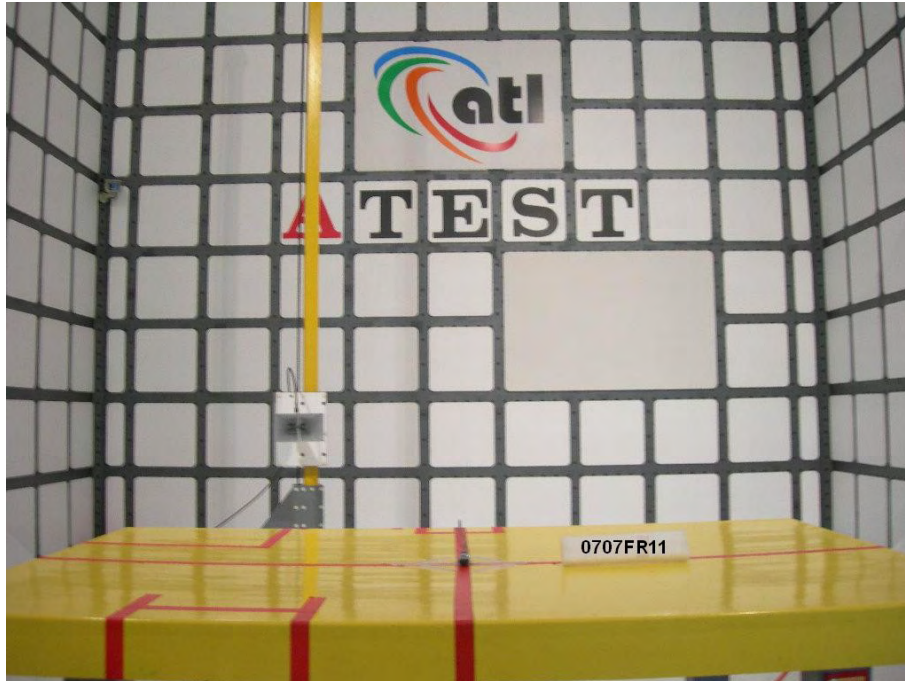


Figure 6. Front View of the Test Configuration



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 : GN Netcom Inc
Model No : A330
EUT : Bluetooth Dongle
Test Mode : Bluetooth 2.0 CH00 2402.000 (Local Frequency: 2402.000 MHz)
Test Date : 07/13 ~ 07/16/2007

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

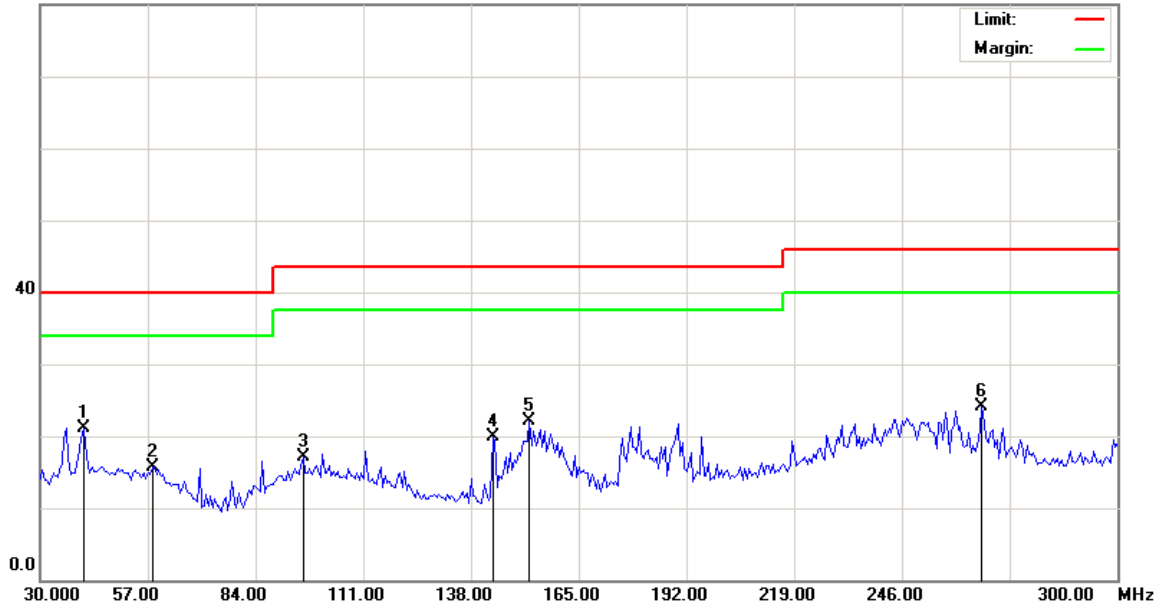
File :MARLIN_JABRA_A330(1G以下)

Data :#1

Date: 2007/07/13

Time: 14:03:37

80.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2402

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

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	40.8000	33.08	-11.88	21.20	40.00	-18.80	peak			
2		58.0800	28.20	-12.41	15.79	40.00	-24.21	peak			
3		95.8800	29.00	-11.99	17.01	43.50	-26.49	peak			
4		143.4000	36.06	-16.24	19.82	43.50	-23.68	peak			
5		152.5800	38.02	-15.95	22.07	43.50	-21.43	peak			
6		265.9800	35.15	-11.01	24.14	46.00	-21.86	peak			

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

●Reference Only



Radiated Emission Measurement

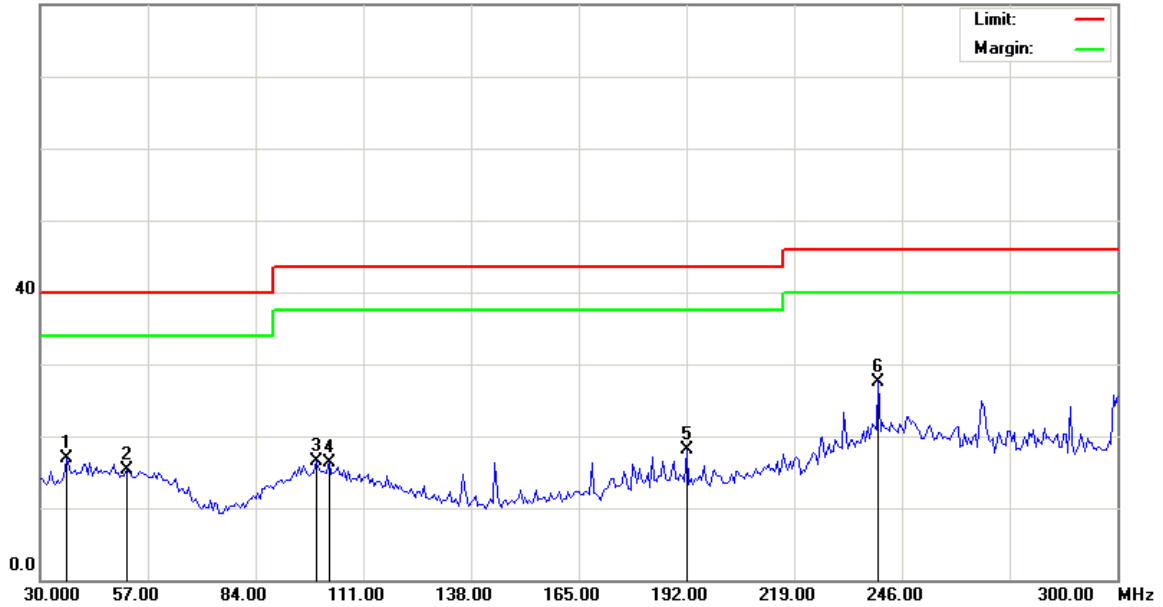
File :MARLIN_JABRA_A330(1G以下)

Data :#3

Date: 2007/07/13

Time: 14:12:10

80.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2402

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

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		36.4800	29.68	-12.80	16.88	40.00	-23.12	peak			
2		51.6000	27.50	-12.17	15.33	40.00	-24.67	peak			
3		99.1200	28.22	-11.81	16.41	43.50	-27.09	peak			
4		102.3600	28.31	-11.91	16.40	43.50	-27.10	peak			
5		192.0000	31.42	-13.26	18.16	43.50	-25.34	peak			
6	*	240.0600	39.03	-11.43	27.60	46.00	-18.40	peak			

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

●Reference Only



Radiated Emission Measurement

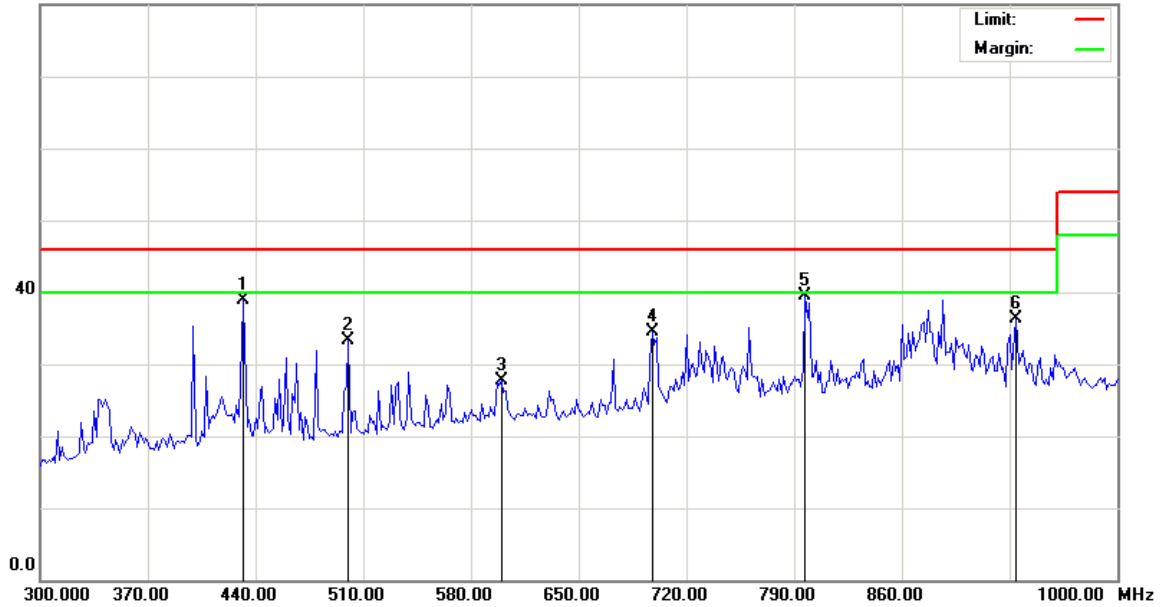
File :MARLIN_JABRA_A330(1G以下)

Data :#2

Date: 2007/07/13

Time: 14:07:53

80.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2402

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

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		431.6000	46.95	-8.03	38.92	46.00	-7.08	peak			
2		500.2000	40.43	-7.17	33.26	46.00	-12.74	peak			
3		599.6000	32.60	-4.91	27.69	46.00	-18.31	peak			
4		697.6000	38.29	-3.86	34.43	46.00	-11.57	peak			
5	*	797.0000	41.81	-2.34	39.47	46.00	-6.53	peak			
6		934.2000	36.40	-0.06	36.34	46.00	-9.66	peak			

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

●Reference Only



Radiated Emission Measurement

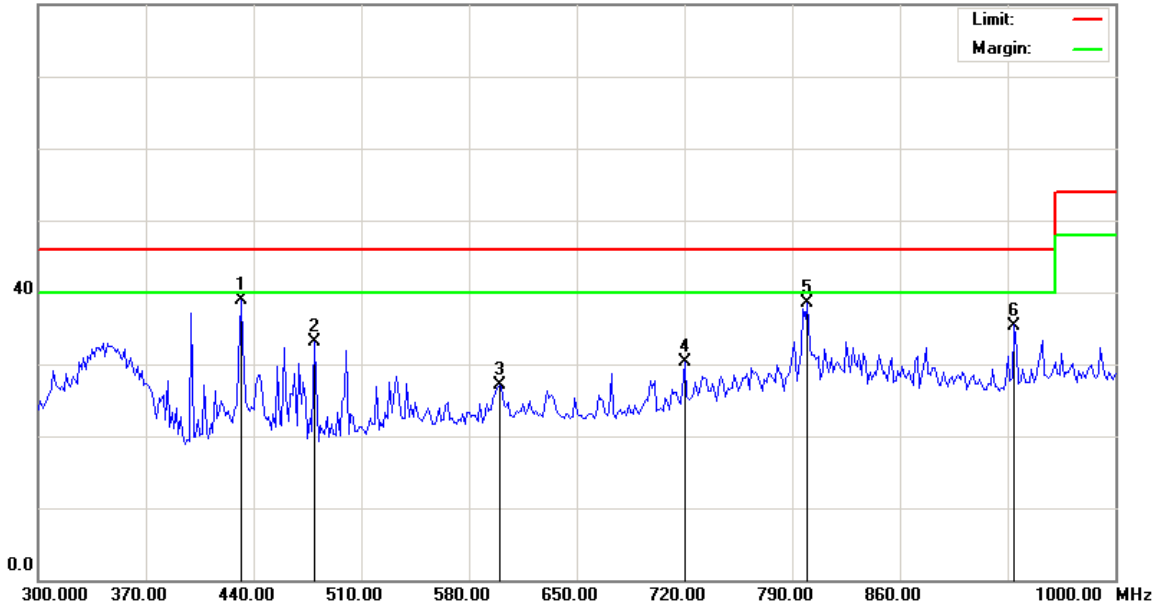
File :MARLIN_JABRA_A330(1G以下)

Data :#4

Date: 2007/07/13

Time: 14:16:26

80.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2402

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

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	431.6000	46.90	-8.03	38.87	46.00	-7.13	peak			
2		479.2000	40.79	-7.60	33.19	46.00	-12.81	peak			
3		599.6000	32.02	-4.91	27.11	46.00	-18.89	peak			
4		720.0000	33.83	-3.55	30.28	46.00	-15.72	peak			
5		799.8000	40.88	-2.32	38.56	46.00	-7.44	peak			
6		934.2000	35.46	-0.06	35.40	46.00	-10.60	peak			

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

●Reference Only



Radiated Emission Measurement

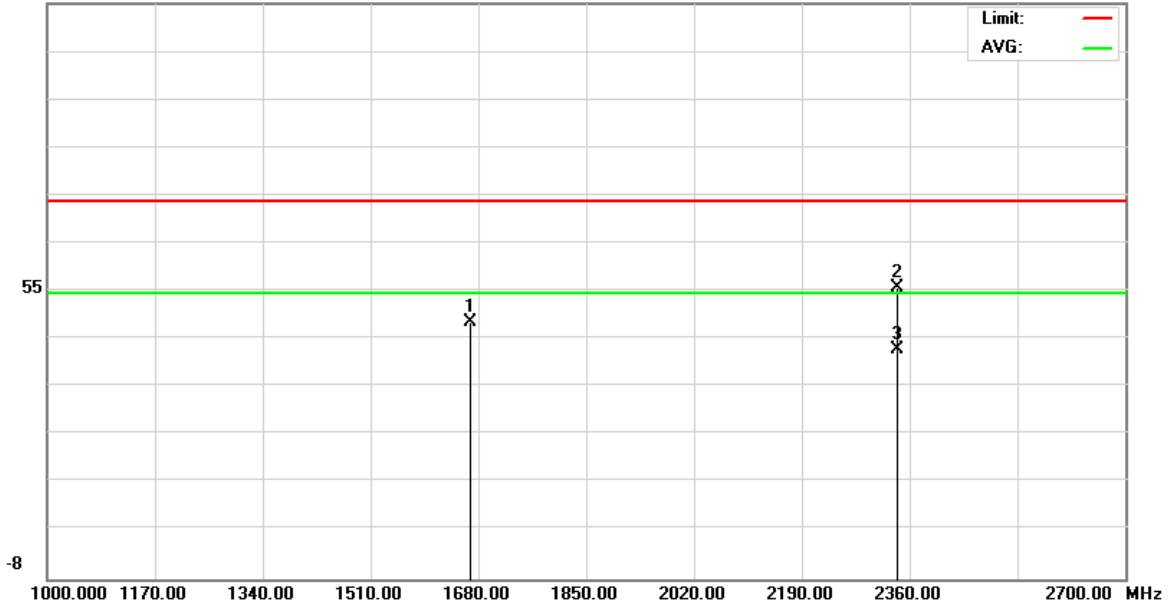
File :A330(2402)(07-16-2007)

Data :#1

Date: 2007/07/16

Time: 10:13:37

117.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode: 參數37

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		1666.400	51.56	-3.85	47.71	74.00	-26.29			peak
2		2339.600	54.92	0.25	55.17	74.00	-18.83			peak
3	*	2339.600	41.64	0.25	41.89	54.00	-12.11			AVG

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

●Reference Only



Radiated Emission Measurement

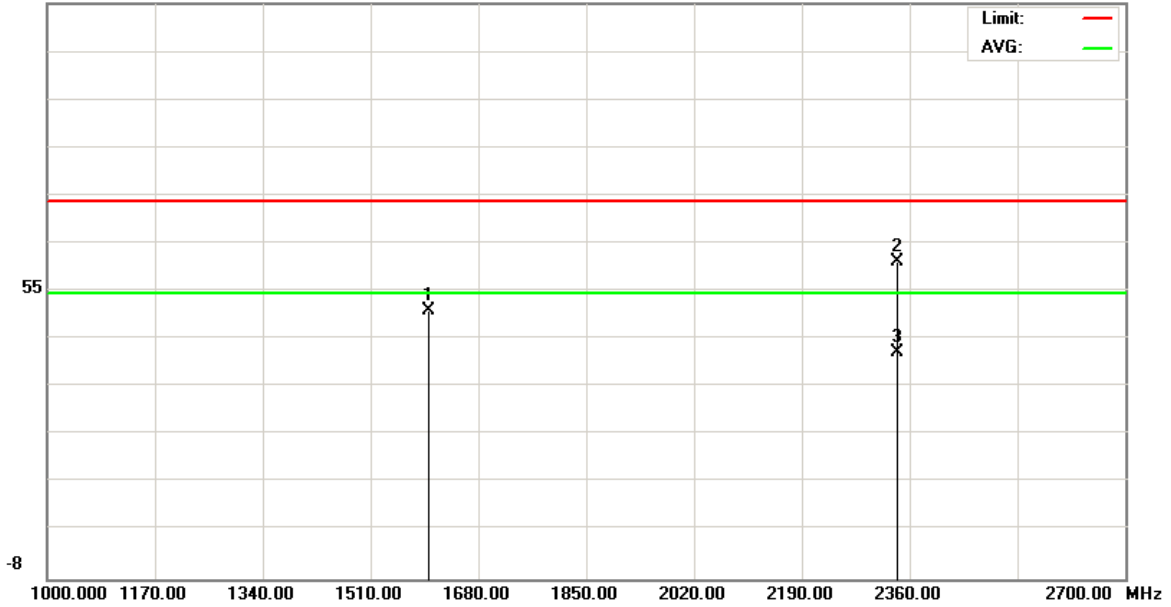
File :A330(2402)(07-16-2007)

Data :#3

Date: 2007/07/16

Time: 10:18:59

117.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode: 參數37

Note: 2402MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		1601.800	54.08	-3.73	50.35	74.00	-23.65	peak			
2		2339.600	60.52	0.25	60.77	74.00	-13.23	peak			
3	*	2339.600	40.96	0.25	41.21	54.00	-12.79	AVG			

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

●Reference Only



Radiated Emission Measurement

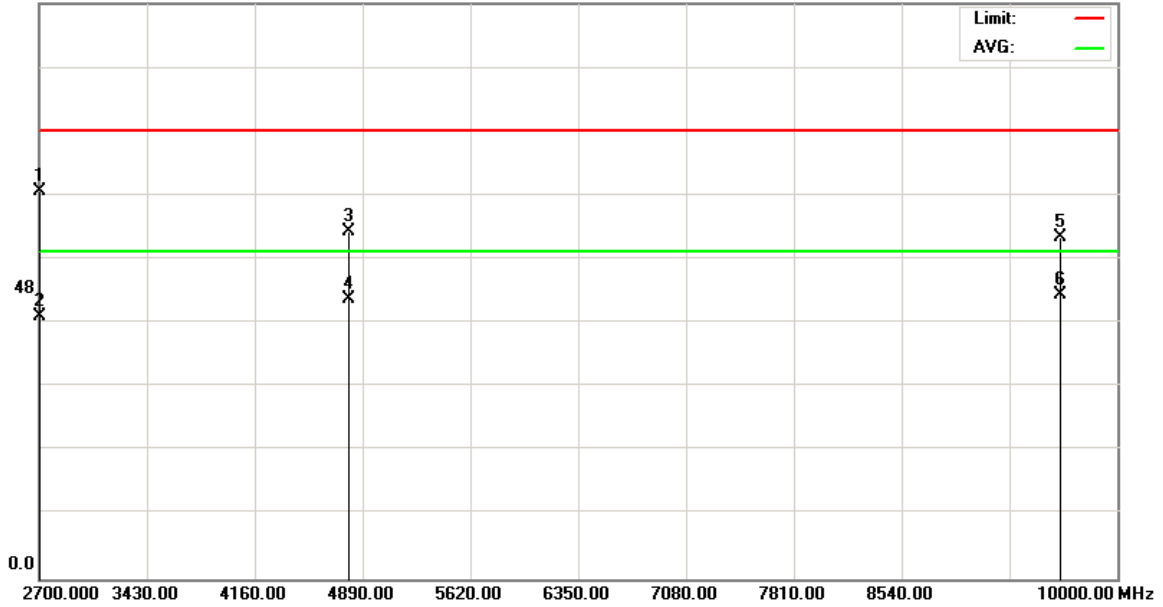
File :A330(2402)(07-16-2007)

Data :#5

Date: 2007/07/13

Time: 15:15:40

95.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode: 參數37

Note: 2402MHz

2.7G-10G 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	Detector	Antenna Height cm	Table Degree degree	Comment
1		2700.000	41.47	22.58	64.05	74.00	-9.95	peak			
2		2700.000	20.86	22.58	43.44	54.00	-10.56	AVG			
3		4798.750	50.02	7.29	57.31	74.00	-16.69	peak			
4		4798.750	38.79	7.29	46.08	54.00	-7.92	AVG			
5		9616.750	39.07	17.25	56.32	74.00	-17.68	peak			
6	*	9616.750	29.58	17.25	46.83	54.00	-7.17	AVG			

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

●Reference Only



Radiated Emission Measurement

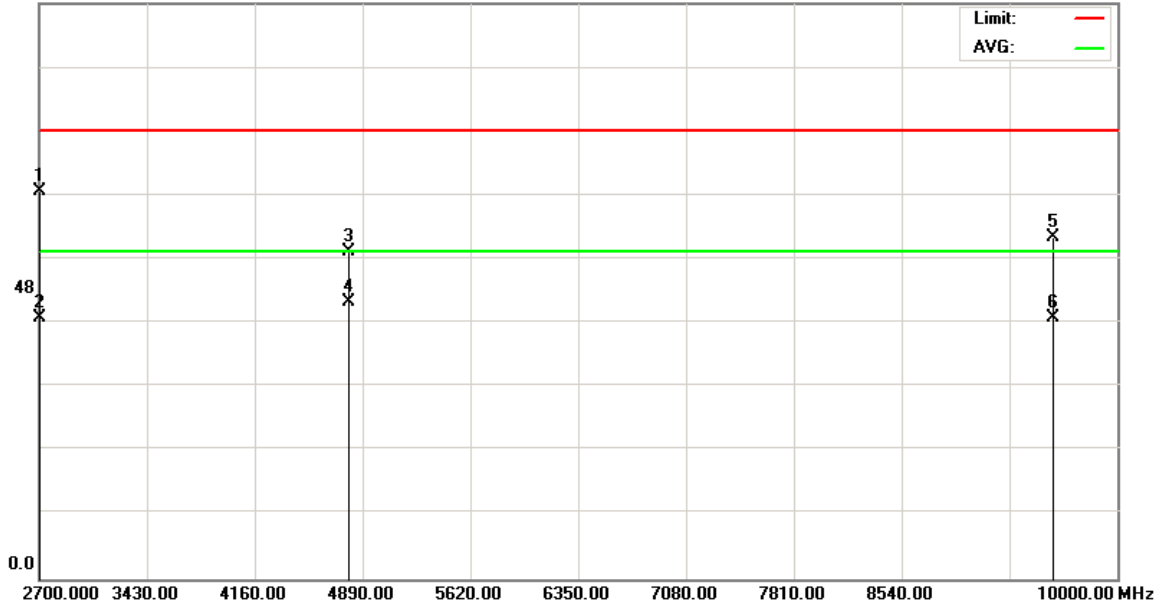
File :A330(2402)(07-16-2007)

