LABCODE: 500069-0

FCC PART 15.247

TEST REPORT

For

Chengdu Xuguang Tech Co., Ltd.

Two Section of Park Road, Longquanyi, Chengdu, Sichuan, China

FCC ID: S5FSDWF-61

Report Type:	Product Type:
Original Report	Wi-Fi Module

Test Engineer:	Leon Chen
Report Number:	RSC130318001
Report Date:	2013-04-23
Reviewed By:	Ivan Cao RF Leader
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Chengdu Xuguang Tech Co., Ltd.*'s product, model number: *SDWF-61/111H (FCC ID: S5FSDWF-61)* (the "EUT") in this report was a *WIFI Module*, which was measured approximately: 28.2 mm (L) x 13.8 mm (W) x 2.0 mm (H), rated input voltage: DC 5.0 V.

**Note: The products, model SDWF-61/111H, SDWF-61/111H1, they are layout, internal structures and components are identify, and they have different part of the antenna, appearance and model names. So, we selected model SDWF-61/111H for fully test, and SDWF-61/111H1 for Spurious Emissions test only, please refer to the Declaration Letter in this report.*

** All measurement and test data in this report was gathered from production sample serial number: 000C43007037/SJ13030500008 (provided by manufacturer). The EUT was received on 2013-03-18.*

Objective

This report is prepared on behalf of *Chengdu Xuguang Tech Co., Ltd.* 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 the compliance of the EUT with FCC Part 15-Subpart C, section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Related Submittal(s)/Grant(s)

No Related Submittals.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, 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. (Dongguan). 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 ±3.46 dB, the uncertainty of any radiation on emissions measurement is:

30~200MHz: 5.0 dB
200~1GHz: 6.2 dB
1~6GHz: 4.45 dB
6~18GHz: 5.23 dB

And the uncertainty will not be taken into consideration for all test data recorded in the report.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) 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 February 02, 2012. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. 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. (Dongguan) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 500069-0).

The current scope of accreditations can be found at http://ts.nist.gov/standards/scopes/5000690.htm

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for test in testing mode, which was provided by manufacturer. 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	/	/

For 802.11b, 802.11g, and 802.11n20 modes were tested with Channel 1, 6 and 11.
For 802.11n40 mode were tested with Channel 3, 6 and 9.

The worst-case data rates are determined to be as follows for each mode based upon investigations by measuring the average power and PSD across all date rates bandwidths, and modulations.

EUT Exercise Software

The software “RT5370 V1.0.0.4” was used for testing, which was provided by manufacturer.

Equipment Modifications

No modification was made to the EUT tested.

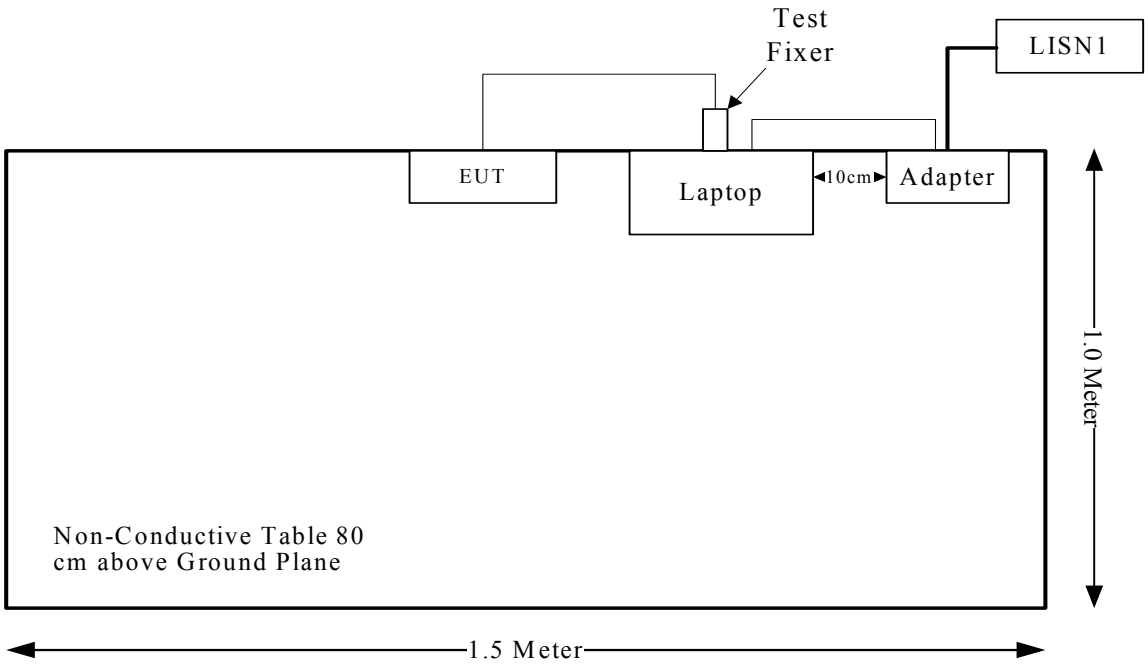
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Laptop	PP11L	/

External Cable

Cable Description	Length (m)	From Port	To
Un-shielded Un-Detachable USB Cable	0.20	Test Fixer	EUT

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247(i), §2.1091	Maximum Permissible exposure (MPE)	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) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.247(i)and subpart §1.1310, 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 level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary:

Predication of MPE limit at a given distance

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

Where:
S = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Mode	Frequency (MHz)	Antenna Gain		Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
802.11b	2462	2	1.58	15.7	37.15	20.00	0.01172	1.0
802.11g	2412	2	1.58	13.06	20.23	20.00	0.00638	1.0
802.11n20	2412	2	1.58	12.69	18.58	20.00	0.00586	1.0
802.11n40	2437	2	1.58	13.32	21.48	20.00	0.00678	1.0

Result: The device meet FCC MPE at 20 cm distance.

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.

Antenna Connector Construction

The Model: SDWF-61/111H has a PIFA antenna, which was used an IPEX connector port attached to the EUT, and the maximum gain is 2.0 dBi; the Model: SDWF-61/111H1 has a printed antenna, which was permanently welded on the PCB, and the maximum gain is 2.0 dBi, please refer to the EUT photos.

Result: Compliance.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cispr} of Table 1, then:
- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

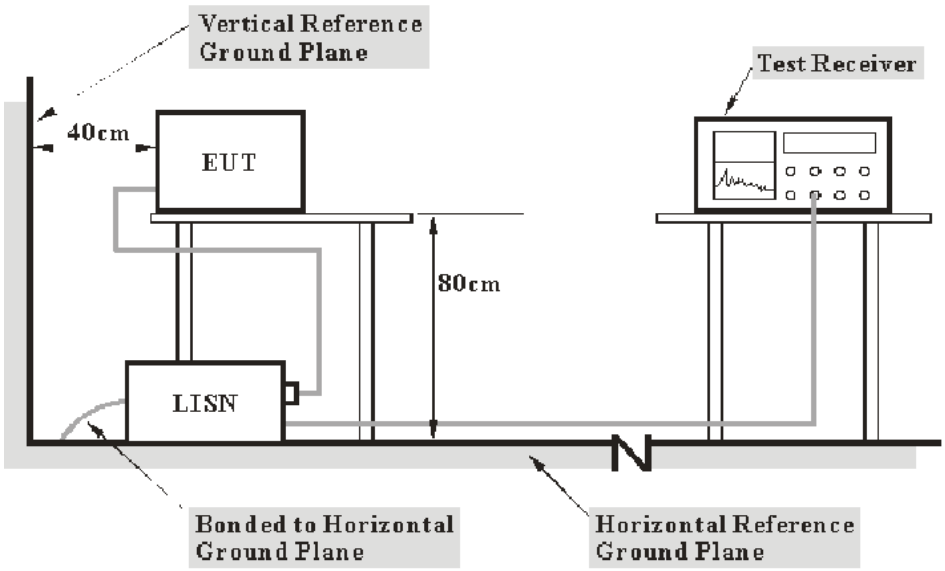
If U_{lab} is greater than U_{cispr} of Table 1, then:
- compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of conducted disturbance at mains port using AMN at Bay Area Compliance Laboratories Corp. (Dongguan) is 3.46 dB (150 kHz to 30 MHz).

Table 1 – Values of U_{cispr}

Measurement	U_{cispr}
Conducted disturbance at mains port using AMN (150 kHz to 30 MHz)	3.4 dB

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 C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

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 outlet of the first LISN and the other support equipments were connected to the outlet of the second 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.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$V_C = V_R + A_C + VDF$

Herein,
V_C: corrected voltage amplitude
V_R: reading voltage amplitude
A_c: attenuation caused by cable loss
VDF: voltage division factor of AMN or ISN

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum 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
R & S	EMI Test Receiver	ESCS 30	830245/006	2013-1-10	2014-1-9
R & S	L.I.S.N	ESH3-Z5	843331/015	2012-9-17	2013-9-16
R & S	L.I.S.N	ESH3-Z5	100113	2012-11-29	2013-11-28

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

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:

4.47 dB at **0.315 MHz** in the **Line** conducted mode.

Test Data

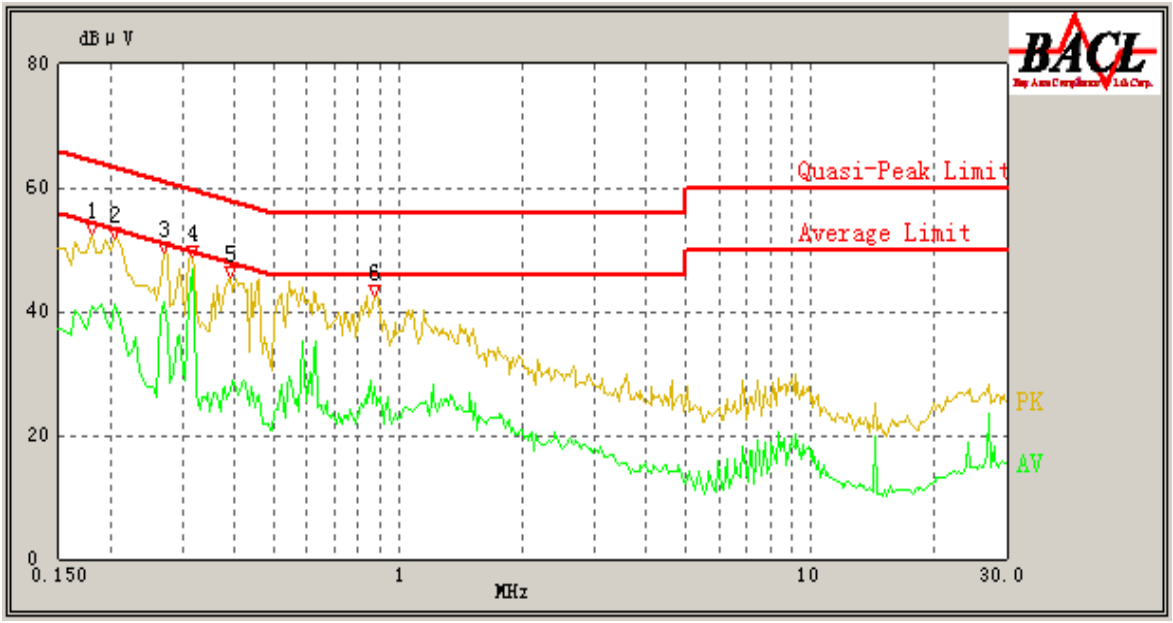
Environmental Conditions

Temperature:	23.5 ° C
Relative Humidity:	61 %
ATM Pressure:	101kPa

The testing was performed by Leon Chen on 2013-04-11.

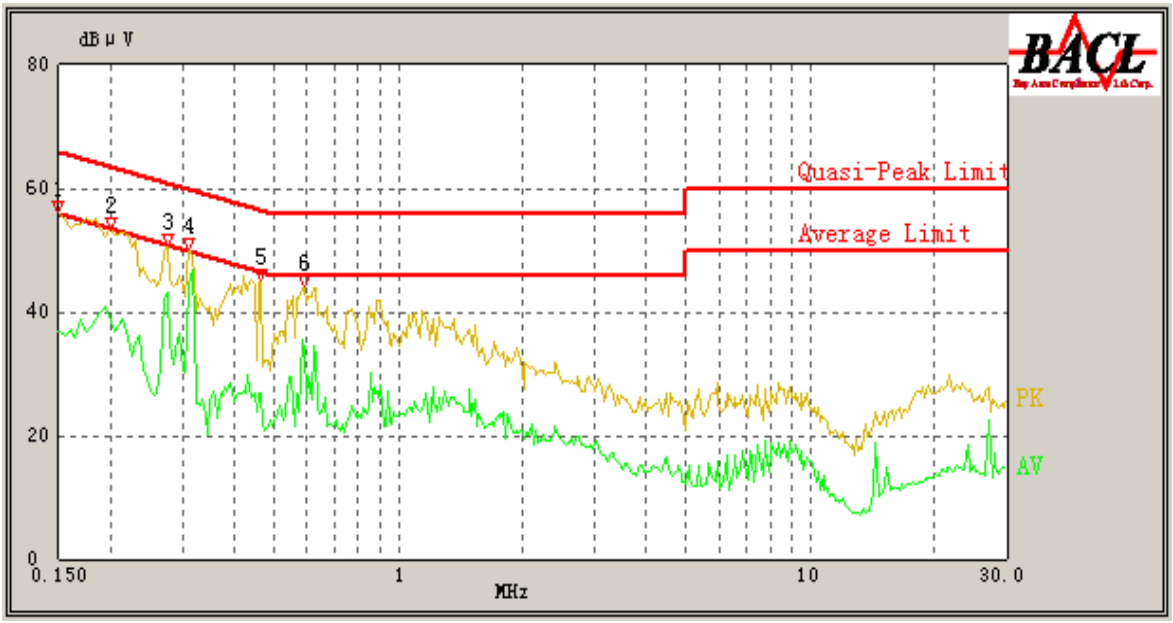
Test Mode: Transmitting

AC 120V/60 Hz, Line



Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/ QP/Ave.)
0.180	43.57	0.41	65.14	21.57	QP
0.180	40.75	0.41	55.14	14.39	AV
0.205	44.96	0.42	64.43	19.47	QP
0.205	41.03	0.42	54.43	13.40	AV
0.270	43.69	0.42	62.57	18.88	QP
0.270	41.41	0.42	52.57	11.16	AV
0.315	47.10	0.42	61.29	14.19	QP
0.315	46.82	0.42	51.29	4.47	AV
0.390	38.37	0.42	59.14	20.77	QP
0.390	27.33	0.42	49.14	21.81	AV
0.880	35.18	0.45	56.00	20.82	QP
0.880	27.91	0.45	46.00	18.09	AV

AC 120V/60 Hz, Neutral



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/ QP/Ave.)
0.150	52.07	0.40	66.00	13.93	QP
0.150	36.73	0.40	56.00	19.27	AV
0.200	49.57	0.42	64.57	15.00	QP
0.200	38.54	0.42	54.57	16.03	AV
0.275	46.06	0.42	62.43	16.37	QP
0.275	43.18	0.42	52.43	9.25	AV
0.310	46.55	0.42	61.43	14.88	QP
0.310	44.22	0.42	51.43	7.21	AV
0.465	38.24	0.42	57.00	18.76	QP
0.465	26.76	0.42	47.00	20.24	AV
0.590	40.24	0.43	56.00	15.76	QP
0.590	34.19	0.43	46.00	11.81	AV

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

Applicable Standard

FCC §15.247 (d); §15.209; §15.205;

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner：

If U_{lab} is less than or equal to U_{cispr} of Table 2, then:
- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{cispr} of Table 2, then:
- compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit.

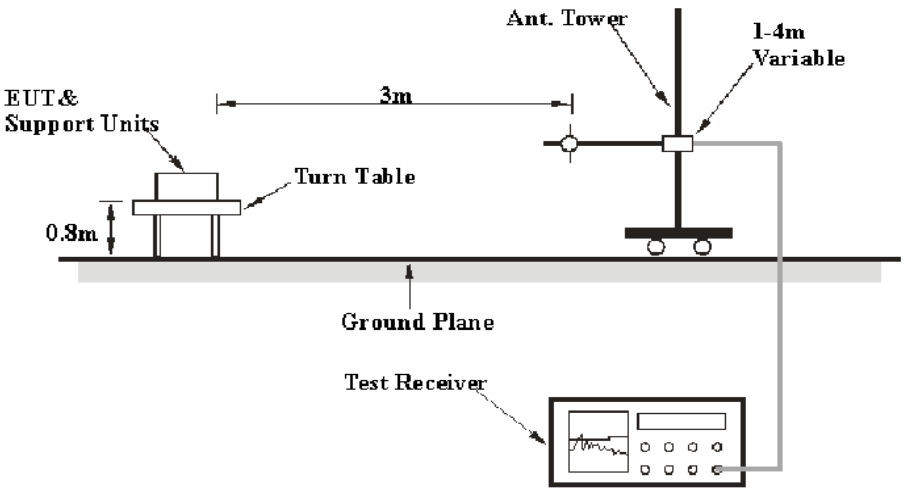
Based on CISPR 16-4-2-2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:
30M~200MHz: 5.0 dB
200M~1GHz: 6.2 dB
1G~6GHz: 4.45 dB
6G~18GHz: 5.23 dB

Table 2 – Values of U_{cispr}

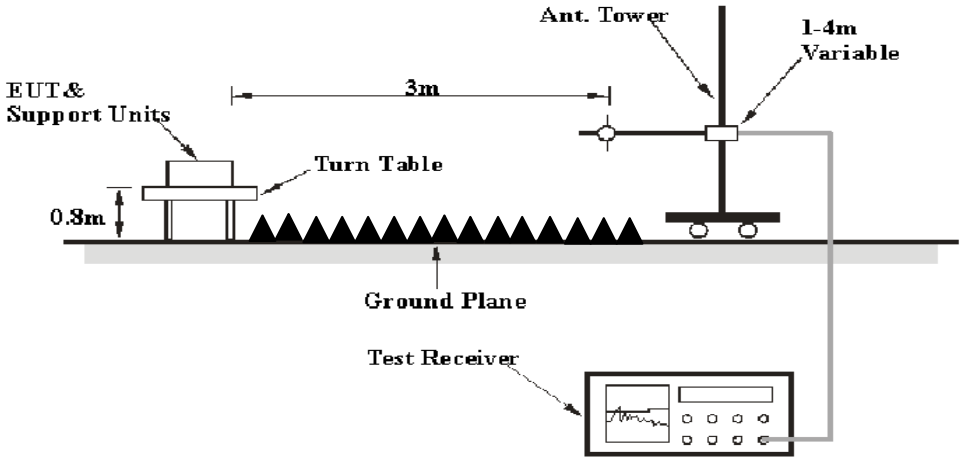
Measurement	U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

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 EUT was connected to the Laptop, which 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	120 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 radiated emission test, EUT was connect to the Laptop, which was connected to the first AC floor outlet.

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 = Receiver Reading + Cable loss + Antenna Factor – Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB 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
R & S	EMI Test Receiver	ESCI	100224	2012-5-14	2013-5-13
Sunol Sciences	Antenna	JB3	A060611-1	2012-9-6	2015-9-5
HP	Pre-amplifier	8447E	2434A02181	N/A	N/A
R & S	Spectrum Analyzer	FSEM 30	849016/001	2012-9-4	2013-9-3
ETS Lindgren	Horn Antenna	3115	000 527 35	2012-9-6	2015-9-5
Mini-Circuit	Pre-amplifier	ZVA-213-S+	54201245	N/A	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Results Summary

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

1.56 dB at **480.2 MHz** in the **Vertical** polarization for 802.11b Mode

Test Data

Environmental Conditions

Temperature:	22.7 ° C
Relative Humidity:	60 %
ATM Pressure:	100.9 kPa

The testing was performed by Leon Chen on 2013-04-09.

