NVLAP LAB CODE 200707-0

FCC PART 15.247

MEASUREMENT AND TEST REPORT

For

RFNET Technologies Pte Ltd

801, Lorong 7 Toa Payoh, #05-02 Wearnes Technology Building, Singapore 319319.

FCC ID: PXPAP1068

This Report Concerns:	Equipment Type:
☒ Original Report	2.4GHz 802.11b/g Outdoor Access Point-Repeater-Bridge

Test Engineer:	Merry Zhao
Report Number:	RSZ07092502
Test Date:	2007-10-12 to 2007-10-26
Report Date:	2007-11-05
Reviewed By:	EMC Manager: Boni Baniqued
Prepared By:	Bay Area Compliance Laboratory 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

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *RFNET Technologies Pte Ltd*'s product, model number: *AP-1068-HP* or the "EUT" as referred to in this report is a *2.4GHz 802.11b/g Outdoor Access Point-Repeater-Bridge*, which measures approximately 21.5 cm L x 12.3 cm W x 4.9 cm H, rated input voltage: DC 48V Adapter.

Adapter:
Manufacturer: AULT KOREA Corp.; model: PUTP-130A-01;
Input: 100-250V, 50~60Hz, 0.5A; Output: +48V, 0.4A

** The test data gathered are from production sample, serial number: 0709045 assigned by BACL Shenzhen, we received the EUT on 2007-09-25.*

Objective

This Type approval report is prepared on behalf of *RFNET Technologies Pte Ltd* 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, 15.209 and 15.247 rules.

Related Submittal(s)/Grant(s)

No related submittal(s).

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 Laboratory 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 Laboratory 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 Laboratory 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 04, 2004. 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 Laboratory 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/ts/htdocs/210/214/scopes/2007070.htm.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a typical fashion (as normally used by a typical user).

EUT Exercise Software

N/A.

Special Accessories

N/A.

Equipment Modifications

Bay Area Compliance Laboratory Corp. (Shenzhen) has not done any modification on the EUT.

Host System Configuration List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
DELL	PC	DELL 170L	CN-0TC670-70821-560-F4Q6	DoC
DELL	Keyboard	SK-8110	CN07N244-71616-56A-1B1E	DoC
DELL	Mouse	M071KC	520027907	DoC
DELL	LCD Monitor	1505FP	Y4287-7168-571-GBSH	DoC
ProMOS	Memory	V826632K24SATG-C0	0525-K1933700	DoC
Intel	CPU	Celeron D-2533	N/A	DoC
HP	Laser Jet5L	C3941A	JPTVOB2337	DoC
ECOM	Modem	EM-56DEV	6588D51200013	DoC

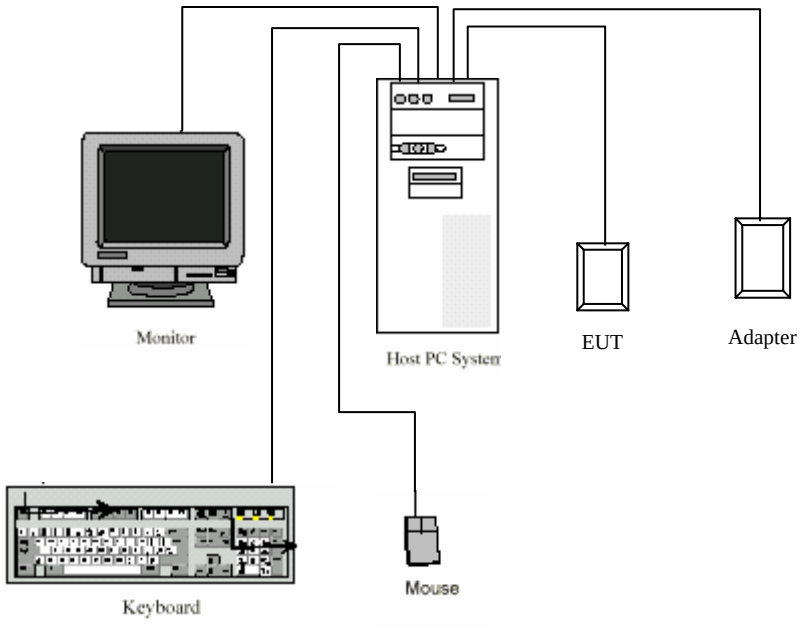
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
DELL	Motherboard	OWC297	CN-OWC297-70821-564-00NI	DoC
DELL	Power	NPS-250KB D	CN-0H2678-17972-56E-80BM	DoC
Seagate	Hard Disk	ST340014A	5JXK3GXE	DoC
DELL	3.5' Floppy	N/A	CN-0N8893-69802-54Q-02P0	DoC
Lite-ON	CD-Rom	LTN-489S	N/A	DoC
Intel	Ethernet	PRO 10/100 VE	N/A	DoC
CS	Smart Card	ACOS2	N/A	DoC

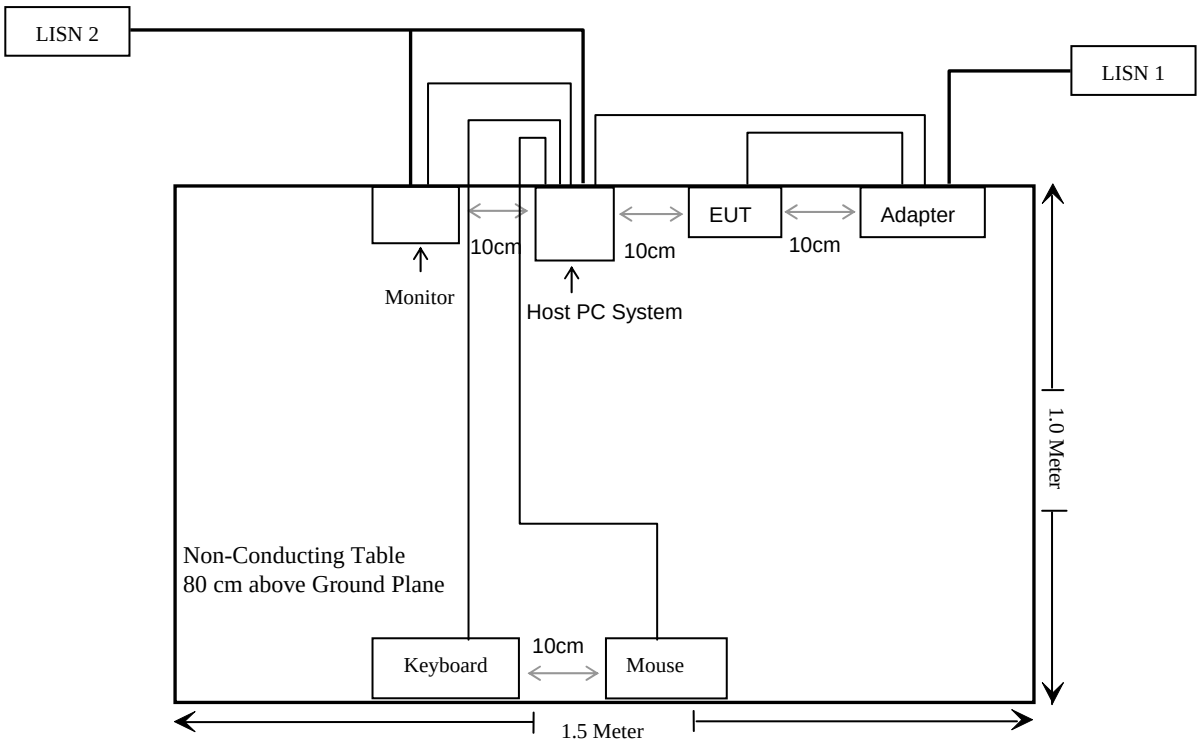
External I/O Cable

Cable Description	Length (M)	From Port	To
Shielded Detachable K/B Cable	1.5	K/B Port /Host	K/B
Shielded Detachable Mouse Cable	1.5	Mouse Port /Host	Mouse
Shielded Detachable VGA Cable	1.5	VGA Port /Host	Printer
Shielded Detachable Serial Cable	1.2	Serial Port /Host	Modem
Adapter Cable	2.9	EUT	Adapter

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

Unintentional Radiators (Receiver Mode)

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.107 (a)	Conducted Emissions	Compliant
§15.109	Radiated Emissions	Compliant

Intentional Radiators (Transmitter Mode)

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247 (i), §1.1310	Maximum Permissible exposure (MPE)	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 (a)	Conducted Emissions	Compliant
§15.247(d), §15.205, §15.209	Spurious Emissions and Band Edges	Compliant
§15.247 (a)(2)	6 dB Bandwidth	Compliant
§15.247(b)(3)	Peak Output Power Measurement	Compliant
§15.247(e)	Power Spectral Density	Compliant

Unintentional Radiator (Receiver Mode)

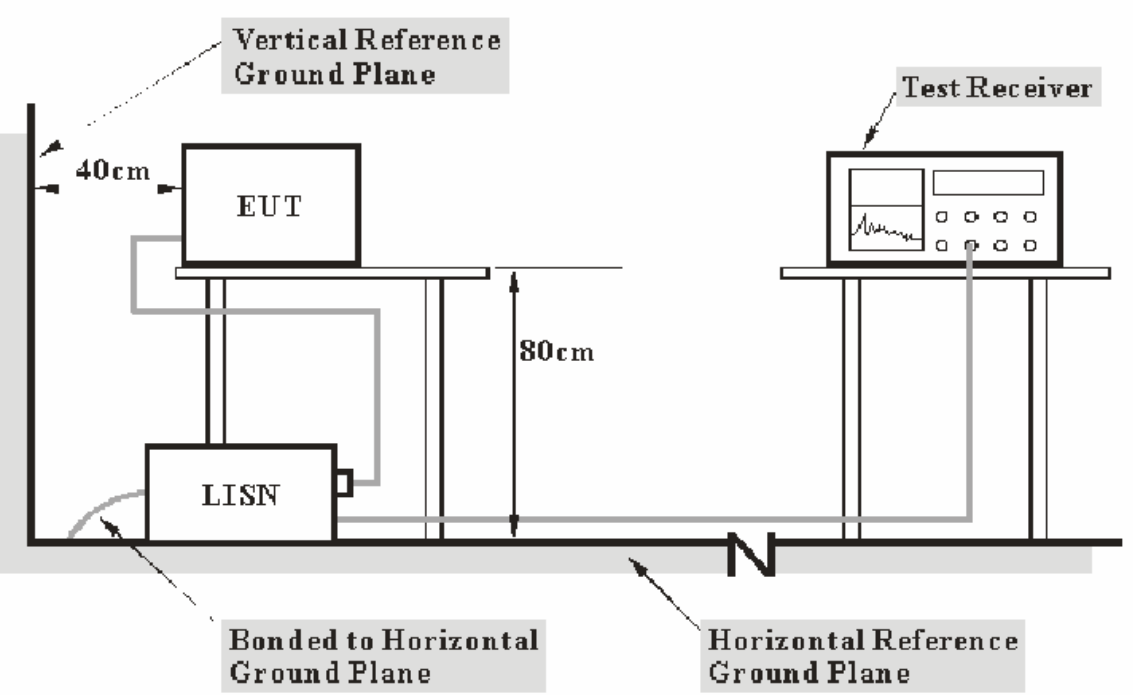
§15.107 (a) - CONDUCTED EMISSIONS

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 Class B 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 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 Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Com-Power	L.I.S.N.	LI-200	12005	N/A	N/A
Com-Power	L.I.S.N.	LI-200	12208	N/A	N/A
Rohde & Schwarz	EMI Test Receiver	ESCS30	DE25330	2007-03-26	2008-03-26
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2007-03-26	2008-03-26

***** Com-Power's LISN were used as the supporting equipment.
*** 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 outlet of 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 Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.107, with the worst margin reading of:

Receiving (802.11g): **14.90 dB** at **4.370 MHz** in the **Neutral** conductor mode
Receiving (802.11b): **14.80 dB** at **4.370 MHz** in the **Neutral** conductor mode

Test Data

Environmental Conditions

Temperature:	22 ° C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa

The testing was performed by Merry Zhao on 2007-10-12.

Test Mode: Receiving(802.11g)

LINE CONDUCTED EMISSIONS				FCC PART 15 CLASS B	
Frequency MHz	Amplitude dBµV	Detector QP/AV	Phase Live/Neutral	Limit dBµV	Margin dB
4.370	45.10	AV	Neutral	60.0	14.90
4.370	45.00	AV	Live	60.0	15.00
0.675	56.40	QP	Neutral	73.0	16.60
14.850	55.80	QP	Neutral	73.0	17.20
4.040	42.30	AV	Neutral	60.0	17.70
4.040	41.80	AV	Live	60.0	18.20
11.140	54.30	QP	Live	73.0	18.70
25.320	53.10	QP	Live	73.0	19.90
15.730	53.10	QP	Live	73.0	19.90
7.625	51.20	QP	Neutral	73.0	21.80
5.560	36.90	AV	Neutral	60.0	23.10
5.560	36.50	AV	Live	60.0	23.50
5.525	47.80	QP	Neutral	73.0	25.20
5.555	47.30	QP	Live	73.0	25.70
4.370	47.20	QP	Neutral	73.0	25.80
4.370	46.80	QP	Live	73.0	26.20
4.040	45.10	QP	Neutral	73.0	27.90
4.040	45.00	QP	Live	73.0	28.00
25.695	29.90	AV	Live	60.0	30.10
7.745	29.80	AV	Neutral	60.0	30.20
15.845	25.00	AV	Live	60.0	35.00
10.715	23.70	AV	Neutral	60.0	36.30
11.205	23.70	AV	Live	60.0	36.30
14.850	22.20	AV	Neutral	60.0	37.80

Test Mode: Receiving(802.11b)

LINE CONDUCTED EMISSIONS				FCC PART 15 CLASS B	
Frequency MHz	Amplitude dBµV	Detector QP/AV	Phase Live/Neutral	Limit dBµV	Margin dB
4.37	45.2	AV	Neutral	60.0	14.80
4.37	44.9	AV	Live	60.0	15.10
15.285	56.6	QP	Neutral	73.0	16.40
15.995	55.8	QP	Live	73.0	17.20
11.165	54.4	QP	Live	73.0	18.60
10.560	53.8	QP	Neutral	73.0	19.20
5.565	50.9	QP	Neutral	73.0	22.10
7.785	50.9	QP	Neutral	73.0	22.10
7.620	50.5	QP	Live	73.0	22.50
5.625	35.7	AV	Neutral	60.0	24.30
5.365	48.2	QP	Live	73.0	24.80
4.370	46.8	QP	Neutral	73.0	26.20
4.370	46.6	QP	Live	73.0	26.40
5.365	30.5	AV	Live	60.0	29.50
7.81	29.5	AV	Neutral	60.0	30.50
7.68	28.6	AV	Live	60.0	31.40
16.03	27.7	AV	Live	60.0	32.30
10.655	26.2	AV	Neutral	60.0	33.80
11.205	23.8	AV	Live	60.0	36.20
15.39	21.9	AV	Neutral	60.0	38.10

Plot(s) of Test Data

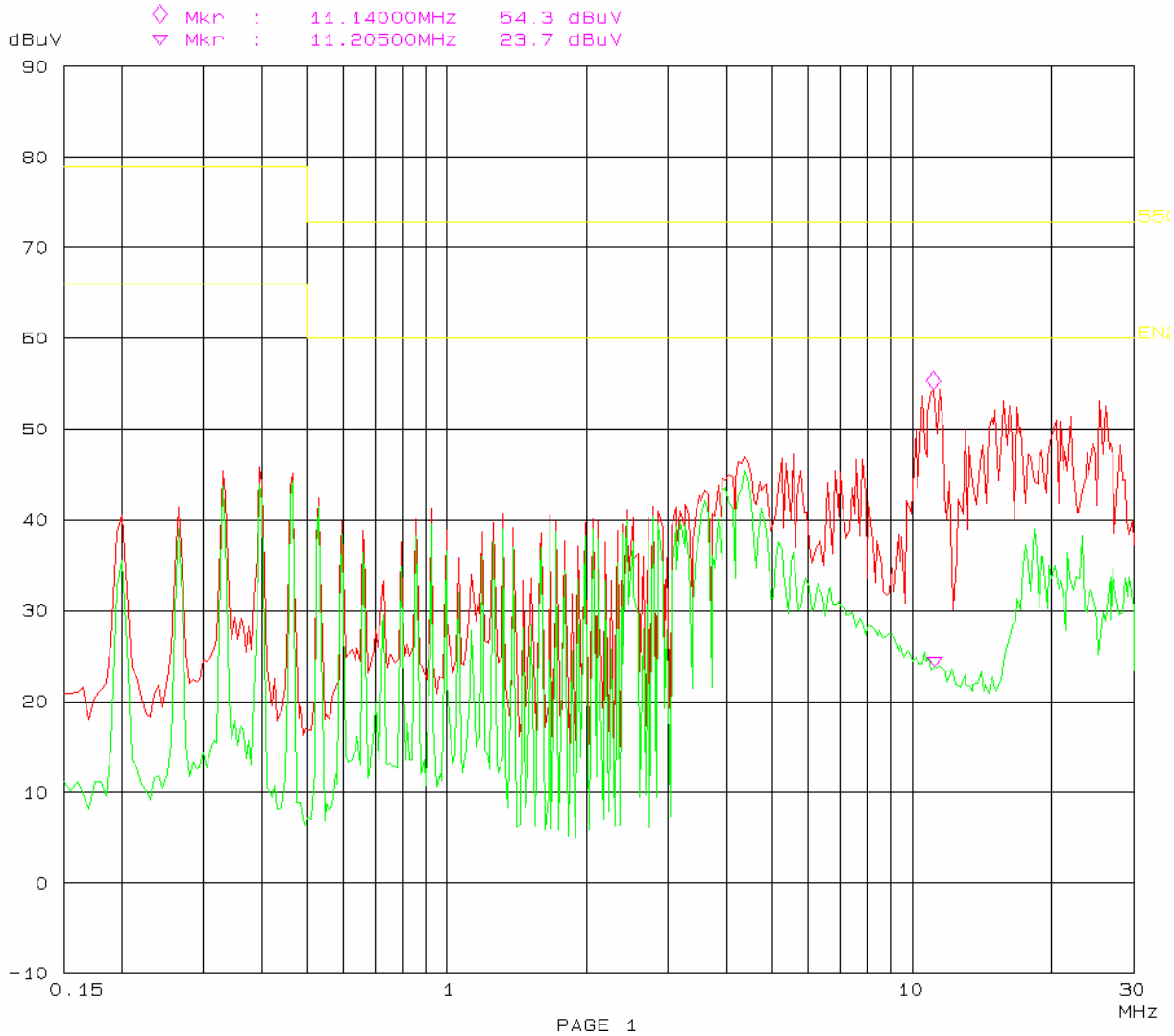
Plot(s) of Test Data is presented hereinafter as reference.

Conducted Emission Test
FCC Part15.109

12. Oct 07 15:33

M/N: AP-1068-HP

Manuf: RFNET
Op Cond: Receiving (802.11g)
Operator: Merry
Test Spec: AC 120V/60Hz L
Comment: 0emp:25 Humi 56%



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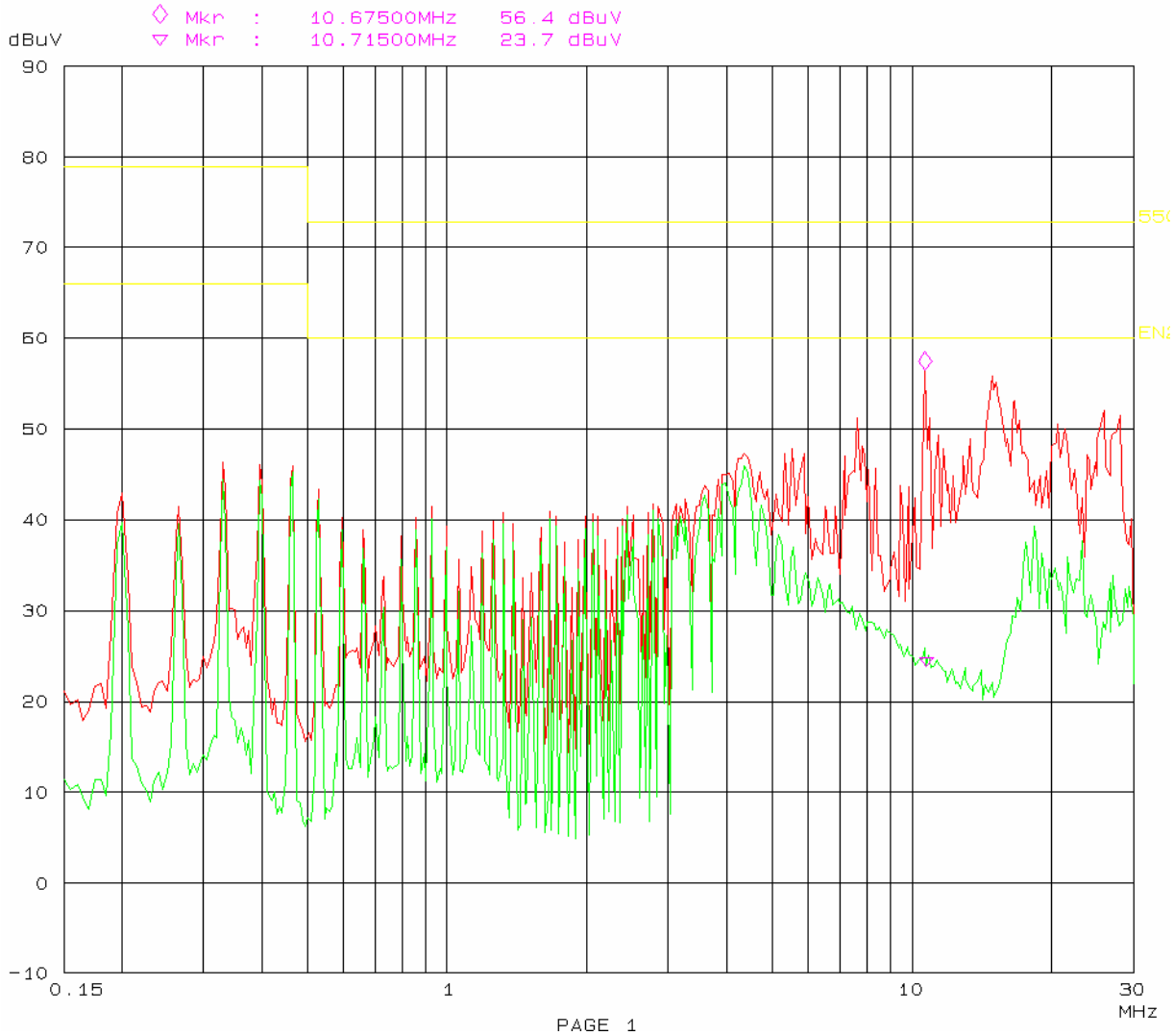
Conducted Emission Test
FCC Part15.109

12. Oct 07 15:49

M/N: AP-1068-HP

Manuf: RFNET
Op Cond: Receiving (802.11g)
Operator: Merry
Test Spec: AC 120V/60Hz N
Comment: Oemp:25 Humi 56%



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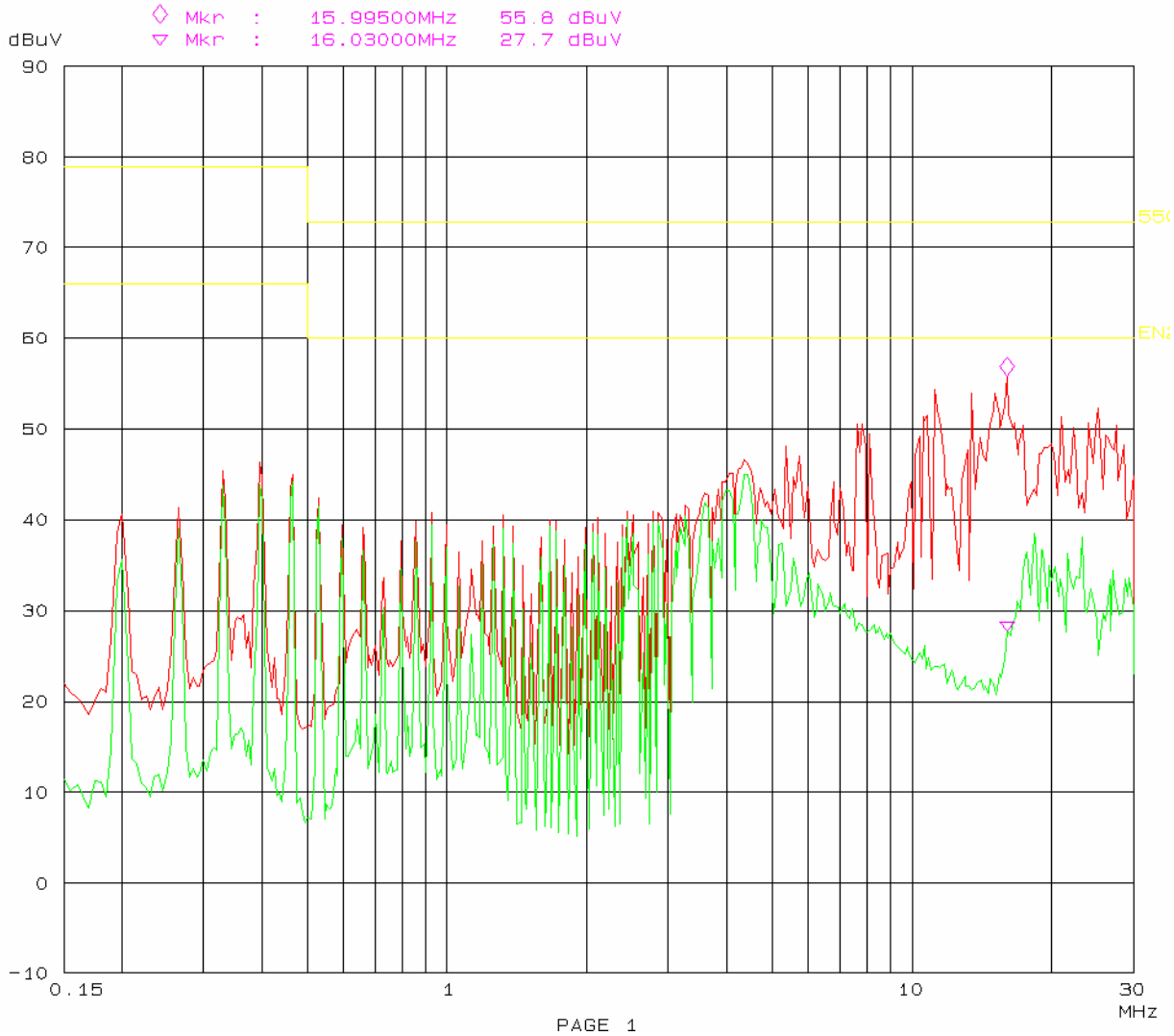
Conducted Emission Test
FCC Part15.109

12. Oct 07 15:17

M/N: AP-1068-HP

Manuf: RFNET
Op Cond: Receiving (802.11b)
Operator: Merry
Test Spec: AC 120V/60Hz L
Comment: Oemp:25 Humi 56%



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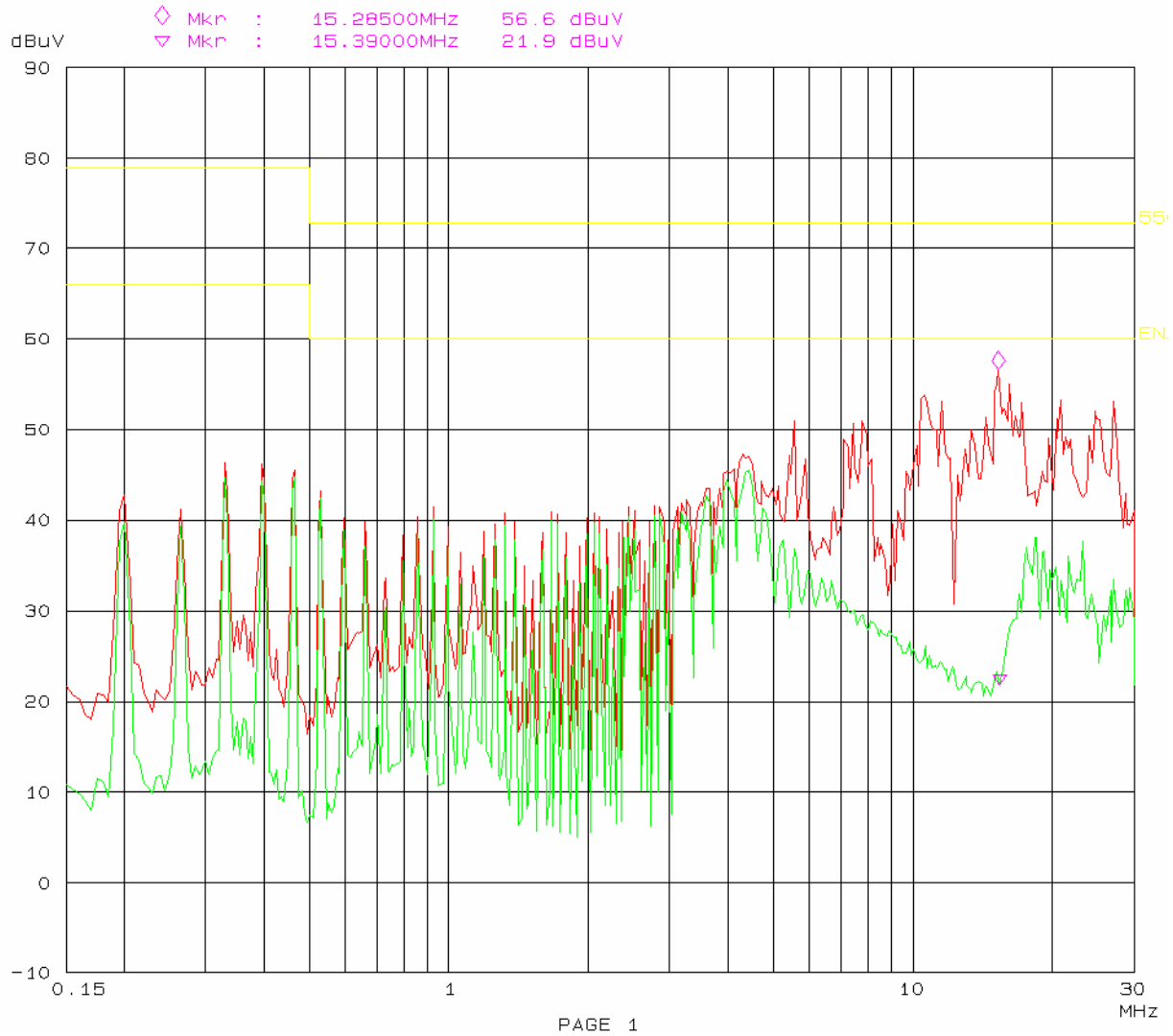
Conducted Emission Test
FCC Part15.109

12. Oct 07 14:52

M/N: AP-1068-HP

Manuf: RFNET
Op Cond: Receiving (802.11b)
Operator: Merry
Test Spec: AC 120V/60Hz N
Comment: Oemp:25 Humi 56%



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§15.109 - RADIATED EMISSIONS

Applicable Standard

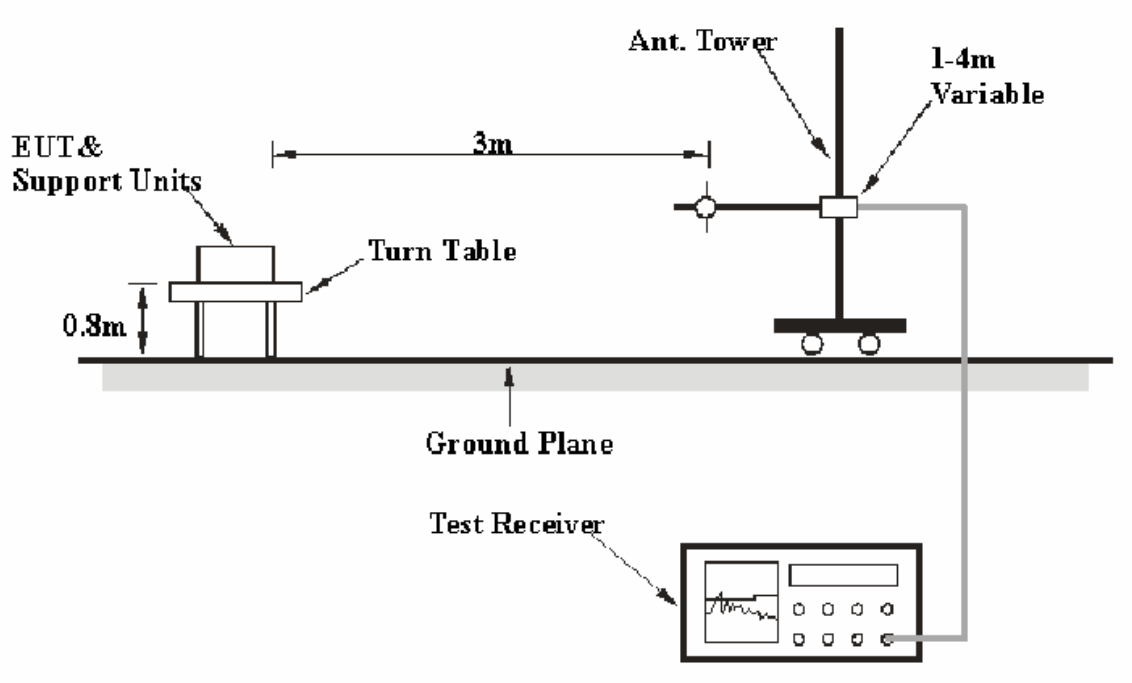
According to FCC §15.109.

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 Laboratory 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 15.109 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 B/W***
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	2006-11-15	2007-11-15
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2007-09-29	2008-09-29
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2007-08-14	2008-08-14
HP	Amplifier	8449B	3008A00277	2007-09-29	2008-09-29
Sunol Sciences	Horn Antenna	DRH-118	A052604	2007-09-25	2008-09-25
Agilent	Spectrum Analyzer	8564E	3943A01781	2006-11-22	2007-11-22

*** 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

For the radiated emissions test, the adapter was 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 Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corr. Amp. = Meter Reading + Antenna Loss + 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 maximum limit. The equation for margin calculation is as follows:

Margin = Limit - Corr. Amp.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC 15.109, with the worst margin reading of:

Receiving mode: **2.2 dB** at **34.643812 MHz** in the **Vertical** polarization, **for below 1 GHz**

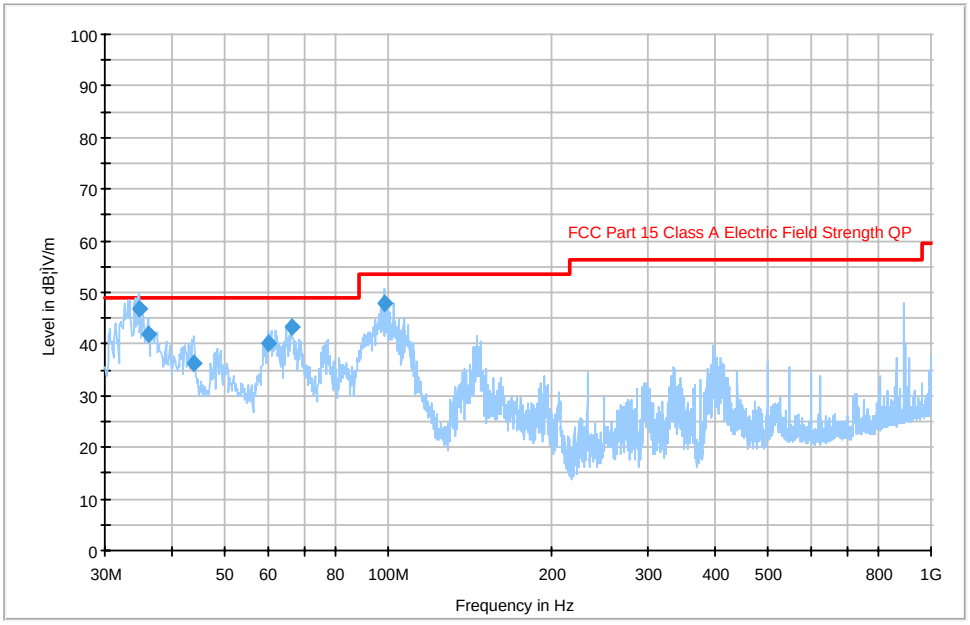
Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	52%
ATM Pressure:	100.9kPa

The testing was performed by Merry Zhao on 2007-10-12.

Test Mode: Receiving(below 1 GHz)



Frequency (MHz)	Quasi Peak (dBµV/m)	Antenna Height (cm)	Polarity	Turntable Position (deg)	Corr. (dB)	Limit (dBµV/m)	Margin (dB)
34.643812	46.8	100.0	V	55.0	-7.6	49.0	2.2
98.442375	48.0	101.0	V	123.0	-16.5	53.5	5.5
66.288188	43.2	128.0	V	198.0	-17.2	49.0	5.8
36.123250	41.8	161.0	V	36.0	-8.7	49.0	7.2
60.216312	40.1	114.0	V	263.0	-17.7	49.0	8.9
43.851812	36.3	101.0	V	206.0	-14.3	49.0	12.7

Intentional Radiation (Transmitter Mode)

§15.247 (i), § 1.1310 - MAXIMUN PERMISSIBLE EXPOSURE (MPE)

Limit

According to §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.

Radio frequency radiation exposure was calculated based on § 1.1310 limits.

Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposures				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f2)	6
30–300	61.4	0.163	1.0	6
300–1500	/	/	f/300	6
1500–100,000	/	/	5	6

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

Test Data

Prediction of MPE limit at a given distance
$S = PG/4\pi R^2$
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: 24.12 (dBm)
Maximum peak output power at antenna input terminal: 258.226 (mW)
Prediction distance: >20 (cm)
Prediction frequency: 2462 (MHz)
Antenna Gain (typical): 1.52 (dBi)
Antenna Gain (typical): 1.419 (numeric)
The worst case is power density at predication frequency at 20 cm: 0.0729 (mW/cm^2)
MPE limit for general population exposure at prediction frequency: 5 (mW/cm^2)

$0.0729(mW/cm^2) < 5 (mW/cm^2)$

Result: Pass

For 802.11g:

Maximum peak output power at antenna input terminal: 24.02 (dBm)
Maximum peak output power at antenna input terminal: 252.348 (mW)
Prediction distance: >20 (cm)
Prediction frequency: 2462 (MHz)
Antenna Gain (typical): 1.52 (dBi)
Antenna Gain (typical): 1.419 (numeric)
The worst case is power density at predication frequency at 20 cm : 0.0713 (mW/cm^2)
MPE limit for general population exposure at prediction frequency: 5 (mW/cm^2)

0.0713 (mW/cm^2) < 5 (mW/cm^2)

Result: Pass

§ 15.203 - ANTENNA REQUIREMENT

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 use of a standard antenna jack or electrical connector is prohibited.

The structure and application of the EUT were analyzed to determine compliance with Section 15.20 3 states that the subject device must meet at least one of the following criteria:

a.) Antenna must be permanently attached to the unit.
b.) Antenna must use a unique type of connector to attached to the EUT.
c.) Unit must be professionally installed. Installer shall be responsible for verifying that the correct antenna is employed with the unit.

Results:

The EUT with an omni-directional antenna with a maximum gain of 1.52 dBi meets the criteria that it must be professionally installed which, in accordance to the above section is considered sufficient to comply with the provision of this section.

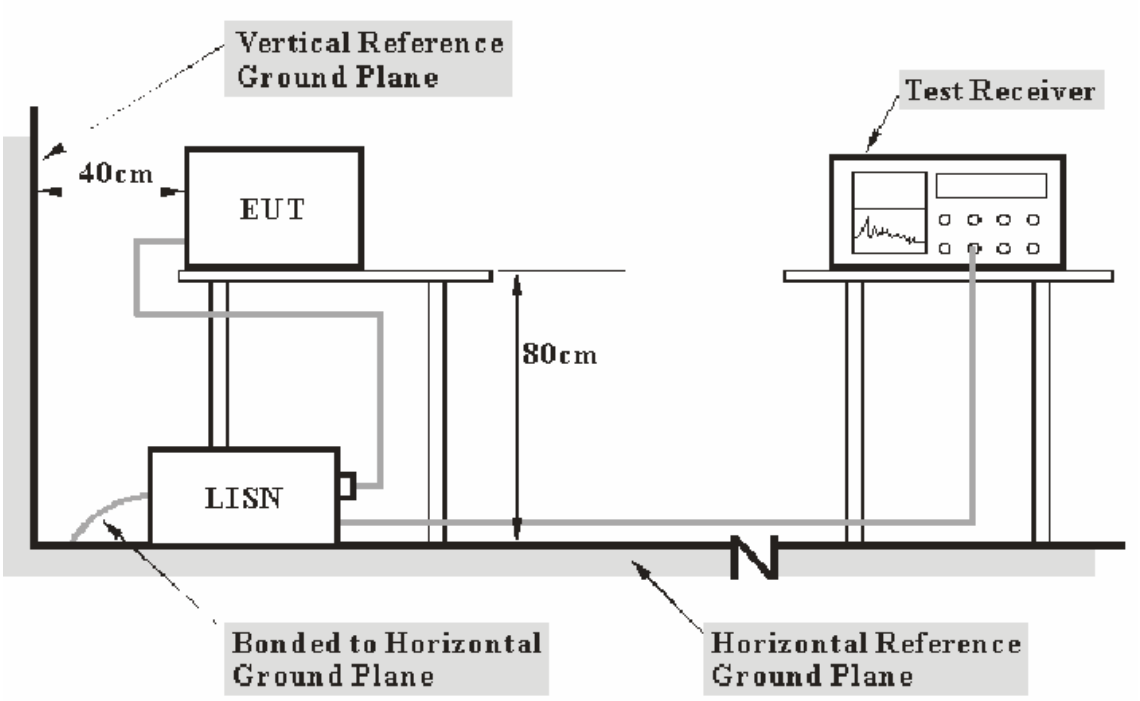
§15.207 (a) - CONDUCTED EMISSIONS

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 Class B 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 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 Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Com-Power	L.I.S.N.	LI-200	12005	N/A	N/A
Com-Power	L.I.S.N.	LI-200	12008	N/A	N/A
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2006-09-29	2007-09-29
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2007-03-26	2008-03-26

***** Com-Power's LISN were used as the supporting equipment.
*** 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 outlet of the first LISN, and all other support equipment power cords 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.

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:

Transmitting (802.11g): **1.50 dB** at **6.47 MHz** in the **Live** conductor mode
Transmitting (802.11b): **1.00 dB** at **4.305 MHz** in the **Neutral/Live** conductor mode

Test Data

Environmental Conditions

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

The testing was performed by Merry Zhao on 2007-10-12.

Test Mode: Transmitting (802.11g)

LINE CONDUCTED EMISSIONS				FCC PART 15 CLASS B	
Frequency MHz	Amplitude dBµV	Detector QP/AV	Phase Live/Neutral	Limit dBµV	Margin dB
6.470	54.50	QP	Live	56.00	1.50
4.175	43.70	AV	Neutral	46.00	2.30
43.200	43.20	AV	Live	46.00	2.80
0.395	44.70	AV	Neutral	47.96	3.26
0.395	44.00	AV	Live	47.96	3.96
0.530	41.30	AV	Live	46.00	4.70
6.760	55.20	QP	Neutral	60.00	4.80
1.165	51.10	QP	Neutral	56.00	4.90
3.845	40.60	AV	Neutral	46.00	5.40
27.685	52.90	QP	Neutral	60.00	7.10
28.610	51.90	QP	Live	60.00	8.10
15.245	51.60	QP	Live	60.00	8.40
4.175	46.20	QP	Neutral	56.00	9.80
4.175	45.40	QP	Live	56.00	10.60
0.395	47.00	QP	Neutral	57.96	10.96
0.395	46.10	QP	Live	57.96	11.86
3.845	43.30	QP	Neutral	56.00	12.70
0.530	42.60	QP	Live	56.00	13.40
28.685	33.30	AV	Live	50.00	16.70
6.760	33.10	AV	Neutral	50.00	16.90
6.495	32.90	AV	Live	50.00	17.10
27.955	27.50	AV	Neutral	50.00	22.50
11.205	24.90	AV	Neutral	50.00	25.10
15.245	22.30	AV	Live	50.00	27.70

Test Mode: Transmitting(802.11b)

LINE CONDUCTED EMISSIONS				FCC PART 15 CLASS B	
Frequency MHz	Amplitude dBµV	Detector QP/AV	Phase Live/Neutral	Limit dBµV	Margin dB
4.305	45.00	AV	Neutral	46.00	1.00
4.305	45.00	AV	Live	46.00	1.00
6.045	58.80	QP	Live	60.00	1.20
4.040	43.50	AV	Neutral	46.00	2.50
4.040	42.80	AV	Live	46.00	3.20
0.530	42.20	AV	Neutral	46.00	3.80
0.395	44.00	AV	Neutral	47.96	3.96
10.590	55.90	QP	Live	60.00	4.10
16.425	55.60	QP	Neutral	60.00	4.40
0.395	43.50	AV	Live	47.96	4.46
0.530	41.40	AV	Live	46.00	4.60
10.785	54.40	QP	Neutral	60.00	5.60
4.305	47.50	QP	Neutral	56.00	8.50
4.305	47.30	QP	Live	56.00	8.70
4.040	46.80	QP	Neutral	56.00	9.20
4.040	46.20	QP	Live	56.00	9.80
0.395	45.90	QP	Neutral	57.96	12.06
0.395	45.50	QP	Live	57.96	12.46
0.530	43.20	QP	Neutral	56.00	12.80
0.530	42.50	QP	Live	56.00	13.50
6.095	33.90	AV	Live	50.00	16.10
16.485	31.60	AV	Neutral	50.00	18.40
10.840	24.90	AV	Neutral	50.00	25.10
10.595	24.80	AV	Live	50.00	25.20

Plot(s) of Test Data

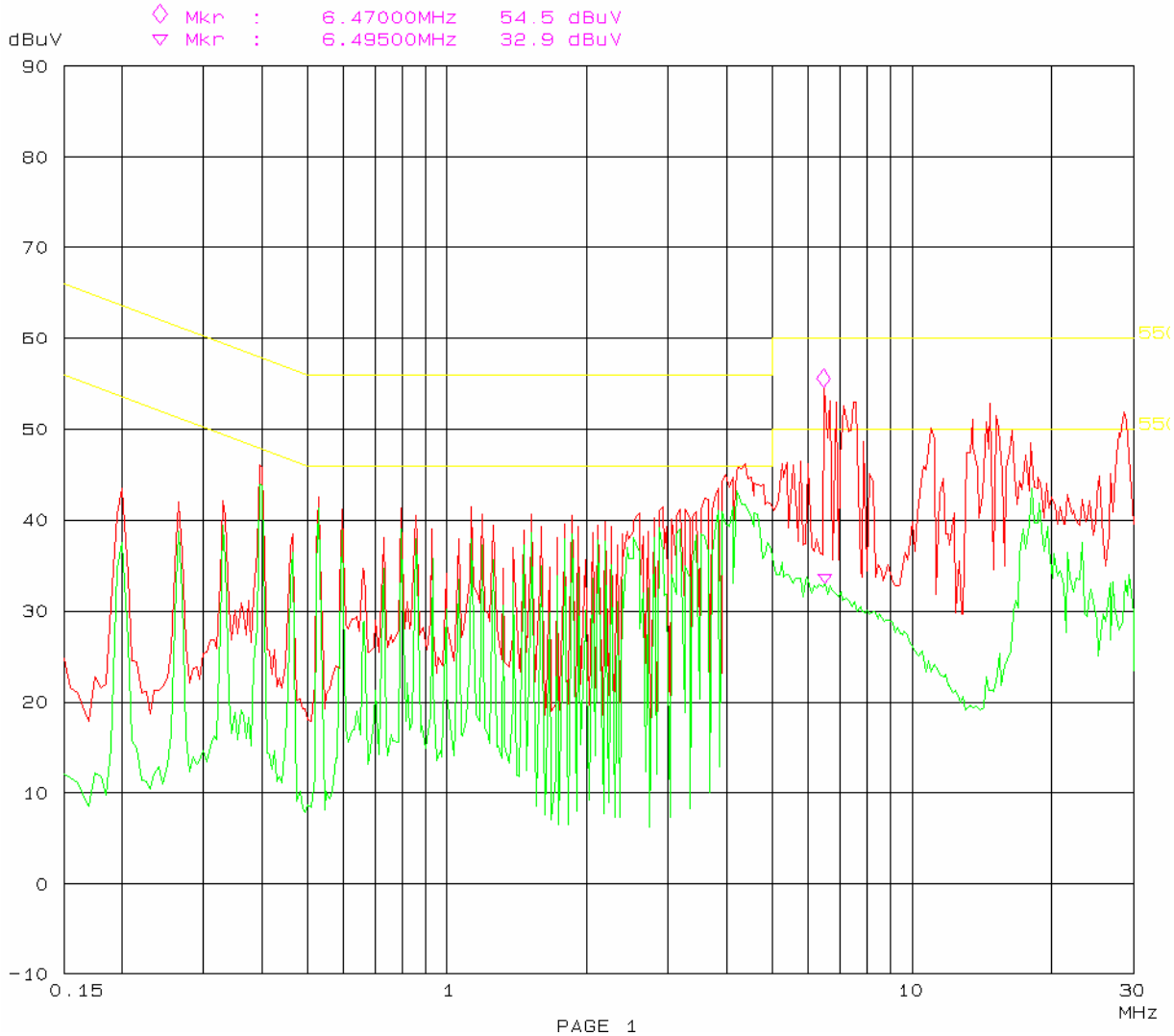
Plot(s) of Test Data is presented hereinafter as reference.

Conducted Emission Test
FCC Part15.209

12. Oct 07 13:35

M/N: AP-1068-HP

Manuf: RFNET
Op Cond: Transmitting (802.11g)
Operator: Merry
Test Spec: AC 120V/60Hz L
Comment: Temp: 25 Humi 56%



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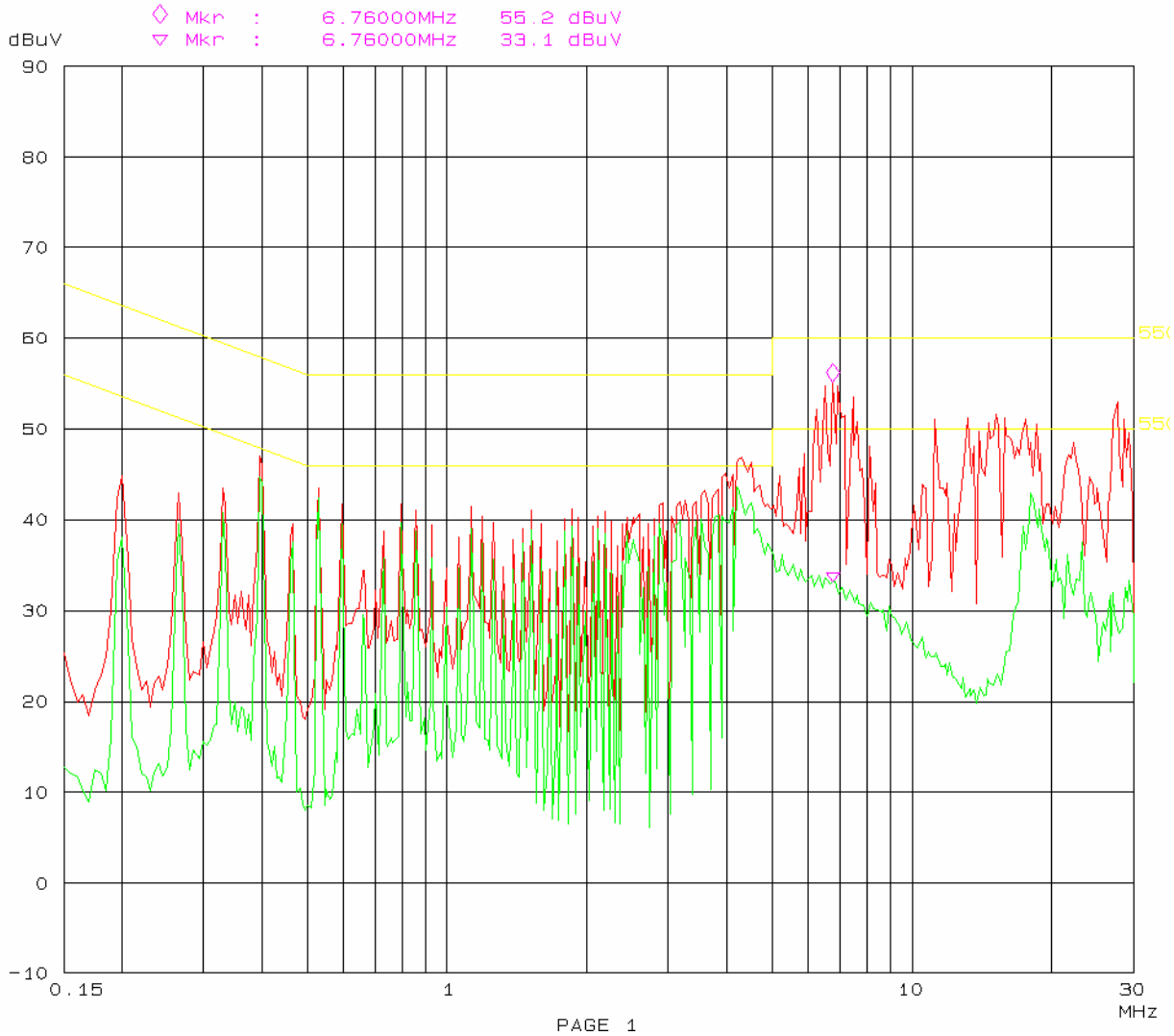
Conducted Emission Test
FCC Part15.209

12. Oct 07 13:15

M/N: AP-1068-HP

Manuf: RFNET
Op Cond: Transmitting (802.11g)
Operator: Merry
Test Spec: AC 120V/60Hz N
Comment: Temp: 25 Humi 56%



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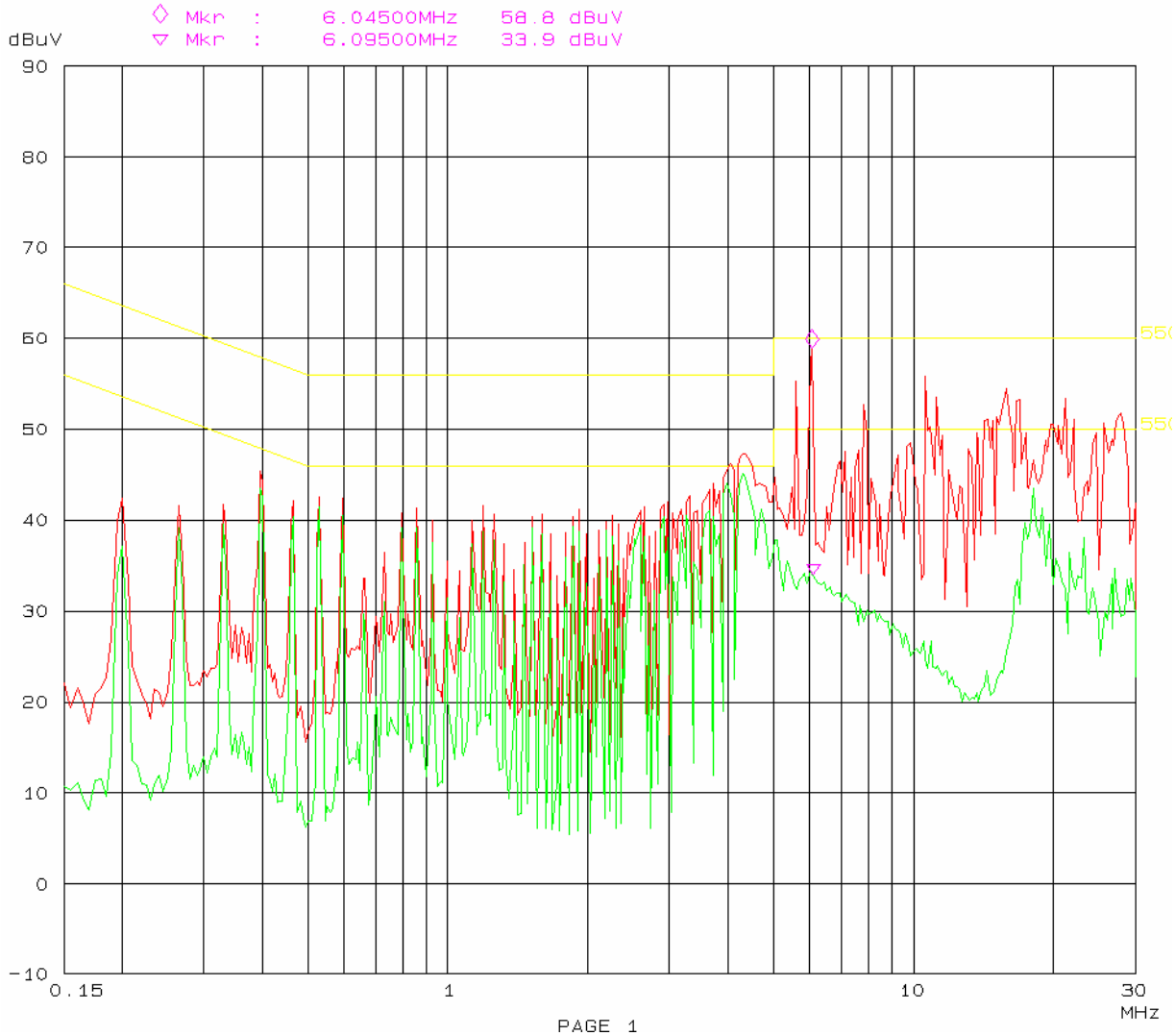
Conducted Emission Test
FCC Part15.209

12. Oct 07 14:05

M/N: AP-1068-HP

Manuf: RFNET
Op Cond: Transmitting(802.11b)
Operator: Merry
Test Spec: AC 120V/60Hz L
Comment: Oemp:25 Humi 56%



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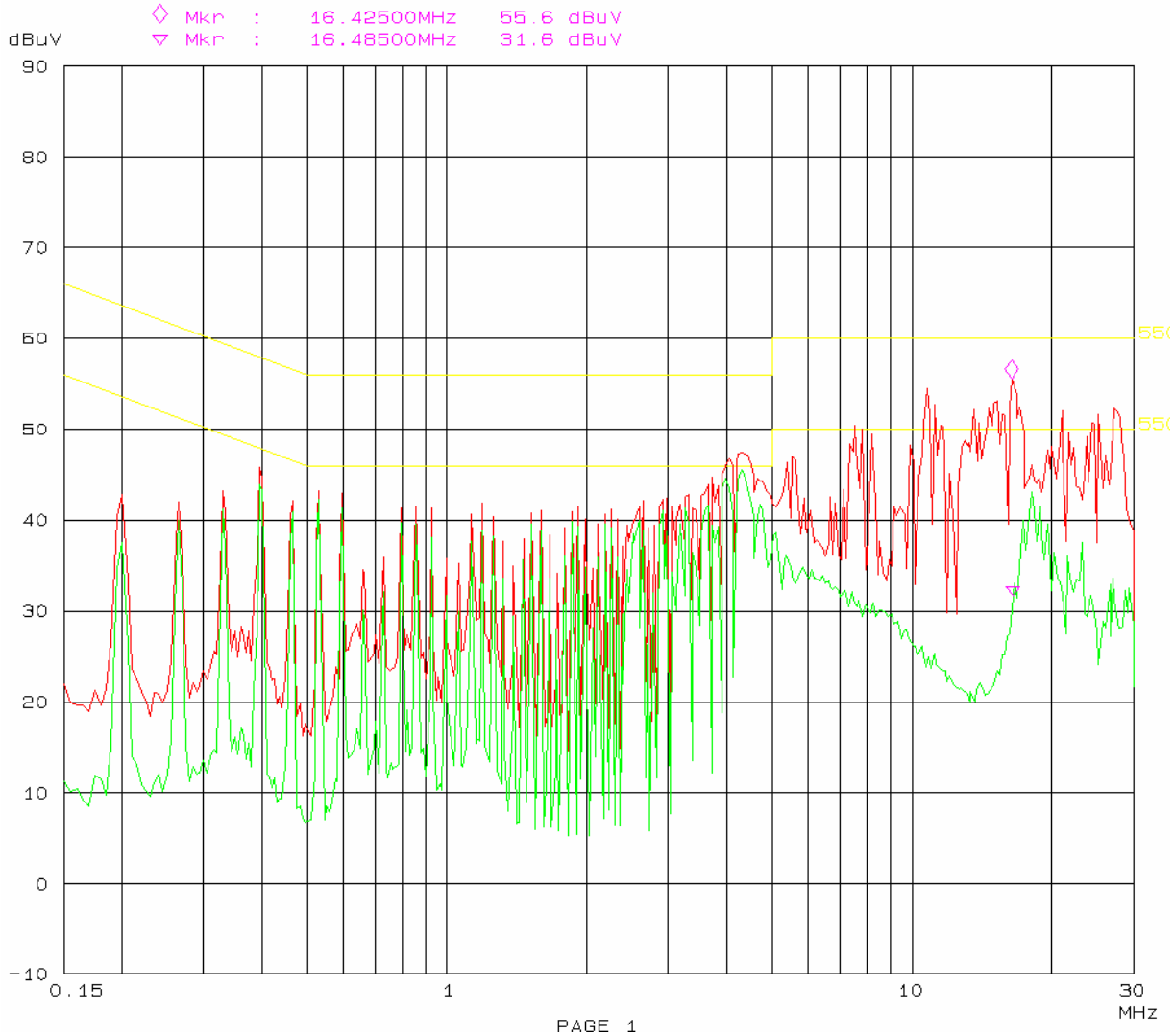
Conducted Emission Test
FCC Part15.209

12. Oct 07 14:20

M/N: AP-1068-HP

Manuf: RFNET
Op Cond: Transmitting(802.11b)
Operator: Merry
Test Spec: AC 120V/60Hz N
Comment: Oemp:25 Humi 56%



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§15.247 (d), §15.205, §15.209 - SPURIOUS EMISSIONS AND BAND EDGES

Applicable Standard

According to FCC §15.247 (d)

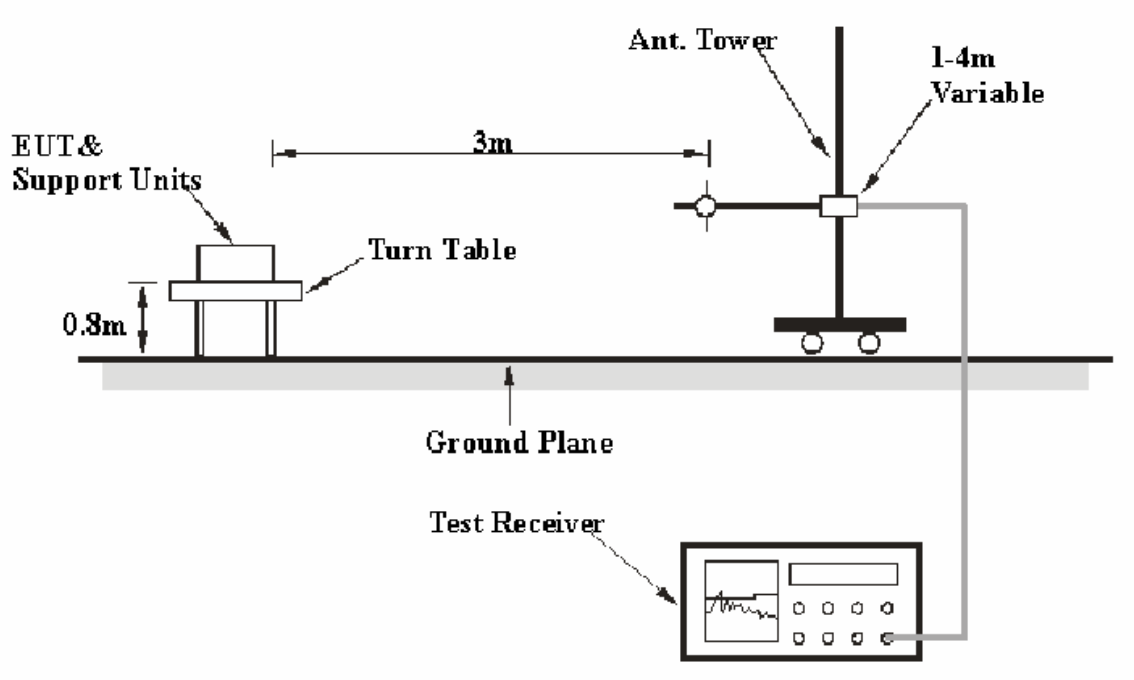
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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)).

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 Laboratory 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:

Frequency Range	***RBW***	***Video B/W***
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	2006-11-15	2007-11-15
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2007-09-29	2008-09-29
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2007-08-14	2008-08-14
HP	Amplifier	8449B	3008A00277	2007-09-29	2008-09-29
Sunol Sciences	Horn Antenna	DRH-118	A052604	2007-09-25	2008-09-25
Agilent	Spectrum Analyzer	8564E	3943A01781	2006-11-22	2007-11-22

*** 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

For the radiated emissions test, the adapter was 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 Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corr. Amp. = Meter Reading + Antenna Loss + 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 maximum limit. The equation for margin calculation is as follows:

Margin = Limit - Corr. Amp.

Test Results Summary

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

Transmitting mode (802.11g)**: 1.51 dB** at **4824 MHz** in the **Horizontal** polarization, **for 2412 MHz**
1.73 dB at **4874 MHz** in the **Horizontal** polarization, **for 2437 MHz**
3.03 dB at **4924 MHz** in the **Vertical** polarization, **for 2462 MHz**
Transmitting mode (802.11b)**: 2.50 dB** at **4824 MHz** in the **Vertical** polarization, **for 2412 MHz**
1.05dB at **4824 MHz** in the **Vertical** polarization, **for 2437 MHz**
1.59 dB at **4924 MHz** in the **Vertical** polarization, **for 2462 MHz**

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	52%
ATM Pressure:	100.9kPa

The testing was performed by Merry Zhao on 2007-10-17 to 2007-10-26.

Test Mode: Transmitting(802.11g)

Frequency	Meter Reading	Detector	Direction	Height	Polar	Antenna Factor	Cable loss	Amplifier	Correction Factor	FCC15	FCC15
MHz	dBuV/m	PK/QP/AV	Degree	Meter	H / V	dB/m	dB	dB	dBuV/m	Limit	Margin
802.11g Channel 1 (2412MHz)											
4824.0	44.65	AV	150	1.50	H	36.6	4.64	33.4	52.49	54	1.51
4824.0	45.35	AV	170	1.30	V	35.4	4.64	33.4	52.99	54	2.01
4824.0	61.30	PK	180	1.20	H	36.6	4.64	33.4	69.14	74	4.86
4824.0	62.01	PK	175	1.20	V	35.4	4.64	33.4	68.65	74	5.35
1685.1	49.65	AV	90	1.45	V	30.0	2.80	35.0	47.45	54	6.55
1664.3	50.70	AV	120	1.40	H	26.5	2.77	35.5	44.47	54	9.53
1716.0	49.65	AV	145	1.20	H	26.5	2.80	35.5	43.45	54	10.55
1685.1	63.84	PK	45	1.20	V	30.0	2.80	35.0	61.64	74	12.36
1026.0	48.92	AV	60	1.45	V	23.8	1.19	35.0	38.91	54	15.09
1664.3	64.57	PK	60	1.00	H	26.5	2.77	35.5	58.34	74	15.66
1716.0	64.48	PK	120	1.20	H	26.5	2.80	35.5	58.28	74	15.72
1026.0	63.70	PK	45	1.50	V	23.8	1.19	35.0	53.69	74	20.31
802.11g Channel 6 (2437MHz)											
4874.00	44.43	AV	150	1.50	H	36.6	4.64	33.4	52.27	54	1.73
4874.00	45.20	AV	175	1.20	V	35.4	4.64	33.4	51.84	54	2.16
4874.00	61.81	PK	180	1.20	H	36.6	4.64	33.4	69.65	74	4.35
4874.00	61.84	PK	145	1.20	V	35.4	4.64	33.4	68.48	74	5.52
1857.10	48.95	AV	90	1.45	V	29.0	2.82	35.2	45.57	54	8.43
1747.69	49.80	AV	80	1.00	V	28.0	2.77	35.3	45.27	54	8.73
1742.48	50.78	AV	120	1.20	H	26.5	2.80	35.5	44.58	54	9.42
1646.09	50.03	AV	60	1.00	H	26.5	2.77	35.5	43.80	54	10.20
1747.69	64.49	PK	170	1.30	V	28.0	2.77	35.3	59.96	74	14.04
1857.10	63.28	PK	45	1.20	V	29.0	2.82	35.2	59.90	74	14.10
1742.48	65.21	PK	120	1.40	H	26.5	2.80	35.5	59.01	74	14.99
1646.09	65.08	PK	90	1.00	H	26.5	2.77	35.5	58.85	74	15.15
802.11g Channel 11 (2462MHz)											
4924.00	44.42	AV	170	1.30	V	35.4	4.55	33.4	50.97	54	3.03
4924.00	43.21	AV	150	1.50	H	36.6	4.55	33.4	50.96	54	3.04
4924.00	61.64	PK	180	1.20	H	36.6	4.55	33.4	69.39	74	4.61
4924.00	62.08	PK	175	1.20	V	35.4	4.55	33.4	68.63	74	5.37
2237.47	49.35	AV	90	1.45	V	30.1	3.62	34.5	48.57	54	5.43
2107.20	48.86	AV	60	1.45	V	30.0	3.60	34.6	47.86	54	6.14
1570.50	50.15	AV	145	1.20	H	26.5	2.78	35.5	43.93	54	10.07
1677.35	50.05	AV	120	1.40	H	26.5	2.77	35.4	43.92	54	10.08
2237.47	63.76	PK	45	1.20	V	30.0	3.62	34.5	62.88	74	11.12
2107.20	63.63	PK	45	1.50	V	30.1	3.60	34.6	62.73	74	11.27
1677.35	65.06	PK	60	1.00	H	26.5	2.77	35.4	58.93	74	15.07
1570.50	64.6	PK	120	1.20	H	26.5	2.78	35.5	58.38	74	15.62

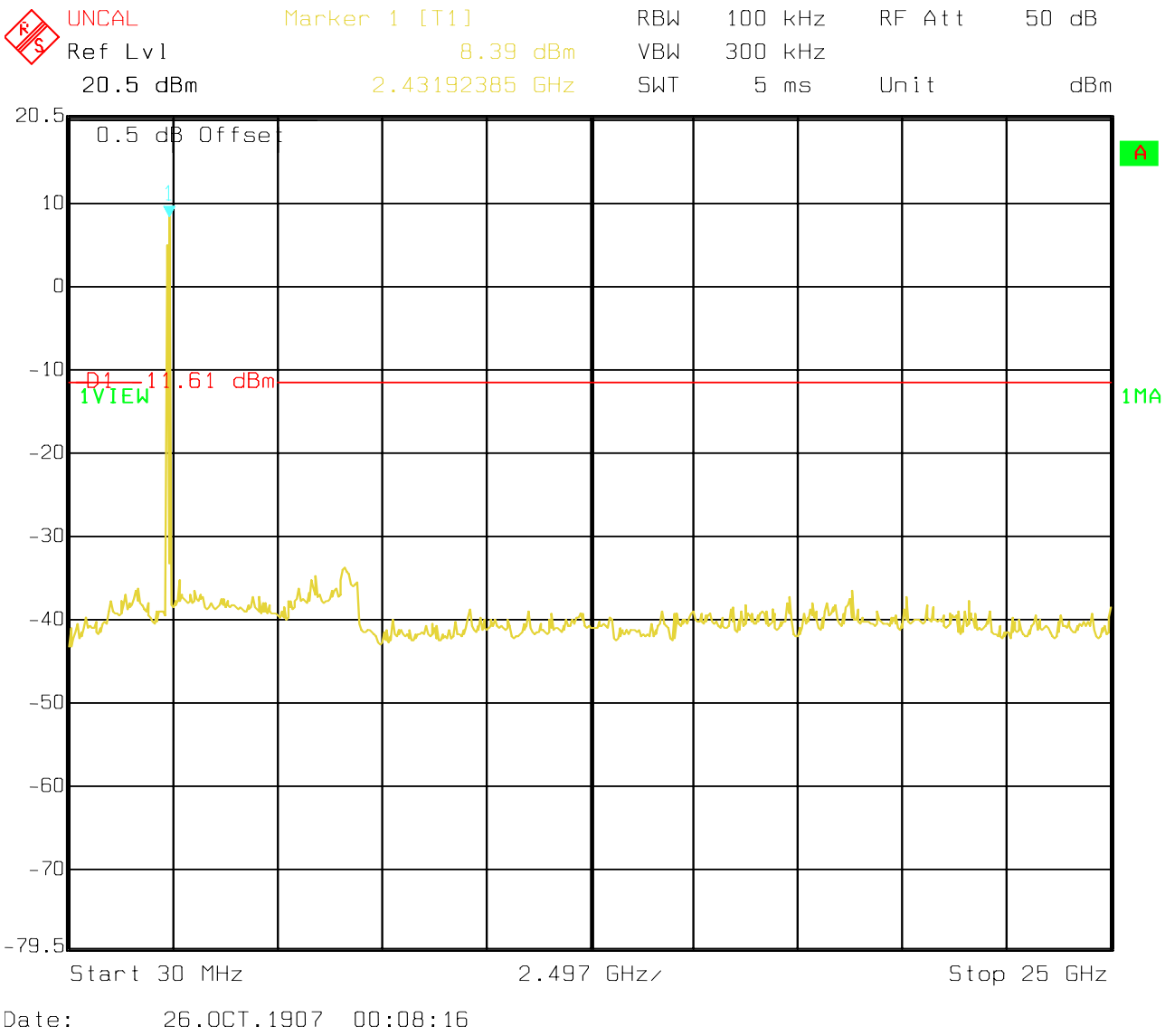
Test Mode: Transmitting (802.11b)

Frequency	Meter Reading	Detector	Direction	Height	Polar	Antenna Factor	Cable loss	Amplifier	Correction Factor	FCC15	FCC15
MHz	dBuV/m	PK/QP/AV	Degree	Meter	H / V	dB/m	dB	dB	dBuV/m	Limit	Margin
802.11b Channel 1 (2412MHz)											
4824.0	44.86	AV	170	1.30	V	35.4	4.64	33.4	51.50	54	2.50
4824.0	43.07	AV	150	1.50	H	36.6	4.64	33.4	50.91	54	3.09
4824.0	60.90	PK	180	1.20	H	36.6	4.64	33.4	68.74	74	5.26
4824.0	61.40	PK	175	1.20	V	35.4	4.64	33.4	68.04	74	5.96
2138.9	49.32	AV	90	1.45	V	30.0	3.09	35.0	47.41	54	6.59
2017.2	48.80	AV	60	1.45	V	30.0	3.09	35.0	46.89	54	7.11
1679.0	50.70	AV	120	1.40	H	26.5	2.77	35.5	44.47	54	9.53
1721.0	50.60	AV	145	1.20	H	26.5	2.80	35.5	44.40	54	9.60
2138.9	63.38	PK	45	1.20	V	30.0	3.09	35.0	61.47	74	12.53
2017.2	62.54	PK	45	1.50	V	30.0	3.09	35.0	60.63	74	13.37
1679.0	64.41	PK	60	1.00	H	26.5	2.77	35.5	58.18	74	15.82
1721.0	64.38	PK	120	1.20	H	26.5	2.80	35.5	58.18	74	15.82
802.11b Channel 6 (2437MHz)											
4874.00	46.31	AV	175	1.20	V	35.4	4.64	33.4	52.95	54	1.05
4874.00	44.15	AV	150	1.50	H	36.6	4.64	33.4	51.99	54	2.01
4874.00	62.70	PK	145	1.20	V	35.4	4.64	33.4	69.34	74	4.66
4874.00	61.22	PK	180	1.20	H	36.6	4.64	33.4	69.06	74	4.94
2187.60	49.50	AV	60	1.00	H	29.7	3.09	35.0	47.29	54	6.71
2187.97	48.50	AV	80	1.00	V	30.0	3.62	35.0	47.12	54	6.88
1663.00	49.70	AV	120	1.20	H	26.5	2.77	35.5	43.47	54	10.53
2187.97	64.13	PK	170	1.30	V	30.0	3.62	35.0	62.75	74	11.25
1661.70	49.30	AV	90	1.45	V	26.0	2.77	35.5	42.57	54	11.43
2187.60	64.30	PK	90	1.00	H	29.7	3.09	35.0	62.09	74	11.91
1661.70	65.03	PK	45	1.20	V	26.0	2.77	35.5	58.30	74	15.70
1663.00	64.40	PK	120	1.40	H	26.5	2.77	35.5	58.17	74	15.83
802.11b Channel 11 (2462MHz)											
4924.00	45.86	AV	170	1.30	V	35.4	4.55	33.4	52.41	54	1.59
4924.00	44.56	AV	150	1.50	H	36.6	4.55	33.4	52.31	54	1.69
4924.00	61.70	PK	180	1.20	H	36.6	4.55	33.4	69.45	74	4.55
2237.47	48.70	AV	90	1.45	V	30.2	3.62	34.5	48.02	54	5.98
4924.00	61.41	PK	175	1.20	V	35.4	4.55	33.4	67.96	74	6.04
2107.20	48.60	AV	60	1.45	V	30.0	3.09	34.8	46.89	54	7.11
2237.47	64.48	PK	45	1.20	V	30.2	3.62	34.5	63.80	74	10.20
1484.50	49.80	AV	120	1.40	H	26.5	2.77	35.5	43.57	54	10.43
2107.20	62.64	PK	45	1.50	V	30.0	3.09	34.8	60.93	74	13.07
1078.10	49.80	AV	145	1.20	H	25.1	1.19	36.0	40.09	54	13.91
1484.50	64.97	PK	60	1.00	H	26.5	2.77	35.5	58.74	74	15.26
1078.10	64.18	PK	120	1.20	H	25.1	1.19	36.0	54.47	74	19.53

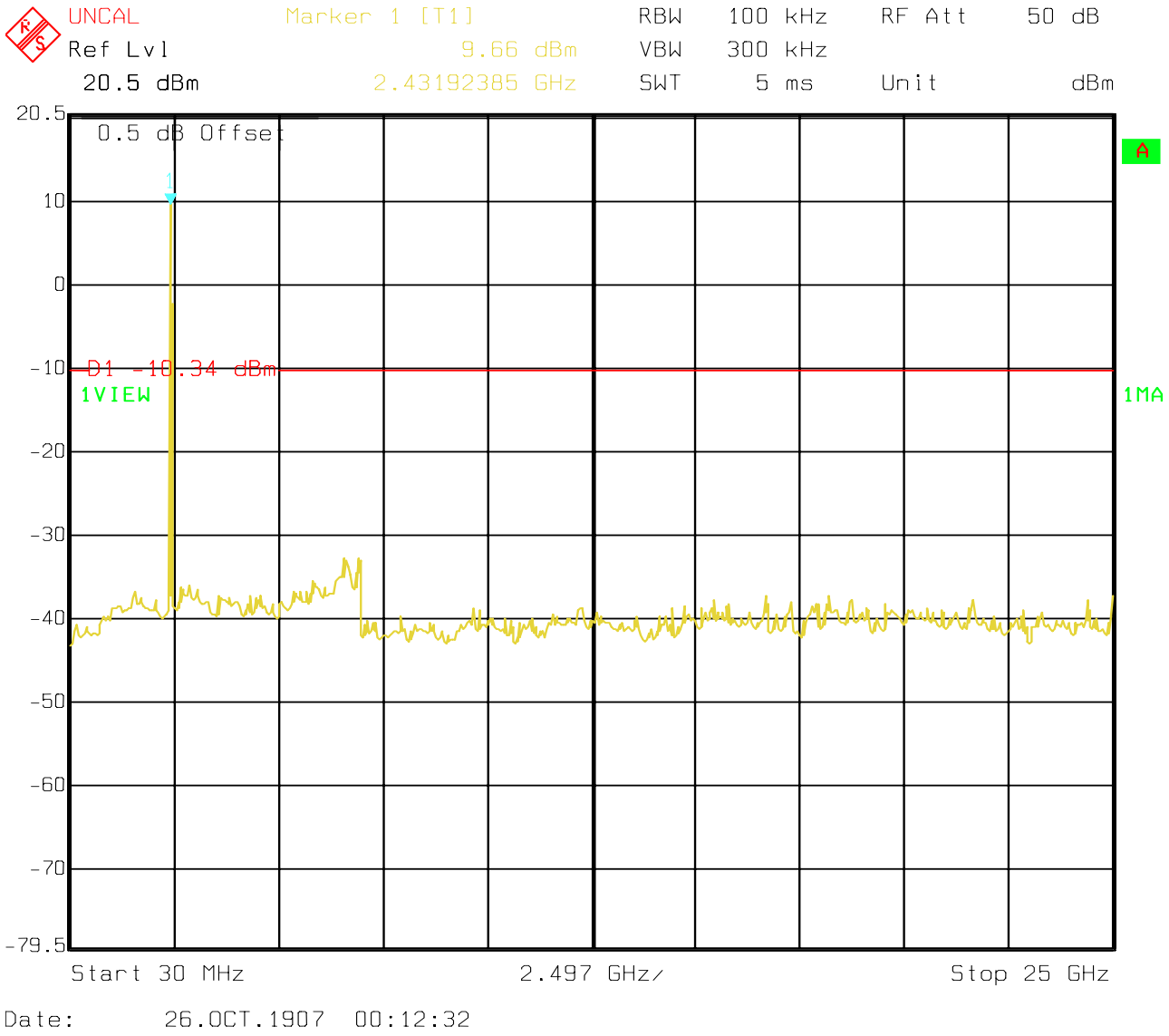
Conducted Spurious Emissions:

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

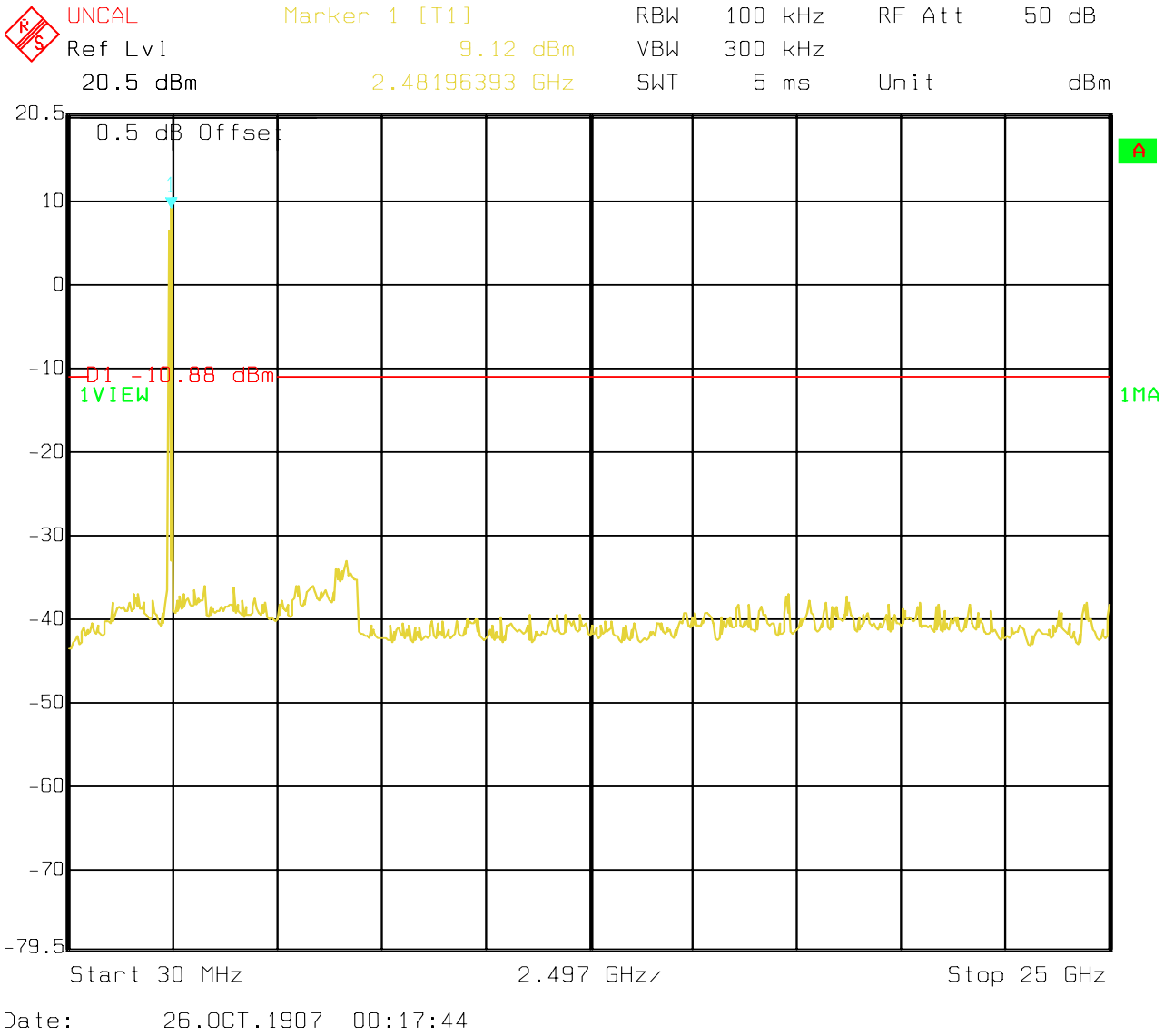
PLOT1: 802.11b, Low Channel



PLOT2: 802.11b, Middle Channel

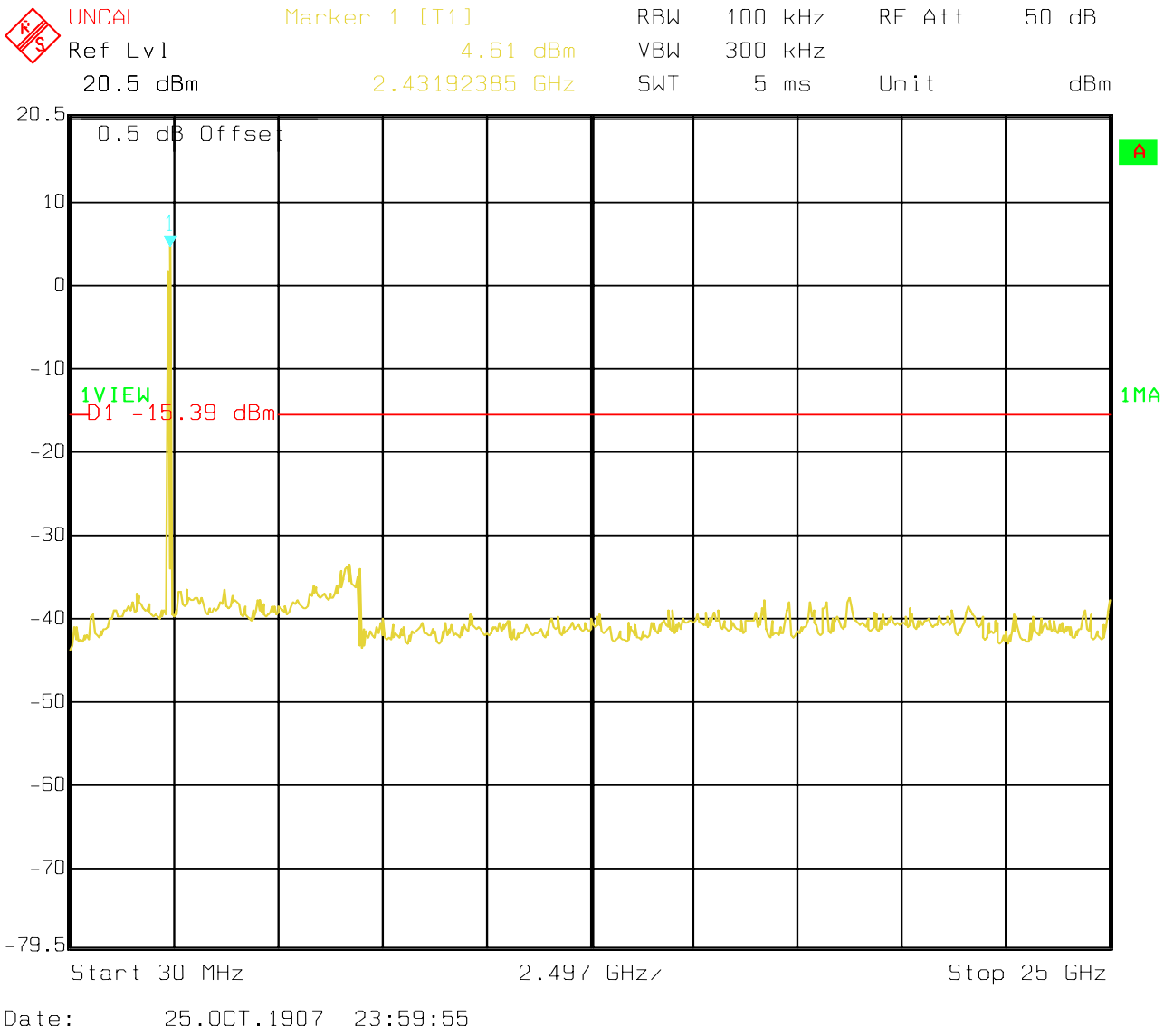


PLOT3: 802.11b, High Channel

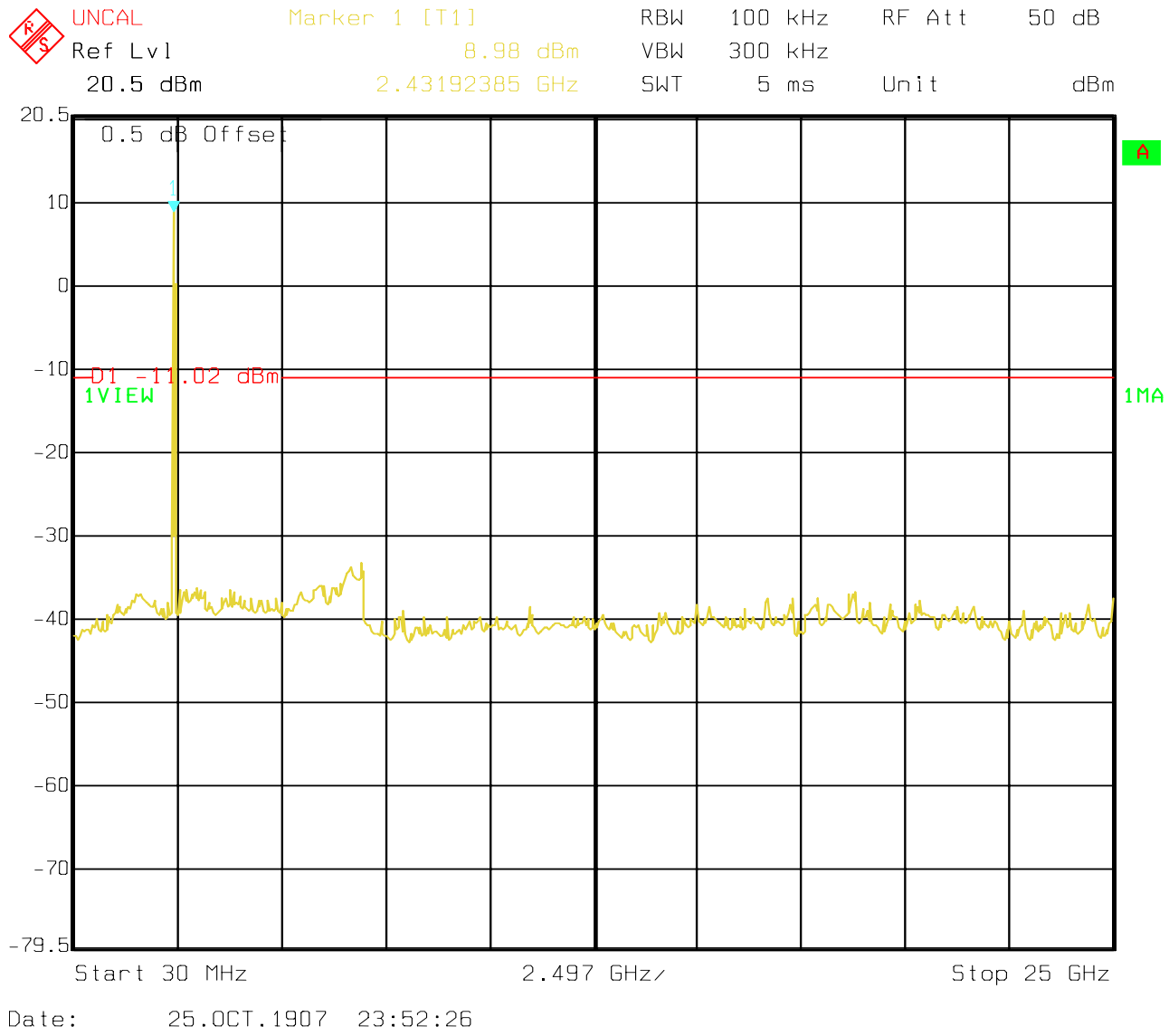


Channel Frequency (MHz)	Data Rate (Mbps)	Delta Value (dBc)	Limit (dBc)	Ref Plot	Result
802.11G Mode					
2412	54	*	20	PLOT4	PASS
2437	54	*	20	PLOT5	PASS
2462	54	*	20	PLOT6	PASS

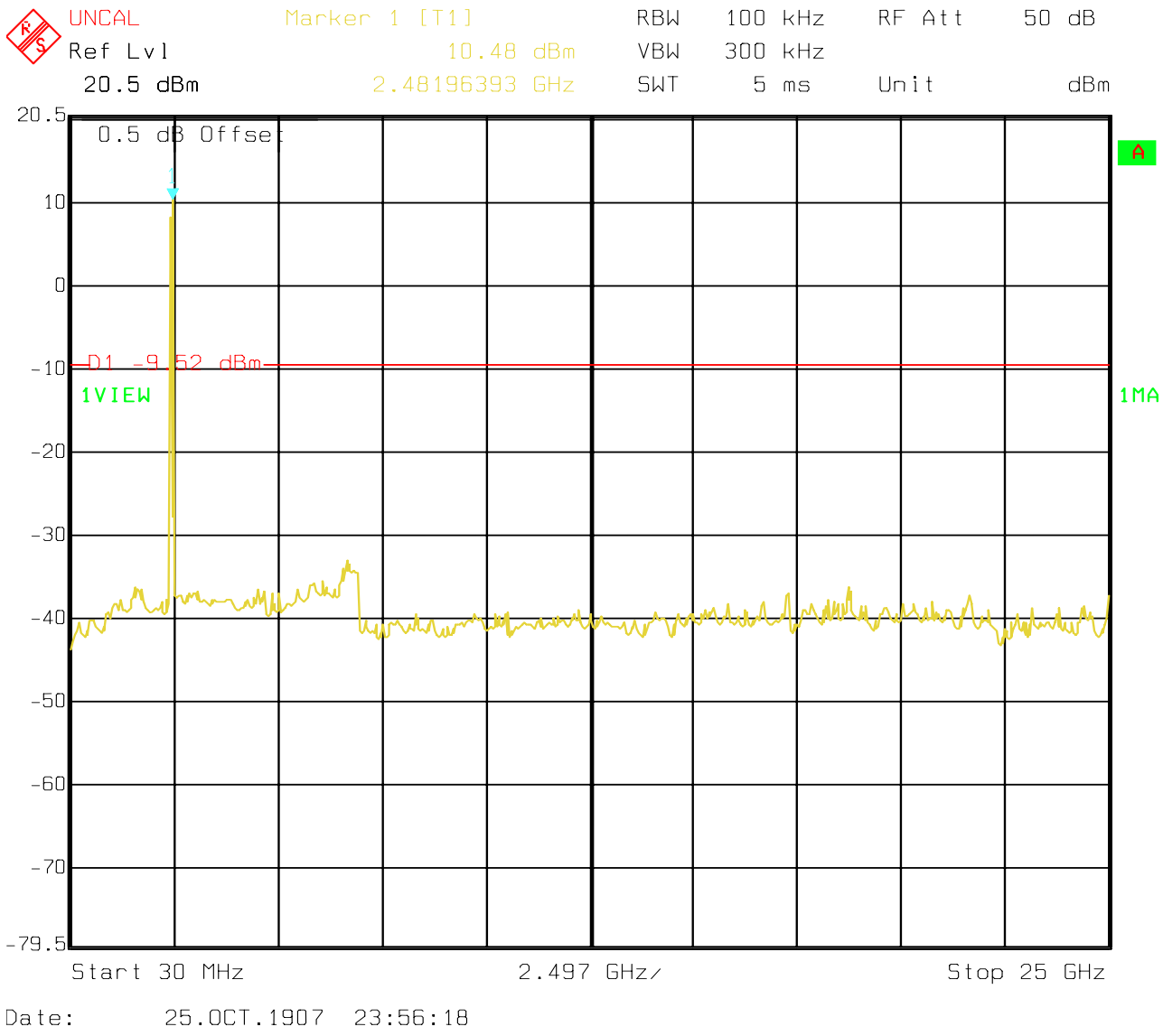
PLOT4: 802.11g, Low Channel



PLOT5: 802.11g, Middle Channel



PLOT6: 802.11g, High Channel

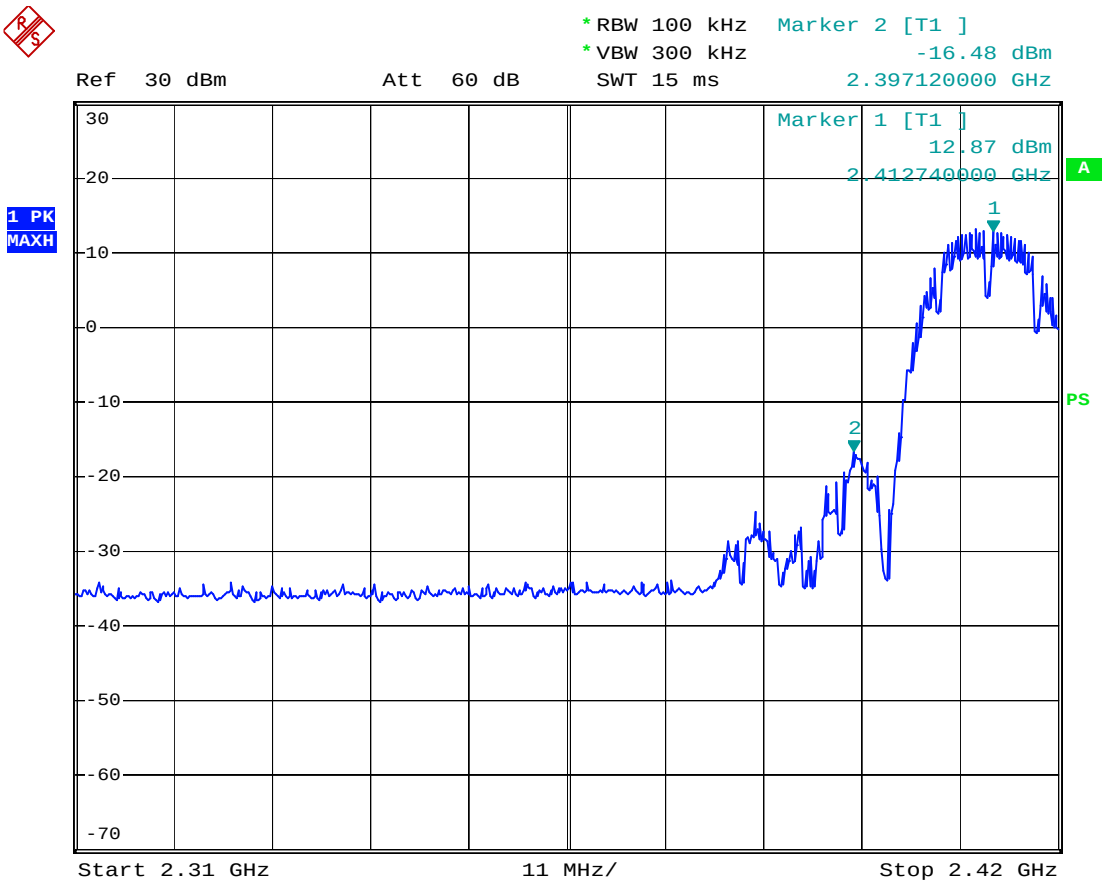


100 kHz Outside-of-Band Edge:

Test Mode: Transmitting

Frequency (MHz)	Data Rate (Mbps)	Delta Value (dBc)	Limit (dBc)	Ref Plot	Result
802.11b					
2397.12	11	29.35	20	PLOT1	PASS
2488.10	11	39.22	20	PLOT2	PASS
802.11g					
2399.68	54	25.25	20	PLOT3	PASS
2484.00	54	29.11	20	PLOT4	PASS

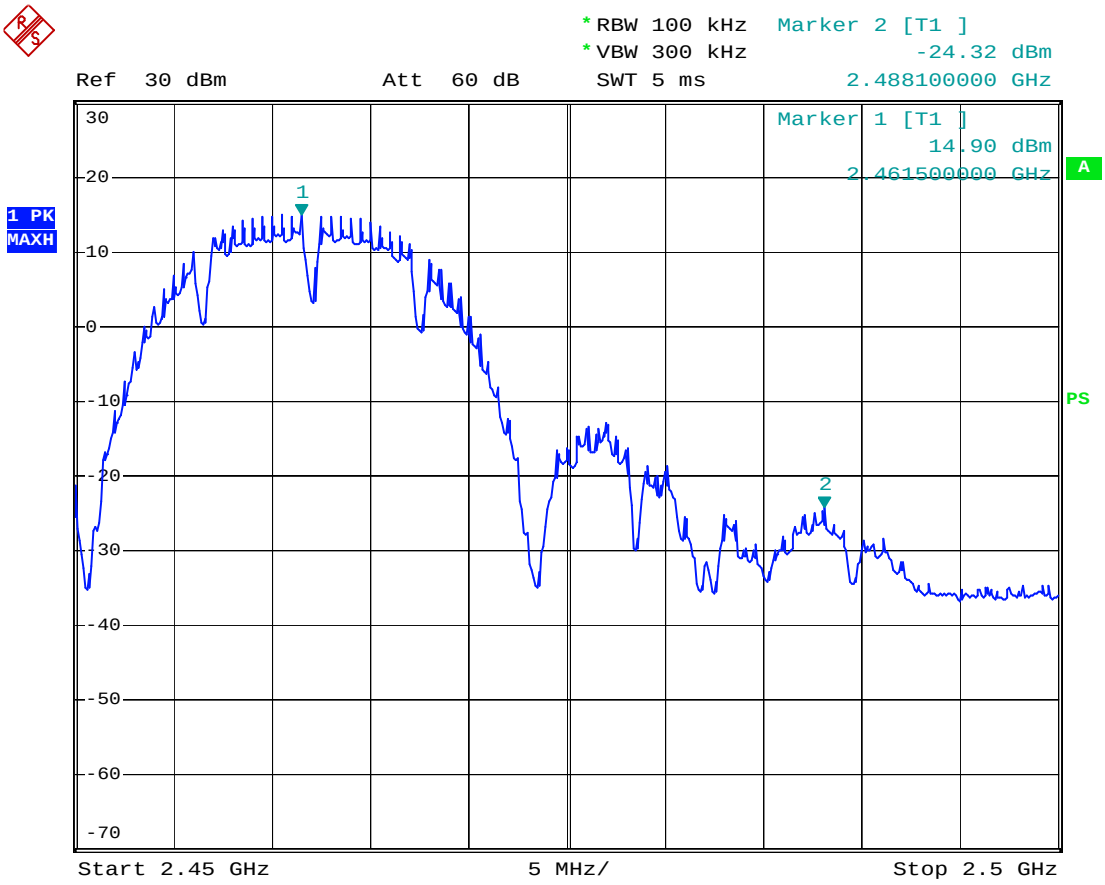
PLOT1



RFNET 802.11B out of bandedge, left

Date: 17.OCT.2007 16:05:38

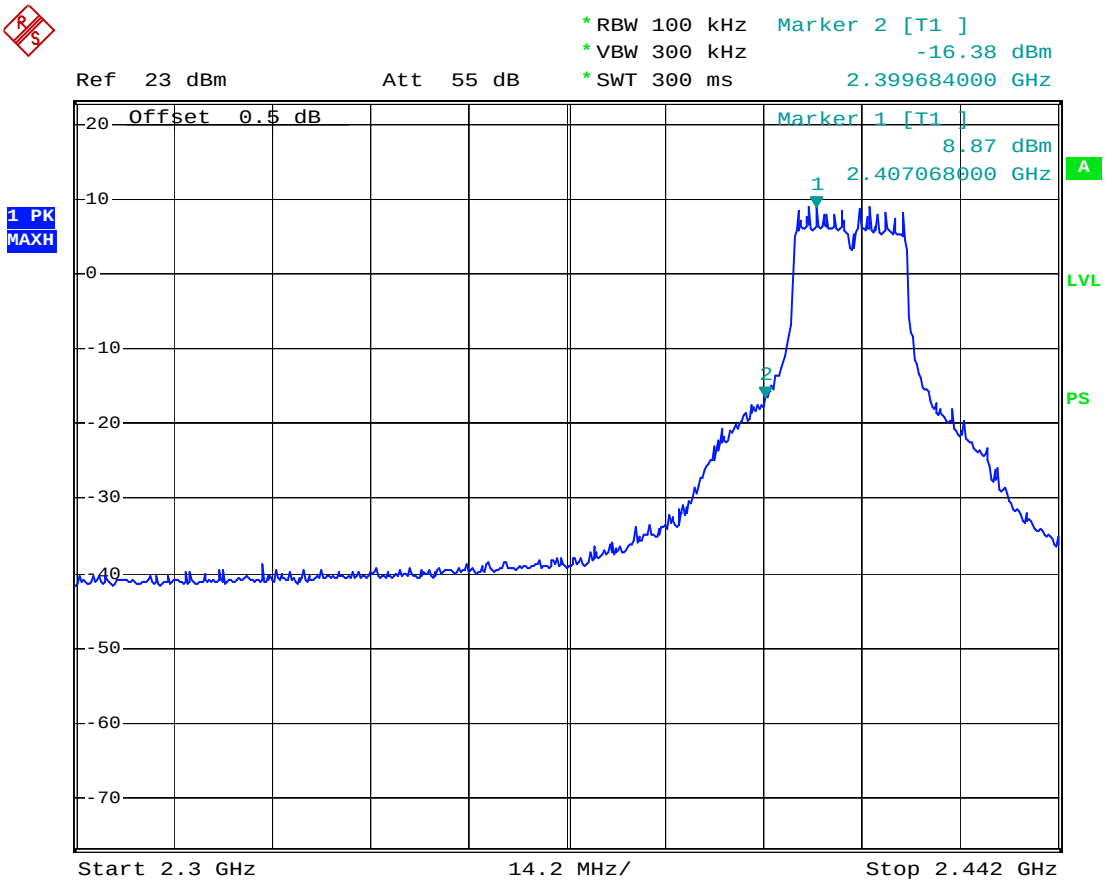
PLOT2



RFNET 802.11b out of bandedge, right

Date: 17.OCT.2007 16:17:13

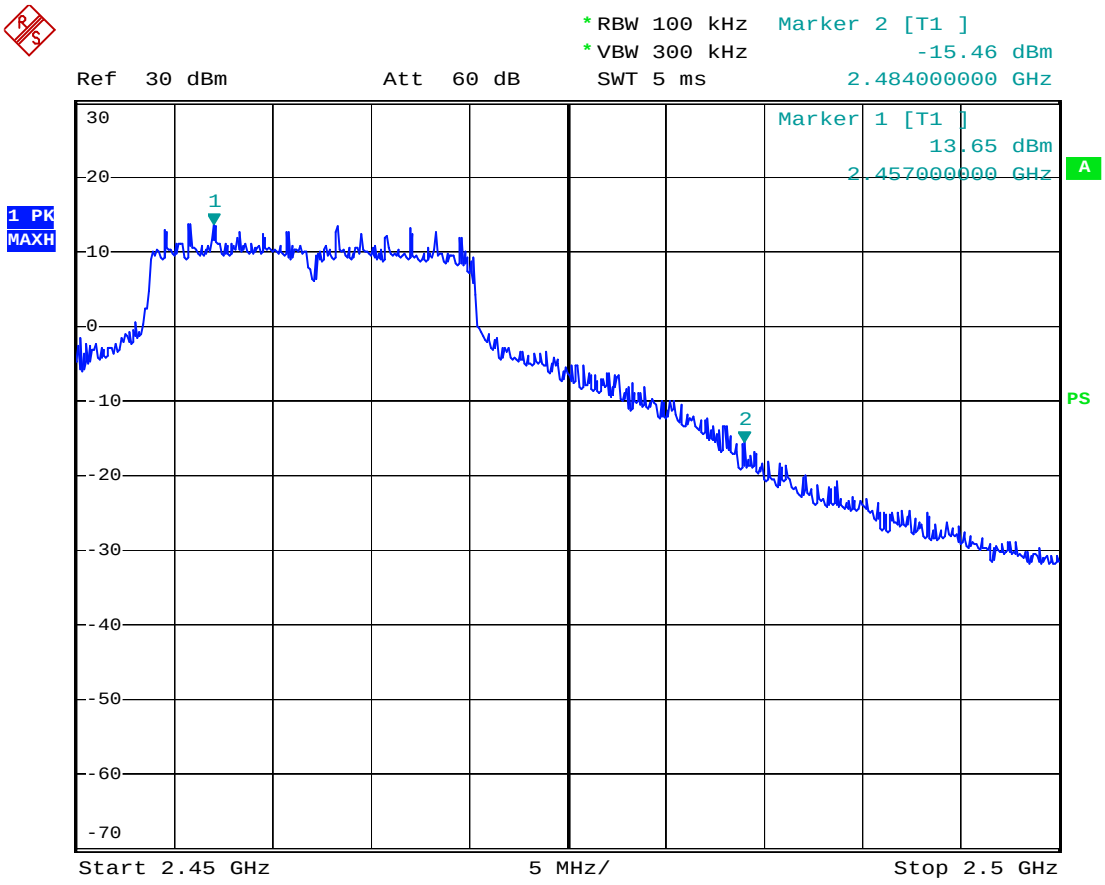
PLOT3



RFNET ,802.11g,out of bandedge,left

Date: 26.OCT.2007 19:10:44

PLOT4



RFNET 802.11g out of bandedge, right

Date: 17.OCT.2007 16:39:27

Spurious emission near restricted band: (RBW=1MHz, VBW=3MHz)

Frequency	Meter Reading	Detector	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Correction Factor	FCC 15.209 Limit	Margin
MHz	dBuV/M	PK/QP/ AV	Degree	Meter	H/V	dB	dB	dB	dBuV/m	dBuV/m	dB
802.11b (2310MHz-2390MHz)											
2388.20	50.70	PK	45	1.2	V	30.6	3.61	35	49.91	54	4.09
2358.20	50.40	PK	180	1.2	H	30.6	3.61	35	49.61	54	4.39
2352.20	49.52	PK	90	1	V	30.6	3.61	35	48.73	54	5.27
2389.03	47.80	PK	180	1.2	V	30.6	3.61	35	47.01	54	6.99
2346.70	47.42	PK	60	1.5	H	30.6	3.61	35	46.63	54	7.37
802.11b (2483.5MHz-2500MHz)											
2492.69	51.64	PK	243	1.4	H	30.6	3.61	35	50.85	54	3.15
2491.08	50.12	PK	234	1.6	V	30.6	3.61	35	49.33	54	4.67
2489.08	48.90	PK	153	1.5	H	30.6	3.61	35	48.11	54	5.89
2490.20	47.52	PK	156	1.4	V	30.6	3.61	35	46.73	54	7.27
802.11g (2310MHz-2390MHz)											
2358.90	50.40	PK	234	1.6	V	30.6	3.61	35	49.61	54	4.39
2358.50	49.60	PK	153	1.5	H	30.6	3.61	35	48.81	54	5.19
2580.50	48.90	PK	156	1.4	V	30.6	3.61	35	48.11	54	5.89
23.56.20	48.70	PK	243	1.4	H	30.6	3.61	35	47.91	54	6.09
802.11g (2483.5MHz-2500MHz)											
2496.66	50.35	PK	156	1.4	V	30.6	3.61	35	49.56	54	4.44
2492.55	50.10	PK	243	1.4	H	30.6	3.61	35	49.31	54	4.69
2488.50	49.80	PK	234	1.6	V	30.6	3.61	35	49.01	54	4.99
2487.60	48.70	PK	153	1.5	H	30.6	3.61	35	47.91	54	6.09

Note: Above Peak spurious emission levels are below the Average spurious emission limit of 54 dBuV/m, thus Average measurement has been omitted.

§15.247(a) (2) – 6dB BANDWIDTH TESTING

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 Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2007-09-29	2008-09-29

*** 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

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 Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	50%
ATM Pressure:	100.9 kPa

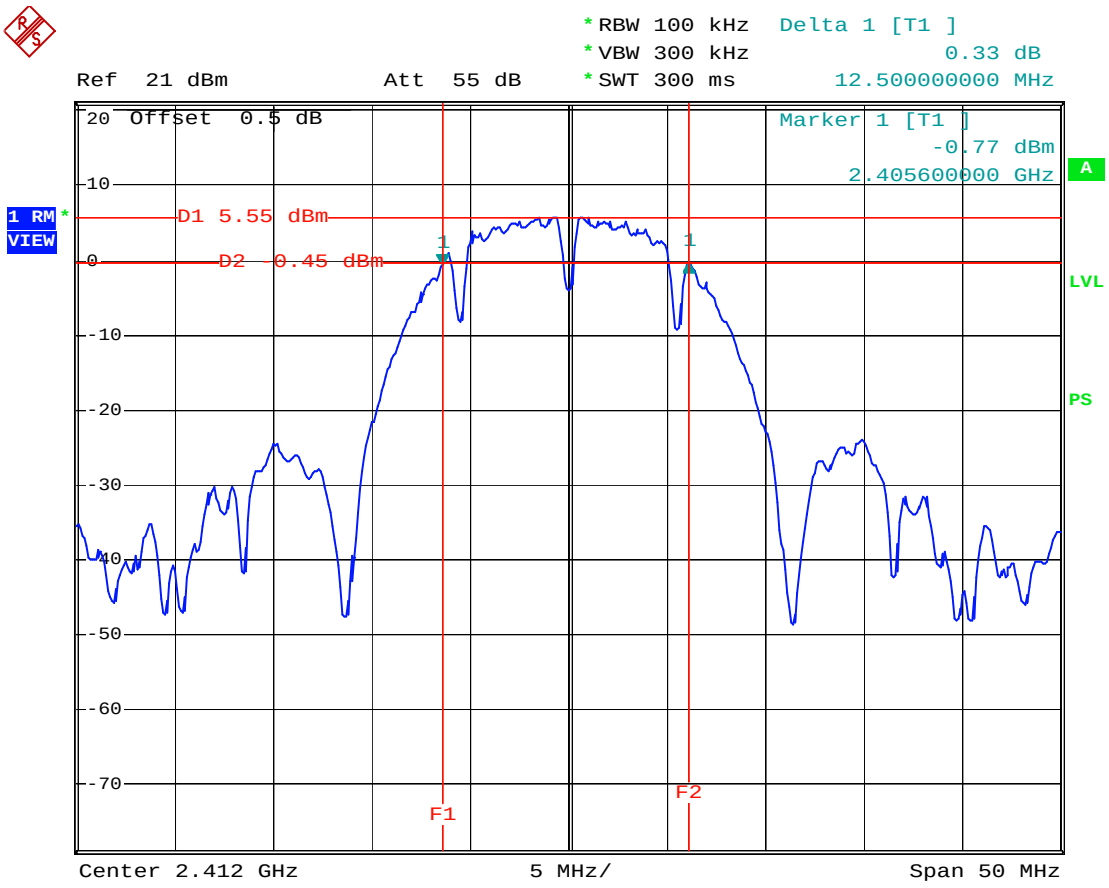
The testing was performed by Merry Zhao on 2007-10-12.

Test Mode: Transmitting

Test Result: Pass

Channel Frequency (MHz)	Data Rate (Mbps)	6dB Bandwidth (kHz)	Limit (kHz)	Ref Plot
802.11b				
2412	11	12500	＞500	PLOT1
2437	11	12300	＞500	PLOT2
2462	11	12200	＞500	PLOT3
802.11g				
2412	54	16400	＞500	PLOT4
2437	54	16600	＞500	PLOT5
2462	54	16600	＞500	PLOT6

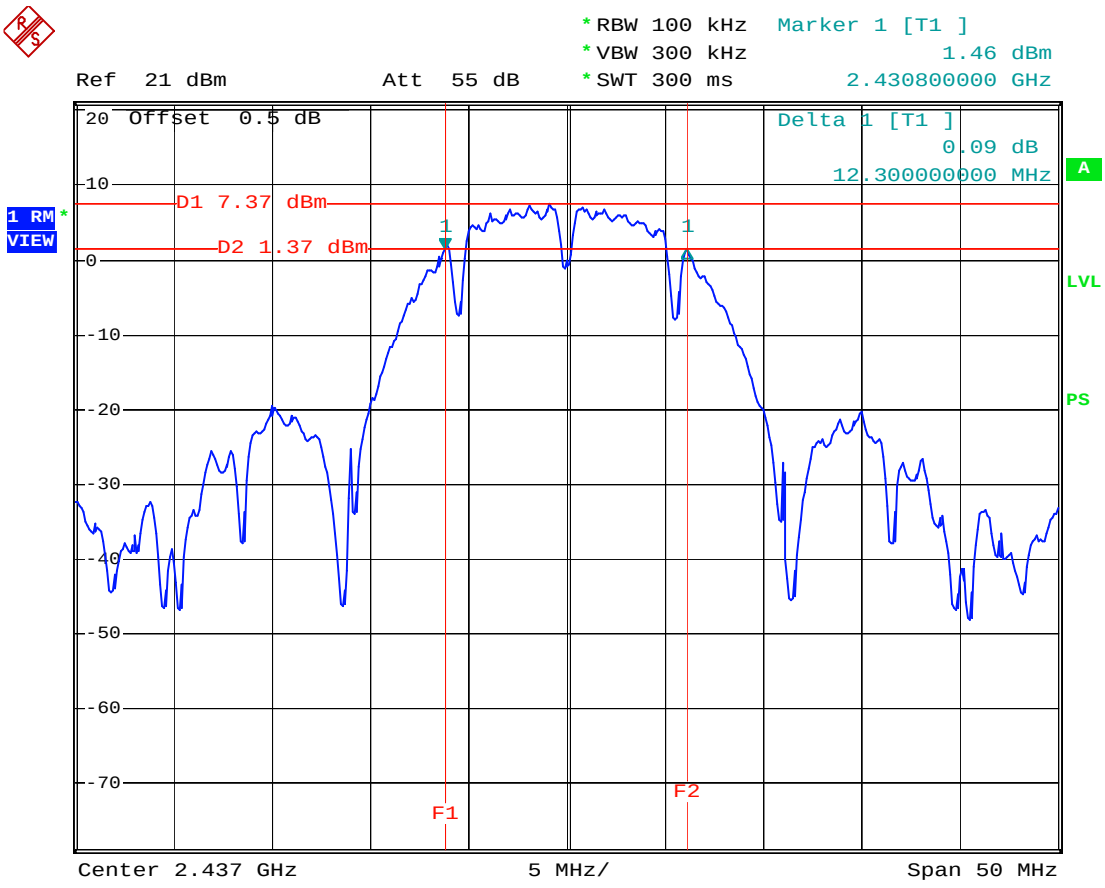
PLOT1



RFNET AP-1068-HP 802.11b, low channel, 6dB bandwidth

Date: 12.OCT.2007 22:45:46

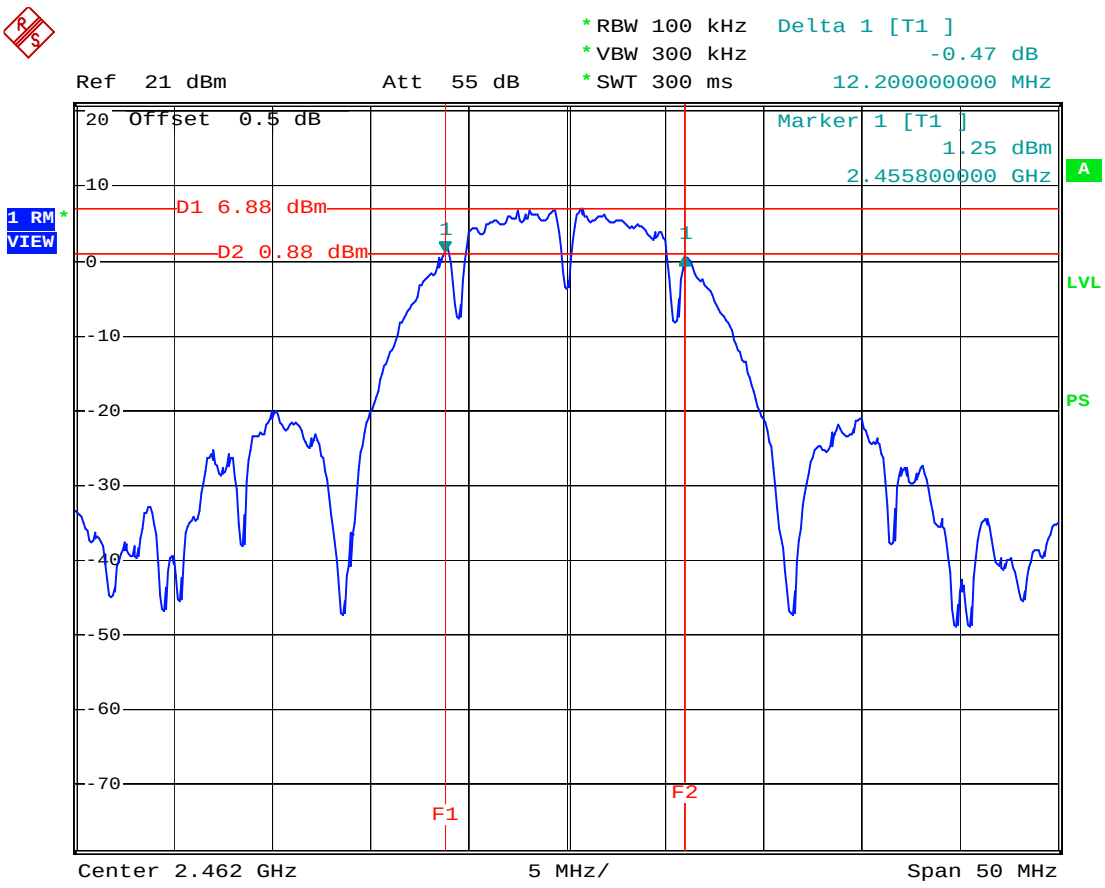
PLOT2



RFNET AP-1068-HP 802.11b,middle channel, 6dB bandwidth

Date: 12.OCT.2007 22:51:17

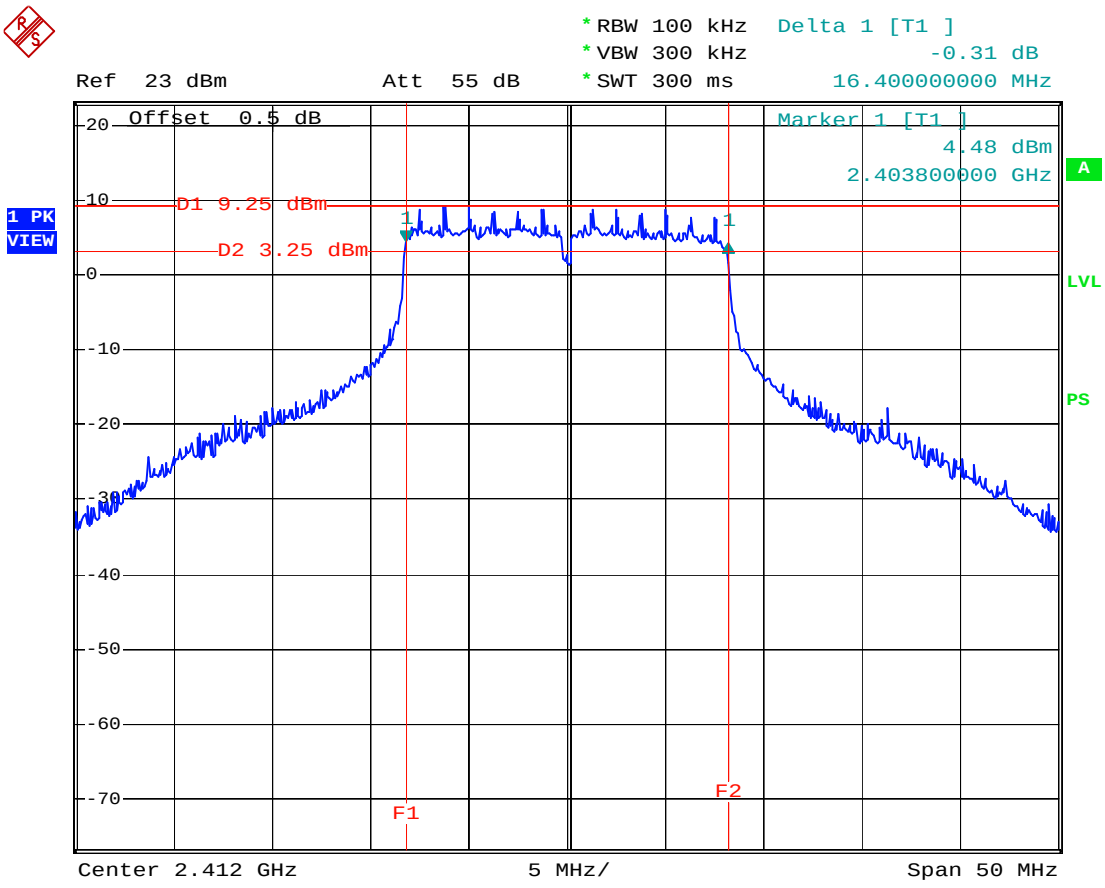
PLOT3



RFNET AP-1068-HP 802.11b, high channel, 6dB bandwidth

Date: 12.OCT.2007 22:54:14

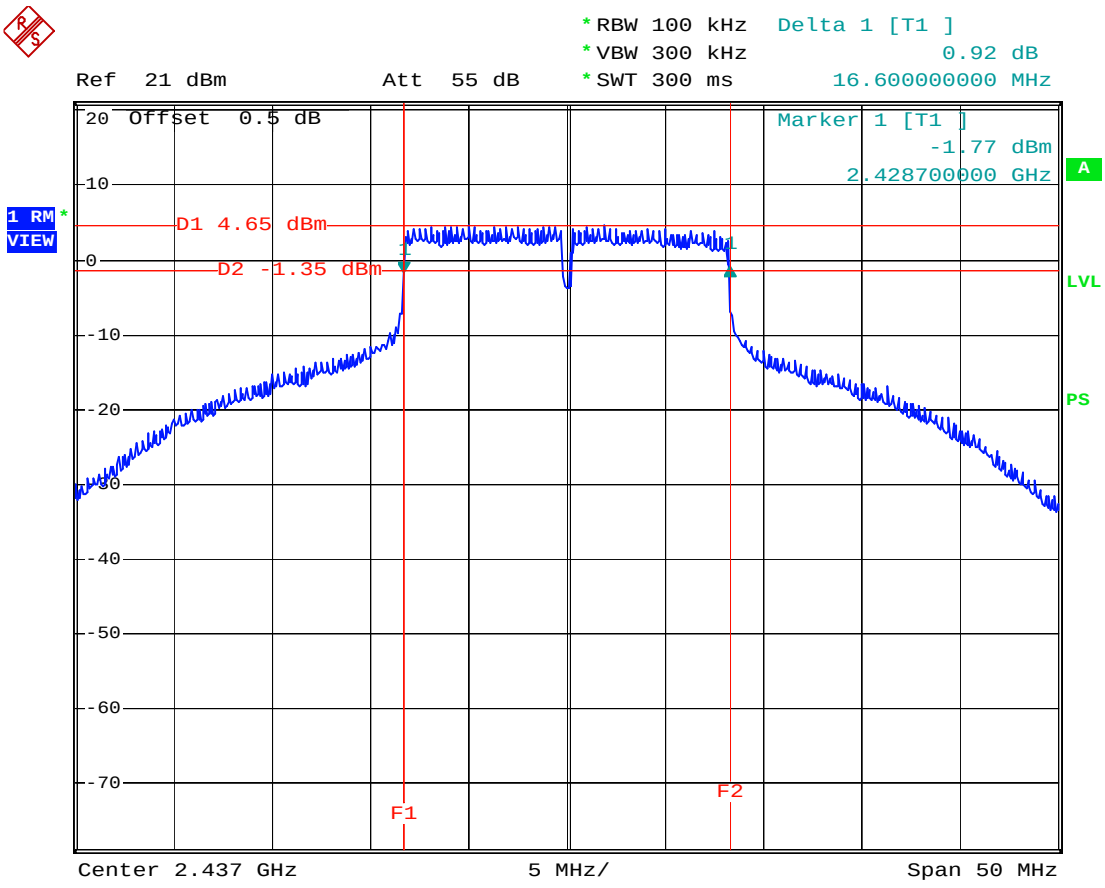
PLOT4



RFNET, AP-1068-HP, 802.11g, 6dB bandwidth

Date: 26.OCT.2007 19:17:30

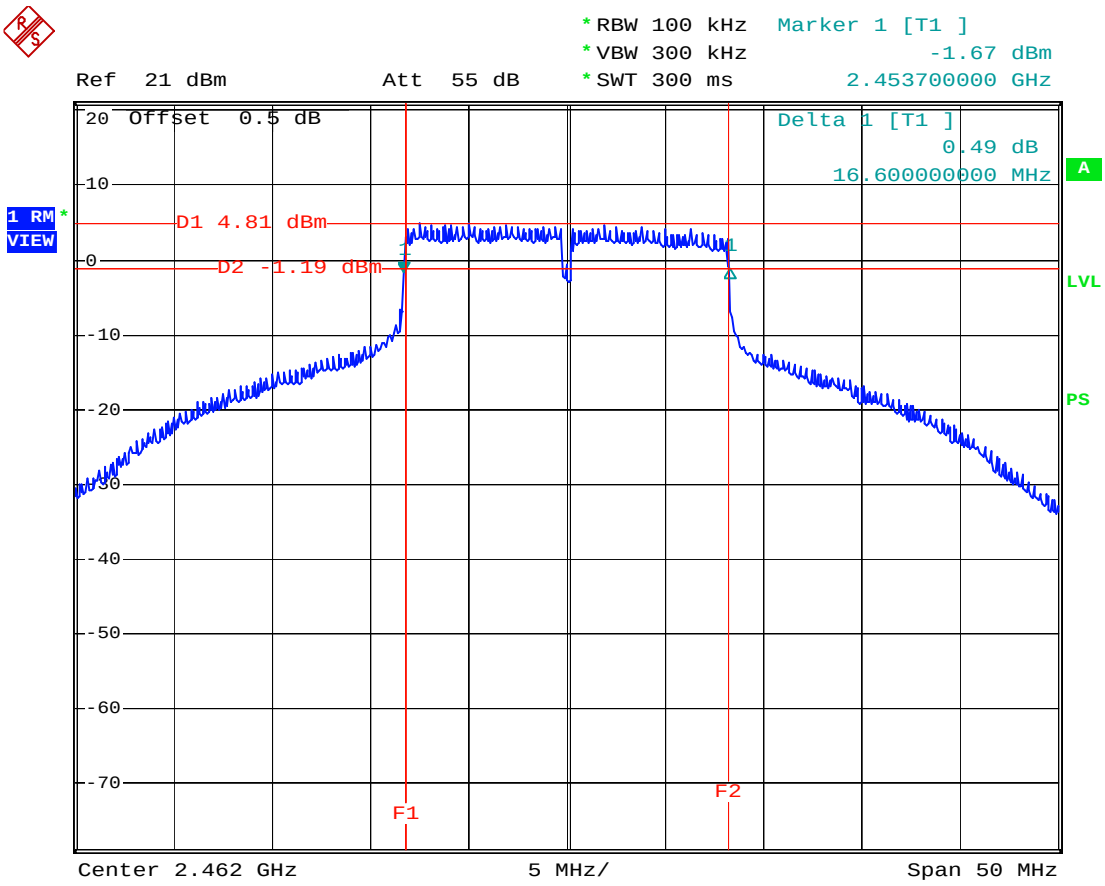
PLOT5



RFNET AP-1068-HP 802.11g, middle channel, 6dB bandwidth

Date: 12.OCT.2007 22:35:33

PLOT6



RFNET AP-1068-HP 802.11g, high channel, 6dB bandwidth

Date: 12.OCT.2007 22:39:25

§15.247(b) (3) - PEAK OUTPUT POWER MEASUREMENT

Applicable Standard

According to §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.

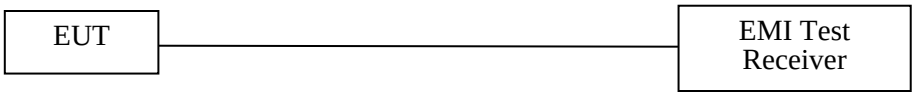
Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2007-09-29	2008-09-29

*** 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

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 Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	50 %
ATM Pressure:	100.9 kPa

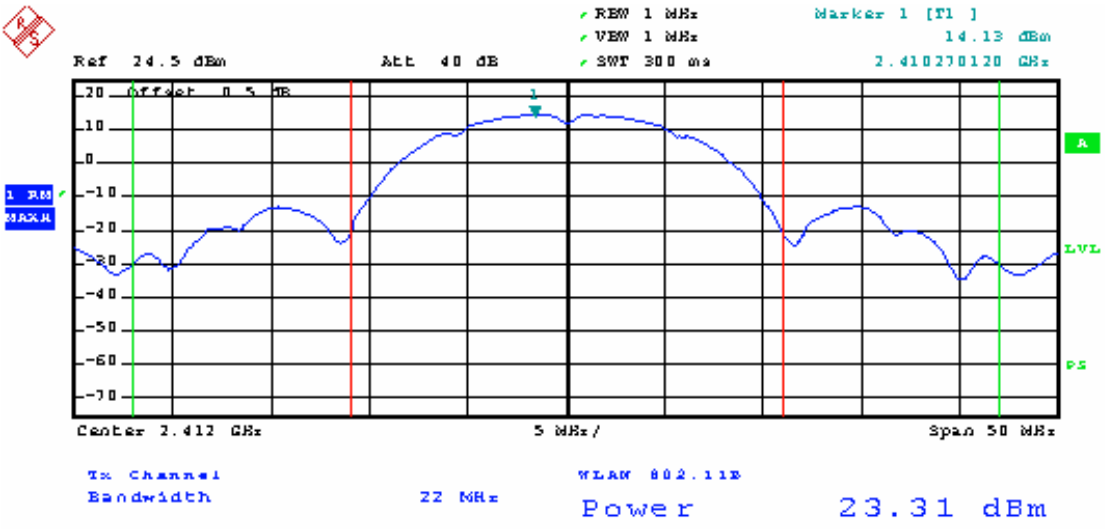
The testing was performed by Merry Zhao on 2007-10-12 to 2007-10-26.

Test Result: Pass

Test mode: Transmitting

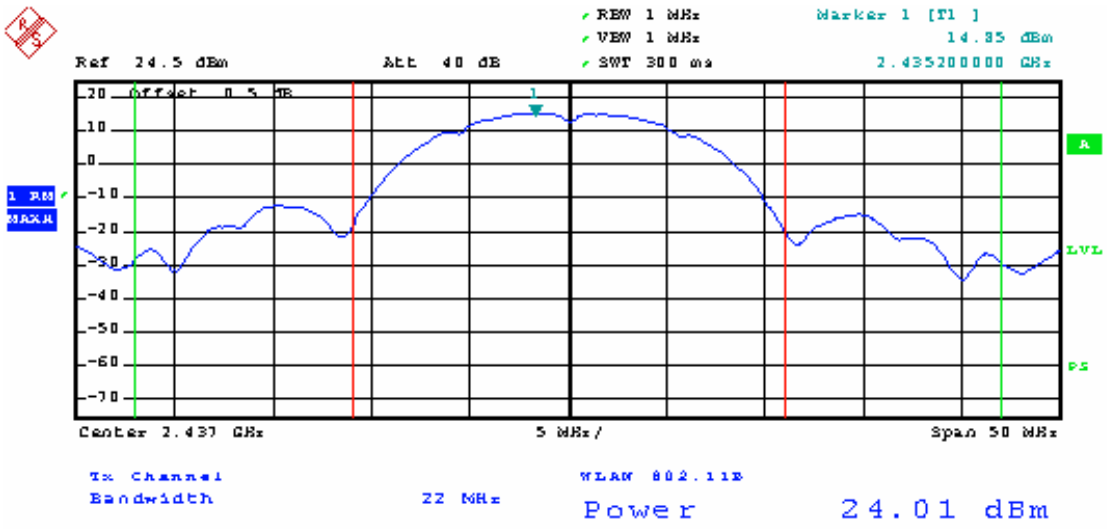
802.11b

Channel	Channel Frequency	Data Rate	Reading Power Power	Limit
	(MHz)	(Mbps)	(dBm)	dBm
LowChannel	2412	11	23.31	30
Mid Channel	2437	11	24.01	30
High Channel	2462	11	24.12	30



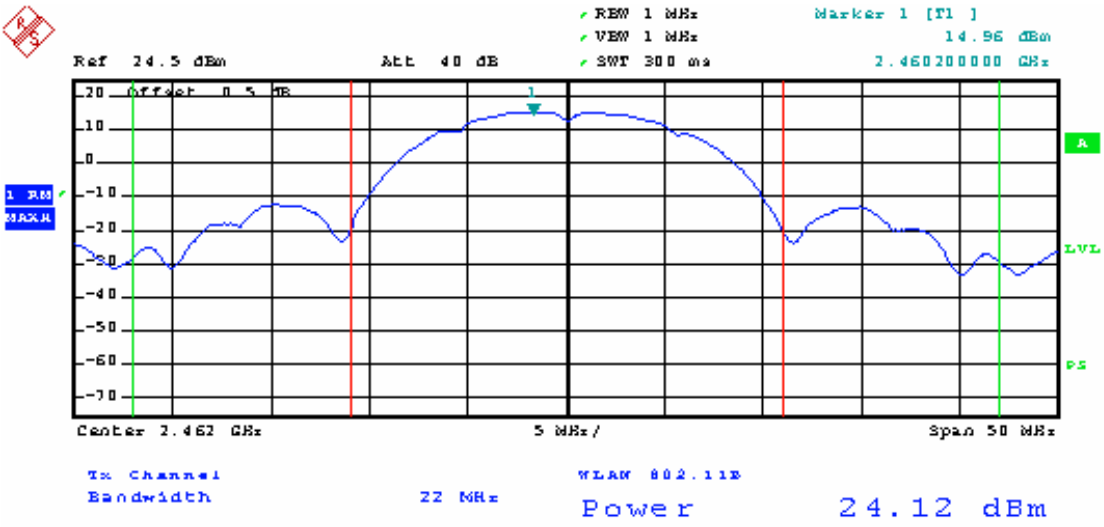
RFNET AP-1068-HP 802.11b, low channel,output power

Date: 12.OCT.2007 22:10:40



RFNET AP-1068-HP 802.11b, middle channel,output power

Date: 12.OCT.2007 22:12:08

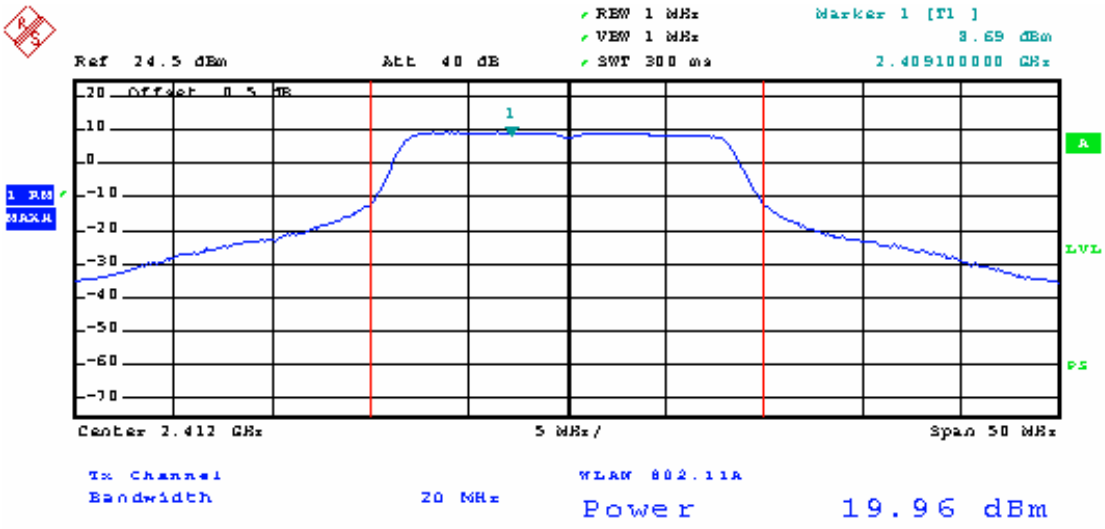


RFNET AP-1068-HP 802.11b, high channel,output power

Date: 12.OCT.2007 22:13:27

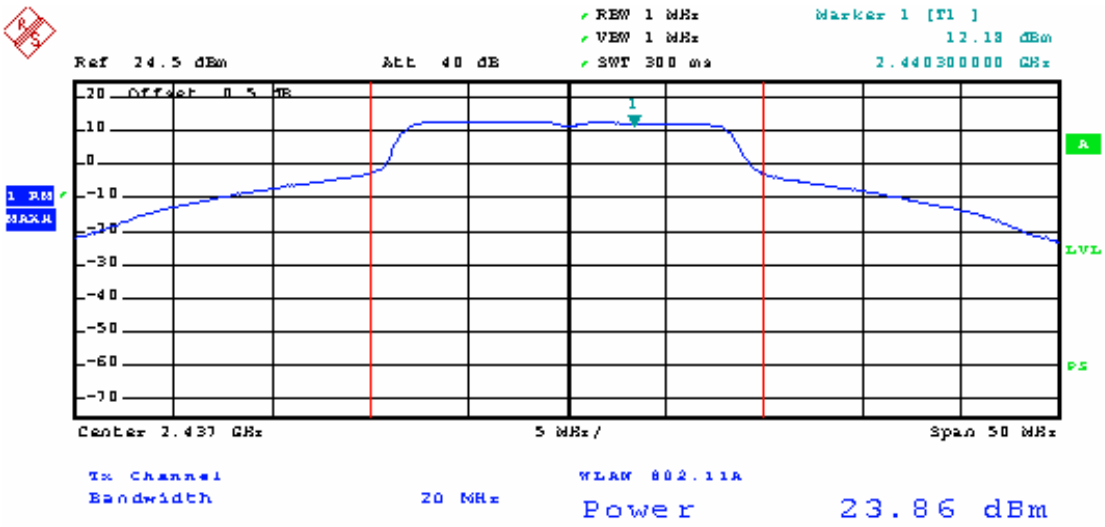
802.11g

Channel	Channel Frequency	Data Rate	Reading Power Output	Limit
	(MHz)	(Mbps)	(dBm)	dBm
Low Channel	2412	54	19.96	30
Mid Channel	2437	54	23.86	30
High Channel	2462	54	24.02	30



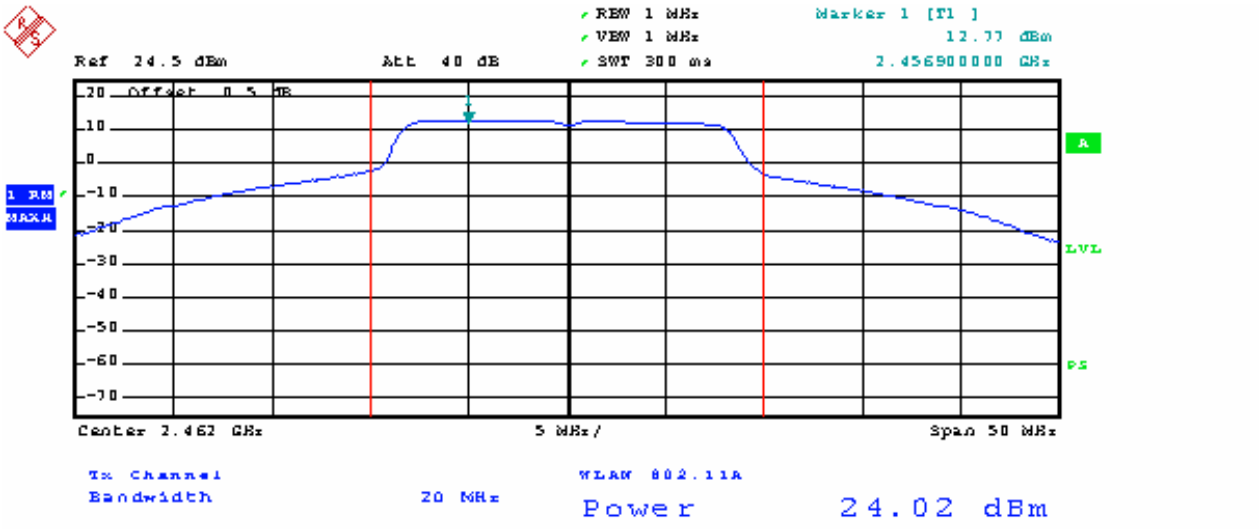
RFNET peak output power,802.11g, low channel

Date: 26.OCT.2007 19:04:18



RFNET AP-1068-HP 802.11g, middle channel,output power

Date: 12.OCT.2007 22:21:31



RFNET AP-1068-HP 802.11g, high channel,output power

Date: 12.OCT.2007 22:24:08

§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 Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2007-09-29	2008-09-29

*** 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 Procedure

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

Test Data

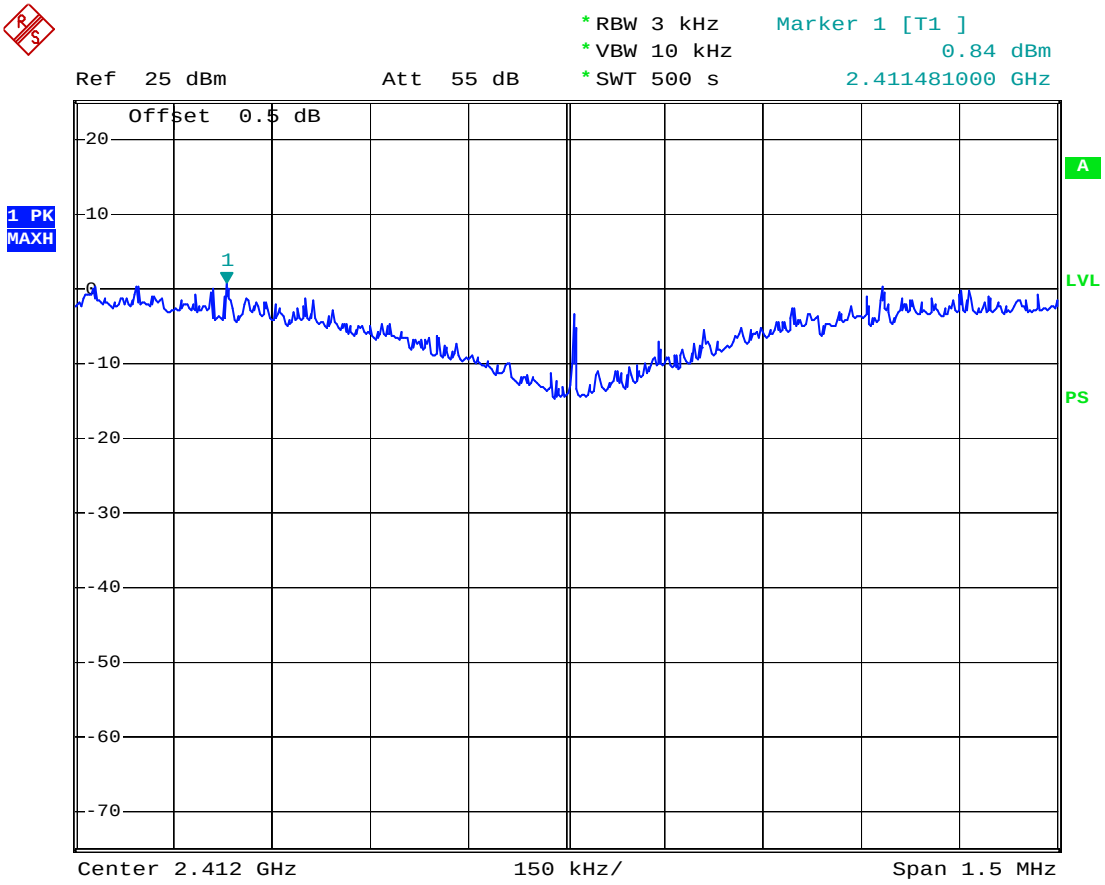
Environmental Conditions

Temperature:	25 °C
Relative Humidity:	53 %
ATM Pressure:	100.9 kPa

The testing was performed by Merry Zhao on 2007-10-16 to 2007-10-26.

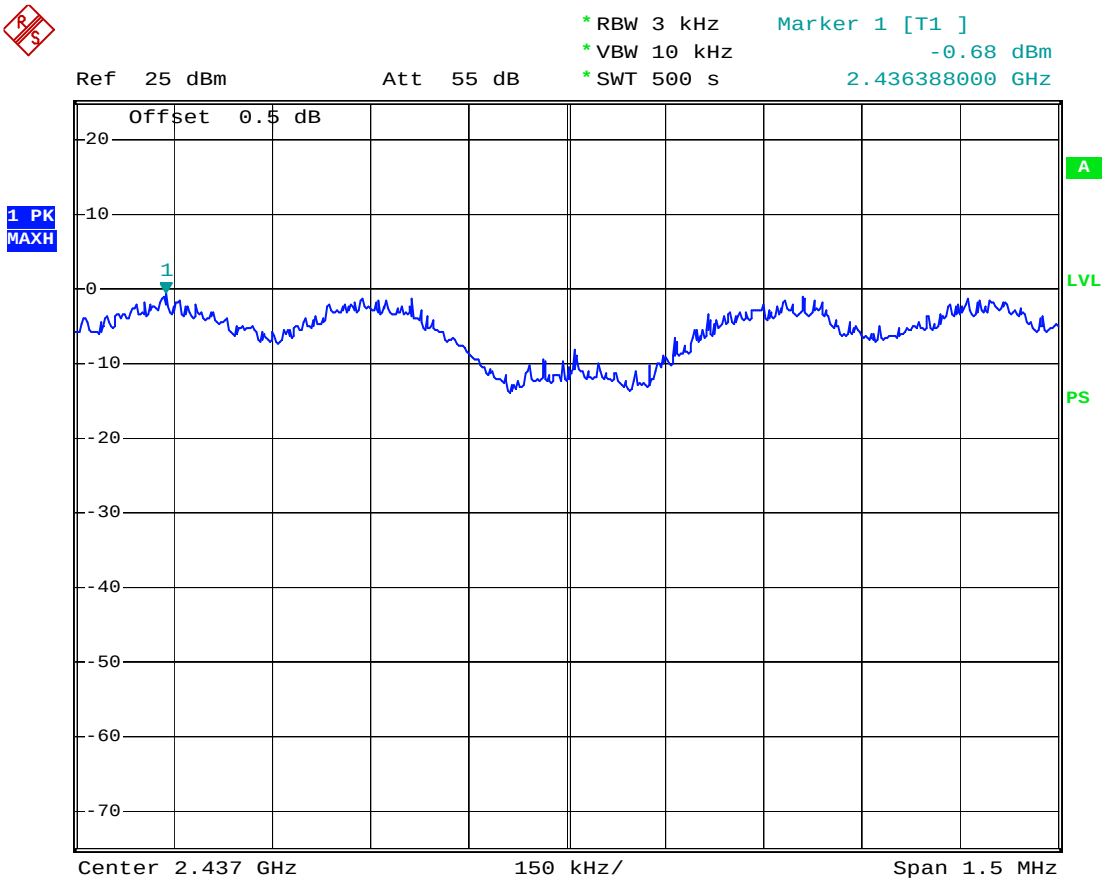
Test Mode: Transmitting

Channel Frequency (MHz)	Data Rate (Mbps)	PSD (dBm/3KHz)	Limit (dBm/3KHZ)	RESULT
802.11b				
2412	11	0.84	8	PASS
2437	11	-0.68	8	PASS
2462	11	2.37	8	PASS
802.11g				
2412	54	-3.58	8	PASS
2437	54	-0.68	8	PASS
2462	54	1.83	8	PASS



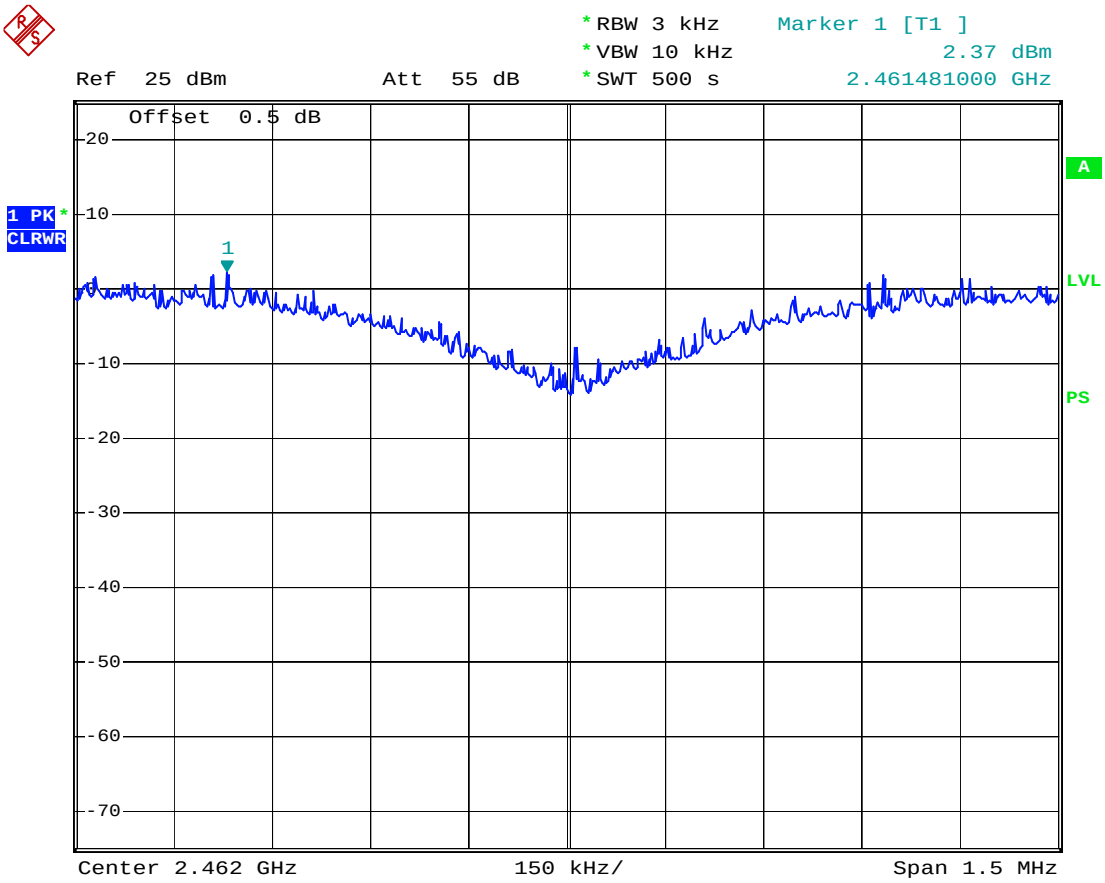
RFNET AP-1068-HP 802.11b, low channel power density

Date: 16.OCT.2007 17:42:19



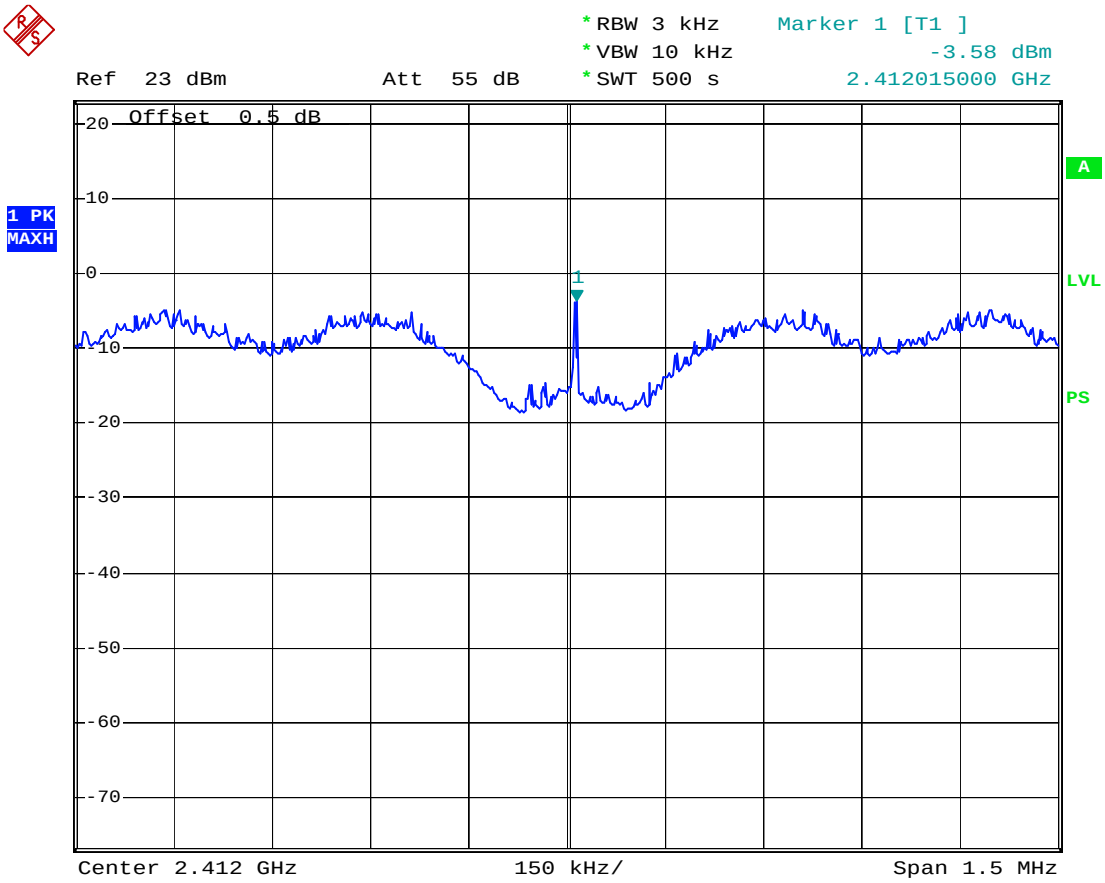
RFNET AP-1068-HP 802.11g,middle channel power density

Date: 16.OCT.2007 16:49:47



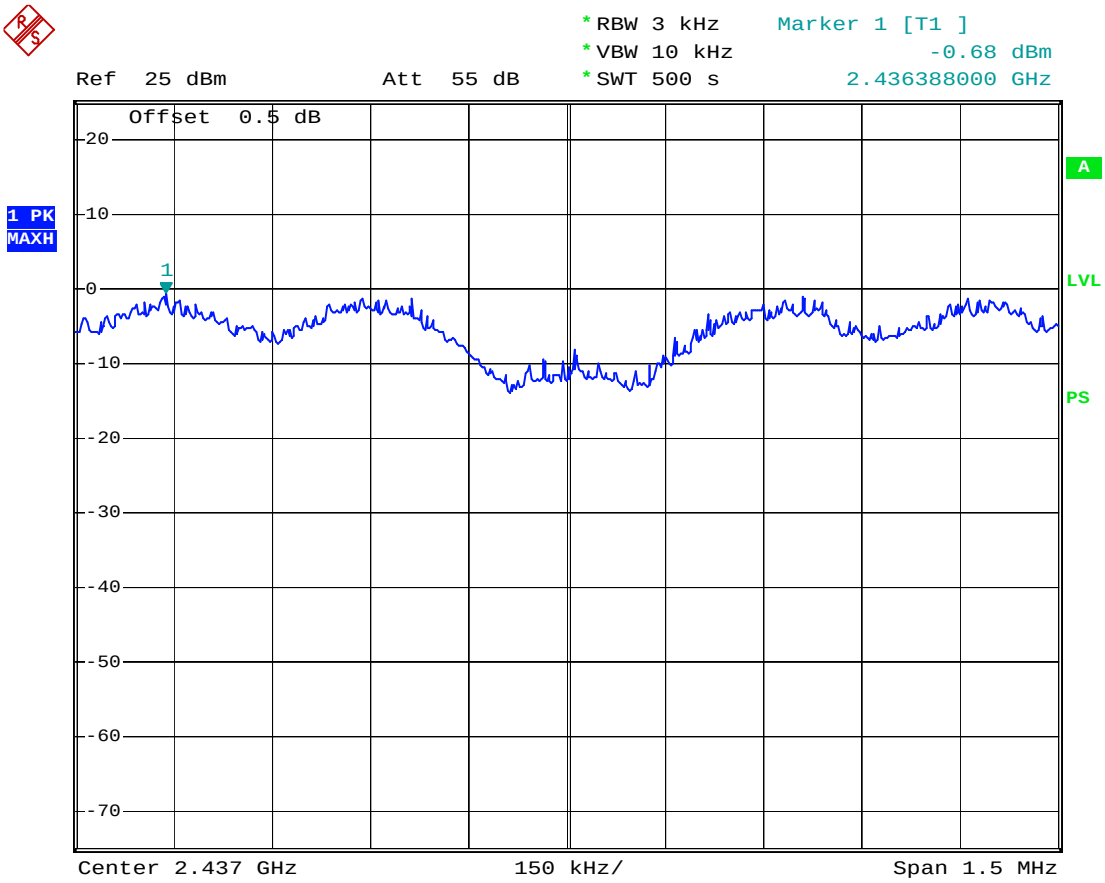
RFNET AP-1068-HP 802.11b, high channel power density

Date: 16.OCT.2007 18:20:05



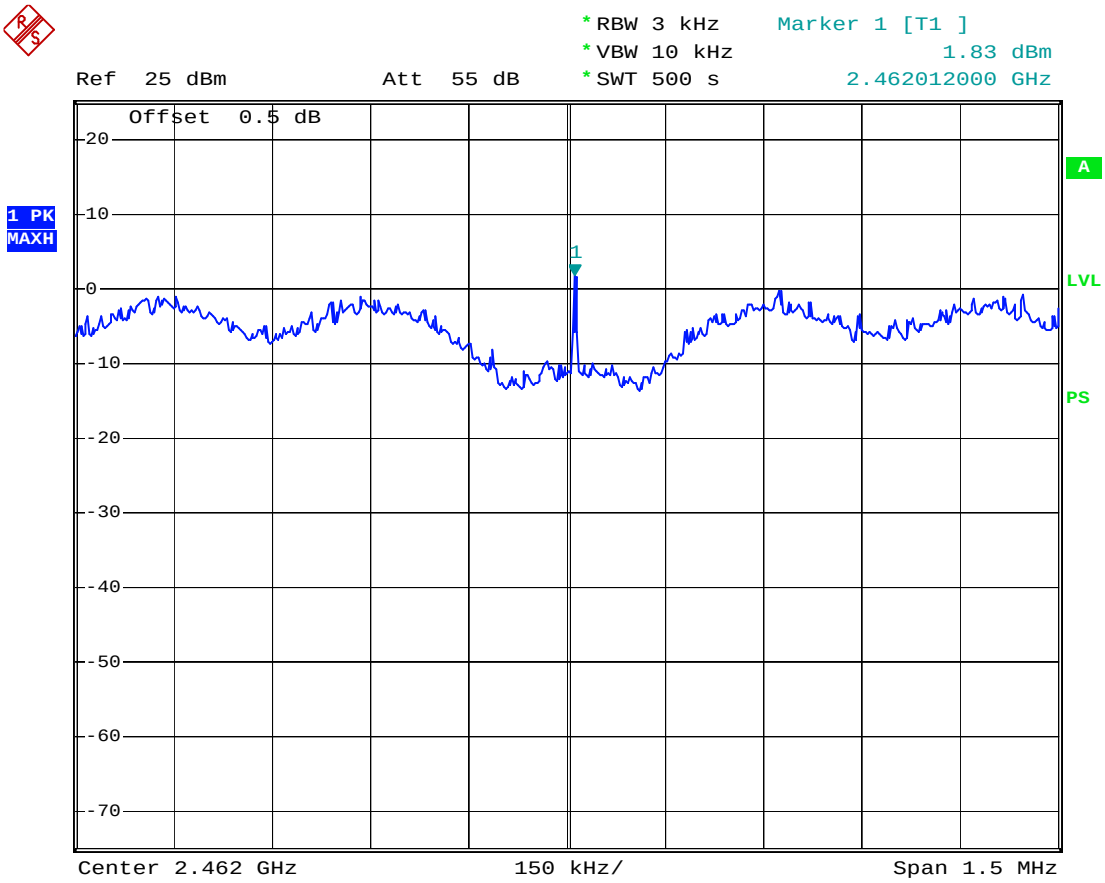
RFNET, AP-1068-HP, 802.11g, power density

Date: 26.OCT.2007 19:40:49



RFNET AP-1068-HP 802.11g,middle channel power density

Date: 16.OCT.2007 16:49:47



RFNET AP-1068-HP 802.11g, high channel power density

Date: 16.OCT.2007 17:09:51

END OF REPORT