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Report No.: SZEM120500266501
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FCC REPORT

Application No: SZEM1205002665IT
Applicant: COBY COMMUNICATIONS LTD.
Manufacturer: ShenZhen Coby Communications Ltd.
Product Name: Mobile Internet Device
Model No.(EUT): MID9042
FCC ID: S7IMID9042
Standards: 47 CFR Part 15, Subpart C (2011)
Date of Receipt: 2012-05-21
Date of Test: 2012-05-28 to 2012-07-17
Date of Issue: 2012-08-13

Test Result:	PASS *
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* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. 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.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15, Subpart C Section 15.203/15.247 (c)	KDB558074 D01 ANSI C63.10 2009	PASS
AC Power Line Conducted Emission	47 CFR Part 15, Subpart C Section 15.207	ANSI C63.10 2009	PASS
Conducted Peak Output Power	47 CFR Part 15, Subpart C Section 15.247 (b)(3)	KDB558074 D01 ANSI C63.10 2009	PASS
6dB Occupied Bandwidth	47 CFR Part 15, Subpart C Section 15.247 (a)(2)	KDB558074 D01 ANSI C63.10 2009	PASS
Power Spectral Density	47 CFR Part 15, Subpart C Section 15.247 (e)	KDB558074 D01 ANSI C63.10 2009	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15, Subpart C Section 15.247(d)	KDB558074 D01 ANSI C63.10 2009	PASS
RF Conducted Spurious Emissions	47 CFR Part 15, Subpart C Section 15.247(d)	KDB558074 D01 ANSI C63.10 2009	PASS
Radiated Spurious Emissions	47 CFR Part 15, Subpart C Section 15.205/15.209	KDB558074 D01 ANSI C63.10 2009	PASS
Band Edge (Radiated Emission)	47 CFR Part 15, Subpart C Section 15.205/15.209	KDB558074 D01 ANSI C63.10 2009	PASS

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


4 General Information

4.1 Client Information

Applicant:	COBY COMMUNICATIONS LTD
Address of Applicant:	Unit C-E, 8/F, Po Shau Centre, 115 How Ming St., Kwun Tong, Kowloon Hong Kong
Manufacturer:	Shenzhen Coby Communications Ltd.
Address of Manufacturer:	Block 2-3, TaoXia 2nd Industrial Zone, LongHua Town, BaoAn District, ShenZhen City Guangdong Province P.R. China

4.2 General Description of EUT

Product Name:	Mobile Internet Device
Model No.:	MID9042
Trade Mark:	COBY
Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels
Channel Separation:	5MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20): OFDM (64QAM, 16QAM, QPSK,BPSK)
Sample Type:	Portable production
Test Power Grade:	8 (manufacturer declare)
Test Software of EUT:	adb shell(manufacturer declare)
Antenna Type and Gain:	Type: Integral antenna Gain:2.0dBi
AC Adapter:	MODEL:PS14K0502000U5 INPUT:100-240V~50/60Hz 0.35A OUTPUT:5.0V  2000mA
EUT Power Supply:	McNair 3738134-2P 16.28Wh 4400mAh 3.7V 20120312
Test Voltage:	120V~ 60Hz
DC Line:	<3m
USB Line:	<3m
Earphone Line:	<3m



Operation Frequency each of channel(802.11b/g/n HT20)							
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 channel see below:

For 802.11b/g/n (HT20):

Channel	Frequency
The Lowest channel	2412MHz
The Middle channel	2437MHz
The Highest channel	2462MHz



4.3 Test Environment and Mode

Operating Environment:	
Temperature:	20.0 °C
Humidity:	50 % RH
Atmospheric Pressure:	1005 mbar
Test mode:	
Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.
Charge + Transmitting mode:	Keep the EUT in transmitting and Charge mode.

4.4 Description of Support Units

The EUT has been tested independent unit.

4.5 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.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.



4.6 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, Full-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, G-416, T-1153 and C-2383 respectively.

- **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 No.: 556682.

- **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.

4.7 Deviation from Standards

None.

4.8 Abnormalities from Standard Conditions

None.

4.9 Other Information Requested by the Customer

None.

4.10 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	2013-06-10
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	2013-05-17
3	EMI Test software	AUDIX	E3	SEL0050	N/A
4	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2012-10-29
5	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2012-10-29
6	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	2012-10-29
7	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2013-05-17
8	Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEL0168	2012-11-26
9	Coaxial cable	SGS	N/A	SEL0027	2013-05-59
10	Coaxial cable	SGS	N/A	SEL0189	2013-05-29
11	Coaxial cable	SGS	N/A	SEL0121	2013-05-29
12	Coaxial cable	SGS	N/A	SEL0178	2013-05-29
13	Band filter	Amindeon	82346	SEL0094	2013-05-17
14	Barometer	Chang Chun	DYM3	SEL0088	2013-05-24
15	DC Power Supply	Zhao Xin	RXN-305D	SEL0117	2012-10-23
16	Humidity/ Temperature Indicator	Shanghai Qixiang	ZJ1-2B	SEL0103	2012-10-27
17	Signal Generator (10M-27GHz)	Rohde & Schwarz	SMR27	SEL0067	2013-05-17
18	Signal Generator	Rohde & Schwarz	SMY01	SEL0155	2012-10-23
19	Loop Antenna	Beijing Daze	ZN30401	SEL0203	2013-6-4



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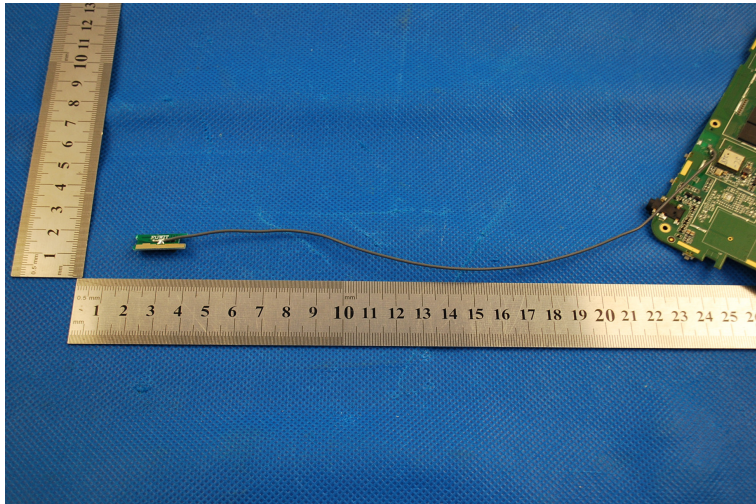


Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)
1	Shielding Room	ZhongYu Electron	GB-88	SEL0042	2013-06-10
2	LISN	Rohde & Schwarz	ENV216	SEL0152	2012-10-23
3	LISN	ETS-LINDGREN	3816/2	SEL0021	2013-5-17
4	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	SEL0162	2012-11-11
5	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	SEL0163	2012-11-11
6	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	SEL0164	2012-11-11
7	EMI Test Receiver	Rohde & Schwarz	ESCI	SEL0022	2013-5-17
8	Coaxial Cable	SGS	N/A	SEL0025	2013-05-29
9	DC Power Supply	Zhao Xin	RXN-305D	SEL0117	2012-10-23
10	Humidity/ Temperature Indicator	Shanghai Qixiang	ZJ1-2B	SEL0103	2012-10-27
11	Barometer	Chang Chun	DYM3	SEL0088	2013-05-24

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5 Test results and Measurement Data

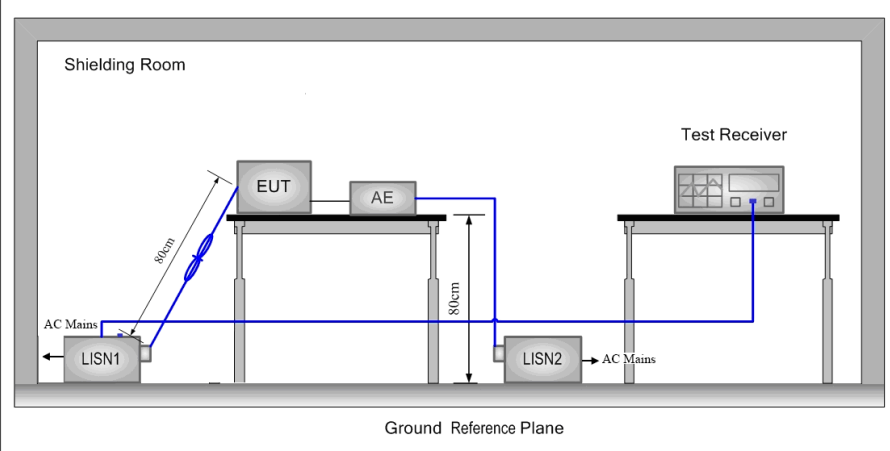
5.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203 /247(c)
<p>15.203 requirement:</p> <p>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.</p> <p>15.247(b) (4) requirement:</p> <p>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.</p>	
<p>EUT Antenna:</p>	
	<p>The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2.0dBi.</p>



5.2 Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207		
Test Method:	ANSI C63.10: 2009		
Test Frequency Range:	150kHz to 30MHz		
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:	<ol style="list-style-type: none">1) The mains terminal disturbance voltage test was conducted in a shielded room.2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.5) 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:	
Test Mode:	Charge + Transmitting mode
Instruments Used:	Refer to section 4.10 for details
Test Results:	Pass

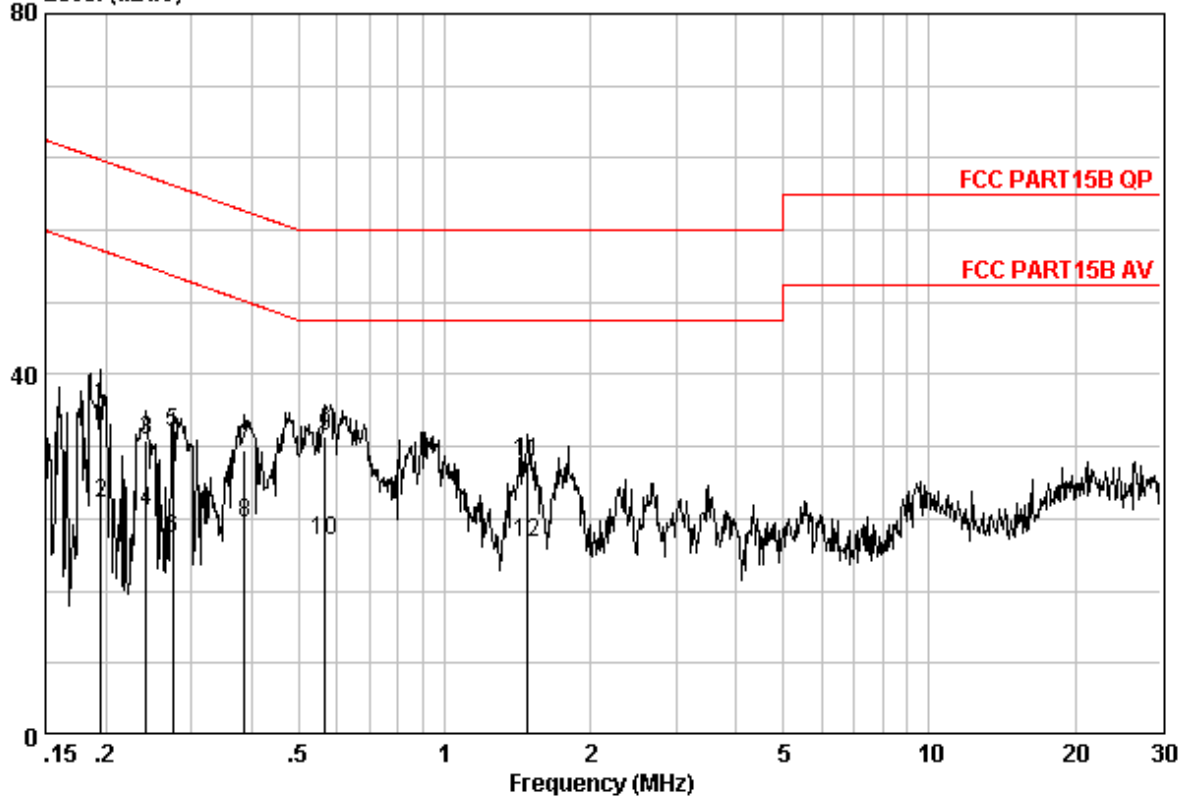
Measurement Data

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:

Data: 36
Level (dBuV)



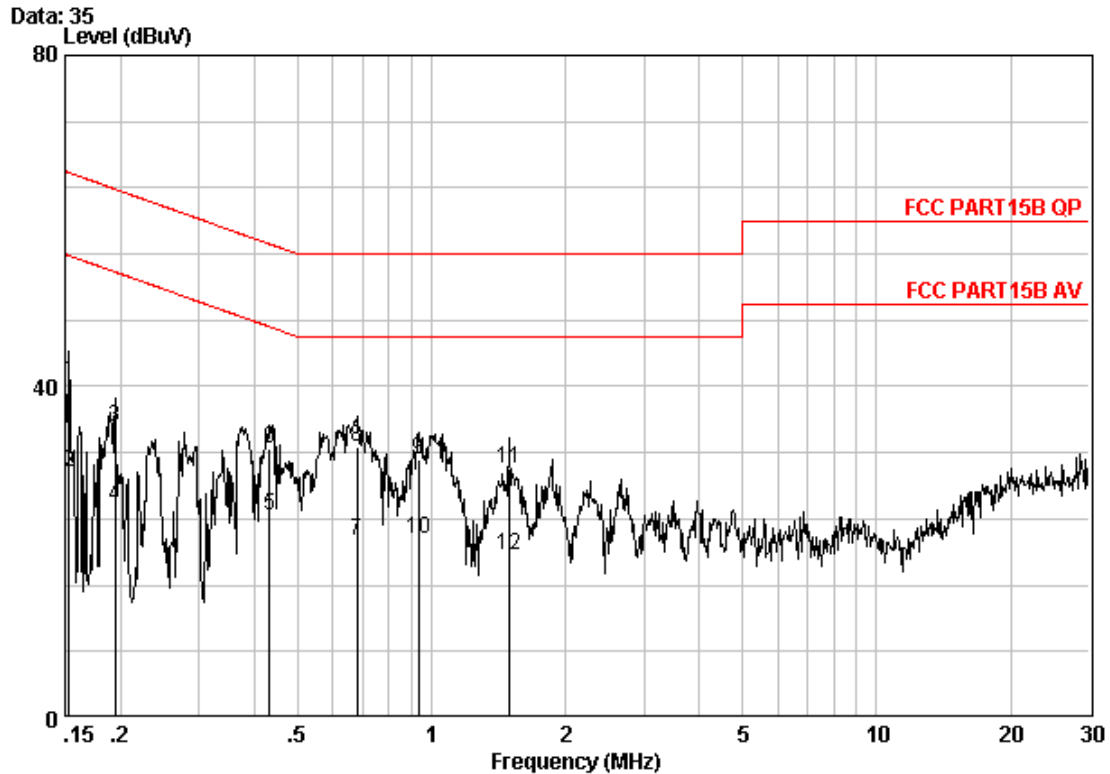
Site : Shielding Room
Condition : FCC PART15B QP CE-20101216 LINE
Job No. : 2665IT
Mode : Charge+TX

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.19500	0.04	9.60	27.00	36.64	63.82	-27.18	QP
2	0.19500	0.04	9.60	16.00	25.64	53.82	-28.18	Average
3	0.24165	0.04	9.60	23.02	32.66	62.04	-29.37	QP
4	0.24165	0.04	9.60	15.30	24.94	52.04	-27.09	Average
5	0.27442	0.05	9.60	23.83	33.48	60.98	-27.51	QP
6	0.27442	0.05	9.60	12.20	21.85	50.98	-29.14	Average
7	0.38724	0.06	9.60	22.04	31.70	58.12	-26.43	QP
8	0.38724	0.06	9.60	13.80	23.46	48.12	-24.67	Average
9	0.56709	0.06	9.64	23.36	33.06	56.00	-22.94	QP
10	0.56709	0.06	9.64	11.89	21.59	46.00	-24.41	Average
11	1.480	0.10	9.70	20.45	30.25	56.00	-25.75	QP
12	1.480	0.10	9.70	11.56	21.36	46.00	-24.64	Average

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Neutral Line:



Site : Shielding Room
Condition : FCC PART 15B QP CE-20101216 NEUTRAL
Job No. : 2665IT
Mode : Charge+TX

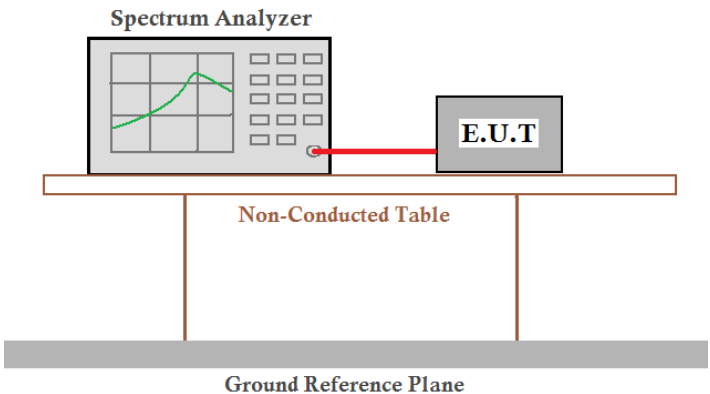
	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.15321	0.04	9.60	31.00	40.64	65.82	-25.18	QP
2	0.15321	0.04	9.60	20.00	29.64	55.82	-26.18	Average
3	0.19447	0.04	9.60	25.52	35.16	63.84	-28.68	QP
4	0.19447	0.04	9.60	15.86	25.50	53.84	-28.34	Average
5	0.43281	0.06	9.60	14.71	24.37	47.20	-22.83	Average
6	0.43281	0.06	9.60	22.91	32.57	57.20	-24.63	QP
7	0.67902	0.06	9.69	11.57	21.32	46.00	-24.68	Average
8	0.67902	0.06	9.69	23.02	32.77	56.00	-23.23	QP
9	0.93314	0.08	9.70	21.45	31.23	56.00	-24.77	QP
10	0.93314	0.08	9.70	11.72	21.49	46.00	-24.51	Average
11	1.487	0.10	9.70	20.31	30.11	56.00	-25.89	QP
12	1.487	0.10	9.70	9.88	19.68	46.00	-26.32	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.

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5.3 Conducted Peak Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(3)
Test Method:	ANSI C63.10 2009 and KDB558074 D01
Test Setup:	 <p><i>Remark:</i> Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.</p>
Test Instruments:	Refer to section 4.10 for details
Exploratory Test Mode:	Transmitting mode
Final Test Mode:	Through Pre-scan, find the 11Mbps of rate is the worst case of 802.11b; 54Mbps of rate is the worst case of 802.11g; 65Mbps of rate is the worst case of 802.11n(HT20).
Limit:	30dBm
Test Results:	Pass



Pre-scan under all rate at lowest channel 1								
Mode	802.11b							
Data Rate	1Mbps	2Mbps	5.5Mbps	11Mbps				
Power(dBm)	18.23	18.58	19.13	19.90				
Mode	802.11g							
Data Rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
Power(dBm)	19.65	19.88	20.13	20.54	21.21	21.46	21.98	22.39
Mode	802.11n(HT20)							
Data Rate	6.5Mbps	13Mbps	19.5Mbps	26Mbps	39Mbps	52Mbps	58.5Mbps	65Mbps
Power (dBm)	19.53	19.86	20.24	20.64	20.89	21.52	21.86	22.14

Through Pre-scan, 11Mbps of rate is the worst case of 802.11b; 54Mbps of rate is the worst case of 802.11g; 65Mbps of rate is the worst case of 802.11n (HT20).

Measurement Data

802.11b mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	19.90	30.00	Pass
Middle	19.77	30.00	Pass
Highest	19.64	30.00	Pass
802.11g mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	22.39	30.00	Pass
Middle	21.97	30.00	Pass
Highest	20.84	30.00	Pass
802.11n(HT20)mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	22.14	30.00	Pass
Middle	21.47	30.00	Pass
Highest	20.86	30.00	Pass

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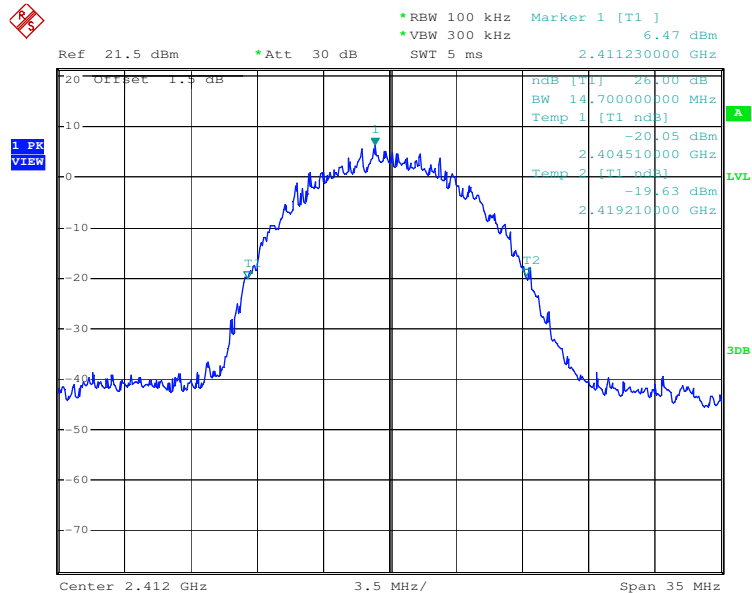
SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM120500266501

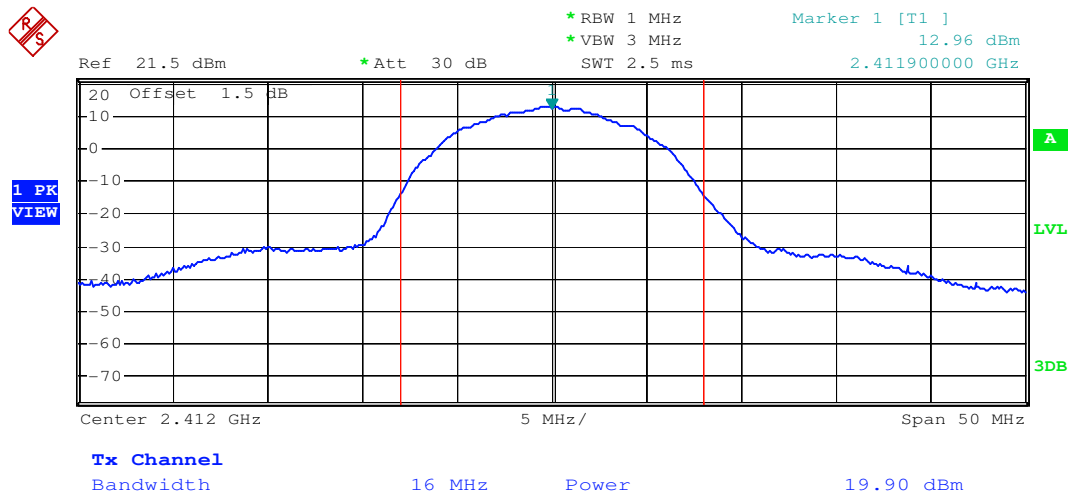
Page: 17 of 85

Test plot as follows:

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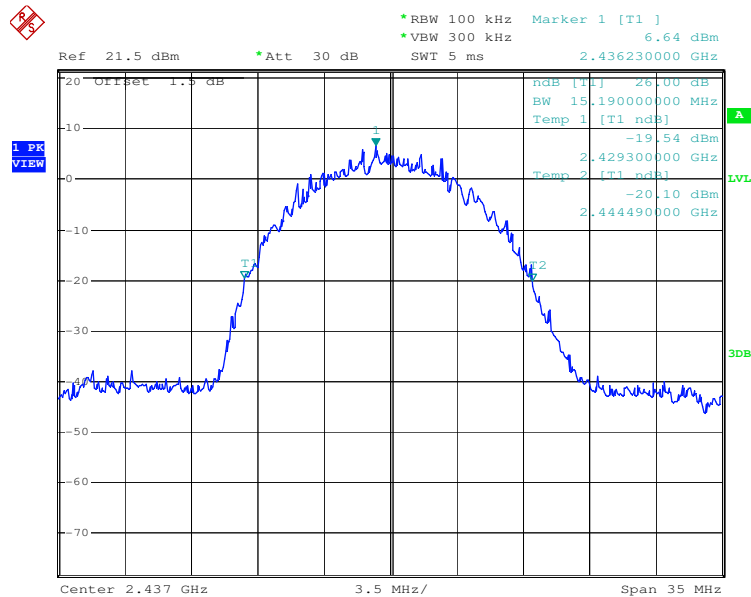


SGS-CSTC Standards Technical Services Ltd.

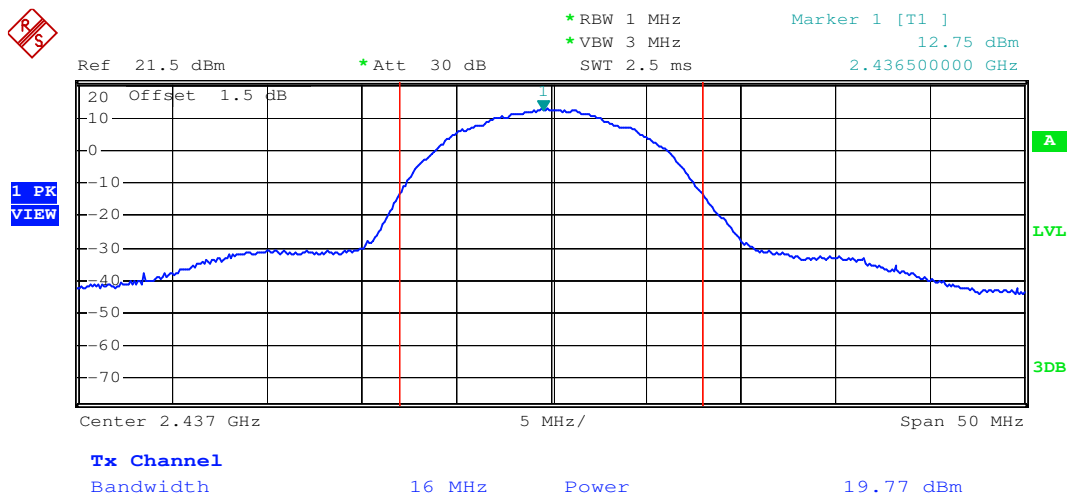
Report No.: SZEM120500266501

Page: 18 of 85

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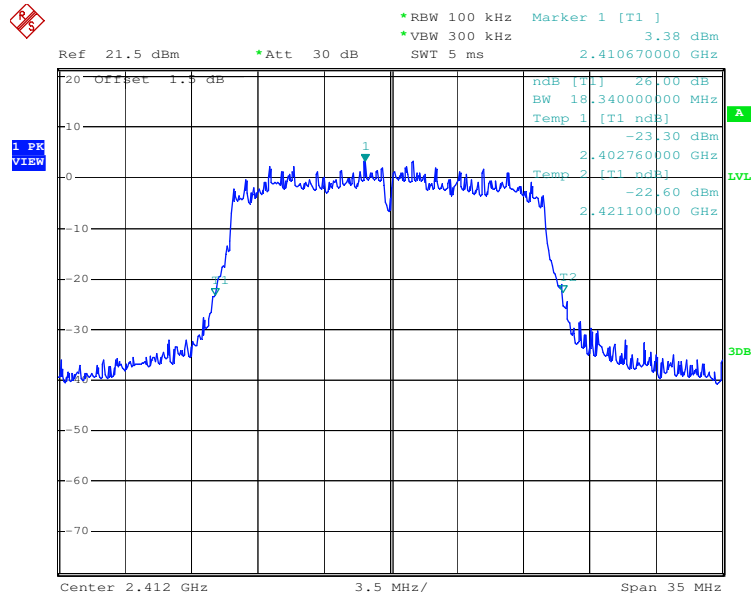


SGS-CSTC Standards Technical Services Ltd.

