



NVLAP LAB CODE 200707-0



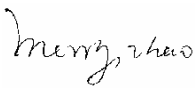
FCC PART 15.247 MEASUREMENT AND TEST REPORT

For

Honeywell Inc.

Honeywell Buildings 1500 West Dundee Rd,
Arlington Heights, IL 60004, USA

FCC ID: BNG-BOTAC01

Report Type: Original Report	Product Type: IdentIPoint
Test Engineer: Sula Huang 	
Report Number: RSZ09101401-15.247	
Report Date: 2009-11-16	
Reviewed By: EMC Engineer Merry Zhao 	
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* This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk "*" (Rev.2)

TABLE OF CONTENTS

GENERAL INFORMATION.....	3
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	3
OBJECTIVE	3
RELATED SUBMITTAL(S)/GRANT(S).....	3
TEST METHODOLOGY	3
TEST FACILITY	4
SYSTEM TEST CONFIGURATION.....	5
DESCRIPTION OF TEST CONFIGURATION	5
EUT EXERCISE SOFTWARE	5
EQUIPMENT MODIFICATIONS	5
LOCAL SUPPORT EQUIPMENT LIST AND DETAILS	5
EXTERNAL I/O CABLE.....	5
CONFIGURATION OF TEST SETUP	6
BLOCK DIAGRAM OF TEST SETUP	6
SUMMARY OF TEST RESULTS	7
FCC §15.247(i), §1.1307(b)(1) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE).....	8
STANDARD APPLICABLE	8
TEST DATA	8
FCC §15.203 - ANTENNA REQUIREMENT.....	10
STANDARD APPLICABLE	10
ANTENNA CONNECTOR CONSTRUCTION	10
FCC §15.207 (a) - CONDUCTED EMISSIONS	11
APPLICABLE STANDARD	11
MEASUREMENT UNCERTAINTY.....	11
EUT SETUP	11
EMI TEST RECEIVER SETUP.....	12
TEST EQUIPMENT LIST AND DETAILS.....	12
TEST PROCEDURE	12
TEST RESULTS SUMMARY	12
TEST DATA	12
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS.....	17
APPLICABLE STANDARD	17
MEASUREMENT UNCERTAINTY.....	17
EUT SETUP	17
EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP	18
TEST EQUIPMENT LIST AND DETAILS.....	18
TEST PROCEDURE	18
CORRECTED AMPLITUDE & MARGIN CALCULATION	18
TEST RESULTS SUMMARY	19
TEST DATA	19
DECLARATION LETTER	34

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Honeywell Inc.*'s product, model number: *BTFTP*, (FCC ID: *BNG-BOTAC01*) or the "EUT" as referred to in this report is a *IdentIPoint*. The EUT is measured approximately 21.5 cm L x 16.5 cm W x 12 cm H. rated input voltage: DC 12V adapter or DC 48V POE. The operating frequency of the CPU is 200 MHz.

Adapter Information: SWITCHING POWER SUPPLY
MODEL: SAW18 12.0-1500US
INPUT: 100-240V 50/60Hz 900mA
OUTPUT: 12V 1500mA

**Note: The series products, model BTBAS, BTSTD, BTFTP, we select BTFTP to test, the all model are electrically identical, only their model names have differences, which was explained in the attached Declaration Letter.*

**All measurement and test data in this report was gathered from production sample serial number: 0910014 (Assigned by BACL, Shenzhen). The EUT was received on 2009-09-14.*

Objective

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

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

Base on the client decalared that the Wi-Fi module was certified on 2006-09-05 with FCC ID: PANWL2203S, so we just test "Conducted Emissions at AC Port", "Spurious Emissions at Antenna Port" and "Spurious Emissions", the other test items, please refer to test report RF950728L04 granted on Aug.21, 2006, issued by Advanced Data Technology Corporation.

Related Submittal(s)/Grant(s)

FCC Part 15.225 submission with FCC ID: BNG-BOTAC01.

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. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located in 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 November 21, 2007. 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.: 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 a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0).



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

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

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

EUT was tested with Channel 1, 6 and 11.

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

EUT Exercise Software

tcp_client, which provided by manufacturer.

Equipment Modifications

No modification was made to the unit tested.

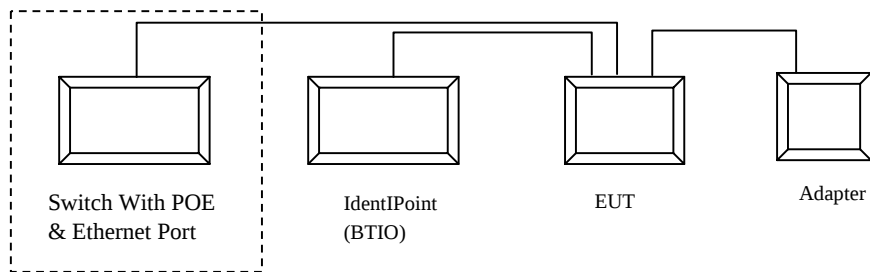
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
NETGEAR	Prosofe 8 Port 10/100 Switch with 4 Port POE	FS108P	IDL18663E00030	DoC
Honeywell	IdentIPoint	BTIO	N/A	N/A
NETGEAR	Switching Adapter	DSA-0421S-501	330-10142-01	DoC

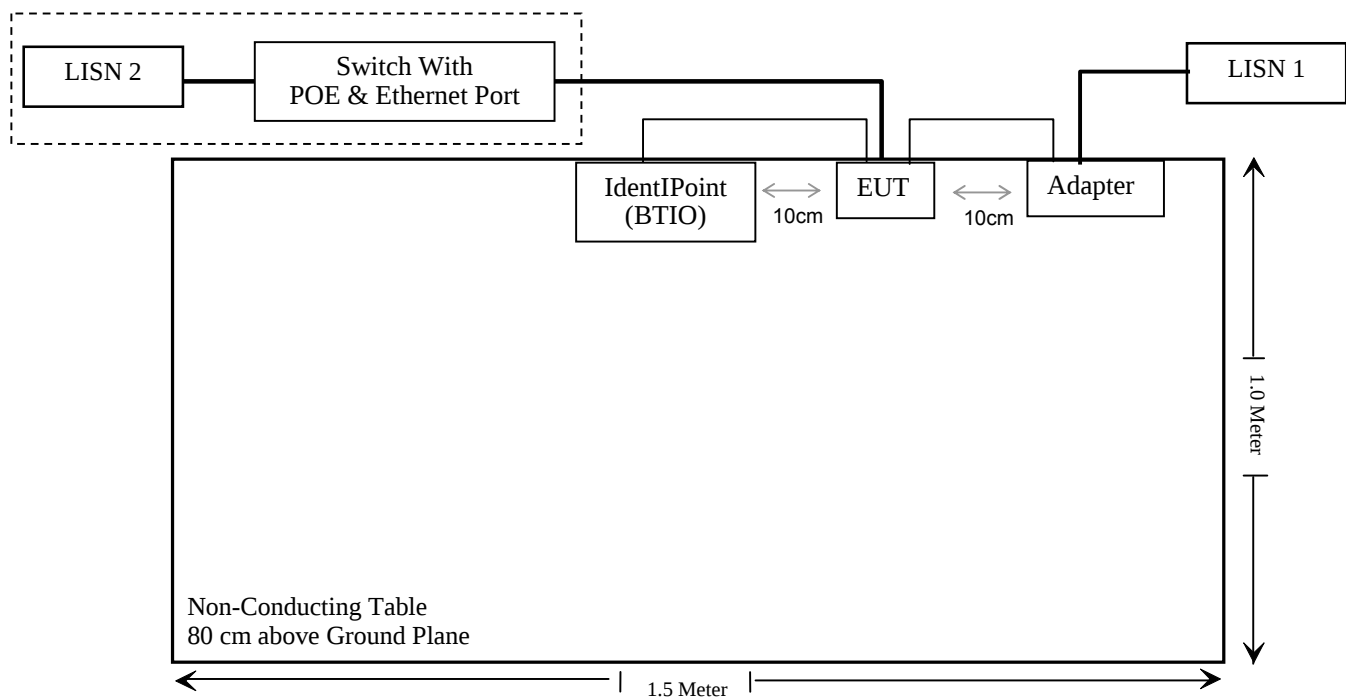
External I/O Cable

Cable Description	Length (m)	From/Port	To
Unshielded Undetachable power Cable	0.50	IdentIPoint (BTIO)	EUT

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (i), §1.1307 (b)(1), §2.1091	Maximum Permissible exposure (MPE)	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 (a),	Conducted Emissions	Compliant
§15.247(d)	Spurious Emissions at Antenna Port	Compliant
§15.205	Restricted Bands	N/A *
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliant
§15.247 (a)(2)	6 dB Bandwidth	N/A *
§15.247(b)(3)	Maximum Peak Output Power	N/A *
§15.247(d)	100kHz Bandwidth of Frequency Band Edge	N/A *
§15.247(e)	Power Spectral Density	N/A *

Note: N/A * please refer to FCC ID: PANWL2203S granted on Sept. 05, 2006, test report RF950728L04 issued by Advanced Data Technology Corporation.