Data :#7

Date: 2007/07/13

Time: 15:25:26

95.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode: 參數37

Note: 2402MHz(122cm)

2.7G-10G 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	Detector	Antenna Height cm	Table Degree degree	Comment
1		2700.000	41.40	22.58	63.98	74.00	-10.02	peak			
2		2700.000	20.53	22.58	43.11	54.00	-10.89	AVG			
3		4798.750	46.82	7.29	54.11	74.00	-19.89	peak			
4	*	4798.750	38.52	7.29	45.81	54.00	-8.19	AVG			
5		9562.000	39.19	17.21	56.40	74.00	-17.60	peak			
6		9562.000	25.93	17.21	43.14	54.00	-10.86	AVG			

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

●Reference Only



Radiated Emission Measurement

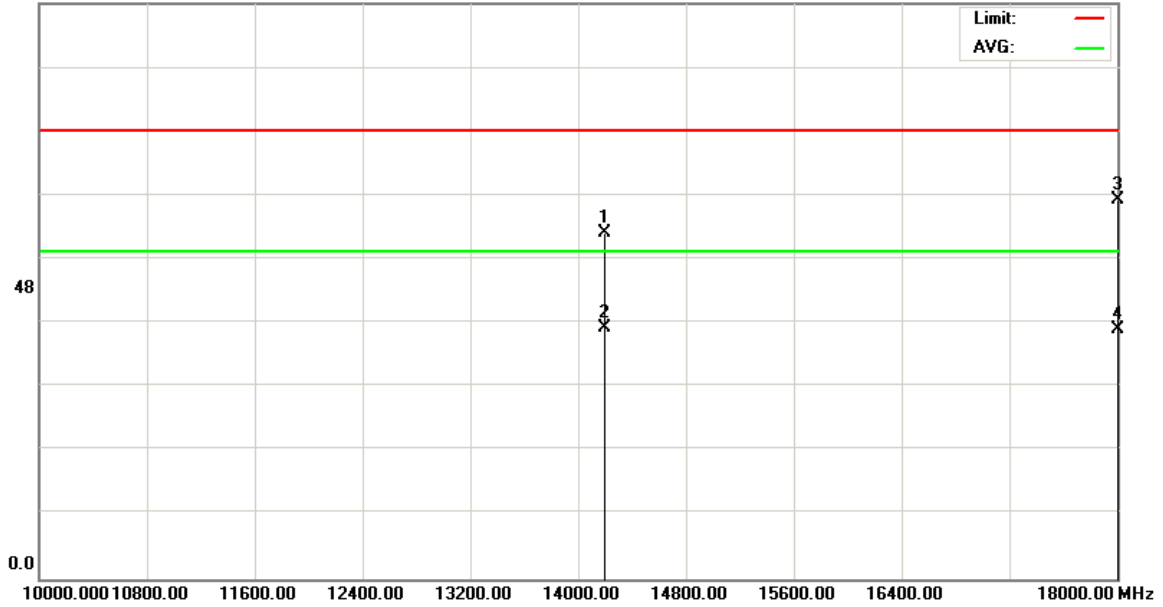
File :A330(2402)(07-16-2007)

Data :#9

Date: 2007/07/16

Time: 11:07:45

95.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: MARLIN_JABRA_A330

Mode: 參數37

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	Detector	Antenna Height cm	Table Degree degree	Comment
1		14200.00	38.19	18.86	57.05	74.00	-16.95	peak			
2		14200.00	22.68	18.86	41.54	54.00	-12.46	AVG			
3	*	18000.00	37.07	25.57	62.64	74.00	-11.36	peak			
4		18000.00	15.73	25.57	41.30	54.00	-12.70	AVG			

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

●Reference Only



Radiated Emission Measurement

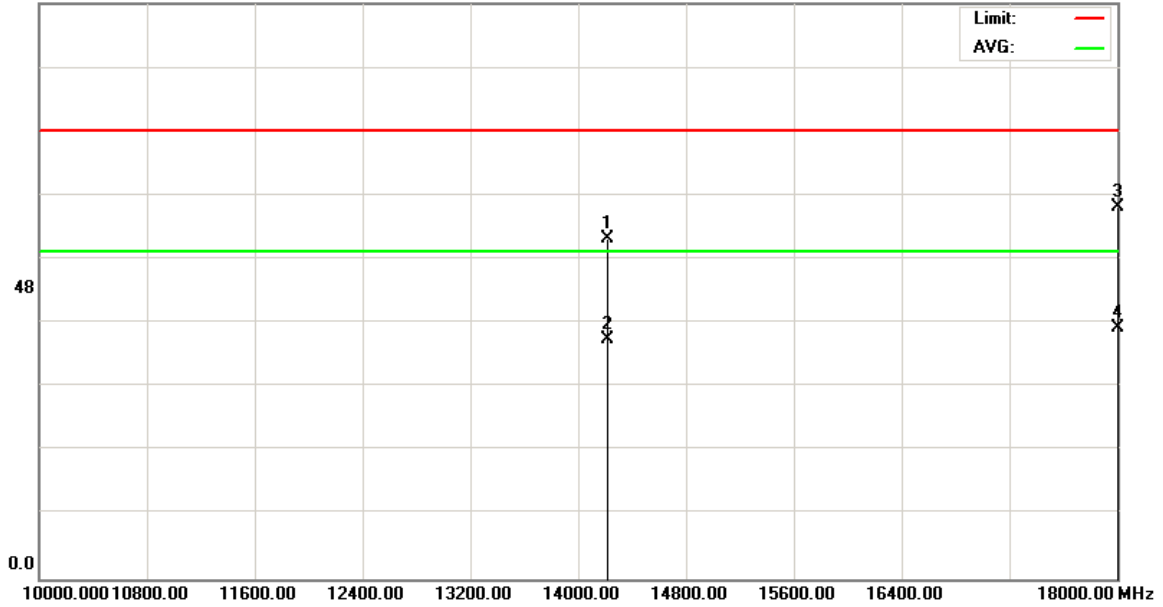
File :A330(2402)(07-16-2007)

Data :#11

Date: 2007/07/16

Time: 11:09:30

95.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: MARLIN_JABRA_A330

Mode: 參數37

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	Detector	Antenna Height cm	Table Degree degree	Comment
1		14220.00	37.30	18.78	56.08	74.00	-17.92	peak			
2		14220.00	20.79	18.78	39.57	54.00	-14.43	AVG			
3	*	18000.00	35.94	25.57	61.51	74.00	-12.49	peak			
4		18000.00	15.83	25.57	41.40	54.00	-12.60	AVG			

*: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 : GN Netcom Inc
Model No : A330
EUT : Bluetooth Dongle
Test Mode : Bluetooth 2.0 CH39 2441.000 (Local Frequency: 2441.000 MHz)
Test Date : 07/13 ~ 07/16/2007

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

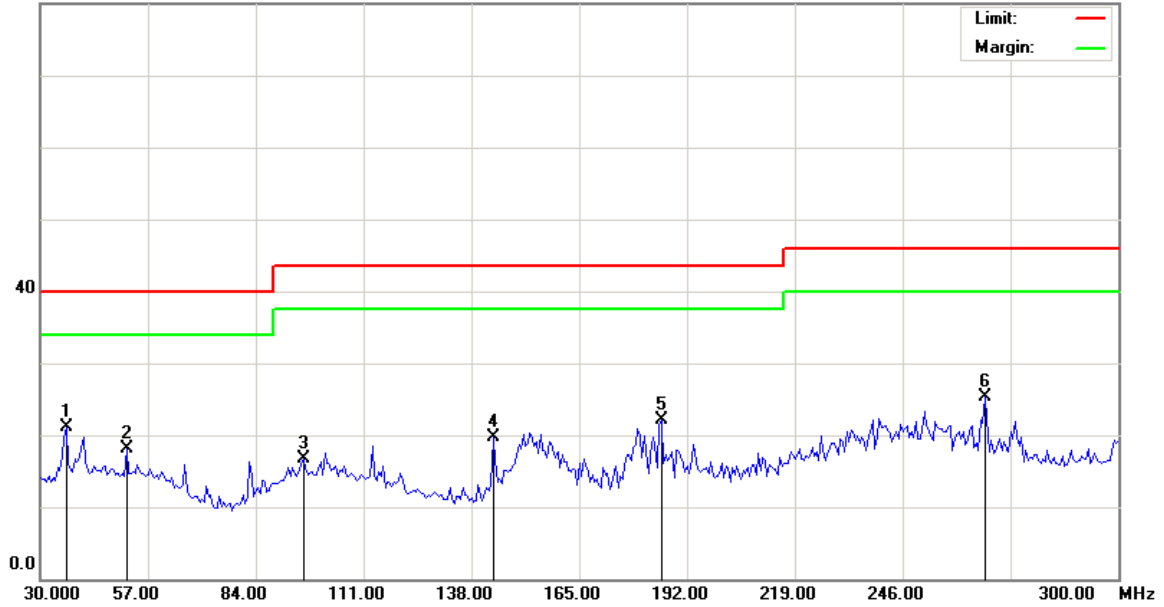
File :MARLIN_JABRA_A330(1G以下)

Data :#5

Date: 2007/07/13

Time: 14:21:25

80.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2441

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

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	36.4800	33.82	-12.80	21.02	40.00	-18.98	peak			
2		51.6000	30.22	-12.17	18.05	40.00	-21.95	peak			
3		95.8800	28.68	-11.99	16.69	43.50	-26.81	peak			
4		143.4000	35.96	-16.24	19.72	43.50	-23.78	peak			
5		185.5200	35.80	-13.76	22.04	43.50	-21.46	peak			
6		266.5200	36.31	-11.01	25.30	46.00	-20.70	peak			

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

●Reference Only



Radiated Emission Measurement

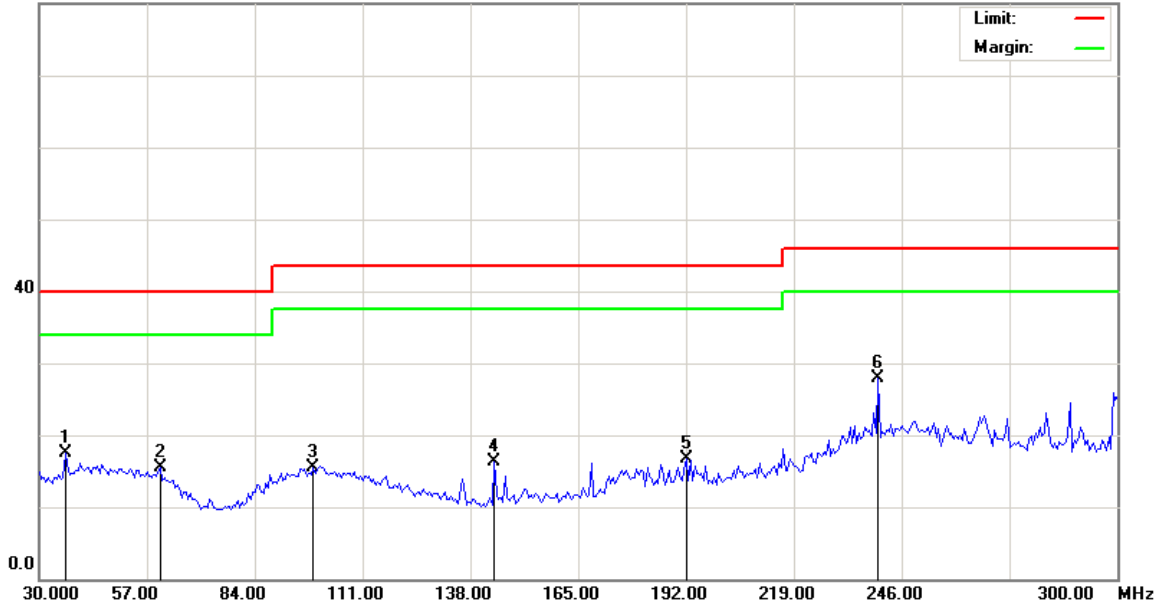
File :MARLIN_JABRA_A330(1G以下)

Data :#7

Date: 2007/07/13

Time: 14:29:57

80.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2441

2.7G-10G 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	Detector	Antenna Height cm	Table Degree degree	Comment
1		36.4800	30.31	-12.80	17.51	40.00	-22.49	peak			
2		60.2400	28.18	-12.63	15.55	40.00	-24.45	peak			
3		98.5800	27.30	-11.84	15.46	43.50	-28.04	peak			
4		143.9400	32.49	-16.22	16.27	43.50	-27.23	peak			
5		192.0000	29.87	-13.26	16.61	43.50	-26.89	peak			
6	*	240.0600	39.26	-11.43	27.83	46.00	-18.17	peak			

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

●Reference Only



Radiated Emission Measurement

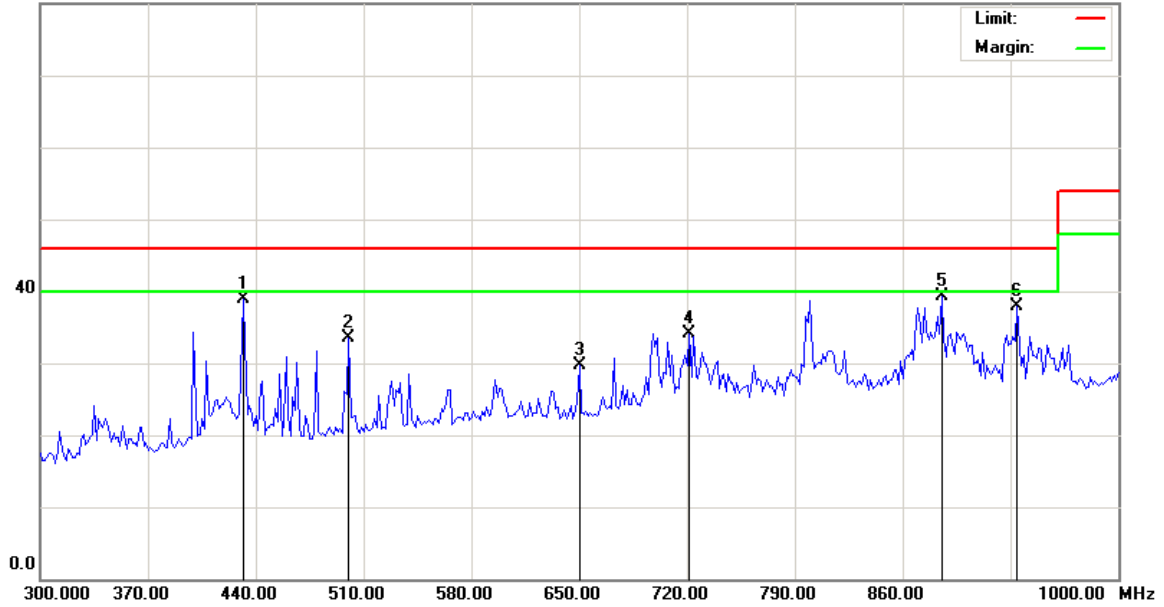
File :MARLIN_JABRA_A330(1G以下)

Data :#6

Date: 2007/07/13

Time: 14:25:41

80.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2441

2.7G-10G 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	Detector	Antenna Height cm	Table Degree degree	Comment
1		431.6000	46.99	-8.03	38.96	46.00	-7.04	peak			
2		500.2000	40.74	-7.17	33.57	46.00	-12.43	peak			
3		650.0000	33.70	-4.09	29.61	46.00	-16.39	peak			
4		721.4000	37.74	-3.54	34.20	46.00	-11.80	peak			
5	*	885.2000	39.47	-0.14	39.33	46.00	-6.67	peak			
6		934.2000	38.02	-0.06	37.96	46.00	-8.04	peak			

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

●Reference Only



Radiated Emission Measurement

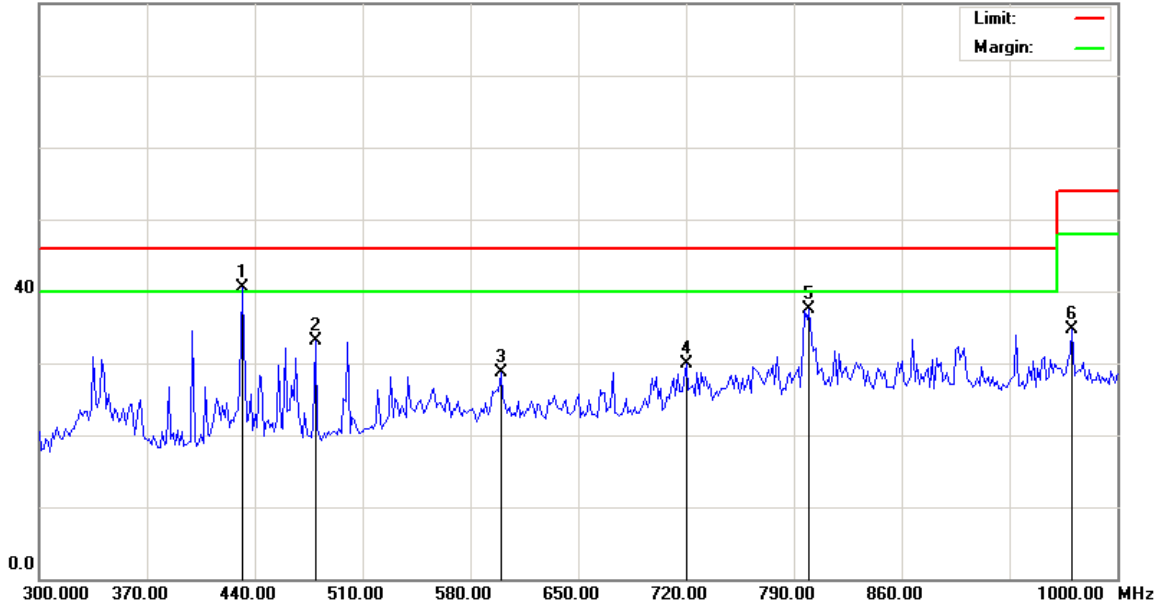
File :MARLIN_JABRA_A330(1G以下)

Data :#8

Date: 2007/07/13

Time: 14:34:13

80.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2441

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

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	431.6000	48.62	-8.03	40.59	46.00	-5.41	peak			
2		479.2000	40.77	-7.60	33.17	46.00	-12.83	peak			
3		599.6000	33.67	-4.91	28.76	46.00	-17.24	peak			
4		720.0000	33.44	-3.55	29.89	46.00	-16.11	peak			
5		799.8000	39.86	-2.32	37.54	46.00	-8.46	peak			
6		970.6000	33.96	0.72	34.68	54.00	-19.32	peak			

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

●Reference Only



Radiated Emission Measurement

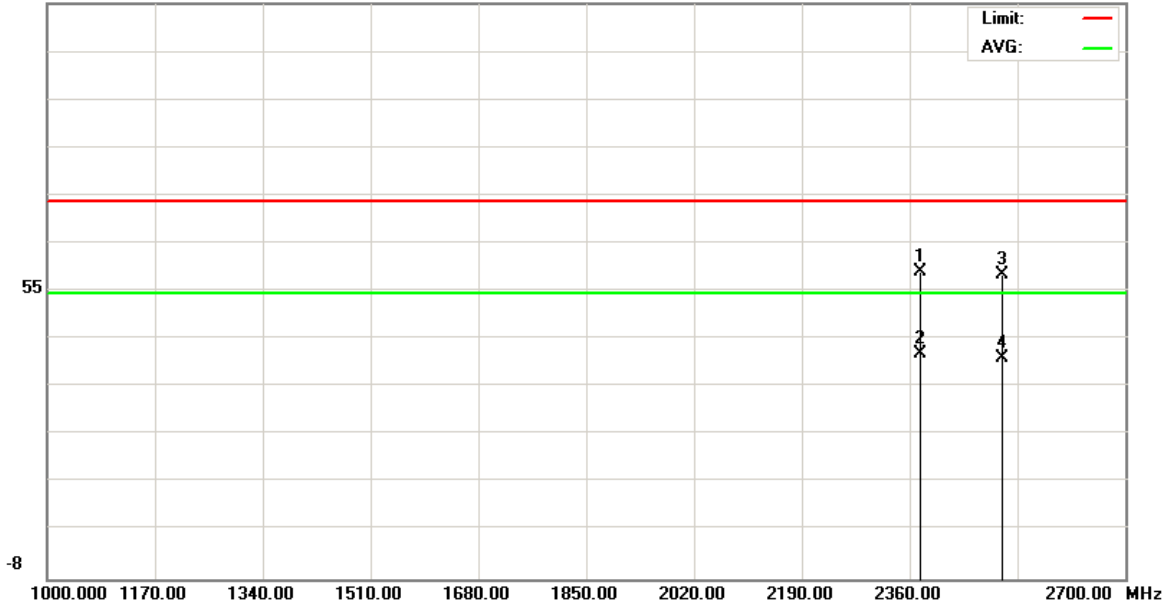
File :A330(2441)(07-16-2007)

Data :#1

Date: 2007/07/16

Time: 10:25:36

117.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode: 參數37

Note: 2441MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		2377.000	58.57	0.16	58.73	74.00	-15.27	peak			
2	*	2377.000	40.88	0.16	41.04	54.00	-12.96	AVG			
3		2506.200	57.68	0.31	57.99	74.00	-16.01	peak			
4		2506.200	39.76	0.31	40.07	54.00	-13.93	AVG			

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

●Reference Only



Radiated Emission Measurement

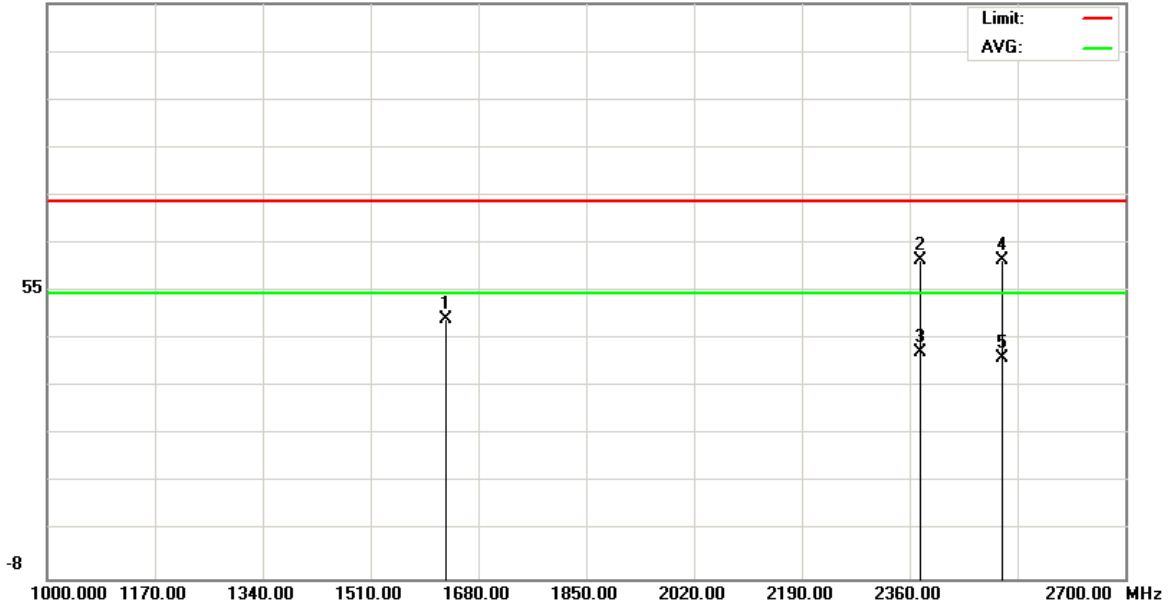
File :A330(2441)(07-16-2007)

