SGS-CSTC Standards Technical Services Ltd.

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FCC REPORT

Application No.:	SZEM1110004004RF
Applicant:	Disruptive Ltd.
Product Name:	Air Zone Series 1
Operation Frequency:	2412MHz to 2462MHz
FCC ID:	YNKPG539US
Standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247: 2010
Date of Receipt:	2011-10-09
Date of Test:	2011-10-26 to 2011-11-15
Date of Issue:	2011-12-01
Test Result :	**PASS ***

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Jack Zhang
EMC Laboratory Manager

This report refers to the General Conditions for Inspection and Testing Services, printed overleaf
This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the SGS PRODUCT CERTIFICATION MARK.. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

2 Contents

3 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.247 (b)(3)	Pass
6dB Occupied Bandwidth	15.247 (a)(2)	Pass
Power Spectral Density	15.247 (e)	Pass
Radiated Emission	15.205/15.209	Pass
Band Edge	15.247(d)	Pass

Remark: Pass: The EUT complies with the essential requirements in the standard.

Fail: The EUT does not comply with the essential requirements in the standard.

4 General Information

4.1 Client Information

Applicant:	Disruptive Ltd.
Address of Applicant:	Windsor House, Turnpike Road, High Wycombe, Bucks, HP12 3NR, UK
Manufacturer:	Disruptive Ltd.
Address of Manufacturer:	Windsor House, Turnpike Road, High Wycombe, Bucks, HP12 3NR, UK
Factory:	Minwa Electronics Co., Ltd.
Address of Factory:	Minwa Industrial Park, Jiahu Road, Fucheng' ao Village, Pinghu Town, Longgang District, Shenzhen

4.2 General Description of E.U.T.

Product Name:	Air Zone Series 1
Model No.:	PG539/PG539US Only the model No. PG539 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for all above models, Only the different on model number.
Operation Frequency:	2412MHz~2462MHz
Channel Numbers:	11
Channel Separation:	5MHz
Modulation Type:	IEEE 802.11b: Direct Sequence Spread Spectrum (DSSS) IEEE 802.11g: Orthogonal Frequency Division Multiplexing(OFDM)
Data speed:	IEEE 802.11b: 1Mbps, 2Mbps, 5.5Mbps, 11Mbps IEEE 802.11g: 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps
Antenna Type:	dedicated
Antenna Gain:	2dBi
AC Adapter:	SWITCHING ADAPTER MODEL: ADS-36RJ-12 12036G INPUT: 100-240V~ 50/60Hz max.0.8A OUTPUT: 12V ⎓ 3.0A
AC adapter DC port:	147cm

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

Note:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channels for testing see below:
802.11b/g

Channel	Frequency
lowest channel	2412MHz
middle channel	2437MHz
highest channel	2462MHz

4.3 Test environment and mode

Test Environment:	
Temperature:	25.0 °C
Humidity:	50 % RH
Atmospheric Pressure:	1015mbar
Test mode:	
AC charge + Transmitter mode:	The EUT transmitted the continuous modulation test signal at the specific channel(s) and AC charge to EUT.

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Pre-scan under all rate at lowest channel 1

Mode	802.11b			
Data Rate	1Mbps	2Mbps	5.5Mbps	11Mbps
EIRP(dBm)	4.61	4.43	4.22	4.05

Mode	802.11g							
Data Rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
EIRP(dBm)	17.02	16.91	16.74	16.53	16.26	16.01	15.92	15.63

Through Pre-scan, 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g.

4.4 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.
Router	TP-Link	TL_WR340G+

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L2929)**
  CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.
- **VCCI**
  The 3m Semi-anechoic chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2197 and C-2383 respectively.
  Date of Registration: September 29, 2011. Valid until September 28, 2014.
- **FCC – Registration No.: 556682**
  SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 556682, March 16, 2011
- **Industry Canada (IC)**
  The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1.

4.6 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch E&E Lab

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China 518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

4.7 Other Information Requested by the Customer

None.

4.8 Test Instruments list

RE in Chamber					
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Due date (yyyy-mm-dd)**
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	2012-06-10
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	2012-05-26
3	EMI Test software	AUDIX	E3	SEL0050	N/A
4	Coaxial cable	SGS	N/A	SEL0028	2012-05-29
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2012-10-29
6	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2012-10-29
7	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	2012-10-29
8	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2012-05-26
9	Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEL0168	2012-10-27
11	Band filter	Amindeon	82346	SEL0094	2012-05-26

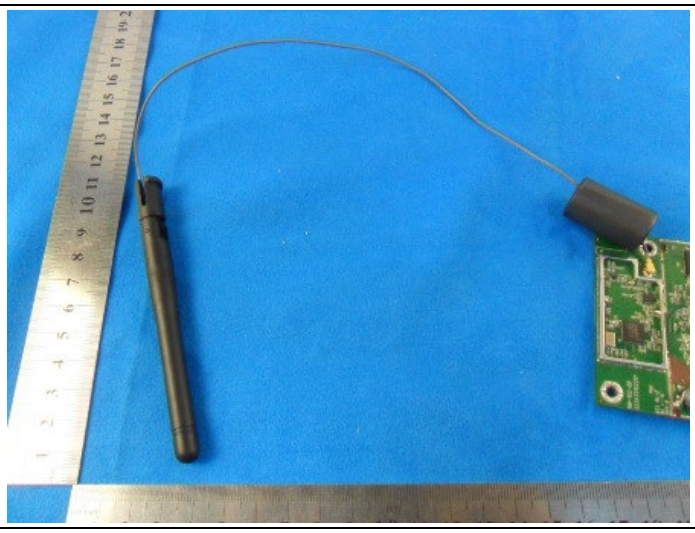
Conducted Emission					
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Due date (yyyy-mm-dd)**
1	Shielding Room	ZhongYu Electron	GB-88	SEL0042	2012-06-10
2	LISN	Rohde & Schwarz	ENV216	SEL0152	2012-10-23
3	Two-Line V-Network	ETS-LINDGREN	3816/2	SEL0021	2012-05-26
4	EMI Test Receiver	Rohde & Schwarz	ESCI	SEL0022	2012-05-26
5	Coaxial Cable	SGS	N/A	SEL0024	2012-05-29

RF conducted					
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Due date (yyyy-mm-dd)**
1	Spectrum Analyzer	Rohde & Schwarz	FSP 30	SEL0154	2012-10-23
2	Coaxial cable	SGS	N/A	SEL0028	2012-05-29

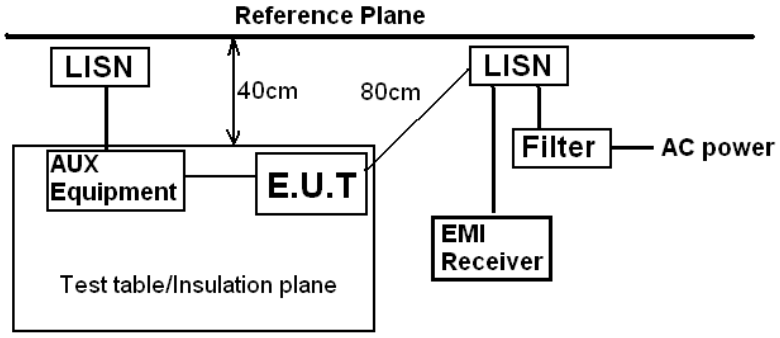
General used equipment					
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Due date (yyyy-mm-dd)**
1	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0102 to SEL0103	2012-10-27
2	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0101	2012-10-27
3	Barometer	ChangChun	DYM3	SEL0088	2012-05-18

5 Test results and Measurement Data

5.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: *An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.* 15.247(c) (1)(i) requirement: *(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.*	
E.U.T Antenna:	

5.2 Conducted Emissions

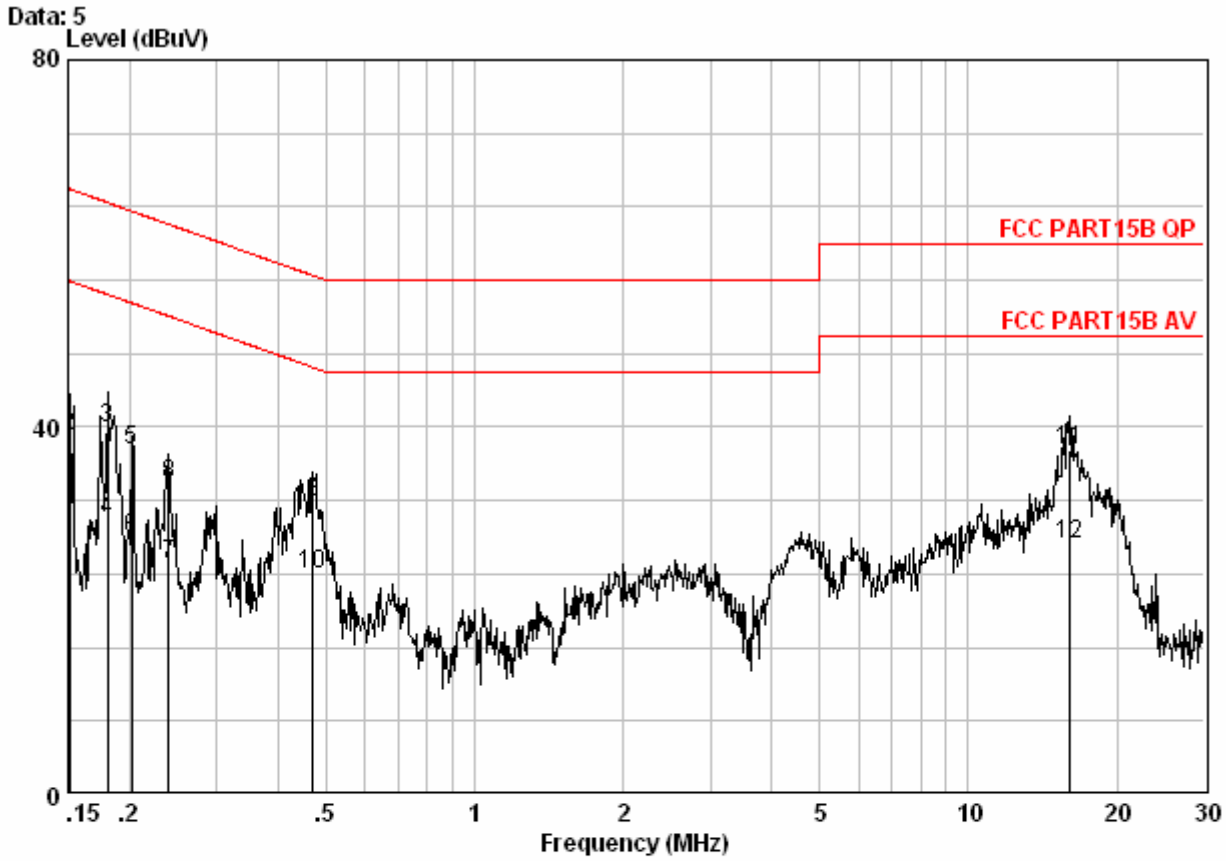
Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2009 section 6.2
Test Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9kHz, VBW=30kHz
Limit:	Frequency range (MHz) / Limit (dBuV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 * Decreases with the logarithm of the frequency.
Test procedure:	The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2009 on conducted measurement.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test Instruments:	Refer to section 4.8 for details
Test mode:	AC charge + Transmitter mode
Test results:	Pass

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live Line:



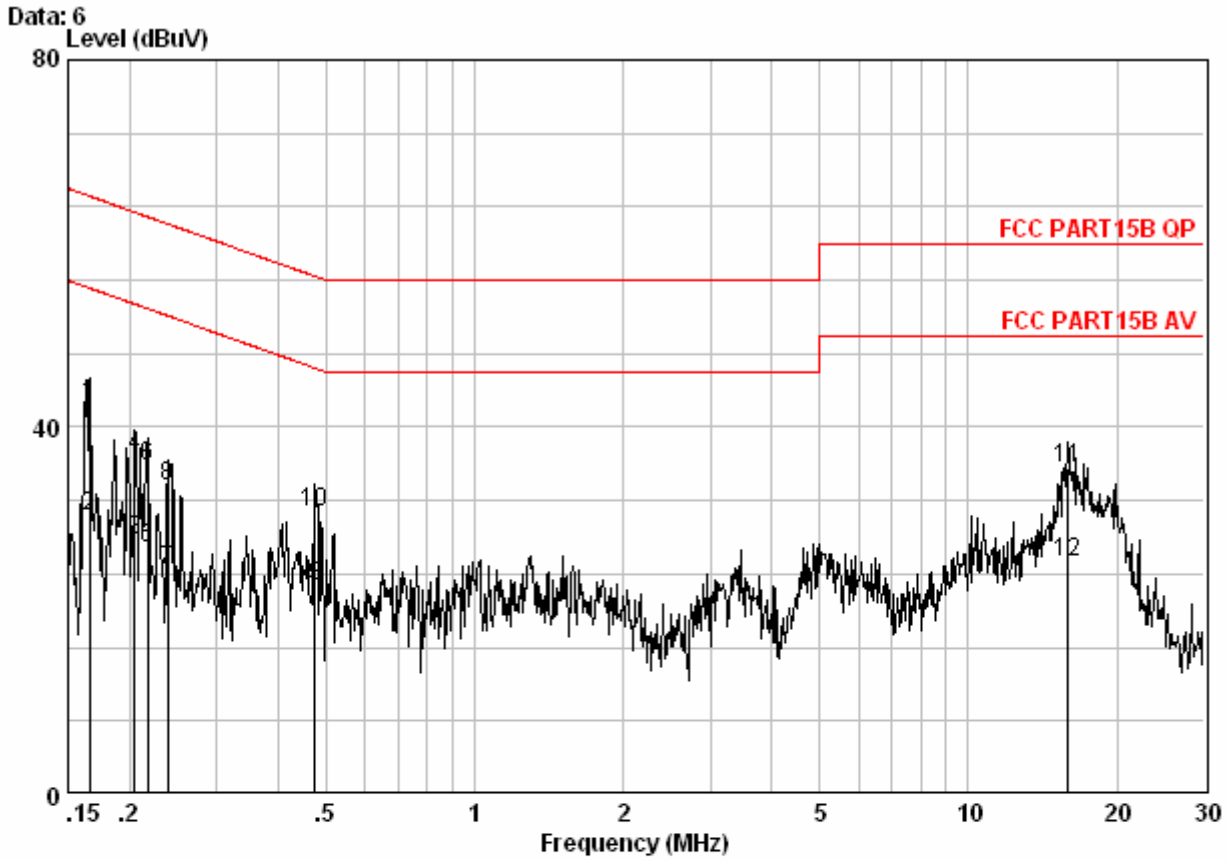
	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.15080	0.04	9.60	21.85	31.49	55.96	-24.46	Average
2	0.15080	0.04	9.60	29.36	39.00	65.96	-26.96	QP
3	0.18056	0.04	9.60	30.15	39.79	64.46	-24.67	QP
4	0.18056	0.04	9.60	20.26	29.90	54.46	-24.56	Average
5	0.20181	0.04	9.60	27.96	37.60	63.54	-25.94	QP
6	0.20181	0.04	9.60	18.28	27.92	53.54	-25.62	Average
7	0.24037	0.04	9.60	15.37	25.02	52.08	-27.07	Average
8	0.24037	0.04	9.60	24.16	33.80	62.08	-28.28	QP
9	0.47110	0.06	9.60	22.25	31.90	56.49	-24.59	QP
10 @	0.47110	0.06	9.60	14.36	24.01	46.49	-22.48	Average
11 @	16.055	0.25	10.02	27.29	37.56	60.00	-22.44	QP
12	16.055	0.25	10.02	16.87	27.15	50.00	-22.85	Average

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

Neutral Line:



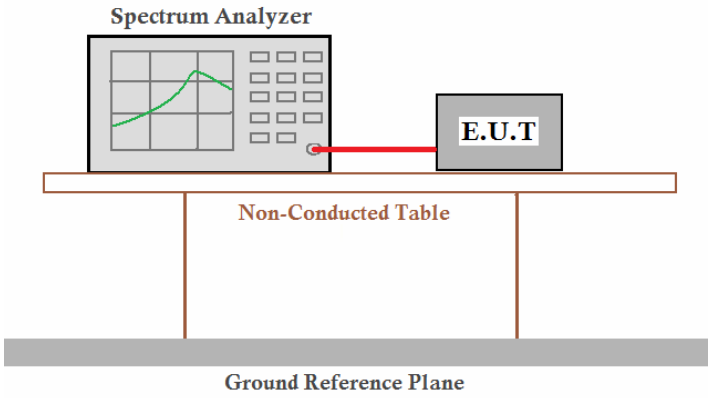
	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 @	0.16589	0.04	9.60	32.76	42.40	65.16	-22.76	QP
2	0.16589	0.04	9.60	20.73	30.37	55.16	-24.80	Average
3	0.20505	0.04	9.60	18.09	27.73	53.40	-25.67	Average
4	0.20505	0.04	9.60	27.24	36.88	63.40	-26.52	QP
5	0.21735	0.04	9.60	17.07	26.71	52.92	-26.21	Average
6	0.21735	0.04	9.60	26.20	35.84	62.92	-27.08	QP
7	0.23910	0.04	9.60	14.73	24.37	52.13	-27.75	Average
8	0.23910	0.04	9.60	23.93	33.58	62.13	-28.55	QP
9	0.47360	0.06	9.60	13.06	22.72	46.45	-23.73	Average
10	0.47360	0.06	9.60	21.08	30.74	56.45	-25.71	QP
11	15.885	0.25	10.02	25.30	35.58	60.00	-24.42	QP
12	15.885	0.25	10.02	15.02	25.30	50.00	-24.70	Average

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

5.3 Conducted Peak Output Power

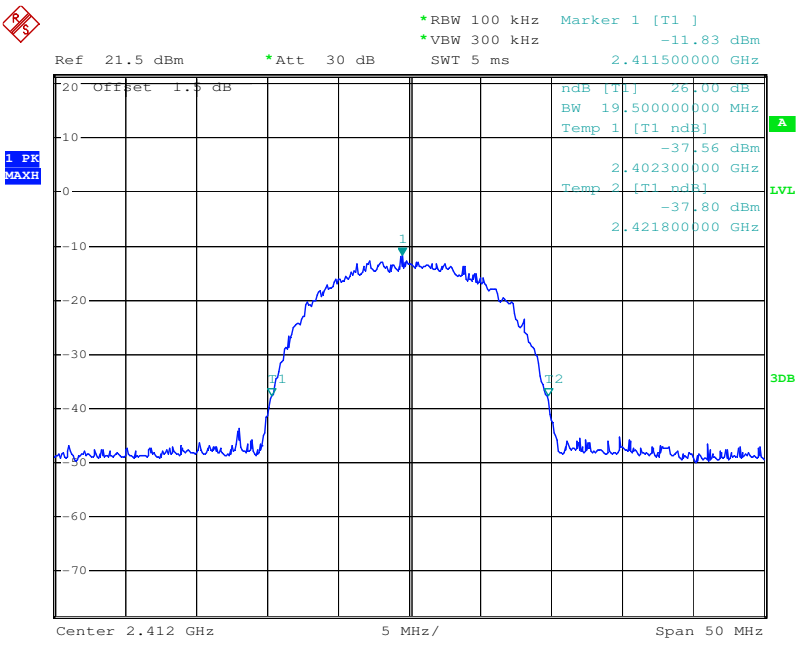
Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	KDB558074 Power Output Option 2 Method #1
Limit:	30dBm
Test setup:	 *Remark:* *Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.*
Test Instruments:	Refer to section 4.8 for details.
Test results:	Pass

Measurement Data

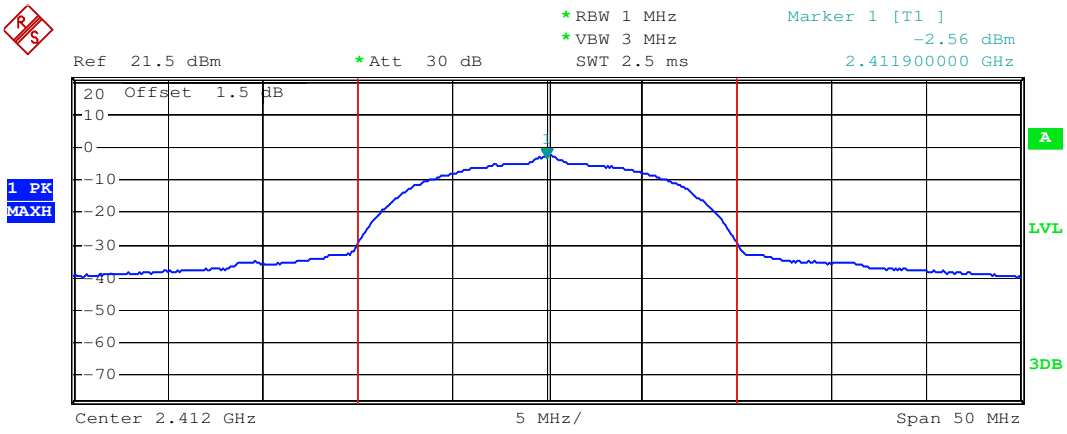
802.11b mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	4.80	30.00	Pass
Middle	4.61	30.00	Pass
Highest	4.36	30.00	Pass
802.11g mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	17.02	30.00	Pass
Middle	16.73	30.00	Pass
Highest	16.41	30.00	Pass

Test plot as follows:

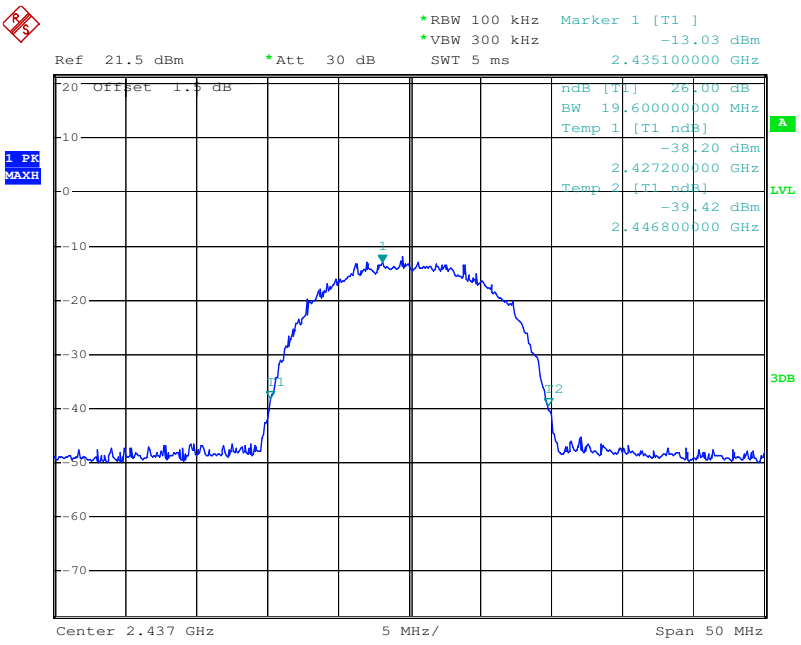
Test mode:	802.11b	Test channel:	Lowest	-26dB



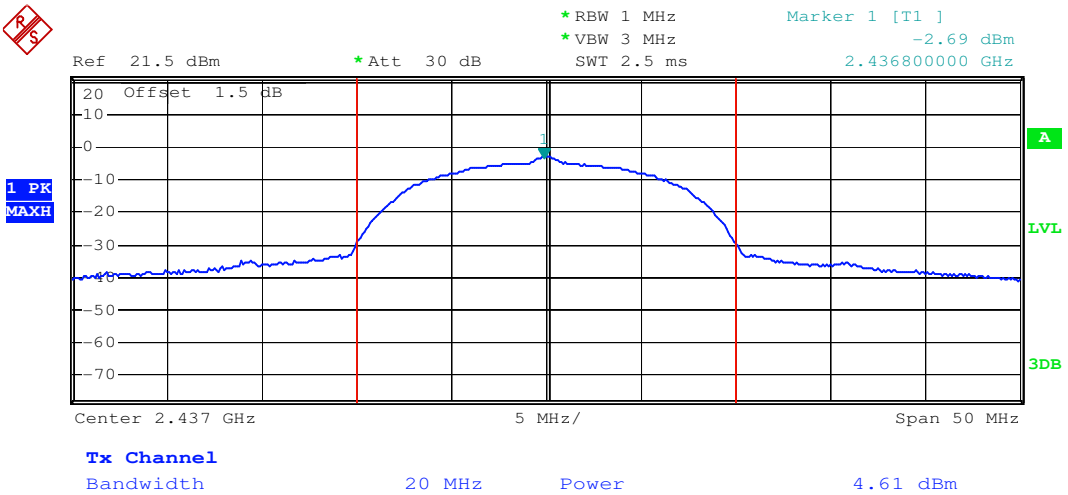
Test mode:	802.11b	Test channel:	Lowest



Test mode:	802.11b	Test channel:	Middle	-26dB



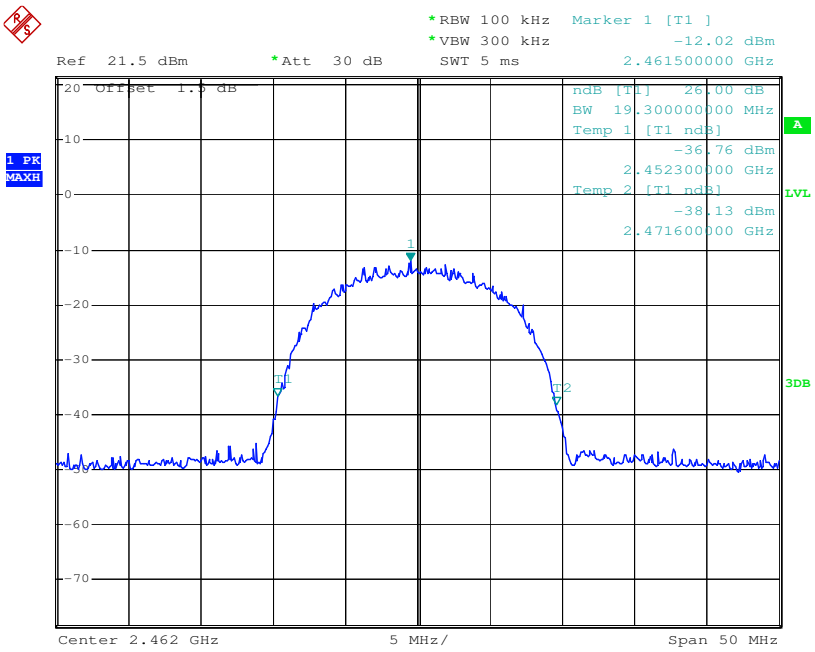
Test mode:	802.11b	Test channel:	Middle



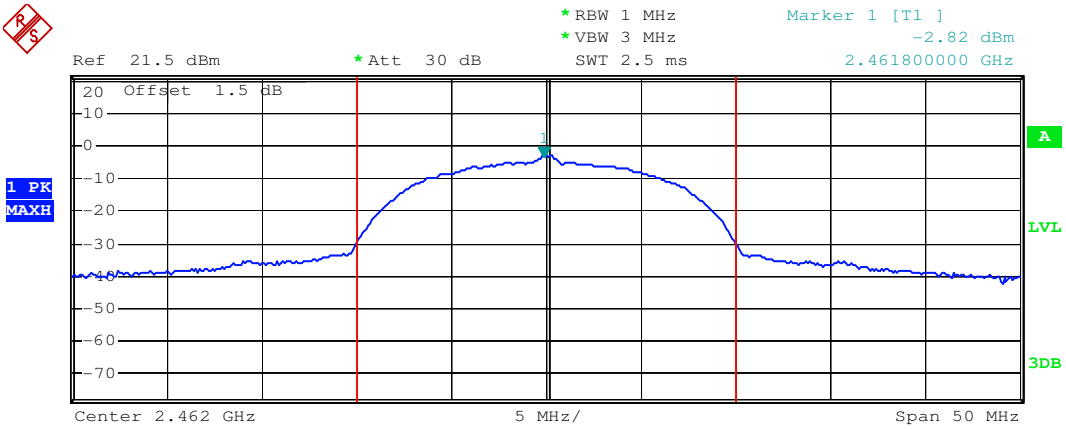
Tx Channel

Bandwidth 20 MHz Power 4.61 dBm

Test mode:	802.11b	Test channel:	Highest	-26dB



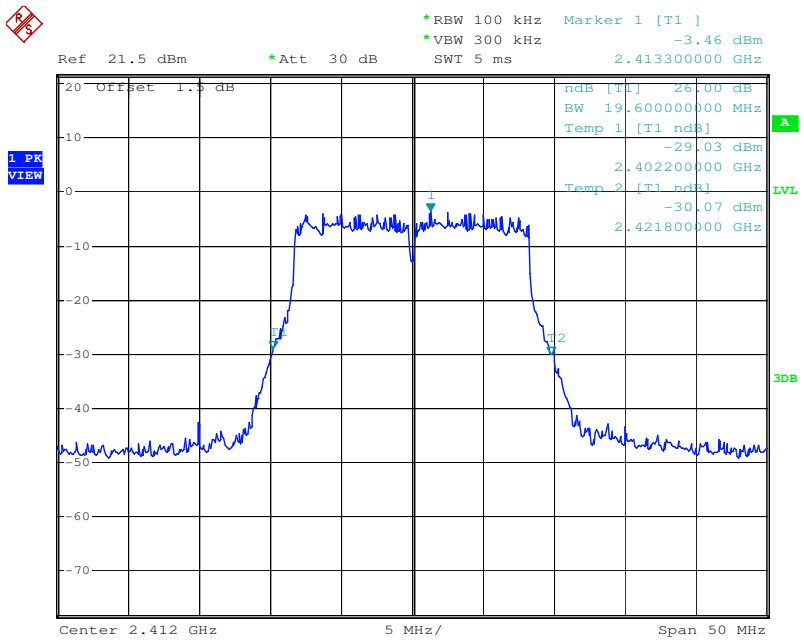
Test mode:	802.11b	Test channel:	Highest



