Lab Code: 200707-0

TEST REPORT

For

Archos SA

12 Rue Ampere Igny, France

FCC PART 15.247

FCC ID: SOVA101C

Report Type:	Product Type:
Original Report	Home Tablet

Test Engineer:	Sula Huang
Report Number:	RSZ110620003-00
Report Date:	2011-08-16
Reviewed By:	Merry Zhao EMC Engineer
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Archos SA*'s product, model number: *A101C (FCC ID: SOVA101C) (*the "EUT") in this report is a *Home Tablet*, which measures approximately: 27.0 cm (L) x 15.2 cm (W) x 1.0 cm (H), rated input voltage: DC 5.0V adapter or DC 3.7 V battery.

Adapter information:
Model: KSAS0100500200D5
Input: AC 100-240V, 50/60 Hz
Output: DC 5.0V, 2.0A

** All measurement and test data in this report was gathered from production sample serial number: 1106056 (Assigned by BACL, Shenzhen). The EUT was received on 2011-06-20.*

Objective

This report is prepared on behalf of *Archos SA* in accordance with Part 2-Subpart J, Part 15-Subparts A, B and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Related Submittal(s)/Grant(s)

Part 15B JBP submissions with FCC ID: SOVA101C

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2009, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

The uncertainty of any RF tests which use conducted method measurement is ±0.96 dB, the uncertainty of any radiation on emissions measurement is ±4.0 dB

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 200707-0).

The current scope of accreditations can be found at http://ts.nist.gov/Standards/scopes/2007070.htm

SYSTEM TEST CONFIGURATION

Description of Test Configuration

For 802.11b and 802.11g mode, 11 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437	/	/

EUT for 802.11b, 802.11g and 802.11 n20 modes were tested with Channel 1, 6 and 11.

EUT Exercise Software

The test was performed under WIFI EMI Tester (Ver1.3) which was provided by the manufacturer:
802.11b: TX Power level 13, data rate: 11 Mbps (Max. output power).
802.11g: TX Power level 13, data rate: 54 Mbps (Max. output power).
802.11n20: TX Power level 12.5, data rate: MSC0-6.5 Mbps (Max. output power).

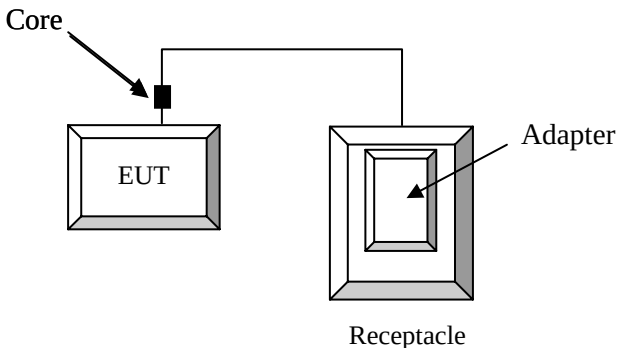
Equipment Modifications

No modification was made to the unit tested.

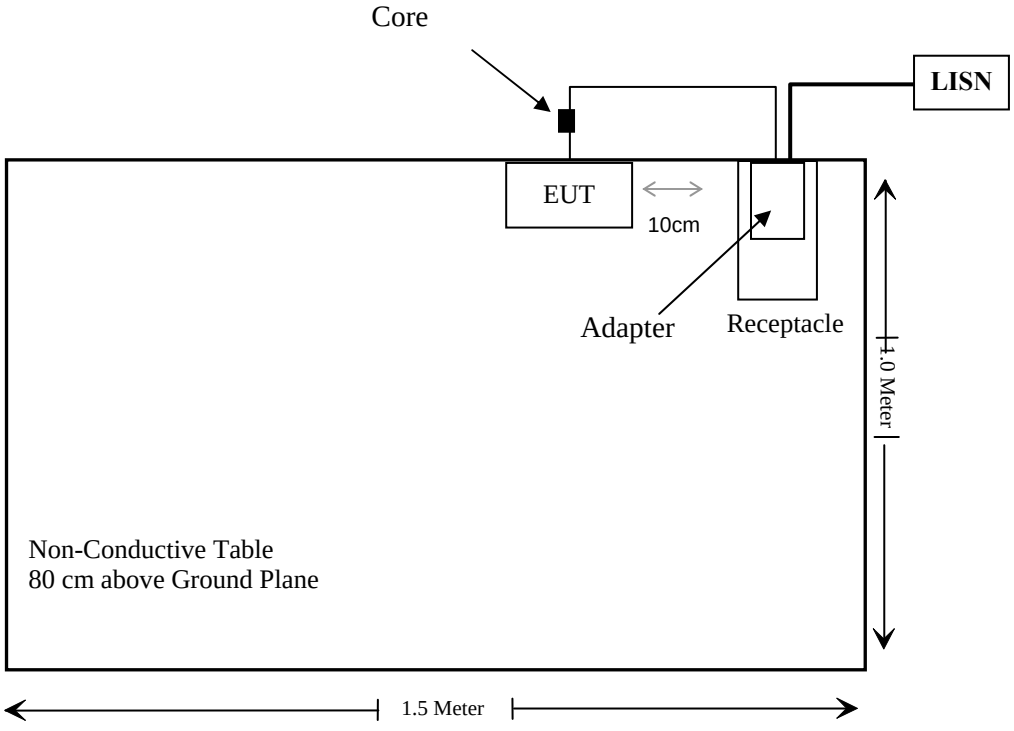
External I/O Cable

Cable Description	Length (m)	From Port	To
Unshielded Undetachable Adapter Cable with a core	1.5	Adapter	EUT

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (i), §2.1093	RF Exposure Information	Compliance
§15.203	Antenna Requirement	Compliance
§15.207 (a)	AC Line Conducted Emissions	Compliance
§15.247(d)	Spurious Emissions at Antenna Port	Compliance
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliance
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliance
§15.247(b)(3)	Maximum Peak Output Power	Compliance
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliance
§15.247(e)	Power Spectral Density	Compliance

FCC §15.247 (i), §1.1307 (b) (1) & §2.1093 - RF EXPOSURE INFORMATION

Applicable Standard

According to FCC §15.247(i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB 447498 D01 Mobile Portable RF Exposure v03r03, no SAR required if power is lower than the flowing threshold:

Frequency Range (MHz)		Center Frequency (MHz)	60/f SAR Limitation (mw)
2412	2462	2437	25

Results:

Maximum Conducted Output Power		Antenna Gain (dBi)	EIRP (mw)
(dBm)	(mw)		
802.11b Mode			
12.30	16.98	0	16.98
802.11g Mode			
11.48	14.06	0	14.06
802.11n HT20 Mode			
10.51	11.25	0	11.25

$P_{Max}<60/f_{GHz,}$ SAR evaluation can be exempted.

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to FCC §15.203, an intentional radiator shall be designed to ensure that no antenna other than that 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 user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.
And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT used one Wi-Fi antenna, PIFA antenna, which in accordance to section 15.203, the antenna's maximum gain is 0 dBi, please refer to the internal photos.

Result: Compliance.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratory Corp. (Shenzhen) is ±2.4 dB (k=2, 95% level of confidence).
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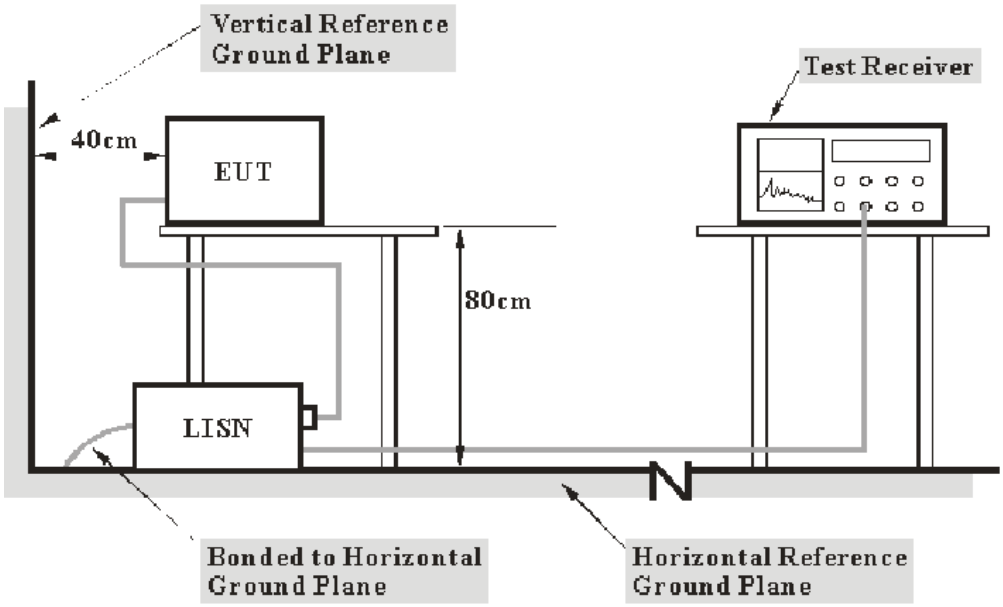
EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2009 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	***IF B/W***
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	830245	2011-03-03	2012-03-02
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2011-03-09	2012-03-08

*** Statement of Traceability:** Bay Area Compliance Laboratory Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207, with the worst margin reading of:

17.60 dB at **14.305 MHz** in the **Neutral** conducted mode

Test Data

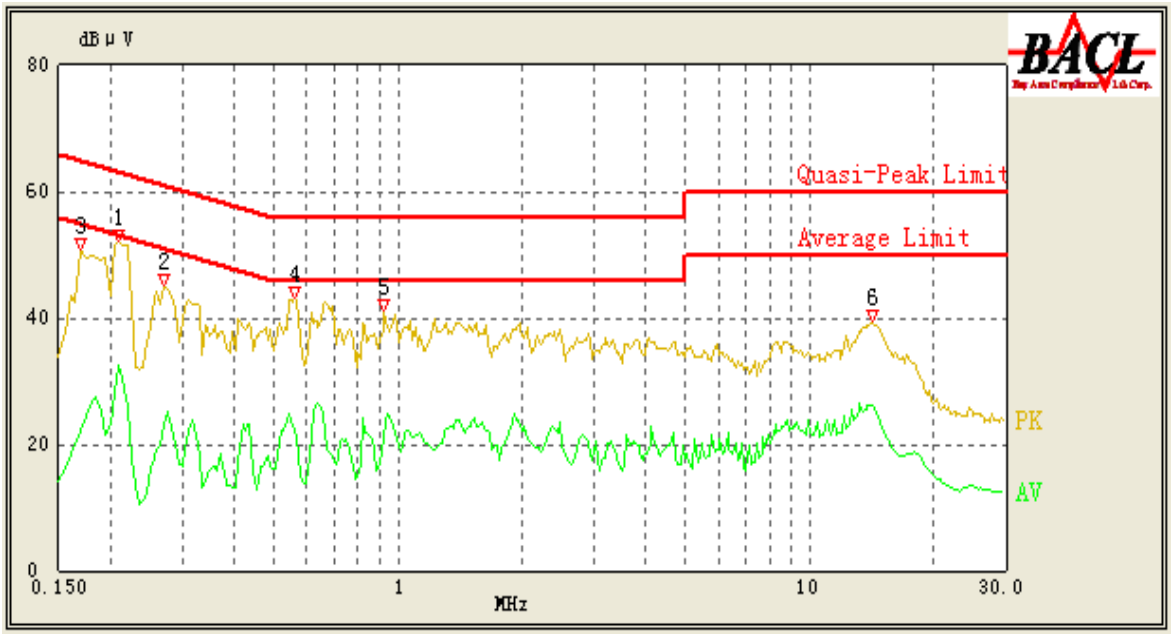
Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

The testing was performed by Sula Huang on 2011-07-07.

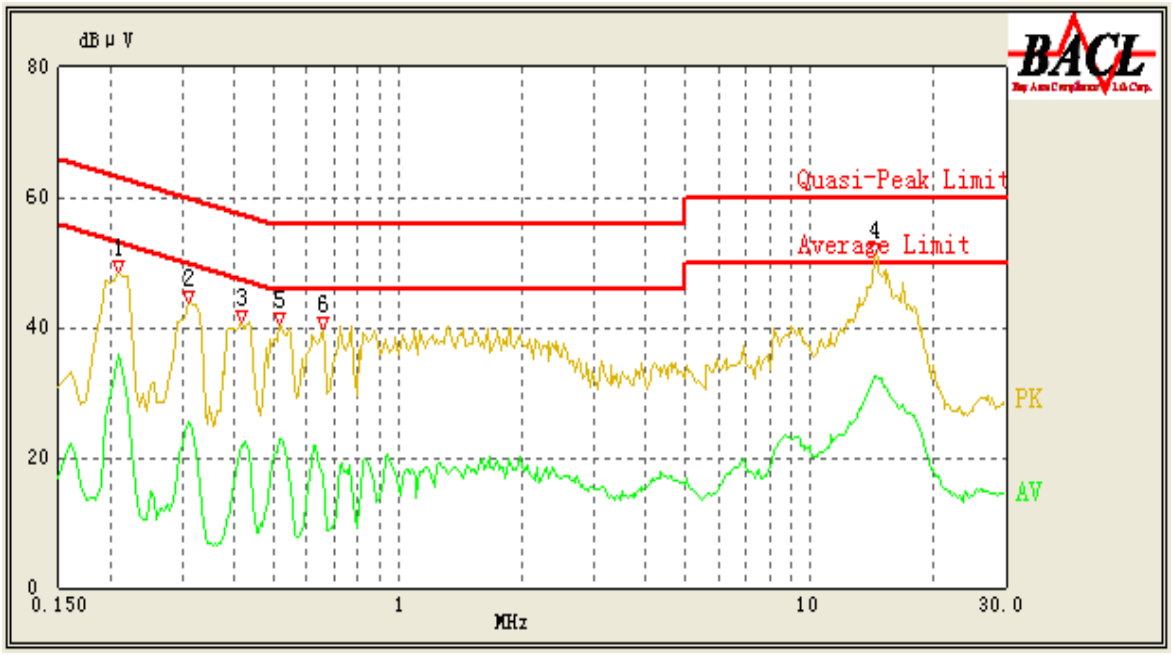
Test Mode: Charging & Communication

120 V, 60 Hz, Line:



Conducted Emissions			FCC Part 15.207		
Frequency (MHz)	Corrected Result (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK /QP/Ave.)
0.560	36.18	10.10	56.00	19.82	QP
0.210	32.60	10.10	54.29	21.69	Ave.
0.210	42.33	10.10	64.29	21.96	QP
0.930	23.75	10.11	46.00	22.25	Ave.
0.560	22.38	10.10	46.00	23.62	Ave.
14.225	26.08	10.20	50.00	23.92	Ave.
0.270	37.49	10.10	62.57	25.08	QP
0.925	28.17	10.11	56.00	27.83	QP
0.270	23.23	10.10	52.57	29.34	Ave.
14.160	28.36	10.20	60.00	31.64	QP
0.170	22.03	10.10	55.43	33.40	Ave.
0.170	30.88	10.10	65.43	34.55	QP

120V, 60 Hz, Neutral:



Conducted Emissions			FCC Part 15.207		
Frequency (MHz)	**Corrected Result (dBµV)**	**Correction Factor (dB)**	**Limit (dBµV)**	**Margin (dB)**	**Detector (PK /QP/Ave.)**
14.305	32.40	10.20	50.00	17.60	Ave.
0.210	35.79	10.10	54.29	18.50	Ave.
0.210	44.29	10.10	64.29	20.00	QP
14.305	39.87	10.20	60.00	20.13	QP
0.515	34.77	10.10	56.00	21.23	QP
0.310	39.31	10.10	61.43	22.12	QP
0.515	22.97	10.10	46.00	23.03	Ave.
0.415	35.20	10.10	58.43	23.23	QP
0.660	31.89	10.10	56.00	24.11	QP
0.310	25.41	10.10	51.43	26.02	Ave.
0.415	21.98	10.10	48.43	26.45	Ave.
0.655	17.36	10.10	46.00	28.64	Ave.

FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

FCC §15.247 (d); §15.209; §15.205;

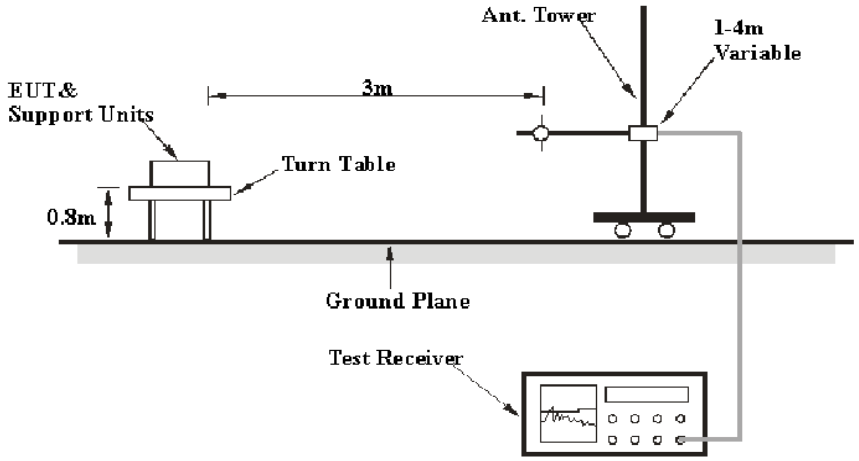
Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

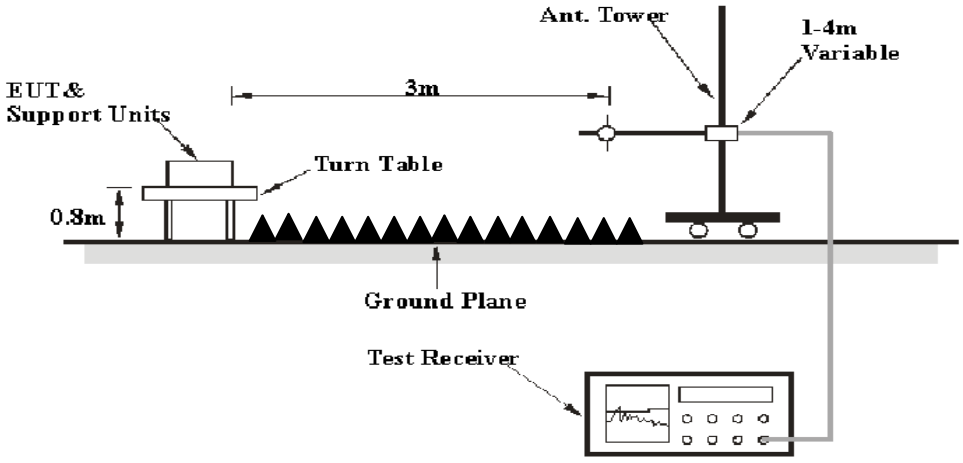
Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is ±4.0 dB(k=2, 95% level of confidence) .

EUT Setup

Below 1 GHz:



Above 1 GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC 15.209, and FCC 15.247 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	***RBW***	***Video B/W***	***Detector***
30 MHz – 1000 MHz	100 kHz	300 kHz	QP
1000 MHz – 25 GHz	1 MHz	3 MHz	PK
1000 MHz – 25 GHz	1 MHz	10 Hz	Ave.

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	HP8447D	2944A09795	2010-08-02	2011-08-01
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2011-03-11	2012-03-10
HP	Amplifier	ZVA-213+	T-E27H	2011-03-08	2012-03-07
Sunol Sciences	Horn Antenna	DRH-118	A052604	2011-05-05	2012-05-04
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2011-07-08	2012-07-07

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.247, with the worst margin reading of:

Below 1 GHz:

11.5 dB at **85.222500 MHz** in the **Horizontal** polarization

Above 1 GHz:

6.22 dB at **1851.4 MHz** in the **Vertical** polarization for 802.11g mode

Test Data

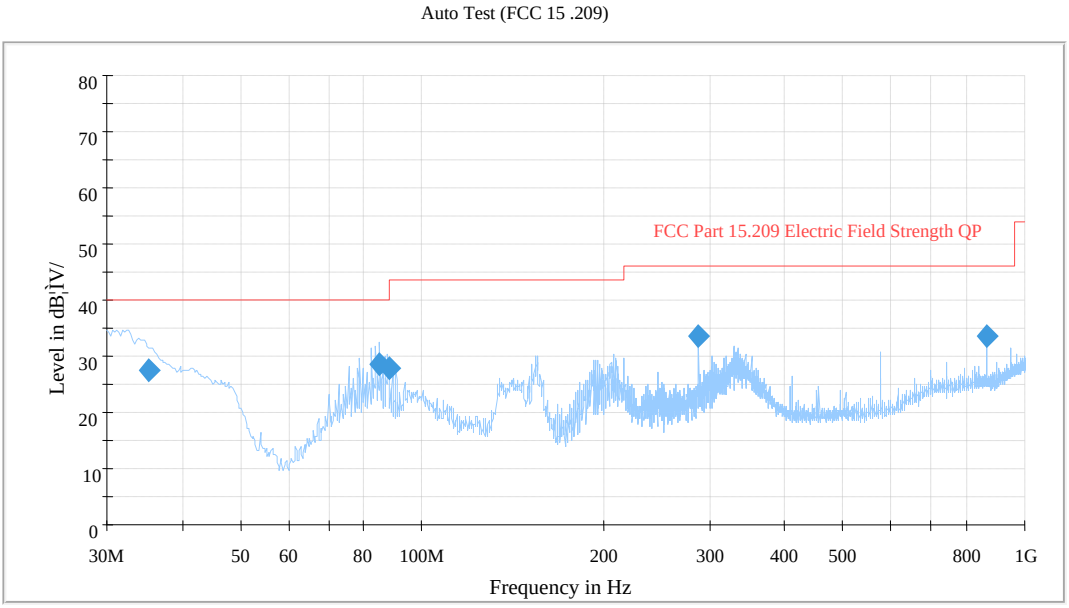
Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

The testing was performed by Sula Huang on 2011-07-16.

1) Below 1 GHz:

Test Mode: Charging & Communication



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Ant. Height (cm)	Ant. Polarity (H/V)	Turntable Position (degree)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
85.222500	28.5	400.0	H	287.0	-17.8	40.0	11.5
864.008250	33.7	100.0	H	200.0	-1.1	46.0	12.3
35.330250	27.5	101.0	V	92.0	-9.0	40.0	12.5
287.964000	33.4	100.0	H	201.0	-12.6	46.0	12.6
88.020500	27.7	400.0	H	274.0	-17.7	43.5	15.8

Note: The data which below the limit 20 dB was not recorded.

2) Above 1 GHz:

802.11b Mode:

Indicated		Detector (PK/Ave.)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247/15.209			
Frequency (MHz)	S.A. Reading (dBμV)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Comment
Low Channel (2412 MHz)												
1851.4	42.29	Ave.	58	1.0	V	29.7	2.53	26.83	47.69	54	6.31	spurious
1851.4	41.49	Ave.	112	1.0	H	29.7	2.53	26.83	46.89	54	7.11	spurious
1980.1	40.75	Ave.	58	1.0	V	29.7	2.97	26.83	46.59	54	7.41	spurious
1980.1	40.24	Ave.	112	1.0	H	29.7	2.97	26.83	46.08	54	7.92	spurious
4824	22.54	Ave.	130	1.5	H	36.6	4.3	26.75	36.69	54	17.31	harmonic
4824	22.06	Ave.	60	1.8	V	35.4	4.3	26.75	35.01	54	18.99	harmonic
4824	38.32	PK	130	1.5	H	36.6	4.3	26.75	52.47	74	21.53	harmonic
4824	37.95	PK	60	1.8	V	35.4	4.3	26.75	50.90	74	23.10	harmonic
1851.4	45.15	PK	58	1.0	V	29.7	2.53	26.83	50.55	74	23.45	spurious
1980.1	44.49	PK	57	1.0	V	29.7	2.97	26.83	50.33	74	23.67	spurious
1851.4	43.81	PK	112	1.0	H	29.7	2.53	26.83	49.21	74	24.79	spurious
1980.1	43.34	PK	112	1.0	H	29.7	2.97	26.83	49.18	74	24.82	spurious
Middle Channel (2437 MHz)												
1851.4	42.16	Ave.	58	1.0	V	29.7	2.53	26.83	47.56	54	6.44	spurious
1851.4	41.46	Ave.	112	1.0	H	29.7	2.53	26.83	46.86	54	7.14	spurious
1980.1	40.55	Ave.	58	1.0	V	29.7	2.97	26.83	46.39	54	7.61	spurious
1980.1	40.22	Ave.	112	1.0	H	29.7	2.97	26.83	46.06	54	7.94	spurious
4874	22.34	Ave.	130	1.5	H	36.6	4.36	26.75	36.55	54	17.45	harmonic
4874	22.14	Ave.	60	1.8	V	35.4	4.36	26.75	35.15	54	18.85	harmonic
4874	38.05	PK	130	1.5	H	36.6	4.36	26.75	52.26	74	21.74	harmonic
4874	38.25	PK	60	1.8	V	35.4	4.36	26.75	51.26	74	22.74	harmonic
1851.4	45.06	PK	58	1.0	V	29.7	2.53	26.83	50.46	74	23.54	spurious
1980.1	44.38	PK	57	1.0	V	29.7	2.97	26.83	50.22	74	23.78	spurious
1980.1	43.28	PK	112	1.0	H	29.7	2.97	26.83	49.12	74	24.88	spurious
1851.4	43.57	PK	112	1.0	H	29.7	2.53	26.83	48.97	74	25.03	spurious
High Channel (2462 MHz)												
1851.4	42.32	Ave.	58	1.0	V	29.7	2.53	26.83	47.72	54	6.28	spurious
1851.4	41.40	Ave.	112	1.0	H	29.7	2.53	26.83	46.80	54	7.20	spurious
1980.1	40.71	Ave.	58	1.0	V	29.7	2.97	26.83	46.55	54	7.45	spurious
1980.1	40.34	Ave.	112	1.0	H	29.7	2.97	26.83	46.18	54	7.82	spurious
4924	22.56	Ave.	250	1.8	H	36.6	4.40	26.75	36.81	54	17.19	harmonic
4924	22.03	Ave.	60	1.8	V	35.4	4.40	26.75	35.08	54	18.92	harmonic
4924	38.54	PK	250	1.8	H	36.6	4.40	26.75	52.79	74	21.21	harmonic
4924	38.05	PK	60	1.8	V	35.4	4.40	26.75	51.10	74	22.90	harmonic
1851.4	45.37	PK	58	1.0	V	29.7	2.53	26.83	50.77	74	23.23	spurious
1980.1	44.24	PK	57	1.0	V	29.7	2.97	26.83	50.08	74	23.92	spurious
1980.1	43.38	PK	112	1.0	H	29.7	2.97	26.83	49.22	74	24.78	spurious
1851.4	43.61	PK	112	1.0	H	29.7	2.53	26.83	49.01	74	24.99	spurious

Radiated spurious emission in restricted band

Freq. (MHz)	S.A. Reading (dBµV)	Detector (PK /Ave.)	Direction Degree	Antenna			Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBµV/m)	FCC Part 15.247/205/209	
				Height (m)	Polar (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)
2483.6	51.06	PK	90	1.5	V	30.6	3.11	26.88	57.89	74	16.11
2483.6	49.61	PK	220	1.5	H	30.6	3.11	26.88	56.44	74	17.56
2390	47.57	PK	54	1.5	V	30.6	2.98	26.83	54.32	74	19.68
2390	26.70	Ave.	250	1.8	H	30.6	2.98	26.83	33.45	54	20.55
2390	26.58	Ave.	54	1.5	V	30.6	2.98	26.83	33.33	54	20.67
2390	46.22	PK	250	1.8	H	30.6	2.98	26.83	52.97	74	21.03
2483.6	25.33	Ave.	90	1.5	V	30.6	3.11	26.88	32.16	54	21.84
2483.6	24.67	Ave.	220	1.5	H	30.6	3.11	26.88	31.50	54	22.50

802.11g Mode:

Indicated		Detector (PK/Ave)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247/15.209			
Frequency (MHz)	S.A. Reading (dBμV)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Comment
Low Channel (2412 MHz)												
1851.4	42.38	Ave.	58	1.0	V	29.7	2.53	26.83	47.78	54	6.22	spurious
1851.4	41.43	Ave.	112	1.0	H	29.7	2.53	26.83	46.83	54	7.17	spurious
1980.1	40.78	Ave.	58	1.0	V	29.7	2.97	26.83	46.62	54	7.38	spurious
1980.1	40.17	Ave.	112	1.0	H	29.7	2.97	26.83	46.01	54	7.99	spurious
4824	22.97	Ave.	130	1.5	H	36.6	4.3	26.75	37.12	54	16.88	harmonic
4824	22.86	Ave.	60	1.8	V	35.4	4.3	26.75	35.81	54	18.19	harmonic
4824	38.83	PK	130	1.5	H	36.6	4.3	26.75	52.98	74	21.02	harmonic
4824	38.38	PK	60	1.8	V	35.4	4.3	26.75	51.33	74	22.67	harmonic
1851.4	45.26	PK	58	1.0	V	29.7	2.53	26.83	50.66	74	23.34	spurious
1980.1	44.51	PK	57	1.0	V	29.7	2.97	26.83	50.35	74	23.65	spurious
1980.1	43.31	PK	112	1.0	H	29.7	2.97	26.83	49.15	74	24.85	spurious
1851.4	43.72	PK	112	1.0	H	29.7	2.53	26.83	49.12	74	24.88	spurious
Middle Channel (2437 MHz)												
1851.4	42.27	Ave.	58	1.0	V	29.7	2.53	26.83	47.67	54	6.33	spurious
1851.4	41.44	Ave.	112	1.0	H	29.7	2.53	26.83	46.84	54	7.16	spurious
1980.1	40.37	Ave.	58	1.0	V	29.7	2.97	26.83	46.21	54	7.79	spurious
1980.1	40.23	Ave.	112	1.0	H	29.7	2.97	26.83	46.07	54	7.93	spurious
4874	22.88	Ave.	130	1.5	H	36.6	4.36	26.75	37.09	54	16.91	harmonic
4874	22.68	Ave.	60	1.8	V	35.4	4.36	26.75	35.69	54	18.31	harmonic
4874	38.72	PK	130	1.5	H	36.6	4.36	26.75	52.93	74	21.07	harmonic
4874	38.86	PK	60	1.8	V	35.4	4.36	26.75	51.87	74	22.13	harmonic
1851.4	45.13	PK	58	1.0	V	29.7	2.53	26.83	50.53	74	23.47	spurious
1980.1	44.42	PK	57	1.0	V	29.7	2.97	26.83	50.26	74	23.74	spurious
1980.1	43.19	PK	112	1.0	H	29.7	2.97	26.83	49.03	74	24.97	spurious
1851.4	43.58	PK	112	1.0	H	29.7	2.53	26.83	48.98	74	25.02	spurious
High Channel (2462 MHz)												
1851.4	42.27	Ave.	58	1.0	V	29.7	2.53	26.83	47.67	54	6.33	spurious
1851.4	41.32	Ave.	112	1.0	H	29.7	2.53	26.83	46.72	54	7.28	spurious
1980.1	40.56	Ave.	58	1.0	V	29.7	2.97	26.83	46.40	54	7.60	spurious
1980.1	40.34	Ave.	112	1.0	H	29.7	2.97	26.83	46.18	54	7.82	spurious
4924	23.12	Ave.	250	1.8	H	36.6	4.40	26.75	37.37	54	16.63	harmonic
4924	22.75	Ave.	60	1.8	V	35.4	4.40	26.75	35.80	54	18.20	harmonic
4924	39.08	PK	250	1.8	H	36.6	4.40	26.75	53.33	74	20.67	harmonic
4924	38.87	PK	60	1.8	V	35.4	4.40	26.75	51.92	74	22.08	harmonic
1851.4	45.39	PK	58	1.0	V	29.7	2.53	26.83	50.79	74	23.21	spurious
1980.1	44.34	PK	57	1.0	V	29.7	2.97	26.83	50.18	74	23.82	spurious
1980.1	43.28	PK	112	1.0	H	29.7	2.97	26.83	49.12	74	24.88	spurious
1851.4	43.49	PK	112	1.0	H	29.7	2.53	26.83	48.89	74	25.11	spurious

