



# FCC REPORT

**Applicant:** Shenzhen Ogemray Technology Co., Ltd  
**Address of Applicant:** 3/F, No.9 Bldg. Minxing Industrial Park. Minkang Rd. Minzhi St. Baoan District. Shenzhen  
**Equipment Under Test (EUT)**  
Product Name: USB Wifi Adaptor  
Model No.: 3E32, 3E, 2E, GWF-3E31, 3E33, 2E31, 2E32, 2E33, WU-150  
**FCC ID:** YWTWF2EXX3EXX  
**Standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.247:2009  
**Date of Receipt:** 26 Oct., 2010  
**Date of Test:** 01-04 Nov., 2010  
**Date of Issue:** 05 Nov., 2010  
**Test Result :** PASS \*

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

Authorized Signature:

Robinson Lo  
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the GTS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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### 3 Test Summary

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

*Remark:*

- *Passed: The EUT complies with the essential requirements in the standard.*
- *Failed: The EUT does not comply with the essential requirements in the standard.*
- *Tx: In this whole report Tx (or tx) means Transmitter.*
- *Rx: In this whole report Rx (or rx) means Receiver.*

## 4 General Information

### 4.1 Client Information

Applicant:	Shenzhen Ogemray Technology Co., Ltd
Address of Applicant:	3/F, No.9 Bldg. Minxing Industrial Park. Minkang Rd. Minzhi St. Baoan District. Shenzhen
Manufacturer/ Factory:	Shenzhen Ogemray Technology Co., Ltd
Address of Manufacturer/ Factory:	3/F, No.9 Bldg. Minxing Industrial Park. Minkang Rd. Minzhi St. Baoan District. Shenzhen

### 4.2 General Description of E.U.T.

Product Name:	USB Wifi Adaptor
Model No.:	3E32, 3E, 2E, GWF-3E31, 3E33, 2E31, 2E32, 2E33, WU-150
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 (declare by Applicant)
Power supply:	DC 5V (USB port supply)
Remark:	Only the model No. 3E32 was tested. 3E32, 3E, 2E, GWF-3E31, 3E33, 2E31, 2E32, 2E33 and WU-150 are identical interior structure, electrical circuits, components and appearance with different model names for the marketing requirement.

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	X	

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

### 4.3 Test environment and mode

<b>Operating Environment:</b>	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
<b>Test mode:</b>	
Operation mode	Keep the EUT in running with full load.

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:

<b>Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.</b>	
Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(H20)	6.5Mbps
802.11n(H40)	13.0Mbps
<b>Final Test Mode:</b>	
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)	

#### 4.4 Test Facility

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

● **FCC —Registration No.: 600491**

Global United Technology Service 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 600491, July 20, 2010.

● **Industry Canada (IC)**

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

#### 4.5 Test Location

All tests were performed at:

Global United Technology Service Co., Ltd.

Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China

Tel: 0755-27798480

Fax: 0755-27798960

#### 4.6 Other Information Requested by the Customer

None.

#### 4.7 Test Instruments list

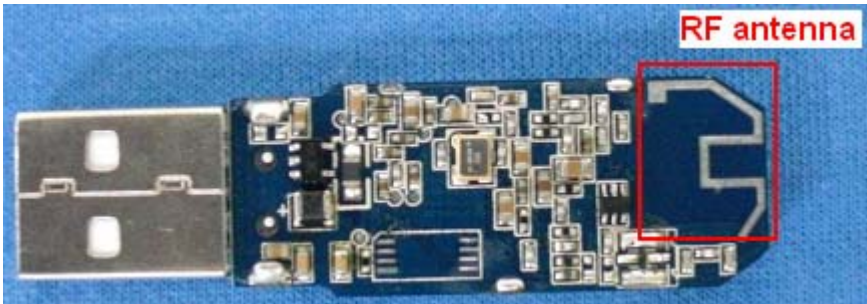
Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS201	Mar. 30 2010	Mar. 30 2011
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS202	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Sep. 10 2010	Sep. 10 2011
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS204	Sep. 10 2010	Sep. 10 2011
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS205	June 30 2010	June 30 2011
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Coaxial Cable	GTS	N/A	GTS400	Apr. 01 2010	Apr. 01 2011
8	Coaxial Cable	GTS	N/A	GTS401	Apr. 01 2010	Apr. 01 2011
9	Coaxial cable	GTS	N/A	GTS402	Apr. 01 2010	Apr. 01 2011
10	Coaxial Cable	GTS	N/A	GTS407	Apr. 01 2010	Apr. 01 2011
11	Coaxial Cable	GTS	N/A	GTS408	Apr. 01 2010	Apr. 01 2011
12	Amplifier(10KHz-5GHz)	Sonnoma Instrument	305-1052	GTS210	Aug. 03 2010	Aug. 03 2011
13	Amplifier(2GHz-20GHz)	HP	8349B	GTS231	Aug. 03 2010	Aug. 03 2011
14	Power Meter	Rohde & Schwarz	NRVD	SEL0069	June 23 2010	June 23 2011
15	Power Sensor	Rohde & Schwarz	URV5-Z2	SEL0071	June 23 2010	June 23 2011

Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS206	Apr. 10 2010	Apr. 10 2011
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS208	Sep. 14 2010	Sep. 14 2011
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS209	Sep. 14 2010	Sep. 14 2011
4	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS207	Apr. 14 2010	Apr. 14 2011
5	Coaxial Cable	GTS	N/A	GTS406	Apr. 01 2010	Apr. 01 2011
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

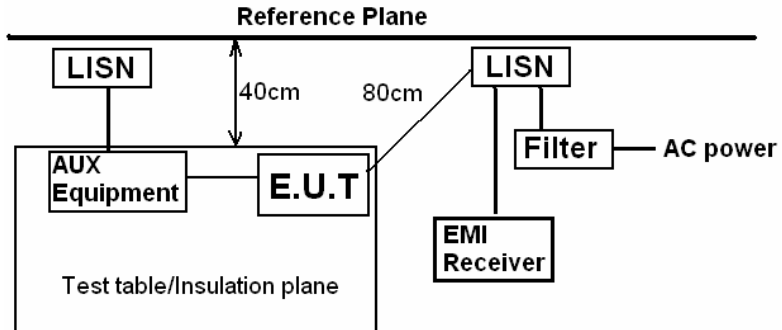


## 5 Test results and Measurement Data

### 5.1 Antenna requirement:

<b>Standard requirement:</b>	FCC Part15 C Section 15.203 /247(c)
<p><i>15.203 requirement:</i>  <i>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.</i></p> <p><i>15.247(c) (1)(i) requirement:</i>  <i>(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.</i></p>	
<b>E.U.T Antenna:</b>	
<p><i>The antenna is no consideration of replacement. The best case gain of the antenna is 2.0dBi.</i></p>	
	

## 5.2 Conducted Emissions

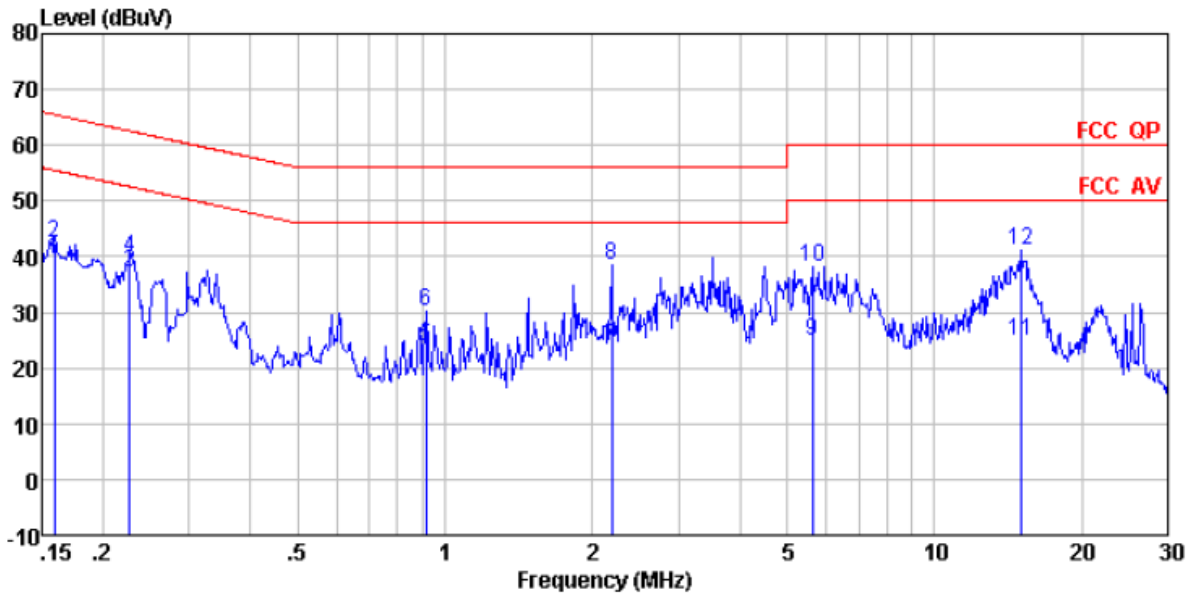
Test Requirement:	FCC Part15 C Section 15.207														
Test Method:	ANSI C63.4: 2003														
Test Frequency Range:	150KHz to 30MHz														
Class / Severity:	Class B														
Receiver setup:	RBW=9KHz, VBW=30KHz														
Limit:	<table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th> <th colspan="2">Limit (dBuV)</th> </tr> <tr> <th>Quasi-peak</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>0.15-0.5</td> <td>66 to 56*</td> <td>56 to 46*</td> </tr> <tr> <td>0.5-5</td> <td>56</td> <td>46</td> </tr> <tr> <td>5-30</td> <td>60</td> <td>50</td> </tr> </tbody> </table> <p>* Decreases with the logarithm of the frequency.</p>	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
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													
Test procedure	<p>The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.</p>														
Test setup:	 <p><i>Remark</i>  <i>E.U.T: Equipment Under Test</i>  <i>LISN: Line Impedance Stabilization Network</i>  <i>Test table height=0.8m</i></p>														
Test Instruments:	Refer to section 4.7 for details														
Test mode:	Refer to section 4.3 for details														
Test results:	Passed														

### Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live Line:

Data: 1 File: E:\GTS project\O\Ogemary\conducted.EM6 (4)



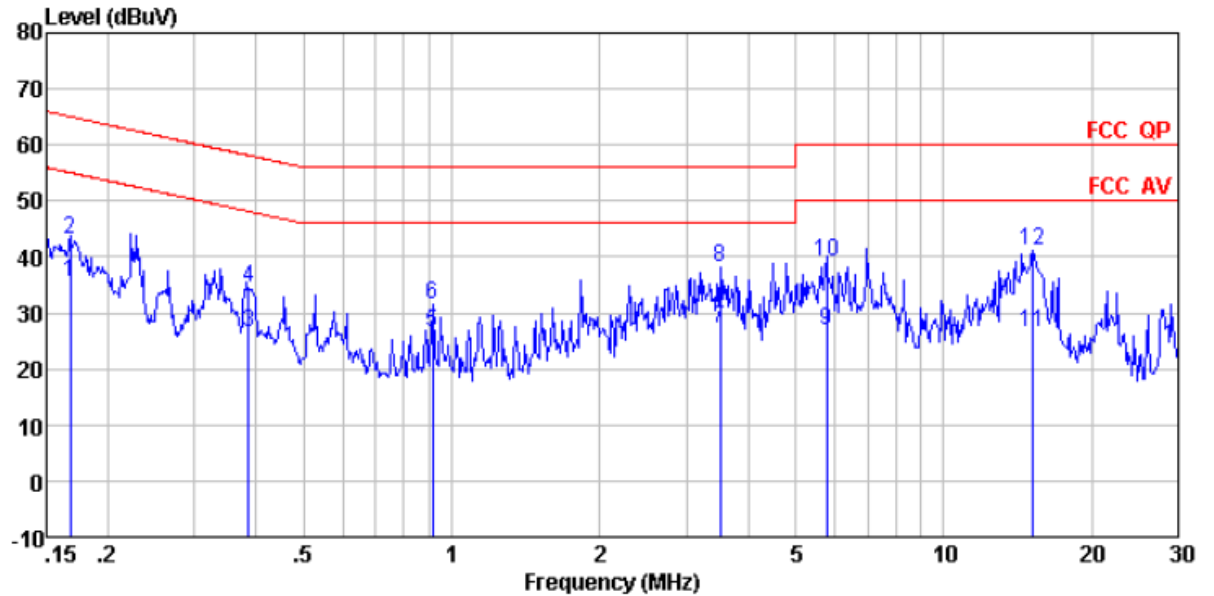
Condition : FCC QP LISN LINE  
 Job No : 273RF  
 EUT : USB Wifi Adaptor  
 Test Mode : PC mode  
 Test Engineer: Lau

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.159	35.70	3.68	0.01	39.39	55.52	-16.13	Average
2	0.159	38.90	3.68	0.01	42.59	65.52	-22.93	QP
3	0.227	33.50	3.64	0.01	37.15	52.57	-15.42	Average
4	0.227	36.20	3.64	0.01	39.85	62.57	-22.72	QP
5	0.914	20.30	3.49	0.01	23.80	46.00	-22.20	Average
6	0.914	26.54	3.49	0.01	30.04	56.00	-25.96	QP
7	2.190	20.40	3.39	0.13	23.92	46.00	-22.08	Average
8	2.190	34.81	3.39	0.13	38.33	56.00	-17.67	QP
9	5.623	21.29	3.29	0.33	24.91	50.00	-25.09	Average
10	5.623	34.63	3.29	0.33	38.25	60.00	-21.75	QP
11	14.986	21.29	3.18	0.43	24.90	50.00	-25.10	Average
12	14.986	37.43	3.18	0.43	41.04	60.00	-18.96	QP

Neutral Line:

Data: 2

File: E:\GTS project\O\Ogemary\conducted.EM6 (4)



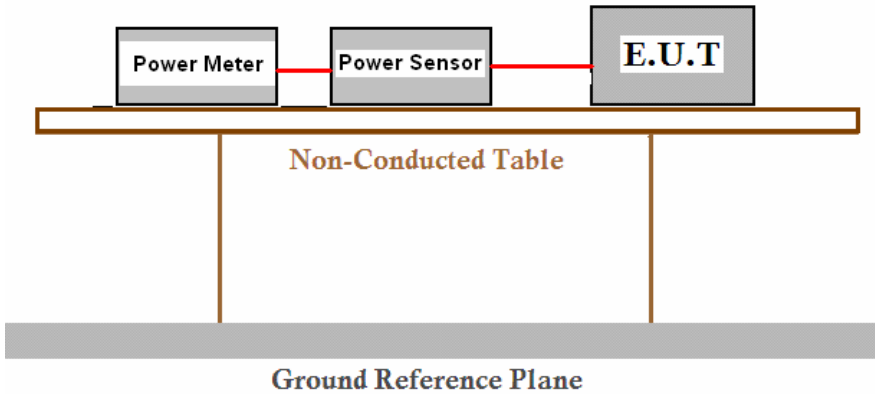
Condition : FCC QP LISN NEUTRAL  
 Job No : 273RF  
 EUT : USB Wifi Adaptor  
 Test Mode : PC mode  
 Test Engineer: Lau

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.168	31.80	3.68	0.01	35.49	55.08	-19.59	Average
2	0.168	39.60	3.68	0.01	43.29	65.08	-21.79	QP
3	0.387	23.10	3.58	0.01	26.69	48.12	-21.43	Average
4	0.387	31.00	3.58	0.01	34.59	58.12	-23.53	QP
5	0.914	23.10	3.49	0.01	26.60	46.00	-19.40	Average
6	0.914	28.02	3.49	0.01	31.52	56.00	-24.48	QP
7	3.509	23.50	3.34	0.24	27.08	46.00	-18.92	Average
8	3.509	34.60	3.34	0.24	38.18	56.00	-17.82	QP
9	5.774	23.10	3.28	0.33	26.71	50.00	-23.29	Average
10	5.774	35.60	3.28	0.33	39.21	60.00	-20.79	QP
11	15.146	22.79	3.18	0.43	26.40	50.00	-23.60	Average
12	15.146	37.51	3.18	0.43	41.12	60.00	-18.88	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.

