

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: Wireless USB Adapter

Model No.: 2C1T, 3C1T

FCC ID: YWTWF3CXT2CXT

Standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247:2009

Date of Receipt: Mar. 24, 2011

Date of Test: Mar. 25, 2011

Date of Issue: Mar. 26, 2011

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)	PASS
AC Power Line Conducted Emission	15.207	PASS
Conducted Peak Output Power	15.247 (b)(3)	PASS
6dB Occupied Bandwidth	15.247 (a)(2)	PASS
Power Spectral Density	15.247 (e)	PASS
Radiated Emission	15.205/15.209	PASS
Band Edge	15.247(d)	PASS

Remark:

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

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:	Wireless USB Adapter
Model No.:	2C1T, 3C1T
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 (inverted, unconventional port antenna)
Antenna gain:	2dBi (declare by Applicant)
Power supply:	DC 5V (USB port supply)
Remark:	Only the model No. 2C1T was tested. 2C1T and 3C1T 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

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Operation mode	Keep the EUT in transmitting with modulation.

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)		

4.4 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 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 Services 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 Services 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 2011	Mar. 30 2012
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	Sept. 10 2010	Sept. 10 2011
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS204	Feb. 26 2011	Feb. 26 2012
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 2011	Apr. 01 2012
8	Coaxial Cable	GTS	N/A	GTS401	Apr. 01 2011	Apr. 01 2012
9	Coaxial cable	GTS	N/A	GTS402	Apr. 01 2011	Apr. 01 2012
10	Coaxial Cable	GTS	N/A	GTS407	Apr. 01 2011	Apr. 01 2012
11	Coaxial Cable	GTS	N/A	GTS408	Apr. 01 2011	Apr. 01 2012
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

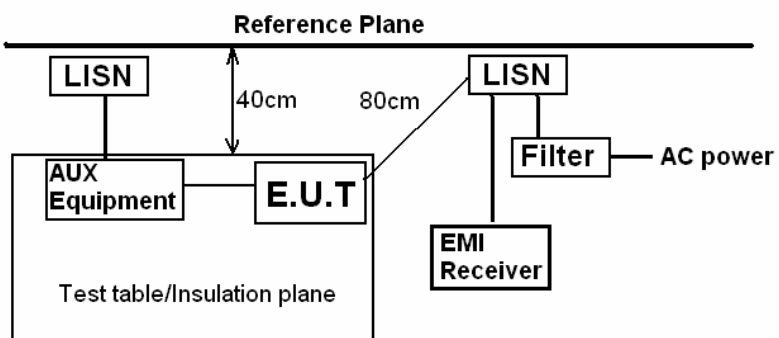
Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS206	Apr. 10 2011	Apr. 10 2012
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS208	Sep. 14 2010	Sep. 14 2011
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS209	Sep. 14 2010	Sep. 14 2011
4	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS207	Apr. 14 2012	Apr. 14 2012
5	Coaxial Cable	GTS	N/A	GTS406	Apr. 01 2011	Apr. 01 2012
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

5 Test results and Measurement Data

5.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
<p><i>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.</i></p> <p><i>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.</i></p>	
E.U.T Antenna:	
<p><i>The antenna port is an inverted, unconventional port; the best case gain of the antenna is 2.0dBi.</i></p> <div data-bbox="247 1019 507 1429" data-label="Image">  </div>	

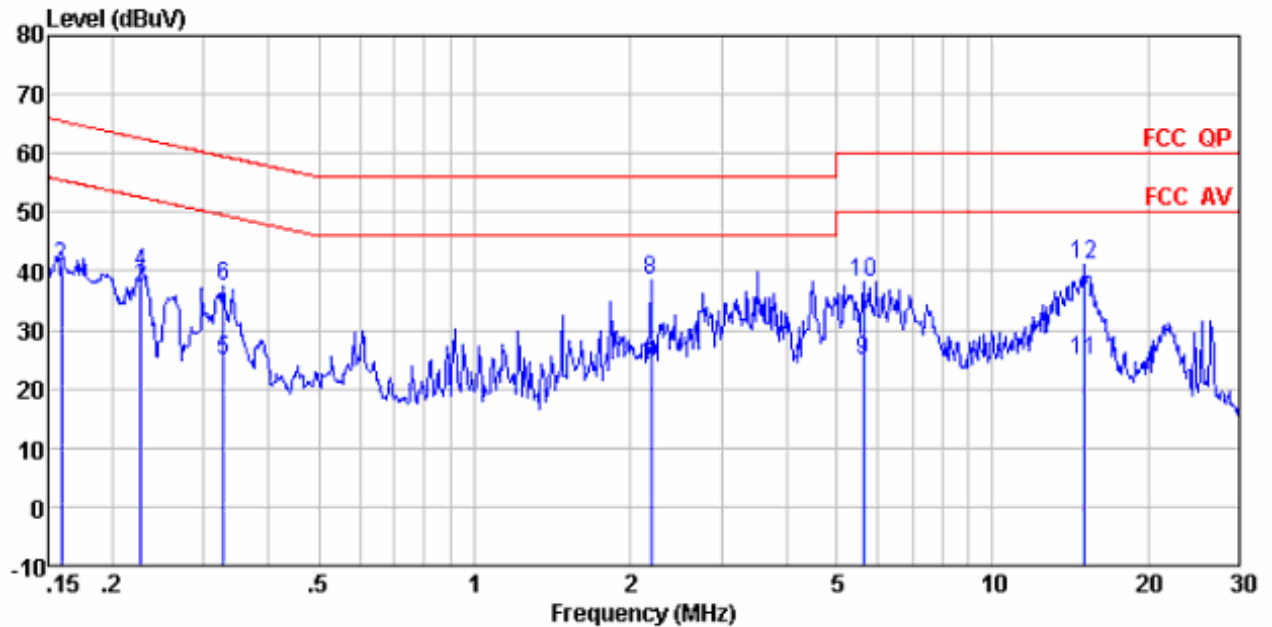
5.2 Conducted Emissions

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> E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>														
Test Instruments:	Refer to section 4.7 for details														
Test mode:	Refer to section 4.3 for details														
Test results:	Passed														

Measurement Data

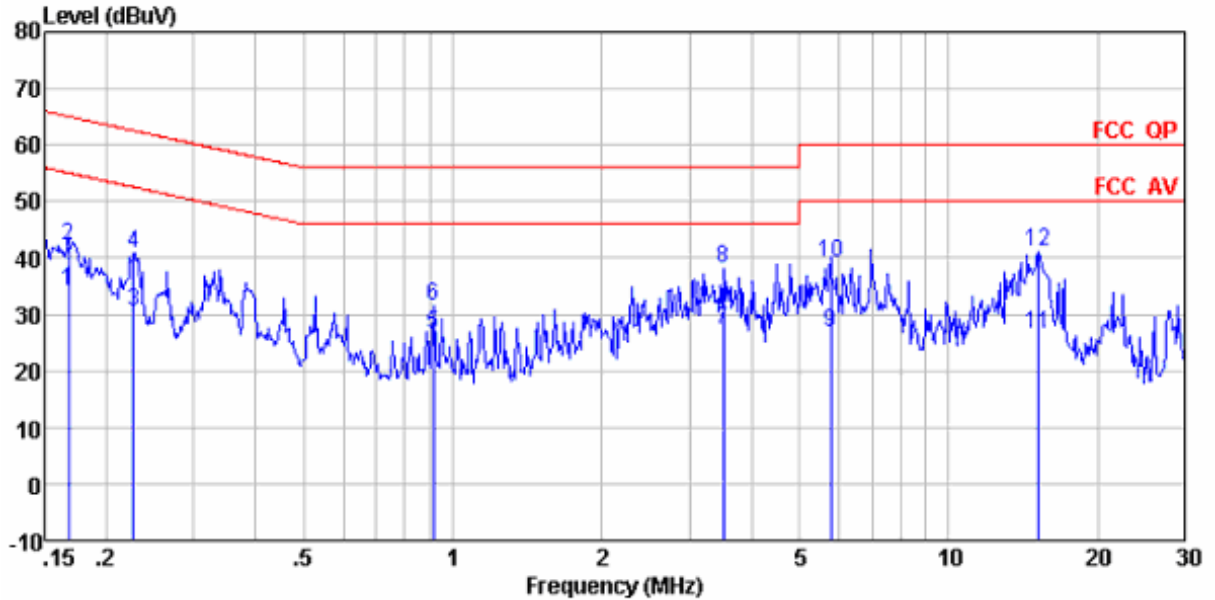
An initial pre-scan was performed on the live and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live Line:



	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.159	34.60	3.68	0.01	38.29	55.52	-17.23	Average
2	0.159	37.20	3.68	0.01	40.89	65.52	-24.63	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	0.327	21.40	3.60	0.01	25.01	49.53	-24.52	Average
6	0.327	33.90	3.60	0.01	37.51	59.53	-22.02	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:

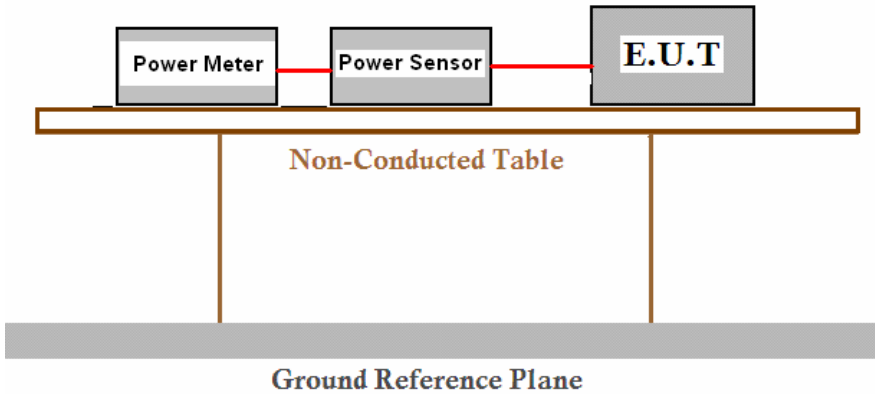


	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.168	30.40	3.68	0.01	34.09	55.08	-20.99	Average
2	0.168	38.60	3.68	0.01	42.29	65.08	-22.79	QP
3	0.227	26.70	3.64	0.01	30.35	52.57	-22.22	Average
4	0.227	37.28	3.64	0.01	40.93	62.57	-21.64	QP
5	0.914	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.

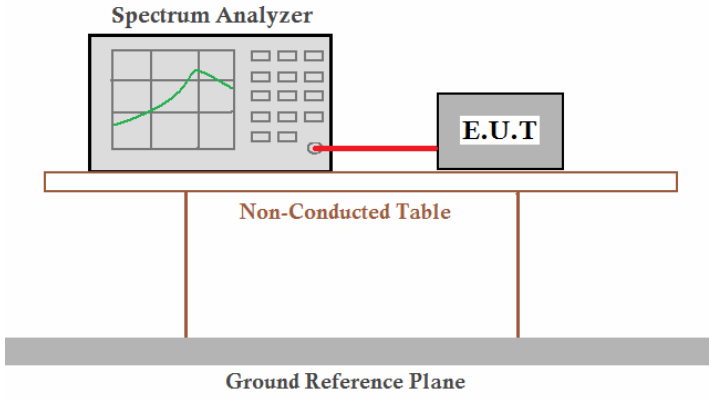
5.3 Conducted Peak Output Power

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	24.76	30.00	Pass
Middle	24.58	30.00	Pass
Highest	24.59	30.00	Pass
802.11g mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	20.76	30.00	Pass
Middle	20.43	30.00	Pass
Highest	20.67	30.00	Pass
802.11n-H20 mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	19.67	30.00	Pass
Middle	19.61	30.00	Pass
Highest	19.58	30.00	Pass
802.11n-H40 mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	19.06	30.00	Pass
Middle	19.21	30.00	Pass
Highest	19.21	30.00	Pass

5.4 6dB Occupy Bandwidth

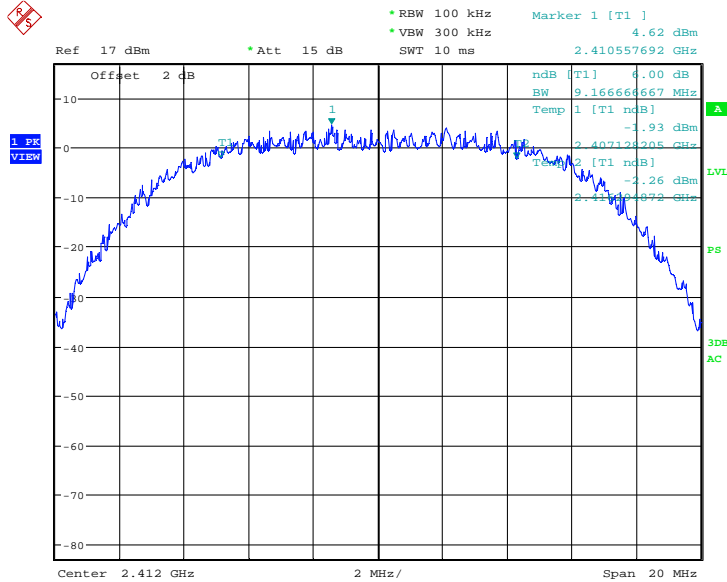
Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	>500KHz
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by two legs and sits on a Ground Reference Plane, which is represented by a thick grey bar at the bottom of the diagram.</p>
Test Instruments:	Refer to section 4.7 for details
Test mode:	Refer to section 4.3 for details
Test results:	Passed

Measurement Data

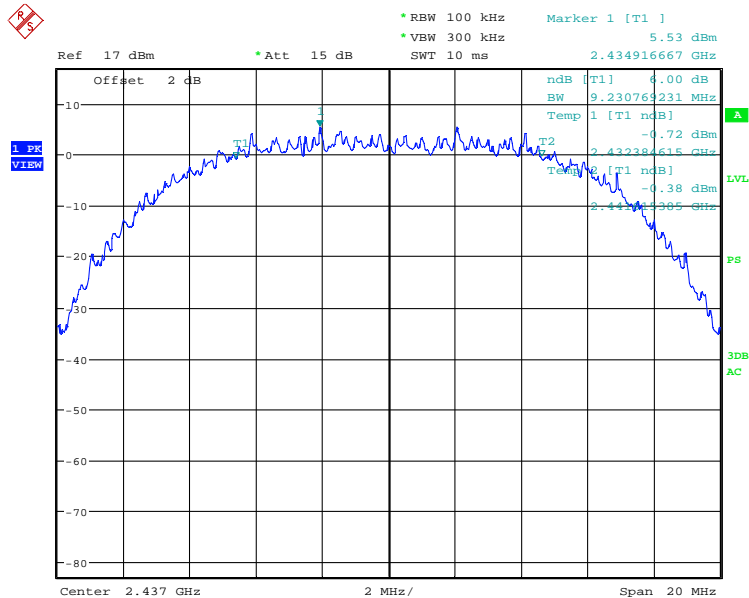
802.11b mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (KHz)	Result
Lowest	9.167	>500	Pass
Middle	9.231	>500	Pass
Highest	8.494	>500	Pass
802.11g mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (KHz)	Result
Lowest	16.474	>500	Pass
Middle	16.506	>500	Pass
Highest	16.474	>500	Pass
802.11n-H20 mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (KHz)	Result
Lowest	17.692	>500	Pass
Middle	17.660	>500	Pass
Highest	17.628	>500	Pass
802.11n-H40 mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (KHz)	Result
Lowest	36.218	>500	Pass
Middle	36.138	>500	Pass
Highest	36.058	>500	Pass

Test plot as follows:

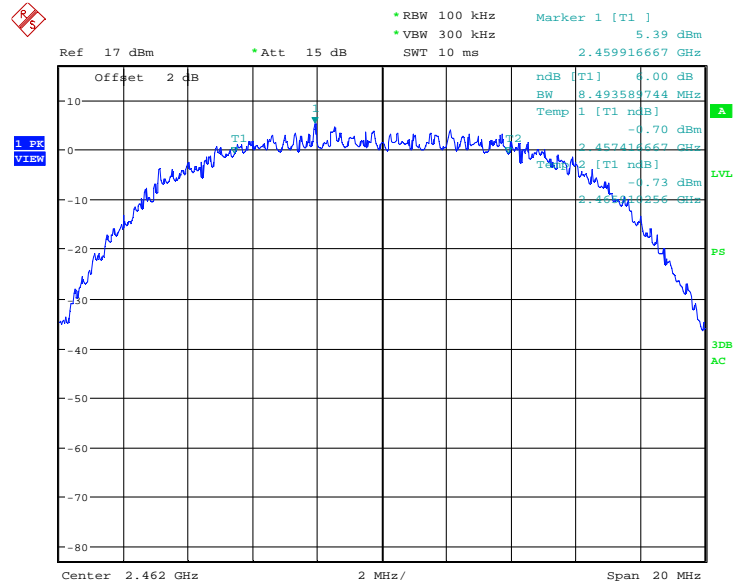
Test mode:	802.11b	Test channel:	Lowest
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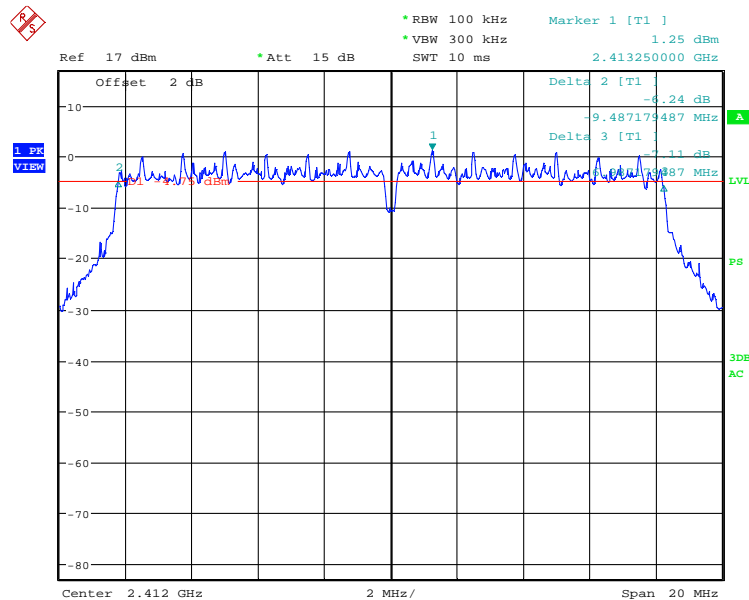
Test mode:	802.11b	Test channel:	Middle
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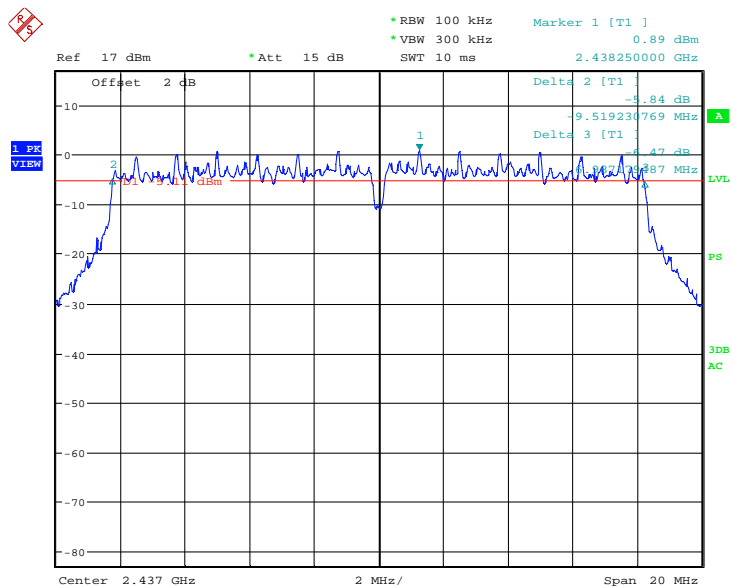
Test mode:	802.11b	Test channel:	Highest
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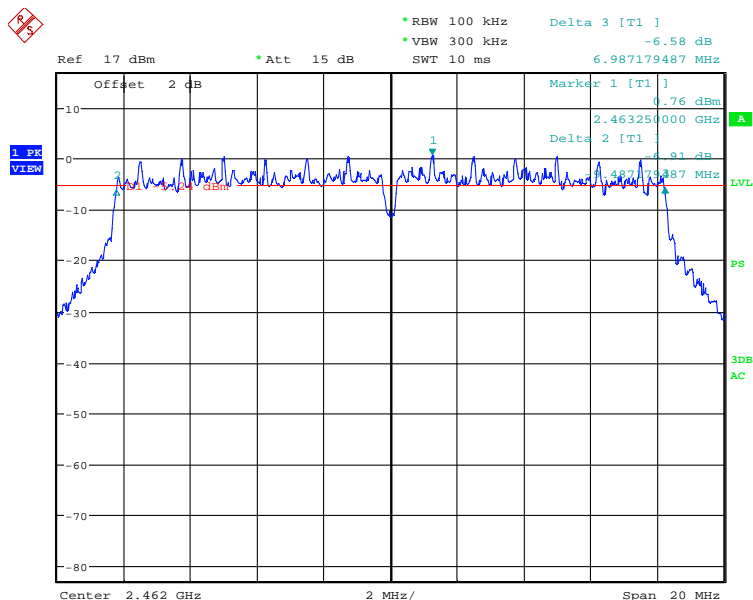
Test mode:	802.11g	Test channel:	Lowest
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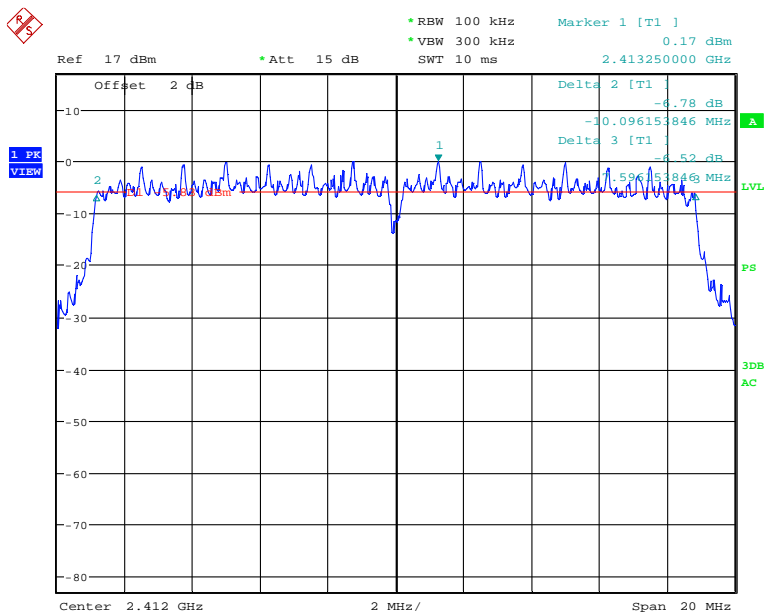
Test mode:	802.11g	Test channel:	Middle
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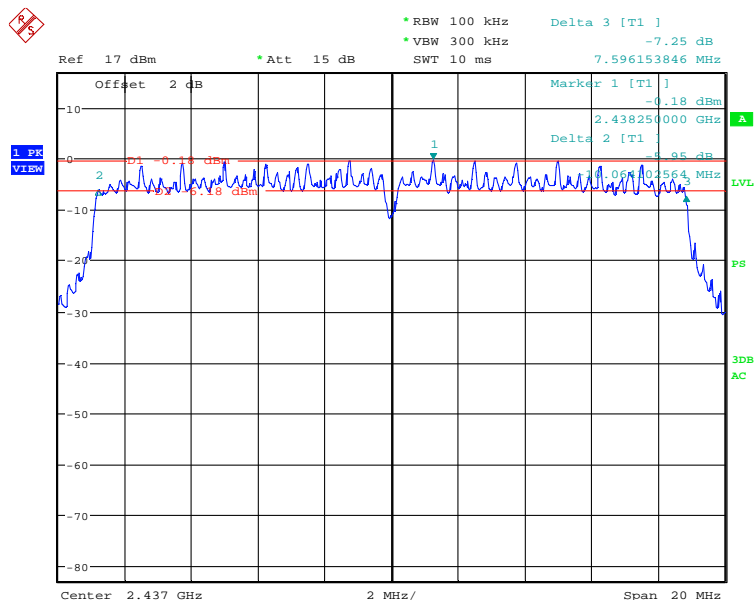
Test mode:	802.11g	Test channel:	Highest
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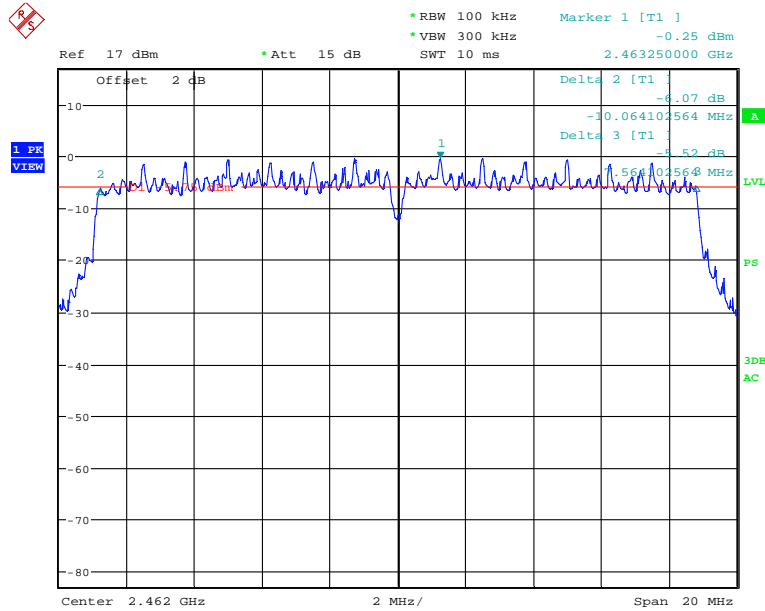
Test mode:	802.11n-H20	Test channel:	Lowest
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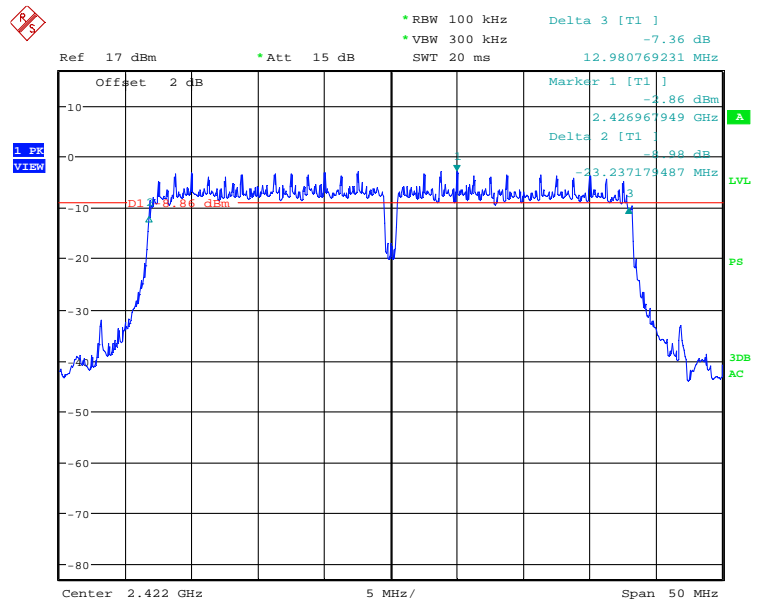
Test mode:	802.11n-H20	Test channel:	Middle
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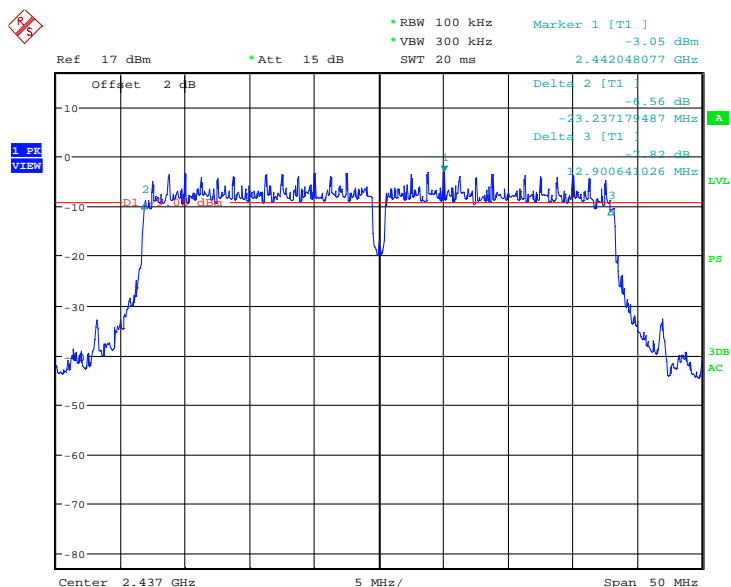
Test mode:	802.11n-H20	Test channel:	Highest
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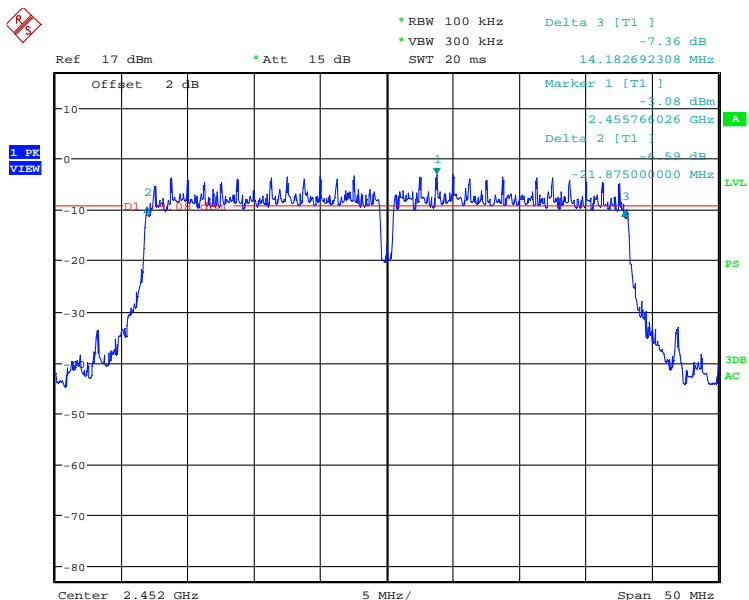
Test mode:	802.11n-H40	Test channel:	Lowest
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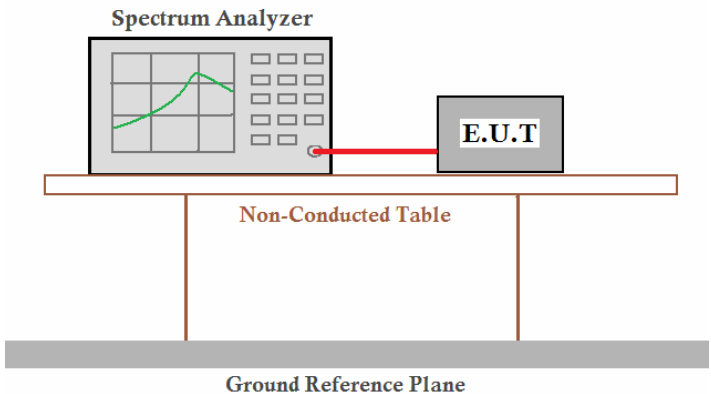
Test mode:	802.11n-H40	Test channel:	Middle
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Test mode:	802.11n-H40	Test channel:	Highest
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5.5 Power Spectral Density