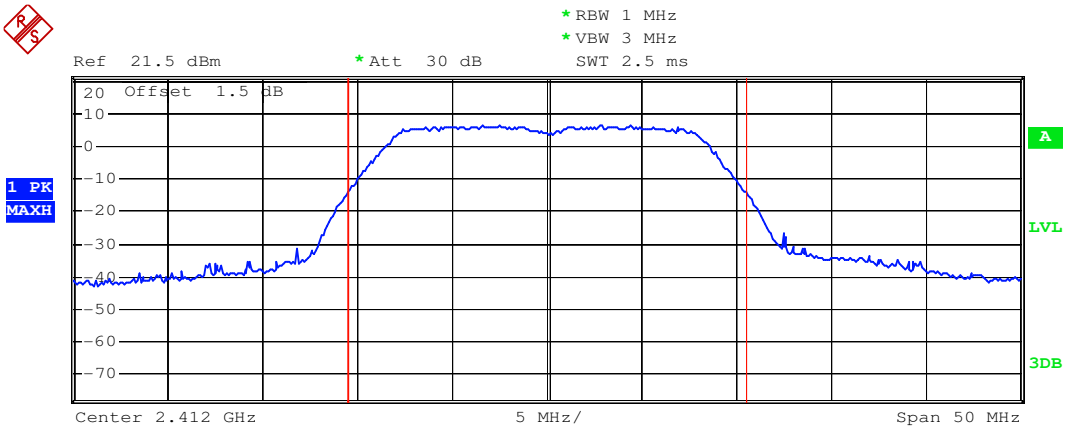
Tx Channel

Bandwidth 20 MHz Power 4.36 dBm

Test mode:	802.11g	Test channel:	Lowest	-26dB



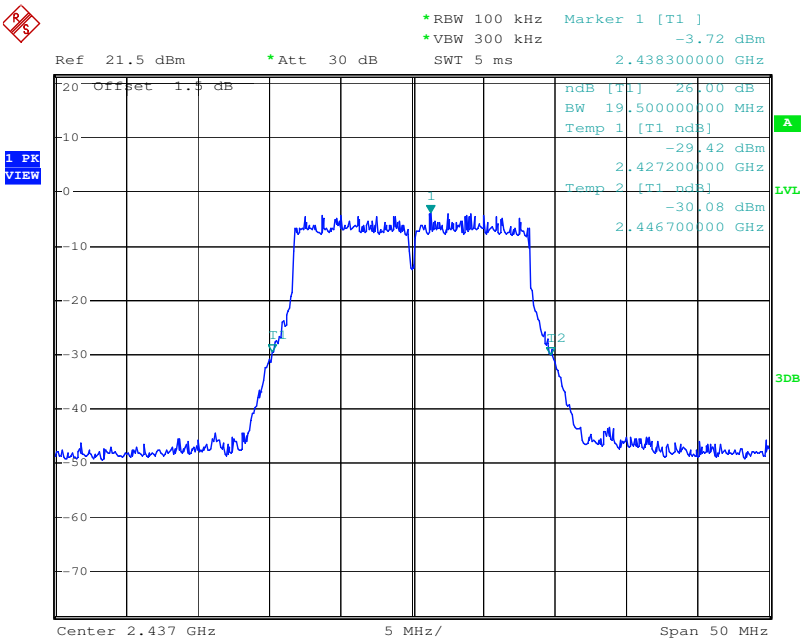
Test mode:	802.11g	Test channel:	Lowest



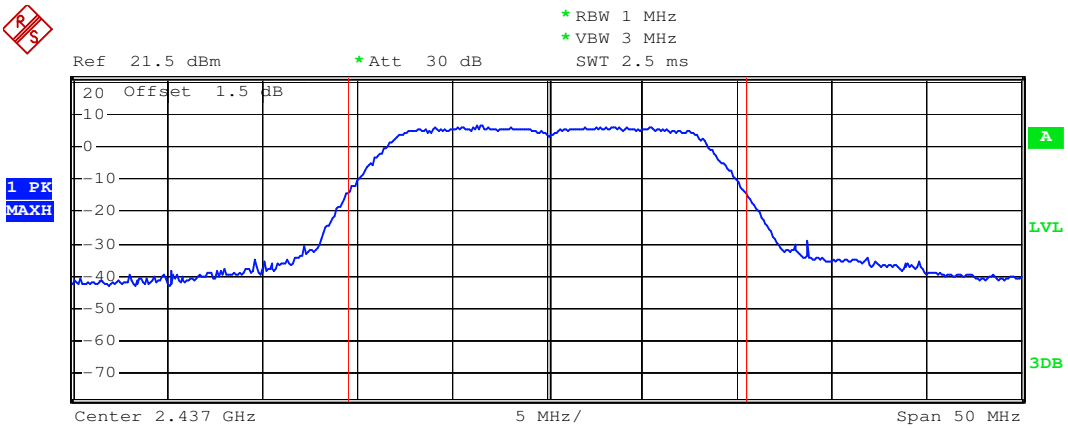
Tx Channel

Bandwidth 21 MHz Power 17.02 dBm

Test mode:	802.11g	Test channel:	Middle	-26dB



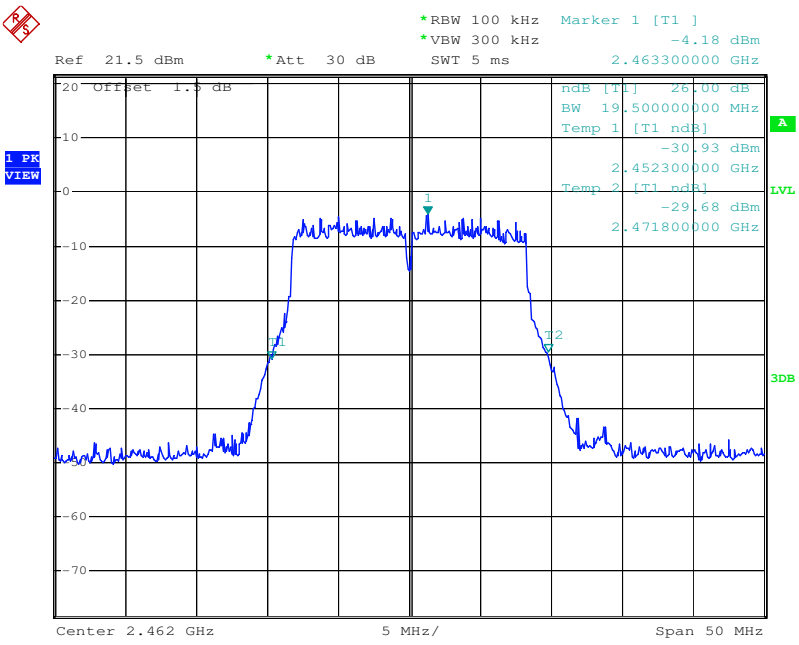
Test mode:	802.11g	Test channel:	Middle



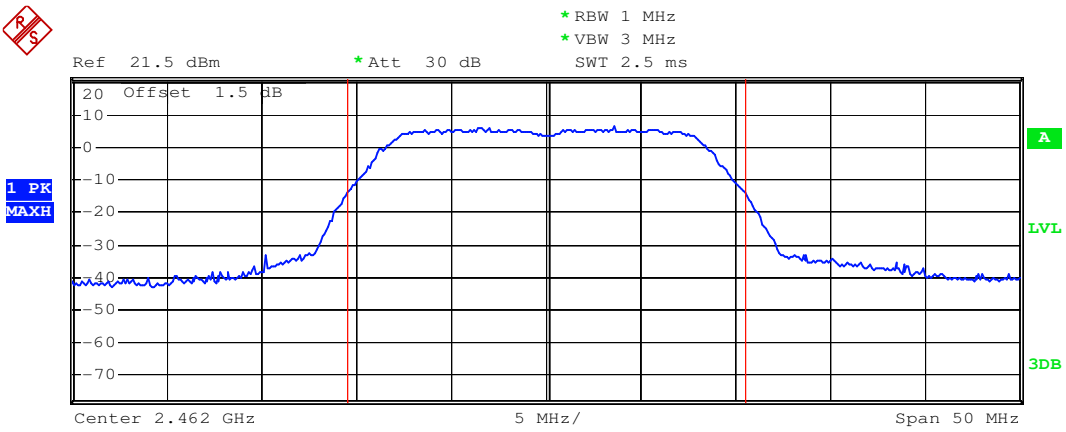
Tx Channel

Bandwidth 21 MHz Power 16.73 dBm

Test mode:	802.11g	Test channel:	Highest	-26dB



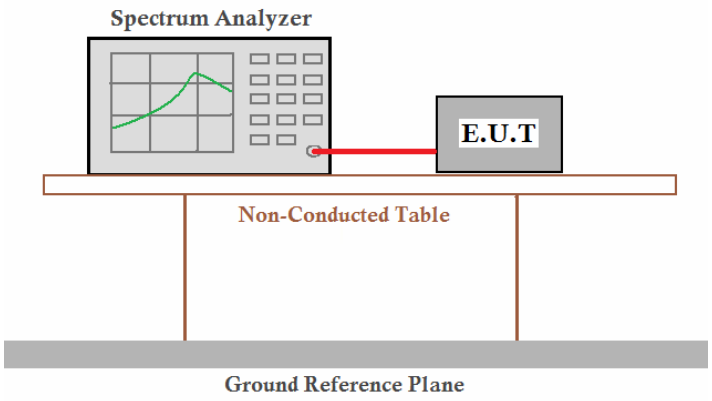
Test mode:	802.11g	Test channel:	Highest



Tx Channel

Bandwidth 21 MHz Power 16.41 dBm

5.4 6dB Occupy Bandwidth

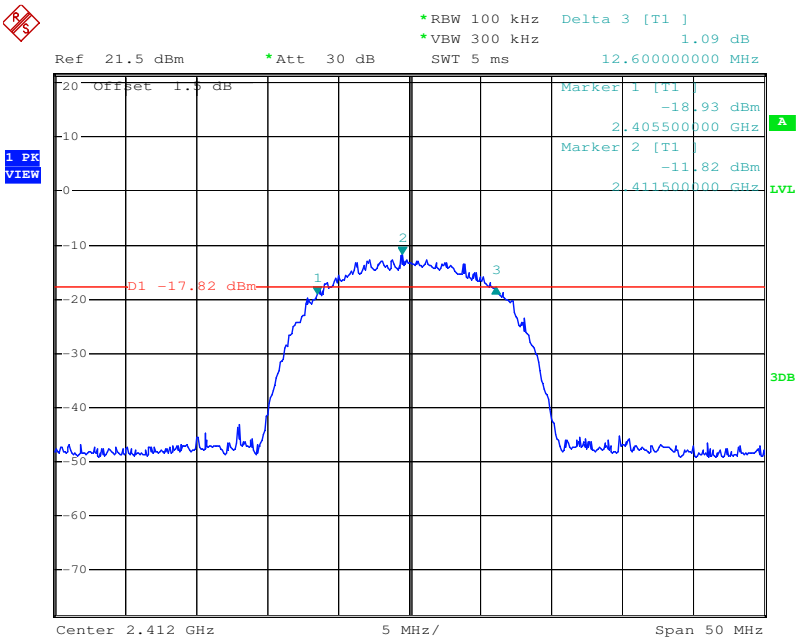
Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	KDB558074
Limit:	>500KHz
Test setup:	
Test Instruments:	Refer to section 4.8 for details
Test results:	Pass

Measurement Data

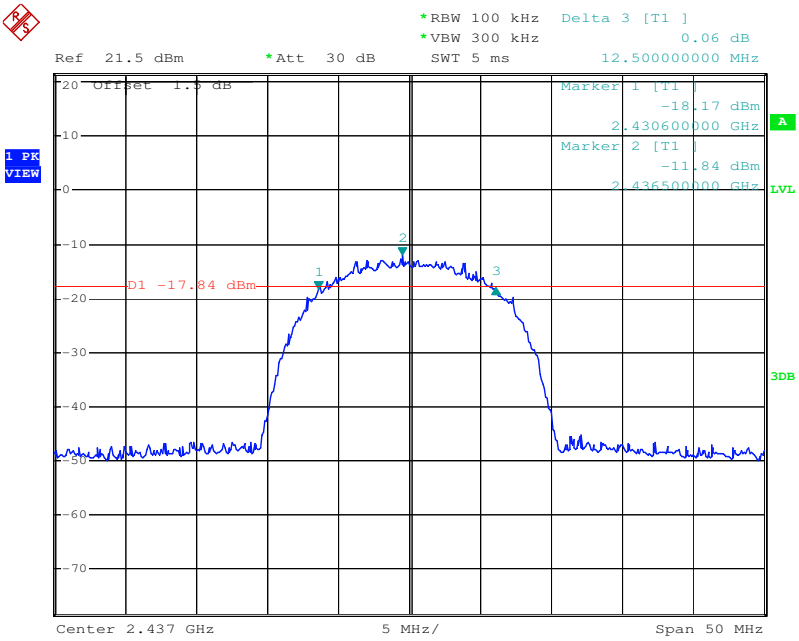
802.11b mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (KHz)	Result
Lowest	12.6	>500	Pass
Middle	12.5	>500	Pass
Highest	12.2	>500	Pass
802.11g mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (KHz)	Result
Lowest	16.8	>500	Pass
Middle	16.6	>500	Pass
Highest	16.6	>500	Pass

Test plot as follows:

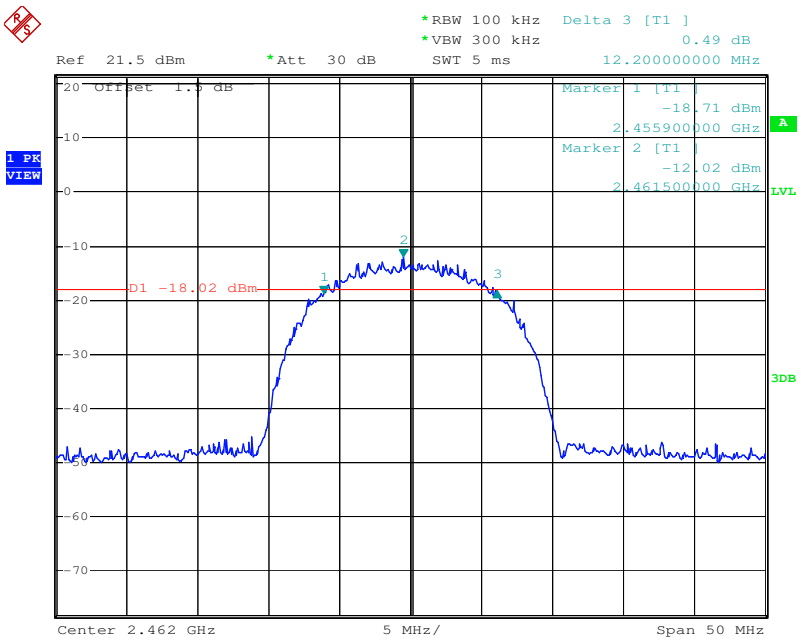
Test mode:	802.11b	Test channel:	Lowest



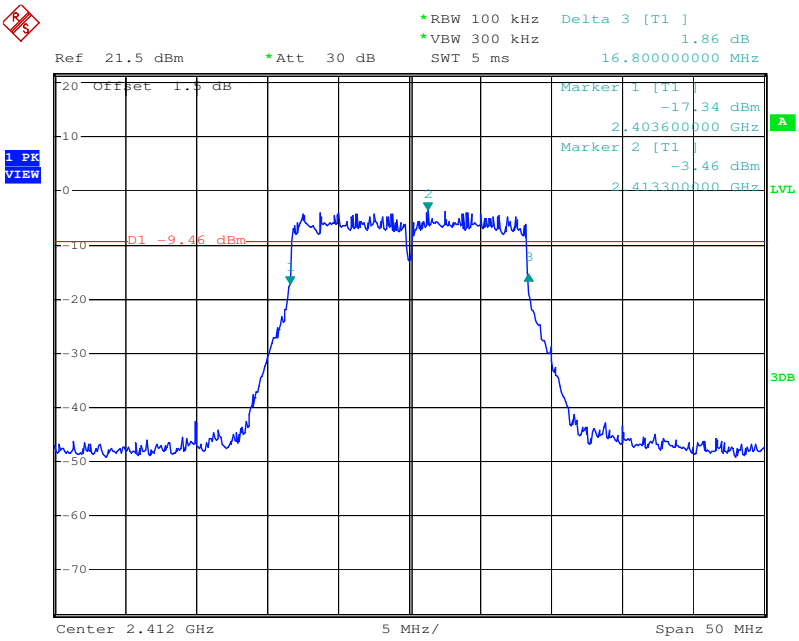
Test mode:	802.11b	Test channel:	Middle



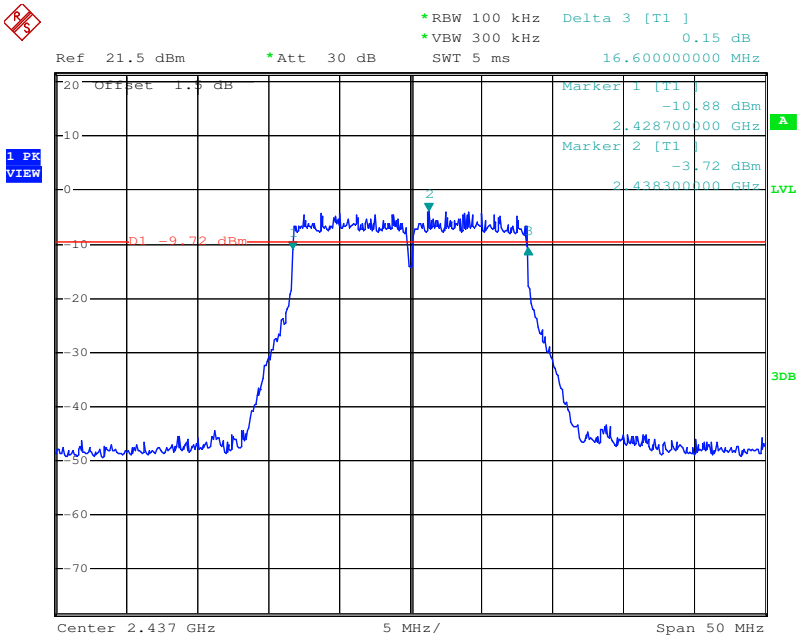
Test mode:	802.11b	Test channel:	Highest