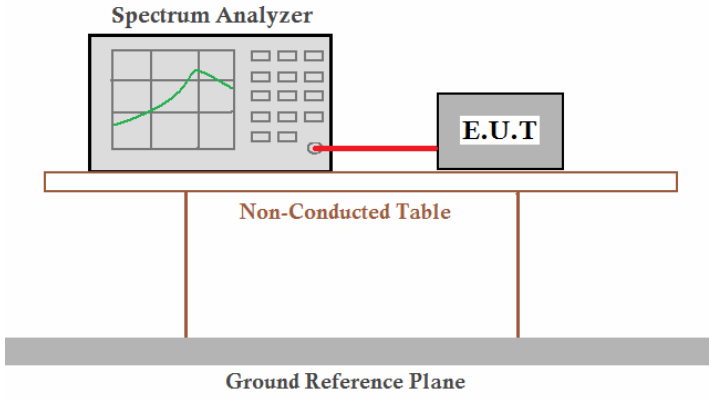
### 5.3 Conducted Peak Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	30dBm
Test setup:	
Test procedure:	A power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. Record the power level.
Test Instruments:	Refer to section 4.7 for details
Test mode:	Refer to section 4.3 for details
Test results:	Passed

**Measurement Data**

802.11b mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	24.14	30.00	Pass
Middle	22.16	30.00	Pass
Highest	23.21	30.00	Pass
802.11g mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	19.23	30.00	Pass
Middle	19.52	30.00	Pass
Highest	19.73	30.00	Pass
802.11n-H20 mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	18.67	30.00	Pass
Middle	18.49	30.00	Pass
Highest	18.26	30.00	Pass
802.11n-H40 mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	18.27	30.00	Pass
Middle	18.19	30.00	Pass
Highest	18.16	30.00	Pass

### 5.4 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:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.</p>
Test Instruments:	Refer to section 4.7 for details
Test mode:	Refer to section 4.3 for details
Test results:	Passed

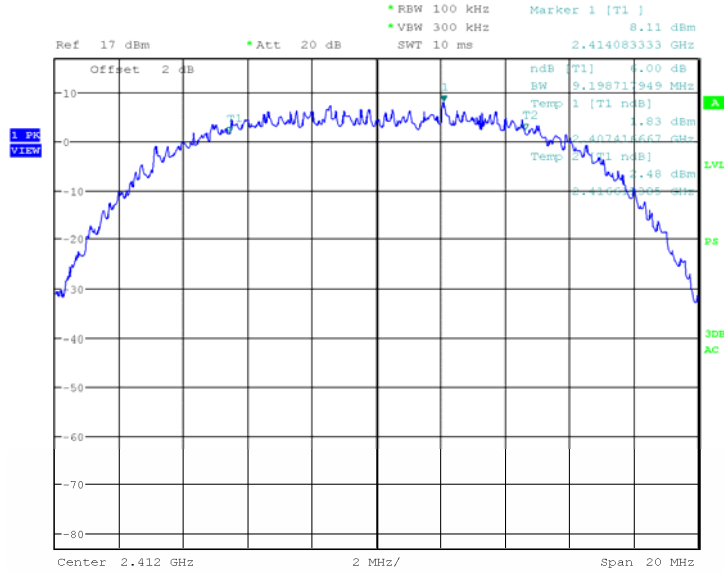
**Measurement Data**

802.11b mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (KHz)	Result
Lowest	9.199	>500	Pass
Middle	9.260	>500	Pass
Highest	9.744	>500	Pass
802.11g mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (KHz)	Result
Lowest	16.506	>500	Pass
Middle	16.525	>500	Pass
Highest	16.506	>500	Pass
802.11n-H20 mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (KHz)	Result
Lowest	17.660	>500	Pass
Middle	17.692	>500	Pass
Highest	17.660	>500	Pass
802.11n-H40 mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (KHz)	Result
Lowest	36.458	>500	Pass
Middle	36.217	>500	Pass
Highest	36.378	>500	Pass

**Test plot as follows:**

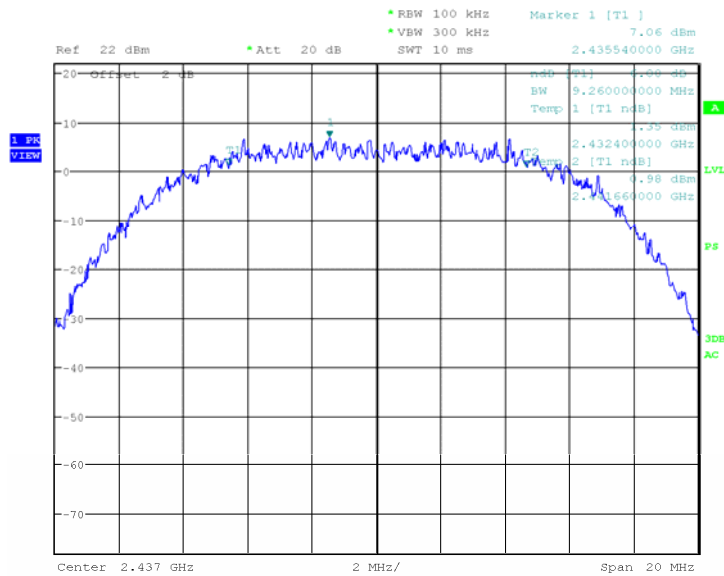


Test mode:	802.11b	Test channel:	Lowest
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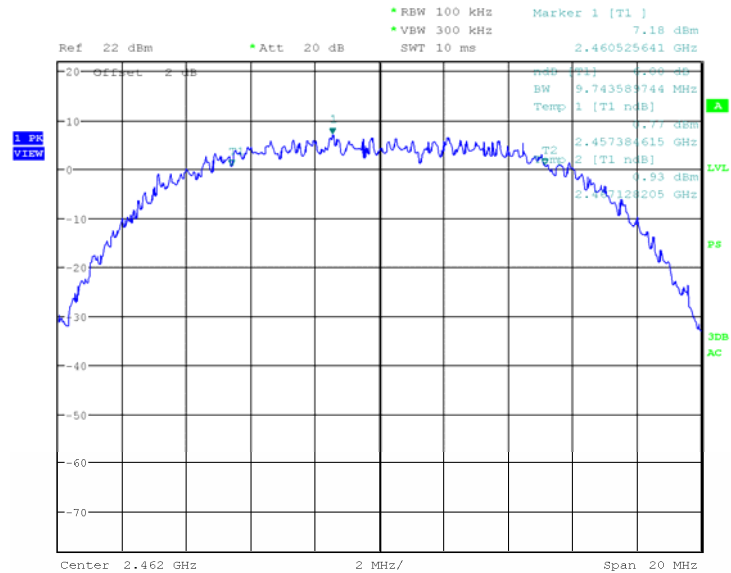
Date: 31.OCT.2010 13:46:25

Test mode:	802.11b	Test channel:	Middle
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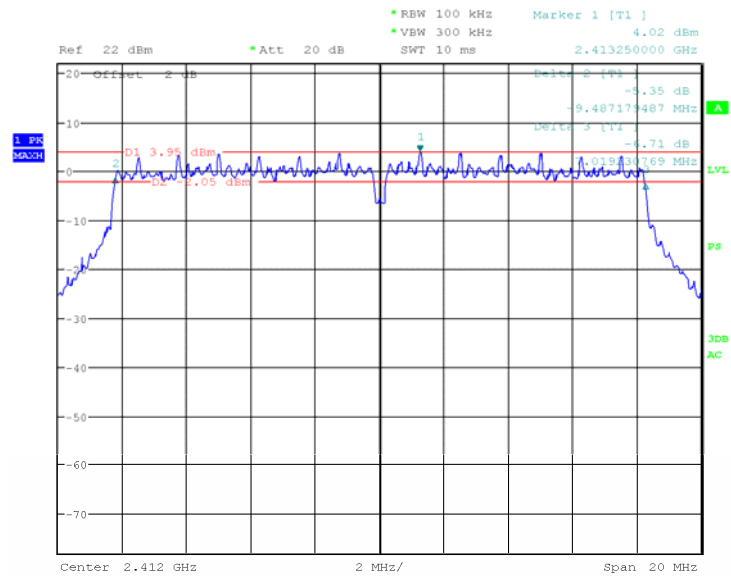
Date: 31.OCT.2010 14:01:43

Test mode:	802.11b	Test channel:	Highest
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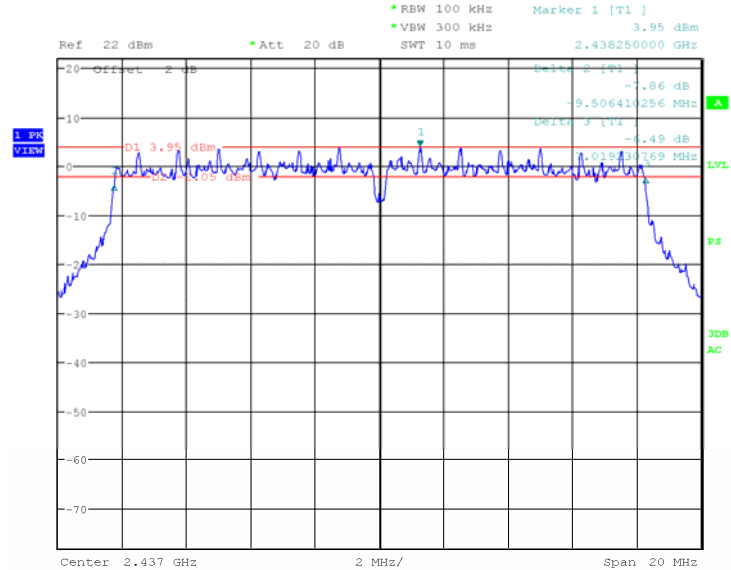
Date: 1.NOV.2010 09:26:45

Test mode:	802.11g	Test channel:	Lowest
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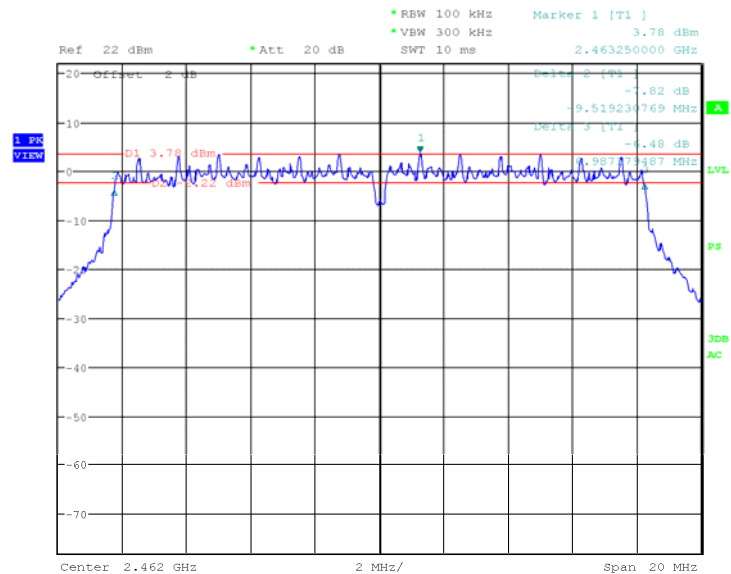
Date: 1.NOV.2010 12:55:53

Test mode:	802.11g	Test channel:	Middle
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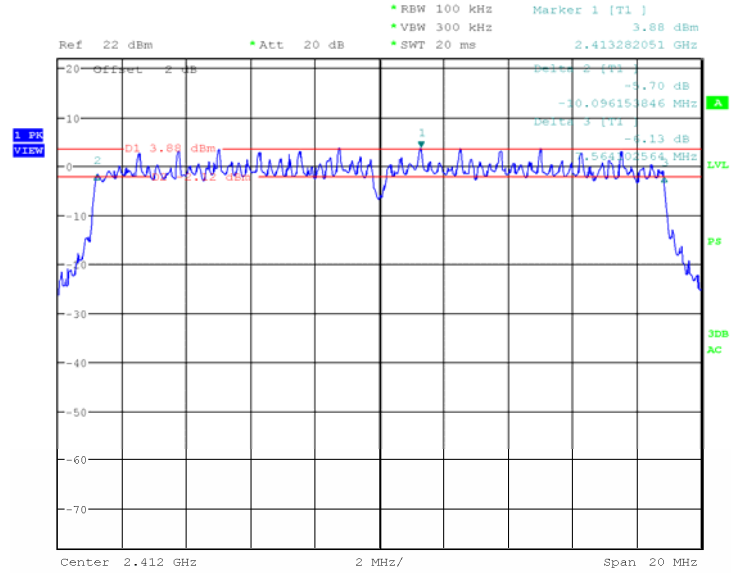
Date: 1.NOV.2010 13:01:04

Test mode:	802.11g	Test channel:	Highest
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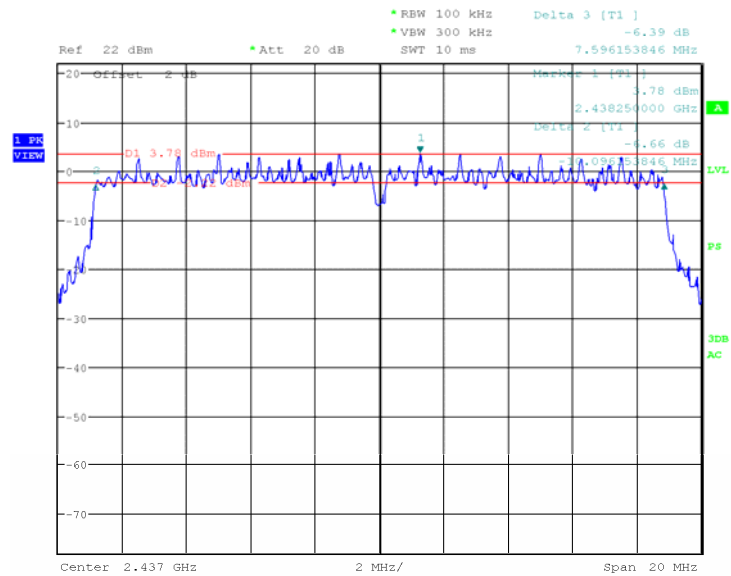
Date: 1.NOV.2010 13:05:18

Test mode:	802.11n-H20	Test channel:	Lowest
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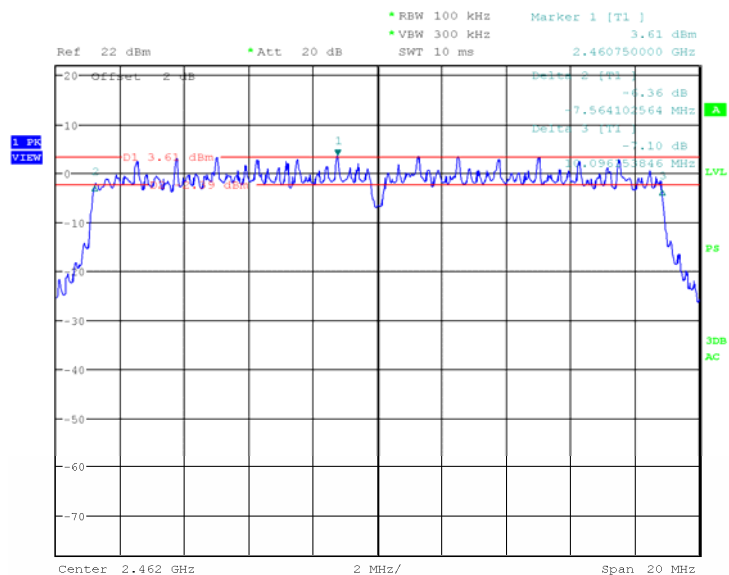
Date: 1.NOV.2010 13:18:45

Test mode:	802.11n-H20	Test channel:	Middle
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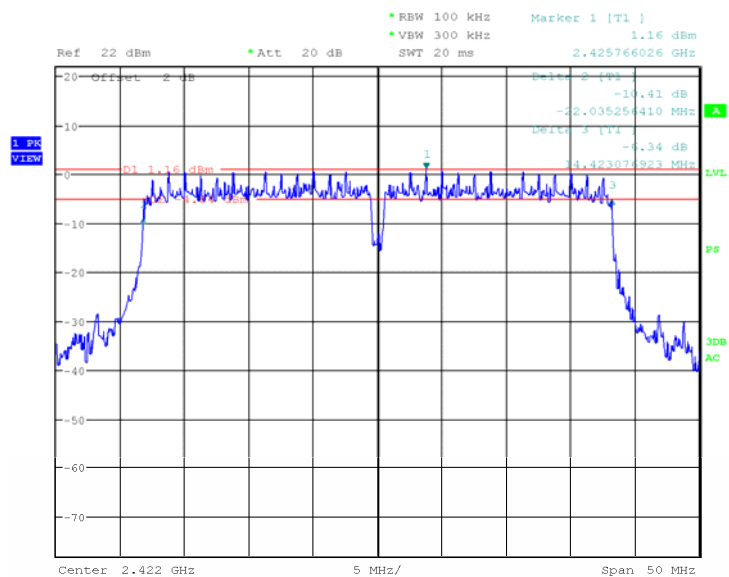
Date: 1.NOV.2010 13:14:44

