Test Report

Product Name	Notebook
Model No	MS-1242, U200
FCC ID.	I4L-12-EM730512H

Applicant	MICRO-STAR INT'L Co., LTD.
Address	No. 69, Li-De St., Jung-He City, Taipei Hsien, Taiwan, R.O.C.

Date of Receipt	May 26, 2009
Issue Date	July 17, 2009
Report No.	096001R-RFUSP05V01
Report Version	V1.0

Test Report Certification

Issue Date: July 17, 2009
Report No.: 096001R-RFUSP05V01

Accredited by NIST (NVLAP)
NVLAP Lab Code: 200533-0

Product Name	Notebook
Applicant	MICRO-STAR INT'L Co., LTD.
Address	No. 69, Li-De St., Jung-He City, Taipei Hsien, Taiwan, R.O.C.
Manufacturer	MICRO-STAR INT'L Co., LTD.
Model No.	MS-1242, U200
EUT Rated Voltage	AC 120V/60Hz
EUT Test Voltage	DC 3.3V
Trade Name	MSI
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2008 ANSI C63.4: 2003
Test Result	Complied

NVLAP Lab Code: 200533-0

The test results relate only to the samples tested.
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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Documented By : Genie Chang
(Senior Adm. Specialist / Genie Chang)

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(Engineer / Johnson Liao)

Approved By :
(Manager / Vincent Lin)

Testing Laboratory
0914

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Notebook
Trade Name	MSI
FCC ID.	I4L-12-EM730512H
Model No.	MS-1242, U200
Frequency Range	2412-2462MHz, 5745-5825MHz
Number of Channels	802.11b/g/n-20MHz: 11, n-40MHz: 7 802.11a/n-20MHz: 5, n-40MHz: 2
Data Speed	802.11b: 1-11Mbps, 802.11a/g: 6-54Mbps, 802.11n: 13.5-300Mbps
Channel separation	802.11b/g/n-20MHz: 5 MHz, 802.11a/n-20MHz: 20MHz 802.11n-40MHz: 40MHz
Type of Modulation	802.11b:DSSS, DBPSK, DQPSK, CCK 802.11a/g/n: OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna Type	Printed on PCB
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Power Adapter	MFR: DELTA, M/N: ADP-40MH BD Input: AC 100-240V, 50-60Hz, 1.2A Output: DC 20V, 2A Cable Out: Shielded, 1.7m with one ferrite core bonded.

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	INPAQ	S79-1800N80-I05	2.6 dBi in 2.4 GHz 3.6 dBi in 5GHz

802.11b/g/n-20MHz (2.4GHz Band) Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		

802.11a/n-20MHz (5GHz Band) Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 149:	5745 MHz	Channel 153:	5765 MHz	Channel 157:	5785 MHz	Channel 161:	5805 MHz
Channel 165:	5825 MHz						

802.11n-40MHz (2.4GHz Band) Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 1:	2422 MHz	Channel 2:	2427 MHz	Channel 3:	2432 MHz	Channel 4:	2437 MHz
Channel 5:	2442 MHz	Channel 6:	2447 MHz	Channel 7:	2452 MHz		

802.11n-40MHz (5GHz Band) Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency
Channel 151:	5755 MHz	Channel 159:	5795 MHz

Note:

1. The EUT is a Notebook with a built-in 2.4GHz and 5GHz WLAN card.
2. The EUT is including two models, The MS-1242 for MSI and the U200 for different marketing requirement.
3. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
4. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps 、802.11g is 6Mbps、802.11n(20BW) is 13.5Mbps and 、802.11n(40BW) is 27Mbps)
5. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11a/b/g/n transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.
6. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

1.2. Operational Description

The EUT is a Notebook with a built-in 2.4GHz and 5GHz WLAN card. This device provided four kinds of transmitting speed 1, 2, 5.5 and 11Mbps and the device of RF carrier is DBPSK, DQPSK and CCK (IEEE 802.11b). The device provided of eight kinds of transmitting speed 6, 9, 12, 18, 24, 36, 48 and 54Mbps the device of RF carrier is BPSK, QPSK, 16QAM and 64QAM (IEEE 802.11a/g).

The device provided of eight kinds of transmitting speed 13.5,26,39,52,78,104,117 and 130Mbps in 802.11n(20BW) mode and 27,54,81,108,162,216,243 and 270Mbps(40BW) the device of RF carrier is BPSK, QPSK, 16QAM and 64QAM (IEEE 802.11n), the IEEE 802.11n is Multiple In, Multiple Out" (MIMO) technology.

The device adapts direct sequence spread spectrum modulation. The antenna provides diversity function to improve the receiving function and the antennas to support 1(Transmit) × 2 (Receive) MISO technology.

This Notebook, compliant with IEEE 802.11b and IEEE 802.11a/g/n, is a high-efficiency Wireless LAN adapter. It allows your computer to connect to a wireless network and to share resources, such as files or printers without being bound to the network wires. Operation in 2.4GHz Direst Sequence Spread Spectrum (DSSS) radio transmission, the Notebook Wired Equivalent Protection (WEP) algorithm is used. In addition, its standard compliance ensures that it can communicate with any IEEE 802.11b and IEEE 802.11a/g/n network.

Another information please refer to users manual.

Test Mode:	Mode 1: Transmitter - 802.11b 1Mbps
	Mode 2: Transmitter - 802.11g 6Mbps
	Mode 3: Transmitter - 802.11a 6Mbps
	Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4GHz Band)
	Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band)
	Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5GHz Band)
	Mode 7: Transmitter - 802.11n-40BW_27Mbps(5GHz Band)

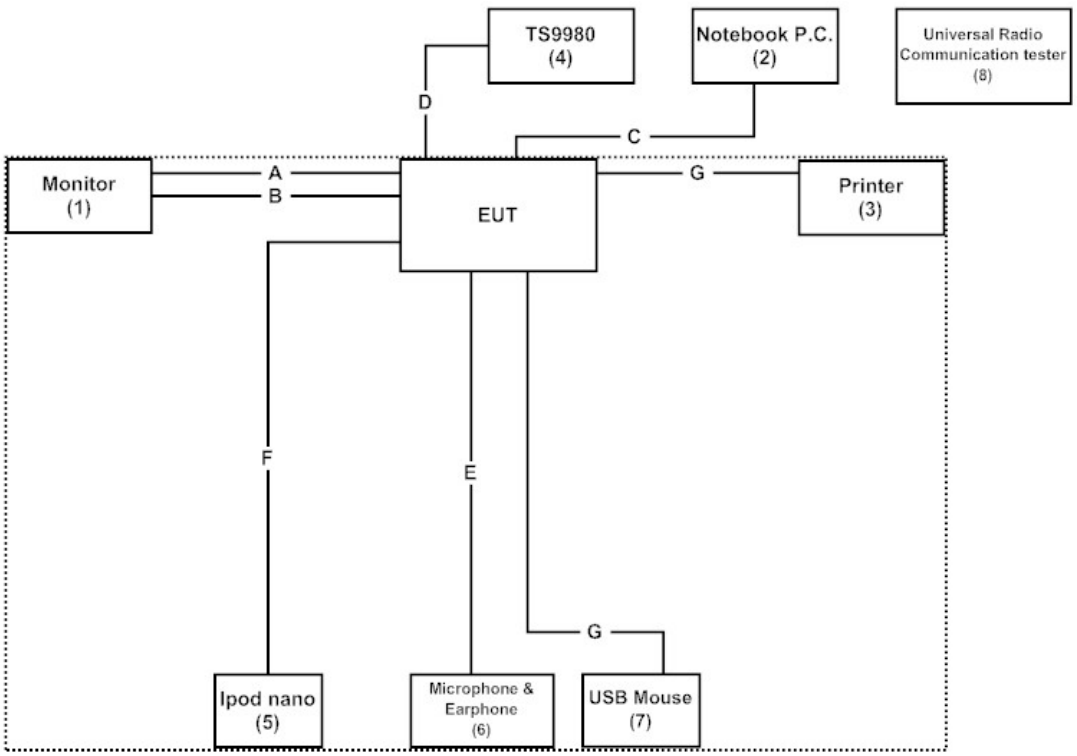
1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

	Product	Manufacturer	Model No.	Serial No.	Power Cord
(1)	Monitor	Dell	2408WFPb	CN-0NN792-74261-82S-0YCS	Non-Shielded, 1.8m
(2)	Notebook PC	DELL	PP04X	C8YYM1S	Non-Shielded, 1.8m
(3)	Printer	EPSON	StyLus C63	FAPY012396	Non-Shielded, 1.8m
(4)	TS9980	R&S	N/A	N/A	Non-Shielded, 1.8m
(5)	IPod nano	Apple	A1236	7K823DY0Y0P	N/A
(6)	Microphone & Earphone	PCHOME	N/A	N/A	N/A
(7)	USB Mouse	Logitech	M-BE58	HCA24311471	N/A
(8)	Universal Radio Communication tester	Rohde & Schwarz	CMU200	104846	Non-Shielded, 1.8m

Signal Cable Type		Signal cable Description
A	D-SUB Cable	Shielded, 1.8m, with two ferrite cores bonded.
B	HDMI Cable	Shielded, 1.0m
C	LAN Cable	Non-Shielded, 7m
D	Coaxial Cable	Shielded, 7m
E	Earphone & Microphone Cable	Non-Shielded, 1.6m
F	USB Cable	Shielded, 1.0m
G	USB Cable	Shielded, 1.6m, two PCS.

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown in Section 1.4

(2) Execute CRTU (Version 5.0.48.0000) on the EUT.

(3) Configure the test mode, the test channel, and the data rate.

(4) Press “OK” to start the continuous transmission.

(5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://tw.quietek.com/modules/myalbum/
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 92195

Accreditation on NVLAP
NVLAP Lab Code: 200533-0

Site Name: Quietek Corporation
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E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

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0914

2. Conducted Emission

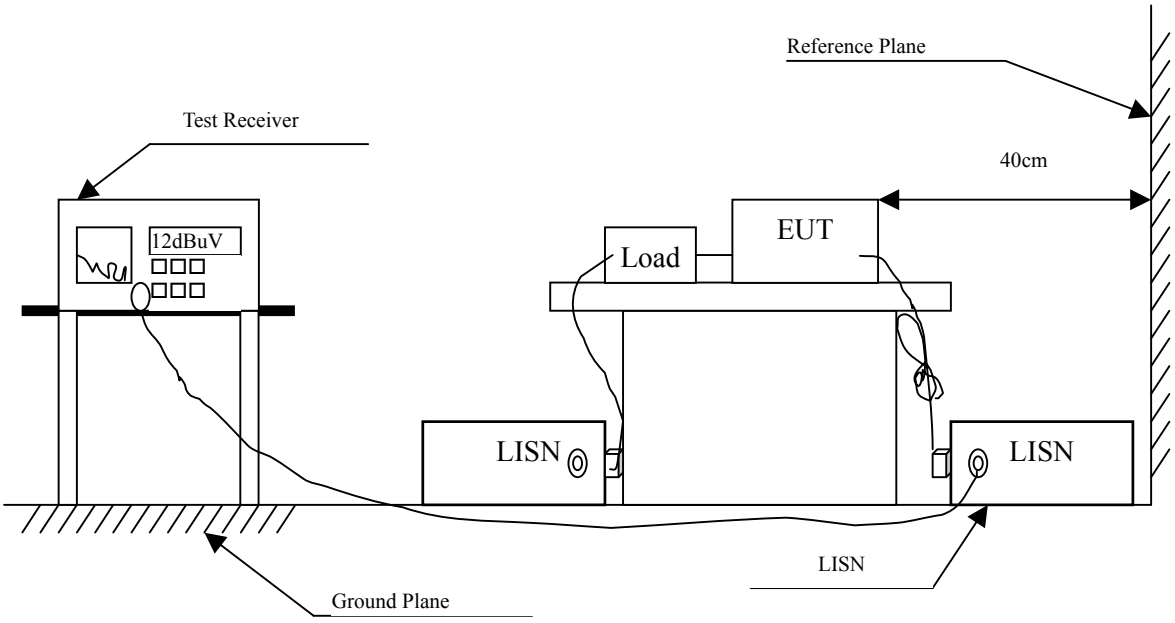
2.1. Test Equipment

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 2009	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2009	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2009	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2009	
5	No.1 Shielded Room			N/A	

Note: All instruments are calibrated every one year.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
Frequency MHz	Limits	
	QP	AVG
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /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.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : Notebook
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.197	9.709	31.830	41.539	-23.118	64.657
0.388	9.650	33.140	42.790	-16.410	59.200
0.709	9.630	28.020	37.650	-18.350	56.000
3.939	9.700	21.540	31.240	-24.760	56.000
15.896	10.000	25.470	35.470	-24.530	60.000
27.064	10.170	18.550	28.720	-31.280	60.000
Average					
0.197	9.709	26.530	36.239	-18.418	54.657
0.388	9.650	32.870	42.520	-6.680	49.200
0.709	9.630	26.450	36.080	-9.920	46.000
3.939	9.700	17.390	27.090	-18.910	46.000
15.896	10.000	22.260	32.260	-17.740	50.000
27.064	10.170	10.680	20.850	-29.150	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and data rate.
5. Only worst case is shown in the test mode.

Product : Notebook
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.193	9.721	33.380	43.101	-21.670	64.771
0.388	9.650	33.080	42.730	-16.470	59.200
0.709	9.650	24.490	34.140	-21.860	56.000
1.810	9.680	23.650	33.330	-22.670	56.000
4.779	9.700	23.860	33.560	-22.440	56.000
15.509	9.998	23.760	33.757	-26.243	60.000
Average					
0.193	9.721	26.660	36.381	-18.390	54.771
0.388	9.650	32.260	41.910	-7.290	49.200
0.709	9.650	20.160	29.810	-16.190	46.000
1.810	9.680	22.390	32.070	-13.930	46.000
4.779	9.700	17.670	27.370	-18.630	46.000
15.509	9.998	19.700	29.697	-20.303	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and data rate.
5. Only worst case is shown in the test mode.

Product : Notebook
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5GHz Band) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.197	9.709	31.890	41.599	-23.058	64.657
0.388	9.650	32.520	42.170	-17.030	59.200
0.709	9.630	27.800	37.430	-18.570	56.000
4.517	9.700	21.890	31.590	-24.410	56.000
16.209	9.990	24.700	34.690	-25.310	60.000
27.181	10.170	18.540	28.710	-31.290	60.000
Average					
0.197	9.709	26.600	36.309	-18.348	54.657
0.388	9.650	32.120	41.770	-7.430	49.200
0.709	9.630	26.450	36.080	-9.920	46.000
4.517	9.700	15.470	25.170	-20.830	46.000
16.209	9.990	21.680	31.670	-18.330	50.000
27.181	10.170	10.740	20.910	-29.090	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and data rate.
5. Only worst case is shown in the test mode.

Product : Notebook
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5GHz Band) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.193	9.721	33.770	43.491	-21.280	64.771
0.384	9.650	31.620	41.270	-18.044	59.314
0.709	9.650	24.150	33.800	-22.200	56.000
4.845	9.700	22.290	31.990	-24.010	56.000
15.435	10.000	22.470	32.470	-27.530	60.000
27.587	10.180	22.530	32.710	-27.290	60.000
Average					
0.193	9.721	26.900	36.621	-18.150	54.771
0.384	9.650	30.390	40.040	-9.274	49.314
0.709	9.650	20.430	30.080	-15.920	46.000
4.845	9.700	16.950	26.650	-19.350	46.000
15.435	10.000	16.650	26.650	-23.350	50.000
27.587	10.180	16.820	27.000	-23.000	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and data rate.
5. Only worst case is shown in the test mode.

3. Peak Power Output

3.1. Test Equipment

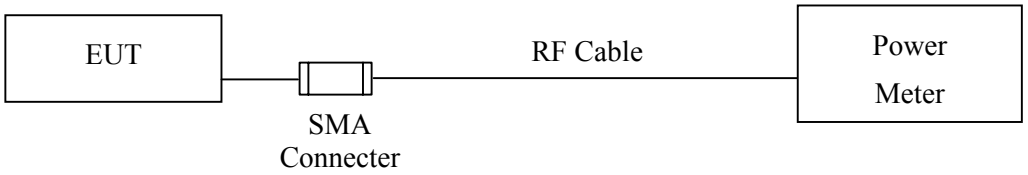
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2009
X	Power Sensor	Anritsu	MA2411B/0738448	Jun., 2009

Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

3.2. Test Setup

Conducted Measurement



3.3. Limits

The maximum peak power shall be less 1 Watt.

3.4. Test Procedure

The EUT was tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : Notebook
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 802.11b 1Mbps

Cable loss=0.5dB		Peak Power Output (dBm)				
Channel No.	Frequency (MHz)	Data Rate (Mbps)				Required Limit
		1	2	5.5	11	
1	2412.00	19.11	--	--	--	1Watt= 30 dBm
6	2437.00	19.06	18.85	18.75	18.88	1Watt= 30 dBm
11	2462.00	18.86	--	--	--	1Watt= 30 dBm

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Notebook
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 802.11g 6Mbps

Cable loss=0.5dB		Peak Power Output (dBm)								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		6	9	12	18	24	36	48	54	
1	2412.00	24.04	--	--	--	--	--	--	--	1Watt= 30 dBm
6	2437.00	22.8	22.05	21.18	21.56	20.38	21.08	21.04	21.19	1Watt= 30 dBm
11	2462.00	20.67	--	--	--	--	--	--	--	1Watt= 30 dBm

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Notebook
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter - 802.11a 6Mbps

Cable loss=1dB		Peak Power Output (dBm)								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		6	9	12	18	24	36	48	54	
149	5745.00	20.25	--	--	--	--	--	--	--	1Watt= 30 dBm
157	5785.00	19.8	19.7	19.22	18.25	18.85	19.11	19.27	19.08	1Watt= 30 dBm
165	5825.00	19.03	--	--	--	--	--	--	--	1Watt= 30 dBm

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Notebook
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4GHz Band)

Cable loss=0.5dB		Peak Power Output (dBm)								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		13.5	26	39	52	78	104	117	130	
1	2412.00	20.54	--	--	--	--	--	--	--	1Watt= 30 dBm
6	2437.00	21.75	20.88	21.05	21.1	20.95	21.14	20.06	20.16	1Watt= 30 dBm
11	2462.00	20.58	--	--	--	--	--	--	--	1Watt= 30 dBm

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Notebook
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band)

Cable loss=0.5dB		Peak Power Output (dBm)								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit (dBm)
		27	54	81	108	162	216	243	270	
1	2422.00	20.9	--	--	--	--	--	--	--	1Watt= 30
4	2437.00	22.62	21.15	21.18	22.05	20.94	21.19	21.77	20.98	1Watt= 30
7	2452.00	20.72	--	--	--	--	--	--	--	1Watt= 30

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Notebook
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5GHz Band)

Cable loss=0.5dB		Peak Power Output (dBm)								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit (dBm)
		13.5	26	39	52	78	104	117	130	
149	5745	20.4	--	--	--	--	--	--	--	1Watt= 30
157	5785	19.8	19.65	19.19	18.88	18.95	19.17	19.05	19.37	1Watt= 30
165	5825	19.14	--	--	--	--	--	--	--	1Watt= 30

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Notebook
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5GHz Band)

Cable loss=0.5dB		Peak Power Output (dBm)								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit (dBm)
		27	54	81	108	162	216	243	270	
151	5755	20.3	19.58	19.71	19.52	19.36	19.58	18.88	19.53	1Watt= 30
159	5795	19.67	--	--	--	--	--	--	--	1Watt= 30

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

4. Radiated Emission

4.1. Test Equipment

The following test equipment are used during the radiated emission test:

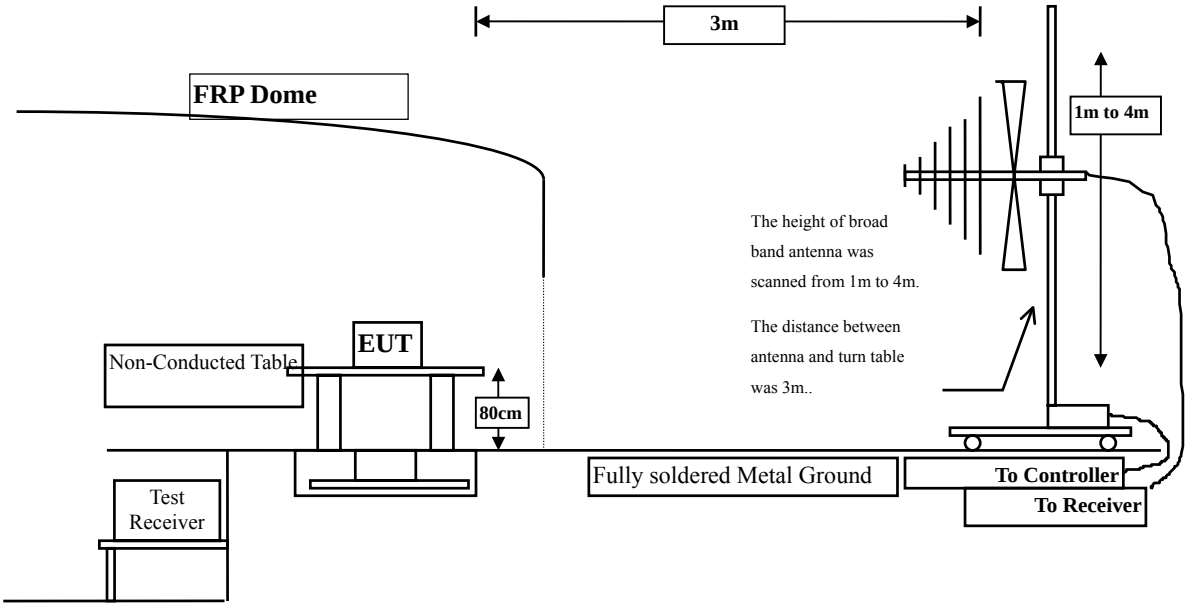
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2008
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2008
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2009
	X	Pre-Amplifier	AGILENT	8447D/2944A09549	Sep., 2008
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2008
	X	Spectrum Analyzer	Advantest	R3162/91700283	Oct., 2008
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2009
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

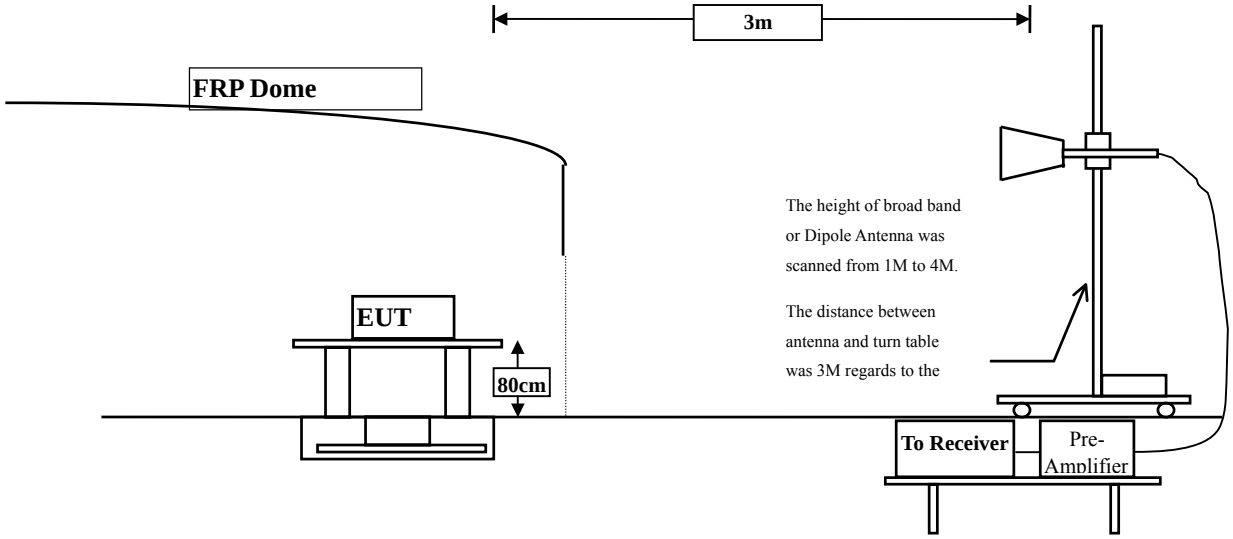
2. The test instruments marked with "X" are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	uV/m @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks: E field strength (dBuV/m) = 20 log E field strength (uV/m)