Radiated spurious emission in restricted band

Freq. (MHz)	S.A. Reading (dBµV)	Detector PK /Ave	Direction Degree	Antenna			Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBµV/m)	FCC Part 15.247/205/209	
				Height (m)	Polar (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)
2483.6	52.80	PK	90	1.5	V	30.6	3.11	26.88	59.63	74	14.37
2483.6	50.91	PK	220	1.5	H	30.6	3.11	26.88	57.74	74	16.26
2390	48.89	PK	54	1.5	V	30.6	2.98	26.83	55.64	74	18.36
2390	27.60	Ave.	250	1.8	H	30.6	2.98	26.83	34.35	54	19.65
2390	27.35	Ave.	54	1.5	V	30.6	2.98	26.83	34.10	54	19.90
2390	47.22	PK	250	1.8	H	30.6	2.98	26.83	53.97	74	20.03
2483.6	26.33	Ave.	90	1.5	V	30.6	3.11	26.88	33.16	54	20.84
2483.6	25.67	Ave.	220	1.5	H	30.6	3.11	26.88	32.50	54	21.50

802.11n20 Mode:

Indicated		Detector (PK/Ave)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247/15.209			
Frequency (MHz)	S.A. Reading (dBμV)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Comment
Low Channel (2412 MHz)												
1851.4	42.29	Ave.	58	1.0	V	29.7	2.53	26.83	47.69	54	6.31	spurious
1851.4	41.49	Ave.	112	1.0	H	29.7	2.53	26.83	46.89	54	7.11	spurious
1980.1	40.75	Ave.	58	1.0	V	29.7	2.97	26.83	46.59	54	7.41	spurious
1980.1	40.24	Ave.	112	1.0	H	29.7	2.97	26.83	46.08	54	7.92	spurious
4824	22.54	Ave.	130	1.5	H	36.6	4.3	26.75	36.69	54	17.31	harmonic
4824	22.06	Ave.	60	1.8	V	35.4	4.3	26.75	35.01	54	18.99	harmonic
4824	38.32	PK	130	1.5	H	36.6	4.3	26.75	52.47	74	21.53	harmonic
4824	37.95	PK	60	1.8	V	35.4	4.3	26.75	50.9	74	23.1	harmonic
1851.4	45.15	PK	58	1.0	V	29.7	2.53	26.83	50.55	74	23.45	spurious
1980.1	44.49	PK	57	1.0	V	29.7	2.97	26.83	50.33	74	23.67	spurious
1851.4	43.81	PK	112	1.0	H	29.7	2.53	26.83	49.21	74	24.79	spurious
1980.1	43.34	PK	112	1.0	H	29.7	2.97	26.83	49.18	74	24.82	spurious
Middle Channel (2437 MHz)												
1851.4	42.16	Ave.	58	1.0	V	29.7	2.53	26.83	47.56	54	6.44	spurious
1851.4	41.46	Ave.	112	1.0	H	29.7	2.53	26.83	46.86	54	7.14	spurious
1980.1	40.55	Ave.	58	1.0	V	29.7	2.97	26.83	46.39	54	7.61	spurious
1980.1	40.22	Ave.	112	1.0	H	29.7	2.97	26.83	46.06	54	7.94	spurious
4874	22.34	Ave.	130	1.5	H	36.6	4.36	26.75	36.55	54	17.45	harmonic
4874	22.14	Ave.	60	1.8	V	35.4	4.36	26.75	35.15	54	18.85	harmonic
4874	38.05	PK	130	1.5	H	36.6	4.36	26.75	52.26	74	21.74	harmonic
4874	38.25	PK	60	1.8	V	35.4	4.36	26.75	51.26	74	22.74	harmonic
1851.4	45.06	PK	58	1.0	V	29.7	2.53	26.83	50.46	74	23.54	spurious
1980.1	44.38	PK	57	1.0	V	29.7	2.97	26.83	50.22	74	23.78	spurious
1980.1	43.28	PK	112	1.0	H	29.7	2.97	26.83	49.12	74	24.88	spurious
1851.4	43.57	PK	112	1.0	H	29.7	2.53	26.83	48.97	74	25.03	spurious
High Channel (2462 MHz)												
1851.4	42.32	Ave.	58	1.0	V	29.7	2.53	26.83	47.72	54	6.28	spurious
1851.4	41.40	Ave.	112	1.0	H	29.7	2.53	26.83	46.80	54	7.20	spurious
1980.1	40.71	Ave.	58	1.0	V	29.7	2.97	26.83	46.55	54	7.45	spurious
1980.1	40.34	Ave.	112	1.0	H	29.7	2.97	26.83	46.18	54	7.82	spurious
4924	22.56	Ave.	250	1.8	H	36.6	4.40	26.75	36.81	54	17.19	harmonic
4924	22.03	Ave.	60	1.8	V	35.4	4.40	26.75	35.08	54	18.92	harmonic
4924	38.54	PK	250	1.8	H	36.6	4.40	26.75	52.79	74	21.21	harmonic
4924	38.05	PK	60	1.8	V	35.4	4.40	26.75	51.10	74	22.90	harmonic
1851.4	45.37	PK	58	1.0	V	29.7	2.53	26.83	50.77	74	23.23	spurious
1980.1	44.24	PK	57	1.0	V	29.7	2.97	26.83	50.08	74	23.92	spurious
1980.1	43.38	PK	112	1.0	H	29.7	2.97	26.83	49.22	74	24.78	spurious
1851.4	43.61	PK	112	1.0	H	29.7	2.53	26.83	49.01	74	24.99	spurious

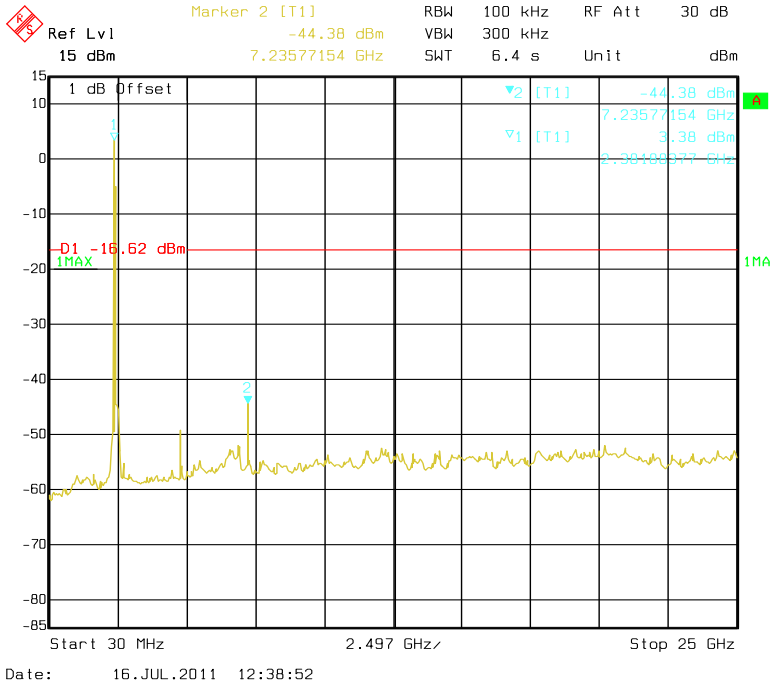
Radiated spurious emission in restricted band

Freq. (MHz)	S.A. Reading (dBµV)	Detector PK /Ave	Direction Degree	Antenna			Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBµV/m)	FCC Part 15.247/205/209	
				Height (m)	Polar (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)
2483.6	51.06	PK	90	1.5	V	30.6	3.11	26.88	57.89	74	16.11
2483.6	49.61	PK	220	1.5	H	30.6	3.11	26.88	56.44	74	17.56
2390	47.57	PK	54	1.5	V	30.6	2.98	26.83	54.32	74	19.68
2390	26.70	Ave.	250	1.8	H	30.6	2.98	26.83	33.45	54	20.55
2390	26.58	Ave.	54	1.5	V	30.6	2.98	26.83	33.33	54	20.67
2390	46.22	PK	250	1.8	H	30.6	2.98	26.83	52.97	74	21.03
2483.6	25.33	Ave.	90	1.5	V	30.6	3.11	26.88	32.16	54	21.84
2483.6	24.67	Ave.	220	1.5	H	30.6	3.11	26.88	31.50	54	22.50

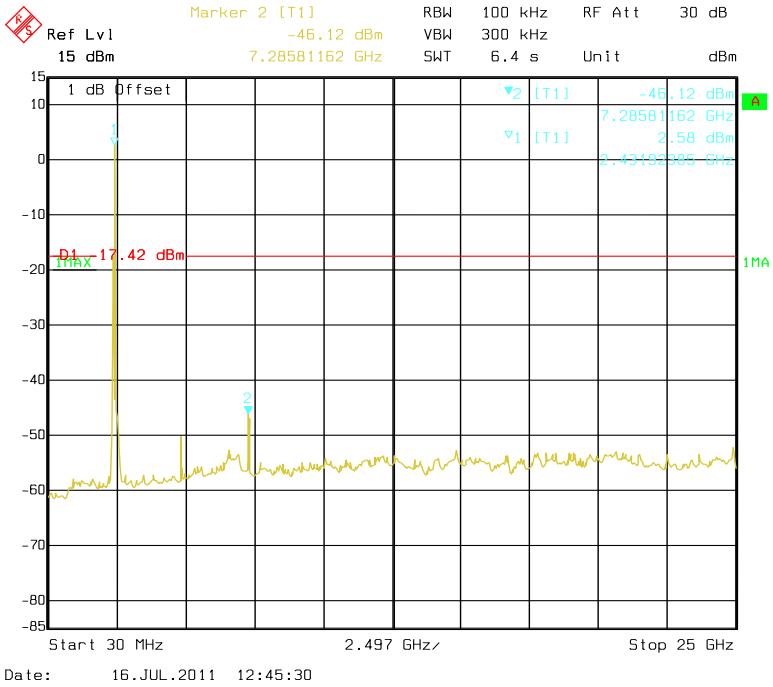
Antenna Port Conducted Spurious Emissions:

Channel Frequency (MHz)	Data Rate (Mbps)	Delta Value (dBc)	Limit (dBc)	Result
802.11b				
2412	11	47.76	20	Pass
2437	11	48.70	20	Pass
2462	11	50.10	20	Pass
802.11g				
2412	54	48.32	20	Pass
2437	54	49.50	20	Pass
2462	54	51.71	20	Pass
802.11n20				
2412	6.5	45.54	20	Pass
2437	6.5	48.92	20	Pass
2462	6.5	51.05	20	Pass