Test mode:	802.11n-H20	Test channel:	Highest
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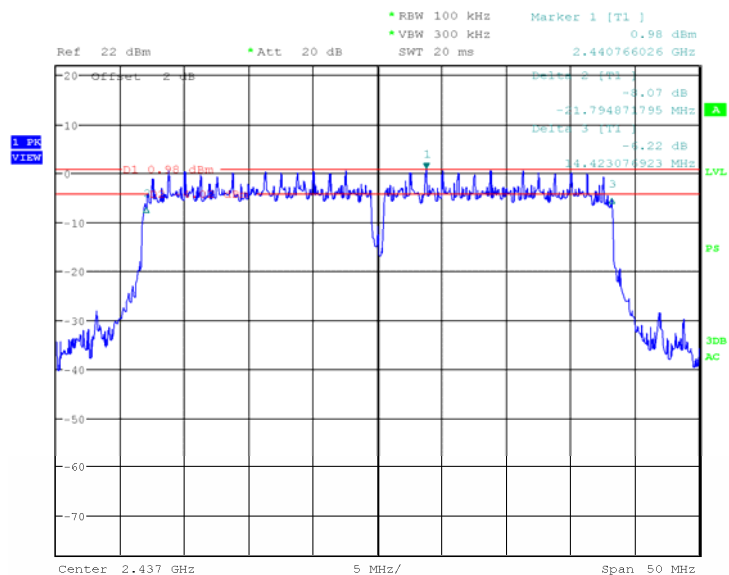
Date: 1.NOV.2010 13:10:32

Test mode:	802.11n-H40	Test channel:	Lowest
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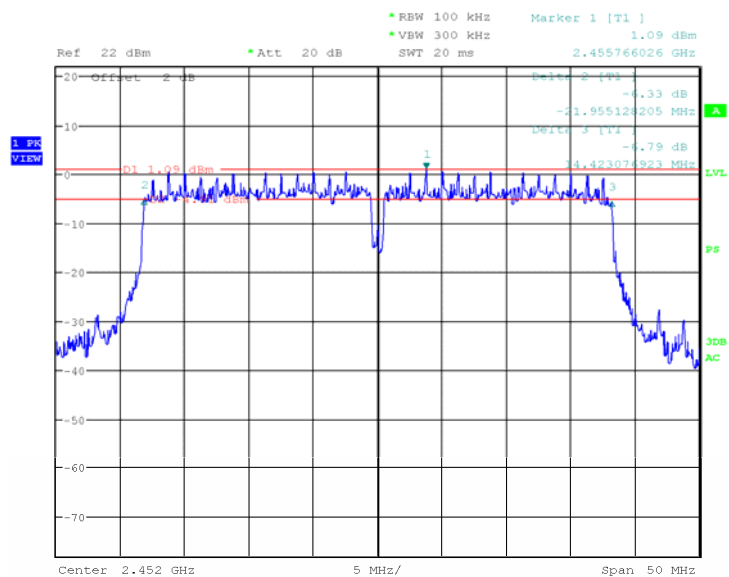
Date: 1.NOV.2010 13:24:09

Test mode:	802.11n-H40	Test channel:	Middle
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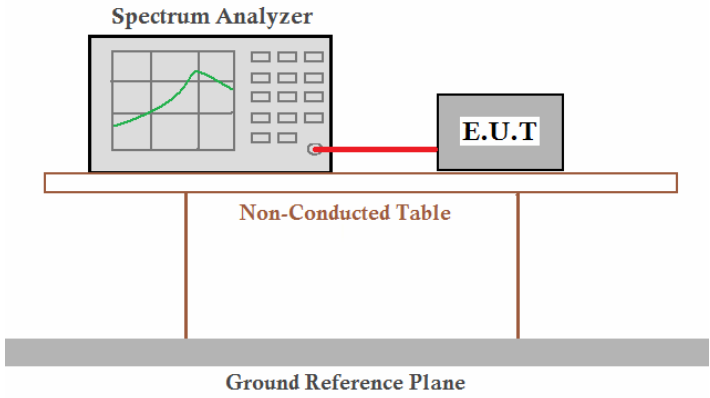
Date: 1.NOV.2010 13:29:19

Test mode:	802.11n-H40	Test channel:	Highest
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Date: 1.NOV.2010 13:33:29

### 5.5 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	8dBm
Test setup:	 <p><i>Remark: Offset the High-Frequency cable loss 3.0dB in the spectrum analyzer.</i></p>
Test Instruments:	Refer to section 4.7 for details
Test mode:	Refer to section 4.3 for details
Test results:	Passed

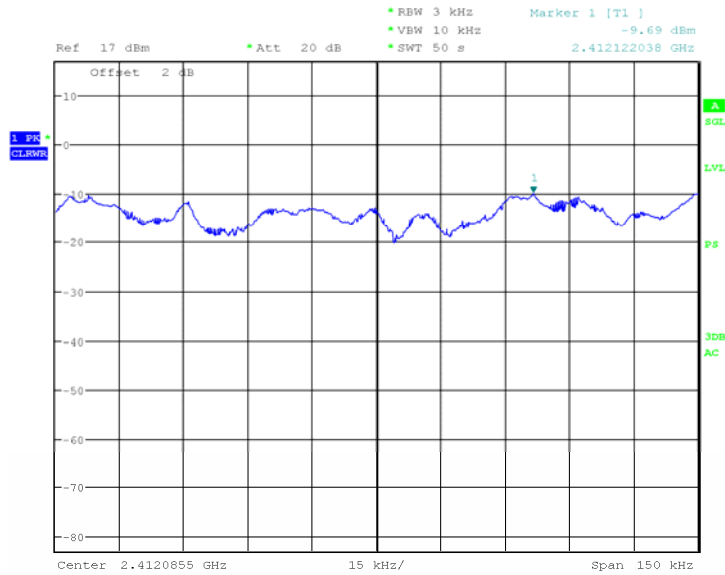
**Measurement Data**

802.11b mode			
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-9.69	8.00	Pass
Middle	-8.05	8.00	Pass
Highest	-12.96	8.00	Pass
802.11g mode			
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-12.14	8.00	Pass
Middle	-12.24	8.00	Pass
Highest	-12.13	8.00	Pass
802.11n-H20 mode			
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-11.72	8.00	Pass
Middle	-11.67	8.00	Pass
Highest	-11.79	8.00	Pass
802.11n-H40 mode			
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-16.62	8.00	Pass
Middle	-16.47	8.00	Pass
Highest	-16.82	8.00	Pass

**Test plot as follows:**

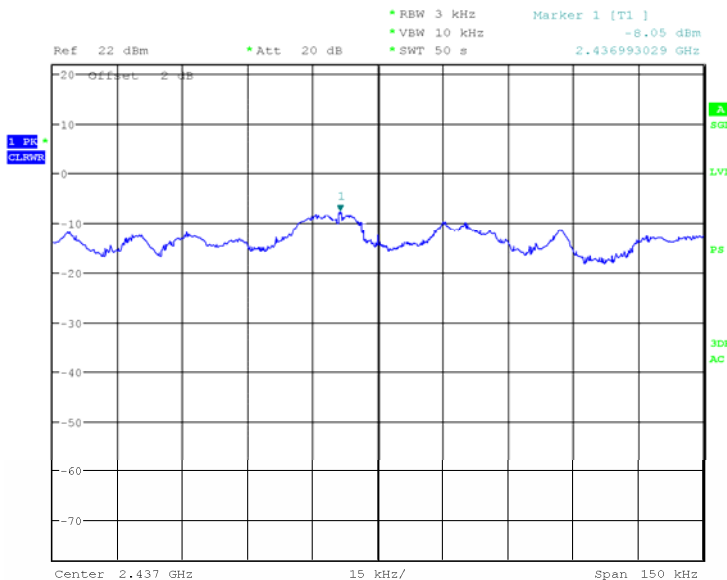


Test mode:	802.11b	Test channel:	Lowest
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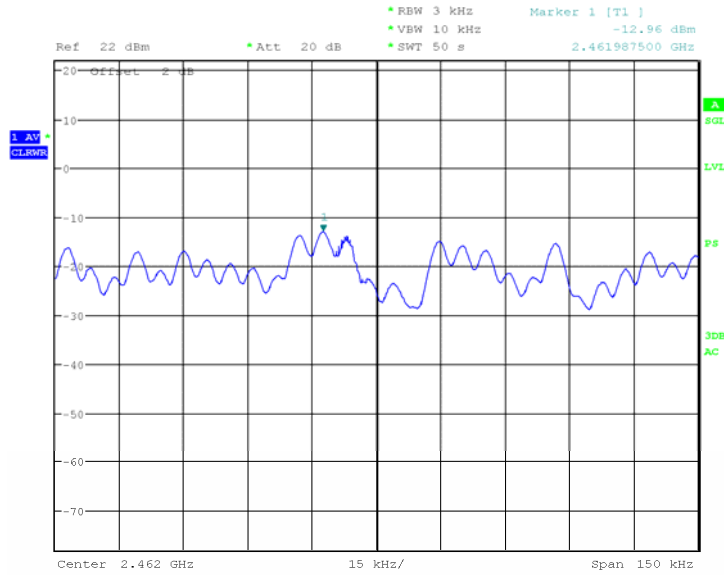
Date: 31.OCT.2010 13:53:03

Test mode:	802.11b	Test channel:	Middle
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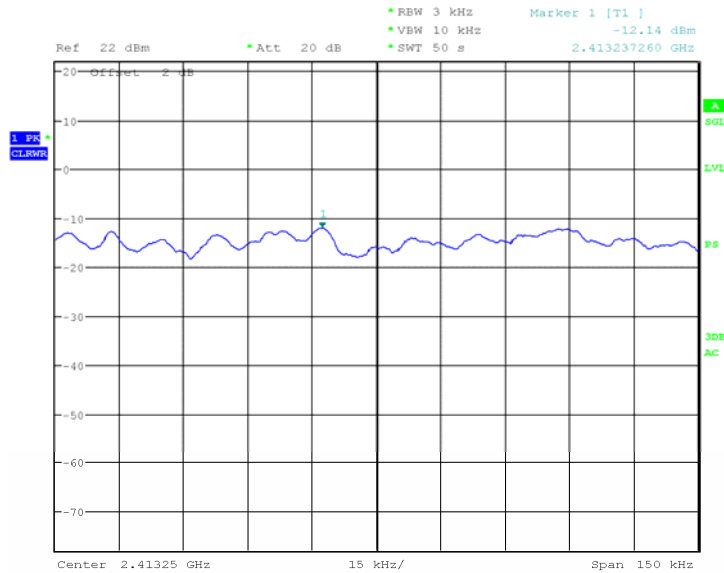
Date: 1.NOV.2010 09:36:13

Test mode:	802.11b	Test channel:	Highest
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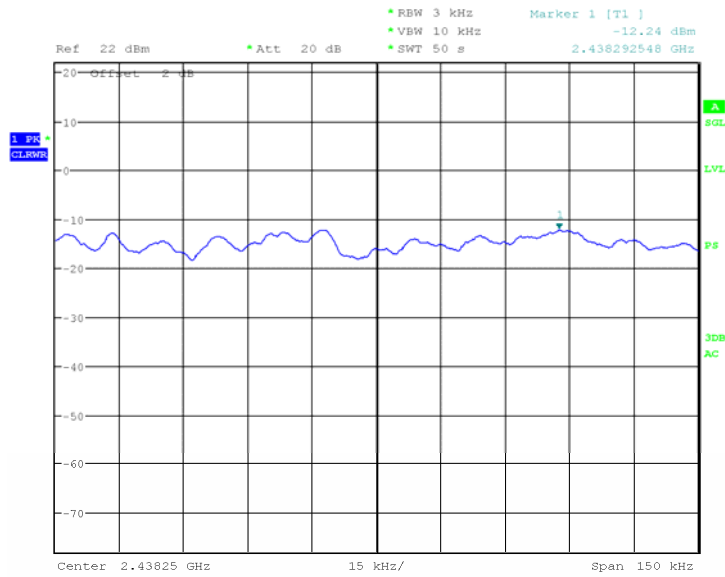
Date: 1.NOV.2010 09:33:20

Test mode:	802.11g	Test channel:	Lowest
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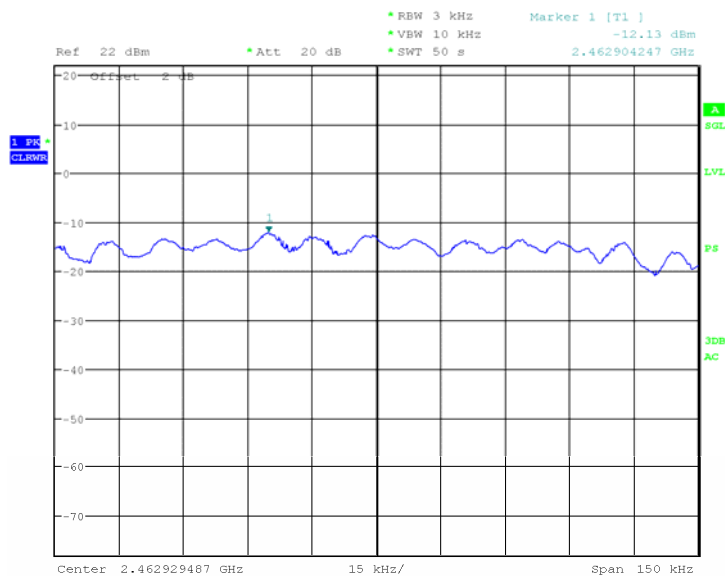
Date: 1.NOV.2010 12:59:43

Test mode:	802.11g	Test channel:	Middle
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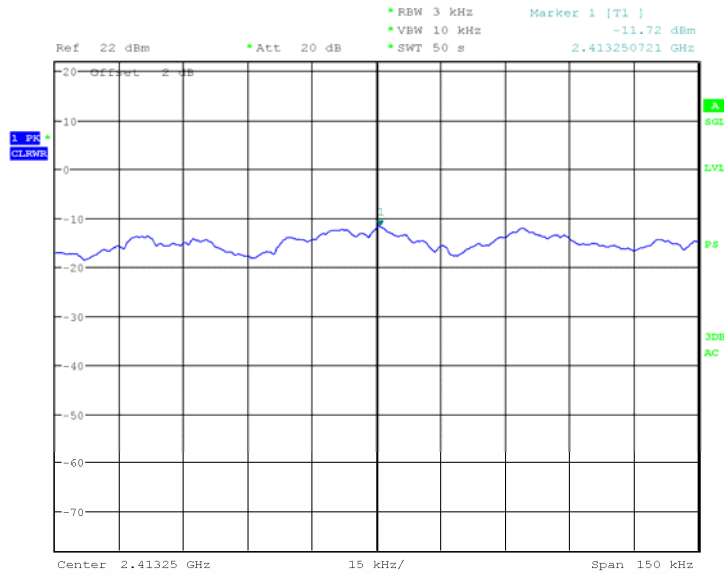
Date: 1.NOV.2010 13:04:05

Test mode:	802.11g	Test channel:	Highest
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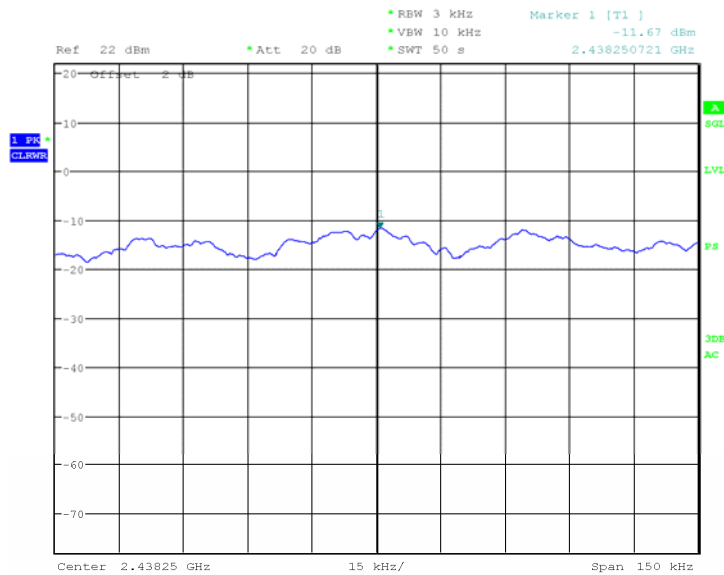
Date: 1.NOV.2010 13:09:05

