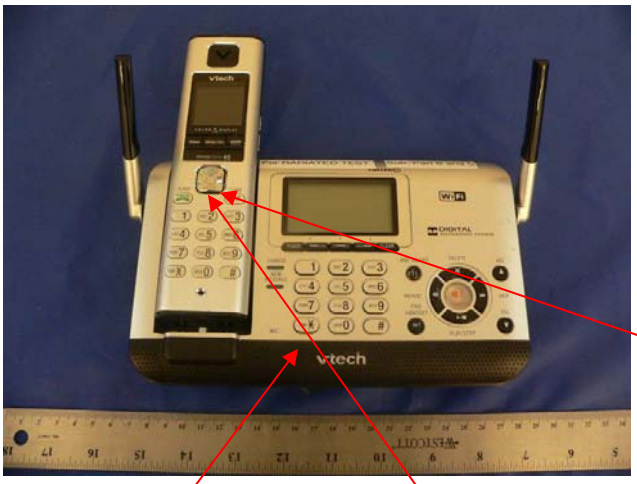
GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *VTech Telecommunication Ltd.*.product, *FCC ID: EW780-5995-00, models: WF6972 and WF 6909* or altogether the "EUT" as referred to this report is a WiFi cordless phone system that follows IEEE 802.11b/g standards along with IEEE 802.11e for Qos. The system will consist of a maximum of 16 hand-sets and a single Base-set. Therefore, the base and the hand-sets will be multiplexed using a TDMA method along with CSMA/CA. TDD is employed for exchanging information between the base station and the various hand-sets (this is not a frequency hopping device). The EUT consists of two distinct models. The **hand-sets** of both Models: Vtech WF6972 and Vtech WF6909 are identical; the difference is between their **base-sets**, wherein model: WF6972 is sold with the transmitting/receiving base-set and model: WF6909 is sold with a charging base-set without transmitting or receiving capabilities. WF6909 will be sold separately but as add-on equipment for WF6972. Both models will be registered under the same IC identifier as a family because model WF6909 is not a stand alone product and will not function without or apart from WF6909.

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

EUT Photo



Vtech WF6972
(Base set with included hand-set)

Vtech WF6909
(Charging base-set pictured sans included hand-set)

Additional EUT photos in Exhibit C

Objective

This type approval report is prepared on behalf of *VTech Telecommunications Canada Ltd.* 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	11Mbps	11Mbps	11Mbps
802.11g Data rate	54Mbps	54Mbps	54Mbps

Special Accessories

The 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

No local support equipment was used during testing

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
§ 15.207 (a)	Conducted Emissions	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

§15.247(e)(i),§2.1091 - RF EXPOSURE

According to §15.247(e)(i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

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

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

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

MPE Prediction (WF6972 Base-set)

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

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

Where: S = power density
P = power input to antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna

Maximum peak output power at antenna input terminal: 19.9 (dBm)
Maximum peak output power at antenna input terminal: 97.72 (mW)
Prediction distance: 20 (cm)
Predication frequency: 2437 (MHz)
Antenna Gain (typical): 0(dBi)
Antenna gain: 1.0 (numeric)
Power density at predication frequency at 20 cm: 0.019(mW/cm^2)

MPE limit for uncontrolled exposure at prediction frequency: 1.0 (mW/cm^2)

Test Result**: Compliant**

The EUT is a mobile device. The power density level is at 20 cm is 0.019mW/cm², which is below the uncontrolled exposure limit of 1.0mW/cm² at 2437 MHz. for WF6909

§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 (b) (4), if transmitting antennas of directional gain greater than 6 dBi are used the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The antenna for this device is an integral antenna with gain of 0dBi.

Hand-set (WF6972 & WF6909): compliant.

There is no consideration for end user replacement or augmentation to the hand-set antenna as the antenna connection to the RF board is permanent (soldered).:

Base-set (WF6972): compliant.

There is no consideration for end user replacement or augmentation to the base-set antennae as the connection between the antennae and their corresponding RF boards is permanent (soldered).

Base-set (WF6909): N/A.

The unit is a charging base-set and has not antenna nor RF board with which attach could be made or severed.

§15.207 (a) - CONDUCTED EMISSIONS

Section 15.207 Conducted limits:

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

** Decreases with the logarithm of the frequency.*

Test Setup

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

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

The EUT was connected with LISN-1.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration 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

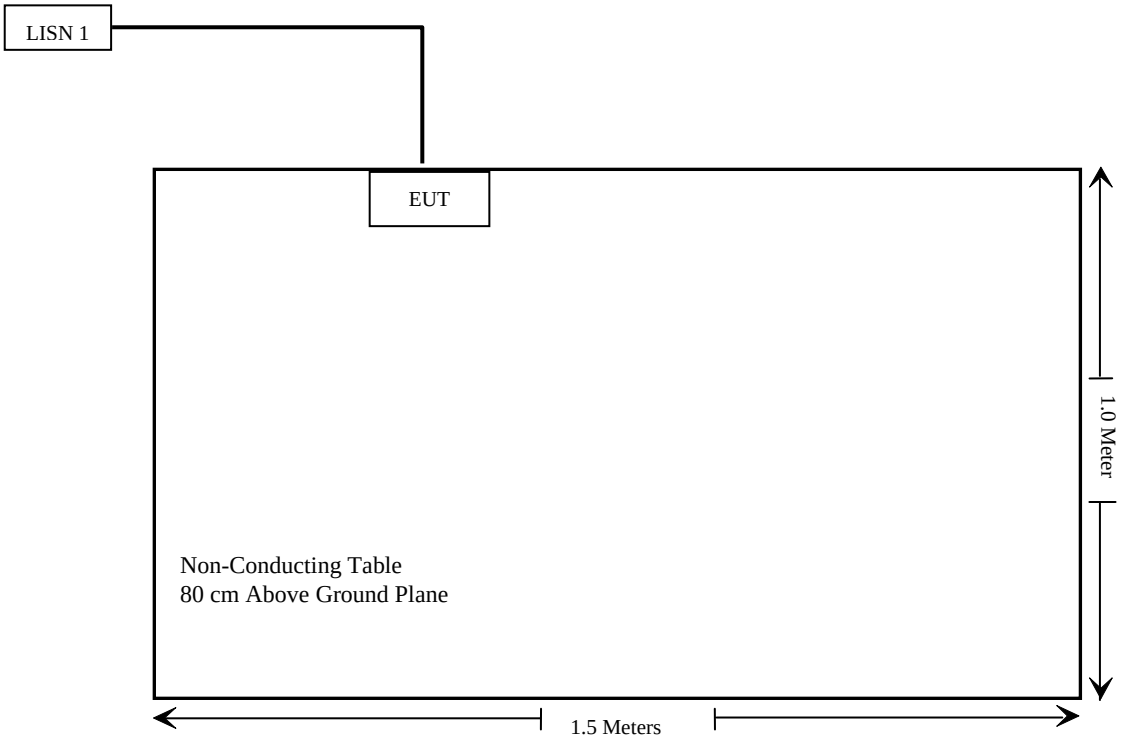
During the conducted emissions test, the power cord of the EUT was connected to the mains outlet of the LISN-1.

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

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

Test Setup Diagram

Conducted Emissions



Environmental Conditions

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

**The testing was performed by Tom Chen on 2006-09-07*

Summary of Test Results

According to the recorded data in following table, the EUT complied with the FCC standard's conducted emissions limits for Class B devices, with the *worst* margin reading of:

BASE SET (WF6972)

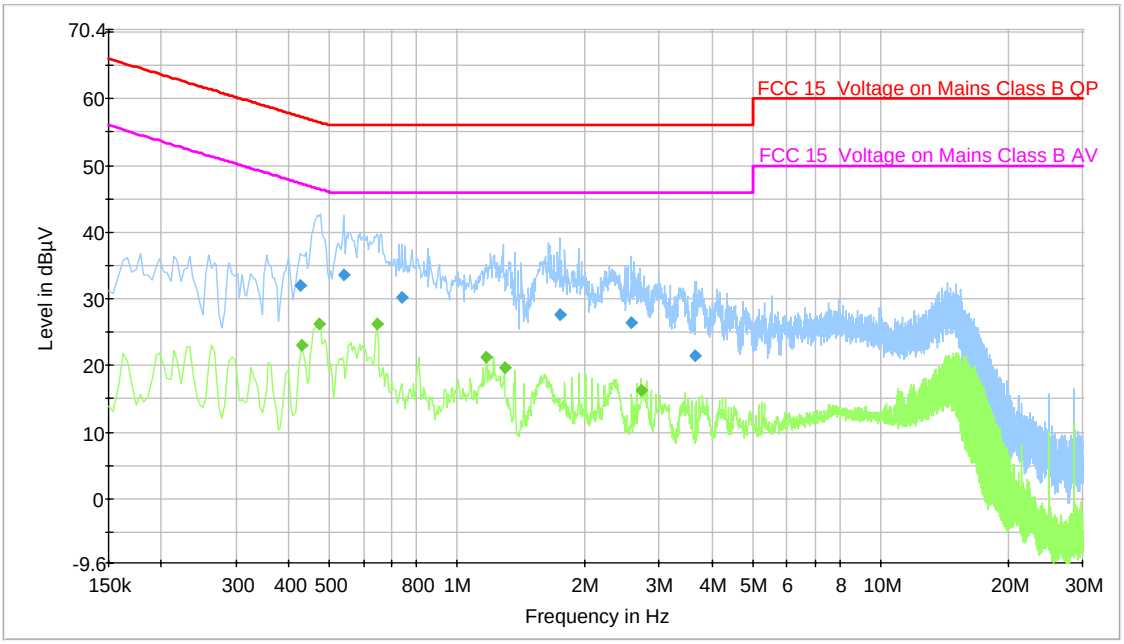
15.4 dB at **0.80900 MHz** in the **Neutral** conductor mode.

HAND SET (WF6972 & WF6909)

16.8 dB at **0.80900 MHz** in the **Neutral** conductor mode.

Conducted Emissions Test plot & data

Base Set (WF6972) Line



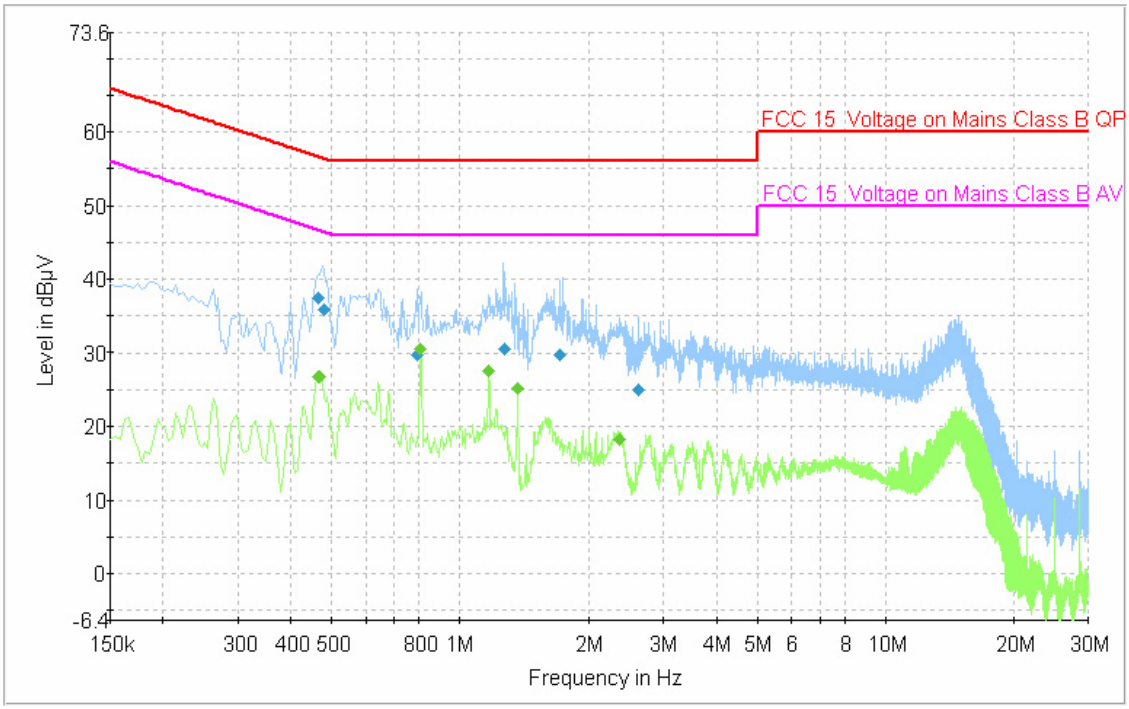
QP Measurements

Frequency (MHz)	Quasi-Peak (dBµV)	Line	Limit (dBµV)	Margin (dB)
0.538000	33.5	L1	56.0	22.5
0.426000	32.0	L1	57.3	25.3
0.742000	30.3	L1	56.0	25.7
1.742000	27.6	L1	56.0	28.4
2.574000	26.3	L1	56.0	29.7
3.642000	21.4	L1	56.0	34.6

Average Measurements

Frequency (MHz)	Average (dBµV)	Line	Limit (dBµV)	Margin (dB)
0.646000	26.2	L1	46.0	19.9
0.470000	26.3	L1	46.5	20.2
0.430000	23.0	L1	47.3	24.3
1.170000	21.3	L1	46.0	24.7
1.290000	19.6	L1	46.0	26.4
2.726000	16.2	L1	46.0	29.8

Base Set (WF6972) Neutral



QP Measurements

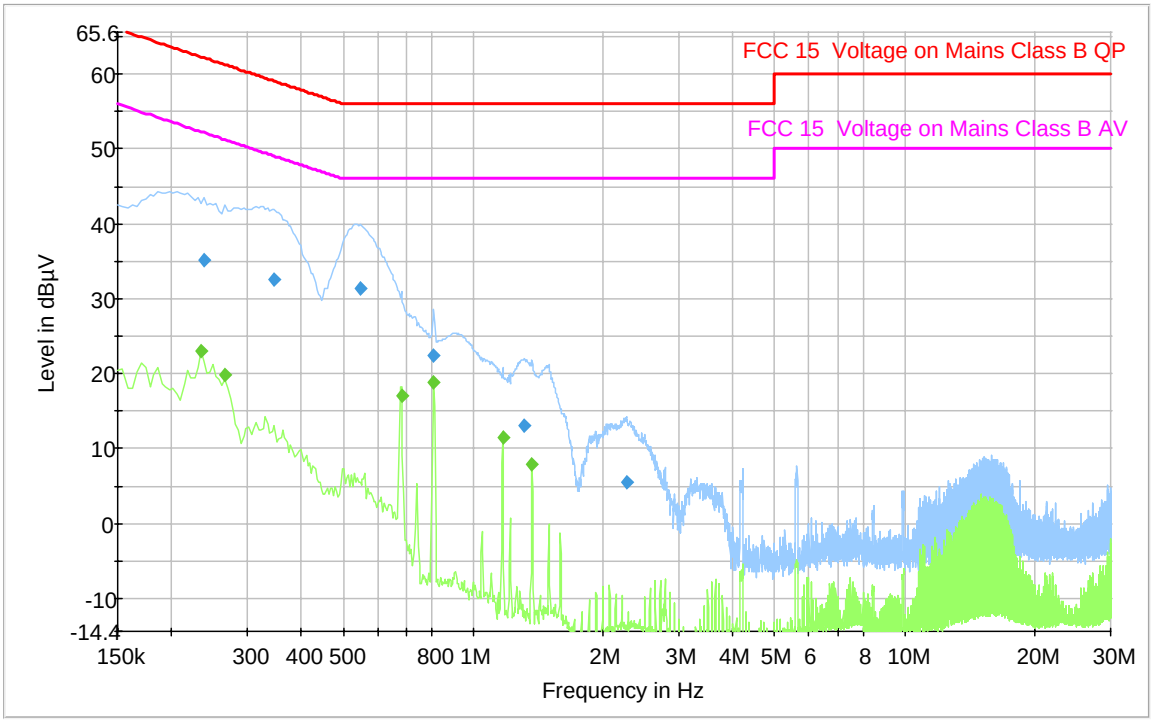
Frequency (MHz)	Quasi-Peak (dBµV)	Line	Limit (dBµV)	Margin (dB)
0.465000	37.3	N	56.6	19.3
0.477000	35.7	N	56.4	20.7
1.273000	30.6	N	56.0	25.4
0.793000	29.8	N	56.0	26.3
1.713000	29.7	N	56.0	26.3
2.625000	25.1	N	56.0	30.9

Average Measurements

Frequency (MHz)	Average (dBµV)	Line	Limit (dBµV)	Margin (dB)
0.809000	30.6	N	46.0	15.4
1.169000	27.7	N	46.0	18.3
0.469000	26.9	N	46.5	19.7
0.465000	26.8	N	46.6	19.8
1.369000	25.2	N	46.0	20.8
2.353000	18.2	N	46.0	27.8

Hand Set (WF6972 & WF6909) Line*

**Measurements taken with hand-set connected to charging base-set (WF6909) and provided AC adapto; see test photos.*



QP Measurements

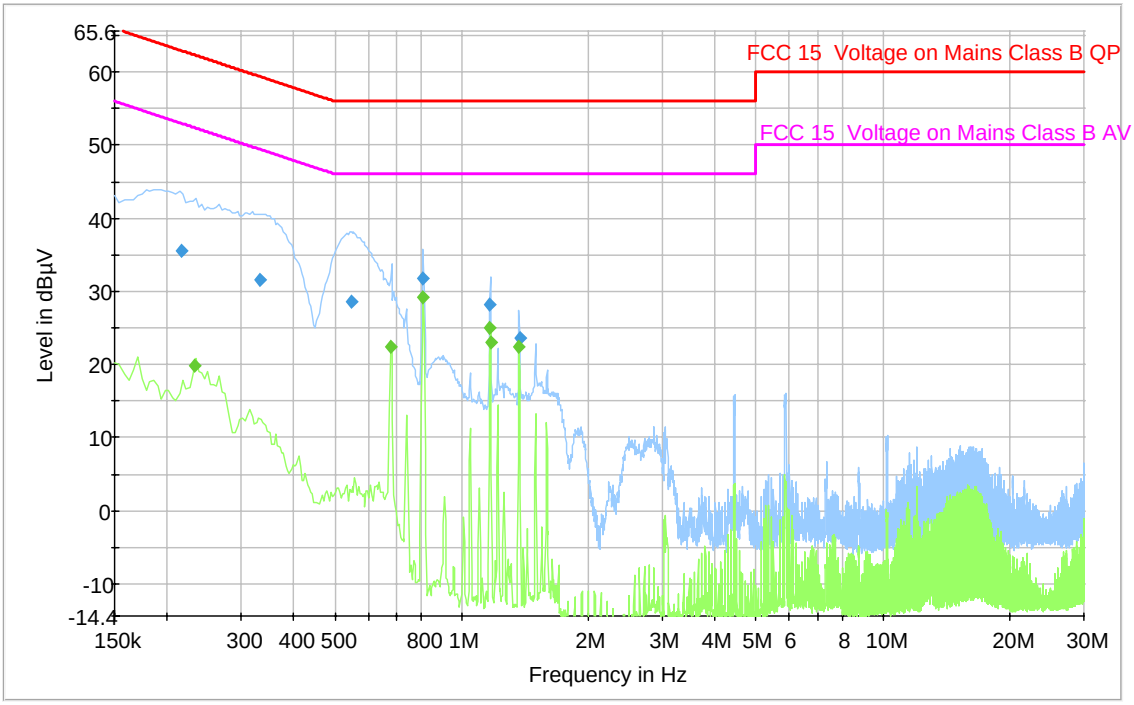
Frequency (MHz)	Quasi-Peak (dBµV)	Line	Limit (dBµV)	Margin (dB)
0.546000	31.3	L1	56.0	24.7
0.346000	32.6	L1	59.1	26.4
0.238000	35.2	L1	62.2	27.0
0.810000	22.4	L1	56.0	33.6
1.314000	13.0	L1	56.0	43.0
2.262000	5.5	L1	56.0	50.5

Average Measurements

Frequency (MHz)	Average (dBµV)	Line	Limit (dBµV)	Margin (dB)
0.810000	18.7	L1	46.0	27.3
0.682000	17.1	L1	46.0	28.9
0.234000	23.0	L1	52.3	29.3
0.266000	19.7	L1	51.2	31.5
1.170000	11.4	L1	46.0	34.6
1.370000	7.8	L1	46.0	38.2

Hand Set (WF6972 & WF6909) Neutral*

**Measurements taken with hand-set connected to charging base-set (WF6909) and provided AC adaptor; see test photos.*



QP Measurements

Frequency (MHz)	Quasi-Peak (dBµV)	Line	Limit (dBµV)	Margin (dB)
0.809000	31.7	N	56.0	24.3
0.217000	35.6	N	62.9	27.3
0.549000	28.6	N	56.0	27.4
0.333000	31.5	N	59.4	27.9
1.169000	28.1	N	56.0	27.9
1.373000	23.6	N	56.0	32.4

Average Measurements

Frequency (MHz)	Average (dBµV)	Line	Limit (dBµV)	Margin (dB)
0.809000	29.2	N	46.0	16.8
1.169000	24.9	N	46.0	21.1
1.173000	23.1	N	46.0	22.9
0.681000	22.5	N	46.0	23.5
1.369000	22.5	N	46.0	23.5
0.233000	19.9	N	52.3	32.4

§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

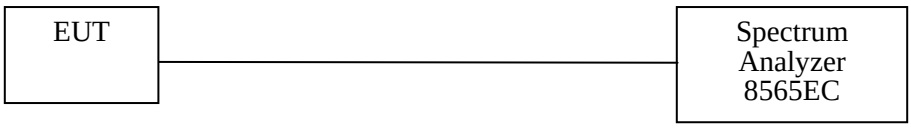
The RF output of the EUT was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz. Sufficient scans were taken to show any out of band emissions up to 10^{th} harmonic.

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 2006-09-07*

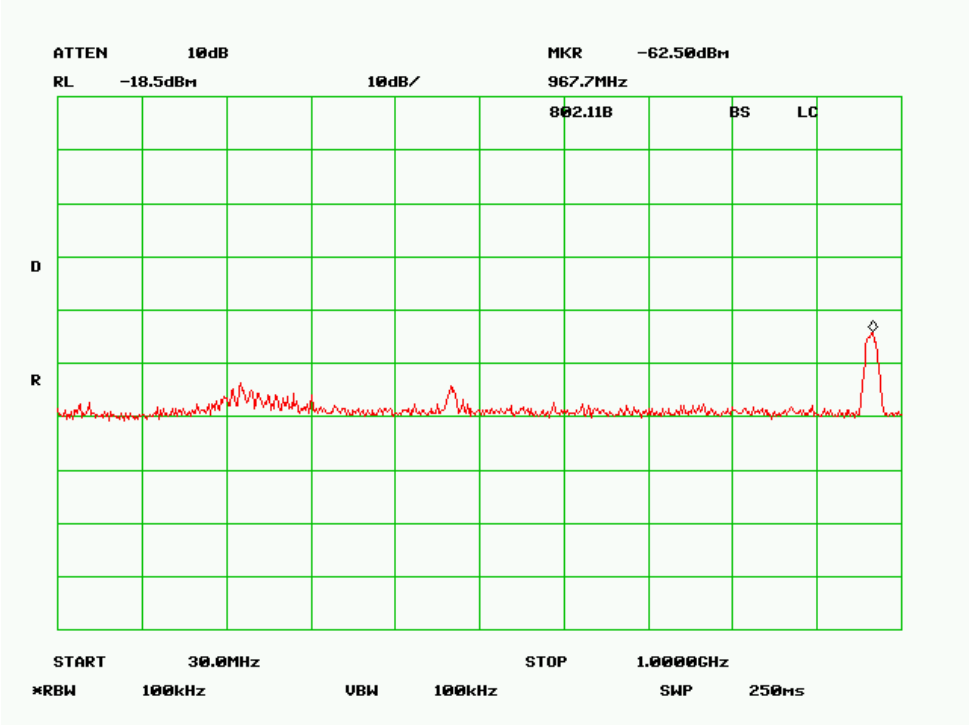
Measurement Result

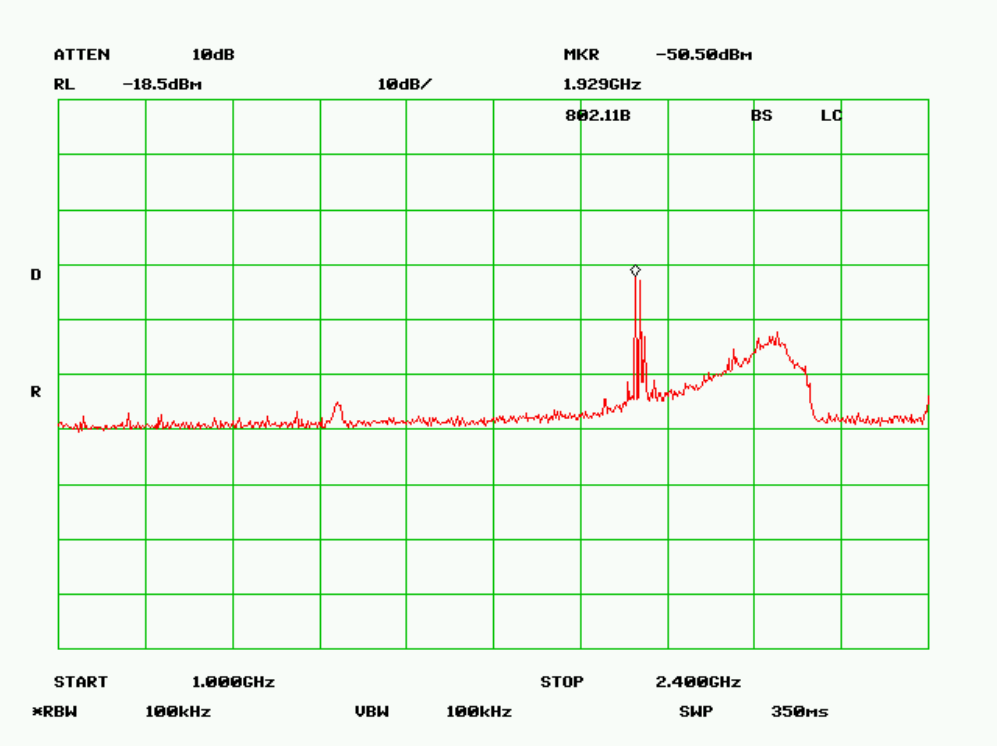
Please refer to following pages for plots of spurious emissions.

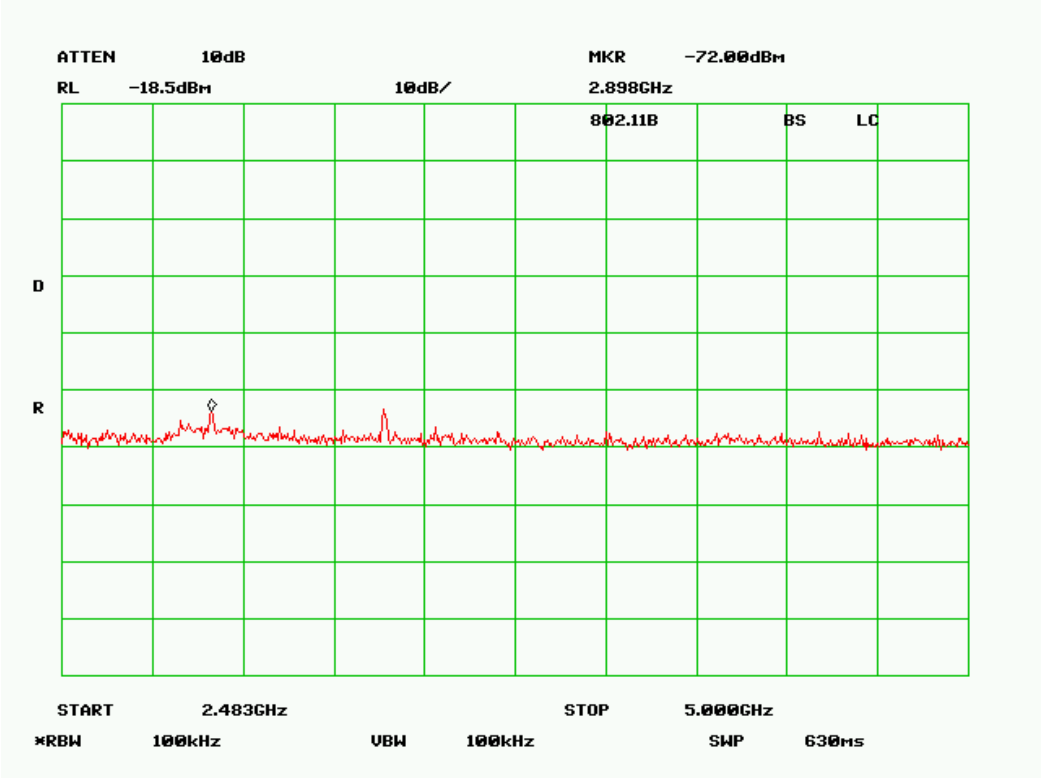
Base Set (WF6972)

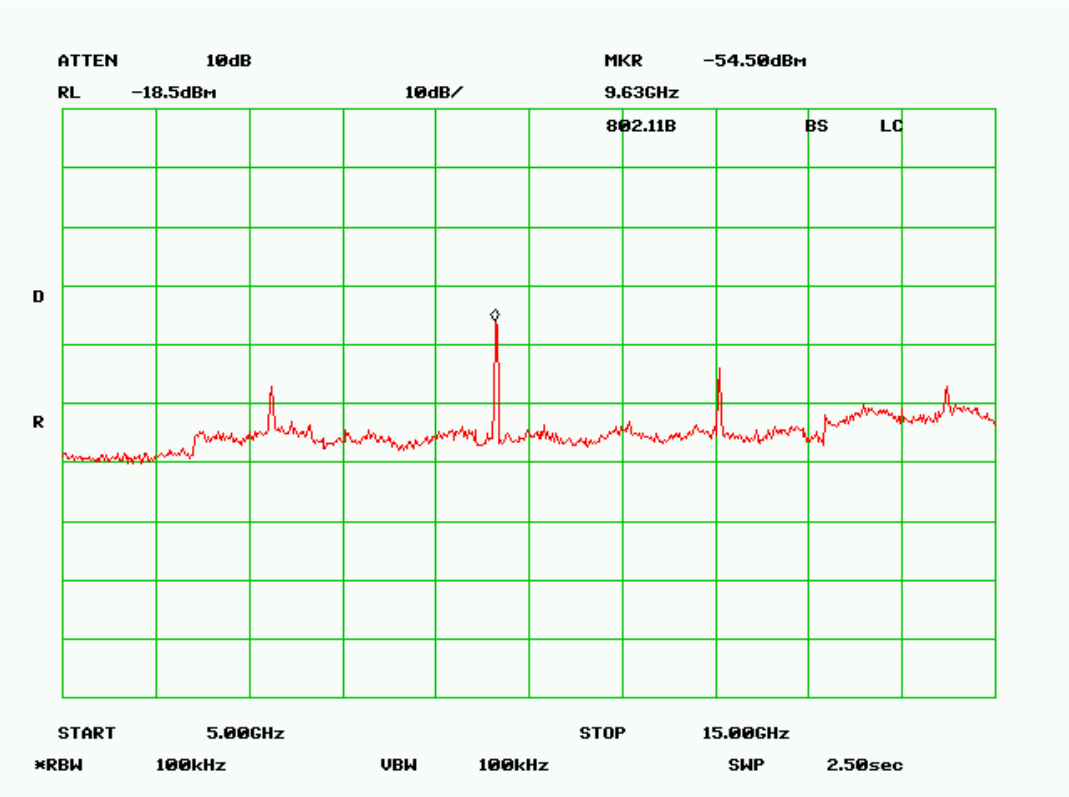
802.11b:

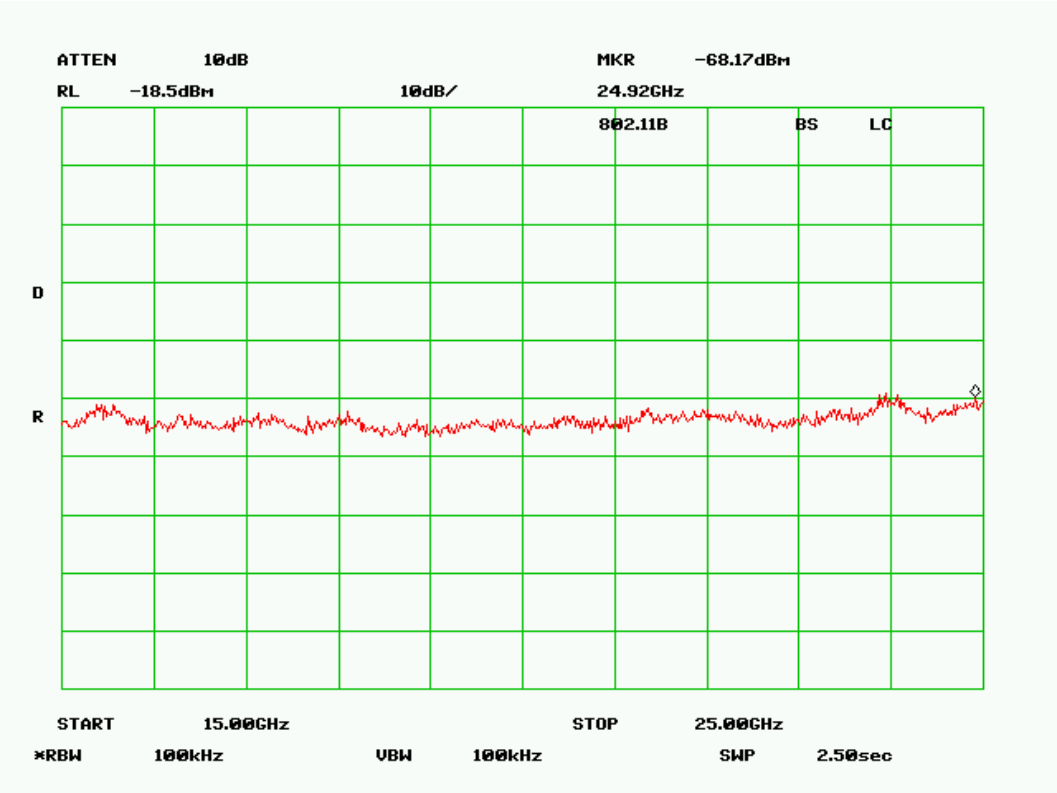
Low Channel



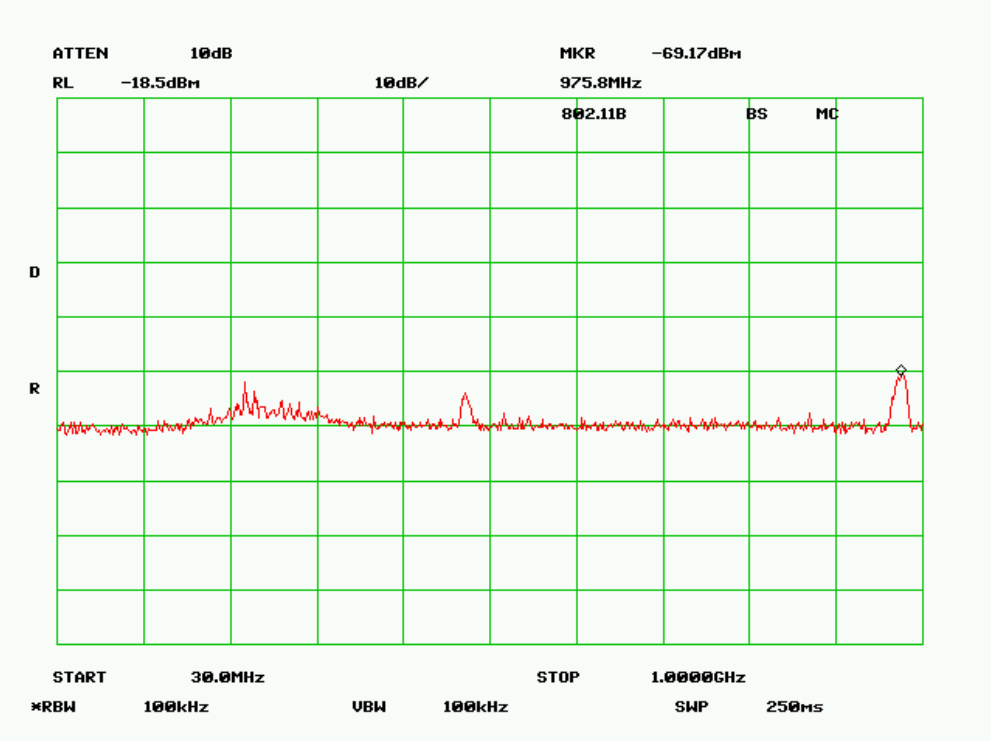


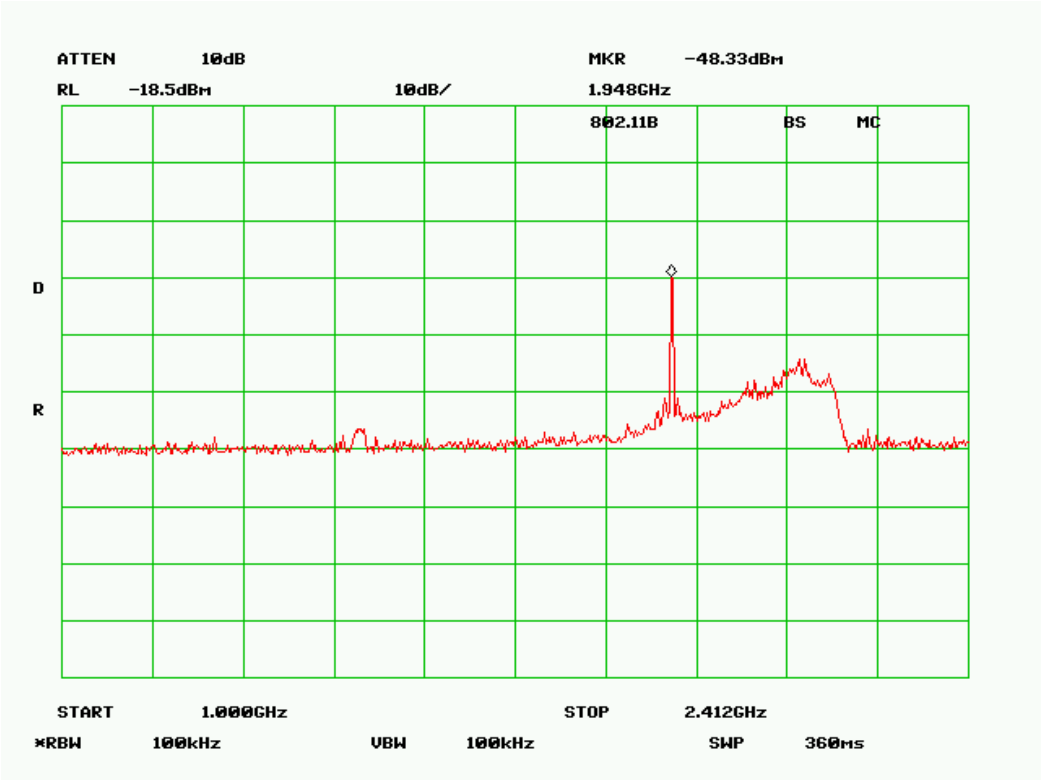

ATTEN 10dB
MKR -72.00dBm
RL -18.5dBm
10dB/
2.898GHz
802.11B
BS LC
D
R
START 2.483GHz
STOP 5.000GHz
*RBW 100kHz
VBW 100kHz
SWP 630ms