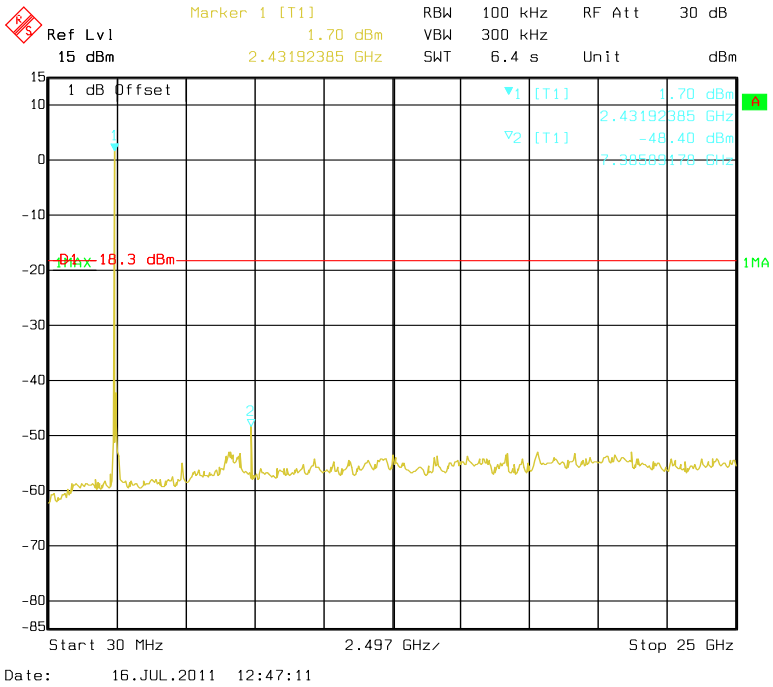
802.11b Low Channel



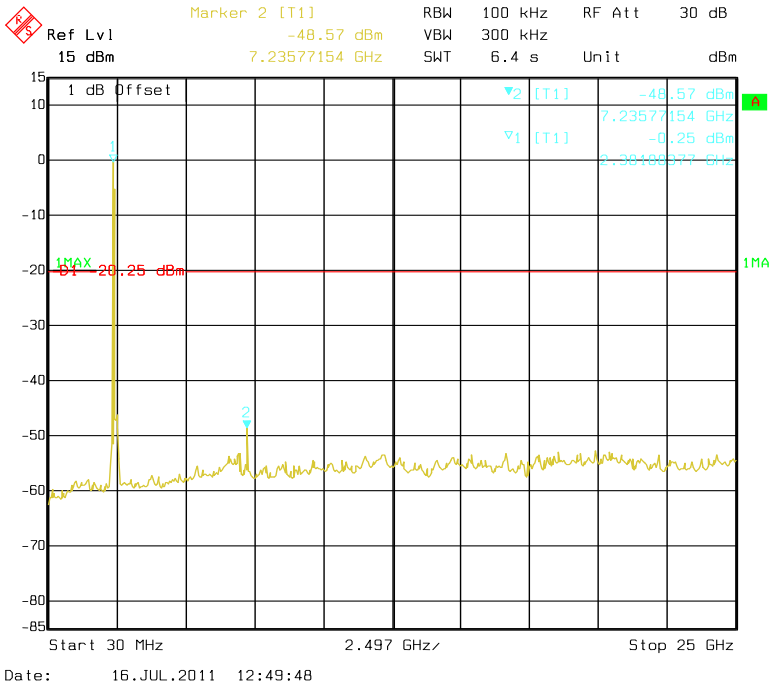
802.11b Middle Channel



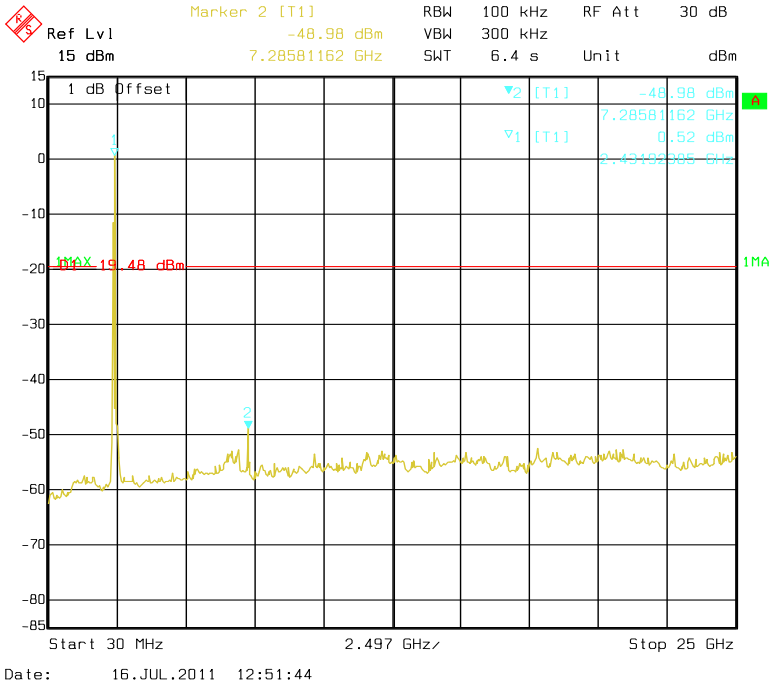
802.11b High Channel



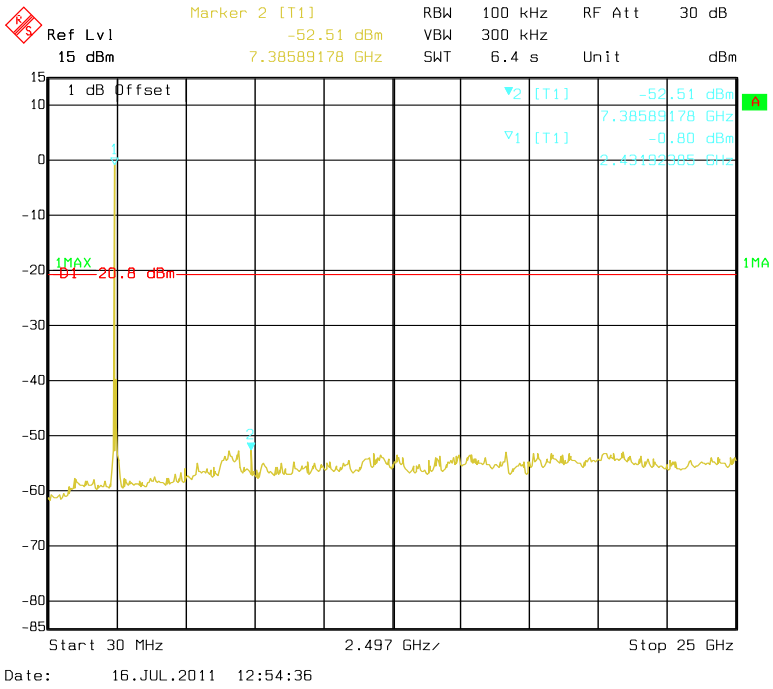
802.11g Low Channel



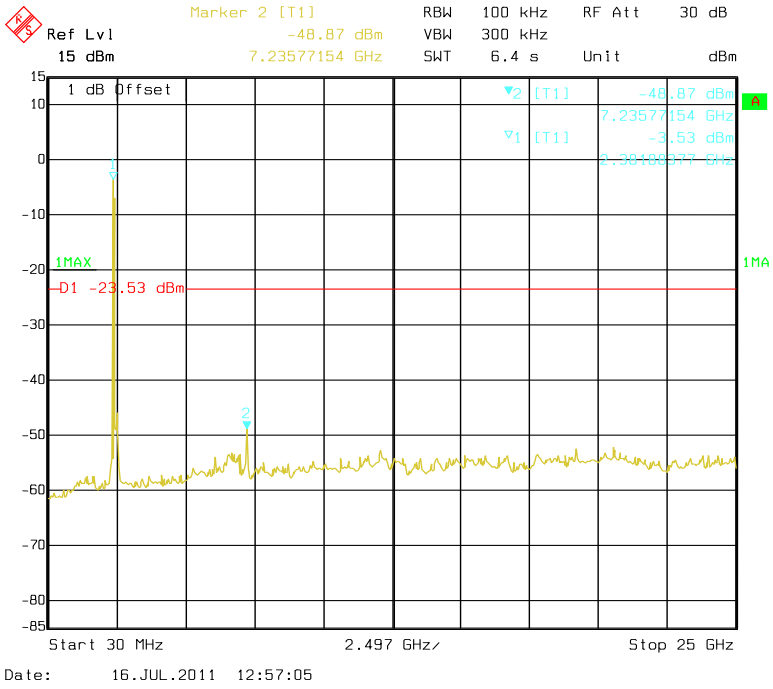
802.11g Middle Channel



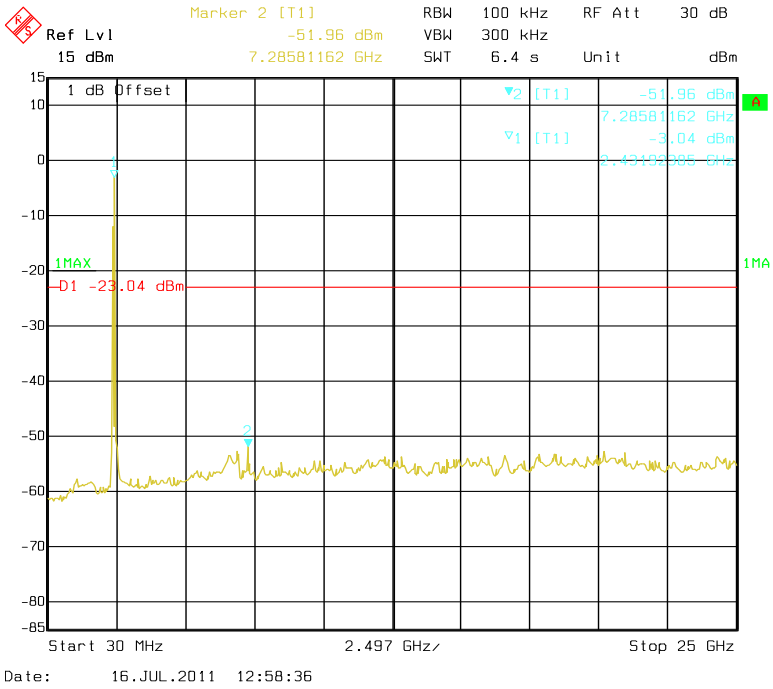
802.11g High Channel



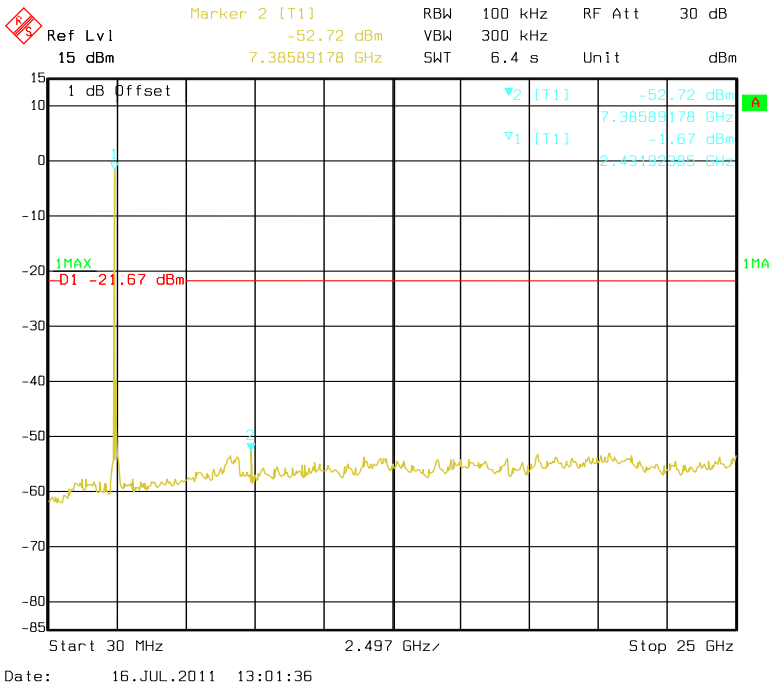
802.11n20 Low Channel



802.11n20 Middle Channel



802.11n20 High Channel



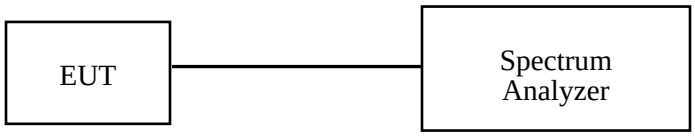
FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH

Applicable Standard

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56%
ATM Pressure:	100.0kPa

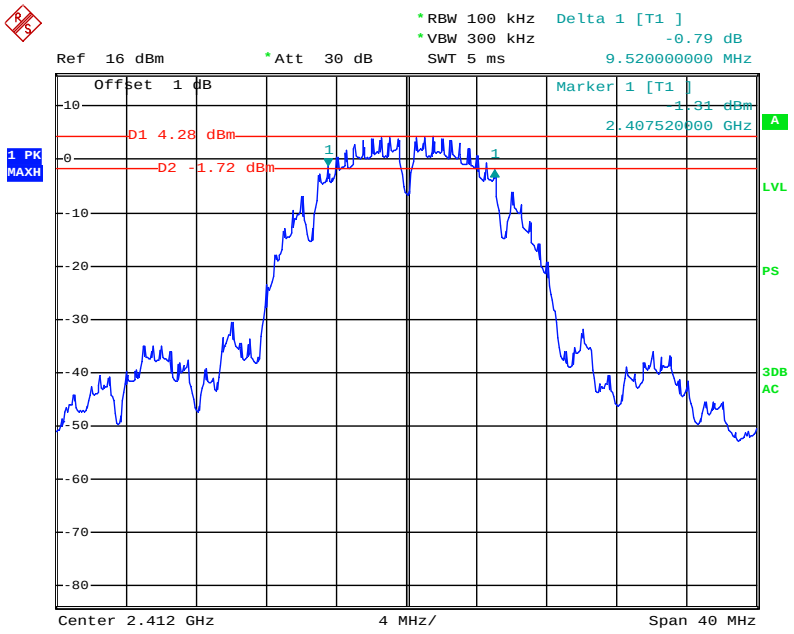
The testing was performed by Sula Huang on 2011-07-15.

Test Result: Pass.

Please refer to the following tables and plots.

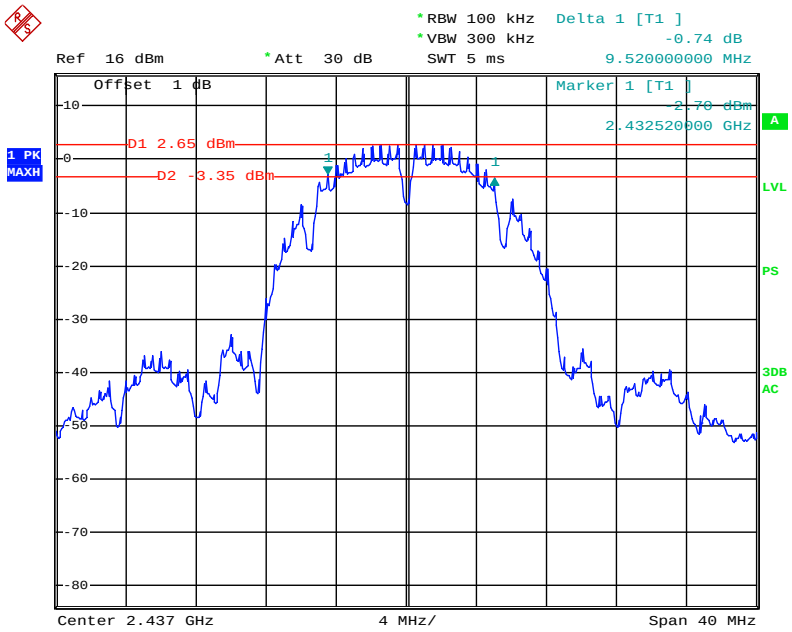
Channel	Frequency (MHz)	Data Rate (Mbps)	6 dB Bandwidth (MHz)	FCC Part 15.247 Limit (kHz)
802.11b mode				
Low	2412	11	9.52	> 500
Middle	2437	11	9.52	> 500
High	2462	11	9.52	> 500
802.11g mode				
Low	2412	54	15.76	> 500
Middle	2437	54	15.76	> 500
High	2462	54	15.76	> 500
802.11n20 mode				
Low	2412	6.5	15.28	> 500
Middle	2437	6.5	15.16	> 500
High	2462	6.5	15.04	> 500

802.11b Low Channel



Date: 15.JUL.2011 22:54:27

802.11b Middle Channel



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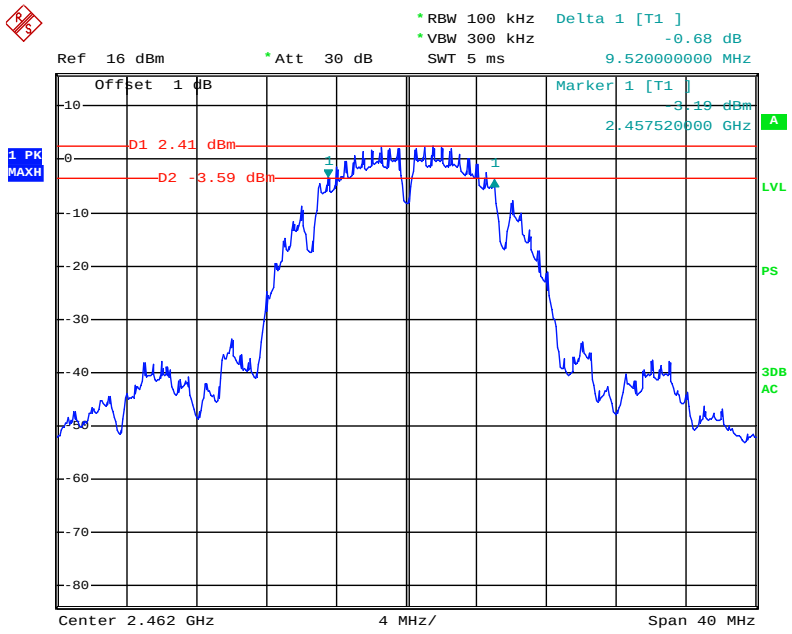
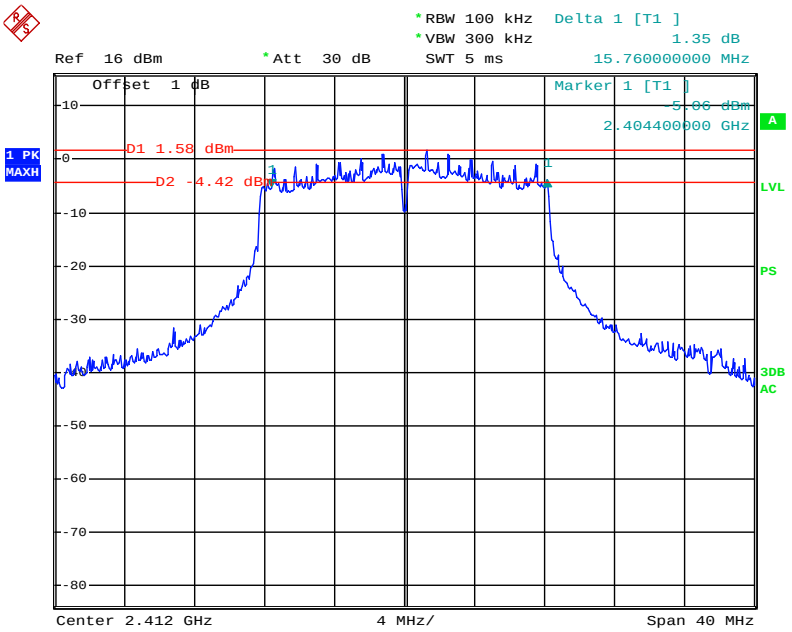
802.11b High Channel



