Test Report

Product Name	Wireless Thin Client (WebPad)
Model No	TX-4000
FCC ID.	BJM-TX4000

Applicant	TATUNG CO.
Address	22, Chungshan N. Rd., 3rd Sec. Taipei, Taiwan, 104, R.O.C.

Date of Receipt	July. 22, 2010
Issue Date	Aug. 11, 2010
Report No.	107325R-RFUSP42V01
Report Version	V1.0

Test Report Certification

Issue Date: Aug. 11, 2010
Report No.: 107325R-RFUSP42V01

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

Product Name	Wireless Thin Client (WebPad)
Applicant	TATUNG CO.
Address	22, Chungshan N. Rd., 3rd Sec. Taipei, Taiwan, 104, R.O.C.
Manufacturer	TATUNG CO.
Model No.	TX-4000
EUT Rated Voltage	AC 100-240V, 100-200V, 47-63Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	TATUNG
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2009 ANSI C63.4: 2003
Test Result	Complied

NVLAP Lab Code: 200533-0

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

Documented By : Leven Huang
(Senior Adm. Specialist / Leven Huang)

Tested By : NoNo Chang
(Engineer / NoNo Chang)

Approved By :
(Manager / Vincent Lin)

Testing Laboratory
0914

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Wireless Thin Client (WebPad)
Trade Name	TATUNG
Model No.	TX-4000
FCC ID.	BJM-TX4000
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: up to 150Mbps
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type	PCB Antenna
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Power Adapter	MFR: UMEC, M/N: UP0501Q-16P Input: AC 100-240V, 100-200V, 47-63Hz, 2.0A Output: DC 16V, 3.13A Cable Out: Shielded, 1.2m, with one ferrite core bonded. Power Cord: Non-shielded, 1.6m
Contain Module	AzureWave / AW-NE768H

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	TATUNG	TWE-5203-01	PCB Antenna	0.19dBi in 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 Wireless Thin Client (WebPad) with a built-in 2.4GHz WLAN transceiver.
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(20M-BW) is 7.2Mbps and 、802.11n(40M-BW) is 15Mbps)
4. 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
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 an Wireless Thin Client (WebPad) 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 Wireless Thin Client (WebPad), 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 Wireless Thin Client (WebPad) 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)

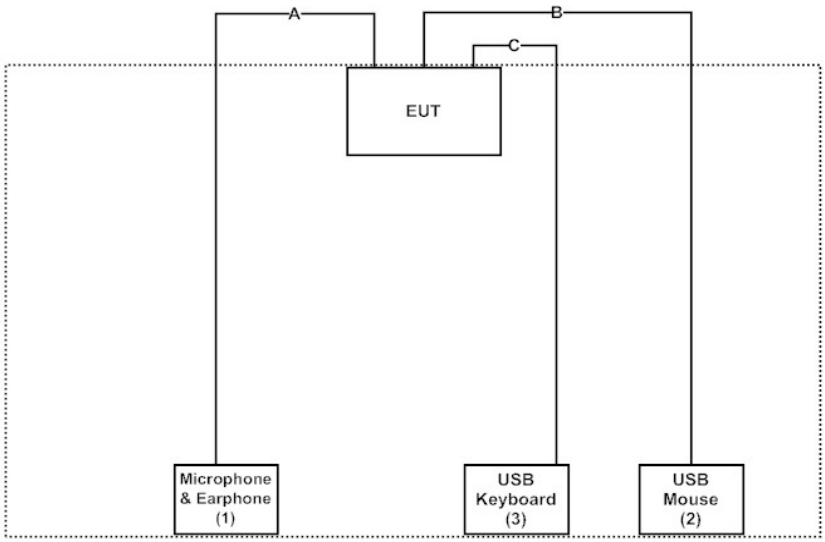
1.3. Tested System Details

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	Microphone & Earphone	PCHOME	N/A	N/A	N/A	N/A
2	USB Mouse	DELL	M056U0A	F0Y01YEG	DoC	N/A
3	USB Keyboard	DELL	SK-8115	MY-0DJ325-71619-6A3-1914	DoC	N/A

Signal Cable Type		Signal cable Description
A	Microphone & Earphone Cable	Non-Shielded,1.2m
B	USB Mouse Cable	Shielded,1m
C	USB Keyboard Cable	Shielded,1m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown in Section 1.3.

(2) Execute “QA_RT3091”Ver 1.5.6.2 on the EUT.

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

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

(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 : http://www.quietek.com/

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

Accreditation on NVLAP
NVLAP Lab Code: 200533-0

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E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

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0914

2. Conducted Emission

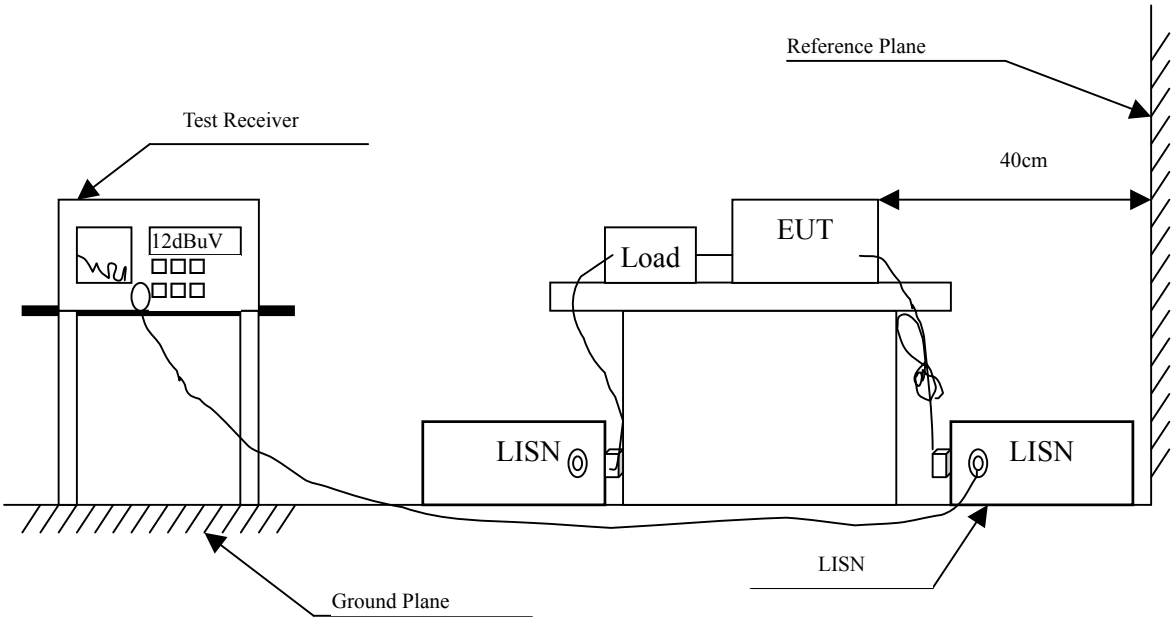
2.1. Test Equipment

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

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 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 : Wireless Thin Client (WebPad)
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.166	9.746	36.650	46.395	-19.148	65.543
0.357	9.650	34.220	43.870	-16.216	60.086
0.896	9.670	30.050	39.720	-16.280	56.000
1.791	9.680	30.570	40.250	-15.750	56.000
3.525	9.700	29.410	39.110	-16.890	56.000
14.158	9.950	42.380	52.330	-7.670	60.000
Average					
0.166	9.746	28.440	38.185	-17.358	55.543
0.357	9.650	31.230	40.880	-9.206	50.086
0.896	9.670	27.350	37.020	-8.980	46.000
1.791	9.680	28.990	38.670	-7.330	46.000
3.525	9.700	23.920	33.620	-12.380	46.000
14.158	9.950	34.600	44.550	-5.450	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 : Wireless Thin Client (WebPad)
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.166	9.748	27.660	37.407	-28.136	65.543
0.298	9.660	30.320	39.980	-21.791	61.771
0.896	9.670	28.390	38.060	-17.940	56.000
2.091	9.680	29.850	39.530	-16.470	56.000
3.584	9.700	29.250	38.950	-17.050	56.000
13.920	9.950	40.290	50.240	-9.760	60.000
Average					
0.166	9.748	3.760	13.507	-42.036	55.543
0.298	9.660	27.210	36.870	-14.901	51.771
0.896	9.670	26.140	35.810	-10.190	46.000
2.091	9.680	26.480	36.160	-9.840	46.000
3.584	9.700	22.960	32.660	-13.340	46.000
13.920	9.950	33.260	43.210	-6.790	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

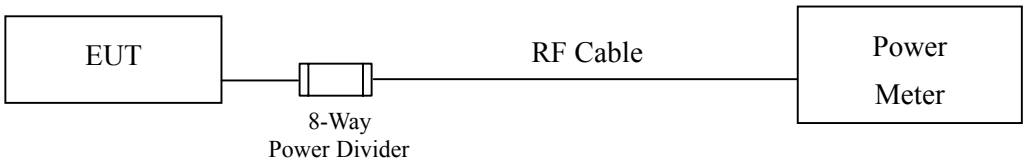
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2010
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2010
	8-WAY Power Divider	JFW	50PD-647 / 526770 0916	Apr., 2010

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 : Wireless Thin Client (WebPad)
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Ant A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	17.31	--	--	--	20.22	<30dBm	Pass
06	2437	16.39	16.02	15.89	16.21	19.39	<30dBm	Pass
11	2462	15.37	--	--	--	18.23	<30dBm	Pass

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

Product : Wireless Thin Client (WebPad)
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Ant A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	7.63	--	--	--	--	--	--	--	18.41	<30dBm	Pass
06	2437	7.1	6.88	6.94	6.95	6.95	6.94	6.92	6.94	17.95	<30dBm	Pass
11	2462	5.92	--	--	--	--	--	--	--	16.79	<30dBm	Pass

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

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

Ant A

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	7.2		
		Measurement Level (dBm)										
01	2412	8.62	--	--	--	--	--	--	--	18.18	<30dBm	Pass
06	2437	8.12	8.01	8.02	8.05	8.03	8.09	8.06	8.09	17.7	<30dBm	Pass
11	2462	7.44	--	--	--	--	--	--	--	16.99	<30dBm	Pass

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

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

Ant A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		15	30	45	60	90	120	135	150	15		
		Measurement Level (dBm)										
01	2422	8.86	--	--	--	--	--	--	--	18	<30dBm	Pass
04	2437	8.67	8.61	8.62	8.59	8.65	8.6	8.54	8.64	17.89	<30dBm	Pass
07	2452	7.96	--	--	--	--	--	--	--	17.18	<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:

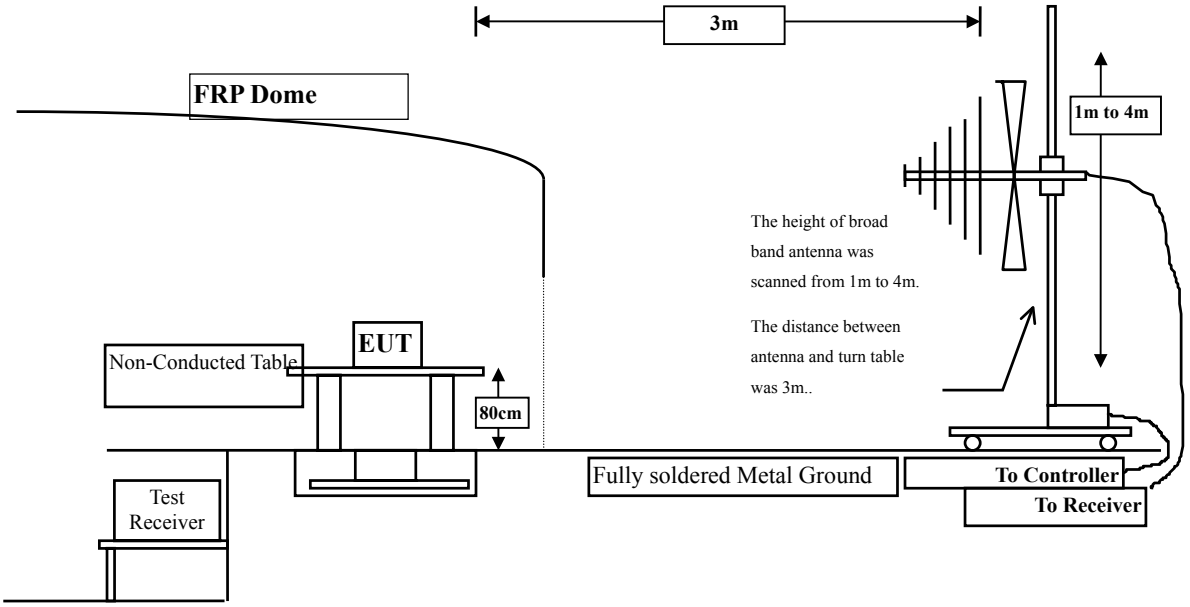
Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2009
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2009
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2010
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2009
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2010
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2009
	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.