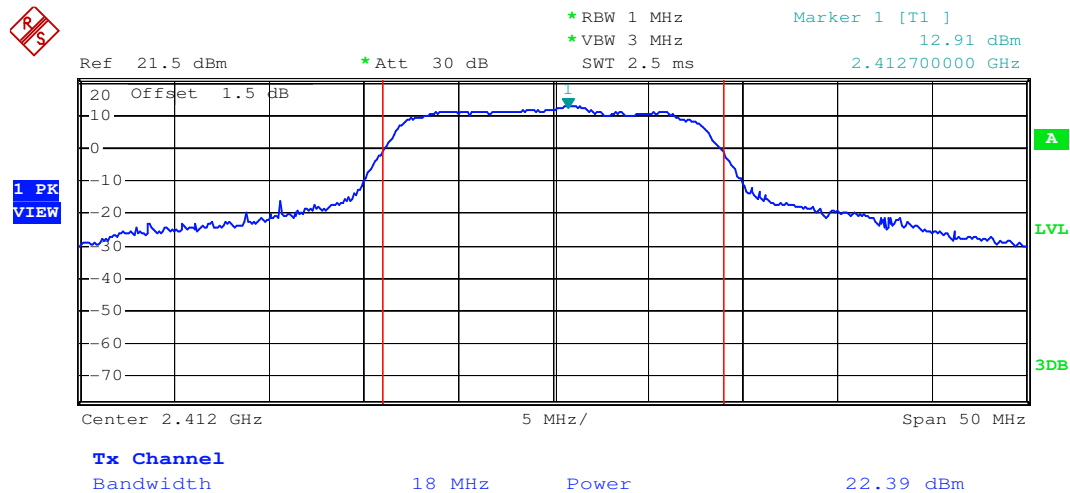
Report No.: SZEM120500266501

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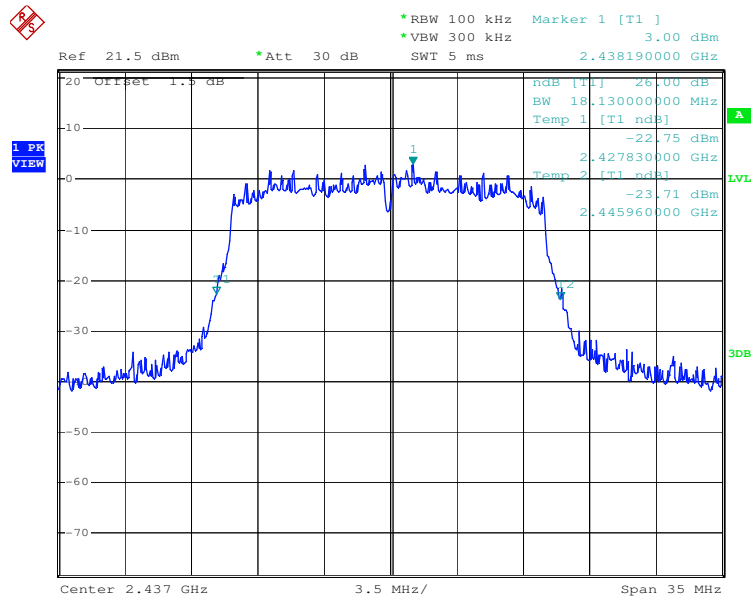


SGS-CSTC Standards Technical Services Ltd.

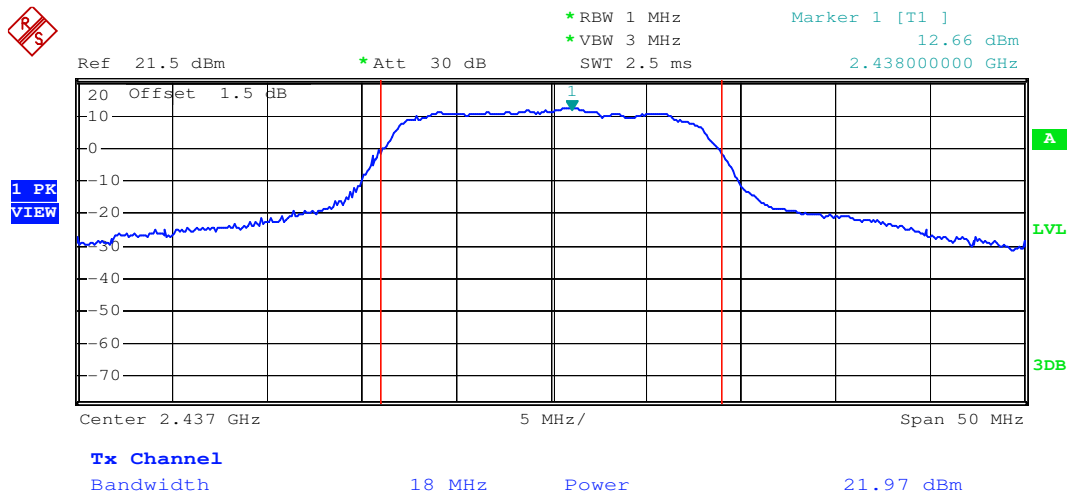
Report No.: SZEM120500266501

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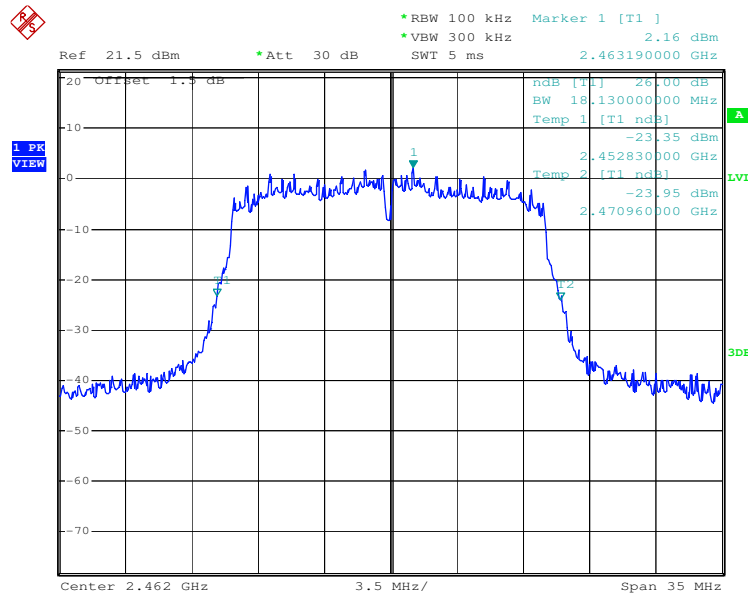


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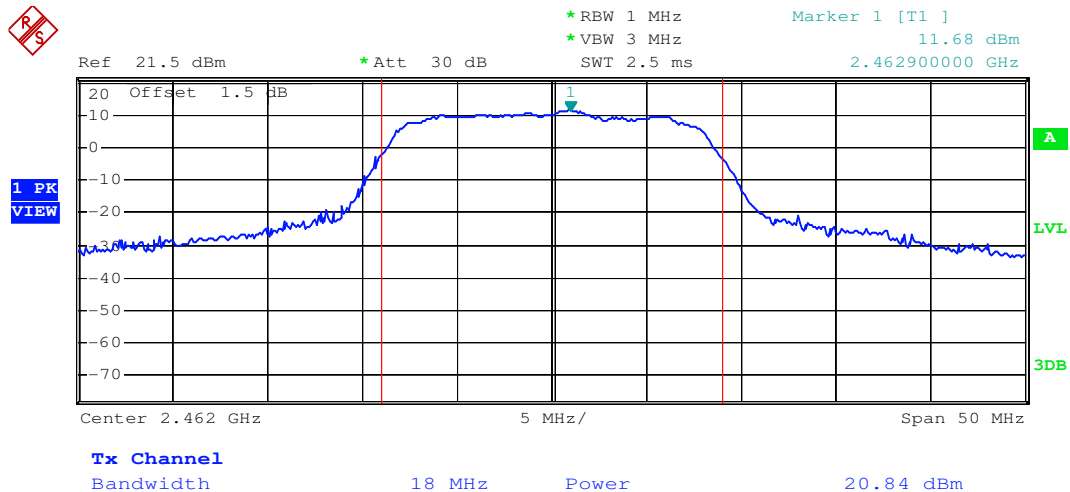
Report No.: SZEM120500266501

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



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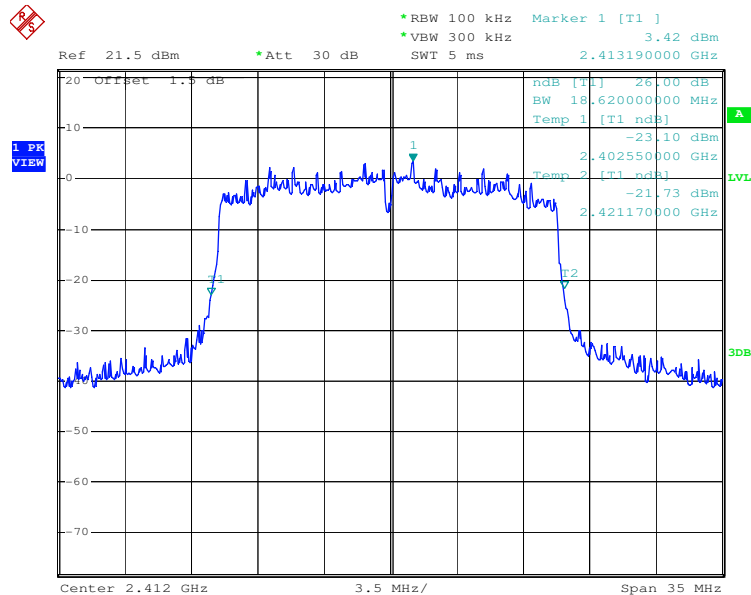


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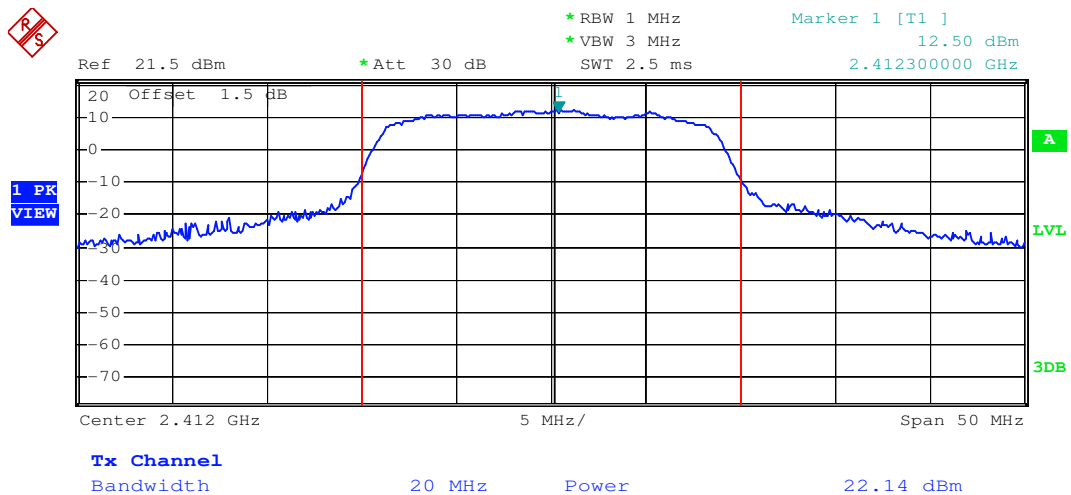
Report No.: SZEM120500266501

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Test mode:	802.11n(HT20)	Test channel:	Lowest	-26 bandwidth
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Test mode:	802.11n(HT20)	Test channel:	Lowest
------------	---------------	---------------	--------



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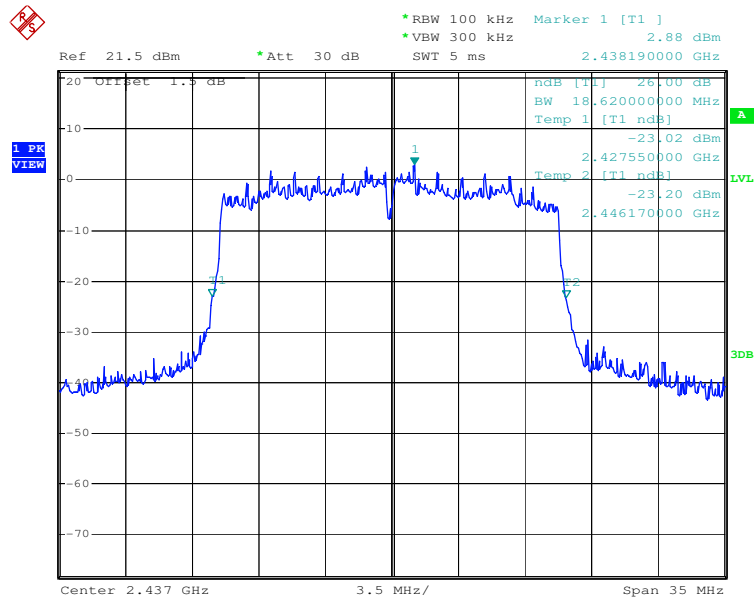


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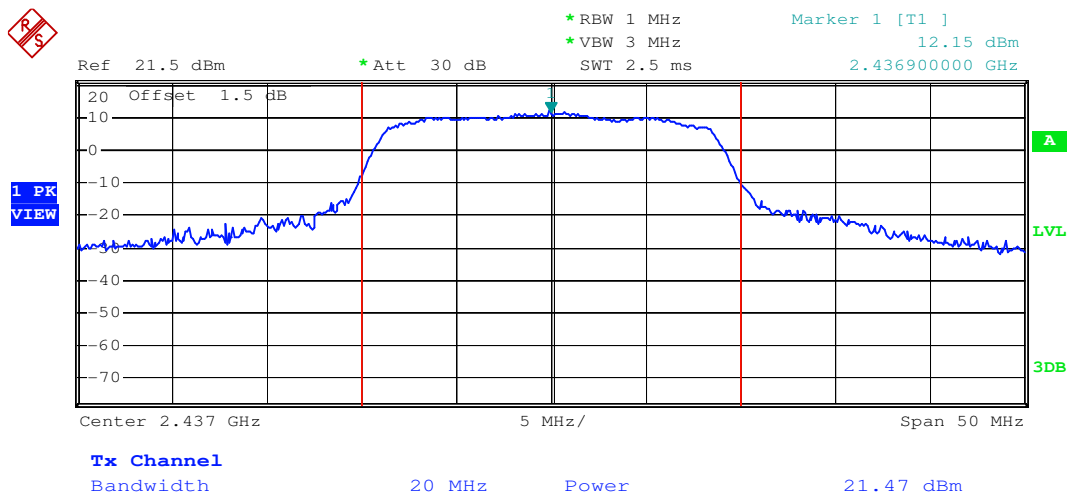
Report No.: SZEM120500266501

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Test mode:	802.11n(HT20)	Test channel:	Middle	-26 bandwidth
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Test mode:	802.11n(HT20)	Test channel:	Middle
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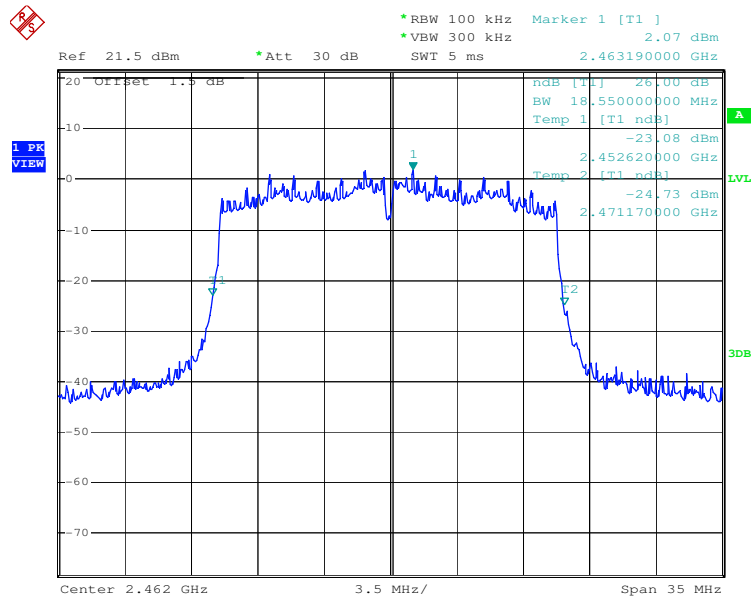


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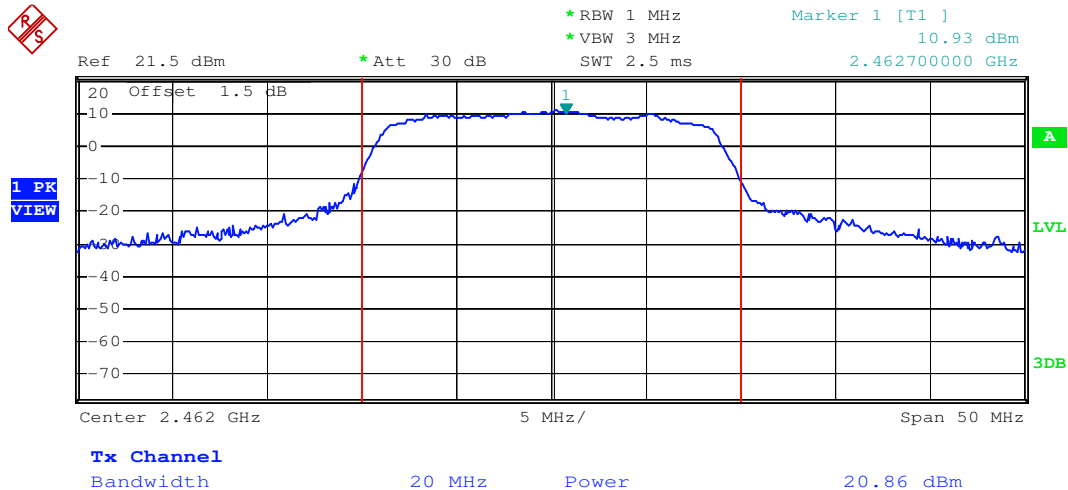
Report No.: SZEM120500266501

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Test mode:	802.11n(HT20)	Test channel:	Highest	-26 bandwidth
------------	---------------	---------------	---------	---------------

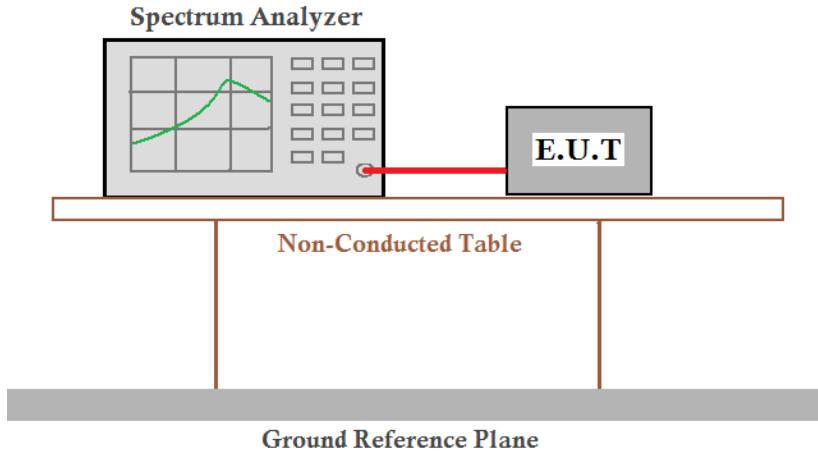


Test mode:	802.11n(HT20)	Test channel:	Highest
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5.4 6dB Occupy Bandwidth

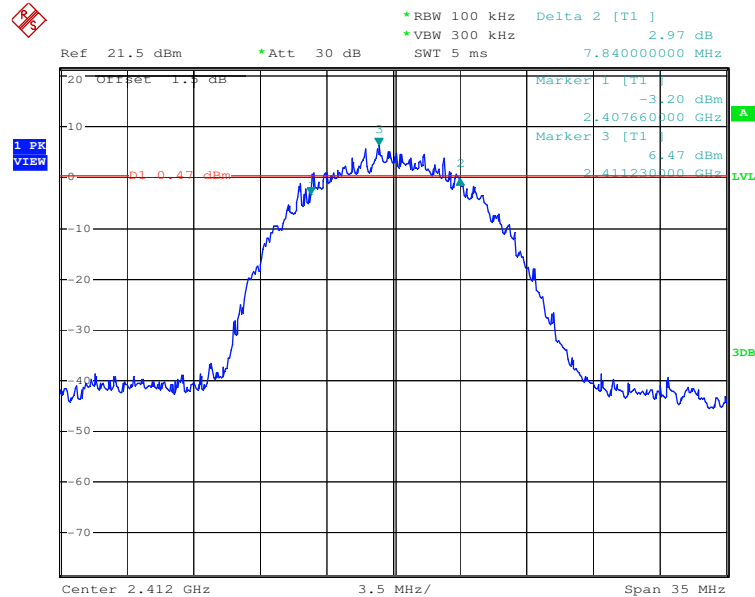
Test Requirement:	47 CFR Part 15C Section 15.247 (a)(2)
Test Method:	ANSI C63.10 2009 and KDB558074 D01
Test Setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T are placed on a Non-Conducted Table. The table is supported by two vertical legs. Below the table is a Ground Reference Plane.</p>
Instruments Used:	Refer to section 4.10 for details
Exploratory Test Mode:	Transmitting mode
Final Test Mode:	Through Pre-scan, find the 11Mbps of rate is the worst case of 802.11b; 54Mbps of rate is the worst case of 802.11g ; 65Mbps of rate is the worst case of 802.11n(HT20).
Limit:	≥ 500 kHz
Test Results:	Pass

**Measurement Data**

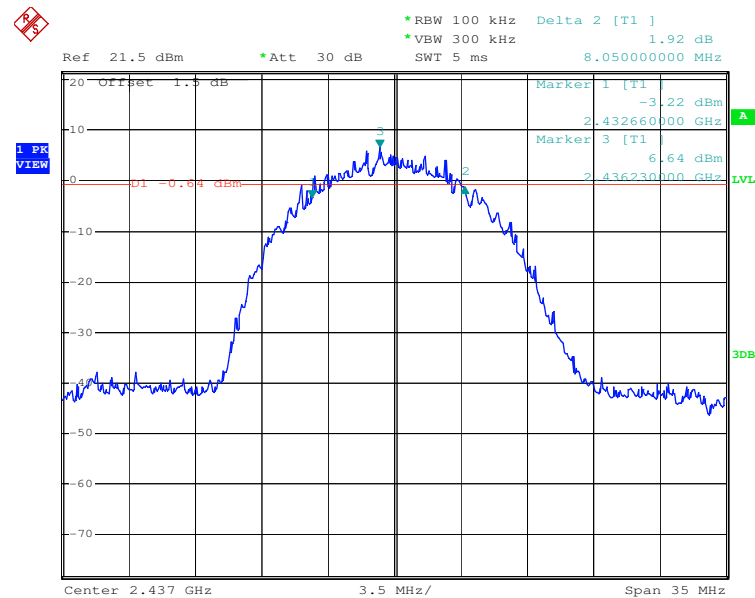
802.11b mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
Lowest	7.84	≥500	Pass
Middle	8.05	≥500	Pass
Highest	7.77	≥500	Pass
802.11g mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
Lowest	15.89	≥500	Pass
Middle	16.38	≥500	Pass
Highest	15.82	≥500	Pass
802.11n(HT20) mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
Lowest	16.24	≥500	Pass
Middle	16.45	≥500	Pass
Highest	17.64	≥500	Pass

Test plot as follows:

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



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



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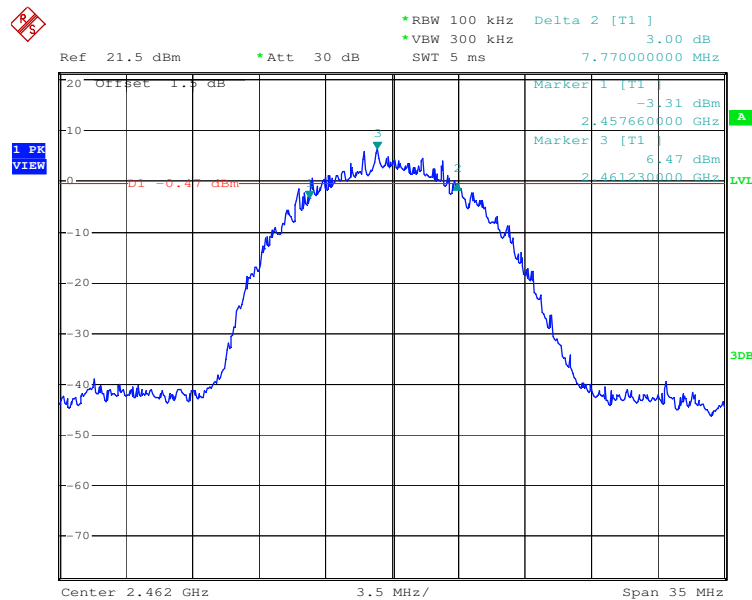