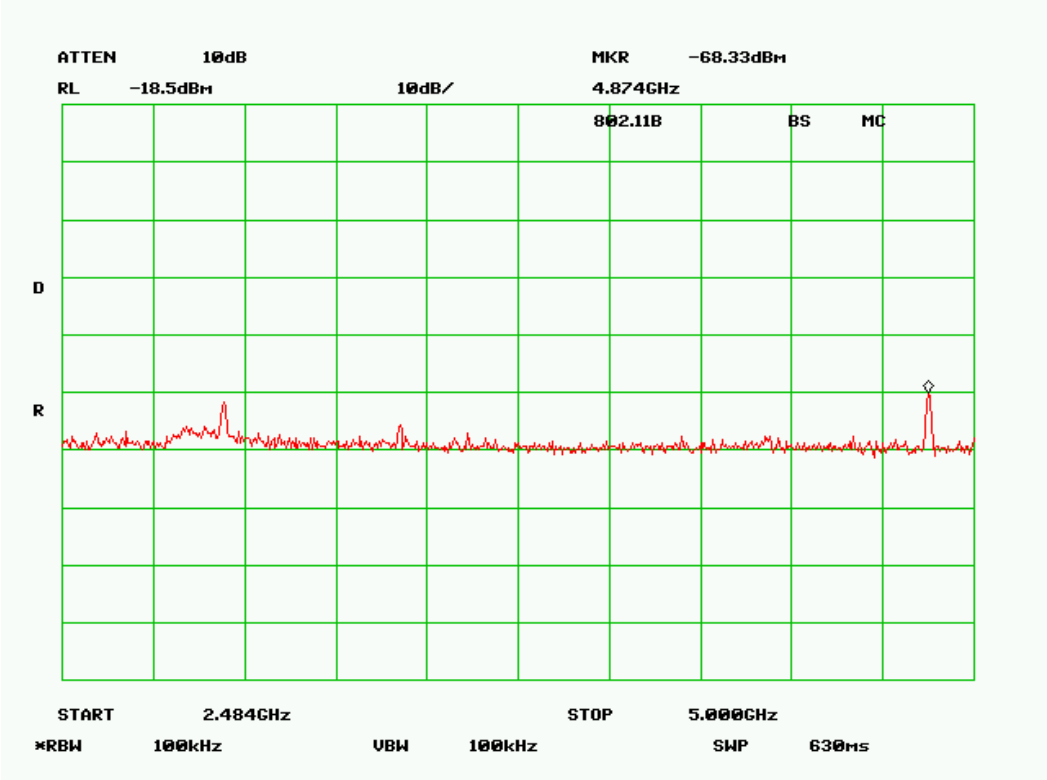

ATTEN 10dB
MKR -54.50dBm
RL -18.5dBm
10dB/
9.63GHz
802.11B
BS LC
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

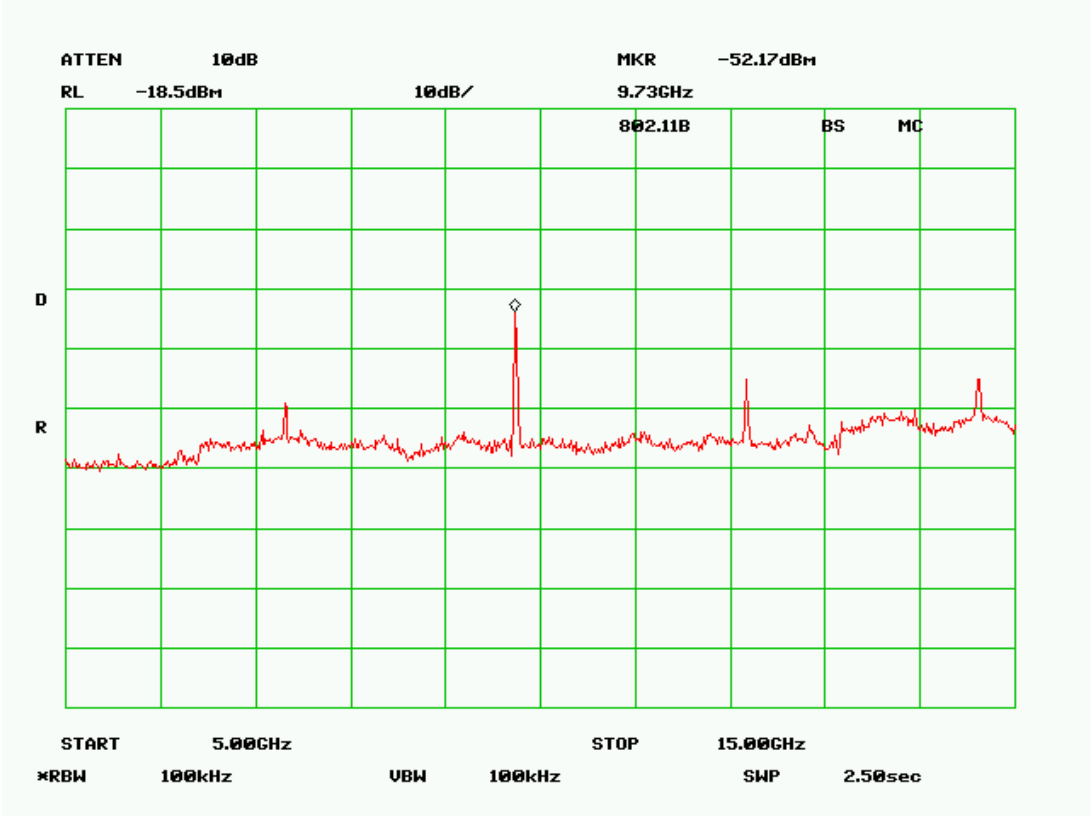


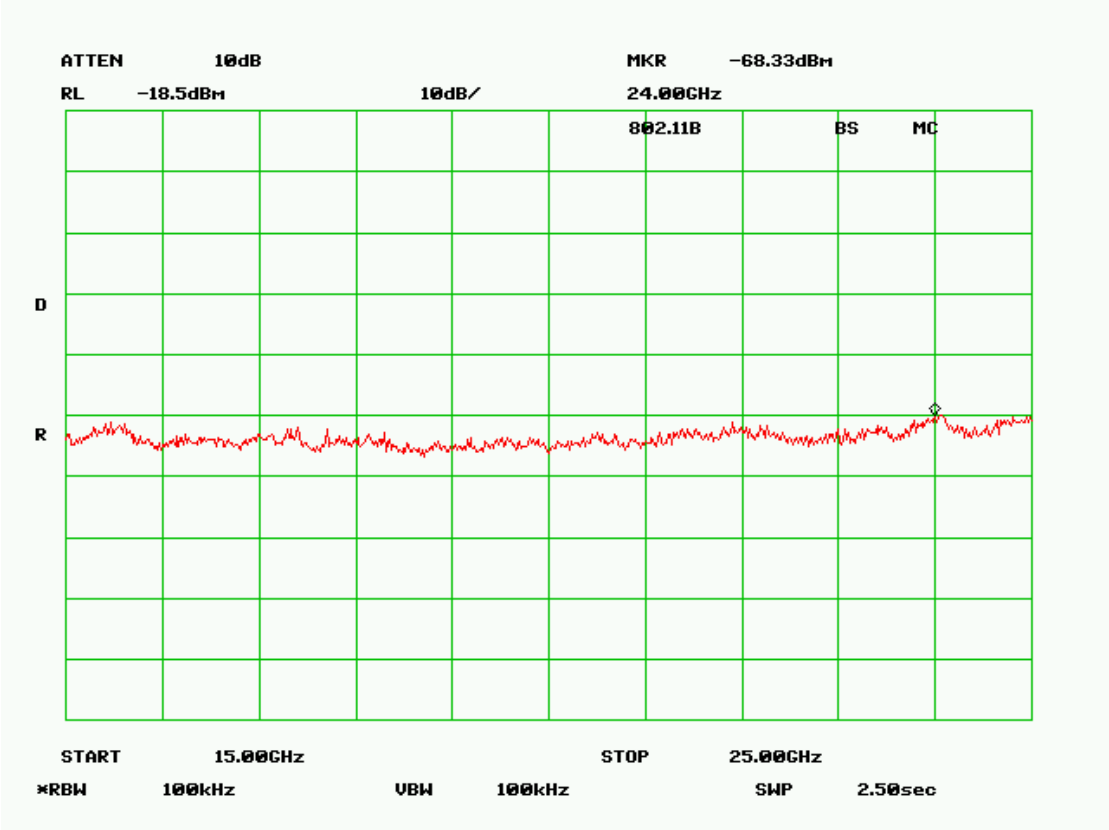
Middle Channel



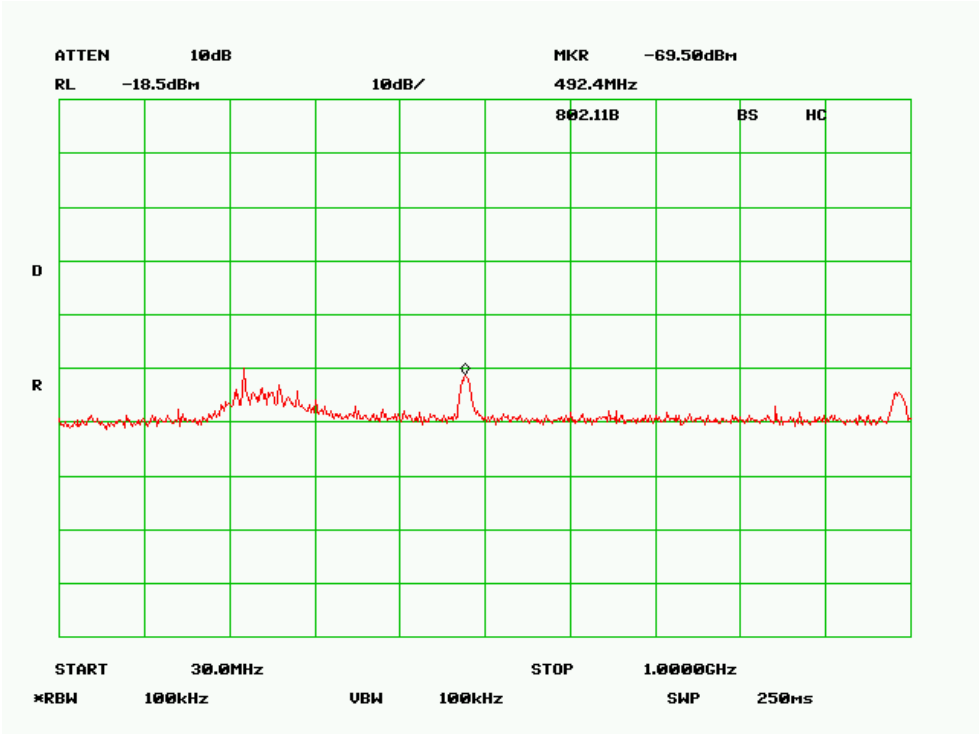

ATTEN 10dB
MKR -48.33dBm
RL -18.5dBm
10dB/
1.948GHz
802.11B
BS
MC
D
R
START 1.000GHz
STOP 2.412GHz
*RBW 100kHz
VBW 100kHz
SWP 360ms

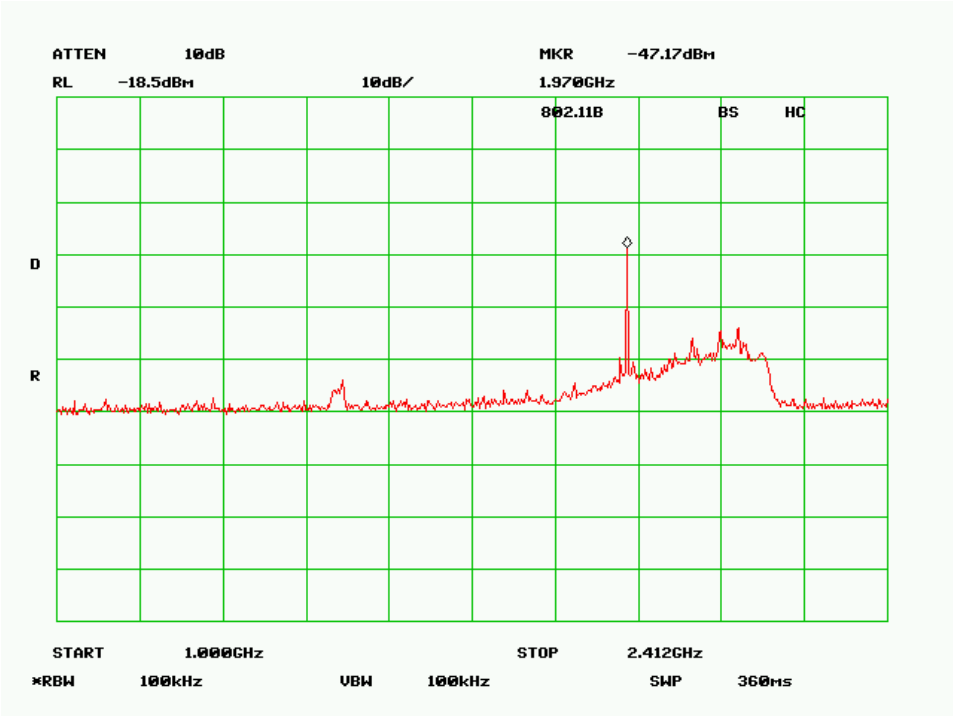

ATTEN 10dB
MKR -68.33dBm
RL -18.5dBm
10dB/
4.874GHz
802.11B
BS
MC
D
R
START 2.484GHz
STOP 5.000GHz
*RBW 100kHz
VBW 100kHz
SWP 630ms

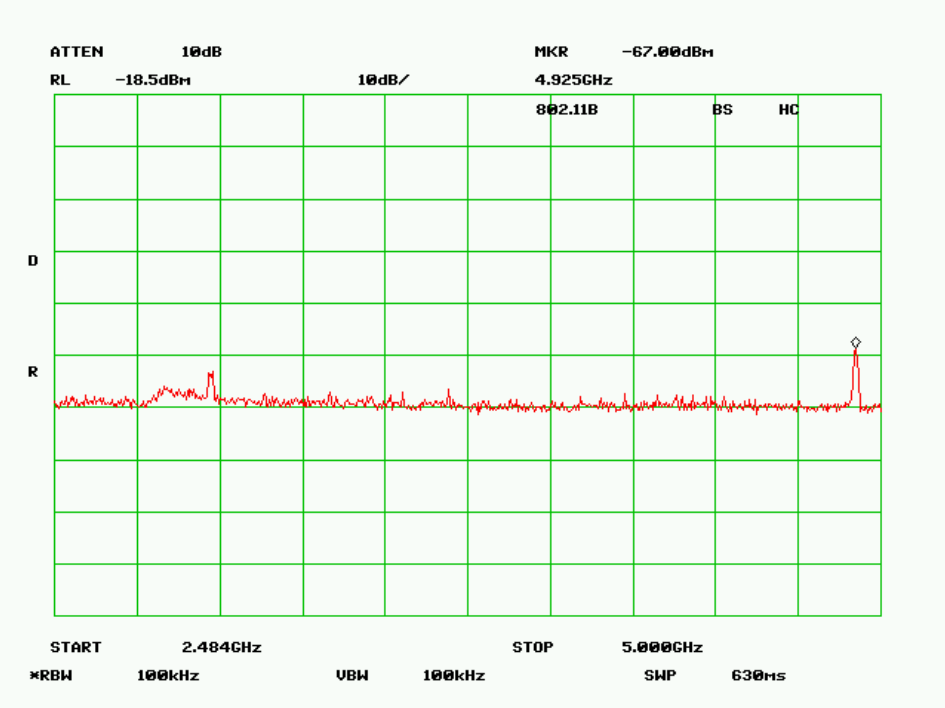

ATTEN 10dB
MKR -52.17dBm
RL -18.5dBm
10dB/
9.73GHz
802.11B
BS MC
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

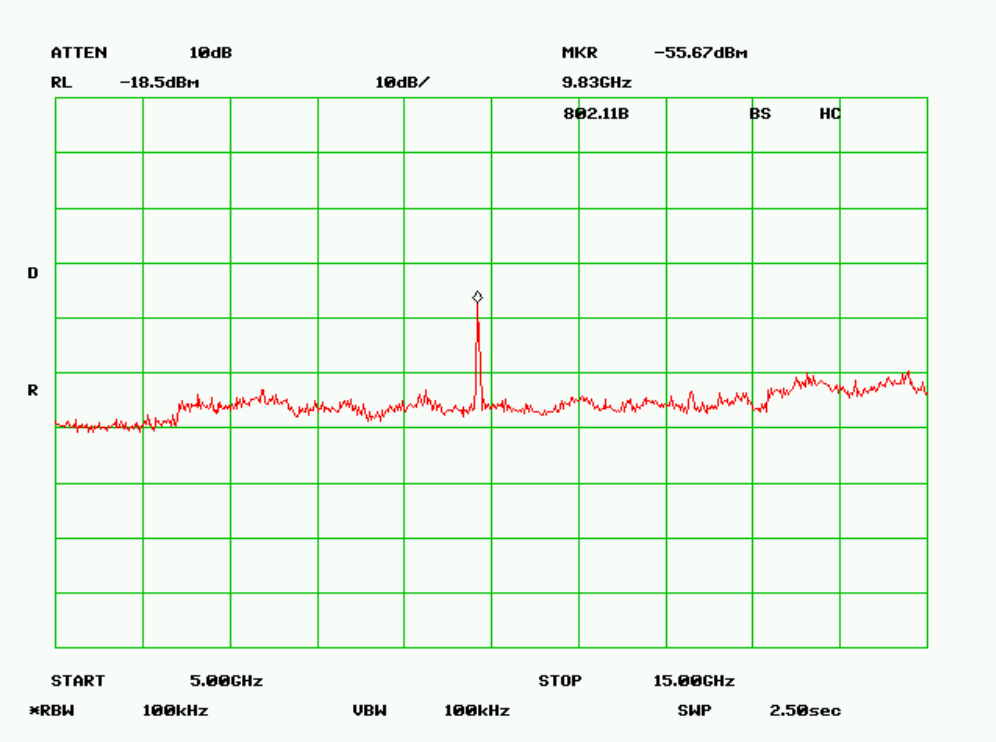

ATTEN 10dB
MKR -68.33dBm
RL -18.5dBm
10dB/
24.00GHz
802.11B
BS MC
D
R
START 15.00GHz
STOP 25.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

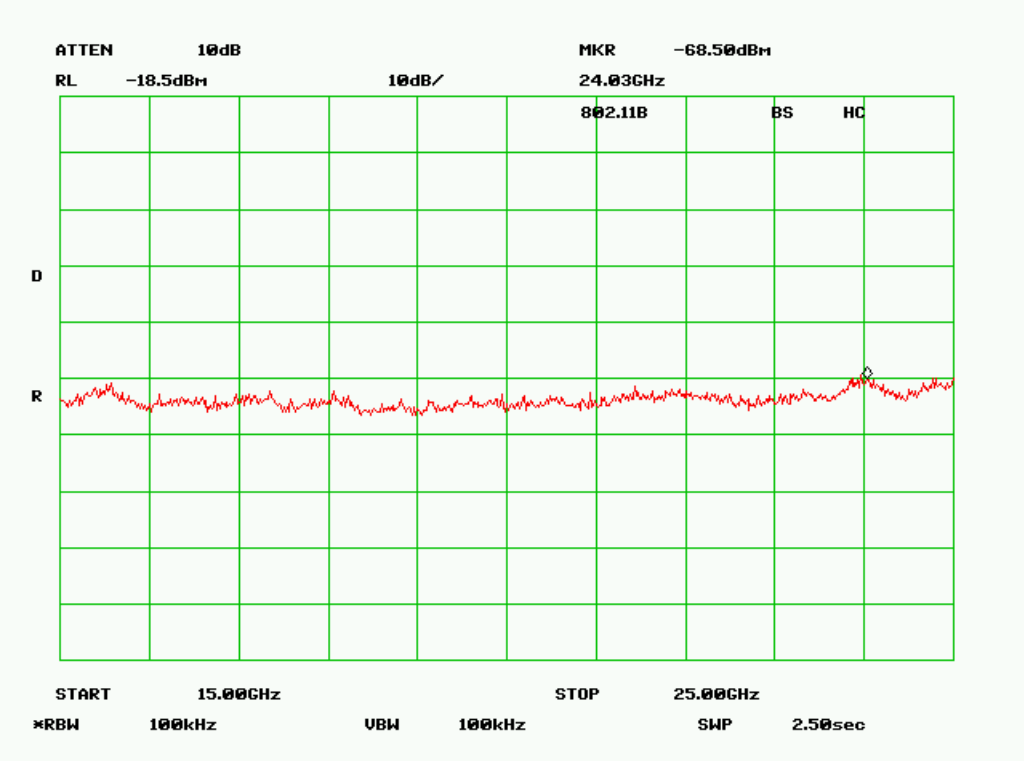
High Channel





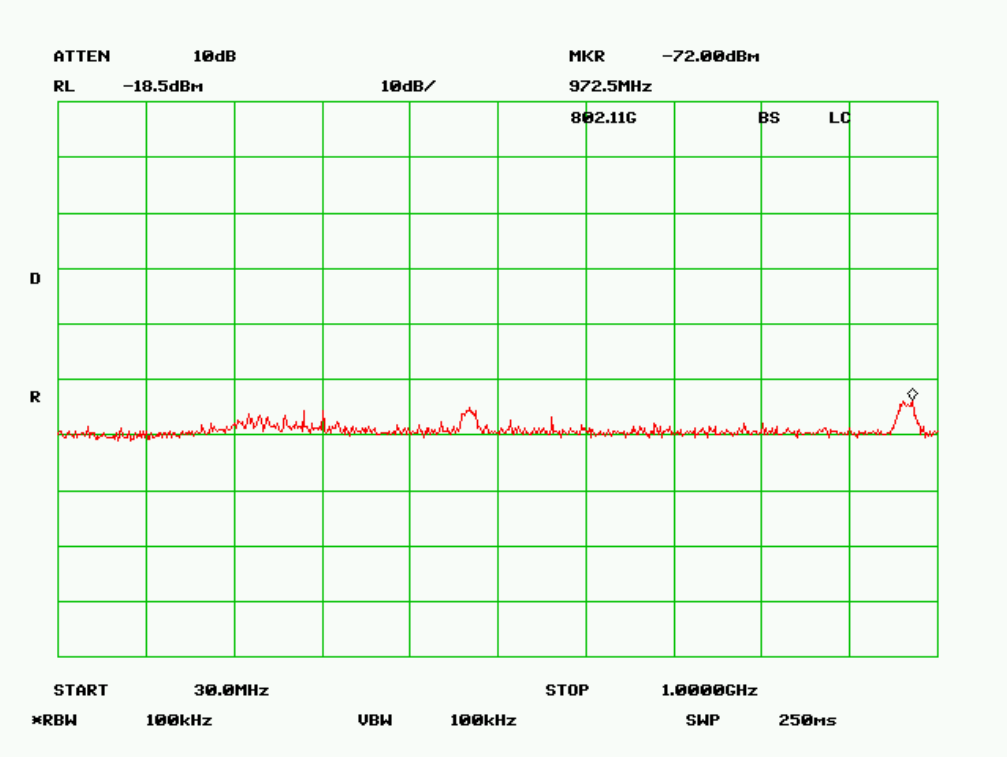

ATTEN 10dB
MKR -67.00dBm
RL -18.5dBm
10dB/
4.925GHz
802.11B
BS HC
D
R
START 2.484GHz
STOP 5.000GHz
*RBW 100kHz
VBW 100kHz
SWP 630ms

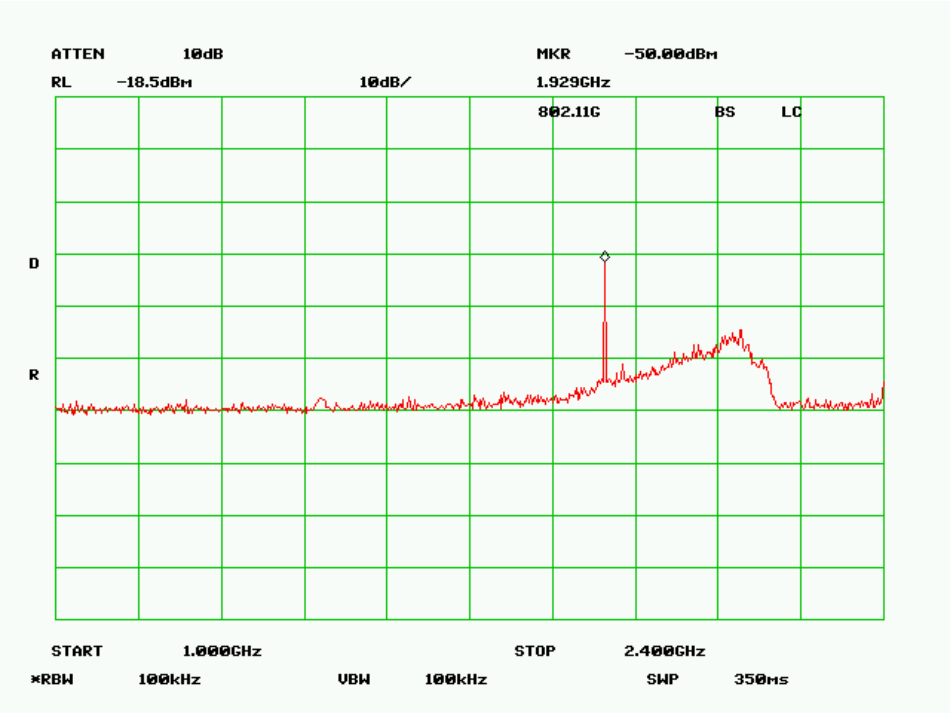

ATTEN 10dB
MKR -55.67dBm
RL -18.5dBm
10dB/
9.83GHz
802.11B
BS HC
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

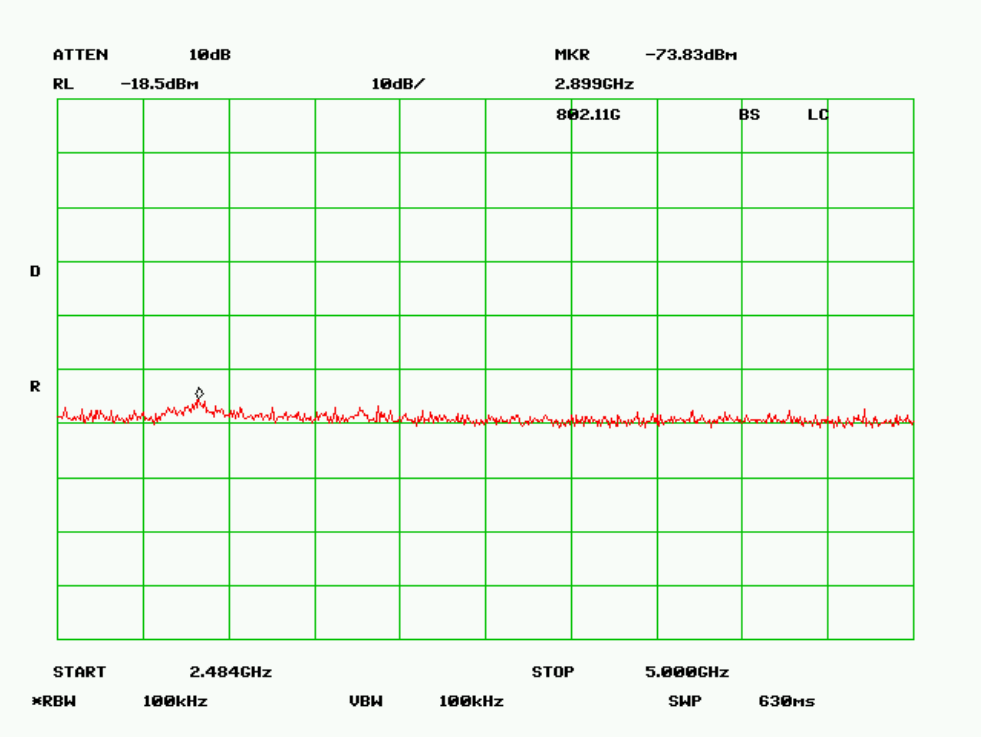


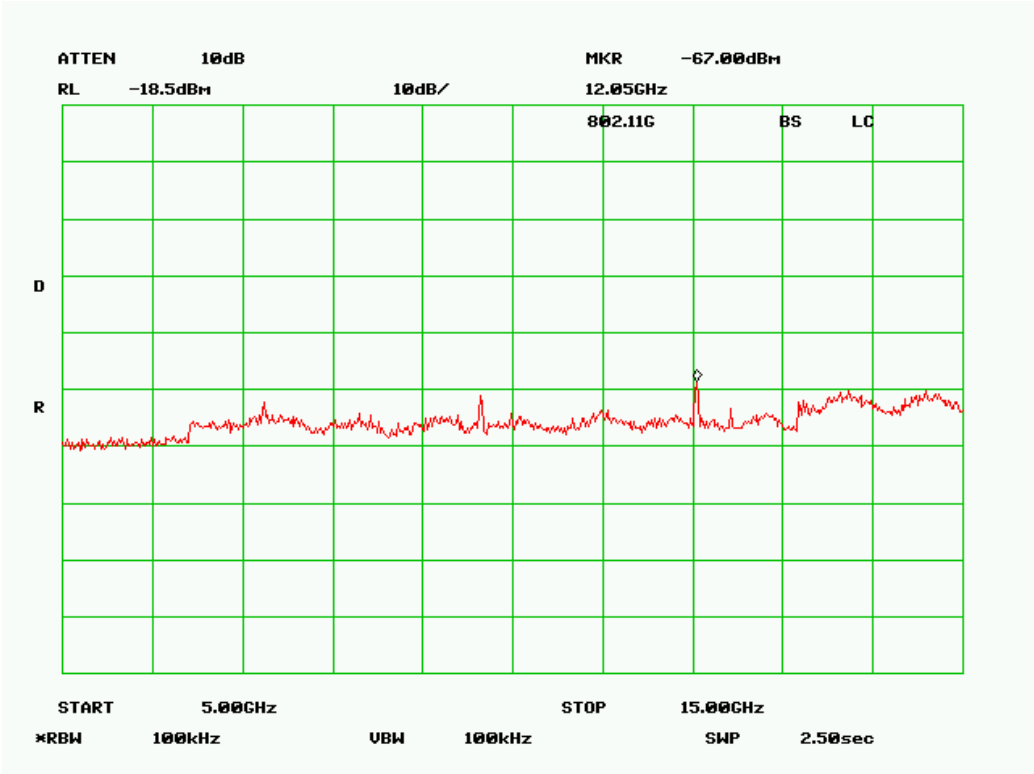
802.11g:

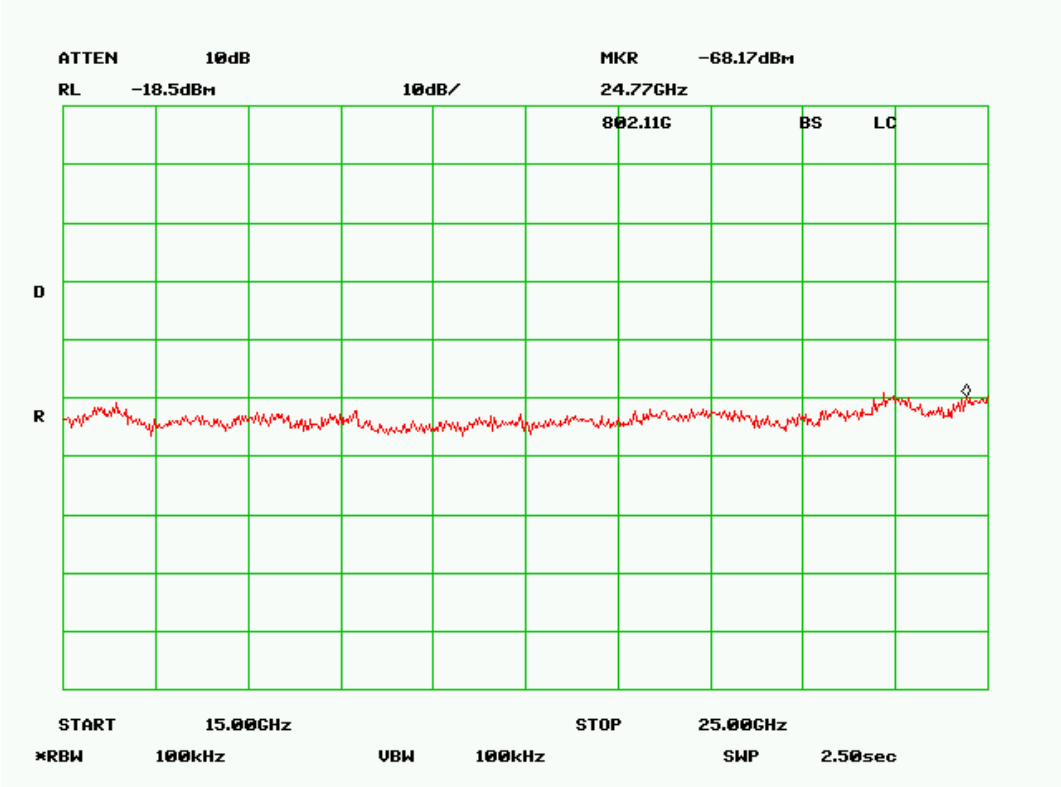
Low Channel



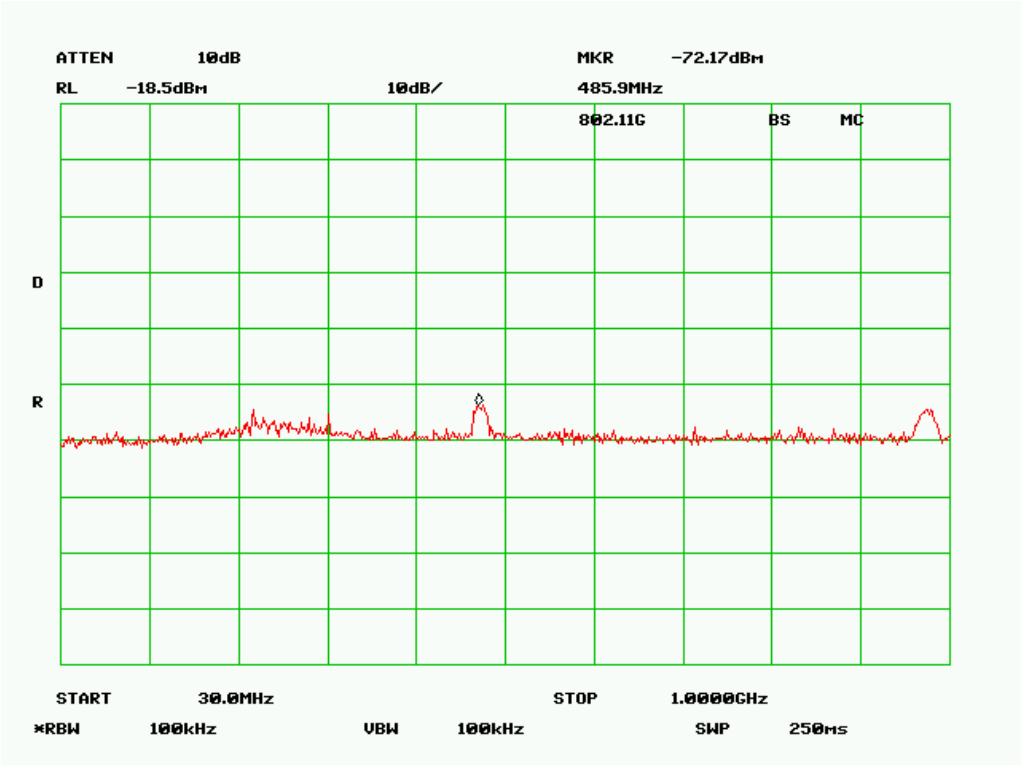

ATTEN 10dB
MKR -50.00dBm
RL -18.5dBm
10dB/
1.929GHz
802.11G
BS LC
D
R
START 1.000GHz
STOP 2.400GHz
*RBW 100kHz
VBW 100kHz
SWP 350ms

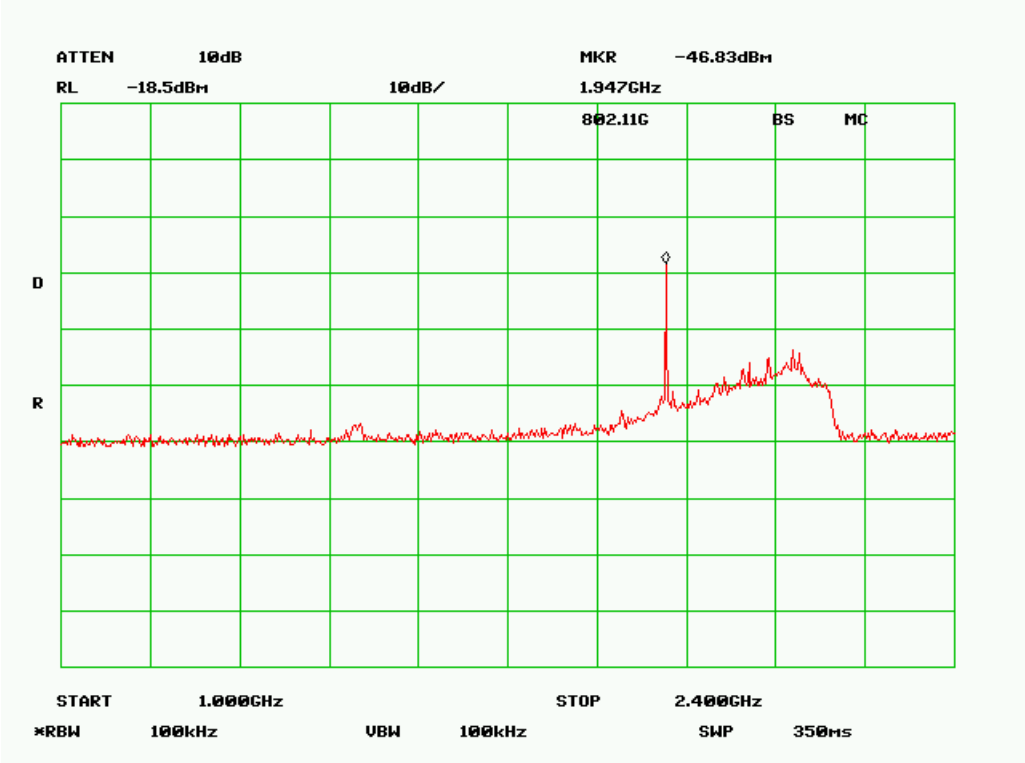

ATTEN 10dB
MKR -73.83dBm
RL -18.5dBm
10dB/
2.899GHz
802.11G
BS LC
D
R
START 2.484GHz
STOP 5.000GHz
*RBW 100kHz
VBW 100kHz
SWP 630ms

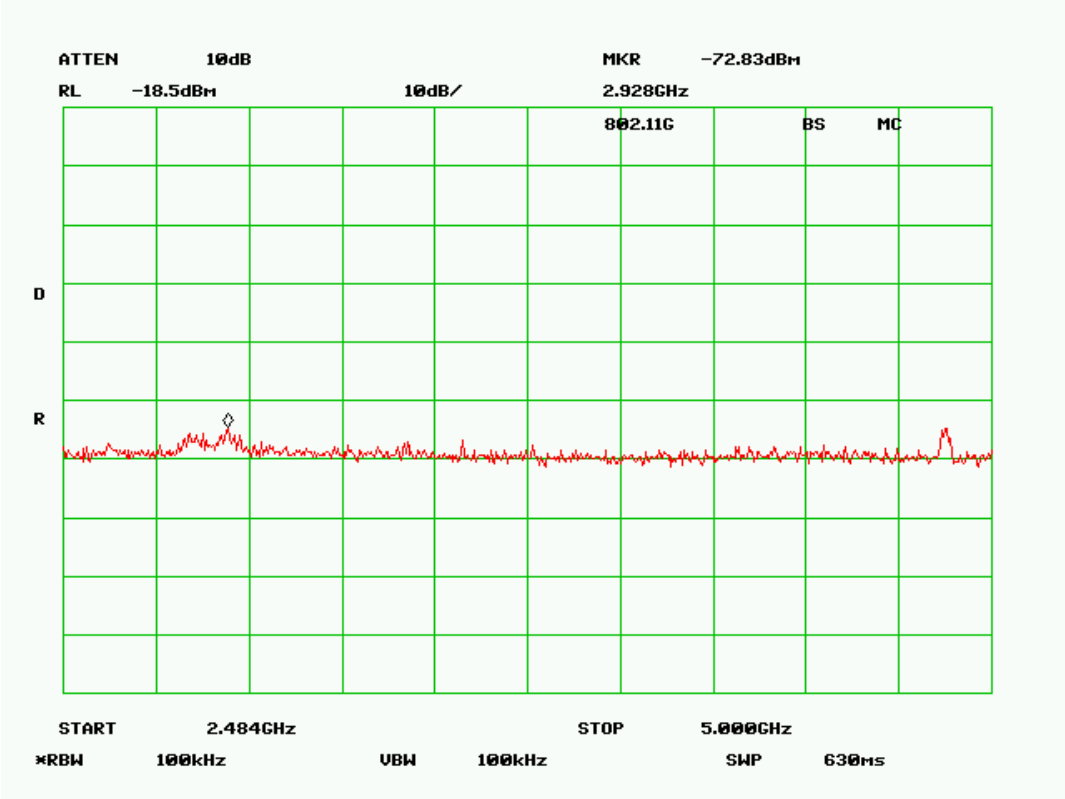

ATTEN 10dB
MKR -67.00dBm
RL -18.5dBm
10dB/
12.05GHz
802.11G
BS LC
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

