Report No: GTSE11120098801

FCC REPORT

Applicant:	RF-LINK INTERNATIONAL LIMITED
Address of Applicant:	Bldg 56A 3/F,Baotian Rd3,Xixiang Town, Bao'an District, Shenzhen, China
Equipment Under Test (EUT)	
Product Name:	RTL8188CUS WIFI module
Model No.:	RL-UM02BS,RL-UM02BL,RL-UM02B,RL-UM02L,RL-UM02
FCC ID:	A5LRTL8188CUS
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247:2010
Date of sample receipt:	Dec.8, 2011
Date of Test:	Dec.12-26, 2011
Date of report issued:	Dec.26, 2011
Test Result :	PASS *

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

Authorized Signature:

Stephen Guo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*Dec.26, 2011*	*Original*

Prepared By: Collin.He ***Date:*** Dec.26, 2011

Project Engineer

Check By: Hans.Hu ***Date:*** Dec.26, 2011

Reviewer

3 Contents

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4 Test Summary

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

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

5 General Information

5.1 Client Information

Applicant:	RF-LINK INTERNATIONAL LIMITED
Address of Applicant:	Bldg 56A 3/F,Baotian Rd3,Xixiang Town,Bao'an District, Shenzhen, China
Manufacturer/ Factory:	RF-LINK INTERNATIONAL LIMITED
Address of Manufacturer/ Factory:	Bldg 56A 3/F,Baotian Rd3,Xixiang Town,Bao'an District, Shenzhen, China

5.2 General Description of E.U.T.

Product Name:	RTL8188CUS WIFI module
Model No.:	RL-UM02BS,RL-UM02BL,RL-UM02B,RL-UM02L,RL-UM02
Operation Frequency:	2412MHz~2462MHz (802.11b/802.11g/802.11n(H20)) 2422MHz~2452MHz (802.11n(H40))
Channel numbers:	11 for 802.11b/802.11g/802.11(H20) 7 for 802.11(H40)
Channel separation:	5MHz
Modulation technology: (IEEE 802.11b)	Direct Sequence Spread Spectrum (DSSS)
Modulation technology: (IEEE 802.11g/802.11n)	Orthogonal Frequency Division Multiplexing(OFDM)
Data speed (IEEE 802.11b):	1Mbps, 2Mbps, 5.5Mbps, 11Mbps
Data speed (IEEE 802.11g):	6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps,54Mbps
Data speed (IEEE 802.11n):	Up to 150Mbps
Antenna Type:	Integral
Antenna gain:	2dBi
Power supply:	DC 3.3V
Remark :	Only RL-UM02BS was tested. RL-UM02BS,RL-UM02BL,RL-UM02B,RL-UM02L,RL-UM02X are identical in the same PCB layout, interior structure and electrical circuits. The only differences are the model name.

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

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

802.11b/802.11g/802.11n(H20)

Channel	Frequency
The lowest channel	2412MHz
The middle channel	2437MHz
The Highest channel	2462MHz

802.11n(H40)

Channel	Frequency
The lowest channel	2422MHz
The middle channel	2437MHz
The Highest channel	2452MHz

5.3 Test mode

WIFI mode	Keep the EUT in normal operation mode by wireless router.
Transmitting mode	Keep the EUT in continuously transmitting mode on fix frequency.

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

Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(H20)	6.5Mbps
802.11n(H40)	13.0Mbps

Final Test Mode:

According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup” 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(H20), 13Mbps for 802.11n(H40)

5.4 Test Facility

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

● **FCC —Registration No.: 600491**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in out files. Registration 600491, July 20, 2010.

● **Industry Canada (IC)**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. Has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-1.

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.
Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China
Tel: 0755-27798480
Fax: 0755-27798960

5.6 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
IBM,	Laptop	T42	L3-G0686	DoC

5.7 Other Information Requested by the Customer

None.

5.8 Test Instruments list

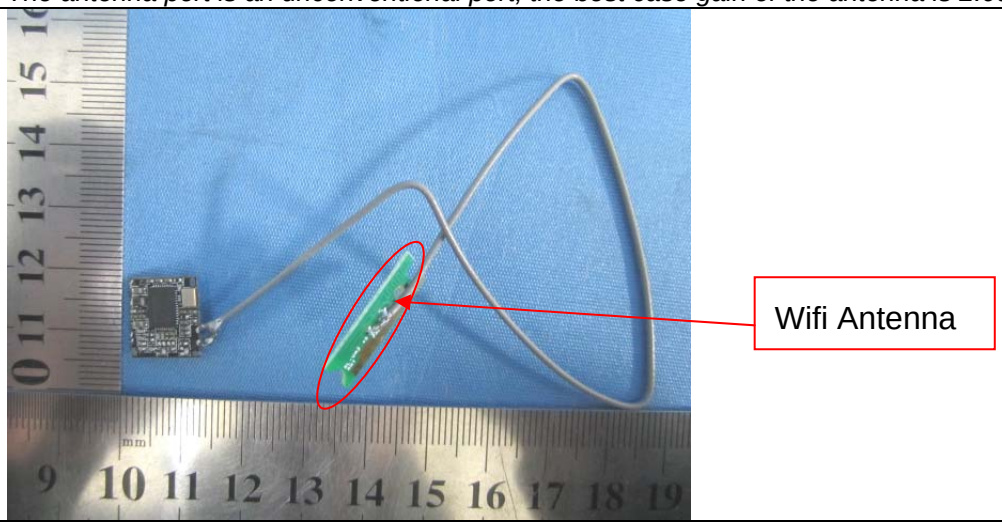
Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 30 2011	Mar. 29 2012
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 04 2011	Jul. 03 2012
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 26 2011	Feb. 25 2012
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 30 2011	June 29 2012
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 30 2011	Mar. 29 2012
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	Apr. 01 2011	Mar. 31 2012
9	Coaxial Cable	GTS	N/A	GTS211	Apr. 01 2011	Mar. 31 2012
9	Coaxial cable	GTS	N/A	GTS210	Apr. 01 2011	Mar. 31 2012
11	Coaxial Cable	GTS	N/A	GTS212	Apr. 01 2011	Mar. 31 2012
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 04 2011	Jul. 03 2012
13	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 04 2011	Jul. 03 2012
14	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 30 2011	June 29 2012
15	Band filter	Amindeon	82346	GTS219	June 30 2011	June 29 2012

Conducted Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS252	Jul. 04 2011	Jul. 03 2012
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jul. 04 2011	Jul. 03 2012
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jul. 04 2011	Jul. 03 2012
4	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jul. 04 2011	Jul. 03 2012
5	Coaxial Cable	GTS	N/A	GTS227	Apr. 01 2011	Mar. 31 2012
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

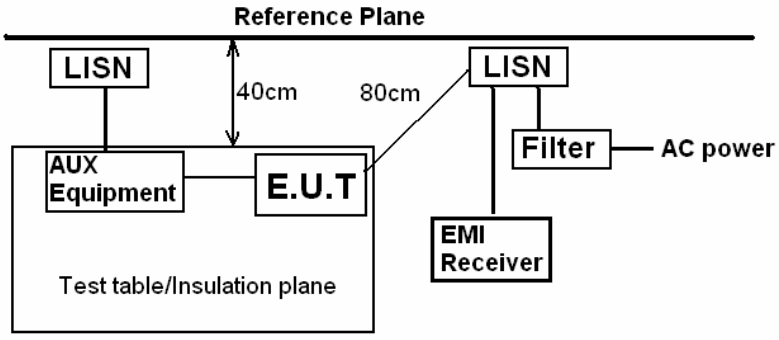
6 Test results and Measurement Data

6.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: *An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.* *15.247(c) (1)(i) requirement:* *(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.*	
E.U.T Antenna:	
The antenna port is an unconventional port; the best case gain of the antenna is 2.0dBi.	

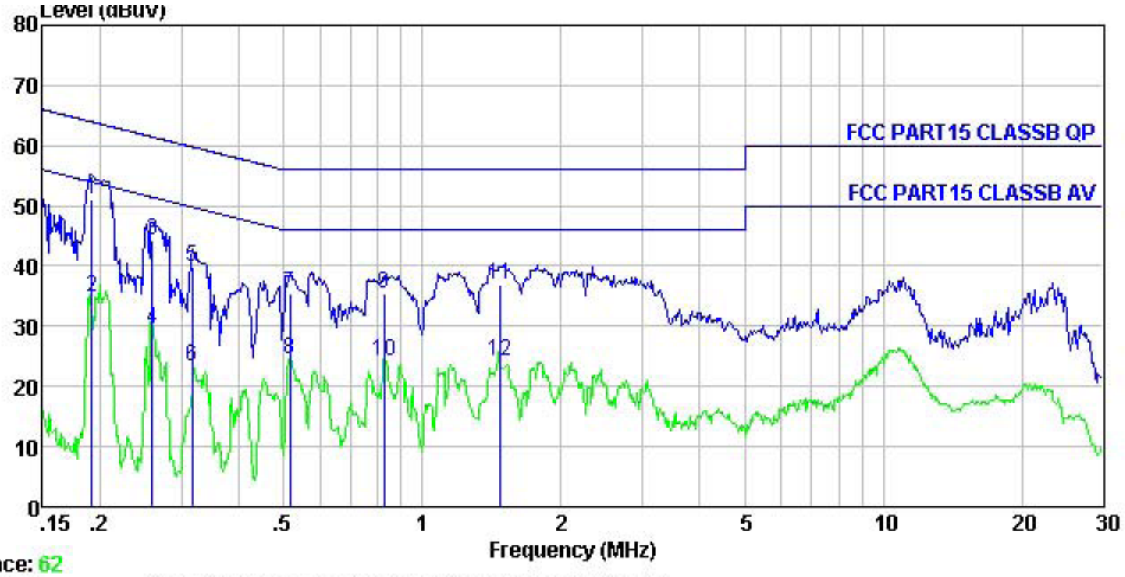


6.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.4: 2003
Test Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9KHz, VBW=30KHz
Limit:	Frequency range (MHz) / Limit (dBuV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 * Decreases with the logarithm of the frequency.
Test procedure:	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test Instruments:	Refer to section 5.8 for details
Test mode:	WIFI mode
Test results:	Pass

Measurement Data

Live Line:

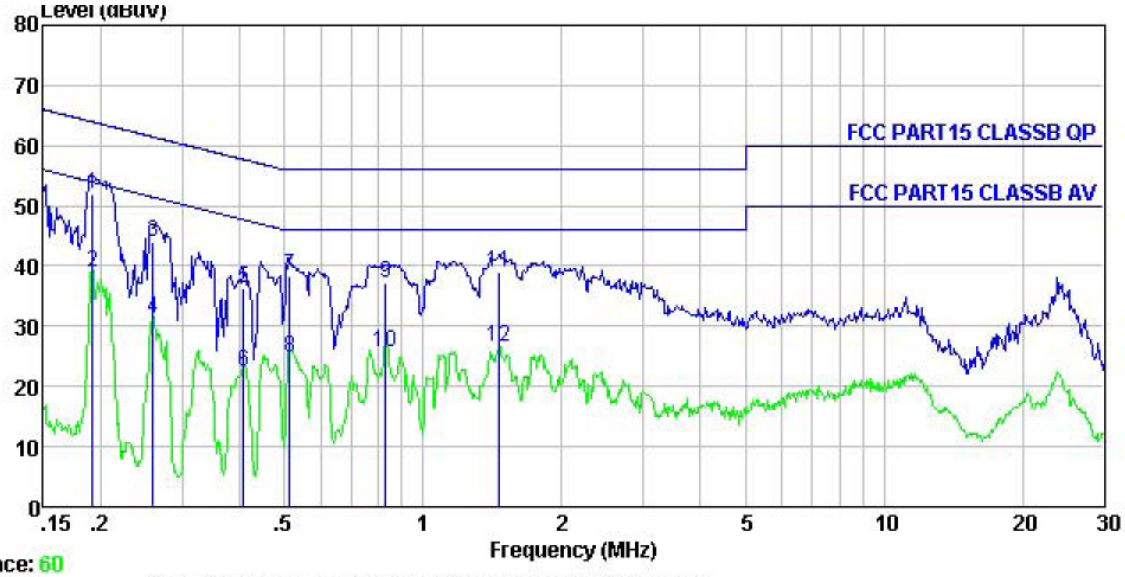


Trace: 62

Condition : FCC PART15 CLASSB QP LISN(2011) LINE
Job No. : 988RF
Test Mode : WIFI mode
Test Engineer: Gavin

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.191	50.36	0.66	0.10	51.12	63.98	-12.86	QP
2	0.191	34.19	0.66	0.10	34.95	53.98	-19.03	Average
3	0.259	43.45	0.63	0.10	44.18	61.47	-17.29	QP
4	0.259	28.81	0.63	0.10	29.54	51.47	-21.93	Average
5	0.317	39.07	0.60	0.10	39.77	59.80	-20.03	QP
6	0.317	22.48	0.60	0.10	23.18	49.80	-26.62	Average
7	0.516	34.66	0.55	0.10	35.31	56.00	-20.69	QP
8	0.516	23.92	0.55	0.10	24.57	46.00	-21.43	Average
9	0.826	34.75	0.50	0.10	35.35	56.00	-20.65	QP
10	0.826	23.57	0.50	0.10	24.17	46.00	-21.83	Average
11	1.472	36.37	0.43	0.10	36.90	56.00	-19.10	QP
12	1.472	23.60	0.43	0.10	24.13	46.00	-21.87	Average

Neutral Line:



Trace: 60

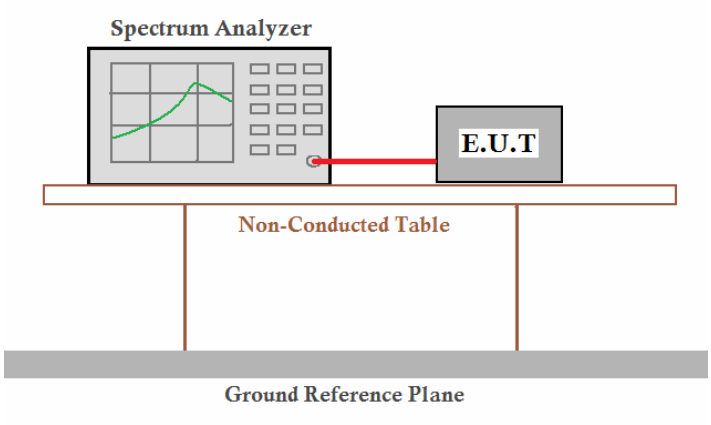
Condition : FCC PART15 CLASSB QP LISN(2011) NEUTRAL
Job No. : 988RF
Test Mode : WIFI mode
Test Engineer: Gavin