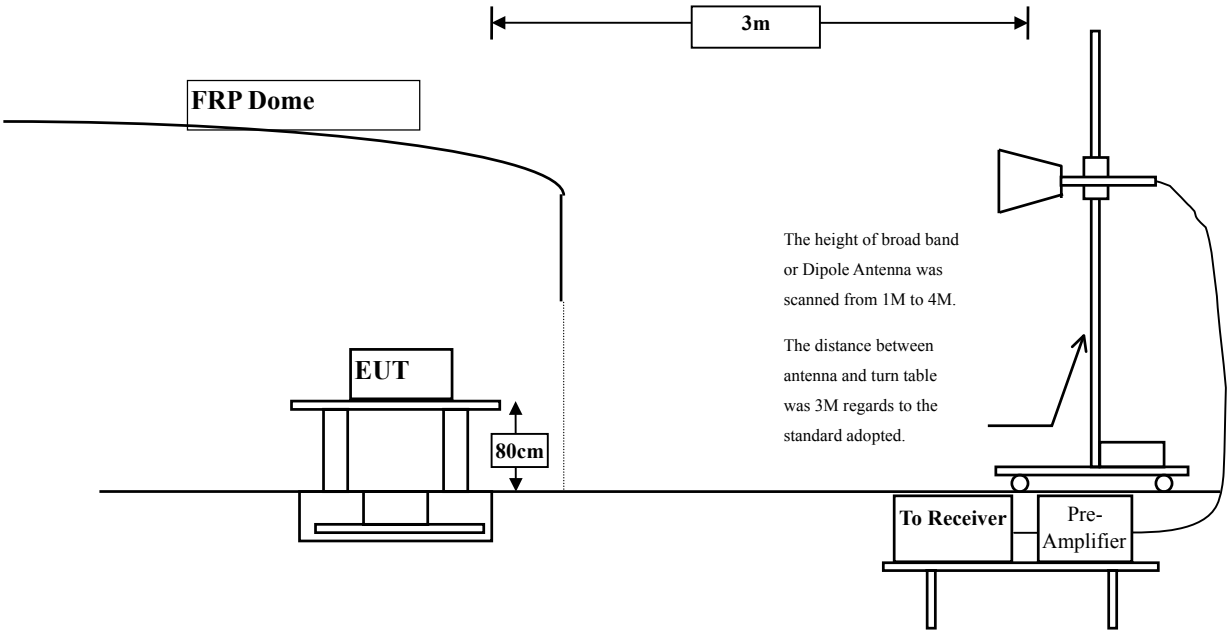
2. The test instruments marked with "X" are used to measure the final test results.

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 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 harminics is checked.

4.5. Uncertainty

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

4.6. Test Result of Radiated Emission

Product : Wireless Thin Client (WebPad)
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	41.430	44.691	-29.309	74.000
7236.000	10.650	35.680	46.330	-27.670	74.000
9648.000	13.337	35.350	48.686	-25.314	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	43.800	50.221	-23.779	74.000
7236.000	11.495	35.390	46.885	-27.115	74.000
9648.000	13.807	35.820	49.626	-24.374	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 : Wireless Thin Client (WebPad)
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	37.610	40.647	-33.353	74.000
7311.000	11.795	35.270	47.064	-26.936	74.000
9748.000	12.635	35.940	48.575	-25.425	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	39.600	45.411	-28.589	74.000
7311.000	12.630	35.070	47.699	-26.301	74.000
9748.000	13.126	36.140	49.266	-24.734	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 : Wireless Thin Client (WebPad)
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	36.640	39.497	-34.503	74.000
7386.000	12.127	34.270	46.398	-27.602	74.000
9848.000	12.852	36.210	49.063	-24.937	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	38.230	43.750	-30.250	74.000
7386.000	13.254	35.170	48.424	-25.576	74.000
9848.000	13.367	36.000	49.367	-24.633	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 : Wireless Thin Client (WebPad)
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	38.590	41.851	-32.149	74.000
7236.000	10.650	36.230	46.880	-27.120	74.000
9648.000	13.337	35.590	48.926	-25.074	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	37.710	44.131	-29.869	74.000
7236.000	11.495	36.100	47.595	-26.405	74.000
9648.000	13.807	35.520	49.326	-24.674	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 : Wireless Thin Client (WebPad)
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	37.090	40.127	-33.873	74.000
7311.000	11.795	34.540	46.334	-27.666	74.000
9748.000	12.635	37.660	50.295	-23.705	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	36.690	42.501	-31.499	74.000
7311.000	12.630	36.150	48.779	-25.221	74.000
9748.000	13.126	36.160	49.286	-24.714	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 : Wireless Thin Client (WebPad)
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	37.030	39.887	-34.113	74.000
7386.000	12.127	34.740	46.868	-27.132	74.000
9848.000	12.852	35.950	48.803	-25.197	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	37.700	43.220	-30.780	74.000
7386.000	13.254	34.160	47.414	-26.586	74.000
9848.000	13.367	36.200	49.567	-24.433	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 : Wireless Thin Client (WebPad)
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	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	37.000	40.261	-33.739	74.000
7236.000	10.650	36.520	47.170	-26.830	74.000
9648.000	13.337	35.490	48.826	-25.174	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	37.030	43.451	-30.549	74.000
7236.000	11.495	35.580	47.075	-26.925	74.000
9648.000	13.807	36.140	49.946	-24.054	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 : Wireless Thin Client (WebPad)
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	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	37.580	40.617	-33.383	74.000
7311.000	11.795	35.070	46.864	-27.136	74.000
9748.000	12.635	36.340	48.975	-25.025	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	37.310	43.121	-30.879	74.000
7311.000	12.630	35.720	48.349	-25.651	74.000
9748.000	13.126	36.450	49.576	-24.424	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 : Wireless Thin Client (WebPad)
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	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	37.970	40.827	-33.173	74.000
7386.000	12.127	34.620	46.748	-27.252	74.000
9848.000	12.852	36.420	49.273	-24.727	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	37.230	42.750	-31.250	74.000
7386.000	13.254	34.690	47.944	-26.056	74.000
9848.000	13.367	36.460	49.827	-24.173	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 : Wireless Thin Client (WebPad)
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2422MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4844.000	3.171	37.230	40.401	-33.599	74.000
7266.000	11.162	35.490	46.652	-27.348	74.000
9688.000	12.964	35.420	48.385	-25.615	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4844.000	6.178	36.910	43.088	-30.912	74.000
7266.000	11.982	35.100	47.082	-26.918	74.000
9688.000	13.507	36.130	49.638	-24.362	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 : Wireless Thin Client (WebPad)
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	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	37.100	40.137	-33.863	74.000
7311.000	11.795	34.840	46.634	-27.366	74.000
9748.000	12.635	35.810	48.445	-25.555	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	36.670	42.481	-31.519	74.000
7311.000	12.630	35.000	47.629	-26.371	74.000
9748.000	13.126	35.570	48.696	-25.304	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 : Wireless Thin Client (WebPad)
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	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4904.000	2.914	36.680	39.595	-34.405	74.000
7356.000	11.995	34.510	46.504	-27.496	74.000
9808.000	12.475	35.900	48.375	-25.625	74.000
Average					
Detector:					
--					
Vertical					
4904.000	5.530	36.620	42.151	-31.849	74.000
7356.000	13.005	34.670	47.674	-26.326	74.000
9808.000	12.901	36.030	48.931	-25.069	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 : Wireless Thin Client (WebPad)
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
138.640	-10.435	40.392	29.957	-13.543	43.500
198.780	-10.661	49.141	38.480	-5.020	43.500
322.940	-4.442	42.276	37.834	-8.166	46.000
586.780	3.436	34.681	38.117	-7.883	46.000
800.180	5.141	37.859	43.000	-3.000	46.000
974.780	6.652	38.538	45.190	-8.810	54.000
Vertical					
59.100	-4.097	38.667	34.570	-5.430	40.000
224.000	-8.699	36.624	27.925	-18.075	46.000
373.380	-2.373	33.078	30.705	-15.295	46.000
623.640	-2.631	35.238	32.607	-13.393	46.000
800.180	2.801	39.513	42.314	-3.686	46.000
968.960	8.191	28.611	36.802	-17.198	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 : Wireless Thin Client (WebPad)
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
64.920	-12.353	40.886	28.533	-11.467	40.000
229.820	-8.162	48.172	40.010	-5.990	46.000
400.540	-2.276	37.407	35.131	-10.869	46.000
586.780	3.436	34.165	37.601	-8.399	46.000
798.240	5.148	34.779	39.927	-6.073	46.000
922.400	6.334	27.806	34.140	-11.860	46.000
Vertical					
59.100	-4.097	39.785	35.688	-4.312	40.000
198.780	-8.221	34.769	26.548	-16.952	43.500
375.320	-2.029	33.021	30.992	-15.008	46.000
522.760	-0.334	33.902	33.568	-12.432	46.000
800.180	2.801	40.383	43.184	-2.816	46.000
996.120	4.019	35.798	39.817	-14.183	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 : Wireless Thin Client (WebPad)
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	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
64.920	-12.353	43.243	30.890	-9.110	40.000
208.480	-11.062	47.797	36.734	-6.766	43.500
400.540	-2.276	36.941	34.665	-11.335	46.000
586.780	3.436	35.659	39.095	-6.905	46.000
798.240	5.148	36.306	41.454	-4.546	46.000
1000.000	9.119	34.703	43.822	-10.178	54.000
Vertical					
57.160	-4.403	40.220	35.817	-4.183	40.000
198.780	-8.221	35.004	26.783	-16.717	43.500
373.380	-2.373	33.184	30.811	-15.189	46.000
623.640	-2.631	35.200	32.569	-13.431	46.000
796.300	2.831	39.543	42.374	-3.626	46.000
998.060	4.176	40.450	44.626	-9.374	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 : Wireless Thin Client (WebPad)
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	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
64.920	-12.353	41.898	29.545	-10.455	40.000
212.360	-10.881	47.190	36.309	-7.191	43.500
400.540	-2.276	37.967	35.691	-10.309	46.000
586.780	3.436	34.996	38.432	-7.568	46.000
798.240	5.148	37.715	42.863	-3.137	46.000
1000.000	9.119	37.000	46.119	-7.881	54.000
Vertical					
59.100	-4.097	39.127	35.030	-4.970	40.000
198.780	-8.221	33.527	25.306	-18.194	43.500
373.380	-2.373	33.299	30.926	-15.074	46.000
522.760	-0.334	33.208	32.874	-13.126	46.000
798.240	2.808	39.697	42.505	-3.495	46.000
924.340	5.550	33.208	38.758	-7.242	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

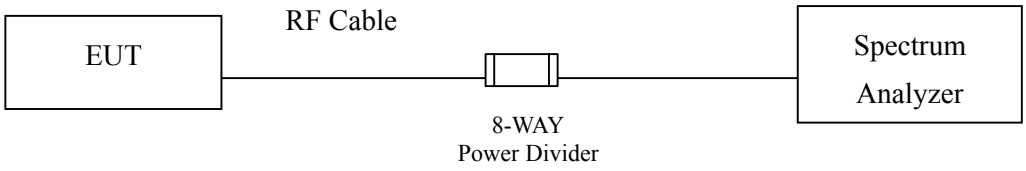
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	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.