Date: 15.JUL.2011 23:00:05

802.11g Low Channel



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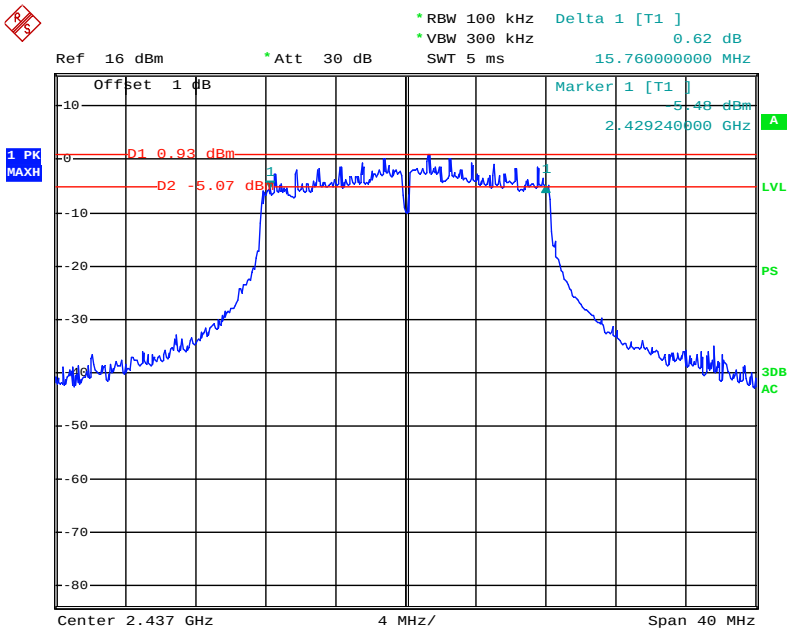
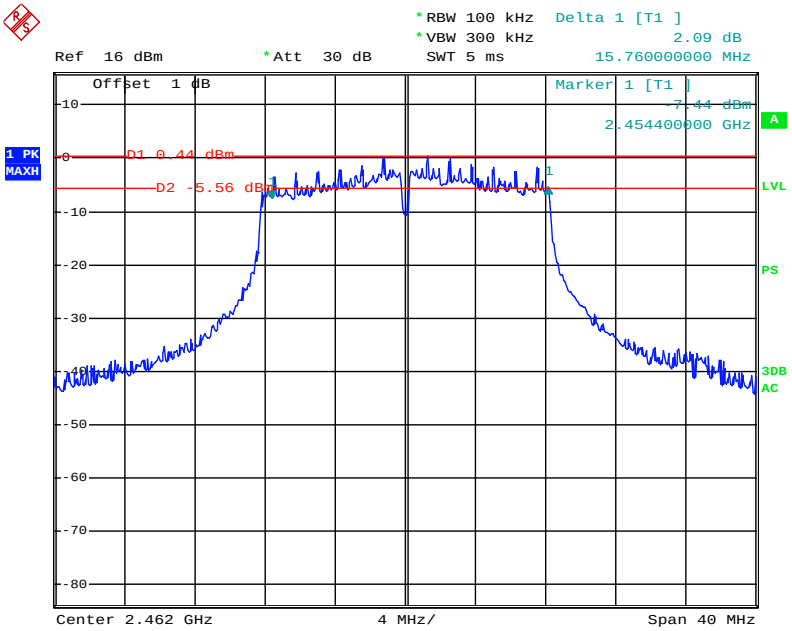
802.11g Middle Channel



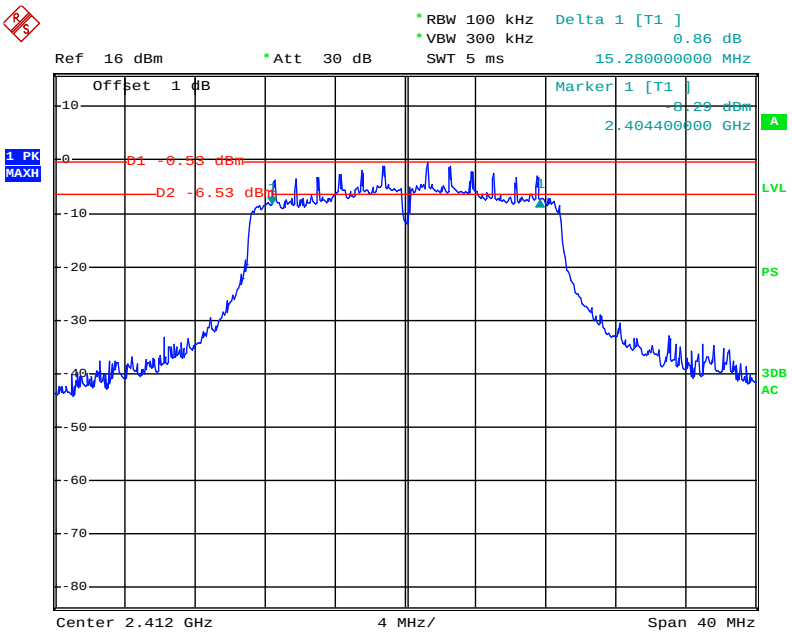
Date: 15.JUL.2011 23:07:02

802.11g High Channel



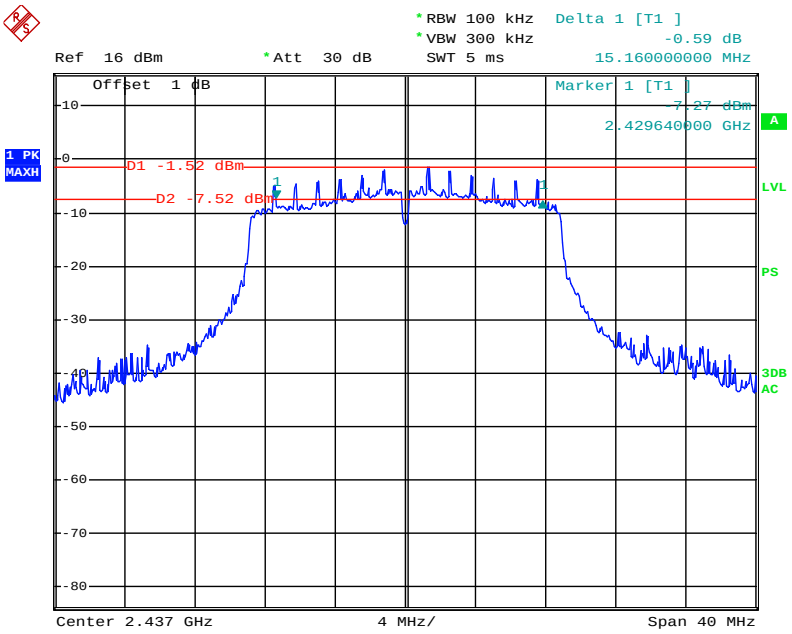
Date: 15.JUL.2011 23:09:07

802.11n20 Low Channel



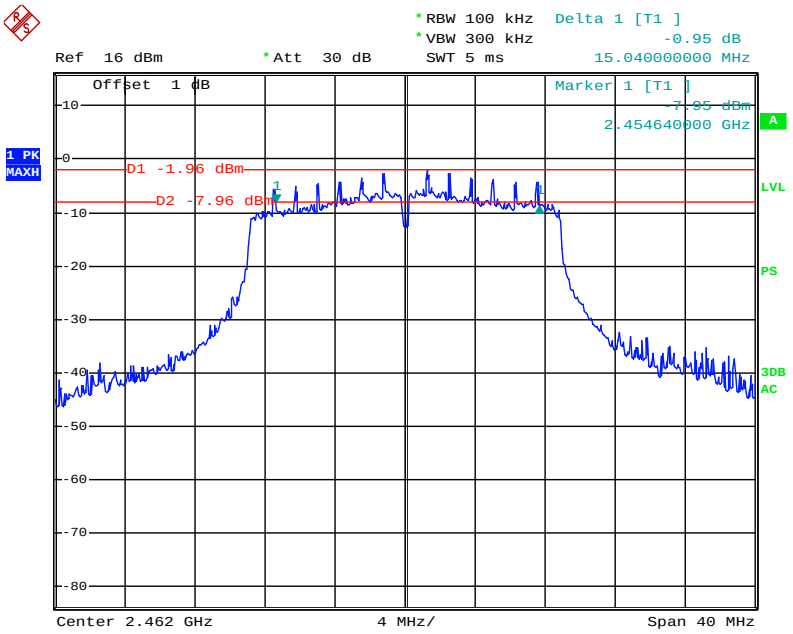
Date: 15.JUL.2011 22:49:05

802.11n20 Middle Channel



Date: 15.JUL.2011 22:44:19

802.11n20 High Channel



Date: 15.JUL.2011 22:40:47

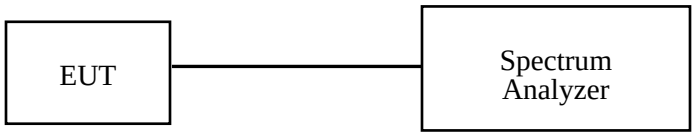
FCC §15.247(b) (3) - MAXIMUM PEAK OUTPUT POWER

Applicable Standard

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to an EMI Test Receiver.
3. Add a correction factor to the display.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

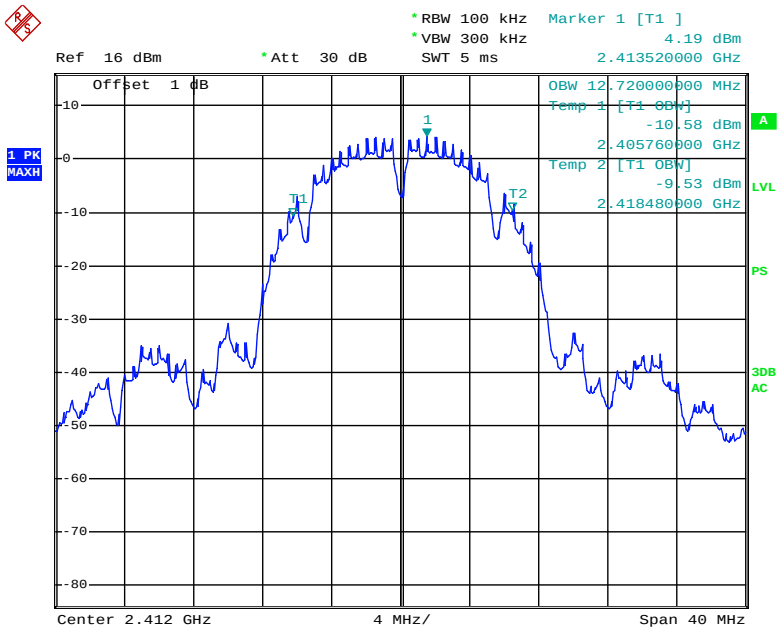
Temperature:	25 ° C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

The testing was performed by Sula Huang on 2011-07-15 and 2011-07-16.

Test Mode: Transmitting

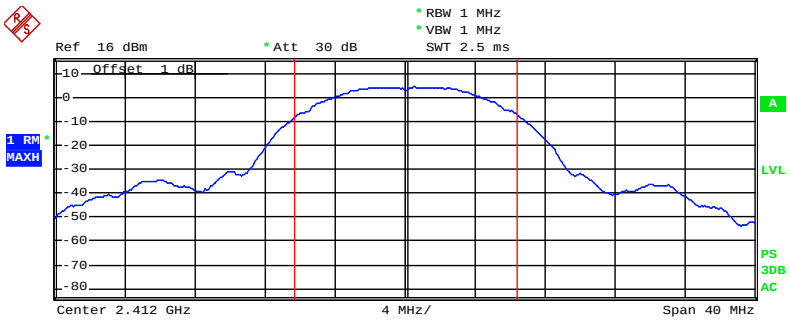
Channel	Frequency (MHz)	Data Rate (Mbps)	Output Power (dBm)	Limit (dBm)
802.11b				
Low	2412	11	12.30	30
Middle	2437	11	11.53	30
High	2462	11	11.67	30
802.11g				
Low	2412	54	11.48	30
Middle	2437	54	11.16	30
High	2462	54	11.23	30
802.11n20				
Low	2412	6.5	10.49	30
Middle	2437	6.5	10.51	30
High	2462	6.5	10.22	30