Test Mode: Transmitting

Model: SDWF-61/111H

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	FCC 15.247	
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
802.11b mode, Low Channel: 2412 MHz									
2412	67.26	PK	H	25.67	3.93	0.00	96.86	N/A	N/A
2412	61.75	AV	H	25.67	3.93	0.00	91.35	N/A	N/A
2412	72.84	PK	V	25.67	3.93	0.00	102.44	N/A	N/A
2412	67.06	AV	V	25.67	3.93	0.00	96.66	N/A	N/A
2390	28.46	PK	V	25.61	3.84	0.00	57.91	74.00	16.09
2390	15.5	AV	V	25.61	3.84	0.00	44.95	54.00	9.05
4824	44.71	PK	V	30.64	4.73	27.26	52.82	74.00	21.18
4824	42.97	AV	V	30.64	4.73	27.26	51.08	54.00	*2.92
7236	34.95	PK	V	34.17	6.56	26.36	49.32	74.00	24.68
7236	24.65	AV	V	34.17	6.56	26.36	39.02	54.00	14.98
9648	32.49	PK	V	36.06	8.70	26.06	51.19	74.00	22.81
9648	18.12	AV	V	36.06	8.70	26.06	36.82	54.00	17.18
2827	37.47	PK	V	27.01	6.13	27.44	43.17	74.00	30.83
2827	20.13	AV	V	27.01	6.13	27.44	25.83	54.00	28.17
400.1	45.5	QP	V	18.04	2.67	21.97	44.24	46.00	*1.76
802.11b mode, Middle Channel: 2437 MHz									
2437	67.05	PK	H	25.74	3.98	0.00	96.77	N/A	N/A
2437	61.59	AV	H	25.74	3.98	0.00	91.31	N/A	N/A
2437	72.64	PK	V	25.74	3.98	0.00	102.36	N/A	N/A
2437	66.75	AV	V	25.74	3.98	0.00	96.47	N/A	N/A
4874	44.18	PK	V	30.77	4.76	27.26	52.45	74.00	21.55
4874	42.31	AV	V	30.77	4.76	27.26	50.58	54.00	*3.42
7311	32.52	PK	V	34.35	6.70	26.51	47.06	74.00	26.94
7311	18.44	AV	V	34.35	6.70	26.51	32.98	54.00	21.02
9748	32.69	PK	V	36.30	8.60	25.68	51.91	74.00	22.09
9748	18.14	AV	V	36.30	8.60	25.68	37.36	54.00	16.64
2827	37.61	PK	V	27.01	6.13	27.44	43.31	74.00	30.69
2827	20.52	AV	V	27.01	6.13	27.44	26.22	54.00	27.78
3260	32.78	PK	V	27.94	5.10	27.47	38.35	74.00	35.65
3260	18.62	AV	V	27.94	5.10	27.47	24.19	54.00	29.81
400.2	45.7	QP	V	18.04	2.67	21.97	44.44	46.00	*1.56
802.11b mode, High Channel: 2462 MHz									
2462	67.11	PK	H	25.80	3.93	0.00	96.84	N/A	N/A
2462	61.68	AV	H	25.80	3.93	0.00	91.41	N/A	N/A
2462	72.71	PK	V	25.80	3.93	0.00	102.44	N/A	N/A
2462	66.84	AV	V	25.80	3.93	0.00	96.57	N/A	N/A
2483.5	28.59	PK	V	25.86	3.80	0.00	58.25	74.00	15.75
2483.5	15.61	AV	V	25.86	3.80	0.00	45.27	54.00	8.73
4924	44.39	PK	V	30.90	4.70	27.27	52.72	74.00	21.28
4924	42.45	AV	V	30.90	4.70	27.27	50.78	54.00	*3.22
7386	32.56	PK	V	34.53	6.84	26.66	47.27	74.00	26.73
7386	18.46	AV	V	34.53	6.84	26.66	33.17	54.00	20.83
9848	33.15	PK	V	36.54	8.49	25.49	52.69	74.00	21.31
9848	17.94	AV	V	36.54	8.49	25.49	37.48	54.00	16.52
2827	37.21	PK	V	27.01	6.13	27.44	42.91	74.00	31.09
2827	20.55	AV	V	27.01	6.13	27.44	26.25	54.00	27.75
400.12	45.4	QP	V	18.04	2.67	21.97	44.14	46.00	*1.86

*Within measurement uncertainty!

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	FCC 15.247	
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
802.11g mode, Low Channel: 2412 MHz									
2412	64.72	PK	H	25.67	3.93	0.00	94.32	N/A	N/A
2412	47.63	AV	H	25.67	3.93	0.00	77.23	N/A	N/A
2412	69.63	PK	V	25.67	3.93	0.00	99.23	N/A	N/A
2412	52.36	AV	V	25.67	3.93	0.00	81.96	N/A	N/A
2390	28.44	PK	V	25.61	3.84	0.00	57.89	74.00	16.11
2390	16.34	AV	V	25.61	3.84	0.00	45.79	54.00	8.21
4824	38.44	PK	V	30.64	4.73	27.26	46.55	74.00	27.45
4824	22.39	AV	V	30.64	4.73	27.26	30.50	54.00	23.50
7236	33.53	PK	V	34.17	6.56	26.36	47.90	74.00	26.10
7236	18.85	AV	V	34.17	6.56	26.36	33.22	54.00	20.78
9648	31.27	PK	V	36.06	8.70	26.06	49.97	74.00	24.03
9648	18.02	AV	V	36.06	8.70	26.06	36.72	54.00	17.28
2827	34.85	PK	V	27.01	6.13	27.44	40.55	74.00	33.45
2827	19.76	AV	V	27.01	6.13	27.44	25.46	54.00	28.54
400.06	45.5	QP	V	18.04	2.67	21.97	44.24	46.00	*1.76
802.11g mode, Middle Channel: 2437 MHz									
2437	64.58	PK	H	25.74	3.98	0.00	94.30	N/A	N/A
2437	47.57	AV	H	25.74	3.98	0.00	77.29	N/A	N/A
2437	69.46	PK	V	25.74	3.98	0.00	99.18	N/A	N/A
2437	52.35	AV	V	25.74	3.98	0.00	82.07	N/A	N/A
4874	38.58	PK	V	30.77	4.76	27.26	46.85	74.00	27.15
4874	22.41	AV	V	30.77	4.76	27.26	30.68	54.00	23.32
7311	31.62	PK	V	34.35	6.70	26.51	46.16	74.00	27.84
7311	18.17	AV	V	34.35	6.70	26.51	32.71	54.00	21.29
9748	30.7	PK	V	36.30	8.60	25.68	49.92	74.00	24.08
9748	18.12	AV	V	36.30	8.60	25.68	37.34	54.00	16.66
2827	35.62	PK	V	27.01	6.13	27.44	41.32	74.00	32.68
2827	19.54	AV	V	27.01	6.13	27.44	25.24	54.00	28.76
3260	32.57	PK	V	27.94	5.10	27.47	38.14	74.00	35.86
3260	18.39	AV	V	27.94	5.10	27.47	23.96	54.00	30.04
400.02	45.3	QP	V	18.04	2.67	21.97	44.04	46.00	*1.96
802.11g mode, High Channel: 2462 MHz									
2462	64.51	PK	H	25.80	3.93	0.00	94.24	N/A	N/A
2462	47.52	AV	H	25.80	3.93	0.00	77.25	N/A	N/A
2462	69.37	PK	V	25.80	3.93	0.00	99.10	N/A	N/A
2462	52.25	AV	V	25.80	3.93	0.00	81.98	N/A	N/A
2483.5	28.69	PK	V	25.86	3.80	0.00	58.35	74.00	15.65
2483.5	16.51	AV	V	25.86	3.80	0.00	46.17	54.00	7.83
4924	38.52	PK	V	30.90	4.70	27.27	46.85	74.00	27.15
4924	22.36	AV	V	30.90	4.70	27.27	30.69	54.00	23.31
7386	31.29	PK	V	34.53	6.84	26.66	46.00	74.00	28.00
7386	17.48	AV	V	34.53	6.84	26.66	32.19	54.00	21.81
9848	30.76	PK	V	36.54	8.49	25.49	50.30	74.00	23.70
9848	17.48	AV	V	36.54	8.49	25.49	37.02	54.00	16.98
2827	35.59	PK	V	27.01	6.13	27.44	41.29	74.00	32.71
2827	19.78	AV	V	27.01	6.13	27.44	25.48	54.00	28.52
400.11	45.4	QP	V	18.04	2.67	21.97	44.14	46.00	*1.86

*Within measurement uncertainty!

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	FCC 15.247	
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
802.11n HT20 mode, Low Channel: 2412 MHz									
2412	64.24	PK	H	25.67	3.93	0.00	93.84	N/A	N/A
2412	47.2	AV	H	25.67	3.93	0.00	76.80	N/A	N/A
2412	68.65	PK	V	25.67	3.93	0.00	98.25	N/A	N/A
2412	52.6	AV	V	25.67	3.93	0.00	82.20	N/A	N/A
2390	28.58	PK	V	25.61	3.84	0.00	58.03	74.00	15.97
2390	15.96	AV	V	25.61	3.84	0.00	45.41	54.00	8.59
4824	41.11	PK	V	30.64	4.73	27.26	49.22	74.00	24.78
4824	22.89	AV	V	30.64	4.73	27.26	31.00	54.00	23.00
7236	33.36	PK	V	34.17	6.56	26.36	47.73	74.00	26.27
7236	18.54	AV	V	34.17	6.56	26.36	32.91	54.00	21.09
9648	31.66	PK	V	36.06	8.70	26.06	50.36	74.00	23.64
9648	18.16	AV	V	36.06	8.70	26.06	36.86	54.00	17.14
2827	35.86	PK	V	27.01	6.13	27.44	41.56	74.00	32.44
2827	19.54	AV	V	27.01	6.13	27.44	25.24	54.00	28.76
400.07	45.5	QP	V	18.04	2.67	21.97	44.24	46.00	*1.76
802.11n HT20mode, Middle Channel: 2437 MHz									
2437	64.19	PK	H	25.74	3.98	0.00	93.91	N/A	N/A
2437	47.58	AV	H	25.74	3.98	0.00	77.30	N/A	N/A
2437	68.65	PK	V	25.74	3.98	0.00	98.37	N/A	N/A
2437	52.29	AV	V	25.74	3.98	0.00	82.01	N/A	N/A
4874	42.13	PK	V	30.77	4.76	27.26	50.40	74.00	23.60
4874	22.35	AV	V	30.77	4.76	27.26	30.62	54.00	23.38
7311	31.39	PK	V	34.35	6.70	26.51	45.93	74.00	28.07
7311	18.25	AV	V	34.35	6.70	26.51	32.79	54.00	21.21
9748	30.74	PK	V	36.30	8.60	25.68	49.96	74.00	24.04
9748	18.16	AV	V	36.30	8.60	25.68	37.38	54.00	16.62
2927	35.24	PK	V	27.01	6.13	27.44	40.94	74.00	33.06
2927	19.68	AV	V	27.01	6.13	27.44	25.38	54.00	28.62
3260	31.74	PK	V	27.94	5.10	27.47	37.31	74.00	36.69
3260	18.24	AV	V	27.94	5.10	27.47	23.81	54.00	30.19
400.03	45.6	QP	V	18.04	2.67	21.97	44.34	46.00	*1.66
802.11n HT20 mode, High Channel: 2462 MHz									
2462	64.11	PK	H	25.80	3.93	0.00	93.84	N/A	N/A
2462	47.5	AV	H	25.80	3.93	0.00	77.23	N/A	N/A
2462	68.82	PK	V	25.80	3.93	0.00	98.55	N/A	N/A
2462	52.72	AV	V	25.80	3.93	0.00	82.45	N/A	N/A
2483.5	28.59	PK	V	25.86	3.80	0.00	58.25	74.00	15.75
2483.5	15.97	AV	V	25.86	3.80	0.00	45.63	54.00	8.37
4924	41.72	PK	V	30.90	4.70	27.27	50.05	74.00	23.95
4924	22.56	AV	V	30.90	4.70	27.27	30.89	54.00	23.11
7386	31.64	PK	V	34.53	6.84	26.66	46.35	74.00	27.65
7386	18.36	AV	V	34.53	6.84	26.66	33.07	54.00	20.93
9848	30.49	PK	V	36.54	8.49	25.49	50.03	74.00	23.97
9848	18.24	AV	V	36.54	8.49	25.49	37.78	54.00	16.22
2827	35.47	PK	V	27.01	6.13	27.44	41.17	74.00	32.83
2827	19.84	AV	V	27.01	6.13	27.44	25.54	54.00	28.46
400.03	45.4	PK	V	18.04	2.67	21.97	44.14	46.00	*1.86

*Within measurement uncertainty!

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	FCC 15.247	
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
802.11n HT40 mode, Low Channel: 2422 MHz									
2422	64.25	PK	H	25.70	3.95	0.00	93.90	N/A	N/A
2422	47.29	AV	H	25.70	3.95	0.00	76.94	N/A	N/A
2422	69.03	PK	V	25.70	3.95	0.00	98.68	N/A	N/A
2422	52.72	AV	V	25.70	3.95	0.00	82.37	N/A	N/A
2390	28.41	PK	V	25.61	3.84	0.00	57.86	74.00	16.14
2390	15.66	AV	V	25.61	3.84	0.00	45.11	54.00	8.89
4844	40.35	PK	V	30.69	4.78	27.26	48.56	74.00	25.44
4844	22.24	AV	V	30.69	4.78	27.26	30.45	54.00	23.55
7266	31.92	PK	V	34.24	6.62	26.42	46.36	74.00	27.64
7266	18.22	AV	V	34.24	6.62	26.42	32.66	54.00	21.34
9688	32.49	PK	V	36.15	8.66	25.91	51.39	74.00	22.61
9688	17.82	AV	V	36.15	8.66	25.91	36.72	54.00	17.28
2827	35.44	PK	V	27.01	6.13	27.44	41.14	74.00	32.86
2827	19.58	AV	V	27.01	6.13	27.44	25.28	54.00	28.72
400.05	45.5	QP	V	18.04	2.67	21.97	44.24	46.00	*1.76
802.11n HT40 mode, Middle Channel: 2437 MHz									
2437	63.92	PK	H	25.74	3.98	0.00	93.64	N/A	N/A
2437	47.35	AV	H	25.74	3.98	0.00	77.07	N/A	N/A
2437	68.97	PK	V	25.74	3.98	0.00	98.69	N/A	N/A
2437	52.71	AV	V	25.74	3.98	0.00	82.43	N/A	N/A
4874	40.42	PK	V	30.77	4.76	27.26	48.69	74.00	25.31
4874	22.68	AV	V	30.77	4.76	27.26	30.95	54.00	23.05
7311	32.18	PK	V	34.35	6.70	26.51	46.72	74.00	27.28
7311	18.2	AV	V	34.35	6.70	26.51	32.74	54.00	21.26
9748	32.69	PK	V	36.30	8.60	25.68	51.91	74.00	22.09
9748	18.14	AV	V	36.30	8.60	25.68	37.36	54.00	16.64
2827	35.61	PK	V	27.01	6.13	27.44	41.31	74.00	32.69
2827	19.52	AV	V	27.01	6.13	27.44	25.22	54.00	28.78
3260	31.71	PK	V	27.94	5.10	27.47	37.28	74.00	36.72
3260	18.18	AV	V	27.94	5.10	27.47	23.75	54.00	30.25
400.03	45.5	QP	V	18.04	2.67	21.97	44.24	46.00	*1.76
802.11n HT40 mode, High Channel: 2452 MHz									
2452	63.93	PK	H	25.78	4.00	0.00	93.70	N/A	N/A
2452	47.45	AV	H	25.78	4.00	0.00	77.22	N/A	N/A
2452	68.97	PK	V	25.78	4.00	0.00	98.74	N/A	N/A
2452	52.66	AV	V	25.78	4.00	0.00	82.43	N/A	N/A
2483.5	28.69	PK	V	25.86	3.80	0.00	58.35	74.00	15.65
2483.5	15.9	AV	V	25.86	3.80	0.00	45.56	54.00	8.44
4904	40.73	PK	V	30.85	4.72	27.27	49.03	74.00	24.97
4904	22.59	AV	V	30.85	4.72	27.27	30.89	54.00	23.11
7356	32.24	PK	V	34.45	6.79	26.60	46.88	74.00	27.12
7356	18.17	AV	V	34.45	6.79	26.60	32.81	54.00	21.19
9808	33.15	PK	V	36.44	8.53	25.48	52.64	74.00	21.36
9808	17.94	AV	V	36.44	8.53	25.48	37.43	54.00	16.57
2827	35.21	PK	V	27.01	6.13	27.44	40.91	74.00	33.09
2827	19.55	AV	V	27.01	6.13	27.44	25.25	54.00	28.75
400.03	45.6	QP	V	18.04	2.67	21.97	44.34	46.00	*1.66

*Within measurement uncertainty!

Model: SDWF-61/111H1

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	FCC 15.247	
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
802.11b mode, Low Channel: 2412 MHz									
2412	64.29	PK	H	25.67	3.93	0.00	93.89	N/A	N/A
2412	58.94	AV	H	25.67	3.93	0.00	88.54	N/A	N/A
2412	65.42	PK	V	25.67	3.93	0.00	95.02	N/A	N/A
2412	60.3	AV	V	25.67	3.93	0.00	89.90	N/A	N/A
2390	28.43	PK	V	25.61	3.84	0.00	57.88	74.00	16.12
2390	14.57	AV	V	25.61	3.84	0.00	44.02	54.00	9.98
4824	-0.08	PK	V	30.64	4.73	27.26	8.03	74.00	65.97
4824	-0.18	AV	V	30.64	4.73	27.26	7.93	54.00	46.07
7236	34.87	PK	V	34.17	6.56	26.36	49.24	74.00	24.76
7236	24.53	AV	V	34.17	6.56	26.36	38.90	54.00	15.10
9648	32.44	PK	V	36.06	8.70	26.06	51.14	74.00	22.86
9648	18.09	AV	V	36.06	8.70	26.06	36.79	54.00	17.21
2827	37.43	PK	V	27.01	6.13	27.44	43.13	74.00	30.87
2827	20.11	AV	V	27.01	6.13	27.44	25.81	54.00	28.19
400.1	45.38	QP	V	18.04	2.67	21.97	44.12	46.00	*1.88
802.11b mode, Middle Channel: 2437 MHz									
2437	65.32	PK	H	25.74	3.98	0.00	95.04	N/A	N/A
2437	60.14	AV	H	25.74	3.98	0.00	89.86	N/A	N/A
2437	66.77	PK	V	25.74	3.98	0.00	96.49	N/A	N/A
2437	61.68	AV	V	25.74	3.98	0.00	91.40	N/A	N/A
4874	32.8	PK	V	30.77	4.76	27.26	41.07	74.00	32.93
4874	20.45	AV	V	30.77	4.76	27.26	28.72	54.00	25.28
7311	32.37	PK	V	34.35	6.70	26.51	46.91	74.00	27.09
7311	18.28	AV	V	34.35	6.70	26.51	32.82	54.00	21.18
9748	33.01	PK	V	36.30	8.60	25.68	52.23	74.00	21.77
9748	17.63	AV	V	36.30	8.60	25.68	36.85	54.00	17.15
2867	31.02	PK	V	26.75	4.61	27.38	35.00	74.00	39.00
2867	20.33	AV	V	26.75	4.61	27.38	24.31	54.00	29.69
3335	31.06	PK	V	28.27	4.59	27.36	36.56	74.00	37.44
3335	20.47	AV	V	28.27	4.59	27.36	25.97	54.00	28.03
400.2	45.3	QP	V	18.04	2.67	21.97	44.04	46.00	*1.96
802.11b mode, High Channel: 2462 MHz									
2462	65.49	PK	H	25.80	3.93	0.00	95.22	N/A	N/A
2462	60.26	AV	H	25.80	3.93	0.00	89.99	N/A	N/A
2462	66.95	PK	V	25.80	3.93	0.00	96.68	N/A	N/A
2462	61.71	AV	V	25.80	3.93	0.00	91.44	N/A	N/A
2483.5	27.86	PK	V	25.86	3.80	0.00	57.52	74.00	16.48
2483.5	13.97	AV	V	25.86	3.80	0.00	43.63	54.00	10.37
4924	32.86	PK	V	30.90	4.70	27.27	41.19	74.00	32.81
4924	20.6	AV	V	30.90	4.70	27.27	28.93	54.00	25.07
7386	32.52	PK	V	34.53	6.84	26.66	47.23	74.00	26.77
7386	18.29	AV	V	34.53	6.84	26.66	33.00	54.00	21.00
9848	33.02	PK	V	36.54	8.49	25.49	52.56	74.00	21.44
9848	17.75	AV	V	36.54	8.49	25.49	37.29	54.00	16.71
2867	31.18	PK	V	26.75	4.61	27.38	35.16	74.00	38.84
2867	20.51	AV	V	26.75	4.61	27.38	24.49	54.00	29.51
480.12	45.35	QP	V	18.04	2.67	21.97	44.09	46.00	*1.91

*Within measurement uncertainty!

