TESTING
CNAS L3572

FCC Part 15C TEST REPORT

Issued to

Latitude Limited

For

Heart Rate Chest Strap

Model Name	:	TD00290
Trade Name	:	Latitude
Brand Name	:	Latitude
FCC ID	:	WM4714
Standard	:	47 CFR Part 15 Subpart C
Test date	:	2012-8-14 to 2012-8-24
Issue date	:	2012-8-27

Shenzhen MORLAB Communication Technology Co., Ltd.

Tested by	Qiu Xiaojun	*Approved by*	Wu Xuewen	*Review by*	Peng Huarui
	Qiu Xiaojun		Wu Xuewen		Peng Huarui
Date	2012.8.27	*Date*	2012.08.27	*Date*	2012.8.27

CTIA Authorized Test Lab LAB CODE 20091223-00 IEEE 1725 OTA

OFTA 電訊管理局

Testing Laboratory 2030

GCF Official Observer of Global Certification Forum

Bluetooth BQTF

FCC Reg. No. 741109

DIRECTORY

Change History		
Issue	Date	Reason for change
1.0	Aug 27, 2012	First edition

1. General Information

1.1. EUT Description

EUT Type	:	Heart Rate Chest Strap
Serial No.	:	(n.a, marked #1 by test site)
Hardware Version	:	1.0
Software Version	:	1.0
Applicant	:	Latitude Limited 7/F, Southeast, Industrial Building, 611-619 Castle Peak Road, Tsuen Wan, N.T., Hong Kong
Manufacturer	:	Latitude Limited 7/F, Southeast, Industrial Building, 611-619 Castle Peak Road, Tsuen Wan, N.T., Hong Kong
Frequency Range	:	The frequency range used is 2402MHz - 2480MHz (40 channels, at intervals of 2MHz);
Modulation Type	:	GFSK
Antenna Type	:	PCB Antenna
Antenna Gain	:	0dBi

Note 1: The EUT is Heart Rate Chest Strap, it contains Bluetooth4.0 LE single-mode Module operating at 2.4GHz ISM band; the frequencies allocated for the Bluetooth Module is F(MHz)=2402+2*n (0<=n<=39). The lowest, middle, highest channel numbers of the Bluetooth Module used and tested in this report are separately 0 (2402MHz), 19 (2440MHz) and 39 (2480MHz).

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

1.2. Test Standards and Results

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

No.	Identity	Document Title
1	47 CFR Part 15 (10-1-09 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	(n.a)
2	15.247(b)	Peak Output Power	PASS
3	15.247(b)	Average Power	PASS
4	15.247(a)	6dB Bandwidth	PASS
5	15.247(a)	99% Bandwidth	PASS
6	15.247(a)	Carrier Frequency Separation	(n.a)
7	15.247(a)	Time of Occupancy (Dwell time)	(n.a)
8	15.247(c)	Conducted Spurious Emission	PASS
9	15.247(c)	Band Edge	PASS
10	15.207	Conducted Emission	PASS
11	15.209 15.247(c)	Radiated Emission	PASS
12	15.247(d)	Power spectral density (PSD)	PASS

The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.4 2009.

These RF tests were performed according to the method of measurements prescribed in KBD558074.

1.3. Facilities and Accreditations

1.3.1. Facilities

Shenzhen Morlab Communications Technology Co., Ltd. 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 L3572.

All measurement facilities used to collect the measurement data are located at FL.3, Building a, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. 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.

1.3.2. Test Environment Conditions

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

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106

2. 47 CFR Part 15C Requirements

2.1. Peak Output Power

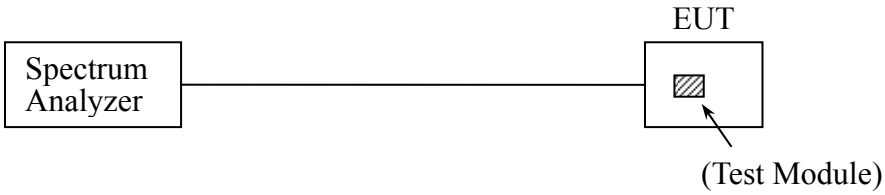
2.1.1. Requirement

According to FCC section 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: The maximum peak conducted output power of the intentional radiator shall not exceed1 Watt.

2.1.2. Test Description

The measured output power was calculated by the reading of the Spectrum Analyzer calibration.

A. Test Setup:



The EUT (Equipment under the test) which is powered by the Battery is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading, all test result in Spectrum Analyzer.

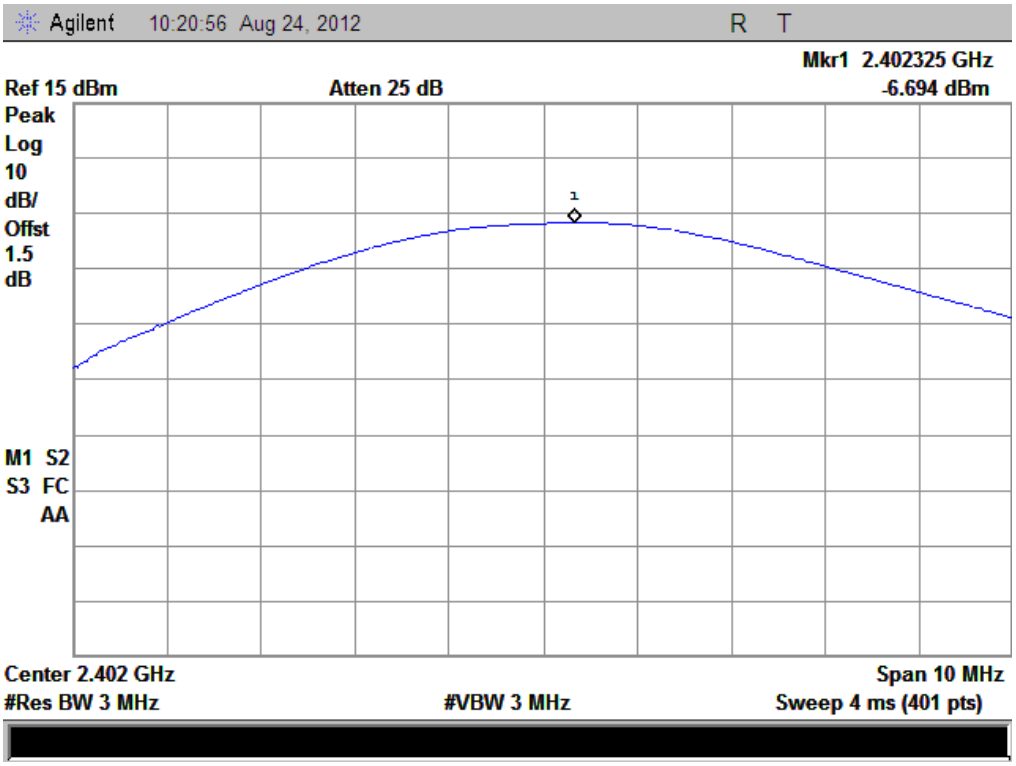
B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	Agilent	E4407B	MY45101810	2012.05	2013.05

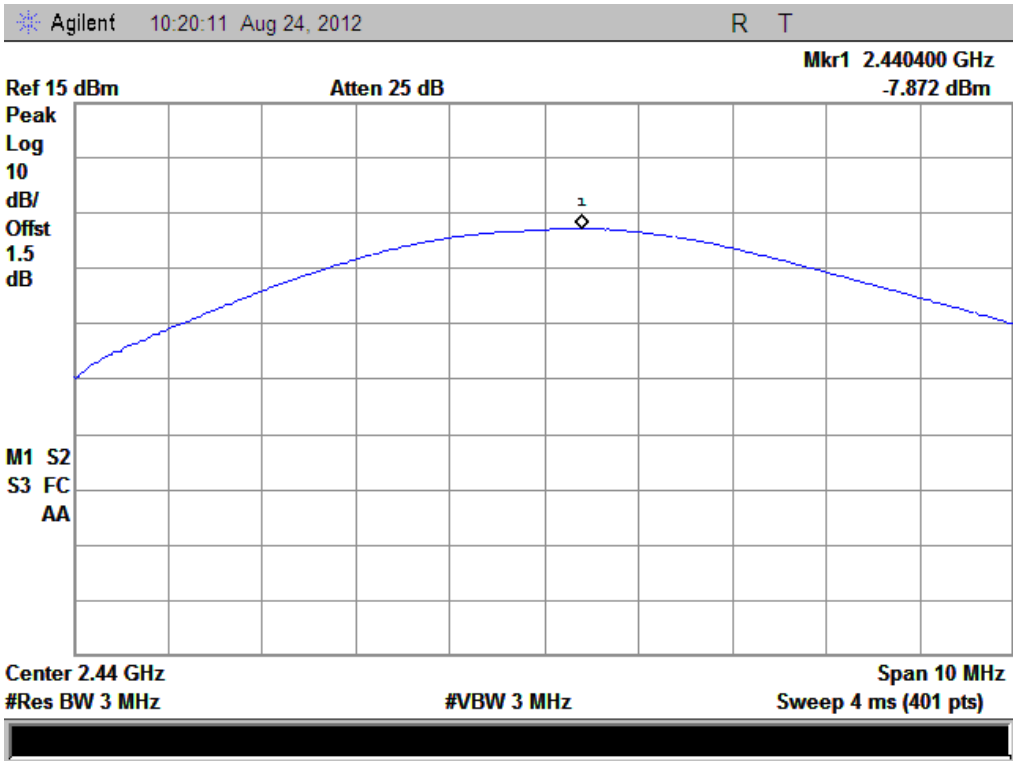
2.1.3. Test Result

The lowest, middle and highest channels are selected to perform testing to verify the conducted RF output peak power of the Module.

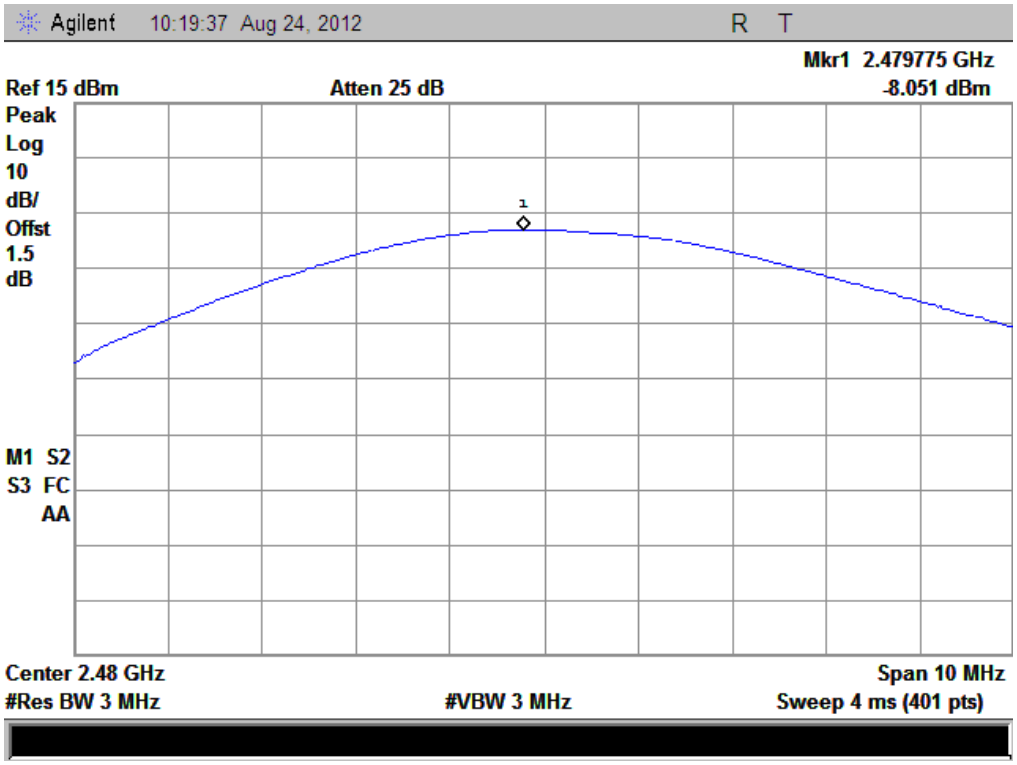
Channel	Frequency (MHz)	Measured Output Peak Power		Refer to Plot	Limit		Verdict
		dBm	W		dBm	W	
0	2402	-6.694	0.000214	Plot A	30	1	PASS
19	2440	-7.872	0.000163	Plot B			PASS
39	2480	-8.051	0.000157	Plot C			PASS



(Plot A: Channel 0: 2402MHz)



(Plot B: Channel 19: 2440 MHz)



(Plot C: Channel 39: 2480MHz)

2.2. Average power

2.2.1. Requirement

None; for reporting purposes only.

2.2.2. Test Description

The transmitter output is connected to a power meter.

Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Power Meter	Agilent	E4416A	MY45101810	2012.05	2013.05

2.2.3. Results

The cable assembly insertion loss of 1.5dB was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Average Power	
		dBm	W
0	2402	-7.15	0.000193
19	2440	-8.36	0.000146
39	2480	-8.62	0.000137

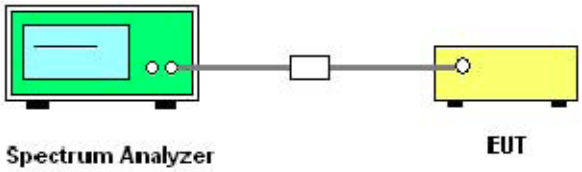
2.3. 6dB Bandwidth

2.3.1. Requirement

According to FCC section 15.247(a) (2), Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

2.3.2. Test Description

A. Test Set:



The EUT which is powered by the Battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	Agilent	E4407B	MY45101810	2012.05	2013.05

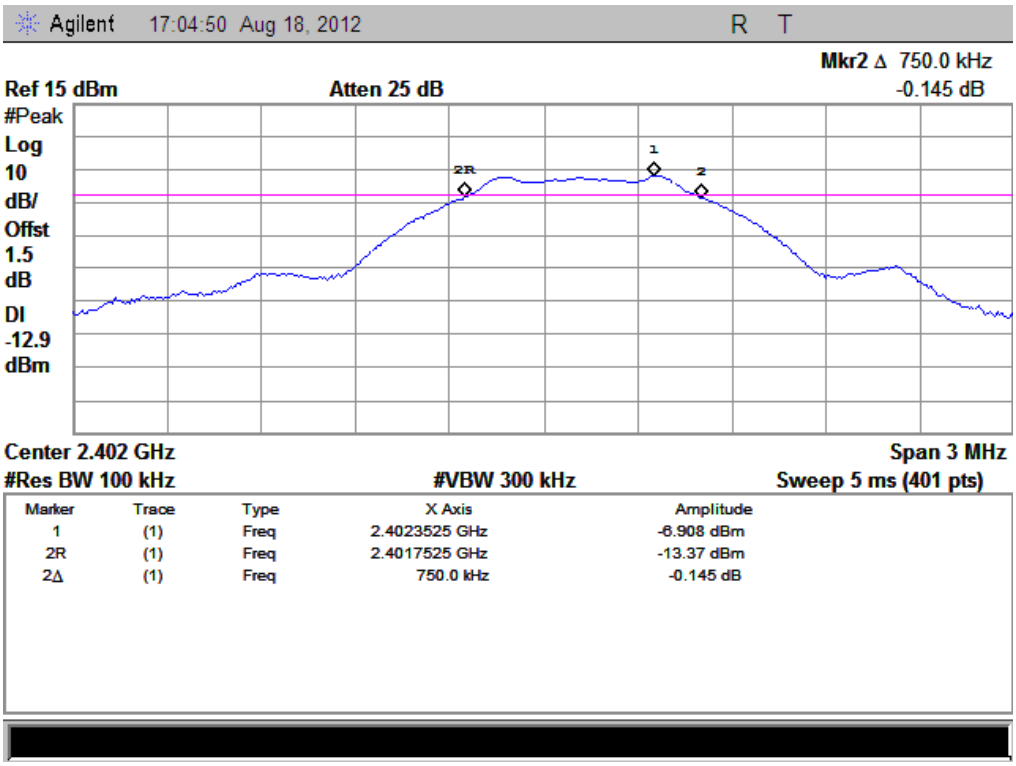
2.3.3. Test Result

The lowest, middle and highest channels are selected to perform testing to record the 6 dB bandwidth of the Module.

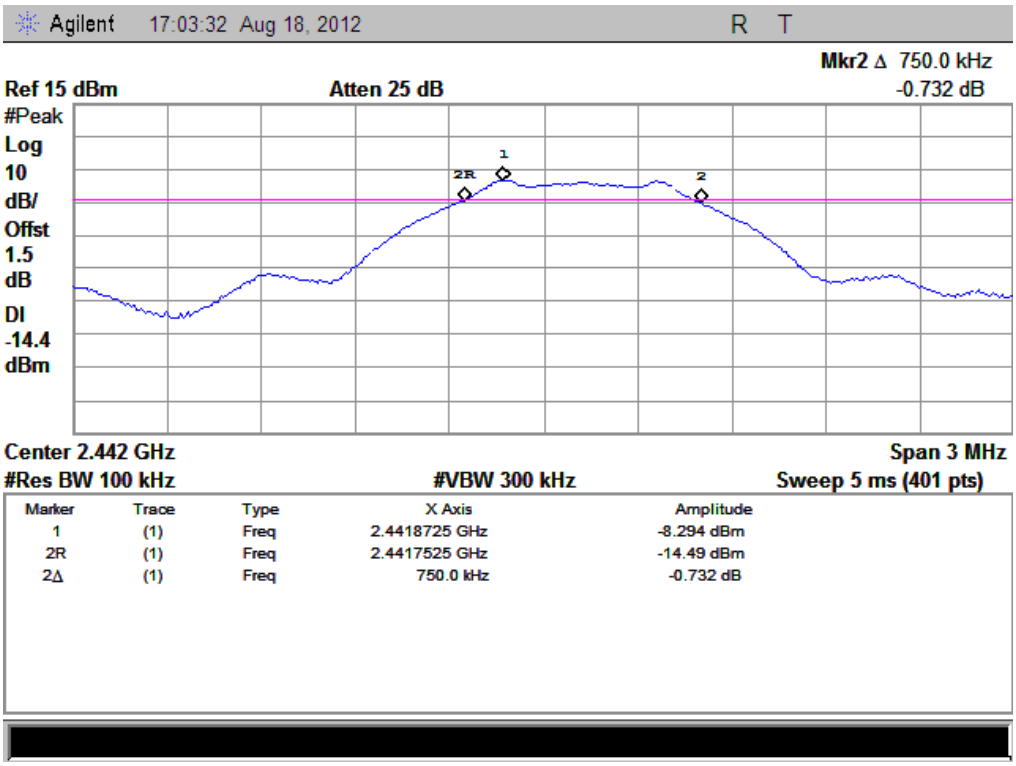
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Refer to Plot	Limits(kHz)	Result
0	2402	0.750	Plot A	≥500	PASS
19	2440	0.750	Plot B	≥500	PASS
39	2480	0.750	Plot C	≥500	PASS

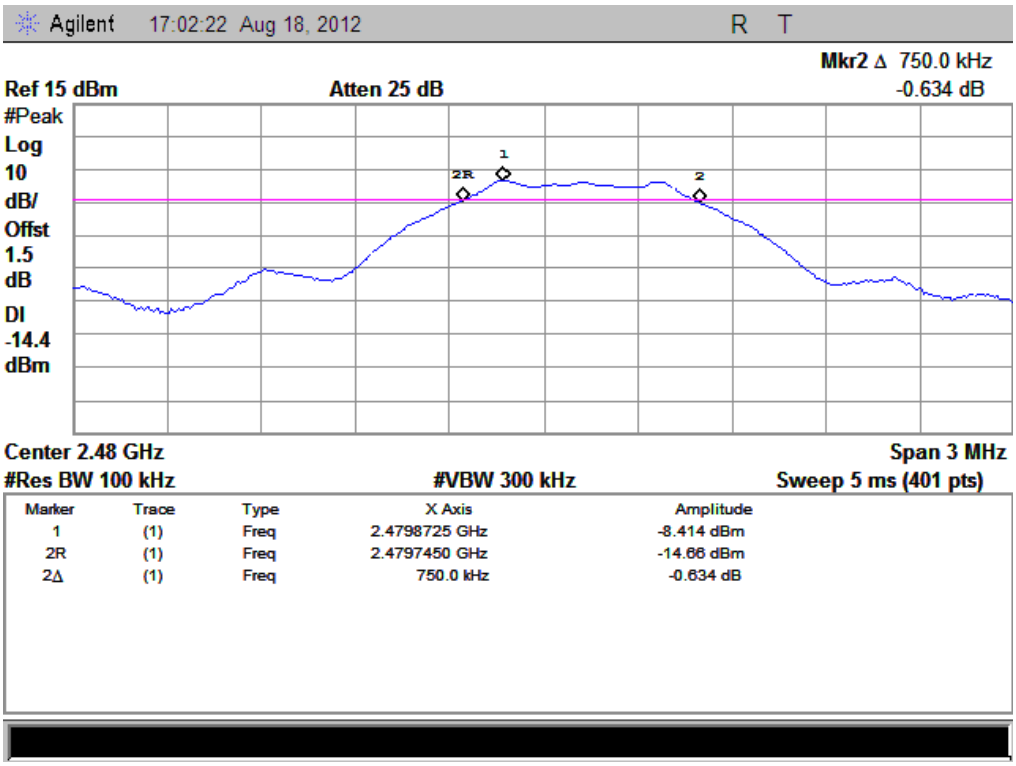
Test Plots:



(Plot A: Channel 0: 2402MHz)



(Plot B: Channel 19: 2440 MHz)



(Plot C: Channel 39: 2480MHz)

2.4. 99% Bandwidth

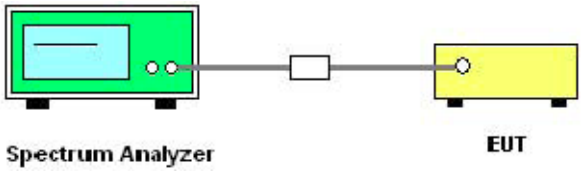
2.4.1. Requirement

None; for reporting purposes only.

2.4.2. Test Description

The transmitter output is connected to a spectrum analyzer. The RBW is set to ≥1% of the 20dB bandwidth. The VBW is set to ≥RBW. The sweep time is coupled.

A. Test Set:



B. Equipments List:

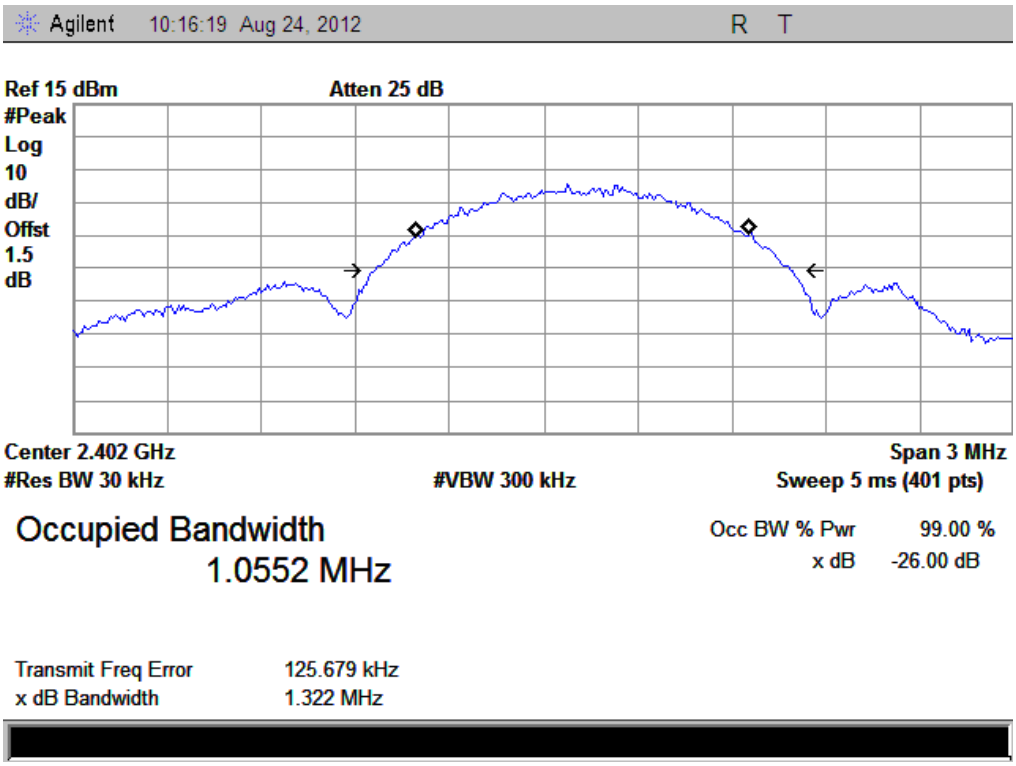
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	Agilent	E4407B	MY45101810	2012.05	2013.05