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.191	51.33	0.66	0.10	52.09	63.98	-11.89	QP
2	0.191	38.17	0.66	0.10	38.93	53.98	-15.05	Average
3	0.259	43.12	0.63	0.10	43.85	61.47	-17.62	QP
4	0.259	30.59	0.63	0.10	31.32	51.47	-20.15	Average
5	0.408	35.75	0.58	0.10	36.43	57.68	-21.25	QP
6	0.408	21.62	0.58	0.10	22.30	47.68	-25.38	Average
7	0.513	37.80	0.55	0.10	38.45	56.00	-17.55	QP
8	0.513	24.27	0.55	0.10	24.92	46.00	-21.08	Average
9	0.830	36.51	0.50	0.10	37.11	56.00	-18.89	QP
10	0.830	25.04	0.50	0.10	25.64	46.00	-20.36	Average
11	1.464	38.48	0.43	0.10	39.01	56.00	-16.99	QP
12	1.464	25.92	0.43	0.10	26.45	46.00	-19.55	Average

Notes:

1. An initial pre-scan was performed on the live and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss

6.3 Conducted Peak Output Power

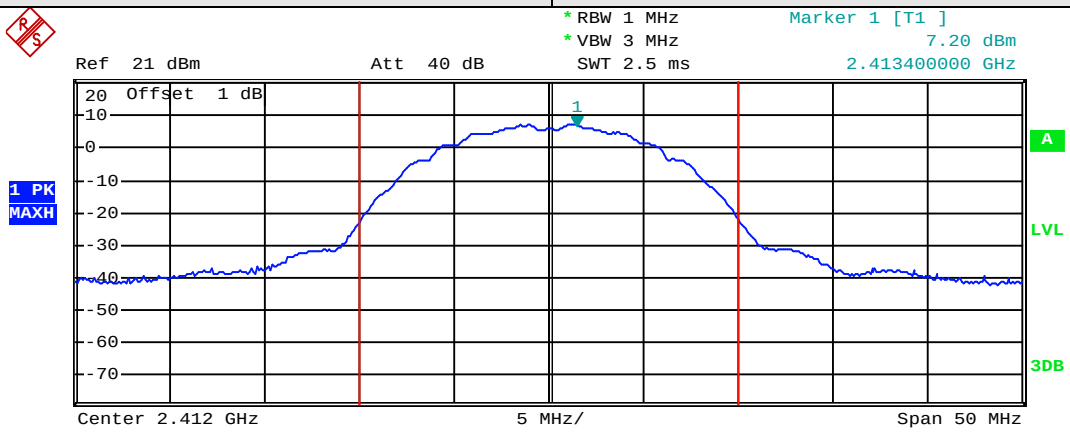
Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Transmitting mode
Test results:	Pass

Measurement Data

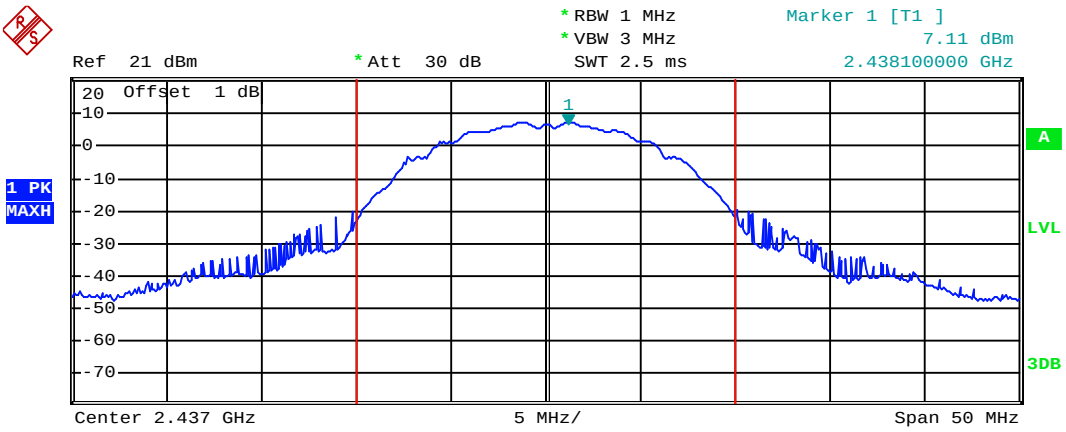
Test CH	Peak Output Power (dBm)				Limit(dBm)	Result
	802.11b	802.11g	802.11n(H20)	802.11n(H40)		
Lowest	15.12	14.95	13.73	13.62	30.00	Pass
Middle	15.20	14.23	13.80	13.29		
Highest	15.06	14.21	13.49	13.40		

Test plot as follows:

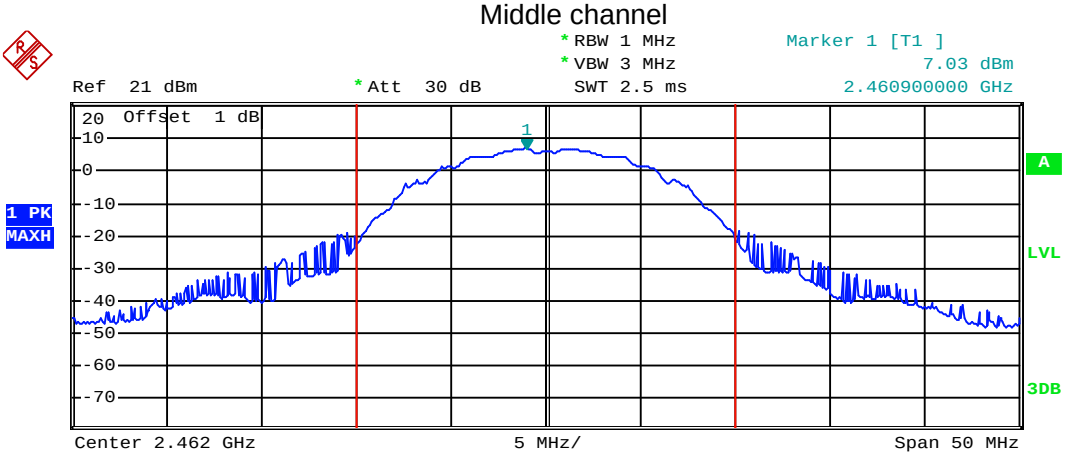
Test mode:	802.11b



Lowest channel

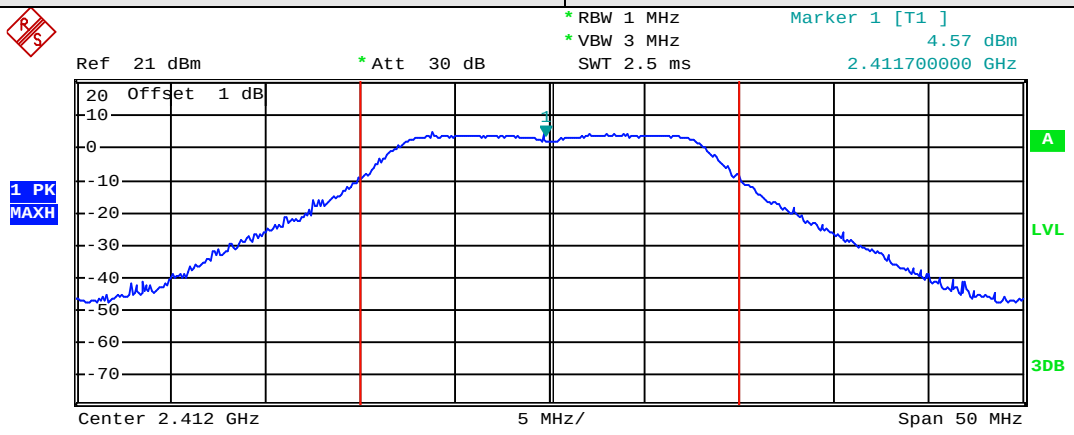


Middle channel

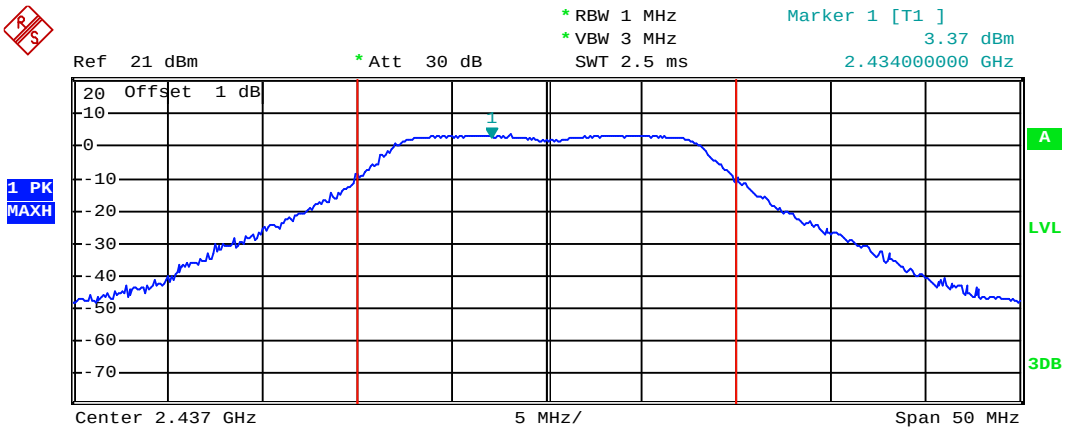


Highest channel

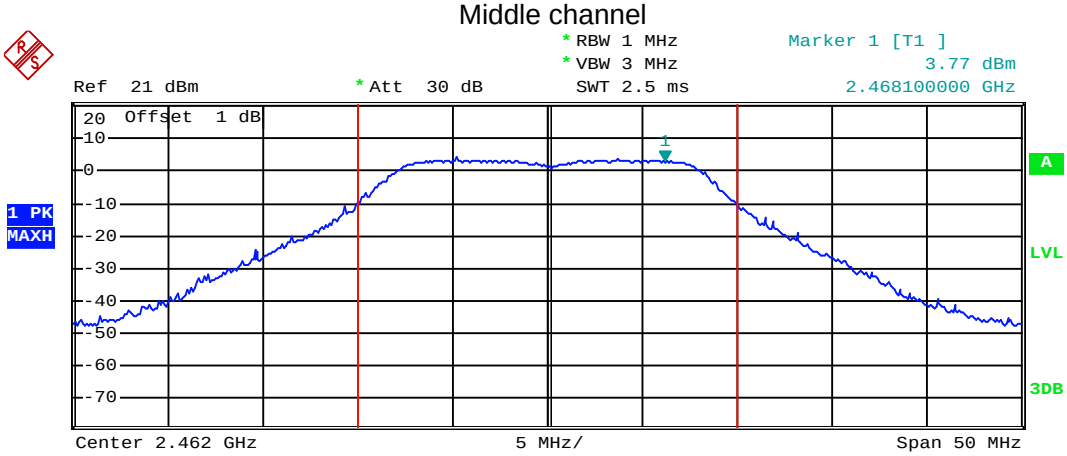
Test mode:	802.11g



Lowest channel

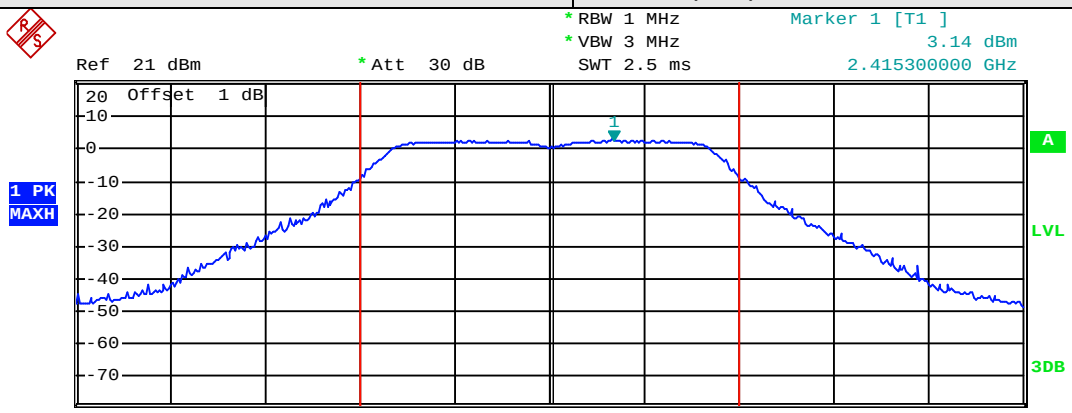


Middle channel

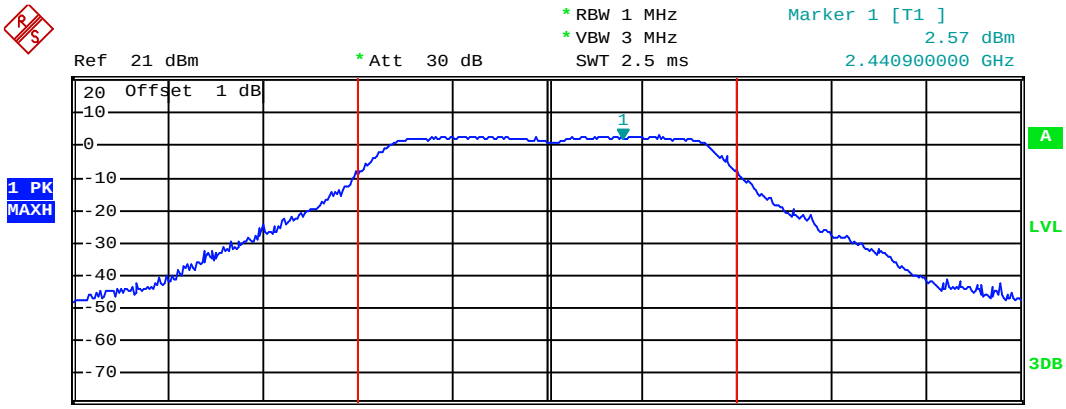


Highest channel

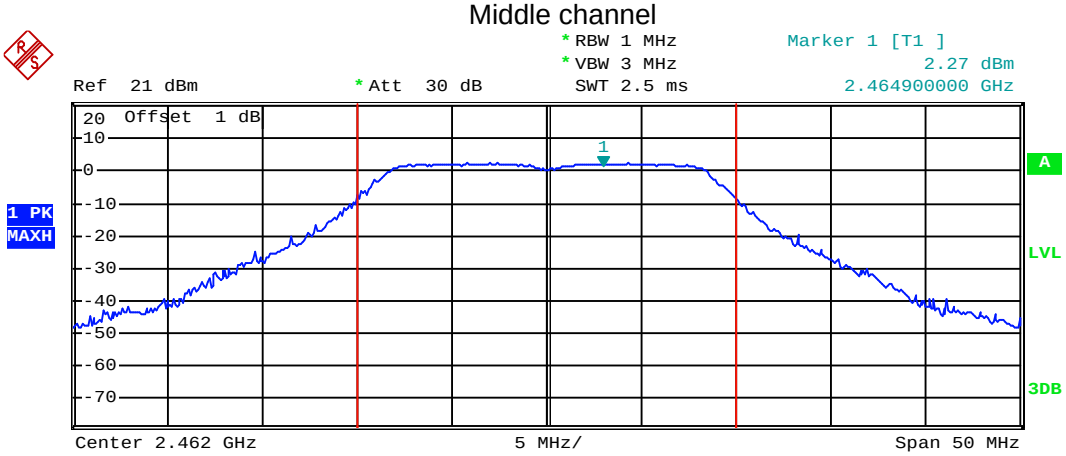
Test mode:	802.11n(H20)



Lowest channel

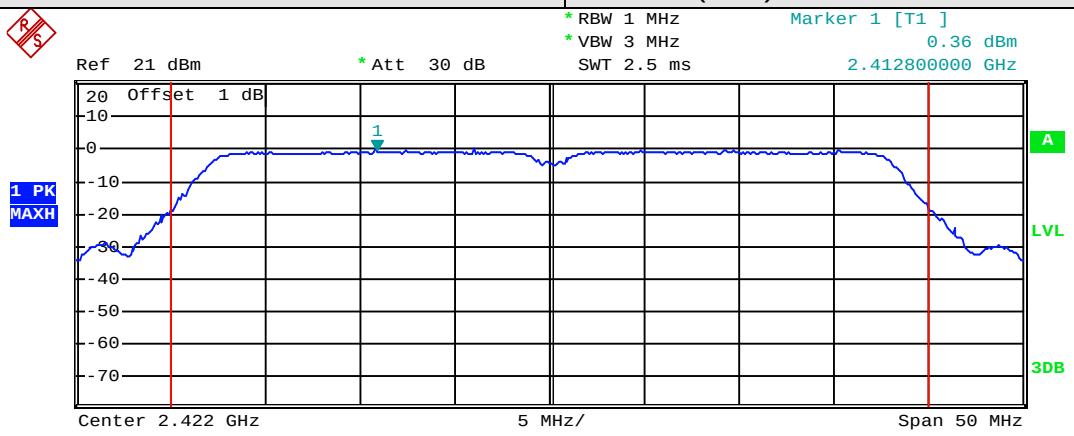


Middle channel

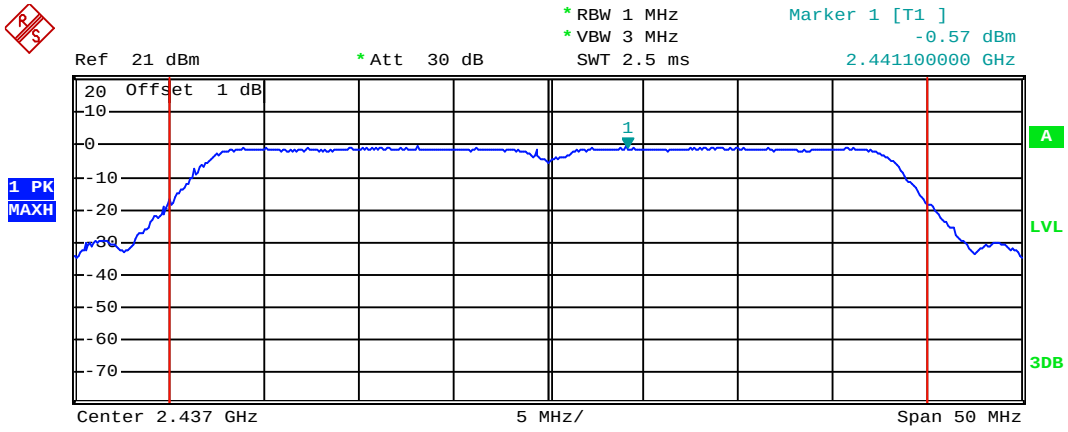


Highest channel

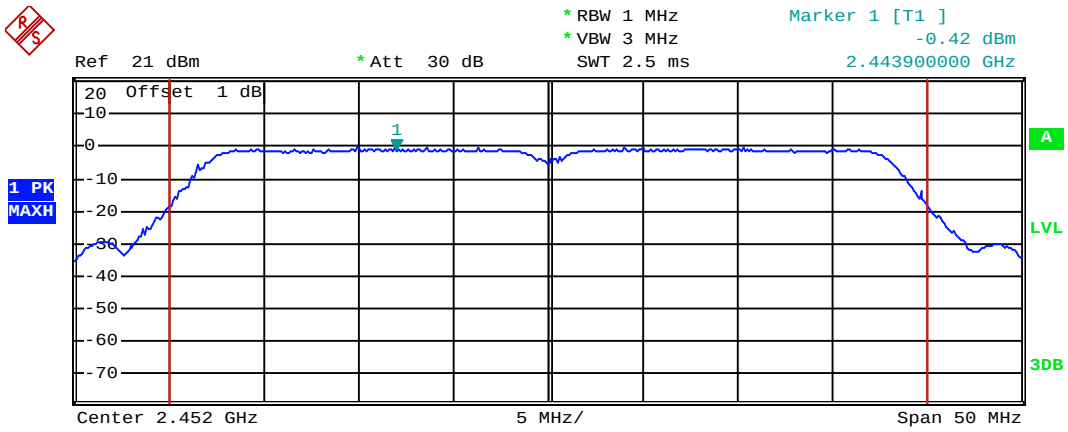
Test mode:	802.11n(H40)



Lowest channel

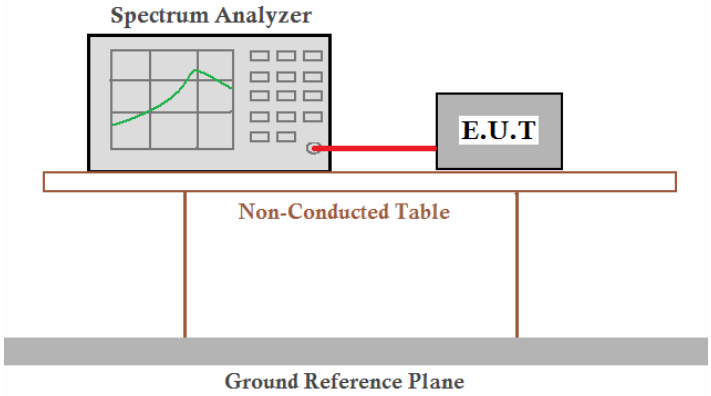


Middle channel



Highest channel

6.4 6dB Occupy Bandwidth

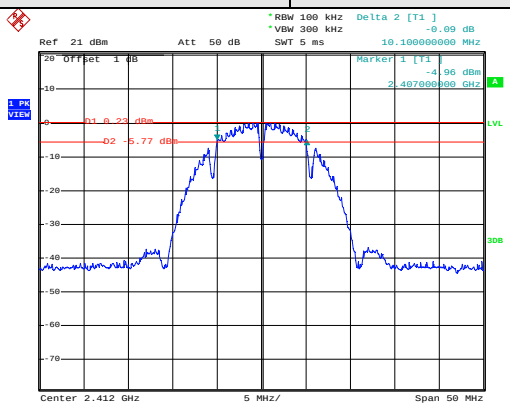
Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	>500KHz
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Transmitting mode
Test results:	Pass

Measurement Data

Test CH	6dB Occupy Bandwidth (MHz)				Limit(KHz)	Result
	802.11b	802.11g	802.11n(H20)	802.11n(H40)		
Lowest	10.10	16.50	17.70	36.10	>500	Pass
Middle	10.10	16.50	17.70	36.10		
Highest	10.00	16.50	17.60	36.20		

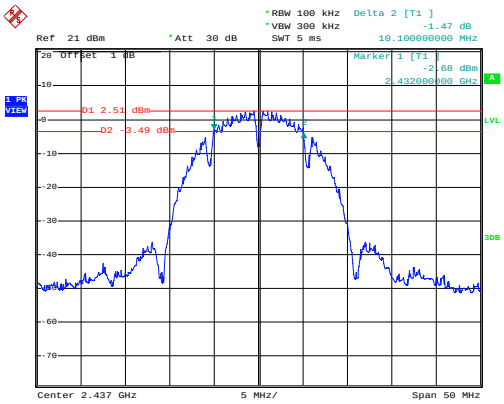
Test plot as follows:

Test mode:	802.11b



Date: 8.DEC.2011 11:48:28

Lowest channel



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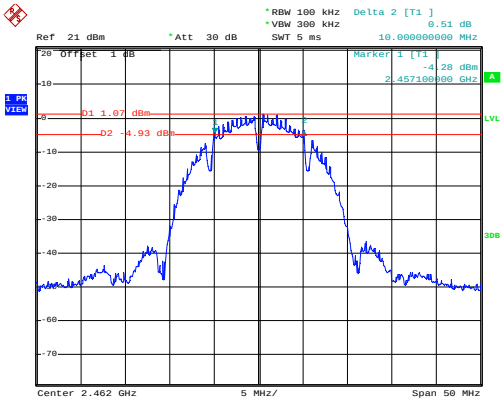
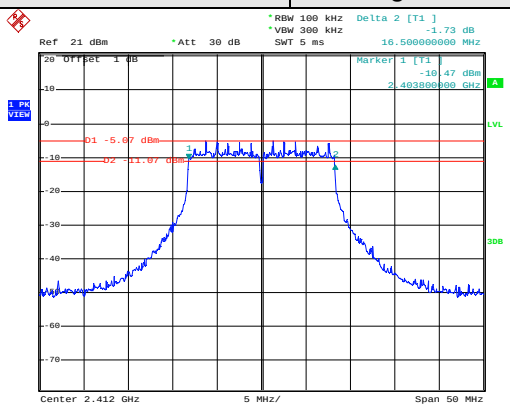
Middle channel



Date: 12.DEC.2011 06:56:31

Highest channel

Test mode:	802.11g



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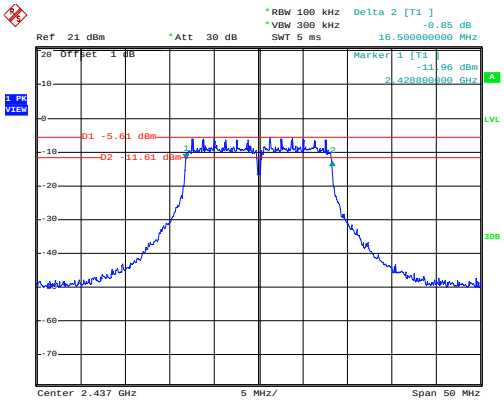
Lowest channel



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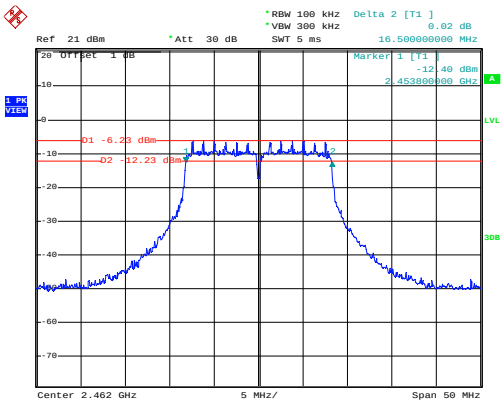
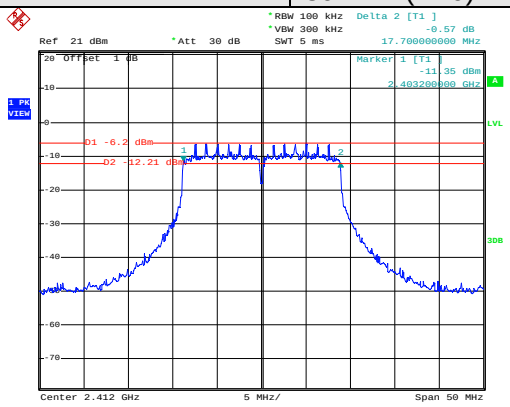
Middle channel



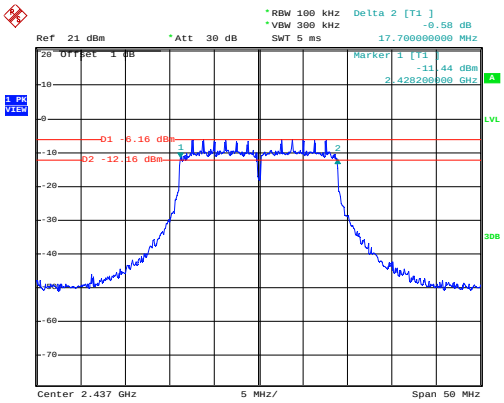
Date: 12.DEC.2011 07:22:02

Highest channel

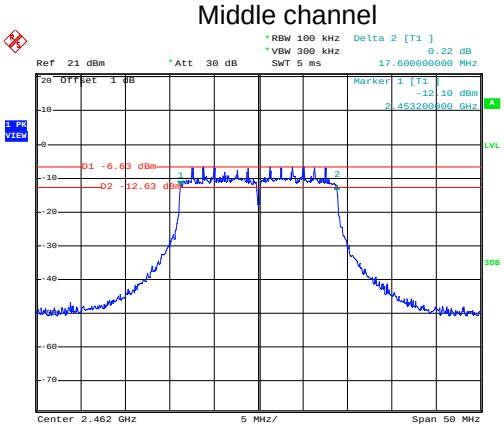
Test mode:	802.11n(H20)



Lowest channel

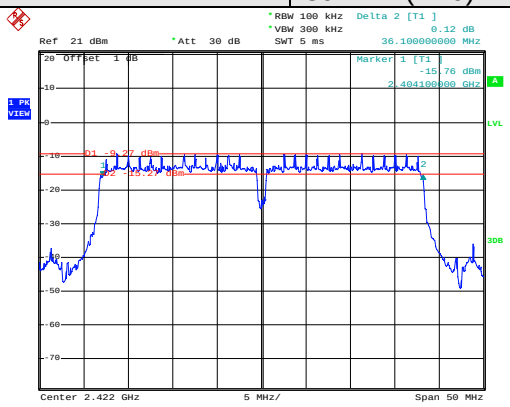


Middle channel



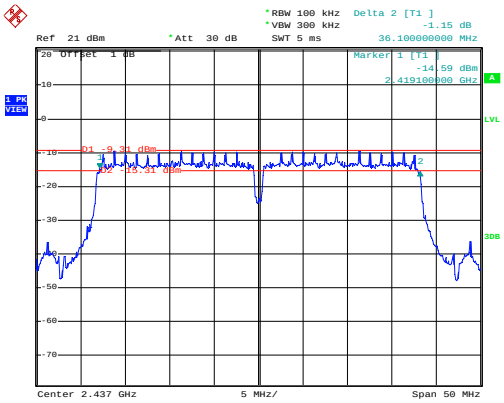
Highest channel

Test mode:	802.11n(H40)



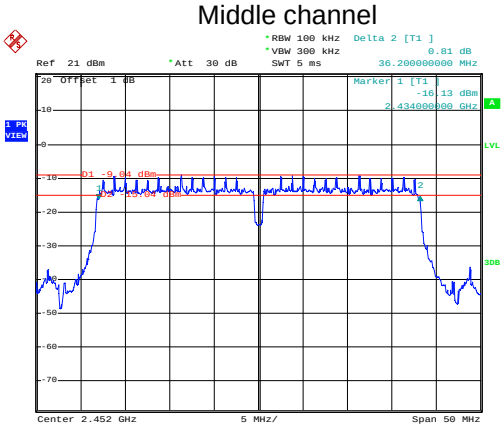
Date: 12.DEC.2011 07:50:25

Lowest channel



Date: 12.DEC.2011 07:59:06

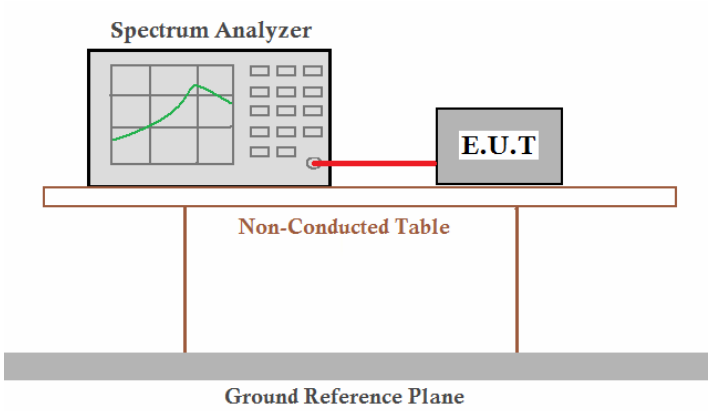
Middle channel



Date: 12.DEC.2011 08:04:40

Highest channel

6.5 Power Spectral Density

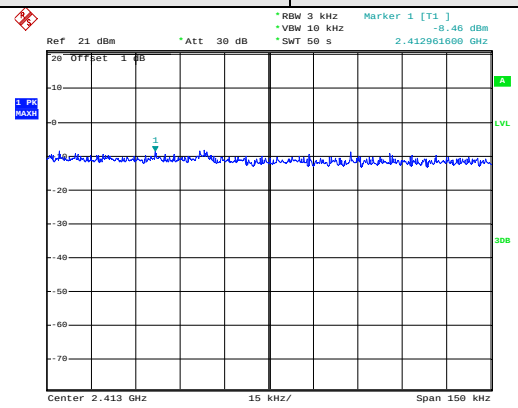
Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	8dBm
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Transmitting mode
Test results:	Pass

Measurement Data

Test CH	Power Spectral Density (dBm)				Limit(dBm)	Result
	802.11b	802.11g	802.11n(H20)	802.11n(H40)		
Lowest	-8.46	-18.35	-20.29	-23.57	8.00	Pass
Middle	-9.51	-17.94	-20.40	-24.12		
Highest	-11.57	-18.90	-20.69	-22.57		

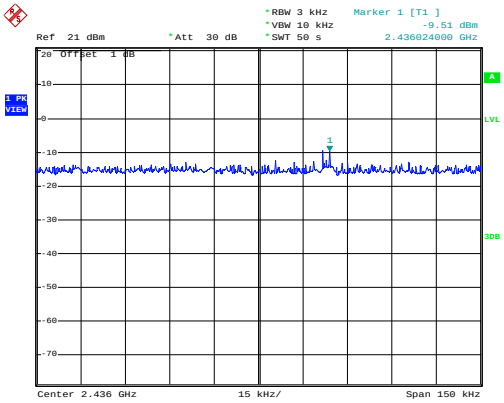
Test plot as follows:

Test mode:	802.11b



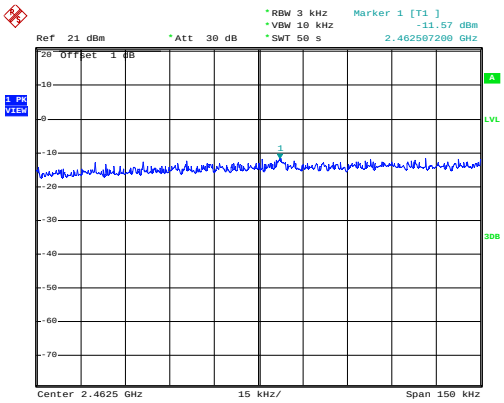
Date: 10.JAN.2012 07:20:17

Lowest channel



Date: 9.DEC.2011 06:59:08

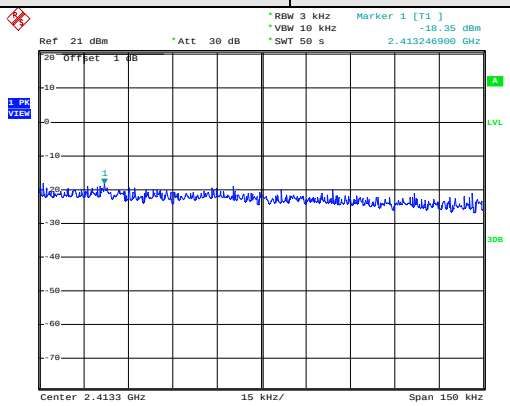
Middle channel



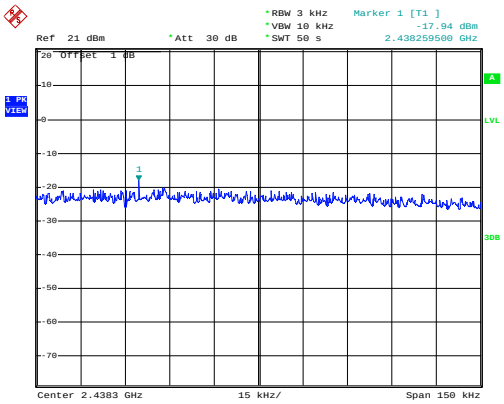
Date: 12.DEC.2011 06:59:35

Highest channel

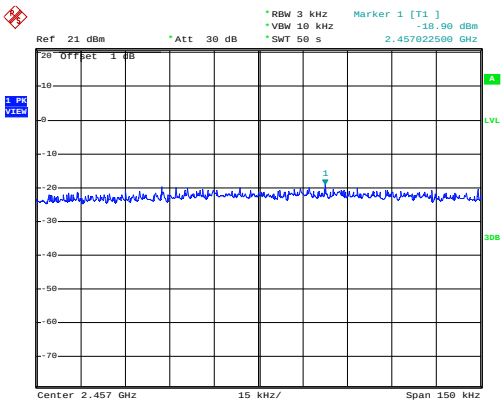
Test mode:	802.11g



Lowest channel

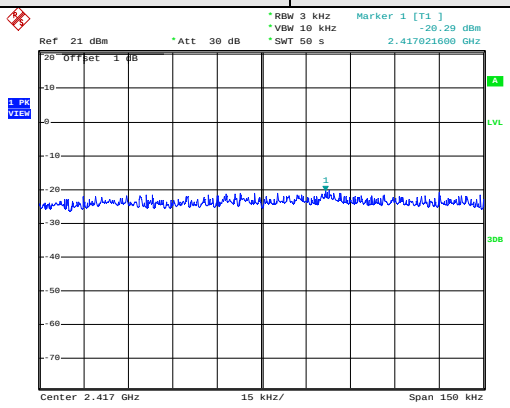


Middle channel

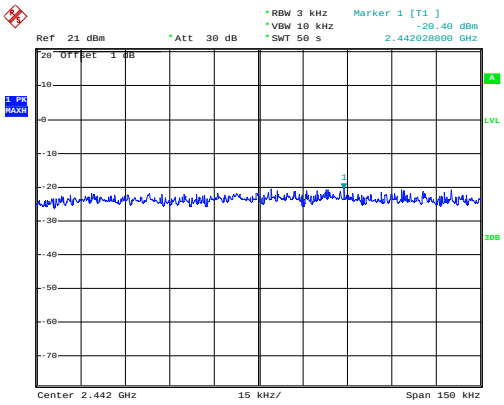


Highest channel

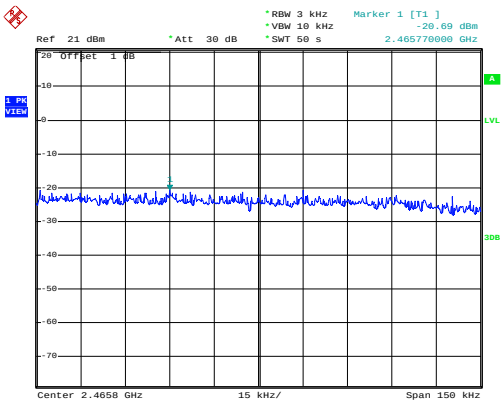
Test mode:	802.11n(H20)



Lowest channel

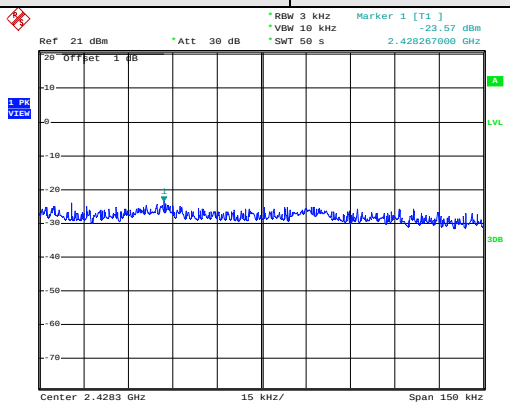


Middle channel

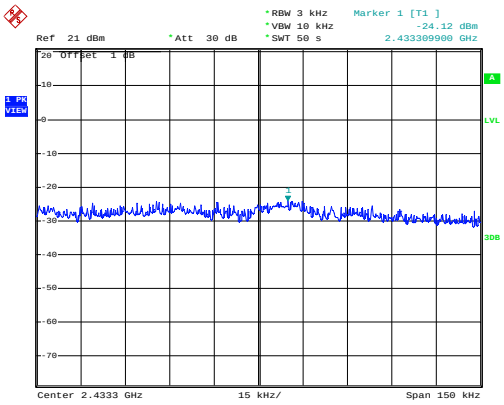


Highest channel

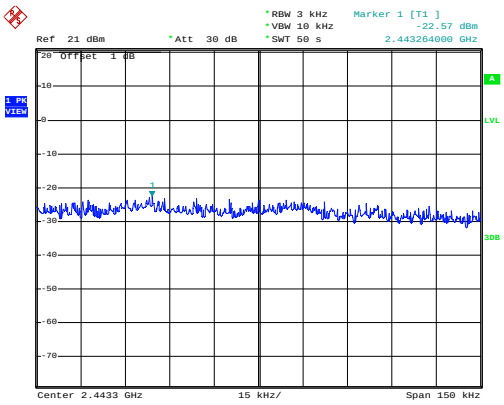
Test mode:	802.11n(H40)



Lowest channel



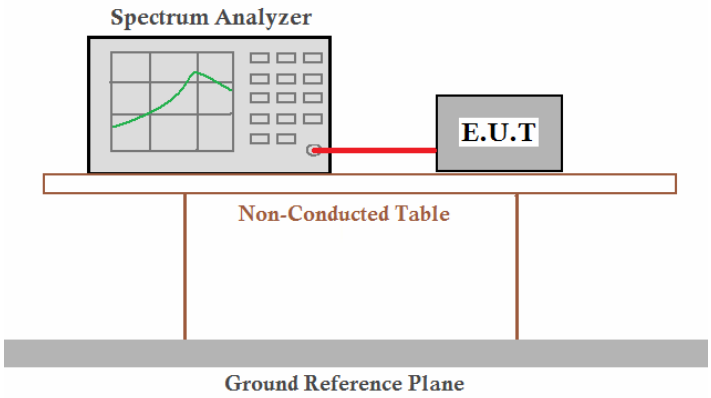
Middle channel



Highest channel

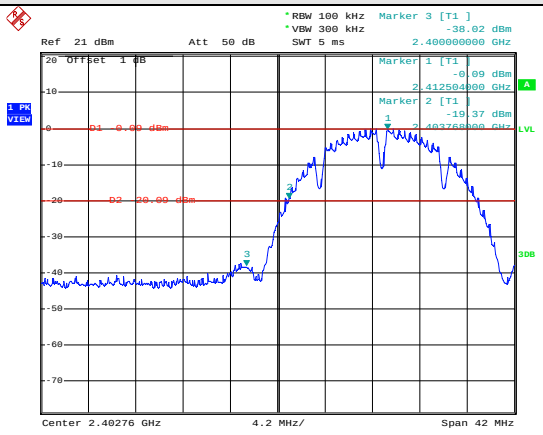
6.6 Band Edge

6.6.1 Conducted Emission Method

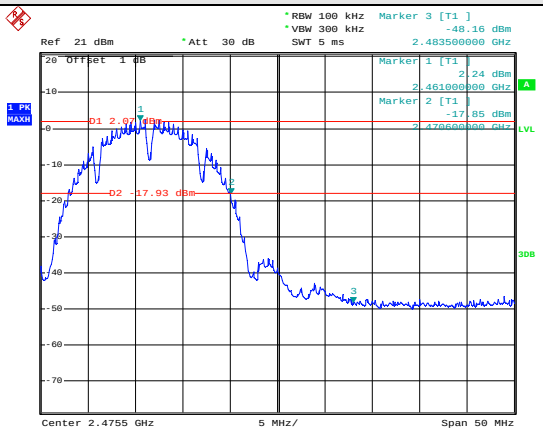
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Transmitting mode
Test results:	Pass

Test plot as follows:

Test mode:802.11b

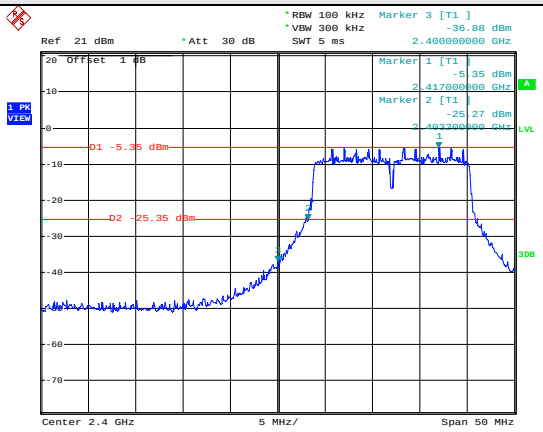


Lowest channel

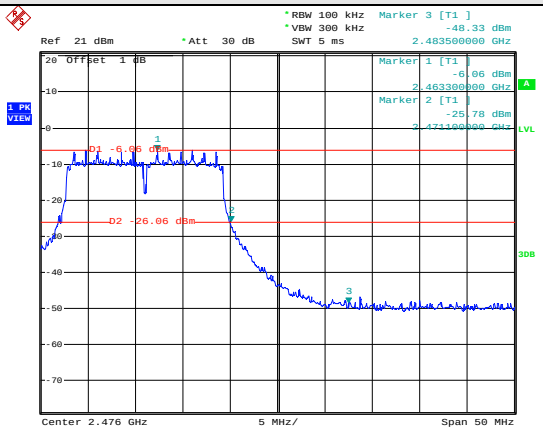


Highest channel

Test mode:802.11g

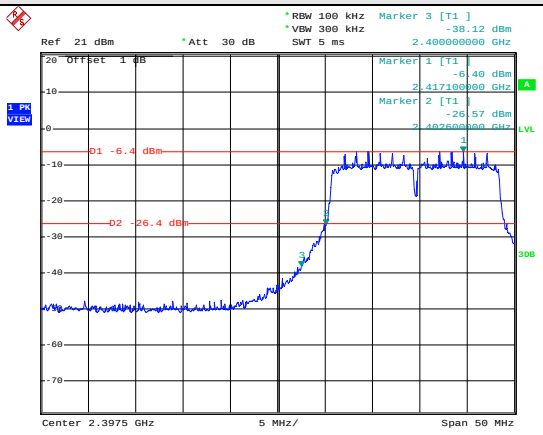


Lowest channel



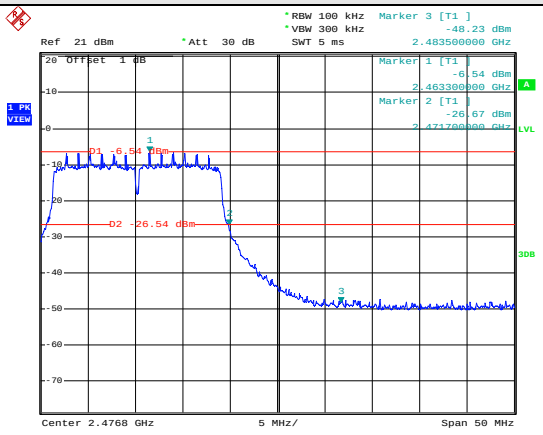
Highest channel

Test mode:802.11n(H20)



Date: 12.DEC.2011 07:36:26

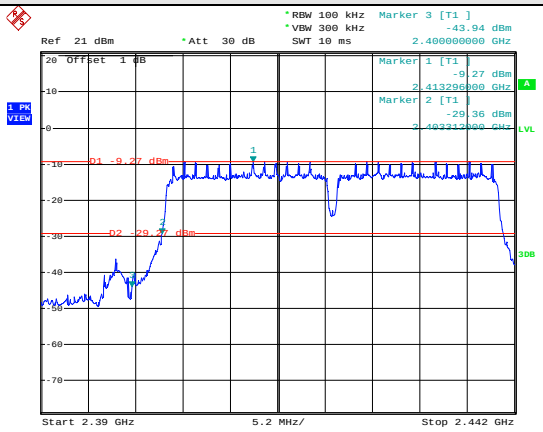
Lowest channel



Date: 12.DEC.2011 07:46:03

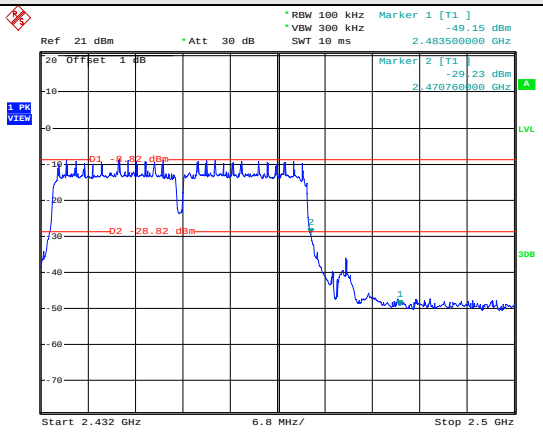
Highest channel

Test mode:802.11n(H40)



Date: 12.DEC.2011 07:54:16

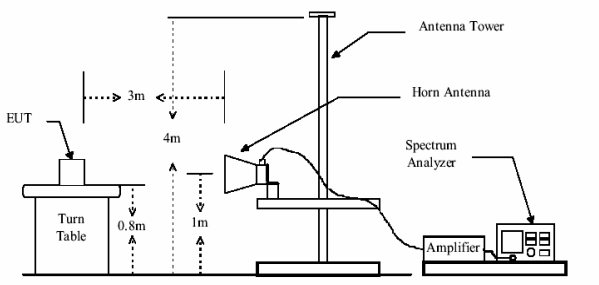
Lowest channel



Date: 12.DEC.2011 08:07:43

Highest channel

6.6.2 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4: 2003</td></tr>
<tr><td>Test Frequency Range:</td><td>2.3GHz to 2.5GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Average</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average Value</td></tr>
<tr><td>74.00</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. 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.
4. 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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. 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 method as specified and then reported in a data sheet.</td></tr>
<tr><td>Test setup:</td><td> 
</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 5.8 for details</td></tr>
<tr><td>Test mode:</td><td>Transmitting mode</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

Test channel: 802.11b		Lowest			Level:		Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	41.53	27.58	3.81	34.83	38.09	74.00	-35.91	Horizontal
2400.00	41.94	27.58	3.83	34.83	38.52	74.00	-35.48	Horizontal
2390.00	42.85	27.58	3.81	34.83	39.41	74.00	-34.59	Vertical
2400.00	43.26	27.58	3.83	34.83	39.84	74.00	-34.16	Vertical

Test channel: 802.11b		Lowest			Level:		Average	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	32.15	27.58	3.81	34.83	28.71	54.00	-25.29	Horizontal
2400.00	32.37	27.58	3.83	34.83	28.95	54.00	-25.05	Horizontal
2390.00	33.47	27.58	3.81	34.83	30.03	54.00	-23.97	Vertical
2400.00	33.69	27.58	3.83	34.83	30.27	54.00	-23.73	Vertical

Test channel: 802.11b		Highest			Level:		Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	41.40	27.52	3.89	34.86	37.95	74.00	-36.05	Horizontal
2500.00	41.66	27.55	3.90	34.87	38.24	74.00	-35.76	Horizontal
2483.50	42.72	27.52	3.89	34.86	39.27	74.00	-34.73	Vertical
2500.00	42.98	27.55	3.90	34.87	39.56	74.00	-34.44	Vertical

Test channel: 802.11b		Highest			Level:		Average	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	32.33	27.52	3.89	34.86	28.88	54.00	-25.12	Horizontal
2500.00	32.61	27.55	3.90	34.87	29.19	54.00	-24.81	Horizontal
2483.50	33.65	27.52	3.89	34.86	30.20	54.00	-23.80	Vertical
2500.00	33.93	27.55	3.90	34.87	30.51	54.00	-23.49	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test channel: 802.11g		Lowest		Level:		Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	41.21	27.58	3.81	34.83	37.77	74.00	-36.23	Horizontal
2400.00	41.62	27.58	3.83	34.83	38.20	74.00	-35.80	Horizontal
2390.00	43.95	27.58	3.81	34.83	40.51	74.00	-33.49	Vertical
2400.00	44.36	27.58	3.83	34.83	40.94	74.00	-33.06	Vertical

Test channel: 802.11g		Lowest		Level:		Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	31.83	27.58	3.81	34.83	28.39	54.00	-25.61	Horizontal
2400.00	32.05	27.58	3.83	34.83	28.63	54.00	-25.37	Horizontal
2390.00	34.57	27.58	3.81	34.83	31.13	54.00	-22.87	Vertical
2400.00	34.79	27.58	3.83	34.83	31.37	54.00	-22.63	Vertical

Test channel: 802.11g		Highest		Level:		Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	41.08	27.52	3.89	34.86	37.63	74.00	-36.37	Horizontal
2500.00	41.34	27.55	3.90	34.87	37.92	74.00	-36.08	Horizontal
2483.50	43.82	27.52	3.89	34.86	40.37	74.00	-33.63	Vertical
2500.00	44.08	27.55	3.90	34.87	40.66	74.00	-33.34	Vertical

Test channel: 802.11g		Highest		Level:		Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	32.01	27.52	3.89	34.86	28.56	54.00	-25.44	Horizontal
2500.00	32.29	27.55	3.90	34.87	28.87	54.00	-25.13	Horizontal
2483.50	34.75	27.52	3.89	34.86	31.30	54.00	-22.70	Vertical
2500.00	35.03	27.55	3.90	34.87	31.61	54.00	-22.39	Vertical

Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test channel: 802.11n(H20)	Lowest	Level:	Peak

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	40.86	27.58	3.81	34.83	37.42	74.00	-36.58	Horizontal
2400.00	41.27	27.58	3.83	34.83	37.85	74.00	-36.15	Horizontal
2390.00	43.60	27.58	3.81	34.83	40.16	74.00	-33.84	Vertical
2400.00	44.01	27.58	3.83	34.83	40.59	74.00	-33.41	Vertical

Test channel: 802.11n(H20)	Lowest	Level:	Average

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	31.48	27.58	3.81	34.83	28.04	54.00	-25.96	Horizontal
2400.00	31.70	27.58	3.83	34.83	28.28	54.00	-25.72	Horizontal
2390.00	34.22	27.58	3.81	34.83	30.78	54.00	-23.22	Vertical
2400.00	34.44	27.58	3.83	34.83	31.02	54.00	-22.98	Vertical

Test channel: 802.11n(H20)	Highest	Level:	Peak

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	40.73	27.52	3.89	34.86	37.28	74.00	-36.72	Horizontal
2500.00	40.99	27.55	3.90	34.87	37.57	74.00	-36.43	Horizontal
2483.50	43.47	27.52	3.89	34.86	40.02	74.00	-33.98	Vertical
2500.00	43.73	27.55	3.90	34.87	40.31	74.00	-33.69	Vertical

Test channel: 802.11n(H20)	Highest	Level:	Average

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	31.66	27.52	3.89	34.86	28.21	54.00	-25.79	Horizontal
2500.00	31.94	27.55	3.90	34.87	28.52	54.00	-25.48	Horizontal
2483.50	34.40	27.52	3.89	34.86	30.95	54.00	-23.05	Vertical
2500.00	34.68	27.55	3.90	34.87	31.26	54.00	-22.74	Vertical

Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test channel: 802.11n(H40)	Lowest	Level:	Peak

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	42.21	27.58	3.81	34.83	38.77	74.00	-35.23	Horizontal
2400.00	42.62	27.58	3.83	34.83	39.20	74.00	-34.80	Horizontal
2390.00	43.34	27.58	3.81	34.83	39.90	74.00	-34.10	Vertical
2400.00	43.75	27.58	3.83	34.83	40.33	74.00	-33.67	Vertical

Test channel: 802.11n(H40)	Lowest	Level:	Average

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	32.83	27.58	3.81	34.83	29.39	54.00	-24.61	Horizontal
2400.00	33.05	27.58	3.83	34.83	29.63	54.00	-24.37	Horizontal
2390.00	33.96	27.58	3.81	34.83	30.52	54.00	-23.48	Vertical
2400.00	34.18	27.58	3.83	34.83	30.76	54.00	-23.24	Vertical

Test channel: 802.11n(H40)	Highest	Level:	Peak

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	42.08	27.52	3.89	34.86	38.63	74.00	-35.37	Horizontal
2500.00	42.34	27.55	3.90	34.87	38.92	74.00	-35.08	Horizontal
2483.50	43.21	27.52	3.89	34.86	39.76	74.00	-34.24	Vertical
2500.00	43.47	27.55	3.90	34.87	40.05	74.00	-33.95	Vertical

Test channel: 802.11n(H40)	Highest	Level:	Average

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	33.01	27.52	3.89	34.86	29.56	54.00	-24.44	Horizontal
2500.00	33.29	27.55	3.90	34.87	29.87	54.00	-24.13	Horizontal
2483.50	34.14	27.52	3.89	34.86	30.69	54.00	-23.31	Vertical
2500.00	34.42	27.55	3.90	34.87	31.00	54.00	-23.00	Vertical

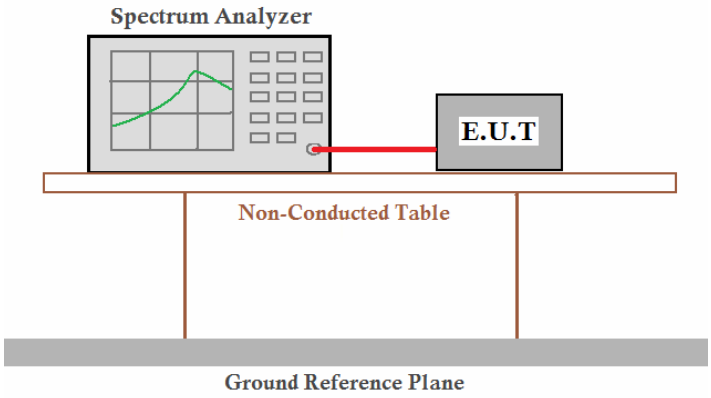
Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2. The emission levels of other frequencies are very lower than the limit and not show in test report.

6.7 Spurious Emission

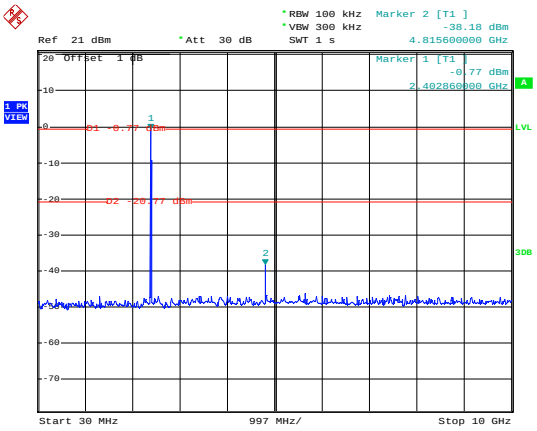
6.7.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Transmitting mode
Test results:	Pass

Test plot as follows:

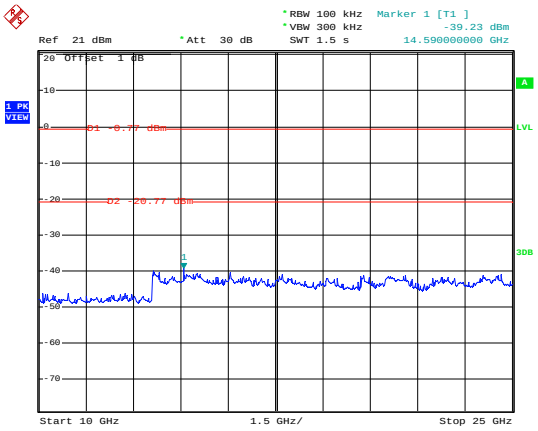
Test mode:802.11b

Lowest channel



Date: 8.DEC.2011 12:02:46

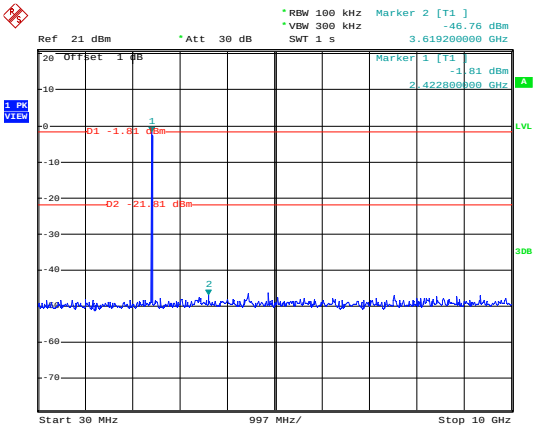
30MHz~10GHz



Date: 8.DEC.2011 12:03:29

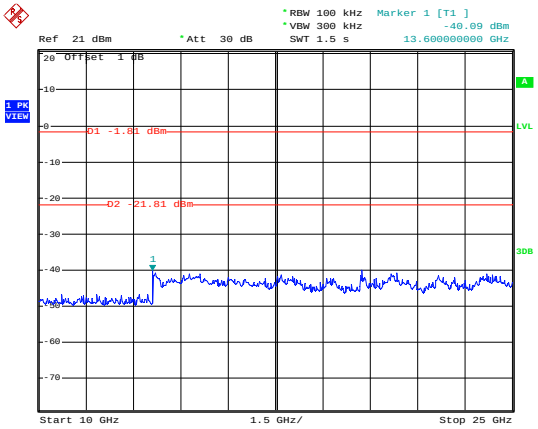
10GHz~25GHz

Middle channel



Date: 9.DEC.2011 07:00:10

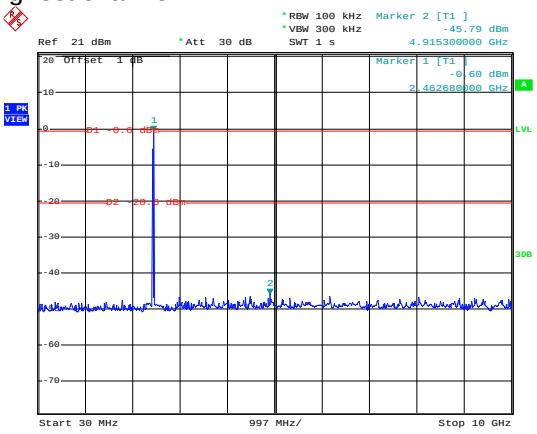
30MHz~10GHz



Date: 9.DEC.2011 07:00:35

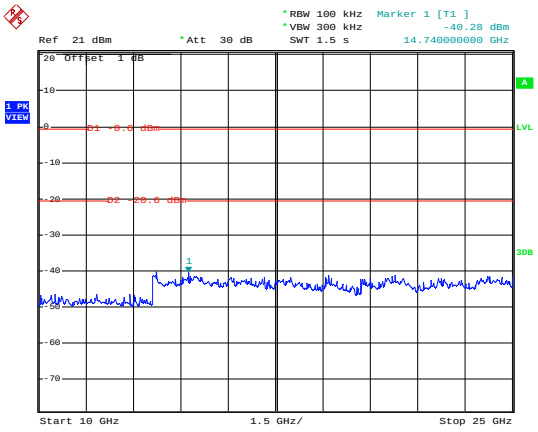
10GHz~25GHz

Highest channel



Date: 12.DEC.2011 07:03:38

30MHz~10GHz

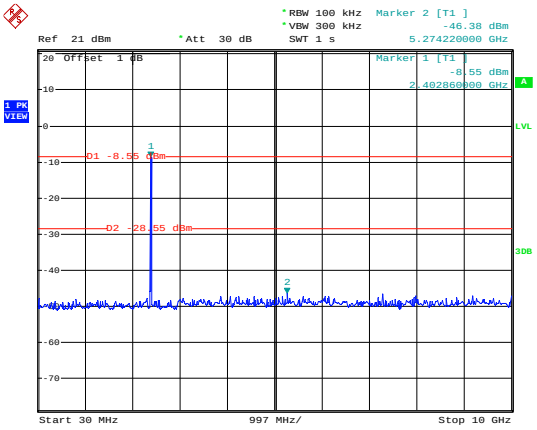


Date: 12.DEC.2011 07:04:33

10GHz~25GHz

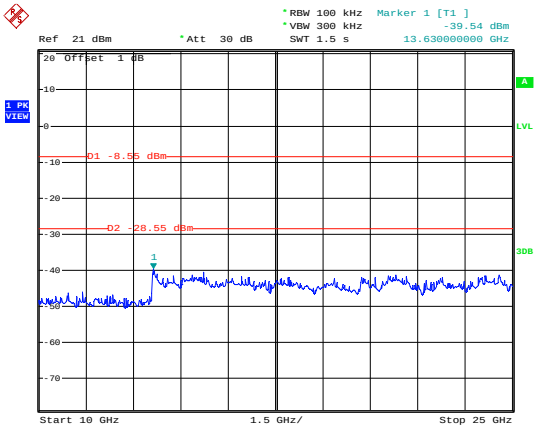
Test mode:802.11g

Lowest channel



Date: 12.DEC.2011 07:12:54

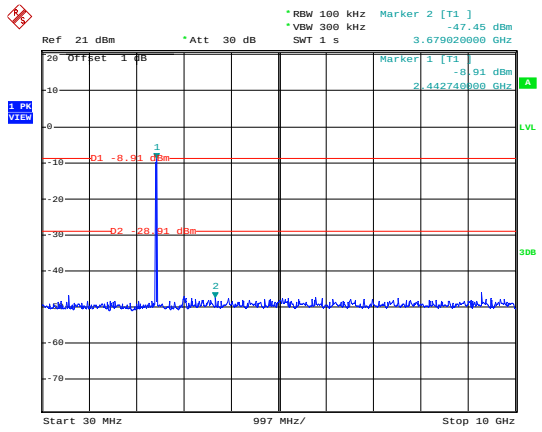
30MHz~10GHz



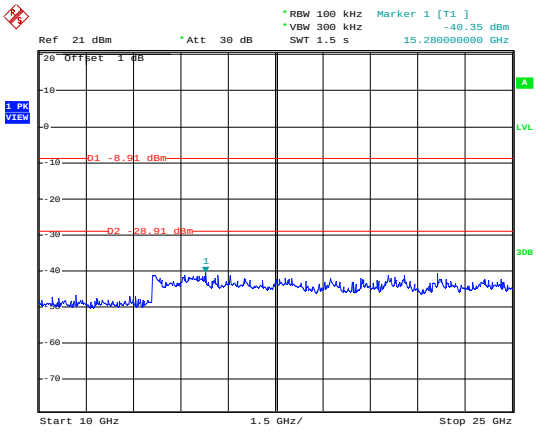
Date: 12.DEC.2011 07:13:11

10GHz~25GHz

Middle channel

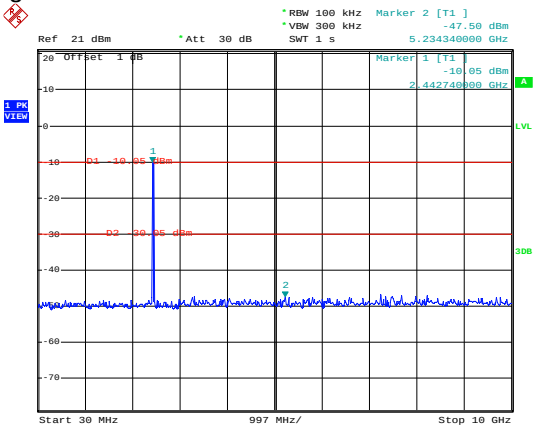


30MHz~10GHz

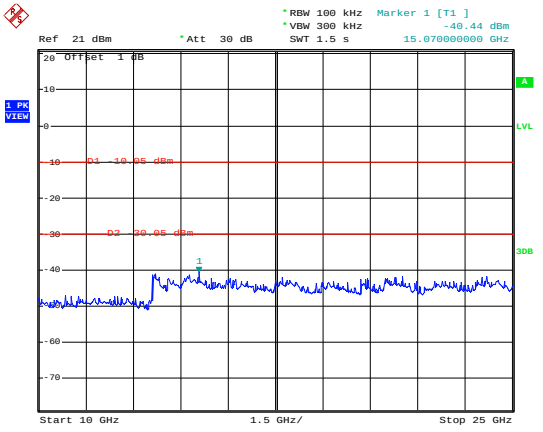


10GHz~25GHz

Highest channel



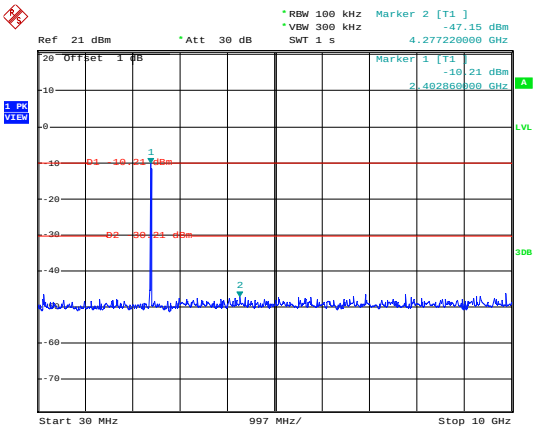
30MHz~10GHz



10GHz~25GHz

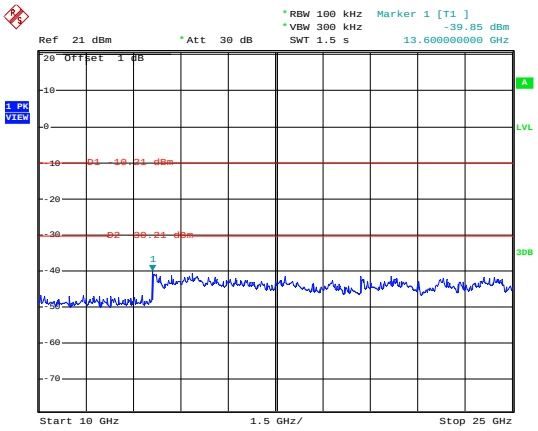
Test mode:802.11n(H20)

