



FCC CERTIFICATION RADIO MEASUREMENT TECHNICAL REPORT

On Model Name: WLAN 11n Mini Router

Model Number: WA-6202

Trademark: CC&C

Prepared for CC&C Technologies, Inc.

FCC ID: WKLWA6202

According to FCC Part 15 (2008), Subpart C

Test Report#: CCC-0807-0468SH-FCC

Prepared by: Chris Huang

Reviewed by: Harry Zhao

QC Manager: Paul Chen

Test Report Released by:

A handwritten signature in black ink that appears to read "Paul J. Chen".

Paul Chen

2008, September 18

Date

Test Location

Tests performed at ECMG Worldwide Certification Solution, Inc. (China) in a Certified ANSI Semi-Anechoic Chamber and Shielded Room performed testing.

Test Site Location: *ECMG Worldwide Certification Solution, Inc. (China)*

Building 2, 1298 Lian Xi Road, Pu Dong New Area, Shanghai, P.R. China 201204

Tel: *86-21-51909300*

Fax: *86-21-51909333*

FCC Registration Number: *172634*

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Administrative Data

Test Sample : WLAN 11n Mini Router

Model Name : WA-6202

Brand Name : CC&C

Date Tested : 2008, July 23rd

Applicant : CC&C Technologies, Inc.
No.9 Building, 3rd Main Street, Kunshan Express
Processing Zone, Jiangsu, P.R.China

Telephone : 86-21-51186310

Fax : 86-21-51186311

Manufacturer : CC&C Technologies, Inc.
No.9 Building, 3rd Main Street, Kunshan Express
Processing Zone, Jiangsu, P.R.China

Test Summary

This report an application for Certification of a Transmitter operation pursuant to FCC 15.247, the product covered by this report is the Model: WA-6202. This report is designed to demonstrate the compliance of this device with the requirements outlined in FCC Part 15.247 using the methods in FCC CFR 47 Part 2.

FCC Section	Requirements	Comments	Remark
15.203	<i>The transmitter shall use a transmitting dedicated antenna employs unique connectors</i>	<i>Compliance</i>	<i>Attachment 1</i>
15.207	<i>Conducted emission test</i>	<i>Compliance</i>	<i>Attachment 2</i>
15.205 / 15.209	<i>Restricted Band of Operation Radiated emissions, general requirements</i>	<i>Compliance</i>	<i>Attachment 3</i>
15.247(d)	<i>Band edge</i>	<i>Compliance</i>	<i>Attachment 4</i>
15.247(a)(2)	<i>Occupied Bandwidth</i>	<i>Compliance</i>	<i>Attachment 5</i>
15.247(b)(3)	<i>Maximum peak output power</i>	<i>Compliance</i>	<i>Attachment 6</i>
15.247(e)	<i>Power spectral density</i>	<i>Compliance</i>	<i>Attachment 7</i>
2.1093	<i>RF exposure calculation</i>	<i>Compliance</i>	<i>Attachment 8</i>

Test Mode Justification

The EUT exercise program was used during radiated testing and was designed to exercise the various system components in a manner similar to a typical use.

For emission testing, the unit was setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing.

Equipment Modification

Any modifications installed previous to testing by CC&C Technologies, Inc. will be incorporated in each production model sold or leased in United States.

There were no modifications installed by ECMG Worldwide Certification Solution, Inc.

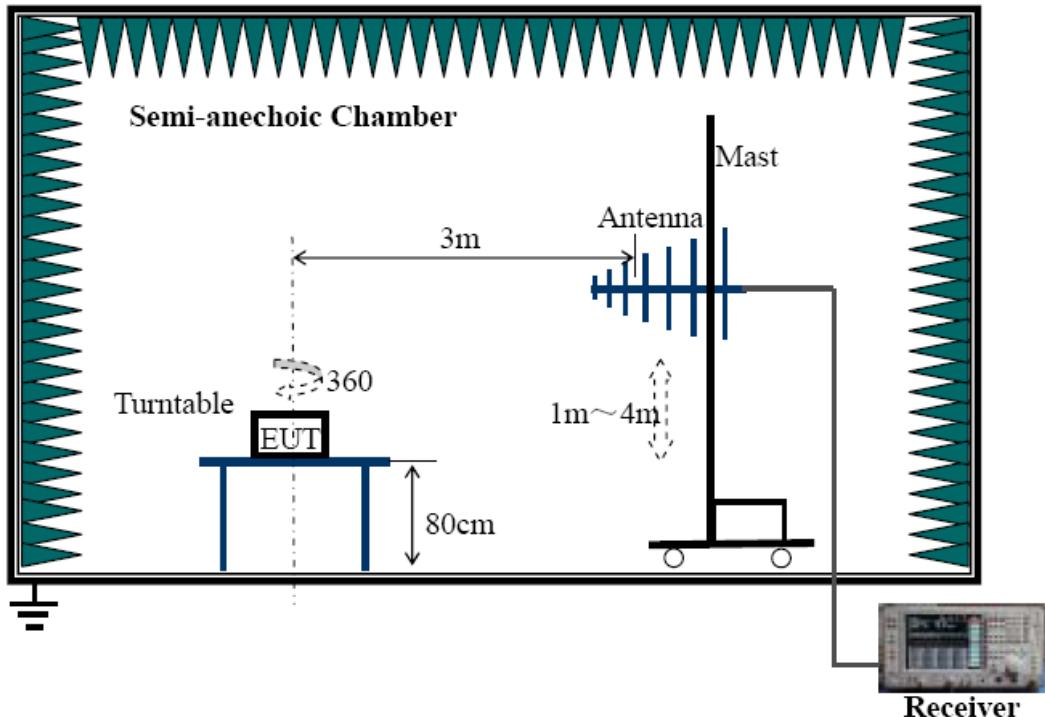
Test System Details

<i>EUT</i>	
<i>Model Name:</i>	<i>WA-6202</i>
<i>Description:</i>	<i>WLAN 11n Mini Router</i>
<i>Manufacturer:</i>	<i>CC&C Technologies, Inc.</i>
<i>Input Voltage:</i>	<i>120V ~ 60Hz</i>
<i>Operating Frequency:</i>	<i>2.4GHz</i>
<i>EUT Power Supply</i>	
<i>Model Name:</i>	<i>AC Adapter</i>
<i>Model Number:</i>	<i>SMP012-1120</i>
<i>Serial Number:</i>	<i>N/A</i>
<i>Input:</i>	<i>100-120V, 50/60Hz,</i>
<i>Output:</i>	<i>12V DC, 1A</i>
<i>Manufacturer:</i>	<i>Senwin</i>

CONTINUE ON TO THE NEXT PAGE...

Support Equipment				
Description	Model Number	Serial Number	Manufacturer	Power Cable Description
PC	OPTIPLEX 330	HBSF92X	DELL	1.8m unshielded
Monitor	E178FPC	CN0WR97964180 7CA7L4C	DELL	1.8m unshielded
Keyboard	L100	CN0RH65665890 7C401F9	DELL	N/A
Mouse	MOC5UO	G1D02BPQ	DELL	N/A
Printer converter	45CV	961217	INTEL LIGENT	N/A
Remote control box	IT-251B	N/A	N/A	N/A
Cable Description				
Description	From	To	Length (Meters)	Shielded (Y/N)
Ethernet Cable	EUT	PC	2.0	N
VGA Cable	Monitor	PC	1.5	Y
Keyboard Cable	Keyboard	PC	1.8	N
Mouse Cable	Mouse	PC	1.8	N
Serial Cable	Control box	PC	1.2m	N
Power Cable	Adapter	EUT	1.2m	N
Parallel Cable	Converter	PC	0.5m	N

Configuration of Tested System



ATTACHMENT 1 - ANTENNA REQUIREMENT

CLIENT:	CC&C Technologies, Inc.	TEST STANDARD:	FCC Part 15.203
MODEL TESTED:	WA-6202	PRODUCT:	WLAN 11n Mini Router
SERIAL NO.:	Engineering Sample	EUT DESIGNATION:	RF Equipment
TEMPERATURE:	25°C	HUMIDITY:	55%RH
ATM PRESSURE:	101.7 kPa	GROUNDING:	No Grounding
TESTED BY:	Cloud Feng	DATE OF TEST:	2008, July 23
SETUP METHOD:	N/A		
ANTENNA REQUIREMENT:	An intentional radiator shall be designed to ensure that no antenna other than furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.		
TEST VOLTAGE:	120V / 60Hz		
TEST STATUS:	Normal Operation As Usual		
RESULTS:	The EUT meets the Antenna requirement. The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Worldwide Certification Solution, Inc. (China) test personnel.		
M. UNCERTAINTY:	N/A		

FCC Section													
FCC Rules 15.203	<p>Described how the EUT complies with the requirement that either its antenna is permanently attached, or that it employs a unique antenna connector, for every antenna proposed for use with the EUT.</p> <p>The exception is in those cases where EUT must be professionally installed. In order to demonstrate that professional installation is required, the following 3 points must be addressed:</p> <ul style="list-style-type: none"> ● The application (or intended use) of the EUT ● The installation requirements of the EUT ● The method by which the EUT will be marketed 												
Conclusion:	<p>The RF device uses integrate antennas.</p> <p>Specifications:</p> <table border="1"> <tbody> <tr> <td>Frequency Range:</td> <td>2400MHz~2500MHz</td> </tr> <tr> <td>Antenna Gain:</td> <td>2.5dBi</td> </tr> <tr> <td>VSWR:</td> <td>2.0:1 Max</td> </tr> <tr> <td>Polarization:</td> <td>Linear, Vertical</td> </tr> <tr> <td>Impedance:</td> <td>50ohm</td> </tr> <tr> <td>Temperature:</td> <td>-10°C to 55°C</td> </tr> </tbody> </table>	Frequency Range:	2400MHz~2500MHz	Antenna Gain:	2.5dBi	VSWR:	2.0:1 Max	Polarization:	Linear, Vertical	Impedance:	50ohm	Temperature:	-10°C to 55°C
Frequency Range:	2400MHz~2500MHz												
Antenna Gain:	2.5dBi												
VSWR:	2.0:1 Max												
Polarization:	Linear, Vertical												
Impedance:	50ohm												
Temperature:	-10°C to 55°C												

ATTACHMENT 2 – CONDUCTED EMISSION TEST RESULTS

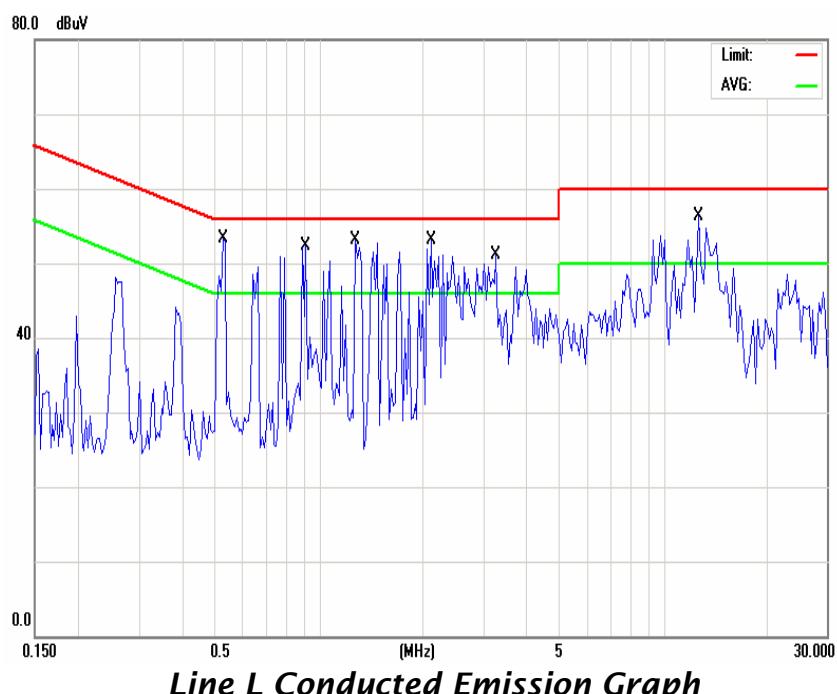
CLIENT:	CC&C Technologies, Inc.	TEST STANDARD:	FCC 15.107/207
MODEL TESTED:	WA-6202	PRODUCT:	WLAN 11n Mini Router
SERIAL NO.:	Engineering Sample	EUT DESIGNATION:	RF Equipment
TEMPERATURE:	21°C	HUMIDITY:	53%RH
ATM PRESSURE:	101.6 kPa	GROUNDING:	No Grounding
TESTED BY:	Cloud Feng	DATE OF TEST:	2008, July 23
SETUP METHOD:	ANSI C63.4 : 2003, FCC 15.107/207		
TEST PROCEDURE:	a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface. b. Connect EUT to the power mains through a line impedance stabilization network (LISN) c. The LISN provides 50ohm coupling impedance for the measuring instrument d. Both sides of AC line were checked for maximum conducted interference. e. The frequency range from 150KHz to 30MHz was searched.. f. Set the test-receiver system to Peak Detect Function and Specified bandwidth. g. If the emission level of the EUT in peak mode was 20 dB lower than the specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be tested using the quasi-peak method in about six maximal points and the results will be reported.		
TESTED RANGE:	0.15MHz-30MHz		
TEST VOLTAGE:	120V / 60Hz		
TEST STATUS:	Keep Tx in continuous transmission mode, modulated		
RESULTS:	The EUT meets the requirements of test reference for Conducted Emissions. The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Worldwide Certification Solution, Inc. (China) test personnel.		
M. UNCERTAINTY:	Freq. $\pm 2 \times 10^{-7} \times$ Center Freq., Amp ± 2.6 dB		

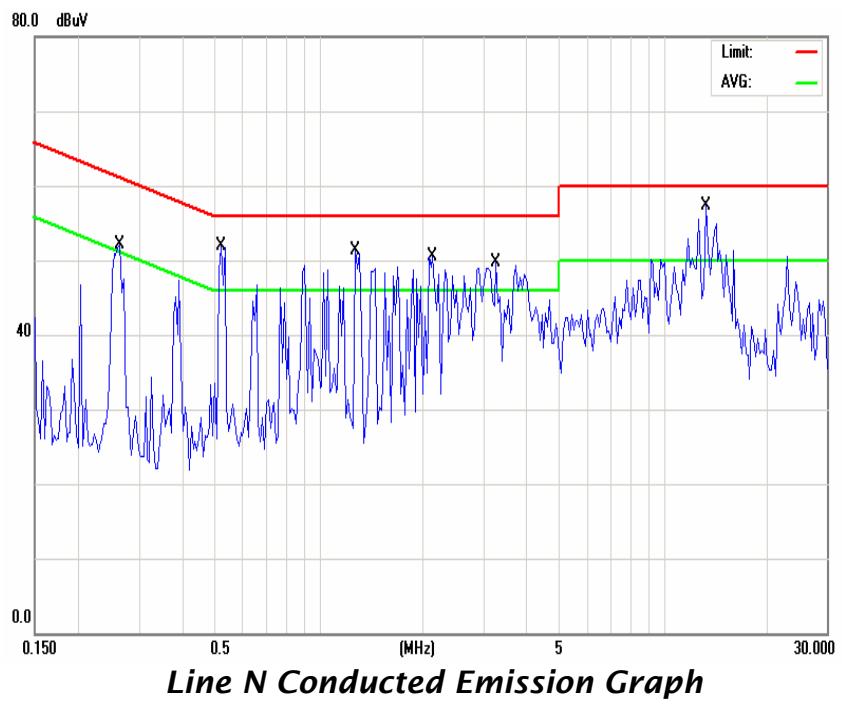
Model: WA-6202

Test modes:

Mode 1	Transmit by 802.11b Channel 06 (2437MHz)
Mode 2	Transmit by 802.11g Channel 06 (2437MHz)
Mode 3	Transmit by 802.11n (20MHz bandwidth) Channel 06 (2437MHz)
Mode 4	Transmit by 802.11n (40MHz bandwidth) Channel 06 (2437MHz)

**Mode 1: Transmit by 802.11b
Channel 06 (2437MHz)**

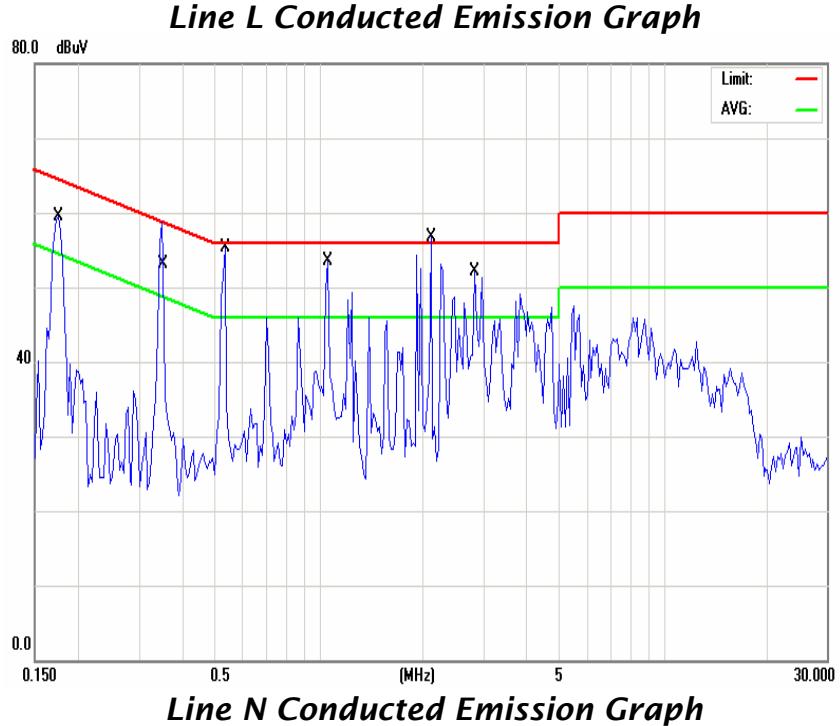
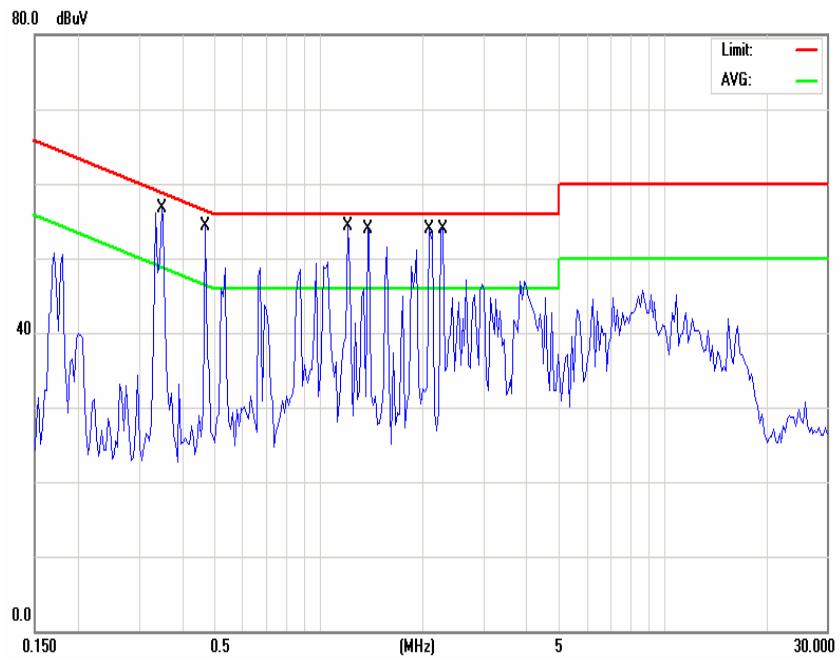




Line N Conducted Emission Graph

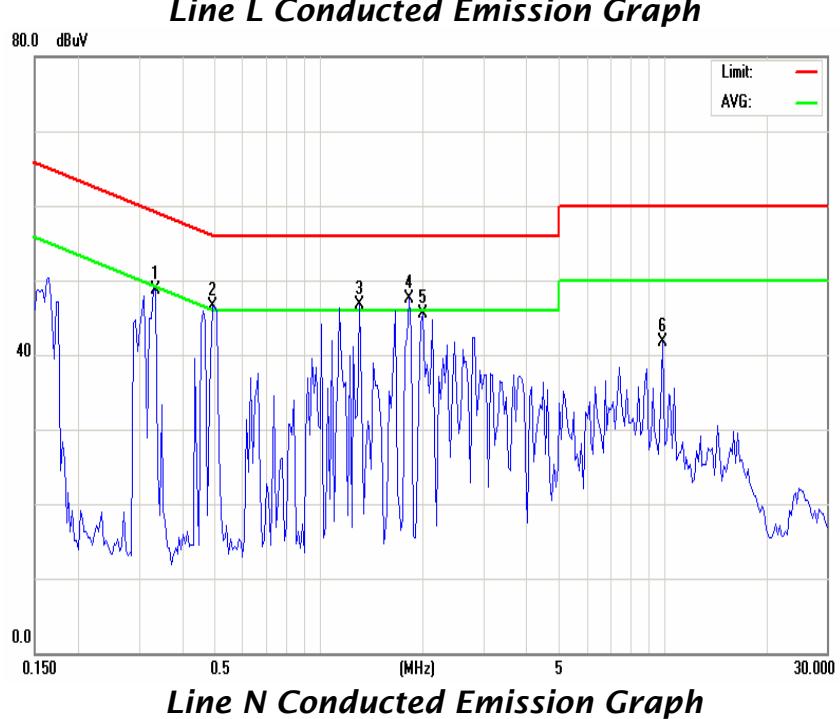
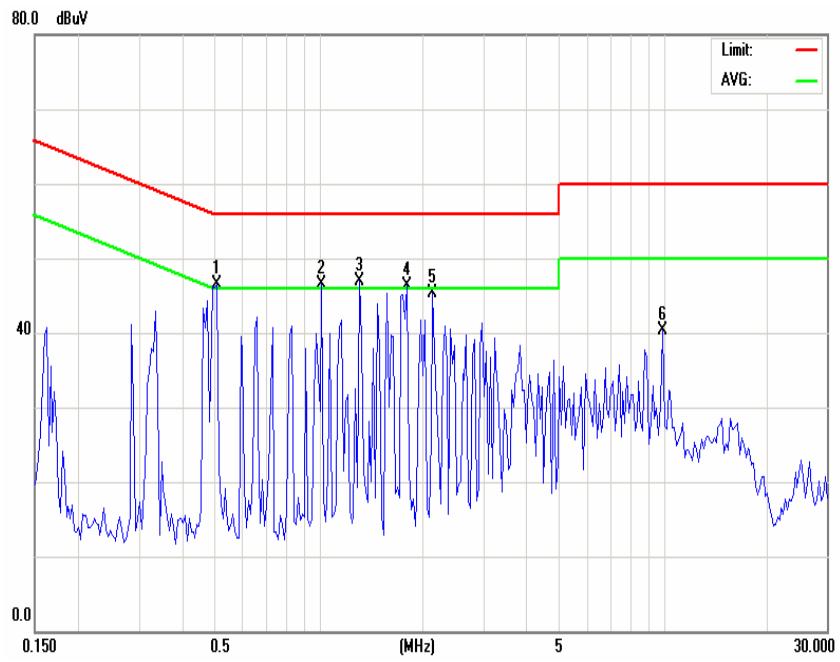
Line L (Hot Lead)								
Signal	Frequency (MHz)	Corrected QP Level (dBuV)	Limits QP (dBuV)	Margin QP (dB)	Frequency (MHz)	Corrected AVE Level (dBuV)	Limits AVE (dBuV)	Margin AVE (dB)
1	0.528	52.57	56.00	-3.43	0.528	38.27	46.00	-7.73
2	0.895	49.88	56.00	-6.12	0.895	38.58	46.00	-7.42
3	1.288	50.06	56.00	-5.94	1.288	36.86	46.00	-9.14
4	2.125	53.40	56.00	-2.60	2.125	40.60	46.00	-5.40
5	3.285	47.75	56.00	-8.25	3.285	37.85	46.00	-8.15
6	12.809	54.76	60.00	-5.24	12.809	44.46	50.00	-5.54
Line N (Neutral Lead)								
Signal	Frequency (MHz)	Corrected QP Level (dBuV)	Limits QP (dBuV)	Margin QP (dB)	Frequency (MHz)	Corrected AVE Level (dBuV)	Limits AVE (dBuV)	Margin AVE (dB)
1	0.267	49.8	61.19	-11.39	0.267	37.19	51.19	-14.00
2	0.521	50.06	56.00	-5.94	0.521	37.76	46.00	-8.24
3	1.282	47.56	56.00	-8.44	1.282	41.15	46.00	-4.85
4	2.125	49.84	56.00	-6.16	2.125	40.80	46.00	-5.20
5	3.286	46.35	56.00	-9.65	3.286	42.69	46.00	-3.31
6	13.418	56.41	60.00	-3.59	13.418	45.08	50.00	-4.92
Note: All readings are using a bandwidth of 9 kHz, with a 30 ms sweep time. A video filter was not used.								

**Mode 2: Transmit by 802.11g
Channel 06 (2437MHz)**



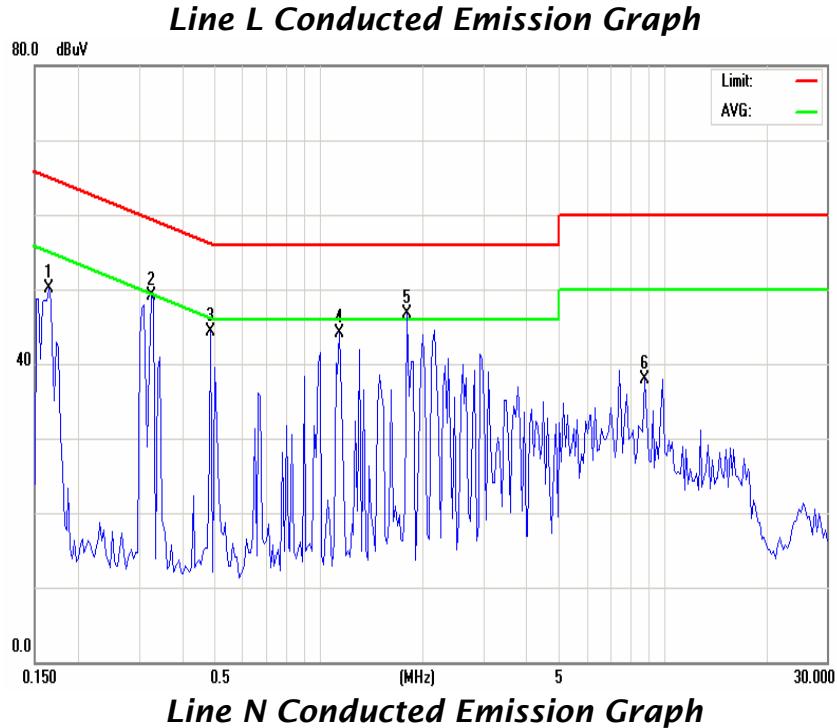
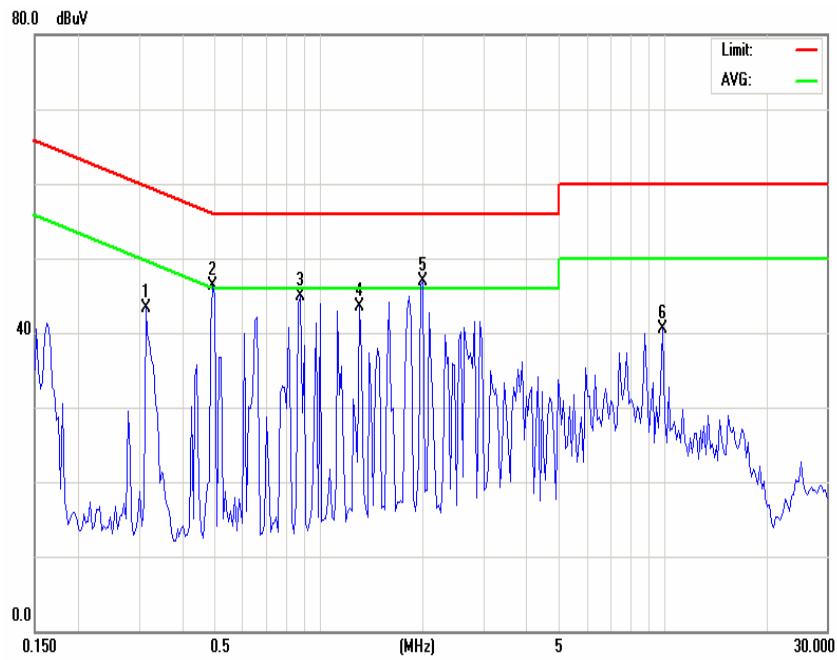
Line L (Hot Lead)								
Signal	Frequency (MHz)	Corrected QP Level (dBuV)	Limits QP (dBuV)	Margin QP (dB)	Frequency (MHz)	Corrected AVE Level (dBuV)	Limits AVE (dBuV)	Margin AVE (dB)
1	0.355	56.31	58.83	-2.52	0.355	46.01	48.83	-2.82
2	0.470	50.33	56.51	-6.18	0.470	42.93	46.51	-3.58
3	1.218	52.09	56.00	-3.91	1.218	43.49	46.00	-2.51
4	1.407	54.17	56.00	-1.83	1.407	42.47	46.00	-3.53
5	2.093	49.10	56.00	-6.90	2.093	33.90	46.00	-12.10
6	2.275	50.25	56.00	-5.75	2.275	37.95	46.00	-8.05
Line N (Neutral Lead)								
Signal	Frequency (MHz)	Corrected QP Level (dBuV)	Limits QP (dBuV)	Margin QP (dB)	Frequency (MHz)	Corrected AVE Level (dBuV)	Limits AVE (dBuV)	Margin AVE (dB)
1	0.175	52.66	64.71	-12.05	0.175	46.06	54.71	-8.65
2	0.359	54.73	58.73	-4.00	0.359	45.28	48.73	-3.45
3	0.531	53.26	56.00	-2.74	0.531	43.96	46.00	-2.04
4	1.065	47.50	56.00	-8.50	1.065	40.90	46.00	-5.10
5	2.121	53.04	56.00	-2.96	2.121	41.84	46.00	-4.16
6	2.839	48.70	56.00	-7.30	2.839	41.00	46.00	-5.00
Note: All readings are using a bandwidth of 9 kHz, with a 30 ms sweep time. A video filter was not used.								

**Mode 3: Transmit by 802.11n (20MHz bandwidth)
Channel 06 (2437MHz)**



Line L (Hot Lead)								
Signal	Frequency (MHz)	Corrected QP Level (dBuV)	Limits QP (dBuV)	Margin QP (dB)	Frequency (MHz)	Corrected AVE Level (dBuV)	Limits AVE (dBuV)	Margin AVE (dB)
1	0.507	46.48	56.00	-9.52	0.507	38.54	46.00	-7.46
2	1.024	46.57	56.00	-9.43	1.024	37.95	46.00	-8.05
3	1.317	46.86	56.00	-9.14	1.317	38.12	46.00	-7.88
4	1.809	46.38	56.00	-9.62	1.809	37.67	46.00	-8.33
5	2.149	45.23	56.00	-10.77	2.149	35.93	46.00	-10.07
6	9.992	40.40	60.00	-19.60	9.992	33.56	50.00	-16.44
Line N (Neutral Lead)								
Signal	Frequency (MHz)	Corrected QP Level (dBuV)	Limits QP (dBuV)	Margin QP (dB)	Frequency (MHz)	Corrected AVE Level (dBuV)	Limits AVE (dBuV)	Margin AVE (dB)
1	0.336	48.70	59.29	-10.59	0.336	40.34	49.29	-8.95
2	0.494	46.53	56.10	-9.57	0.494	38.43	46.10	-7.67
3	1.317	46.70	56.00	-9.30	1.317	38.34	46.00	-7.66
4	1.834	47.44	56.00	-8.56	1.834	39.10	46.00	-6.90
5	2.012	45.57	56.00	-10.43	2.012	37.64	46.00	-8.36
6	9.992	41.76	60.00	-18.24	9.992	32.06	50.00	-17.94
Note: All readings are using a bandwidth of 9 kHz, with a 30 ms sweep time. A video filter was not used.								

**Mode 4: Transmit by 802.11n (40MHz bandwidth)
Channel 06 (2437MHz)**



Line L (Hot Lead)								
Signal	Frequency (MHz)	Corrected QP Level (dBuV)	Limits QP (dBuV)	Margin QP (dB)	Frequency (MHz)	Corrected AVE Level (dBuV)	Limits AVE (dBuV)	Margin AVE (dB)
1	0.315	43.24	59.84	-16.6	0.315	36.79	49.84	-13.05
2	0.494	46.33	56.10	-9.77	0.494	35.02	46.10	-11.08
3	0.885	44.81	56.00	-11.19	0.885	37.94	46.00	-8.06
4	1.317	43.59	56.00	-12.41	1.317	36.54	46.00	-9.46
5	2.012	46.81	56.00	-9.19	2.012	37.29	46.00	-8.71
6	9.992	40.54	60.00	-19.46	9.992	33.34	50.00	-16.66
Line N (Neutral Lead)								
Signal	Frequency (MHz)	Corrected QP Level (dBuV)	Limits QP (dBuV)	Margin QP (dB)	Frequency (MHz)	Corrected AVE Level (dBuV)	Limits AVE (dBuV)	Margin AVE (dB)
1	0.165	50.15	65.22	-15.07	0.165	41.23	55.22	-13.99
2	0.328	49.10	59.51	-10.41	0.328	40.23	49.51	-9.28
3	0.488	44.25	56.21	-11.96	0.488	37.49	46.21	-8.72
4	1.153	44.01	56.00	-11.99	1.153	37.20	46.00	-8.80
5	1.809	46.68	56.00	-9.32	1.809	39.12	46.00	-6.88
6	8.869	37.81	60.00	-22.19	8.869	32.73	50.00	-17.27
Note: All readings are using a bandwidth of 9 kHz, with a 30 ms sweep time. A video filter was not used.								

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP	85462A	3650A00363	11/29/07	11/28/08
LISN	R&S	ESH3-Z5	844249/018	12/04/07	12/03/08
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.					

