



47 CFR PART 15 C - BLUETOOTH

TEST REPORT

of

HIC

Trade Name: Huawei
 Brand Name: vodafone
 Model Name: EC W820
 Report No.: SH10110003B01
 FCC ID: QISEC-W820

prepared for

Huawei Technologies Co.,Ltd.

Bantian, Longgang District Shenzhen 518129, P.R. China



Shenzhen Electronic Product Quality Testing Center

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CTIA Authorized Test Lab

LAB CODE 20081223-00

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1. TEST CERTIFICATION

Equipment under Test: HIC

Brand Name: vodafone

Model Name: EC W820

FCC ID: QISEC-W820

Applicant: Huawei Technologies Co.,Ltd.

Bantian,Longgang District Shenzhen 518129,P.R.China

Manufacturer: Huawei Technologies Co.,Ltd.

Bantian,Longgang District Shenzhen 518129,P.R.China

Test Standards: 47 CFR Part 15 Subpart C

Test Date(s): Nov 27, 2010 –Dec 03, 2010

Test Result: PASS

* We Hereby Certify That:

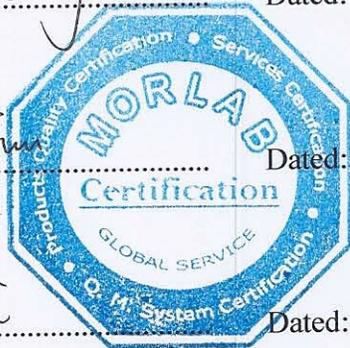
The equipment under test was tested by Shenzhen Electronic Product Quality Testing Center Morlab Laboratory. The test data, data evaluation, test procedures and equipment configurations shown in this report were made in accordance with the requirement of related FCC rules.

The test results of this report only apply for the tested sample equipment identified above. The test report shall be invalid without all the signatures of the test engineer, the reviewer and the approver.

Tested by: Shi Feng Dated: 2010.12.6
Shi Feng

Reviewed by: Zhang Jun Dated: 2010.12.6
Zhang Jun

Approved by: Wei Bei Dated: 2010.12.6
Wei Bei



2. GENERAL INFORMATION

2.1 EUT Description

EUT Type.....: HIC
Model Name: EC W820
Serial No.....: (n.a, marked #1 by test site)
Modulation Type.....: Frequency Hopping Spread Spectrum (FHSS)
Frequency: The frequency range used is 2402MHz - 2480MHz (79 channels, at intervals of 1MHz);
The frequency block is 2400MHz to 2483.5MHz.
Power Supply.....: Battery
Brand name: BYD
Mode Name.: BH61E
Capacitance: 2200mAh
Rated voltage: 3.7V
Charge limited: 4.2V
Manufacturer: BYD Company Limited
YAN AN RD, LONGGANG, KUICHONG,
SHENZHEN, GUANGDONG 518119 CHINA
Ancillary Equipments.....: AC Adapter (Charger for Battery)
Brand name: Ruide
Mode Name.: RD1202500-C55-00G
Rated Input: AC100~240V, 1000mA, 50/60Hz
Rated Output: DC12V, 2500 mA, 30W
Manufacturer: Shenzhen Ruide Electronic Industrial Co.,Ltd
2nd Floor, Block 2, Minqi Scientific Zone,
Honghualing , Xili, Nanshan District , Shenzhen
China
Antenna Specification: 1dBi gain (Max)

Note 1: The EUT is a Mobile Phone, it contains Bluetooth Module operating at 2.4GHz ISM band; the frequencies allocated for the Bluetooth Module is $F(\text{MHz})=2402+1*n$ ($0 \leq n \leq 78$). The lowest, middle, highest channel numbers of the Bluetooth Module used and tested in this report are separately 0 (2402MHz), 39 (2441MHz) and 78 (2480MHz).

Note 2: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

2.2 Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart C (Bluetooth, 2.4GHz ISM band radiators) for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 15 (10-1-05 Edition)	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Result
1	15.247(a)	Number of Hopping Frequency	PASS
2	15.247(b)	Peak Output Power	PASS
3	15.247(a)	20dB Bandwidth	PASS
4	15.247(a)	Carrier Frequency Separation	PASS
5	15.247(a)	Time of Occupancy (Dwell time)	PASS
6	15.247(c)	Conducted Spurious Emission	PASS
7	15.247(c)	Band Edge	PASS
8	15.207	Conducted Emission	PASS
9	15.209 15.247(c)	Radiated Emission	PASS

2.3 Facilities and Accreditations

2.3.1 Facilities

Shenzhen Electronic Product Quality Testing Center Morlab Laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659.

All measurement facilities used to collect the measurement data are located at Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen 518055 CHINA. The test site is constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22; the FCC registration number is 741109.

2.3.2 Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	20 - 25
Relative Humidity (%):	40 - 60
Atmospheric Pressure (kPa):	96

2.4 EUT Setup and Operating Conditions

The EUT has been tested under Operating and standby condition. CMU200 was used to control the EUT for staying in continuous transmitting mode. Channel 0, 39 and 78 with highest data rate (DH1) (DH3) (DH5) are chosen for tested.

Mode 1: AC charge+EUT Mode;

Mode 2: Battery+EUT Mode;

Worst Case:GFSK(1 Mbps) Mode 1 Channel Low (2402MHz)、 Mid (2441MHz) and High (2480MHz) were chosen for full testing.

After the preliminary scan GFSK, $\pi/4$ -DQPSK,8-DPSK. we found the modulation at GFSK producing the highest emission level, so evaluated we chosen the above modes (worst case) as a representative.

3. 47 CFR PART 15C REQUIREMENTS

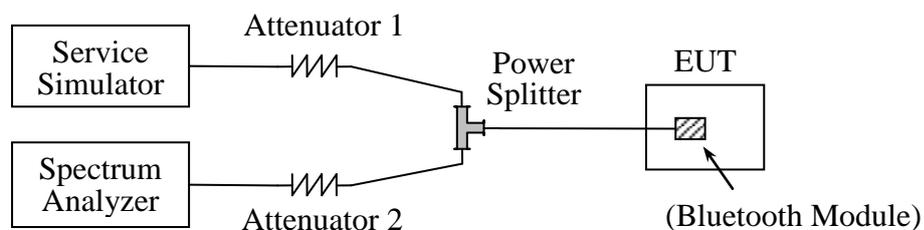
3.1 Number of Hopping Frequency

3.1.1 Requirement

According to FCC section 15.247(a)(1)(ii), frequency hopping systems operating in the 2400MHz to 2483.5MHz bands shall use at least 75 hopping frequencies.

3.1.2 Test Description

A. Test Setup:



The Bluetooth Module of the EUT, which is powered by the Battery, is coupled to the Spectrum Analyzer (SA) and the Bluetooth Service Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. During the measurement, the Bluetooth Module of the EUT is activated and controlled by the SS, and is set to operate under test mode transmitting 339 bytes DH5 packages at maximum power.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Service Simulator	Anritsu	MT8852A	6K00002788	2010.9	1year
Spectrum Analyzer	R&S	FSP30	101020	2010.9	1year
Spectrum Analyzer	Agilent	E4440A	MY46187763	2010.9	1year
Power Splitter	Weinschel	1506A	NW521	(n.a.)	(n.a.)
Attenuator 1	Resnet	10dB	(n.a.)	(n.a.)	(n.a.)
Attenuator 2	Resnet	3dB	(n.a.)	(n.a.)	(n.a.)

