

FC

Test Report

Product Name	Notebook P.C.
Model No	UX30
FCC ID.	MSQUX30INTEL512H

Applicant	ASUSTek COMPUTER INC.
Address	4FL., No. 15, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.

Date of Receipt	June 06, 2009
Issue Date	June 26, 2009
Report No.	096116R-RFUSP05V01
Report Version	V1.0

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

Test Report Certification

Issue Date: June 26, 2009

Report No.: 096116R-RFUSP05V01



Accredited by NIST (NVLAP)

NVLAP Lab Code: 200533-0

Product Name	Notebook P.C.
Applicant	ASUSTek COMPUTER INC.
Address	4FL., No. 15, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.
Manufacturer	1.PEGATRON CORPORATION Taoyuan Mfg 2.Protek (Shanghai) Limited. 3.NorthTec Asia (Shanghai) Limited.
Model No.	UX30
Rated Voltage	AC 120V/60Hz
Working Voltage	AC 100-240V, 50-60Hz
Trade Name	ASUS
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2008 ANSI C63.4: 2003
Test Result	Complied



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Documented By :



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Tested By :



(Engineer / Dino Chen)

Approved By :



(Manager / Vincent Lin)



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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Notebook P.C.
Trade Name	ASUS
FCC ID.	MSQUX30INTEL512H
Model No.	UX30
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	PIFA Antenna
Antenna Gain	Refer to the table "Antenna List"
Channel Control	Auto
Power Adapter	MFR: PIE(ASUS), M/N: AD6630 Input: AC 100-240V, 50-60Hz, 1.0A Output: DC 19V, 2.1A Cable Out: Shielded, 1.8m, with one ferrite core bonded.

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	INPAQ	WA-P-LB-02-007 (Tx1)	2.5dBi in 2.4 GHz
		WA-P-LB-01-002 (Tx2) (or Rx2 for 512 family)	1.73dBi in 5GHz
2	ACON	AMP6P-700064 (Tx1)	1.34dBi in 2.4 GHz
		AMP6P-700065 (Tx2) (or Rx2 for 512 family)	2.38dBi in 5GHz

802.11b/g/n-20MHz 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 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 (2.4G 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 (5G 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 P.C. with a built-in 2.4GHz and 5GHz WLAN card.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. 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)
4. 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.
5. 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 P.C. 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 P.C. , 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 P.C. 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-Antenna 1
	Mode 2: Transmitter - 802.11g 6Mbps-Antenna 1
	Mode 3: Transmitter - 802.11a 6Mbps-Antenna 2
	Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4G Band)-Antenna 1
	Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4G Band)-Antenna 1
	Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5G Band)-Antenna 2
	Mode 7: Transmitter - 802.11n-40BW_27Mbps(5G Band)-Antenna 2

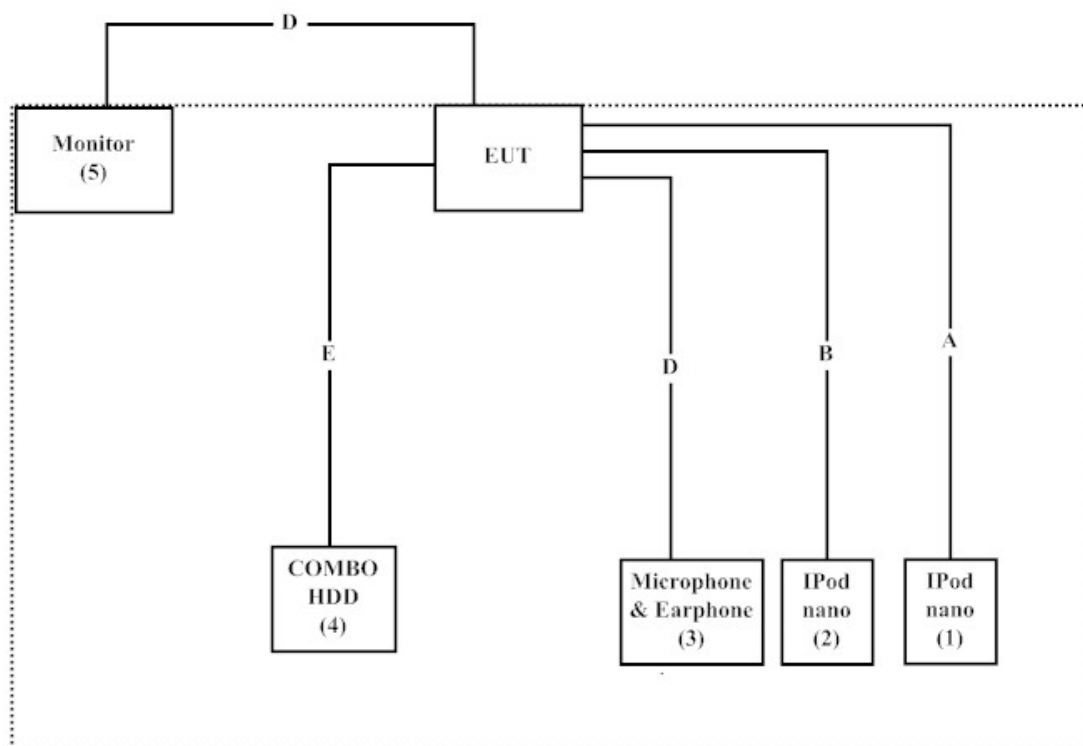
1.3. Tested System Details

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) iPod nano	Apple	A1236	7K818WQLY0P	N/A
(2) iPod nano	Apple	A1236	YM827ERSY0P	N/A
(3) Microphone & Earphone	PCHOME	N/A	N/A	N/A
(4) COMBO HDD	TeraSys	F12-UF	A0100215-63m0031	Non-Shielded 1.8m
(5) Monitor	Dell	2407WFPb	CN-0FC255-46633-67T-04HS	Non-Shielded, 1.8m

Signal Cable Type	Signal cable Description
A. USB Cable	Shielded, 1.2m
B. USB Cable	Shielded, 1.2m
C. Earphone Cable	Non-Shielded, 1.2m
D. VGA Cable	Non-Shielded, 1.8m
E. USB Cable	Shielded, 1.2m

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
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Registration Number: 92195



Accreditation on NVLAP
NVLAP Lab Code: 200533-0



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FCC Accreditation Number: TW1014



2. Conducted Emission

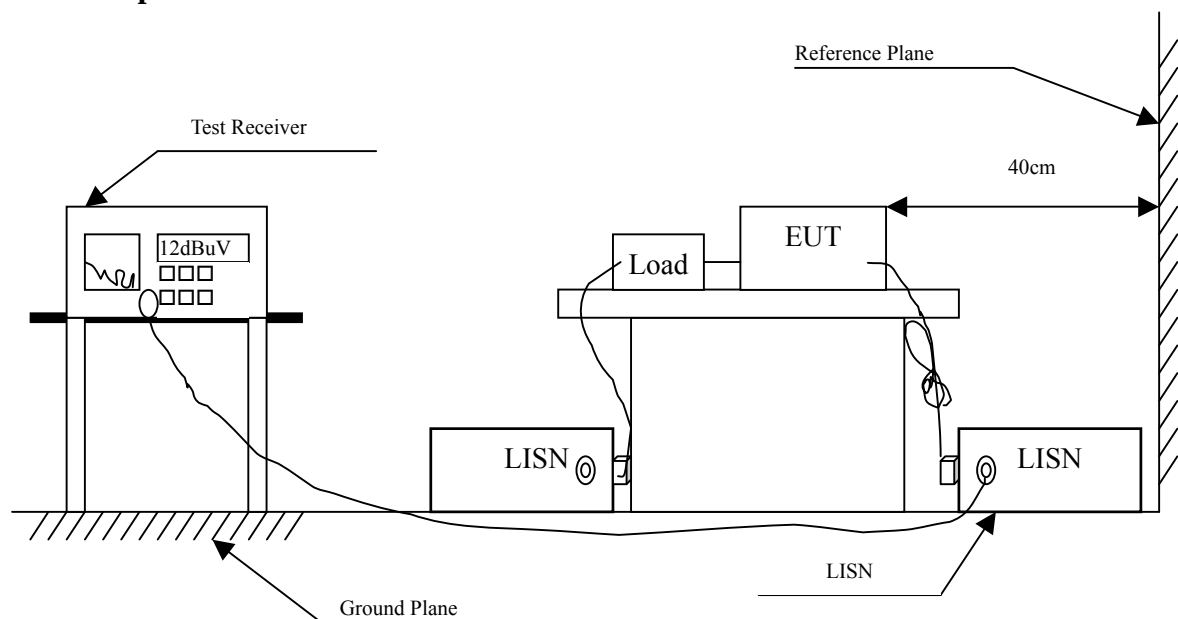
2.1. Test Equipment

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 P.C.
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4G Band)-Antenna 1 (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Line 1					
Quasi-Peak					
0.173	9.734	41.280	51.015	-14.328	65.343
0.236	9.682	32.990	42.672	-20.871	63.543
0.298	9.650	26.200	35.850	-25.921	61.771
0.345	9.650	21.090	30.740	-29.689	60.429
0.576	9.640	19.810	29.450	-26.550	56.000
1.490	9.674	13.400	23.074	-32.926	56.000
Average					
0.173	9.734	24.050	33.785	-21.558	55.343
0.236	9.682	16.800	26.482	-27.061	53.543
0.298	9.650	9.780	19.430	-32.341	51.771
0.345	9.650	4.300	13.950	-36.479	50.429
0.576	9.640	8.410	18.050	-27.950	46.000
1.490	9.674	6.050	15.724	-30.276	46.000

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 P.C.
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4G Band)-Antenna 1 (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.185	9.727	39.480	49.208	-15.792	65.000
0.228	9.698	32.270	41.968	-21.803	63.771
0.291	9.663	26.390	36.053	-25.918	61.971
0.353	9.655	20.730	30.385	-29.815	60.200
0.588	9.643	18.860	28.503	-27.497	56.000
1.670	9.680	11.600	21.280	-34.720	56.000
Average					
0.185	9.727	22.850	32.578	-22.422	55.000
0.228	9.698	12.760	22.458	-31.313	53.771
0.291	9.663	9.850	19.513	-32.458	51.971
0.353	9.655	4.800	14.455	-35.745	50.200
0.588	9.643	8.150	17.793	-28.207	46.000
1.670	9.680	4.700	14.380	-31.620	46.000

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 P.C.
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5G Band)-Antenna 2 (5755MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.181	9.724	42.100	51.824	-13.290	65.114
0.244	9.679	33.820	43.499	-19.815	63.314
0.291	9.653	28.320	37.973	-23.998	61.971
0.341	9.650	21.540	31.190	-29.353	60.543
0.588	9.637	19.220	28.857	-27.143	56.000
1.498	9.676	13.850	23.526	-32.474	56.000
Average					
0.181	9.724	26.830	36.554	-18.560	55.114
0.244	9.679	17.570	27.249	-26.065	53.314
0.291	9.653	12.090	21.743	-30.228	51.971
0.341	9.650	3.360	13.010	-37.533	50.543
0.588	9.637	8.280	17.917	-28.083	46.000
1.498	9.676	6.980	16.656	-29.344	46.000

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 P.C.
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5G Band)-Antenna 2 (5755MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.177	9.736	41.430	51.166	-14.063	65.229
0.232	9.695	33.370	43.065	-20.592	63.657
0.298	9.660	26.520	36.180	-25.591	61.771
0.361	9.653	20.460	30.113	-29.858	59.971
0.611	9.650	16.970	26.620	-29.380	56.000
1.545	9.680	12.900	22.580	-33.420	56.000
Average					
0.177	9.736	25.660	35.396	-19.833	55.229
0.232	9.695	16.360	26.055	-27.602	53.657
0.298	9.660	10.290	19.950	-31.821	51.771
0.361	9.653	5.100	14.753	-35.218	49.971
0.611	9.650	5.430	15.080	-30.920	46.000
1.545	9.680	5.570	15.250	-30.750	46.000

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

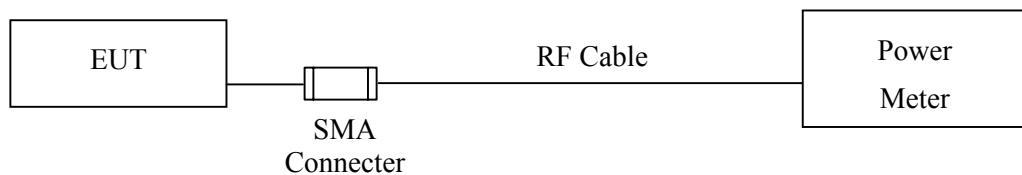
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2009
X	Power Sensor	Anritsu	MA2491A/034457	May, 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 P.C.
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter - 802.11b 1Mbps-Antenna 1

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	--	--	--	1 Watt= 30 dBm
6	2437.00	19.06	18.85	18.75	18.88	1 Watt= 30 dBm
11	2462.00	18.86	--	--	--	1 Watt= 30 dBm

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

Product : Notebook P.C.
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter - 802.11g 6Mbps-Antenna 1

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	--	--	--	--	--	--	--	1 Watt= 30 dBm
6	2437.00	22.8	22.05	21.18	21.56	20.38	21.08	21.04	21.19	1 Watt= 30 dBm
11	2462.00	20.67	--	--	--	--	--	--	--	1 Watt= 30 dBm

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

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

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	--	--	--	--	--	--	--	1 Watt= 30 dBm
157	5785.00	19.80	19.7	19.22	18.25	18.85	19.11	19.27	19.08	1 Watt= 30 dBm
165	5825.00	19.03	--	--	--	--	--	--	--	1 Watt= 30 dBm

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

Product : Notebook P.C.
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4G Band)-Antenna 1

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	--	--	--	--	--	--	--	1 Watt= 30 dBm
6	2437.00	21.75	20.88	21.05	21.1	20.95	21.14	20.06	20.16	1 Watt= 30 dBm
11	2462.00	20.58	--	--	--	--	--	--	--	1 Watt= 30 dBm

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

Product : Notebook P.C.
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4G Band)-Antenna 1

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	20.90	--	--	--	--	--	--	--	1 Watt= 30
4	2437.00	22.62	21.15	21.18	22.05	20.94	21.19	21.77	20.98	1 Watt= 30
7	2452.00	20.72	--	--	--	--	--	--	--	1 Watt= 30

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

Product : Notebook P.C.
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5G Band)-Antenna 2

Cable loss=0.5dB		Peak Power Output (dBm)								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit (dBm)
		6.5	13	19.5	26	39	52	58.5	65	
149	5745	20.40	--	--	--	--	--	--	--	1 Watt= 30
157	5785	19.80	19.65	19.19	18.88	18.95	19.17	19.05	19.37	1 Watt= 30
165	5825	19.14	--	--	--	--	--	--	--	1 Watt= 30

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

Product : Notebook P.C.
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5G Band)-Antenna 2

Cable loss=0.5dB		Peak Power Output (dBm)								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit (dBm)
		13.5	27	40.5	54	81	108	121.5	135	
151	5755	20.30	19.58	19.71	19.52	19.36	19.58	18.88	19.53	1 Watt= 30
159	5795	19.67	--	--	--	--	--	--	--	1 Watt= 30

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

4. Radiated Emission

4.1. Test Equipment

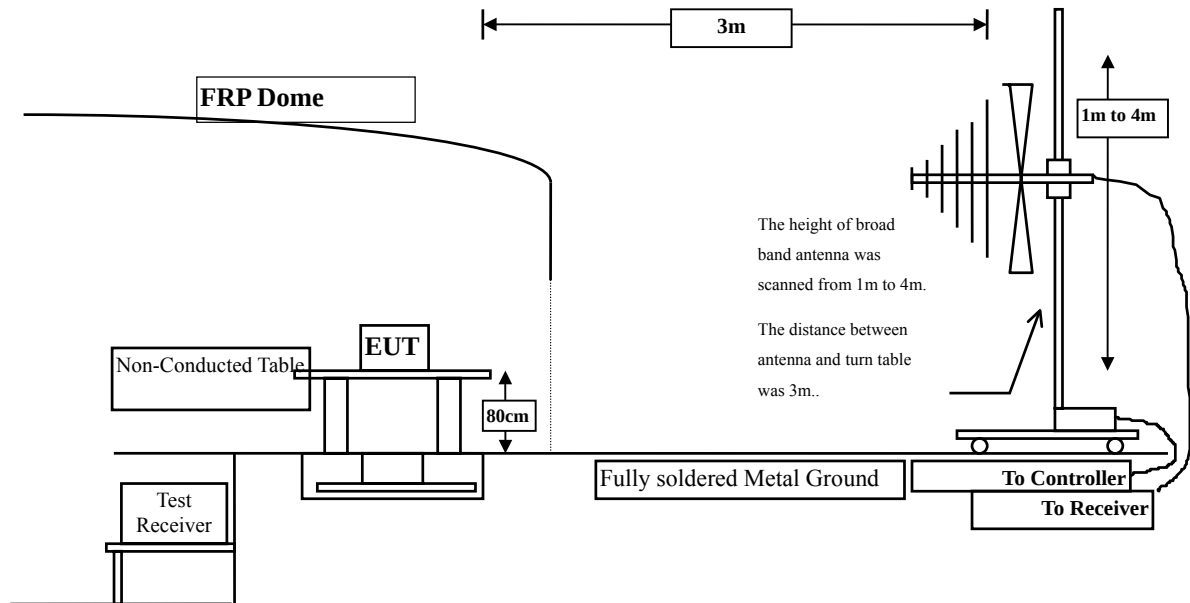
The following test equipment are used during the radiated emission test:

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., 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

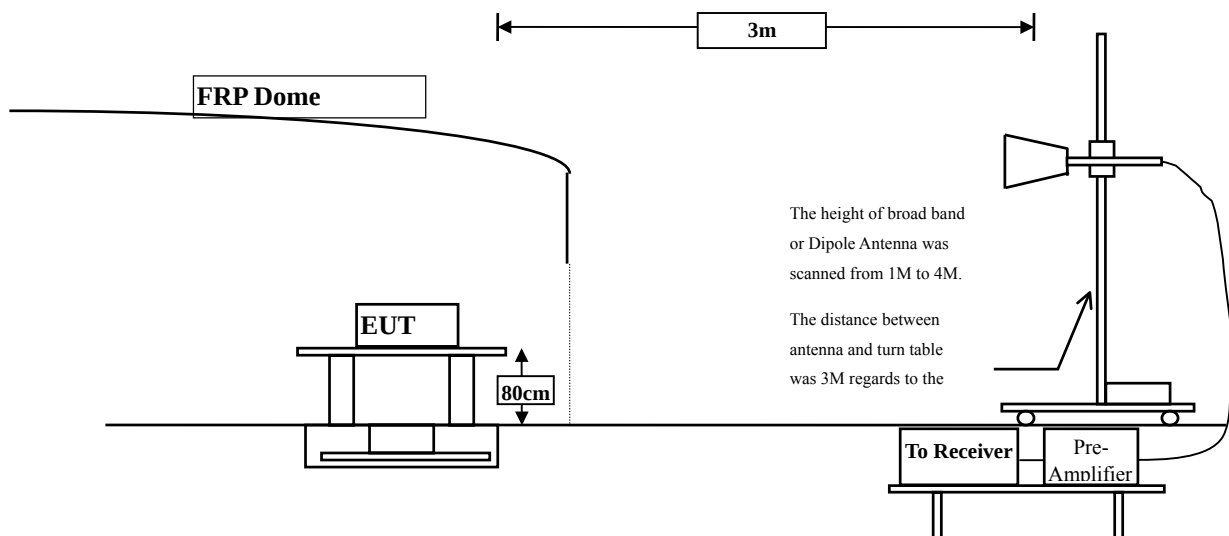
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

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 beamwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The frequency range from 30MHz to 10th harmonics is checked.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

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

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.479	44.950	48.429	-25.571	74.000
7236.000	7.874	43.470	51.344	-22.656	74.000
9648.000	13.286	42.230	55.515	-18.485	74.000
Average Detector:					
9648.000	13.286	31.220	44.505	-9.495	54.000
Vertical					
Peak Detector:					
4824.000	3.571	50.290	53.861	-20.139	74.000
7236.000	8.819	46.030	54.848	-19.152	74.000
9648.000	13.764	42.950	56.714	-17.286	74.000
Average Detector:					
7236.000	8.819	31.670	40.488	-13.512	54.000
9648.000	13.764	30.730	44.494	-9.506	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter - 802.11b 1Mbps-Antenna 1 (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.103	45.270	48.373	-25.627	74.000
7311.000	7.419	42.970	50.389	-23.611	74.000
9748.000	13.320	42.700	56.020	-17.980	74.000
Average					
Detector:					
9748.000	13.320	31.450	44.770	-9.230	54.000
Vertical					
Peak Detector:					
4874.000	3.578	49.210	52.788	-21.212	74.000
7311.000	8.231	44.860	53.090	-20.910	74.000
9748.000	13.425	43.100	56.525	-17.475	74.000
Average					
Detector:					
9748.000	13.425	32.570	45.995	-8.005	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter - 802.11b 1Mbps-Antenna 1 (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4924.000	3.365	44.210	47.575	-26.425	74.000
7386.000	6.626	41.970	48.596	-25.404	74.000
9848.000	13.627	42.070	55.697	-18.303	74.000
Average Detector:					
9848.000	13.627	31.460	45.087	-8.913	54.000
Vertical					
Peak Detector:					
4924.000	4.222	49.280	53.502	-20.498	74.000
7386.000	7.306	46.150	53.456	-20.544	74.000
9848.000	13.601	43.310	56.911	-17.089	74.000
Average Detector:					
9848.000	13.601	31.130	44.731	-9.269	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter - 802.11g 6Mbps-Antenna 1 (2412MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.479	43.160	46.639	-27.361	74.000
7236.000	7.874	43.070	50.944	-23.056	74.000
9648.000	13.286	42.780	56.065	-17.935	74.000
Average					
Detector:					
9648.000	13.286	30.460	43.745	-10.255	54.000
Vertical					
Peak Detector:					
4824.000	3.571	44.810	48.381	-25.619	74.000
7236.000	8.819	43.210	52.028	-21.972	74.000
9648.000	13.764	42.170	55.934	-18.066	74.000
Average					
Detector:					
9648.000	13.764	29.510	43.274	-10.726	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter - 802.11g 6Mbps-Antenna 1 (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.103	44.100	47.203	-26.797	74.000
7311.000	7.419	44.160	51.579	-22.421	74.000
9748.000	13.320	44.780	58.100	-15.900	74.000
Average					
Detector:					
9748.000	13.320	30.180	43.500	-10.500	54.000
Vertical					
Peak Detector:					
4874.000	3.578	46.750	50.328	-23.672	74.000
7311.000	8.231	51.530	59.760	-14.240	74.000
9748.000	13.425	44.060	57.485	-16.515	74.000
Average					
Detector:					
7311.000	8.231	34.530	42.760	-11.240	54.000
9748.000	13.425	31.070	44.495	-9.505	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter - 802.11g 6Mbps-Antenna 1 (2462 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	3.365	43.660	47.025	-26.975	74.000
7386.000	6.626	42.730	49.356	-24.644	74.000
9848.000	13.601	42.126	55.727	1.727	54.000
Average					
Detector:					
9848.000	13.627	30.210	43.837	-10.163	54.000
Vertical					
Peak Detector:					
4924.000	4.222	45.740	49.962	-24.038	74.000
7386.000	7.306	44.840	52.146	-21.854	74.000
9848.000	13.601	41.990	55.591	-18.409	74.000
Average					
Detector:					
9848.000	13.601	16.580	30.181	-23.819	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter - 802.11a 6Mbps-Antenna 2 (5745 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11490.000	11.800	44.670	56.470	-17.530	74.000
Average					
Detector:					
11490.000	11.800	33.440	45.240	-8.760	54.000
Vertical					
Peak Detector:					
11490.000	11.771	43.180	54.951	-19.049	74.000
Average					
Detector:					
11490.000	11.771	31.850	43.621	-10.379	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter - 802.11a 6Mbps-Antenna 2 (5785 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11570.000	11.959	43.570	55.528	-18.472	74.000
Average					
Detector:					
11570.000	11.959	31.690	43.648	-10.352	54.000
Vertical					
Peak Detector:					
11570.000	11.854	44.070	55.924	-18.076	74.000
Average					
Detector:					
11570.000	11.854	33.460	45.314	-8.686	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter - 802.11a 6Mbps-Antenna 2 (5825 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11650.000	12.531	47.350	59.880	-14.120	74.000
Average					
Detector:					
11650.000	12.531	32.150	44.680	-9.320	54.000
Vertical					
Peak Detector:					
11650.000	12.334	49.630	61.963	-12.037	74.000
Average					
Detector:					
11650.000	12.334	35.130	47.463	-6.537	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4G Band)-Antenna 1 (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.479	42.470	45.949	-28.051	74.000
7236.000	7.874	43.220	51.094	-22.906	74.000
9648.000	13.286	41.960	55.245	-18.755	74.000
Average Detector:					
9648.000	13.286	30.050	43.335	-10.665	54.000
Vertical					
Peak Detector:					
4824.000	3.571	44.150	47.721	-26.279	74.000
7236.000	8.819	40.500	49.318	-24.682	74.000
9648.000	13.764	41.800	55.564	-18.436	74.000
Average Detector:					
9648.000	13.764	30.070	43.834	-10.166	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4G Band)-Antenna 1 (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.103	43.550	46.653	-27.347	74.000
7311.000	7.419	43.540	50.959	-23.041	74.000
9748.000	13.320	44.820	58.140	-15.860	74.000
Average					
Detector:					
9736.000	13.267	30.290	43.557	-10.443	54.000
Vertical					
Peak Detector:					
4874.000	3.578	47.380	50.958	-23.042	74.000
7311.000	8.231	51.320	59.550	-14.450	74.000
9748.000	13.425	45.250	58.675	-15.325	74.000
Average					
Detector:					
7311.000	8.231	37.100	45.330	-8.670	54.000
9748.000	13.425	30.040	43.465	-10.535	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4G Band)-Antenna 1 (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4924.000	3.365	42.830	46.195	-27.805	74.000
7386.000	6.626	42.280	48.906	-25.094	74.000
9848.000	13.627	41.960	55.587	-18.413	74.000
Average Detector:					
9848.000	13.627	29.940	43.567	-10.433	54.000
Vertical					
Peak Detector:					
4924.000	4.222	42.980	47.202	-26.798	74.000
7386.000	7.306	43.230	50.536	-23.464	74.000
9848.000	13.601	41.200	54.801	-19.199	74.000
Average Detector:					
9848.000	13.601	31.100	44.701	-9.299	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4G Band)-Antenna 1 (2422MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4844.000	3.330	43.190	46.520	-27.480	74.000
7266.000	7.677	40.690	48.367	-25.633	74.000
9688.000	13.220	41.510	54.730	-19.270	74.000
Average					
Detector:					
9688.000	13.220	30.290	43.510	-10.490	54.000
Vertical					
Peak Detector:					
4844.000	3.575	44.330	47.905	-26.095	74.000
7266.000	8.568	42.780	51.348	-22.652	74.000
9688.000	13.551	41.920	55.470	-18.530	74.000
Average					
Detector:					
9688.000	13.551	30.150	43.700	-10.300	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4G Band)-Antenna 1 (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.103	42.840	45.943	-28.057	74.000
7311.000	7.419	43.750	51.169	-22.831	74.000
9748.000	13.320	41.540	54.860	-19.140	74.000
Average					
Detector:					
9748.000	13.320	30.130	43.450	-10.550	54.000
Vertical					
Peak Detector:					
4874.000	3.578	44.410	47.988	-26.012	74.000
7311.000	8.231	42.190	50.420	-23.580	74.000
9748.000	13.425	41.820	55.245	-18.755	74.000
Average					
Detector:					
9748.000	13.425	30.230	43.655	-10.345	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4G Band)-Antenna 1 (2452 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4904.000	3.144	43.870	47.014	-26.986	74.000
7356.000	6.659	42.270	48.929	-25.071	74.000
9808.000	13.492	40.810	54.302	-19.698	74.000
Average Detector:					
9808.000	13.492	29.830	43.322	-10.678	54.000
Vertical					
Peak Detector:					
4904.000	3.847	44.370	48.217	-25.783	74.000
7356.000	7.390	41.850	49.239	-24.761	74.000
9808.000	13.414	41.590	55.004	-18.996	74.000
Average Detector:					
9808.000	13.414	29.880	43.294	-10.706	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5G Band)-Antenna 2 (5745MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
	11.800	44.140	55.940	-18.060	74.000
Average Detector:					
11490.000	11.800	31.680	43.480	-10.520	54.000
Vertical					
Peak Detector:					
11490.000	11.771	44.190	55.961	-18.039	74.000
Average Detector:					
11490.000	11.771	32.300	44.071	-9.929	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5G Band)-Antenna 2 (5785 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11570.000	11.959	44.910	56.868	-17.132	74.000
Average					
Detector:					
11570.000	11.959	32.840	44.798	-9.202	54.000
Vertical					
Peak Detector:					
11570.000	11.854	45.820	57.674	-16.326	74.000
Average					
Detector:					
11570.000	11.854	33.570	45.424	-8.576	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5G Band)-Antenna 2 (5825 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
11650.000	12.531	46.570	59.100	-14.900	74.000
Average Detector:					
11650.000	12.334	33.567	45.900	-8.100	54.000
Vertical					
Peak Detector:					
11650.000	12.334	41.900	54.233	-19.767	74.000
Average Detector:					
11650.000	12.334	35.423	47.756	-6.244	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5G Band)-Antenna 2 (5755MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
11510.000	11.817	42.580	54.396	-19.604	74.000
Average Detector:					
11510.000	11.817	30.660	42.476	-11.524	54.000
Vertical					
Peak Detector:					
11510.000	11.769	43.290	55.059	-18.941	74.000
Average Detector:					
11510.000	11.769	31.240	43.009	-10.991	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 P.C.
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5G Band)-Antenna 2 (5795 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11590.000	12.246	43.650	55.897	-18.103	74.000
Average					
Detector:					
11590.000	12.246	31.530	43.777	-10.223	54.000
Vertical					
Peak Detector:					
11590.000	12.123	44.120	56.244	-17.756	74.000
Average					
Detector:					
11590.000	12.123	32.840	44.964	-9.036	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 P.C.
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter - 802.11b 1Mbps-Antenna 1 (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
388.200	0.792	31.250	32.042	-13.958	46.000
468.220	3.359	30.055	33.414	-12.586	46.000
495.000	1.290	33.000	34.289	-11.711	46.000
555.560	2.673	31.014	33.687	-12.313	46.000
858.900	6.413	31.713	38.126	-7.874	46.000
900.600	5.619	31.074	36.693	-9.307	46.000
962.500	6.742	35.010	41.752	-12.248	54.000
Vertical					
378.550	0.546	36.220	36.767	-9.233	46.000
555.250	-2.604	32.580	29.976	-16.024	46.000
633.250	-1.614	31.250	29.636	-16.364	46.000
721.500	-0.902	34.500	33.598	-12.402	46.000
851.250	-0.537	31.470	30.933	-15.067	46.000
933.250	2.928	33.360	36.288	-9.712	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 P.C.
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter - 802.11g 6Mbps-Antenna 1 (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
375.650	0.710	35.250	35.960	-10.040	46.000
463.500	3.072	32.580	35.652	-10.348	46.000
478.300	1.787	31.100	32.888	-13.112	46.000
544.120	4.155	34.500	38.655	-7.345	46.000
735.600	2.819	31.250	34.068	-11.932	46.000
822.500	7.081	32.330	39.411	-6.589	46.000
Vertical					
375.580	0.188	36.300	36.488	-9.512	46.000
444.580	-6.633	36.250	29.617	-16.383	46.000
452.360	-5.230	31.008	25.778	-20.222	46.000
553.500	-2.034	32.330	30.297	-15.703	46.000
662.200	-1.118	31.240	30.121	-15.879	46.000
852.300	-0.523	36.000	35.477	-10.523	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 P.C.
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter - 802.11a 6Mbps-Antenna 2 (5785MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
314.500	-4.738	32.090	27.352	-18.648	46.000
358.600	-0.609	32.325	31.716	-14.284	46.000
442.500	-0.021	36.000	35.980	-10.020	46.000
525.100	2.918	31.250	34.168	-11.832	46.000
683.600	2.690	36.000	38.690	-7.310	46.000
712.000	3.644	32.250	35.894	-10.106	46.000
Vertical					
255.600	-5.154	33.200	28.046	-17.954	46.000
336.250	-2.002	32.450	30.449	-15.551	46.000
452.300	-5.254	34.010	28.756	-17.244	46.000
555.350	-2.629	32.550	29.921	-16.079	46.000
643.200	-2.806	32.550	29.744	-16.256	46.000
958.300	2.833	32.060	34.893	-11.107	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 P.C.
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4G Band)-Antenna 1 (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
294.325	-5.060	41.556	36.496	-9.504	46.000
461.650	3.814	32.174	35.989	-10.011	46.000
541.675	3.591	32.932	36.523	-9.477	46.000
677.475	2.713	32.892	35.605	-10.395	46.000
803.575	6.218	32.325	38.543	-7.457	46.000
907.850	6.001	32.136	38.137	-7.863	46.000
Vertical					
233.700	-6.838	40.222	33.384	-12.616	46.000
294.325	-5.105	41.556	36.451	-9.549	46.000
500.450	-0.301	33.434	33.133	-12.867	46.000
604.725	2.002	33.971	35.973	-10.027	46.000
750.225	1.929	33.079	35.008	-10.992	46.000
820.550	2.919	33.382	36.301	-9.699	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 P.C.
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4G Band)-Antenna 1 (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
233.700	-8.568	40.222	31.654	-14.346	46.000
294.325	-5.060	41.556	36.496	-9.504	46.000
466.500	3.015	33.033	36.048	-9.952	46.000
614.425	2.849	35.769	38.618	-7.382	46.000
696.875	3.165	32.411	35.576	-10.424	46.000
803.575	6.218	32.615	38.833	-7.167	46.000
Vertical					
289.475	-5.733	35.591	29.858	-16.142	46.000
541.675	1.716	33.826	35.542	-10.458	46.000
614.425	1.529	35.769	37.298	-8.702	46.000
689.600	2.175	32.617	34.792	-11.208	46.000
796.300	2.553	34.117	36.670	-9.330	46.000
966.050	3.666	33.001	36.667	-17.333	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 P.C.
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5G Band)-Antenna 2 (5785 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
294.325	-5.060	41.556	36.496	-9.504	46.000
384.050	0.965	33.366	34.331	-11.669	46.000
471.350	3.119	32.645	35.764	-10.236	46.000
662.925	1.761	33.615	35.376	-10.624	46.000
742.950	3.721	33.225	36.945	-9.055	46.000
924.825	6.387	32.284	38.671	-7.329	46.000
Vertical					
294.325	-5.105	41.556	36.451	-9.549	46.000
376.775	0.340	33.709	34.048	-11.952	46.000
544.100	1.281	33.688	34.969	-11.031	46.000
684.750	2.060	33.328	35.388	-10.612	46.000
796.300	2.553	34.117	36.670	-9.330	46.000
966.050	3.666	33.001	36.667	-17.333	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 P.C.
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5G Band)-Antenna 2 (5755MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
233.700	-8.568	40.222	31.654	-14.346	46.000
294.325	-5.060	41.556	36.496	-9.504	46.000
393.750	0.496	35.199	35.695	-10.305	46.000
510.150	2.937	33.670	36.607	-9.393	46.000
653.225	1.775	33.772	35.547	-10.453	46.000
774.475	5.016	32.855	37.871	-8.129	46.000
Vertical					
233.700	-6.838	40.222	33.384	-12.616	46.000
294.325	-5.105	41.556	36.451	-9.549	46.000
510.150	0.707	33.670	34.377	-11.623	46.000
614.425	1.529	35.769	37.298	-8.702	46.000
699.300	-0.158	33.126	32.968	-13.032	46.000
769.625	2.490	32.806	35.296	-10.704	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.