SIGNED BY:

Cloud Feng

ENGINEER

REVIEWED BY:

Hang Zhao

SENIOR ENGINEER

ATTACHMENT 3 – GENERAL RADIATED EMISSIONS

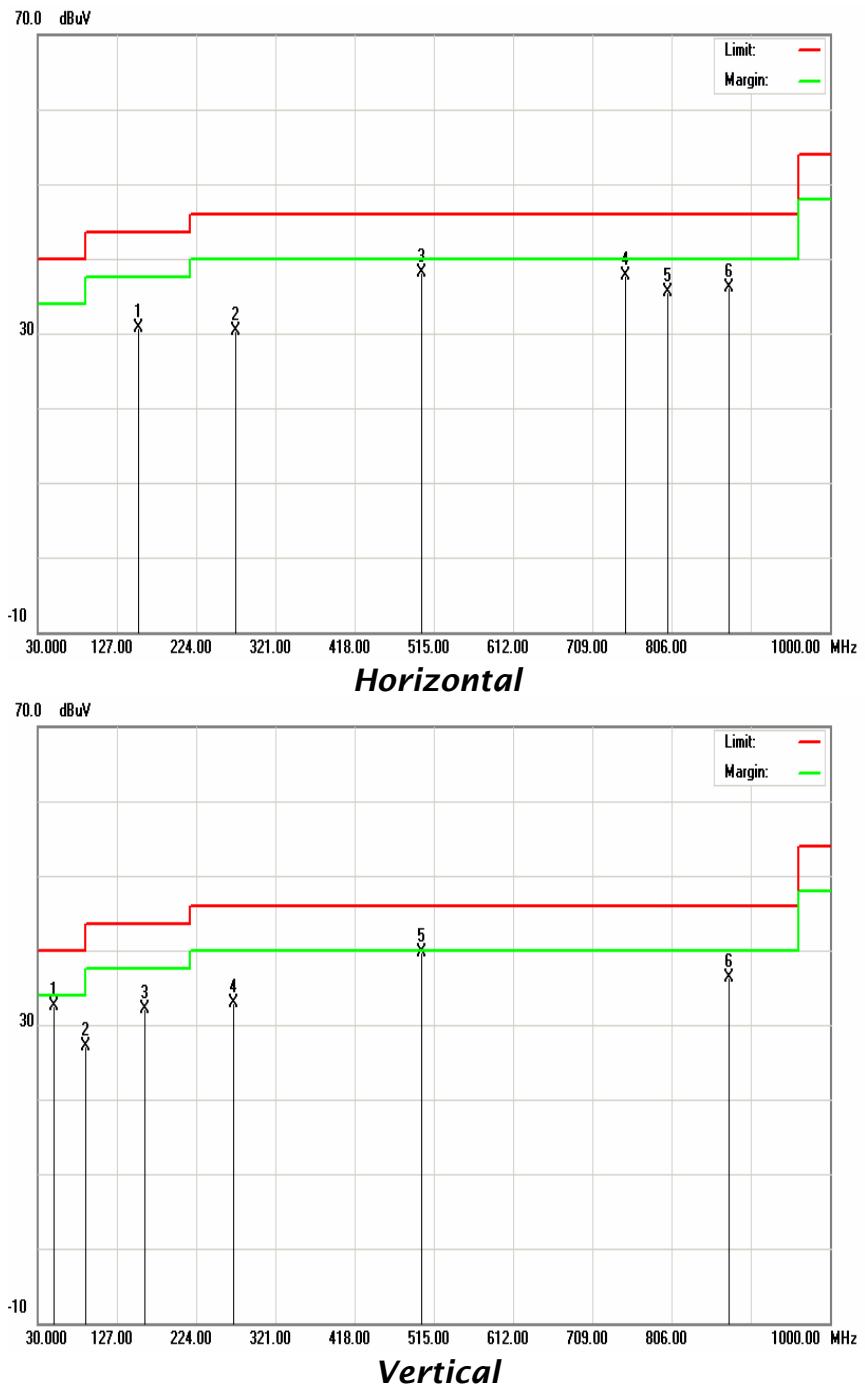
CLIENT:	CC&C Technologies, Inc.	TEST STANDARD:	FCC Part 15.209, 15.205
MODEL TESTED:	WA-6202	PRODUCT:	WLAN 11n Mini Router
SERIAL NO.:	Engineering Sample	EUT DESIGNATION:	RF Equipment
TEMPERATURE:	24°C	HUMIDITY:	55%RH
ATM PRESSURE:	101.7 kPa	GROUNDING:	Grounding Through PC
TESTED BY:	Cloud Feng	DATE OF TEST:	2008, July 23
SETUP METHOD:	ANSI C63.4 - 2003		
TEST PROCEDURE:	<p>The EUT is set up according to the guidelines of ANSI C63.4 for radiated emissions. The length of the antenna was adjusted to the maximum output level. An EMI receiver peak scan is made at the frequency measurement range (pre-scan) in an Anechoic chamber. Signal discrimination is then performed and the significant peaks marked. These peaks are then quasi-peaked for final test at an Open Site Test area. The frequency investigated is from 30MHz to 1GHz.</p> <p>The following data lists the significant emission frequencies, measured levels, correction factors (including cable and antenna correction factors), and the corrected readings against the limits. Explanation of the Correction Factor is given as follows:</p> <p>FS= RA + AF + CF - AG Where: FS = Field Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Attenuation Factor AG = Amplifier Gain</p>		
TESTED RANGE:	30MHz to 24,000MHz		
TEST VOLTAGE:	120V / 60Hz		
RESULTS:	<p>- The EUT meets the requirements of test reference for Radiated Emissions.</p> <p>The test results relate only to the equipment under test provided by client.</p>		
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Worldwide Certification Solution, Inc. test personnel.		
M. UNCERTAINTY:	Freq. $\pm 2 \times 10^{-7} \times$ Center Freq., Amp ± 2.6 dB		

Model: WA-6202

Test modes:

Mode 1	<i>Transmit by 802.11b Channel 01 (2412MHz) , Channel 06 (2437MHz) & Channel 11 (2462MHz)</i>
Mode 2	<i>Transmit by 802.11g Channel 01 (2412MHz) , Channel 06 (2437MHz) & Channel 11 (2462MHz)</i>
Mode 3	<i>Transmit by 802.11n (20MHz bandwidth) Channel 01 (2412MHz) , Channel 06 (2437MHz) & Channel 11 (2462MHz)</i>
Mode 4	<i>Transmit by 802.11n (40MHz bandwidth) Channel 03 (2422MHz) , Channel 06 (2437MHz) & Channel 09 (2452MHz)</i>

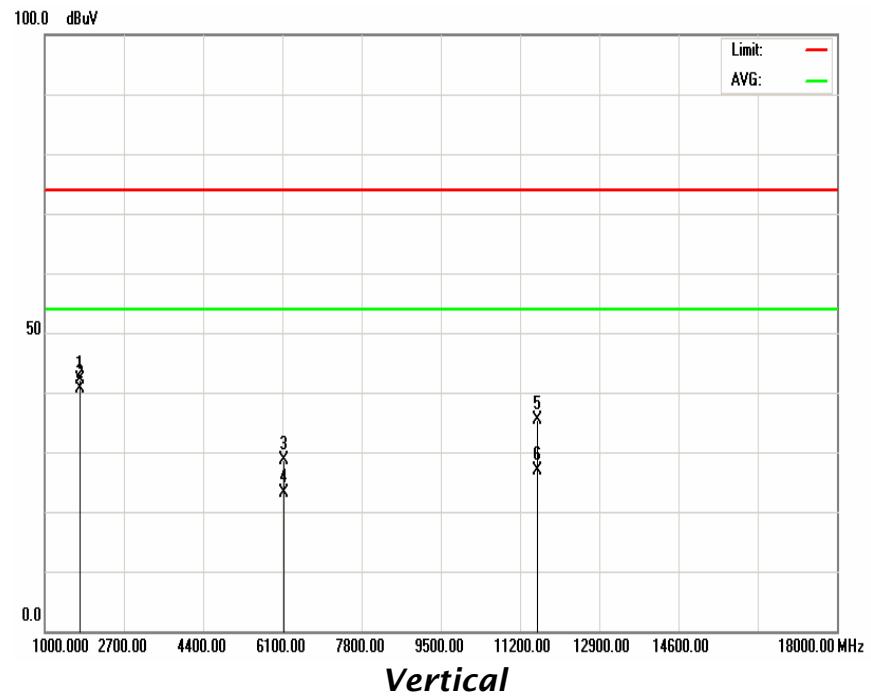
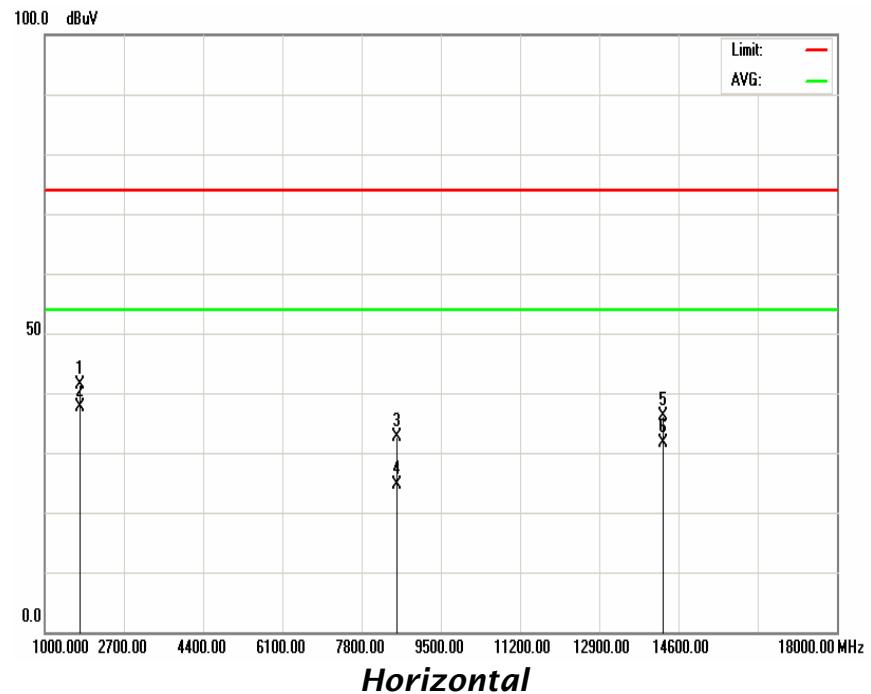
Mode 1: Transmit by 802.11b
Channel 01 (2412MHz)
Below 1GHz



Horizontal							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	152.850	12.03	30.63	43.50	-12.87	129	152
2	271.569	14.98	30.22	46.00	-15.78	276	122
3	500.000	20.10	38.11	46.00	-7.89	209	149
4	750.048	23.40	37.72	46.00	-8.28	127	176
5	800.000	24.10	35.53	46.00	-10.47	192	189
6	876.100	24.86	36.06	46.00	-9.94	23	109
Vertical							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	47.858	10.01	32.51	40.00	-7.49	354	103
2	86.058	8.60	27.20	40.00	-12.80	143	123
3	160.025	12.24	32.04	43.50	-11.46	138	108
4	268.359	14.93	32.98	46.00	-13.02	182	100
5	500.000	20.10	39.62	46.00	-6.38	102	120
6	875.000	24.85	36.28	46.00	-9.72	283	104

Note: All readings are quasi-peak unless stated otherwise, using a QP bandwidth of 120kHz, with a 500 ms sweep time. A video filter was not used.

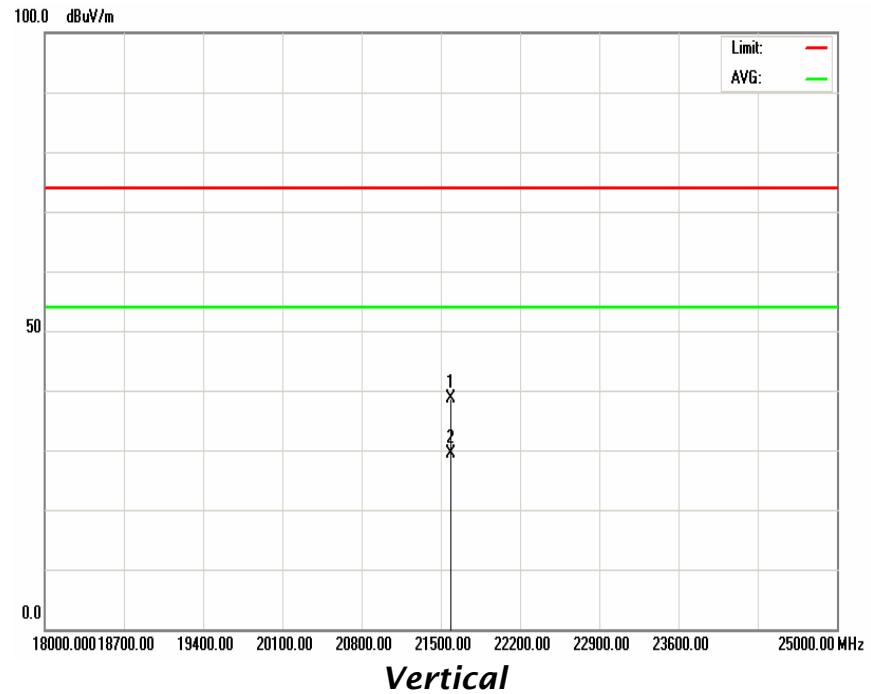
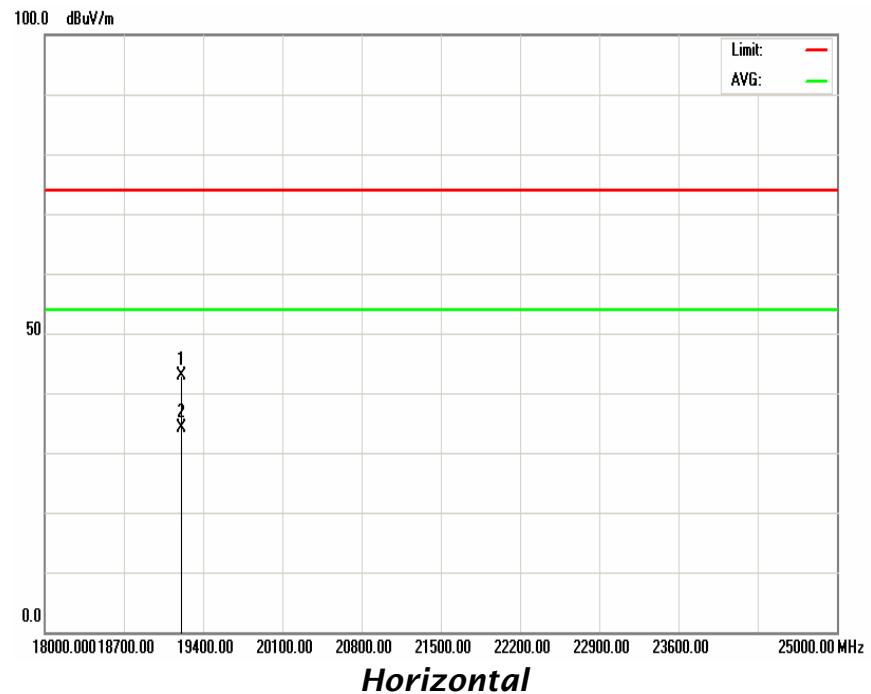
*Mode 1: Transmit by 802.11b
Channel 01 (2412MHz)
1GHz-18GHz*



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1747	27.71	41.31	74.00	-32.69	peak
2	1747	27.71	37.75	54.00	-16.25	AVG
3	8547	34.12	32.74	74.00	-41.26	peak
4	8547	34.12	24.52	54.00	-29.48	AVG
5	14257	38.14	36.14	74.00	-37.86	peak
6	14257	38.14	31.74	54.00	-22.26	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1730	27.60	42.20	74.00	-31.80	peak
2	1730	27.60	40.64	54.00	-13.36	AVG
3	6128	32.18	28.63	74.00	-45.37	peak
4	6128	32.18	23.04	54.00	-30.96	AVG
5	11580	36.87	35.36	74.00	-38.64	peak
6	11580	36.87	26.90	54.00	-27.10	AVG

Note: All readings are peak readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

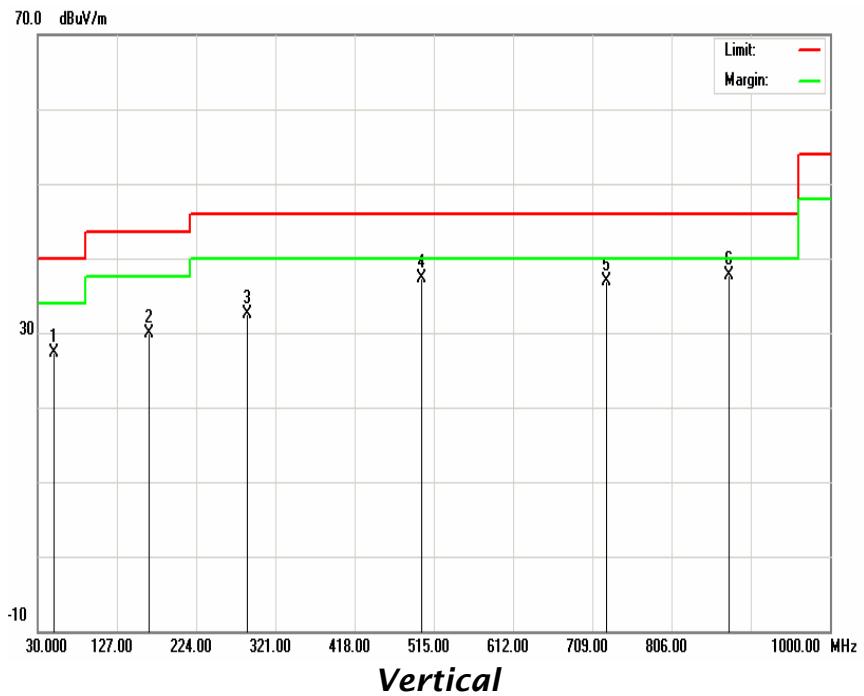
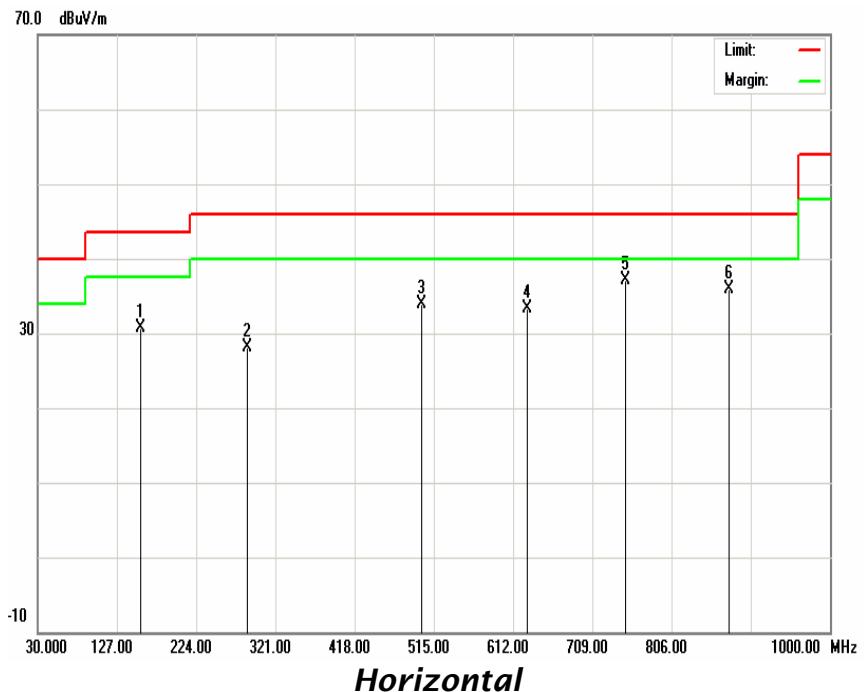
**Mode 1: Transmit by 802.11b
Channel 01 (2412MHz)
18GHz-25GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	19204	40.01	42.90	74.00	-31.10	peak
2	19204	40.01	34.10	54.00	-19.90	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	21582	40.13	38.60	74.00	-35.40	peak
2	21582	40.13	29.30	54.00	-24.70	AVG

Note: All readings are peak readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

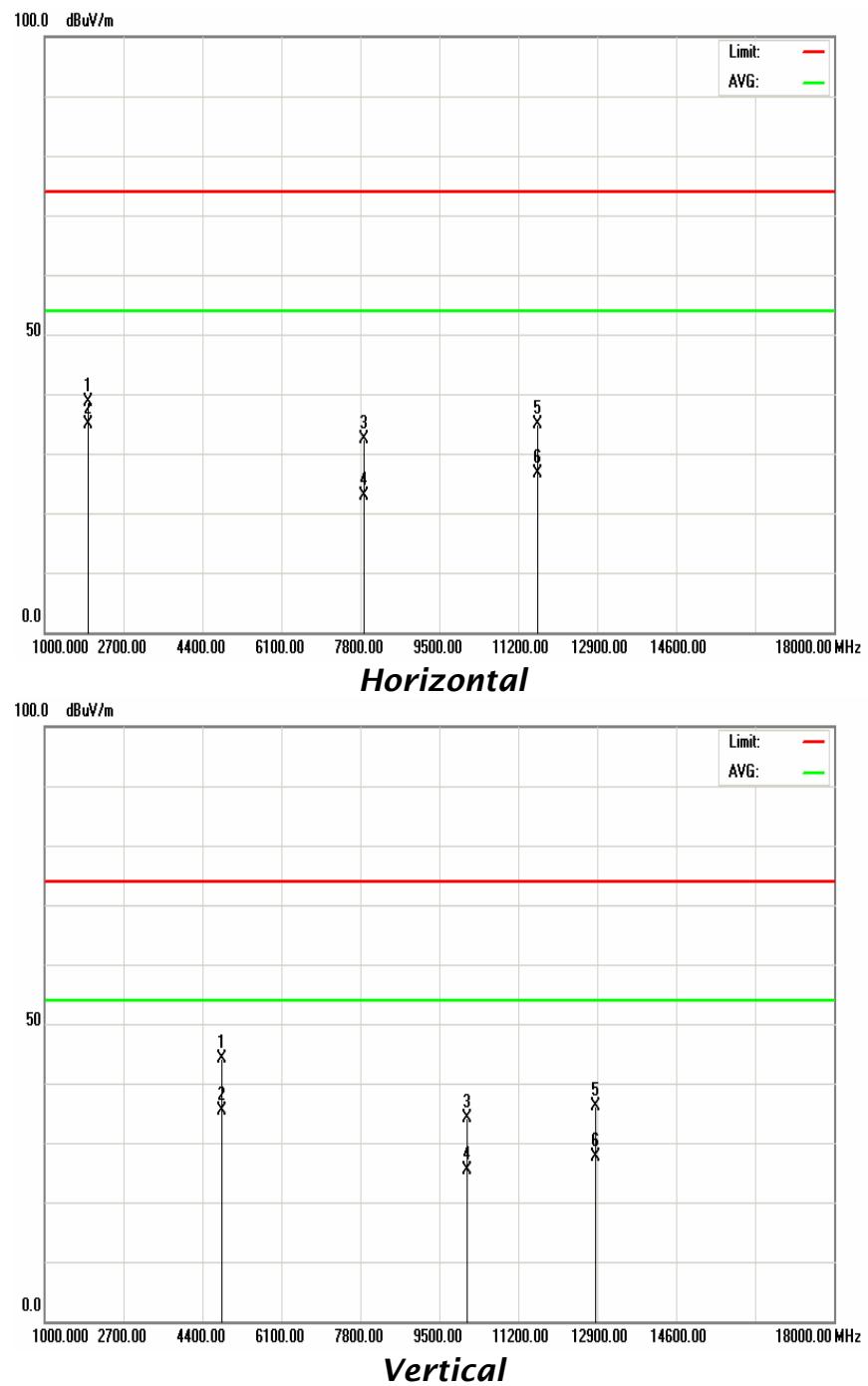
Mode 1: Transmit by 802.11b
Channel 06 (2437MHz)
Below 1GHz



Horizontal							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	154.280	12.07	30.67	43.50	-12.83	10	100
2	285.650	15.24	28.04	46.00	-17.96	302	120
3	500.000	20.10	33.90	46.00	-12.1	343	142
4	628.350	21.34	33.34	46.00	-12.66	183	102
5	750.000	23.40	37.20	46.00	-8.80	293	173
6	875.300	24.85	35.85	46.00	-10.15	273	128
Vertical							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	48.500	9.68	27.28	40.00	-12.72	102	103
2	164.520	12.37	29.97	43.50	-13.53	204	123
3	286.320	15.25	32.45	46.00	-13.55	293	108
4	500.200	20.10	37.40	46.00	-8.60	219	105
5	724.250	23.04	36.84	46.00	-9.16	319	118
6	874.600	24.85	37.75	46.00	-8.25	234	104

Note: All readings are quasi-peak unless stated otherwise, using a QP bandwidth of 120kHz, with a 500 ms sweep time. A video filter was not used.

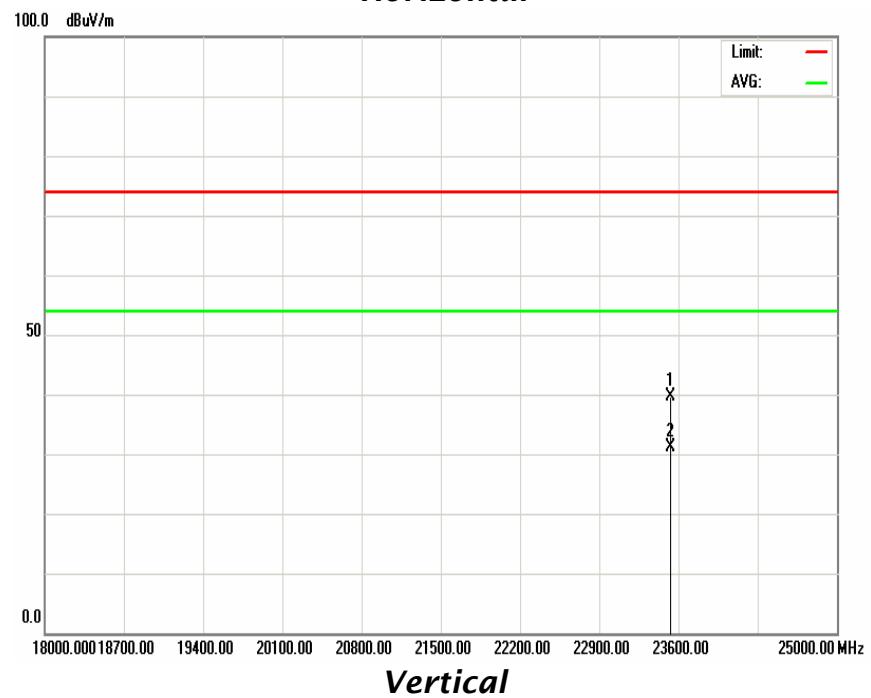
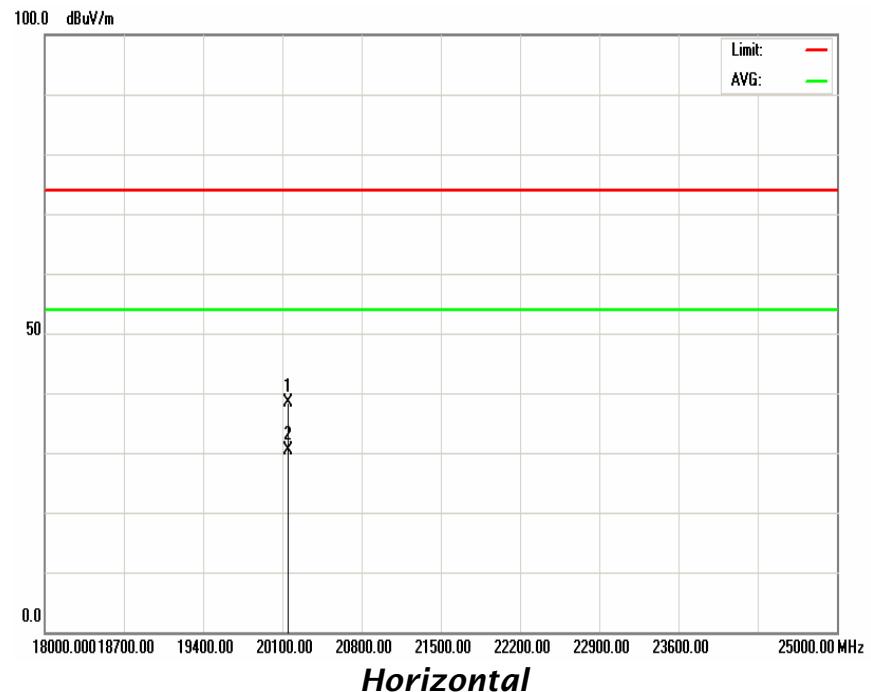
**Mode 1: Transmit by 802.11b
Channel 06 (2437MHz)
1GHz-18GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1901	28.68	38.53	74.00	-35.47	peak
2	1901	28.68	34.92	54.00	-19.08	AVG
3	7856	33.56	32.45	74.00	-41.55	peak
4	7856	33.56	22.85	54.00	-31.15	AVG
5	11585	36.73	34.86	74.00	-39.14	peak
6	11585	36.73	26.70	54.00	-27.30	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	4825	32.93	44.24	74.00	-29.76	peak
2	4825	32.93	35.41	54.00	-18.59	AVG
3	10054	35.84	34.15	74.00	-39.85	peak
4	10054	35.84	25.39	54.00	-28.61	AVG
5	12854	37.14	36.24	74.00	-37.76	peak
6	12854	37.14	27.59	54.00	-26.41	AVG

Note: All readings are peak readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

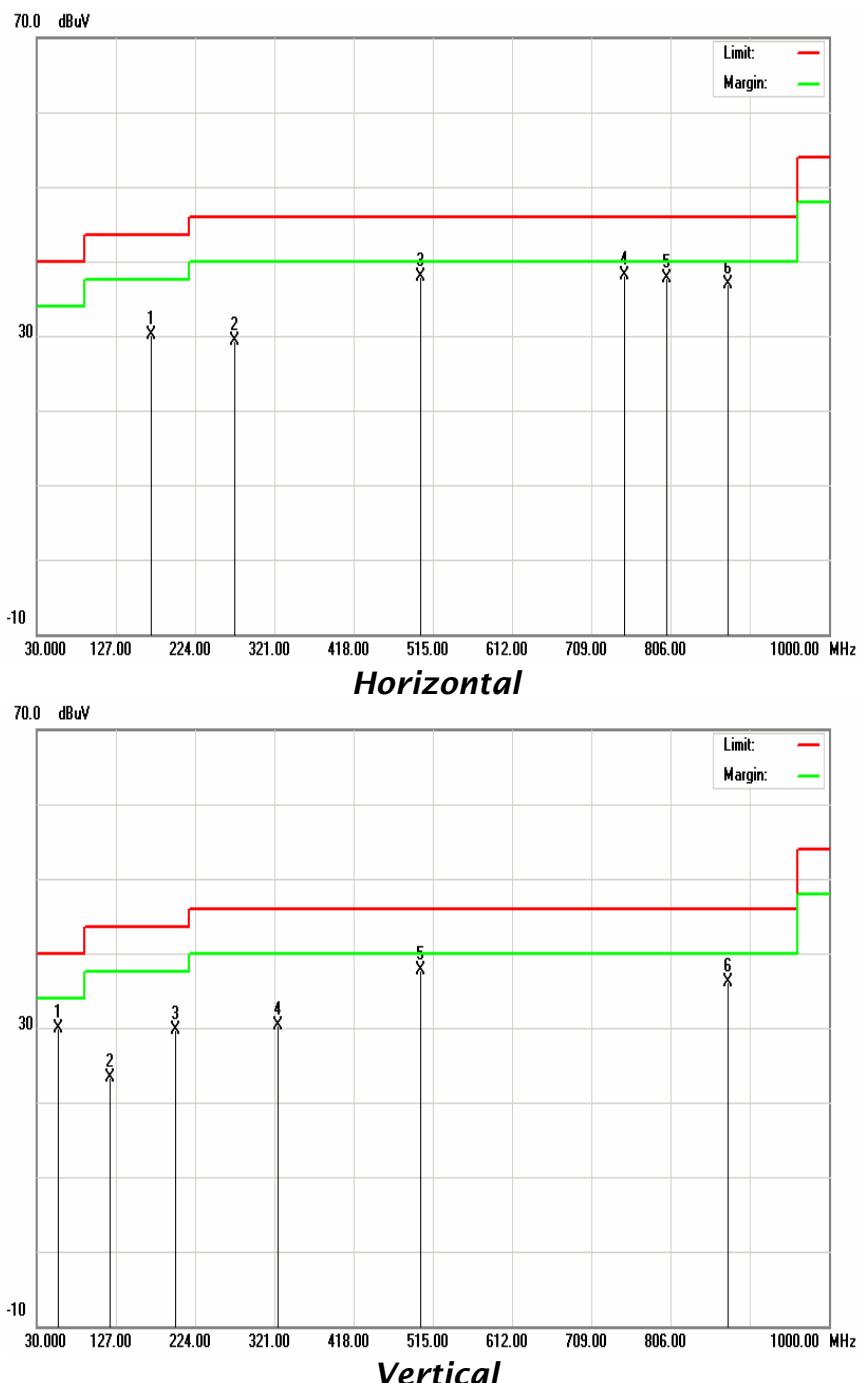
**Mode 1: Transmit by 802.11b
Channel 06 (2437MHz)
18GHz-25GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	20150	40.12	38.40	74.00	-35.60	peak
2	20150	40.12	30.40	54.00	-23.60	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	23520	42.14	39.60	74.00	-34.40	peak
2	23520	42.14	31.20	54.00	-22.80	AVG

Note: All readings are peak readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

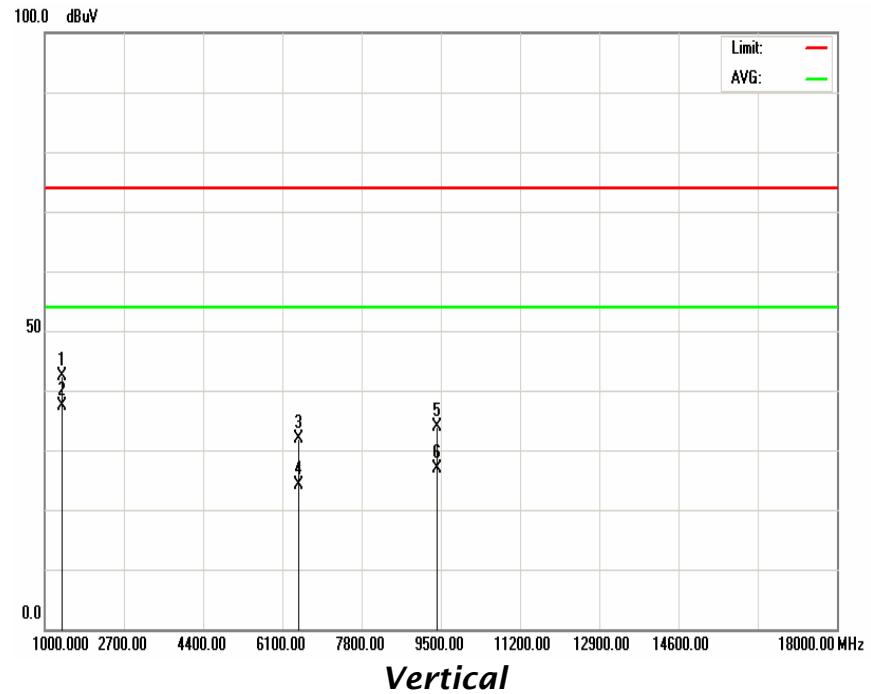
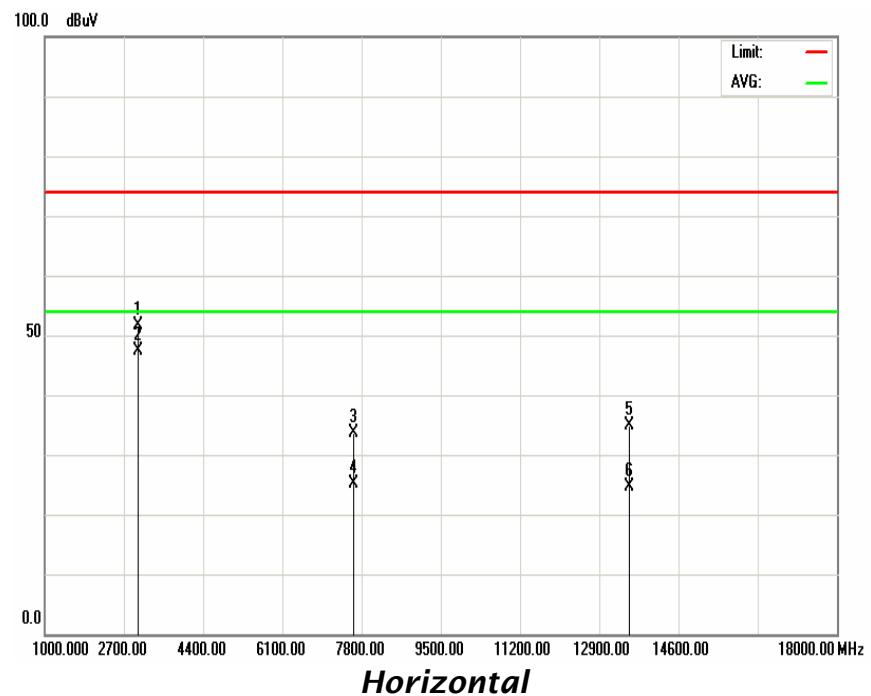
Mode 1: Transmit by 802.11b
Channel 11 (2462MHz)
Below 1GHz



Horizontal							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	168.25	12.48	30.13	43.50	-13.37	283	198
2	270.86	14.97	29.33	46.00	-16.67	133	145
3	500.00	20.1	37.95	46.00	-8.05	26	139
4	750.00	23.4	38.05	46.00	-7.95	327	128
5	801.00	24.11	37.76	46.00	-8.24	359	110
6	875.05	24.85	36.85	46.00	-9.15	23	100
Vertical							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	55.75	8.85	29.89	40.00	-10.11	176	100
2	119.65	10.77	23.31	43.50	-20.19	234	116
3	198.65	13.55	29.75	43.50	-13.75	180	100
4	325.00	16.05	30.35	46.00	-15.65	58	105
5	500.00	20.10	37.70	46.00	-8.30	350	117
6	875.00	24.85	36.08	46.00	-9.92	336	117

Note: All readings are quasi-peak unless stated otherwise, using a QP bandwidth of 120kHz, with a 500 ms sweep time. A video filter was not used.