FCC §15.247(i), §1.1307(b)(1) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Standard Applicable

According to subpart 15.247 (i) and subpart 1.1307 (b)(1), 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

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/f ²)	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

Test Data

Predication of MPE limit at a given distance

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

Where:

S = power density (in appropriate units, e.g. mW/cm²)

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)

For 802.11b:

Maximum peak output power at antenna input terminal: 9.56 (dBm)

Maximum peak output power at antenna input terminal: 9.036 (mW)

Prediction distance: 20 (cm)

Predication frequency: 2412 (MHz)

Antenna Gain (typical): 3.05 (dBi)

Maximum Antenna Gain: 2.018 (numeric)

The worst case is power density at predication frequency at 20 cm: 0.00363 (mW/cm²)

MPE limit for general population exposure at prediction frequency: 1.0 (mW/cm²)

For 802.11g:

Maximum peak output power at antenna input terminal: 9.54 (dBm)

Maximum peak output power at antenna input terminal: 8.995 (mW)

Prediction distance: 20 (cm)

Predication frequency: 2437 (MHz)

Antenna Gain (typical): 3.05 (dBi)

Maximum Antenna Gain: 2.018 (numeric)

The worst case is power density at predication frequency at 20 cm: 0.003613 (mW/cm²)

MPE limit for general population exposure at prediction frequency: 1.0 (mW/cm²)

Result:

The predicted power density level at 20 cm is 0.00363 mw/cm² for 802.11b, 0.003613 mw/cm² for 802.11g, which is below the uncontrolled exposure limit of 1.0 mw/cm², The EUT is used at least 20 cm away from user's body. It is determined as mobile equipment and complies with the MPE limit.

FCC §15.203 - ANTENNA REQUIREMENT

Standard Applicable

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.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has a integral printed antenna on PCB, which complies with the Part 15.203. The antenna gain is 3.05 dBi. Please see EUT photo for details.

Result: Compliant.

FCC §15.207 (a) - CONDUCTED EMISSIONS

Applicable Standard

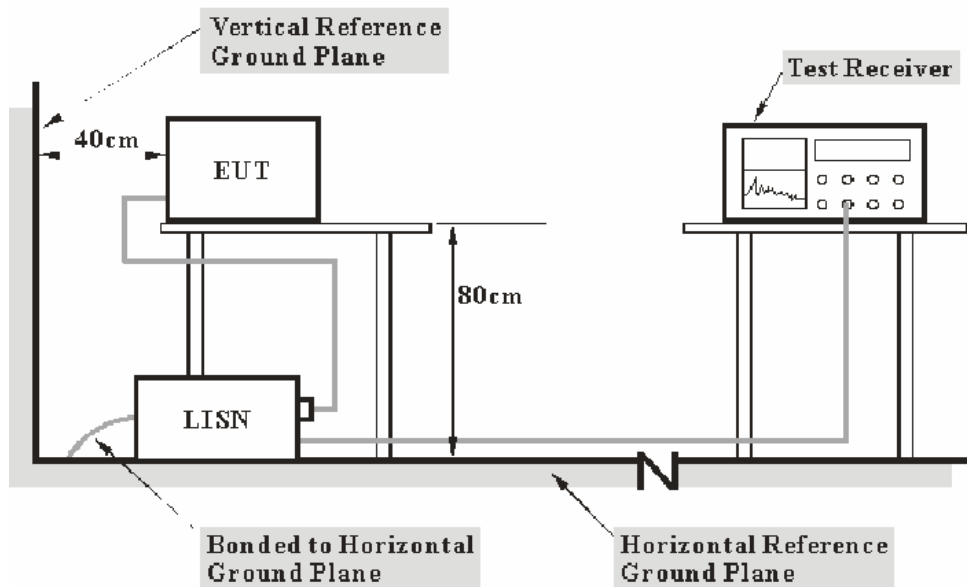
CFR47 §15.207

Measurement Uncertainty

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

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratory Corp. (Shenzhen) is ± 2.4 dB.

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:

<i>Frequency Range</i>	<i>IF B/W</i>
150 kHz – 30 MHz	9 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	830245/006	2009-04-28	2010-04-27
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2009-04-28	2010-04-27

* **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 Procedure

During the conducted emission test, the adapter was connected to the LISN 1, the host PC and the monitor was connected to the LISN 2.

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 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:

11.92 dB at 15.0656 MHz in the **Line** conductor mode, powered by adapter
13.05 dB at 0.3374 MHz in the **Neutral** conductor mode, powered by adapter

3.24 dB at 0.5100 MHz in the **Line** conductor mode, powered by POE
2.30 dB at 0.5050 MHz in the **Neutral** conductor mode, powered by POE

Test Data

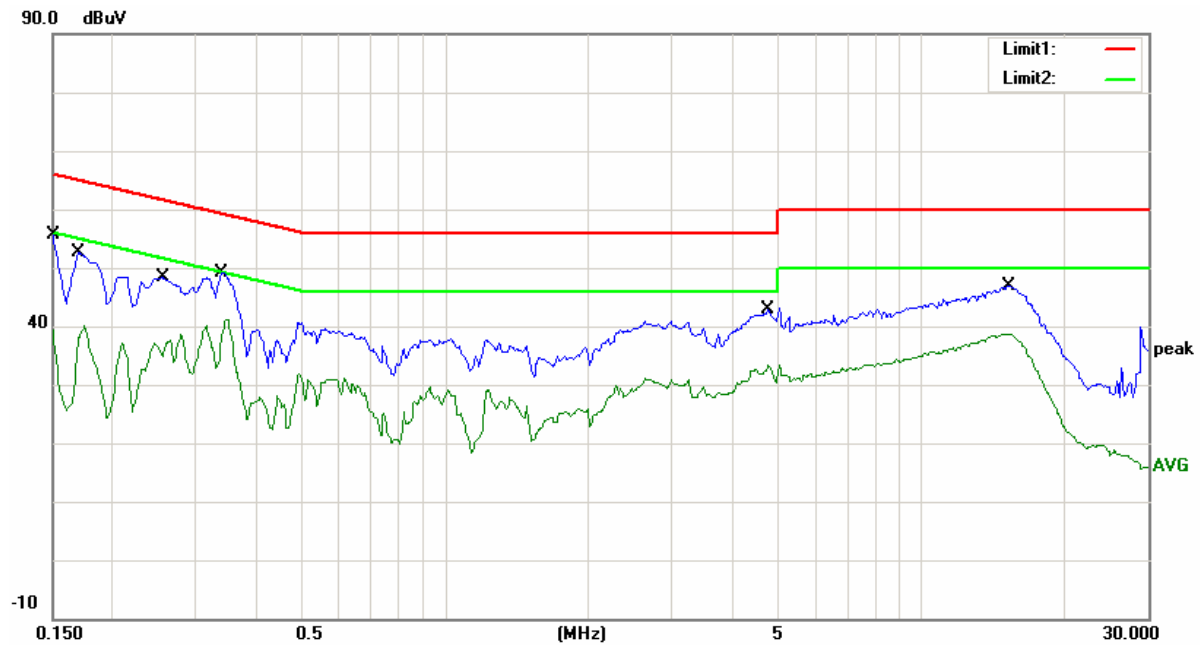
Environmental Conditions

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

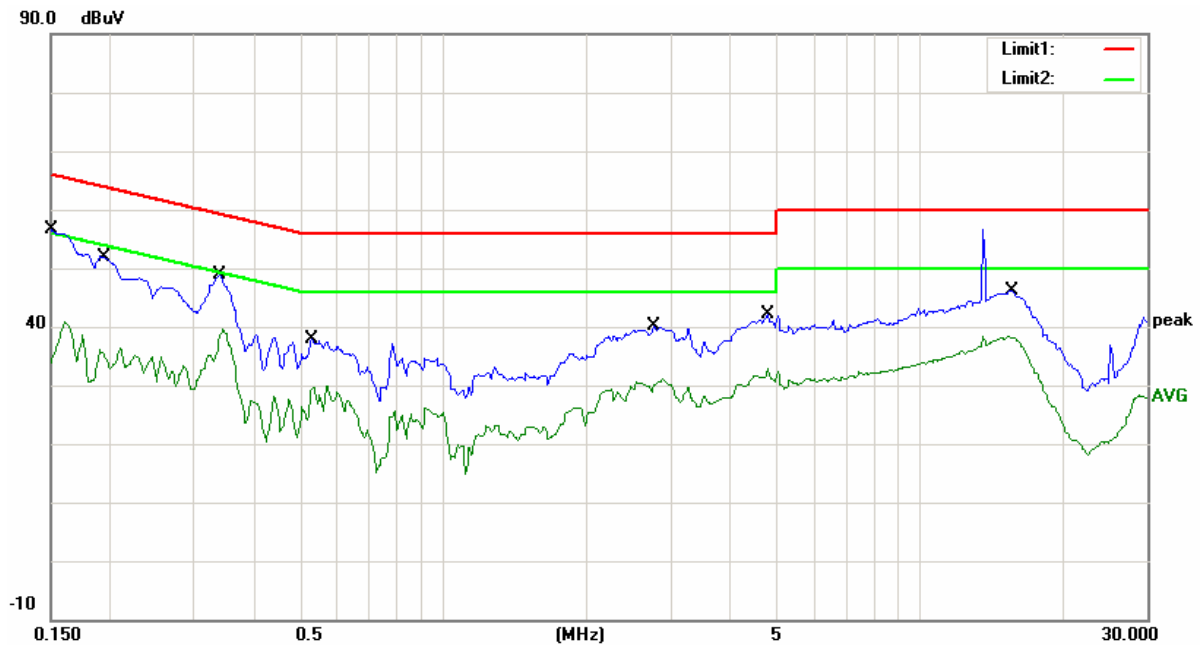
The testing was performed by Sula Huang on 2009-11-16.