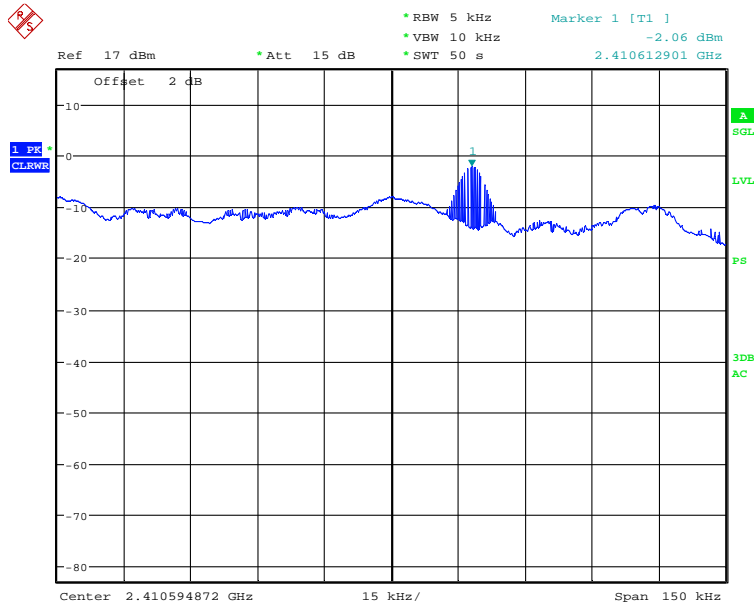
Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	8dBm
Test setup:	 <p><i>Remark: Offset the High-Frequency cable loss 3.0dB in the spectrum analyzer.</i></p>
Test Instruments:	Refer to section 4.7 for details
Test mode:	Refer to section 4.3 for details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

Measurement Data

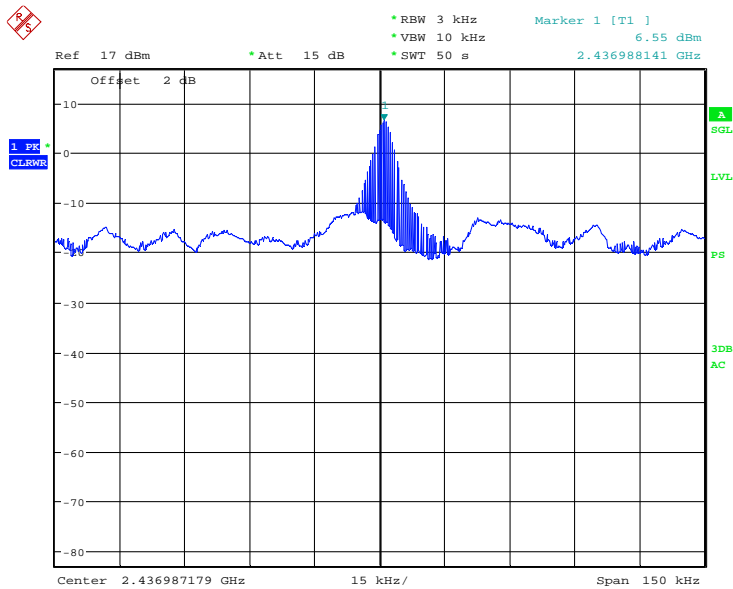
802.11b mode			
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-2.06	8.00	Pass
Middle	6.55	8.00	Pass
Highest	6.36	8.00	Pass
802.11g mode			
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-15.17	8.00	Pass
Middle	-15.56	8.00	Pass
Highest	-15.67	8.00	Pass
802.11n-H20 mode			
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-15.80	8.00	Pass
Middle	-16.09	8.00	Pass
Highest	-16.23	8.00	Pass
802.11n-H40 mode			
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-20.28	8.00	Pass
Middle	-20.29	8.00	Pass
Highest	-20.31	8.00	Pass

Test plot as follows:

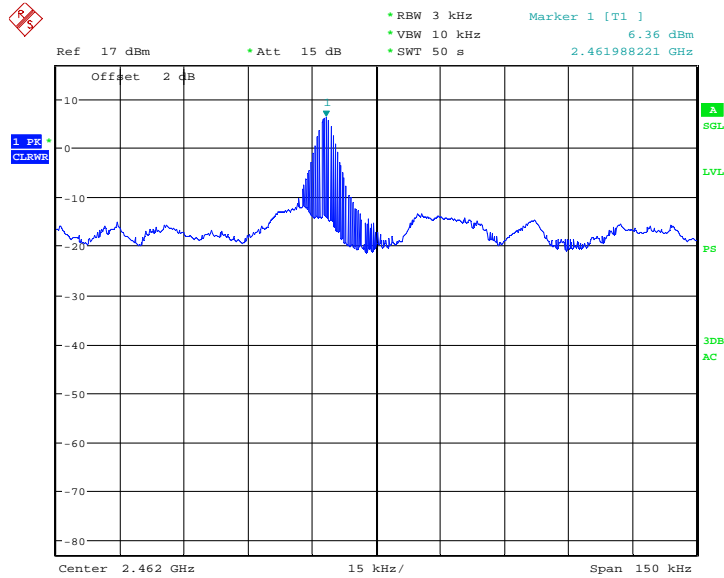
Test mode:	802.11b	Test channel:	Lowest
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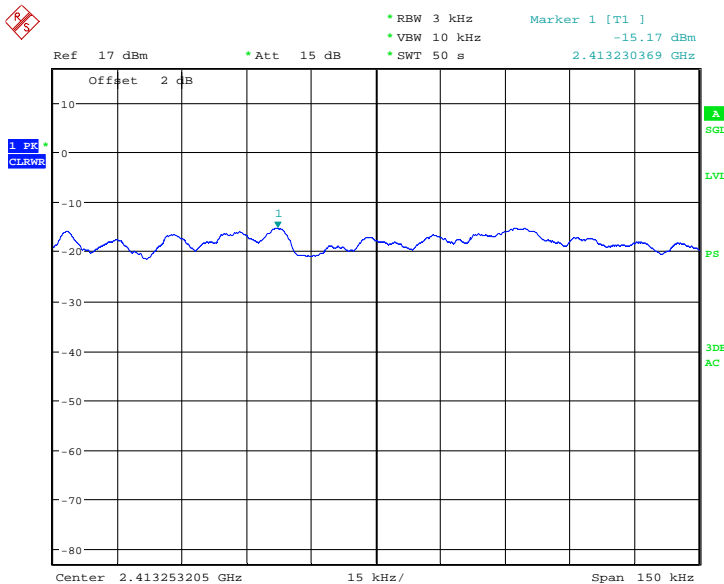
Test mode:	802.11b	Test channel:	Middle
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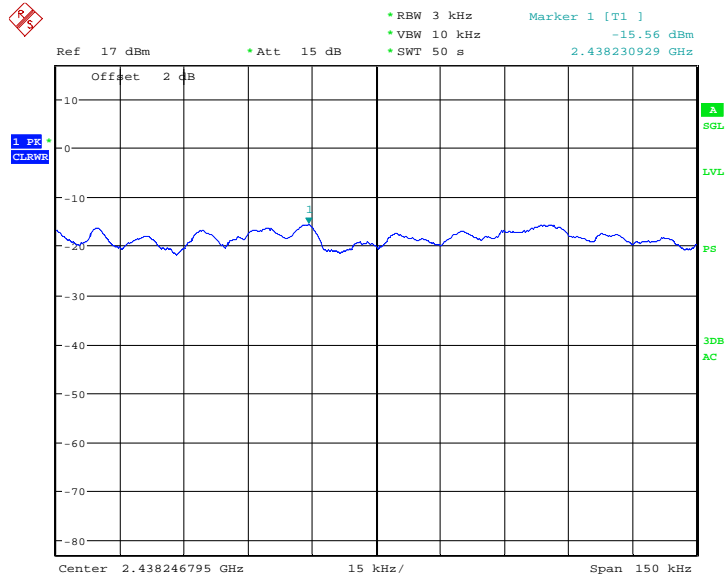
Test mode:	802.11b	Test channel:	Highest
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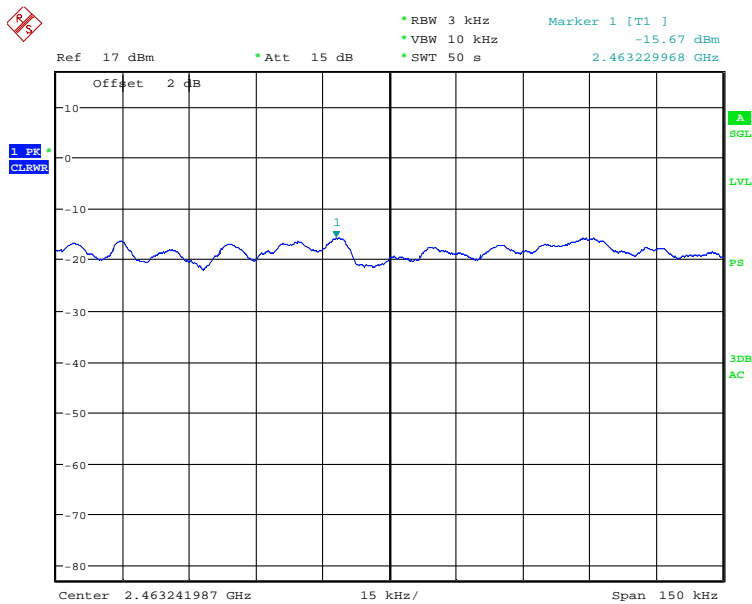
Test mode:	802.11g	Test channel:	Lowest
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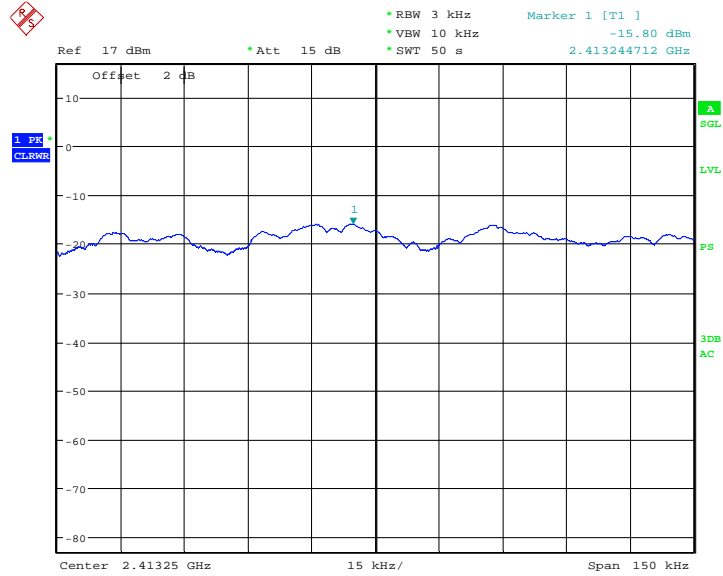
Test mode:	802.11g	Test channel:	Middle
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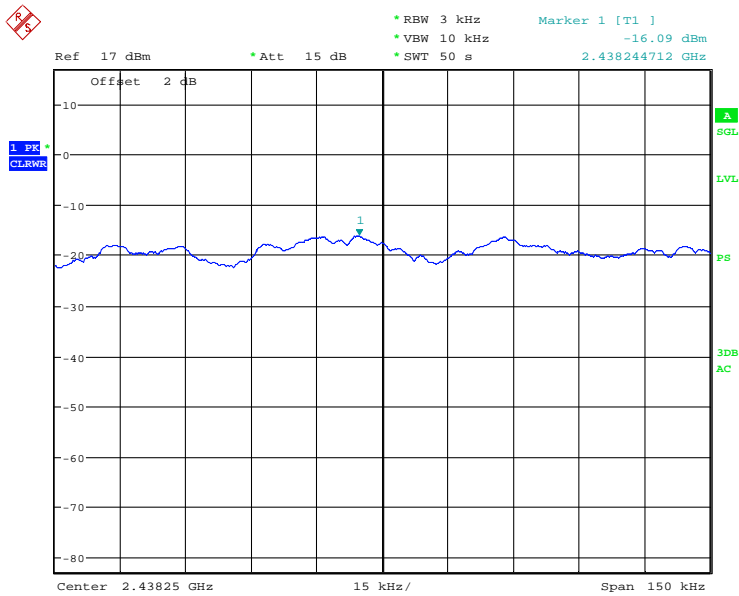
Test mode:	802.11g	Test channel:	Highest
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Test mode:	802.11n-H20	Test channel:	Lowest
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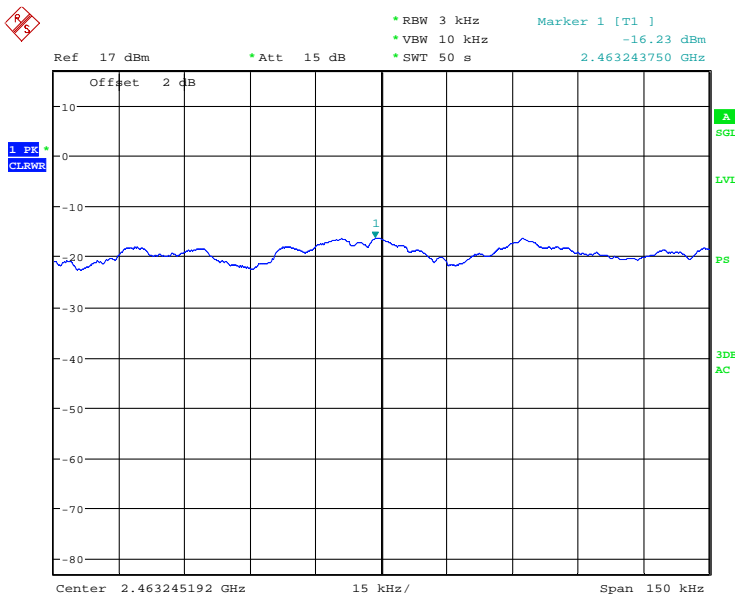
Test mode:	802.11n-H20	Test channel:	Middle
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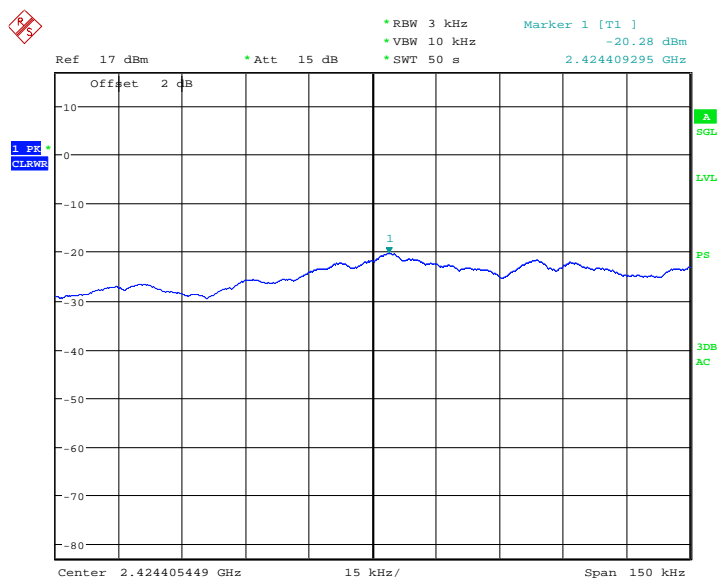