5. RF antenna conducted test

5.1. Test Equipment

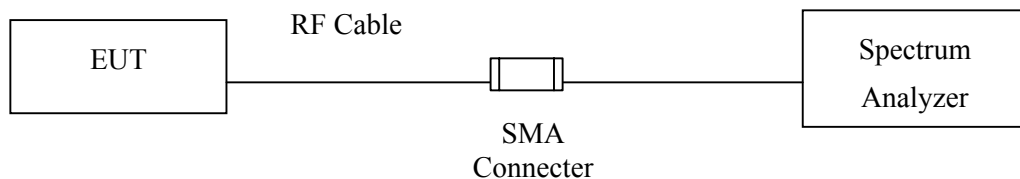
The following test equipments are used during the radiated emission tests:

	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

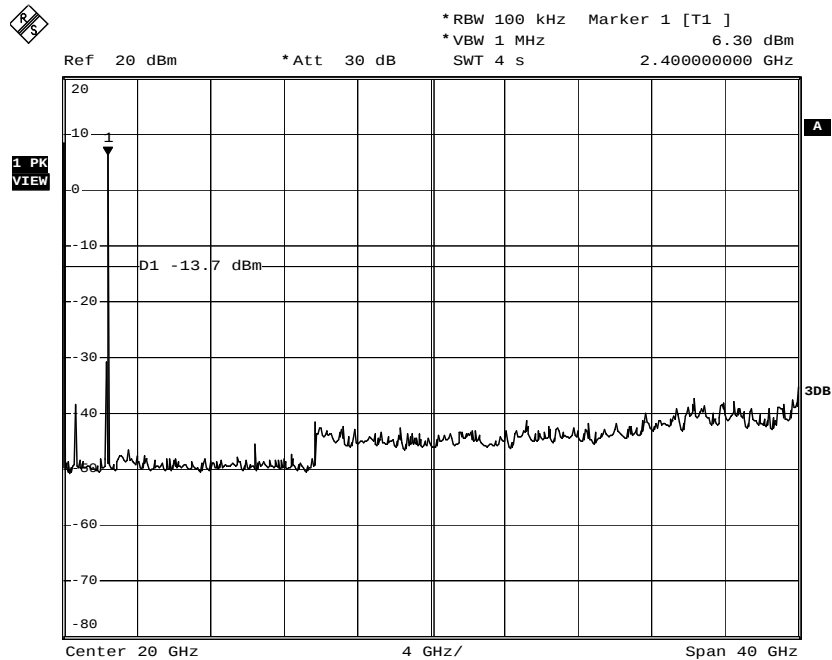
The measurement uncertainty

Conducted is defined as $\pm 1.27\text{dB}$

5.6. Test Result of RF antenna conducted test

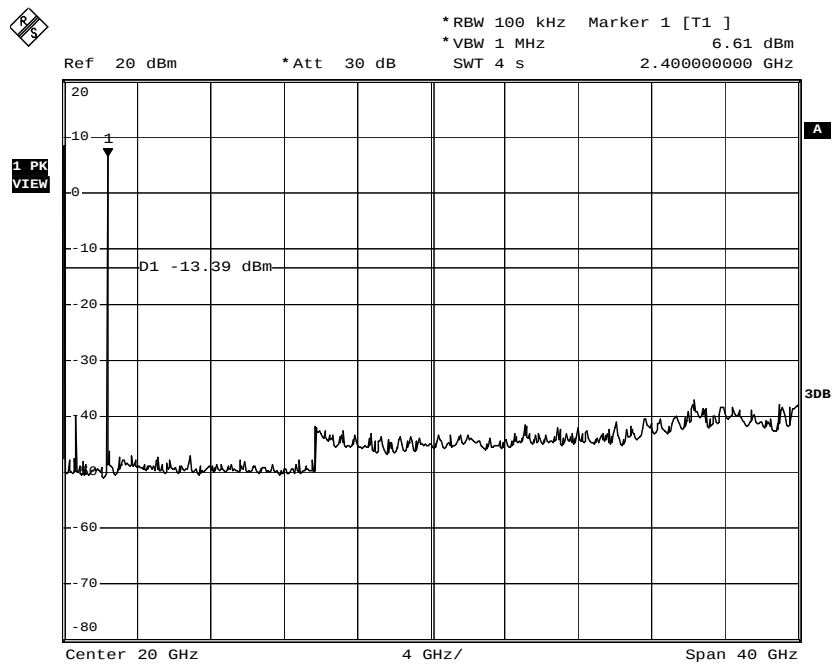
Product : Notebook P.C.
 Test Item : RF antenna conducted test
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter - 802.11b 1Mbps-Antenna 1

Channel 01 (2412MHz) 30MHz-25GHz



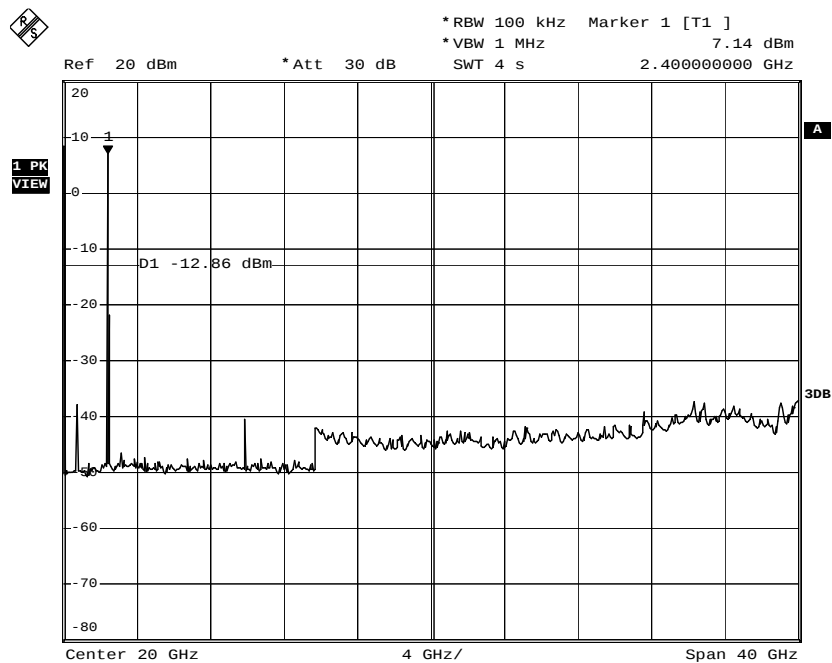
Date: 22.JUN.2009 18:02:55

Channel 06 (2437MHz) 30MHz -25GHz



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

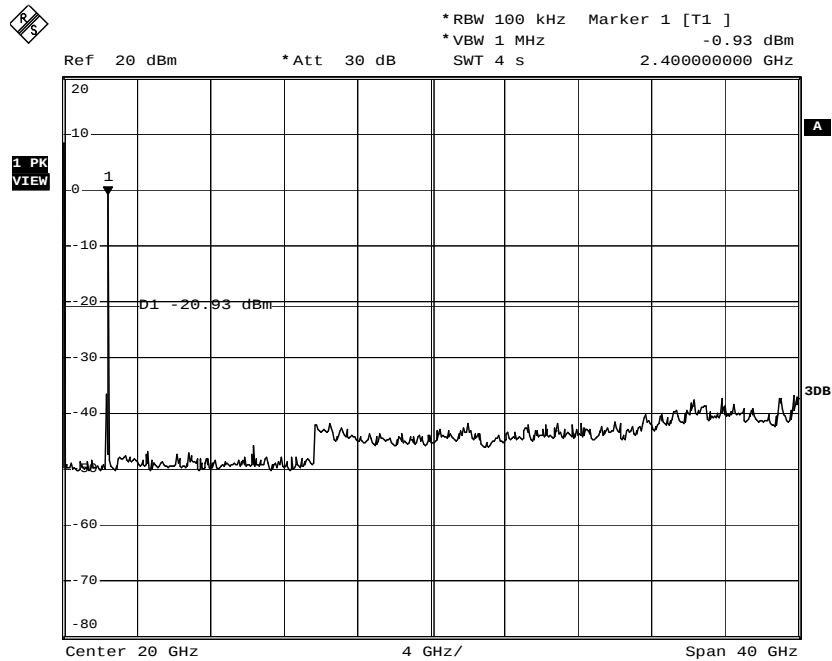
Channel 11 (2462MHz) 30MHz -25GHz



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

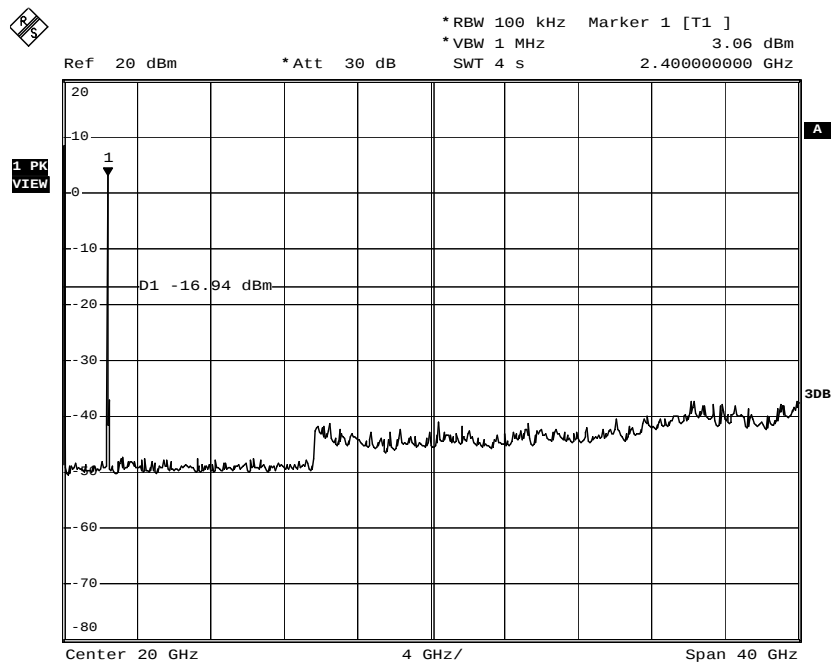
Product : Notebook P.C.
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter - 802.11g 6Mbps-Antenna 1

Channel 01 (2412MHz) 30MHz -25GHz



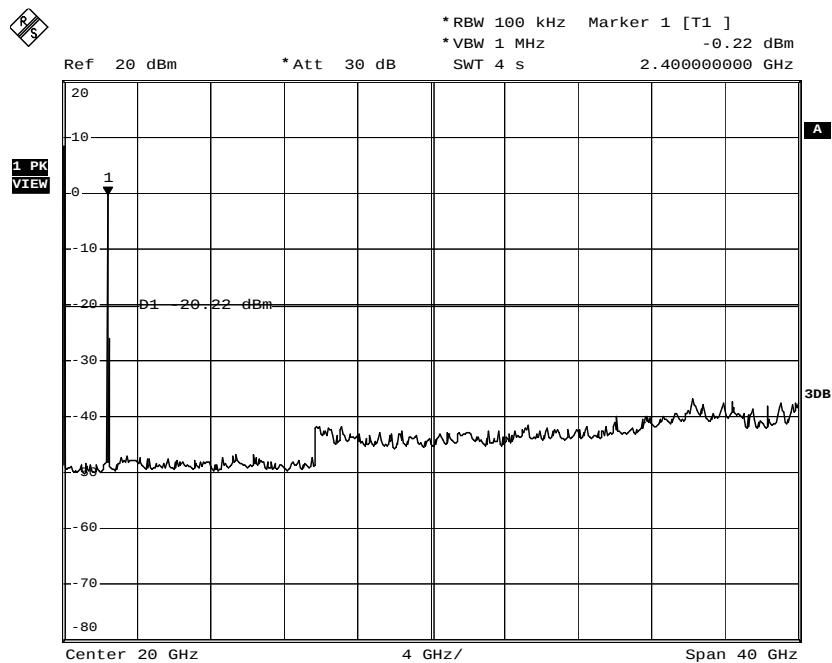
Date: 22.JUN.2009 18:05:56

Channel 06 (2437MHz) 30MHz -25GHz



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

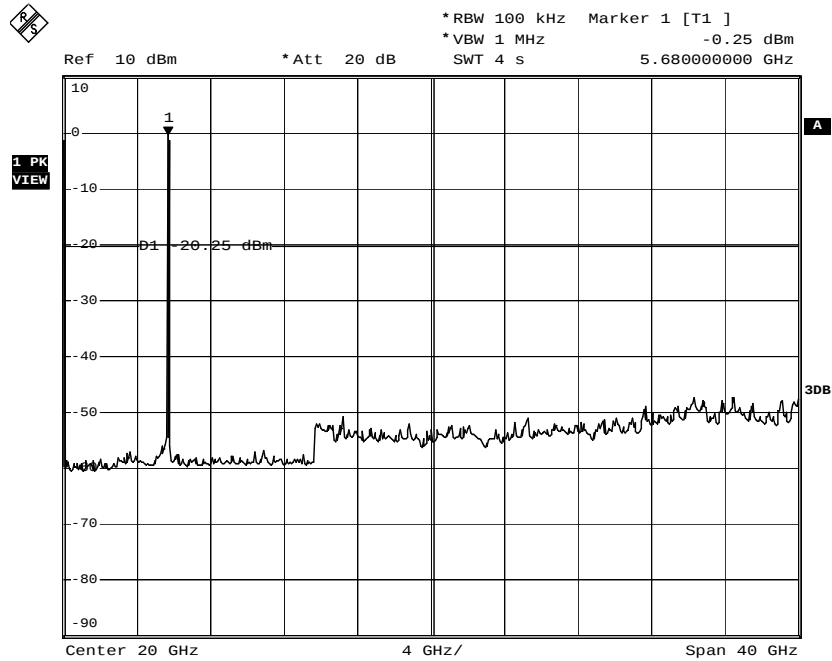
Channel 11 (2462MHz) 30MHz -25GHz



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

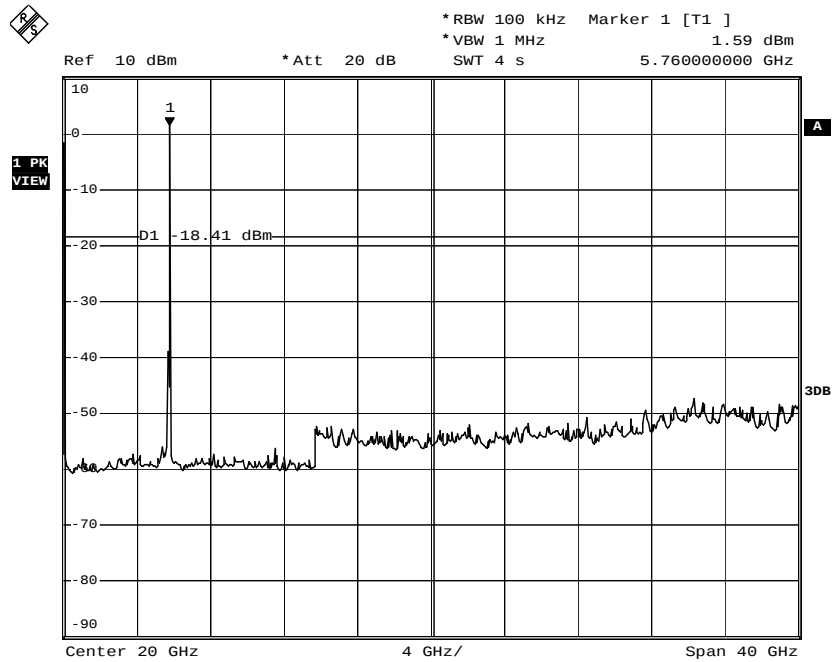
Product : Notebook P.C.
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter - 802.11a 6Mbps-Antenna 2

Channel 149 (5745MHz) 30MHz -40GHz



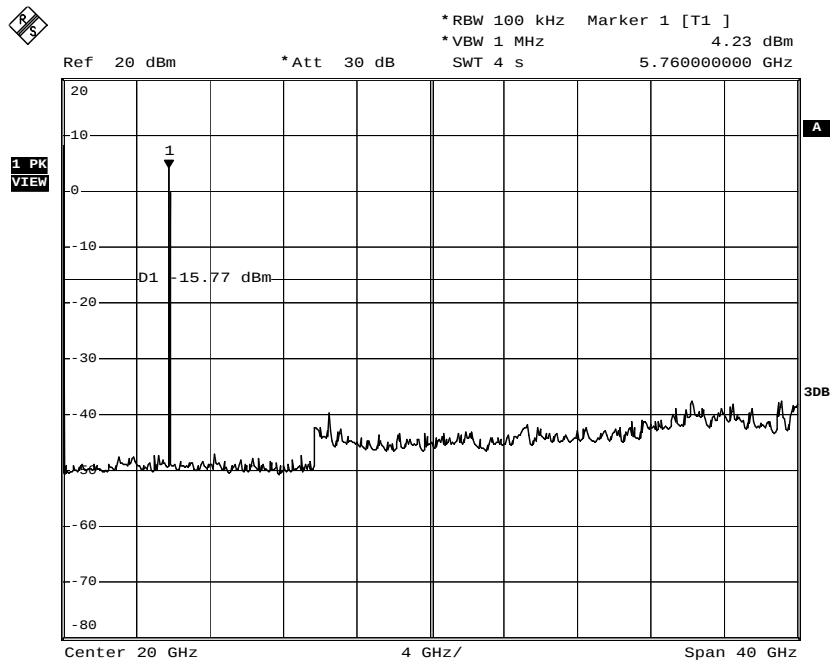
Date: 22.JUN.2009 18:19:10

Channel 157 (5785MHz) 30MHz -40GHz



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

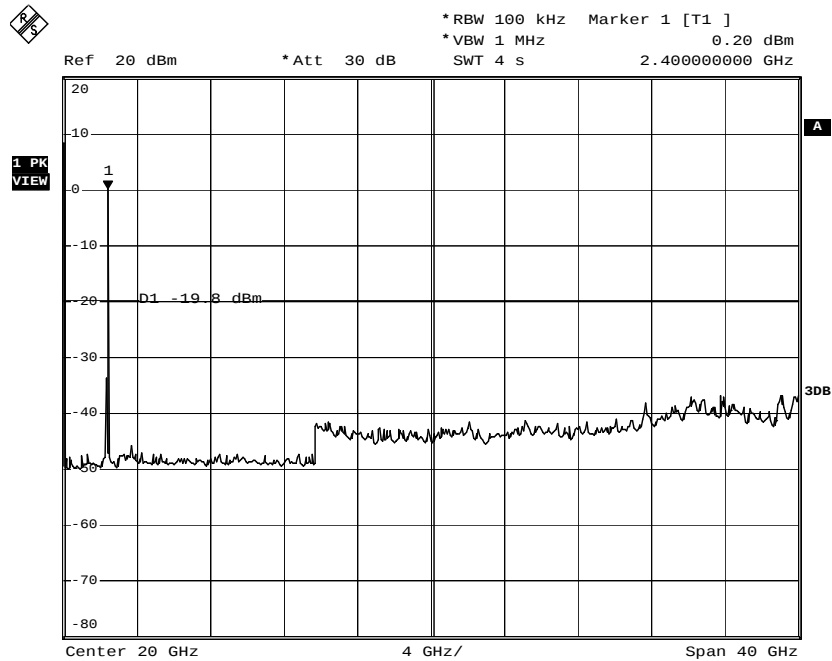
Channel 165 (5825MHz) 30MHz -40GHz



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

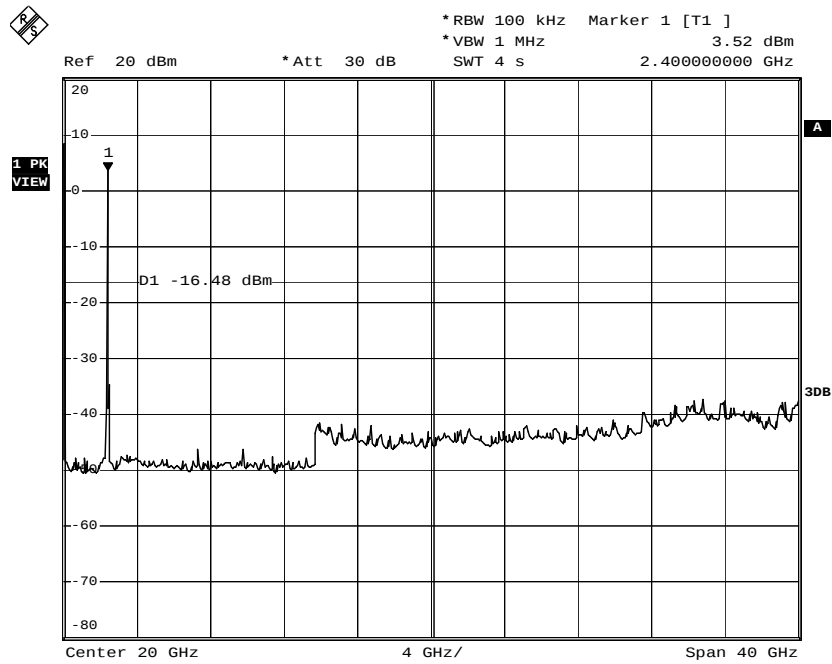
Product : Notebook P.C.
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4G Band)-Antenna 1

