Lab Code: 200707-0

FCC PART 15.247

TEST REPORT

For

Nexpro International Limitada

San Jose-Goicoechea, Guadalupe, Barrio Tournon, Frente Al Hotel Villas Tournon,

Oficinas Del Bufete Facio Y Canas, Costa Rica

FCC ID: ZYPES980

Report Type:	Product Type:
Original Report	Mobile Phone

Test Engineer:	Ares Liu
Report Number:	R1DG120710004-00A
Report Date:	2012-07-23
Reviewed By:	Ivan Cao 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 *Nexpro International Limitada*'s product, model number: *EVE(FCC ID: ZYPES980) or* ("EUT") in this report is a Mobile Phone, named as EVE by applicant, which was measured approximately: 11.0 cm (L) x 6.0cm (W) x 1.5cm (H), rated input voltage: DC 3.7V Lithium battery or DC 5.0V from adapter.

Adapter Information:
MODEL NO:C325A50070
ADAPTADER AC/DC
INPUT: 100-240V, 50/60 Hz, 120mA
OUTPUT: 5V, 700mA.

Frequency Range:
GSM 850: 824-849 MHz (Tx), 869-894 MHz (Rx)
PCS 1900: 1850-1910 MHz (Tx), 1930-1990 MHz (Rx)
WCDMA Band II 1850-1910 MHz (Tx), 1930-1990 MHz (Rx)
WCDMA Band V 824-849 MHz (Tx), 869-894 MHz (Rx)
BT: 2400-2483.5 MHz
WIFI: 2412-2462 MHz

Modulation Mode: GMSK (Cellular/PCS); QPSK/BPSK (WCDMA)
DSSS, OFDM (Wifi)
GFSK, 8-DPSK, π/4-DQPSK (Bluetooth)

Transmitter Output Power:
GSM/GPRS Cellular Band: 31.94 dBm (Conducted)
WCDMA Band V: 22.73 dBm (Conducted)
GSM/GPRS PCS Band: 29.52 dBm (Conducted)
WCDMA Band II: 22.82 dBm (Conducted)
BT: 7.09 dBm (Conducted)
Wi-Fi: 13.62 dBm (Conducted)

** All measurement and test data in this report was gathered from production sample serial number: 120710004 (Assigned by BACL, Shenzhen). The EUT was received on 2012-07-11.*

Objective

This report is prepared on behalf of *Nexpro International Limitada* 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 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)

FCC Part 22H&24E PCE submissions with FCC ID: ZYPES980.
FCC Part 15B JBP submissions with FCC ID: ZYPES980.
FCC Part 15C DSS submissions with FCC ID: ZYPES980 for Bluetooth.

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., and KDB 558074 D01 DTS Meas Guidance v01, Guidance for Performing Compliance Measurements on Digital Transmission System(DTS) Operating Under §15.247.

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 ±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

The system was configured for testing at testing mode, which was provided by manufacturer. For 802.11b and 802.11g, 802.11n20, 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, 802.11n20 modes were tested with Channel 1, 6 and 11.

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.

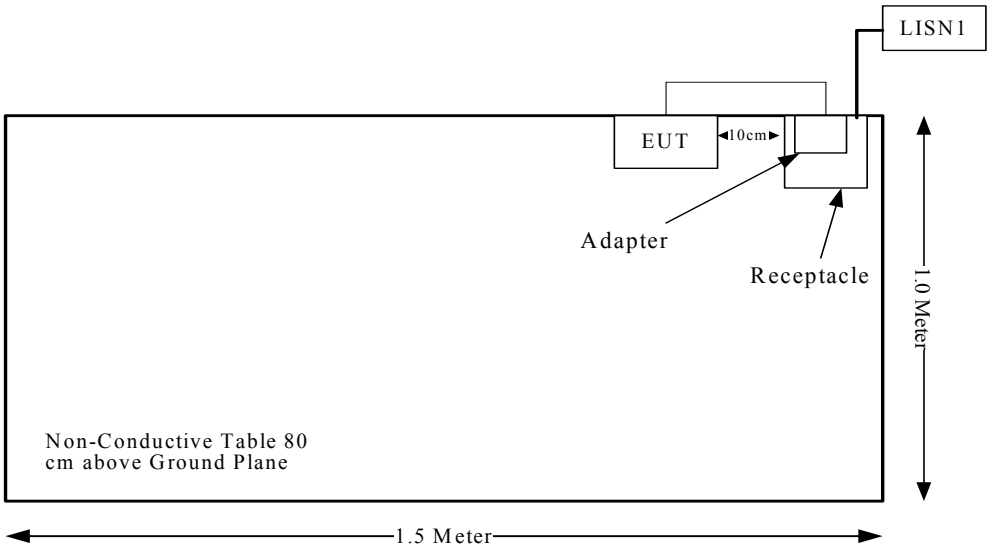
EUT Exercise Software

No EUT Exercise Software

Equipment Modifications

No modification was made to EUT.

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (i), §2.1093	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) & §2.1093 – RF EXPOSURE

Applicable Standard

According to §15.247 (i) and §1.1307(b)(1), 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.

Table 2 – Summary of SAR Evaluation Requirements for a Cell Phone with Multiple Transmitters

	Individual Transmitter	Simultaneous Transmission
Licensed Transmitters	Routine evaluation required	SAR not required: Unlicensed only o when stand-alone 1-g SAR is not required and antenna is ≥ 5 cm from other antennas Licensed & Unlicensed o when the sum of the 1-g SAR is < 1.6 W/kg for all simultaneous transmitting antennas o when SAR to peak location separation ratio of simultaneous transmitting antenna pair is < 0.3 SAR required: Licensed & Unlicensed antenna pairs with SAR to peak location separation ratio ≥ 0.3; test is only required for the configuration that results in the highest SAR in stand-alone configuration for each wireless mode and exposure condition Note: simultaneous transmission exposure conditions for head and body can be different for different style phones; therefore, different test requirements may apply
Unlicensed Transmitters	When there is no simultaneous transmission – o output ≤ 60/f: SAR not required o output > 60/f: stand-alone SAR required When there is simultaneous transmission – Stand-alone SAR not required when o output ≤ 2·P_{Ref} and antenna is ≥ 5.0 cm from other antennas o output ≤ P_{Ref} and antenna is ≥ 2.5 cm from other antennas o output ≤ P_{Ref} and antenna is < 2.5 cm from other antennas, each with either output power ≤ P_{Ref} or 1-g SAR < 1.2 W/kg Otherwise stand-alone SAR is required When stand-alone SAR is required o test SAR on highest output channel for each wireless mode and exposure condition o if SAR for highest output channel is > 50% of SAR limit, evaluate all channels according to normal procedures	
Jaw, Mouth and Nose	Flat phantom SAR required o when measurement is required in tight regions of SAM and it is not feasible or the results can be questionable due to probe tilt, calibration, positioning and orientation issues o position rectangular and clam-shell phones according to flat phantom procedures and conduct SAR measurements for these specific locations	When simultaneous transmission SAR testing is required, contact the FCC Laboratory for interim guidance.

Routine SAR evaluation refers to that specifically required by § 2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters with output power greater than the applicable low threshold require SAR evaluation to qualify for TCB approval.

1) Wi-Fi can transmit simultaneously with GSM.
2) The distance between Wifi and GSM antenna is cm 5.6cm> 5cm. The max output power of Wifi antenna is (13.62 dBm) 23.01mW < $2P_{Ref}$ (24mW) .According to KDB648474, stand-alone SAR is not required for Wifi antenna and simultaneous SAR evaluation is not required for Bluetooth and GSM antennas.
3) P_{Ref} is defined as the maximum conducted power available at the antenna according to source-based time-averaging requirements of Section 2.1093(d) (5).

Result: Compliance

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to §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 EUT has an internal PIFA antenna, which complied with 15.203, the maximum gain is 0dBi, please refer to the internal photos.

Result: Compliance.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

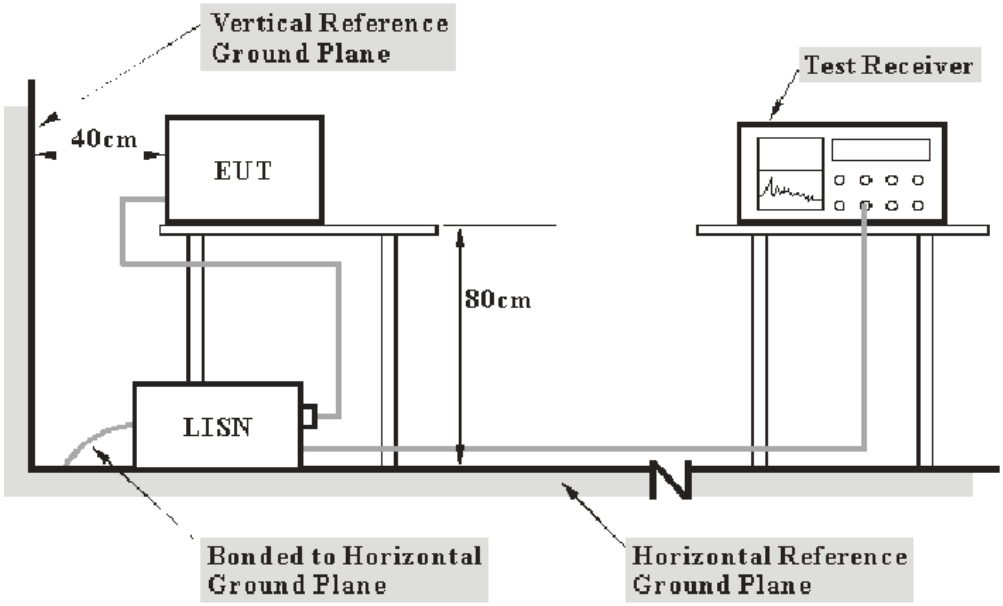
FCC§15.207

Measurement Uncertainty

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

Based on CISPR 16-4-2, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratory Corp. (Dongguan) is ±2.4 dB (k=2, 95% level of confidence).

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 spacing between the peripherals was 10 cm.

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 BW***
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	100176	2011-11-24	2012-11-23
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2011-11-17	2012-11-16

*** 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:

6.00 dB at **1.880 MHz** in the **Neutral** mode

Test Data

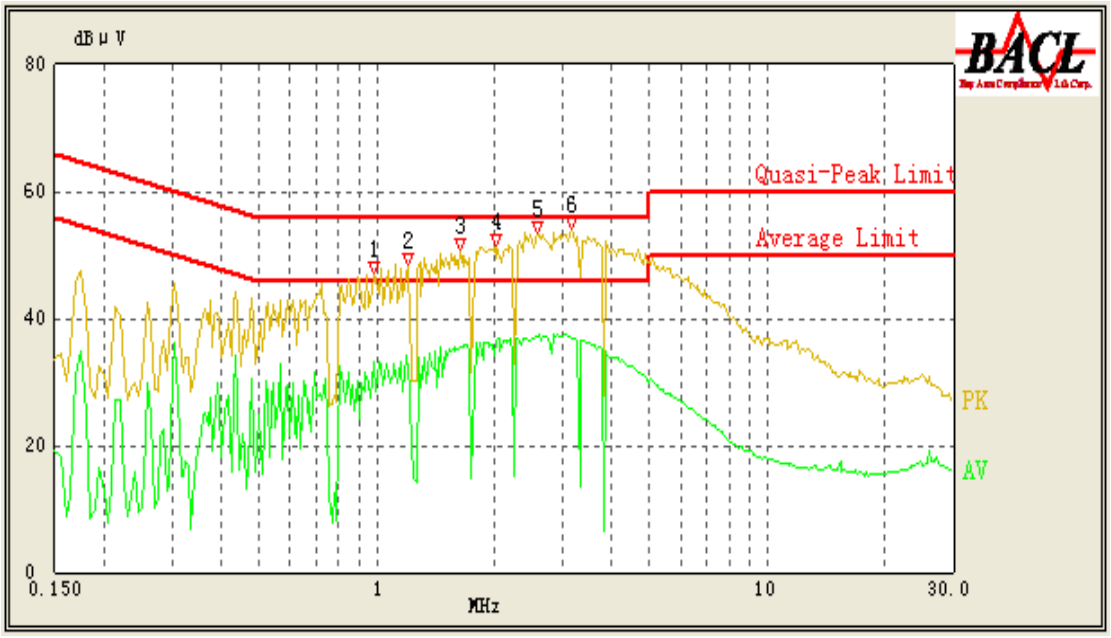
Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	48 %
ATM Pressure:	100.0 kPa

The testing was performed by Ares Liu on 2012-07-18.

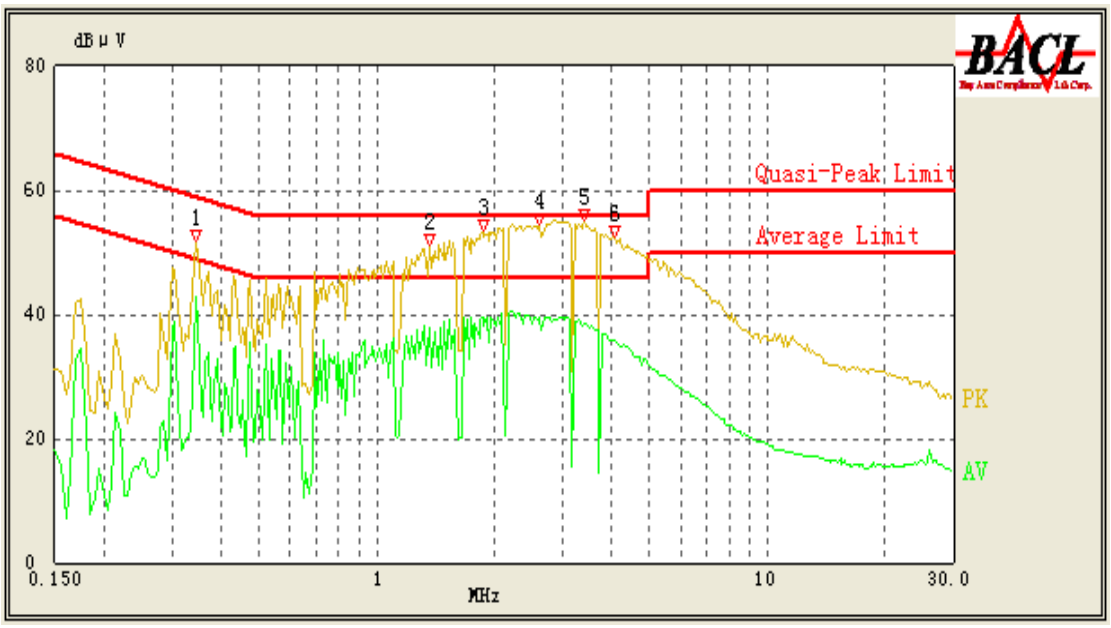
Test Mode: Transmitting

120 V, 60 Hz, Line:



Frequency (MHz)	Corrected Result (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK /QP/Ave.)
3.130	37.13	0.49	46.00	8.87	Ave.
2.575	37.01	0.49	46.00	8.99	Ave.
2.060	36.72	0.48	46.00	9.28	Ave.
1.630	35.53	0.47	46.00	10.47	Ave.
2.570	45.03	0.49	56.00	10.97	QP
1.195	34.09	0.46	46.00	11.91	Ave.
3.140	44.02	0.49	56.00	11.98	QP
1.635	41.66	0.47	56.00	14.34	QP
2.030	41.07	0.48	56.00	14.93	QP
1.200	40.84	0.46	56.00	15.16	QP
0.995	28.46	0.45	46.00	17.54	Ave.
0.985	36.73	0.45	56.00	19.27	QP

120V, 60 Hz, Neutral:



Frequency (MHz)	Corrected Result (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK /QP/Ave.)
1.880	50.00	0.48	56.00	6.00	QP
1.880	39.65	0.48	46.00	6.35	Ave.
2.615	39.59	0.49	46.00	6.41	Ave.
3.410	49.59	0.49	56.00	6.41	QP
2.600	48.75	0.49	56.00	7.25	QP
0.345	42.76	0.42	50.43	7.67	Ave.
3.375	38.27	0.49	46.00	7.73	Ave.
1.360	48.08	0.46	56.00	7.92	QP
1.360	38.00	0.46	46.00	8.00	Ave.
4.060	47.03	0.50	56.00	8.97	QP
0.345	50.60	0.42	60.43	9.83	QP
4.070	35.94	0.50	46.00	10.06	Ave.

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

Applicable Standard

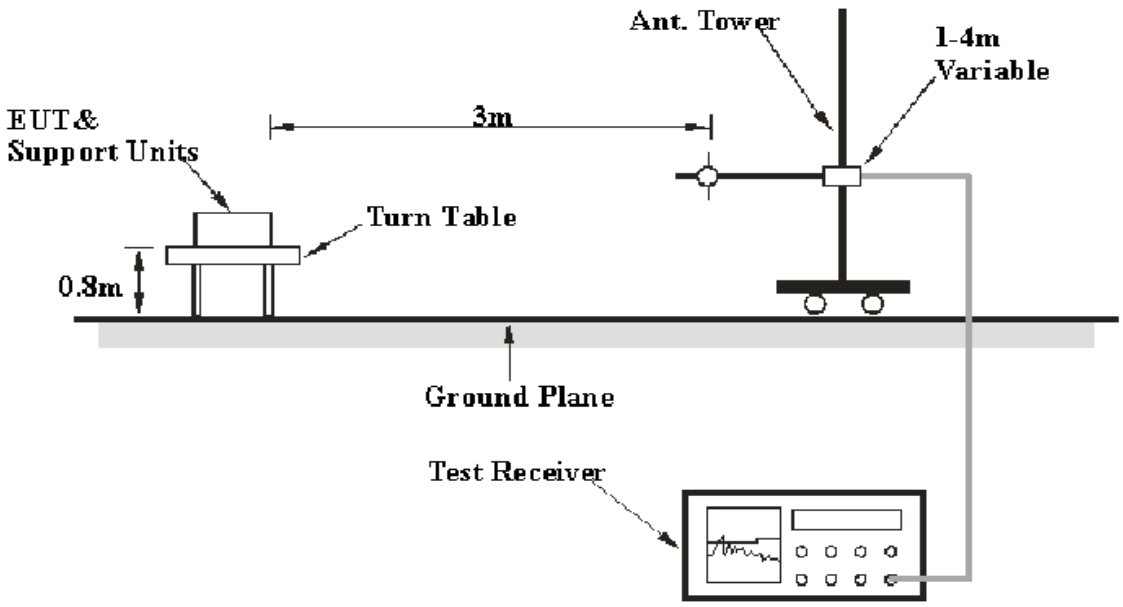
FCC §15.247 (d); §15.209; §15.205;

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 CISPR 16-4-2, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Laboratories Corp. (Dongguan) is 4.0 dB(k=2, 95% level of confidence) .

EUT Setup



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2009. 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 spacing between the peripherals was 10 cm.

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 BW***	***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 radiated emission test, the adapter was connected to 120 VAC/60 Hz power source.

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 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
HP	Amplifier	HP8447D	2944A09795	2011-11-24	2012-11-23
Rohde & Schwarz	EMI Test Receiver	ESCI	101122	2011-11-17	2012-11-16
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2011-11-28	2012-11-27
DUCOMMUN Technologies	Pre-amp	ALN-09173030-01	991396-01	2011-11-24	2012-12-23
Sunol Sciences	Horn Antenna	DRH-118	A052304	2011-12-01	2012-11-30
Rohde & Schwarz	Signal Analyzer	FSIQ 26	8386001028	2011-11-24	2012-11-23

*** 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, Section 15.205, 15.209 and 15.247, with the worst margin reading of:

0.41 dB at **4824 MHz** in the **Horizontal** polarization (802.11b mode)

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	48 %
ATM Pressure:	100.0 kPa

The testing was performed by Ares Liu from 2012-07-17to 2012-09-07.

Mode: Transmitting:

802.11b Mode:

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)
Low Channel: 2412 MHz									
2412	64	AV	H	31.11	3.93	0.00	99.03	N/A	N/A
2412	68.89	PK	H	31.11	3.93	0.00	103.92	N/A	N/A
2412	59.53	AV	V	31.11	3.93	0.00	94.56	N/A	N/A
2412	64.37	PK	V	31.11	3.93	0.00	99.40	N/A	N/A
4824	42.84	AV	H	33.21	4.73	27.19	53.59	54.00	0.41 *
2390	15.69	AV	H	30.98	3.84	0.00	50.52	54.00	3.48 *
9648	24.31	AV	V	38.60	8.70	26.43	45.18	54.00	8.82
2390	29.05	PK	H	30.98	3.84	0.00	63.88	74.00	10.12
7236	23.59	AV	V	38.72	6.56	26.58	42.30	54.00	11.70
408.36	36.48	QP	H	16.42	2.45	21.79	33.56	46.00	12.44
9648	36.14	PK	V	38.60	8.70	26.43	57.01	74.00	16.99
7236	36.86	PK	V	38.72	6.56	26.58	55.57	74.00	18.43
4824	44.76	PK	H	33.21	4.73	27.19	55.51	74.00	18.49
1248.6	36.68	PK	H	25.25	2.71	27.20	37.44	74.00	36.56
Middle Channel: 2437 MHz									
2437	63.52	AV	H	31.25	3.98	0.00	98.75	N/A	N/A
2437	68.57	PK	H	31.25	3.98	0.00	103.80	N/A	N/A
2437	56.03	AV	V	31.25	3.98	0.00	91.26	N/A	N/A
2437	63.42	PK	V	31.25	3.98	0.00	98.65	N/A	N/A
4874	41.25	AV	H	33.32	4.76	27.03	52.31	54.00	1.69 *
9748	24.53	AV	V	38.80	8.60	26.53	45.40	54.00	8.60
7311	23.85	AV	V	38.86	6.70	26.65	42.76	54.00	11.24
409.81	36.92	QP	H	16.45	2.46	21.79	34.03	46.00	11.97
4874	47.18	PK	H	33.32	4.76	27.03	58.24	74.00	15.76
9748	36.94	PK	V	38.80	8.60	26.53	57.81	74.00	16.19
7311	37.02	PK	V	38.86	6.70	26.65	55.93	74.00	18.07
3557.9	20.84	AV	H	31.80	4.42	27.76	29.31	54.00	24.69
2986.5	35.73	PK	V	30.92	7.20	27.61	46.25	74.00	27.75
3557.9	33.09	PK	H	31.80	4.42	27.76	41.56	74.00	32.44
High Channel: 2462 MHz									
2462	64.11	AV	H	31.39	3.93	0.00	99.43	N/A	N/A
2462	69.36	PK	H	31.39	3.93	0.00	104.68	N/A	N/A
2462	57.73	AV	V	31.39	3.93	0.00	93.05	N/A	N/A
2462	62.46	PK	V	31.39	3.93	0.00	97.78	N/A	N/A
4924	40.36	AV	H	33.43	4.70	27.17	51.33	54.00	2.67 *
2483.5	13.63	AV	V	31.51	3.80	0.00	48.93	54.00	5.07
609.58	38.24	QP	H	19.44	3.04	22.27	38.45	46.00	7.55
9848	24.85	AV	V	39.00	8.49	26.63	45.71	54.00	8.29
7386	24.03	AV	V	38.99	6.84	26.73	43.14	54.00	10.86
2483.5	27.61	PK	V	31.51	3.80	0.00	62.91	74.00	11.09
4924	47.97	PK	H	33.43	4.70	27.17	58.94	74.00	15.06
9848	37.23	PK	V	39.00	8.49	26.63	58.09	74.00	15.91
7386	37.18	PK	V	38.99	6.84	26.73	56.29	74.00	17.71
2995.3	36.48	PK	H	30.91	7.38	27.60	47.18	74.00	26.82

802.11g Mode:

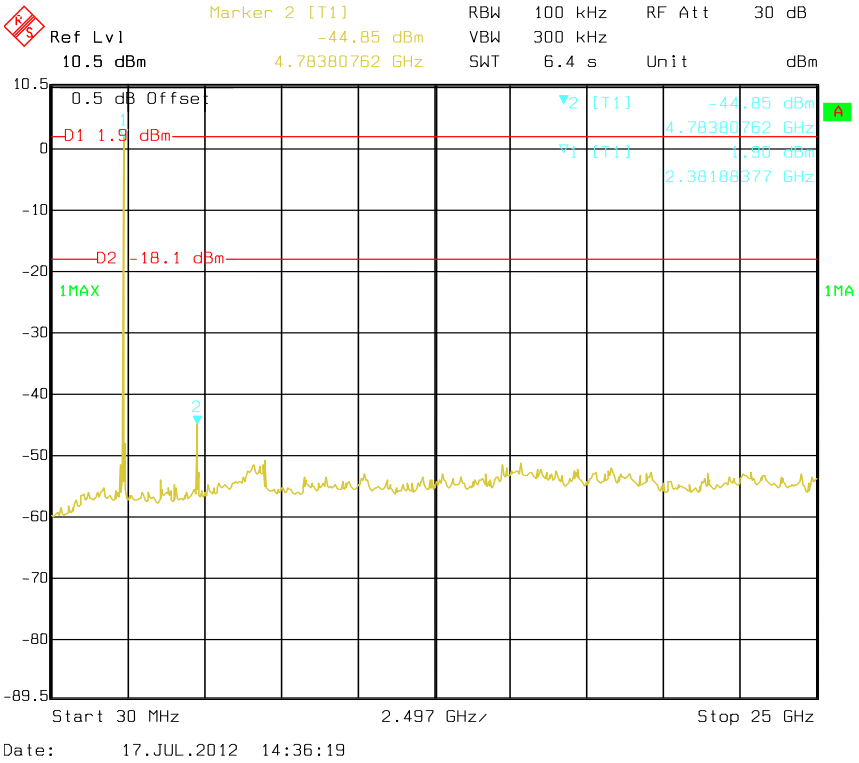
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	FCC 15.247	
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
Low Channel: 2412 MHz									
2412	49.46	AV	H	31.11	3.93	0.00	84.49	N/A	N/A
2412	63.23	PK	H	31.11	3.93	0.00	98.26	N/A	N/A
2412	41.61	AV	V	31.11	3.93	0.00	76.64	N/A	N/A
2412	55.23	PK	V	31.11	3.93	0.00	90.26	N/A	N/A
2390	14.83	AV	H	30.98	3.84	0.00	49.66	54.00	4.34
9648	23.67	AV	V	38.60	8.70	26.43	44.54	54.00	9.46
2390	28.46	PK	H	30.98	3.84	0.00	63.29	74.00	10.71
7236	23.38	AV	V	38.72	6.56	26.58	42.09	54.00	11.91
408.36	35.91	QP	H	16.42	2.45	21.79	32.99	46.00	13.01
9648	35.94	PK	V	38.60	8.70	26.43	56.81	74.00	17.19
7236	36.45	PK	V	38.72	6.56	26.58	55.16	74.00	18.84
4824	20.06	AV	H	33.21	4.73	27.19	30.81	54.00	23.19
4824	35.56	PK	H	33.21	4.73	27.19	46.31	74.00	27.69
1248.6	35.76	PK	H	25.25	2.71	27.20	36.52	74.00	37.48
Middle Channel: 2437 MHz									
2437	49.74	AV	H	31.25	3.98	0.00	84.97	N/A	N/A
2437	64	PK	H	31.25	3.98	0.00	99.23	N/A	N/A
2437	44.58	AV	V	31.25	3.98	0.00	79.81	N/A	N/A
2437	57.82	PK	V	31.25	3.98	0.00	93.05	N/A	N/A
9748	24.69	AV	V	38.80	8.60	26.53	45.56	54.00	8.44
7311	25.49	AV	V	38.86	6.70	26.65	44.40	54.00	9.60
409.81	36.71	QP	H	16.45	2.46	21.79	33.82	46.00	12.18
7311	39.87	PK	V	38.86	6.70	26.65	58.78	74.00	15.22
9748	37.44	PK	V	38.80	8.60	26.53	58.31	74.00	15.69
4874	21.71	AV	H	33.32	4.76	27.03	32.77	54.00	21.23
3557.9	21.96	AV	H	31.80	4.42	27.76	30.43	54.00	23.57
4874	36.89	PK	H	33.32	4.76	27.03	47.95	74.00	26.05
2986.5	34.83	PK	V	30.92	7.20	27.61	45.35	74.00	28.65
3557.9	34.58	PK	H	31.80	4.42	27.76	43.05	74.00	30.95
High Channel: 2462 MHz									
2462	50.89	AV	H	31.39	3.93	0.00	86.21	N/A	N/A
2462	65.22	PK	H	31.39	3.93	0.00	100.54	N/A	N/A
2462	43.93	AV	V	31.39	3.93	0.00	79.25	N/A	N/A
2462	56.88	PK	V	31.39	3.93	0.00	92.20	N/A	N/A
2483.5	13.62	AV	H	31.51	3.80	0.00	48.92	54.00	5.08
609.58	38.92	QP	H	19.44	3.04	22.27	39.13	46.00	6.87
9848	24.67	AV	V	39.00	8.49	26.63	45.53	54.00	8.47
2483.5	27.72	PK	H	31.51	3.80	0.00	63.02	74.00	10.98
7386	23.91	AV	V	38.99	6.84	26.73	43.02	54.00	10.98
9848	36.55	PK	V	39.00	8.49	26.63	57.41	74.00	16.59
7386	36.89	PK	V	38.99	6.84	26.73	56.00	74.00	18.00
4924	24.77	AV	H	33.43	4.70	27.17	35.74	54.00	18.26
4924	38.97	PK	H	33.43	4.70	27.17	49.94	74.00	24.06
2995.3	36.84	PK	H	30.91	7.38	27.60	47.54	74.00	26.46

802.11n20 Mode:

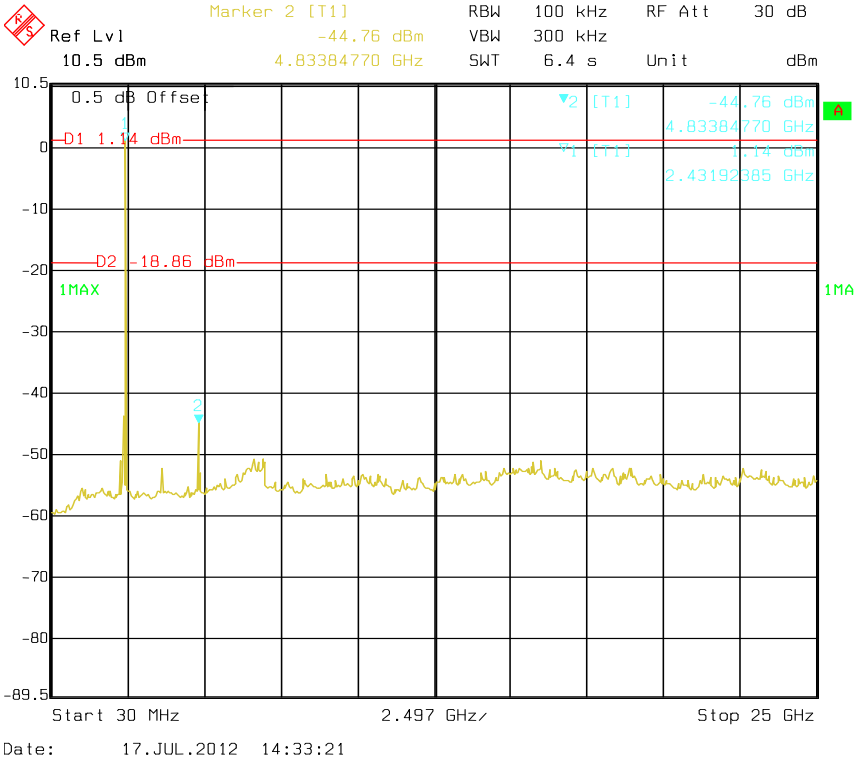
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	FCC 15.247	
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
Low Channel: 2412 MHz									
2412	49.36	AV	H	31.11	3.93	0.00	84.39	N/A	N/A
2412	64.27	PK	H	31.11	3.93	0.00	99.30	N/A	N/A
2412	42.68	AV	V	31.11	3.93	0.00	77.71	N/A	N/A
2412	57.91	PK	V	31.11	3.93	0.00	92.94	N/A	N/A
2390	14.15	AV	H	30.98	3.84	0.00	48.98	54.00	5.02
9648	24.76	AV	V	38.60	8.70	26.43	45.63	54.00	8.37
2390	29.22	PK	H	30.98	3.84	0.00	64.05	74.00	9.95
7236	24.49	AV	H	38.72	6.56	26.58	43.20	54.00	10.80
408.36	37.16	QP	V	16.42	2.45	21.79	34.24	46.00	11.76
9648	34.92	PK	V	38.60	8.70	26.43	55.79	74.00	18.21
7236	36.59	PK	H	38.72	6.56	26.58	55.30	74.00	18.70
4824	21.35	AV	V	33.21	4.73	27.19	32.10	54.00	21.90
4824	36.42	PK	V	33.21	4.73	27.19	47.17	74.00	26.83
1248.6	23.54	AV	H	25.25	2.71	27.20	24.30	54.00	29.70
1248.6	35.79	PK	H	25.25	2.71	27.20	36.55	74.00	37.45
Middle Channel: 2437 MHz									
2437	49.26	AV	H	31.25	3.98	0.00	84.49	N/A	N/A
2437	64.62	PK	H	31.25	3.98	0.00	99.85	N/A	N/A
2437	44.29	AV	V	31.25	3.98	0.00	79.52	N/A	N/A
2437	58.23	PK	V	31.25	3.98	0.00	93.46	N/A	N/A
9748	25.13	AV	V	38.80	8.60	26.53	46.00	54.00	8.00
7311	25.09	AV	H	38.86	6.70	26.65	44.00	54.00	10.00
409.81	35.88	QP	V	16.45	2.46	21.79	32.99	46.00	13.01
9748	38.47	PK	V	38.80	8.60	26.53	59.34	74.00	14.66
7311	39.48	PK	H	38.86	6.70	26.65	58.39	74.00	15.61
4874	21.37	AV	V	33.32	4.76	27.03	32.43	54.00	21.57
2986.5	21.29	AV	H	30.92	7.20	27.61	31.81	54.00	22.19
3557.9	21.67	AV	H	31.80	4.42	27.76	30.14	54.00	23.86
4874	36.48	PK	V	33.32	4.76	27.03	47.54	74.00	26.46
2986.5	35.23	PK	H	30.92	7.20	27.61	45.75	74.00	28.25
3557.9	34.81	PK	H	31.80	4.42	27.76	43.28	74.00	30.72
High Channel: 2462 MHz									
2462	50.13	AV	H	31.39	3.93	0.00	85.45	N/A	N/A
2462	65.03	PK	H	31.39	3.93	0.00	100.35	N/A	N/A
2462	44.19	AV	V	31.39	3.93	0.00	79.51	N/A	N/A
2462	57.34	PK	V	31.39	3.93	0.00	92.66	N/A	N/A
2483.5	13.72	AV	H	31.51	3.80	0.00	49.02	54.00	4.98
609.58	38.46	QP	V	19.44	3.04	22.27	38.67	46.00	7.33
9848	25.13	AV	H	39.00	8.49	26.63	45.99	54.00	8.01
2483.5	28.34	PK	H	31.51	3.80	0.00	63.64	74.00	10.36
7386	24.13	AV	H	38.99	6.84	26.73	43.24	54.00	10.76
9848	36.15	PK	H	39.00	8.49	26.63	57.01	74.00	16.99
7386	37.24	PK	H	38.99	6.84	26.73	56.35	74.00	17.65
4924	23.99	AV	V	33.43	4.70	27.17	34.95	54.00	19.05
2995.3	21.66	AV	V	30.91	7.38	27.60	32.36	54.00	21.64
4924	37.92	PK	V	33.43	4.70	27.17	48.88	74.00	25.12
2995.3	34.95	PK	V	30.91	7.38	27.60	45.65	74.00	28.35