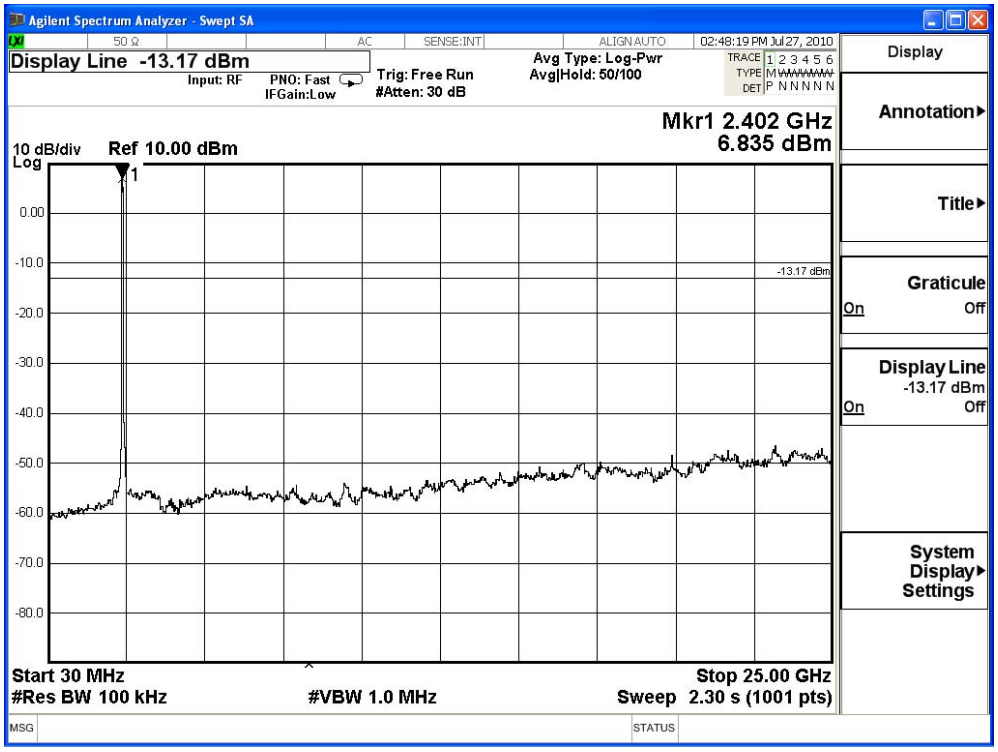
5.5. Uncertainty

The measurement uncertainty
Conducted is defined as ± 1.27dB

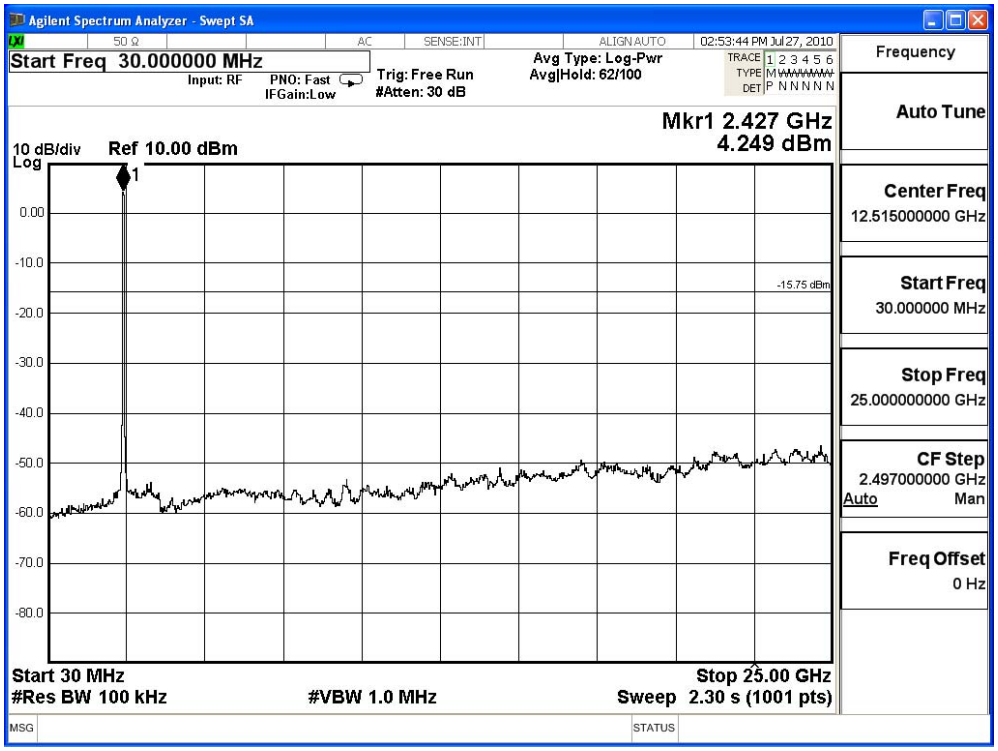
5.6. Test Result of RF antenna conducted test

Product : Wireless Thin Client (WebPad)
Test Item : RF antenna conducted test
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

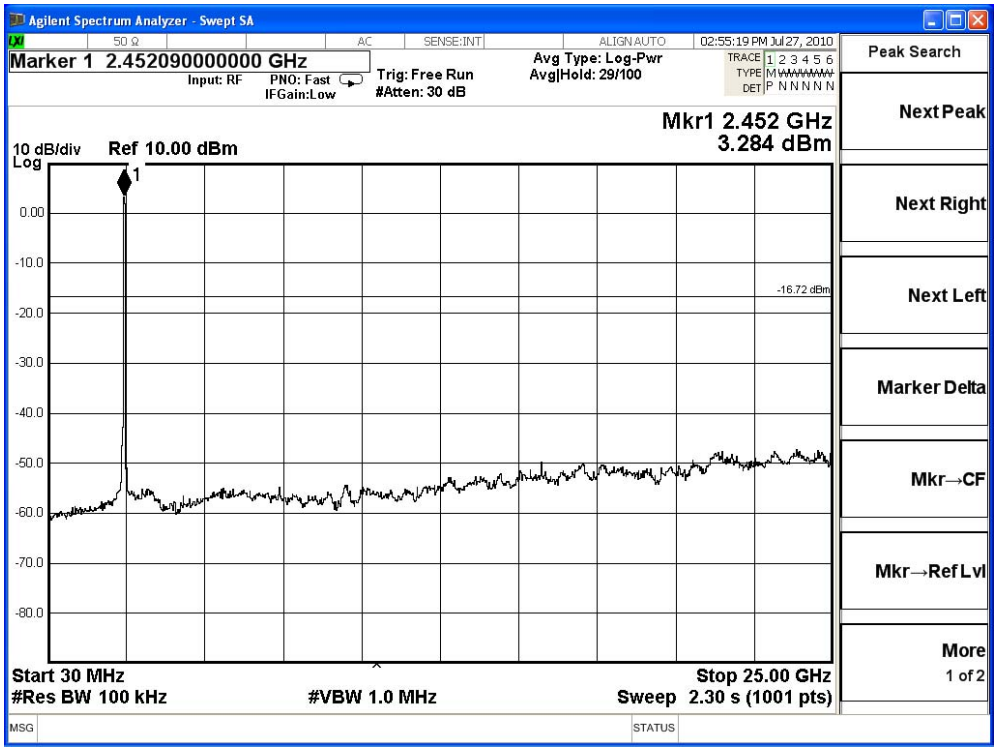
Channel 01 (2412MHz) 30MHz-25GHz



Channel 06 (2437MHz) 30MHz-25GHz

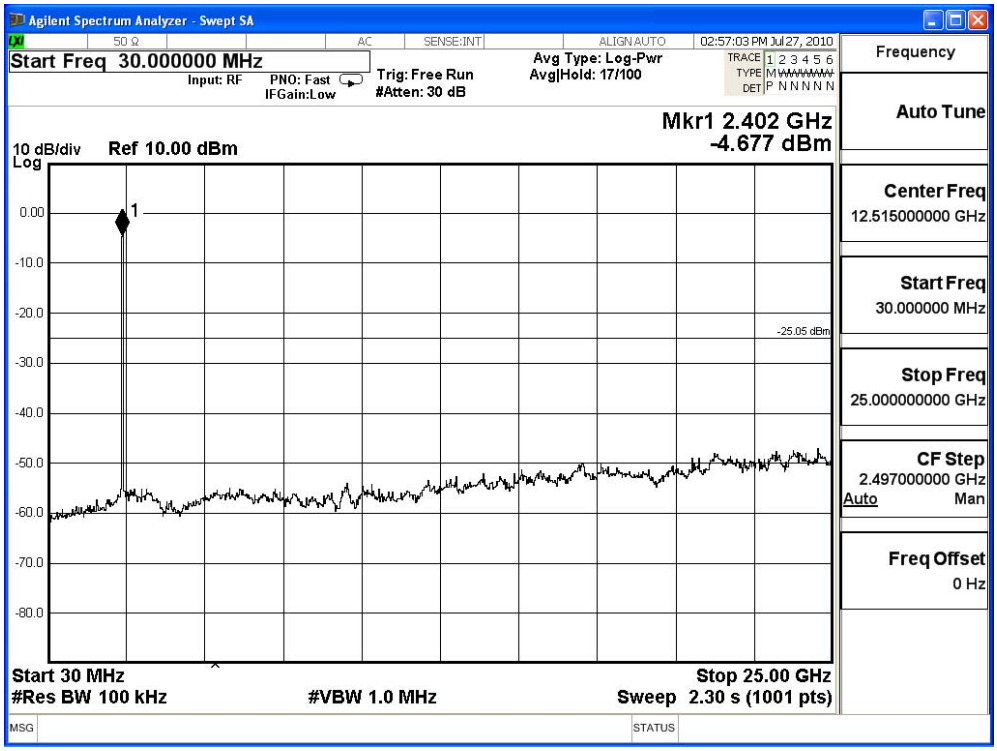


Channel 11 (2462MHz) 30MHz-25GHz

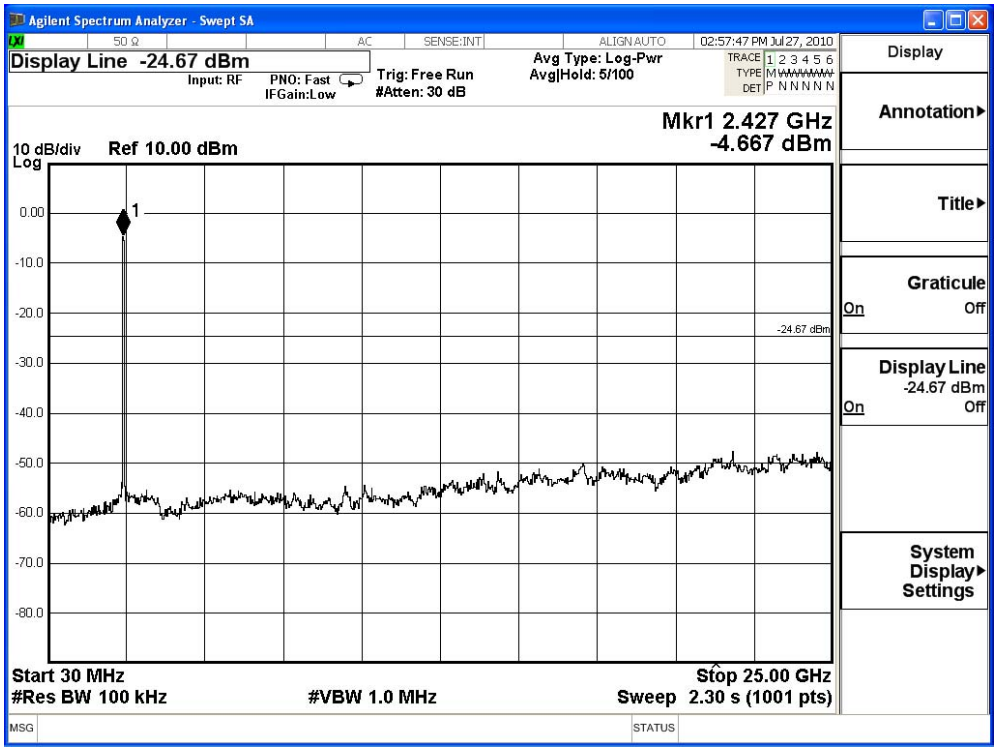


Product : Wireless Thin Client (WebPad)
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