2.4.3. Test Result

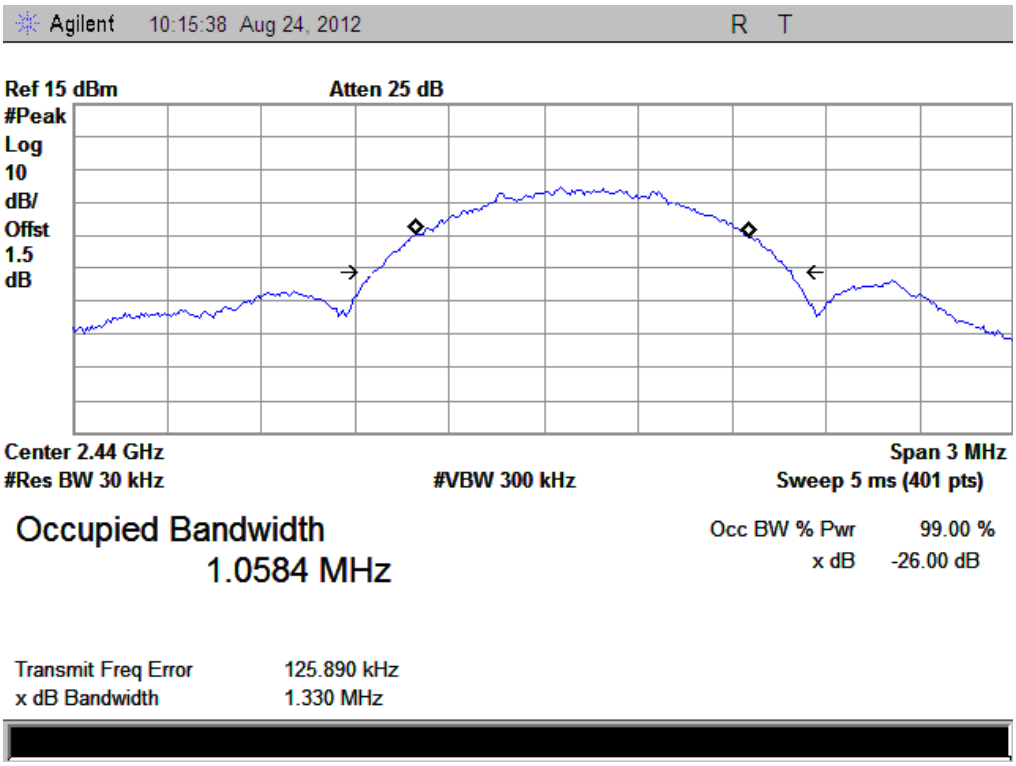
A. Test Verdict:

Channel	Frequency (MHz)	99% Bandwidth (MHz)	Refer to Plot
0	2402	1.0552	Plot A
19	2440	1.0584	Plot B
39	2480	1.0604	Plot C

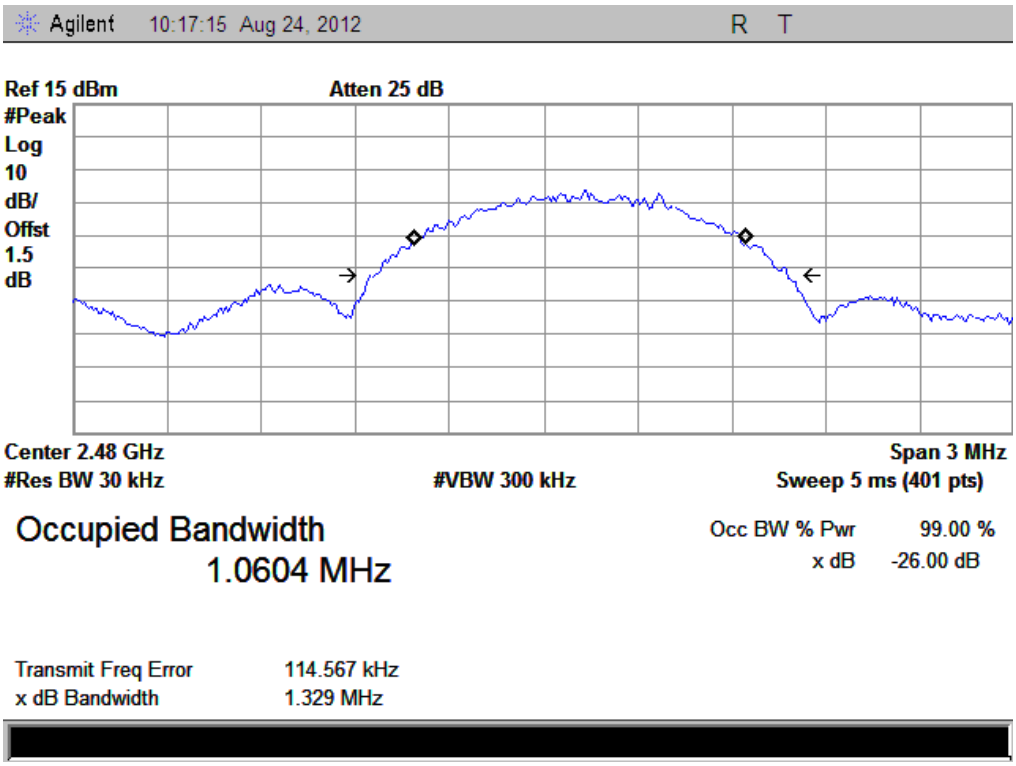
B. Test Plots:



(Plot A: Channel 0: 2402MHz)



(Plot B: Channel 19: 2440MHz)



(Plot C: Channel 39: 2480MHz)

2.5. Conducted Spurious Emissions

2.5.1. 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.

2.5.2. Test Description

See section 2.3.2 of this report.

2.5.3. Test Result

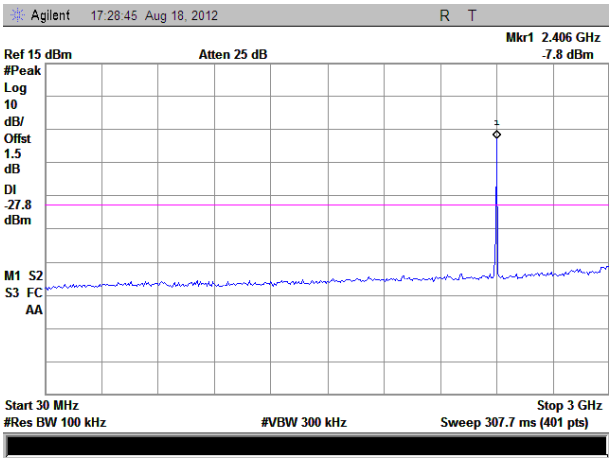
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions.

A. Test Verdict:

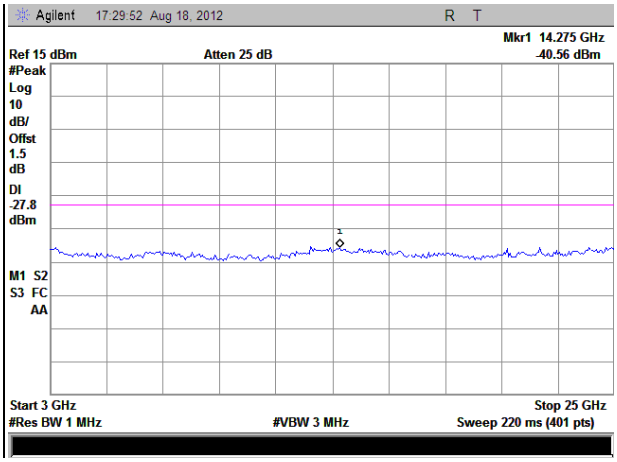
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Refer to Plot	Limit (dBm)		Verdict
				Carrier Level	Calculated -20dBc Limit	
0	2402	<-25	Plot A.1/A.2	-7.800	-27.8	PASS
19	2440	<-25	Plot B.1/B.2	-9.023	-29.0	PASS
39	2480	<-25	Plot C.1/C.2	-9.391	-29.4	PASS

Test Plots:

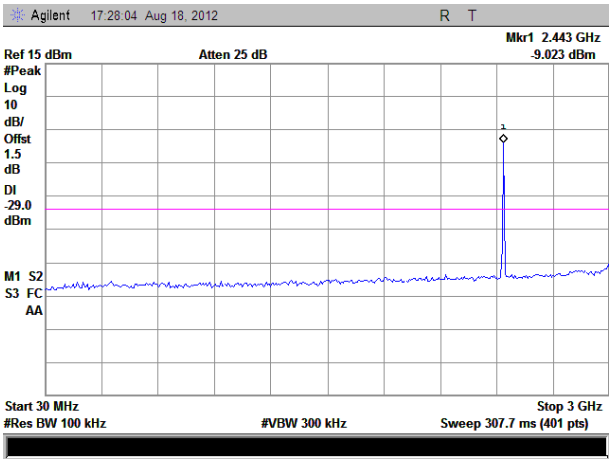
Note: the power of the Module transmitting frequency should be ignored.



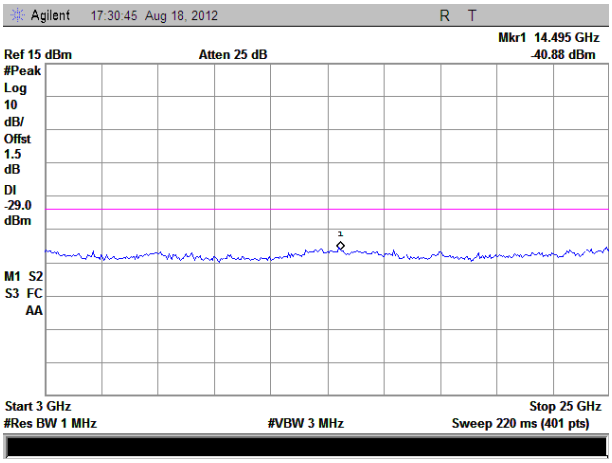
(Plot A.1: Channel = 0, 30MHz to 3GHz)



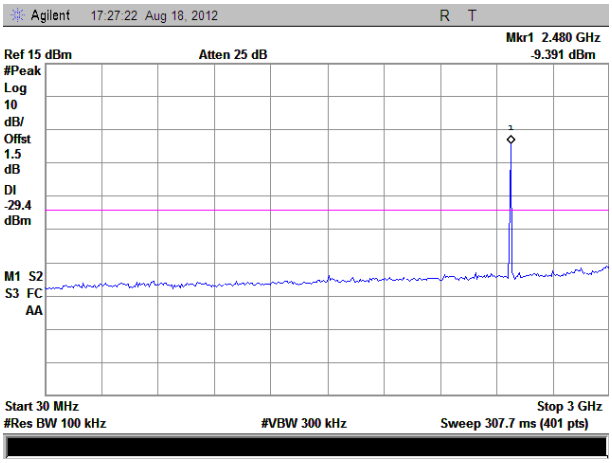
(Plot A.2: Channel = 0, 3GHz to 25GHz)



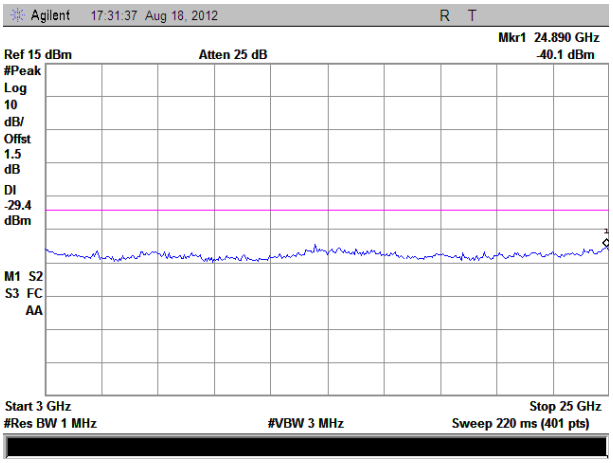
(Plot B.1: Channel = 19, 30MHz to 3GHz)



(Plot B.2: Channel = 19, 3GHz to 25GHz)



(Plot C.1: Channel = 39, 30MHz to 3GHz)



(Plot C.2: Channel = 39, 3GHz to 25GHz)

2.6. Power spectral density (PSD)

2.6.1. Requirement

According to FCC section 15.247(d), the same method of determining the conducted output power shall be used to determine the power spectral density. If a peak output power is measured, then a peak power spectral density measurement is required. If an average output power is measured, then an average power spectral density measurement should be used.

2.6.2. Test Description

See section 2.3.2 of this report.

2.6.3. Test Result

The lowest, middle and highest channels are tested to verify the band edge emissions.

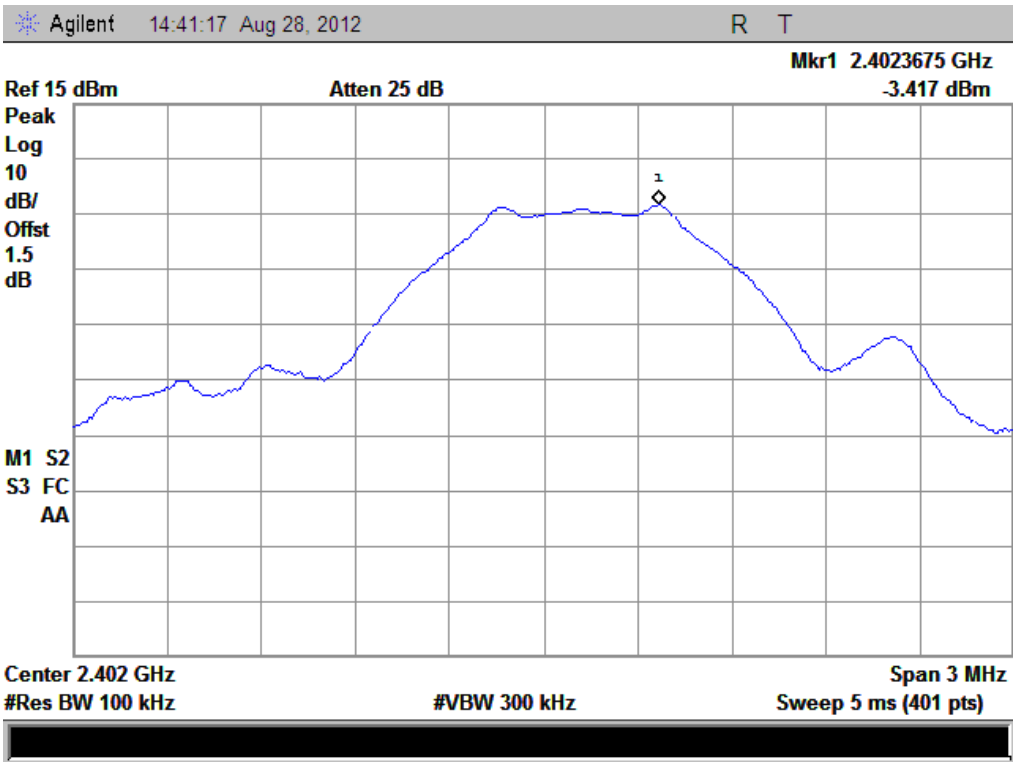
Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (3 kHz/100 kHz = -15.2 dB).