Conducted Spurious Emissions at Antenna Port

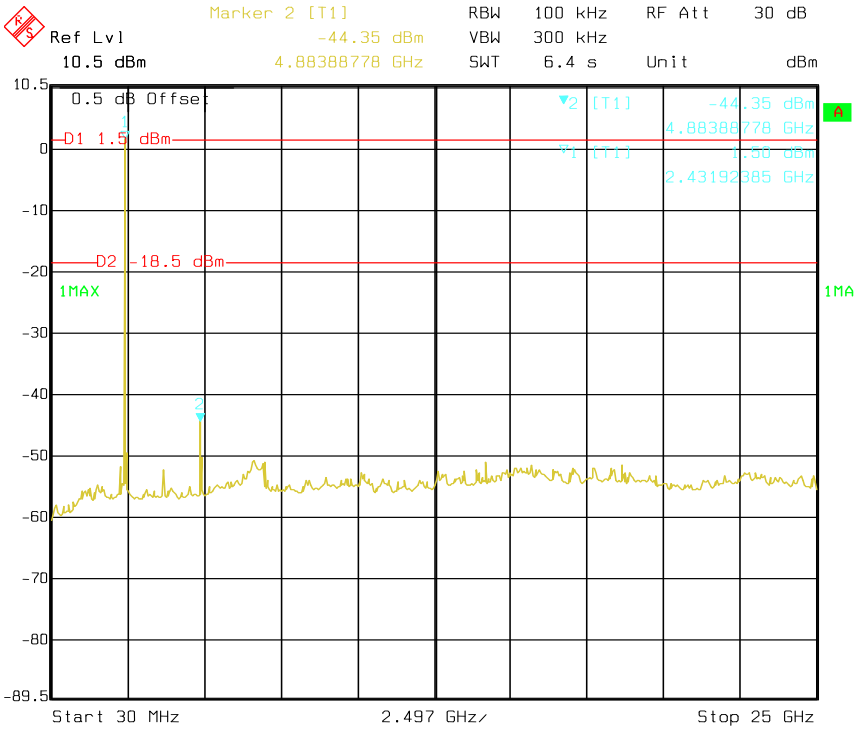
802.11b Low Channel



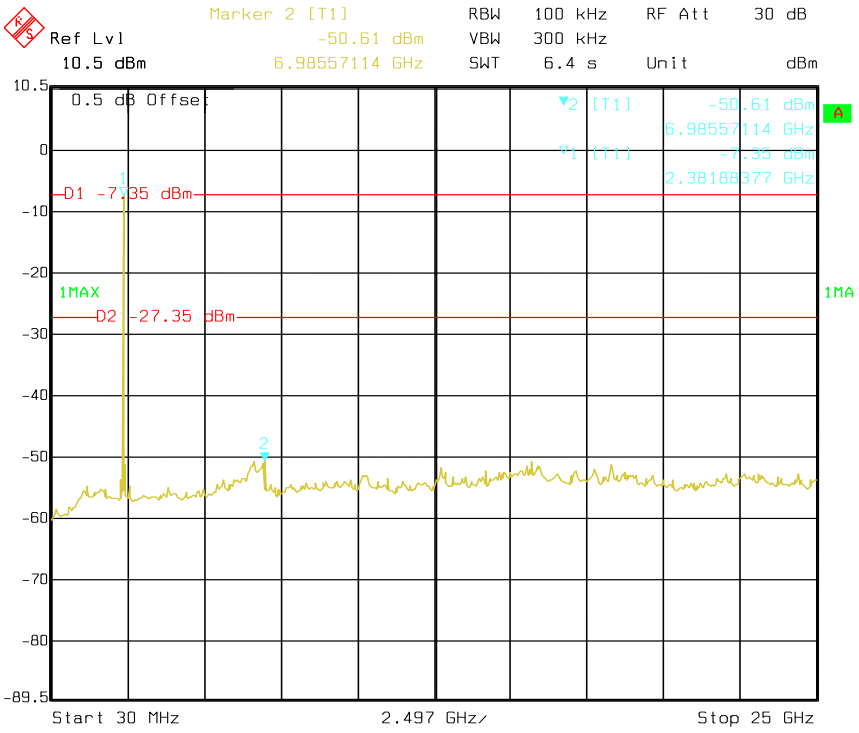
802.11b Middle Channel



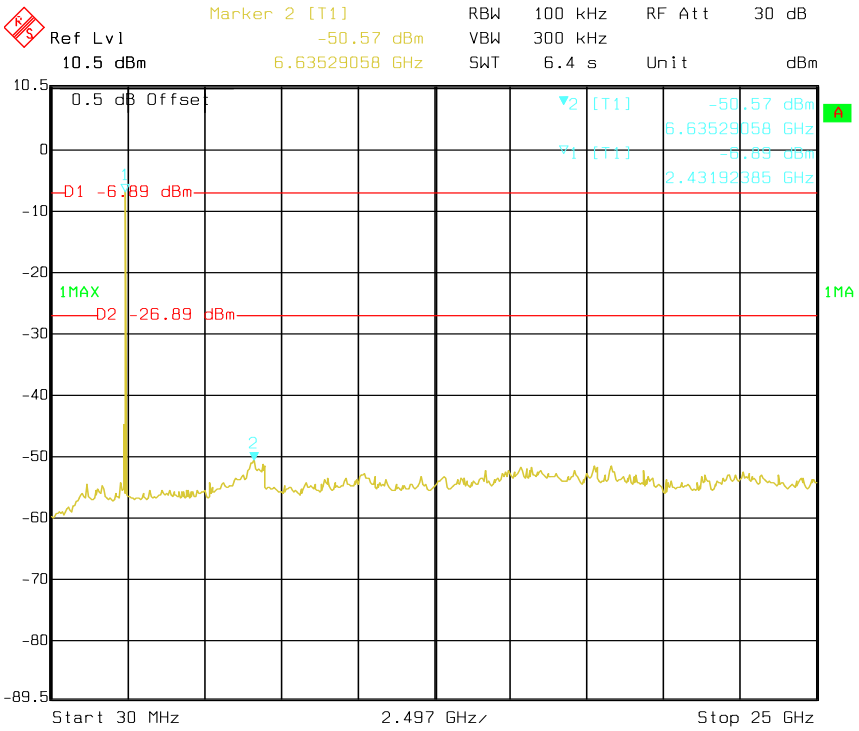
802.11b High Channel



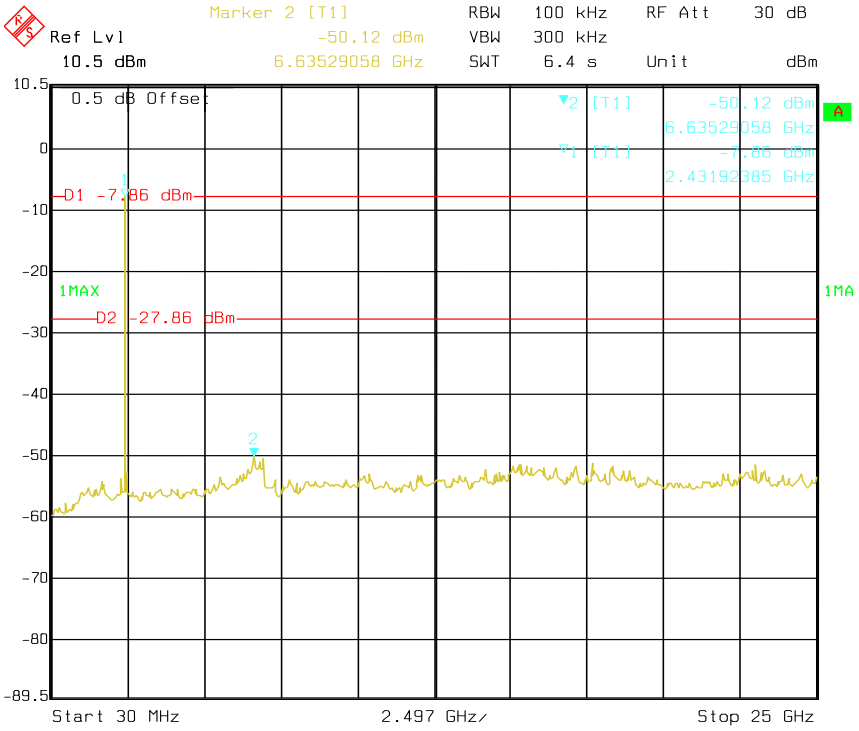
802.11g Low Channel



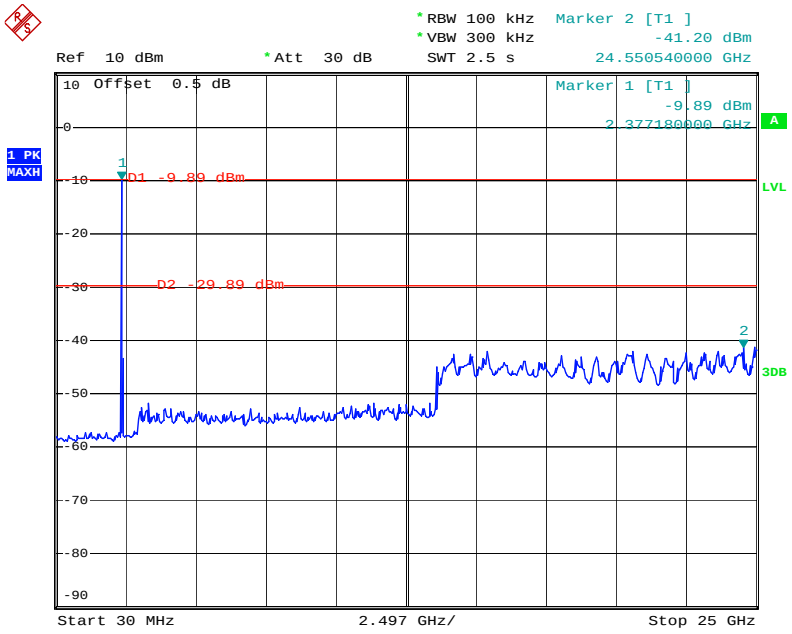
802.11g Middle Channel



802.11g High Channel

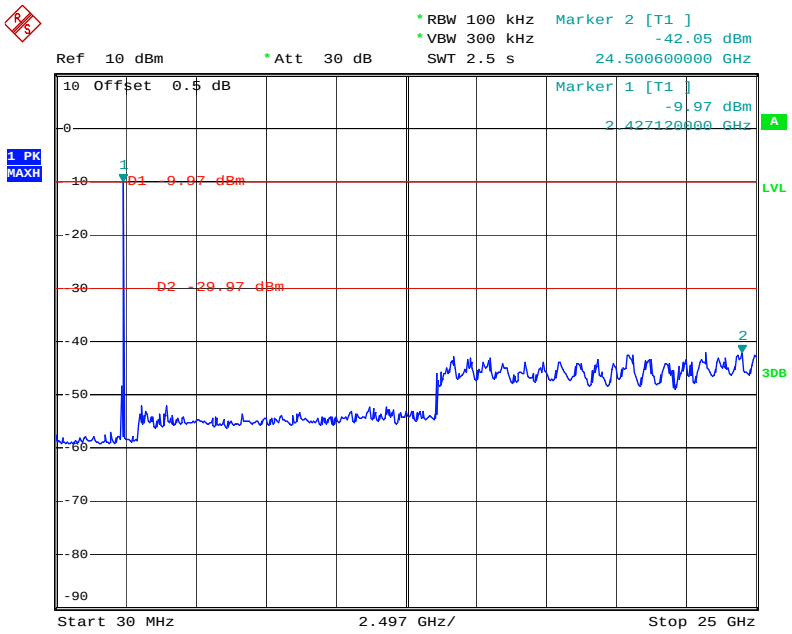


802.11n20 Low Channel



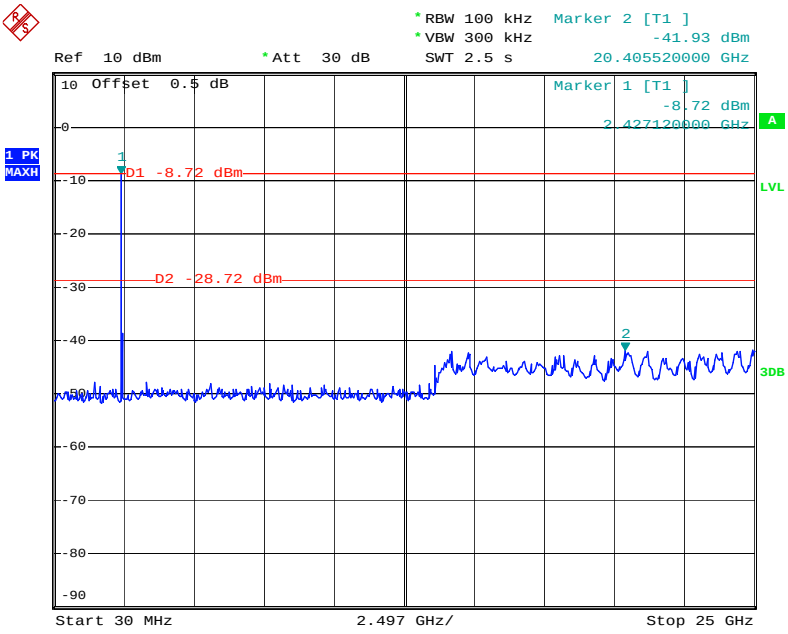
Date: 7.SEP.2012 10:44:14

802.11n20 Middle Channel



Date: 7.SEP.2012 10:40:39

802.11n20 High Channel



Date: 7.SEP.2012 10:38:59

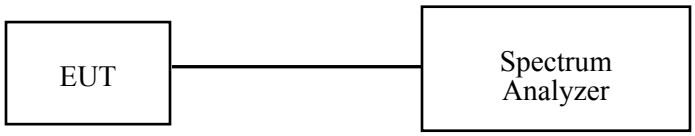
FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH

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	101122	2011-11-17	2012-11-16

*** 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:	48 %
ATM Pressure:	100.0kPa

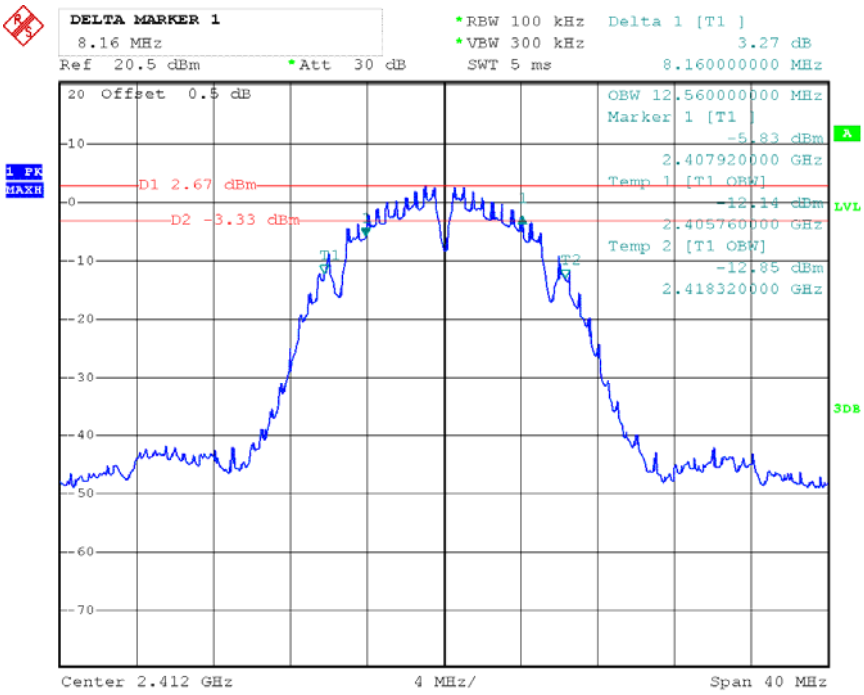
The testing was performed by Ares Liu from 2012-07-17to 2012-09-07..

Test Result: Pass.

Please refer to the following tables and plots.

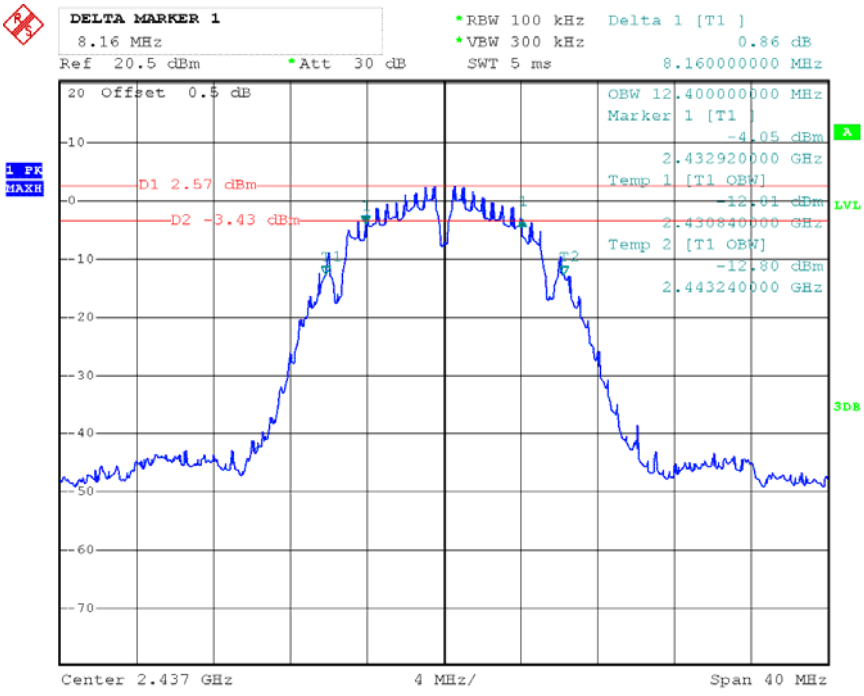
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (kHz)
802.11b mode			
Low	2412	8.16	>500
Middle	2437	8.16	>500
High	2462	8.16	>500
802.11g mode			
Low	2412	16.16	>500
Middle	2437	16.16	>500
High	2462	16.16	>500
802.11n20 mode			
Low	2412	16.64	>500
Middle	2437	16.60	>500
High	2462	16.64	>500

