



Test Report

Product Name	Touch Note
Model No	T1005, T1005M, T1005G, T1005X, T1005C, R1002, R1003
FCC ID.	JCK-T1005

Applicant	GIGA-BYTE TECHNOLOGY CO., LTD
Address	5FL., No. 6, Bau Chiang Road, Hsin-Tien, Taipei-Hsien, Taiwan, R.O.C.

Date of Receipt	Sep. 01, 2010
Issue Date	Sep. 16, 2010
Report No.	109073R-RFUSP42V01
Report Version	V1.0

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Test Report Certification

Issue Date: Sep. 16, 2010

Report No.: 109073R-RFUSP42V01



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

Product Name	Touch Note
Applicant	GIGA-BYTE TECHNOLOGY CO., LTD
Address	5FL., No. 6, Bau Chiang Road, Hsin-Tien, Taipei-Hsien, Taiwan, R.O.C.
Manufacturer	GIGA-BYTE TECHNOLOGY CO., LTD
Model No.	T1005, T1005M, T1005G, T1005X, T1005C, R1002, R1003
EUT Rated Voltage	AC 100-240V, 50-60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	GIGABYTE
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2009 ANSI C63.4: 2003
Test Result	Complied



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Testing Laboratory
0914

TABLE OF CONTENTS

Description	Page
1. GENERAL INFORMATION	5
1.1. EUT Description.....	5
1.2. Operational Description	7
1.3. Tested System Details.....	8
1.4. Configuration of Tested System	9
1.5. EUT Exercise Software	10
1.6. Test Facility	11
2. Conducted Emission.....	12
2.1. Test Equipment.....	12
2.2. Test Setup	12
2.3. Limits	13
2.4. Test Procedure	13
2.5. Uncertainty	13
2.6. Test Result of Conducted Emission.....	14
3. Peak Power Output	16
3.1. Test Equipment.....	16
3.2. Test Setup	16
3.3. Limits	16
3.4. Test Procedure	16
3.5. Uncertainty	16
3.6. Test Result of Peak Power Output.....	17
4. Radiated Emission.....	21
4.1. Test Equipment.....	21
4.2. Test Setup	22
4.3. Limits	23
4.4. Test Procedure	24
4.5. Uncertainty	24
4.6. Test Result of Radiated Emission.....	25
5. RF antenna conducted test.....	41
5.1. Test Equipment.....	41
5.2. Test Setup	41
5.3. Limits	41
5.4. Test Procedure	42
5.5. Uncertainty	42
5.6. Test Result of RF antenna conducted test.....	43
6. Band Edge	51
6.1. Test Equipment.....	51
6.2. Test Setup	52
6.3. Limits	52
6.4. Test Procedure	53
6.5. Uncertainty	53
6.6. Test Result of Band Edge	54

7.	Occupied Bandwidth.....	70
7.1.	Test Equipment.....	70
7.2.	Test Setup	70
7.3.	Limits	70
7.4.	Test Procedure	70
7.5.	Uncertainty	70
7.6.	Test Result of Occupied Bandwidth	71
8.	Power Density	83
8.1.	Test Equipment.....	83
8.2.	Test Setup	83
8.3.	Limits	83
8.4.	Test Procedure	83
8.5.	Uncertainty	83
8.6.	Test Result of Power Density	84
9.	EMI Reduction Method During Compliance Testing	96

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Touch Note
Trade Name	GIGABYTE
Model No.	T1005, T1005M, T1005G, T1005X, T1005C, R1002, R1003
FCC ID.	JCK-T1005
Frequency Range	2412-2462MHz for 802.11b/g/n-20BW, 2422-2452MHz for 802.11n-40BW
Number of Channels	802.11b/g/n-20MHz: 11, n-40MHz: 7
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps, 802.11n: 7.2-150Mbps
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type	PIFA
Antenna Gain	Refer to the table "Antenna List"
Channel Control	Auto
Power Adapter	MFR: Delta, M/N: ADP-36EH C Input: AC 100-240V, 50-60Hz, 1A Output: DC 12V, 3A Cable Out: Non-Shielded, 1.8m
Contain Module	Azurewave / AW-NE139H

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	ARISTOTLE	RFA-02-P24-70B-340-R (Main) RFA-02-P24-70-305-L (Aux)	PIFA	0.88dBi for 2.4GHz

Note: The antenna of EUT is conform to FCC 15.203

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		

802.11n-40MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2422 MHz	Channel 02:	2427 MHz	Channel 03:	2432 MHz	Channel 04:	2437 MHz
Channel 05:	2442 MHz	Channel 06:	2447 MHz	Channel 07:	2452 MHz		

Note:

1. The EUT is a Touch Note, Contains functions and so on WiFi.
2. The EUT is including seven models for different marketing requirement.
3. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
4. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps 、802.11g is 6Mbps 、802.11n(20M-BW) is 7.2Mbps and 、802.11n(40M-BW) is 15Mbps)
5. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11b/g/n transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices
6. The device has included Bluetooth module (FCCID:QDS-BRCM1043). The module placement and antenna placement please review internal photo of this report. The Bluetooth antenna is separation > 5cm to WLAN antenna and no co-location requirement.

1.2. Operational Description

The EUT is a Touch Note with 11 channels. 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 802.11g).

The device provided of eight kinds of transmitting speed 7.2,14.4,21.7,28.9,43.3,57.8,65 and 72.2Mbps in 802.11n(20M-BW) mode and 15,30,45,60,90,120,135 and 150 Mbps(40M-BW) the device of RF carrier is BPSK, QPSK, 16QAM and 64QAM (IEEE 802.11n), The IEEE 802.11n is Multiple In, Single Out” (MISO) technology and two antennas to support 1(Transmit) * 2(Receive) MISO technology.

This Touch Note, compliant with IEEE 802.11b and IEEE 802.11g/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) and Orthogonal Frequency Division Multiplexing (OFDM) radio transmission, the Touch Note Wired Equivalent Protection (WEP) algorithm is used. In addition, its standard compliance ensures that it can communicate with any IEEE 802.11b and IEEE 802.11g/n network.

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

1.3. Tested System Details

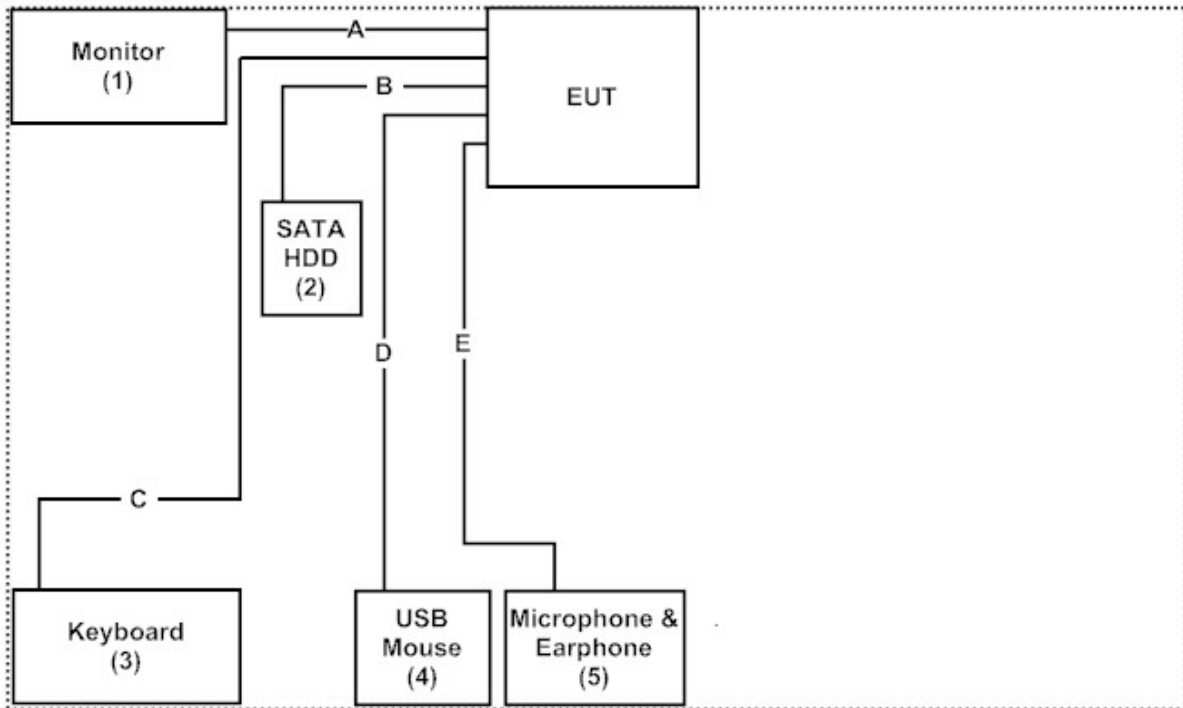
The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1 Monitor	Dell	2407WFPb	CN-0YY528-4663 3-796-12RS	DoC	Non-Shielded, 1.8m
2 SATA HDD	Onnto	ST-M10	A03521-H3-0008	DoC	Non-Shielded, 1.8m With Core*1
3 Keyboard	DELL	SK-8115	MY-0DJ325-71619 -6A3-1910	DoC	N/A
4 USB Mouse	DELL	M056U0A	F0Y01YEK	DoC	N/A
5 Microphone & Earphone	PCHOME	N/A	N/A	N/A	N/A

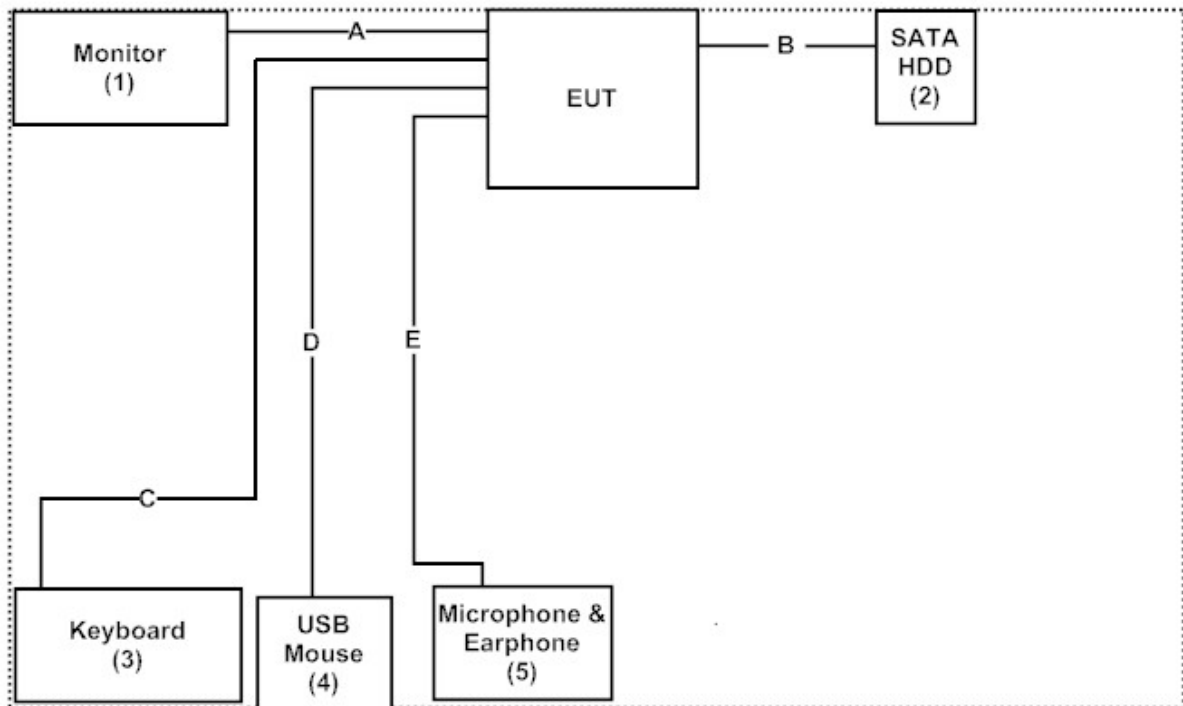
	Signal Cable Type	Signal cable Description
A	VGA Cable	Shielded, 1.8m, with one ferrite core bonded
B	SATA Cable	Shielded, 1.5m
C	USB Keyboard Cable	Shielded, 1.8m
D	USB Mouse Cable	Shielded, 1.8m
E	Microphone & Earphone Cable	Non-Shielded, 1.2m