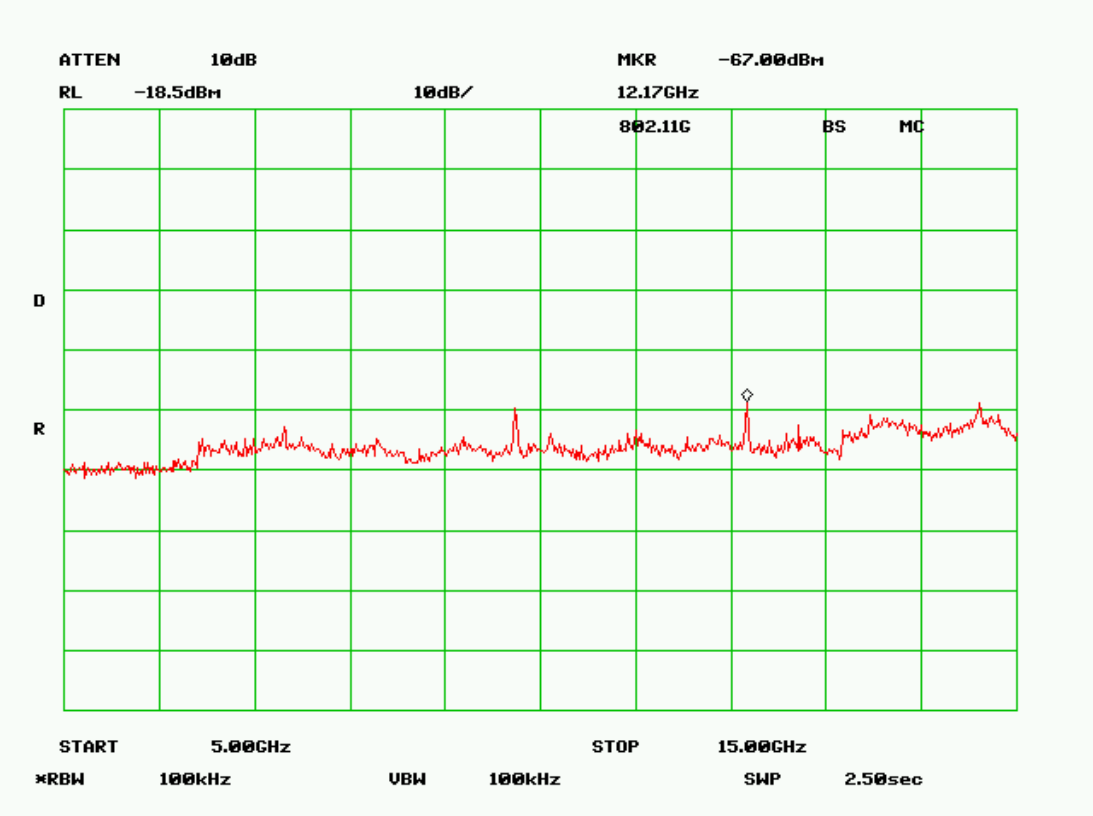

ATTEN 10dB
MKR -68.17dBm
RL -18.5dBm
10dB/
24.77GHz
802.11G
BS LC
D
R
START 15.00GHz
STOP 25.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

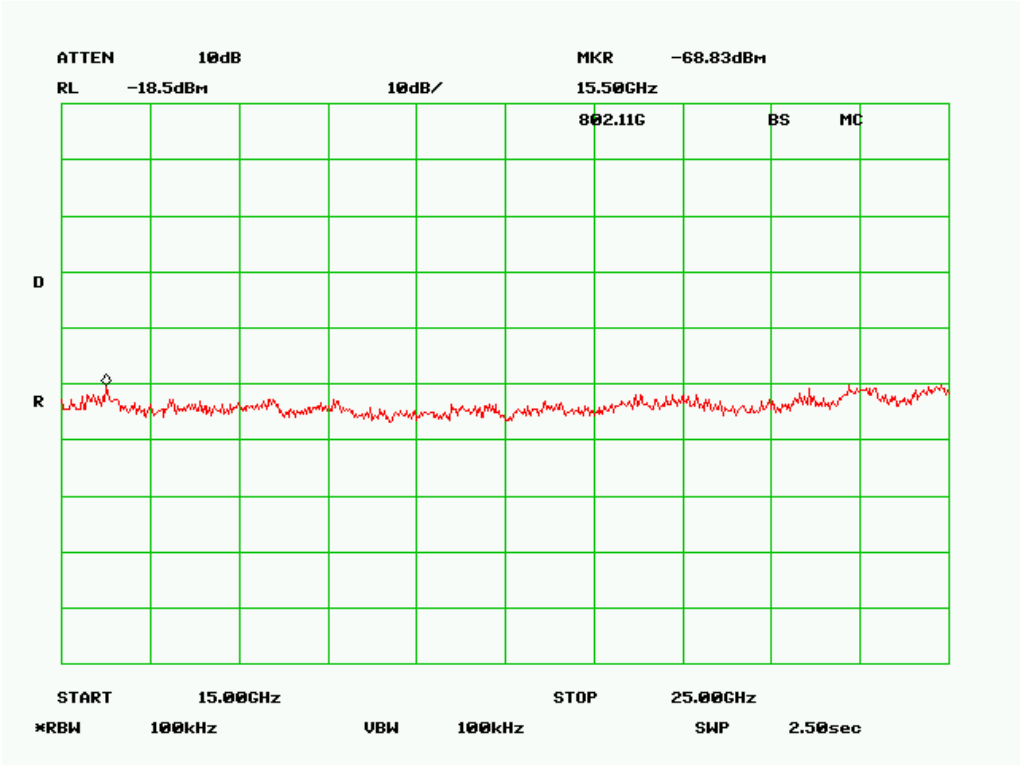
Middle Channel



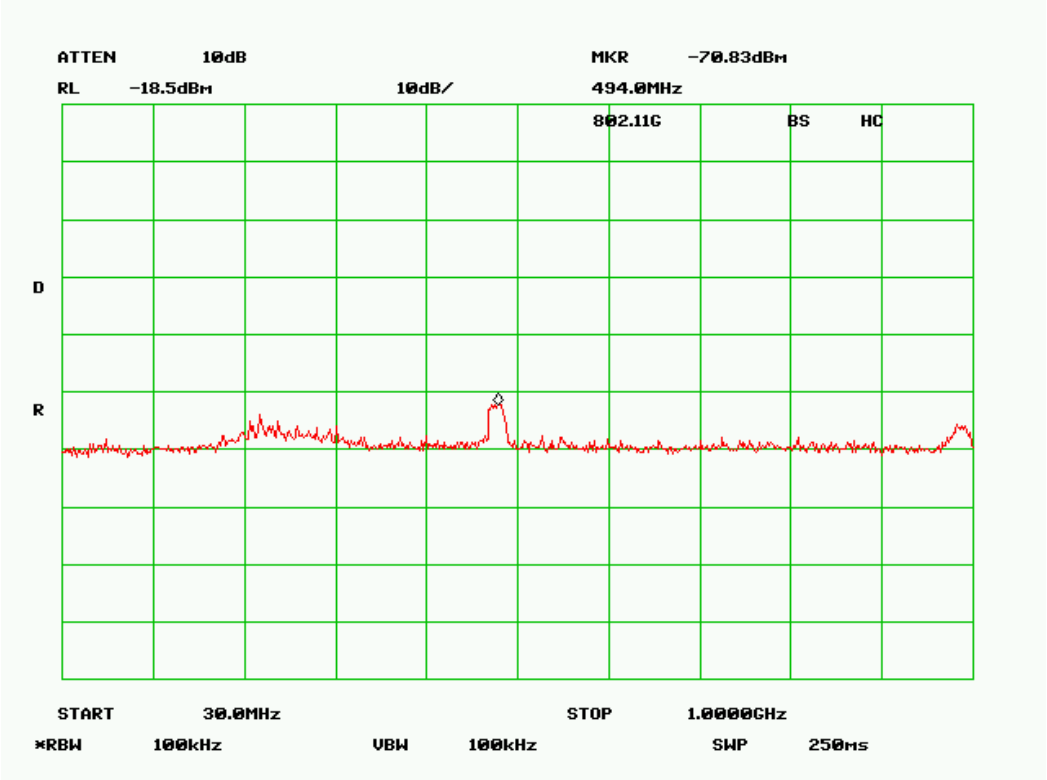


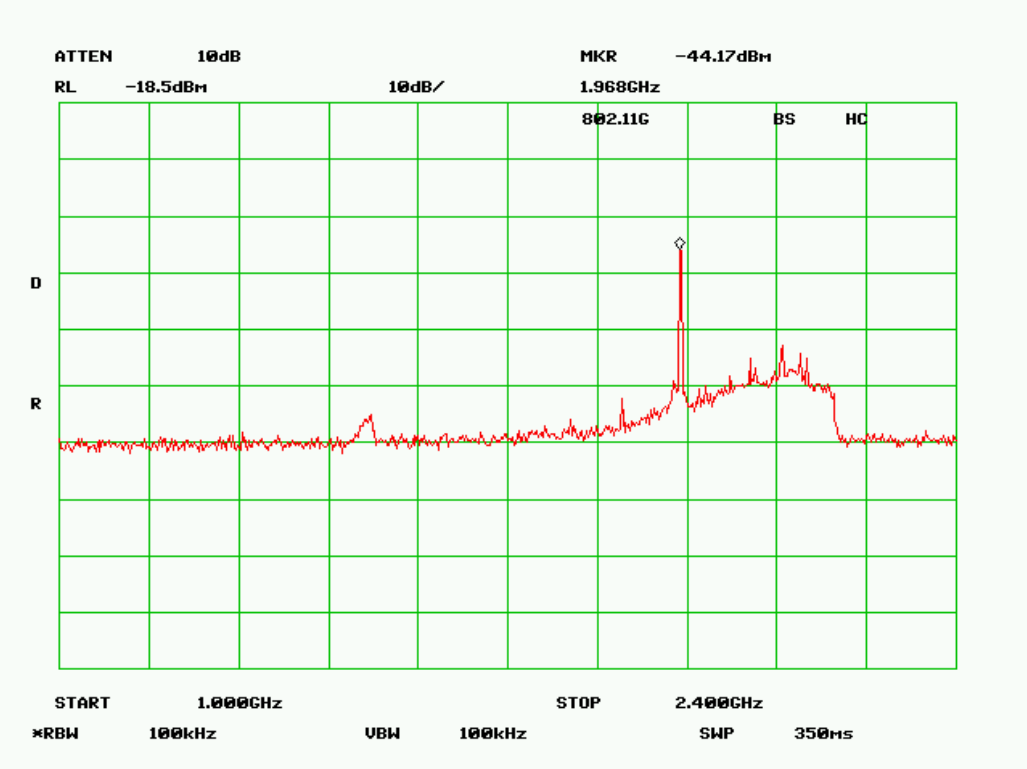

ATTEN 10dB
MKR -72.83dBm
RL -18.5dBm
10dB/
2.928GHz
802.11G
BS MC
D
R
START 2.484GHz
STOP 5.000GHz
*RBW 100kHz
VBW 100kHz
SWP 630ms

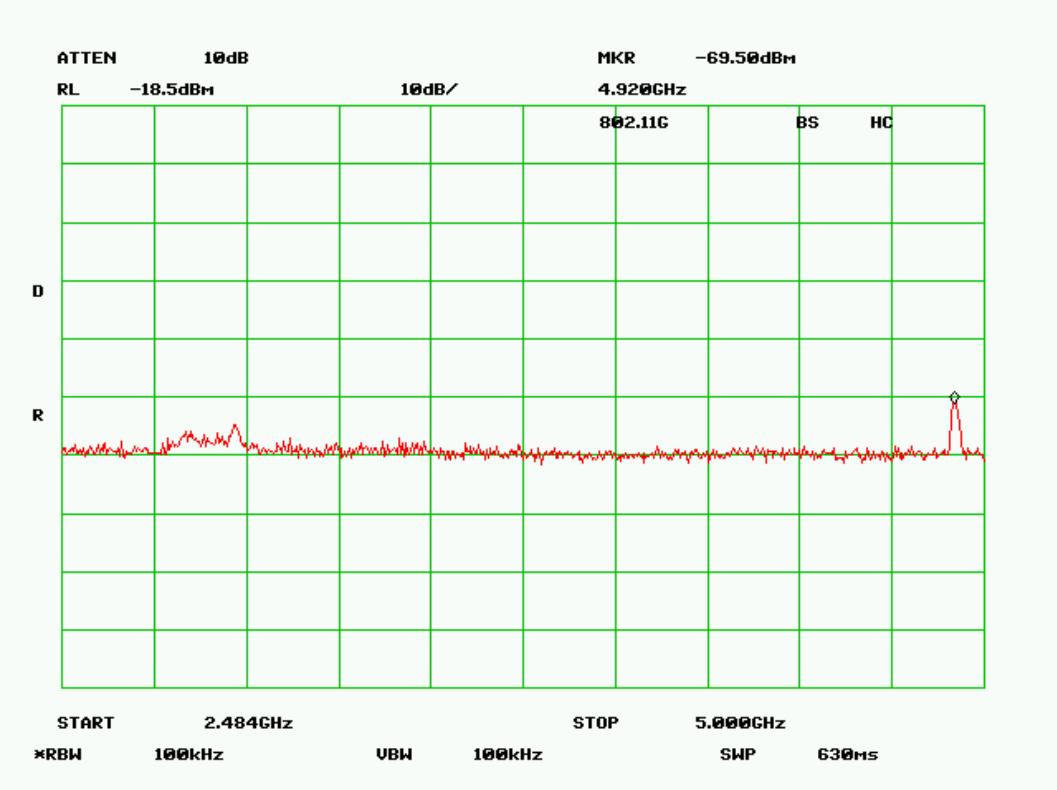

ATTEN 10dB
MKR -67.00dBm
RL -18.5dBm
10dB/
12.17GHz
802.11G
BS MC
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

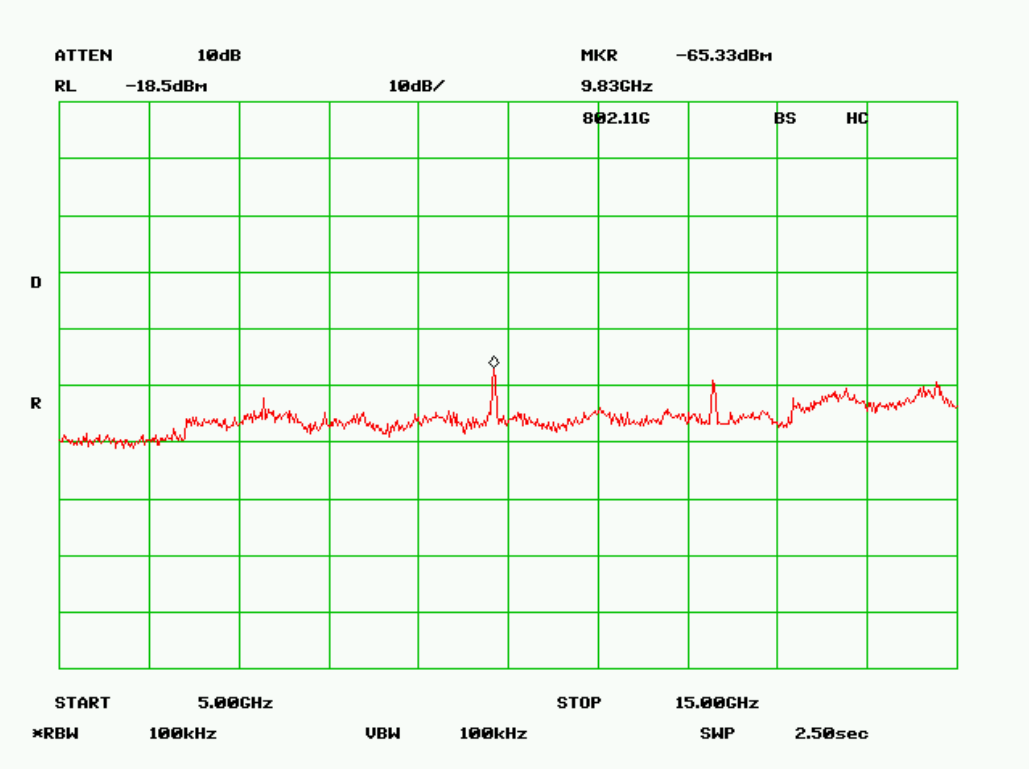


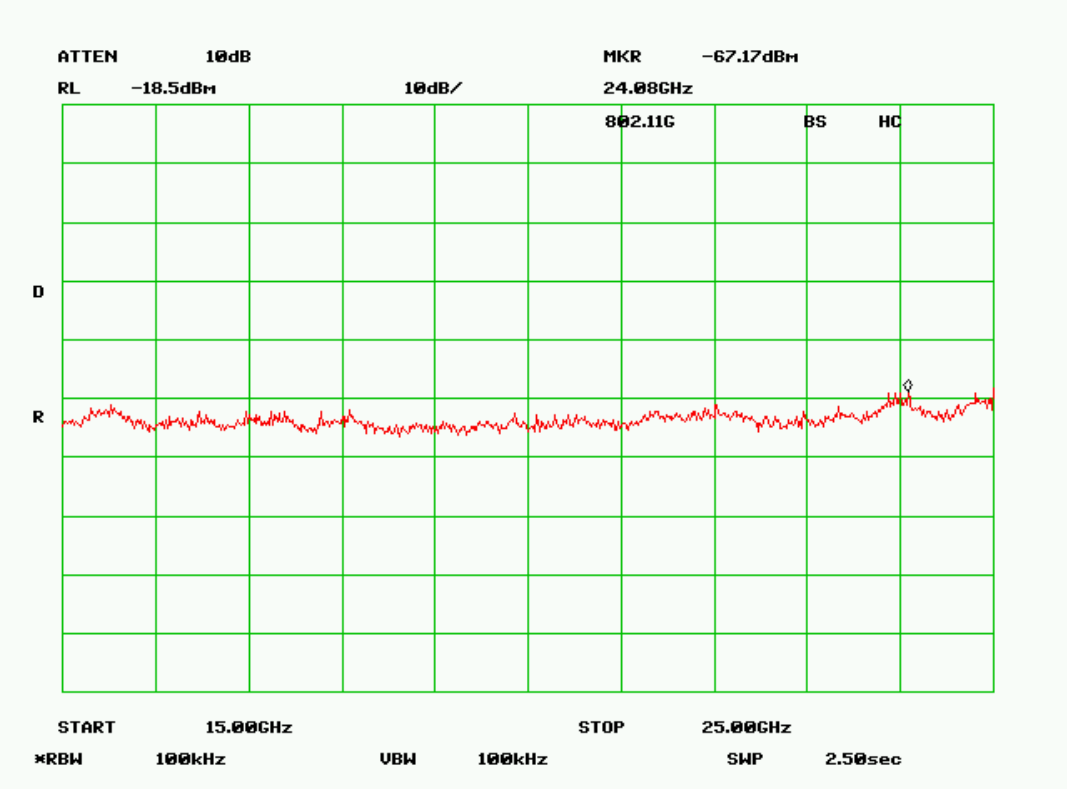
High Channel




ATTEN 10dB
MKR -44.17dBm
RL -18.5dBm
10dB/
1.968GHz
802.11G
BS HC
D
R
START 1.000GHz
STOP 2.400GHz
*RBW 100kHz
VBW 100kHz
SWP 350ms


ATTEN 10dB
MKR -69.50dBm
RL -18.5dBm
10dB/
4.920GHz
802.11G
BS HC
D
R
START 2.484GHz
STOP 5.000GHz
*RBW 100kHz
VBW 100kHz
SWP 630ms

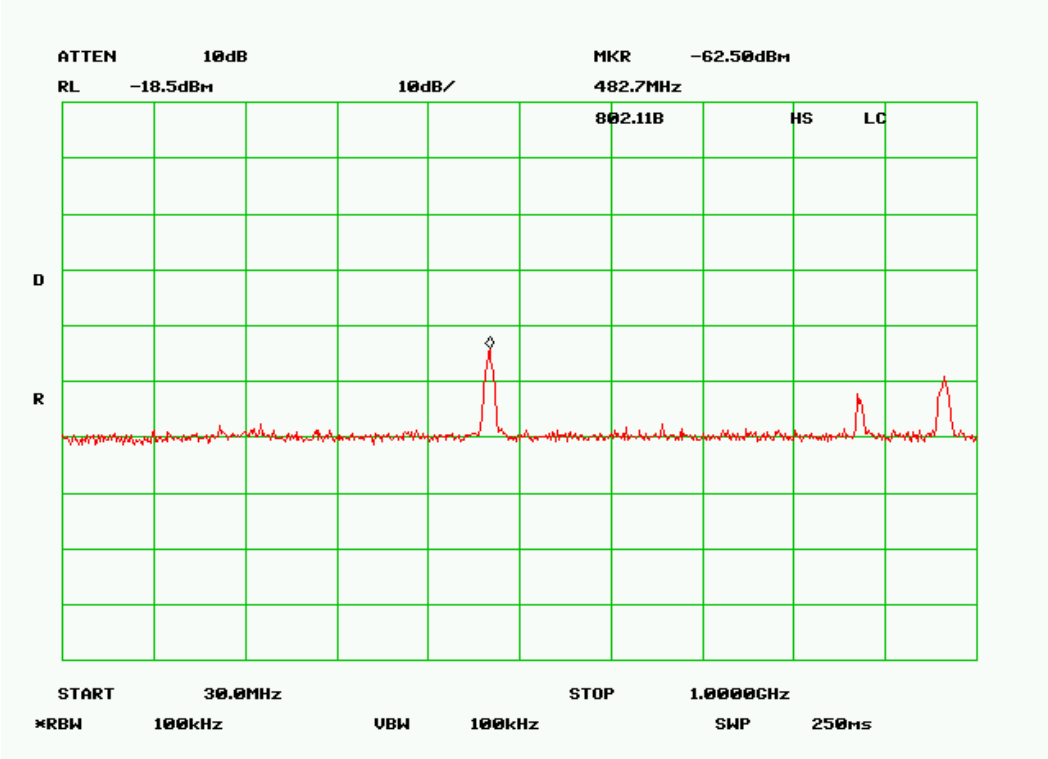

ATTEN 10dB
MKR -65.33dBm
RL -18.5dBm
10dB/
9.83GHz
802.11G
BS HC
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

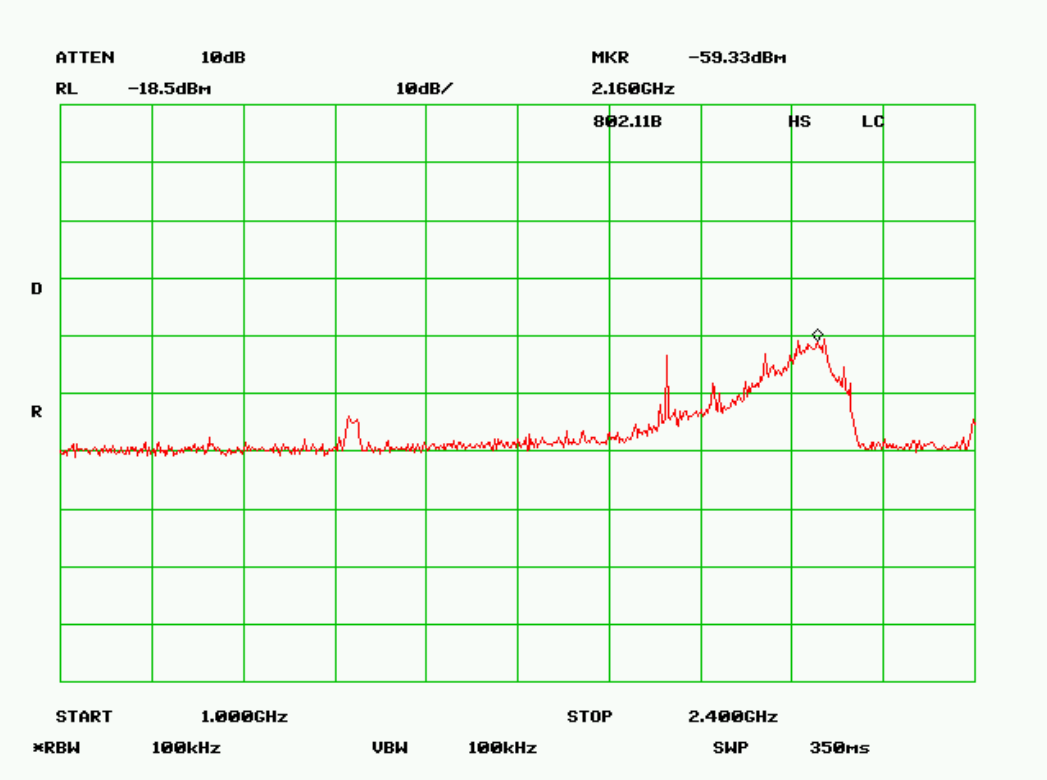

ATTEN 10dB
MKR -67.17dBm
RL -18.5dBm
10dB/
24.08GHz
802.11G
BS HC
D
R
START 15.00GHz
STOP 25.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

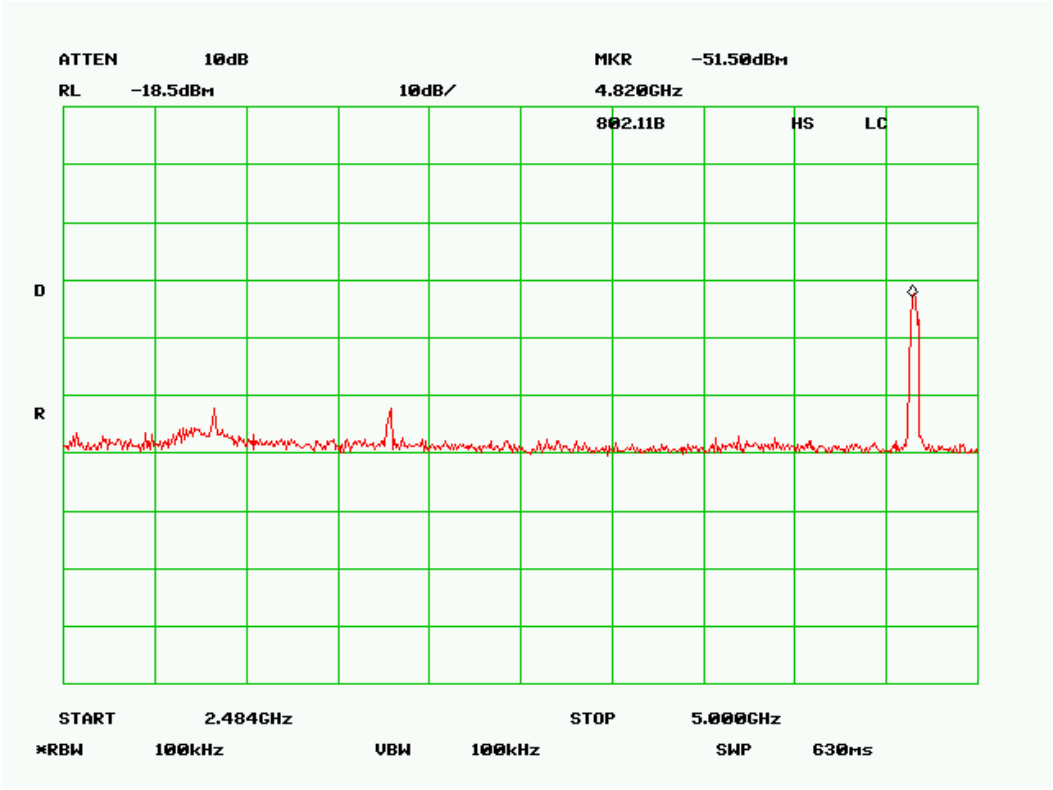
Hand Set (WF6972 & WF6909)

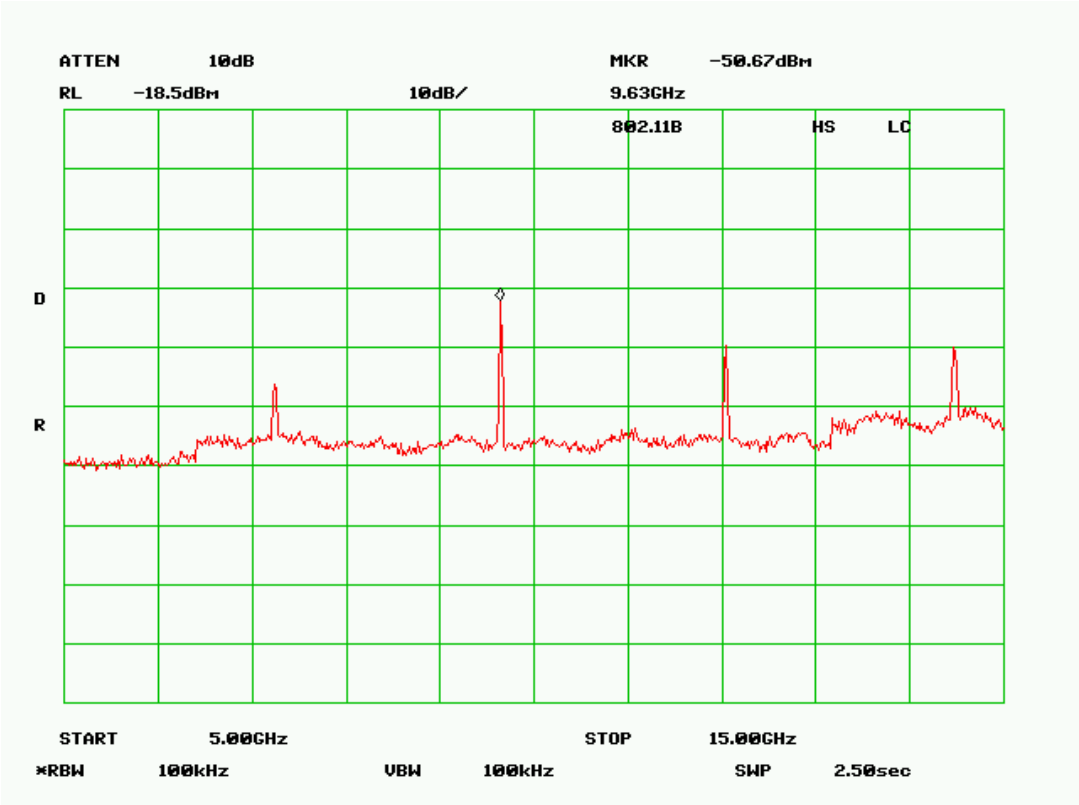
802.11b:

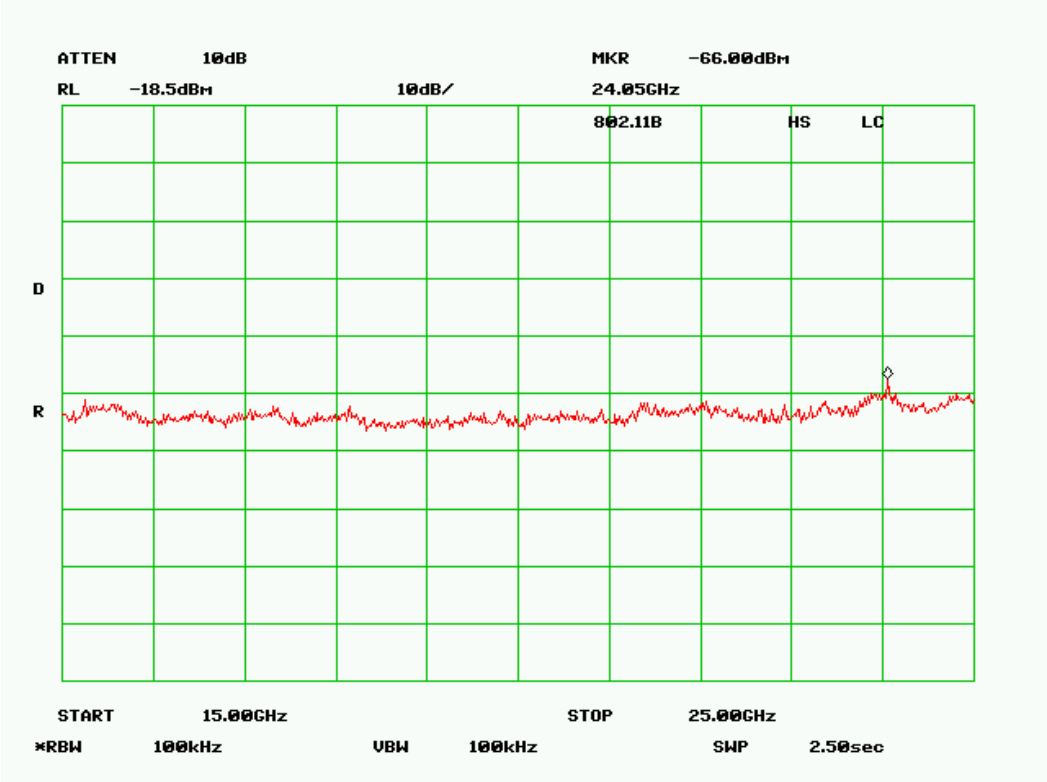
Low Channel



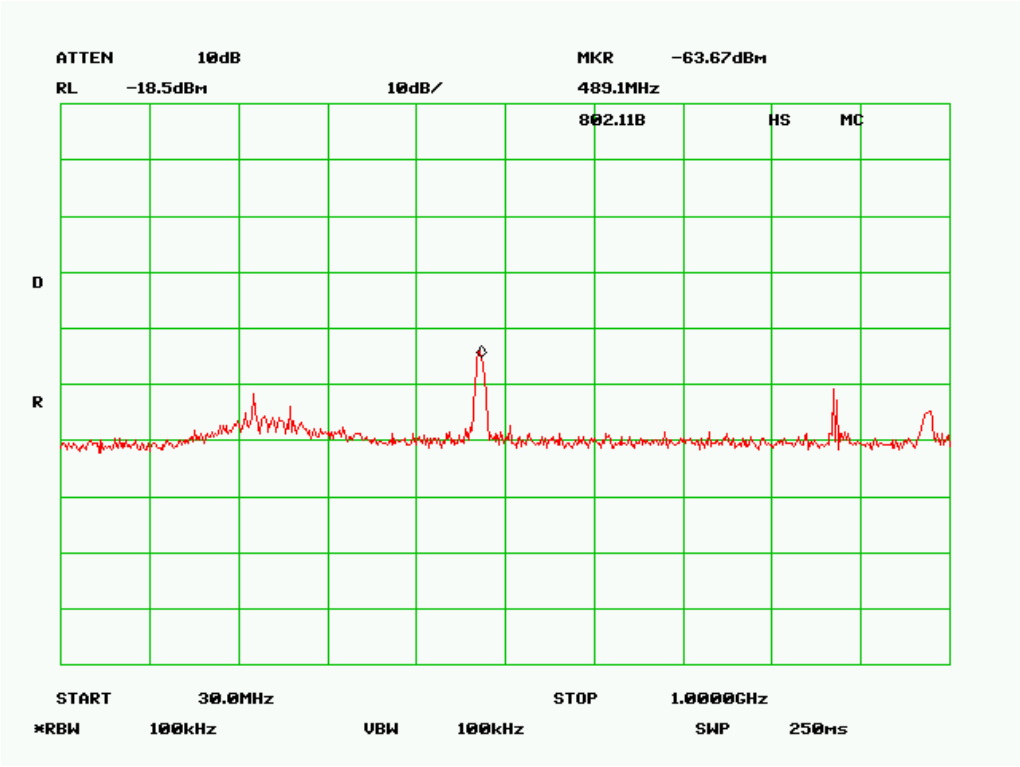


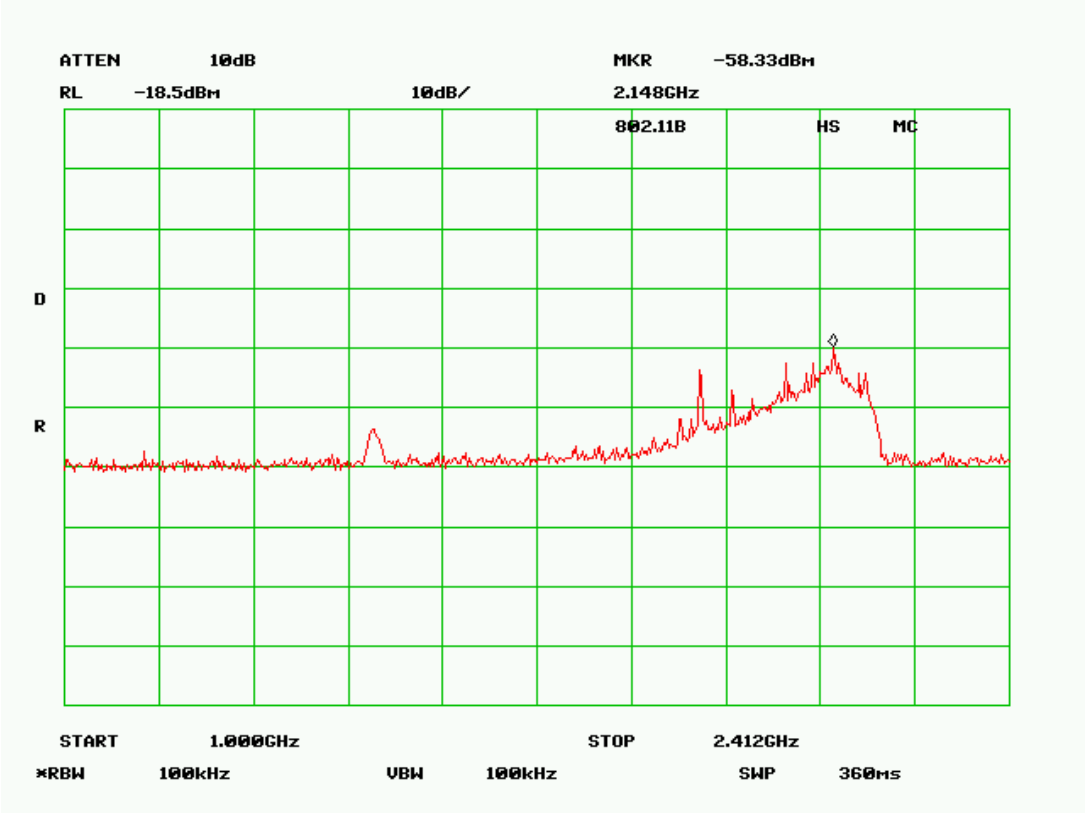

ATTEN 10dB
MKR -51.50dBm
RL -18.5dBm
10dB/
4.820GHz
802.11B
HS
LC
D
R
START 2.484GHz
STOP 5.000GHz
*RBW 100kHz
VBW 100kHz
SWP 630ms

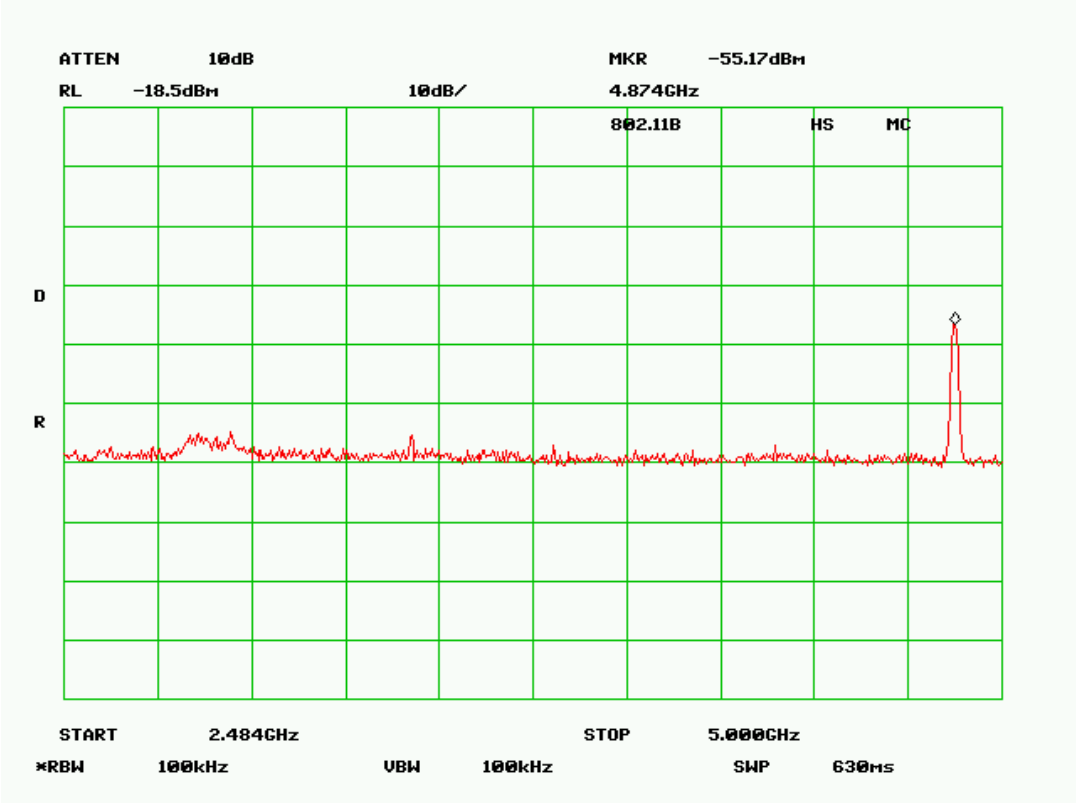

ATTEN 10dB
MKR -50.67dBm
RL -18.5dBm
10dB/
9.63GHz
802.11B
HS
LC
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