Data :#3

Date: 2007/07/16

Time: 10:36:32

117.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode: 參數37

Note: 2441MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		1629.000	52.27	-3.87	48.40	74.00	-25.60	peak			
2		2377.000	61.04	0.16	61.20	74.00	-12.80	peak			
3	*	2377.000	41.11	0.16	41.27	54.00	-12.73	AVG			
4		2506.200	60.90	0.31	61.21	74.00	-12.79	peak			
5		2506.200	39.78	0.31	40.09	54.00	-13.91	AVG			

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

●Reference Only



Radiated Emission Measurement

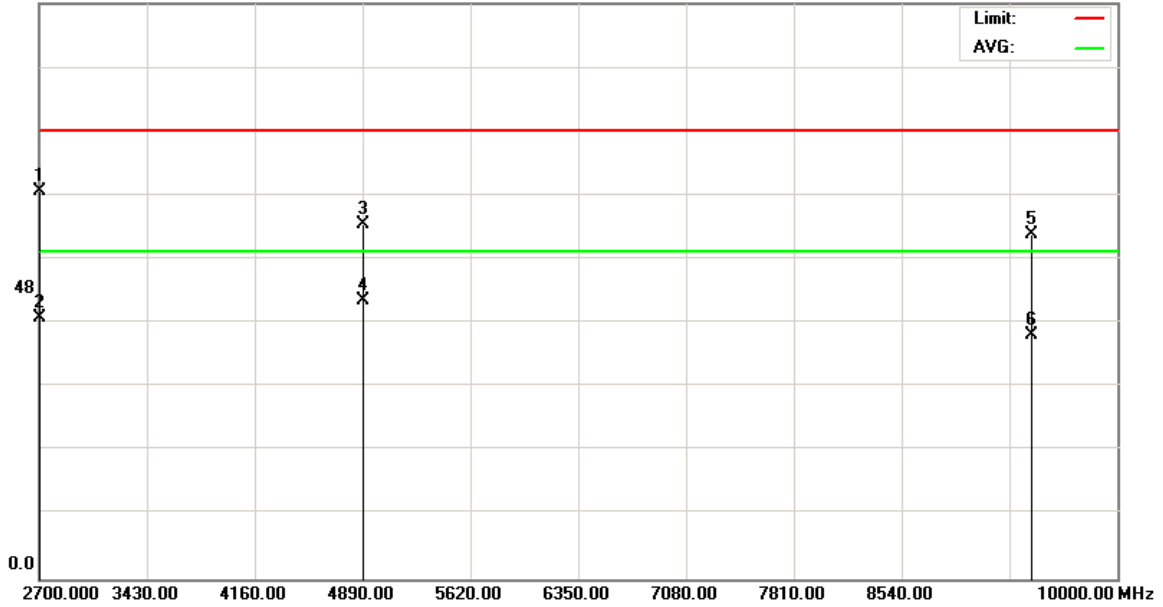
File :A330(2441)(07-16-2007)

Data :#5

Date: 2007/07/13

Time: 15:51:17

95.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode: 參數37

Note: 2441MHz

2.7G-10G 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	Detector	Antenna Height cm	Table Degree degree	Comment
1		2700.000	41.47	22.58	64.05	74.00	-9.95	peak			
2		2700.000	20.53	22.58	43.11	54.00	-10.89	AVG			
3		4890.000	50.76	7.73	58.49	74.00	-15.51	peak			
4	*	4890.000	38.12	7.73	45.85	54.00	-8.15	AVG			
5		9416.000	39.89	17.07	56.96	74.00	-17.04	peak			
6		9416.000	23.24	17.07	40.31	54.00	-13.69	AVG			

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

●Reference Only



Radiated Emission Measurement

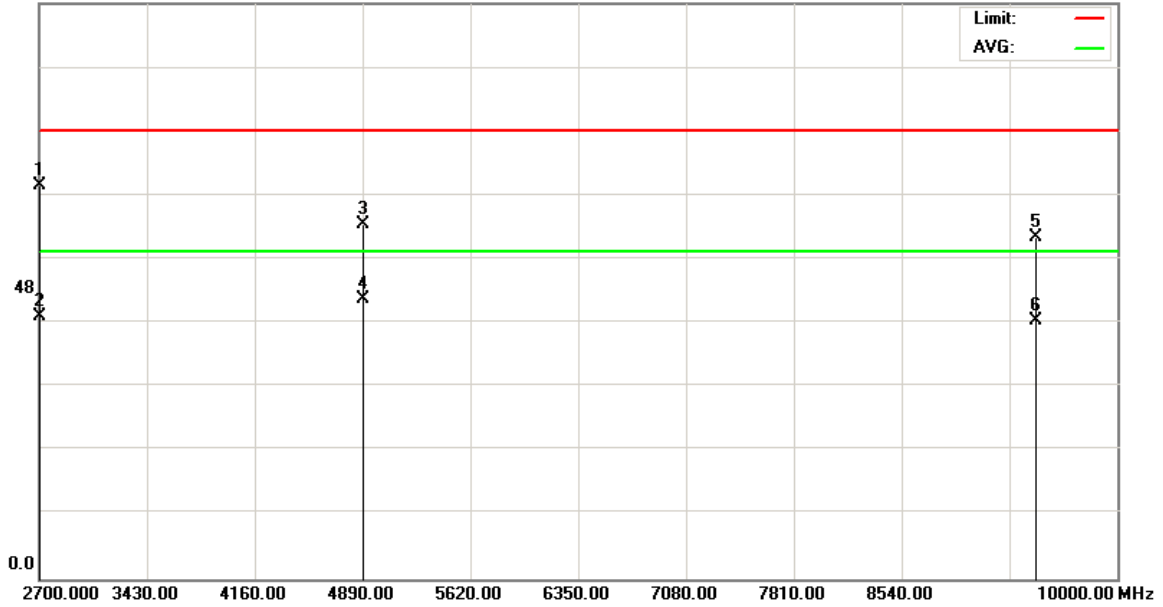
File :A330(2441)(07-16-2007)

Data :#7

Date: 2007/07/13

Time: 15:59:10

95.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode: 參數37

Note: 2441MHz

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	42.33	22.58	64.91	74.00	-9.09			peak
2		2700.000	20.79	22.58	43.37	54.00	-10.63			AVG
3		4890.000	50.83	7.73	58.56	74.00	-15.44			peak
4	*	4890.000	38.46	7.73	46.19	54.00	-7.81			AVG
5		9452.500	39.46	17.00	56.46	74.00	-17.54			peak
6		9452.500	25.55	17.00	42.55	54.00	-11.45			AVG

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

●Reference Only



Radiated Emission Measurement

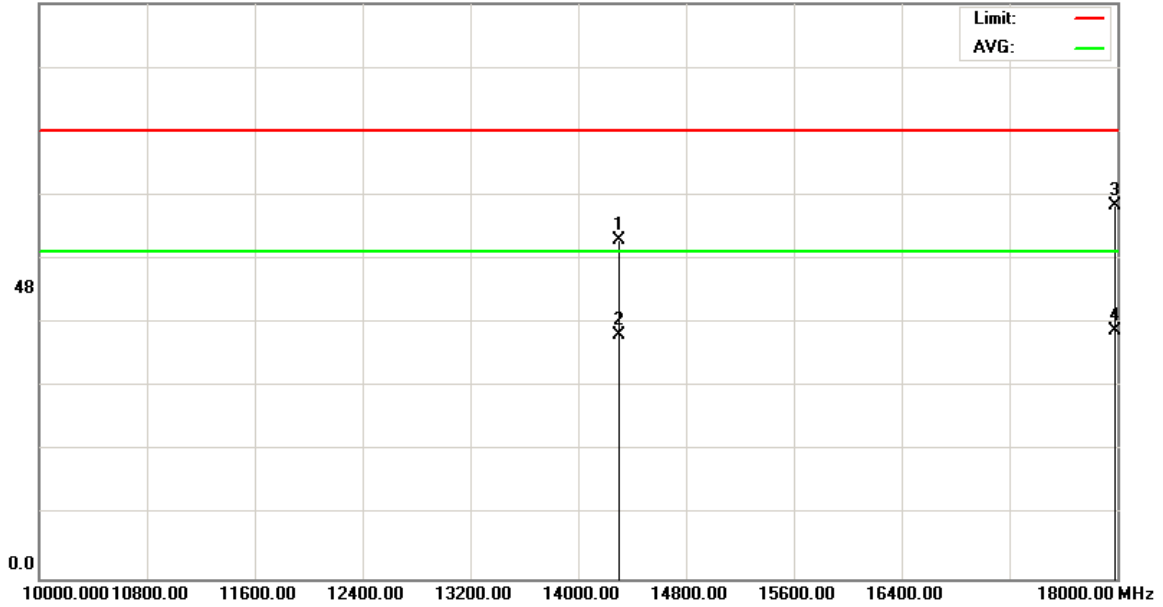
File :A330(2441)(07-16-2007)

Data :#9

Date: 2007/07/16

Time: 11:10:49

95.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: MARLIN_JABRA_A330

Mode: 參數37

Note: 2441MHz

2.7G-10G AV Scan

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		14300.00	37.42	18.61	56.03	74.00	-17.97	peak			
2		14300.00	21.55	18.61	40.16	54.00	-13.84	AVG			
3	*	17980.00	36.40	25.21	61.61	74.00	-12.39	peak			
4		17980.00	15.86	25.21	41.07	54.00	-12.93	AVG			

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

●Reference Only



Radiated Emission Measurement

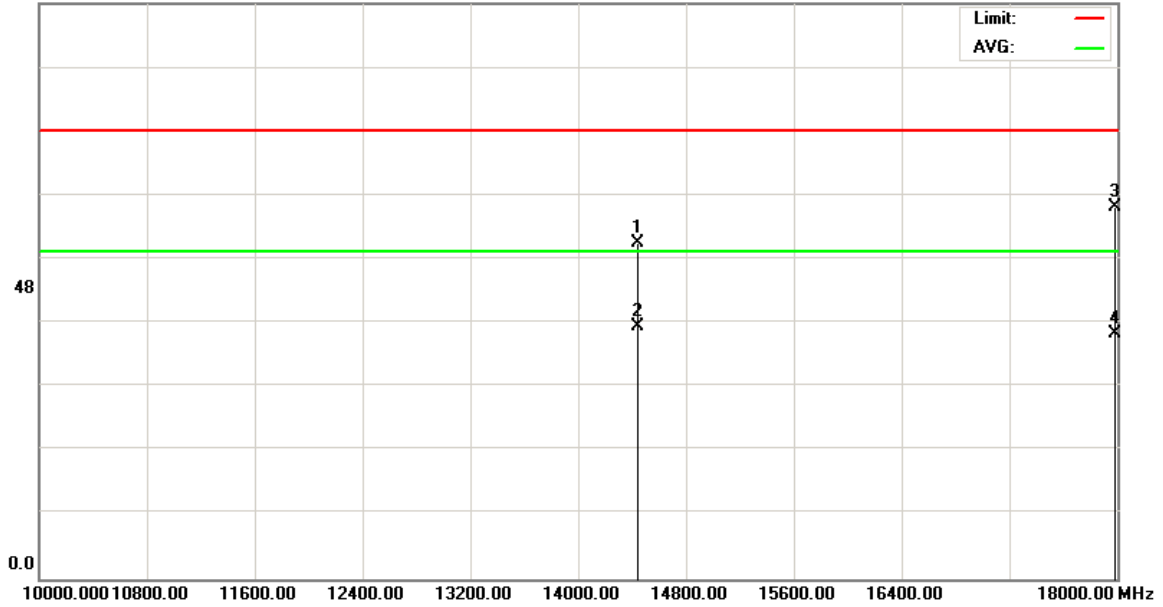
File :A330(2441)(07-16-2007)

Data :#11

Date: 2007/07/16

Time: 11:12:12

95.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: MARLIN_JABRA_A330

Mode: 參數37

Note: 2441MHz

2.7G-10G AV Scan

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		14440.00	37.50	18.00	55.50	74.00	-18.50	peak			
2	*	14440.00	23.68	18.00	41.68	54.00	-12.32	AVG			
3		17980.00	36.29	25.21	61.50	74.00	-12.50	peak			
4		17980.00	15.39	25.21	40.60	54.00	-13.40	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 : GN Netcom Inc
Model No : A330
EUT : Bluetooth Dongle
Test Mode : Bluetooth 2.0 CH78 2480.000 (Local Frequency: 2480.000 MHz)
Test Date : 07/13 ~ 07/16/2007

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

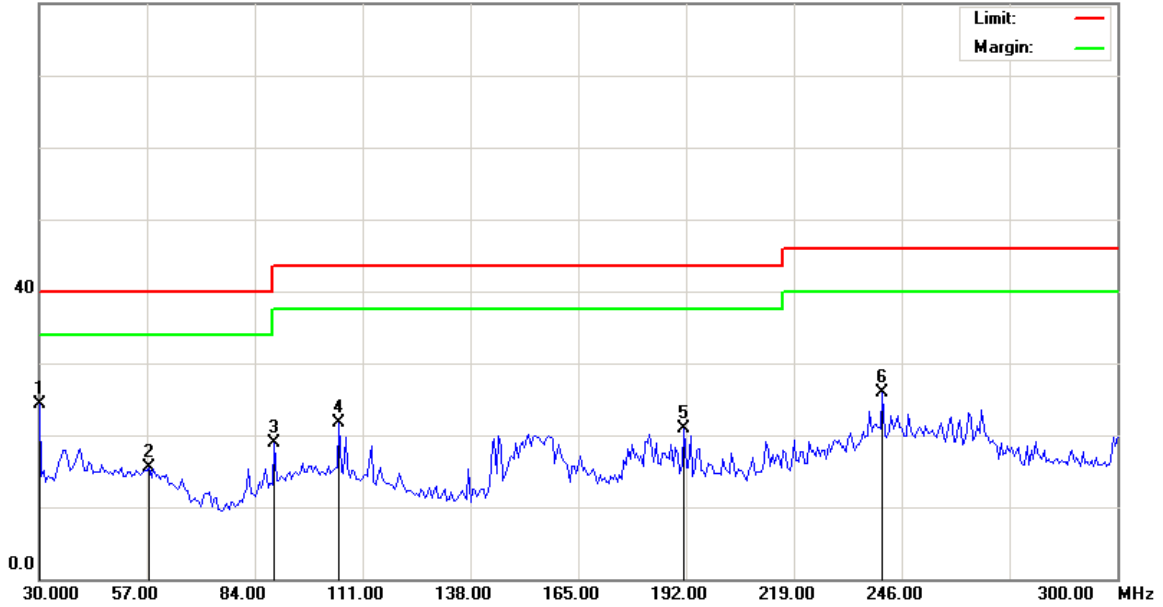
File :MARLIN_JABRA_A330(1G以下)

Data :#9

Date: 2007/07/13

Time: 14:38:54

80.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2480

2.7G-10G 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	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	30.0000	37.84	-13.49	24.35	40.00	-15.65	peak			
2		57.5400	27.92	-12.38	15.54	40.00	-24.46	peak			
3		88.8600	32.39	-13.53	18.86	43.50	-24.64	peak			
4		105.0600	33.87	-12.09	21.78	43.50	-21.72	peak			
5		191.4600	34.12	-13.29	20.83	43.50	-22.67	peak			
6		241.1400	37.26	-11.39	25.87	46.00	-20.13	peak			

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

●Reference Only



Radiated Emission Measurement

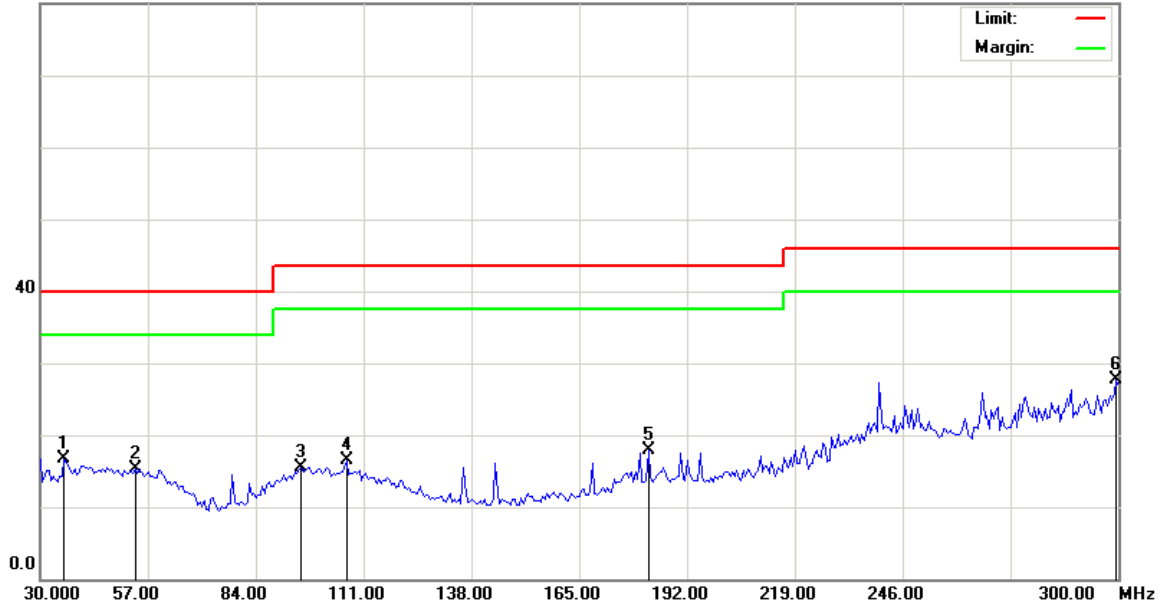
File :MARLIN_JABRA_A330(1G以下)

Data :#11

Date: 2007/07/13

Time: 14:47:26

80.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2480

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

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		35.9400	29.66	-12.95	16.71	40.00	-23.29	peak			
2		53.7600	27.59	-12.19	15.40	40.00	-24.60	peak			
3		95.3399	27.57	-12.02	15.55	43.50	-27.95	peak			
4		106.6800	28.68	-12.23	16.45	43.50	-27.05	peak			
5		182.2800	32.00	-14.09	17.91	43.50	-25.59	peak			
6	*	299.4600	37.68	-10.00	27.68	46.00	-18.32	peak			

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

●Reference Only



Radiated Emission Measurement

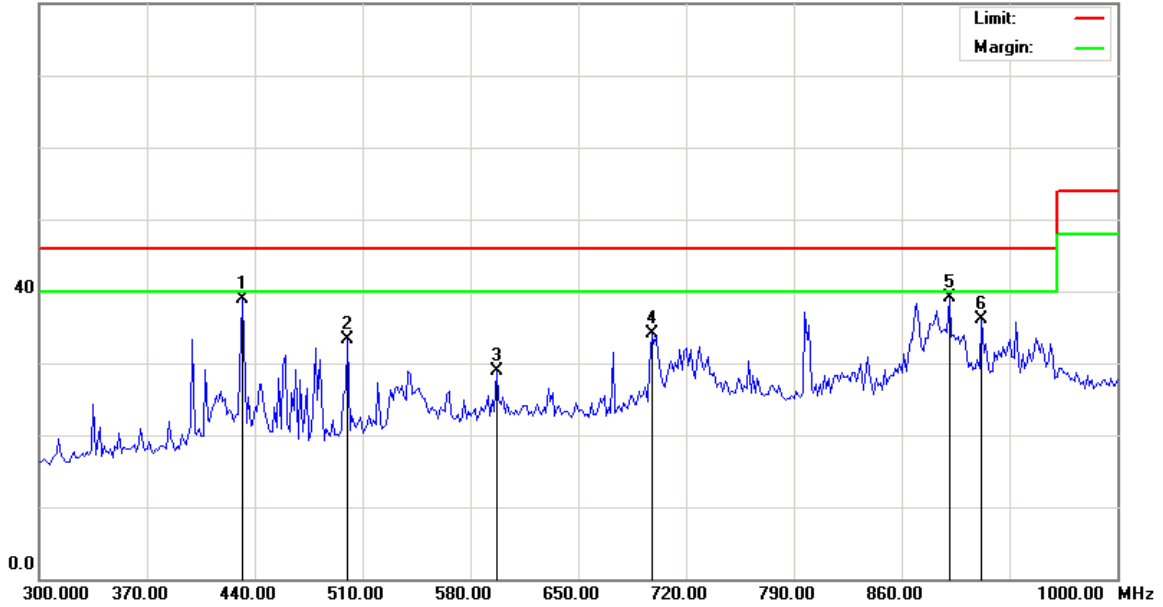
File :MARLIN_JABRA_A330(1G以下)

Data :#10

Date: 2007/07/13

Time: 14:43:10

80.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2480

2.7G-10G 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	Detector	Antenna Height cm	Table Degree degree	Comment
1		431.6000	46.95	-8.03	38.92	46.00	-7.08	peak			
2		500.2000	40.54	-7.17	33.37	46.00	-12.63	peak			
3		596.8000	33.72	-4.88	28.84	46.00	-17.16	peak			
4		697.6000	37.92	-3.86	34.06	46.00	-11.94	peak			
5	*	890.8000	39.84	-0.79	39.05	46.00	-6.95	peak			
6		911.8000	36.14	-0.10	36.04	46.00	-9.96	peak			

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

●Reference Only



Radiated Emission Measurement

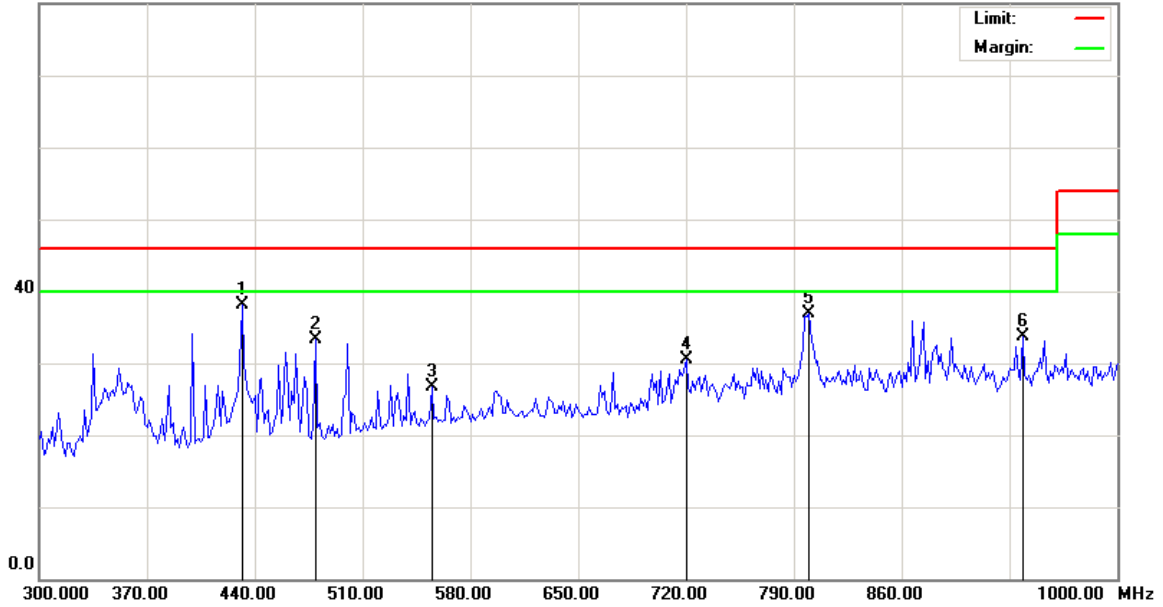
File :MARLIN_JABRA_A330(1G以下)

