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Report No.: FCC13-RTE052901
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FCC REPORT

Applicant: Shenzhen Delux Industry Co., Ltd.

Address of Applicant: Delux Industry Park, Lanzhu Street New Pingshan District, Shenzhen City, Guangdong Province, China

Equipment Under Test (EUT)

Product Name: WIFI iData

Model No.: iU-01W

Trade mark: DELUX

FCC ID: SGPIU01W01

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247:2012

Date of sample receipt: May 17, 2013

Date of Test: May 17-28, 2013

Date of report issued: May 29, 2013

Test Result : PASS *

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

Authorized Signature:



Kevin Yu
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 EBO 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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2 Version

Version No.	Date	Description
00	May 29, 2013	Original

Prepared By:**Date:**

May 29, 2013

Project Engineer**Check By:****Date:**

May 29, 2013

Reviewer

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4 Test Summary

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

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

5 General Information

5.1 Client Information

Applicant:	Shenzhen Delux Industry Co., Ltd.
Address of Applicant:	Delux Industry Park, Lanzhu Street New Pingshan District, Shenzhen City, Guangdong Province, China
Manufacturer:	Shenzhen Delux Industry Co., Ltd.
Address of Manufacturer:	Delux Industry Park, Lanzhu Street New Pingshan District, Shenzhen City, Guangdong Province, China

5.2 General Description of EUT

Product Name:	WIFI iData
Model No.:	iU-01W
Operation Frequency:	2412MHz~2462MHz (802.11b/802.11g/802.11n(H20)) 2422MHz~2452MHz (802.11n(H40))
Channel numbers:	11 for 802.11b/802.11g /802.11n(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)
Antenna Type:	Integral
Antenna gain:	2dBi (declare by Applicant)
Power supply:	DC 3.7V Li-ion Battery

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

Note:

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

802.11b/802.11g/ 802.11n(H20)

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

802.11n(H40)

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

5.3 Test mode

Transmitting mode	Keep the EUT in transmitting mode.
<i>Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.</i>	

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

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

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

Final Test Mode:

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

5.4 Test Facility

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

• CNAS —Registration No.: CNAS L5775

CNAS has accredited Global United Technology Services Co., Ltd. to ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• 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 out files. Registration 600491, July 20, 2010.

• Industry Canada (IC)

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

5.5 Test Location

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

5.6 Other Information Requested by the Customer

None.

5.7 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
HP	Printer	CB495A	05257893	DoC
Lenovo	PC Host	M6900	EA05257893	DoC
DELL	MONITOR	E178FPC	N/A	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC

5.8 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 29 2013	Mar. 28 2015
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	Spectrum Analyzer	Agilent	E4440A	GTS533	Dec. 6, 2012	Dec. 5, 2013
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 03 2012	Jul. 02 2013
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 24 2013	Feb. 23 2014
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	Mar. 09 2013	Mar. 08 2014
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 29 2013	Mar. 28 2014
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 30 2013	Mar. 29 2014
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 30 2013	Mar. 29 2014
11	Coaxial cable	GTS	N/A	GTS210	Mar. 30 2013	Mar. 29 2014
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 30 2013	Mar. 29 2014
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 03 2012	Jul. 02 2013
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 03 2012	Jul. 02 2013
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 29 2012	June 28 2013
16	Band filter	Amindeon	82346	GTS219	Mar. 30 2013	Mar. 29 2014

Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS264	Sep. 08 2011	Sep. 07 2013
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jul. 03 2012	Jul. 02 2013
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jul. 03 2012	Jul. 02 2013
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jul. 03 2012	Jul. 02 2013
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jul. 03 2012	Jul. 02 2013
6	Coaxial Cable	GTS	N/A	GTS227	Jul. 03 2012	Jul. 02 2013
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	Barometer	ChangChun	DYM3	GTS257	July 10 2012	July 09 2013

6 Test results and Measurement Data

6.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
15.247(c) (1)(i) requirement: (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.	
E.U.T Antenna: <i>The antenna is Integral antenna, the best case gain of the antenna is 2dBi</i>	

6.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207		
Test Method:	ANSI C63.4:2003		
Test Frequency Range:	150KHz to 30MHz		
Class / Severity:			
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50

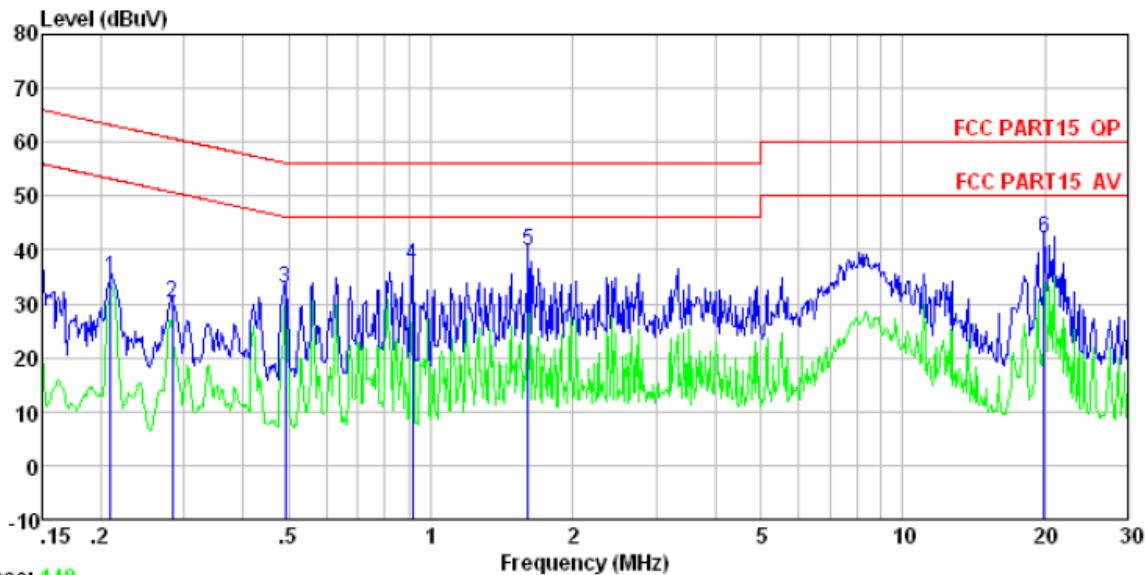
* Decreases with the logarithm of the frequency.

Test setup:	Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m		
Test procedure:	- The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides 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 refer 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.		
Test Instruments:	Refer to section 5.8 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Pass		

Measurement data:

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Line:



Trace: 148

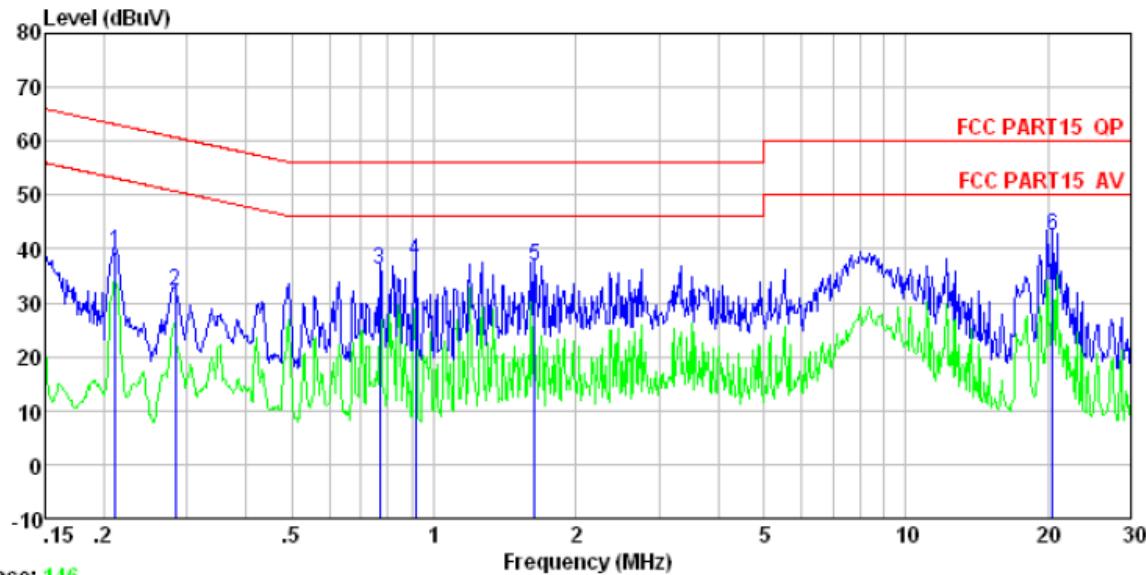
Condition : FCC PART15 QP LISN-2012 LINE

Job No. : 0693RF

Test mode : WiFi mode

Test Engineer: Yang

	Read Freq	LISN Level	Cable Factor	Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV		dB	dBuV	dBuV	dB	
1	0.209	34.92	-0.23	0.10	34.79	63.23	-28.44	QP
2	0.283	30.33	-0.22	0.10	30.21	60.72	-30.51	QP
3	0.491	33.05	-0.21	0.10	32.94	56.14	-23.20	QP
4	0.914	37.19	-0.21	0.10	37.08	56.00	-18.92	QP
5	1.610	39.83	-0.23	0.10	39.70	56.00	-16.30	QP
6	19.950	42.72	-0.63	0.21	42.30	60.00	-17.70	QP

Neutral:

Condition : FCC PART15 QP LISN-2012 NEUTRAL

Job No. : 0693RF

Test mode : WiFi mode

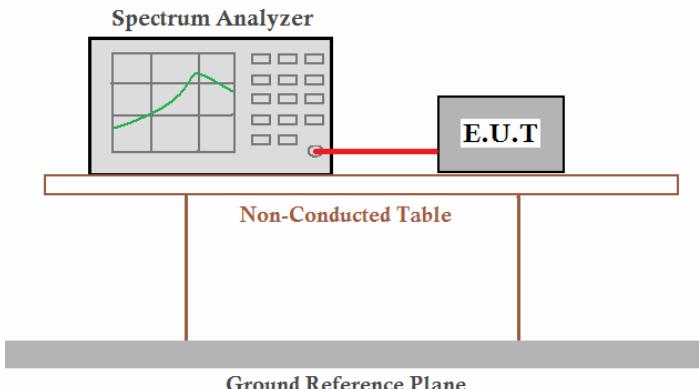
Test Engineer: Yang

	Read Freq	LISN Level	Cable Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV		dB	dB	dBuV	dB	
1	0.212	39.43	-0.09	0.10	39.44	63.14	-23.70	QP
2	0.283	32.06	-0.09	0.10	32.07	60.72	-28.65	QP
3	0.767	36.27	-0.08	0.10	36.29	56.00	-19.71	QP
4	0.914	37.75	-0.09	0.10	37.76	56.00	-18.24	QP
5	1.636	36.90	-0.10	0.10	36.90	56.00	-19.10	QP
6	20.486	42.95	-0.54	0.21	42.62	60.00	-17.38	QP

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

6.3 Conducted Peak Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V02
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

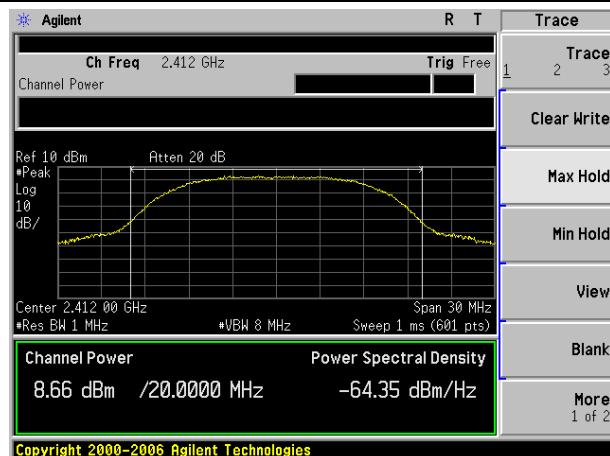
Measurement Data

Test CH	Peak Output Power (dBm)				Limit(dBm)	Result
	802.11b	802.11g	802.11n(H20)	802.11n(H40)		
Lowest	8.66	8.50	8.37	8.15	30.00	Pass
Middle	8.05	8.44	8.23	8.07		
Highest	8.07	8.48	7.88	8.03		