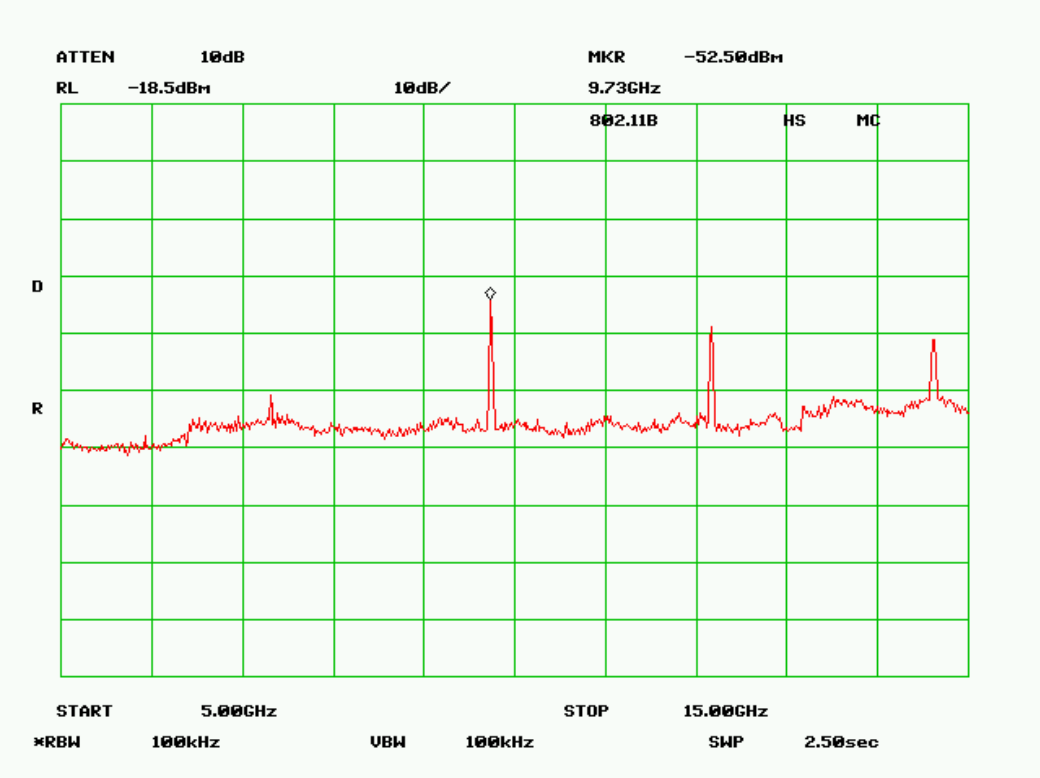


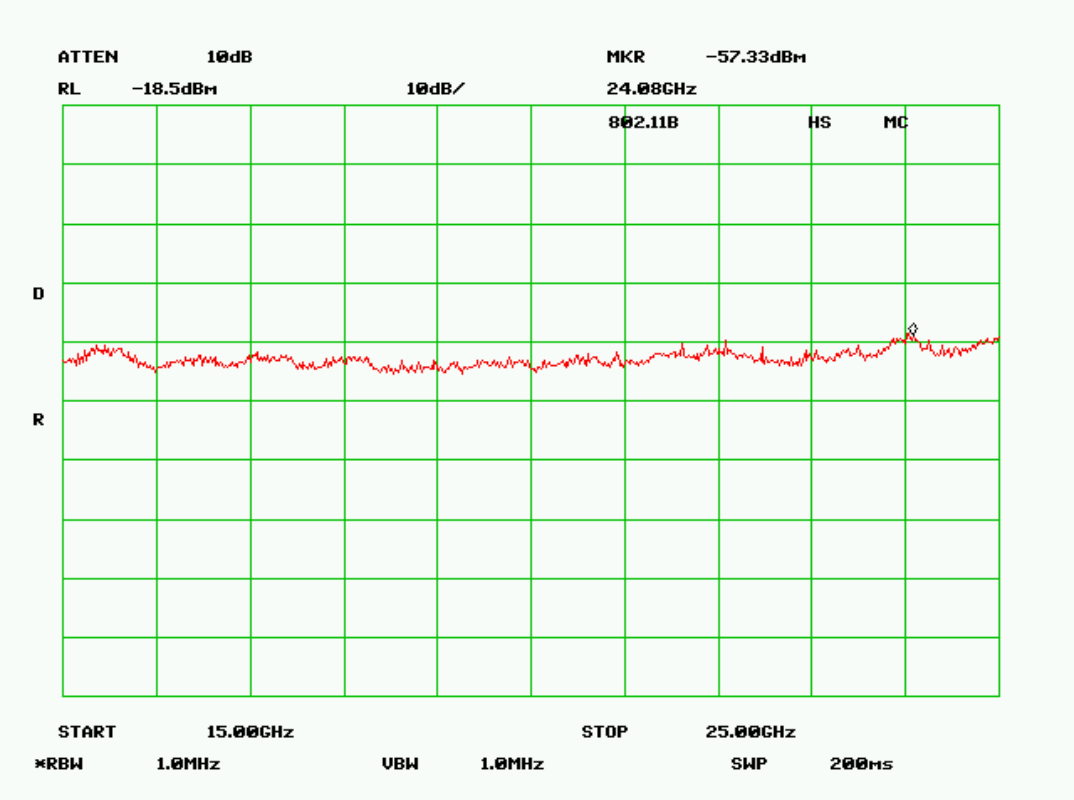
Middle Channel



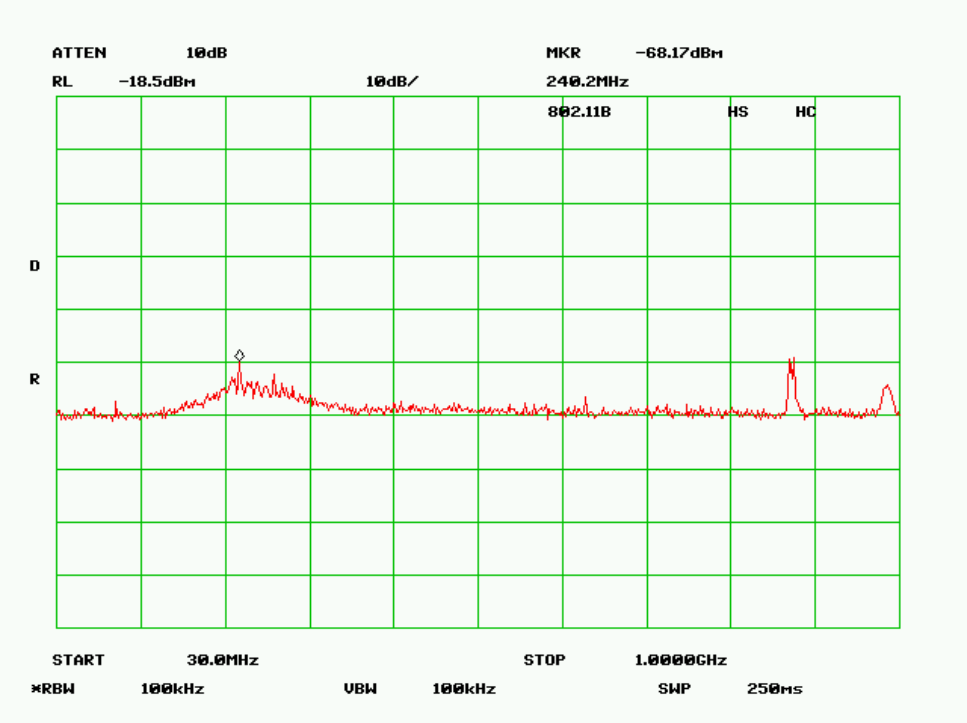

ATTEN 10dB
MKR -58.33dBm
RL -18.5dBm
10dB/
2.148GHz
802.11B
HS
MC
D
R
START 1.000GHz
STOP 2.412GHz
*RBW 100kHz
VBW 100kHz
SWP 360ms

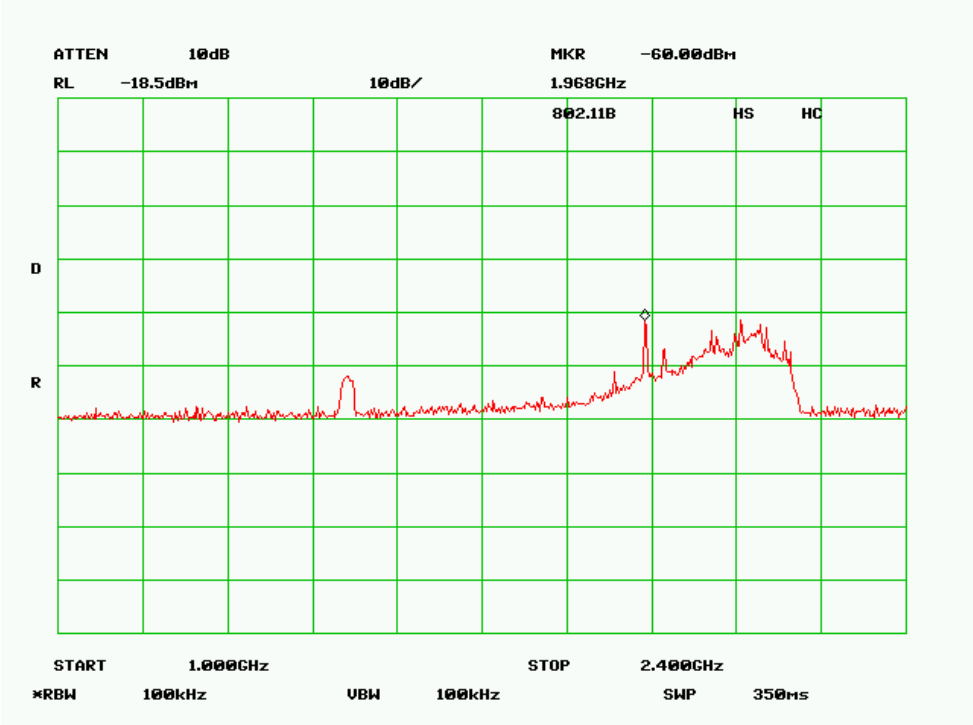

ATTEN 10dB
MKR -55.17dBm
RL -18.5dBm
10dB/
4.874GHz
802.11B
HS
MC
D
R
START 2.484GHz
STOP 5.000GHz
*RBW 100kHz
VBW 100kHz
SWP 630ms

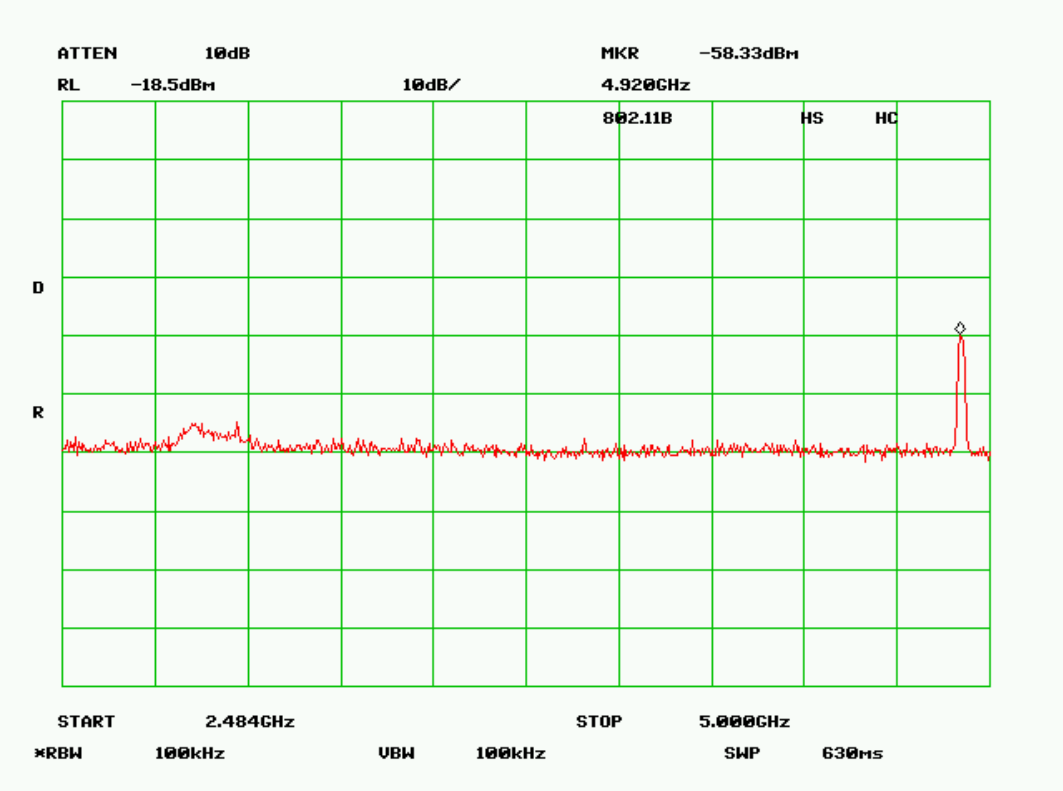

ATTEN 10dB
MKR -52.50dBm
RL -18.5dBm
10dB/
9.73GHz
802.11B
HS
MC
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

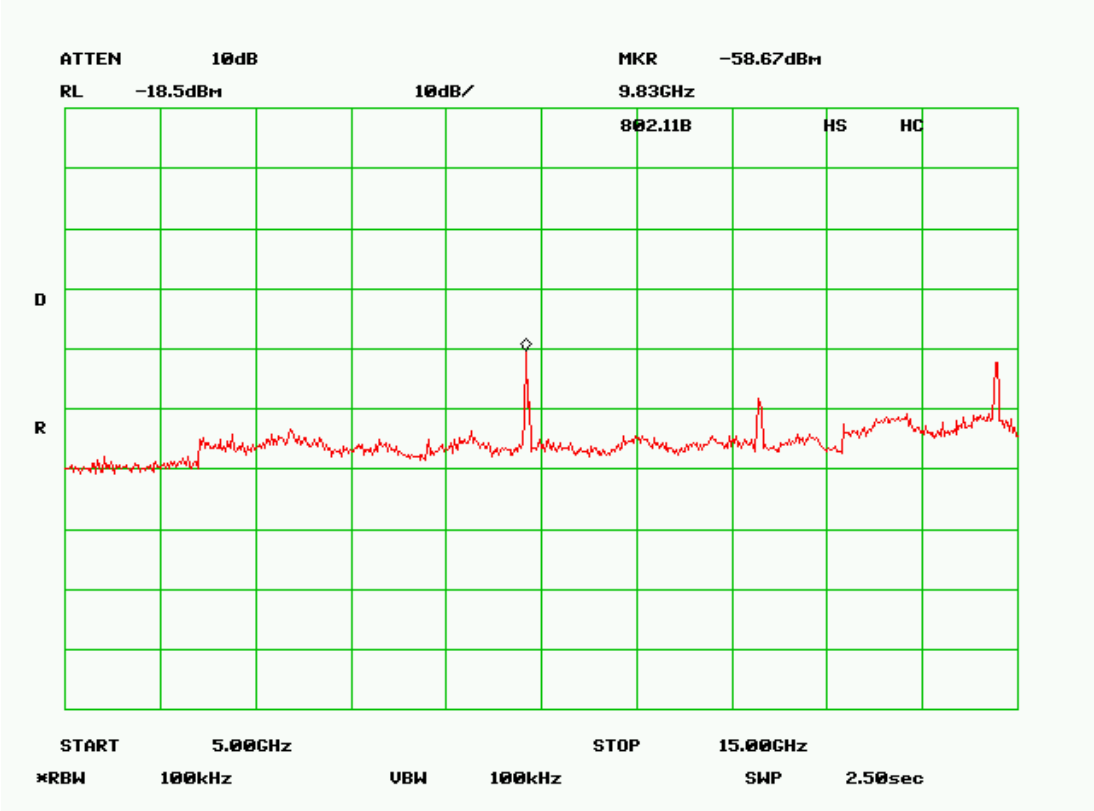

ATTEN 10dB
MKR -57.33dBm
RL -18.5dBm
10dB/
24.08GHz
802.11B
HS
MC
D
R
START 15.00GHz
STOP 25.00GHz
*RBW 1.0MHz
VBW 1.0MHz
SWP 200ms

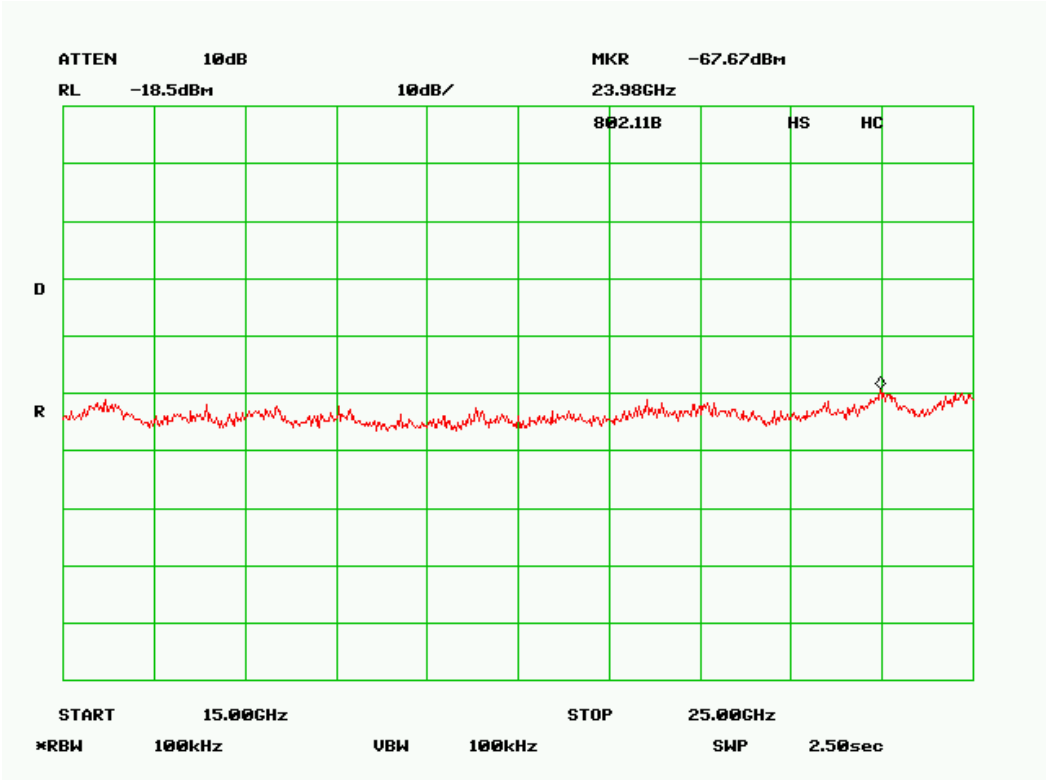
High Channel





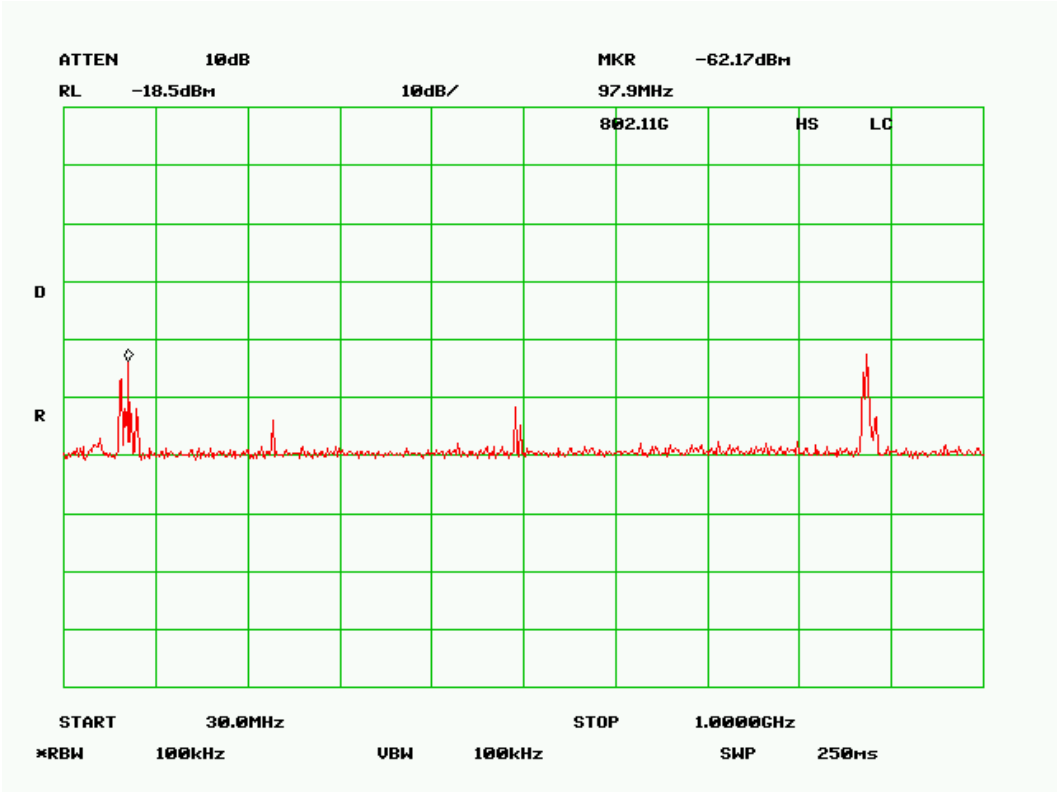

ATTEN 10dB
MKR -58.33dBm
RL -18.5dBm
10dB/
4.920GHz
802.11B
HS HC
D
R
START 2.484GHz
STOP 5.000GHz
*RBW 100kHz
VBW 100kHz
SWP 630ms

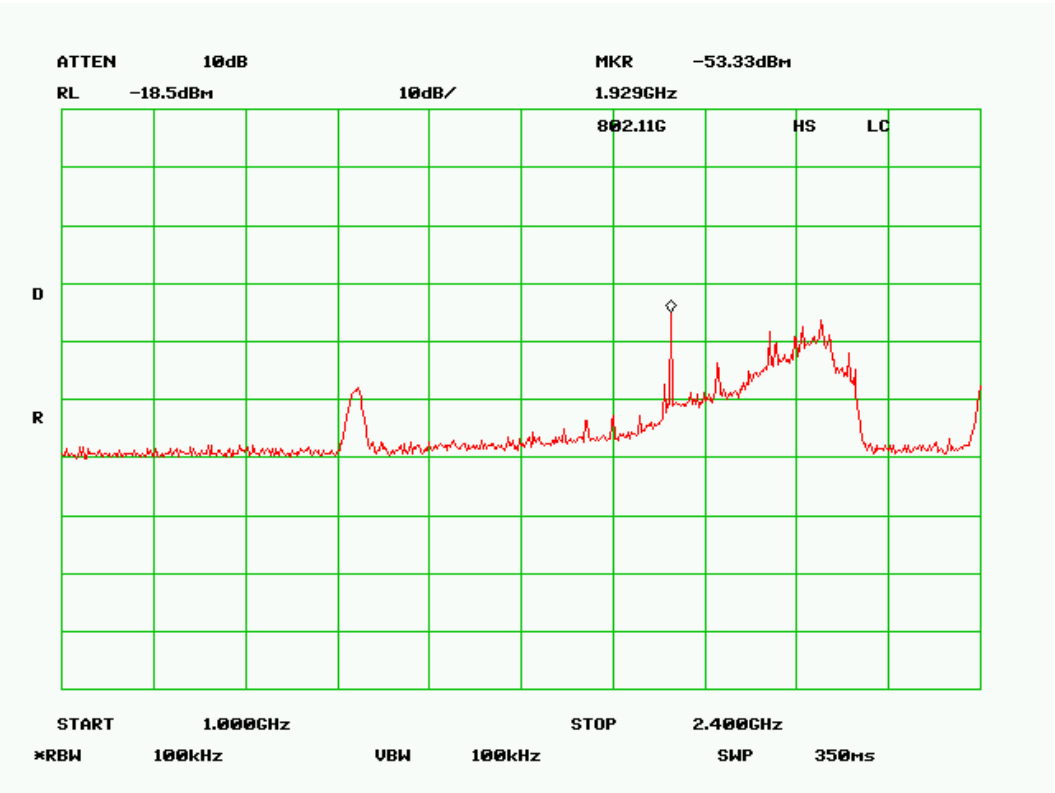

ATTEN 10dB
MKR -58.67dBm
RL -18.5dBm
10dB/
9.83GHz
802.11B
HS HC
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

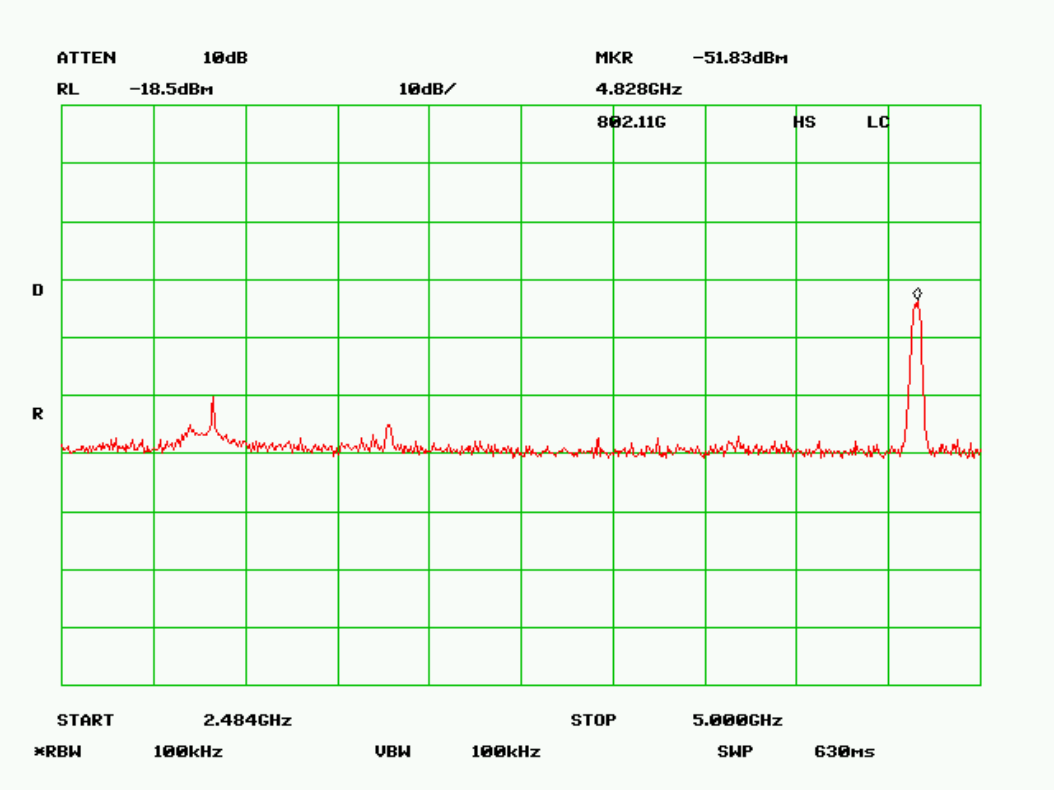


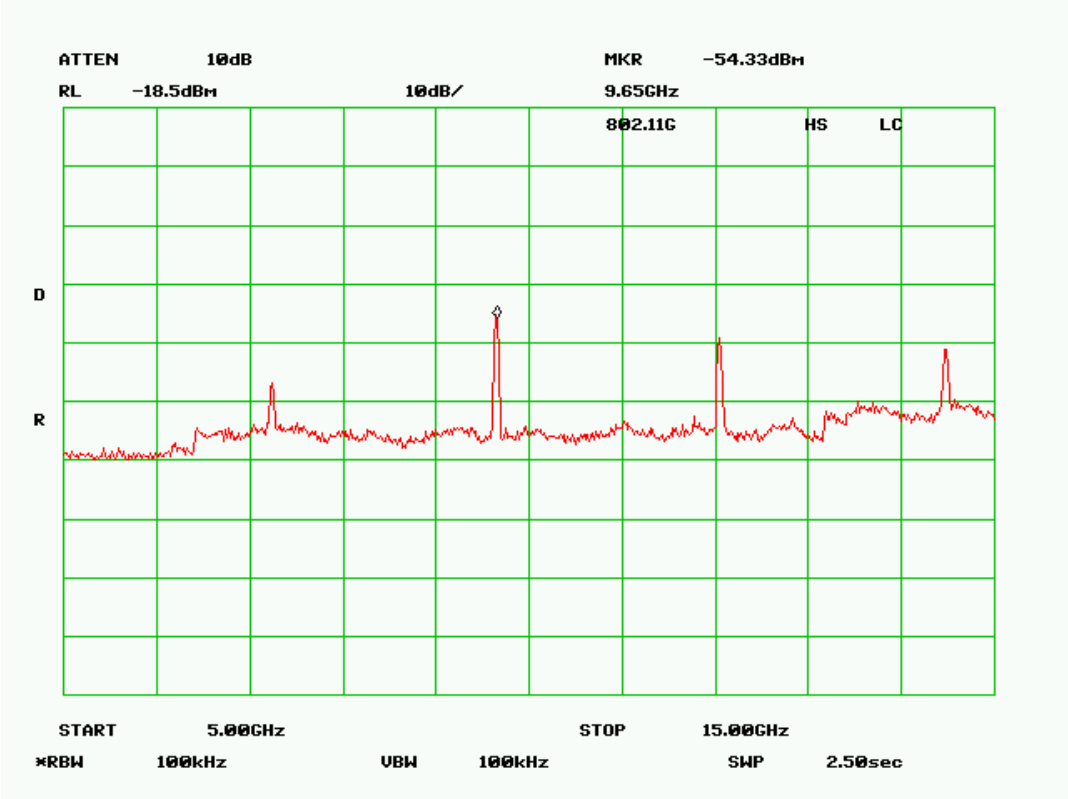
802.11g:

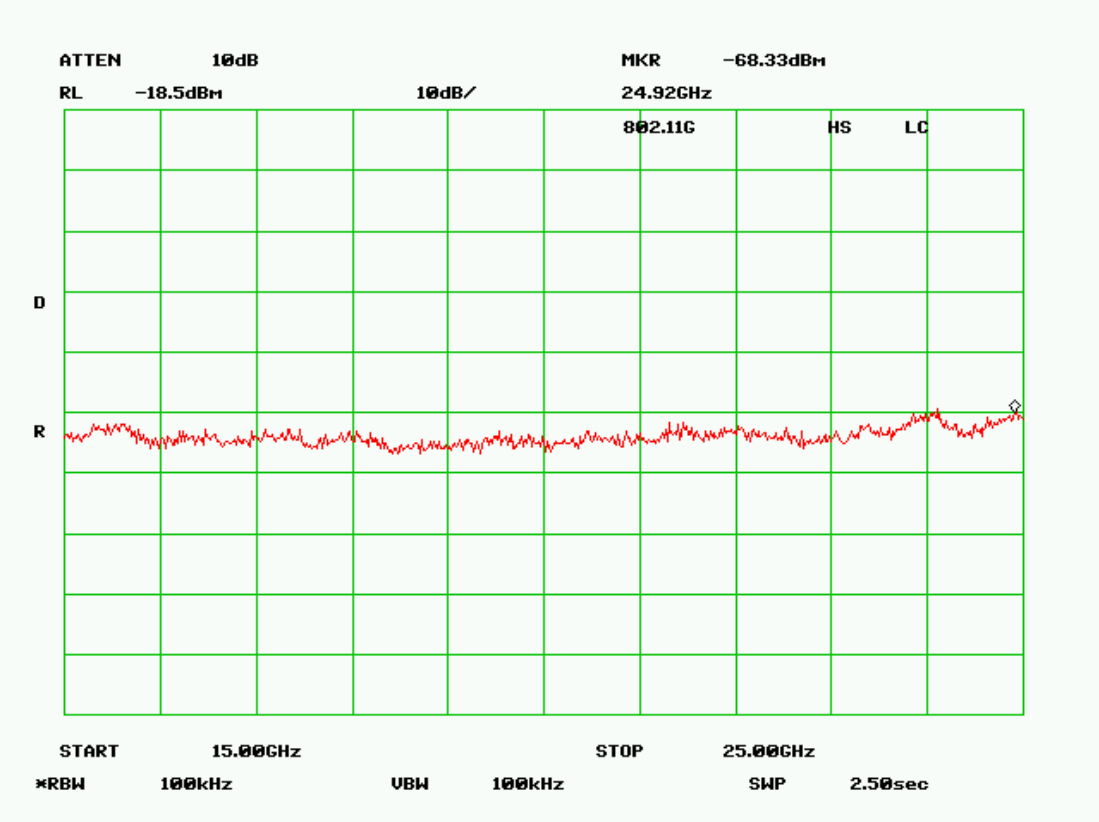
Low Channel



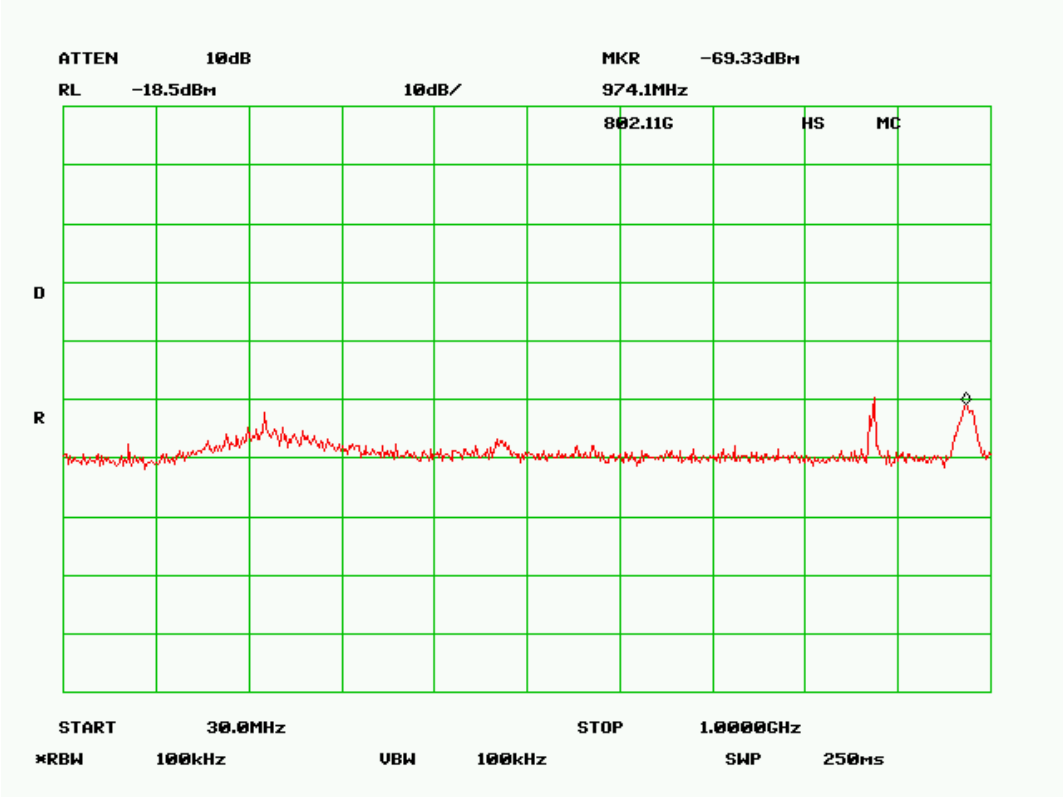

ATTEN 10dB
MKR -53.33dBm
RL -18.5dBm
10dB/
1.929GHz
802.11G
HS
LC
D
R
START 1.000GHz
STOP 2.400GHz
*RBW 100kHz
VBW 100kHz
SWP 350ms

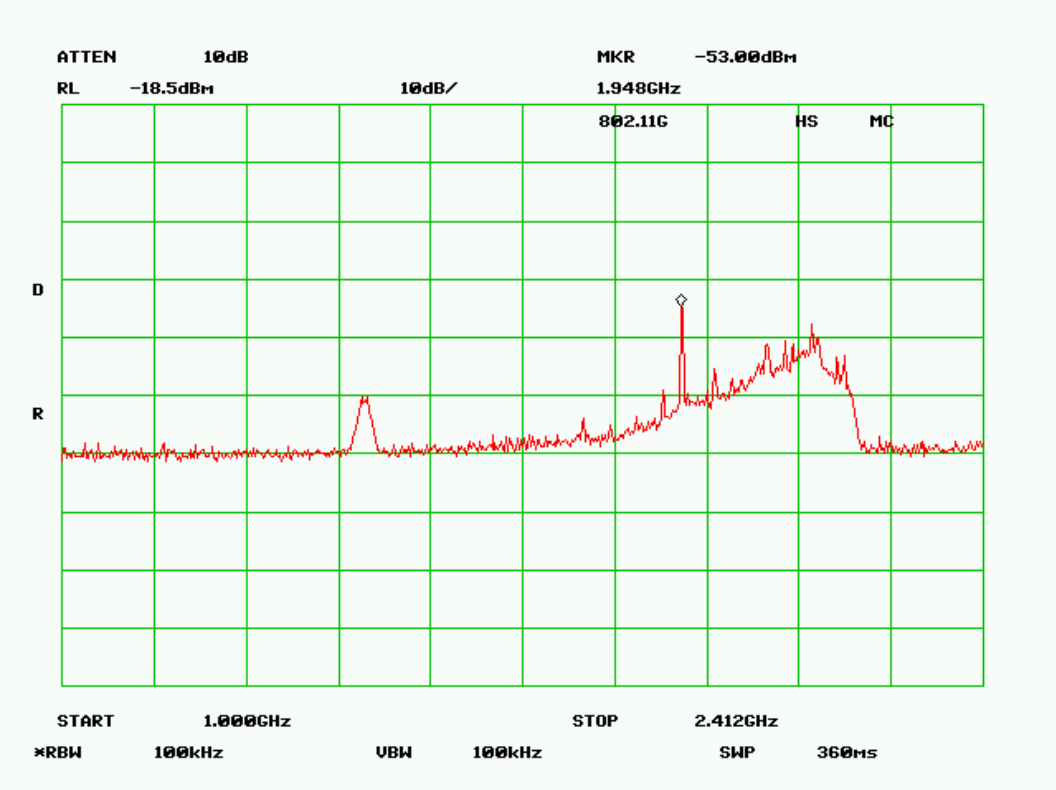

ATTEN 10dB
MKR -51.83dBm
RL -18.5dBm
10dB/
4.828GHz
802.11G
HS
LC
D
R
START 2.484GHz
STOP 5.000GHz
*RBW 100kHz
VBW 100kHz
SWP 630ms