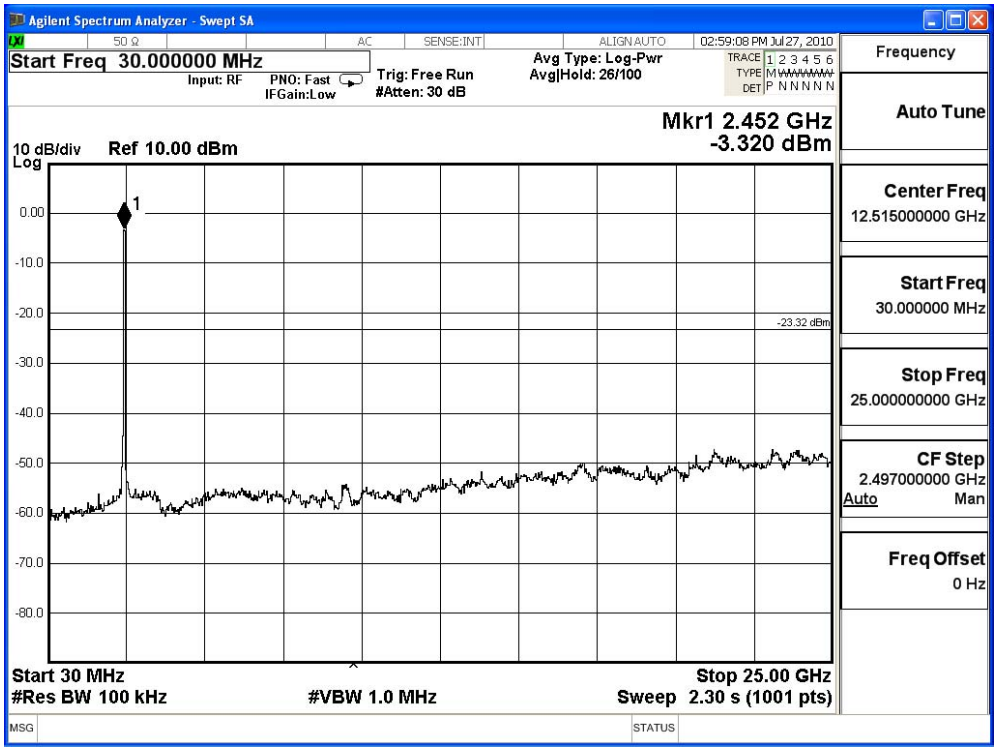
Channel 01 (2412MHz) 30MHz-25GHz



Channel 06 (2437MHz) 30MHz-25GHz

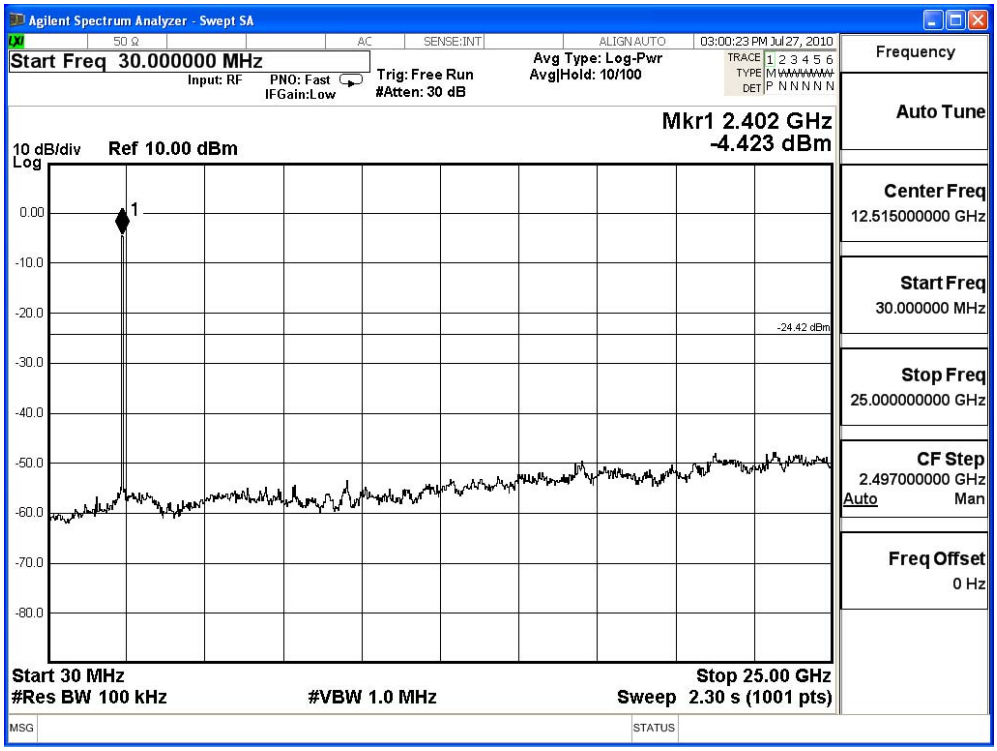


Channel 11 (2462MHz) 30MHz-25GHz

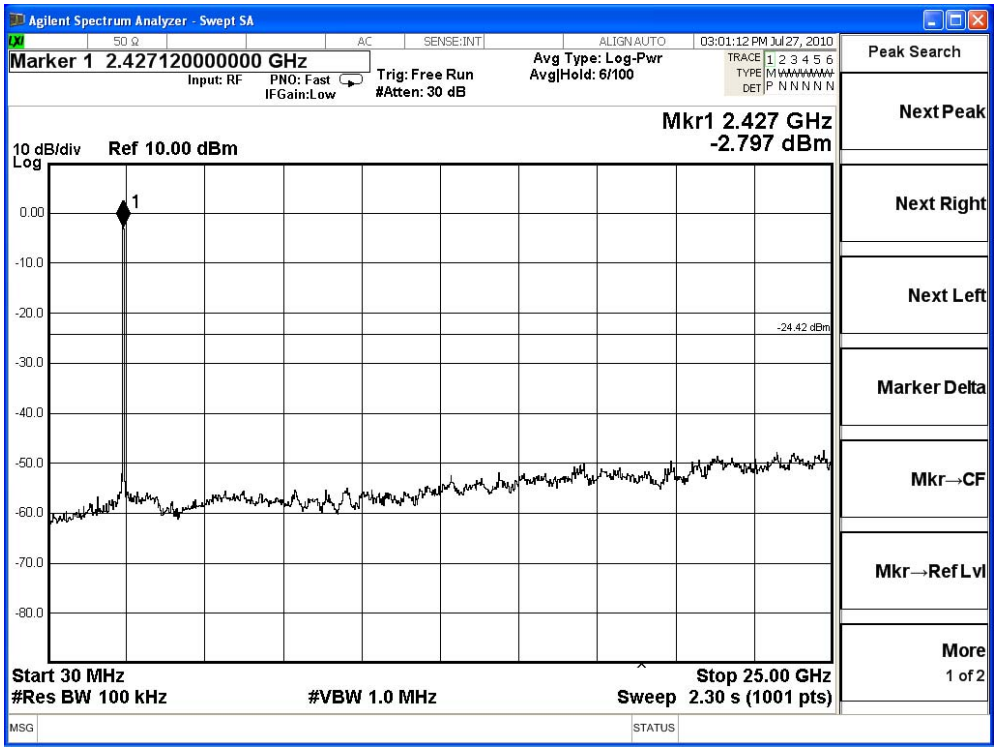


Product : Wireless Thin Client (WebPad)
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