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	FCC 15.247	
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
802.11g mode, Low Channel: 2412 MHz									
2412	60.62	PK	H	25.67	3.93	0.00	90.22	N/A	N/A
2412	45	AV	H	25.67	3.93	0.00	74.60	N/A	N/A
2412	62.17	PK	V	25.67	3.93	0.00	91.77	N/A	N/A
2412	46.3	AV	V	25.67	3.93	0.00	75.90	N/A	N/A
2390	28.34	PK	V	25.61	3.84	0.00	57.79	74.00	16.21
2390	14.79	AV	V	25.61	3.84	0.00	44.24	54.00	9.76
4824	-0.01	PK	V	30.64	4.73	27.26	8.10	74.00	65.90
4824	-0.03	AV	V	30.64	4.73	27.26	8.08	54.00	45.92
7236	33.45	PK	V	34.17	6.56	26.36	47.82	74.00	26.18
7236	18.7	AV	V	34.17	6.56	26.36	33.07	54.00	20.93
9648	31.08	PK	V	36.06	8.70	26.06	49.78	74.00	24.22
9648	17.97	AV	V	36.06	8.70	26.06	36.67	54.00	17.33
2867	30.84	PK	V	26.75	4.61	27.38	34.82	74.00	39.18
2867	19.72	AV	V	26.75	4.61	27.38	23.70	54.00	30.30
400.06	45.43	QP	V	18.04	2.67	21.97	44.17	46.00	*1.83
802.11g mode, Middle Channel: 2437 MHz									
2437	61.5	PK	H	25.74	3.98	0.00	91.22	N/A	N/A
2437	45.58	AV	H	25.74	3.98	0.00	75.30	N/A	N/A
2437	62.94	PK	V	25.74	3.98	0.00	92.66	N/A	N/A
2437	47.04	AV	V	25.74	3.98	0.00	76.76	N/A	N/A
4874	31.66	PK	V	30.77	4.76	27.26	39.93	74.00	34.07
4874	17.45	AV	V	30.77	4.76	27.26	25.72	54.00	28.28
7311	30.91	PK	V	34.35	6.70	26.51	45.45	74.00	28.55
7311	17.19	AV	V	34.35	6.70	26.51	31.73	54.00	22.27
9748	30.41	PK	V	36.30	8.60	25.68	49.63	74.00	24.37
9748	17.3	AV	V	36.30	8.60	25.68	36.52	54.00	17.48
2867	31.21	PK	V	26.75	4.61	27.38	35.19	74.00	38.81
2867	19.3	AV	V	26.75	4.61	27.38	23.28	54.00	30.72
3335	31.26	PK	V	28.27	4.59	27.36	36.76	74.00	37.24
3335	19.49	AV	V	28.27	4.59	27.36	24.99	54.00	29.01
400.02	45.21	QP	V	18.04	2.67	21.97	43.95	46.00	*2.05
802.11g mode, High Channel: 2462 MHz									
2462	61.63	PK	H	25.80	3.93	0.00	91.36	N/A	N/A
2462	45.7	AV	H	25.80	3.93	0.00	75.43	N/A	N/A
2462	63.04	PK	V	25.80	3.93	0.00	92.77	N/A	N/A
2462	47.22	AV	V	25.80	3.93	0.00	76.95	N/A	N/A
2483.5	27.52	PK	V	25.86	3.80	0.00	57.18	74.00	16.82
2483.5	13.92	AV	V	25.86	3.80	0.00	43.58	54.00	10.42
4924	31.78	PK	V	30.90	4.70	27.27	40.11	74.00	33.89
4924	17.50	AV	V	30.90	4.70	27.27	25.83	54.00	28.17
7386	30.94	PK	V	34.53	6.84	26.66	45.65	74.00	28.35
7386	17.31	AV	V	34.53	6.84	26.66	32.02	54.00	21.98
9848	30.53	PK	V	36.54	8.49	25.49	50.07	74.00	23.93
9848	17.31	AV	V	36.54	8.49	25.49	36.85	54.00	17.15
2867	31.37	PK	V	26.75	4.61	27.38	35.35	74.00	38.65
2867	19.50	AV	V	26.75	4.61	27.38	23.48	54.00	30.52
400.11	45.31	QP	V	18.04	2.67	21.97	44.05	46.00	*1.95

*Within measurement uncertainty!

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	FCC 15.247	
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
802.11n HT20 mode, Low Channel: 2412 MHz									
2412	60.48	PK	H	25.67	3.93	0.00	90.08	N/A	N/A
2412	45.91	AV	H	25.67	3.93	0.00	75.51	N/A	N/A
2412	62.41	PK	V	25.67	3.93	0.00	92.01	N/A	N/A
2412	46.4	AV	V	25.67	3.93	0.00	76.00	N/A	N/A
2390	28.41	PK	V	25.61	3.84	0.00	57.86	74.00	16.14
2390	14.84	AV	V	25.61	3.84	0.00	44.29	54.00	9.71
4824	31.99	PK	V	30.64	4.73	27.26	40.10	74.00	33.90
4824	18.13	AV	V	30.64	4.73	27.26	26.24	54.00	27.76
7236	33.24	PK	V	34.17	6.56	26.36	47.61	74.00	26.39
7236	18.49	AV	V	34.17	6.56	26.36	32.86	54.00	21.14
9648	31.63	PK	V	36.06	8.70	26.06	50.33	74.00	23.67
9648	18.08	AV	V	36.06	8.70	26.06	36.78	54.00	17.22
2867	30.84	PK	V	26.75	4.61	27.38	34.82	74.00	39.18
2867	19.5	AV	V	26.75	4.61	27.38	23.48	54.00	30.52
400.07	45.47	QP	V	18.04	2.67	21.97	44.21	46.00	*1.79
802.11n HT20 mode, Middle Channel: 2437 MHz									
2437	61.68	PK	H	25.74	3.98	0.00	91.40	N/A	N/A
2437	46	AV	H	25.74	3.98	0.00	75.72	N/A	N/A
2437	63.03	PK	V	25.74	3.98	0.00	92.75	N/A	N/A
2437	47.34	AV	V	25.74	3.98	0.00	77.06	N/A	N/A
4874	31.69	PK	V	30.77	4.76	27.26	39.96	74.00	34.04
4874	17.89	AV	V	30.77	4.76	27.26	26.16	54.00	27.84
7311	31.32	PK	V	34.35	6.70	26.51	45.86	74.00	28.14
7311	18.13	AV	V	34.35	6.70	26.51	32.67	54.00	21.33
9748	30.23	PK	V	36.30	8.60	25.68	49.45	74.00	24.55
9748	18.09	AV	V	36.30	8.60	25.68	37.31	54.00	16.69
2867	30.34	PK	V	26.75	4.61	27.38	34.32	74.00	39.68
2867	19.57	AV	V	26.75	4.61	27.38	23.55	54.00	30.45
3335	31.74	PK	V	28.27	4.59	27.36	37.24	74.00	36.76
3335	18.24	AV	V	28.27	4.59	27.36	23.74	54.00	30.26
400.03	45.6	QP	V	18.04	2.67	21.97	44.34	46.00	*1.66
802.11n HT20 mode, High Channel: 2462 MHz									
2462	61.74	PK	H	25.80	3.93	0.00	91.47	N/A	N/A
2462	46.08	AV	H	25.80	3.93	0.00	75.81	N/A	N/A
2462	63.06	PK	V	25.80	3.93	0.00	92.79	N/A	N/A
2462	47.35	AV	V	25.80	3.93	0.00	77.08	N/A	N/A
2483.5	27.77	PK	V	25.86	3.80	0.00	57.43	74.00	16.57
2483.5	13.74	AV	V	25.86	3.80	0.00	43.40	54.00	10.60
4924	31.87	PK	V	30.90	4.70	27.27	40.20	74.00	33.80
4924	18.03	AV	V	30.90	4.70	27.27	26.36	54.00	27.64
7386	31.51	PK	V	34.53	6.84	26.66	46.22	74.00	27.78
7386	18.17	AV	V	34.53	6.84	26.66	32.88	54.00	21.12
9848	30.31	PK	V	36.54	8.49	25.49	49.85	74.00	24.15
9848	18.15	AV	V	36.54	8.49	25.49	37.69	54.00	16.31
2867	30.42	PK	V	26.75	4.61	27.38	34.40	74.00	39.60
2867	19.77	AV	V	26.75	4.61	27.38	23.75	54.00	30.25
400.03	45.27	PK	V	18.04	2.67	21.97	44.01	46.00	*1.99

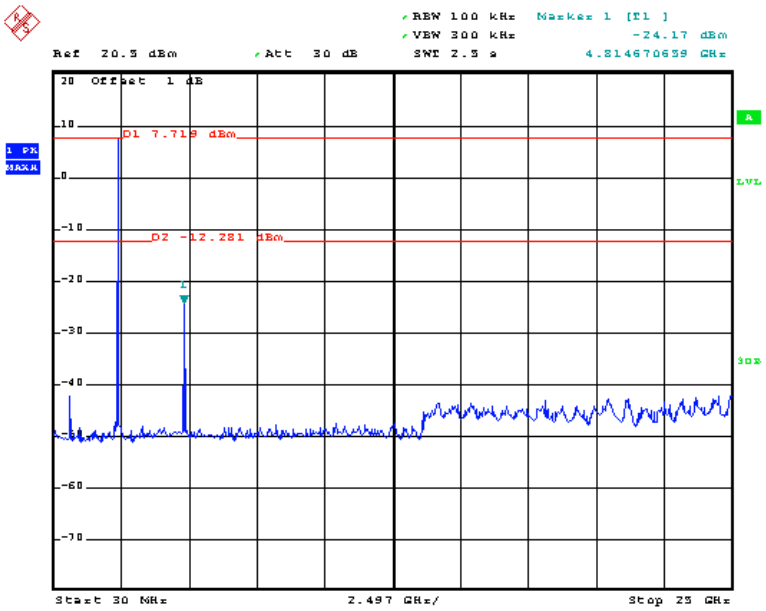
*Within measurement uncertainty!

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	FCC 15.247	
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
802.11n HT40 mode, Low Channel: 2422 MHz									
2422	60.31	PK	H	25.70	3.95	0.00	89.96	N/A	N/A
2422	45.74	AV	H	25.70	3.95	0.00	75.39	N/A	N/A
2422	62.35	PK	V	25.70	3.95	0.00	92.00	N/A	N/A
2422	46.34	AV	V	25.70	3.95	0.00	75.99	N/A	N/A
2390	28.46	PK	V	25.61	3.84	0.00	57.91	74.00	16.09
2390	14.86	AV	V	25.61	3.84	0.00	44.31	54.00	9.69
4844	31.95	PK	V	30.69	4.78	27.26	40.16	74.00	33.84
4844	18.1	AV	V	30.69	4.78	27.26	26.31	54.00	27.69
7266	33.15	PK	V	34.24	6.62	26.42	47.59	74.00	26.41
7266	18.32	AV	V	34.24	6.62	26.42	32.76	54.00	21.24
9688	31.57	PK	V	36.15	8.66	25.91	50.47	74.00	23.53
9688	17.91	AV	V	36.15	8.66	25.91	36.81	54.00	17.19
2867	30.81	PK	V	26.75	4.61	27.38	34.79	74.00	39.21
2867	19.3	AV	V	26.75	4.61	27.38	23.28	54.00	30.72
400.05	45.38	QP	V	18.04	2.67	21.97	44.12	46.00	*1.88
802.11n HT40 mode Middle Channel: 2437 MHz									
2437	61.65	PK	H	25.74	3.98	0.00	91.37	N/A	N/A
2437	46.03	AV	H	25.74	3.98	0.00	75.75	N/A	N/A
2437	62.95	PK	V	25.74	3.98	0.00	92.67	N/A	N/A
2437	47.22	AV	V	25.74	3.98	0.00	76.94	N/A	N/A
4874	31.8	PK	V	30.77	4.76	27.26	40.07	74.00	33.93
4874	17.9	AV	V	30.77	4.76	27.26	26.17	54.00	27.83
7311	31.4	PK	V	34.35	6.70	26.51	45.94	74.00	28.06
7311	18.1	AV	V	34.35	6.70	26.51	32.64	54.00	21.36
9748	30.25	PK	V	36.30	8.60	25.68	49.47	74.00	24.53
9748	18.08	AV	V	36.30	8.60	25.68	37.30	54.00	16.70
2867	30.32	PK	V	26.75	4.61	27.38	34.30	74.00	39.70
2867	19.71	AV	V	26.75	4.61	27.38	23.69	54.00	30.31
3335	30.4	PK	V	28.27	4.59	27.36	35.90	74.00	38.10
3335	19.58	AV	V	28.27	4.59	27.36	25.08	54.00	28.92
400.03	45.18	QP	V	18.04	2.67	21.97	43.92	46.00	*2.08
802.11n HT40 mode High Channel: 2452 MHz									
2452	61.71	PK	H	25.78	4.00	0.00	91.48	N/A	N/A
2452	45.95	AV	H	25.78	4.00	0.00	75.72	N/A	N/A
2452	62.99	PK	V	25.78	4.00	0.00	92.76	N/A	N/A
2452	47.33	AV	V	25.78	4.00	0.00	77.10	N/A	N/A
2483.5	27.86	PK	V	25.86	3.80	0.00	57.52	74.00	16.48
2483.5	13.88	AV	V	25.86	3.80	0.00	43.54	54.00	10.46
4904	31.73	PK	V	30.85	4.72	27.27	40.03	74.00	33.97
4904	17.96	AV	V	30.85	4.72	27.27	26.26	54.00	27.74
7356	31.38	PK	V	34.45	6.79	26.60	46.02	74.00	27.98
7356	18.12	AV	V	34.45	6.79	26.60	32.76	54.00	21.24
9808	30.22	PK	V	36.44	8.53	25.48	49.71	74.00	24.29
9808	17.99	AV	V	36.44	8.53	25.48	37.48	54.00	16.52
2867	30.32	PK	V	26.75	4.61	27.38	34.30	74.00	39.70
2867	19.71	AV	V	26.75	4.61	27.38	23.69	54.00	30.31
400.03	45.15	QP	V	18.04	2.67	21.97	43.89	46.00	*2.11

*Within measurement uncertainty!

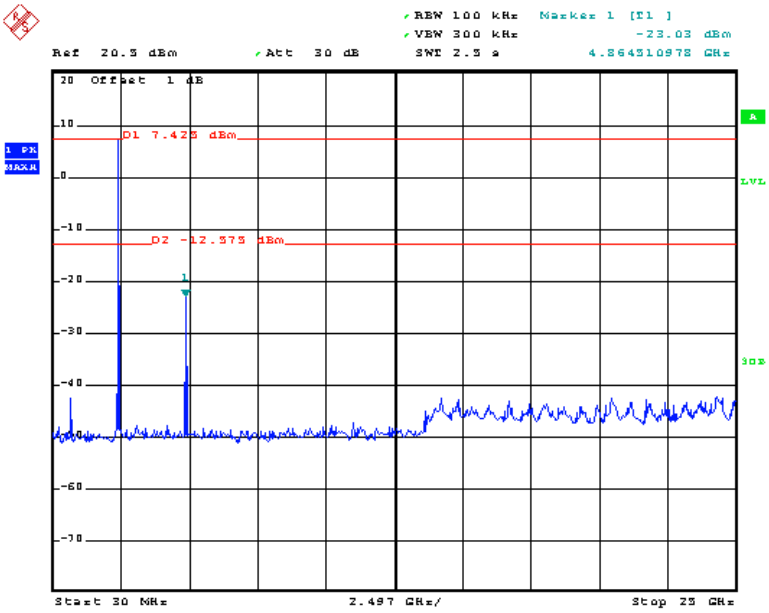
Conducted Spurious Emissions at Antenna Port

802.11b Low Channel



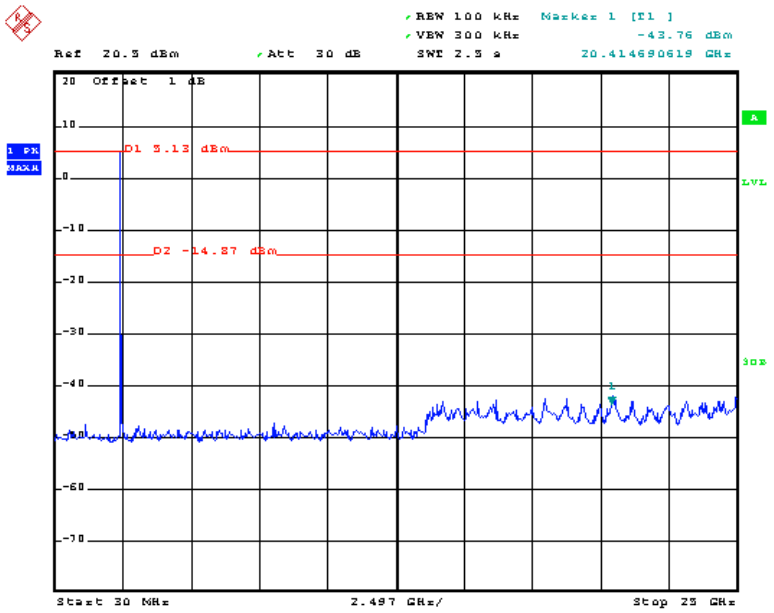
Date: 09.APR.2013 11:47:08

802.11b Middle Channel



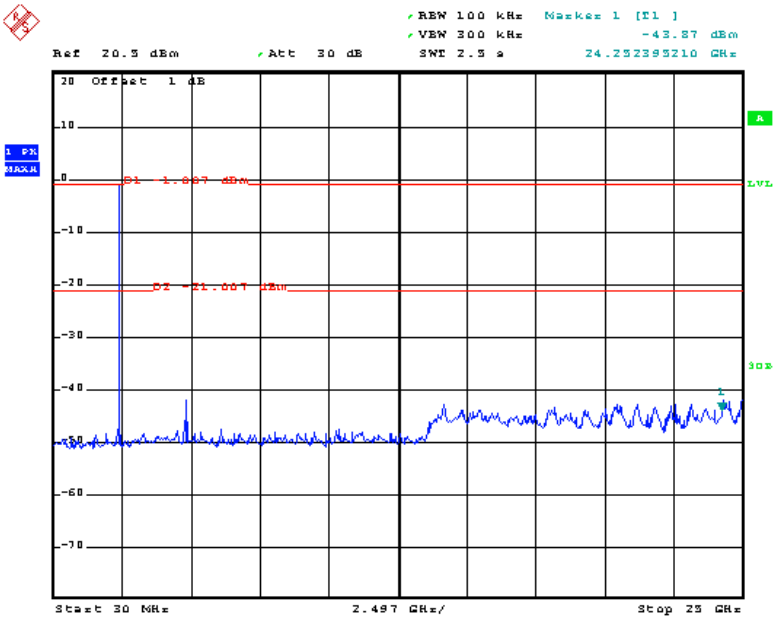
Date: 09.APR.2013 11:53:35

802.11b High Channel



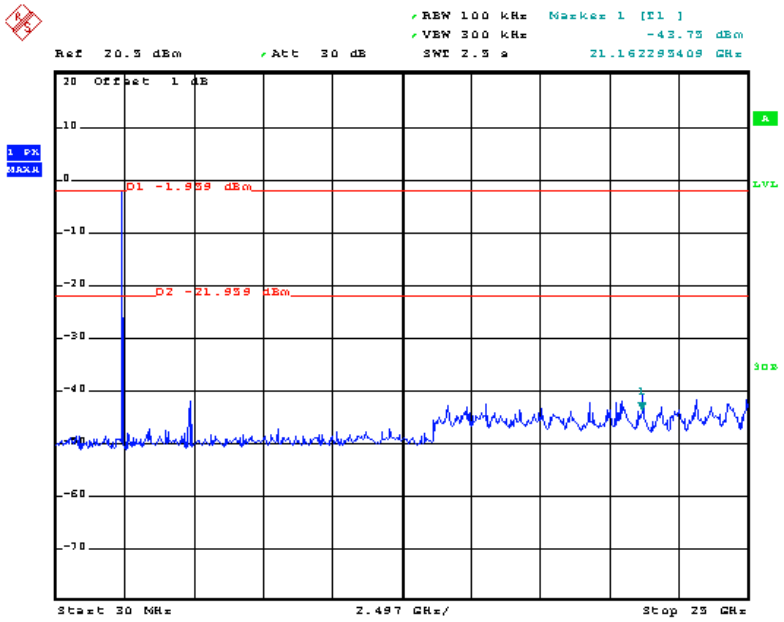
Date: 09.APR.2013 11:51:52

802.11g Low Channel



Date: 09.APR.2013 12:17:00

802.11g Middle Channel



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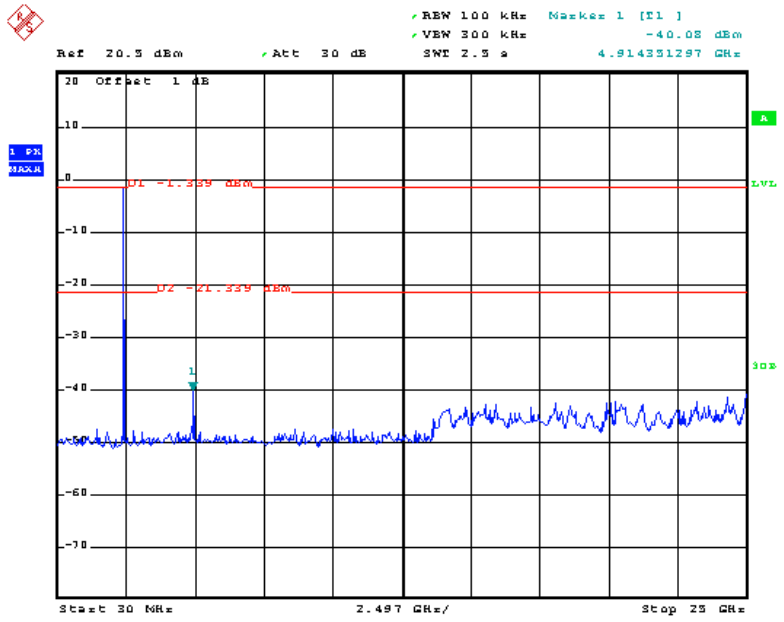
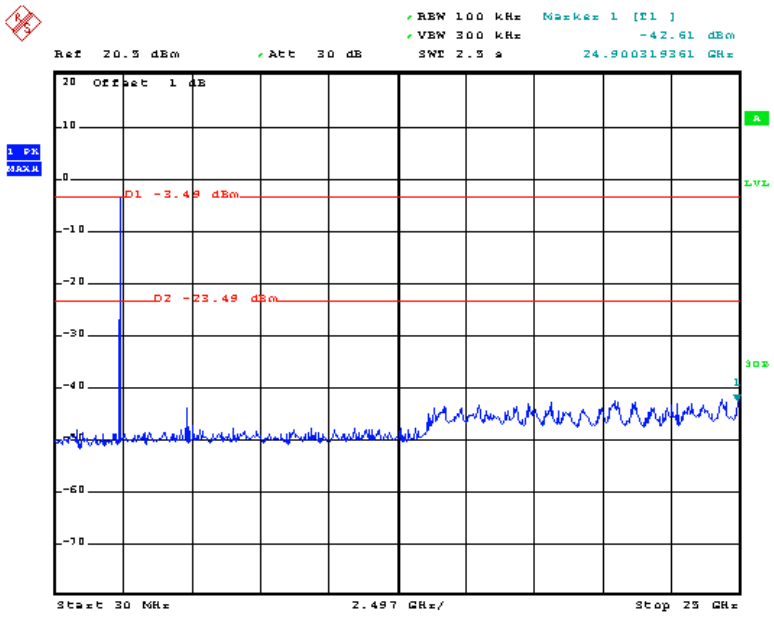
802.11g High Channel



