



FCC 47 CFR PART 15 SUBPART C

TEST REPORT

For

Product Name: Lenovo S6000L

Brand Name: Lenovo

Model No.: 60049; Z0AN; Lenovo S6000L-F

FCC ID:O57S6000LF

IC:10407A-S6000LF

Test Report Number:
C130726E02-RPW

Issued for

Lenovo (Shanghai) Electronics Technology Co., Ltd.

No. 68 Building, 199 Fenju Road, Wai Gao Qiao FTZ , Shanghai , China

Issued by

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SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result
3.1	15.247(a)(2)	RSS-210 A8.2(a)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass
3.1	-	RSS-Gen 4.6.1	99% Bandwidth	-	Pass
3.2	15.247(b)(1)	RSS-210 A8.1(b)	Peak Output Power	$\leq 30\text{dBm}$	Pass
3.5	15.247(e)	RSS-210 A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}$	Pass
3.4	15.247(d)	RSS-210 A8.5	Conducted Band Edges and Spurious Emission	$\leq 20\text{dBc}$	Pass
3.5	15.247(d)	RSS-210 A8.5	Radiated Band Edges and Spurious Emission	15.209(a) & 15.247(d)	Pass
3.6	15.207	RSS-210 Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass
3.7	15.203 & 15.247(b)	RSS-210 A8.4	Antenna Requirement	N/A	Pass



1. TEST RESULT CERTIFICATION

Product Name:	Lenovo S6000L
Brand Name:	Lenovo
Model Name.:	60049; Z0AN; Lenovo S6000L-F
Applicant Discrepancy:	Initial
Device Category:	PORTABLE DEVICES
Date of Test:	July 22, 2013- July 26, 2013
Applicant:	Lenovo (Shanghai) Electronics Technology Co., Ltd. No. 68 Building, 199 Fenju Road, Wai Gao Qiao FTZ , Shanghai , China
Manufacturer:	Lenovo PC HK Limited 23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong
Application Type:	Certification

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 15 Subpart C	No non-compliance noted
Canada RSS-210 Issue 8	No non-compliance noted
Canada RSS-Gen Issue 3	No non-compliance noted

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. 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 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

The test results of this report relate only to the tested sample EUT identified in this report.

Approved by:

Tested by:

Hui.Li
RF Manager
Compliance Certification Service Inc.

Blent.Wang
Test Engineer
Compliance Certification Service Inc.



2. EUT DESCRIPTION

Product Name:	Lenovo S6000L
Brand Name:	Lenovo
Model Name:	60049; Z0AN; Lenovo S6000L-F
Model Discrepancy:	Only for market segment
Power Adapter Power Rating :	Power supply and ADP (rating): Brand: HuntKey Model: HKA00905015-2C INPUT: 100 - 240 50/60Hz 0.25A Vac OUTPUT: 5 Vdc, 1.5 A Battery(rating): Model Name:L11C2P32 Capacitance: 6340mAh Rated Voltage: 3.7 V Charging Limit: 4.2 V
Frequency Range:	2402 ~ 2480 MHz
Transmit Power:	Bluetooth v4.0-LE:-0.08dBm (0.98mW)
Modulation Technique:	Bluetooth v4.0-LE:GFSK
Number of Channels:	40 Channels
Antenna Specification:	Fixed Internal Antenna

Remark:

1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.
2. This submittal(s) (test report) is intended for **FCC ID: O57S6000LF** filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.
3. This submittal(s) (test report) is intended for **IC:10407A-S6000LF** filing to comply with Canada RSS-210 Issue 8 and Canada RSS-Gen Issue 3 Rules.



3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 2003 and FCC CFR 47 15.207, 15.209, 15.247, RSS-210 and RSS-Gen.

3.1. EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.2. EUT EXERCISE

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

3.3. GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4 2003 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4 2003.



3.4. FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

- (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

- (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.



4. INSTRUMENT CALIBRATION

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

Equipment Used for Emissions Measurement

Conducted Emissions Test Site				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	RS	FSU26	200789	2014-6-30
OSCILLOSCOPE	Agilent	DSO6104A	MY44002585	2014-3-14
Peak and Avg Power Sensor	Agilent	E9327A	US40441788	2014-3-14
EPM-P Series Power Meter	Agilent	E4416A	GB41292714	2014-3-14
Power SPLITTER	Mini-Circuits	ZN2PD-9G	SF078500430	N.C.R
DC POWER SUPPLY	AGILENT	E3632A	MY50340053	2014-3-14
Temp. / Humidity Chamber	TERCHY	MHK-120AK	X30109	2014-1-24
Test Software	EZ-EMC			

977 Chamber				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY44020154	2014-4-16
Pre-Amplifier	MITEQ	JS41-00101800-32-10P	1675713	2013-10-8
Pre-Amplifier	MITEQ	NSP400-NF	870731	2014-4-26
Bilog Antenna	Sunol Sciences	JB1	A062604	2014-5-2
Horn-antenna	SCHWARZBECK	BBHA9120D	D:267	2014-4-28
Turn Table	CT	CT123	4165	N.C.R
Antenna Tower	CT	CTERG23	3256	N.C.R
Controller	CT	CT100	95637	N.C.R
Test Software	EZ-EMC			



Compliance Certification Services Inc.

Report No: C130726E02-RPW

FCC ID: O57S6000LF

Date of Issue :July 27, 2013

IC:10407A-S6000LF

Conducted Emission				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI TEST RECEIVER	R&S	ESCI3	100781	2014-3-14
V (V-LISN)	Schwarzbeck	NNLK 8129	8129-143	2014-3-14
LISN (EUT)	FCC	FCC-LISN-50/250-50-2-02	SN:05012	2014-3-14
TRANSIENT LIMITER	SCHAFFNER	CFL9206	1710	2014-3-14
Test Software	EZ-EMC			

Remark: The measurement uncertainty is less than +/- 2.81dB, which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.

Expanded Uncertainty (95% CONFIDENCE INTERVAL): K=2



5. FACILITIES AND ACCREDITATIONS

5.1. FACILITIES

All measurement facilities used to collect the measurement data are located at CCS China Kunshan Lab at 10#Weiye Rd, Innovation Park Eco. & Tec. Development Zone Kunshan city JiangSu, (215300), CHINA.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 2003 and CISPR Publication 22.

5.2. EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.



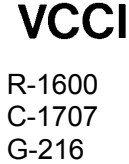
All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5.3. LABORATORY ACCREDITATIONS AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by American Association for Laboratory Accreditation Program for the specific scope accreditation under Lab Code: 200581-0 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listed with Industry Canada, Certification and Engineering Bureau, IC5743 for 10m chamber 10m, IC5743 for 10m chamber 3m.



5.4. TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	A2LA	47 CFR FCC Part 15/18 (using ANSI C63.4 :2003); VCCI V3; CNS 13438; CNS 13439; CNS 13803; CISPR 11; EN 55011; CISPR 13; EN 55013; CISPR 22:2005; CISPR 22:1997 +A1 :2000+A2 :2002; EN 55022:2006; EN55022 :1998 +A1 :2001+A2 :2003; EN 61000-6-3 (excluding discontinuous interference); EN 61000-6-4; AS/NZS CISPR 22; CAN/CSA-CEI/IEC CISPR 22; EN 61000-3-2; EN 61000-3-3; EN550024; EN 61000-4-2; EN 61000-4-3; EN61000-4-4; EN 61000-4-5; EN 61000-4-6; IEC 61000-4-8; EN 61000-4-11; IEC61000-3-2; IEC61000-3-3; IEC 61000-4-2; IEC 61000-4-3; IEC 61000-4-4; IEC 61000-4-5; IEC 61000-4-6; IEC 61000-4-8; IEC 61000-4-11; EN 300 220-3; EN 300 328; EN 300 330-2; EN 300 440-1; EN 300-440-2; EN 300 893; EN 301 489-01; EN 301 489-3; EN 301 489-07; EN 301 489-17; 47 CFR FCC Part 15, 22, 24	
USA	FCC	3/10 meter Sites to perform FCC Part 15/18 measurements	
Japan	VCCI	3/10 meter Sites and conducted test sites to perform radiated/conducted measurements	

* No part of this report may be used to claim or imply product endorsement by A2LA or any agency of the US Government.



6. SETUP OF EQUIPMENT UNDER TEST

6.1. SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

6.2. SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID
1.	N/A	N/A	N/A	N/A	N/A

Remark:

1. *All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.*
2. *Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.*



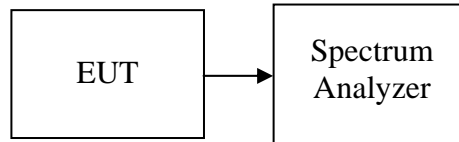
7. FCC PART 15.247 REQUIREMENTS

7.1. 6DB AND 99% BANDWIDTH MEASUREMENT

7.1.1. limit

According to §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 6dB bandwidth shall be at least 500 kHz.

7.1.2. Test Configuration



7.1.3. test procedure

KDB 558074 D01 DTS Measurement Guidance V03r01 dated 09-04-2013.

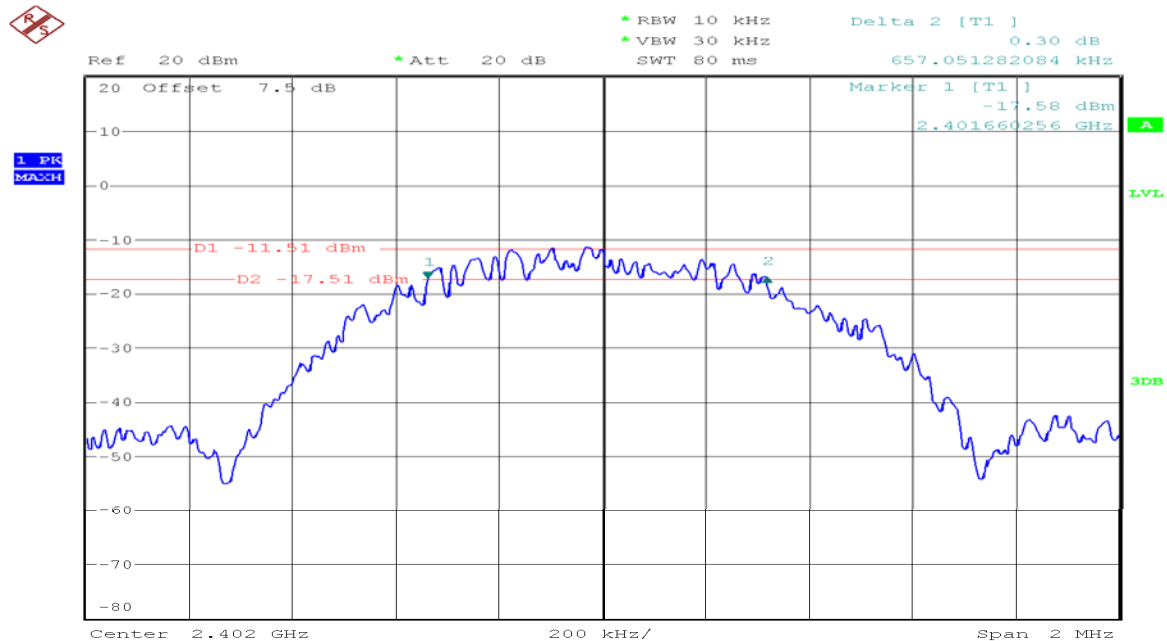
Test Data

7.1.4. Test Result of 6dB Bandwidth

Bluetooth 4.0 - LE mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2402	0.657	>500	PASS
Mid	2440	0.657		PASS
High	2480	0.654		PASS