Channel 01 (2412MHz) 30MHz -25GHz



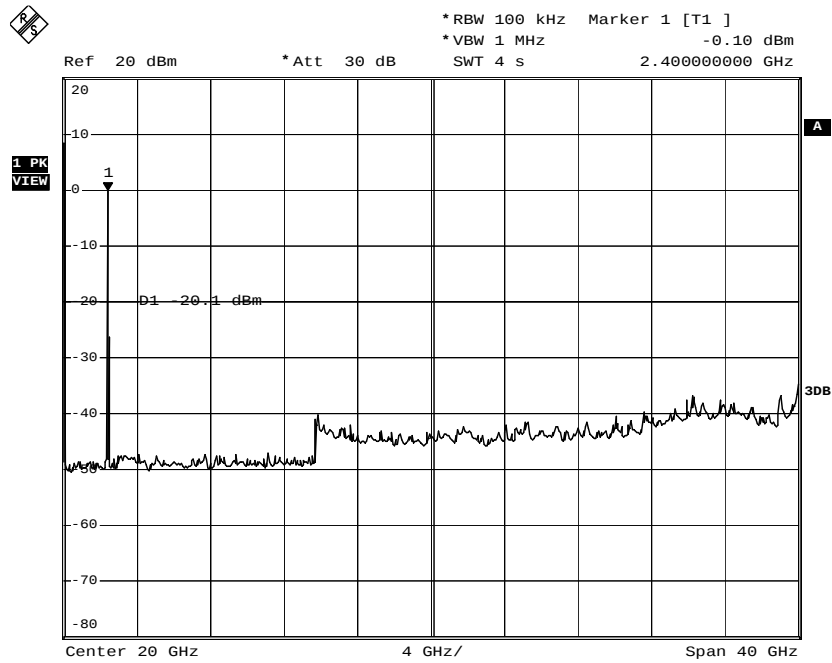
Date: 22.JUN.2009 18:10:02

Channel 06 (2437MHz) 30MHz -25GHz



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

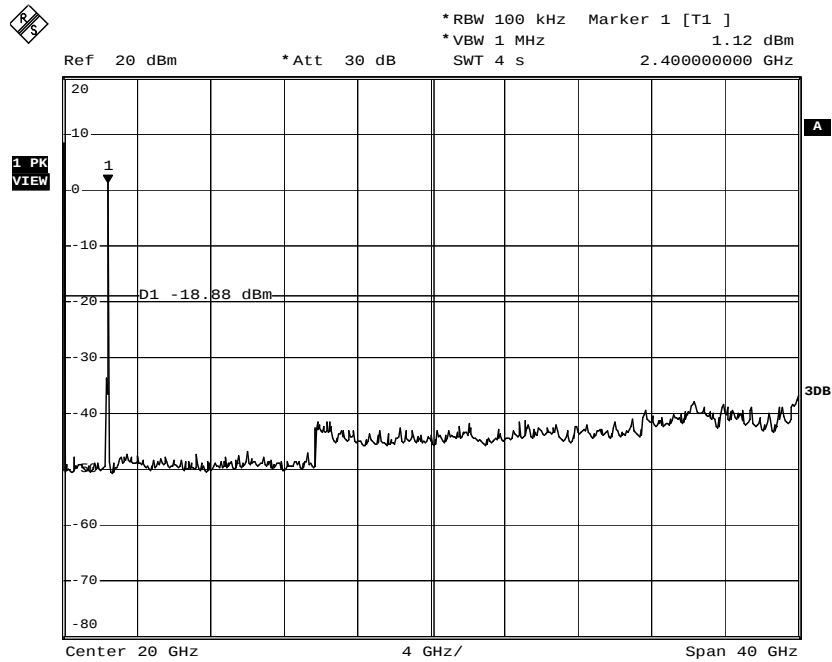
Channel 11 (2462MHz) 30MHz -25GHz



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

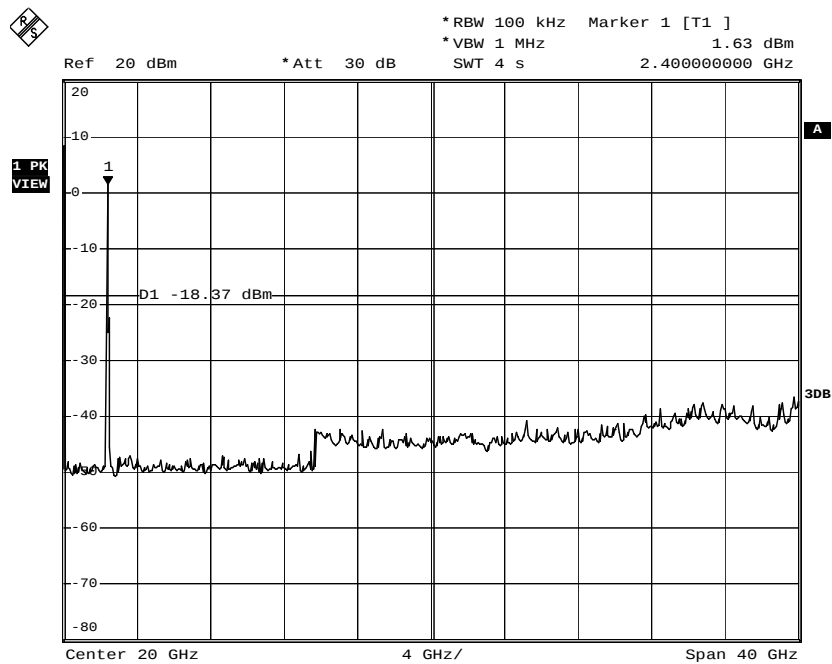
Product : Notebook P.C.
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4G Band)-Antenna 1

Channel 01 (2422MHz) 30MHz -25GHz



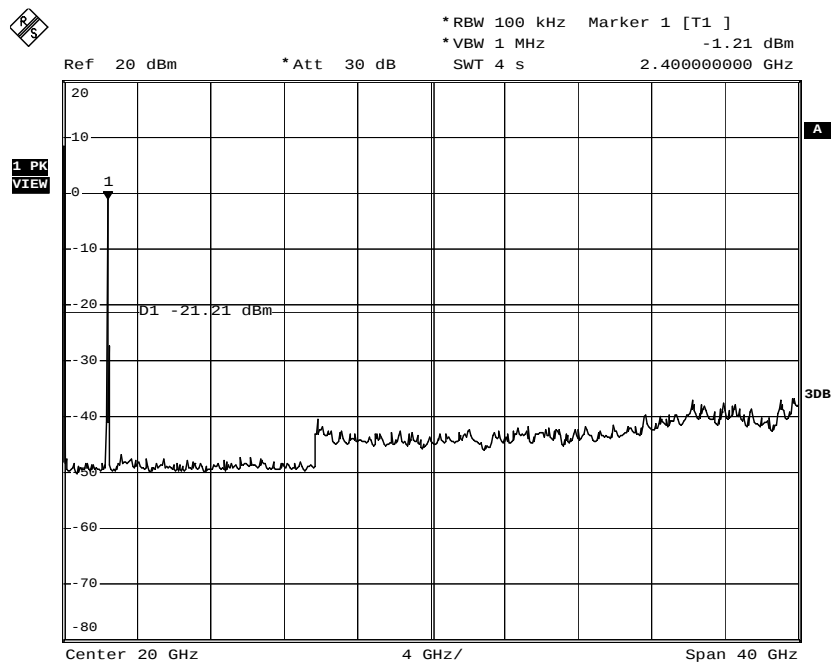
Date: 22.JUN.2009 18:13:36

Channel 04 (2437MHz) 30MHz -25GHz



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

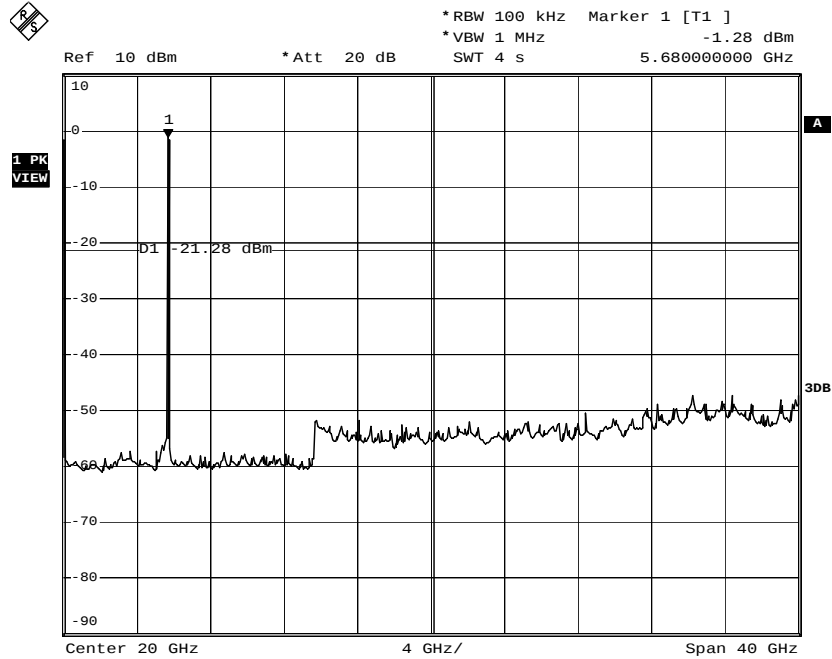
Channel 07 (2452MHz) 30MHz -25GHz



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

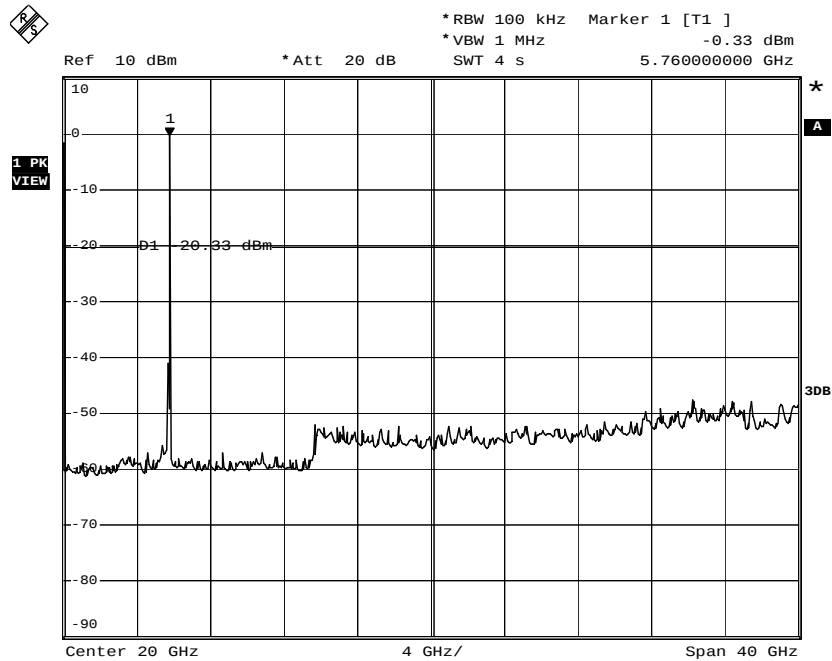
Product : Notebook P.C.
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5G Band)-Antenna 2

Channel 49 (5745MHz) 30MHz -40GHz



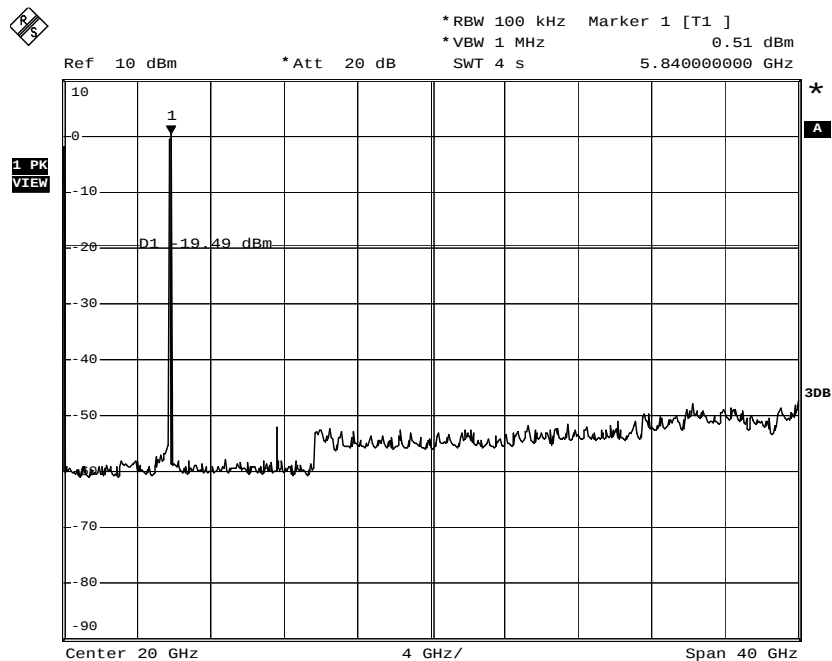
Date: 22.JUN.2009 19:27:52

Channel 157 (5785MHz) 30MHz -40GHz



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

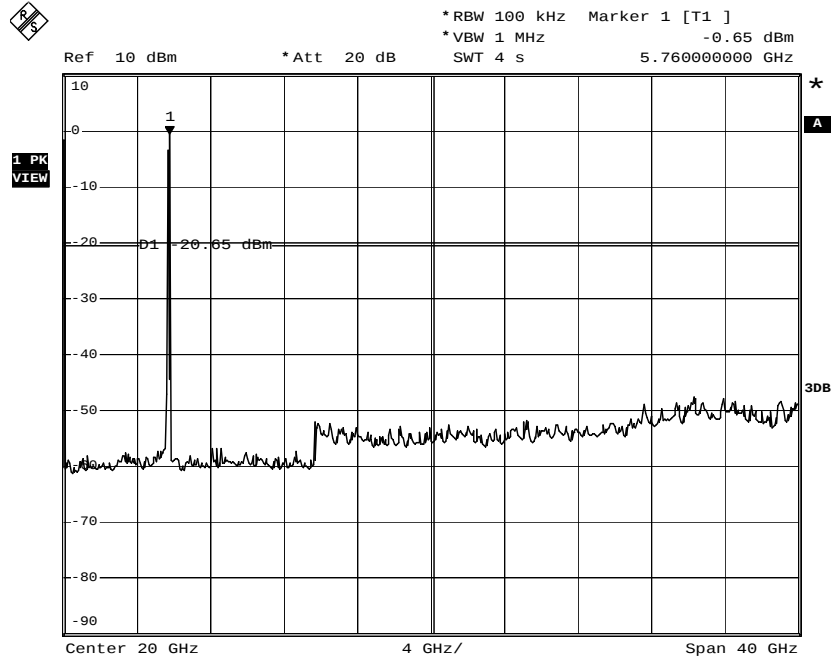
Channel 165 (5825MHz) 30MHz -40GHz



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

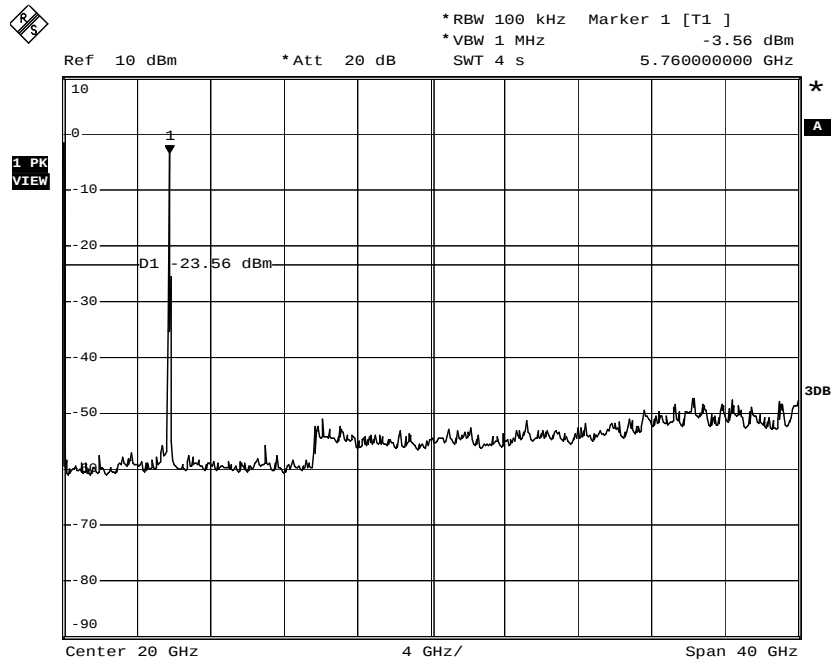
Product : Notebook P.C.
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5G Band)-Antenna 2

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

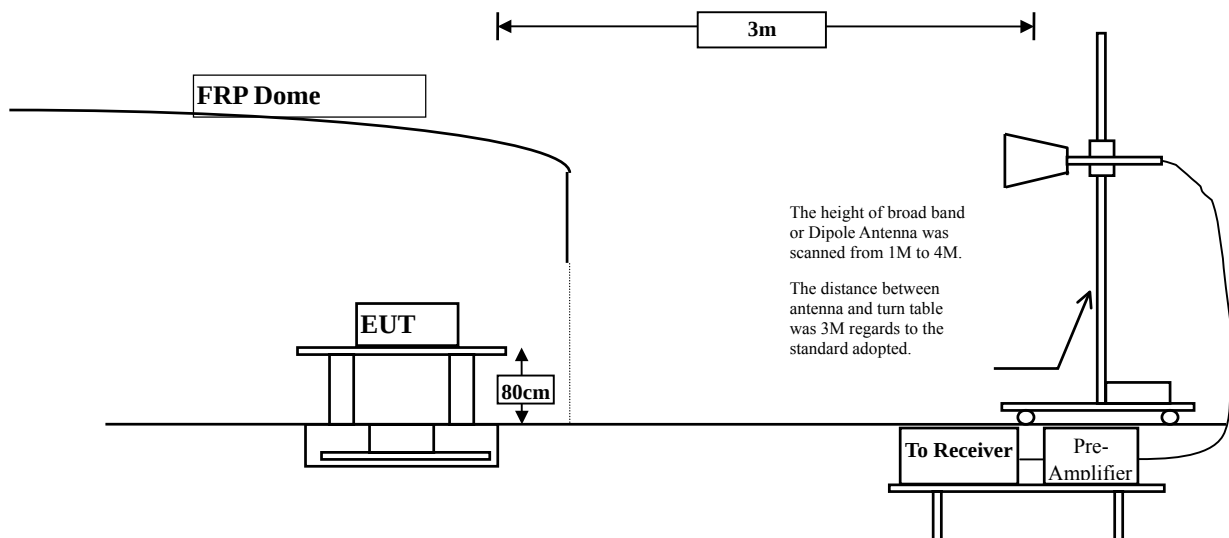
The following test equipments are used during the band edge tests:

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 P.C.
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter - 802.11b 1Mbps-Antenna 1-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:

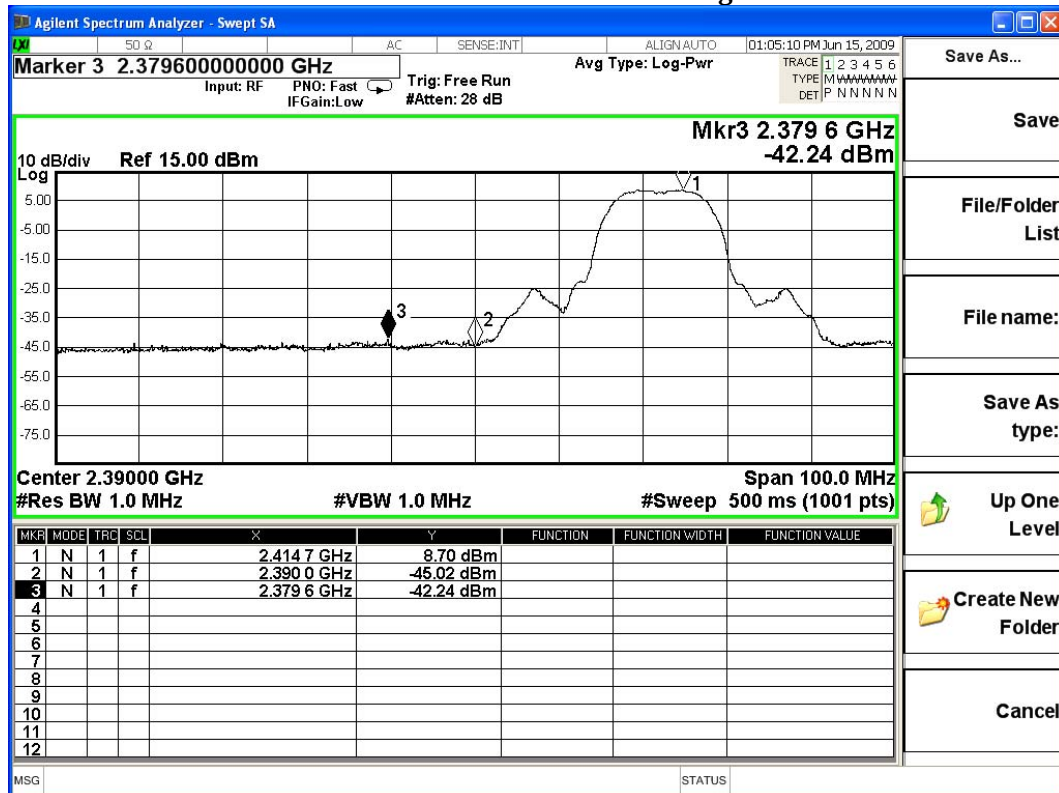
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

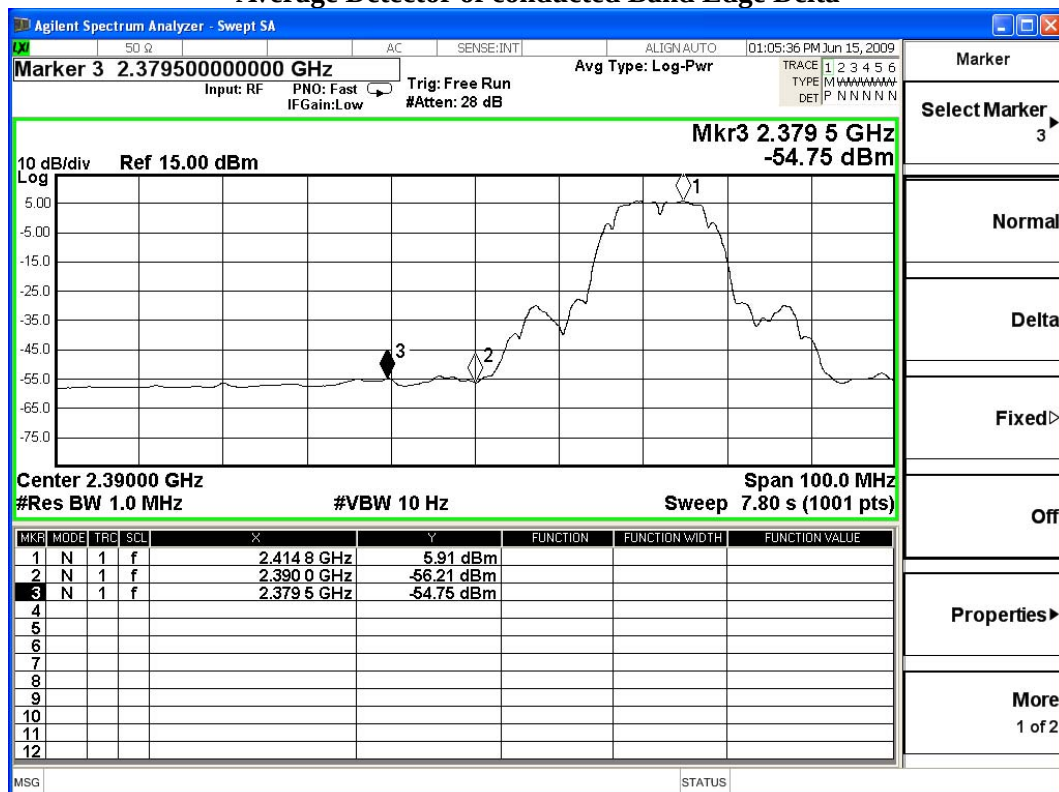
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



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

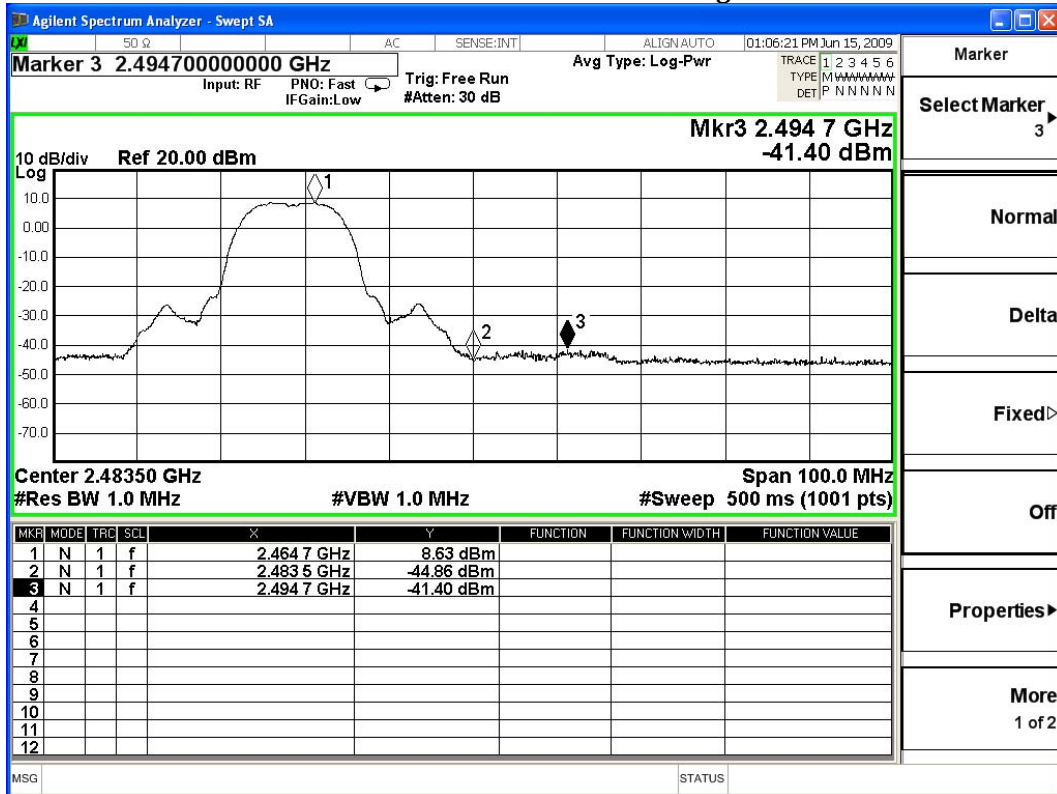
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

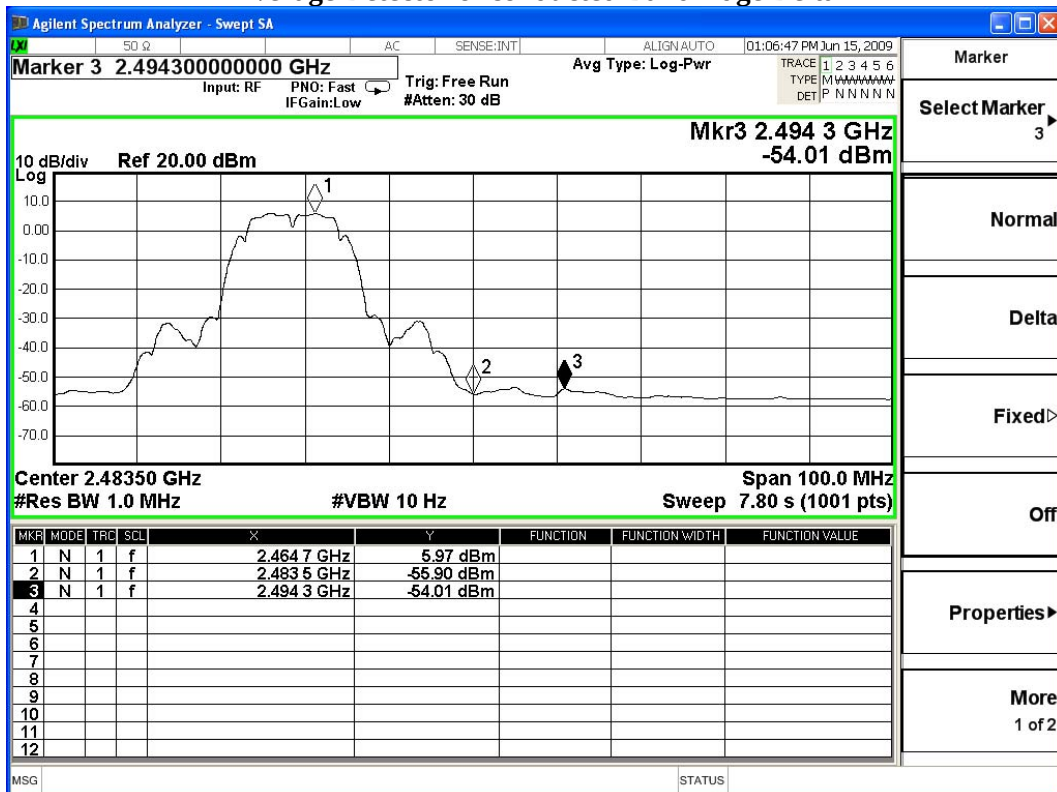
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