Test Mode: Transmitting (802.11b, powered by adapter)

Line:



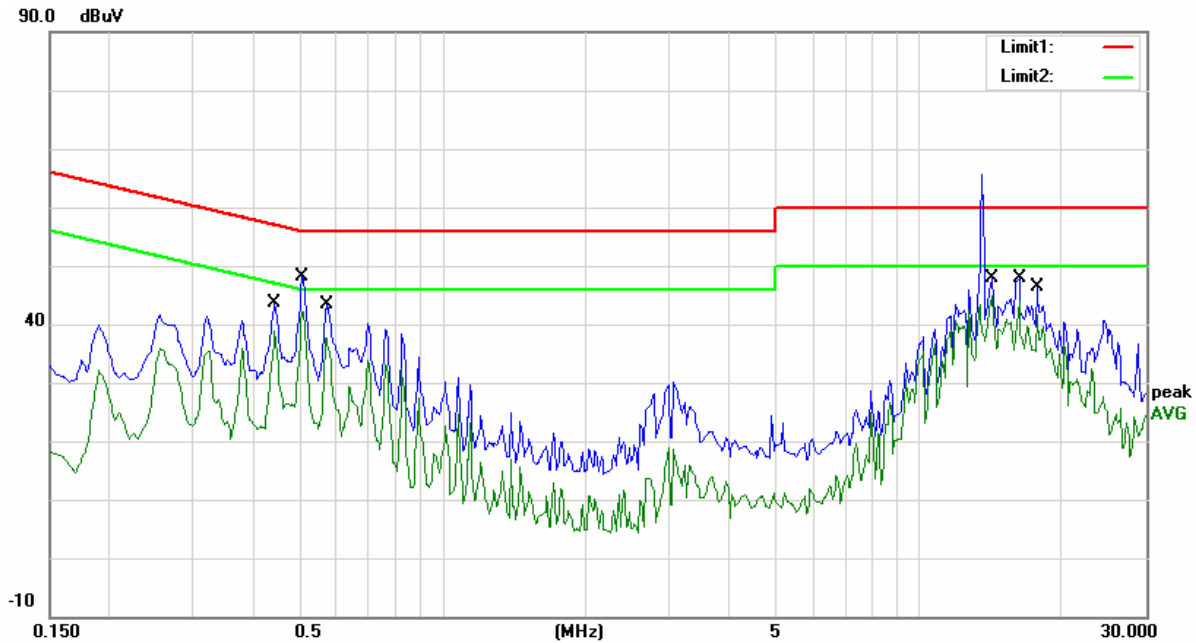
Conducted Emission				FCC Part 15.207		
Frequency (MHz)	Receiver Reading (dBμV)	Correction Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Remark
15.0656	27.88	10.20	38.08	50.00	11.92	AV
0.3410	36.94	10.10	47.04	59.18	12.14	QP
0.3410	26.89	10.10	36.99	49.18	12.19	AV
0.1500	42.60	10.10	52.70	66.00	13.30	QP
4.7213	20.54	10.10	30.64	46.00	15.36	AV
0.1712	38.49	10.10	48.59	64.90	16.31	QP
15.0656	33.07	10.20	43.27	60.00	16.73	QP
0.2535	33.65	10.10	43.75	61.64	17.89	QP
0.2535	23.59	10.10	33.69	51.64	17.95	AV
4.7213	27.48	10.10	37.58	56.00	18.42	QP
0.1500	27.28	10.10	37.38	56.00	18.62	AV
0.1712	22.26	10.10	32.36	54.90	22.54	AV

Neutral:

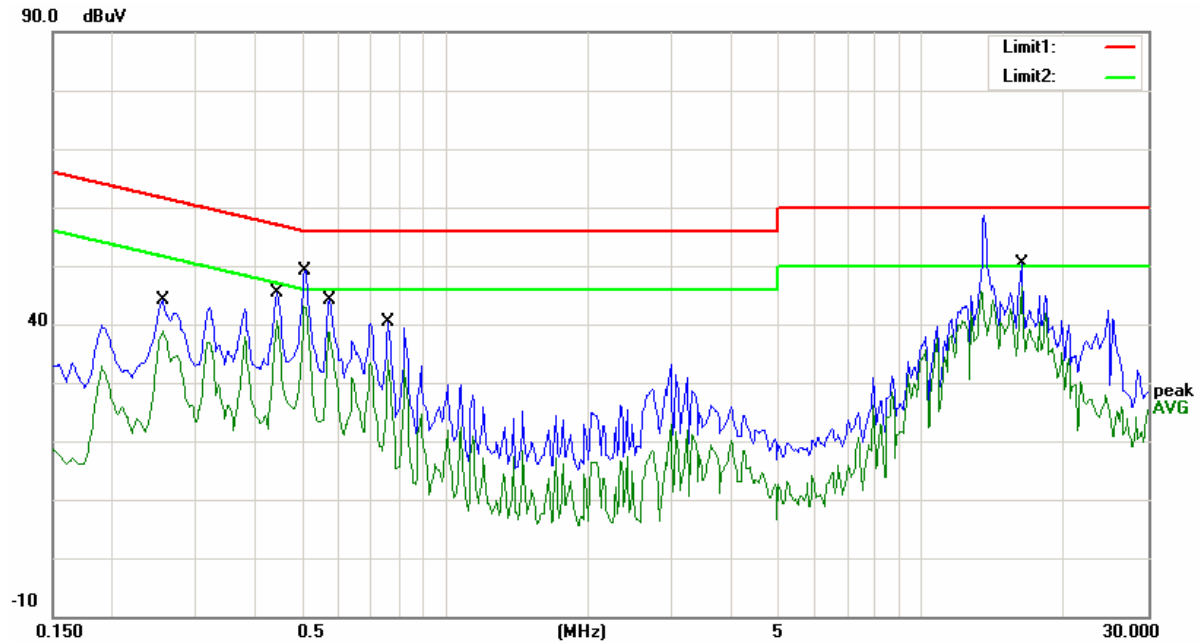
Conducted Emission				FCC Part 15.207		
Frequency (MHz)	Receiver Reading (dBμV)	Correction Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Remark
0.3374	26.12	10.10	36.22	49.27	13.05	AV
0.3374	34.65	10.10	44.75	59.27	14.52	QP
4.7716	21.00	10.10	31.10	46.00	14.90	AV
0.1500	29.37	10.10	39.47	56.00	16.53	AV
2.7794	18.56	10.10	28.66	46.00	17.34	AV
4.7716	27.34	10.10	37.44	56.00	18.56	QP
2.7794	26.21	10.10	36.31	56.00	19.69	QP
0.5265	16.00	10.10	26.10	46.00	19.90	AV
0.5265	25.61	10.10	35.71	56.00	20.29	QP
0.1500	35.30	10.10	45.40	66.00	20.60	QP
0.1965	32.88	10.10	42.98	63.76	20.78	QP
0.1965	14.90	10.10	25.00	53.76	28.76	AV

Test Mode: Transmitting (802.11b, powered by POE)

Line:



Conducted Emission				FCC Part 15.207		
Frequency (MHz)	Receiver Reading (dBμV)	Correction Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Remark
0.5100	32.66	10.10	42.76	46.00	3.24	AV
0.5100	37.44	10.10	47.54	56.00	8.46	QP
0.5750	26.87	10.10	36.97	46.00	9.03	AV
0.4400	26.08	10.10	36.18	47.06	10.88	AV
0.5750	31.86	10.10	41.96	56.00	14.04	QP
0.4400	30.54	10.10	40.64	57.06	16.42	QP
17.7549	20.21	10.20	30.41	50.00	19.59	AV
17.7549	22.25	10.20	32.45	60.00	27.55	QP
16.0546	7.22	10.20	17.42	50.00	32.58	AV
14.1376	6.52	10.20	16.72	50.00	33.28	AV
16.0546	14.20	10.20	24.40	60.00	35.60	QP
14.1376	11.78	10.20	21.98	60.00	38.02	QP

Neutral:

Conducted Emission				FCC Part 15.207		
Frequency (MHz)	Receiver Reading (dBμV)	Correction Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Remark
0.5050	33.60	10.10	43.70	46.00	2.30*	AV
0.4450	30.22	10.10	40.32	46.97	6.65	AV
0.5700	29.25	10.10	39.35	46.00	6.65	AV
0.5050	37.01	10.10	47.11	56.00	8.89	QP
0.7600	24.09	10.10	34.19	46.00	11.81	AV
0.5700	34.03	10.10	44.13	56.00	11.87	QP
0.4450	33.02	10.10	43.12	56.97	13.85	QP
0.2575	27.25	10.10	37.35	51.51	14.16	AV
0.7600	28.53	10.10	38.63	56.00	17.37	QP
0.2575	31.21	10.10	41.31	61.51	20.20	QP
16.3118	4.12	10.20	14.32	50.00	35.68	AV
16.3118	10.63	10.20	20.83	60.00	39.17	QP

Note: * Within measurement uncertainty.