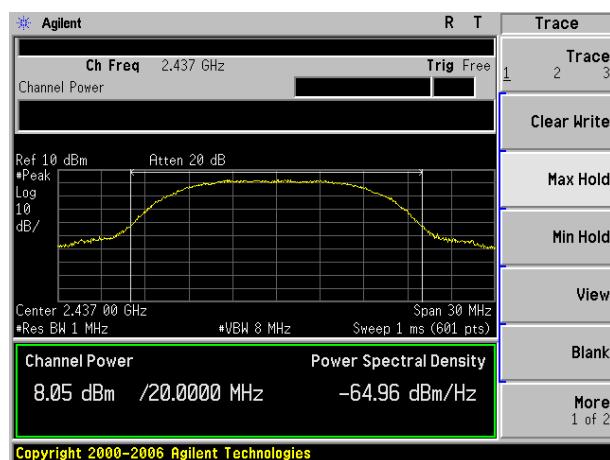
Test plot as follows:

Test mode:

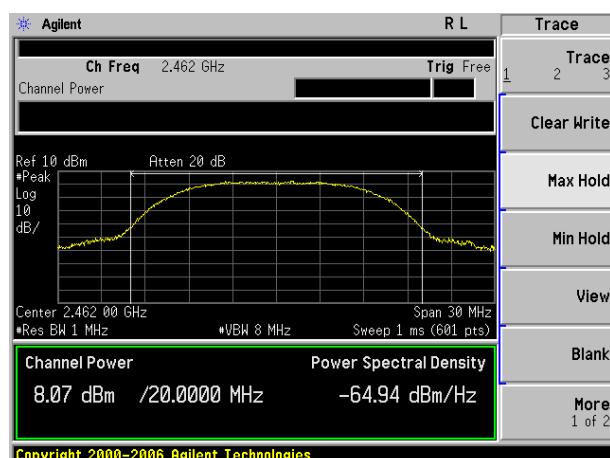
802.11b



Lowest channel



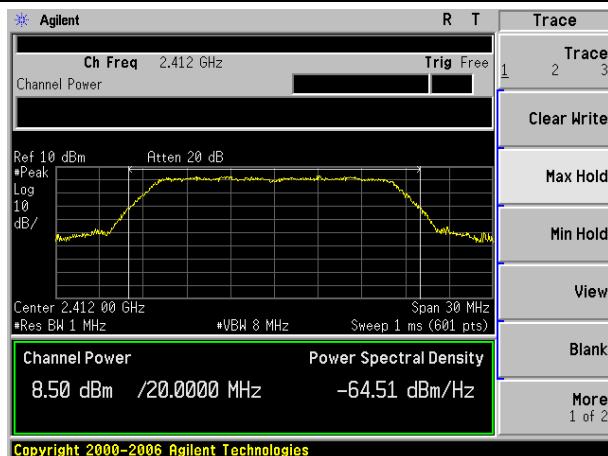
Middle channel



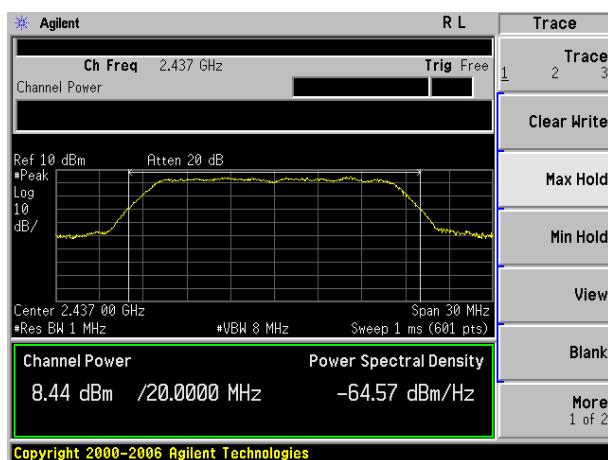
Highest channel

Test mode:

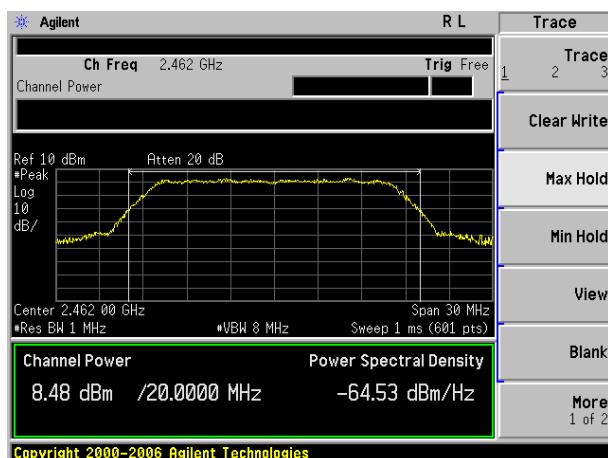
802.11g



Lowest channel



Middle channel



Highest channel

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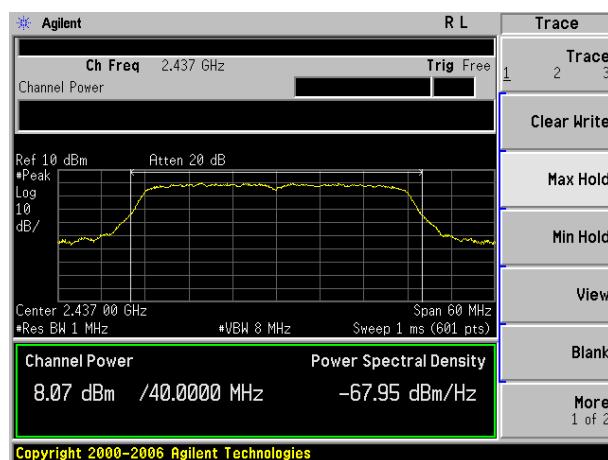


Test mode:

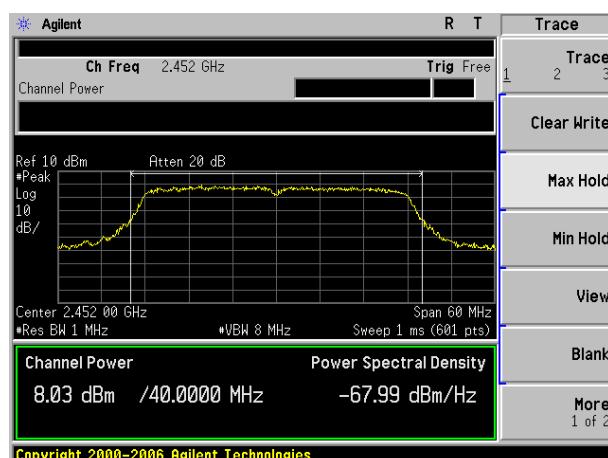
802.11n(HT40)



Lowest channel

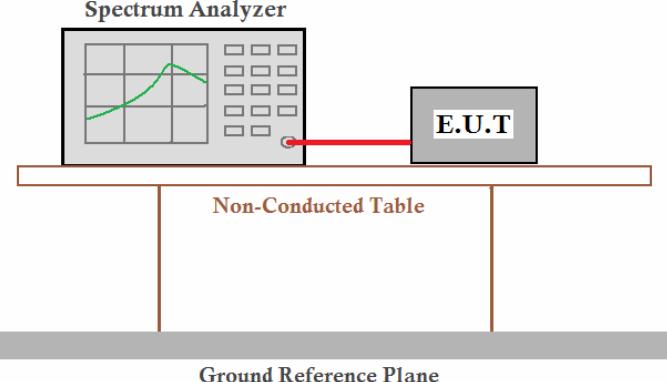


Middle channel



Highest channel

6.4 Channel Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)		
Test Method:	ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V02		
Limit:	>500KHz		
Test setup:			
Test Instruments:	Refer to section 5.8 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Pass		

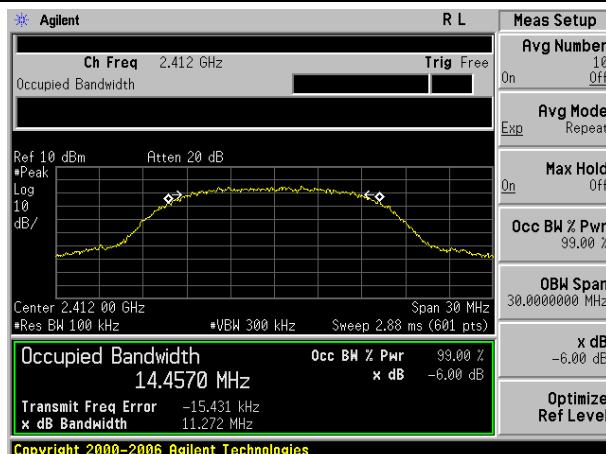
Measurement Data

Test CH	Emission Bandwidth (MHz)				Limit(KHz)	Result
	802.11b	802.11g	802.11n(H20)	802.11n(H40)		
Lowest	11.272	16.520	17.720	36.347		
Middle	11.313	16.506	17.679	36.355		
Highest	11.278	16.502	17.652	36.074		

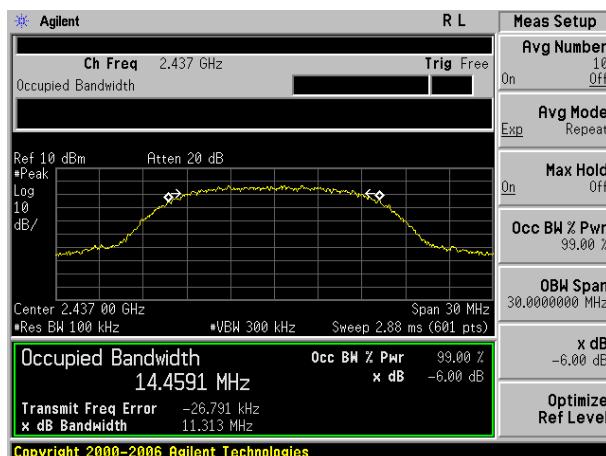
Test plot as follows:

Test mode:

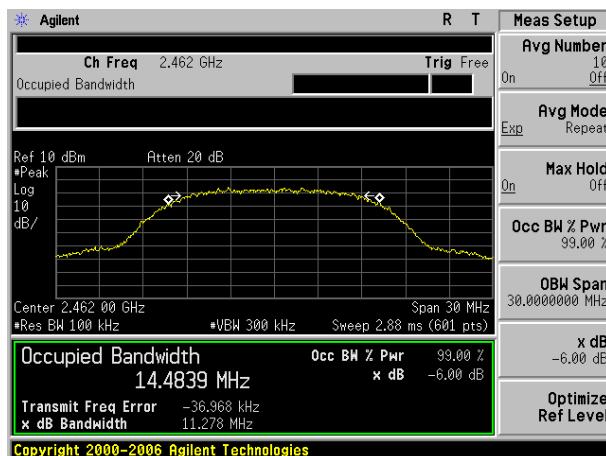
802.11b



Lowest channel



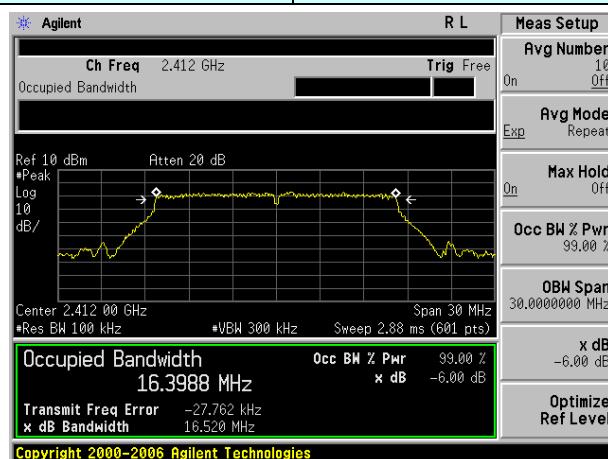
Middle channel



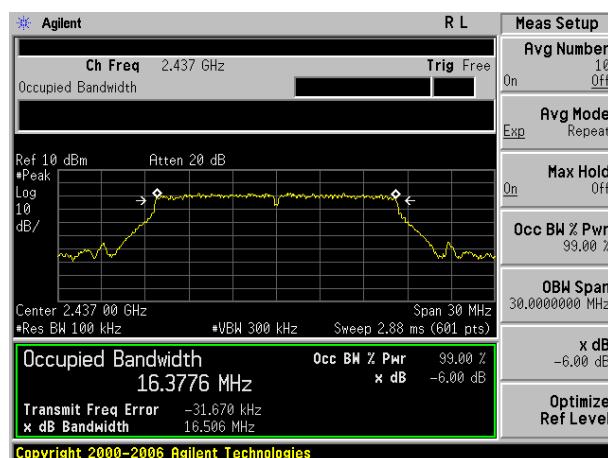
Highest channel

Test mode:

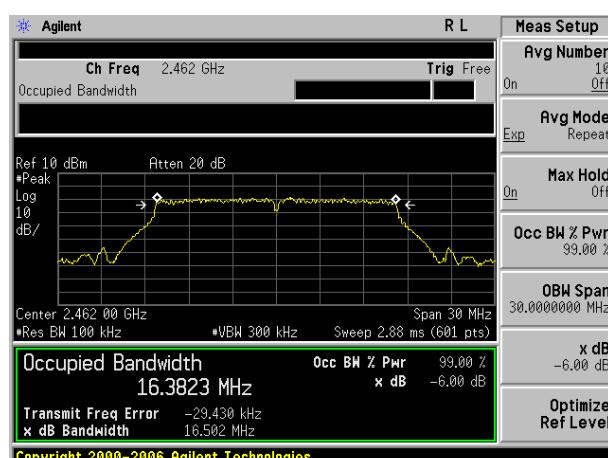
802.11g



Lowest channel



Middle channel

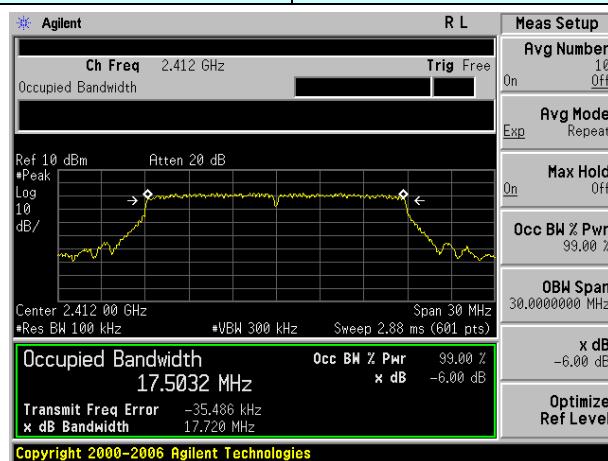


Highest channel

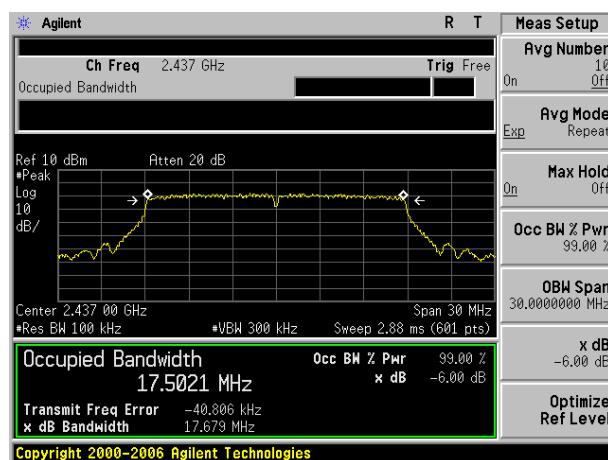
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Test mode:

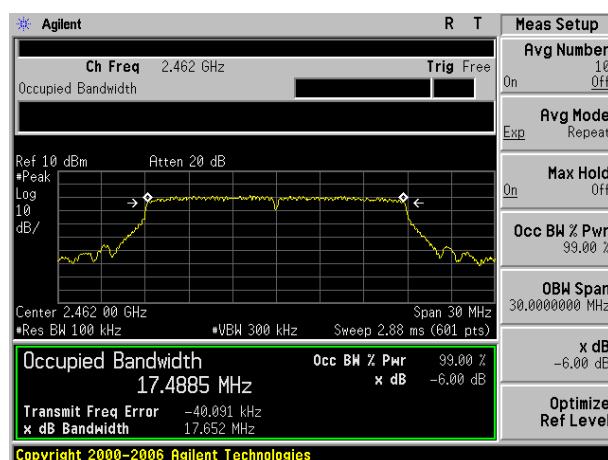
802.11n(HT20)



Lowest channel



Middle channel

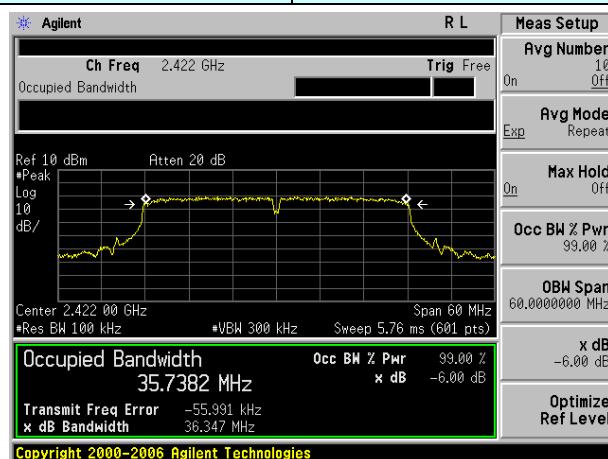


Highest channel

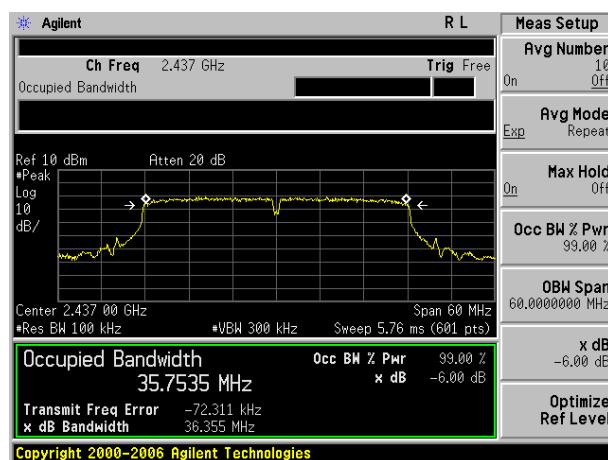
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Test mode:

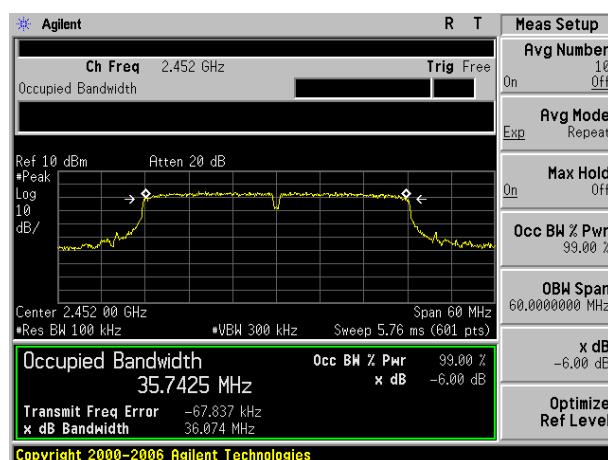
802.11n(HT40)



Lowest channel



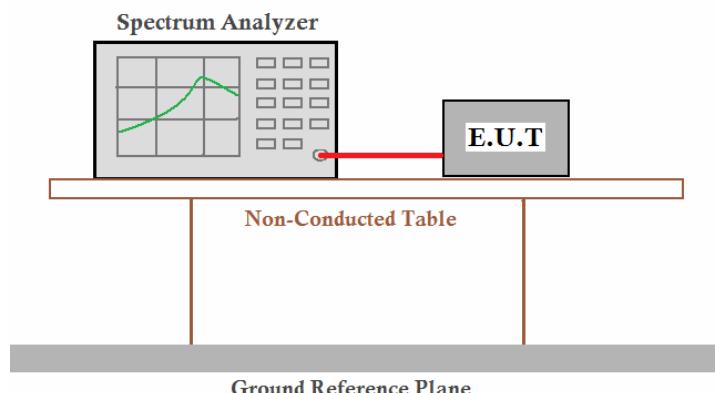
Middle channel



Highest channel

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6.5 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V02
Limit:	8dBm
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

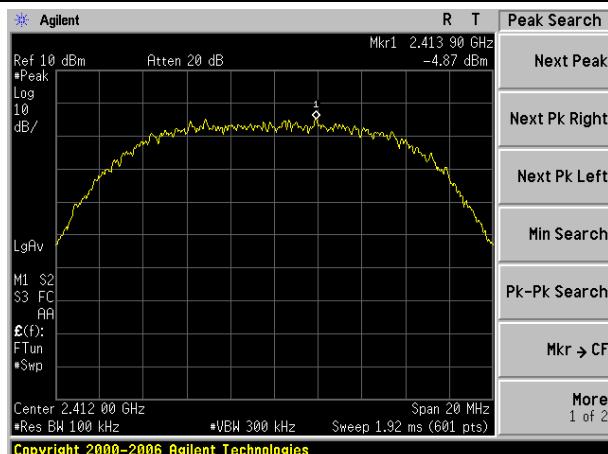
Measurement Data

Test CH	Power Spectral Density (dBm)				Limit (dBm/3kHz)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	-4.87	-6.77	-6.65	-10.66	8.00	Pass
Middle	-5.21	-6.95	-6.67	-10.24		
Highest	-5.88	-7.68	-7.54	-10.73		

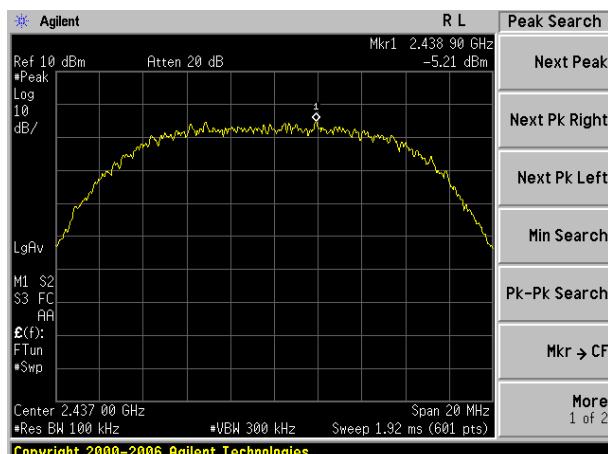
Test plot as follows:

Test mode:

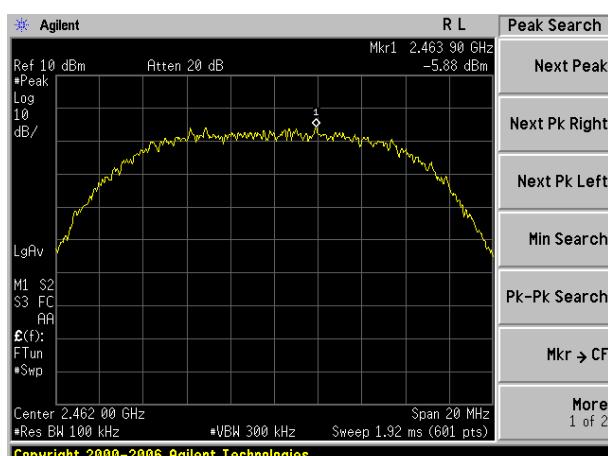
802.11b



Lowest channel



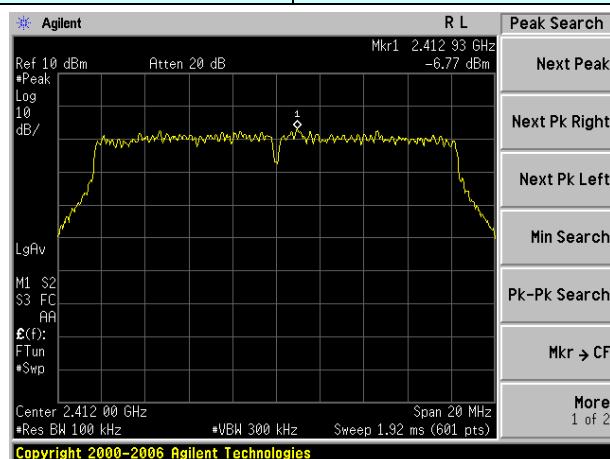
Middle channel



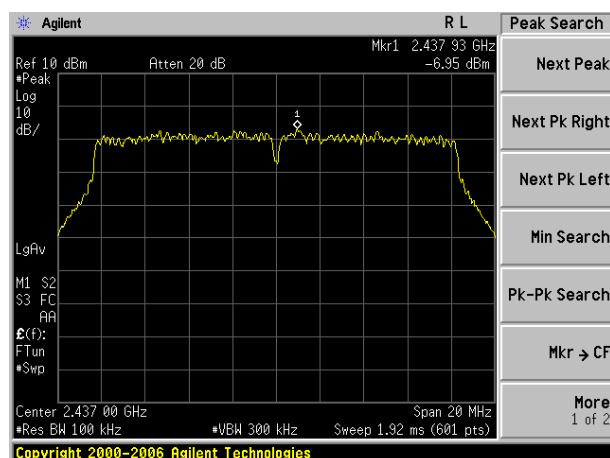
Highest channel

Test mode:

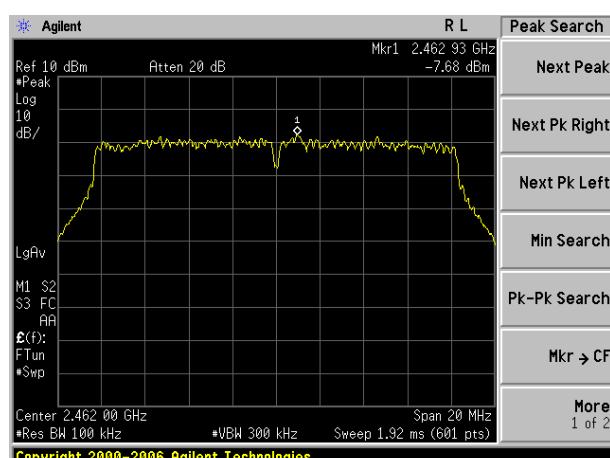
802.11g



Lowest channel



Middle channel

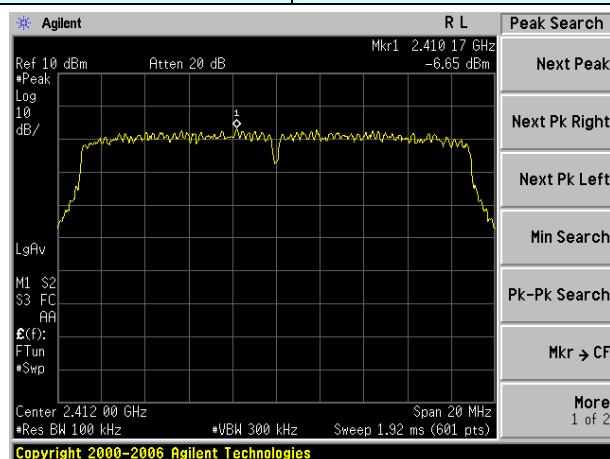


Highest channel

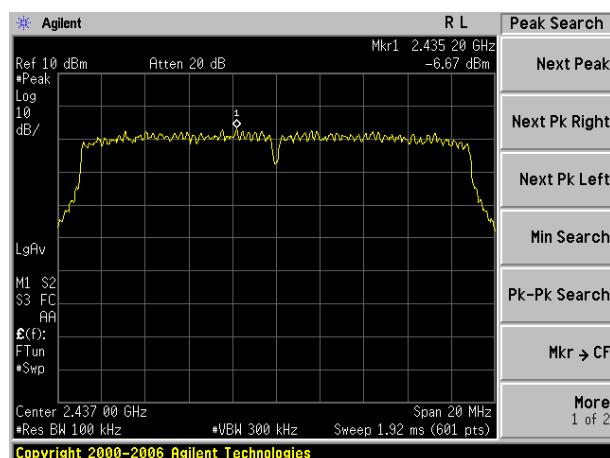
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Test mode:

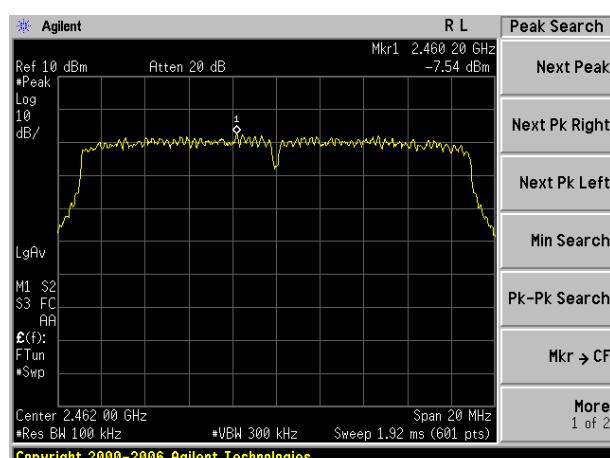
802.11n(HT20)



Lowest channel



Middle channel

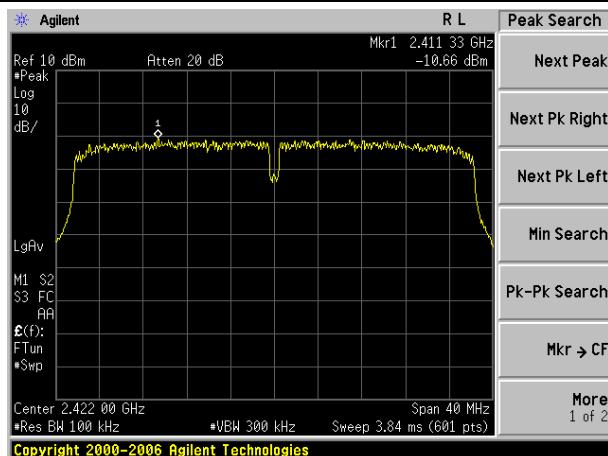


Highest channel

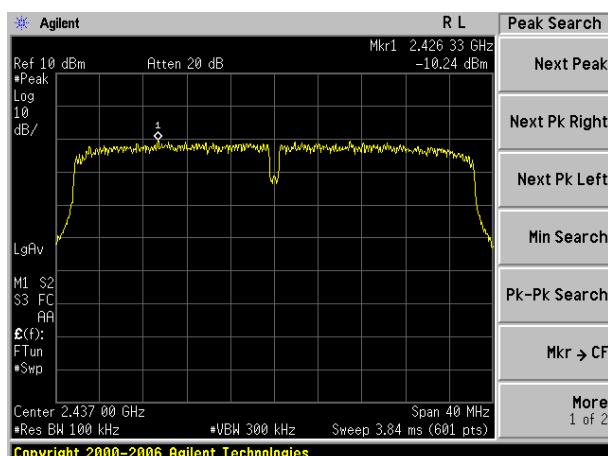
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Test mode:

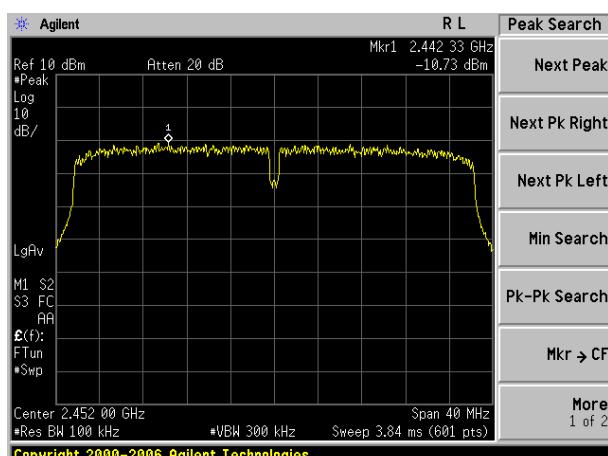
802.11n(HT40)



Lowest channel



Middle channel

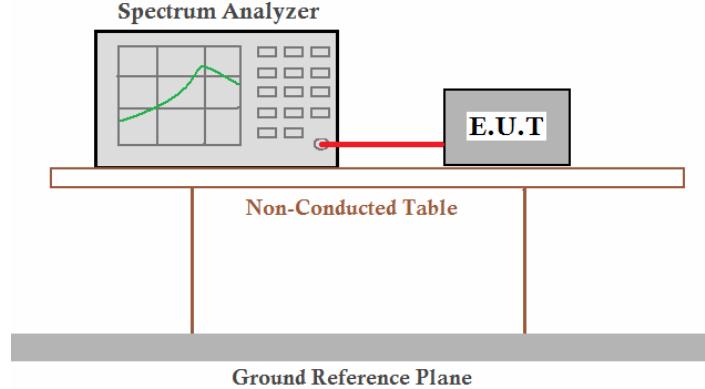


Highest channel

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6.6 Band edges

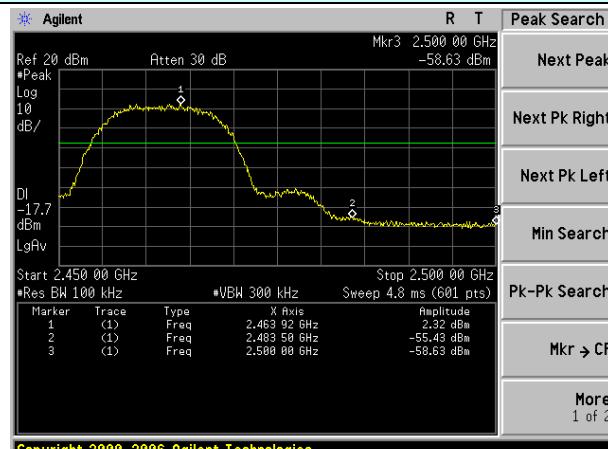
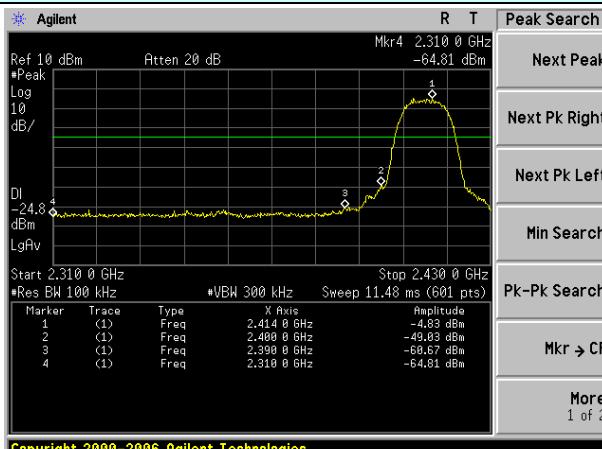
6.6.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V02
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Test plot as follows:

Test mode:

802.11b

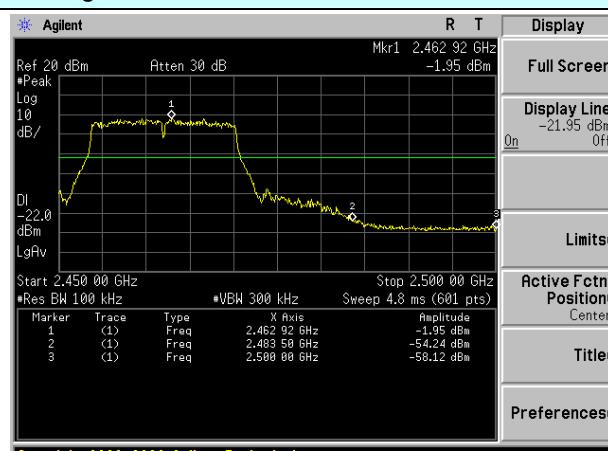
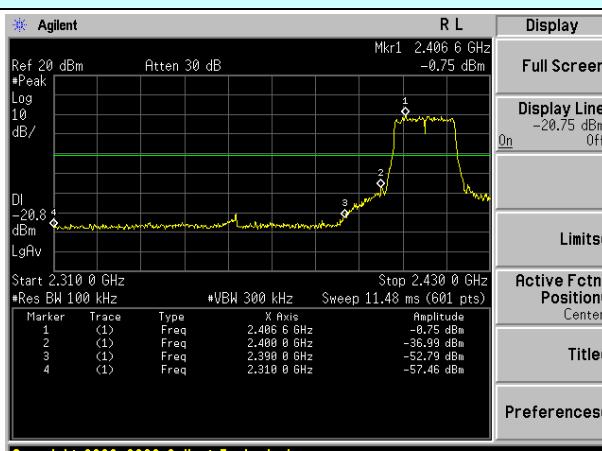


Lowest channel

Highest channel

Test mode:

802.11g

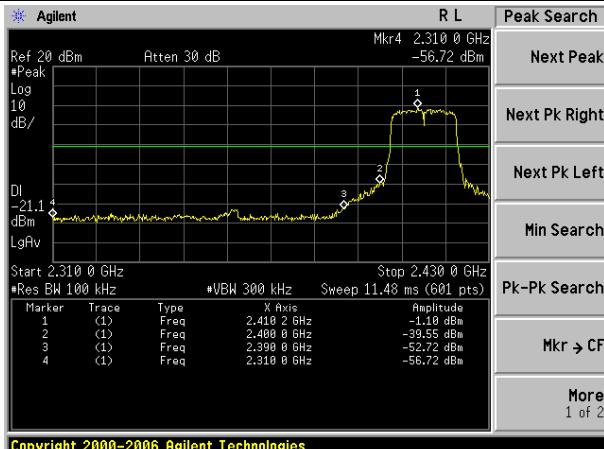


Lowest channel

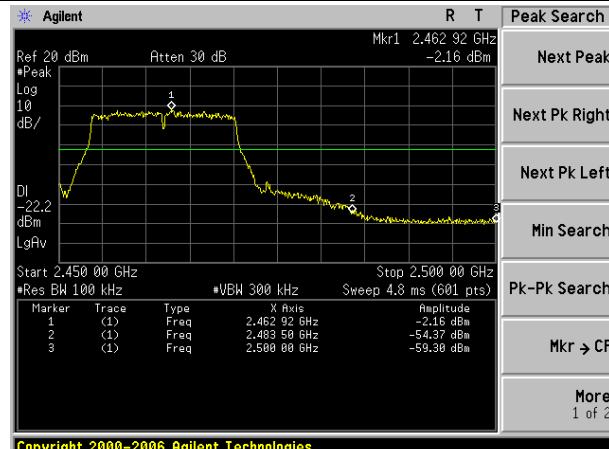
Highest channel

Test mode:

802.11n(HT20)



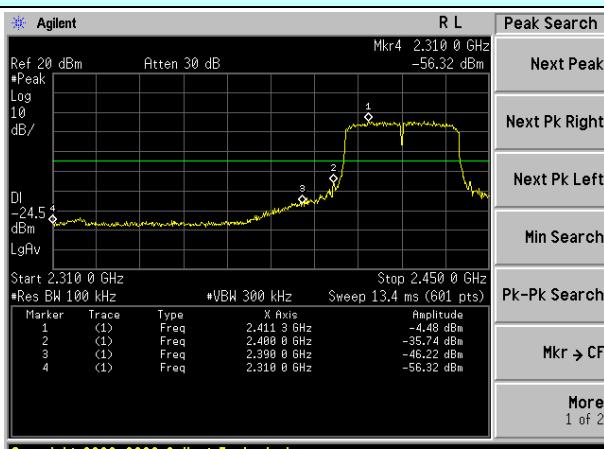
Lowest channel



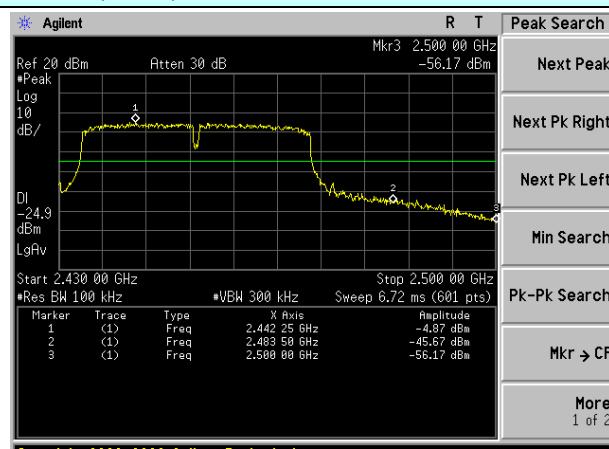
Highest channel

Test mode:

802.11n(HT40)



Lowest channel



Highest channel

6.6.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205								
Test Method:	ANSI C63.4: 2003								
Test Frequency Range:	30MHz to 25GHz, only worse case is reported								
Test site:	Measurement Distance: 3m								
Receiver setup:	Frequency	Detector	RBW	VBW	Remark				
	Above 1GHz	Peak	1MHz	3MHz	Peak Value				
		Peak	1MHz	10Hz	Average Value				
Limit:	Frequency	Limit (dBuV/m @3m)		Remark					
	Above 1GHz	54.00		Average Value					
		74.00		Peak Value					
Test setup:									
Test Procedure:	<ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. 								
Test Instruments:	Refer to section 5.8 for details								
Test mode:	Refer to section 5.3 for details								
Test results:	Pass								

Remark:

Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the X-axis which it is worse case.

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Measurement data:

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	48.37	27.59	5.38	30.18	51.16	74.00	-22.84	Horizontal
2400.00	65.37	27.58	5.39	30.18	68.16	74.00	-5.84	Horizontal
2390.00	49.81	27.59	5.38	30.18	52.60	74.00	-21.40	Vertical
2400.00	67.36	27.58	5.39	30.18	70.15	74.00	-3.85	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	35.94	27.59	5.38	30.18	38.73	54.00	-15.27	Horizontal
2400.00	47.86	27.58	5.39	30.18	50.65	54.00	-3.35	Horizontal
2390.00	37.49	27.59	5.38	30.18	40.28	54.00	-13.72	Vertical
2400.00	49.54	27.58	5.39	30.18	52.33	54.00	-1.67	Vertical

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	47.82	27.53	5.47	29.93	50.89	74.00	-23.11	Horizontal
2500.00	44.48	27.55	5.49	29.93	47.59	74.00	-26.41	Horizontal
2483.50	49.46	27.53	5.47	29.93	52.53	74.00	-21.47	Vertical
2500.00	46.41	27.55	5.49	29.93	49.52	74.00	-24.48	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	35.88	27.53	5.47	29.93	38.95	54.00	-15.05	Horizontal
2500.00	32.45	27.55	5.49	29.93	35.56	54.00	-18.44	Horizontal
2483.50	37.53	27.53	5.47	29.93	40.60	54.00	-13.40	Vertical
2500.00	34.17	27.55	5.49	29.93	37.28	54.00	-16.72	Vertical

Remark:

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

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	59.74	27.59	5.38	30.18	62.53	74.00	-11.47	Horizontal
2400.00	67.44	27.58	5.39	30.18	70.23	74.00	-3.77	Horizontal
2390.00	61.38	27.59	5.38	30.18	64.17	74.00	-9.83	Vertical
2400.00	69.37	27.58	5.39	30.18	72.16	74.00	-1.84	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	40.71	27.59	5.38	30.18	43.50	54.00	-10.50	Horizontal
2400.00	47.11	27.58	5.39	30.18	49.90	54.00	-4.10	Horizontal
2390.00	42.36	27.59	5.38	30.18	45.15	54.00	-8.85	Vertical
2400.00	48.83	27.58	5.39	30.18	51.62	54.00	-2.38	Vertical

Test mode:	802.11g	Test channel:	Highest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	64.94	27.53	5.47	29.93	68.01	74.00	-5.99	Horizontal
2500.00	46.54	27.55	5.49	29.93	49.65	74.00	-24.35	Horizontal
2483.50	66.58	27.53	5.47	29.93	69.65	74.00	-4.35	Vertical
2500.00	48.47	27.55	5.49	29.93	51.58	74.00	-22.42	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	39.28	27.53	5.47	29.93	42.35	54.00	-11.65	Horizontal
2500.00	32.98	27.55	5.49	29.93	36.09	54.00	-17.91	Horizontal
2483.50	40.93	27.53	5.47	29.93	44.00	54.00	-10.00	Vertical
2500.00	34.70	27.55	5.49	29.93	37.81	54.00	-16.19	Vertical

Remark:

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

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Test mode:	802.11n(H20)	Test channel:	Lowest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	61.09	27.59	5.38	30.18	63.88	74.00	-10.12	Horizontal
2400.00	67.71	27.58	5.39	30.18	70.50	74.00	-3.50	Horizontal
2390.00	62.73	27.59	5.38	30.18	65.52	74.00	-8.48	Vertical
2400.00	69.64	27.58	5.39	30.18	72.43	74.00	-1.57	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	39.94	27.59	5.38	30.18	42.73	54.00	-11.27	Horizontal
2400.00	45.51	27.58	5.39	30.18	48.30	54.00	-5.70	Horizontal
2390.00	41.59	27.59	5.38	30.18	44.38	54.00	-9.62	Vertical
2400.00	47.23	27.58	5.39	30.18	50.02	54.00	-3.98	Vertical

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	61.05	27.53	5.47	29.93	64.12	74.00	-9.88	Horizontal
2500.00	48.31	27.55	5.49	29.93	51.42	74.00	-22.58	Horizontal
2483.50	62.69	27.53	5.47	29.93	65.76	74.00	-8.24	Vertical
2500.00	50.24	27.55	5.49	29.93	53.35	74.00	-20.65	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	38.73	27.53	5.47	29.93	41.80	54.00	-12.20	Horizontal
2500.00	32.64	27.55	5.49	29.93	35.75	54.00	-18.25	Horizontal
2483.50	40.38	27.53	5.47	29.93	43.45	54.00	-10.55	Vertical
2500.00	34.36	27.55	5.49	29.93	37.47	54.00	-16.53	Vertical

Remark:

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

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	64.47	27.59	5.38	30.18	67.26	74.00	-6.74	Horizontal
2400.00	67.41	27.58	5.39	30.18	70.20	74.00	-3.80	Horizontal
2390.00	66.11	27.59	5.38	30.18	68.90	74.00	-5.10	Vertical
2400.00	69.34	27.58	5.39	30.18	72.13	74.00	-1.87	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	41.82	27.59	5.38	30.18	44.61	54.00	-9.39	Horizontal
2400.00	43.36	27.58	5.39	30.18	46.15	54.00	-7.85	Horizontal
2390.00	43.47	27.59	5.38	30.18	46.26	54.00	-7.74	Vertical
2400.00	45.08	27.58	5.39	30.18	47.87	54.00	-6.13	Vertical

Test mode:	802.11n(H40)	Test channel:	Highest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	66.02	27.53	5.47	29.93	69.09	74.00	-4.91	Horizontal
2500.00	55.10	27.55	5.49	29.93	58.21	74.00	-15.79	Horizontal
2483.50	67.66	27.53	5.47	29.93	70.73	74.00	-3.27	Vertical
2500.00	57.03	27.55	5.49	29.93	60.14	74.00	-13.86	Vertical

Average value:

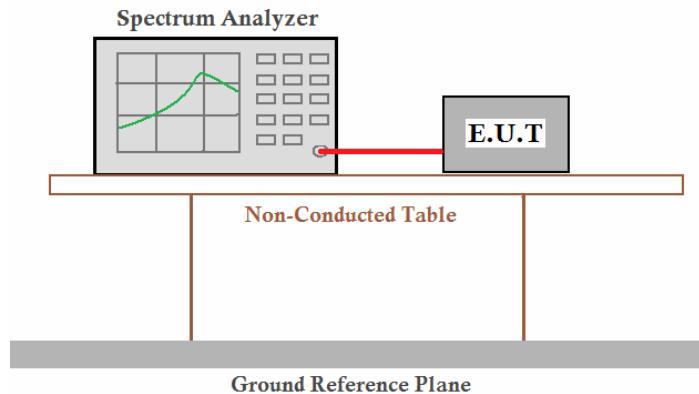
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	40.27	27.53	5.47	29.93	43.34	54.00	-10.66	Horizontal
2500.00	35.43	27.55	5.49	29.93	38.54	54.00	-15.46	Horizontal
2483.50	41.92	27.53	5.47	29.93	44.99	54.00	-9.01	Vertical
2500.00	37.15	27.55	5.49	29.93	40.26	54.00	-13.74	Vertical

Remark:

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

6.7 Spurious Emission

6.7.1 Conducted Emission Method

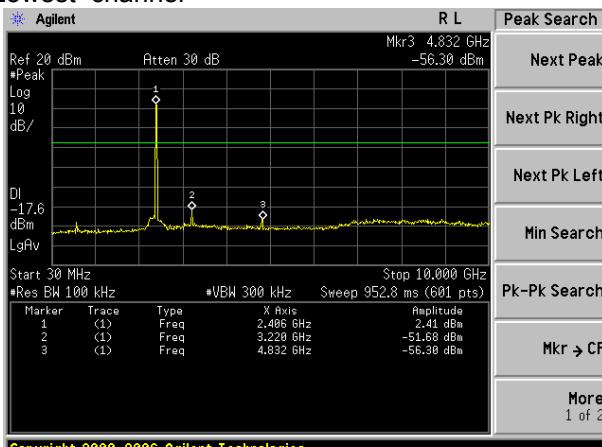
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V02
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Test plot as follows:

Test mode:

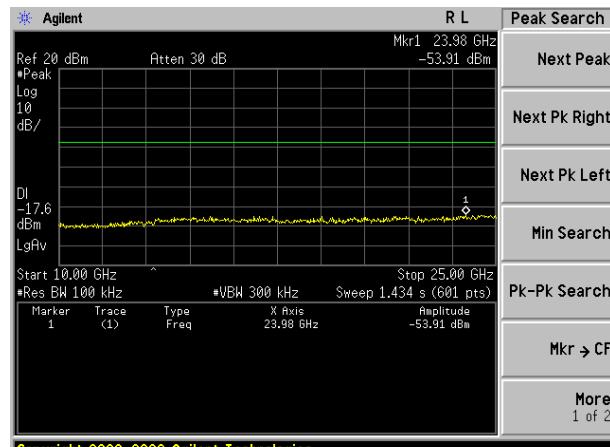
802.11b

Lowest channel



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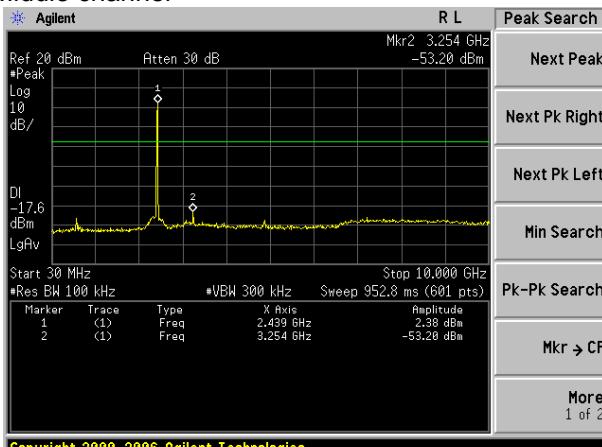
30MHz~10GHz



