

Report No.: SZEM140500272201

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FCC REPORT

Application No: SZEM1405002722RF

Applicant: RM ACQUISITION. LLC

Manufacturer/
Factory:

ELECTRONICS TECHNOLOGY (DONG GUAN)COMPANY LIMITED

Product Name: GPS

Model No.(EUT): TND730

Add Model No.: RVND7730, RVND7735

FCC ID: A4C-10005A

Standards: 47 CFR Part 15, Subpart C (2013)

Date of Receipt: 2014-06-10

Date of Test: 2014-06-25 to 2014-07-16

Date of Issue: 2014-07-22

Test Result: PASS *

. * 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)	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 v03r01	PASS
6dB Occupied Bandwidth	47 CFR Part 15, Subpart C Section 15.247 (a)(2)	KDB558074 D01 v03r01	PASS
Power Spectral Density	47 CFR Part 15, Subpart C Section 15.247 (e)	KDB558074 D01 v03r01	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15, Subpart C Section 15.247(d)	KDB558074 D01 v03r01	PASS
RF Conducted Spurious Emissions	47 CFR Part 15, Subpart C Section 15.247(d)	KDB558074 D01 v03r01	PASS
Radiated Spurious Emissions	47 CFR Part 15, Subpart C Section 15.205/15.209	ANSI C63.10 2009	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15, Subpart C Section 15.205/15.209	ANSI C63.10 2009	PASS

Remark:

Model No.: TND730, RVND7730, RVND7735

Only the Model TND730 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for all above models. Only the item number is different.

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4 General Information

4.1 Client Information

Applicant:	RM ACQUISITION. LLC
Address of Applicant:	9855 Woods Dr., Skokie, IL 60077
Manufacturer:	ELECTRONICS TECHNOLOGY (DONG GUAN)COMPANY LIMITED
Address of Manufacturer:	No. 161, Xin Min Road, Tong Luo Wei Industrial Zone, Jin Xia, Chang An Town, Dong Guan City, Guang Dong Province, China
Factory:	ELECTRONICS TECHNOLOGY (DONG GUAN)COMPANY LIMITED
Address of Factory:	No. 161, Xin Min Road, Tong Luo Wei Industrial Zone, Jin Xia, Chang An Town, Dong Guan City, Guang Dong Province, China

4.2 General Description of EUT

Product Name:	GPS				
Model No.:	TND730, RVND	TND730, RVND7730, RVND7735			
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 802.11	b: DSSS(CCK,DQPSK,DBPSK) g: OFDM(64QAM, 16QAM, QPSK, BPSK) n(HT20): OFDM (64QAM, 16QAM,QPSK,BPSK)			
Sample Type:	Portable produc	tion			
Test Power Grade:	44 (manufacturer declare)				
Test Software of EUT:	adb shell (manu	facturer declare)			
EUT Function:	GPS/GPRS Locator				
Antenna Type and Gain:	Type : Integral Gain :0dBi				
Power Supply:	Vehicular	Model:BY0502000			
	Adapter:	Input: DC12-24V 2.5A			
		Output: DC5V/2A			
	Battery:	Mode:Y14DBIAA1			
		Type:Lithium polymer battery			
	950mAh 3.7V				
USB Cable:	100cm(unshielded)				
DC Cable:	152cm				

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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



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4.3 Test Environment and Mode

Operating Environment:	
Temperature:	23.0 °C
Humidity:	55 % RH
Atmospheric Pressure:	1005 mbar
Test mode:	
Transmitting mode:	The EUT transmitted the continuous modulation test signal at the specific channel(s)
AC Charge + Transmitting mode:	The EUT transmitted the continuous modulation test signal at the specific channel(s) and AC charge it.
Vehicular Charge+ Transmitting mode:	The EUT transmitted the continuous modulation test signal at the specific channel(s) and Vehicular charge it

4.4 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.
AC Adapter	Supply by SGS	N/A
Earphone	Supply by SGS	N/A
SD card	Supply by SGS	N/A

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.

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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)

Two 3m Semi-anechoic chambers of SGS-CSTC Standards Technical Services Co., Ltd. have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1 & 4620C-2.

4.7 Deviation from Standards

None.

4.8 Abnormalities from Standard Conditions

None.

4.9 Other Information Requested by the Customer

None.





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4.10Equipment List

	Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)	
1	Shielding Room	ZhongYu Electron	GB-88	SEL0042	2015-06-10	
2	LISN	Rohde & Schwarz	ENV216	SEL0152	2014-10-24	
3	LISN	ETS-LINDGREN	3816/2	SEL0021	2015-05-16	
4	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN- T8-02	SEL0162	2014-11-10	
5	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN- T4-02	SEL0163	2014-11-10	
6	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN- T2-02	SEL0164	2014-11-10	
7	EMI Test Receiver	Rohde & Schwarz	ESCI	SEL0022	2015-05-16	
8	Coaxial Cable	SGS	N/A	SEL0025	2015-05-29	
9	DC Power Supply	Zhao Xin	RXN-305D	SEL0117	2014-10-24	
10	Humidity/ Temperature Indicator	Shanhai Qixiang	ZJ1-2B	SEL0103	2014-10-24	
11	Barometer	Chang Chun	DYM3	SEL0088	2015-05-16	



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	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	2015-06-10
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	2015-05-16
3	EMI Test software	AUDIX	E3	SEL0050	N/A
4	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2014-10-24
5	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2014-10-24
6	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	2014-10-24
7	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2015-05-16
8	Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEL0168	2014-10-24
9	Coaxial cable	SGS	N/A	SEL0027	2015-05-29
10	Coaxial cable	SGS	N/A	SEL0189	2015-05-29
11	Coaxial cable	SGS	N/A	SEL0121	2015-05-29
12	Coaxial cable	SGS	N/A	SEL0178	2015-05-29
13	Band filter	Amindeon	82346	SEL0094	2015-05-16
14	Barometer	Chang Chun	DYM3	SEL0088	2015-05-16
15	DC Power Supply	Zhao Xin	RXN-305D	SEL0117	2014-10-24
16	Humidity/ Temperature Indicator	Shanhai Qixiang	ZJ1-2B	SEL0103	2014-10-24
17	Signal Generator (10M-27GHz)	Rohde & Schwarz	SMR27	SEL0067	2015-05-16
18	Signal Generator	Rohde & Schwarz	SMY01	SEL0155	2014-10-24
19	Loop Antenna	Beijing Daze	ZN30401	SEL0203	2015-06-04



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	RF connected test				
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)
1	DC Power Supply	Zhao Xin	RXN-305D	SEL0117	2014-10-24
2	Humidity/ Temperature Indicator	HYGRO	ZJ1-2B	SEL0033	2014-10-24
3	Spectrum Analyzer	Rohde & Schwarz	FSP	SEL0154	2014-10-24
4	Coaxial cable	SGS	N/A	SEL0178	2015-05-29
5	Coaxial cable	SGS	N/A	SEL0179	2015-05-29
6	Barometer	ChangChun	DYM3	SEL0088	2015-05-16
7	Signal Generator	Rohde & Schwarz	SML03	SEL0068	2015-05-16
8	Band filter	amideon	82346	SEL0094	2015-05-16
9	POWER METER	R&S	NRVS	SEL0144	2014-10-24
10	Attenuator	Beijin feihang taida	TST-2-6dB	SEL0205	2015-05-16
11	Power Divider(splitter)	Agilent Technologies	11636B	SEL0130	2014-10-24

Note: The calibration interval is one year, all the instruments are valid.



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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)

15.203 requirement:

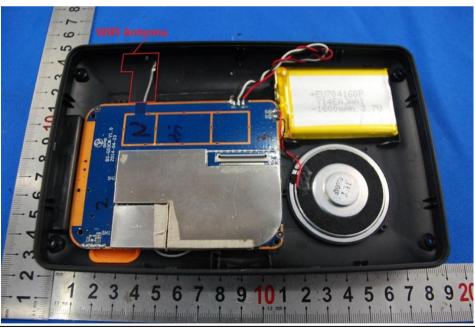
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit 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(b) (4) requirement:

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.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 0dBi.





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5.2 Conducted Emissions

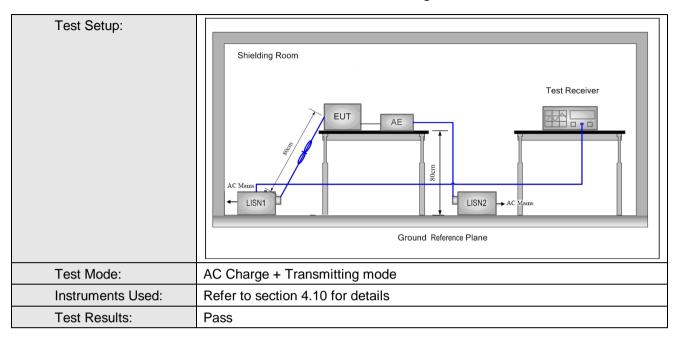
Test Requirement:	47 CFR Part 15C Section 15.207			
Test Method:	ANSI C63.10: 2009			
Test Frequency Range:	150kHz to 30MHz			
Limit:	Fraguency range (MHz)	Limit (c	lBuV)	
	Frequency range (MHz)	Quasi-peak	Average	
	0.15-0.5	66 to 56*	56 to 46*	
	0.5-5	56	46	
	5-30	60	50	
	* Decreases with the logarithn	n of the frequency.		
Test Procedure:	 The mains terminal disturbly room. The EUT was connected to Impedance Stabilization linear impedance. The power call connected to a second reference 	o AC power source thro Network) which provi	ough a LISN 1 (Line des a 50Ω/50μH + f the EUT were	5Ω
	plane in the same way as multiple socket outlet strip a single LISN provided the reasonable single sin	ating of the LISN was reced upon a non-metalliced upon a non-metalliced upon a non-metalliced upon a reference plane, the a vertical ground reference upon the vertical ground reference upon the LISN 1 and the quipment was at least the count of the LISN 1 and the quipment was at least the count of the upon the relation terface cables must be seen a non-metal to the count of the LISN 1 and the quipment was at least the count of the upon the relation terface cables must be seen and the properties of the upon the relation terface cables must be seen and the properties of the upon the u	multiple power cable not exceeded. c table 0.8m above to arrangement, the last reference plane. The rest of reference plane. The horizontal ground om the boundary of the plane for LISNs his distance was EUT. All other units 0.8 m from the LISN we positions of e changed according	the EUT ear the the of 2.

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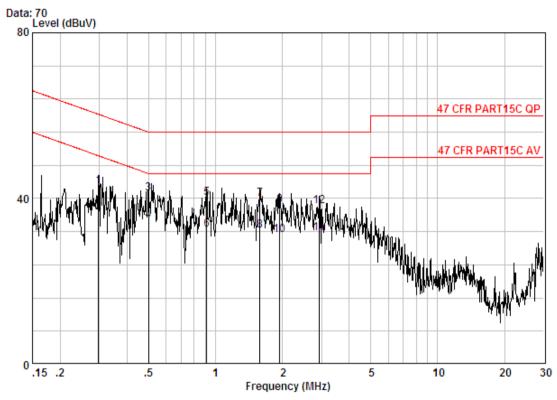
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Measurement Data

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:



Site : Shielding Room

Condition : 47 CFR PART15C QP CE LINE

Job No. : 2722RF

Mode : AC charge +TX mode

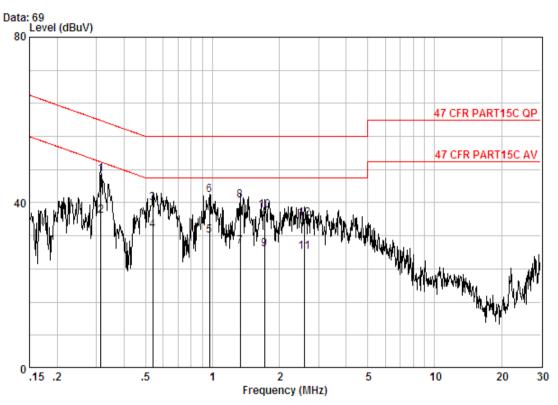
		Freq	Cable Loss	LISN Factor	Read Level		Limit Line	Over Limit	Remark
		MHz	dB	dB	dBuV	dBuV	dBuV	——dB	
1		0.29711	0.01	9.70	33.31	43.02	60.32	-17.31	QP
2		0.29711	0.01	9.70	26.83	36.54	50.32	-13.78	Average
3		0.49937	0.01	9.80	31.29	41.10	56.01	-14.91	QP
4 (9	0.49937	0.01	9.80	24.77	34.58	46.01	-11.43	Average
5		0.91357	0.02	9.80	30.38	40.20	56.00	-15.80	QP
6		0.91357	0.02	9.80	22.74	32.56	46.00	-13.44	Average
7		1.585	0.02	9.80	30.05	39.87	56.00	-16.14	QP
8		1.585	0.02	9.80	22.51	32.33	46.00	-13.67	Average
9		1.949	0.02	9.80	28.44	38.26	56.00	-17.74	QP
10		1.949	0.02	9.80	21.36	31.18	46.00	-14.82	Average
11		2.931	0.02	9.84	21.70	31.56	46.00	-14.44	Average
12		2.931	0.02		28.28				_



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Neutral Line:



Site : Shielding Room

Condition : 47 CFR PART15C QP CE NEUTRAL

Job No. : 2722RF

Mode : AC charge +TX mode

		Freq	Cable Loss	LISN Factor	Read Level		Limit Line	Over Limit	Remark
		MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1		0.31495	0.01	9.72	37.21	46.93	59.84	-12.91	QP
2		0.31495	0.01	9.72	27.05	36.78	49.84	-13.06	Average
3		0.53782	0.01	9.80	30.16	39.97	56.00	-16.03	QP
4	@	0.53782	0.01	9.80	23.58	33.39	46.00	-12.61	Average
5		0.96840	0.02	9.80	22.20	32.02	46.00	-13.98	Average
6		0.96840	0.02	9.80	31.98	41.80	56.00	-14.20	QP
7		1.331	0.02	9.80	19.51	29.33	46.00	-16.67	Average
8		1.331	0.02	9.80	30.83	40.65	56.00	-15.35	QP
9		1.716	0.02	9.80	18.85	28.67	46.00	-17.33	Average
10		1.716	0.02	9.80	28.23	38.05	56.00	-17.95	QP
11		2.594	0.02	9.83	18.21	28.06	46.00	-17.94	Average
12		2.594	0.02	9.83	26.43	36.28	56.00	-19.72	QP

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:	KDB558074 D01 v03r01
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane
	Remark: Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.
Test Instruments:	Refer to section 4.10 for details
Exploratory Test Mode:	
Final Test Mode:	Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b;
	6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20)
Limit:	30dBm
Test Results:	Pass

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Pre-scan under all rate at lowest channel 1

Mode		802	.11b					
Data Rate	1Mbps	2Mbps	5.5Mbps	11Mbps				
	18.76	18.63	18.58	18.52				
Mode				802	.11g			
Data Rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
	17.69	17.63	17.58	17.56	17.52	17.49	17.45	17.42
Mode				802.11	n(HT20)			
Data Rate	6.5Mbps	13Mbps	19.5Mbps	26Mbps	39Mbps	52Mbps	58.5Mbps	65Mbps
	17.43	17.38	17.36	17.34	17.29	17.25	17.23	17.19

Through Pre-scan, 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20)

Measurement Data

	802.11b mod	е	,
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	22.72	30.00	Pass
Middle	23.06	30.00	Pass
Highest	24.88	30.00	Pass
	802.11g mod	е	
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	23.48	30.00	Pass
Middle	24.45	30.00	Pass
Highest	25.18	30.00	Pass
	802.11n(HT20 <u>)</u> m	ode	
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	21.95	30.00	Pass
Middle	23.53	30.00	Pass C E
Highest	22.65	30.00	Pass

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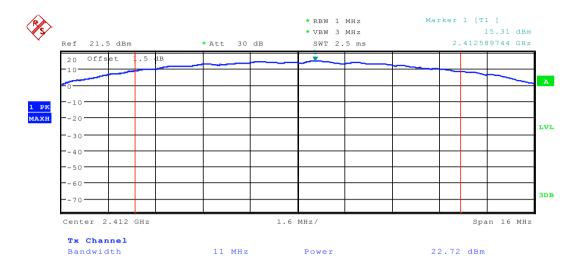


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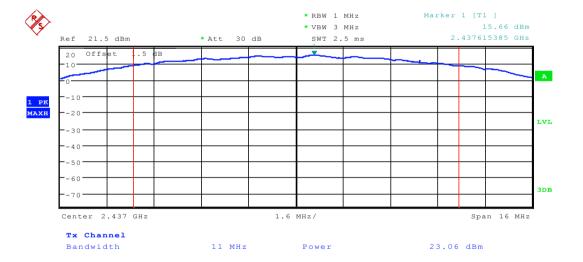
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Test plot as follows:

Test mode: 802.11b Test channel: Lowest



Test mode: 802.11b Test channel: Middle





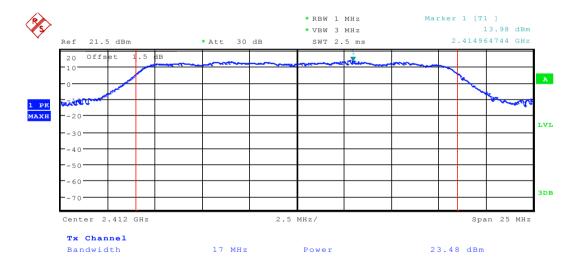
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Test mode: 802.11b Test channel: Highest



Toot modo:	802.11g	Toet channal:	Lowoot
l est mode:	00Z.11Q	l lest channel:	Lowest



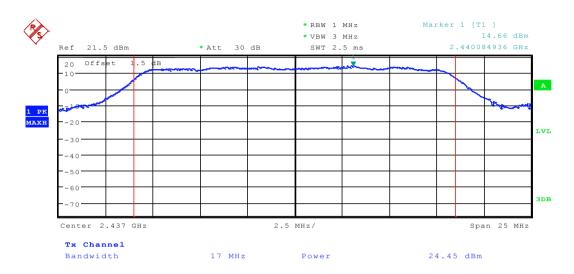
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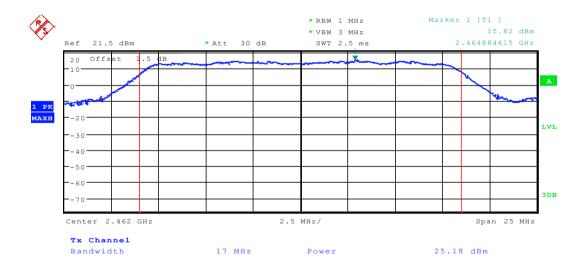
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Test mode: 802.11g Test channel: Middle



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l est mode:	802.11g	l est channel:	Highest



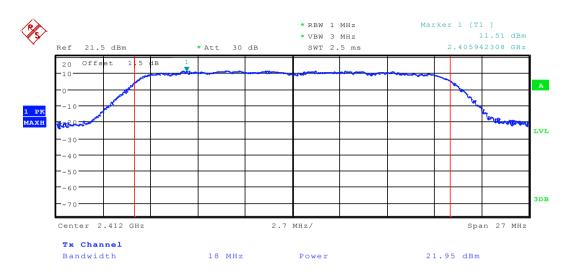
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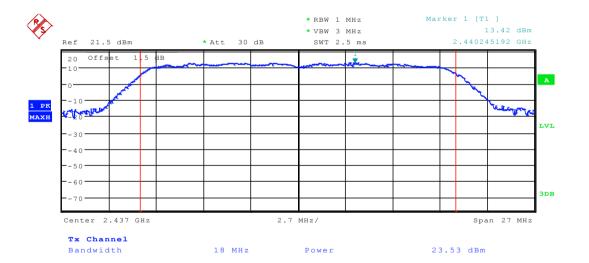
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Test mode: 802.11n(HT20) Test channel: Lowest



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



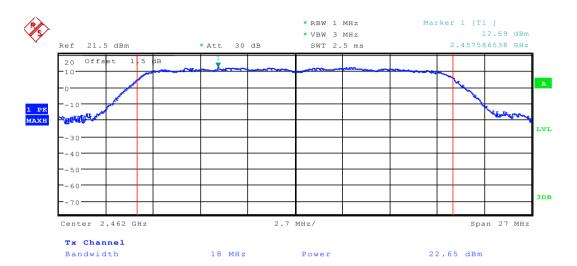
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Test mode: 802.11n(HT20) Test channel: Highest

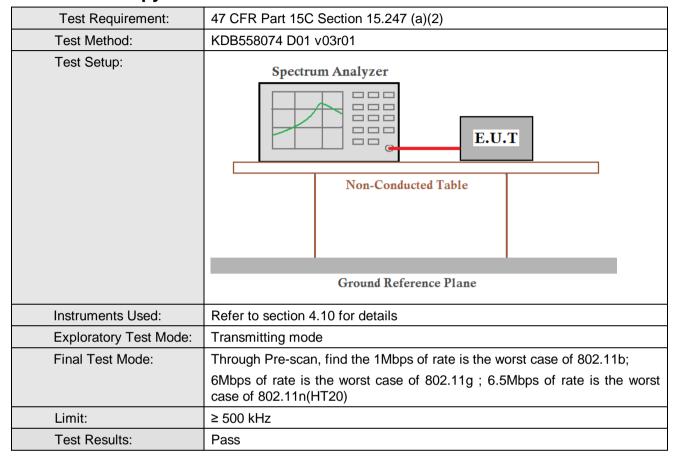




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5.4 6dB Occupy Bandwidth





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Measurement Data

	802.11b mode						
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result				
Lowest	10.240384615	≥500	Pass				
Middle	10.336538462	≥500	Pass				
Highest	10.528846154	≥500	Pass				
	802.11g mode						
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result				
Lowest	16.538461539	≥500	Pass				
Middle	16.490384615	≥500	Pass				
Highest	16.538461538	≥500	Pass				
	802.11n(HT20) mode						
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result				
Lowest	17.644230769	≥500	Pass				
Middle	17.788461539	≥500	Pass				
Highest	17.355769231	≥500	Pass				

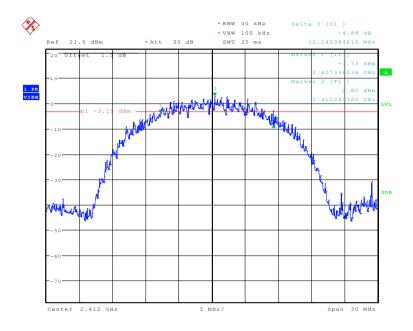


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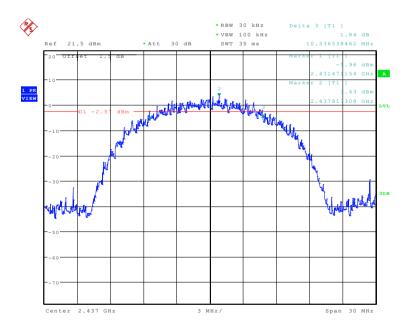
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Test plot as follows:

Test mode: 802.11b Test channel: Lowest



Test mode: 802.11b Test channel: Middle

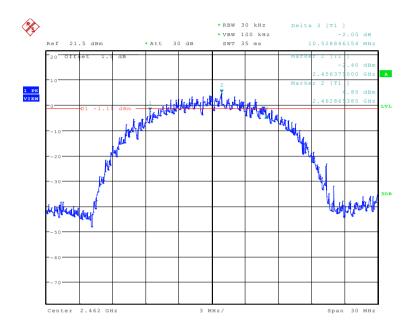




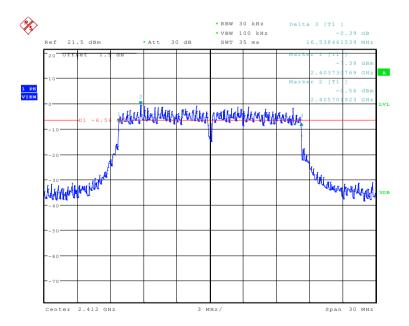
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Test mode: 802.11b Test channel: Highest



Test mode: 802.11g Test channel: Lowest

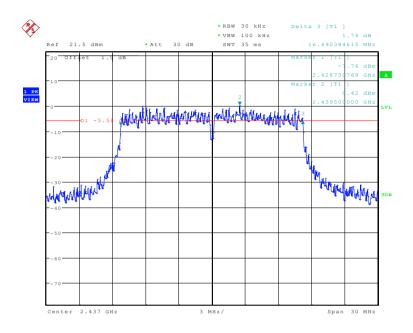




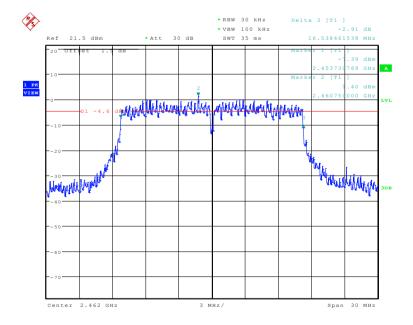
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Test mode: 802.11g Test channel: Middle



Test mode:	802.11g	Test channel:	Highest
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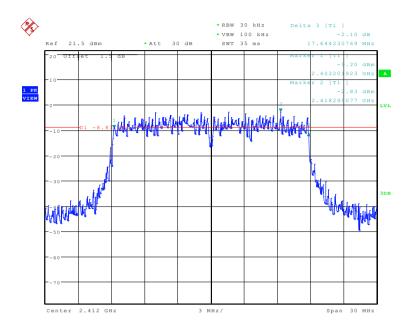




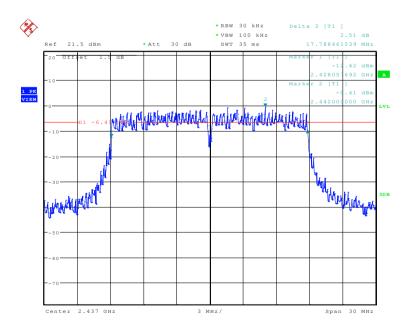
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Test mode: 802.11n(HT20) Test channel: Lowest