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

Applicable Standard

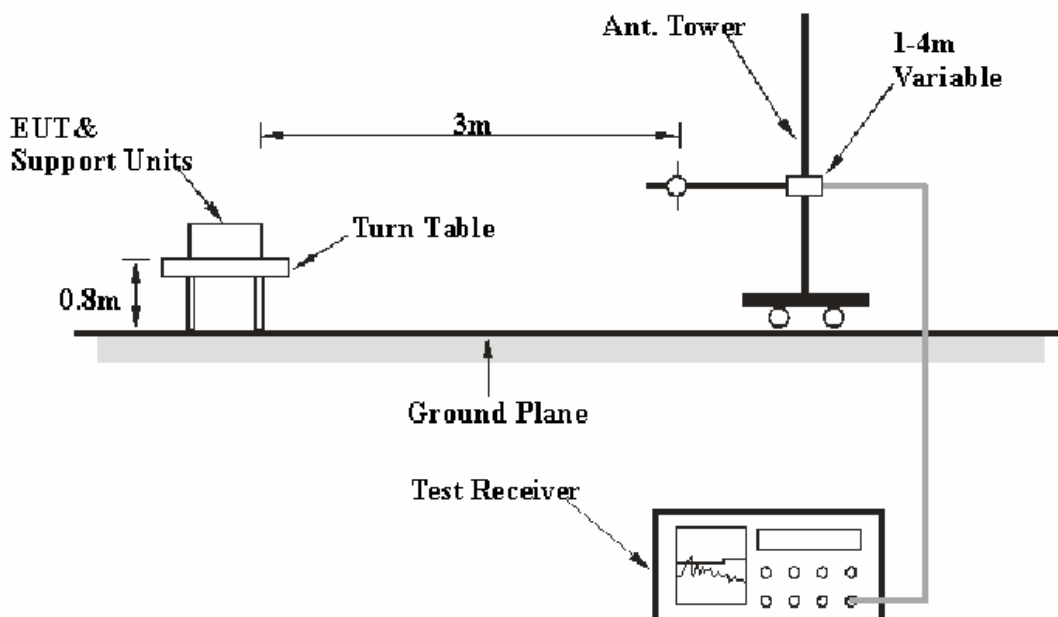
FCC §15.247 (d); §15.209; §15.205;

Measurement Uncertainty

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

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

EUT Setup



The radiated emission tests were performed in the 3 meters chamber B 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 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:

<u>Frequency Range</u>	<u>RBW</u>	<u>Video B/W</u>
30MHz – 1000 MHz	100 kHz	300 kHz
1000 MHz – 25 GHz	1 MHz	3 MHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	HP8447D	2944A09795	2009-08-02	2010-08-02
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2009-11-07	2010-11-06
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2009-03-11	2010-03-11
HP	Amplifier	8449B	3008A00277	2009-09-12	2010-09-11
Sunol Sciences	Horn Antenna	DRH-118	A052604	2009-05-05	2010-05-04
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2009-07-08	2010-07-08

*** 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 Procedure

For the radiated emissions test, the adapter, the host PC and monitor were connected to the 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-1GHz and peak and Average detection modes for frequencies above 1GHz.

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:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

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

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205, 15.109, 15.209 and 15.247, with the worst margin reading of:

30 -1000 MHz:

802.11b (wost case): **5.2 dB** at **40.659500 MHz** in the **Vertical** polarization, powered by adapter
802.11b (wost case): **2.1 dB** at **40.315500 MHz** in the **Vertical** polarization, powered by POE

802.11g (wost case): **3.1 dB** at **40.697000 MHz** in the **Vertical** polarization, powered by adapter
802.11g (wost case): **2.2 dB** at **384.019250 MHz** in the **Vertical** polarization, powered by POE

Above 1 GHz:

802.11b (Low Channel): **3.97 dB** at **4824 MHz** in the **Horizontal** polarization, powered by adapter
802.11b (Middle Channel): **4.42 dB** at **4874 MHz** in the **Horizontal** polarization, powered by adapter
802.11b (High Channel): **4.64 dB** at **4924 MHz** in the **Horizontal** polarization, powered by adapter

802.11b (Low Channel): **4.18 dB** at **4824 MHz** in the **Horizontal** polarization, powered by POE
802.11b (Middle Channel): **4.58 dB** at **4874 MHz** in the **Horizontal** polarization, powered by POE
802.11b (High Channel): **3.63 dB** at **4924 MHz** in the **Horizontal** polarization, powered by POE

802.11g (Low Channel): **5.14 dB** at **4824 MHz** in the **Vertical** polarization, powered by adapter
802.11g (Middle Channel): **3.84 dB** at **4874 MHz** in the **Horizontal** polarization, powered by adapter
802.11g (High Channel): **5.44 dB** at **4924 MHz** in the **Horizontal** polarization, powered by adapter

802.11g (Low Channel): **4.33 dB** at **4824 MHz** in the **Vertical** polarization, powered by POE
802.11g (Middle Channel): **5.71 dB** at **4874 MHz** in the **Horizontal** polarization, powered by POE
802.11g (High Channel): **4.18 dB** at **4924 MHz** in the **Horizontal** polarization, powered by POE

Test Data

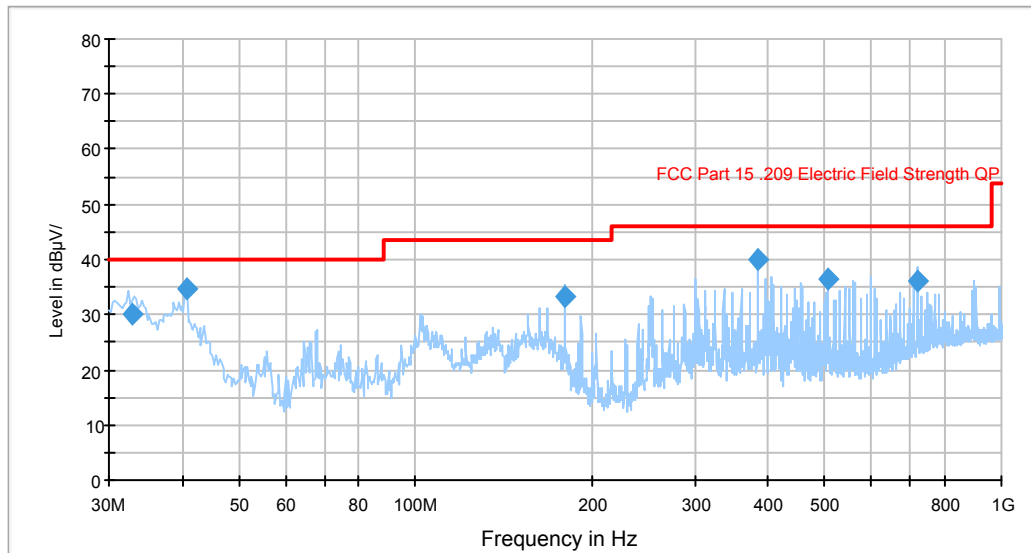
Environmental Conditions

Temperature:	24 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

The testing was performed by Sula Huang on 2009-11-11 to 2009-11-12.

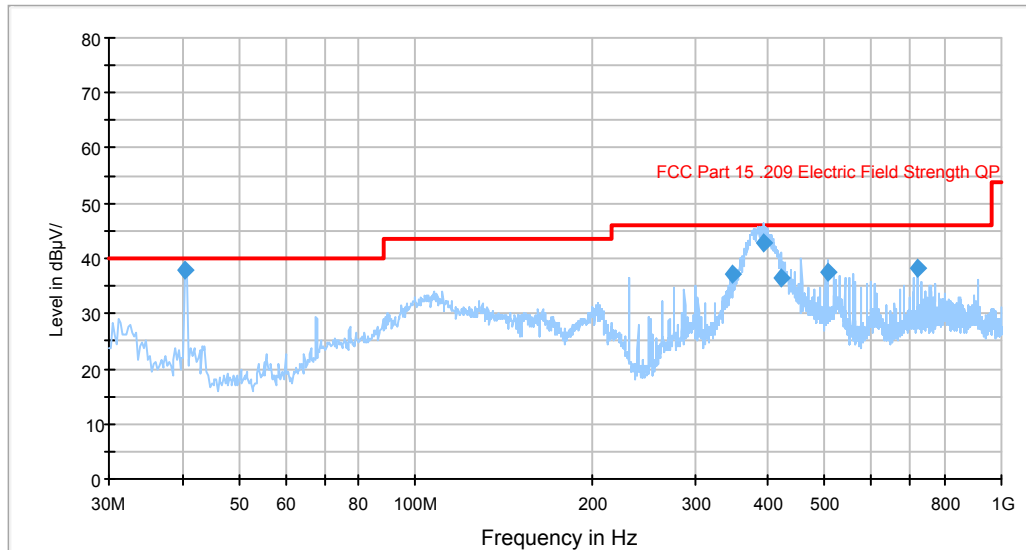
30-1000 MHz:

Test Mode: Transmitting (802.11b, powered by adapter)



Frequency (MHz)	Corrected Amplitude (dBμV/m)	Ant. Height (cm)	Ant. Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dBμV/m)	Margin (dB)
40.659500	34.8	100.0	V	270.0	-13.7	40.0	5.2
384.013500	39.9	131.0	V	137.0	-12.7	46.0	6.1
506.537000	36.3	116.0	V	281.0	-10.2	46.0	9.7
719.975250	36.2	100.0	H	187.0	-4.0	46.0	9.8
32.871000	30.1	117.0	V	288.0	-8.2	40.0	9.9
179.999000	33.4	100.0	V	211.0	-16.0	43.5	10.1

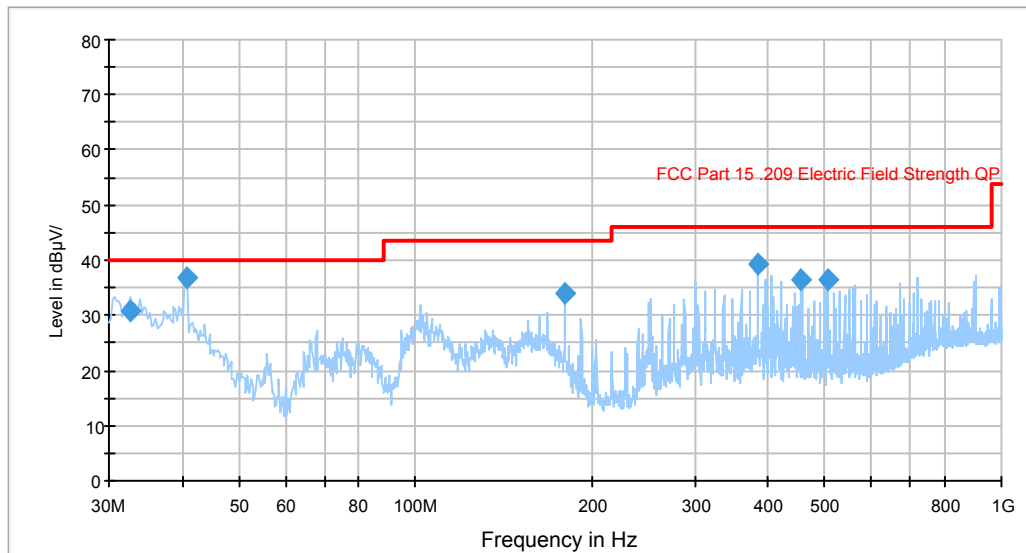
Test Mode: Transmitting (802.11b, powered by POE)



Frequency (MHz)	Corrected Amplitude (dBμV/m)	Ant. Height (cm)	Ant. Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dBμV/m)	Margin (dB)
40.315500	37.9	100.0	V	231.0	-13.5	40.0	2.1*
393.210500	42.7	133.0	V	6.0	-12.5	46.0	3.3*
720.001000	38.1	100.0	H	305.0	-4.0	46.0	7.9
506.650000	37.6	157.0	V	82.0	-10.2	46.0	8.4
348.117750	37.1	157.0	V	97.0	-13.4	46.0	8.9
420.423000	36.3	146.0	V	20.0	-11.9	46.0	9.7

* Within measurement uncertainty.

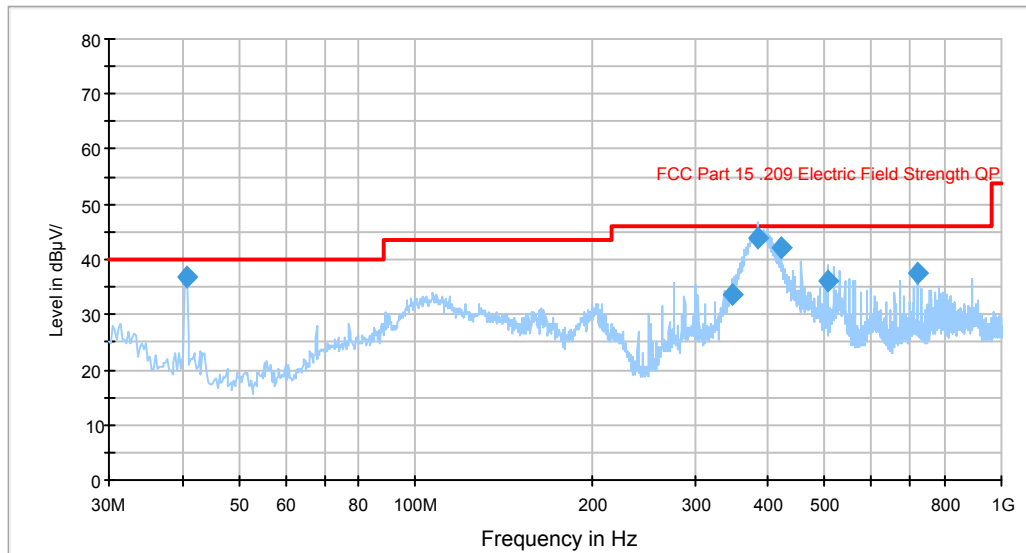
Test Mode: Transmitting (802.11g, powered by adapter)



Frequency (MHz)	Corrected Amplitude (dBμV/m)	Ant. Height (cm)	Ant. Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dBμV/m)	Margin (dB)
40.697000	36.9	100.0	V	240.0	-13.7	40.0	3.1*
384.017500	39.4	131.0	V	138.0	-12.7	46.0	6.6
32.592000	30.7	100.0	V	230.0	-8.0	40.0	9.3
506.520750	36.6	100.0	V	197.0	-10.2	46.0	9.4
180.107000	34.0	163.0	H	224.0	-0.6	43.5	9.5
455.997750	36.4	158.0	V	173.0	-11.2	46.0	9.6

* Within measurement uncertainty.

Test Mode: Transmitting (802.11g, powered by POE)



Frequency (MHz)	Corrected Amplitude (dBμV/m)	Ant. Height (cm)	Ant. Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dBμV/m)	Margin (dB)
384.019250	43.8	144.0	V	357.0	-12.7	46.0	2.2*
40.685000	36.7	100.0	V	77.0	-13.7	40.0	3.3*
420.018750	42.2	119.0	V	7.0	-11.9	46.0	3.8*
720.011000	37.5	100.0	H	316.0	-4.0	46.0	8.5
506.568750	36.2	118.0	V	6.0	-10.2	46.0	9.8
347.931250	33.5	173.0	V	154.0	-13.4	46.0	12.5

* Within measurement uncertainty.

Above 1 GHz:

802.11b Mode (powered by adapter):

Indicated		Detector (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247/15.209			
Frequency (MHz)	Receiver Reading (dBμV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Comment
Low Channel (2412 MHz)												
4824	38.84	AV	251	1.90	H	36.0	8.79	33.6	50.03	54	3.97	Harmonic
4824	35.06	AV	245	1.45	V	35.4	8.79	33.6	45.65	54	8.35	Harmonic
4824	52.82	PK	251	1.90	H	36.0	8.79	33.6	64.01	74	9.99	Harmonic
4824	50.42	PK	245	1.45	V	35.4	8.79	33.6	61.01	74	12.99	Harmonic
2487.58	53.22	PK	152	1.00	H	30.6	5.69	33.90	55.61	74	18.39	Spurious
2487.58	32.66	AV	152	1.00	H	30.6	5.69	33.90	35.05	54	18.95	Spurious
2486.54	32.23	AV	180	1.50	V	30.50	5.69	33.90	34.52	54	19.48	Spurious
2310.76	32.39	AV	180	1.30	H	30.0	5.55	33.90	34.04	54	19.96	Spurious
2365.78	31.79	AV	150	1.00	V	30.30	5.55	33.90	33.74	54	20.26	Spurious
1385.8	35.96	AV	225	1.40	H	25.6	4.20	35.0	30.76	54	23.24	Spurious
2486.54	48.09	PK	180	1.50	V	30.50	5.69	33.90	50.38	74	23.62	Spurious
2365.78	46.41	PK	150	1.00	V	30.30	5.55	33.90	48.36	74	25.64	Spurious
1147.0	34.05	AV	154	1.55	V	24.5	3.62	35.0	27.17	54	26.83	Spurious
2310.76	45.11	PK	180	1.30	H	30.0	5.55	33.90	46.76	74	27.24	Spurious
1385.8	48.79	PK	225	1.40	H	25.6	4.20	35.0	43.59	74	30.41	Spurious
1147.0	48.05	PK	155	1.55	V	24.5	3.62	35.0	41.17	74	32.83	Spurious
Middle Channel (2437 MHz)												
4874	38.13	AV	70	1.20	H	36.2	8.85	33.6	49.58	54	4.42	Harmonic
4874	34.92	AV	260	1.23	V	35.0	8.85	33.6	45.17	54	8.83	Harmonic
4874	52.34	PK	70	1.20	H	36.2	8.85	33.6	63.79	74	10.21	Harmonic
2384.8	39.50	AV	26	1.20	V	30.30	5.55	33.90	41.45	54	12.55	Spurious
2489.2	38.94	AV	20	1.00	V	30.50	5.69	33.90	41.23	54	12.77	Spurious
4874	50.49	PK	260	1.23	V	35.0	8.85	33.6	60.74	74	13.26	Harmonic
2489.2	54.68	PK	20	1.00	V	30.50	5.69	33.90	56.97	74	17.03	Spurious
2384.8	54.55	PK	26	1.20	V	30.60	5.55	33.90	56.8	74	17.2	Spurious
2312.9	33.26	AV	170	1.20	H	30.90	5.55	33.90	35.81	54	18.19	Spurious
1385.8	36.29	AV	130	1.07	V	25.1	4.0	35.0	30.39	54	23.61	Spurious
1133.84	35.93	AV	175	1.37	H	25.2	3.60	35.0	29.73	54	24.27	Spurious
2312.9	45.94	PK	170	1.20	H	30.90	5.55	33.90	48.49	74	25.51	Spurious
1385.8	48.92	PK	130	1.07	V	25.1	4.0	35.0	43.02	74	30.98	Spurious
1133.84	48.84	PK	175	1.37	H	25.2	3.60	35.0	42.64	74	31.36	Spurious