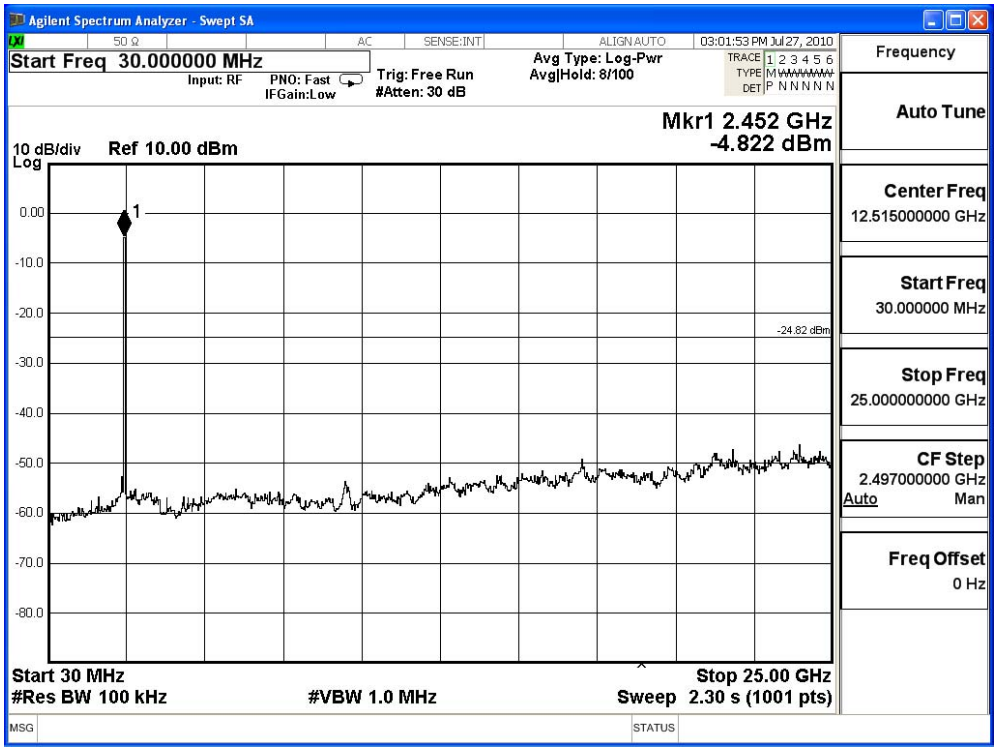
Channel 01 (2412MHz) 30MHz-25GHz



Channel 06 (2437MHz) 30MHz-25GHz

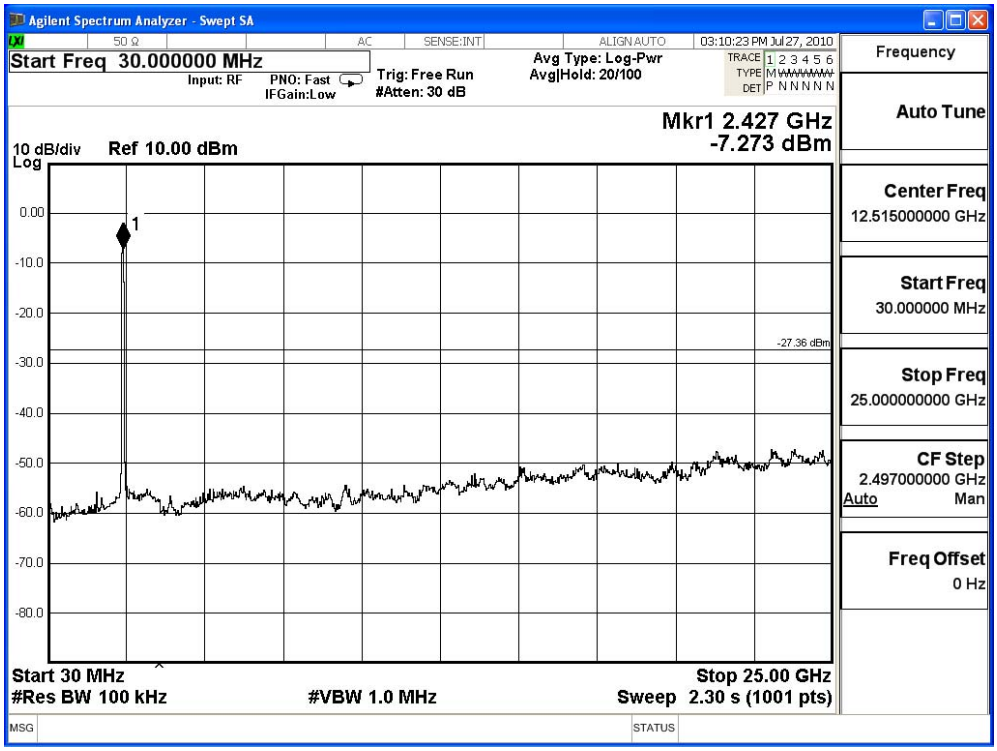


Channel 11 (2462MHz) 30MHz-25GHz

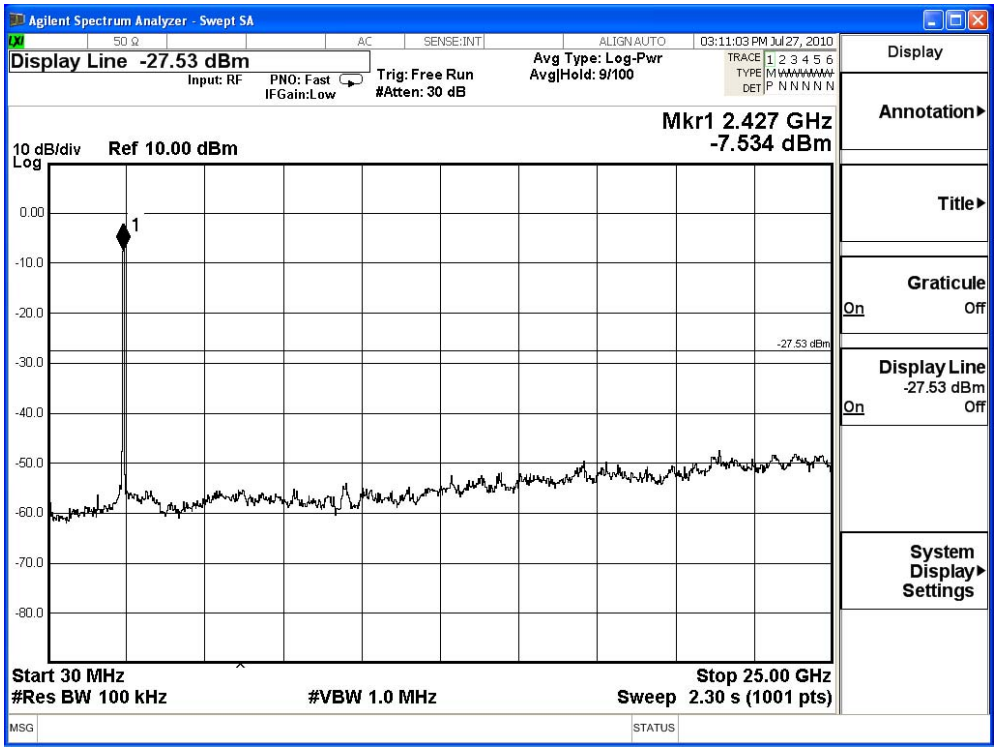


Product : Wireless Thin Client (WebPad)
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

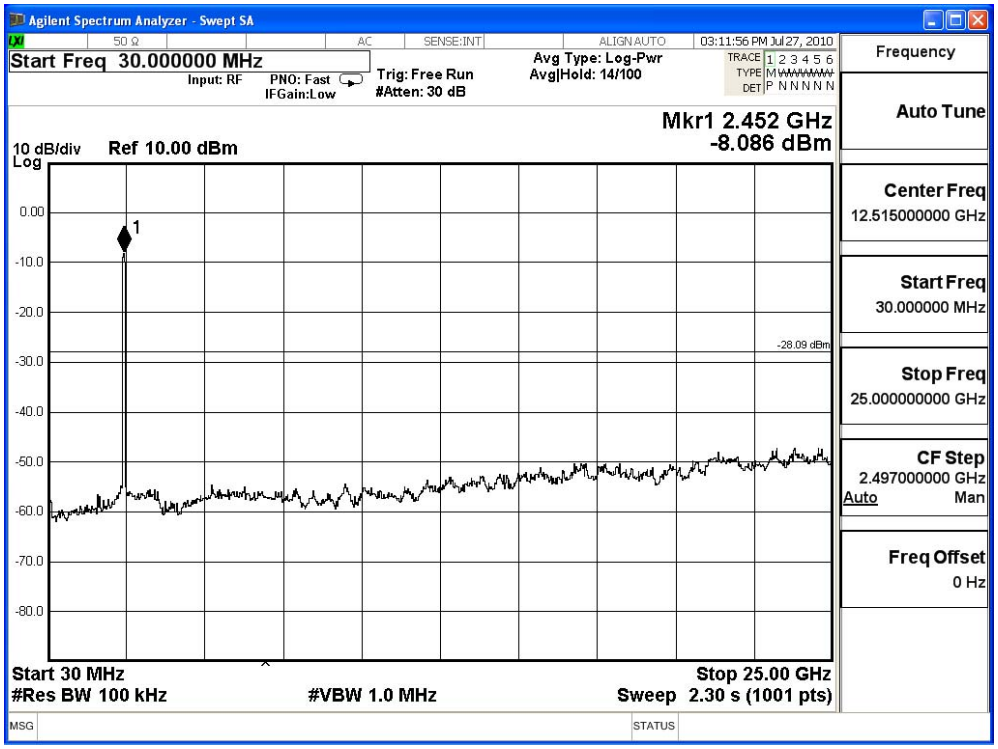
Channel 01 (2422MHz) 30MHz-25GHz



Channel 04 (2437MHz) 30MHz-25GHz



Channel 07 (2452MHz) 30MHz-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:

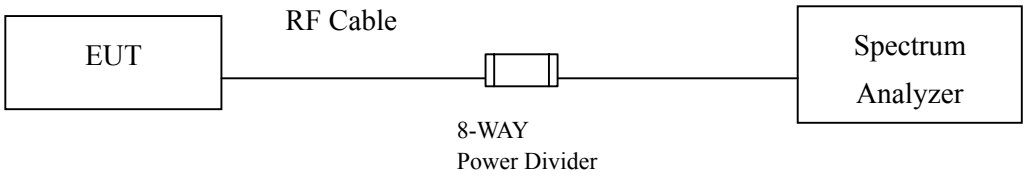
The following test equipments are used during the band edge tests:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2009
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2009
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2010
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2009
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2010
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2009
	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

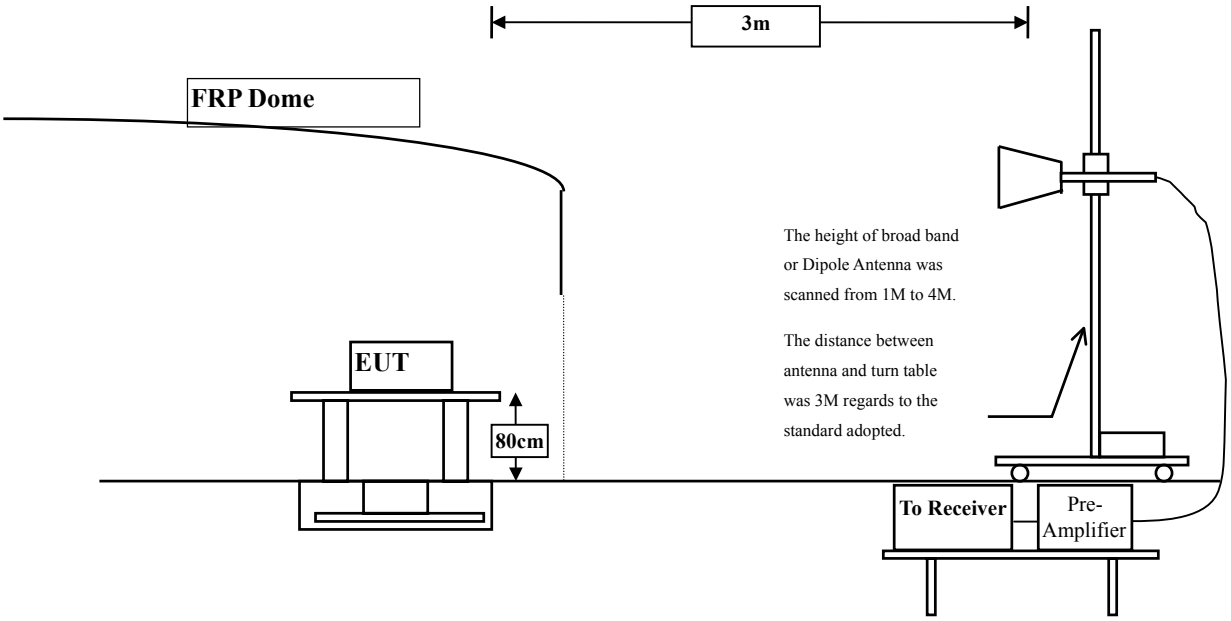
Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

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 : Wireless Thin Client (WebPad)
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	61.1	92.738	Peak
Horizontal	2412	31.639	56.52	88.158	Average
Vertical	2412	30.95	59.79	90.739	Peak
Vertical	2412	30.95	55.24	86.189	Average

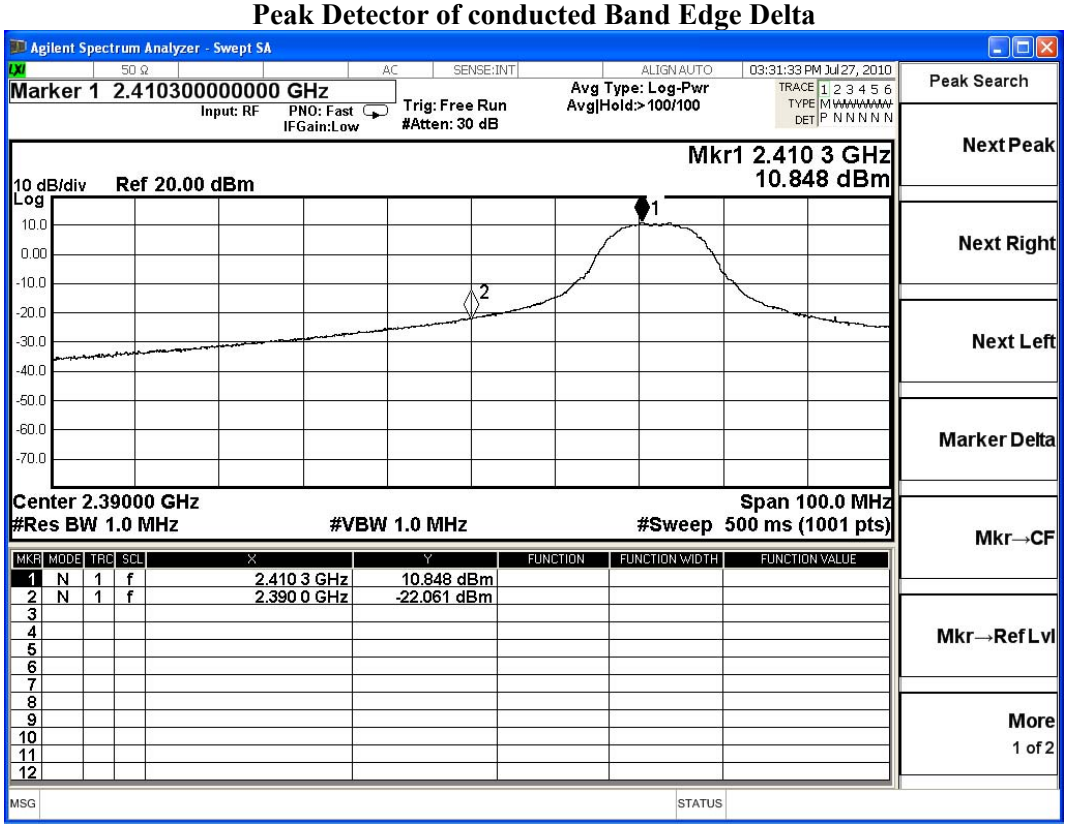
Note: 1: Spectrum Analyzer setting:
Peak detector: RBW=1MHz, VBW=1MHz
Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