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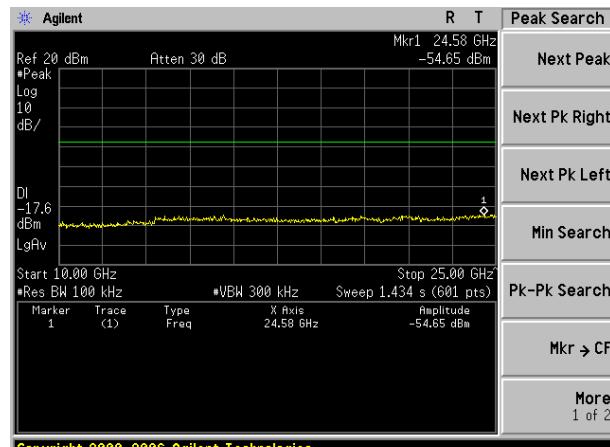
10GHz~25GHz

Middle channel



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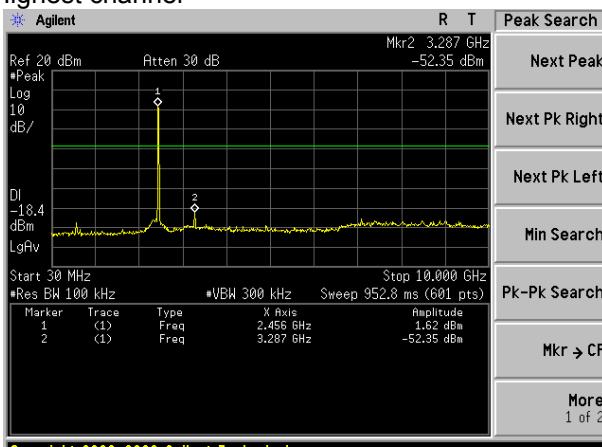
30MHz~10GHz



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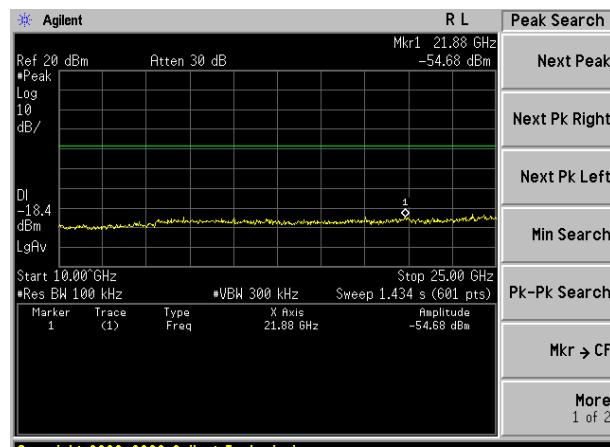
10GHz~25GHz

Highest channel



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30MHz~10GHz



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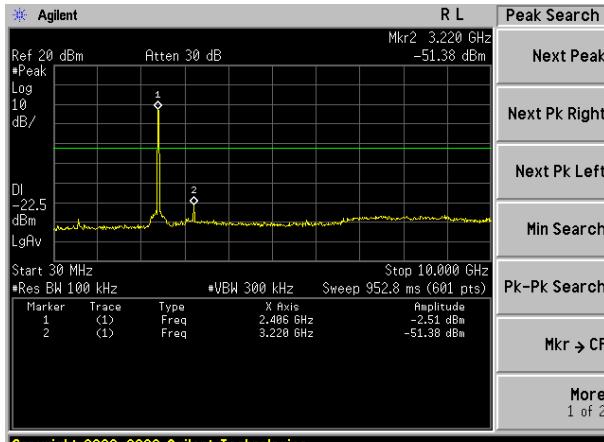
10GHz~25GHz

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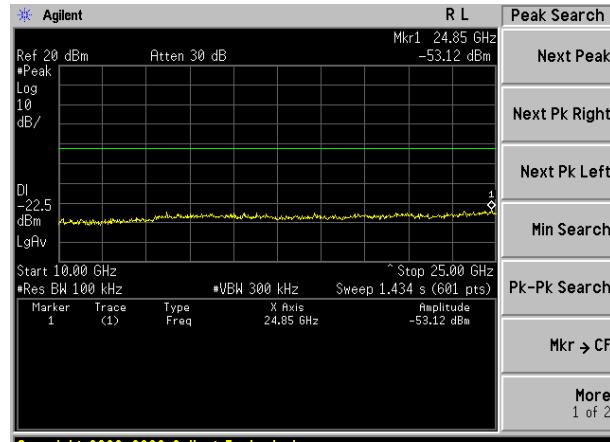
Test mode:

802.11g

Lowest channel

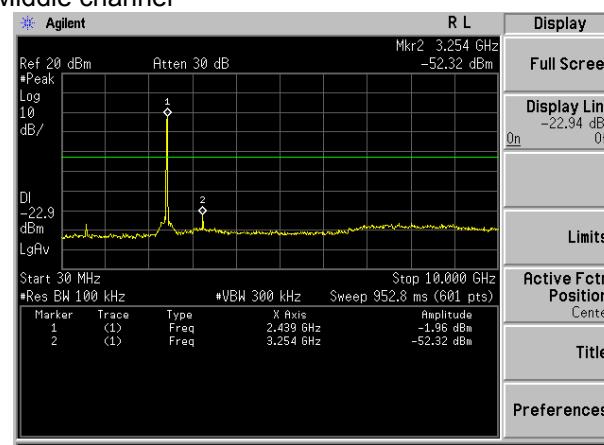


30MHz~10GHz

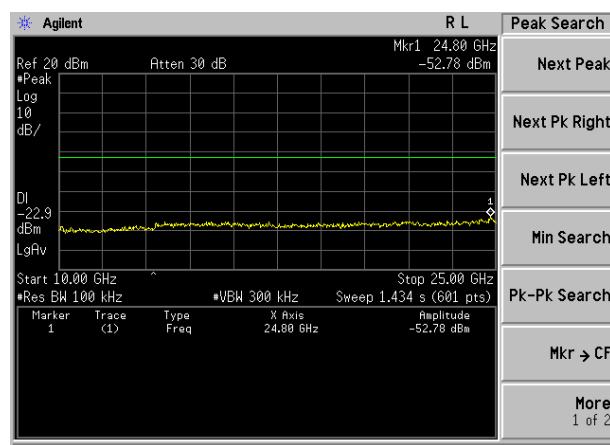


10GHz~25GHz

Middle channel

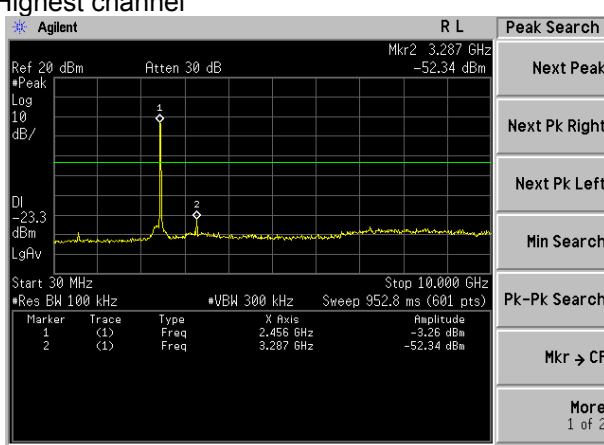


30MHz~10GHz

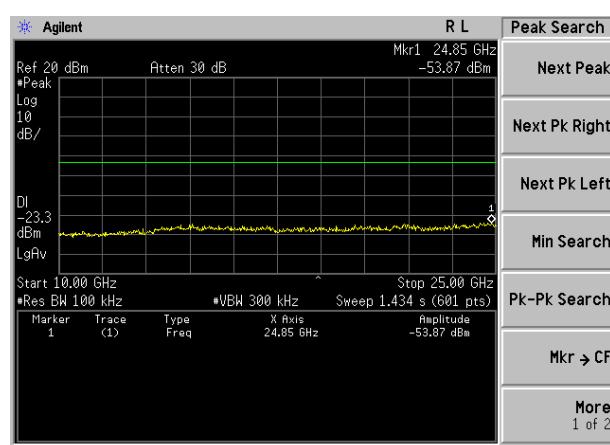


10GHz~25GHz

Highest channel



30MHz~10GHz



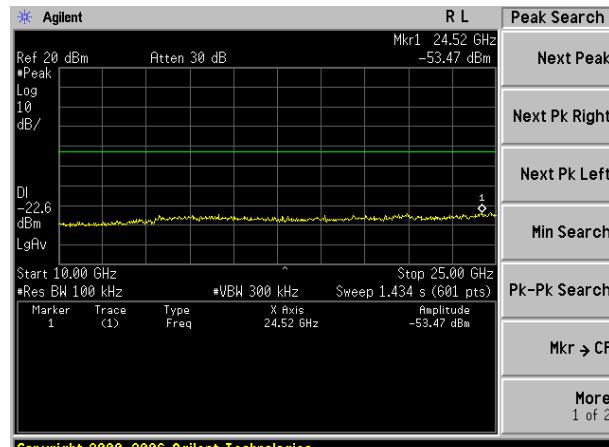
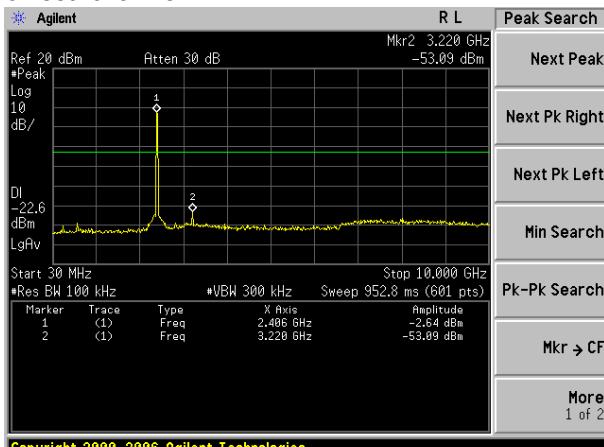
10GHz~25GHz

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Test mode:

802.11n(HT20)

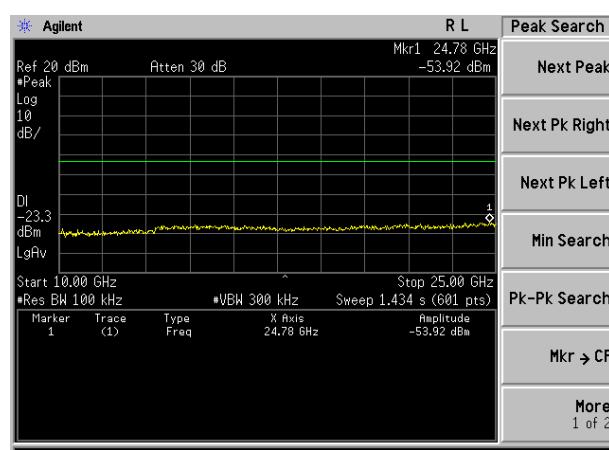
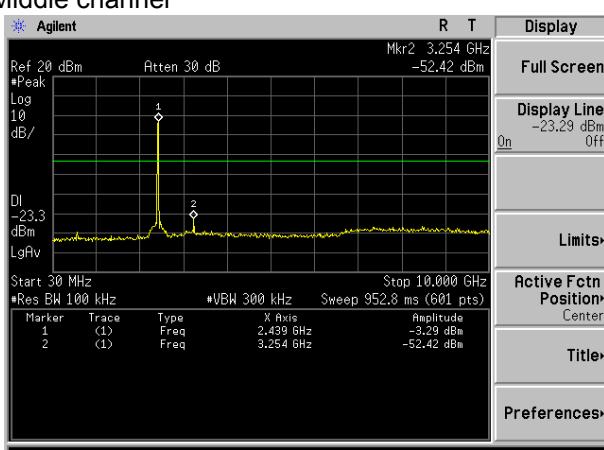
Lowest channel