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

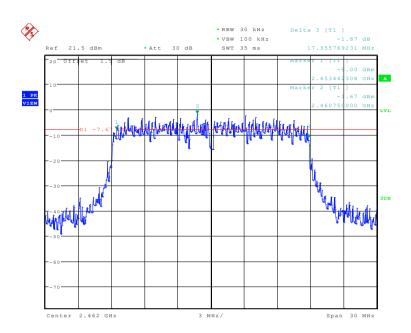




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Test mode: 802.11n(HT20) Test channel: Highest





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5.5 Power Spectral Density

Test Requirement:	47 CFR Part 15C Section 15.247 (e)
Test Method:	KDB558074 D01 v03r01
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane Remark:
	Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.
Test Instruments:	Refer to section 4.10 for details
Exploratory Test Mode:	Transmitting mode
Final Test Mode:	Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b;
	6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n (HT20)
Limit:	≤8.00dBm
Test Results:	Pass

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Measurement Data

Surement Data			
	802.11b mode		
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-5.10	≤8.00	Pass
Middle	-4.35	≤8.00	Pass
Highest	0.98	≤8.00	Pass
	802.11g mode		
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-11.79	≤8.00	Pass
Middle	-10.17	≤8.00	Pass
Highest	-9.37	≤8.00	Pass
	802.11n(HT20) mode		
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-13.53	≤8.00	Pass
Middle	-12.30	≤8.00	Pass
Highest	-12.23	≤8.00	Pass

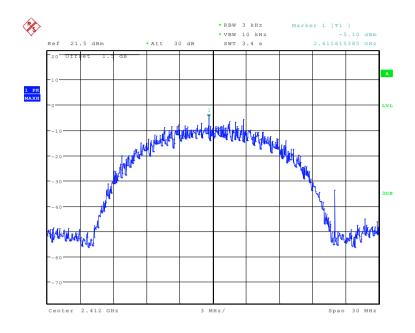


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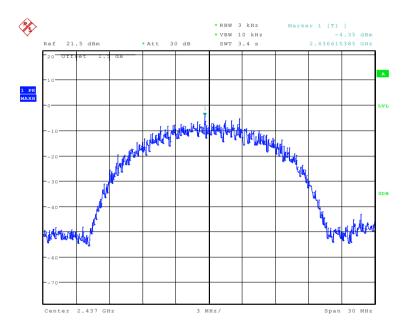
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Test plot as follows:

Test mode: 802.11b Test channel: Lowest



Test mode: 802.11b Test channel: Middle



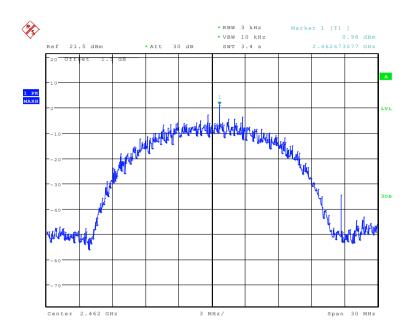
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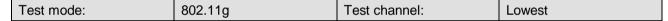


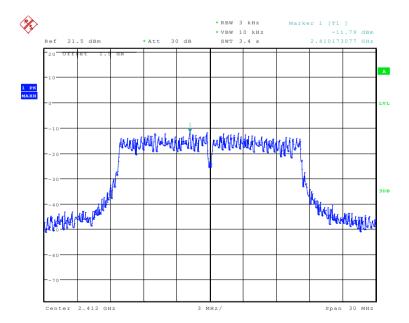
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Test mode: 802.11b Test channel: Highest





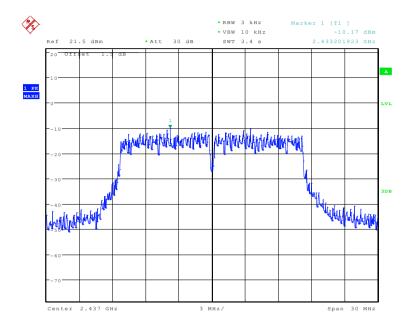




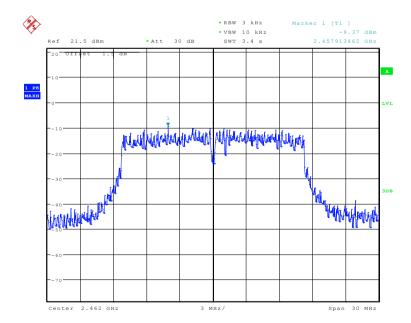
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Test mode: 802.11g Test channel: Middle



Test mode: 802.11g Test channel: Highest



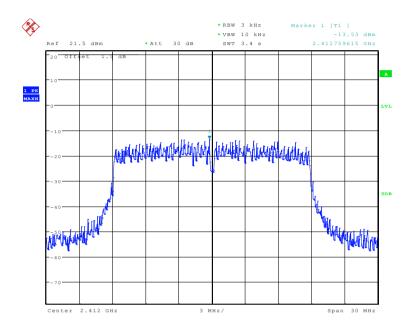
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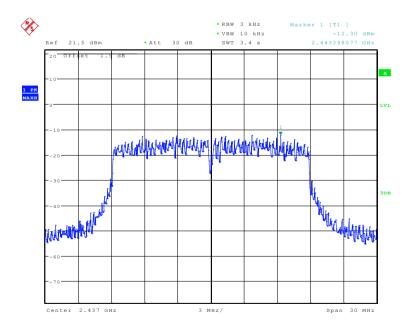
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Test mode: 802.11n (HT20) Test channel: Lowest







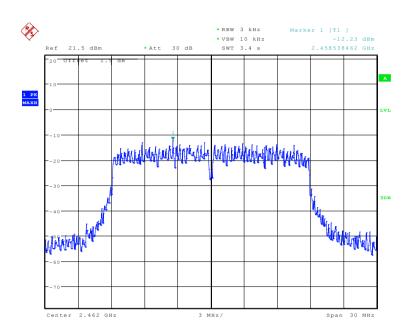
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Test mode: 802.11n (HT20) Test channel: Highest





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5.6 Band-edge for RF Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)				
Test Method:	KDB558074 D01 v03r01				
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane Remark: Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.				
Exploratory Test Mode:	Transmitting mode				
Final Test Mode:	Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b;				
	6Mbps of rate is the worst case of 802.11g; 6.5Mbps 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				



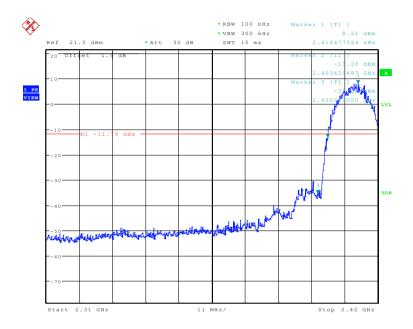


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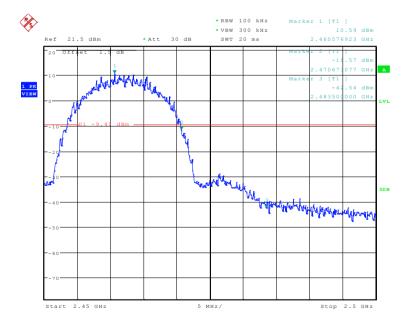
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Test plot as follows:

Test mode: 802.11b Test channel: Lowest



Test mode: 802.11b Test channel: Highest

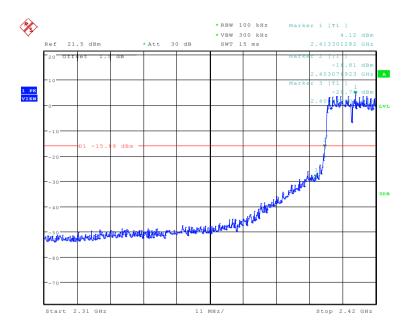




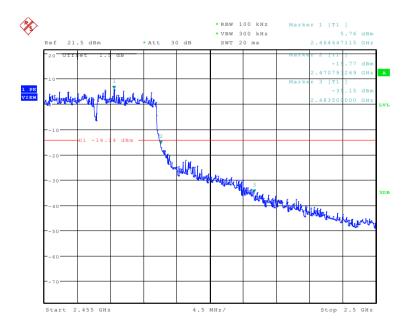
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Test mode: 802.11g Test channel: Lowest



Test mode: 802.11g Test channel: Highest



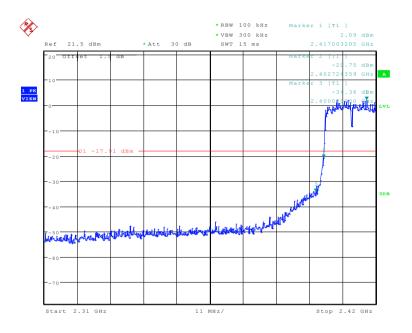
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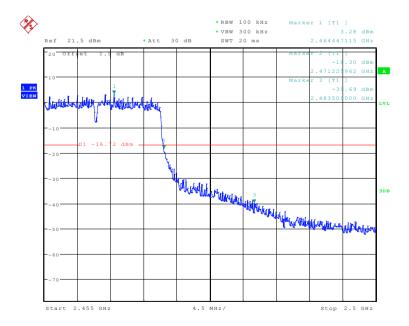
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Test mode: 802.11n (HT20) Test channel: Lowest



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:	KDB558074 D01 v03r01					
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane					
	Remark: Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.					
Exploratory Test Mode:	Transmitting mode					
Final Test Mode:	Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b;					
	6Mbps of rate is the worst case of 802.11g; 6.5Mbps 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					

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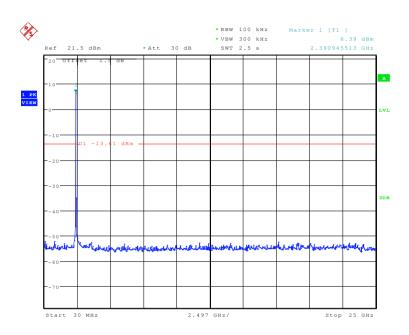


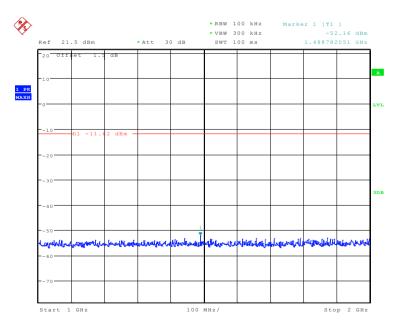
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Test plot as follows:

Test mode: 802.11b Test channel: Lowest

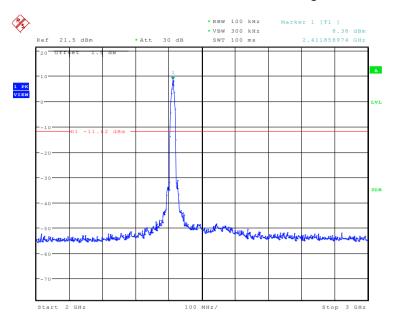


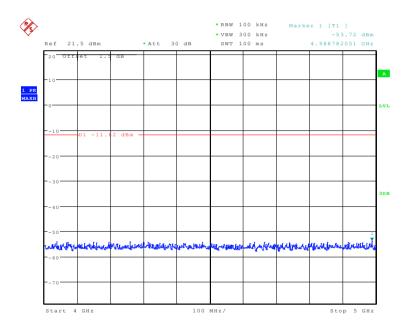




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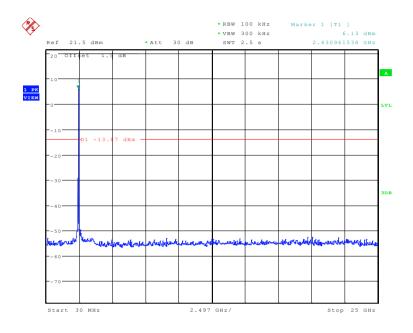


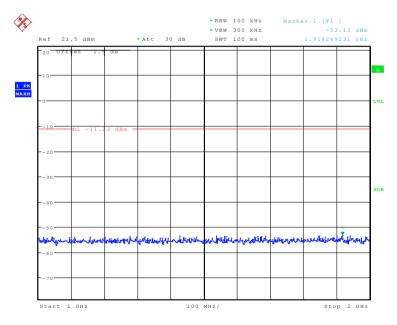


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Test mode: 802.11b Test channel: Middle

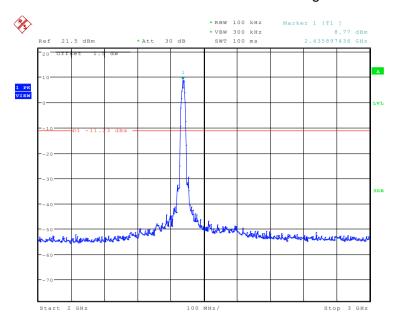


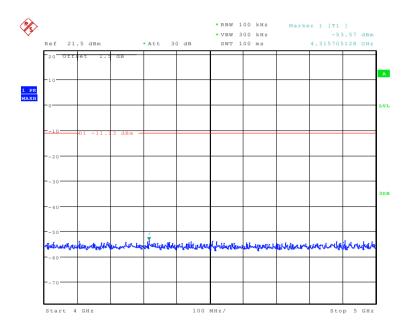




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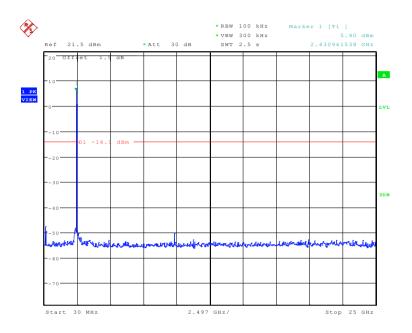