Lowest channel



Date: 12.DEC.2011 07:37:07

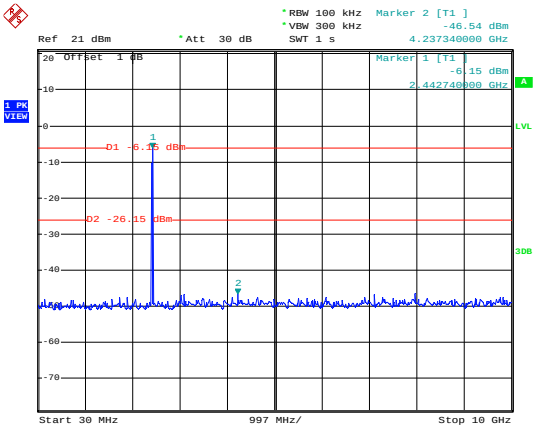
30MHz~10GHz



Date: 12.DEC.2011 07:37:24

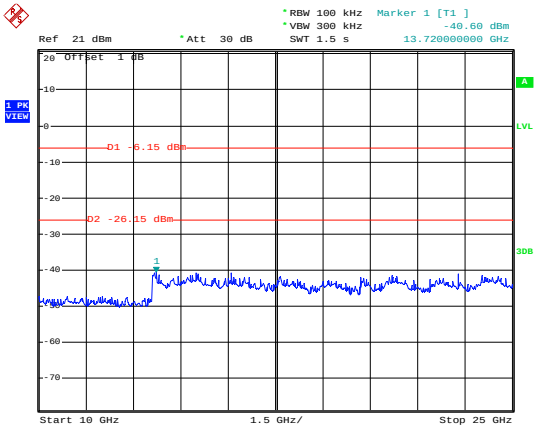
10GHz~25GHz

Middle channel



Date: 12.DEC.2011 07:41:22

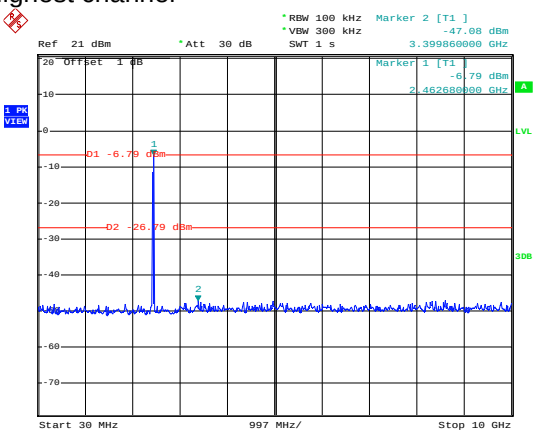
30MHz~10GHz



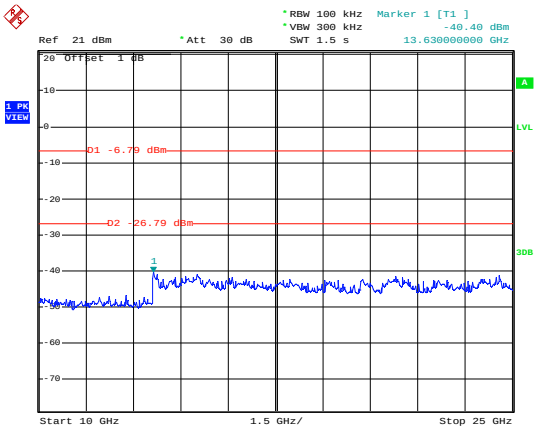
Date: 12.DEC.2011 07:41:37

10GHz~25GHz

Highest channel



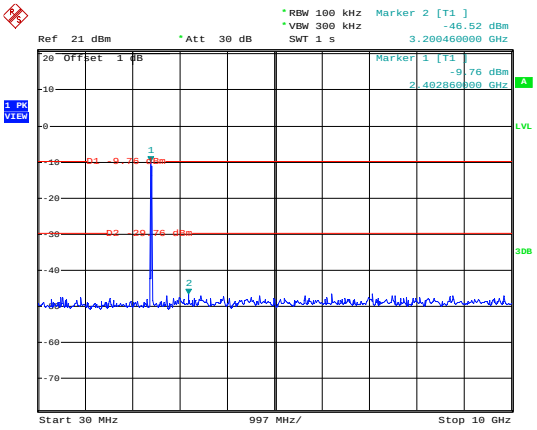
30MHz~10GHz



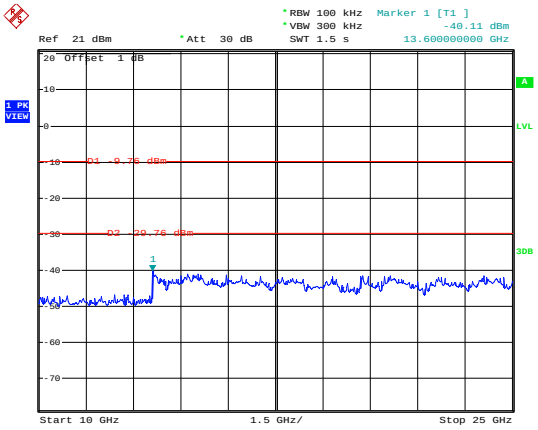
10GHz~25GHz

Test mode:802.11n(H40)

Lowest channel

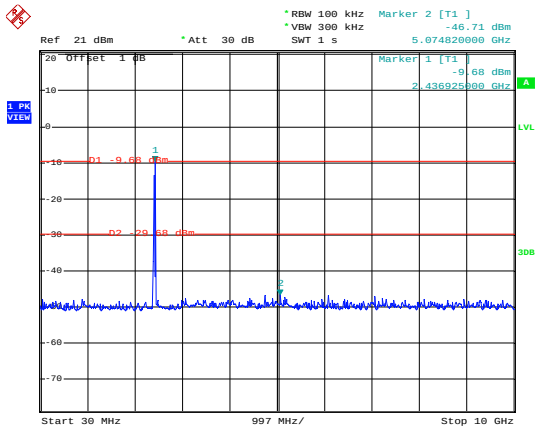


30MHz~10GHz



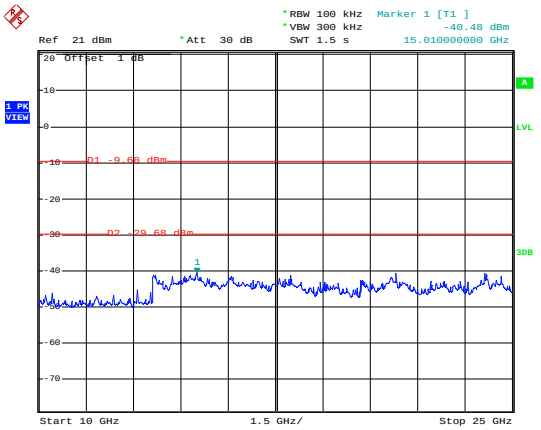
10GHz~25GHz

Middle channel



Date: 12.DEC.2011 08:02:23

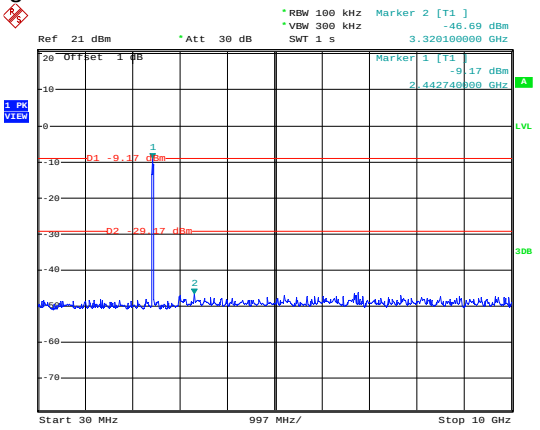
30MHz~10GHz



Date: 12.DEC.2011 08:02:36

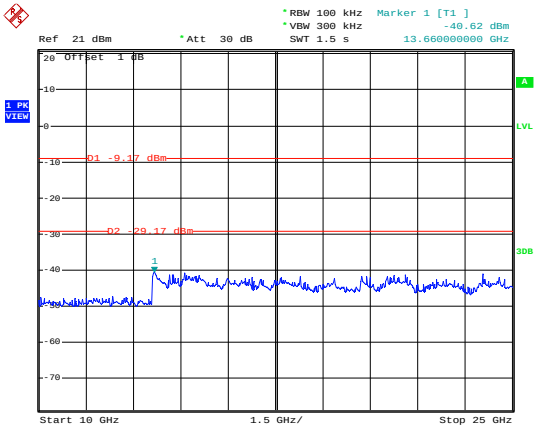
10GHz~25GHz

Highest channel



Date: 12.DEC.2011 08:08:36

30MHz~10GHz

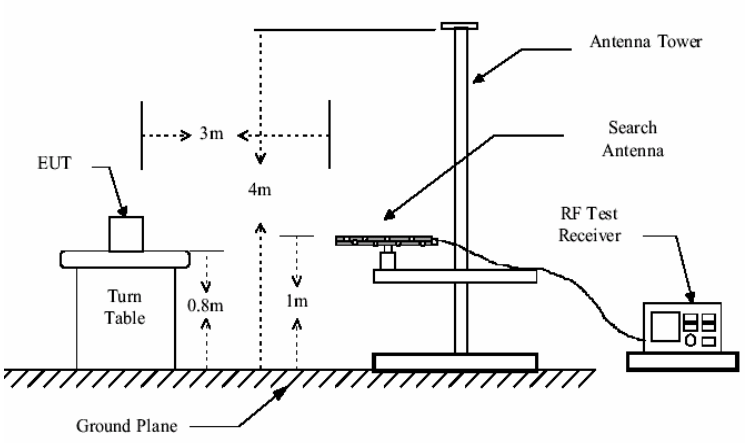
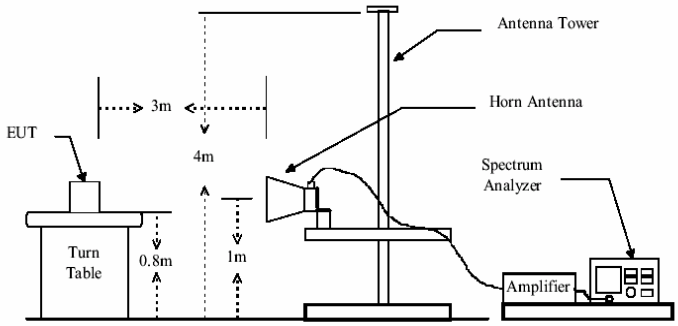


Date: 12.DEC.2011 08:08:50

10GHz~25GHz

6.7.2 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4:2003</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 25GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Average</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr>
<tr><td>74.0</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>
1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. 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.
4. 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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. 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 method as specified and then reported in a data sheet.
</td></tr>
</table>

Test setup:	Below 1GHz  Above 1GHz 
Test Instruments:	Refer to section 5.8 for details
Test mode:	Transmitting mode
Test results:	Pass

Below 1GHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
68.39	54.96	12.34	0.39	31.89	35.80	40.00	-4.20	Vertical
80.08	56.29	11.70	0.43	31.81	36.61	40.00	-3.39	Vertical
152.13	59.99	8.35	0.61	32.00	36.95	43.50	-6.55	Vertical
244.23	57.99	12.03	0.89	32.28	38.63	46.00	-7.37	Vertical
373.31	53.83	14.57	1.20	32.31	37.29	46.00	-8.71	Vertical
499.43	52.52	16.58	1.46	31.62	38.94	46.00	-7.06	Vertical
54.64	51.17	16.04	0.34	31.99	35.56	40.00	-4.44	Horizontal
80.08	52.80	11.70	0.43	31.81	33.12	40.00	-6.88	Horizontal
156.46	59.28	8.51	0.62	32.01	36.40	43.50	-7.10	Horizontal
244.23	61.04	12.03	0.89	32.28	41.68	46.00	-4.32	Horizontal
381.25	55.92	14.66	1.21	32.32	39.47	46.00	-6.53	Horizontal
480.53	56.68	16.08	1.42	31.75	42.43	46.00	-3.57	Horizontal

Above 1GHz

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	44.24	31.55	5.89	35.47	46.21	74.00	-27.79	Vertical
7236.00	44.52	36.50	7.10	35.30	52.82	74.00	-21.18	Vertical
9648.00	42.92	38.14	9.01	35.73	54.34	74.00	-19.66	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
4824.00	43.98	31.55	5.89	35.47	45.95	74.00	-28.05	Horizontal
7236.00	44.26	36.50	7.10	35.30	52.56	74.00	-21.44	Horizontal
9648.00	42.66	38.14	9.01	35.73	54.08	74.00	-19.92	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	34.19	31.55	5.89	35.47	36.16	54.00	-17.84	Vertical
7236.00	35.16	36.50	7.10	35.30	43.46	54.00	-10.54	Vertical
9648.00	33.38	38.14	9.01	35.73	44.80	54.00	-9.20	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
4824.00	33.93	31.55	5.89	35.47	35.90	54.00	-18.10	Horizontal
7236.00	34.90	36.50	7.10	35.30	43.20	54.00	-10.80	Horizontal
9648.00	33.12	38.14	9.01	35.73	44.54	54.00	-9.46	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	44.41	31.57	5.91	35.48	46.41	74.00	-27.59	Vertical
7311.00	44.20	36.48	7.14	35.28	52.54	74.00	-21.46	Vertical
9748.00	44.24	38.45	9.06	35.75	56.00	74.00	-18.00	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
4874.00	44.15	31.57	5.91	35.48	46.15	74.00	-27.85	Horizontal
7311.00	43.94	36.48	7.14	35.28	52.28	74.00	-21.72	Horizontal
9748.00	43.98	38.45	9.06	35.75	55.74	74.00	-18.26	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	34.27	31.57	5.91	35.48	36.27	54.00	-17.73	Vertical
7311.00	35.10	36.48	7.14	35.28	43.44	54.00	-10.56	Vertical
9748.00	34.89	38.45	9.06	35.75	46.65	54.00	-7.35	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
4874.00	34.01	31.57	5.91	35.48	36.01	54.00	-17.99	Horizontal
7311.00	34.84	36.48	7.14	35.28	43.18	54.00	-10.82	Horizontal
9748.00	34.63	38.45	9.06	35.75	46.39	54.00	-7.61	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	44.23	31.61	5.93	35.49	46.28	74.00	-27.72	Vertical
7386.00	44.41	36.52	7.16	35.24	52.85	74.00	-21.15	Vertical
9848.00	43.71	38.70	9.08	35.77	55.72	74.00	-18.28	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
4924.00	43.97	31.61	5.93	35.49	46.02	74.00	-27.98	Horizontal
7386.00	44.15	36.52	7.16	35.24	52.59	74.00	-21.41	Horizontal
9848.00	43.45	38.70	9.08	35.77	55.46	74.00	-18.54	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	34.90	31.61	5.93	35.49	36.95	54.00	-17.05	Vertical
7386.00	35.20	36.52	7.16	35.24	43.64	54.00	-10.36	Vertical
9848.00	34.20	38.70	9.08	35.77	46.21	54.00	-7.79	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
4924.00	34.64	31.61	5.93	35.49	36.69	54.00	-17.31	Horizontal
7386.00	34.94	36.52	7.16	35.24	43.38	54.00	-10.62	Horizontal
9848.00	33.94	38.70	9.08	35.77	45.95	54.00	-8.05	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal

Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2. "" means this data is the too weak instrument of signal is unable to test.*

3. The emission levels of other frequencies are very lower than the limit and not show in test report.

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	43.88	31.55	5.89	35.47	45.85	74.00	-28.15	Vertical
7236.00	44.16	36.50	7.10	35.30	52.46	74.00	-21.54	Vertical
9648.00	42.56	38.14	9.01	35.73	53.98	74.00	-20.02	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
4824.00	43.64	31.55	5.89	35.47	45.61	74.00	-28.39	Horizontal
7236.00	43.92	36.50	7.10	35.30	52.22	74.00	-21.78	Horizontal
9648.00	42.32	38.14	9.01	35.73	53.74	74.00	-20.26	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	33.83	31.55	5.89	35.47	35.80	54.00	-18.20	Vertical
7236.00	34.80	36.50	7.10	35.30	43.10	54.00	-10.90	Vertical
9648.00	33.02	38.14	9.01	35.73	44.44	54.00	-9.56	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
4824.00	33.59	31.55	5.89	35.47	35.56	54.00	-18.44	Horizontal
7236.00	34.56	36.50	7.10	35.30	42.86	54.00	-11.14	Horizontal
9648.00	32.78	38.14	9.01	35.73	44.20	54.00	-9.80	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	44.05	31.57	5.91	35.48	46.05	74.00	-27.95	Vertical
7311.00	43.84	36.48	7.14	35.28	52.18	74.00	-21.82	Vertical
9748.00	43.88	38.45	9.06	35.75	55.64	74.00	-18.36	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
4874.00	43.81	31.57	5.91	35.48	45.81	74.00	-28.19	Horizontal
7311.00	43.60	36.48	7.14	35.28	51.94	74.00	-22.06	Horizontal
9748.00	43.64	38.45	9.06	35.75	55.40	74.00	-18.60	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal

Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2. "" means this data is the too weak instrument of signal is unable to test.*

3. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test mode:	802.11g		Test channel:	Middle		Remark:	Average	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	33.91	31.57	5.91	35.48	35.91	54.00	-18.09	Vertical
7311.00	34.74	36.48	7.14	35.28	43.08	54.00	-10.92	Vertical
9748.00	34.53	38.45	9.06	35.75	46.29	54.00	-7.71	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
4874.00	33.67	31.57	5.91	35.48	35.67	54.00	-18.33	Horizontal
7311.00	34.50	36.48	7.14	35.28	42.84	54.00	-11.16	Horizontal
9748.00	34.29	38.45	9.06	35.75	46.05	54.00	-7.95	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal

Test mode:	802.11g		Test channel:	Highest		Remark:	Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	43.87	31.61	5.93	35.49	45.92	74.00	-28.08	Vertical
7386.00	44.05	36.52	7.16	35.24	52.49	74.00	-21.51	Vertical
9848.00	43.35	38.70	9.08	35.77	55.36	74.00	-18.64	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
4924.00	43.63	31.61	5.93	35.49	45.68	74.00	-28.32	Horizontal
7386.00	43.81	36.52	7.16	35.24	52.25	74.00	-21.75	Horizontal
9848.00	43.11	38.70	9.08	35.77	55.12	74.00	-18.88	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal

Test mode:	802.11g		Test channel:	Highest		Remark:	Average	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	34.54	31.61	5.93	35.49	36.59	54.00	-17.41	Vertical
7386.00	34.84	36.52	7.16	35.24	43.28	54.00	-10.72	Vertical
9848.00	33.84	38.70	9.08	35.77	45.85	54.00	-8.15	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
4924.00	34.30	31.61	5.93	35.49	36.35	54.00	-17.65	Horizontal
7386.00	34.60	36.52	7.16	35.24	43.04	54.00	-10.96	Horizontal
9848.00	33.60	38.70	9.08	35.77	45.61	54.00	-8.39	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal

Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2. "" means this data is the too weak instrument of signal is unable to test.*

3. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test mode:	802.11n(H20)	Test channel:	Lowest	Remark:	Peak			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	43.53	31.55	5.89	35.47	45.50	74.00	-28.50	Vertical
7236.00	43.81	36.50	7.10	35.30	52.11	74.00	-21.89	Vertical
9648.00	42.21	38.14	9.01	35.73	53.63	74.00	-20.37	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
4824.00	42.99	31.55	5.89	35.47	44.96	74.00	-29.04	Horizontal
7236.00	43.27	36.50	7.10	35.30	51.57	74.00	-22.43	Horizontal
9648.00	41.67	38.14	9.01	35.73	53.09	74.00	-20.91	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal

Test mode:	802.11n(H20)	Test channel:	Lowest	Remark:	Average			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	33.48	31.55	5.89	35.47	35.45	54.00	-18.55	Vertical
7236.00	34.45	36.50	7.10	35.30	42.75	54.00	-11.25	Vertical
9648.00	32.67	38.14	9.01	35.73	44.09	54.00	-9.91	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
4824.00	32.94	31.55	5.89	35.47	34.91	54.00	-19.09	Horizontal
7236.00	33.91	36.50	7.10	35.30	42.21	54.00	-11.79	Horizontal
9648.00	32.13	38.14	9.01	35.73	43.55	54.00	-10.45	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal

Test mode:	802.11n(H20)	Test channel:	Middle	Remark:	Peak			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	43.70	31.57	5.91	35.48	45.70	74.00	-28.30	Vertical
7311.00	43.49	36.48	7.14	35.28	51.83	74.00	-22.17	Vertical
9748.00	43.53	38.45	9.06	35.75	55.29	74.00	-18.71	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
4874.00	43.16	31.57	5.91	35.48	45.16	74.00	-28.84	Horizontal
7311.00	42.95	36.48	7.14	35.28	51.29	74.00	-22.71	Horizontal
9748.00	42.99	38.45	9.06	35.75	54.75	74.00	-19.25	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal

Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2. "" means this data is the too weak instrument of signal is unable to test.*

3. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test mode:	802.11n(H20)	Test channel:	Middle	Remark:	Average		

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	33.56	31.57	5.91	35.48	35.56	54.00	-18.44	Vertical
7311.00	34.39	36.48	7.14	35.28	42.73	54.00	-11.27	Vertical
9748.00	34.18	38.45	9.06	35.75	45.94	54.00	-8.06	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
4874.00	33.02	31.57	5.91	35.48	35.02	54.00	-18.98	Horizontal
7311.00	33.85	36.48	7.14	35.28	42.19	54.00	-11.81	Horizontal
9748.00	33.64	38.45	9.06	35.75	45.40	54.00	-8.60	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal

Test mode:	802.11n(H20)	Test channel:	Highest	Remark:	Peak		

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	43.52	31.61	5.93	35.49	45.57	74.00	-28.43	Vertical
7386.00	43.70	36.52	7.16	35.24	52.14	74.00	-21.86	Vertical
9848.00	43.00	38.70	9.08	35.77	55.01	74.00	-18.99	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
4924.00	42.98	31.61	5.93	35.49	45.03	74.00	-28.97	Horizontal
7386.00	43.16	36.52	7.16	35.24	51.60	74.00	-22.40	Horizontal
9848.00	42.46	38.70	9.08	35.77	54.47	74.00	-19.53	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal

Test mode:	802.11n(H20)	Test channel:	Highest	Remark:	Average		

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	34.19	31.61	5.93	35.49	36.24	54.00	-17.76	Vertical
7386.00	34.49	36.52	7.16	35.24	42.93	54.00	-11.07	Vertical
9848.00	33.49	38.70	9.08	35.77	45.50	54.00	-8.50	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
4924.00	33.65	31.61	5.93	35.49	35.70	54.00	-18.30	Horizontal
7386.00	33.95	36.52	7.16	35.24	42.39	54.00	-11.61	Horizontal
9848.00	32.95	38.70	9.08	35.77	44.96	54.00	-9.04	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal

Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2. "" means this data is the too weak instrument of signal is unable to test.*

3. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test mode:	802.11n(H40)	Test channel:	Lowest	Remark:	Peak		

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4844.00	45.09	31.55	5.89	35.47	47.06	74.00	-26.94	Vertical
7266.00	44.94	36.49	7.12	35.29	53.26	74.00	-20.74	Vertical
9688.00	43.88	38.25	9.03	35.74	55.42	74.00	-18.58	Vertical
12110.00	*					74.00		Vertical
14532.00	*					74.00		Vertical
4844.00	44.97	31.55	5.89	35.47	46.94	74.00	-27.06	Horizontal
7266.00	44.82	36.49	7.12	35.29	53.14	74.00	-20.86	Horizontal
9688.00	43.76	38.25	9.03	35.74	55.30	74.00	-18.70	Horizontal
12110.00	*					74.00		Horizontal
14532.00	*					74.00		Horizontal

Test mode:	802.11n(H40)	Test channel:	Lowest	Remark:	Average		

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4844.00	36.29	31.55	5.89	35.47	38.26	54.00	-15.74	Vertical
7266.00	35.61	36.49	7.12	35.29	43.93	54.00	-10.07	Vertical
9688.00	34.23	38.25	9.03	35.74	45.77	54.00	-8.23	Vertical
12110.00	*					54.00		Vertical
14532.00	*					54.00		Vertical
4844.00	36.17	31.55	5.89	35.47	38.14	54.00	-15.86	Horizontal
7266.00	35.49	36.49	7.12	35.29	43.81	54.00	-10.19	Horizontal
9688.00	34.11	38.25	9.03	35.74	45.65	54.00	-8.35	Horizontal
12110.00	*					54.00		Horizontal
14532.00	*					54.00		Horizontal

Test mode:	802.11n(H40)	Test channel:	Middle	Remark:	Peak		

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	44.41	31.57	5.91	35.48	46.41	74.00	-27.59	Vertical
7311.00	44.20	36.48	7.14	35.28	52.54	74.00	-21.46	Vertical
9784.00	44.24	38.45	9.06	35.75	56.00	74.00	-18.00	Vertical
12233.00	*					74.00		Vertical
14688.00	*					74.00		Vertical
4874.00	44.29	31.57	5.91	35.48	46.29	74.00	-27.71	Horizontal
7311.00	44.08	36.48	7.14	35.28	52.42	74.00	-21.58	Horizontal
9784.00	44.12	38.45	9.06	35.75	55.88	74.00	-18.12	Horizontal
12233.00	*					74.00		Horizontal
14688.00	*					74.00		Horizontal

Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2. "" means this data is the too weak instrument of signal is unable to test.*

3. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test mode:	802.11n(H40)	Test channel:	Middle	Remark:	Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	35.50	31.57	5.91	35.48	37.50	54.00	-16.50	Vertical
7311.00	35.73	36.48	7.14	35.28	44.07	54.00	-9.93	Vertical
9784.00	35.17	38.45	9.06	35.75	46.93	54.00	-7.07	Vertical
12233.00	*					54.00		Vertical
14688.00	*					54.00		Vertical
4874.00	35.38	31.57	5.91	35.48	37.38	54.00	-16.62	Horizontal
7311.00	35.61	36.48	7.14	35.28	43.95	54.00	-10.05	Horizontal
9784.00	35.05	38.45	9.06	35.75	46.81	54.00	-7.19	Horizontal
12233.00	*					54.00		Horizontal
14688.00	*					54.00		Horizontal

Test mode:	802.11n(H40)	Test channel:	Highest	Remark:	Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4904.00	44.23	31.61	5.93	35.49	46.28	74.00	-27.72	Vertical
7356.00	44.41	36.52	7.16	35.24	52.85	74.00	-21.15	Vertical
9808.00	43.71	38.70	9.08	35.77	55.72	74.00	-18.28	Vertical
12233.00	*					74.00		Vertical
14688.00	*					74.00		Vertical
4904.00	44.11	31.61	5.93	35.49	46.16	74.00	-27.84	Horizontal
7356.00	44.29	36.52	7.16	35.24	52.73	74.00	-21.27	Horizontal
9808.00	43.59	38.70	9.08	35.77	55.60	74.00	-18.40	Horizontal
12233.00	*					74.00		Horizontal
14688.00	*					74.00		Horizontal

Test mode:	802.11n(H40)	Test channel:	Highest	Remark:	Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4904.00	35.20	31.61	5.93	35.49	37.25	54.00	-16.75	Vertical
7356.00	35.16	36.52	7.16	35.24	43.60	54.00	-10.40	Vertical
9808.00	34.18	38.70	9.08	35.77	46.19	54.00	-7.81	Vertical
12260.00	*					54.00		Vertical
14712.00	*					54.00		Vertical
4904.00	35.08	31.61	5.93	35.49	37.13	54.00	-16.87	Horizontal
7356.00	35.04	36.52	7.16	35.24	43.48	54.00	-10.52	Horizontal
9808.00	34.06	38.70	9.08	35.77	46.07	54.00	-7.93	Horizontal
12260.00	*					54.00		Horizontal
14712.00	*					54.00		Horizontal

Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2. "" means this data is the too weak instrument of signal is unable to test.*

3. The emission levels of other frequencies are very lower than the limit and not show in test report.