4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.
The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.
Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.
The measurement is divided into the Preliminary Measurement and the Final Measurement.
The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.
The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.
The measurement frequency range form 30MHz - 10th Harmonic of fundamental was investigated.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 802.11b 1Mbps (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	9.582	42.240	51.822	-22.178	74.000
7236.000	14.401	39.470	53.871	-20.129	74.000
9648.000	19.795	38.080	57.875	-16.125	74.000
Average Detector:					
9648.000	19.795	22.430	42.225	-11.775	54.000
Vertical					
Peak Detector:					
4824.000	8.462	42.090	50.552	-23.448	74.000
7236.000	15.412	39.070	54.482	-19.518	74.000
9648.000	19.005	41.140	60.145	-13.855	74.000
Average Detector:					
7236.000	15.412	22.250	37.662	-16.338	54.000
9648.000	19.005	23.950	42.955	-11.045	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 802.11b 1Mbps (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	9.473	41.050	50.523	-23.477	74.000
7311.000	14.540	38.850	53.389	-20.611	74.000
9748.000	20.024	39.530	59.555	-14.445	74.000
Average					
Detector:					
9748.000	20.024	22.800	42.825	-11.175	54.000
Vertical					
Peak Detector:					
4874.000	8.882	39.670	48.551	-25.449	74.000
7311.000	15.283	39.530	54.813	-19.187	74.000
9748.000	19.228	42.180	61.409	-12.591	74.000
Average					
Detector:					
7311.000	15.283	22.800	38.083	-15.917	54.000
9748.000	19.228	24.750	43.979	-10.021	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 802.11b 1Mbps (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	9.487	40.320	49.806	-24.194	74.000
7386.000	14.798	36.710	51.508	-22.492	74.000
9848.000	20.005	40.450	60.456	-13.544	74.000
Average					
Detector:					
9848.000	20.005	23.750	43.756	-10.244	54.000
Vertical					
Peak Detector:					
4924.000	9.415	41.240	50.654	-23.346	74.000
7386.000	15.269	38.110	53.379	-20.621	74.000
9848.000	19.191	42.700	61.891	-12.109	74.000
Average					
Detector:					
9848.000	19.191	23.860	43.051	-10.949	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 802.11g 6Mbps (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	9.582	38.240	47.822	-26.178	74.000
7236.000	14.401	35.300	49.701	-24.299	74.000
9648.000	19.795	35.460	55.255	-18.745	74.000
Average Detector:					
9648.000	19.795	22.560	42.355	-11.645	54.000
Vertical					
Peak Detector:					
4824.000	8.462	38.720	47.182	-26.818	74.000
7236.000	15.412	34.850	50.262	-23.738	74.000
9648.000	19.005	35.280	54.285	-19.715	74.000
Average Detector:					
9648.000	19.005	22.622	41.627	-12.373	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 802.11g 6Mbps (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4874.000	9.473	36.250	45.723	-28.277	74.000
7311.000	14.540	34.280	48.819	-25.181	74.000
9748.000	20.024	35.990	56.015	-17.985	74.000
Average Detector:					
9748.000	20.024	24.360	44.385	-9.615	54.000
Vertical Peak Detector:					
4874.000	8.882	37.290	46.171	-27.829	74.000
7311.000	15.283	34.730	50.013	-23.987	74.000
9748.000	19.228	37.210	56.439	-17.561	74.000
Average Detector:					
9748.000	19.228	22.590	41.819	-12.181	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 802.11g 6Mbps (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	9.487	36.610	46.096	-27.904	74.000
7386.000	14.798	33.980	48.778	-25.222	74.000
9848.000	20.005	35.770	55.776	-18.224	74.000
Average					
Detector:					
9848.000	20.005	23.610	43.616	-10.384	54.000
Vertical					
Peak Detector:					
4924.000	9.415	35.600	45.014	-28.986	74.000
7386.000	15.269	33.610	48.879	-25.121	74.000
9848.000	19.191	36.170	55.361	-18.639	74.000
Average					
Detector:					
9848.000	19.191	22.670	41.861	-12.139	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter - 802.11a 6Mbps (5745 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11490.000	19.970	43.390	63.360	-10.640	74.000
Average Detector:					
11490.000	19.970	30.560	50.530	-3.470	54.000
Vertical Peak Detector:					
11490.000	18.883	49.130	68.013	-5.987	74.000
Average Detector:					
11490.000	18.883	31.900	50.783	-3.217	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter - 802.11a 6Mbps (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11570.000	19.925	44.080	64.005	-9.995	74.000
Average Detector:					
11570.000	19.925	30.380	50.305	-3.695	54.000
Vertical Peak Detector:					
11570.000	19.036	48.530	67.565	-6.435	74.000
Average Detector:					
11570.000	19.036	31.730	50.765	-3.235	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter - 802.11a 6Mbps (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11570.000	19.036	31.730	50.765	-3.235	54.000
Average Detector:					
11650.000	19.755	29.640	49.394	-4.606	54.000
Vertical Peak Detector:					
11650.000	18.830	47.970	66.800	-7.200	74.000
Average Detector:					
11650.000	18.830	31.220	50.050	-3.950	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4GHz Band) (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	9.582	38.700	48.282	-25.718	74.000
7236.000	14.401	35.200	49.601	-24.399	74.000
9648.000	19.795	35.430	55.225	-18.775	74.000
Average Detector:					
9648.000	19.795	22.520	42.315	-11.685	54.000
Vertical					
Peak Detector:					
4824.000	8.462	37.620	46.082	-27.918	74.000
7236.000	15.412	36.020	51.432	-22.568	74.000
9648.000	19.005	36.620	55.625	-18.375	74.000
Average Detector:					
9648.000	19.005	22.190	41.195	-12.805	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4GHz Band) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4874.000	9.473	39.980	49.453	-24.547	74.000
7311.000	14.540	37.560	52.099	-21.901	74.000
9748.000	20.024	36.940	56.965	-17.035	74.000
Average Detector:					
9748.000	20.024	22.790	42.815	-11.185	54.000
Vertical Peak Detector:					
4874.000	8.882	37.080	45.961	-28.039	74.000
7311.000	15.283	37.480	52.763	-21.237	74.000
9748.000	19.228	36.620	55.849	-18.151	74.000
Average Detector:					
9748.000	19.228	22.880	42.109	-11.891	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4GHz Band) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	9.487	40.610	50.096	-23.904	74.000
7386.000	14.798	35.230	50.028	-23.972	74.000
9848.000	20.005	36.700	56.706	-17.294	74.000
Average					
Detector:					
9848.000	20.005	23.070	43.076	-10.924	54.000
Vertical					
Peak Detector:					
4924.000	9.415	38.680	48.094	-25.906	74.000
7386.000	15.269	34.870	50.139	-23.861	74.000
9848.000	19.191	35.820	55.011	-18.989	74.000
Average					
Detector:					
9848.000	19.191	22.710	41.901	-12.099	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band) (2422MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4844.000	9.536	38.240	47.776	-26.224	74.000
7266.000	14.459	36.780	51.239	-22.761	74.000
9688.000	19.847	35.910	55.757	-18.243	74.000
Average					
Detector:					
9688.000	19.847	22.640	42.487	-11.513	54.000
Vertical					
Peak Detector:					
4844.000	8.627	37.150	45.777	-28.223	74.000
7266.000	15.363	34.540	49.904	-24.096	74.000
9688.000	19.057	36.150	55.207	-18.793	74.000
Average					
Detector:					
9688.000	19.057	23.160	42.217	-11.783	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4874.000	9.473	36.880	46.353	-27.647	74.000
7311.000	14.540	34.150	48.689	-25.311	74.000
9748.000	20.024	35.880	55.905	-18.095	74.000
Average Detector:					
9748.000	20.024	23.180	43.205	-10.795	54.000
Vertical Peak Detector:					
4874.000	8.882	35.840	44.721	-29.279	74.000
7311.000	15.283	34.380	49.663	-24.337	74.000
9748.000	19.228	37.490	56.719	-17.281	74.000
Average Detector:					
9748.000	19.228	24.260	43.489	-10.511	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band) (2452 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4904.000	9.518	36.260	45.778	-28.222	74.000
7356.000	14.741	34.080	48.820	-25.180	74.000
9808.000	20.066	35.920	55.986	-18.014	74.000
Average Detector:					
9808.000	20.066	23.610	43.676	-10.324	54.000
Vertical Peak Detector:					
4904.000	9.235	36.800	46.034	-27.966	74.000
7356.000	15.318	33.810	49.128	-24.872	74.000
9808.000	19.266	35.980	55.246	1.246	54.000
Average Detector:					
9808.000	19.266	22.390	41.656	-12.344	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5GHz Band) (5745MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11490.000	19.970	44.020	63.990	-10.010	74.000
Average					
Detector:					
11490.000	19.970	29.920	49.890	-4.110	54.000
Vertical					
Peak Detector:					
11490.000	18.883	49.170	68.053	-5.947	74.000
Average					
Detector:					
11490.000	18.883	30.790	49.673	-4.327	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5GHz Band) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11570.000	19.925	43.190	63.115	-10.885	74.000
Average Detector:					
11570.000	19.925	29.460	49.385	-4.615	54.000
Vertical Peak Detector:					
11570.000	19.036	48.420	67.455	-6.545	74.000
Average Detector:					
11570.000	19.036	31.290	50.325	-3.675	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5GHz Band) (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11650.000	19.755	43.300	63.054	-10.946	74.000
Average Detector:					
11650.000	19.755	28.770	48.524	-5.476	54.000
Vertical Peak Detector:					
11650.000	18.830	49.080	67.910	-6.090	74.000
Average Detector:					
11650.000	18.830	30.410	49.240	-4.760	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5GHz Band) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11510.000	19.945	39.570	59.515	-14.485	74.000
Average					
Detector:					
11510.000	19.945	26.660	46.605	-7.395	54.000
Vertical					
Peak Detector:					
11510.000	18.914	44.920	63.834	-10.166	74.000
Average					
Detector:					
11510.000	18.914	31.160	50.074	-3.926	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5GHz Band) (5795 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11590.000	19.924	40.020	59.944	-14.056	74.000
Average Detector:					
11590.000	19.924	27.220	47.144	-6.856	54.000
Vertical Peak Detector:					
11590.000	19.082	46.130	65.212	-8.788	74.000
Average Detector:					
11590.000	19.082	30.820	49.902	-4.098	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 802.11b 1Mbps (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
299.660	-4.061	33.237	29.176	-16.824	46.000
381.140	-1.606	27.101	25.495	-20.505	46.000
522.760	1.270	30.575	31.845	-14.155	46.000
674.080	2.353	34.540	36.893	-9.107	46.000
800.180	4.773	32.278	37.051	-8.949	46.000
932.100	6.430	29.289	35.719	-10.281	46.000
Vertical					
299.660	-7.331	36.274	28.943	-17.057	46.000
375.320	-2.599	34.188	31.589	-14.411	46.000
524.700	-0.898	31.940	31.042	-14.958	46.000
674.080	-0.947	36.968	36.021	-9.979	46.000
842.860	2.683	30.032	32.715	-13.285	46.000
953.440	6.113	31.183	37.296	-8.704	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Notebook
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 802.11g 6Mbps (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
299.660	-4.061	37.040	32.979	-13.021	46.000
375.320	-1.779	34.188	32.409	-13.591	46.000
524.700	1.282	31.940	33.222	-12.778	46.000
674.080	2.353	33.861	36.214	-9.786	46.000
790.480	4.807	29.212	34.019	-11.981	46.000
889.420	5.822	30.307	36.130	-9.870	46.000
Vertical					
375.320	-2.599	34.188	31.589	-14.411	46.000
534.400	-1.100	30.442	29.342	-16.658	46.000
625.580	-3.068	29.632	26.564	-19.436	46.000
759.440	2.030	30.713	32.743	-13.257	46.000
889.420	2.072	30.307	32.380	-13.620	46.000
963.140	7.068	29.462	36.530	-17.470	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Notebook
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter - 802.11a 6Mbps (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
299.660	-4.061	37.192	33.131	-12.869	46.000
373.380	-1.717	32.288	30.571	-15.429	46.000
522.760	1.270	29.148	30.418	-15.582	46.000
672.140	1.840	28.026	29.866	-16.134	46.000
796.300	4.783	31.700	36.483	-9.517	46.000
901.060	5.134	26.618	31.752	-14.248	46.000
Vertical					
299.660	-7.331	40.792	33.461	-12.539	46.000
373.380	-2.927	31.219	28.292	-17.708	46.000
449.040	-7.949	33.875	25.926	-20.074	46.000
522.760	-0.850	31.632	30.782	-15.218	46.000
821.520	3.099	33.428	36.527	-9.473	46.000
901.060	2.874	31.034	33.908	-12.092	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Notebook
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4GHz Band) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
295.780	-4.148	33.689	29.541	-16.459	46.000
375.320	-1.779	34.188	32.409	-13.591	46.000
460.680	1.131	30.276	31.407	-14.593	46.000
600.360	3.455	31.401	34.856	-11.144	46.000
674.080	2.353	32.626	34.979	-11.021	46.000
889.420	5.822	30.307	36.130	-9.870	46.000
Vertical					
299.660	-7.331	37.040	29.709	-16.291	46.000
375.320	-2.599	34.188	31.589	-14.411	46.000
674.080	-0.947	35.515	34.568	-11.432	46.000
800.180	2.433	31.770	34.203	-11.797	46.000
889.420	2.072	30.307	32.380	-13.620	46.000
965.080	7.397	29.941	37.338	-16.662	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Notebook
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
297.720	-4.117	37.690	33.573	-12.427	46.000
373.380	-1.717	34.512	32.795	-13.205	46.000
522.760	1.270	32.790	34.060	-11.940	46.000
600.360	3.455	31.401	34.856	-11.144	46.000
674.080	2.353	35.507	37.860	-8.140	46.000
889.420	5.822	30.307	36.130	-9.870	46.000
Vertical					
297.720	-7.627	37.690	30.063	-15.937	46.000
375.320	-2.599	34.188	31.589	-14.411	46.000
524.700	-0.898	32.891	31.993	-14.007	46.000
674.080	-0.947	38.807	37.860	-8.140	46.000
825.400	3.125	31.891	35.015	-10.985	46.000
953.440	6.113	31.183	37.296	-8.704	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Notebook
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5GHz Band) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
299.660	-4.061	37.811	33.750	-12.250	46.000
375.320	-1.779	33.709	31.930	-14.070	46.000
524.700	1.282	28.624	29.906	-16.094	46.000
598.420	3.466	26.337	29.803	-16.197	46.000
800.180	4.773	31.398	36.171	-9.829	46.000
897.180	4.730	27.122	31.852	-14.148	46.000
Vertical					
299.660	-7.331	39.344	32.013	-13.987	46.000
522.760	-0.850	31.476	30.626	-15.374	46.000
749.740	1.998	29.456	31.454	-14.546	46.000
796.300	2.453	33.070	35.523	-10.477	46.000
901.060	2.874	30.549	33.423	-12.577	46.000
967.020	7.541	27.233	34.774	-19.226	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Notebook
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5GHz Band) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
299.660	-4.061	36.770	32.709	-13.291	46.000
375.320	-1.779	32.597	30.818	-15.182	46.000
598.420	3.466	25.866	29.332	-16.668	46.000
749.740	2.808	27.928	30.736	-15.264	46.000
800.180	4.773	30.774	35.547	-10.453	46.000
897.180	4.730	25.962	30.692	-15.308	46.000
Vertical					
297.720	-7.627	37.933	30.306	-15.694	46.000
373.380	-2.927	30.577	27.650	-18.350	46.000
522.760	-0.850	34.528	33.678	-12.322	46.000
749.740	1.998	29.852	31.850	-14.150	46.000
800.180	2.433	33.586	36.019	-9.981	46.000
897.180	1.880	30.088	31.968	-14.032	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

5. RF antenna conducted test

5.1. Test Equipment

The following test equipments are used during the radiated emission tests:

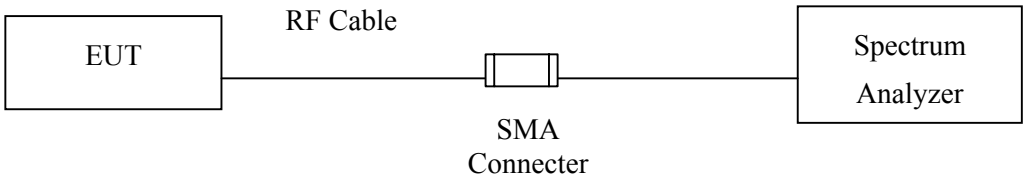
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R&S	FSP40 / 100170	Nov, 2008
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2009

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

The EUT was tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

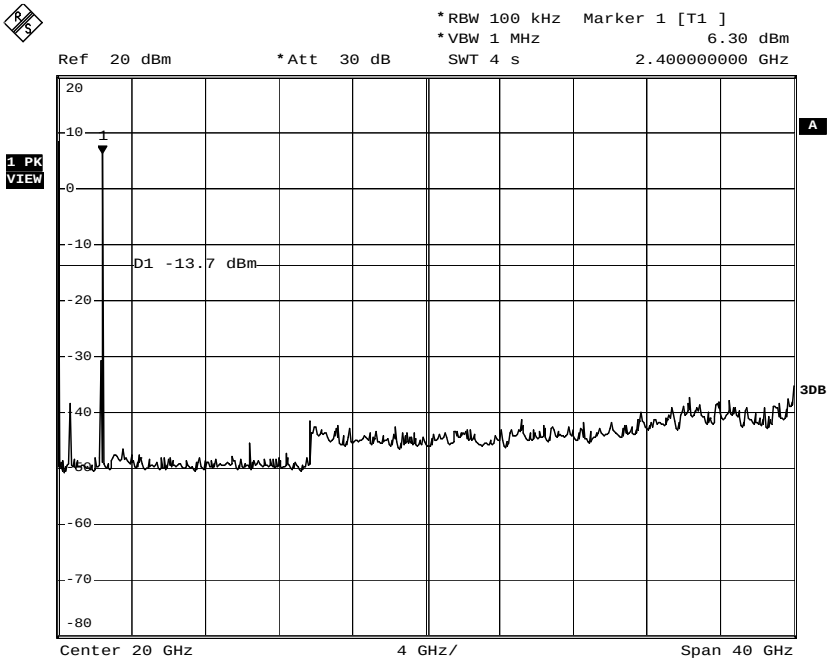
5.5. Uncertainty

The measurement uncertainty
Conducted is defined as ± 1.27dB

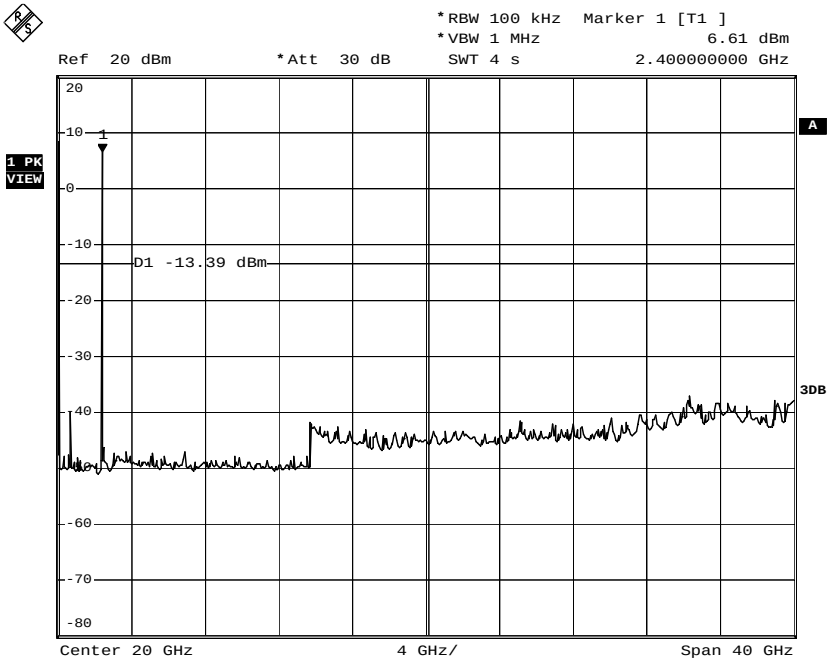
5.6. Test Result of RF antenna conducted test

Product : Notebook
Test Item : RF antenna conducted test
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 802.11b 1Mbps

Channel 01 (2412MHz) 30MHz-25GHz

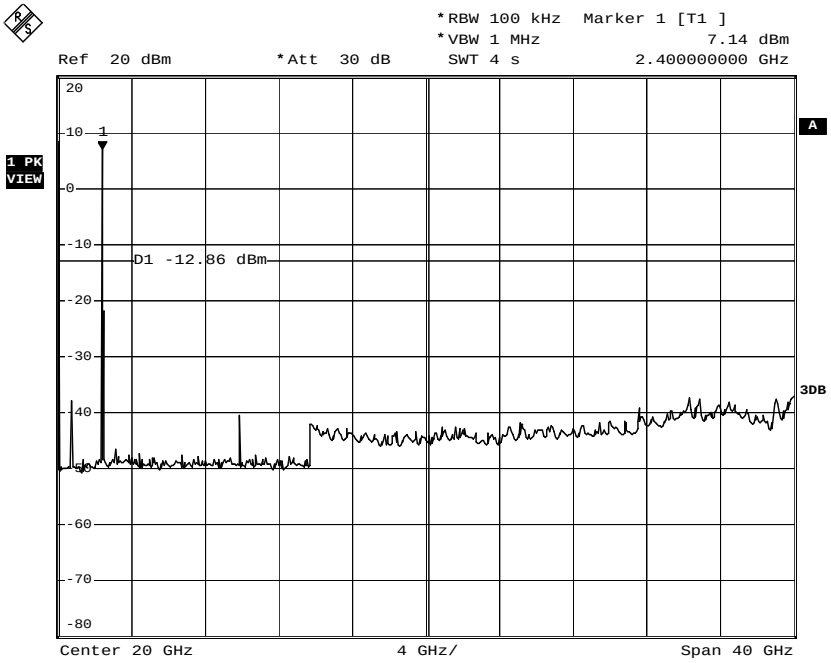


Channel 06 (2437MHz) 30MHz -25GHz



Date: 22.JUN.2009 18:04:06

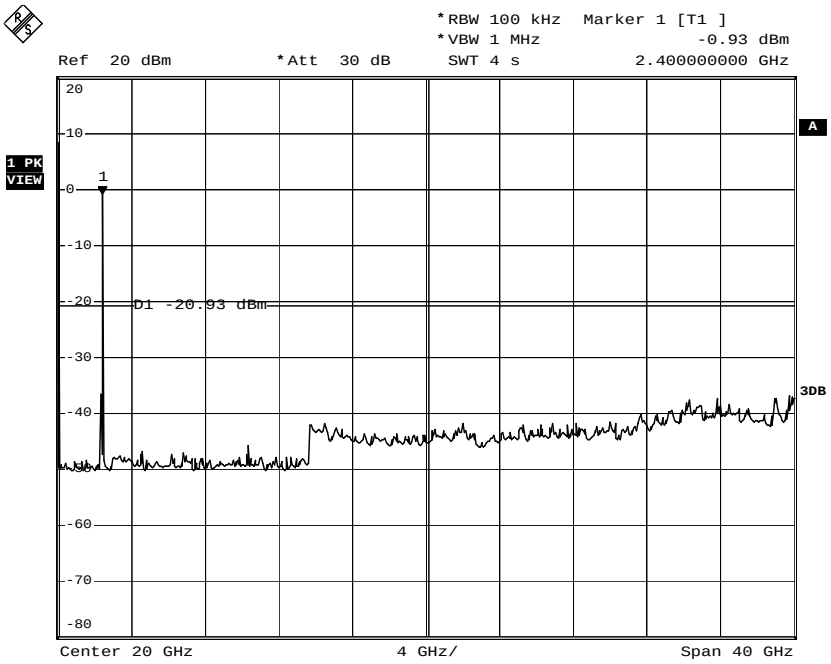
Channel 11 (2462MHz) 30MHz -25GHz



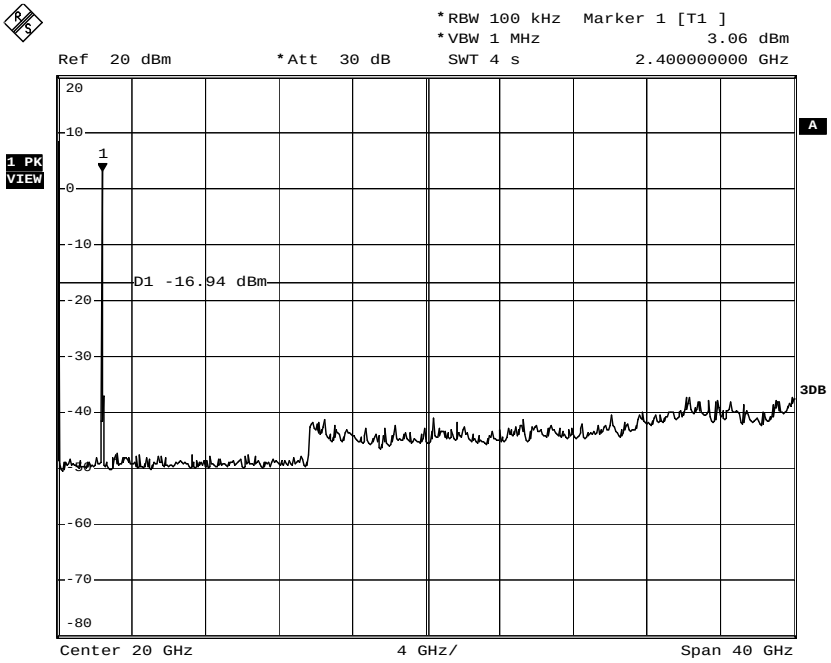
Date: 22.JUN.2009 18:04:56

Product : Notebook
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 802.11g 6Mbps

Channel 01 (2412MHz) 30MHz -25GHz

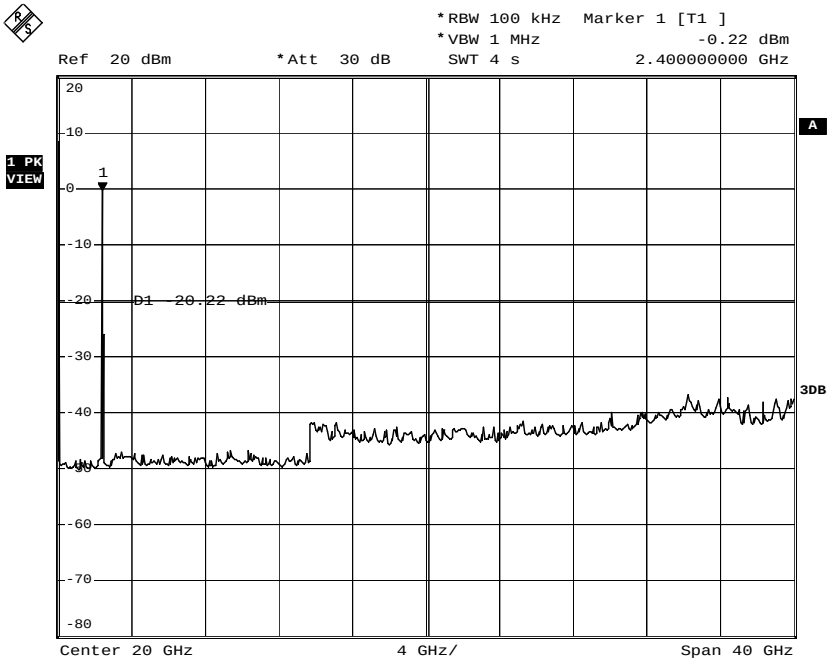


Channel 06 (2437MHz) 30MHz -25GHz



Date: 22.JUN.2009 18:07:03

Channel 11 (2462MHz) 30MHz -25GHz



Date: 22.JUN.2009 18:08:13

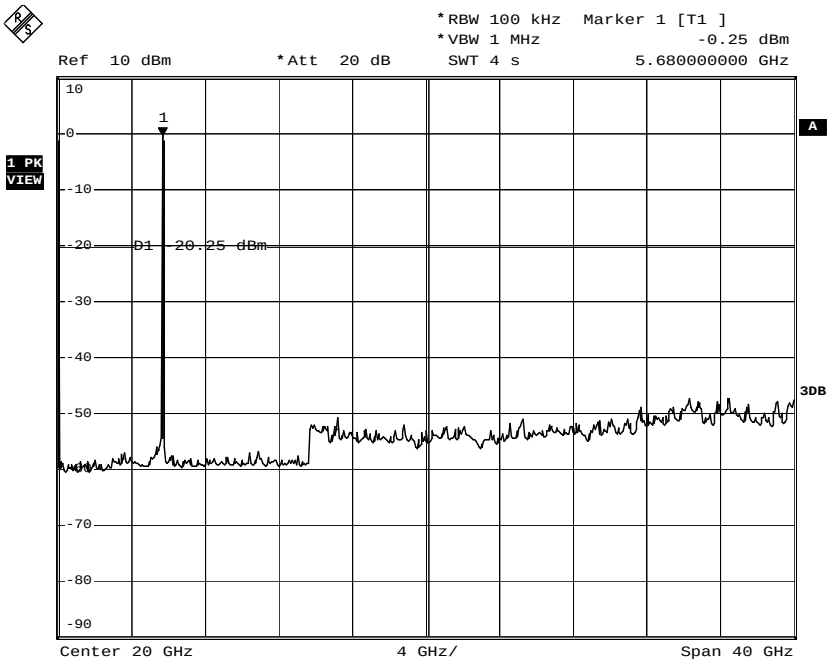
Product : Notebook

Test Item : RF Antenna Conducted Spurious

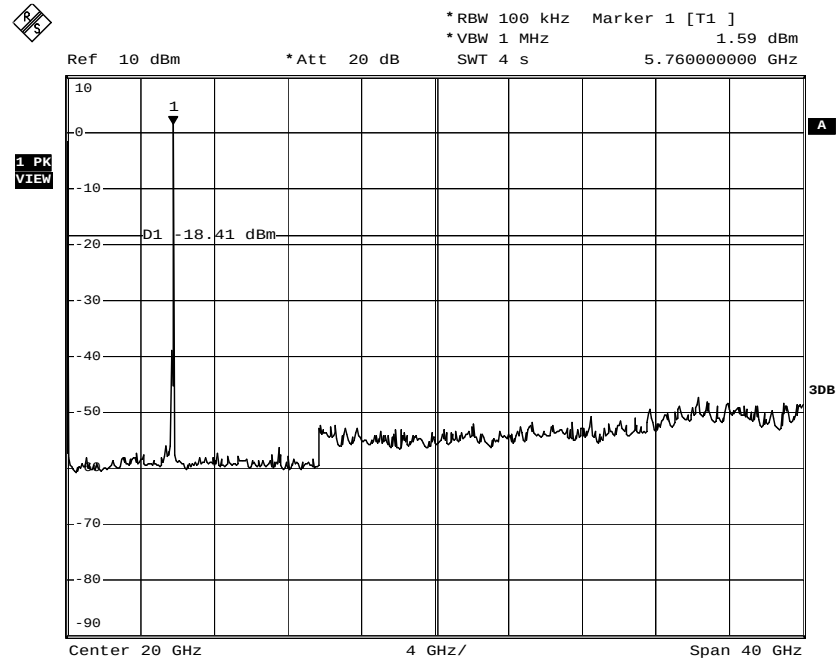
Test Site : No.3 OATS

Test Mode : Mode 3: Transmitter - 802.11a 6Mbps

Channel 149 (5745MHz) 30MHz -40GHz

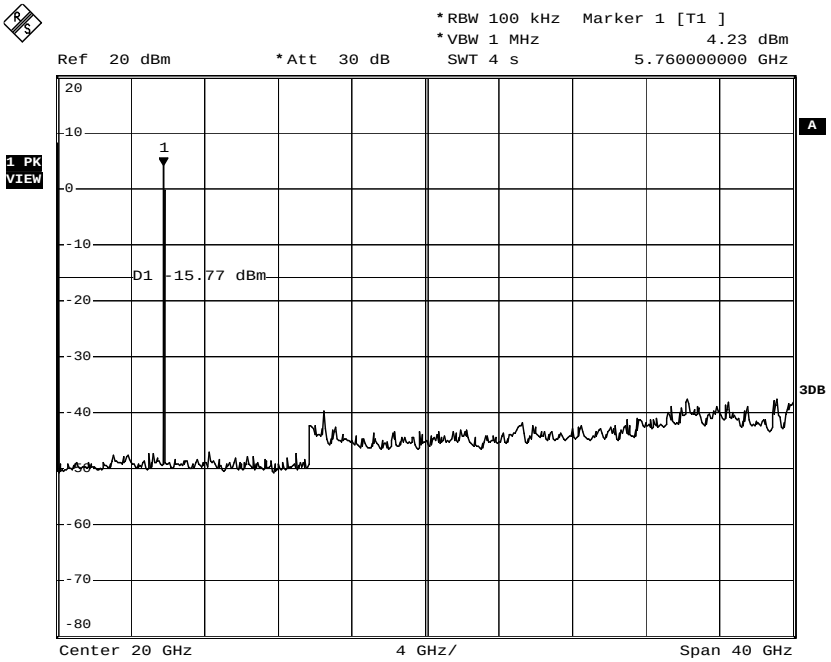


Channel 157 (5785MHz) 30MHz -40GHz



Date: 22.JUN.2009 18:20:12

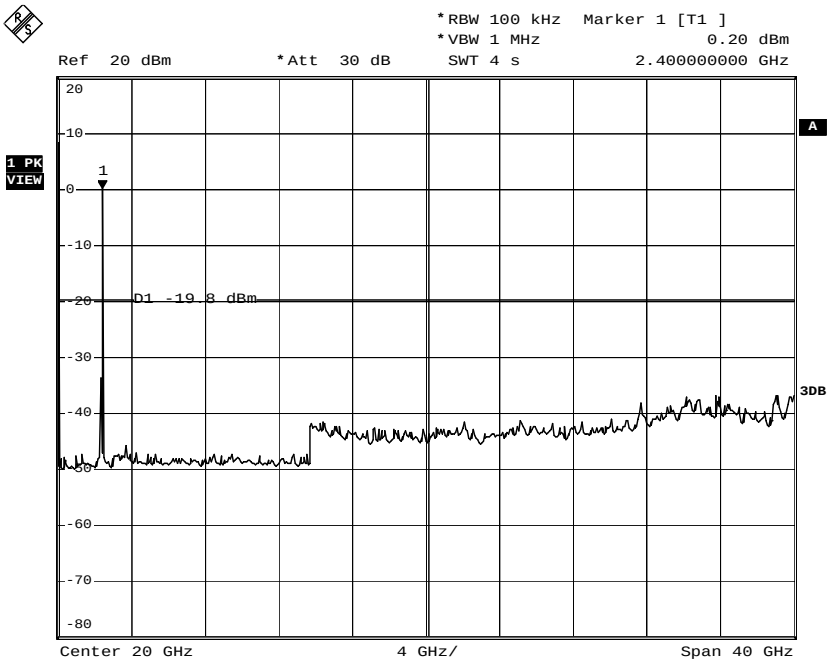
Channel 165 (5825MHz) 30MHz -40GHz



Date: 22.JUN.2009 19:26:34

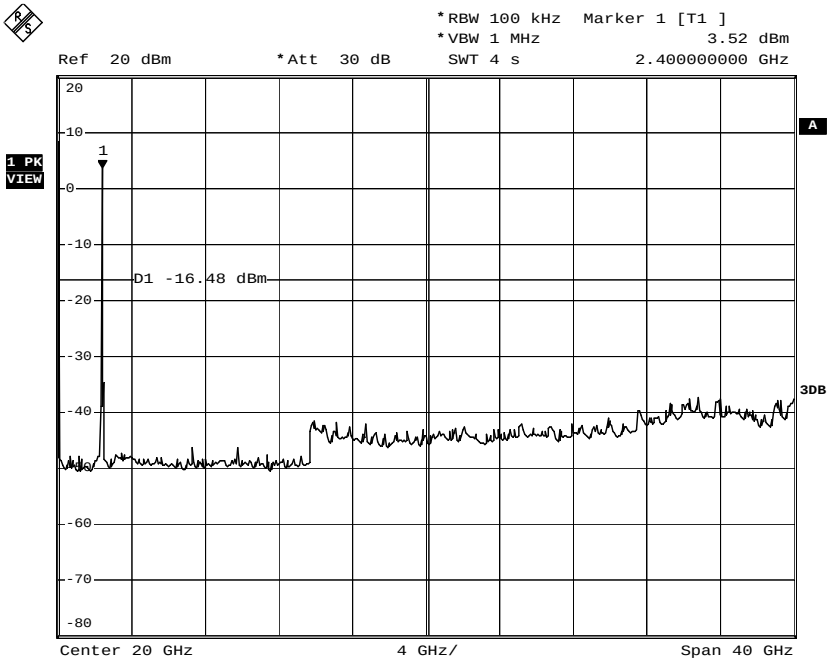
Product : Notebook
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4GHz Band)