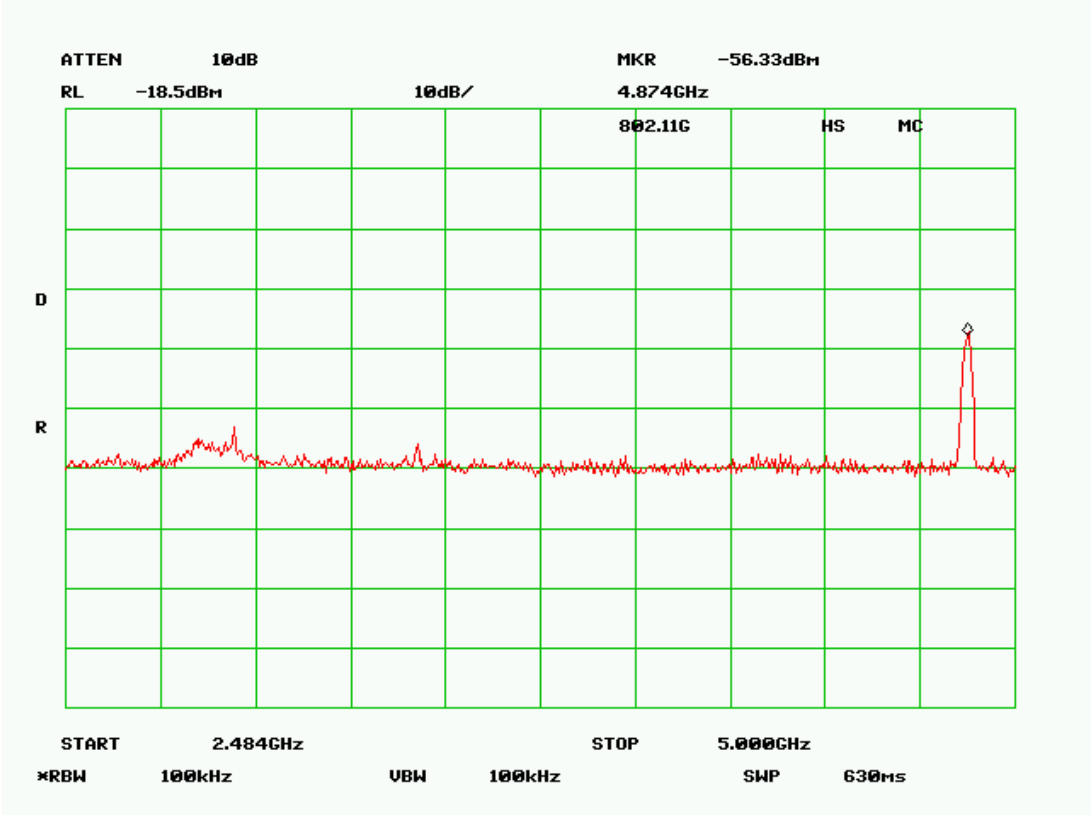

ATTEN 10dB
MKR -54.33dBm
RL -18.5dBm
10dB/
9.65GHz
802.11G
HS
LC
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

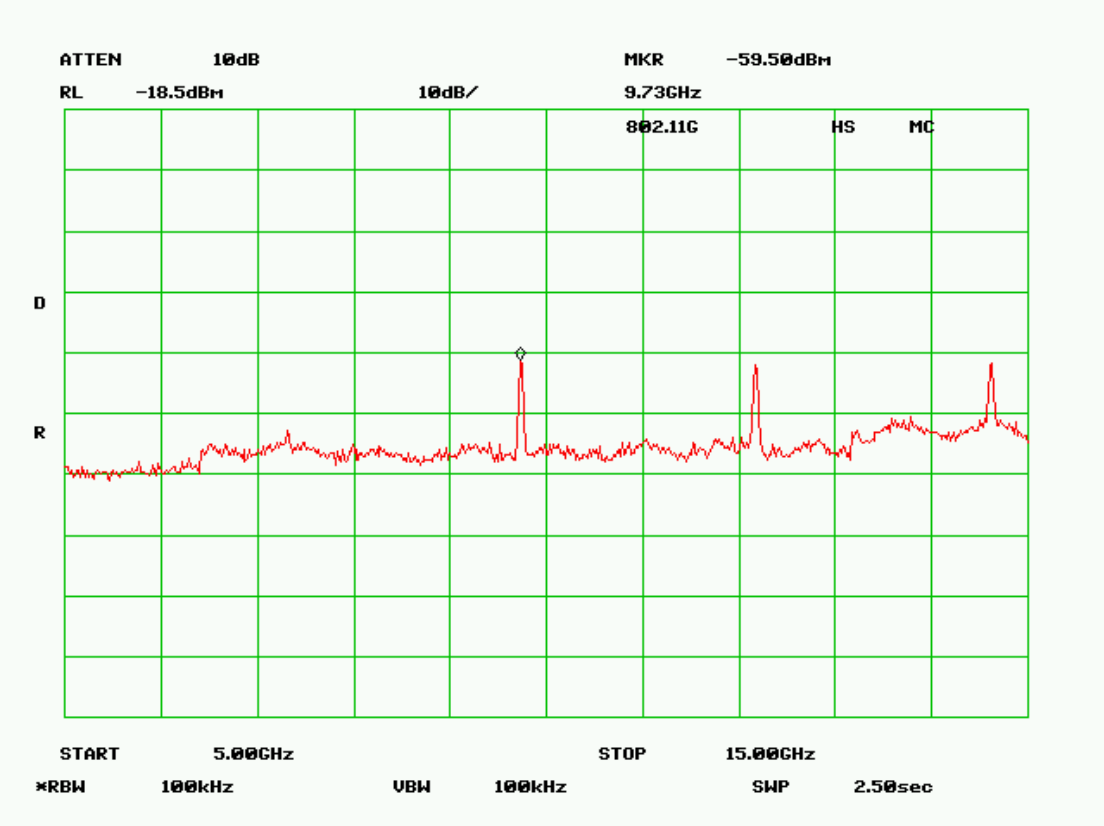

ATTEN 10dB
MKR -68.33dBm
RL -18.5dBm
10dB/
24.92GHz
802.11G
HS
LC
D
R
START 15.00GHz
STOP 25.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

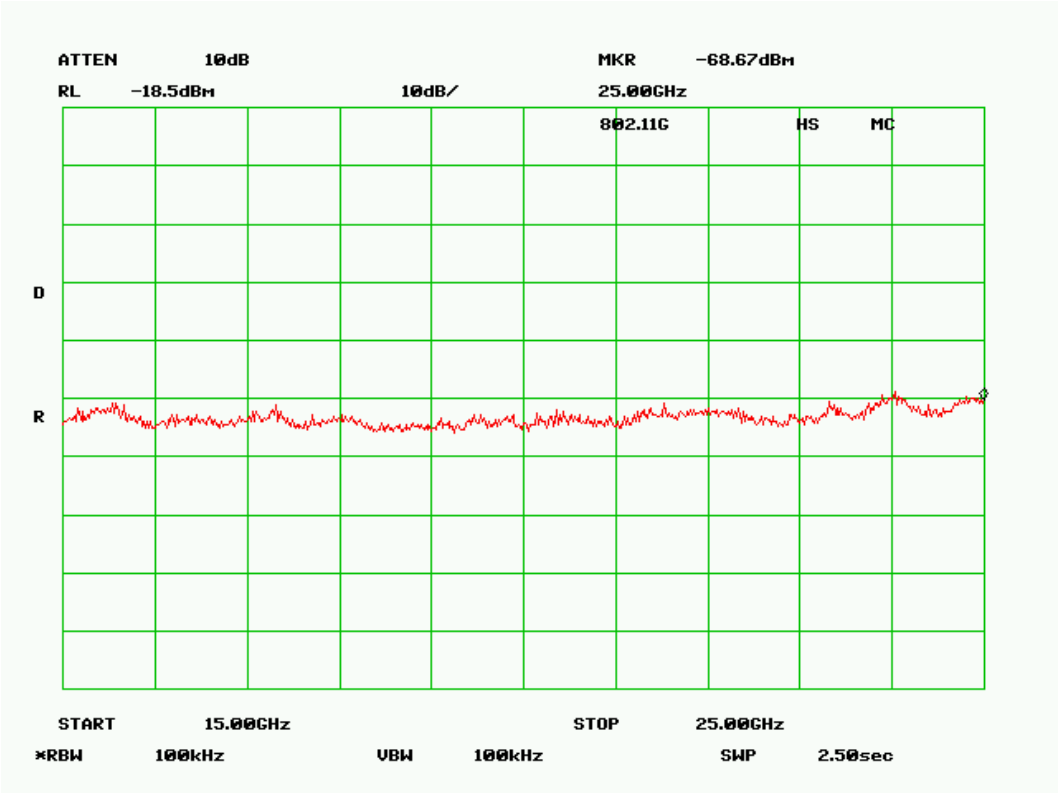
Mid Channel


ATTEN 10dB
MKR -69.33dBm
RL -18.5dBm
10dB/
974.1MHz
802.11G
HS
MC
D
R
START 30.0MHz
STOP 1.0000GHz
*RBW 100kHz
VBW 100kHz
SWP 250ms

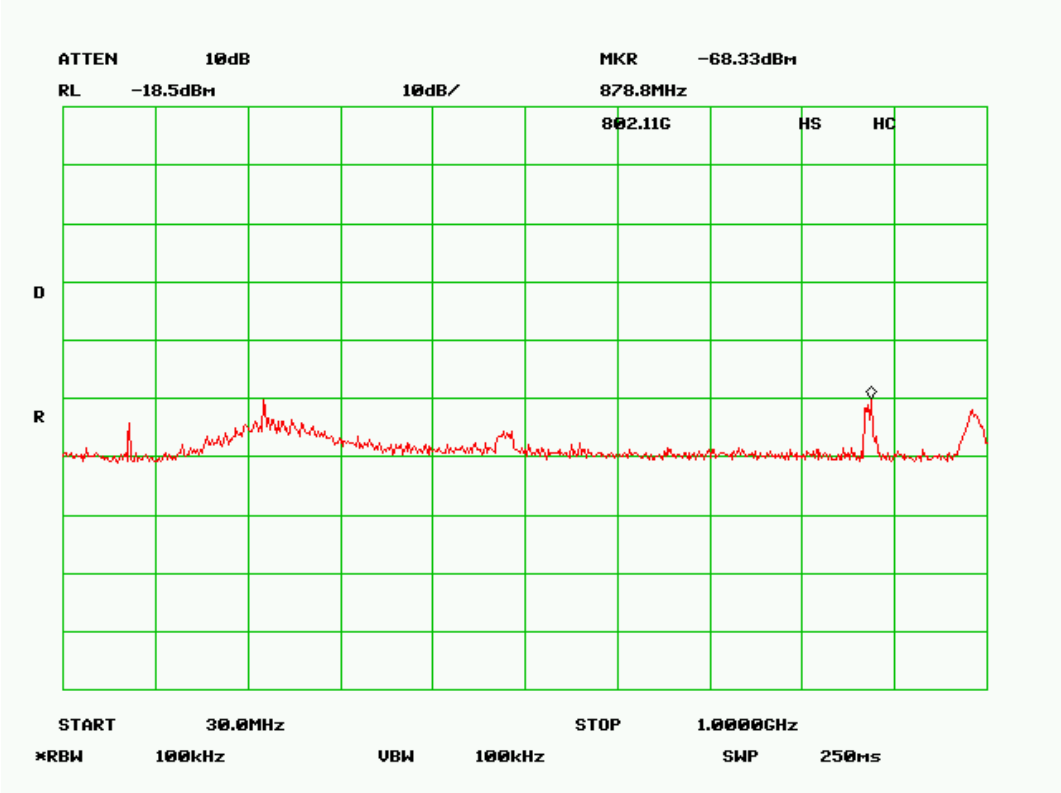

ATTEN 10dB
MKR -53.00dBm
RL -18.5dBm
10dB/
1.948GHz
802.11G
HS
MC
D
R
START 1.000GHz
STOP 2.412GHz
*RBW 100kHz
VBW 100kHz
SWP 360ms

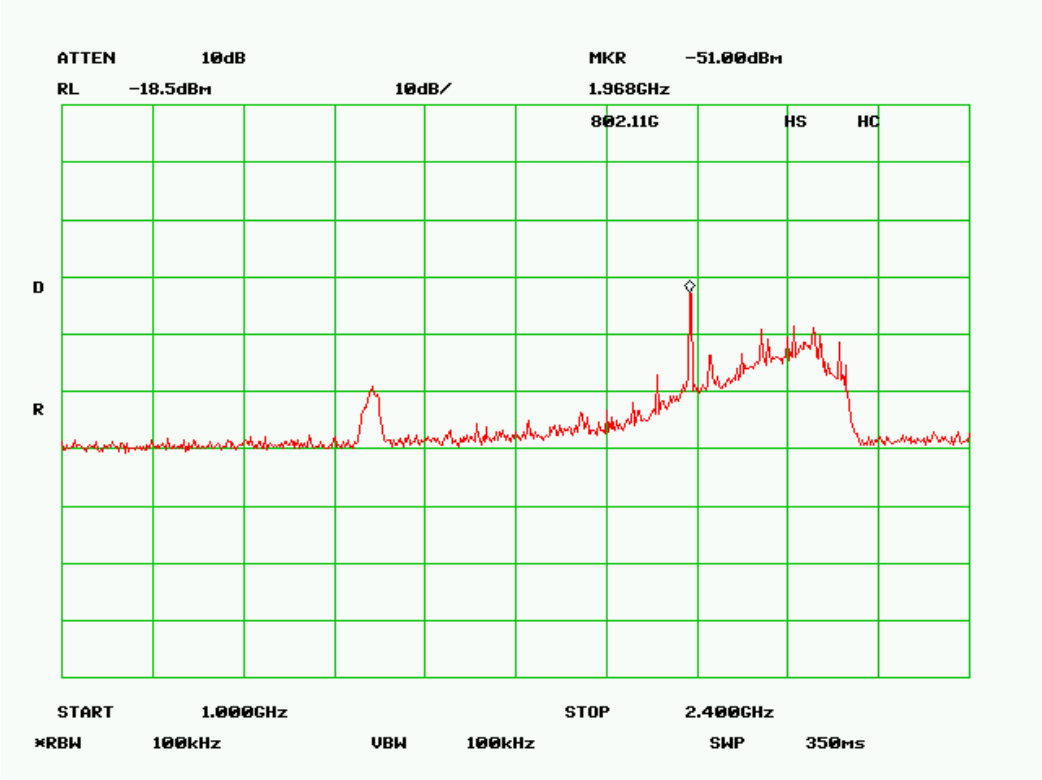

ATTEN 10dB
MKR -56.33dBm
RL -18.5dBm
10dB/
4.874GHz
802.11G
HS
MC
D
R
START 2.484GHz
STOP 5.000GHz
*RBW 100kHz
VBW 100kHz
SWP 630ms

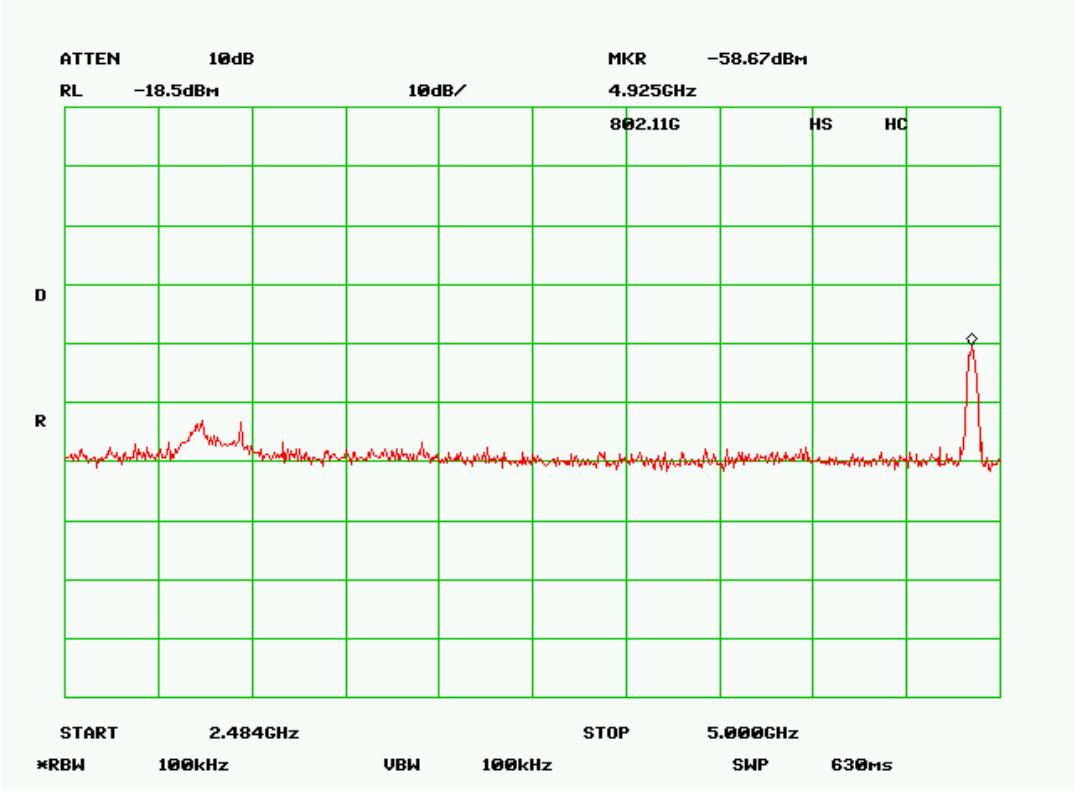

ATTEN 10dB
MKR -59.50dBm
RL -18.5dBm
10dB/
9.73GHz
802.11G
HS
MC
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec

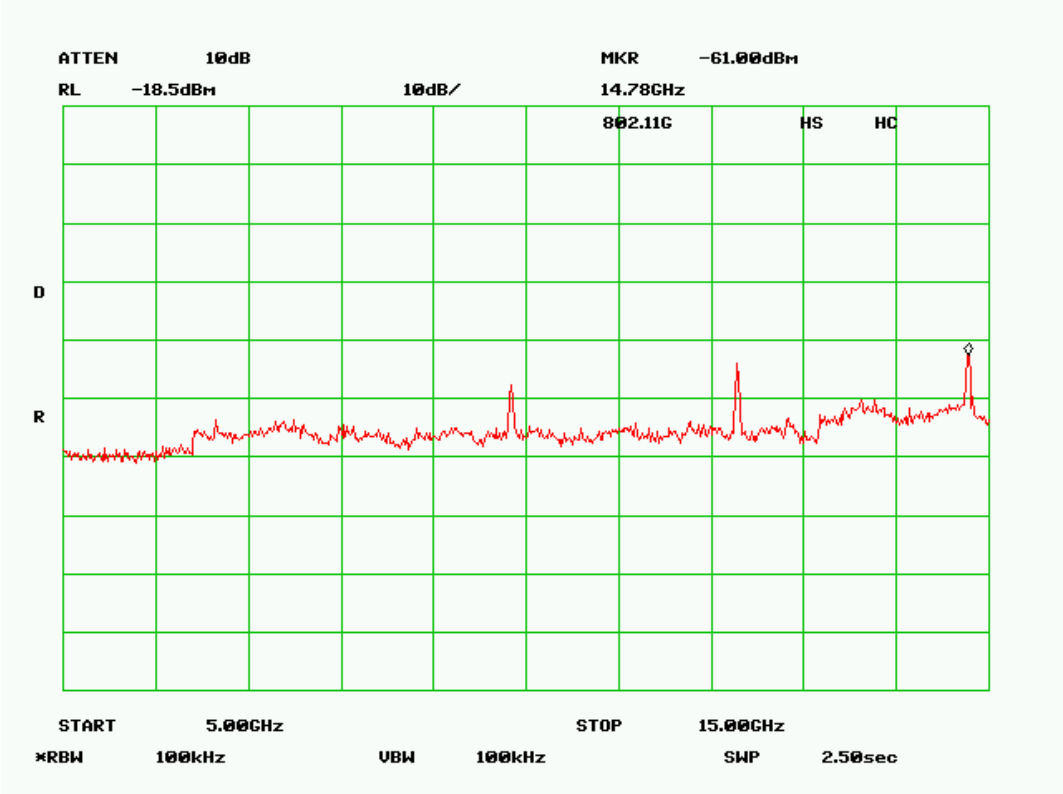


High Channel




ATTEN 10dB
MKR -51.00dBm
RL -18.5dBm
10dB/
1.968GHz
802.11G
HS
HC
D
R
START 1.000GHz
STOP 2.400GHz
*RBW 100kHz
VBW 100kHz
SWP 350ms


ATTEN 10dB
MKR -58.67dBm
RL -18.5dBm
10dB/
4.925GHz
802.11G
HS
HC
D
R
START 2.484GHz
STOP 5.000GHz
*RBW 100kHz
VBW 100kHz
SWP 630ms


ATTEN 10dB
MKR -61.00dBm
RL -18.5dBm
10dB/
14.78GHz
802.11G
HS
HC
D
R
START 5.00GHz
STOP 15.00GHz
*RBW 100kHz
VBW 100kHz
SWP 2.50sec


ATTEN 10dB
MKR -68.50dBm
RL -18.5dBm
10dB/
23.93GHz
802.11G
HS
HC
D
R
START 15.00GHz
STOP 25.00GHz
*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.
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EUT Setup

The radiated emissions tests were performed using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC 15.209 limits.

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	2/3/2006
Agilent	Pre amplifier	8449B	3008A01978	8/10/2005
Sunol Science Corp	Combination Antenna	JB3 Antenna	A020106-3	2/14/2006
Rohde & Schewarz	EMI Test Receiver	ESCI 1166.595 0K03	20-174821	2/24/2006
Sunol Science Corp	System Controller	SC99V	113005-1	N/R

* **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

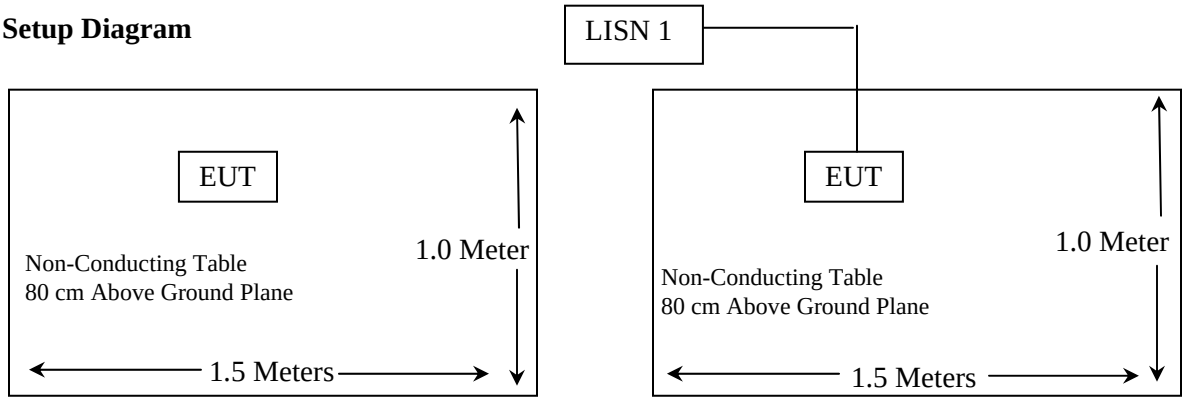
The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

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

Test Setup Diagram



(Handset only) *(Base set only)*

Environmental Conditions

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

**The testing was performed by Tom Chen on 2006-09-07*

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:

Base Set (WF6972)

802.11g:

-7.7 dB at **32.970000 MHz** in the **Vertical** polarization for 30MHz – 1GHz
-10.8 dB at **2080.0000 MHz** in the **Horizontal** polarization for Low Channel, 1GHz – 25GHz
-10.8 dB at **2080.0000 MHz** in the **Horizontal** polarization for Middle Channel, 1GHz – 25GHz
-10.8 dB at **2080.0000 MHz** in the **Horizontal** polarization for High Channel, 1GHz – 25GHz

802.11b:

-16.2 dB at **1929.6000 MHz** in the **Vertical** polarization for Low Channel, 1GHz – 25GHz
-16.2 dB at **1947.6000 MHz** in the **Vertical** polarization for Middle Channel, 1GHz – 25GHz
-10.8 dB at **2080.0000 MHz** in the **Horizontal** polarization for Low Channel, 1GHz – 25GHz

Hand Set (WF6972 & WF6909)

802.11g:

-8.5 dB at **100.265000 MHz** in the **Vertical** polarization for 30MHz – 1GHz
-15.5 dB at **1969.0000 MHz** in the **Vertical** polarization for Low Channel, 1GHz – 25GHz
-15.5 dB at **1950.0000 MHz** in the **Vertical** polarization for Middle Channel, 1GHz – 25GHz
-15.5 dB at **1969.0000 MHz** in the **Vertical** polarization for High Channel, 1GHz – 25GHz

802.11b:

-16.2 dB 1929.6000 MHz in the **Vertical** polarization for Low Channel, 1GHz – 25GHz
-21.3 dB 2080.0000 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

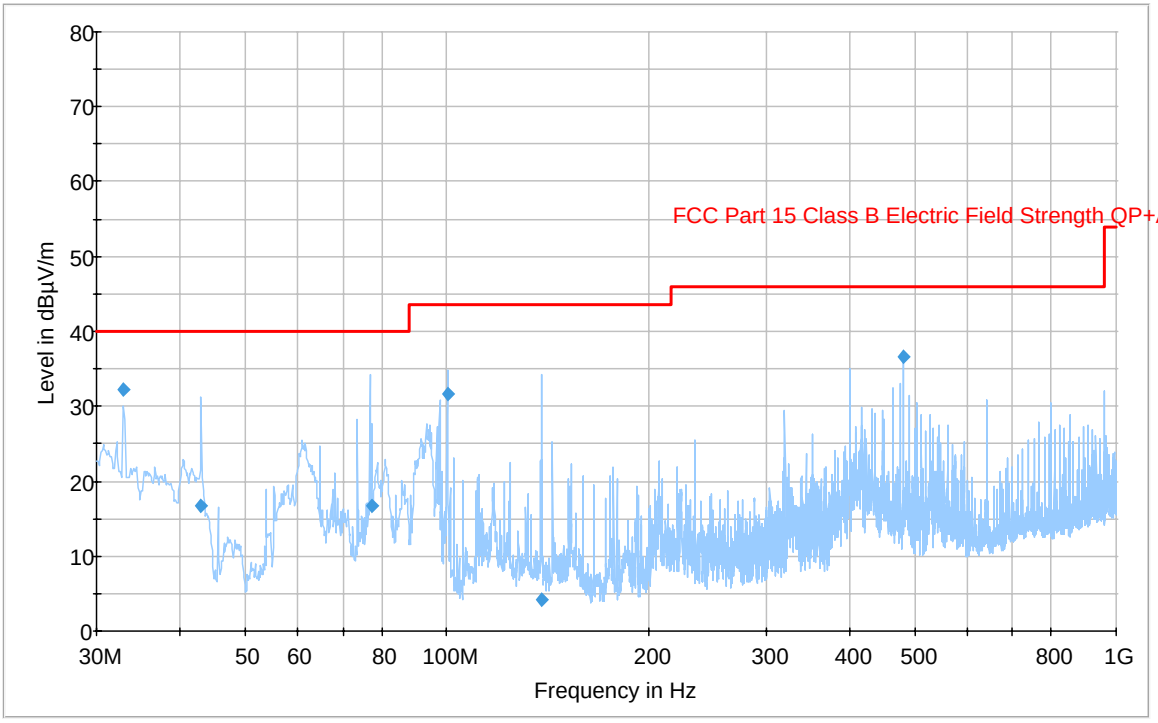
Radiated Emissions Test plot & data

Base Set (WF6972)

Primary scan 30MHz -1GHz

Frequency	Reading	Azimuth	Height	Polar	Corrected Reading	15.247		
MHz	dBuV	Degrees	m	H / V	dBuV/m	Limit (dBuV/m)	Margin	Comments
32.970000	32.3	148.0	1.5	V	-18.1	40.0	-7.7	QuasiPeak
480.020000	36.5	86.0	1.7	H	-18.9	46.0	-9.5	QuasiPeak
100.263750	31.6	102.0	1.5	V	-25.5	43.5	-11.9	QuasiPeak
42.973750	16.7	254.0	3.0	V	-25.2	40.0	-23.3	QuasiPeak
77.222500	16.7	73.0	1.1	V	-28.8	40.0	-23.3	QuasiPeak
138.818750	4.2	12.0	1.2	V	-23.5	43.5	-39.3	QuasiPeak

Base Set Test plot 30MHz – 1000MHz

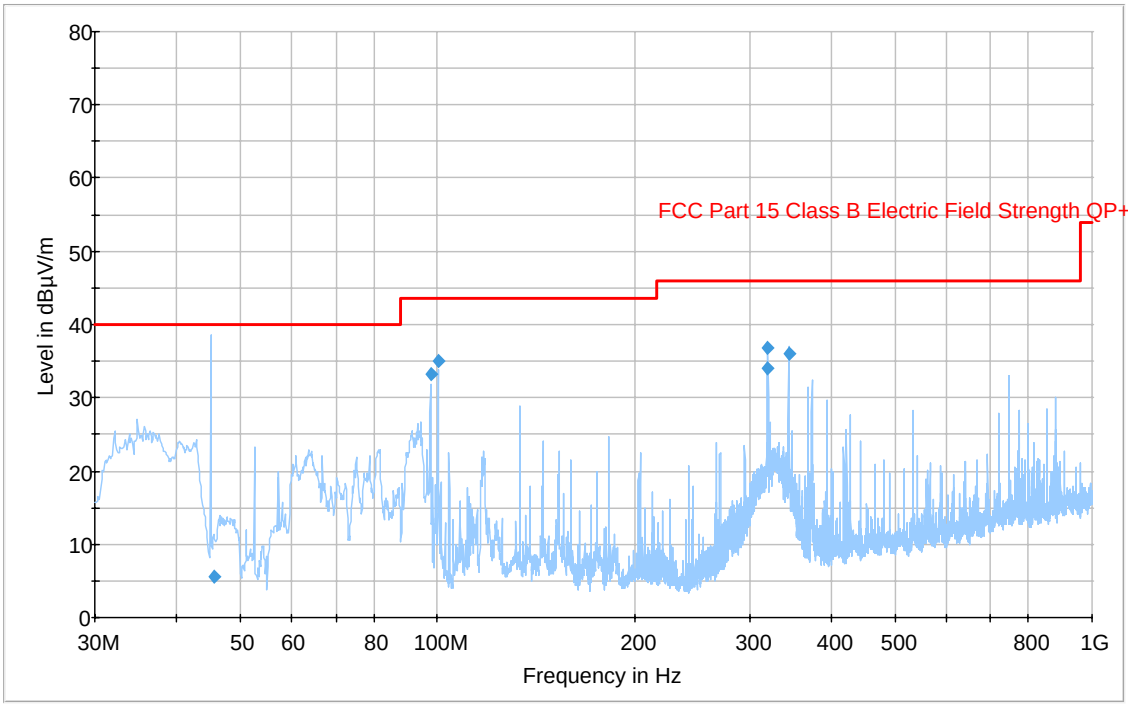


Hand Set (WF6972 & WF6909)

Primary scan 30MHz -1GHz

Frequency	Reading	Azimuth	Height	Polar	Corrected Reading	15.247		
MHz	dBuV	Degrees	m	H / V	dBuV/m	Limit (dBuV/m)	Margin	Comments
100.265000	35.0	127.0	100.7	V	-25.5	43.5	-8.5	QuasiPeak
320.023750	36.7	344.0	100.5	H	-22.2	46.0	-9.3	QuasiPeak
344.037500	35.9	309.0	101.2	H	-21.6	46.0	-10.1	QuasiPeak
97.657500	33.1	23.0	240.9	V	-26.1	43.5	-10.4	QuasiPeak
319.970000	34.0	2.0	111.6	H	-22.2	46.0	-12.0	QuasiPeak
45.696250	5.6	320.0	101.2	V	-26.8	40.0	-34.4	QuasiPeak

Hand Set Test plot 30MHz – 1000MHz



Base Set (WF6972)

802.11g

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

Measured at 1 meter at 4824 MHz & 7236 MHz
Measured at 3 meter at 1930 MHz & 2080 MHz

Frequency	Reading	Direction	Height	Polar.	Antenna Loss	Cable loss	Amplifier	Distance factor	Correction Factor	Limit	Margin	Comments
MHz	dBuV/m	Degree	Meter	H / V	dB	dB	dB	dB	dBuV/m	dBuV/m		
2080.0000	48.2	211	1.5	H	28.7	1.5	35.1	0.0	43.2	54	-10.8	Ave
1930.0000	46.5	215	1.4	V	24.8	1.2	35.5	0.0	37.0	54	-17.0	Ave
2080.0000	40.5	236	1.5	V	28.7	1.5	35.1	0.0	35.6	54	-18.4	Ave
1930.0000	42.0	11	1.4	H	24.8	1.2	35.5	0.0	32.5	54	-21.5	Ave
7236.0000	32.7	120	1.3	v	36.7	4.2	34.9	10.0	28.7	54	-25.3	Ave
7236.0000	32.7	165	1.6	h	36.7	4.2	34.9	10.0	28.7	54	-25.3	Ave
2080.0000	52.0	211	1.5	H	28.7	1.5	35.1	0.0	47.1	74	-26.9	Peak
4824.0000	36.1	190	1.1	v	32.5	1.9	34.8	10.0	25.7	54	-28.3	Ave
2080.0000	48.5	236	1.5	V	28.7	1.5	35.1	0.0	43.6	74	-30.4	Peak
7236.0000	46.8	165	1.6	h	36.7	4.2	34.9	10.0	42.8	74	-31.2	Peak
1930.0000	52.0	215	1.4	V	24.8	1.2	35.5	0.0	42.5	74	-31.5	Peak
7236.0000	44.6	120	1.3	v	36.7	4.2	34.9	10.0	40.6	74	-33.4	Peak
4824.0000	29.8	164	1.6	h	32.5	1.9	34.8	10.0	19.4	54	-34.6	Ave
1930.0000	48.2	11	1.4	H	24.8	1.2	35.5	0.0	38.6	74	-35.4	Peak
4824.0000	47.6	190	1.1	v	32.5	1.9	34.8	10.0	37.2	74	-36.8	Peak
4824.0000	43.3	164	1.6	h	32.5	1.9	34.8	10.0	32.9	74	-41.1	Peak

Primary scan 1GHz -25GHz, (Middle channel 2437MHz)

Measured at 1 meter at 4874 MHz & 7311 MHz
Measured at 3 meter at 1948 MHz & 2080 MHz

Frequency	Reading	Direction	Height	Polar.	Antenna Loss	Cable loss	Amplifier	Distnace factor	Correction Factor	Limit	Margin	Comments
MHz	dBuV/m	Degree	Meter	H / V	dB	dB	dB	dB	dBuV/m	dBuV/m		
2080.0000	48.2	211	1.5	H	28.7	1.5	35.1	0.0	43.2	54	-10.8	Ave
1948.0000	46.5	215	1.4	V	24.8	1.2	35.5	0.0	37.0	54	-17.0	Ave
2080.0000	40.5	236	1.5	V	28.7	1.5	35.1	0.0	35.6	54	-18.4	Ave
1948.0000	42.0	11	1.4	H	24.8	1.2	35.5	0.0	32.5	54	-21.5	Ave
2080.0000	52.0	211	1.5	H	28.7	1.5	35.1	0.0	47.1	74	-26.9	Peak
4874.0000	34.6	180	1.1	v	32.5	1.9	34.8	10.0	24.2	54	-29.8	Ave
7311.0000	28.0	215	1.1	h	36.7	4.2	35.1	10.0	23.8	54	-30.2	Ave
2080.0000	48.5	236	1.5	V	28.7	1.5	35.1	0.0	43.6	74	-30.4	Peak
7311.0000	27.8	302	1.5	v	36.7	4.2	35.1	10.0	23.6	54	-30.4	Ave
1948.0000	52.0	215	1.4	V	24.8	1.2	35.5	0.0	42.5	74	-31.5	Peak
4874.0000	31.0	225	1.4	h	32.5	1.9	34.8	10.0	20.6	54	-33.4	Ave
1948.0000	48.2	11	1.4	H	24.8	1.2	35.5	0.0	38.6	74	-35.4	Peak
7311.0000	41.3	302	1.5	v	36.7	4.2	35.1	10.0	37.1	74	-36.9	Peak
4874.0000	47.4	180	1.1	v	32.5	1.9	34.8	10.0	37.0	74	-37.0	Peak
7311.0000	40.7	215	1.1	h	36.7	4.2	35.1	10.0	36.5	74	-37.5	Peak
4874.0000	44.2	225	1.4	h	32.5	1.9	34.8	10.0	33.8	74	-40.2	Peak

Primary scan 1GHz -25GHz, (High Channel 2462 MHz)

Measured at 1 meter at 4924 MHz & 7386 MHz
Measured at 3 meter at 1970 MHz & 2080 MHz

Frequency	Reading	Direction	Height	Polar.	Antenna Loss	Cable loss	Amplifier	Distance factor	Correction Factor	Limit	Margin	Comments
MHz	dBuV/m	Degree	Meter	H / V	dB	dB	dB	dB	dBuV/m	dBuV/m		
2080.0000	48.2	211	1.5	H	28.7	1.5	35.1	0.0	43.2	54	-10.8	Ave
1970.0000	46.5	215	1.4	V	24.8	1.2	35.5	0.0	37.0	54	-17.0	Ave
2080.0000	40.5	236	1.5	V	28.7	1.5	35.1	0.0	35.6	54	-18.4	Ave
1970.0000	42.0	11	1.4	H	24.8	1.2	35.5	0.0	32.5	54	-21.5	Ave
2080.0000	52.0	211	1.5	H	28.7	1.5	35.1	0.0	47.1	74	-26.9	Peak
7386.0000	28.0	173	1.4	v	36.7	4.2	34.7	10.0	24.2	54	-29.8	Ave
7386.0000	28.0	255	1.8	h	36.7	4.2	34.7	10.0	24.2	54	-29.8	Ave
2080.0000	48.5	236	1.5	V	28.7	1.5	35.1	0.0	43.6	74	-30.4	Peak
1970.0000	52.0	215	1.4	V	24.8	1.2	35.5	0.0	42.5	74	-31.5	Peak
4924.0000	31.5	230	1.2	v	32.5	1.9	34.8	10.0	21.1	54	-32.9	Ave
4924.0000	30.7	103	1.1	h	32.5	1.9	34.8	10.0	20.3	54	-33.7	Ave
7386.0000	43.5	173	1.4	v	36.7	4.2	34.7	10.0	39.8	74	-34.2	Peak
1970.0000	48.2	11	1.4	H	24.8	1.2	35.5	0.0	38.6	74	-35.4	Peak
7386.0000	40.9	255	1.8	h	36.7	4.2	34.7	10.0	37.1	74	-36.9	Peak
4924.0000	42.9	103	1.1	h	32.5	1.9	34.8	10.0	32.5	74	-41.5	Peak

802.11b

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

Measured at 1 meter at 4824 MHz & 7236 MHz
Measured at 3 meter at 1929.6 MHz & 2082 MHz

Frequency	Reading	Direction	Height	Polar.	Antenna Loss	Cable loss	Amplifier	Distance factor	Correction Factor	Limit	Margin	Comments
MHz	dBuV/m	Degree	Meter	H / V	dB	dB	dB	dB	dBuV/m	dBuV/m		
1929.6000	47.3	195	1.7	V	24.8	1.2	35.5	0.0	37.8	54	-16.2	Ave
1929.6000	46.3	269	1.6	H	24.8	1.2	35.5	0.0	36.8	54	-17.2	Ave
2082.0000	37.7	328	1.6	H	28.7	1.5	35.1	0.0	32.7	54	-21.3	Ave
2082.0000	35.0	240	1.6	V	28.7	1.5	35.1	0.0	30.1	54	-23.9	Ave
7236.0000	32.7	120	1.3	v	36.7	4.2	34.9	10.0	28.7	54	-25.3	Ave
7236.0000	32.7	160	1.6	h	36.7	4.2	34.9	10.0	28.7	54	-25.3	Ave
4824.0000	36.2	187	1.1	v	32.5	1.9	34.8	10.0	25.8	54	-28.2	Ave
7236.0000	46.8	160	1.6	h	36.7	4.2	34.9	10.0	42.8	74	-31.2	Peak
2082.0000	47.0	328	1.6	H	28.7	1.5	35.1	0.0	42.1	74	-31.9	Peak
1929.6000	51.5	195	1.7	V	24.8	1.2	35.5	0.0	42.0	74	-32.0	Peak
7236.0000	45.8	120	1.3	v	36.7	4.2	34.9	10.0	41.8	74	-32.2	Peak
1929.6000	51.2	269	1.6	H	24.8	1.2	35.5	0.0	41.6	74	-32.4	Peak
2082.0000	46.0	240	1.6	V	28.7	1.5	35.1	0.0	41.1	74	-32.9	Peak
4824.0000	29.8	164	1.6	h	32.5	1.9	34.8	10.0	19.4	54	-34.6	Ave
4824.0000	48.7	187	1.1	v	32.5	1.9	34.8	10.0	38.3	74	-35.7	Peak
4824.0000	43.3	164	1.6	h	32.5	1.9	34.8	10.0	32.9	74	-41.1	Peak

Primary scan 1GHz -25GHz, (Middle channel 2437MHz)