PSD = Reading Value + Cable loss + BWCF

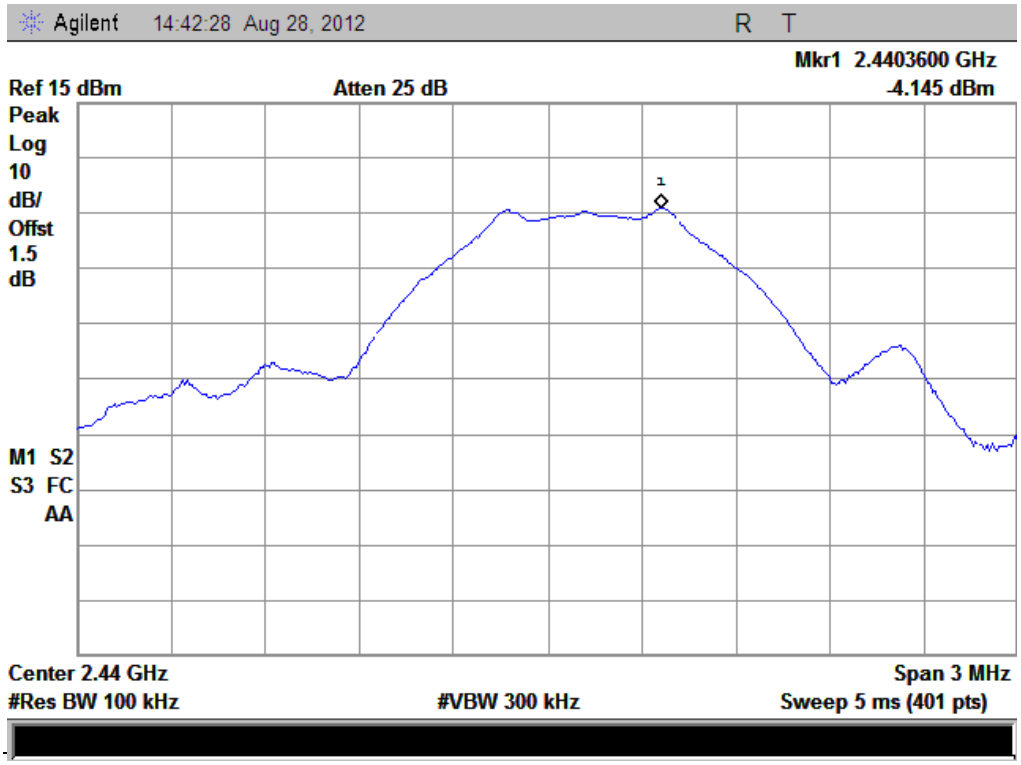
A. Test Verdict:

Spectral power density (dBm/3kHz)							
Channel	Frequency (MHz)	Measured PSD (dBm/100kHz)	Refer to Plot	BWCF (dB)	Scale Result (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
0	2402	-3.417	Plot A	-15.2	-16.617	8	PASS
19	2440	-4.145	Plot B	-15.2	-19.345	8	PASS
39	2480	-4.922	Plot C	-15.2	-20.122	8	PASS
Measurement uncertainty: ±1.3dB							

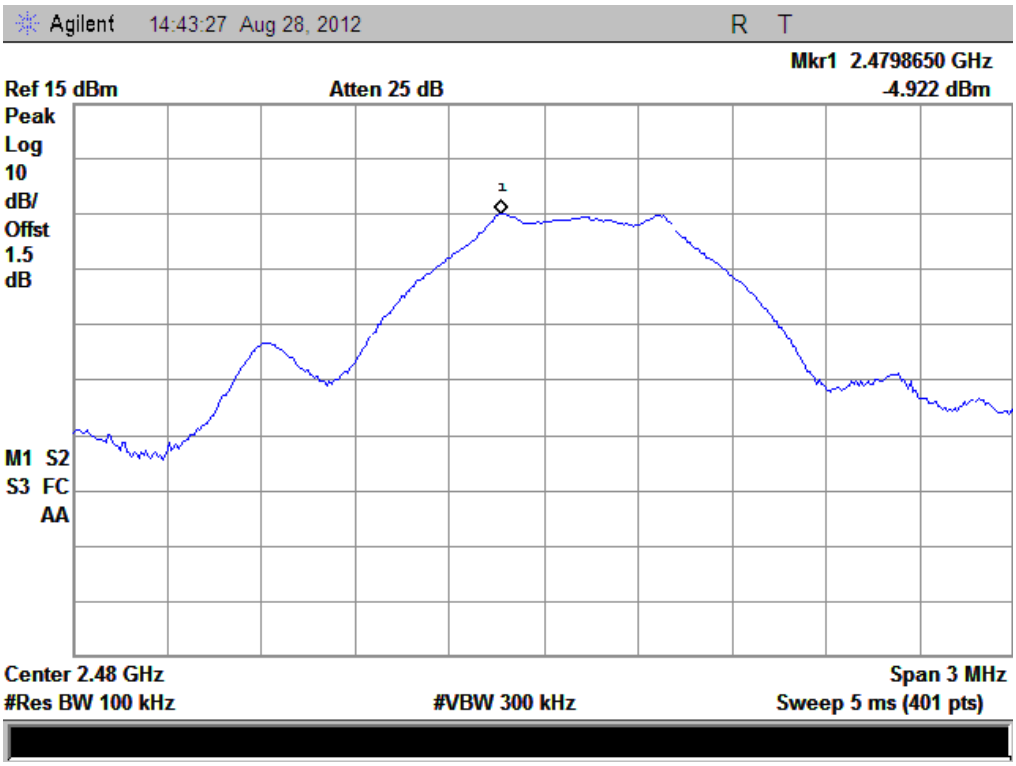
Test Plots:



(Plot A: Channel = 0)



(Plot B: Channel = 19)



(Plot C: Channel = 39)

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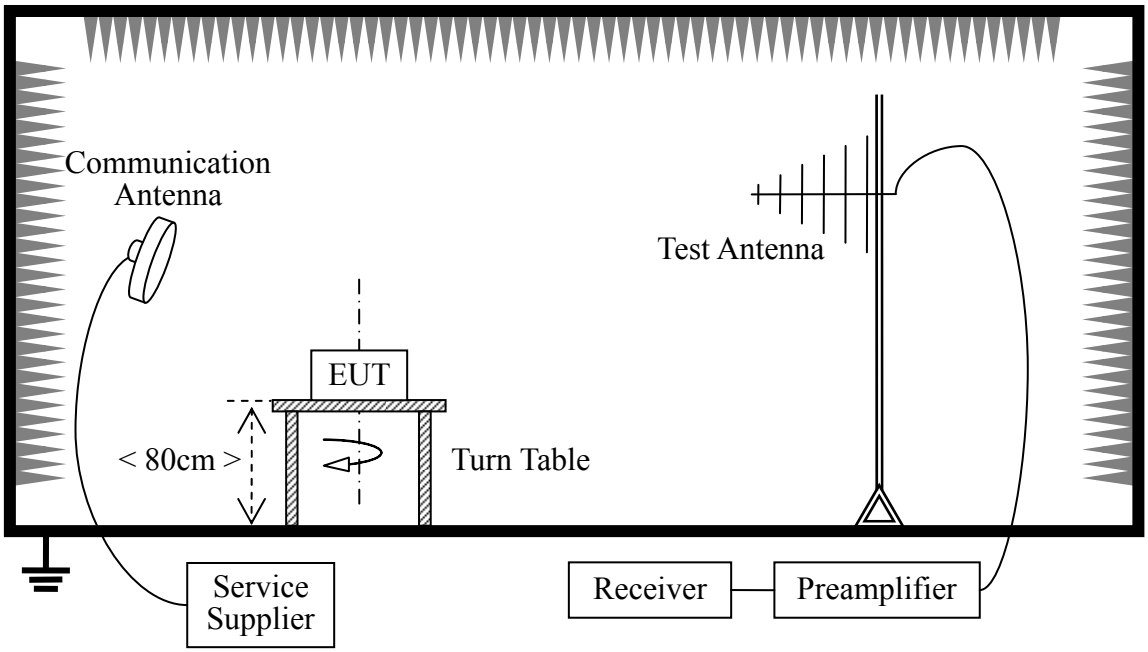
2.7. Band Edge

2.7.1. 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.

2.7.2. Test Description

A. Test Setup



The Module of the EUT is powered by the Battery charged with the AC Adapter. 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.

For the Test Antenna:

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
Receiver	Agilent	E7405A	US44210471	2012.5	2013.05
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2012.5	2014.05
Test Antenna	Schwarzbeck	BBHA 9120C	9120C-384	2012.5	2013.05

2.7.3. Test Result

The lowest and highest channels are tested to verify the band edge emissions.

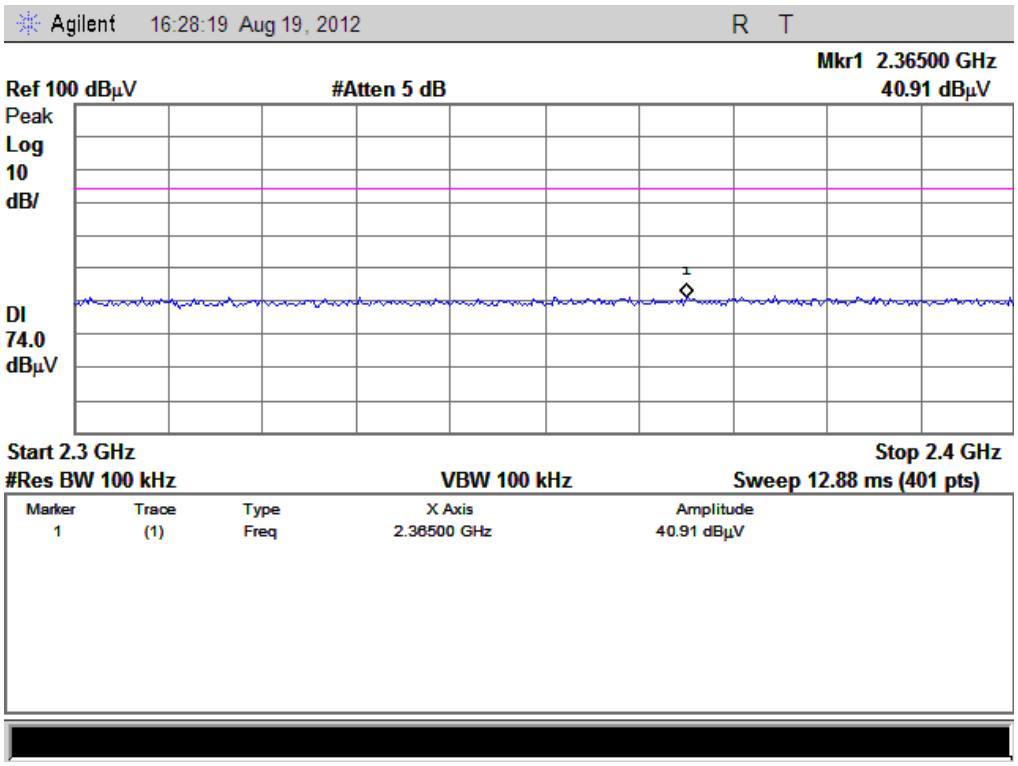
The measurement results are obtained as below:
$E\ [dB\mu V/m] = U_R + A_T + A_{Factor}\ [dB]$; $A_T = L_{Cable\ loss}\ [dB] - G_{preamp}\ [dB]$
A_T: Total correction Factor except Antenna
U_R: Receiver Reading
G_{preamp}: Preamplifier Gain
A_{Factor}: Antenna Factor at 3m

The lowest and highest channels are tested to verify the band edge emissions.