1.4. Configuration of Tested System

For Conduction



For Radiated



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.4.
- (2) Execute “ART tool.exe”(Ver 0_9_b7_ar28x) on the EUT.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press “OK” to start the continuous Transmit.
- (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://www.quietek.com/tw/ctg/cts/accreditations.htm>

The address and introduction of Quietek Corporation's laboratories can be founded in our Web site:

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Accreditation on NVLAP
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FCC Accreditation Number: TW1014



2. Conducted Emission

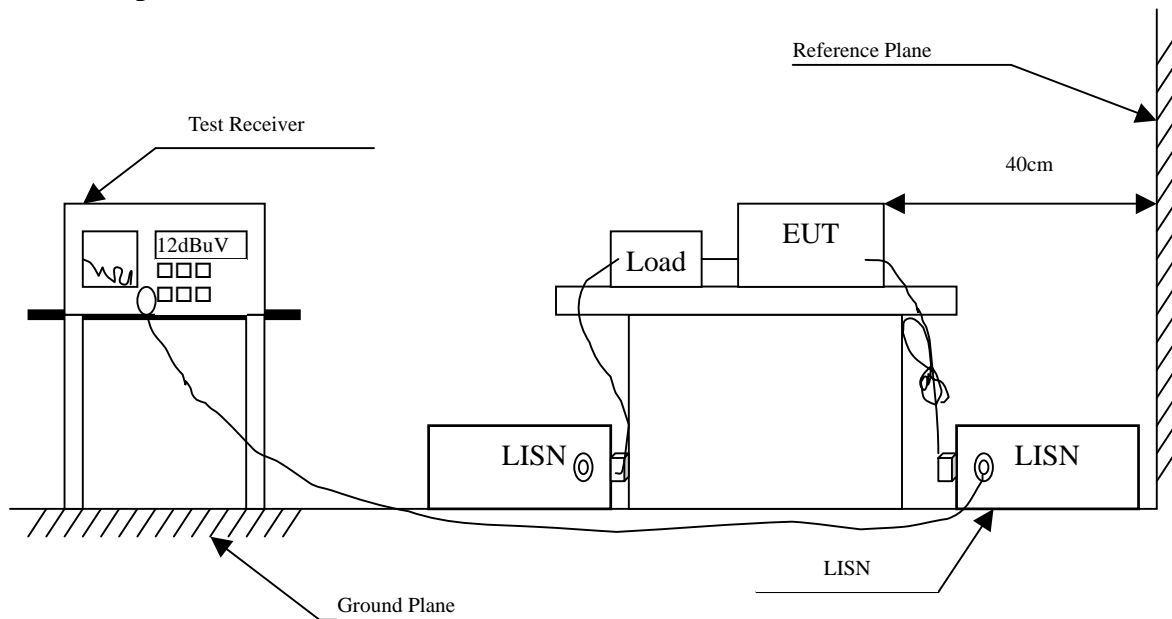
2.1. Test Equipment

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, 2010	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2010	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2010	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2010	
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 : Touch Note
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Line 1					
Quasi-Peak					
0.150	9.766	34.150	43.916	-22.084	66.000
0.189	9.714	42.530	52.244	-12.642	64.886
0.259	9.670	34.000	43.670	-19.216	62.886
0.330	9.650	29.730	39.380	-21.477	60.857
3.451	9.690	14.750	24.440	-31.560	56.000
14.107	9.950	27.460	37.410	-22.590	60.000
Average					
0.150	9.766	22.260	32.026	-23.974	56.000
0.189	9.714	26.370	36.084	-18.802	54.886
0.259	9.670	26.620	36.290	-16.596	52.886
0.330	9.650	21.620	31.270	-19.587	50.857
3.451	9.690	4.030	13.720	-32.280	46.000
14.107	9.950	20.370	30.320	-19.680	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Touch Note
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Line 2					
Quasi-Peak					
0.197	9.719	41.920	51.639	-13.018	64.657
0.271	9.672	33.540	43.212	-19.331	62.543
0.345	9.658	26.940	36.598	-23.831	60.429
0.463	9.640	20.560	30.200	-26.857	57.057
3.115	9.690	18.200	27.890	-28.110	56.000
13.638	9.944	28.520	38.464	-21.536	60.000
Average					
0.197	9.719	13.080	22.799	-31.858	54.657
0.271	9.672	4.730	14.402	-38.141	52.543
0.345	9.658	4.320	13.978	-36.451	50.429
0.463	9.640	2.950	12.590	-34.467	47.057
3.115	9.690	10.050	19.740	-26.260	46.000
13.638	9.944	15.590	25.534	-24.466	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Peak Power Output

3.1. Test Equipment

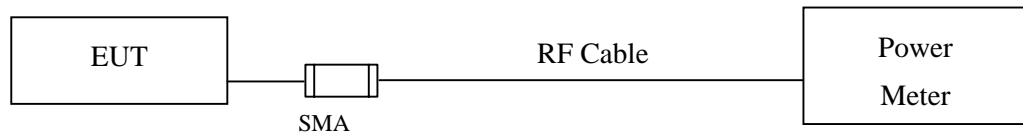
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2010
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2010
	8-WAY Power Divider	JFW	50PD-647 / 526770 0916	Apr., 2010

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.
3. The power combiner is used for measure 11n mode.

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 : Touch Note
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11			
		Measurement Level (dBm)						
01	2412	14.3	--	--	--	16.7	<30dBm	Pass
06	2437	16.2	16.03	15.92	15.7	18.5	<30dBm	Pass
11	2462	15.6	--	--	--	17.55	<30dBm	Pass

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

Product : Touch Note
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54			
		Measurement Level (dBm)										
01	2412	5.35	--	--	--	--	--	--	--	15.1	<30dBm	Pass
06	2437	9.1	9.02	9	8.95	8.92	8.89	8.87	8.85	18.65	<30dBm	Pass
11	2462	6.21	--	--	--	--	--	--	--	15.66	<30dBm	Pass

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

Product : Touch Note
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2			
		Measurement Level (dBm)										
01	2412	6.02	--	--	--	--	--	--	--	14.9	<30dBm	Pass
06	2437	9.23	9.22	9.2	9.19	9.17	9.17	9.16	9.15	18.25	<30dBm	Pass
11	2462	5.11	--	--	--	--	--	--	--	14	<30dBm	Pass

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

Product : Touch Note
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		15	30	45	60	90	120	135	150			
		Measurement Level (dBm)										
01	2422	4.47	--	--	--	--	--	--	--	14.05	<30dBm	Pass
04	2437	7.3	7.29	7.28	7.26	7.23	7.2	7.18	7.17	16.33	<30dBm	Pass
07	2452	5.61	--	--	--	--	--	--	--	14.61	<30dBm	Pass

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

4. Radiated Emission

4.1. Test Equipment

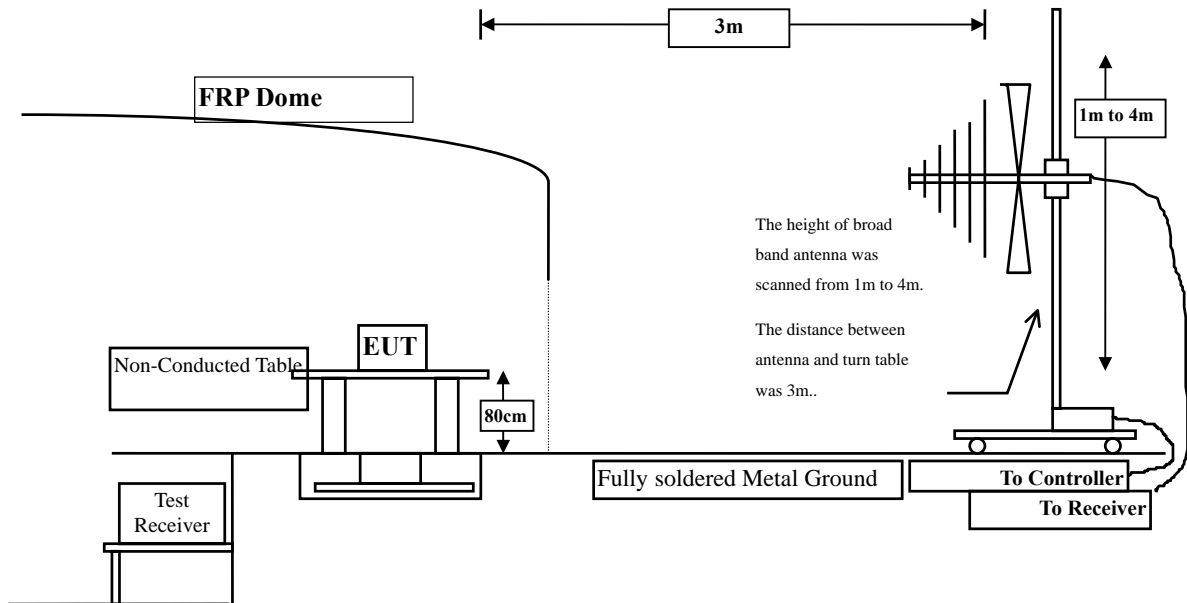
The following test equipment are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2010
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2010
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2010
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2010
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2010
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2010
	X	Coaxial Cable	Quietek	QTK-CABLE/ CAB5	Feb., 2010
	X	Controller	Quietek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