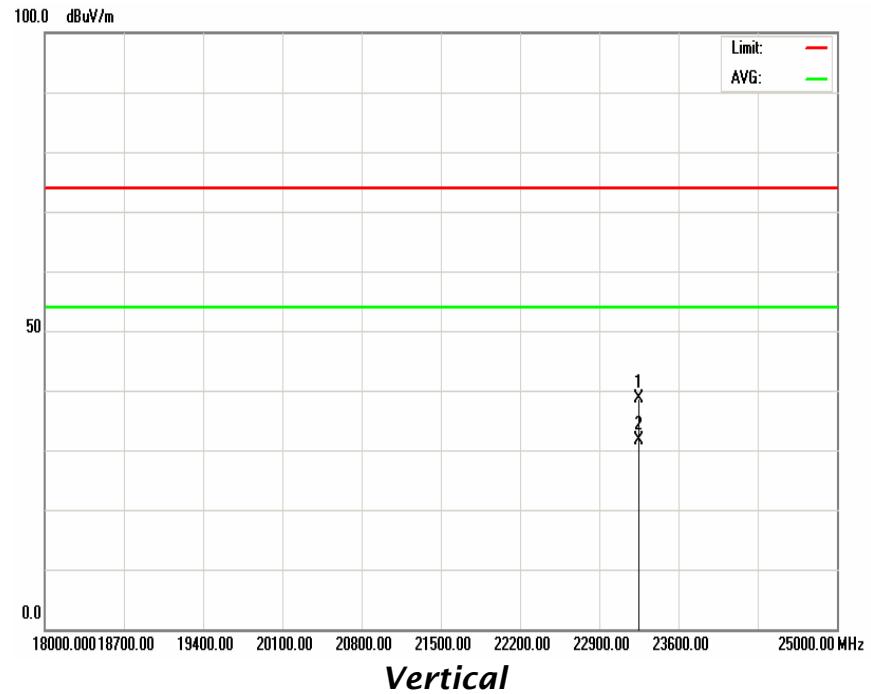
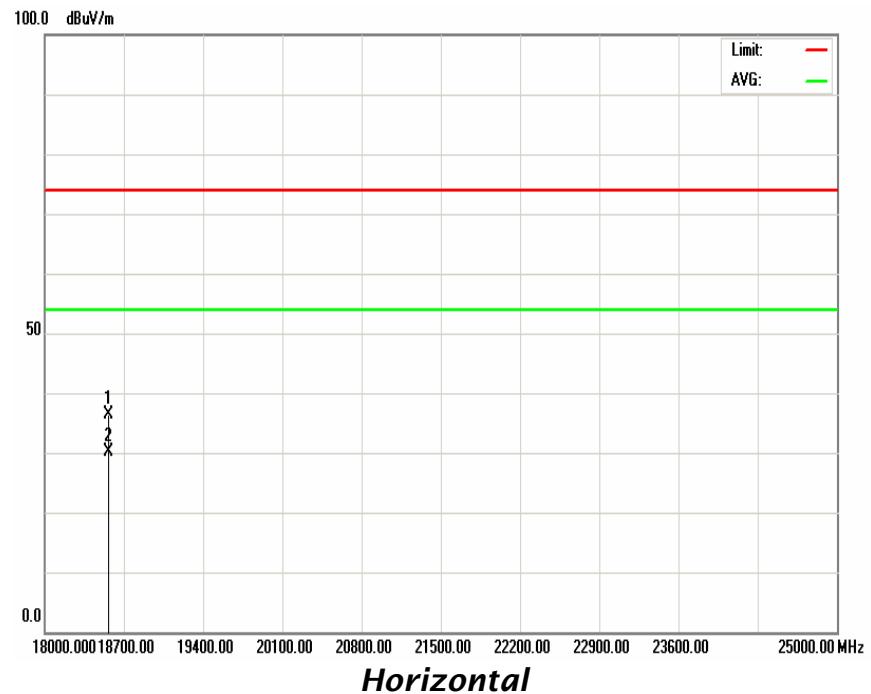
Mode 1: Transmit by 802.11b
Channel 11 (2462MHz)
1GHz-18GHz



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	2975	32.47	51.61	74.00	-22.39	peak
2	2975	32.47	47.47	54.00	-6.53	AVG
3	7626	33.84	33.56	74.00	-40.44	peak
4	7626	33.84	25.05	54.00	-28.95	AVG
5	13527	37.10	34.85	74.00	-39.15	peak
6	13527	37.10	24.65	54.00	-29.35	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1352	25.22	42.47	74.00	-31.53	peak
2	1352	25.22	37.26	54.00	-16.74	AVG
3	6428	33.27	31.85	74.00	-42.15	peak
4	6428	33.27	24.01	54.00	-29.99	AVG
5	9405	34.76	33.85	74.00	-40.15	peak
6	9405	34.76	26.98	54.00	-27.02	AVG

Note: All readings are & average readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

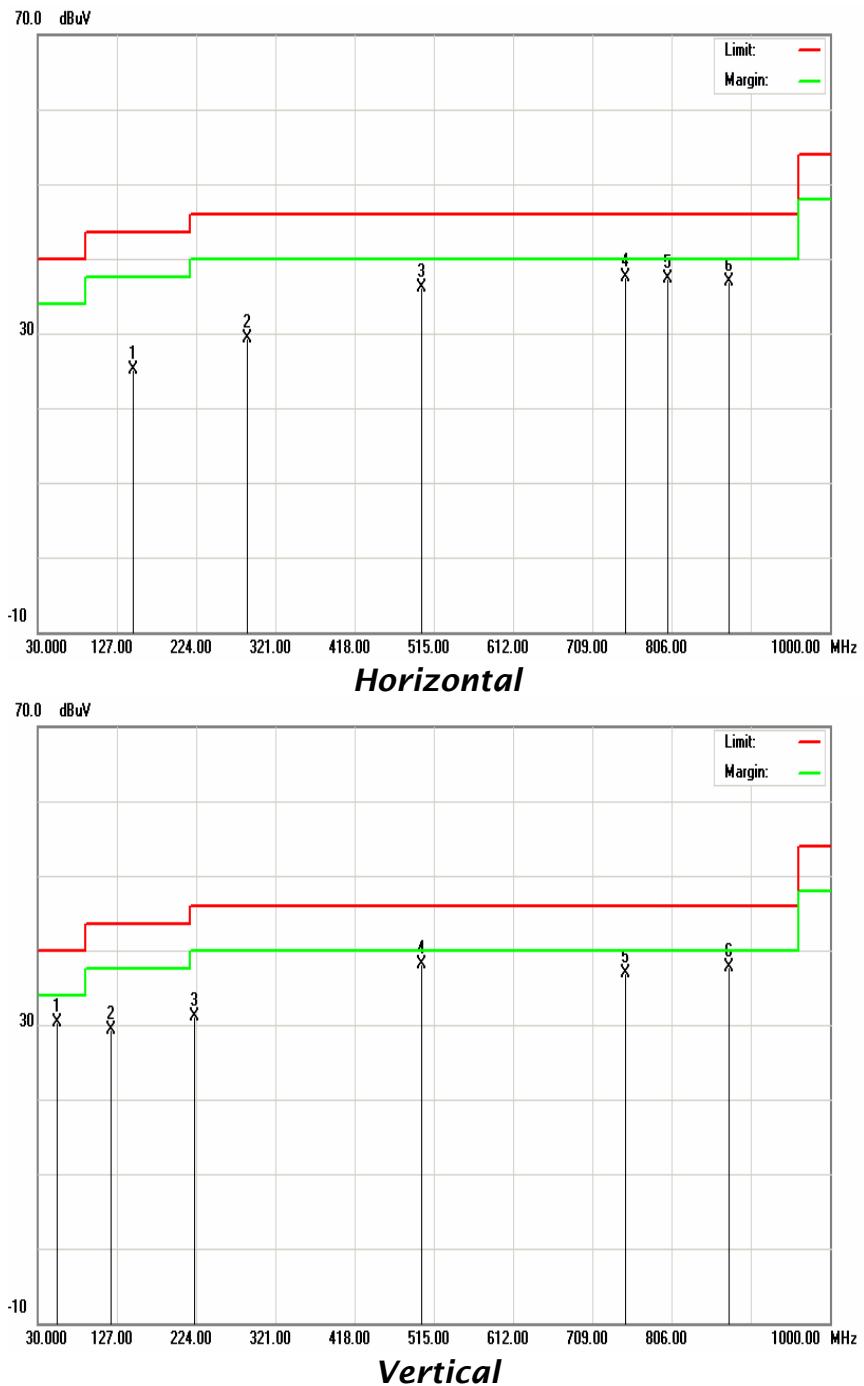
**Mode 1: Transmit by 802.11b
Channel 11 (2462MHz)
18GHz-25GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	18560	38.95	36.40	74.00	-37.60	peak
2	18560	38.95	30.20	54.00	-23.80	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	23250	43.14	38.60	74.00	-35.40	peak
2	23250	43.14	31.60	54.00	-22.40	AVG

Note: All readings are peak readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

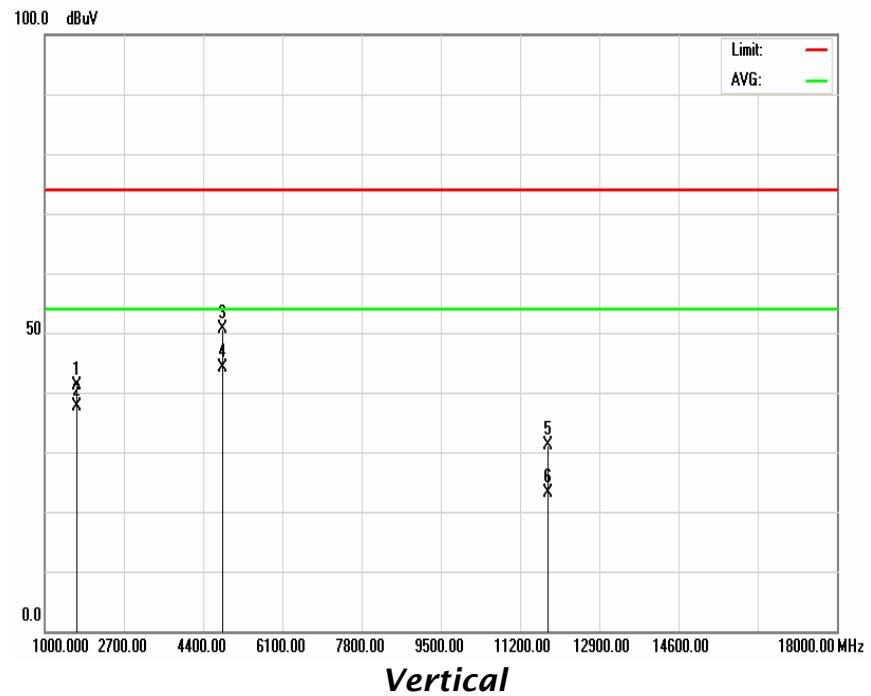
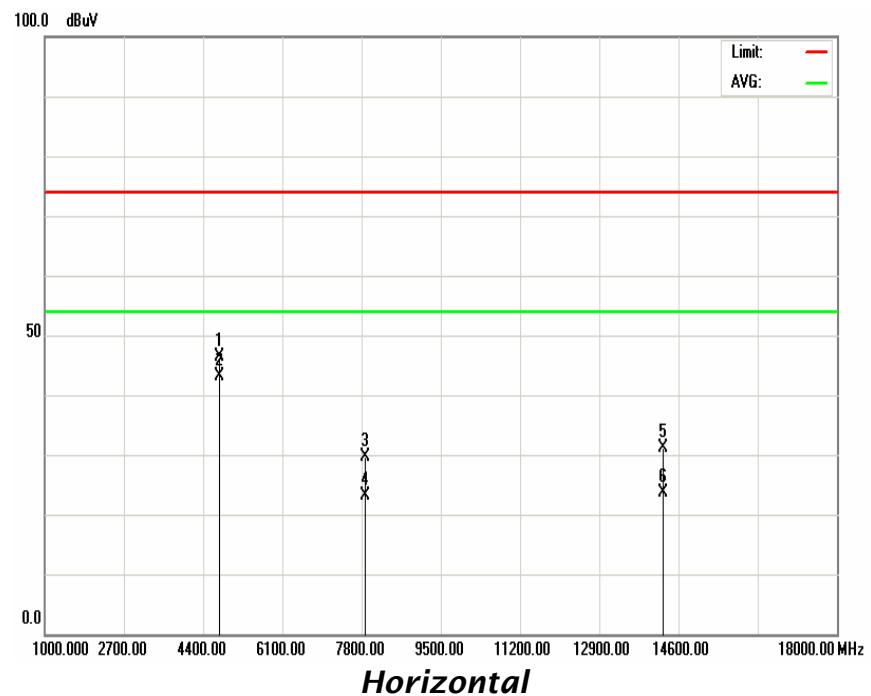
Mode 2: Transmit by 802.11g
Channel 01 (2412MHz)
Below 1GHz



Horizontal							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	145.36	11.77	25.02	43.50	-18.48	232	123
2	285.14	15.23	29.21	46.00	-16.79	198	176
3	500.00	20.10	36.15	46.00	-9.85	173	142
4	750.00	23.40	37.58	46.00	-8.42	328	103
5	800.25	24.10	37.35	46.00	-8.65	230	187
6	875.00	24.85	36.82	46.00	-9.18	278	162
Vertical							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	53.68	8.86	30.33	40.00	-9.67	134	109
2	118.65	10.73	29.36	43.50	-14.14	127	114
3	220.85	14.01	31.05	46.00	-14.95	187	100
4	500.00	20.10	38.14	46.00	-7.86	293	105
5	750.00	23.40	36.96	46.00	-9.04	285	100
6	875.00	24.85	37.64	46.00	-8.36	89	103

Note: All readings are quasi-peak unless stated otherwise, using a QP bandwidth of 120kHz, with a 500 ms sweep time. A video filter was not used.

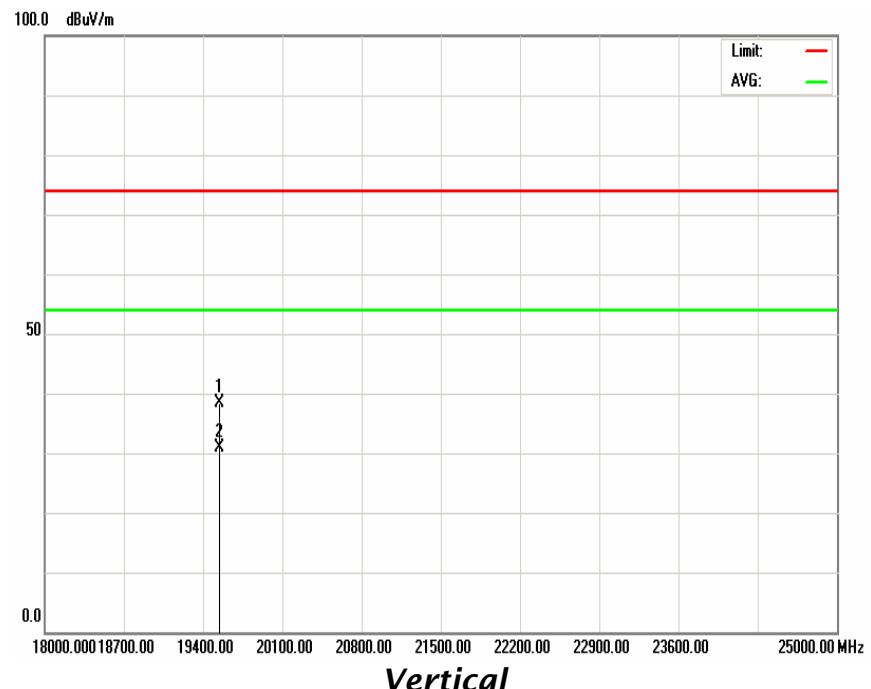
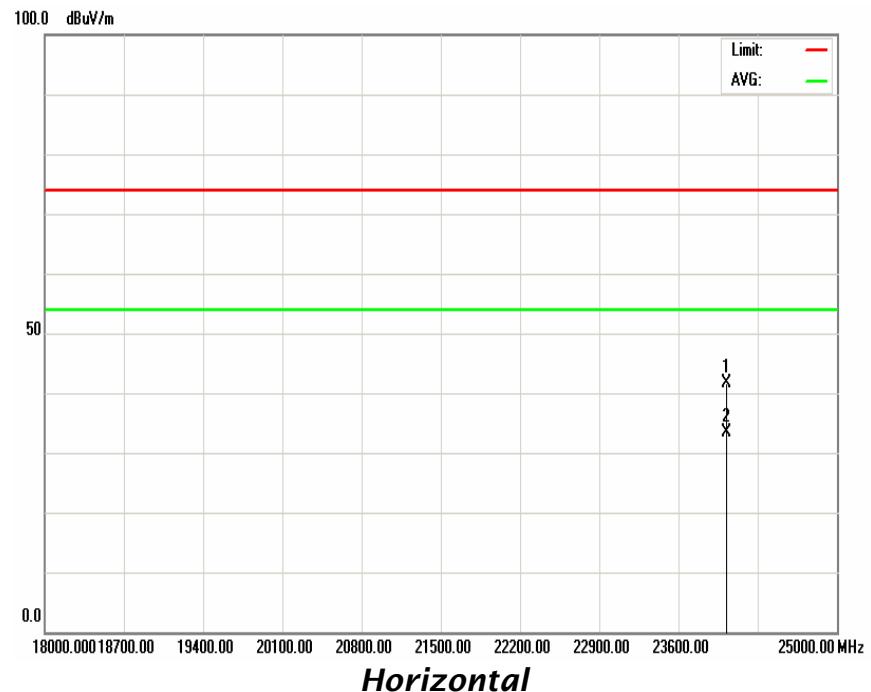
Mode 2: Transmit by 802.11g
Channel 01 (2412MHz)
1GHz-18GHz



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	4724	33.82	46.41	74.00	-27.59	peak
2	4724	33.82	43.07	54.00	-10.93	AVG
3	7854	33.90	29.69	74.00	-44.31	peak
4	7854	33.90	23.25	54.00	-30.75	AVG
5	14258	38.16	31.07	74.00	-42.93	peak
6	14258	38.16	23.55	54.00	-30.45	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1655	27.13	41.09	74.00	-32.91	peak
2	1655	27.13	37.75	54.00	-16.25	AVG
3	4813	33.91	50.65	74.00	-23.35	peak
4	4813	33.91	44.19	54.00	-9.81	AVG
5	11754	36.57	31.04	74.00	-42.96	peak
6	11754	36.57	23.14	54.00	-30.86	AVG

Note: All readings are & average readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

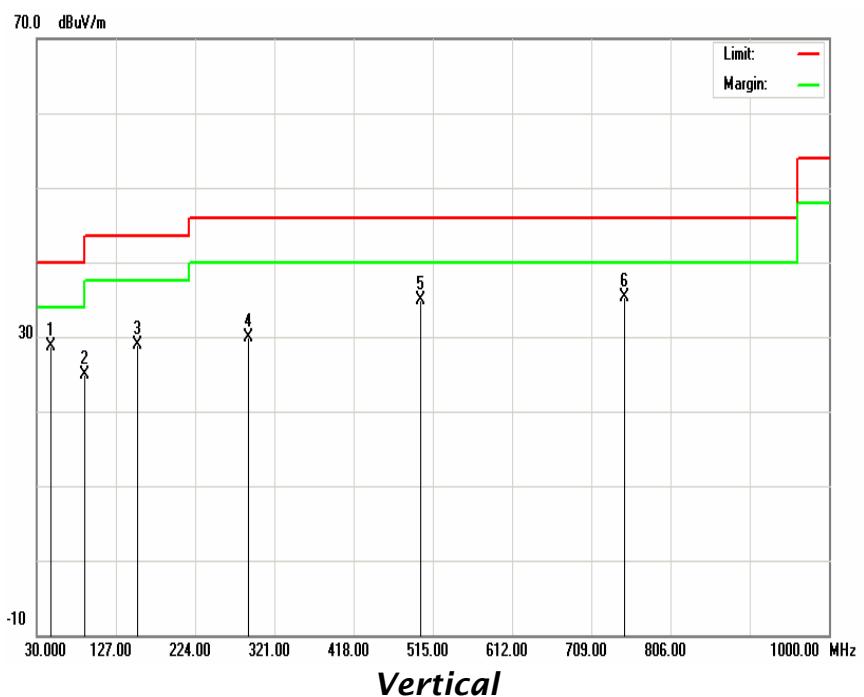
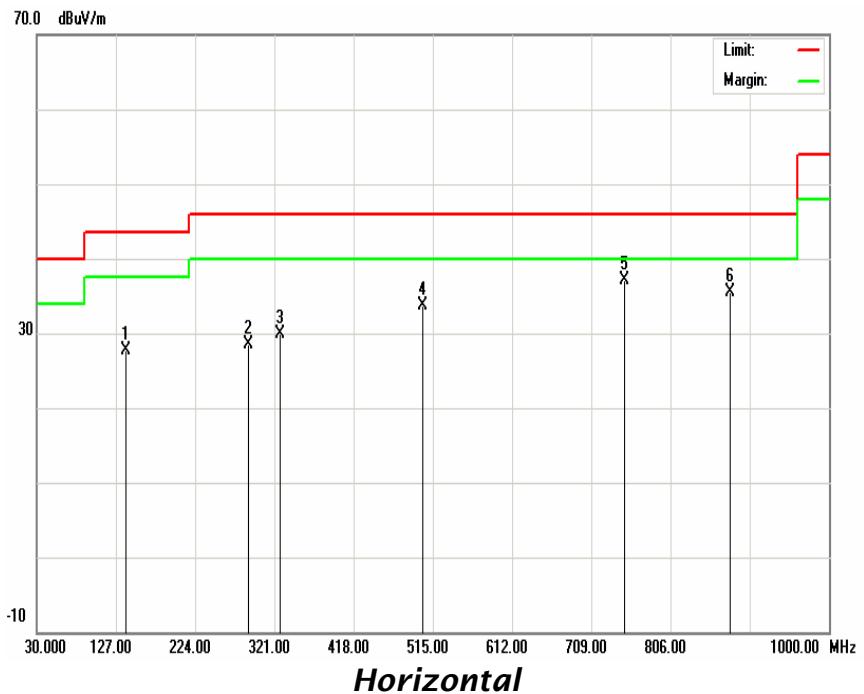
**Mode 2: Transmit by 802.11g
Channel 01 (2412MHz)
18GHz-25GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	24018	43.60	41.60	74.00	-32.40	peak
2	24018	43.60	33.50	54.00	-20.50	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	19536	39.38	38.50	74.00	-35.50	peak
2	19536	39.38	31.00	54.00	-23.00	AVG

Note: All readings are peak readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

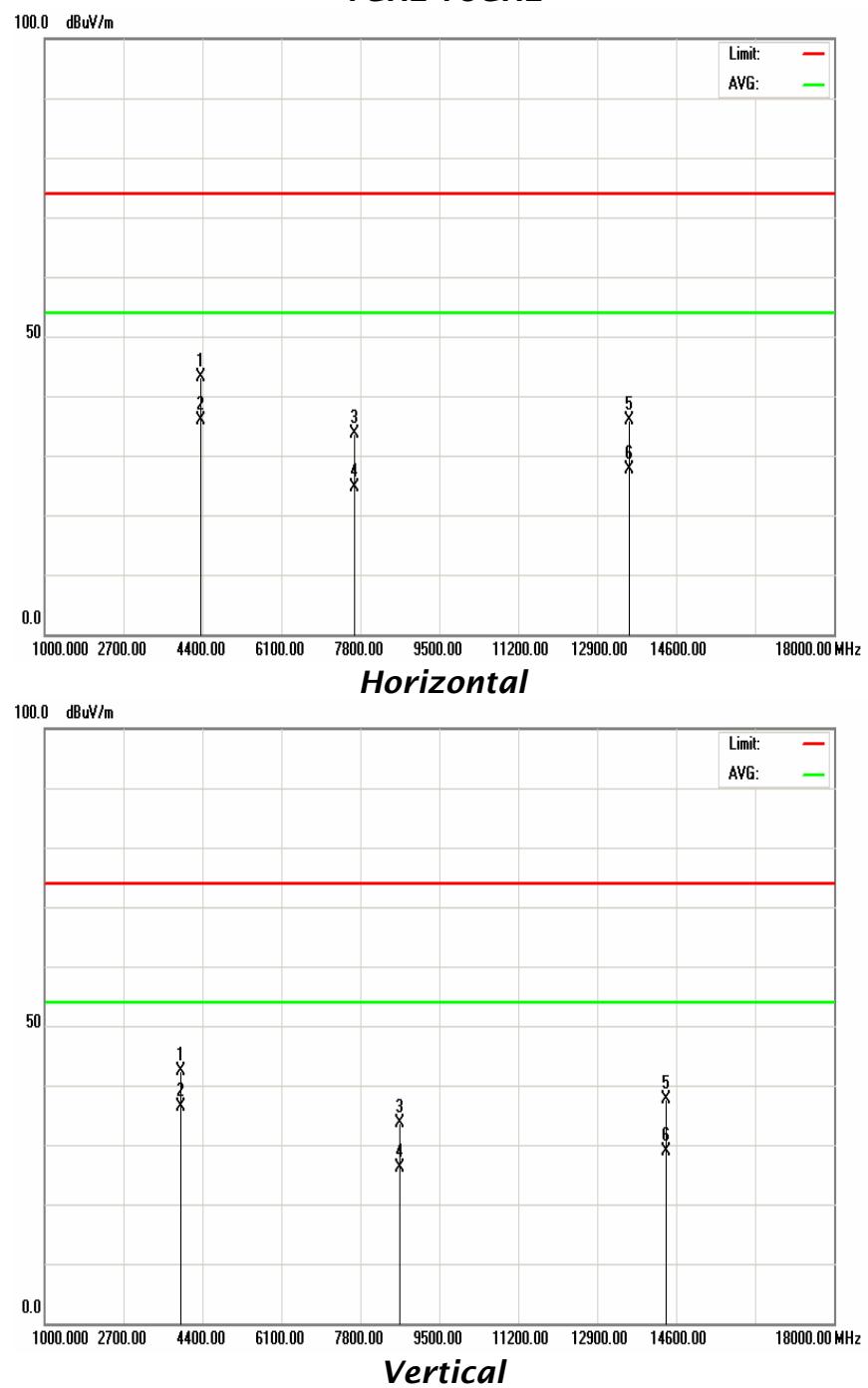
Mode 2: Transmit by 802.11g
Channel 06 (2437MHz)
Below 1GHz



Horizontal							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	137.580	11.47	27.67	43.50	-15.83	293	193
2	287.650	15.28	28.48	46.00	-17.52	318	183
3	326.500	16.09	29.89	46.00	-16.11	26	103
4	501.400	20.11	33.71	46.00	-12.29	132	129
5	750.120	23.40	37.20	46.00	-8.80	104	132
6	877.250	24.87	35.57	46.00	-10.43	138	162
Vertical							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	45.750	11.11	28.72	40.00	-11.28	18	100
2	87.320	8.53	24.83	40.00	-15.17	74	103
3	152.250	12.02	28.92	43.50	-14.58	345	103
4	288.600	15.30	29.90	46.00	-16.1	203	104
5	500.00	20.10	35.00	46.00	-11	218	102
6	750.00	23.40	35.30	46.00	-10.7	164	103

Note: All readings are quasi-peak unless stated otherwise, using a QP bandwidth of 120kHz, with a 500 ms sweep time. A video filter was not used.

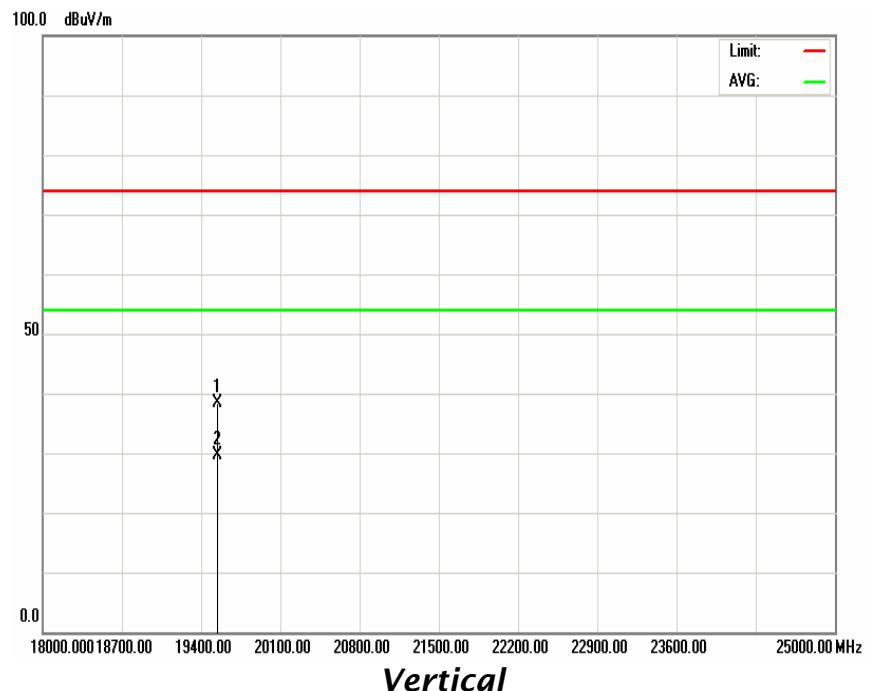
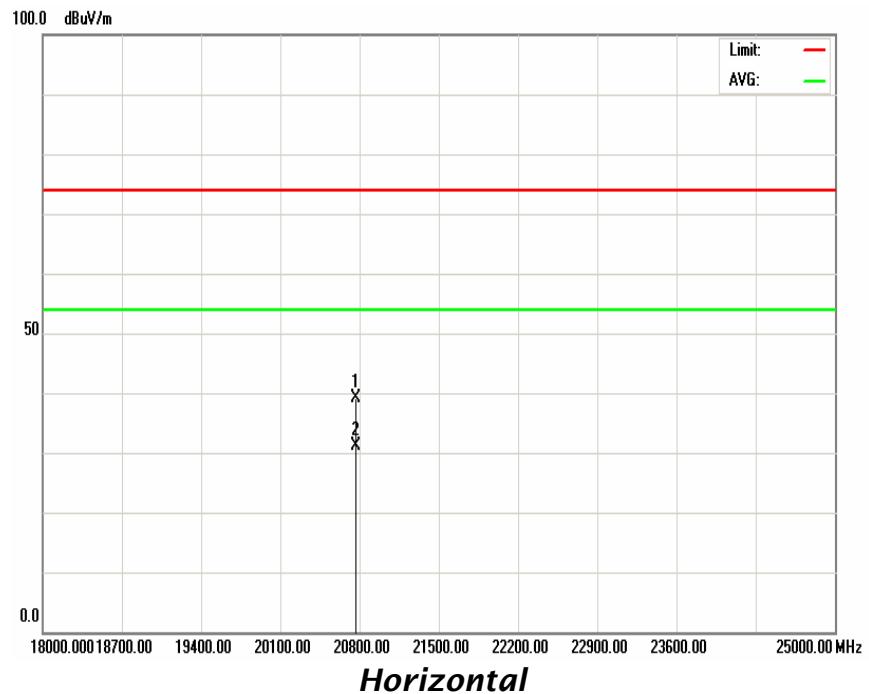
Mode 2: Transmit by 802.11g
Channel 06 (2437MHz)
1GHz-18GHz



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	4356	33.46	43.08	74.00	-30.92	peak
2	4356	33.46	35.96	54.00	-18.04	AVG
3	7652	34.01	33.65	74.00	-40.35	peak
4	7652	34.01	24.65	54.00	-29.35	AVG
5	13576	37.65	35.82	74.00	-38.18	peak
6	13576	37.65	27.62	54.00	-26.38	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	3925	32.84	42.37	74.00	-31.63	peak
2	3925	32.84	36.31	54.00	-17.69	AVG
3	8625	34.82	33.56	74.00	-40.44	peak
4	8625	34.82	26.14	54.00	-27.86	AVG
5	14365	38.10	37.65	74.00	-36.35	peak
6	14365	38.10	28.96	54.00	-25.04	AVG

Note: All readings are & average readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

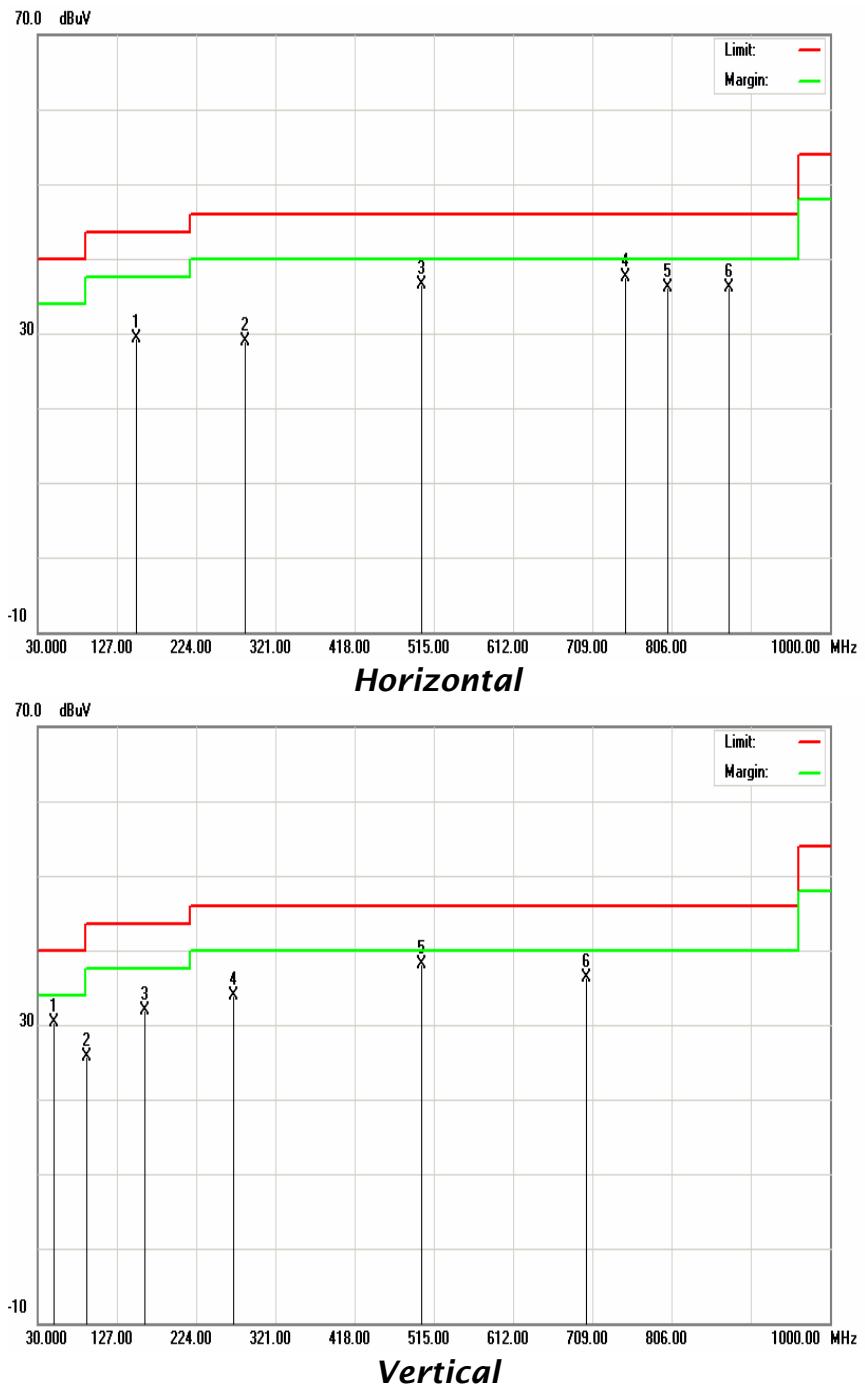
**Mode 2: Transmit by 802.11g
Channel 06 (2437MHz)
18GHz-25GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	20753	40.10	39.20	74.00	-34.80	peak
2	20753	40.10	31.20	54.00	-22.80	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	19540	39.87	38.50	74.00	-35.50	peak
2	19540	39.87	29.60	55.00	-24.40	AVG

Note: All readings are peak readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

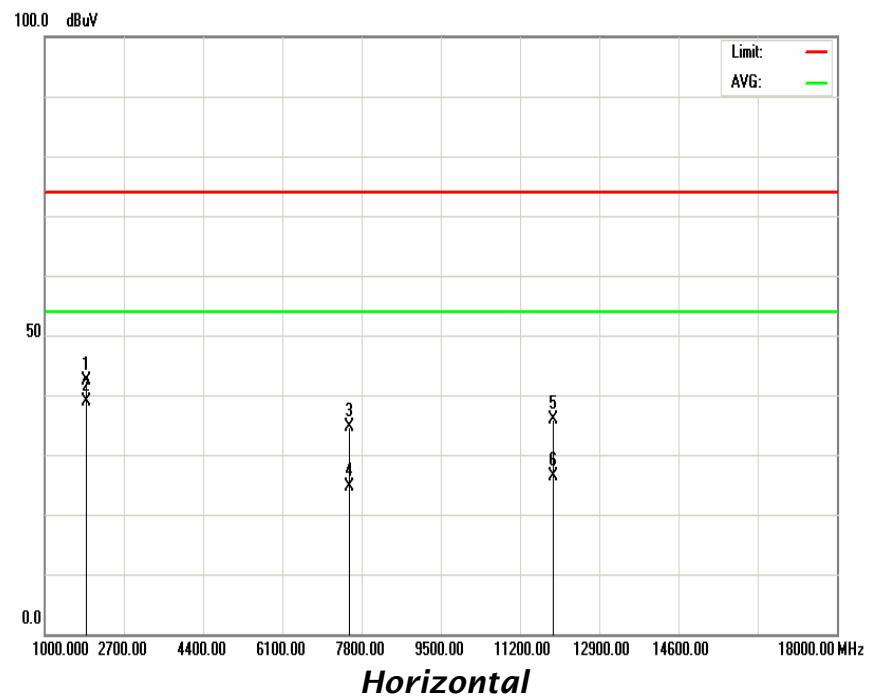
Mode 2: Transmit by 802.11g
Channel 11 (2462MHz)
Below 1GHz



Horizontal							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	150.25	11.96	29.37	43.50	-14.13	209	104
2	284.30	15.22	28.84	46.00	-17.16	142	110
3	500.00	20.10	36.42	46.00	-9.58	123	132
4	750.00	23.40	37.52	46.00	-8.48	298	100
5	800.00	24.10	36.1	46.00	-9.90	318	107
6	875.00	24.85	36.14	46.00	-9.86	87	114
Vertical							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	48.58	9.63	30.28	40.00	-9.72	223	100
2	89.68	8.42	25.78	43.50	-17.72	255	187
3	160.24	12.25	31.91	43.50	-11.59	198	100
4	268.04	14.93	33.96	46.00	-12.04	169	100
5	500.00	20.10	38.1	46.00	-7.90	128	100
6	700.00	22.70	36.22	46.00	-9.78	24	106

Note: All readings are quasi-peak unless stated otherwise, using a QP bandwidth of 120kHz, with a 500 ms sweep time. A video filter was not used.