Report No: GTSE11030013401

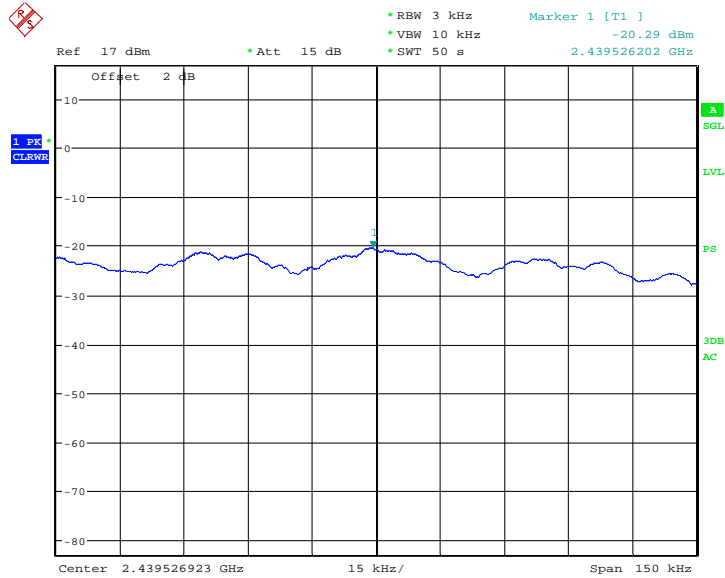
Test mode:	802.11n-H20	Test channel:	Highest
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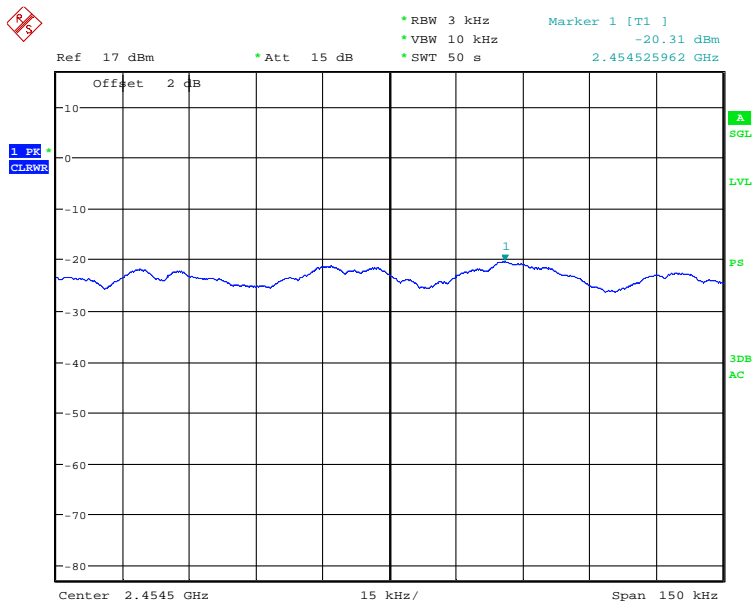
Test mode:	802.11n-H40	Test channel:	Lowest
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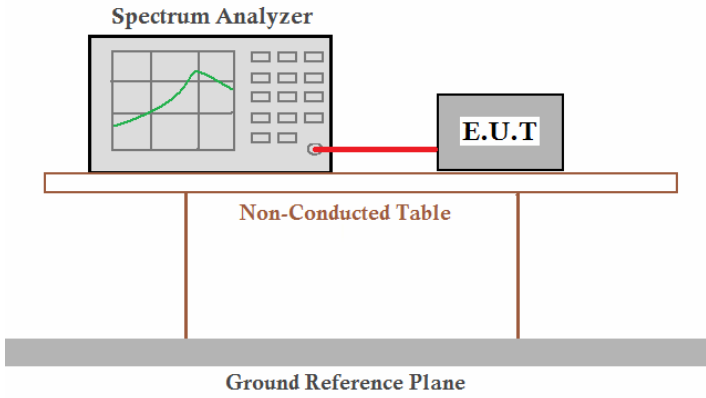
Test mode:	802.11n-H40	Test channel:	Middle
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Test mode:	802.11n-H40	Test channel:	Highest
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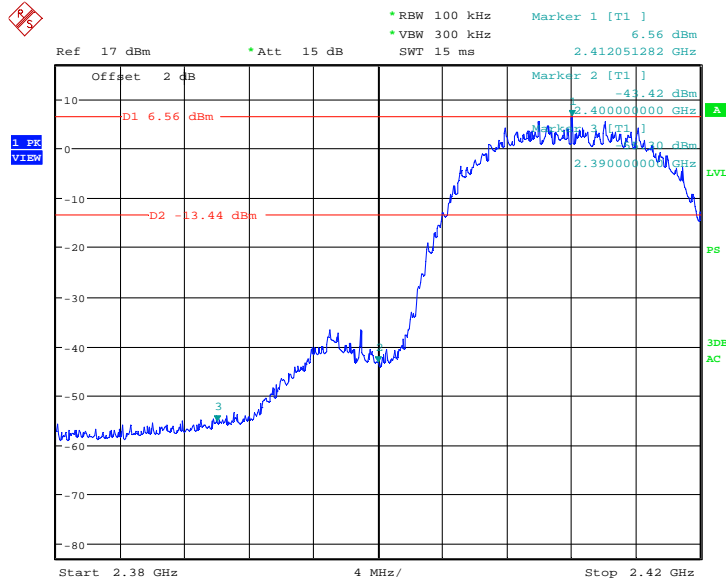


5.6 Band Edge

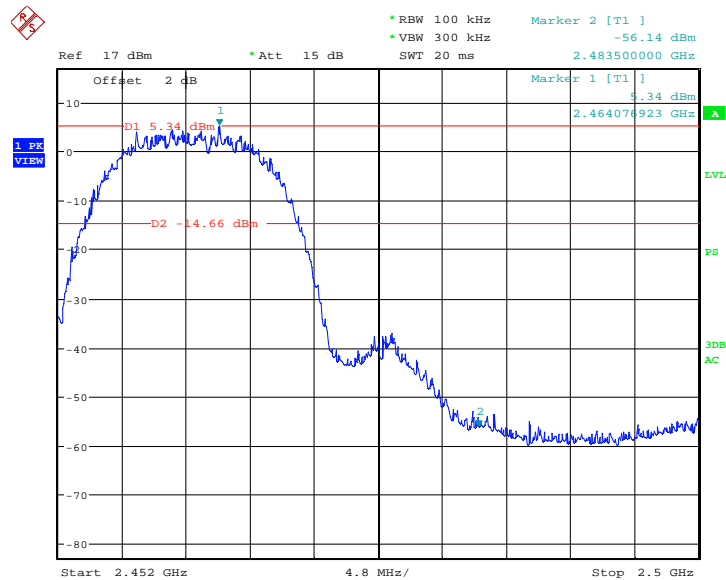
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 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:

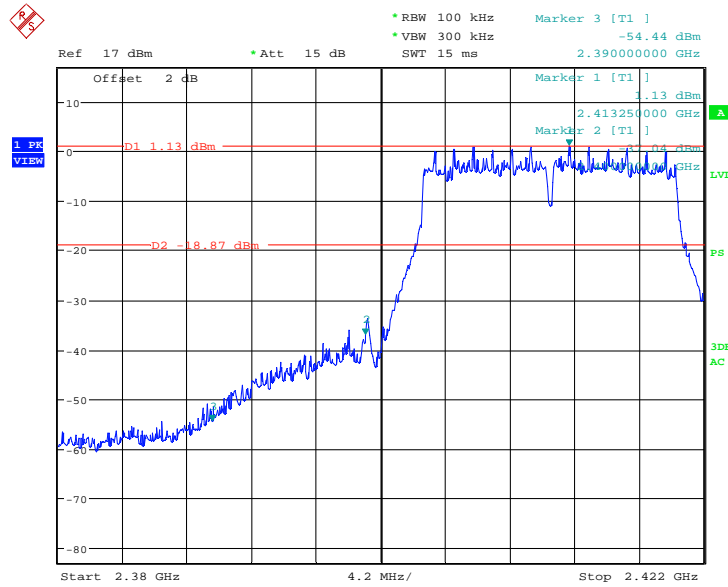
Test mode:	802.11b	Test channel:	Lowest
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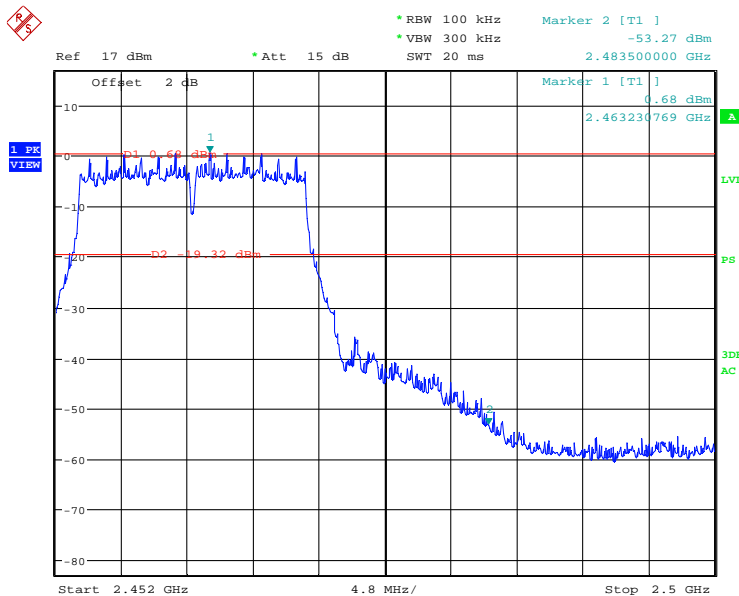
Test mode:	802.11b	Test channel:	Highest
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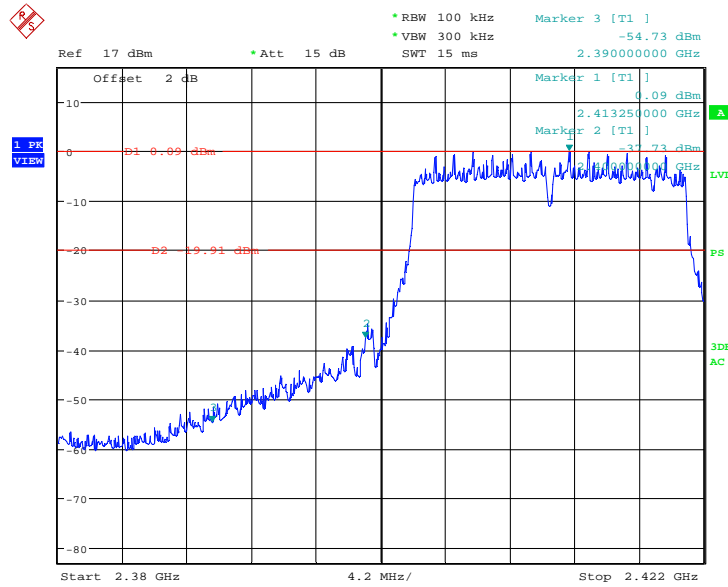
Test mode:	802.11g	Test channel:	Lowest
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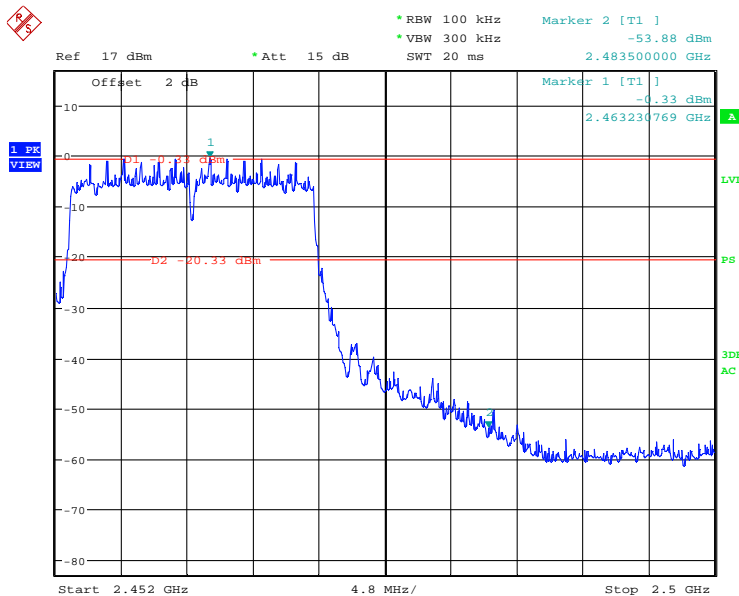
Test mode:	802.11g	Test channel:	Highest
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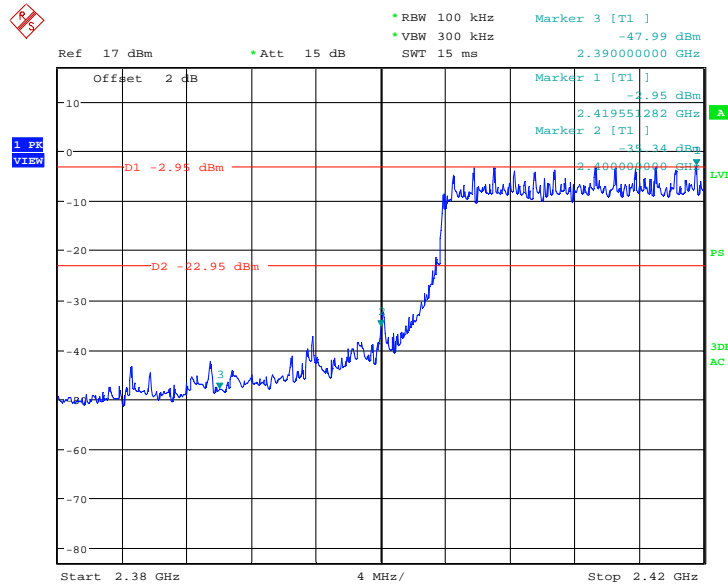
Test mode:	802.11n-H20	Test channel:	Lowest
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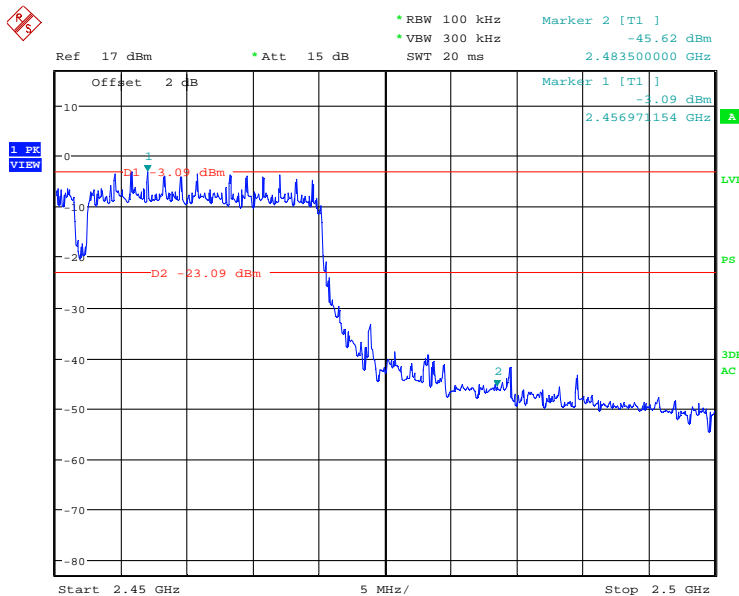
Test mode:	802.11n-H20	Test channel:	Highest
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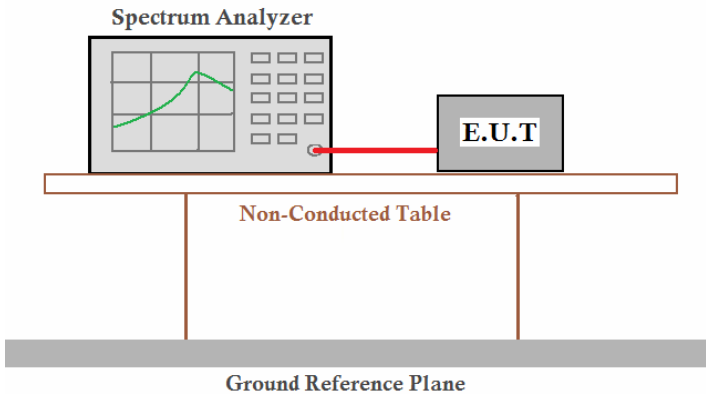
Test mode:	802.11n-H40	Test channel:	Lowest
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Test mode:	802.11n-H40	Test channel:	Highest
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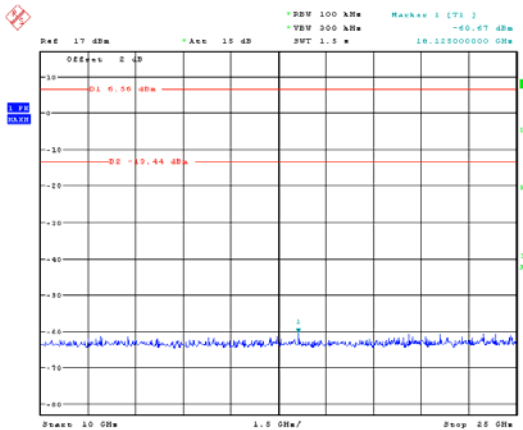
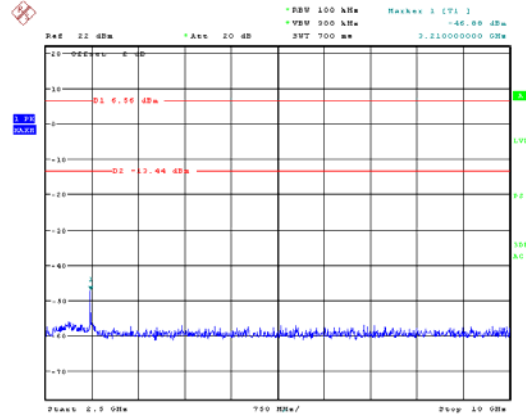
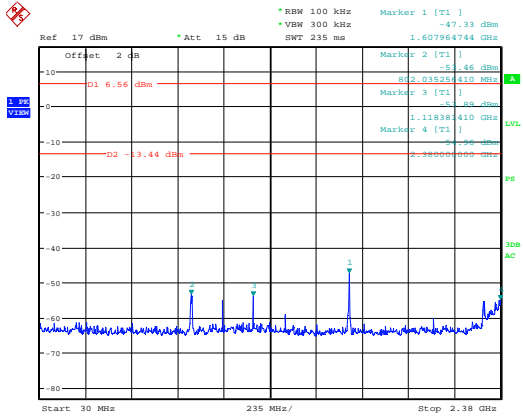