Channel 01 (2412MHz) 30MHz -25GHz



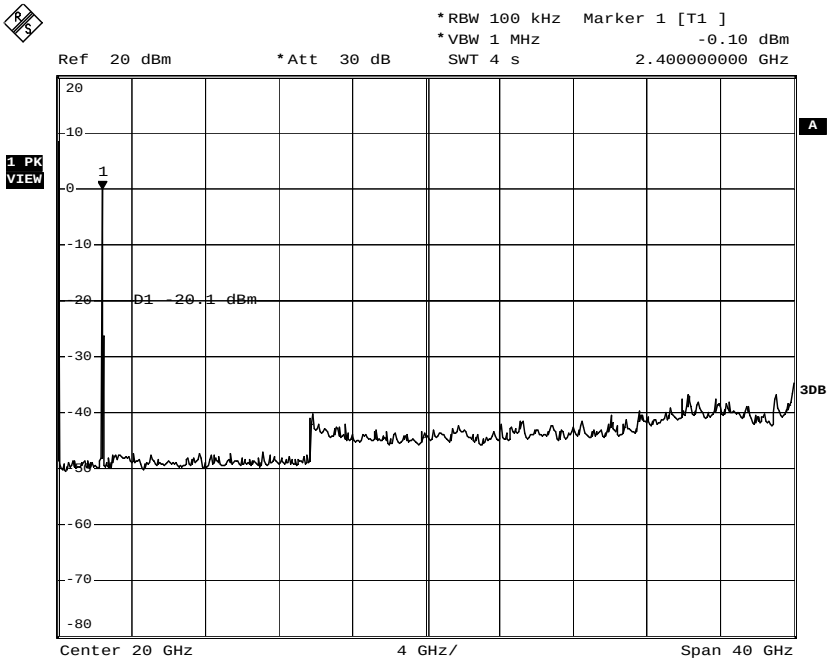
Date: 22.JUN.2009 18:10:02

Channel 06 (2437MHz) 30MHz -25GHz



Date: 22.JUN.2009 18:11:30

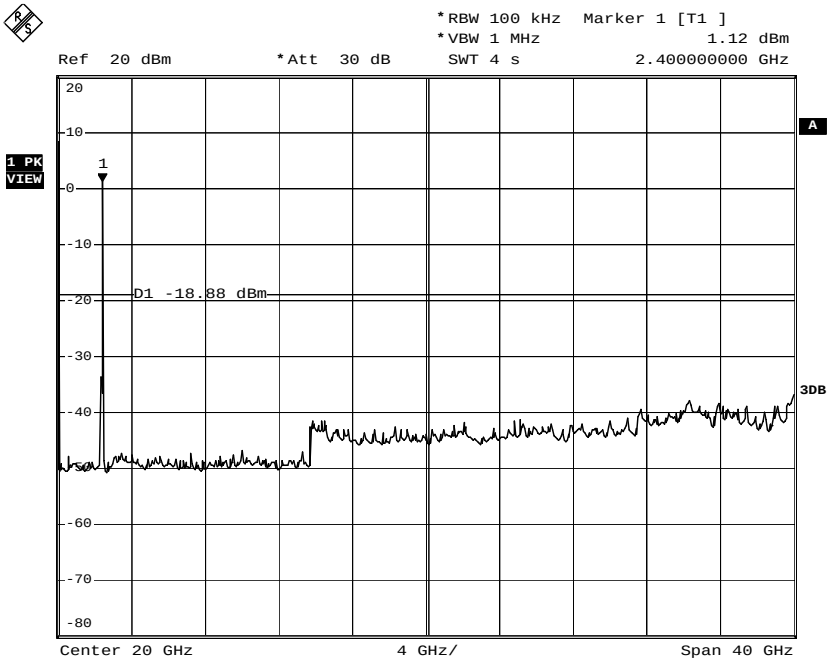
Channel 11 (2462MHz) 30MHz -25GHz



Date: 22.JUN.2009 18:12:30

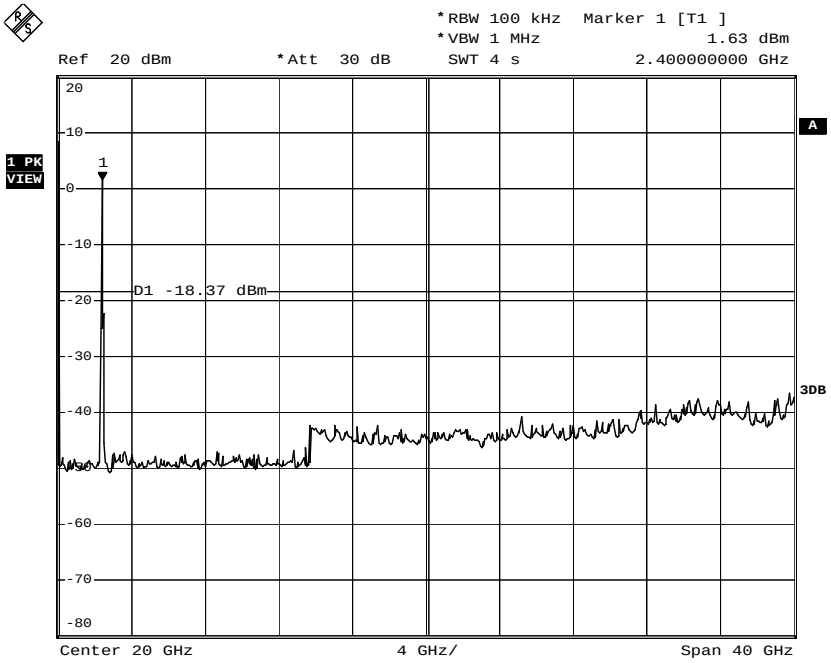
Product : Notebook
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band)

Channel 01 (2422MHz) 30MHz -25GHz



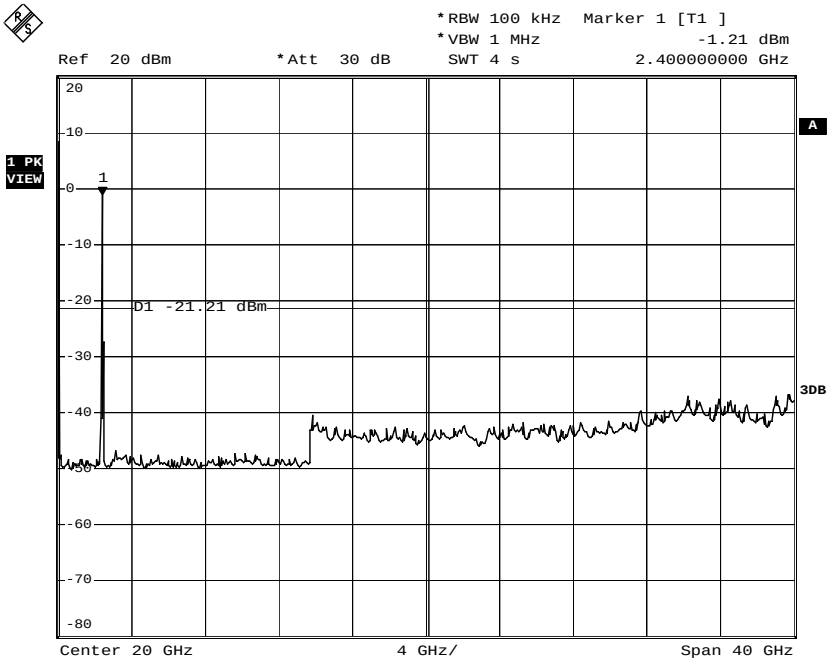
Date: 22.JUN.2009 18:13:36

Channel 04 (2437MHz) 30MHz -25GHz



Date: 22.JUN.2009 18:14:45

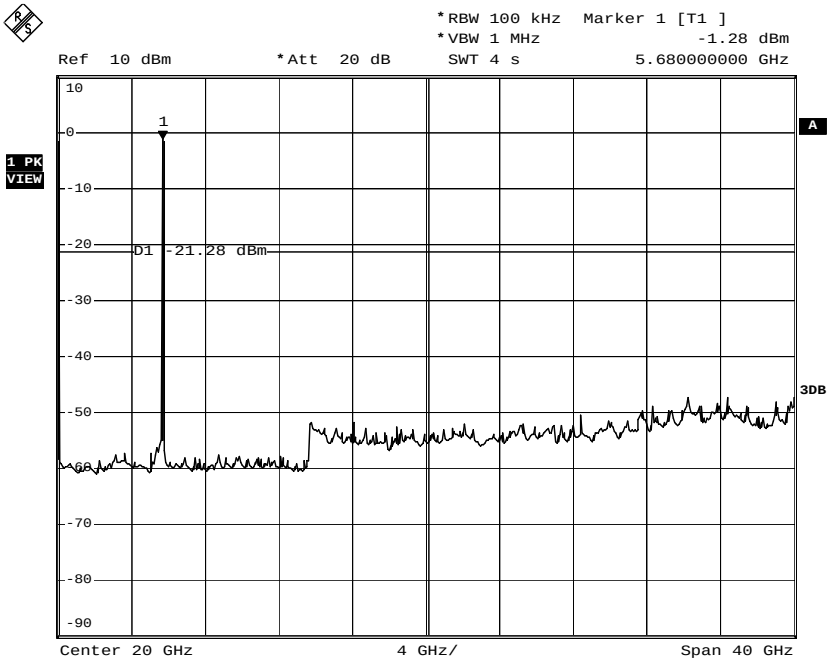
Channel 07 (2452MHz) 30MHz -25GHz



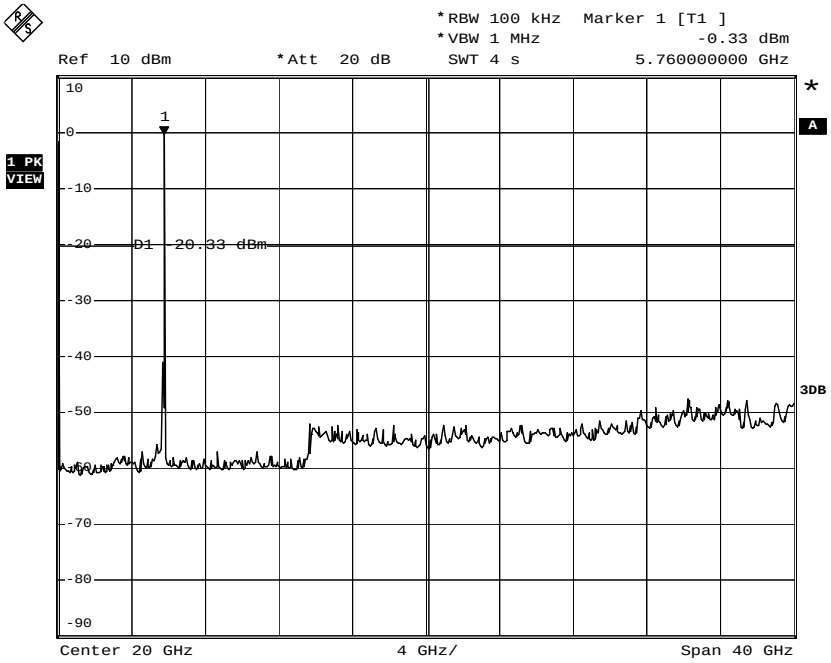
Date: 22.JUN.2009 18:15:56

Product : Notebook
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5GHz Band)

Channel 149 (5745MHz) 30MHz -40GHz

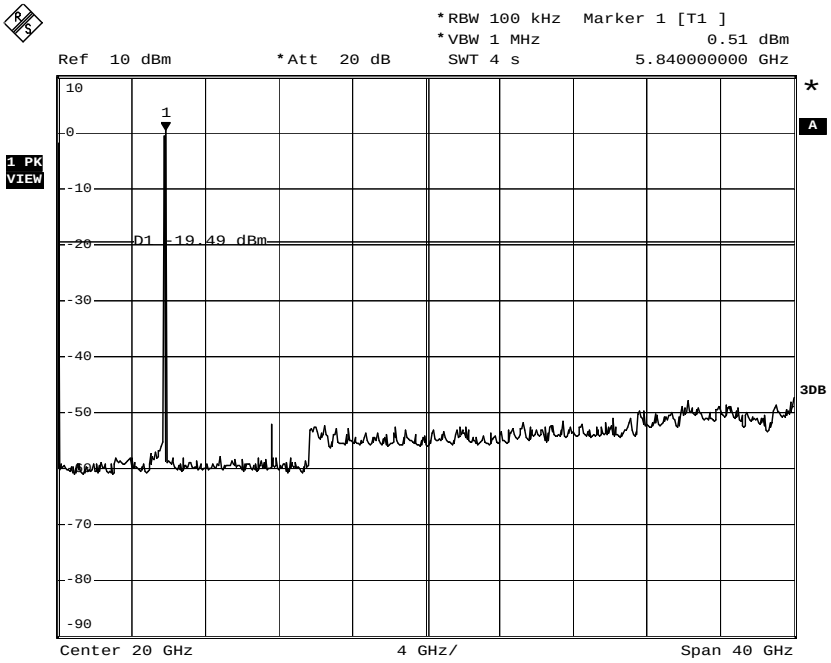


Channel 157 (5785MHz) 30MHz -40GHz



Date: 22.JUN.2009 19:28:42

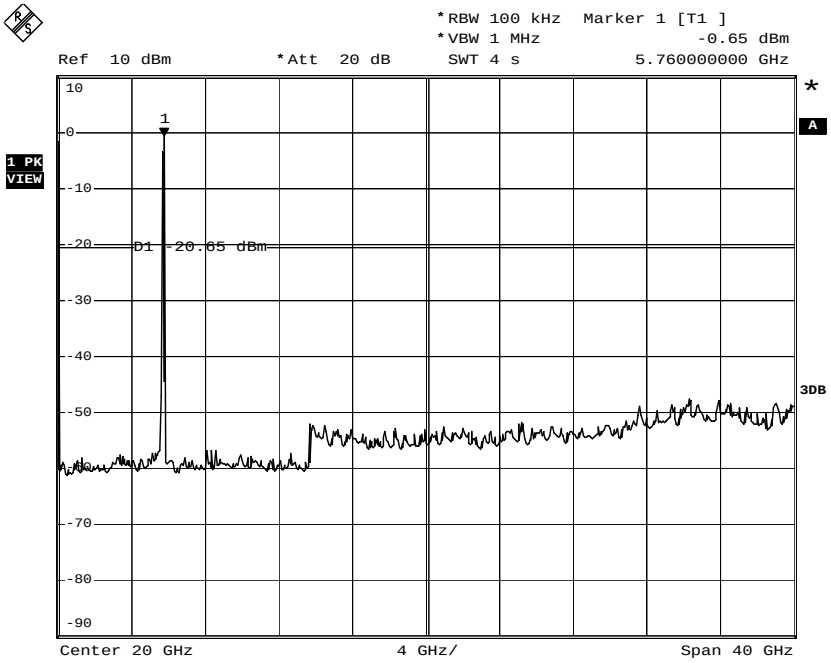
Channel 165 (5825MHz) 30MHz -40GHz



Date: 22.JUN.2009 19:29:26

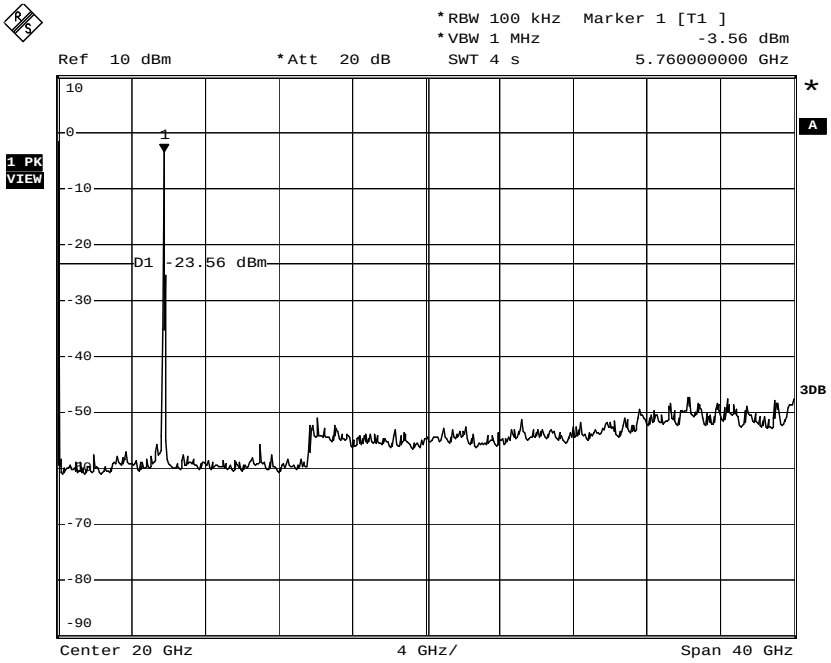
Product : Notebook
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5GHz Band)

Channel 151 (5755MHz) 30MHz -40GHz



Date: 22.JUN.2009 19:30:34

Channel 159 (5795MHz) 30MHz -40GHz



Date: 22.JUN.2009 19:31:13

6. Band Edge

6.1. Test Equipment

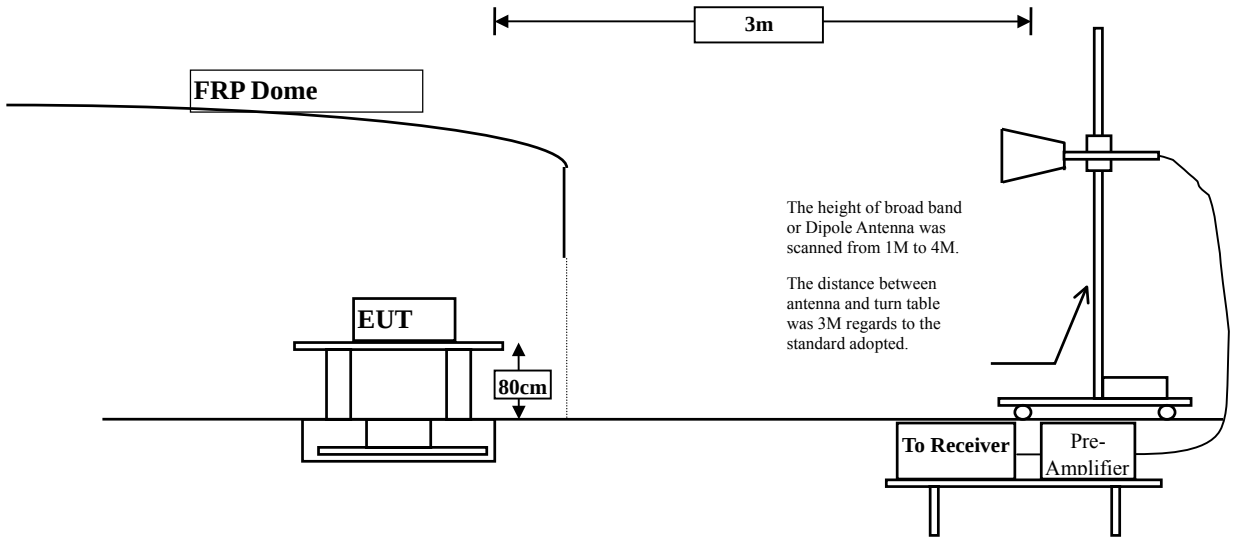
The following test equipments are used during the band edge tests:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2008
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2008
	X	Pre-Amplifier	AGILENT	8447D/2944A09549	Sep., 2008
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2008
	X	Spectrum Analyzer	Advantest	R3162/91700283	Oct., 2008
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2009
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A
	X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2009

Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

6.2. Test Setup

RF Radiated Measurement:



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

6.5. Uncertainty

± 3.9 dB above 1GHz
± 3.8 dB below 1GHz

6.6. Test Result of Band Edge

Product : Notebook
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 802.11b 1Mbps-Channel 1

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dBuV]	Correction Factor [dB/m]	Emission Level [dBuV/m]	Detector
Horizontal	2412	67.909	36.060	103.969	Peak
Horizontal	2412	64.575	36.055	100.629	Average
Vertical	2412	75.021	35.312	110.334	Peak
Vertical	2412	71.666	35.318	106.983	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2379.6	103.969	50.94	53.029	Peak
Horizontal	2379.5	100.629	60.66	39.969	Average
Vertical	2379.6	110.334	50.94	59.394	Peak
Vertical	2379.5	106.983	60.66	46.323	Average

Note:

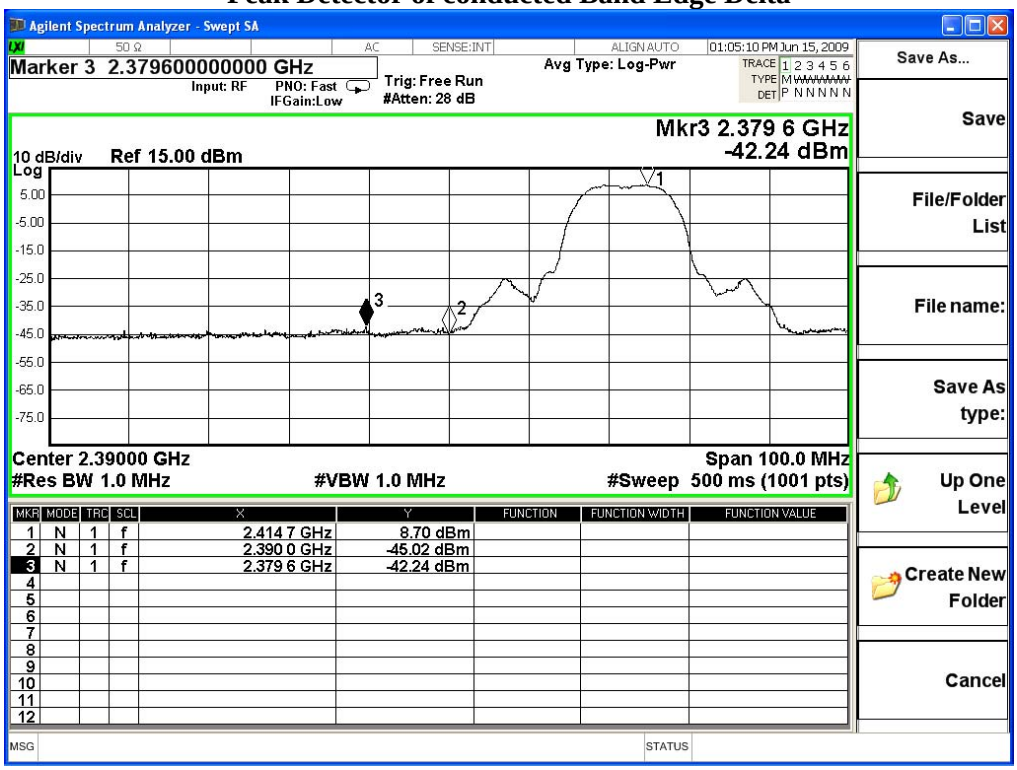
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

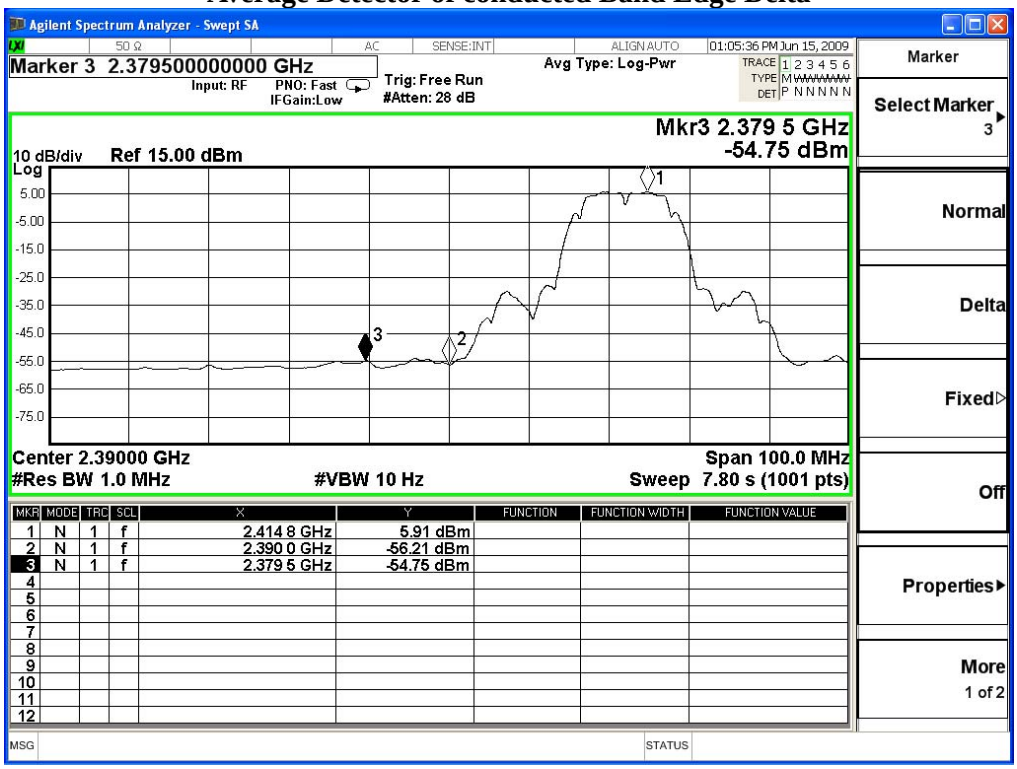
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Notebook
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 802.11b 1Mbps -Channel 11

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dB(uV)]	Correction Factor [dB/m]	Emission Level [dB(uV/m)]	Detector
Horizontal	2462	70.704	36.342	107.046	Peak
Horizontal	2462	67.233	36.331	103.564	Average
Vertical	2462	75.938	35.901	111.839	Peak
Vertical	2462	72.473	35.883	108.356	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2494.7	107.046	50.03	57.016	Peak
Horizontal	2494.3	103.564	59.98	43.584	Average
Vertical	2494.7	111.839	50.03	61.809	Peak
Vertical	2494.3	108.356	59.98	48.376	Average

Note:

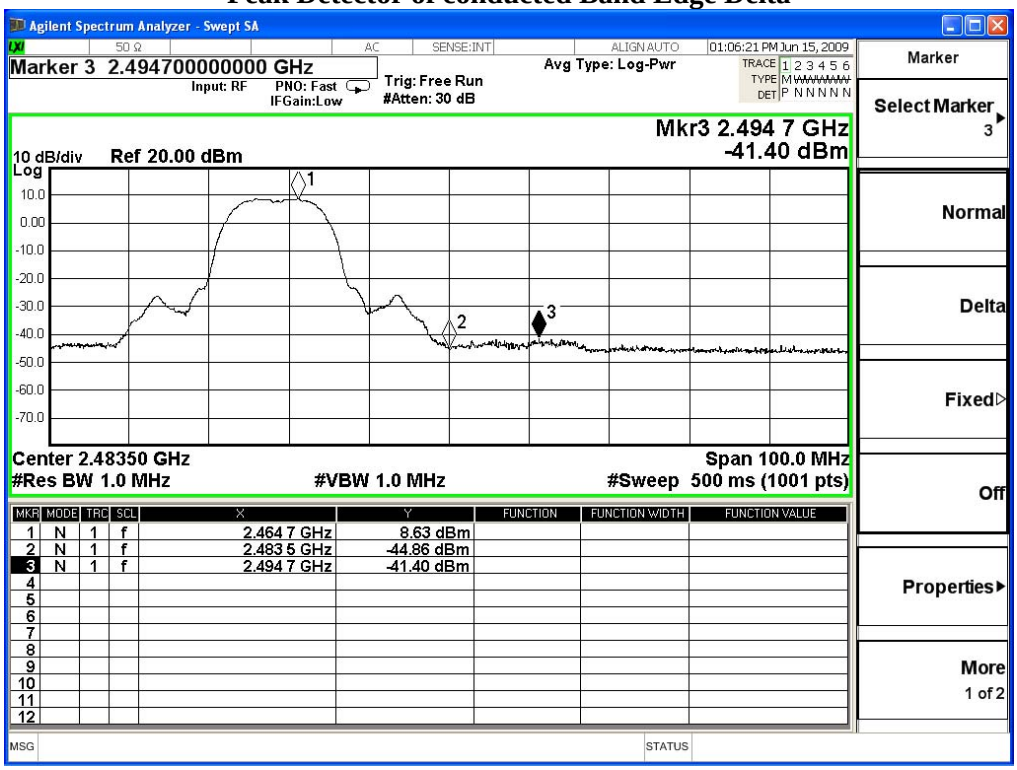
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