Test mode:	802.11n-H20	Test channel:	Lowest
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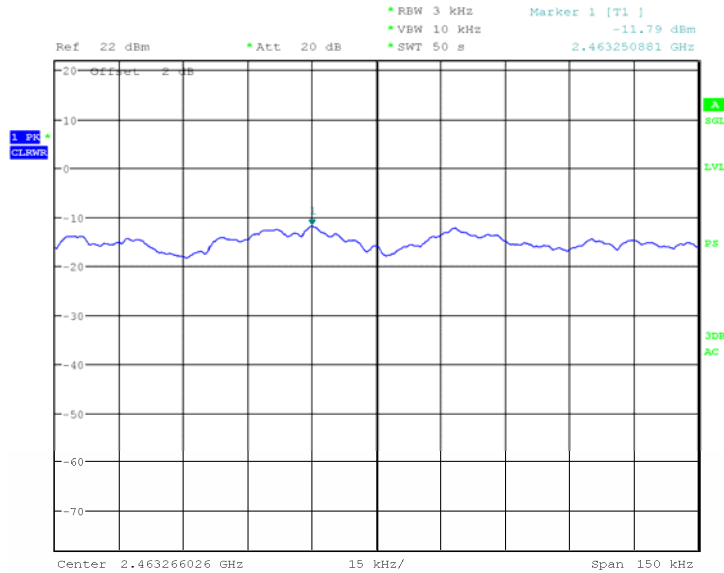
Date: 1.NOV.2010 13:22:23

Test mode:	802.11n-H20	Test channel:	Middle
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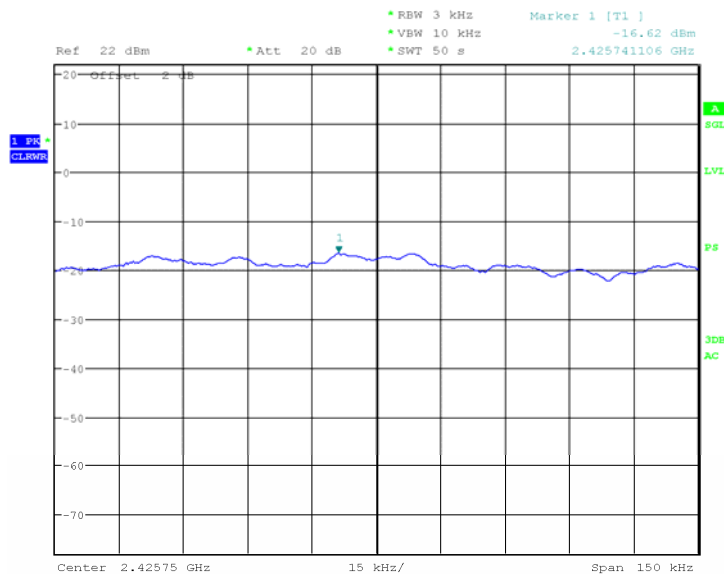
Date: 1.NOV.2010 13:17:33

Test mode:	802.11n-H20	Test channel:	Highest
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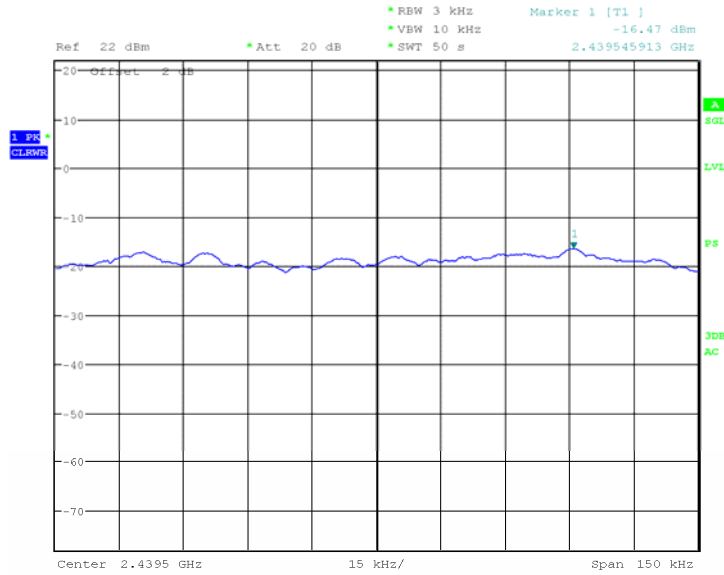
Date: 1.NOV.2010 13:13:37

Test mode:	802.11n-H40	Test channel:	Lowest
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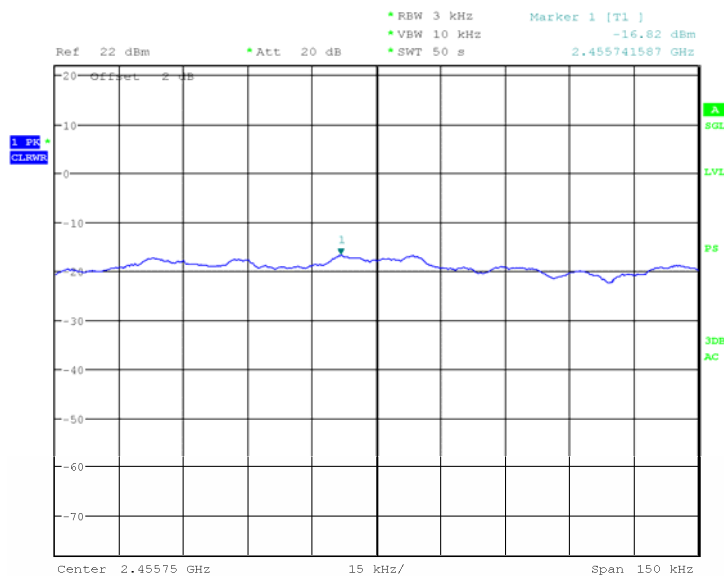
Date: 1.NOV.2010 13:27:59

Test mode:	802.11n-H40	Test channel:	Middle
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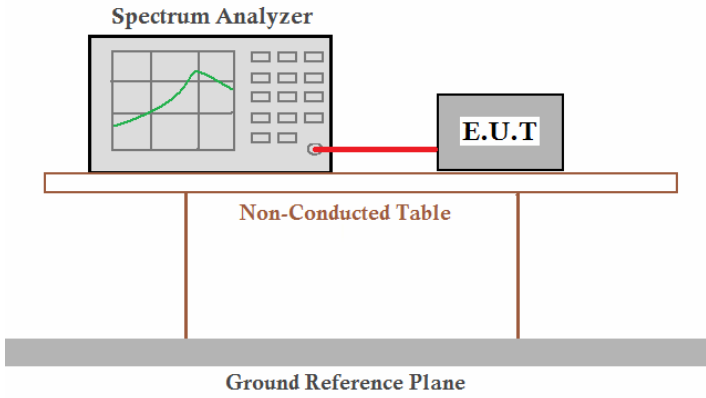
Date: 1.NOV.2010 13:32:14

Test mode:	802.11n-H40	Test channel:	Highest
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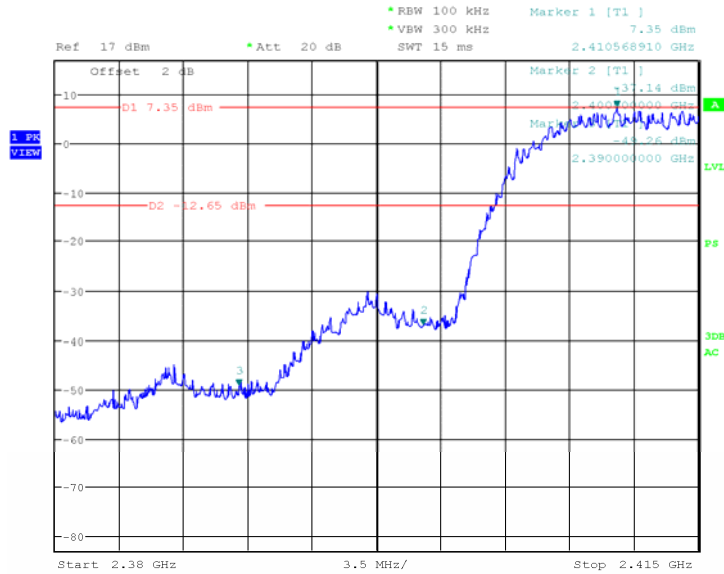
Date: 1.NOV.2010 13:36:55

### 5.6 Band Edge

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:	 <p><i>Remark: Offset the High-Frequency cable loss 3.0dB in the spectrum analyzer.</i></p>
Test Instruments:	Refer to section 4.7 for details
Test mode:	Refer to section 4.3 for details
Test results:	Passed

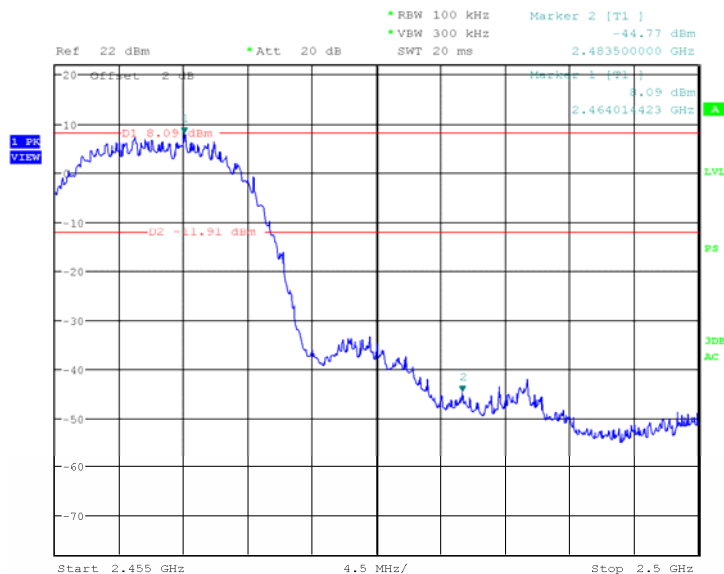
Test plot as follows:

Test mode:	802.11b	Test channel:	Lowest
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Date: 31.OCT.2010 13:47:20

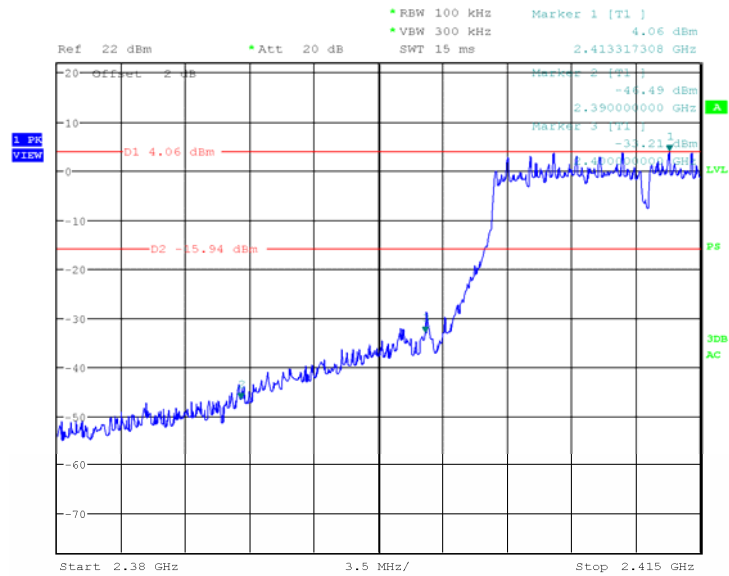
Test mode:	802.11b	Test channel:	Highest
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Date: 1.NOV.2010 09:27:43

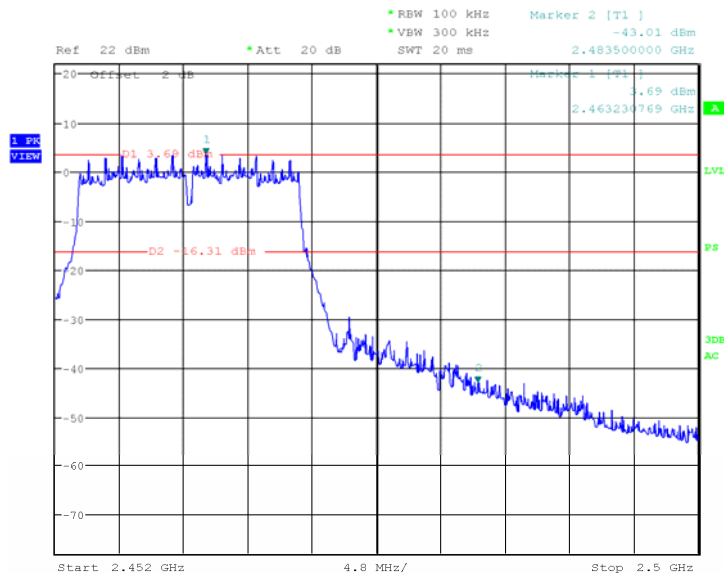


Test mode:	802.11g	Test channel:	Lowest
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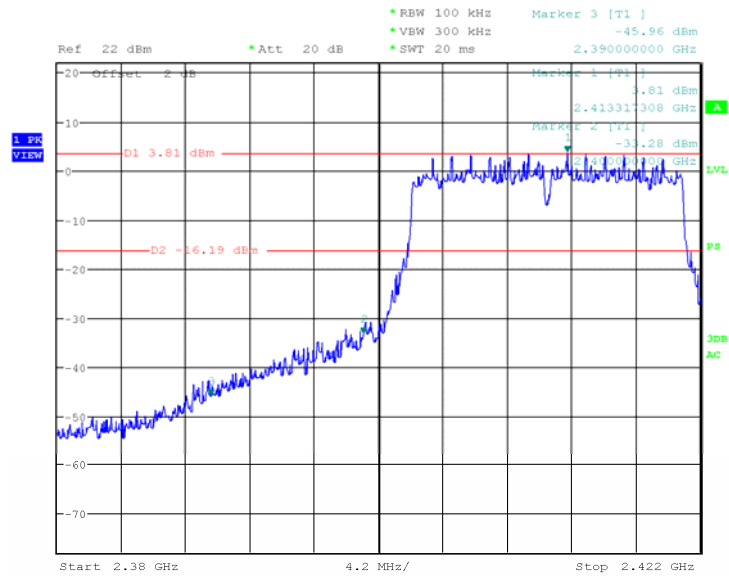
Date: 1.NOV.2010 12:56:55

Test mode:	802.11g	Test channel:	Highest
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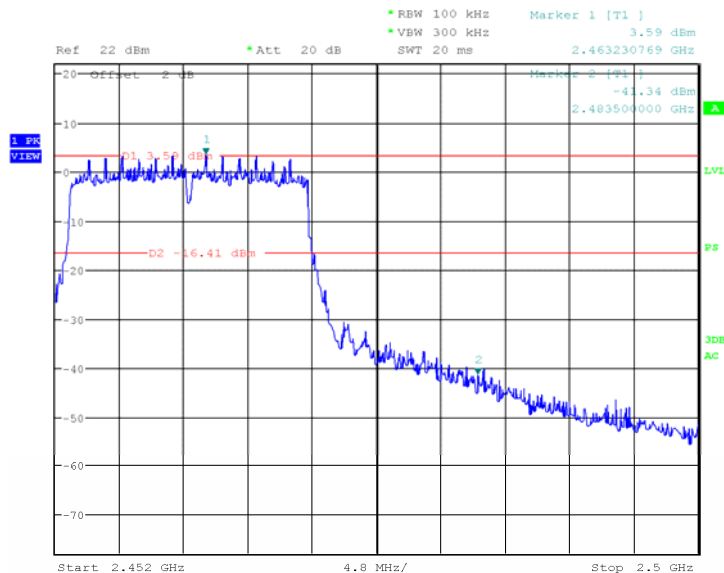
Date: 1.NOV.2010 13:06:11

Test mode:	802.11n-H20	Test channel:	Lowest
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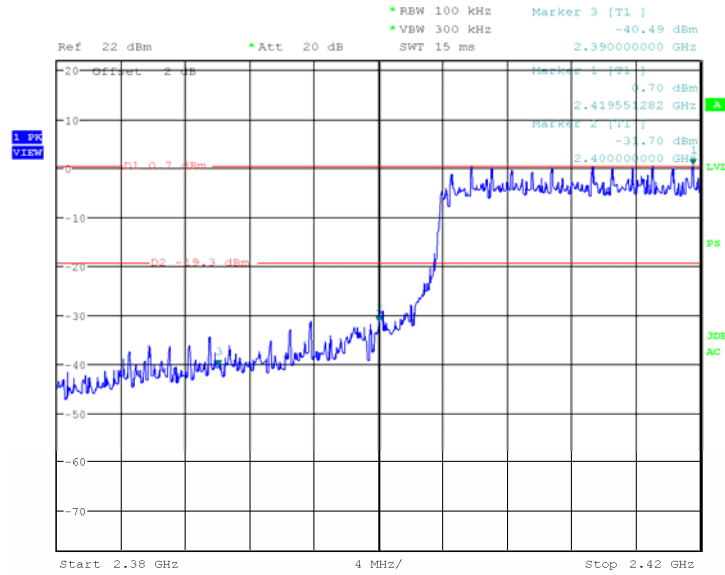
Date: 1.NOV.2010 13:19:25

Test mode:	802.11n-H20	Test channel:	Highest
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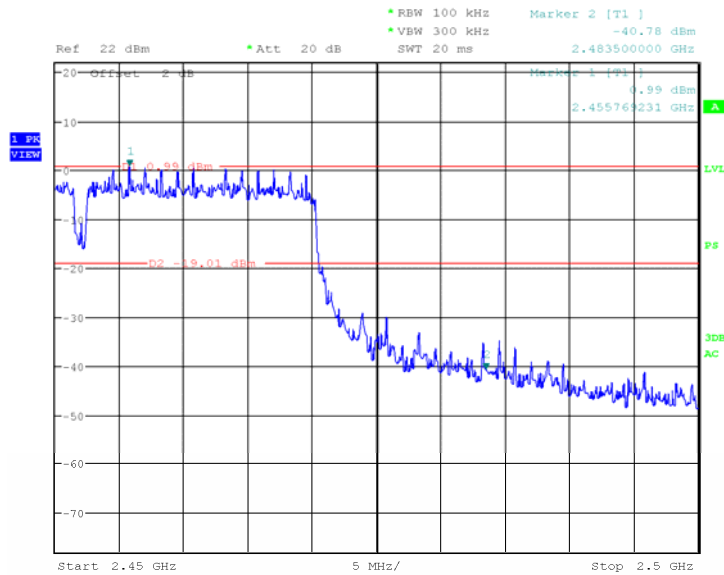
Date: 1.NOV.2010 13:11:12

Test mode:	802.11n-H40	Test channel:	Lowest
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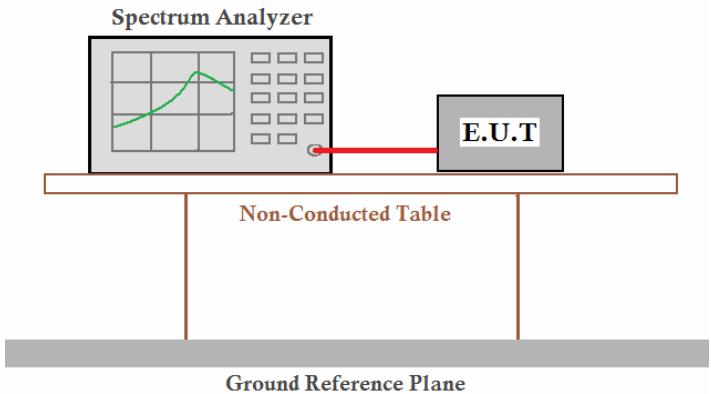
Date: 1.NOV.2010 13:25:14

Test mode:	802.11n-H40	Test channel:	Highest
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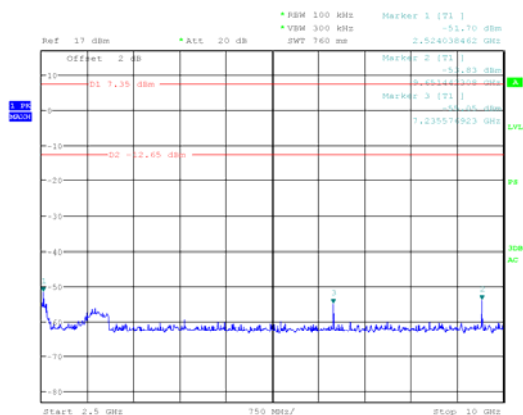
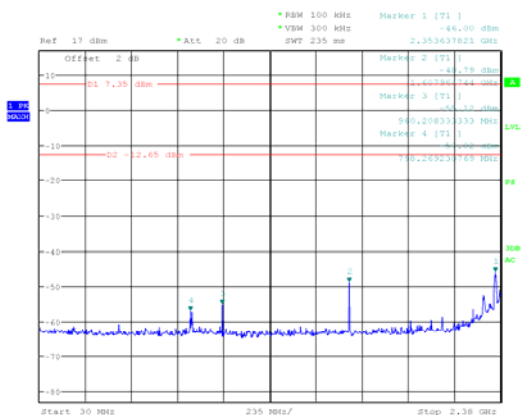
Date: 1.NOV.2010 13:34:30

### 5.7 RF Antenna Conducted spurious emissions

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:	 <p><i>Remark: Offset the High-Frequency cable loss 3.0dB in the spectrum analyzer.</i></p>
Test Instruments:	Refer to section 4.7 for details
Test mode:	Refer to section 4.3 for details
Test results:	Passed

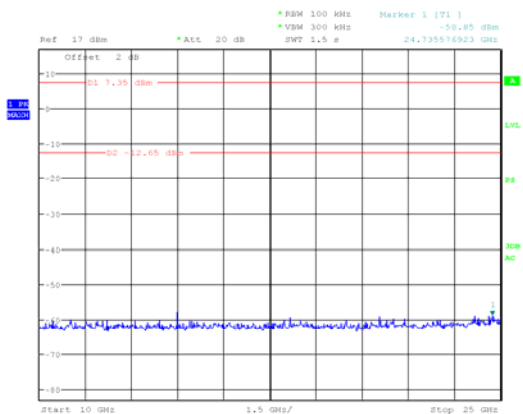
Test plot as follows:

Test mode:	802.11b	Test channel:	Lowest
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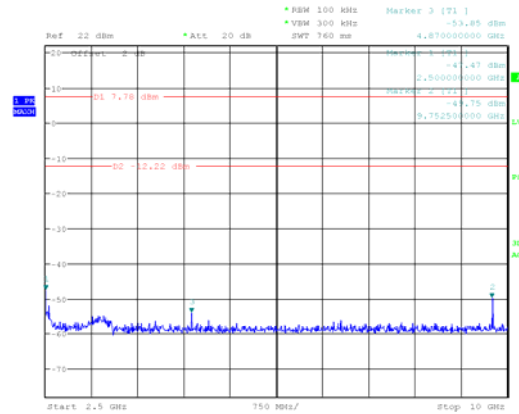
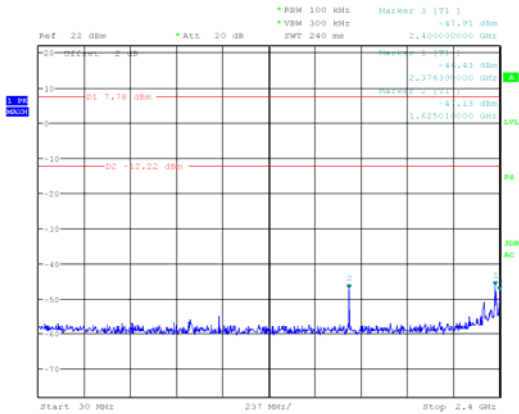
Date: 31.OCT.2010 13:48:14

Date: 31.OCT.2010 13:48:47



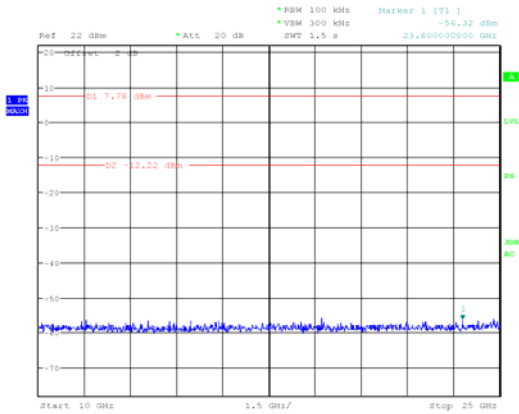
Date: 31.OCT.2010 13:49:09

Test mode:	802.11b	Test channel:	Middle
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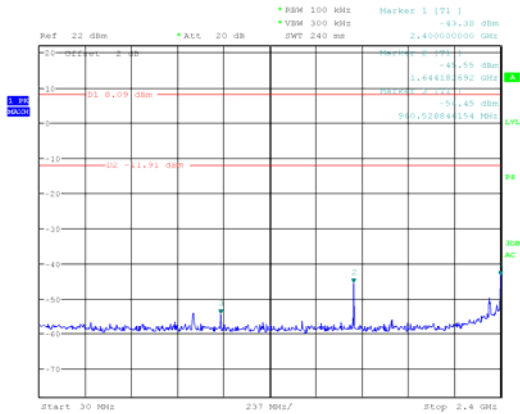
Date: 31.OCT.2010 14:02:56

Date: 31.OCT.2010 14:03:24

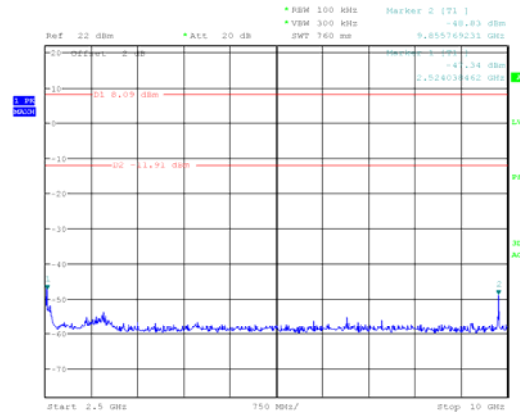


Date: 31.OCT.2010 14:03:40

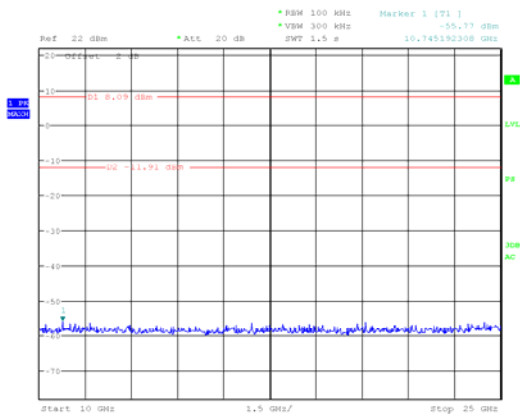
Test mode:	802.11b	Test channel:	Highest
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Date: 1.NOV.2010 09:28:17

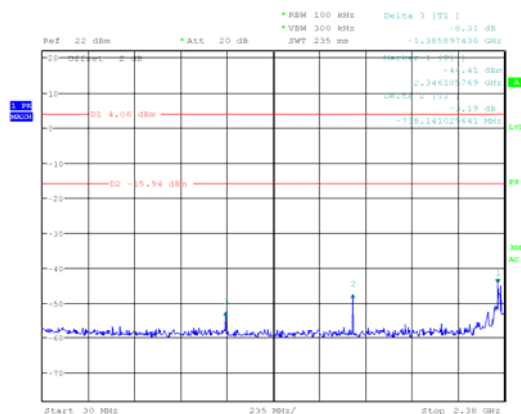


Date: 1.NOV.2010 09:28:41

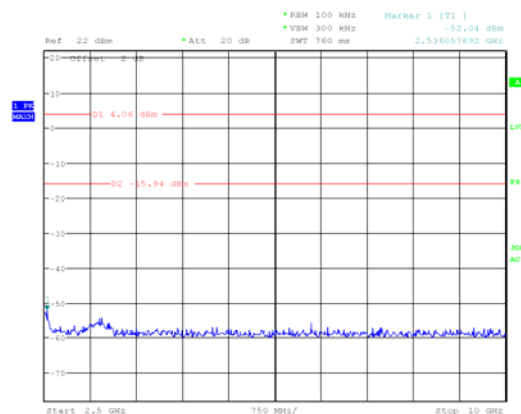


Date: 1.NOV.2010 09:29:01

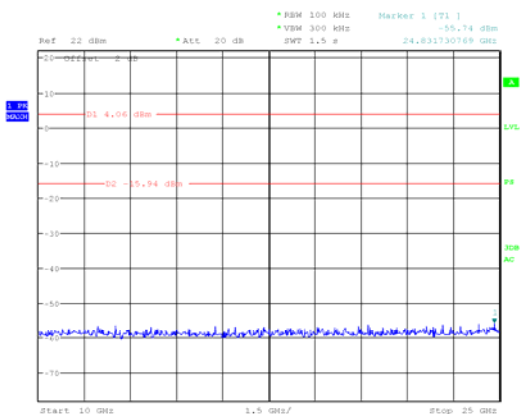
Test mode:	802.11g	Test channel:	Lowest
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Date: 1.NOV.2010 12:57:21



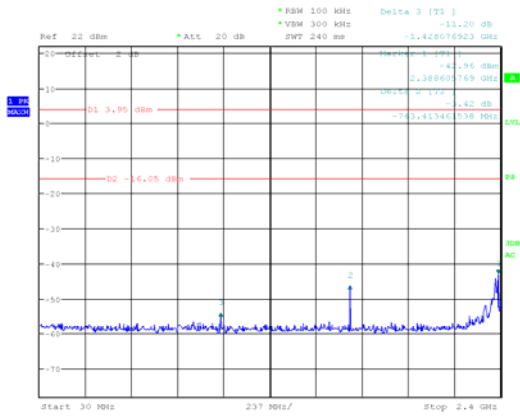
Date: 1.NOV.2010 12:57:39



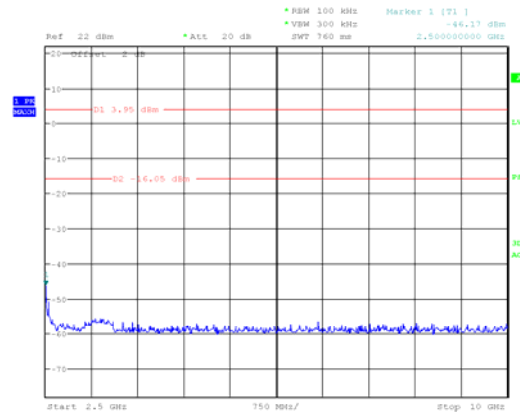
Date: 1.NOV.2010 12:57:54



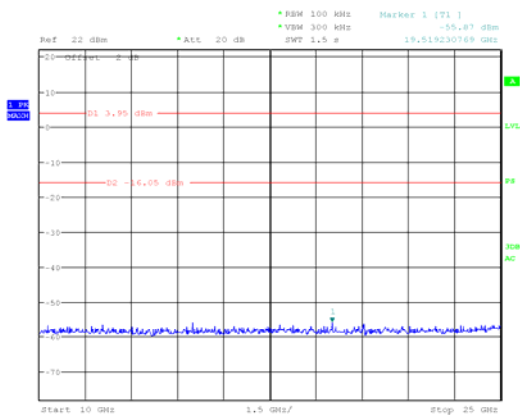
Test mode:	802.11g	Test channel:	Middle
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Date: 1.NOV.2010 13:01:43

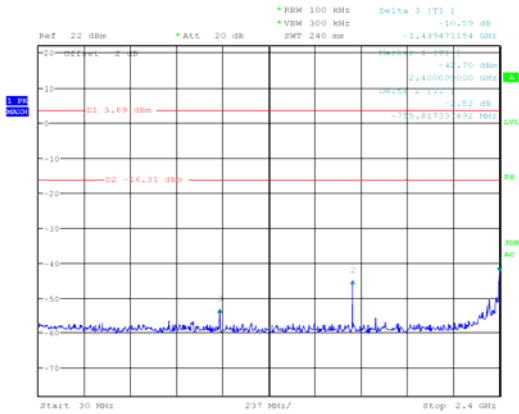


Date: 1.NOV.2010 13:02:00

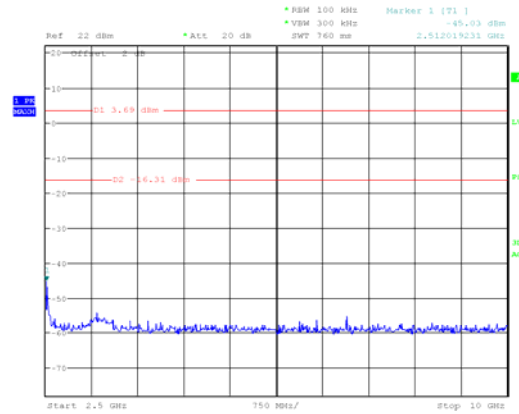


Date: 1.NOV.2010 13:02:18

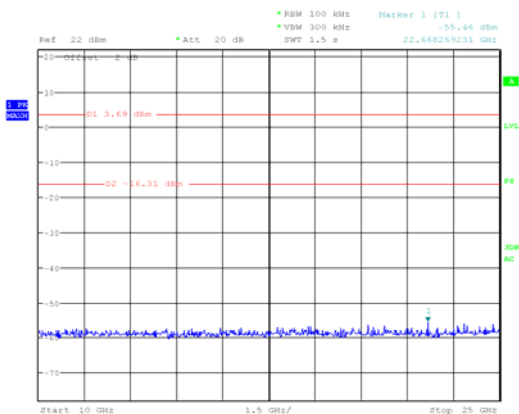
Test mode:	802.11g	Test channel:	Highest
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Date: 1.NOV.2010 13:06:33

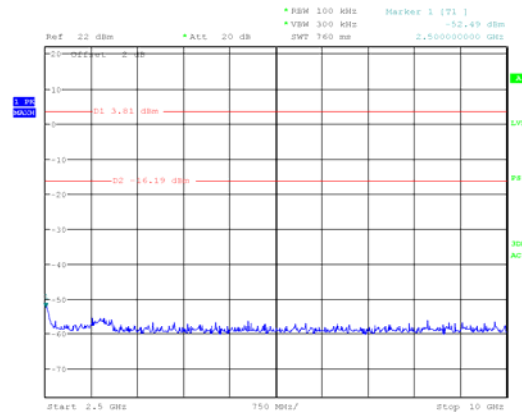
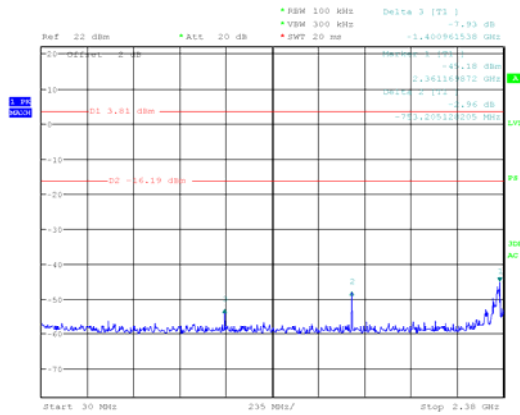


Date: 1.NOV.2010 13:06:47



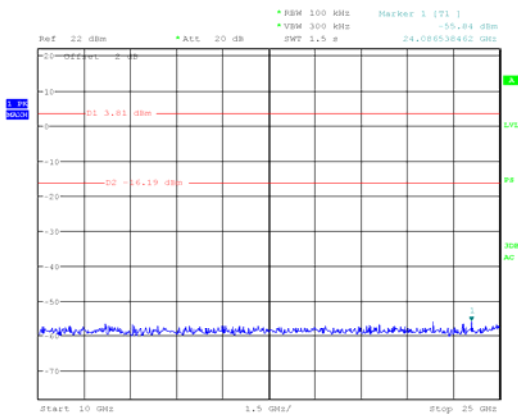
Date: 1.NOV.2010 13:07:13

Test mode:	802.11n-H20	Test channel:	Lowest
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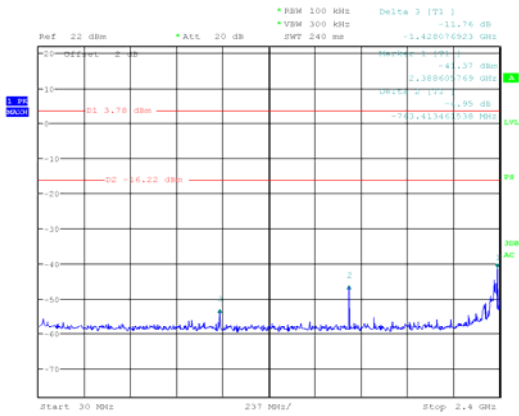
Date: 1.NOV.2010 13:19:54

Date: 1.NOV.2010 13:20:30

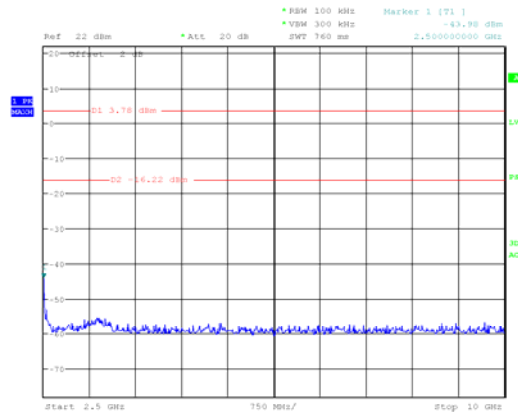


Date: 1.NOV.2010 13:20:49

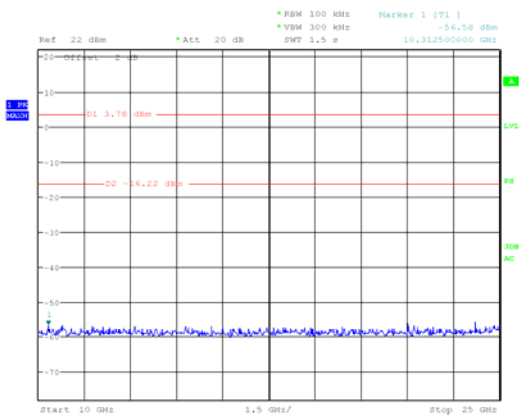
Test mode:	802.11n-H20	Test channel:	Middle
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Date: 1.NOV.2010 13:15:38

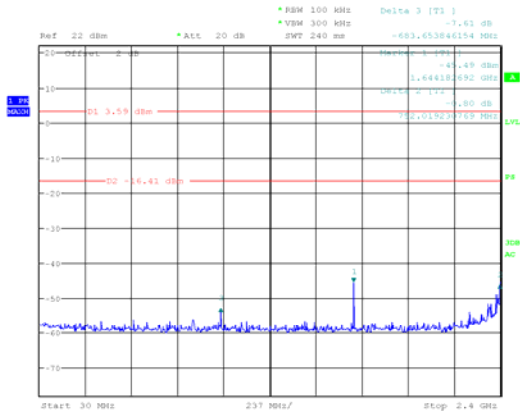


Date: 1.NOV.2010 13:15:54

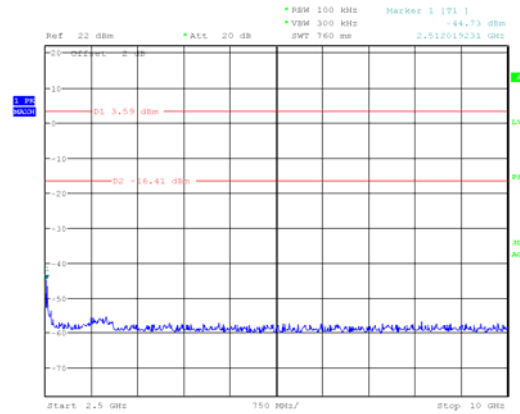


Date: 1.NOV.2010 13:16:09

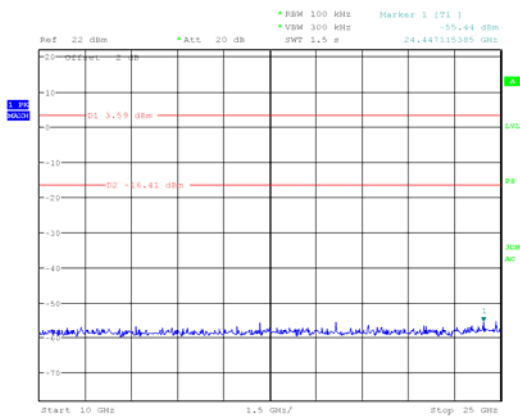
Test mode:	802.11n-H20	Test channel:	Highest
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Date: 1.NOV.2010 13:11:35

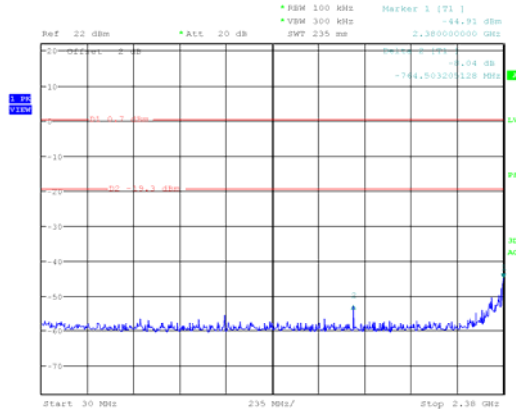


Date: 1.NOV.2010 13:11:52

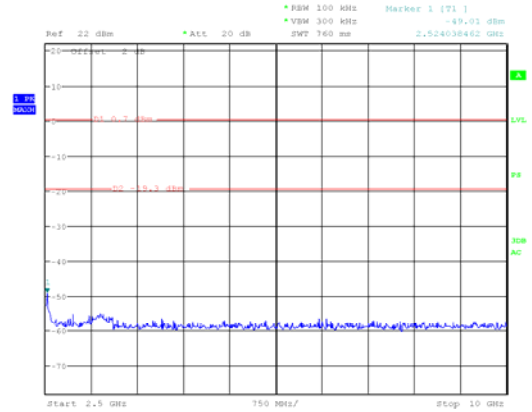


Date: 1.NOV.2010 13:12:13

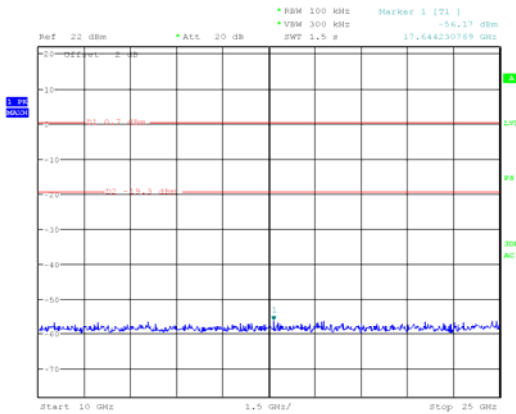
Test mode:	802.11n-H40	Test channel:	Lowest
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Date: 1.NOV.2010 13:25:44

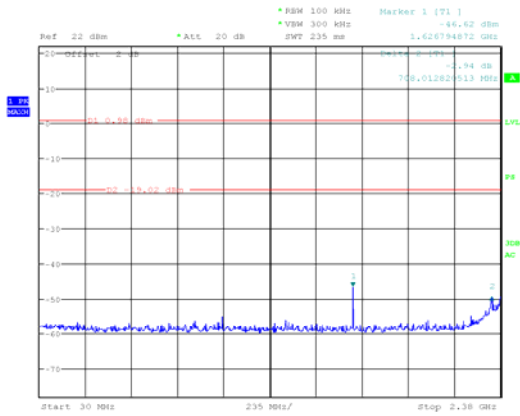


Date: 1.NOV.2010 13:26:07

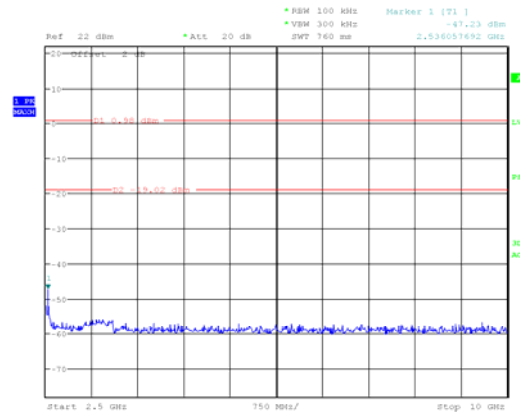


Date: 1.NOV.2010 13:26:26

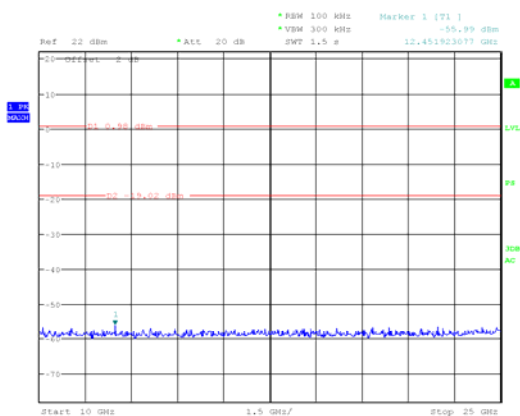
Test mode:	802.11n-H40	Test channel:	Middle
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Date: 1.NOV.2010 13:29:58

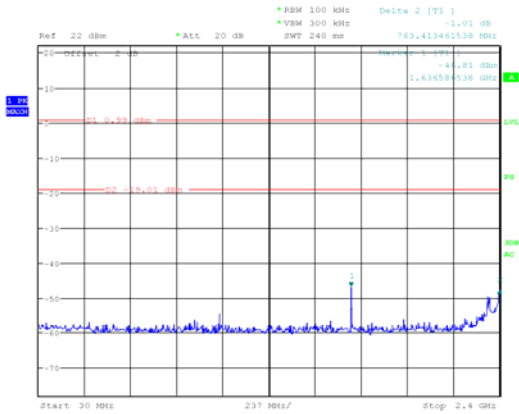


Date: 1.NOV.2010 13:30:16

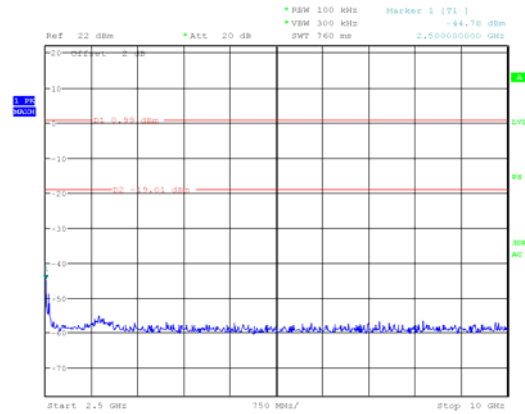


Date: 1.NOV.2010 13:30:32

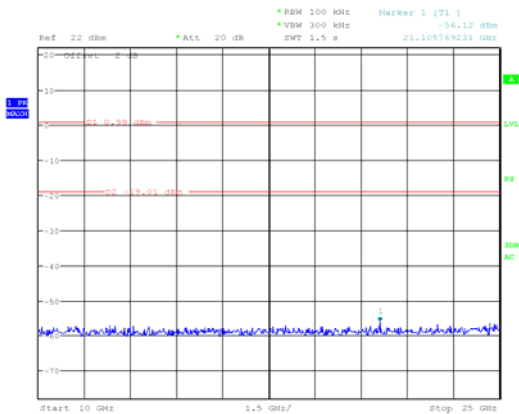
Test mode:	802.11n-H40	Test channel:	Highest
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Date: 1.NOV.2010 13:34:51



Date: 1.NOV.2010 13:35:09

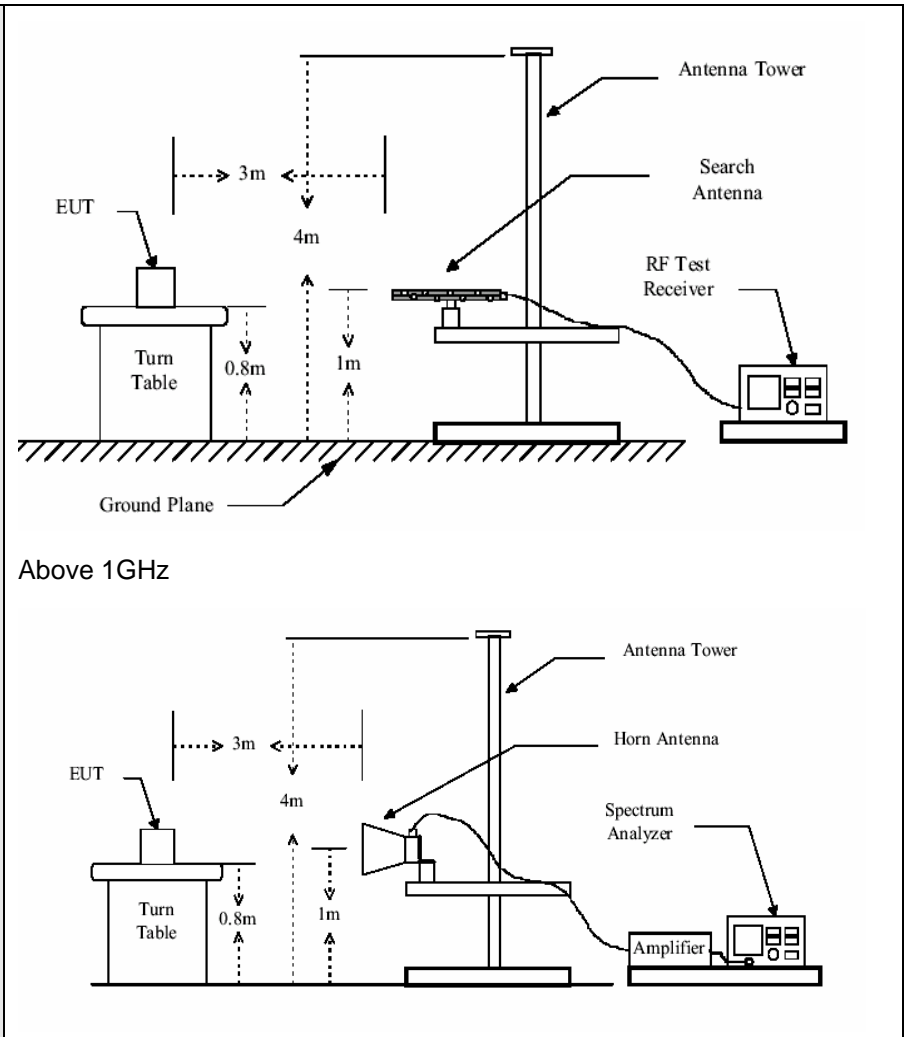


Date: 1.NOV.2010 13:35:23



### 5.8 Radiated Emission

Test Requirement:	FCC Part15 C Section 15.209 and 15.205			
Test Method:	ANSI C63.4: 2003			
Test Frequency Range:	30MHz to 25GHz			
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)			
Receiver setup:	Frequency	Detector	RBW	VBW
	30MHz-1GHz	Quasi-peak	100KHz	300KHz
	Above 1GHz	Peak	1MHz	3MHz
		Peak	1MHz	10Hz
Remark	Quasi-peak Value			
	Peak Value			
	Average Value			
Limit:	Frequency	Limit (dBuV/m @3m)		Remark
	30MHz-88MHz	40.0		Quasi-peak Value
	88MHz-216MHz	43.5		Quasi-peak Value
	216MHz-960MHz	46.0		Quasi-peak Value
	960MHz-1GHz	54.0		Quasi-peak Value
	Above 1GHz	54.0		Average Value
		74.0		Peak Value
Test Procedure:	a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.			
	b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.			
	c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.			
	d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.			
	e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.			
	f. 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.			
Test setup:	Below 1GHz			