Measured at 1 meter at 4874 MHz
Measured at 3 meter at 1947.6 MHz & 2081.5 MHz

Frequency	Reading	Direction	Height	Polar.	Antenna Loss	Cable loss	Amplifier	Distance factor	Correction Factor	Limit	Margin	Comments
MHz	dBuV/m	Degree	Meter	H / V	dB	dB	dB	dB	dBuV/m	dBuV/m		
1947.6000	47.3	195	1.7	V	24.8	1.2	35.5	0.0	37.8	54	-16.2	Ave
1947.6000	46.3	269	1.6	H	24.8	1.2	35.5	0.0	36.8	54	-17.2	Ave
2081.5000	37.7	328	1.6	H	28.7	1.5	35.1	0.0	32.7	54	-21.3	Ave
2081.5000	35.0	240	1.6	V	28.7	1.5	35.1	0.0	30.1	54	-23.9	Ave
4874.0000	35.7	185	1.1	v	32.5	1.9	34.8	10.0	25.3	54	-28.7	Ave
2081.5000	47.0	328	1.6	H	28.7	1.5	35.1	0.0	42.1	74	-31.9	Peak
1947.6000	51.5	195	1.7	V	24.8	1.2	35.5	0.0	42.0	74	-32.0	Peak
1947.6000	51.2	269	1.6	H	24.8	1.2	35.5	0.0	41.6	74	-32.4	Peak
2081.5000	46.0	240	1.6	V	28.7	1.5	35.1	0.0	41.1	74	-32.9	Peak
4874.0000	31.0	221	1.4	h	32.5	1.9	34.8	10.0	20.6	54	-33.4	Ave
4874.0000	48.0	185	1.1	v	32.5	1.9	34.8	10.0	37.6	74	-36.4	Peak
4874.0000	44.0	221	1.4	h	32.5	1.9	34.8	10.0	33.6	74	-40.4	Peak

Primary scan 1GHz -25GHz, (High Channel 2462 MHz)

Measured at 1 meter at 4924 MHz
Measured at 3 meter at 1970 MHz & 2080 MHz

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Distance factor	Correction Factor	Limit	Margin	Comments
MHz	dBuV/m	Degree	Meter	H / V	dB	dB	dB	dB	dBuV/m	dBuV/m		
2080.0000	48.2	211	1.5	H	28.7	1.5	35.1	0.0	43.2	54	-10.8	Ave
1970.0000	46.5	215	1.4	V	24.8	1.2	35.5	0.0	37.0	54	-17.0	Ave
2080.0000	40.5	236	1.5	V	28.7	1.5	35.1	0.0	35.6	54	-18.4	Ave
1970.0000	42.0	11	1.4	H	24.8	1.2	35.5	0.0	32.5	54	-21.5	Ave
2080.0000	52.0	211	1.5	H	28.7	1.5	35.1	0.0	47.1	74	-26.9	Peak
2080.0000	48.5	236	1.5	V	28.7	1.5	35.1	0.0	43.6	74	-30.4	Peak
1970.0000	52.0	215	1.4	V	24.8	1.2	35.5	0.0	42.5	74	-31.5	Peak
4924.0000	31.5	225	1.1	v	32.5	1.9	34.8	10.0	21.1	54	-32.9	Ave
4924.0000	30.7	101	1.1	h	32.5	1.9	34.8	10.0	20.3	54	-33.7	Ave
1970.0000	48.2	11	1.4	H	24.8	1.2	35.5	0.0	38.6	74	-35.4	Peak
4924.0000	43.7	225	1.1	v	32.5	1.9	34.8	10.0	33.3	74	-40.7	Peak
4924.0000	43.3	101	1.1	h	32.5	1.9	34.8	10.0	32.9	74	-41.1	Peak

Hand Set (WF6972 & WF6909)

802.11g

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

Measured at 1 meter at 4824 MHz & 7236 MHz
Measured at 3 meter at 1969 MHz & 1973.2 MHz

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Distance factor	Correction Factor	Limit	Margin	Comments
MHz	dBuV/m	Degree	Meter	H / V	dB	dB	dB	dB	dBuV/m	dBuV/m		
1969.0000	48.0	327	1.4	V	24.8	1.2	35.5	0.0	38.5	54	-15.5	Ave
1969.0000	42.8	300	1.4	H	24.8	1.2	35.5	0.0	33.3	54	-20.7	Ave
7236.0000	28.3	121	1.3	v	36.7	4.2	34.9	10.0	24.3	54	-29.7	Ave
7236.0000	28.0	303	1.5	h	36.7	4.2	34.9	10.0	24.0	54	-30.0	Ave
1973.2000	33.2	313	1.5	V	24.8	1.2	35.5	0.0	23.6	54	-30.4	Ave
1973.2000	33.2	310	1.5	H	24.8	1.2	35.5	0.0	23.6	54	-30.4	Ave
1969.0000	52.3	327	1.4	V	24.8	1.2	35.5	0.0	42.8	74	-31.2	Peak
4824.0000	32.0	173	1.5	h	32.5	1.9	34.8	10.0	21.6	54	-32.4	Ave
1969.0000	48.8	300	1.4	H	24.8	1.2	35.5	0.0	39.3	74	-34.7	Peak
7236.0000	41.3	121	1.3	v	36.7	4.2	34.9	10.0	37.3	74	-36.7	Peak
4824.0000	27.0	234	1.7	v	32.5	1.9	34.8	10.0	16.6	54	-37.4	Ave
7236.0000	40.5	303	1.5	h	36.7	4.2	34.9	10.0	36.5	74	-37.5	Peak
4824.0000	46.5	173	1.5	h	32.5	1.9	34.8	10.0	36.1	74	-37.9	Peak
1973.2000	46.0	313	1.5	V	24.8	1.2	35.5	0.0	35.8	74	-38.2	Peak
1973.2000	45.3	310	1.5	H	24.8	1.2	35.5	0.0	35.8	74	-38.2	Peak
4824.0000	38.5	234	1.7	v	32.5	1.9	34.8	10.0	28.1	74	-45.9	Peak

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

Measured at 1 meter at 4874 MHz & 7311 MHz
Measured at 3 meter at 1950 MHz & 1971.4 MHz

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Distance factor	Correction Factor	Limit	Margin	Comments
MHz	dBuV/m	Degree	Meter	H / V	dB	dB	dB	dB	dBuV/m	dBuV/m		
1950.0000	48.0	327	1.4	V	24.8	1.2	35.5	0.0	38.5	54	-15.5	Ave
1950.0000	42.8	300	1.4	H	24.8	1.2	35.5	0.0	33.3	54	-20.7	Ave
7311.0000	28.0	215	1.1	h	36.7	4.2	35.1	10.0	23.8	54	-30.2	Ave
1971.4000	33.2	313	1.5	V	24.8	1.2	35.5	0.0	23.6	54	-30.4	Ave
1971.4000	33.2	310	1.5	H	24.8	1.2	35.5	0.0	23.6	54	-30.4	Ave
7311.0000	27.8	302	1.5	v	36.7	4.2	35.1	10.0	23.6	54	-30.4	Ave
1950.0000	52.3	327	1.4	V	24.8	1.2	35.5	0.0	42.8	74	-31.2	Peak
1950.0000	48.8	300	1.4	H	24.8	1.2	35.5	0.0	39.3	74	-34.7	Peak
4874.0000	28.5	247	1.2	h	32.5	1.9	34.8	10.0	18.1	54	-35.9	Ave
4874.0000	28.0	299	1.5	v	32.5	1.9	34.8	10.0	17.6	54	-36.4	Ave
7311.0000	41.3	302	1.5	v	36.7	4.2	35.1	10.0	37.1	74	-36.9	Peak
7311.0000	40.7	215	1.1	h	36.7	4.2	35.1	10.0	36.5	74	-37.5	Peak
1971.4000	46.0	313	1.5	V	24.8	1.2	35.5	0.0	35.8	74	-38.2	Peak
1971.4000	45.3	310	1.5	H	24.8	1.2	35.5	0.0	35.8	74	-38.2	Peak
4874.0000	41.3	299	1.5	v	32.5	1.9	34.8	10.0	30.9	74	-43.1	Peak
4874.0000	41.3	247	1.2	h	32.5	1.9	34.8	10.0	30.9	74	-43.1	Peak

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

Measured at 1 meter at 4924 MHz & 7386 MHz
Measured at 3 meter at 1969 MHz & 1973.2 MHz

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Distnace factor	Correction Factor	Limit	Margin	Comments
MHz	dBuV/m	Degree	Meter	H / V	dB	dB	dB	dB	dBuV/m	dBuV/m		
1969.0000	48.0	327	1.4	V	24.8	1.2	35.5	0.0	38.5	54	-15.5	Ave
1969.0000	42.8	300	1.4	H	24.8	1.2	35.5	0.0	33.3	54	-20.7	Ave
4924.0000	27.8	265	1.6	v	32.5	1.9	34.8	10.0	29.8	54	-24.2	Ave
7386.0000	28.0	171	1.4	v	36.7	4.2	34.7	10.0	24.2	54	-29.8	Ave
7386.0000	28.0	251	1.8	h	36.7	4.2	34.7	10.0	24.2	54	-29.8	Ave
1973.2000	33.2	313	1.5	V	24.8	1.2	35.5	0.0	23.6	54	-30.4	Ave
1973.2000	33.2	310	1.5	H	24.8	1.2	35.5	0.0	23.6	54	-30.4	Ave
1969.0000	52.3	327	1.4	V	24.8	1.2	35.5	0.0	42.8	74	-31.2	Peak
1969.0000	48.8	300	1.4	H	24.8	1.2	35.5	0.0	39.3	74	-34.7	Peak
7386.0000	42.8	171	1.4	v	36.7	4.2	34.7	10.0	39.1	74	-34.9	Peak
4924.0000	29.2	168	1.4	h	32.5	1.9	34.8	10.0	18.8	54	-35.2	Ave
7386.0000	41.3	251	1.8	h	36.7	4.2	34.7	10.0	37.6	74	-36.4	Peak
1973.2000	46.0	313	1.5	V	24.8	1.2	35.5	0.0	35.8	74	-38.2	Peak
1973.2000	45.3	310	1.5	H	24.8	1.2	35.5	0.0	35.8	74	-38.2	Peak
4924.0000	41.7	168	1.4	h	32.5	1.9	34.8	10.0	31.3	74	-42.7	Peak
4924.0000	40.2	265	1.6	v	32.5	1.9	34.8	10.0	29.8	74	-44.2	Peak

802.11b

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

Measured at 1 meter at 4824 MHz & 7236 MHz
Measured at 3 meter at 1929.6 MHz & 2080 MHz

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Distance factor	Correction Factor	Limit	Margin	Comments
MHz	dBuV/m	Degree	Meter	H / V	dB	dB	dB	dB	dBuV/m	dBuV/m		
1929.6000	47.3	195	1.7	V	24.8	1.2	35.5	0.0	37.8	54	-16.2	Ave
1929.6000	46.3	269	1.6	H	24.8	1.2	35.5	0.0	36.8	54	-17.2	Ave
2080.0000	37.7	328	1.6	H	28.7	1.5	35.1	0.0	32.7	54	-21.3	Ave
2080.0000	35.0	240	1.6	V	28.7	1.5	35.1	0.0	30.1	54	-23.9	Ave
7236.0000	32.7	120	1.3	v	36.7	4.2	34.9	10.0	28.7	54	-25.3	Ave
7236.0000	32.7	160	1.6	h	36.7	4.2	34.9	10.0	28.7	54	-25.3	Ave
4824.0000	36.2	187	1.1	v	32.5	1.9	34.8	10.0	25.8	54	-28.2	Ave
7236.0000	46.8	160	1.6	h	36.7	4.2	34.9	10.0	42.8	74	-31.2	Peak
2080.0000	47.0	328	1.6	H	28.7	1.5	35.1	0.0	42.1	74	-31.9	Peak
1929.6000	51.5	195	1.7	V	24.8	1.2	35.5	0.0	42.0	74	-32.0	Peak
7236.0000	45.8	120	1.3	v	36.7	4.2	34.9	10.0	41.8	74	-32.2	Peak
1929.6000	51.2	269	1.6	H	24.8	1.2	35.5	0.0	41.6	74	-32.4	Peak
2080.0000	46.0	240	1.6	V	28.7	1.5	35.1	0.0	41.1	74	-32.9	Peak
4824.0000	29.8	164	1.6	h	32.5	1.9	34.8	10.0	19.4	54	-34.6	Ave
4824.0000	48.7	187	1.1	v	32.5	1.9	34.8	10.0	38.3	74	-35.7	Peak
4824.0000	43.3	164	1.6	h	32.5	1.9	34.8	10.0	32.9	74	-41.1	Peak

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

Measured at 1 meter at 4874 MHz
Measured at 3 meter at 2080 MHz

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Distance factor	Correction Factor	Limit	Margin	Comments
MHz	dBuV/m	Degree	Meter	H / V	dB	dB	dB	dB	dBuV/m	dBuV/m		
2080.0000	37.7	328	1.6	H	28.7	1.5	35.1	0.0	32.7	54	-21.3	Ave
2080.0000	35.0	240	1.6	V	28.7	1.5	35.1	0.0	30.1	54	-23.9	Ave
4874.0000	35.7	185	1.1	v	32.5	1.9	34.8	10.0	25.3	54	-28.7	Ave
2080.0000	47.0	328	1.6	H	28.7	1.5	35.1	0.0	42.1	74	-31.9	Peak
2080.0000	46.0	240	1.6	V	28.7	1.5	35.1	0.0	41.1	74	-32.9	Peak
4874.0000	31.0	221	1.4	h	32.5	1.9	34.8	10.0	20.6	54	-33.4	Ave
4874.0000	48.0	185	1.1	v	32.5	1.9	34.8	10.0	37.6	74	-36.4	Peak
4874.0000	44.0	221	1.4	h	32.5	1.9	34.8	10.0	33.6	74	-40.4	Peak

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

Measured at 1 meter at 4924 MHz & 7386 MHz
Measured at 3 meter at 2080 MHz

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Distance factor	Correction Factor	Limit	Margin	Comments
MHz	dBuV/m	Degree	Meter	H / V	dB	dB	dB	dB	dBuV/m	dBuV/m		
2080.0000	37.7	328	1.6	H	28.7	1.5	35.1	0.0	32.7	54	-21.3	Ave
2080.0000	35.0	240	1.6	V	28.7	1.5	35.1	0.0	30.1	54	-23.9	Ave
7386.0000	28.1	251	1.8	h	36.7	4.2	34.7	10.0	24.3	54	-29.7	Ave
7386.0000	27.9	169	1.6	v	36.7	4.2	34.7	10.0	24.1	54	-29.9	Ave
2080.0000	47.0	328	1.6	H	28.7	1.5	35.1	0.0	42.1	74	-31.9	Peak
2080.0000	46.0	240	1.6	V	28.7	1.5	35.1	0.0	41.1	74	-32.9	Peak
4924.0000	31.5	220	1.2	v	32.5	1.9	34.8	10.0	21.1	54	-32.9	Ave
4924.0000	30.7	105	1.1	h	32.5	1.9	34.8	10.0	20.3	54	-33.7	Ave
7386.0000	42.8	169	1.6	v	36.7	4.2	34.7	10.0	39.1	74	-34.9	Peak
7386.0000	41.3	251	1.8	h	36.7	4.2	34.7	10.0	37.6	74	-36.4	Peak
4924.0000	43.9	220	1.2	v	32.5	1.9	34.8	10.0	33.5	74	-40.5	Peak
4924.0000	43.5	105	1.1	h	32.5	1.9	34.8	10.0	33.1	74	-40.9	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

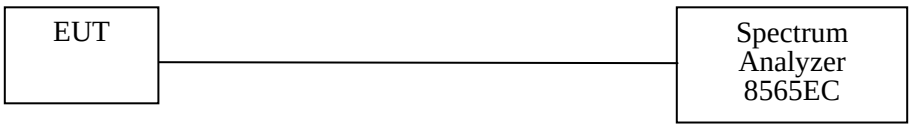
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency 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

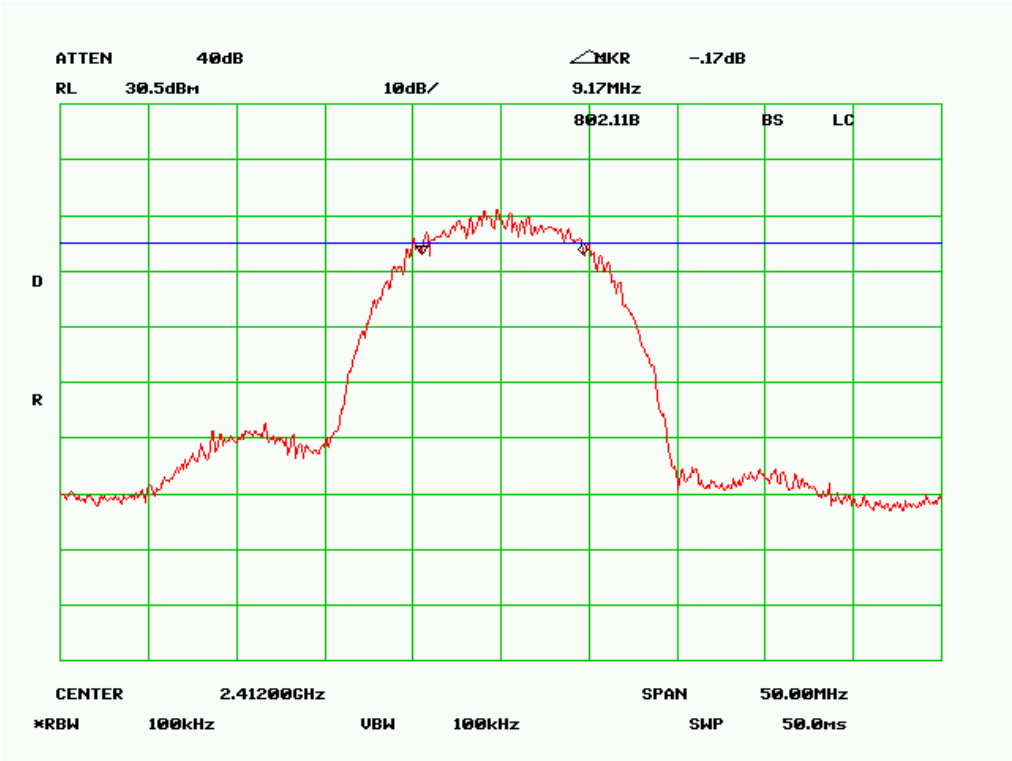
**The testing was performed by Tom Chen on 2006-09-07*

Test Results

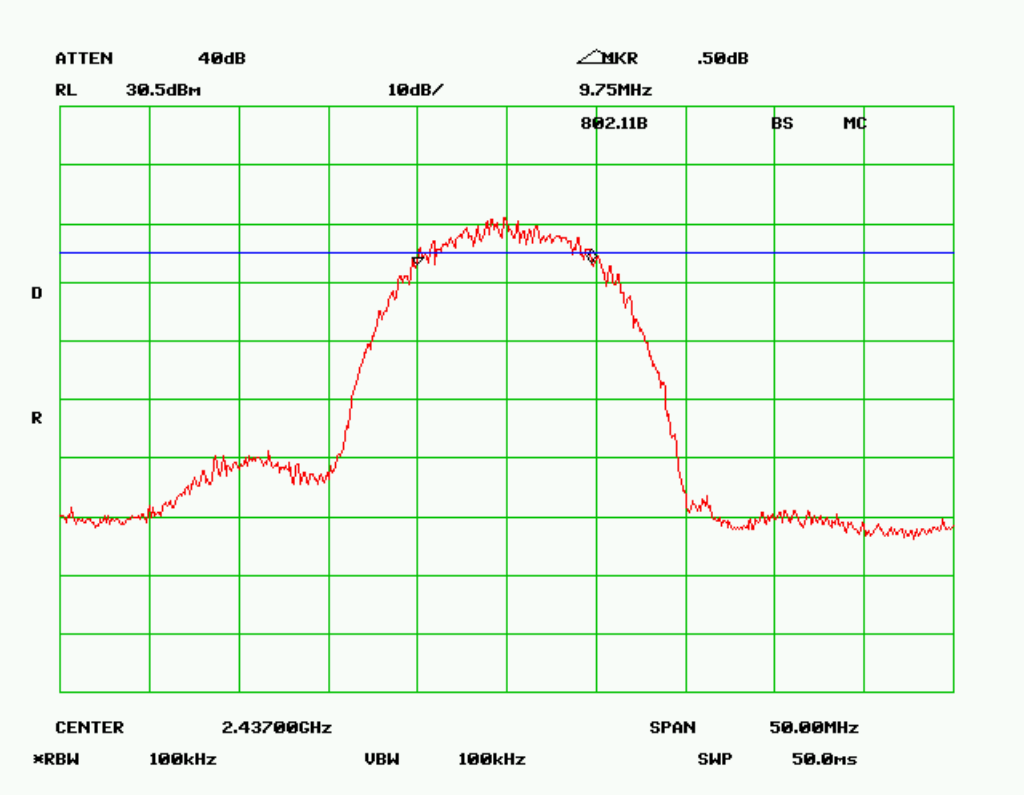
Base Set (WF6972)

802.11b:

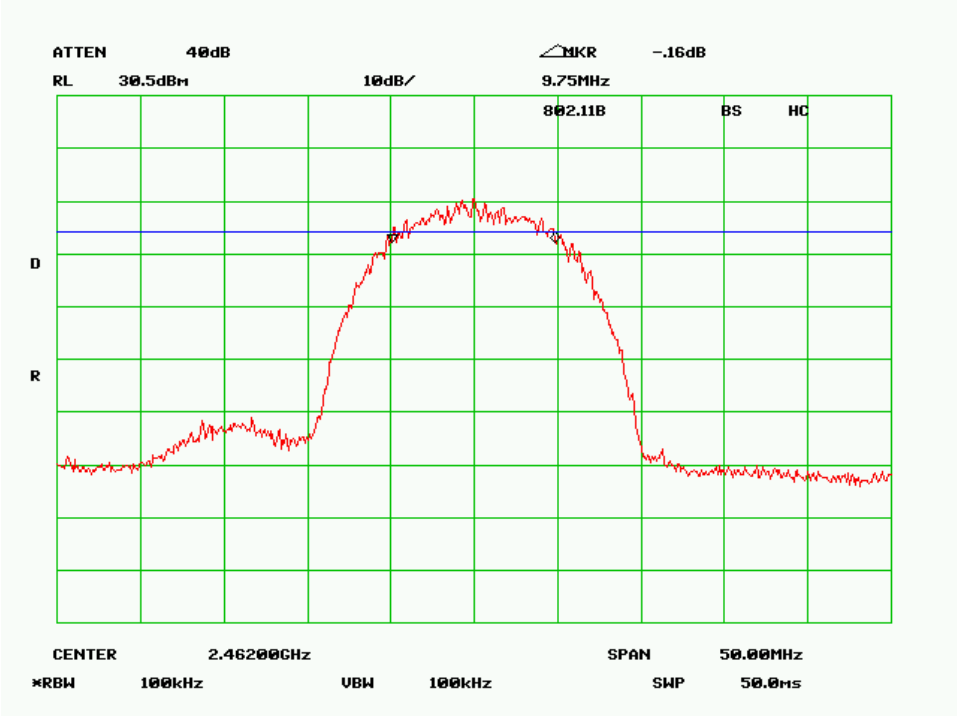
Low Channel



Middle Channel

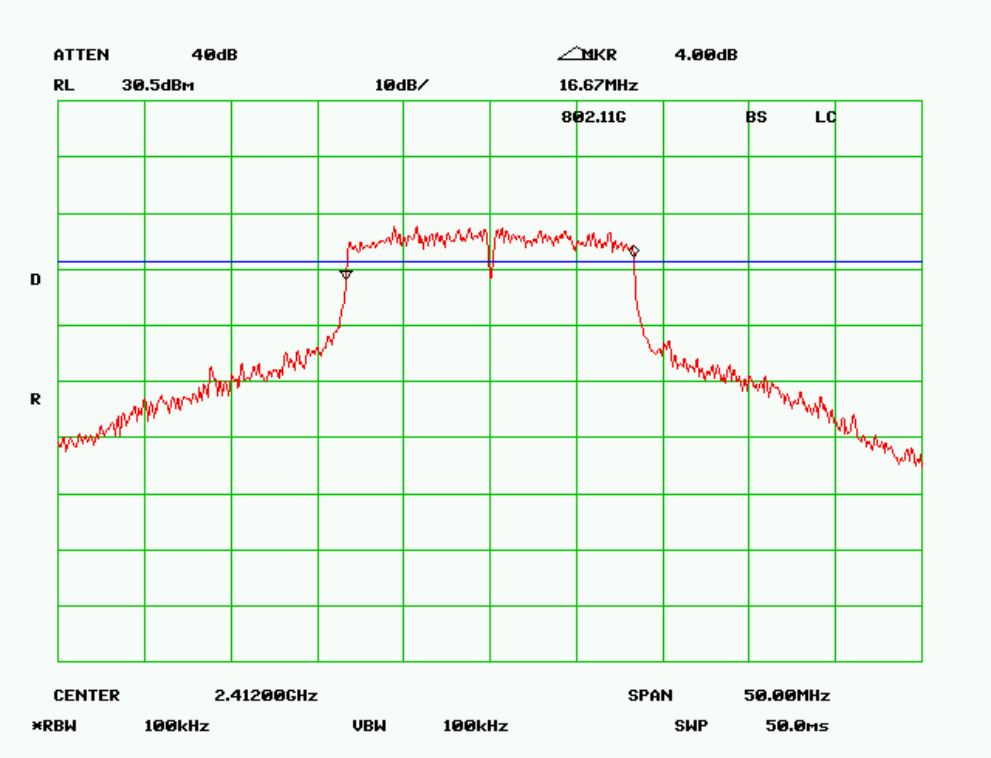


High Channel

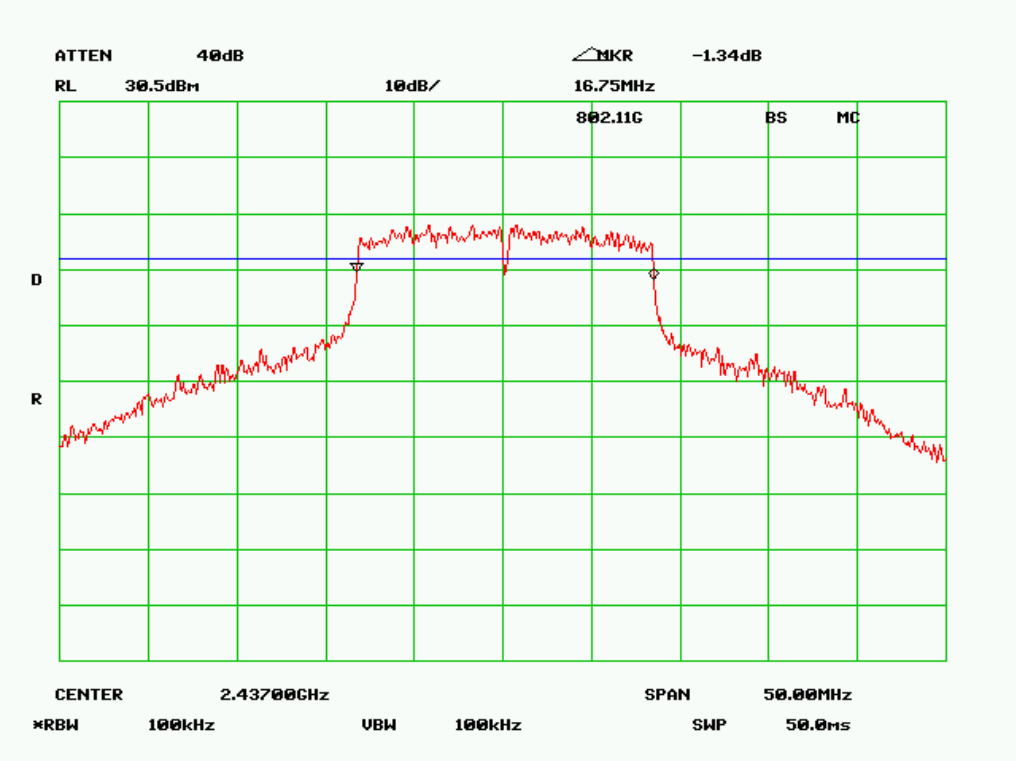


802.11g:

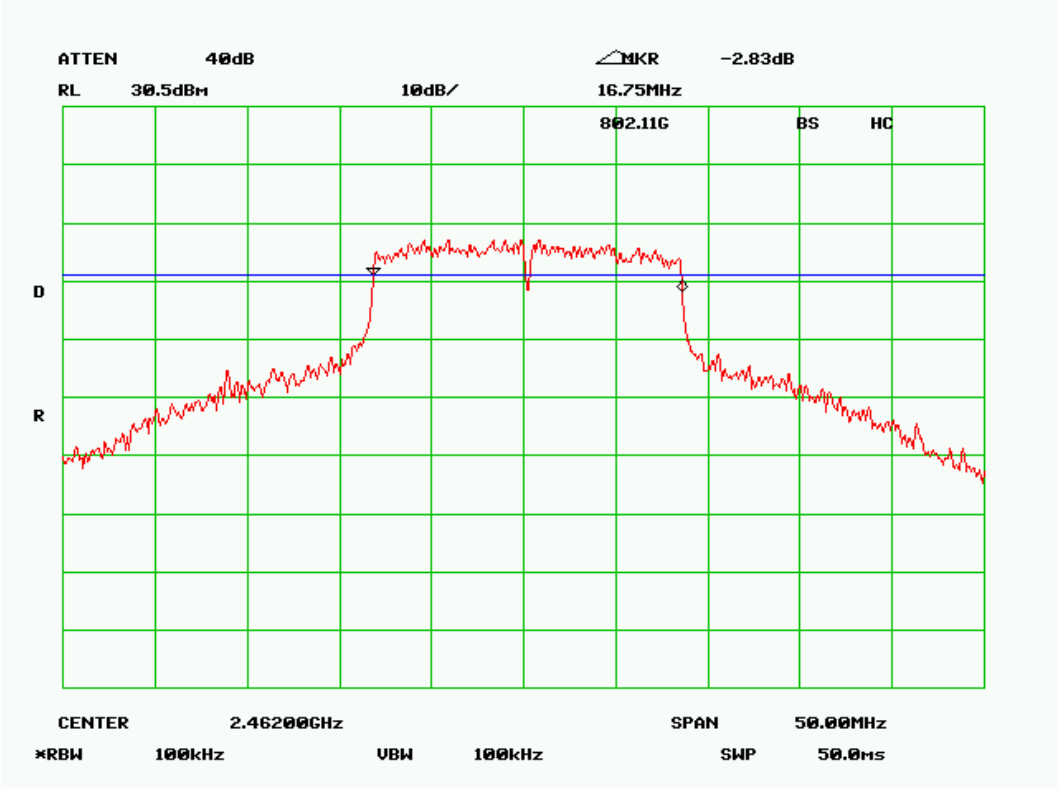
Low Channel



Middle Channel



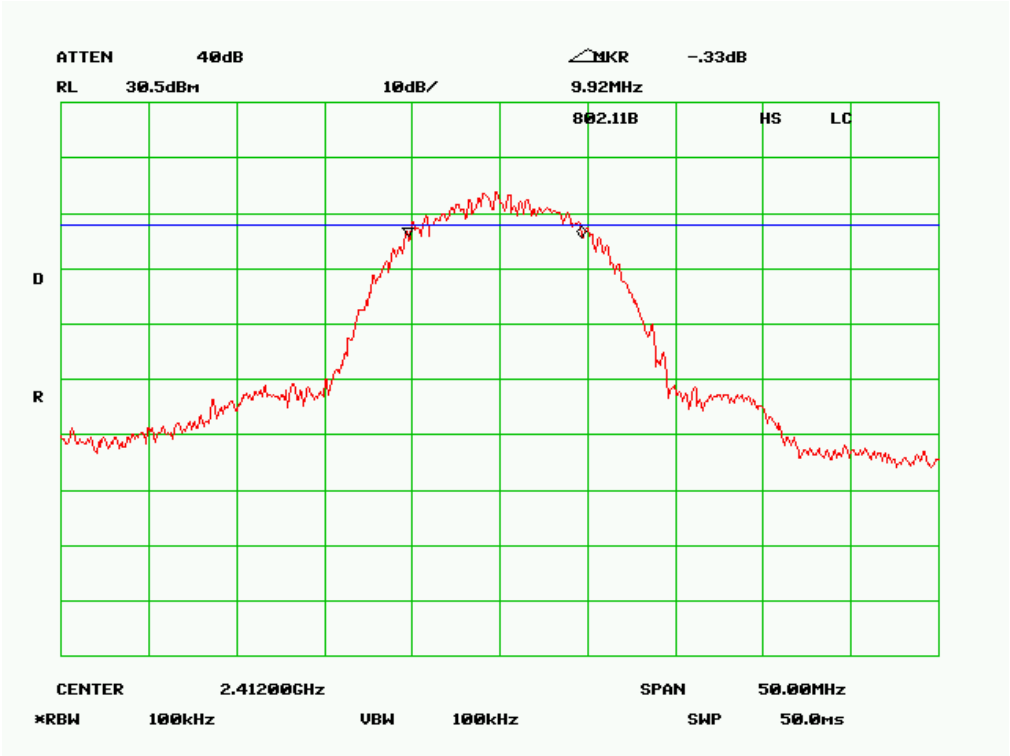
High Channel



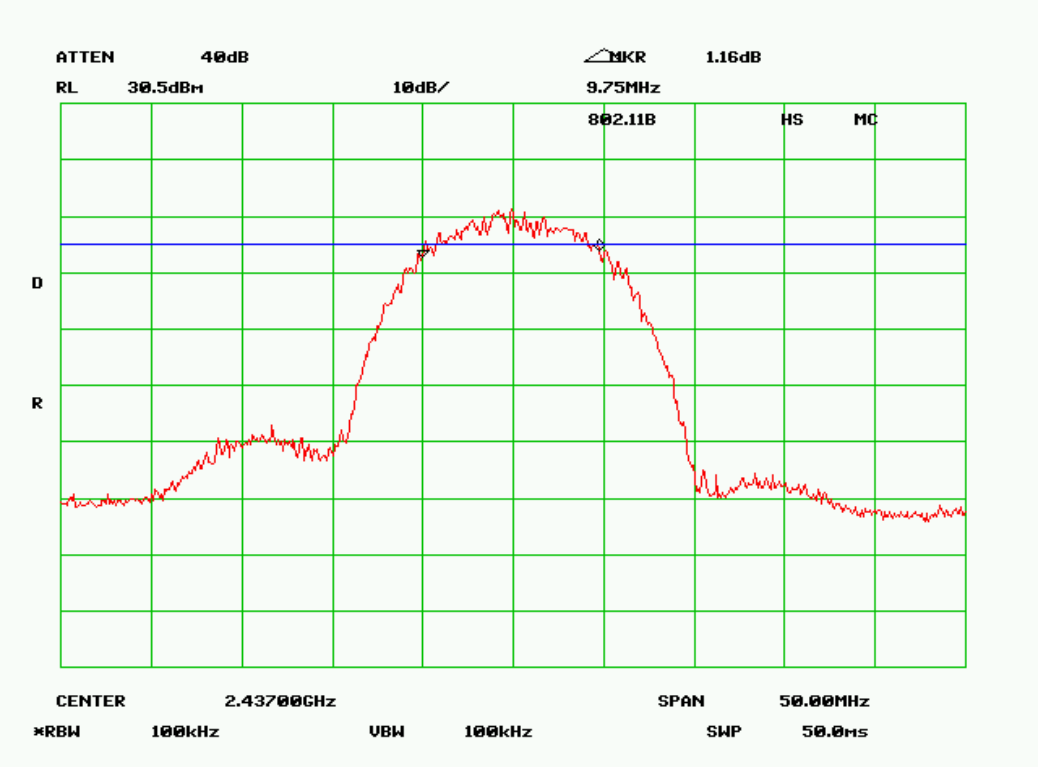
Hand Set (WF6972 & WF6909)

802.11b:

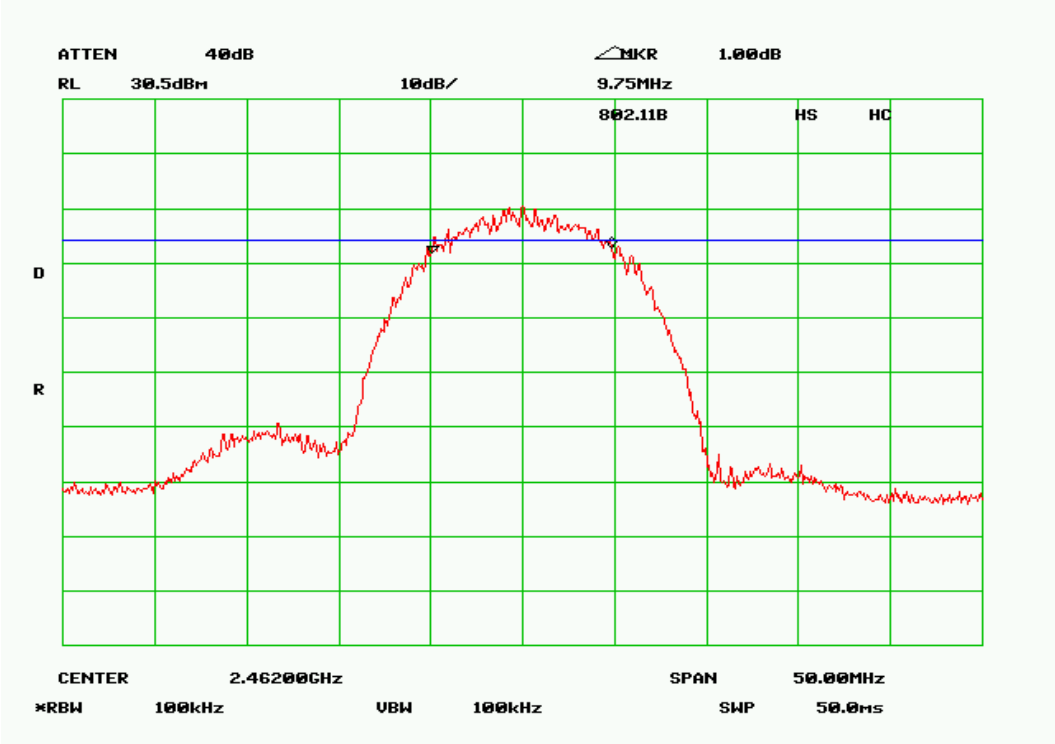
Low Channel



Middle Channel

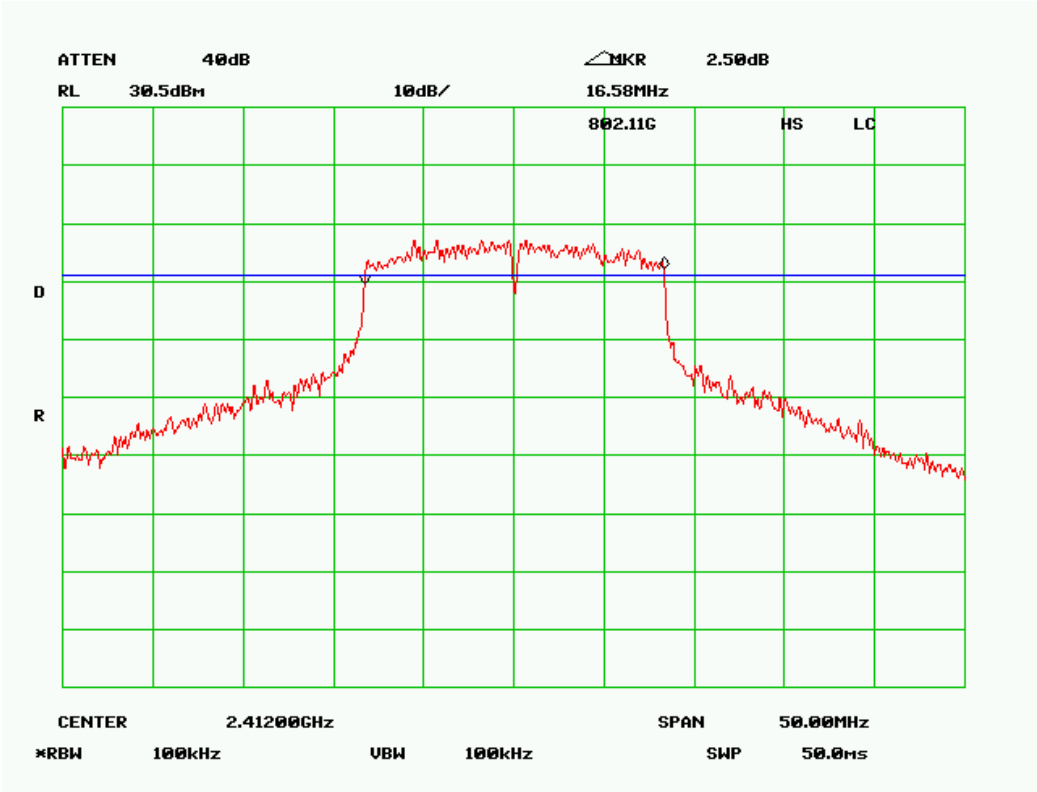


High Channel

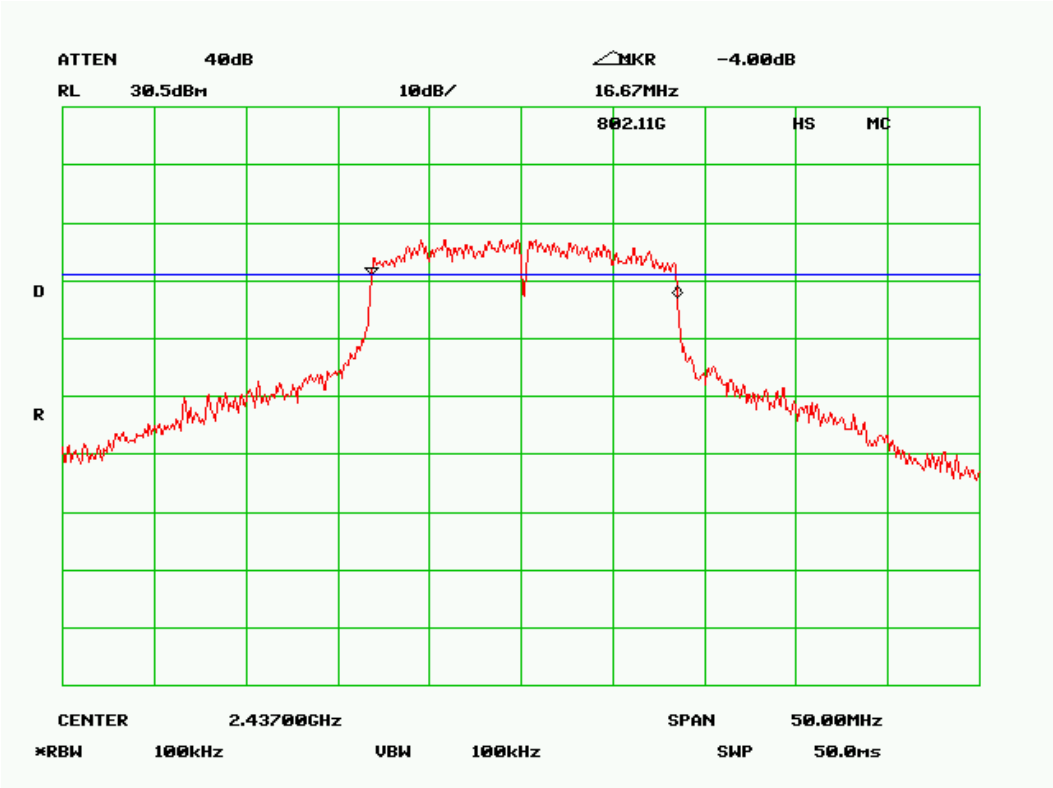


802.11g:

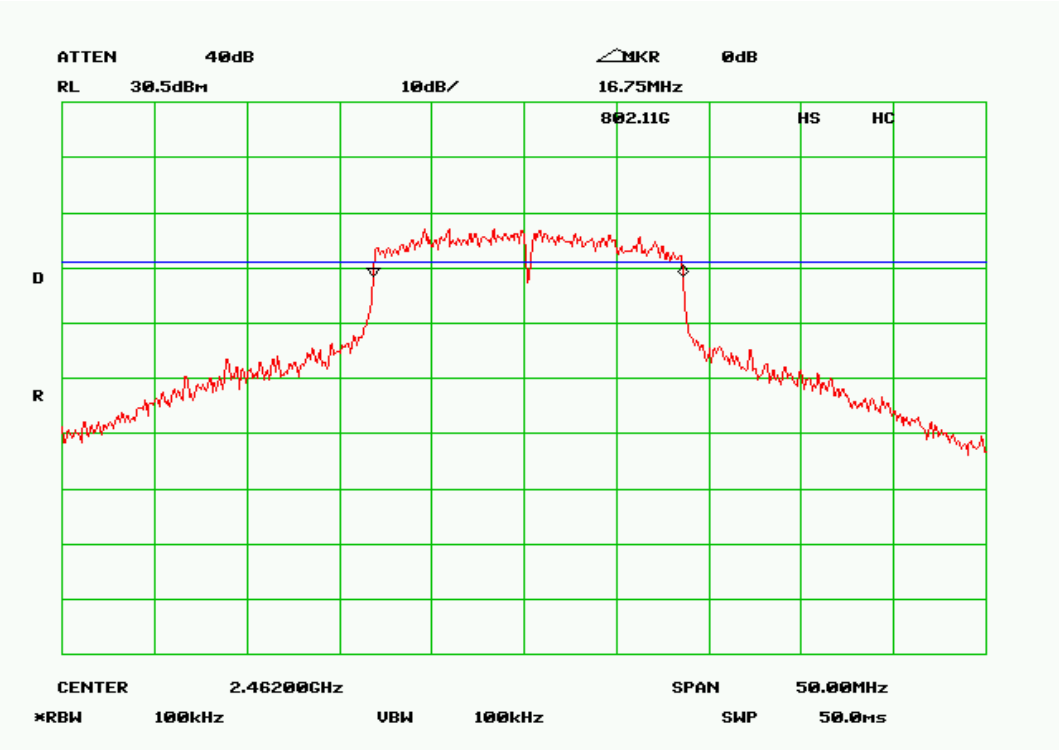
Low Channel



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

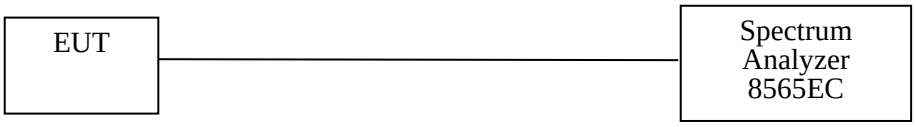
1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to a spectrum analyzer.
3. Add a correction factor to the display.