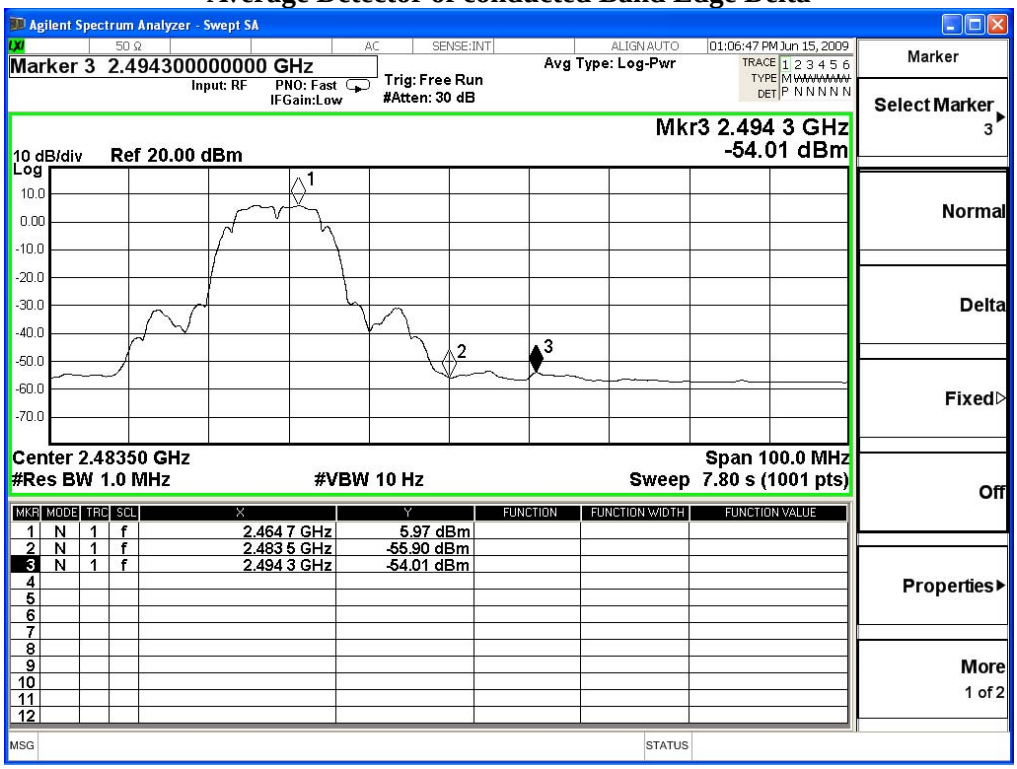
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Notebook
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 802.11g 6Mbps -Channel 1

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dBuV]	Correction Factor [dB/m]	Emission Level [dBuV/m]	Detector
Horizontal	2412	62.043	36.613	98.656	Peak
Horizontal	2412	52.773	36.605	89.378	Average
Vertical	2412	66.351	35.650	102.001	Peak
Vertical	2412	55.537	35.599	91.136	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2389.75	98.656	36.53	62.126	Peak
Horizontal	2390.0	89.378	46.82	42.558	Average
Vertical	2389.75	102.001	36.53	65.471	Peak
Vertical	2390.0	91.136	46.82	44.316	Average

Note:

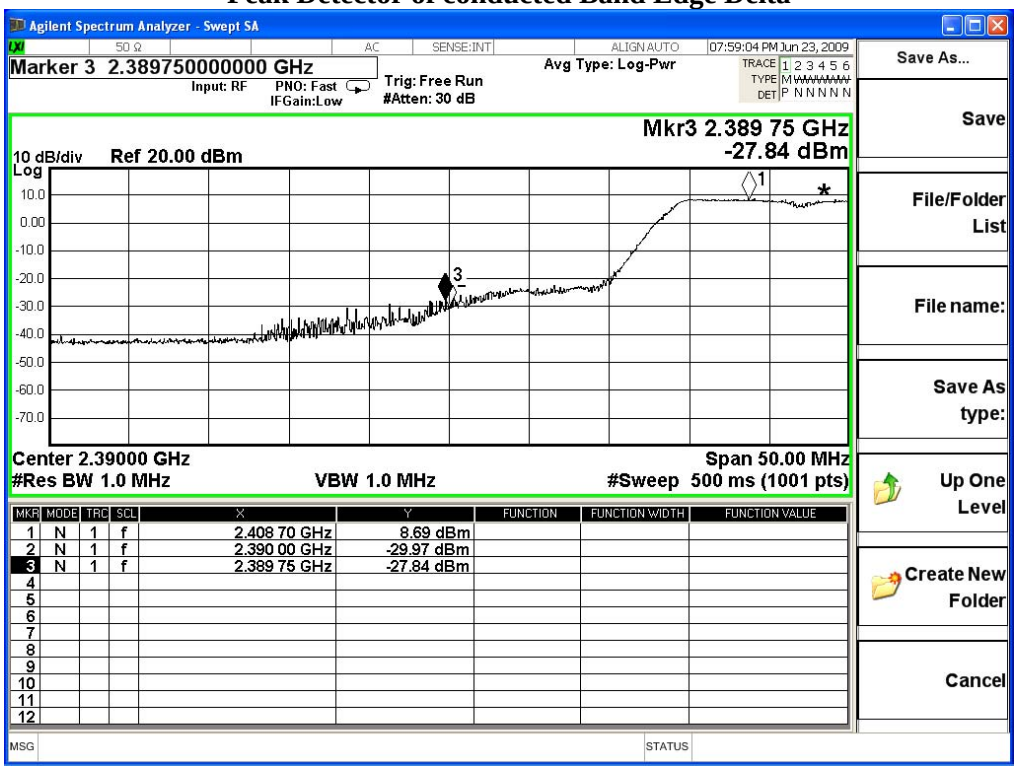
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

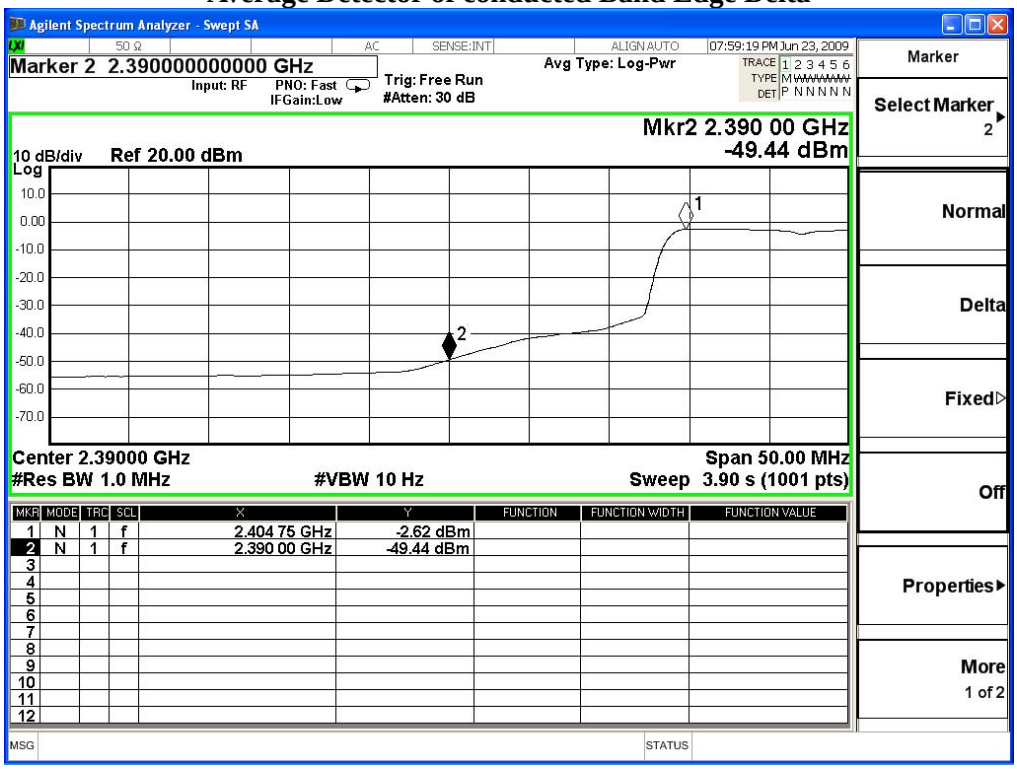
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Notebook
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 802.11g 6Mbps -Channel 11

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dB(uV)]	Correction Factor [dB/m]	Emission Level [dB(uV/m)]	Detector
Horizontal	2462	64.777	36.703	101.480	Peak
Horizontal	2462	55.642	36.704	92.346	Average
Vertical	2462	68.139	35.985	104.124	Peak
Vertical	2462	57.725	36.087	93.811	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2483.7	101.480	33.98	67.5	Peak
Horizontal	2483.5	92.346	46.55	45.796	Average
Vertical	2483.7	104.124	33.98	70.144	Peak
Vertical	2483.5	93.811	46.55	47.261	Average

Note:

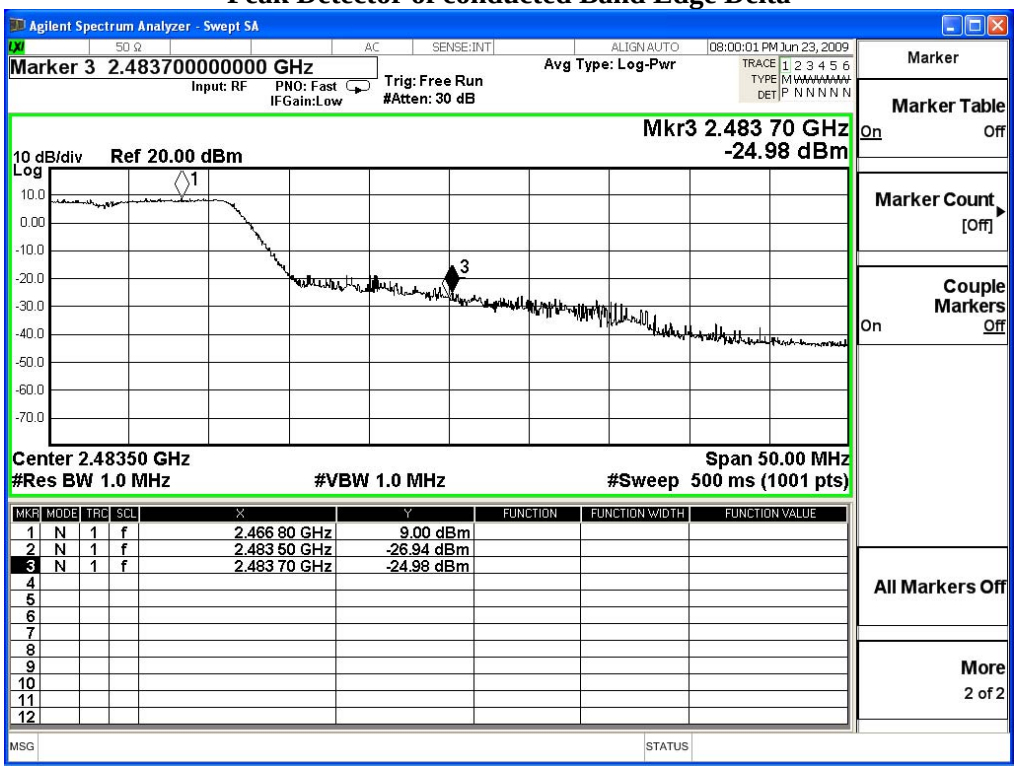
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

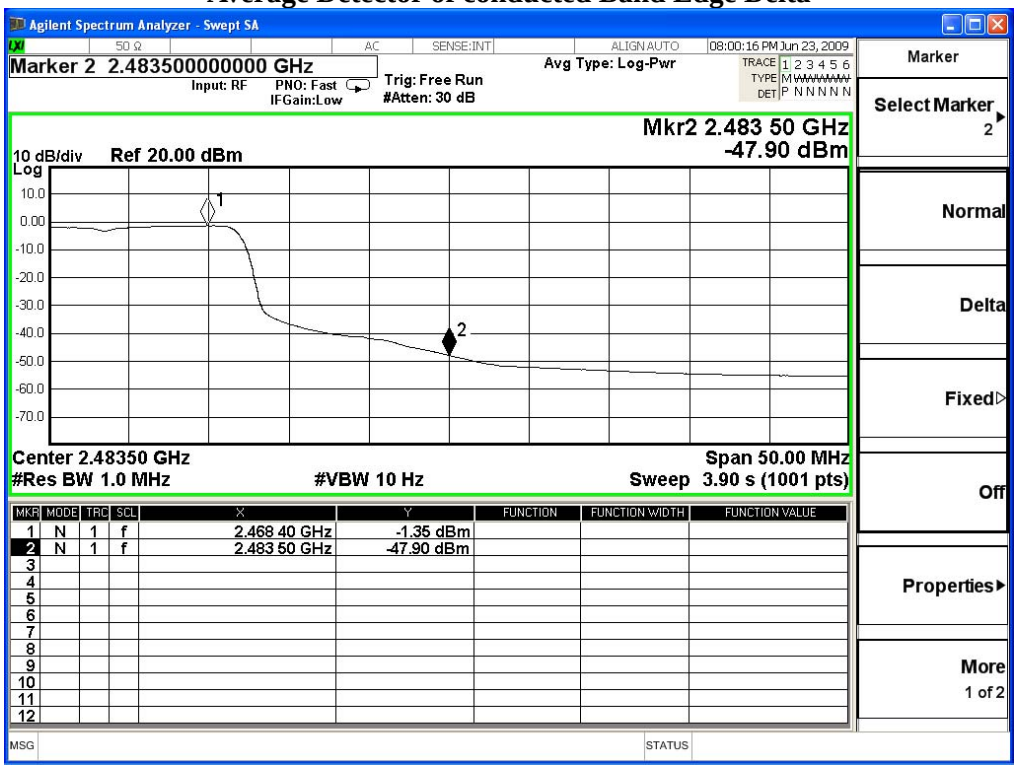
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Notebook
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4GHz Band) -Channel 1

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dBuV]	Correction Factor [dB/m]	Emission Level [dBuV/m]	Detector
Horizontal	2412	62.718	36.613	99.331	Peak
Horizontal	2412	52.367	36.605	88.972	Average
Vertical	2412	66.606	35.609	102.215	Peak
Vertical	2412	54.769	35.664	90.433	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2390.0	99.331	34.88	64.451	Peak
Horizontal	2390.0	88.972	44.01	44.962	Average
Vertical	2390.0	102.215	34.88	67.335	Peak
Vertical	2390.0	90.433	44.01	46.423	Average

Note:

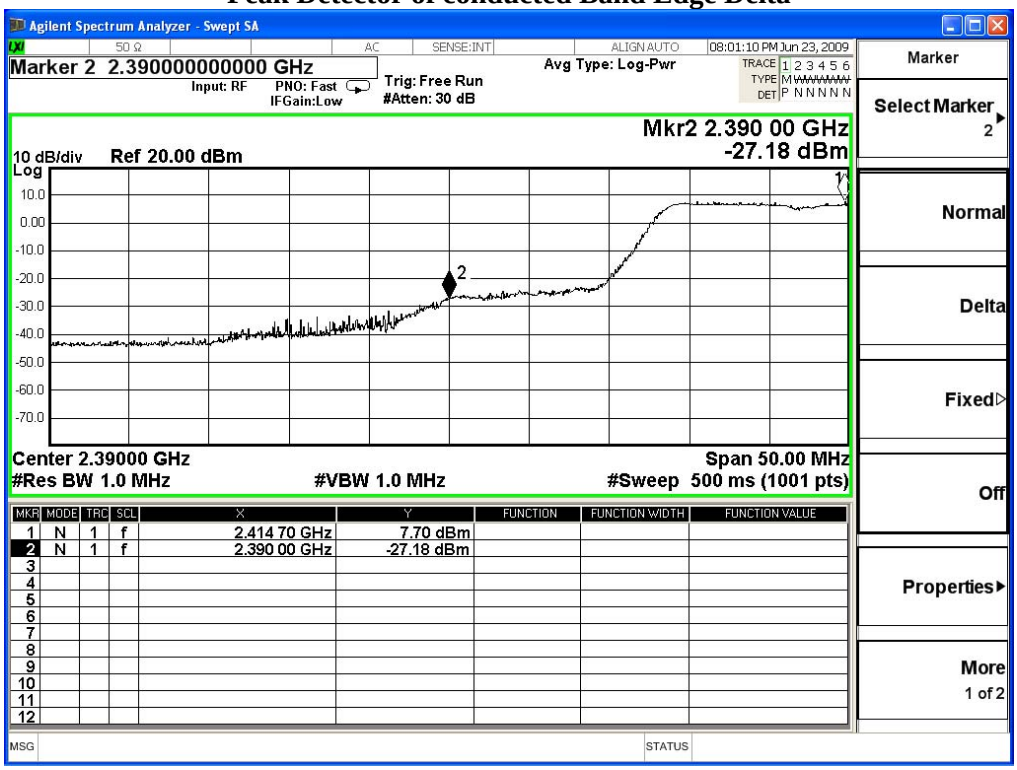
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

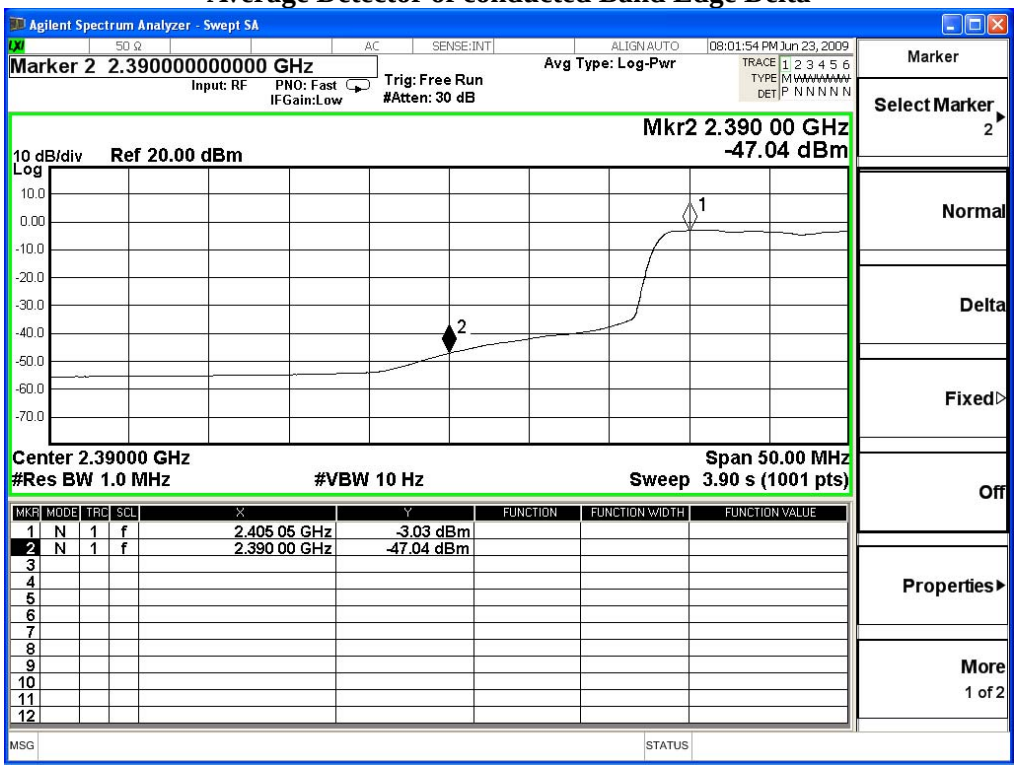
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Notebook
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4GHz Band) -Channel 11

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dB(uV)]	Correction Factor [dB/m]	Emission Level [dB(uV/m)]	Detector
Horizontal	2462	65.034	36.704	101.737	Peak
Horizontal	2462	55.243	36.704	91.947	Average
Vertical	2462	67.325	36.074	103.399	Peak
Vertical	2462	58.026	36.079	94.105	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2483.85	101.737	35.25	66.487	Peak
Horizontal	2483.5	91.947	45	46.947	Average
Vertical	2483.85	103.399	35.25	68.089	Peak
Vertical	2483.5	94.105	45	49.105	Average

Note:

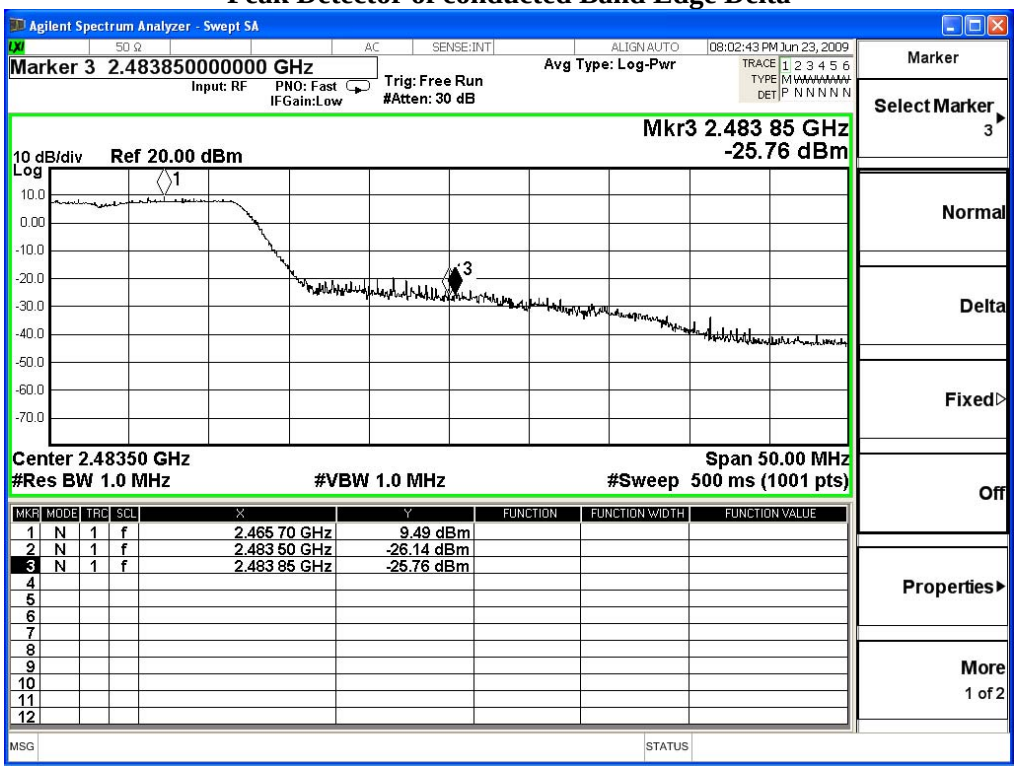
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

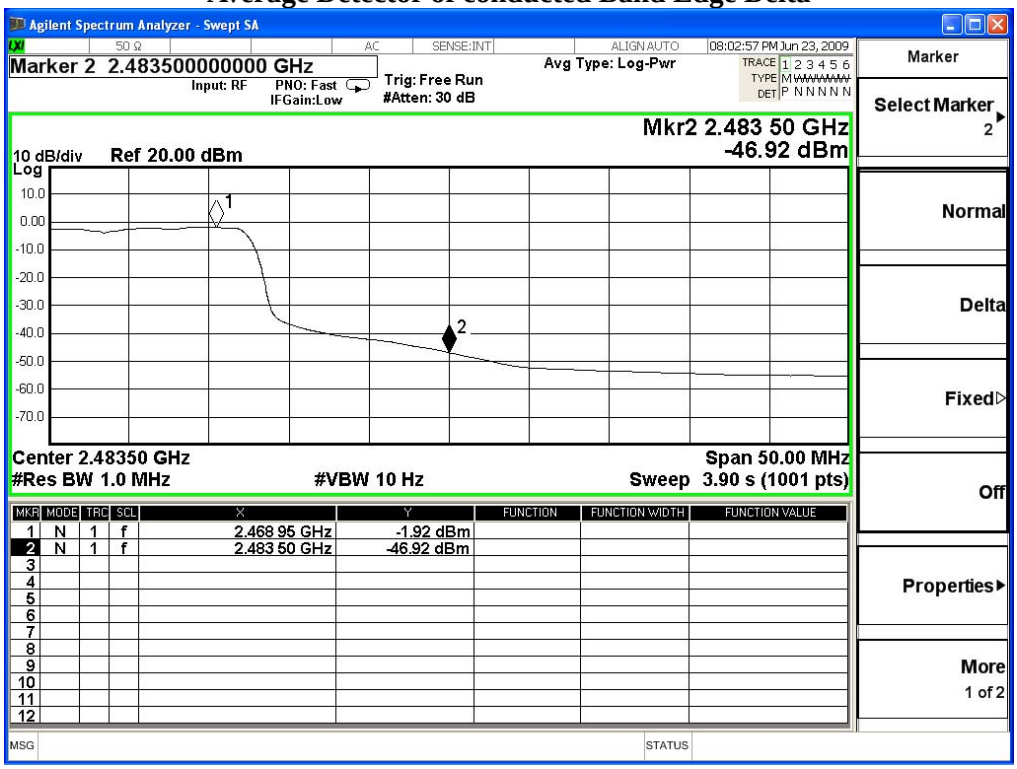
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Notebook
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band) -Channel 1

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dBuV]	Correction Factor [dB/m]	Emission Level [dBuV/m]	Detector
Horizontal	2422	60.734	36.613	97.347	Peak
Horizontal	2422	50.656	36.612	87.268	Average
Vertical	2422	62.959	35.772	98.731	Peak
Vertical	2422	52.506	35.772	88.278	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2388	97.347	32.53	64.817	Peak
Horizontal	2390	87.268	36.31	50.958	Average
Vertical	2388	98.731	32.53	66.201	Peak
Vertical	2390	88.278	36.31	51.968	Average

Note:

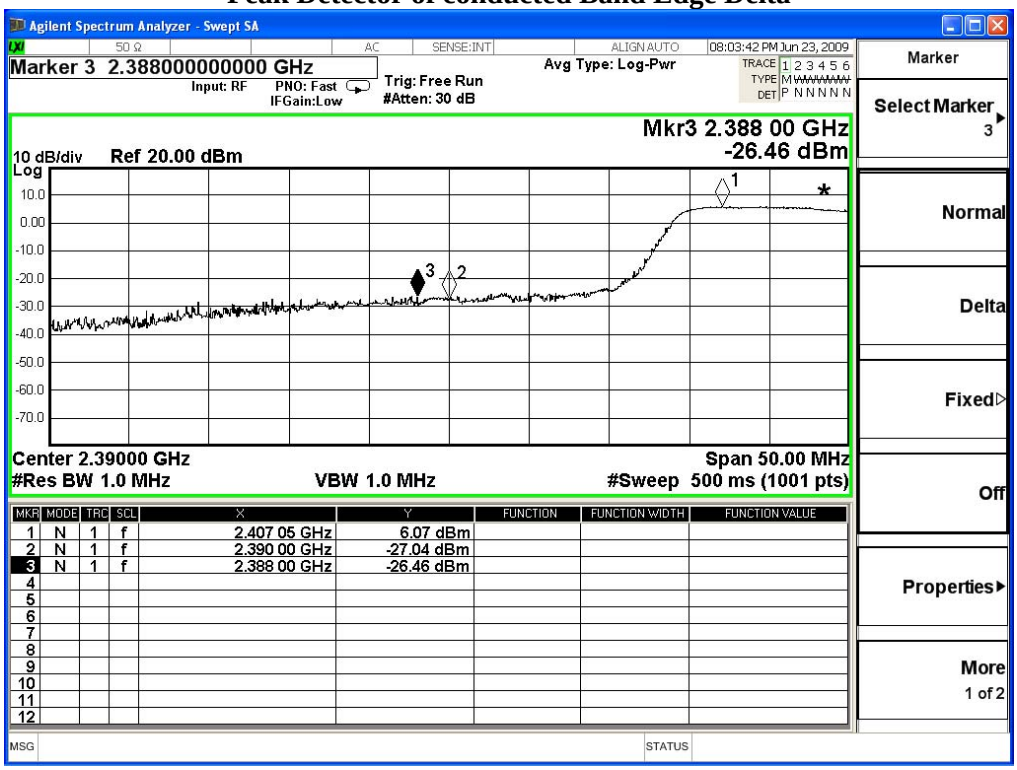
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

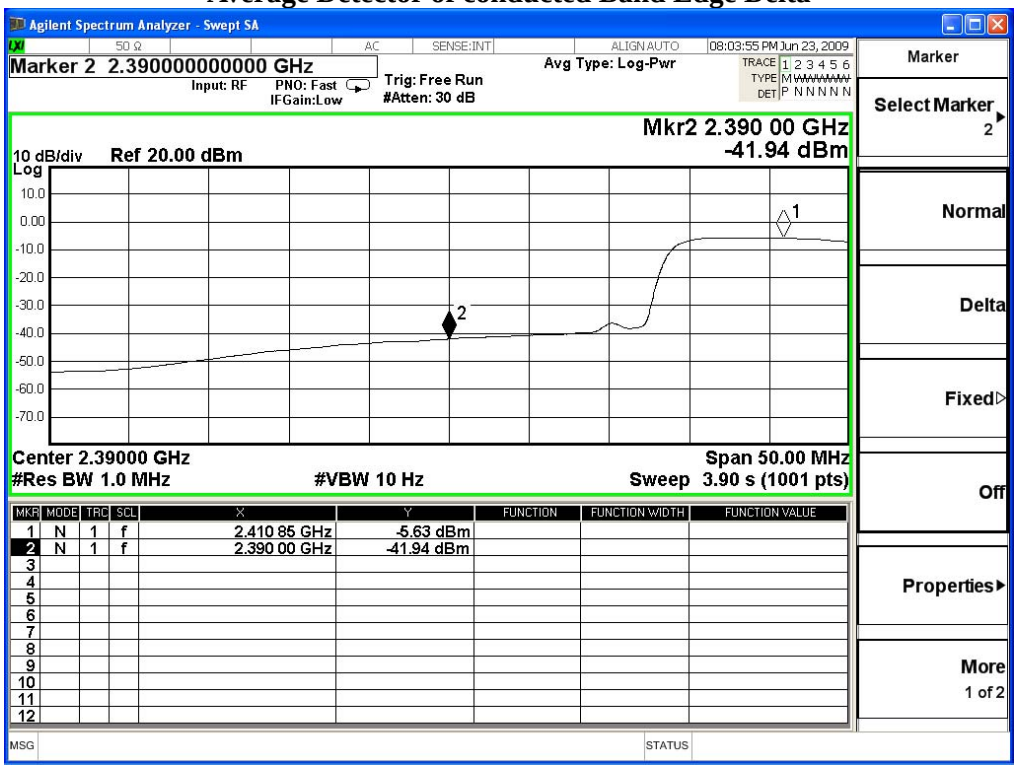
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Notebook
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band) -Channel 7