Data :#12

Date: 2007/07/13

Time: 14:51:43

80.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2480

2.7G-10G 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	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	431.6000	46.11	-8.03	38.08	46.00	-7.92	peak			
2		479.2000	40.89	-7.60	33.29	46.00	-12.71	peak			
3		554.8000	32.58	-5.82	26.76	46.00	-19.24	peak			
4		720.0000	33.99	-3.55	30.44	46.00	-15.56	peak			
5		799.8000	39.24	-2.32	36.92	46.00	-9.08	peak			
6		938.4000	33.52	0.19	33.71	46.00	-12.29	peak			

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

●Reference Only



Radiated Emission Measurement

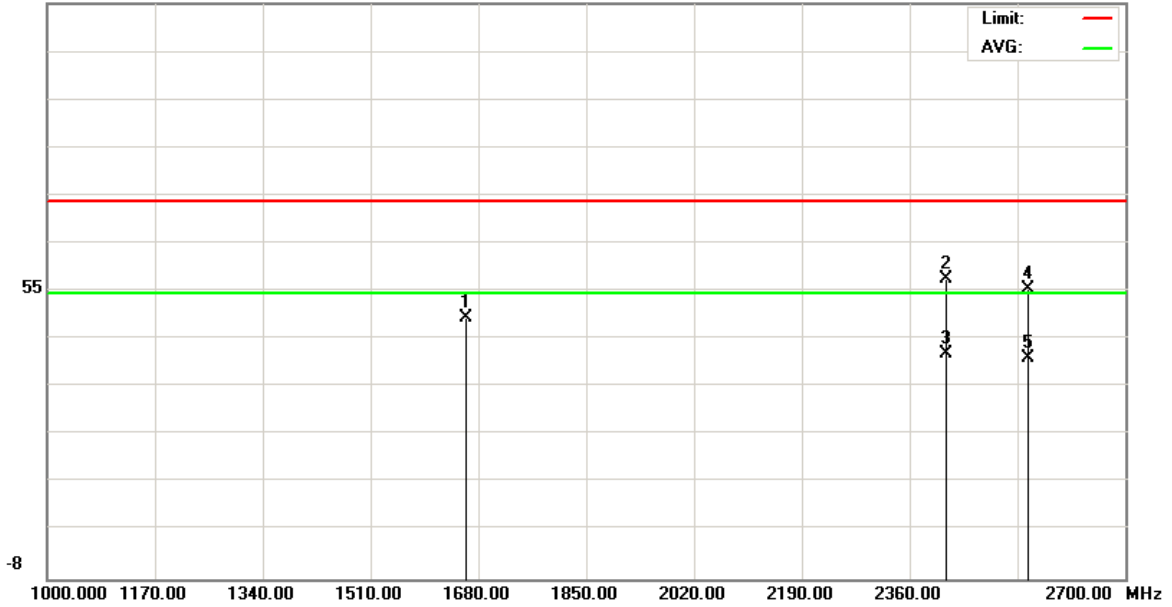
File :A330(2480)(07-16-2007)

Data :#1

Date: 2007/07/16

Time: 10:43:36

117.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode: 參數37

Note: 2480MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		1659.600	52.52	-3.81	48.71	74.00	-25.29	peak			
2		2417.800	57.18	0.08	57.26	74.00	-16.74	peak			
3	*	2417.800	40.96	0.08	41.04	54.00	-12.96	AVG			
4		2547.000	54.48	0.39	54.87	74.00	-19.13	peak			
5		2547.000	39.58	0.39	39.97	54.00	-14.03	AVG			

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

●Reference Only



Radiated Emission Measurement

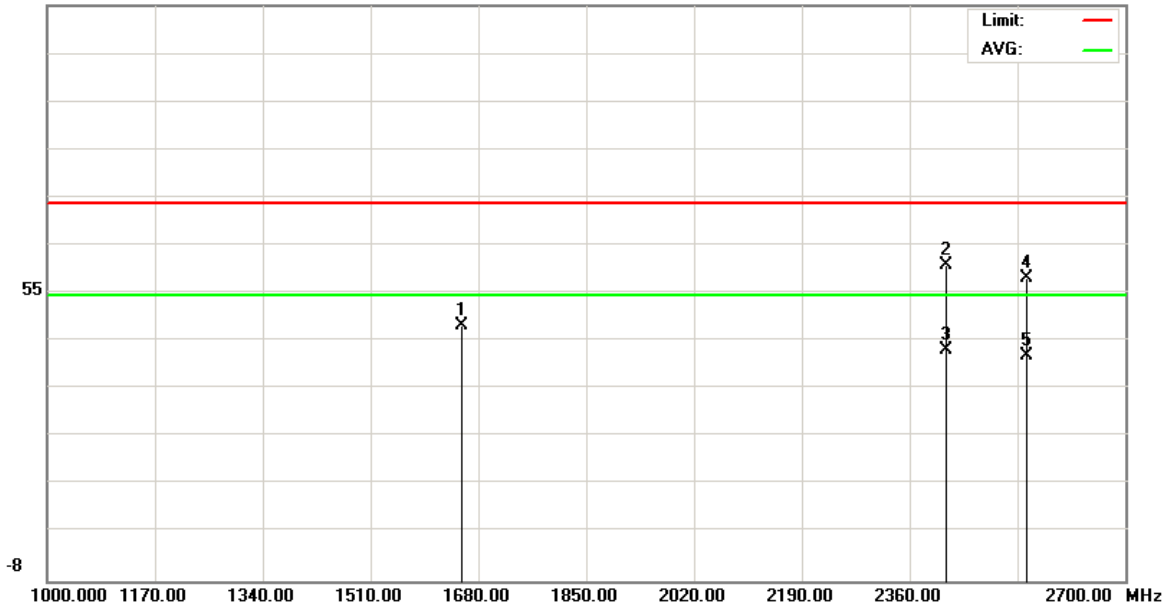
File :A330(2480)(07-16-2007)

Data :#3

Date: 2007/07/16

Time: 10:51:03

117.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode: 參數37

Note: 2480MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		1652.800	51.25	-3.80	47.45	74.00	-26.55	peak			
2		2417.800	60.64	0.08	60.72	74.00	-13.28	peak			
3	*	2417.800	41.98	0.08	42.06	54.00	-11.94	AVG			
4		2543.600	57.36	0.43	57.79	74.00	-16.21	peak			
5		2543.600	40.33	0.43	40.76	54.00	-13.24	AVG			

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

●Reference Only



Radiated Emission Measurement

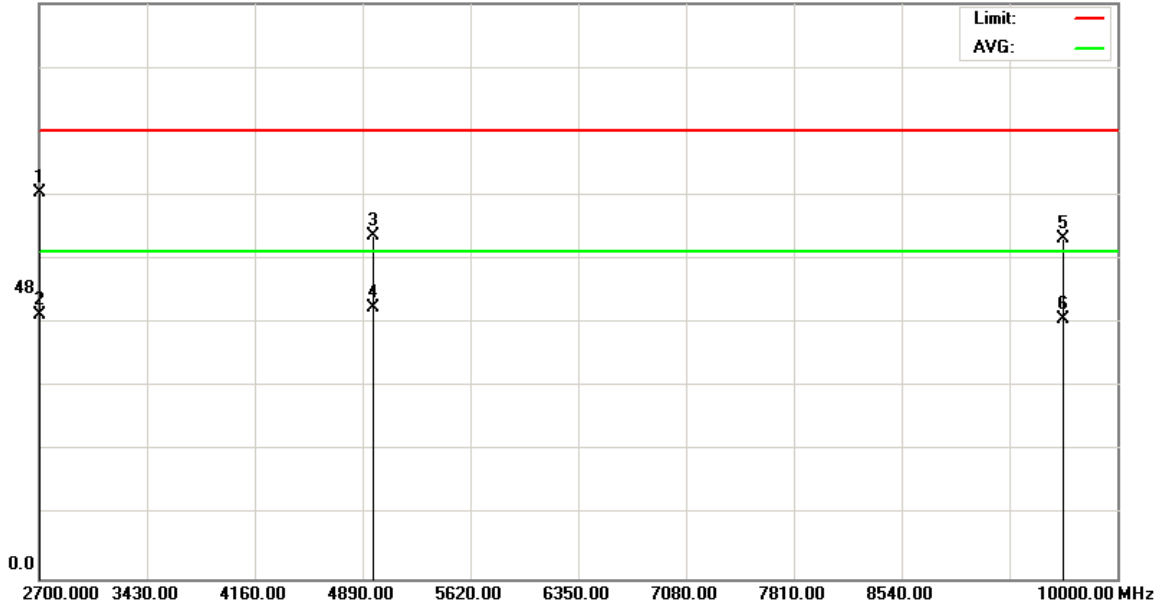
File :A330(2480)(07-16-2007)

Data :#5

Date: 2007/07/13

Time: 16:12:02

95.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode: 參數37

Note: 2480MHz

2.7G-10G 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	Detector	Antenna Height cm	Table Degree degree	Comment
1		2700.000	41.17	22.58	63.75	74.00	-10.25	peak			
2		2700.000	21.11	22.58	43.69	54.00	-10.31	AVG			
3		4963.000	48.91	7.82	56.73	74.00	-17.27	peak			
4	*	4963.000	36.96	7.82	44.78	54.00	-9.22	AVG			
5		9635.000	39.09	17.06	56.15	74.00	-17.85	peak			
6		9635.000	25.83	17.06	42.89	54.00	-11.11	AVG			

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

●Reference Only



Radiated Emission Measurement

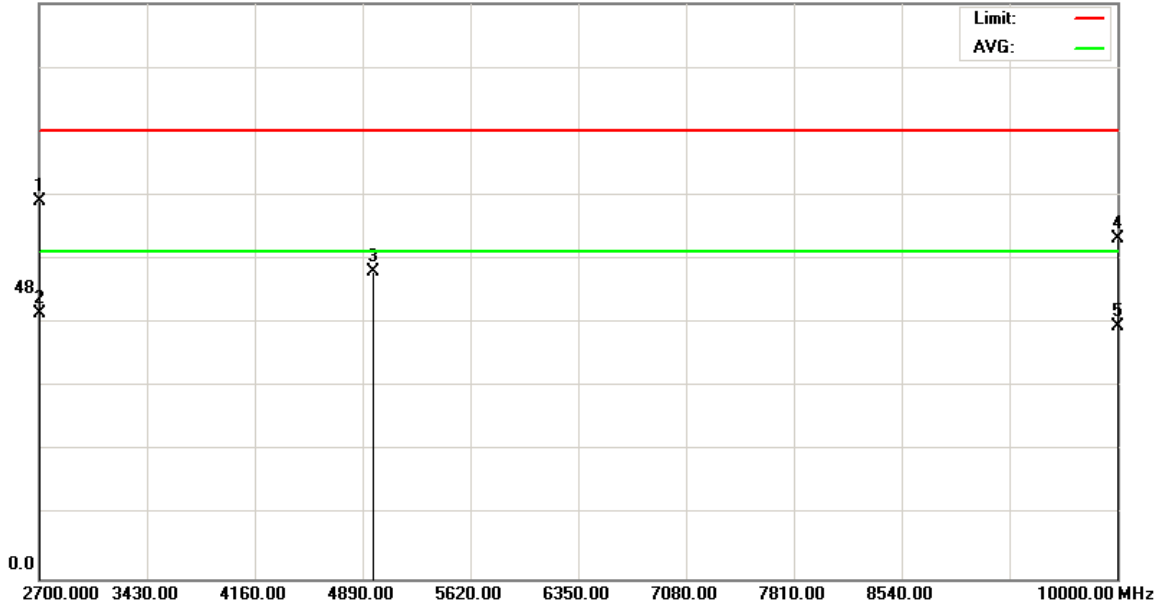
File :A330(2480)(07-16-2007)

Data :#7

Date: 2007/07/13

Time: 16:43:45

95.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode: 參數37

Note: 2480MHz

2.7G-10G 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	Detector	Antenna Height cm	Table Degree degree	Comment
1		2700.000	39.67	22.58	62.25	74.00	-11.75	peak			
2	*	2700.000	21.22	22.58	43.80	54.00	-10.20	AVG			
3		4963.000	42.87	7.82	50.69	74.00	-23.31	peak			
4		10000.00	38.32	17.94	56.26	74.00	-17.74	peak			
5		10000.00	23.75	17.94	41.69	54.00	-12.31	AVG			

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

●Reference Only



Radiated Emission Measurement

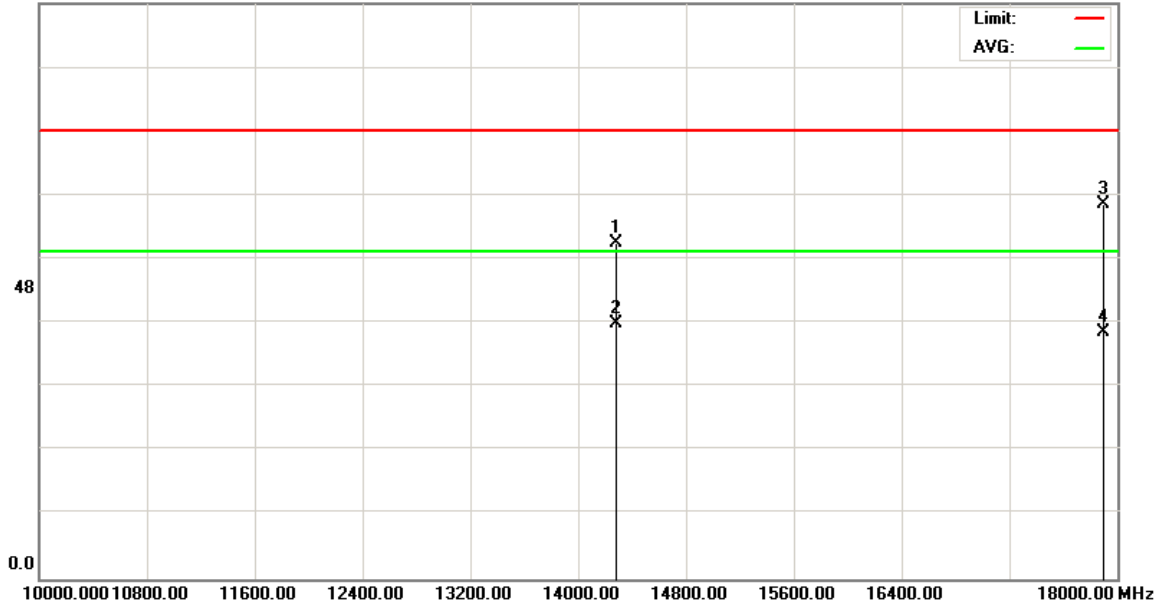
File :A330(2480)(07-16-2007)

Data :#9

Date: 2007/07/16

Time: 11:13:22

95.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: MARLIN_JABRA_A330

Mode: 參數37

Note: 2480MHz

2.7G-10G 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	Detector	Antenna Height cm	Table Degree degree	Comment
1		14280.00	36.78	18.63	55.41	74.00	-18.59	peak			
2	*	14280.00	23.55	18.63	42.18	54.00	-11.82	AVG			
3		17900.00	36.84	24.96	61.80	74.00	-12.20	peak			
4		17900.00	15.78	24.96	40.74	54.00	-13.26	AVG			

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

●Reference Only



Radiated Emission Measurement

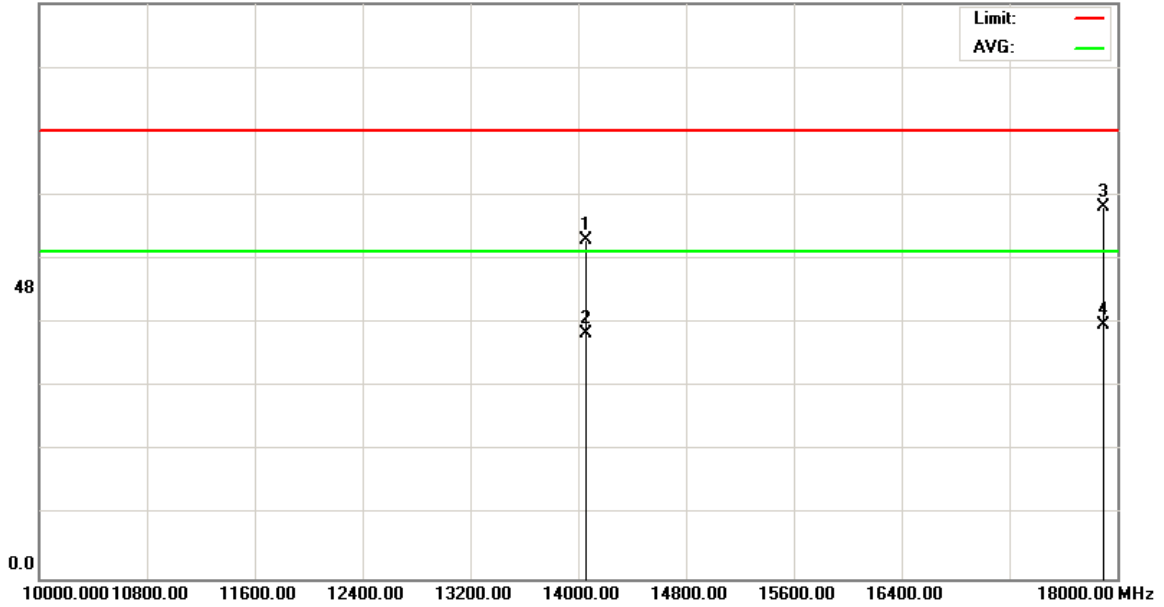
File :A330(2480)(07-16-2007)

Data :#11

Date: 2007/07/16

Time: 11:14:26

95.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 1m

M/N: MARLIN_JABRA_A330

Mode: 參數37

Note: 2480MHz

2.7G-10G 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	Detector	Antenna Height cm	Table Degree degree	Comment
1		14060.00	37.31	18.72	56.03	74.00	-17.97	peak			
2		14060.00	21.79	18.72	40.51	54.00	-13.49	AVG			
3		17900.00	36.49	24.96	61.45	74.00	-12.55	peak			
4	*	17900.00	16.91	24.96	41.87	54.00	-12.13	AVG			

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

●Reference Only

4. Maximum Conducted Output Power Requirements

4.1 Test Condition & Setup:

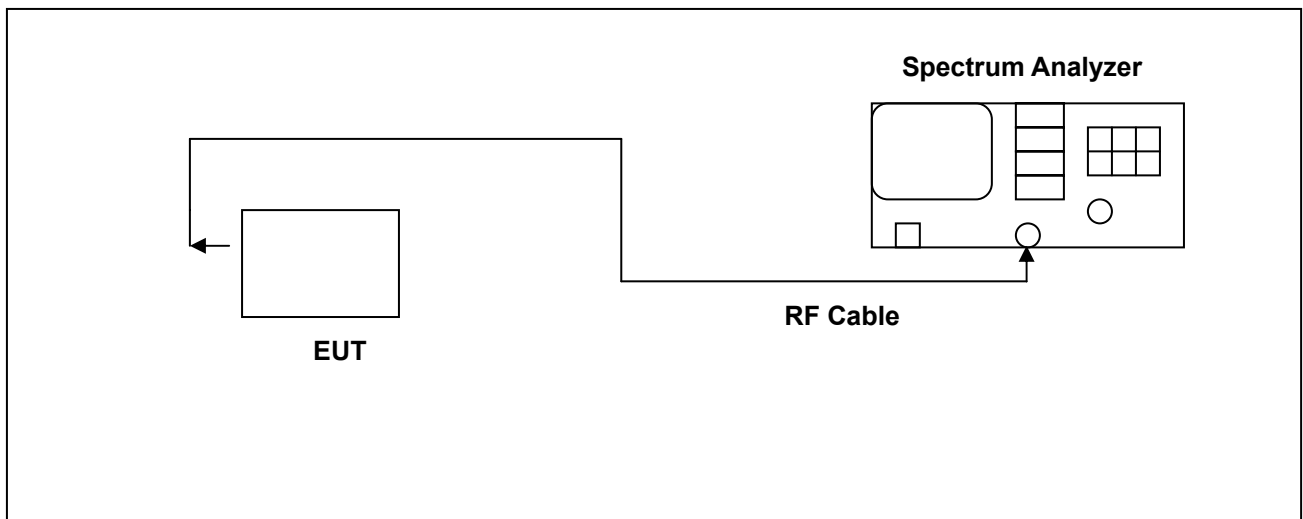
The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to spectrum analyzer. 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. 11, 2006	Nov. 11, 2007

4.4 Test Result _ Bluetooth 2.0 Mode:

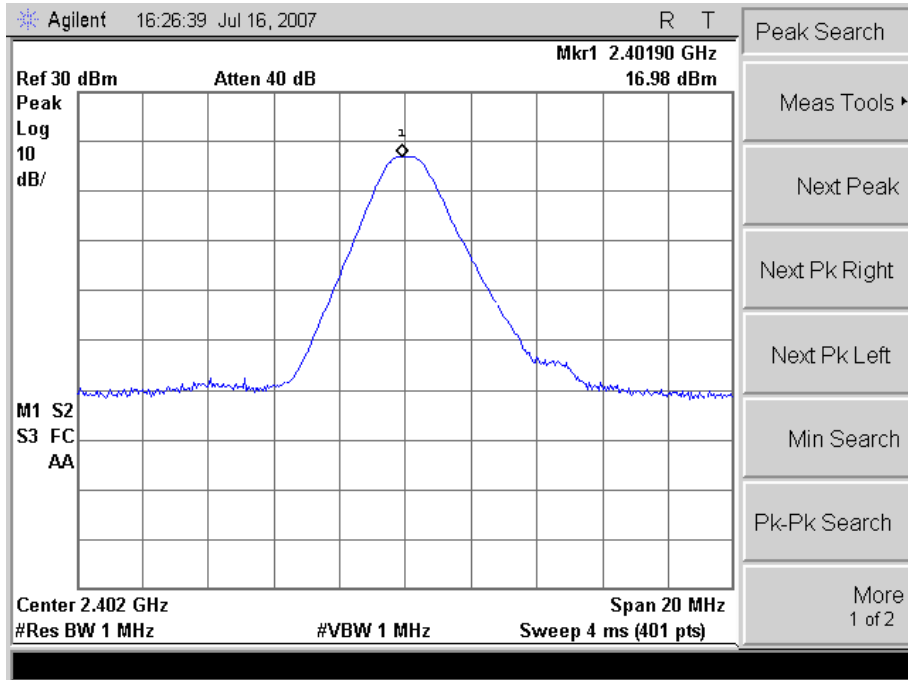
Frequency (MHz)	Output (dBm)	Required Limit
2402	16.98	<30dBm
2441	16.26	<30dBm
2480	15.83	<30dBm

Note: Test Graphs See next page.