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

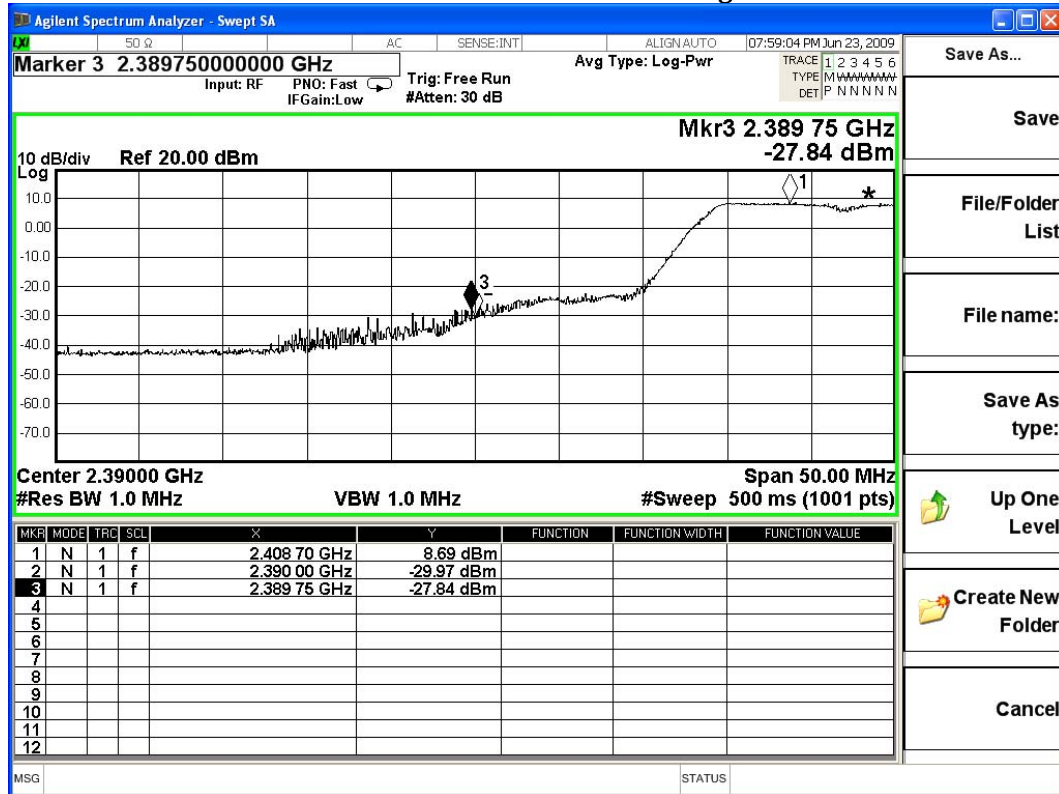
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

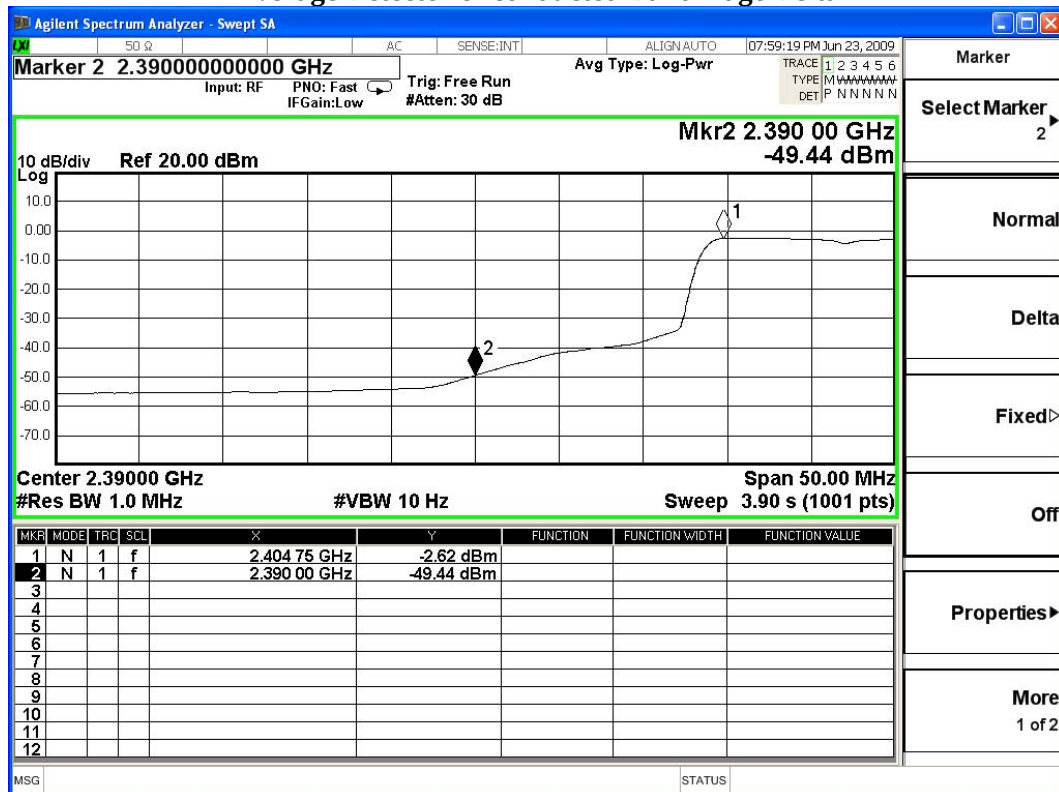
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



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

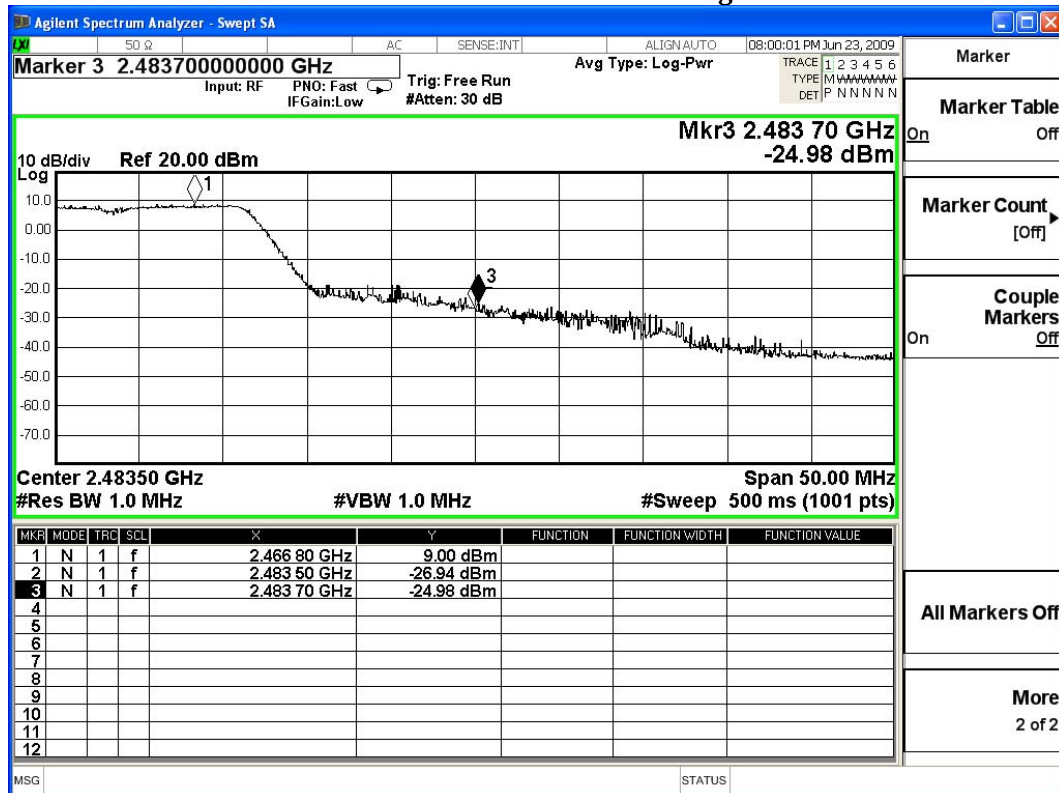
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

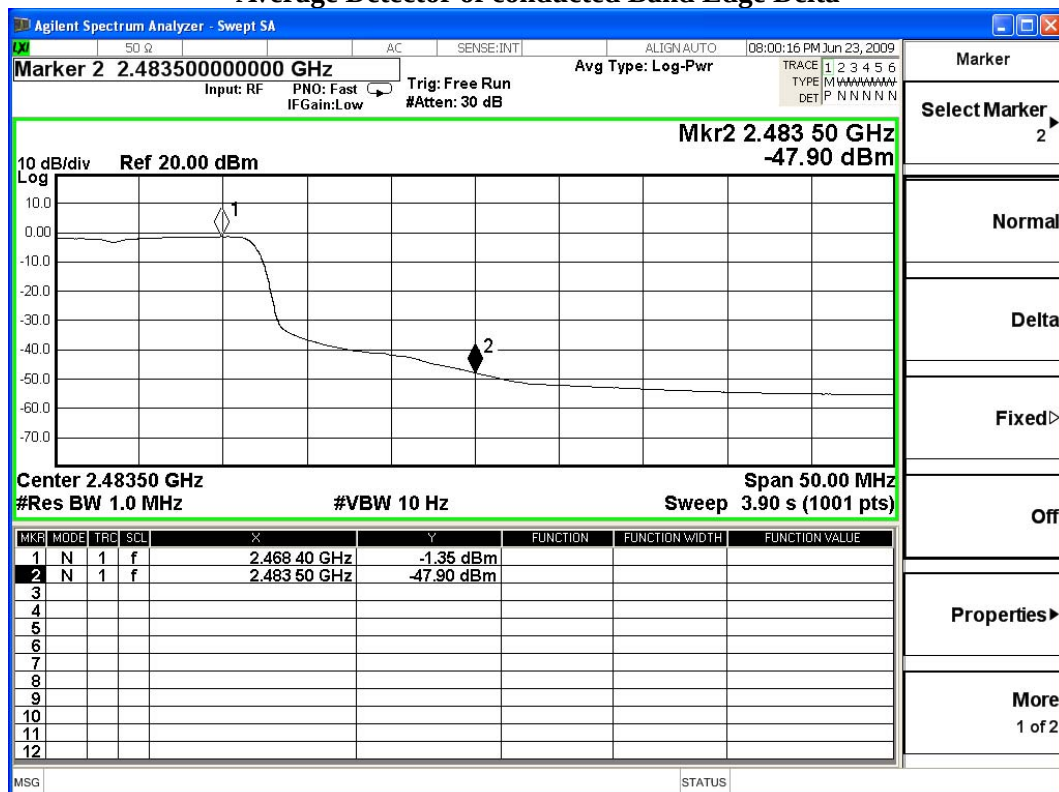
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



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

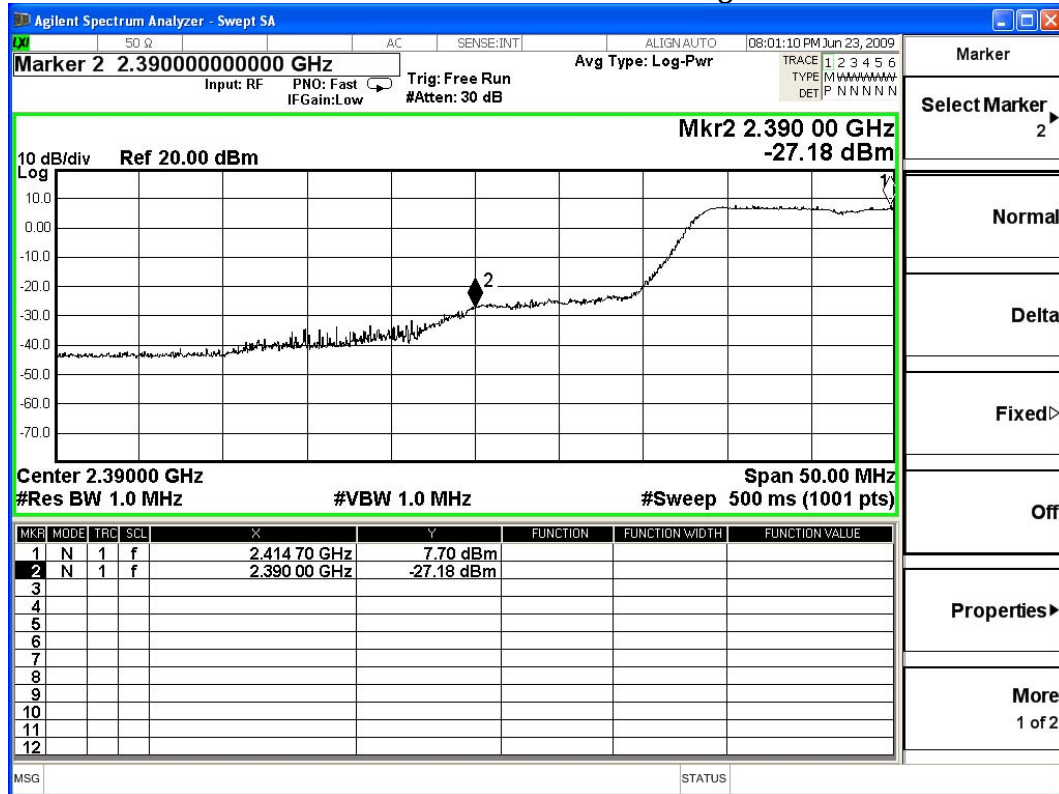
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

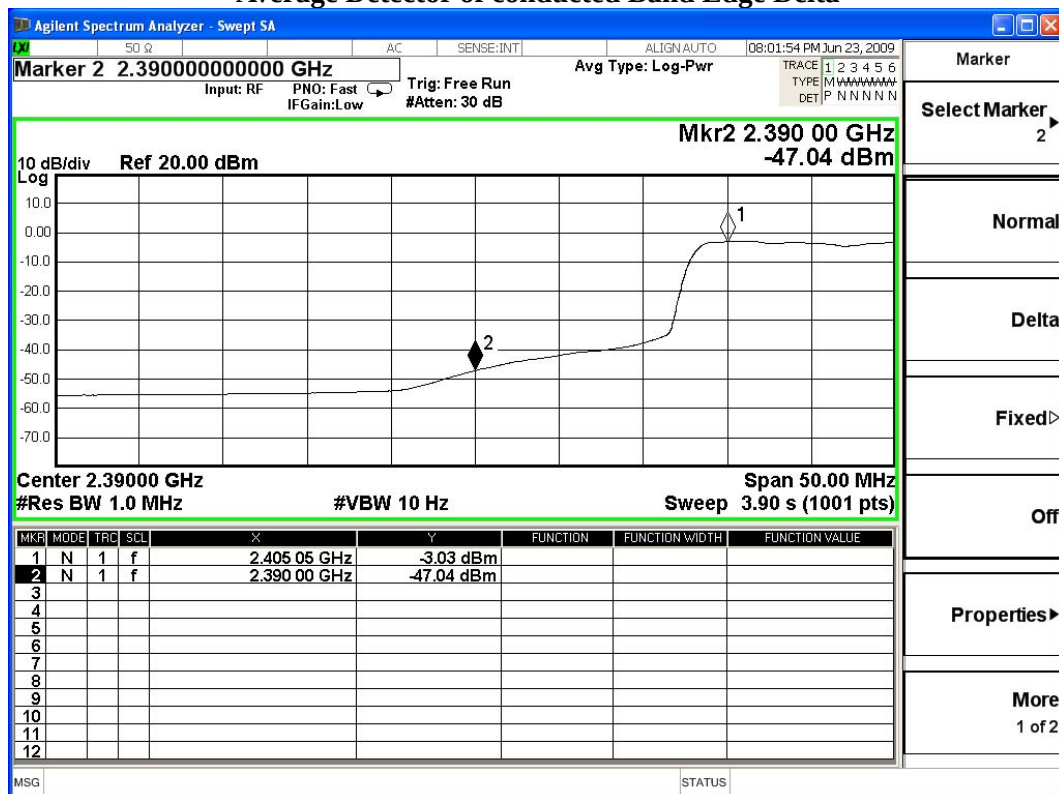
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



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

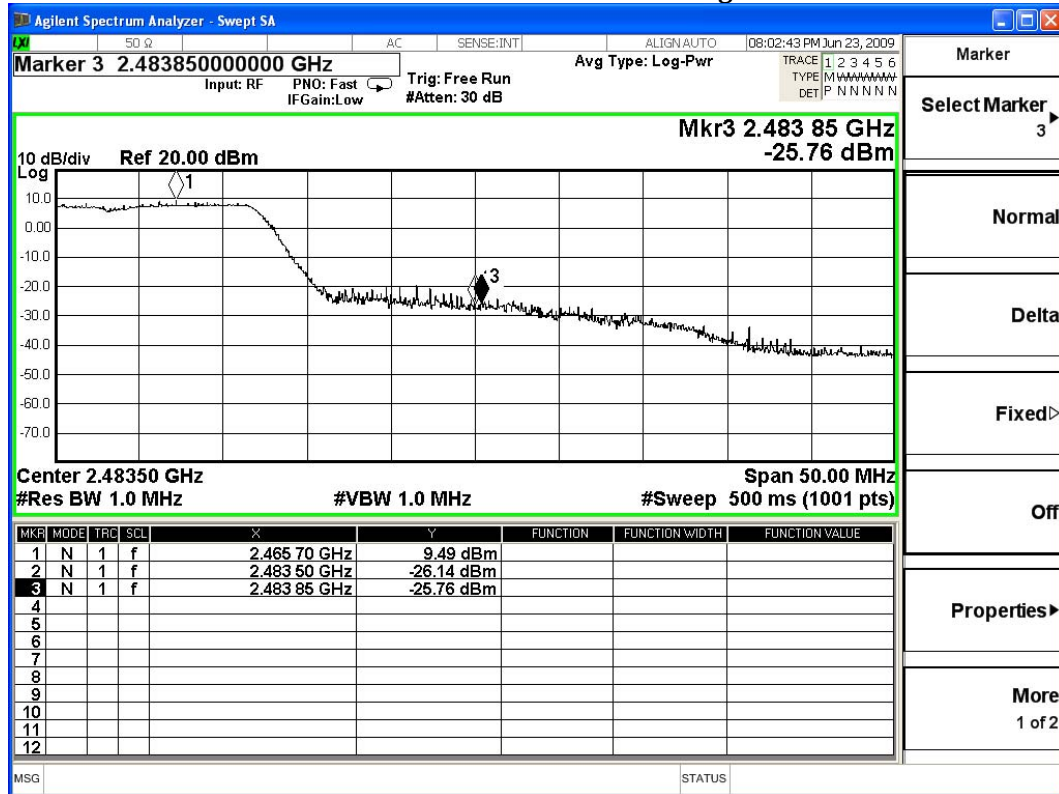
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

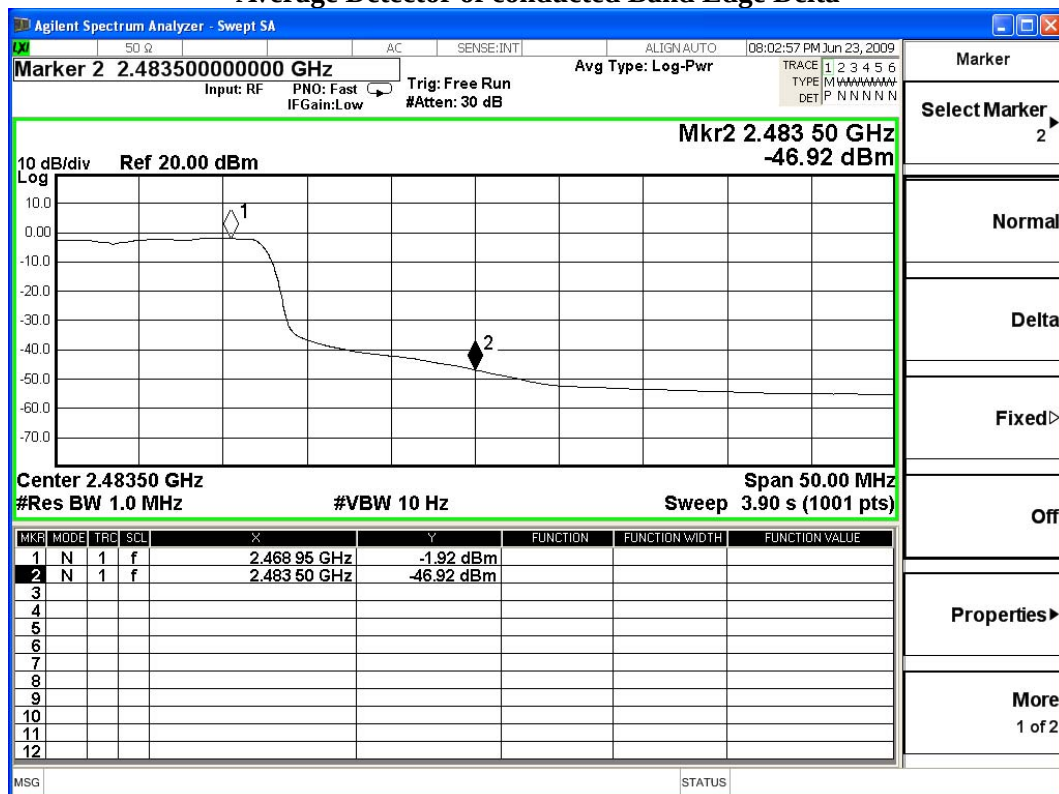
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



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

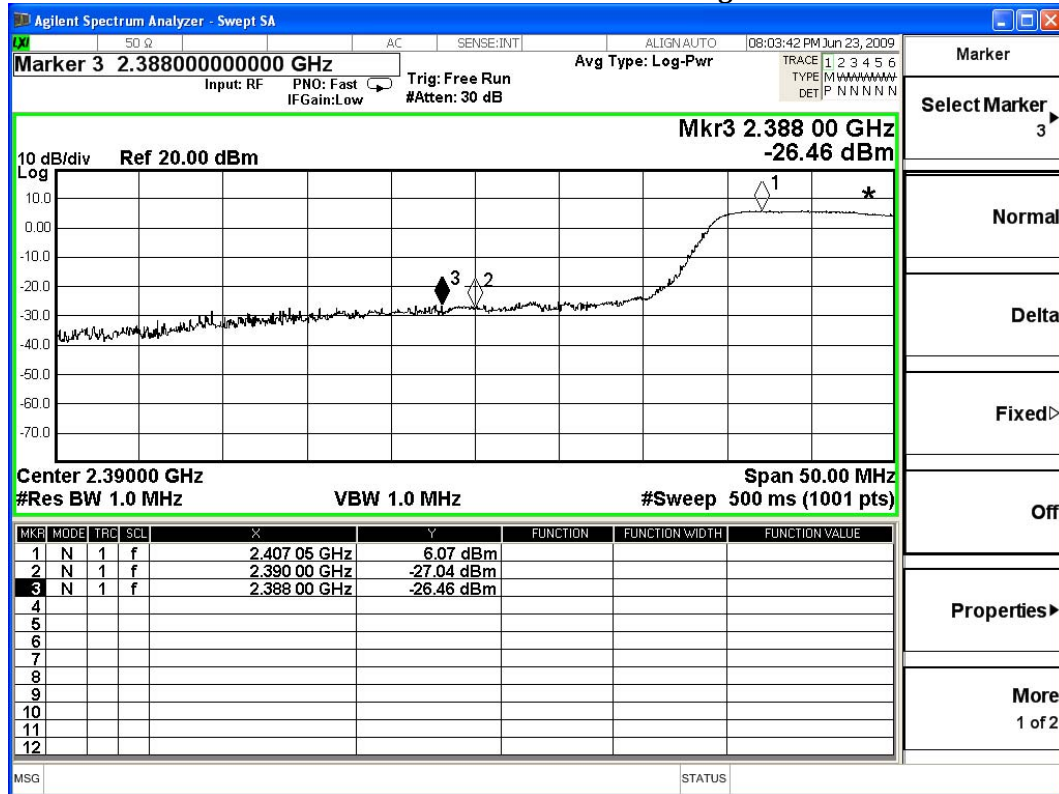
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

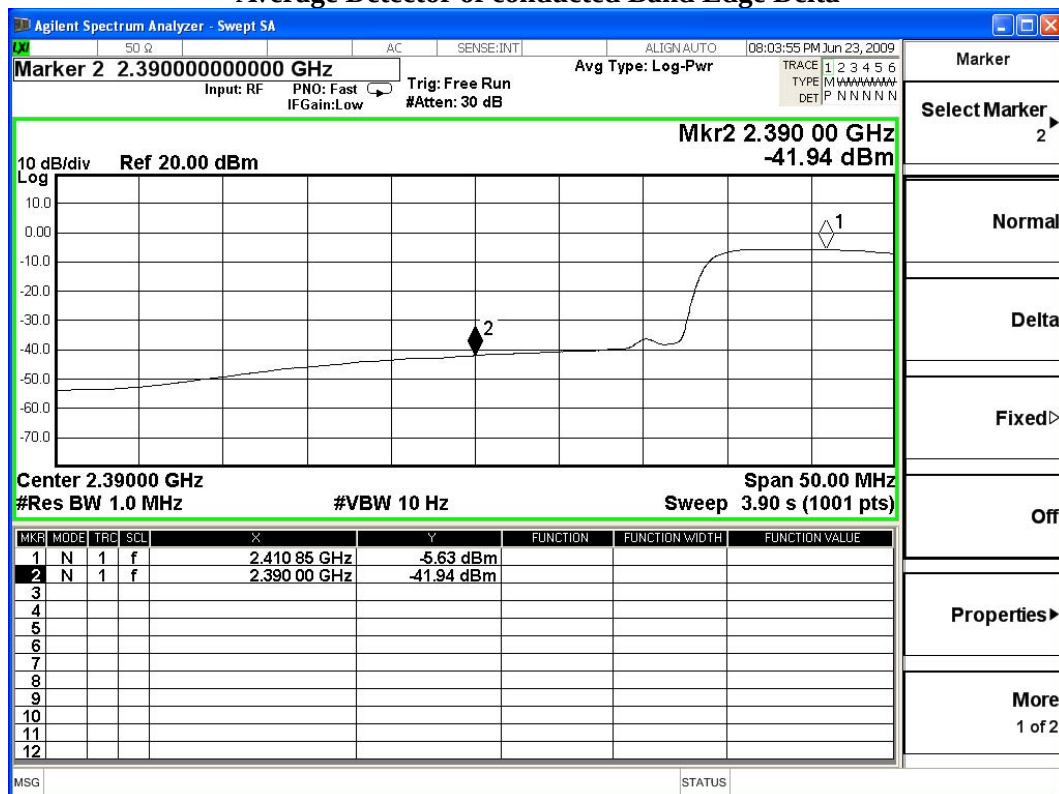
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



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

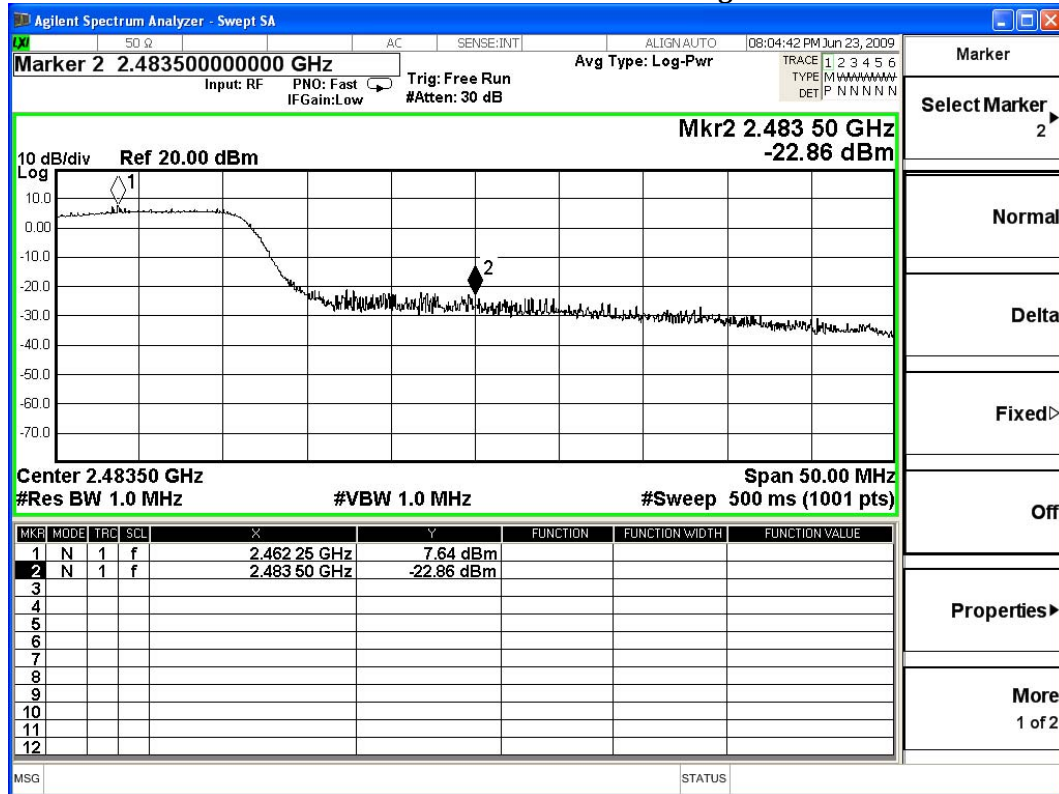
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