Date: 09.APR.2013 12:07:49

802.11n HT20 Low Channel



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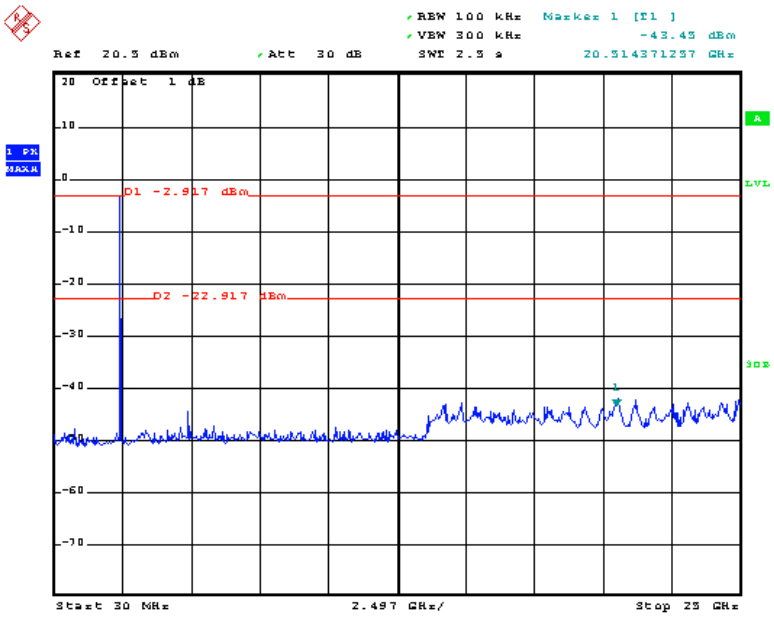

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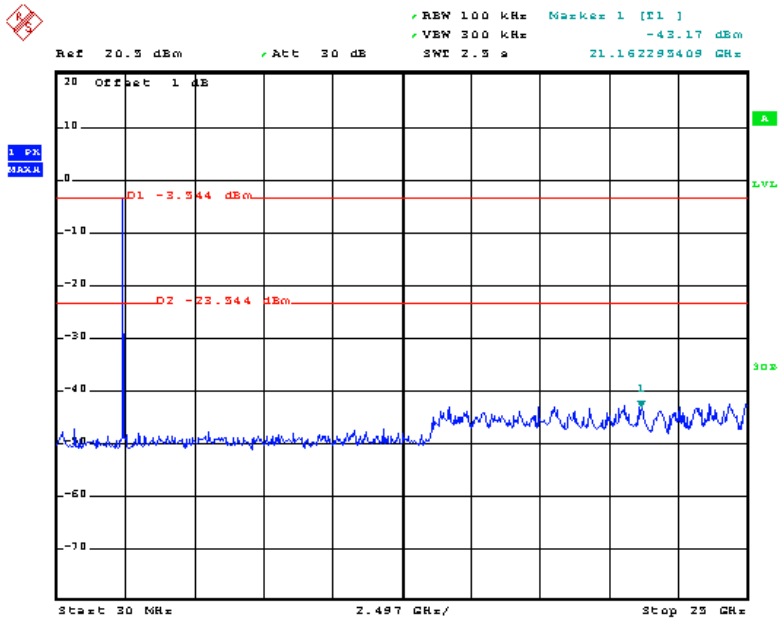
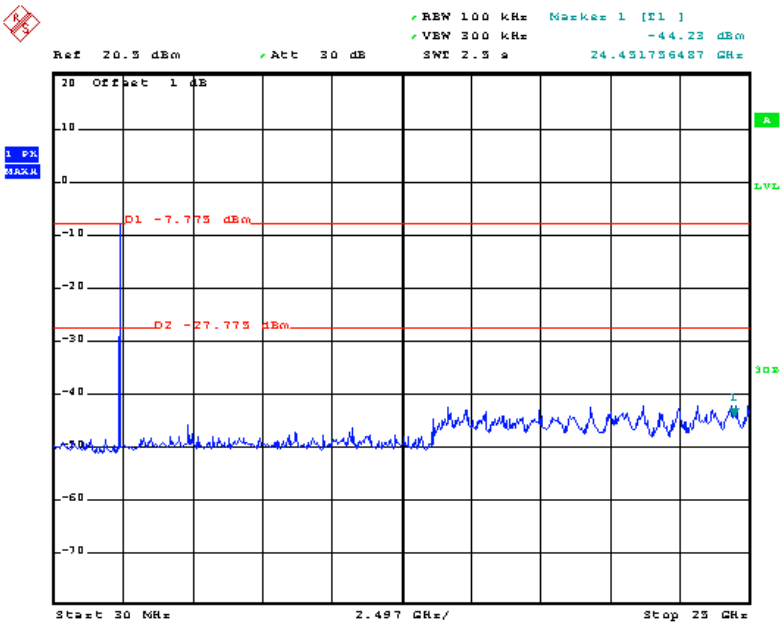


Date: 09.APR.2013 12:29:48

802.11n HT40 Low Channel



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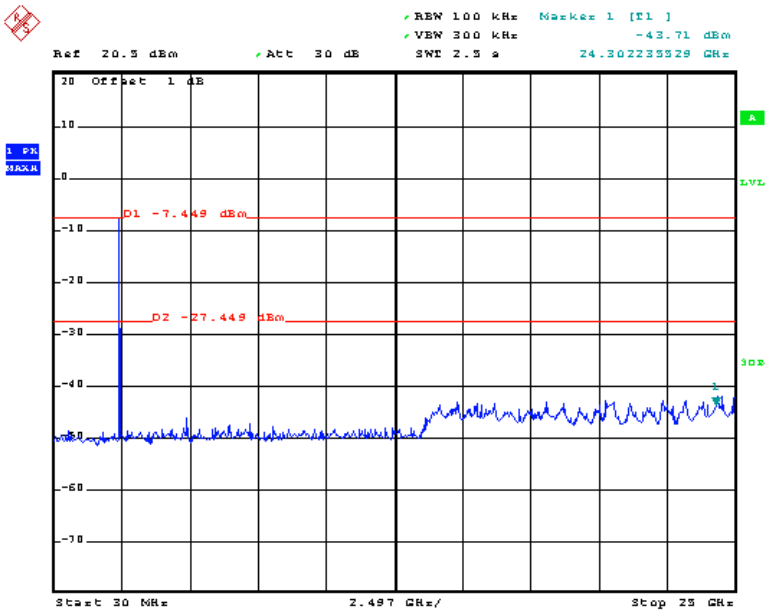
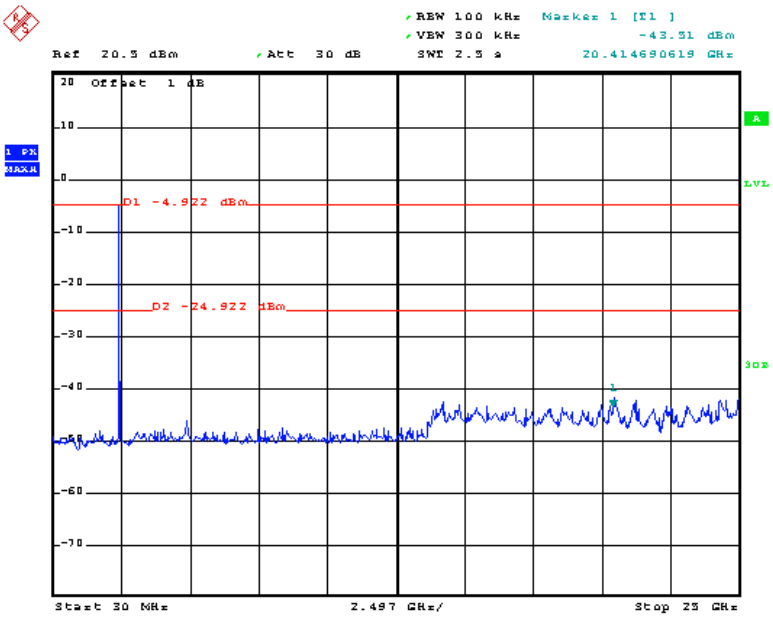
802.11n HT40 Middle Channel



Date: 09.APR.2013 12:40:08

802.11n HT40 High Channel



Date: 09.APR.2013 12:43:01

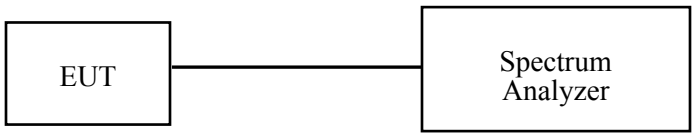
FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH

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	Spectrum Analyzer	FSP38	100478	2012-5-14	2013-5-13

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	23.1° C
Relative Humidity:	66 %
ATM Pressure:	100.9 kPa

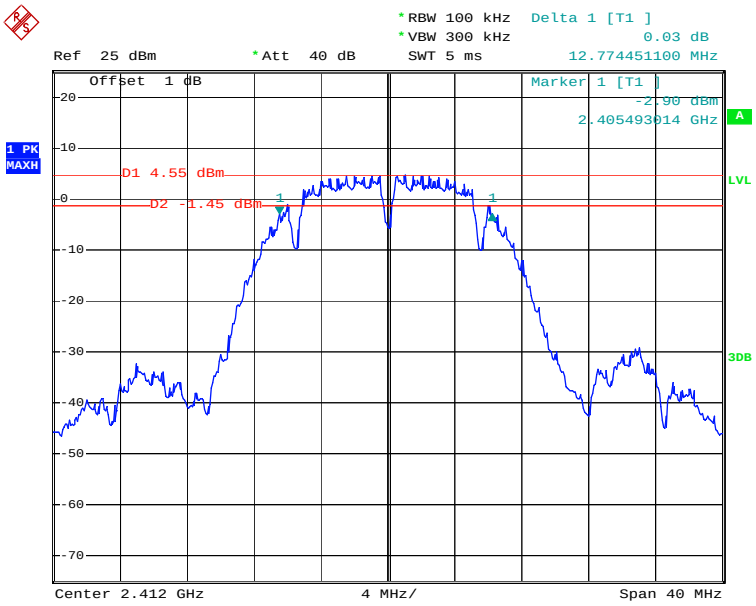
The testing was performed by Leon Chen on 2013-04-07.

Test Result: Pass.

Please refer to the following tables and plots.

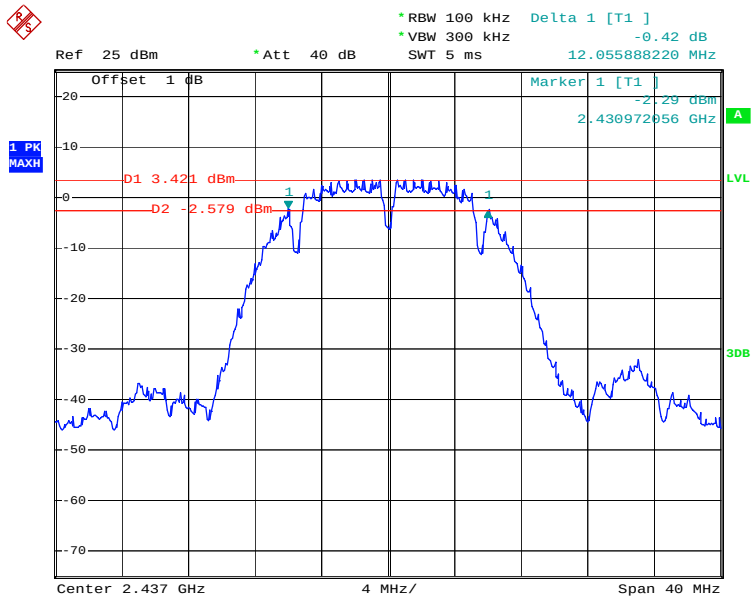
Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	FCC Limit (kHz)
802.11b mode			
Low	2412	12.77	> 500
Middle	2437	12.06	> 500
High	2462	12.06	> 500
802.11g mode			
Low	2412	15.89	> 500
Middle	2437	15.49	> 500
High	2462	15.57	> 500
802.11n HT20 mode			
Low	2412	15.17	> 500
Middle	2437	15.81	> 500
High	2462	15.81	> 500
802.11n HT40 mode			
Low	2422	34.17	> 500
Middle	2437	34.97	> 500
High	2452	35.13	> 500

802.11b Low Channel



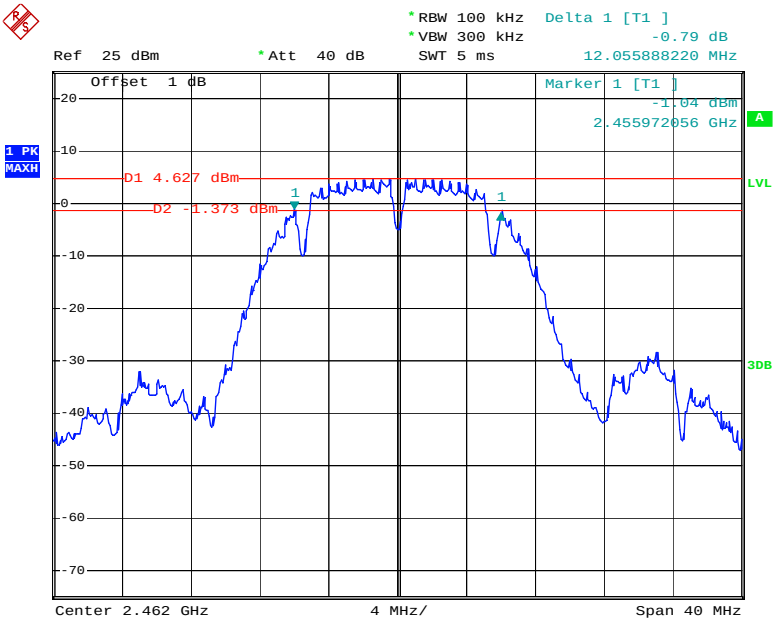
Date: 7.APR.2013 12:40:57

802.11b Middle Channel



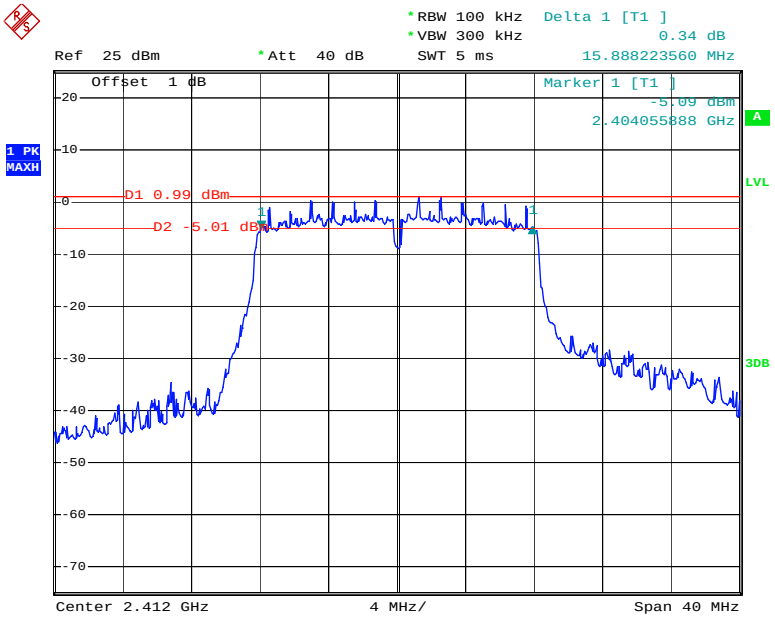
Date: 7.APR.2013 12:50:44

802.11b High Channel



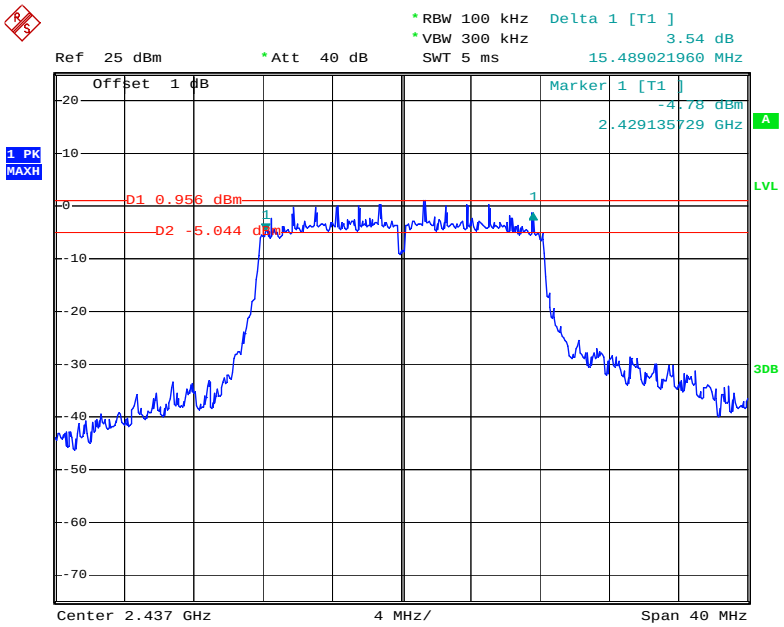
Date: 7.APR.2013 15:33:13

802.11g Low Channel



Date: 7.APR.2013 15:45:44

802.11g Middle Channel



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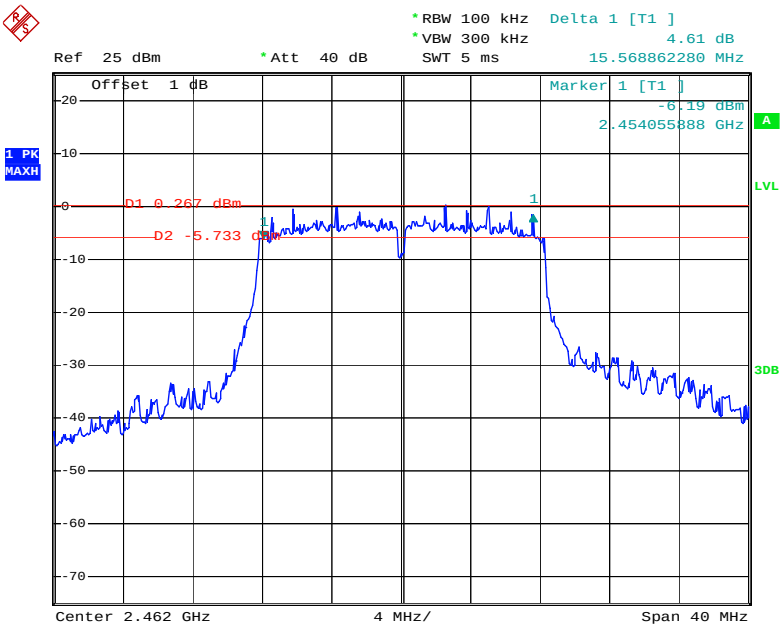
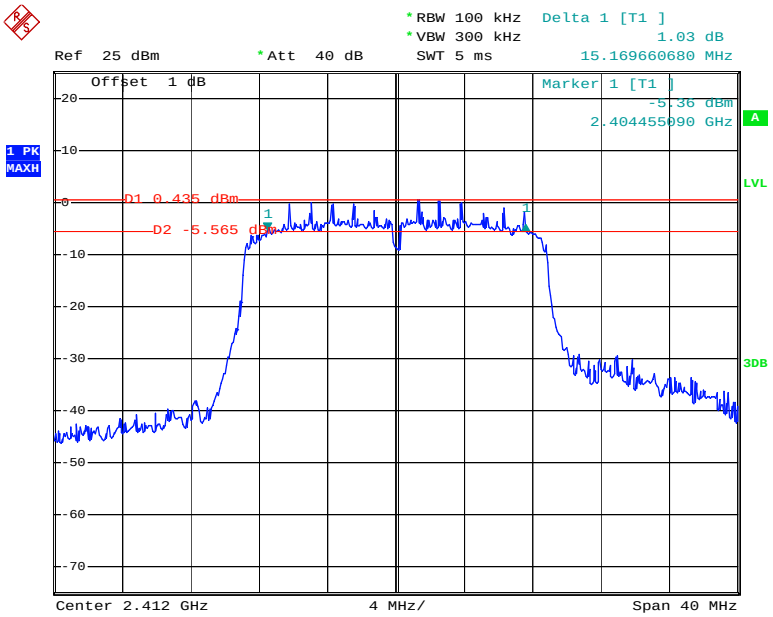
802.11g High Channel