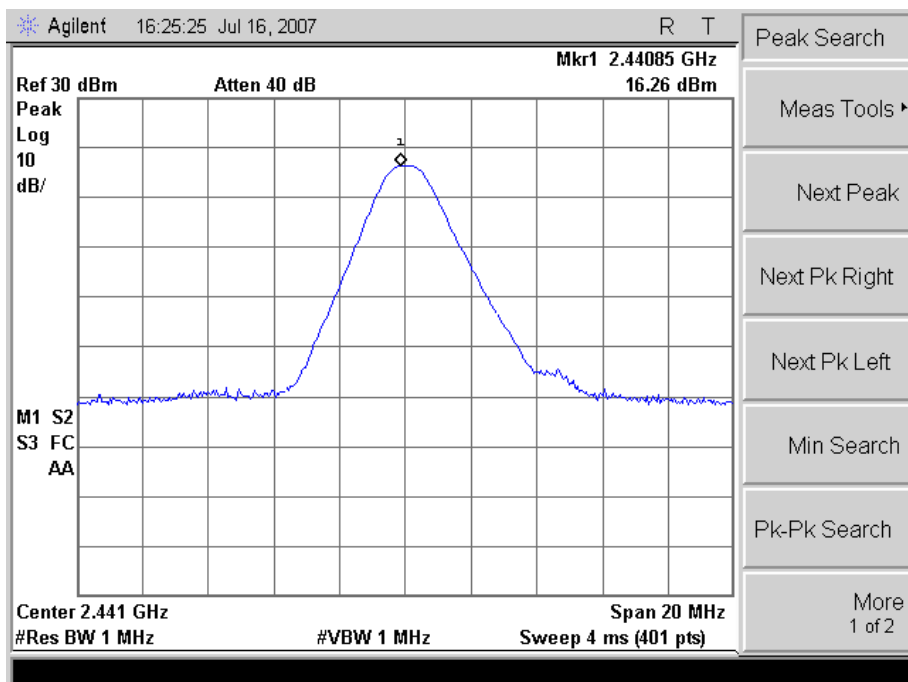


4.5 Test Graphs:

FHSS CH00 (2402MHz)

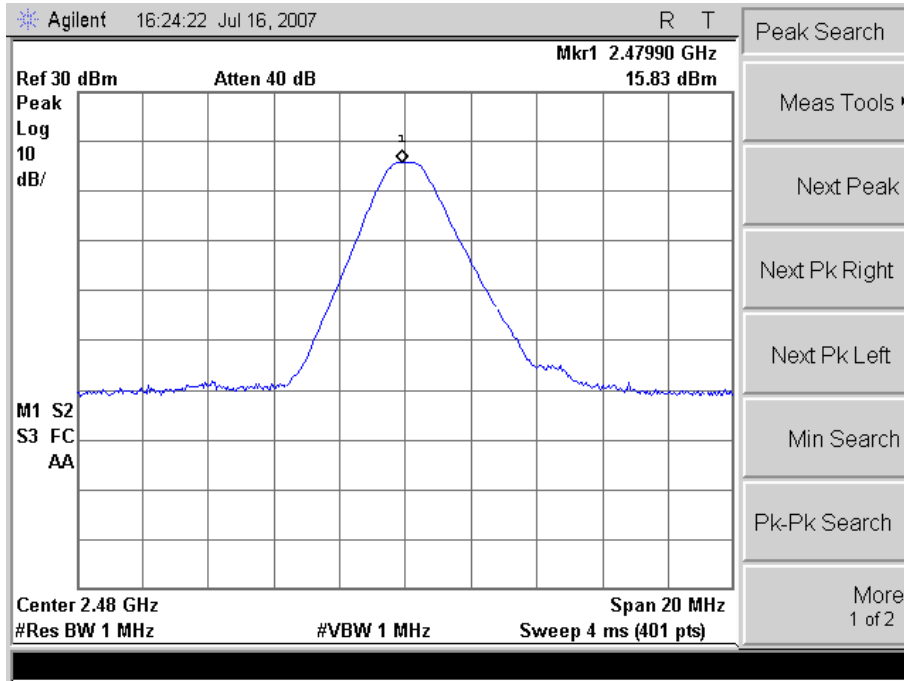


FHSS CH39 (2441MHz)





FHSS CH78 (2480MHz)



5. Minimum 20dB RF Bandwidth Requirements

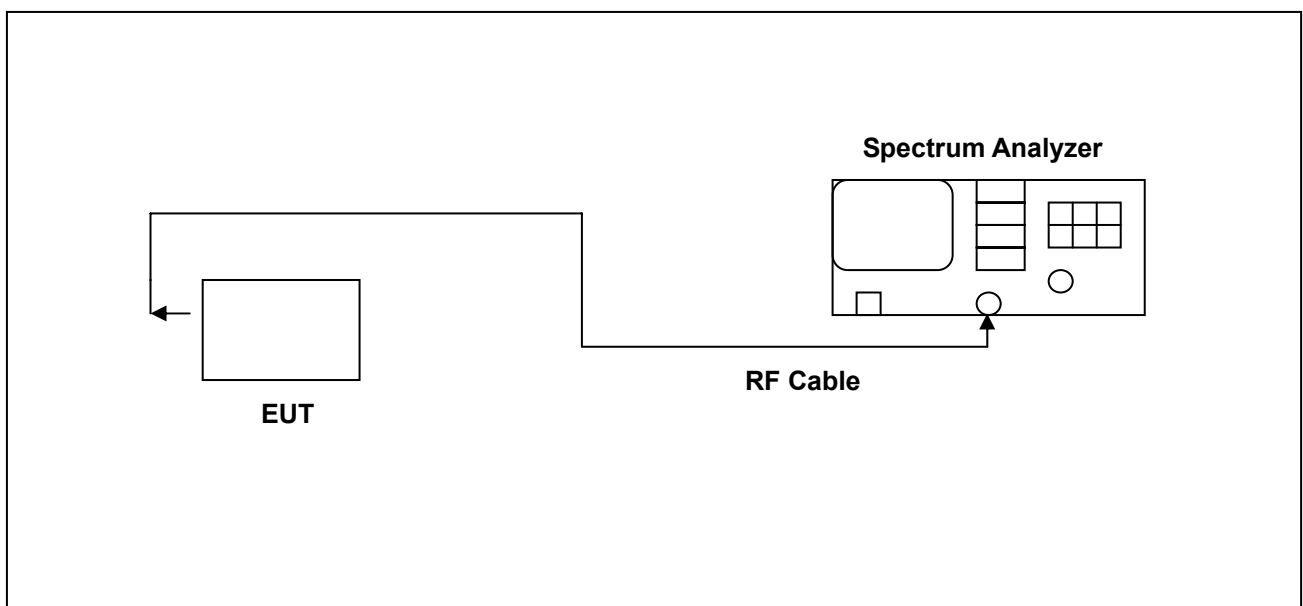
5.1 Test Condition & Setup:

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:

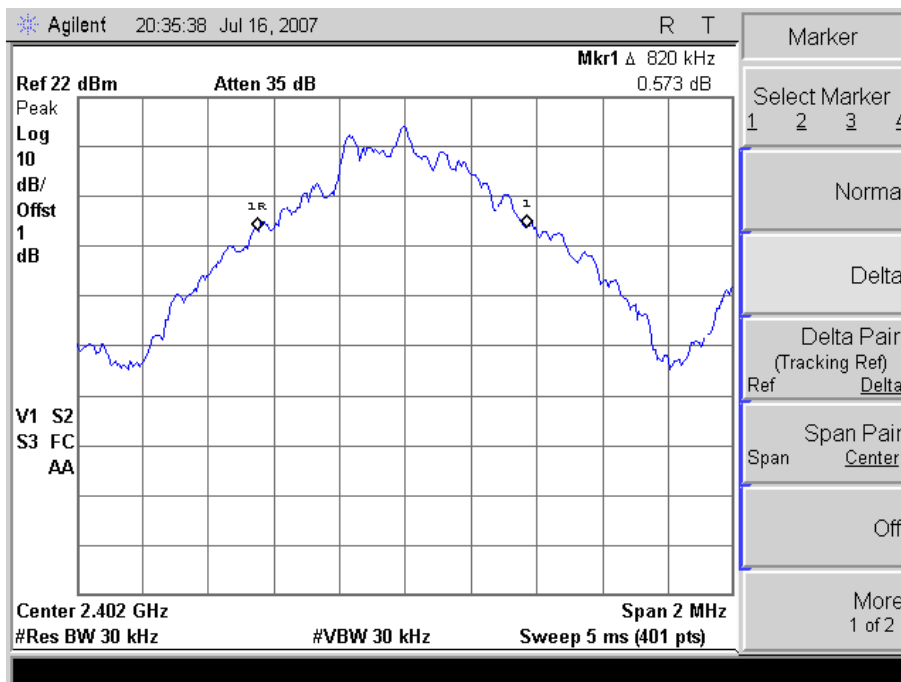
Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
Spectrum Analyzer	Agilent	E4445A	MY45300744	Nov. 11, 2006	Nov. 11, 2006

5.4 Test Result:

Frequency (MHz)	Max 20dB Bandwidth (KHz)	2/3 Max 20dB Bandwidth (KHz)	Required Limit
2402	820	546.67	<1MHz
2441	810	540	<1MHz
2480	775	516.67	<1MHz

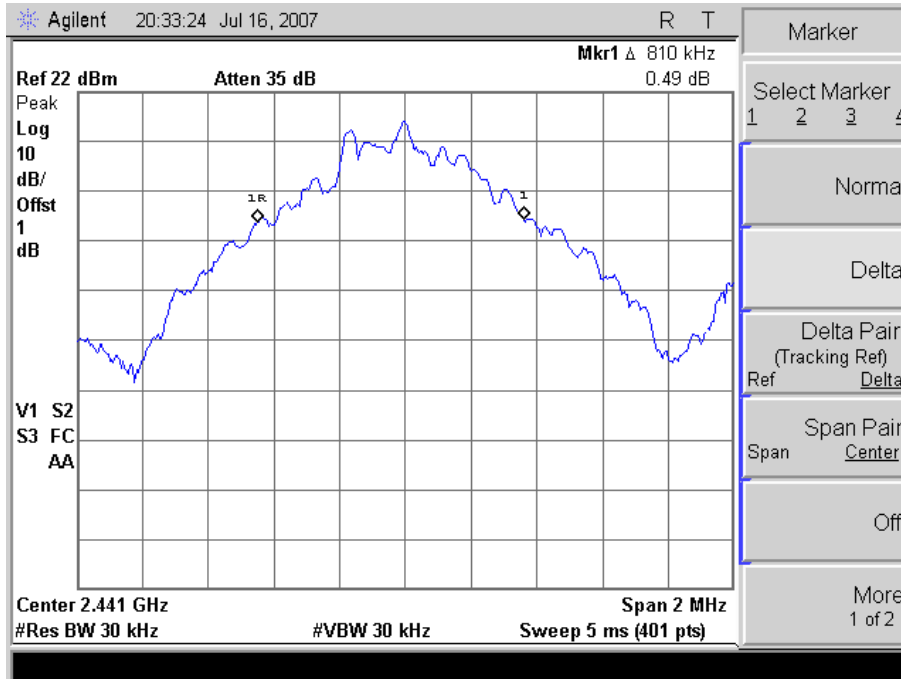
5.5 Test Graphs:

FHSS CH00 (2412MHz)

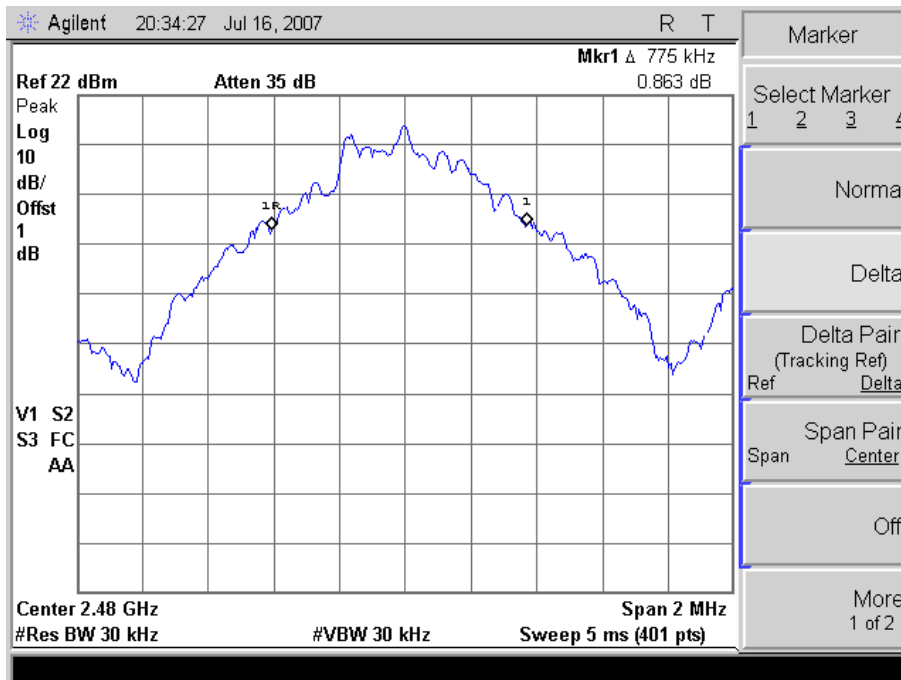




FHSS CH39 (2441MHz)



FHSS CH78 (2480MHz)



6. Carrier Frequency Separation Requirements

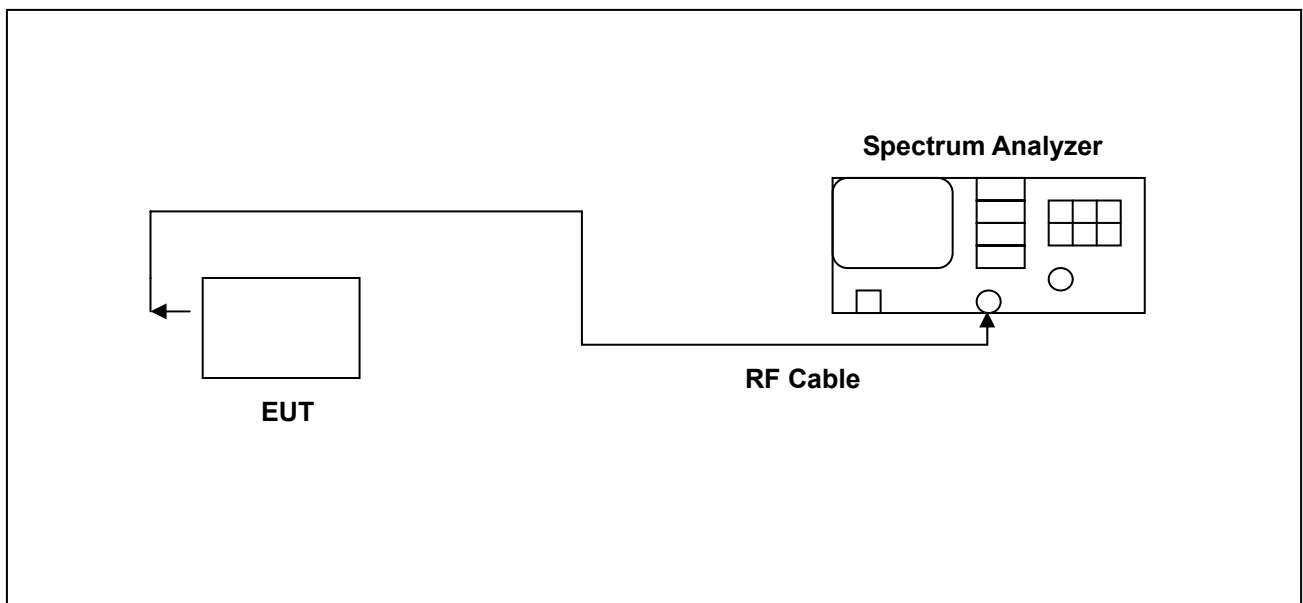
6.1 Test Condition & Setup:

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:



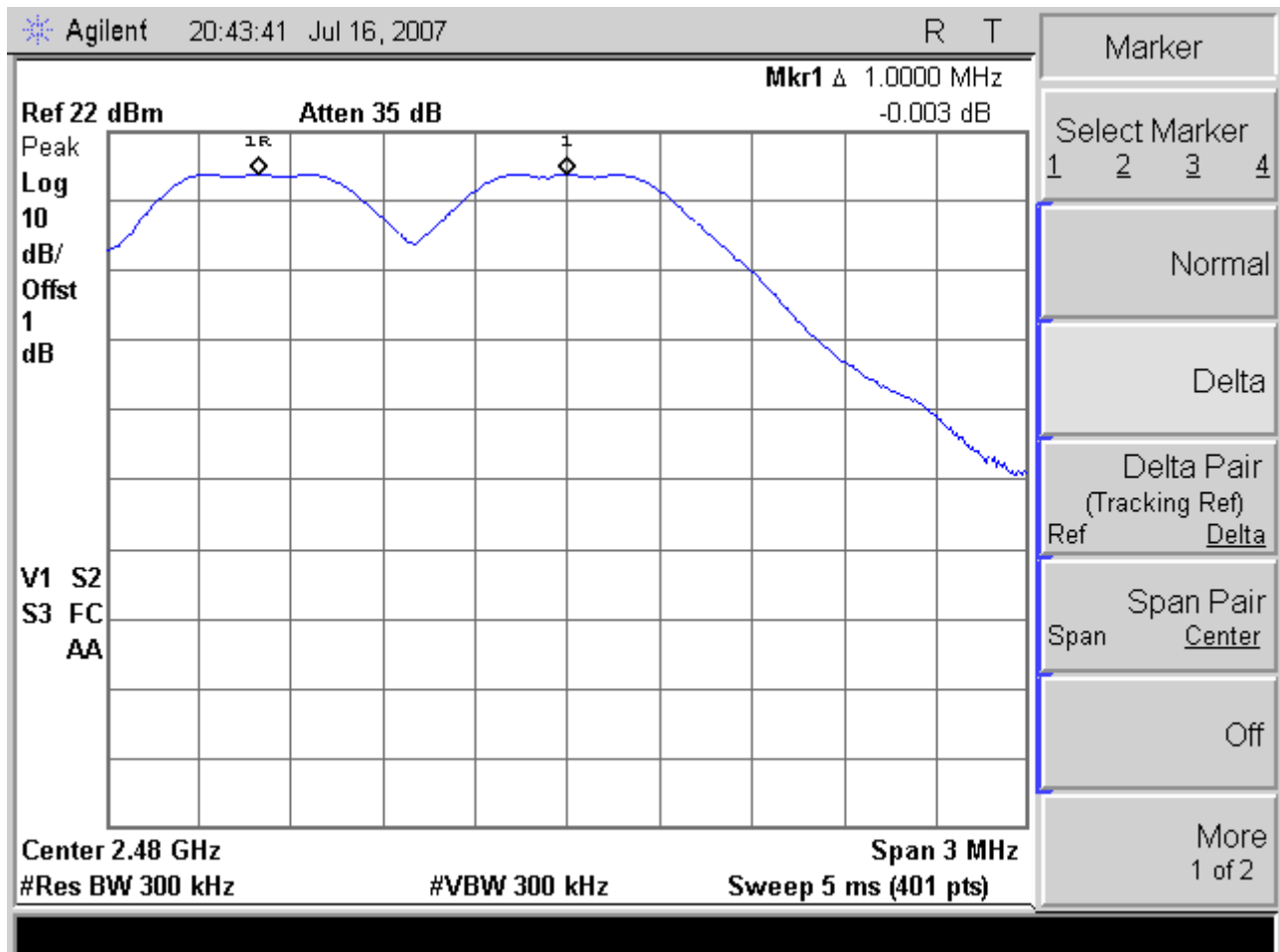


6.3 Test Equipment List:

Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
Spectrum Analyzer	Agilent	E4445A	MY45300744	Nov. 11, 2006	Nov. 11, 2007
Attenuator	RADIALL	R41572000	0603033073	NA	NA

6.4 Test Result:

Carrier Frequency Separation Measure:	1MHz
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7. Number of Hopping Requirements

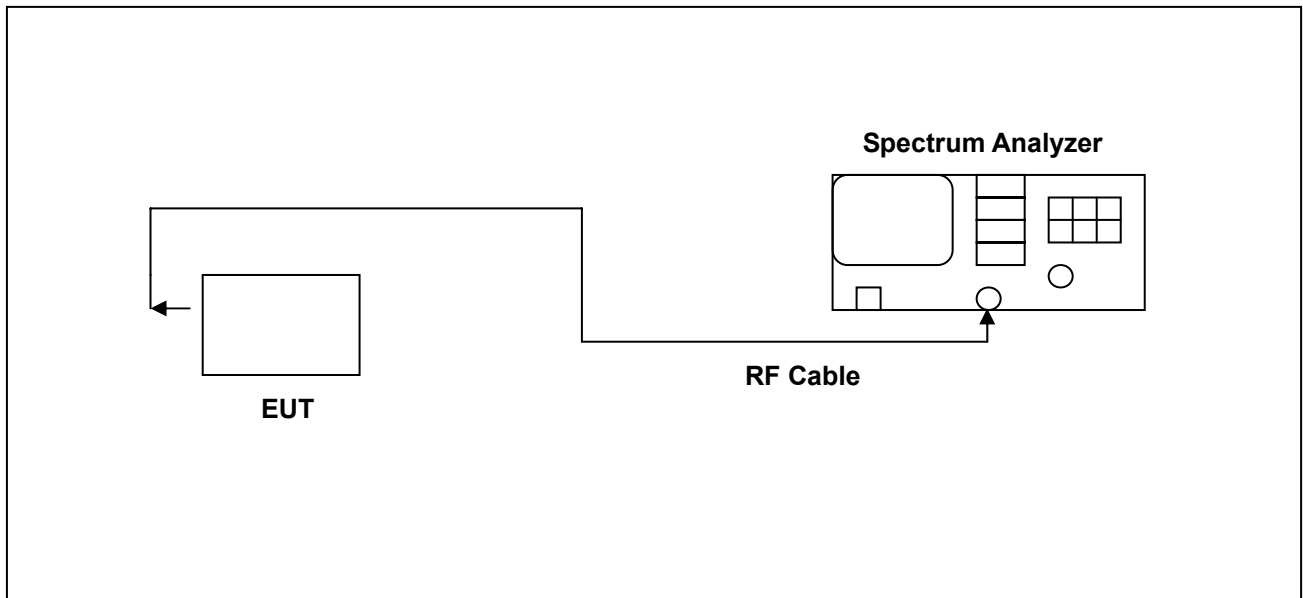
7.1 Test Condition & Setup:

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. 11, 2006	Nov. 11, 2007
Attenuator	RADIALL	R41572000	0603033073	NA	NA

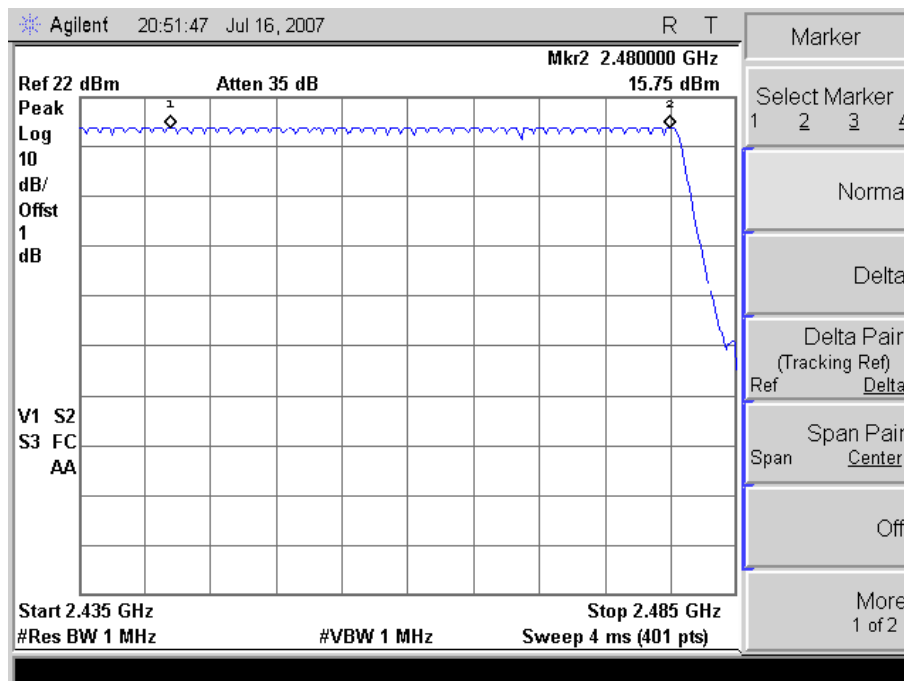
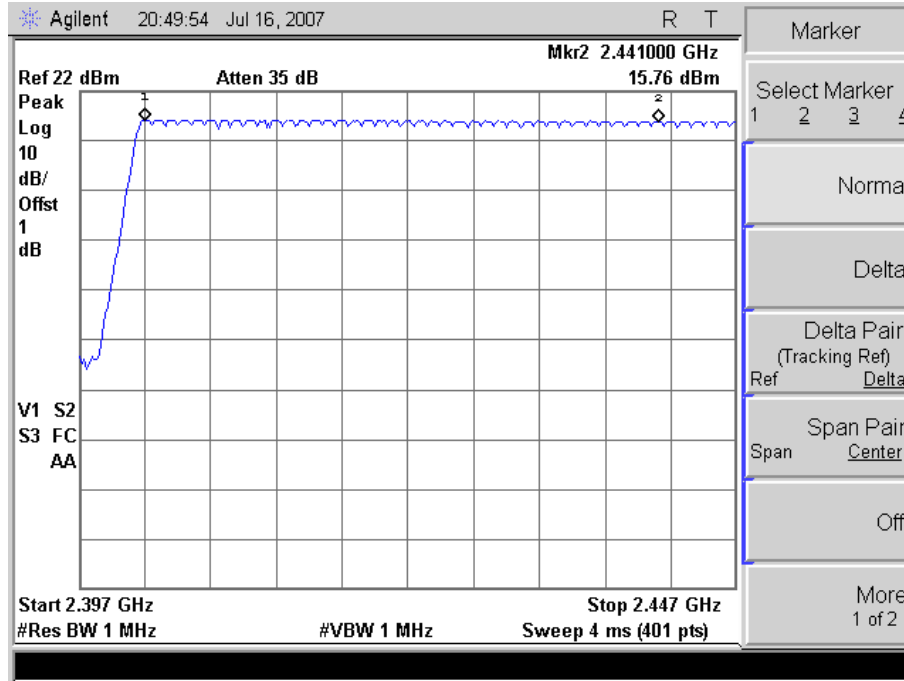
7.4 Test Result:

Number of Hopping Measure:	79CH
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Note: Test Graphs See next page.