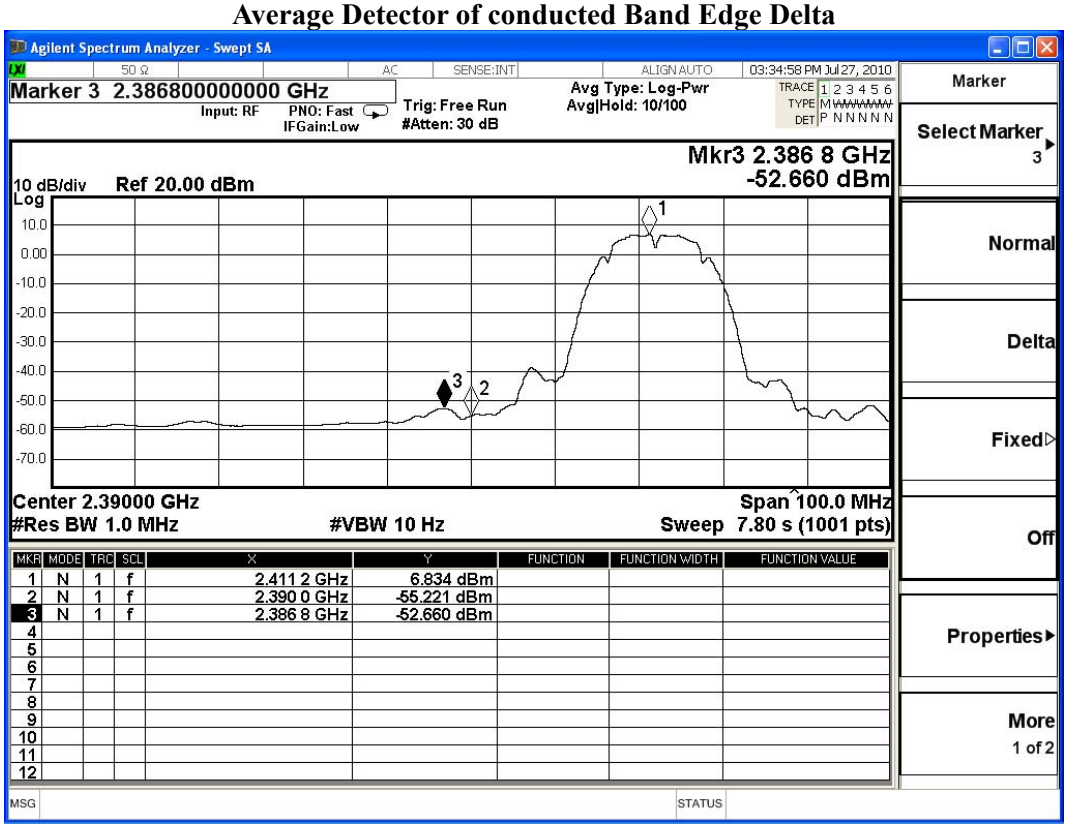
Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2390	92.738	32.909	59.829	Peak
Horizontal	2386.8	88.158	59.044	29.114	Average
Vertical	2390	90.739	32.909	57.83	Peak
Vertical	2386.8	86.189	59.044	27.145	Average

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 limit = 74dBuV/m, Average limit = 54dBuV/m

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Wireless Thin Client (WebPad)
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	57.68	89.699	Peak
Horizontal	2462	32.019	53.1	85.119	Average
Vertical	2462	31.29	58.41	89.7	Peak
Vertical	2462	31.29	53.61	84.9	Average

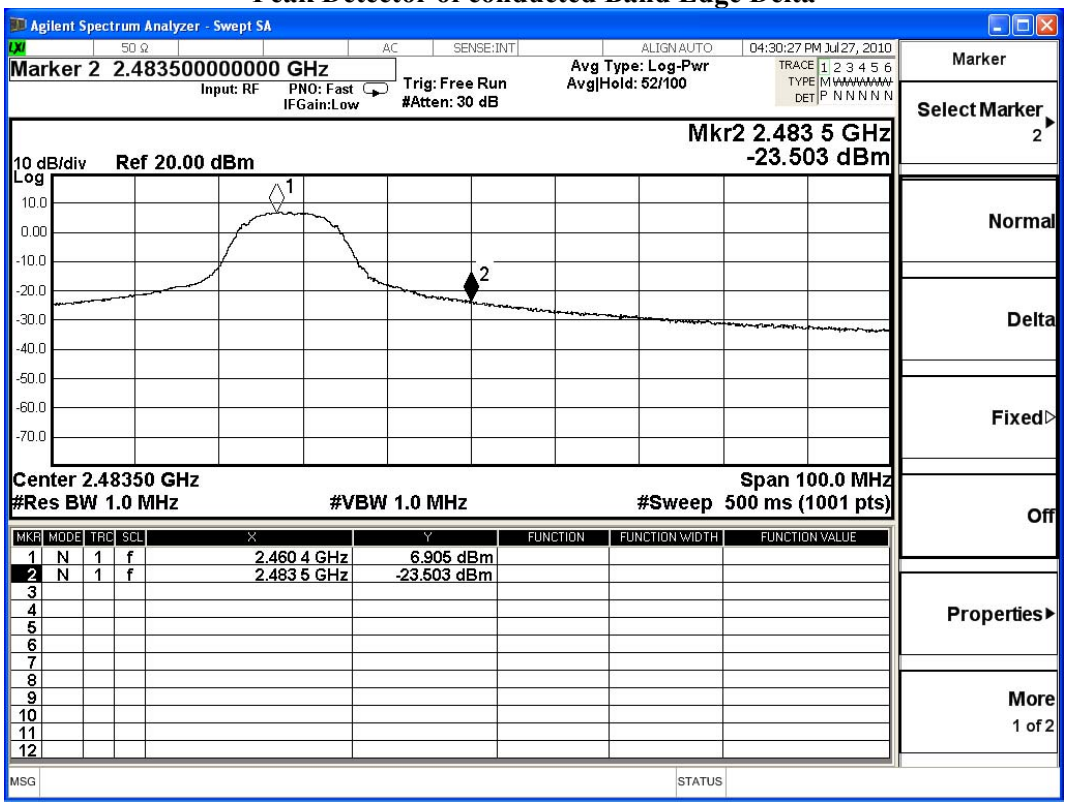
Note: 1: Spectrum Analyzer setting:
Peak detector: RBW=1MHz, VBW=1MHz
Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

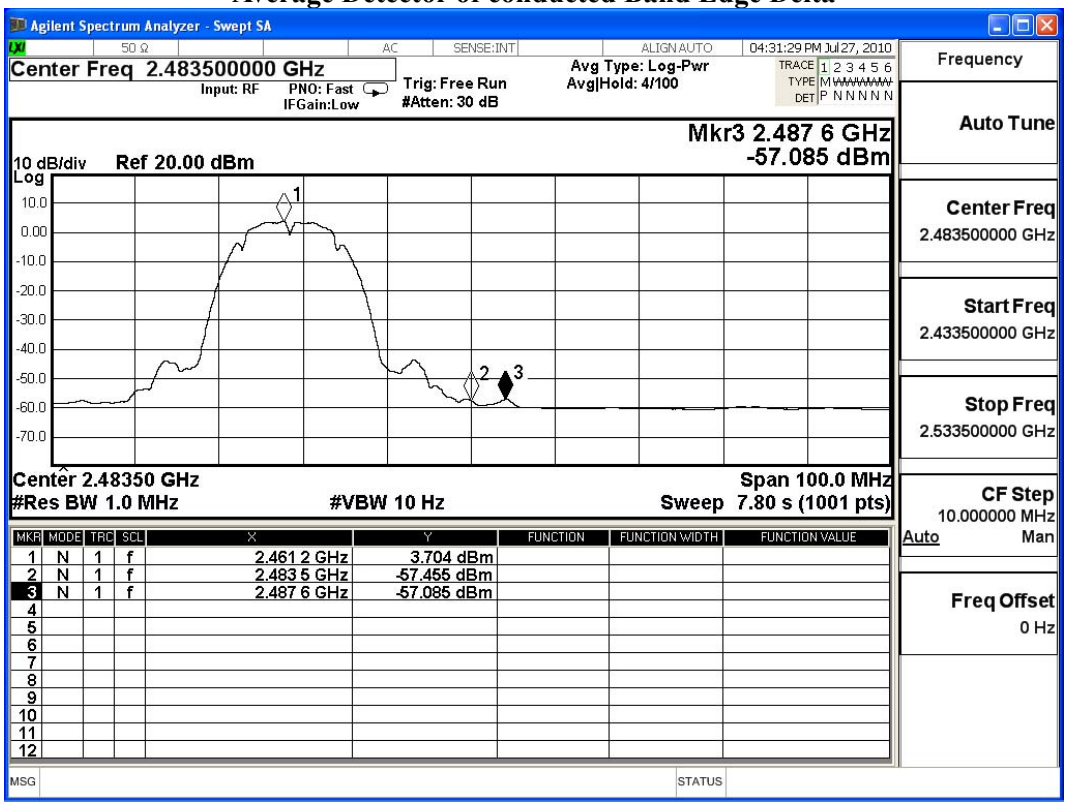
Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2483.5	89.699	30.408	59.291	Peak
Horizontal	2487.6	85.119	60.789	24.33	Average
Vertical	2483.5	89.7	30.408	59.292	Peak
Vertical	2487.6	84.9	60.789	24.111	Average

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 limit = 74dBuV/m, Average limit = 54dBuV/m

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Wireless Thin Client (WebPad)
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	58.84	90.478	Peak
Horizontal	2412	31.639	41.65	73.288	Average
Vertical	2412	31.639	57.1	88.738	Peak
Vertical	2412	31.639	42.02	73.658	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	2388.2	90.478	28.704	61.774	Peak
Horizontal	2359.5	73.288	50.521	22.767	Average
Vertical	2388.2	88.738	28.704	60.034	Peak
Vertical	2359.5	73.658	50.521	23.137	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:

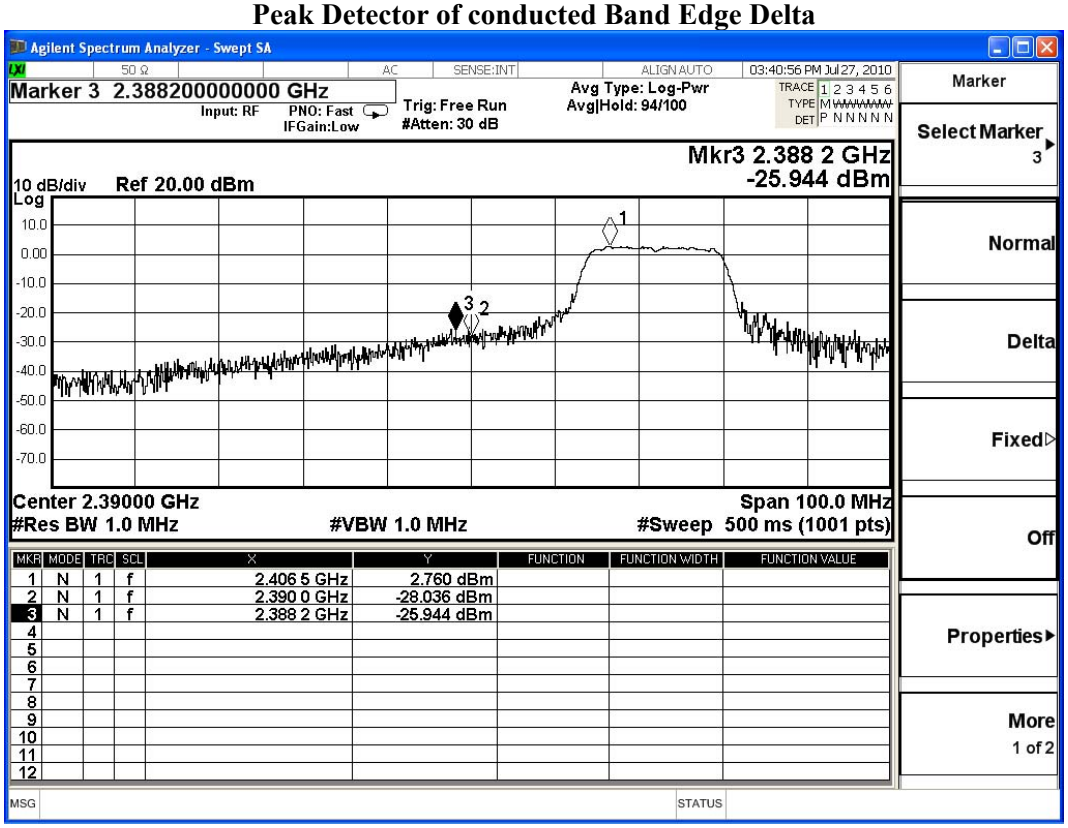
Band Edge field Strength = F - Δ

F = Fundamental field Strength (Peak or Average)