Indicated		Detector (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247/15.209			
Frequency (MHz)	Receiver Reading (dBµV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Comment
HighChannel (2462 MHz)												
4924	37.46	AV	100	1.15	H	36.6	8.90	33.6	49.36	54	4.64	Harmonic
4924	36.47	AV	143	1.20	V	35.0	8.90	33.6	46.77	54	7.23	Harmonic
4924	52.86	PK	100	1.15	H	36.6	8.90	33.6	64.76	74	9.24	Harmonic
4924	51.46	PK	143	1.20	V	35.0	8.90	33.6	61.76	74	12.24	Harmonic
2317.76	33.23	AV	210	1.00	V	30.90	5.55	33.90	35.78	54	18.22	Spurious
2317.79	32.77	AV	318	1.20	H	30.90	5.55	33.90	35.32	54	18.68	Spurious
2483.4	31.69	AV	0	1.00	V	30.50	5.69	33.90	33.98	54	20.02	Spurious
1449.62	34.76	AV	150	1.15	H	26.4	4.35	35.0	30.51	54	23.49	Spurious
2483.4	47.79	PK	0	1.00	V	30.50	5.69	33.90	50.08	74	23.92	Spurious
2317.79	47.11	PK	318	1.20	H	30.90	5.55	33.90	49.66	74	24.34	Spurious
1284.48	34.54	AV	280	1.20	V	25.1	3.80	35.0	28.44	54	25.56	Spurious
2317.76	45.73	PK	210	1.00	V	30.90	5.55	33.90	48.28	74	25.72	Spurious
1449.62	47.39	PK	150	1.15	H	26.4	4.35	35.0	43.14	74	30.86	Spurious
1284.48	48.61	PK	280	1.20	V	25.1	3.80	35.0	42.51	74	31.49	Spurious

* Within measurement uncertainty.

802.11b Mode (powered by POE):

Indicated		Detector (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247/15.209			
Frequency (MHz)	Receiver Reading (dBμV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Comment
Low Channel (2412 MHz)												
4824	38.72	AV	276	2.0	H	36.0	8.70	33.6	49.82	54	4.18	Harmonic
4824	34.74	AV	250	1.5	V	35.4	8.79	33.6	45.33	54	8.67	Harmonic
4824	52.67	PK	276	2.0	H	36.0	8.70	33.6	63.77	74	10.23	Harmonic
4824	50.50	PK	250	1.5	V	35.4	8.79	33.6	61.09	74	12.91	Harmonic
1980.5	36.02	AV	45	1.4	V	29.7	5.12	35.0	35.84	54	18.16	Spurious
2487.56	53.34	PK	150	1.00	H	30.6	5.69	33.90	55.73	74	18.27	Spurious
2487.56	32.68	AV	150	1.00	H	30.6	5.69	33.90	35.07	54	18.93	Spurious
2486.53	32.29	AV	180	1.5	V	30.50	5.69	33.90	34.58	54	19.42	Spurious
2311.51	32.43	AV	182	1.30	H	30.0	5.55	33.90	34.08	54	19.92	Spurious
1744	56.55	PK	180	1.1	H	27.6	4.88	35.0	54.03	74	19.97	Spurious
2365.80	31.82	AV	151	1.0	V	30.30	5.55	33.90	33.77	54	20.23	Spurious
1744	34.25	AV	125	1.3	H	27.6	4.88	35.0	31.73	54	22.27	Spurious
2486.53	48.13	PK	180	1.5	V	30.50	5.69	33.90	50.42	74	23.58	Spurious
1980.5	48.88	PK	45	1.4	V	29.7	5.12	35.0	48.7	74	25.3	Spurious
2365.80	46.45	PK	151	1.0	V	30.30	5.55	33.90	48.4	74	25.6	Spurious
2311.51	45.26	PK	182	1.30	H	30.0	5.55	33.90	46.91	74	27.09	Spurious
Middle Channel (2437 MHz)												
4874	37.97	AV	78	1.20	H	36.2	8.85	33.6	49.42	54	4.58	Harmonic
4874	35.28	AV	253	1.18	V	35.0	8.85	33.6	45.53	54	8.47	Harmonic
4874	52.19	PK	78	1.20	H	36.2	8.85	33.6	63.64	74	10.36	Harmonic
2384.75	39.45	AV	25	1.2	V	30.30	5.55	33.90	41.4	54	12.6	Spurious
2489.42	38.96	AV	20	1.0	V	30.50	5.69	33.90	41.25	54	12.75	Spurious
4874	50.57	PK	253	1.18	V	35.0	8.85	33.6	60.82	74	13.18	Harmonic
2489.42	54.73	PK	20	1.0	V	30.50	5.69	33.90	57.02	74	16.98	Spurious
2384.75	54.39	PK	25	1.2	V	30.60	5.55	33.90	56.64	74	17.36	Spurious
2313.12	33.31	AV	175	1.3	H	30.90	5.55	33.90	35.86	54	18.14	Spurious
1631	36.12	AV	120	1.2	H	27.3	4.60	35.0	33.02	54	20.98	Spurious
1662	35.75	AV	180	1.2	V	27.3	4.60	35.0	32.65	54	21.35	Spurious
2313.12	45.88	PK	175	1.3	H	30.90	5.55	33.90	48.43	74	25.57	Spurious
1631	48.76	PK	120	1.2	H	27.3	4.60	35.0	45.66	74	28.34	Spurious
1662	48.55	PK	180	1.2	V	27.3	4.60	35.0	45.45	74	28.55	Spurious

Indicated		Detector (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247/15.209			
Frequency (MHz)	Receiver Reading (dBμV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Comment
HighChannel (2462 MHz)												
4924	38.47	AV	80	1.32	H	36.6	8.90	33.6	50.37	54	3.63*	Harmonic
4924	36.28	AV	90	1.3	V	35.0	8.90	33.6	46.58	54	7.42	Harmonic
4924	53.20	PK	80	1.32	H	36.6	8.90	33.6	65.1	74	8.9	Harmonic
4924	51.20	PK	90	1.3	V	35.0	8.90	33.6	61.5	74	12.5	Harmonic
2110	36.44	AV	60	1.45	V	30.0	5.15	34.0	37.59	54	16.41	Spurious
2318.21	33.34	AV	215	1.0	V	30.90	5.55	33.90	35.89	54	18.11	Spurious
2318.08	33.04	AV	320	1.2	H	30.90	5.55	33.90	35.59	54	18.41	Spurious
2483.35	31.72	AV	0	1.0	V	30.50	5.69	33.90	34.01	54	19.99	Spurious
2110	50.02	PK	60	1.45	V	30.0	5.15	34.0	51.17	74	22.83	Spurious
2318.08	48.25	PK	320	1.2	H	30.90	5.55	33.90	50.8	74	23.2	Spurious
1231	35.52	AV	120	1.2	H	25.8	4.0	35.0	30.32	54	23.68	Spurious
2483.35	47.81	PK	0	1.0	V	30.50	5.69	33.90	50.1	74	23.9	Spurious
2318.21	45.81	PK	215	1.0	V	30.90	5.55	33.90	48.36	74	25.64	Spurious
1231	48.74	PK	120	1.2	H	25.8	4.0	35.0	43.54	74	30.46	Spurious

* Within measurement uncertainty.