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 2006-09-07*

Measurement Result

RF Output Power: Base Set (WF6972)

802.11b:

Frequency	Reading	Output	Limit	Result
MHz	dBm	mW	(mW)	
2412	20	100.00	1000	Pass
2437	20.2	104.71	1000	Pass
2462	19	79.43	1000	Pass

802.11g:

Frequency	Reading	Output	Limit	Result
MHz	dBm	mW	(mW)	
2412	18.7	74.13	1000	Pass
2437	19.5	89.13	1000	Pass
2462	19.1	81.28	1000	Pass

Hand Set (WF6972 & WF6909)

802.11b:

Frequency	Reading	Output	Limit	Result
MHz	dBm	mW	(mW)	
2412	19.1	81.28	1000	Pass
2437	19.9	97.72	1000	Pass
2462	19	79.43	1000	Pass

802.11g:

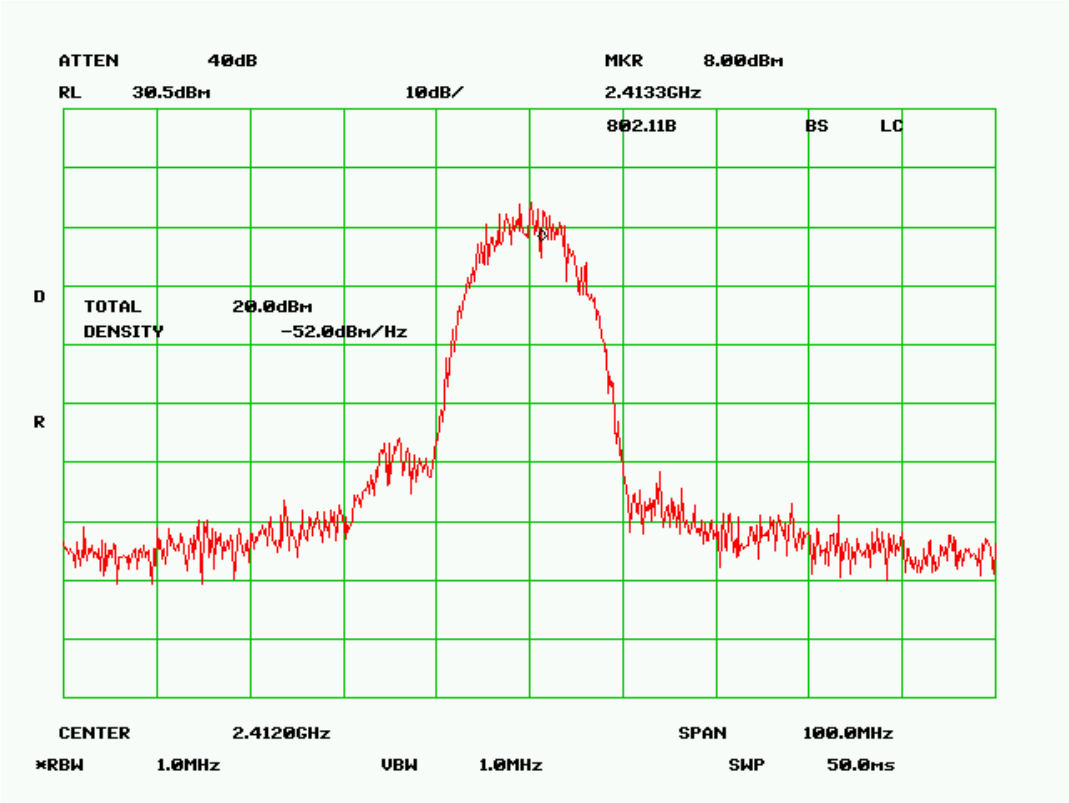
Frequency	Reading	Output	Limit	Result
MHz	dBm	mW	(mW)	
2412	19	79.43	1000	Pass
2437	18.8	75.86	1000	Pass
2462	18	63.10	1000	Pass

Test Result

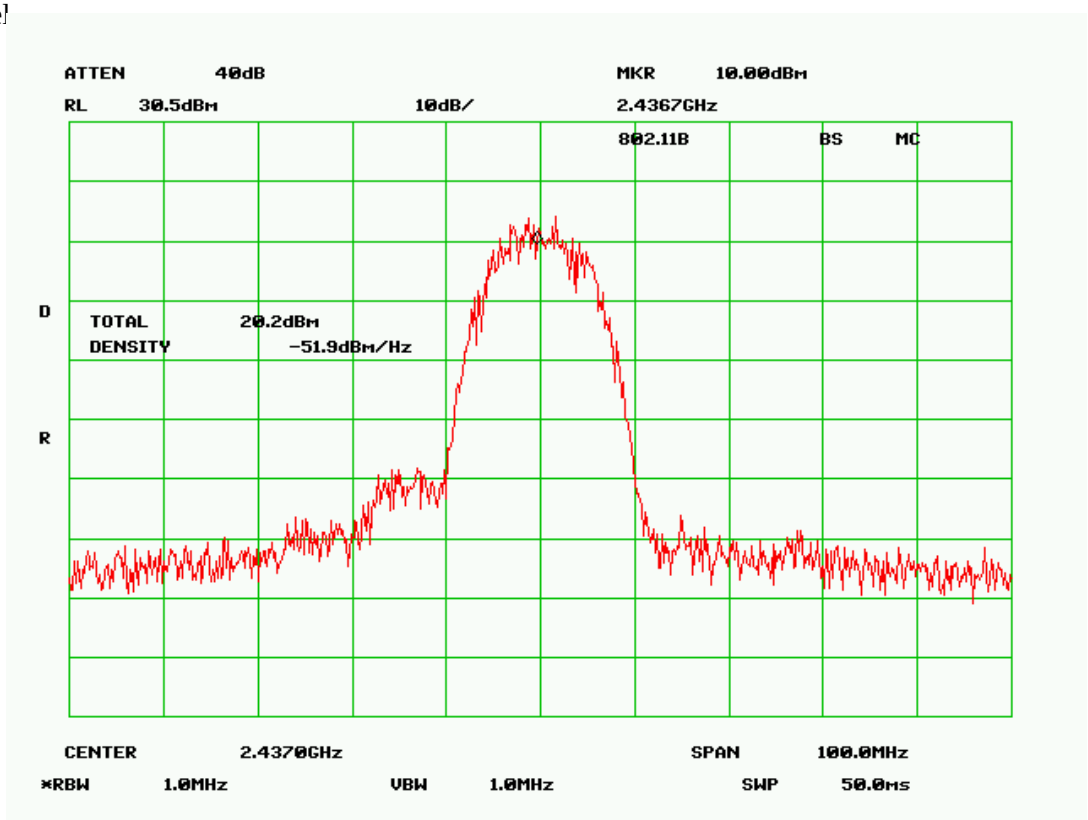
Base Set (WF6972 & WF6909)

802.11b:

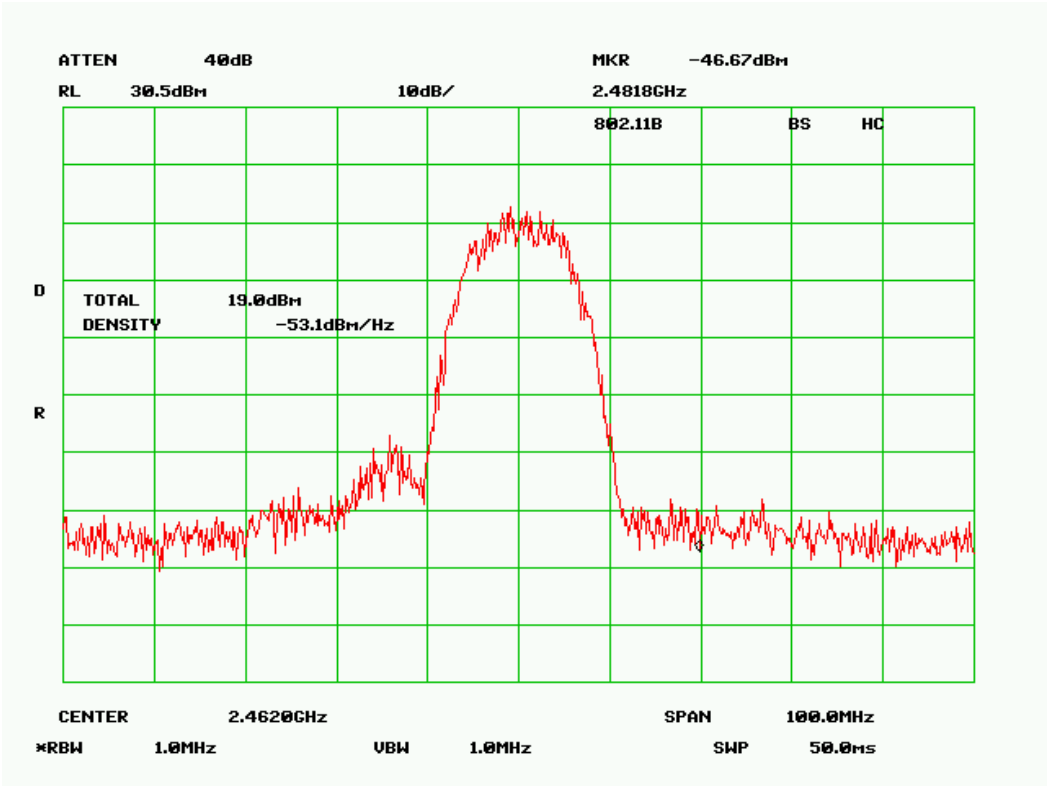
Low Channel



Middle Channel

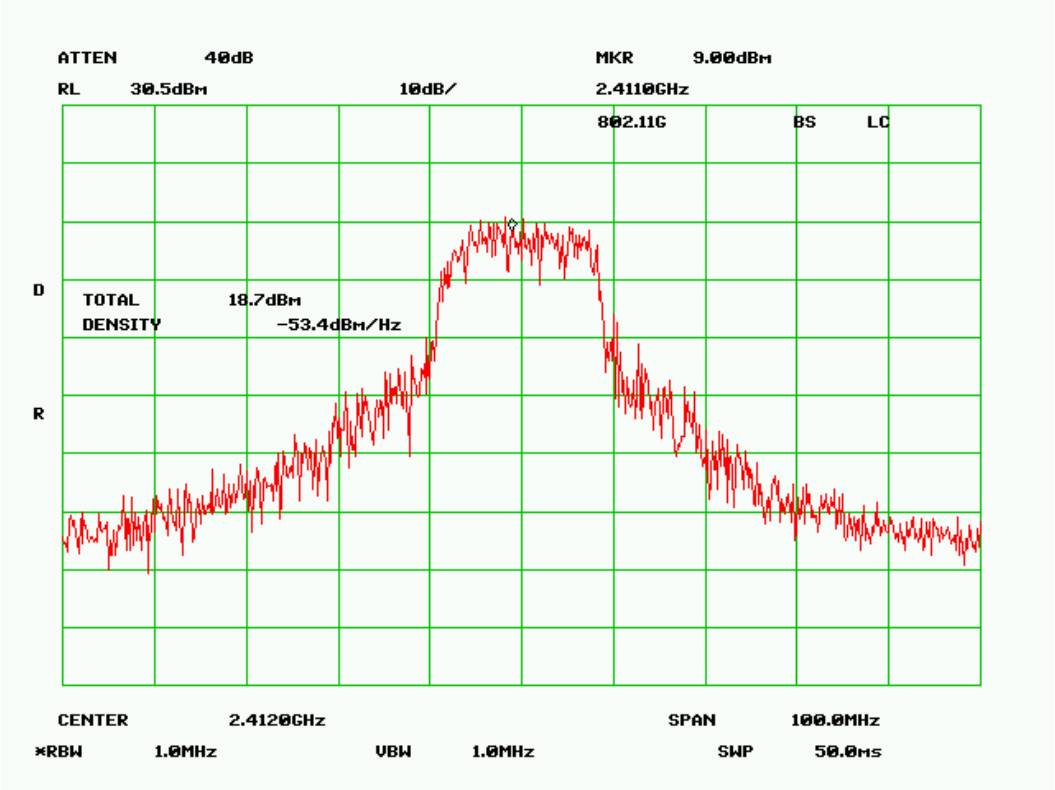


High Channel

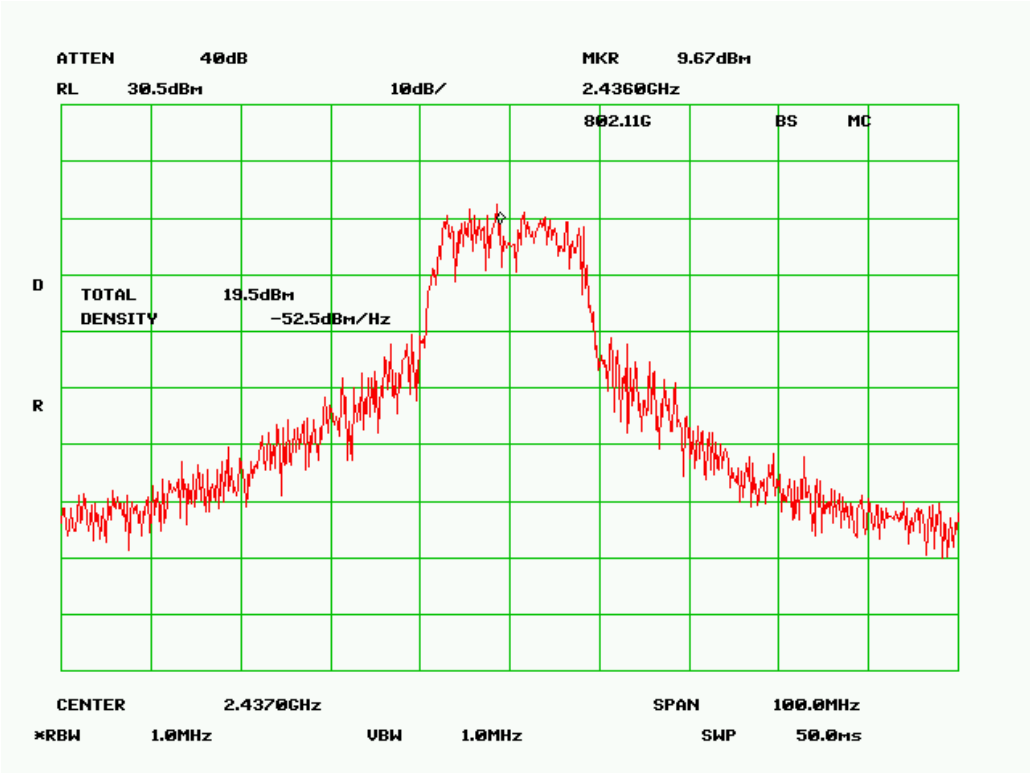


802.11g:

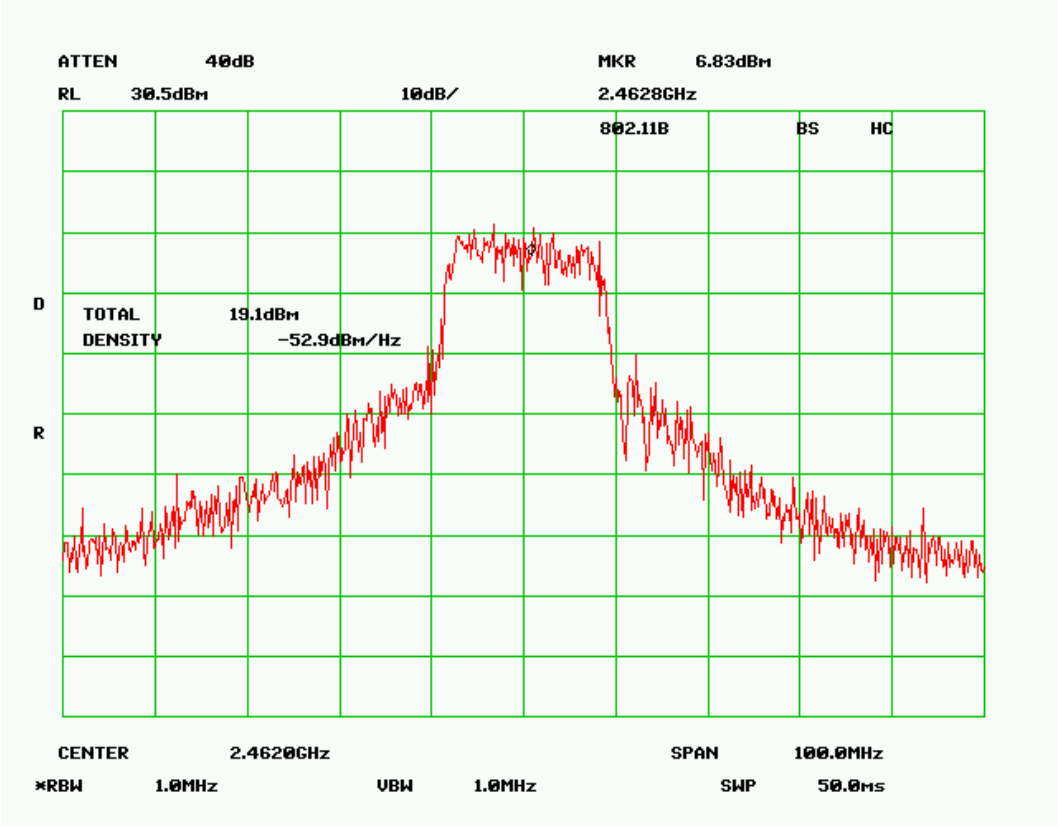
Low Channel



Mid Channel



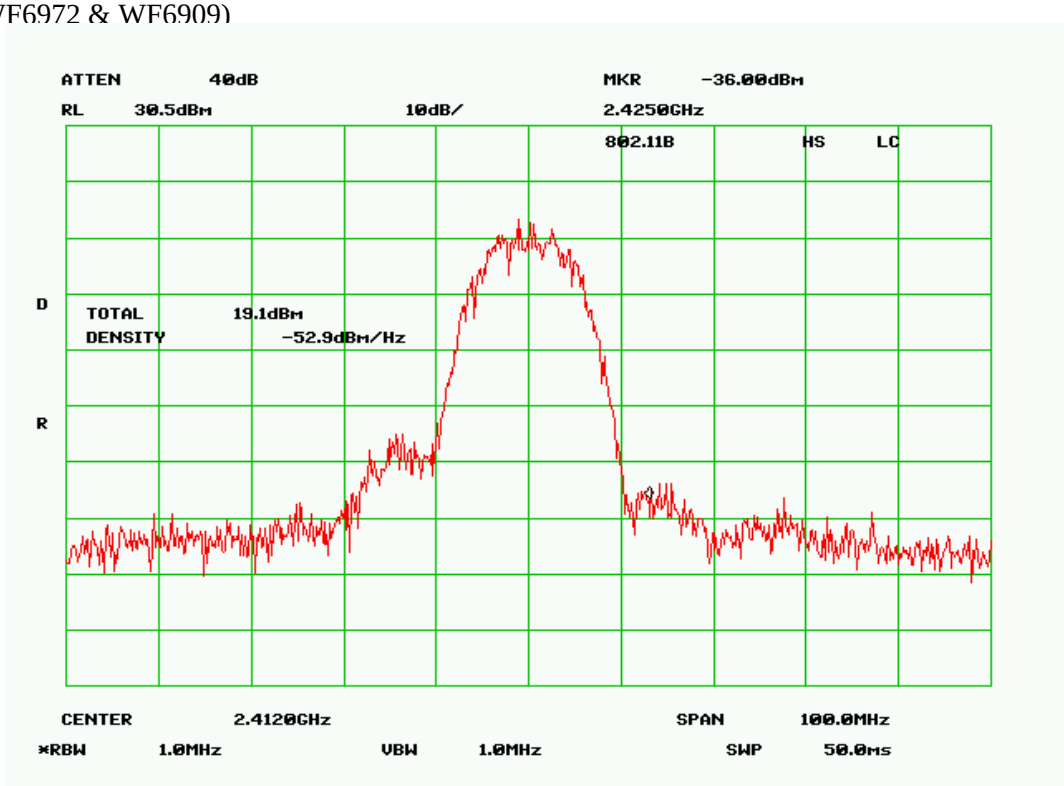
High Channel



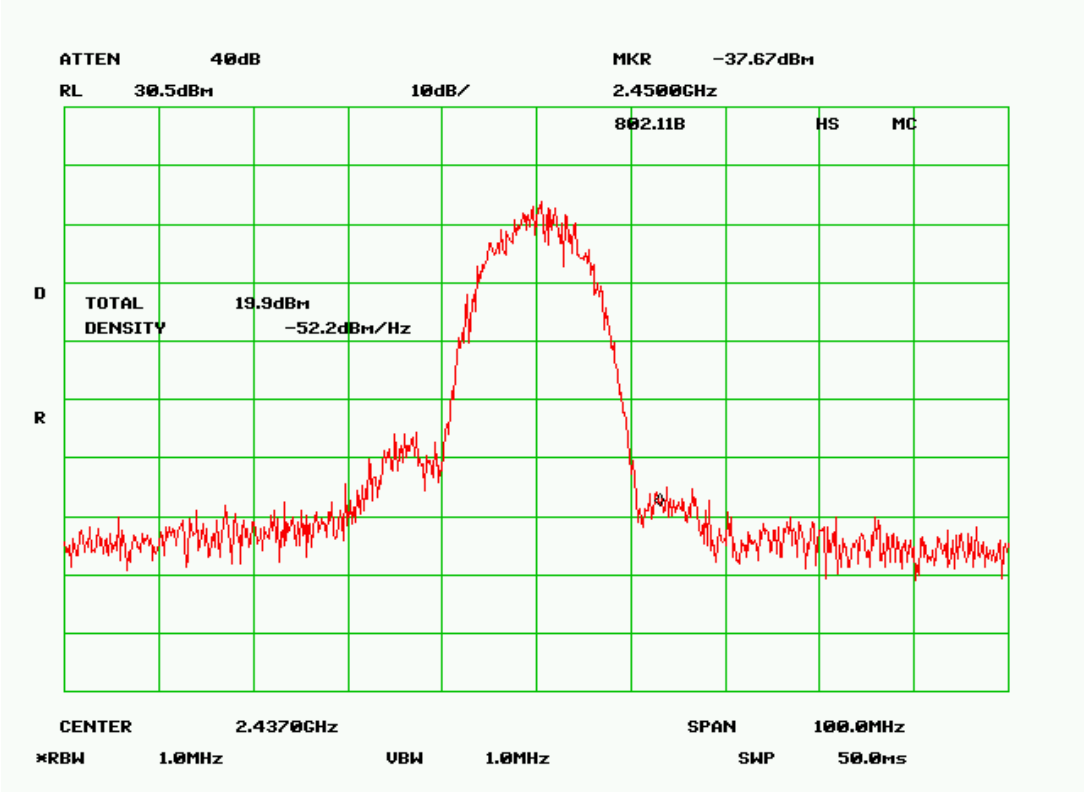
HAND SET (WF6972 & WF6909)

802.11b:

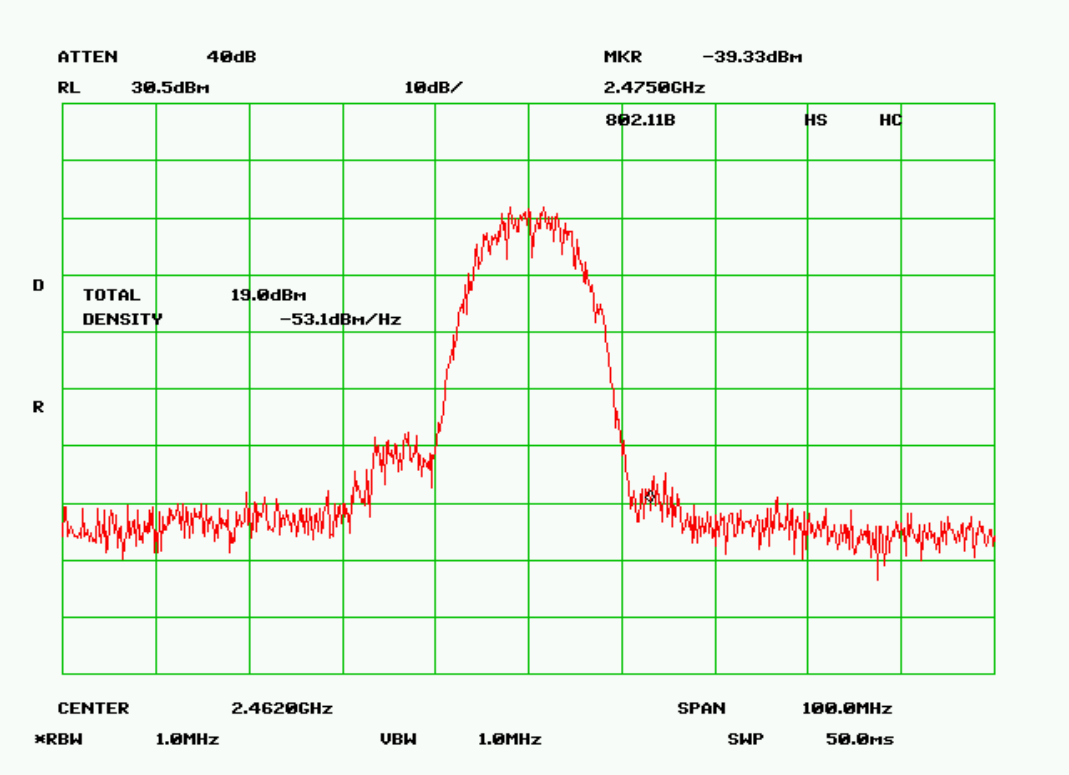
Low Channel



Middle Channel

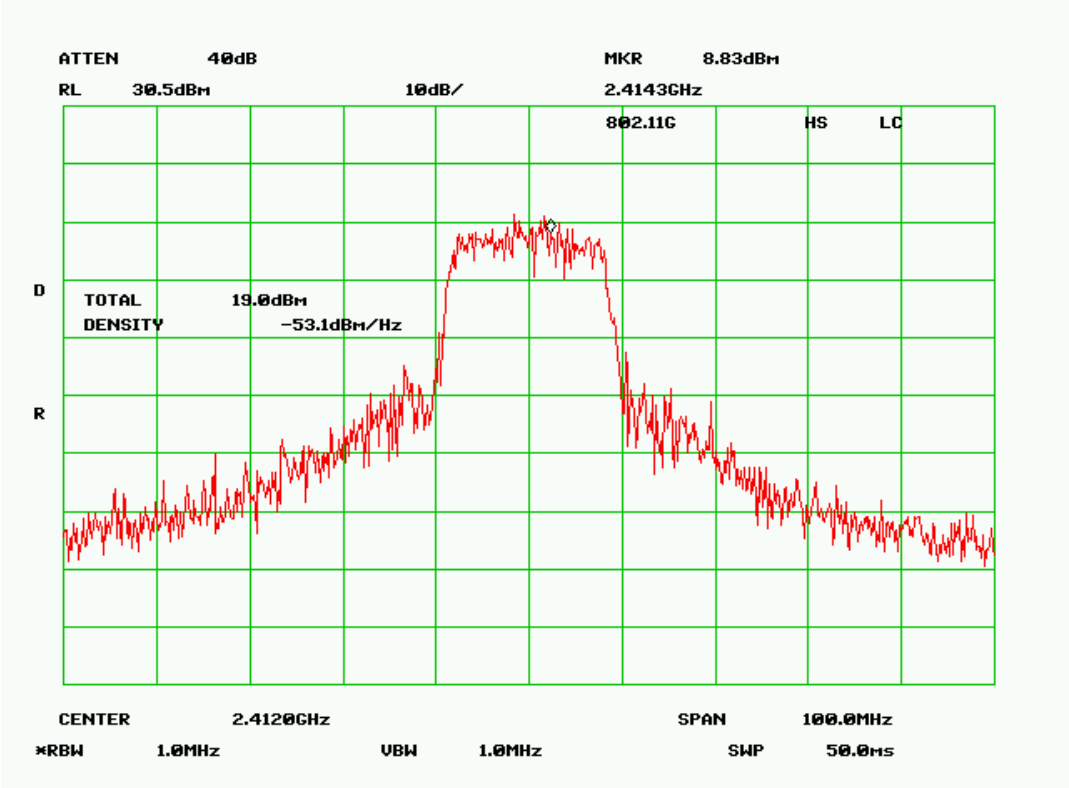


High Channel

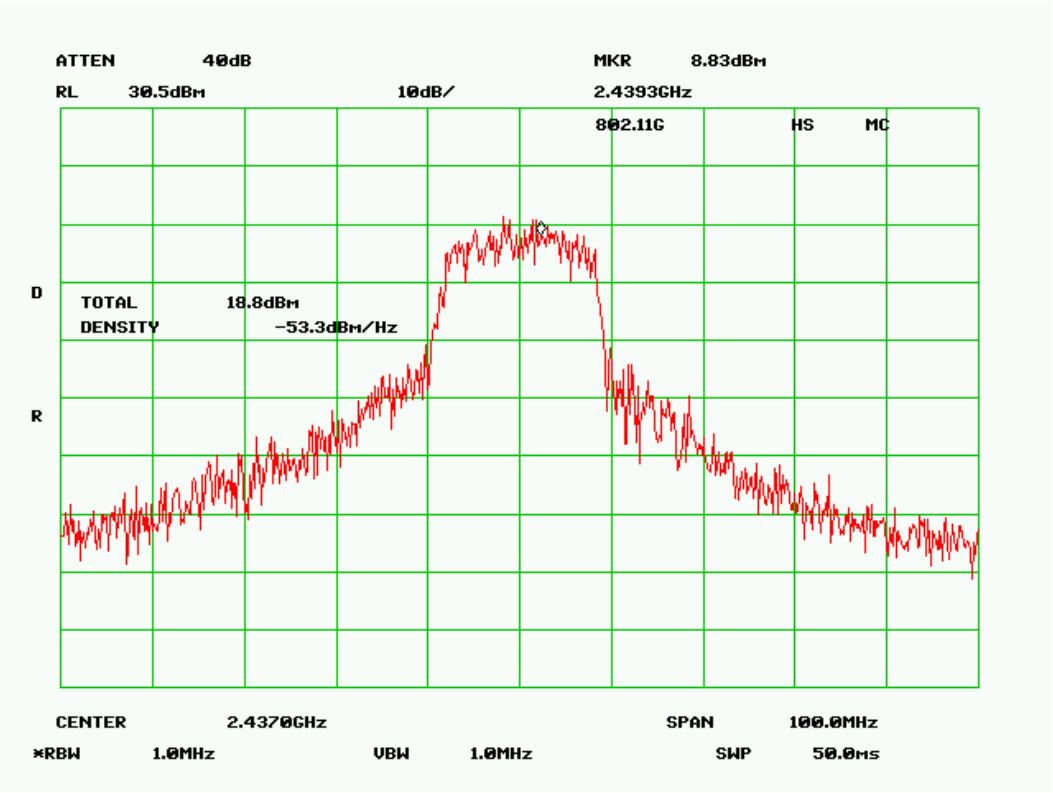


802.11g:

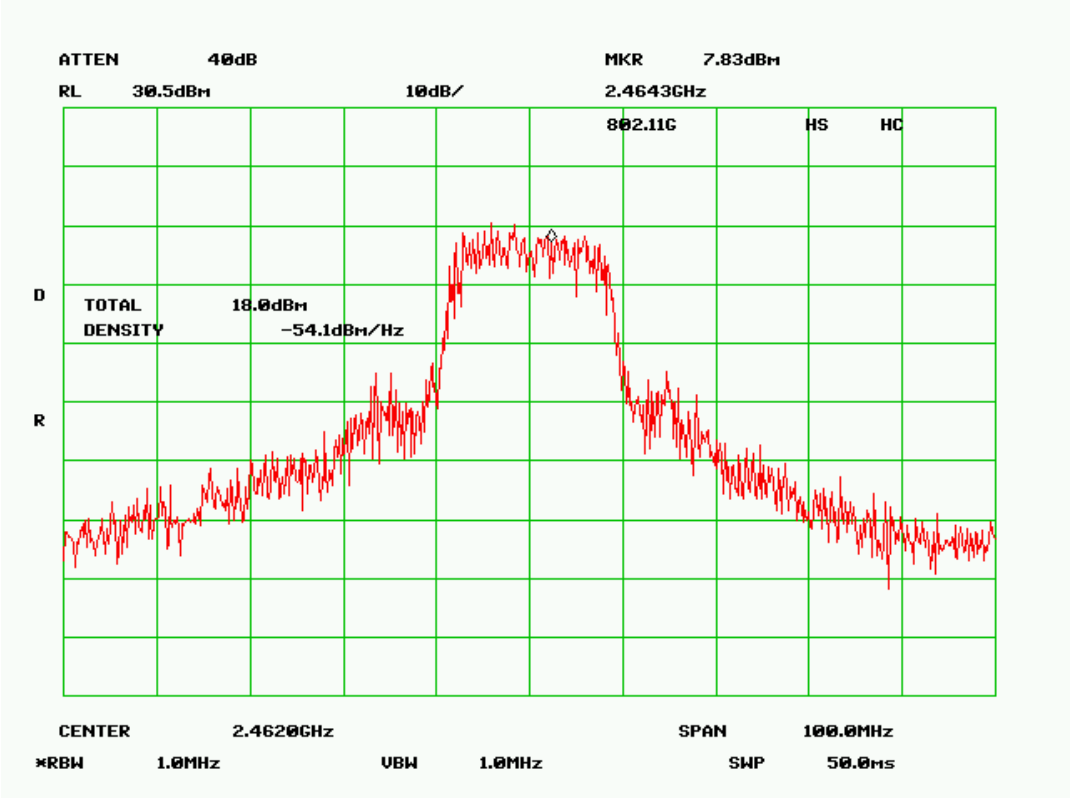
Low Channel



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 2006-09-07*

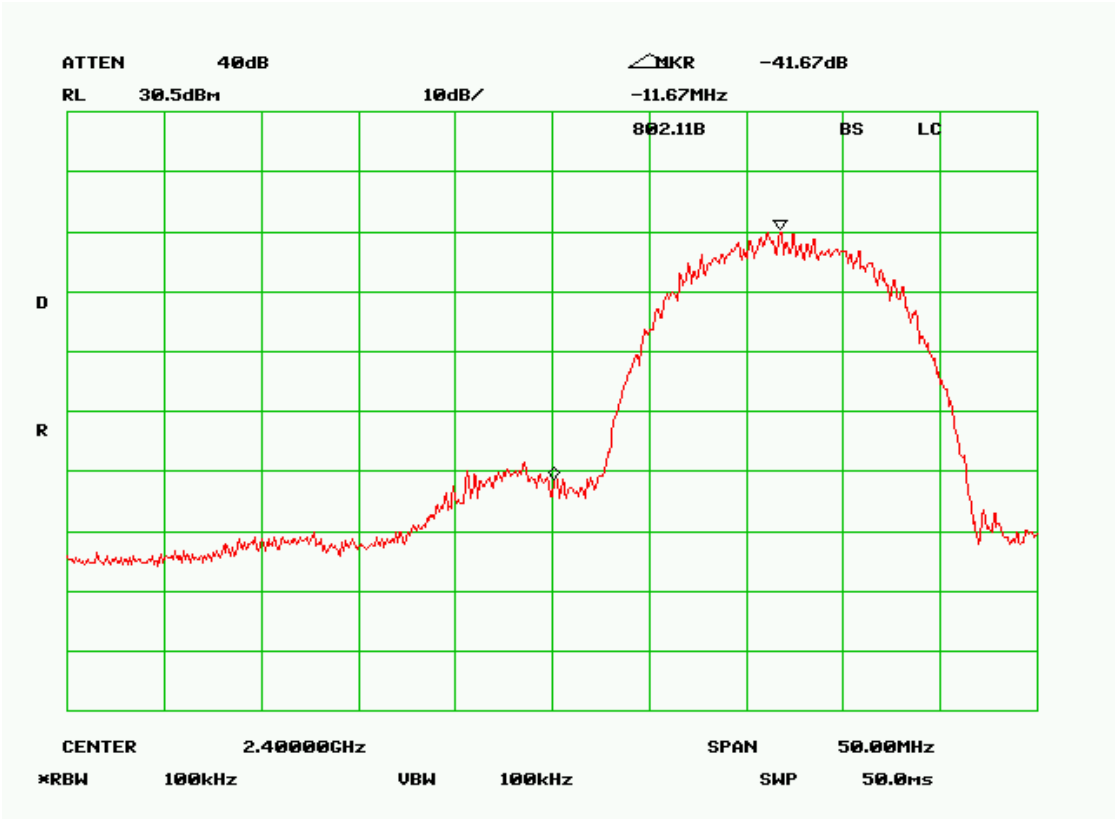
Measurement Result

Please refer to following pages for plots of band edge.