802.11b 99% Occupied Bandwidth, Low Channel



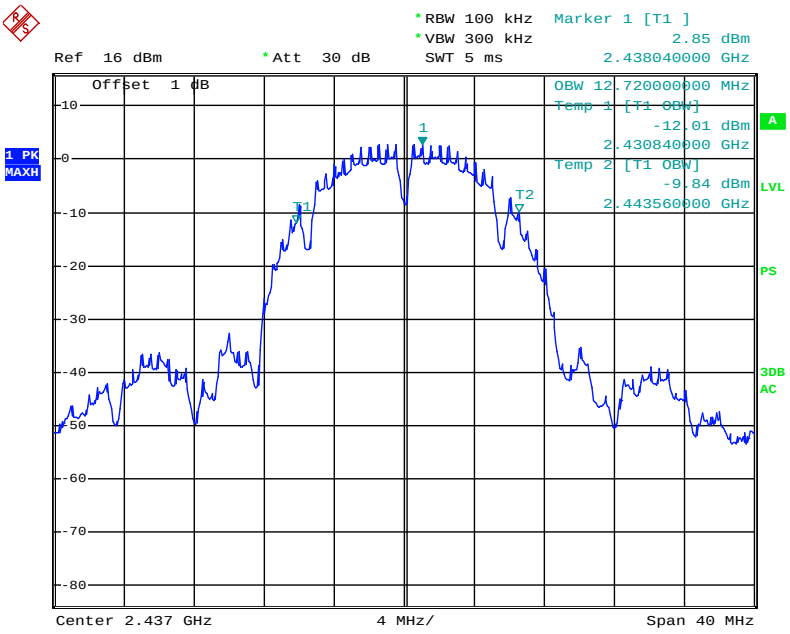
Date: 15.JUL.2011 22:02:42

802.11b RF Output Power, Low Channel



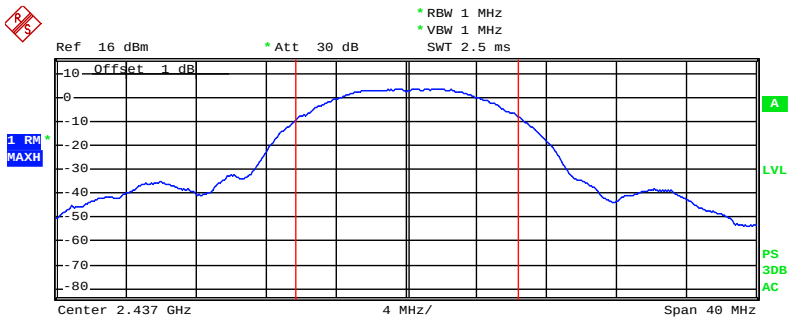
Date: 16.JUL.2011 10:31:15

802.11b 99% Occupied Bandwidth, Middle Channel



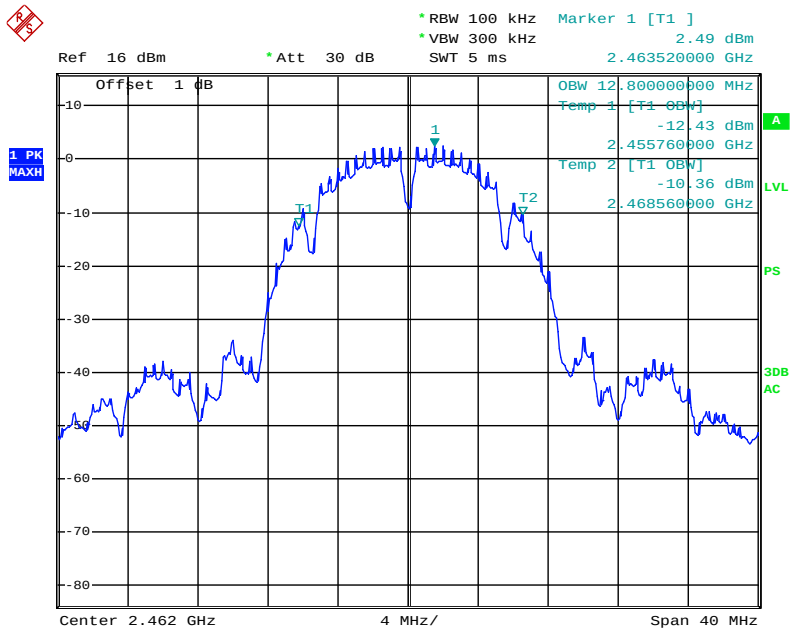
Date: 15.JUL.2011 22:04:07

802.11b RF Output Power, Middle Channel



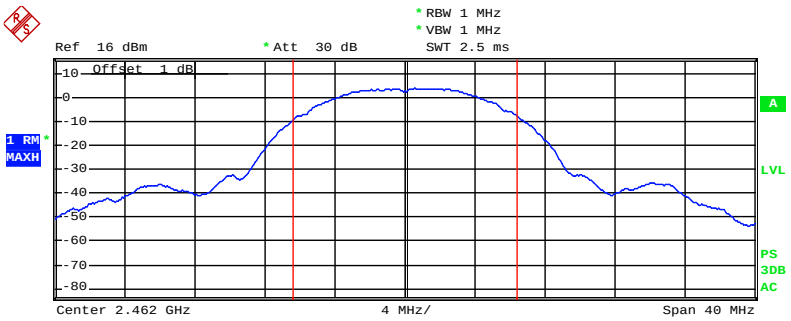
Date: 16.JUL.2011 10:28:20

802.11b 99% Occupied Bandwidth, High Channel



Date: 15.JUL.2011 22:05:32

802.11b RF Output Power, High Channel

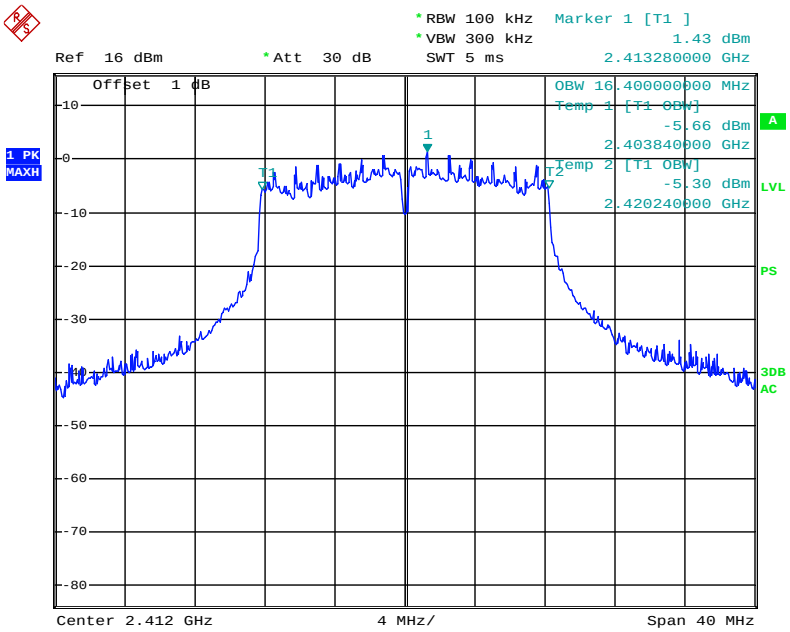


Tx Channel

Bandwidth	12.8 MHz	Power	11.67 dBm

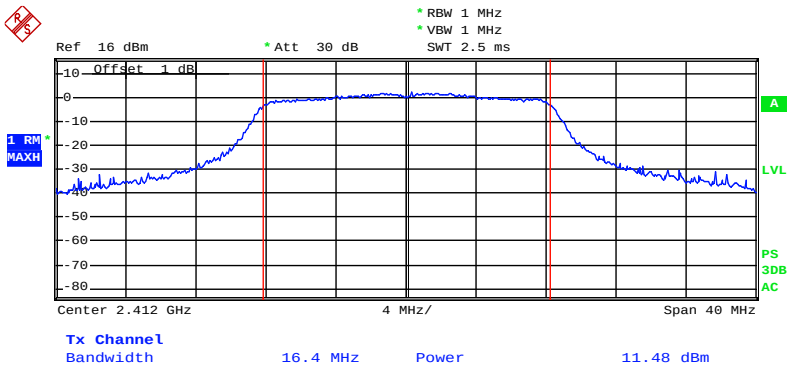
Date: 16.JUL.2011 10:26:33

802.11g 99% Occupied Bandwidth, Low Channel



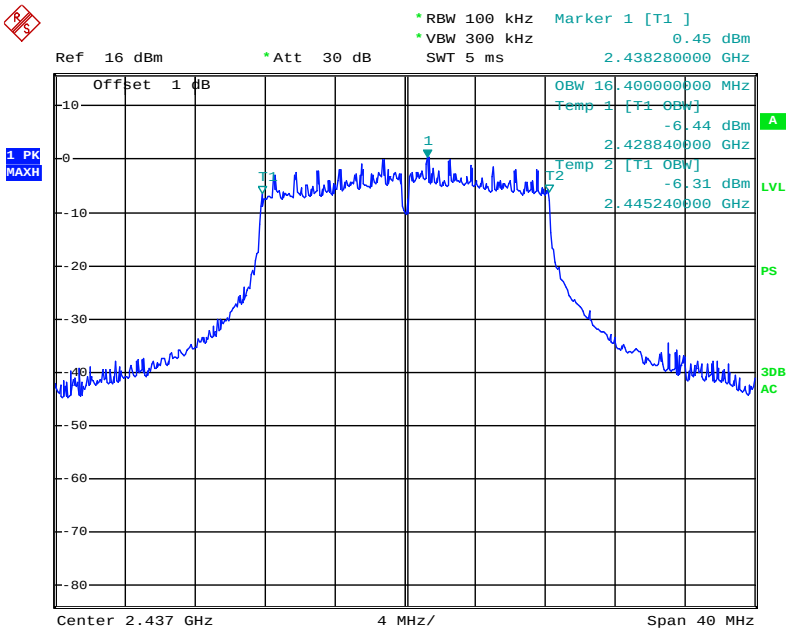
Date: 15.JUL.2011 22:14:27

802.11g RF Output Power, Low Channel



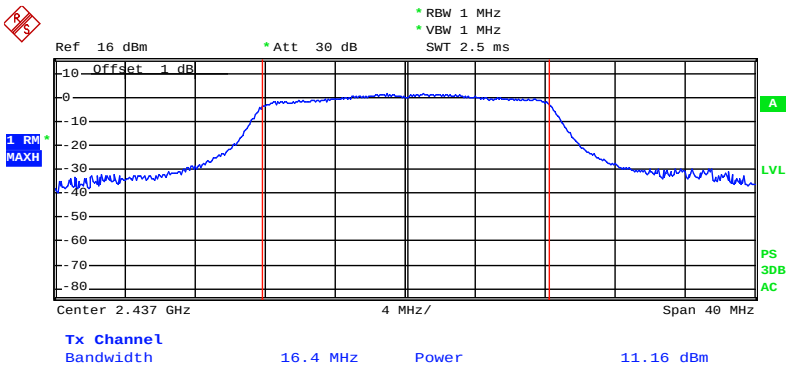
Date: 16.JUL.2011 10:37:14

802.11g 99% Occupied Bandwidth, Middle Channel



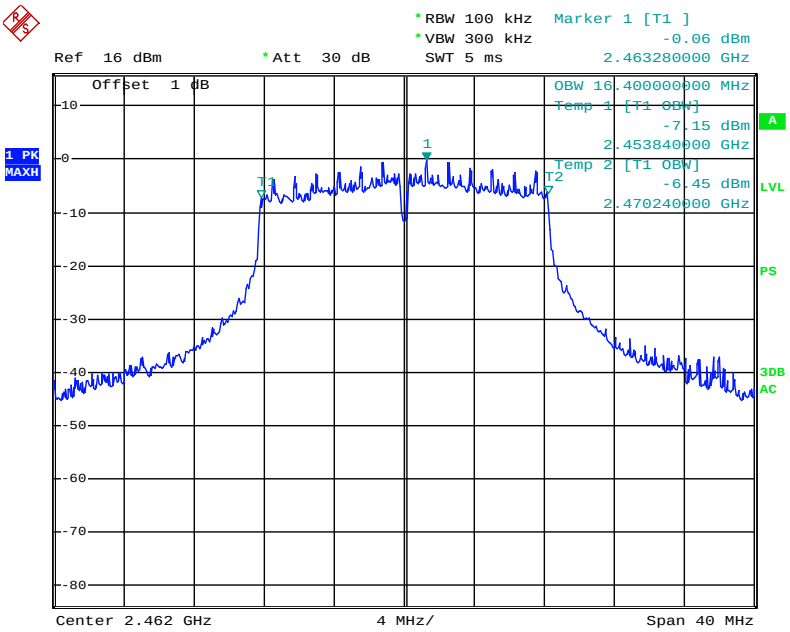
Date: 15.JUL.2011 22:16:00

802.11g RF Output Power, Middle Channel



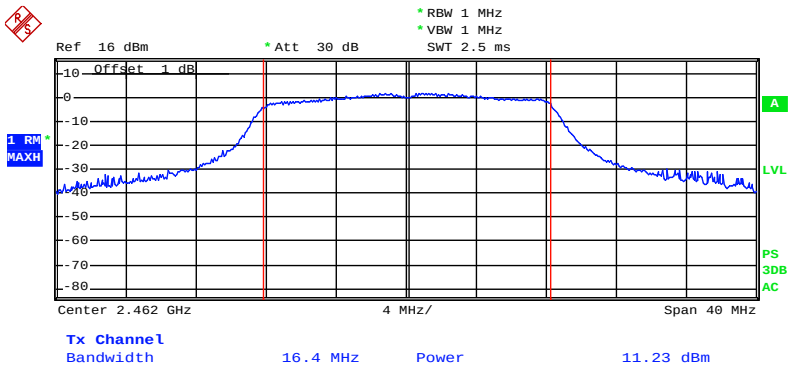
Date: 16.JUL.2011 10:40:17

802.11g 99% Occupied Bandwidth, High Channel



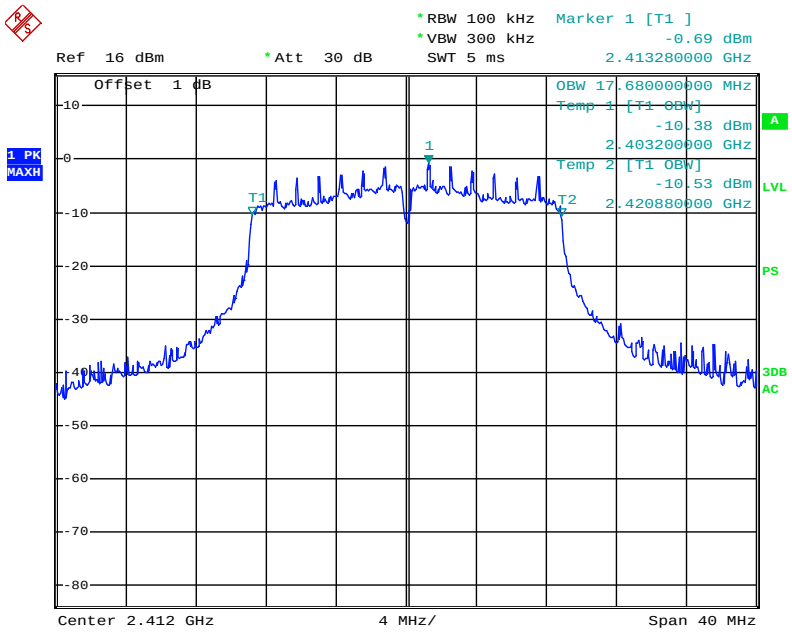
Date: 15.JUL.2011 22:17:03

802.11g RF Output Power, High Channel



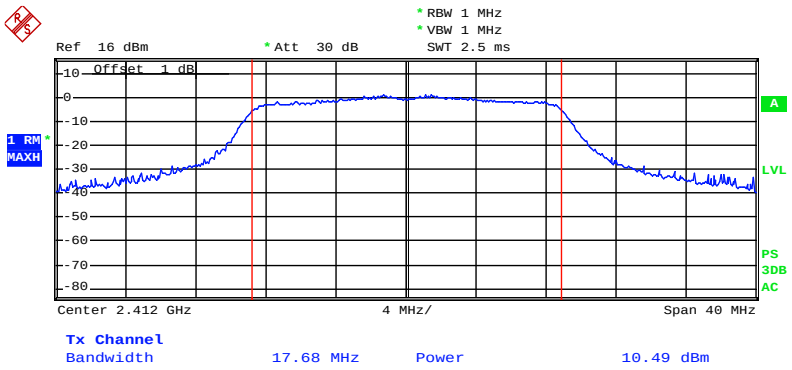
Date: 16.JUL.2011 10:42:46

802.11n20 99% Occupied Bandwidth, Low Channel



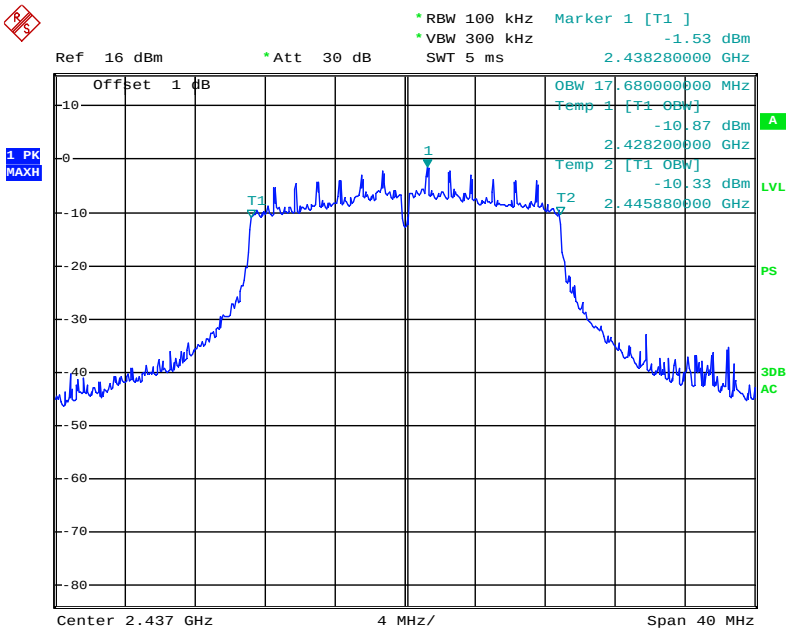
Date: 15.JUL.2011 22:33:37

802.11n20 RF Output Power, Low Channel



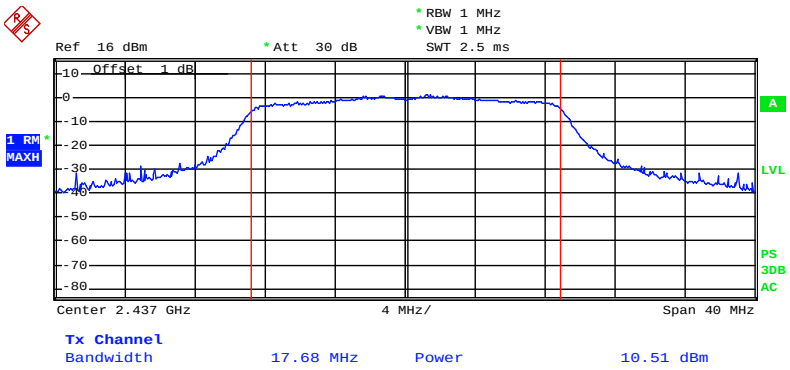
Date: 16.JUL.2011 10:04:07

802.11n20 99% Occupied Bandwidth, Middle Channel



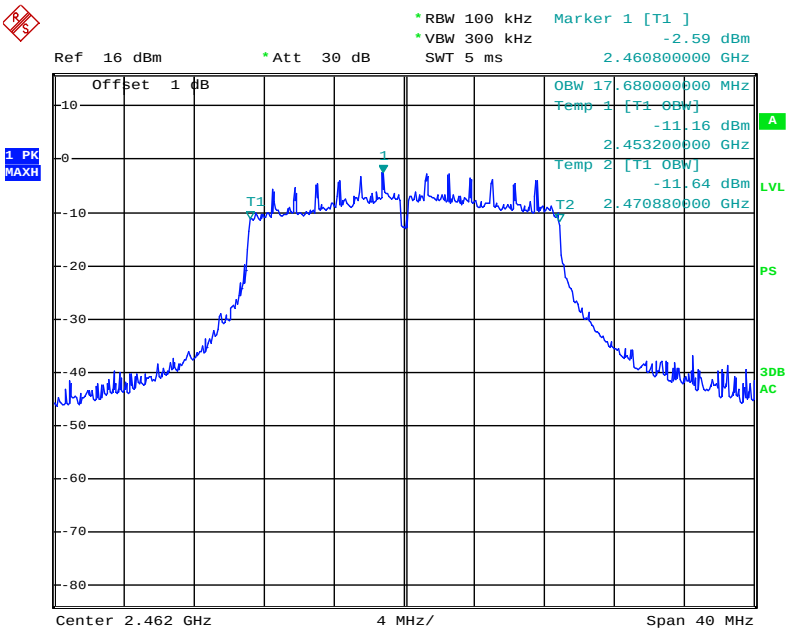
Date: 15.JUL.2011 22:35:52

802.11n20 RF Output Power, Middle Channel



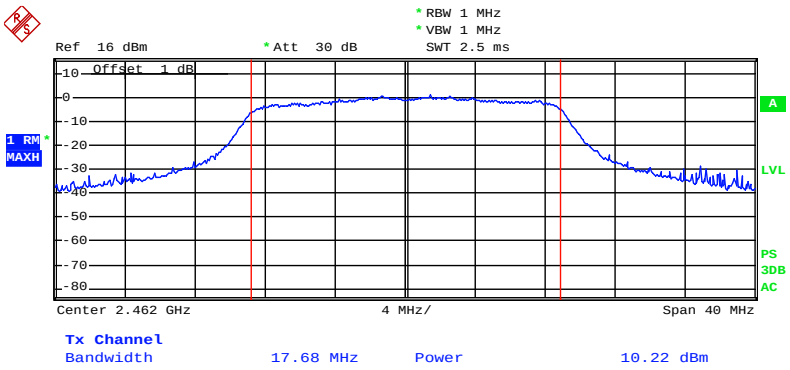
Date: 16.JUL.2011 10:17:23