5.7 RF Antenna Conducted spurious emissions

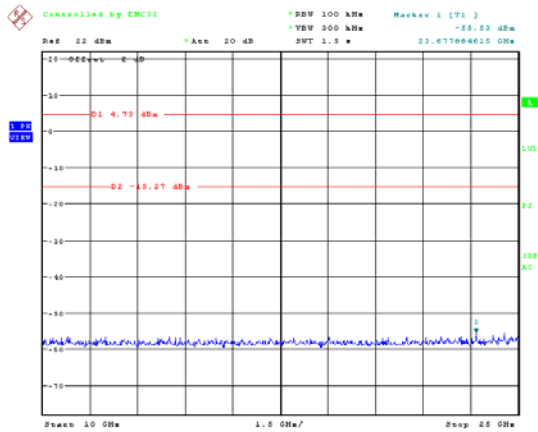
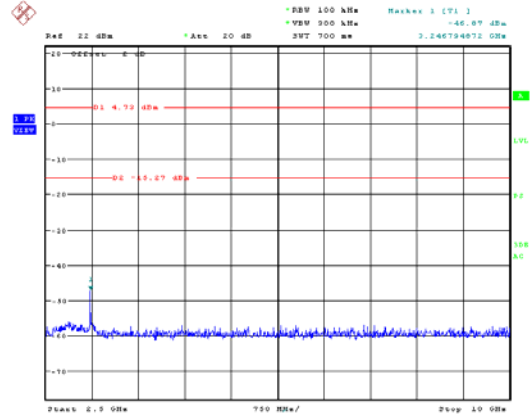
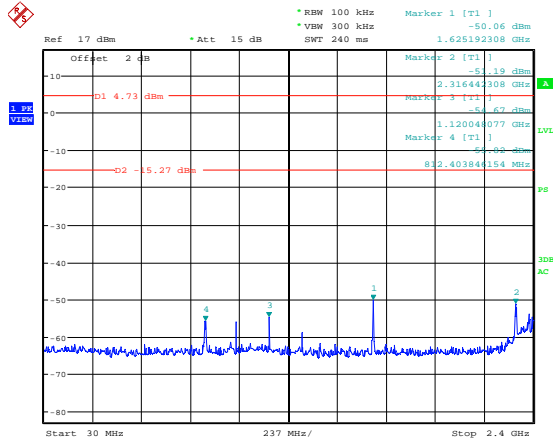
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 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:

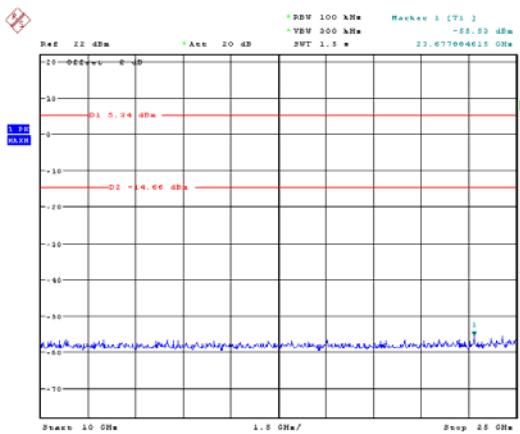
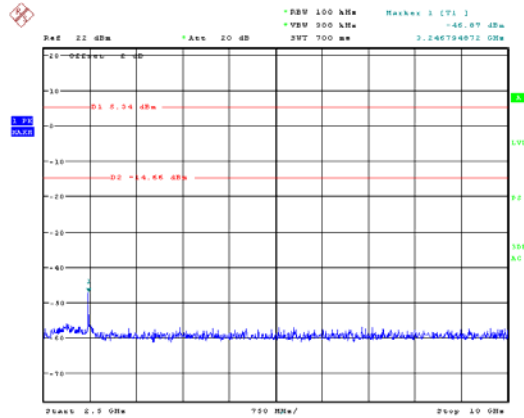
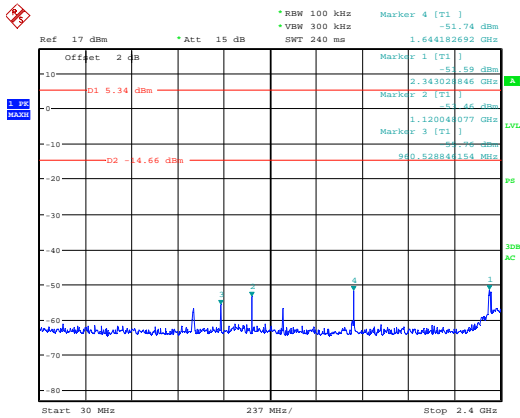
Test mode:	802.11b	Test channel:	Lowest
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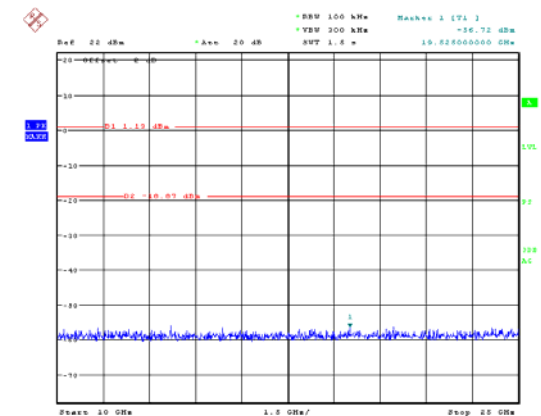
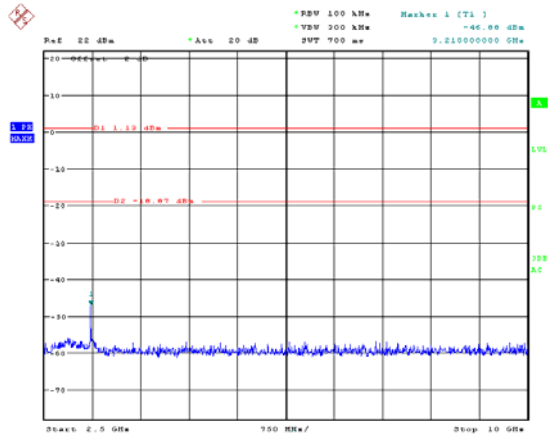
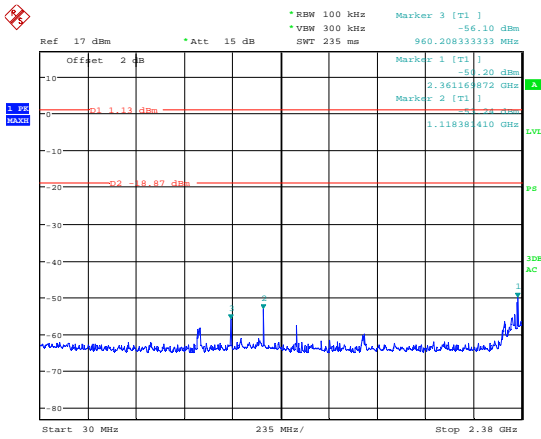
Test mode:	802.11b	Test channel:	Middle
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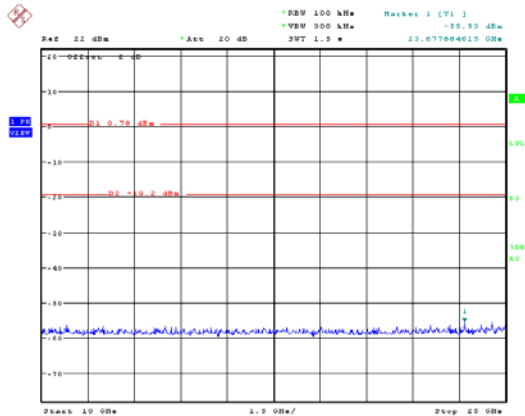
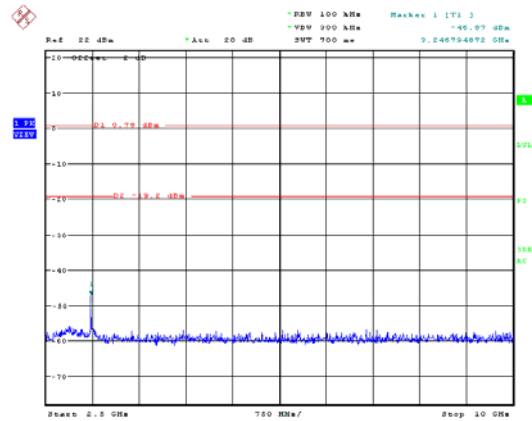
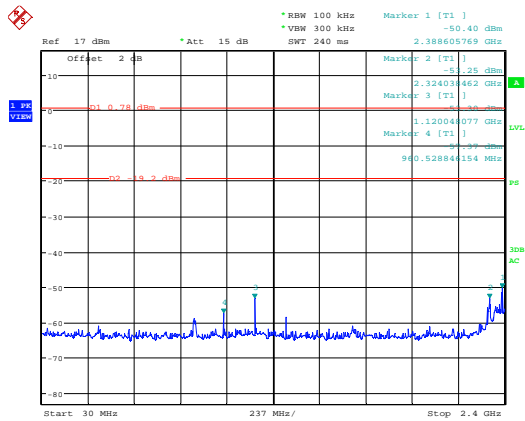
Test mode:	802.11b	Test channel:	Highest
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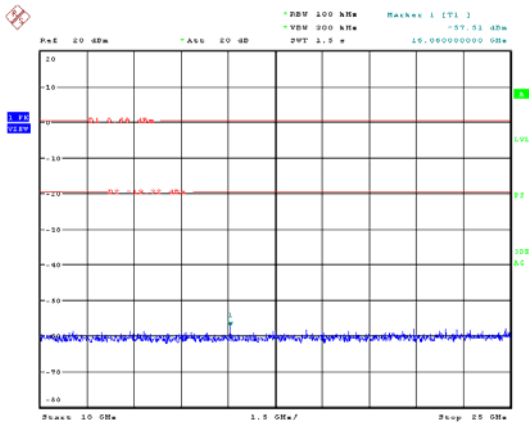
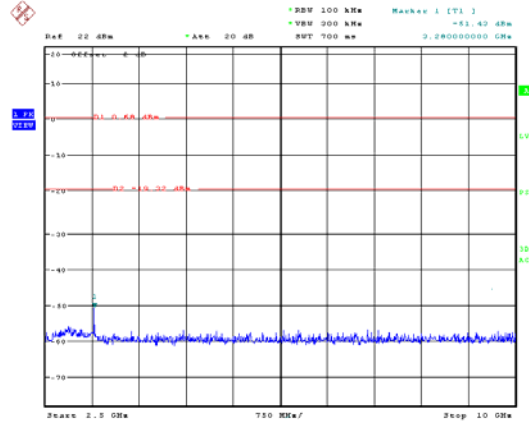
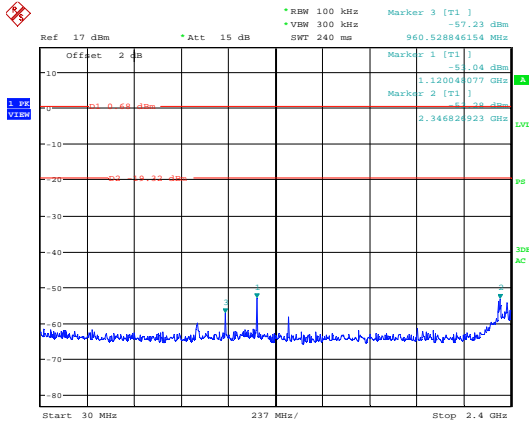
Test mode:	802.11g	Test channel:	Lowest
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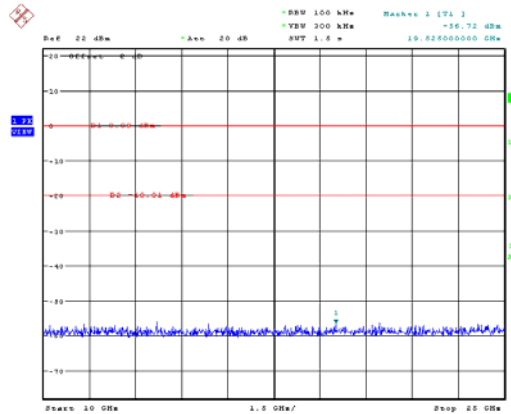
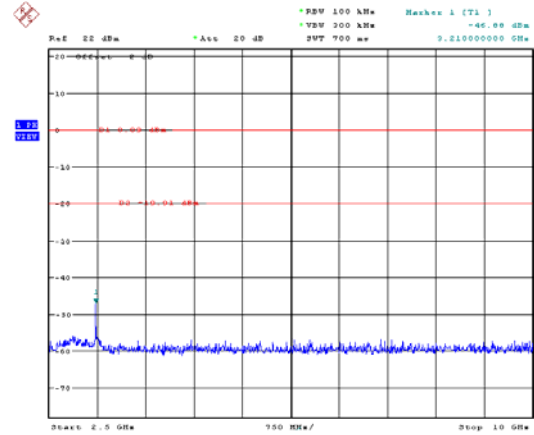
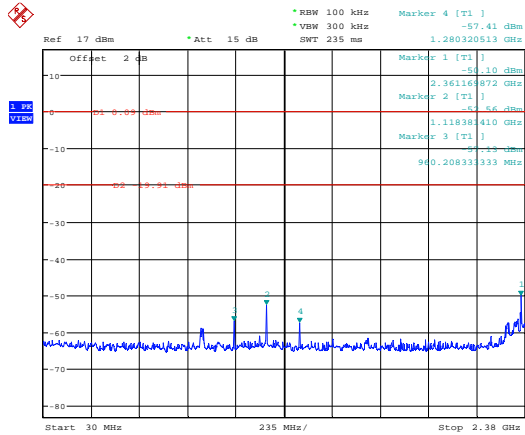
Test mode:	802.11g	Test channel:	Middle
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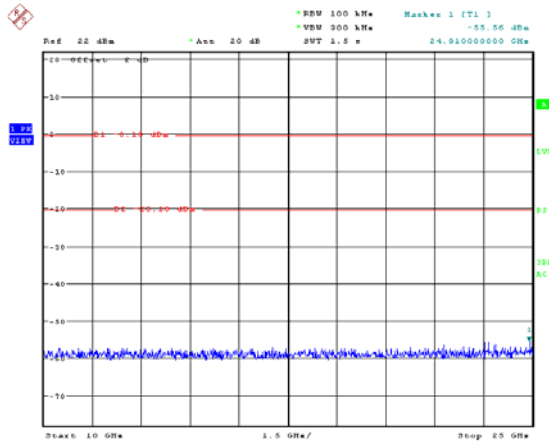
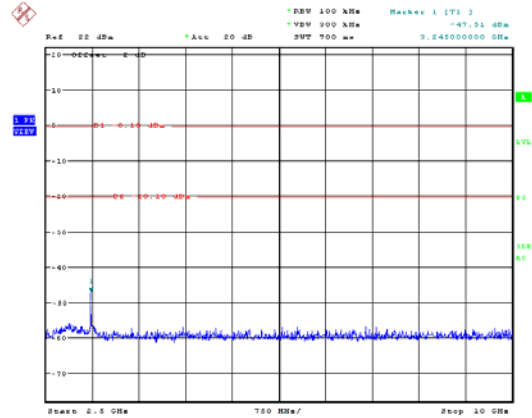
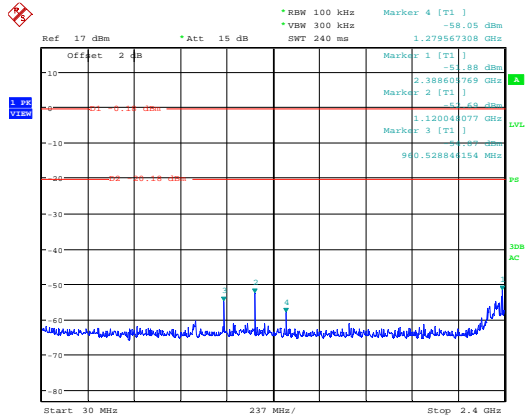
Test mode:	802.11g	Test channel:	Highest
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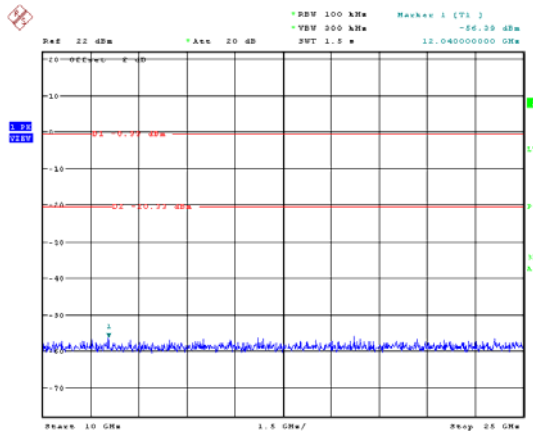
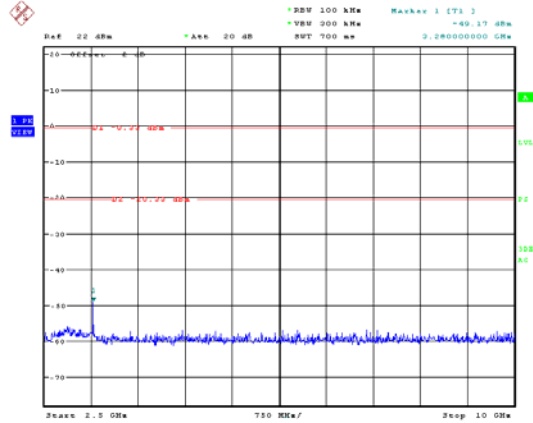
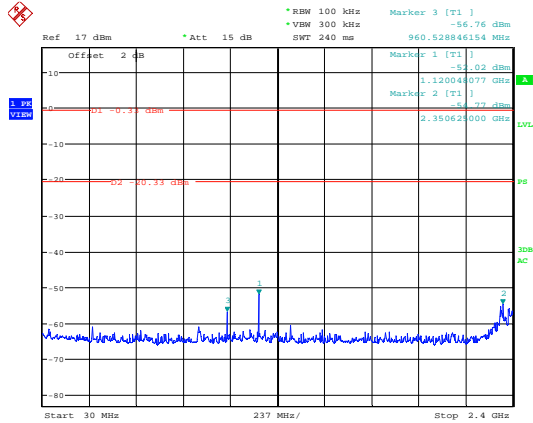
Test mode:	802.11n-H20	Test channel:	Lowest
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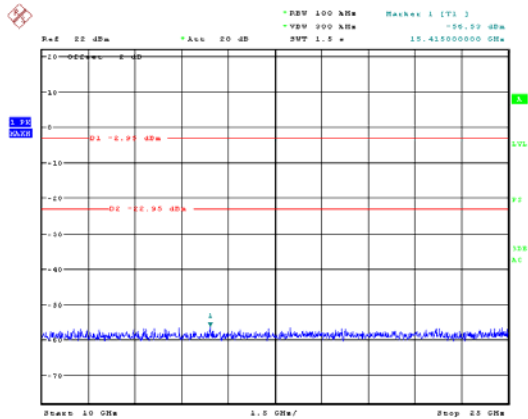
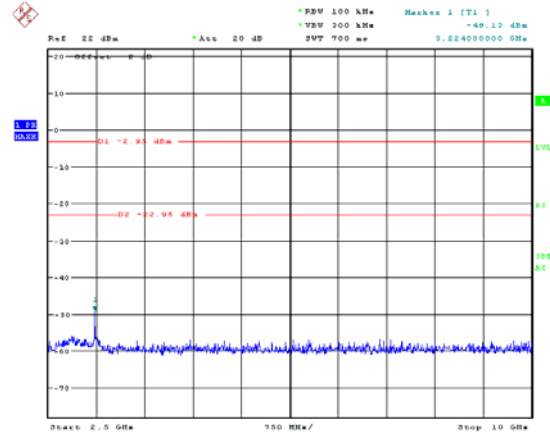
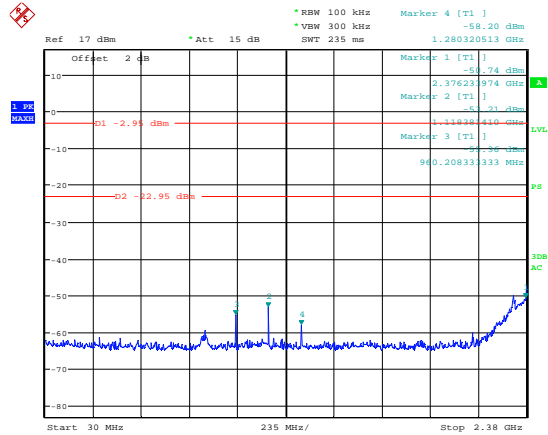
Test mode:	802.11n-H20	Test channel:	Middle
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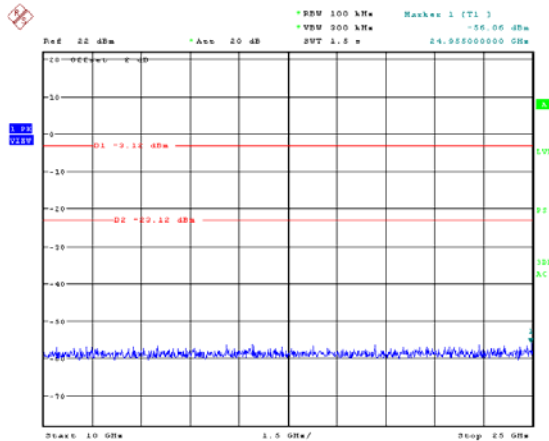
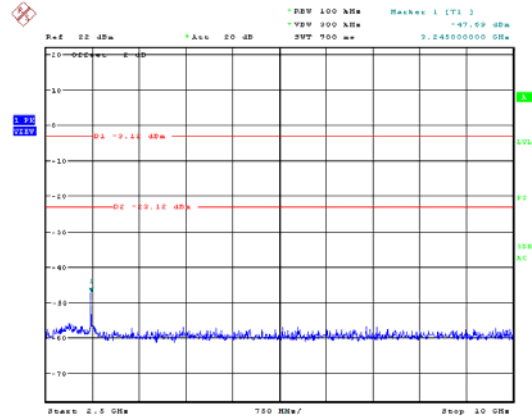
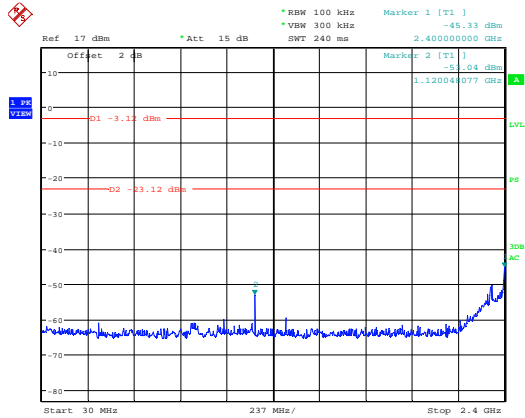
Test mode:	802.11n-H20	Test channel:	Highest
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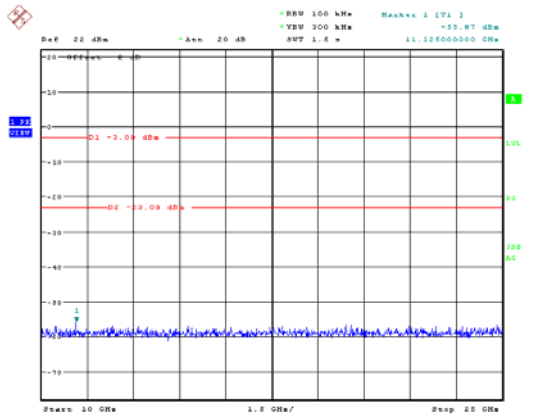
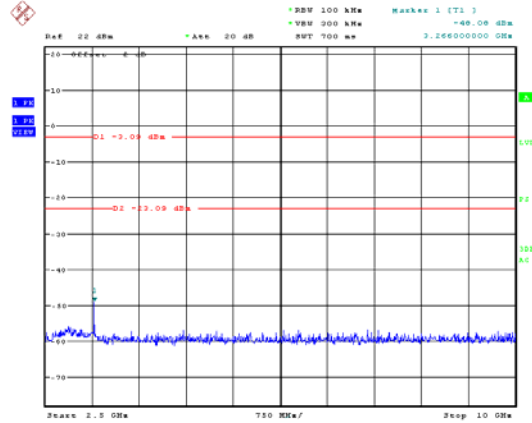
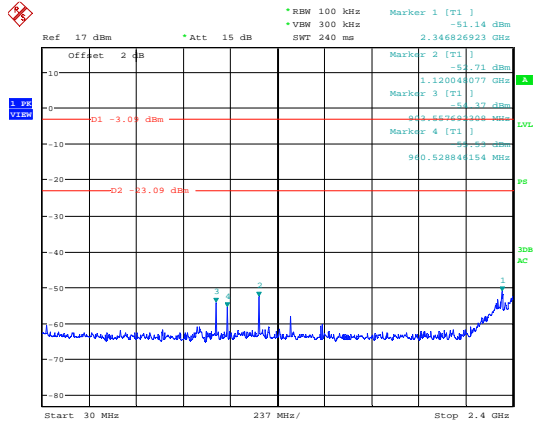
Test mode:	802.11n-H40	Test channel:	Lowest
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Test mode:	802.11n-H40	Test channel:	Middle
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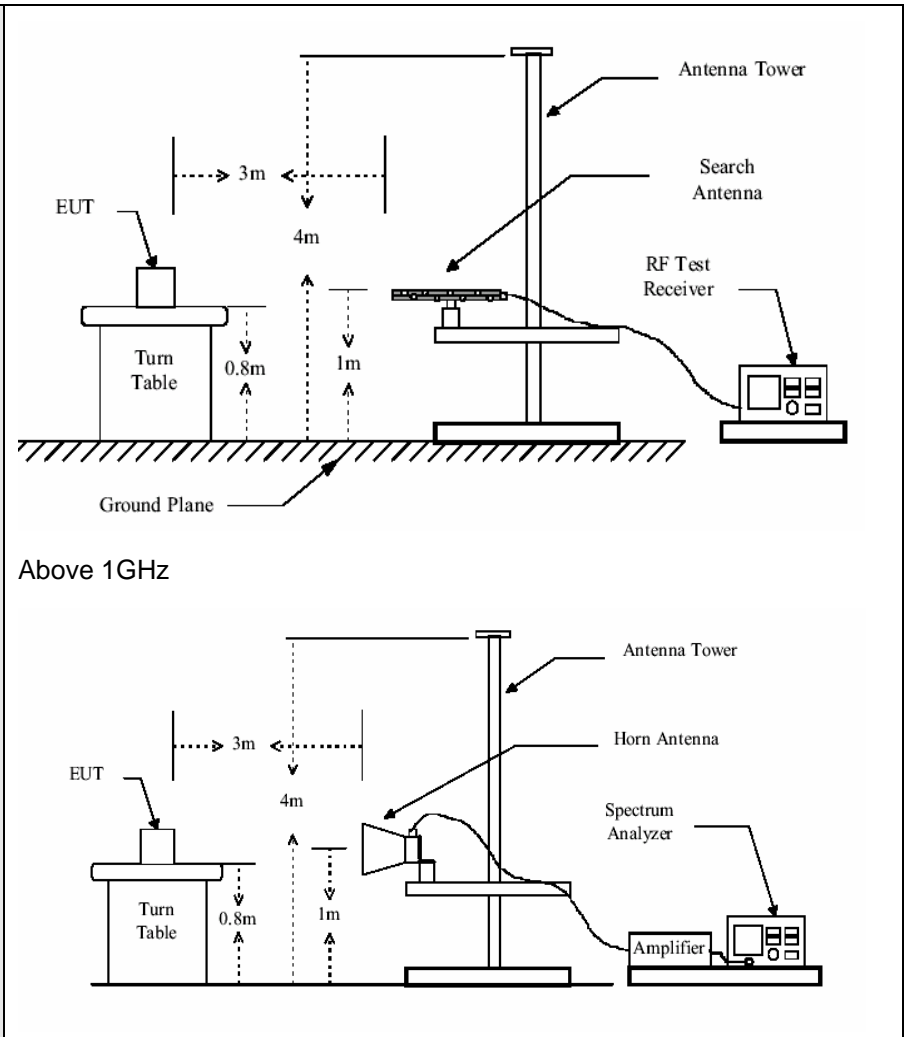


Test mode:	802.11n-H40	Test channel:	Highest
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5.8 Radiated Emission

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	Remark
	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit:	Frequency	Limit (dBuV/m @3m)		Remark	
	30MHz-88MHz	40.0		Quasi-peak Value	
	88MHz-216MHz	43.5		Quasi-peak Value	
	216MHz-960MHz	46.0		Quasi-peak Value	
	960MHz-1GHz	54.0		Quasi-peak Value	
	Above 1GHz	54.0		Average Value	
		74.0		Peak Value	
Test Procedure:	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>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.</p>				
Test setup:	Below 1GHz				

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

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
180.02	41.03	11.63	1.68	25.62	28.72	43.50	-14.78	Vertical
260.14	43.70	10.30	1.98	25.60	30.38	46.00	-15.62	Vertical
312.18	43.77	12.71	2.10	25.58	33.00	46.00	-13.00	Vertical
495.93	46.75	17.56	2.39	25.55	41.15	46.00	-4.85	Vertical
506.48	45.50	18.33	2.43	25.55	40.71	46.00	-5.29	Vertical
755.39	40.09	23.56	3.06	25.52	41.19	46.00	-4.81	Vertical
312.18	38.32	16.22	2.10	25.58	31.06	46.00	-14.94	Horizontal
497.68	42.95	21.19	2.40	25.55	40.99	46.00	-5.01	Horizontal
510.04	41.20	21.72	2.44	25.55	39.81	46.00	-6.19	Horizontal
614.21	40.89	22.16	2.73	25.54	40.24	46.00	-5.76	Horizontal
729.36	42.41	21.91	3.01	25.52	41.81	46.00	-4.19	Horizontal
768.75	40.68	22.64	3.09	25.52	40.89	46.00	-5.11	Horizontal

5.8.2 Transmitter emission 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		
1384.00	38.04	25.63	2.43	21.35	44.75	74.00	-29.25	Vertical		
2390.00	47.19	27.59	3.33	30.10	48.01	74.00	-25.99	Vertical		
2400.00	52.09	27.58	3.37	30.10	52.94	74.00	-21.06	Vertical		
4824.00	39.84	31.79	5.34	24.07	52.90	74.00	-21.10	Vertical		
7236.00	31.5	36.19	6.88	26.44	48.13	74.00	-25.87	Vertical		
9648.00	29.99	38.07	8.96	25.36	51.66	74.00	-22.34	Vertical		
12060.00	28.63	39.05	10.35	25.15	52.88	74.00	-21.12	Vertical		
1384.00	40.95	25.63	2.43	21.35	47.66	74.00	-26.34	Horizontal		
2390.00	48.44	27.59	3.33	30.10	49.26	74.00	-24.74	Horizontal		
2400.00	53.25	27.58	3.37	30.10	54.10	74.00	-19.90	Horizontal		
4824.00	43.45	31.79	5.34	24.07	56.51	74.00	-17.49	Horizontal		
7236.00	32.48	36.19	6.88	26.44	49.11	74.00	-24.89	Horizontal		
9648.00	30.88	38.07	8.96	25.36	52.55	74.00	-21.45	Horizontal		
12060.00	29.43	39.05	10.35	25.15	53.68	74.00	-20.32	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		
1384.00	21.58	25.63	2.43	21.35	28.29	54.00	-25.71	Vertical		
2390.00	30.83	27.59	3.33	30.10	31.65	54.00	-22.35	Vertical		
2400.00	35.08	27.58	3.37	30.10	35.93	54.00	-18.07	Vertical		
4824.00	18.6	31.79	5.34	24.07	31.66	54.00	-22.34	Vertical		
7236.00	15.5	36.19	6.88	26.44	32.13	54.00	-21.87	Vertical		
9648.00	13.47	38.07	8.96	25.36	35.14	54.00	-18.86	Vertical		
12060.00	15.28	39.05	10.35	25.15	39.53	54.00	-14.47	Vertical		
1384.00	22.92	25.63	2.43	21.35	29.63	54.00	-24.37	Horizontal		
2390.00	32.08	27.59	3.33	30.10	32.90	54.00	-21.10	Horizontal		
2400.00	36.24	27.58	3.37	30.10	37.09	54.00	-16.91	Horizontal		
4824.00	24.67	31.79	5.34	24.07	37.73	54.00	-16.27	Horizontal		
7236.00	16.48	36.19	6.88	26.44	33.11	54.00	-20.89	Horizontal		
9648.00	14.36	38.07	8.96	25.36	36.03	54.00	-17.97	Horizontal		
12060.00	16.08	39.05	10.35	25.15	40.33	54.00	-13.67	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		
1754.00	42.34	25.09	2.61	28.59	41.45	74.00	-32.55	Vertical		
4874.00	40.06	31.85	5.40	24.01	53.30	74.00	-20.70	Vertical		
7311.00	29.62	36.37	6.90	26.58	46.31	74.00	-27.69	Vertical		
9688.00	25.79	38.13	8.98	25.34	47.56	74.00	-26.44	Vertical		
12185.00	26.66	38.92	10.38	25.04	50.92	74.00	-23.08	Vertical		
14622.00	23.62	42.33	11.91	24.45	53.41	74.00	-20.59	Vertical		
1754.00	47.22	25.09	2.61	28.59	46.33	74.00	-27.67	Horizontal		
4874.00	44.52	31.85	5.40	24.01	57.76	74.00	-16.24	Horizontal		
7311.00	29.95	36.37	6.90	26.58	46.64	74.00	-27.36	Horizontal		
9688.00	26.23	38.13	8.98	25.34	48.00	74.00	-26.00	Horizontal		
12185.00	27.21	38.92	10.38	25.04	51.47	74.00	-22.53	Horizontal		
14622.00	24.28	42.33	11.91	24.45	54.07	74.00	-19.93	Horizontal		

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		
1754.00	28.58	25.09	2.61	28.59	27.69	54.00	-26.31	Vertical		
4874.00	19.84	31.85	5.40	24.01	33.08	54.00	-20.92	Vertical		
7311.00	16.52	36.37	6.90	26.58	33.21	54.00	-20.79	Vertical		
9688.00	13.56	38.13	8.98	25.34	35.33	54.00	-18.67	Vertical		
12185.00	14.54	38.92	10.38	25.04	38.80	54.00	-15.20	Vertical		
14622.00	11.61	42.33	11.91	24.45	41.40	54.00	-12.60	Vertical		
1754.00	28.69	25.09	2.61	28.59	27.80	54.00	-26.20	Horizontal		
4874.00	23.8	31.85	5.40	24.01	37.04	54.00	-16.96	Horizontal		
7311.00	16.85	36.37	6.90	26.58	33.54	54.00	-20.46	Horizontal		
9688.00	14	38.13	8.98	25.34	35.77	54.00	-18.23	Horizontal		
12185.00	15.09	38.92	10.38	25.04	39.35	54.00	-14.65	Horizontal		
14622.00	12.27	42.33	11.91	24.45	42.06	54.00	-11.94	Horizontal		



Report No: GTSE11030013401

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		
1648.00	42.16	24.87	2.55	27.09	42.49	74.00	-31.51	Vertical		
2483.50	47.73	27.53	3.49	29.93	48.82	74.00	-25.18	Vertical		
2500.00	52.37	27.55	3.52	30.70	52.74	74.00	-21.26	Vertical		
4924.00	38.12	31.89	5.46	23.96	51.51	74.00	-22.49	Vertical		
7386.00	29	36.49	6.93	26.79	45.63	74.00	-28.37	Vertical		
12310.00	26.63	38.83	10.41	24.90	50.97	74.00	-23.03	Vertical		
14772.00	22.77	41.82	12.18	24.52	52.25	74.00	-21.75	Vertical		
1648.00	43.5	24.87	2.55	27.09	43.83	74.00	-30.17	Horizontal		
2483.50	49.03	27.53	3.49	29.93	50.12	74.00	-23.88	Horizontal		
2500.00	53.63	27.55	3.52	30.70	54.00	74.00	-20.00	Horizontal		
4924.00	38.95	31.89	5.46	23.96	52.34	74.00	-21.66	Horizontal		
7386.00	30.18	36.49	6.93	26.79	46.81	74.00	-27.19	Horizontal		
12310.00	27.77	38.83	10.41	24.90	52.11	74.00	-21.89	Horizontal		
14772.00	23.87	41.82	12.18	24.52	53.35	74.00	-20.65	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		
1648.00	24.57	24.87	2.55	27.09	24.90	54.00	-29.10	Vertical		
2483.50	34.59	27.53	3.49	29.93	35.68	54.00	-18.32	Vertical		
2500.00	30.76	27.55	3.52	30.70	31.13	54.00	-22.87	Vertical		
4924.00	19.75	31.89	5.46	23.96	33.14	54.00	-20.86	Vertical		
7386.00	16.88	36.49	6.93	26.79	33.51	54.00	-20.49	Vertical		
12310.00	14.62	38.83	10.41	24.90	38.96	54.00	-15.04	Vertical		
14772.00	12.01	41.82	12.18	24.52	41.49	54.00	-12.51	Vertical		
1648.00	25.91	24.87	2.55	27.09	26.24	54.00	-27.76	Horizontal		
2483.50	35.89	27.53	3.49	29.93	36.98	54.00	-17.02	Horizontal		
2500.00	32.02	27.55	3.52	30.70	32.39	54.00	-21.61	Horizontal		
4924.00	24.21	31.89	5.46	23.96	37.60	54.00	-16.40	Horizontal		
7386.00	18.06	36.49	6.93	26.79	34.69	54.00	-19.31	Horizontal		
12310.00	15.76	38.83	10.41	24.90	40.10	54.00	-13.90	Horizontal		
14772.00	13.11	41.82	12.18	24.52	42.59	54.00	-11.41	Horizontal		

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		
1384.00	32.56	25.63	2.43	21.35	39.27	74.00	-34.73	Vertical		
2390.00	45.64	27.59	3.33	30.10	46.46	74.00	-27.54	Vertical		
2400.00	50.47	27.58	3.37	30.10	51.32	74.00	-22.68	Vertical		
4824.00	33.17	31.79	5.34	24.07	46.23	74.00	-27.77	Vertical		
7236.00	29.74	36.19	6.88	26.44	46.37	74.00	-27.63	Vertical		
9648.00	28.16	38.07	8.96	25.36	49.83	74.00	-24.17	Vertical		
12060.00	26.73	39.05	10.35	25.15	50.98	74.00	-23.02	Vertical		
1384.00	39.06	25.63	2.43	21.35	45.77	74.00	-28.23	Horizontal		
2390.00	47.08	27.59	3.33	30.10	47.90	74.00	-26.10	Horizontal		
2400.00	51.85	27.58	3.37	30.10	52.70	74.00	-21.30	Horizontal		
4824.00	43.54	31.79	5.34	24.07	56.60	74.00	-17.40	Horizontal		
7236.00	31	36.19	6.88	26.44	47.63	74.00	-26.37	Horizontal		
9648.00	29.36	38.07	8.96	25.36	51.03	74.00	-22.97	Horizontal		
12060.00	27.87	39.05	10.35	25.15	52.12	74.00	-21.88	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		
1384.00	21.24	25.63	2.43	21.35	27.95	54.00	-26.05	Vertical		
2390.00	30.9	27.59	3.33	30.10	31.72	54.00	-22.28	Vertical		
2400.00	35.56	27.58	3.37	30.10	36.41	54.00	-17.59	Vertical		
4824.00	19.49	31.79	5.34	24.07	32.55	54.00	-21.45	Vertical		
7236.00	16.8	36.19	6.88	26.44	33.43	54.00	-20.57	Vertical		
9648.00	15.18	38.07	8.96	25.36	36.85	54.00	-17.15	Vertical		
12060.00	17.4	39.05	10.35	25.15	41.65	54.00	-12.35	Vertical		
1384.00	23.09	25.63	2.43	21.35	29.80	54.00	-24.20	Horizontal		
2390.00	32.78	27.59	3.33	30.10	33.60	54.00	-20.40	Horizontal		
2400.00	37.47	27.58	3.37	30.10	38.32	54.00	-15.68	Horizontal		
4824.00	29.02	31.79	5.34	24.07	42.08	54.00	-11.92	Horizontal		
7236.00	18.77	36.19	6.88	26.44	35.40	54.00	-18.60	Horizontal		
9648.00	17.18	38.07	8.96	25.36	38.85	54.00	-15.15	Horizontal		
12060.00	19.43	39.05	10.35	25.15	43.68	54.00	-10.32	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		
1754.00	41.73	25.09	2.61	28.59	40.84	74.00	-33.16	Vertical		
4874.00	34.36	31.85	5.40	24.01	47.60	74.00	-26.40	Vertical		
7311.00	29.11	36.37	6.90	26.58	45.80	74.00	-28.20	Vertical		
9688.00	25.33	38.13	8.98	25.34	47.10	74.00	-26.90	Vertical		
12185.00	26.25	38.92	10.38	25.04	50.51	74.00	-23.49	Vertical		
14622.00	23.26	42.33	11.91	24.45	53.05	74.00	-20.95	Vertical		
1754.00	41.94	25.09	2.61	28.59	41.05	74.00	-32.95	Horizontal		
4874.00	43.19	31.85	5.40	24.01	56.43	74.00	-17.57	Horizontal		
7311.00	29.34	36.37	6.90	26.58	46.03	74.00	-27.97	Horizontal		
9688.00	25.57	38.13	8.98	25.34	47.34	74.00	-26.66	Horizontal		
12185.00	26.5	38.92	10.38	25.04	50.76	74.00	-23.24	Horizontal		
14622.00	23.52	42.33	11.91	24.45	53.31	74.00	-20.69	Horizontal		

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		
1754.00	29.25	25.09	2.61	28.59	28.36	54.00	-25.64	Vertical		
4874.00	21.04	31.85	5.40	24.01	34.28	54.00	-19.72	Vertical		
7311.00	18.25	36.37	6.90	26.58	34.94	54.00	-19.06	Vertical		
9688.00	15.82	38.13	8.98	25.34	37.59	54.00	-16.41	Vertical		
12185.00	17.33	38.92	10.38	25.04	41.59	54.00	-12.41	Vertical		
14622.00	14.93	42.33	11.91	24.45	44.72	54.00	-9.28	Vertical		
1754.00	29.24	25.09	2.61	28.59	28.35	54.00	-25.65	Horizontal		
4874.00	26.26	31.85	5.40	24.01	39.50	54.00	-14.50	Horizontal		
7311.00	18.04	36.37	6.90	26.58	34.73	54.00	-19.27	Horizontal		
9688.00	15.51	38.13	8.98	25.34	37.28	54.00	-16.72	Horizontal		
12185.00	16.92	38.92	10.38	25.04	41.18	54.00	-12.82	Horizontal		
14622.00	14.42	42.33	11.91	24.45	44.21	54.00	-9.79	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		
1648.00	36.85	24.87	2.55	27.09	37.18	74.00	-36.82	Vertical		
2483.50	46.47	27.53	3.49	29.93	47.56	74.00	-26.44	Vertical		
2500.00	51.16	27.55	3.52	30.70	51.53	74.00	-22.47	Vertical		
4924.00	30.82	31.89	5.46	23.96	44.21	74.00	-29.79	Vertical		
7386.00	27.89	36.49	6.93	26.79	44.52	74.00	-29.48	Vertical		
12310.00	25.57	38.83	10.41	24.90	49.91	74.00	-24.09	Vertical		
14772.00	21.76	41.82	12.18	24.52	51.24	74.00	-22.76	Vertical		
1648.00	38.49	24.87	2.55	27.09	38.82	74.00	-35.18	Horizontal		
2483.50	47.97	27.53	3.49	29.93	49.06	74.00	-24.94	Horizontal		
2500.00	52.52	27.55	3.52	30.70	52.89	74.00	-21.11	Horizontal		
4924.00	43.08	31.89	5.46	23.96	56.47	74.00	-17.53	Horizontal		
7386.00	28.97	36.49	6.93	26.79	45.60	74.00	-28.40	Horizontal		
12310.00	26.51	38.83	10.41	24.90	50.85	74.00	-23.15	Horizontal		
14772.00	22.56	41.82	12.18	24.52	52.04	74.00	-21.96	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		
1648.00	25.68	24.87	2.55	27.09	26.01	54.00	-27.99	Vertical		
2483.50	36.01	27.53	3.49	29.93	37.10	54.00	-16.90	Vertical		
2500.00	32.49	27.55	3.52	30.70	32.86	54.00	-21.14	Vertical		
4924.00	21.79	31.89	5.46	23.96	35.18	54.00	-18.82	Vertical		
7386.00	19.23	36.49	6.93	26.79	35.86	54.00	-18.14	Vertical		
12310.00	17.28	38.83	10.41	24.90	41.62	54.00	-12.38	Vertical		
14772.00	14.98	41.82	12.18	24.52	44.46	54.00	-9.54	Vertical		
1648.00	25.86	24.87	2.55	27.09	26.19	54.00	-27.81	Horizontal		
2483.50	36.22	27.53	3.49	29.93	37.31	54.00	-16.69	Horizontal		
2500.00	32.73	27.55	3.52	30.70	33.10	54.00	-20.90	Horizontal		
4924.00	26.76	31.89	5.46	23.96	40.15	54.00	-13.85	Horizontal		
7386.00	19.53	36.49	6.93	26.79	36.16	54.00	-17.84	Horizontal		
12310.00	17.61	38.83	10.41	24.90	41.95	54.00	-12.05	Horizontal		
14772.00	15.34	41.82	12.18	24.52	44.82	54.00	-9.18	Horizontal		

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		
1384.00	39.05	25.63	2.43	21.35	45.76	74.00	-28.24	Vertical		
2390.00	32.95	27.59	3.33	30.10	33.77	74.00	-40.23	Vertical		
2400.00	46.05	27.58	3.37	30.10	46.90	74.00	-27.10	Vertical		
4824.00	50.9	31.79	5.34	24.07	63.96	74.00	-10.04	Vertical		
7236.00	35.62	36.19	6.88	26.44	52.25	74.00	-21.75	Vertical		
9648.00	30.21	38.07	8.96	25.36	51.88	74.00	-22.12	Vertical		
12060.00	28.65	39.05	10.35	25.15	52.90	74.00	-21.10	Vertical		
1384.00	39.14	25.63	2.43	21.35	45.85	74.00	-28.15	Horizontal		
2390.00	47.24	27.59	3.33	30.10	48.06	74.00	-25.94	Horizontal		
2400.00	52.09	27.58	3.37	30.10	52.94	74.00	-21.06	Horizontal		
4824.00	42.98	31.79	5.34	24.07	56.04	74.00	-17.96	Horizontal		
7236.00	31.4	36.19	6.88	26.44	48.03	74.00	-25.97	Horizontal		
9648.00	29.84	38.07	8.96	25.36	51.51	74.00	-22.49	Horizontal		
12060.00	28.43	39.05	10.35	25.15	52.68	74.00	-21.32	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		
1384.00	29.25	25.63	2.43	21.35	35.96	54.00	-18.04	Vertical		
2390.00	33.11	27.59	3.33	30.10	33.93	54.00	-20.07	Vertical		
2400.00	37.79	27.58	3.37	30.10	38.64	54.00	-15.36	Vertical		
4824.00	29.47	31.79	5.34	24.07	42.53	54.00	-11.47	Vertical		
7236.00	20.42	36.19	6.88	26.44	37.05	54.00	-16.95	Vertical		
9648.00	19.75	38.07	8.96	25.36	41.42	54.00	-12.58	Vertical		
12060.00	19.15	39.05	10.35	25.15	43.40	54.00	-10.60	Vertical		
1384.00	26.83	25.63	2.43	21.35	33.54	54.00	-20.46	Horizontal		
2390.00	32.57	27.59	3.33	30.10	33.39	54.00	-20.61	Horizontal		
2400.00	33.34	27.58	3.37	30.10	34.19	54.00	-19.81	Horizontal		
4824.00	38.11	31.79	5.34	24.07	51.17	54.00	-2.83	Horizontal		
7236.00	29.15	36.19	6.88	26.44	45.78	54.00	-8.22	Horizontal		
9648.00	19.57	38.07	8.96	25.36	41.24	54.00	-12.76	Horizontal		
12060.00	18.06	39.05	10.35	25.15	42.31	54.00	-11.69	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		
1754.00	43.85	25.09	2.61	28.59	42.96	74.00	-31.04	Vertical		
4874.00	40.71	31.85	5.40	24.01	53.95	74.00	-20.05	Vertical		
7311.00	33.32	36.37	6.90	26.58	50.01	74.00	-23.99	Vertical		
9688.00	28.05	38.13	8.98	25.34	49.82	74.00	-24.18	Vertical		
12185.00	24.25	38.92	10.38	25.04	48.51	74.00	-25.49	Vertical		
14622.00	25.15	42.33	11.91	24.45	54.94	74.00	-19.06	Vertical		
1754.00	44.51	25.09	2.61	28.59	43.62	74.00	-30.38	Horizontal		
4874.00	43.99	31.85	5.40	24.01	57.23	74.00	-16.77	Horizontal		
7311.00	29.07	36.37	6.90	26.58	45.76	74.00	-28.24	Horizontal		
9688.00	25.38	38.13	8.98	25.34	47.15	74.00	-26.85	Horizontal		
12185.00	26.39	38.92	10.38	25.04	50.65	74.00	-23.35	Horizontal		
14622.00	23.49	42.33	11.91	24.45	53.28	74.00	-20.72	Horizontal		

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		
1754.00	29.59	25.09	2.61	28.59	28.70	54.00	-25.30	Vertical		
4874.00	28.71	31.85	5.40	24.01	41.95	54.00	-12.05	Vertical		
7311.00	20.48	36.37	6.90	26.58	37.17	54.00	-16.83	Vertical		
9688.00	17.67	38.13	8.98	25.34	39.44	54.00	-14.56	Vertical		
12185.00	18.22	38.92	10.38	25.04	42.48	54.00	-11.52	Vertical		
14622.00	16.71	42.33	11.91	24.45	46.50	54.00	-7.50	Vertical		
1754.00	29.14	25.09	2.61	28.59	28.25	54.00	-25.75	Horizontal		
4874.00	29.15	31.85	5.40	24.01	42.39	54.00	-11.61	Horizontal		
7311.00	25.92	36.37	6.90	26.58	42.61	54.00	-11.39	Horizontal		
9688.00	18.11	38.13	8.98	25.34	39.88	54.00	-14.12	Horizontal		
12185.00	15.66	38.92	10.38	25.04	39.92	54.00	-14.08	Horizontal		
14622.00	17.15	42.33	11.91	24.45	46.94	54.00	-7.06	Horizontal		



Report No: GTSE11030013401

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		
1648.00	42.79	24.87	2.55	27.09	43.12	74.00	-30.88	Vertical		
2483.50	37.1	27.53	3.49	29.93	38.19	74.00	-35.81	Vertical		
2500.00	46.65	27.55	3.52	30.70	47.02	74.00	-26.98	Vertical		
4924.00	51.27	31.89	5.46	23.96	64.66	74.00	-9.34	Vertical		
7386.00	34.86	36.49	6.93	26.79	51.49	74.00	-22.51	Vertical		
12310.00	27.86	38.83	10.41	24.90	52.20	74.00	-21.80	Vertical		
14772.00	25.47	41.82	12.18	24.52	54.95	74.00	-19.05	Vertical		
1648.00	45.49	24.87	2.55	27.09	45.82	74.00	-28.18	Horizontal		
2483.50	48	27.53	3.49	29.93	49.09	74.00	-24.91	Horizontal		
2500.00	52.58	27.55	3.52	30.70	52.95	74.00	-21.05	Horizontal		
4924.00	41.28	31.89	5.46	23.96	54.67	74.00	-19.33	Horizontal		
7386.00	29.09	36.49	6.93	26.79	45.72	74.00	-28.28	Horizontal		
12310.00	26.66	38.83	10.41	24.90	51.00	74.00	-23.00	Horizontal		
14772.00	22.74	41.82	12.18	24.52	52.22	74.00	-21.78	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		
1648.00	31.79	24.87	2.55	27.09	32.12	54.00	-21.88	Vertical		
2483.50	37.19	27.53	3.49	29.93	38.28	54.00	-15.72	Vertical		
2500.00	36.45	27.55	3.52	30.70	36.82	54.00	-17.18	Vertical		
4924.00	32.86	31.89	5.46	23.96	46.25	54.00	-7.75	Vertical		
7386.00	22.09	36.49	6.93	26.79	38.72	54.00	-15.28	Vertical		
12310.00	19.46	38.83	10.41	24.90	43.80	54.00	-10.20	Vertical		
14772.00	17.44	41.82	12.18	24.52	46.92	54.00	-7.08	Vertical		
1648.00	30.11	24.87	2.55	27.09	30.44	54.00	-23.56	Horizontal		
2483.50	35.24	27.53	3.49	29.93	36.33	54.00	-17.67	Horizontal		
2500.00	31.63	27.55	3.52	30.70	32.00	54.00	-22.00	Horizontal		
4924.00	24.17	31.89	5.46	23.96	37.56	54.00	-16.44	Horizontal		
7386.00	27.53	36.49	6.93	26.79	44.16	54.00	-9.84	Horizontal		
12310.00	20.03	38.83	10.41	24.90	44.37	54.00	-9.63	Horizontal		
14772.00	18.14	41.82	12.18	24.52	47.62	54.00	-6.38	Horizontal		

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		
1725.00	44.94	25.02	2.59	28.36	44.19	74.00	-29.81	Vertical		
2390.00	46.79	27.59	3.33	30.10	47.61	74.00	-26.39	Vertical		
2400.00	50.44	27.58	3.37	30.10	51.29	74.00	-22.71	Vertical		
4844.00	42.41	31.82	5.36	24.05	55.54	74.00	-18.46	Vertical		
7266.00	28.53	36.28	6.89	26.51	45.19	74.00	-28.81	Vertical		
12110.00	25.85	38.98	10.37	25.11	50.09	74.00	-23.91	Vertical		
14532.00	23.77	42.55	11.78	24.38	53.72	74.00	-20.28	Vertical		
1725.00	48.44	25.02	2.59	28.36	47.69	74.00	-26.31	Horizontal		
2390.00	48.23	27.59	3.33	30.10	49.05	74.00	-24.95	Horizontal		
2400.00	51.82	27.58	3.37	30.10	52.67	74.00	-21.33	Horizontal		
4844.00	44.15	31.82	5.36	24.05	57.28	74.00	-16.72	Horizontal		
7266.00	29.79	36.28	6.89	26.51	46.45	74.00	-27.55	Horizontal		
12110.00	27.05	38.98	10.37	25.11	51.29	74.00	-22.71	Horizontal		
14532.00	24.91	42.55	11.78	24.38	54.86	74.00	-19.14	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		
1725.00	31.82	25.02	2.59	28.36	31.07	54.00	-22.93	Vertical		
2390.00	30.06	27.59	3.33	30.10	30.88	54.00	-23.12	Vertical		
2400.00	36.02	27.58	3.37	30.10	36.87	54.00	-17.13	Vertical		
4844.00	22.68	31.82	5.36	24.05	35.81	54.00	-18.19	Vertical		
7266.00	20.87	36.28	6.89	26.51	37.53	54.00	-16.47	Vertical		
12110.00	17.88	38.98	10.37	25.11	42.12	54.00	-11.88	Vertical		
14532.00	16.4	42.55	11.78	24.38	46.35	54.00	-7.65	Vertical		
1725.00	30.67	25.02	2.59	28.36	29.92	54.00	-24.08	Horizontal		
2390.00	30.84	27.59	3.33	30.10	31.66	54.00	-22.34	Horizontal		
2400.00	36.73	27.58	3.37	30.10	37.58	54.00	-16.42	Horizontal		
4844.00	31.65	31.82	5.36	24.05	44.78	54.00	-9.22	Horizontal		
7266.00	21.44	36.28	6.89	26.51	38.10	54.00	-15.90	Horizontal		
12110.00	18.38	38.98	10.37	25.11	42.62	54.00	-11.38	Horizontal		
14532.00	16.83	42.55	11.78	24.38	46.78	54.00	-7.22	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		
1754.00	47.09	25.09	2.61	28.59	46.20	74.00	-27.80	Vertical		
4874.00	41.21	31.85	5.40	24.01	54.45	74.00	-19.55	Vertical		
7311.00	31.01	36.37	6.90	26.58	47.70	74.00	-26.30	Vertical		
9688.00	27.5	38.13	8.98	25.34	49.27	74.00	-24.73	Vertical		
12185.00	28.69	38.92	10.38	25.04	52.95	74.00	-21.05	Vertical		
14622.00	25.97	42.33	11.91	24.45	55.76	74.00	-18.24	Vertical		
1754.00	46.3	25.09	2.61	28.59	45.41	74.00	-28.59	Horizontal		
4874.00	44.25	31.85	5.40	24.01	57.49	74.00	-16.51	Horizontal		
7311.00	31.24	36.37	6.90	26.58	47.93	74.00	-26.07	Horizontal		
9688.00	27.74	38.13	8.98	25.34	49.51	74.00	-24.49	Horizontal		
12185.00	28.94	38.92	10.38	25.04	53.20	74.00	-20.80	Horizontal		
14622.00	26.23	42.33	11.91	24.45	56.02	74.00	-17.98	Horizontal		

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		
1754.00	30.81	25.09	2.61	28.59	29.92	54.00	-24.08	Vertical		
4874.00	25.3	31.85	5.40	24.01	38.54	54.00	-15.46	Vertical		
7311.00	20.91	36.37	6.90	26.58	37.60	54.00	-16.40	Vertical		
9688.00	17.99	38.13	8.98	25.34	39.76	54.00	-14.24	Vertical		
12185.00	19.77	38.92	10.38	25.04	44.03	54.00	-9.97	Vertical		
14622.00	17.64	42.33	11.91	24.45	47.43	54.00	-6.57	Vertical		
1754.00	29.8	25.09	2.61	28.59	28.91	54.00	-25.09	Horizontal		
4874.00	28.99	31.85	5.40	24.01	42.23	54.00	-11.77	Horizontal		
7311.00	20.7	36.37	6.90	26.58	37.39	54.00	-16.61	Horizontal		
9688.00	17.68	38.13	8.98	25.34	39.45	54.00	-14.55	Horizontal		
12185.00	19.36	38.92	10.38	25.04	43.62	54.00	-10.38	Horizontal		
14622.00	17.13	42.33	11.91	24.45	46.92	54.00	-7.08	Horizontal		



Report No: GTSE11030013401

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		
1954.00	45.92	25.95	2.74	30.69	43.92	74.00	-30.08	Vertical		
2483.50	48.8	27.53	3.49	29.93	49.89	74.00	-24.11	Vertical		
2500.00	46.13	27.55	3.52	30.70	46.50	74.00	-27.50	Vertical		
4904.00	40.74	31.88	5.42	23.97	54.07	74.00	-19.93	Vertical		
7356.00	30.91	36.45	6.92	26.70	47.58	74.00	-26.42	Vertical		
9748.00	28.82	38.27	9.00	25.30	50.79	74.00	-23.21	Vertical		
12260.00	27.87	38.86	10.40	24.97	52.16	74.00	-21.84	Vertical		
14712.00	25.48	42.08	12.07	24.50	55.13	74.00	-18.87	Vertical		
1954.00	47.56	25.95	2.74	30.69	45.56	74.00	-28.44	Horizontal		
2483.50	50.3	27.53	3.49	29.93	51.39	74.00	-22.61	Horizontal		
2500.00	47.49	27.55	3.52	30.70	47.86	74.00	-26.14	Horizontal		
4904.00	44.31	31.88	5.42	23.97	57.64	74.00	-16.36	Horizontal		
7356.00	31.99	36.45	6.92	26.70	48.66	74.00	-25.34	Horizontal		
9748.00	29.76	38.27	9.00	25.30	51.73	74.00	-22.27	Horizontal		
12260.00	28.67	38.86	10.40	24.97	52.96	74.00	-21.04	Horizontal		
14712.00	25.84	42.08	12.07	24.50	55.49	74.00	-18.51	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		
1954.00	32.78	25.95	2.74	30.69	30.78	54.00	-23.22	Vertical		
2483.50	39.34	27.53	3.49	29.93	40.43	54.00	-13.57	Vertical		
2500.00	38.45	27.55	3.52	30.70	38.82	54.00	-15.18	Vertical		
4904.00	25.58	31.88	5.42	23.97	38.91	54.00	-15.09	Vertical		
7356.00	22.07	36.45	6.92	26.70	38.74	54.00	-15.26	Vertical		
9748.00	20.2	38.27	9.00	25.30	42.17	54.00	-11.83	Vertical		
12260.00	19.47	38.86	10.40	24.97	43.76	54.00	-10.24	Vertical		
14712.00	15.3	42.08	12.07	24.50	44.95	54.00	-9.05	Vertical		
1954.00	28.96	25.95	2.74	30.69	26.96	54.00	-27.04	Horizontal		
2483.50	38.55	27.53	3.49	29.93	39.64	54.00	-14.36	Horizontal		
2500.00	37.69	27.55	3.52	30.70	38.06	54.00	-15.94	Horizontal		
4904.00	31.23	31.88	5.42	23.97	44.56	54.00	-9.44	Horizontal		
7356.00	22.55	36.45	6.92	26.70	39.22	54.00	-14.78	Horizontal		
9748.00	20.86	38.27	9.00	25.30	42.83	54.00	-11.17	Horizontal		
12260.00	20.31	38.86	10.40	24.97	44.60	54.00	-9.40	Horizontal		
14712.00	16.32	42.08	12.07	24.50	45.97	54.00	-8.03	Horizontal		