3.1.3 Test Result

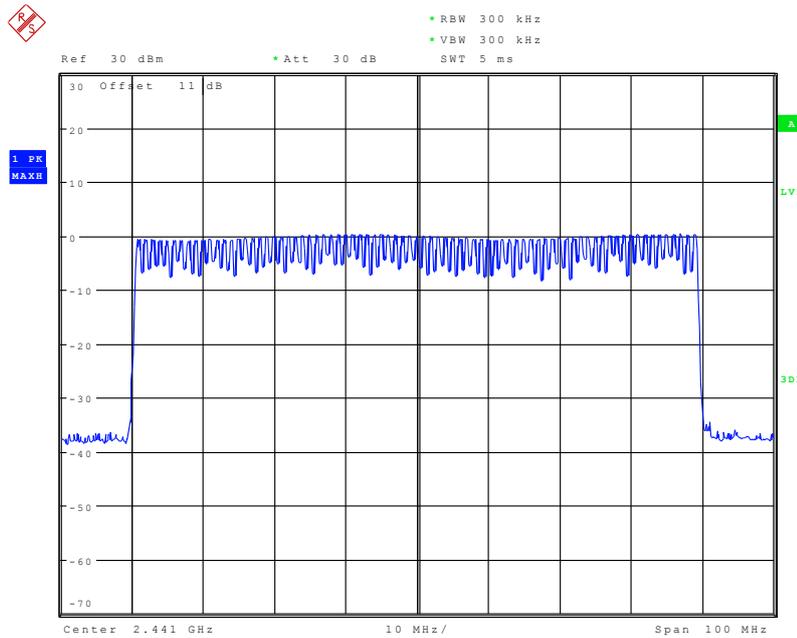
The Bluetooth Module operates at hopping-on test mode; the frequencies number employed is

counted to verify the Module's using the number of hopping frequency. compliance to Hopping Sequence and Equal Usage of the channels

A. Test Verdict:

Frequency Block (MHz)	Measured Channel Numbers	Min. Limit	Refer to Plot	Verdict
2400 - 2483.5	79	75	Plot A	PASS

B. Test Plot:



Date: 30.NOV.2010 15:21:57

(Plot A: 2402MHz to 2480MHz)

3.2 Peak Output Power

3.2.1 Requirement

According to FCC section 15.247(b)(1), for frequency hopping systems that operates in the 2400MHz to 2483.5MHz band employing at least 75 hopping channels, the maximum peak output power of the intentional radiator shall not exceed 1Watt. For all other frequency hopping systems in the 2400MHz to 2483.5MHz band, it is 0.125Watts.

3.2.2 Test Description

See section 3.1.2 of this report.

3.2.3 Test Result

The Bluetooth Module operates at hopping-off test mode. The lowest, middle and highest channels are selected to perform testing to verify the conducted RF output peak power of the Module.

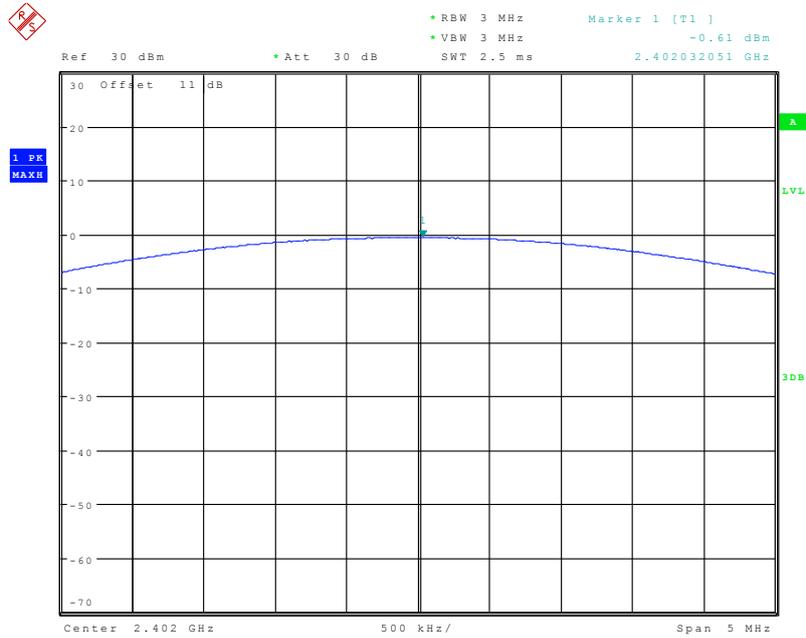
A. Test Verdict:

Channel	Frequency (MHz)	Measured Output Peak Power			Limit	Verdict
		Data Rate/Modulation				
		GFSK	π /4-DQPSK	8-DPSK	dBm	
		1Mbps	2Mbps	3Mbps		
0	2402	-0.61	-0.78	-0.93	30	PASS
39	2441	-0.29	-0.46	-0.68		PASS
78	2480	0.25	0.03	-0.15		PASS

GFSK (1Mbps)

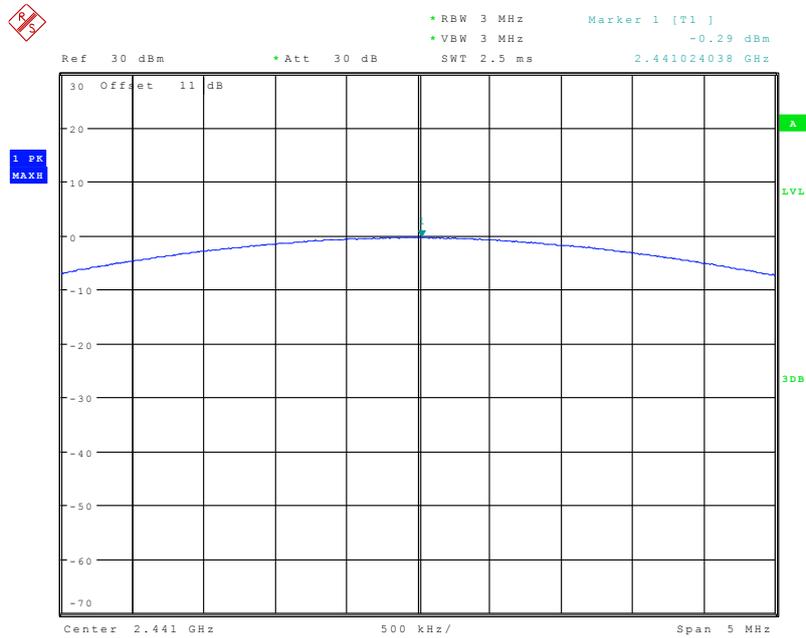
Channel	Frequency (MHz)	Measured Output Peak Power			Limit		Verdict
		dBm	W	Refer to Plot	dBm	W	
0	2402	-0.61	0.00087	Plot A	30	1	PASS
39	2441	-0.29	0.00094	Plot B			PASS
78	2480	0.25	0.00106	Plot C			PASS

B. Test Plot:



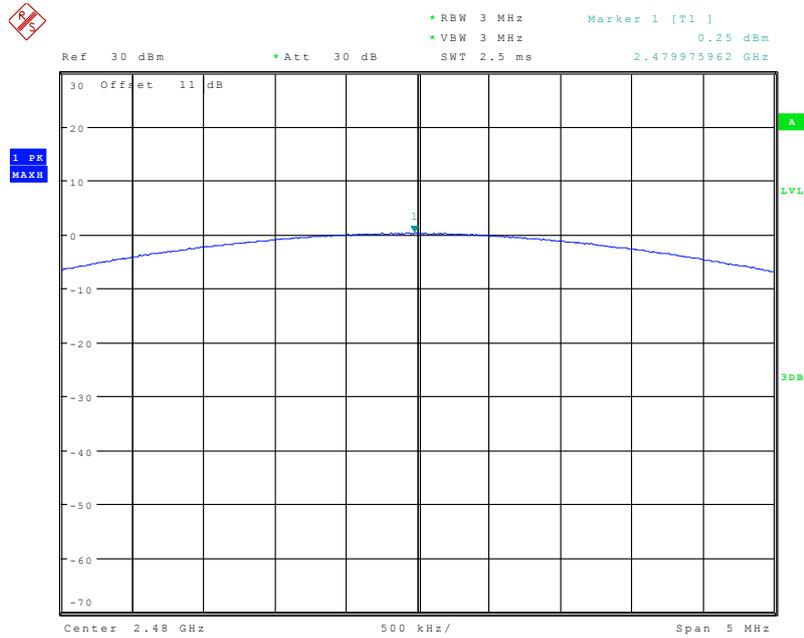
Date: 2.DEC.2010 11:00:15

(Plot A:Channel = 2402)



Date: 2.DEC.2010 11:05:39

(Plot B:Channel = 2441)



Date: 2.DEC.2010 11:13:46

(Plot C:Channel = 2480)

3.3 20dB Bandwidth

3.3.1 Definition

The 20dB bandwidth is known as the 99% emission bandwidth, or 20dB bandwidth ($10 \cdot \log 1\% = 20\text{dB}$) taking the total RF output power.

3.3.2 Test Description

See section 3.1.2 of this report.

3.3.3 Test Result

The Bluetooth Module operates at hopping-off test mode. The lowest, middle and highest channels are selected to perform testing to record the 20dB bandwidth of the Module.