	 <p>Above 1GHz</p>
<p>Test Instruments:</p>	<p>Refer to section 4.7 for details</p>
<p>Test mode:</p>	<p>Refer to section 4.3 for details</p>
<p>Test results:</p>	<p>Passed</p>

**Note:**

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

$$Final\ Test\ Level = Receiver\ Reading + Antenna\ Factor + Cable\ Factor - Preamplifier\ Factor$$

**5.8.1 Radiated emission below 1GHz**

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
48.50	39.84	14.16	0.67	25.72	28.95	40.00	-11.05	Vertical
78.14	38.19	12.08	0.93	25.68	25.52	40.00	-14.48	Vertical
125.01	40.05	10.80	1.35	25.65	26.55	43.50	-16.95	Vertical
360.45	32.67	16.98	2.19	25.57	26.27	46.00	-19.73	Vertical
631.69	33.32	21.16	2.77	25.53	31.72	46.00	-14.28	Vertical
897.00	39.26	24.17	3.32	25.51	41.24	46.00	-4.76	Vertical
39.44	30.06	15.29	0.64	25.73	20.26	40.00	-19.74	Horizontal
69.85	34.01	8.45	0.83	25.69	17.60	40.00	-22.40	Horizontal
125.45	39.62	11.41	1.35	25.65	26.73	43.50	-16.77	Horizontal
262.90	33.94	13.41	1.99	25.60	23.74	46.00	-22.26	Horizontal
487.32	39.49	20.84	2.38	25.55	37.16	46.00	-8.84	Horizontal
699.31	33.49	28.01	2.94	25.53	38.91	46.00	-7.09	Horizontal

**5.8.2 Transmitter emission above 1GHz**

Test mode:		802.11b		Test channel:		Lowest		Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization		
1384.00	37.93	25.63	2.43	21.35	44.64	74.00	-29.36	Vertical		
2390.00	47.22	27.59	3.33	30.10	48.04	74.00	-25.96	Vertical		
2400.00	52.26	27.58	3.37	30.10	53.11	74.00	-20.89	Vertical		
4824.00	40.15	31.79	5.34	24.07	53.21	74.00	-20.79	Vertical		
7236.00	31.95	36.19	6.88	26.44	48.58	74.00	-25.42	Vertical		
9648.00	30.58	38.07	8.96	25.36	52.25	74.00	-21.75	Vertical		
1384.00	40.58	25.63	2.43	21.35	47.29	74.00	-26.71	Horizontal		
2390.00	48.24	27.59	3.33	30.10	49.06	74.00	-24.94	Horizontal		
2400.00	53.22	27.58	3.37	30.10	54.07	74.00	-19.93	Horizontal		
4824.00	43.59	31.79	5.34	24.07	56.65	74.00	-17.35	Horizontal		
7236.00	32.79	36.19	6.88	26.44	49.42	74.00	-24.58	Horizontal		
9648.00	31.36	38.07	8.96	25.36	53.03	74.00	-20.97	Horizontal		

Test mode:		802.11b		Test channel:		Lowest		Remark:		Average
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Over limit	polarization		
1384.00	21.47	25.63	2.43	21.35	28.18	54.00	-25.82	Vertical		
2390.00	30.86	27.59	3.33	30.10	31.68	54.00	-22.32	Vertical		
2400.00	35.25	27.58	3.37	30.10	36.10	54.00	-17.90	Vertical		
4824.00	18.91	31.79	5.34	24.07	31.97	54.00	-22.03	Vertical		
7236.00	15.95	36.19	6.88	26.44	32.58	54.00	-21.42	Vertical		
9648.00	14.06	38.07	8.96	25.36	35.73	54.00	-18.27	Vertical		
1384.00	22.55	25.63	2.43	21.35	29.26	54.00	-24.74	Horizontal		
2390.00	31.88	27.59	3.33	30.10	32.70	54.00	-21.30	Horizontal		
2400.00	36.21	27.58	3.37	30.10	37.06	54.00	-16.94	Horizontal		
4824.00	24.81	31.79	5.34	24.07	37.87	54.00	-16.13	Horizontal		
7236.00	16.79	36.19	6.88	26.44	33.42	54.00	-20.58	Horizontal		
9648.00	14.84	38.07	8.96	25.36	36.51	54.00	-17.49	Horizontal		

Test mode:		802.11b		Test channel:		Middle		Remark:		Peak
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Over limit	polarization		
1754.00	42.03	25.09	2.61	28.59	41.14	74.00	-32.86	Vertical		
4874.00	39.86	31.85	5.40	24.01	53.10	74.00	-20.90	Vertical		
7311.00	29.53	36.37	6.90	26.58	46.22	74.00	-27.78	Vertical		
9688.00	25.81	38.13	8.98	25.34	47.58	74.00	-26.42	Vertical		
12185.00	26.79	38.92	10.38	25.04	51.05	74.00	-22.95	Vertical		
14622.00	23.86	42.33	11.91	24.45	53.65	74.00	-20.35	Vertical		
1754.00	46.95	25.09	2.61	28.59	46.06	74.00	-27.94	Horizontal		
4874.00	44.28	31.85	5.40	24.01	57.52	74.00	-16.48	Horizontal		
7311.00	29.74	36.37	6.90	26.58	46.43	74.00	-27.57	Horizontal		
9688.00	26.05	38.13	8.98	25.34	47.82	74.00	-26.18	Horizontal		
12185.00	27.06	38.92	10.38	25.04	51.32	74.00	-22.68	Horizontal		
14622.00	24.16	42.33	11.91	24.45	53.95	74.00	-20.05	Horizontal		

Test mode:		802.11b		Test channel:		Middle		Remark:		Average
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Over limit	polarization		
1754.00	28.27	25.09	2.61	28.59	27.38	54.00	-26.62	Vertical		
4874.00	19.64	31.85	5.40	24.01	32.88	54.00	-21.12	Vertical		
7311.00	16.43	36.37	6.90	26.58	33.12	54.00	-20.88	Vertical		
9688.00	13.58	38.13	8.98	25.34	35.35	54.00	-18.65	Vertical		
12185.00	14.67	38.92	10.38	25.04	38.93	54.00	-15.07	Vertical		
14622.00	11.85	42.33	11.91	24.45	41.64	54.00	-12.36	Vertical		
1754.00	28.42	25.09	2.61	28.59	27.53	54.00	-26.47	Horizontal		
4874.00	23.56	31.85	5.40	24.01	36.80	54.00	-17.20	Horizontal		
7311.00	16.64	36.37	6.90	26.58	33.33	54.00	-20.67	Horizontal		
9688.00	13.82	38.13	8.98	25.34	35.59	54.00	-18.41	Horizontal		
12185.00	14.94	38.92	10.38	25.04	39.20	54.00	-14.80	Horizontal		
14622.00	12.15	42.33	11.91	24.45	41.94	54.00	-12.06	Horizontal		

Test mode:		802.11b		Test channel:		Highest		Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dB $\mu$ V)	Level (dB $\mu$ V/m)	Limit Line (dB $\mu$ V/m)	Over Limit (dB)	polarization		
1648.00	42.79	24.87	2.55	27.09	43.12	74.00	-30.88	Vertical		
2483.50	48.34	27.53	3.49	29.93	49.43	74.00	-24.57	Vertical		
2500.00	52.96	27.55	3.52	30.70	53.33	74.00	-20.67	Vertical		
4924.00	38.69	31.89	5.46	23.96	52.08	74.00	-21.92	Vertical		
7386.00	29.55	36.49	6.93	26.79	46.18	74.00	-27.82	Vertical		
12310.00	27.16	38.83	10.41	24.90	51.50	74.00	-22.50	Vertical		
1648.00	43.35	24.87	2.55	27.09	43.68	74.00	-30.32	Horizontal		
2483.50	48.93	27.53	3.49	29.93	50.02	74.00	-23.98	Horizontal		
2500.00	53.58	27.55	3.52	30.70	53.95	74.00	-20.05	Horizontal		
4924.00	38.95	31.89	5.46	23.96	52.34	74.00	-21.66	Horizontal		
7386.00	30.23	36.49	6.93	26.79	46.86	74.00	-27.14	Horizontal		
12310.00	27.87	38.83	10.41	24.90	52.21	74.00	-21.79	Horizontal		

Test mode:		802.11b		Test channel:		Highest		Remark:		Average
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Over limit	polarization		
1648.00	25.20	24.87	2.55	27.09	25.53	54.00	-28.47	Vertical		
2483.50	35.20	27.53	3.49	29.93	36.29	54.00	-17.71	Vertical		
2500.00	31.35	27.55	3.52	30.70	31.72	54.00	-22.28	Vertical		
4924.00	20.32	31.89	5.46	23.96	33.71	54.00	-20.29	Vertical		
7386.00	17.43	36.49	6.93	26.79	34.06	54.00	-19.94	Vertical		
12310.00	15.15	38.83	10.41	24.90	39.49	54.00	-14.51	Vertical		
1648.00	25.76	24.87	2.55	27.09	26.09	54.00	-27.91	Horizontal		
2483.50	35.79	27.53	3.49	29.93	36.88	54.00	-17.12	Horizontal		
2500.00	31.97	27.55	3.52	30.70	32.34	54.00	-21.66	Horizontal		
4924.00	24.21	31.89	5.46	23.96	37.60	54.00	-16.40	Horizontal		
7386.00	18.11	36.49	6.93	26.79	34.74	54.00	-19.26	Horizontal		
12310.00	15.86	38.83	10.41	24.90	40.20	54.00	-13.80	Horizontal		

Test mode:		802.11g		Test channel:		Lowest		Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization		
1384.00	32.45	25.63	2.43	21.35	39.16	74.00	-34.84	Vertical		
2390.00	45.67	27.59	3.33	30.10	46.49	74.00	-27.51	Vertical		
2400.00	50.64	27.58	3.37	30.10	51.49	74.00	-22.51	Vertical		
4824.00	33.48	31.79	5.34	24.07	46.54	74.00	-27.46	Vertical		
7236.00	30.19	36.19	6.88	26.44	46.82	74.00	-27.18	Vertical		
9648.00	28.75	38.07	8.96	25.36	50.42	74.00	-23.58	Vertical		
1384.00	38.69	25.63	2.43	21.35	45.40	74.00	-28.60	Horizontal		
2390.00	46.88	27.59	3.33	30.10	47.70	74.00	-26.30	Horizontal		
2400.00	51.82	27.58	3.37	30.10	52.67	74.00	-21.33	Horizontal		
4824.00	43.68	31.79	5.34	24.07	56.74	74.00	-17.26	Horizontal		
7236.00	31.31	36.19	6.88	26.44	47.94	74.00	-26.06	Horizontal		
9648.00	29.84	38.07	8.96	25.36	51.51	74.00	-22.49	Horizontal		

Test mode:		802.11g		Test channel:		Lowest		Remark:		Average
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over limit	polarization		
1384.00	19.99	25.63	2.43	21.35	26.70	54.00	-27.30	Vertical		
2390.00	29.31	27.59	3.33	30.10	30.13	54.00	-23.87	Vertical		
2400.00	33.63	27.58	3.37	30.10	34.48	54.00	-19.52	Vertical		
4824.00	17.22	31.79	5.34	24.07	30.28	54.00	-23.72	Vertical		
7236.00	14.19	36.19	6.88	26.44	30.82	54.00	-23.18	Vertical		
9648.00	12.23	38.07	8.96	25.36	33.90	54.00	-20.10	Vertical		
1384.00	21.23	25.63	2.43	21.35	27.94	54.00	-26.06	Horizontal		
2390.00	30.52	27.59	3.33	30.10	31.34	54.00	-22.66	Horizontal		
2400.00	34.81	27.58	3.37	30.10	35.66	54.00	-18.34	Horizontal		
4824.00	25.96	31.79	5.34	24.07	39.02	54.00	-14.98	Horizontal		
7236.00	15.31	36.19	6.88	26.44	31.94	54.00	-22.06	Horizontal		
9648.00	13.32	38.07	8.96	25.36	34.99	54.00	-19.01	Horizontal		

Test mode:		802.11g		Test channel:		Middle		Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization		
1754.00	41.42	25.09	2.61	28.59	40.53	74.00	-33.47	Vertical		
4874.00	34.16	31.85	5.40	24.01	47.40	74.00	-26.60	Vertical		
7311.00	29.02	36.37	6.90	26.58	45.71	74.00	-28.29	Vertical		
9688.00	25.35	38.13	8.98	25.34	47.12	74.00	-26.88	Vertical		
12185.00	26.38	38.92	10.38	25.04	50.64	74.00	-23.36	Vertical		
14622.00	23.50	42.33	11.91	24.45	53.29	74.00	-20.71	Vertical		
1754.00	41.67	25.09	2.61	28.59	40.78	74.00	-33.22	Horizontal		
4874.00	42.95	31.85	5.40	24.01	56.19	74.00	-17.81	Horizontal		
7311.00	29.13	36.37	6.90	26.58	45.82	74.00	-28.18	Horizontal		
9688.00	25.39	38.13	8.98	25.34	47.16	74.00	-26.84	Horizontal		
12185.00	26.35	38.92	10.38	25.04	50.61	74.00	-23.39	Horizontal		
14622.00	23.40	42.33	11.91	24.45	53.19	74.00	-20.81	Horizontal		

Test mode:		802.11g		Test channel:		Middle		Remark:		Average
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over limit	polarization		
1754.00	27.66	25.09	2.61	28.59	26.77	54.00	-27.23	Vertical		
4874.00	19.08	31.85	5.40	24.01	32.32	54.00	-21.68	Vertical		
7311.00	15.92	36.37	6.90	26.58	32.61	54.00	-21.39	Vertical		
9688.00	13.12	38.13	8.98	25.34	34.89	54.00	-19.11	Vertical		
12185.00	14.26	38.92	10.38	25.04	38.52	54.00	-15.48	Vertical		
14622.00	11.49	42.33	11.91	24.45	41.28	54.00	-12.72	Vertical		
1754.00	27.91	25.09	2.61	28.59	27.02	54.00	-26.98	Horizontal		
4874.00	24.59	31.85	5.40	24.01	37.83	54.00	-16.17	Horizontal		
7311.00	16.03	36.37	6.90	26.58	32.72	54.00	-21.28	Horizontal		
9688.00	13.16	38.13	8.98	25.34	34.93	54.00	-19.07	Horizontal		
12185.00	14.23	38.92	10.38	25.04	38.49	54.00	-15.51	Horizontal		
14622.00	11.39	42.33	11.91	24.45	41.18	54.00	-12.82	Horizontal		

Test mode:		802.11g		Test channel:		Highest		Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBμV)	Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	polarization		
1648.00	37.48	24.87	2.55	27.09	37.81	74.00	-36.19	Vertical		
2483.50	47.08	27.53	3.49	29.93	48.17	74.00	-25.83	Vertical		
2500.00	51.75	27.55	3.52	30.70	52.12	74.00	-21.88	Vertical		
4924.00	31.39	31.89	5.46	23.96	44.78	74.00	-29.22	Vertical		
7386.00	28.44	36.49	6.93	26.79	45.07	74.00	-28.93	Vertical		
12310.00	26.10	38.83	10.41	24.90	50.44	74.00	-23.56	Vertical		
1648.00	38.34	24.87	2.55	27.09	38.67	74.00	-35.33	Horizontal		
2483.50	47.87	27.53	3.49	29.93	48.96	74.00	-25.04	Horizontal		
2500.00	52.47	27.55	3.52	30.70	52.84	74.00	-21.16	Horizontal		
4924.00	43.08	31.89	5.46	23.96	56.47	74.00	-17.53	Horizontal		
7386.00	29.02	36.49	6.93	26.79	45.65	74.00	-28.35	Horizontal		
12310.00	26.61	38.83	10.41	24.90	50.95	74.00	-23.05	Horizontal		