802.11n20 99% Occupied Bandwidth, High Channel



Date: 15.JUL.2011 22:36:56

802.11n20 RF Output Power, High Channel



Date: 16.JUL.2011 10:17:59

FCC §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

Applicable Standard

In any 100 kHz 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 radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 1 MHz and VBW of spectrum analyzer to 1 MHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

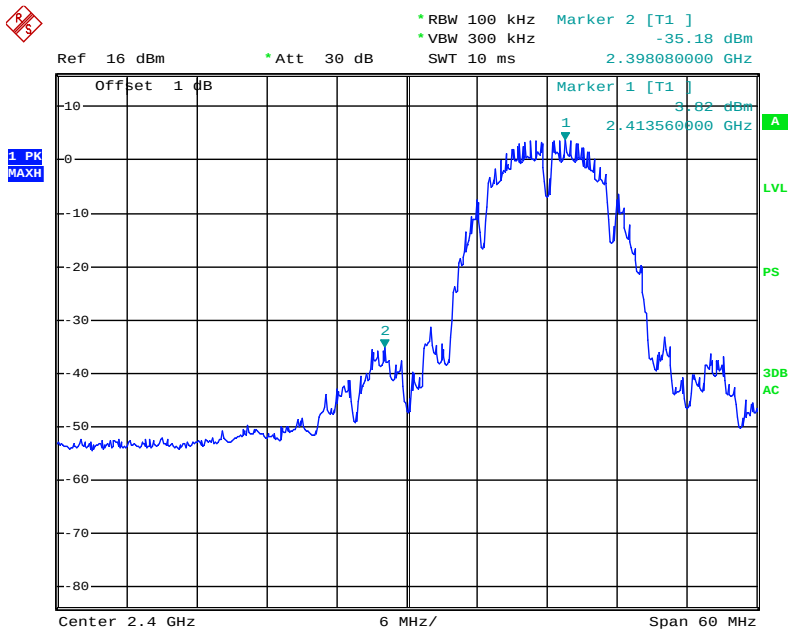
The testing was performed by Sula Huang on 2011-07-15.

Test Result: *Compliance*

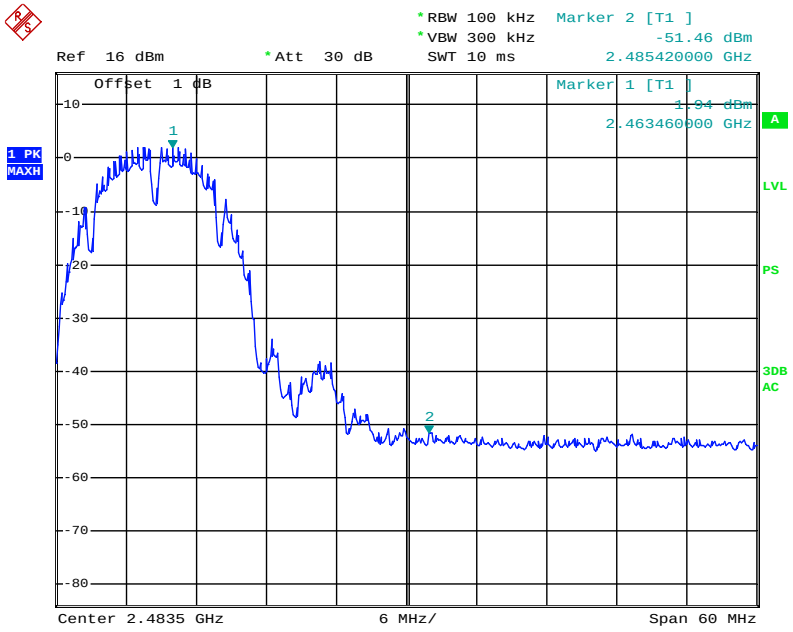
Frequency (MHz)	Delta Value (dBc)	Limit (dBc)	Result
802.11b mode			
2398.08	38.20	20	Pass
2485.42	53.40	20	Pass
802.11g mode			
2398.80	33.08	20	Pass
2483.86	44.91	20	Pass
802.11n20 mode			
2398.32	32.98	20	Pass
2483.98	44.22	20	Pass

Please refer to following plots.

802.11b: Band Edge, Left Side

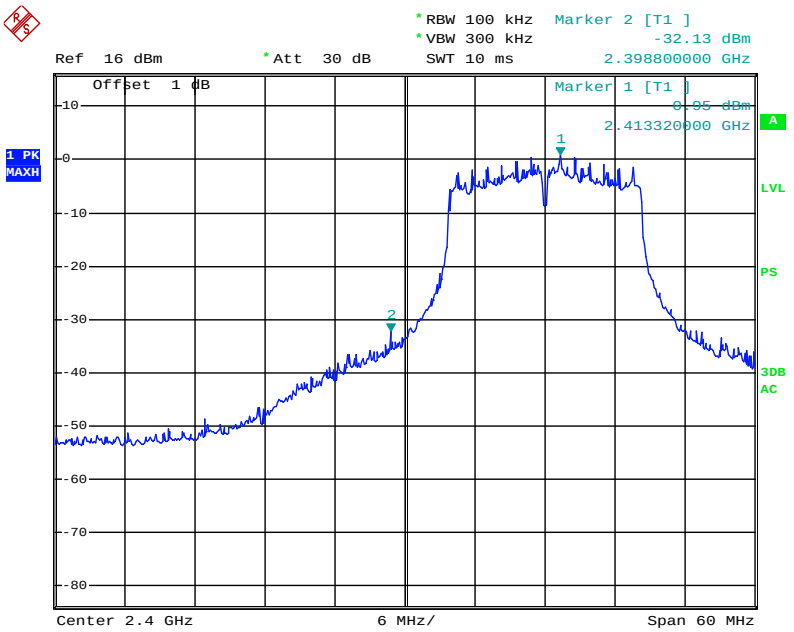


802.11b: Band Edge, Right Side



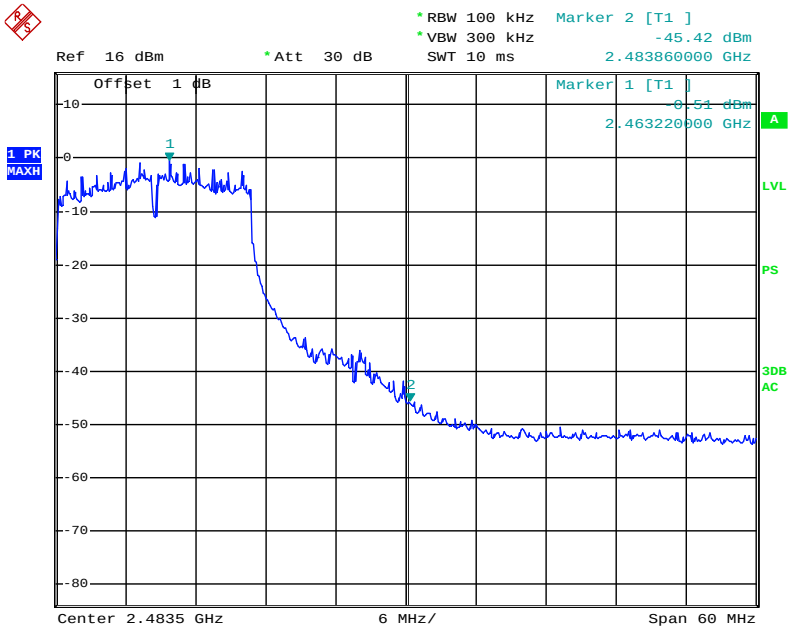
Date: 16.JUL.2011 10:55:50

802.11g: Band Edge, Left Side



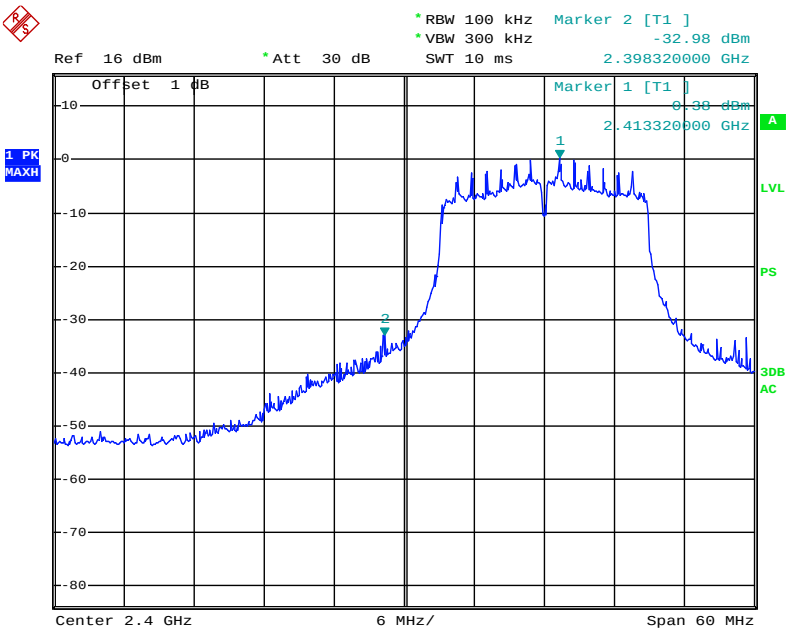
Date: 16.JUL.2011 11:04:58

802.11g: Band Edge, Right Side



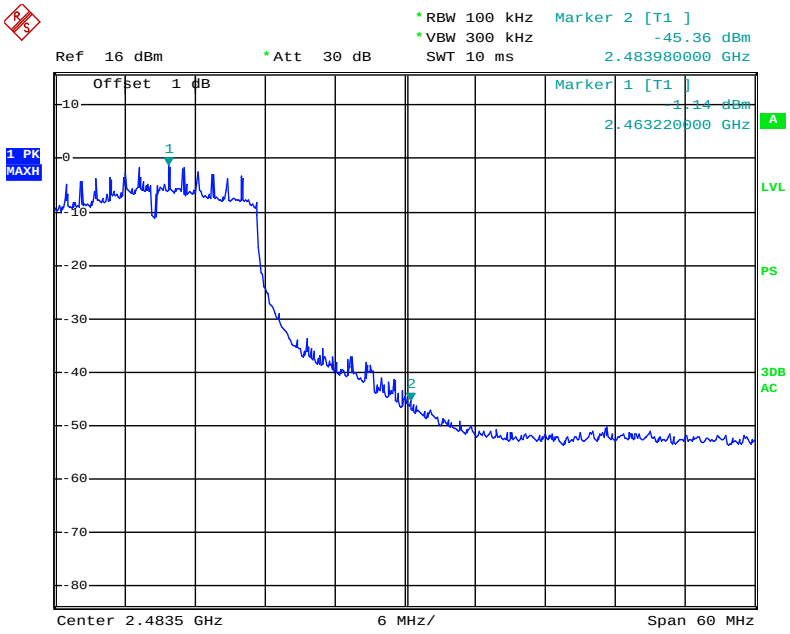
Date: 16.JUL.2011 10:51:58

802.11n20: Band Edge, Left Side



Date: 16.JUL.2011 11:01:06

802.11n20: Band Edge, Right Side



Date: 16.JUL.2011 10:58:12

FCC §15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Adjust the center frequency of SA on any frequency be measured and set SA to 1.5MHz span mode. And then, set RBW and VBW of spectrum analyzer to proper value. (DTS)
4. Repeat above procedures until all frequencies measured were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10

*** Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

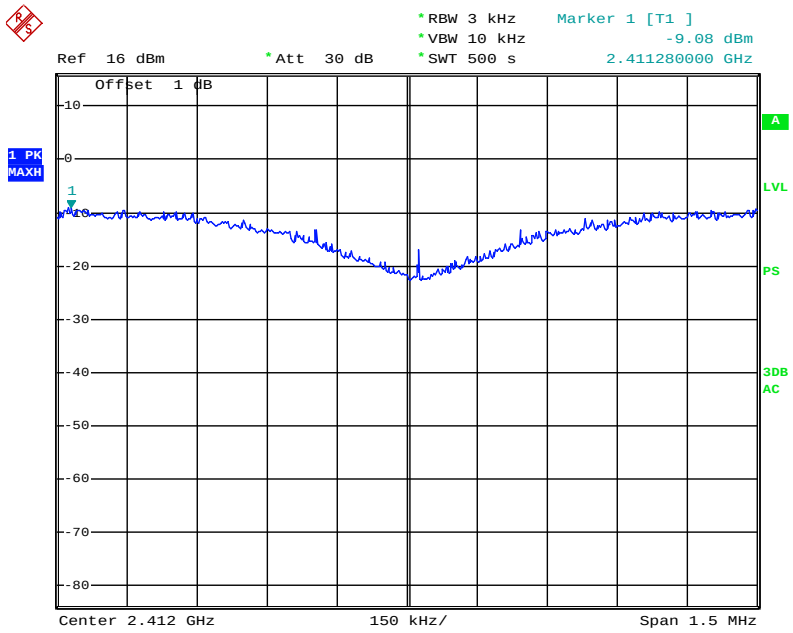
The testing was performed by Sula Huang on 2011-07-15 and 2011-07-16.