A. Test Verdict:

The maximum 20dB bandwidth measured is 1.361MHz according to the table below.

GFSK(1Mbps):

Channel	Frequency (MHz)	20dB Bandwidth (MHz)	Refer to Plot
0	2402	0.966	Plot A
39	2441	0.969	Plot B
78	2480	0.969	Plot C

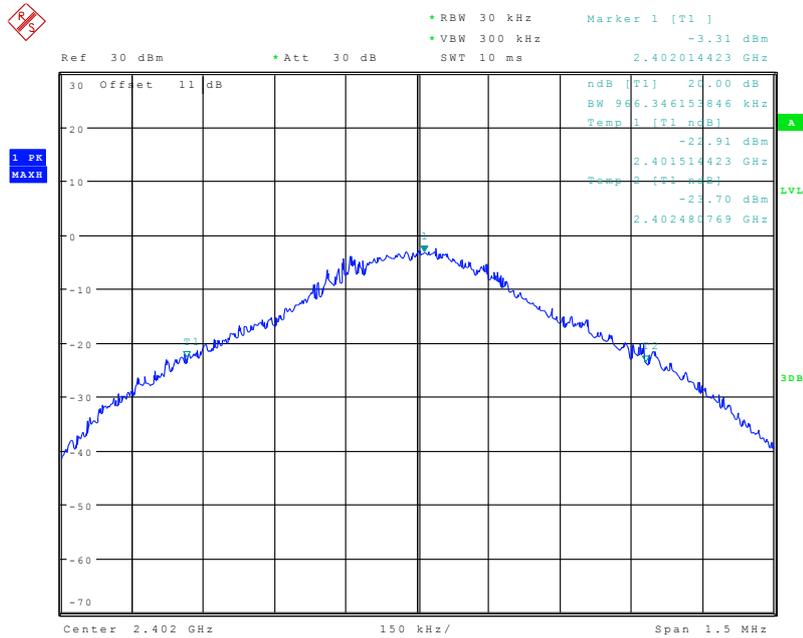
π /4-DQPSK(2Mbps)

Channel	Frequency (MHz)	20dB Bandwidth (MHz)	Refer to Plot
0	2402	1.332	Plot D
39	2441	1.337	Plot E
78	2480	1.332	Plot F

8-DPSK(3Mbps)

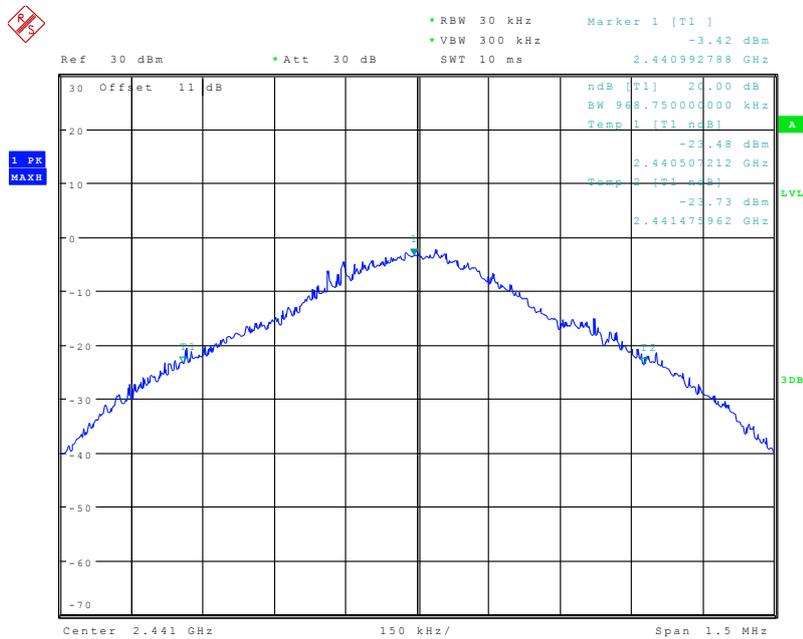
Channel	Frequency (MHz)	20dB Bandwidth (MHz)	Refer to Plot
0	2402	1.361	Plot G
39	2441	1.358	Plot H
78	2480	1.361	Plot I

B. Test Plot:



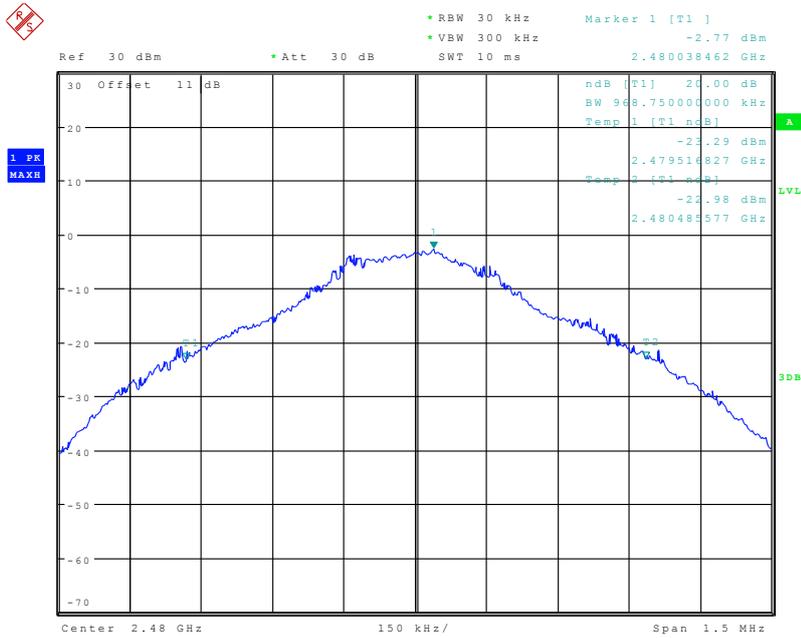
Date: 2.DEC.2010 11:21:59

(Plot A: Channel = 2402)



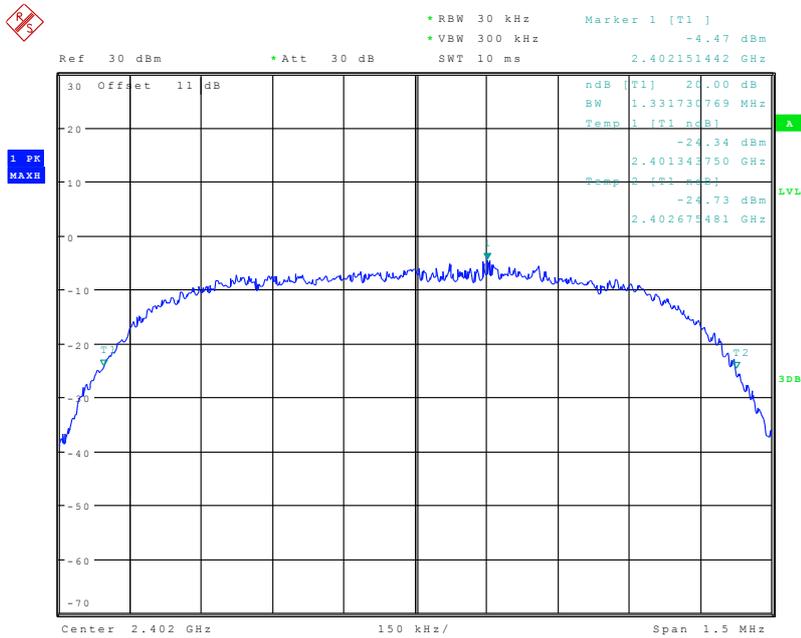
Date: 2.DEC.2010 11:25:48

(Plot B: Channel = 2441)