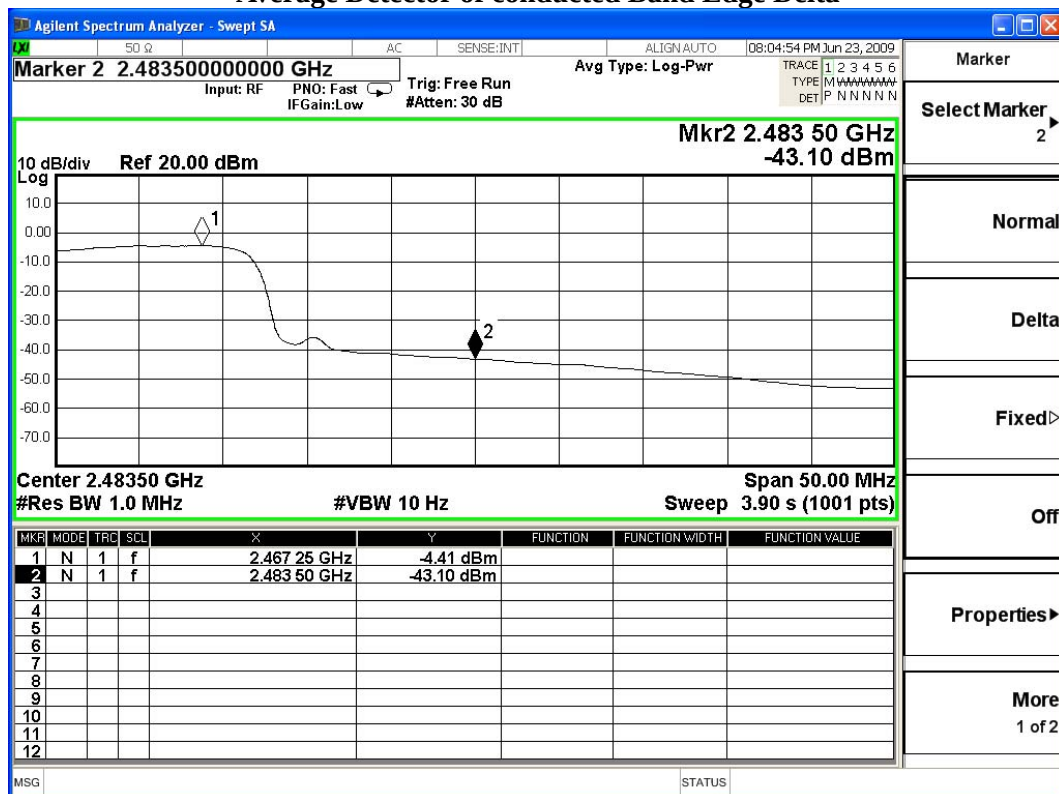
F = Fundamental field Strength (Peak or Average)

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

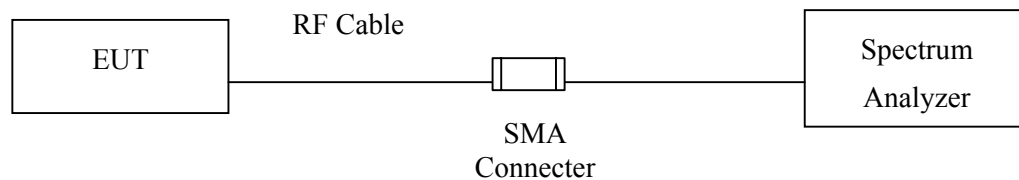
7.1. Test Equipment

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

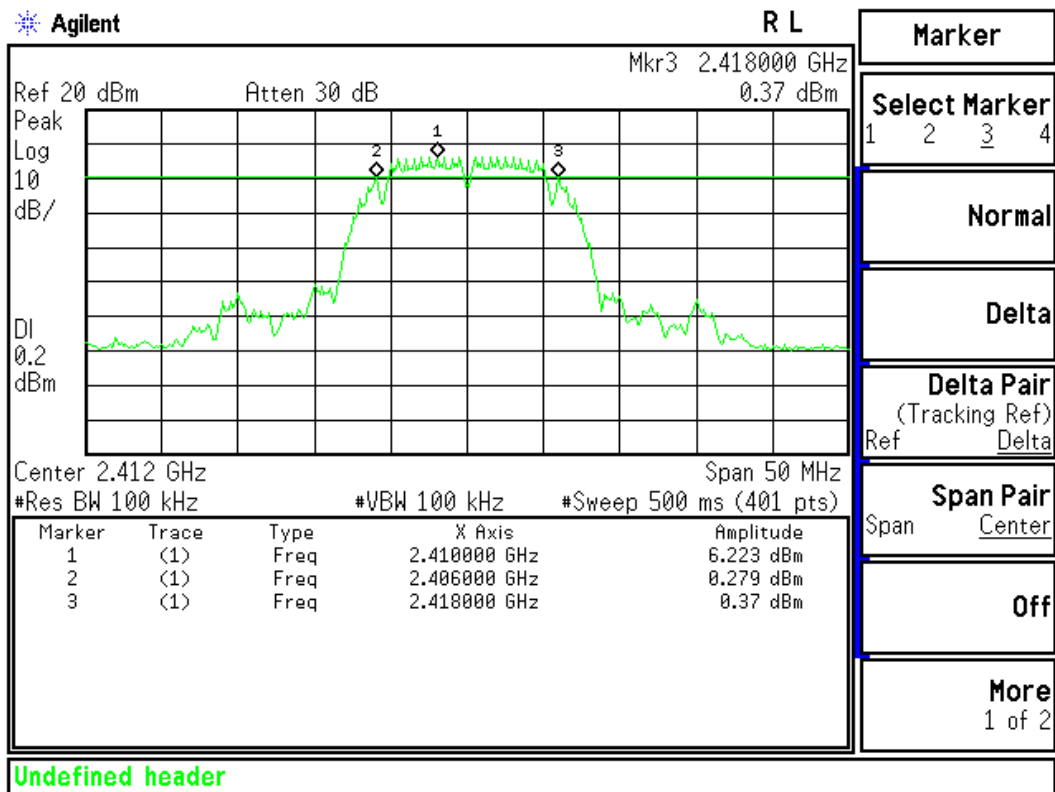
$\pm 150\text{Hz}$

7.6. Test Result of Occupied Bandwidth

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

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

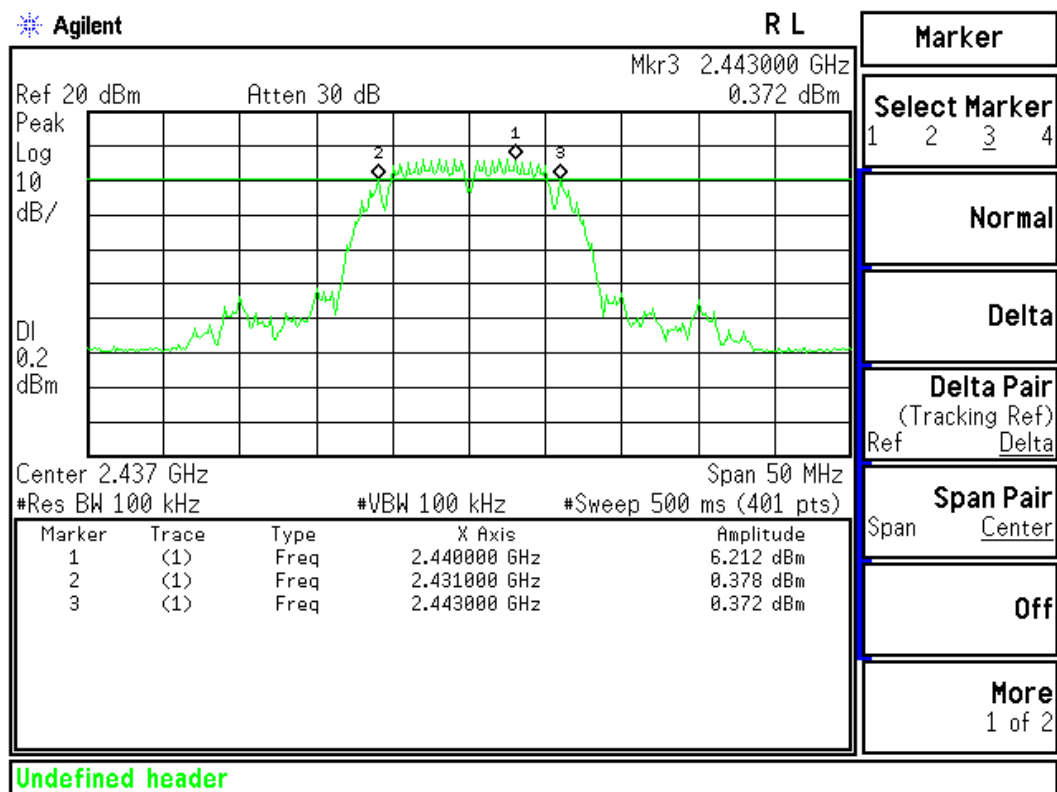
Figure Channel 1:



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

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

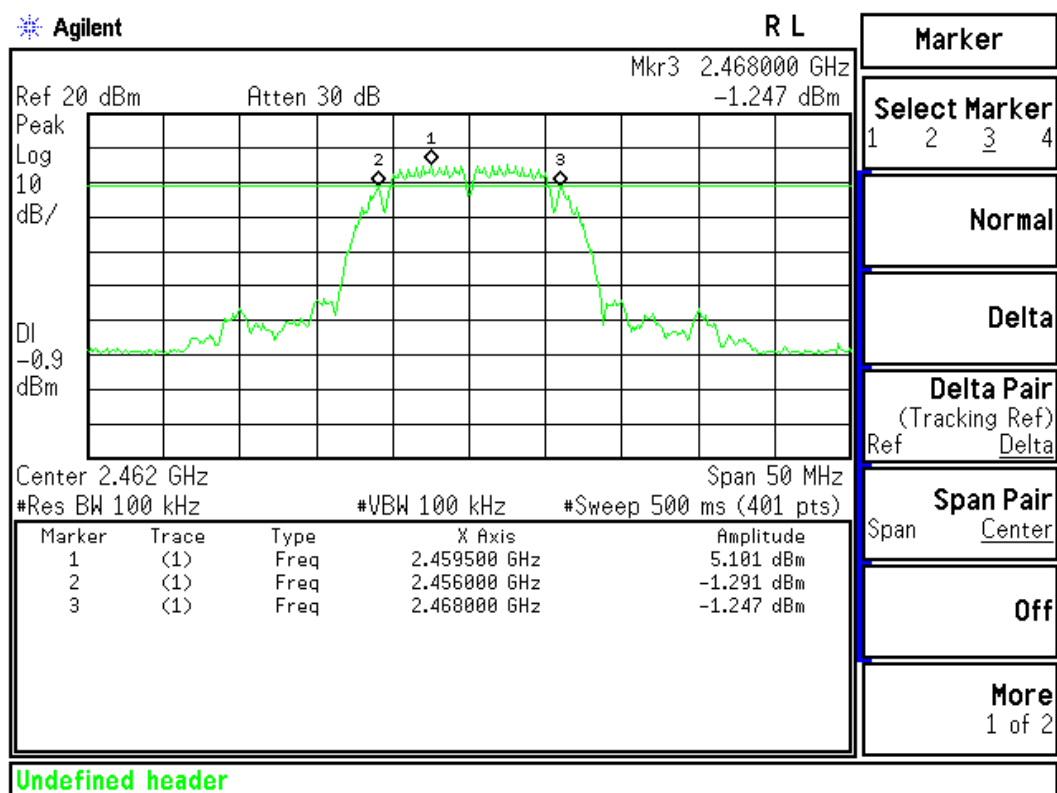
Figure Channel 6:



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

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

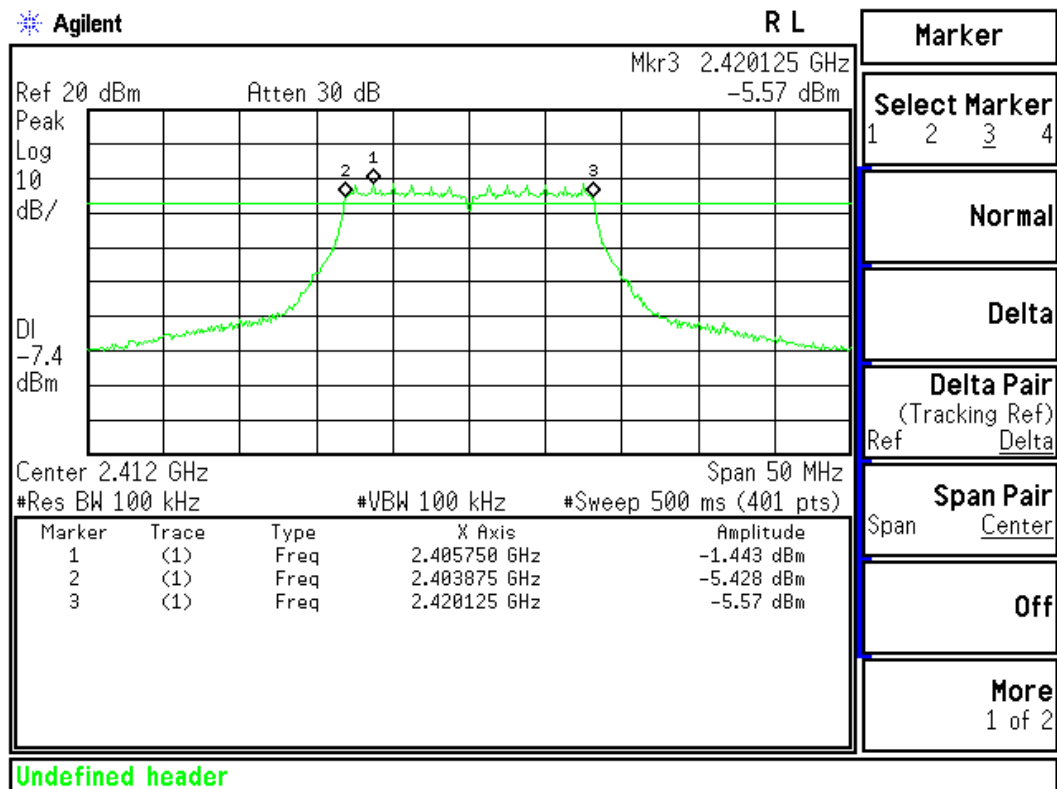
Figure Channel 11:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter - 802.11g 6Mbps-Antenna 1 (2412MHz)

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

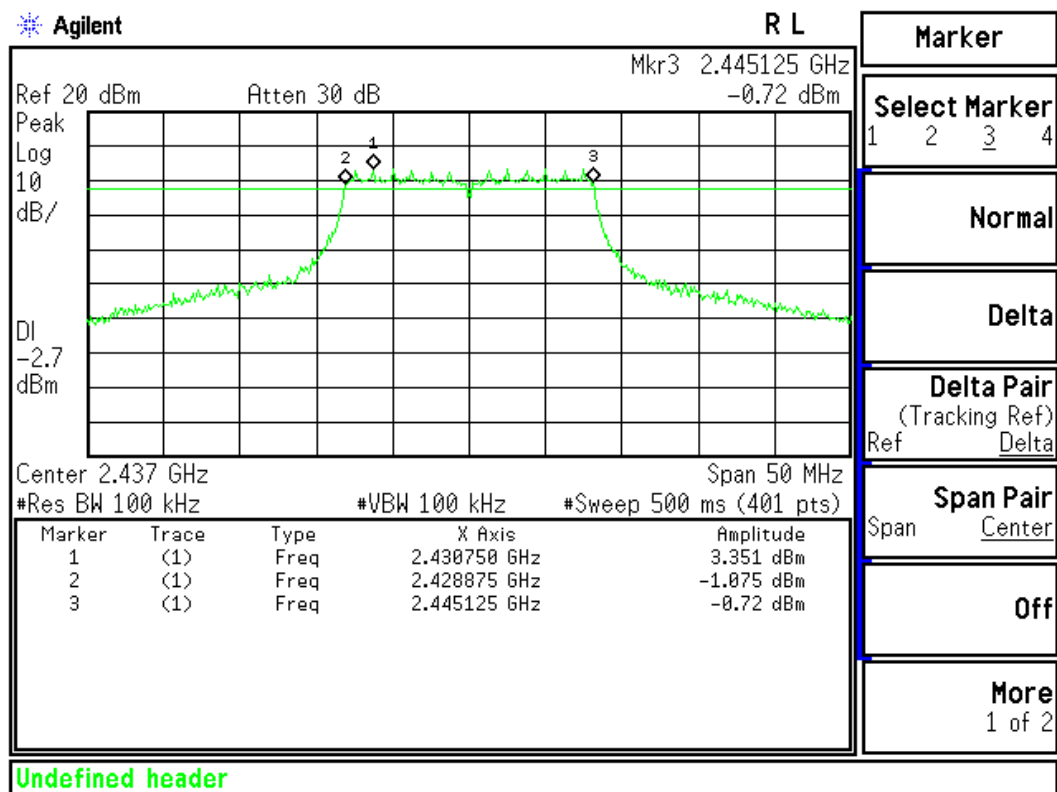
Figure Channel 1:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter - 802.11g 6Mbps-Antenna 1 (2437MHz)

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

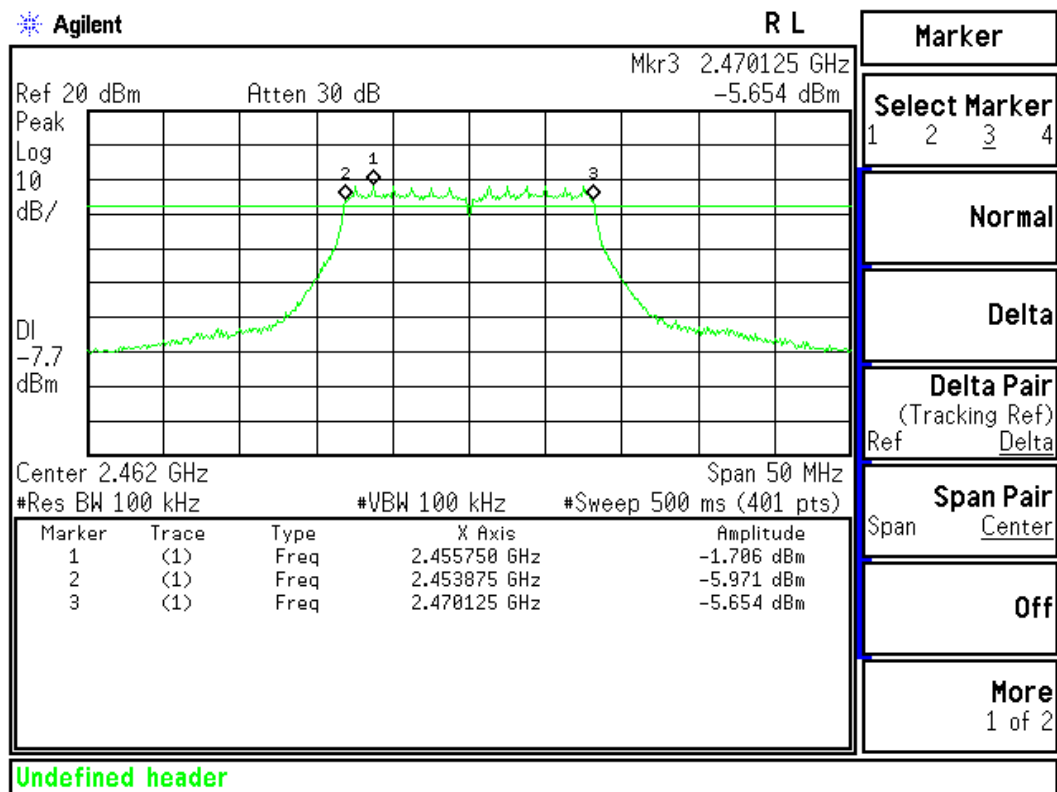
Figure Channel 6:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter - 802.11g 6Mbps-Antenna 1 (2462MHz)

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

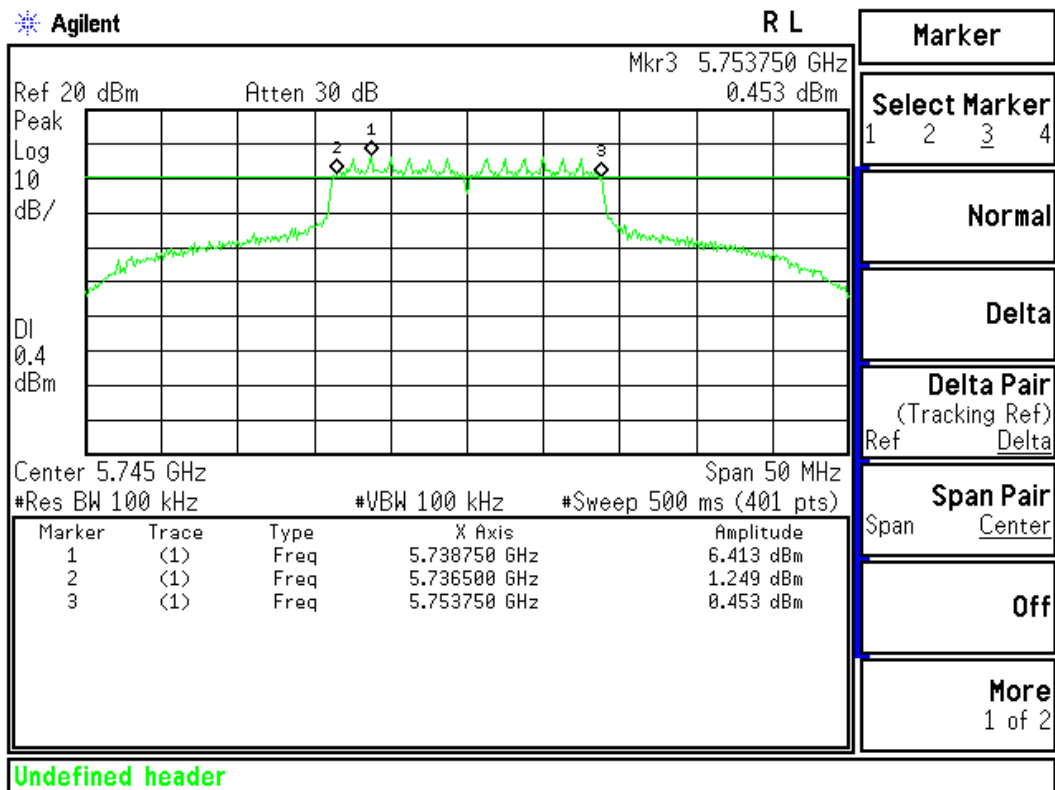
Figure Channel 11:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter - 802.11a 6Mbps-Antenna 2 (5745MHz)

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

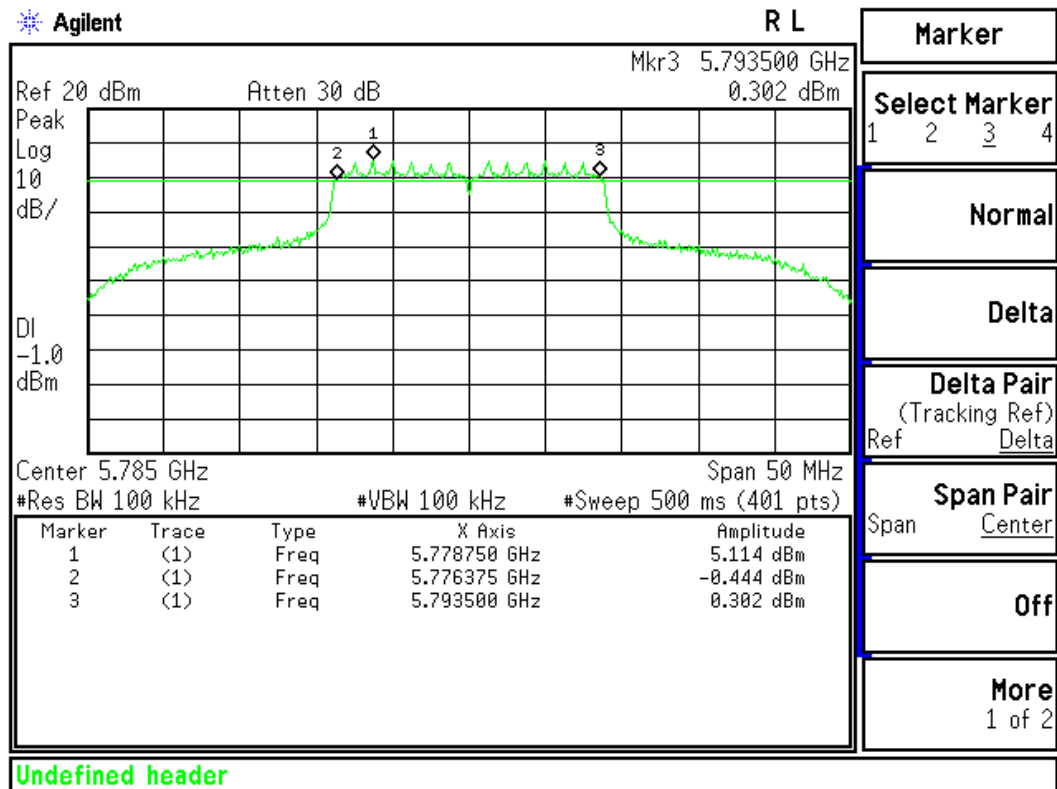
Figure Channel 149:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter - 802.11a 6Mbps-Antenna 2 (5785MHz)

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

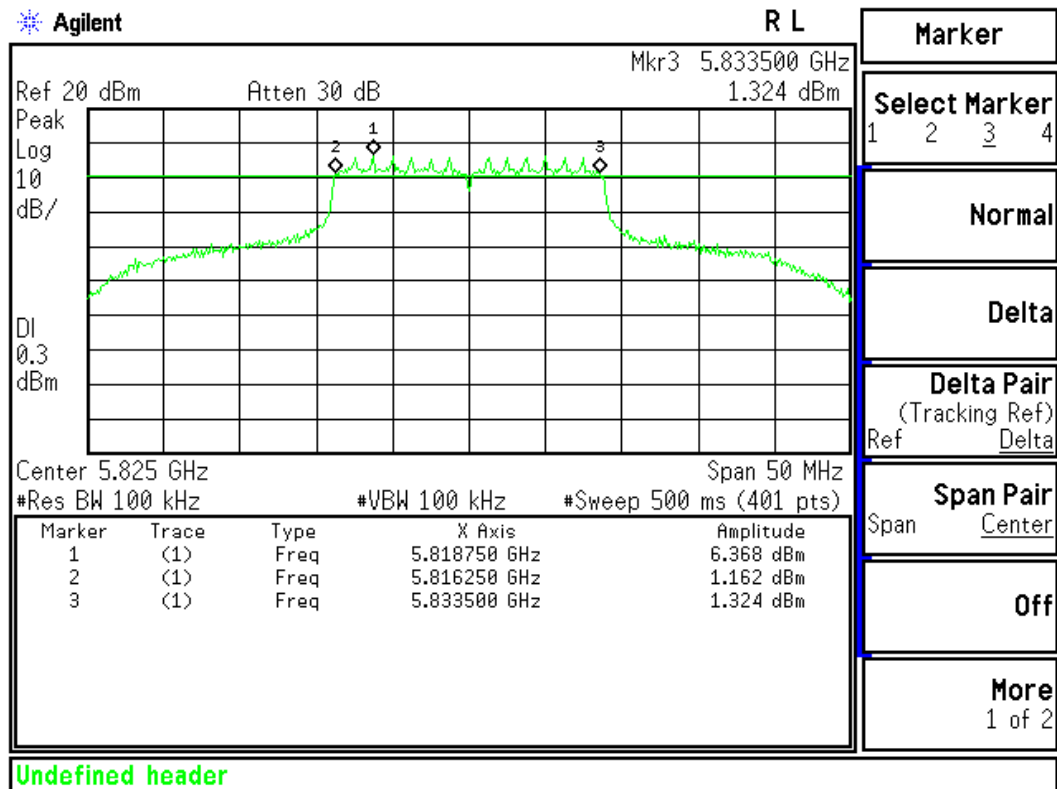
Figure Channel 157:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter - 802.11a 6Mbps-Antenna 2 (5825MHz)

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

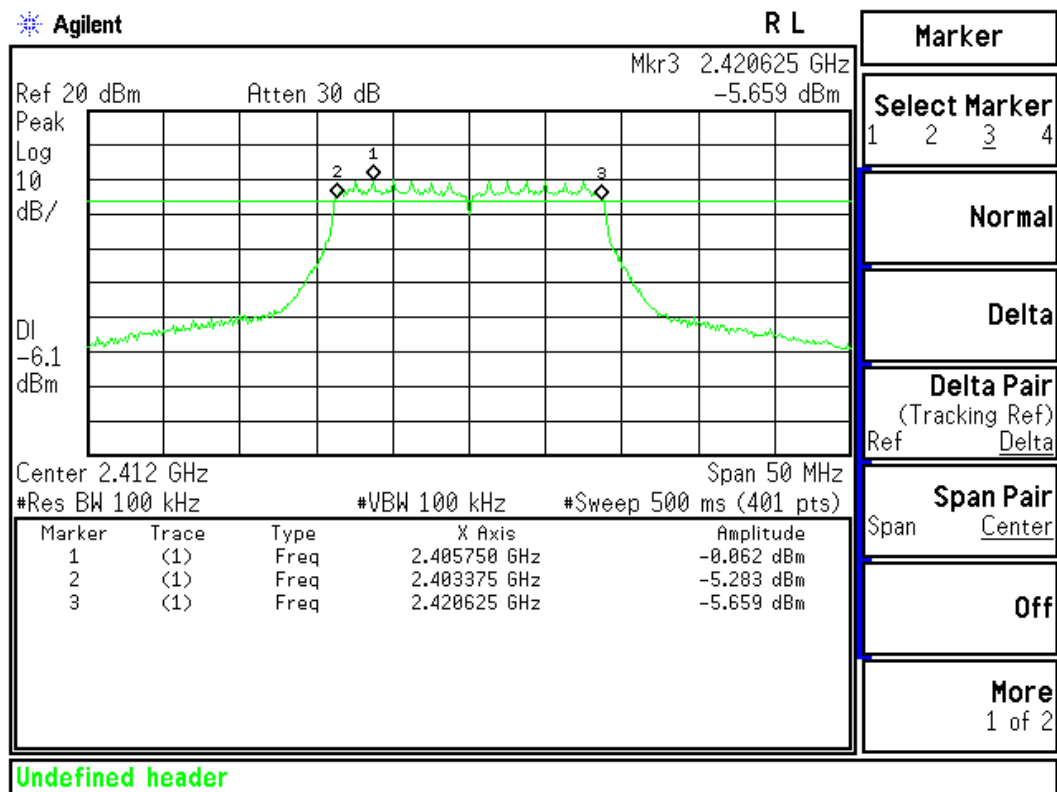
Figure Channel 165:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4G Band)-Antenna 1 (2412MHz)

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

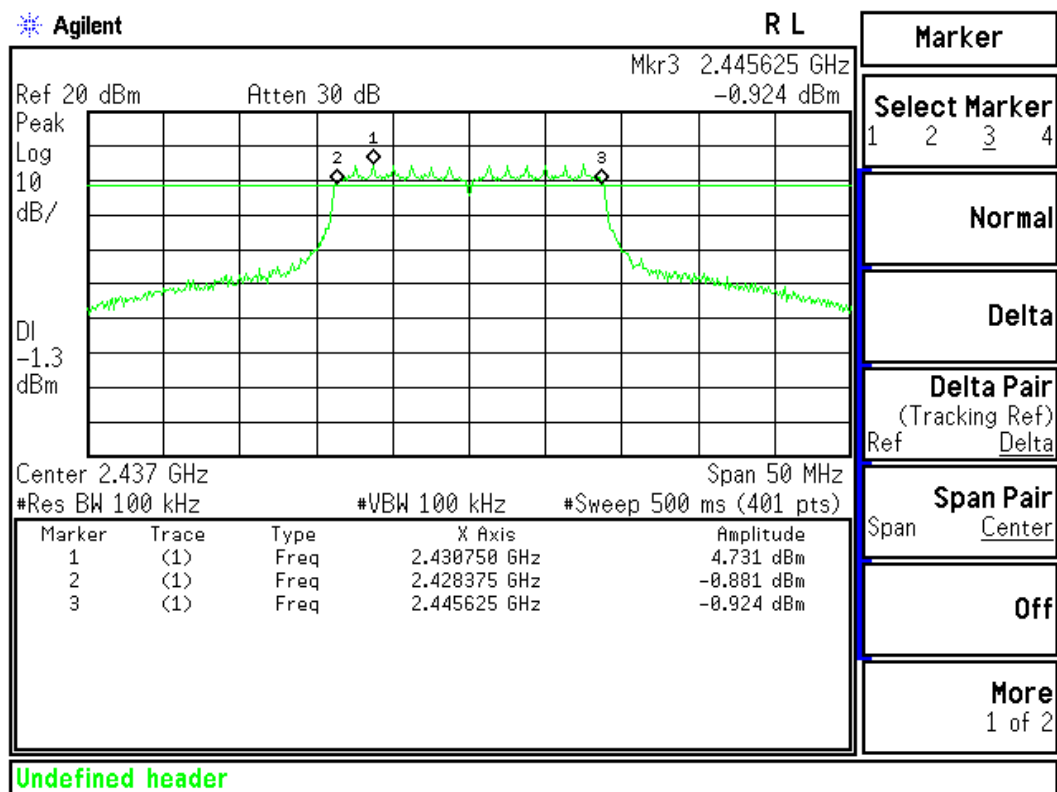
Figure Channel 1:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4G Band)-Antenna 1 (2437MHz)

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

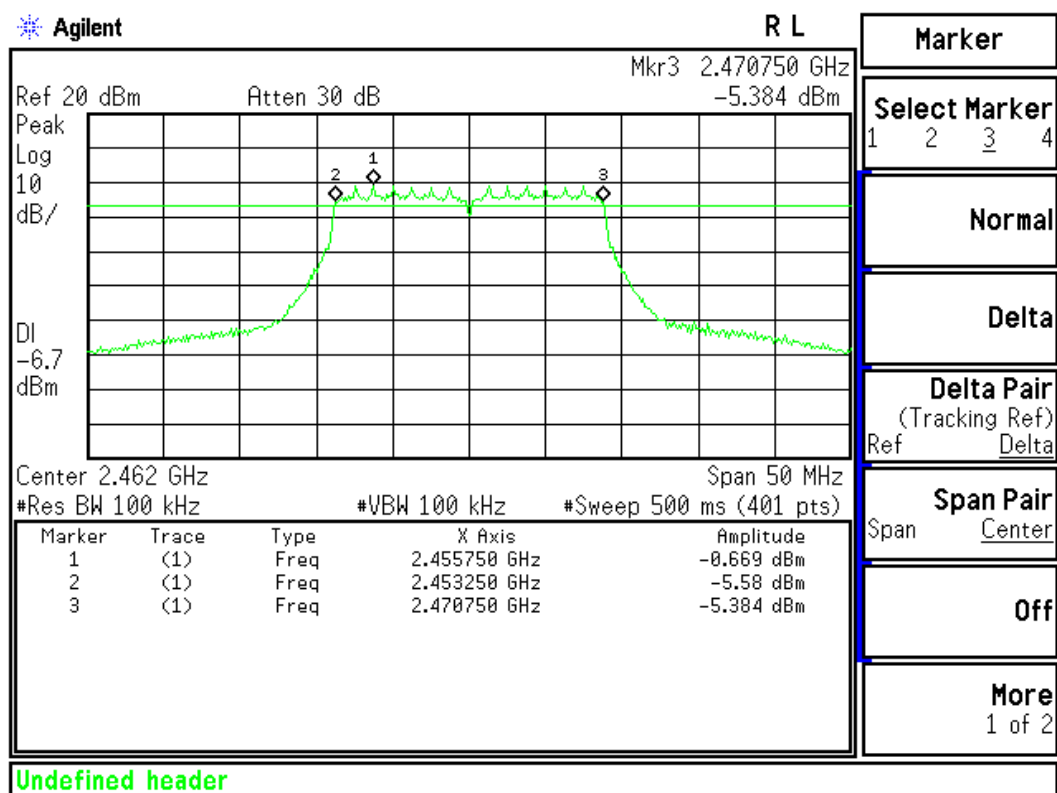
Figure Channel 6:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4G Band)-Antenna 1 (2462MHz)

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

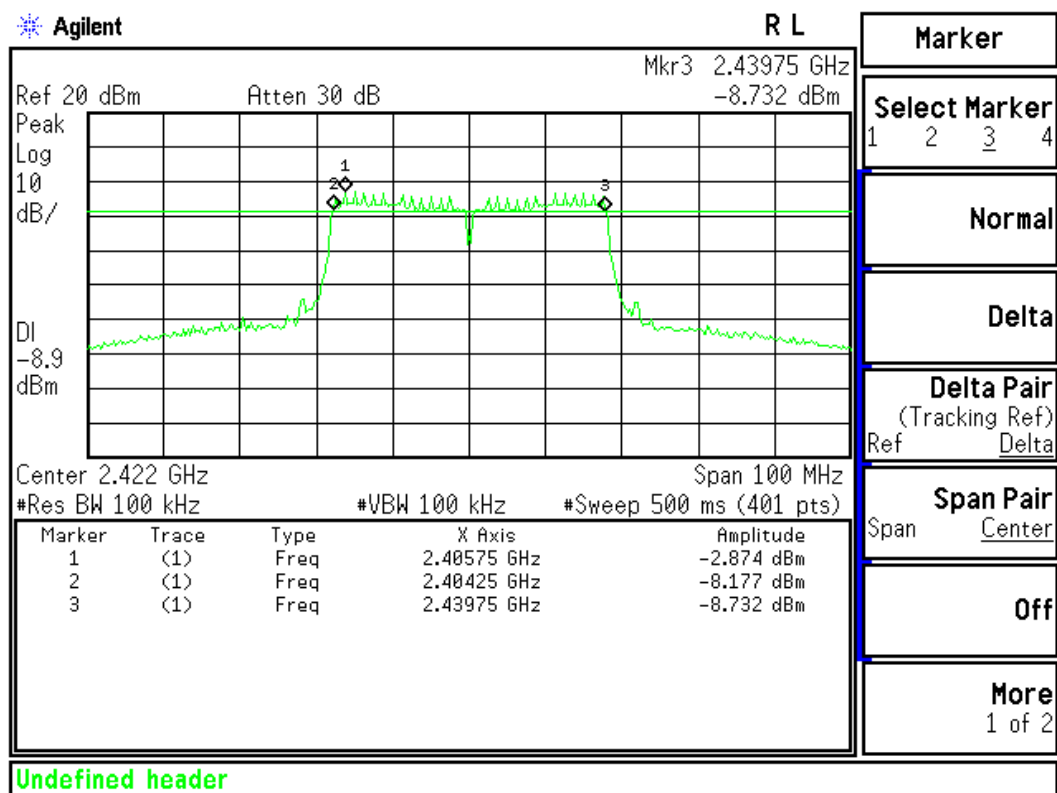
Figure Channel 11:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4G Band)-Antenna 1 (2422MHz)

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

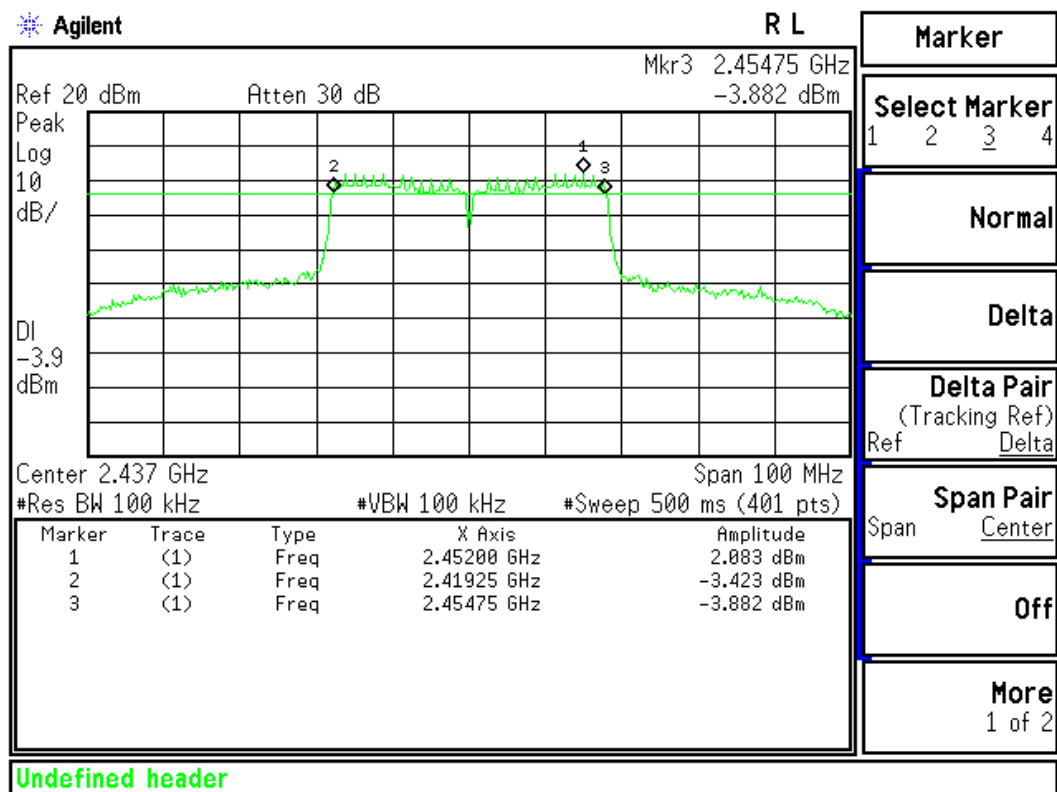
Figure Channel 1:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4G Band)-Antenna 1 (2437MHz)

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

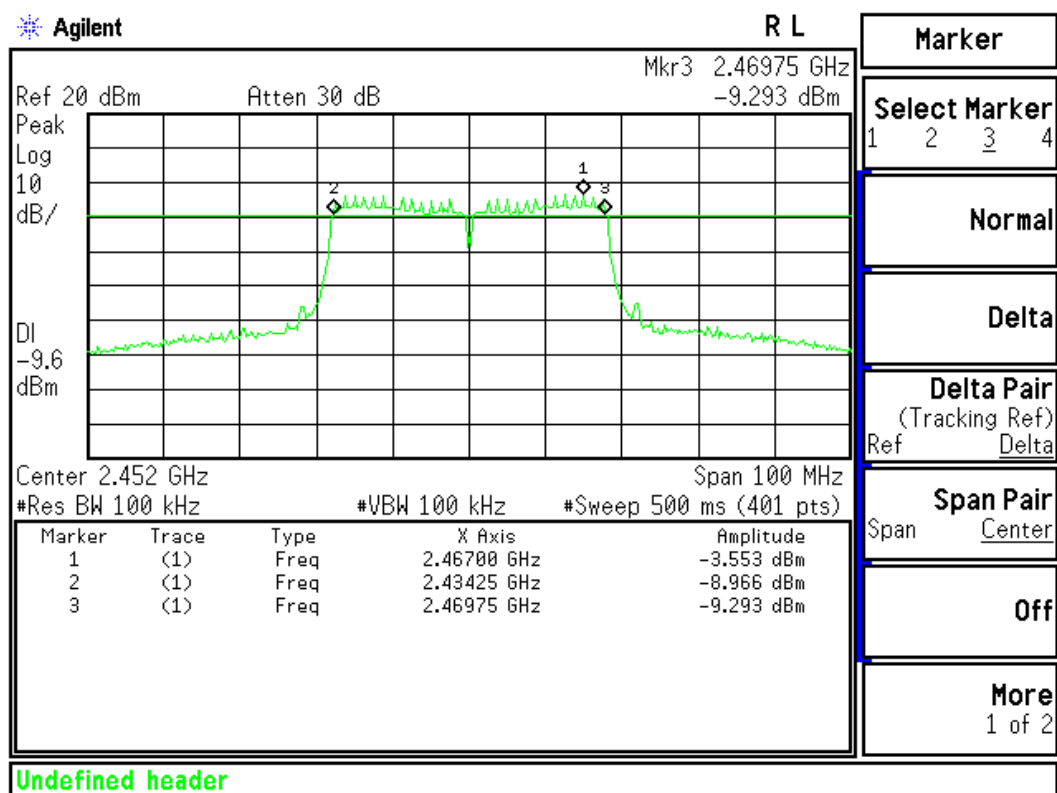
Figure Channel 4:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4G Band)-Antenna 1 (2452MHz)

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

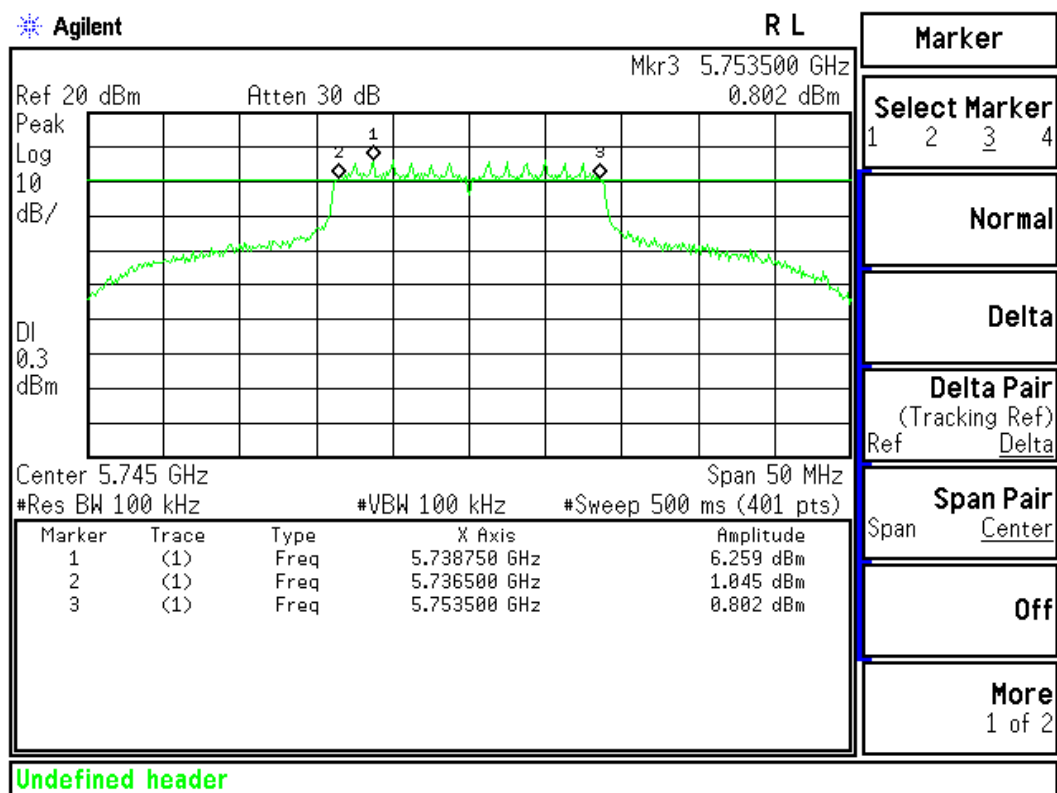
Figure Channel 7:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5G Band)-Antenna 2 (5745MHz)

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

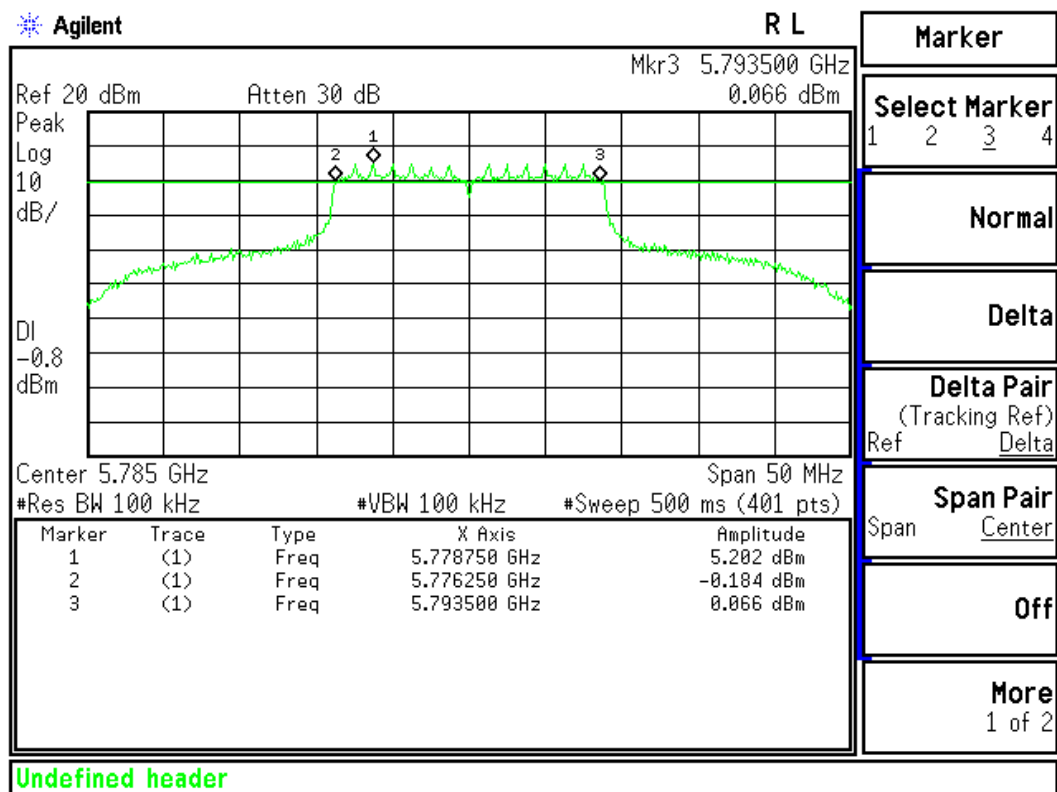
Figure Channel 149:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5G Band)-Antenna 2 (5785MHz)

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

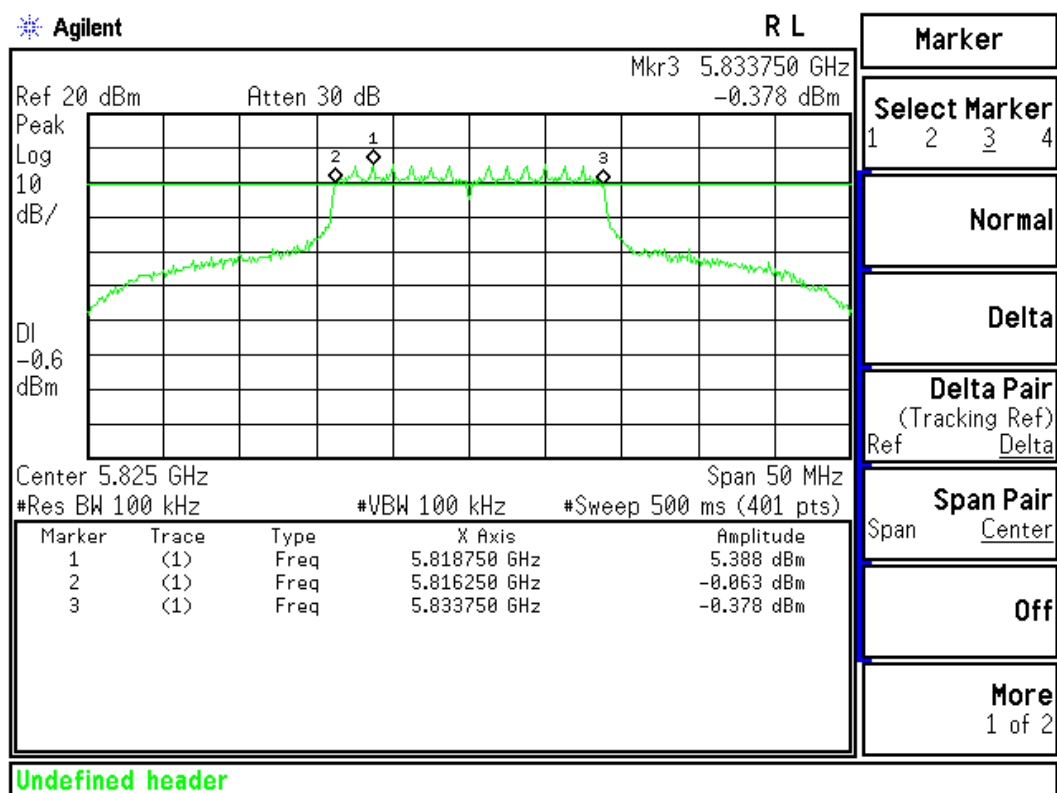
Figure Channel 157:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5G Band)-Antenna 2 (5825MHz)

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

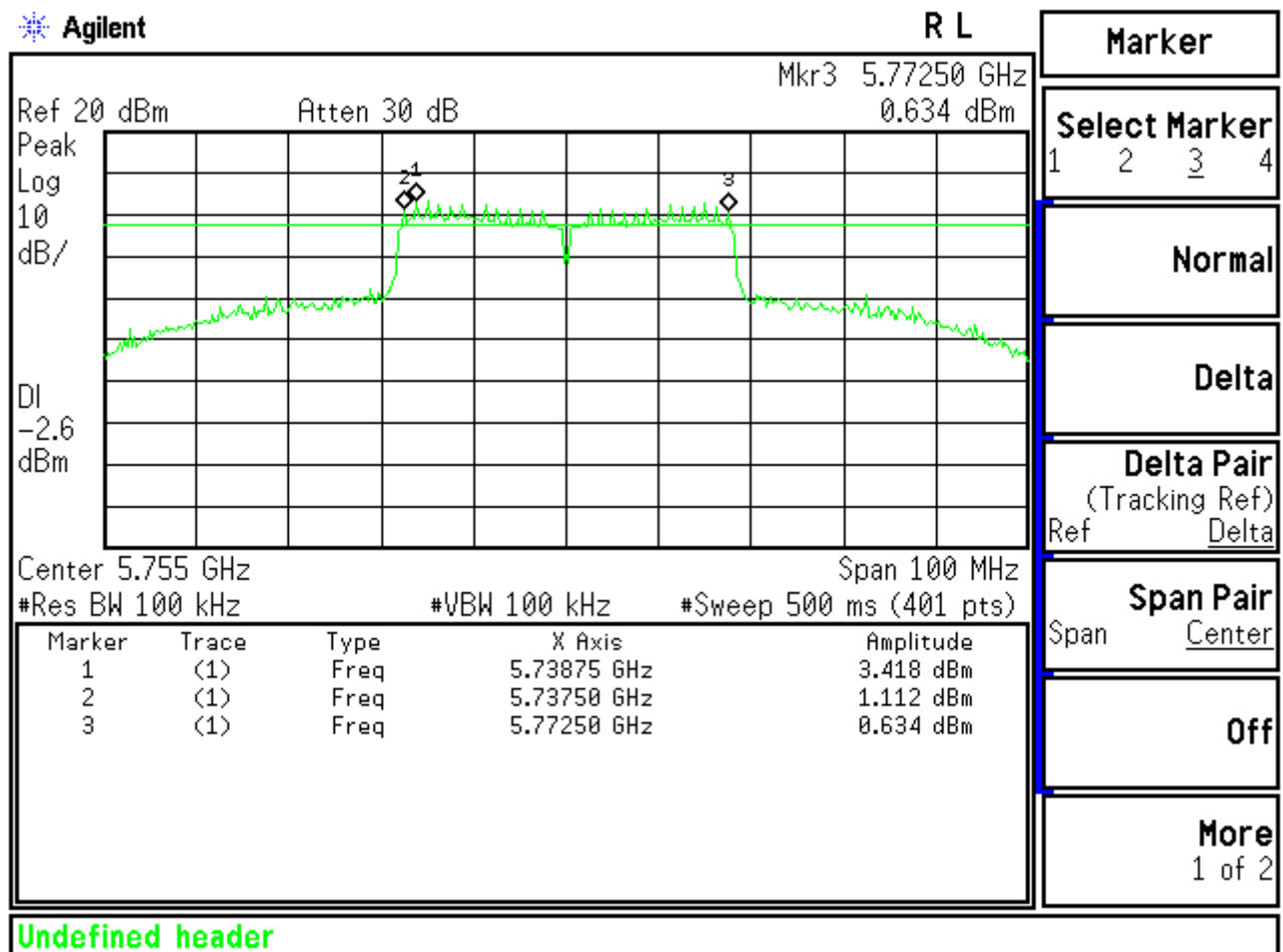
Figure Channel 165:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5G Band)-Antenna 2 (5755MHz)

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

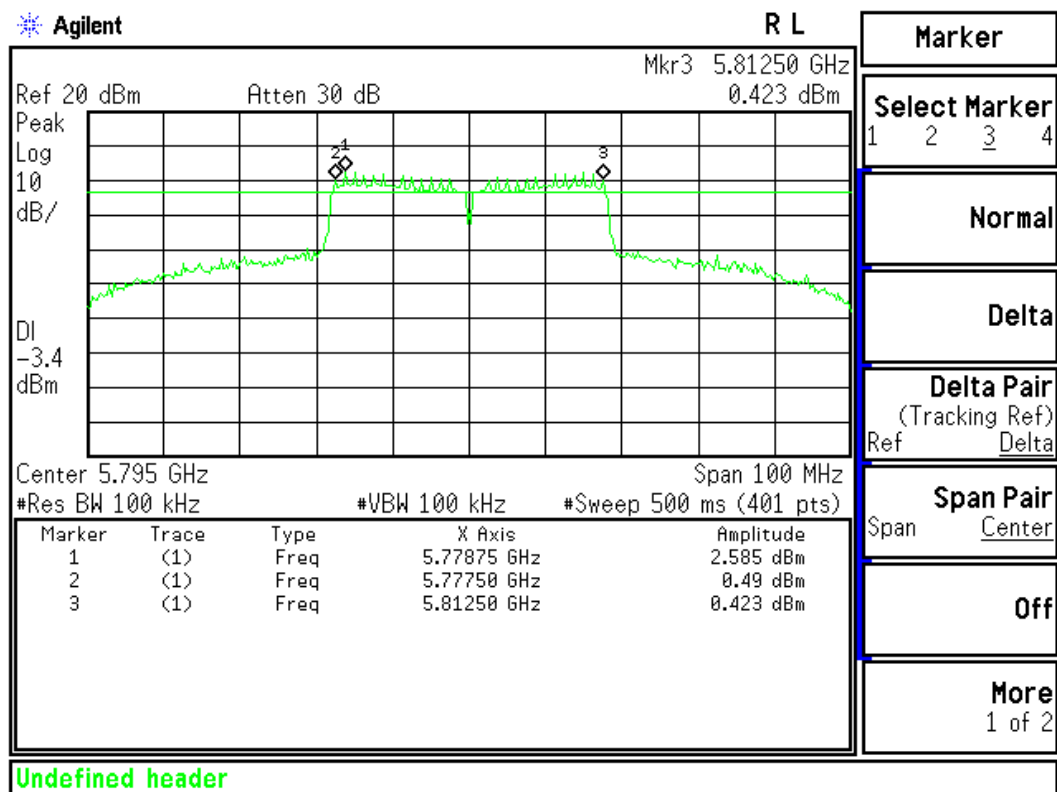
Figure Channel 151:



Product : Notebook P.C.
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5G Band)-Antenna 2 (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

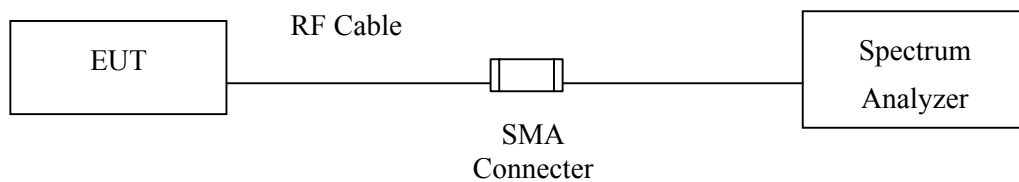
8.1. Test Equipment

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

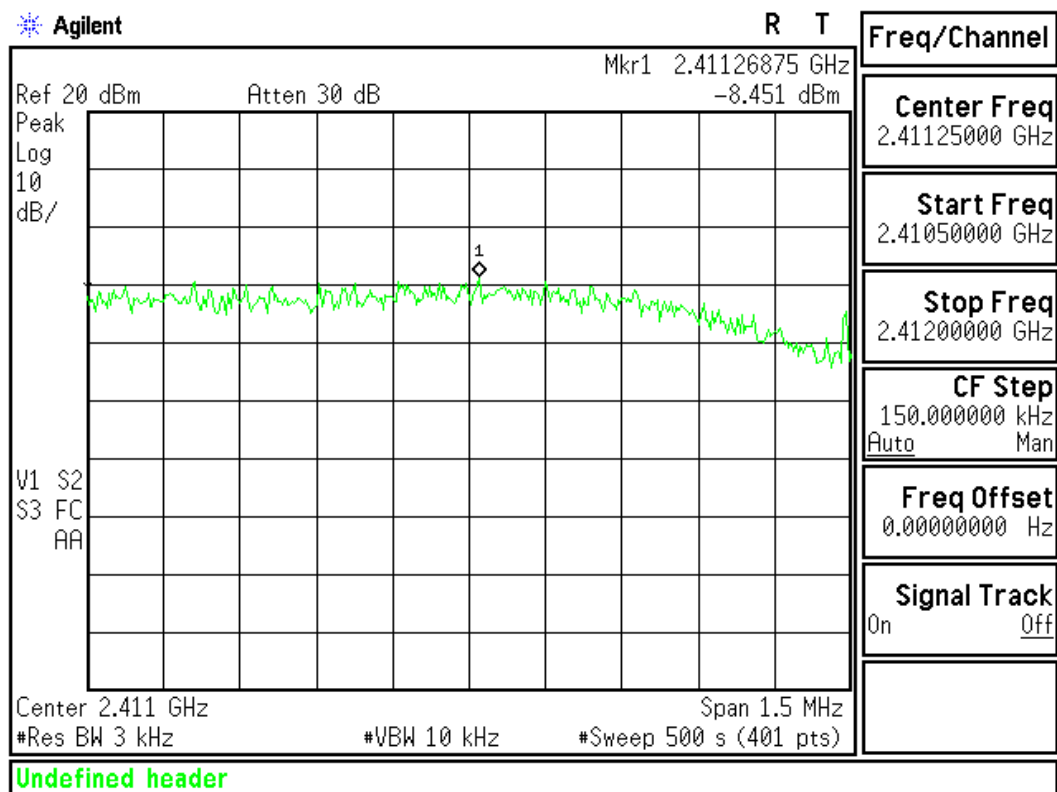
± 1.27 dB

8.6. Test Result of Power Density

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

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

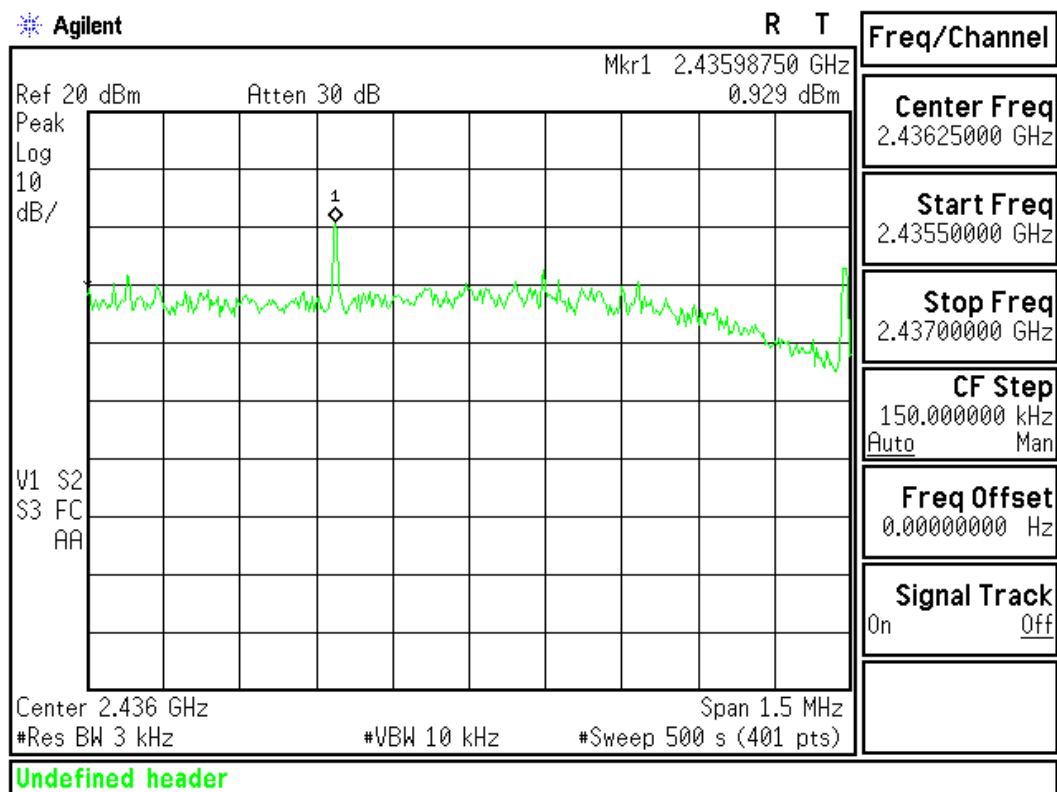
Figure Channel 1:



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

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

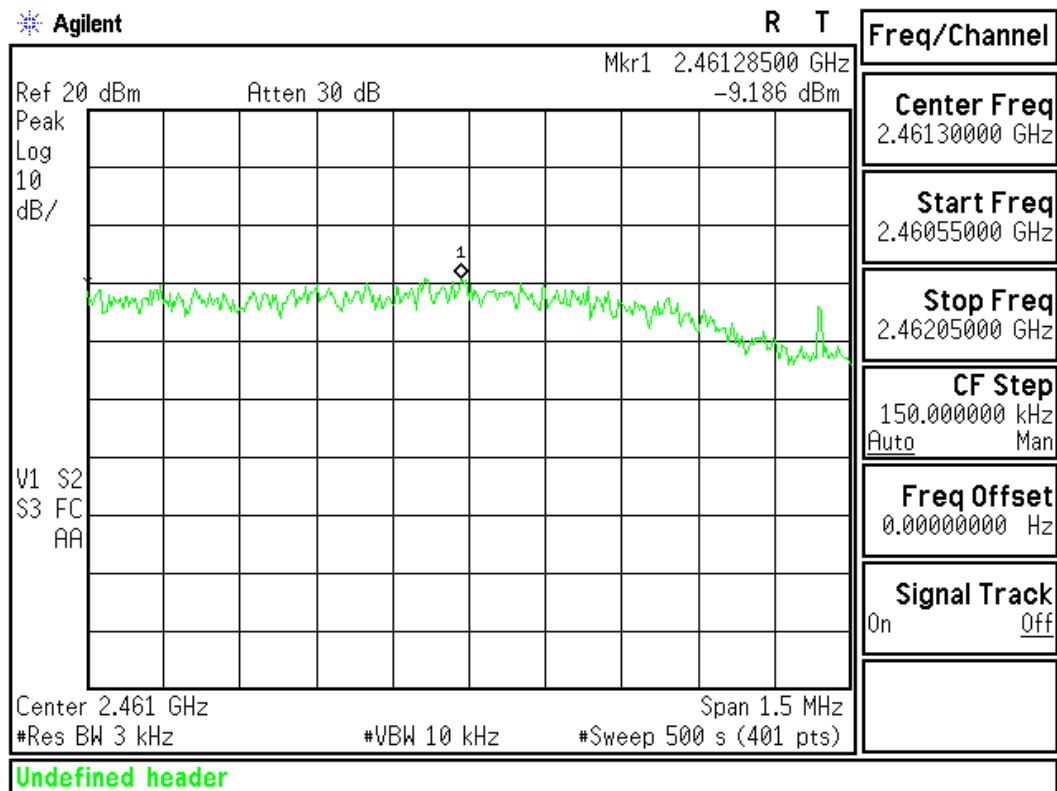
Figure Channel 6:



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

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

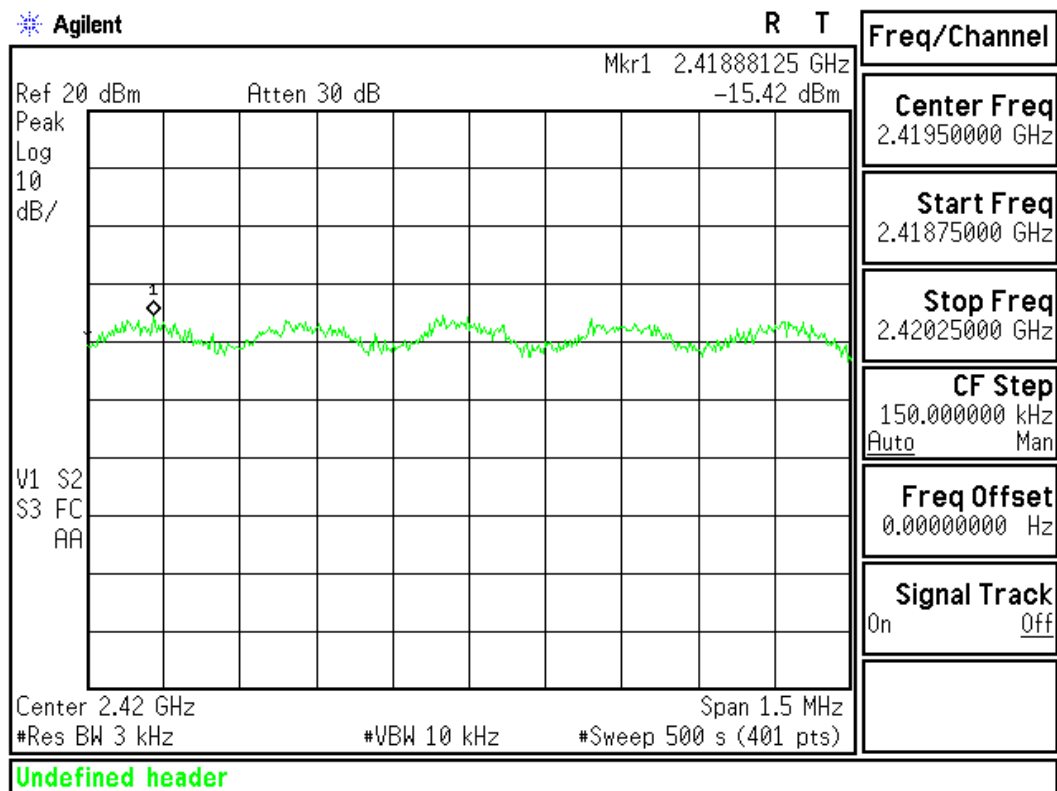
Figure Channel 11:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter - 802.11g 6Mbps-Antenna 1 (2412MHz)

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

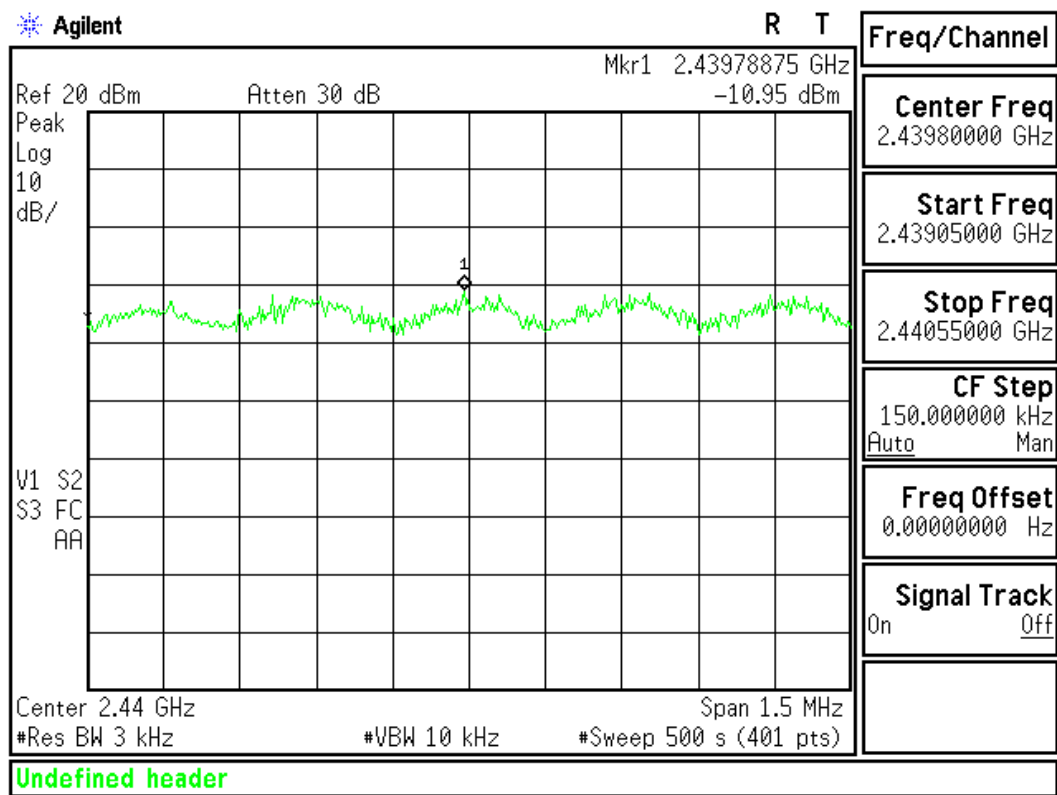
Figure Channel 1:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 2: Transmitter - 802.11g 6Mbps-Antenna 1 (2437MHz)

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

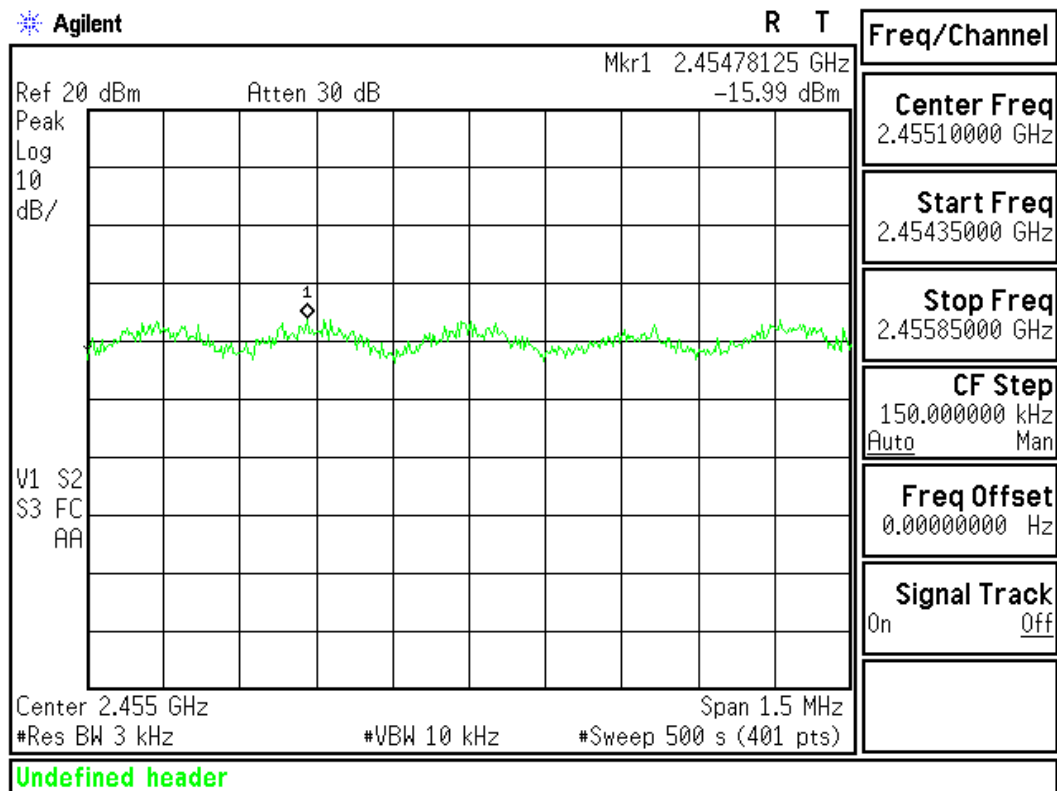
Figure Channel 6:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter - 802.11g 6Mbps-Antenna 1 (2462MHz)

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

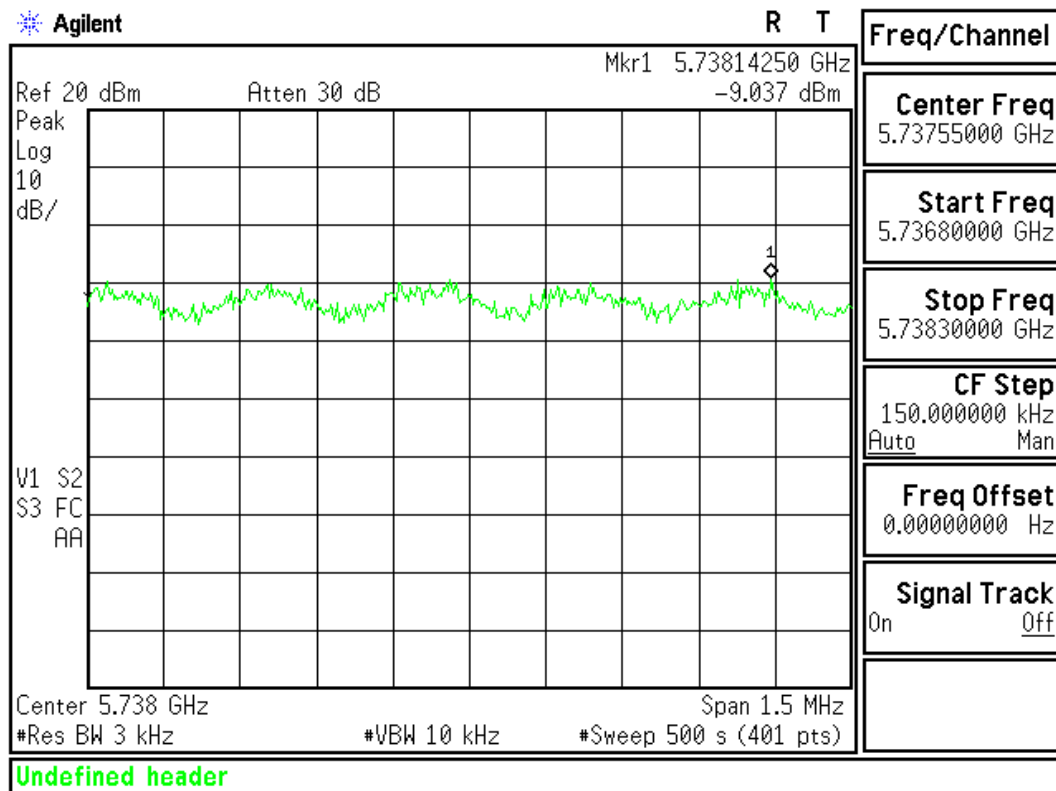
Figure Channel 11:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter - 802.11a 6Mbps-Antenna 2 (5745MHz)

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

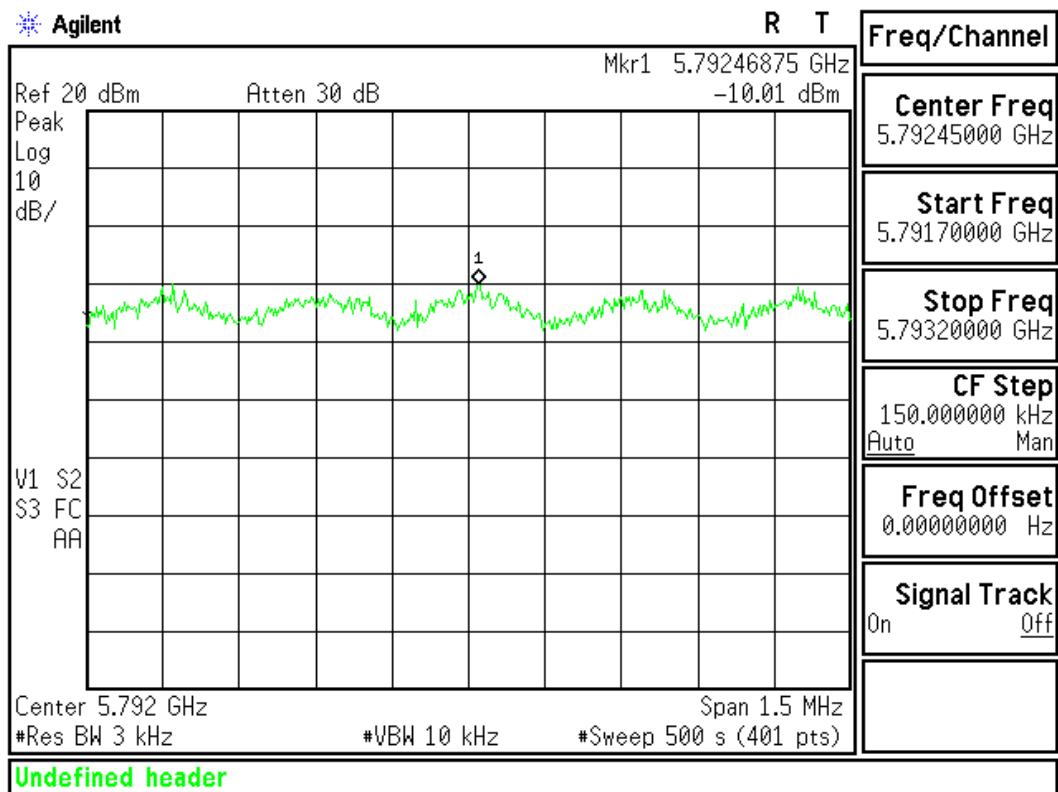
Figure Channel 149:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter - 802.11a 6Mbps-Antenna 2 (5785MHz)

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

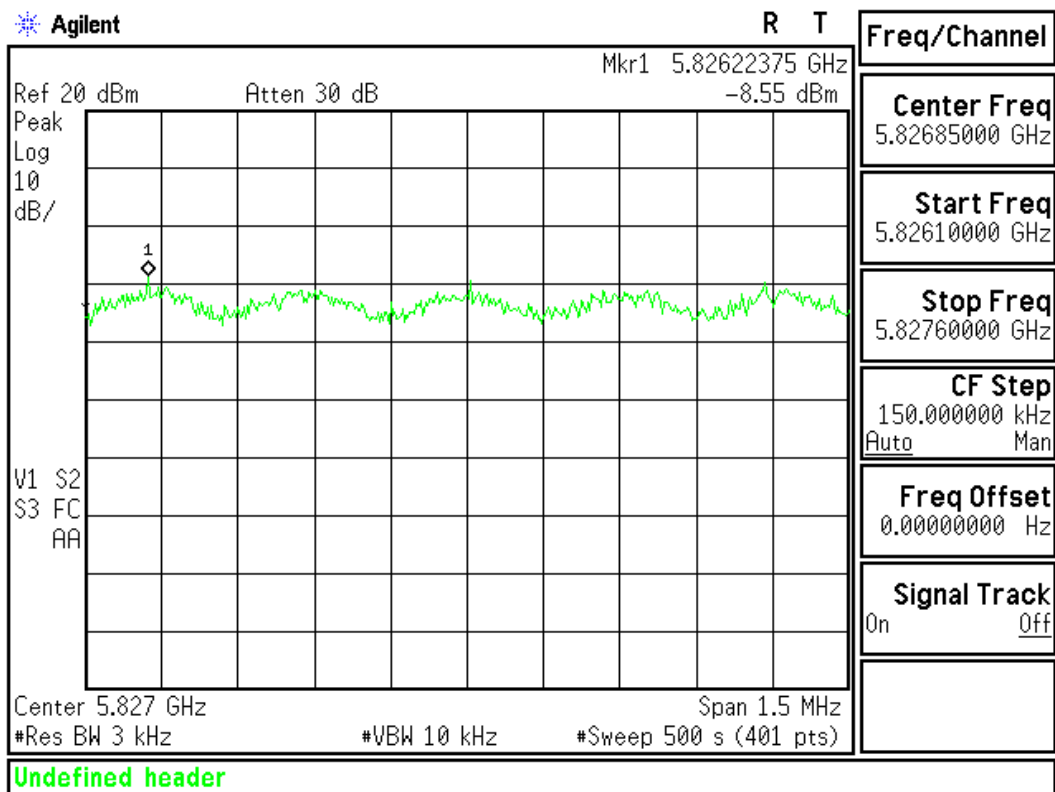
Figure Channel 157:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter - 802.11a 6Mbps-Antenna 2 (5825MHz)

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

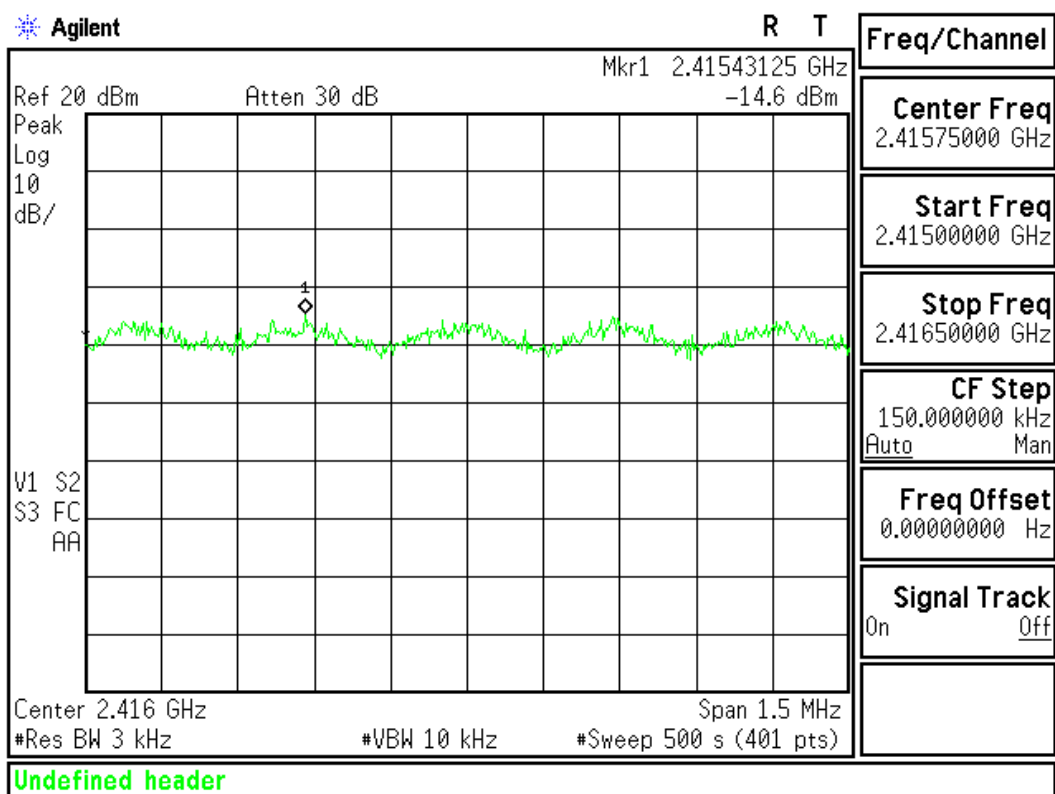
Figure Channel 165:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4G Band)-Antenna 1 (2412MHz)