7.5 Test Graphs (CH0~CH39 & CH40~CH78)



8. Time of Occupancy (Dwell Time) Requirements

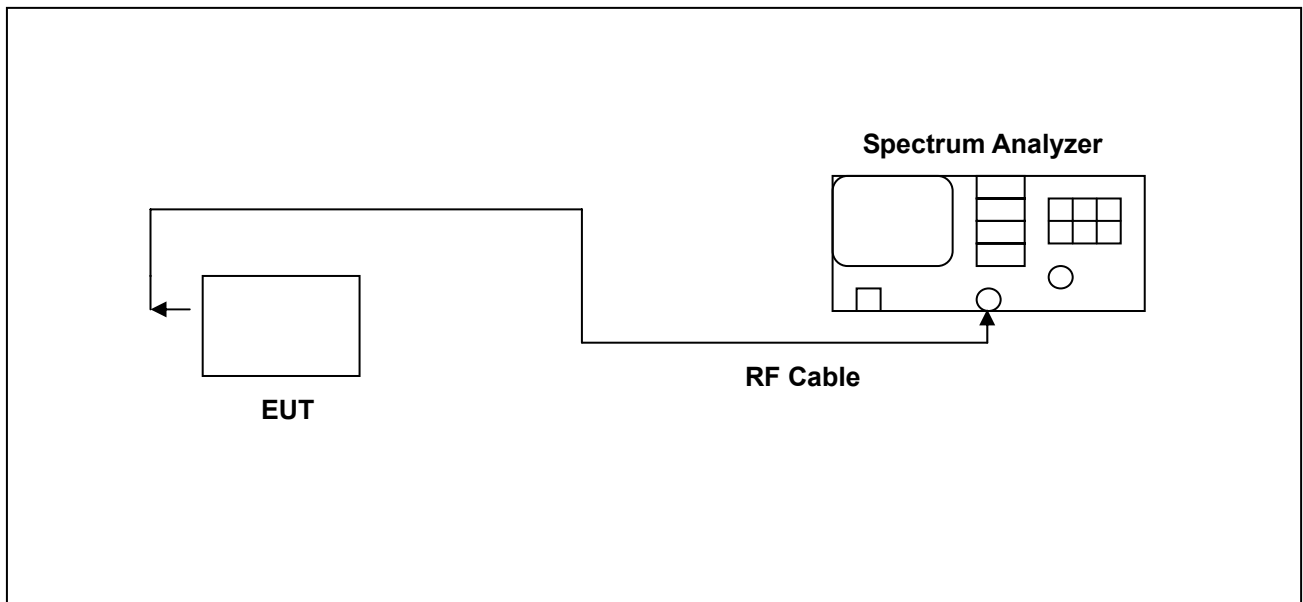
8.1 Test Condition & Setup:

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. 11, 2006	Nov. 11, 2007
Attenuator	RADIALL	R41572000	0603033073	NA	NA

8.4 Test Result:

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)	0.41 ms (sec)
Each Channel Dwell Times on Cycle(2)	$31.6 * 10.13 = 320.108(\text{times})$
Dwell Times on Cycle (1) * (2)	131.24428 ms (sec)
LIMIT(msec)	$< = 400$

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

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)	1.68 ms (sec)
Each Channel Dwell Times on Cycle(2)	$31.6*5.1=161.16(\text{times})$
Dwell Times on Cycle (1) * (2)	270.74880 ms (sec)
LIMIT(msec)	$< = 400$

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



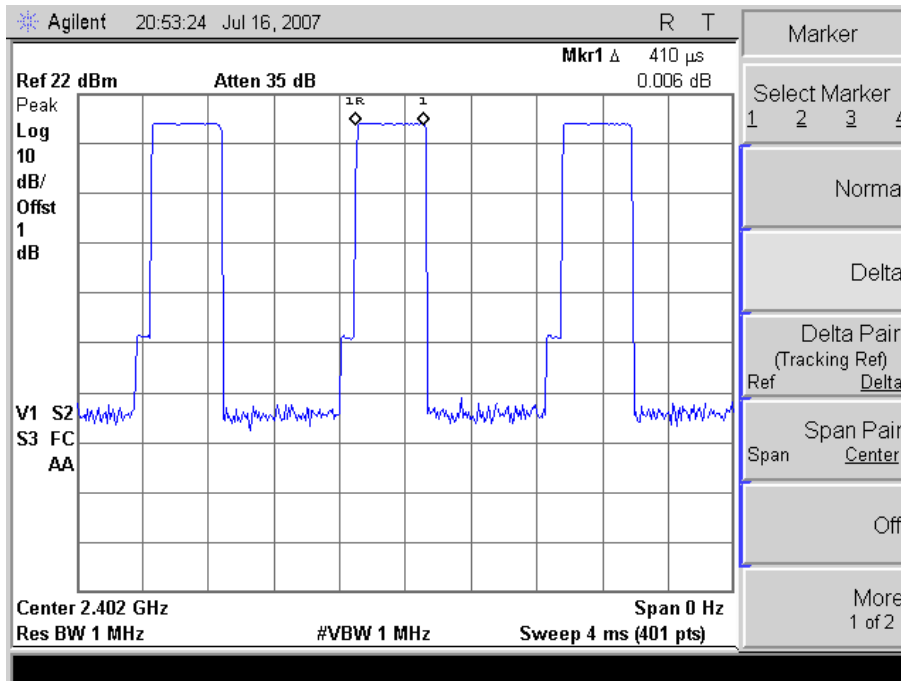
DH5 Mode

Cycle Calculate	79CH * 0.4 = 31.6 (sec)
The EUT Hopping Number per Sec	1600 times/sec
Each Channel Dwell Times per Sec	266.7/79CH=3.37 (times/sec)
Each Channel Dwell Times (1)	2.90 ms (sec)
Each Channel Dwell Times on Cycle(2)	31.6*2.82=106.492 (times)
Dwell Times on Cycle (1) * (2)	308.82680 ms (sec)
LIMIT(msec)	< = 400

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

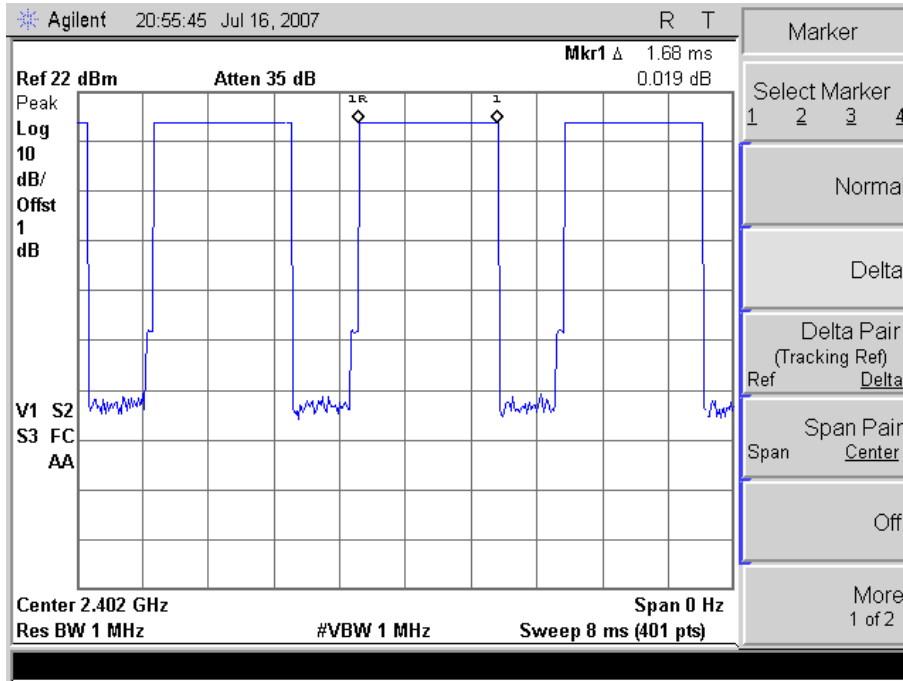
8.5 Test Graphs:

FHSS DH1

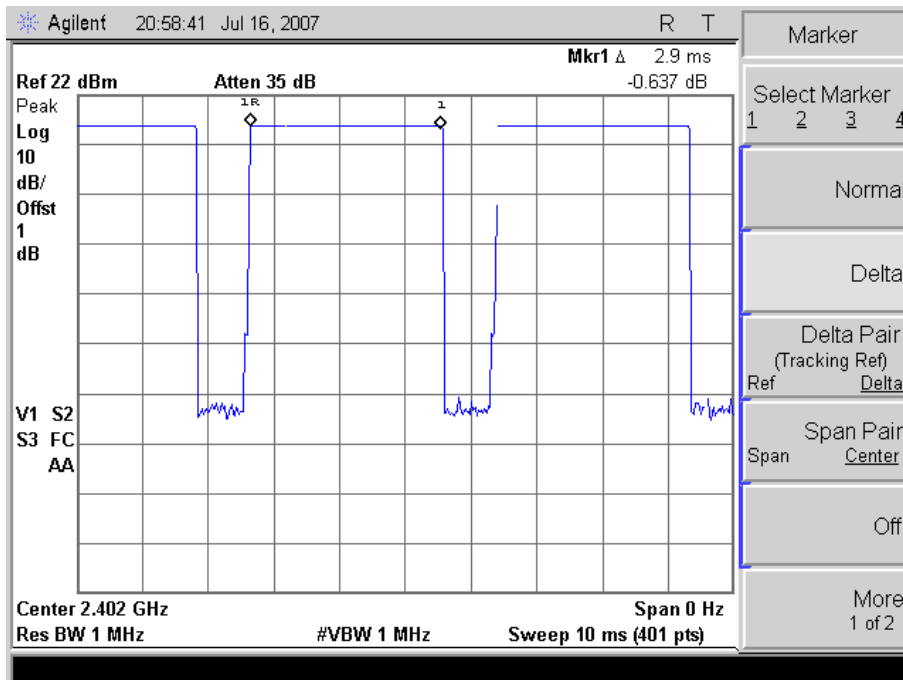




FHSS DH3



FHSS DH5



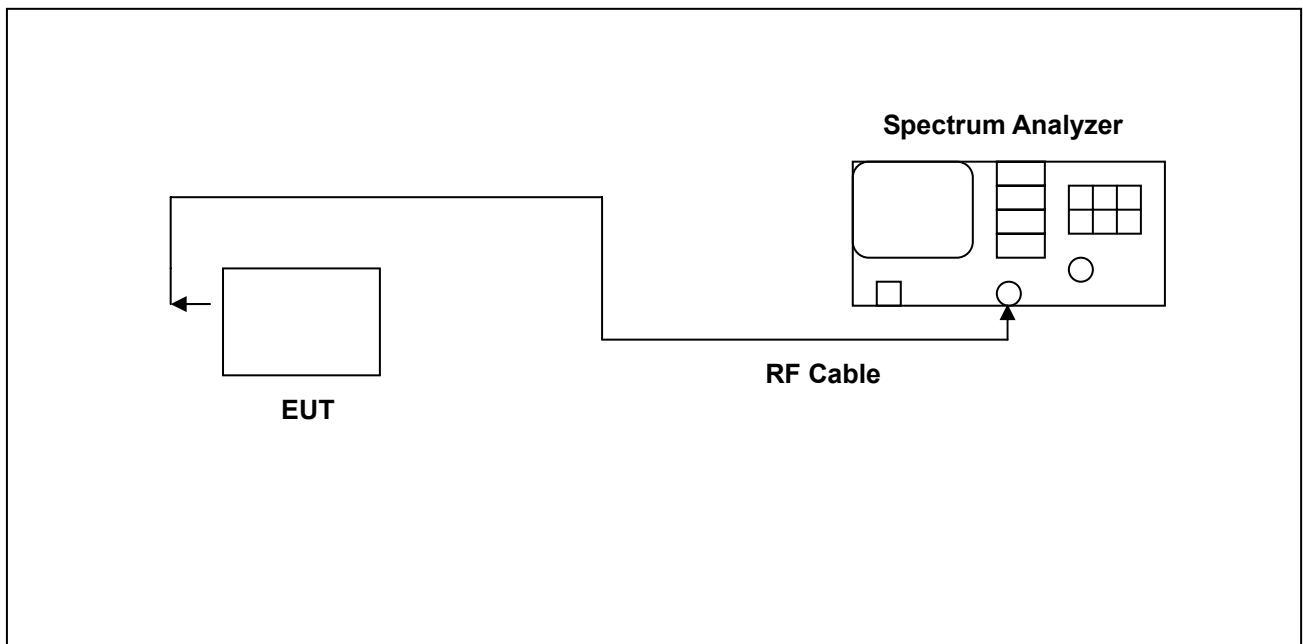
9. Out of Band Conducted Emissions Requirements

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. 11, 2006	Nov. 11, 2007

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.



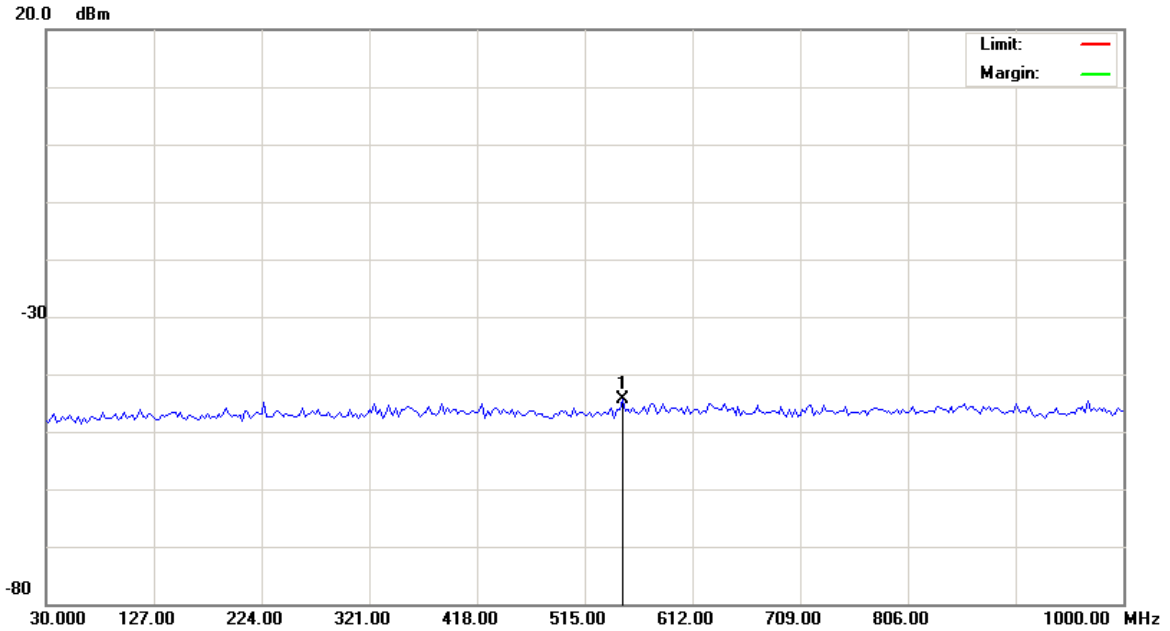
9.5 Test Graphs:

File :MARLIN_JABRA_A330(20dB)

Data :#1

Date: 16/7/2007

Time: 16:57:25



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

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	*	548.9500	-44.31	0.00	-44.31			peak		Comment

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

●Reference Only

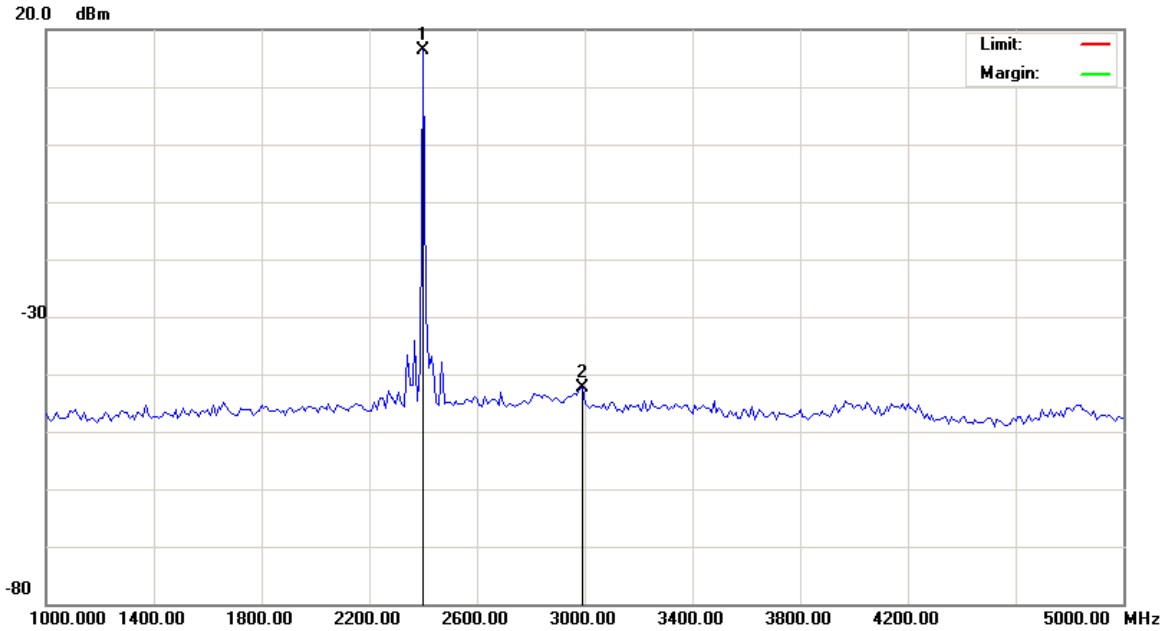


File :MARLIN_JABRA_A330(20dB)

Data :#2

Date: 16/7/2007

Time: 16:57:38



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

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	*	2400.000	16.47	0.00	16.47			peak		
2		2990.000	-42.41	0.00	-42.41			peak		

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

●Reference Only

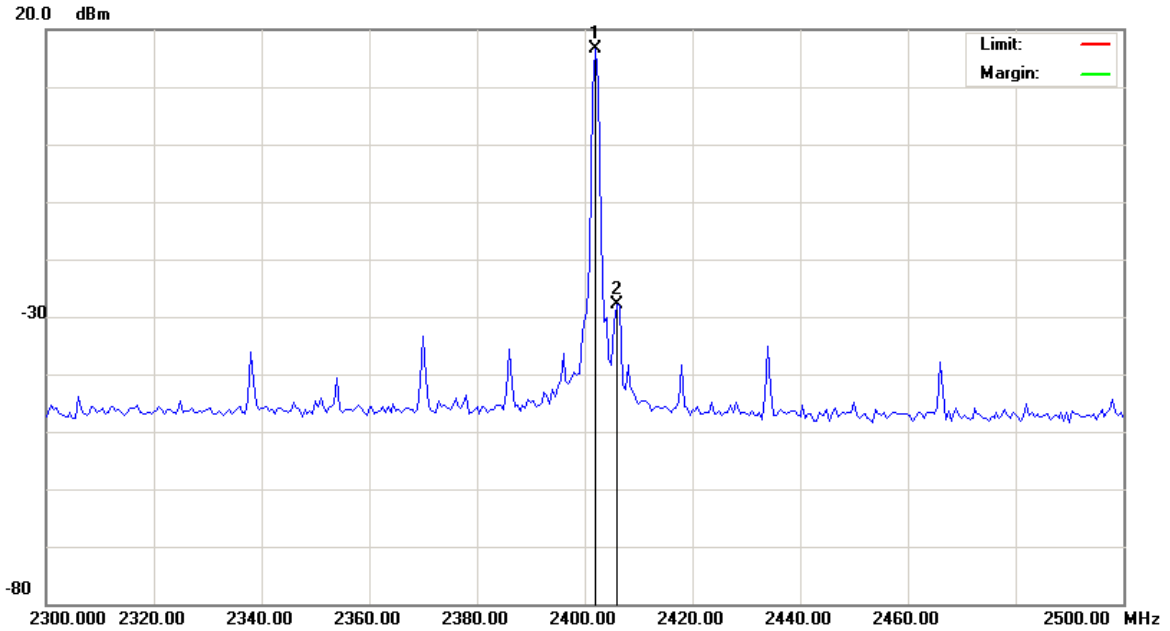


File :MARLIN_JABRA_A330(20dB)

Data :#3

Date: 16/7/2007

Time: 16:57:50



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

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	*	2402.000	16.75	0.00	16.75					peak
2		2406.000	-27.97	0.00	-27.97					peak