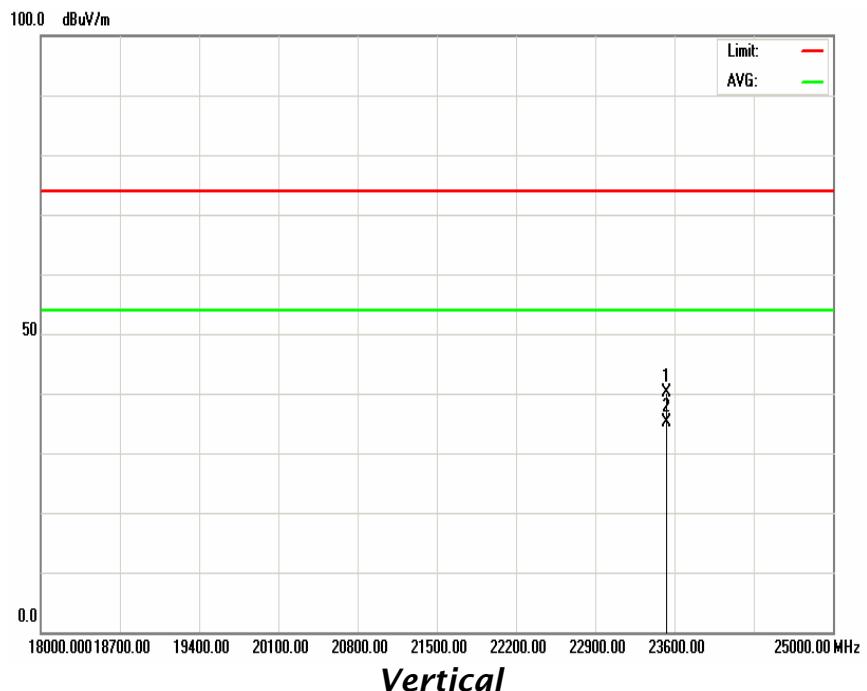
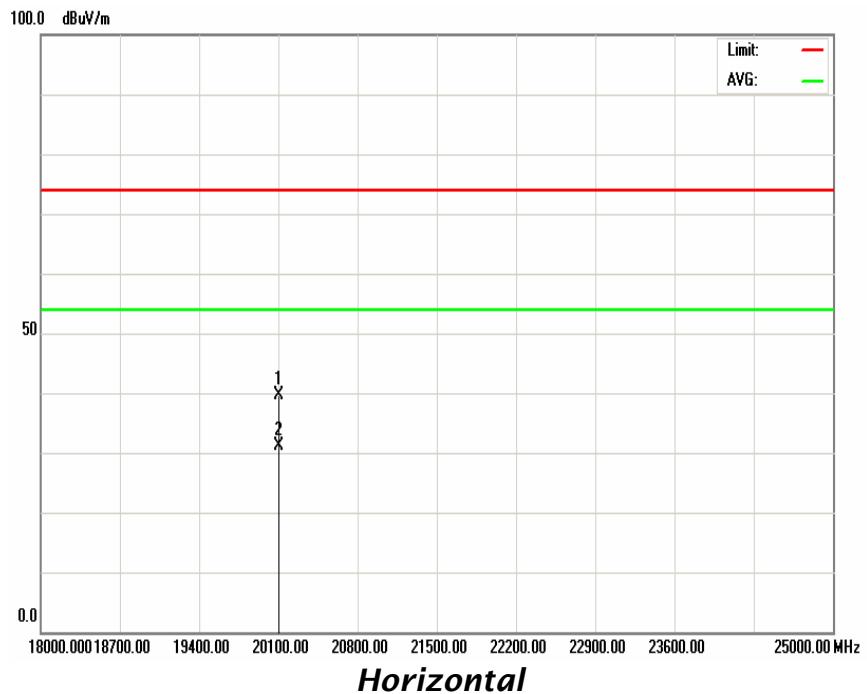
**Mode 2: Transmit by 802.11g
Channel 11 (2462MHz)
1GHz-18GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1875	28.51	42.36	74.00	-31.64	peak
2	1875	28.51	38.91	54.00	-15.09	AVG
3	7534	33.65	34.75	74.00	-39.25	peak
4	7534	33.65	24.58	54.00	-29.42	AVG
5	11895	36.13	35.87	74.00	-38.13	peak
6	11895	36.13	26.41	54.00	-27.59	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	4825	32.93	47.45	74.00	-26.55	peak
2	4825	32.93	42.21	54.00	-11.79	AVG
3	8421	34.16	32.74	74.00	-41.26	peak
4	8421	34.16	23.8	54.00	-30.2	AVG
5	15788	39.03	31.25	74.00	-42.75	peak
6	15788	39.03	24.68	54.00	-29.32	AVG

Note: All readings are & average readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

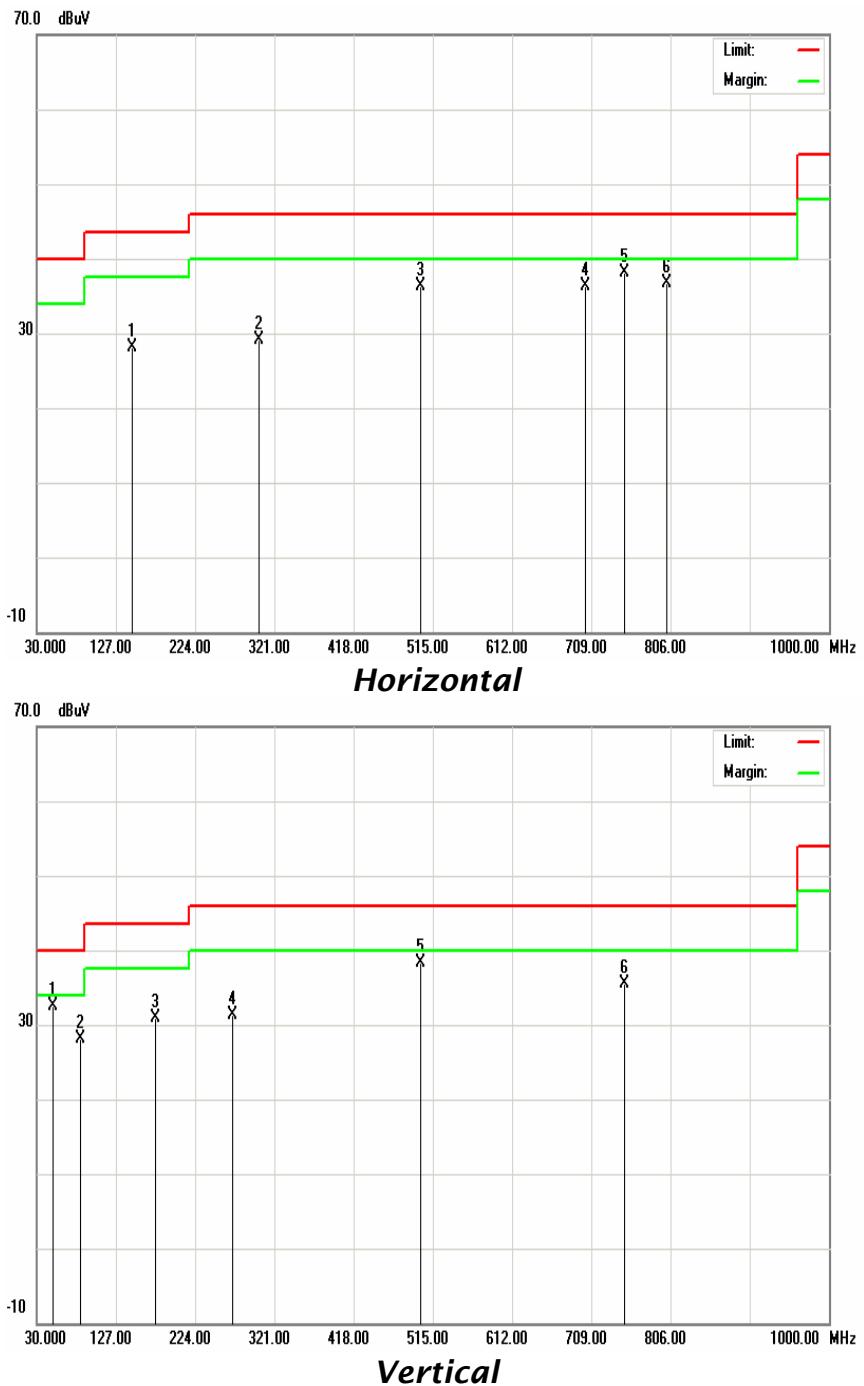
**Mode 2: Transmit by 802.11g
Channel 11 (2462MHz)
18GHz-25GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	20100	40.14	39.60	74.00	-34.40	peak
2	20100	40.14	31.10	54.00	-22.90	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	23514	42.45	40.10	74.00	-33.90	peak
2	23514	4.45	35.10	54.00	-18.90	AVG

Note: All readings are peak readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

Mode 3: Transmit by 802.11n (20MHz bandwidth)
Channel 01 (2412MHz)
Below 1GHz



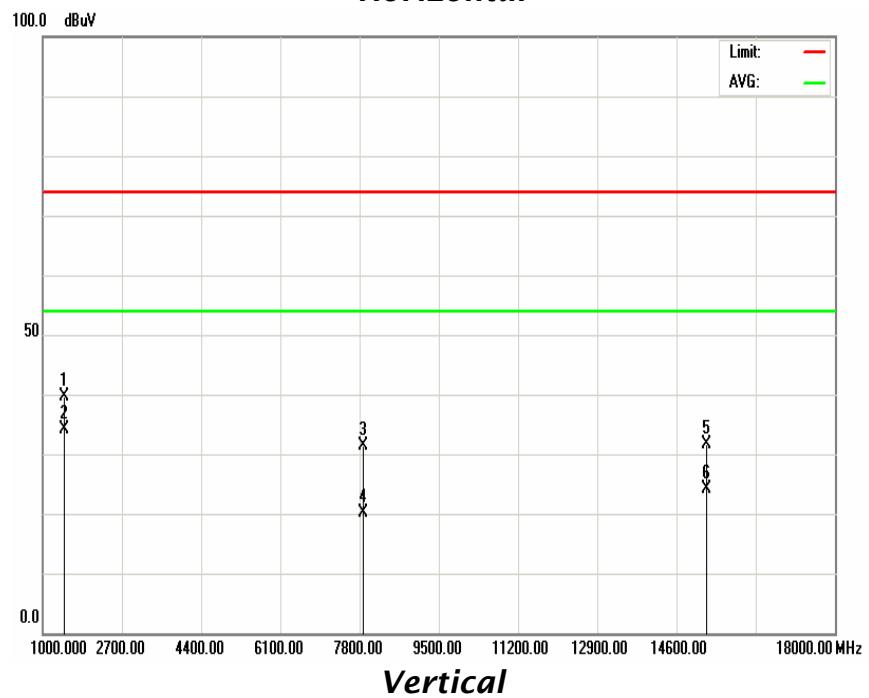
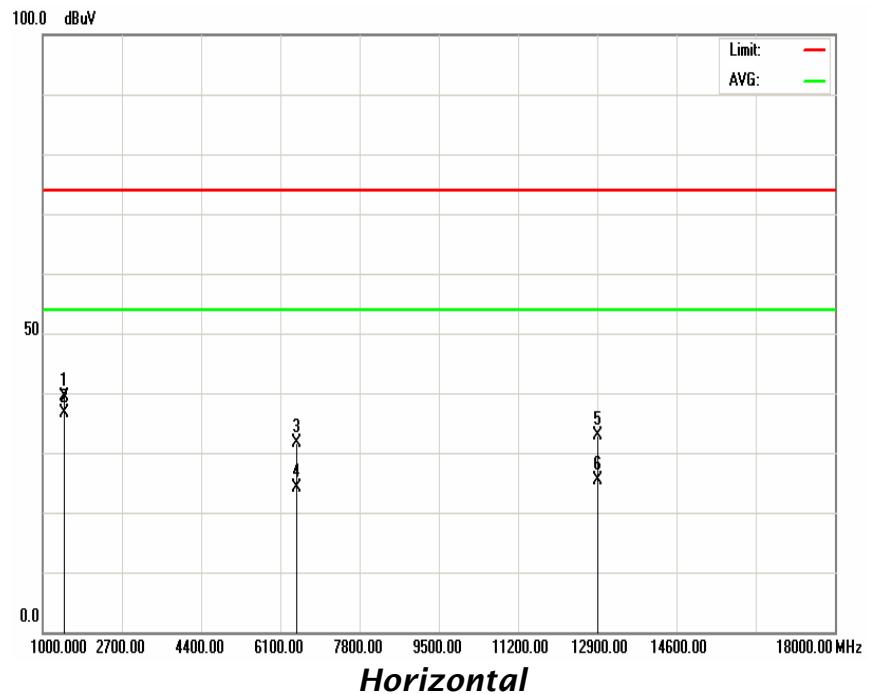
Horizontal							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	146.36	11.8	28.12	43.50	-15.38	129	102
2	299.36	15.49	29.07	46.00	-16.93	123	138
3	500.00	20.1	36.4	46.00	-9.60	358	123
4	700.00	22.7	36.32	46.00	-9.68	17	121
5	750.00	23.4	38.05	46.00	-7.95	276	109
6	800.00	24.1	36.75	46.00	-9.25	291	187
Vertical							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	48.25	9.81	32.41	40.00	-7.59	276	100
2	82.35	8.78	28.14	40.00	-11.86	212	100
3	175.00	12.67	30.93	43.50	-12.57	126	103
4	268.00	14.93	31.29	46.00	-14.71	198	100
5	500.00	20.10	38.35	46.00	-7.65	102	100
6	750.00	23.40	35.43	46.00	-10.57	209	100

Note: All readings are quasi-peak unless stated otherwise, using a QP bandwidth of 120kHz, with a 500 ms sweep time. A video filter was not used.

Mode 3: Transmit by 802.11n (20MHz bandwidth)

Channel 01 (2412MHz)

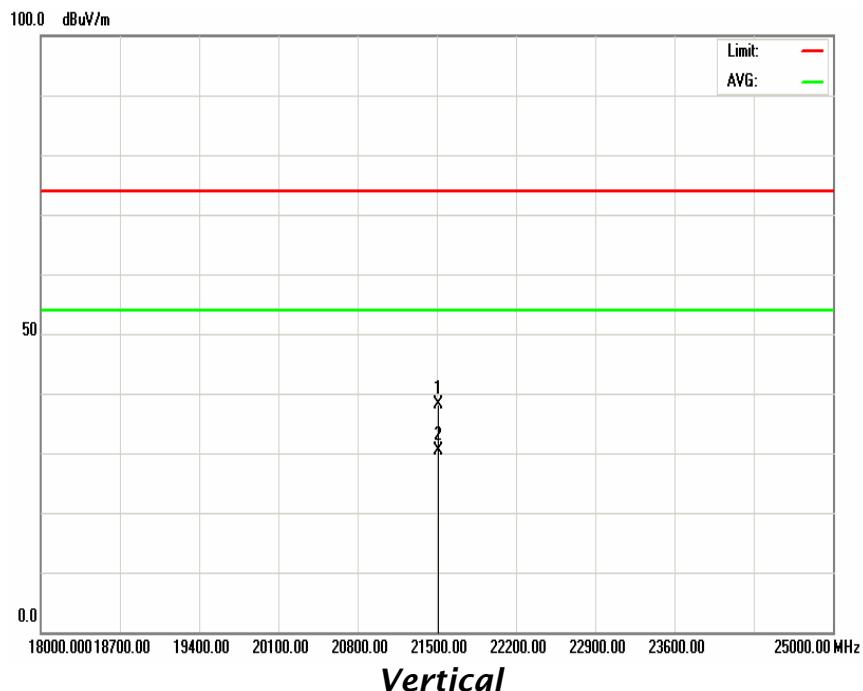
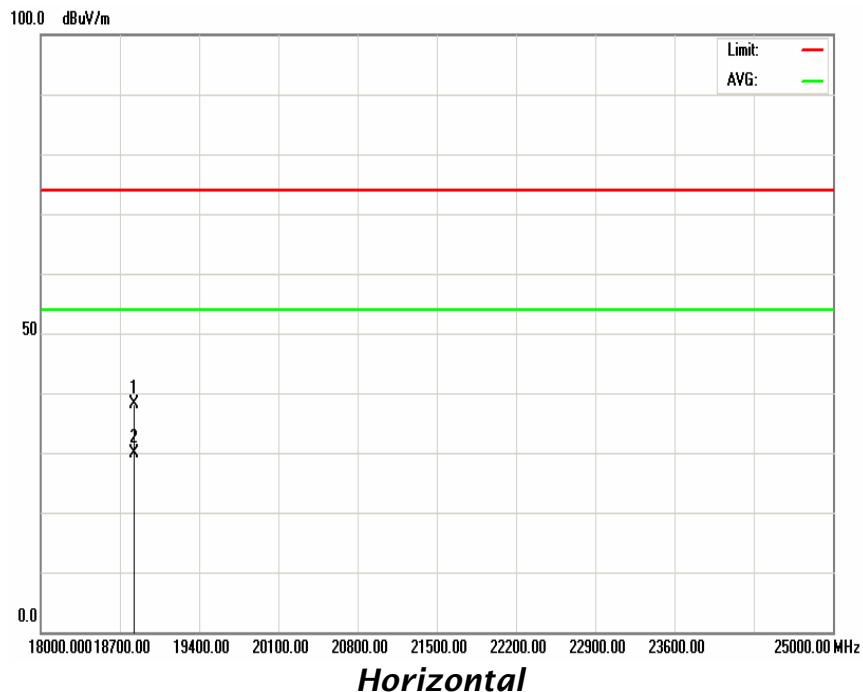
1GHz-18GHz



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1456	25.88	39.40	74.00	-34.60	peak
2	1456	25.88	36.62	54.00	-17.38	AVG
3	6427	33.28	31.62	74.00	-42.38	peak
4	6427	33.28	24.17	54.00	-29.83	AVG
5	12865	37.10	32.85	74.00	-41.15	peak
6	12865	37.10	25.38	54.00	-28.62	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1456	25.87	39.62	74.00	-34.38	peak
2	1456	25.87	34.13	54.00	-19.87	AVG
3	7854	34.10	31.26	74.00	-42.74	peak
4	7854	34.10	20.14	54.00	-33.86	AVG
5	15214	38.09	31.74	74.00	-42.26	peak
6	15214	38.09	24.16	54.00	-29.84	AVG

Note: All readings are peak & average readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

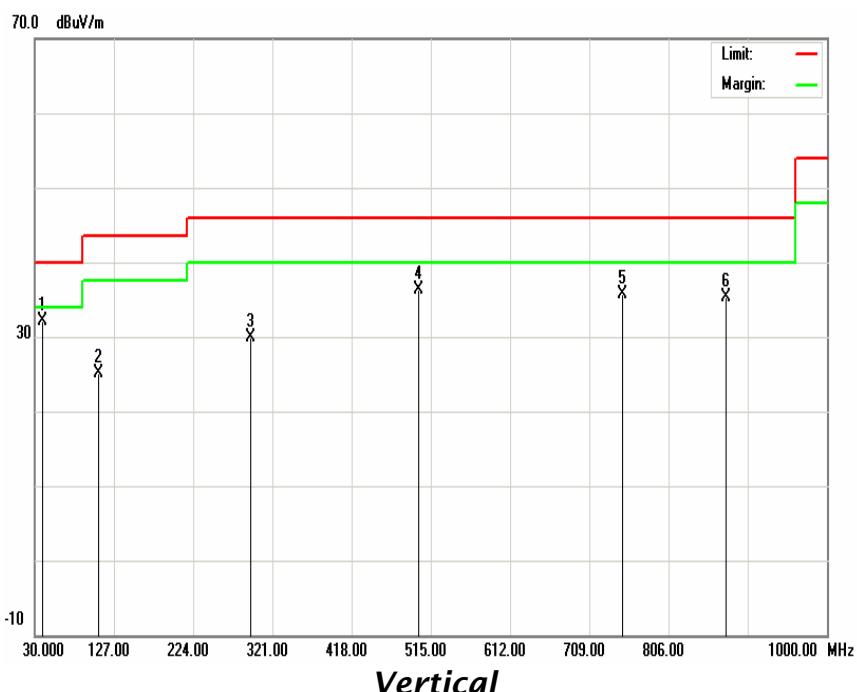
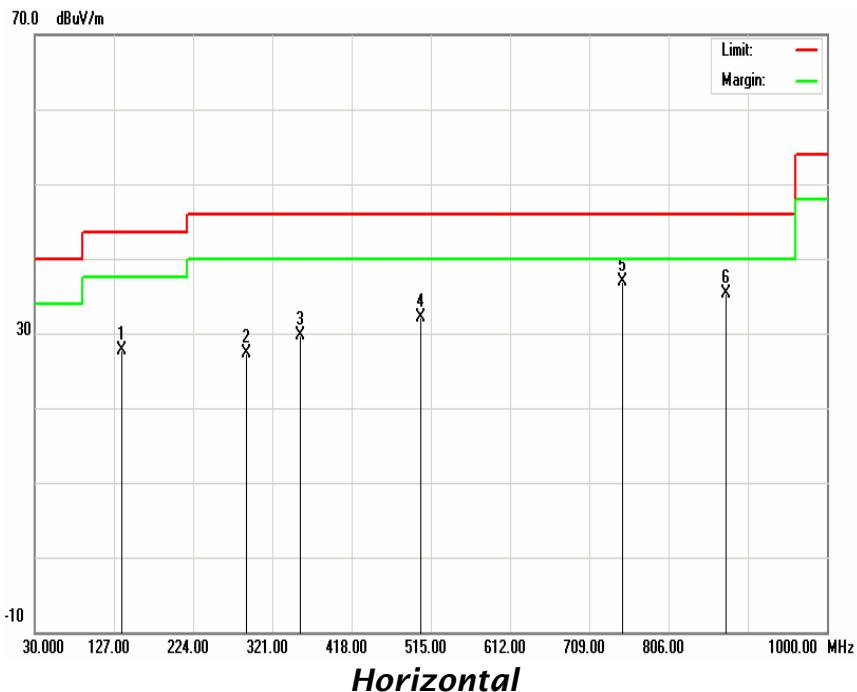
**Mode 3: Transmit by 802.11n (20MHz bandwidth)
Channel 01 (2412MHz)
18GHz-25GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	18820	38.54	38.10	74.00	-35.90	peak
2	18820	38.54	30.00	54.00	-24.00	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	21508	41.86	38.10	74.00	-35.90	peak
2	21508	41.86	30.50	54.00	-23.50	AVG

Note: All readings are peak readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

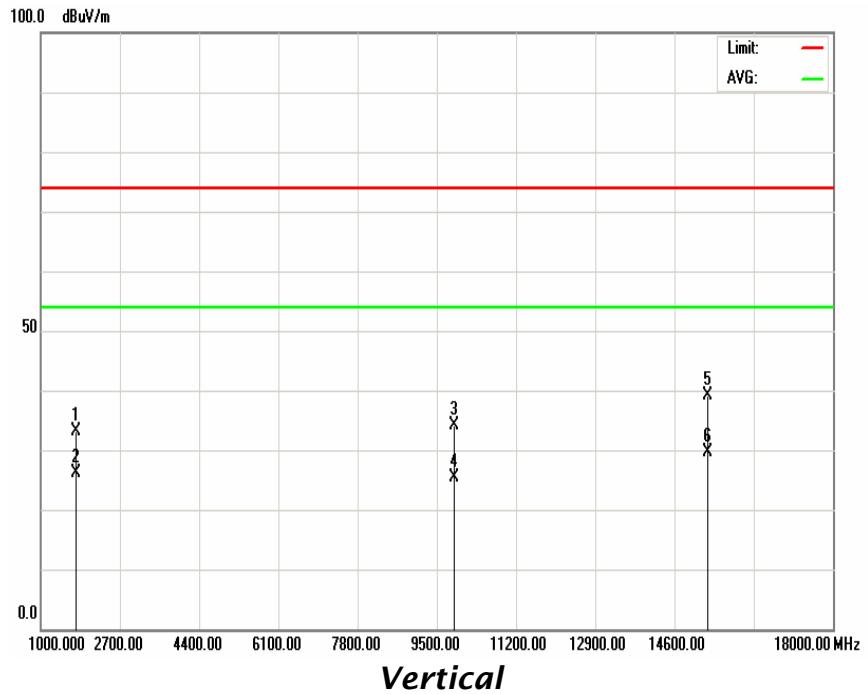
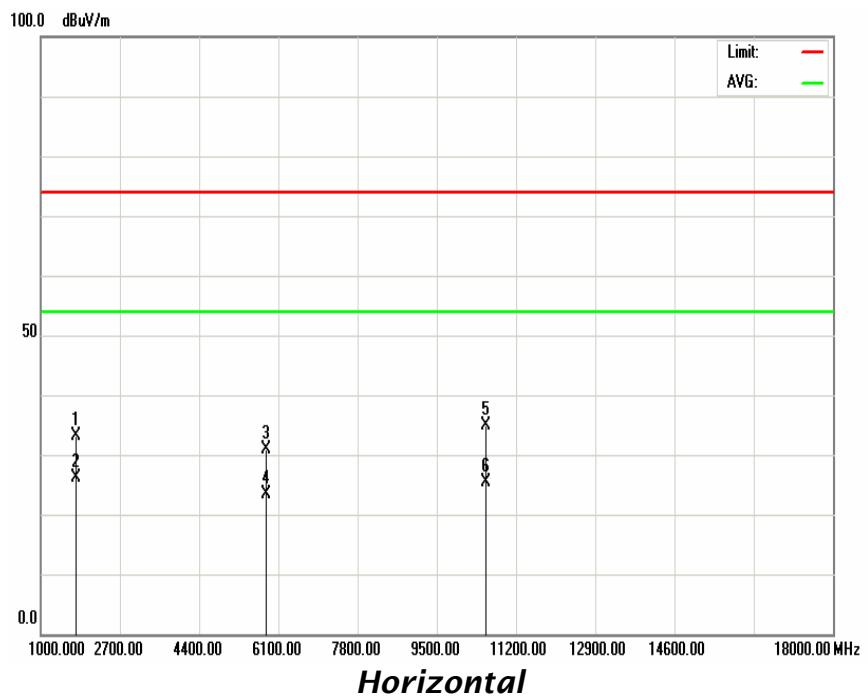
**Mode 3: Transmit by 802.11n (20MHz bandwidth)
Channel 06 (2437MHz)
Below 1GHz**



Horizontal							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	135.200	11.39	27.69	43.50	-15.81	204	134
2	288.600	15.30	27.30	46.00	-18.70	298	128
3	352.800	16.66	29.66	46.00	-16.34	318	149
4	502.100	20.12	32.12	46.00	-13.88	29	104
5	750.100	23.40	36.90	46.00	-9.10	173	114
6	875.000	24.85	35.25	46.00	-10.75	143	129
Vertical							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	38.400	14.89	32.19	40.00	-7.81	140	100
2	105.300	10.20	25.20	43.50	-18.3	293	100
3	293.540	15.39	29.99	46.00	-16.01	54	100
4	500.000	20.10	36.40	46.00	-9.6	183	100
5	750.000	23.40	35.80	46.00	-10.2	203	100
6	875.000	24.85	35.25	46.00	-10.75	128	100

Note: All readings are quasi-peak unless stated otherwise, using a QP bandwidth of 120kHz, with a 500 ms sweep time. A video filter was not used.

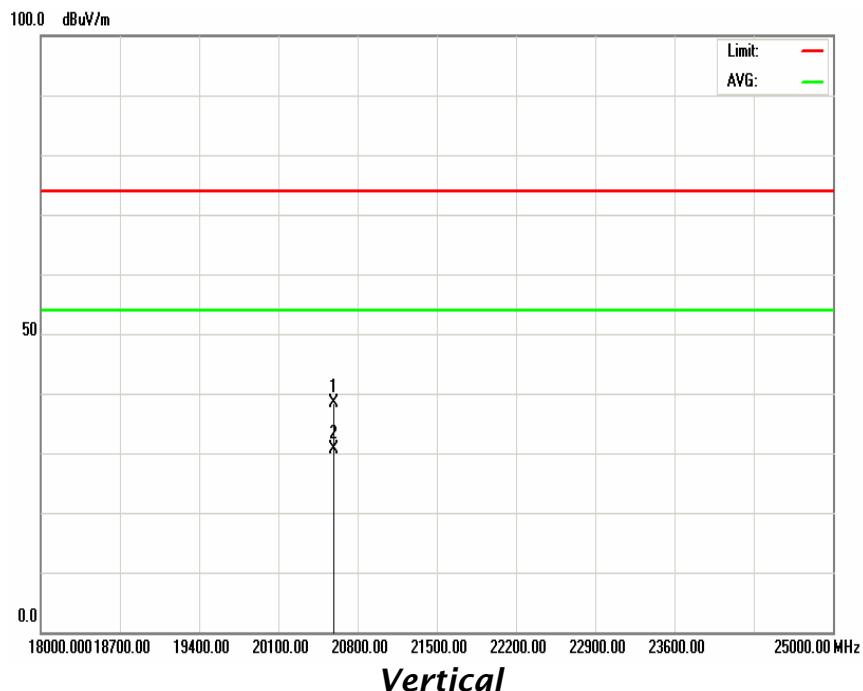
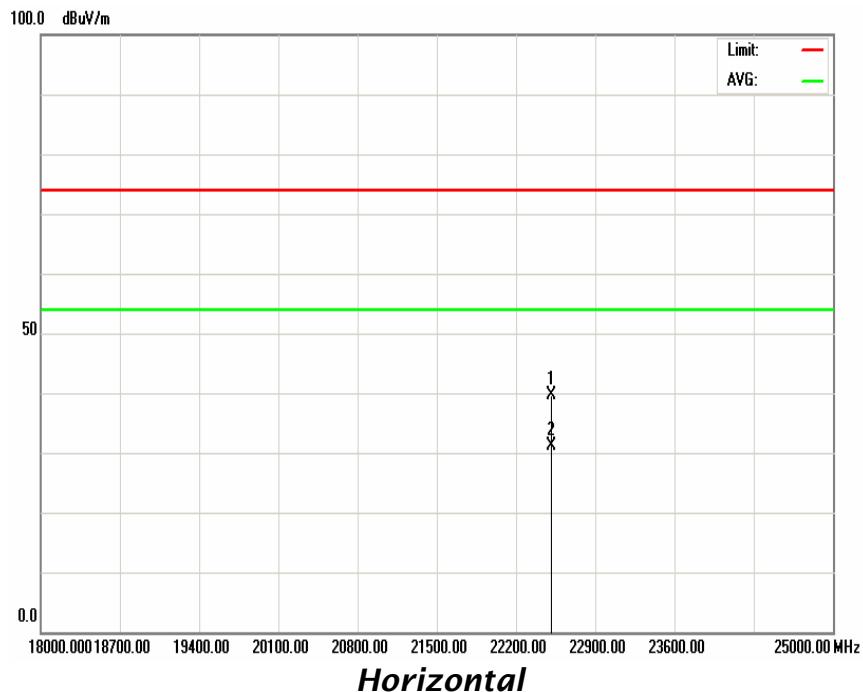
**Mode 3: Transmit by 802.11n (20MHz bandwidth)
Channel 06 (2437MHz)
1GHz-18GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1763	27.81	33.02	74.00	-40.98	peak
2	1763	27.81	26.16	54.00	-27.84	AVG
3	5825	33.82	30.98	74.00	-43.02	peak
4	5825	33.82	23.45	54.00	-30.55	AVG
5	10525	36.14	34.89	74.00	-39.11	peak
6	10525	36.14	25.36	54.00	-28.64	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1763	27.81	33.02	74.00	-40.98	peak
2	1763	27.81	26.16	54.00	-27.84	AVG
3	9852	35.89	34.11	74.00	-39.89	peak
4	9852	35.89	25.36	54.00	-28.64	AVG
5	15284	38.54	39.14	74.00	-34.86	peak
6	15284	38.54	29.68	54.00	-24.32	AVG

Note: All readings are peak & average readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