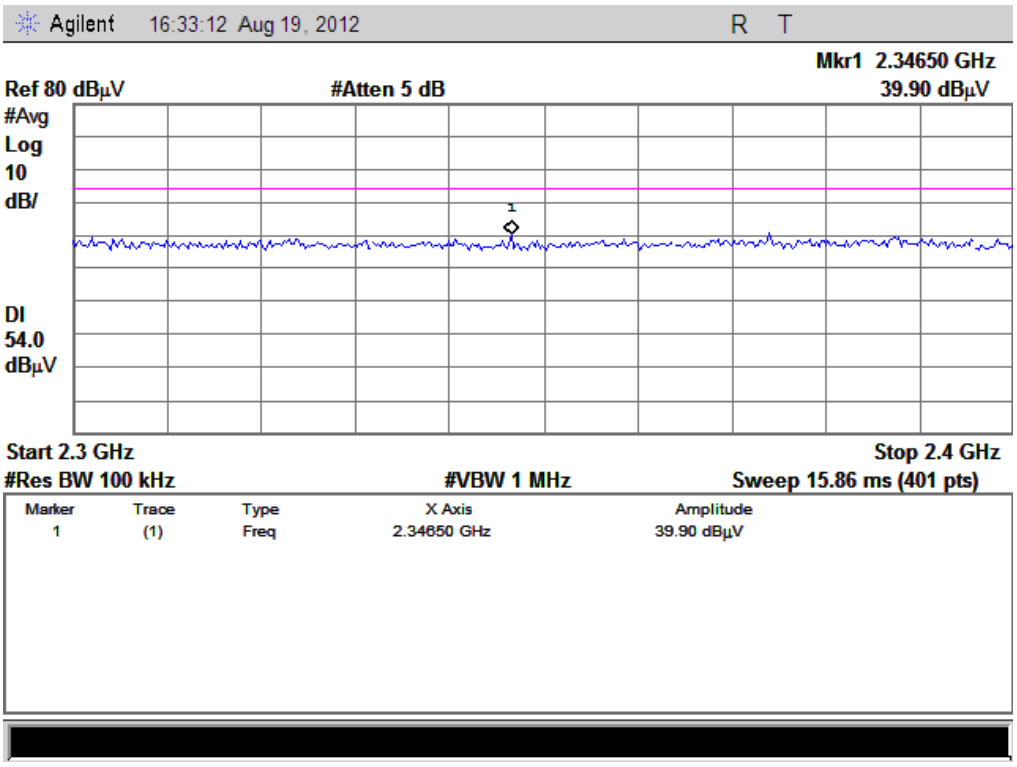
A. Test Verdict:

Channel	Frequency (MHz)	Receiver Reading U_R (dBuV)		A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)		Limit (dBμV/m)		Verdict
		PK	AV			PK	AV	PK	AV	
0	2402	40.91	39.90	-30.93	32.56	42.54	41.53	74	54	PASS
39	2480	39.09	36.06	-29.05	32.5	42.54	39.51	74	54	PASS

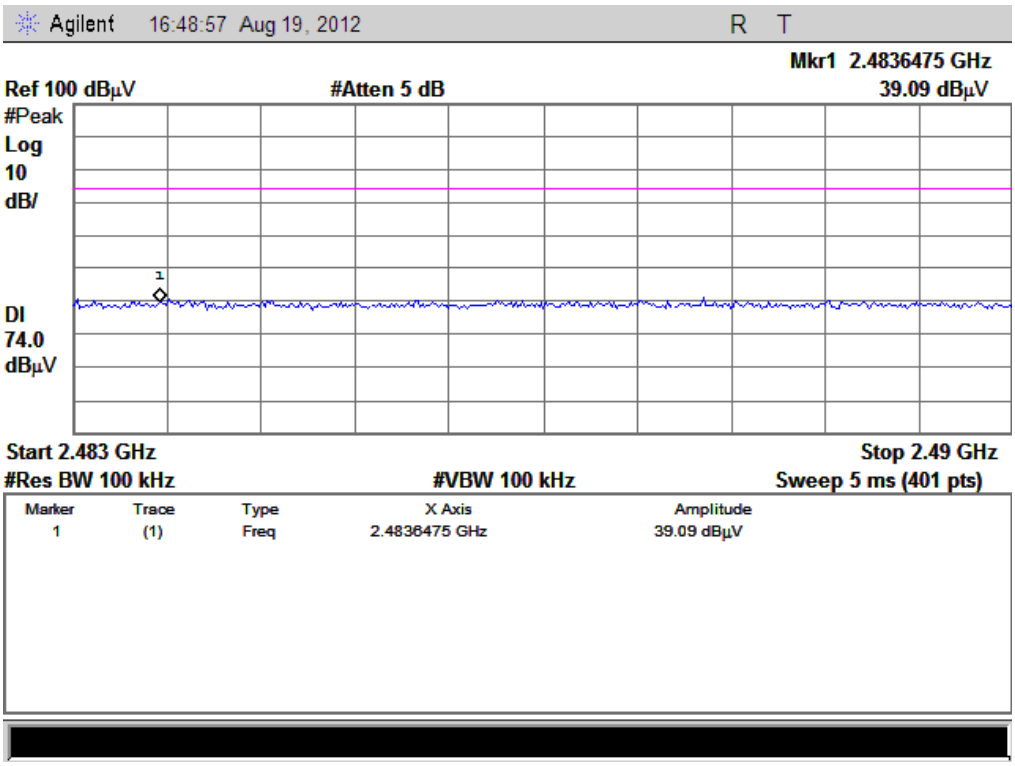
Test Plots:



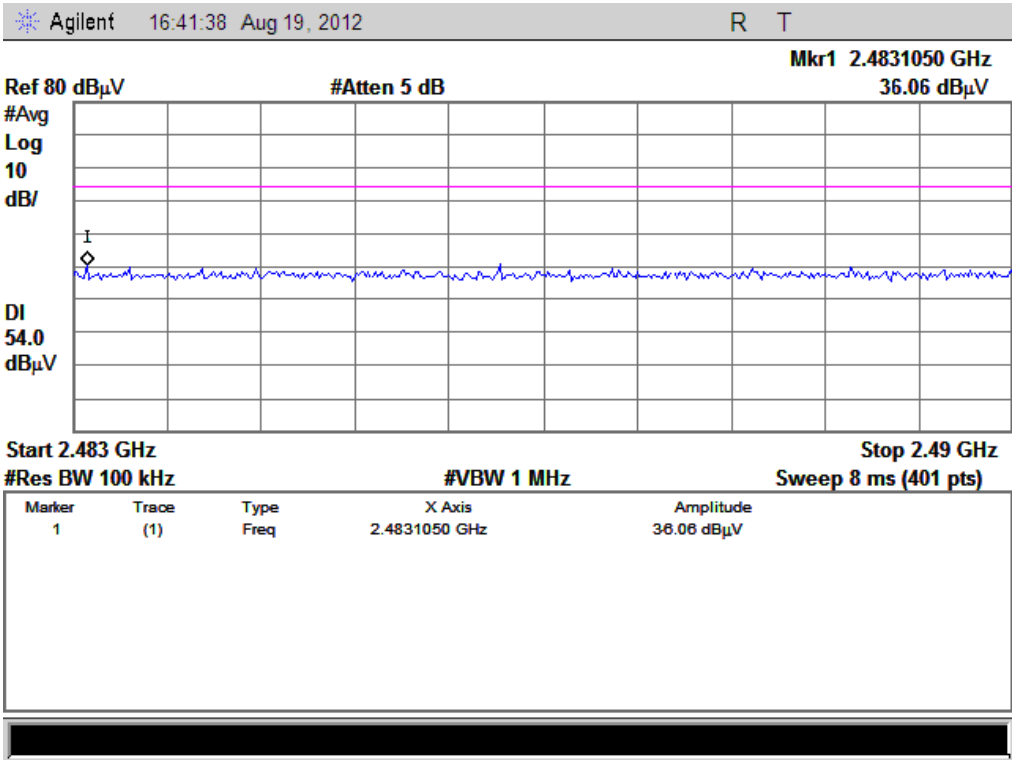
(Plot A1: Channel = 0 PEAK)



(Plot A2: Channel = 0 AVG)



(Plot B1: Channel = 39 PEAK)



(Plot B2: Channel = 39 AVG)

2.8. Conducted Emission

2.8.1. Requirement

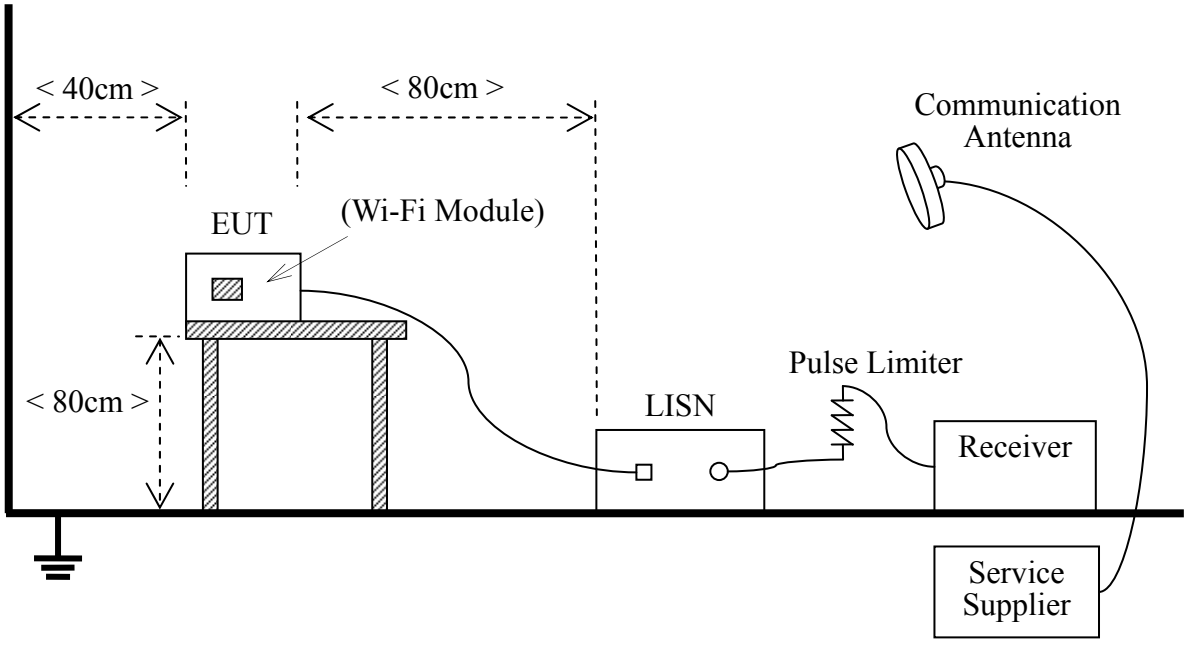
According to FCC section 15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following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

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

NOTE:
(a) The lower limit shall apply at the band edges.
(b) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

2.8.2. 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 C63.4:2009

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 EUT is activated and controlled by the Wi-Fi Service Supplier (SS) via a Common Antenna.

Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2012.05	2013.05
LISN	Schwarzbeck	NSLK 8127	812744	2012.05	2013.05
Service Supplier	R&S	CMU200	100448	2012.05	2013.05
Pulse Limiter (20dB)	Schwarzbeck	VTSD 9561-D	9391	(n.a.)	(n.a.)

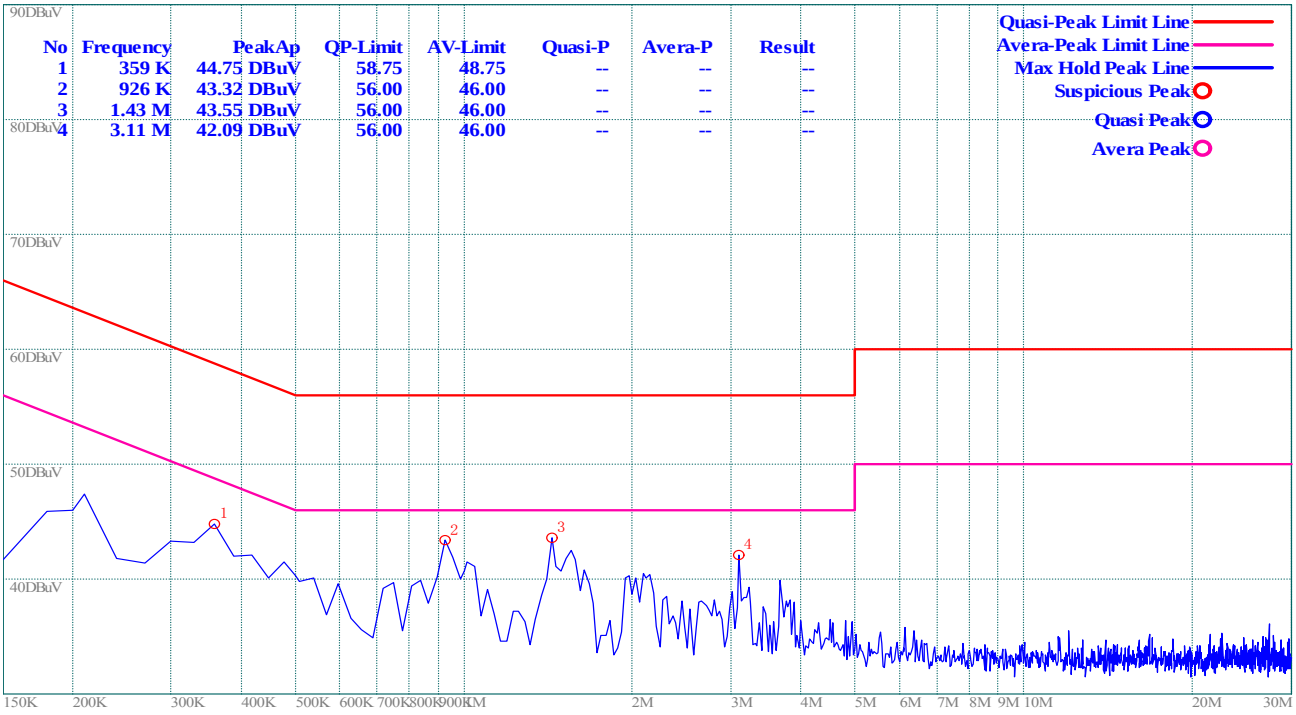
2.8.3. Test Result

The maximum conducted interference is searched using Peak (PK), if 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.