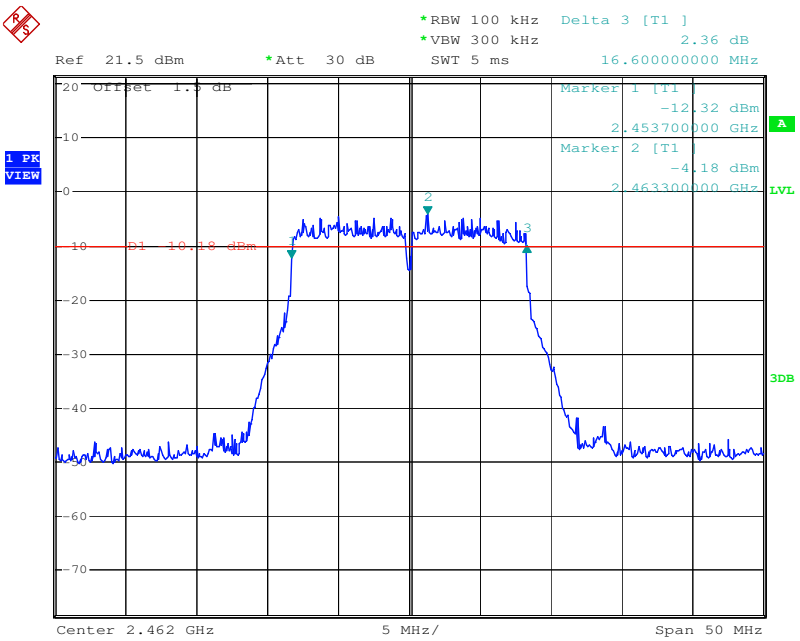
Test mode:	802.11g	Test channel:	Lowest



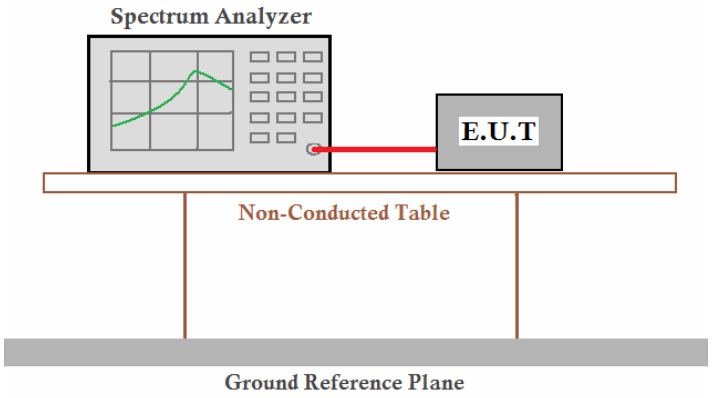
Test mode:	802.11g	Test channel:	Middle



Test mode:	802.11g	Test channel:	Highest



5.5 Power Spectral Density

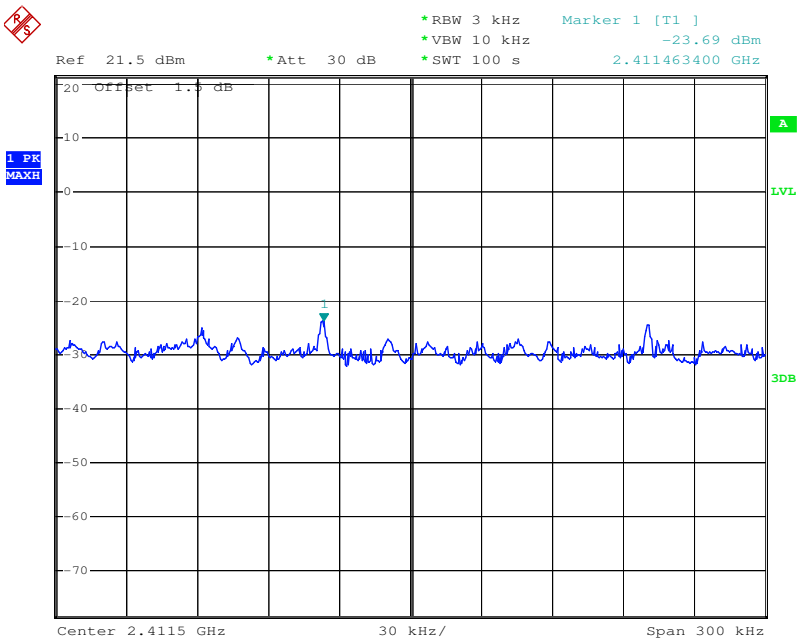
Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	ANSI C63.10:2009 section 6.11
Limit:	<8dBm
Test setup:	 *Remark:* *Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.*
Test Instruments:	Refer to section 4.8 for details.
Test results:	Pass

Measurement Data

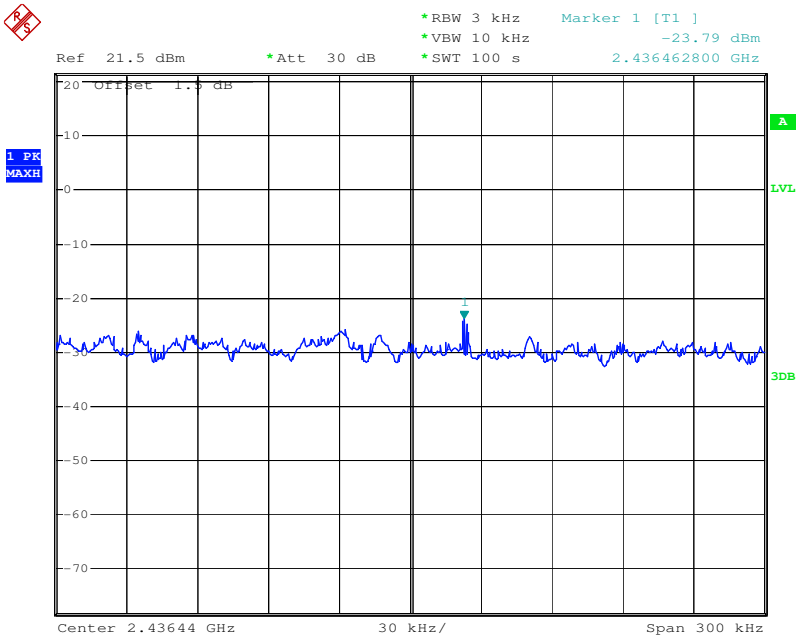
802.11b mode			
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-23.69	<8.00	Pass
Middle	-23.79	<8.00	Pass
Highest	-24.08	<8.00	Pass
802.11g mode			
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-18.12	<8.00	Pass
Middle	-18.47	<8.00	Pass
Highest	-18.80	<8.00	Pass

Test plot as follows:

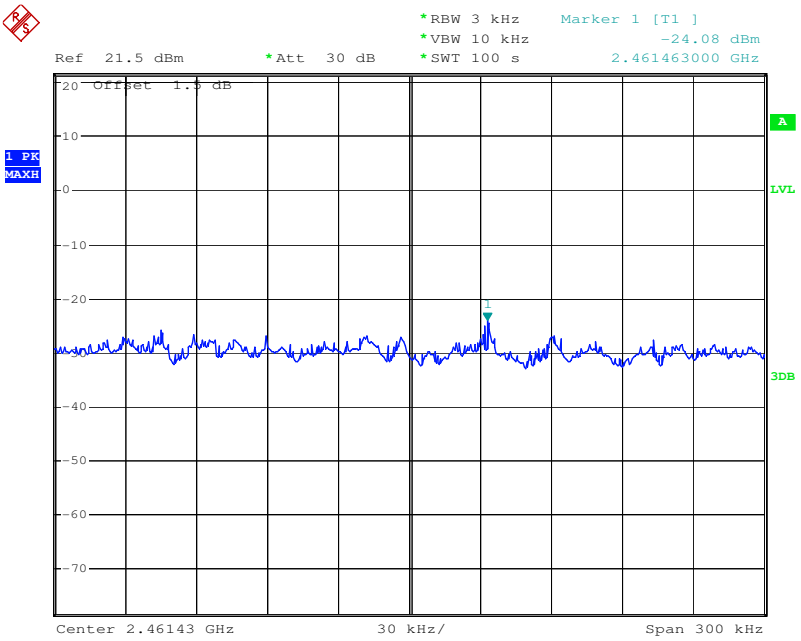
Test mode:	802.11b	Test channel:	Lowest



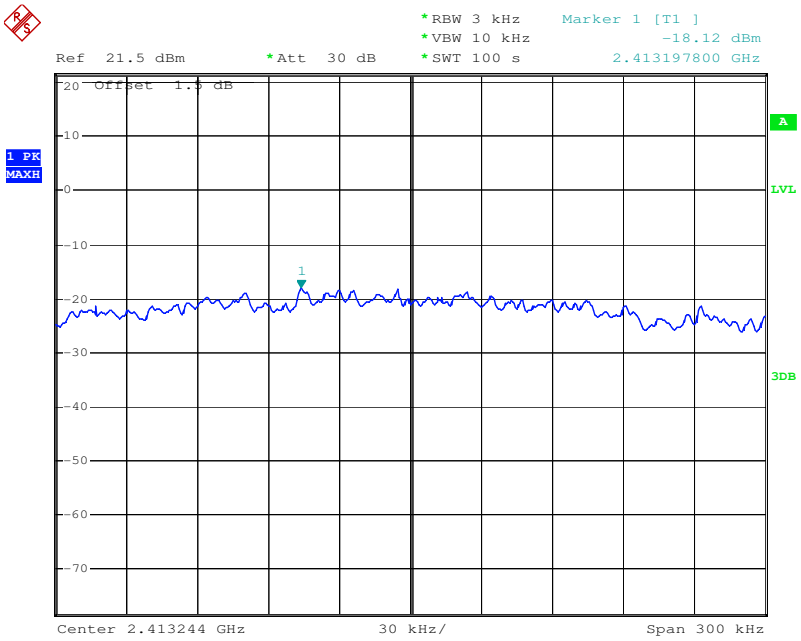
Test mode:	802.11b	Test channel:	Middle



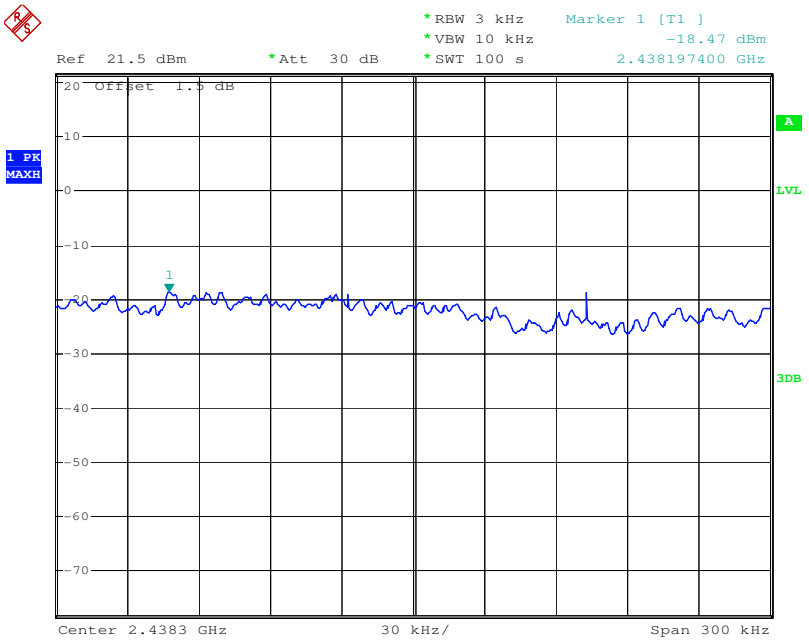
Test mode:	802.11b	Test channel:	Highest



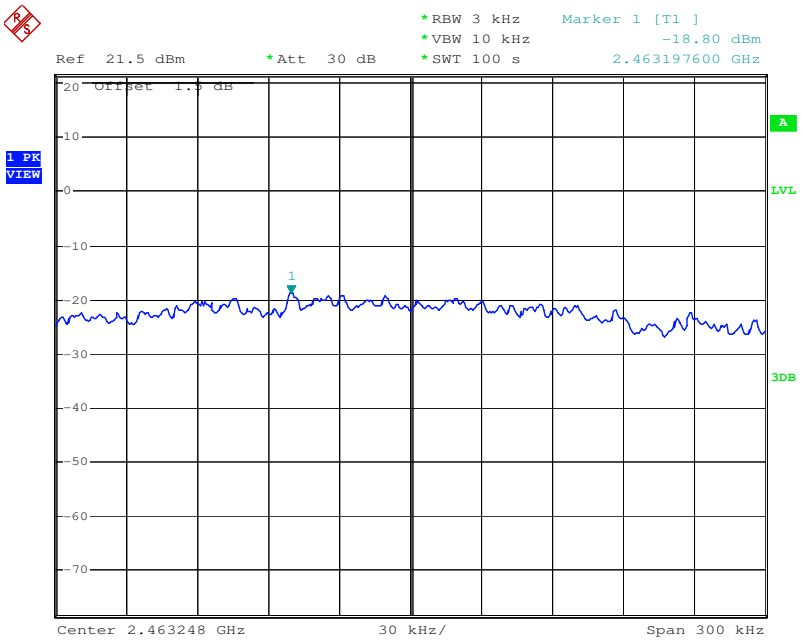
Test mode:	802.11g	Test channel:	Lowest



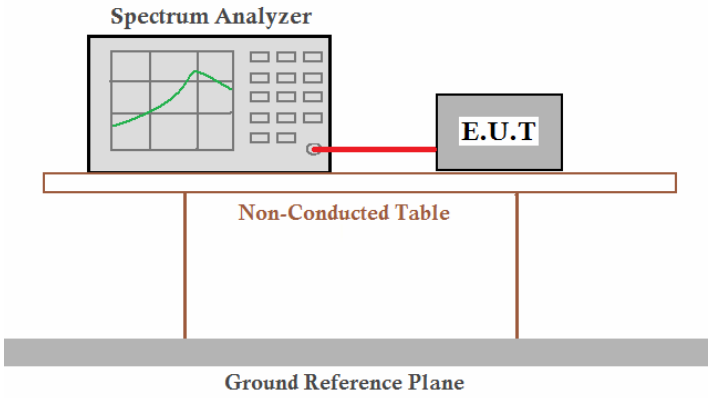
Test mode:	802.11g	Test channel:	Middle



Test mode:	802.11g	Test channel:	Highest

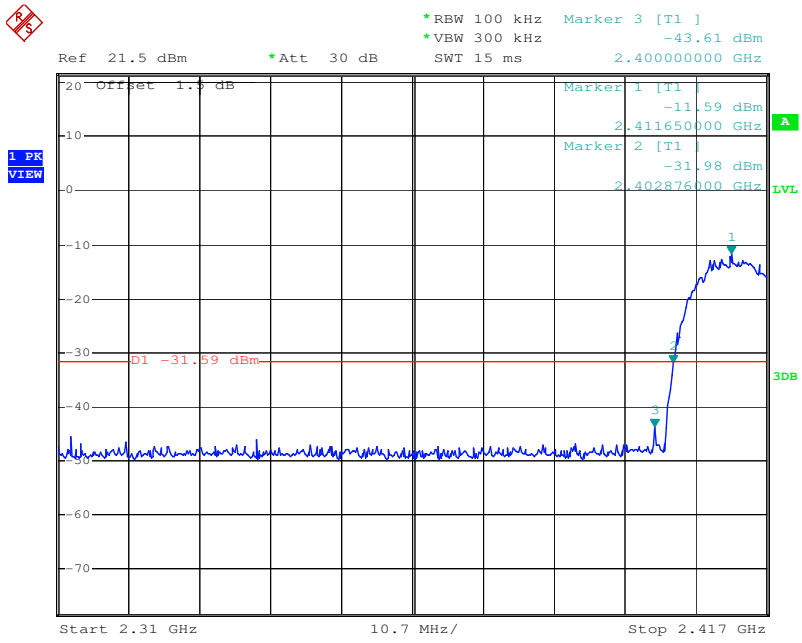


5.6 Band Edge

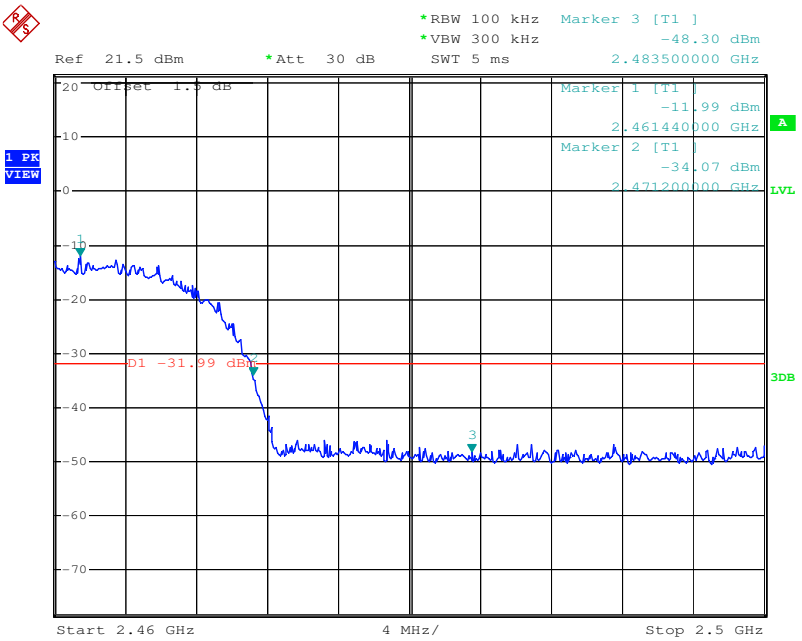
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2009 section 6.9
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 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.
Test setup:	 *Remark:* *Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.*
Test Instruments:	Refer to section 4.8 for details.
Test results:	Pass

Test plot as follows:

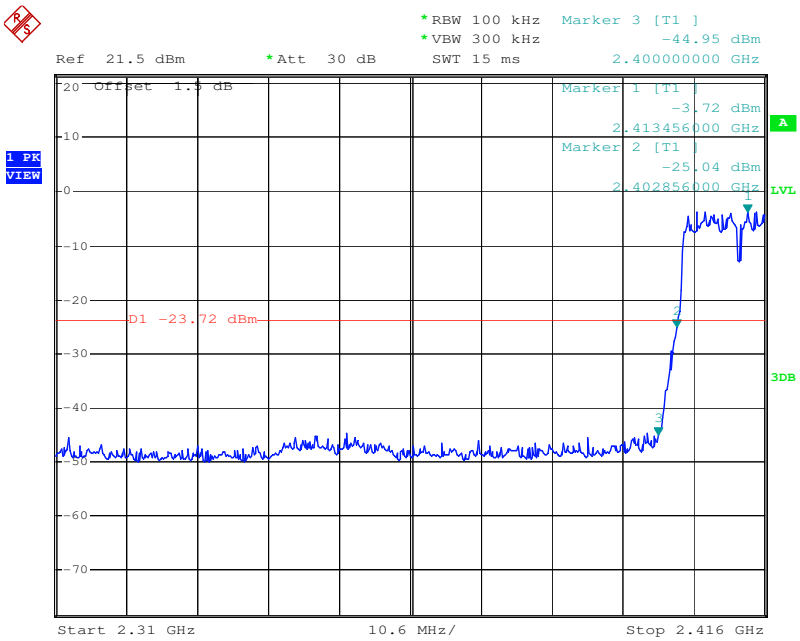
Test mode:	802.11b	Test channel:	Lowest



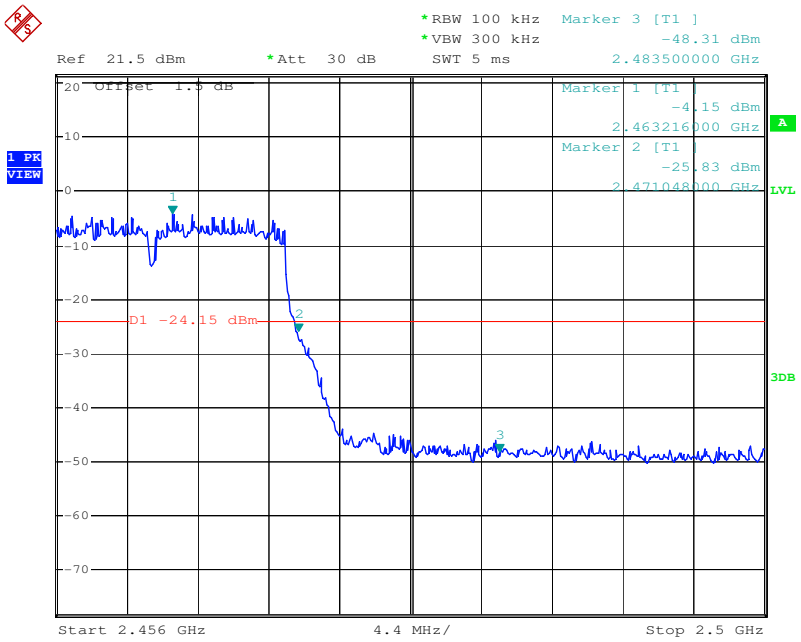
Test mode:	802.11b	Test channel:	Highest



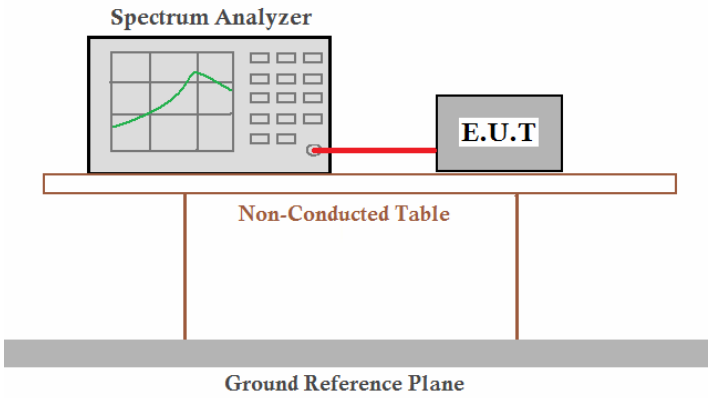
Test mode:	802.11g	Test channel:	Lowest



Test mode:	802.11g	Test channel:	Highest

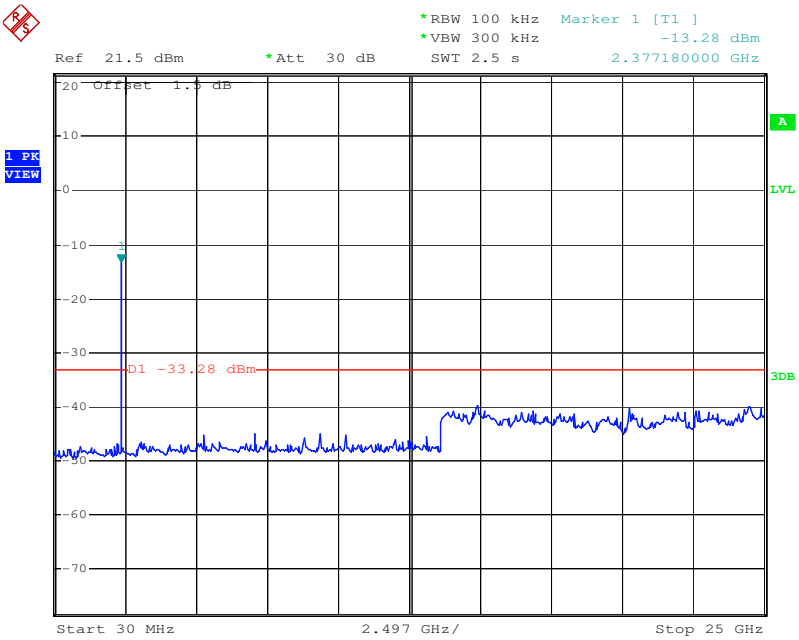


5.7 RF Antenna Conducted spurious emissions

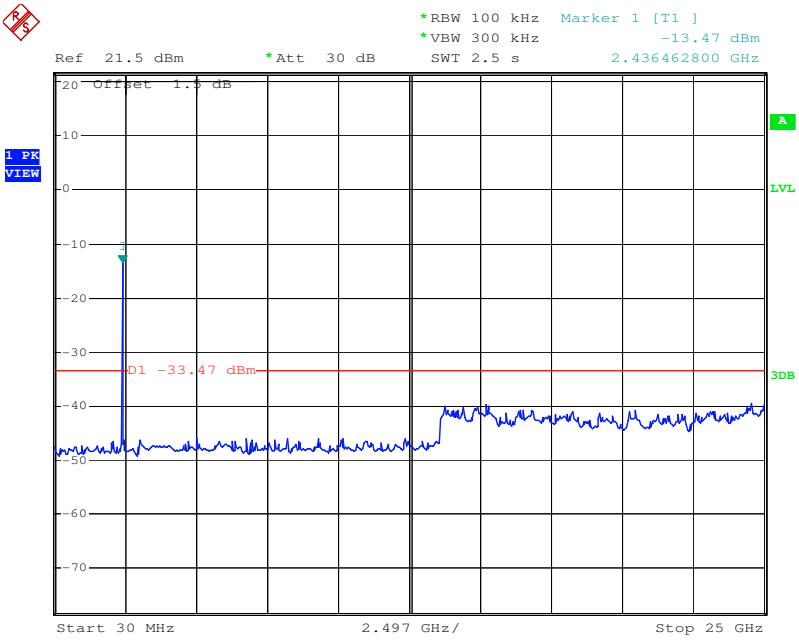
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2009
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below 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.
Test setup:	 *Remark:* *Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.*
Test Instruments:	Refer to section 4.8 for details.
Test results:	Pass

Test plot as follows:

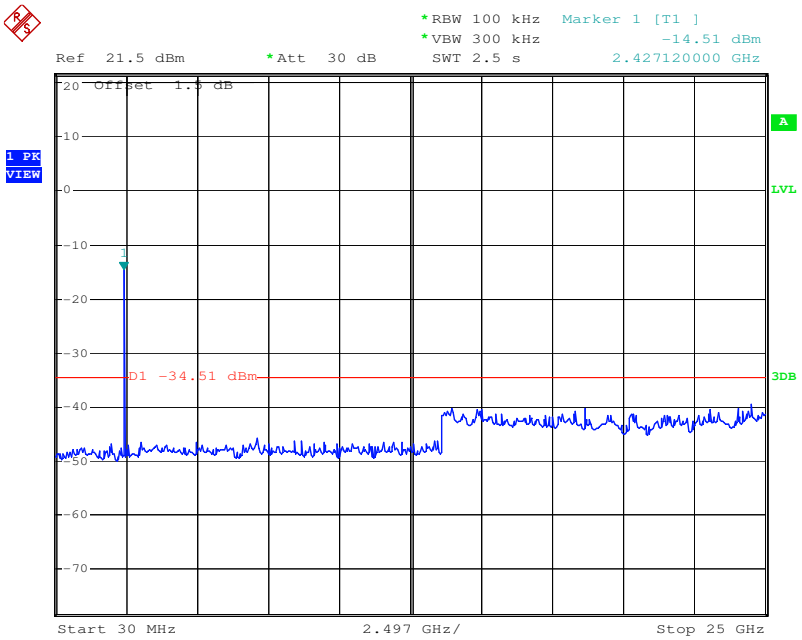
Test mode:	802.11b	Test channel:	Lowest



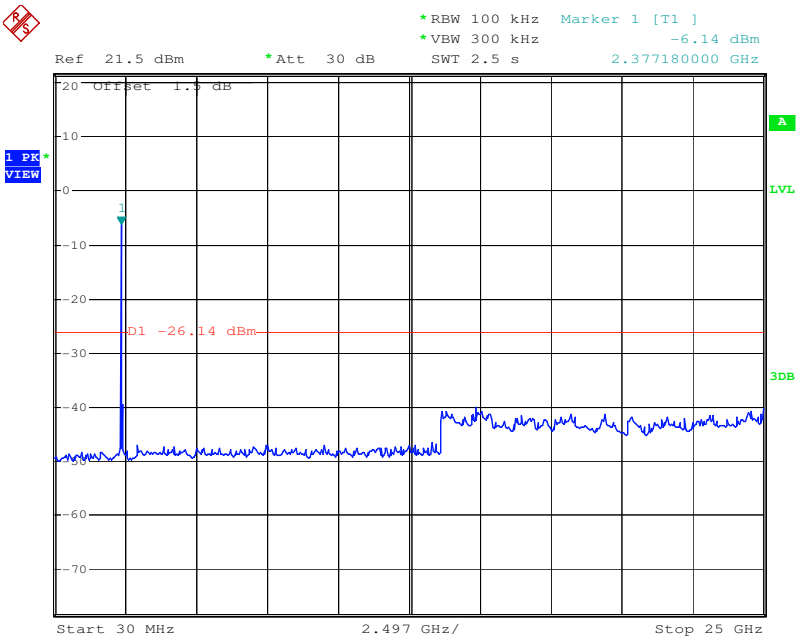
Test mode:	802.11b	Test channel:	Middle



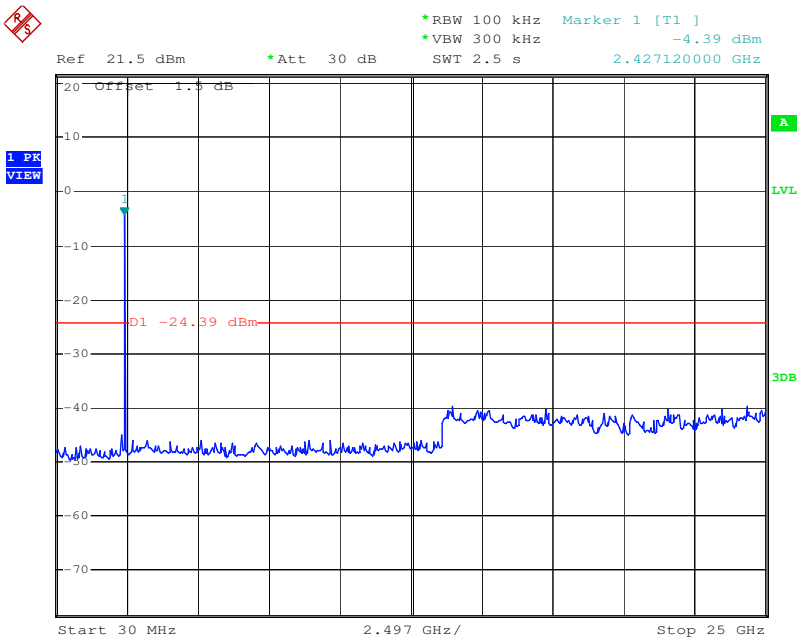
Test mode:	802.11b	Test channel:	Highest