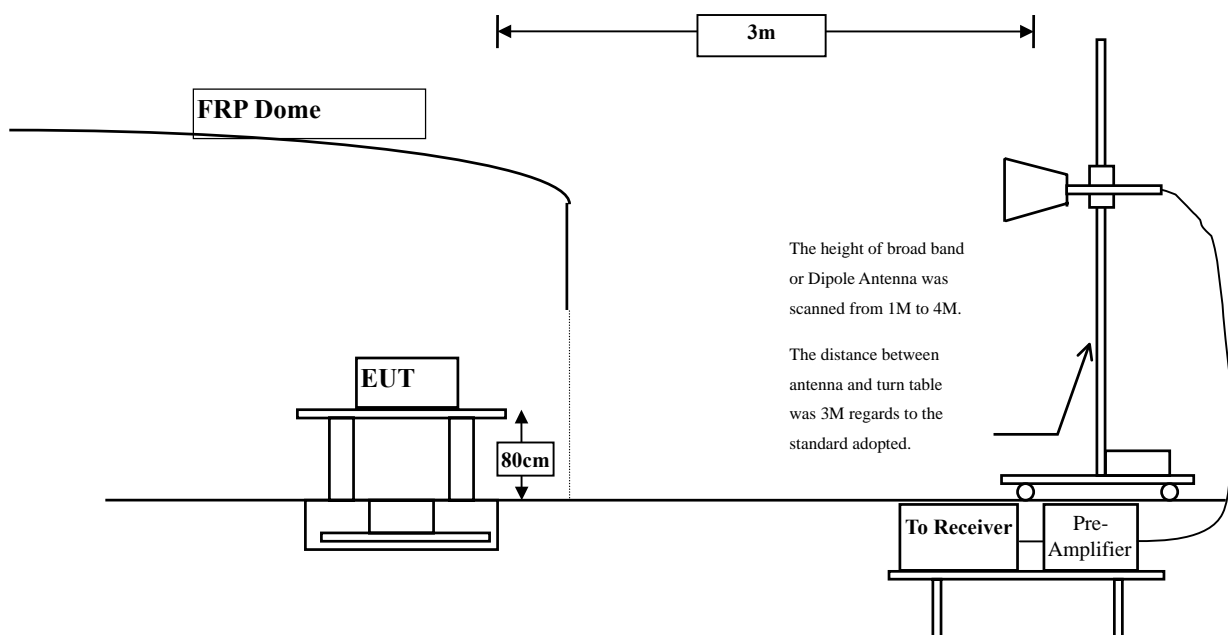
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with "X" are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. Limits

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

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

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

4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

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

The 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 : Touch Note
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	39.020	42.281	-31.719	74.000
7236.000	10.650	37.430	48.080	-25.920	74.000
9648.000	13.337	35.560	48.896	-25.104	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	42.420	48.841	-25.159	74.000
7236.000	11.495	38.020	49.515	-24.485	74.000
9648.000	13.807	36.130	49.936	-24.064	74.000
Average Detector:					
--					

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 : Touch Note
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	40.030	43.067	-30.933	74.000
7311.000	11.795	37.740	49.534	-24.466	74.000
9748.000	12.635	36.340	48.975	-25.025	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	43.330	49.141	-24.859	74.000
7311.000	12.630	38.860	51.489	-22.511	74.000
9748.000	13.126	36.350	49.476	-24.524	74.000
Average Detector:					
--					

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 : Touch Note
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	37.430	40.287	-33.713	74.000
7386.000	12.127	36.420	48.548	-25.452	74.000
9848.000	12.852	36.650	49.503	-24.497	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	39.410	44.930	-29.070	74.000
7386.000	13.254	36.450	49.704	-24.296	74.000
9848.000	13.367	36.540	49.907	-24.093	74.000
Average Detector:					
--					

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 : Touch Note
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	36.830	40.091	-33.909	74.000
7236.000	10.650	35.880	46.530	-27.470	74.000
9648.000	13.337	36.120	49.456	-24.544	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	36.850	43.271	-30.729	74.000
7236.000	11.495	36.260	47.755	-26.245	74.000
9648.000	13.807	36.380	50.186	-23.814	74.000
Average Detector:					
--					

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 : Touch Note
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	36.910	39.947	-34.053	74.000
7311.000	11.795	36.270	48.064	-25.936	74.000
9748.000	12.635	36.440	49.075	-24.925	74.000
Average Detector:					
--					
Peak Detector:					
4874.000	5.812	36.460	42.271	-31.729	74.000
7311.000	12.630	37.420	50.049	-23.951	74.000
9748.000	13.126	36.850	49.976	-24.024	74.000
Average Detector:					
--					

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 : Touch Note
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	36.700	39.557	-34.443	74.000
7386.000	12.127	36.130	48.258	-25.742	74.000
9848.000	12.852	36.410	49.263	-24.737	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	36.540	42.060	-31.940	74.000
7386.000	13.254	35.420	48.674	-25.326	74.000
9848.000	13.367	36.310	49.677	-24.323	74.000
Average Detector:					
--					

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 : Touch Note
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	37.190	40.451	-33.549	74.000
7236.000	10.650	37.300	47.950	-26.050	74.000
9648.000	13.337	35.800	49.136	-24.864	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	36.350	42.771	-31.229	74.000
7236.000	11.495	35.780	47.275	-26.725	74.000
9648.000	13.807	35.420	49.226	-24.774	74.000
Average Detector:					
--					

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 : Touch Note
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	36.350	39.387	-34.613	74.000
7311.000	11.795	35.720	47.514	-26.486	74.000
9748.000	12.635	36.330	48.965	-25.035	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	36.680	42.491	-31.509	74.000
7311.000	12.630	35.750	48.379	-25.621	74.000
9748.000	13.126	36.050	49.176	-24.824	74.000
Average Detector:					
--					

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 : Touch Note
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	36.630	39.487	-34.513	74.000
7386.000	12.127	35.080	47.208	-26.792	74.000
9848.000	12.852	36.650	49.503	-24.497	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	36.850	42.370	-31.630	74.000
7386.000	13.254	35.030	48.284	-25.716	74.000
9848.000	13.367	36.080	49.447	-24.553	74.000
Average Detector:					
--					

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 : Touch Note
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2422MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4844.000	3.171	37.320	40.491	-33.509	74.000
7266.000	11.162	35.330	46.492	-27.508	74.000
9688.000	12.964	36.040	49.005	-24.995	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4844.000	6.178	37.050	43.228	-30.772	74.000
7266.000	11.982	35.260	47.242	-26.758	74.000
9688.000	13.507	36.390	49.898	-24.102	74.000
Average Detector:					
--					

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 : Touch Note
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	36.850	39.887	-34.113	74.000
7311.000	11.795	34.780	46.574	-27.426	74.000
9748.000	12.635	35.890	48.525	-25.475	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	37.010	42.821	-31.179	74.000
7311.000	12.630	35.950	48.579	-25.421	74.000
9748.000	13.126	36.020	49.146	-24.854	74.000
Average Detector:					
--					

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 : Touch Note
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2452 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4904.000	2.914	37.350	40.265	-33.735	74.000
7356.000	11.995	35.030	47.024	-26.976	74.000
9808.000	12.475	35.870	48.345	-25.655	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4904.000	5.530	37.430	42.961	-31.039	74.000
7356.000	13.005	34.660	47.664	-26.336	74.000
9808.000	12.901	35.950	48.851	-25.149	74.000
Average Detector:					
--					

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 : Touch Note
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
276.380	-5.783	49.071	43.288	-2.712	46.000
355.920	-2.528	39.792	37.264	-8.736	46.000
414.120	-3.242	37.570	34.328	-11.672	46.000
483.960	-0.688	38.371	37.684	-8.316	46.000
553.800	2.510	36.116	38.626	-7.374	46.000
968.960	6.981	33.829	40.810	-13.190	54.000
Vertical					
276.380	-8.653	49.707	41.054	-4.946	46.000
414.120	-7.902	48.786	40.884	-5.116	46.000
483.960	-3.548	44.881	41.334	-4.666	46.000
553.800	-4.450	43.618	39.168	-6.832	46.000
691.540	2.421	38.489	40.910	-5.090	46.000
968.960	8.191	36.665	44.856	-9.144	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 : Touch Note
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
276.380	-5.783	47.644	41.861	-4.139	46.000
322.940	-4.442	38.112	33.670	-12.330	46.000
483.960	-0.688	38.436	37.749	-8.251	46.000
553.800	2.510	34.968	37.478	-8.522	46.000
691.540	3.681	32.500	36.181	-9.819	46.000
968.960	6.981	33.381	40.362	-13.638	54.000
Vertical					
276.380	-8.653	51.736	43.083	-2.917	46.000
414.120	-7.902	48.360	40.458	-5.542	46.000
483.960	-3.548	45.221	41.674	-4.326	46.000
553.800	-4.450	45.503	41.053	-4.947	46.000
691.540	2.421	38.666	41.087	-4.913	46.000
968.960	8.191	37.404	45.595	-8.405	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 : Touch Note
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
276.380	-5.783	48.469	42.686	-3.314	46.000
355.920	-2.528	38.462	35.934	-10.066	46.000
483.960	-0.688	38.624	37.937	-8.063	46.000
553.800	2.510	35.862	38.372	-7.628	46.000
691.540	3.681	32.868	36.549	-9.451	46.000
968.960	6.981	33.066	40.047	-13.953	54.000
Vertical					
276.380	-8.653	50.471	41.818	-4.182	46.000
414.120	-7.902	47.677	39.775	-6.225	46.000
483.960	-3.548	44.853	41.306	-4.694	46.000
501.420	-0.795	37.985	37.190	-8.810	46.000
553.800	-4.450	43.348	38.898	-7.102	46.000
968.960	8.191	35.720	43.911	-10.089	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 : Touch Note
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
276.380	-5.783	48.373	42.590	-3.410	46.000
355.920	-2.528	39.624	37.096	-8.904	46.000
483.960	-0.688	38.088	37.401	-8.599	46.000
553.800	2.510	36.103	38.613	-7.387	46.000
691.540	3.681	32.547	36.228	-9.772	46.000
968.960	6.981	33.322	40.303	-13.697	54.000
Vertical					
276.380	-8.653	51.228	42.575	-3.425	46.000
414.120	-7.902	47.284	39.382	-6.618	46.000
483.960	-3.548	45.327	41.780	-4.220	46.000
553.800	-4.450	44.153	39.703	-6.297	46.000
899.120	3.063	36.216	39.279	-6.721	46.000
968.960	8.191	35.041	43.232	-10.768	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.

5. RF antenna conducted test

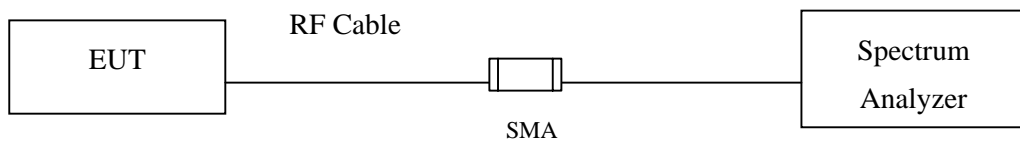
5.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2010
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2010
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2010
	8-WAY Power Divider	JFW	50PD-647 / 526770 0916	Apr., 2010

- 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.
 3. The power combiner is used for measure 11n mode.