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dB(uV)]	Correction Factor [dB/m]	Emission Level [dB(uV/m)]	Detector
Horizontal	2452	63.794	36.699	100.493	Peak
Horizontal	2452	53.074	36.703	89.777	Average
Vertical	2452	65.417	36.082	101.499	Peak
Vertical	2452	55.462	36.078	91.540	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2483.5	100.493	30.5	69.993	Peak
Horizontal	2483.5	89.777	38.69	51.087	Average
Vertical	2483.5	101.499	30.5	70.999	Peak
Vertical	2483.5	91.540	38.69	52.85	Average

Note:

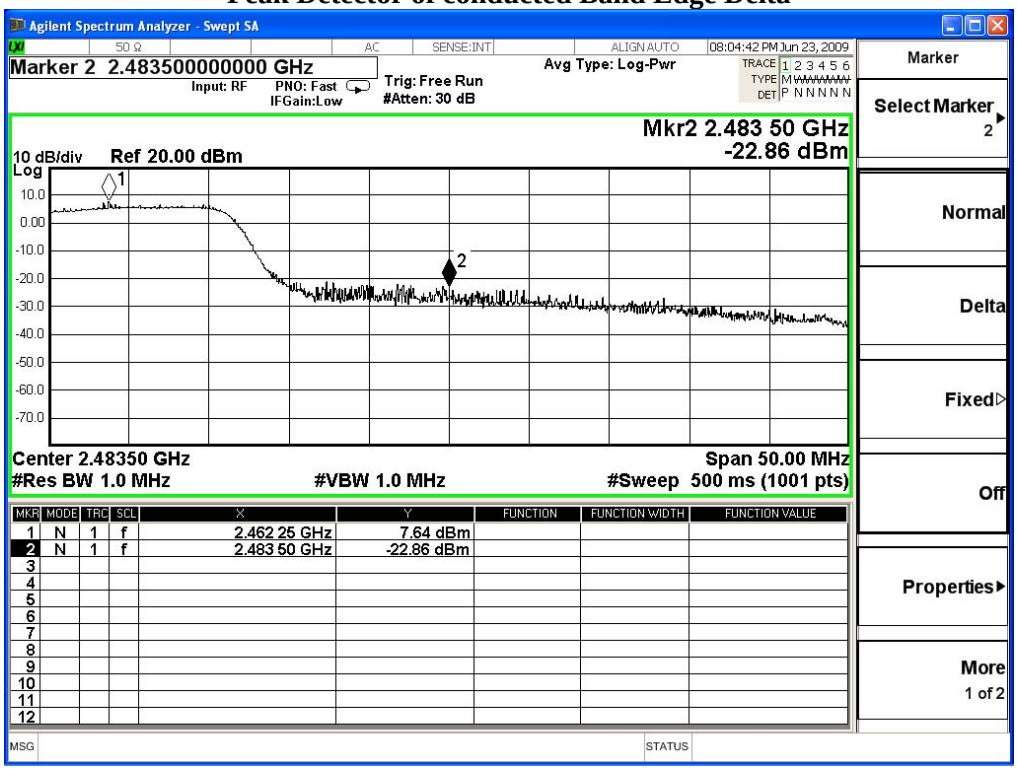
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

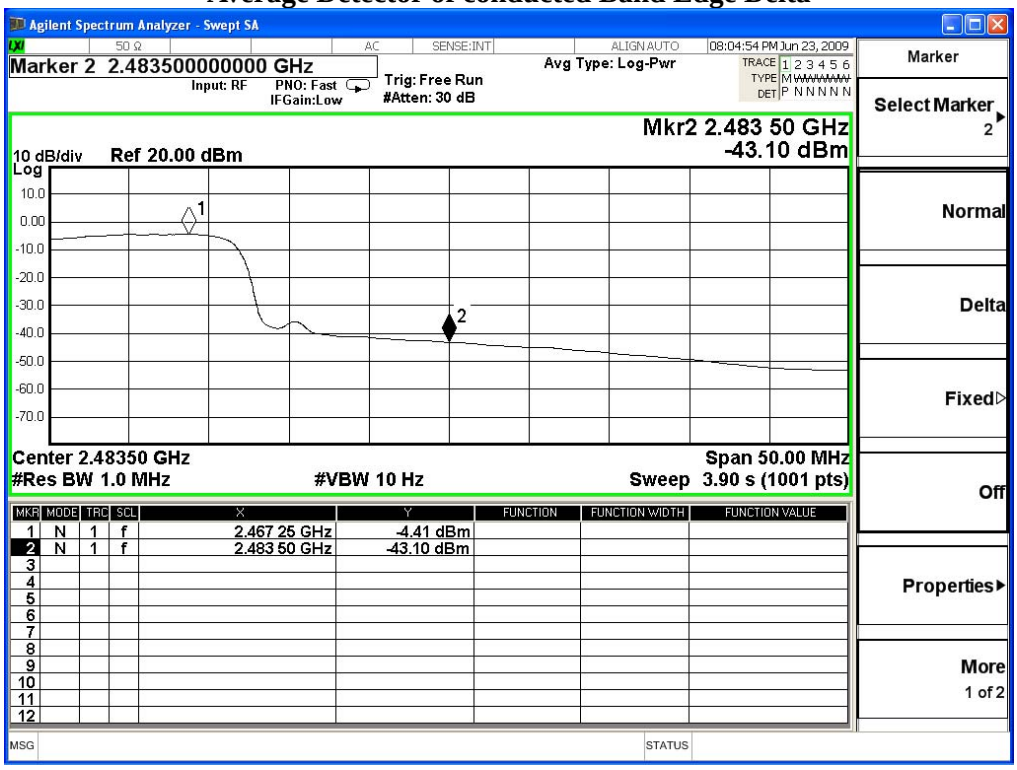
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



7. Occupied Bandwidth

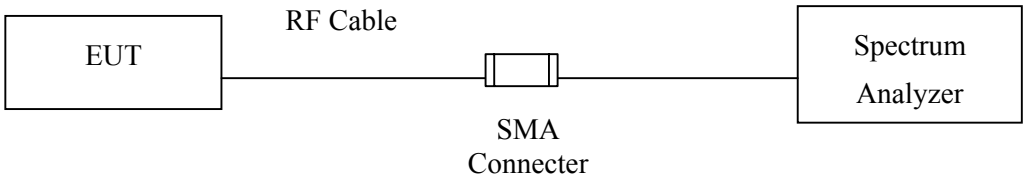
7.1. Test Equipment

The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr, 2009

Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003; tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Span greater than RBW.

7.5. Uncertainty

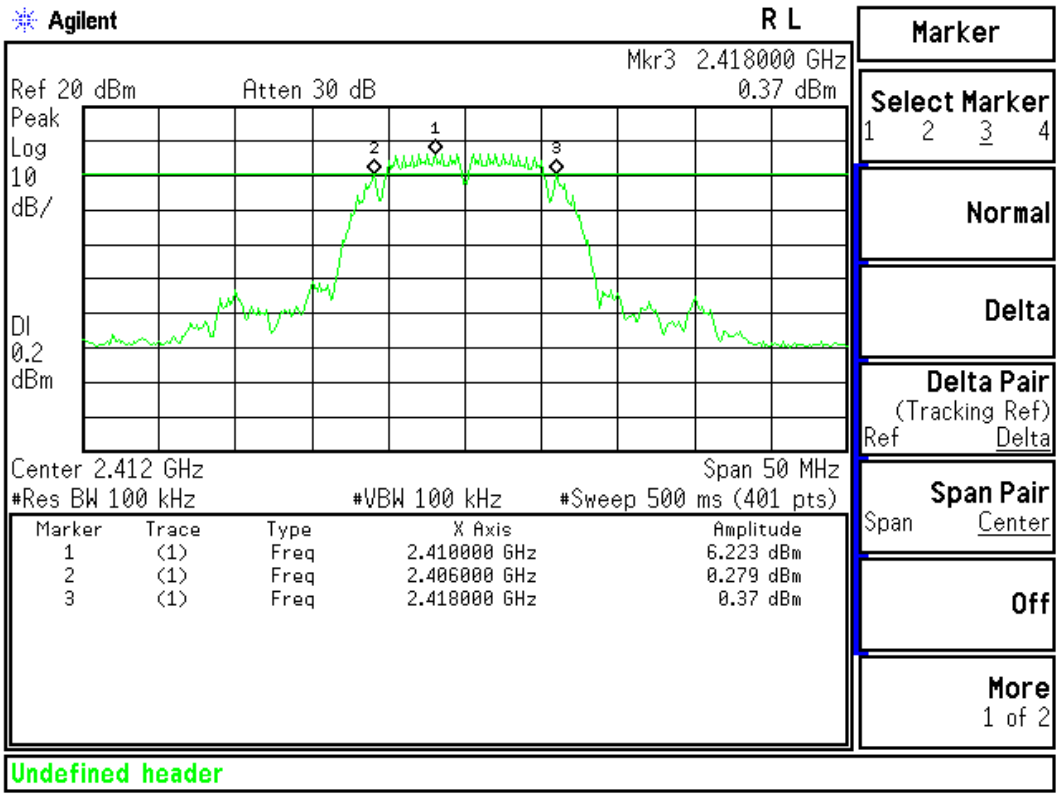
± 150Hz

7.6. Test Result of Occupied Bandwidth

Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 802.11b 1Mbps (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1 (1Mbps)	2412.00	12000	>500	Pass

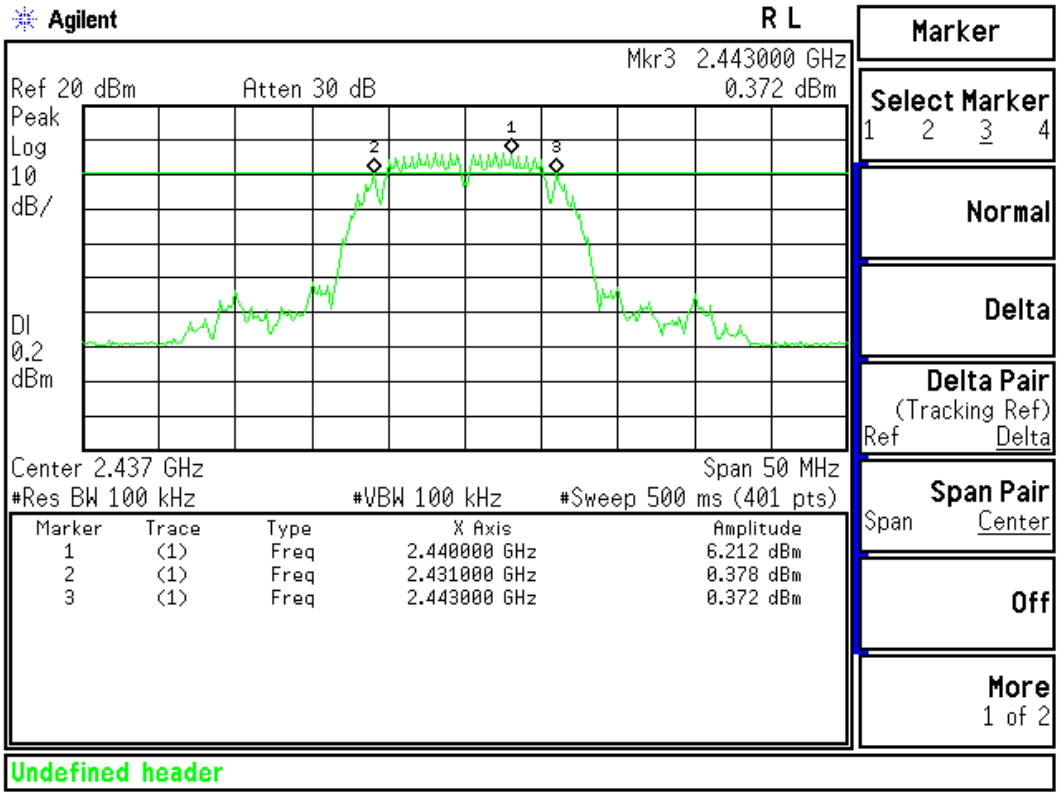
Figure Channel 1:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 802.11b 1Mbps (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6 (1Mbps)	2437.00	12000	>500	Pass

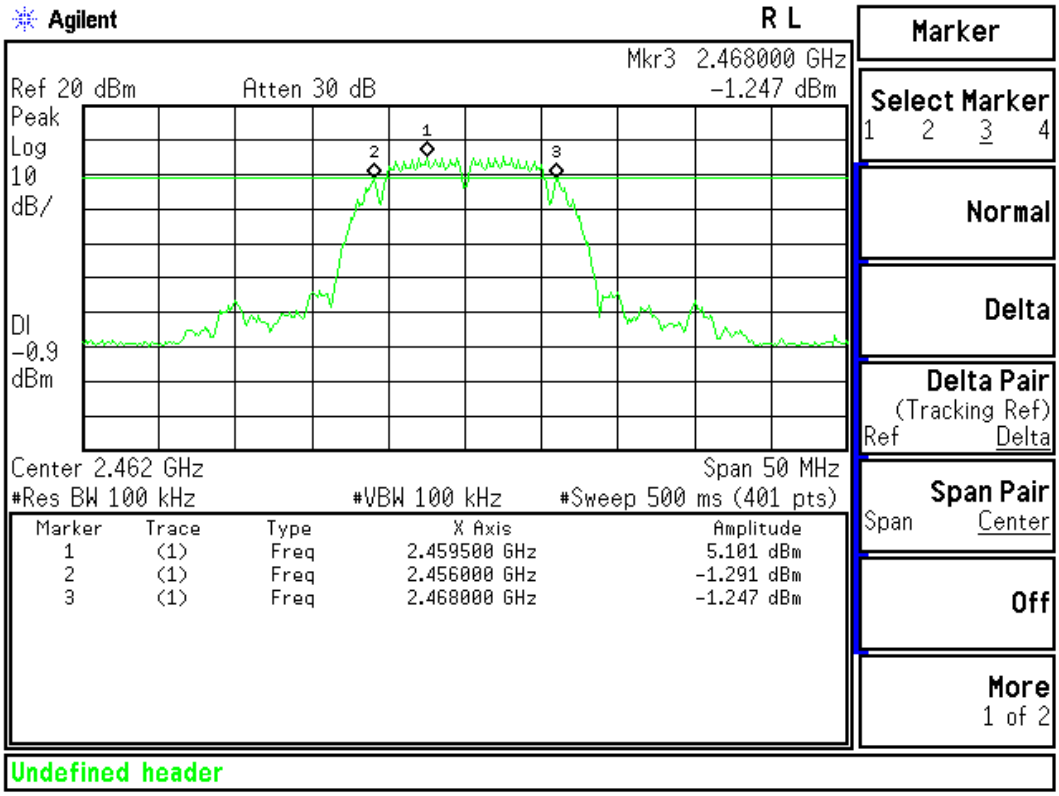
Figure Channel 6:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 802.11b 1Mbps (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11 (1Mbps)	2462.00	12000	>500	Pass

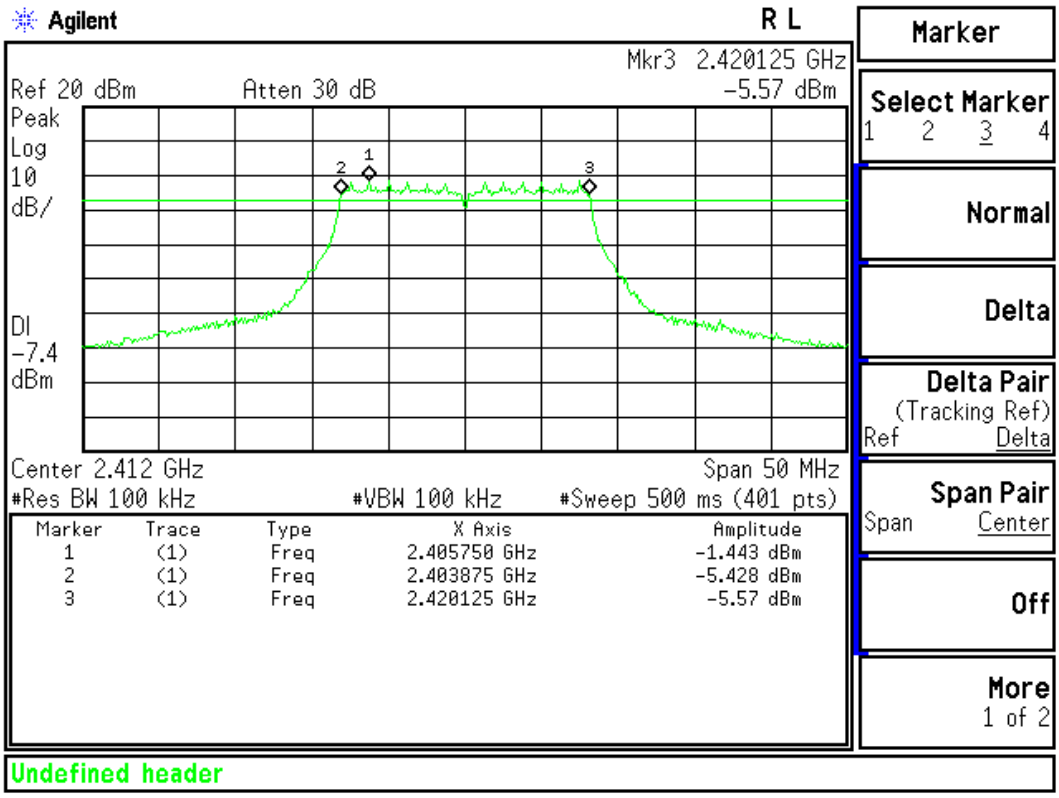
Figure Channel 11:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 802.11g 6Mbps (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1 (6Mbps)	2412.00	16250	>500	Pass

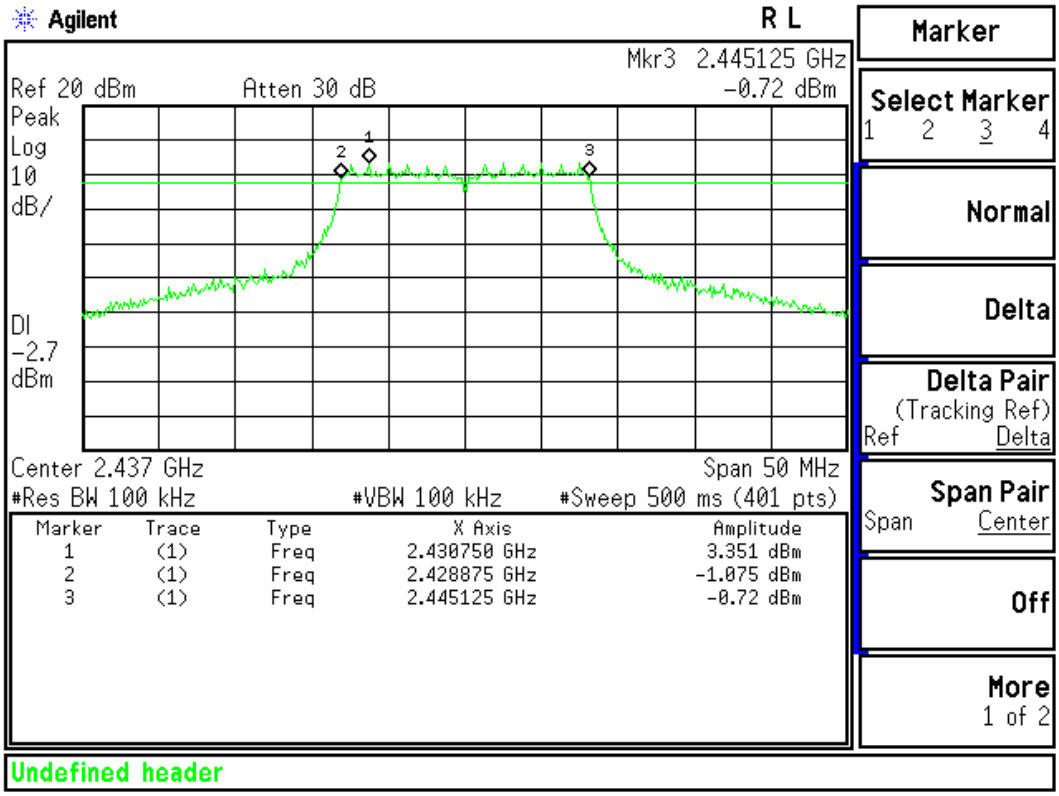
Figure Channel 1:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 802.11g 6Mbps (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6 (6Mbps)	2437.00	16250	>500	Pass

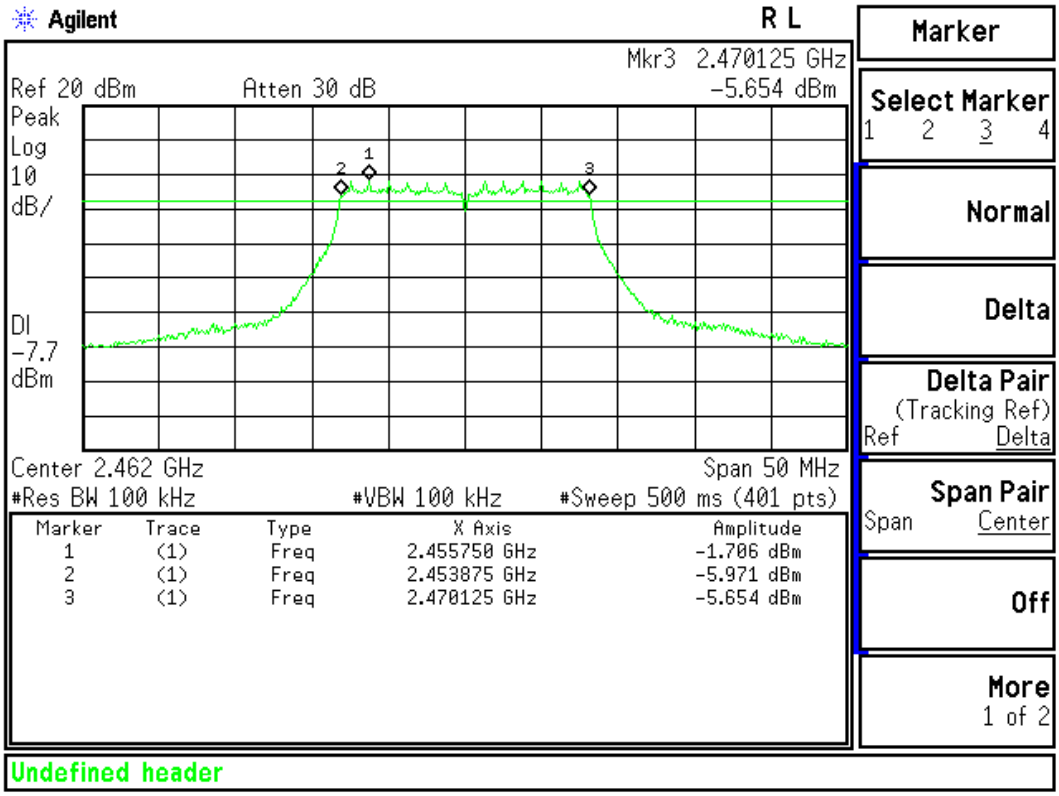
Figure Channel 6:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 802.11g 6Mbps (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11 (6Mbps)	2462.00	16250	>500	Pass

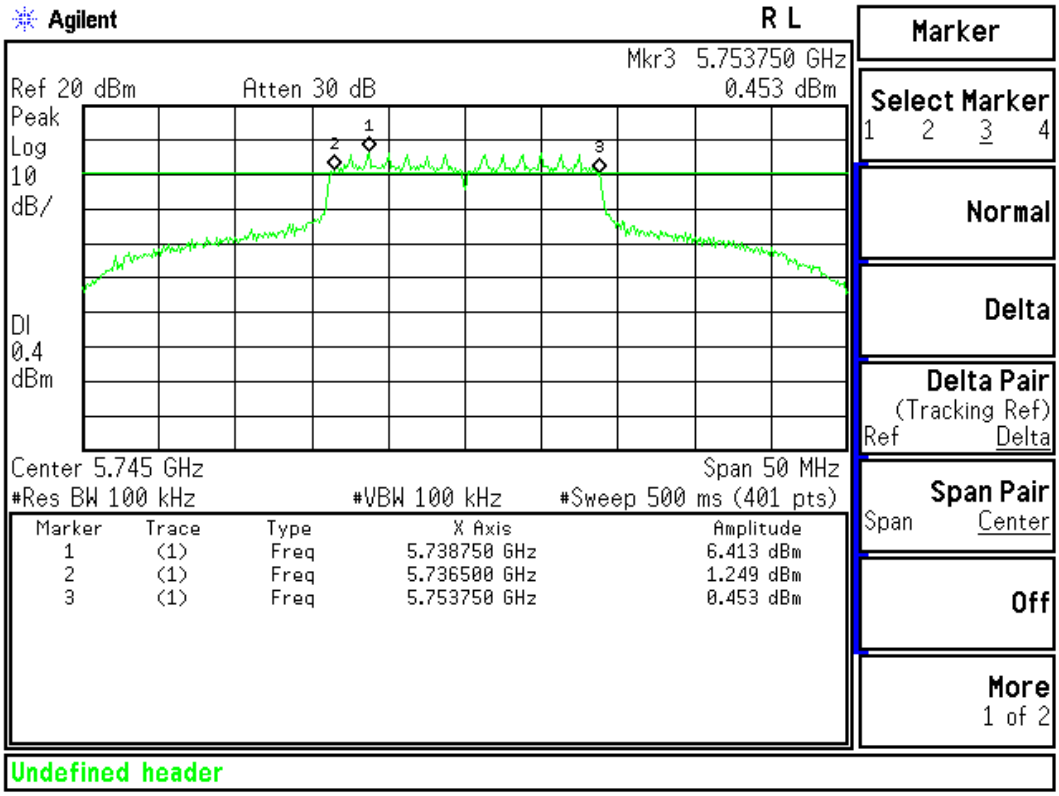
Figure Channel 11:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter - 802.11a 6Mbps (5745MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149 (6Mbps)	5745.00	17250	>500	Pass

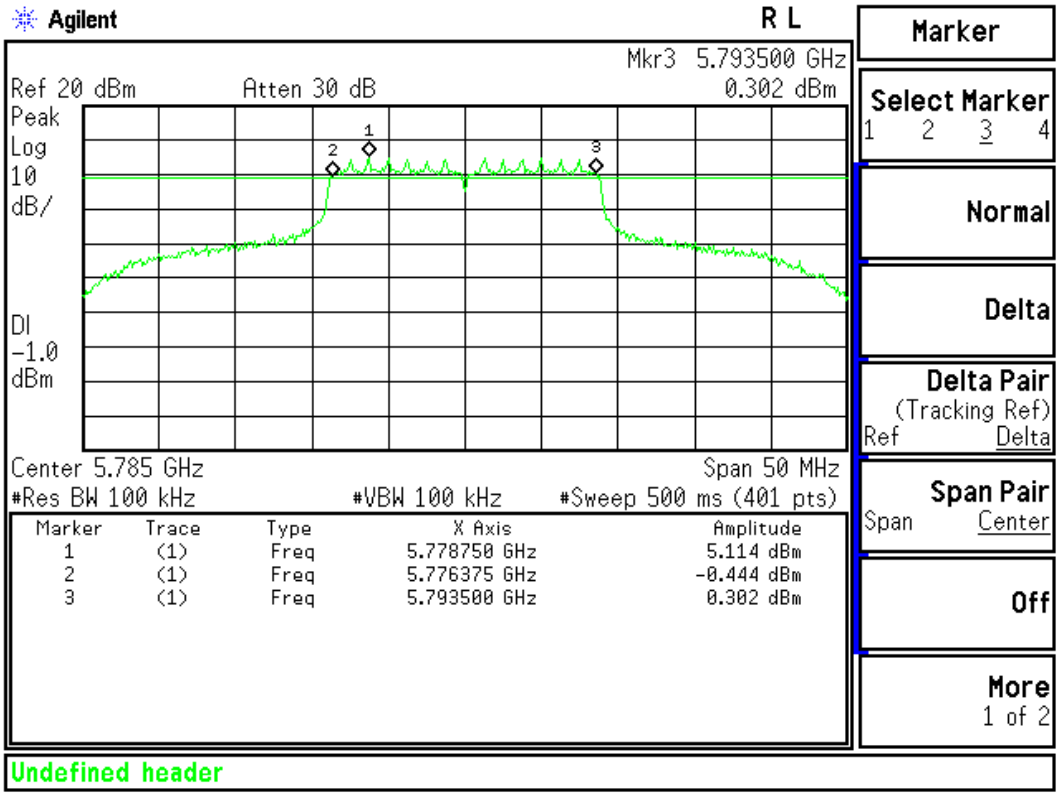
Figure Channel 149:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter - 802.11a 6Mbps (5785MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
157 (6Mbps)	5785.00	17125	>500	Pass