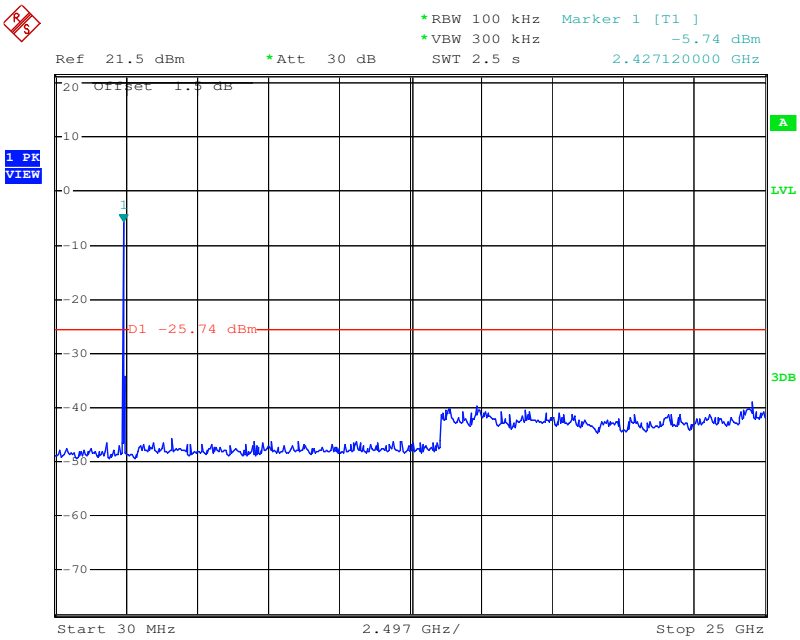
Test mode:	802.11g	Test channel:	Lowest



Test mode:	802.11g	Test channel:	Middle



Test mode:	802.11g	Test channel:	Highest



5.8 Radiated Emission

Test Requirement:	FCC Part15 C Section 15.209 and 15.205
Test Method:	ANSI C63.10:2009 section 6.5 and 6.6
Test Frequency Range:	30MHz to 25GHz
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)
Receiver setup:	

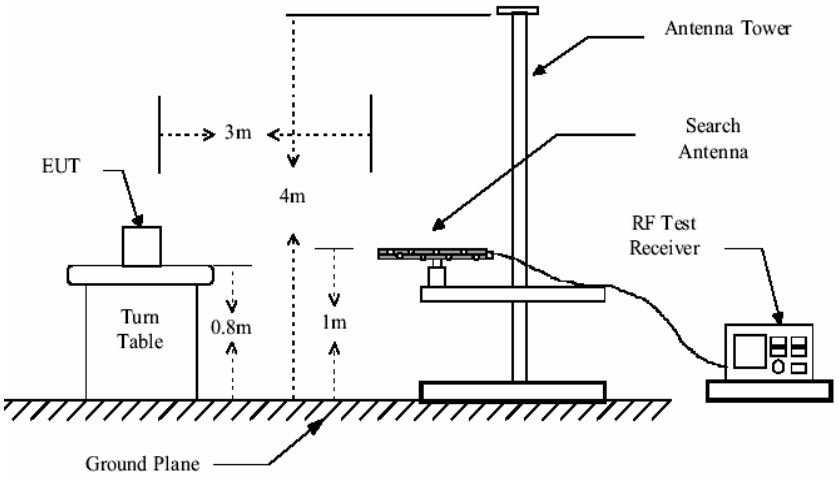
Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	Peak	1MHz	10Hz	Average Value

Limit:

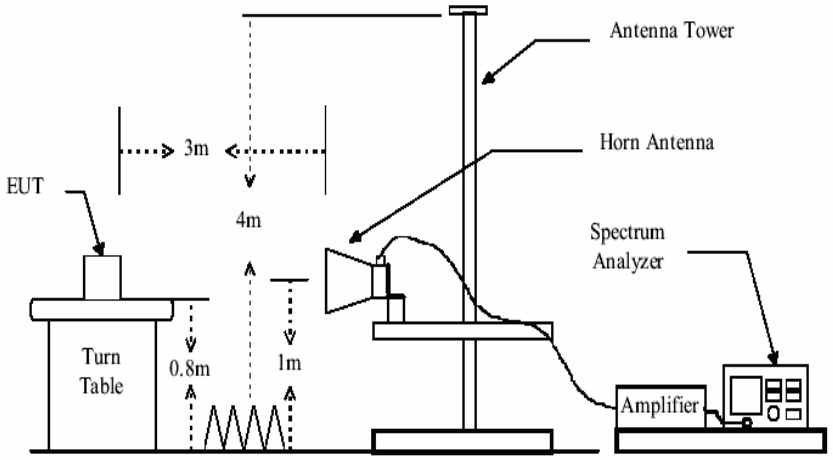
Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

Test Procedure:	The E.U.T and its simulators are placed on a turn table which is 0.8meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2009 on radiated measurement.
Test Instruments:	Refer to section 4.8 for details.
Test mode:	AC charge + Transmitter mode
Test results:	Pass

Test setup:	Below 1GHz



Above 1GHz

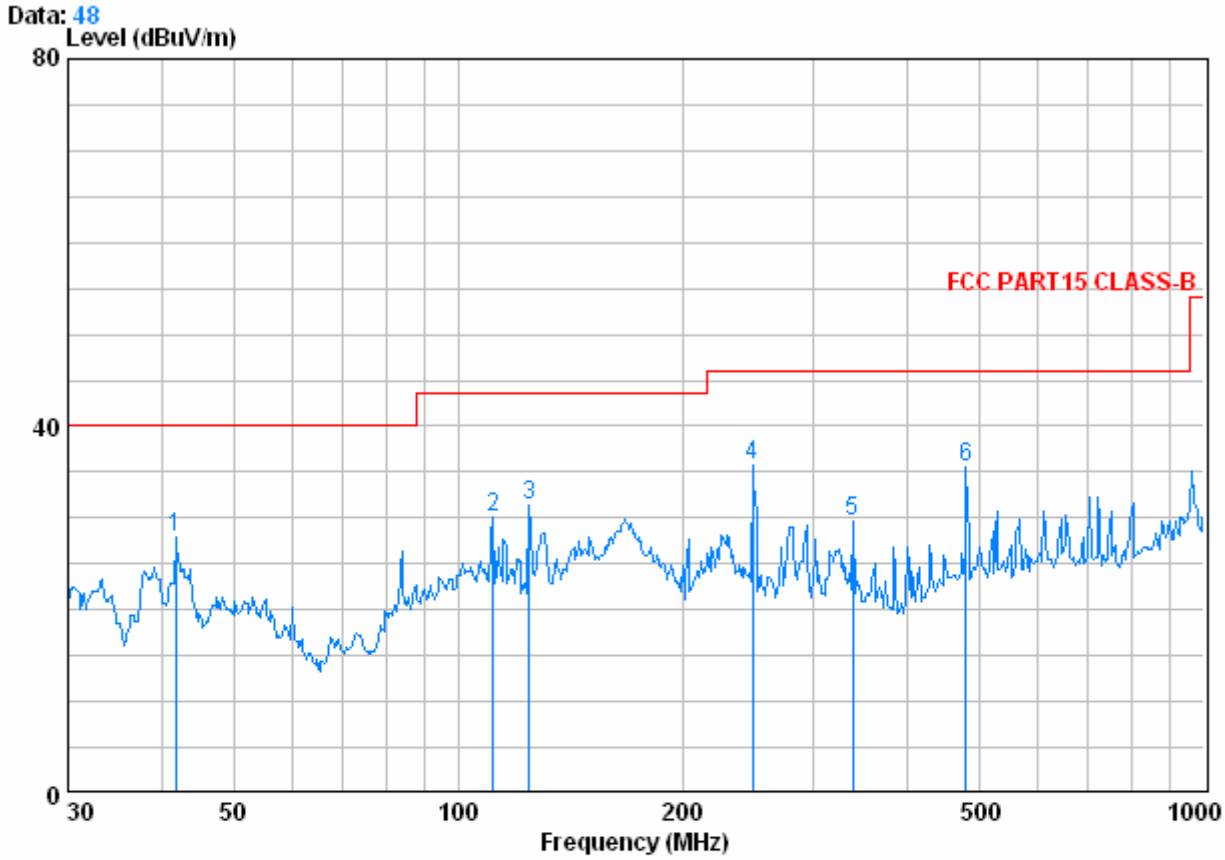


Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

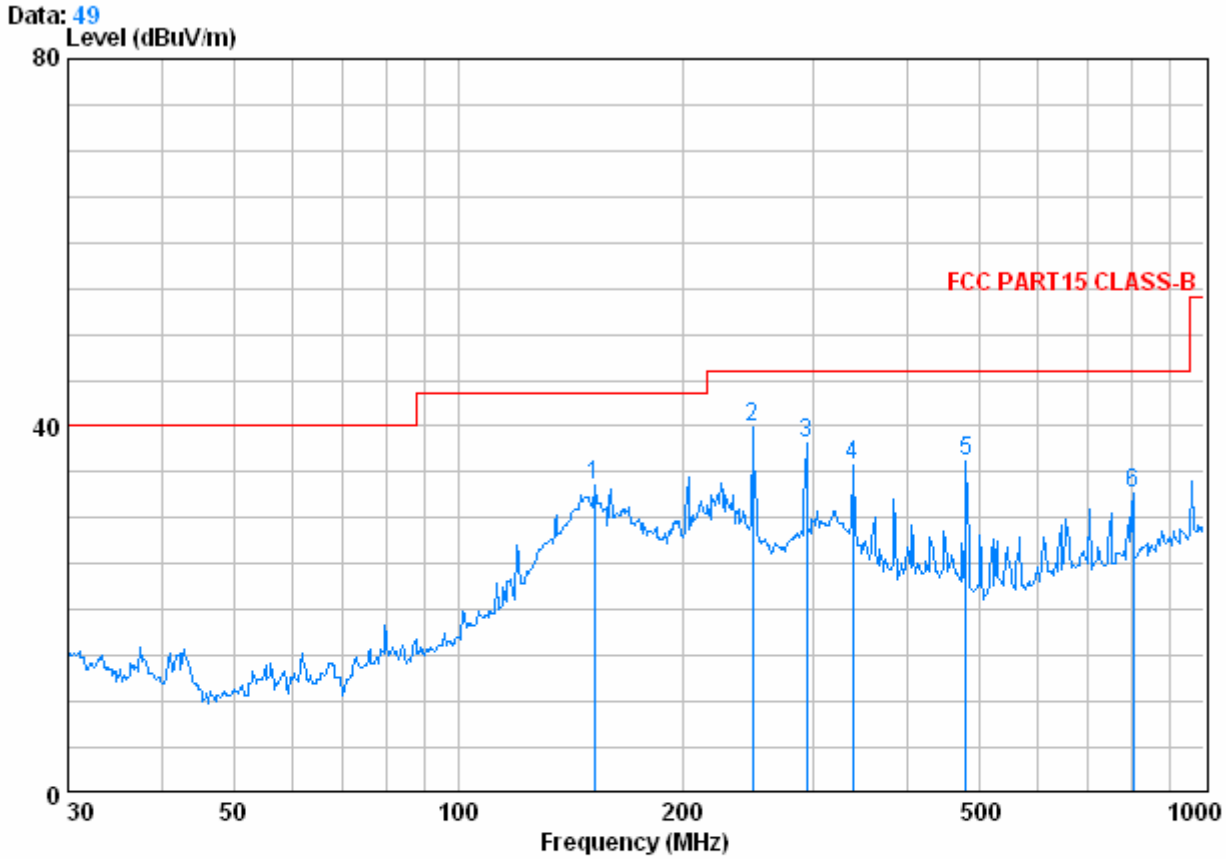
5.8.1 Radiated emission below 1GHz

Vertical:



	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	41.860	0.64	10.51	27.31	43.96	27.79	40.00	-12.21
2	111.347	1.23	8.51	27.13	47.43	30.04	43.50	-13.46
3	124.569	1.27	7.81	27.04	49.46	31.49	43.50	-12.01
4	248.552	1.67	12.27	26.54	48.43	35.83	46.00	-10.17
5	338.400	2.02	15.13	26.70	39.09	29.54	46.00	-16.46
6	480.528	2.53	17.80	27.60	42.82	35.55	46.00	-10.45

Horizontal:



	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	152.130	1.32	9.14	26.90	50.11	33.68	43.50	-9.82
2 @	248.552	1.67	12.27	26.54	52.55	39.95	46.00	-6.05
3	293.084	1.87	13.58	26.42	49.21	38.24	46.00	-7.76
4	338.400	2.02	15.13	26.70	45.35	35.80	46.00	-10.20
5	480.528	2.53	17.80	27.60	43.54	36.26	46.00	-9.74
6	804.603	3.23	22.14	27.27	34.51	32.61	46.00	-13.39

5.8.2 Transmitter emission above 1GHz

Test mode:	802.11b	Test channel:	Lowest	Remark:	Peak

Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over limit	polarization
1528.750	3.92	28.35	39.37	45.53	38.43	74.00	-35.57	Vertical
3185.500	5.32	33.32	40.44	46.25	44.45	74.00	-29.55	Vertical
4677.750	7.29	34.92	41.54	45.35	46.02	74.00	-27.98	Vertical
6358.000	8.10	36.12	40.61	45.57	49.18	74.00	-24.82	Vertical
7086.500	8.58	35.83	39.99	45.42	49.84	74.00	-24.16	Vertical
8614.000	9.51	36.29	38.65	42.20	49.35	74.00	-24.65	Vertical
1587.500	3.97	28.84	39.39	48.48	41.90	74.00	-32.10	Horizontal
1822.500	4.18	30.44	39.49	52.11	47.24	74.00	-26.76	Horizontal
3185.500	5.32	33.32	40.44	47.36	45.56	74.00	-28.44	Horizontal
6052.500	7.99	35.76	40.87	49.17	52.05	74.00	-21.95	Horizontal
6851.500	8.31	35.96	40.18	48.71	52.80	74.00	-21.20	Horizontal
9824.250	9.77	37.53	37.61	42.64	52.33	74.00	-21.67	Horizontal

Test mode:	802.11b	Test channel:	Middle	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1646.250	4.02	29.21	39.42	50.00	43.81	74.00	-30.19	Vertical
2950.500	5.02	33.33	40.27	47.61	45.69	74.00	-28.31	Vertical
4560.250	7.14	35.12	41.44	48.12	48.94	74.00	-25.06	Vertical
5700.000	7.85	35.20	41.19	47.74	49.60	74.00	-24.40	Vertical
6898.500	8.35	35.90	40.15	47.30	51.40	74.00	-22.60	Vertical
8696.250	9.54	36.36	38.59	44.54	51.85	74.00	-22.15	Vertical
1446.500	3.84	28.01	39.33	45.78	38.30	74.00	-35.70	Horizontal
3608.500	5.90	33.32	40.74	46.75	45.23	74.00	-28.77	Horizontal
5300.500	7.67	34.70	41.53	46.03	46.87	74.00	-27.13	Horizontal
7345.000	8.90	35.94	39.75	45.95	51.04	74.00	-22.96	Horizontal
8884.250	9.59	36.51	38.42	42.44	50.12	74.00	-23.88	Horizontal
10329.500	10.08	38.10	37.58	40.38	50.98	74.00	-23.02	Horizontal

Test mode:	802.11b	Test channel:	Highest	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1963.500	4.31	31.55	39.55	45.88	42.19	74.00	-31.81	Vertical
3808.250	6.21	33.57	40.90	46.02	44.90	74.00	-29.10	Vertical
4548.500	7.14	35.12	41.44	47.08	47.90	74.00	-26.10	Vertical
6569.500	8.17	36.23	40.43	46.68	50.65	74.00	-23.35	Vertical
8026.500	9.34	36.01	39.16	44.37	50.56	74.00	-23.44	Vertical
9072.250	9.63	36.68	38.26	42.25	50.30	74.00	-23.70	Vertical
1646.250	4.02	29.21	39.42	56.02	49.83	74.00	-24.17	Horizontal
3373.500	5.57	33.25	40.58	47.22	45.46	74.00	-28.54	Horizontal
4454.500	7.01	35.06	41.37	47.59	48.29	74.00	-25.71	Horizontal
6146.500	8.02	35.88	40.79	47.58	50.69	74.00	-23.31	Horizontal
7227.500	8.76	35.89	39.85	46.77	51.57	74.00	-22.43	Horizontal
9389.500	9.66	37.08	37.98	42.56	51.32	74.00	-22.68	Horizontal

Test mode:	802.11g	Test channel:	Lowest	Remark:	Peak

Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over limit	polarization
1646.250	4.02	29.21	39.42	51.29	45.10	74.00	-28.90	Vertical
3843.500	6.26	33.61	40.93	46.16	45.10	74.00	-28.90	Vertical
4748.250	7.38	34.81	41.58	46.40	47.01	74.00	-26.99	Vertical
6569.500	8.17	36.23	40.43	47.04	51.01	74.00	-22.99	Vertical
7850.250	9.28	36.00	39.31	44.42	50.39	74.00	-23.61	Vertical
9119.250	9.64	36.74	38.22	43.04	51.20	74.00	-22.80	Vertical
1728.500	4.10	29.83	39.45	47.98	42.46	74.00	-31.54	Horizontal
3197.250	5.35	33.32	40.45	46.06	44.28	74.00	-29.72	Horizontal
4748.250	7.38	34.81	41.58	45.85	46.46	74.00	-27.54	Horizontal
6522.500	8.15	36.28	40.46	46.63	50.60	74.00	-23.40	Horizontal
7521.250	9.12	36.00	39.61	43.92	49.43	74.00	-24.57	Horizontal
10106.250	9.91	37.84	37.49	41.76	52.02	74.00	-21.98	Horizontal

Test mode:	802.11g	Test channel:	Middle	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1728.500	4.10	29.83	39.45	53.57	48.05	74.00	-25.95	Vertical
3091.500	5.19	33.37	40.37	46.53	44.72	74.00	-29.28	Vertical
4548.500	7.14	35.12	41.44	46.14	46.96	74.00	-27.04	Vertical
5723.500	7.86	35.26	41.15	46.26	48.23	74.00	-25.77	Vertical
6957.250	8.43	35.85	40.08	46.08	50.28	74.00	-23.72	Vertical
8731.500	9.55	36.39	38.55	43.20	50.59	74.00	-23.41	Vertical
1646.250	4.02	29.21	39.42	53.20	47.01	74.00	-26.99	Horizontal
3420.500	5.65	33.23	40.61	46.46	44.73	74.00	-29.27	Horizontal
4654.250	7.27	34.95	41.51	46.58	47.29	74.00	-26.71	Horizontal
6146.500	8.02	35.88	40.79	47.62	50.73	74.00	-23.27	Horizontal
7415.500	8.99	35.97	39.69	45.25	50.52	74.00	-23.48	Horizontal
9025.250	9.63	36.62	38.31	42.43	50.37	74.00	-23.63	Horizontal

Test mode:	802.11g	Test channel:	Highest	Remark:	Peak

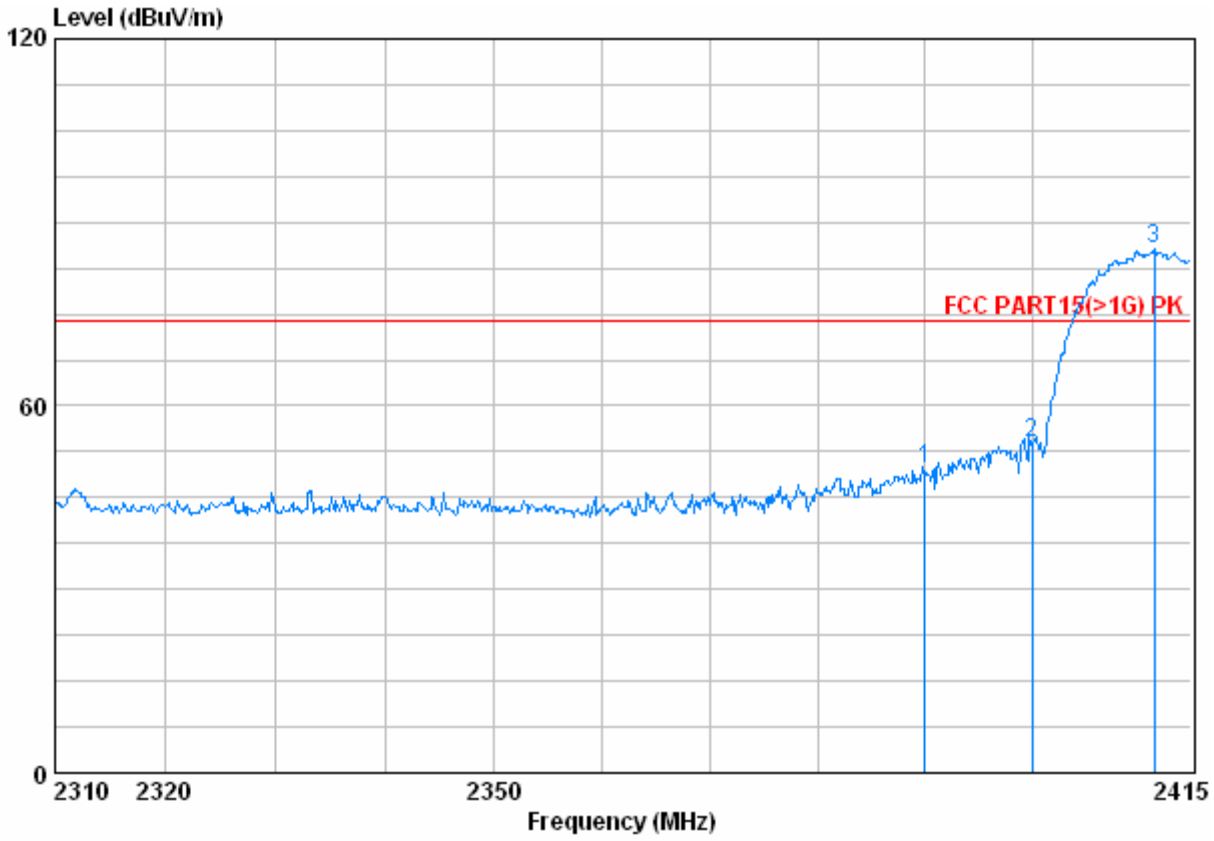
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1822.500	4.18	30.44	39.49	48.16	43.29	74.00	-30.71	Vertical
3068.000	5.14	33.37	40.35	46.76	44.92	74.00	-29.08	Vertical
4231.250	6.74	34.45	41.21	46.30	46.28	74.00	-27.72	Vertical
5441.500	7.73	34.83	41.40	47.65	48.81	74.00	-25.19	Vertical
7333.250	8.87	35.94	39.77	45.71	50.75	74.00	-23.25	Vertical
8919.500	9.61	36.53	38.39	43.62	51.37	74.00	-22.63	Vertical
1834.250	4.19	30.57	39.50	45.95	41.21	74.00	-32.79	Horizontal
3420.500	5.65	33.23	40.61	45.77	44.04	74.00	-29.96	Horizontal
4654.250	7.27	34.95	41.51	45.81	46.52	74.00	-27.48	Horizontal
6181.750	8.03	35.92	40.76	46.29	49.48	74.00	-24.52	Horizontal
7932.500	9.31	36.00	39.24	42.12	48.19	74.00	-25.81	Horizontal
9906.500	9.80	37.61	37.53	40.95	50.83	74.00	-23.17	Horizontal

Remark: 1. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.

2. The disturbance above 10GHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics have been displayed.

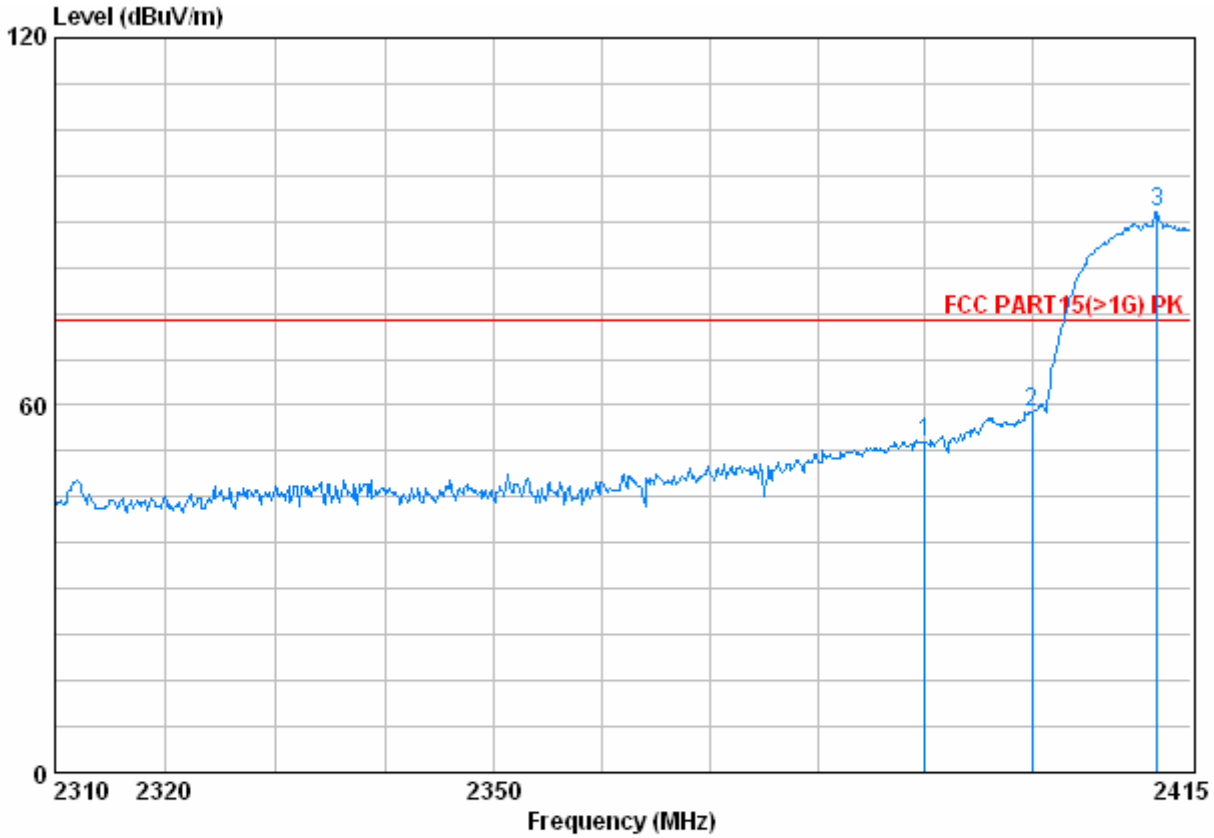
5.8.3 Band edge (Radiated Emission)

Test mode:	802.11b	Test channel:	Lowest	Vertical	Peak



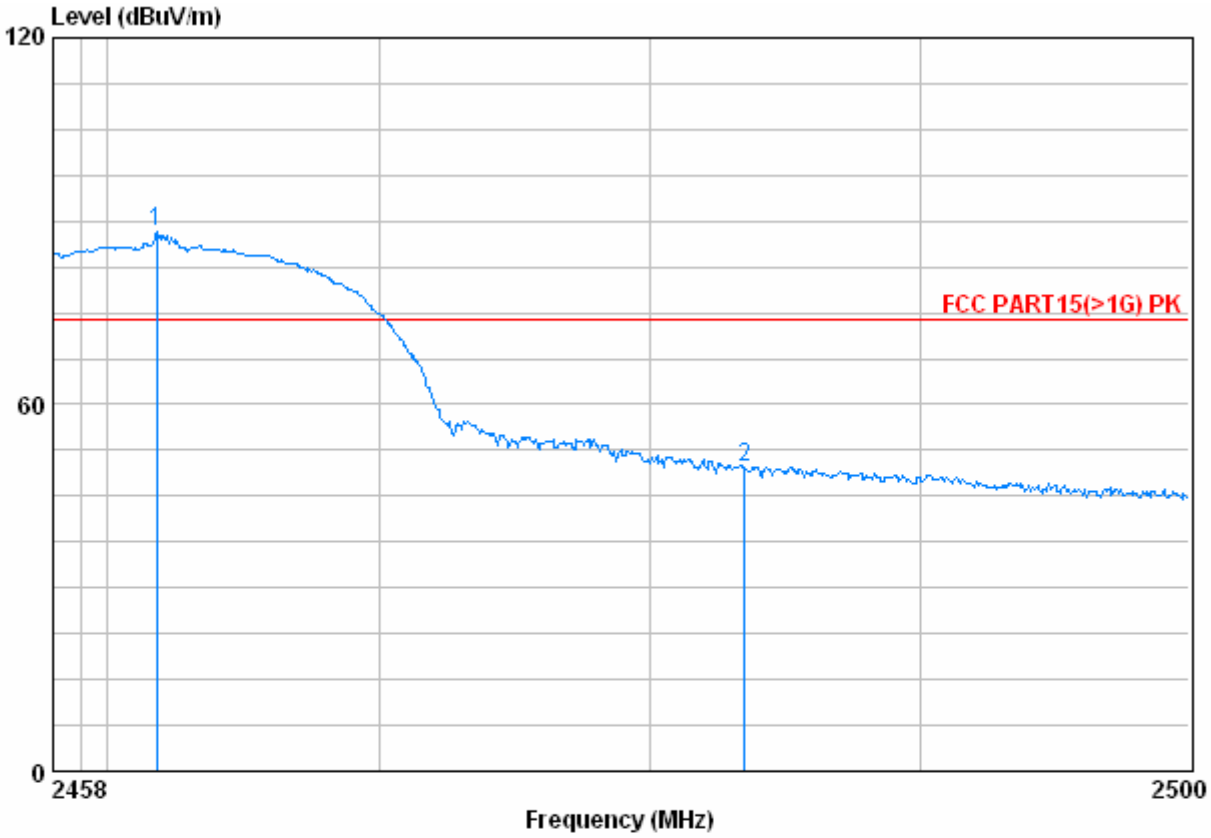
	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	54.09	49.74	74.00	-24.26
2	2400.000	2.98	32.51	39.86	58.17	53.80	74.00	-20.20
3 X	2411.535	2.99	32.54	39.86	90.03	85.71	74.00	11.71

Test mode:	802.11b	Test channel:	Lowest	Horizontal	Peak



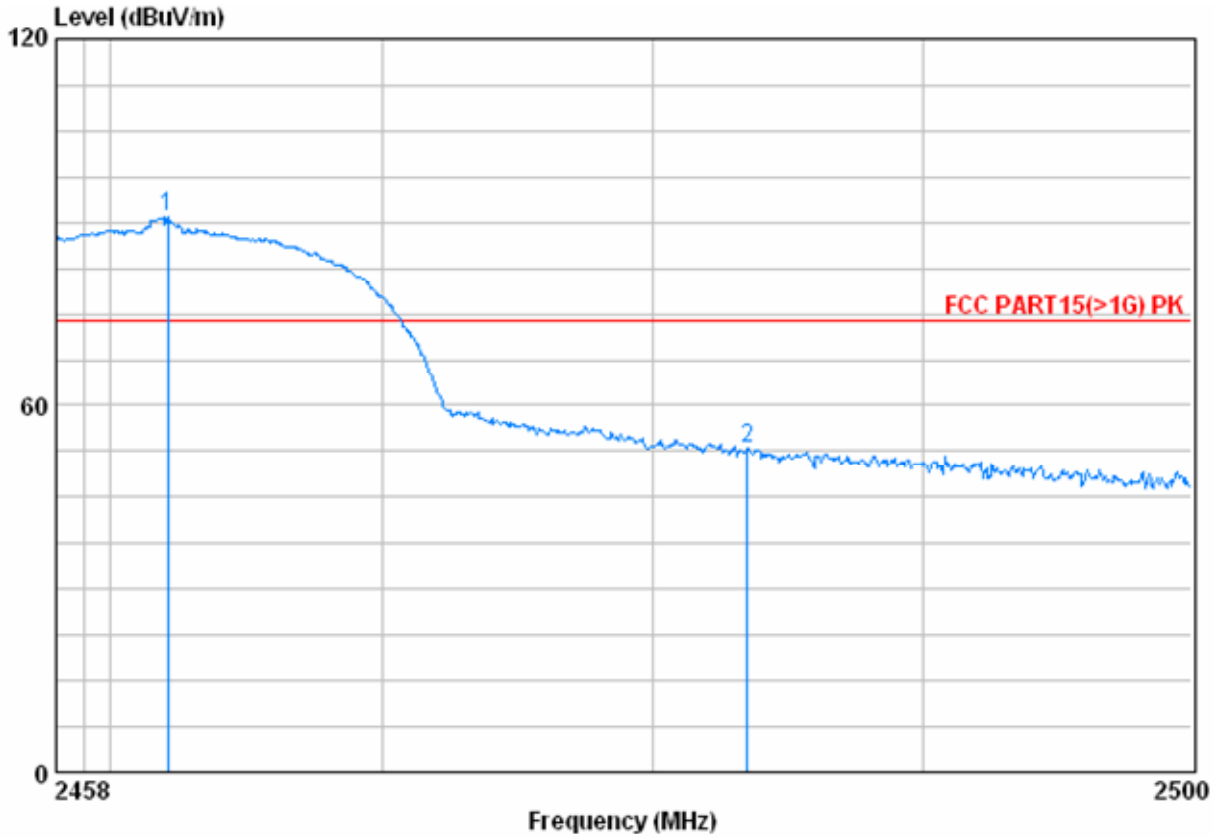
	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	58.17	53.82	74.00	-20.18
2	2400.000	2.98	32.51	39.86	63.27	58.90	74.00	-15.10
3 @	2411.850	2.99	32.54	39.86	95.94	91.61	74.00	17.61

Test mode:	802.11b	Test channel:	Highest	Vertical	Peak



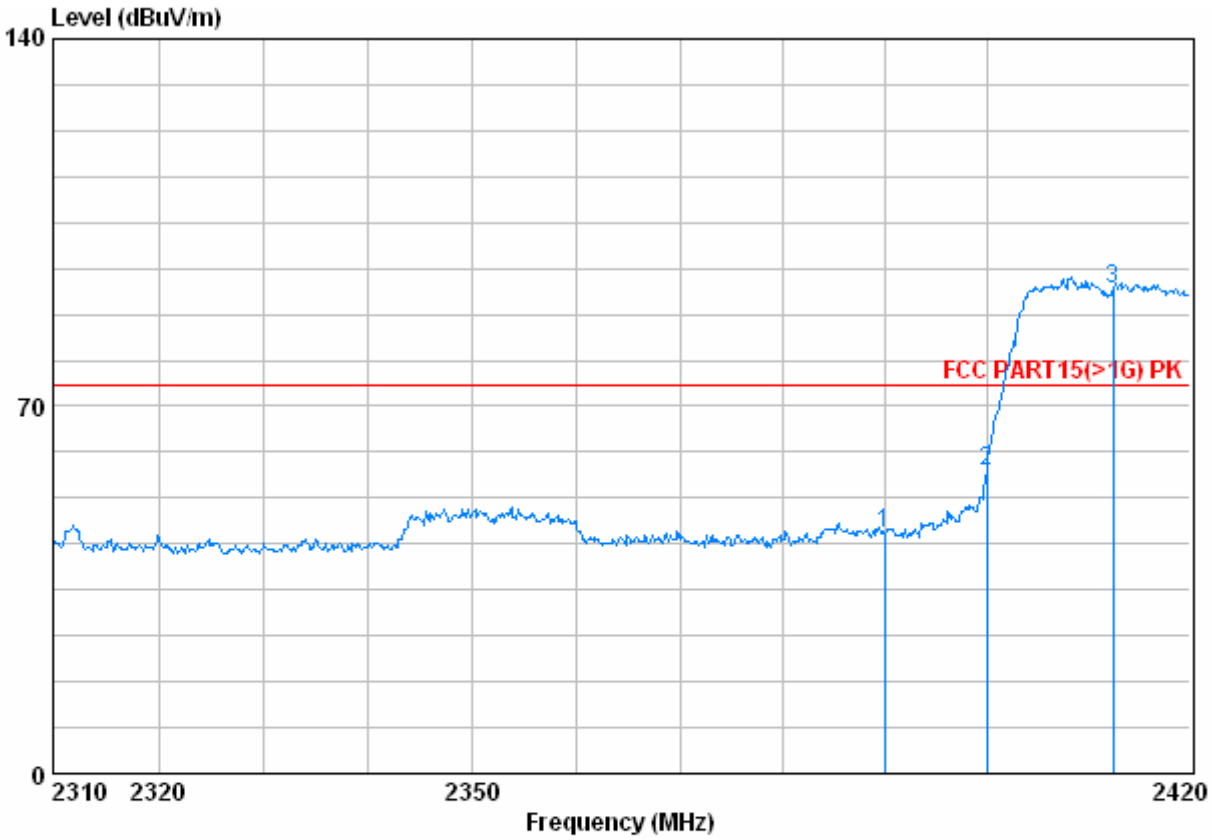
	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 X	2461.822	3.02	32.64	39.91	92.38	88.14	74.00	14.14
2	2483.500	3.03	32.67	39.92	53.81	49.59	74.00	-24.41

Test mode:	802.11b	Test channel:	Highest	Horizontal	Peak



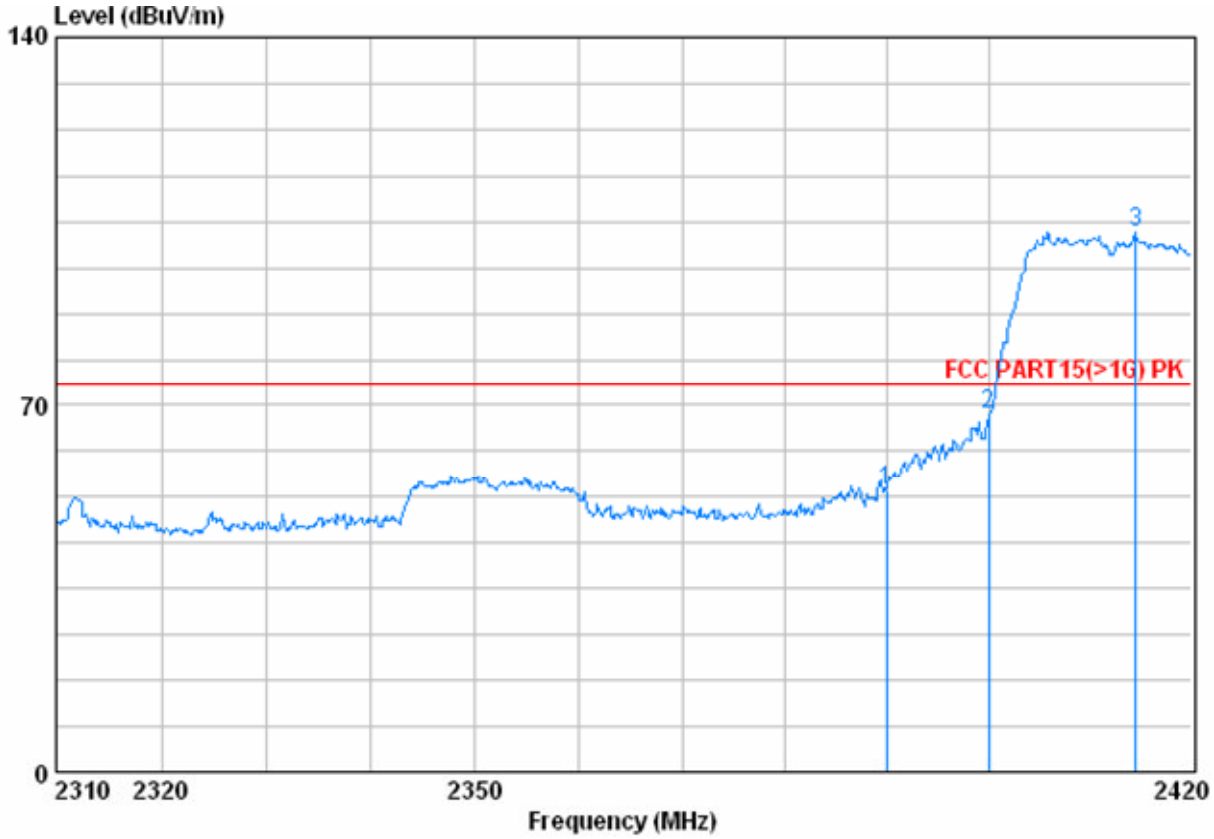
	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @	2462.116	3.02	32.64	39.91	95.09	90.84	74.00	16.84
2	2483.500	3.03	32.67	39.92	57.07	52.85	74.00	-21.15

Test mode:	802.11g	Test channel:	Lowest	Vertical	Peak



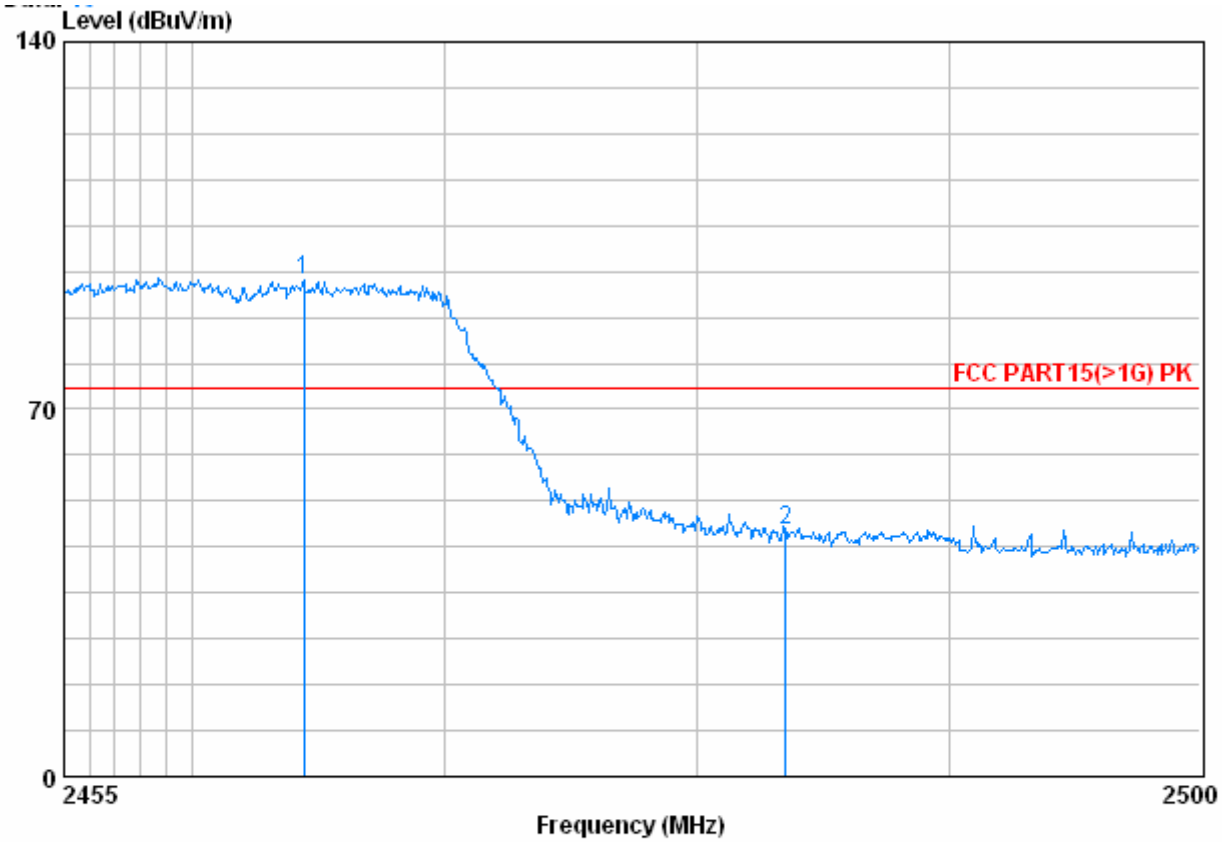
	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	50.22	45.86	74.00	-28.14
2	2400.000	2.98	32.51	39.86	61.96	57.59	74.00	-16.41
3 @	2412.410	2.99	32.54	39.86	96.75	92.42	74.00	18.42

Test mode:	802.11g	Test channel:	Lowest	Horizontal	Peak



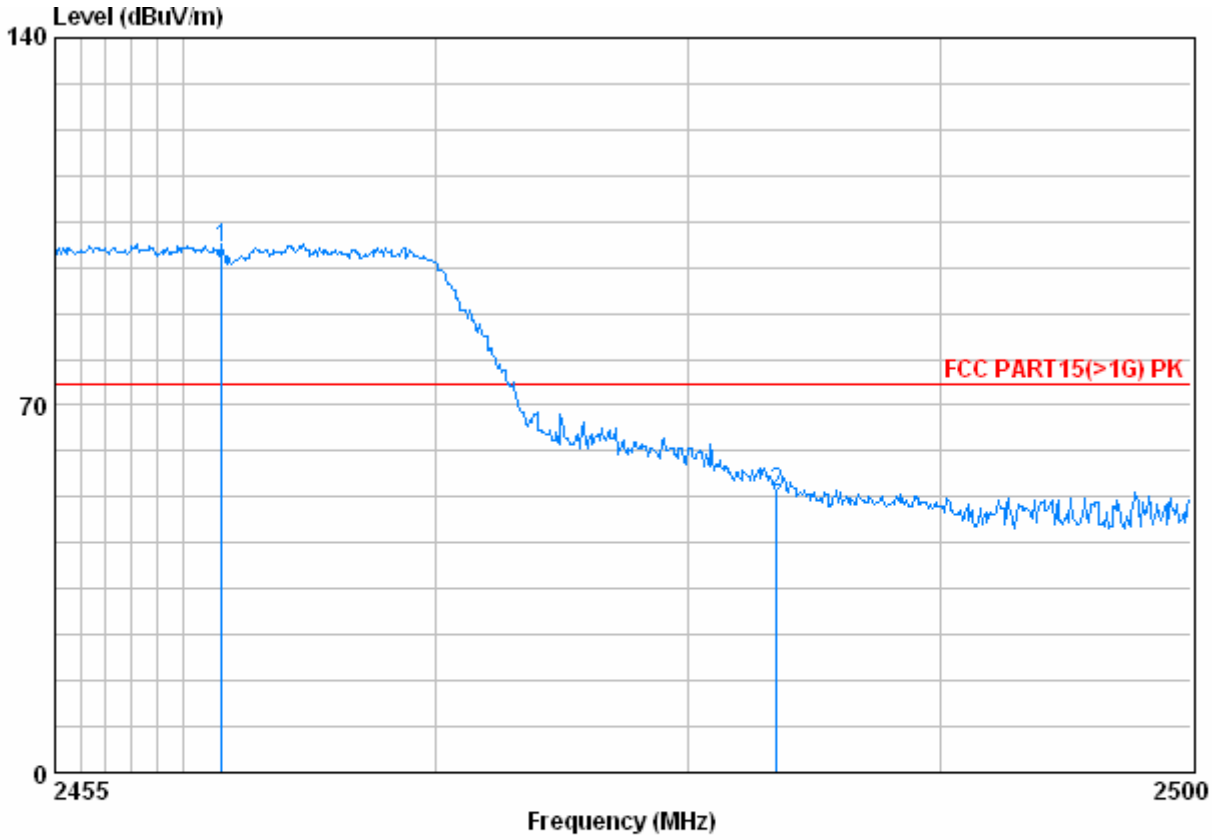
	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	57.96	53.61	74.00	-20.39
2	2400.000	2.98	32.51	39.86	72.69	68.32	74.00	-5.68
3 @	2414.500	2.99	32.54	39.86	107.30	102.97	74.00	28.97

Test mode:	802.11g	Test channel:	Highest	Vertical	Peak



	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @	2464.450	3.02	32.64	39.91	99.03	94.78	74.00	20.78
2	2483.500	3.03	32.67	39.92	51.17	46.95	74.00	-27.05

Test mode:	802.11g	Test channel:	Highest	Horizontal	Peak



	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @	2461.570	3.02	32.64	39.91	104.13	99.88	74.00	25.88
2	2483.500	3.03	32.67	39.92	57.65	53.43	74.00	-20.57

Remark: As shown in this section, the peak field strength of any emission shall not exceed the maximum permitted average limits So, only the peak measurements were shown in the report.