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

●Reference Only



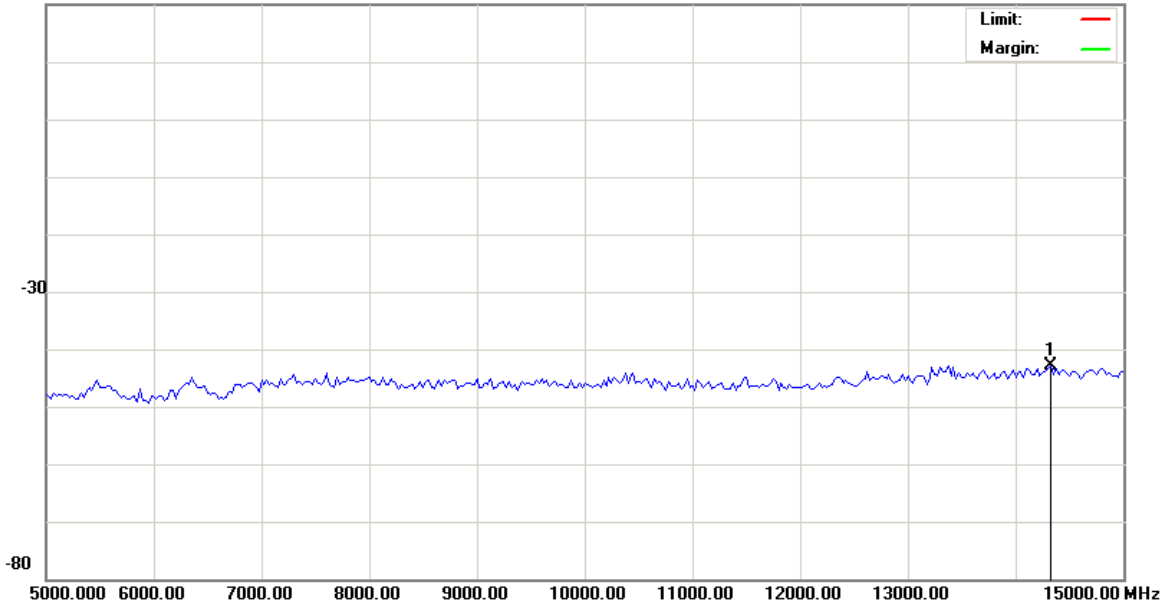
File :MARLIN_JABRA_A330(20dB)

Data :#4

Date: 16/7/2007

Time: 16:58:03

20.0 dBm



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

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	*	14325.00	-42.80	0.00	-42.80			peak		Comment

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

●Reference Only



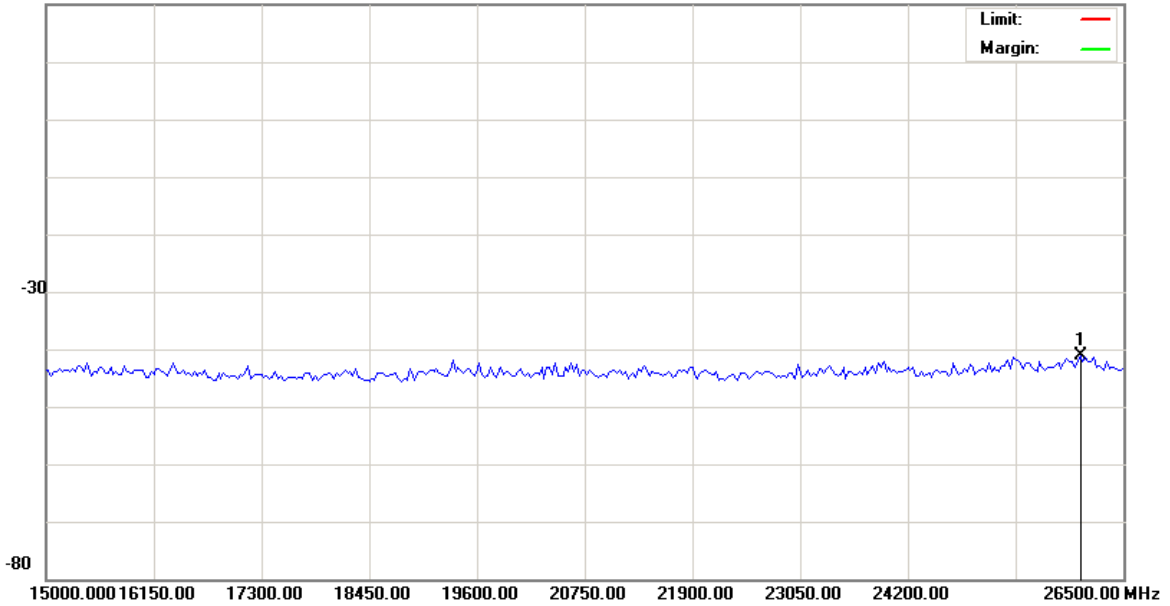
File :MARLIN_JABRA_A330(20dB)

Data :#5

Date: 16/7/2007

Time: 16:58:16

20.0 dBm



Site 966半電波暗室
 Limit:
 EUT:
 M/N: MARLIN_JABRA_A330
 Mode:
 Note: 2402

Polarization: **Vertical**
 Power: AC 110V/60Hz
 Distance: 3m

Temperature: 22 °C
 Humidity: 60 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	26040.00	-41.19	0.00	-41.19			peak		

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

●Reference Only

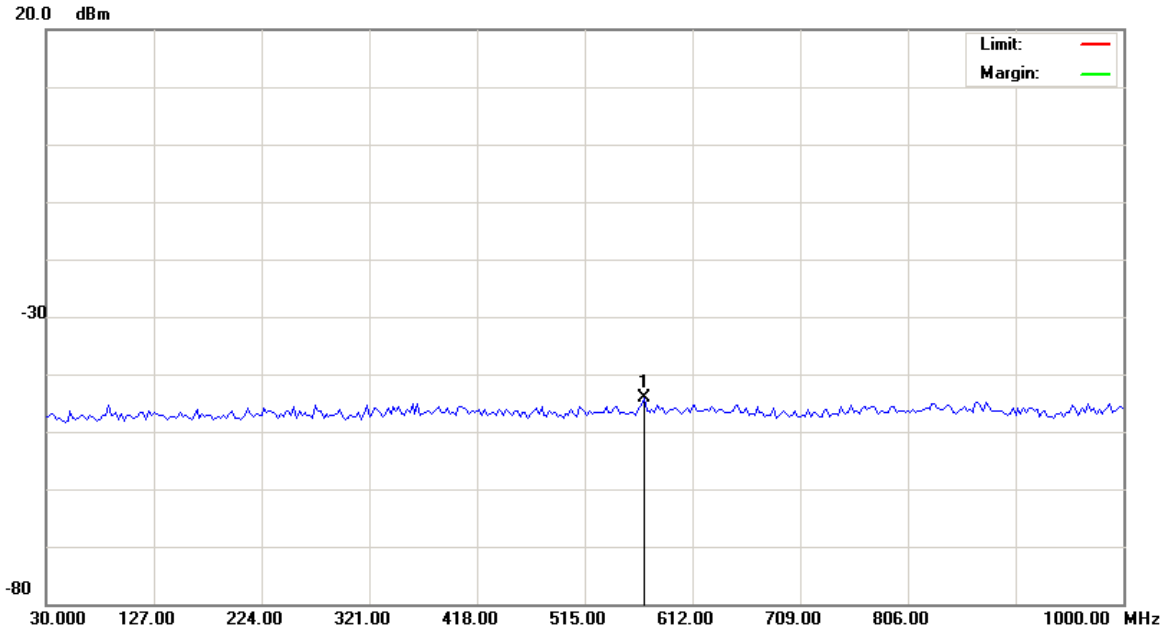


File :MARLIN_JABRA_A330(20dB)

Data :#6

Date: 16/7/2007

Time: 16:59:46



Site 966半電波暗室
 Limit:
 EUT:
 M/N: MARLIN_JABRA_A330
 Mode:
 Note: 2441

Polarization: **Vertical**
 Power: AC 110V/60Hz
 Distance: 3m

Temperature: 22 °C
 Humidity: 60 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree		
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	568.3500	-44.01	0.00	-44.01			peak			

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

●Reference Only

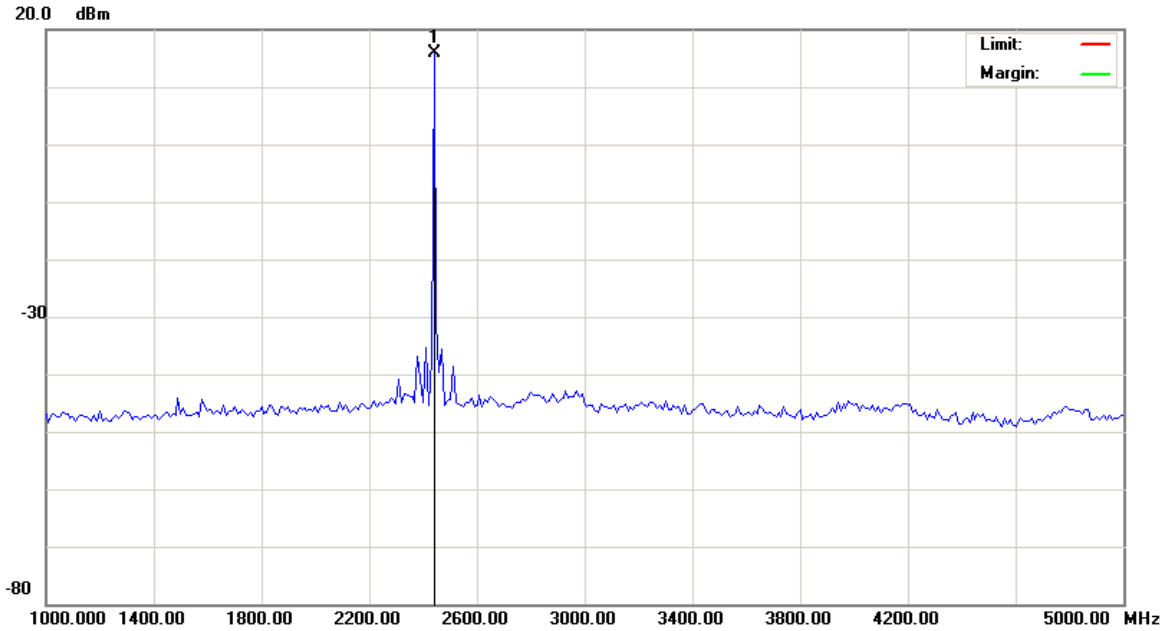


File :MARLIN_JABRA_A330(20dB)

Data :#7

Date: 16/7/2007

Time: 16:59:59



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2441

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	2440.000	15.83	0.00	15.83			peak		Comment

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

●Reference Only



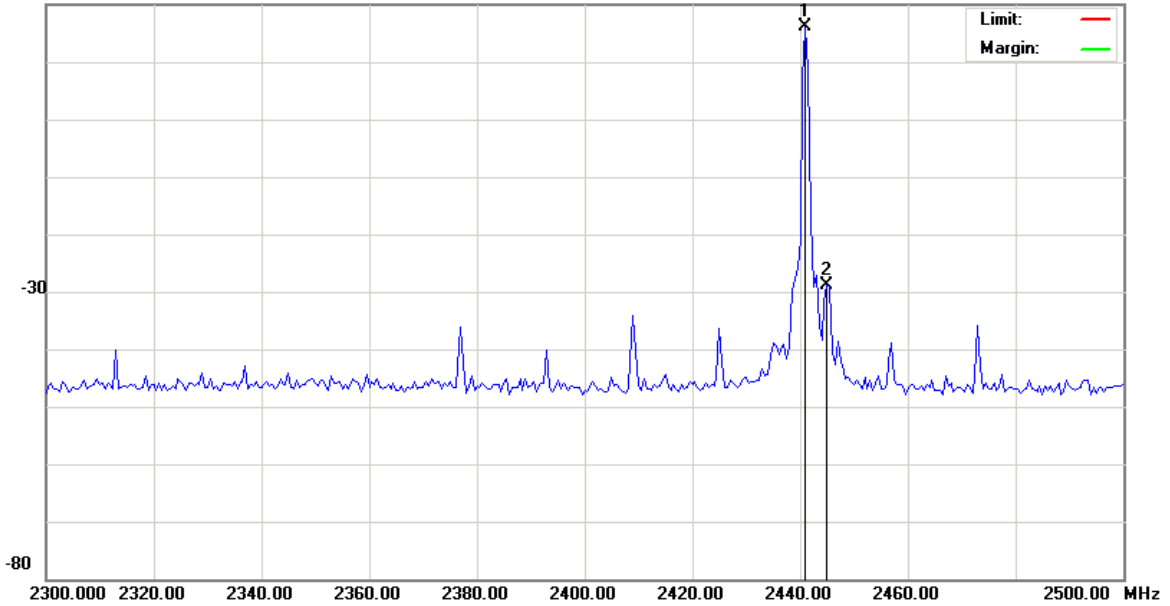
File :MARLIN_JABRA_A330(20dB)

Data :#8

Date: 16/7/2007

Time: 17:00:11

20.0 dBm



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

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	*	2441.000	16.09	0.00	16.09					peak
2		2445.000	-28.95	0.00	-28.95					peak

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

●Reference Only



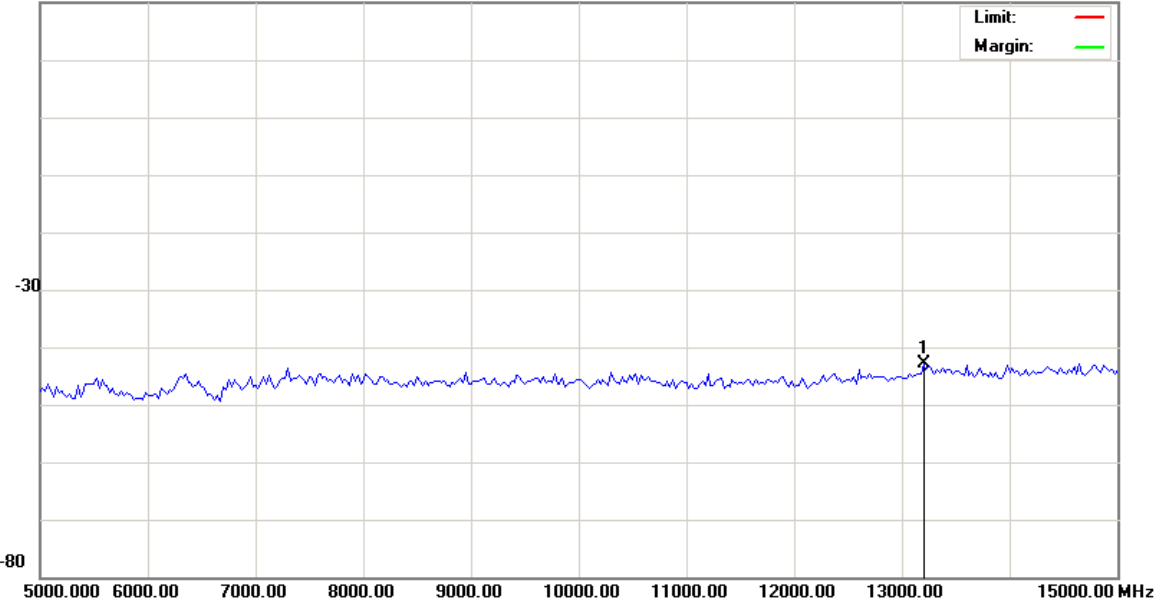
File :MARLIN_JABRA_A330(20dB)

Data :#9

Date: 16/7/2007

Time: 17:00:24

20.0 dBm



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2441

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	13200.00	-42.75	0.00	-42.75					peak

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

●Reference Only



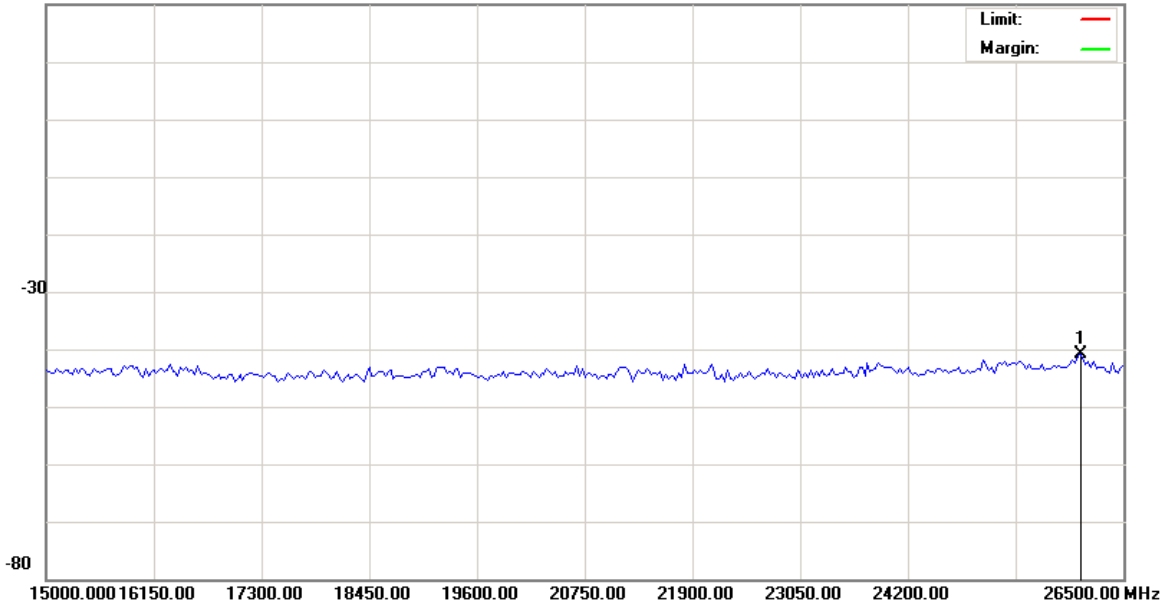
File :MARLIN_JABRA_A330(20dB)

Data :#10

Date: 16/7/2007

Time: 17:00:37

20.0 dBm



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2441

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	26040.00	-40.96	0.00	-40.96			peak		Comment

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

●Reference Only

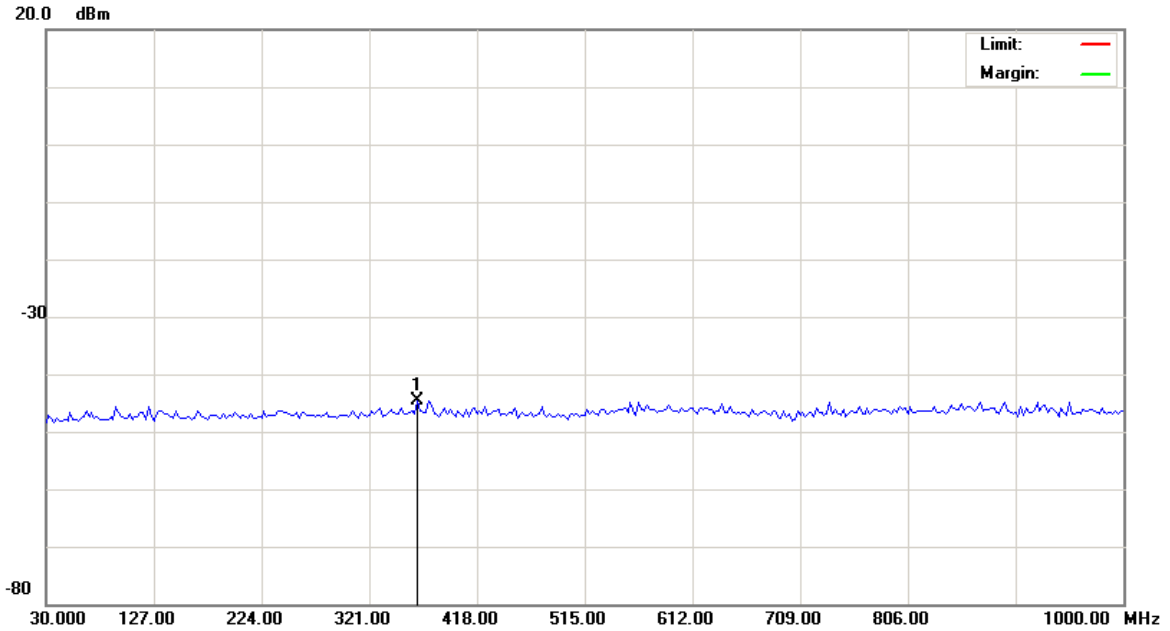


File :MARLIN_JABRA_A330(20dB)

Data :#11

Date: 16/7/2007

Time: 17:01:39



Site 966半電波暗室 Polarization: **Vertical** Temperature: 22 °C
 Limit: Power: AC 110V/60Hz Humidity: 60 %
 EUT: Distance: 3m
 M/N: MARLIN_JABRA_A330
 Mode:
 Note: 2480

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	364.6500	-44.70	0.00	-44.70			peak		Comment

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

●Reference Only

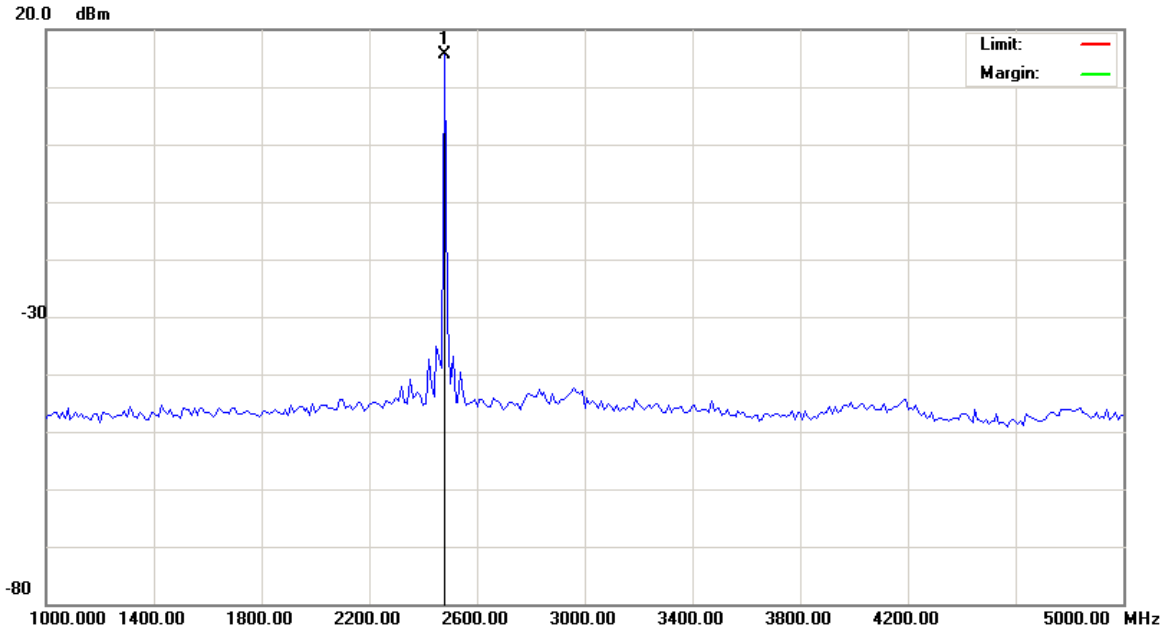


File :MARLIN_JABRA_A330(20dB)

Data :#12

Date: 16/7/2007

Time: 17:01:52



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2480

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	2480.000	15.66	0.00	15.66			peak		Comment