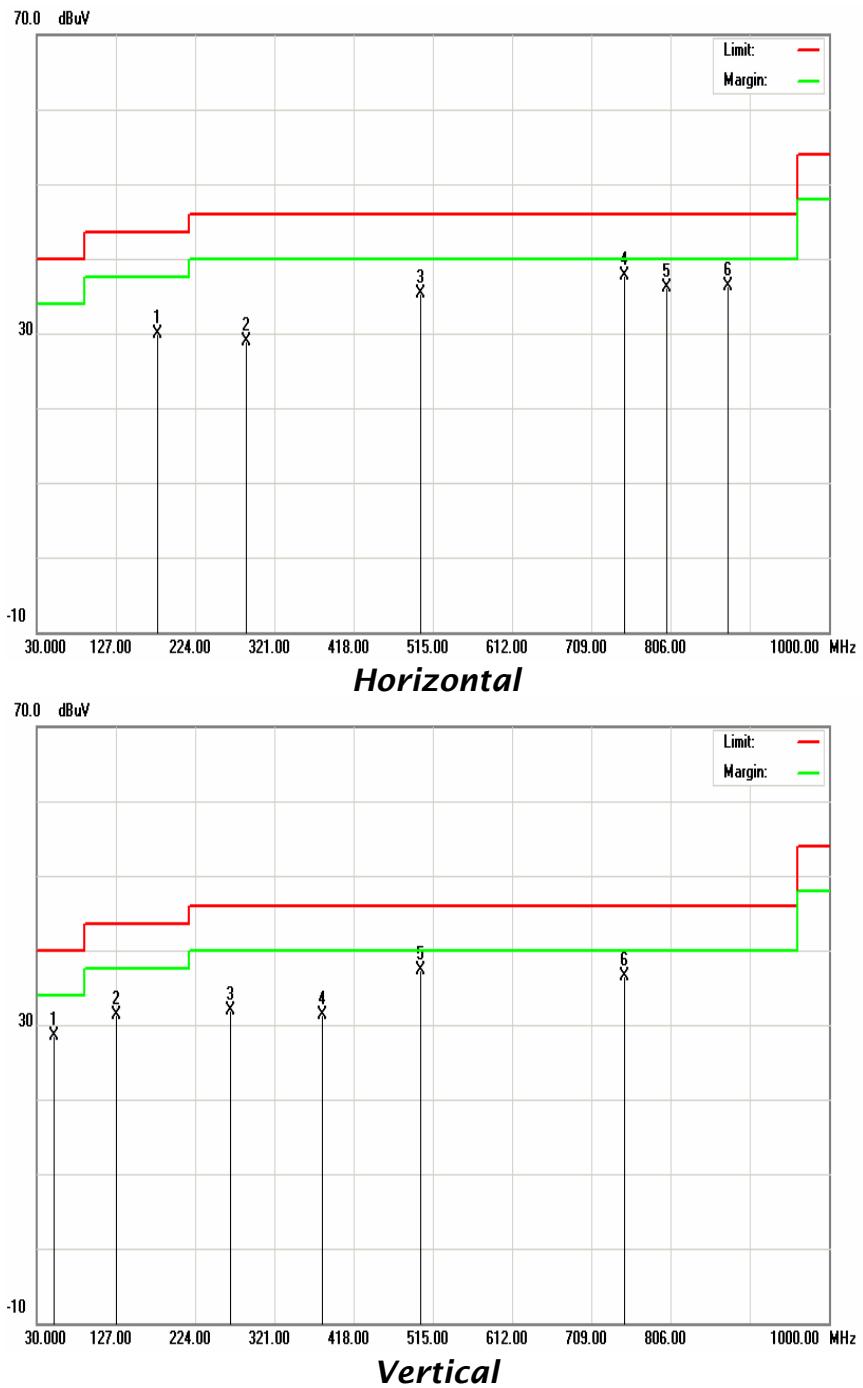
**Mode 3: Transmit by 802.11n (20MHz bandwidth)
Channel 06 (2437MHz)
18GHz-25GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	22502	42.34	39.60	74.00	-34.40	peak
2	22502	42.34	31.20	54.00	-22.80	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	20583	40.86	38.50	74.00	-35.50	peak
2	20583	40.86	30.60	54.00	-23.40	AVG

Note: All readings are peak readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

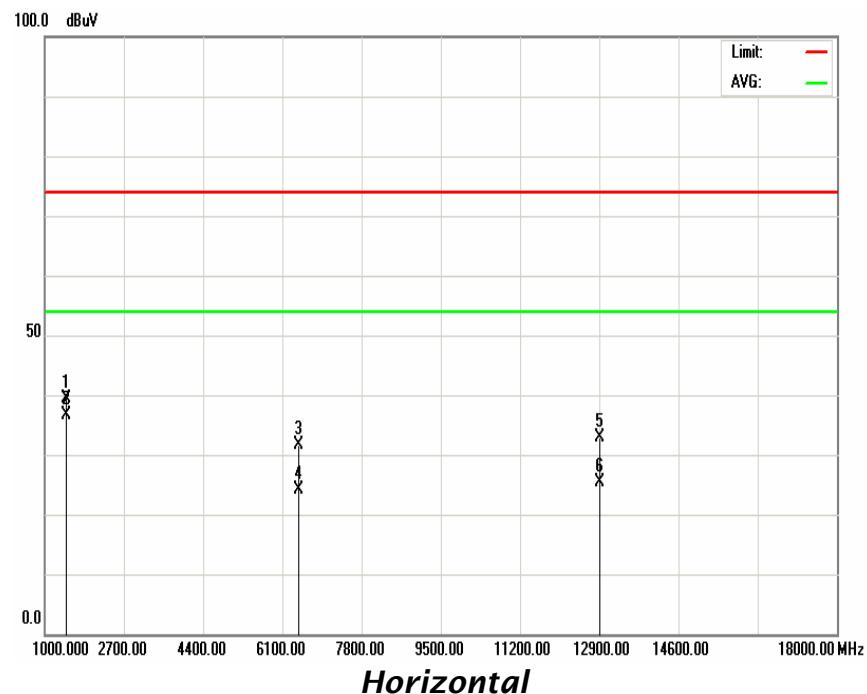
**Mode 3: Transmit by 802.11n (20MHz bandwidth)
Channel 11 (2462MHz)
Below 1GHz**



Horizontal							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	176.36	12.71	29.96	43.50	-13.54	122	107
2	285.01	15.23	28.88	46.00	-17.12	298	100
3	500.00	20.10	35.30	46.00	-10.70	310	176
4	750.00	23.40	37.70	46.00	-8.30	176	190
5	800.00	24.10	36.11	46.00	-9.89	58	138
6	875.00	24.85	36.21	46.00	-9.79	302	102
Vertical							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	50.263	8.90	28.55	40.00	-11.45	209	100
2	126.52	11.08	31.38	43.50	-12.12	216	100
3	266.36	14.89	31.91	46.00	-14.09	183	103
4	378.25	17.22	31.24	46.00	-14.76	120	105
5	500.00	20.10	37.35	46.00	-8.65	147	100
6	750.00	23.40	36.52	46.00	-9.48	183	175

Note: All readings are quasi-peak unless stated otherwise, using a QP bandwidth of 120kHz, with a 500 ms sweep time. A video filter was not used.

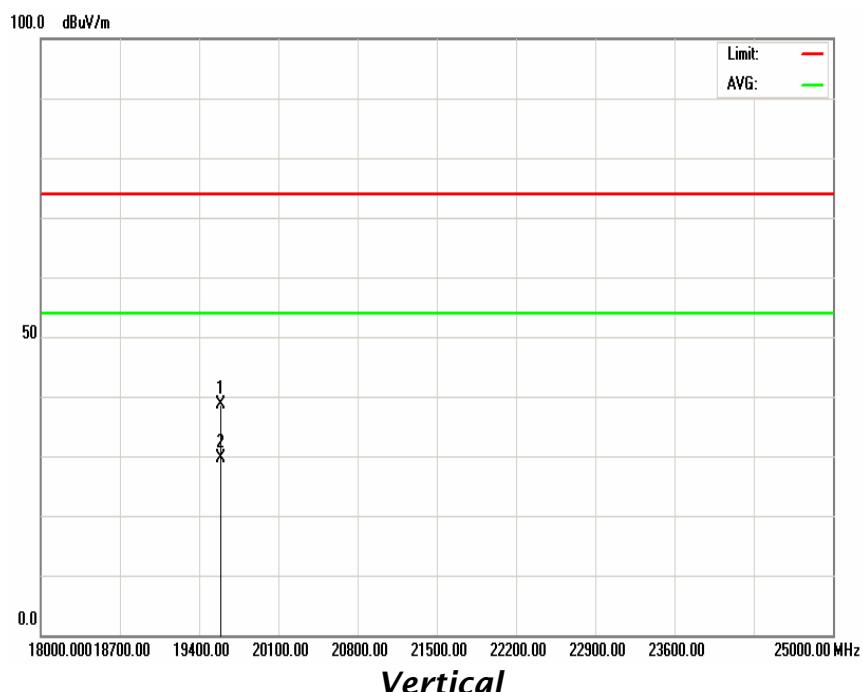
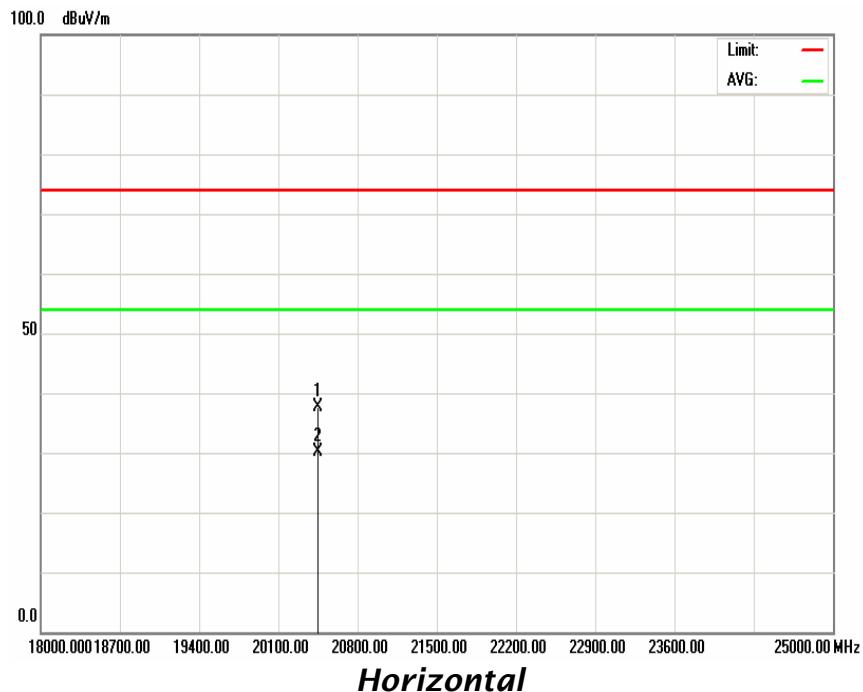
**Mode 3: Transmit by 802.11n (20MHz bandwidth)
Channel 11 (2462MHz)
1GHz-18GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1456	25.88	39.40	74.00	-34.60	peak
2	1456	25.88	36.62	54.00	-17.38	AVG
3	6427	33.83	31.62	74.00	-42.38	peak
4	6427	33.83	24.17	54.00	-29.83	AVG
5	12865	37.02	32.85	74.00	-41.15	peak
6	12865	37.02	25.38	54.00	-28.62	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1456	25.87	39.62	74.00	-34.38	peak
2	1456	25.87	34.13	54.00	-19.87	AVG
3	7854	33.95	31.26	74.00	-42.74	peak
4	7854	33.95	20.14	54.00	-33.86	AVG
5	15214	39.12	31.74	74.00	-42.26	peak
6	15214	39.12	24.16	54.00	-29.84	AVG

Note: All readings are peak & average readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

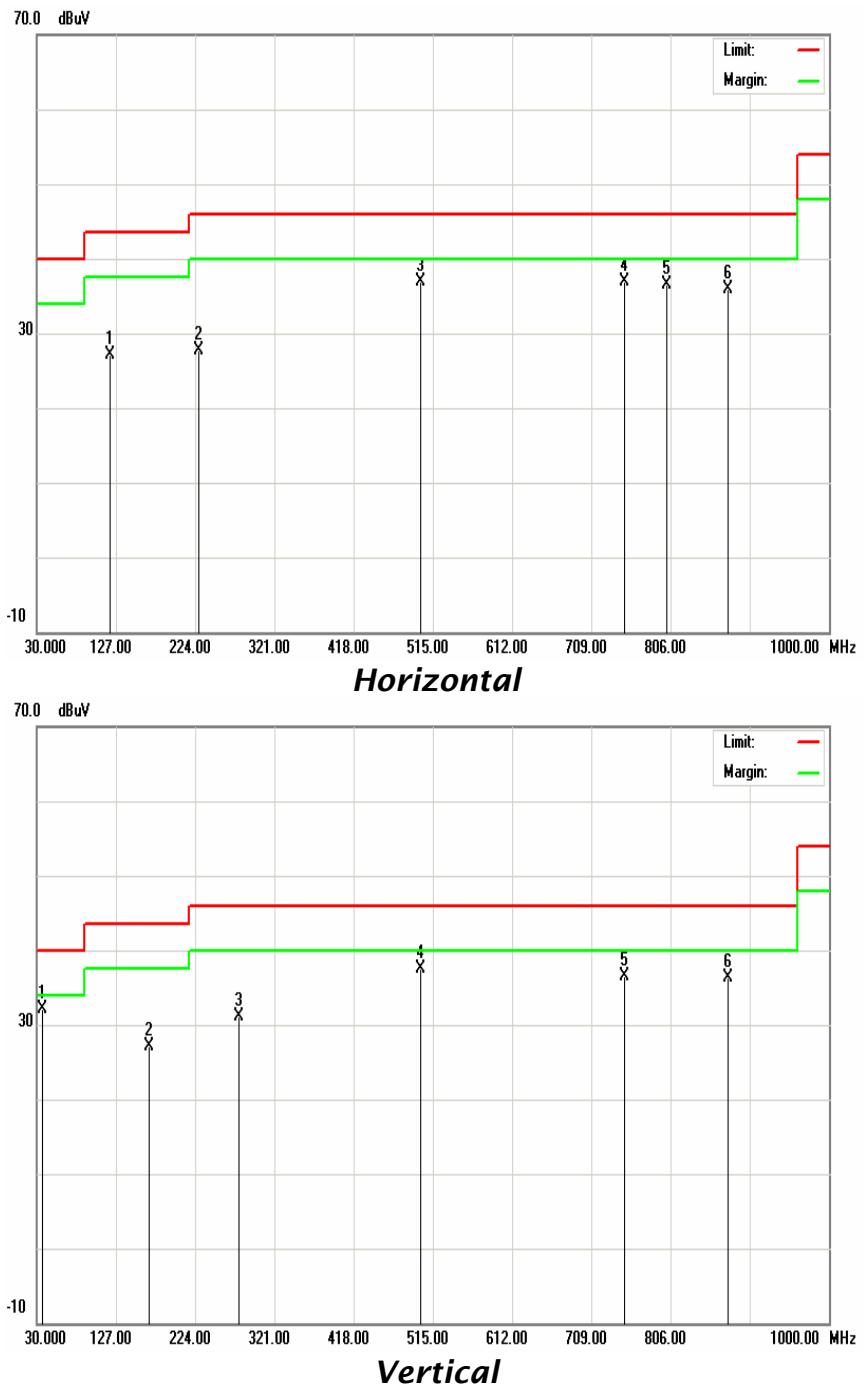
**Mode 3: Transmit by 802.11n (20MHz bandwidth)
Channel 11 (2462MHz)
18GHz-25GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	20442	40.75	37.60	74.00	-36.40	peak
2	20442	40.75	30.20	54.00	-23.80	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	19580	39.76	38.60	74.00	-35.40	peak
2	19580	39.76	29.70	54.00	-24.30	AVG

Note: All readings are peak readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

**Mode 4: Transmit by 802.11n (40MHz bandwidth)
Channel 03 (2422MHz)
Below 1GHz**



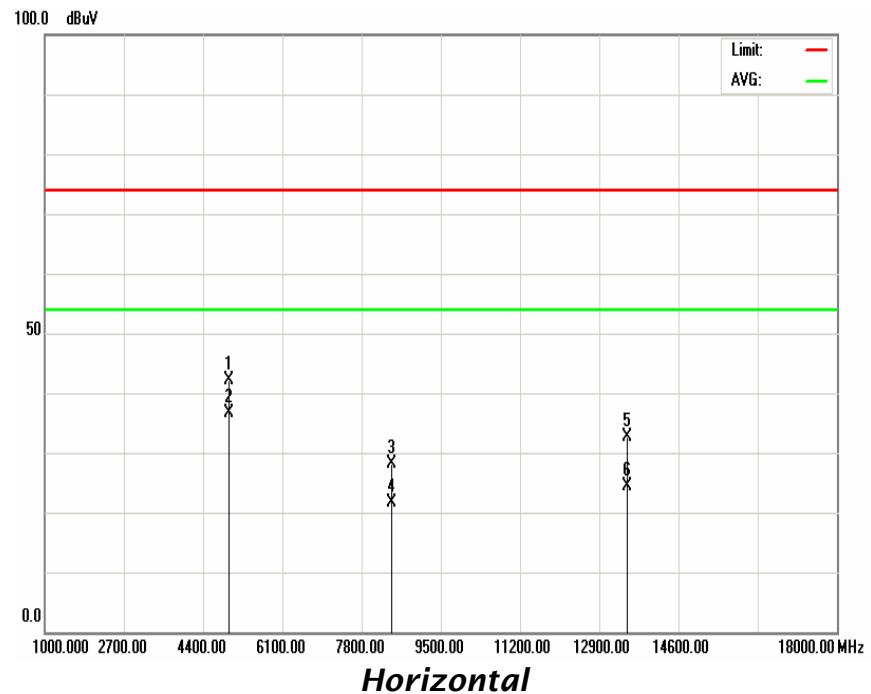
Horizontal							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	119.63	10.77	27.09	43.50	-16.41	173	121
2	226.45	14.13	27.73	46.00	-18.27	193	100
3	500.00	20.10	36.97	46.00	-9.03	187	129
4	750.00	23.40	36.97	46.00	-9.03	298	118
5	800.00	24.10	36.57	46.00	-9.43	310	102
6	876.00	24.86	35.82	46.00	-10.18	83	100
Vertical							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	37.025	15.66	32.05	40.00	-7.95	92	103
2	166.35	12.42	27.11	43.50	-16.39	102	104
3	275.36	15.06	31.08	46.00	-14.92	184	100
4	500.00	20.10	37.56	46.00	-8.44	234	100
5	750.00	23.40	36.56	46.00	-9.44	277	100
6	875.00	24.85	36.38	46.00	-9.62	304	100

Note: All readings are quasi-peak unless stated otherwise, using a QP bandwidth of 120kHz, with a 500 ms sweep time. A video filter was not used.

Mode 4: Transmit by 802.11n (40MHz bandwidth)

Channel 03 (2422MHz)

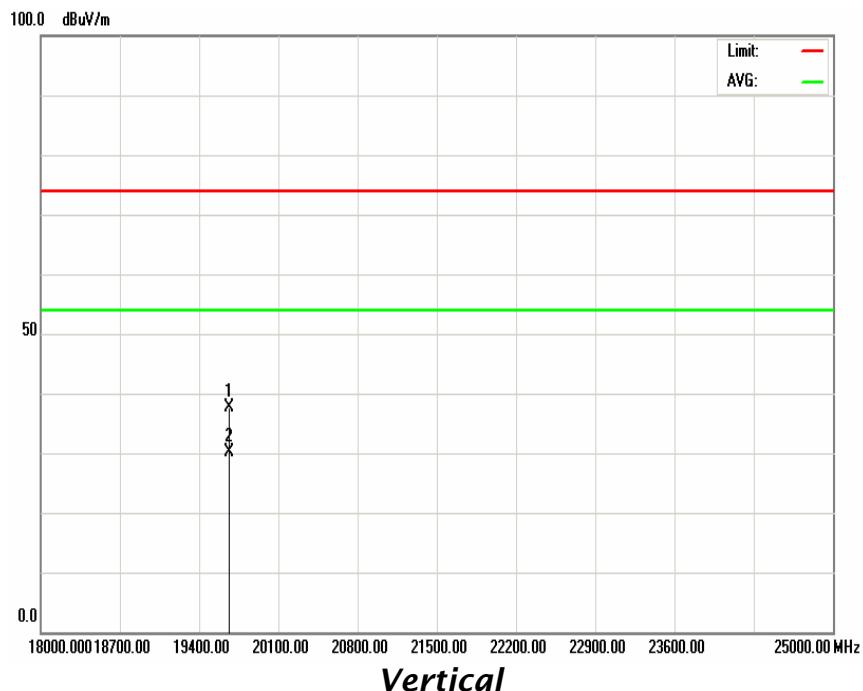
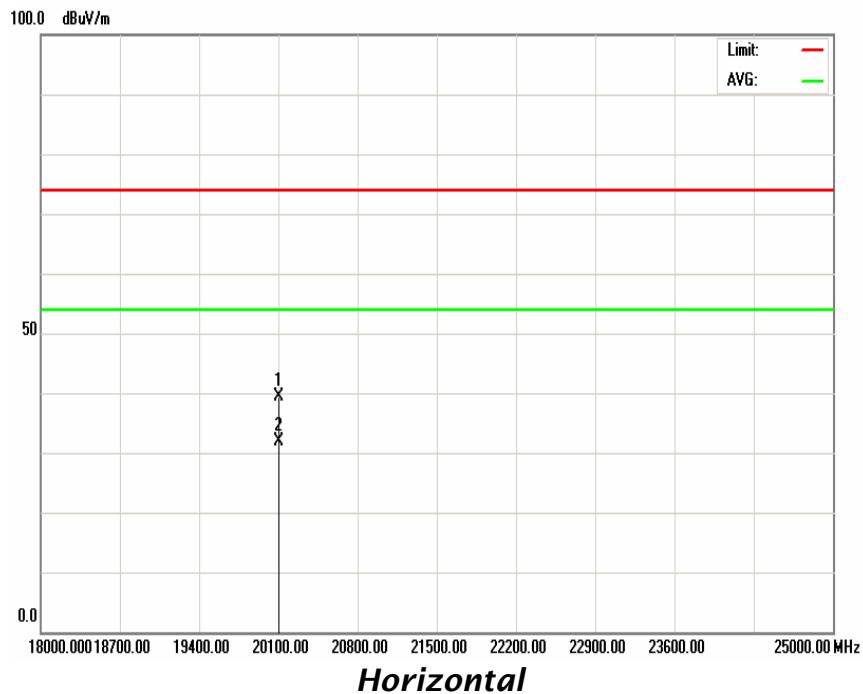
1GHz-18GHz



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	4921	33.02	42.09	74.00	-31.91	peak
2	4921	33.02	36.66	54.00	-17.34	AVG
3	8426	34.24	28.21	74.00	-45.79	peak
4	8426	34.24	21.75	54.00	-32.25	AVG
5	13475	37.87	32.52	74.00	-41.48	peak
6	13475	37.87	24.32	54.00	-29.68	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1926	28.83	41.57	74.00	-32.43	peak
2	1926	28.83	37.97	54.00	-16.03	AVG
3	4899	32.93	44.23	74.00	-29.77	peak
4	4899	32.93	39.14	54.00	-14.86	AVG
5	11854	36.93	31.74	74.00	-42.26	peak
6	11854	36.93	23.65	54.00	-30.35	AVG

Note: All readings are peak & average readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

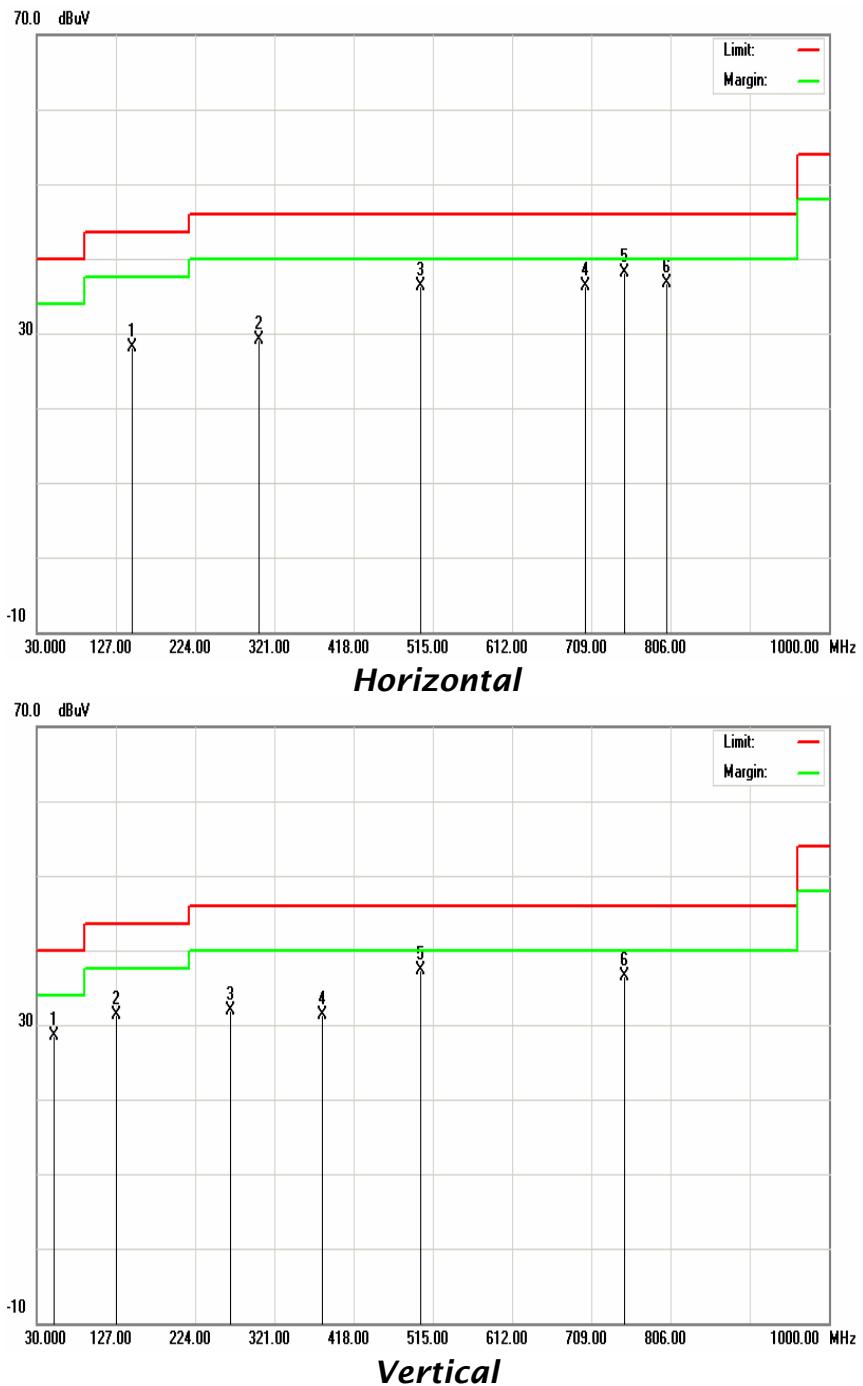
**Mode 4: Transmit by 802.11n (40MHz bandwidth)
Channel 03 (2422MHz)
18GHz-25GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	20100	40.34	39.40	74.00	-34.60	peak
2	20100	40.34	31.80	54.00	-22.20	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	19652	39.54	37.60	74.00	-36.40	peak
2	19652	39.54	30.20	54.00	-23.80	AVG

Note: All readings are peak & average readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

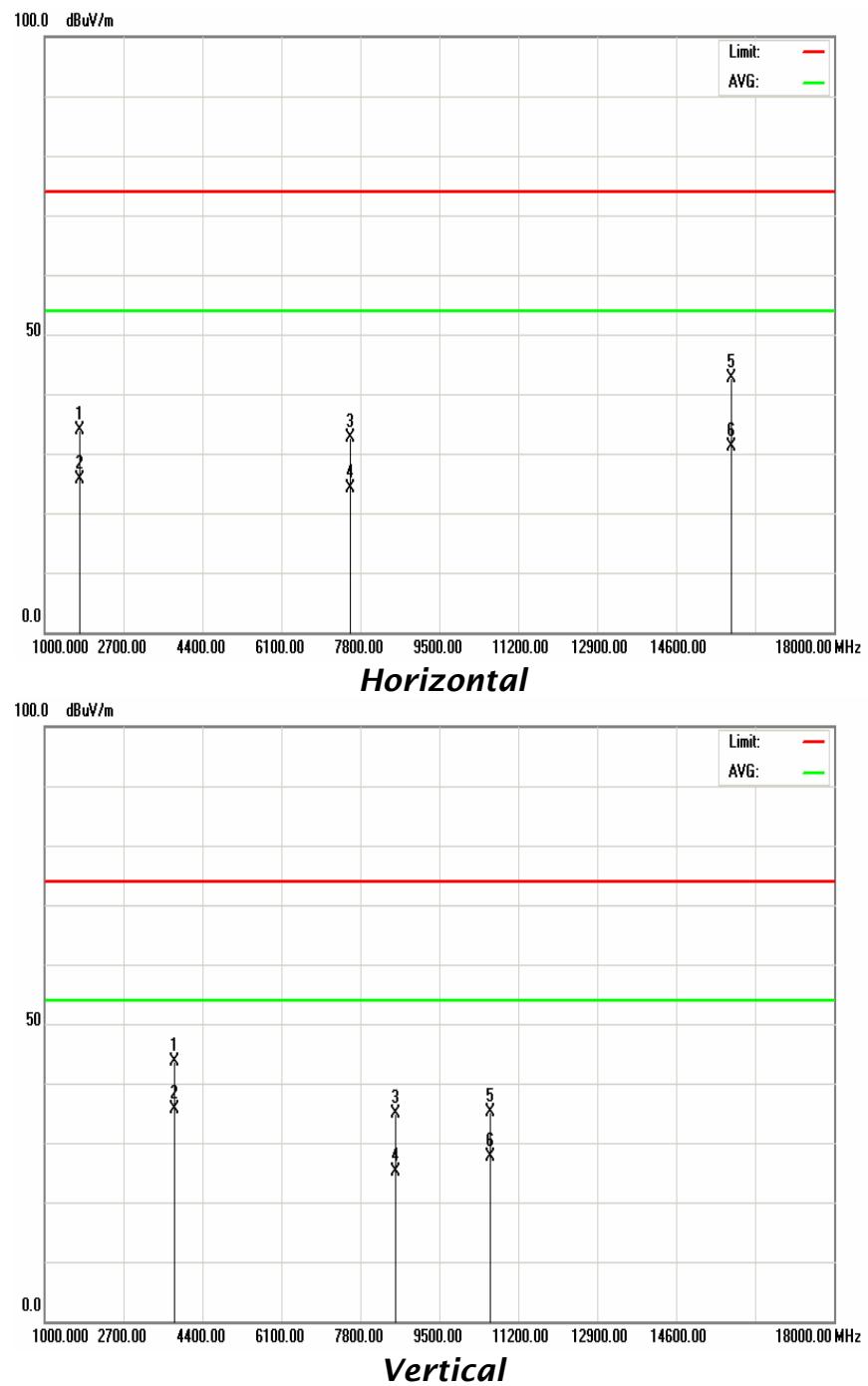
**Mode 4: Transmit by 802.11n (40MHz bandwidth)
Channel 06 (2437MHz)
Below 1GHz**



Horizontal							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	119.63	10.77	27.14	43.50	-16.36	132	184
2	226.45	14.13	27.34	46.00	-18.66	202	183
3	500.00	20.10	36.82	46.00	-9.18	219	129
4	750.00	23.40	36.32	46.00	-9.68	308	118
5	800.00	24.10	36.38	46.00	-9.62	38	102
6	876.00	24.86	35.32	46.00	-10.68	233	100
Vertical							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	37.025	15.66	32.34	40.00	-7.66	92	103
2	166.35	12.42	27.29	43.50	-16.21	102	104
3	275.36	15.06	31.29	46.00	-14.71	184	154
4	500.00	20.10	37.27	46.00	-8.73	234	134
5	750.00	23.40	36.92	46.00	-9.08	277	118
6	875.00	24.85	37.33	46.00	-8.67	304	100

Note: All readings are quasi-peak unless stated otherwise, using a QP bandwidth of 120kHz, with a 500 ms sweep time. A video filter was not used.