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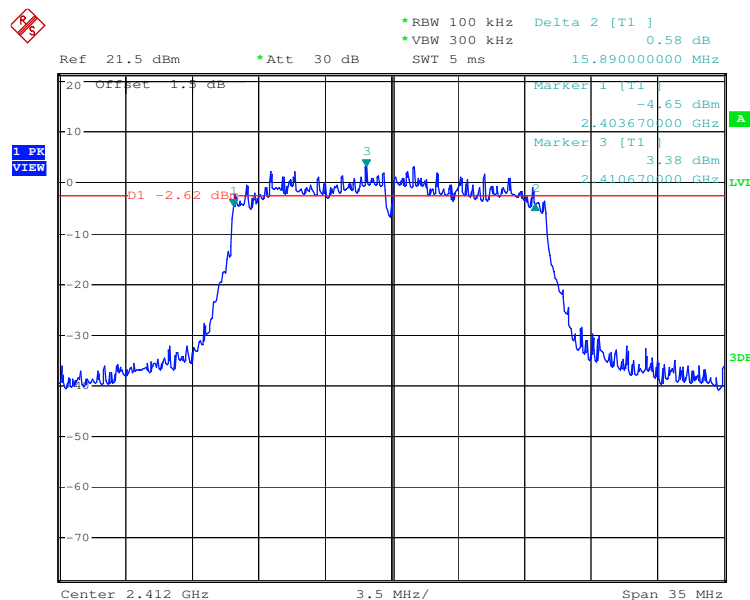
Report No.: SZEM120500266501

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Test mode:	802.11b	Test channel:	Highest
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Test mode:	802.11g	Test channel:	Lowest
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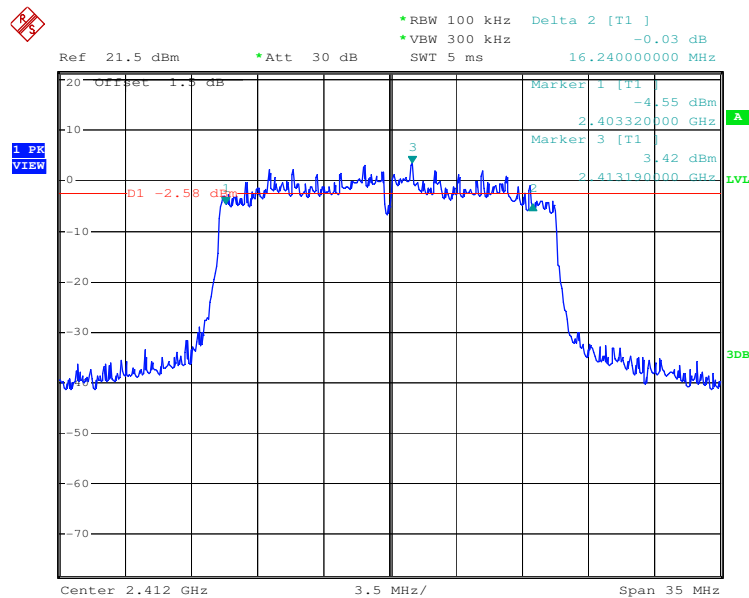


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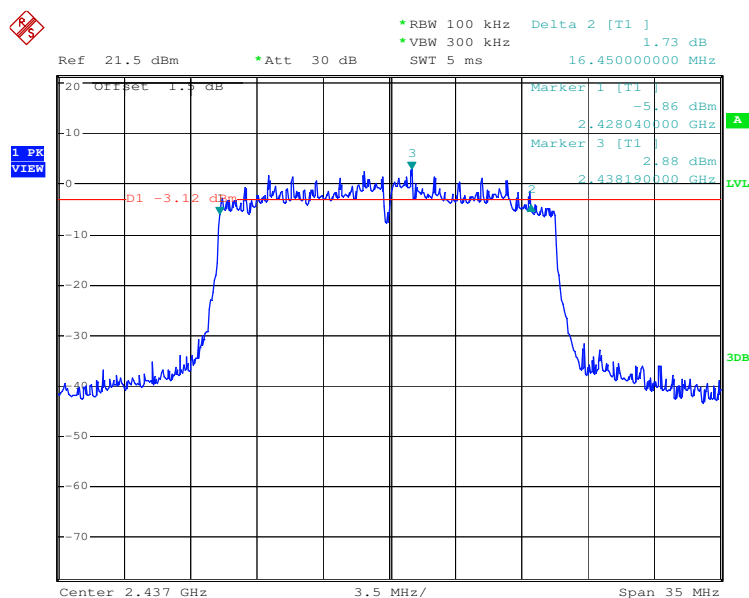
Report No.: SZEM120500266501

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Test mode:	802.11n(HT20)	Test channel:	Lowest
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Test mode:	802.11n(HT20)	Test channel:	Middle
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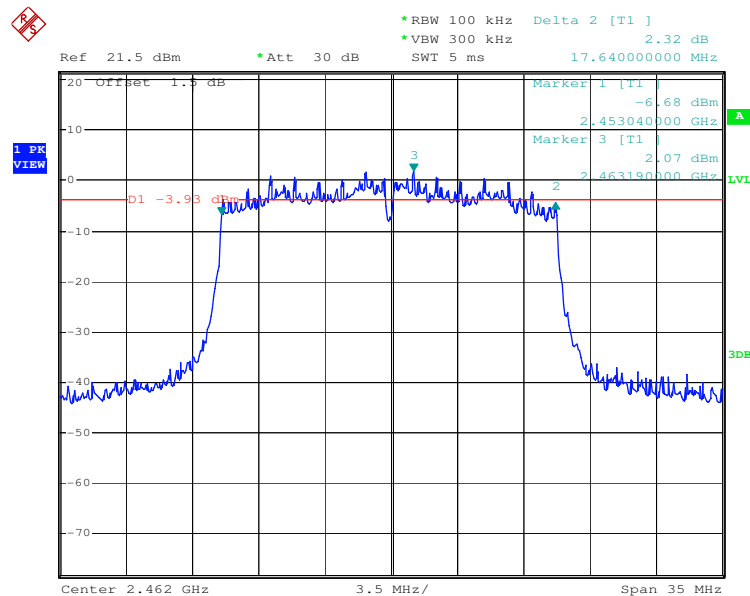


SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM120500266501

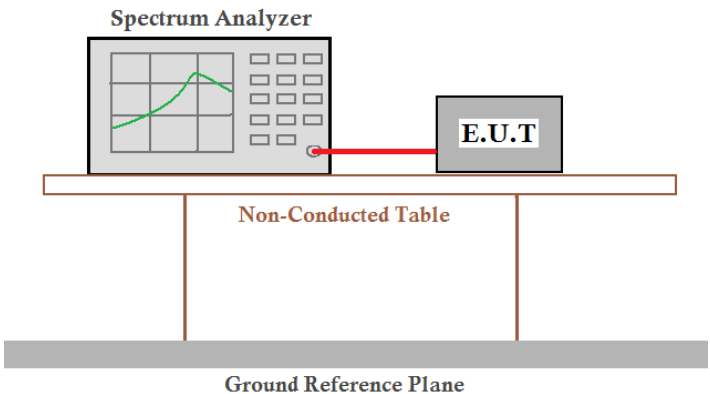
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Test mode:	802.11n(HT20)	Test channel:	Highest
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5.5 Power Spectral Density

Test Requirement:	47 CFR Part 15C Section 15.247 (e)
Test Method:	ANSI C63.10 2009 and KDB558074 D01
Test Setup:	 <p><i>Remark:</i> Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.</p>
Test Instruments:	Refer to section 4.10 for details
Exploratory Test Mode:	Transmitting mode
Final Test Mode:	Through Pre-scan, find the 11Mbps of rate is the worst case of 802.11b; 54Mbps of rate is the worst case of 802.11g ; 65Mbps of rate is the worst case of 802.11n (HT20).
Limit:	≤8.00dBm
Test Results:	Pass

**Measurement Data**

802.11b mode			
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-7.25	≤8.00	Pass
Middle	-7.12	≤8.00	Pass
Highest	-8.00	≤8.00	Pass
802.11g mode			
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-10.81	≤8.00	Pass
Middle	-10.33	≤8.00	Pass
Highest	-12.76	≤8.00	Pass
802.11n(HT20) mode			
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-10.77	≤8.00	Pass
Middle	-10.37	≤8.00	Pass
Highest	-13.05	≤8.00	Pass

Remark:

Power Spectral Density=Power + BWCF

BWCF=10log(3kHz/100kHz)=-15.2dB



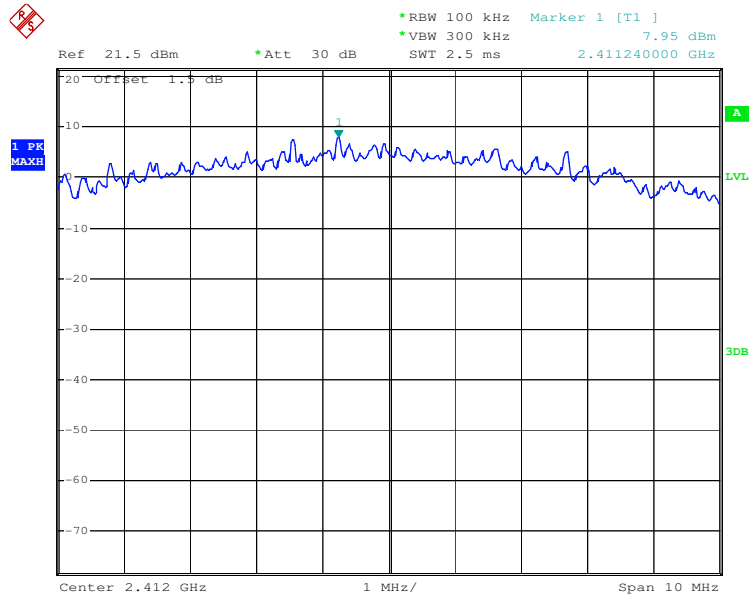
SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM120500266501

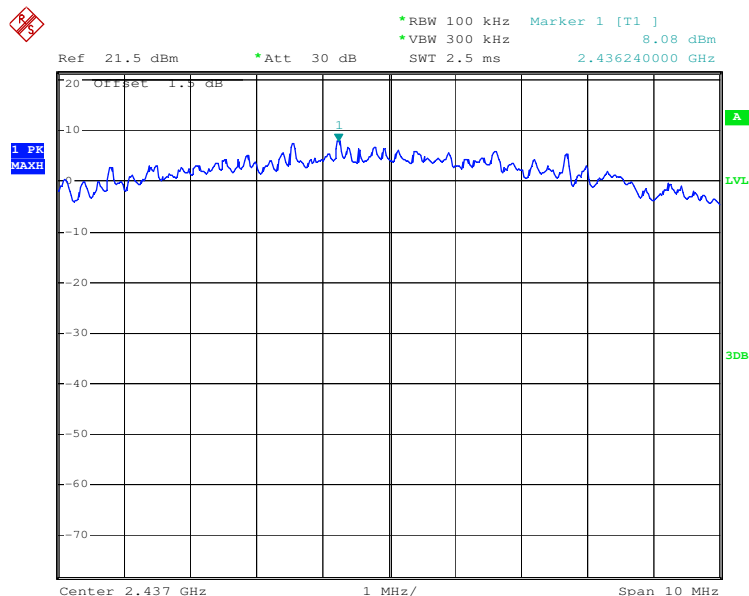
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Test plot as follows:

Test mode:	802.11b	Test channel:	Lowest
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Test mode:	802.11b	Test channel:	Middle
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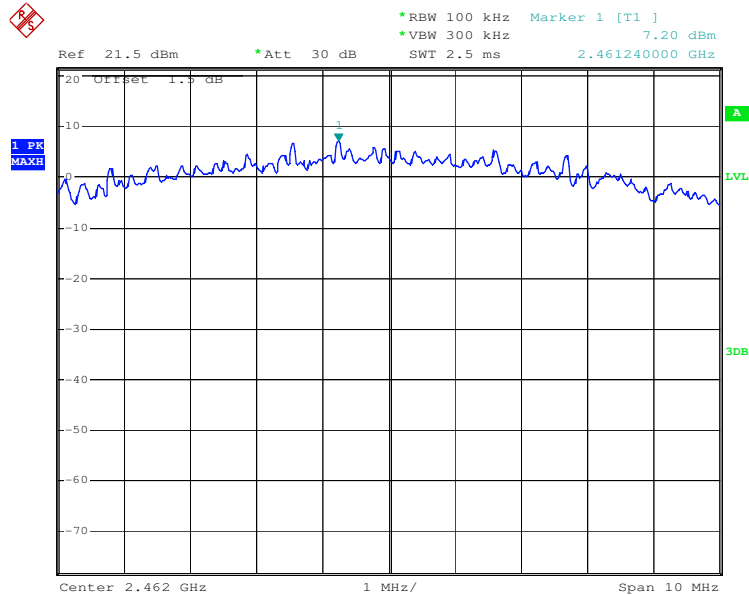


SGS-CSTC Standards Technical Services Ltd.

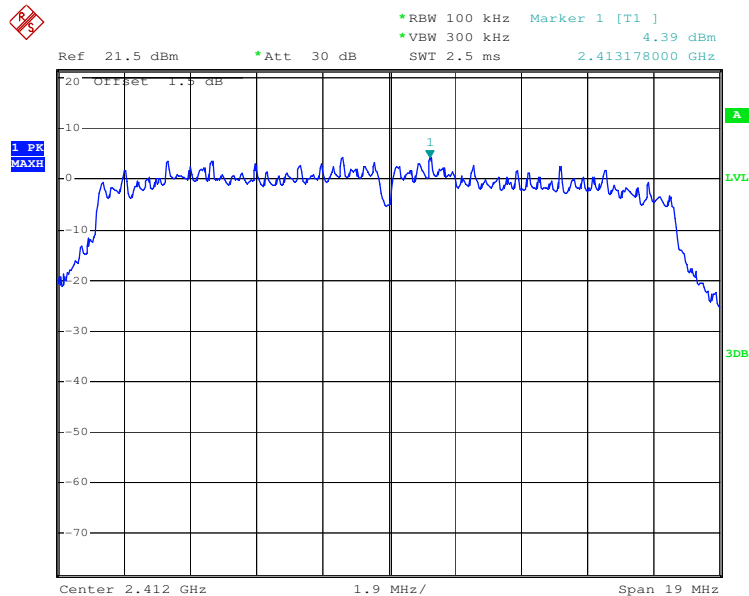
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Test mode:	802.11b	Test channel:	Highest
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Test mode:	802.11g	Test channel:	Lowest
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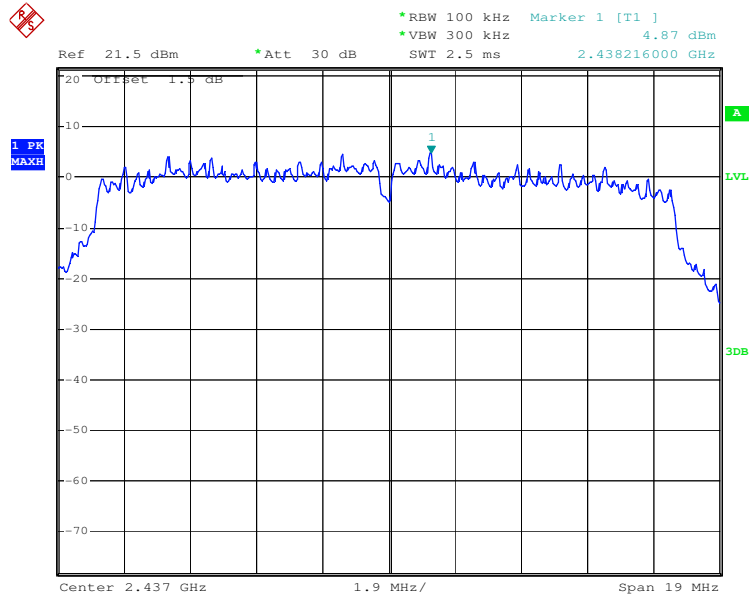


SGS-CSTC Standards Technical Services Ltd.

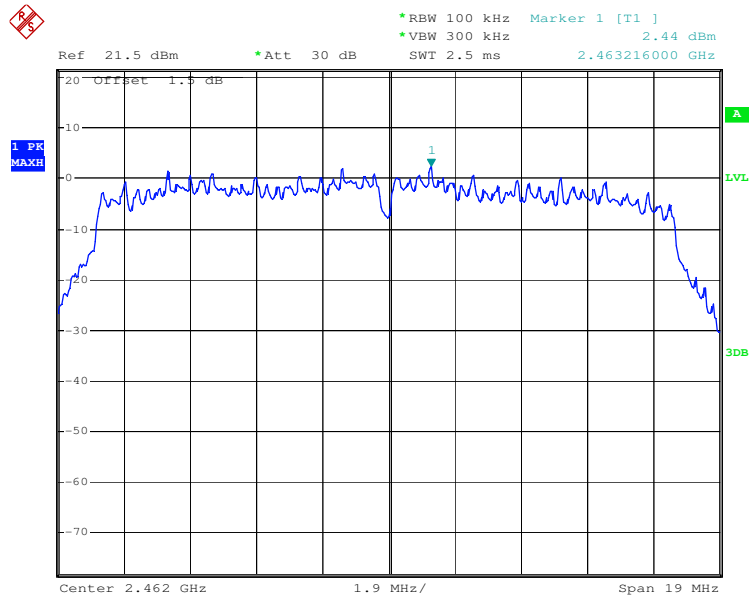
Report No.: SZEM120500266501

Page: 37 of 85

Test mode:	802.11g	Test channel:	Middle
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Test mode:	802.11g	Test channel:	Highest
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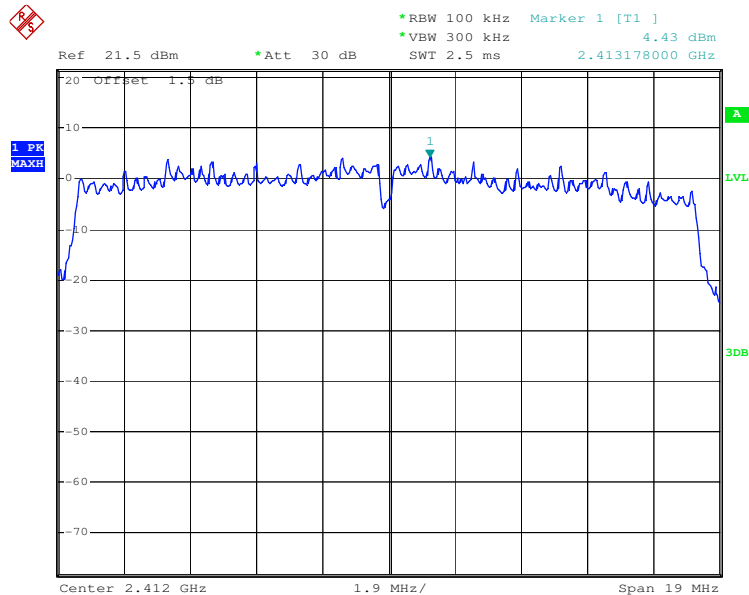


SGS-CSTC Standards Technical Services Ltd.

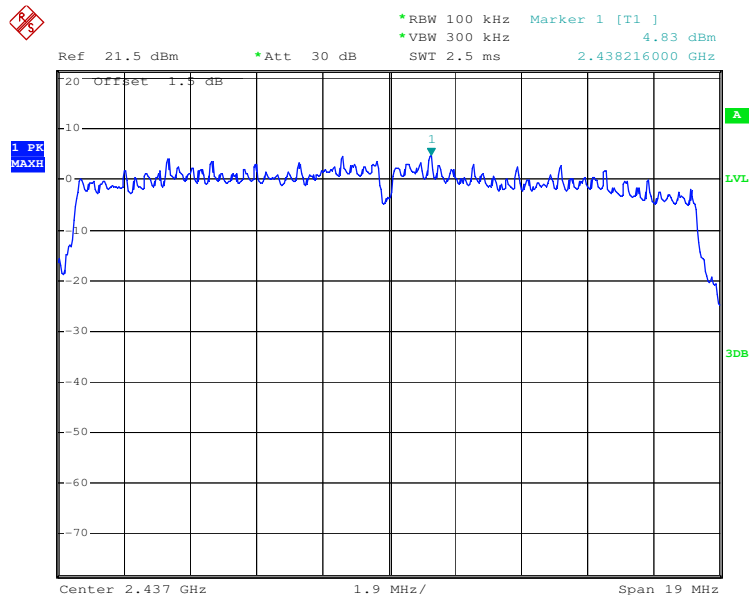
Report No.: SZEM120500266501

Page: 38 of 85

Test mode:	802.11n(HT20)	Test channel:	Lowest
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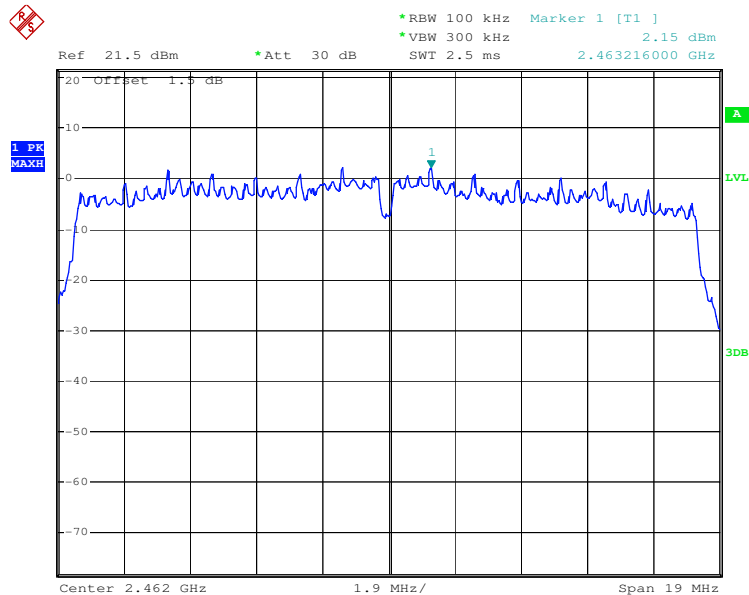
Test mode:	802.11n(HT20)	Test channel:	Middle
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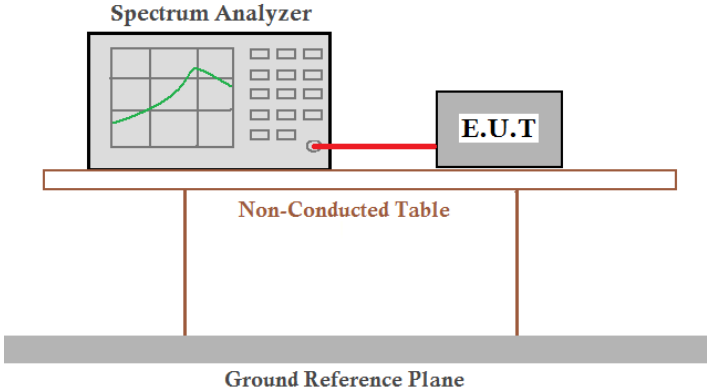


Test mode:	802.11n(HT20)	Test channel:	Highest
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5.6 Band-edge for RF Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10 2009 and KDB558074 D01
Test Setup:	 <p><i>Remark:</i> Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.</p>
Exploratory Test Mode:	Transmitting mode
Final Test Mode:	Through Pre-scan, find the 11Mbps of rate is the worst case of 802.11b; 54Mbps of rate is the worst case of 802.11g ; 65Mbps of rate is the worst case of 802.11n(HT20).
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.
Instruments Used:	Refer to section 4.10 for details
Test Results:	Pass



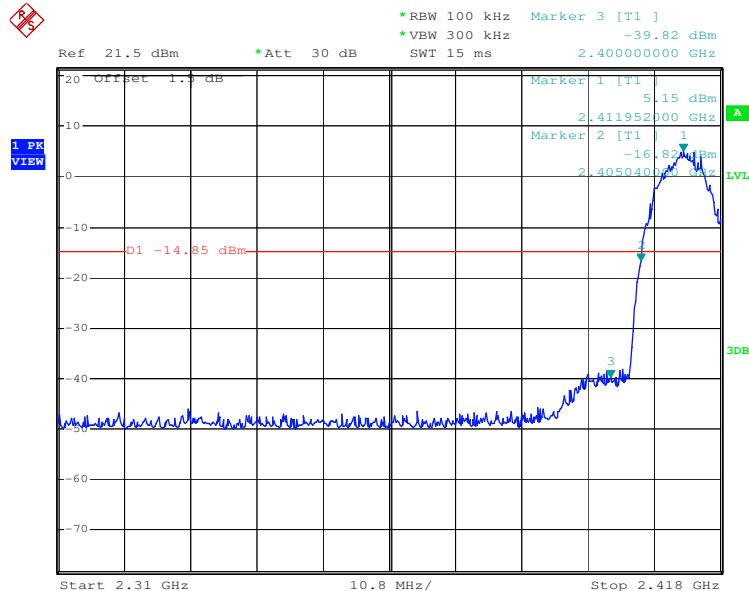
SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM120500266501

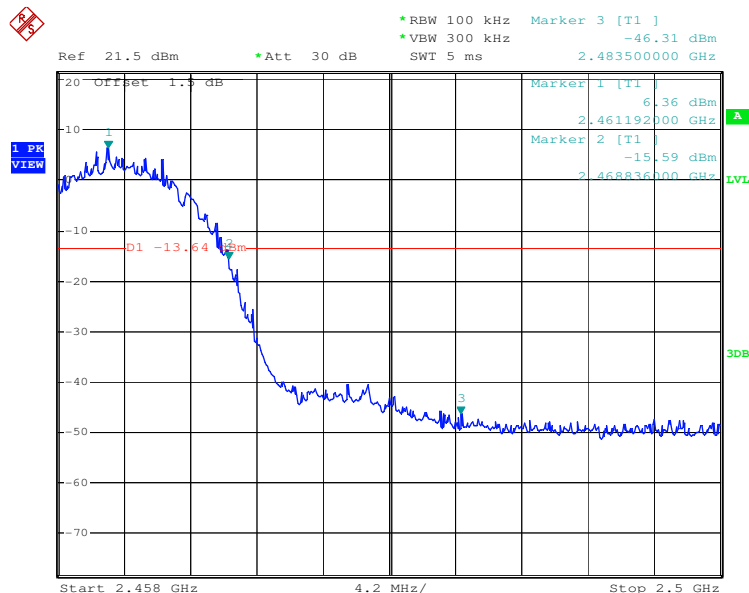
Page: 41 of 85

Test plot as follows:

Test mode:	802.11b	Test channel:	Lowest
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Test mode:	802.11b	Test channel:	Highest
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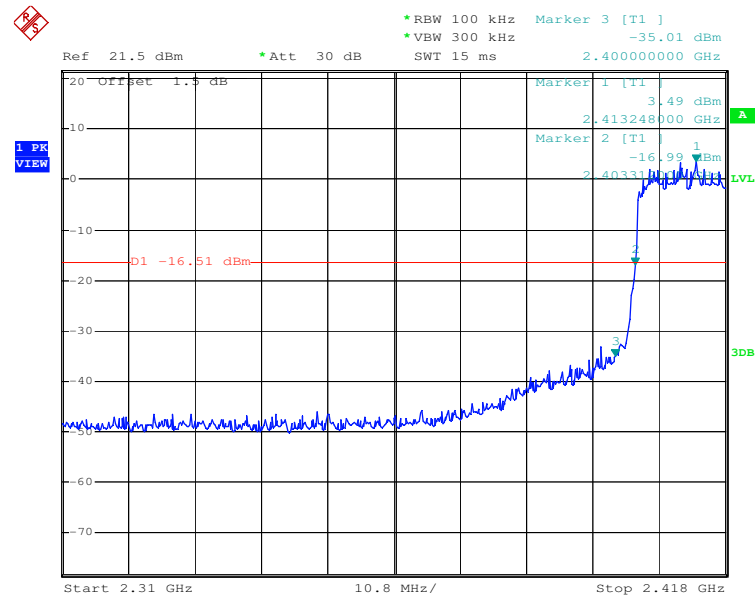


SGS-CSTC Standards Technical Services Ltd.