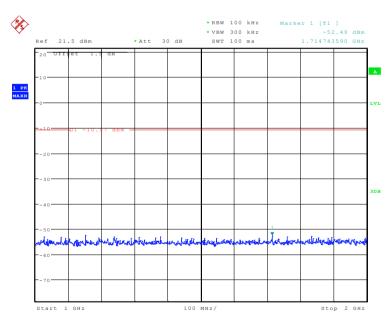


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Test mode: 802.11b Test channel: Highest

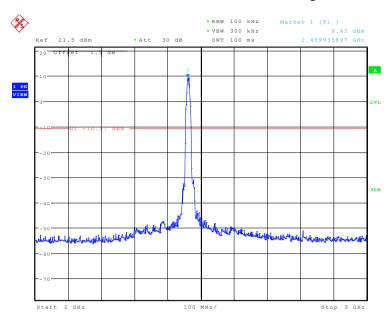


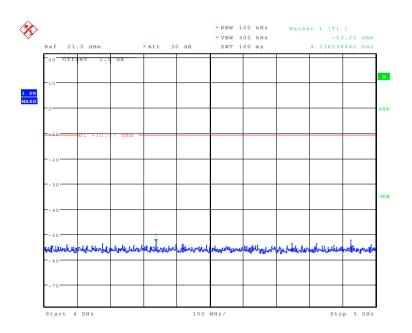




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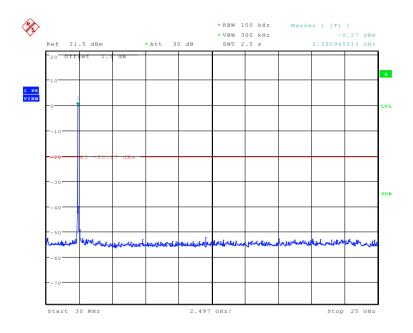


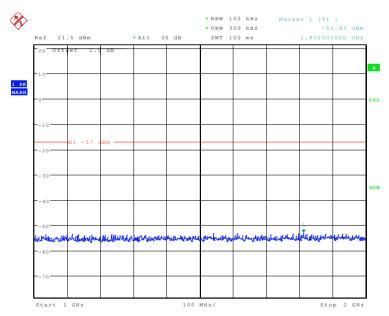


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Test mode: 802.11g Test channel: Lowest



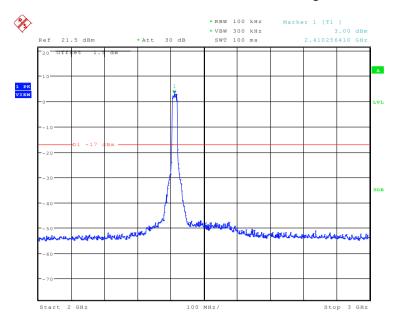


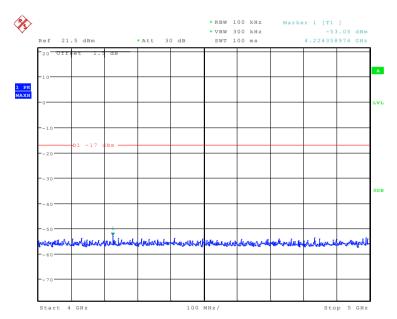
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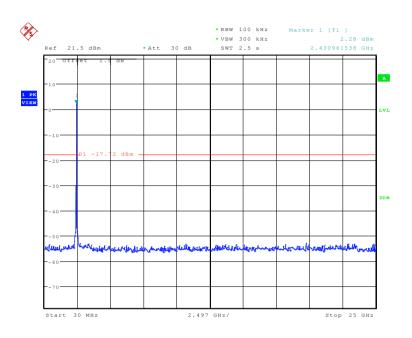


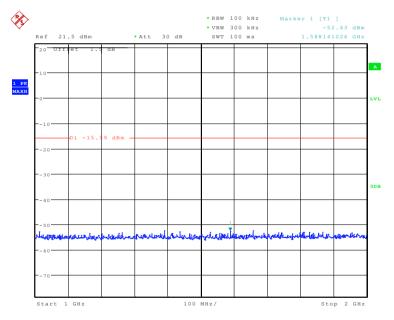


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Test mode: 802.11g Test channel: Middle

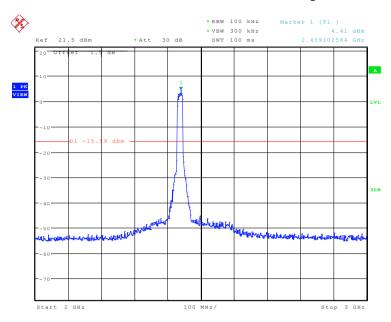


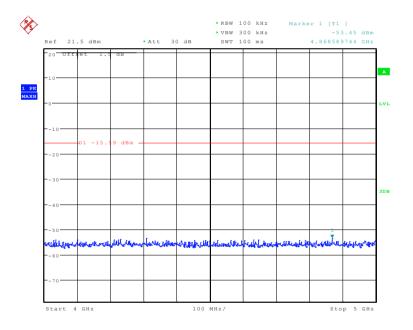




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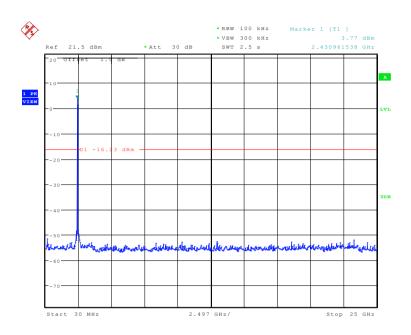


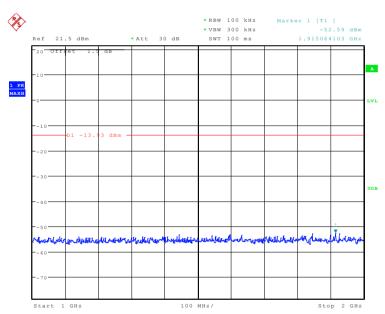


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Test mode: 802.11g Test channel: Highest



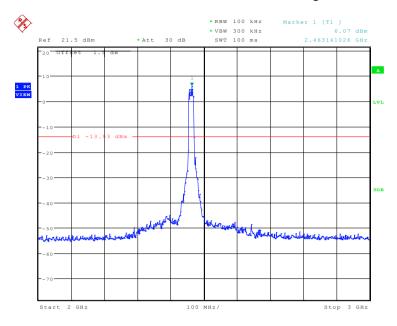


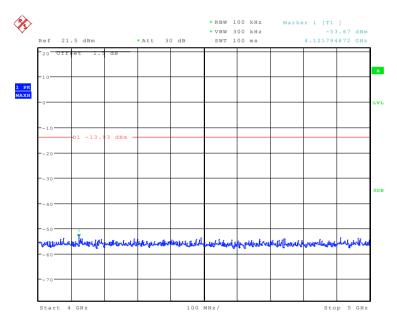
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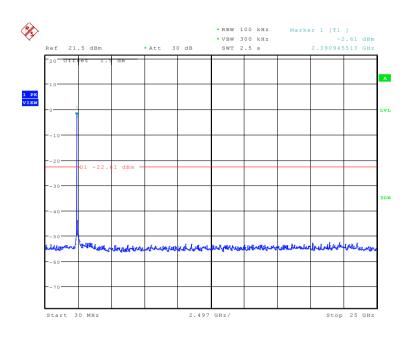
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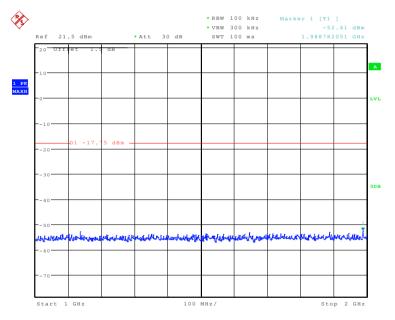


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Test mode: 802.11n (HT20) Test channel: Lowest



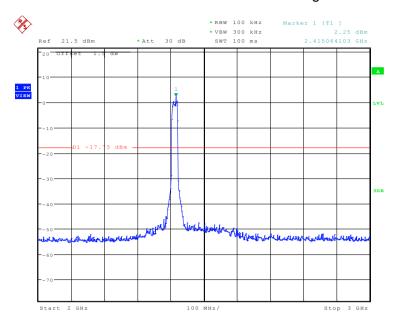


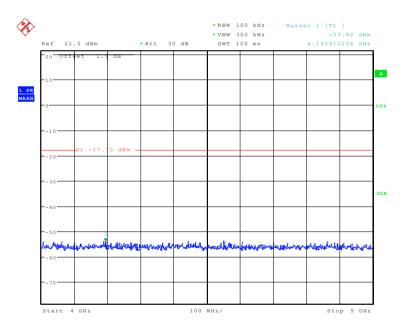
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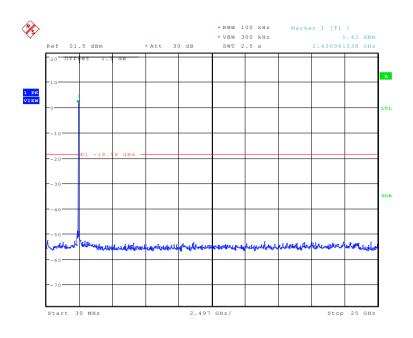


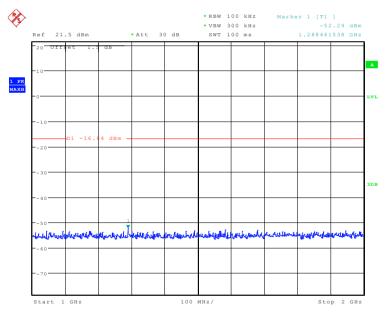


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Test mode: 802.11n (HT20) Test channel: Middle

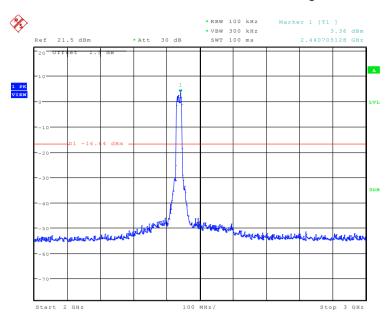


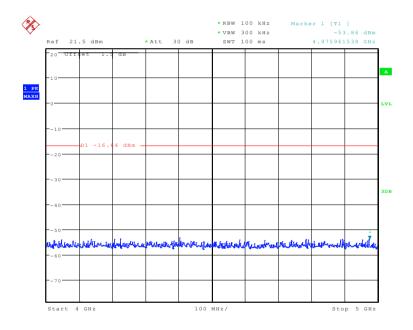




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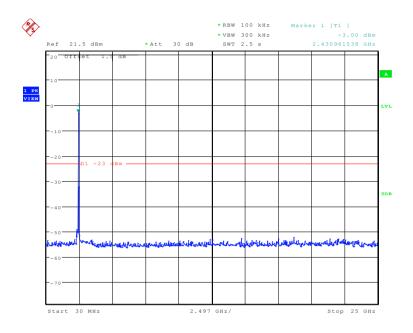


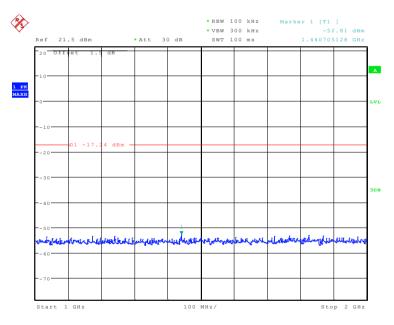


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Test mode: 802.11n (HT20) Test channel: Highest

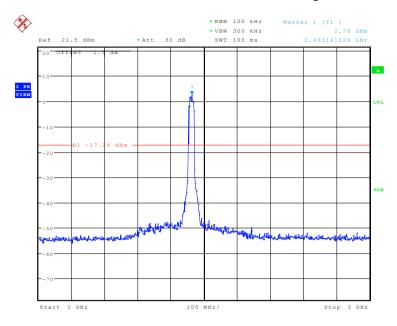


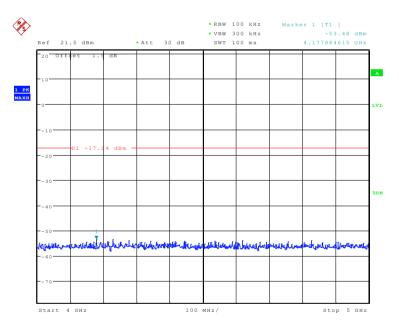




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Remark:

Pretest 9kHz to 25GHz, find the highest point when testing, so only the worst data were shown in the test report.

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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									
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					
	Above 10112	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 peak										
	emission level rad	lated by the device	9.							