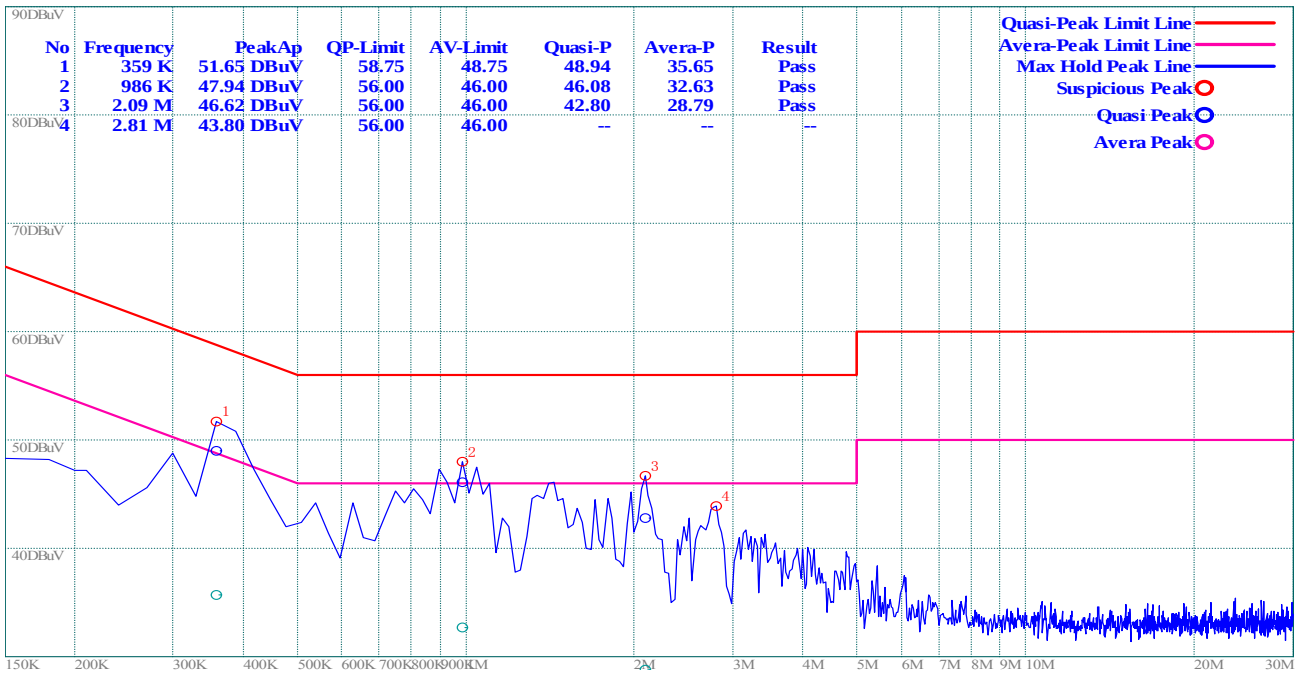
A. Test setup:

The EUT configuration of the emission tests is EUT + Charger.

Test Plots:



(Plot A: L Phase)



No	Frequency	PeakAp	QP-Limit	AV-Limit	Quasi-P	Avera-P	Result
1	359 K	51.65 DBuV	58.75	48.75	48.94	35.65	Pass
2	986 K	47.94 DBuV	56.00	46.00	46.08	32.63	Pass
3	2.09 M	46.62 DBuV	56.00	46.00	42.80	28.79	Pass
4	2.81 M	43.80 DBuV	56.00	46.00	--	--	--

(Plot B: N Phase)

2.9. Radiated Emission

2.9.1. 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 (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Note:

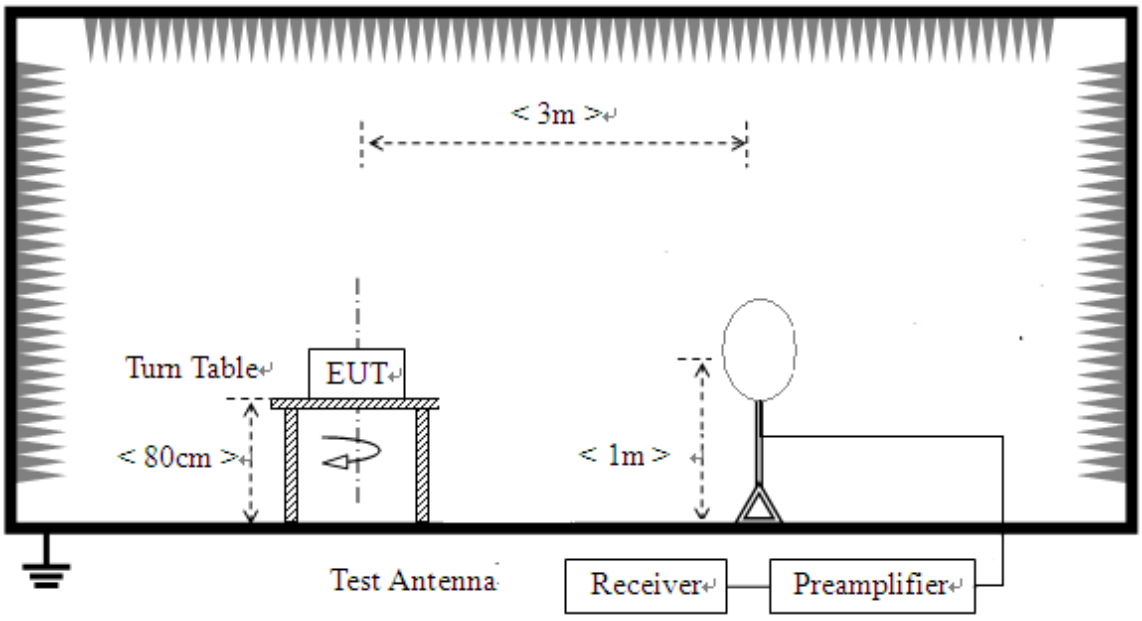
1. For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.
2. For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK)

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)

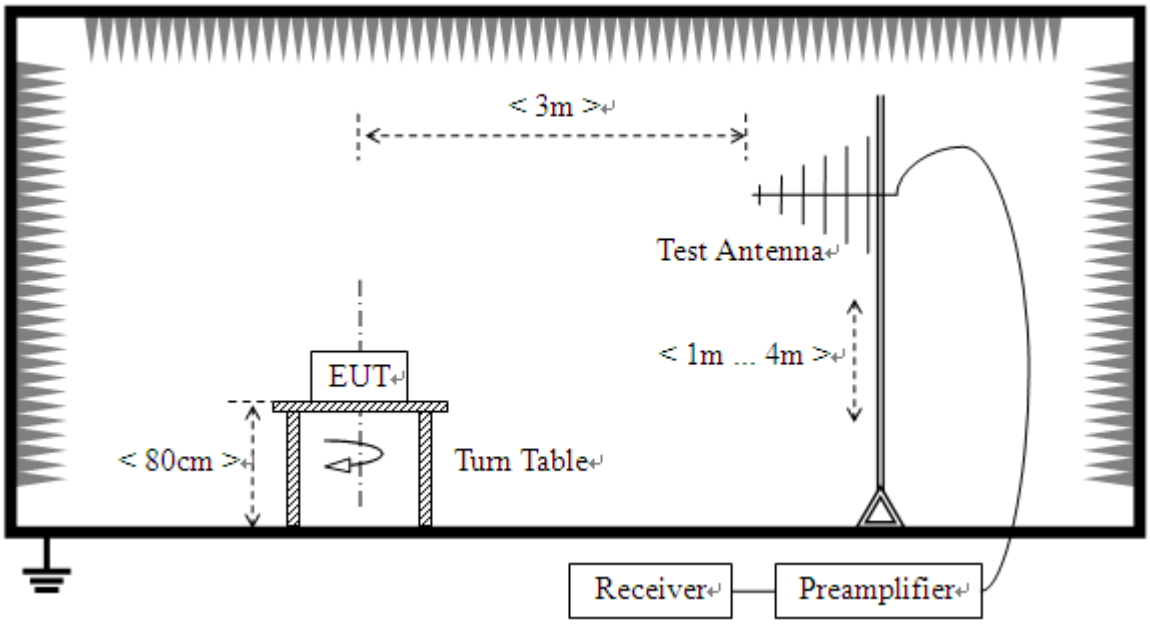
2.9.2. Test Description

A. Test Setup:

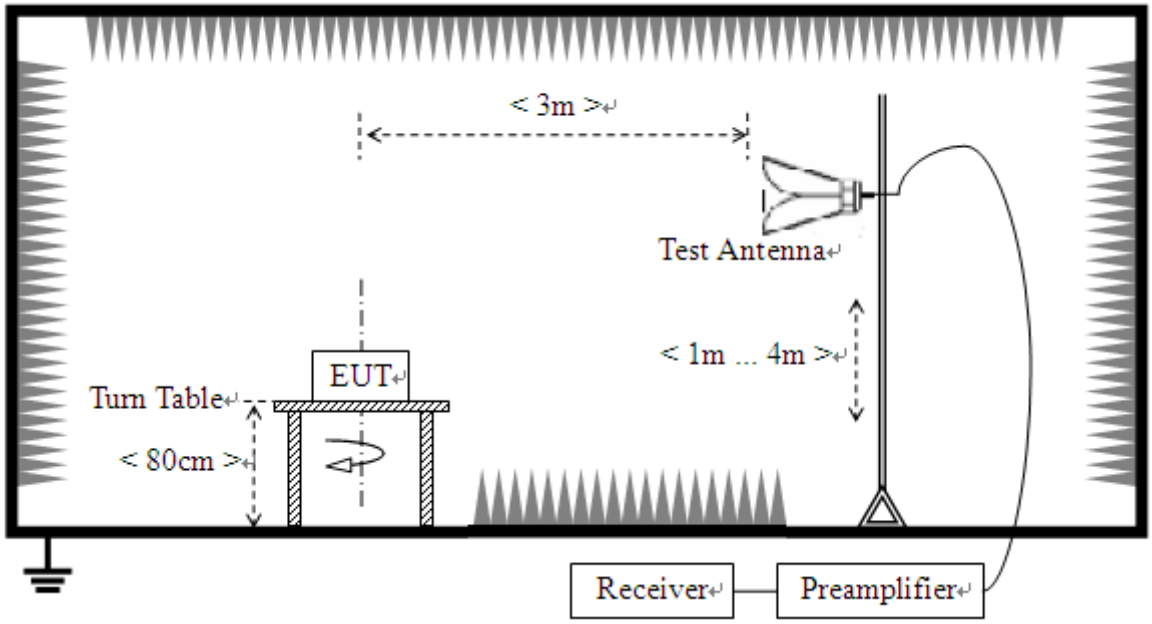
1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz



3) For radiated emissions above 1GHz



The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.4 (2009). 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 EUT 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 EUT is activated and controlled by the Wireless Router via a Common Antenna, and is set to operate under hopping-on test mode.

For the Test Antenna:

(a) In the frequency range of 9kHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
(b) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 2GHz) and Horn Test Antenna (above 2GHz) 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 emission levels at both horizontal and vertical polarizations should be tested.

Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	R&S	CMU200	100448	2012.05	2013.05
Receiver	Agilent	E7405A	US44210471	2012.05	2013.05
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2012.05	2014.05
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2012.05	2013.05

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Test Antenna - Horn	Schwarzbeck	BBHA 9120D	9120C-963	2012.05	2013.05
Test Antenna - Horn	R&S	HL050S7	71688	2012.05	2013.05
Test Antenna -Loop	Schwarzbeck	FMZB 1519	1519-022	2012.05	2013.05

2.9.3. Test Result

According to ANSI C63.4 selection 4.2.2, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak limit, it is unnecessary to perform an quasi-peak measurement.

The measurement results are obtained as below:

$E\ [dB\mu V/m] = U_R + A_T + A_{Factor}\ [dB]$; $A_T = L_{Cable\ loss}\ [dB] - G_{preamp}\ [dB]$

A_T: Total correction Factor except Antenna

U_R: Receiver Reading

G_{preamp}: Preamplifier Gain

A_{Factor}: Antenna Factor at 3m

During the test, the total correction Factor AT and A_{Factor} were built in test software.