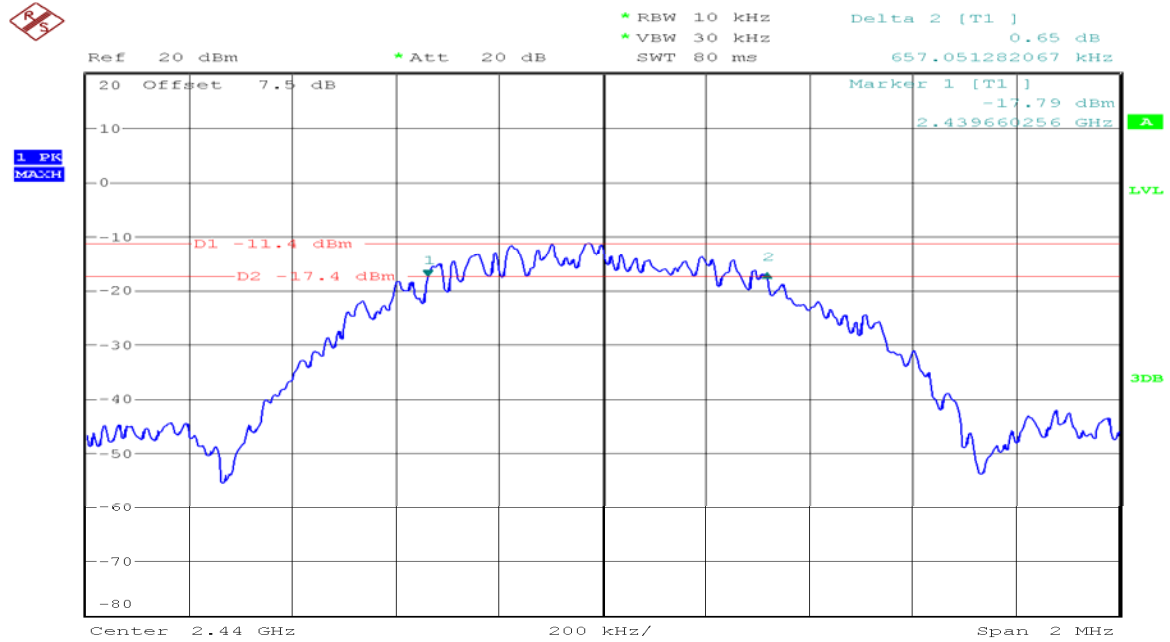
6dB Bandwidth Plot on Channel 00



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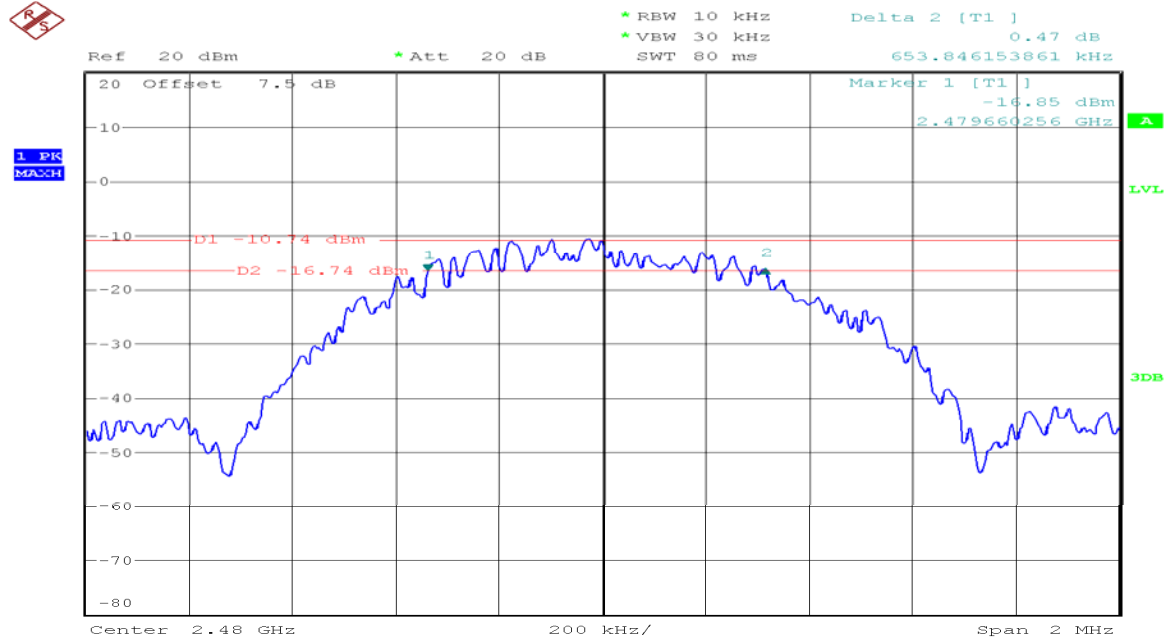


6dB Bandwidth Plot on Channel 19



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6dB Bandwidth Plot on Channel 39



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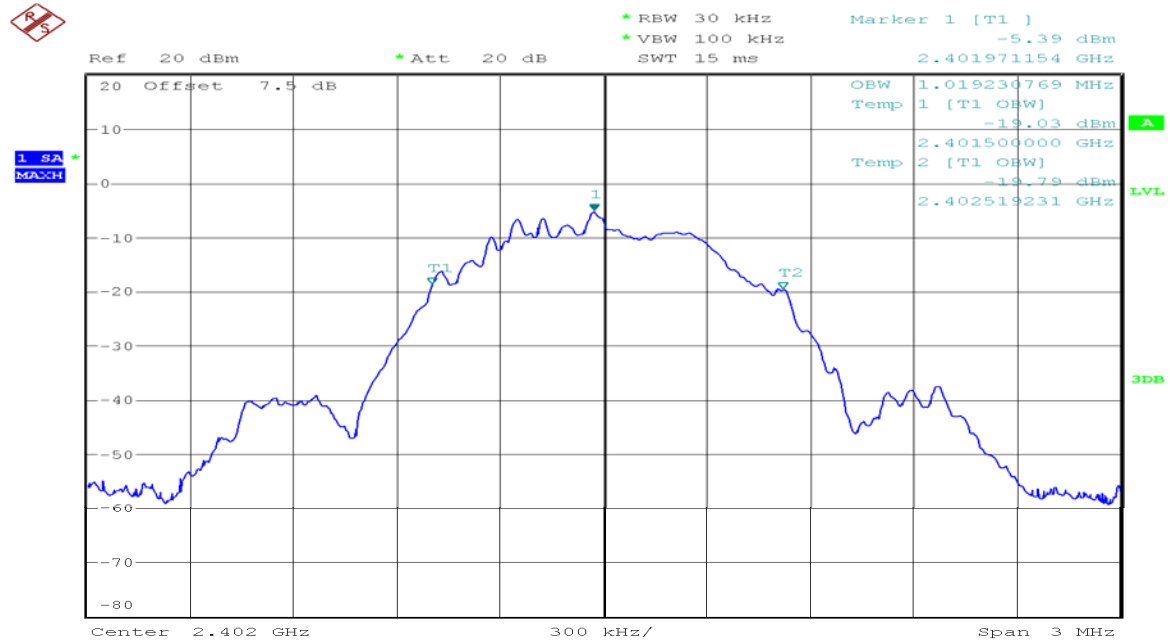


7.1.5. Test Result of 99% Occupied Bandwidth

Bluetooth 4.0 - LE mode

Channel	Frequency (MHz)	Bluetooth 4.0 - LE 99% Occupied Bandwidth(MHz)
Low	2402	1.019
Mid	2440	1.019
High	2480	1.019

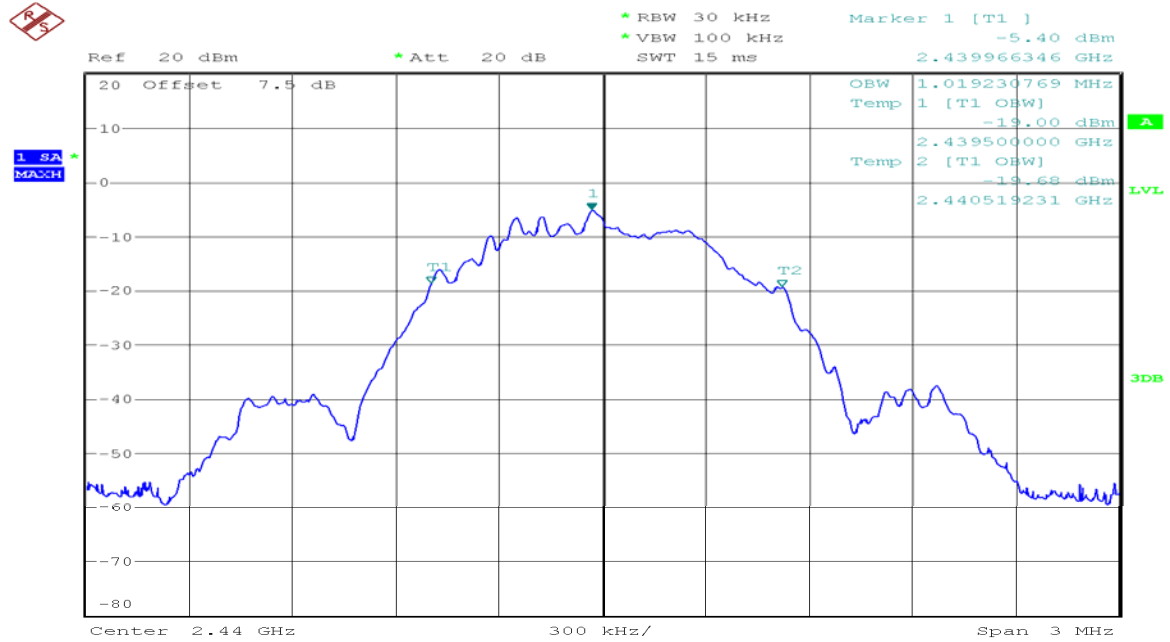
99% Occupied Bandwidth Plot on Channel 00



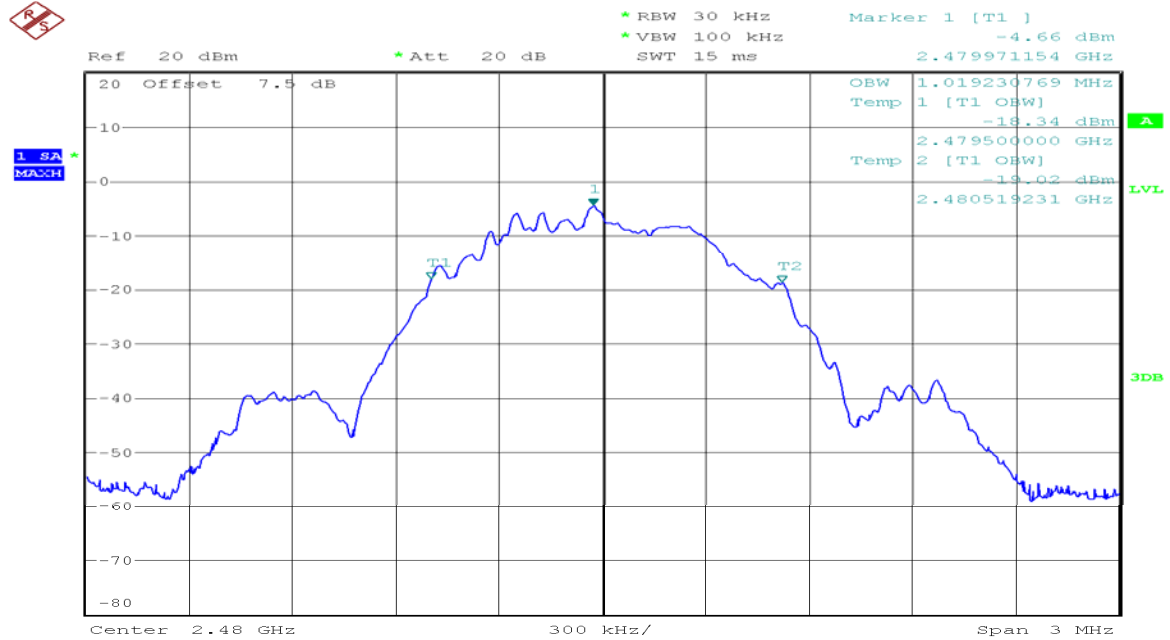
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99% Occupied Bandwidth Plot on Channel 19



99% Occupied Bandwidth Plot on Channel 39





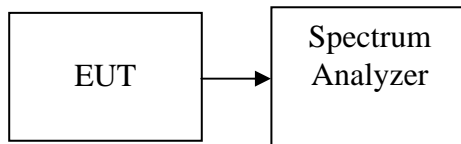
7.2. OUTPUT POWER MEASUREMENT

7.2.1. limit

The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
2. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

7.2.2. Test Configuration



7.2.3. test procedure

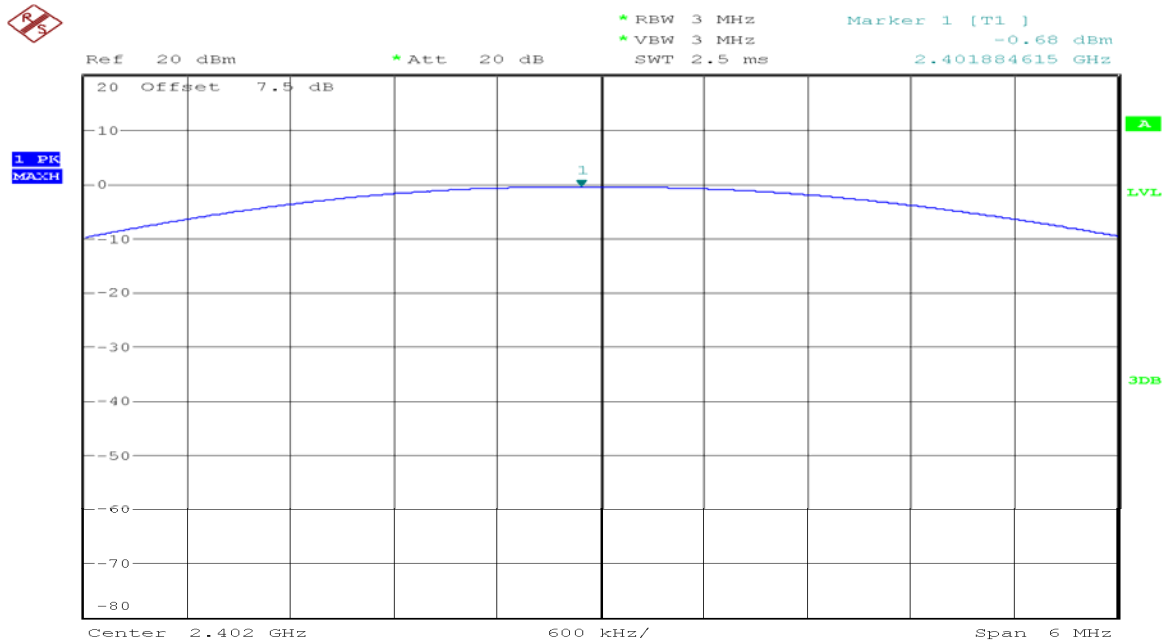
KDB 558074 D01 DTS Measurement Guidance V03r01 dated 09-04-2013.



7.2.4. Test Result of Peak Output Power

Channel	Frequency	Output Power	Output Power	Limit	Result
	(MHz)	(dBm)	(mw)		
Low	2402	-0.68	0.86	30dBm	PASS
Mid	2440	-0.55	0.88		PASS
High	2480	-0.08	0.98		PASS

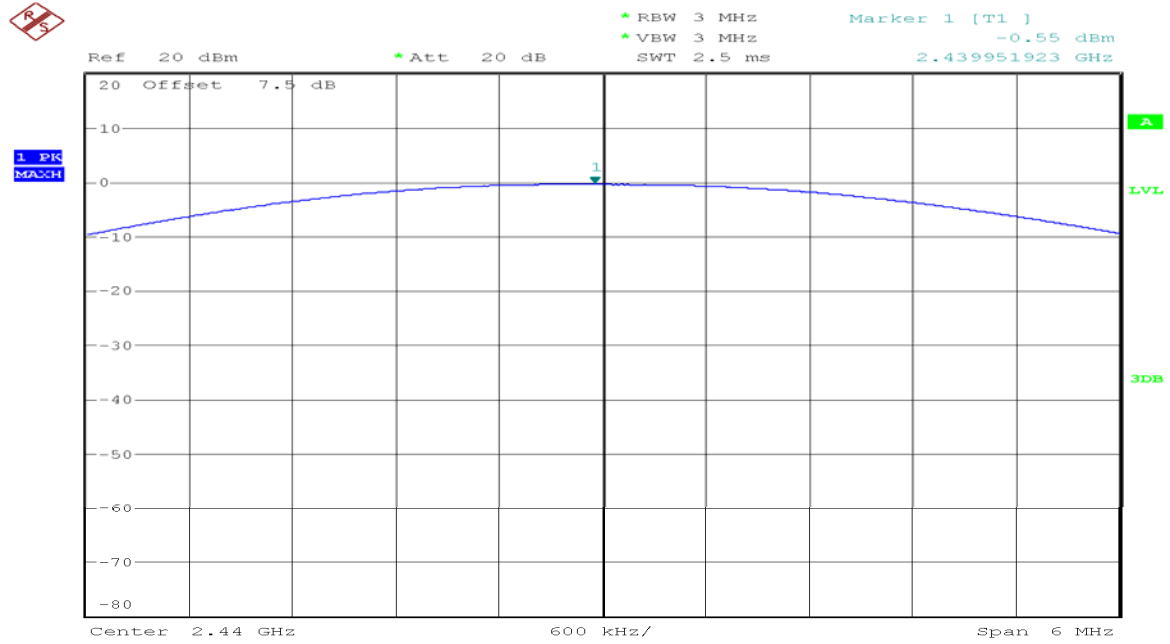
Peak Output Power Plot on Channel 00



Date: 25.JUL.2013 22:10:33

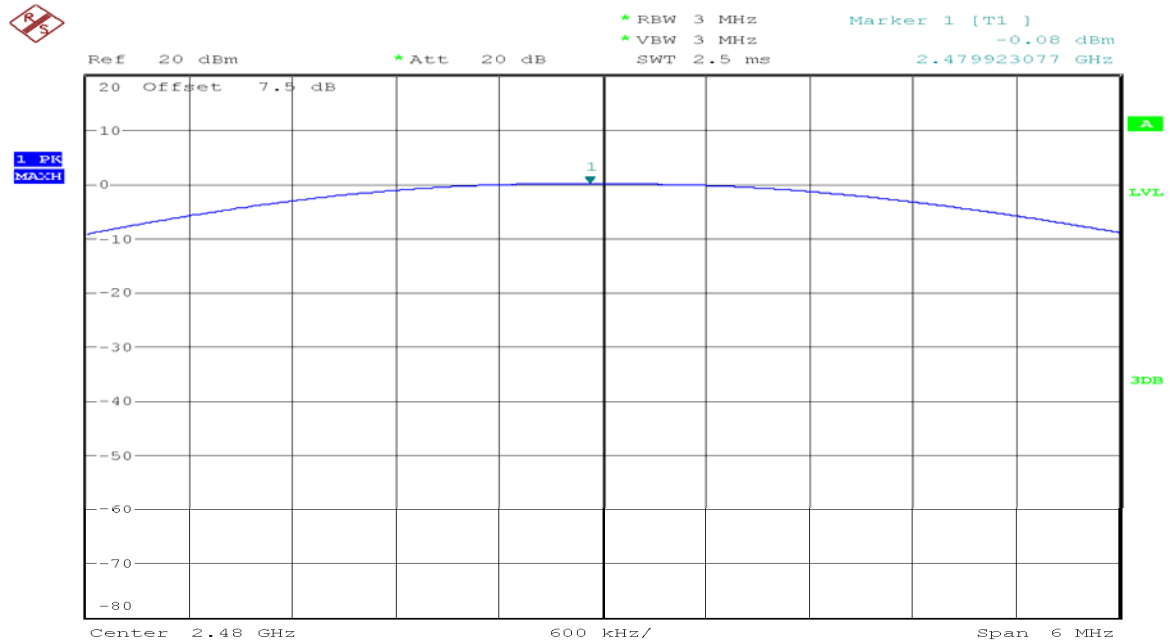


Peak Output Power Plot on Channel 19



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Peak Output Power Plot on Channel 39



Date: 25.JUL.2013 22:09:30

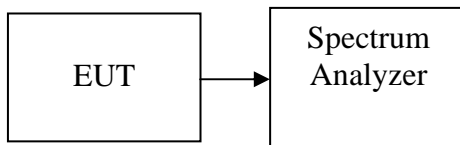


7.3. PEAK POWER SPECTRAL DENSITY

7.3.1. limit

1. According to §15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.
2. According to §15.247(f), the digital modulation operation of the hybrid system, with the frequency hopping turned off, shall comply with the power density requirements of paragraph (d) of this section.

7.3.2. Test Configuration



7.3.3. test procedure

KDB 558074 D01 DTS Measurement Guidance V03r01 dated 09-04-2013.

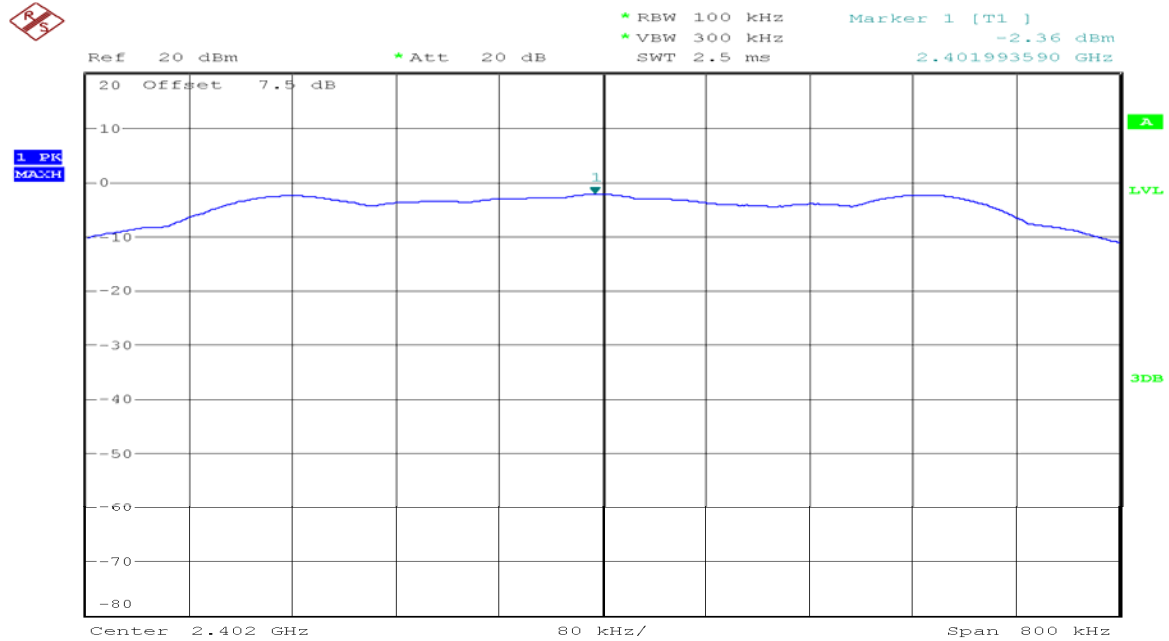
7.3.4. Test Result of Power Spectral Density

Channel	Frequency	PPSD(100 kHz)	PPSD(3kHz)	Limit
	(MHz)	(dBm)	(dBm)	(dBm)
Low	2402	-2.36	-16.67	8
Mid	2440	-2.22	-16.56	8
High	2480	-1.6	-15.97	8



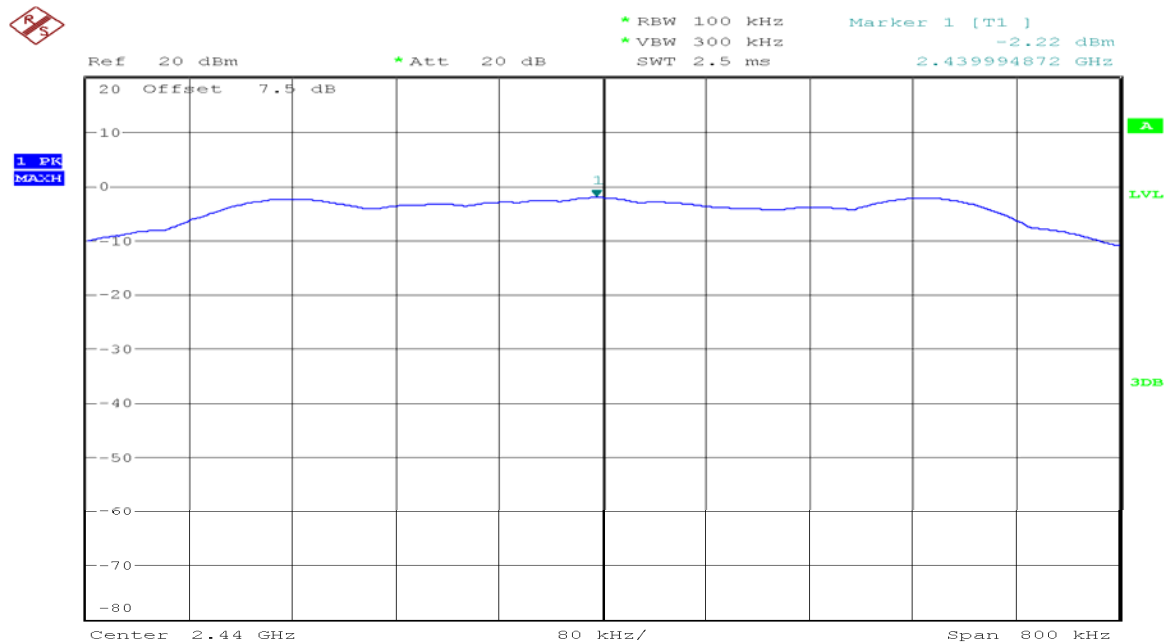
7.3.5. Test Result of Power Spectral Density Plots (100kHz)

PSD 100kHz Plot on Channel 00



Date: 25.JUL.2013 16:50:41

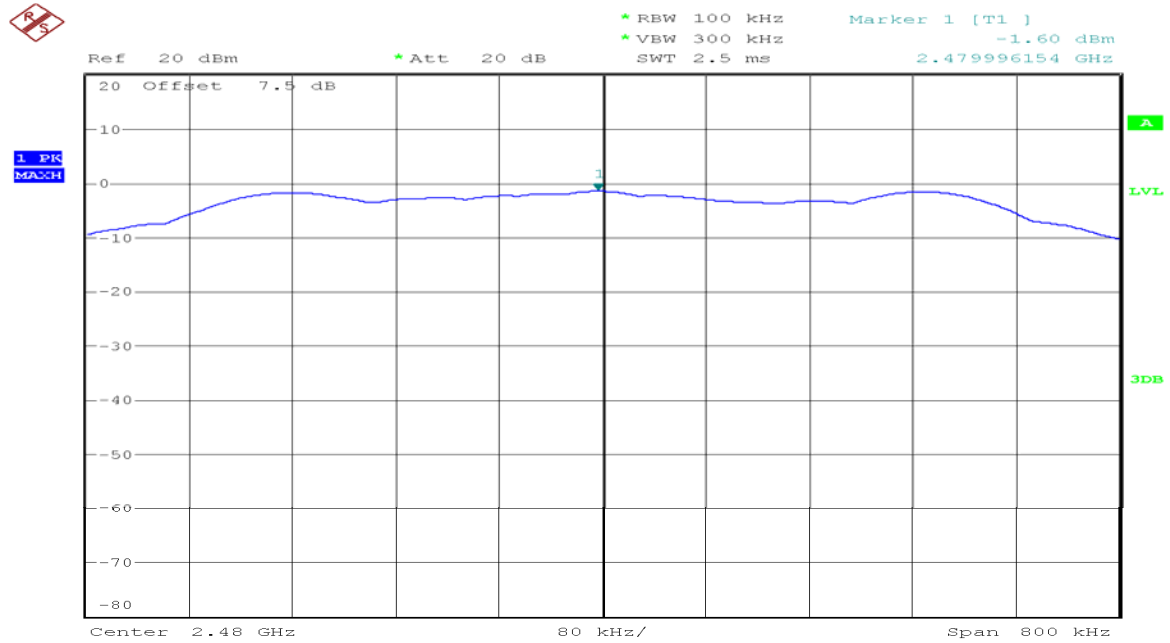
PSD 100kHz Plot on Channel 19



Date: 25.JUL.2013 16:50:08



PSD 100kHz Plot on Channel 39

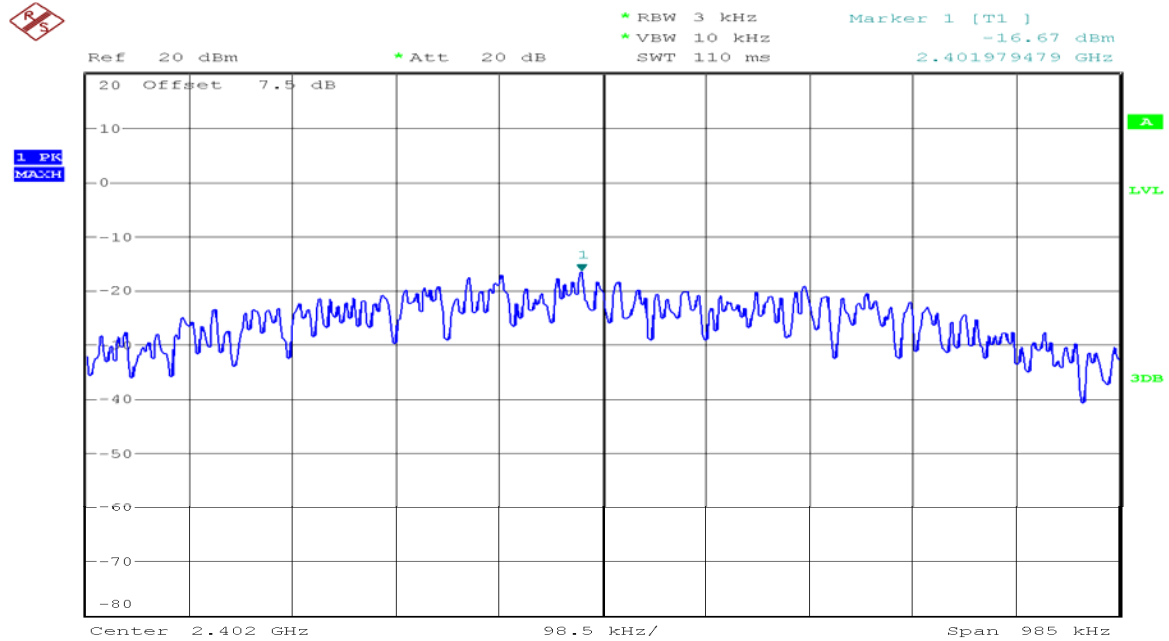


Date: 25.JUL.2013 16:49:26



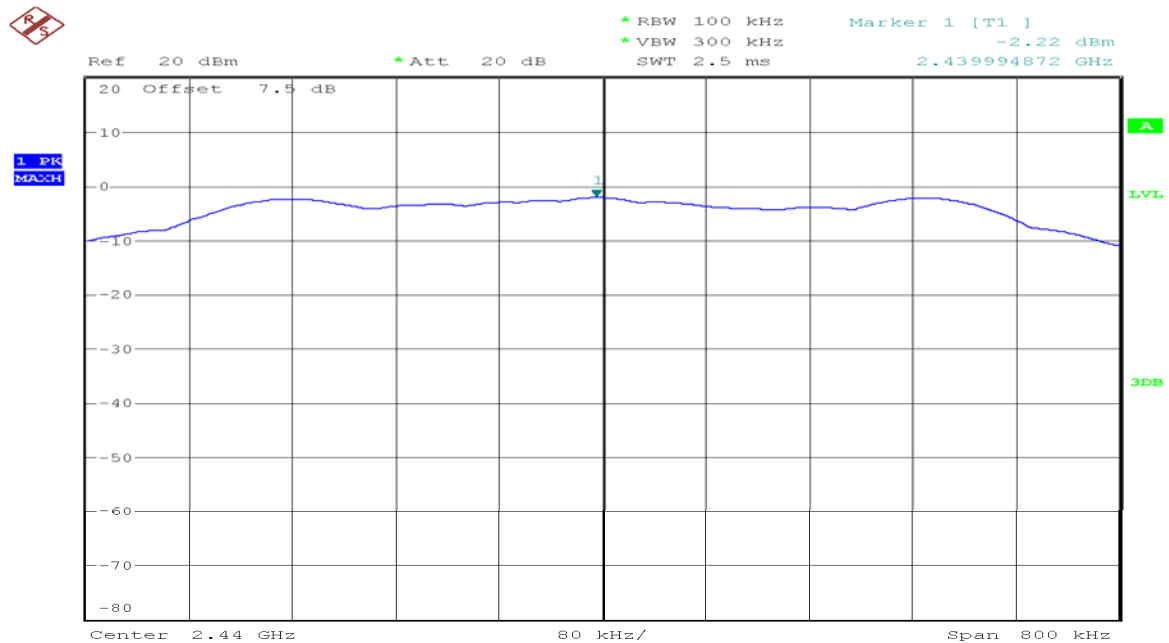
7.3.6. Test Result of Power Spectral Density Plots (3kHz)

PSD 3kHz Plot on Channel 00



Date: 25.JUL.2013 16:55:09

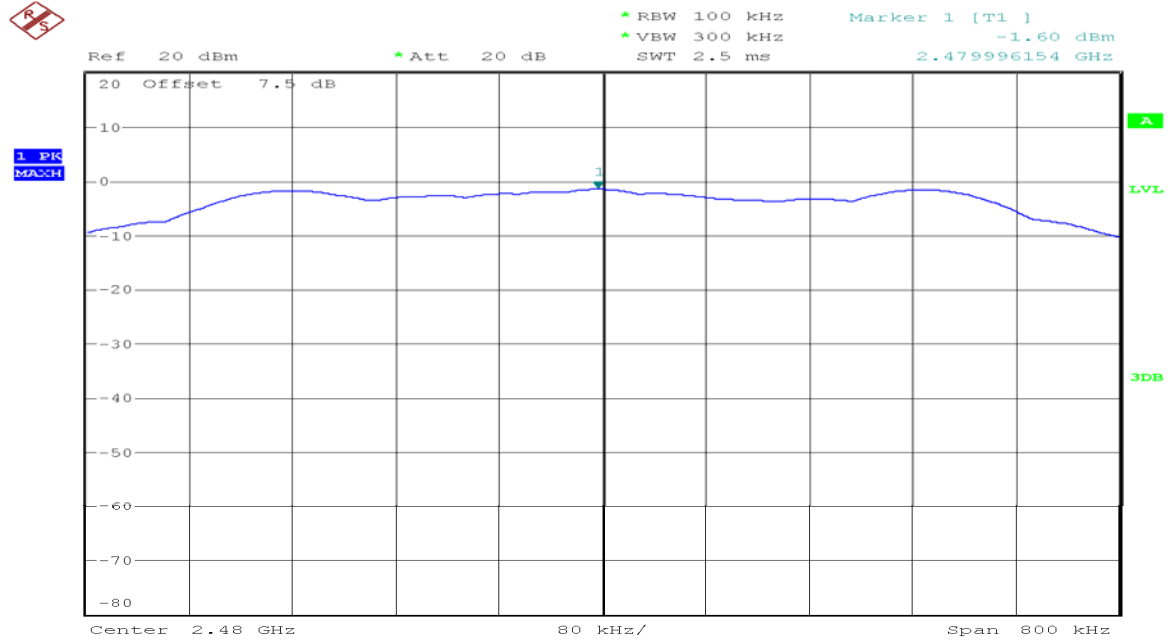
PSD 3kHz Plot on Channel 19



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PSD 3kHz Plot on Channel 39



Date: 25.JUL.2013 16:49:26



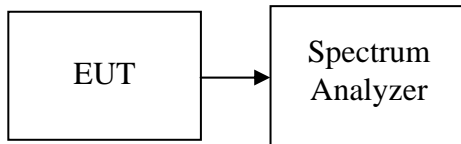
7.4. CONDUCTED BAND EDGES AND SPURIOUS EMISSION

7.4.1. limit

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

Conducted power was measured based on the use of RMS averaging over a time interval, therefore the required attenuation is 30 dB.

7.4.2. Test Configuration



7.4.3. test procedure

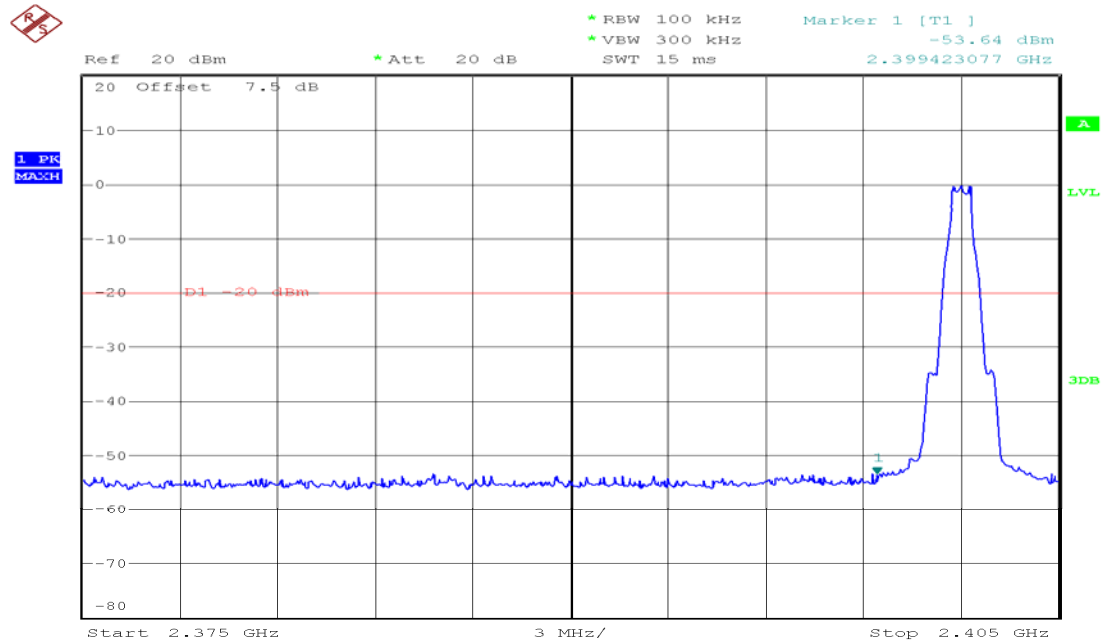
Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100KHz. The video bandwidth is set to 300KHz.



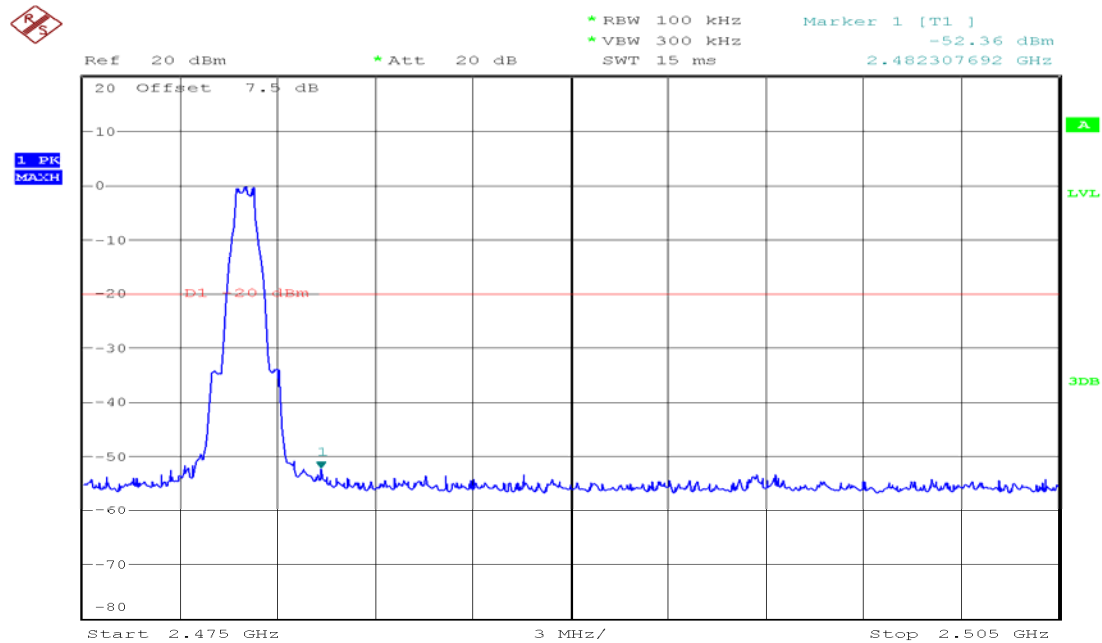
7.4.4. Test Plots of Conducted Band Edges

Low Band Edge Plot on Channel 00



Date: 25.JUL.2013 17:03:31

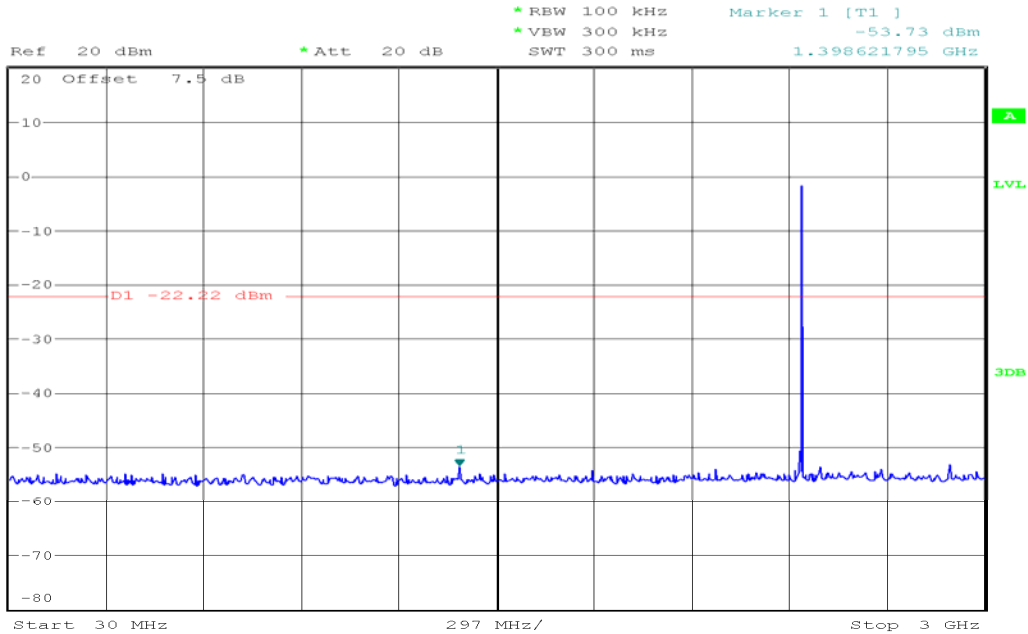
High Band Edge Plot on Channel 39



Date: 25.JUL.2013 17:04:55

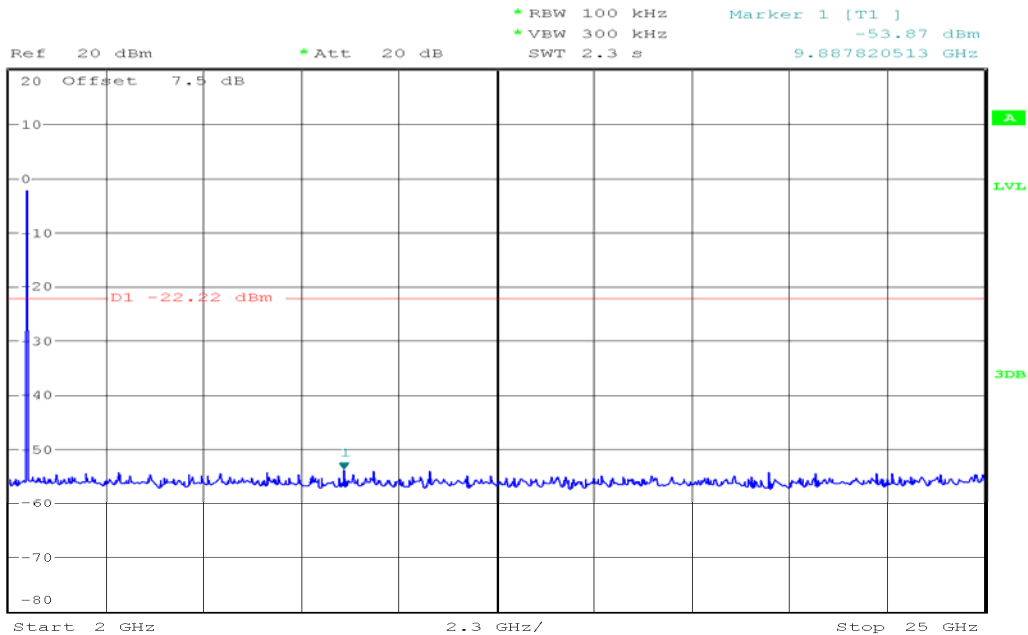


Conducted Spurious Emission Plot on Channel 19 30MHz~3GHz



Date: 25.JUL.2013 17:28:09

2GHz~25GHz



Date: 25.JUL.2013 17:28:51

Conducted Spurious Emission Plot on Channel 39



Compliance Certification Services Inc.

Report No: C130726E02-RPW

FCC ID: O57S6000LF

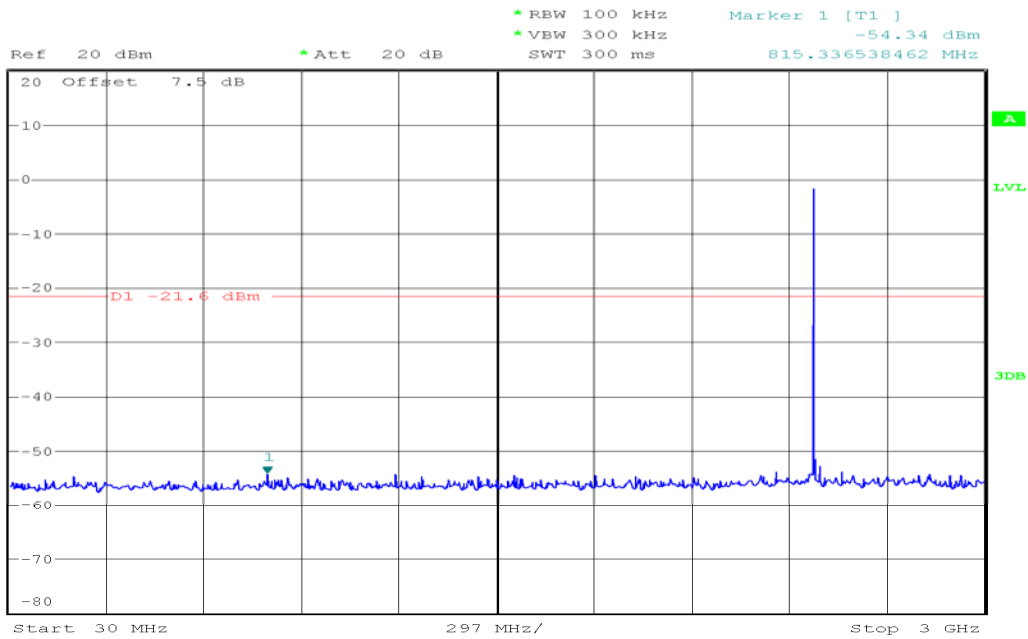
Date of Issue :July 27, 2013

IC:10407A-S6000LF

30MHz~3GHz



1 PK
MACH

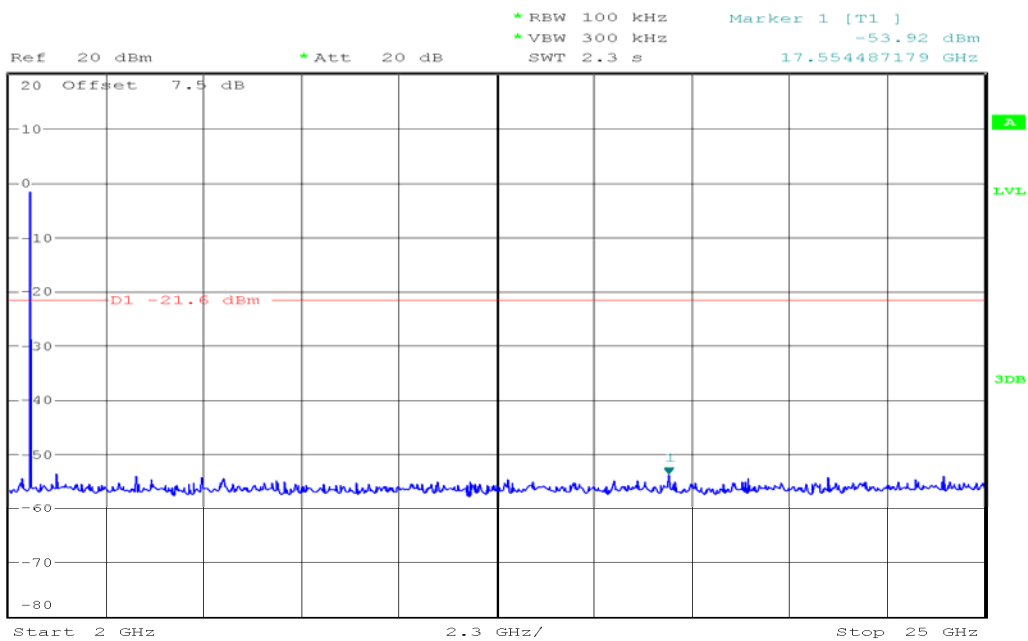


Date: 25.JUL.2013 17:29:43

3GHz~25GHz



1 PK
MACH



Date: 25.JUL.2013 17:30:11



7.5. RADIATED EMISSIONS

7.5.1. limit

1. According to §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 ($\mu\text{V/m}$)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

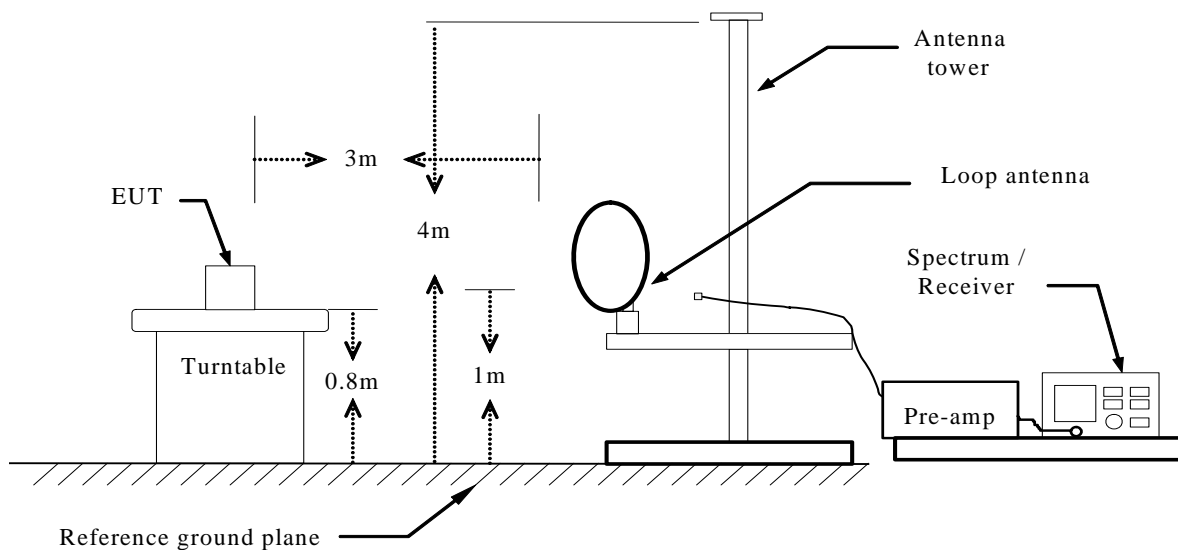
Remark: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

2. In the emission table above, the tighter limit applies at the band edges.

Frequency (MHz)	Field Strength ($\mu\text{V/m}$ at 3-meter)	Field Strength (dB $\mu\text{V/m}$ at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

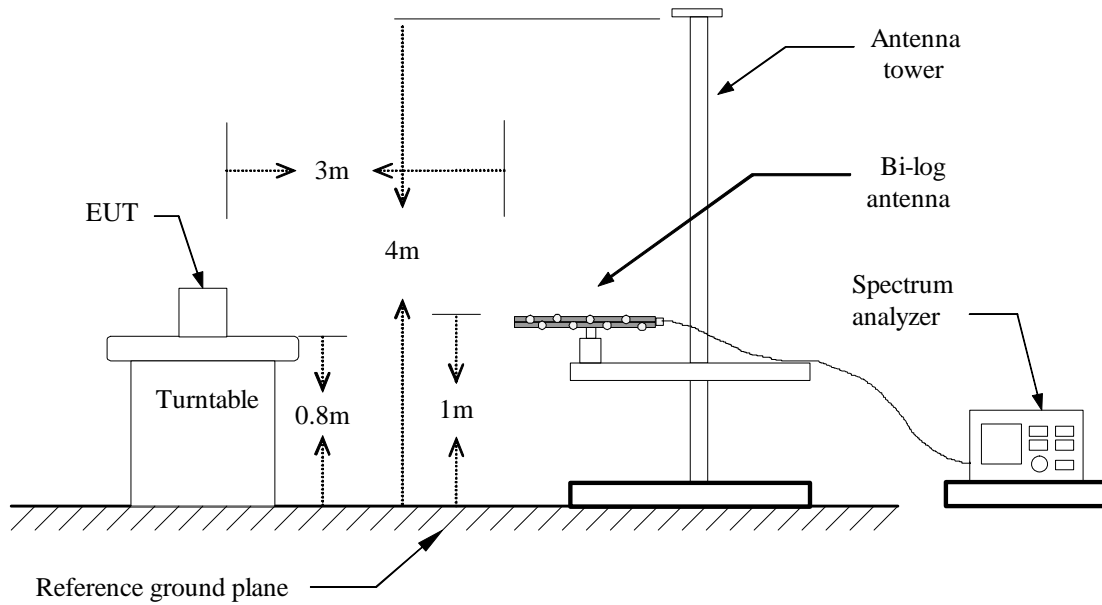
7.5.2. Test Configuration

Below 30MHz

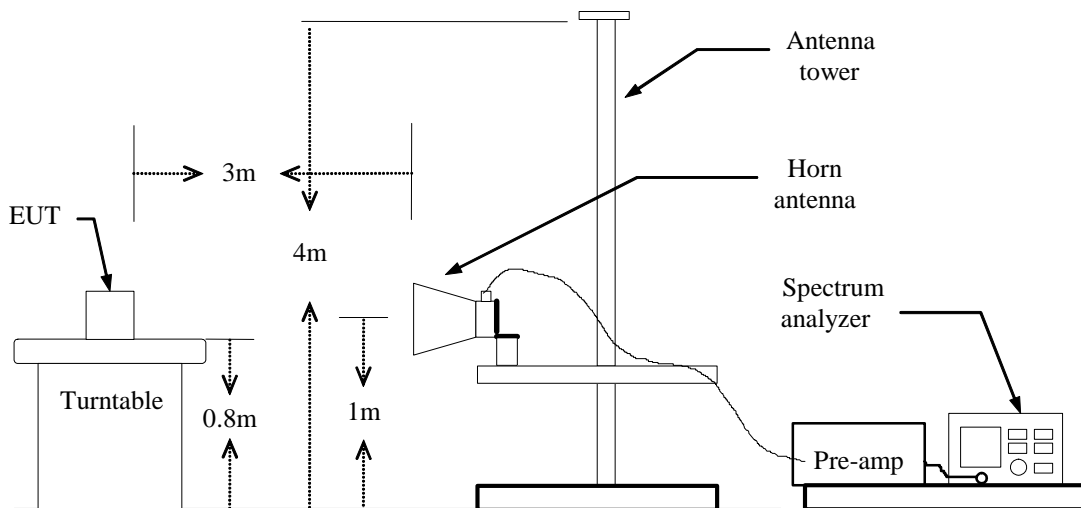




Below 1 GHz



Above 1 GHz





7.5.4. Test Result of Radiated Band Edges

Operation Mode: Bluetooth v4.0-LE**Test Date:** July 24, 2013**Test Channel:** CH00**Tested by:** Blent.Wang**Temperature:** 25°C**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2390.000	V	45.66	-14.28	31.38	74.00	-42.62	PEAK
2390.000	V	35.32	-14.28	21.04	54.00	-32.96	AVG
2390.000	H	45.72	-14.28	31.44	74.00	-42.56	PEAK
2390.000	H	35.33	-14.28	21.05	54.00	-32.95	AVG

Operation Mode: Bluetooth v4.0-LE**Test Date:** July 24, 2013**Test Channel:** CH39**Tested by:** Blent.Wang**Temperature:** 25°C**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2483.500	V	57.89	-13.65	44.24	74.00	-29.76	PEAK
2483.500	V	38.42	-13.65	24.77	54.00	-29.23	AVG
2483.192	H	50.06	-13.65	36.41	74.00	-37.59	PEAK
2483.500	H	35.65	-13.65	22.00	54.00	-32.00	AVG



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Operation Mode: Bluetooth v4.0-LE

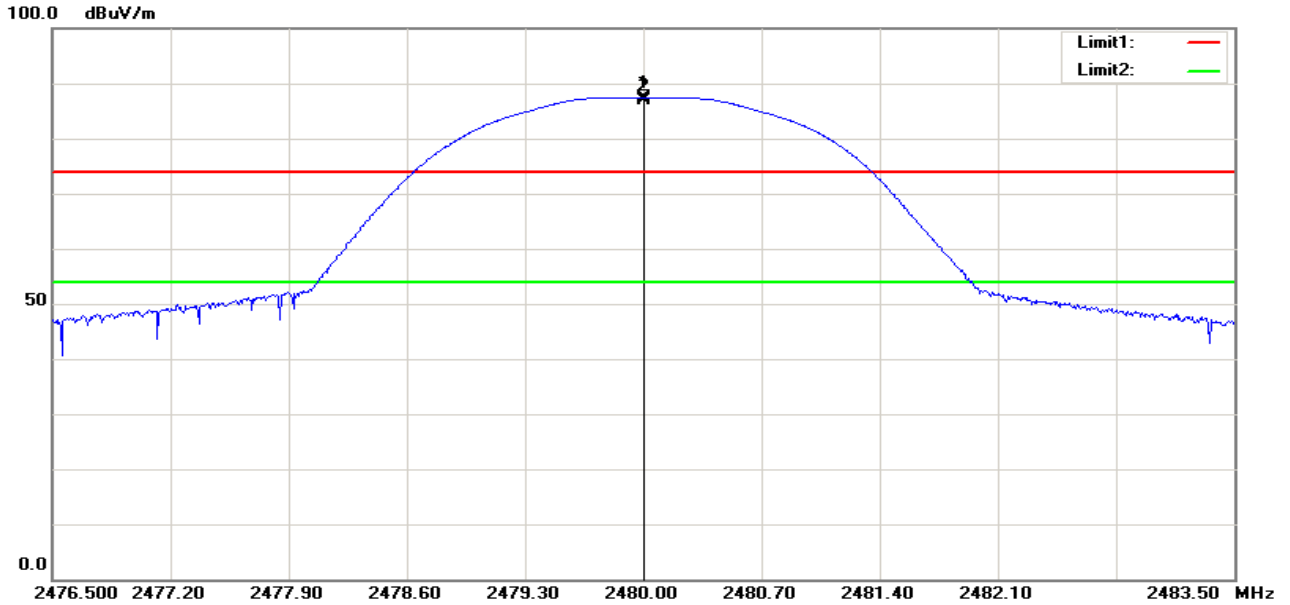
Test Date: July 24, 2013

Test Channel: CH39

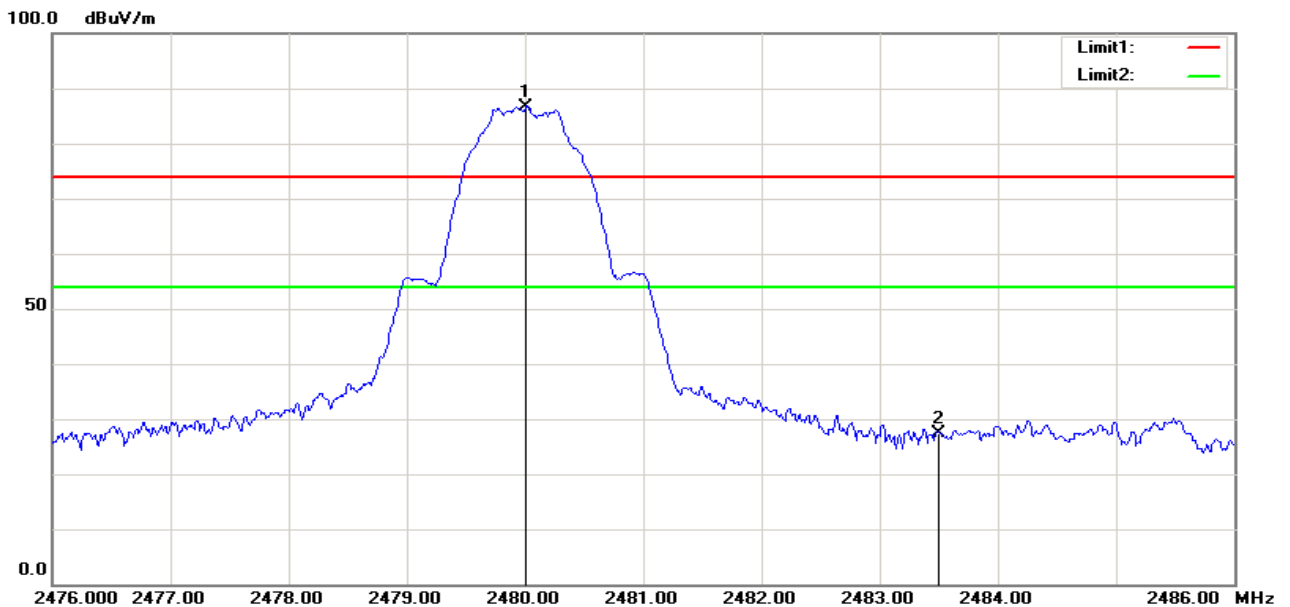
Tested by: Blent.Wang

Temperature: 25°C

Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2480.000	100.96	-13.67	87.29	74.00	13.29	100	86	peak
2	2480.000	100.66	-13.67	86.99	54.00	32.99	100	86	AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2480.000	100.39	-13.67	86.72	74.00	12.72	100	86	peak
2	2483.500	41.15	-13.65	27.50	74.00	-46.50	100	86	peak



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Report No: C130726E02-RPW

FCC ID: O57S6000LF

Date of Issue :July 27, 2013

IC:10407A-S6000LF

Operation Mode: Bluetooth v4.0-LE

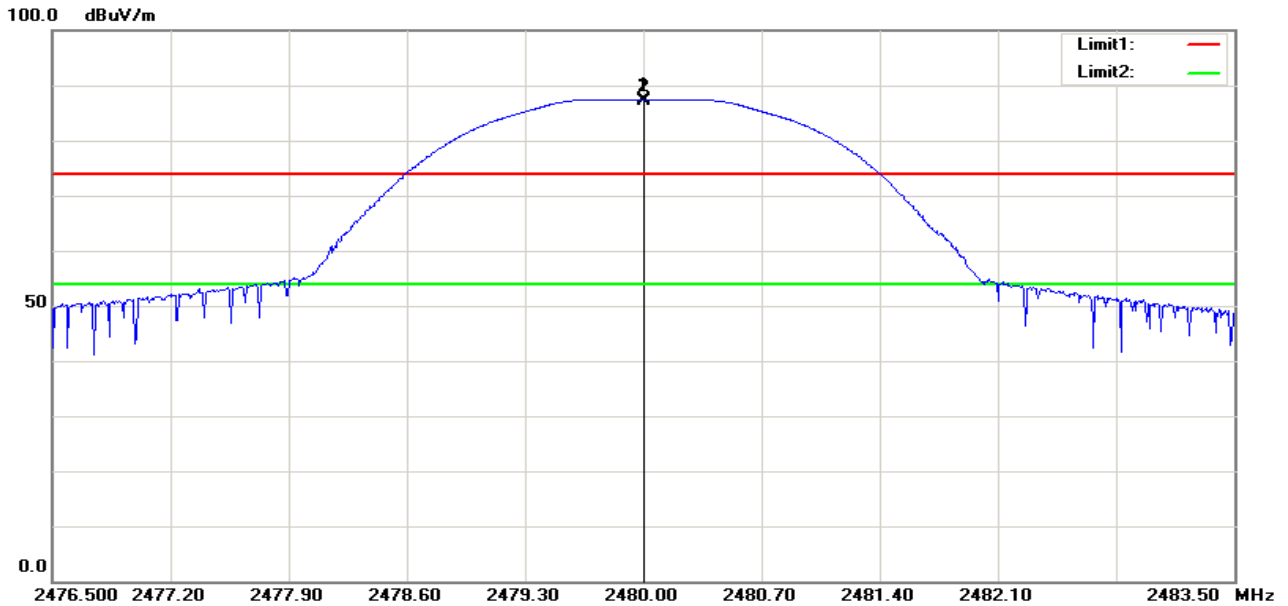
Test Date: July 24, 2013

Test Channel: CH39

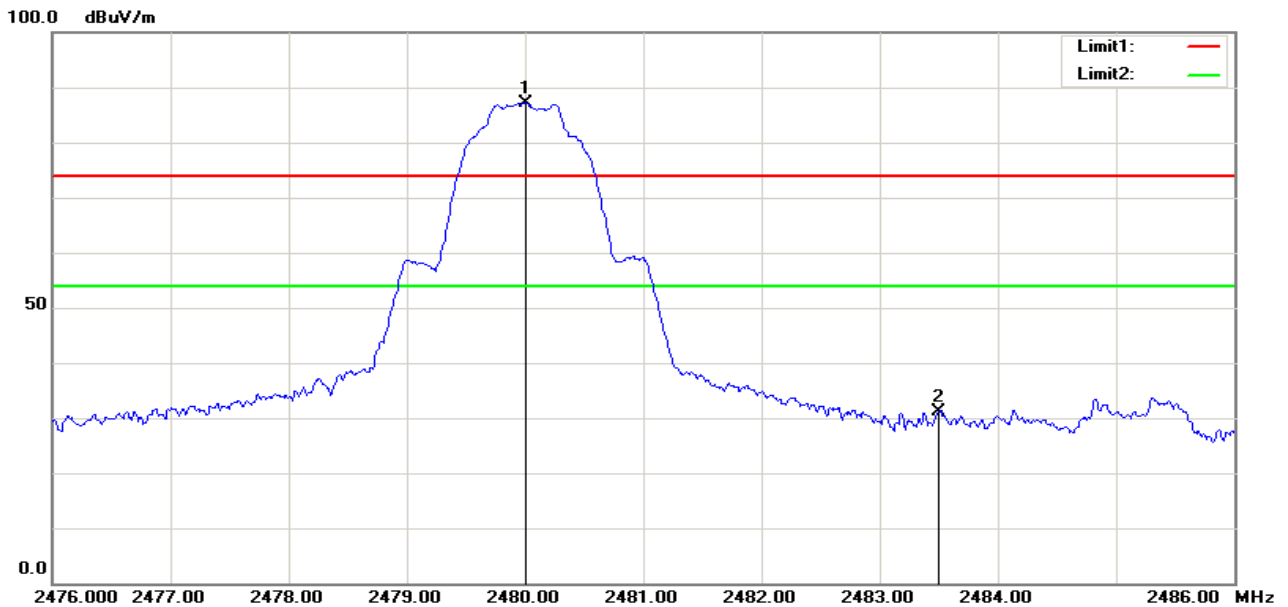
Tested by: Blent.Wang

Temperature: 25°C

Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2480.000	101.02	-13.67	87.35	74.00	13.35	100	82	peak
2	2480.000	100.78	-13.67	87.11	54.00	33.11	100	82	AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2480.000	100.86	-13.67	87.19	74.00	13.19	100	86	peak
2	2483.500	44.79	-13.65	31.14	74.00	-42.86	100	86	peak



7.5.5. Test Result of Radiated Emission

30MHz-1GHz

Operation Mode: Bluetooth v4.0-LE

Test Date: July 24, 2013

Test Channel: CH39

Tested by: Blent.Wang

Temperature: 25°C

Polarity: Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	30.9700	14.87	22.03	36.90	40.00	-3.10	100	325	peak
2	487.8400	16.15	19.29	35.44	46.00	-10.56	201	0	peak
3	642.0700	15.08	21.98	37.06	46.00	-8.94	100	97	peak
4	759.4400	16.12	23.04	39.16	46.00	-6.84	100	92	peak
5	864.2000	15.91	25.21	41.12	46.00	-4.88	100	0	peak
6	945.6800	17.06	25.59	42.65	46.00	-3.35	100	31	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	30.0000	14.35	22.71	37.06	40.00	-2.94	100	93	peak
2	120.2100	14.24	15.19	29.43	43.50	-14.07	100	183	peak
3	596.4800	16.35	20.52	36.87	46.00	-9.13	204	216	peak
4	678.9300	15.62	21.98	37.60	46.00	-8.40	204	231	peak
5	845.7700	15.50	25.25	40.75	46.00	-5.25	100	67	peak
6	945.6800	17.07	25.59	42.66	46.00	-3.34	200	145	peak

Notes:

1. Measuring frequencies from 9 KHz to the 1GHz, No emission found between lowest internal used/generated frequency to 30 MHz.
2. Radiated emissions measured in frequency range from 9 KHz to 1000MHz were made with an instrument using Peak detector mode.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. The IF bandwidth of SPA between 30MHz to 1GHz was 100kHz.



Compliance Certification Services Inc.

Report No: C130726E02-RPW

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Date of Issue :July 27, 2013

IC:10407A-S6000LF

Above1GHz

Operation Mode: Bluetooth v4.0-LE

Test Date: July 24, 2013

Test Channel: CH00

Tested by: Blent.Wang

Temperature: 25°C

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2402.000	V	46.06	-14.27	31.79	74.00	-42.21	PEAK
4804.000	V	44.74	-8.05	36.69	74.00	-37.31	PEAK
7206.000	V	43.42	-0.57	42.85	74.00	-31.15	PEAK
2402.000	H	46.17	-14.27	31.90	74.00	-42.10	PEAK
4804.000	H	44.87	-8.05	36.82	74.00	-37.18	PEAK
7206.000	H	43.89	-0.57	43.32	74.00	-30.68	PEAK

Operation Mode: Bluetooth v4.0-LE

Test Date: July 24, 2013

Test Channel: CH19

Tested by: Blent.Wang

Temperature: 25°C

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2440.000	V	46.13	-13.98	32.15	74.00	-41.85	PEAK
4880.000	V	44.13	-7.66	36.47	74.00	-37.53	PEAK
7320.000	V	42.50	-0.83	41.67	74.00	-32.33	PEAK
2440.000	H	47.27	-13.98	33.29	74.00	-40.71	PEAK
4880.000	H	44.31	-7.66	36.65	74.00	-37.35	PEAK
7320.000	H	42.63	-0.83	41.80	74.00	-32.20	PEAK



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Report No: C130726E02-RPW

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Operation Mode: Bluetooth v4.0-LE

Test Date: July 24, 2013

Test Channel: CH39

Tested by: Blent.Wang

Temperature: 25°C

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2480.000	V	46.82	-13.67	33.15	74.00	-40.85	PEAK
4960.000	V	44.89	-7.58	37.31	74.00	-36.69	PEAK
7440.000	V	44.18	-0.51	43.67	74.00	-30.33	PEAK
2480.000	H	47.07	-13.67	33.40	74.00	-40.60	PEAK
4960.000	H	44.89	-7.58	37.31	74.00	-36.69	PEAK
7440.000	H	44.35	-0.51	43.84	74.00	-30.16	PEAK

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Spectrum setting:
 - a. Peak Setting 1GHz to 10th harmonics of fundamental, RBW = 1MHz, VBW = 1MHz, Sweep time = Auto.
 - b. AV Setting 1GHz to 10th harmonics of fundamental, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.



7.6. POWERLINE CONDUCTED EMISSIONS

7.6.1. limit

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, 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 or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

* Decreases with the logarithm of the frequency.

7.6.2. Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

7.6.3. TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

7.6.4. test result of AC Conducted Emission

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.



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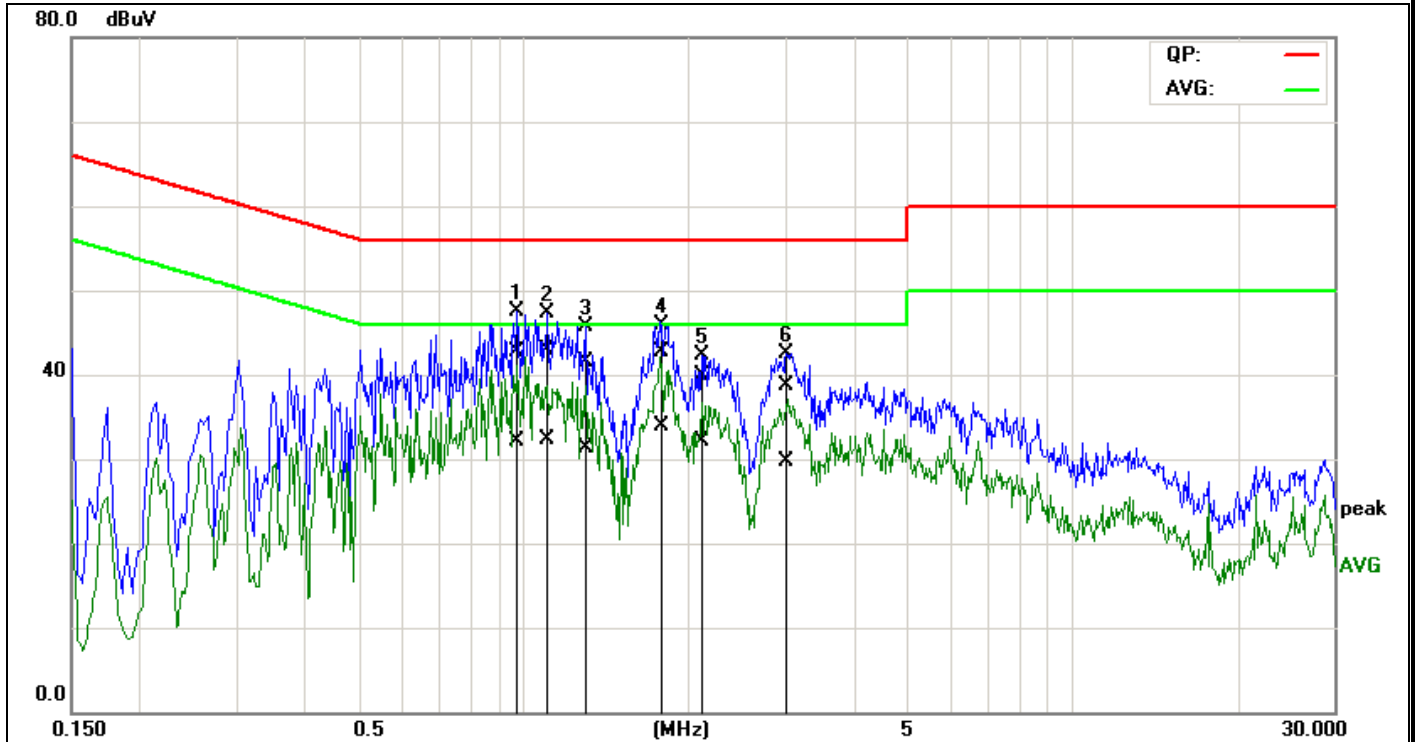
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Job No.: C130726E02
 Company: Lenovo
 Standard: FCC Class B
 Test item: Conduction test
 Line: L1
 Model: 60049

Date: 2013-7-23
 Time: 15:32:29
 Temp.(C)/Hum.(%): 22(C)/48%
 Test By: Blent.Wang
 Test Voltage: AC 120V/60Hz
 Description:

L1



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.9752	32.75	22.05	9.98	42.73	32.03	56.00	46.00	-13.27	-13.97	Pass
2	1.1060	32.82	22.29	9.99	42.81	32.28	56.00	46.00	-13.19	-13.72	Pass
3	1.3020	31.41	21.21	10.01	41.42	31.22	56.00	46.00	-14.58	-14.78	Pass
4	1.7974	32.69	23.80	10.07	42.76	33.87	56.00	46.00	-13.24	-12.13	Pass
5*	2.1182	29.80	21.95	10.10	39.90	32.05	56.00	46.00	-16.10	-13.95	Pass
6	3.0189	28.56	19.58	10.21	38.77	29.79	56.00	46.00	-17.23	-16.21	Pass

Note: 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).



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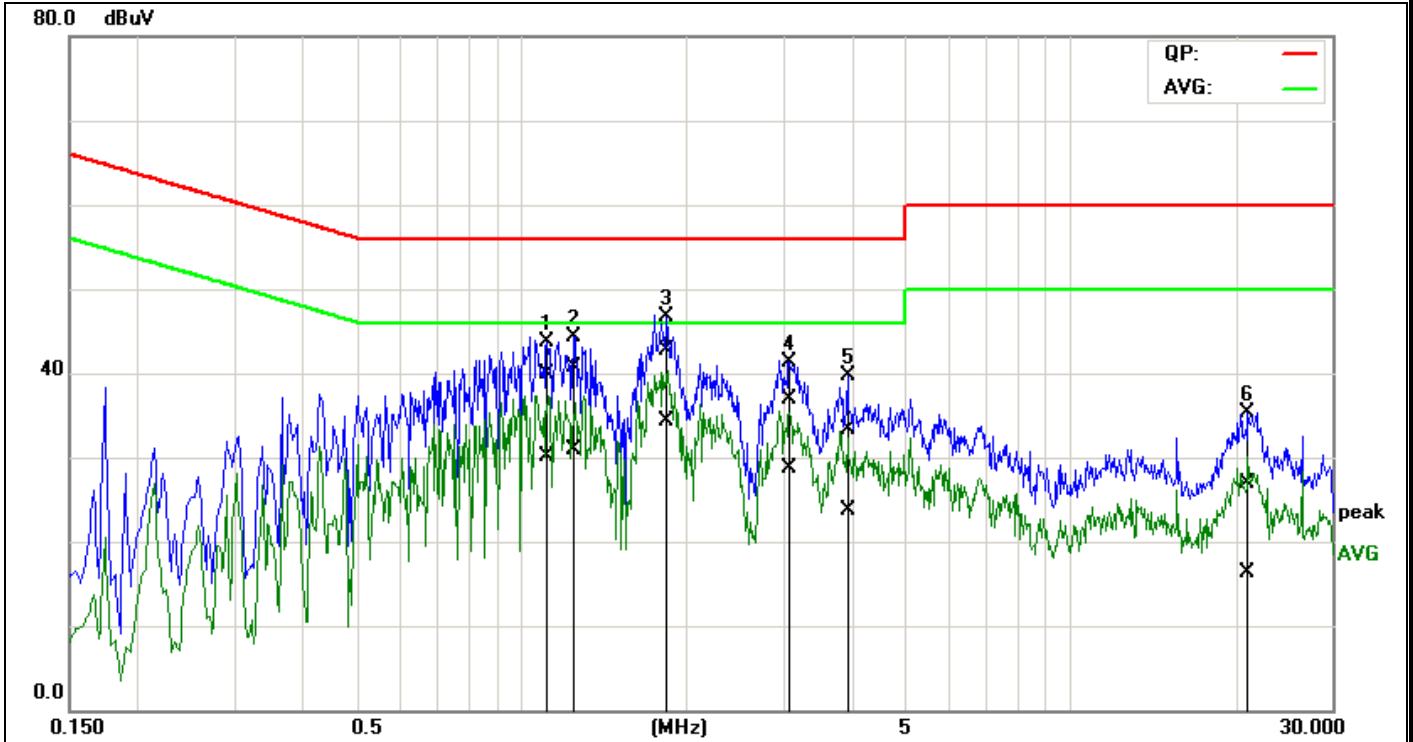
FCC ID: O57S6000LF

Date of Issue :July 27, 2013

IC:10407A-S6000LF

Job No.: C130726E02
 Company: Lenovo
 Standard: FCC Class B
 Test item: Conduction test
 Line: L2
 Model: 60049

Date: 2013-7-23
 Time: 15:36:59
 Temp.(C)/Hum.(%): 22(C)/48%
 Test By: Blent.Wang
 Test Voltage: AC 120V/60Hz
 Description:



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	1.1183	30.00	20.15	9.98	39.98	30.13	56.00	46.00	-16.02	-15.87	Pass
2	1.2460	30.62	20.81	10.00	40.62	30.81	56.00	46.00	-15.38	-15.19	Pass
3	1.8148	32.53	24.23	10.10	42.63	34.33	56.00	46.00	-13.37	-11.67	Pass
4	3.0972	26.71	18.44	10.24	36.95	28.68	56.00	46.00	-19.05	-17.32	Pass
5	3.9429	23.03	13.34	10.33	33.36	23.67	56.00	46.00	-22.64	-22.33	Pass
6*	21.0777	15.73	5.24	11.09	26.82	16.33	60.00	50.00	-33.18	-33.67	Pass

Remark:

- 1.The measuring frequencies range between 0.15 MHz and 30 MHz.
- 2.The emissions measured in the frequency range between 0.15 MHz and 30MHz were made with an instrument using Quasi-peak detector and Average detector.
- 3.“—” denotes the emission level was or more than 2dB below the Average limit, and no re-check was made.
- 4.The IF bandwidth of SPA between 0.15MHz and 30MHz was 10KHz. The IF bandwidth of Test Receiver between 0.15MHz and 30MHz was 9kHz.

END OF REPORT