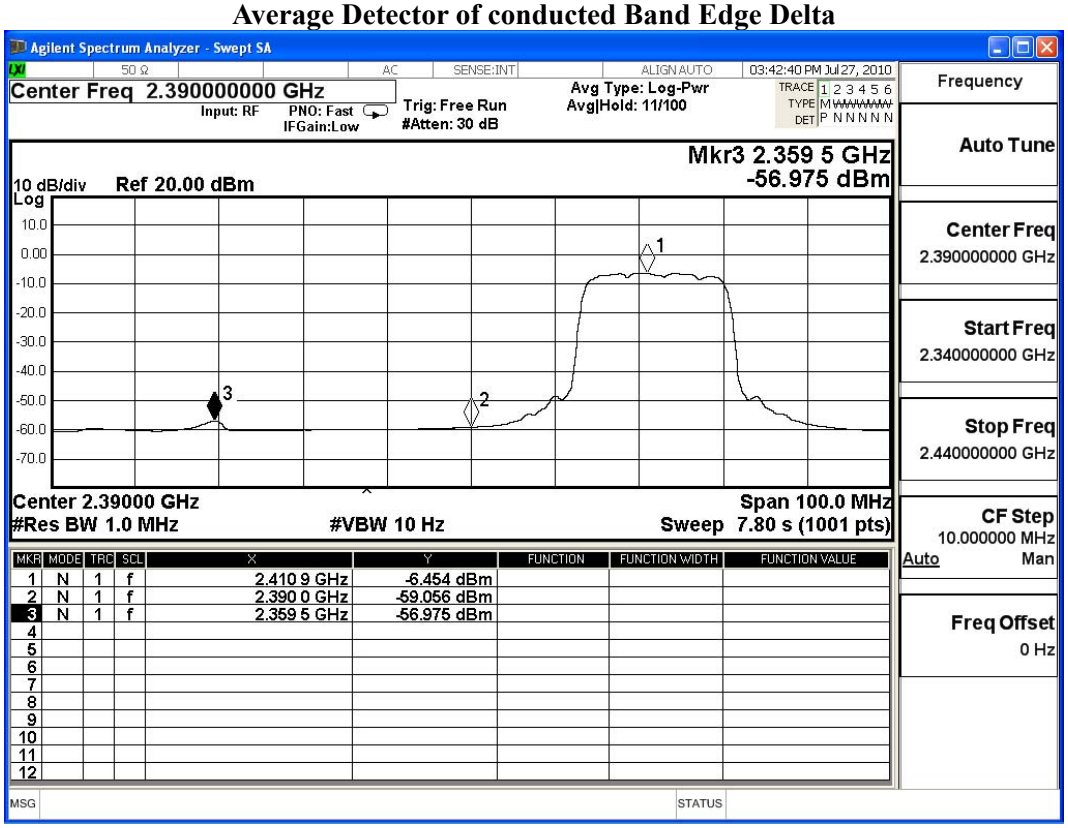
Δ = Conducted Band Edge Delta (Peak or Average)

Peak limit = 74dBuV/m, Average limit = 54dBuV/m

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Wireless Thin Client (WebPad)
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	52.5	84.519	Peak
Horizontal	2462	32.019	38.54	70.559	Average
Vertical	2462	31.29	54.8	86.09	Peak
Vertical	2462	31.29	40.15	71.44	Average

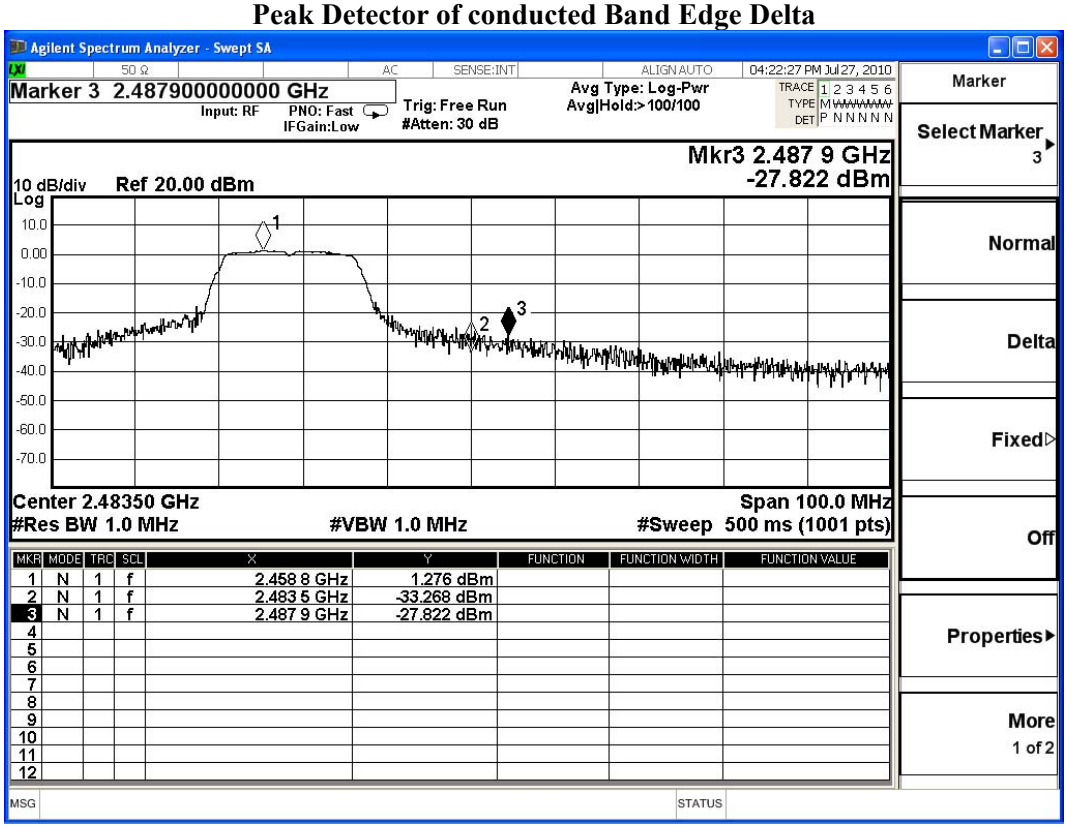
Note: 1: Spectrum Analyzer setting:
Peak detector: RBW=1MHz, VBW=1MHz
Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

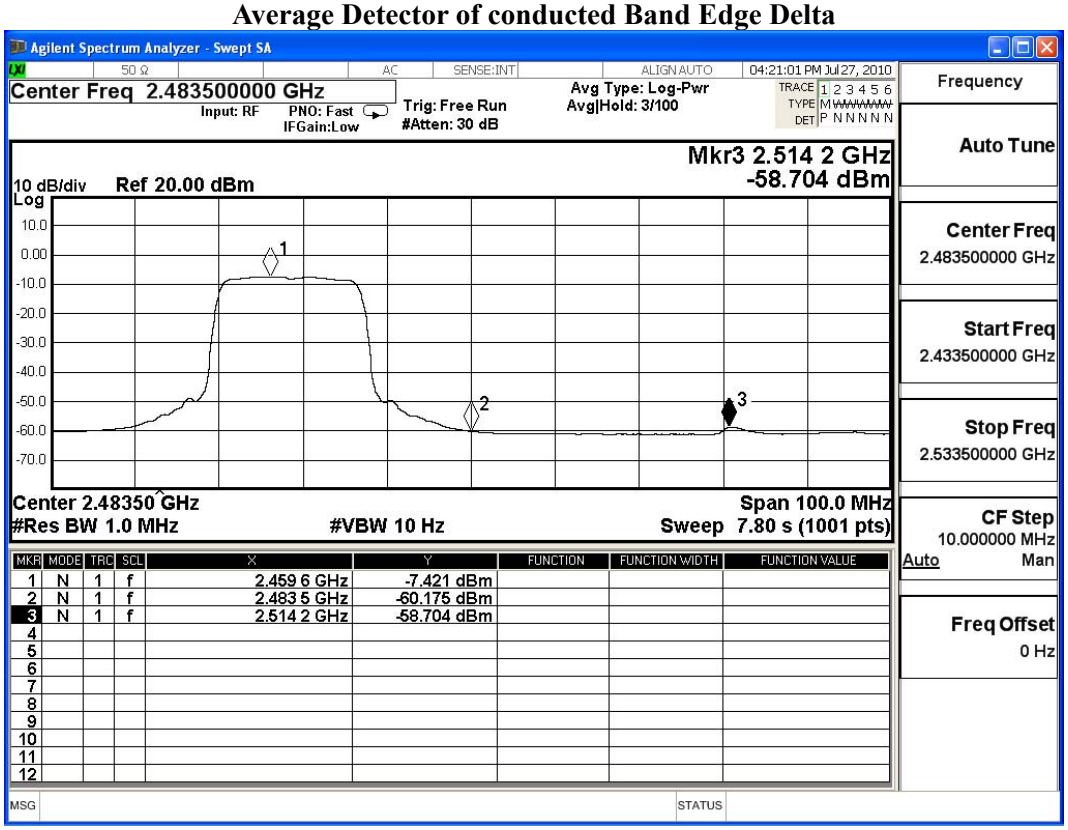
Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2487.9	84.519	29.098	55.421	Peak
Horizontal	2483.5	70.559	52.754	17.805	Average
Vertical	2487.9	86.09	29.098	56.992	Peak
Vertical	2483.5	71.44	52.754	18.686	Average

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 limit = 74dBuV/m, Average limit = 54dBuV/m

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Wireless Thin Client (WebPad)
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	58.55	90.188	Peak
Horizontal	2412	31.639	44.09	75.728	Average
Vertical	2412	30.95	57.96	88.909	Peak
Vertical	2412	30.95	43.49	74.439	Average

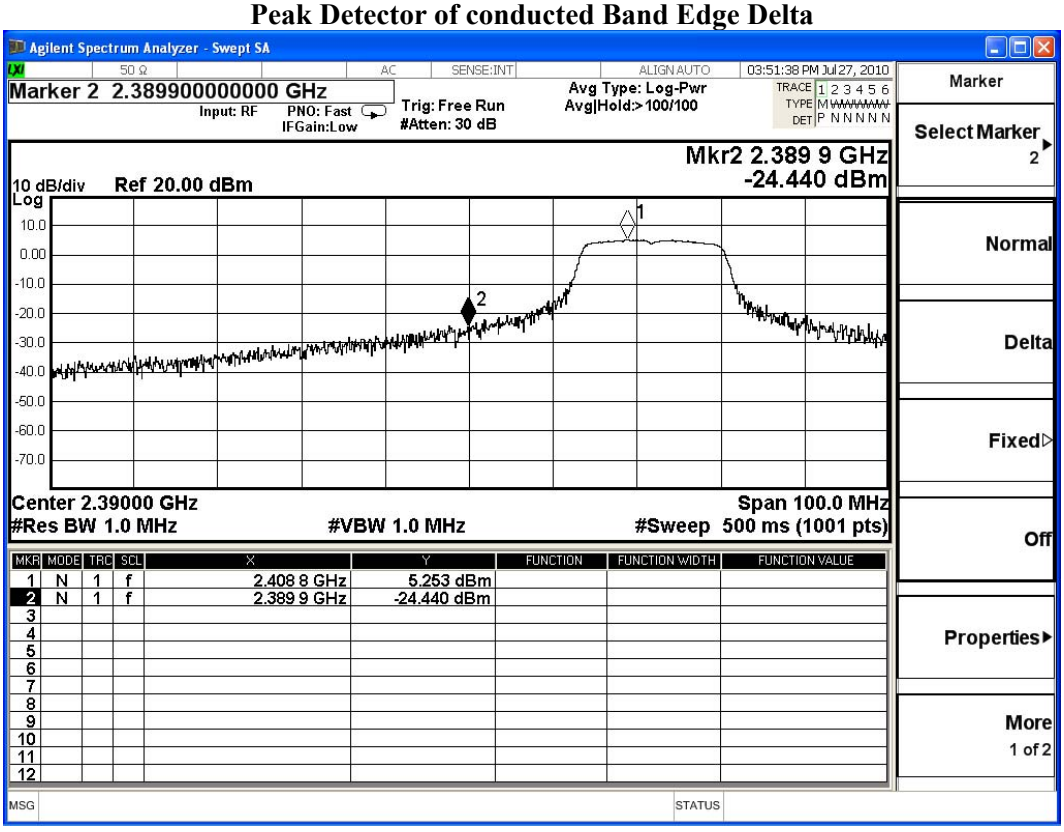
Note: 1: Spectrum Analyzer setting:
Peak detector: RBW=1MHz, VBW=1MHz
Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