Test Mode: Transmitting

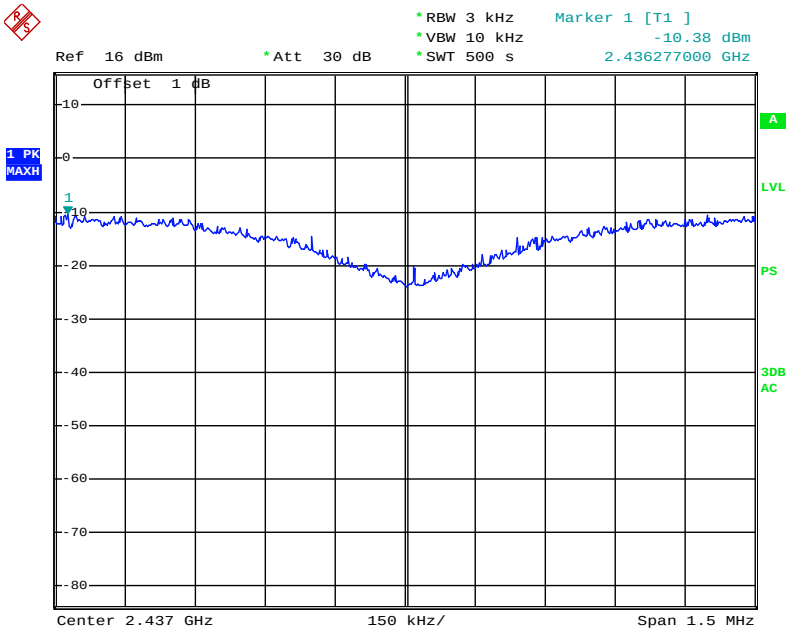
Test Result: Pass

Channel	Frequency (MHz)	Data Rate	Power Spectral Density (dBm)	Part 15.247 Limit (dBm)	Result
802.11b mode					
Low	2412	11	-9.08	8	Pass
Middle	2437	11	-10.38	8	Pass
High	2462	11	-10.53	8	Pass
802.11g mode					
Low	2412	54	-12.65	8	Pass
Middle	2437	54	-13.20	8	Pass
High	2462	54	-14.18	8	Pass
802.11n20 mode					
Low	2412	6.5	-14.10	8	Pass
Middle	2437	6.5	-16.11	8	Pass
High	2462	6.5	-16.03	8	Pass

Power Spectral Density, 802.11b Low Channel

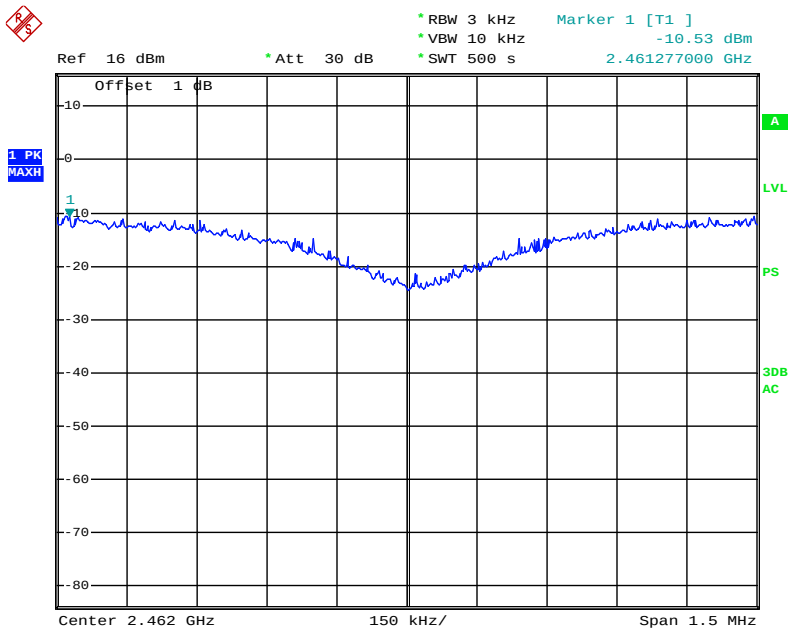


Power Spectral Density, 802.11b Middle Channel



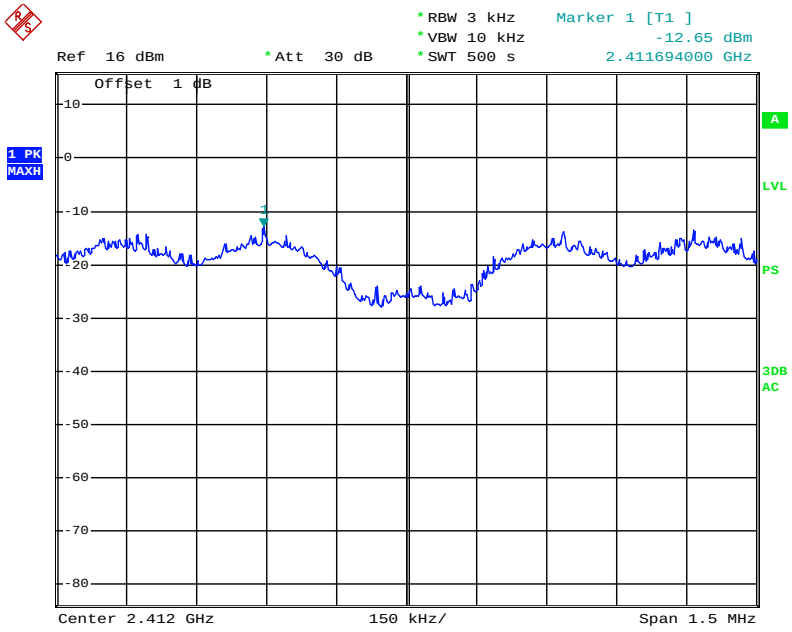
Date: 15.JUL.2011 23:38:39

Power Spectral Density, 802.11b High Channel



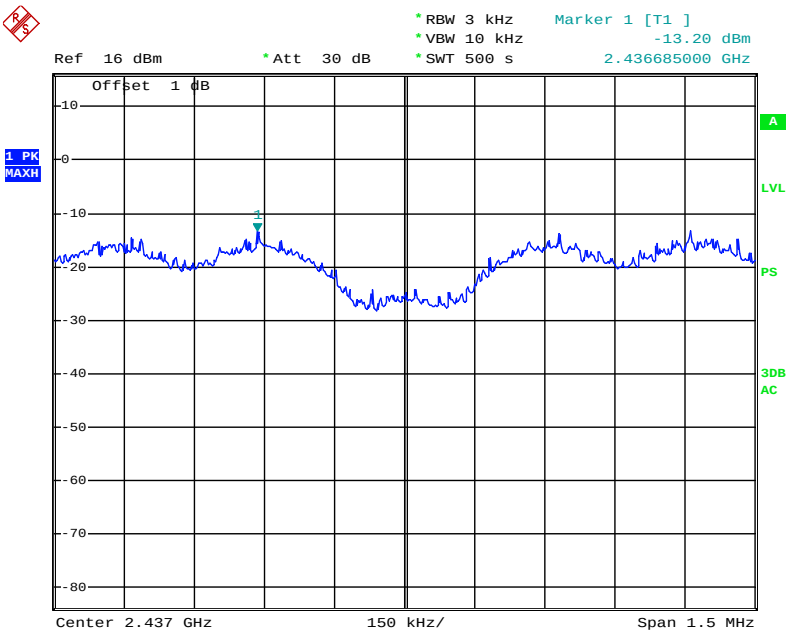
Date: 15.JUL.2011 23:48:13

Power Spectral Density, 802.11g Low Channel



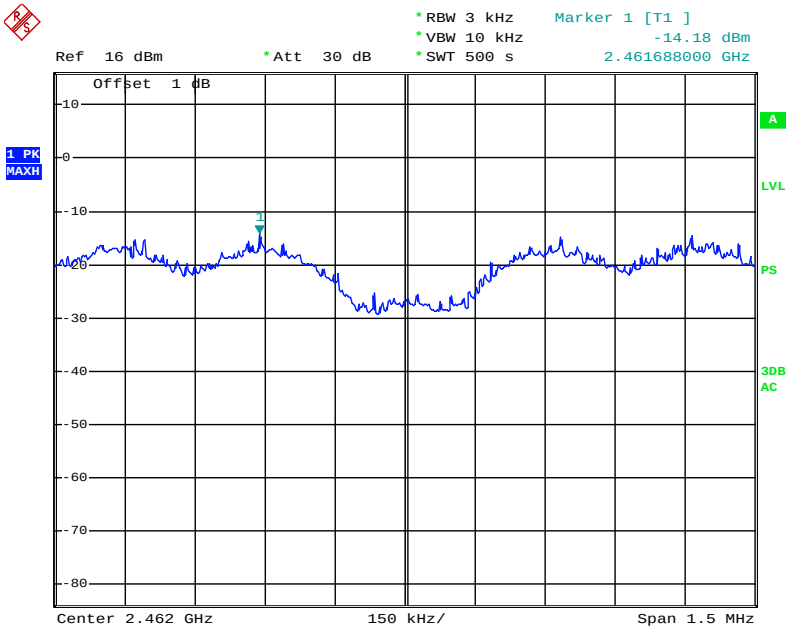
Date: 15.JUL.2011 23:58:45

Power Spectral Density, 802.11g Middle Channel



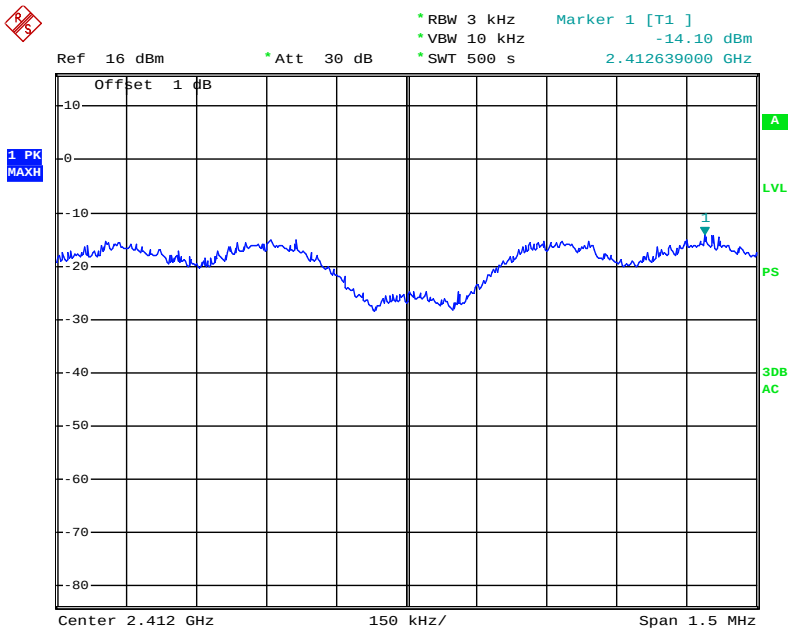
Date: 16.JUL.2011 08:43:28

Power Spectral Density, 802.11g High Channel



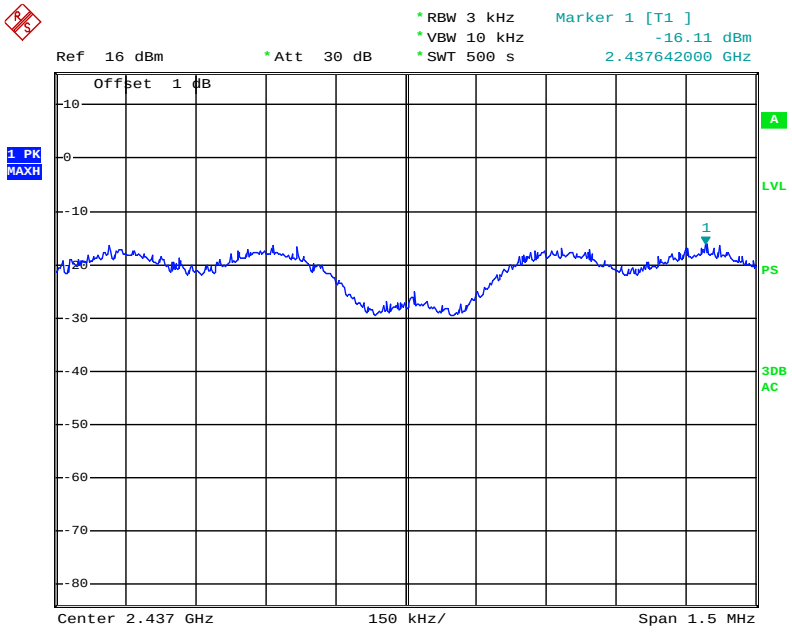
Date: 16.JUL.2011 08:53:57

Power Spectral Density, 802.11n20 Low Channel



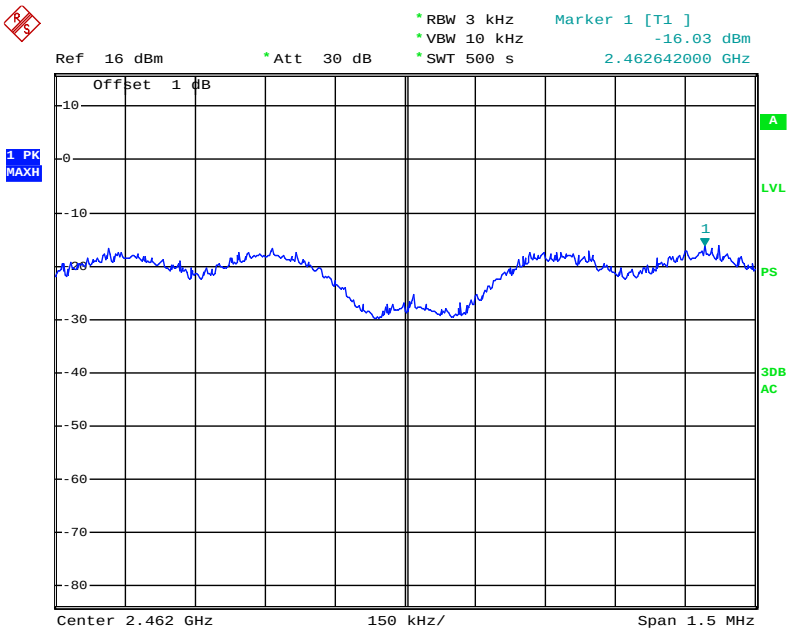
Date: 16.JUL.2011 09:06:13

Power Spectral Density, 802.11n20 Middle Channel



Date: 16.JUL.2011 09:50:51

Power Spectral Density, 802.11n20 High Channel



Date: 16.JUL.2011 09:38:03

******* END OF REPORT *******