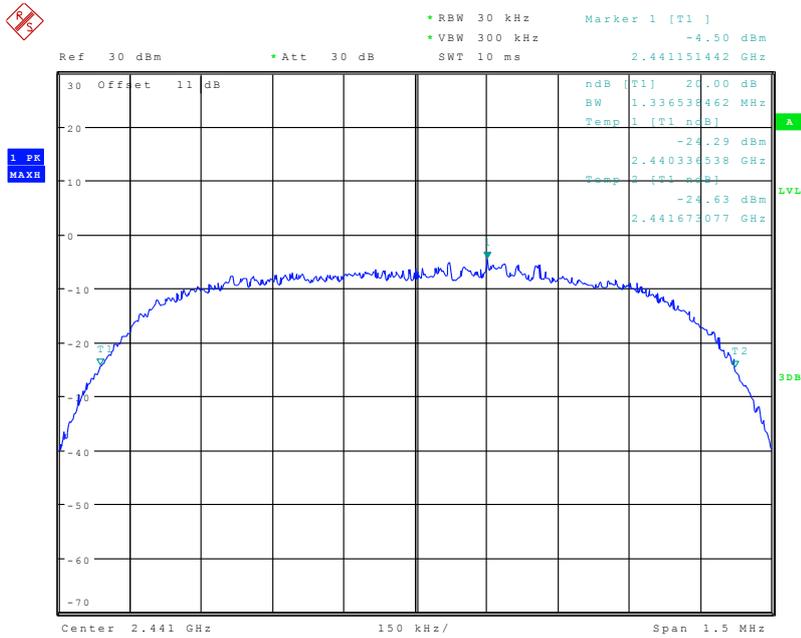
Date: 2.DEC.2010 11:28:20

(Plot C: Channel = 2480)



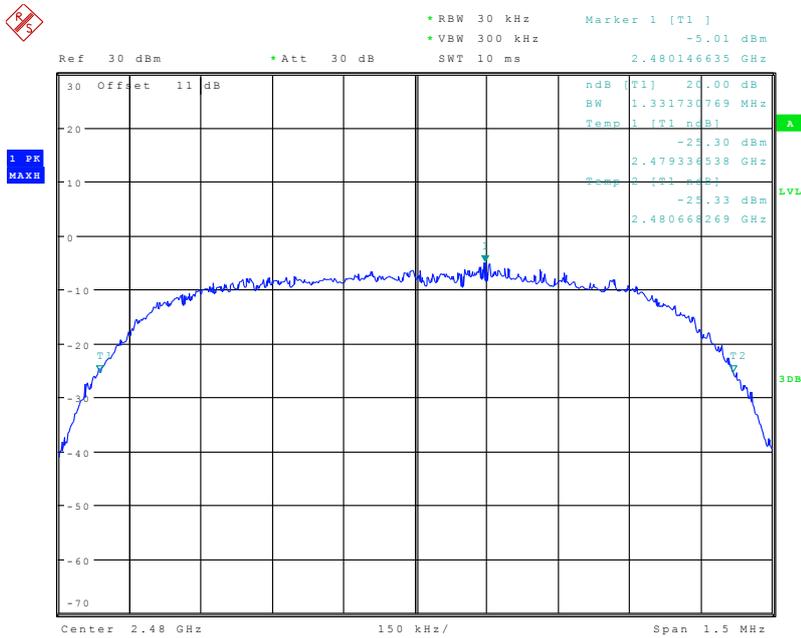
Date: 2.DEC.2010 11:31:57

(Plot D: Channel = 2402)



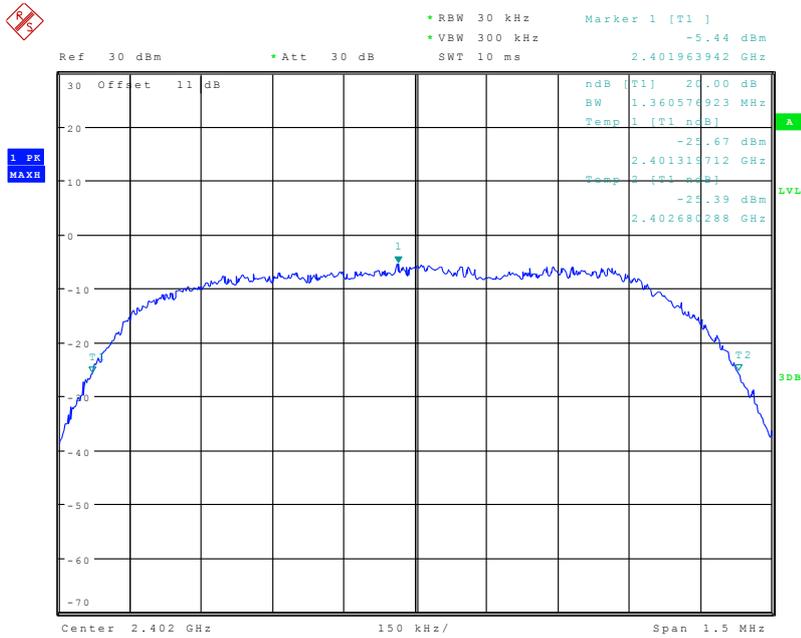
Date: 2.DEC.2010 11:32:16

(Plot E: Channel = 2441)



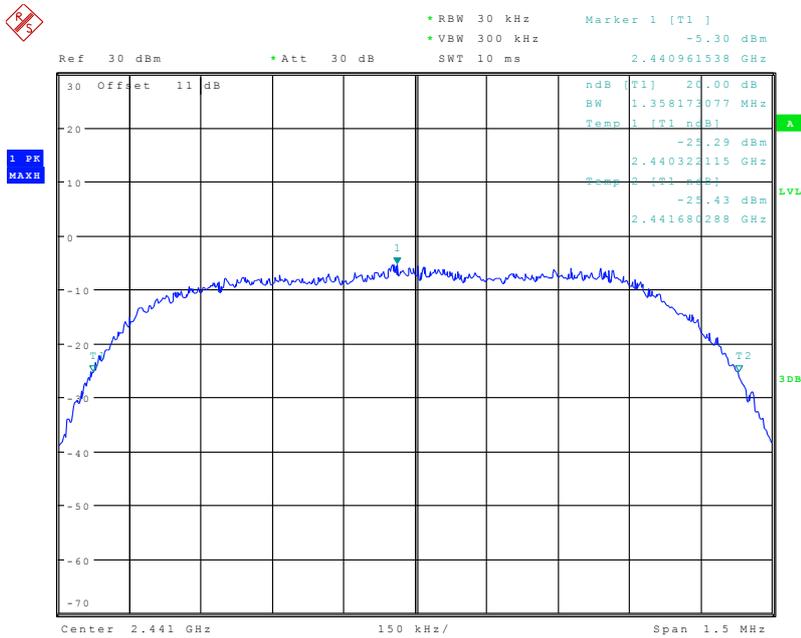
Date: 2.DEC.2010 11:33:27

(Plot F: Channel = 2480)



Date: 2.DEC.2010 11:34:07

(Plot G: Channel = 2402)



Date: 2.DEC.2010 11:35:15

(Plot H: Channel = 2441)

3.4 Carried Frequency Separation

3.4.1 Definition

According to FCC section 15.247(a)(1), frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater.

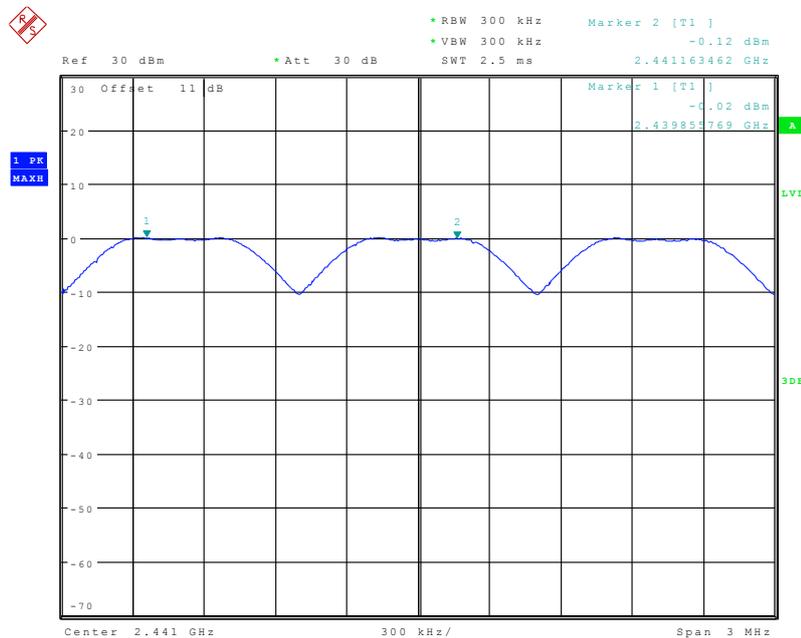
3.4.2 Test Description

See section 3.1.2 of this report.

3.4.3 Test Result

The Bluetooth Module operates at hopping-on test mode.