802.11g Mode (powered by adapter):

Indicated		Detector (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247/15.209			
Frequency (MHz)	Receiver Reading (dBµV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Comment
Low Channel (2412 MHz)												
4824	37.76	AV	151	1.52	V	35.4	8.70	33.6	48.86	54	5.14	Harmonic
4824	37.43	AV	165	1.8	H	36.0	8.70	33.6	48.53	54	5.47	Harmonic
4824	50.65	PK	150	1.8	H	36.0	8.70	33.6	61.75	74	12.25	Harmonic
4824	50.28	PK	175	1.75	V	35.4	8.70	33.6	61.38	74	12.62	Harmonic
2378.20	37.05	AV	150	1.3	H	30.30	5.55	33.90	39.00	54	15.00	Spurious
2332	35.50	AV	90	1.3	V	30.0	5.55	34.0	37.05	54	16.95	Spurious
1521	37.61	AV	180	1.2	H	27.0	4.40	35.0	34.01	54	19.99	Spurious
2378.20	51.18	PK	150	1.3	H	30.30	5.55	33.90	53.13	74	20.87	Spurious
2332	48.40	PK	20	1.2	V	30.0	5.55	34.0	49.95	74	24.05	Spurious
1521	50.1	PK	120	1.3	H	27.0	4.40	35.0	46.5	74	27.5	Spurious
Middle Channel (2437 MHz)												
4874	38.71	AV	230	1.25	H	36.2	8.85	33.6	50.16	54	3.84*	Harmonic
4874	37.74	AV	65	1.35	V	35.0	8.85	33.6	47.99	54	6.01	Harmonic
4874	50.19	PK	240	1.30	H	36.2	8.85	33.6	61.64	74	12.36	Harmonic
4874	50.55	PK	60	1.30	V	35.0	8.85	33.6	60.8	74	13.2	Harmonic
2358.65	35.79	AV	190	1.5	H	30.30	5.55	33.90	37.74	54	16.26	Spurious
2360.10	34.67	AV	180	1.4	V	30.30	5.55	33.90	36.62	54	17.38	Spurious
2358.65	53.14	PK	190	1.5	H	30.30	5.55	33.90	55.09	74	18.91	Spurious
1789	35.47	AV	90	1.5	V	28.0	4.80	35.0	33.27	54	20.73	Spurious
1684	34.9	AV	120	1.1	H	27.6	4.70	35.0	32.2	54	21.8	Spurious
2360.10	48.93	PK	180	1.4	V	30.30	5.55	33.90	50.88	74	23.12	Spurious
1789	47.43	PK	45	1.2	V	28.0	4.80	35.0	45.23	74	28.77	Spurious
1684	47.4	PK	90	1.2	H	27.6	4.70	35.0	44.7	74	29.3	Spurious
HighChannel (2462 MHz)												
4924	36.66	AV	160	1.91	H	36.6	8.90	33.6	48.56	54	5.44	Harmonic
4924	35.88	AV	50	1.50	V	35.0	8.90	33.6	46.18	54	7.82	Harmonic
4924	50.91	PK	150	1.85	H	36.6	8.90	33.6	62.81	74	11.19	Harmonic
4924	49.77	PK	60	1.50	V	35.0	8.90	33.6	60.07	74	13.93	Harmonic
2315.2	33.26	AV	170	1.2	H	30.90	5.55	33.90	35.81	54	18.19	Spurious
2487.54	31.59	AV	360	1.0	V	30.50	5.69	33.90	33.88	54	20.12	Spurious
1655	36.72	AV	5	1.3	H	27.4	4.65	35.0	33.77	54	20.23	Spurious
1589	34.67	AV	100	1.1	V	27.0	4.50	35.0	31.17	54	22.83	Spurious
2315.2	45.94	PK	170	1.2	H	30.90	5.55	33.90	48.49	74	25.51	Spurious
2487.54	43.97	PK	360	1.0	V	30.50	5.69	33.90	46.26	74	27.74	Spurious
1655	48.97	PK	80	1.2	H	27.4	4.65	35.0	46.02	74	27.98	Spurious
1589	47.39	PK	85	1.2	V	27.0	4.50	35.0	43.89	74	30.11	Spurious

* Within measurement uncertainty.

802.11g Mode (powered by POE):

Indicated		Detector (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247/15.209			
Frequency (MHz)	Receiver Reading (dBµV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Comment
Low Channel (2412 MHz)												
4824	38.57	AV	158	1.67	V	35.4	8.70	33.6	49.67	54	4.33	Harmonic
4824	37.65	AV	150	2.0	H	36.0	8.70	33.6	48.75	54	5.25	Harmonic
4824	50.46	PK	145	2.0	H	36.0	8.70	33.6	61.56	74	12.44	Harmonic
4824	50.40	PK	170	1.80	V	35.4	8.70	33.6	61.50	74	12.50	Harmonic
2380.22	38.12	AV	151	1.3	H	30.30	5.55	33.90	40.07	54	13.93	Spurious
2365.10	34.78	AV	180	1.4	V	30.30	5.55	33.90	36.73	54	17.27	Spurious
1801	36.66	AV	145	1.2	H	28.0	4.88	35.0	34.54	54	19.46	Spurious
2380.22	52.18	PK	151	1.3	H	30.30	5.55	33.90	54.13	74	19.87	Spurious
1589	34.81	AV	90	1.1	V	27.0	4.50	35.0	31.51	54	22.49	Spurious
2365.10	49.20	PK	180	1.4	V	30.30	5.55	33.90	51.15	74	22.85	Spurious
1801	48.73	PK	120	1.3	H	28.0	4.88	35.0	46.61	74	27.39	Spurious
1589	47.83	PK	90	1.2	V	27.0	4.50	35.0	44.53	74	29.47	Spurious
Middle Channel (2437 MHz)												
4874	36.84	AV	228	1.25	H	36.2	8.85	33.6	48.29	54	5.71	Harmonic
4874	37.38	AV	54	1.29	V	35.0	8.85	33.6	47.63	54	6.37	Harmonic
4874	49.93	PK	237	1.25	H	36.2	8.85	33.6	61.38	74	12.62	Harmonic
4874	50.38	PK	54	1.29	V	35.0	8.85	33.6	60.63	74	13.37	Harmonic
2358.36	35.82	AV	190	1.5	H	30.30	5.55	33.90	37.77	54	16.23	Spurious
2361.15	34.76	AV	180	1.4	V	30.30	5.55	33.90	36.71	54	17.29	Spurious
2358.36	53.17	PK	190	1.5	H	30.30	5.55	33.90	55.12	74	18.88	Spurious
1624	36.66	AV	255	1.60	H	27.3	4.60	35.0	33.56	54	20.44	Spurious
2361.15	49.38	PK	180	1.4	V	30.30	5.55	33.90	51.33	74	22.67	Spurious
1044	34.94	AV	60	1.3	V	24.5	3.50	35.0	27.94	54	26.06	Spurious
1624	49.27	PK	255	1.60	H	27.3	4.60	35.0	46.17	74	27.83	Spurious
1044	48.70	PK	45	1.5	V	24.5	3.50	35.0	41.7	74	32.3	Spurious
HighChannel (2462 MHz)												
4924	37.92	AV	158	1.91	H	36.6	8.90	33.6	49.82	54	4.18	Harmonic
4924	37.87	AV	50	1.56	V	35.0	8.90	33.6	48.17	54	5.83	Harmonic
4924	51.28	PK	158	1.91	H	36.6	8.90	33.6	63.18	74	10.82	Harmonic
4924	49.88	PK	50	1.56	V	35.0	8.90	33.6	60.18	74	13.82	Harmonic
2316.26	34.25	AV	170	1.2	H	30.90	5.55	33.90	36.8	54	17.2	Spurious
1901	35.77	AV	80	1.2	V	29.5	5.00	35.0	35.27	54	18.73	Spurious
2486.64	31.61	AV	358	1.0	V	30.50	5.69	33.90	33.9	54	20.1	Spurious
1641	35.60	AV	285	1.66	H	27.4	4.62	35.0	32.62	54	21.38	Spurious
2316.26	46.39	PK	170	1.2	H	30.90	5.55	33.90	48.94	74	25.06	Spurious
1901	49.20	PK	170	1.3	V	29.5	5.00	35.0	48.70	74	25.3	Spurious
2486.64	44.21	PK	358	1.0	V	30.50	5.69	33.90	46.5	74	27.5	Spurious
1641	48.92	PK	285	1.66	H	27.4	4.62	35.0	45.94	74	28.06	Spurious

Antenna Port Conducted Spurious Emissions

Channel Frequency (MHz)	Data Rate (Mbps)	Delta Value (dBc)	Limit (dBc)	Ref. Plot	Result
802.11b Mode					
2412	11	*	20	PLOT1	PASS
2437	11	*	20	PLOT2	PASS
2462	11	*	20	PLOT3	PASS
802.11g Mode					
2412	54	*	20	PLOT4	PASS
2437	54	*	20	PLOT5	PASS
2462	54	*	20	PLOT6	PASS

Please refer to the following plots.