Test mode:		802.11g		Test channel:		Highest		Remark:		Average
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over limit	polarization		
1648.00	23.89	24.87	2.55	27.09	24.22	54.00	-29.78	Vertical		
2483.50	33.94	27.53	3.49	29.93	35.03	54.00	-18.97	Vertical		
2500.00	30.14	27.55	3.52	30.70	30.51	54.00	-23.49	Vertical		
4924.00	19.16	31.89	5.46	23.96	32.55	54.00	-21.45	Vertical		
7386.00	16.32	36.49	6.93	26.79	32.95	54.00	-21.05	Vertical		
12310.00	14.09	38.83	10.41	24.90	38.43	54.00	-15.57	Vertical		
1648.00	24.75	24.87	2.55	27.09	25.08	54.00	-28.92	Horizontal		
2483.50	34.73	27.53	3.49	29.93	35.82	54.00	-18.18	Horizontal		
2500.00	30.86	27.55	3.52	30.70	31.23	54.00	-22.77	Horizontal		
4924.00	19.81	31.89	5.46	23.96	33.20	54.00	-20.80	Horizontal		
7386.00	16.90	36.49	6.93	26.79	33.53	54.00	-20.47	Horizontal		
12310.00	14.60	38.83	10.41	24.90	38.94	54.00	-15.06	Horizontal		

Test mode:		802.11n-H20		Test channel:		Lowest		Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization		
1384.00	32.98	25.63	2.43	21.35	39.69	74.00	-34.31	Vertical		
2390.00	46.22	27.59	3.33	30.10	47.04	74.00	-26.96	Vertical		
2400.00	51.21	27.58	3.37	30.10	52.06	74.00	-21.94	Vertical		
4824.00	34.07	31.79	5.34	24.07	47.13	74.00	-26.87	Vertical		
7236.00	30.80	36.19	6.88	26.44	47.43	74.00	-26.57	Vertical		
9648.00	29.38	38.07	8.96	25.36	51.05	74.00	-22.95	Vertical		
1384.00	33.77	25.63	2.43	21.35	40.48	74.00	-33.52	Horizontal		
2390.00	47.04	27.59	3.33	30.10	47.86	74.00	-26.14	Horizontal		
2400.00	52.06	27.58	3.37	30.10	52.91	74.00	-21.09	Horizontal		
4824.00	34.95	31.79	5.34	24.07	48.01	74.00	-25.99	Horizontal		
7236.00	31.71	36.19	6.88	26.44	48.34	74.00	-25.66	Horizontal		
9648.00	30.32	38.07	8.96	25.36	51.99	74.00	-22.01	Horizontal		

Test mode:		802.11n-H20		Test channel:		Lowest		Remark:		Average
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over limit	polarization		
1384.00	20.52	25.63	2.43	21.35	27.23	54.00	-26.77	Vertical		
2390.00	29.86	27.59	3.33	30.10	30.68	54.00	-23.32	Vertical		
2400.00	34.20	27.58	3.37	30.10	35.05	54.00	-18.95	Vertical		
4824.00	17.81	31.79	5.34	24.07	30.87	54.00	-23.13	Vertical		
7236.00	14.80	36.19	6.88	26.44	31.43	54.00	-22.57	Vertical		
9648.00	12.86	38.07	8.96	25.36	34.53	54.00	-19.47	Vertical		
1384.00	21.31	25.63	2.43	21.35	28.02	54.00	-25.98	Horizontal		
2390.00	30.68	27.59	3.33	30.10	31.50	54.00	-22.50	Horizontal		
2400.00	35.05	27.58	3.37	30.10	35.90	54.00	-18.10	Horizontal		
4824.00	18.69	31.79	5.34	24.07	31.75	54.00	-22.25	Horizontal		
7236.00	15.71	36.19	6.88	26.44	32.34	54.00	-21.66	Horizontal		
9648.00	13.80	38.07	8.96	25.36	35.47	54.00	-18.53	Horizontal		

Test mode:		802.11n-H20		Test channel:		Middle		Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization		
1754.00	40.51	25.09	2.61	28.59	39.62	74.00	-34.38	Vertical		
4874.00	33.23	31.85	5.40	24.01	46.47	74.00	-27.53	Vertical		
7311.00	28.07	36.37	6.90	26.58	44.76	74.00	-29.24	Vertical		
9688.00	24.38	38.13	8.98	25.34	46.15	74.00	-27.85	Vertical		
12185.00	25.39	38.92	10.38	25.04	49.65	74.00	-24.35	Vertical		
14622.00	22.49	42.33	11.91	24.45	52.28	74.00	-21.72	Vertical		
1754.00	41.24	25.09	2.61	28.59	40.35	74.00	-33.65	Horizontal		
4874.00	33.99	31.85	5.40	24.01	47.23	74.00	-26.77	Horizontal		
7311.00	28.86	36.37	6.90	26.58	45.55	74.00	-28.45	Horizontal		
9688.00	25.20	38.13	8.98	25.34	46.97	74.00	-27.03	Horizontal		
12185.00	26.24	38.92	10.38	25.04	50.50	74.00	-23.50	Horizontal		
14622.00	23.37	42.33	11.91	24.45	53.16	74.00	-20.84	Horizontal		





**Report No: GTSE10100027301**

Test mode:		802.11n-H20		Test channel:		Middle		Remark:		Average
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over limit	polarization		
1754.00	26.75	25.09	2.61	28.59	25.86	54.00	-28.14	Vertical		
4874.00	18.15	31.85	5.40	24.01	31.39	54.00	-22.61	Vertical		
7311.00	14.97	36.37	6.90	26.58	31.66	54.00	-22.34	Vertical		
9688.00	12.15	38.13	8.98	25.34	33.92	54.00	-20.08	Vertical		
12185.00	13.27	38.92	10.38	25.04	37.53	54.00	-16.47	Vertical		
14622.00	10.48	42.33	11.91	24.45	40.27	54.00	-13.73	Vertical		
1754.00	27.48	25.09	2.61	28.59	26.59	54.00	-27.41	Horizontal		
4874.00	18.91	31.85	5.40	24.01	32.15	54.00	-21.85	Horizontal		
7311.00	15.76	36.37	6.90	26.58	32.45	54.00	-21.55	Horizontal		
9688.00	12.97	38.13	8.98	25.34	34.74	54.00	-19.26	Horizontal		
12185.00	14.12	38.92	10.38	25.04	38.38	54.00	-15.62	Horizontal		
14622.00	11.36	42.33	11.91	24.45	41.15	54.00	-12.85	Horizontal		

Test mode:		802.11n-H20		Test channel:		Highest		Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization		
1648.00	37.71	24.87	2.55	27.09	38.04	74.00	-35.96	Vertical		
2483.50	47.24	27.53	3.49	29.93	48.33	74.00	-25.67	Vertical		
2500.00	51.84	27.55	3.52	30.70	52.21	74.00	-21.79	Vertical		
4924.00	31.41	31.89	5.46	23.96	44.80	74.00	-29.20	Vertical		
7386.00	28.39	36.49	6.93	26.79	45.02	74.00	-28.98	Vertical		
12310.00	25.98	38.83	10.41	24.90	50.32	74.00	-23.68	Vertical		
1648.00	38.34	24.87	2.55	27.09	38.67	74.00	-35.33	Horizontal		
2483.50	47.90	27.53	3.49	29.93	48.99	74.00	-25.01	Horizontal		
2500.00	52.53	27.55	3.52	30.70	52.90	74.00	-21.10	Horizontal		
4924.00	32.13	31.89	5.46	23.96	45.52	74.00	-28.48	Horizontal		
7386.00	29.14	36.49	6.93	26.79	45.77	74.00	-28.23	Horizontal		
12310.00	26.76	38.83	10.41	24.90	51.10	74.00	-22.90	Horizontal		

Test mode:		802.11n-H20		Test channel:		Highest		Remark:		Average
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over limit	polarization		
1648.00	24.12	24.87	2.55	27.09	24.45	54.00	-29.55	Vertical		
2483.50	34.10	27.53	3.49	29.93	35.19	54.00	-18.81	Vertical		
2500.00	30.23	27.55	3.52	30.70	30.60	54.00	-23.40	Vertical		
4924.00	19.18	31.89	5.46	23.96	32.57	54.00	-21.43	Vertical		
7386.00	16.27	36.49	6.93	26.79	32.90	54.00	-21.10	Vertical		
12310.00	13.97	38.83	10.41	24.90	38.31	54.00	-15.69	Vertical		
1648.00	24.75	24.87	2.55	27.09	25.08	54.00	-28.92	Horizontal		
2483.50	34.76	27.53	3.49	29.93	35.85	54.00	-18.15	Horizontal		
2500.00	30.92	27.55	3.52	30.70	31.29	54.00	-22.71	Horizontal		
4924.00	19.90	31.89	5.46	23.96	33.29	54.00	-20.71	Horizontal		
7386.00	17.02	36.49	6.93	26.79	33.65	54.00	-20.35	Horizontal		
12310.00	14.75	38.83	10.41	24.90	39.09	54.00	-14.91	Horizontal		

Test mode:		802.11n-H40		Test channel:		Lowest		Remark:		Peak
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Global United Technology Service Co., Ltd.  
 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District,  
 Shenzhen, China 518102

Project No.: GTSE101000273RF

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
1725.00	39.25	25.02	2.59	28.36	38.50	74.00	-35.50	Vertical
2390.00	46.09	27.59	3.33	30.10	46.91	74.00	-27.09	Vertical
2400.00	49.73	27.58	3.37	30.10	50.58	74.00	-23.42	Vertical
4844.00	30.31	31.82	5.36	24.05	43.44	74.00	-30.56	Vertical
7266.00	27.80	36.28	6.89	26.51	44.46	74.00	-29.54	Vertical
12110.00	25.11	38.98	10.37	25.11	49.35	74.00	-24.65	Vertical
1725.00	40.49	25.02	2.59	28.36	39.74	74.00	-34.26	Horizontal
2390.00	47.30	27.59	3.33	30.10	48.12	74.00	-25.88	Horizontal
2400.00	50.91	27.58	3.37	30.10	51.76	74.00	-22.24	Horizontal
4844.00	31.46	31.82	5.36	24.05	44.59	74.00	-29.41	Horizontal
7266.00	28.92	36.28	6.89	26.51	45.58	74.00	-28.42	Horizontal
12110.00	26.20	38.98	10.37	25.11	50.44	74.00	-23.56	Horizontal

Test mode:		802.11n-H40		Test channel:		Lowest		Remark:		Average	
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Over limit	polarization			
1725.00	21.99	25.02	2.59	28.36	21.24	54.00	-32.76	Vertical			
2390.00	26.64	27.59	3.33	30.10	27.46	54.00	-26.54	Vertical			
2400.00	32.01	27.58	3.37	30.10	32.86	54.00	-21.14	Vertical			
4844.00	18.08	31.82	5.36	24.05	31.21	54.00	-22.79	Vertical			
7266.00	15.68	36.28	6.89	26.51	32.34	54.00	-21.66	Vertical			
12110.00	12.10	38.98	10.37	25.11	36.34	54.00	-17.66	Vertical			
1725.00	23.23	25.02	2.59	28.36	22.48	54.00	-31.52	Horizontal			
2390.00	27.85	27.59	3.33	30.10	28.67	54.00	-25.33	Horizontal			
2400.00	33.19	27.58	3.37	30.10	34.04	54.00	-19.96	Horizontal			
4844.00	19.23	31.82	5.36	24.05	32.36	54.00	-21.64	Horizontal			
7266.00	16.80	36.28	6.89	26.51	33.46	54.00	-20.54	Horizontal			
12110.00	13.19	38.98	10.37	25.11	37.43	54.00	-16.57	Horizontal			

Test mode:		802.11n-H40		Test channel:		Middle		Remark:		Peak	
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization			
1754.00	42.20	25.09	2.61	28.59	41.31	74.00	-32.69	Vertical			
4874.00	35.06	31.85	5.40	24.01	48.30	74.00	-25.70	Vertical			
7311.00	30.04	36.37	6.90	26.58	46.73	74.00	-27.27	Vertical			
9688.00	26.49	38.13	8.98	25.34	48.26	74.00	-25.74	Vertical			
12185.00	27.64	38.92	10.38	25.04	51.90	74.00	-22.10	Vertical			
14622.00	24.88	42.33	11.91	24.45	54.67	74.00	-19.33	Vertical			
1754.00	42.45	25.09	2.61	28.59	41.56	74.00	-32.44	Horizontal			
4874.00	35.24	31.85	5.40	24.01	48.48	74.00	-25.52	Horizontal			
7311.00	30.15	36.37	6.90	26.58	46.84	74.00	-27.16	Horizontal			
9688.00	26.53	38.13	8.98	25.34	48.30	74.00	-25.70	Horizontal			
12185.00	27.61	38.92	10.38	25.04	51.87	74.00	-22.13	Horizontal			
14622.00	24.78	42.33	11.91	24.45	54.57	74.00	-19.43	Horizontal			

Test mode:		802.11n-H40		Test channel:		Middle		Remark:		Average
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over limit	polarization		
1754.00	25.64	25.09	2.61	28.59	24.75	54.00	-29.25	Vertical		
4874.00	22.61	31.85	5.40	24.01	35.85	54.00	-18.15	Vertical		
7311.00	17.70	36.37	6.90	26.58	34.39	54.00	-19.61	Vertical		
9688.00	14.26	38.13	8.98	25.34	36.03	54.00	-17.97	Vertical		
12185.00	15.52	38.92	10.38	25.04	39.78	54.00	-14.22	Vertical		
14622.00	12.87	42.33	11.91	24.45	42.66	54.00	-11.34	Vertical		
1754.00	25.89	25.09	2.61	28.59	25.00	54.00	-29.00	Horizontal		
4874.00	22.79	31.85	5.40	24.01	36.03	54.00	-17.97	Horizontal		
7311.00	17.81	36.37	6.90	26.58	34.50	54.00	-19.50	Horizontal		
9688.00	14.30	38.13	8.98	25.34	36.07	54.00	-17.93	Horizontal		
12185.00	15.49	38.92	10.38	25.04	39.75	54.00	-14.25	Horizontal		
14622.00	12.77	42.33	11.91	24.45	42.56	54.00	-11.44	Horizontal		

Test mode:		802.11n-H40		Test channel:		Highest		Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBμV)	Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	polarization		
1954.00	37.97	25.95	2.74	30.69	35.97	74.00	-38.03	Vertical		
2483.50	48.68	27.53	3.49	29.93	49.77	74.00	-24.23	Vertical		
2500.00	42.84	27.55	3.52	30.70	43.21	74.00	-30.79	Vertical		
4904.00	33.15	31.88	5.42	23.97	46.48	74.00	-27.52	Vertical		
7356.00	30.28	36.45	6.92	26.70	46.95	74.00	-27.05	Vertical		
9748.00	28.02	38.27	9.00	25.30	49.99	74.00	-24.01	Vertical		
1954.00	38.83	25.95	2.74	30.69	36.83	74.00	-37.17	Horizontal		
2483.50	49.47	27.53	3.49	29.93	50.56	74.00	-23.44	Horizontal		
2500.00	43.56	27.55	3.52	30.70	43.93	74.00	-30.07	Horizontal		
4904.00	33.80	31.88	5.42	23.97	47.13	74.00	-26.87	Horizontal		
7356.00	30.86	36.45	6.92	26.70	47.53	74.00	-26.47	Horizontal		
9748.00	28.53	38.27	9.00	25.30	50.50	74.00	-23.50	Horizontal		

Test mode:		802.11n-H40		Test channel:		Highest		Remark:		Average
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over limit	polarization		
1954.00	25.41	25.95	2.74	30.69	23.41	54.00	-30.59	Vertical		
2483.50	35.54	27.53	3.49	29.93	36.63	54.00	-17.37	Vertical		
2500.00	34.22	27.55	3.52	30.70	34.59	54.00	-19.41	Vertical		
4904.00	20.92	31.88	5.42	23.97	34.25	54.00	-19.75	Vertical		
7356.00	18.16	36.45	6.92	26.70	34.83	54.00	-19.17	Vertical		
9748.00	16.01	38.27	9.00	25.30	37.98	54.00	-16.02	Vertical		
1954.00	26.27	25.95	2.74	30.69	24.27	54.00	-29.73	Horizontal		
2483.50	36.33	27.53	3.49	29.93	37.42	54.00	-16.58	Horizontal		
2500.00	34.94	27.55	3.52	30.70	35.31	54.00	-18.69	Horizontal		
4904.00	21.57	31.88	5.42	23.97	34.90	54.00	-19.10	Horizontal		
7356.00	18.74	36.45	6.92	26.70	35.41	54.00	-18.59	Horizontal		
9748.00	16.52	38.27	9.00	25.30	38.49	54.00	-15.51	Horizontal		