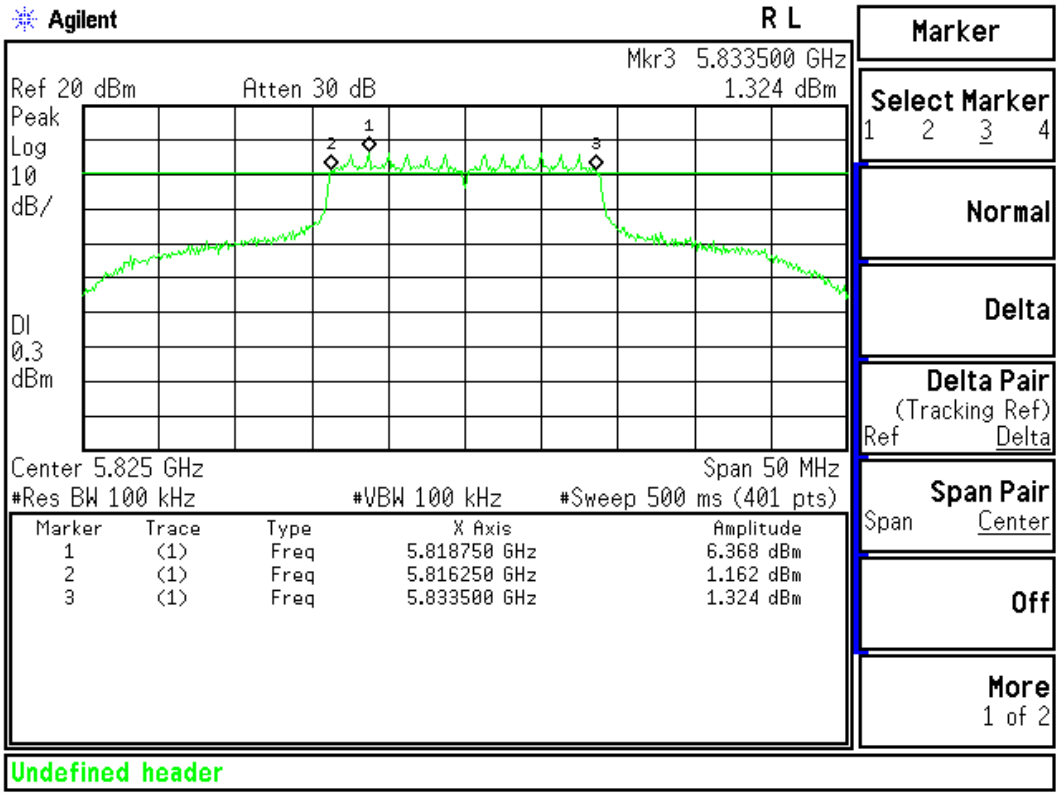
Figure Channel 157:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter - 802.11a 6Mbps (5825MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
165 (6Mbps)	5825.00	17250	>500	Pass

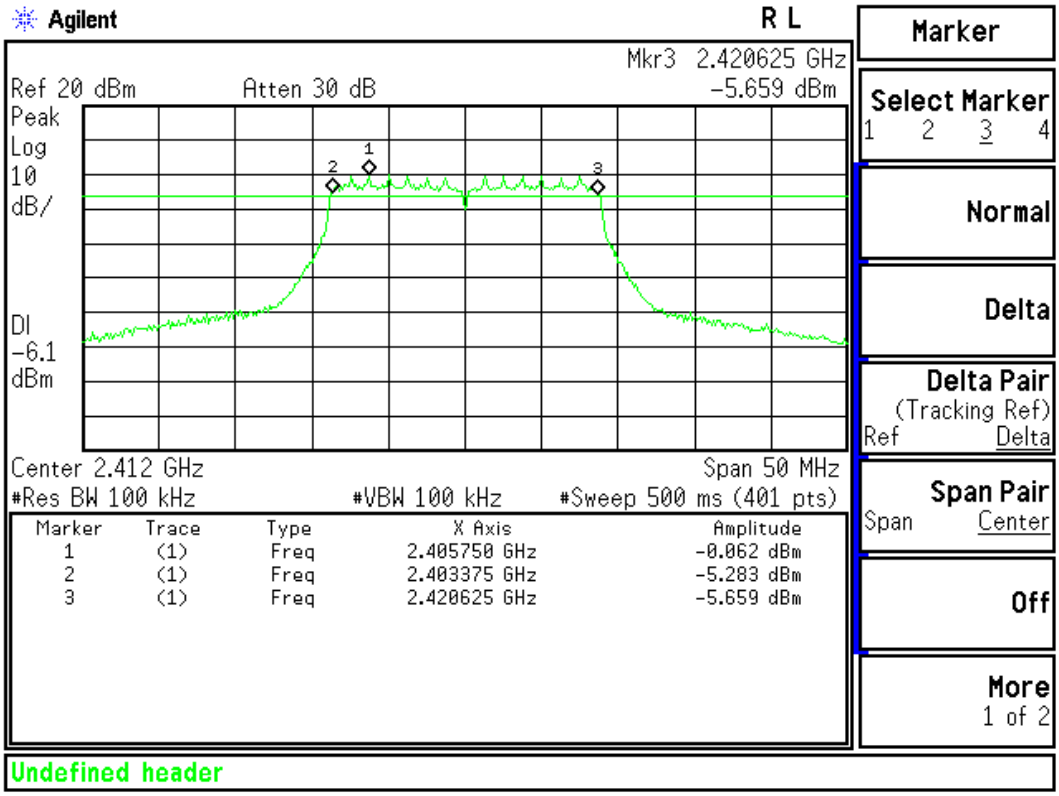
Figure Channel 165:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4GHz Band) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1 (13.5Mbps)	2412.00	17250	>500	Pass

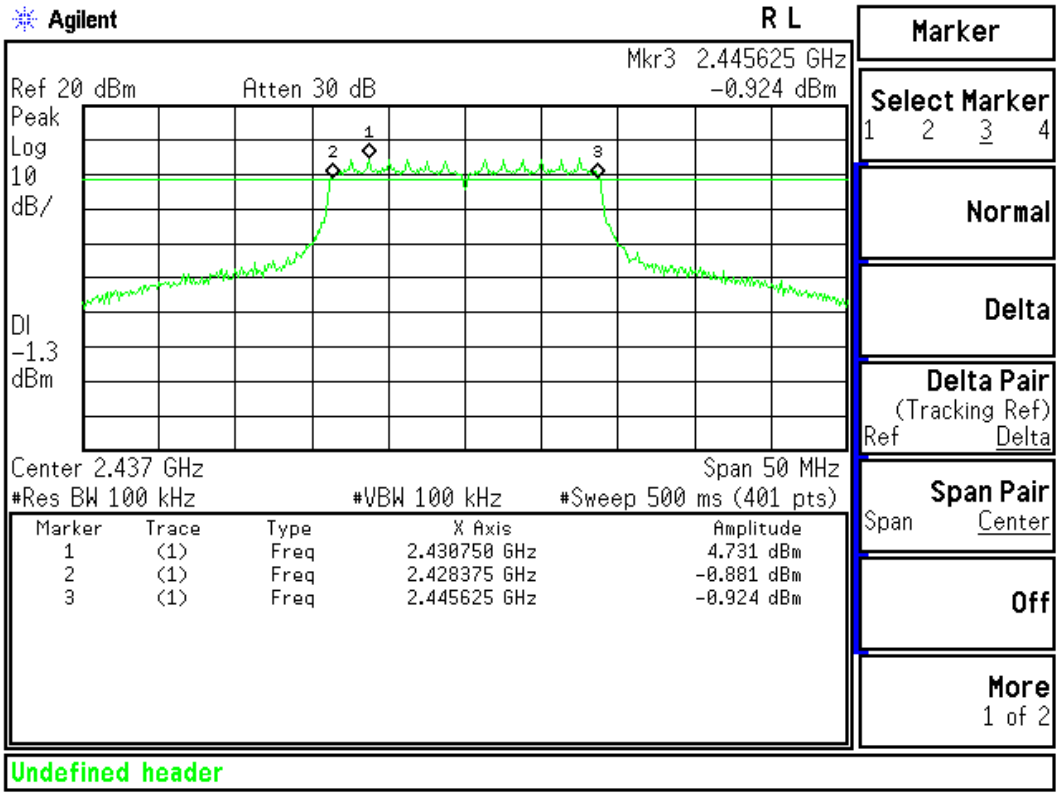
Figure Channel 1:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4GHz Band) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6 (13.5Mbps)	2437.00	17250	>500	Pass

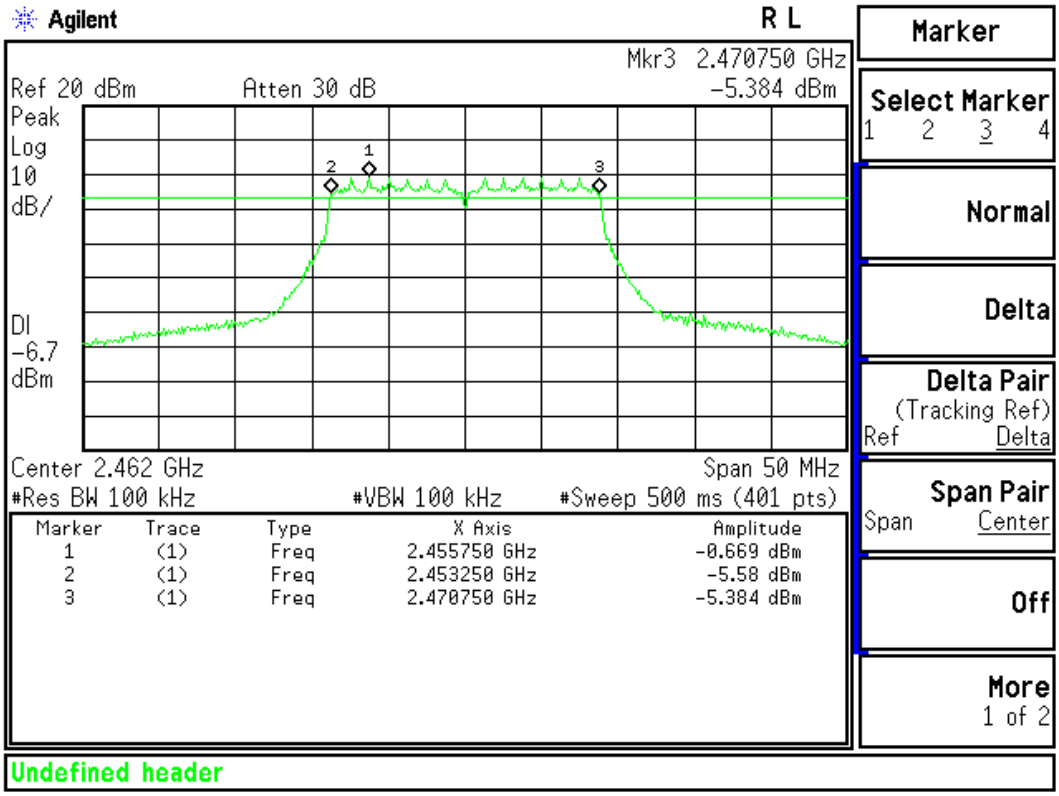
Figure Channel 6:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4GHz Band) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11 (13.5Mbps)	2462.00	17500	>500	Pass

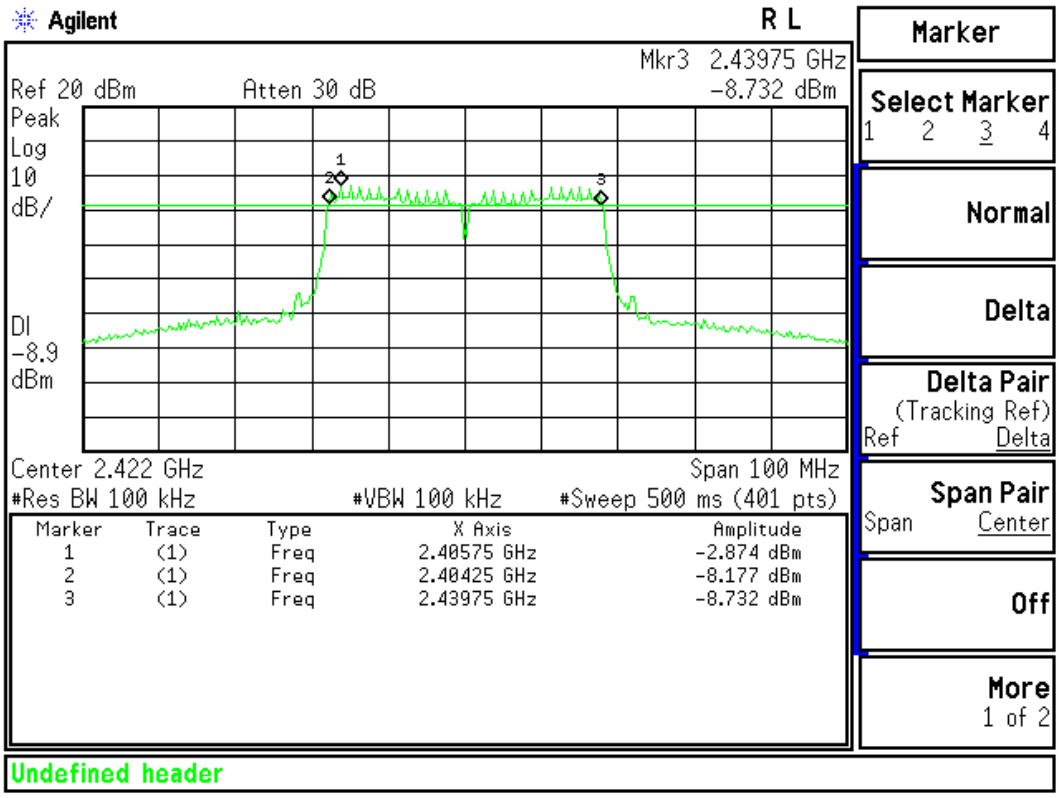
Figure Channel 11:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band) (2422MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1 (27Mbps)	2422.00	35500	>500	Pass

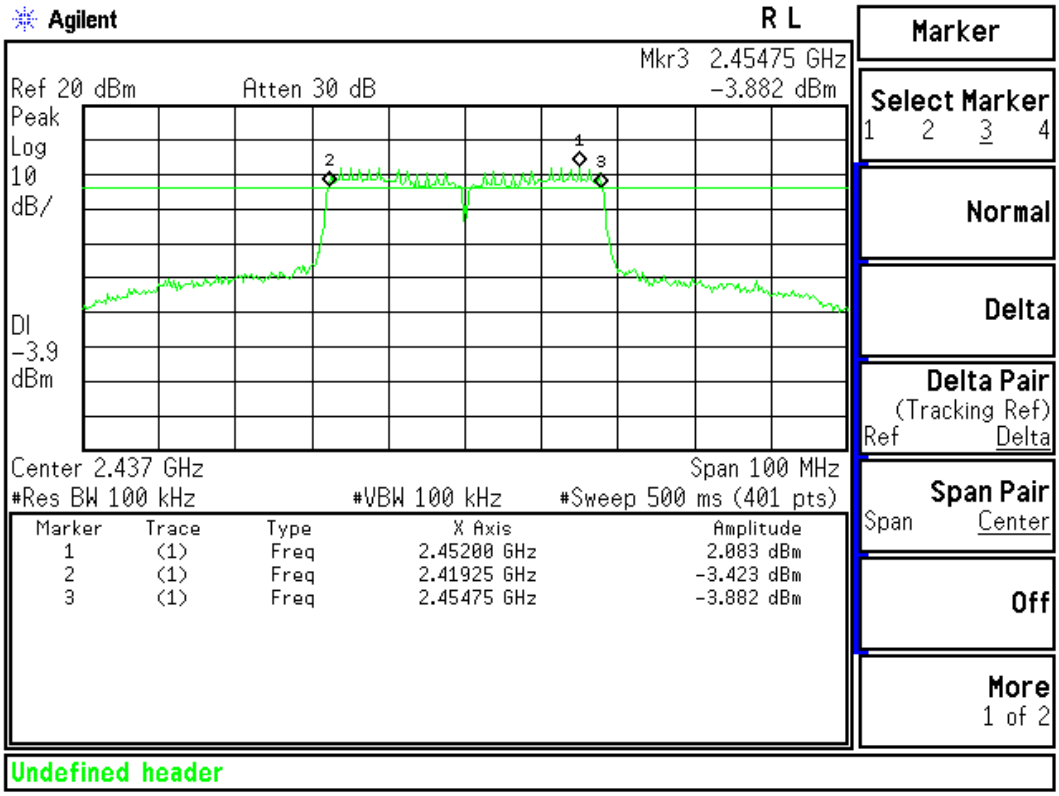
Figure Channel 1:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
4 (27Mbps)	2437.00	35500	>500	Pass

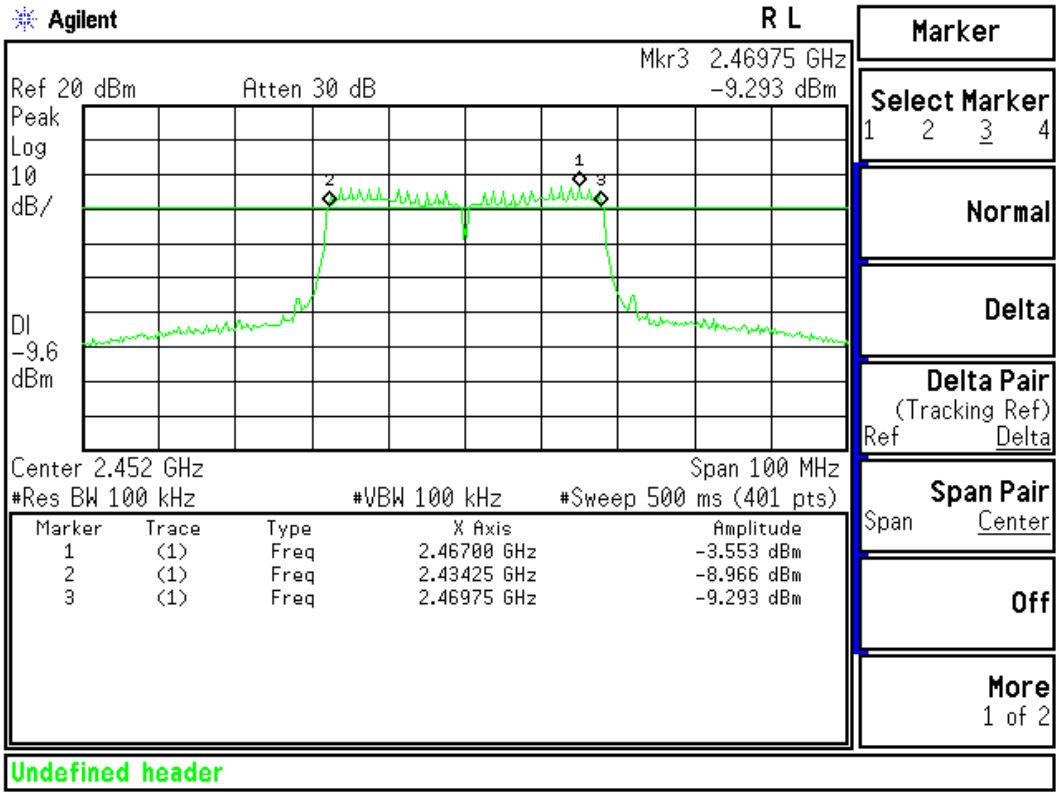
Figure Channel 4:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band) (2452MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
7 (27Mbps)	2452.00	35500	>500	Pass

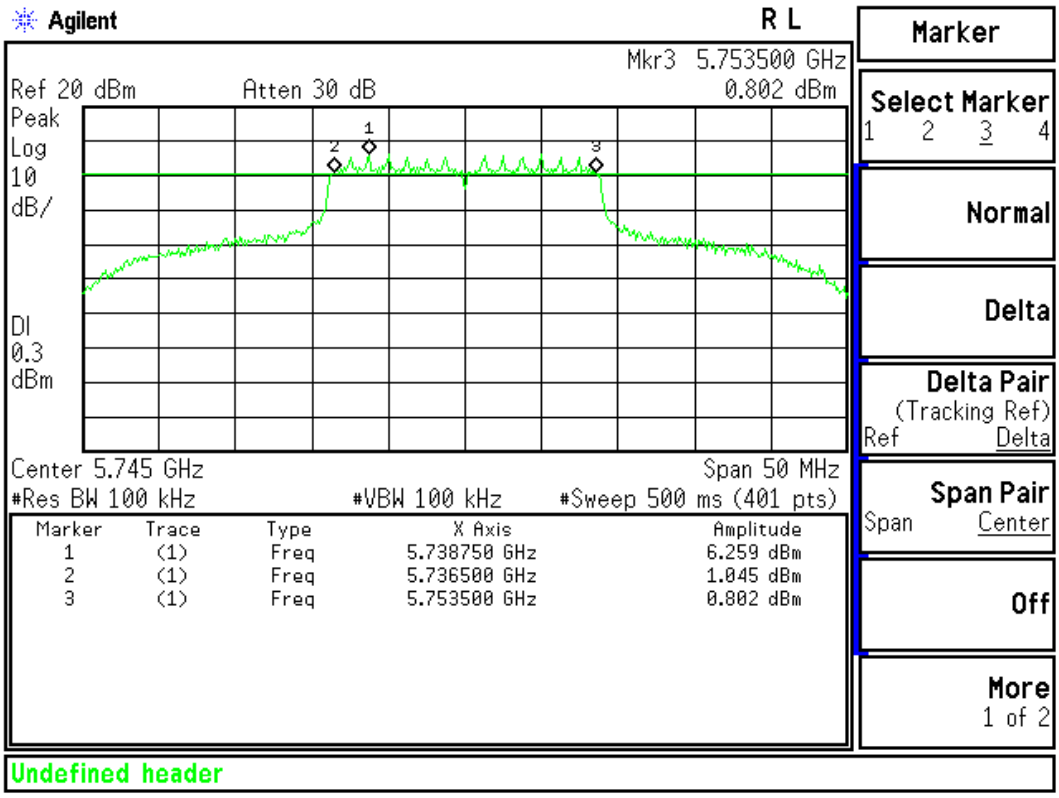
Figure Channel 7:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5GHz Band) (5745MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149(13.5Mbps)	5745.00	17000	>500	Pass

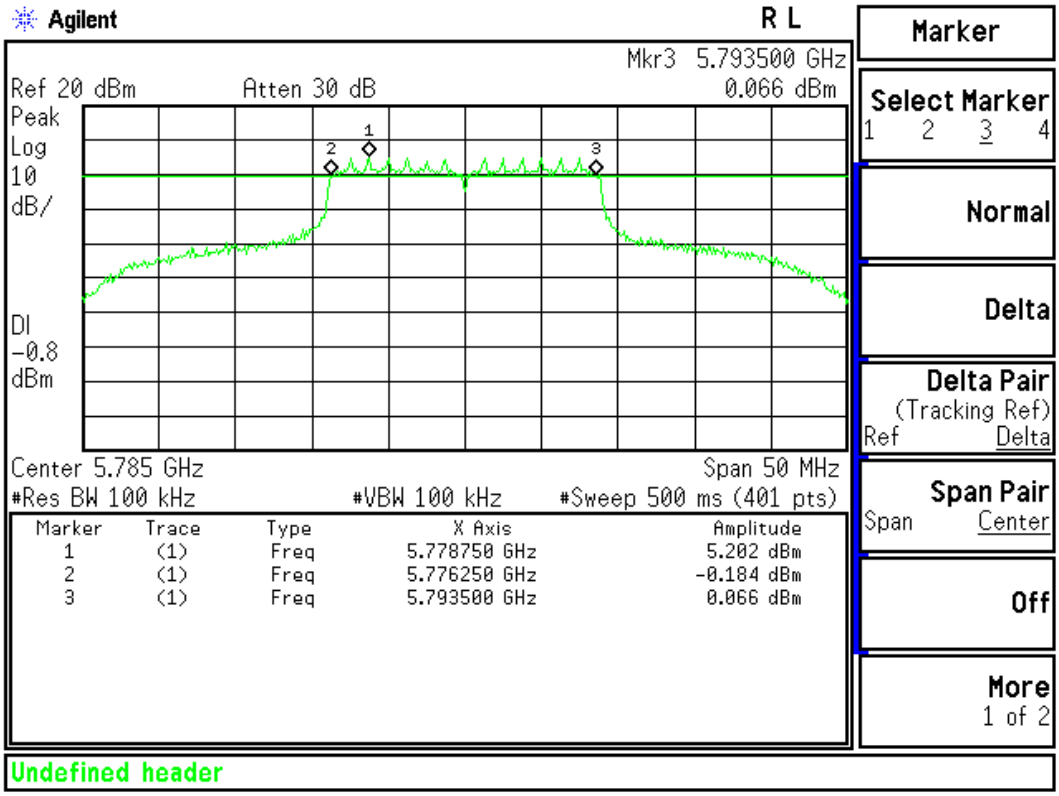
Figure Channel 149:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5GHz Band) (5785MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
157(13.5Mbps)	5785.00	17250	>500	Pass

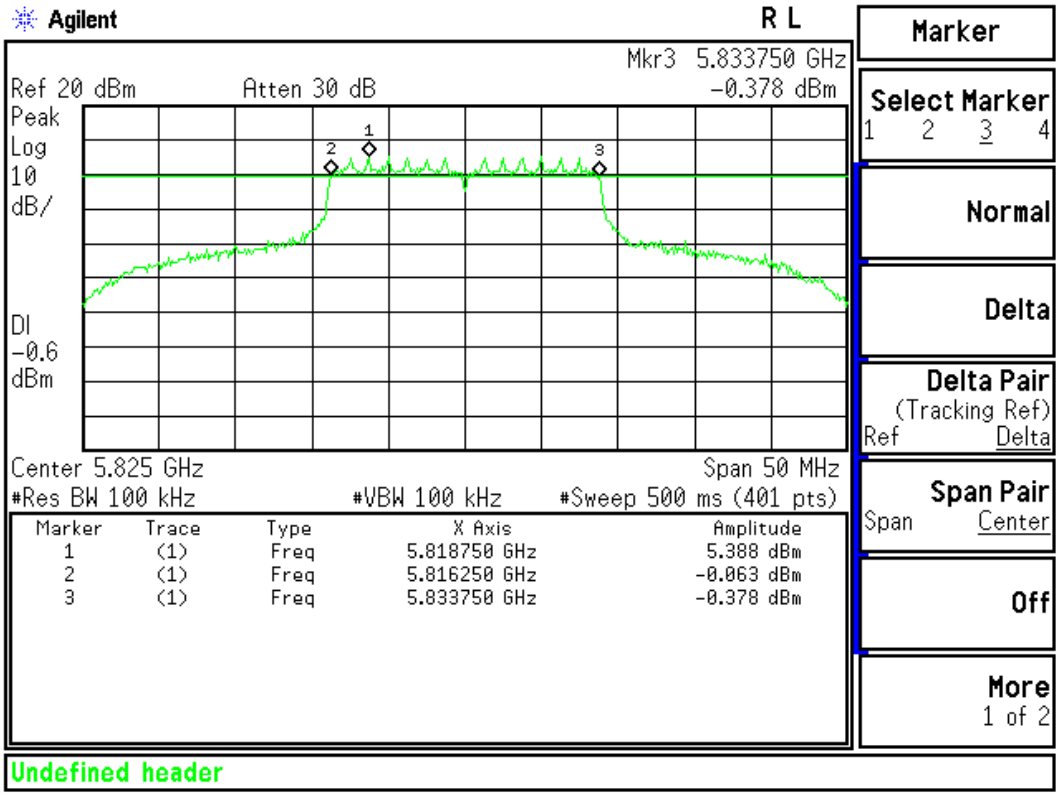
Figure Channel 157:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5GHz Band) (5825MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
165(13.5Mbps)	5825.00	17500	>500	Pass

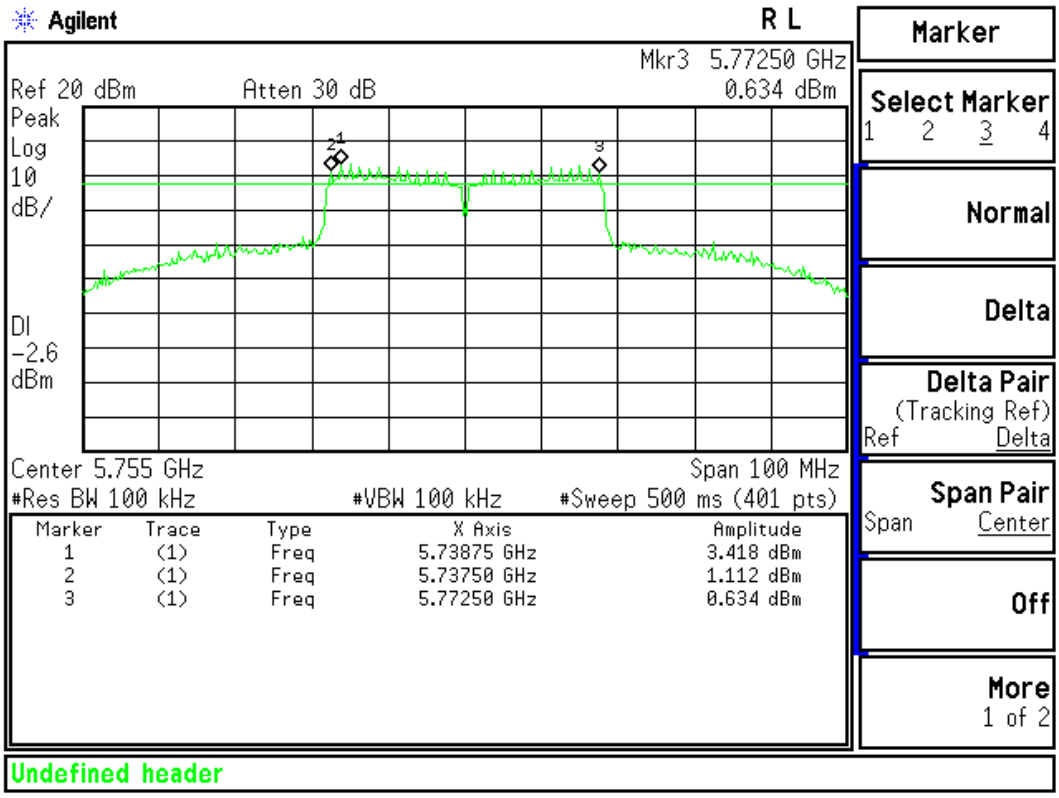
Figure Channel 165:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5GHz Band) (5755MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151 (27Mbps)	5755.00	35000	>500	Pass

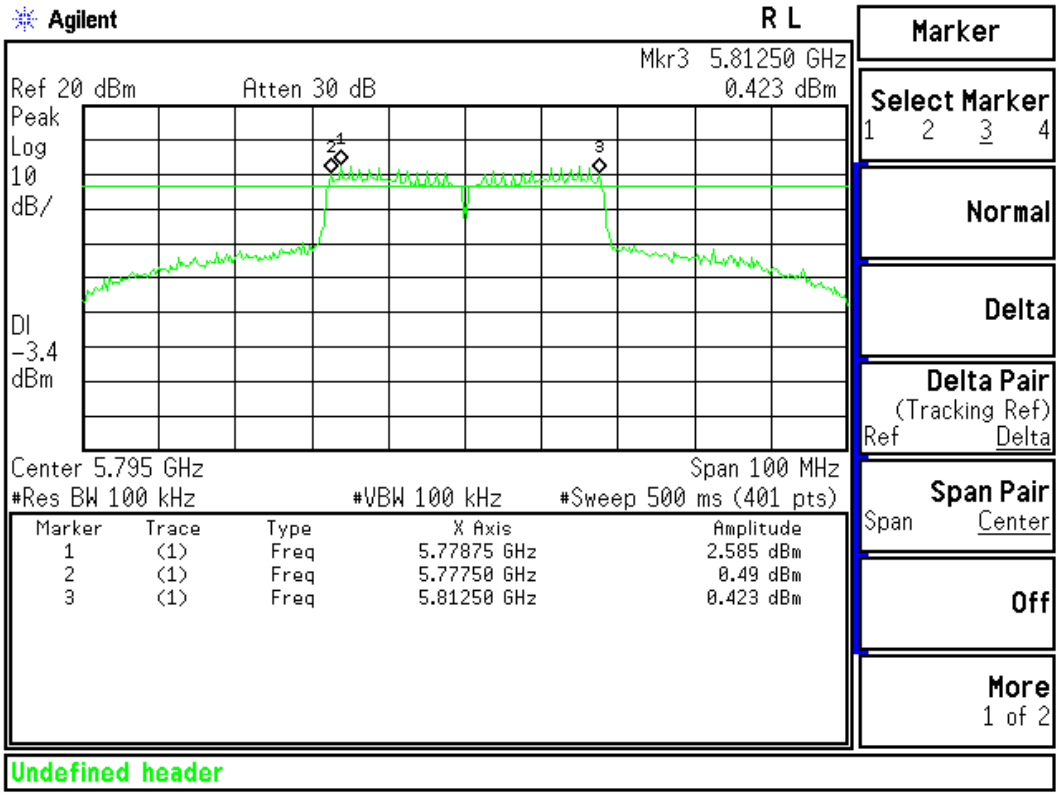
Figure Channel 151:



Product : Notebook
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5GHz Band) (5795MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
159 (27Mbps)	5795.00	35000	>500	Pass

Figure Channel 159:



8. Power Density

8.1. Test Equipment

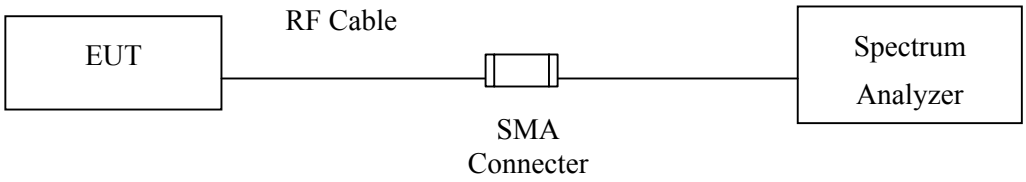
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr, 2009

Note: 1. All equipments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

8.2. Test Setup



8.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003; tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW= 3 kHz, VBW=10KHz, Sweep time=(SPAN/3KHz), detector=Peak detector

8.5. Uncertainty

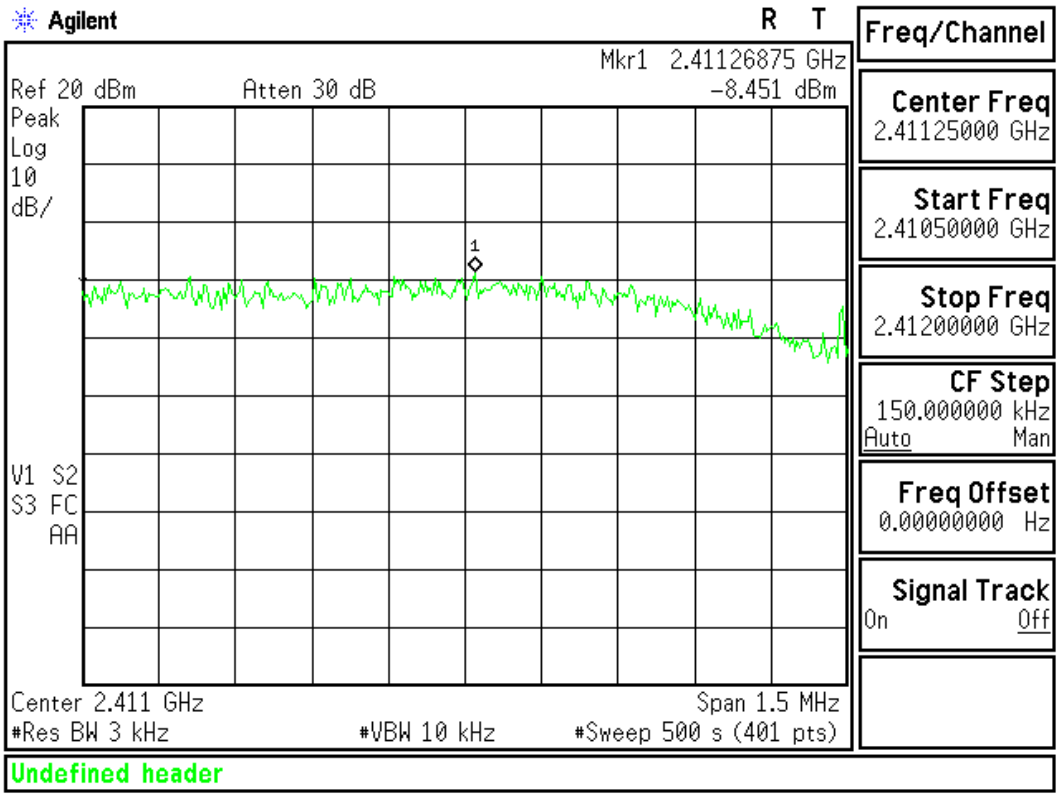
± 1.27 dB

8.6. Test Result of Power Density

Product : Notebook
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 802.11b 1Mbps (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1 (1Mbps)	2412.00	-8.451	< 8dBm	Pass

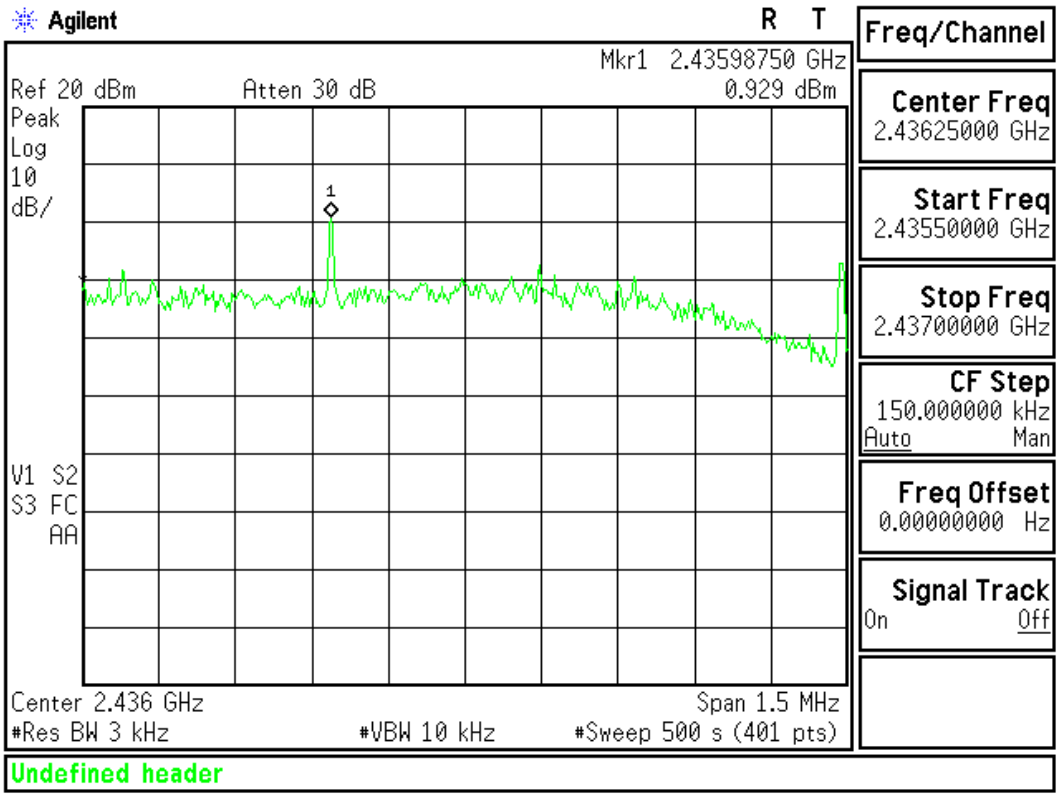
Figure Channel 1:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 1: Transmitter - 802.11b 1Mbps (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6 (1Mbps)	2437.000	0.929	< 8dBm	Pass

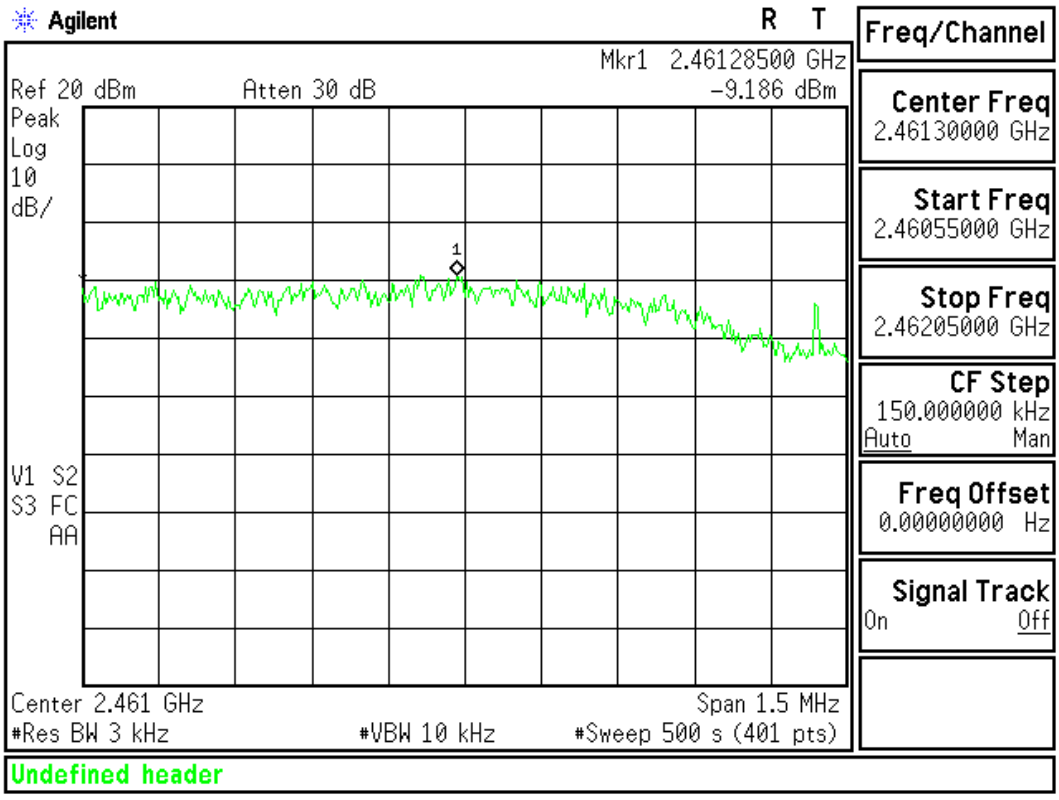
Figure Channel 6:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 802.11b 1Mbps (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11 (1Mbps)	2462.00	-9.186	< 8dBm	Pass

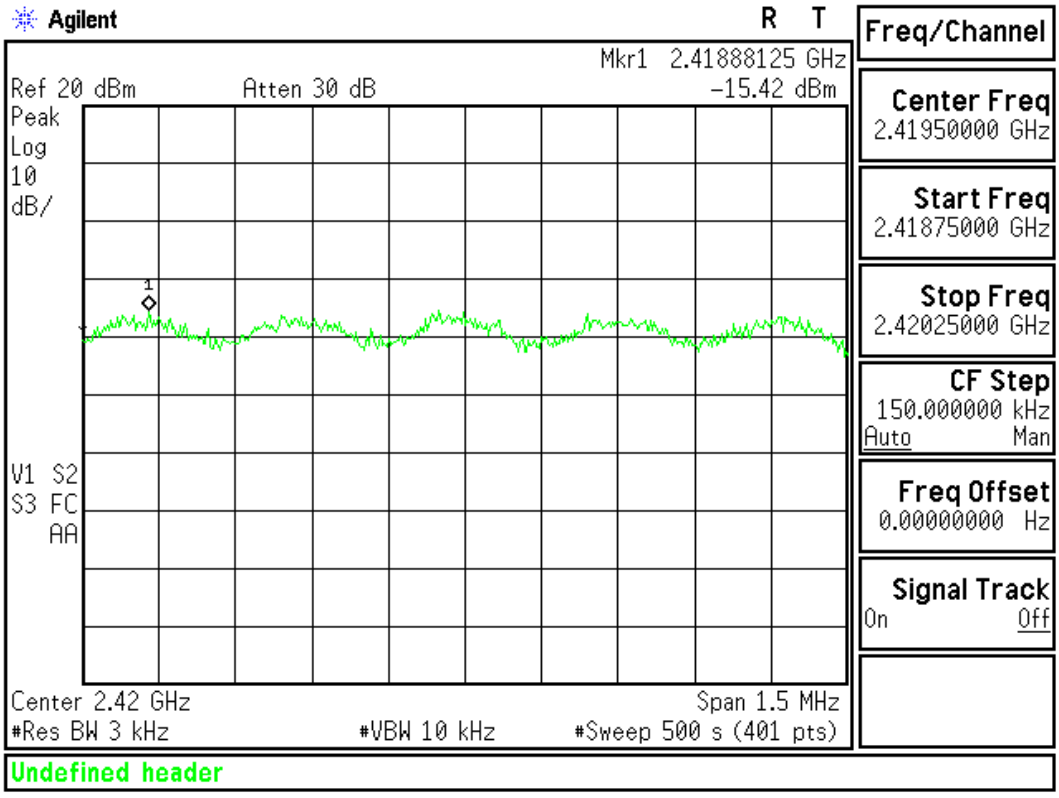
Figure Channel 11:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 802.11g 6Mbps (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1 (6Mbps)	2412.00	-15.42	< 8dBm	Pass

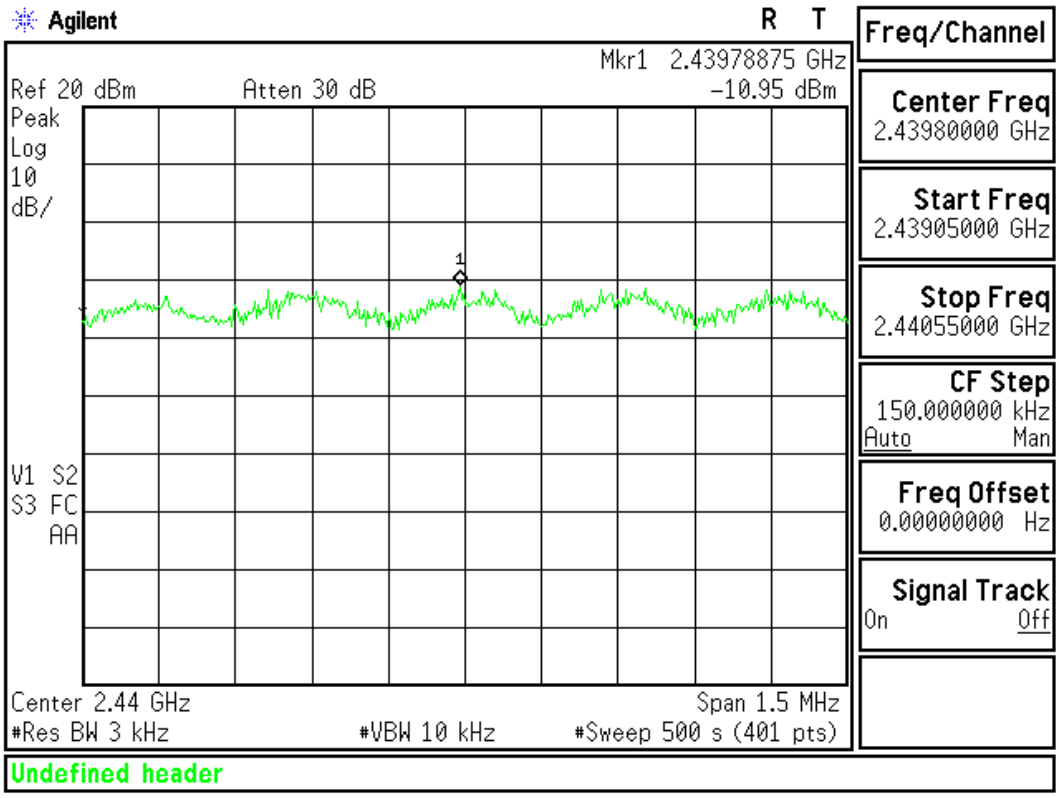
Figure Channel 1:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 2: Transmitter - 802.11g 6Mbps (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6 (6Mbps)	2437.000	-10.95	< 8dBm	Pass

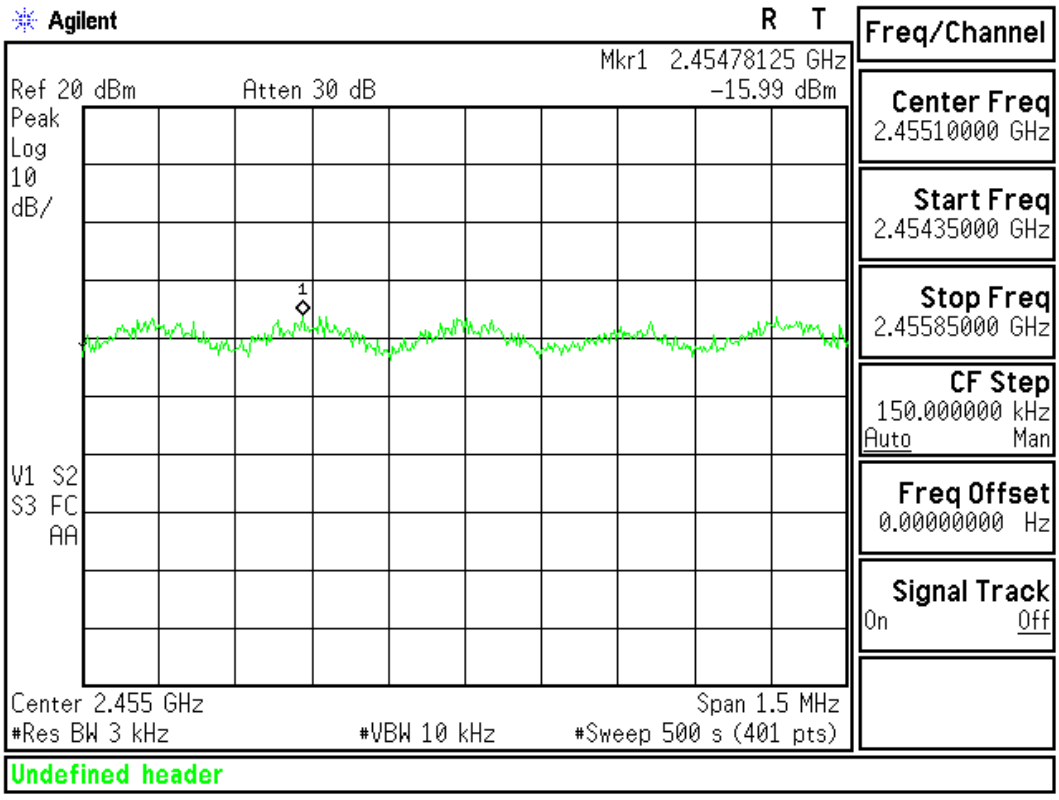
Figure Channel 6:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 802.11g 6Mbps (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11 (6Mbps)	2462.00	-15.99	< 8dBm	Pass

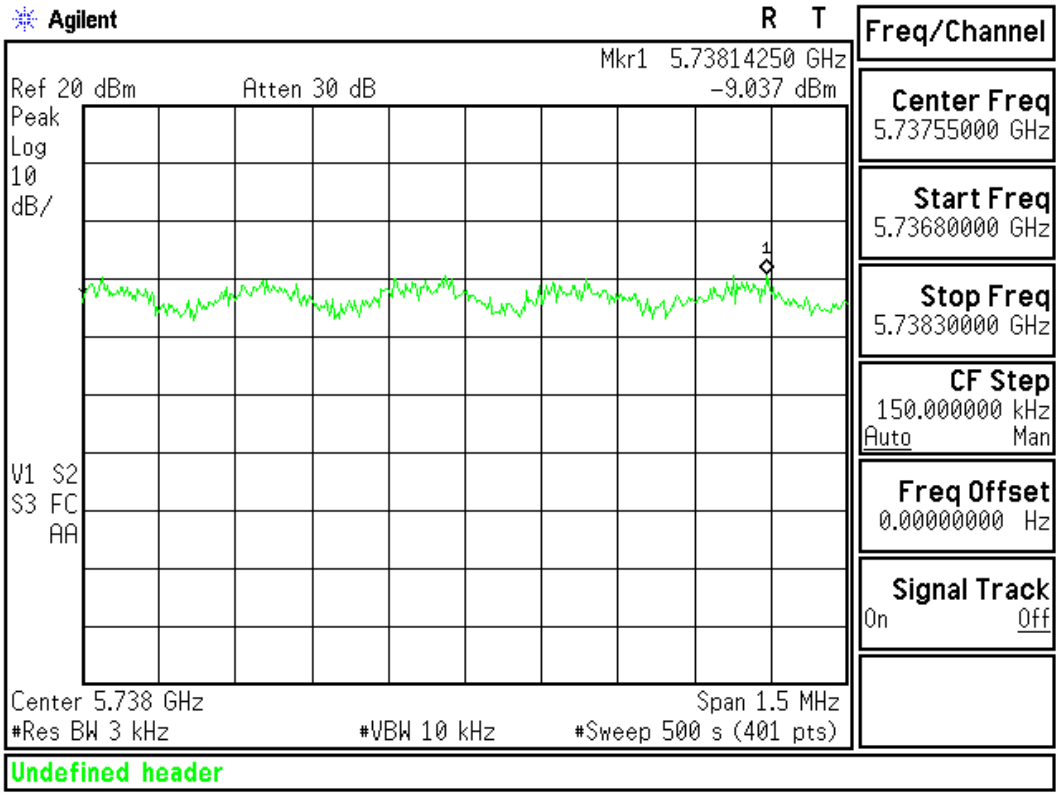
Figure Channel 11:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter - 802.11a 6Mbps (5745MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
149 (6Mbps)	5745.000	-9.037	< 8dBm	Pass

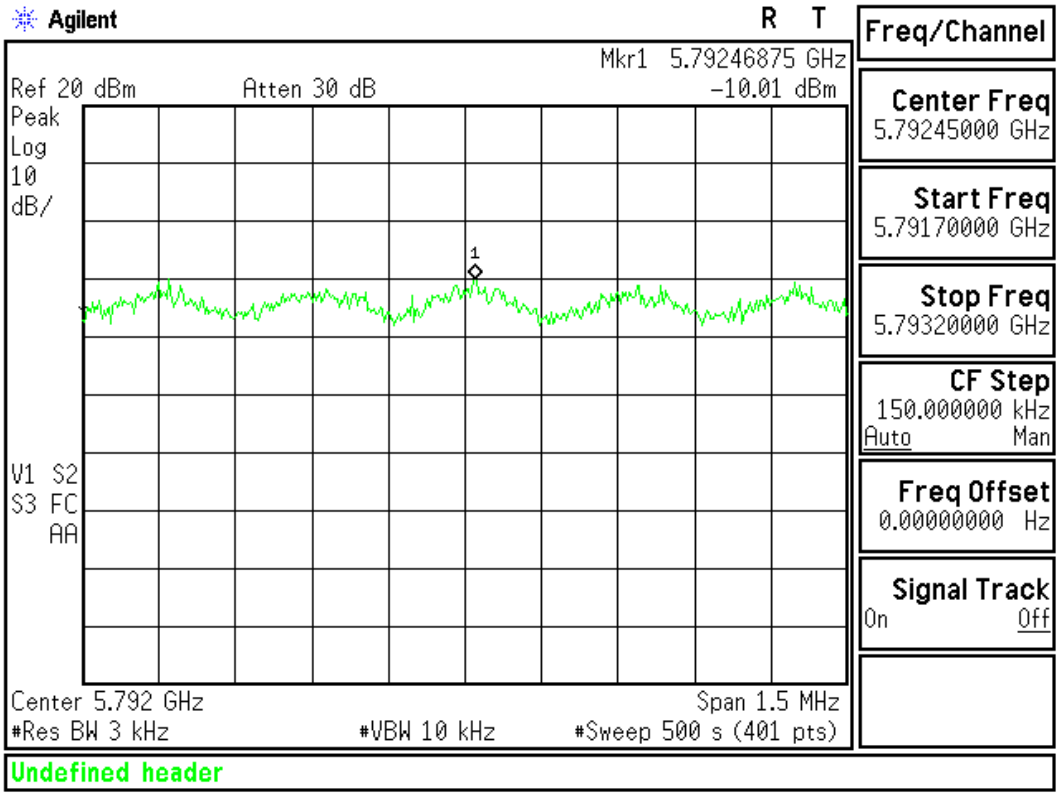
Figure Channel 149:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter - 802.11a 6Mbps (5785MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
157(6Mbps)	5785.000	-10.01	< 8dBm	Pass

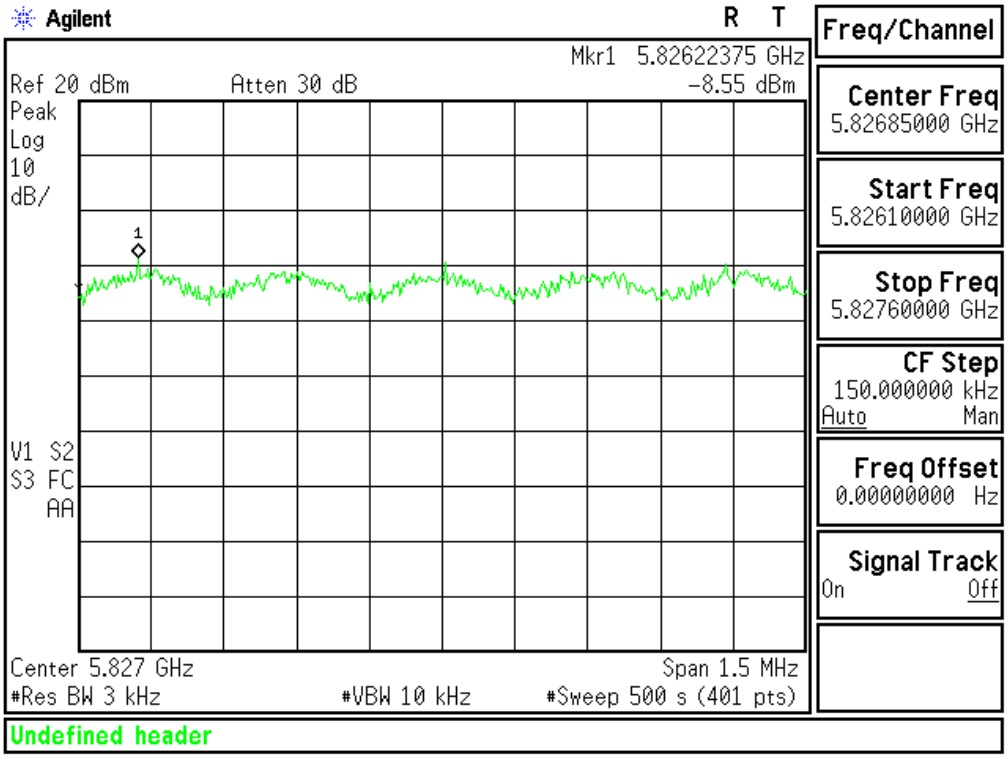
Figure Channel 157:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter - 802.11a 6Mbps (5825MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
165 (6Mbps)	5825.000	-8.55	< 8dBm	Pass