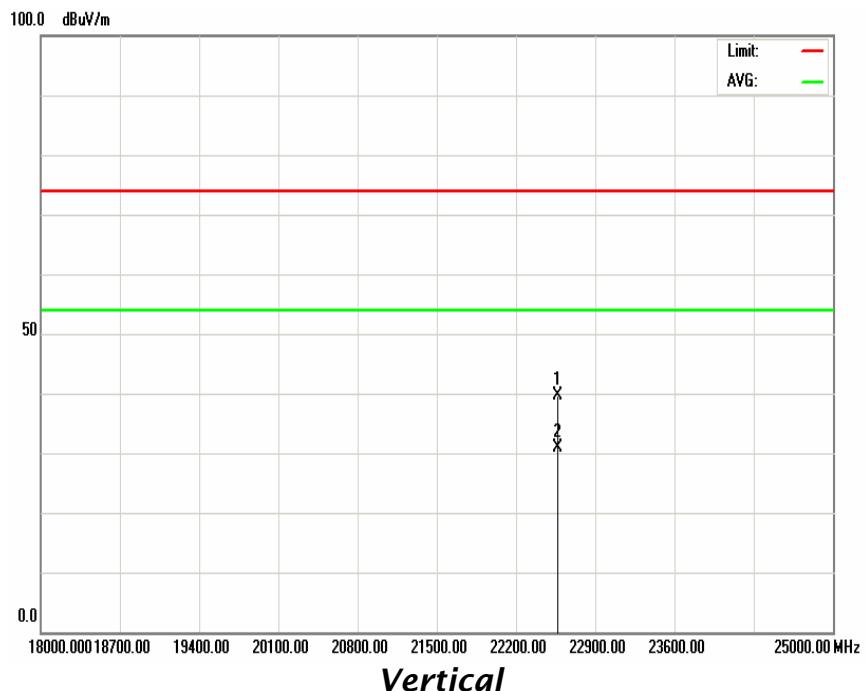
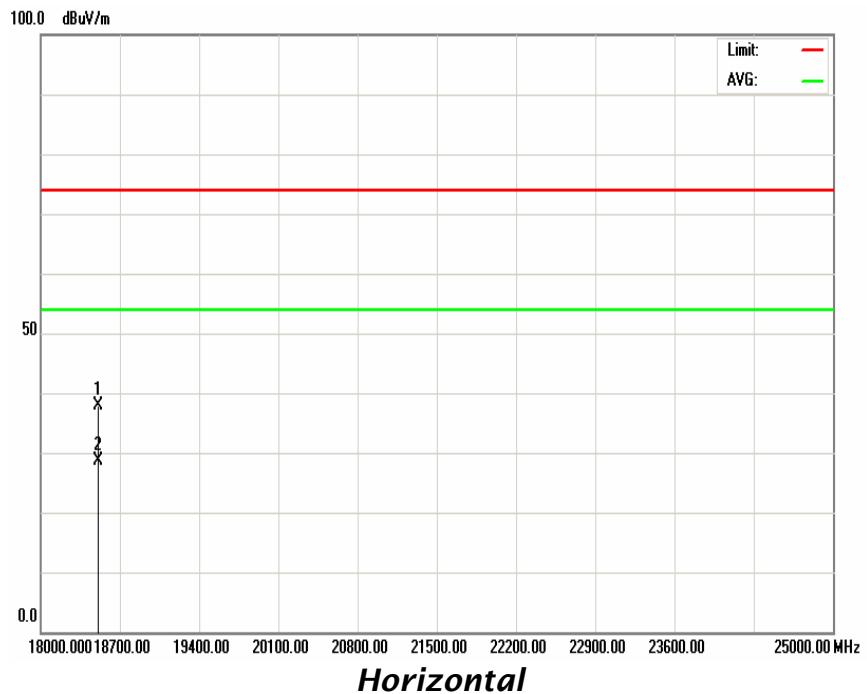
**Mode 4: Transmit by 802.11n (40MHz bandwidth)
Channel 06 (2437MHz)
1GHz-18GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1741	27.67	33.81	74.00	-40.19	peak
2	1741	27.67	25.66	54.00	-28.34	AVG
3	7562	33.78	32.58	74.00	-41.42	peak
4	7562	33.78	24.01	54.00	-29.99	AVG
5	15785	38.60	42.55	74.00	-31.45	peak
6	15785	38.60	31.05	54.00	-22.95	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	3785	27.35	43.74	74.00	-30.26	peak
2	3785	27.35	35.66	54.00	-18.34	AVG
3	8563	34.34	34.96	74.00	-39.04	peak
4	8563	34.34	25.01	54.00	-28.99	AVG
5	10582	36.15	35.11	74.00	-38.89	peak
6	10582	36.15	27.61	54.00	-26.39	AVG

Note: All readings are peak & average readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

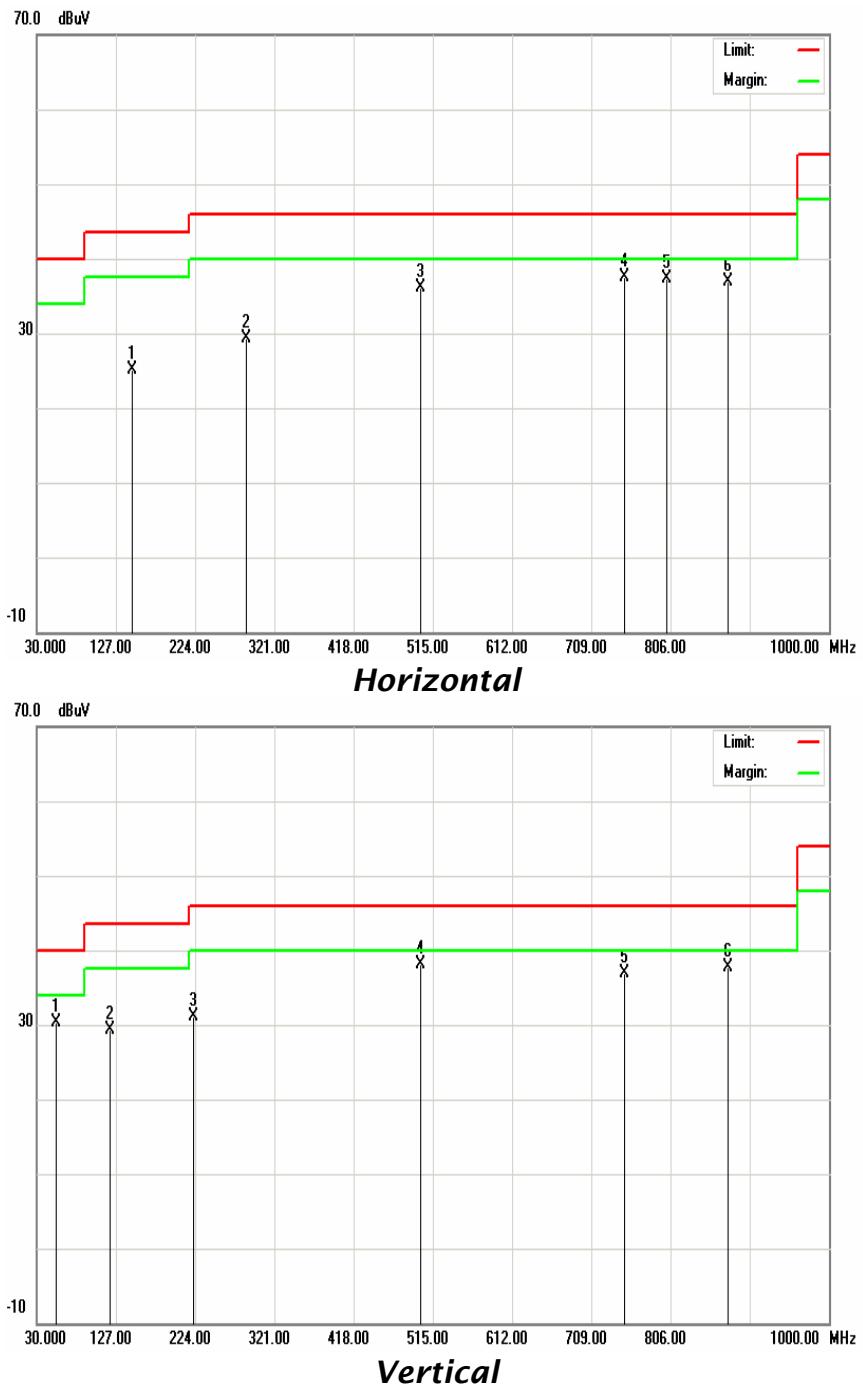
**Mode 4: Transmit by 802.11n (40MHz bandwidth)
Channel 06 (2437MHz)
18GHz-25GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	18500	37.65	37.90	74.00	-36.10	peak
2	18500	37.65	28.60	54.00	-25.40	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	22560	42.54	39.60	74.00	-34.40	peak
2	22560	42.54	31.00	54.00	-23.00	AVG

Note: All readings are peak readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

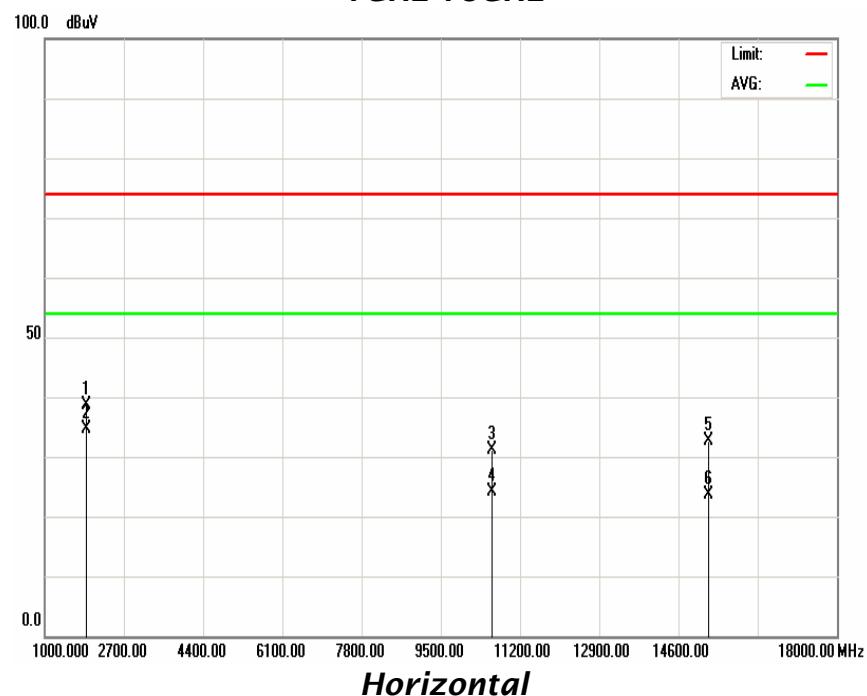
**Mode 4: Transmit by 802.11n (40MHz bandwidth)
Channel 09 (2452MHz)
Below 1GHz**



Horizontal							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	145.36	11.77	25.02	43.50	-18.48	272	183
2	285.14	15.23	29.21	46.00	-16.79	102	109
3	500.00	20.10	36.15	46.00	-9.85	194	173
4	750.00	23.40	37.58	46.00	-8.42	128	138
5	800.25	24.10	37.35	46.00	-8.65	123	102
6	875.00	24.85	36.82	46.00	-9.18	93	116
Vertical							
Signal	Frequency (MHz)	Factor (dB)	Corrected QP Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Angle of Turner (degree)	Height of Tower (cm)
1	53.68	8.86	30.33	40.00	-9.67	323	100
2	118.65	10.73	29.36	43.50	-14.14	358	100
3	220.85	14.01	31.05	46.00	-14.95	182	103
4	500.00	20.10	38.14	46.00	-7.86	172	105
5	750.00	23.40	36.96	46.00	-9.04	17	100
6	875.00	24.85	37.64	46.00	-8.36	28	100

Note: All readings are quasi-peak unless stated otherwise, using a QP bandwidth of 120kHz, with a 500 ms sweep time. A video filter was not used.

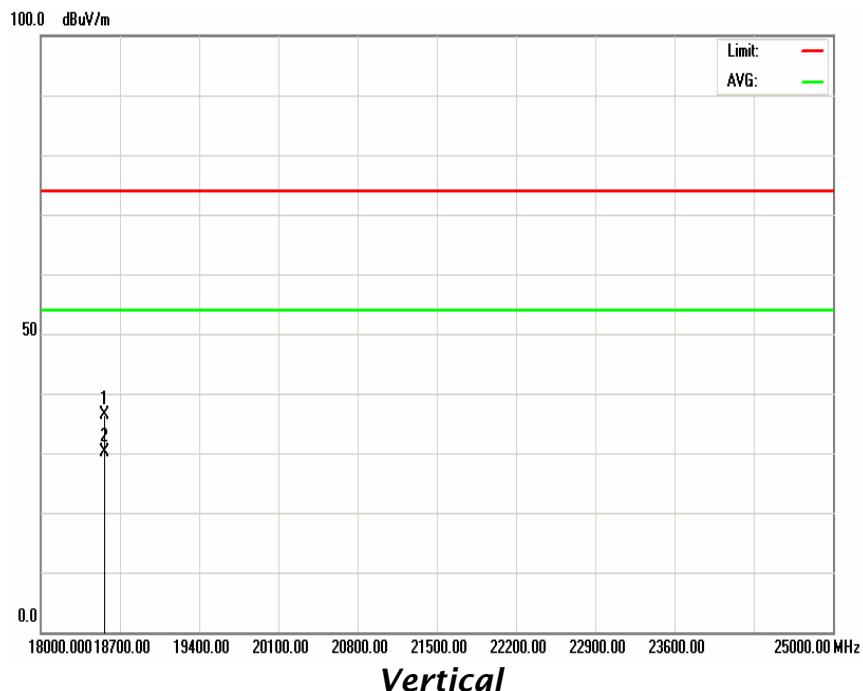
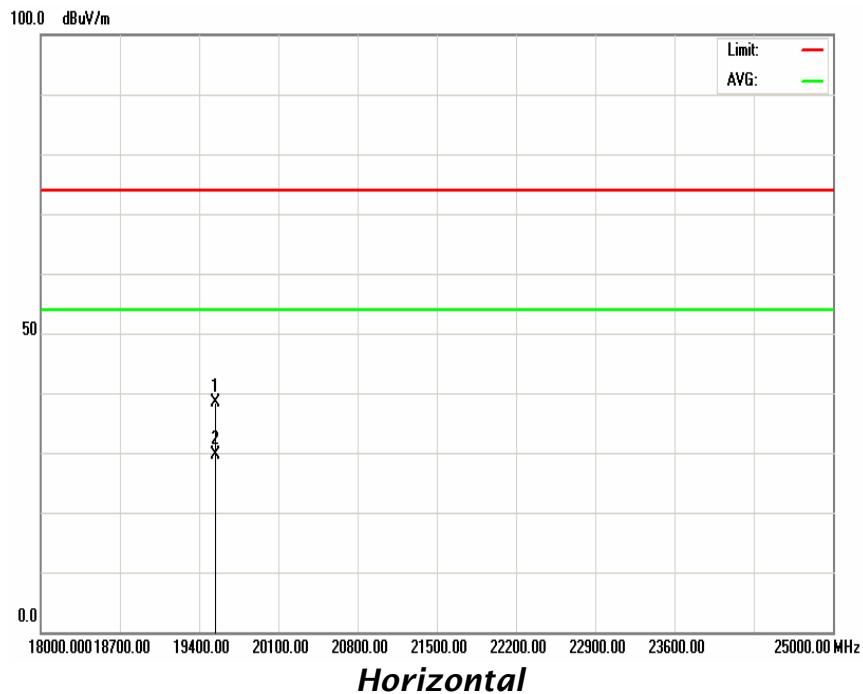
**Mode 4: Transmit by 802.11n (40MHz bandwidth)
Channel 09 (2452MHz)
1GHz-18GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1858	28.41	38.68	74.00	-35.32	peak
2	1858	28.41	34.73	54.00	-19.27	AVG
3	10574	34.24	31.25	74.00	-42.75	peak
4	10574	34.24	24.21	54.00	-29.79	AVG
5	15204	38.34	32.57	74.00	-41.43	peak
6	15204	38.34	23.75	54.00	-30.25	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	1958	29.04	39.06	74.00	-34.94	peak
2	1958	29.04	33.31	54.00	-20.69	AVG
3	7804	33.82	32.7	74.00	-41.3	peak
4	7804	33.82	21.75	54.00	-32.25	AVG
5	14225	38.15	31.07	74.00	-42.93	peak
6	14225	38.15	24.17	54.00	-29.83	AVG

Note: All readings are peak & average readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

**Mode 4: Transmit by 802.11n (40MHz bandwidth)
Channel 09 (2452MHz)
18GHz-25GHz**



Horizontal						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	19540	39.87	38.40	74.00	-35.60	peak
2	19540	39.87	30.00	54.00	-24.00	AVG
Vertical						
Signal	Frequency (MHz)	Factor (dB)	Corrected Level dB(uV/m)	3 Meter Limits dB(uV/m)	Margin (dB)	Detector
1	18560	38.95	36.40	74.00	-37.60	peak
2	18560	38.95	30.20	54.00	-23.80	AVG

Note: All readings are peak readings unless stated otherwise, using a bandwidth of 1000kHz, with a 500 ms sweep time. A video filter was not used.

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP	85462A	3650A00363	11/29/07	11/28/08
EMI Test Receiver RF Unit	R&S	ESMI-RF	DE23873	11/29/07	11/28/08
EMI Test Receiver Display Unit	R&S	ESAI-D	825035/005	11/29/07	11/28/08
Broadband Antenna	Sunol	JB5	A110503	11/29/07	11/28/08
Horn Antenna	Xibao	Xibao	040507	04/08/08	04/07/09
Double-Ridged Horn antenna	A-infor	JXTXLB-SJ-180400-15	WK293382	05/17/08	05/16/09
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.					

SIGNED BY:

Cloud Feng

ENGINEER

REVIEWED BY:

Hang Zhou

SENIOR ENGINEER

ATTACHMENT 4 – BAND EDGE TEST

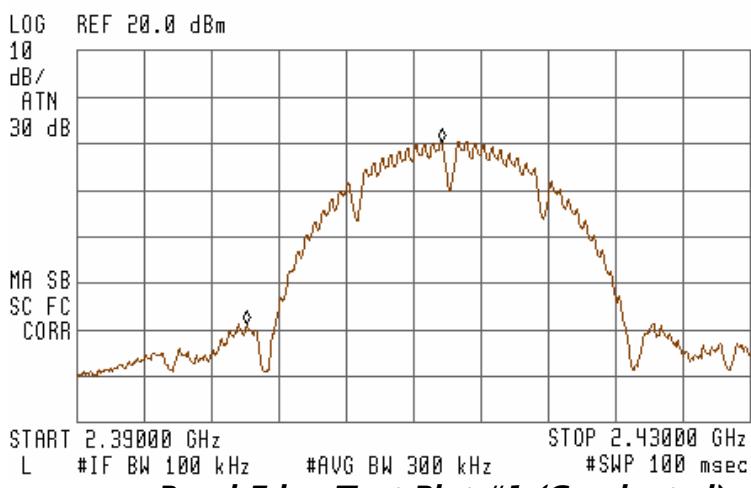
CLIENT:	CC&C Technologies Inc.	TEST STANDARD:	FCC Part 15.247 (d)
MODEL TESTED:	WA-6202	PRODUCT:	WLAN 11n Mini Router
SERIAL NO.:	Engineering Sample	EUT DESIGNATION:	RF Equipment
TEMPERATURE:	21°C	HUMIDITY:	53%RH
ATM PRESSURE:	101.6 kPa	GROUNDING:	No Grounding
TESTED BY:	Cloud Feng	DATE OF TEST:	2008, July 23
SETUP METHOD:	ANSI C63.4 - 2003		
BANDEdge REQUIREMENT:	<p>FCC 15.247 (d) In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiators shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.</p> <p>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).</p>		
TEST PROCEDURE:	<p>The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.</p> <p>a) For conducted method, connect two antenna ports into a power splitter then combine the power into the spectrum, Set RBW = 100 kHz, Video bandwidth VBW=300kHz, scan up through 10th. Harmonic, that is 25GHz.</p> <p>b) For radiated method: The EUT is set up according to the guidelines of ANSI C63.4 for radiated emissions. The length of the antenna was adjusted to the maximum output level. An EMI receiver peak scan is made at the frequency measurement range (pre-scan) in an Anechoic chamber. Signal discrimination is then performed and the significant peaks marked. These peaks are then quasi-peaked for final test at an Open Site Test area. The frequency investigated is from 30MHz to 25GHz.</p> <p>The following data lists the significant emission frequencies, measured levels, correction factors (including cable and antenna correction factors), and the corrected readings against the limits. Explanation of the Correction Factor is given as follows:</p> <p>FS= RA + AF + CF - AG</p>		

	Where: FS = Field Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Attenuation Factor AG = Amplifier Gain
TEST VOLTAGE:	120V / 60Hz
TEST STATUS:	Transmitting continuously
RESULTS:	The EUT meets band edge requirement. The test results relate only to the equipment under test provided by client.
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Worldwide Certification Solution, Inc. (China) test personnel.
M. UNCERTAINTY:	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp ± 2.6 dB

**Mode 1: Transmit by 802.11b
Channel 01 (2412MHz)
Conducted method**

11:30:41 SEP 18, 2008

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKA 2.40010 GHz
-38.81 dBm



Band Edge Test Plot #1 (Conducted)

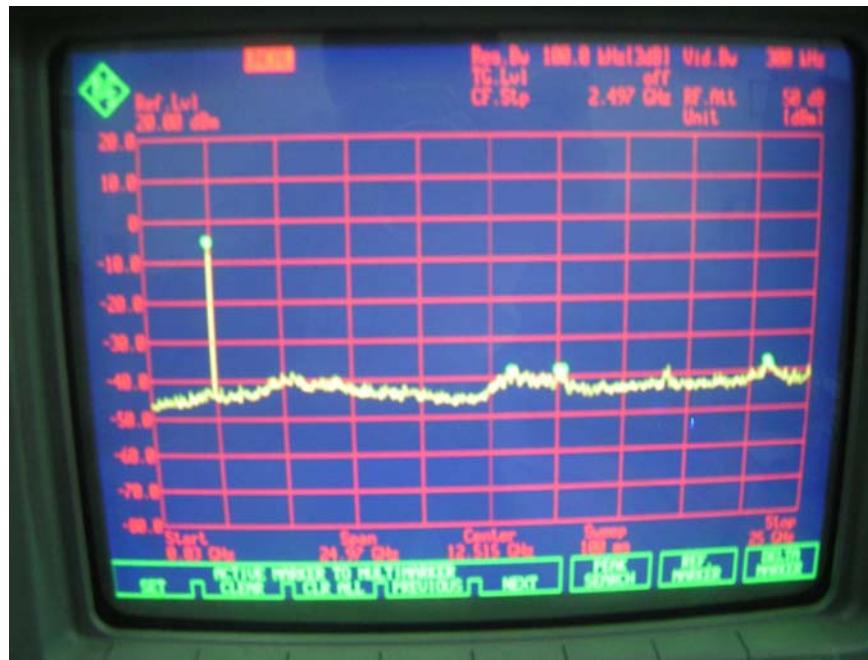
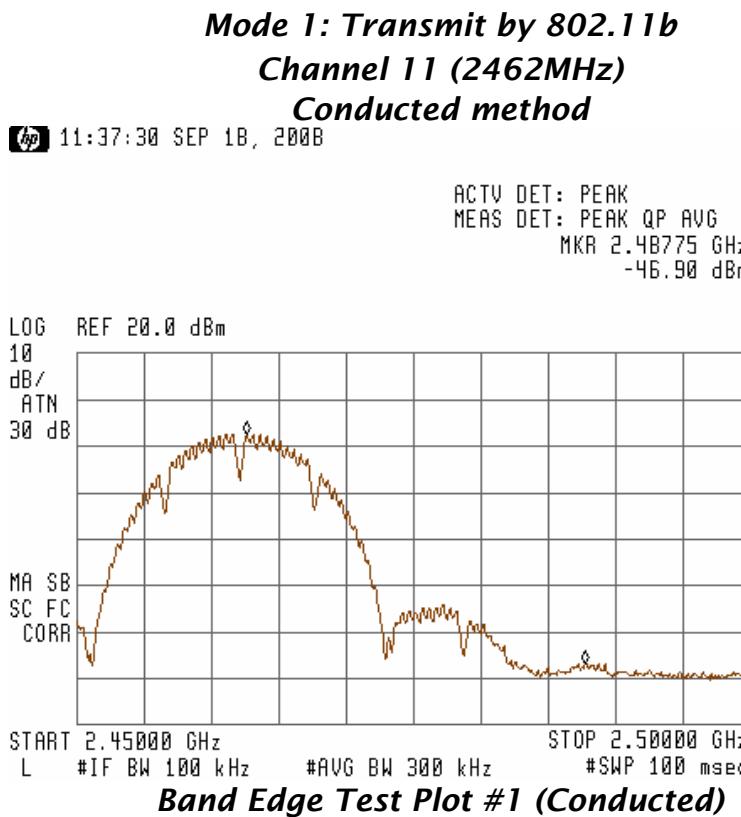


Band Edge Test Plot #2

Radiated method

Antenna Horizontal						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	60.4	74.0	-13.6
2	2483.5	27.5	10.3	57.3	74.0	-16.7
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	48.9	54.0	-5.1
2	2483.5	27.5	10.3	44.8	54.0	-9.2
Antenna Vertical						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	58.7	74.0	-15.3
2	2483.5	27.5	10.3	56.5	74.0	-17.5
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	47.6	54.0	-6.4
2	2483.5	27.5	10.3	47.0	54.0	-7.0

Restrict Band Test Table



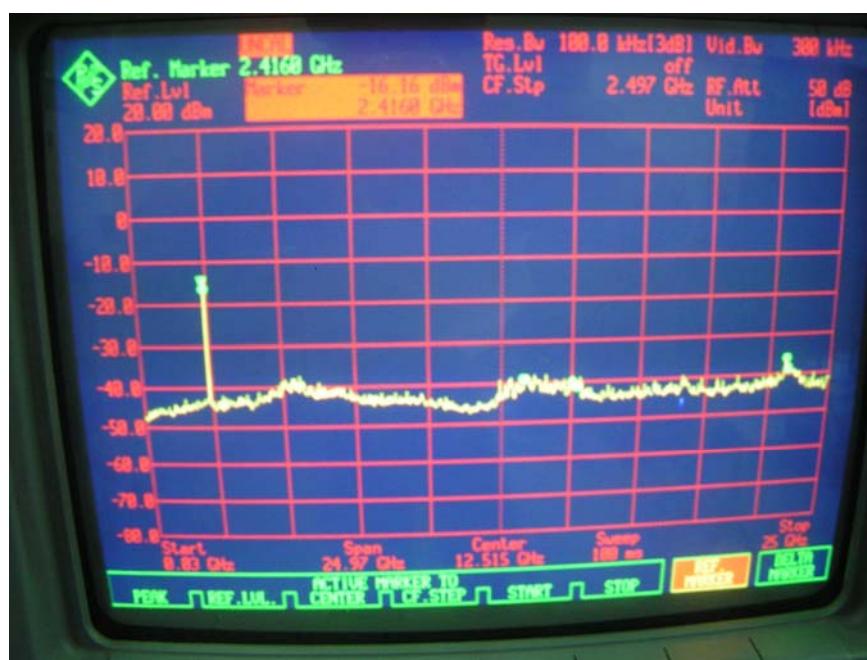
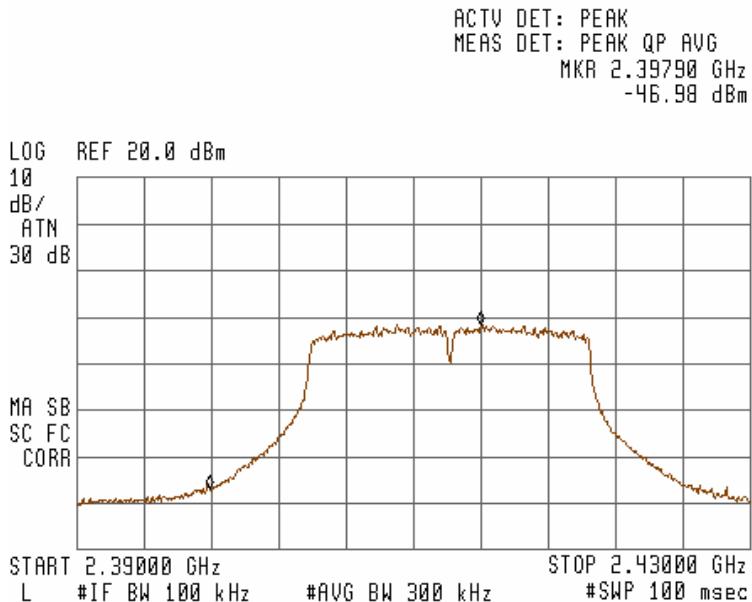
Radiated method

Antenna Horizontal						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	60.3	74.0	-13.7
2	2483.5	27.5	10.3	58.9	74.0	-15.1
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	47.3	54.0	-6.7
2	2483.5	27.5	10.3	46.9	54.0	-7.1
Antenna Vertical						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	58.5	74.0	-15.5
2	2483.5	27.5	10.3	58.3	74.0	-15.7
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	48.1	54.0	-5.9
2	2483.5	27.5	10.3	46.3	54.0	-7.7

Restrict Band Test Table

**Mode 2: Transmit by 802.11g
Channel 01 (2412MHz)
Conducted method**

11:23:58 SEP 18, 2008



Radiated method

RF Test Report #: CCC-0807-0468SH-FCC

Prepared for CC&C Technologies, Inc.

Prepared by ECMG Worldwide Certification Solution, Inc.

Radiated method

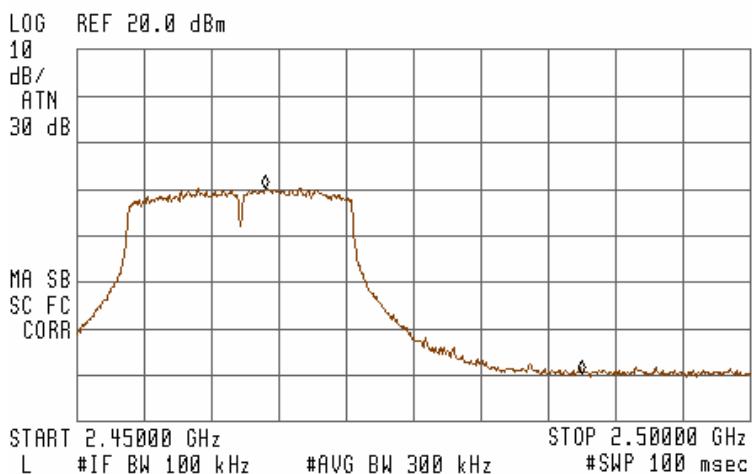
Antenna Horizontal						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	57.8	74.0	-16.2
2	2483.5	27.5	10.3	58.5	74.0	-15.5
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	47.1	54.0	-6.9
2	2483.5	27.5	10.3	46.4	54.0	-7.6
Antenna Vertical						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	56.5	74.0	-17.5
2	2483.5	27.5	10.3	55.8	74.0	-18.2
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	45.9	54.0	-8.1
2	2483.5	27.5	10.3	46.0	54.0	-8.0

Restrict Band Test Table

**Mode 2: Transmit by 802.11g
Channel 11 (2462MHz)
Conducted method**

11:18:04 SEP 18, 2008

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKA 2.48750 GHz
-49.63 dBm



Band Edge Test Plot #1 (Conducted)



Band Edge Test Plot #2 (Conducted)

Radiated method

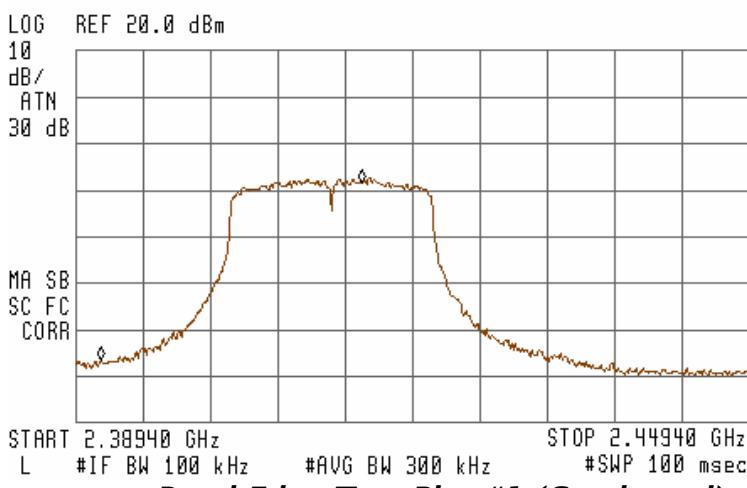
Antenna Horizontal						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	58.9	74.0	-15.1
2	2483.5	27.5	10.3	58.4	74.0	-15.6
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	47.5	54.0	-6.5
2	2483.5	27.5	10.3	47.5	54.0	-6.5
Antenna Vertical						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	58.6	74.0	-15.4
2	2483.5	27.5	10.3	57.5	74.0	-16.5
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	47.3	54.0	-6.7
2	2483.5	27.5	10.3	47.2	54.0	-6.8

Restrict Band Test Table

**Mode 3: Transmit by 802.11n (20MHz bandwidth)
Channel 01 (2412MHz)
Conducted method**

11:05:00 SEP 18, 2008

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKA 2.39165 GHz
-46.73 dBm



Band Edge Test Plot #1 (Conducted)



Band Edge Test Plot #2 (Conducted)

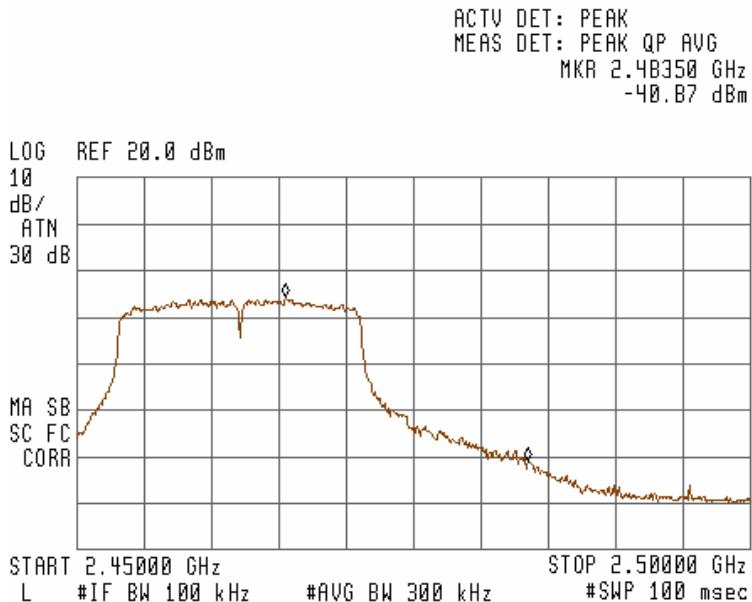
Radiated method

Antenna Horizontal						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	58.5	74.0	-15.5
2	2483.5	27.5	10.3	58.1	74.0	-15.9
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	47.9	54.0	-6.1
2	2483.5	27.5	10.3	45.8	54.0	-8.2
Antenna Vertical						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	57.4	74.0	-16.6
2	2483.5	27.5	10.3	55.9	74.0	-18.1
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	46.9	54.0	-7.1
2	2483.5	27.5	10.3	46.3	54.0	-7.7

Restrict Band Test Table

**Mode 3: Transmit by 802.11n (20MHz bandwidth)
Channel 11 (2462MHz)
Conducted method**

11:10:44 SEP 18, 2008



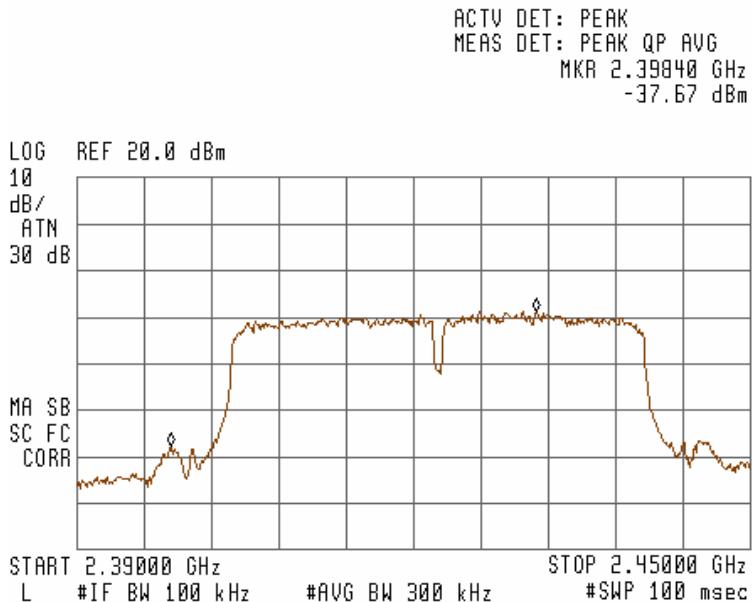
Radiated method

Antenna Horizontal						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	59.3	74.0	-14.7
2	2483.5	27.5	10.3	58.1	74.0	-15.9
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	47.4	54.0	-6.6
2	2483.5	27.5	10.3	47.3	54.0	-6.7
Antenna Vertical						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	57.6	74.0	-16.4
2	2483.5	27.5	10.3	54.3	74.0	-19.7
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	45.3	54.0	-8.7
2	2483.5	27.5	10.3	46.4	54.0	-7.6

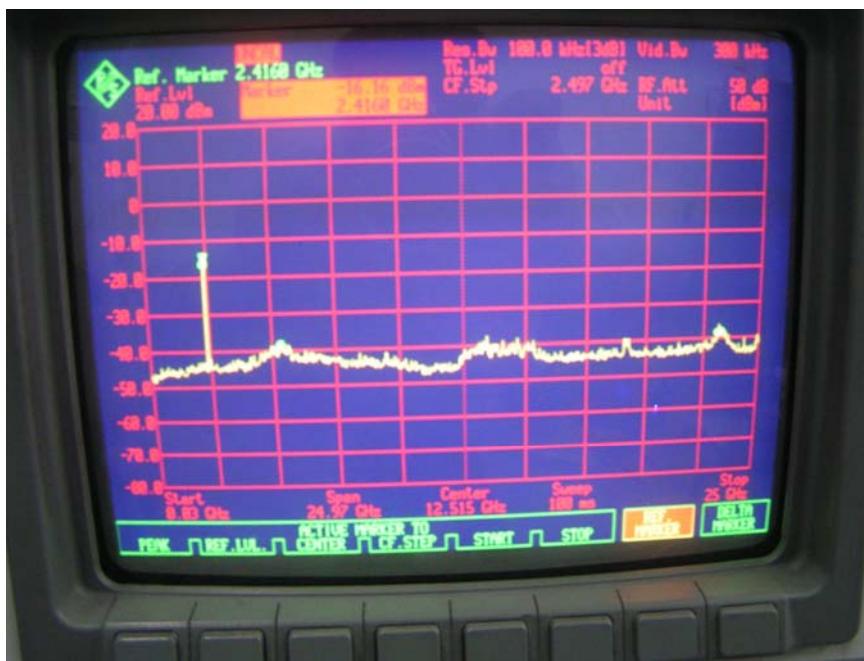
Restrict Band Test Table

**Mode 4: Transmit by 802.11n (40MHz bandwidth)
Channel 03 (2422MHz)
Conducted method**

10:58:38 SEP 18, 2008



Band Edge Test Plot #1 (Conducted)



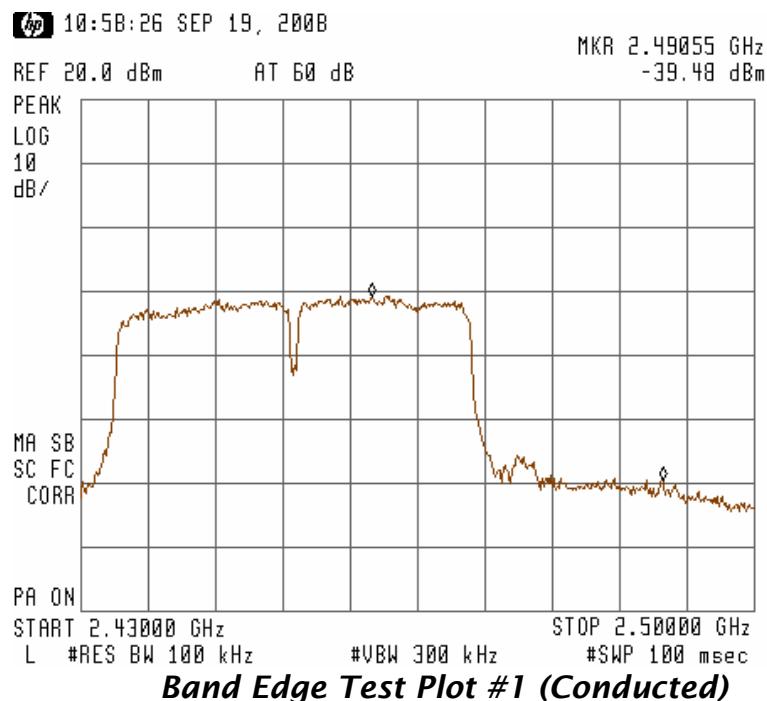
Band Edge Test Plot #2 (Conducted)

Radiated method

Antenna Horizontal						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	59.7	74.0	-14.3
2	2483.5	27.5	10.3	56.4	74.0	-17.6
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	49.0	54.0	-5.0
2	2483.5	27.5	10.3	45.4	54.0	-8.6
Antenna Vertical						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	58.6	74.0	-15.4
2	2483.5	27.5	10.3	55.9	74.0	-18.1
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	46.4	54.0	-7.6
2	2483.5	27.5	10.3	46.5	54.0	-7.5

Restrict Band Test Table

**Mode 4: Transmit by 802.11n (40MHz bandwidth)
Channel 09 (2452MHz)
Conducted method**



Band Edge Test Plot #2 (Conducted)

Radiated method

Antenna Horizontal						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	59.6	74.0	-14.4
2	2483.5	27.5	10.3	58.1	74.0	-15.9
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	49.1	54.0	-4.9
2	2483.5	27.5	10.3	46.5	54.0	-7.5
Antenna Vertical						
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected PK Level (dBuV)	Limits PK (dBuV/m)	Margin PK (dB)
1	2390.0	27.2	10.0	59.1	74.0	-14.9
2	2483.5	27.5	10.3	57.5	74.0	-16.5
Signal	Frequency (MHz)	Antenna Factor (dB/m)	Cable Factor (dB)	Corrected AV Level (dBuV)	Limits AV (dBuV/m)	Margin AV (dB)
1	2390.0	27.2	10.0	48.1	54.0	-5.9
2	2483.5	27.5	10.3	47.3	54.0	-6.7

Restrict Band Test Table

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP	85462A	3650A00363	11/29/07	11/28/08
EMI Test Receiver RF Unit	R&S	ESMI-RF	DE23873	11/29/07	11/28/08
EMI Test Receiver Display Unit	R&S	ESAI-D	825035/005	11/29/07	11/28/08
Power Splitter	Agilent	11667B	N/A	11/29/07	11/28/08
Broadband Antenna	Sunol	JB5	A110503	11/29/07	11/28/08
Horn Antenna	Xibao	Xibao	040507	04/08/08	04/07/09
10dB Attenuator	Huaxiang	TS5G-10dB	08050902	05/23/08	05/22/09
10dB Attenuator	Huaxiang	TS5-10dB	08050901	05/23/08	05/22/09
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.					