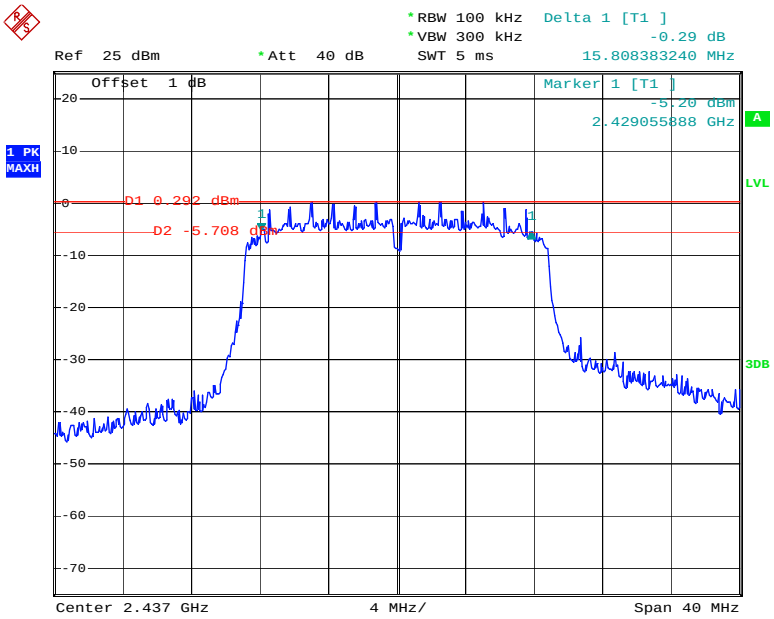
Date: 7.APR.2013 15:38:07

802.11n HT20 Low Channel



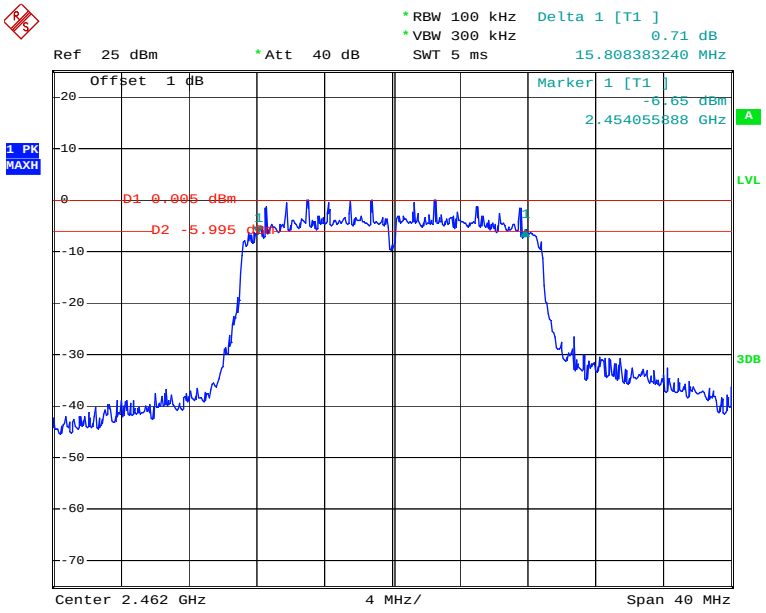
Date: 7.APR.2013 15:50:52

802.11n HT20 Middle Channel



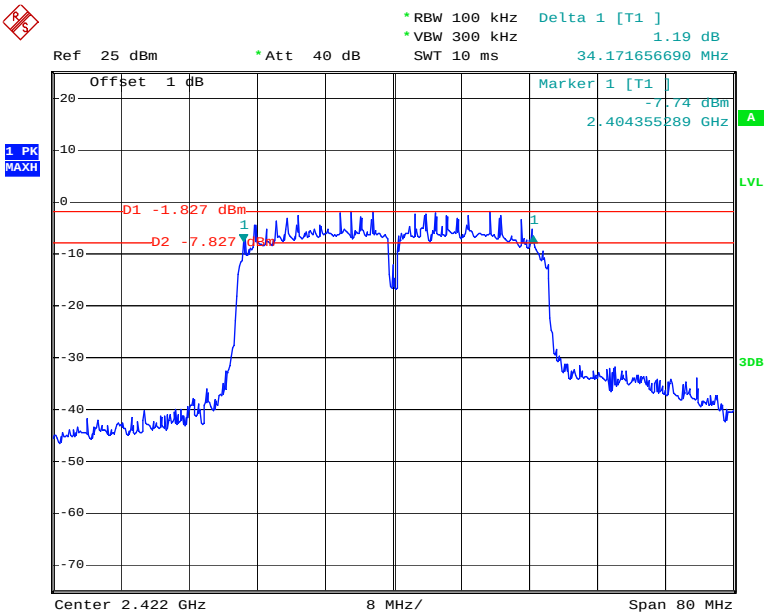
Date: 7.APR.2013 15:52:29

802.11n HT20 High Channel



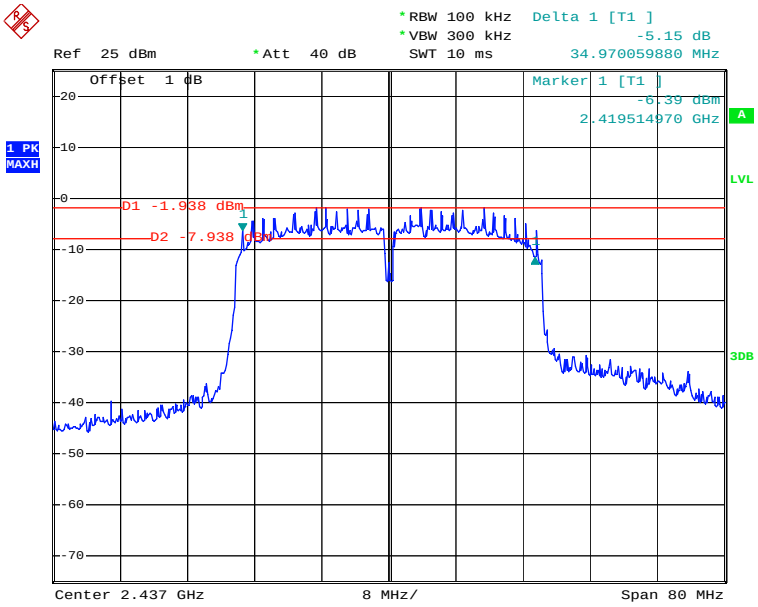
Date: 7.APR.2013 15:55:19

802.11n HT40 Low Channel



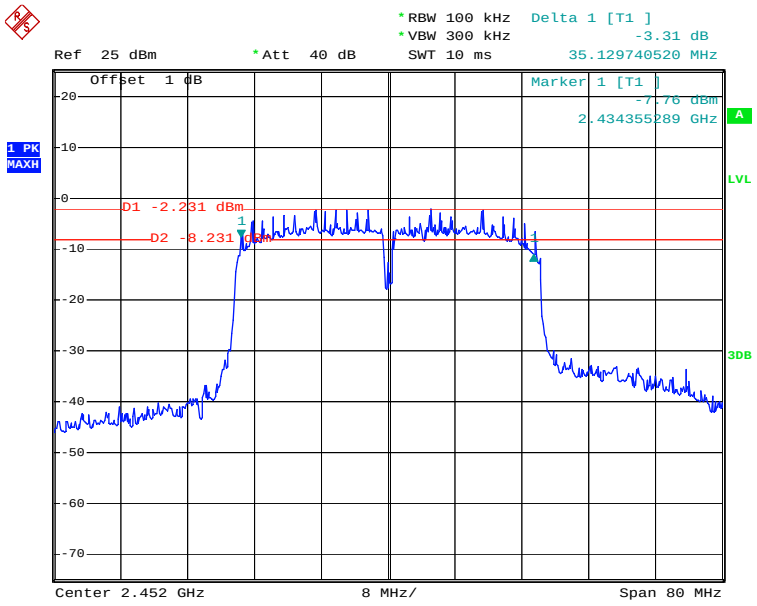
Date: 7.APR.2013 16:12:31

802.11n HT40 Middle Channel



Date: 7.APR.2013 16:09:54

802.11n HT40 High Channel



Date: 7.APR.2013 16:07:29

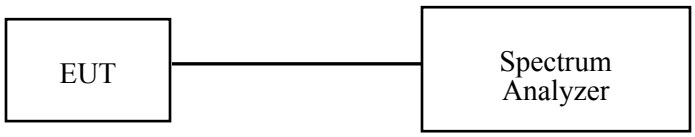
FCC §15.247(b) (3) - MAXIMUM PEAK OUTPUT POWER

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	Spectrum Analyzer	FSP38	100478	2012-5-14	2013-5-13

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	23.1° C
Relative Humidity:	66 %
ATM Pressure:	100.9 kPa

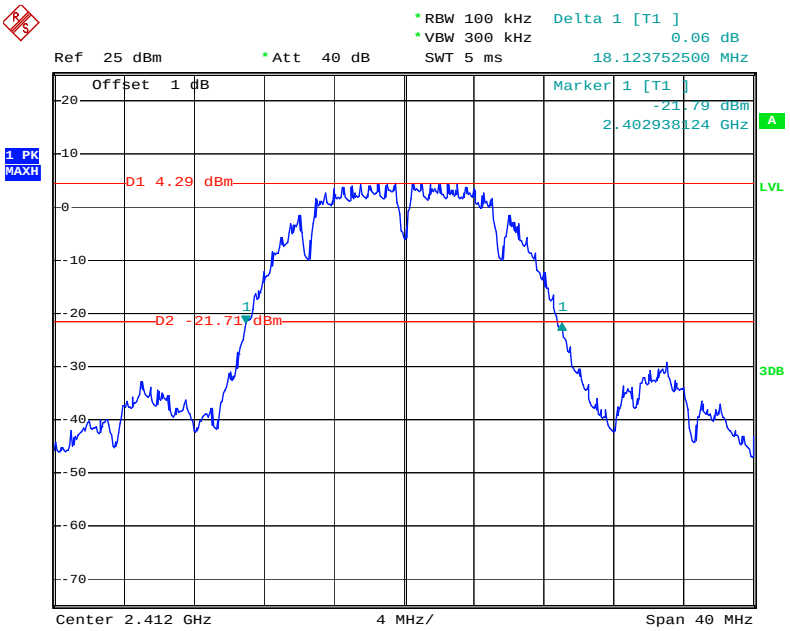
The testing was performed by Leon Chen on 2013-04-07.

Test Mode: Transmitting

Channel	Frequency (MHz)	Conducted Output Power (dBm)	FCC Limit (dBm)	Result
802.11b mode				
Low	2412	15.63	30	Pass
Middle	2437	15.29	30	Pass
High	2462	15.70	30	Pass
802.11g mode				
Low	2412	13.06	30	Pass
Middle	2437	13.00	30	Pass
High	2462	12.75	30	Pass
802.11n HT20 mode				
Low	2412	12.69	30	Pass
Middle	2437	12.66	30	Pass
High	2462	12.56	30	Pass
802.11n HT40 mode				
Low	2422	13.11	30	Pass
Middle	2437	13.32	30	Pass
High	2452	12.96	30	Pass