Note: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

A. Test Verdict for Harmonics:

The Fundamental Emissions

The field strength of {Fundamental Emission} listed below is recorded, and used in the next table.

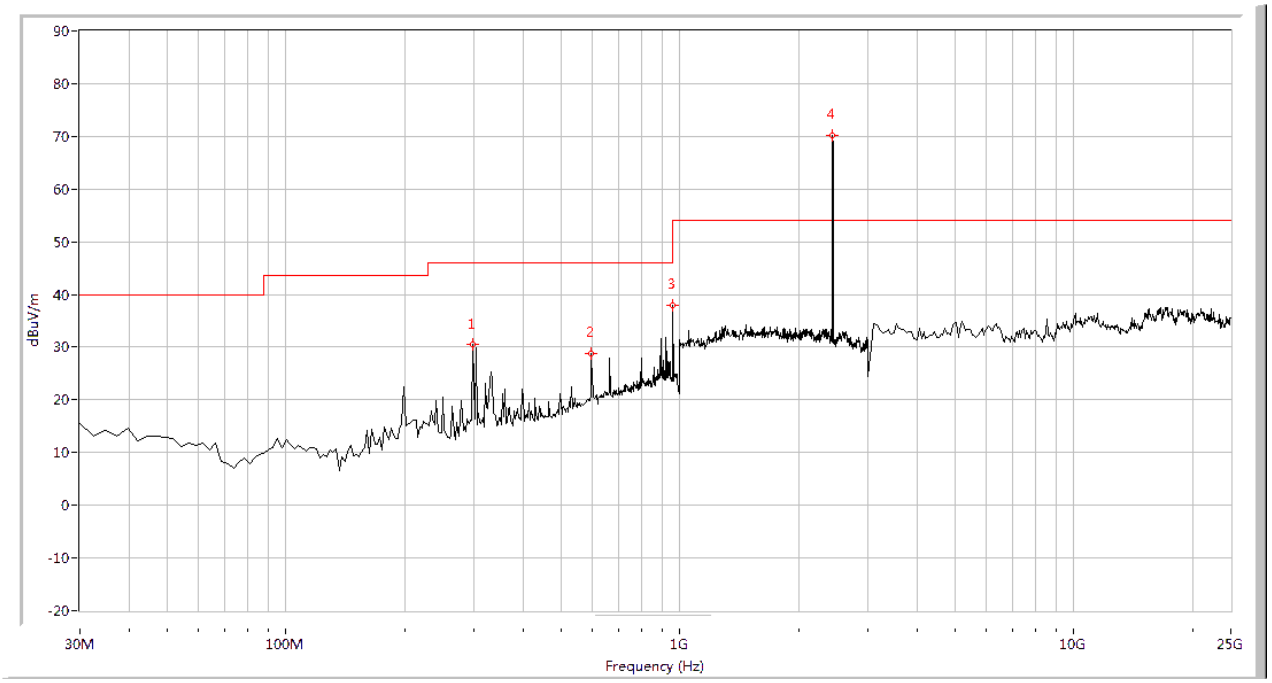
Channel	Frequency (MHz)	Fundamental Emission (dBμV/m)		Antenna Polarization	Refer to Plot
		PK	AV		
0	2402	70.16	N/A	Horizontal	Plot A.2
		63.34	N/A	Vertical	Plot A.3
19	2440	66.14	N/A	Horizontal	Plot B.2
		70.32	N/A	Vertical	Plot B.3
39	2480	72.33	N/A	Horizontal	Plot C.2
		60.15	N/A	Vertical	Plot C.3

Also refer to following plots for the emissions falling in the restricted bands.

Test Plots for the Whole Measurement Frequency Range:

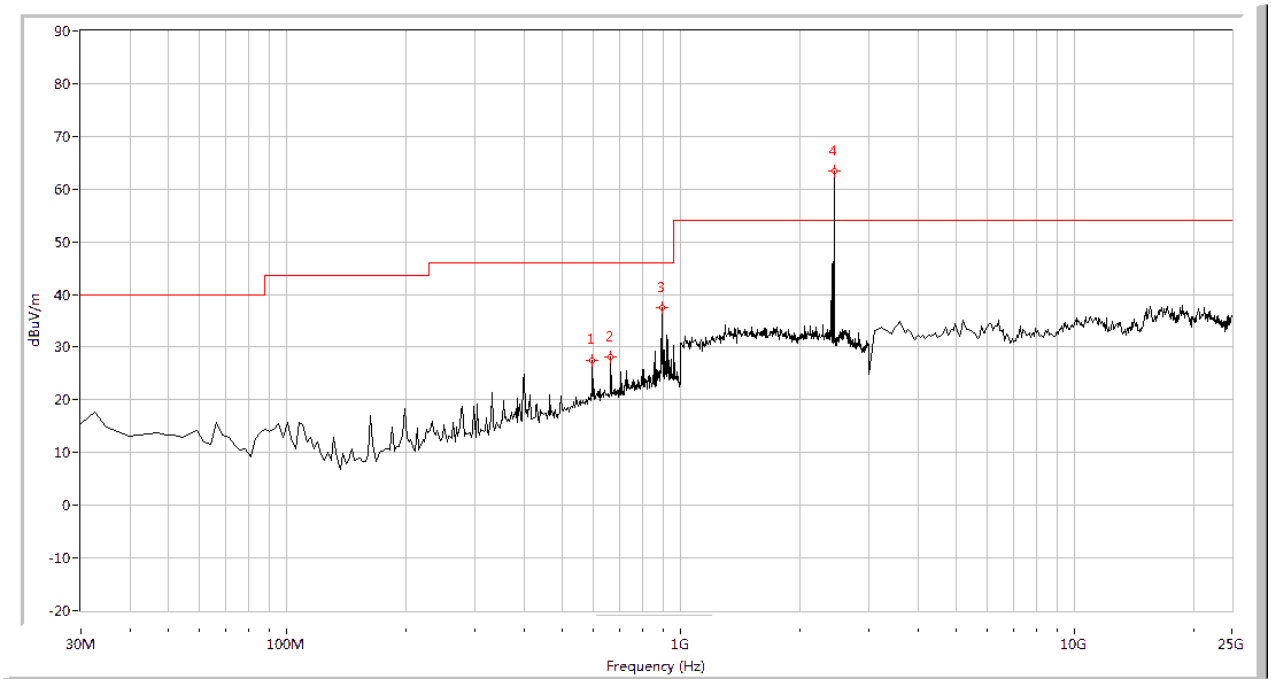
Plots for Channel = 0

(Plot A.1: 9kHz to 30MHz)



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Degree	Antenna	Verdict
298.512	30.51	N.A	N.A	N.A	46.0	N.A	145.6	Horizontal	PASS
596.045	28.76	N.A	N.A	N.A	46.0	N.A	184.7	Horizontal	PASS
958.869	37.98	N.A	N.A	N.A	46.0	N.A	228.0	Horizontal	PASS
2402.411	70.16	N.A	N.A	54.0	N.A	54.0	260.7	Horizontal	N.A

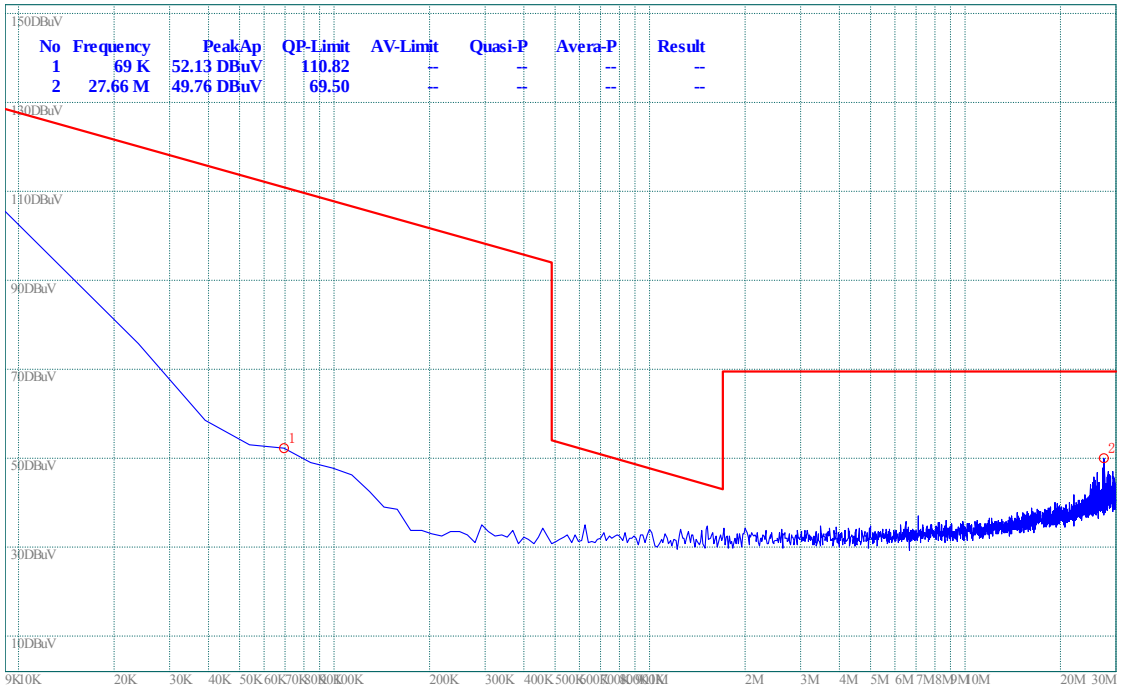
(Plot A.2: Antenna Horizontal, 30MHz to 25GHz)



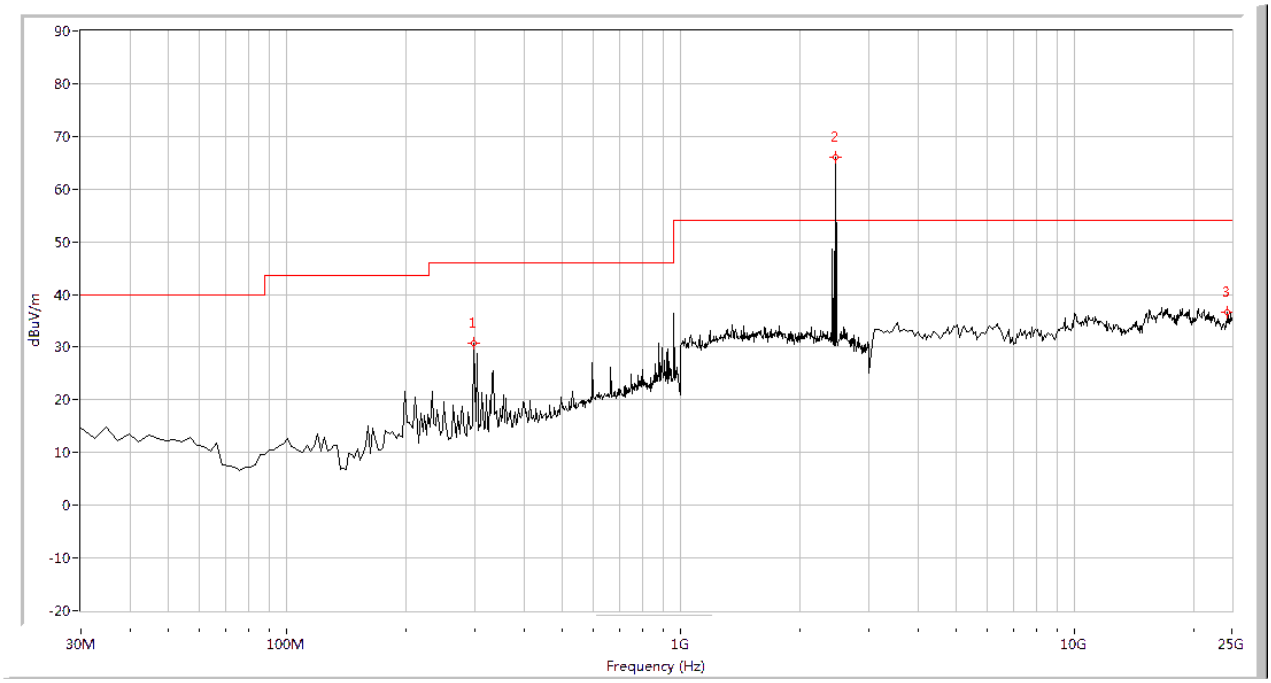
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Degree	Antenna	Verdict
596.075	27.54	N.A	N.A	N.A	46.0	N.A	172.1	Vertical	PASS
663.752	28.10	N.A	N.A	N.A	46.0	N.A	111.6	Vertical	PASS
895.983	37.41	N.A	N.A	N.A	46.0	N.A	162.5	Vertical	PASS
2402.364	63.34	N.A	N.A	54.0	N.A	54.0	171.2	Vertical	N.A