SIGNED BY:

Cloud Feng

ENGINEER

REVIEWED BY:

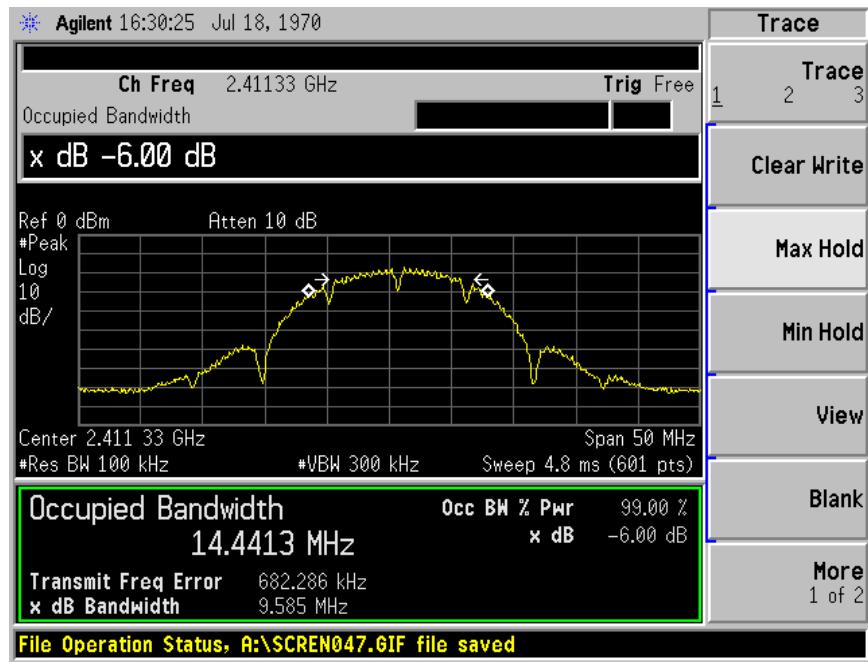
Hang Zhou

SENIOR ENGINEER

ATTACHMENT 5 – Occupied Bandwidth

CLIENT:	CC&C Technologies, Inc.	TEST STANDARD:	FCC Part 15.247 (a)(2)
MODEL NUMBER:	WA-6202	PRODUCT:	WLAN 11n Mini Router
SERIAL NO.:	Engineering Sample	EUT DESIGNATION:	RF Equipment
TEMPERATURE:	21 °C	HUMIDITY:	53%RH
ATM PRESSURE:	101.6 kPa	GROUNDING:	No Grounding
TESTED BY:	Cloud Feng	DATE OF TEST:	2008, July 23
SETUP METHOD:	ANSI C63.4 - 2003		
BANDWIDTH REQUIREMENT:	FCC 15.247 (a) (2) (i) The minimum 6 dB bandwidth shall be at least 500kHz.		
TEST PROCEDURE:	<p>The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.</p> <p>Set the spectrum as follow:</p> <p>Span=100MHz, centered on the plot; RBW=100kHz; VBW\geqRBW; Sweep=Auto; Detector=Peak; Trace=Maxhold;</p> <p>Use the search peak function to set the marker to the peak of the emission; Use the delta-mark function to measure 6dB down to both sides of the emission; The 6dB BW is the delta reading between two 6dB down marker.</p>		
TEST VOLTAGE:	120V / 60Hz		
TEST STATUS:	Transmitting continuously		
RESULTS:	The EUT meets the bandwidth requirement. The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Worldwide Certification Solution, Inc. (China) test personnel.		
M. UNCERTAINTY:	Freq. \pm 2×10^{-7} x Center Freq., Amp \pm 2.6 dB		

Mode 1: Transmit by 802.11b
Channel 01 (2412MHz)



Bandwidth Plot

Mode 1: Transmit by 802.11b

Channel 07 (2442MHz)

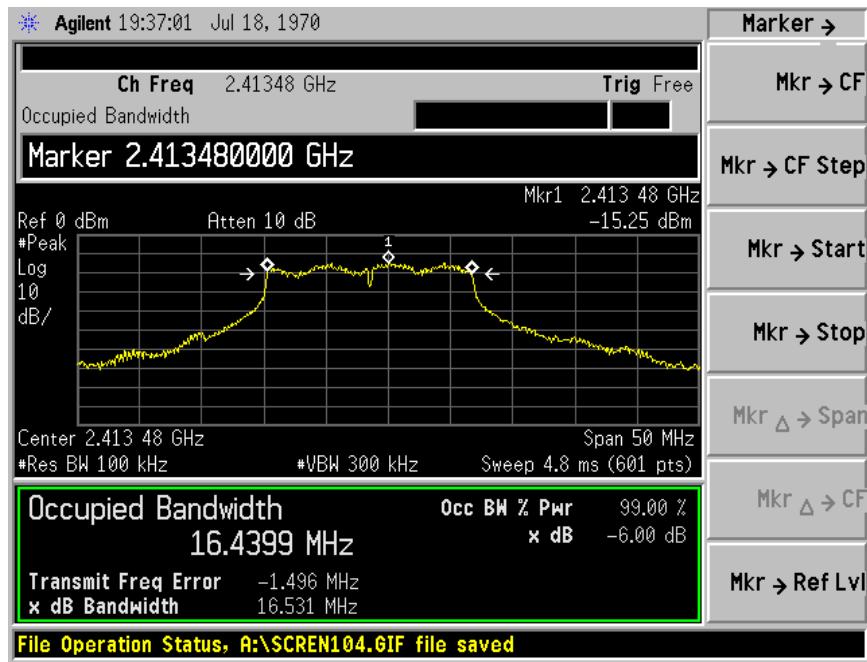


Mode 1: Transmit by 802.11b
Channel 11 (2462MHz)

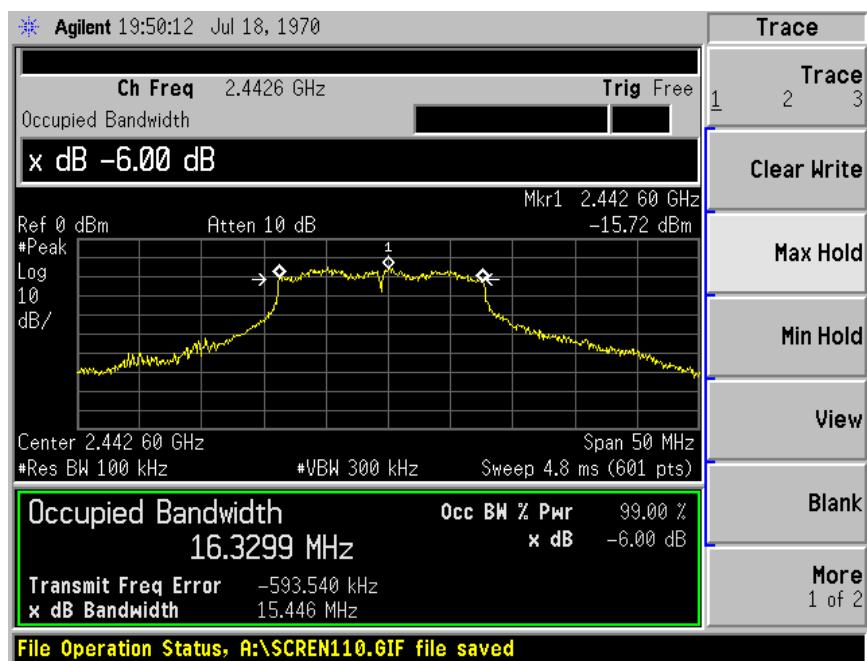


Bandwidth Plot

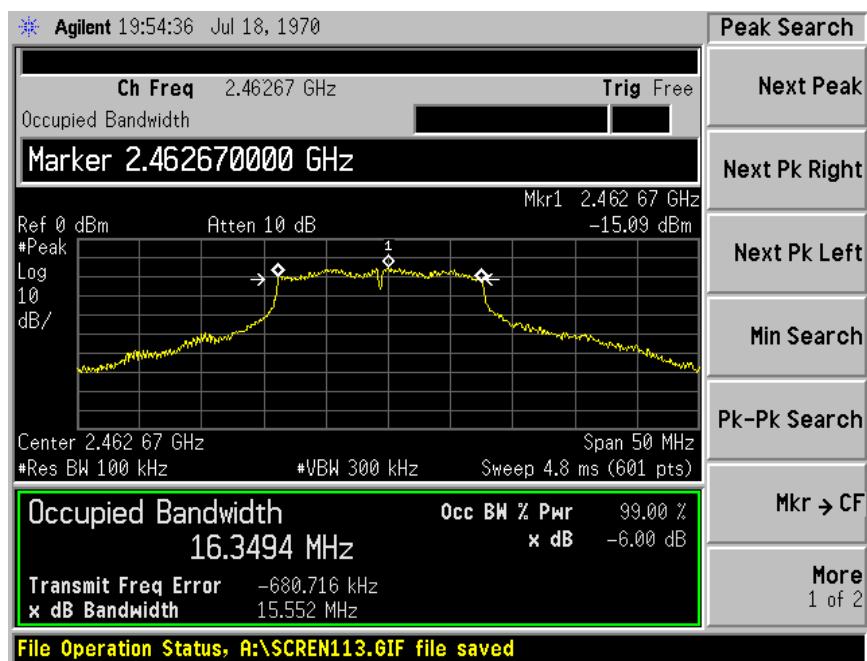
Mode 2: Transmit by 802.11g
Channel 01 (2412MHz)



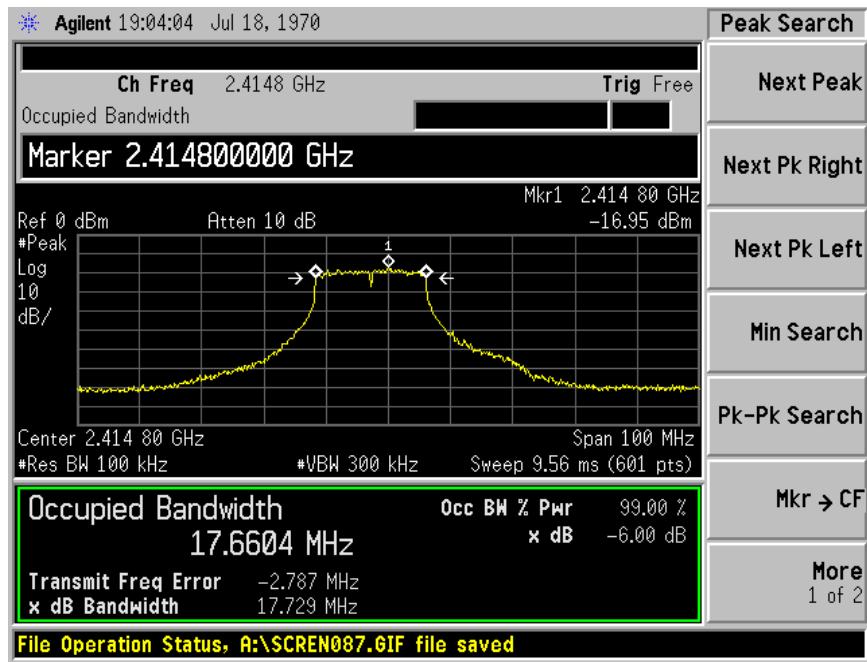
Mode 2: Transmit by 802.11g
Channel 07 (2442MHz)



Mode 2: Transmit by 802.11g
Channel 11 (2476MHz)

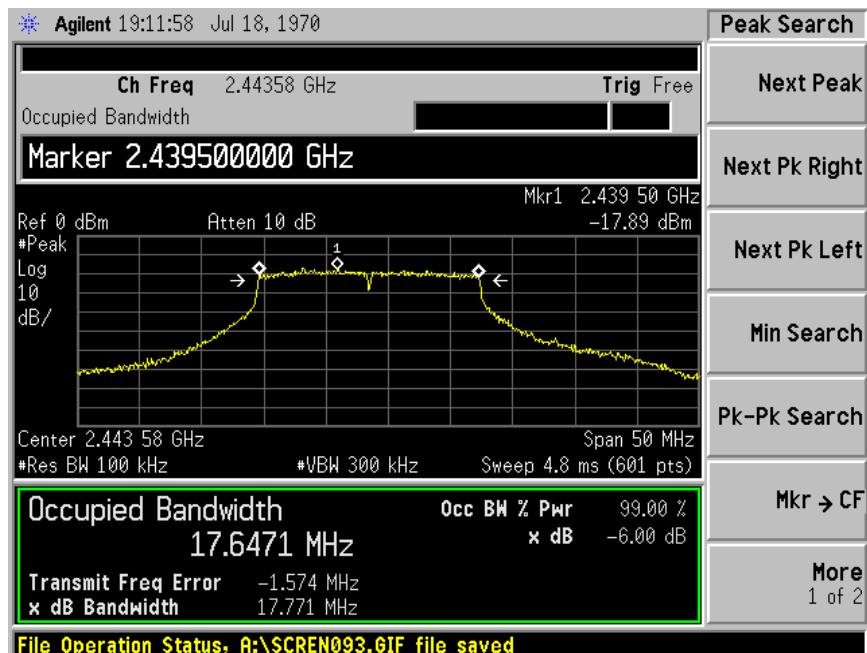


Mode 3: Transmit by 802.11n (20MHz bandwidth)
Channel 01 (2416MHz)



Mode 3: Transmit by 802.11n (20MHz bandwidth)

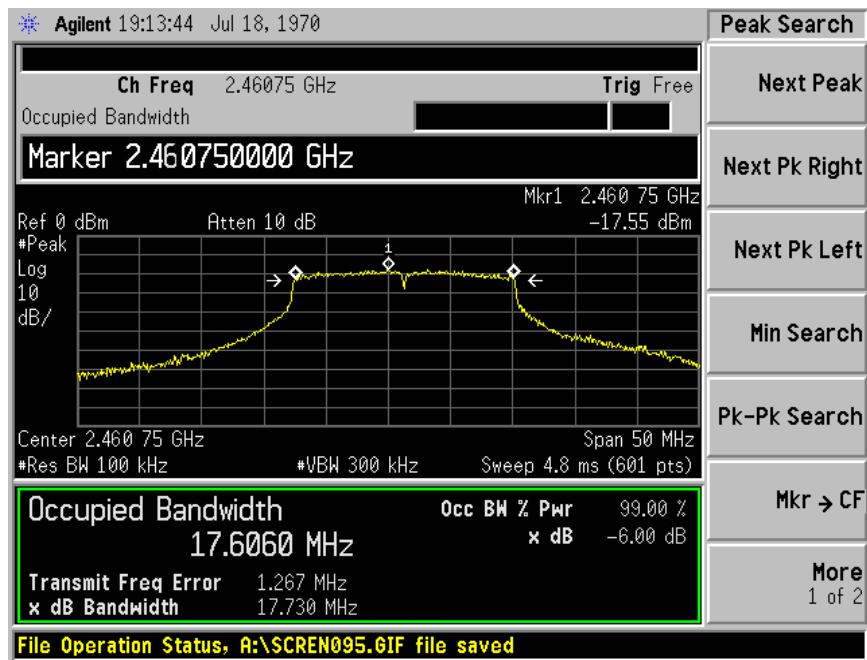
Channel 07 (2442MHz)



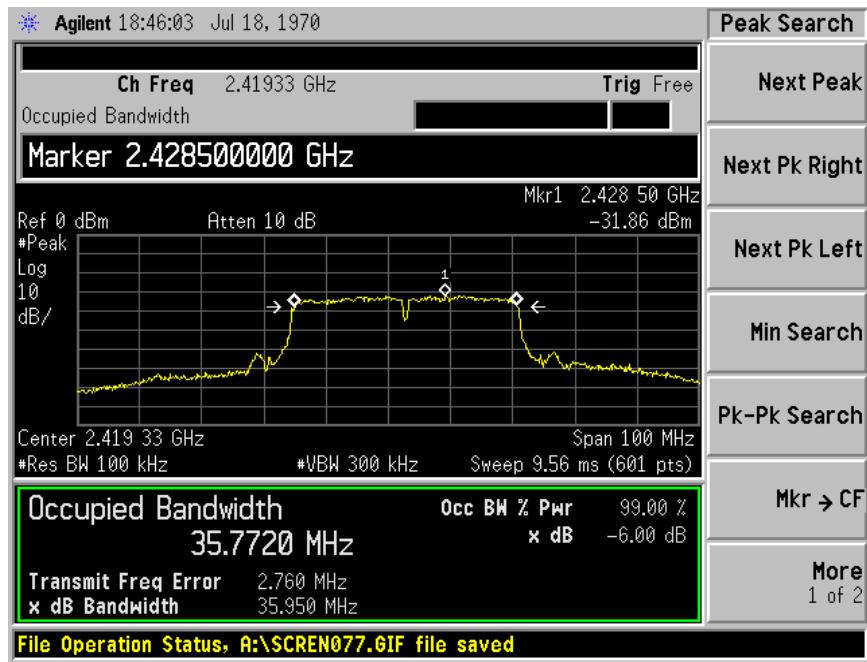
Bandwidth Plot

Mode 3: Transmit by 802.11n (20MHz bandwidth)

Channel 11 (2462MHz)



Mode 4: Transmit by 802.11n (40MHz bandwidth)
Channel 04 (2427MHz)



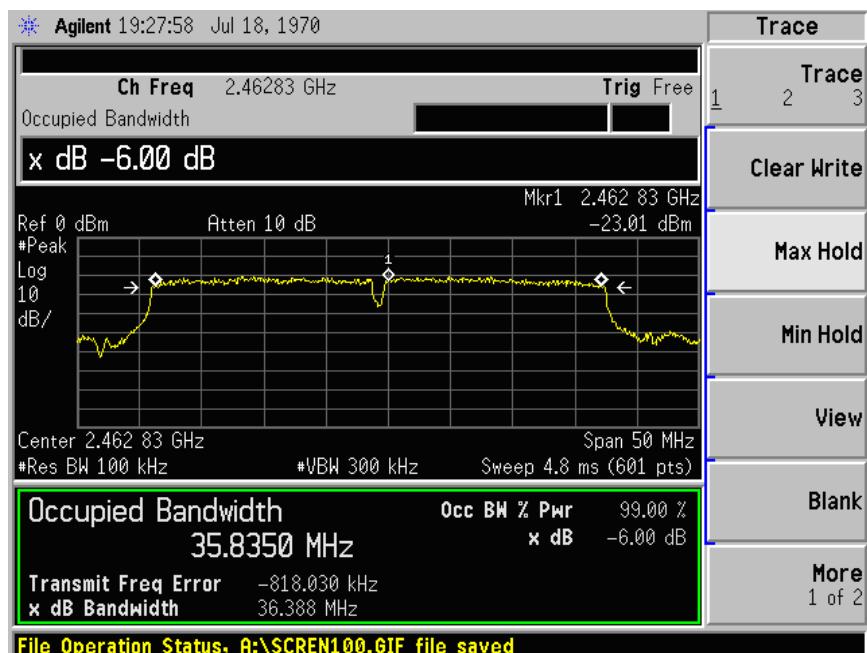
Mode 4: Transmit by 802.11n (40MHz bandwidth)

Channel 07 (2442MHz)



Mode 4: Transmit by 802.11n (40MHz bandwidth)

Channel 11 (2462MHz)



Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP	85462A	3650A00363	11/29/07	11/28/08
EMI Test Receiver RF Unit	R&S	ESMI-RF	DE23873	11/29/07	11/28/08
EMI Test Receiver Display Unit	R&S	ESAI-D	825035/005	11/29/07	11/28/08
Power Splitter	Agilent	11667B	N/A	11/29/07	11/28/08
Broadband Antenna	Sunol	JB5	A110503	11/29/07	11/28/08
Horn Antenna	Xibao	Xibao	040507	04/08/08	04/07/09
Spectrum Analyzer	Agilent	E4440A	US45303119	03/20/08	03/19/09
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.					

SIGNED BY:

Cloud Feng

ENGINEER

REVIEWED BY:

Hang Zhou

SENIOR ENGINEER

ATTACHMENT 6 - MAXIMUM PEAK OUTPUT POWER

CLIENT:	CC&C Technologies, Inc.	TEST STANDARD:	FCC Part 15.247 (b) (3)
MODEL TESTED:	WA-6202	PRODUCT:	WLAN 11N MINI ROUTER
SERIAL NO.:	Engineering Sample	EUT DESIGNATION:	RF Equipment
TEMPERATURE:	21°C	HUMIDITY:	53%RH
ATM PRESSURE:	101.6 kPa	GROUNDING:	No Grounding
TESTED BY:	Cloud Feng	DATE OF TEST:	2008, July 23
SETUP METHOD:	ANSI C63.4 - 2003		
TEST REQUIREMENT:	FCC 15.247 (b) (3) For system using digital modulation in the 902-928MHz, 2400-2483.5MHz, and 5725-5850 MHz bands: 1Watt.		
TEST PROCEDURE:	<p>The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.</p> <p>Connect two antenna ports into a power splitter then combine the power into the spectrum.</p> <p>Power output measurement allowed per Section 15.247(b)(3).</p> <p>In the following, "T" is the transmission pulse duration over which the transmitter is on and transmitting at its maximum power control level. Measurements are performed with a spectrum analyzer. Three methods are provided to accommodate measurement limitations of the spectrum analyzer depending on signal parameters. Set resolution bandwidth (RBW) = 1 MHz. Set span to encompass the entire emission bandwidth (EBW) of the signal. Use automatic setting for analyzer sweep time.</p> <p>As "T" \geq sweep time, the test procedure will be used as following:</p> <ol style="list-style-type: none"> 1. Set span to encompass the entire emission bandwidth (EBW) of the signal. 2. Set sweep trigger to "free run". 3. Set RBW = 1 MHz. Set VBW $\geq 1/T$ 4. Use linear display mode. 5. Use sample detector mode if bin width (i.e., span/number of points in spectrum) < 0.5 RBW. Otherwise use peak detector mode. 6. Set max hold. 7. Allow max hold to run for 60 seconds. 8. Compute power by applying a bandwidth correction factor of $10 \log (EBW/1 \text{ MHz})$ to the spectral peak of the emission. The integration can be performed using the spectrum analyzer's band. 		
TEST VOLTAGE:	120V / 60Hz		

TEST STATUS:	Transmitting continuously with maximum power
RESULTS:	The EUT meets the maximum peak conducted output power requirement. The test results relate only to the equipment under test provided by client.
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Worldwide Certification Solution, Inc. (China) test personnel.
M. UNCERTAINTY:	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp ± 2.6 dB

Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	Data Rate (Mbps)				Limit (dBm)
		1	2	5.5	11	
01	2412	16.78	16.64	16.52	16.26	30
06	2437	17.42	17.12	16.01	15.78	30
11	2462	18.99	17.77	17.78	17.64	30

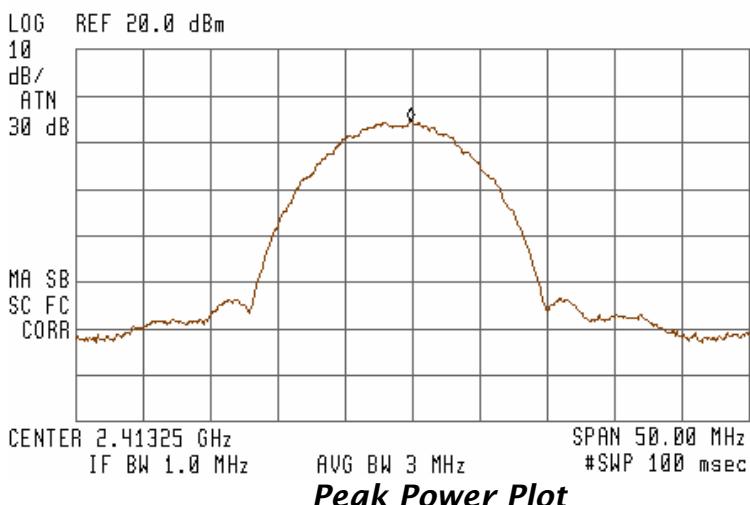
Note #1: The antenna gain of transmitter is less than 6 dBi and other than fixed, point-to-point operation, therefore the limit is 30 dBm.

Note #2: 26dB BW= 17.2MHz, so the correction factor=10log(17.2MHz/1MHz)
=12.35

Channel 01 (2412MHz)

09:09:48 SEP 18, 2008

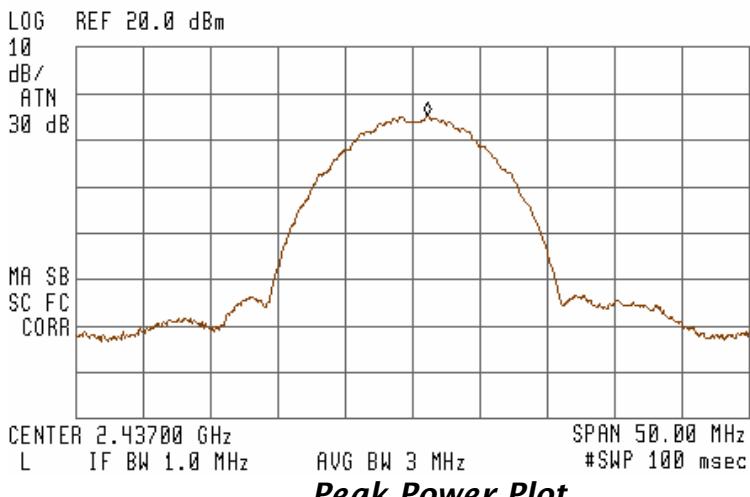
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 2.41313 GHz
4.43 dBm



Channel 06 (2437MHz)

09:24:47 SEP 18, 2008

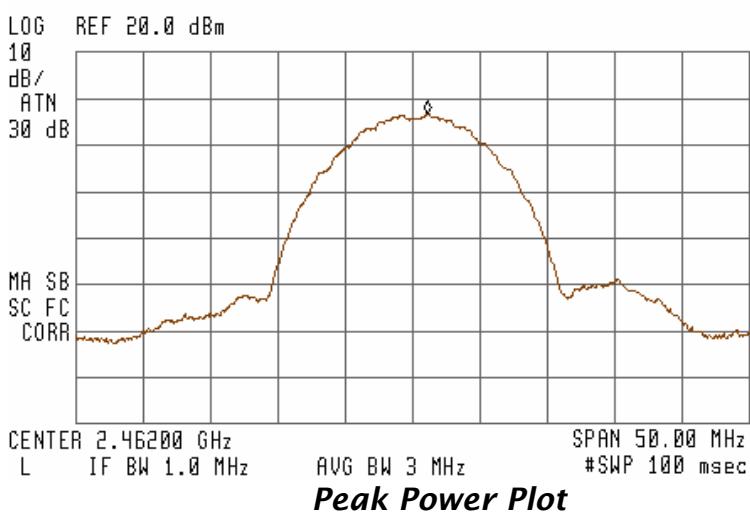
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 2.43813 GHz
5.07 dBm



Channel 11 (2462MHz)

09:15:15 SEP 18, 2008

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 2.46313 GHz
6.64 dBm



Mode 2: Transmit by 802.11g

Channel No.	Frequency (MHz)	Data Rate (Mbps)								Limit (dBm)
		6	9	12	18	24	36	48	54	
01	2412	12.03	11.85	11.78	11.76	11.68	11.66	11.64	11.50	30
06	2437	12.95	12.76	12.76	12.67	12.68	12.66	12.59	12.57	30
11	2462	14.23	14.10	14.04	14.06	14.12	13.98	13.85	13.76	30

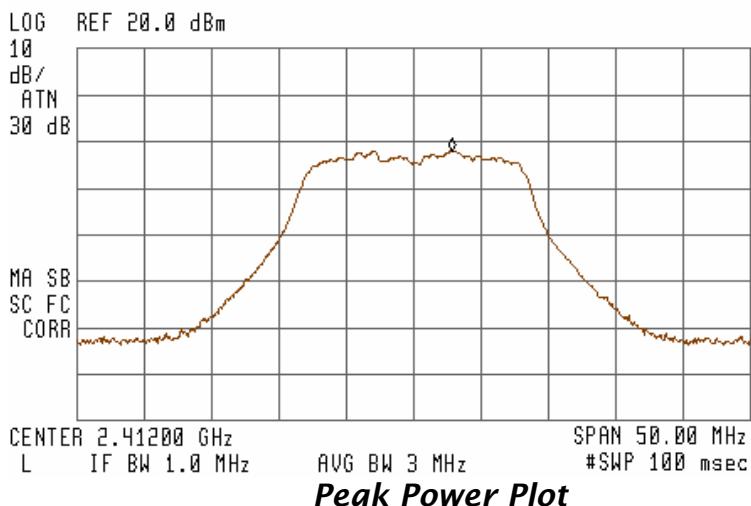
Note #1: The antenna gain of transmitter is less than 6 dBi and other than fixed, point-to-point operation, therefore the limit is 30dBm.

Note #2: 26dB BW= 25.6MHz, so the correction factor= $10\log(25.6\text{MHz}/1\text{MHz}) = 14.08$

Channel 01 (2412MHz)

09:46:46 SEP 18, 2008

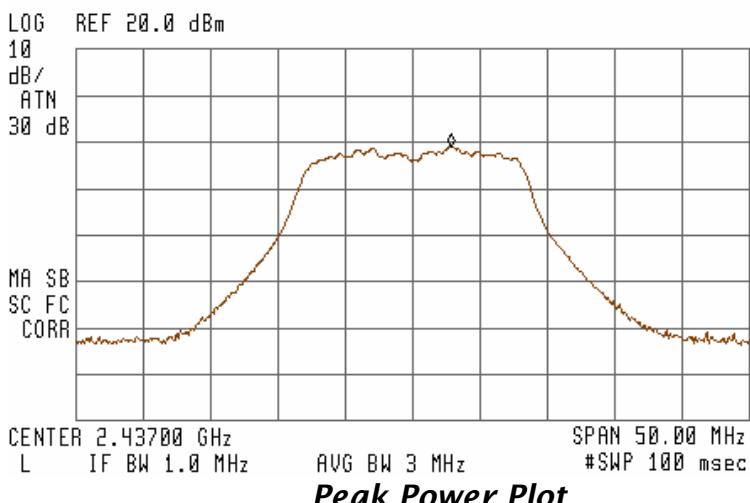
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 2.41488 GHz
-2.05 dBm



Channel 06 (2437MHz)

09:39:32 SEP 18, 2008

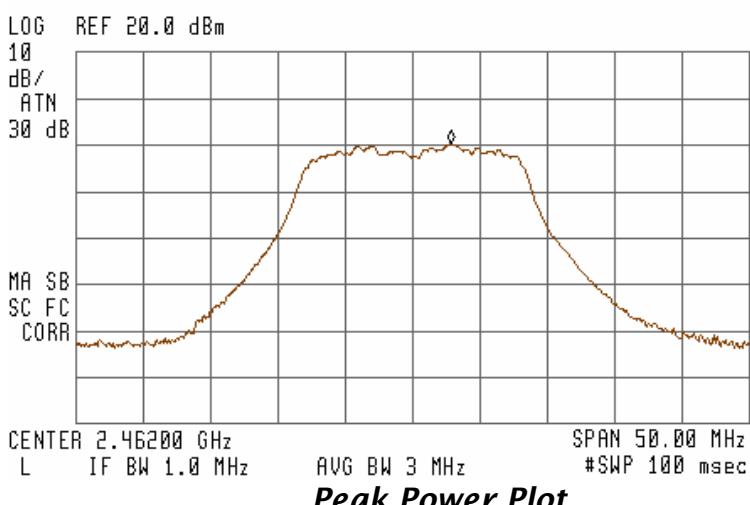
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 2.43988 GHz
-1.13 dBm



Channel 11 (2462MHz)

09:55:00 SEP 18, 2008

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 2.46488 GHz
.15 dBm



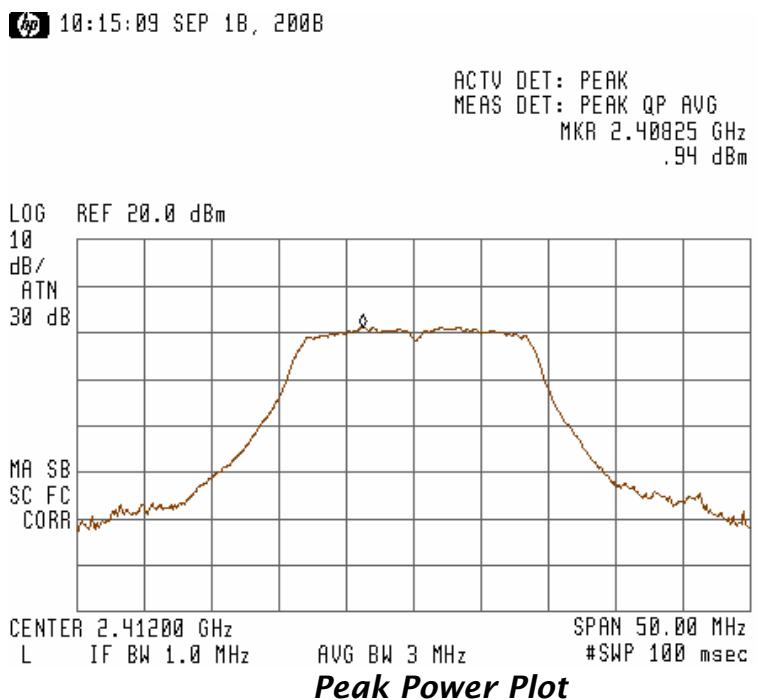
Mode 3: Transmit by 802.11n (20MHz bandwidth)

Channel No.	Frequency (MHz)	Data Rate (Mbps)								Limit (dBm)
		6.5	13.0	19.5	26.0	39.0	52.0	58.5	65.0	
01	2412	15.33	14.86	14.88	14.78	14.70	14.75	14.68	14.70	30
06	2437	16.51	16.07	16.06	16.06	15.89	15.94	15.75	15.69	30
11	2462	17.90	17.47	17.43	17.45	17.38	17.40	17.41	17.40	30

Note #1: The antenna gain of transmitter is less than 6 dBi and other than fixed, point-to-point operation, therefore the limit is 30dBm.