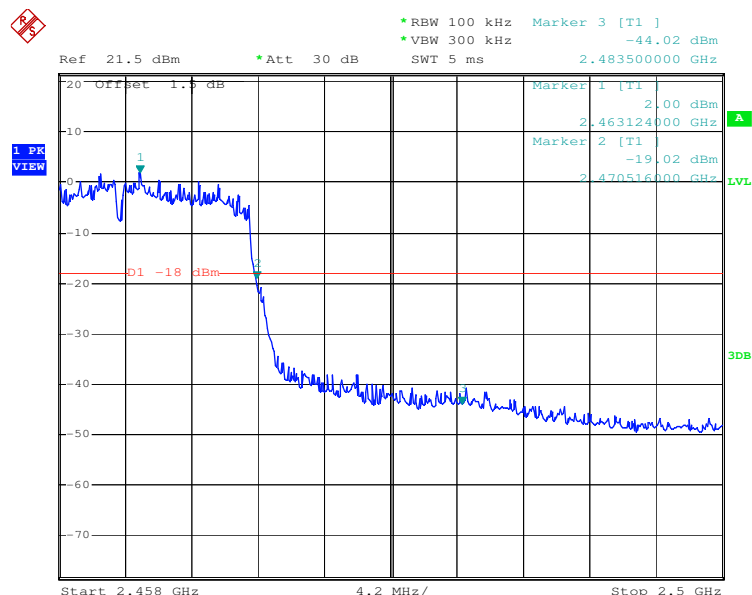
Report No.: SZEM120500266501

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Test mode:	802.11g	Test channel:	Lowest
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Test mode:	802.11g	Test channel:	Highest
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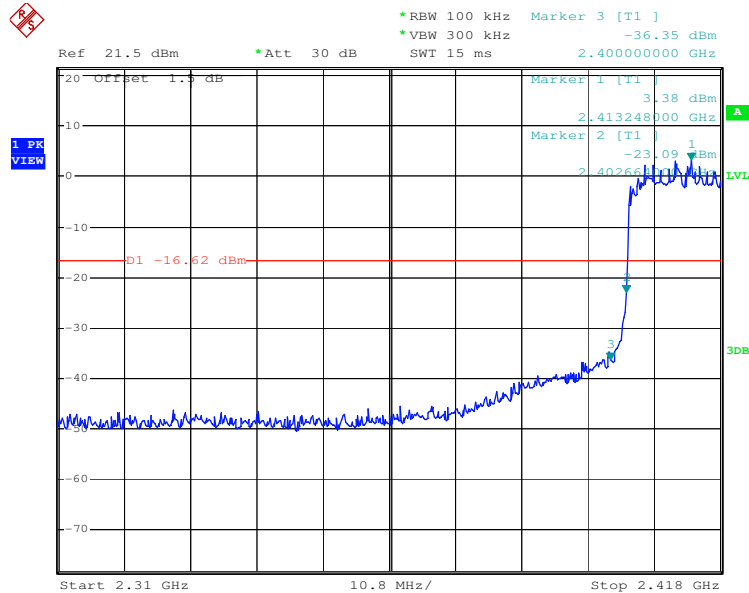


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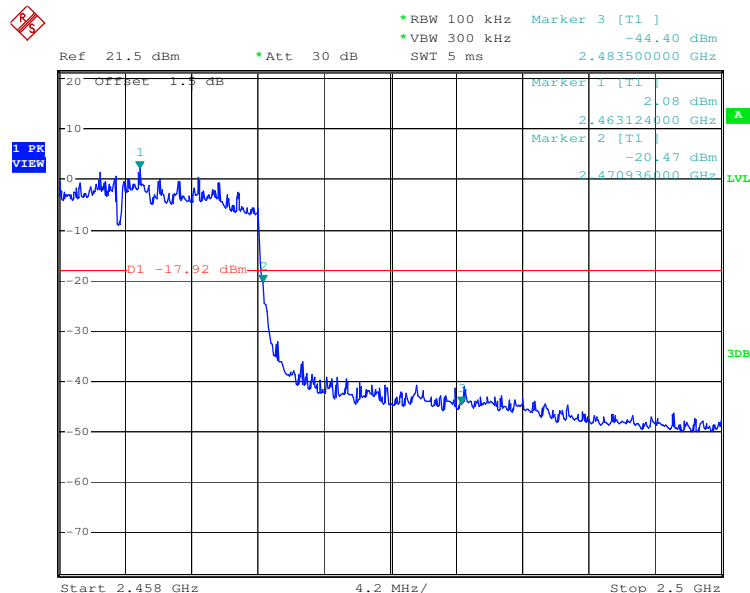
Report No.: SZEM120500266501

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Test mode:	802.11n(HT20)	Test channel:	Lowest
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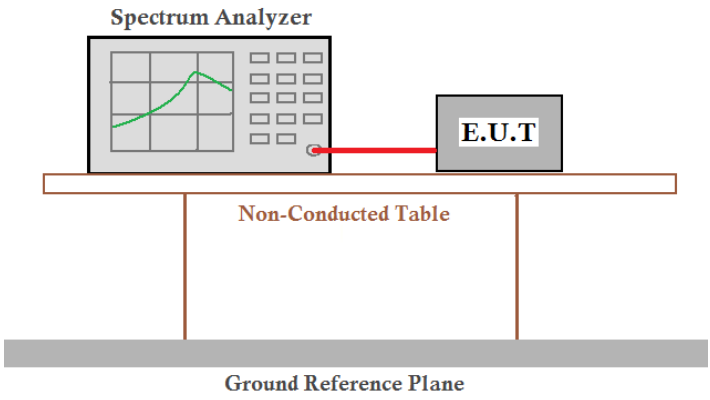


Test mode:	802.11n(HT20)	Test channel:	Highest
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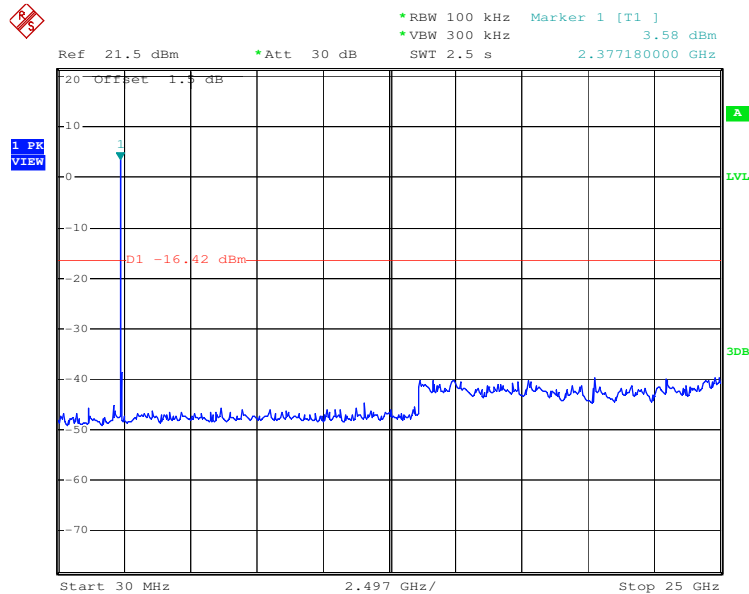
5.7 RF Conducted Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10 2009 and KDB558074 D01
Test Setup:	 <p><i>Remark:</i> Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.</p>
Exploratory Test Mode:	Transmitting mode
Final Test Mode:	Through Pre-scan, find the 11Mbps of rate is the worst case of 802.11b; 54Mbps of rate is the worst case of 802.11g ; 6Mbps of rate is the worst case of 802.11n(HT20) ; 65Mbps of rate is the worst case of 802.11n(HT40)
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.
Instruments Used:	Refer to section 4.10 for details
Test Results:	Pass

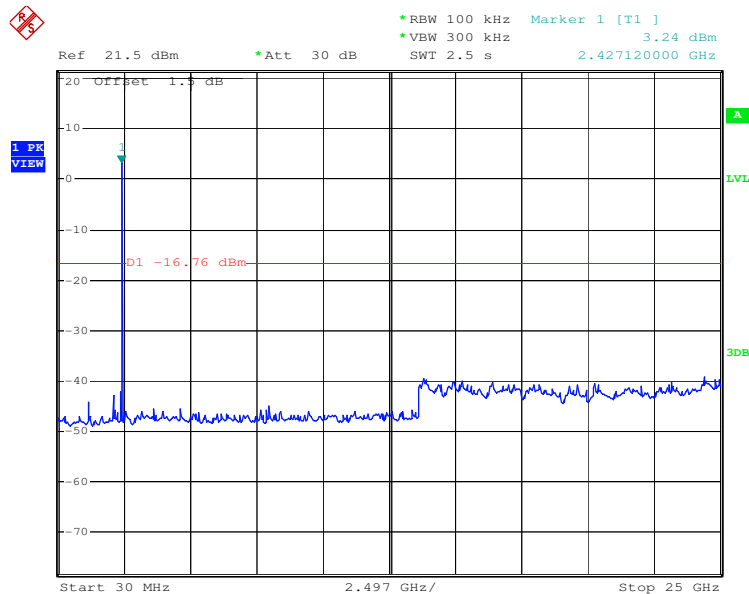


Test plot as follows:

Test mode:	802.11b	Test channel:	Lowest
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Test mode:	802.11b	Test channel:	Middle
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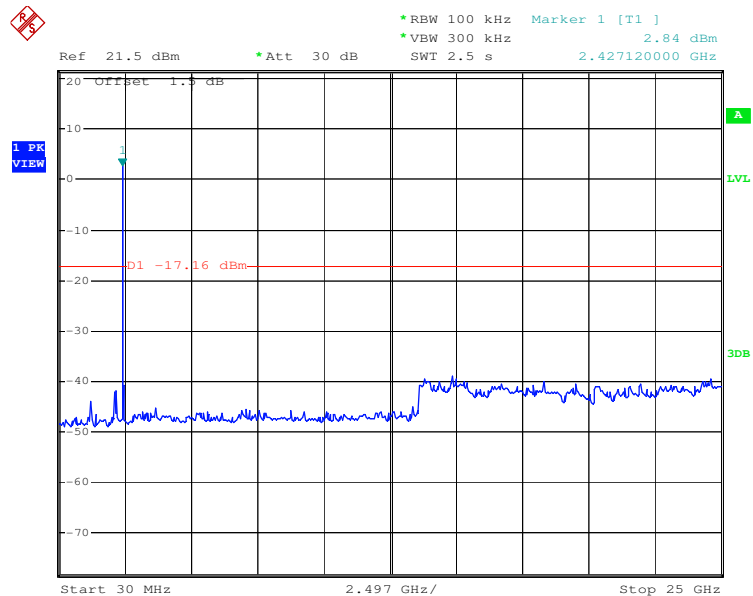


SGS-CSTC Standards Technical Services Ltd.

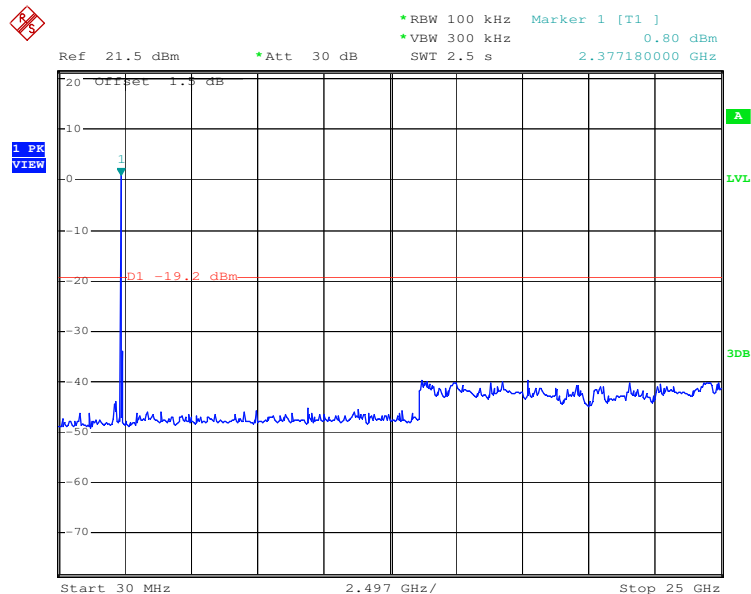
Report No.: SZEM120500266501

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Test mode:	802.11b	Test channel:	Highest
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Test mode:	802.11g	Test channel:	Lowest
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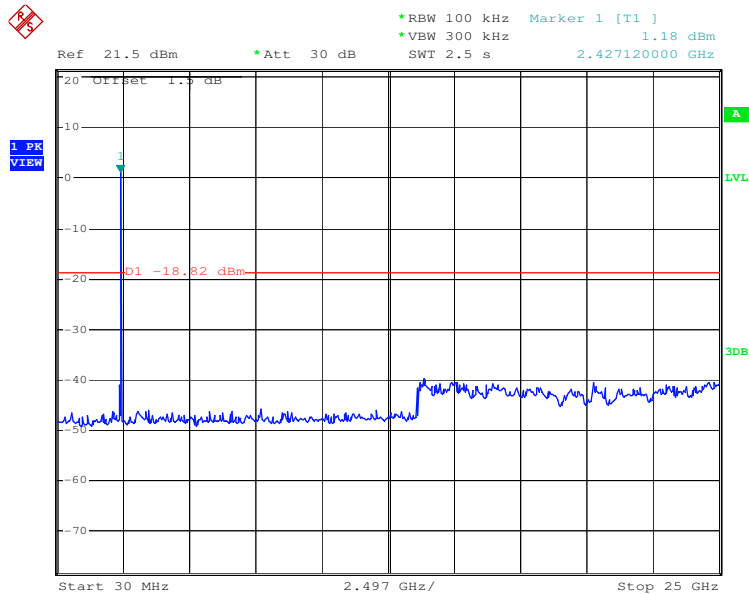


SGS-CSTC Standards Technical Services Ltd.

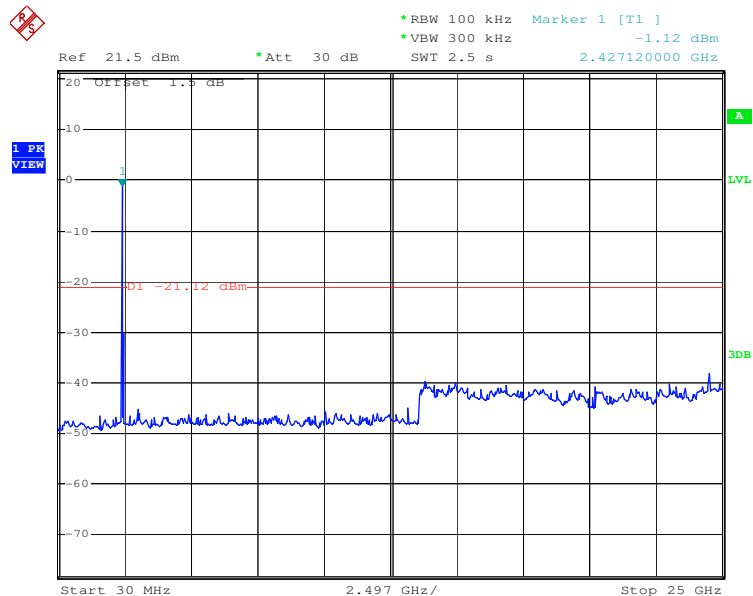
Report No.: SZEM120500266501

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Test mode:	802.11g	Test channel:	Middle
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Test mode:	802.11g	Test channel:	Highest
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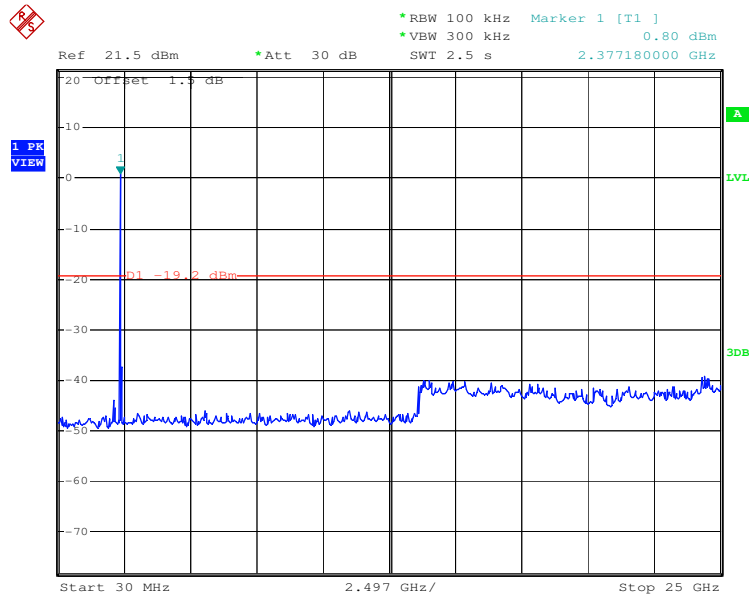


SGS-CSTC Standards Technical Services Ltd.

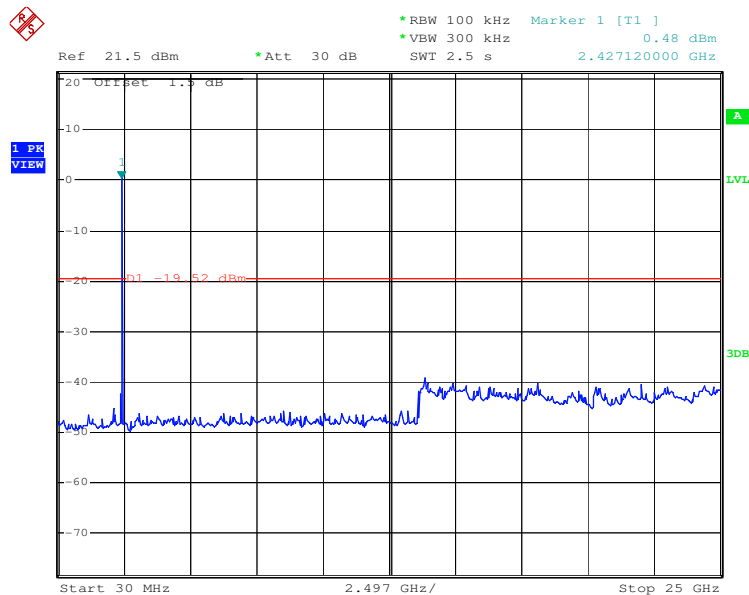
Report No.: SZEM120500266501

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Test mode:	802.11n(HT20)	Test channel:	Lowest
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Test mode:	802.11n(HT20)	Test channel:	Middle
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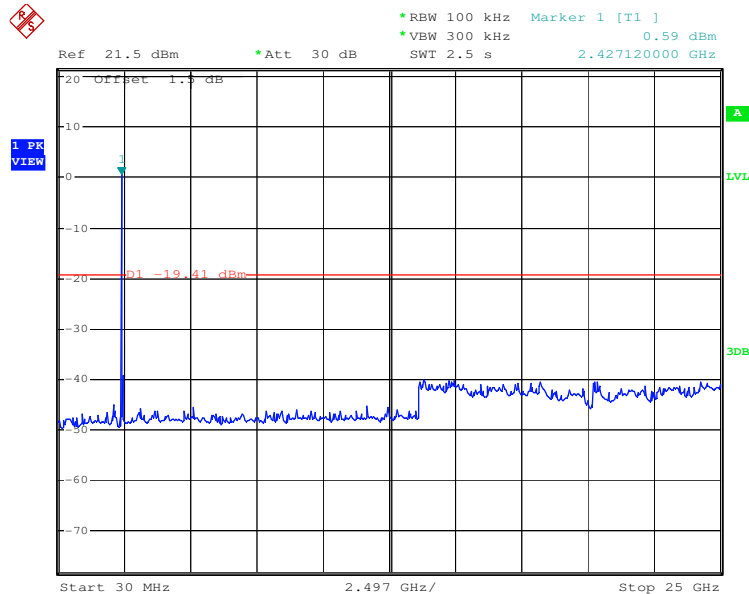


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Test mode:	802.11n(HT20)	Test channel:	Highest
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5.8 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205				
Test Method:	ANSI C63.10 2009 and KDB558074 D01				
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	100 kHz	300kHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3
	Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.				

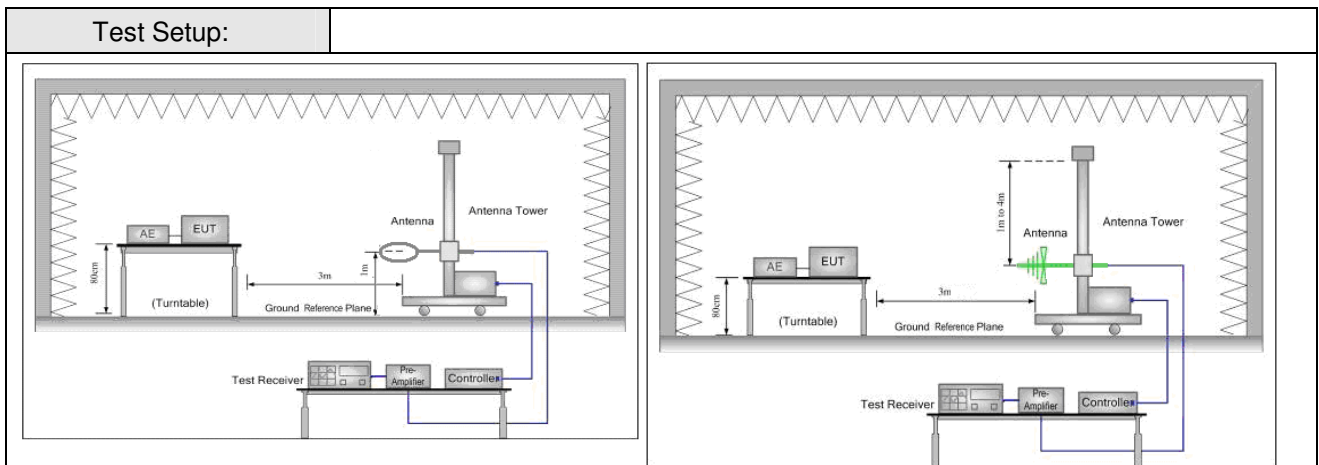


Figure 1. Below 30MHz

Figure 2. 30MHz to 1GHz

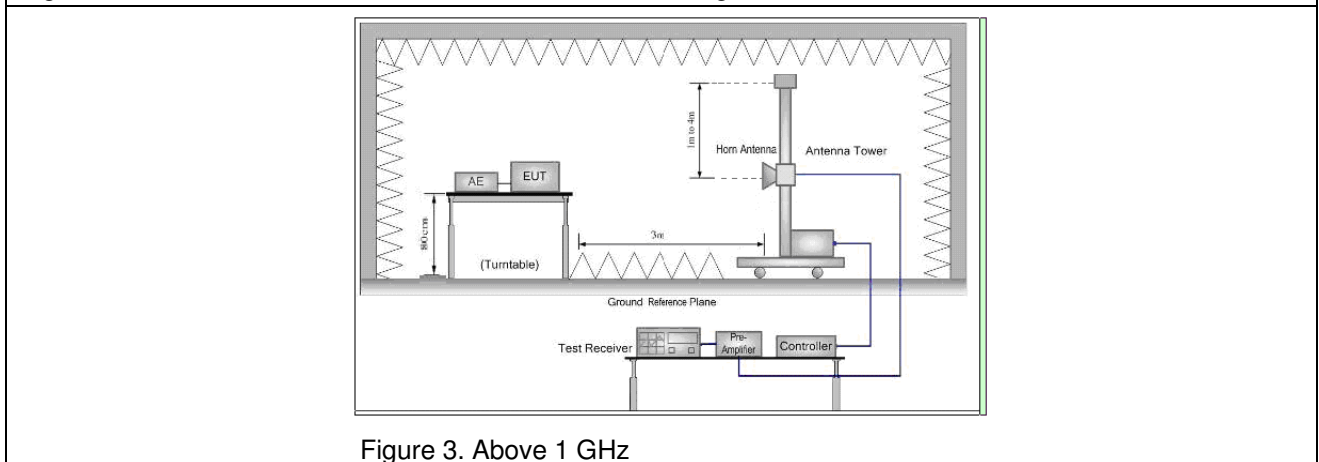


Figure 3. Above 1 GHz

<p>Test Procedure:</p>	<ol style="list-style-type: none"> a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB
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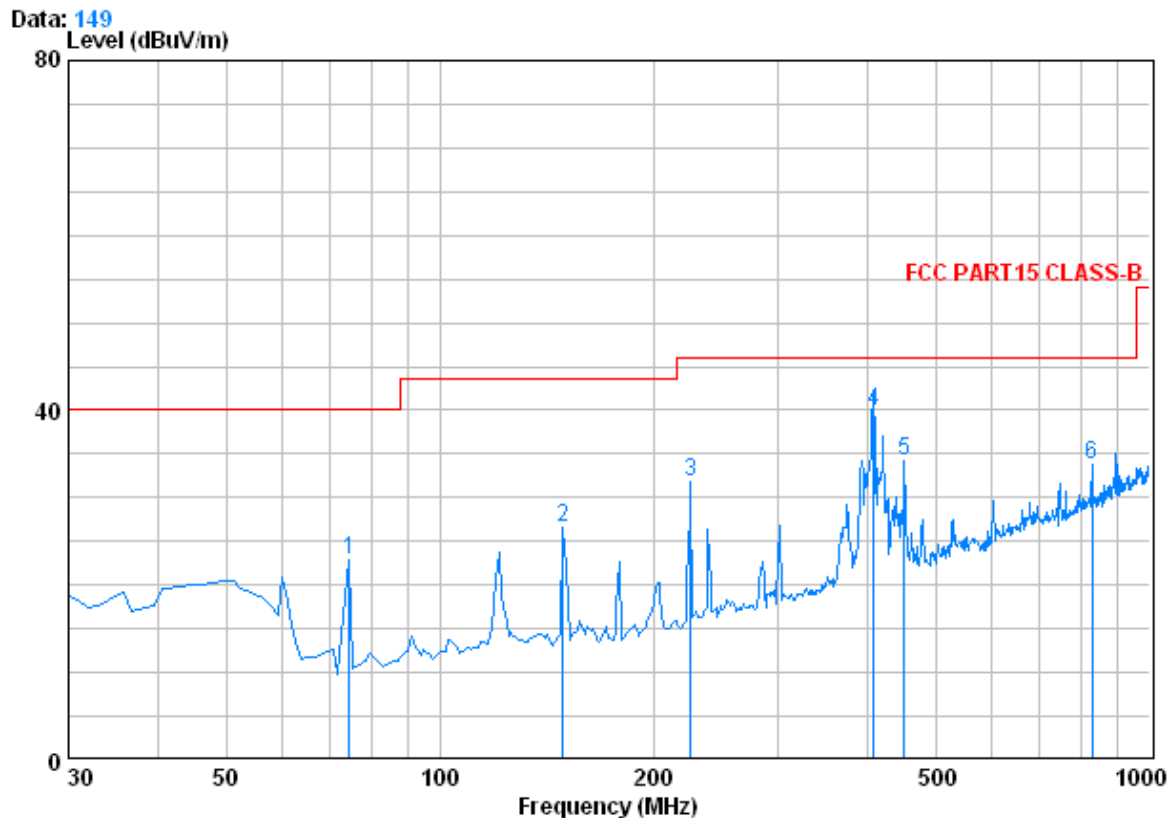
	<p>margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</p> <p>g. Test the EUT in the lowest channel ,the middle channel ,the Highest channel</p> <p>h. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.</p> <p>i. Repeat above procedures until all frequencies measured was complete.</p>
Exploratory Test Mode:	Charge +Transmitting mode
Final Test Mode:	Through Pre-scan, find the 11Mbps of rate is the worst case of 802.11b; 54Mbps of rate is the worst case of 802.11g; 65Mbps of rate is the worst case of 802.11n (HT20).
Instruments Used:	Refer to section 4.10 for details
Test Results:	Pass

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5.8.1 Radiated emission below 1GHz

30MHz~1GHz (QP)		
Test mode:	Charge +Transmitting	Vertical



Condition : FCC PART15 CLASS-B 3m 3142C VERTICAL

Job No. : 2665IT

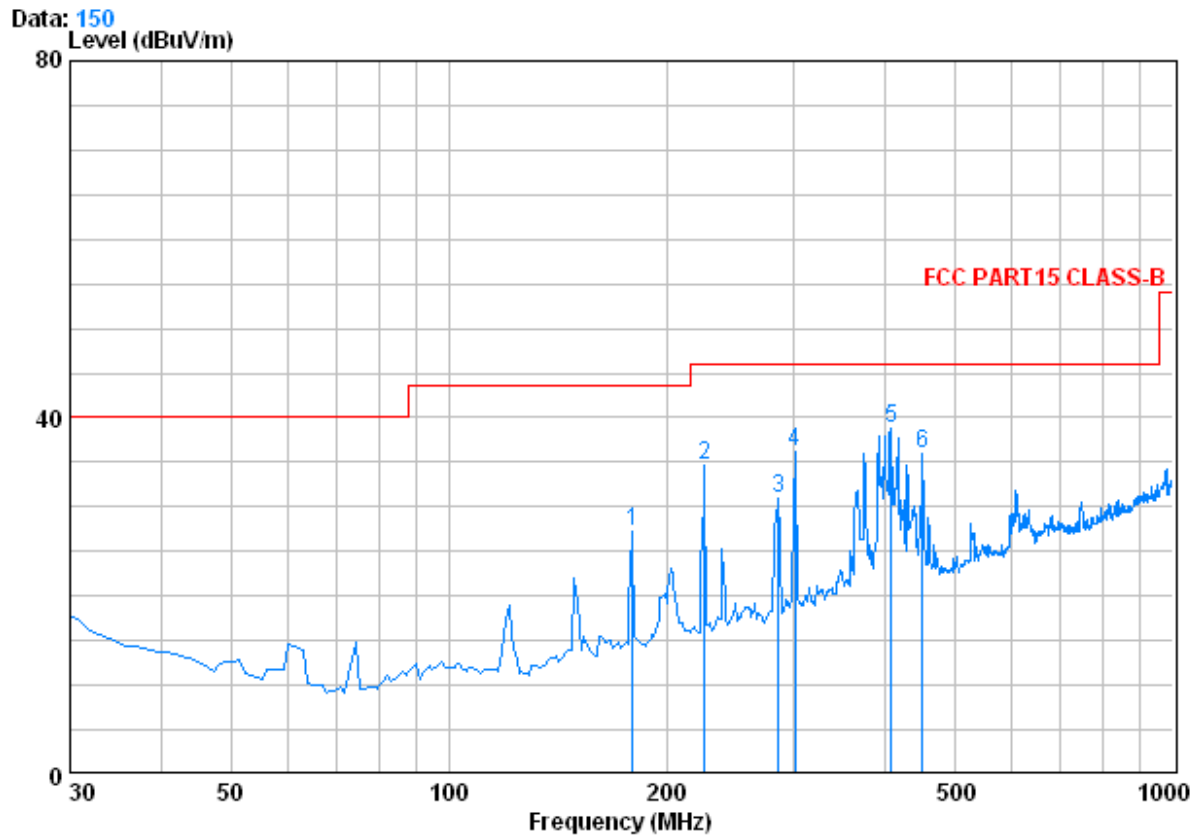
Mode : charge+TX

	Freq	CableAntenna Loss	Preamplifier Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	74.620	0.95	7.28	27.24	41.95	22.93	40.00 -17.07
2	149.310	1.32	8.91	26.91	43.30	26.61	43.50 -16.89
3	225.940	1.55	11.53	26.61	45.35	31.81	46.00 -14.19
4 @	408.300	2.24	16.33	27.19	48.62	40.00	46.00 -6.00
5	450.980	2.41	16.90	27.44	42.35	34.22	46.00 -11.78
6	828.310	3.32	22.40	27.13	35.27	33.86	46.00 -12.14

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Test mode:	Charge +Transmitting	Horizontal
------------	----------------------	------------



Condition : FCC PART15 CLASS-B 3m3142C HORIZONTAL

Job No. : 2665IT

Mode : charge+TX

		Cable	Antenna	Preamp	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	179.380	1.37	9.87	26.78	42.77	27.24	43.50	-16.26
2	225.940	1.55	11.53	26.61	48.11	34.58	46.00	-11.42
3	285.110	1.83	13.26	26.44	42.39	31.05	46.00	-14.95
4	300.630	1.90	13.90	26.40	46.80	36.20	46.00	-9.80
5 0	408.300	2.24	16.33	27.19	47.47	38.85	46.00	-7.15
6	450.980	2.41	16.90	27.44	44.20	36.07	46.00	-9.93

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**5.8.2 Transmitter emission above 1GHz**

Test mode:		802.11b		Test channel:		Lowest		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	
1340.089	2.41	27.82	39.29	49.03	39.97	74	-34.03	Vertical	
2246.737	2.93	32.23	39.75	57.24	52.65	74	-21.35	Vertical	
3625.669	3.84	33.34	40.76	52.04	48.46	74	-25.54	Vertical	
4821.757	4.70	34.68	41.64	50.84	48.58	74	-25.42	Vertical	
6428.771	5.24	36.20	40.55	49.54	50.43	74	-23.57	Vertical	
9441.913	6.03	37.14	37.94	47.42	52.65	74	-21.35	Vertical	
1724.166	2.66	29.83	39.45	51.38	44.42	74	-29.58	Horizontal	
2246.737	2.93	32.23	39.75	58.23	53.64	74	-20.36	Horizontal	
3112.129	3.41	33.36	40.38	49.65	46.04	74	-27.96	Horizontal	
4024.520	4.18	33.89	41.05	49.92	46.94	74	-27.06	Horizontal	
6156.505	5.17	35.88	40.79	49.66	49.92	74	-24.08	Horizontal	
8042.903	6.20	36.01	39.15	49.18	52.24	74	-21.76	Horizontal	

Test mode:		802.11b		Test channel:		Middle		Remark:	Peak
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization	
1593.340	2.58	28.84	39.39	48.96	40.99	74	-33.01	Vertical	
2229.645	2.92	32.20	39.74	56.64	52.02	74	-21.98	Vertical	
3662.775	3.87	33.41	40.79	52.38	48.87	74	-25.13	Vertical	
5850.919	5.07	35.45	41.06	49.47	48.93	74	-25.07	Vertical	
8462.975	6.18	36.19	38.78	48.98	52.57	74	-21.43	Vertical	
10480.590	6.09	38.28	37.65	47.06	53.78	74	-20.22	Vertical	
1367.659	2.43	27.88	39.29	50.28	41.30	74	-32.70	Horizontal	
2269.730	2.94	32.30	39.77	56.31	51.78	74	-22.22	Horizontal	
3662.775	3.87	33.41	40.79	50.04	46.53	74	-27.47	Horizontal	
5631.725	5.00	35.09	41.24	48.67	47.52	74	-26.48	Horizontal	
7489.599	6.10	36.00	39.62	48.14	50.62	74	-23.38	Horizontal	
10269.320	6.04	38.02	37.56	46.03	52.53	74	-21.47	Horizontal	

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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	
2252.463	2.93	32.27	39.75	53.00	48.45	74	-25.55	Vertical	
3700.260	3.91	33.45	40.81	52.65	49.20	74	-24.80	Vertical	
4676.696	4.61	34.92	41.54	49.01	47.00	74	-27.00	Vertical	
6816.394	5.35	35.99	40.22	48.72	49.84	74	-24.16	Vertical	
7413.726	6.02	35.97	39.69	48.78	51.08	74	-22.92	Vertical	
10427.370	6.08	38.22	37.62	46.09	52.77	74	-21.23	Vertical	
1621.985	2.59	29.09	39.41	50.04	42.31	74	-31.69	Horizontal	
2246.737	2.93	32.23	39.75	57.03	52.44	74	-21.56	Horizontal	
3700.260	3.91	33.45	40.81	50.90	47.45	74	-26.55	Horizontal	
5674.896	5.01	35.18	41.20	49.85	48.84	74	-25.16	Horizontal	
7470.558	6.08	35.99	39.64	48.74	51.17	74	-22.83	Horizontal	
10480.590	6.09	38.28	37.65	46.43	53.15	74	-20.85	Horizontal	

Test mode:		802.11g		Test channel:		Lowest		Remark:	Peak
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization	
2246.737	2.93	32.23	39.75	56.16	51.56	74	-22.44	Vertical	
3625.669	3.84	33.34	40.76	49.59	46.01	74	-27.99	Vertical	
4785.075	4.68	34.73	41.61	48.53	46.33	74	-27.67	Vertical	
6903.705	5.45	35.90	40.13	48.72	49.94	74	-24.06	Vertical	
7547.013	6.17	36.00	39.57	48.83	51.43	74	-22.57	Vertical	
10560.940	6.11	38.32	37.68	46.02	52.77	74	-21.23	Vertical	
2246.737	2.93	32.23	39.75	57.84	53.25	74	-20.75	Horizontal	
3625.669	3.84	33.34	40.76	51.09	47.51	74	-26.49	Horizontal	
4629.319	4.57	35.01	41.50	49.19	47.27	74	-26.73	Horizontal	
6094.137	5.15	35.82	40.84	49.21	49.34	74	-24.66	Horizontal	
6903.705	5.45	35.90	40.13	49.41	50.63	74	-23.37	Horizontal	
9346.262	6.06	37.01	38.03	47.75	52.79	74	-21.21	Horizontal	

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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	
2229.645	2.92	32.20	39.74	56.59	51.97	74	-22.03	Vertical	
3662.775	3.87	33.41	40.79	50.95	47.44	74	-26.56	Vertical	
5674.896	5.01	35.18	41.20	48.87	47.86	74	-26.14	Vertical	
6478.053	5.25	36.26	40.51	48.79	49.79	74	-24.21	Vertical	
7547.013	6.17	36.00	39.57	47.94	50.54	74	-23.46	Vertical	
10888.510	6.19	38.46	37.81	45.98	52.82	74	-21.18	Vertical	
2246.737	2.93	32.23	39.75	57.16	52.57	74	-21.43	Horizontal	
3863.900	4.05	33.63	40.94	49.87	46.61	74	-27.39	Horizontal	
5086.523	4.81	34.48	41.71	49.83	47.41	74	-26.59	Horizontal	
6678.987	5.30	36.13	40.33	49.20	50.30	74	-23.70	Horizontal	
7413.726	6.02	35.97	39.69	48.98	51.28	74	-22.72	Horizontal	
10453.950	6.09	38.24	37.64	47.18	53.87	74	-20.13	Horizontal	

Test mode:		802.11g		Test channel:		Highest		Remark:	Peak
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization	
2246.737	2.93	32.23	39.75	56.78	52.19	74	-21.81	Vertical	
3700.260	3.91	33.45	40.81	53.14	49.69	74	-24.31	Vertical	
4455.890	4.47	35.06	41.37	49.92	48.08	74	-25.92	Vertical	
6156.505	5.17	35.88	40.79	49.54	49.80	74	-24.20	Vertical	
6956.627	5.48	35.85	40.08	49.96	51.21	74	-22.79	Vertical	
9251.580	6.08	36.89	38.11	47.45	52.31	74	-21.69	Vertical	
2246.737	2.93	32.23	39.75	57.84	53.25	74	-20.75	Horizontal	
3700.260	3.91	33.45	40.81	49.88	46.43	74	-27.57	Horizontal	
4641.118	4.59	34.98	41.51	48.56	46.62	74	-27.38	Horizontal	
6494.564	5.26	36.28	40.50	49.08	50.12	74	-23.88	Horizontal	
8022.456	6.20	36.01	39.16	48.31	51.36	74	-22.64	Horizontal	
10321.740	6.05	38.08	37.58	45.55	52.10	74	-21.90	Horizontal	

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Test mode:		802.11n(HT20)		Test channel:		Lowest		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	
1724.166	2.66	29.83	39.45	50.71	43.75	74	-30.25	Vertical	
2246.737	2.93	32.23	39.75	58.47	53.88	74	-20.12	Vertical	
3625.669	3.84	33.34	40.76	51.57	47.99	74	-26.01	Vertical	
5138.579	4.82	34.53	41.66	50.24	47.93	74	-26.07	Vertical	
7547.013	6.17	36.00	39.57	48.51	51.11	74	-22.89	Vertical	
9441.913	6.03	37.14	37.94	47.37	52.60	74	-21.40	Vertical	
1880.038	2.75	30.94	39.51	46.81	40.99	74	-33.01	Horizontal	
2246.737	2.93	32.23	39.75	57.95	53.36	74	-20.64	Horizontal	
3634.910	3.85	33.37	40.77	48.77	45.22	74	-28.78	Horizontal	
5191.168	4.84	34.60	41.62	50.43	48.25	74	-25.75	Horizontal	
6544.350	5.27	36.27	40.45	48.89	49.98	74	-24.02	Horizontal	
9346.262	6.06	37.01	38.03	46.73	51.77	74	-22.23	Horizontal	

Test mode:		802.11n(HT20)		Test channel:		Middle		Remark:	Peak
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization	
1495.101	2.51	28.10	39.35	49.76	41.02	74	-32.98	Vertical	
2246.737	2.93	32.23	39.75	57.49	52.90	74	-21.10	Vertical	
3662.775	3.87	33.41	40.79	53.08	49.57	74	-24.43	Vertical	
5631.725	5.00	35.09	41.24	49.59	48.44	74	-25.56	Vertical	
6816.394	5.35	35.99	40.22	50.03	51.15	74	-22.85	Vertical	
8703.294	6.17	36.36	38.59	47.98	51.92	74	-22.08	Vertical	
1795.839	2.71	30.32	39.48	48.06	41.61	74	-32.39	Horizontal	
2229.645	2.92	32.20	39.74	56.87	52.25	74	-21.75	Horizontal	
3208.660	3.49	33.32	40.45	49.08	45.44	74	-28.56	Horizontal	
4594.102	4.55	35.06	41.47	49.99	48.13	74	-25.87	Horizontal	
6544.350	5.27	36.27	40.45	50.98	52.07	74	-21.93	Horizontal	
7394.878	6.00	35.96	39.71	49.49	51.74	74	-22.26	Horizontal	

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Test mode:		802.11n(HT20)		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			
1759.638	2.69	30.07	39.46	48.83	42.13	74	-31.87	Vertical			
2252.000	2.93	32.27	39.75	51.60	47.05	74	-26.95	Vertical			
3700.260	3.91	33.45	40.81	53.07	49.62	74	-24.38	Vertical			
4490.048	4.48	35.15	41.40	48.95	47.18	74	-26.82	Vertical			
5338.579	4.90	34.73	41.50	49.48	47.61	74	-26.39	Vertical			
6494.564	5.26	36.28	40.50	49.71	50.75	74	-23.25	Vertical			
1773.127	2.70	30.07	39.47	53.48	46.78	74	-27.22	Horizontal			
2246.737	2.93	32.23	39.75	56.74	52.15	74	-21.85	Horizontal			
3690.853	3.90	33.43	40.81	49.83	46.35	74	-27.65	Horizontal			
5138.579	4.82	34.53	41.66	49.85	47.54	74	-26.46	Horizontal			
6974.358	5.50	35.83	40.08	48.84	50.09	74	-23.91	Horizontal			
8022.456	6.20	36.01	39.16	48.24	51.29	74	-22.71	Horizontal			

Remark:

- 1) 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
- 2) The disturbance above 11GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.
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.

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5.9 Band Edge (Radiated Emission)

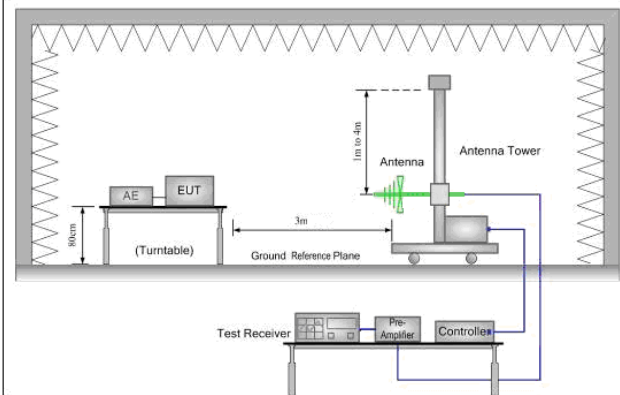
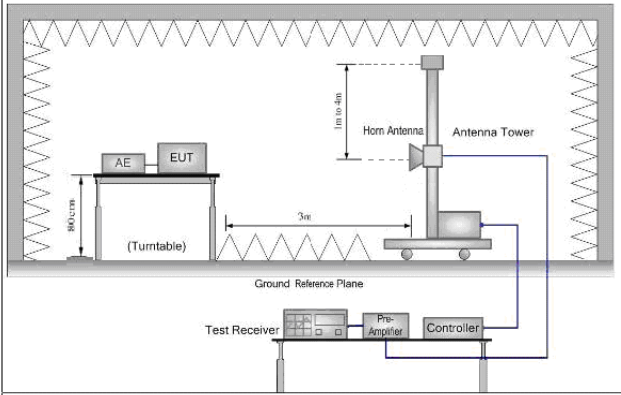
Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205		
Test Method:	ANSI C63.10 2009 and KDB558074 D01		
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)		
Limit:	Frequency	Limit (dBuV/m @3m)	Remark
	30MHz-88MHz	40.0	Quasi-peak Value
	88MHz-216MHz	43.5	Quasi-peak Value
	216MHz-960MHz	46.0	Quasi-peak Value
	960MHz-1GHz	54.0	Quasi-peak Value
	Above 1GHz	54.0	Average Value
		74.0	Peak Value
Test Setup:	<div style="display: flex; justify-content: space-around;">   </div>		

Figure 1. 30MHz to 1GHz

Figure 2. Above 1 GHz



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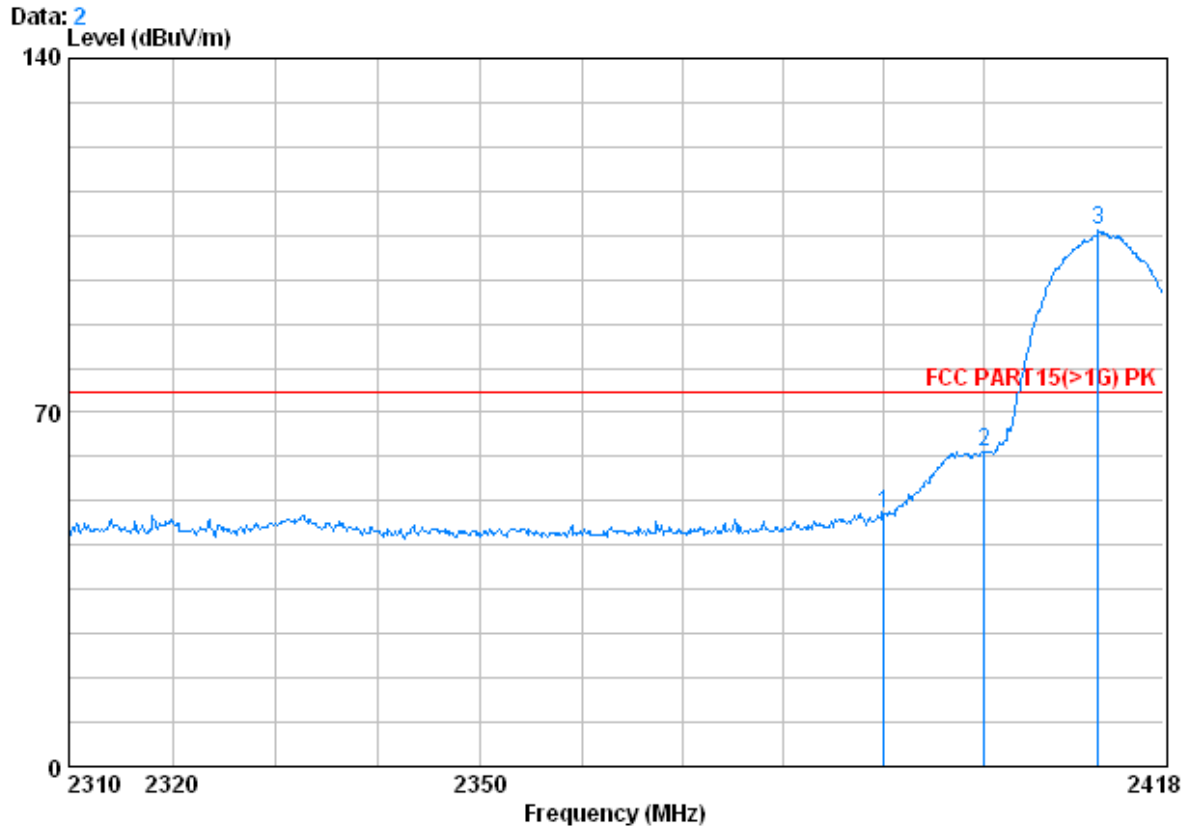
Test Procedure:	<ul style="list-style-type: none">a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channelg. Test the EUT in the lowest channel , the Highest channelh. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.i. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Charge + Transmitting mode
Final Test Mode:	Through Pre-scan, find the 11Mbps of rate is the worst case of 802.11b; 54Mbps of rate is the worst case of 802.11g ; 65Mbps of rate is the worst case of 802.11n(HT20).
Instruments Used:	Refer to section 4.10 for details
Test Results:	Pass

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Test plot as follows:

Test mode:	802.11b	Test channel:	Lowest	Remark:	Peak	Vertical
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Condition : FCC PART15(>1G) PK 3m VERTICAL
JOB : 2665IT
model : b 2412 bandedge

		CableAntenna Preamp			Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	54.30	49.94	74.00	-24.06
2	2400.000	2.98	32.51	39.86	66.50	62.14	74.00	-11.86
3 @	2411.412	2.99	32.54	39.86	110.38	106.05	74.00	32.05

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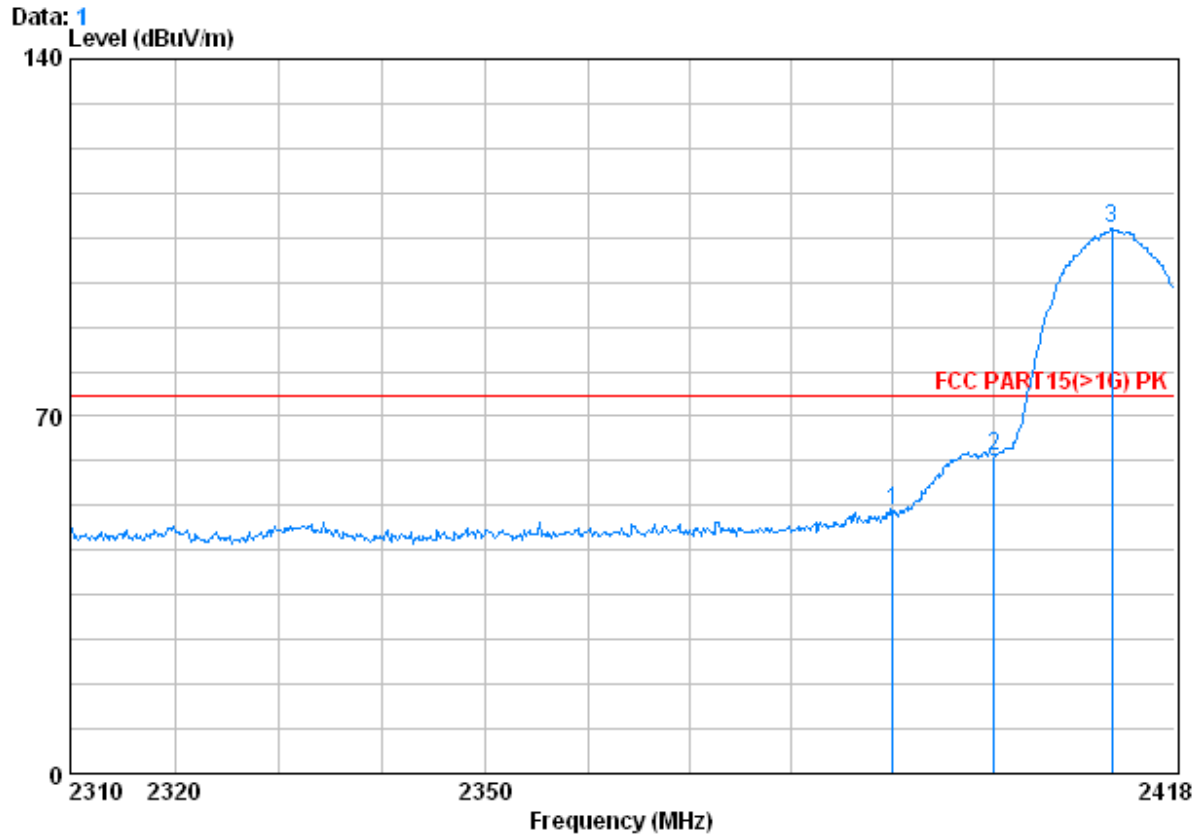


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Test mode:	802.11b	Test channel:	Lowest	Remark:	Peak	Horizontal
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Condition : FCC PART15(>1G) PK 3m HORIZONTAL
 JOB : 2665IT
 model : b 2412 bandedge

	Freq	Cable	Antenna	Preamp	Read	Limit	Over
		Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	55.75	51.40	74.00 -22.60
2	2400.000	2.98	32.51	39.86	66.61	62.24	74.00 -11.76
3	2411.736	2.99	32.54	39.86	111.31	106.98	74.00 32.98

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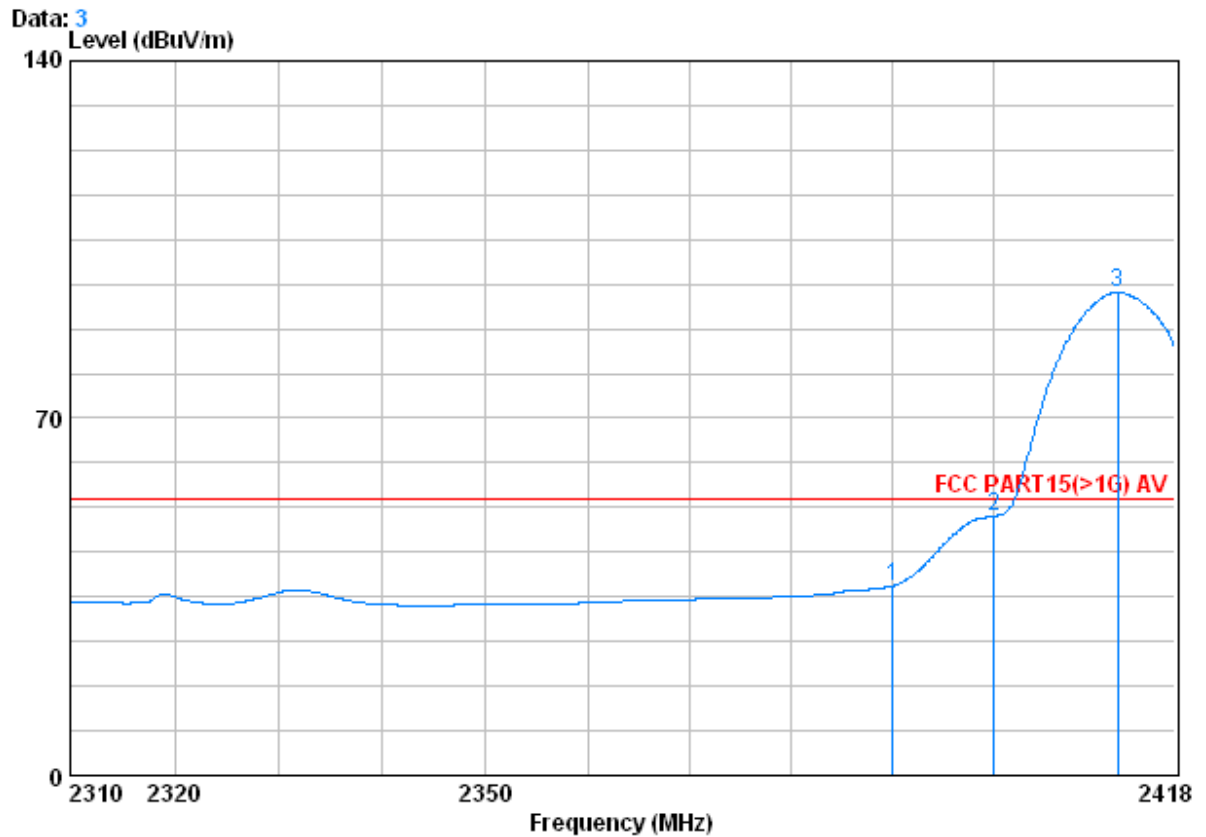


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Test mode:	802.11b	Test channel:	Lowest	Remark:	Average	Vertical
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Condition : FCC PART15(>1G) AV 3m VERTICAL
JOB : 2665IT
model : b 2412 bandedge

	Freq	Cable Loss	Antenna Factor	Preamplifier Factor	Read Level	Limit 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	41.53	37.18	54.00	-16.82
2	2400.000	2.98	32.51	39.86	55.25	50.89	54.00	-3.11
3 @	2412.276	2.99	32.54	39.86	98.97	94.64	54.00	40.64

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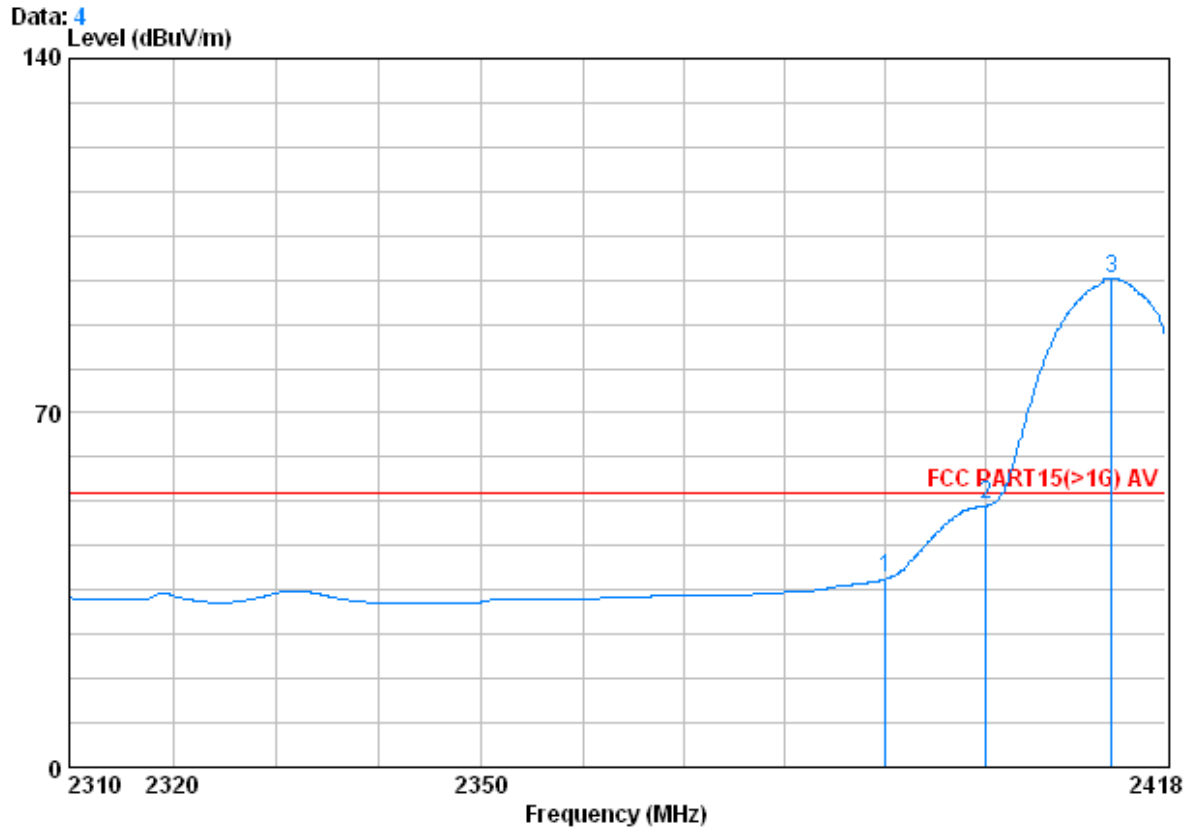


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Test mode:	802.11b	Test channel:	Lowest	Remark:	Average	Horizontal
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Condition : FCC PART15(>1G) AV 3m HORIZONTAL
JOB : 2665IT
model : b 2412 bandedge

	Freq	Cable	Antenna	Preamplifier	Read	Limit	Over
		Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	41.56	37.21	54.00 -16.79
2	2400.000	2.98	32.51	39.86	56.11	51.74	54.00 -2.26
3 @	2412.600	2.99	32.54	39.86	100.96	96.64	54.00 42.64

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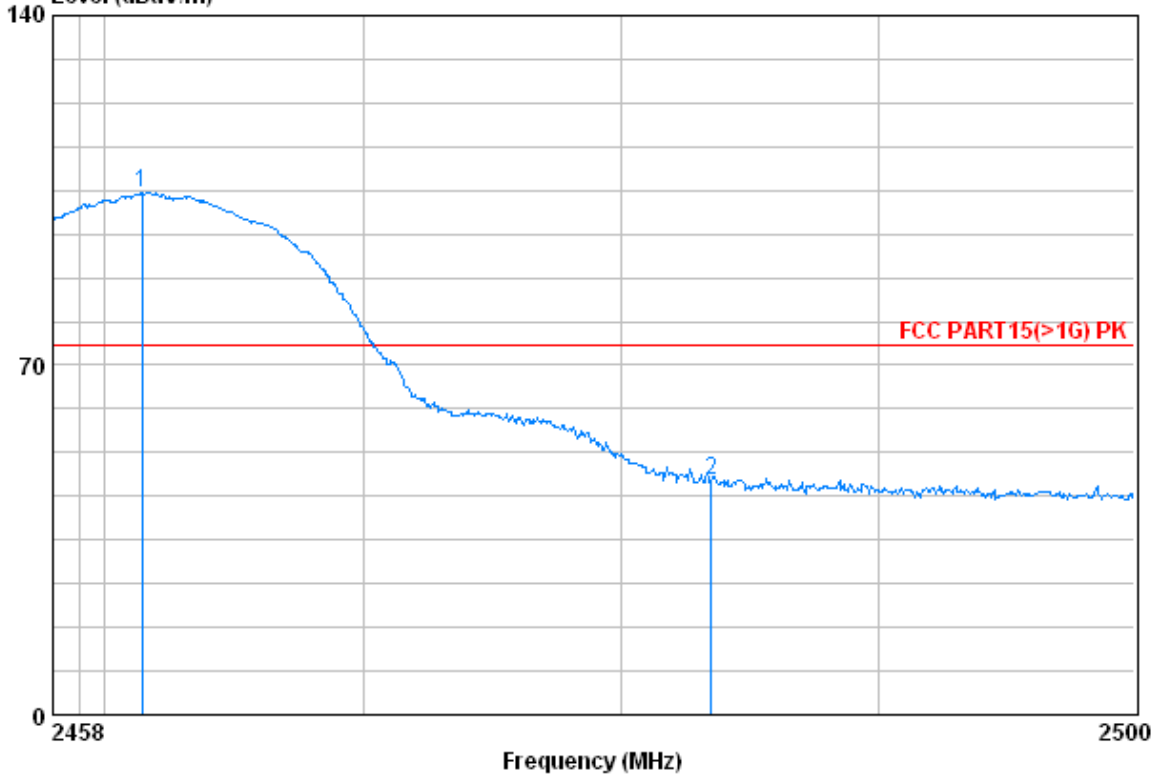
SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM120500266501

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Test mode:	802.11b	Test channel:	Highest	Remark:	Peak	Vertical
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Data: 7
Level (dBuV/m)



Condition : FCC PART15(>1G) PK 3m VERTICAL
JOB : 2665IT
model : b 2462 bandedge

	Freq	Cable Loss	Antenna Factor	Preamplifier Factor	Read Level	Limit Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2461.444	3.02	32.64	39.91	108.82	104.57	74.00	30.57
2	2483.500	3.03	32.67	39.92	51.17	46.95	74.00	-27.05

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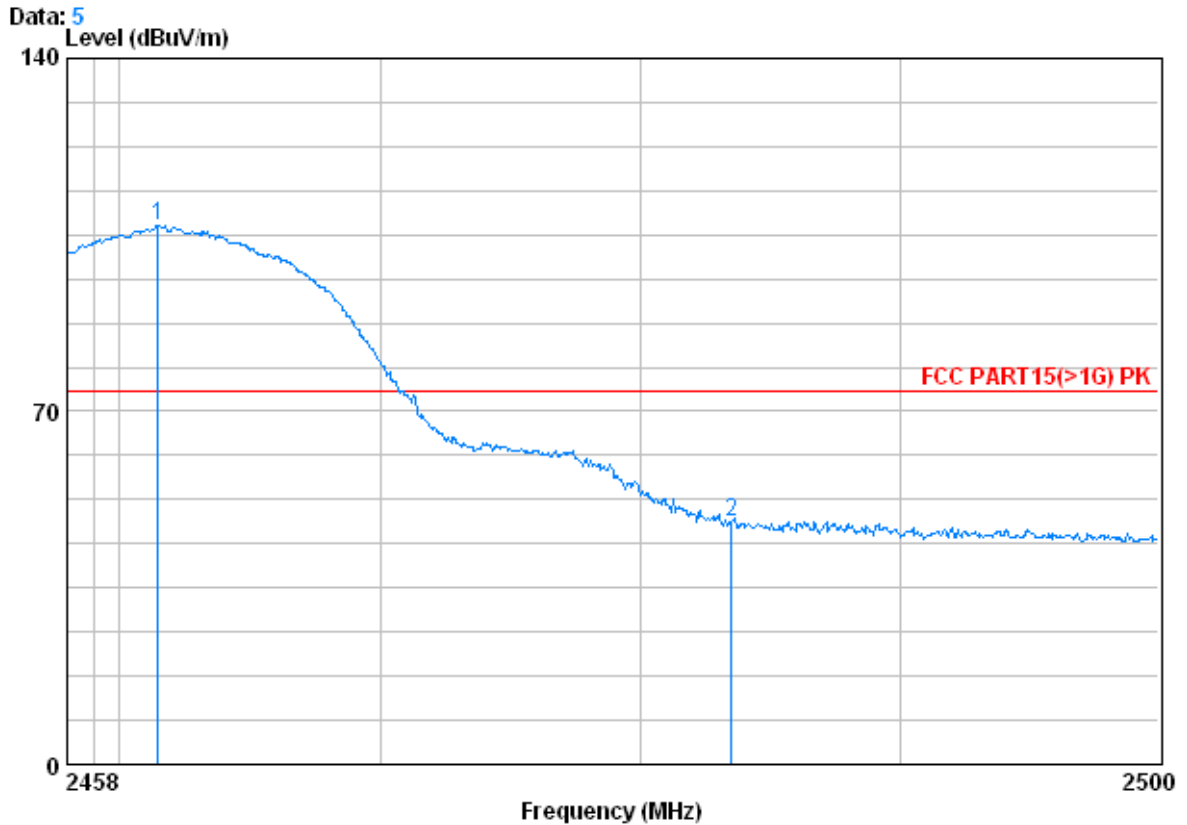


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Test mode:	802.11b	Test channel:	Highest	Remark:	Peak	Horizontal
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Condition : FCC PART15(>1G) PK 3m HORIZONTAL

JOB : 2665IT

model : b 2462 bandedge

	Freq	Cable Loss	Antenna Factor	Preamplifier Factor	Read Level	Level	Limit	Over
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2461.486	3.02	32.64	39.91	111.20	106.95	74.00	32.95
2	2483.500	3.03	32.67	39.92	52.46	48.24	74.00	-25.76

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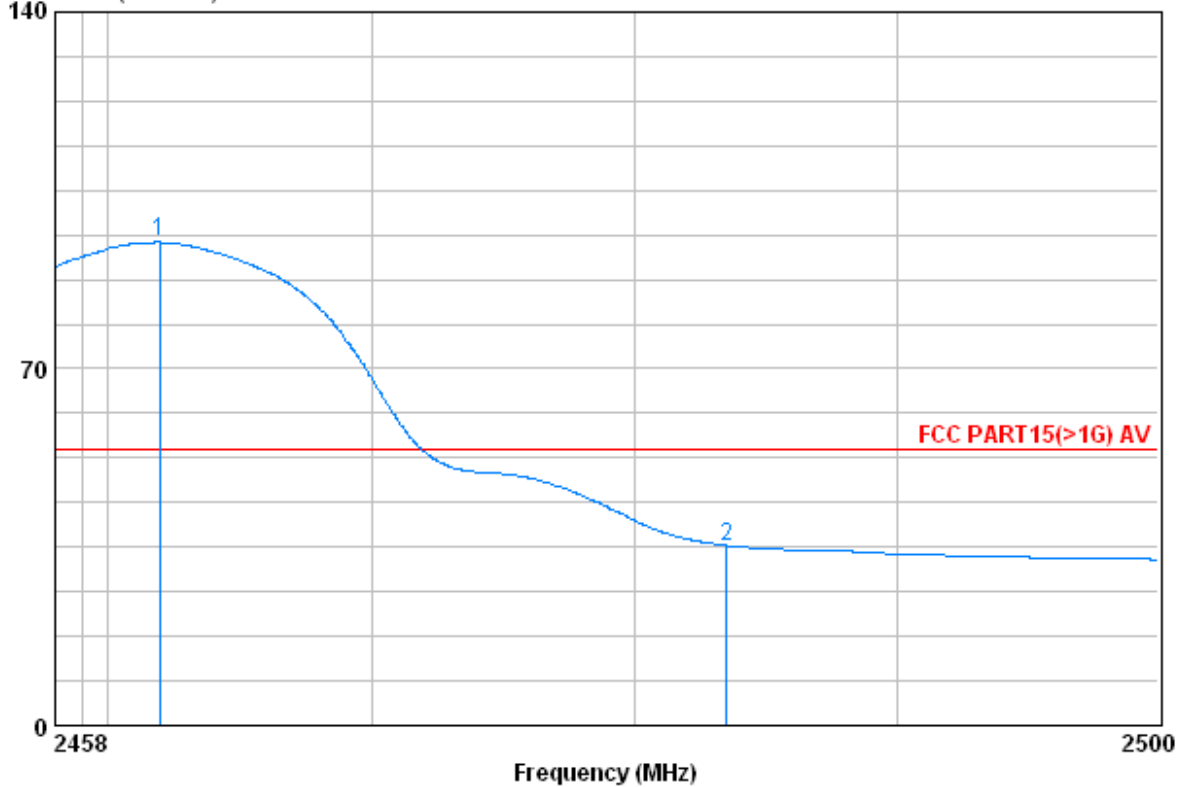
Report No.: SZEM120500266501

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Test mode:	802.11b	Test channel:	Highest	Remark:	Average	Vertical
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Data: 8

Level (dBuV/m)



Condition : FCC PART15(>1G) AV 3m VERTICAL
JOB : 2665IT
model : b 2462 bandedge

	Freq	Cable	Antenna	Preamplifier	Read	Limit	Over
	MHz	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	2461.948	3.02	32.64	39.91	99.07	94.82	54.00
2	2483.500	3.03	32.67	39.92	39.50	35.28	-18.72



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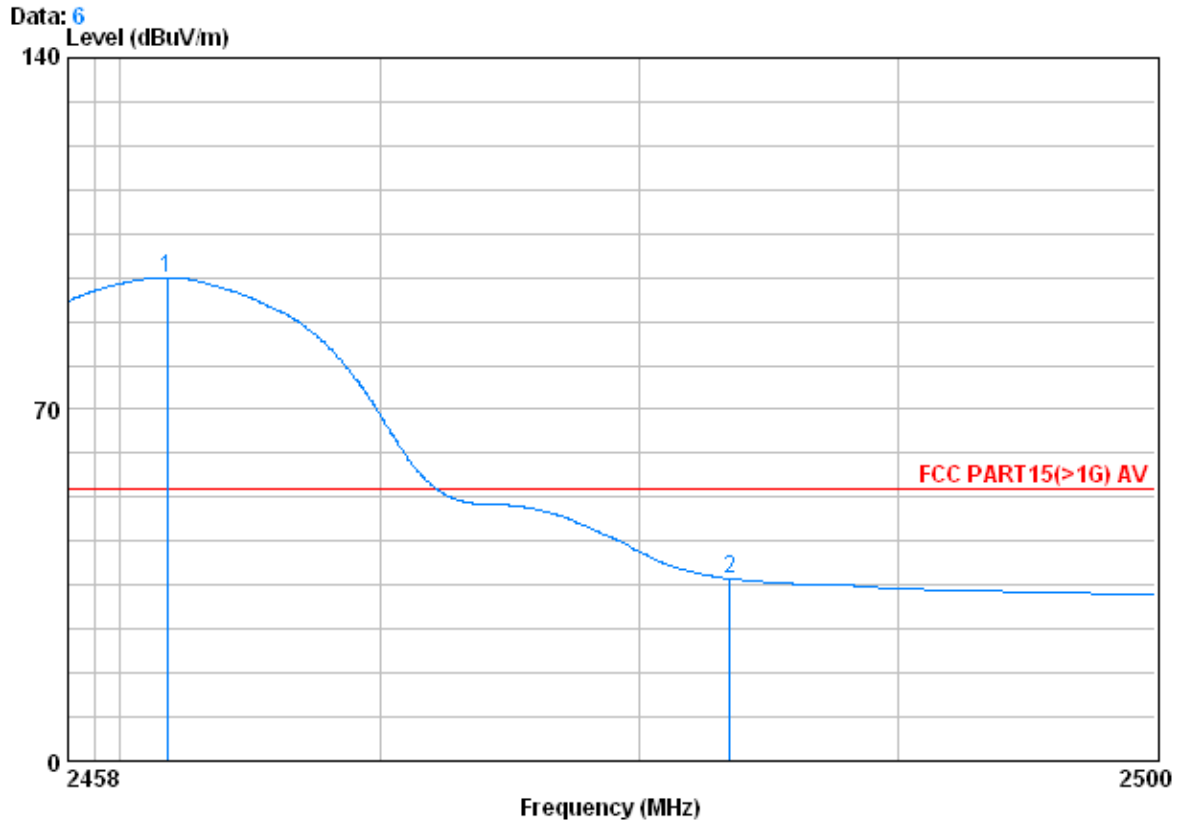


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Test mode:	802.11b	Test channel:	Highest	Remark:	Average	Horizontal
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Condition : FCC PART15(>1G) AV 3m HORIZONTAL

JOB : 2665IT

model : b 2462 bandedge

	Freq	Cable	Antenna	Preamp	Read	Limit	Over
		Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m
1	2461.822	3.02	32.64	39.91	100.42	96.18	54.00
2	2483.500	3.03	32.67	39.92	40.46	36.24	54.00

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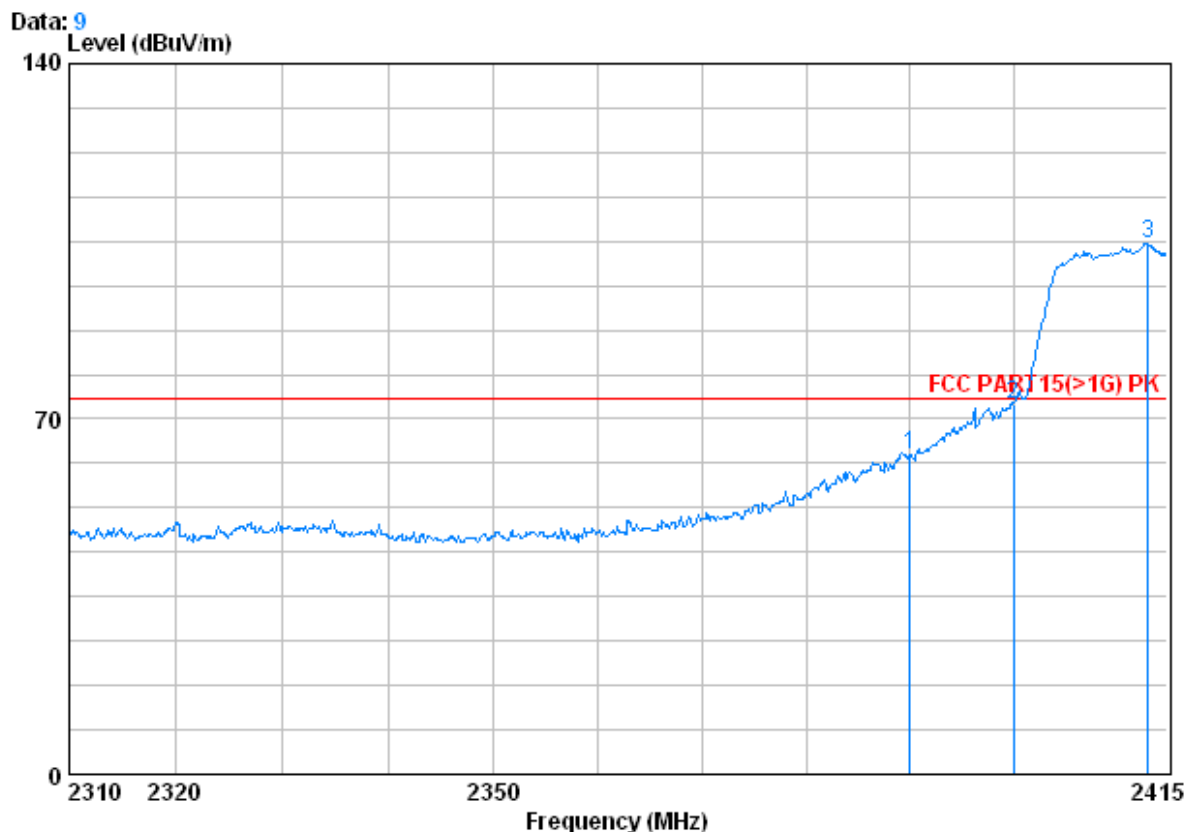


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Test mode:	802.11g	Test channel:	Lowest	Remark:	Peak	Vertical
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Condition : FCC PART15(>1G) PK 3m VERTICAL

JOB : 2665IT

model : g 2412 bandedge

	Freq	Cable Loss	Antenna Factor	Preamplifier Factor	Read Level	Level	Limit	Over
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	67.27	62.92	74.00	-11.08
2	2400.000	2.98	32.51	39.86	77.32	72.95	74.00	-1.05
3	2413.110	2.99	32.54	39.86	108.95	104.62	74.00	30.62

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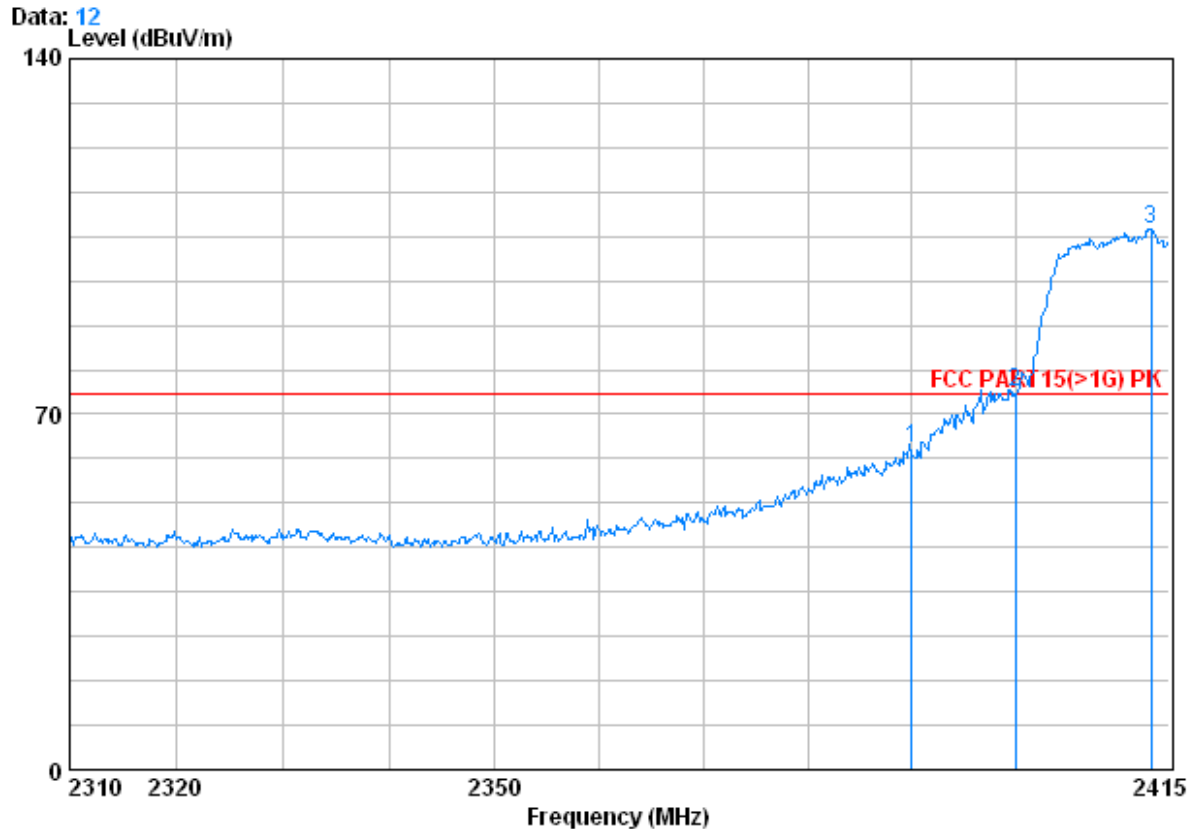


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Test mode:	802.11g	Test channel:	Lowest	Remark:	Peak	Horizontal
------------	---------	---------------	--------	---------	------	------------



Condition : FCC PART15(>1G) PK 3m HORIZONTAL
JOB : 2665IT
model : g 2412 bandedge

	Freq	Cable	Antenna	Preamplifier	Read	Limit	Over
		Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	67.62	63.27	74.00 -10.73
2 X	2400.000	2.98	32.51	39.86	78.63	74.27	74.00 0.27
3 @	2413.215	2.99	32.54	39.86	110.83	106.50	74.00 32.50

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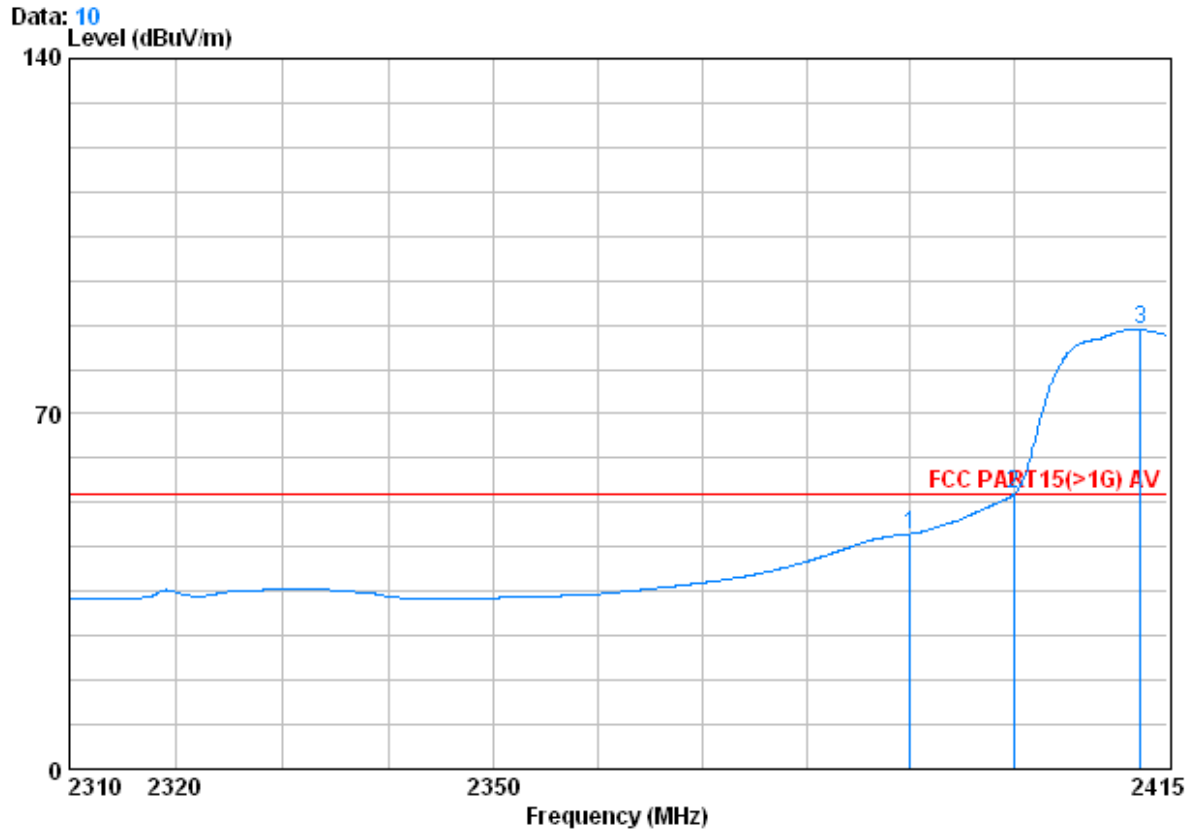


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Test mode:	802.11g	Test channel:	Lowest	Remark:	Average	Vertical
------------	---------	---------------	--------	---------	---------	----------



Condition : FCC PART15(>1G) AV 3m VERTICAL
JOB : 2665IT
model : g2412 bandedge

	Freq	CableAntenna	Preamp	Read	Limit	Over
		Loss	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m
1	2390.000	2.98	32.51	39.85	50.64	46.29
2 X	2400.000	2.98	32.51	39.86	58.39	54.02
3 Ø	2412.375	2.99	32.54	39.86	90.83	86.51

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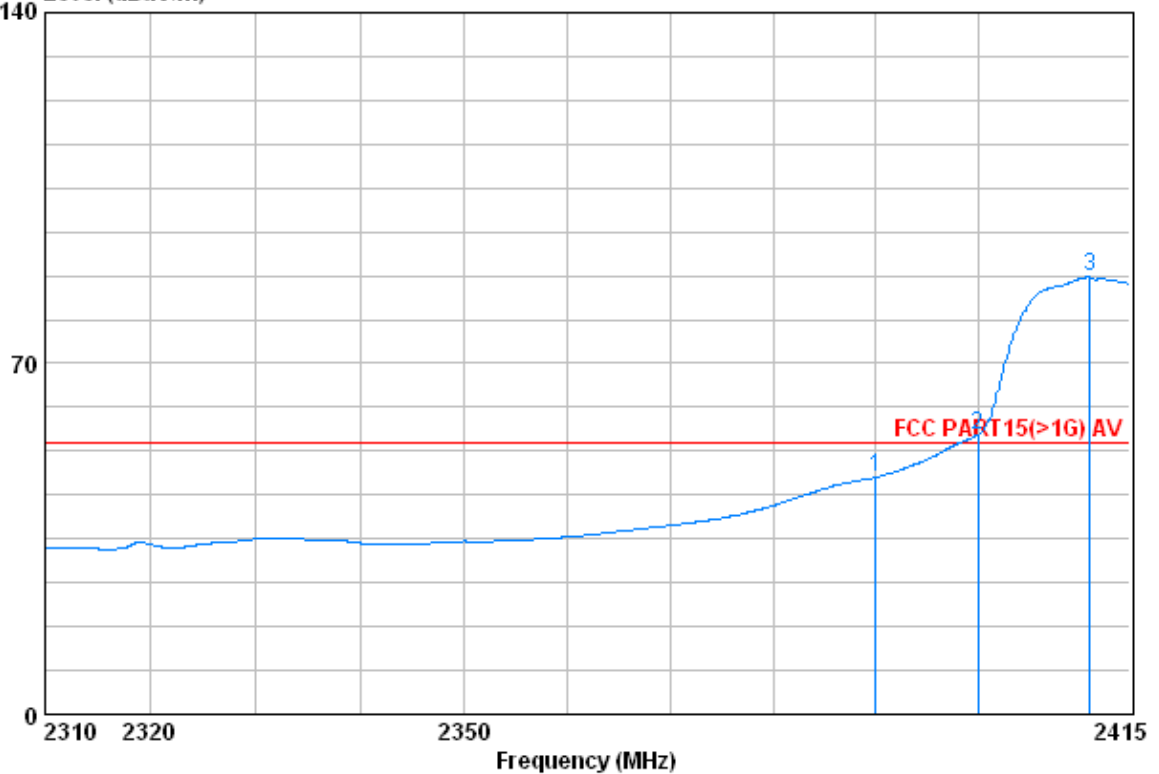
SGS-CSTC Standards Technical Services Ltd.

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Test mode:	802.11g	Test channel:	Lowest	Remark:	Average	Horizontal
------------	---------	---------------	--------	---------	---------	------------

Data: 11
Level (dBuV/m)



Condition : FCC PART15(>1G) AV 3m HORIZONTAL
JOB : 2665IT
model : g 2412 bandedge

	Freq	CableAntenna 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	51.65	47.30	54.00	-6.70
2 X	2400.000	2.98	32.51	39.86	60.08	55.71	54.00	1.71
3 Ø	2411.115	2.99	32.54	39.86	91.57	87.25	54.00	33.25

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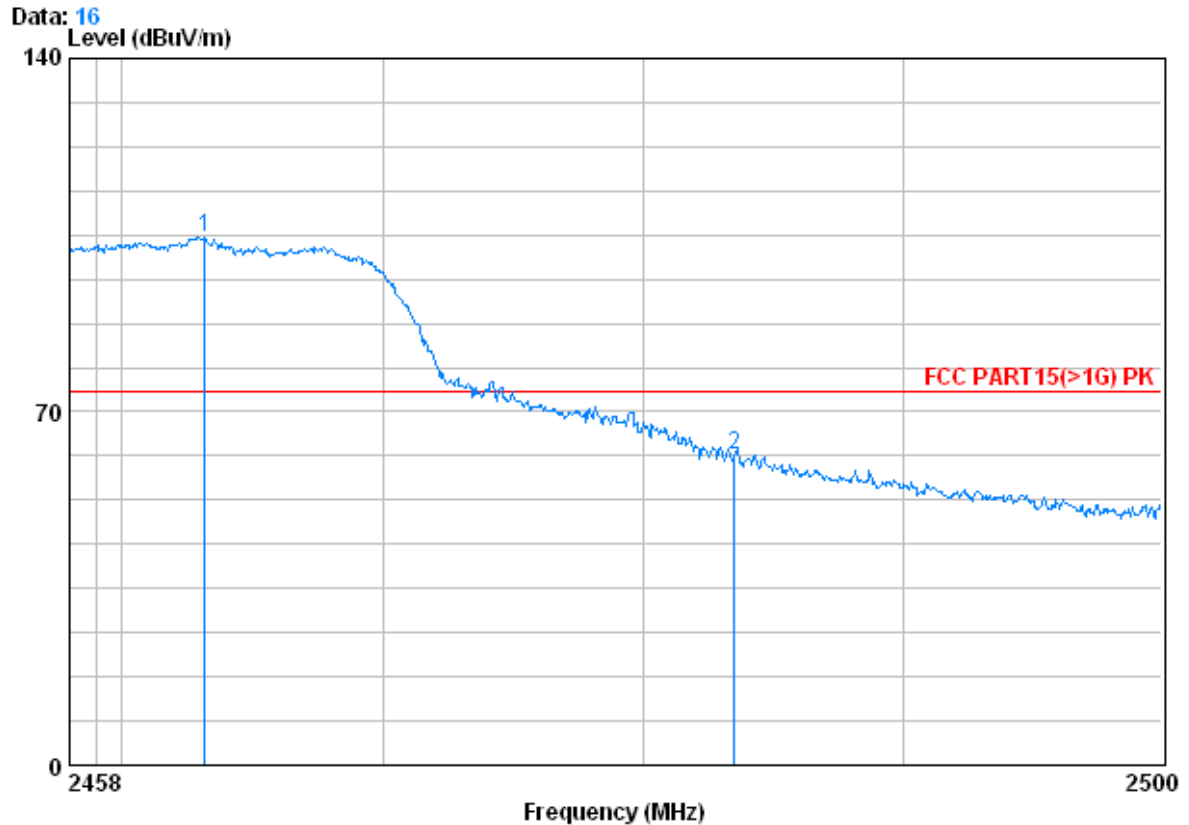


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Test mode:	802.11g	Test channel:	Highest	Remark:	Peak	Vertical
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Condition : FCC PART15(>1G) PK 3m VERTICAL

JOB : 2665IT

model : g2462 bandedge

	Freq	Cable	Antenna	Preamp	Read		Limit	Over
		Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2463.166	3.02	32.64	39.91	108.70	104.45	74.00	30.45
2	2483.500	3.03	32.67	39.92	65.69	61.47	74.00	-12.53

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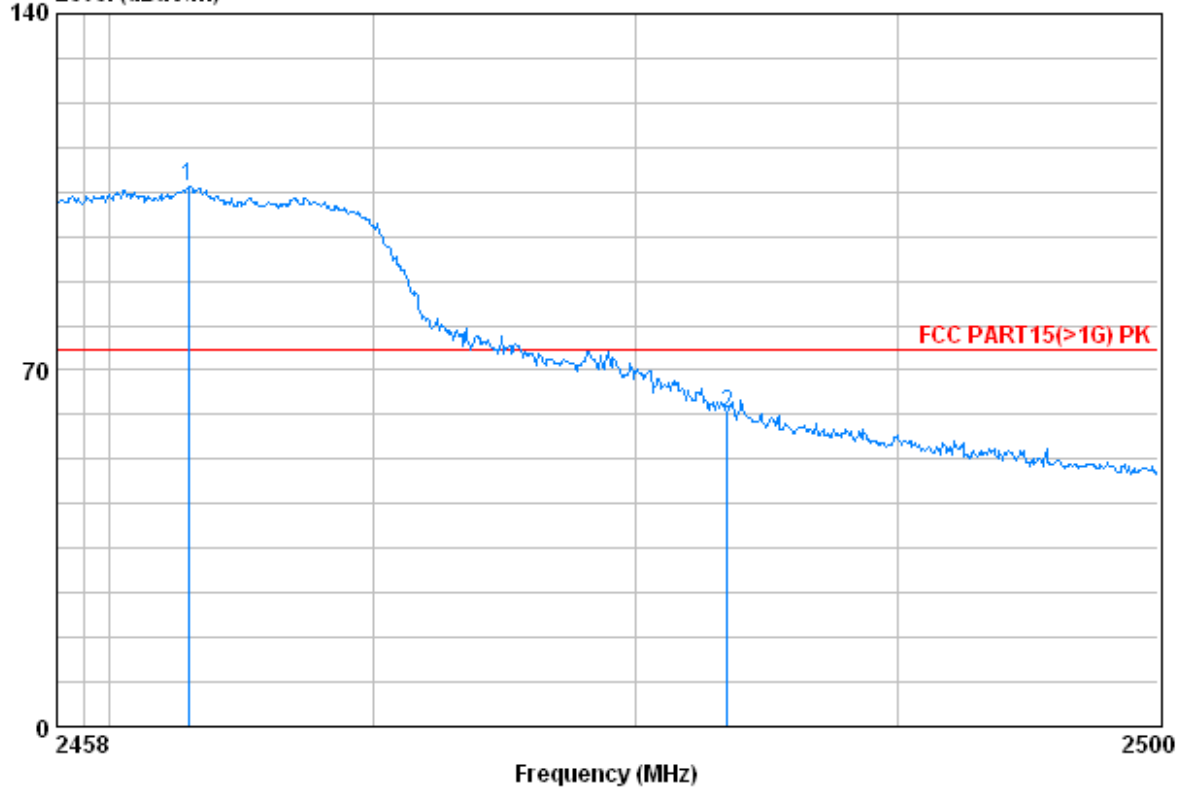
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Test mode:	802.11g	Test channel:	Highest	Remark:	Peak	Horizontal
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Data: 13

Level (dBuV/m)



Condition : FCC PART15(>1G) PK 3m HORIZONTAL

JOB : 2665IT

model : g 2462 bandedge

	Freq	Cable	Antenna	Preamp	Read	Limit	Over
	MHz	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	2462.998	3.02	32.64	39.91	110.40	106.15	74.00 32.15
2	2483.500	3.03	32.67	39.92	65.59	61.37	74.00 -12.63

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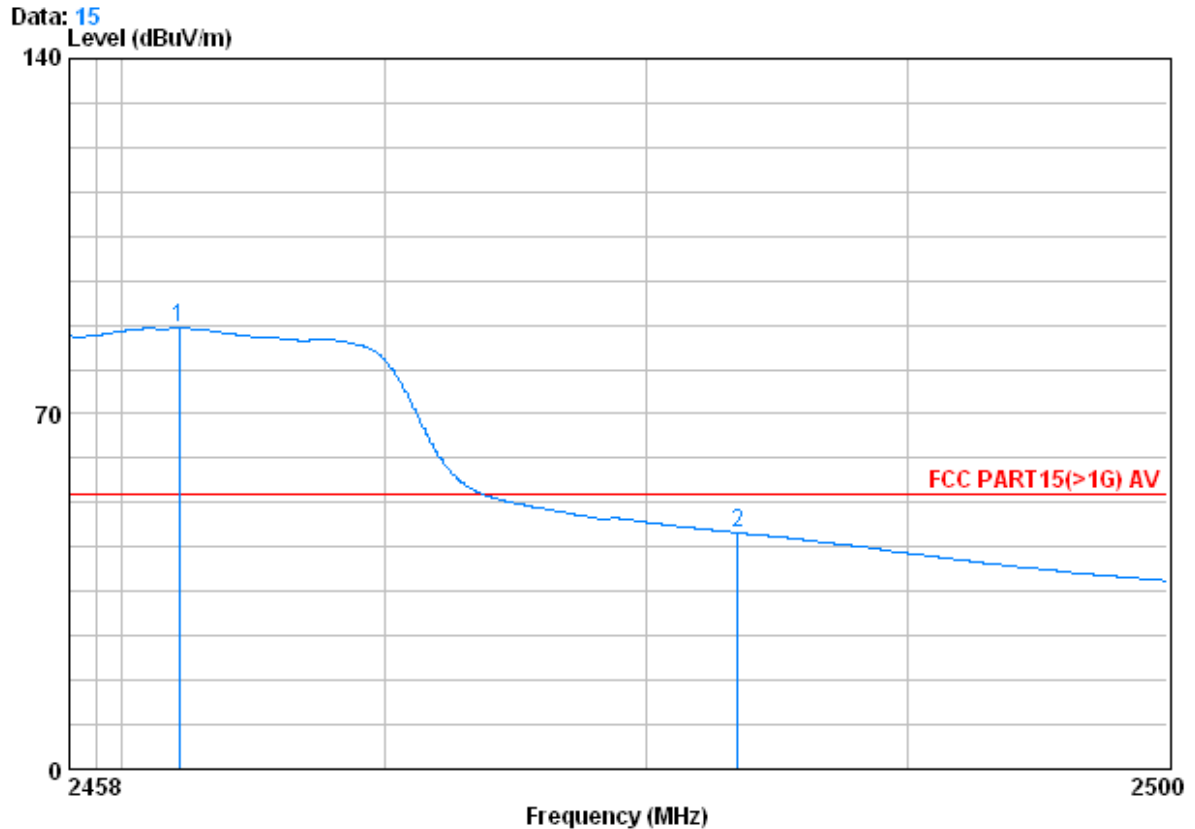


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Test mode:	802.11g	Test channel:	Highest	Remark:	Average	Vertical
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Condition : FCC PART15(>1G) AV 3m VERTICAL
JOB : 2665IT
model : g2462 bandedge

	Freq	Cable	Antenna	Preamp	Read	Limit	Over
	MHz	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1 0	2462.158	3.02	32.64	39.91	91.11	86.86	54.00
2	2483.500	3.03	32.67	39.92	50.79	46.57	54.00

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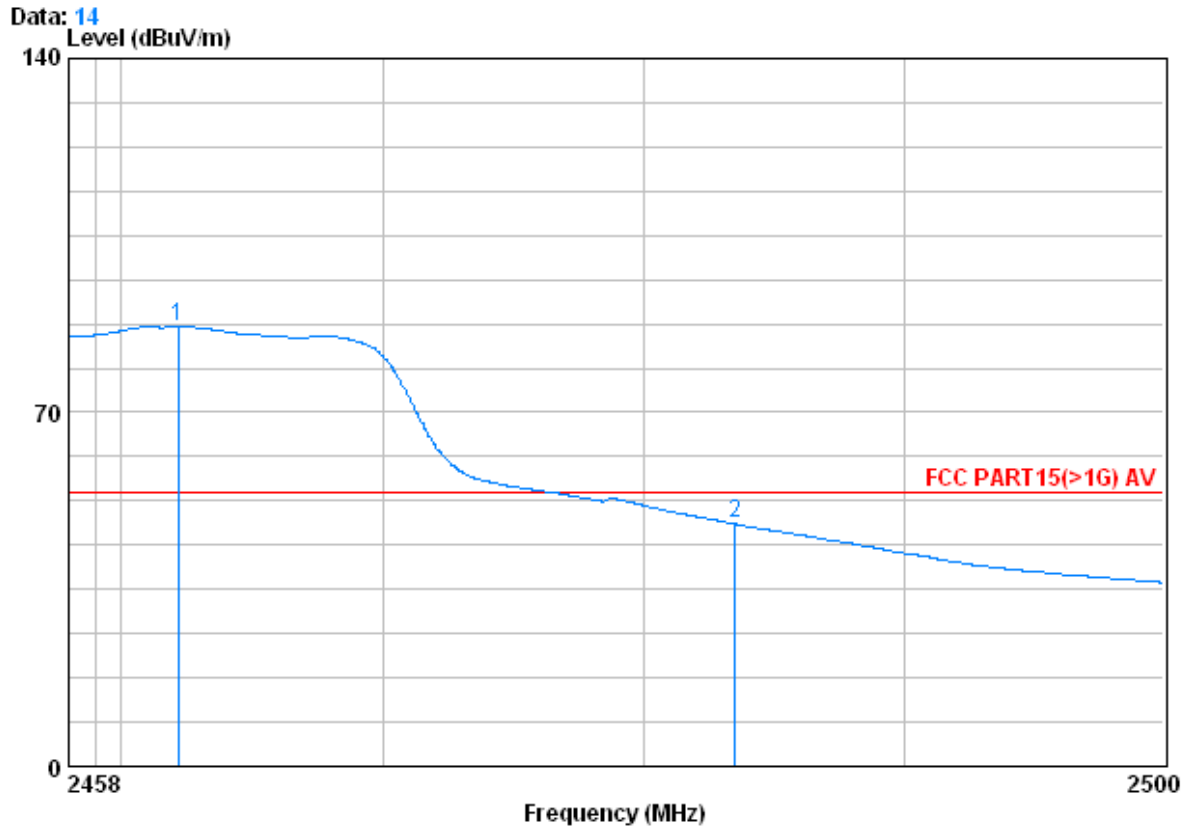


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Test mode:	802.11g	Test channel:	Highest	Remark:	Average	Horizontal
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Condition : FCC PART15(>1G) AV 3m HORIZONTAL

JOB : 2665IT

model : g 2462 bandedge

	Freq	Cable Loss	Antenna Factor	Preamplifier Factor	Read Level	Level	Limit	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @	2462.158	3.02	32.64	39.91	91.17	86.92	54.00	32.92
2	2483.500	3.03	32.67	39.92	52.13	47.91	54.00	-6.09

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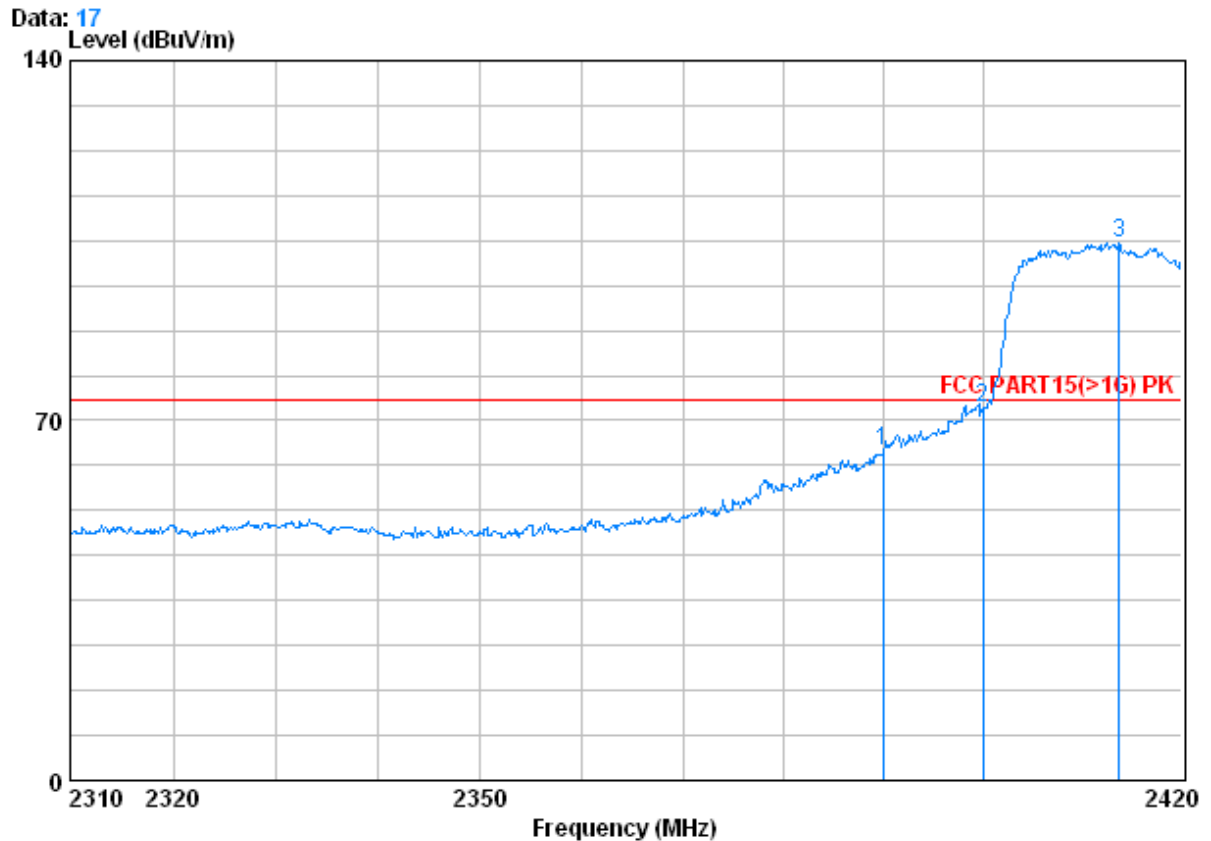