802.11b Low Channel



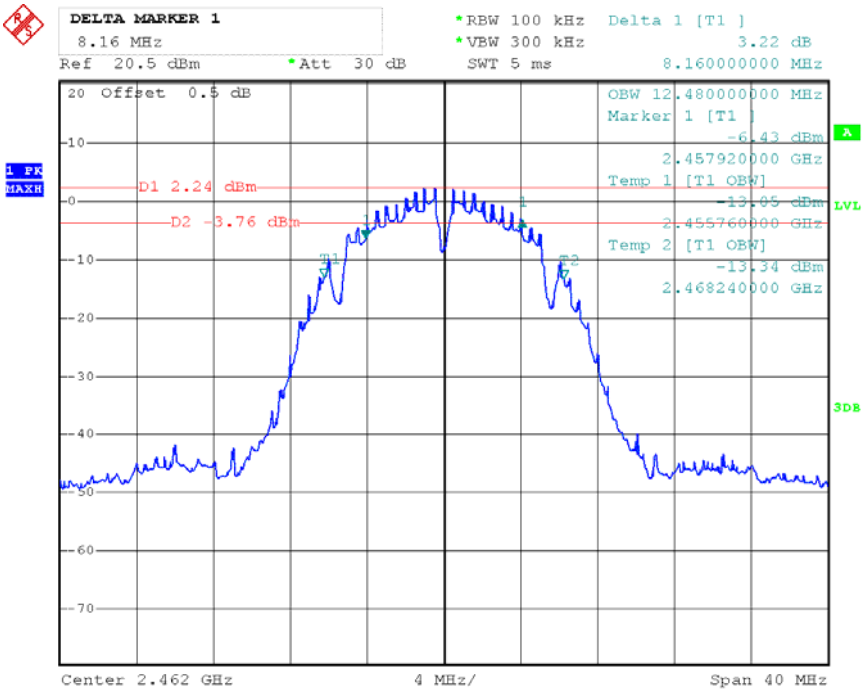
Date: 17.JUL.2012 14:22:08

802.11b Middle Channel



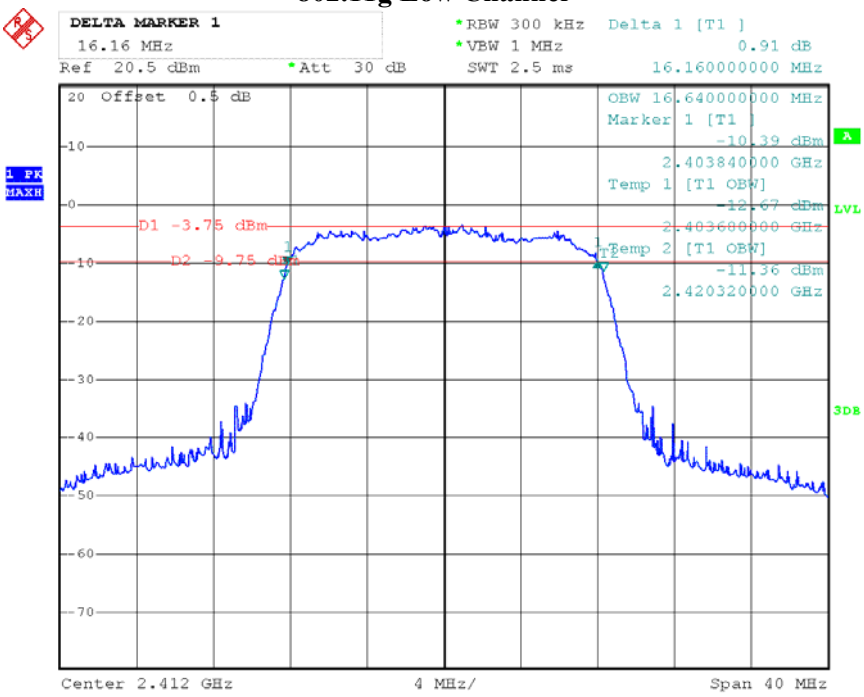
Date: 17.JUL.2012 14:42:22

802.11b High Channel



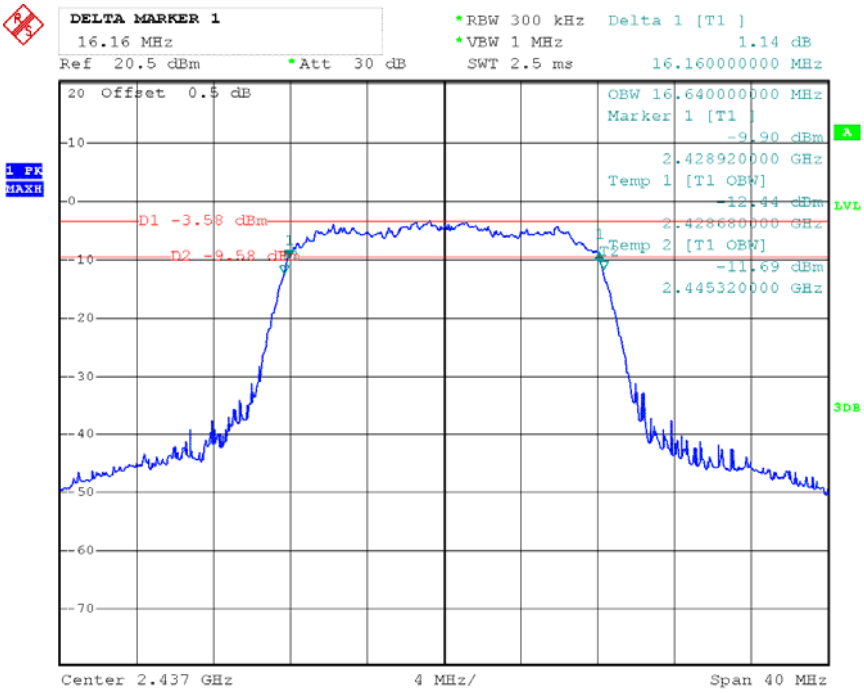
Date: 17.JUL.2012 14:36:44

802.11g Low Channel



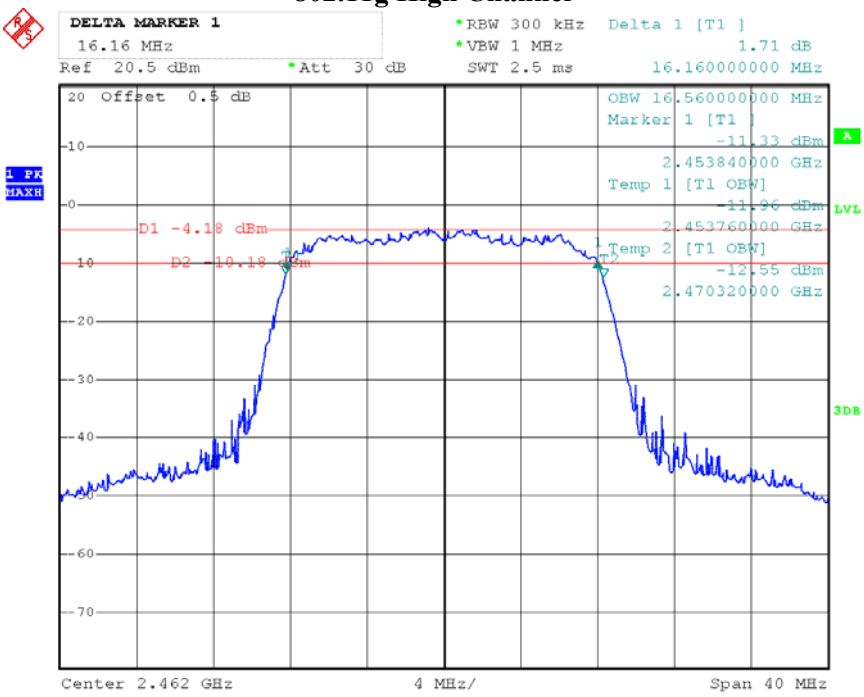
Date: 17.JUL.2012 15:06:47

802.11g Middle Channel



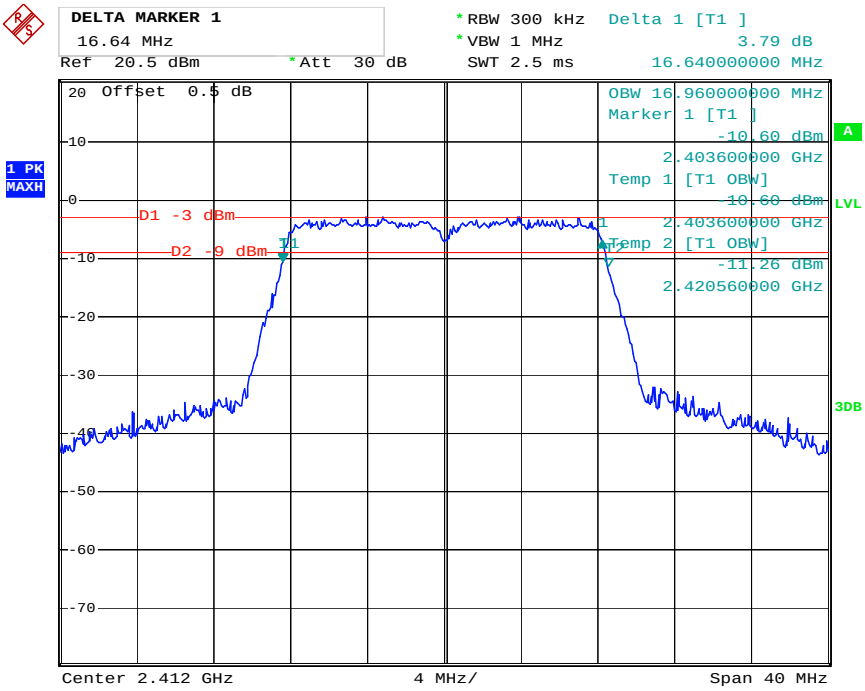
Date: 17.JUL.2012 14:59:28

802.11g High Channel



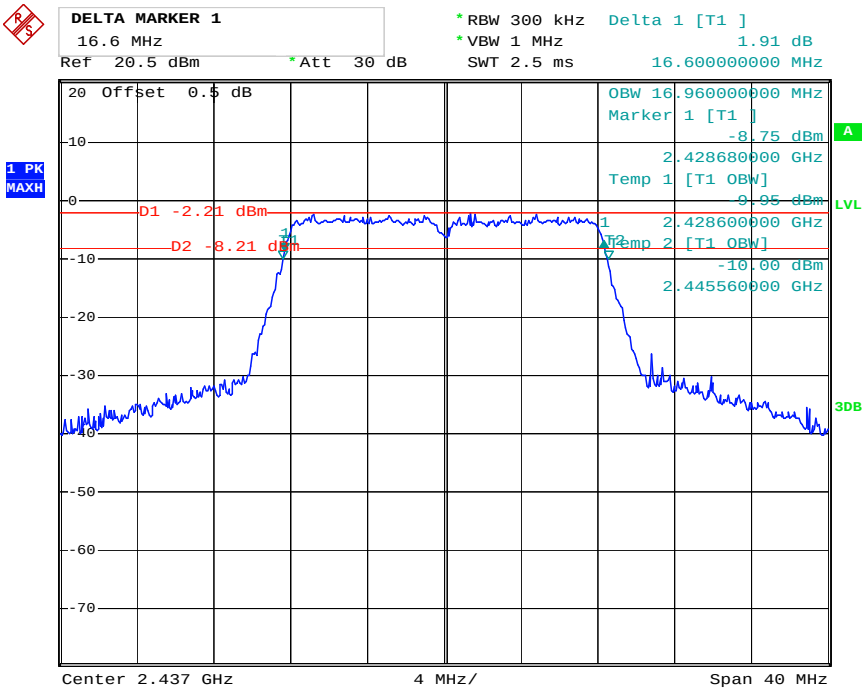
Date: 17.JUL.2012 15:15:04

802.11n20 Low Channel



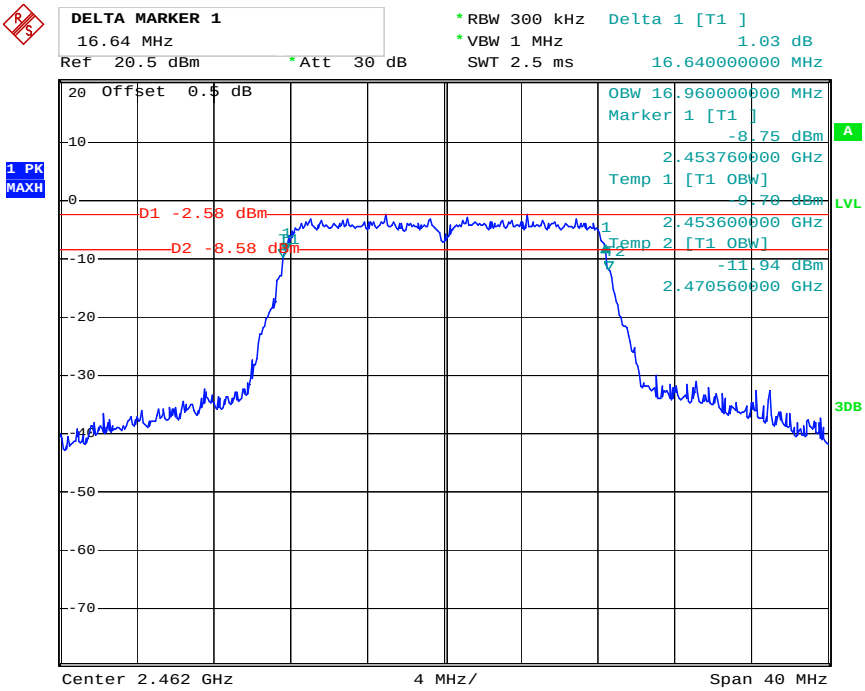
Date: 7.SEP.2012 09:57:05

802.11n20 Middle Channel



Date: 7.SEP.2012 09:59:49

802.11n20 High Channel



Date: 7.SEP.2012 10:02:47

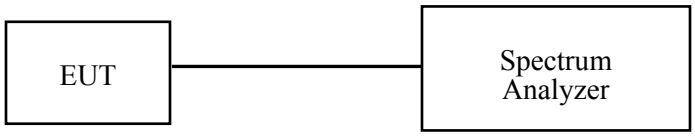
FCC §15.247(b) (3) - MAXIMUM PEAK OUTPUT POWER

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 Spectrum Analyzer.
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	101122	2011-11-17	2012-11-16

*** 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:	48 %
ATM Pressure:	100.0 kPa

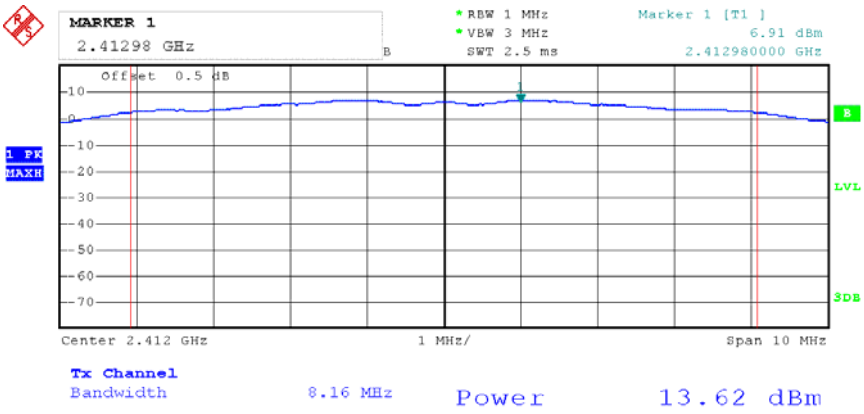
The testing was performed by Ares Liu on 2012-09-07.

Test Mode: Transmitting

Channel	Frequency (MHz)	Conducted Output Power (dBm)	Limit (dBm)	Result
802.11b mode				
Low	2412	13.62	30	PASS
Middle	2437	13.31	30	PASS
High	2462	12.94	30	PASS
802.11g mode				
Low	2412	12.10	30	PASS
Middle	2437	12.06	30	PASS
High	2462	11.73	30	PASS
802.11n20 mode				
Low	2412	12.36	30	PASS
Middle	2437	12.60	30	PASS
High	2462	12.43	30	PASS

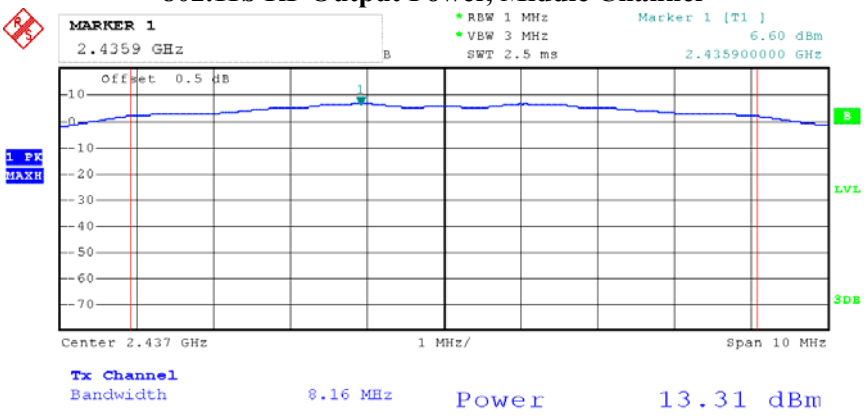
Note: the antenna gain is 0 dBi.

802.11b RF Output Power, Low Channel



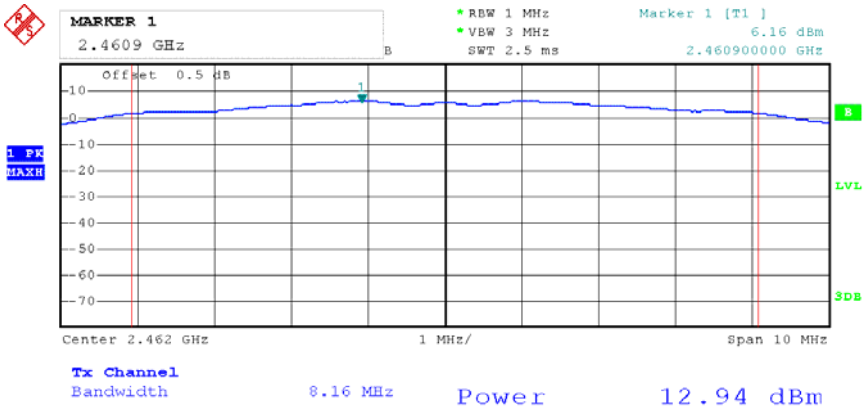
Date: 17.JUL.2012 14:20:43

802.11b RF Output Power, Middle Channel



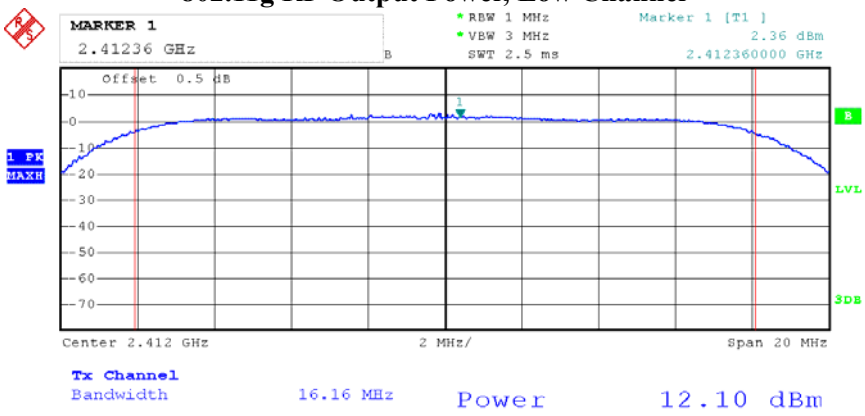
Date: 17.JUL.2012 14:42:37

802.11b RF Output Power, High Channel



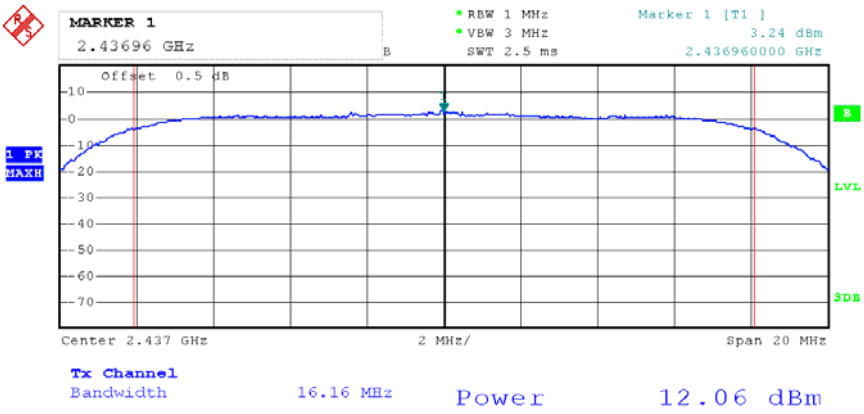
Date: 17.JUL.2012 14:36:58

802.11g RF Output Power, Low Channel



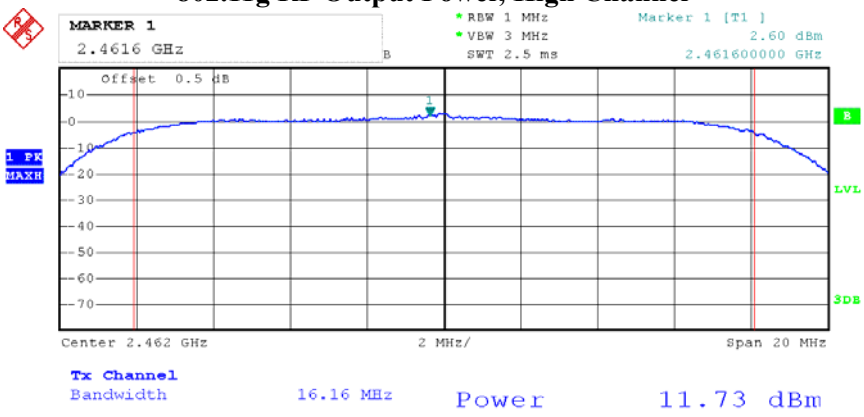
Date: 17.JUL.2012 15:08:26

802.11g RF Output Power, Middle Channel



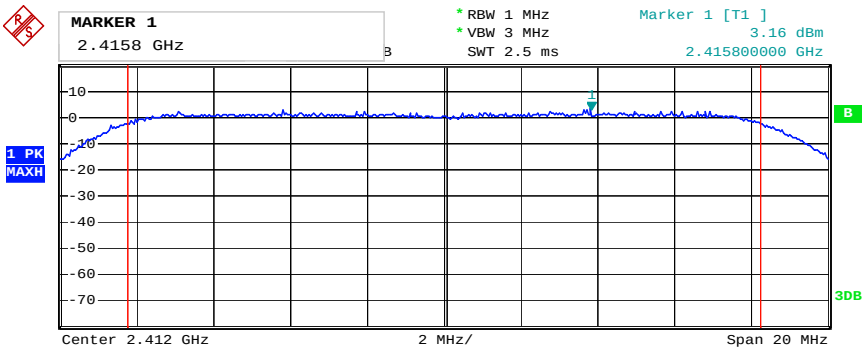
Date: 17.JUL.2012 15:03:03

802.11g RF Output Power, High Channel



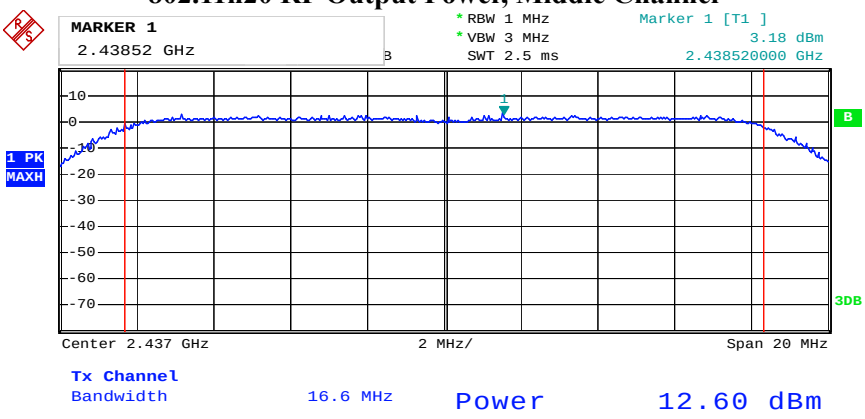
Date: 17.JUL.2012 15:20:08

802.11n20 RF Output Power, Low Channel



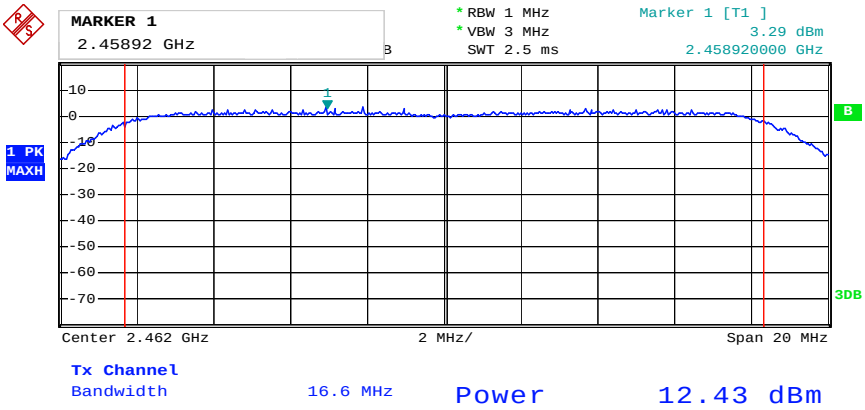
Date: 7.SEP.2012 09:52:31

802.11n20 RF Output Power, Middle Channel



Date: 7.SEP.2012 10:00:05

802.11n20 RF Output Power, High Channel



Date: 7.SEP.2012 10:03:06

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	EMI Test Receiver	ESCI	101122	2011-11-17	2012-11-16

*** 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

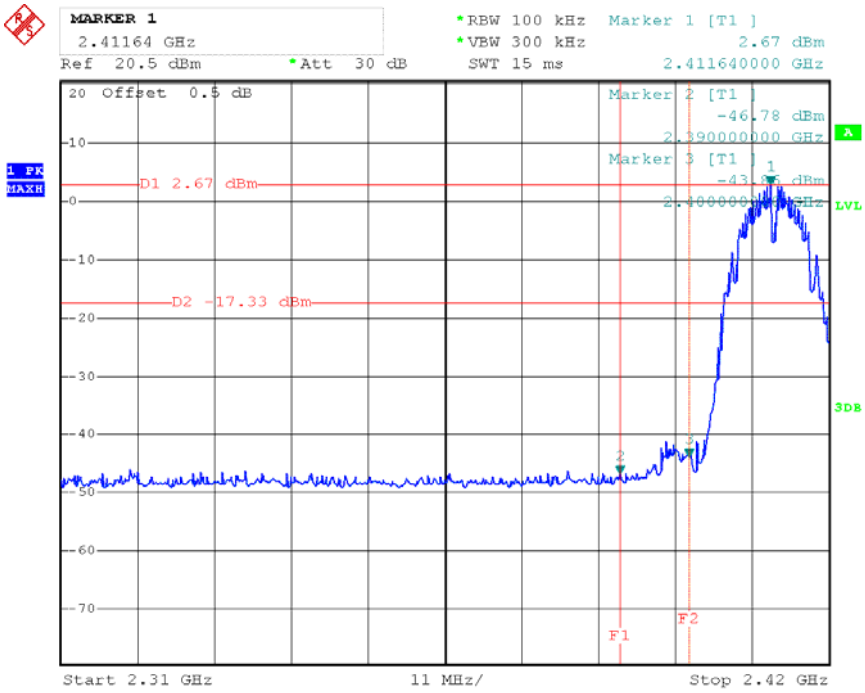
Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	48 %
ATM Pressure:	100.0 kPa

The testing was performed by Ares Liu from 2012-07-17to 2012-09-07.