For any adjacent channels (e.g. the channel 39 and 40 as showed in the Plot A), the Module does have hopping channel carrier frequencies separated by a minimum of 25kHz or two-thirds of the 20dB bandwidth of the hopping channel (refer to section 3.3.3), whichever is greater. So, the verdict is PASS.



Date: 30.NOV.2010 09:27:53

(Plot A: Carried Frequency Separation)

3.5 Time of Occupancy (Dwell time)

3.5.1 Requirement

According to FCC section 15.247(a)(1)(iii), frequency hopping systems in the 2400 - 2483.5MHz band shall use at least 15 non-overlapping channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

3.5.2 Test Description

See section 3.1.2 of this report.

3.5.3 Test Result

The average time of occupancy on any channel within the Period can be calculated with formulas (for DH1 and DH5 package type):

$$\begin{aligned} \{\text{Total of Dwell}\} &= \{\text{Pulse Time}\} * (1600 / 6) / \{\text{Number of Hopping Frequency}\} * \{\text{Period}\} \\ \{\text{Period}\} &= 0.4s * \{\text{Number of Hopping Frequency}\} \end{aligned}$$

The lowest, middle and highest channels are selected to perform testing to record the dwell time of each occupation measured in this channel, which is called Pulse Time here.

A. Test Verdict:

DH1

Channel	Frequency (MHz)	Pulse Time		Total of Dwell (ms)	Limit (ms)	Verdict
		ms	Refer to Plot			
39	2441	0.38	Plot B	40.53	400	PASS

DH3

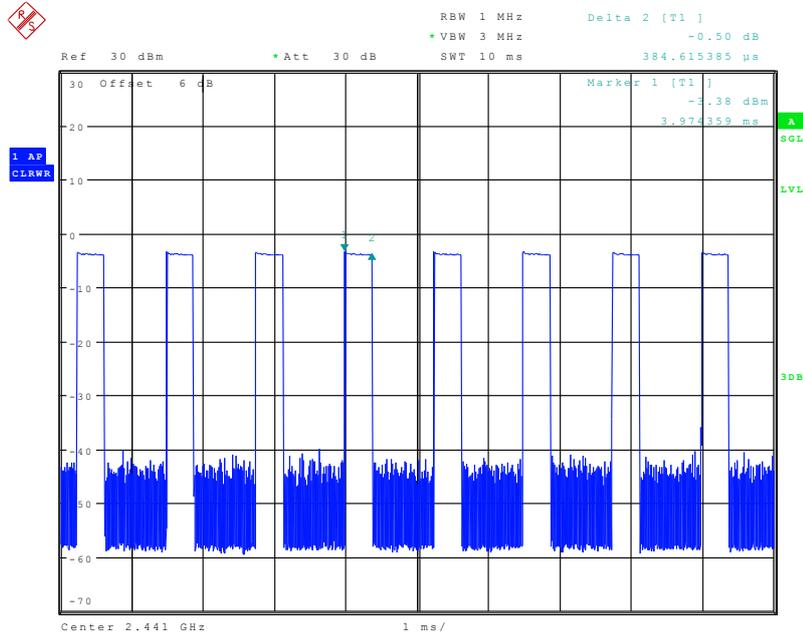
Channel	Frequency (MHz)	Pulse Time		Total of Dwell (ms)	Limit (ms)	Verdict
		ms	Refer to Plot			
39	2441	1.63	Plot E	173.87	400	PASS

DH5

Channel	Frequency (MHz)	Pulse Time		Total of Dwell (ms)	Limit (ms)	Verdict
		ms	Refer to Plot			
39	2441	2.88	Plot H	307.20	400	PASS

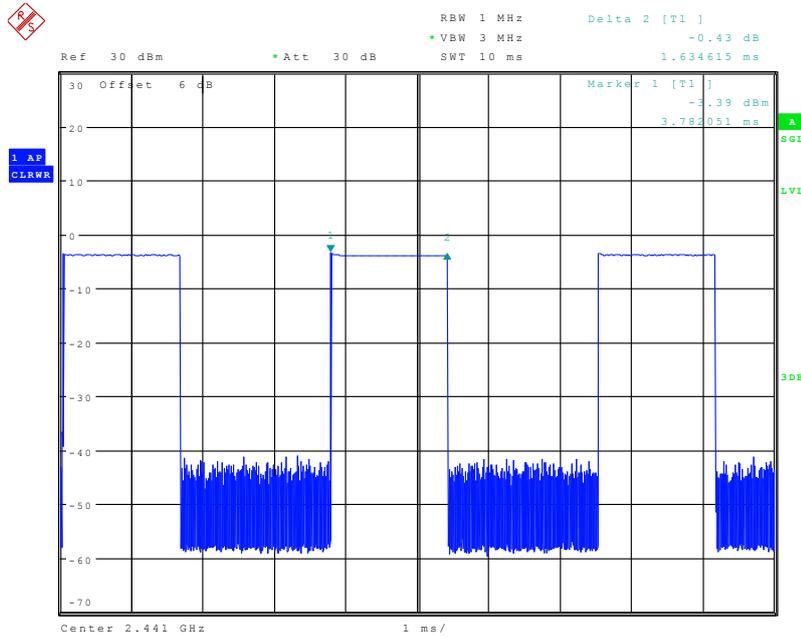
B. Test Plot:

Note: the following plots record the Pulse Time of the Module carrier.



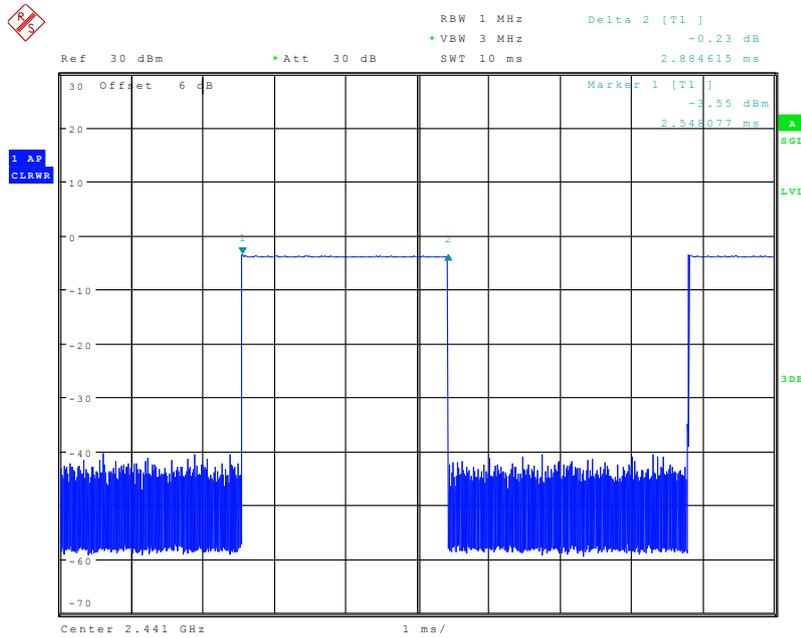
Date: 30.NOV.2010 14:58:39

(Plot A: Channel = 2441)



Date: 30.NOV.2010 15:02:08

(Plot B: Channel = 2441)



Date: 30.NOV.2010 15:06:07

(Plot C: Channel = 2441)

3.6 Conducted Spurious Emissions

3.6.1 Requirement

According to FCC section 15.247(c), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

3.6.2 Test Description

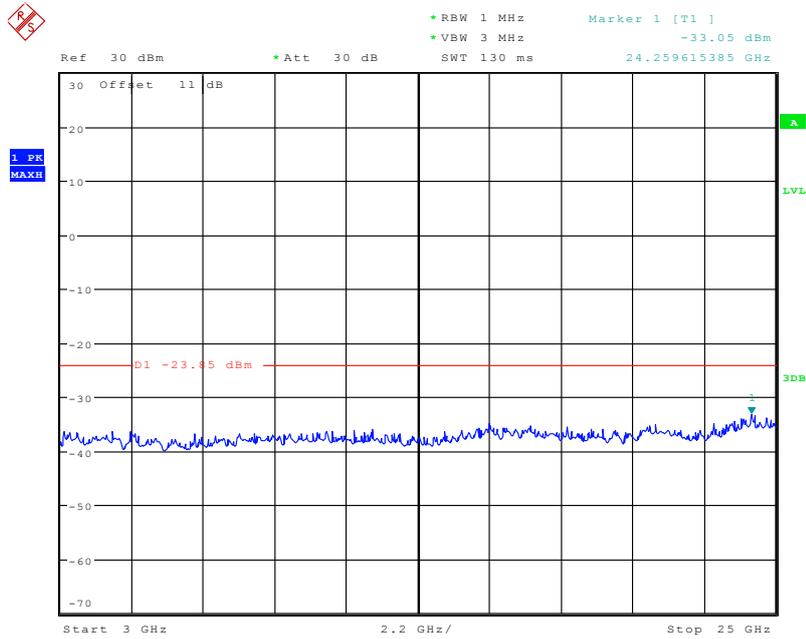
See section 3.1.2 of this report.