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Test mode:	802.11n(HT20)	Test channel:	Lowest	Remark:	Peak	Vertical
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Condition : FCC PART15(>1G) PK 3m VERTICAL

JOB : 2665IT

model : n(HT20) 2412 bandedge

		Cable&Antenna Preamp			Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	68.27	63.92	74.00	-10.08
2	2400.000	2.98	32.51	39.86	76.86	72.49	74.00	-1.51
3 @	2413.730	2.99	32.54	39.86	108.96	104.63	74.00	30.63



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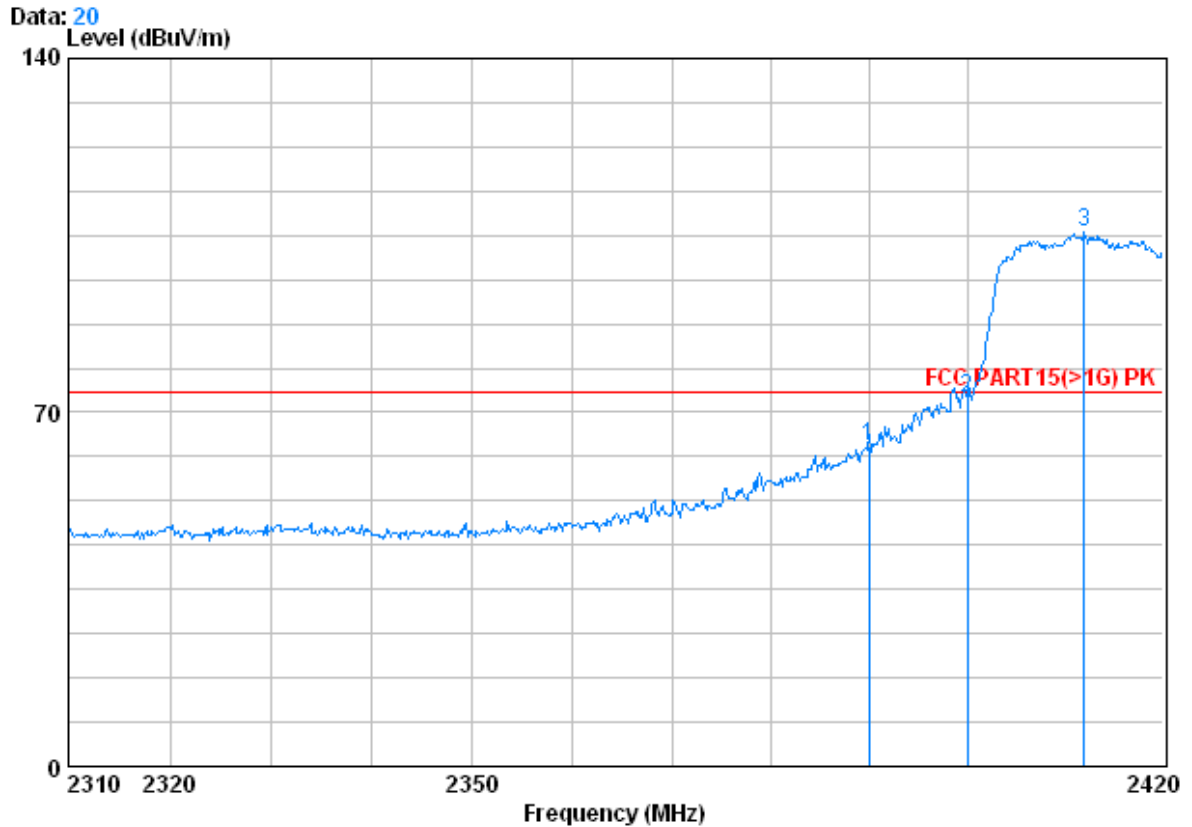


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Test mode:	802.11n(HT20)	Test channel:	Lowest	Remark:	Peak	Horizontal
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Condition : FCC PART15(>1G) PK 3m HORIZONTAL

JOB : 2665IT

model : n(HT20) 2412 bandedge

		Cable&Antenna			Preamp		Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m		dB
1	2390.000	2.98	32.51	39.85	67.65	63.30	74.00	-10.70	
2	2400.000	2.98	32.51	39.86	77.22	72.85	74.00	-1.15	
3 @	2411.970	2.99	32.54	39.86	109.94	105.61	74.00	31.61	

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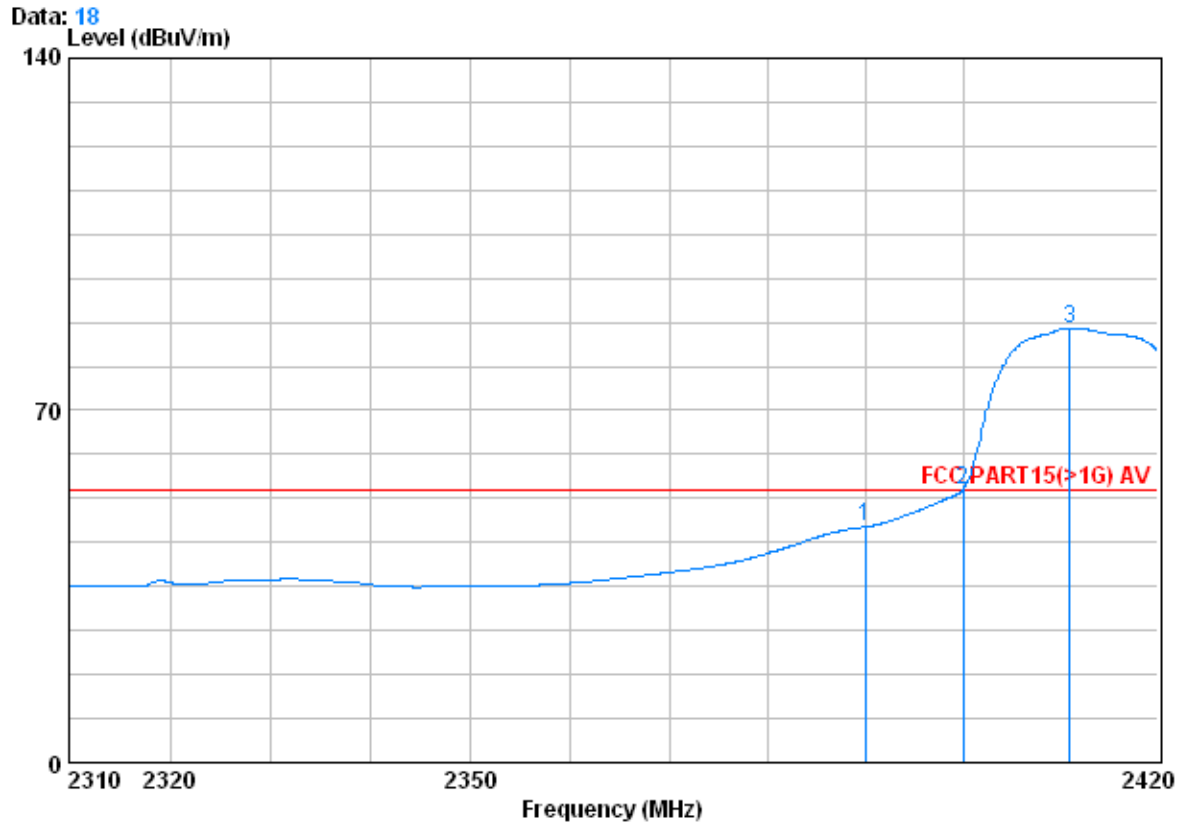


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Test mode:	802.11n(HT20)	Test channel:	Lowest	Remark:	Average	Vertical
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Condition : FCC PART15(>1G) AV 3m VERTICAL

JOB : 2665IT

model : n(HT20) 2412 bandedge

		CableAntenna		Preamp	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	51.17	46.82	54.00	-7.18
2 X	2400.000	2.98	32.51	39.86	58.43	54.06	54.00	0.06
3 Ø	2410.980	2.99	32.54	39.86	90.67	86.34	54.00	32.34

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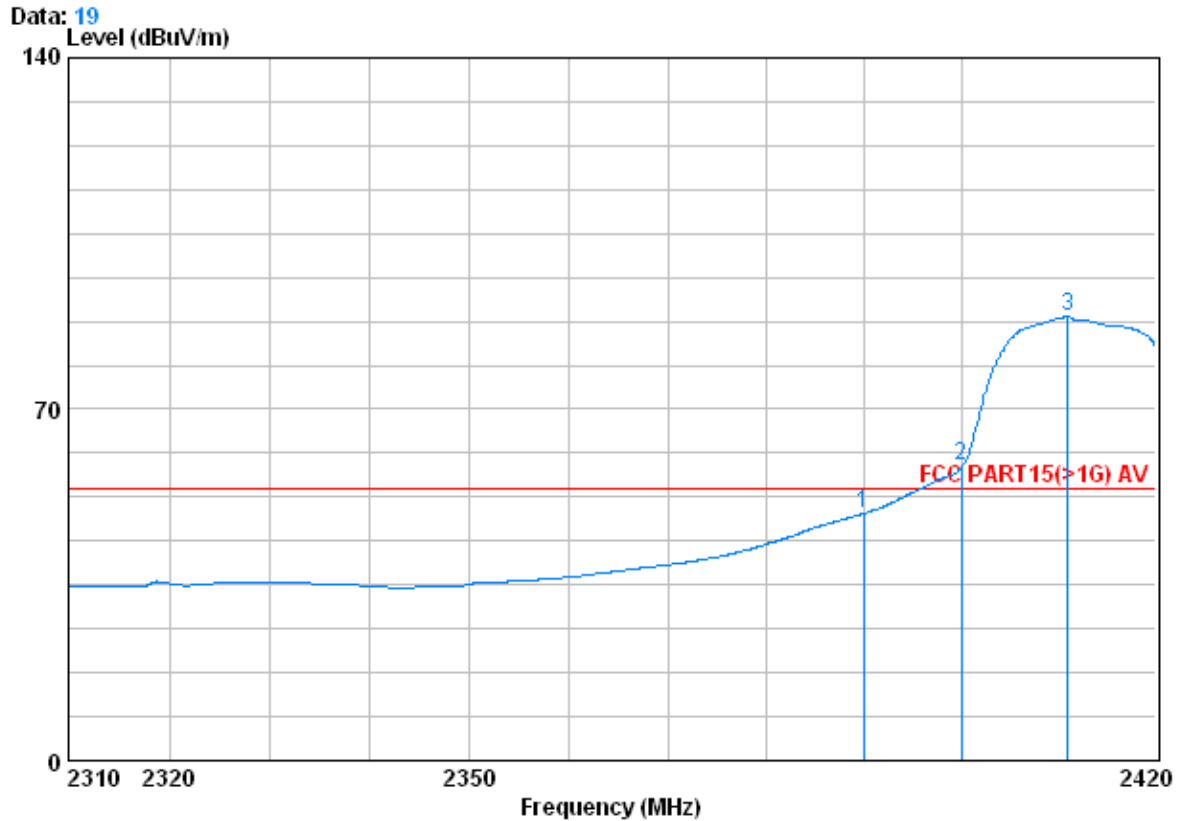


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Test mode:	802.11n(HT20)	Test channel:	Lowest	Remark:	Average	Horizontal
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Condition : FCC PART15(>1G) AV 3m HORIZONTAL

JOB : 2665IT

model : n(HT20) 2412 bandedge

		CableAntenna		Preamp	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	53.45	49.09	54.00	-4.91
2 X	2400.000	2.98	32.51	39.86	63.10	58.73	54.00	4.73
3 Ø	2410.980	2.99	32.54	39.86	92.73	88.40	54.00	34.40

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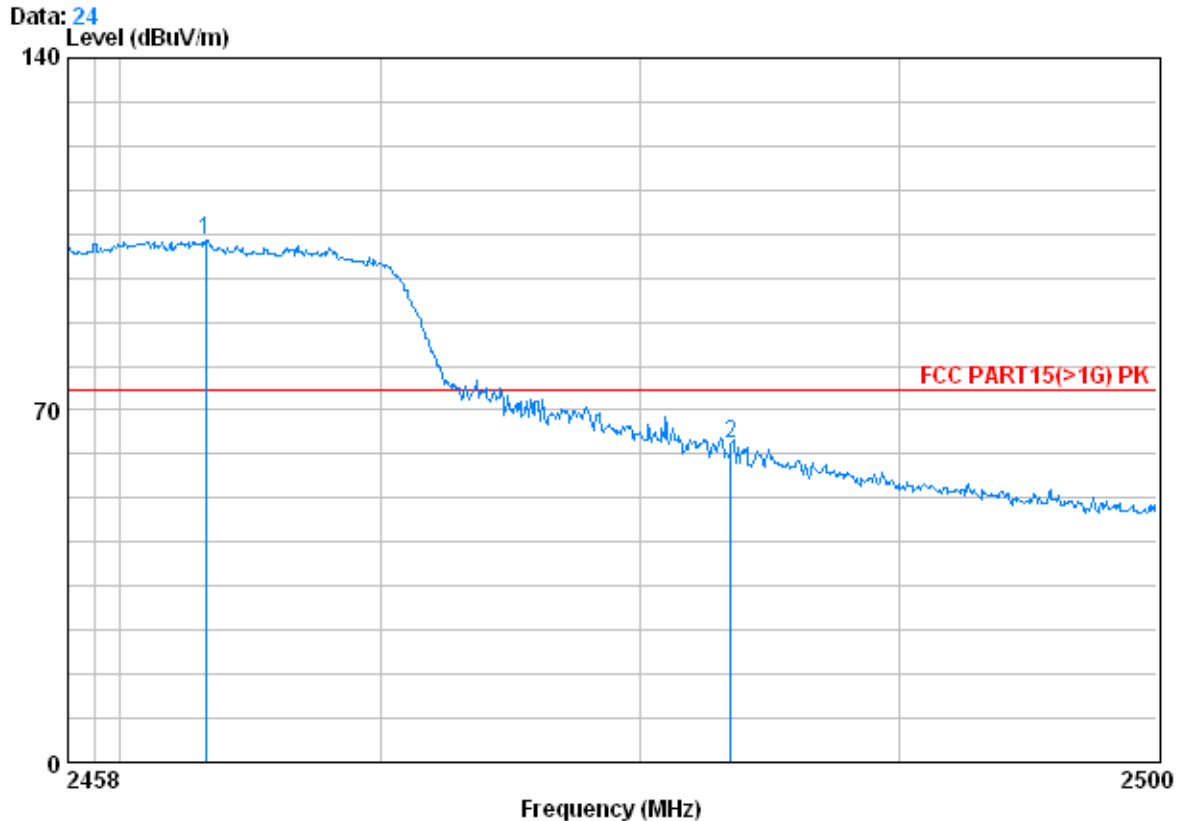


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Test mode:	802.11n(HT20)	Test channel:	Highest	Remark:	Peak	Vertical
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Condition : FCC PART15(>1G) PK 3m VERTICAL

JOB : 2663IT

model : n(HT20) 2462 bandedge

		Cable	Antenna	Preamplifier	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @	2463.292	3.02	32.64	39.91	108.03	103.78	74.00	29.78
2	2483.500	3.03	32.67	39.92	67.52	63.30	74.00	-10.70

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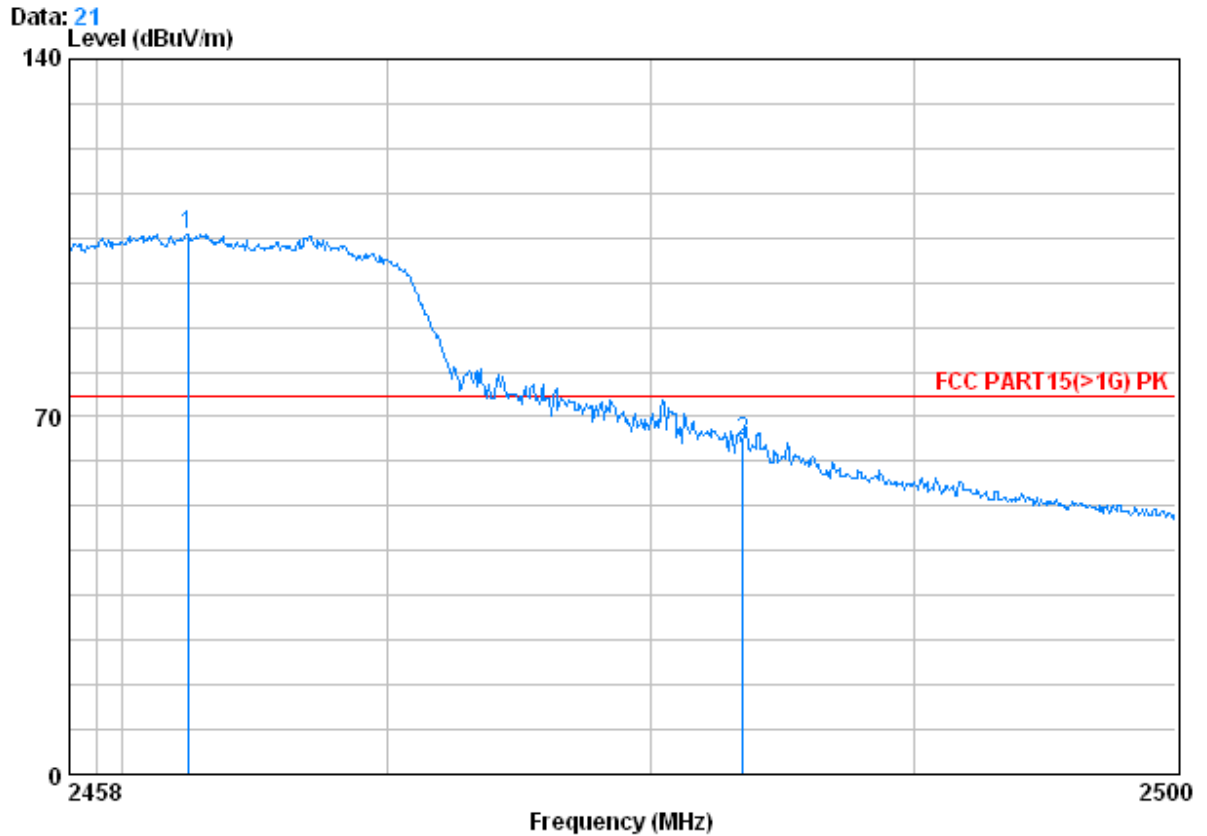


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Test mode:	802.11n(HT20)	Test channel:	Highest	Remark:	Peak	Horizontal
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Condition : FCC PART15(>1G) PK 3m HORIZONTAL
JOB : 2665IT
model : n(HT20) 2462 bandedge

		Cable	Antenna	Preamp	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2462.452	3.02	32.64	39.91	110.09	105.84	74.00	31.84
2	2483.500	3.03	32.67	39.92	69.32	65.10	74.00	-8.90

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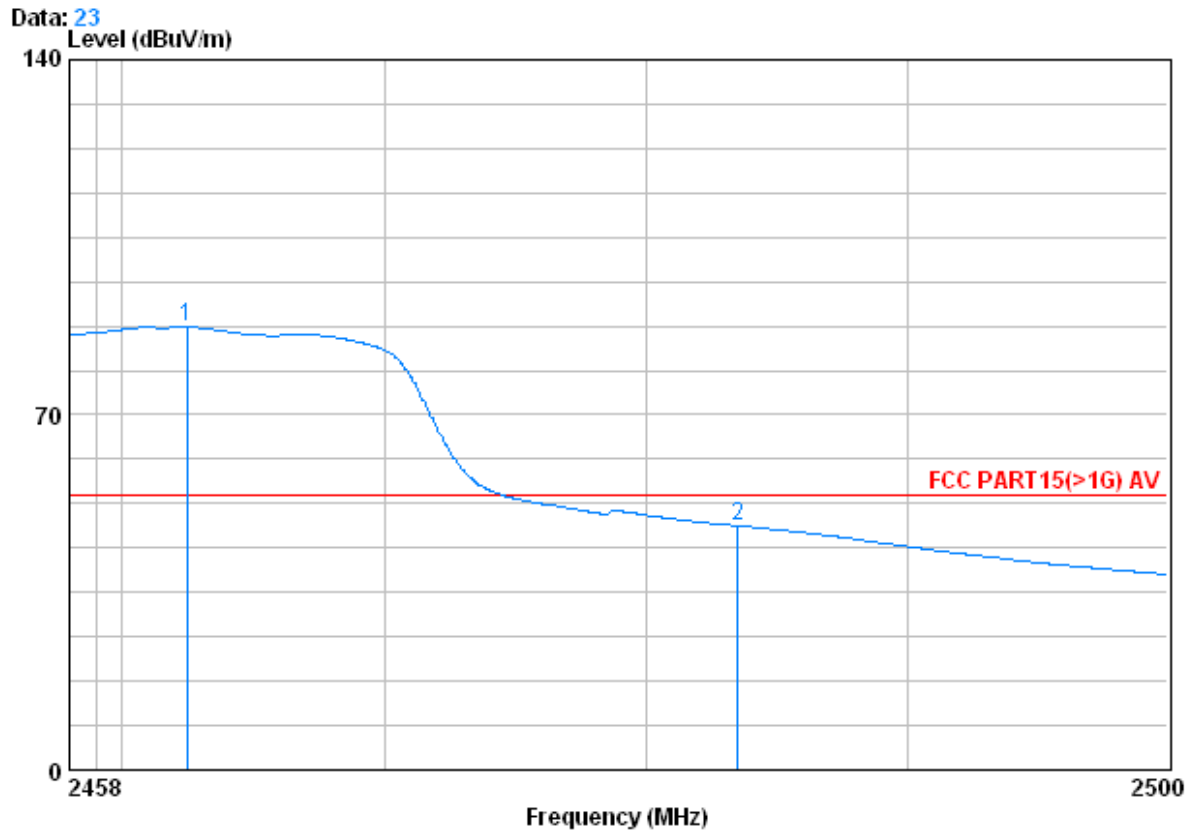


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Test mode:	802.11n(HT20)	Test channel:	Highest	Remark:	Average	Vertical
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Condition : FCC PART15(>1G) AV 3m VERTICAL
JOB : 2665IT
model : n(HT20) 2462 bandedge

	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Limit Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @	2462.452	3.02	32.64	39.91	91.55	87.30	54.00	33.30
2	2483.500	3.03	32.67	39.92	52.35	48.13	54.00	-5.87

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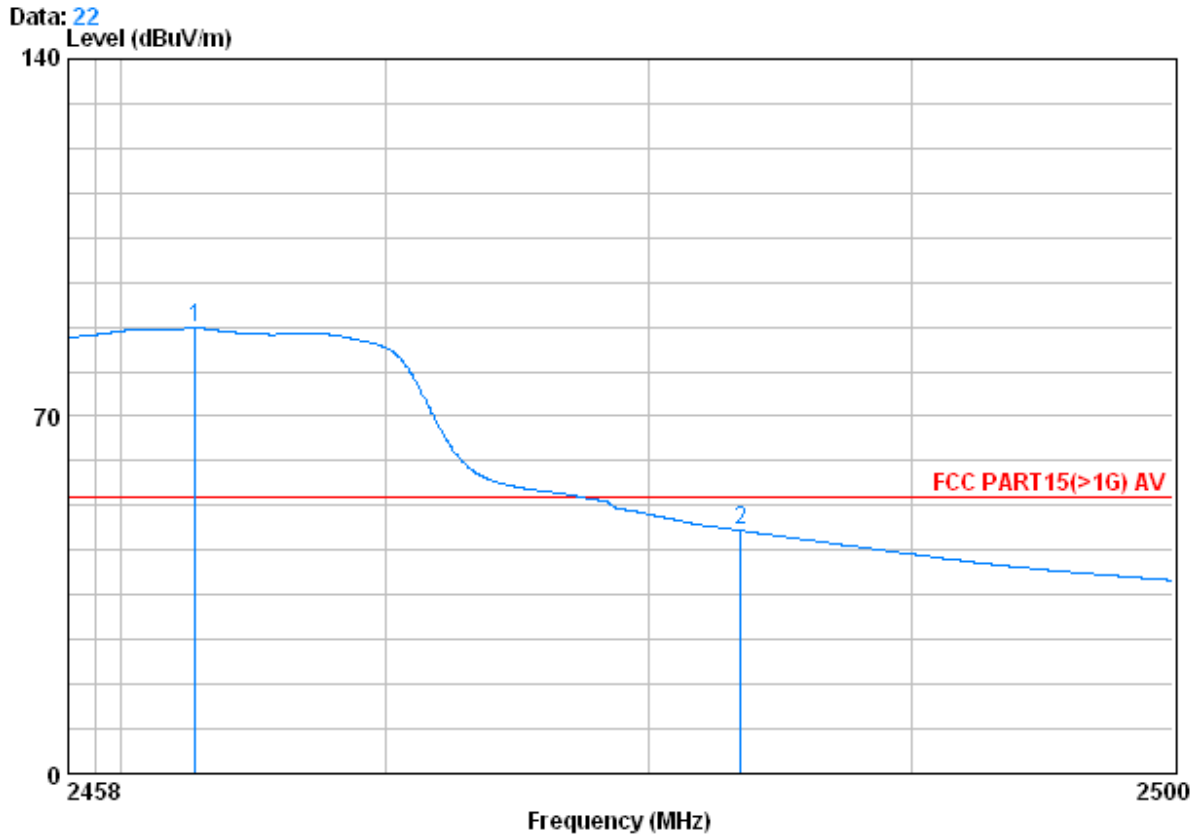


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Test mode:	802.11n(HT20)	Test channel:	Highest	Remark:	Average	Horizontal
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Condition : FCC PART15(>1G) AV 3m HORIZONTAL
JOB : 2665IT
model : n(HT20) 2462 bandedge

	Freq	Cable Loss	Antenna Factor	Preamplifier Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @	2462.788	3.02	32.64	39.91	91.46	87.21	54.00	33.21
2	2483.500	3.03	32.67	39.92	51.84	47.62	54.00	-6.38

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

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