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

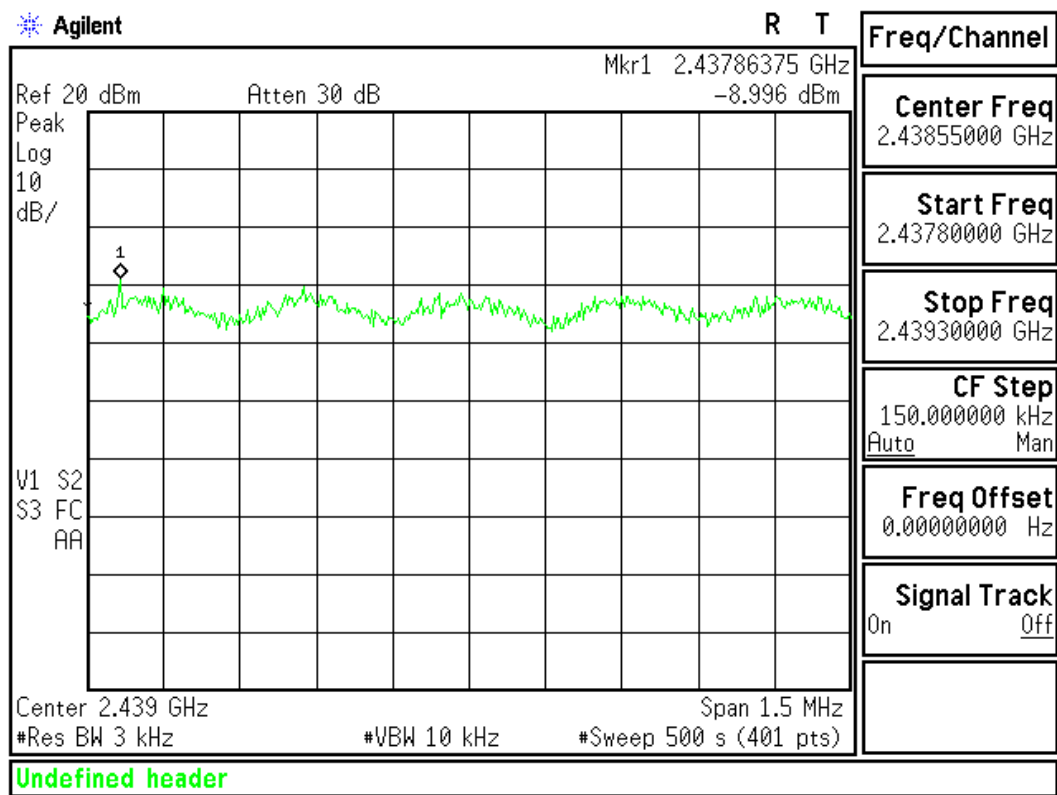
Figure Channel 1:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4G Band)-Antenna 1 (2437MHz)

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

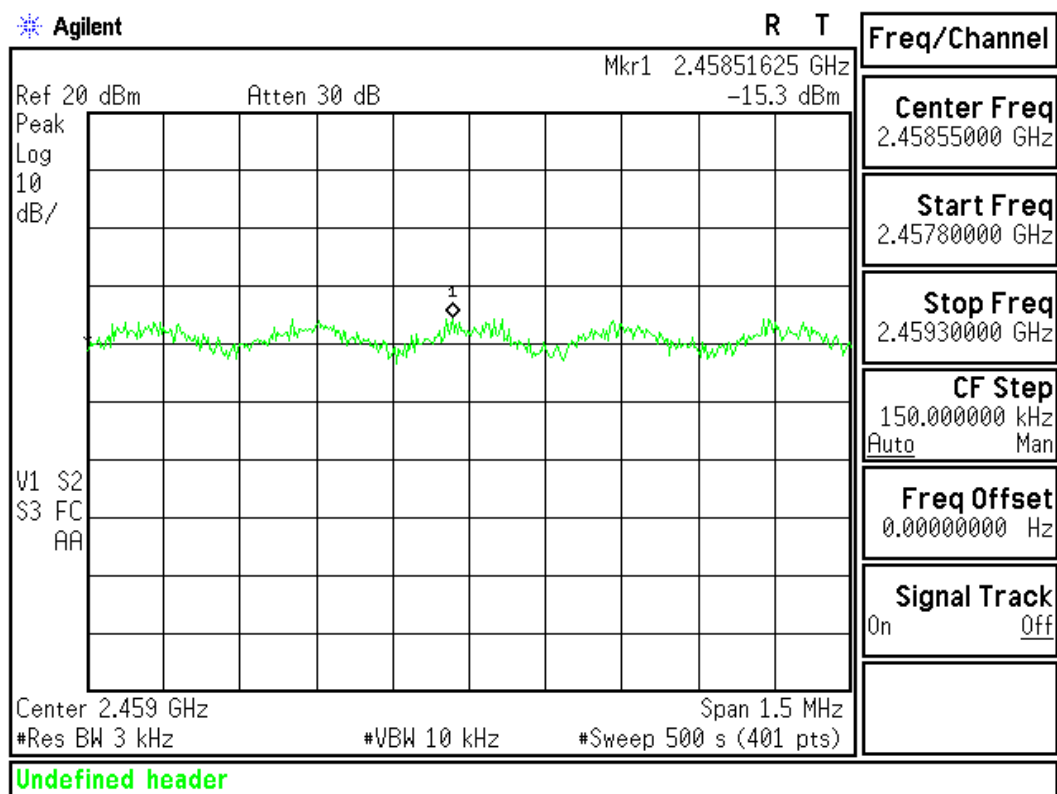
Figure Channel 6:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter - 802.11n-20BW_13.5Mbps(2.4G Band)-Antenna 1 (2462MHz)

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

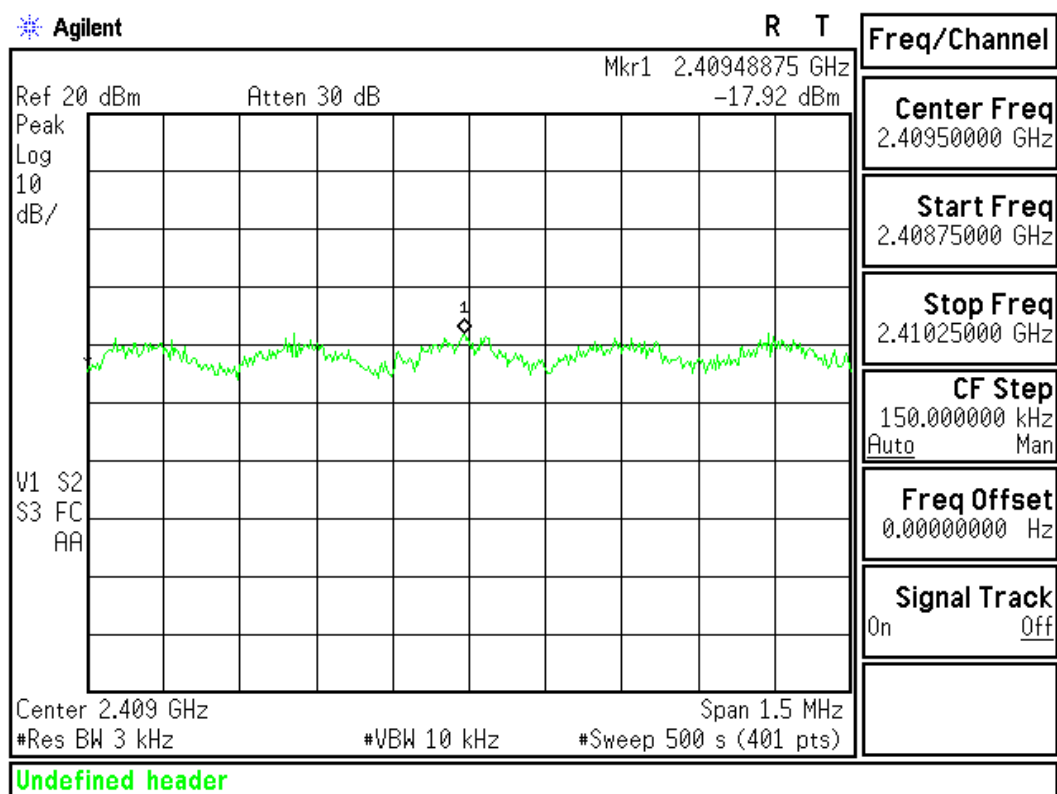
Figure Channel 11:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4G Band)-Antenna 1 (2422MHz)

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

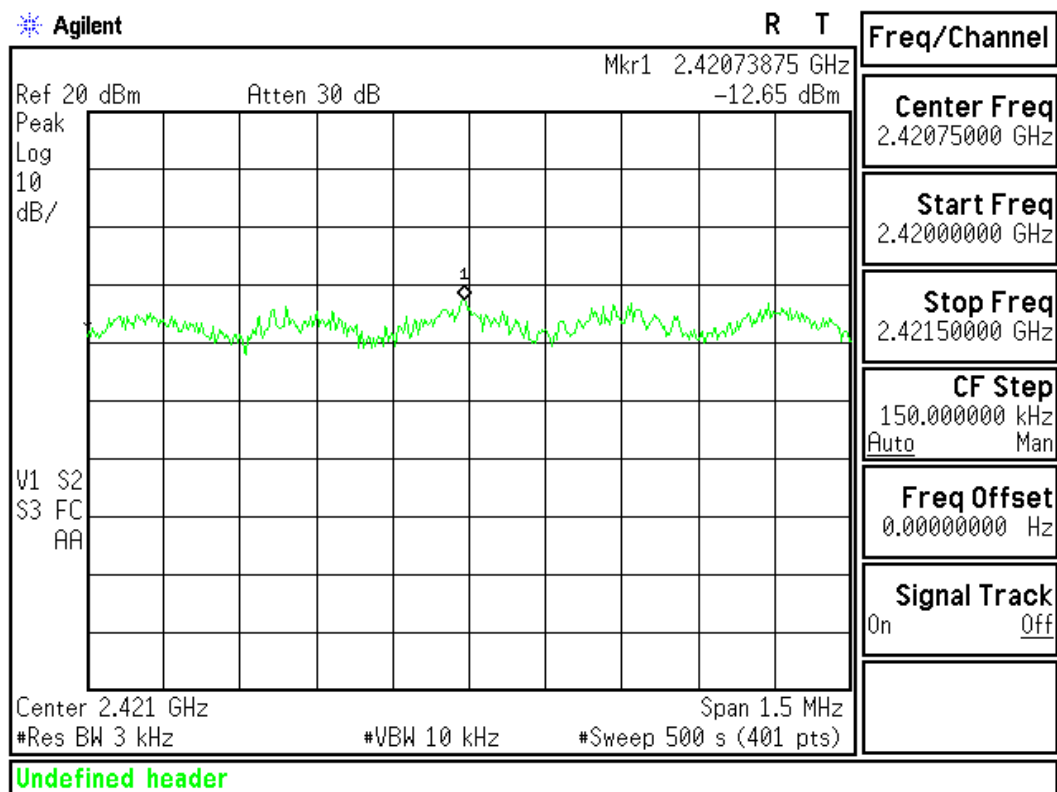
Figure Channel 1:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4G Band)-Antenna 1 (2437MHz)

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

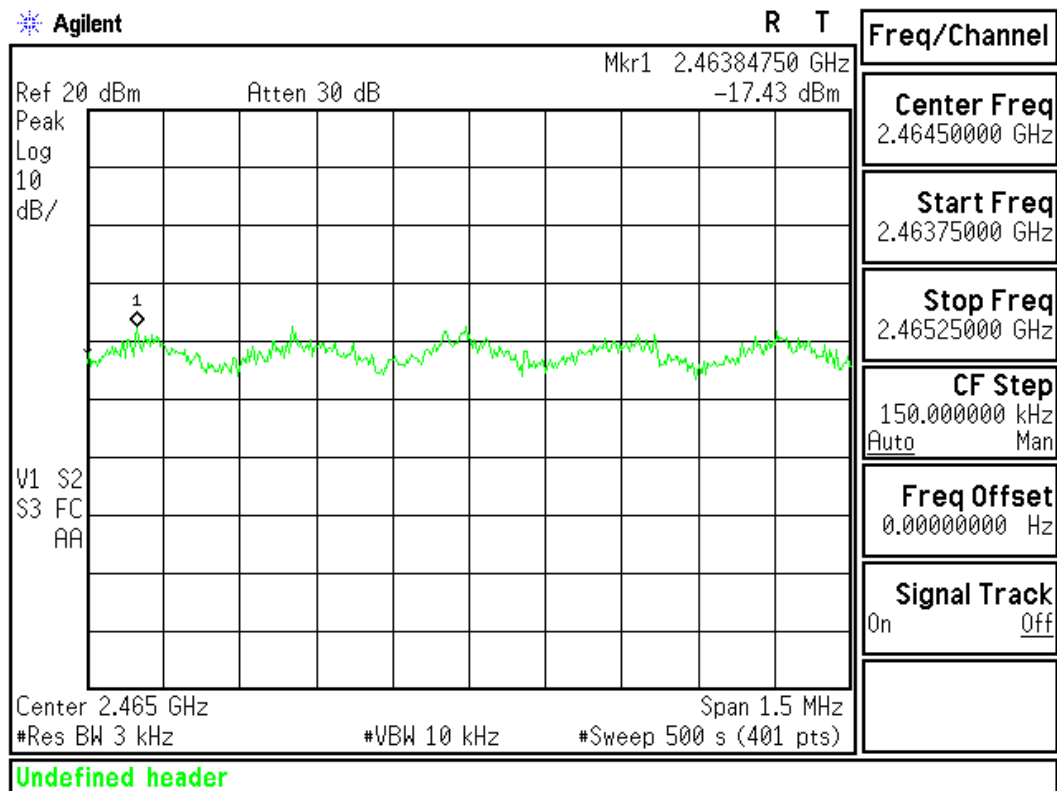
Figure Channel 4:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmitter - 802.11n-40BW_27Mbps(2.4G Band)-Antenna 1 (2452MHz)

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

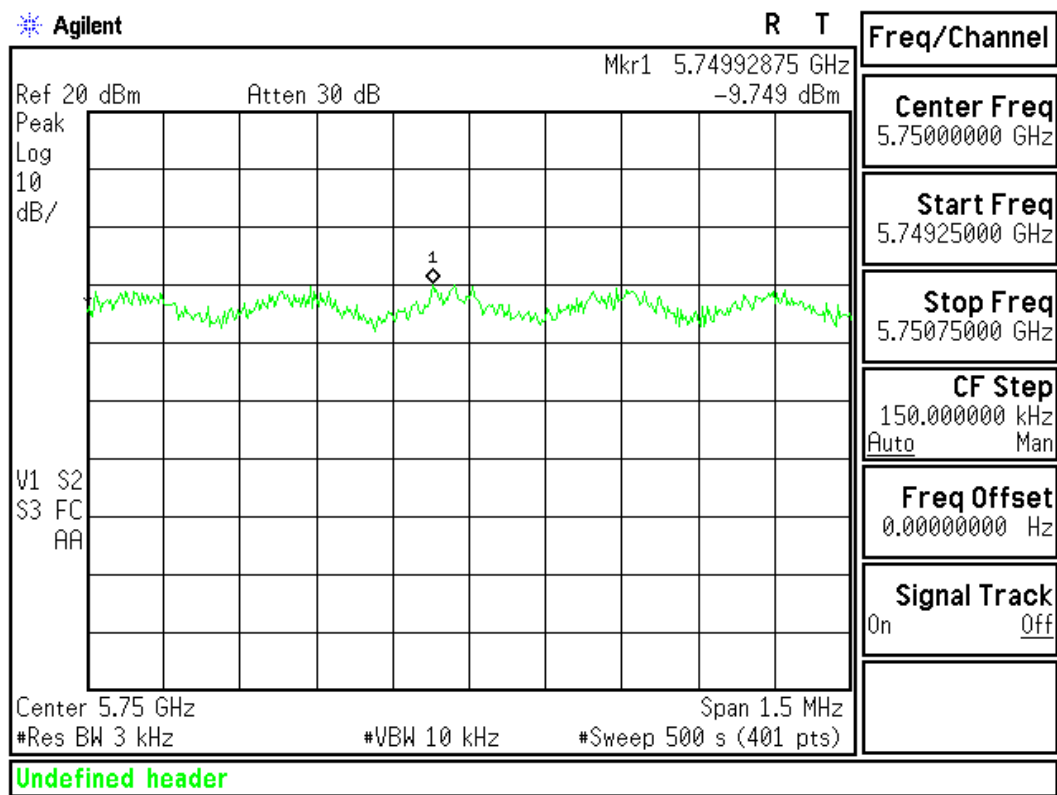
Figure Channel 7:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5G Band)-Antenna 2 (5745MHz)

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

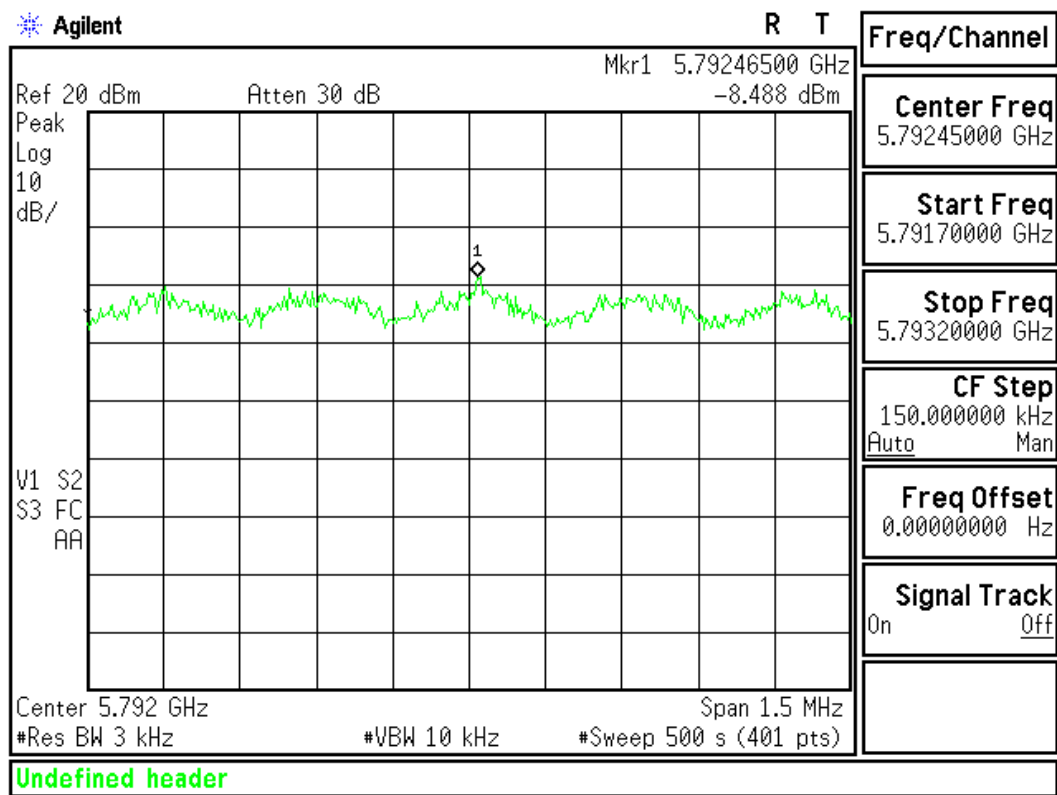
Figure Channel 149:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5G Band)-Antenna 2 (5785MHz)

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

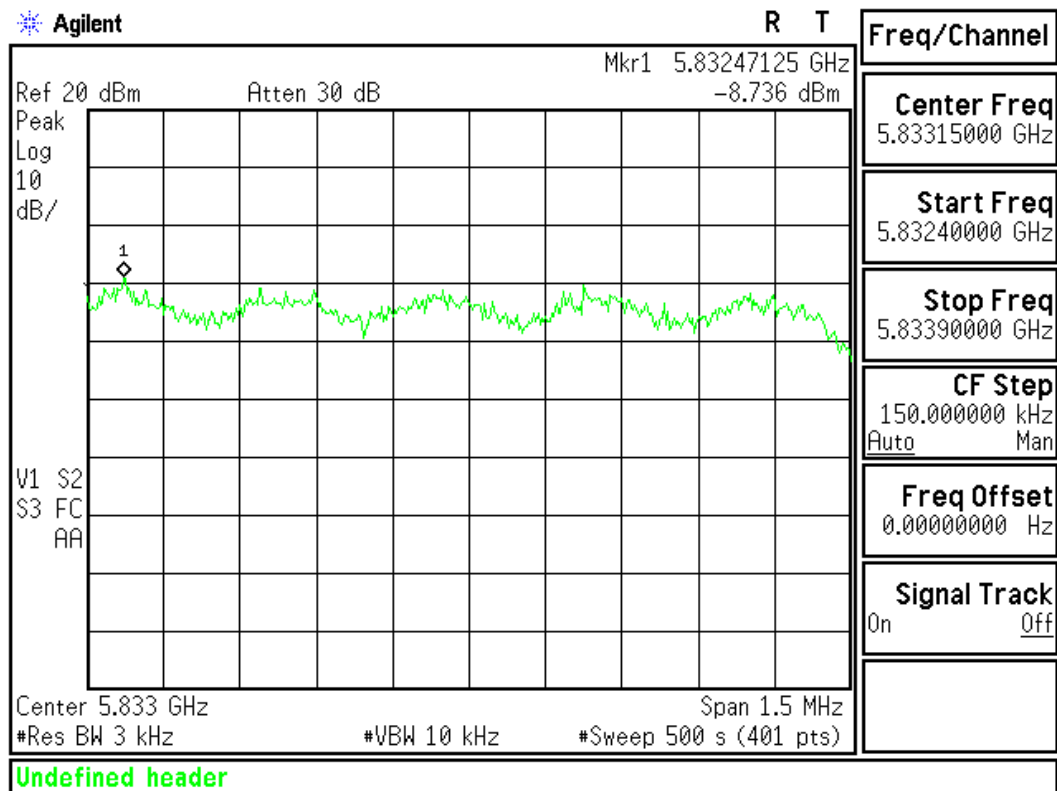
Figure Channel 157:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmitter - 802.11n-20BW_13.5Mbps(5G Band)-Antenna 2 (5825MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
165(13.5Mbps)	5825.00	-8.583	< 8dBm	Pass

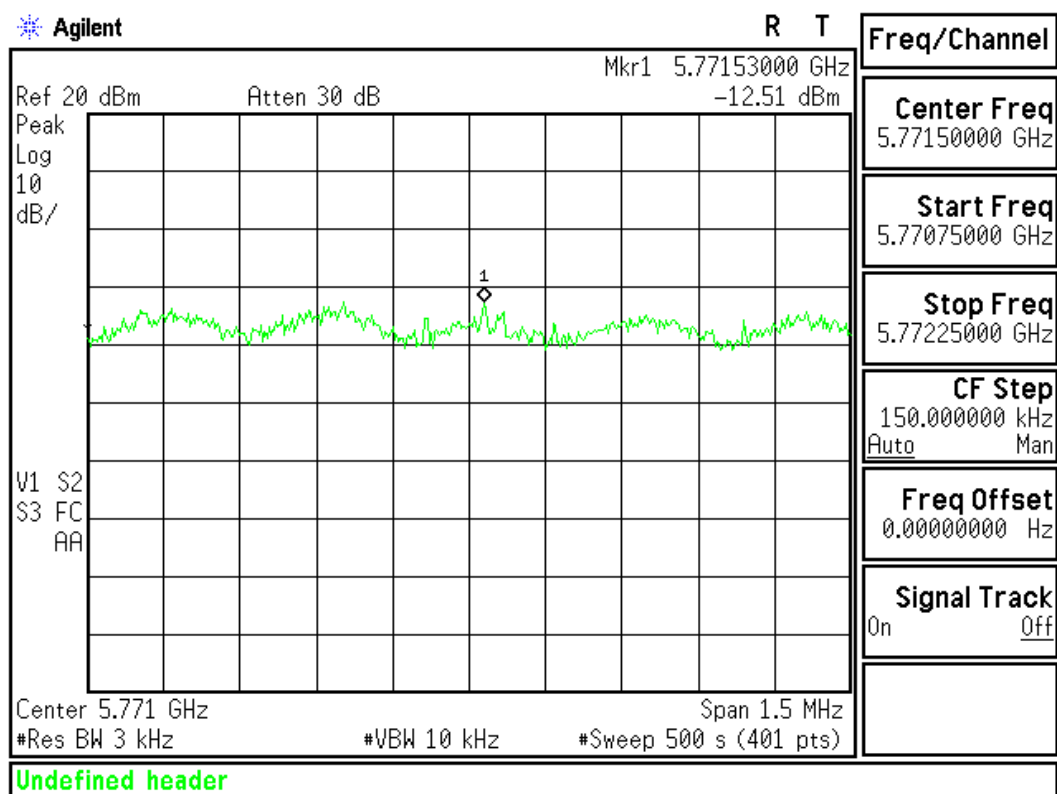
Figure Channel 165:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5G Band)-Antenna 2 (5755MHz)

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

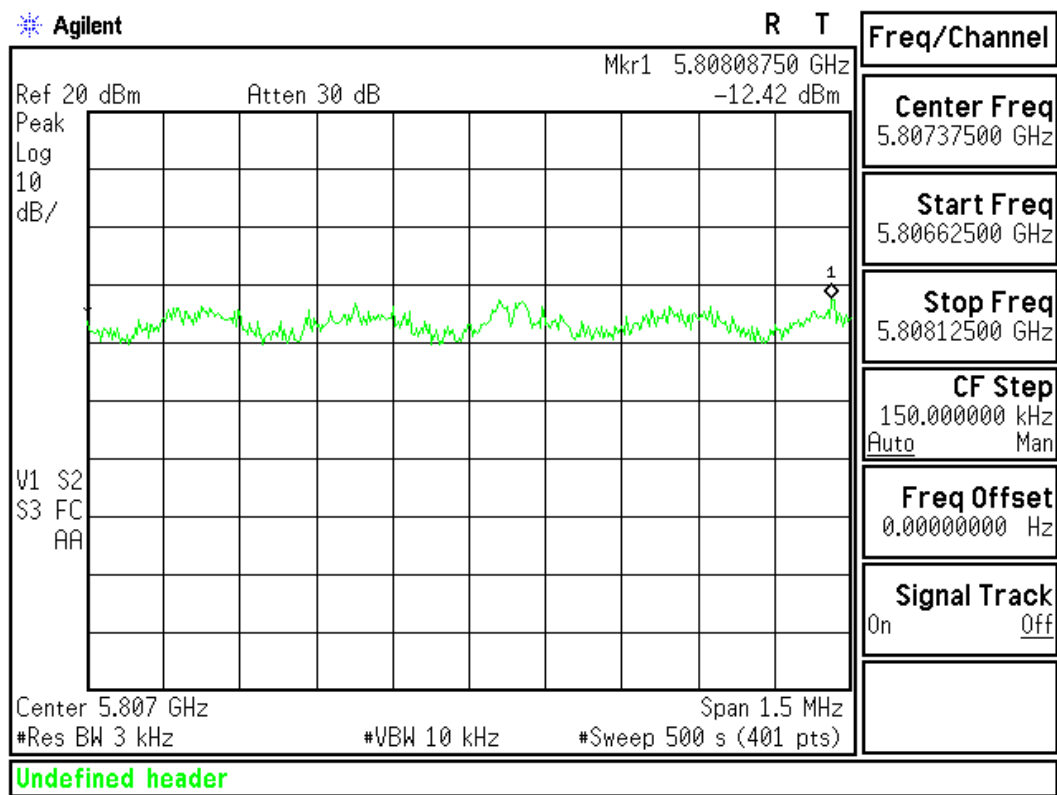
Figure Channel 151:



Product : Notebook P.C.
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 7: Transmitter - 802.11n-40BW_27Mbps(5G Band)-Antenna 2 (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.