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

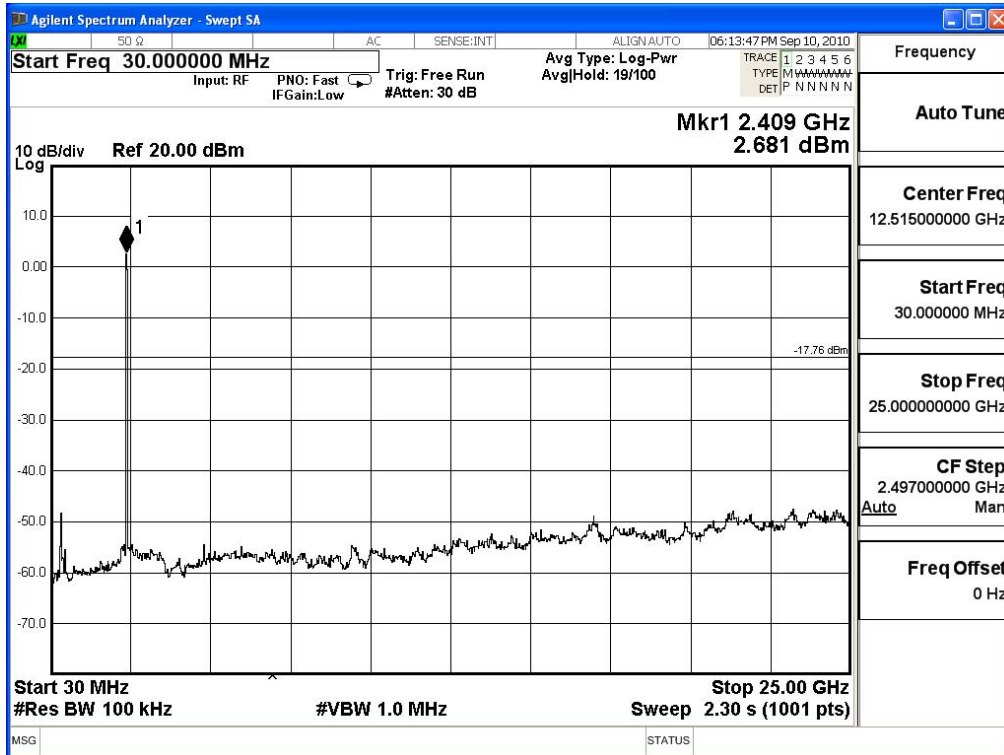
The measurement uncertainty

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

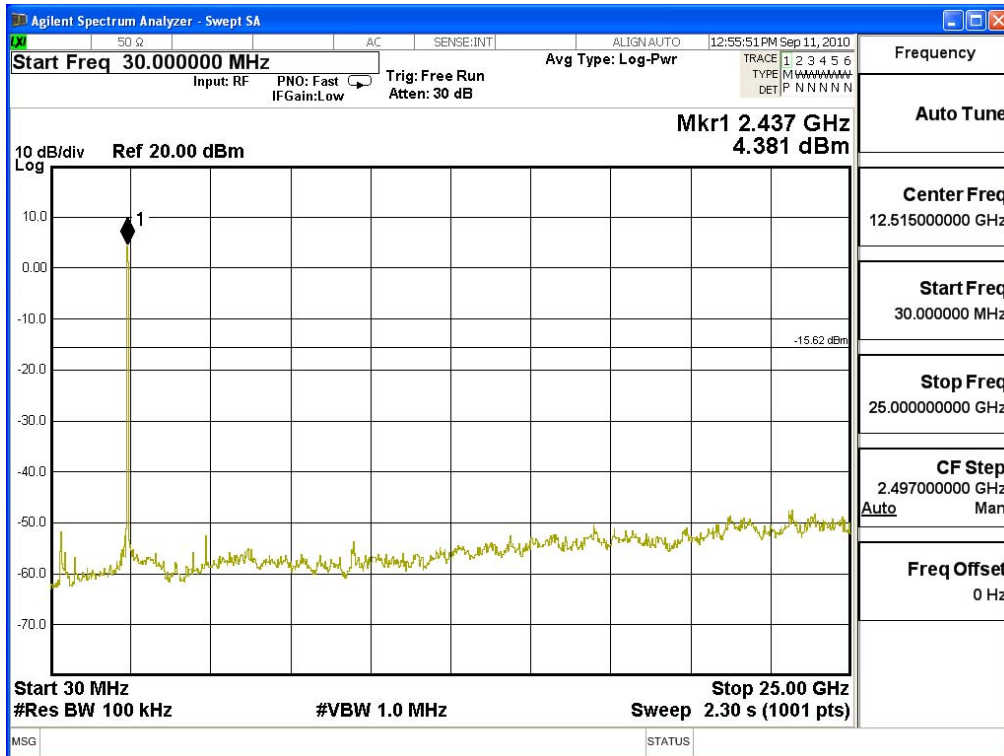
5.6. Test Result of RF antenna conducted test

Product : Touch Note
 Test Item : RF antenna conducted test
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

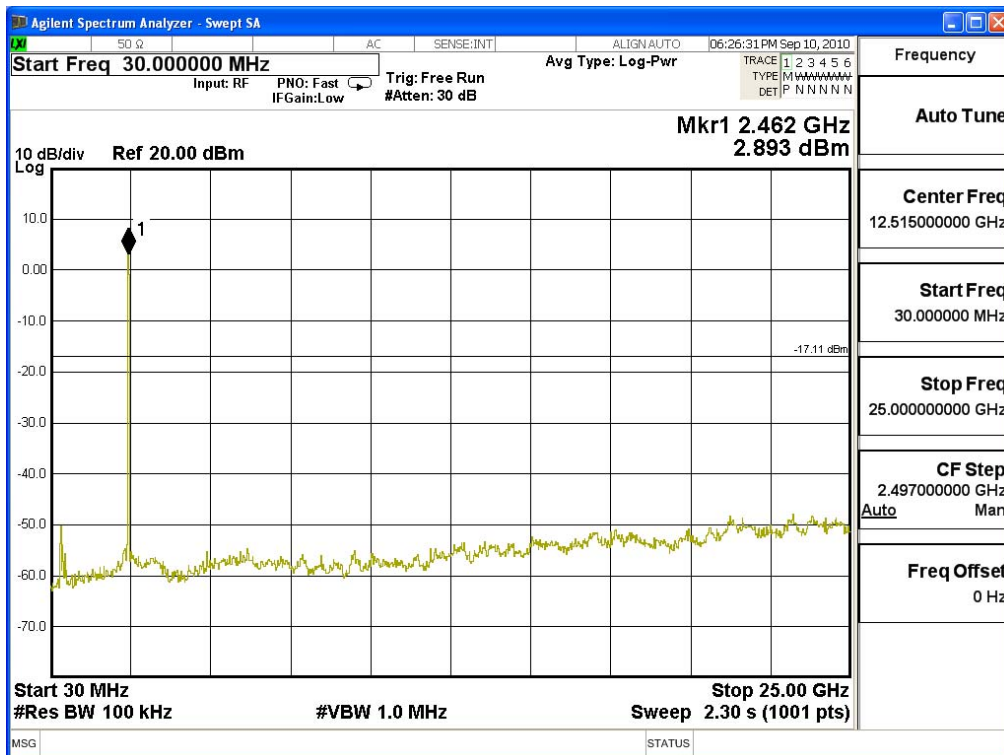
Channel 01 (2412MHz) 30-25GHz



Channel 06 (2437MHz) 30-25GHz

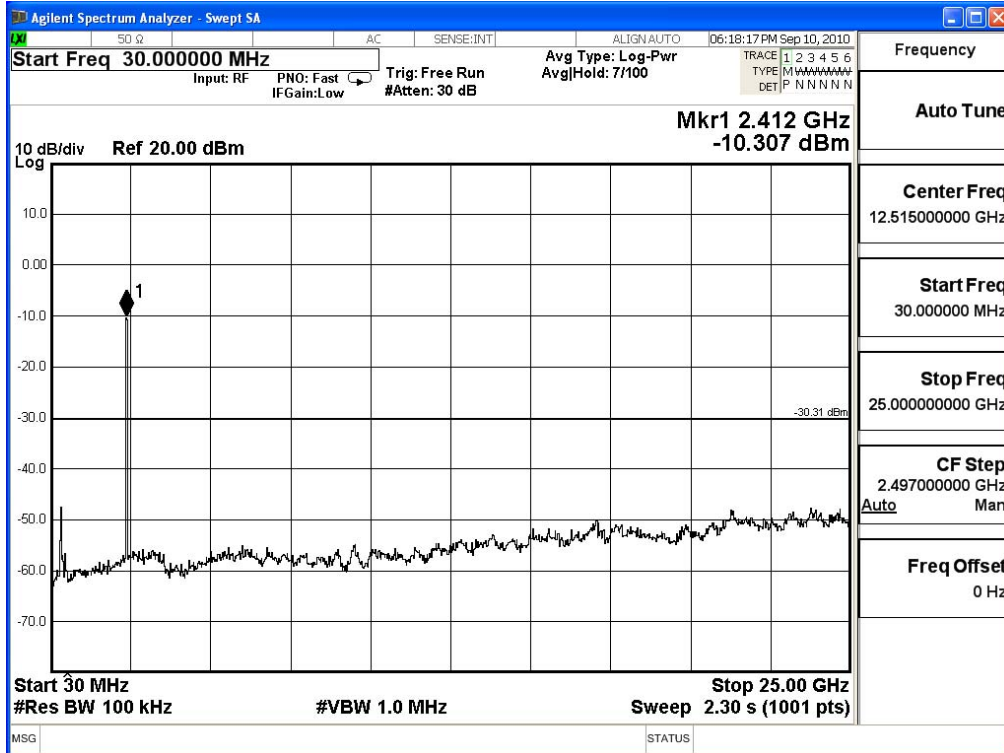


Channel 11 (2462MHz) 30-25GHz

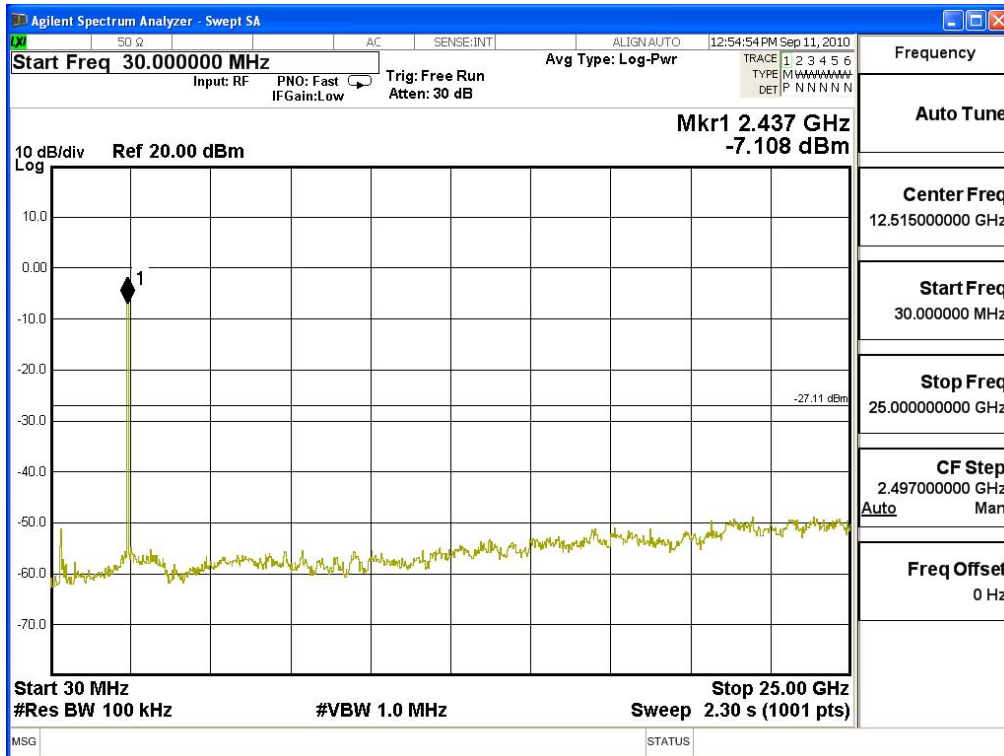


Product : Touch Note
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

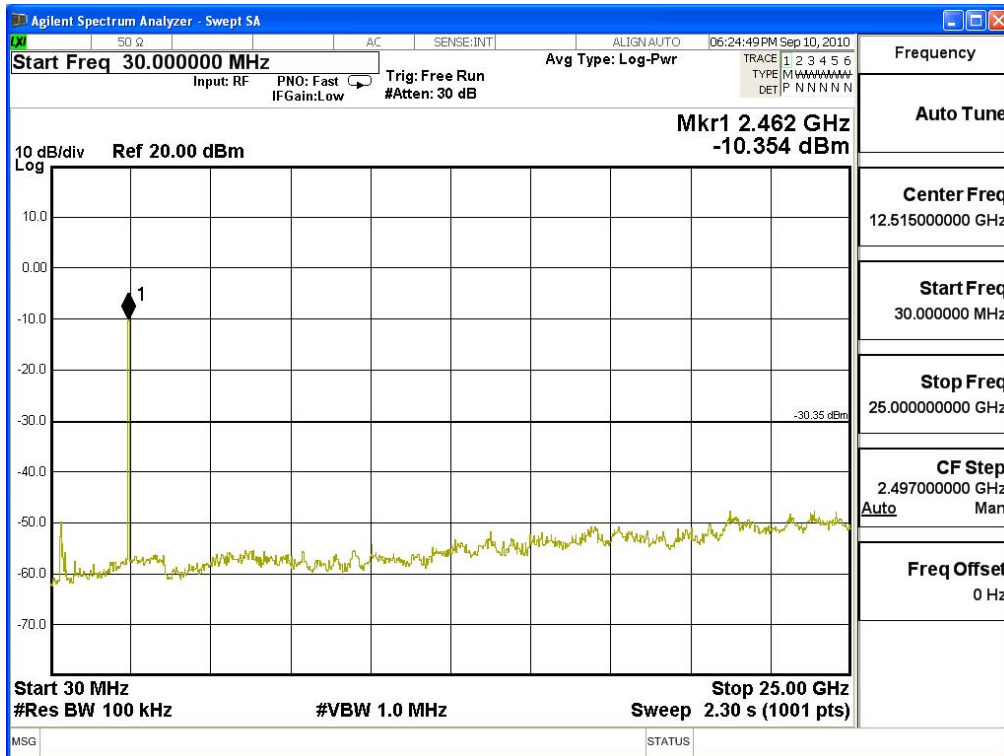
Channel 01 (2412MHz) 30-25GHz



Channel 06 (2437MHz) 30-25GHz

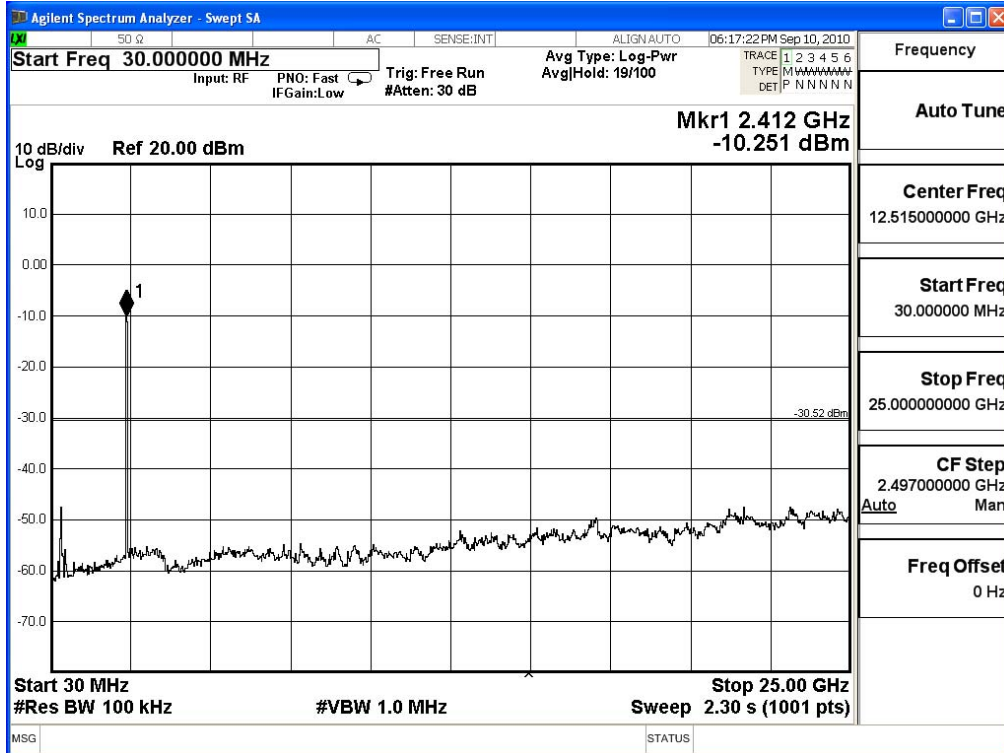


Channel 11 (2462MHz) 30-25GHz

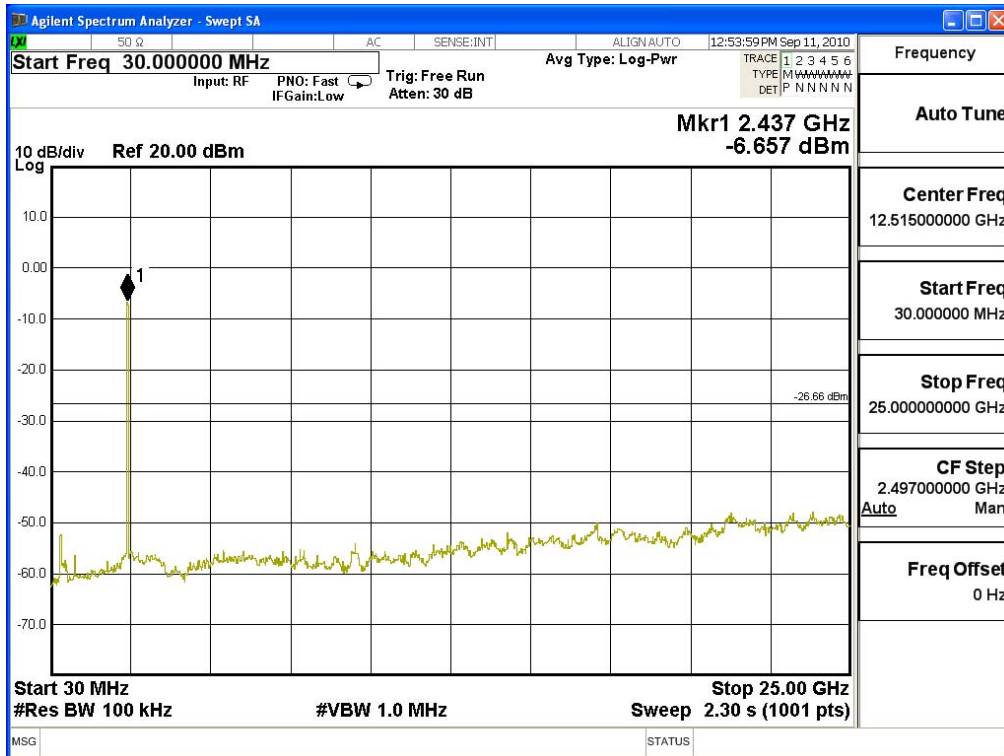


Product : Touch Note
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

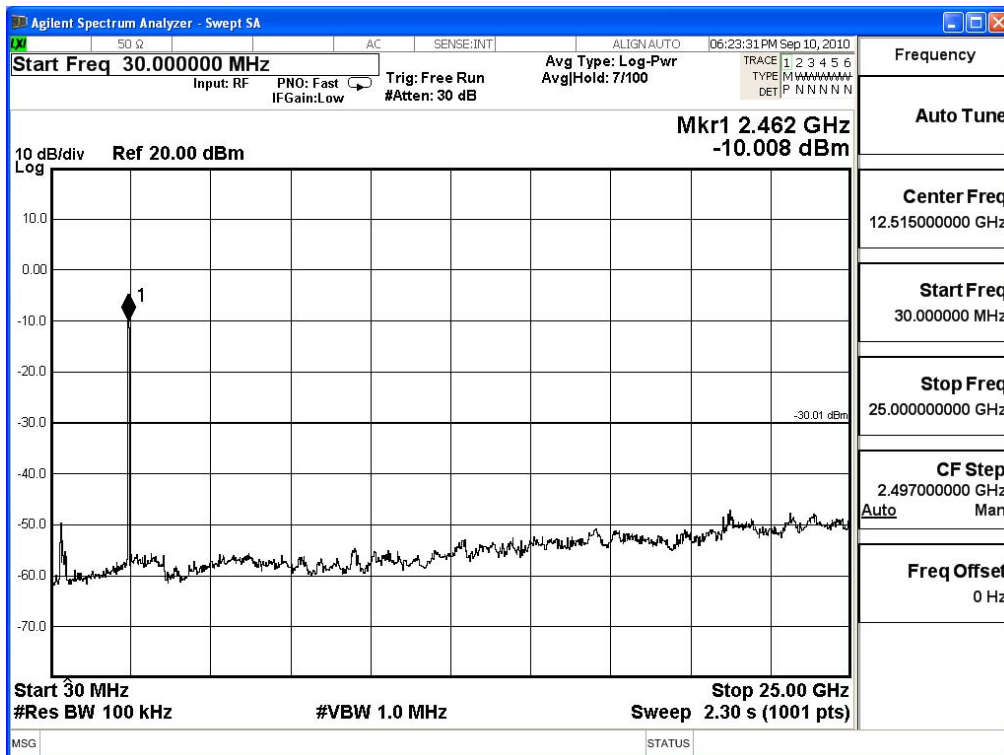
Channel 01 (2412MHz) 30-25GHz



Channel 06 (2437MHz) 30-25GHz

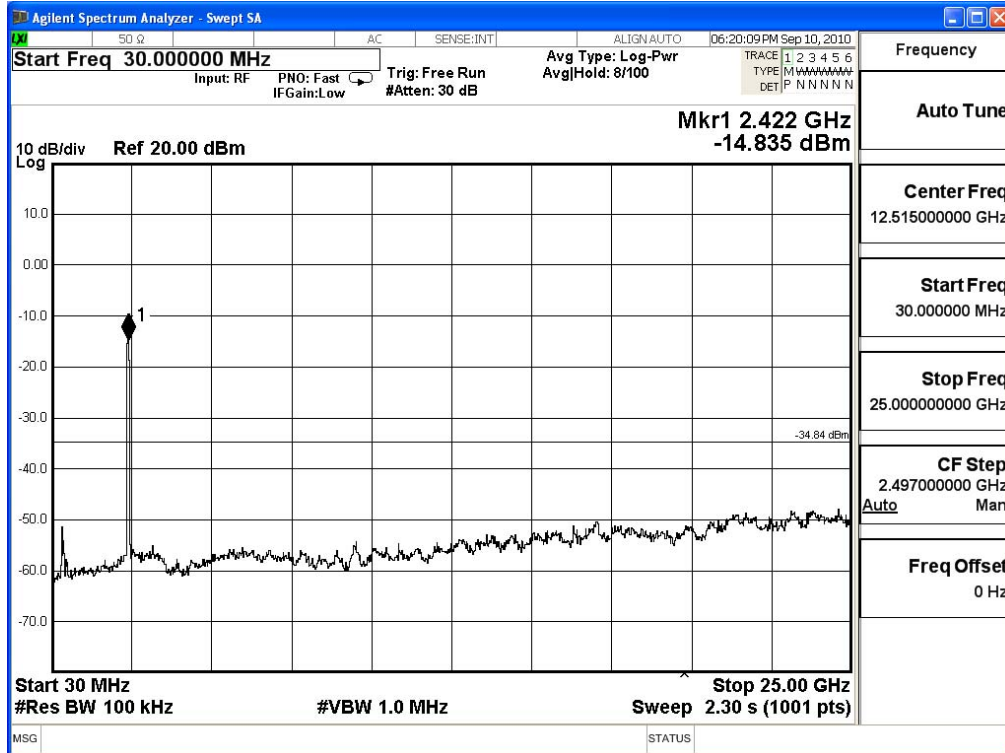


Channel 11 (2462MHz) 30-25GHz

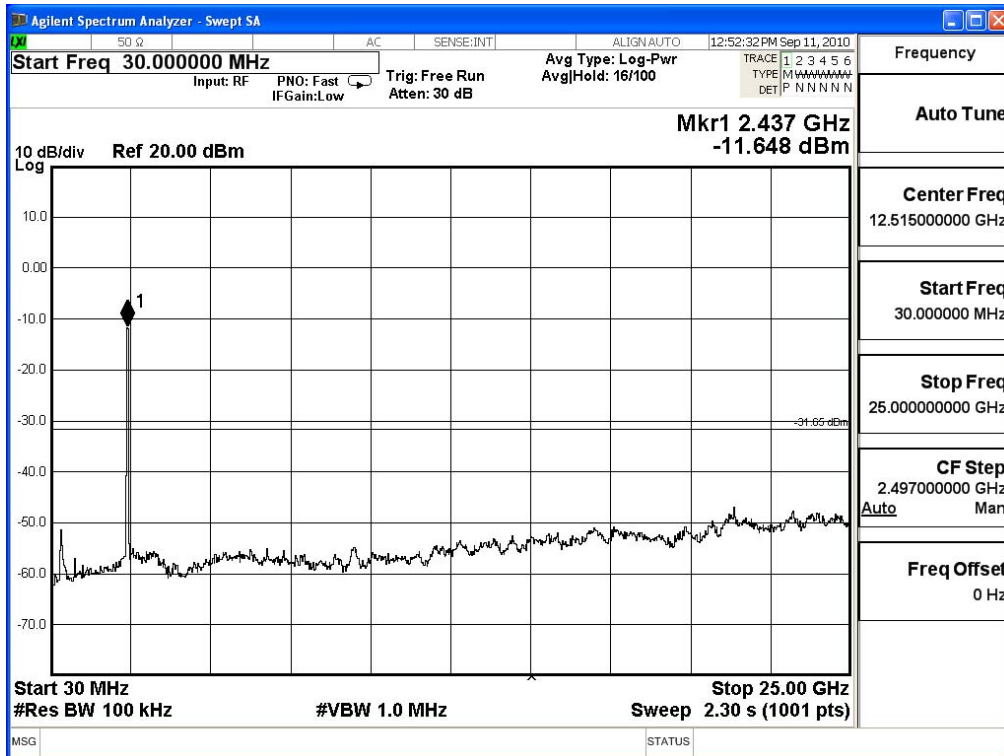


Product : Touch Note
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

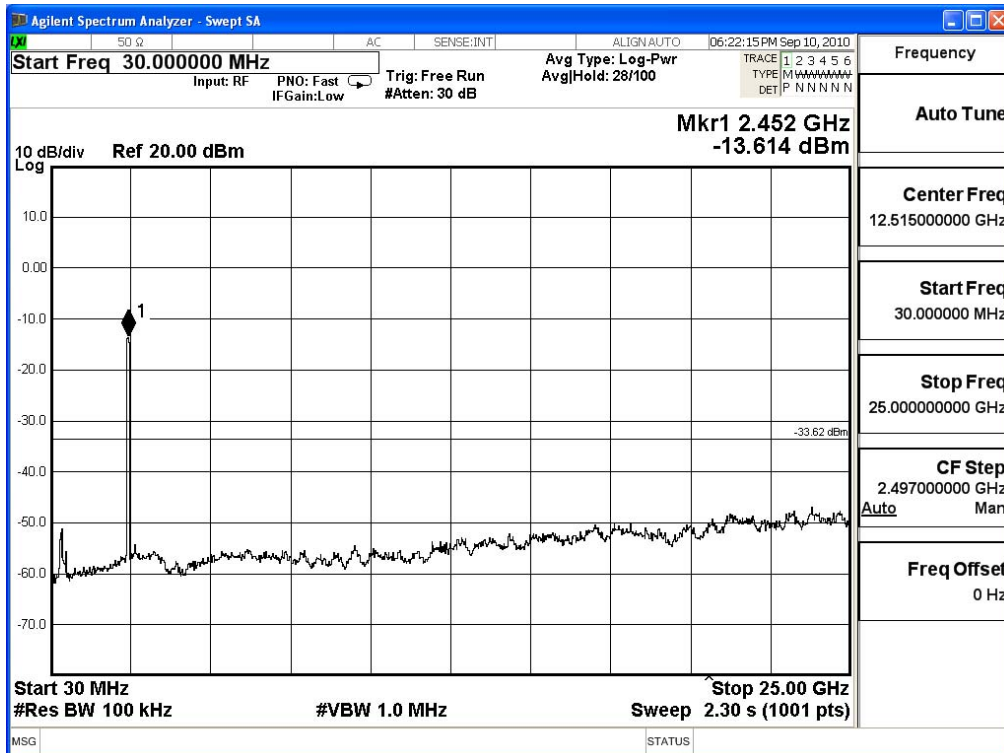
Channel 01 (2422MHz) 30-25GHz



Channel 04 (2437MHz) 30-25GHz



Channel 07 (2452MHz) 30-25GHz



6. Band Edge

6.1. Test Equipment

RF Conducted Measurement

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

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2010
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2010
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2010
	8-WAY Power Divider	JFW	50PD-647 / 526770 0916	Apr., 2010

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.
3. The power combiner is used for measure 11n mode.

RF Radiated Measurement:

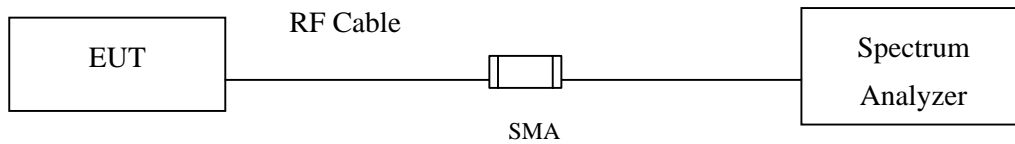
The following test equipments are used during the band edge tests:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2010
	X Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2010
	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2010
	X Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2010
	X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2010
	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2010
	X Coaxial Cable	Quietek	QTK-CABLE/ CAB5	Feb., 2010
	X Controller	Quietek	QTK-CONTROLLER/ CTRL3	N/A
	X Coaxial Switch	Anritsu	MP59B/6200265729	N/A

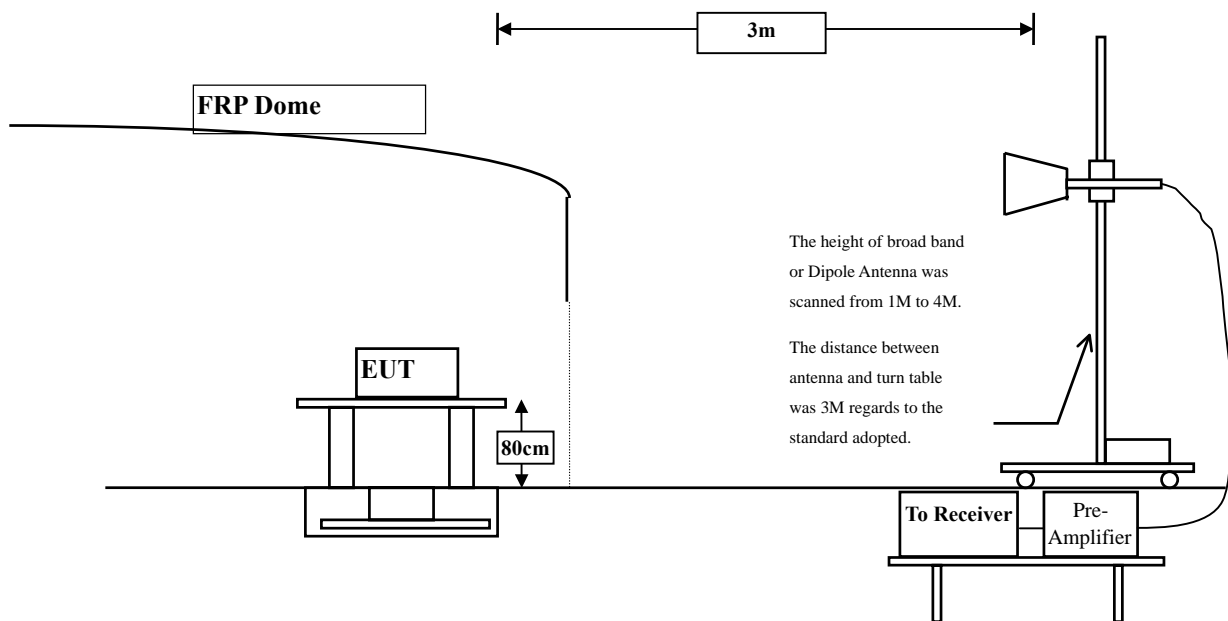
- Note:
1. All instruments are calibrated every one year.
 2. The test instruments marked by "X" are used to measure the final test results.

6.2. Test Setup

RF Conducted Measurement



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 : Touch Note
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2412	31.639	73.76	105.398	Peak
Vertical	2412	30.95	67.2	98.149	Peak

Note: 1:Spectrum Analyzer setting:

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

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2372.4	105.398	51.8	53.598	Peak
Vertical	2372.4	98.149	51.8	46.349	Peak

Note:

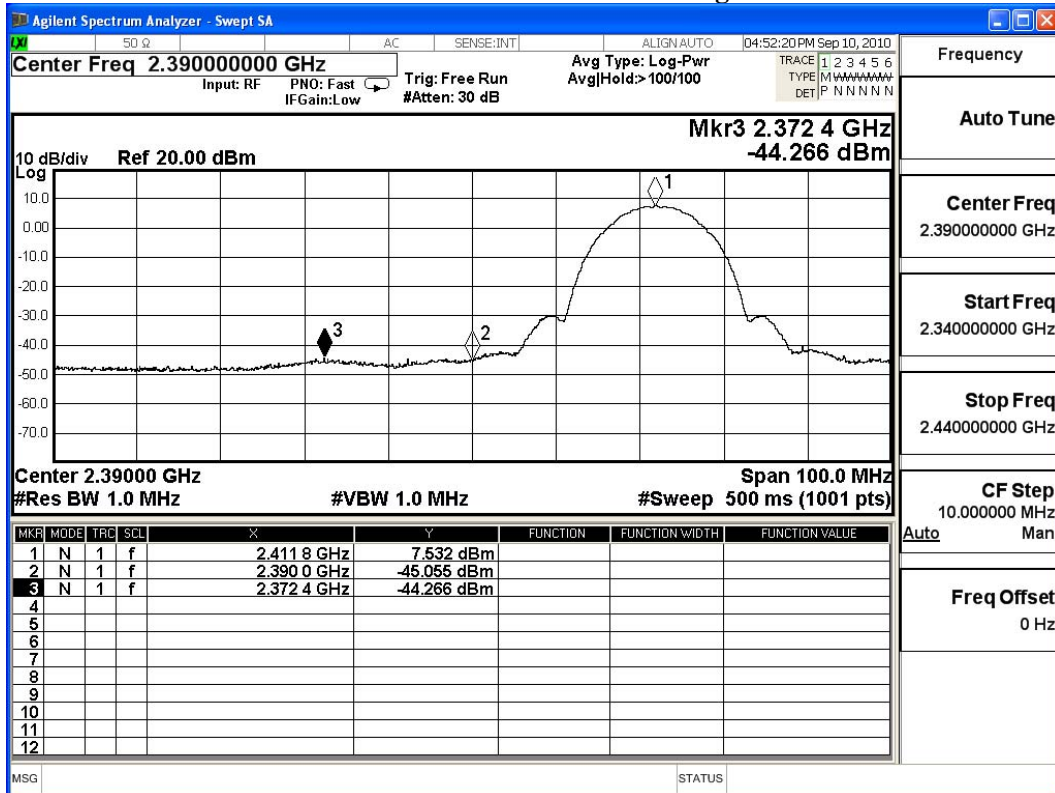
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

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



Product : Touch Note
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2462	32.019	68.7	100.719	Peak
Vertical	2462	31.29	61.5	92.79	Peak

Note: 1:Spectrum Analyzer setting:

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

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2483.9	100.719	50.666	50.053	Peak
Vertical	2483.9	92.79	50.666	42.124	Peak

Note:

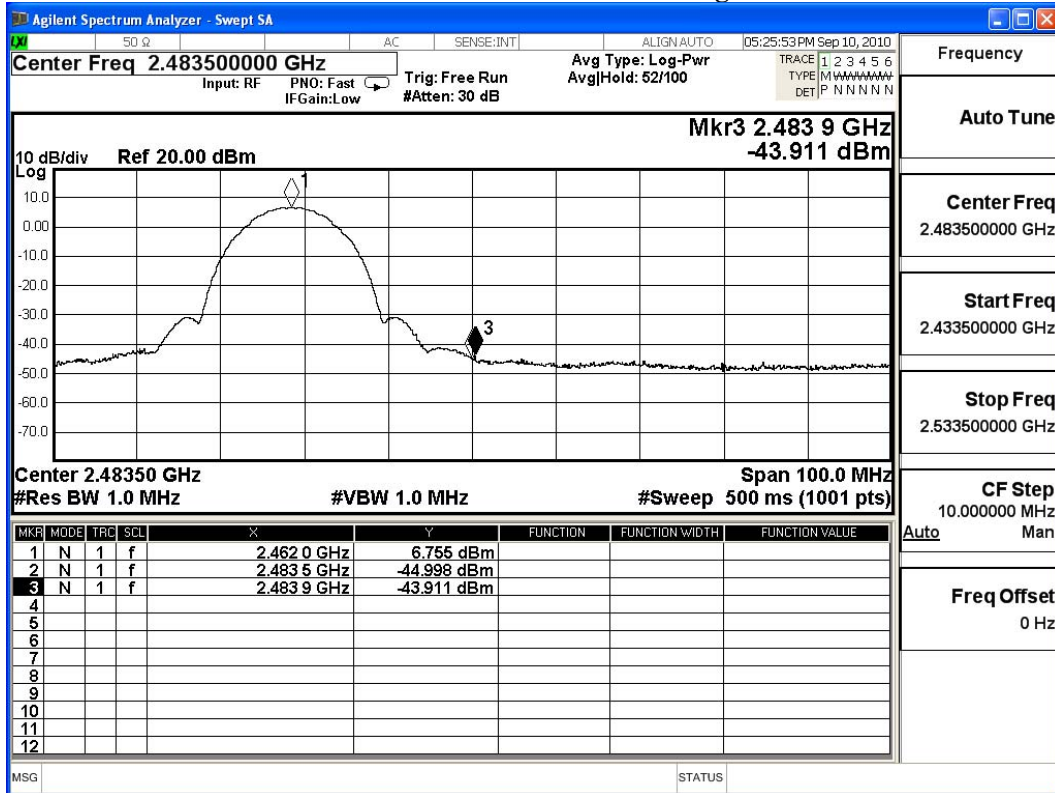
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = $F - \Delta$

F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Product : Touch Note
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2412	31.639	66.62	98.258	Peak
Vertical	2412	30.95	59.52	90.469	Peak

Note: 1:Spectrum Analyzer setting:

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

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2374.6	98.258	46.98	51.278	Peak
Vertical	2374.6	90.469	46.98	43.489	Peak

Note:

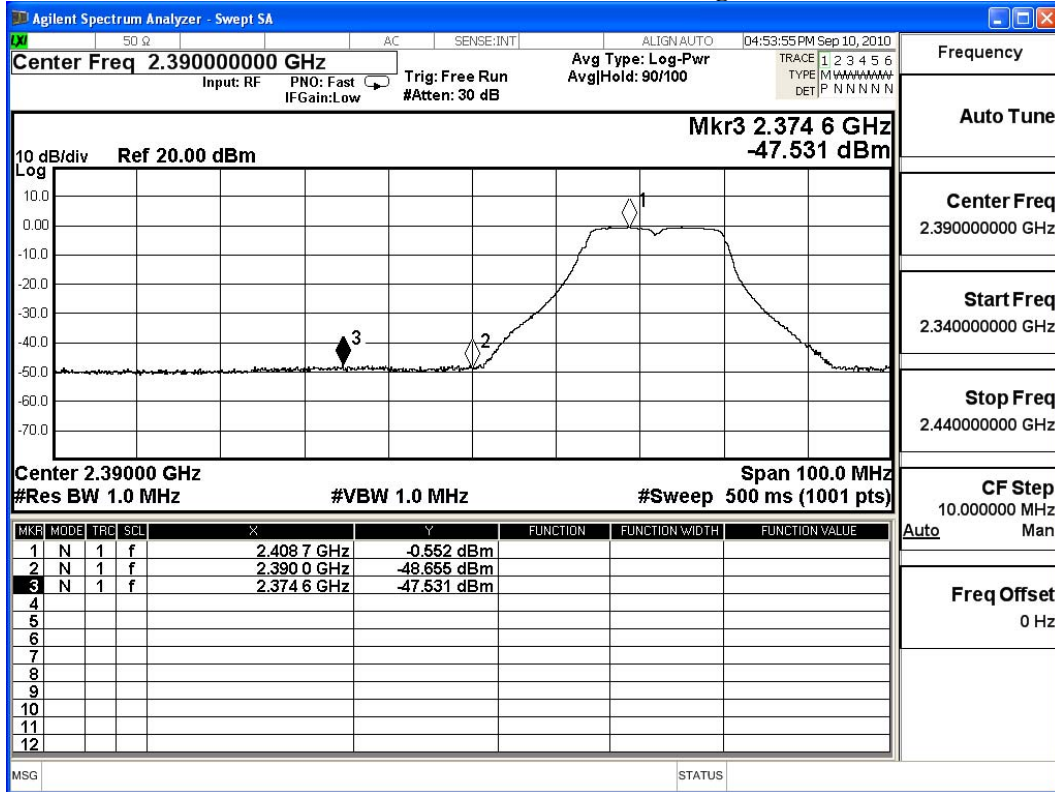
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

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



Product : Touch Note
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2462	32.019	62.55	94.569	Peak
Vertical	2462	31.29	55.26	86.55	Peak

Note: 1:Spectrum Analyzer setting:

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

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2485.6	94.569	48.542	46.027	Peak
Vertical	2485.6	86.55	48.542	38.008	Peak

Note:

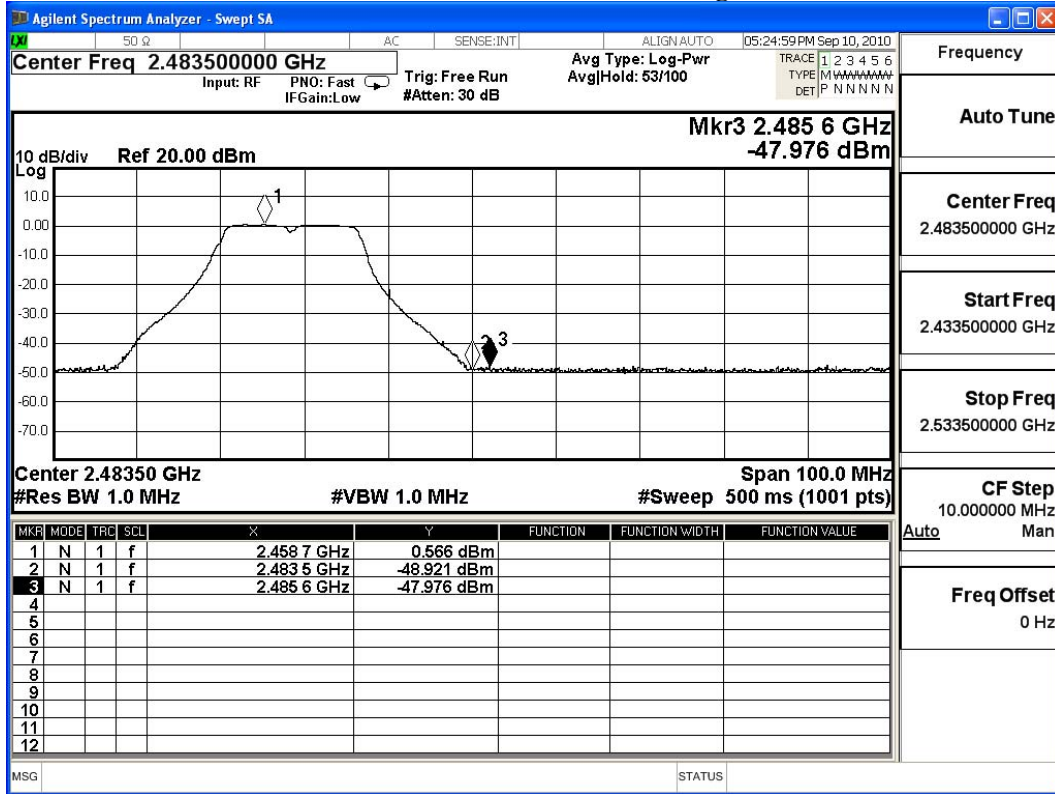
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

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



Frequency
Auto Tune
Center Freq 2.483500000 GHz
Start Freq 2.433500000 GHz
Stop Freq 2.533500000 GHz
CF Step 10.000000 MHz
Auto Man
Freq Offset 0 Hz

Product : Touch Note
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2412	31.639	67.79	99.428	Peak
Vertical	2412	30.95	60.78	91.729	Peak

Note: 1:Spectrum Analyzer setting:

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

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2376.8	99.428	48.392	51.036	Peak
Vertical	2376.8	91.729	48.392	43.337	Peak

Note:

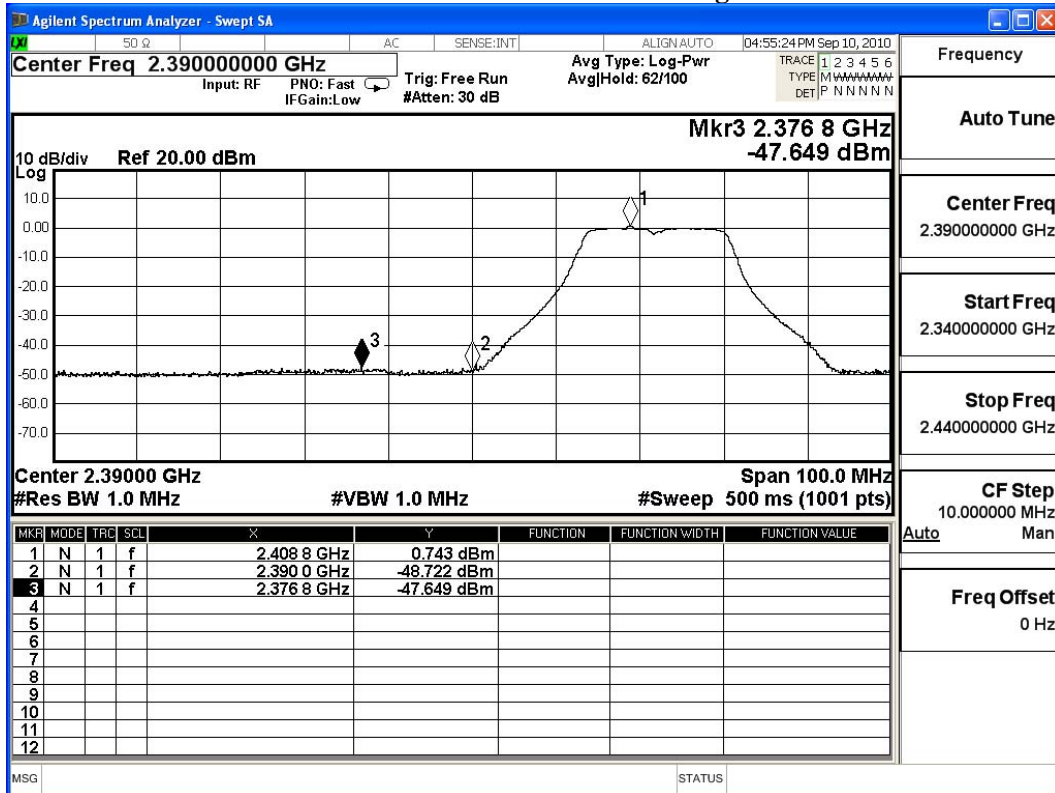
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

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



Product : Touch Note
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2462	32.019	62.04	94.059	Peak
Vertical	2462	31.29	54.58	85.87	Peak

Note: 1:Spectrum Analyzer setting:

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

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2488.8	94.059	48.45	45.609	Peak
Vertical	2488.8	85.87	48.45	37.42	Peak

Note:

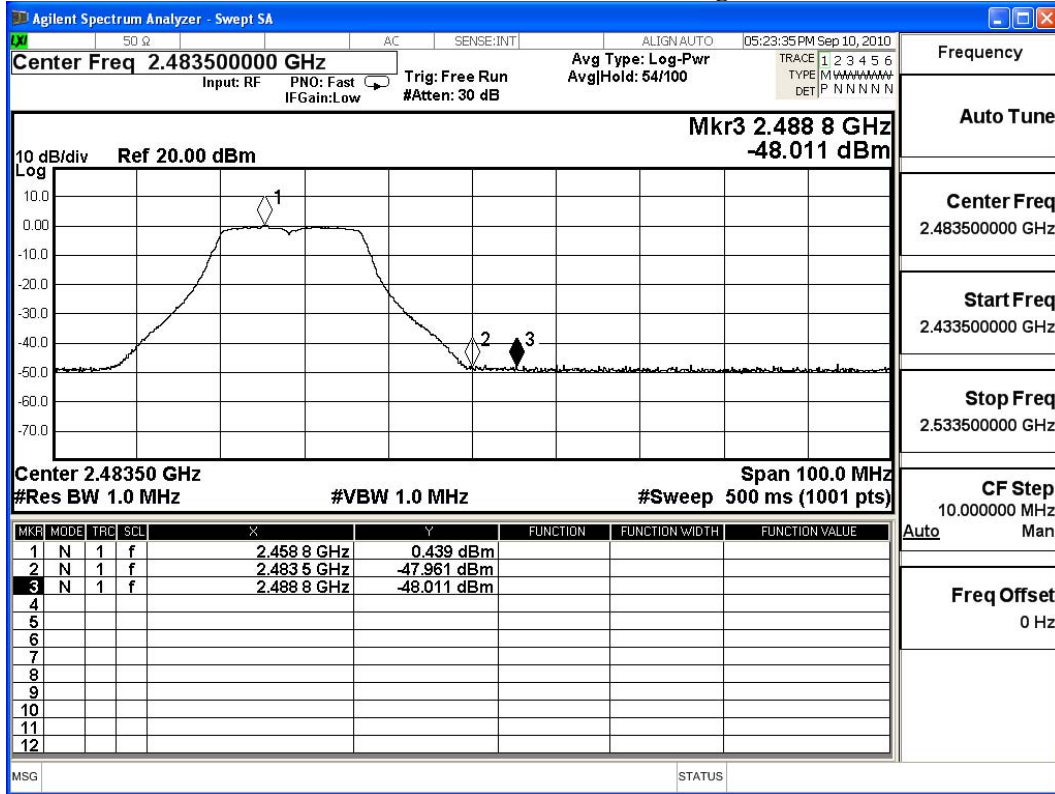
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

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



Product : Touch Note
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2422	31.715	63.03	94.745	Peak
Horizontal	2422	31.017	46.65	77.667	Average
Vertical	2422	31.017	56.32	87.337	Peak
Vertical	--	--	--	--	Average

Note: 1:Spectrum Analyzer setting:

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

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2388.6	94.745	35.256	59.489	Peak
Horizontal	2390	77.667	41.303	36.364	Average
Vertical	2388.6	87.337	35.256	52.081	Peak
Vertical	--	--	--	--	Average

Note:

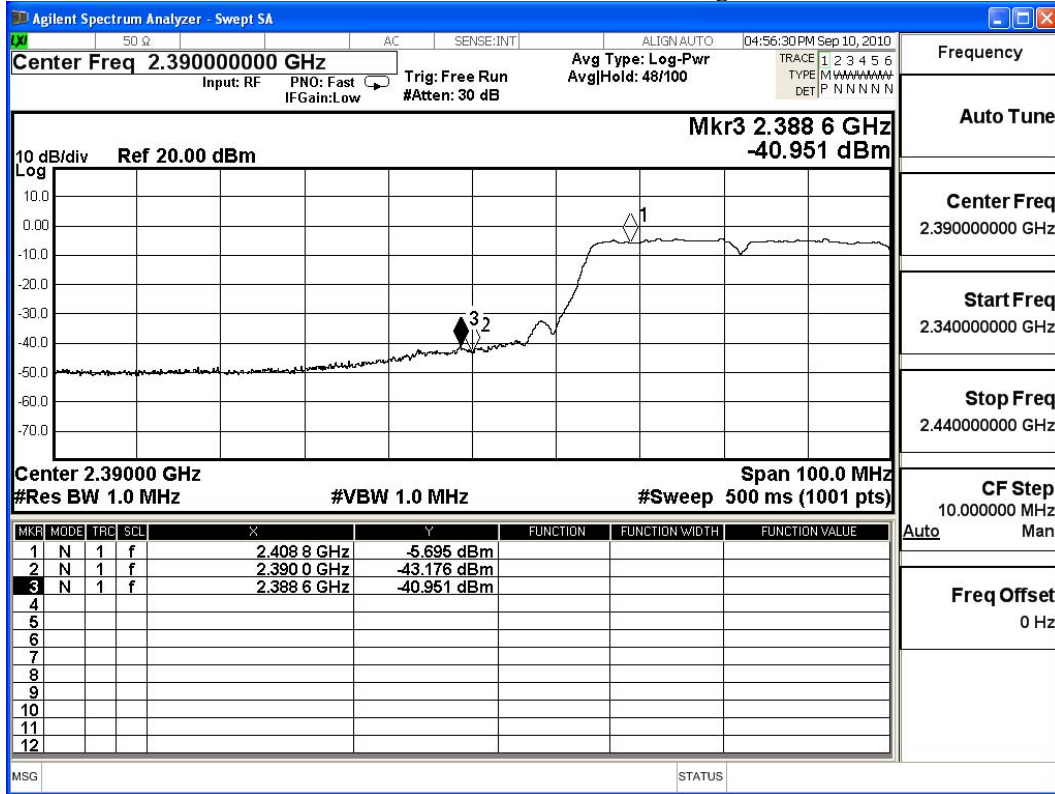
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

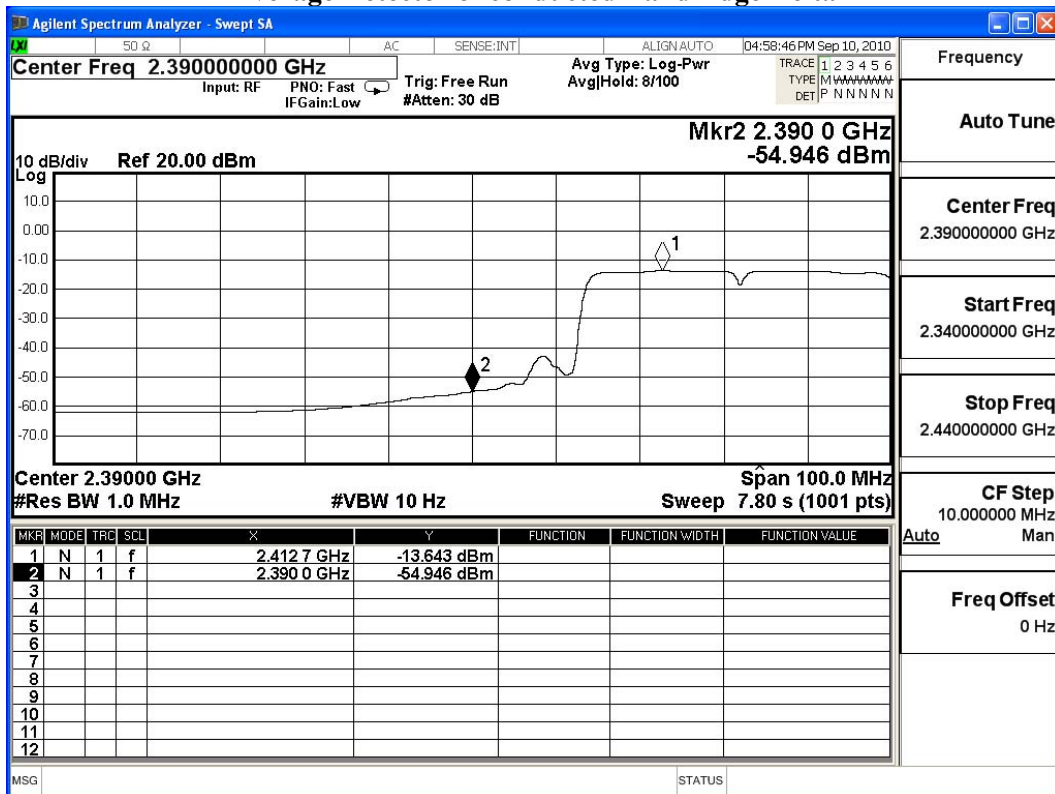
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Touch Note
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2452	31.944	61.03	92.974	Peak
Vertical	2452	31.222	53.98	85.202	Peak

Note: 1:Spectrum Analyzer setting:

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

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2490	92.974	44.364	48.61	Peak
Vertical	2490	85.202	44.364	40.838	Peak

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