3.6.3 Test Result

The Bluetooth Module operates at hopping-off test mode. The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions.

A. Test Verdict:

Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Refer to Plot	Limit (dBm)		Verdict
				Carrier Level	Calculated -20dBc Limit	
0	2402	-33.74	Plot A.1/A.2	-3.34	-23.34	PASS
39	2441	-32.95	Plot B.1/B.2	-3.43	-23.43	PASS
78	2480	-33.05	Plot C.1/C.2	-3.85	-23.85	PASS



Date: 30.NOV.2010 10:10:15

(Plot C.2: Channel = 78, 3GHz to 25GHz)

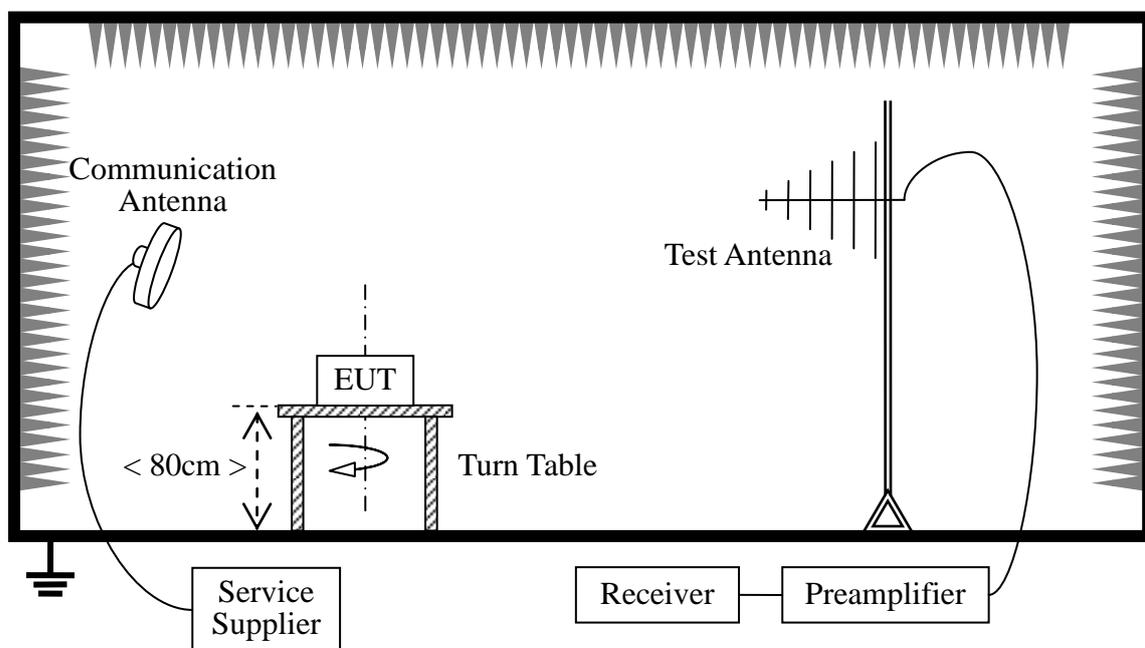
3.7 Band Edge

3.7.1 Requirement

According to FCC section 15.247(c), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

3.7.2 Test Description

A. Test Setup:



The Bluetooth Module of the EUT is powered by the Battery charged with the AC Adapter which is powered by 120V, 60Hz AC mains supply. The Module is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading. During the measurement, the Bluetooth Module is activated and controlled by the Bluetooth Service Supplier (SS) via a Common Antenna, and is set to operate under hopping-on test mode transmitting 339 bytes DH5 packages at maximum power.

For the Test Antenna:

Horn Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength..

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Anritsu	MT8852A	6K00002788	2010.9	1year
Receiver	Agilent	E4440A	MY46187763	2010.9	1year
Spectrum Analyzer	R&S	FSP30	101020	2010.9	1year
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2009.10	2year
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2010.9	1year

3.7.3 Test Result

The Bluetooth Module operates at hopping-off test mode. The lowest and highest channels are tested to verify the band edge emissions.

A. Test Verdict:.

Channel	Frequency (MHz)	Max. Emission in the Restricted Bands (dB μ V/m)		Refer to Plot	Limit (dB μ V/m)		Verdict
		PK	AV		PK	AV	
0	2402	41.01	33.36	Plot A.1/A.2	74	54	PASS
78	2480	38.25	34.53	Plot B.1/B.2	74	54	PASS

B. Test Plot:

3.8 Conducted Emission

3.8.1 Requirement

According to FCC section 15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

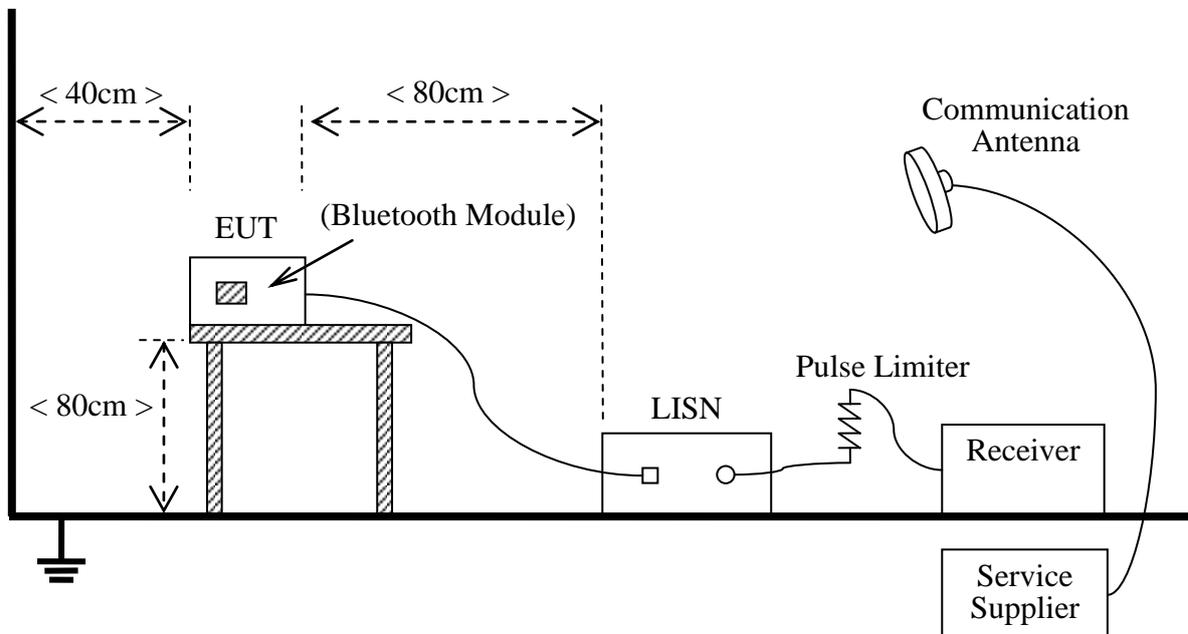
Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

NOTE:

- The lower limit shall apply at the band edges.
- The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

3.8.2 Test Description

A. Test Setup:



The Table-top EUT was placed upon a non-metallic table 0.8m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.4:2003

The Bluetooth Module of the EUT is powered by the Battery charged with the AC Adapter which is powered by 120V, 60Hz AC mains supply. The factors of the site are calibrated to correct the reading. During the measurement, the Bluetooth Module is activated and controlled by the Bluetooth Service Supplier (SS) via a Common Antenna, and is set to operate under hopping-on test mode transmitting 339 bytes DH5 packages at maximum power.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2010.9	1year
LISN	Schwarzbeck	NSLK 8127	812744	2010.9	1year
Service Supplier	R&S	CMU200	100448	2010.9	1year
Pulse Limiter (20dB)	Schwarzbeck	VTSD 9561-D	9391	(n.a.)	(n.a.)

3.8.3 Test Result

The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Band width (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.355219	56.6	1000.000	9.000	N	9.7	2.1	58.7	PASS
0.370144	54.7	1000.000	9.000	N	9.7	3.6	58.3	PASS
0.616406	44.0	1000.000	9.000	N	9.7	12.0	56.0	PASS
0.866400	49.4	1000.000	9.000	N	9.7	6.6	56.0	PASS
1.105200	47.2	1000.000	9.000	N	9.7	8.8	56.0	PASS
1.489519	49.5	1000.000	9.000	N	9.7	6.5	56.0	PASS
0.344025	48.3	1000.000	9.000	L1	9.7	10.6	58.9	PASS
0.355219	49.6	1000.000	9.000	L1	9.7	9.1	58.7	PASS
0.664912	39.5	1000.000	9.000	L1	9.7	16.5	56.0	PASS
0.926100	42.4	1000.000	9.000	L1	9.7	13.6	56.0	PASS
0.967144	42.2	1000.000	9.000	L1	9.7	13.8	56.0	PASS
1.008188	43.3	1000.000	9.000	L1	9.7	12.7	56.0	PASS

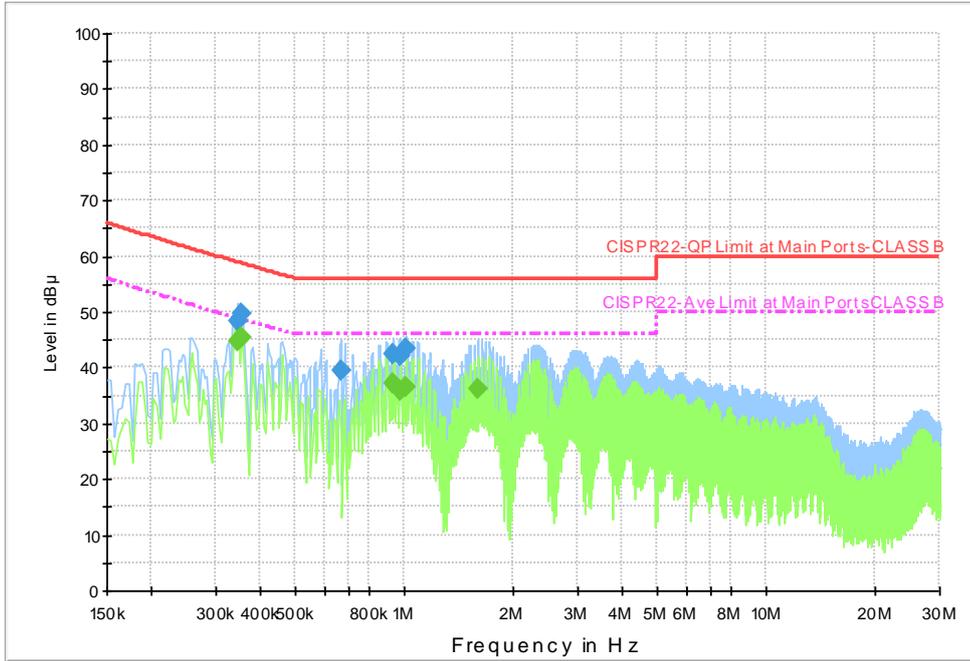
1.



Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Band width (kHz)	Line	Corr. (dB)	Margi n (dB)	Limit (dB μ V)	Comment
0.355219	47.4	1000.000	9.000	N	9.7	1.2	48.6	PASS
0.373875	44.2	1000.000	9.000	N	9.7	4.0	48.2	PASS
0.866400	40.5	1000.000	9.000	N	9.7	5.5	46.0	PASS
0.944756	40.2	1000.000	9.000	N	9.7	5.8	46.0	PASS
1.485788	40.3	1000.000	9.000	N	9.7	5.7	46.0	PASS
1.526831	40.5	1000.000	9.000	N	9.7	5.5	46.0	PASS
0.344025	44.6	1000.000	9.000	L1	9.7	4.3	48.9	PASS
0.355219	45.4	1000.000	9.000	L1	9.7	3.2	48.6	PASS
0.929831	37.3	1000.000	9.000	L1	9.7	8.7	46.0	PASS
0.967144	35.9	1000.000	9.000	L1	9.7	10.1	46.0	PASS
1.008188	36.6	1000.000	9.000	L1	9.7	9.4	46.0	PASS
1.590262	36.3	1000.000	9.000	L1	9.8	9.7	46.0	PASS

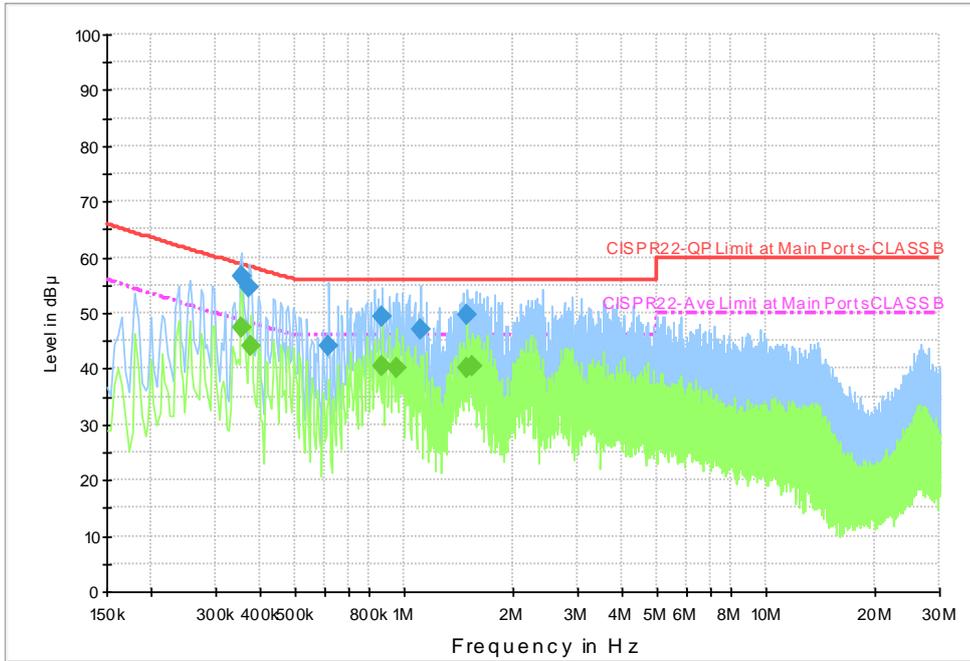
Test Plot:

MORLAB-CE-ENV216Auto Test-L



(Plot A: L Phase)

MORLAB-CE-ENV216Auto Test-N



(Plot B: N Phase)

3.9 Radiated Emission

3.9.1 Requirement

According to FCC section 15.247(c), radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

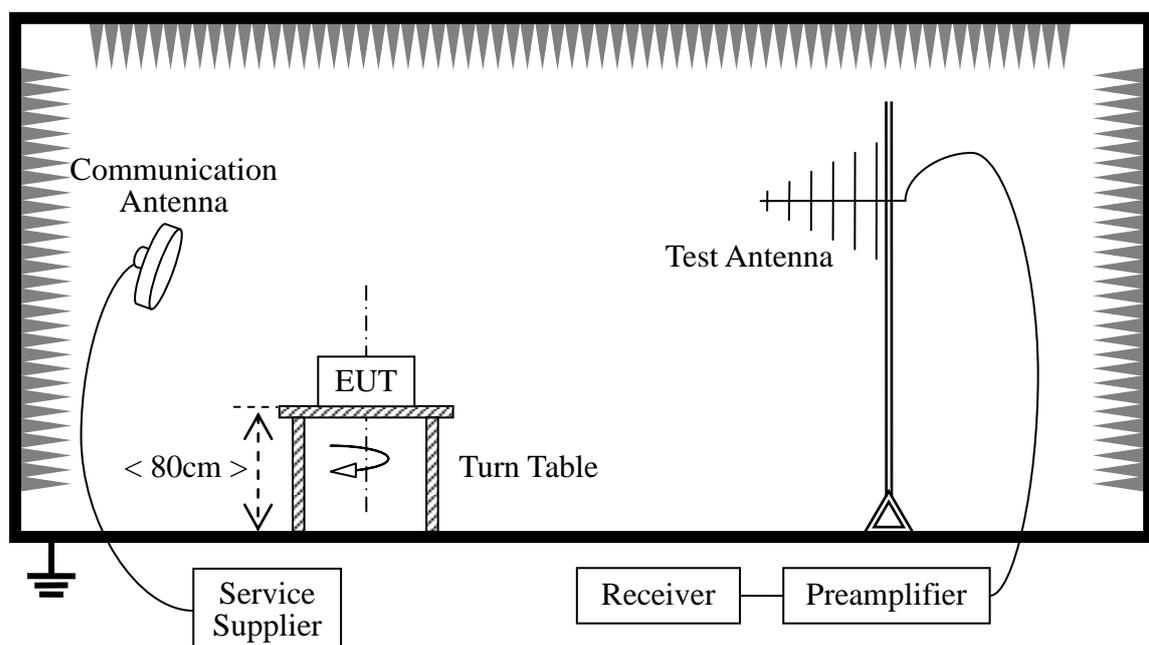
According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength ($\mu\text{V}/\text{m}$)	Measurement Distance (m)	Detector
30 - 88	100	3	QP
88 - 216	150	3	QP
216 - 960	200	3	QP
960 - 1000	500	3	QP
Above 1000	500	3	AV