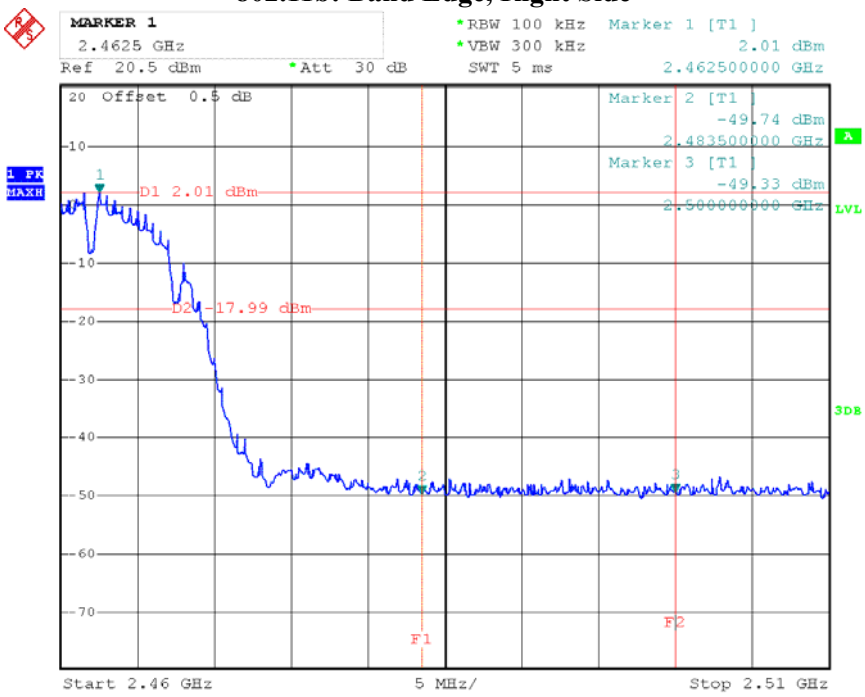
Test Result: *Compliance*

802.11b: Band Edge, Left Side



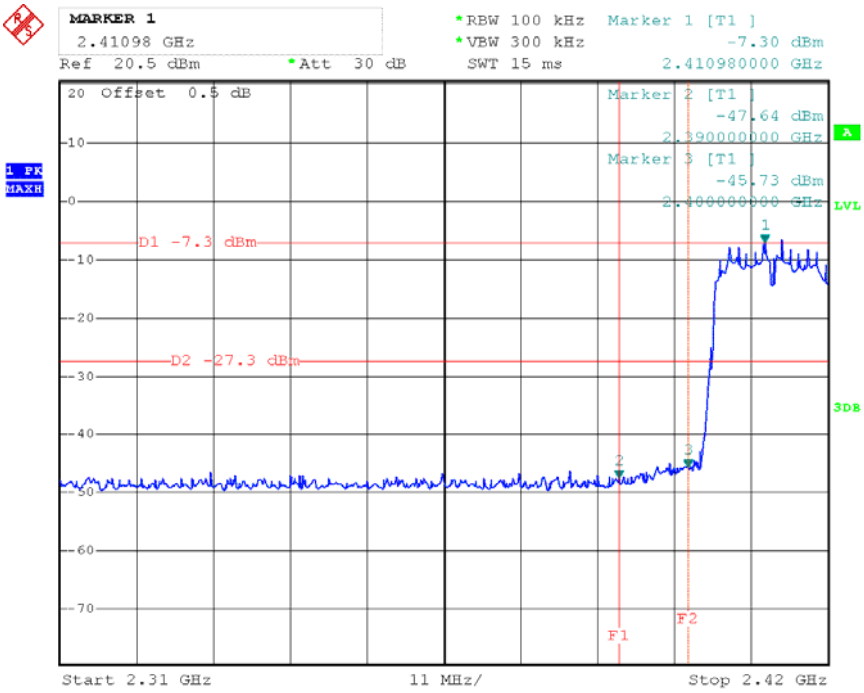
Date: 17.JUL.2012 14:28:01

802.11b: Band Edge, Right Side



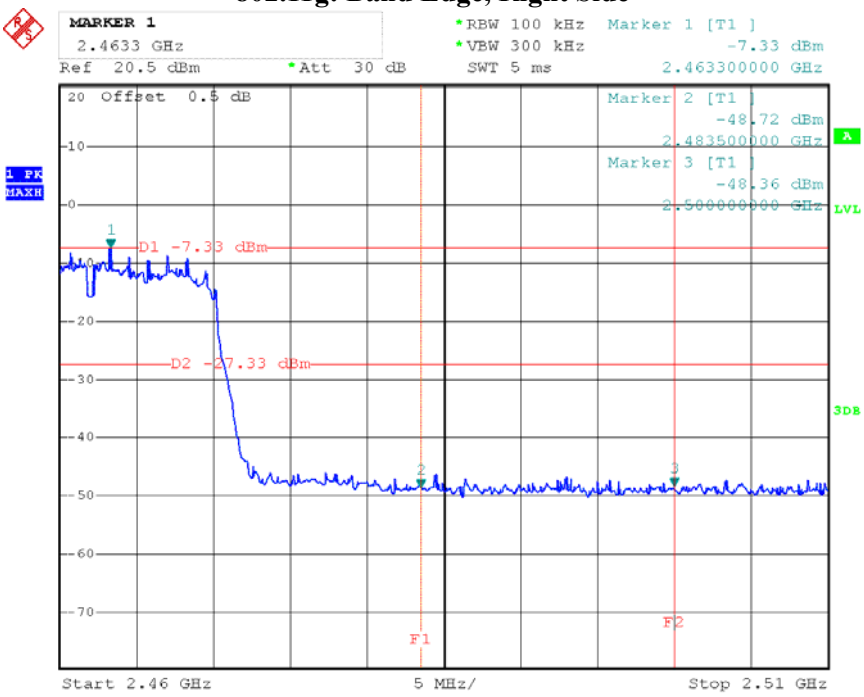
Date: 17.JUL.2012 14:34:55

802.11g: Band Edge, Left Side



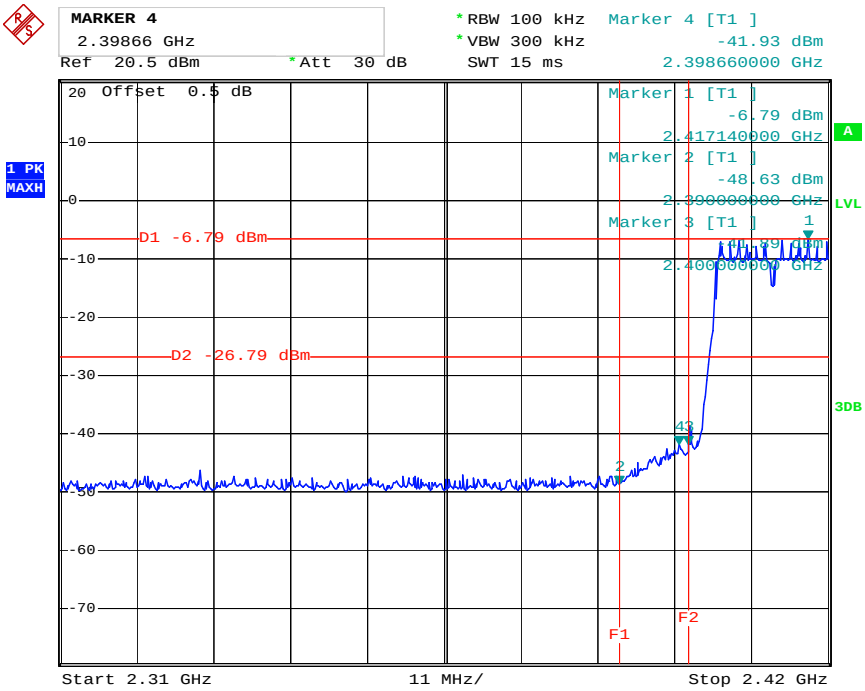
Date: 17.JUL.2012 15:09:43

802.11g: Band Edge, Right Side



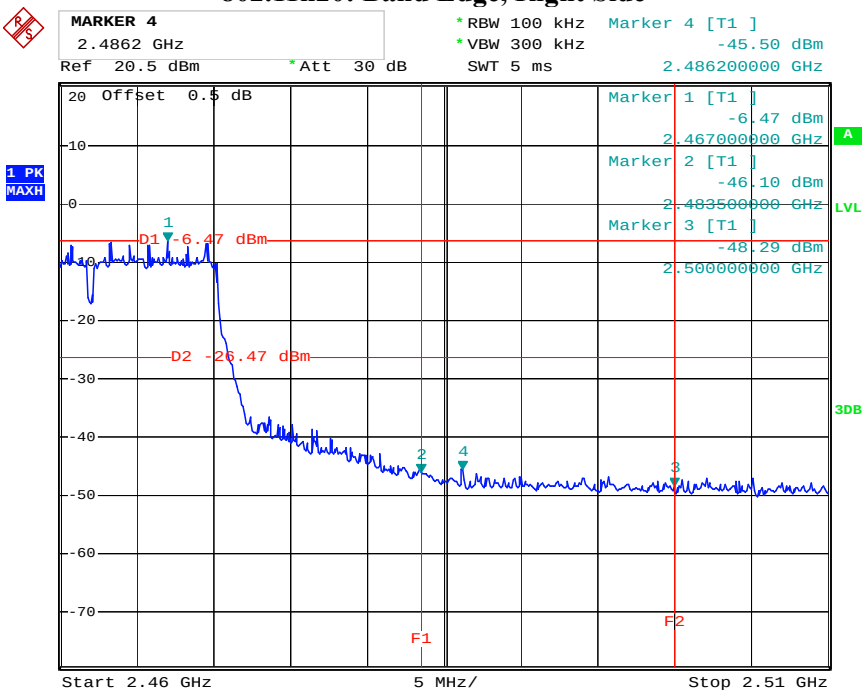
Date: 17.JUL.2012 15:13:36

802.11n20: Band Edge, Left Side



Date: 7.SEP.2012 09:54:11

802.11n20: Band Edge, Right Side



Date: 7.SEP.2012 10:05:08

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. Set the RBW = 100 kHz, VBW ≥ 300 kHz, set the span to 5-30 % greater than the EBW.
4. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
5. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (3 kHz/100 kHz = -15.2dB).

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ 26	8386001028	2011-11-24	2012-11-23

*** 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:	48 %
ATM Pressure:	100.0 kPa

The testing was performed by Ares Liu from 2012-07-17to 2012-09-07..

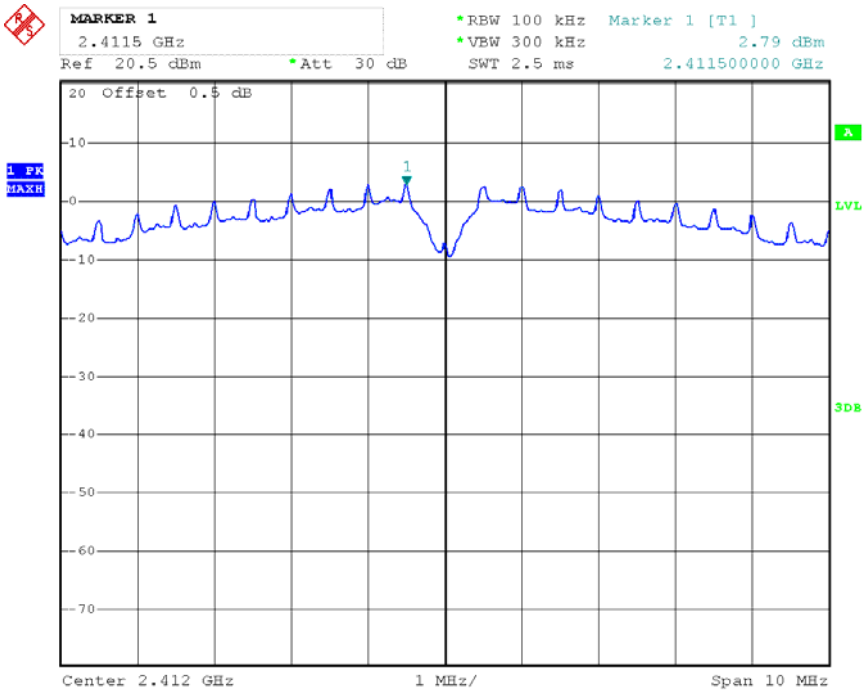
Test Mode: Transmitting

Test Result: Pass

Channel	Reading Level (dBm/100 kHz)	Power Spectral Density (dBm/3 kHz)	Limit (dBm/3 kHz)	Result
802.11b mode				
Low	0.61	-12.41	8	PASS
Middle	0.86	-12.44	8	PASS
High	0.71	-12.92	8	PASS
802.11g mode				
Low	-8.28	-21.97	8	PASS
Middle	-8.70	-22.15	8	PASS
High	-8.36	-22.64	8	PASS
802.11n20 mode				
Low	-8.78	-21.97	8	PASS
Middle	-8.67	-21.35	8	PASS
High	-8.57	-21.90	8	PASS