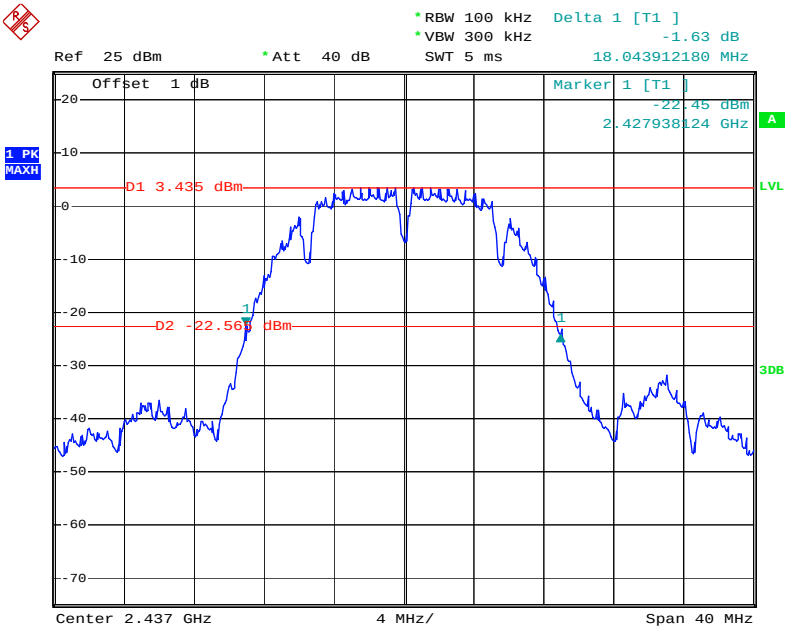
Please refer to the following plots

802.11b 99% OBW, Low Channel



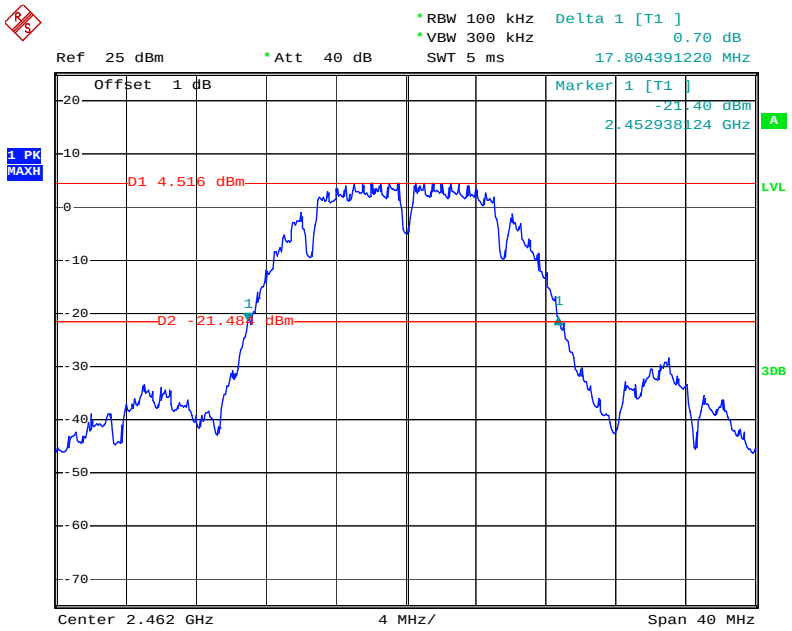
Date: 7.APR.2013 12:41:10

802.11b 99% OBW, Middle Channel



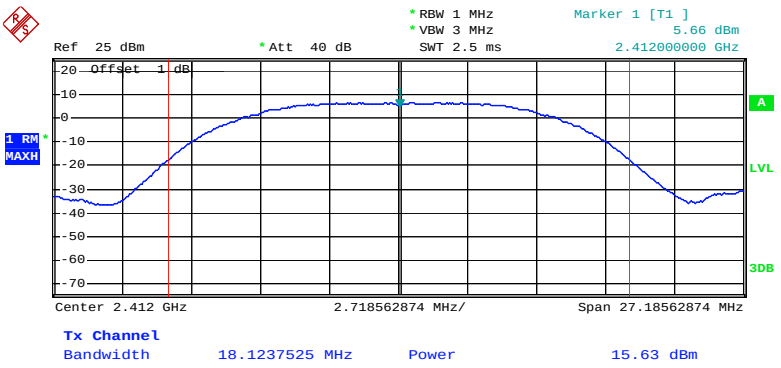
Date: 7.APR.2013 12:50:57

802.11b 99% OBW, High Channel



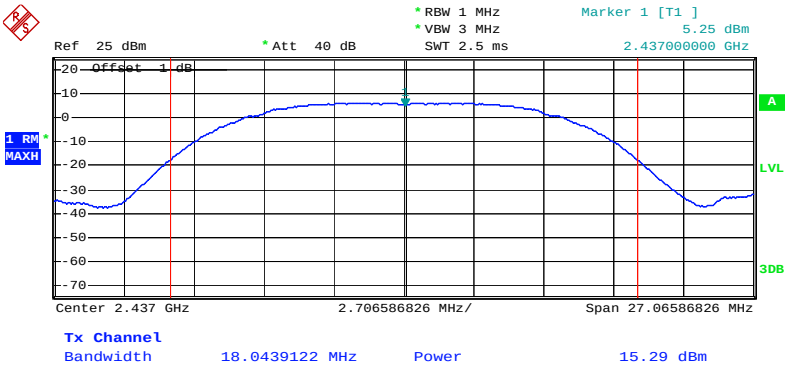
Date: 7.APR.2013 15:33:25

802.11b RF Output Power, Low Channel



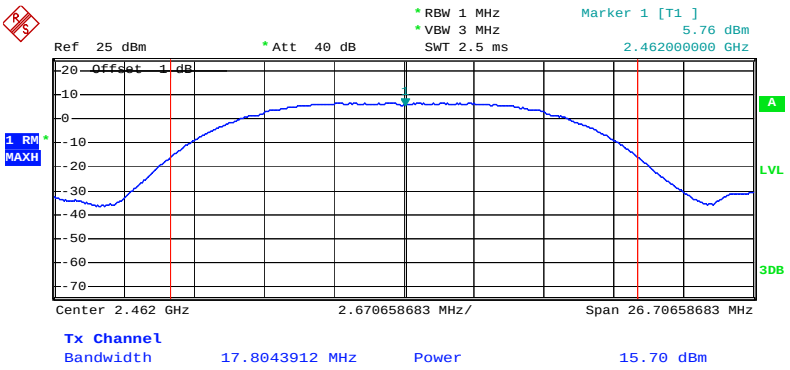
Date: 7.APR.2013 12:41:16

802.11b RF Output Power, Middle Channel



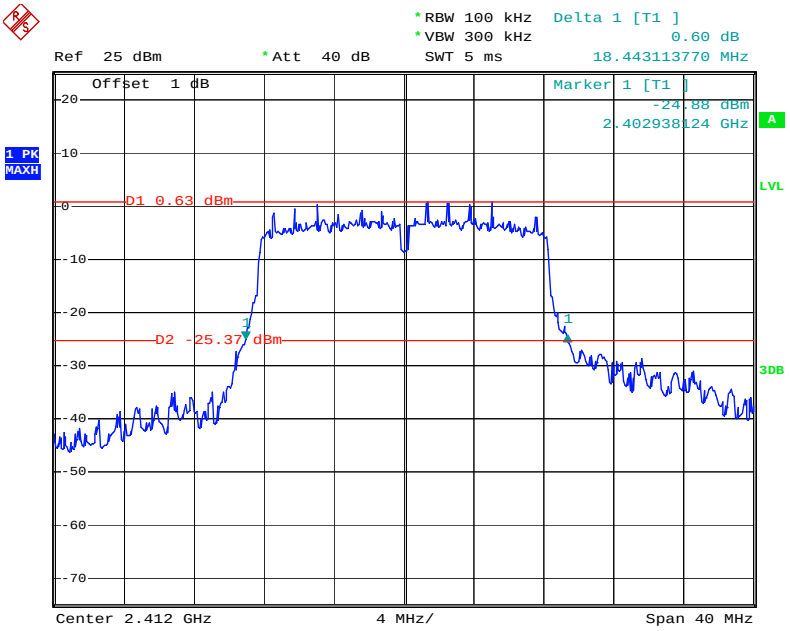
Date: 7.APR.2013 12:42:55

802.11b RF Output Power, High Channel



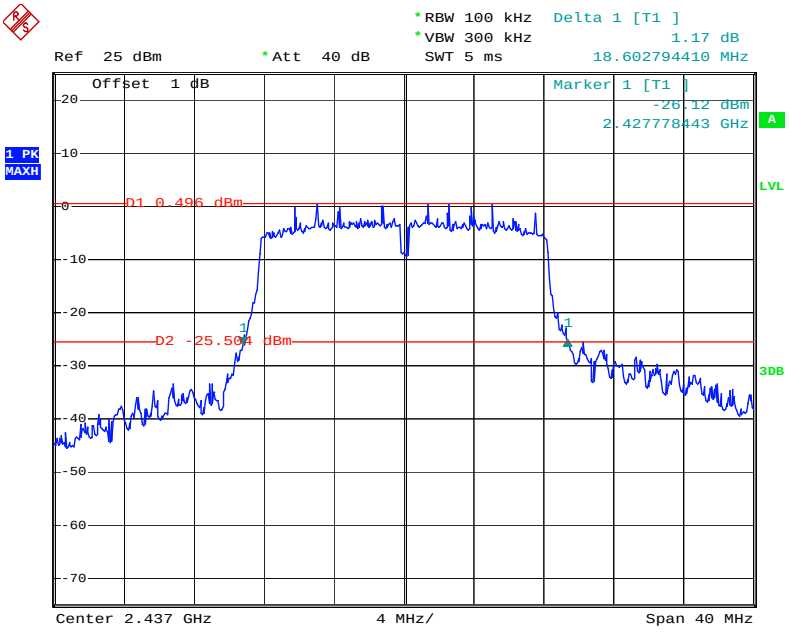
Date: 7.APR.2013 15:33:31

802.11g 99% OBW, Low Channel



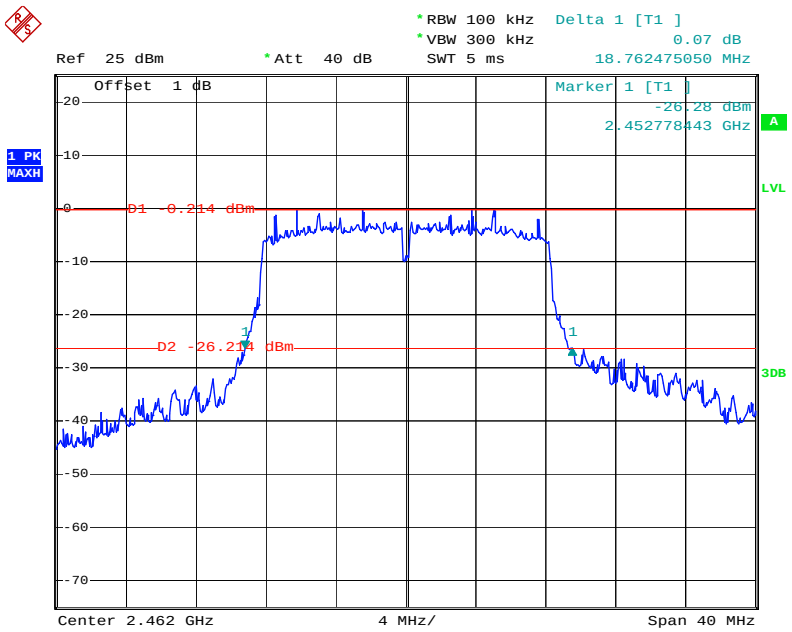
Date: 7.APR.2013 15:45:57

802.11g 99% OBW, Middle Channel



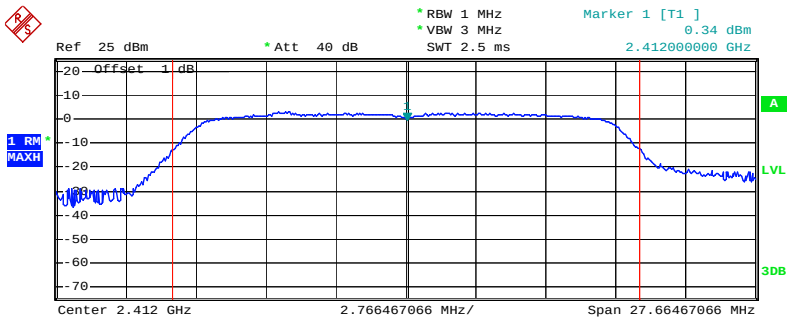
Date: 7.APR.2013 15:41:53

802.11g 99% OBW, High Channel



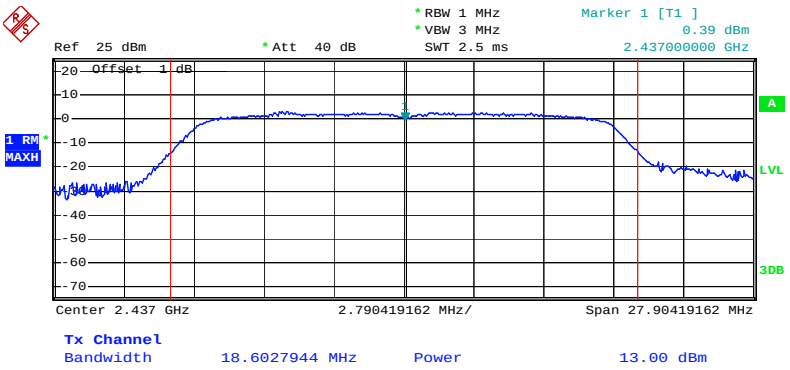
Date: 7.APR.2013 15:38:19

802.11g RF Output Power, Low Channel



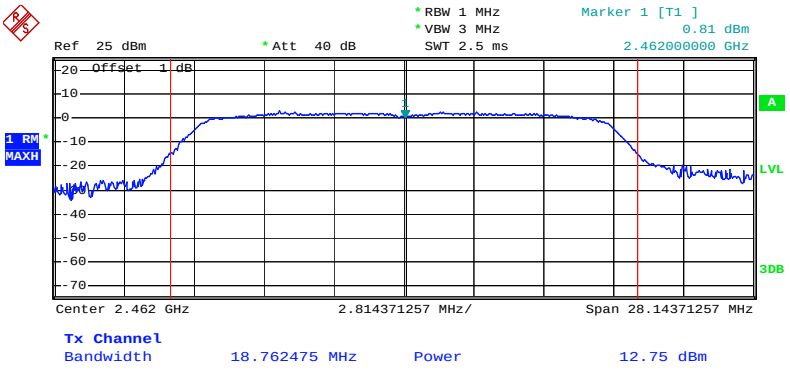
Date: 7.APR.2013 15:46:03

802.11g RF Output Power, Middle Channel



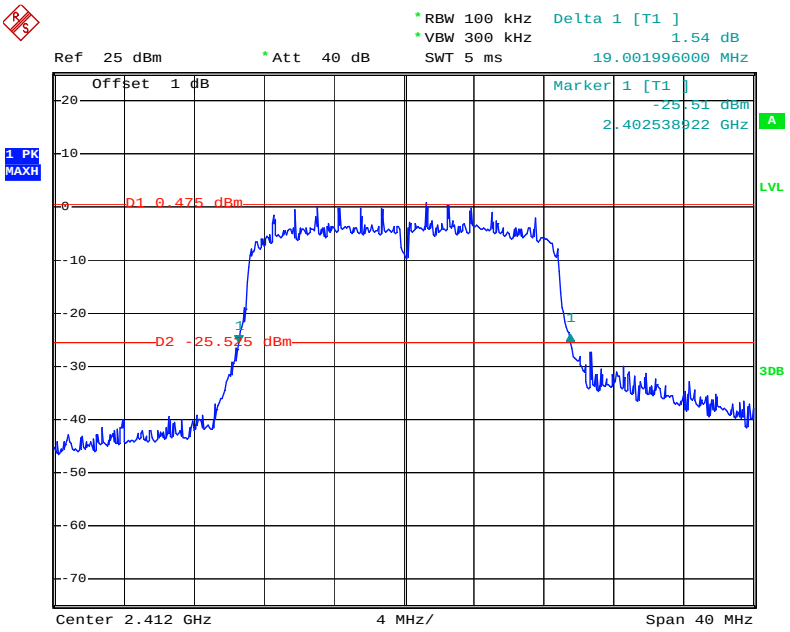
Date: 7.APR.2013 15:41:59

802.11g RF Output Power, High Channel



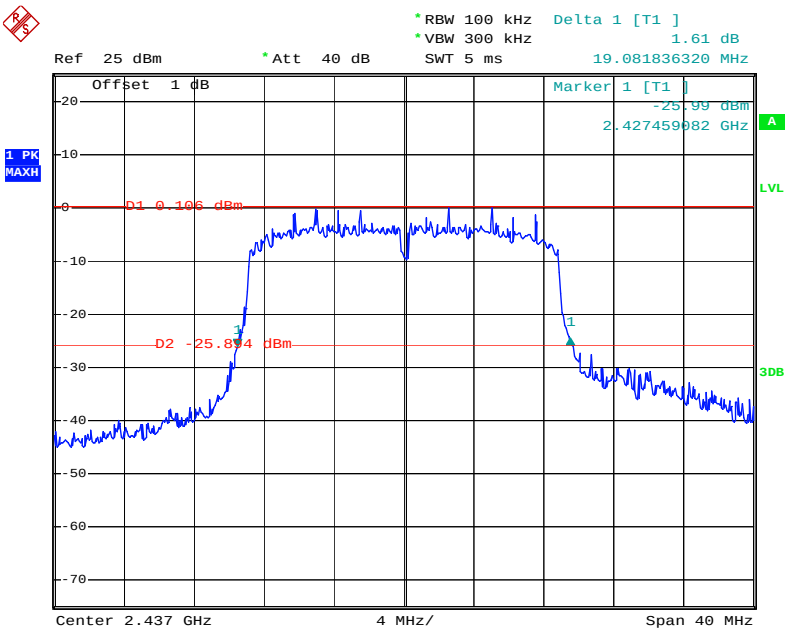
Date: 7.APR.2013 15:38:26

802.11n HT20 99% OBW, Low Channel



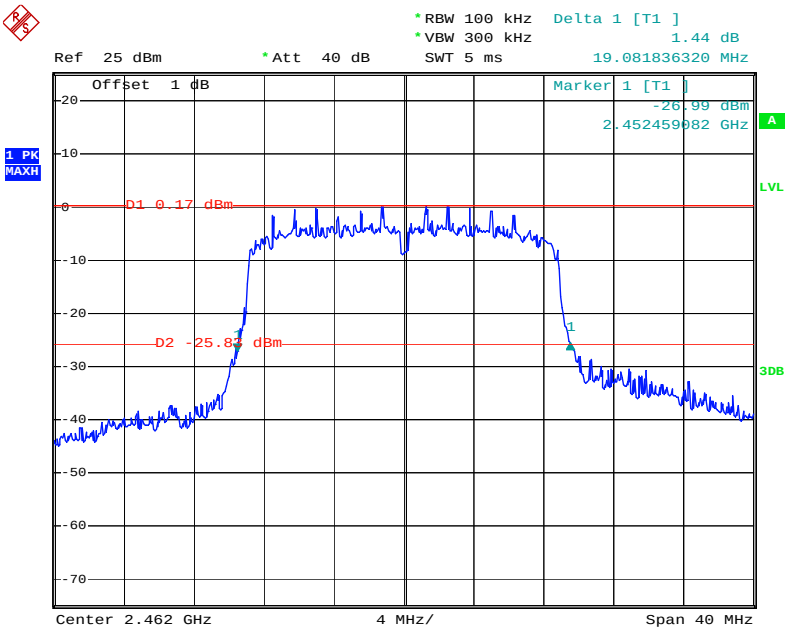
Date: 7.APR.2013 15:51:04

802.11n HT20 99% OBW, Middle Channel



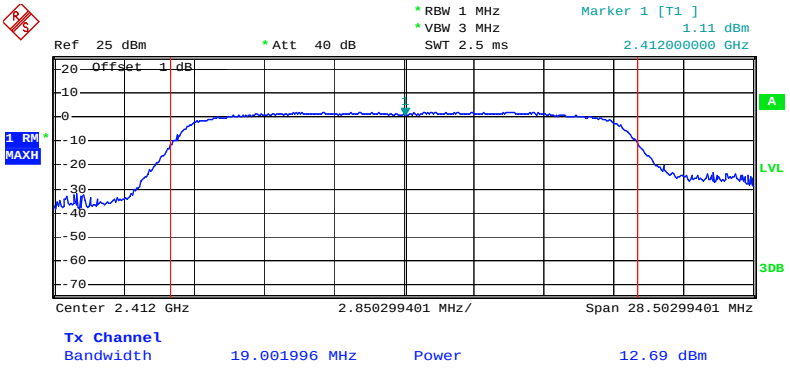
Date: 7.APR.2013 15:52:41

802.11n HT20 99% OBW, High Channel



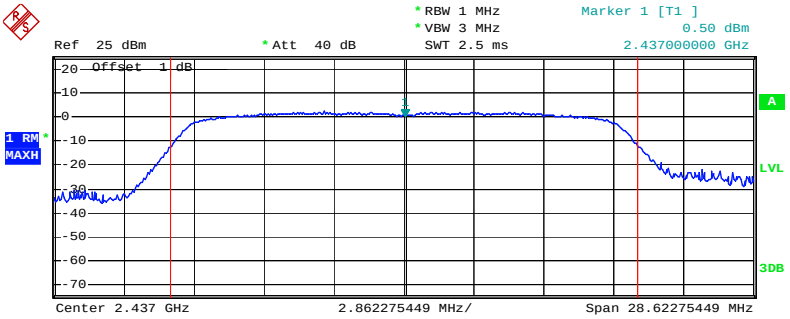
Date: 7.APR.2013 15:55:32

802.11n HT20 RF Output Power, Low Channel



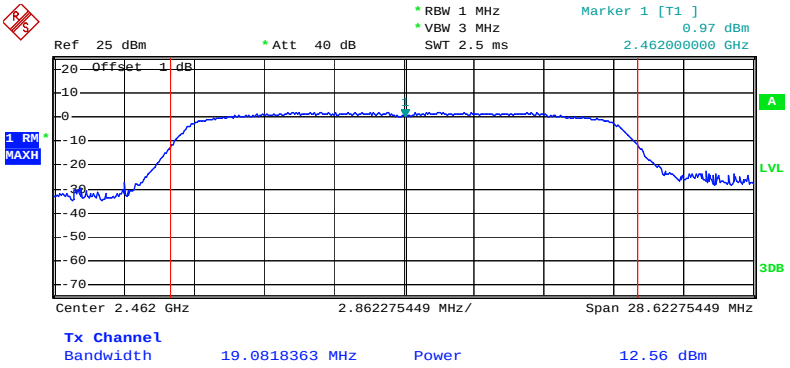
Date: 7.APR.2013 15:51:10

802.11n HT20 RF Output Power, Middle Channel



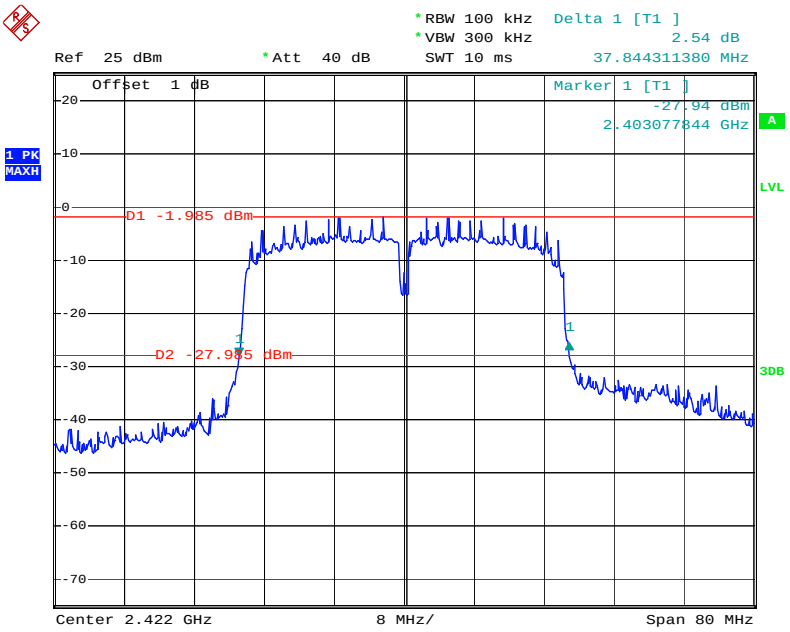
Date: 7.APR.2013 15:52:47

802.11n HT20 RF Output Power, High Channel



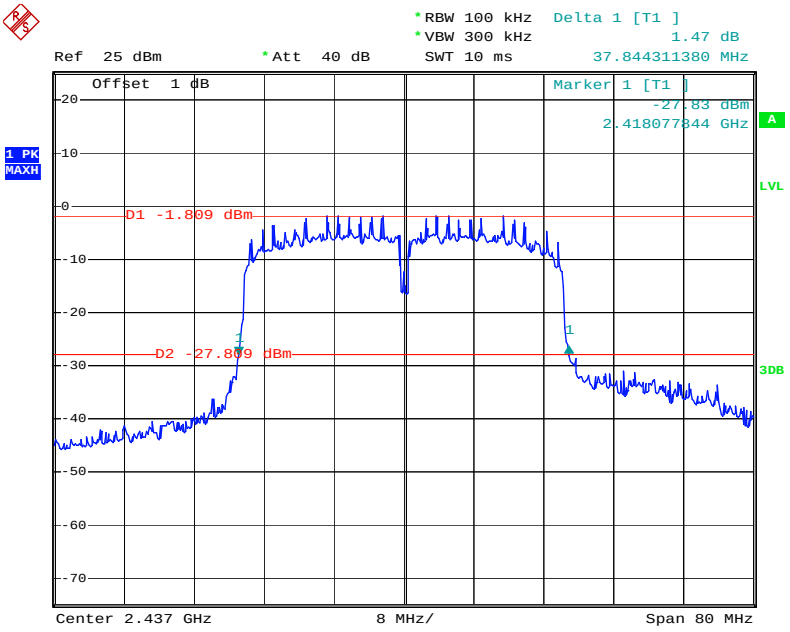
Date: 7.APR.2013 15:55:38

802.11n HT40 99%OBW, Low Channel



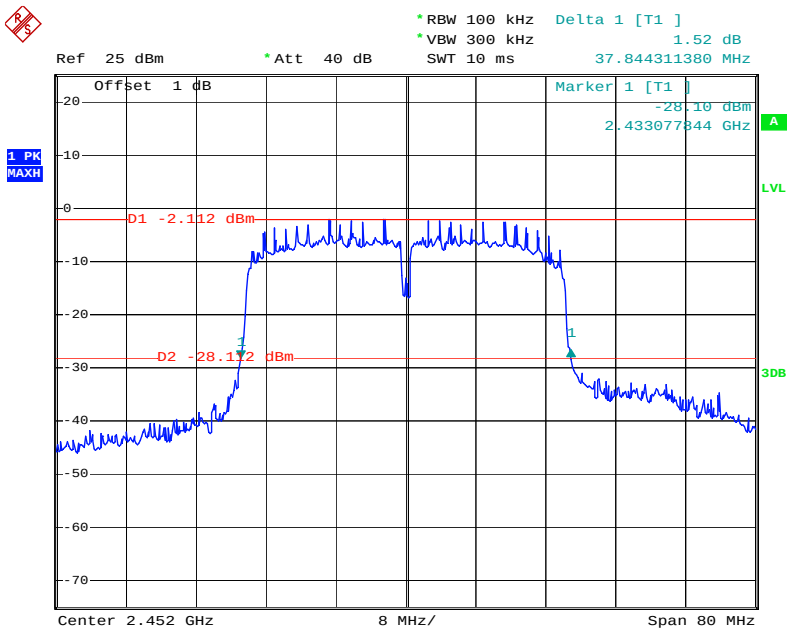
Date: 7.APR.2013 16:12:44

802.11n HT40 99%OBW, Middle Channel



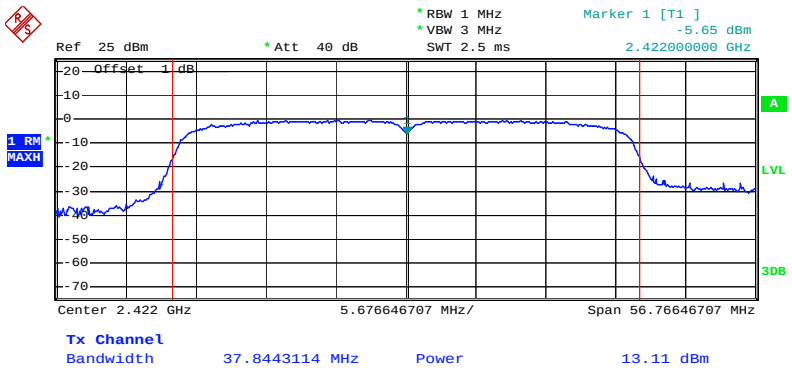
Date: 7.APR.2013 16:10:06

802.11n HT40 99% OBW, High Channel



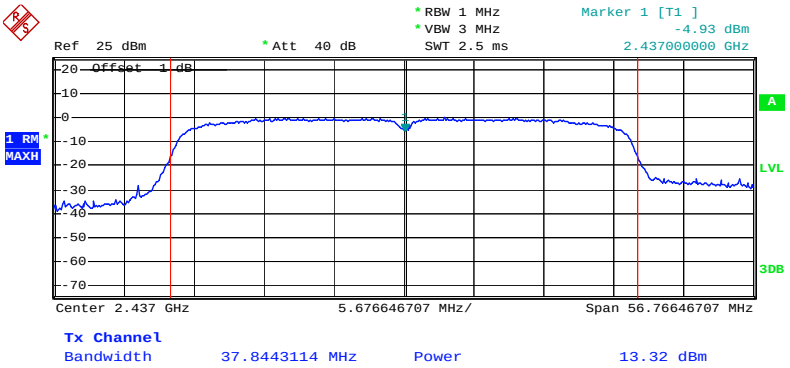
Date: 7.APR.2013 16:07:42

802.11n HT40 RF Output Power, Low Channel



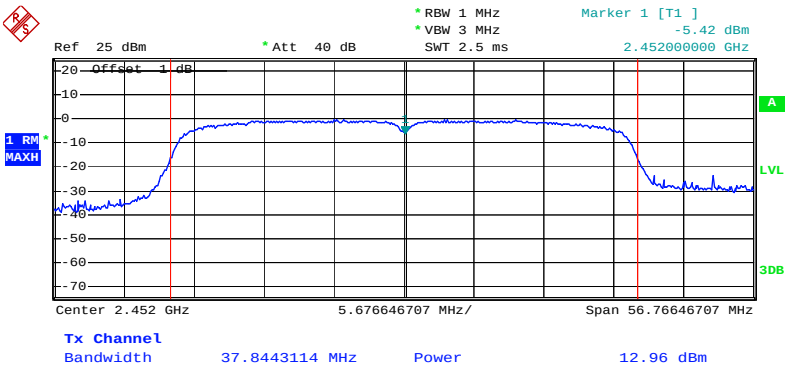
Date: 7.APR.2013 16:12:50

802.11n HT40 RF Output Power, Middle Channel



Date: 7.APR.2013 16:10:13

802.11n HT40 RF Output Power, High Channel



Date: 7.APR.2013 16:07:48

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 100 kHz and VBW of spectrum analyzer to 300 kHz 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	Spectrum Analyzer	FSP38	100478	2012-5-14	2013-5-13

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

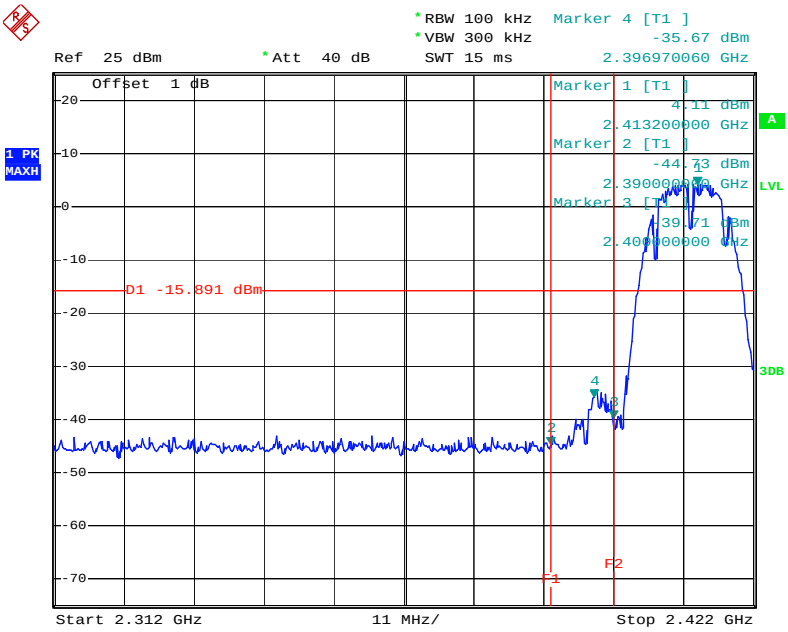
Environmental Conditions

Temperature:	23.1° C
Relative Humidity:	66 %
ATM Pressure:	100.9 kPa

The testing was performed by Leon Chen on 2013-04-07.

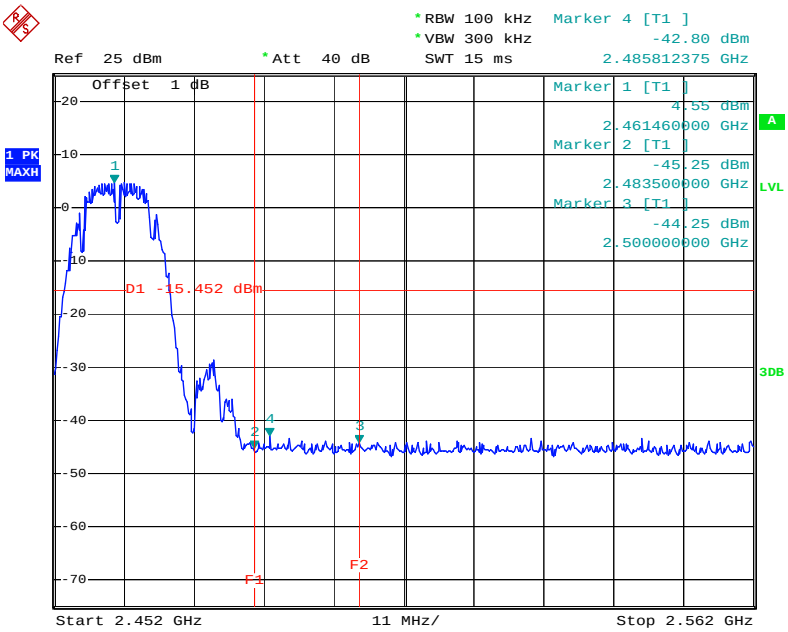
Test Result: Compliance, Please refer to following table and plots.

802.11b: Band Edge, Left Side



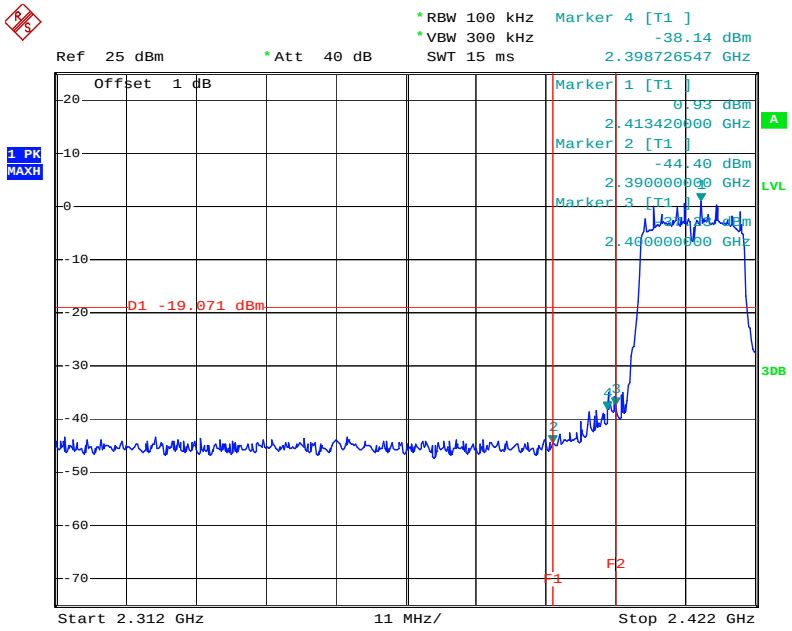
Date: 7.APR.2013 12:41:45

802.11b: Band Edge, Right Side



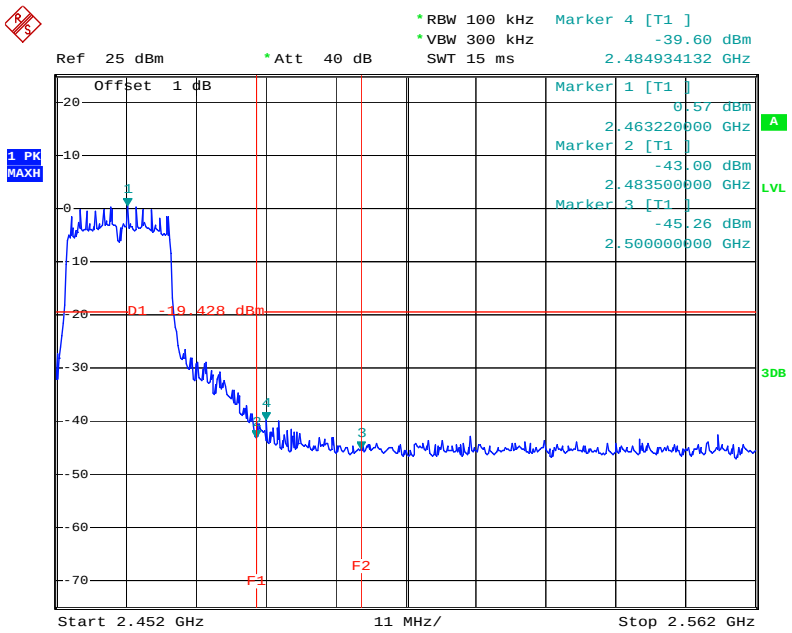
Date: 7.APR.2013 15:34:01

802.11g: Band Edge, Left Side



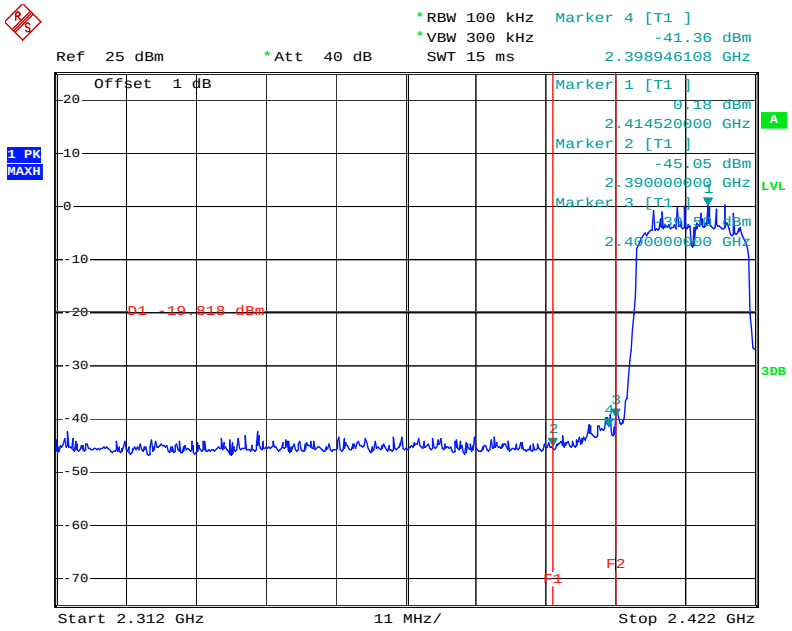
Date: 7.APR.2013 15:46:34

802.11g: Band Edge, Right Side



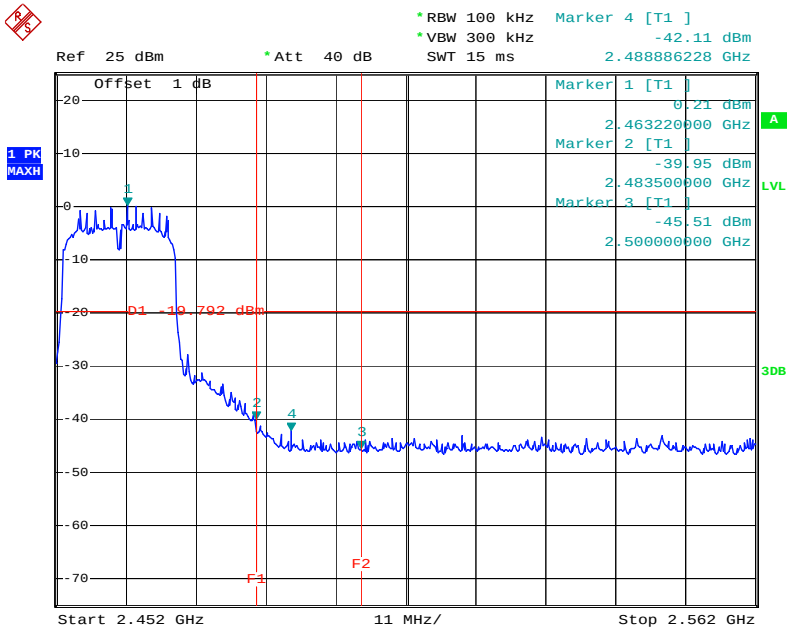
Date: 7.APR.2013 15:38:56

802.11n HT20 Band Edge, Left Side



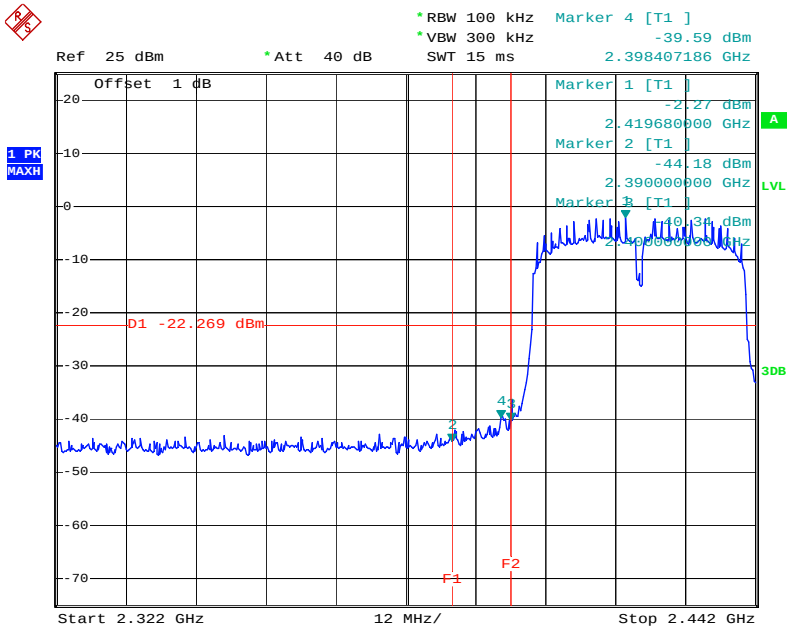
Date: 7.APR.2013 15:51:41

802.11n HT20 Band Edge, Right Side



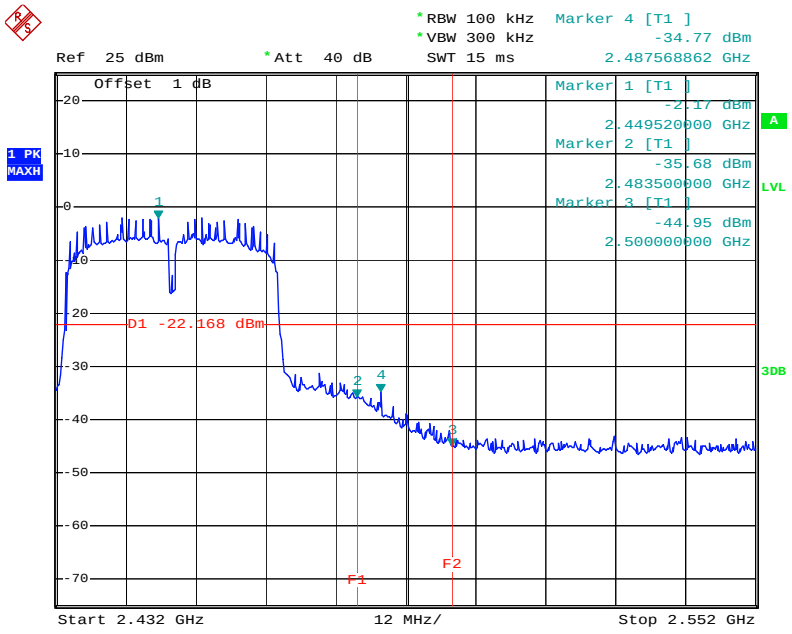
Date: 7.APR.2013 15:56:08

802.11n HT40 Band Edge, Left Side



Date: 7.APR.2013 16:13:30

802.11n HT40 Band Edge, Right Side



Date: 7.APR.2013 16:08:29

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. According to KDB 558074 D01 DTS Meas Guidance v02, set the RBW = 3 kHz, VBW = 30 kHz, Set the span to 1.5 times the DTS channel bandwidth.
4. Use the peak marker function to determine the maximum power level in any 3 kHz band segment within the fundamental EBW.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Spectrum Analyzer	FSP38	100478	2012-5-14	2013-5-13

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	22.4 ° C
Relative Humidity:	68 %
ATM Pressure:	101 kPa

The testing was performed by Leon Chen on 2013-04-11.

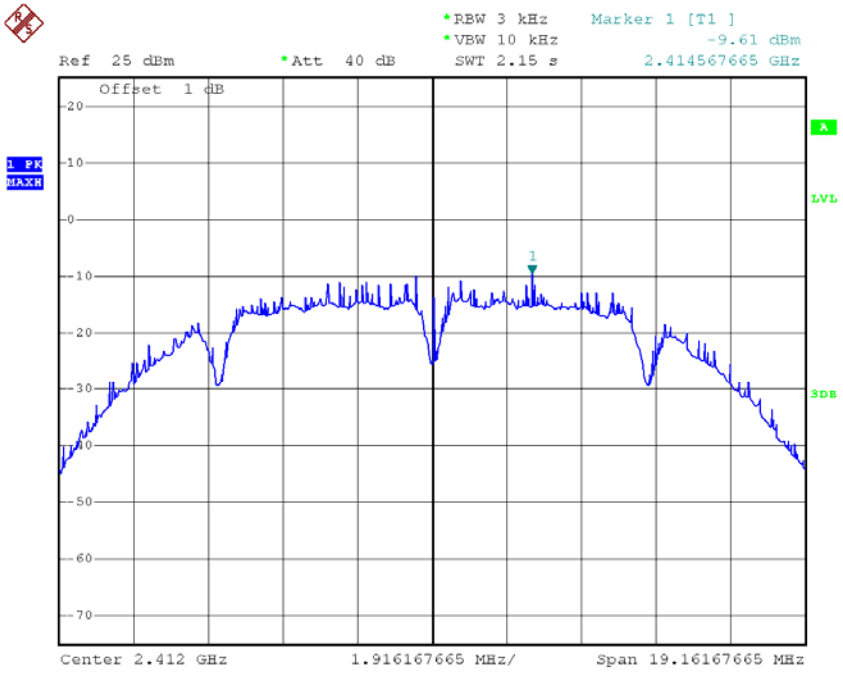
Test Mode: Transmitting

Test Result: Pass

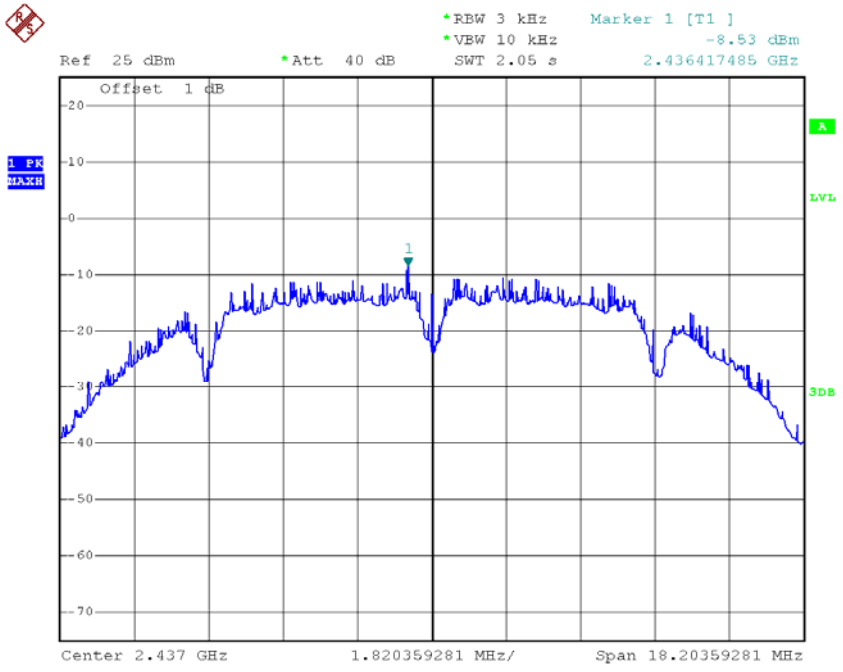
Channel	PSD (dBm/3 kHz)	FCC Limit (dBm/3 kHz)	Result
802.11b mode			
Low	-9.61	8	Pass
Middle	-8.53	8	Pass
High	-10.02	8	Pass
802.11g mode			
Low	-16.26	8	Pass
Middle	-16.20	8	Pass
High	-16.23	8	Pass
802.11n HT20 mode			
Low	-15.56	8	Pass
Middle	-16.35	8	Pass
High	-16.25	8	Pass
802.11n HT40 mode			
Low	-16.13	8	Pass
Middle	-17.87	8	Pass
High	-18.73	8	Pass

Please refer to the following plots

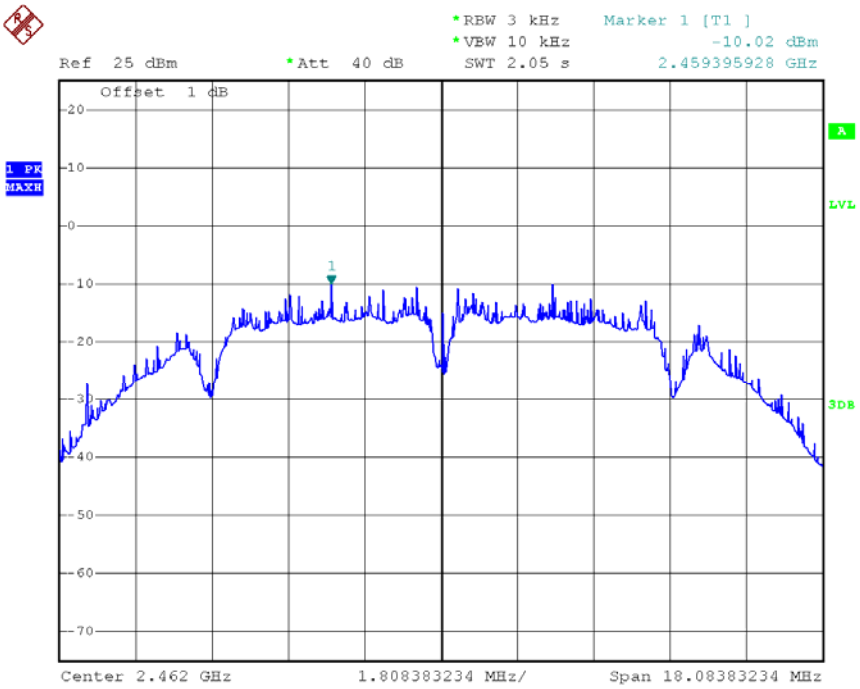
Power Spectral Density, 802.11b Low Channel



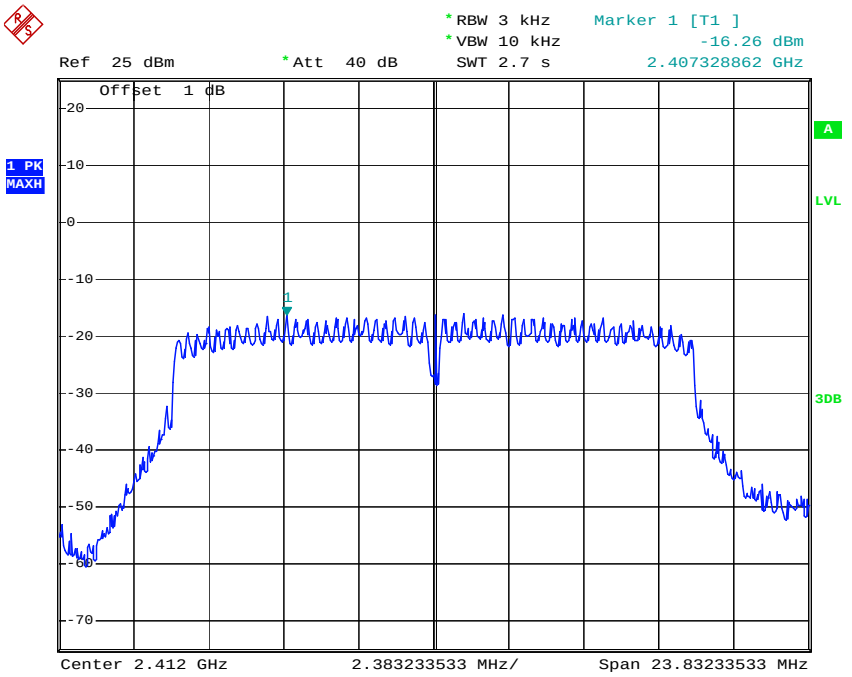
Power Spectral Density, 802.11b Middle Channel



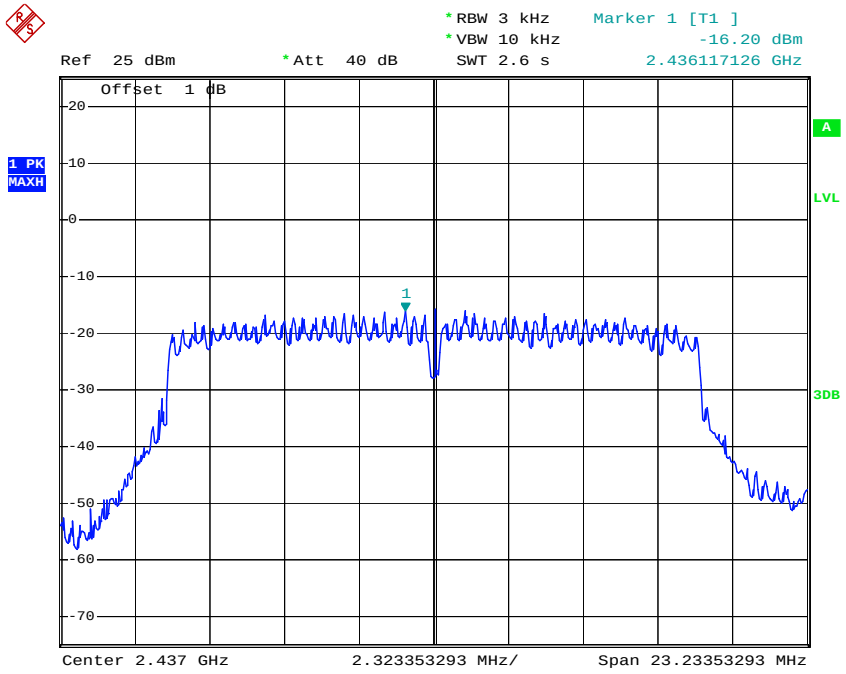
Power Spectral Density, 802.11b High Channel



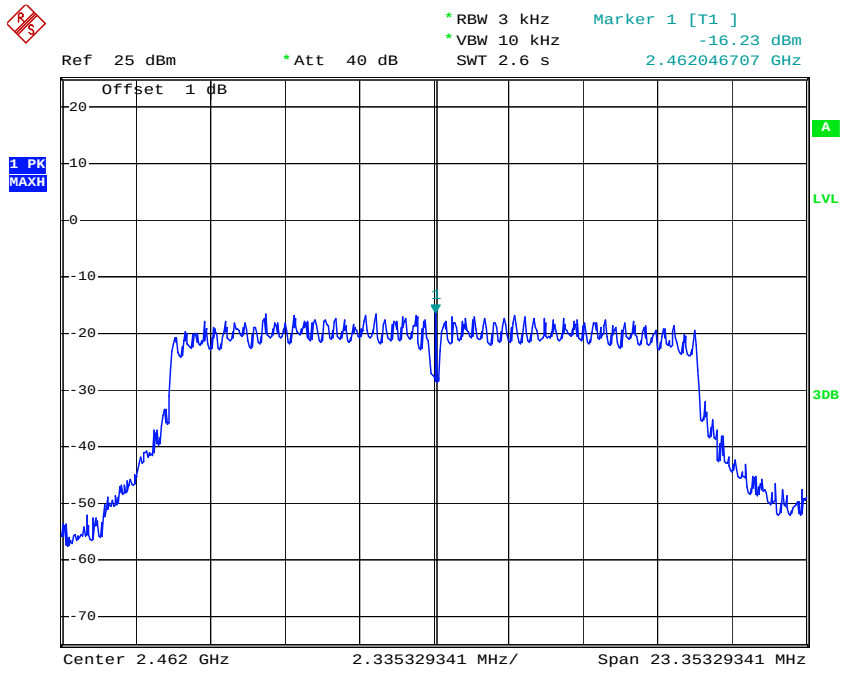
Power Spectral Density, 802.11g Low Channel



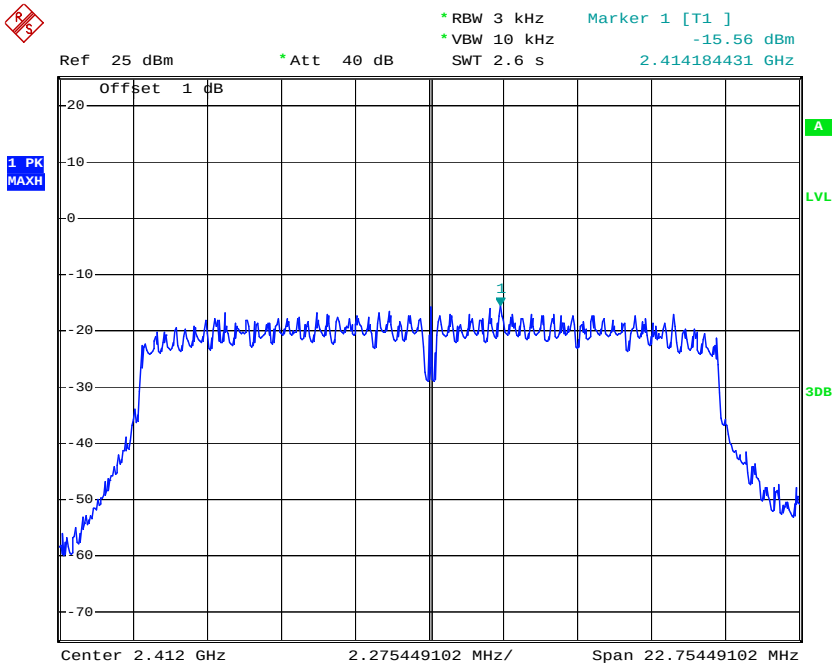
Power Spectral Density, 802.11g Middle Channel



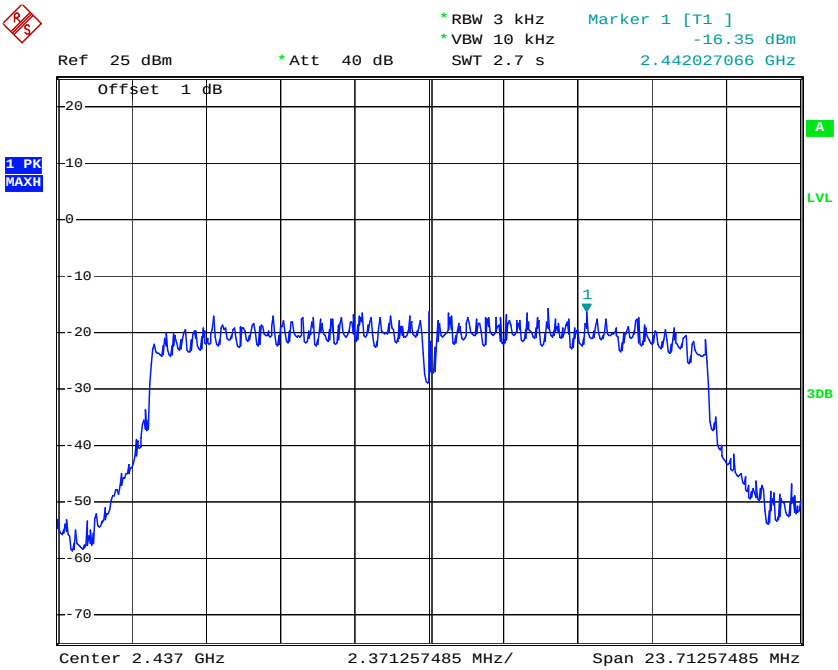
Power Spectral Density, 802.11g High Channel



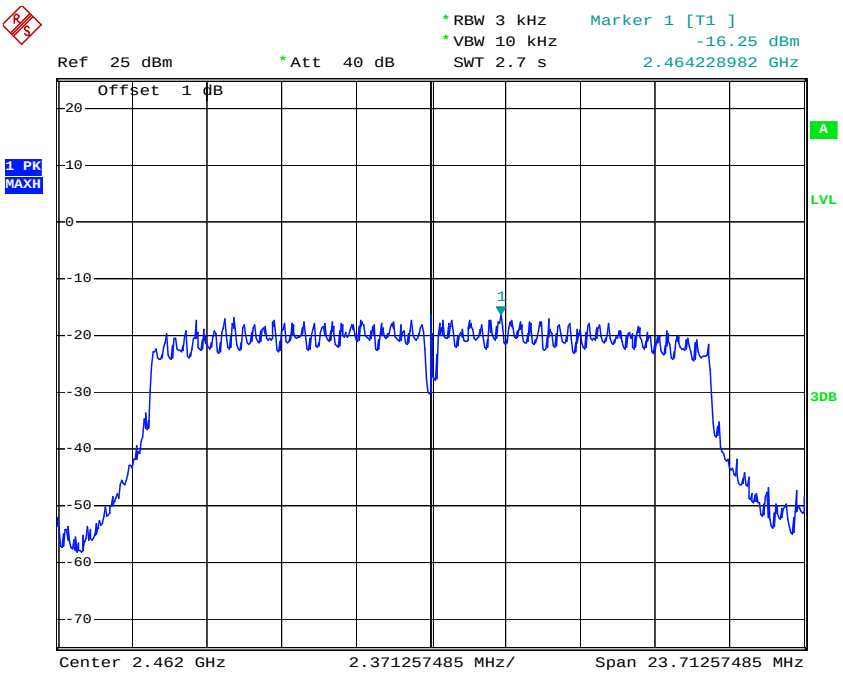
Power Spectral Density, 802.11n HT20 Low Channel



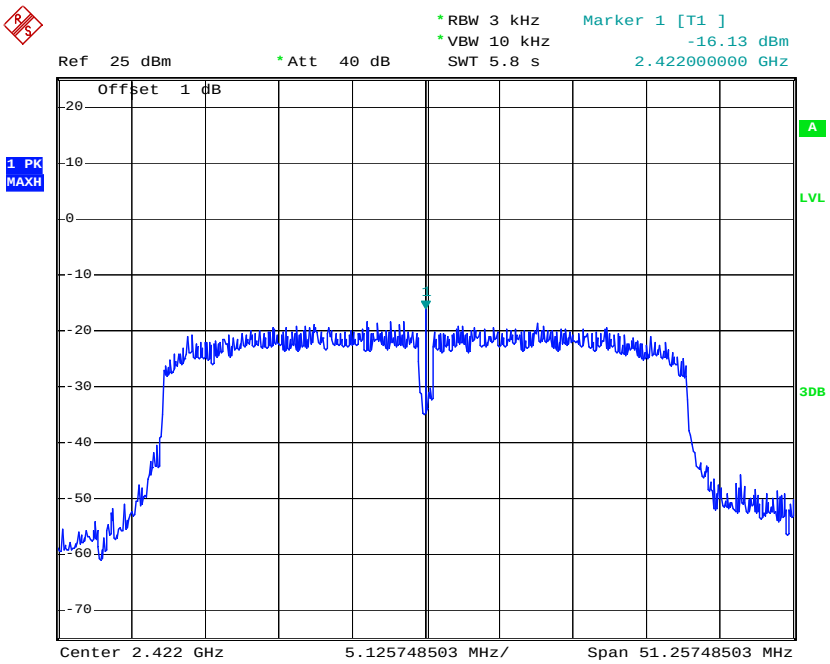
Power Spectral Density, 802.11n HT20 Middle Channel



Power Spectral Density, 802.11n HT20 High Channel



Power Spectral Density, 802.11n HT40 Low Channel



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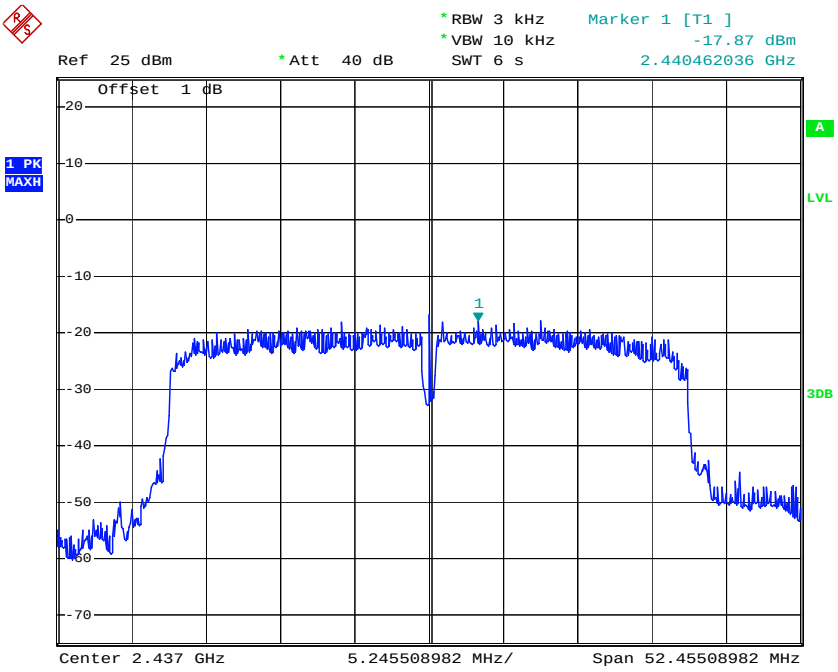
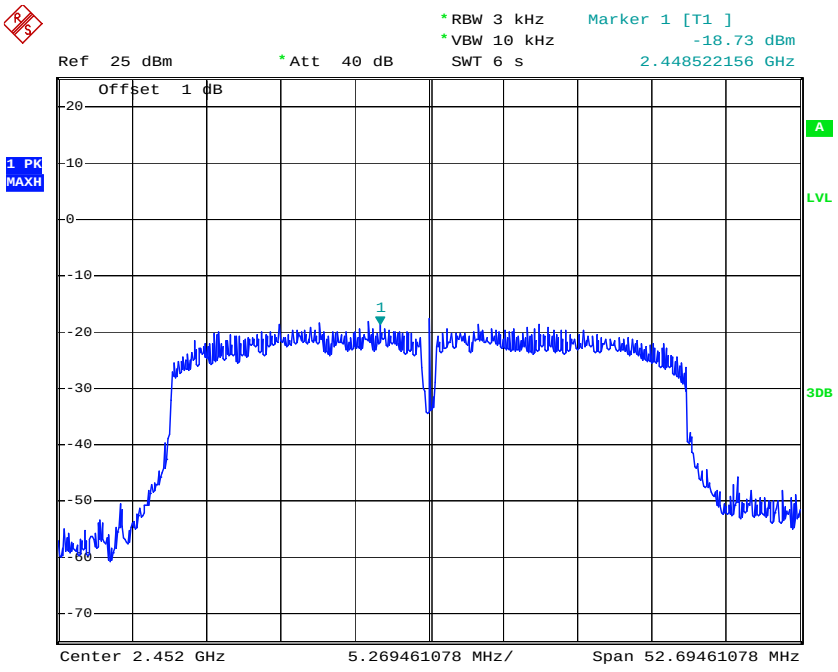
Power Spectral Density, 802.11n HT40 Middle Channel



Power Spectral Density, 802.11n HT40 High Channel



DECLARATION LETTER

Company Name: ChengDu XuGuang Tech Co., Ltd.
Address: Two section of park Road Longquanyi Chengdu China
Tel: 0086-028-84841818

Declaration Letter

Bay Area Compliance Laboratories Corp. (Dongguan)
No.69 Pulongcun, Puxinhu Industrial Zone,
Tangxia, Dongguan, Guangdong, China
Tel: +86-769-86858888
Fax: +86-769-86858891

Date: 2012-11-29

We, **ChengDu XuGuang Tech Co., Ltd.,** hereby declare that product: WIFI Module, multi-listing model number: SDWF-61/111H1 is electrically identical to test model number: SDWF-61/111H(layout of PCB, schematics, board layout, and internal structures), which was certified by BACL (this project No.: RSC130318001).

They just have different appearance, model names and the antenna part.

Please contact with us if any need.

Sincerely,

Applicant's Signature: Hua Lan

Printed Name: Hua Lan
Title: Manager
Company: Sichuan Huati Lighting Industry Co., Ltd.

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