Note #2: 26dB BW= 27.5MHz, so the correction factor=10log(27.5MHz/1MHz)
=14.39

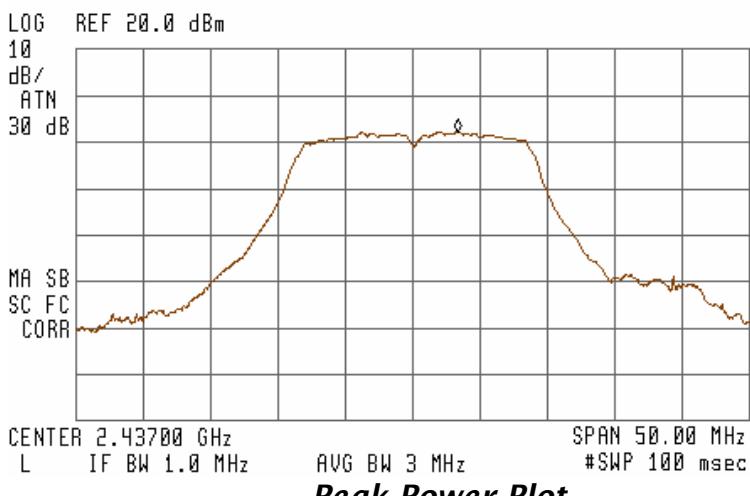
Channel 01 (2412MHz)



Channel 06 (2437MHz)

10:09:24 SEP 18, 2008

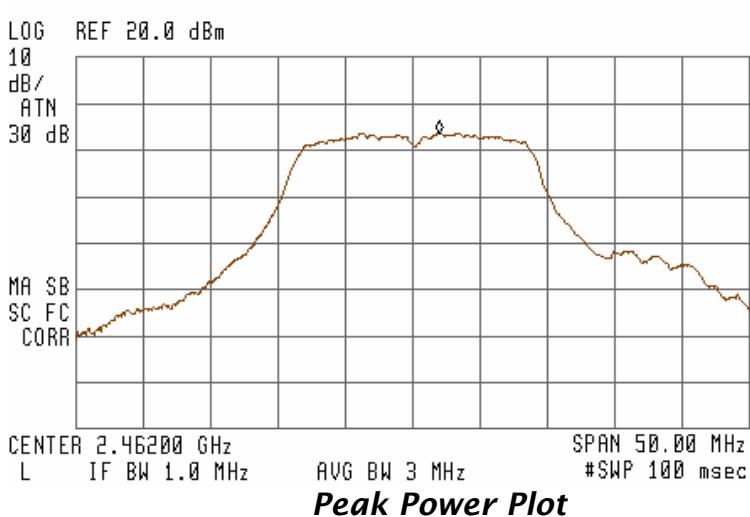
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 2.44038 GHz
2.12 dBm



Channel 11 (2462MHz)

10:01:28 SEP 18, 2008

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 2.46400 GHz
3.51 dBm



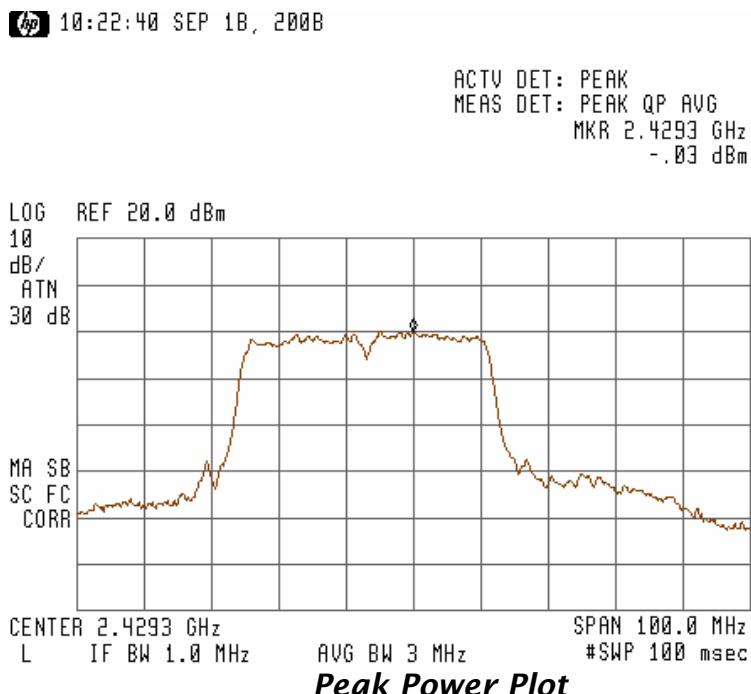
Mode 4: Transmit by 802.11n (40MHz bandwidth)

Channel No.	Frequency (MHz)	Data Rate (Mbps)									Limit (dBm)
		13.5	27.0	40.5	54.0	81.0	108.	121.	135.		
03	2422	16.13	15.87	15.85	15.85	15.84	15.85	15.78	15.79	30	
06	2437	16.84	16.65	15.65	15.60	15.58	15.57	15.54	15.54	30	
09	2452	14.55	14.35	14.35	14.30	14.28	14.30	14.28	14.22	30	

Note #1: The antenna gain of transmitter is less than 6 dBi and other than fixed, point-to-point operation, therefore the limit is 30 dBm.

Note #2: 26dB BW= 41.3MHz, so the correction factor=10log(41.3MHz/1MHz)=16.16

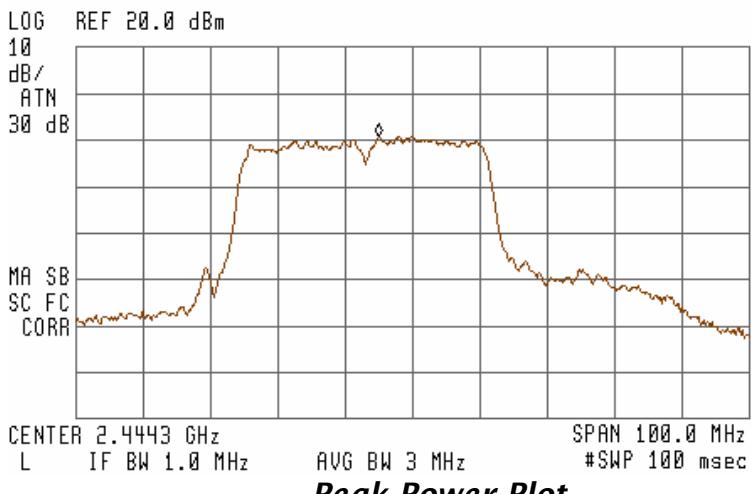
Channel 03 (2422MHz)



Channel 06 (2437MHz)

10:29:23 SEP 18, 2008

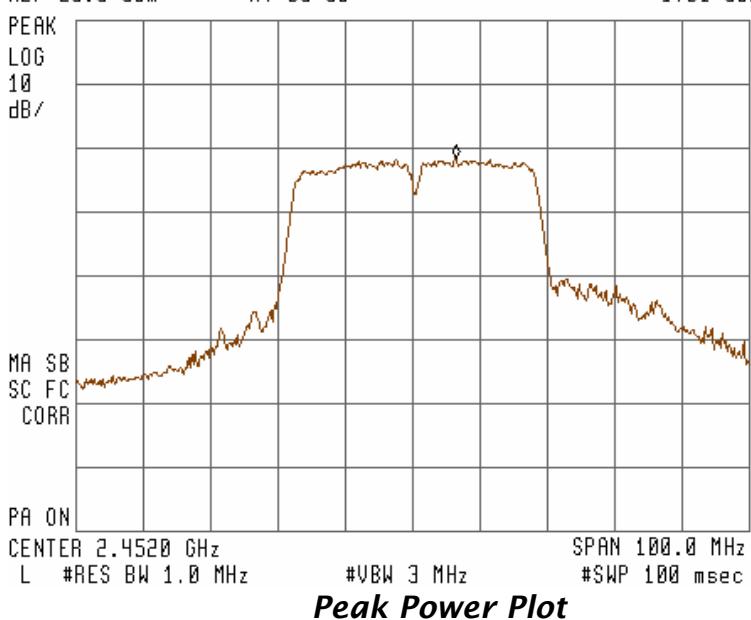
ACTV DET: PEAK
MERS DET: PEAK QP AVG
MKR 2.4393 GHz
.68 dBm



Channel 09 (2452MHz)

10:47:05 SEP 19, 2008

MKR 2.4585 GHz
-1.61 dBm



Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP	85462A	3650A00363	11/29/07	11/28/08
EMI Test Receiver RF Unit	R&S	ESMI-RF	DE23873	11/29/07	11/28/08
EMI Test Receiver Display Unit	R&S	ESAI-D	825035/005	11/29/07	11/28/08
Power Splitter	Agilent	11667B	N/A	11/29/07	11/28/08
10dB Attenuator	Huaxiang	TS5G-10dB	08050902	05/23/08	05/22/09
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.					

SIGNED BY:



ENGINEER

REVIEWED BY:



SENIOR ENGINEER

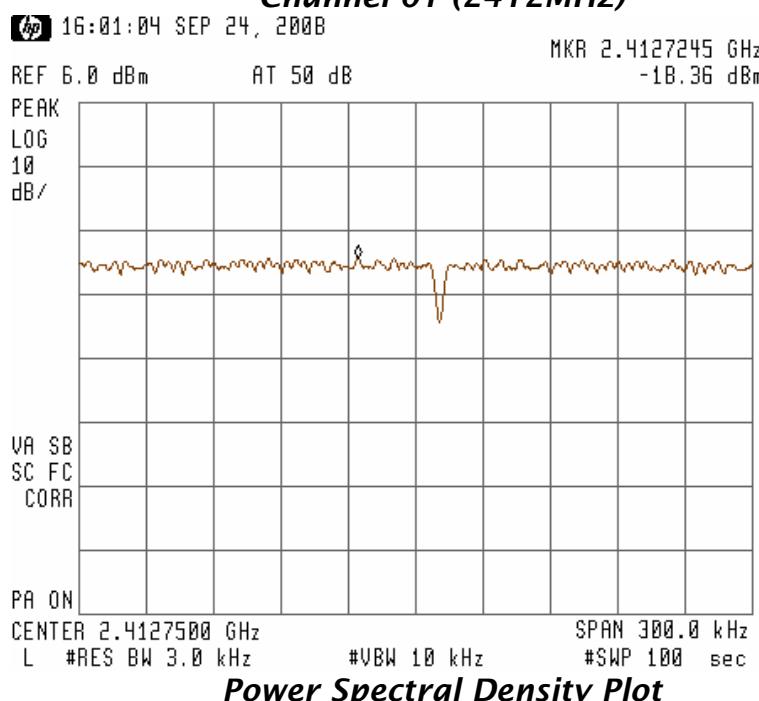
ATTACHMENT 7 – POWER SPECTRAL DENSITY

CLIENT:	CC&C Technologies, Inc	TEST STANDARD:	FCC Part 15.247 (e)
MODEL NUMBER:	WA-6202	PRODUCT:	WLAN 11N MINI ROUTER
SERIAL NO.:	Engineering Sample	EUT DESIGNATION:	RF Equipment
TEMPERATURE:	21°C	HUMIDITY:	53%RH
ATM PRESSURE:	101.6 kPa	GROUNDING:	No Grounding
TESTED BY:	Cloud Feng	DATE OF TEST:	2008, July 23
SETUP METHOD:	ANSI C63.4 - 2003		
POWER SPECTRAL DENSITY REQUIREMENT:	FCC 15.247 (e) For digitally modulated systems, the power density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.		
TEST PROCEDURE:	<p>The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.</p> <p>Connect two antenna ports into a power splitter then combine the power into the spectrum.</p> <p>Set the spectrum as follow:</p> <p>Locate and zoom in on emission peak(s) within the passband. Set RBW = 3 kHz, VBW > RBW, sweep=(SPAN/3 kHz) e.g., for a span of 300kHz, the sweep should be 300kHz/3kHz= 100 seconds.</p> <p>Read the peak level of the plot, that is the power spectral density in 3kHz.</p>		
TEST VOLTAGE:	120V / 60Hz		
TEST STATUS:	Transmitting continuously		
RESULTS:	The EUT meets the bandwidth requirement. The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Worldwide Certification Solution, Inc. (China) test personnel.		
M. UNCERTAINTY:	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp ± 2.6 dB		

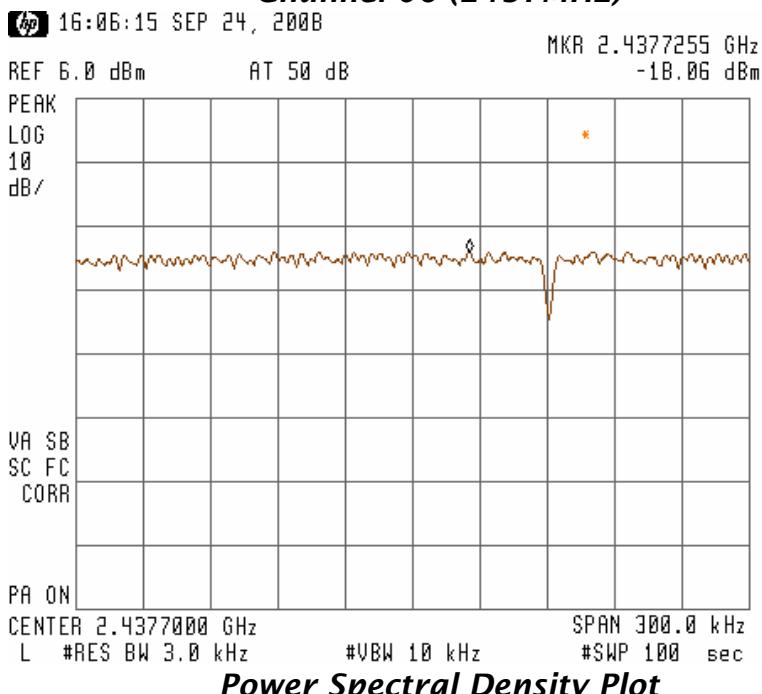
Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
01	2412	-18.36	8	Pass
06	2437	-18.06	8	Pass
11	2462	-17.24	8	Pass

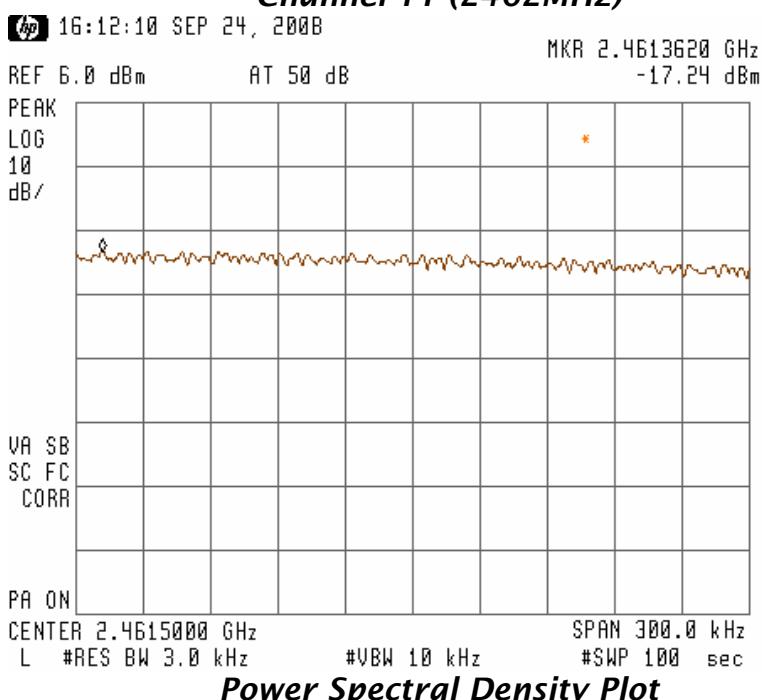
Channel 01 (2412MHz)



Channel 06 (2437MHz)



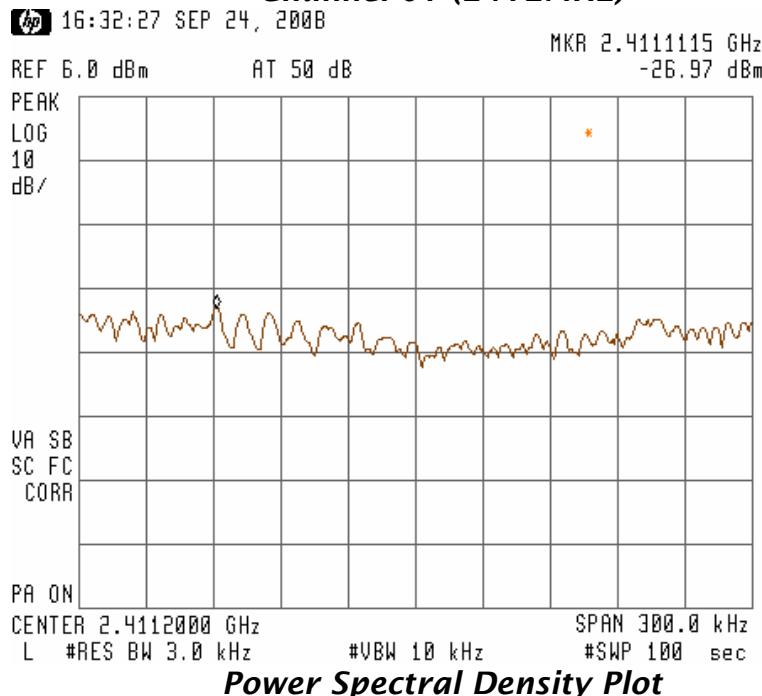
Channel 11 (2462MHz)



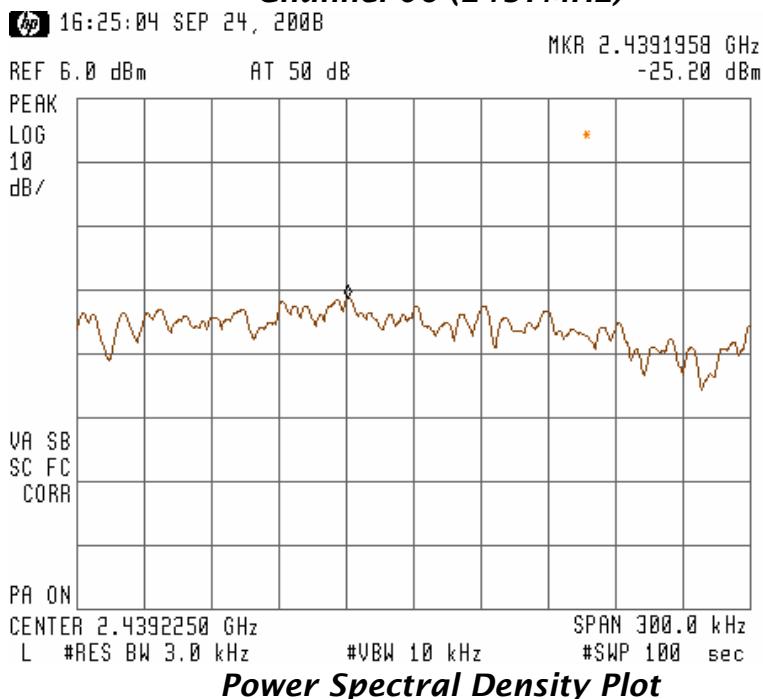
Mode 2: Transmit by 802.11g

Channel No.	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
01	2412	-26.97	8	Pass
06	2437	-25.20	8	Pass
11	2462	-24.74	8	Pass

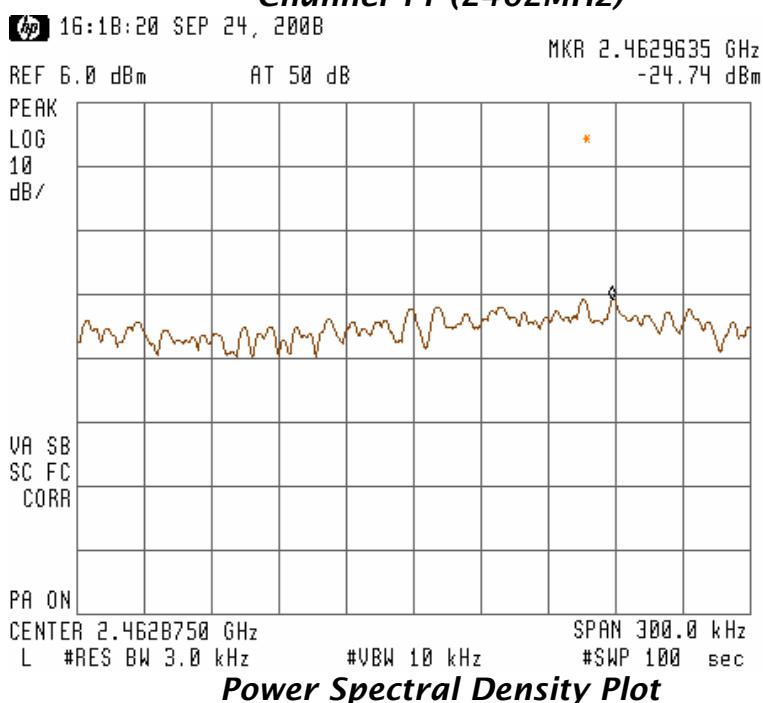
Channel 01 (2412MHz)



Channel 06 (2437MHz)

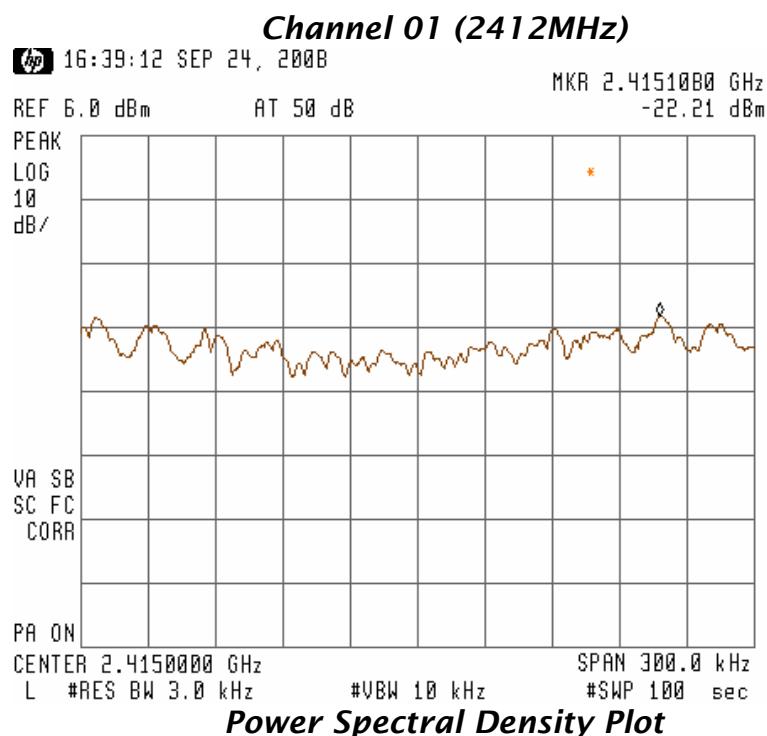


Channel 11 (2462MHz)

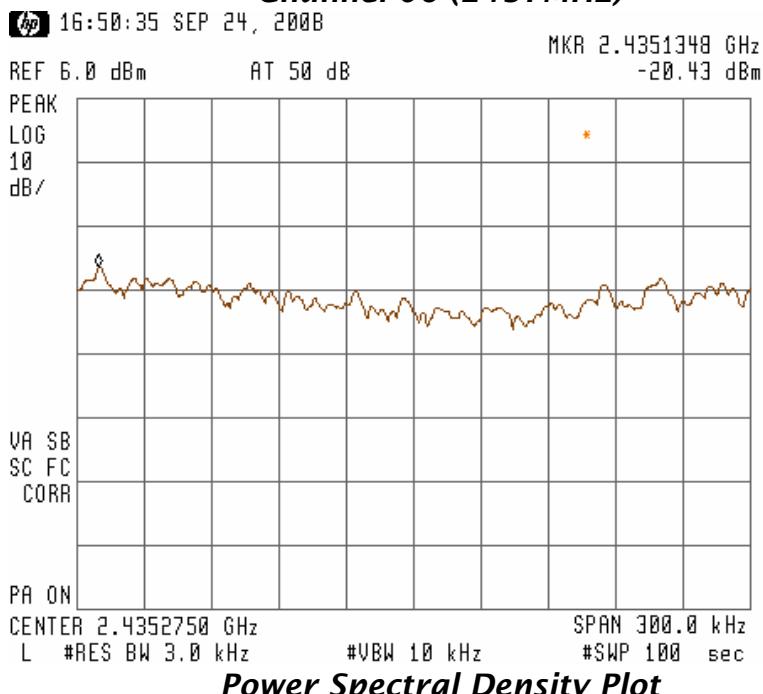


Mode 3: Transmit by 802.11n (20MHz bandwidth)

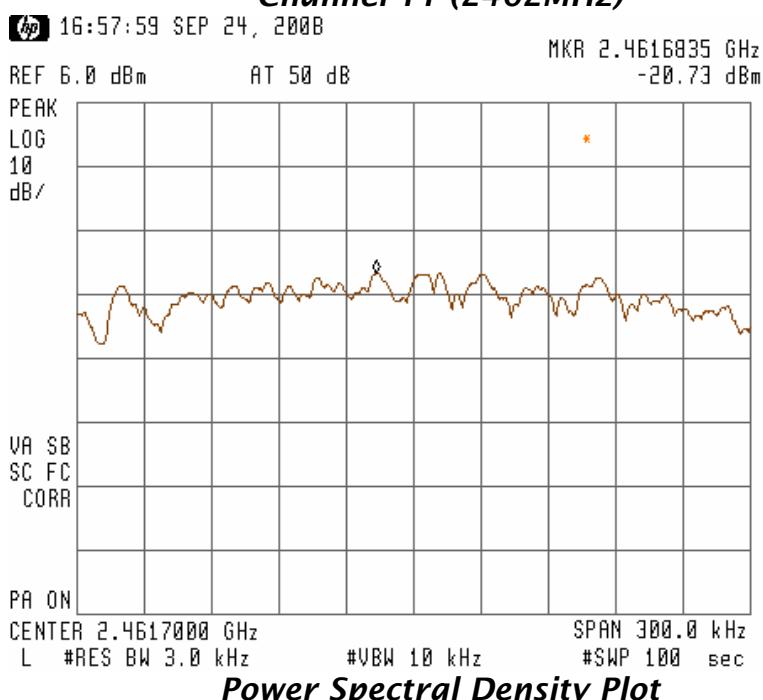
Channel No.	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
01	2412	-22.21	8	Pass
06	2437	-20.43	8	Pass
11	2462	-20.73	8	Pass



Channel 06 (2437MHz)

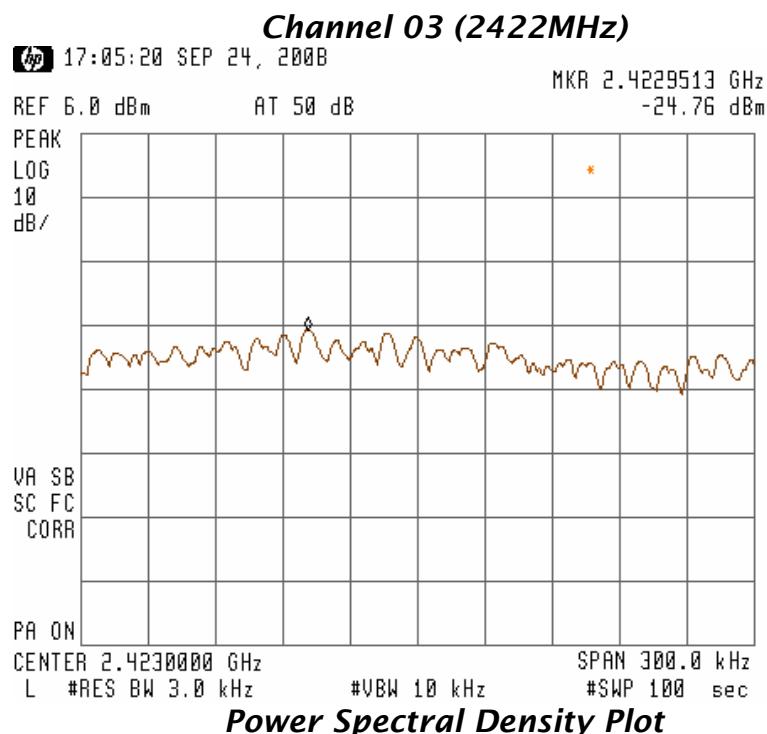


Channel 11 (2462MHz)

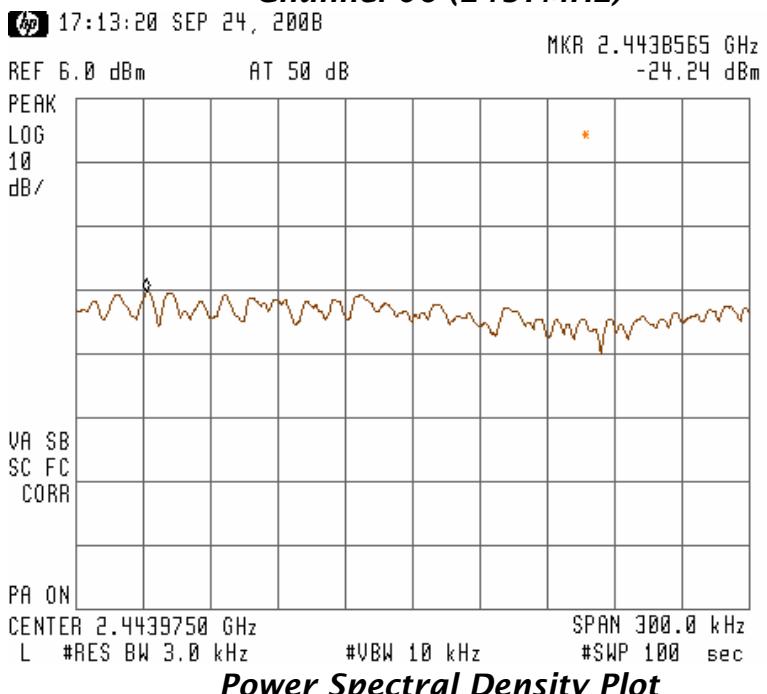


Mode 4: Transmit by 802.11n (40MHz bandwidth)

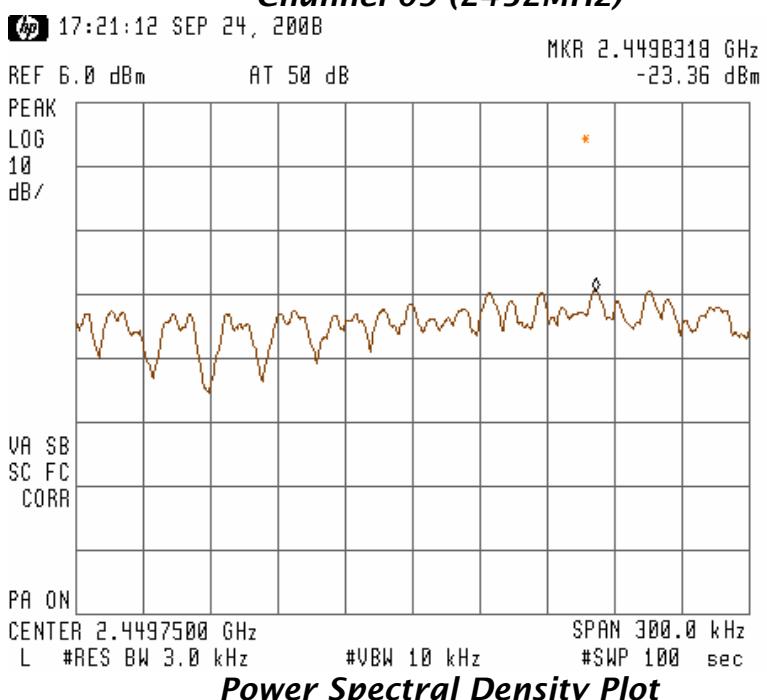
Channel No.	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
03	2422	-24.76	8	Pass
06	2437	-24.24	8	Pass
19	2452	-23.36	8	Pass



Channel 06 (2437MHz)



Channel 09 (2452MHz)



Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP	85462A	3650A00363	11/29/07	11/28/08
EMI Test Receiver RF Unit	R&S	ESMI-RF	DE23873	11/29/07	11/28/08
EMI Test Receiver Display Unit	R&S	ESAI-D	825035/005	11/29/07	11/28/08
Power Splitter	Agilent	11667B	N/A	11/29/07	11/28/08
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.					

SIGNED BY:

Cloud Feng

ENGINEER

REVIEWED BY:

Hengzhen

SENIOR ENGINEER

ATTACHMENT 8 – RF EXPOSURE CALCULATION

CLIENT:	CC&C Technologies, Inc.	TEST STANDARD:	FCC 1.1307(b)(1) FCC 2.1093			
MODEL NUMBER:	WA-6202	PRODUCT:	WLAN 11N MINI ROUTER			
SERIAL NO.:	Engineering Sample	EUT DESIGNATION:	RF Equipment			
TEMPERATURE:	21°C	HUMIDITY:	53%RH			
ATM PRESSURE:	101.6 kPa	GROUNDING:	No Grounding			
TESTED BY:	Cloud Feng	DATE OF TEST:	2008, July 23			
SETUP METHOD:	N/A					
TEST PROCEDURE:	<p>According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.</p> <p>According to §1.1310 and §2.1093 RF exposure is calculated.</p> <p>Limits for General Population/Uncontrolled Exposure</p>					
TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)						
Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)		
(A) Limits for Occupational/Controlled Exposures						
0.3–3.0	614	1.63	*(100)	6		
3.0–30	1842/f	4.89/f	*(900/f ²)	6		
30–300	61.4	0.163	1.0	6		
300–1500			f/300	6		
1500–100,000			5	6		
(B) Limits for General Population/Uncontrolled Exposure						
0.3–1.34	614	1.63	*(100)	30		
1.34–30	824/f	2.19/f	*(180/f ²)	30		
30–300	27.5	0.073	0.2	30		
300–1500			f/1500	30		
1500–100,000			1.0	30		
<small>f = frequency in MHz * = Plane-wave equivalent power density</small>						
<small>NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.</small>						
<small>NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.</small>						

MPE PREDICTION:*Equation from page 18 of OET Bulletin 65, Edition 97-01*

$$S = PG/4 \pi R^2$$

*Where: S=power density**P=power input to antenna**G=power gain of the antenna in the direction of interest relative to an isotropic radiator**R=distance to the center of radiation of the antenna**2400MHz – 2483.5MHz**Maximum peak output power at antenna input terminal**Predication frequency: 2400-2483.5MHz**Antenna gain: 2.5dBi**Prediction distance: 20cm**Power density at predication frequency at 20cm**MPE limit for uncontrolled exposure at prediction frequency: 0.6 mW/cm²***Mode 1: Transmit by 802.11b**

Frequency (MHz)	Power (dBm)	Power (mW)	Antenna Gain (dBi)	Antenna Gain(numeric)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
2412	16.78	47.64	2.5	1.78	0.0169	0.6
2437	17.42	55.21	2.5	1.78	0.0196	0.6
2462	18.99	79.25	2.5	1.78	0.0281	0.6

Mode 2: Transmit by 802.11g

Frequency (MHz)	Power (dBm)	Power (mW)	Antenna Gain (dBi)	Antenna Gain(numeric)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
2412	12.03	15.96	2.5	1.78	0.0057	0.6
2437	12.95	19.72	2.5	1.78	0.0070	0.6
2462	14.23	26.49	2.5	1.78	0.0094	0.6

Mode 3: Transmit by 802.11n (20MHz Bandwidth)

Frequency (MHz)	Power (dBm)	Power (mW)	Antenna Gain (dBi)	Antenna Gain(numeric)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
2412	15.33	34.12	2.5	1.78	0.0121	0.6
2437	16.51	44.77	2.5	1.78	0.0159	0.6
2462	17.90	61.66	2.5	1.78	0.0219	0.6

Mode 4: Transmit by 802.11n (40MHz Bandwidth)

Frequency (MHz)	Power (dBm)	Power (mW)	Antenna Gain (dBi)	Antenna Gain(numeric)	Power Density (mW/cm2)	MPE Limit (mW/cm2)
2422	16.13	41.02	2.5	1.78	0.0145	0.6
2437	16.84	48.31	2.5	1.78	0.0171	0.6
2452	14.55	28.51	2.5	1.78	0.0101	0.6

Test Result:

The EUT is a fixed device. 0.6mW/cm2 limit applies. The prediction distance is 20cm.