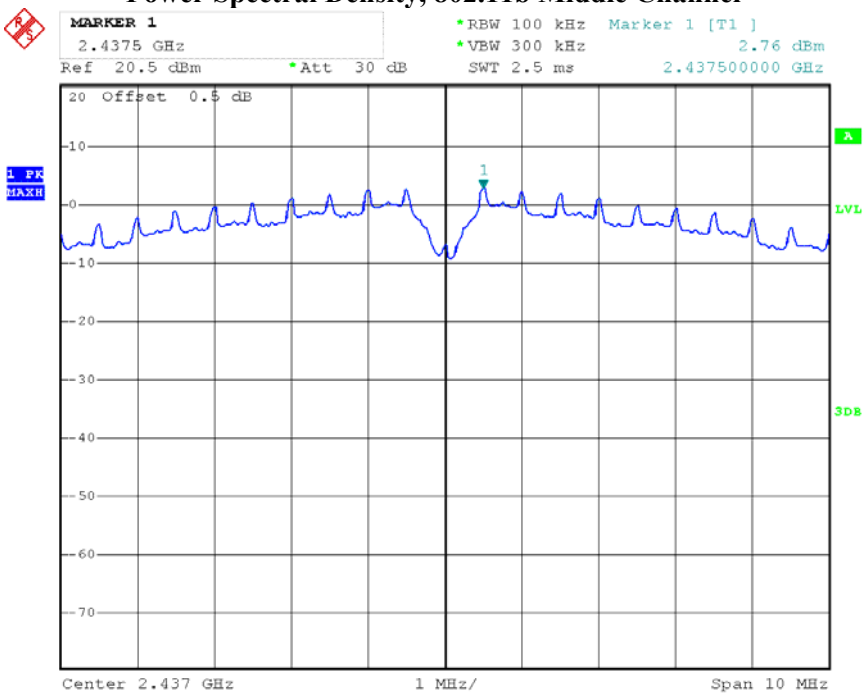
Please refer to the following plots

Power Spectral Density, 802.11b Low Channel



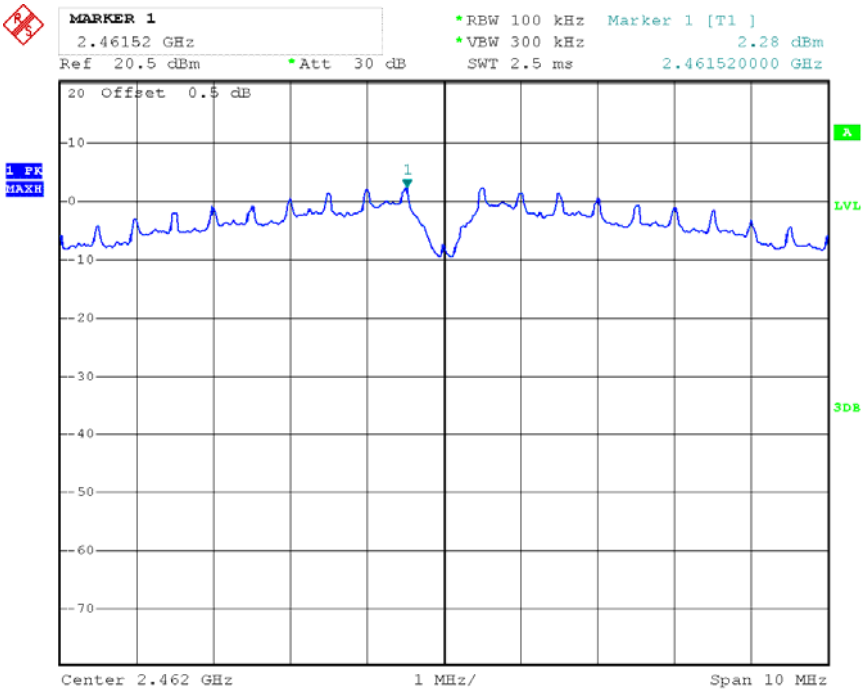
Date: 17.JUL.2012 14:25:59

Power Spectral Density, 802.11b Middle Channel



Date: 17.JUL.2012 14:41:09

Power Spectral Density, 802.11b High Channel



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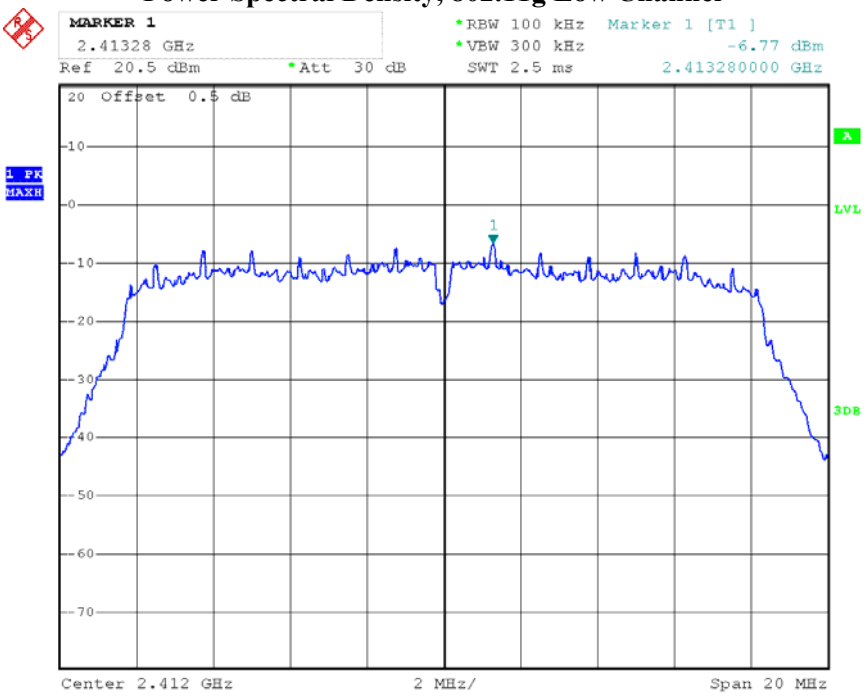
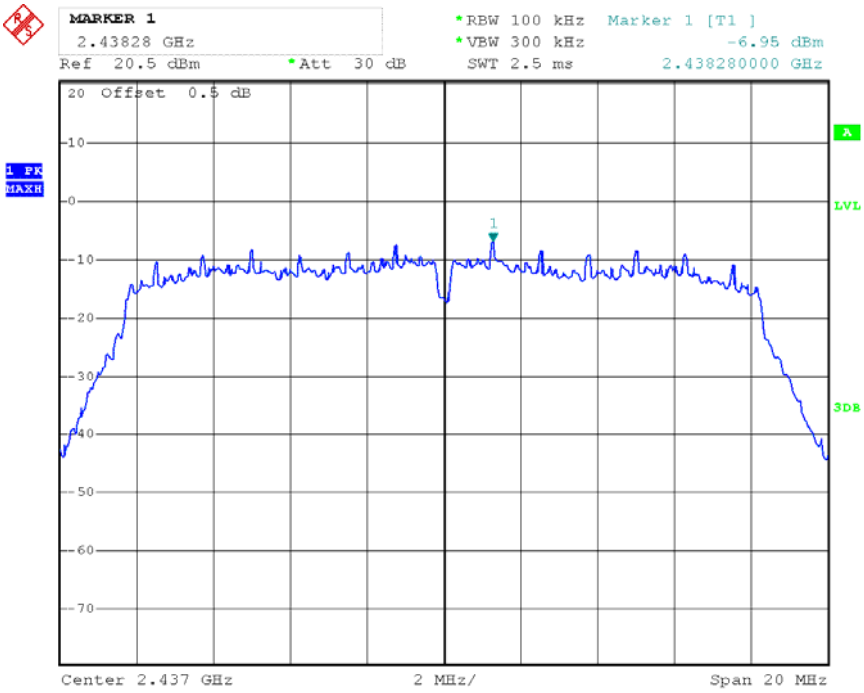
Power Spectral Density, 802.11g Low Channel



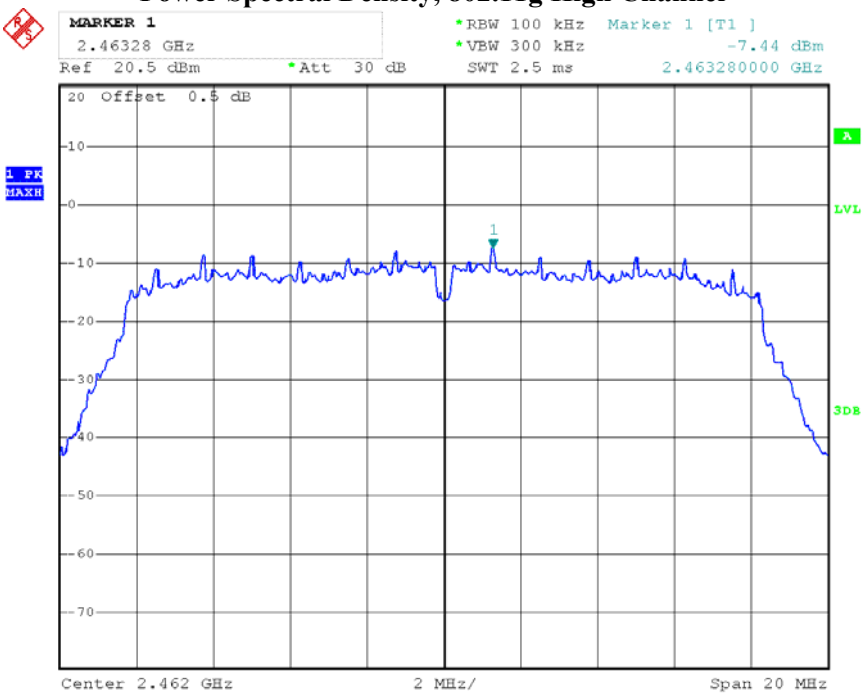
Date: 17.JUL.2012 15:07:36

Power Spectral Density, 802.11g Middle Channel



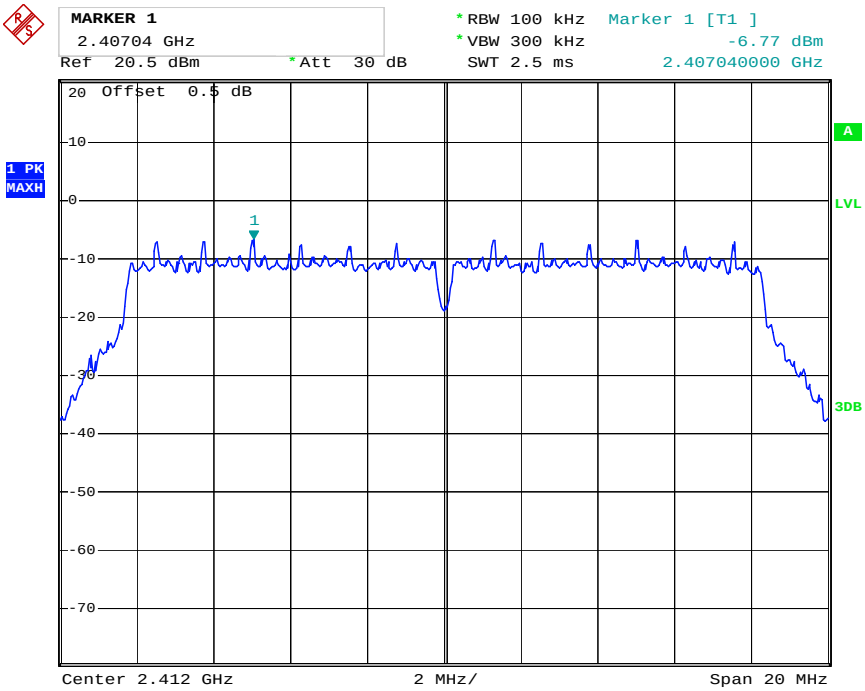
Date: 17.JUL.2012 15:03:49

Power Spectral Density, 802.11g High Channel



Date: 17.JUL.2012 15:16:48

Power Spectral Density, 802.11n20 Low Channel



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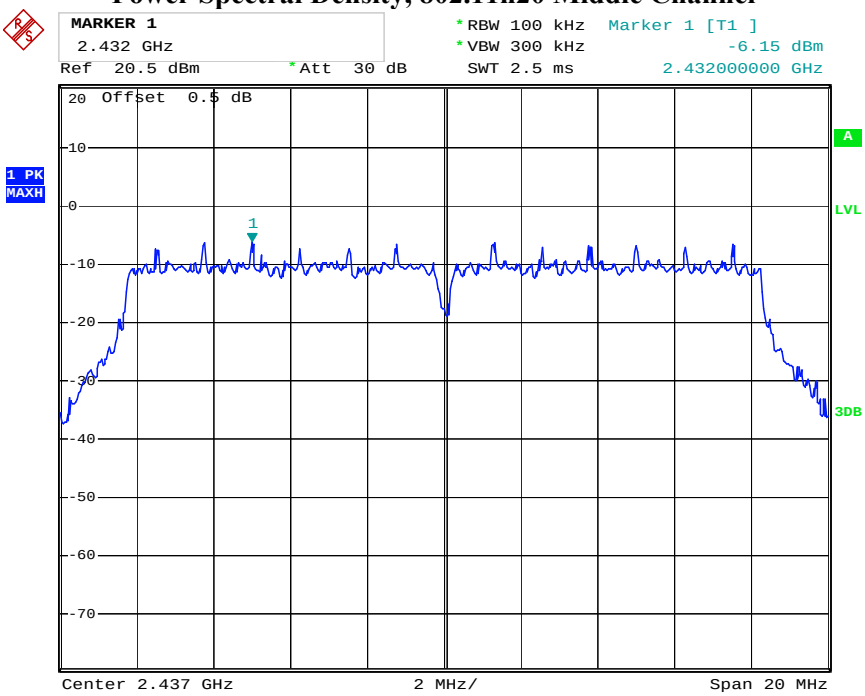
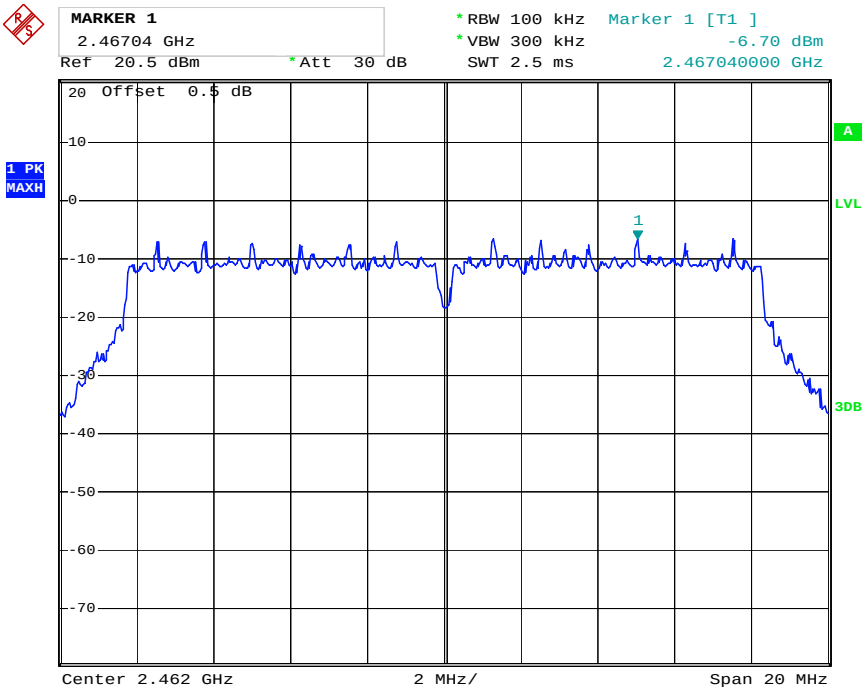
Power Spectral Density, 802.11n20 Middle Channel



Date: 7.SEP.2012 10:00:58

Power Spectral Density, 802.11n20 High Channel



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