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

●Reference Only



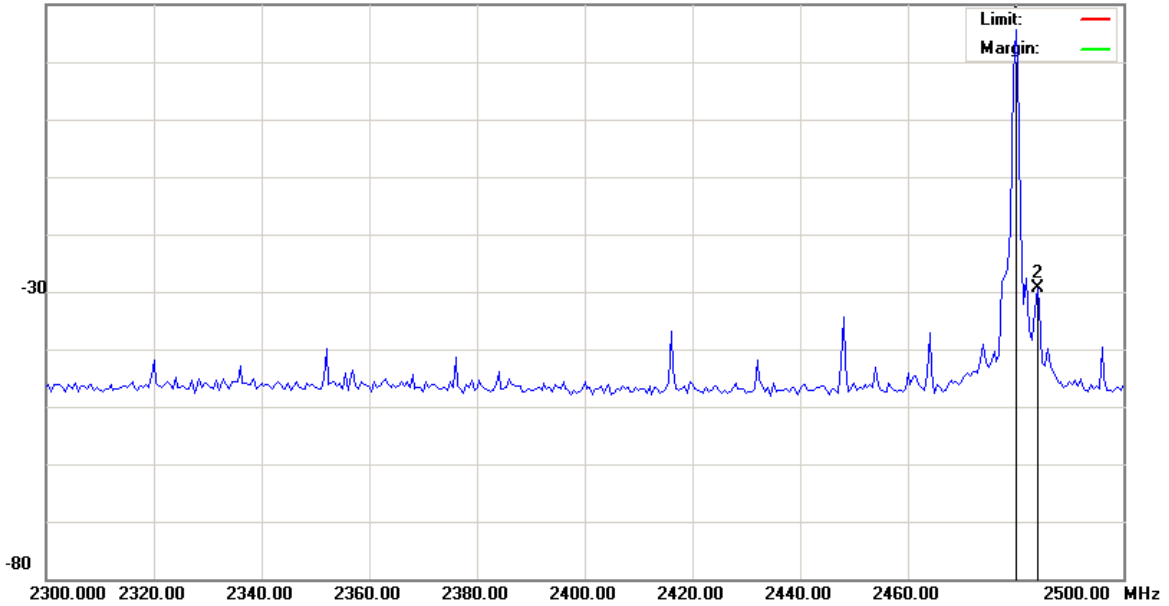
File :MARLIN_JABRA_A330(20dB)

Data :#13

Date: 16/7/2007

Time: 17:02:05

20.0 dBm



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2480

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	2480.000	15.72	0.00	15.72			peak		
2		2484.000	-29.45	0.00	-29.45			peak		

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

●Reference Only



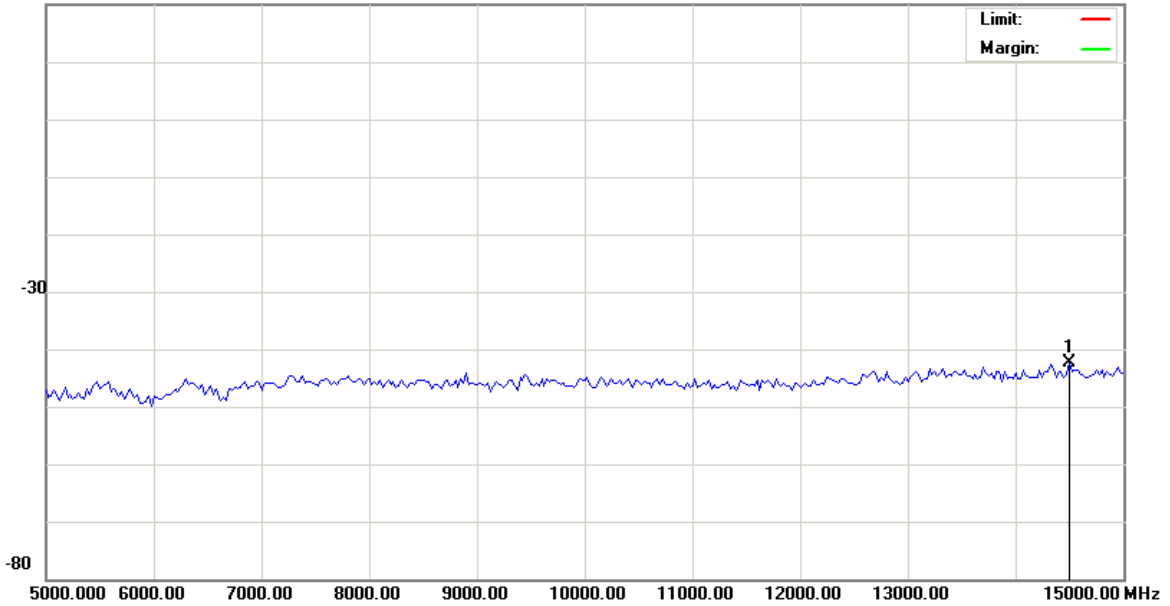
File :MARLIN_JABRA_A330(20dB)

Data :#14

Date: 16/7/2007

Time: 17:02:17

20.0 dBm



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2480

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	14500.00	-42.49	0.00	-42.49			peak		Comment

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

●Reference Only



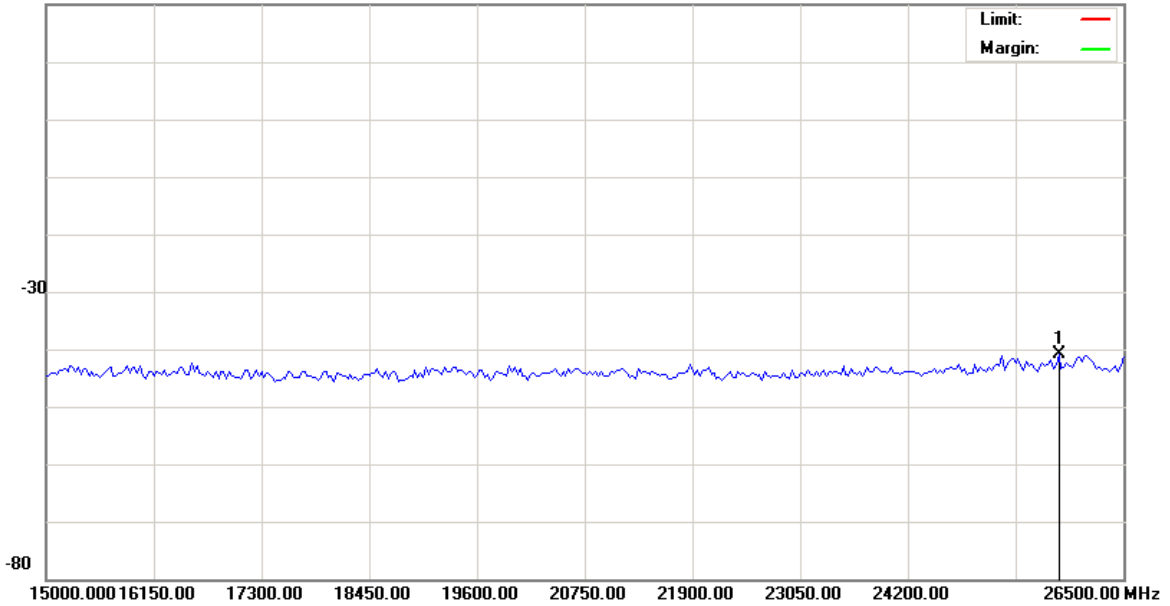
File :MARLIN_JABRA_A330(20dB)

Data :#15

Date: 16/7/2007

Time: 17:02:30

20.0 dBm



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 2480

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	25810.00	-40.80	0.00	-40.80			peak		Comment

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

●Reference Only

10. Band Edges Requirements

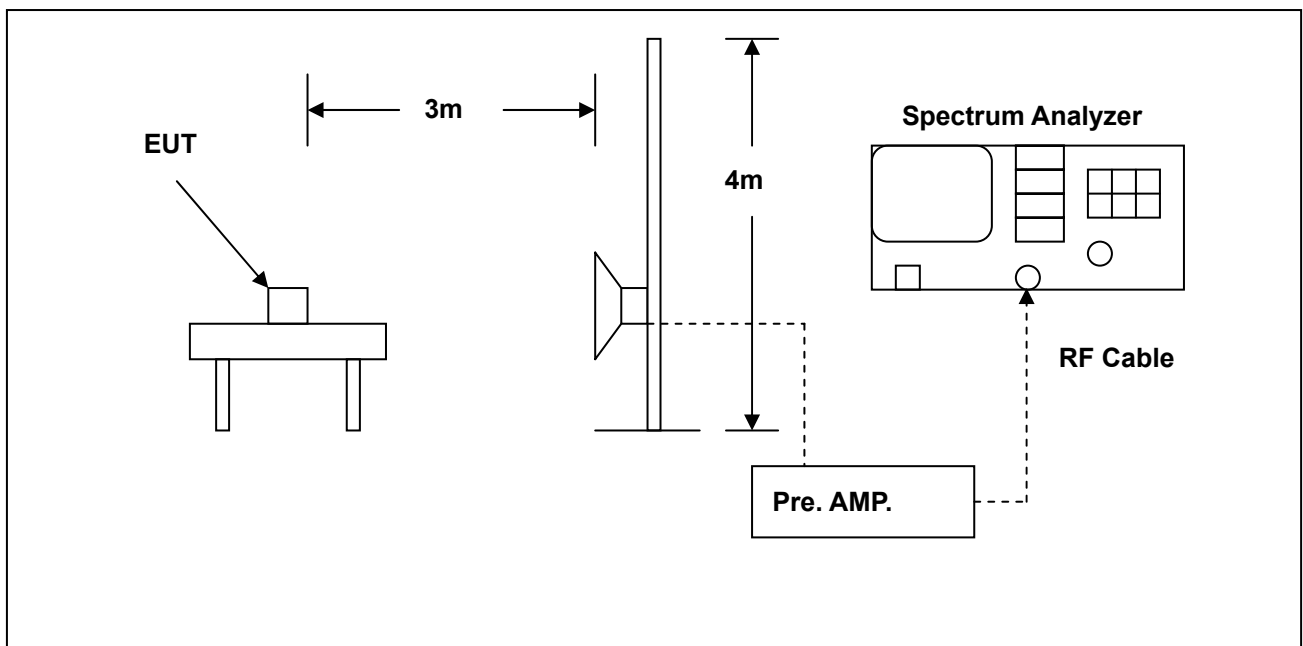
10.1 Test Condition & Setup:

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	May. 28, 2007	May. 28, 2008
Pre Amplifier	Agilent	8449B	3008A02237	May. 28, 2007	May. 28, 2008
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	Jun. 26, 2007	Jun. 26, 2008



10.4 Test Result :

Applicant : GN Netcom Inc
Model No : A330
EUT : Bluetooth Dongle
Test Mode : Low CH & High CH
Test Date : 07/13/2007

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.



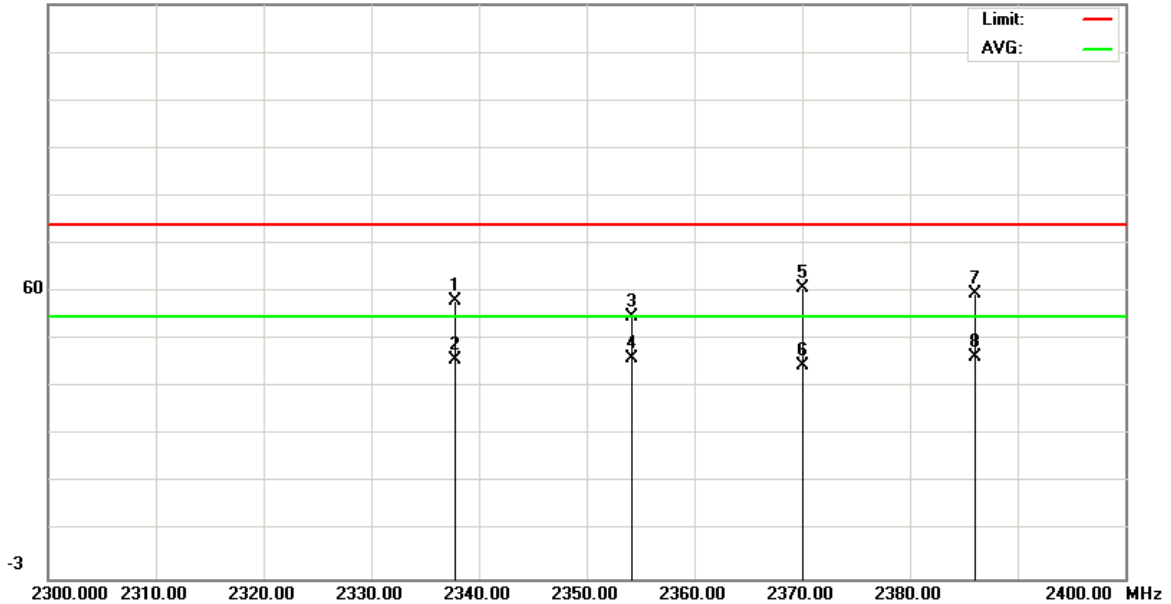
File :MARLIN_JABRA_A330(banded

Data :#1

Date: 2007/07/13

Time: 17:09:10

122.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note:

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		2337.800	57.24	0.26	57.50	74.00	-16.50			peak
2		2337.800	44.51	0.26	44.77	54.00	-9.23			AVG
3		2354.200	53.98	0.18	54.16	74.00	-19.84			peak
4		2354.200	44.73	0.18	44.91	54.00	-9.09			AVG
5		2370.000	60.17	0.18	60.35	74.00	-13.65			peak
6		2370.000	43.18	0.18	43.36	54.00	-10.64			AVG
7		2386.000	58.90	0.15	59.05	74.00	-14.95			peak
8	*	2386.000	45.16	0.15	45.31	54.00	-8.69			AVG

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

●Reference Only



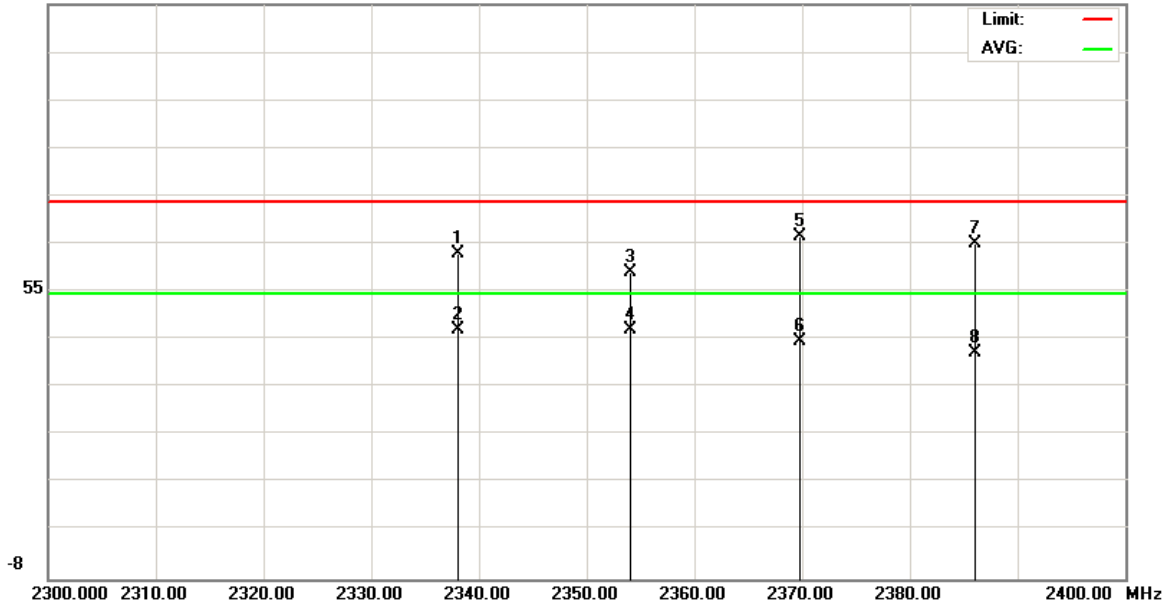
File :MARLIN_JABRA_A330(banded

Data :#5

Date: 2007/07/13

Time: 17:17:11

117.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note:

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		2338.000	62.61	0.26	62.87	74.00	-11.13			peak
2		2338.000	45.98	0.26	46.24	54.00	-7.76			AVG
3		2354.000	58.58	0.17	58.75	74.00	-15.25			peak
4		2354.000	45.91	0.17	46.08	54.00	-7.92			AVG
5	*	2369.800	66.32	0.18	66.50	74.00	-7.50			peak
6		2369.800	43.68	0.18	43.86	54.00	-10.14			AVG
7		2386.000	64.94	0.15	65.09	74.00	-8.91			peak
8		2386.000	40.99	0.15	41.14	54.00	-12.86			AVG

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

●Reference Only



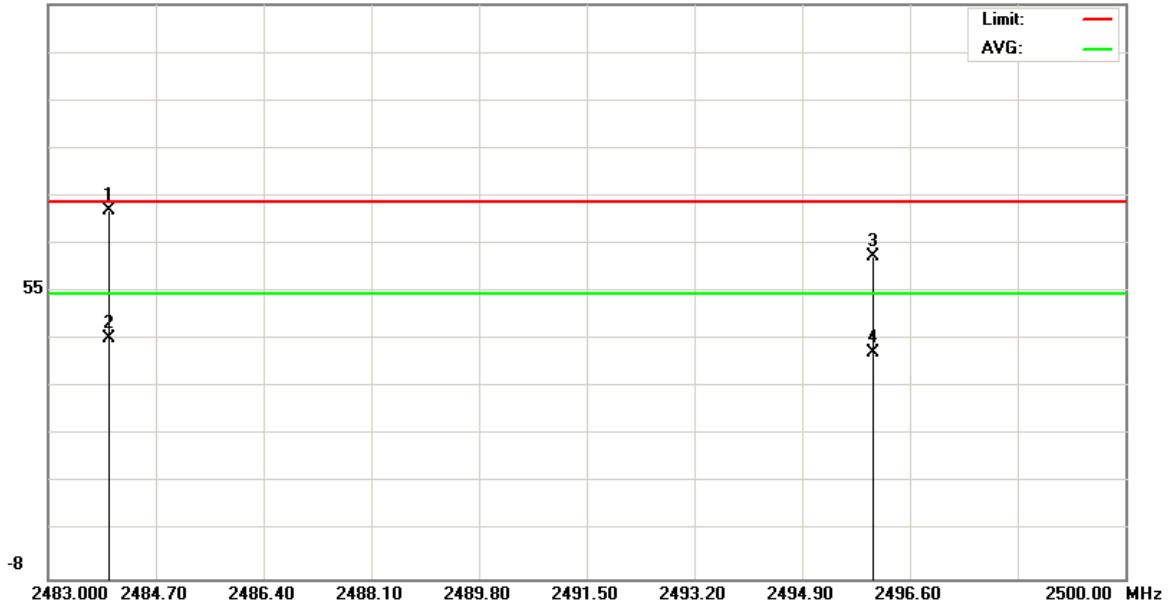
File :MARLIN_JABRA_A330(banded

Data :#6

Date: 2007/07/13

Time: 17:31:07

117.0 dBuV



Site 966半電波暗室

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note:

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	*	2483.952	71.91	0.25	72.16	74.00	-1.84			peak
2		2483.952	44.15	0.25	44.40	54.00	-9.60			AVG
3		2496.022	61.92	0.25	62.17	74.00	-11.83			peak
4		2496.022	40.98	0.25	41.23	54.00	-12.77			AVG

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

●Reference Only



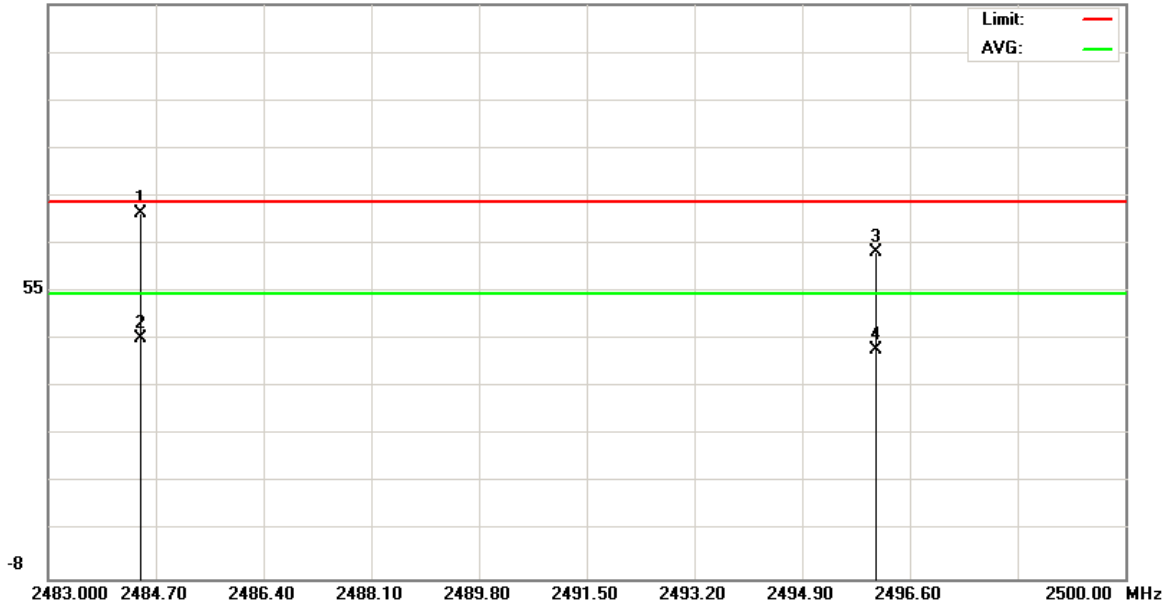
File :MARLIN_JABRA_A330(banded

Data :#10

Date: 2007/07/13

Time: 17:52:27

117.0 dBuV



Site 966半電波暗室

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT:

Distance: 3m

M/N: MARLIN_JABRA_A330

Mode:

Note: 參數:37

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	*	2484.462	71.20	0.25	71.45	74.00	-2.55			peak
2		2484.462	43.94	0.25	44.19	54.00	-9.81			AVG
3		2496.056	62.83	0.25	63.08	74.00	-10.92			peak
4		2496.056	41.69	0.25	41.94	54.00	-12.06			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.

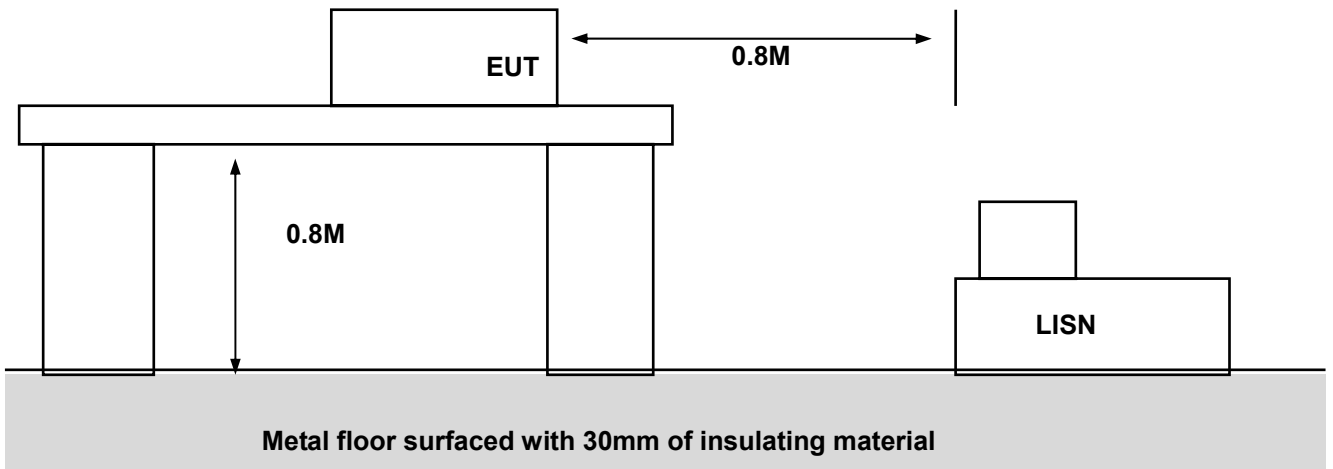
And According to 15.247 (b) & A8.4(2), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

11.2 Antenna Connector Construction

The antenna used in this product is internal antenna. And the maximum Gain of this antenna is only **-1.59** dBi.

Appendix A - EUT Test SETUP

MEASUREMENT OF POWER LINE CONDUCTED RFI VOLTAGE



MEASUREMENT OF RADIATED EMISSION