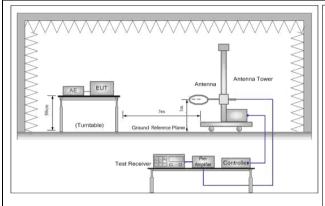
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Test Setup:



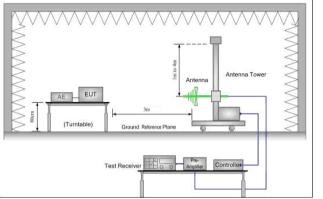


Figure 1. Below 30MHz

Figure 2. 30MHz to 1GHz

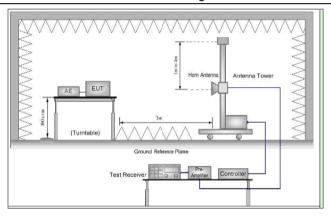


Figure 3. Above 1 GHz

Test Procedure:

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. 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 margin would be re-tested one by one using peak, quasi-peak or average

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Test Results:	Pa	ss			
Instruments Used:	Re	fer to section 4.10 for details			
	On	ly the worst case is recorded in the report.			
	80	2.11n(HT20)			
	of	rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of			
		rough Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; lbps			
Final Test Mode:	Ve	Pretest the EUT at Transmitting mode, AC Charge + Transmitting mode and Vehicular Charge+ Transmitting mode, found the AC Charge + Transmitting mode which it is worse case.			
Mode:	Ve	hicular Charge+ Transmitting mode			
	est Tra	ansmitting mode, AC Charge + Transmitting mode,			
	i.	Repeat above procedures until all frequencies measured was complete.			
	h.	The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case.			
	g.	Test the EUT in the lowest channel ,the middle channel ,the Highest channel			
		method as specified and then reported in a data sheet.			

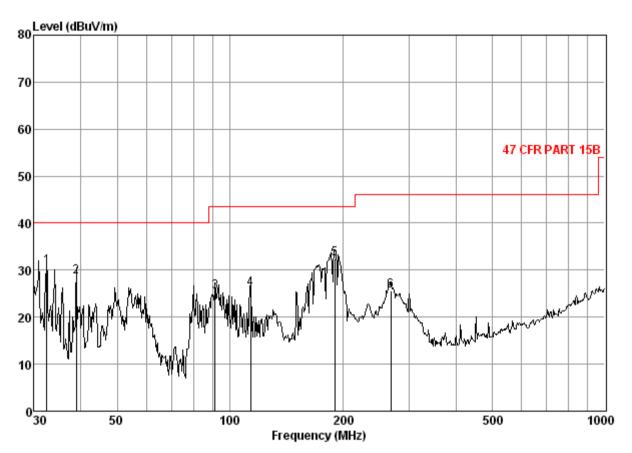


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5.8.1 Radiated emission below 1GHz

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



Condition: 47 CFR PART 15B 3m 3142C VERTICAL

Job No. : 2722RF

Mode : AC charge+TX mode

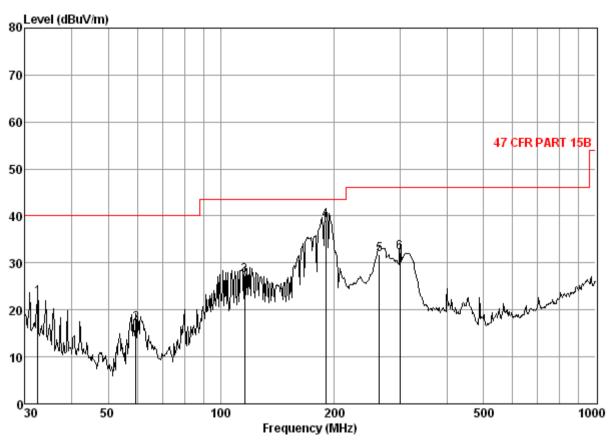
			ntenna	Preamp Factor				Over Limit
_	MHz	dB	dB/m	dB	dBuV	$\overline{\text{dBuV/m}}$	$\overline{\text{dBuV/m}}$	dB
1 2 3 4 5	32. 41 38. 89 91. 17 113. 32 190. 41 268. 49	0.60 0.60 1.11 1.24 1.39 1.76	5. 91 7. 53 6. 80	27.21	43.86 45.52 44.42 50.90	28. 61 25. 33	40.00 43.50 43.50 43.50	-18.17 -17.42



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



Condition: 47 CFR PART 15B 3m 3142C HORIZONTAL

Job No. : 2722RF

Mode : AC charge+TX mode

		CableA		Preamp Factor				Over Limit
	MHz	dB	dB/m	dB	dBuV	$\overline{\text{dBuV/m}}$	dBuV/m	dB
1 2 3 4 5	32. 41 59. 23 115. 73 190. 41 264. 75 300. 37	0.60 0.80 1.24 1.39 1.74 1.90	6.80 9.40	27. 35 27. 27 27. 10 26. 73 26. 49 26. 40	38. 20 45. 59 57. 51 47. 04	17.10 27.25 38.97	40.00 43.50 43.50 46.00	-16.25 -4.53

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5.8.2 Transmitter emission above 1GHz

Test mode:	802	.11b	Test ch	annel:	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)	Polarizatio n
2920.248	5.00	33.28	40.24	45.47	43.51	74	-30.49	Vertical
3933.367	6.38	33.74	40.98	45.37	44.51	74	-29.49	Vertical
4824.000	7.45	34.68	41.64	45.30	45.79	74	-28.21	Vertical
7236.000	8.76	35.90	39.85	44.21	49.02	74	-24.98	Vertical
9648.000	9.69	37.36	37.76	41.21	50.50	74	-23.50	Vertical
11633.540	11.02	38.54	38.13	41.49	52.92	74	-21.08	Vertical
2920.248	5.00	33.28	40.24	44.92	42.96	74	-31.04	Horizontal
3943.392	6.38	33.74	41.00	45.39	44.51	74	-29.49	Horizontal
4824.000	7.45	34.68	41.64	45.17	45.66	74	-28.34	Horizontal
7236.000	8.76	35.90	39.85	43.70	48.51	74	-25.49	Horizontal
9648.000	9.69	37.36	37.76	41.78	51.07	74	-22.93	Horizontal
11254.860	10.75	38.45	37.97	41.06	52.29	74	-21.71	Horizontal

Test mode:	802	.11b	Test ch	annel:	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)	Polarizatio n
2854.107	4.95	33.19	40.20	44.54	42.48	74	-31.52	Vertical
3883.622	6.31	33.68	40.95	45.77	44.81	74	-29.19	Vertical
4874.000	7.48	34.59	41.68	45.28	45.67	74	-28.33	Vertical
7311.000	8.85	35.92	39.79	43.28	48.26	74	-25.74	Vertical
9748.000	9.74	37.46	37.68	41.38	50.90	74	-23.10	Vertical
11752.600	11.11	38.66	38.17	40.84	52.44	74	-21.56	Vertical
2898.032	4.98	33.26	40.23	45.89	43.90	74	-30.10	Horizontal
3903.444	6.33	33.70	40.97	45.26	44.32	74	-29.68	Horizontal
4874.000	7.48	34.59	41.68	44.89	45.28	74	-28.72	Horizontal
7311.000	8.85	35.92	39.79	43.37	48.35	74	-25.65	Horizontal
9748.000	9.74	37.46	37.68	41.26	50.78	74	-23.22	Horizontal
11457.210	10.90	38.41	38.05	41.22	52.48	74	-21.52	Horizontal



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Test mode:	802	.11b	Test ch	annel:	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)	Polarizatio n
2950.135	5.02	33.33	40.27	45.50	43.58	74	-30.42	Vertical
3933.367	6.38	33.74	40.98	44.85	43.99	74	-30.01	Vertical
4924.000	7.51	34.51	41.72	45.16	45.46	74	-28.54	Vertical
7386.000	8.94	35.96	39.72	43.18	48.36	74	-25.64	Vertical
9848.000	9.78	37.54	37.58	40.62	50.36	74	-23.64	Vertical
11341.140	10.81	38.43	38.00	41.05	52.29	74	-21.71	Vertical
2957.654	5.02	33.33	40.27	45.29	43.37	74	-30.63	Horizontal
3913.393	6.33	33.70	40.97	45.80	44.86	74	-29.14	Horizontal
4924.000	7.51	34.51	41.72	45.73	46.03	74	-27.97	Horizontal
7386.000	8.94	35.96	39.72	43.59	48.77	74	-25.23	Horizontal
9848.000	9.78	37.54	37.58	40.68	50.42	74	-23.58	Horizontal
11486.410	10.91	38.40	38.06	41.64	52.89	74	-21.11	Horizontal

Test mode:	802	.11g	Test ch	annel:	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)	Polarizatio n
2927.691	5.01	33.28	40.24	45.21	43.26	74	-30.74	Vertical
3943.392	6.38	33.74	41.00	45.05	44.17	74	-29.83	Vertical
4824.000	7.45	34.68	41.64	44.83	45.32	74	-28.68	Vertical
7236.000	8.76	35.90	39.85	44.11	48.92	74	-25.08	Vertical
9648.000	9.69	37.36	37.76	40.92	50.21	74	-23.79	Vertical
11842.690	11.17	38.74	38.21	41.27	52.97	74	-21.03	Vertical
2905.419	4.98	33.26	40.23	45.66	43.67	74	-30.33	Horizontal
3863.900	6.28	33.63	40.94	45.95	44.92	74	-29.08	Horizontal
4824.000	7.45	34.68	41.64	45.18	45.67	74	-28.33	Horizontal
7236.000	8.76	35.90	39.85	44.03	48.84	74	-25.16	Horizontal
9648.000	9.69	37.36	37.76	41.64	50.93	74	-23.07	Horizontal
11515.680	10.94	38.42	38.07	41.60	52.89	74	-21.11	Horizontal



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Test mode:	802	.11g	Test ch	st channel: Middle Remark:		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)	Polarizatio n
2927.691	5.01	33.28	40.24	45.25	43.30	74	-30.70	Vertical
3913.393	6.33	33.70	40.97	45.41	44.47	74	-29.53	Vertical
4874.000	7.48	34.59	41.68	45.02	45.41	74	-28.59	Vertical
7311.000	8.85	35.92	39.79	43.43	48.41	74	-25.59	Vertical
9748.000	9.74	37.46	37.68	40.72	50.24	74	-23.76	Vertical
11457.210	10.90	38.41	38.05	41.88	53.14	74	-20.86	Vertical
2912.824	5.00	33.28	40.24	44.53	42.57	74	-31.43	Horizontal
3873.749	6.28	33.66	40.94	44.72	43.72	74	-30.28	Horizontal
4874.000	7.48	34.59	41.68	44.66	45.05	74	-28.95	Horizontal
7311.000	8.85	35.92	39.79	43.37	48.35	74	-25.65	Horizontal
9748.000	9.74	37.46	37.68	40.61	50.13	74	-23.87	Horizontal
11633.540	11.02	38.54	38.13	41.24	52.67	74	-21.33	Horizontal

Test mode:	802	2.11g	Test ch	annel:	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
2965.192	5.04	33.35	40.27	45.09	43.21	74	-30.79	Vertical
3903.444	6.33	33.70	40.97	45.11	44.17	74	-29.83	Vertical
4924.000	7.51	34.51	41.72	45.41	45.71	74	-28.29	Vertical
7386.000	8.94	35.96	39.72	43.61	48.79	74	-25.21	Vertical
9848.000	9.78	37.54	37.58	40.64	50.38	74	-23.62	Vertical
11722.720	11.08	38.62	38.16	41.66	53.20	74	-20.80	Vertical
2875.986	4.97	33.21	40.21	45.50	43.47	74	-30.53	Horizontal
3933.367	6.38	33.74	40.98	45.22	44.36	74	-29.64	Horizontal
4924.000	7.51	34.51	41.72	45.22	45.52	74	-28.48	Horizontal
7386.000	8.94	35.96	39.72	43.09	48.27	74	-25.73	Horizontal
9848.000	9.78	37.54	37.58	40.60	50.34	74	-23.66	Horizontal
11603.960	11.00	38.50	38.11	41.55	52.94	74	-21.06	Horizontal



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Test mode:	802.	802.11n(HT20)		annel:	Lowest	Remark:	k: 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
2927.691	5.01	33.28	40.24	45.95	44.00	74	-30.00	Vertical
3883.622	6.31	33.68	40.95	45.07	44.11	74	-29.89	Vertical
4824.000	7.45	34.68	41.64	45.53	46.02	74	-27.98	Vertical
7236.000	8.76	35.90	39.85	44.12	48.93	74	-25.07	Vertical
9648.000	9.69	37.36	37.76	6 41.71 51.00		74	-23.00	Vertical
11574.460	10.98	38.47	38.10	41.05	52.40	74	-21.60	Vertical
2950.135	5.02	33.33	40.27	45.30	43.38	74	-30.62	Horizontal
3933.367	6.38	33.74	40.98	45.49	44.63	74	-29.37	Horizontal
4824.000	7.45	34.68	41.64	44.80	45.29	74	-28.71	Horizontal
7236.000	8.76	35.90	39.85	43.79	48.60	74	-25.40	Horizontal
9648.000	9.69	37.36	37.76	41.60	50.89	74	-23.11	Horizontal
11812.580	11.15	38.71	38.20	40.86	52.52	74	-21.48	Horizontal