30MHz~10GHz

10GHz~25GHz

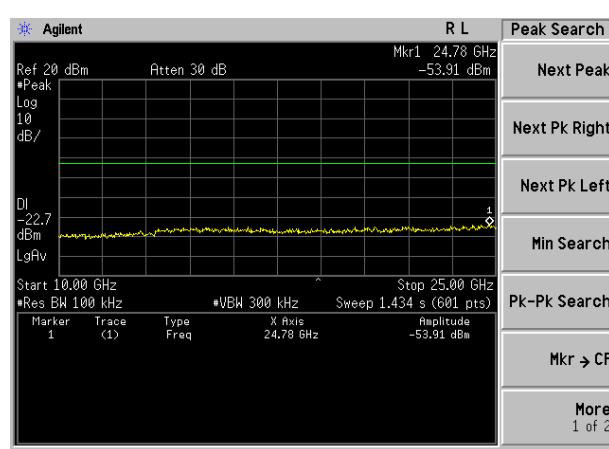
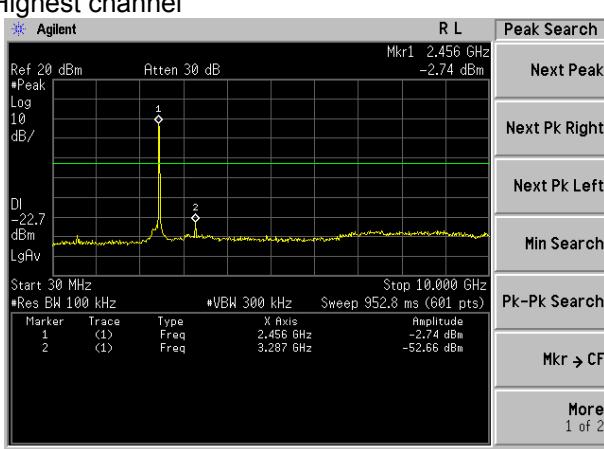
Middle channel



30MHz~10GHz

10GHz~25GHz

Highest channel



30MHz~10GHz

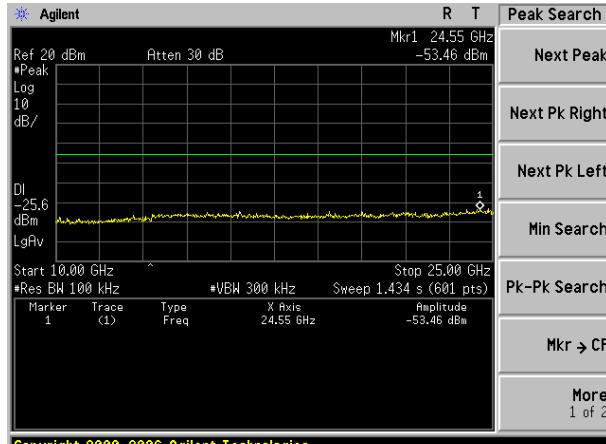
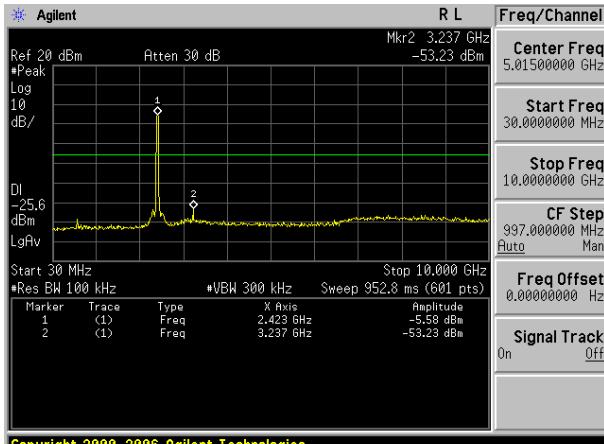
10GHz~25GHz

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Test mode:

802.11n(HT40)

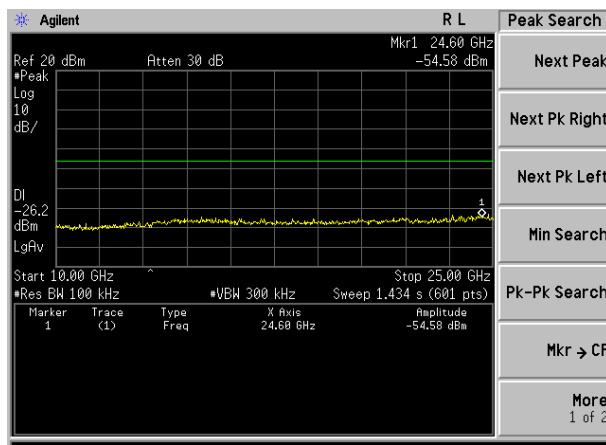
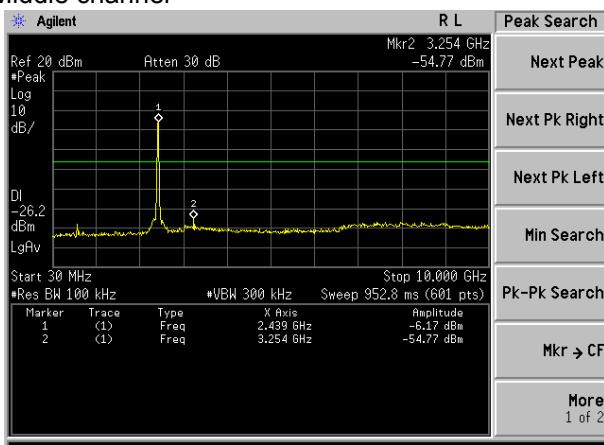
Lowest channel



30MHz~10GHz

10GHz~25GHz

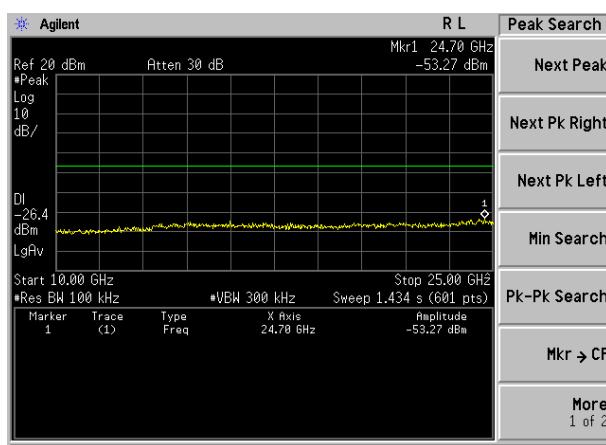
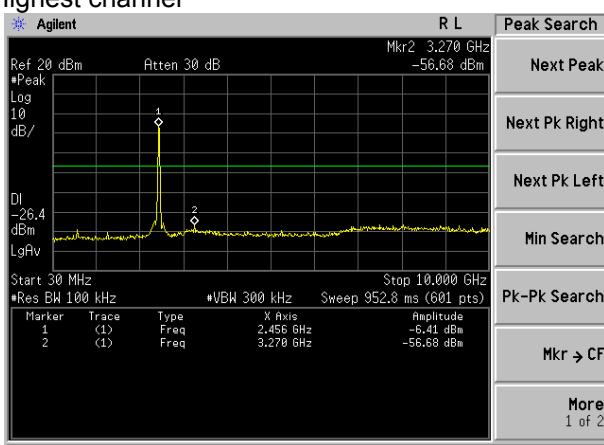
Middle channel



30MHz~10GHz

10GHz~25GHz

Highest channel

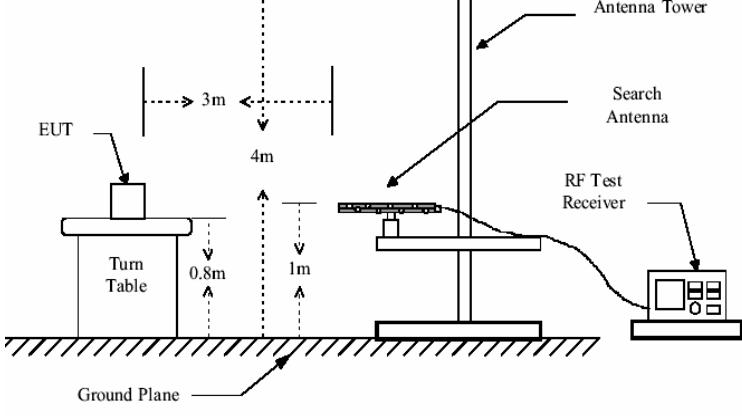


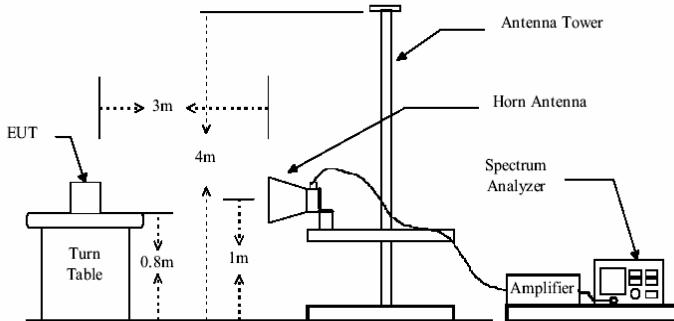
30MHz~10GHz

10GHz~25GHz

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6.7.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.4: 2003				
Test Frequency Range:	30MHz to 25GHz				
Test site:	Measurement Distance: 3m				
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 setup:	Below 1GHz  Above 1GHz				



Test Procedure:	<ol style="list-style-type: none"> The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 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. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 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 Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Remark:

Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the X-axis which it is worse case.

■ 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
59.86	42.48	15.74	0.86	31.94	27.14	40.00	-12.86	Vertical
250.30	51.21	15.07	2.12	32.16	36.24	46.00	-9.76	Vertical
300.37	55.83	16.08	2.36	32.17	42.10	46.00	-3.90	Vertical
360.00	52.30	16.43	2.67	32.00	39.40	46.00	-6.60	Vertical
501.18	42.01	18.63	3.31	31.56	32.39	46.00	-13.61	Vertical
601.43	40.85	20.52	3.73	31.04	34.06	46.00	-11.94	Vertical
250.30	53.63	15.07	2.12	32.16	38.66	46.00	-7.34	Horizontal
300.37	55.59	16.08	2.36	32.17	41.86	46.00	-4.14	Horizontal
360.45	55.75	16.43	2.67	32.00	42.85	46.00	-3.15	Horizontal
501.18	42.43	18.63	3.31	31.56	32.81	46.00	-13.19	Horizontal
721.73	38.98	22.10	4.17	31.22	34.03	46.00	-11.97	Horizontal
919.29	36.92	24.03	4.93	31.19	34.69	46.00	-11.31	Horizontal

■ Above 1GHz

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	35.56	31.28	8.62	24.17	51.29	74.00	-22.71	Vertical
7236.00	36.89	35.36	11.68	26.52	57.41	74.00	-16.59	Vertical
9648.00	35.57	37.44	14.16	25.44	61.73	74.00	-12.27	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	33.96	31.28	8.62	24.17	49.69	74.00	-24.31	Horizontal
7236.00	35.34	35.36	11.68	26.52	55.86	74.00	-18.14	Horizontal
9648.00	31.40	37.44	14.16	25.44	57.56	74.00	-16.44	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	20.33	31.28	8.62	24.17	36.06	54.00	-17.94	Vertical
7236.00	20.89	35.36	11.68	26.52	41.41	54.00	-12.59	Vertical
9648.00	18.92	37.44	14.16	25.44	45.08	54.00	-8.92	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4824.00	19.96	31.28	8.62	24.17	35.69	54.00	-18.31	Horizontal
7236.00	21.10	35.36	11.68	26.52	41.62	54.00	-12.38	Horizontal
9648.00	17.57	37.44	14.16	25.44	43.73	54.00	-10.27	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

Remark:

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
- **, means this data is the too weak instrument of signal is unable to test.

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	35.99	32.02	8.66	24.12	52.55	74.00	-21.45	Vertical
7311.00	36.81	36.64	11.71	26.71	58.45	74.00	-15.55	Vertical
9748.00	32.78	38.54	14.25	25.38	60.19	74.00	-13.81	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	33.92	32.02	8.66	24.12	50.48	74.00	-23.52	Horizontal
7311.00	34.16	36.64	11.71	26.71	55.80	74.00	-18.20	Horizontal
9748.00	29.96	38.54	14.25	25.38	57.37	74.00	-16.63	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	20.76	32.02	8.66	24.12	37.32	54.00	-16.68	Vertical
7311.00	20.81	36.64	11.71	26.71	42.45	54.00	-11.55	Vertical
9748.00	16.13	38.54	14.25	25.38	43.54	54.00	-10.46	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	19.92	32.02	8.66	24.12	36.48	54.00	-17.52	Horizontal
7311.00	19.29	36.64	11.71	26.71	40.93	54.00	-13.07	Horizontal
9748.00	15.72	38.54	14.25	25.38	43.13	54.00	-10.87	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. **, means this data is the too weak instrument of signal is unable to test.