Ref Lvl 11.5 dBm

Marker 1 [T1] -0.37 dBm

2.38188377 GHz

RBW 100 kHz RF Att 20 dB

VBW 300 kHz

SWT 6.4 s Unit dBm

1.5 dB Offset

D1 -20.37 dBm

11MAX

Start 30 MHz

2.497 GHz

Stop 25 GHz

Date: 12.NOV.2009 16:33:40

Ref Lvl 11.5 dBm

Marker 1 [T1] -0.49 dBm 2.43192385 GHz

RBW 100 kHz RF Att 20 dB

VBW 300 kHz

SWT 6.4 s Unit dBm

1.5 dB Offset

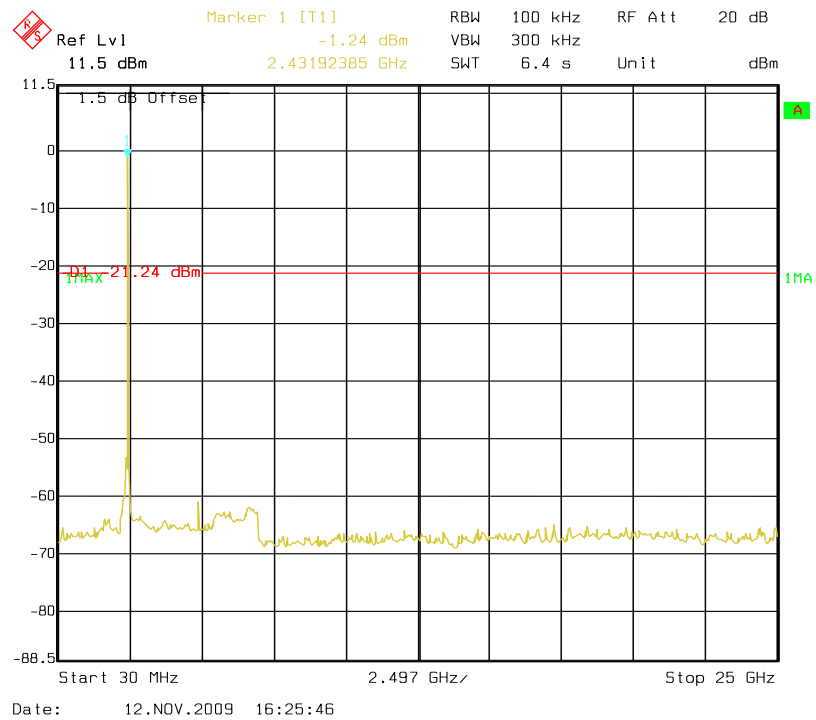
0.4 -20.49 dBm

11A

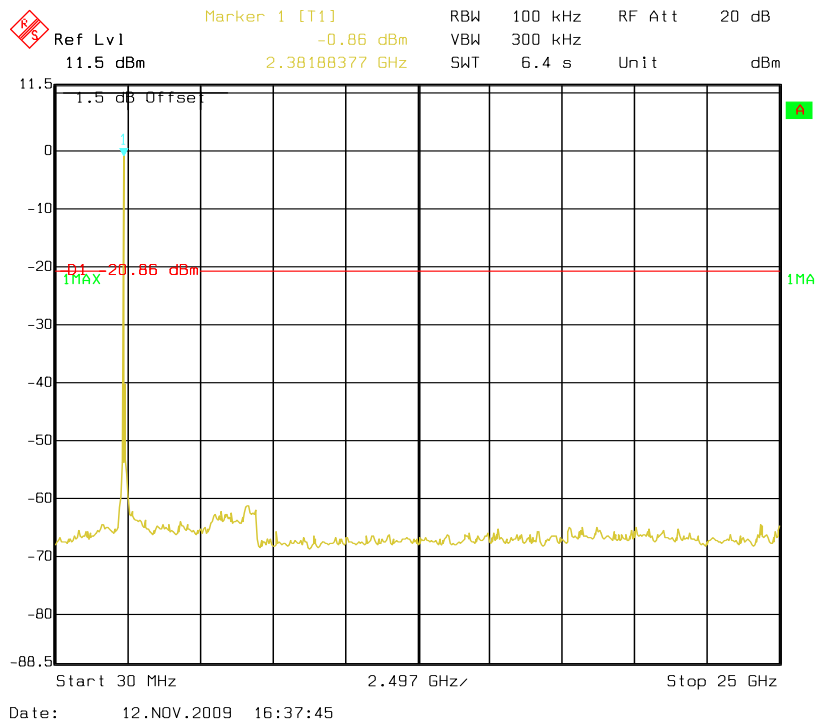
Start 30 MHz 2.497 GHz/ Stop 25 GHz

Date: 12.NOV.2009 16:30:06

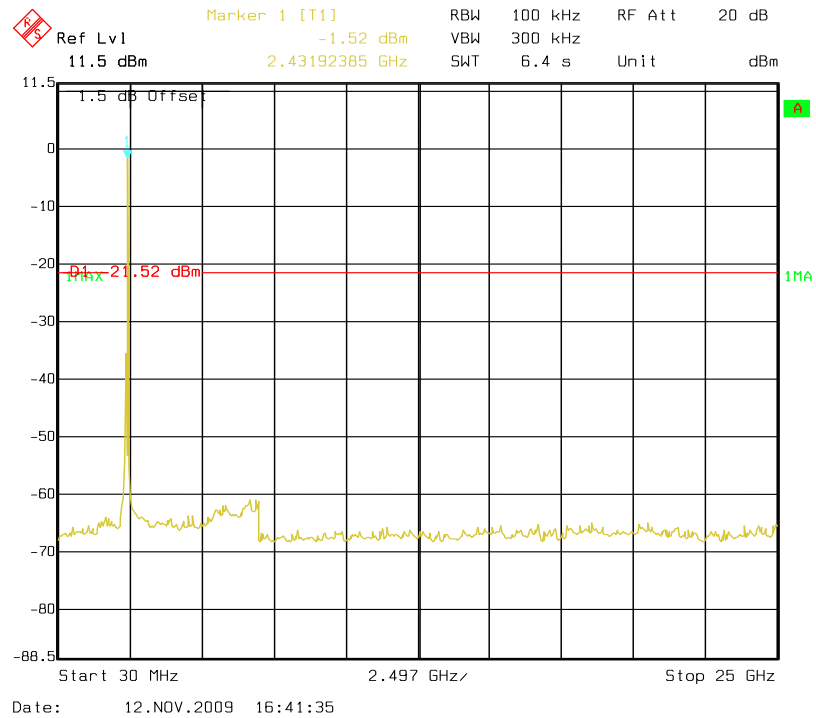
802.11b High Channel



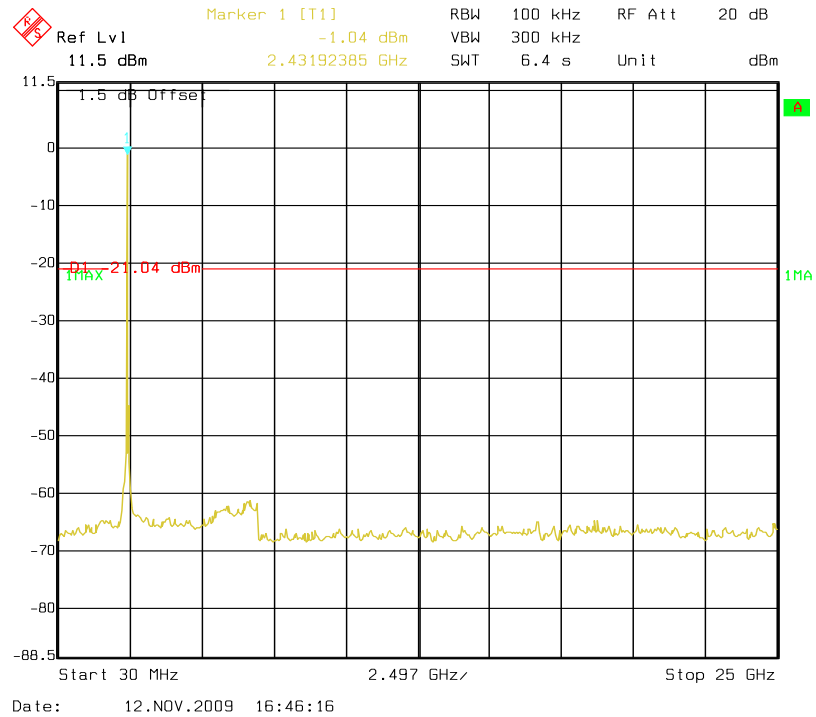
802.11g Low Channel



802.11g Middle Channel



802.11g High Channel



DECLARATION LETTER

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Differences between BTBAS, BTSTD and BTFPT

There are three models exist under IdentIPoint:

BTBAS – Basic model, IP65 waterproof

BTSTD – Standard model, with keypad and display

BTFPT – Fingerprint model, with keypad, display and fingerprint sensor.

Here is a summary of the differences between the 3 models of IdentIPoint

	BTBAS	BTSTD	BTFPT
Appearance			
LCD	Not present	128 x 64 ASTN	128 x 64 ASTN
LED indicator position	Mid upper half	Above LCD	Above LCD
Keypad	Not present	3 x 4	3 x 4
Fingerprint circuit	Not present	Not present	Capacitive Fingerprint detection with Infrared finger sensing
Board configuration	Top board + Bottom board	Top board + Bottom board	Top board + Bottom board + Fingerprint board

All three models are built under the same circuitry and carry the same software.

Sincerely,


Gregory Turner
Director of Global Offerings

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