Test mode:	802.	11n(HT20)	Test cha	nnel:	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
2927.691	5.01	33.28	40.24	44.53	42.58	74	-31.42	Vertical
3953.443	6.41	33.76	41.00	45.66	44.83	74	-29.17	Vertical
4874.000	7.48	34.59	41.68	46.19	46.58	74	-27.42	Vertical
7311.000	8.85	35.92	39.79	43.74	48.72	74	-25.28	Vertical
9748.000	9.74	37.46	37.68	41.06	50.58	74	-23.42	Vertical
11722.720	11.08	38.62	38.16	41.01	52.55	74	-21.45	Vertical
2905.419	4.98	33.26	40.23	45.73	43.74	74	-30.26	Horizontal
3933.367	6.38	33.74	40.98	44.73	43.87	74	-30.13	Horizontal
4874.000	7.48	34.59	41.68	46.17	46.56	74	-27.44	Horizontal
7311.000	8.85	35.92	39.79	43.34	48.32	74	-25.68	Horizontal
9748.000	9.74	37.46	37.68	41.02	50.54	74	-23.46	Horizontal
11574.460	10.98	38.47	38.10	41.81	53.16	74	-20.84	Horizontal

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Test mode:	802	.11n(HT20)	Test cha	nnel:	Highest	Remark:	F	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
2883.316	4.97	33.24	40.21	45.40	43.40	74	-30.60	Vertical
3893.520	6.31	33.68	40.95	45.70	44.74	74	-29.26	Vertical
4924.000	7.51	34.51	41.72	46.01	46.31	74	-27.69	Vertical
7386.000	8.94	35.96	39.72	43.33	48.51	74	-25.49	Vertical
9848.000	9.78	37.54	37.58	41.08	50.82	50.82 74		Vertical
12024.960	11.30	38.93	38.28	40.65	52.60	74	-21.40	Vertical
2868.674	4.95	33.21	40.20	44.87	42.83	74	-31.17	Horizontal
3933.367	6.38	33.74	40.98	45.51	44.65	74	-29.35	Horizontal
4924.000	7.51	34.51	41.72	45.59	45.89	74	-28.11	Horizontal
7386.000	8.94	35.96	39.72	43.68	48.86	74	-25.14	Horizontal
9848.000	9.78	37.54	37.58	40.50	50.24	74	-23.76	Horizontal
11933.470	11.24	38.83	38.24	41.23	53.06	74	-20.94	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) Scan from 9kHz to 25GHz,The disturbance above 13GHz 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 amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
- 3) 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.

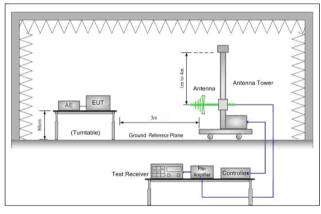


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5.9 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15	7 CFR Part 15C Section 15.209 and 15.205							
Test Method:	ANSI C63.10 2009	NSI C63.10 2009							
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)								
Limit:	Frequency	Limit (dBuV/m @3m)	Remark						
	30MHz-88MHz	40.0	Quasi-peak Value						
	88MHz-216MHz	Quasi-peak Value							
	216MHz-960MHz	46.0	Quasi-peak Value						
	960MHz-1GHz	54.0	Quasi-peak Value						
	Above 1GHz	54.0	Average Value						
	Above 1GHz 74.0 Peak Value								
Test Setup:									



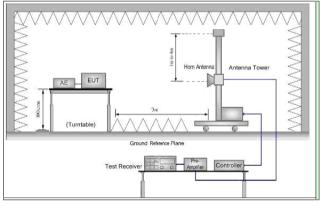


Figure 1. 30MHz to 1GHz

Figure 2. Above 1 GHz

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and Vehicular Charge+ Transmitting mode, found the AC Charge + Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b;		
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 channel g. Test the EUT in the lowest channel , the Highest channel h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case. i. Repeat above procedures until all frequencies measured was complete. Exploratory Test Mode: Exploratory Test Mode: Transmitting mode, AC Charge + Transmitting mode, Vehicular Charge+ Transmitting mode, found the AC Charge + Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) Only the worst case is recorded in the report.	Test Procedure:	the ground at a 3 meter semi-anechoic camber. The table was rotated
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 channel g. Test the EUT in the lowest channel , the Highest channel h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case. i. Repeat above procedures until all frequencies measured was complete. Exploratory Test Mode: Transmitting mode, AC Charge + Transmitting mode, Vehicular Charge+ Transmitting mode, AC Charge + Transmitting mode and Vehicular Charge+ Transmitting mode, found the AC Charge + Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) Only the worst case is recorded in the report.		antenna, which was mounted on the top of a variable-height antenna
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 channel g. Test the EUT in the lowest channel , the Highest channel h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode,And found the X axis positioning which it is worse case. i. Repeat above procedures until all frequencies measured was complete. Exploratory Test Mode: Transmitting mode, AC Charge + Transmitting mode, Vehicular Charge+ Transmitting mode, AC Charge + Transmitting mode and Vehicular Charge+ Transmitting mode, found the AC Charge + Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11c; 6.5Mbps of rate is the worst case of 802.11n(HT20) Only the worst case is recorded in the report.		ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make
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 channel g. Test the EUT in the lowest channel , the Highest channel h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case. i. Repeat above procedures until all frequencies measured was complete. Exploratory Test Mode: Transmitting mode, AC Charge + Transmitting mode, Vehicular Charge+ Transmitting mode Final Test Mode: Pretest the EUT at Transmitting mode, AC Charge + Transmitting mode and Vehicular Charge+ Transmitting mode, found the AC Charge + Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) Only the worst case is recorded in the report. Refer to section 4.10 for details		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
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 channel g. Test the EUT in the lowest channel , the Highest channel h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case. i. Repeat above procedures until all frequencies measured was complete. Exploratory Test Mode: Transmitting mode, AC Charge + Transmitting mode, Vehicular Charge+ Transmitting mode, AC Charge + Transmitting mode and Vehicular Charge+ Transmitting mode, found the AC Charge + Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) Only the worst case is recorded in the report. Refer to section 4.10 for details		
h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case. i. Repeat above procedures until all frequencies measured was complete. Exploratory Test Mode: Transmitting mode, AC Charge + Transmitting mode, Vehicular Charge+ Transmitting mode Final Test Mode: Pretest the EUT at Transmitting mode, AC Charge + Transmitting mode and Vehicular Charge+ Transmitting mode, found the AC Charge + Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11n; 6Mbps of rate is the worst case of 802.11n (HT20) Only the worst case is recorded in the report. Instruments Used: Refer to section 4.10 for details		transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for
for Transmitting mode, And found the X axis positioning which it is worse case. i. Repeat above procedures until all frequencies measured was complete. Exploratory Test Mode: Transmitting mode, AC Charge + Transmitting mode, Vehicular Charge+ Transmitting mode Final Test Mode: Pretest the EUT at Transmitting mode, AC Charge + Transmitting mode and Vehicular Charge+ Transmitting mode, found the AC Charge + Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11n(HT20) Only the worst case is recorded in the report. Instruments Used: Refer to section 4.10 for details		g. Test the EUT in the lowest channel, the Highest channel
complete. Exploratory Test Mode: Transmitting mode, AC Charge + Transmitting mode, Vehicular Charge+ Transmitting mode Final Test Mode: Pretest the EUT at Transmitting mode, AC Charge + Transmitting mode and Vehicular Charge+ Transmitting mode, found the AC Charge + Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) Only the worst case is recorded in the report. Instruments Used: Refer to section 4.10 for details		for Transmitting mode, And found the X axis positioning which it is
Vehicular Charge+ Transmitting mode Final Test Mode: Pretest the EUT at Transmitting mode, AC Charge + Transmitting mode and Vehicular Charge+ Transmitting mode, found the AC Charge + Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) Only the worst case is recorded in the report. Instruments Used: Refer to section 4.10 for details		· · · · · · · · · · · · · · · · · · ·
Final Test Mode: Pretest the EUT at Transmitting mode, AC Charge + Transmitting mode and Vehicular Charge+ Transmitting mode, found the AC Charge + Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) Only the worst case is recorded in the report. Refer to section 4.10 for details	Exploratory Test Mode:	Transmitting mode, AC Charge + Transmitting mode,
and Vehicular Charge+ Transmitting mode, found the AC Charge + Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) Only the worst case is recorded in the report. Instruments Used: Refer to section 4.10 for details		Vehicular Charge+ Transmitting mode
6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) Only the worst case is recorded in the report. Refer to section 4.10 for details	Final Test Mode:	
Instruments Used: Refer to section 4.10 for details		Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20)
Test Results: Pass	Instruments Used:	Refer to section 4.10 for details
	Test Results:	Pass

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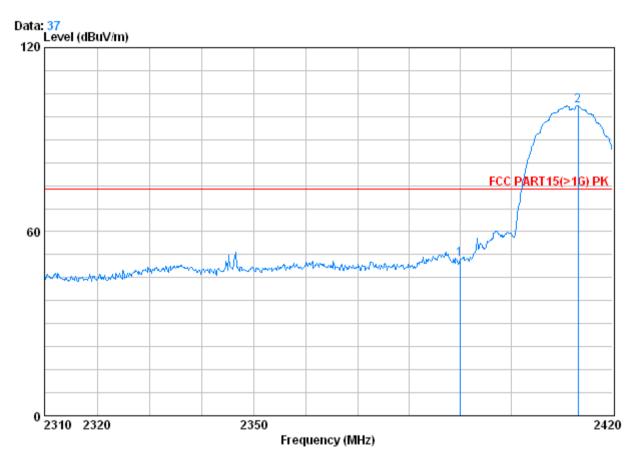


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Test plot as follows:

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



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

Job No. : 2722RF Mode : 2412 B

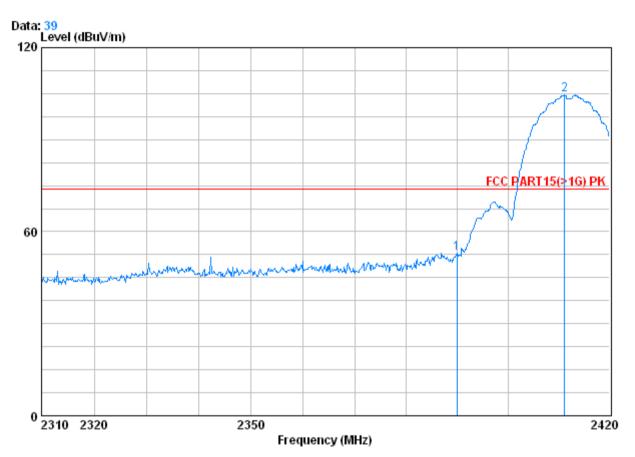
	Freq			Preamp Factor			Limit Line	
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 2	2390.000 2413.180			39.85 39.86				



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Test mode. Ooz. Tro Test chamber. Lowest Nemark. Fear Honzonta		Test mode:	802.11b	Test channel:	Lowest	Remark:	Peak	Horizontal
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Condition : FCC PART15(>1G) PK 3m HORIZONTAL

Job No. : 2722RF Mode : 2412 B

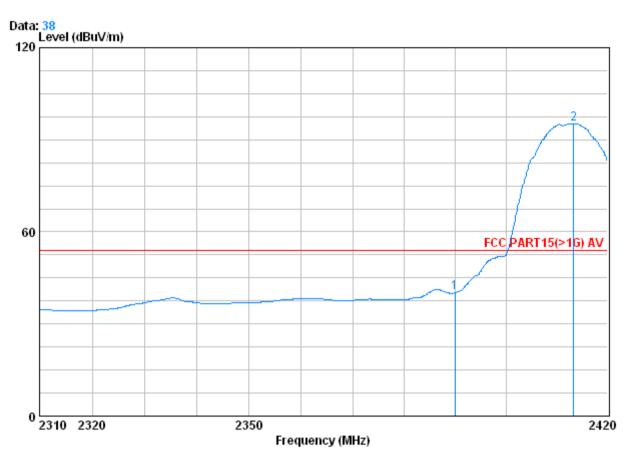
	Freq			Preamp Factor			Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 0 2 0	2390.000 2411.090			39.85 39.86				



Report No.: SZEM140500272201

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



Condition : FCC PART15(>1G) AV 3m VERTICAL

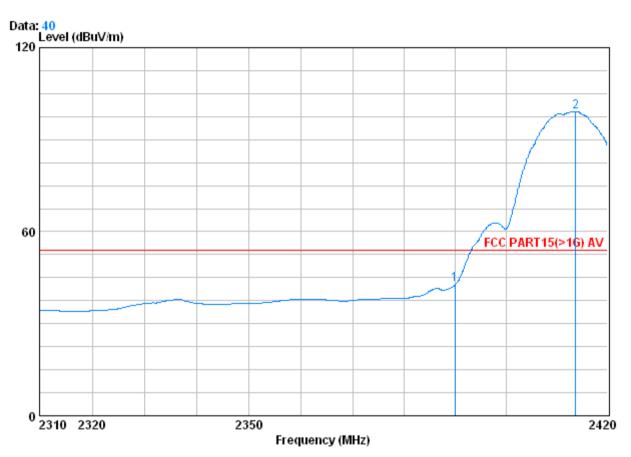
Job No. : 2722RF Mode : 2412 B

		Freq			Preamp Factor			Limit Line	
		MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 (2 (-	2390.000 2413.290			39.85 39.86				



Report No.: SZEM140500272201

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

Job No. : 2722RF Mode : 2412 B

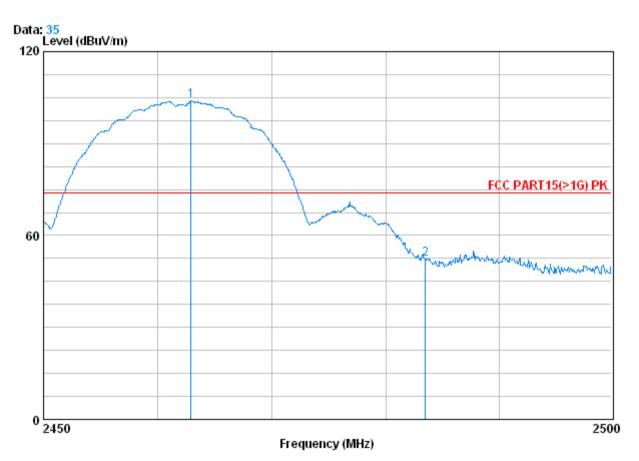
	Freq			Preamp Factor			Limit Line	
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 2	2390.000 2413.730			39.85 39.86				



Report No.: SZEM140500272201

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



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

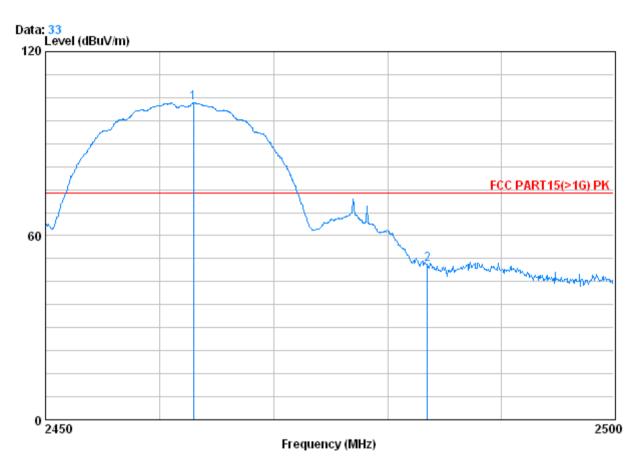
Job No. : 2722RF Mode : 2462 B

	Freq			Preamp Factor			Limit Line	
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @ 2 @	2462.900 2483.500			39.91 39.92				29.91 -21.78



Report No.: SZEM140500272201

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

Job No. : 2722RF Mode : 2462 B

> 1 @ 2 @

	Cablei	Antenna	Preamp	Read		Limit	Over
Freq	Loss	Factor	Factor	Level	Level	Line	Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
2462.950	3.02	32.64	39.91	107.54	103.30	74.00	29.30
2483.500	3.03	32.67	39.92	54.85	50.63	74.00	-23.37



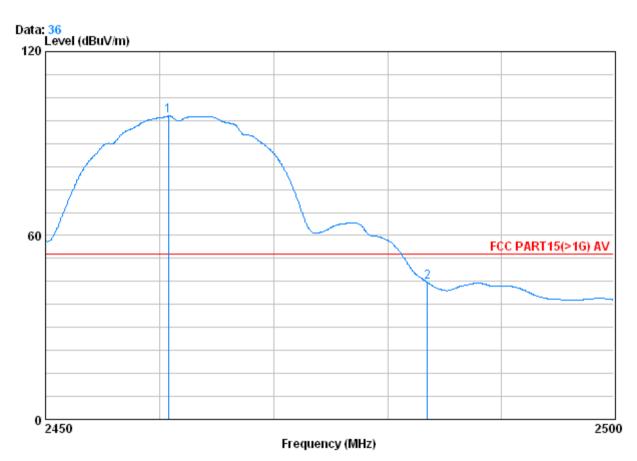
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Test mode:	802.11b	Test channel:	Highest	Remark:	Average	Vertical
i cot illouc.	002.110	i cot oriaririoi.	riigiicat	rtomant.	rivoluge	Voitioai



Condition : FCC PART15(>1G) AV 3m VERTICAL

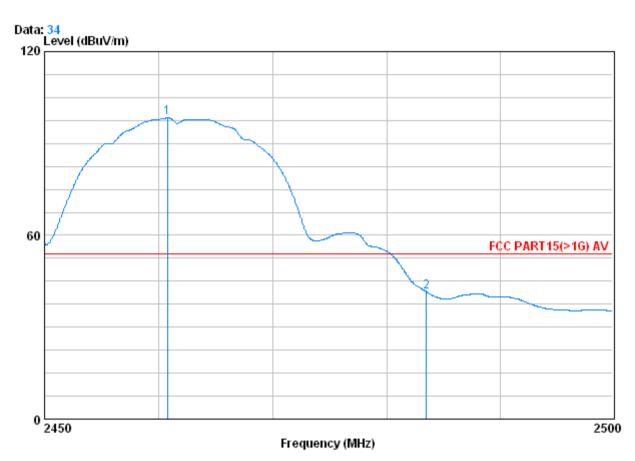
Job No. : 2722RF Mode : 2462 B

	Freq		Antenna Factor	-			Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 0	2460.750 2483.500						54.00 54.00	



Report No.: SZEM140500272201

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

Job No. : 2722RF Mode : 2462 B

1046	. 2402 D	Freq		Antenna Factor	•			Limit Line	Over Limit
		MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	_	2460.750		32.64					
2	[d	2483.500	3.03	32.67	39.92	45.85	41.63	54.00	-12.37

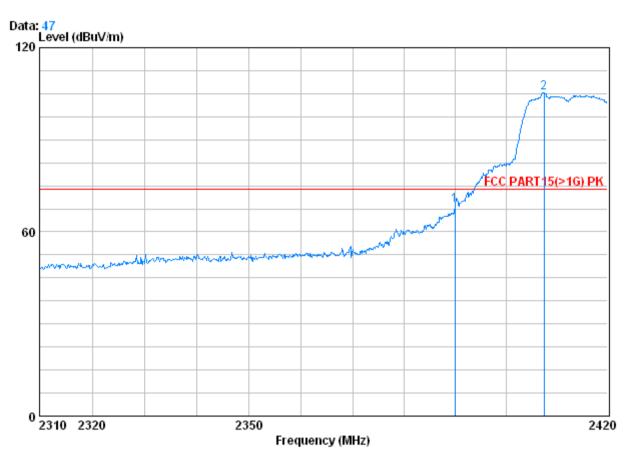
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rest mode. ouz.rig rest channel. Lowest Remark. Peak Vertical	Test mode:	802.11g	Test channel:	Lowest	Remark:	Peak	Vertical
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Condition : FCC PART15(>1G) PK 3m VERTICAL

Job No. : 2722RF Mode : 2412 G

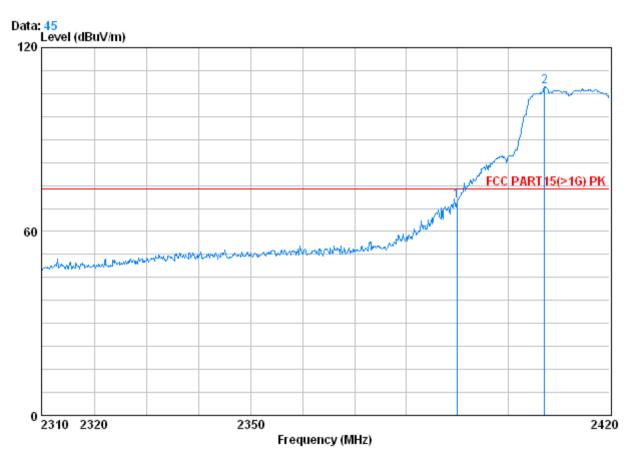
	Freq			Preamp Factor			Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @ 2 @	2390.000 2407.460						74.00 74.00	



Report No.: SZEM140500272201

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

Job No. : 2722RF Mode : 2412 G

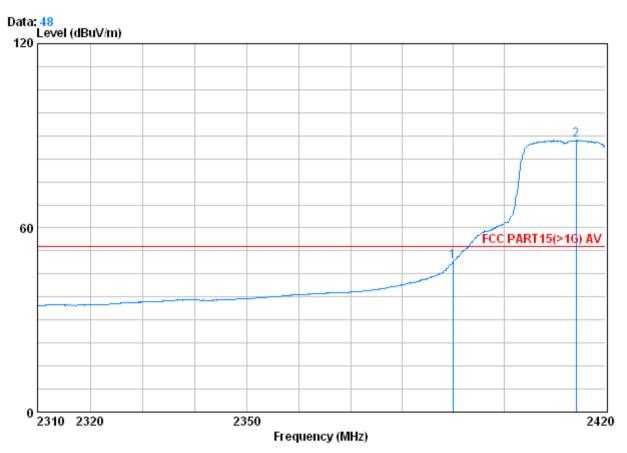
	Freq			Preamp Factor			Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @ 2 @	2389.970 2407.130						74.00 74.00	



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Test mode:	802.11g	Test channel:	Lowest	Remark:	Average	Vertical
Tool Illoud.	002.119	i cot oriaririoi.	LOWCOL	i tomant.	rvolugo	Voitioai



Condition : FCC PART15(>1G) AV 3m VERTICAL

Job No. : 2722RF Mode : 2412 G

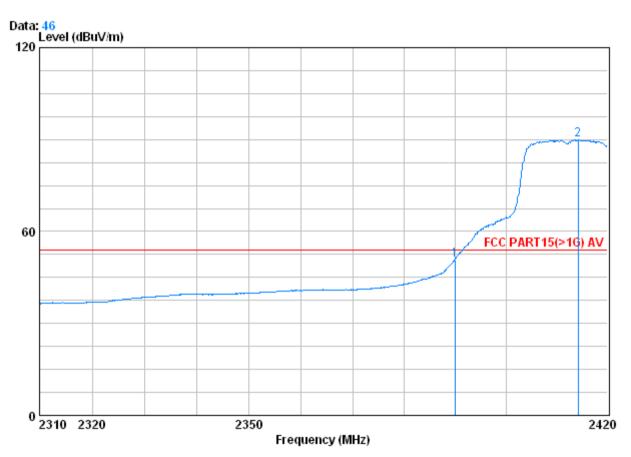
	Freq			Preamp Factor			Limit Line	
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @ 2 @	2390.000 2414.170						54.00 54.00	



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

Job No. : 2722RF Mode : 2412 G

	Freq			Preamp Factor			Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @ 2 @	2390.000 2414.170			39.85 39.86				-3.25 35.93

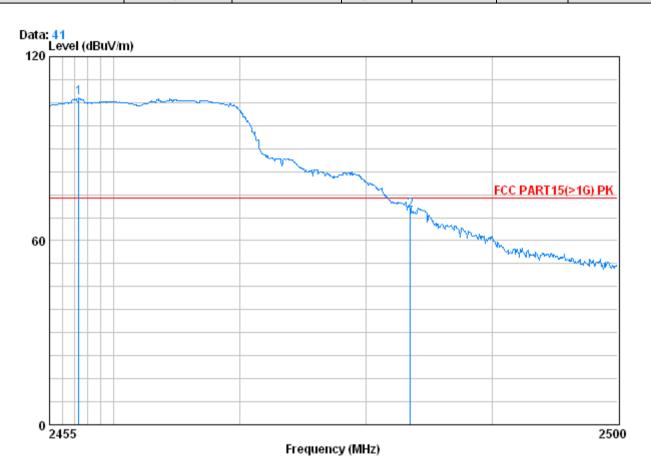
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Test mode:	802.11g	Test channel:	Highest	Remark:	Peak	Vertical



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

Job No. : 2722RF Mode : 2462 G

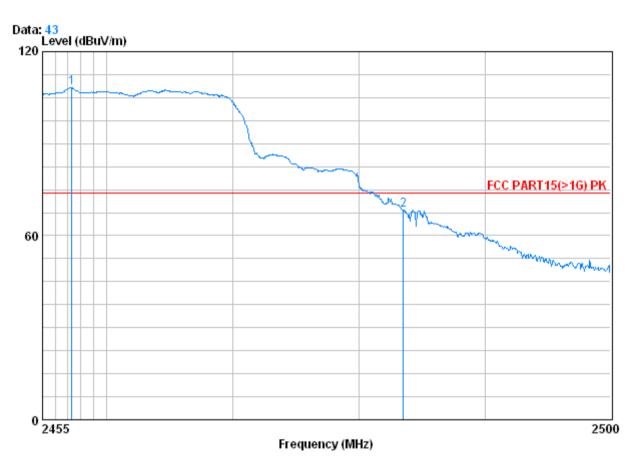
		Freq		Antenna Factor	•			Limit Line	
		MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 2	-	2457.295 2483.500						74.00 74.00	



Report No.: SZEM140500272201

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



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

Job No. : 2722RF Mode : 2462 G

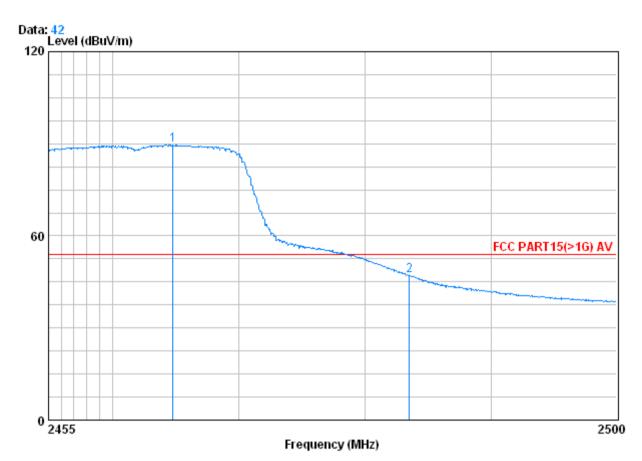
104e	: 2402 G	Freq			•			Limit Line	Over Limit
	_	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 0 2 0		157.295 183.500						74.00 74.00	



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Test mode: 802.11g Te	st channel: Highest	Remark:	Average	Vertical
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Condition : FCC PART15(>1G) AV 3m VERTICAL

Job No. : 2722RF Mode : 2462 G

		Freq		Antenna Factor	-			Limit Line	Over Limit
		MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	0	2464.810	3.02	32.64	39.91	93.78	89.54	54.00	35.54
2	0	2483.500	3.03	32.67	39.92	51.34	47.12	54.00	-6.88

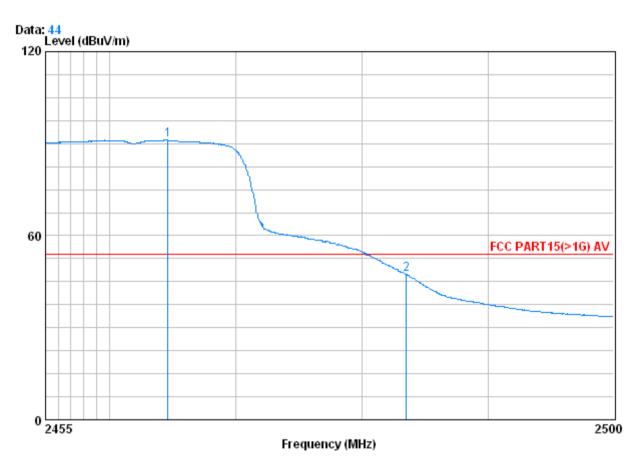
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Test mode: 802.11g Test channel:	Highest F	Remark:	Average	Horizontal
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Condition : FCC PART15(>1G) AV 3m HORIZONTAL

Job No. : 2722RF Mode : 2462 G

- C	. 2-02 0	Freq			Preamp Factor	Read Level		Limit Line	Over Limit
	-	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
10		2464.630			39.91				



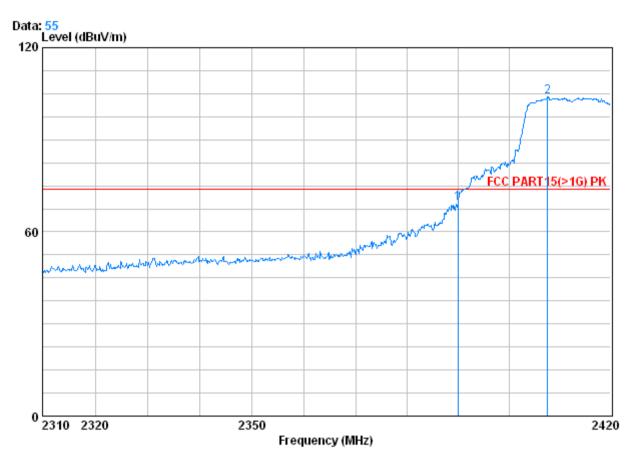
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Test mode: 802.11n(HT20) Test channel: Lowest Remark: Peak Vertical



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

Job No. : 2722RF Mode : 2412 N

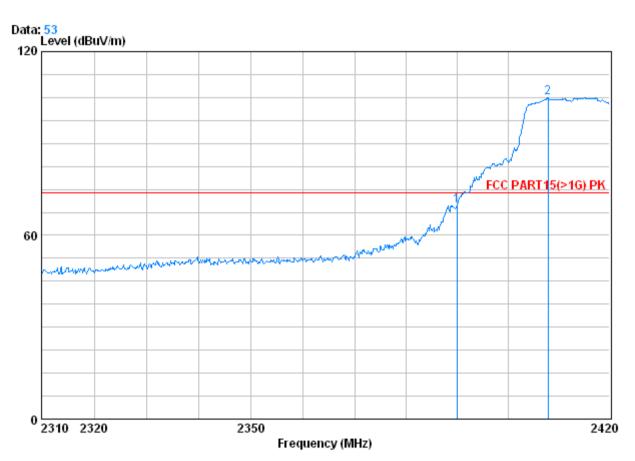
	Freq			Preamp Factor			Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 0 2 0	2390.000 2407.570						74.00 74.00	



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Test mode:	802.11n(HT20)	Test channel:	Lowest	Remark:	Peak	Horizontal



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

Job No. : 2722RF Mode : 2412 N

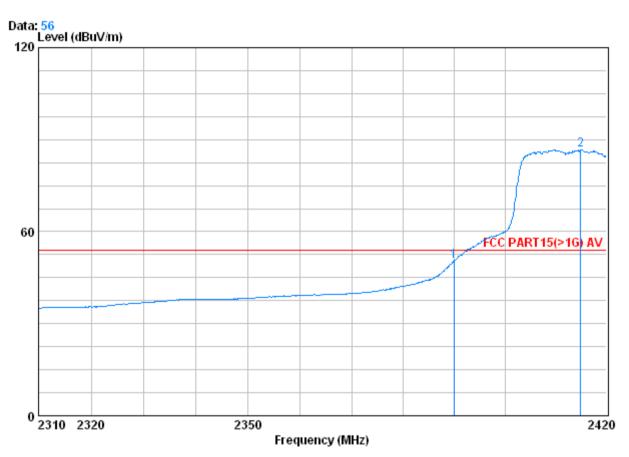
1046	. 2412 14	Freq			Preamp Factor			Limit Line	Over Limit
	-	MHz	dB	dB/m	dB	dBuV	dBuV/m	$\overline{\mathtt{dBuV/m}}$	dB
1 @ 2 @		2390.000 2407.900			39.85 39.86			74.00 74.00	-4.24 30.95



Report No.: SZEM140500272201

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Test mode: 802.11n(HT20) Test channel: Lowest Remark: Average Vertical
--



Condition : FCC PART15(>1G) AV 3m VERTICAL

Job No. : 2722RF Mode : 2412 N

	Freq			Preamp Factor			Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 0 2 0	2390.000 2414.940			39.85 39.86			54.00 54.00	-3.50 32.64

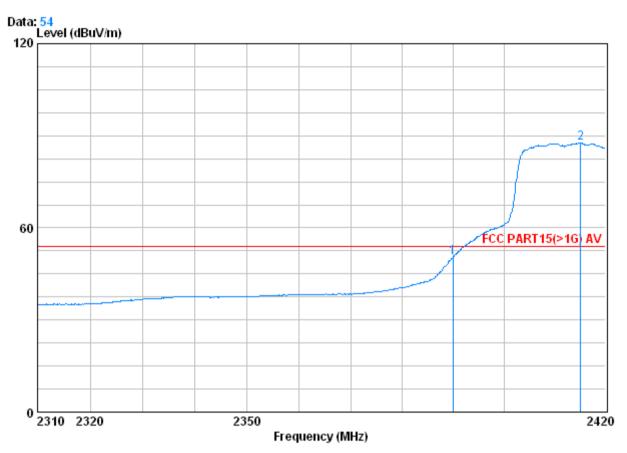
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Test mode:	802.11n(HT20)	Test channel:	Lowest	Remark:	Average	Horizontal



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

Job No. : 2722RF Mode : 2412 N

	Freq			Preamp Factor			Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @ 2 @	2390.000	2.98	32.51	39.85	54.75	50.40	54.00	-3.60

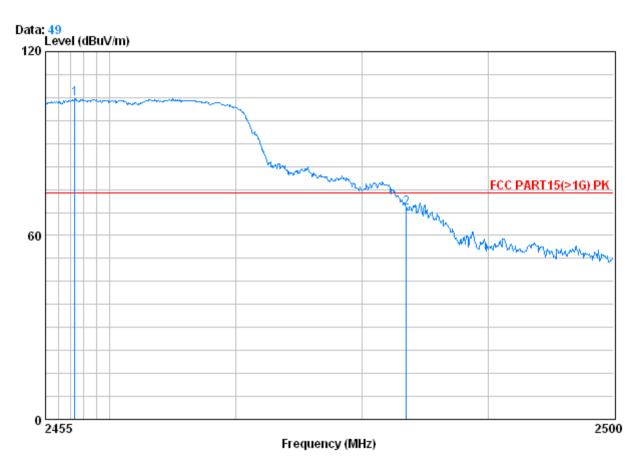
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Test mode: 802.11n(HT20) Test channel: Highest Remark: Peak Vertical	Test mode:
--	------------



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

Job No. : 2722RF Mode : 2462 N

1046	. 2402 14	Freq			•			Limit Line	Over Limit
		MHz	dB	dB/m	dB	dBuV	dBuV/m	$\overline{\mathtt{dBuV/m}}$	dB
1	-	2457.295 2483.500				108.90 73.28			30.66 -4.94

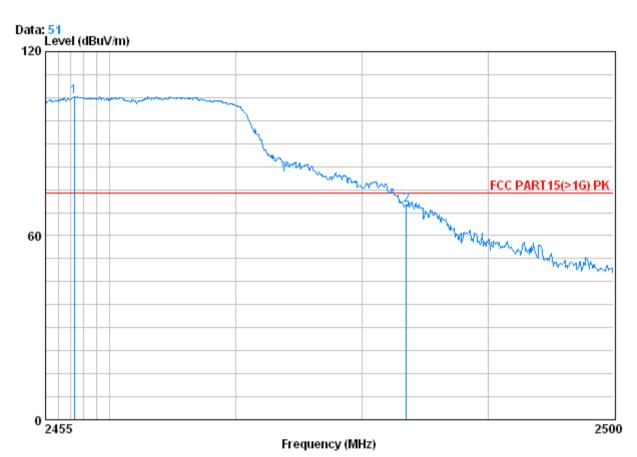
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Test mode:	802.11n(HT20)	Test channel:	Highest	Remark:	Peak	Horizontal
	00					



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

Job No. : 2722RF Mode : 2462 N

noute	. 2402 N	Freq		Antenna Factor	-			Limit Line	Over Limit
	-	MHz	dB	dB/m	dB	dBuV	$\overline{\text{dBuV/m}}$	dBuV/m	dB
1 @ 2 @		2457.250 2483.500						74.00 74.00	

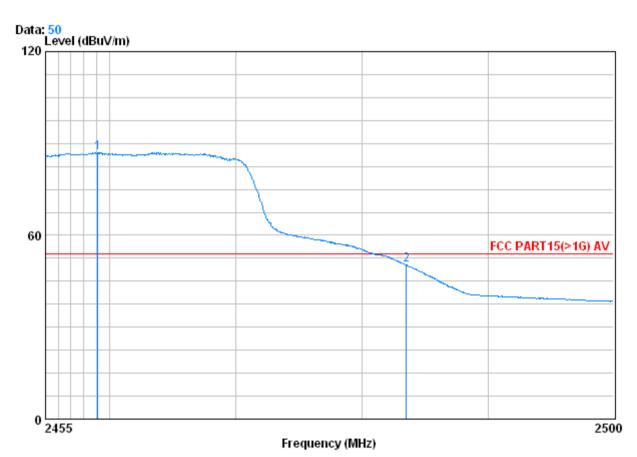
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Test mode:	802.11n(HT20)	Test channel:	Highest	Remark:	Average	Vertical
1 oot modo.	002.1111(11120)	i oot onamion.	i ngnoot	i tomant.	rivolago	v Oi tioai



Condition : FCC PART15(>1G) AV 3m VERTICAL

Job No. : 2722RF Mode : 2462 N

лоце	. 2402 1	Freq			Preamp Factor			Limit Line	Over Limit
		MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	0	2459.095	3.02	32.64	39.91	91.23	86.98	54.00	32.98
2	0	2483.500	3.03	32.67	39.92	54.52	50.30	54.00	-3.70

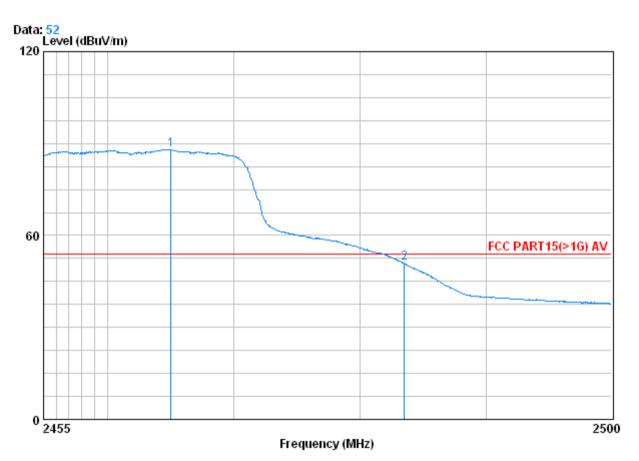
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Test mode:	802.11n(HT20)	Test channel:	Highest	Remark:	Average	Horizontal
1000111000.	002.1111(11120)	i oot onamion.	i ligiloot	i tomant.	rivolago	110112011141



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

Job No. : 2722RF Mode : 2462 N

	Freq			Preamp Factor	Read Level		Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 0 2 0	2465.035 2483.500			39.91 39.92				

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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