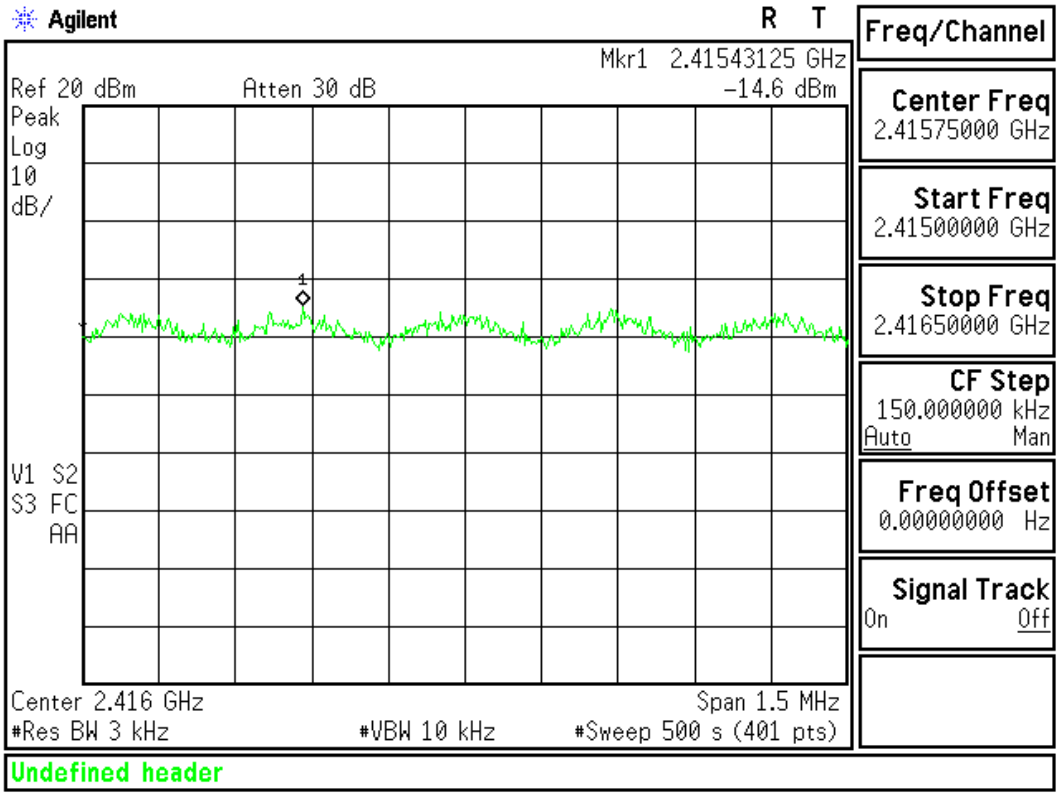
Figure Channel 165:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4GHz Band) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1 (13.5Mbps)	2412.00	-14.6	< 8dBm	Pass

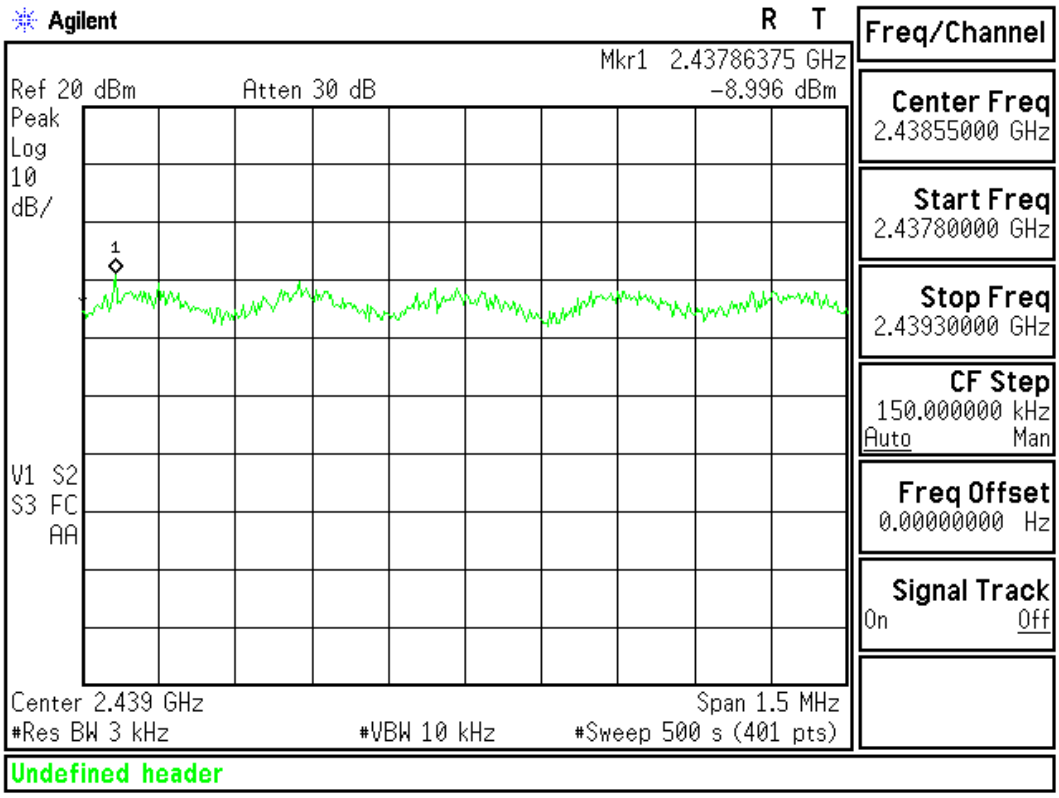
Figure Channel 1:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4GHz Band) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6 (13.5Mbps)	2437.000	-8.996	< 8dBm	Pass

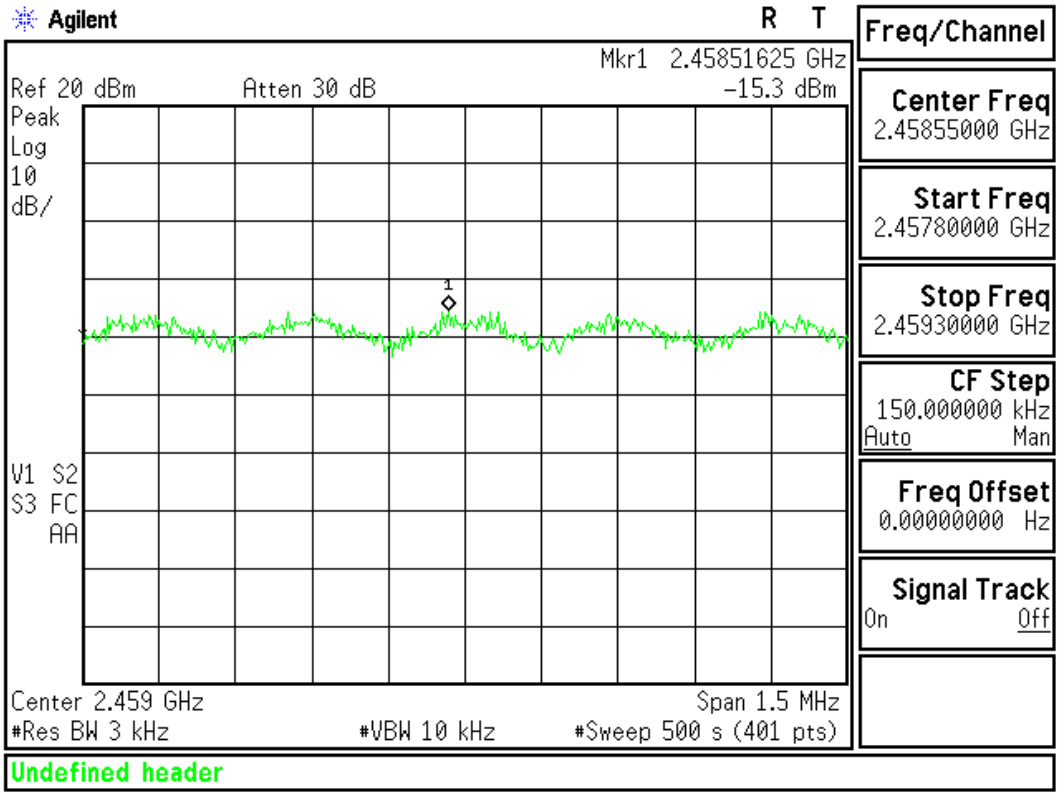
Figure Channel 6:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4GHz Band) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11 (13.5Mbps)	2462.00	-15.3	< 8dBm	Pass

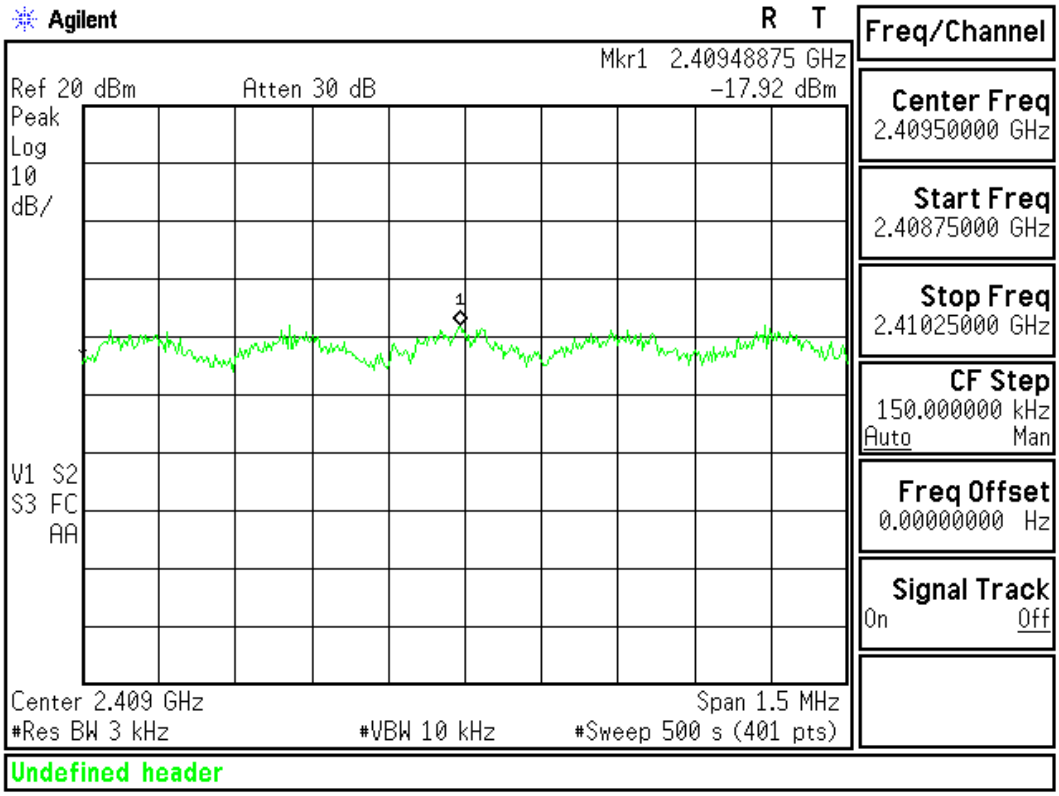
Figure Channel 11:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band) (2422MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1 (27Mbps)	2422.00	-17.92	< 8dBm	Pass

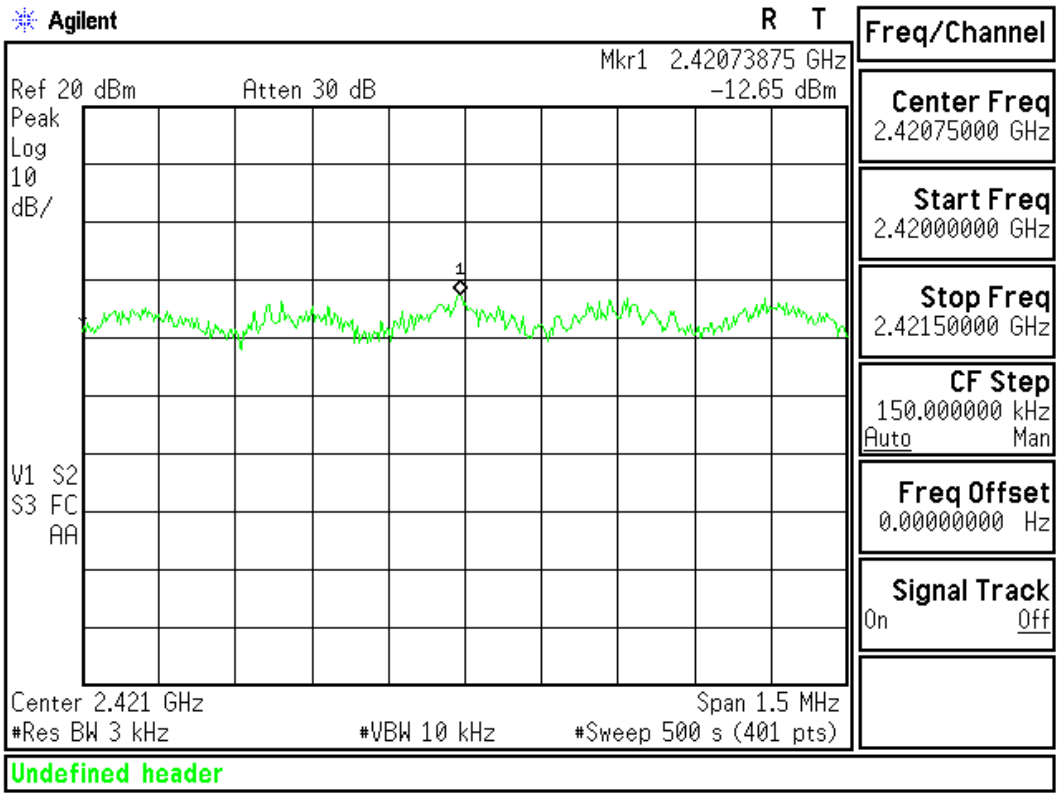
Figure Channel 1:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
4 (27Mbps)	2437.000	-12.65	< 8dBm	Pass

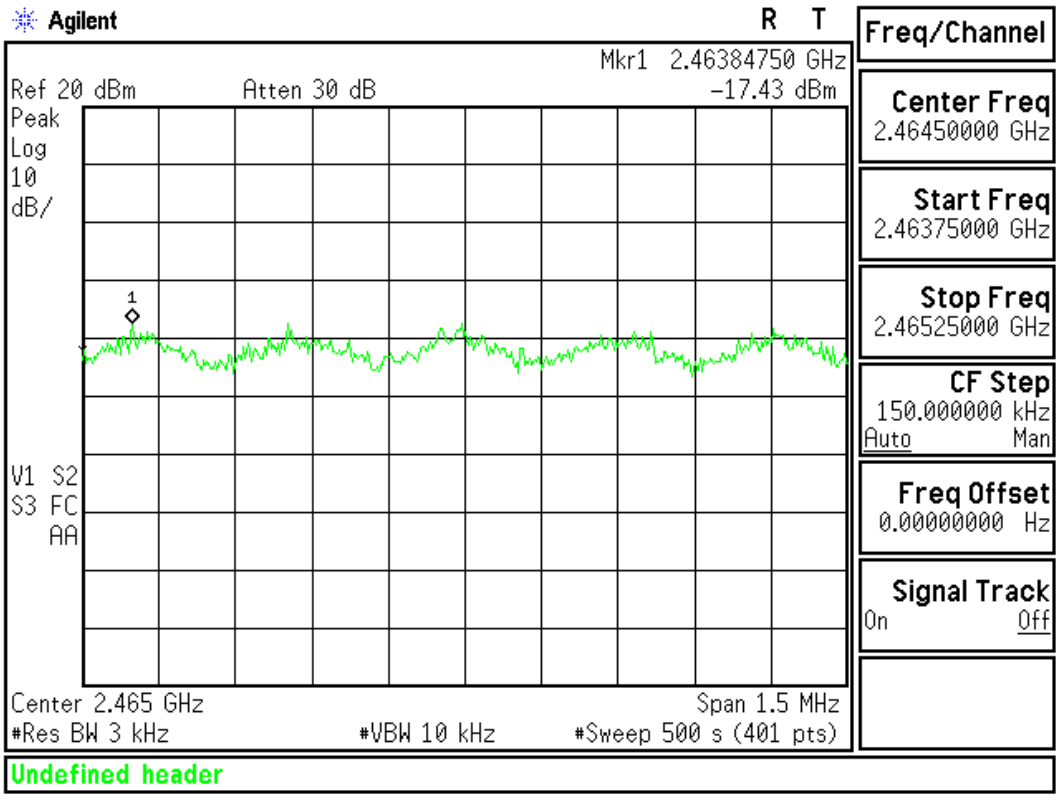
Figure Channel 4:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4GHz Band) (2452MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
07 (27Mbps)	2452.00	-17.43	< 8dBm	Pass

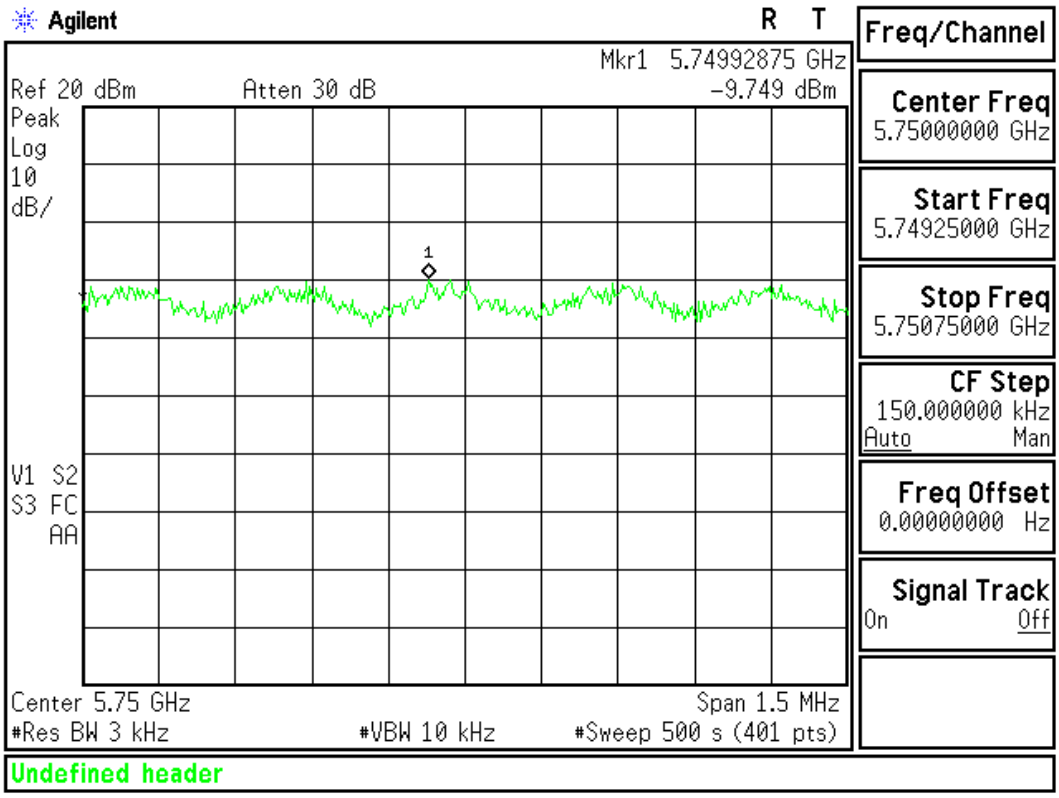
Figure Channel 7:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5GHz Band) (5745MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
149 (13.5Mbps)	5745.00	-9.749	< 8dBm	Pass

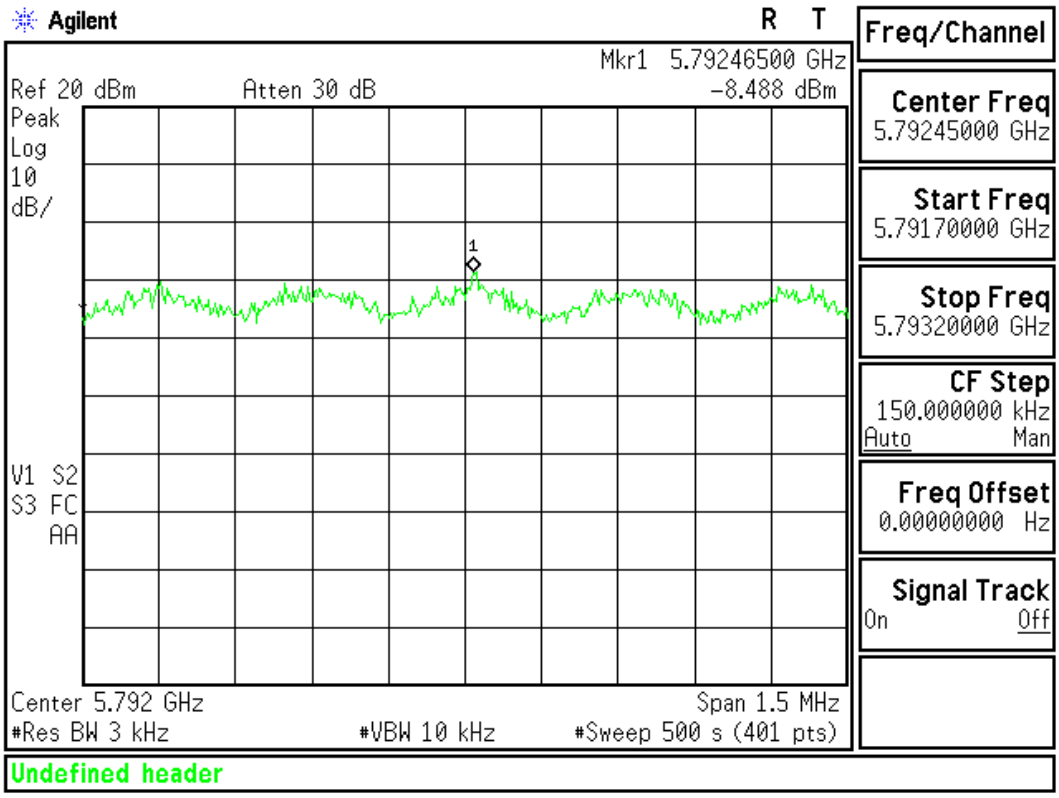
Figure Channel 149:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5GHz Band) (5785MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
157(13.5Mbps)	5785.000	-8.488	< 8dBm	Pass

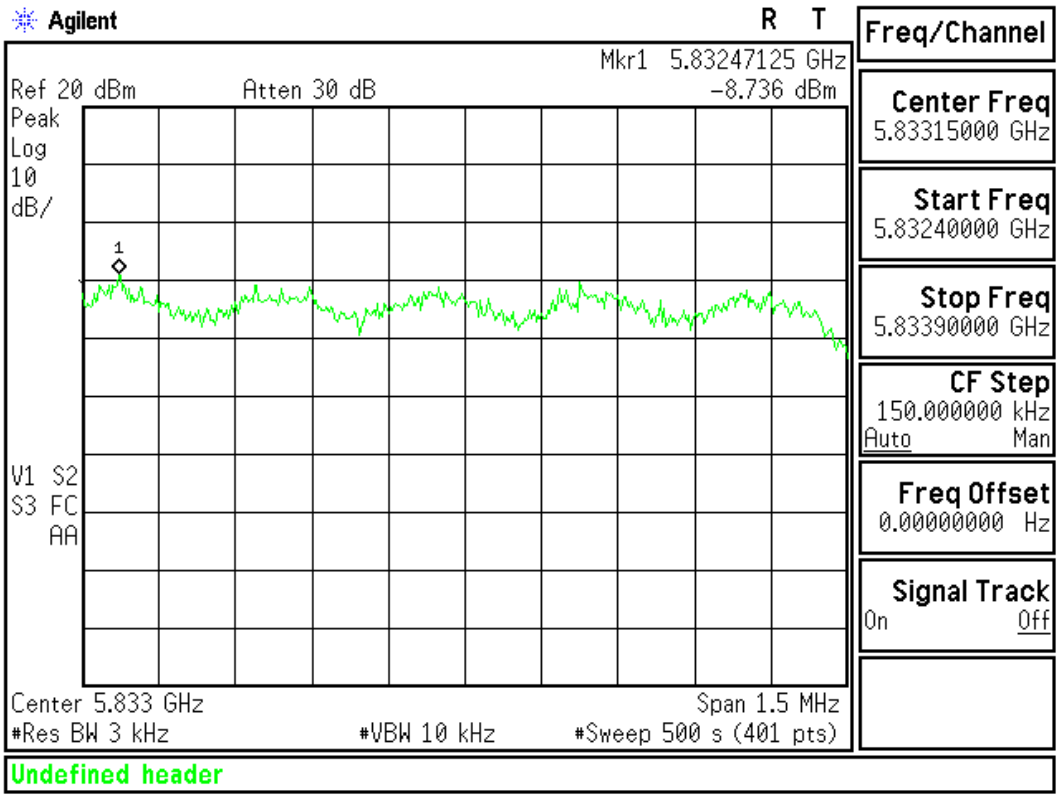
Figure Channel 157:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5GHz Band) (5825MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
165(13.5Mbps)	5825.00	-8.736	< 8dBm	Pass

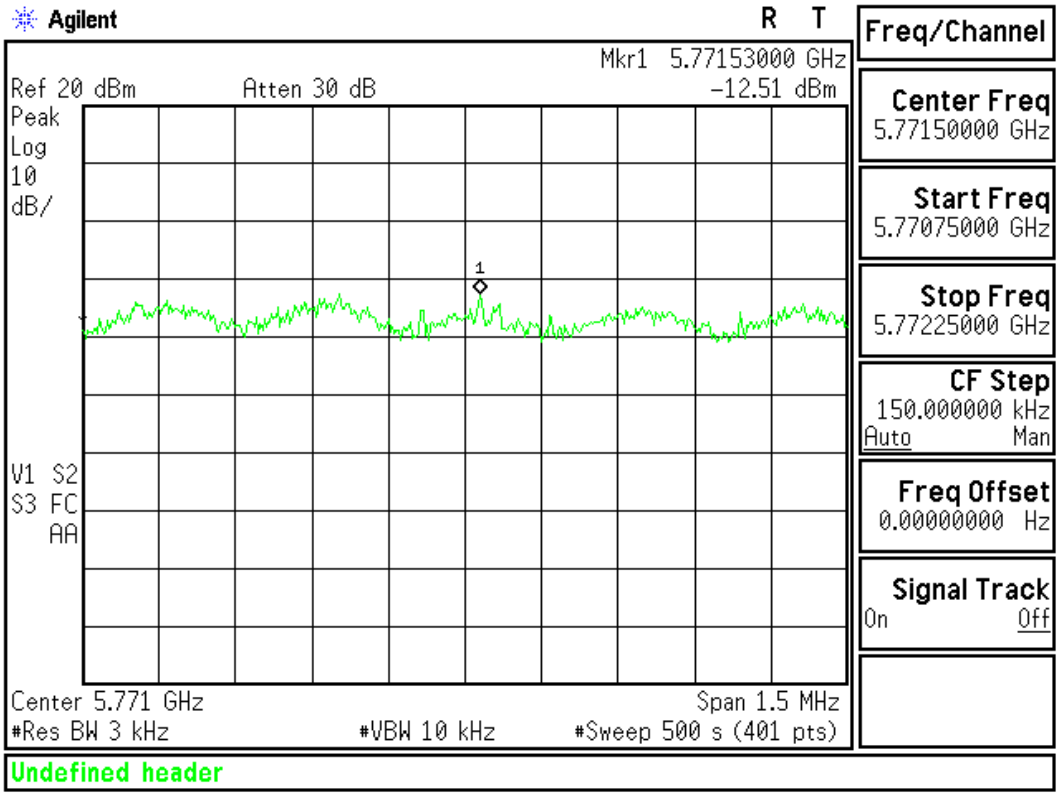
Figure Channel 165:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5GHz Band) (5755MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
151 (27Mbps)	5755.00	-12.51	< 8dBm	Pass

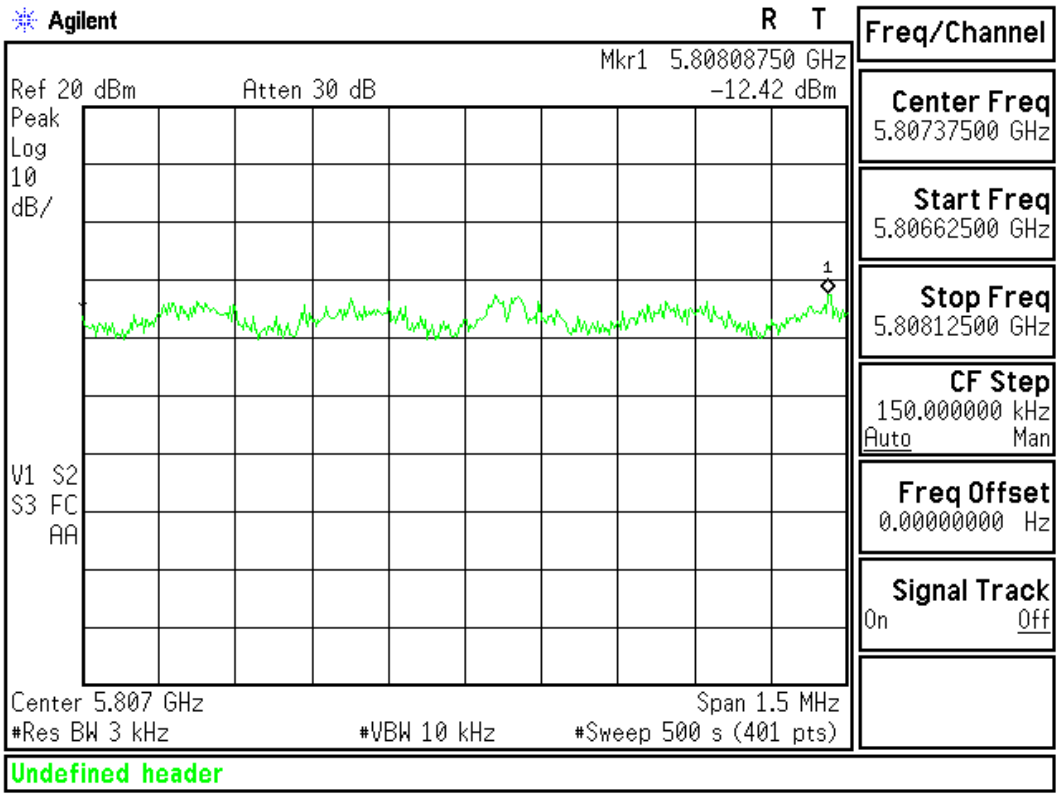
Figure Channel 151:



Product : Notebook
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5GHz Band) (5795MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
159 (27Mbps)	5795.000	-12.42	< 8dBm	Pass

Figure Channel 159:



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.