(Plot A.3: Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 19

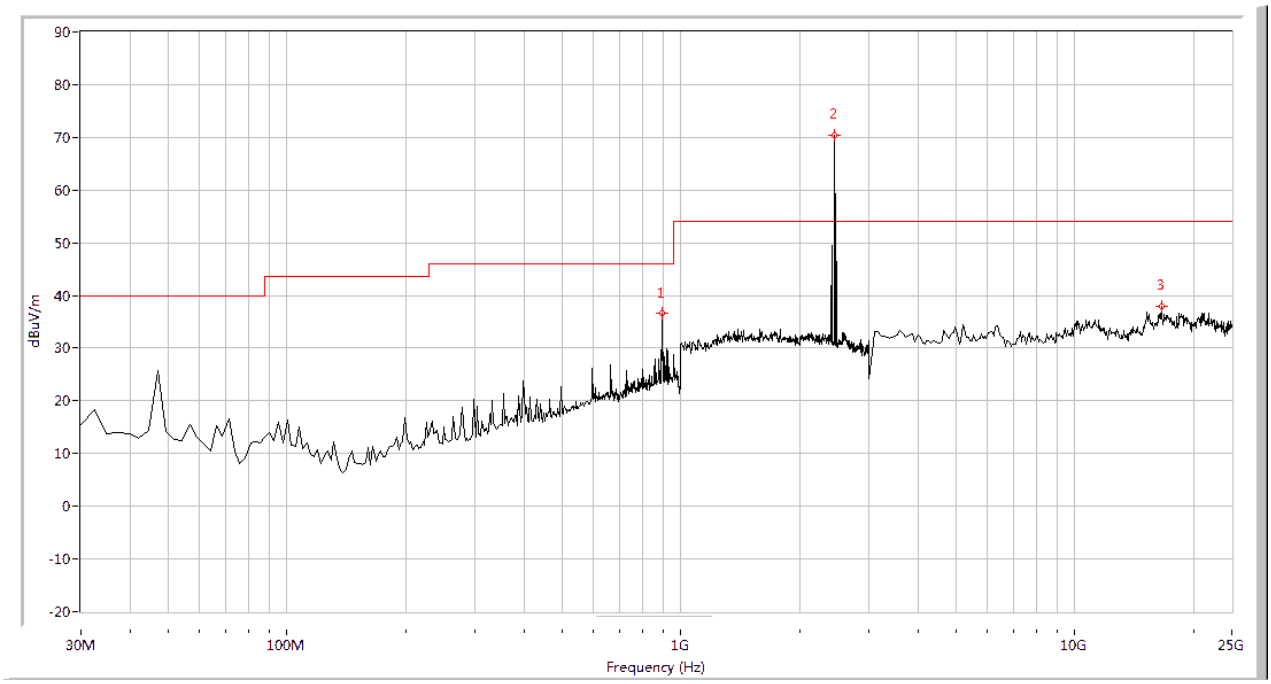


(Plot B.1: 9kHz to 30MHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Degree	Antenna	Verdict
298.516	30.85	N.A	N.A	N.A	46.0	N.A	120.8	Horizontal	PASS
2440.325	66.14	N.A	N.A	54.0	N.A	54.0	270.6	Horizontal	N.A
24396.532	36.54	N.A	N.A	54.0	N.A	54.0	178.3	Horizontal	PASS

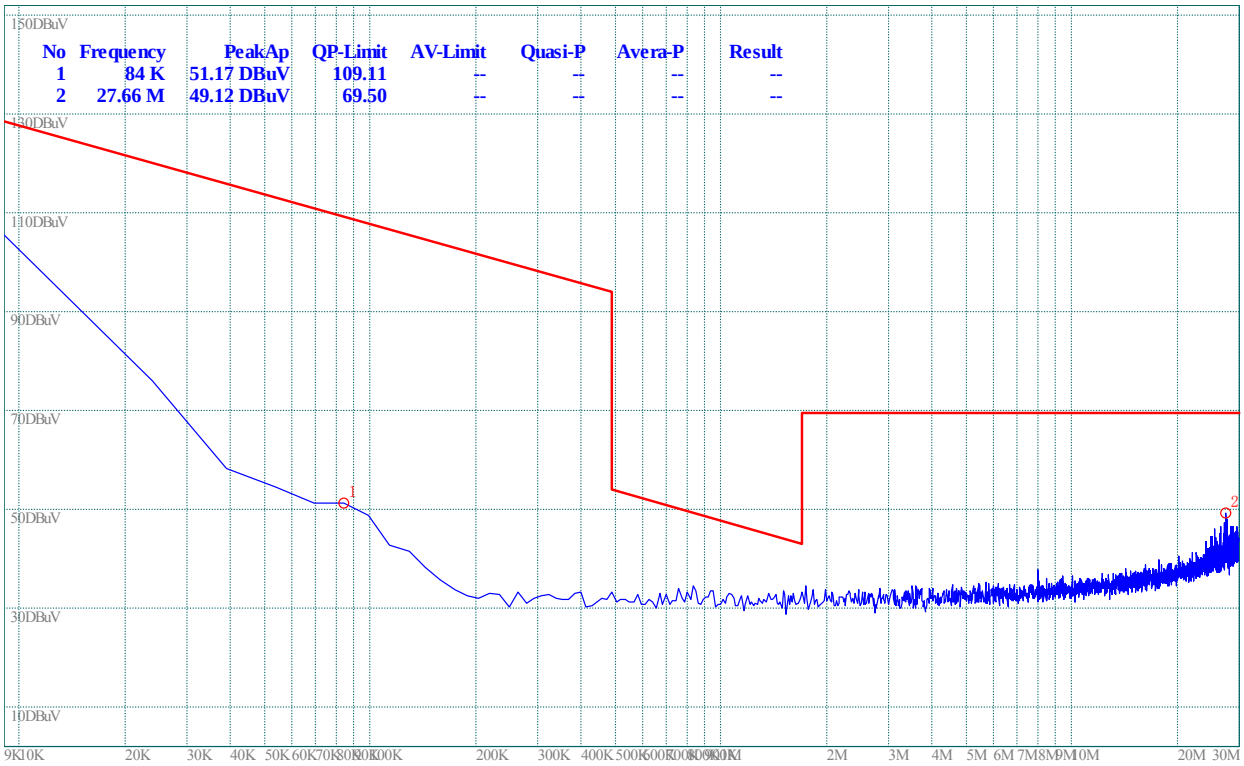
(Plot B.2: Antenna Horizontal, 30MHz to 25GHz)



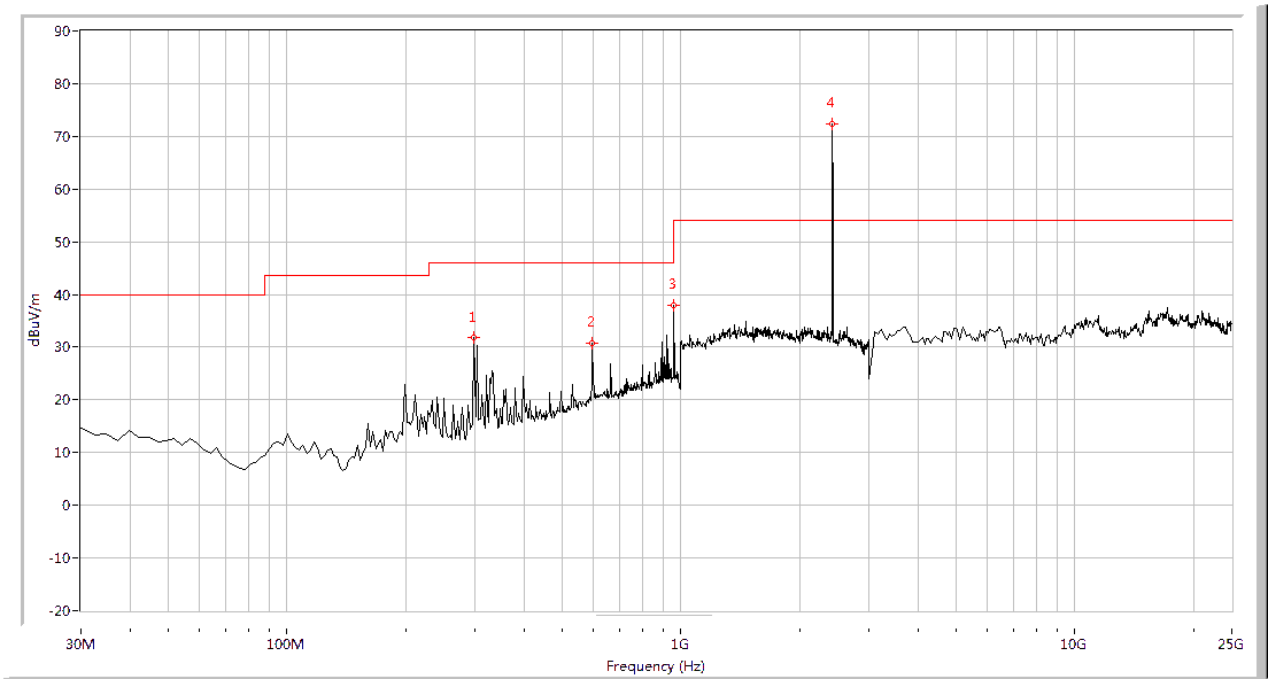
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Degree	Antenna	Verdict
895.983	36.54	N.A	N.A	N.A	46.0	N.A	163.9	Vertical	PASS
2440.383	70.32	N.A	N.A	54.0	N.A	54.0	2.0	Vertical	N.A
16551.134	38.02	N.A	N.A	54.0	N.A	54.0	255.5	Vertical	PASS

(Plot B.3: Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 39

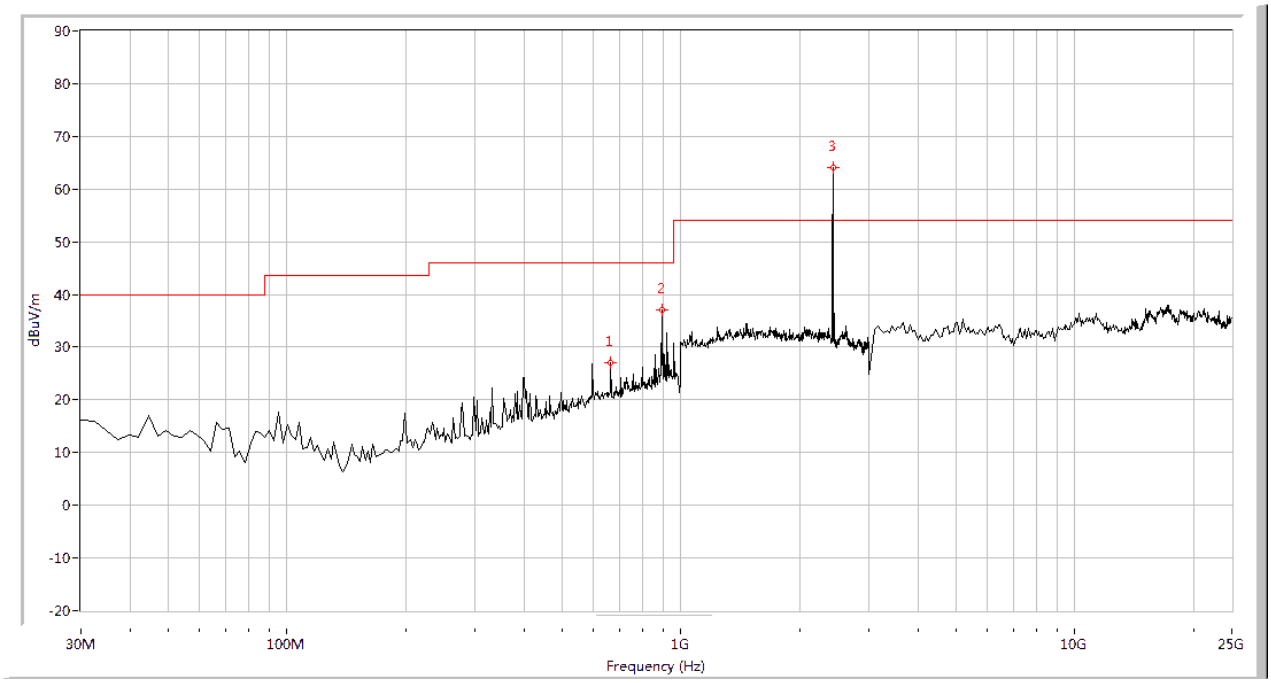


(Plot C.1: 9kHz to 30MHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Degree	Antenna	Verdict
298.498	31.73	N.A	N.A	N.A	46.0	N.A	119.0	Horizontal	PASS
596.068	30.84	N.A	N.A	N.A	46.0	N.A	228.8	Horizontal	PASS
958.798	38.04	N.A	N.A	N.A	46.0	N.A	228.8	Horizontal	PASS
2480.397	72.33	N.A	N.A	54.0	N.A	54.0	-0.0	Horizontal	N.A

(Plot C.2: Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Degree	Antenna	Verdict
663.759	27.05	N.A	N.A	N.A	46.0	N.A	107.2	Vertical	PASS
895.975	36.97	N.A	N.A	N.A	46.0	N.A	161.6	Vertical	PASS
2480.419	64.15	N.A	N.A	54.0	N.A	54.0	43.4	Vertical	N.A

(Plot C.3: Antenna Vertical, 30MHz to 25GHz)

** END OF REPORT **