Test mode:	802.11b	Test channel:	Highest
------------	---------	---------------	---------

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	36.49	32.14	8.70	24.05	53.28	74.00	-20.72	Vertical
7386.00	38.70	36.75	11.76	26.90	60.31	74.00	-13.69	Vertical
9848.00	32.34	38.79	14.31	25.30	60.14	74.00	-13.86	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	34.73	32.14	8.70	24.05	51.52	74.00	-22.48	Horizontal
7386.00	36.18	36.75	11.76	26.90	57.79	74.00	-16.21	Horizontal
9848.00	30.17	38.79	14.31	25.30	57.97	74.00	-16.03	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal
17234.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	21.26	32.14	8.70	24.05	38.05	54.00	-15.95	Vertical
7386.00	22.70	36.75	11.76	26.90	44.31	54.00	-9.69	Vertical
9848.00	15.69	38.79	14.31	25.30	43.49	54.00	-10.51	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4924.00	20.73	32.14	8.70	24.05	37.52	54.00	-16.48	Horizontal
7386.00	21.94	36.75	11.76	26.90	43.55	54.00	-10.45	Horizontal
9848.00	16.34	38.79	14.31	25.30	44.14	54.00	-9.86	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. **, means this data is the too weak instrument of signal is unable to test.

Test mode:	802.11g	Test channel:	lowest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	36.10	31.28	8.62	24.17	51.83	74.00	-22.17	Vertical
7236.00	37.52	35.36	11.68	26.52	58.04	74.00	-15.96	Vertical
9648.00	36.29	37.44	14.16	25.44	62.45	74.00	-11.55	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	34.70	31.28	8.62	24.17	50.43	74.00	-23.57	Horizontal
7236.00	36.03	35.36	11.68	26.52	56.55	74.00	-17.45	Horizontal
9648.00	31.98	37.44	14.16	25.44	58.14	74.00	-15.86	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	20.87	31.28	8.62	24.17	36.60	54.00	-17.40	Vertical
7236.00	21.52	35.36	11.68	26.52	42.04	54.00	-11.96	Vertical
9648.00	19.64	37.44	14.16	25.44	45.80	54.00	-8.20	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4824.00	20.70	31.28	8.62	24.17	36.43	54.00	-17.57	Horizontal
7236.00	21.79	35.36	11.68	26.52	42.31	54.00	-11.69	Horizontal
9648.00	18.15	37.44	14.16	25.44	44.31	54.00	-9.69	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. **, means this data is the too weak instrument of signal is unable to test.

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	36.46	32.02	8.66	24.12	53.02	74.00	-20.98	Vertical
7311.00	37.43	36.64	11.71	26.71	59.07	74.00	-14.93	Vertical
9748.00	33.17	38.54	14.25	25.38	60.58	74.00	-13.42	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	34.53	32.02	8.66	24.12	51.09	74.00	-22.91	Horizontal
7311.00	34.91	36.64	11.71	26.71	56.55	74.00	-17.45	Horizontal
9748.00	30.30	38.54	14.25	25.38	57.71	74.00	-16.29	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	21.23	32.02	8.66	24.12	37.79	54.00	-16.21	Vertical
7311.00	21.43	36.64	11.71	26.71	43.07	54.00	-10.93	Vertical
9748.00	16.52	38.54	14.25	25.38	43.93	54.00	-10.07	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	20.53	32.02	8.66	24.12	37.09	54.00	-16.91	Horizontal
7311.00	20.67	36.64	11.71	26.71	42.31	54.00	-11.69	Horizontal
9748.00	16.47	38.54	14.25	25.38	43.88	54.00	-10.12	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. **, means this data is the too weak instrument of signal is unable to test.

Test mode:	802.11g	Test channel:	Highest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	37.33	32.14	8.70	24.05	54.12	74.00	-19.88	Vertical
7386.00	39.42	36.75	11.76	26.90	61.03	74.00	-12.97	Vertical
9848.00	33.00	38.79	14.31	25.30	60.80	74.00	-13.20	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	35.30	32.14	8.70	24.05	52.09	74.00	-21.91	Horizontal
7386.00	36.66	36.75	11.76	26.90	58.27	74.00	-15.73	Horizontal
9848.00	30.80	38.79	14.31	25.30	58.60	74.00	-15.40	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal
17234.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	22.10	32.14	8.70	24.05	38.89	54.00	-15.11	Vertical
7386.00	23.42	36.75	11.76	26.90	45.03	54.00	-8.97	Vertical
9848.00	16.35	38.79	14.31	25.30	44.15	54.00	-9.85	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4924.00	21.30	32.14	8.70	24.05	38.09	54.00	-15.91	Horizontal
7386.00	22.42	36.75	11.76	26.90	44.03	54.00	-9.97	Horizontal
9848.00	15.97	38.79	14.31	25.30	43.77	54.00	-10.23	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. **, means this data is the too weak instrument of signal is unable to test.

Test mode:	802.11n(H20)	Test channel:	Lowest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	35.30	31.28	8.62	24.17	51.03	74.00	-22.97	Vertical
7236.00	36.52	35.36	11.68	26.52	57.04	74.00	-16.96	Vertical
9648.00	35.13	37.44	14.16	25.44	61.29	74.00	-12.71	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	33.63	31.28	8.62	24.17	49.36	74.00	-24.64	Horizontal
7236.00	35.15	35.36	11.68	26.52	55.67	74.00	-18.33	Horizontal
9648.00	31.15	37.44	14.16	25.44	57.31	74.00	-16.69	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	20.07	31.28	8.62	24.17	35.80	54.00	-18.20	Vertical
7236.00	20.52	35.36	11.68	26.52	41.04	54.00	-12.96	Vertical
9648.00	18.48	37.44	14.16	25.44	44.64	54.00	-9.36	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4824.00	19.63	31.28	8.62	24.17	35.36	54.00	-18.64	Horizontal
7236.00	20.91	35.36	11.68	26.52	41.43	54.00	-12.57	Horizontal
9648.00	17.32	37.44	14.16	25.44	43.48	54.00	-10.52	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “*”, means this data is the too weak instrument of signal is unable to test.

Test mode:	802.11n(H20)	Test channel:	Middle
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	35.58	32.02	8.66	24.12	52.14	74.00	-21.86	Vertical
7311.00	36.45	36.64	11.71	26.71	58.09	74.00	-15.91	Vertical
9748.00	32.47	38.54	14.25	25.38	59.88	74.00	-14.12	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	33.41	32.02	8.66	24.12	49.97	74.00	-24.03	Horizontal
7311.00	33.78	36.64	11.71	26.71	55.42	74.00	-18.58	Horizontal
9748.00	29.67	38.54	14.25	25.38	57.08	74.00	-16.92	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	20.35	32.02	8.66	24.12	36.91	54.00	-17.09	Vertical
7311.00	20.45	36.64	11.71	26.71	42.09	54.00	-11.91	Vertical
9748.00	15.82	38.54	14.25	25.38	43.23	54.00	-10.77	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	19.41	32.02	8.66	24.12	35.97	54.00	-18.03	Horizontal
7311.00	19.54	36.64	11.71	26.71	41.18	54.00	-12.82	Horizontal
9748.00	14.84	38.54	14.25	25.38	42.25	54.00	-11.75	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

Remark:

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
- “*”, means this data is the too weak instrument of signal is unable to test.

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	36.04	32.14	8.70	24.05	52.83	74.00	-21.17	Vertical
7386.00	38.14	36.75	11.76	26.90	59.75	74.00	-14.25	Vertical
9848.00	32.04	38.79	14.31	25.30	59.84	74.00	-14.16	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	34.02	32.14	8.70	24.05	50.81	74.00	-23.19	Horizontal
7386.00	35.36	36.75	11.76	26.90	56.97	74.00	-17.03	Horizontal
9848.00	29.49	38.79	14.31	25.30	57.29	74.00	-16.71	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal
17234.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	20.81	32.14	8.70	24.05	37.60	54.00	-16.40	Vertical
7386.00	22.14	36.75	11.76	26.90	43.75	54.00	-10.25	Vertical
9848.00	15.39	38.79	14.31	25.30	43.19	54.00	-10.81	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4924.00	20.02	32.14	8.70	24.05	36.81	54.00	-17.19	Horizontal
7386.00	21.12	36.75	11.76	26.90	42.73	54.00	-11.27	Horizontal
9848.00	14.66	38.79	14.31	25.30	42.46	54.00	-11.54	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

Remark:

- 1 Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
- 2 ***, means this data is the too weak instrument of signal is unable to test.

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4844.00	36.41	31.40	8.63	24.04	52.40	74.00	-21.60	Vertical
7266.00	37.65	35.96	11.69	26.47	58.83	74.00	-15.17	Vertical
9688.00	36.24	37.71	14.21	25.30	62.86	74.00	-11.14	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4844.00	34.73	31.40	8.63	24.04	50.72	74.00	-23.28	Horizontal
7266.00	35.88	35.96	11.69	26.47	57.06	74.00	-16.94	Horizontal
9688.00	32.23	37.71	14.21	25.30	58.85	74.00	-15.15	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4844.00	21.18	31.40	8.63	24.04	37.17	54.00	-16.83	Vertical
7266.00	21.65	35.96	11.69	26.47	42.83	54.00	-11.17	Vertical
9688.00	19.59	37.71	14.21	25.30	46.21	54.00	-7.79	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4844.00	20.73	31.40	8.63	24.04	36.72	54.00	-17.28	Horizontal
7266.00	21.64	35.96	11.69	26.47	42.82	54.00	-11.18	Horizontal
9688.00	18.40	37.71	14.21	25.30	45.02	54.00	-8.98	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “*”, means this data is the too weak instrument of signal is unable to test.

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

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	37.11	32.02	8.66	24.12	53.67	74.00	-20.33	Vertical
7311.00	37.85	36.64	11.71	26.71	59.49	74.00	-14.51	Vertical
9748.00	34.03	38.54	14.25	25.38	61.44	74.00	-12.56	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	35.00	32.02	8.66	24.12	51.56	74.00	-22.44	Horizontal
7311.00	35.38	36.64	11.71	26.71	57.02	74.00	-16.98	Horizontal
9748.00	31.12	38.54	14.25	25.38	58.53	74.00	-15.47	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	21.88	32.02	8.66	24.12	38.44	54.00	-15.56	Vertical
7311.00	21.85	36.64	11.71	26.71	43.49	54.00	-10.51	Vertical
9748.00	17.38	38.54	14.25	25.38	44.79	54.00	-9.21	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	21.00	32.02	8.66	24.12	37.56	54.00	-16.44	Horizontal
7311.00	21.14	36.64	11.71	26.71	42.78	54.00	-11.22	Horizontal
9748.00	17.29	38.54	14.25	25.38	44.70	54.00	-9.30	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

Remark:

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
- “*”, means this data is the too weak instrument of signal is unable to test.

Test mode:	802.11n(H40)	Test channel:	Highest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4904.00	38.04	32.08	8.68	23.97	54.83	74.00	-19.17	Vertical
7356.00	40.44	36.69	11.74	26.73	62.14	74.00	-11.86	Vertical
9808.00	34.32	38.60	14.29	25.22	61.99	74.00	-12.01	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4904.00	36.09	32.08	8.68	23.97	52.88	74.00	-21.12	Horizontal
7356.00	37.45	36.69	11.74	26.73	59.15	74.00	-14.85	Horizontal
9808.00	32.04	38.60	14.29	25.22	59.71	74.00	-14.29	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal
17234.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4904.00	22.81	32.08	8.68	23.97	39.60	54.00	-14.40	Vertical
7356.00	24.44	36.69	11.74	26.73	46.14	54.00	-7.86	Vertical
9808.00	17.67	38.60	14.29	25.22	45.34	54.00	-8.66	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4904.00	22.09	32.08	8.68	23.97	38.88	54.00	-15.12	Horizontal
7356.00	23.21	36.69	11.74	26.73	44.91	54.00	-9.09	Horizontal
9808.00	16.21	38.60	14.29	25.22	43.88	54.00	-10.12	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

Remark:

- 1 Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
- 2 **, means this data is the too weak instrument of signal is unable to test.