In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table)

3.9.2 Test Description

A. Test Setup:



The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.4 (2003). The EUT was set-up on insulator 80cm above the Ground Plane. The set-up and test methods were according to ANSI C63.4.

The Bluetooth Module of the EUT is powered by the Battery charged with the AC Adapter which is powered by 120V, 60Hz AC mains supply. The Module is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading. During the measurement, the Bluetooth Module is activated and controlled by the Bluetooth Service Supplier (SS) via a Common Antenna, and is set to operate under hopping-on test mode transmitting 339 bytes DH5 packages at maximum power.

For the Test Antenna: In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength, the azimuth range of turntable was 0° to 360°, the receive antenna has two polarizations horizontal and vertical. When doing measurements above 1GHz, the EUT was placed within the 3dB beam width range of the horn antenna, and the EUT was tested in 3 orthogonal positions as recommended in ANSI C63.4 for Radiated Emissions and the worst-case data was presented.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Anritsu	MT8852A	6K00002788	2010.9	1year
Spectrum Analyzer	R&S	FSP30	101020	2010.9	1year
Receiver	Agilent	E7405A	US44210471	2010.9	1year
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2009.10	2year
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2010.9	1year
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2010.9	1year
Test Antenna - circular	R&S	AC004R1	0749.3000.03	2010.9	1year
Test Antenna	Schwarzbeck	BBHA9170	BBHA9170171	2010.9	1year

3.9.3 Test Result

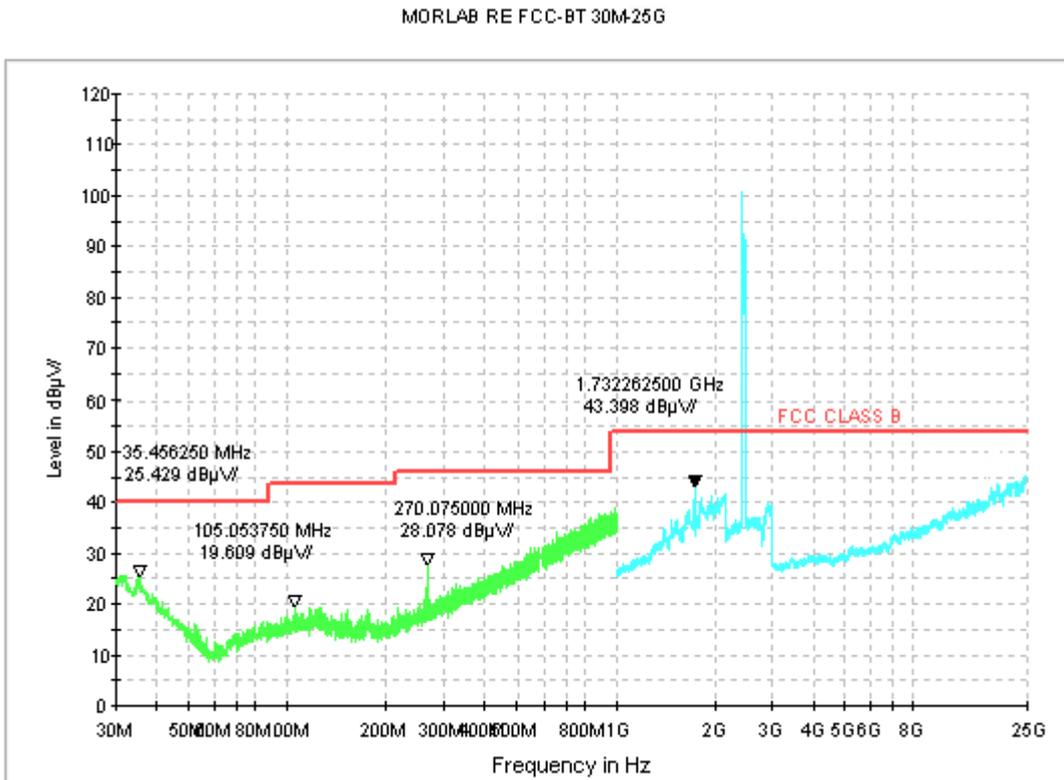
A. Test Mode:

1. Channel 0: Frequency 2402MHz
2. Channel 39: Frequency 2441MHz
3. Channel 78: Frequency 2480Mhz

NOTE:

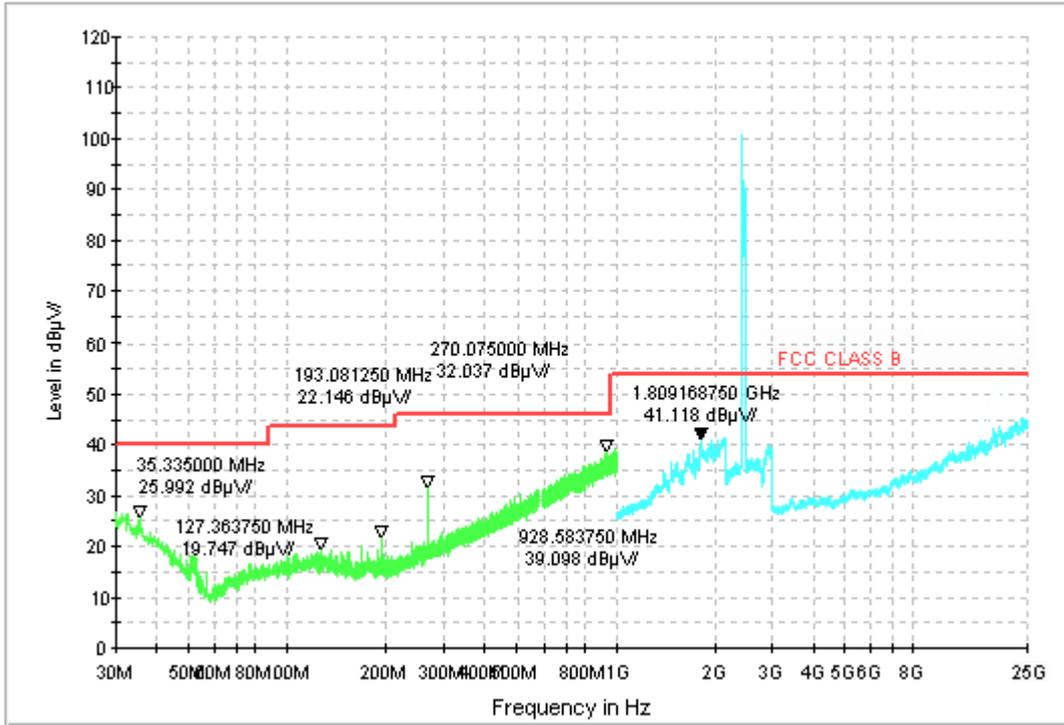
All test modes are performed, only the worst cases are recorded in this report.

B. Test Plots for the Whole Measurement Frequency Range:



(Plot A.1: Antenna Horizontal)

MORLAB RE FCC-BT 30M-25G



(Plot A.2: Antenna Vertical)

** END OF REPORT **