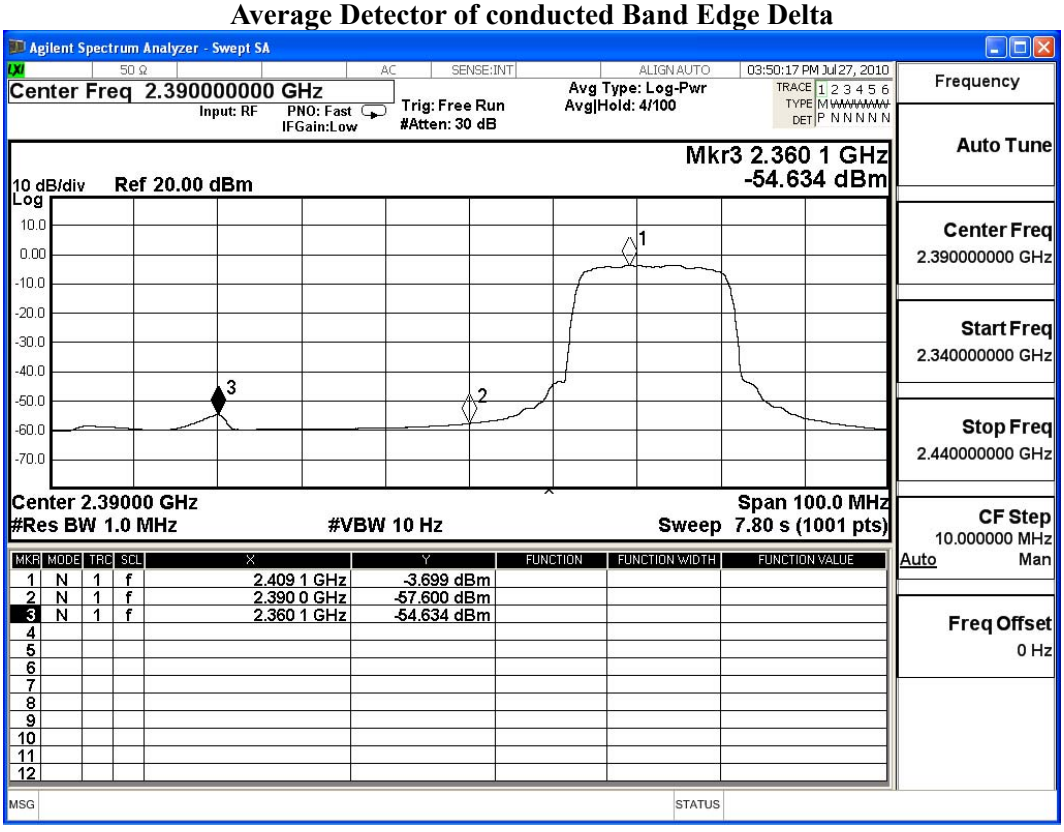
Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2389.9	90.188	29.693	60.495	Peak
Horizontal	2360.1	75.728	50.935	24.793	Average
Vertical	2389.9	88.909	26.693	62.216	Peak
Vertical	2360.1	74.439	50.935	23.504	Average

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 limit = 74dBuV/m, Average limit = 54dBuV/m

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Wireless Thin Client (WebPad)
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	54.83	86.849	Peak
Horizontal	2462	32.019	40.98	72.999	Average
Vertical	2462	31.29	55.55	86.84	Peak
Vertical	2462	31.29	41.8	73.09	Average

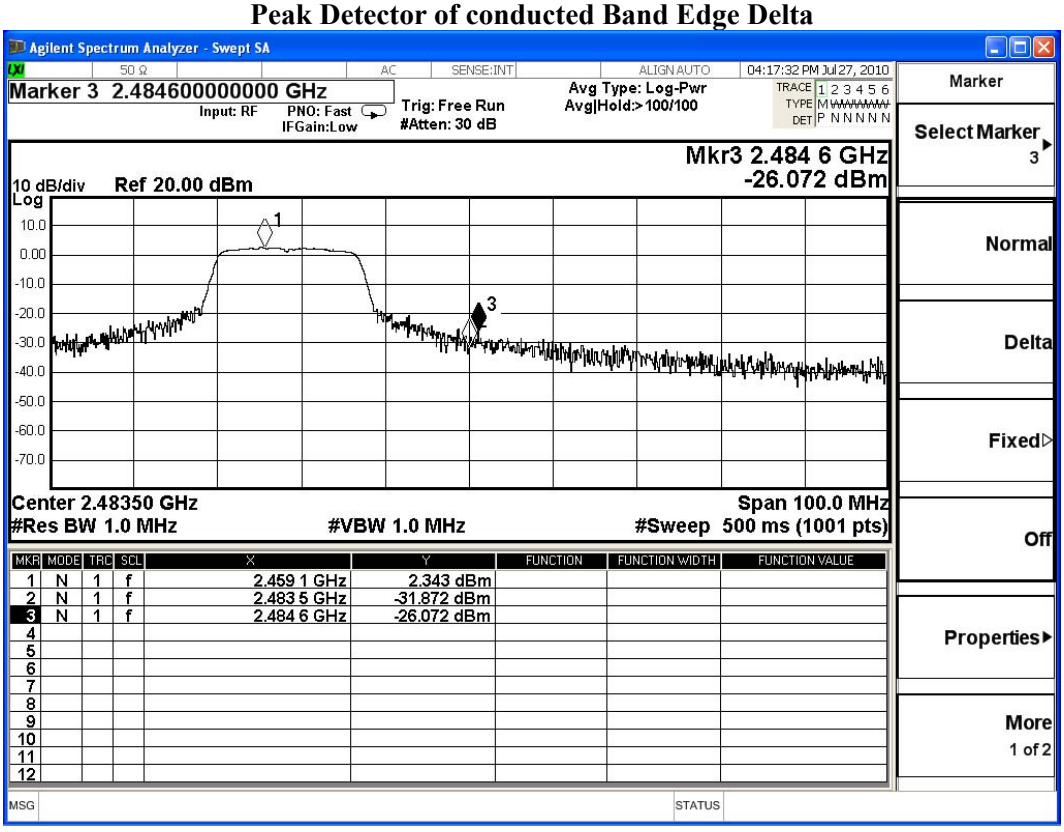
Note: 1: Spectrum Analyzer setting:
Peak detector: RBW=1MHz, VBW=1MHz
Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

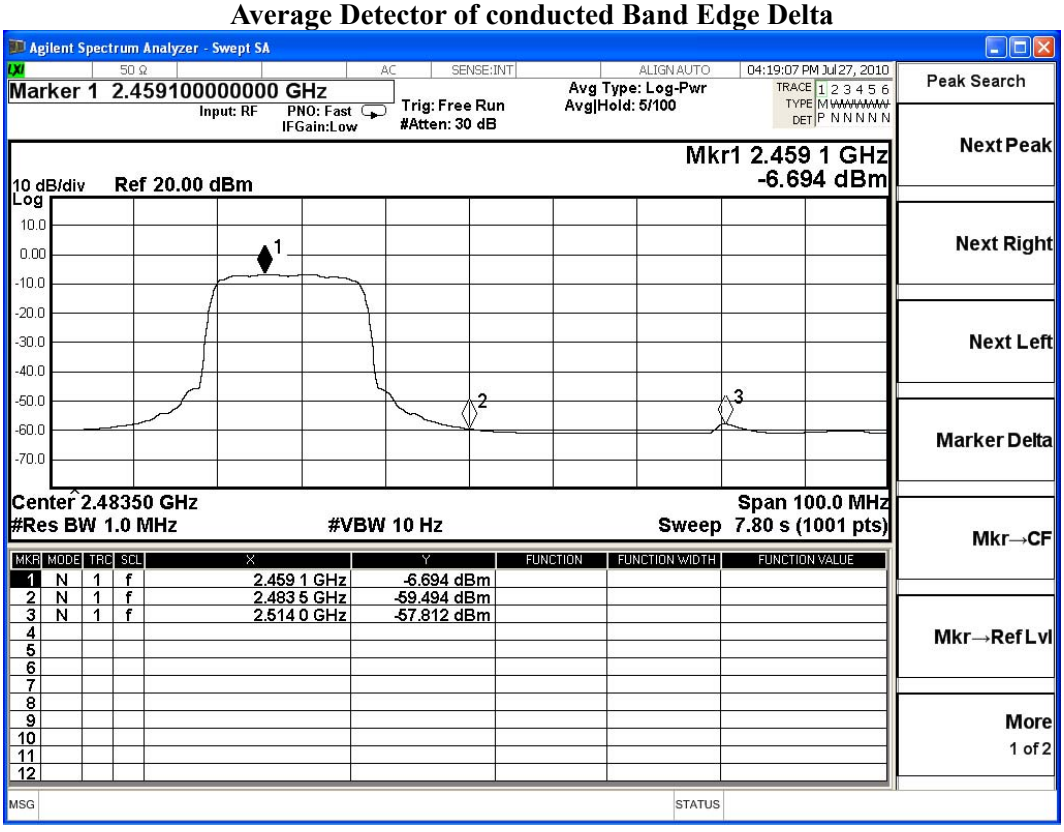
Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2484.6	86.849	28.415	58.434	Peak
Horizontal	2483.5	72.999	52.8	20.199	Average
Vertical	2484.6	86.84	28.415	58.425	Peak
Vertical	2483.5	73.09	52.8	20.29	Average

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 limit = 74dBuV/m, Average limit = 54dBuV/m

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Wireless Thin Client (WebPad)
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	56.61	88.325	Peak
Horizontal	2422	31.715	38.68	70.395	Average
Vertical	2422	31.017	55.23	86.247	Peak
Vertical	2422	31.017	37.91	68.927	Average

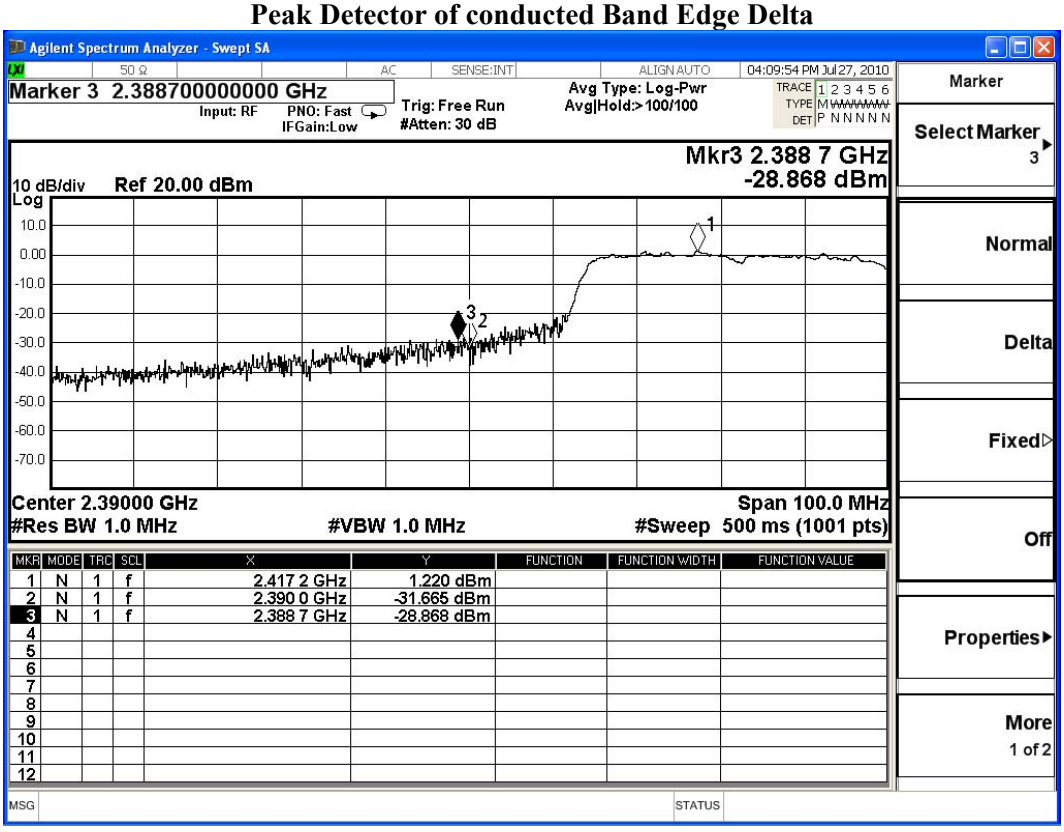
Note: 1: Spectrum Analyzer setting:
Peak detector: RBW=1MHz, VBW=1MHz
Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2388.7	88.325	30.088	58.237	Peak
Horizontal	2390	70.395	48.832	21.563	Average
Vertical	2388.7	86.247	30.088	56.159	Peak
Vertical	2390	68.927	48.832	20.095	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 limit = 74dBuV/m, Average limit = 54dBuV/m

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta