Lab Code: 200167-0

FCC PART 15.247

MEASUREMENT AND TEST REPORT

For

Fidelity Comtech, Inc.

2400 Trade Centre Ave, Longmont, CO 80503

FCC ID: Q2AFCI3000

Model: FCI-3000

This Report Concerns: ☒ Original Report	**Product type:** Phased Array, steered beam WLAN Terminal
Test Engineer:	Tom Chen
Report No.:	R0609132
Report Date:	2006-10-10
Reviewed By:	Test Engineer: Daniel Deng
Prepared By: (TZ)	Bay Area Compliance Laboratory Corp. 1274 Anvilwood Ave. Sunnyvale, CA 94089, U.S.A. Tel: (408) 732-9162 Fax: (408) 732 9164

Note: This test report is for the customer shown above and their specific product only. It may not be duplicated without prior written consent from Bay Area Compliance Laboratories Corp. This report **must not** be used by the customer to claim product certification, approval, or endorsement by NVLAP or any agency of the U.S. Government.

TABLE OF CONTENTS

GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The Fidelity Comtech, Inc.'s Phocus Array system is an IEEE 802.11b/g radio and phased array antenna system designed for outdoor use and housed in one package that can act as an access point or as a client station.

The Phocus Array system is used for the following applications:
• Wireless ISP
• Enterprise Networks
• Wireless Hotspots
• Emergency First responders
• Military deployments
• Homeland Security

Mechanical Description

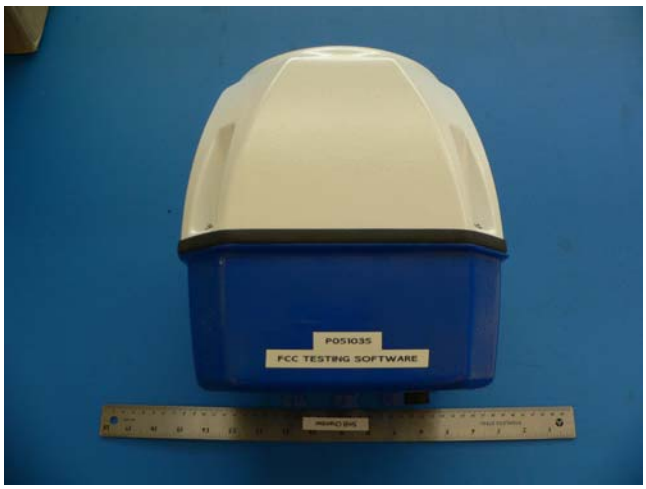
The *Fidelity Comtech, Inc.'s* product, *FCC ID: Q2AFCI3000, model: FCI-3000* or the "EUT" as referred to this report is a phased array antenna WLAN system which measures 235mmL x 235mmW x 280mmH 10lbs.

EUT Description:

1) External Construction: Outdoor mountable, sealed, high-impact, UV painted,ABS plastic radome over a powder-coated cast aluminum base. Base and radome are joined with a neoprene seal.
2) Operating Environment: 0°C to 60°C; 0 – 100% relative humidity. Not designed to be immersed in liquid.
3) Power Requirements: Supplied external 120 VAC Power Supply, 24 VDC Output, 2.5 Amp

** The test data gathered are from production sample, serial number: 001, provided by the manufacturer.*

EUT Photo



Additional EUT photos in Exhibit C

Objective

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

The objective is to determine compliance with FCC rules for Output Power, Antenna Requirements, 6 dB Bandwidth, and power spectral density, 100 kHz Bandwidth of Band Edges Measurement, Spurious Emissions, Conducted and Spurious Radiated Emissions.

Related Submittal(s)/Grant(s)

No Related Submittals.

Test Methodology

All measurements contained in this report were conducted in accordance 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.

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 values range from $\pm$2.0 for Conducted Emissions tests and $\pm$4.0 dB for Radiated Emissions tests are the most accurate estimates pertaining to uncertainty of EMC measurements at BACL.

Detailed instrumentation measurement uncertainties can be found in BACL report QAP-018.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratory, Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by BACL Corp. to collect radiated and conducted emissions measurement data is located at it's facility in Sunnyvale, California, USA.

Test site at BACL has been fully described in reports submitted to the Federal Communication Commission (FCC) and Voluntary Control Council for Interference (VCCI). The details of these reports has been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997 and Article 8 of the VCCI regulations on December 25, 1997. 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 and Voluntary Control Council for Interference have the reports on file and is listed under FCC registration number: 90464 and VCCI Registration No.: C-1298 and R-1234. The test site has been approved by the FCC and VCCI for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, BACL is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200167-0). The current scope of accreditations can be found at http://ts.nist.gov/ts/htdocs/210/214/scopes/2001670.htm

SYSTEM TEST CONFIGURATION

Justification

The host system was configured for testing according to ANSI C63.4-2003.

The EUT was tested in the testing mode to represent *worst*-case results during the final qualification test.

EUT built-in Exercise Software

The EUT is programmed with the following data rate settings that were used during testing:

	2412MHz	2437MHz	2462MHz
802.11b Data rate	1Mbps	1Mbps	1Mbps
802.11g Data rate	6Mbps	6Mbps	6Mbps

Note : The worst-case data rates are determined based on investigation by measuring the peak power PPSD across all data rates.

Special Accessories

There were no special accessories were required, included, or intended for use with EUT during these tests.

Equipment Modifications

No modifications were made to the EUT.

Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Compaq	Laptop	Presario 2100	CNF43403FB

Interface Ports and Cabling

Cable Description	Length (M)	From	To
RJ45 Cable	1.5	Power injector	EUT
RJ45 Cable	1.5	Laptop	EUT

SUMMARY OF TEST RESULTS

Results reported relate only to the product tested.

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247(e)(i) §2.1091	RF Exposure	Compliant
§15.203	Antenna Requirement	Compliant
§2.1051 & §15.247(d)	Spurious Emissions at Antenna Port	Compliant
§15.205	Restricted Band	Compliant
§15.209 (a) & §15.247(c)	Radiated Emissions	Compliant
§15.247 (a)(2)	6 dB Bandwidth	Compliant
§15.247 (b)(3)	Maximum Peak Output Power	Compliant
§ 15.247 (c)	100 kHz Bandwidth of Frequency Band Edge	Compliant
§15.247 (d)	Power Spectral Density	Compliant
§ 15.207 (a)	Conducted Emissions	Compliant

§15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to § 15.247(c)(2)(i)(ii)(A)The directional gain shall be calculated as the sum of 10 log (number of array elements or staves) plus the directional gain of the element or stave having the highest gain.

The antenna for this device is an integral antenna array with 8 elements, the antenna gain is computed as;
10 log (8)+ 6dBi = 15 dBi

§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 receiver, 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 BACL is ±2.4 dB.

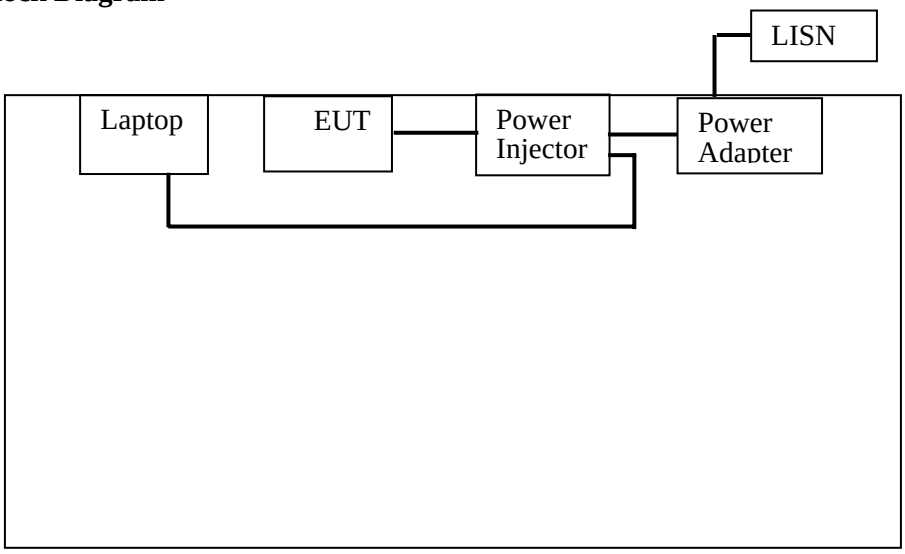
Test Setup

The measurements were performed at a shield room, using the setup per ANSI C63.4 – 2003 measurement procedure. The specification used are the FCC Class B limits.

The external I/O cables were draped along the edge of the test table and bundle when necessary.

The Power injector of EUT is connected to the power adaptor.

Test Setup Block Diagram



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal Date
Rohde & Schwarz	Artificial-Mains Network	ESH2-Z5	871884/039	2005-11-14
Rohde & Schwarz	EMI Test Receiver	ESCS30	100176	2006-03-13

*** Statement of Traceability: BACL Corp.** attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

Test Procedure

During the conducted emissions test, the power cord of the adaptor was connected to the mains outlet of the LISN-1.

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

All the data were recorded in the peak, quasi-peak and average detection mode. Quasi-Peak readings are distinguished with a "QP". Average readings are distinguished with an "Ave".

Environmental Conditions

Temperature:	23° C
Relative Humidity:	53%
ATM Pressure:	1041 mbar

**The testing was performed by Tom Chen on 2006-10-09*

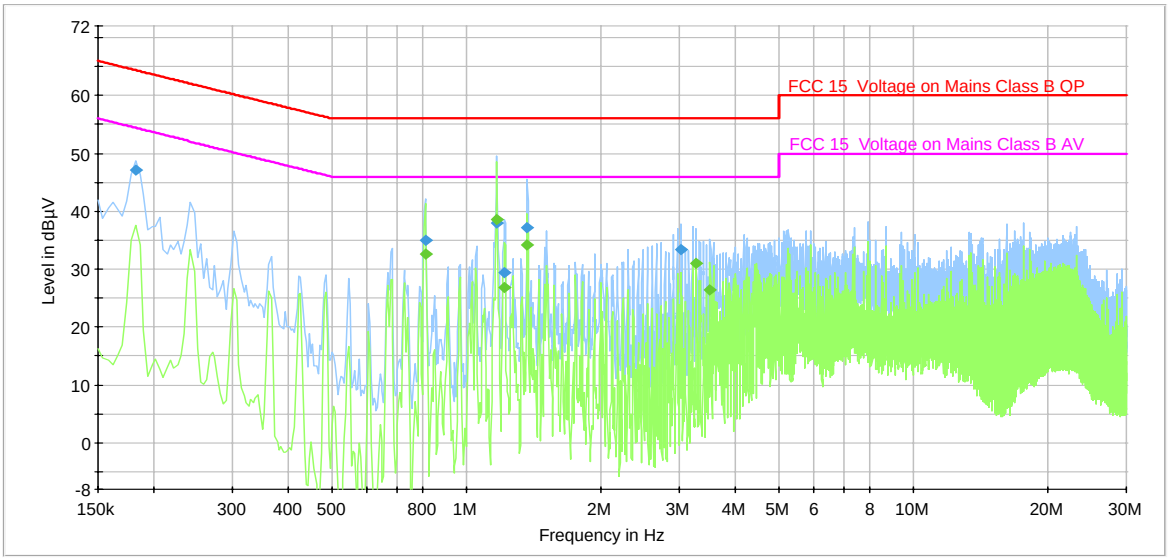
Summary of Test Results

According to the recorded data in the following table, the EUT complied with the FCC Conducted limits for a Class B device, having a *worst* margin reading of:

-7.5 dB at **1.17 MHz** in the **Line** conductor mode.

Conducted Emissions Test plots & data

120V / 60 Hz "Line" conductor



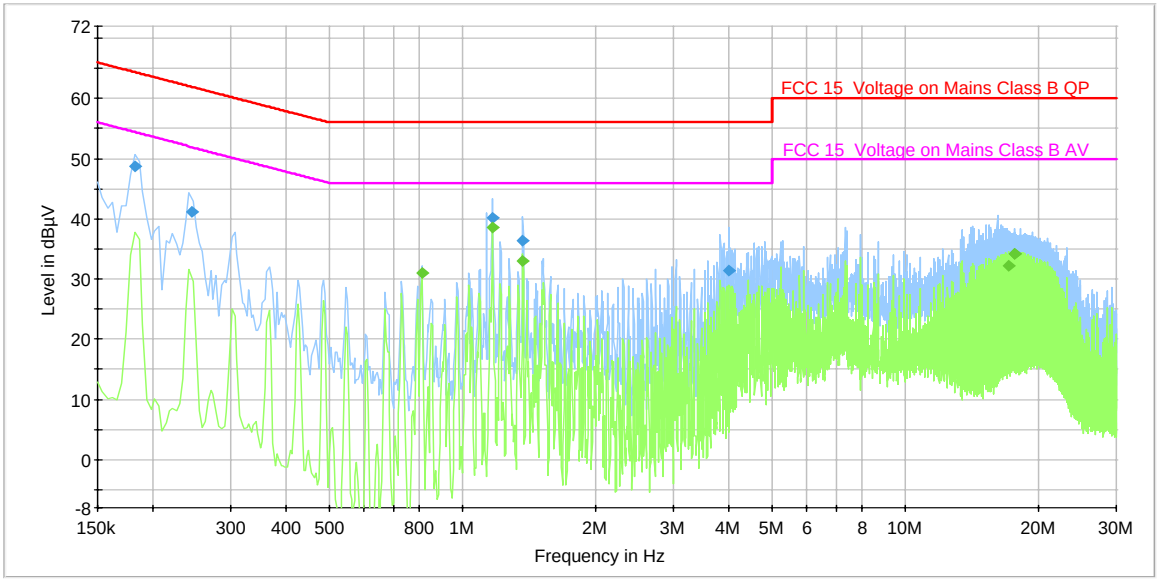
QP Detector Measurement

Frequency (MHz)	Quasi Peak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Conductor	Cord. (dB)	Margin (dB)	Limit (dBµV)
0.182000	47.2	1000.000	9.000	L1	0.2	17.2	64.4
1.170000	37.9	1000.000	9.000	L1	0.3	18.1	56.0
1.370000	37.2	1000.000	9.000	L1	0.2	18.8	56.0
0.810000	35.0	1000.000	9.000	L1	0.3	21.0	56.0
3.030000	33.3	1000.000	9.000	L1	0.3	22.7	56.0
1.218000	29.4	1000.000	9.000	L1	0.3	26.6	56.0

Average Detector Measurement

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Conductor	Cord. (dB)	Margin (dB)	Limit (dBµV)
1.170000	38.5	1000.000	9.000	L1	0.3	7.5	46.0
1.370000	34.1	1000.000	9.000	L1	0.2	11.9	46.0
0.810000	32.6	1000.000	9.000	L1	0.3	13.4	46.0
3.270000	31.1	1000.000	9.000	L1	0.3	14.9	46.0
1.218000	26.8	1000.000	9.000	L1	0.3	19.2	46.0
3.514000	26.5	1000.000	9.000	L1	0.3	19.5	46.0

120V / 60 Hz "Neutral" conductor



QP Detector Measurement

Frequency (MHz)	Quasi Peak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Conductor	Cord. (dB)	Margin (dB)	Limit (dBµV)
0.182000	48.7	1000.000	9.000	N	0.2	15.7	64.4
1.169000	40.2	1000.000	9.000	N	0.3	15.8	56.0
1.369000	36.3	1000.000	9.000	N	0.2	19.7	56.0
0.245000	41.2	1000.000	9.000	N	0.2	20.8	61.9
4.005000	31.4	1000.000	9.000	N	0.3	24.6	56.0

Average Measurement Detector

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Conductor	Cord. (dB)	Margin (dB)	Limit (dBµV)
1.169000	38.5	1000.000	9.000	N	0.3	7.5	46.0
1.369000	33.1	1000.000	9.000	N	0.2	12.9	46.0
0.809000	31.0	1000.000	9.000	N	0.3	15.0	46.0
17.713000	34.3	1000.000	9.000	N	0.5	15.7	50.0
17.653000	34.2	1000.000	9.000	N	0.5	15.9	50.0
17.109000	32.2	1000.000	9.000	N	0.6	17.8	50.0

§2.1051 & §15.247(d) - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Applicable Standard

For §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.

Requirements: CFR 47, §2.1051.

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in §2.1057.

Measurement Procedure

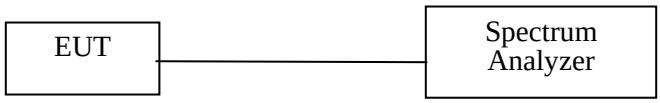
The RF output of the EUT was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz. Sufficient scans were taken to show any out of band emissions up to 10^{th} harmonic.

Equipment Lists

Manufacturer	Description	Model	Serial Number	Calibration Date
Agilent	Analyzer, Spectrum	8565EC	3946A00131	2006-01-11

*** Statement of Traceability: BACL Corp.** attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

Test Setup Diagram



Environmental Conditions

Temperature:	23 °C
Relative Humidity:	53%
ATM Pressure:	1041 mbar

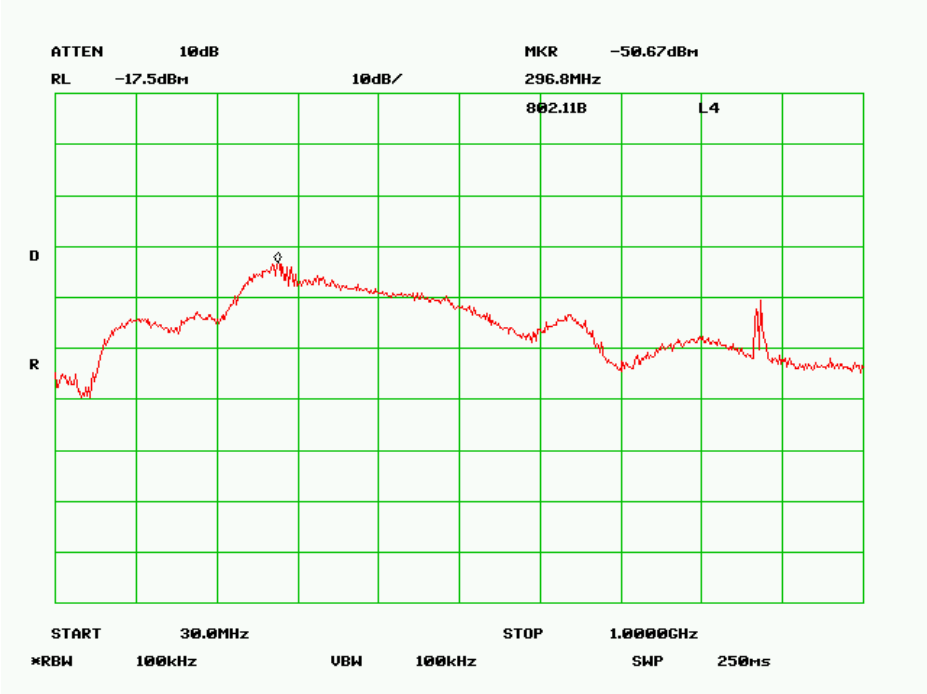
**The testing was performed by Tom Chen on 2006-10-09*

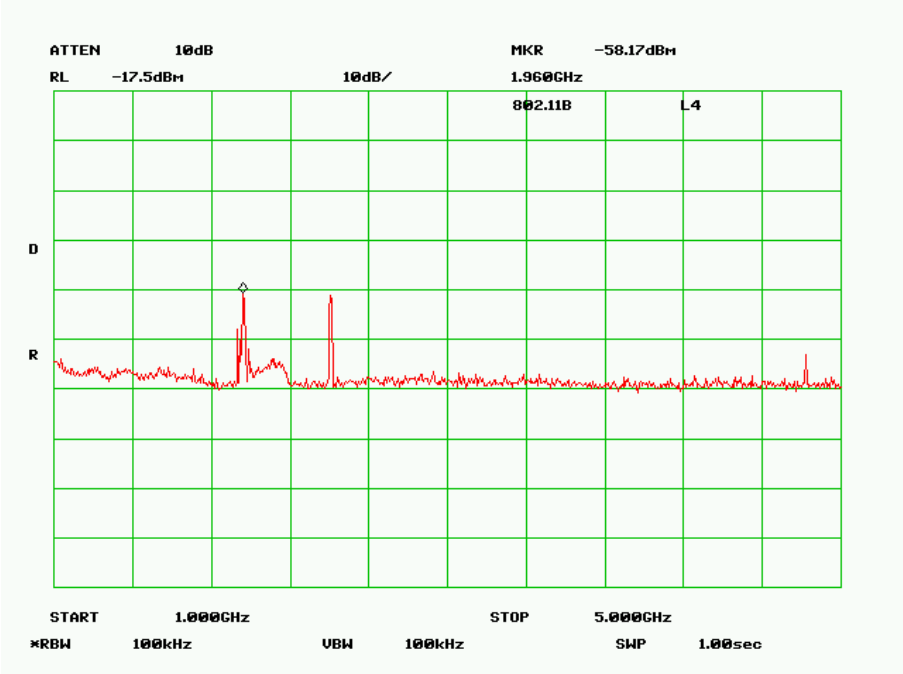
Measurement Results

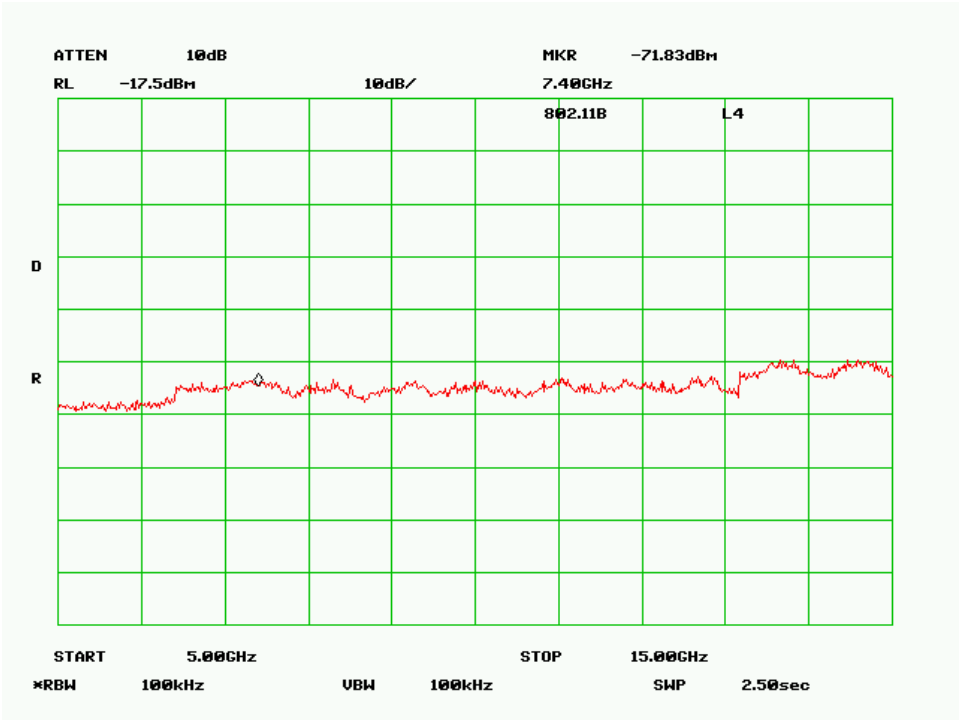
Please refer to following pages for plots of spurious emissions.

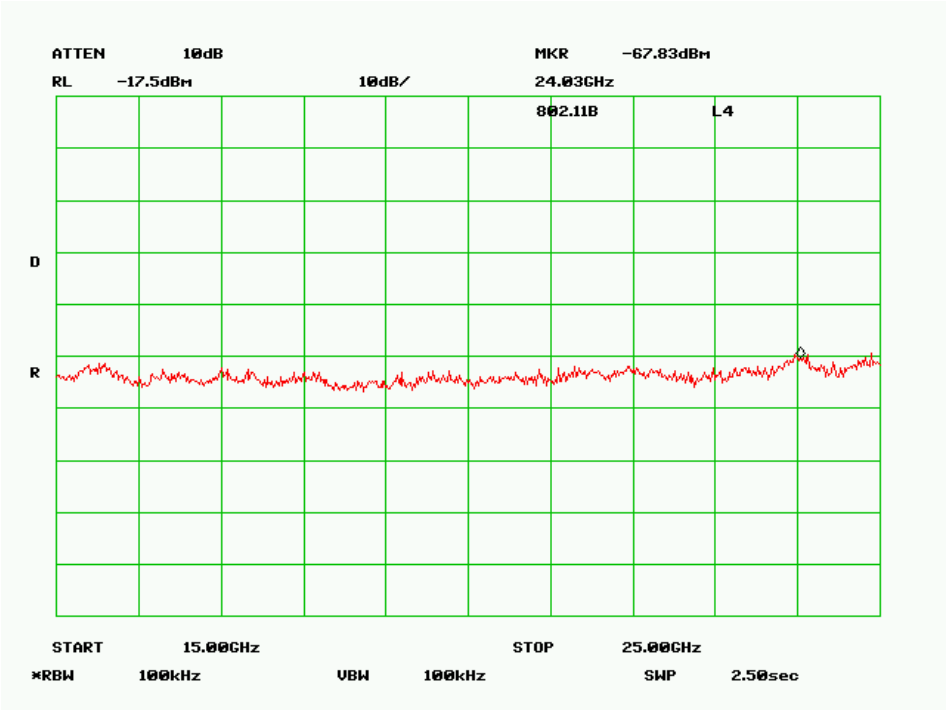
802.11b mode:

Low Channel

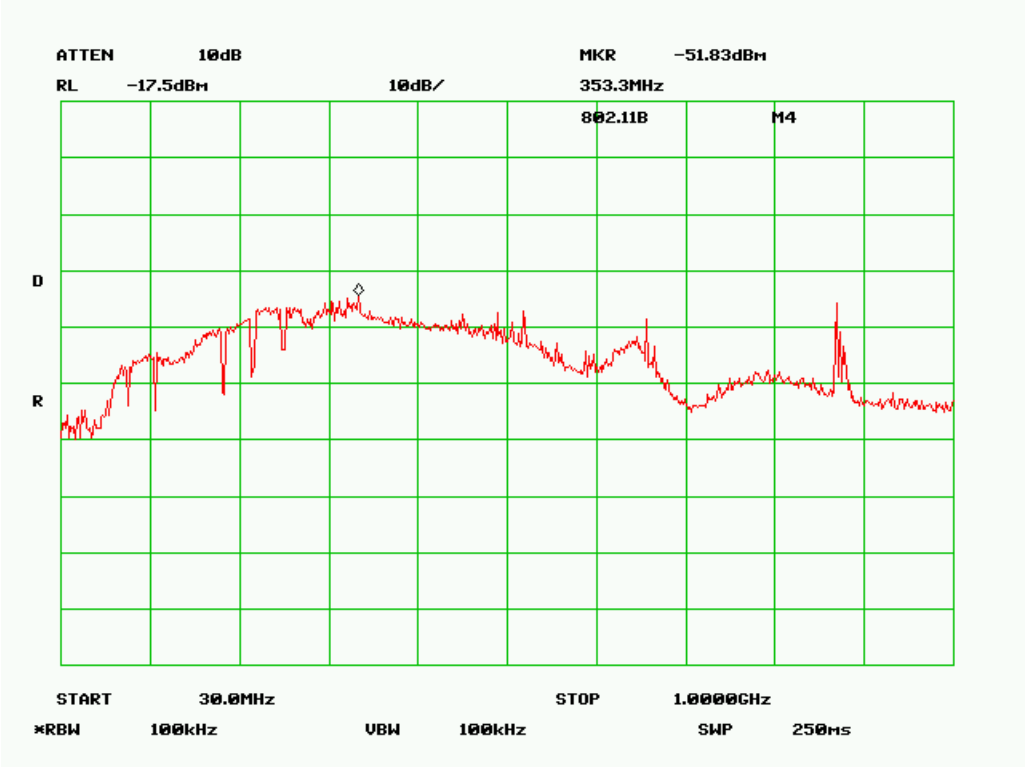


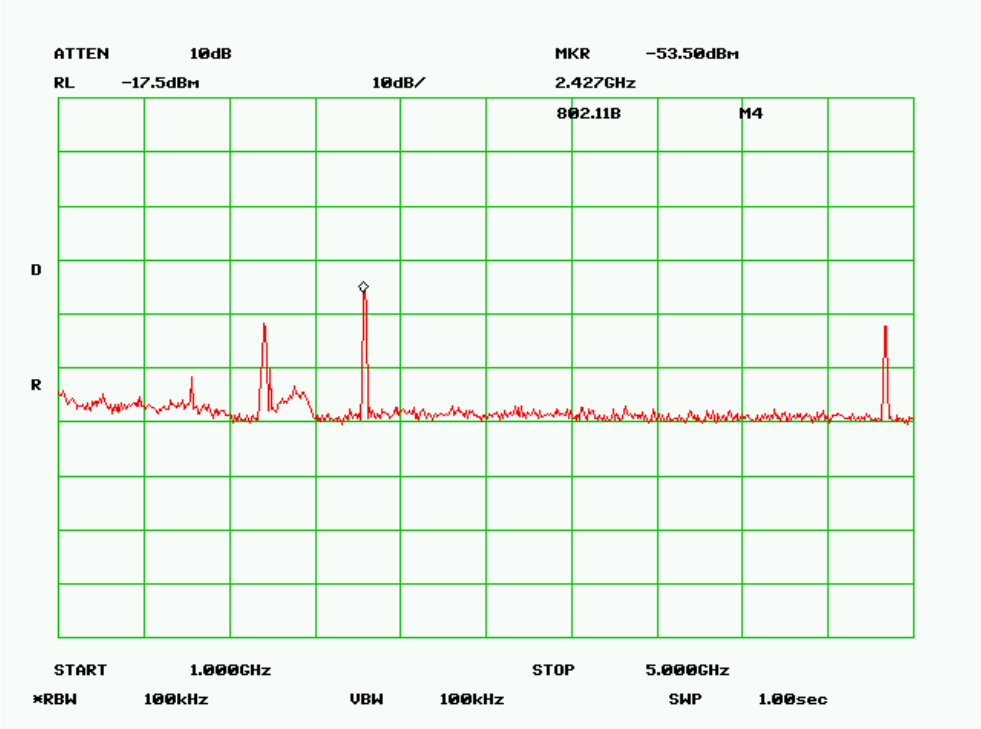


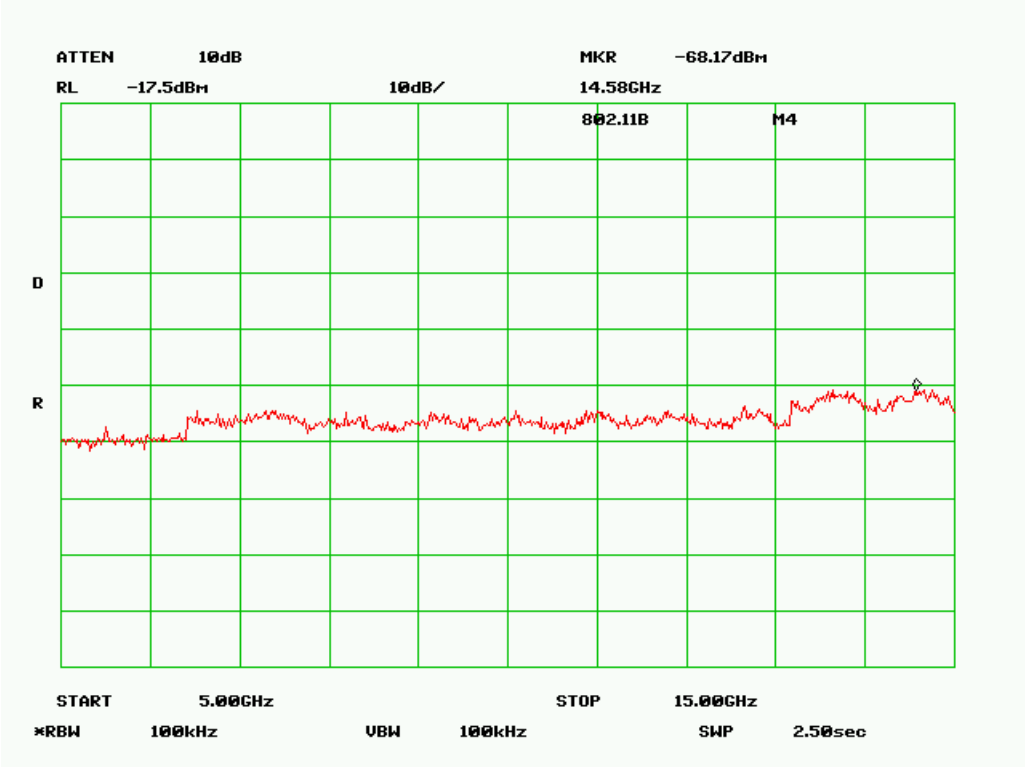

ATTEN 10dB
MKR -71.83dBm
RL -17.5dBm
10dB/
7.40GHz
802.11B
L4
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec


ATTEN 10dB
MKR -67.83dBm
RL -17.5dBm
10dB/
24.03GHz
802.11B
L4
D
R
START 15.00GHz
STOP 25.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

Middle Channel



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RL -17.5dBm
10dB/
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802.11B
M4
D
R
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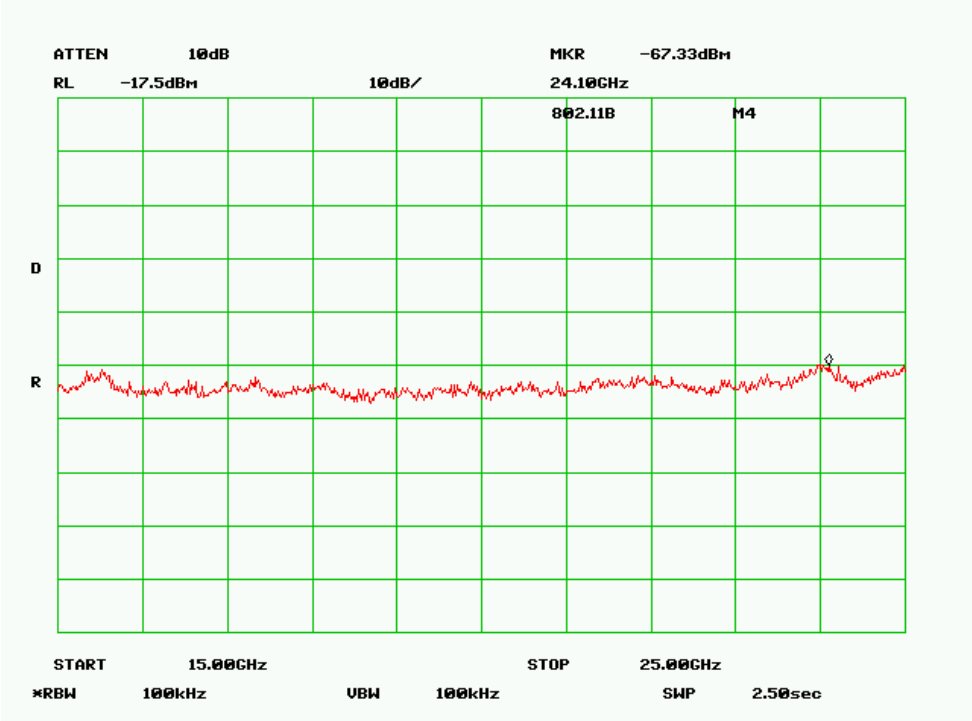
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec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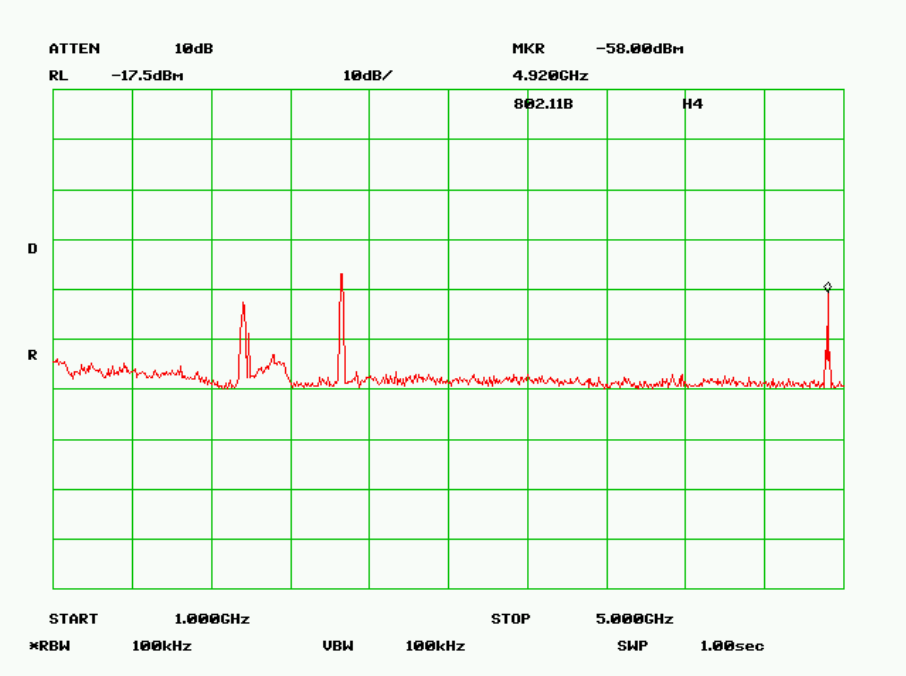
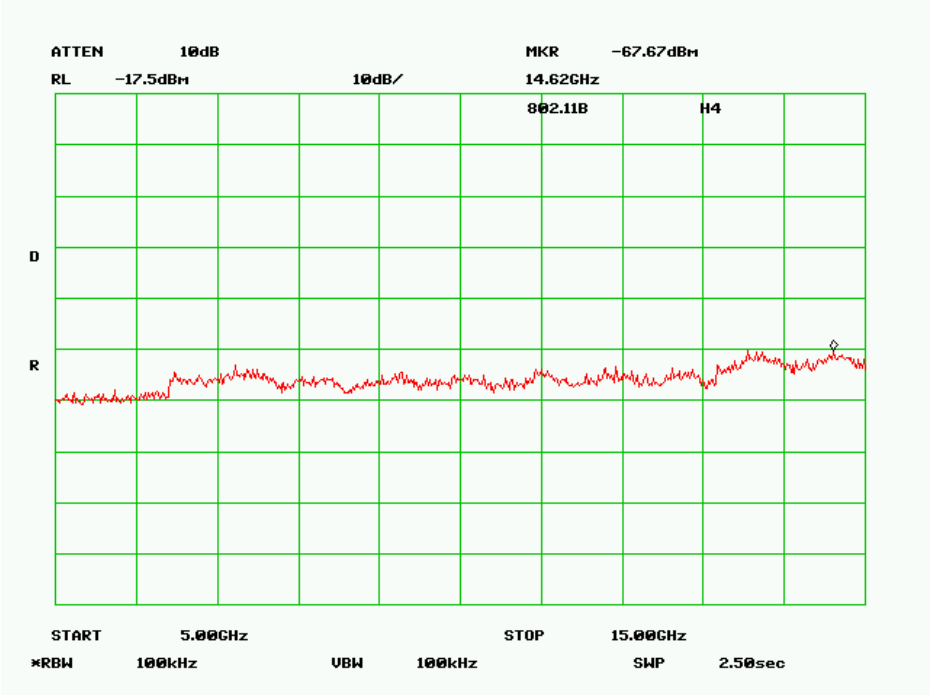
MKR -67.33dBm
RL -17.5dBm
10dB/
24.10GHz
802.11B
M4
D
R
START 15.00GHz
STOP 25.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

High Channel

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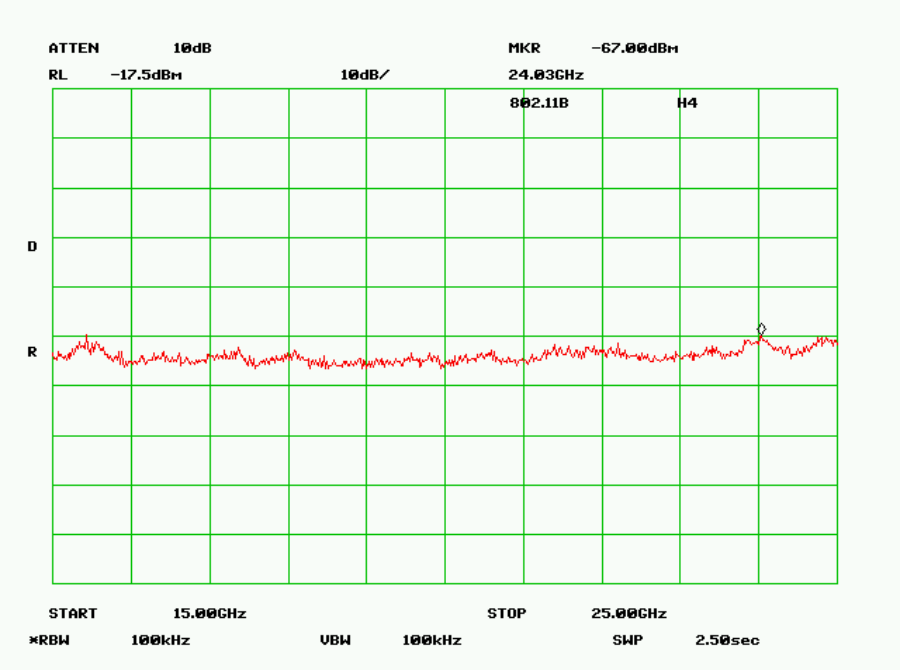
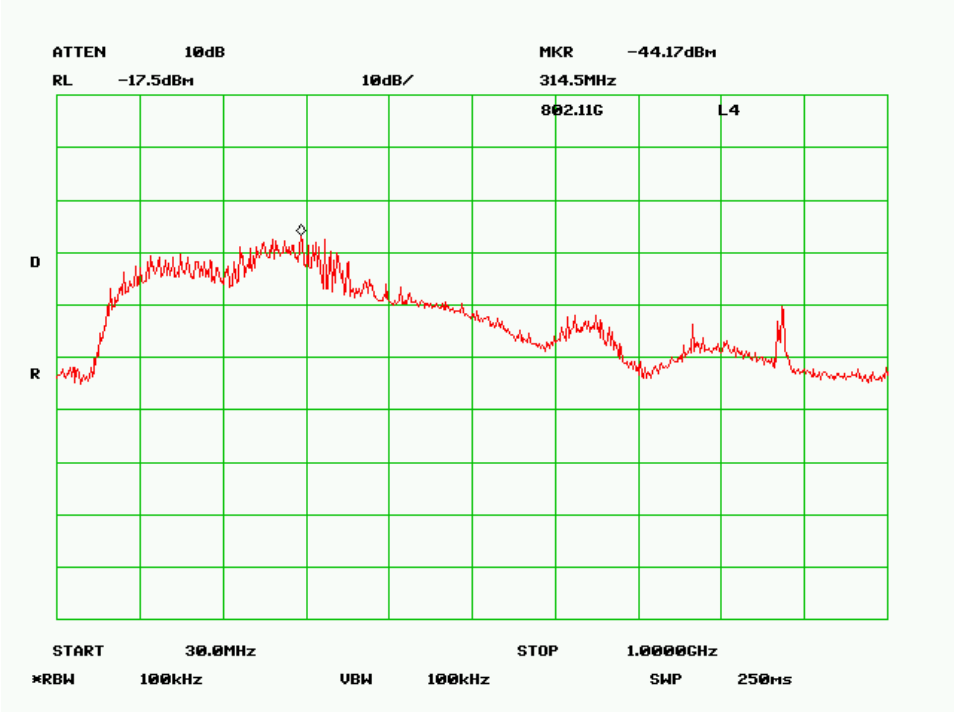
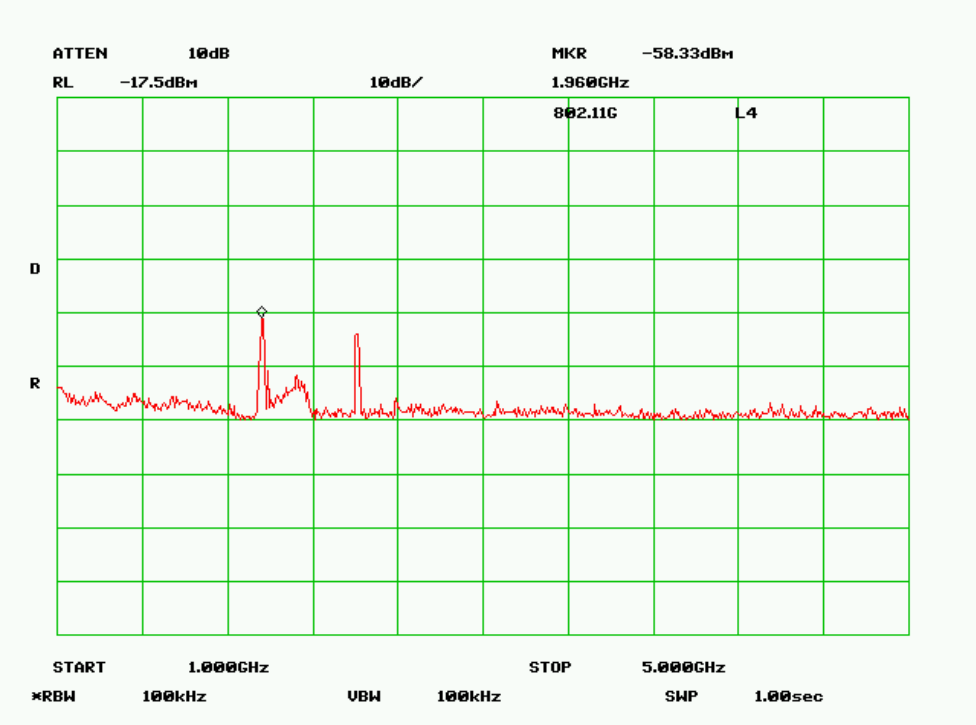
MKR -67.67dBm
RL -17.5dBm
10dB/
14.62GHz
802.11B
H4
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

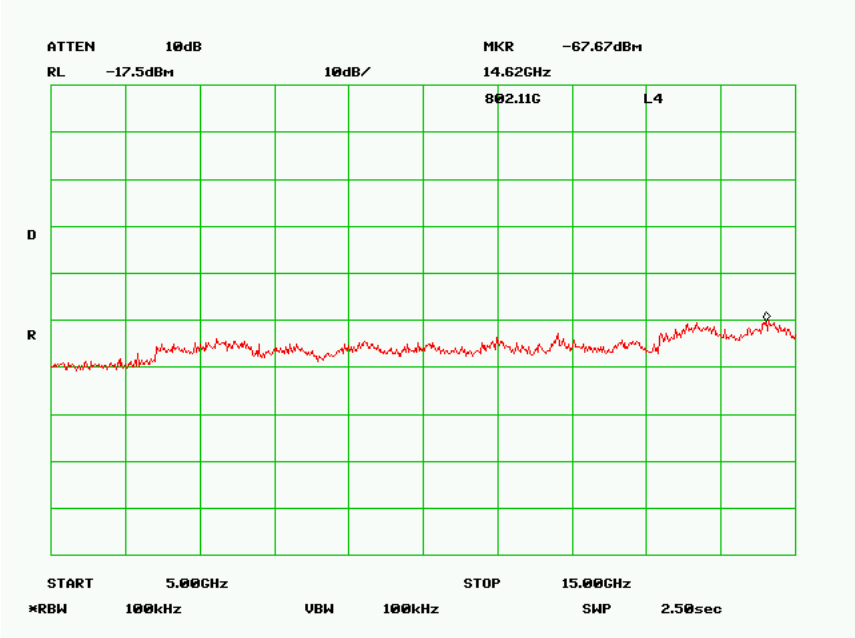

ATTEN 10dB
MKR -67.00dBm
RL -17.5dBm
10dB/
24.03GHz
802.11B
H4
D
R
START 15.00GHz
STOP 25.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

802.11g mode:

Low Channel



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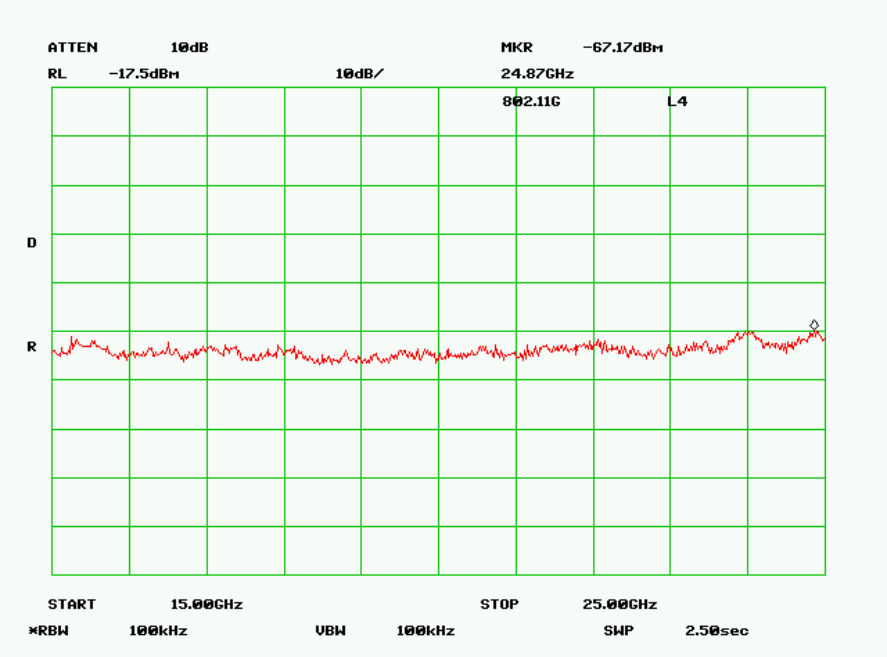
MKR -67.67dBm
RL -17.5dBm
10dB/
14.62GHz
802.11G
L4
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec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MKR -67.17dBm
RL -17.5dBm
10dB/
24.87GHz
802.11G
L4
D
R
START 15.00GHz
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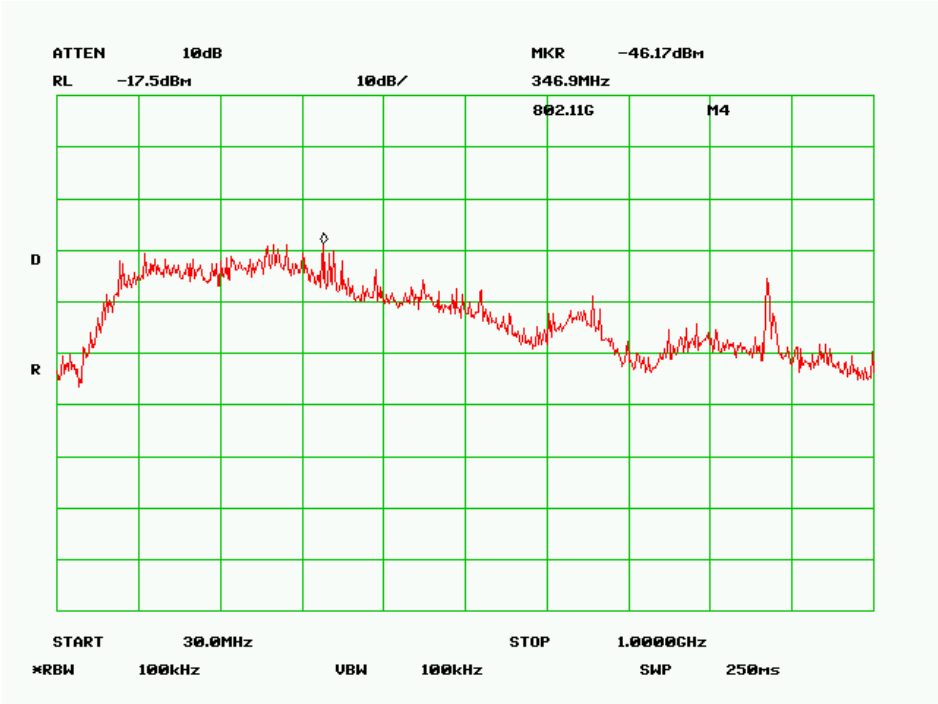
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

Mid Channel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802.11G
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D
R
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STOP 1.0000GHz
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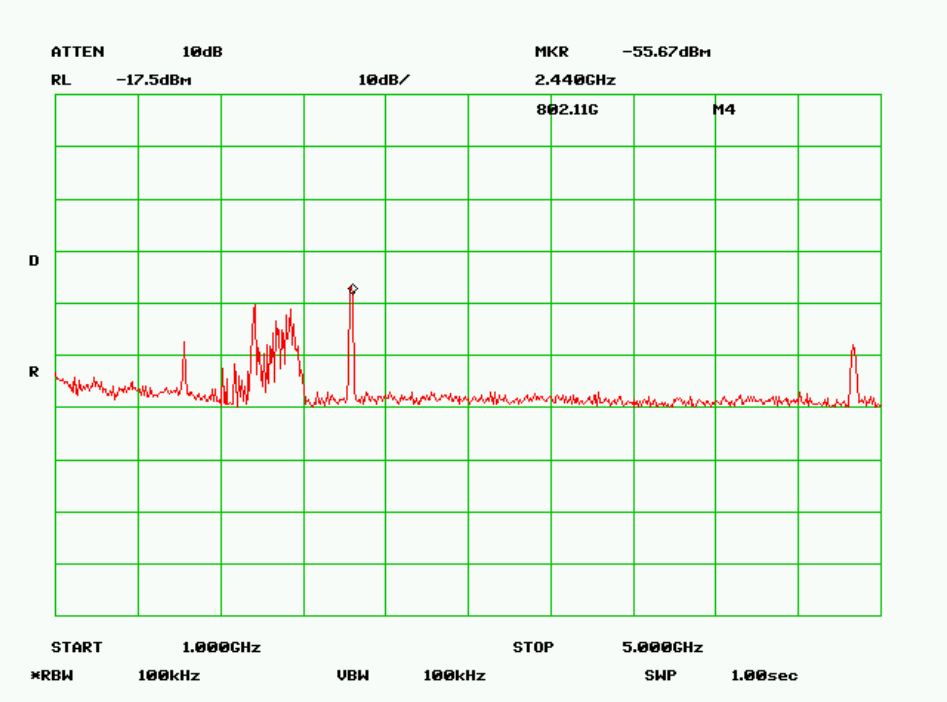
VBW 100kHz
SWP 250ms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RL -17.5dBm
10dB/
2.440GHz
802.11G
M4
D
R
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STOP 5.000GHz
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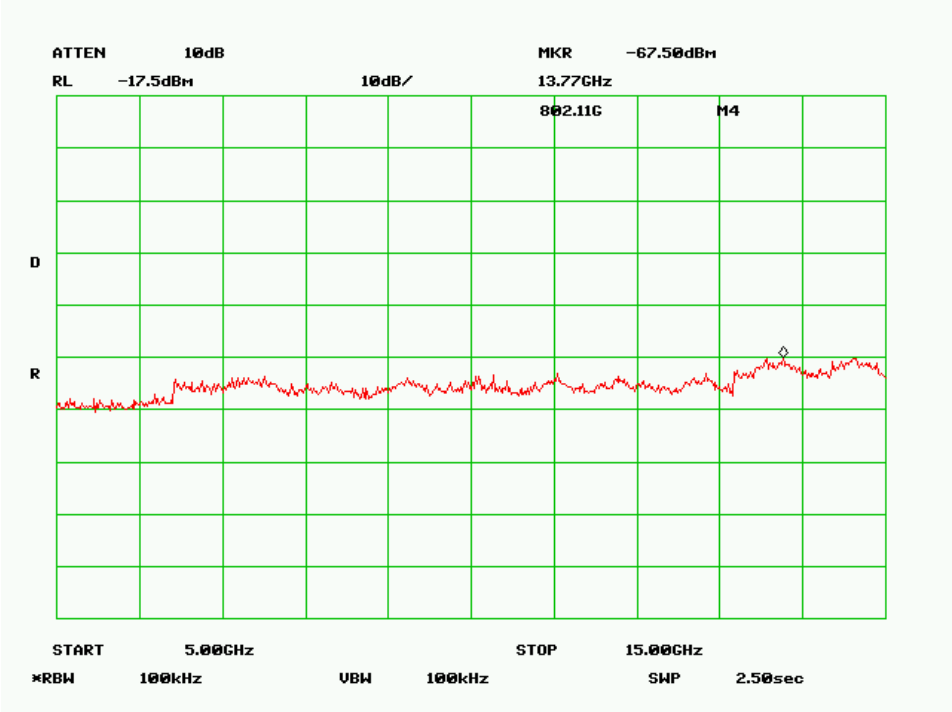
VBW 100kHz
SWP 1.00sec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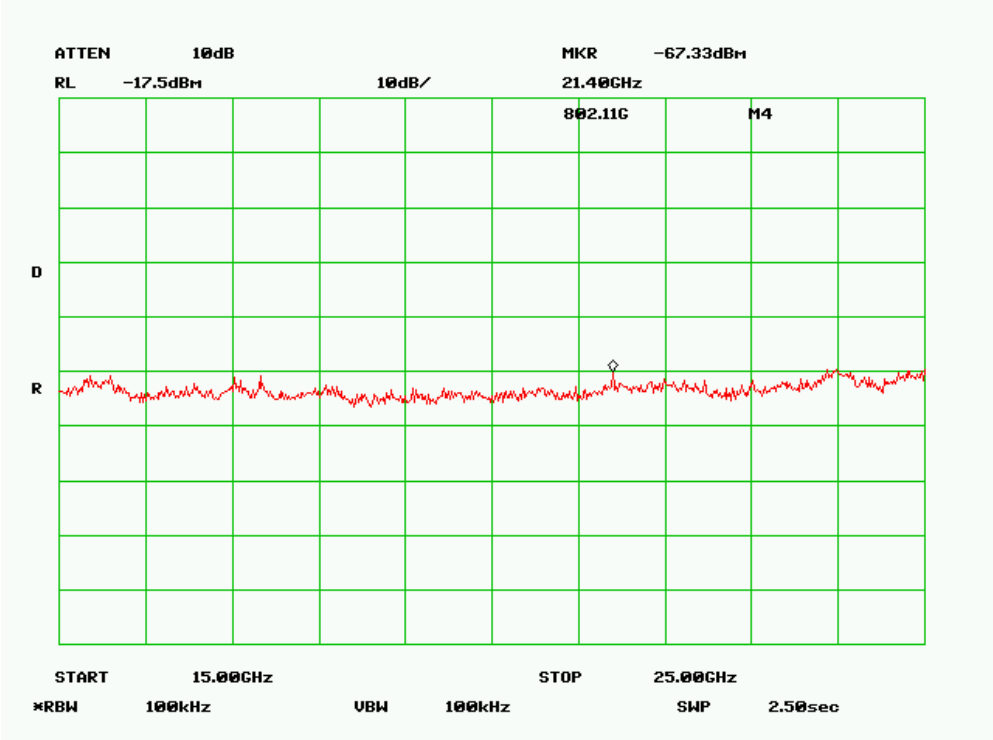
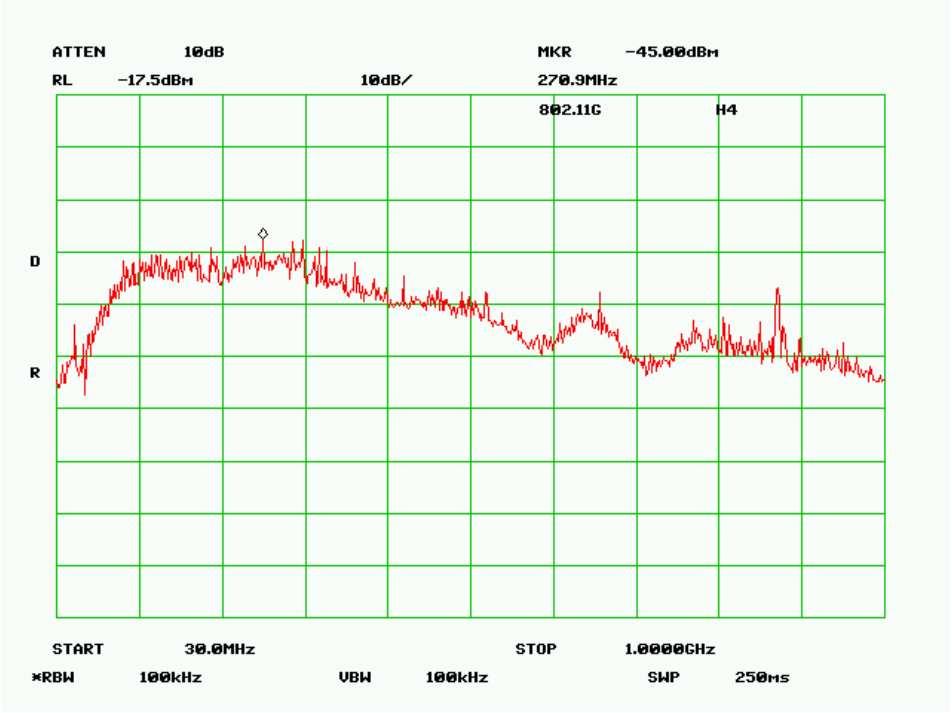
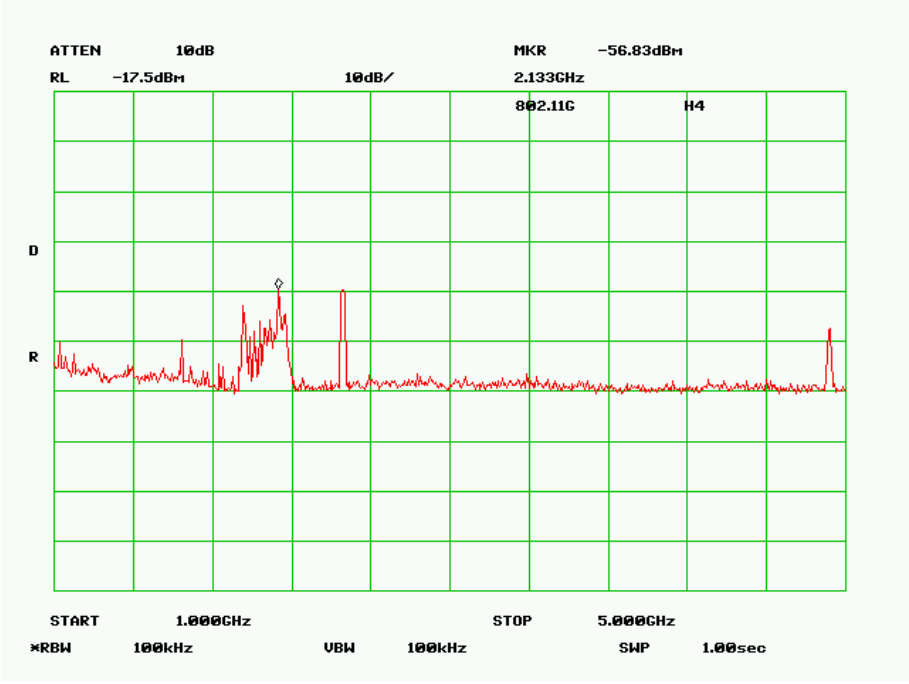
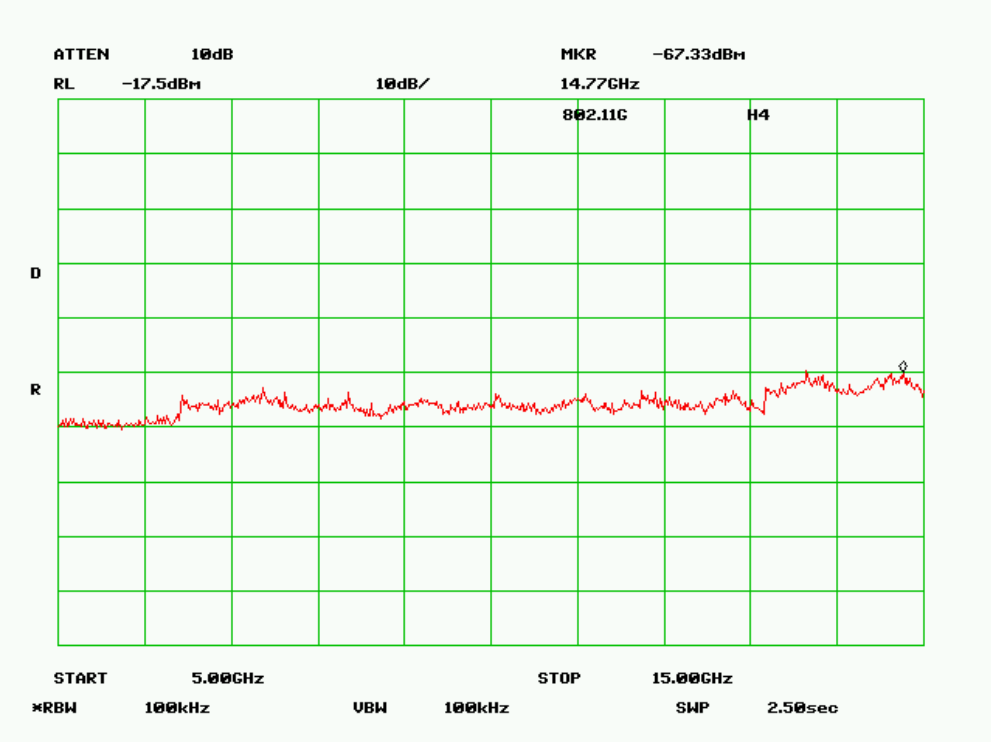
MKR -67.50dBm
RL -17.5dBm
10dB/
13.77GHz
802.11G
M4
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec


ATTEN 10dB
MKR -67.33dBm
RL -17.5dBm
10dB/
21.40GHz
802.11G
M4
D
R
START 15.00GHz
STOP 25.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

High Channel



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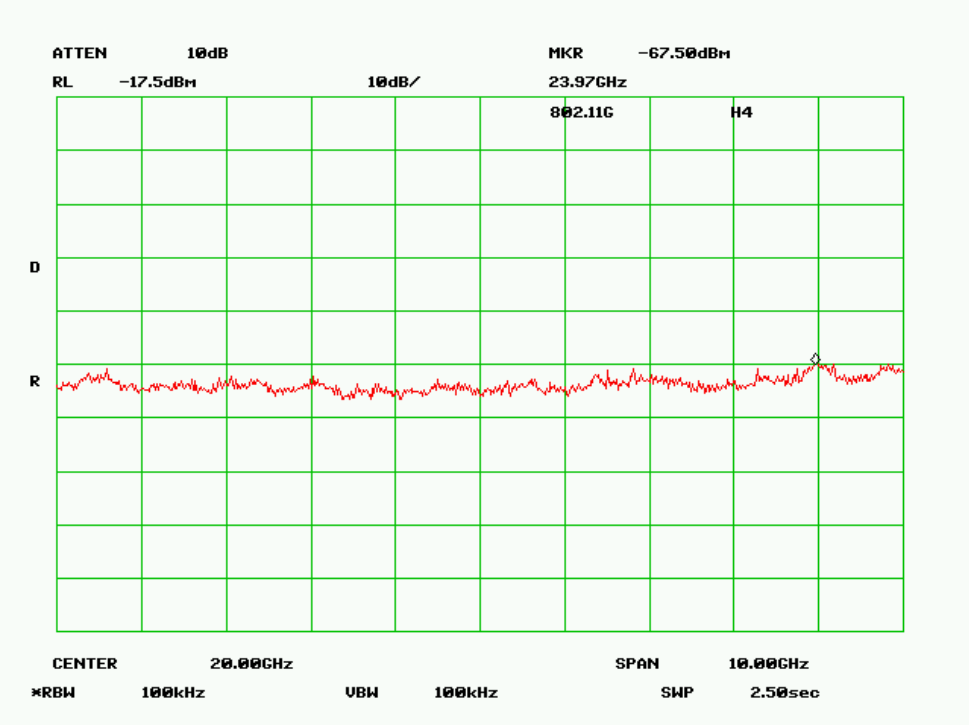
MKR -67.33dBm
RL -17.5dBm
10dB/
14.77GHz
802.11G
H4
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec


ATTEN 10dB
MKR -67.50dBm
RL -17.5dBm
10dB/
23.97GHz
802.11G
H4
D
R
CENTER 20.00GHz
SPAN 10.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

§15.205 & §15.209 & §15.247(c) - SPURIOUS RADIATED EMISSIONS

Applicable Standard

As per 15.35(d): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1 MHz.

As per 15.209(a): Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table

Frequency (MHz)	Field Strength (microvolts /meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100**	3
88 - 216	150**	3
216 - 960	200**	3
Above 960	500	3

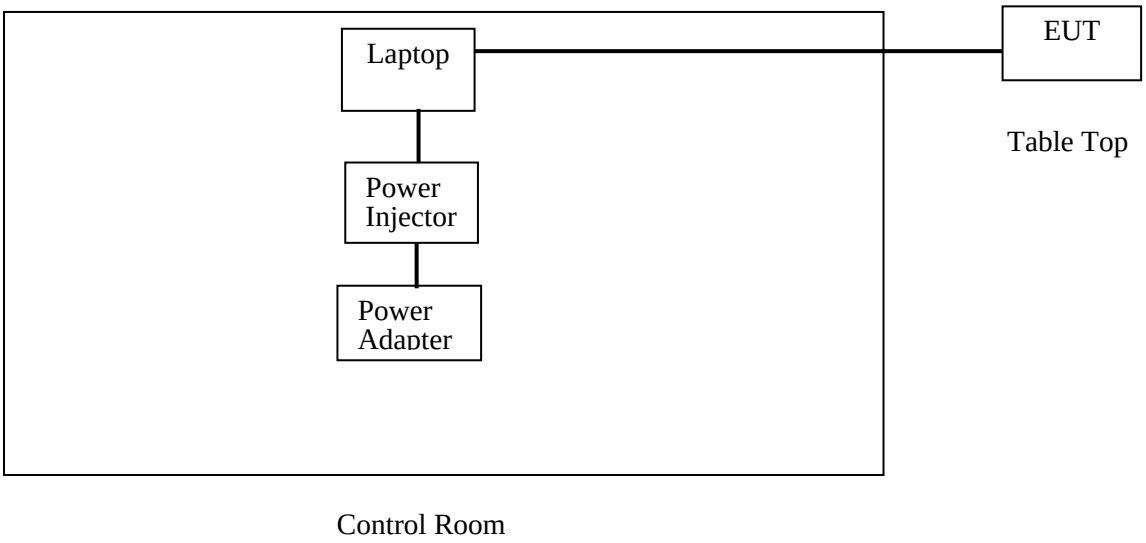
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

As per 15.247(c)(1)(i): Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Test Setup

The radiated emissions tests were performed in the 3-meter open area test site, using the setup in accordance with ANSI C63.4-2003. The specification used was the FCC 15 Subpart C limits.

Test Setup Block Diagram



EUT Setup

The radiated emissions tests were performed using the setup accordance with the ANSI C63.4-2003.

The spacing between the peripherals was 10 centimeters.

External I/O cables were draped along the edge of the test table and bundle when necessary.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal Date
Sonoma Instruments	Pre amplifier	317	260408	2006-02-03
Agilent	Pre amplifier	8449B	3008A01978	2006-08-10
Sunol Science Corp	Combination Antenna	JB3 Antenna	A020106-3	2006-02-14
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.595 0K03	20-174821	2006-02-24
Sunol Science Corp	System Controller	SC99V	113005-1	N/R
Sunol Science Corp	Horn Antenna	DHR-118	A052704	2006-08-16

* **Statement of Traceability:** BACL attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

Test Procedure

For the radiated emissions test, the EUT, and all support equipment power cords 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.

All data was recorded in the peak detection mode. Quasi-peak readings performed only when an emissions was found to be marginal (within -4 dBμV of specification limits), and are distinguished with a "**QP**" in the data table.

Corrected Amplitude & Margin Calculation

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

Corrected Amplitude = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

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

Margin = Corrected Amplitude - FCC 15.247 Limit

Environmental Conditions

Temperature:	23 °C
Relative Humidity:	53%
ATM Pressure:	1041 mbar

**The testing was performed by Tom Chen on 2006-10-09*

Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.247, and had the worst margin of:

Omni Directional beam pattern:

-8.5 dB at **166.668750 MHz** in the **Horizontal** polarization for 30MHz – 1GHz
-3.7 dB 4824.000 MHz in the **Vertical** polarization for Low Channel, 1GHz – 25GHz
-9.6 dB 4874.0000 MHz in the **Vertical** polarization for Middle Channel, 1GHz – 25GHz
-21.3 dB 2080.0000 MHz in the **Vertical** polarization for High Channel, 1GHz – 25GHz

Directional beam pattern:

-2.9 dB at **233.316250 MHz** in the **Vertical** polarization for 30MHz – 1GHz
-3.7 dB at **4824.0000 MHz** in the **Vertical** polarization for Low Channel, 1GHz – 25GHz
-14.7 dB at **7311.0000 MHz** in the **Vertical** polarization for Middle Channel, 1GHz – 25GHz
-14.8 dB at **7386.0000 MHz** in the **Vertical** polarization for High Channel, 1GHz – 25GHz

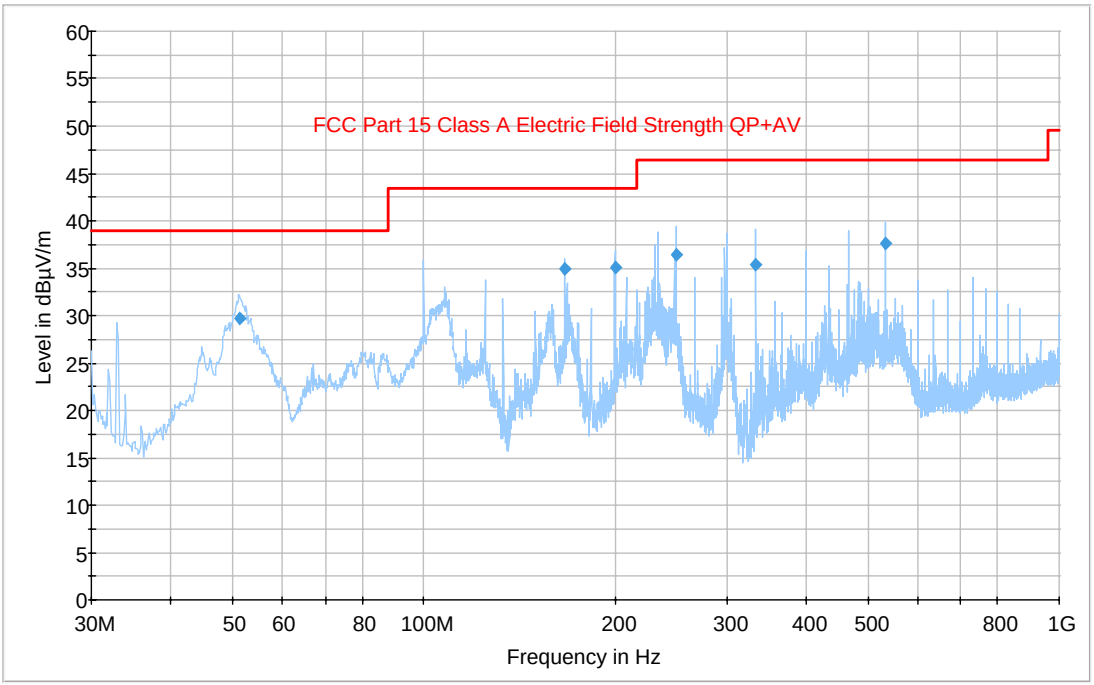
Radiated Emissions Test plot & data

Omni Directional beam pattern:

Primary scan 30MHz -1000MHz @ 10Meter

Frequency	Reading	Azimuth	Height	Polar.	Corrected Reading	15.109		
MHz	dBuV	Degreess	m	H / V	dBuV/m	Limit (dBuV/m)	Margin (dB)	Comments
166.668750	35.0	315.0	3.85	H	-23.9	43.5	-8.5	Quasi-Peak
200.012500	35.0	317.0	1.00	V	-23.1	43.5	-8.5	Quasi-Peak
533.328750	37.6	337.0	2.58	V	-16.5	46.4	-8.8	Quasi-Peak
51.238750	29.7	168.0	2.22	V	-29.1	39.0	-9.3	Quasi-Peak
250.007500	36.5	129.0	3.69	H	-24.1	46.4	-9.9	Quasi-Peak
333.307500	35.3	55.0	3.85	V	-21.0	46.4	-11.1	Quasi-Peak

Test plot 30MHz – 1000MHz @ 10Meter



Above 1000MHz:

802.11b mode:

Primary scan 1GHz -25GHz, (Low channel 2412 MHz) @3 meter

Frequency	Reading	Azimouth	Height	Polar.	Antenna Factor	Cable loss	Amplifier	Corrected Reading	Limit	Margin	Comments
MHz	dBuV	Degrees	Meter	H / V	dB/m	dB	dB	dBuV/m	dBuV/m		
4824.0000	40.5	339	1.1	v	32.5	1.9	34.8	40.1	54	-13.9	Ave
7236.0000	27.0	169	1.3	v	36.7	4.2	34.9	33.0	54	-21.0	Ave
7236.0000	26.7	160	1.3	h	36.7	4.2	34.9	32.7	54	-21.3	Ave
4824.0000	30.8	128	1.3	h	32.5	1.9	34.8	30.4	54	-23.6	Ave
1033.0000	42.0	212	1.2	V	23.3	1.3	36.5	30.1	54	-23.9	Ave
1333.0000	41.0	157	1.7	V	23.3	0.8	36.3	28.7	54	-25.3	Ave
7236.0000	41.0	160	1.3	h	36.7	4.2	34.9	47.0	74	-27.0	Peak
1000.0000	38.5	222	1.3	V	23.3	1.3	36.5	26.6	54	-27.4	Ave
4824.0000	47.0	339	1.1	v	32.5	1.9	34.8	46.6	74	-27.4	Peak
7236.0000	40.0	169	1.3	v	36.7	4.2	34.9	46.0	74	-28.0	Peak
4824.0000	42.8	128	1.3	h	32.5	1.9	34.8	42.4	74	-31.6	Peak
1033.0000	51.3	212	1.2	V	23.3	1.3	36.5	39.4	74	-34.6	Peak
1000.0000	50.5	222	1.3	V	23.3	1.3	36.5	38.6	74	-35.4	Peak
1333.0000	49.3	157	1.7	V	23.3	0.8	36.3	37.0	74	-37.0	Peak

Primary scan 1GHz -25GHz, (Mid channel 2437 MHz) @3 meters

Frequency	Reading	Azimouth	Height	Polar.	Antenna Factor	Cable loss	Amplifier	Corrected Reading	Limit	Margin	Comments
MHz	dBuV	Degrees	Meter	H / V	dB/m	dB	dB	dBuV/m	dBuV/m		
4874.0000	43.8	25	1.4	v	32.5	1.9	34.8	43.4	54	-10.6	Ave
7311.0000	32.5	301	1.4	v	36.7	4.2	35.1	38.3	54	-15.7	Ave
4874.0000	38.5	138	1.3	h	32.5	1.9	34.8	38.1	54	-15.9	Ave
7311.0000	27.4	165	1.3	h	36.7	4.2	35.1	33.2	54	-20.8	Ave
7311.0000	45.3	301	1.4	v	36.7	4.2	35.1	51.1	74	-22.9	Peak
1033.0000	42.0	212	1.2	V	23.3	1.3	36.5	30.1	54	-23.9	Ave
4874.0000	49.3	25	1.4	v	32.5	1.9	34.8	48.9	74	-25.1	Peak
1333.0000	41.0	157	1.7	V	23.3	0.8	36.3	28.7	54	-25.3	Ave
1000.0000	38.5	222	1.3	V	23.3	1.3	36.5	26.6	54	-27.4	Ave
7311.0000	40.6	165	1.3	h	36.7	4.2	35.1	46.4	74	-27.6	Peak
4874.0000	44.5	138	1.3	h	32.5	1.9	34.8	44.1	74	-29.9	Peak
1033.0000	51.3	212	1.2	V	23.3	1.3	36.5	39.4	74	-34.6	Peak
1000.0000	50.5	222	1.3	V	23.3	1.3	36.5	38.6	74	-35.4	Peak
1333.0000	49.3	157	1.7	V	23.3	0.8	36.3	37.0	74	-37.0	Peak

Primary scan 1GHz -25GHz, (High channel 2462 MHz) @3 meters

Frequency	Reading	Azimouth	Height	Polar.	Antenna Factor	Cable loss	Amplifier	Corrected Reading	Limit	Margin	Comments
MHz	dBuV	Degrees	Meter	H / V	dB/m	dB	dB	dBuV/m	dBuV/m		
4924.0000	43.0	26	1.1	v	32.5	1.9	34.8	42.6	54	-11.4	Ave
7386.0000	31.3	330	1.2	v	36.7	4.2	34.7	37.5	54	-16.5	Ave
4924.0000	36.7	148	1.8	h	32.5	1.9	34.8	36.3	54	-17.7	Ave
7386.0000	26.0	150	1.3	h	36.7	4.2	34.7	32.2	54	-21.8	Ave
7386.0000	44.3	330	1.2	v	36.7	4.2	34.7	50.5	74	-23.5	Peak
1033.0000	42.0	212	1.2	V	23.3	1.3	36.5	30.1	54	-23.9	Ave
1333.0000	41.0	157	1.7	V	23.3	0.8	36.3	28.7	54	-25.3	Ave
4924.0000	48.7	26	1.1	v	32.5	1.9	34.8	48.3	74	-25.7	Peak
7386.0000	42.1	150	1.3	h	36.7	4.2	34.7	48.3	74	-25.7	Peak
1000.0000	38.5	222	1.3	V	23.3	1.3	36.5	26.6	54	-27.4	Ave
4924.0000	45.3	148	1.8	h	32.5	1.9	34.8	44.9	74	-29.1	Peak
1033.0000	51.3	212	1.2	V	23.3	1.3	36.5	39.4	74	-34.6	Peak
1000.0000	50.5	222	1.3	V	23.3	1.3	36.5	38.6	74	-35.4	Peak
1333.0000	49.3	157	1.7	V	23.3	0.8	36.3	37.0	74	-37.0	Peak

802.11g mode:

Primary scan 1GHz -25GHz, (Low channel 2412 MHz) @ 3 meters

Frequency	Reading	Azimouth	Height	Polar.	Antenna Factor	Cable loss	Amplifier	Corrected Reading	Limit	Margin	Comments
MHz	dBuV	Degrees	Meter	H / V	dB/m	dB	dB	dBuV/m	dBuV/m		
7236.0000	27.1	180	1.3	v	36.7	4.2	34.9	33.1	54	-20.9	Ave
7236.0000	26.7	220	1.3	h	36.7	4.2	34.9	32.7	54	-21.3	Ave
4824.0000	30.8	326	1.2	v	32.5	1.9	34.8	30.4	54	-23.6	Ave
4824.0000	29.3	226	1.2	h	32.5	1.9	34.8	28.9	54	-25.1	Ave
7236.0000	40.4	180	1.3	v	36.7	4.2	34.9	46.4	74	-27.6	Peak
7236.0000	39.9	220	1.3	h	36.7	4.2	34.9	45.9	74	-28.1	Peak
4824.0000	45.5	326	1.2	v	32.5	1.9	34.8	45.1	74	-28.9	Peak
1000.0000	35.2	315	1.2	V	23.3	1.3	36.5	23.2	54	-30.8	Ave
4824.0000	42.3	226	1.2	h	32.5	1.9	34.8	41.9	74	-32.1	Peak
1033.0000	33.7	310	1.2	V	23.3	1.3	36.5	21.7	54	-32.3	Ave
1333.0000	33.0	288	1.2	V	23.3	0.8	36.3	20.7	54	-33.3	Ave
1033.0000	47.7	310	1.2	V	23.3	1.3	36.5	35.7	74	-38.3	Peak
1000.0000	47.5	315	1.2	V	23.3	1.3	36.5	35.6	74	-38.4	Peak
1333.0000	45.7	288	1.2	V	23.3	0.8	36.3	33.4	74	-40.6	Peak

Primary scan 1GHz -25GHz, (Mid channel 2437 MHz) @ 3 meters

Frequency	Reading	Azimouth	Height	Polar.	Antenna Factor	Cable loss	Amplifier	Corrected Reading	Limit	Margin	Comments
MHz	dBuV	Degreess	Meter	H / V	dB/m	dB	dB	dBuV/m	dBuV/m		
7311.0000	33.5	135	1.1	v	36.7	4.2	35.1	39.3	54	-14.7	Ave
4874.0000	38.0	21	1.2	v	32.5	1.9	34.8	37.6	54	-16.4	Ave
7311.0000	28.4	150	1.3	h	36.7	4.2	35.1	34.2	54	-19.8	Ave
4874.0000	54.3	21	1.2	v	32.5	1.9	34.8	53.9	74	-20.1	Peak
7311.0000	47.2	135	1.1	v	36.7	4.2	35.1	53.0	74	-21.0	Peak
4874.0000	31.7	141	1.8	h	32.5	1.9	34.8	31.3	54	-22.7	Ave
7311.0000	42.3	150	1.3	h	36.7	4.2	35.1	48.1	74	-25.9	Peak
4874.0000	47.3	141	1.8	h	32.5	1.9	34.8	46.9	74	-27.1	Peak
1000.0000	35.2	315	1.2	V	23.3	1.3	36.5	23.2	54	-30.8	Ave
1033.0000	33.7	310	1.2	V	23.3	1.3	36.5	21.7	54	-32.3	Ave
1333.0000	33.0	288	1.2	V	23.3	0.8	36.3	20.7	54	-33.3	Ave
1033.0000	47.7	310	1.2	V	23.3	1.3	36.5	35.7	74	-38.3	Peak
1000.0000	47.5	315	1.2	V	23.3	1.3	36.5	35.6	74	-38.4	Peak
1333.0000	45.7	288	1.2	V	23.3	0.8	36.3	33.4	74	-40.6	Peak

Primary scan 1GHz -25GHz, (High channel 2462 MHz) @3 meters

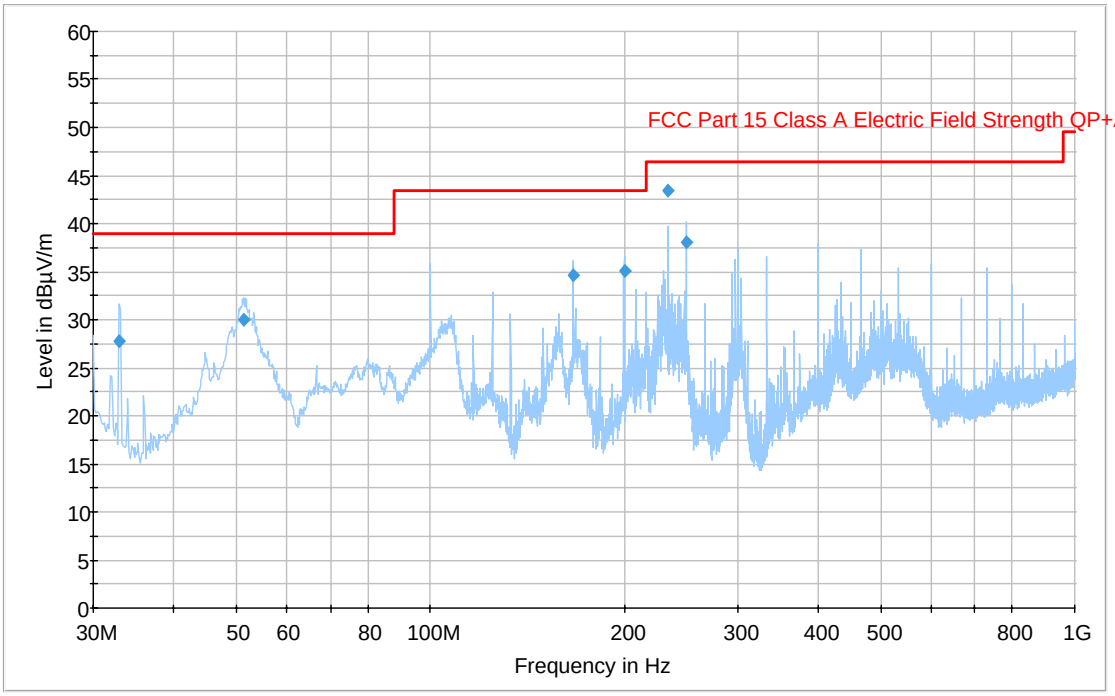
Frequency	Reading	Azimouth	Height	Polar.	Antenna Factor	Cable loss	Amplifier	Corrected Reading	Limit	Margin	Comments
MHz	dBuV	Degrees	Meter	H / V	dB/m	dB	dB	dBuV/m	dBuV/m		
7386.0000	33.0	330	1.2	v	36.7	4.2	34.7	39.2	54	-14.8	Ave
7386.0000	28.4	150	1.3	h	36.7	4.2	34.7	34.6	54	-19.4	Ave
4924.0000	34.3	255	1.1	v	32.5	1.9	34.8	33.9	54	-20.1	Ave
4924.0000	32.5	335	1.2	h	32.5	1.9	34.8	32.1	54	-21.9	Ave
7386.0000	45.7	330	1.2	v	36.7	4.2	34.7	51.9	74	-22.1	Peak
7386.0000	42.3	150	1.3	h	36.7	4.2	34.7	48.5	74	-25.5	Peak
4924.0000	48.3	255	1.1	v	32.5	1.9	34.8	47.9	74	-26.1	Peak
4924.0000	44.2	335	1.2	h	32.5	1.9	34.8	43.8	74	-30.2	Peak
1000.0000	35.2	315	1.2	V	23.3	1.3	36.5	23.2	54	-30.8	Ave
1033.0000	33.7	310	1.2	V	23.3	1.3	36.5	21.7	54	-32.3	Ave
1333.0000	33.0	288	1.2	V	23.3	0.8	36.3	20.7	54	-33.3	Ave
1033.0000	47.7	310	1.2	V	23.3	1.3	36.5	35.7	74	-38.3	Peak
1000.0000	47.5	315	1.2	V	23.3	1.3	36.5	35.6	74	-38.4	Peak
1333.0000	45.7	288	1.2	V	23.3	0.8	36.3	33.4	74	-40.6	Peak

Directional beam pattern:

Primary scan 30MHz -1000MHz @ 10Meter

Frequency	Reading	Azimuth	Height	Polar.	Corrected Reading	15.109		
MHz	dBuV	Degreess	m	H / V	dBuV/m	Limit (dBuV/m)	Margin (dB)	Comments
233.316250	43.5	291.0	99.0	V	-24.5	46.4	-2.9	Quasi-Peak
250.008750	38.1	291.0	100.0	V	-24.1	46.4	-8.3	Quasi-Peak
200.012500	35.1	47.0	100.0	V	-23.1	43.5	-8.4	Quasi-Peak
166.668750	34.6	133.0	118.0	V	-23.9	43.5	-8.9	Quasi-Peak
51.320000	30.0	221.0	296.0	V	-29.1	39.0	-9.1	Quasi-Peak
32.970000	27.7	176.0	99.0	V	-18.7	39.0	-11.3	Quasi-Peak

Test plot 30MHz – 1000MHz @ 10Meter



Above 1000MHz"

802.11b mode

Primary scan 1GHz -25GHz, (Low channel 2412 MHz) @ 3 meters

Frequency	Reading	Azimouth	Height	Polar.	Antenna Factor	Cable loss	Amplifier	Corrected Reading	Limit	Margin	Comments
MHz	dBuV	Degrees	Meter	H / V	dB/m	dB	dB	dBuV/m	dBuV/m		
4824.0000	50.7	295	1.1	v	32.5	1.9	34.8	50.3	54	-3.7	Ave
4824.0000	38.8	313	1.2	h	32.5	1.9	34.8	38.4	54	-15.6	Ave
7236.0000	32.3	258	1.2	v	36.7	4.2	34.9	38.3	54	-15.7	Ave
7236.0000	32.3	220	1.3	h	36.7	4.2	34.9	38.3	54	-15.7	Ave
4824.0000	53.7	295	1.1	v	32.5	1.9	34.8	53.3	74	-20.7	Peak
7236.0000	46.0	220	1.3	h	36.7	4.2	34.9	52.0	74	-22.0	Peak
7236.0000	42.7	258	1.2	v	36.7	4.2	34.9	48.7	74	-25.3	Peak
4824.0000	46.0	313	1.2	h	32.5	1.9	34.8	45.6	74	-28.4	Peak
1033.0000	35.8	265	1.2	V	23.3	1.3	36.5	23.9	54	-30.1	Ave
1000.0000	34.5	260	1.2	V	23.3	1.3	36.5	22.6	54	-31.4	Ave
1333.0000	34.2	250	1.2	V	23.3	0.8	36.3	21.9	54	-32.1	Ave
1333.0000	47.5	250	1.2	V	23.3	0.8	36.3	35.2	74	-38.8	Peak
1033.0000	46.3	265	1.2	V	23.3	1.3	36.5	34.4	74	-39.6	Peak
1000.0000	45.8	260	1.2	V	23.3	1.3	36.5	33.9	74	-40.1	Peak

Primary scan 1GHz -25GHz, (Mid channel 2437 MHz) @ 3 meters

Frequency	Reading	Azimouth	Height	Polar.	Antenna Factor	Cable loss	Amplifier	Corrected Factor	Limit	Margin	Comments
MHz	dBuV	Degrees	Meter	H / V	dB/m	dB	dB	dBuV/m	dBuV/m		
4874.0000	44.8	304	1.4	v	32.5	1.9	34.8	44.4	54	-9.6	Ave
4874.0000	39.8	291	1.2	h	32.5	1.9	34.8	39.4	54	-14.6	Ave
7311.0000	32.5	301	1.4	v	36.7	4.2	35.1	38.3	54	-15.7	Ave
7311.0000	27.4	165	1.3	h	36.7	4.2	35.1	33.2	54	-20.8	Ave
7311.0000	45.3	301	1.4	v	36.7	4.2	35.1	51.1	74	-22.9	Peak
4874.0000	49.2	304	1.4	v	32.5	1.9	34.8	48.8	74	-25.2	Peak
7311.0000	40.6	165	1.3	h	36.7	4.2	35.1	46.4	74	-27.6	Peak
4874.0000	46.2	291	1.2	h	32.5	1.9	34.8	45.8	74	-28.2	Peak
1033.0000	35.8	265	1.2	V	23.3	1.3	36.5	23.9	54	-30.1	Ave
1000.0000	34.5	260	1.2	V	23.3	1.3	36.5	22.6	54	-31.4	Ave
1333.0000	34.2	250	1.2	V	23.3	0.8	36.3	21.9	54	-32.1	Ave
1333.0000	47.5	250	1.2	V	23.3	0.8	36.3	35.2	74	-38.8	Peak
1033.0000	46.3	265	1.2	V	23.3	1.3	36.5	34.4	74	-39.6	Peak
1000.0000	45.8	260	1.2	V	23.3	1.3	36.5	33.9	74	-40.1	Peak

Primary scan 1GHz -25GHz, (High channel 2462 MHz) @ 3 meters

Frequency	Reading	Azimouth	Height	Polar.	Antenna Factor	Cable loss	Amplifier	Corrected Reading	Limit	Margin	Comments
MHz	dBuV	Degrees	Meter	H / V	dB/m	dB	dB	dBuV/m	dBuV/m		
4924.0000	48.8	301	1.2	v	32.5	1.9	34.8	48.4	54	-5.6	Ave
4924.0000	41.0	292	1.2	h	32.5	1.9	34.8	40.6	54	-13.4	Ave
7386.0000	31.3	330	1.2	v	36.7	4.2	34.7	37.5	54	-16.5	Ave
7386.0000	26.0	150	1.3	h	36.7	4.2	34.7	32.2	54	-21.8	Ave
4924.0000	51.8	301	1.2	v	32.5	1.9	34.8	51.4	74	-22.6	Peak
7386.0000	44.3	330	1.2	v	36.7	4.2	34.7	50.5	74	-23.5	Peak
7386.0000	42.1	150	1.3	h	36.7	4.2	34.7	48.3	74	-25.7	Peak
4924.0000	47.2	292	1.2	h	32.5	1.9	34.8	46.8	74	-27.2	Peak
1033.0000	35.8	265	1.2	V	23.3	1.3	36.5	23.9	54	-30.1	Ave
1000.0000	34.5	260	1.2	V	23.3	1.3	36.5	22.6	54	-31.4	Ave
1333.0000	34.2	250	1.2	V	23.3	0.8	36.3	21.9	54	-32.1	Ave
1333.0000	47.5	250	1.2	V	23.3	0.8	36.3	35.2	74	-38.8	Peak
1033.0000	46.3	265	1.2	V	23.3	1.3	36.5	34.4	74	-39.6	Peak
1000.0000	45.8	260	1.2	V	23.3	1.3	36.5	33.9	74	-40.1	Peak

802.11g mode

Primary scan 1GHz -25GHz, (Low channel 2412 MHz) @ 3 meters

Frequency	Reading	Azimouth	Height	Polar.	Antenna Factor	Cable loss	Amplifier	Corrected Reading	Limit	Margin	Comments
MHz	dBuV	Degrees	Meter	H / V	dB/m	dB	dB	dBuV/m	dBuV/m		
4824.0000	50.7	295	1.1	v	32.5	1.9	34.8	50.3	54	-3.7	Ave
4824.0000	38.8	313	1.2	h	32.5	1.9	34.8	38.4	54	-15.6	Ave
7236.0000	32.3	258	1.2	v	36.7	4.2	34.9	38.3	54	-15.7	Ave
7236.0000	32.3	220	1.3	h	36.7	4.2	34.9	38.3	54	-15.7	Ave
4824.0000	53.7	295	1.1	v	32.5	1.9	34.8	53.3	74	-20.7	Peak
7236.0000	46.0	220	1.3	h	36.7	4.2	34.9	52.0	74	-22.0	Peak
7236.0000	42.7	258	1.2	v	36.7	4.2	34.9	48.7	74	-25.3	Peak
4824.0000	46.0	313	1.2	h	32.5	1.9	34.8	45.6	74	-28.4	Peak
1033.0000	35.8	265	1.2	V	23.3	1.3	36.5	23.9	54	-30.1	Ave
1000.0000	34.5	260	1.2	V	23.3	1.3	36.5	22.6	54	-31.4	Ave
1333.0000	34.2	250	1.2	V	23.3	0.8	36.3	21.9	54	-32.1	Ave
1333.0000	47.5	250	1.2	V	23.3	0.8	36.3	35.2	74	-38.8	Peak
1033.0000	46.3	265	1.2	V	23.3	1.3	36.5	34.4	74	-39.6	Peak
1000.0000	45.8	260	1.2	V	23.3	1.3	36.5	33.9	74	-40.1	Peak

Primary scan 1GHz -25GHz, (Mid channel 2437 MHz) @ 3 meters

Frequency	Reading	Azimouth	Height	Polar.	Antenna Factor	Cable loss	Amplifier	Corrected Reading	Limit	Margin	Comments
MHz	dBuV	Degrees	Meter	H / V	dB/m	dB	dB	dBuV/m	dBuV/m		
7311.0000	33.5	135	1.1	v	36.7	4.2	35.1	39.3	54	-14.7	Ave
4874.0000	38.0	21	1.2	v	32.5	1.9	34.8	37.6	54	-16.4	Ave
7311.0000	28.4	150	1.3	h	36.7	4.2	35.1	34.2	54	-19.8	Ave
4874.0000	54.3	21	1.2	v	32.5	1.9	34.8	53.9	74	-20.1	Peak
7311.0000	47.2	135	1.1	v	36.7	4.2	35.1	53.0	74	-21.0	Peak
4874.0000	31.7	141	1.8	h	32.5	1.9	34.8	31.3	54	-22.7	Ave
7311.0000	42.3	150	1.3	h	36.7	4.2	35.1	48.1	74	-25.9	Peak
4874.0000	47.3	141	1.8	h	32.5	1.9	34.8	46.9	74	-27.1	Peak
1033.0000	35.8	265	1.2	V	23.3	1.3	36.5	23.9	54	-30.1	Ave
1000.0000	34.5	260	1.2	V	23.3	1.3	36.5	22.6	54	-31.4	Ave
1333.0000	34.2	250	1.2	V	23.3	0.8	36.3	21.9	54	-32.1	Ave
1333.0000	47.5	250	1.2	V	23.3	0.8	36.3	35.2	74	-38.8	Peak
1033.0000	46.3	265	1.2	V	23.3	1.3	36.5	34.4	74	-39.6	Peak
1000.0000	45.8	260	1.2	V	23.3	1.3	36.5	33.9	74	-40.1	Peak

Primary scan 1GHz -25GHz, (High channel 2462 MHz) @ 3 meters

Frequency	Reading	Azimouth	Height	Polar.	Antenna Factor	Cable loss	Amplifier	Corrected Reading	Limit	Margin	Comments
MHz	dBuV	Degrees	Meter	H / V	dB/m	dB	dB	dBuV/m	dBuV/m		
7386.0000	33.0	330	1.2	v	36.7	4.2	34.7	39.2	54	-14.8	Ave
4924.0000	38.3	295	1.2	v	32.5	1.9	34.8	37.9	54	-16.1	Ave
7386.0000	28.4	150	1.3	h	36.7	4.2	34.7	34.6	54	-19.4	Ave
4924.0000	53.8	295	1.2	v	32.5	1.9	34.8	53.4	74	-20.6	Peak
4924.0000	32.5	283	1.2	h	32.5	1.9	34.8	32.1	54	-21.9	Ave
7386.0000	45.7	330	1.2	v	36.7	4.2	34.7	51.9	74	-22.1	Peak
7386.0000	42.3	150	1.3	h	36.7	4.2	34.7	48.5	74	-25.5	Peak
4924.0000	46.7	283	1.2	h	32.5	1.9	34.8	46.3	74	-27.7	Peak
1033.0000	35.8	265	1.2	V	23.3	1.3	36.5	23.9	54	-30.1	Ave
1000.0000	34.5	260	1.2	V	23.3	1.3	36.5	22.6	54	-31.4	Ave
1333.0000	34.2	250	1.2	V	23.3	0.8	36.3	21.9	54	-32.1	Ave
1333.0000	47.5	250	1.2	V	23.3	0.8	36.3	35.2	74	-38.8	Peak
1033.0000	46.3	265	1.2	V	23.3	1.3	36.5	34.4	74	-39.6	Peak
1000.0000	45.8	260	1.2	V	23.3	1.3	36.5	33.9	74	-40.1	Peak

§15.247(a) (2) – 6 dB BANDWIDTH

Applicable Standard

According to §15.247(a)(2), 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

Measurement Procedure

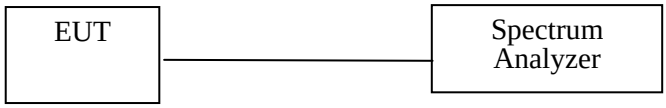
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency 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 emissions bandwidth. (6 dB bandwidth for DTS)
4. Repeat above procedures until all frequencies measured were complete.

Equipment List

Manufacturer	Description	Model	Serial Number	Cal. Date
Agilent	Analyzer, Spectrum	8565EC	3946A00131	2006-01-11

*** Statement of Traceability: BACL Corp.** attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

Test Setup Diagram



Environmental Conditions

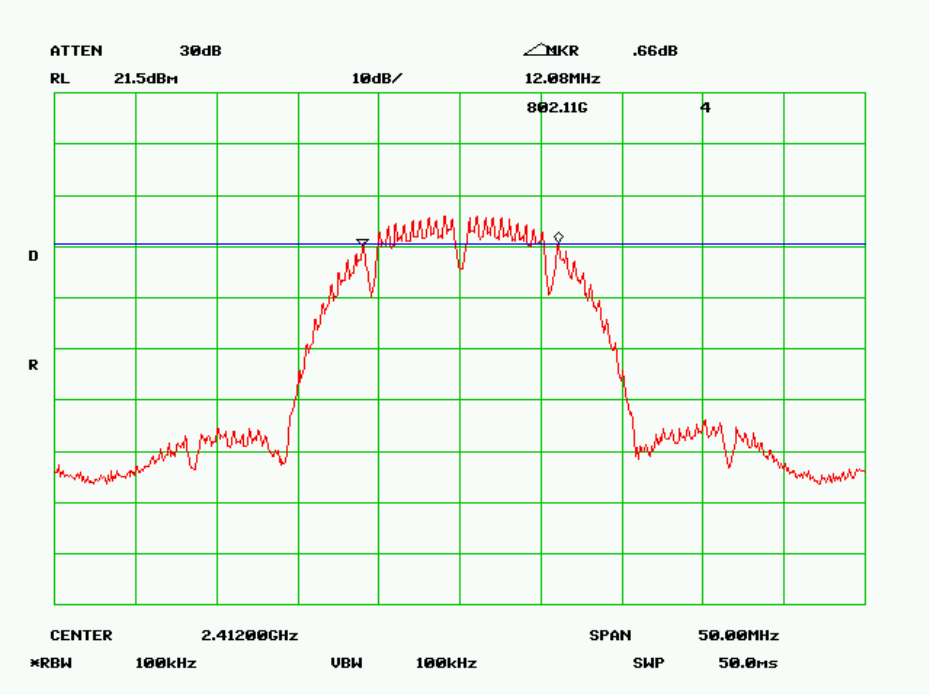
Temperature:	23° C
Relative Humidity:	53%
ATM Pressure:	1041 mbar

**The testing was performed by Tom Chen on 2006-10-09*

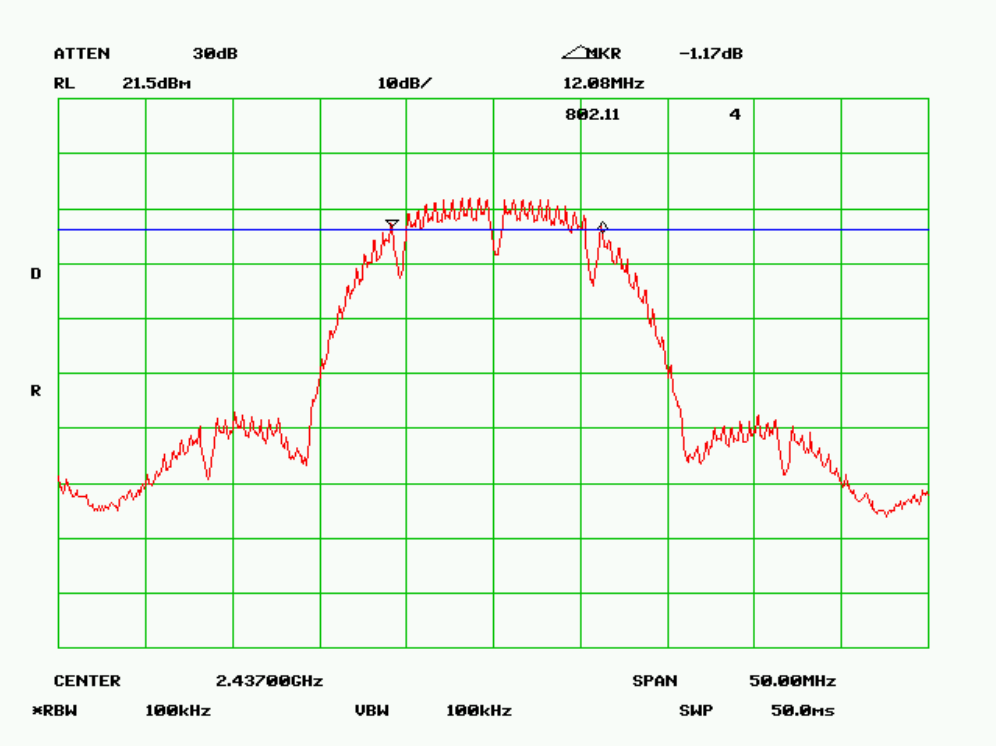
Test Results

802.11b mode:

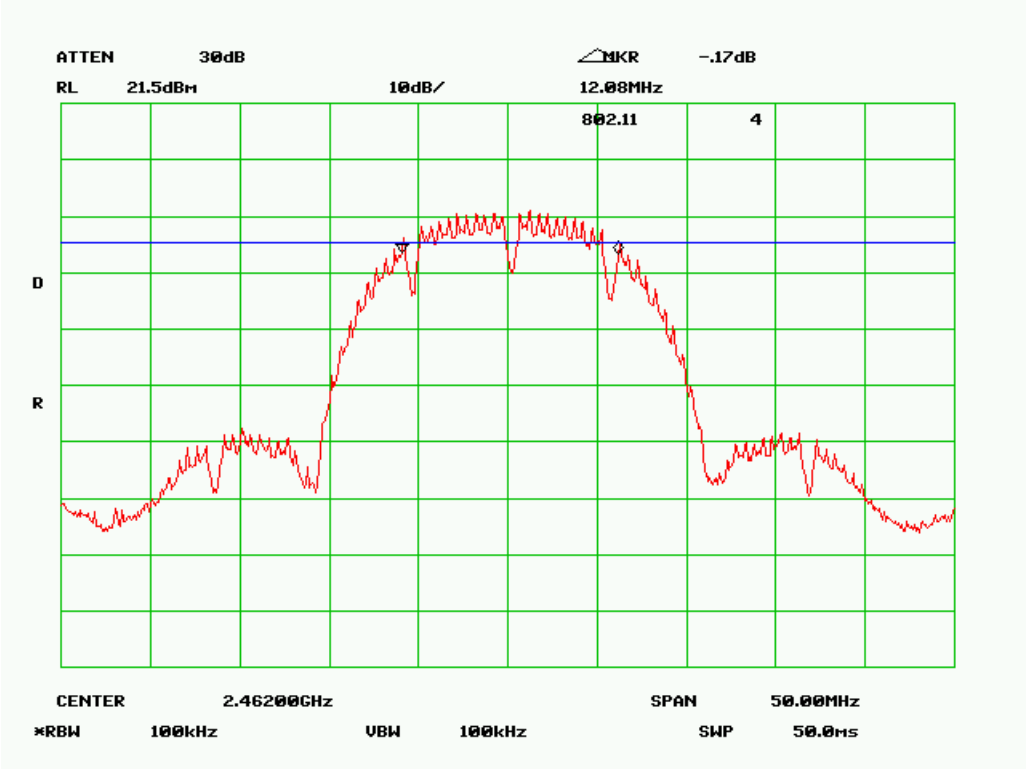
Low Channel



Middle Channel

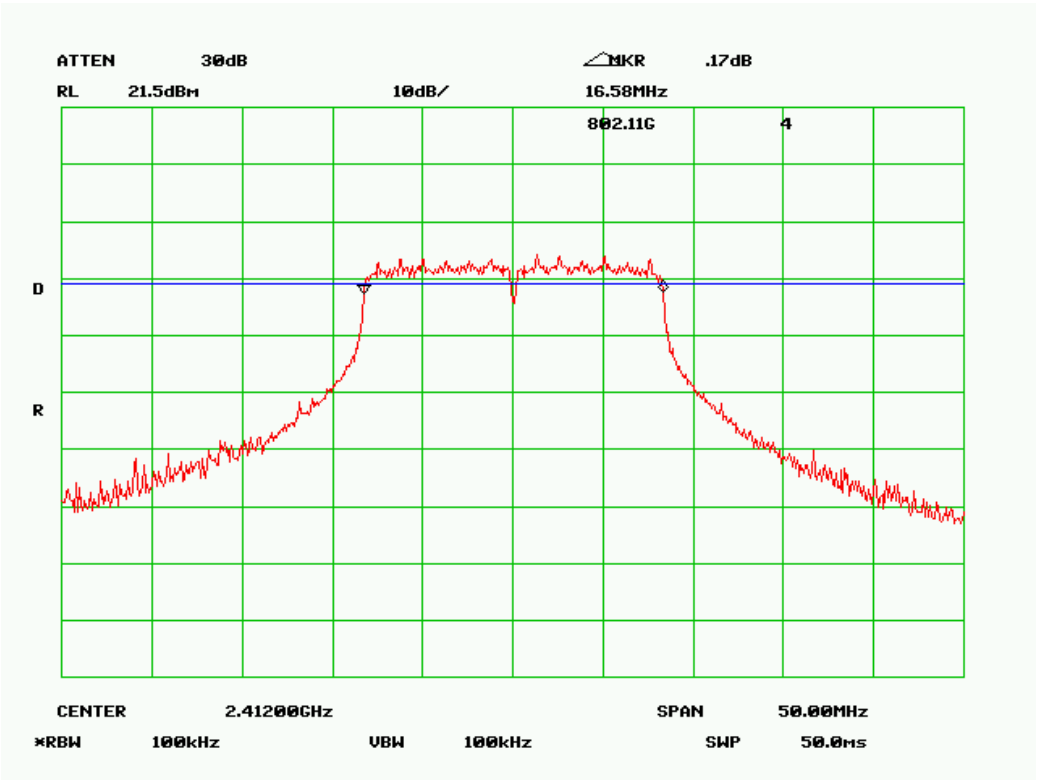


High Channel

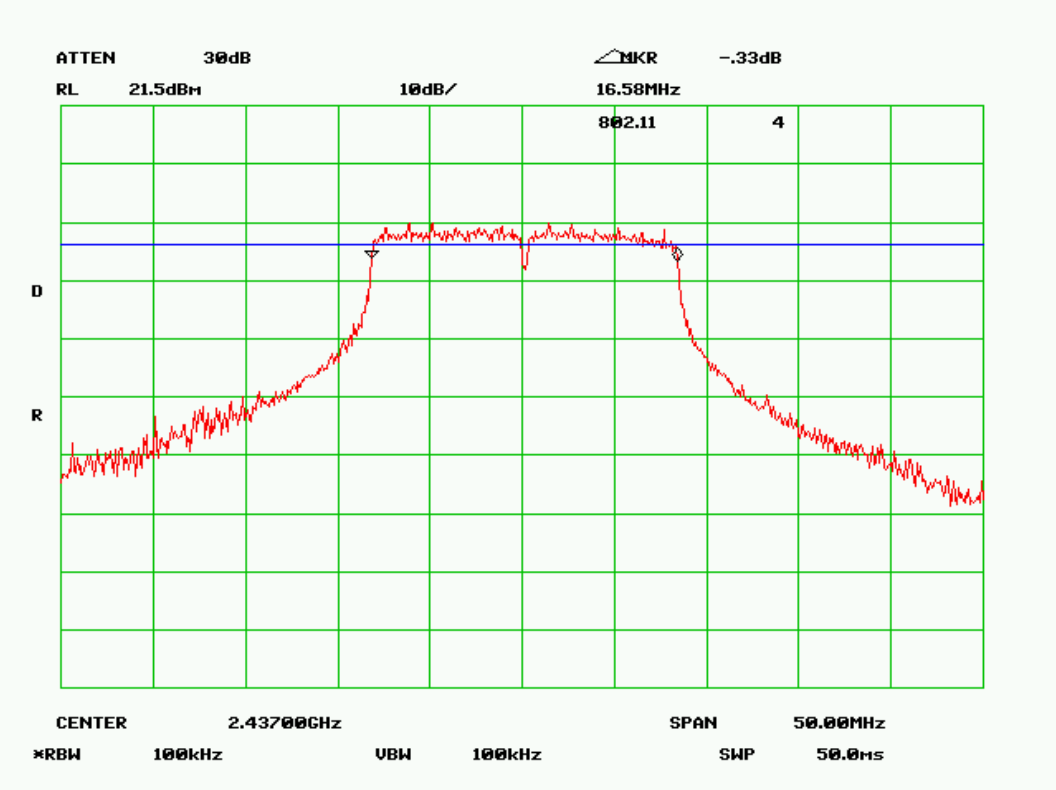


802.11g mode:

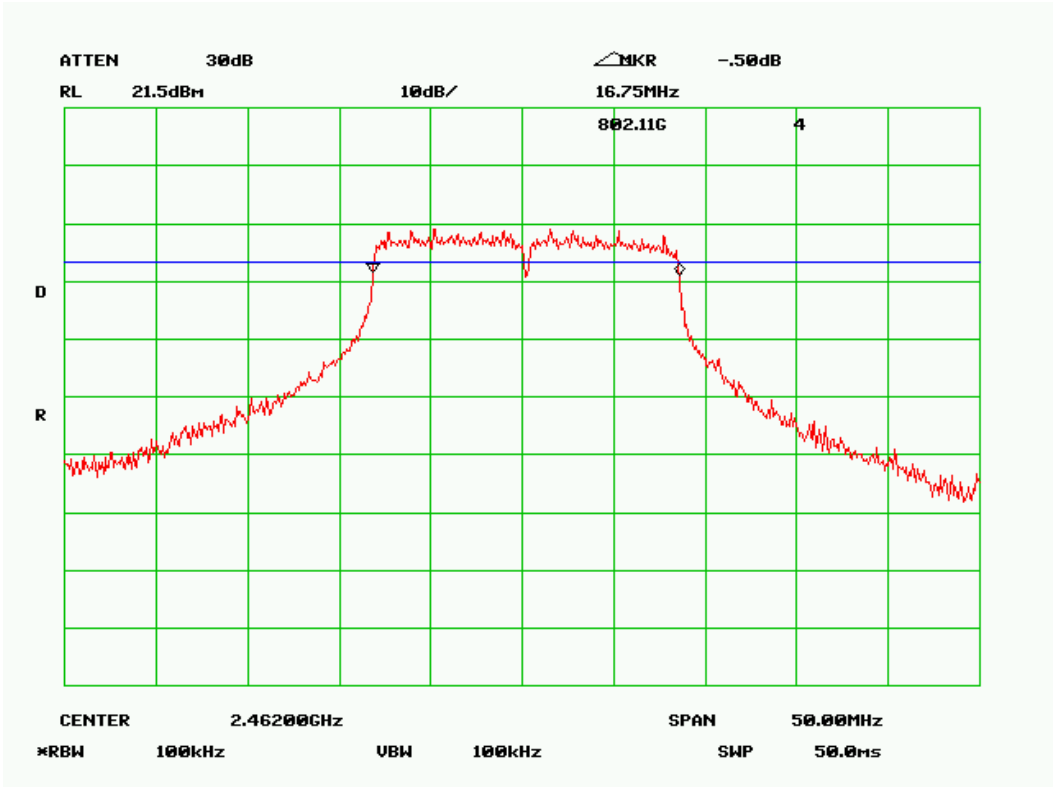
Low Channel



Middle Channel



High Channel



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

Applicable Standard

According to §15.247(b) (3): The maximum peak conducted output power of the intentional radiator shall not exceed 1 Watt for systems using digital modulation in 2400-2483.5 MHz band. 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.

Measurement Procedure

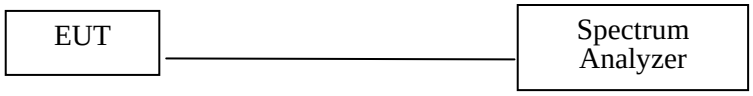
1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to a spectrum analyzer.
3. Add a correction factor to the display.

Equipment Lists

Manufacturer	Description	Model	Serial Number	Cal. Date
Agilent	Spectrum analyzer	8565EC	3946A00131	2006-01-11

*** Statement of Traceability: BACL Corp.** attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

Test Setup Diagram



Environmental Conditions

Temperature:	23° C
Relative Humidity:	53%
ATM Pressure:	1041 mbar

**The testing was performed by Tom Chen on 2006-10-09*

Measurement Result

The EUT (FCI-3000) had 8 T/R Modules, the maximum peak power calculate by reading x 8 the reading (*worst*-case) was highest within 8 T/R Modules.

802.11b mode:

Frequency	Reading	Output	Total Output	Total Output	Limit	Result
MHz	dBm	mW	dBm	mW	(mW)	
2412	5.8	3.80	14.8309	30.42	1000	Pass
2437	12.2	16.60	21.2309	132.77	1000	Pass
2462	11	12.59	20.0309	100.71	1000	Pass

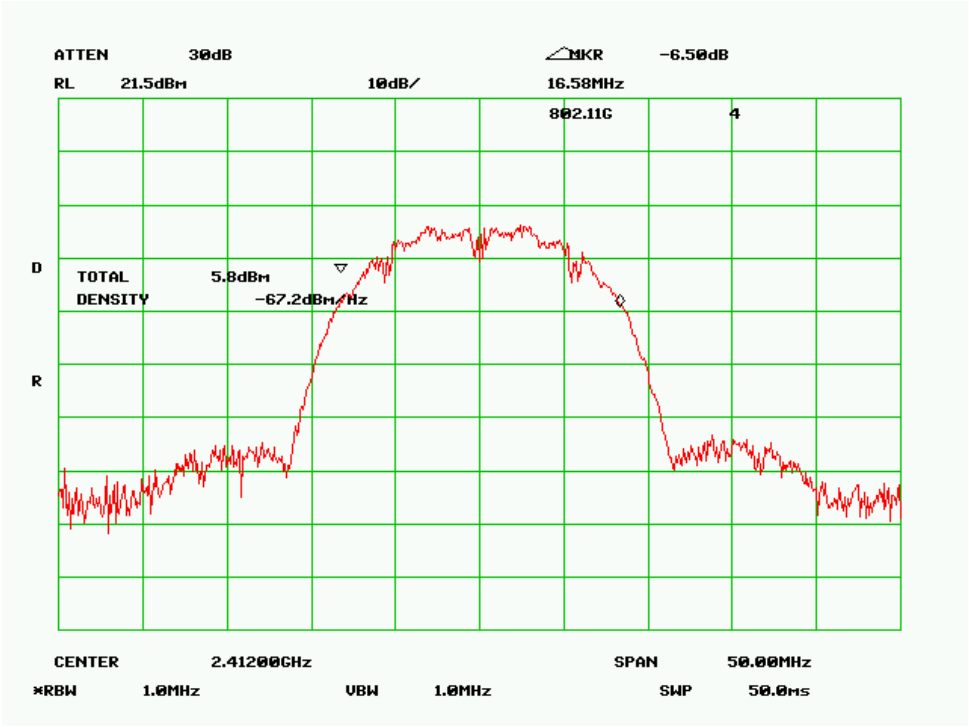
802.11g mode:

Frequency	Reading	Output	Total Output	Total Output	Limit	Result
MHz	dBm	mW	dBm	mW	(mW)	
2412	6.4	4.37	15.431	34.92	1000	Pass
2437	12.3	16.98	21.331	135.86	1000	Pass
2462	11.6	14.45	20.631	115.64	1000	Pass

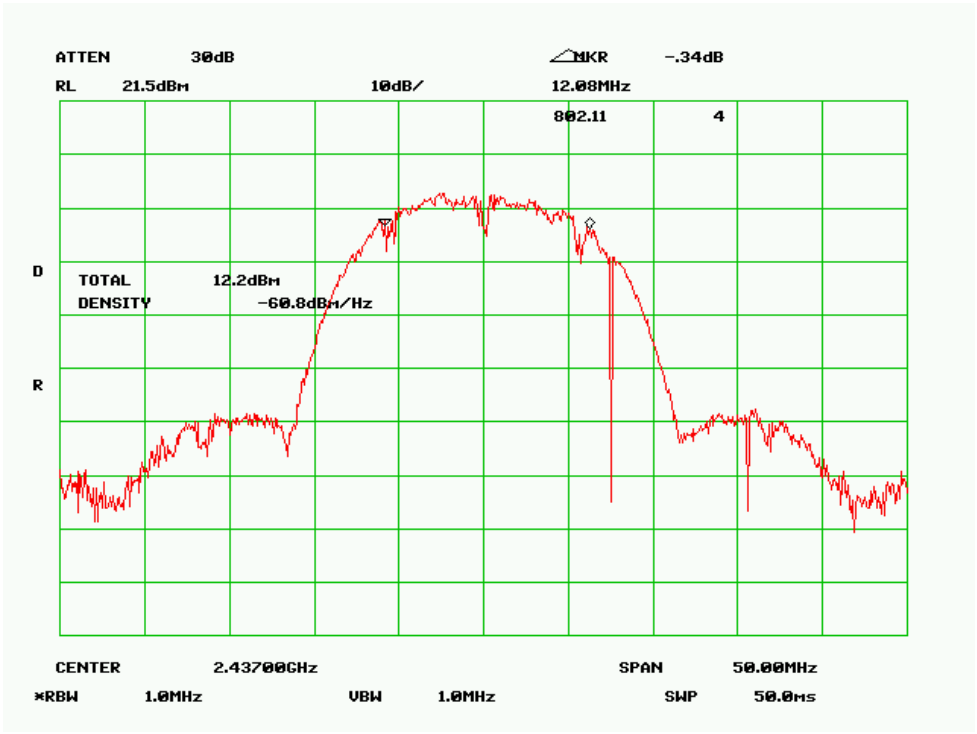
Test Plots

802.11b mode:

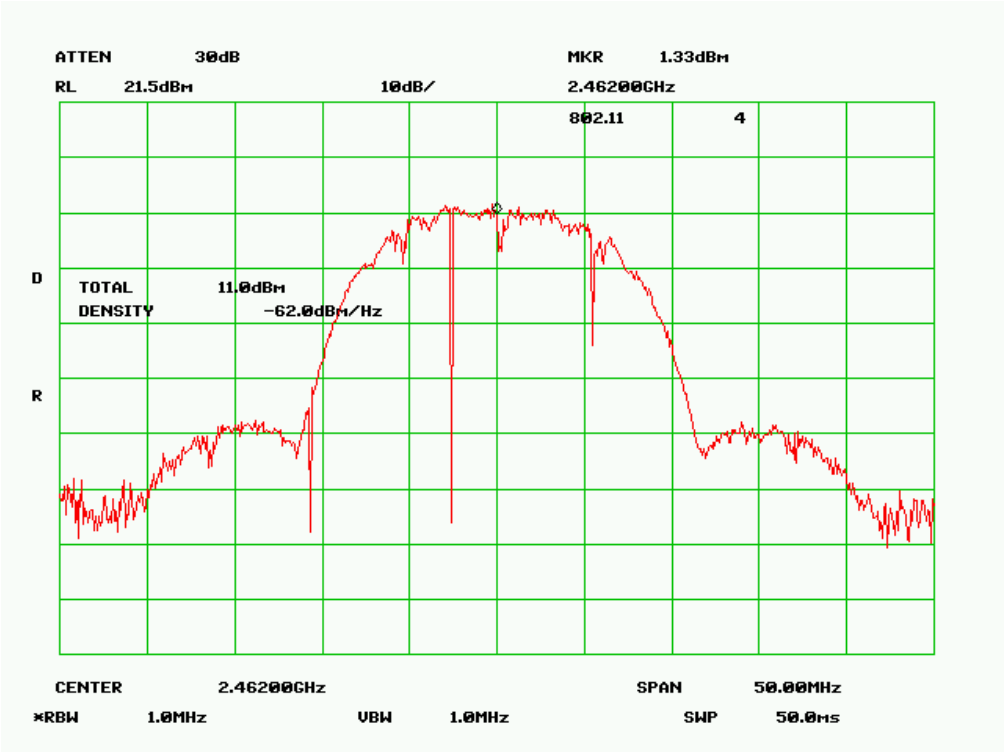
Low Channel



Middle Channel

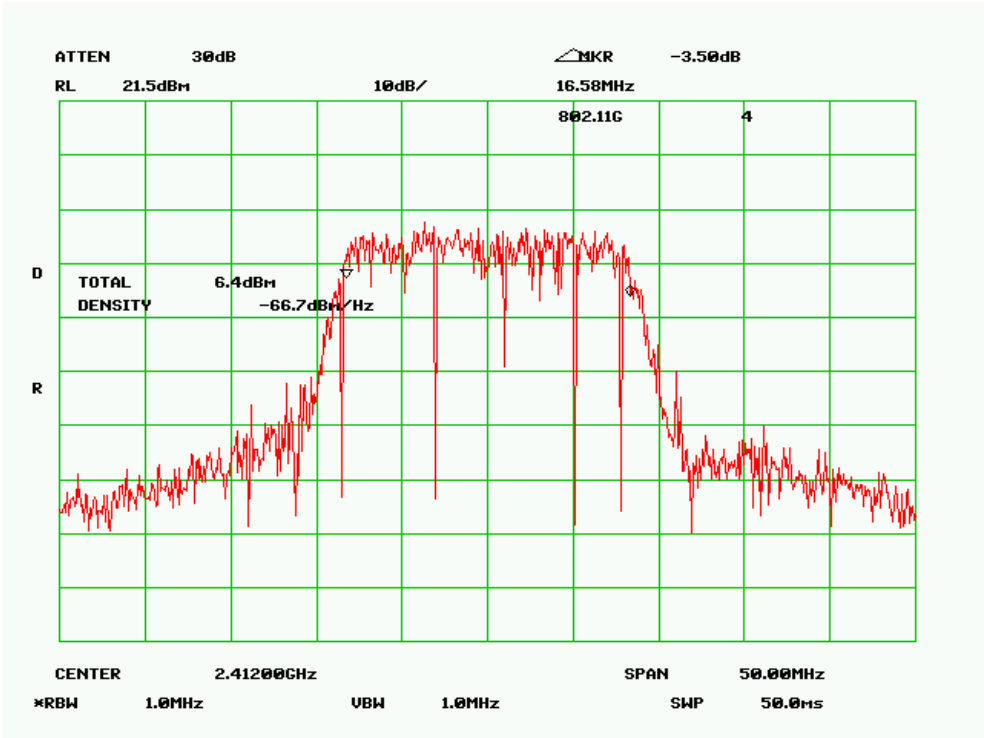


High Channel

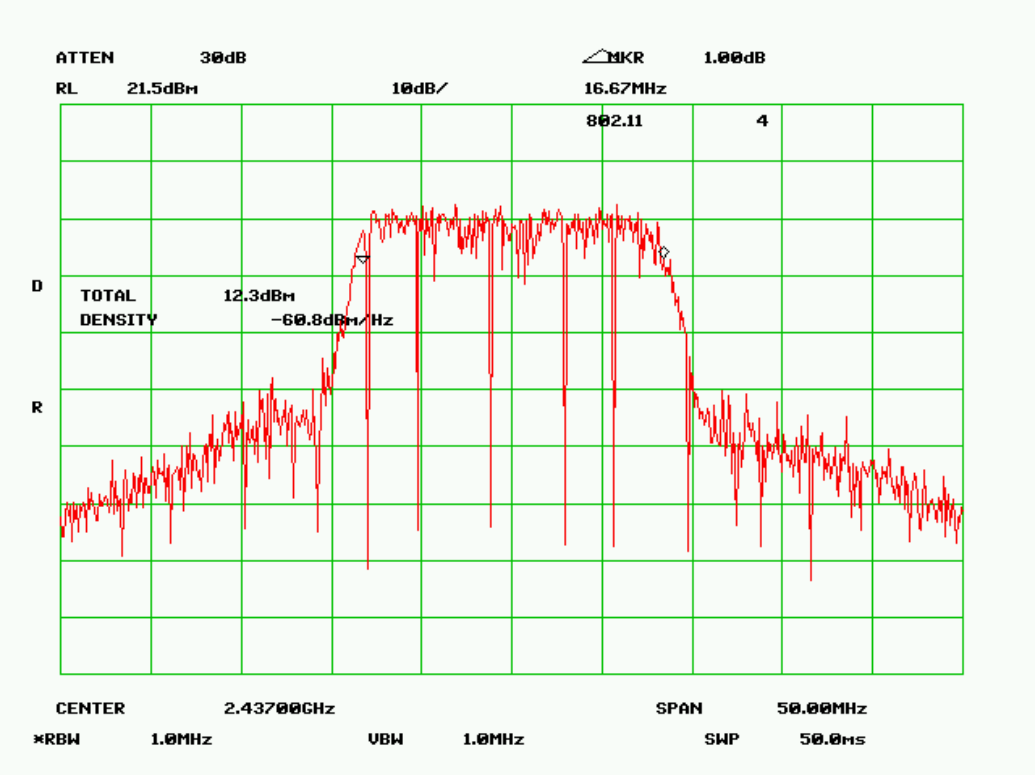


802.11g mode:

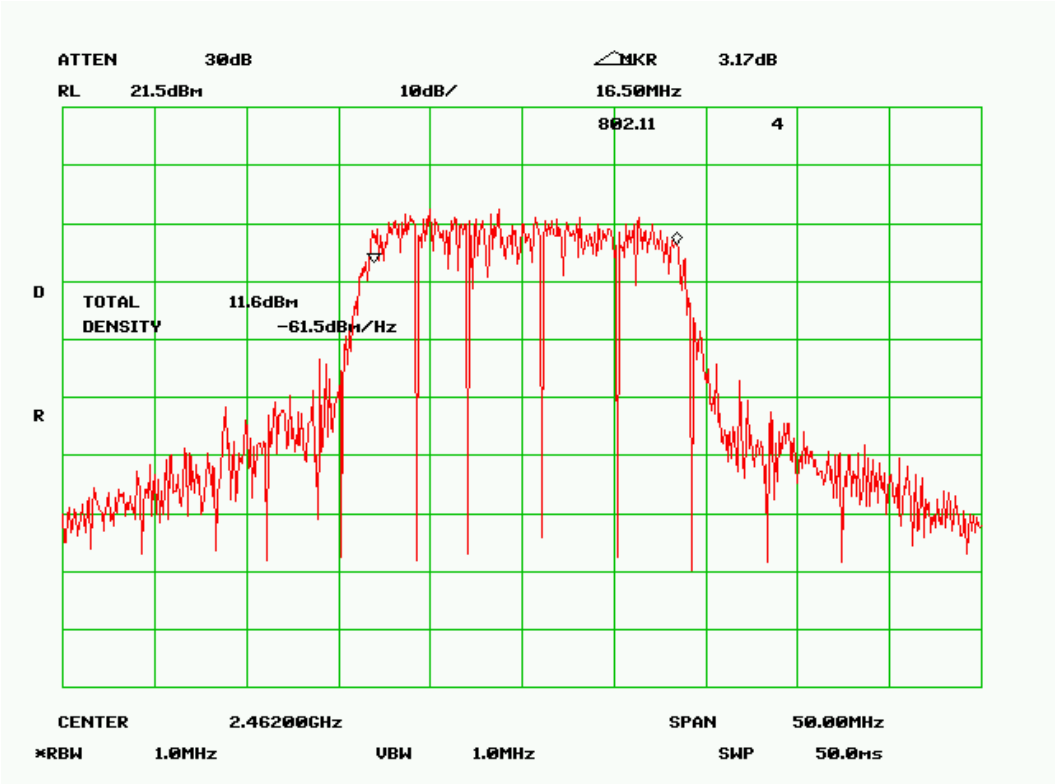
Low Channel



Middle Channel



High Channel



§15.247(c) - 100 kHz BANDWIDTH OF BAND EDGES

Applicable Standard

According to §15.247(d), in *any* 100 kHz bandwidth outside the frequency bands in which the spread spectrum 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. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emissions limits specified in §15.209(a) see §15.205(c)).

Measurement Procedure

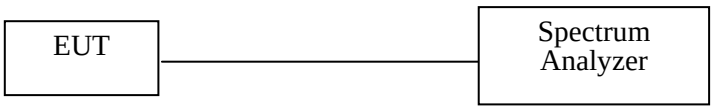
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then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

Equipment Lists

Manufacturer	Description	Model	Serial Number	Cal. Date
Agilent	Spectrum analyzer	8565EC	3946A00131	2006-01-11

*** Statement of Traceability: BACL Corp.** attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

Test Setup Diagram



Environmental Conditions

Temperature:	23° C
Relative Humidity:	53%
ATM Pressure:	1041 mbar

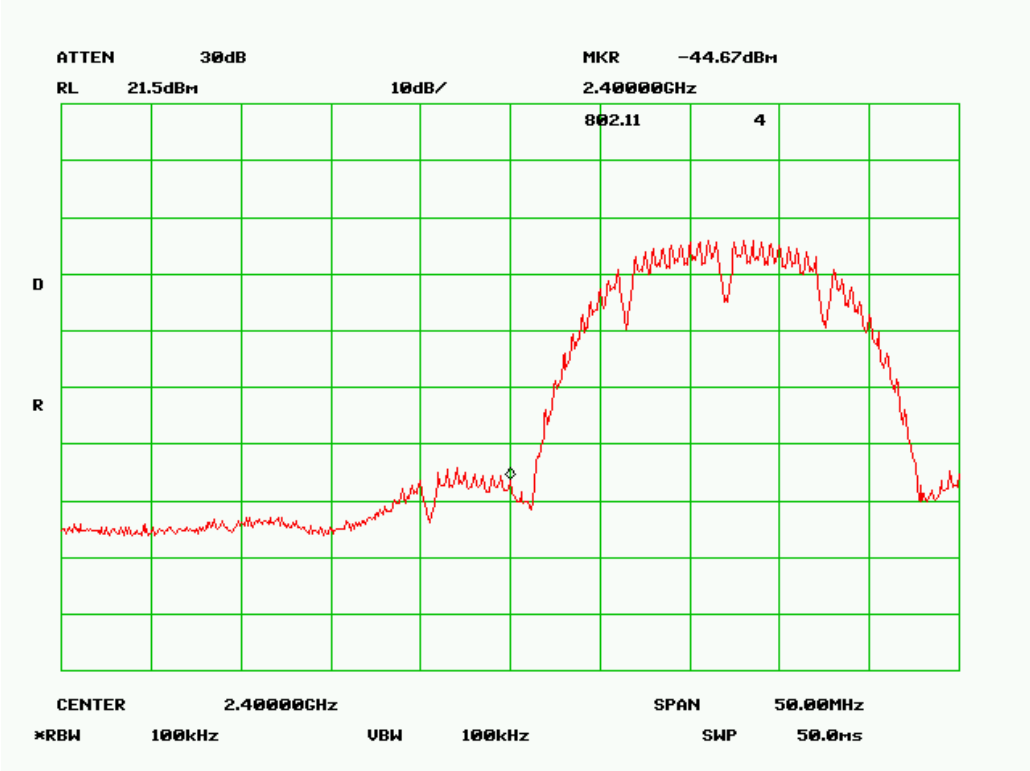
**The testing was performed by Tom Chen on 2006-10-09*

Measurement Result

Please refer to following pages for plots of band edge.

802.11b mode:

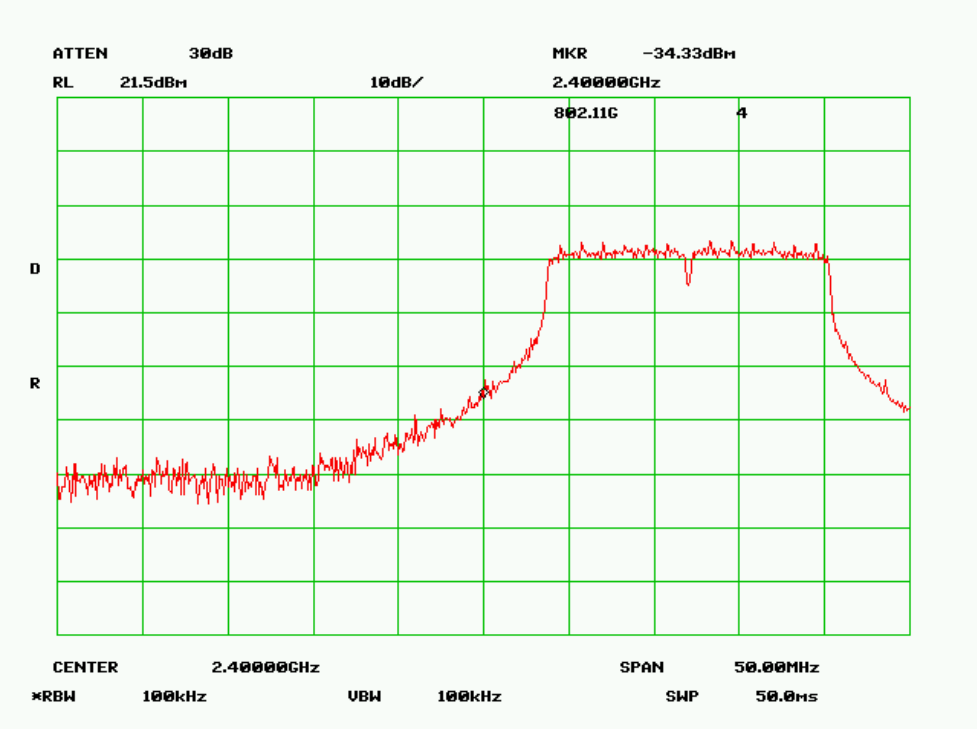
Low Channel



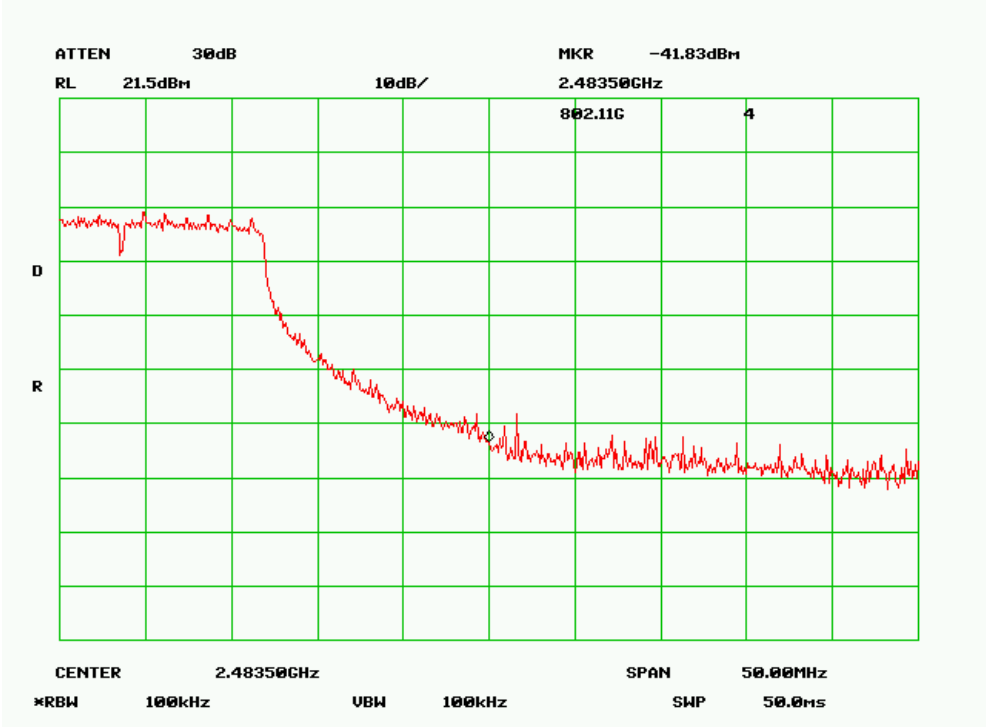
High Channel

802.11g mode:

Low Channel



High Channel



§15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

According to §15.247 (e), 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.

Measurement Procedure

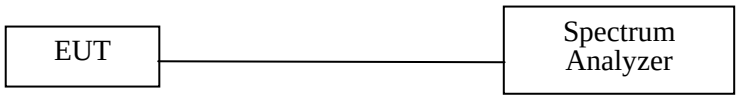
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. 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.

Equipment Lists

Manufacturer	Description	Model	Serial Number	Cal. Date
Agilent	Spectrum analyzer	8565EC	3946A00131	2006-01-11

*** Statement of Traceability: BACL Corp.** attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

Test Setup Diagram



Environmental Conditions

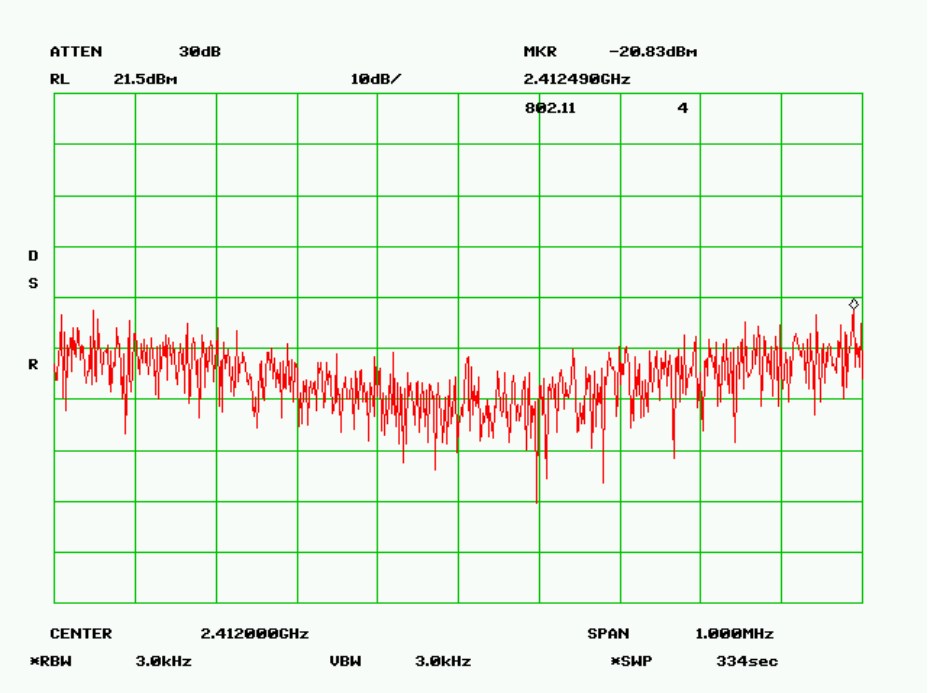
Temperature:	23° C
Relative Humidity:	53%
ATM Pressure:	1041 mbar

**The testing was performed by Tom Chen on 2006-10-09*

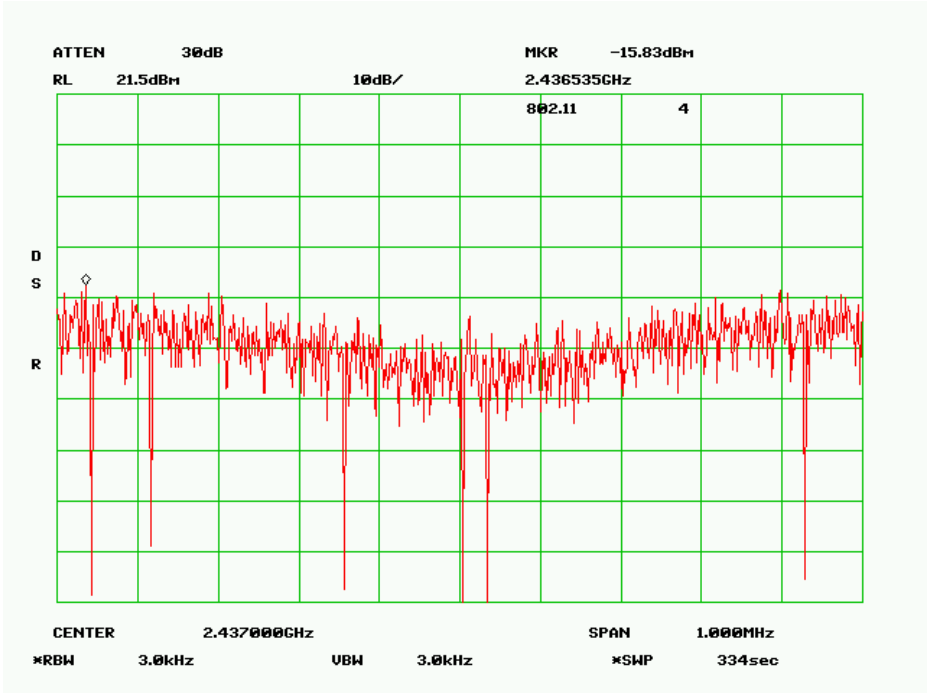
Measurement Result

802.11b mode:

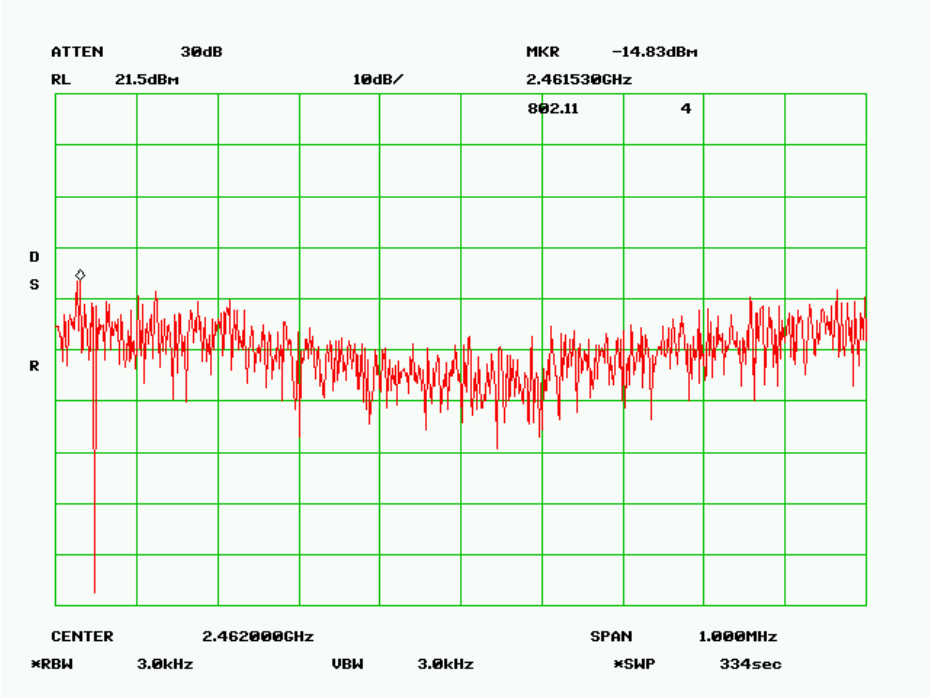
Low Channel



Middle Channel

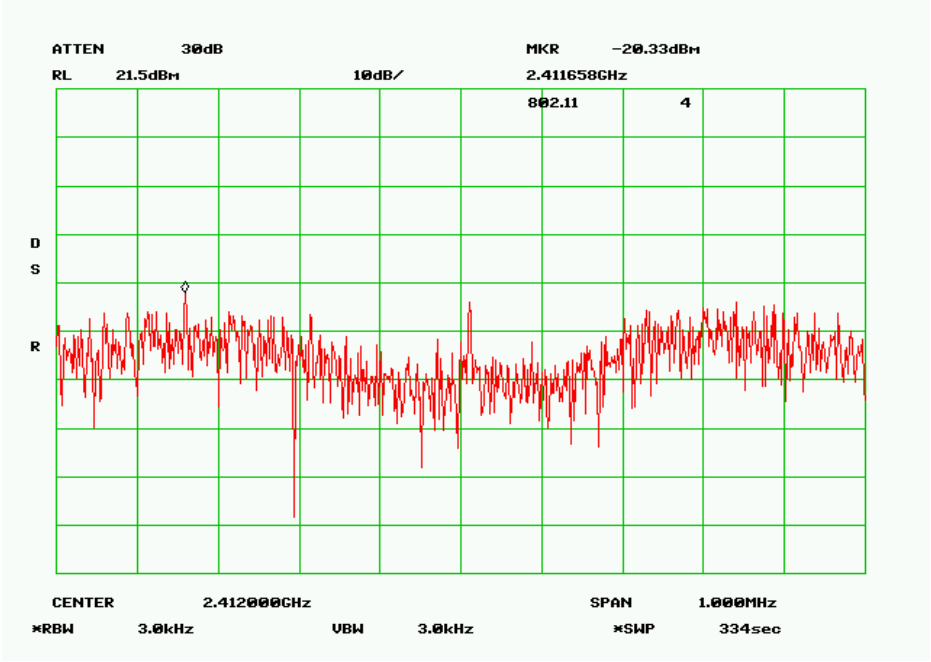


High Channel

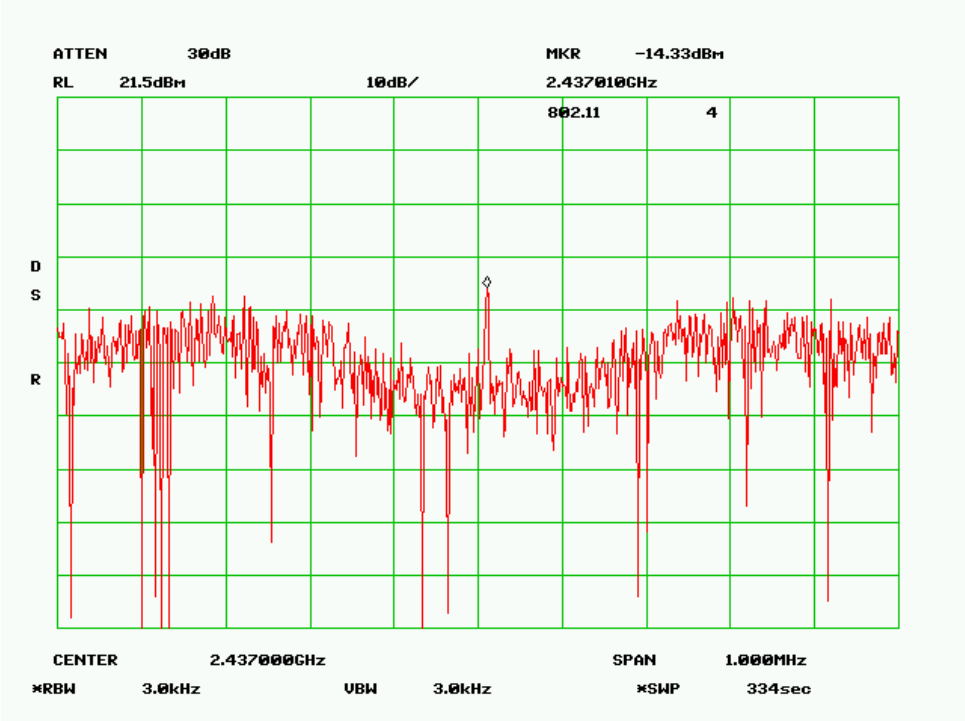


802.11g mode:

Low Channel



Middle Channel



High Channel