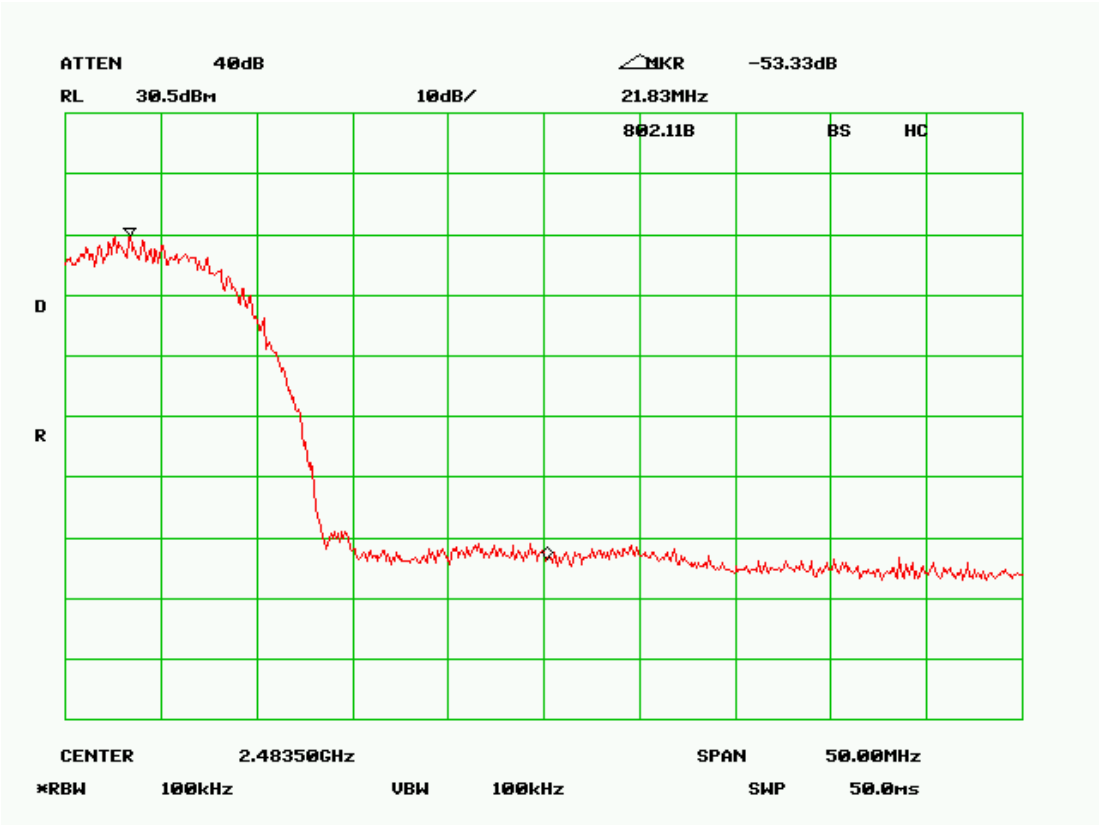
Base Set (WF6972)

802.11b:

Low Channel

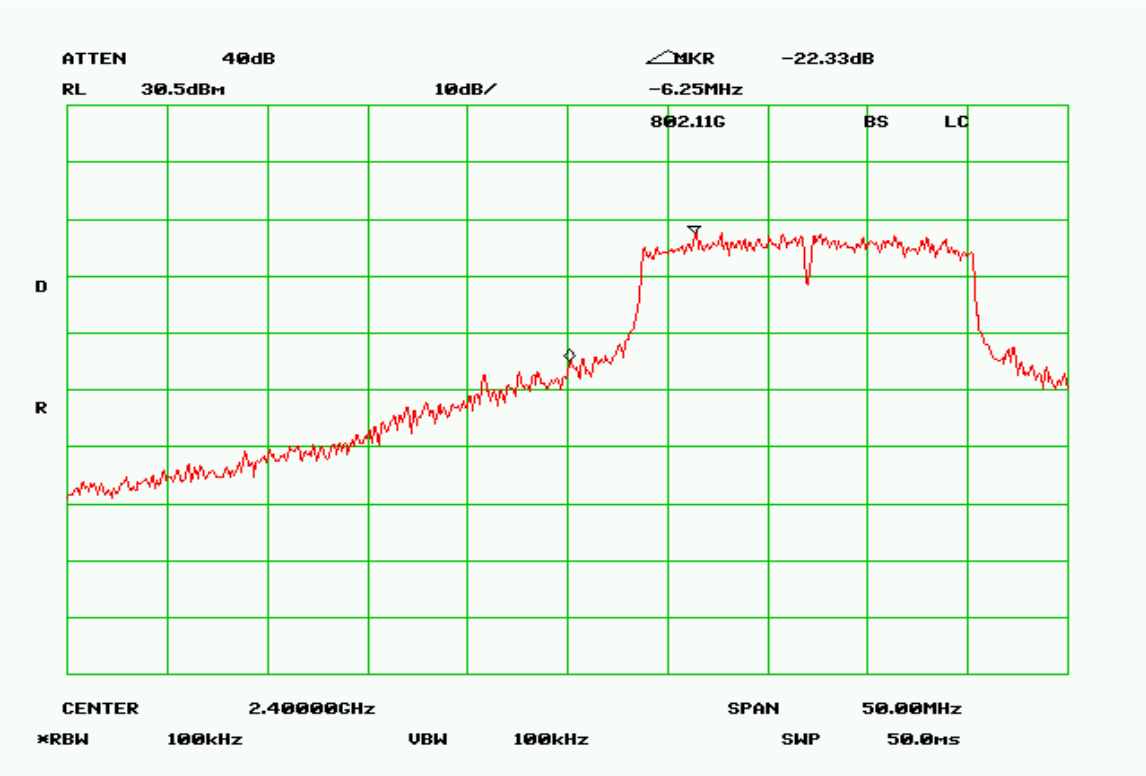


High Channel

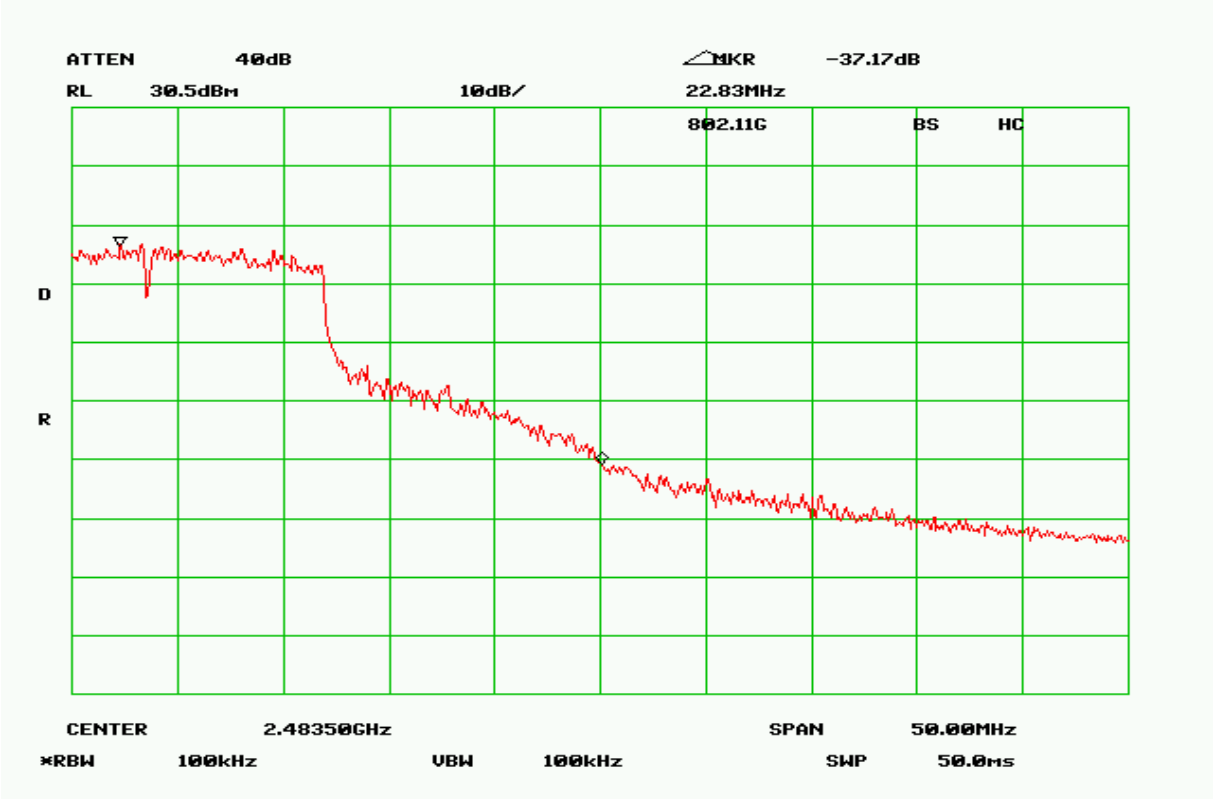


802.11g:

Low Channel



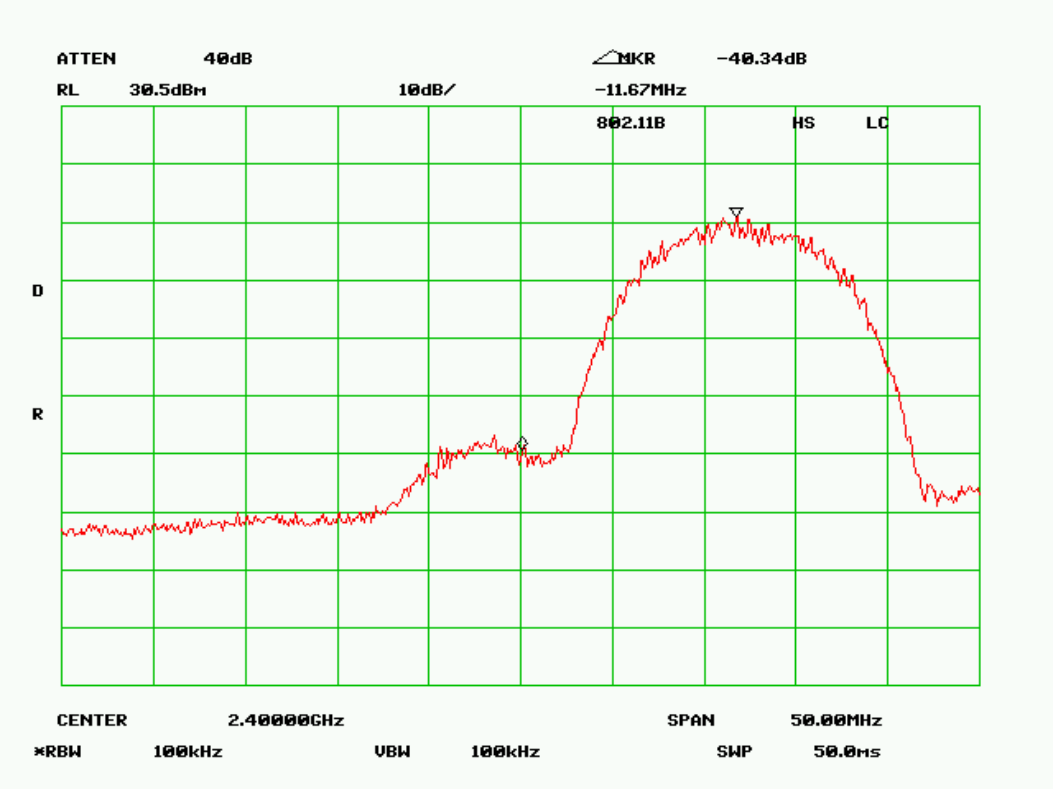
High Channel



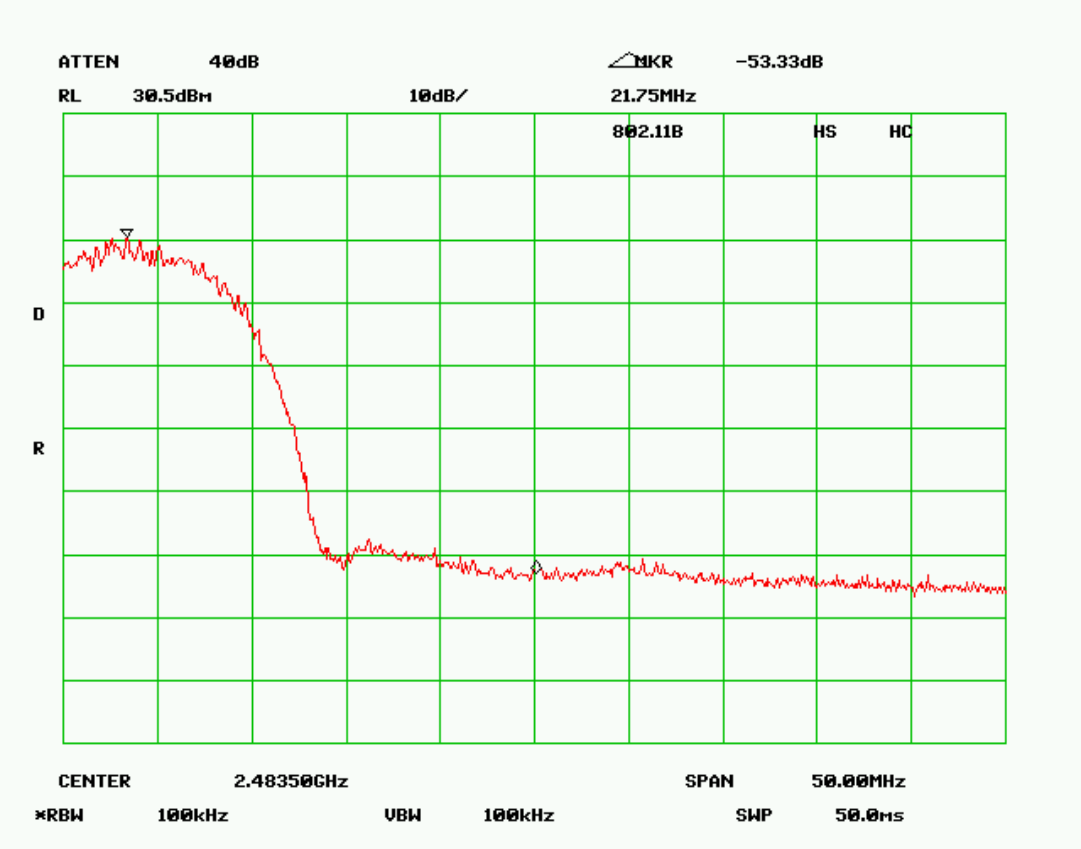
Hand Set (WF6972 & WF6909)

802.11b:

Low Channel

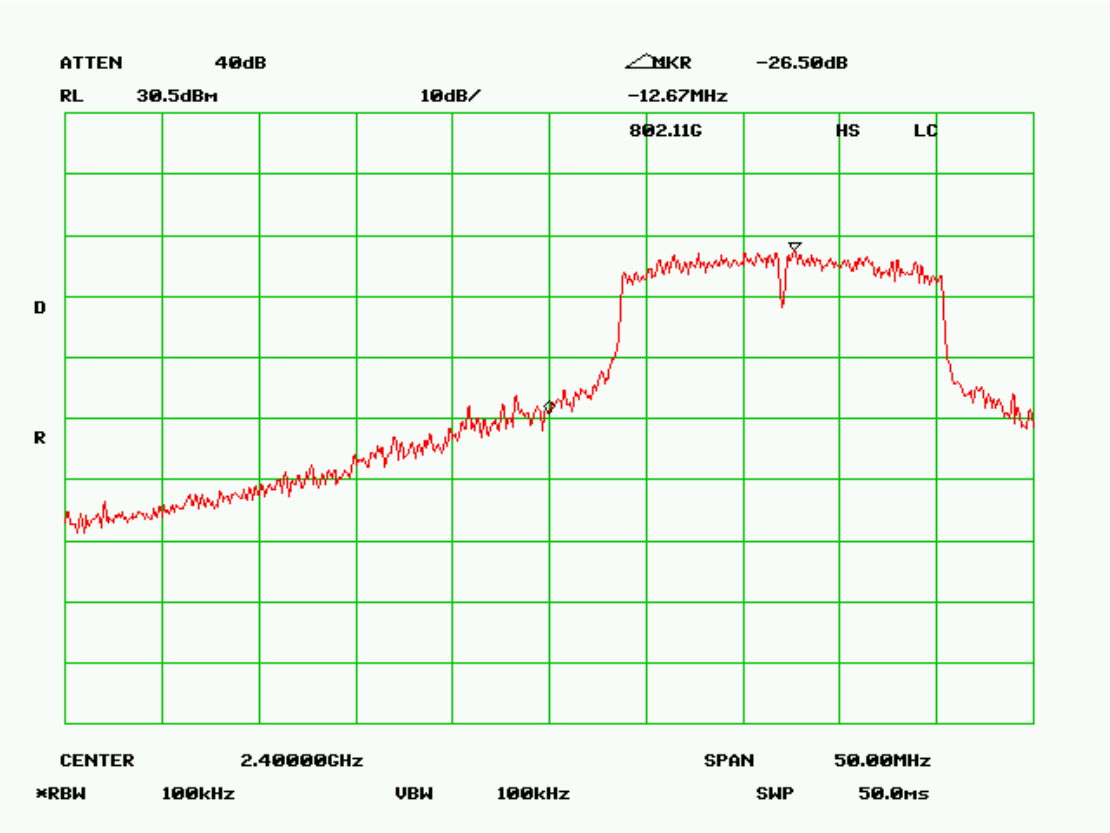


High Channel

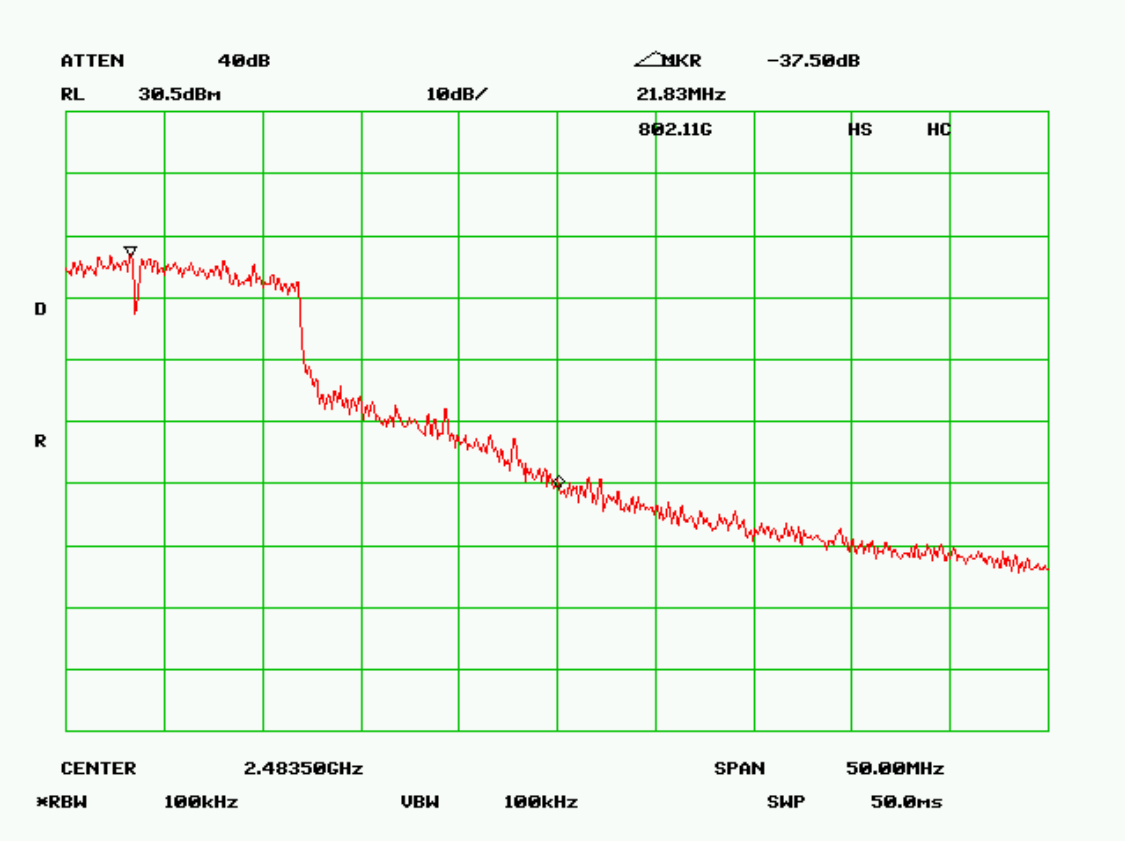


802.11g:

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

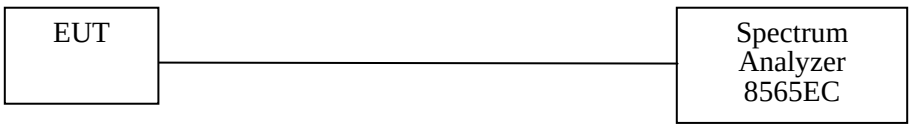
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. 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 2006-09-07*

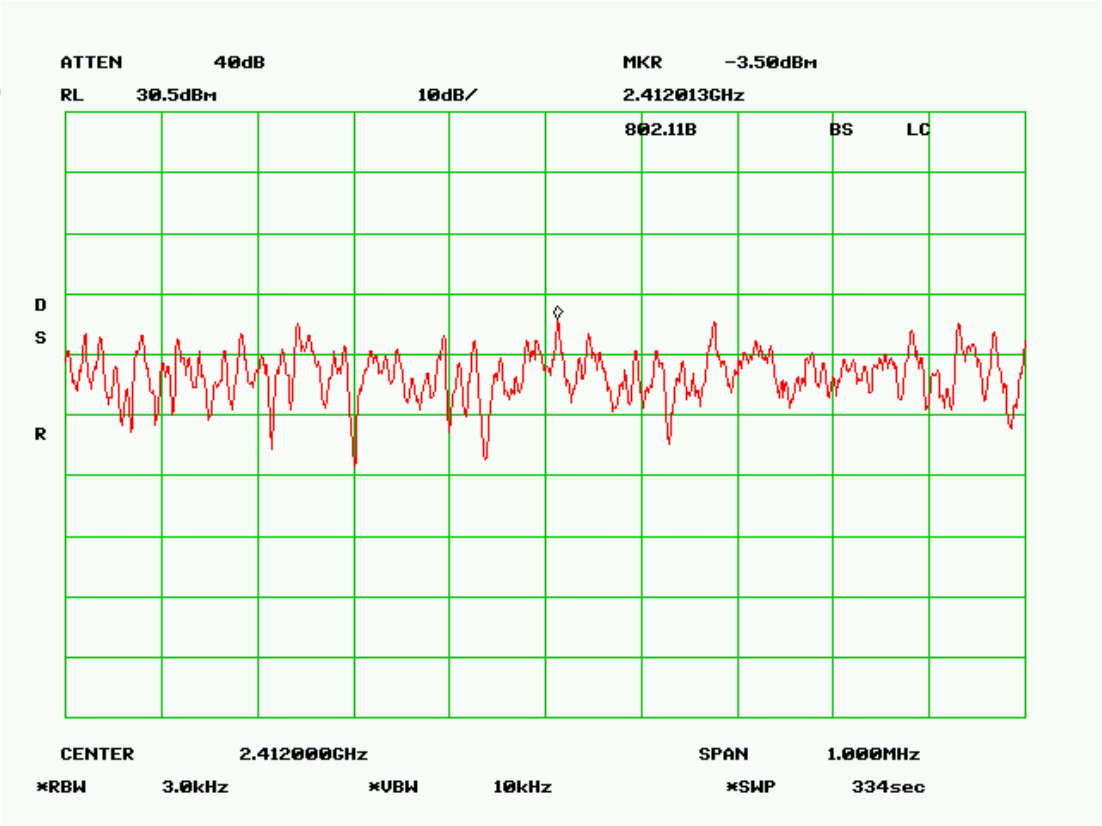
Measurement Result

Test Results

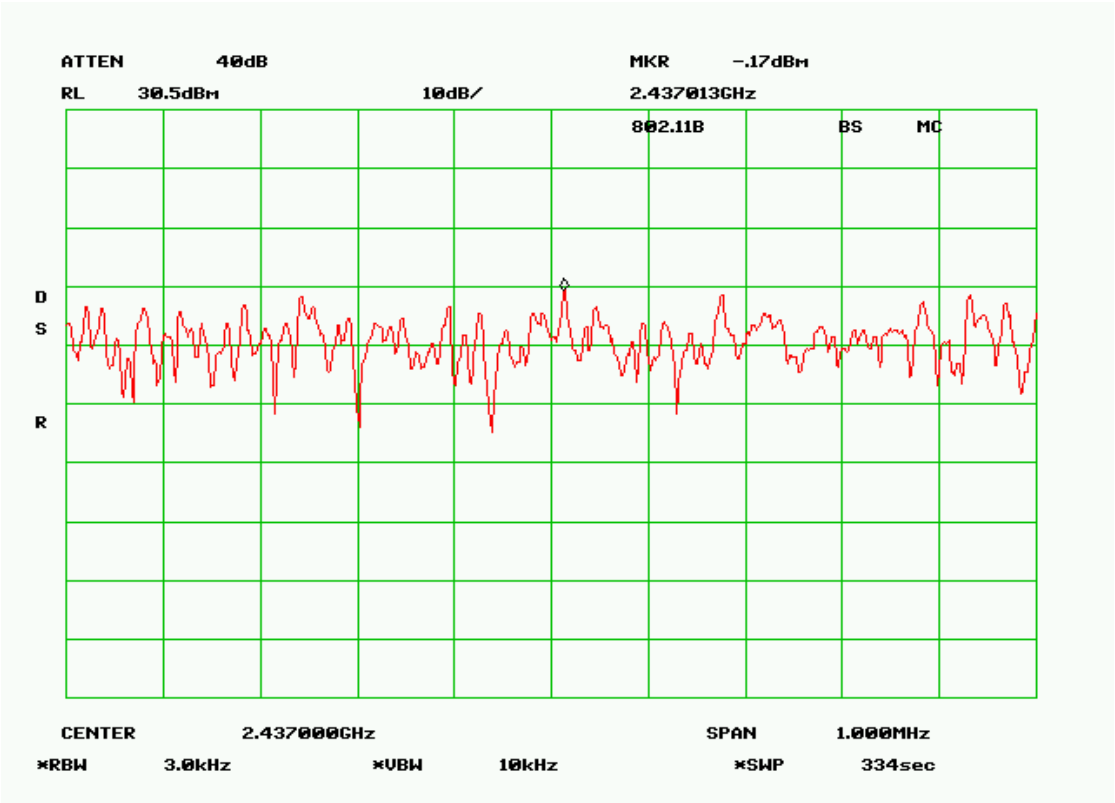
Base Set (WF6972)

802.11b:

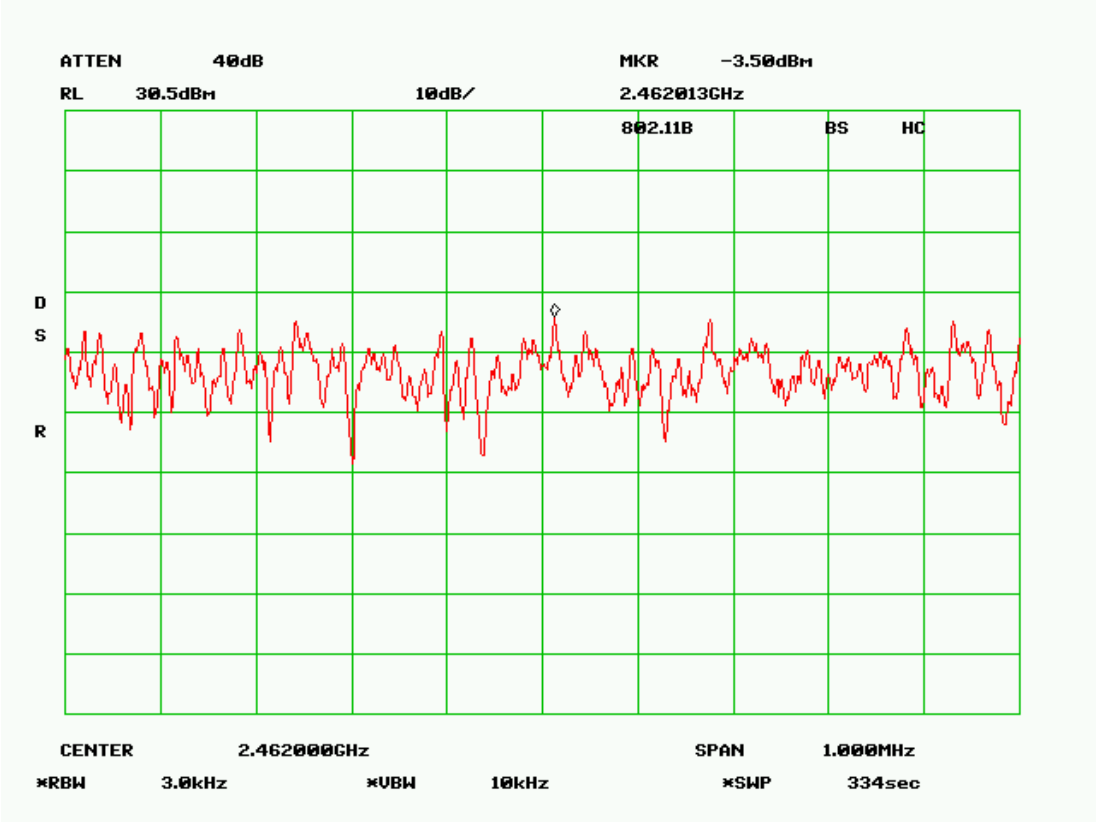
Low Channel



Middle Channel

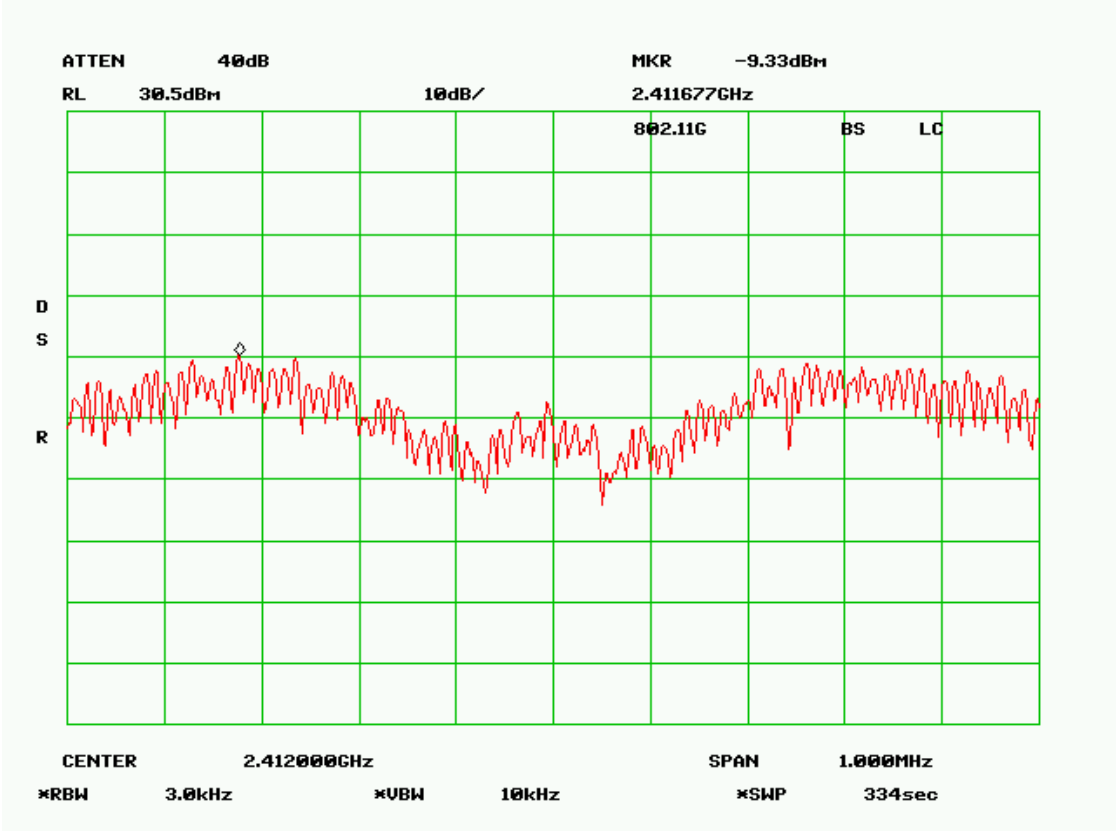


High Channel

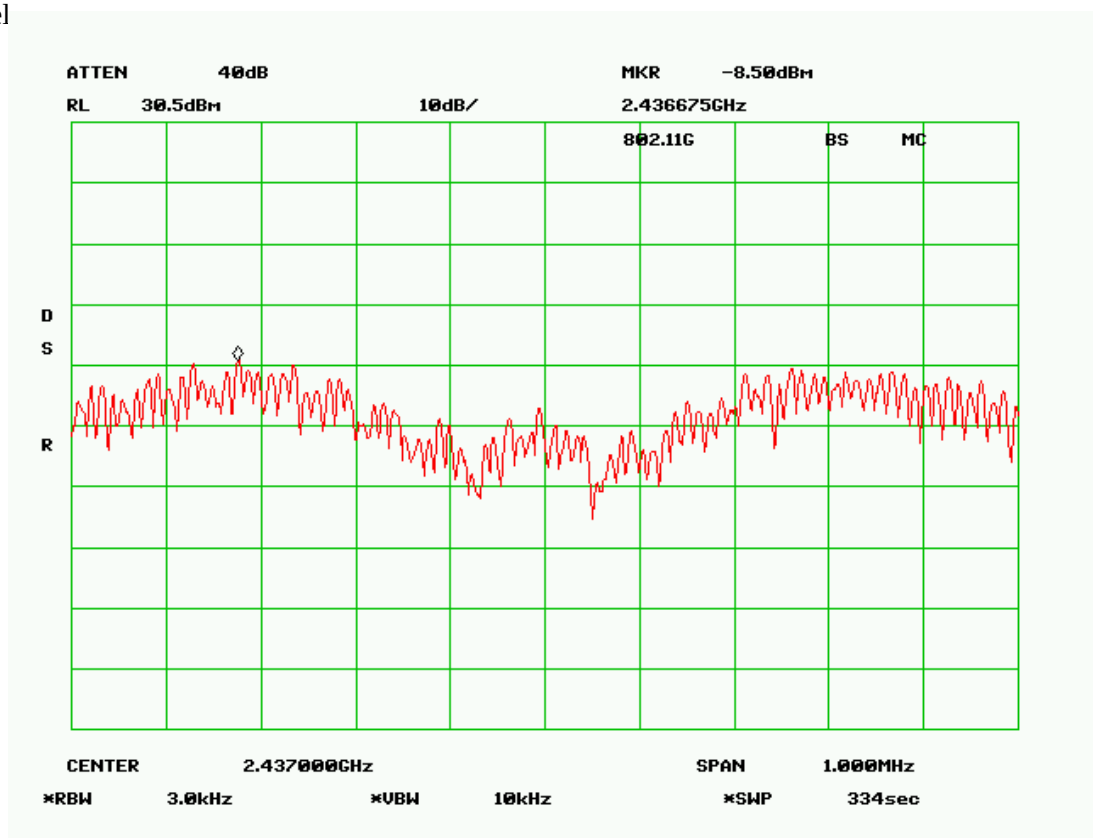


802.11g:

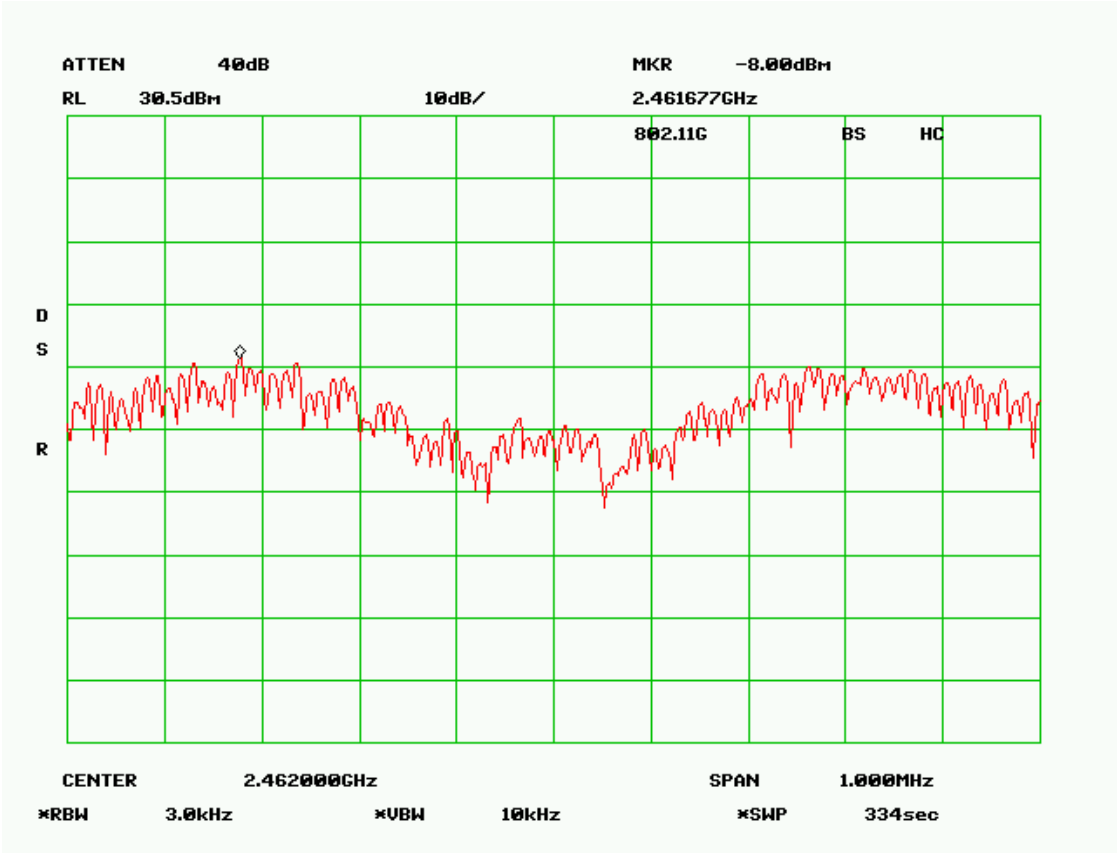
Low Channel



Middle Channel



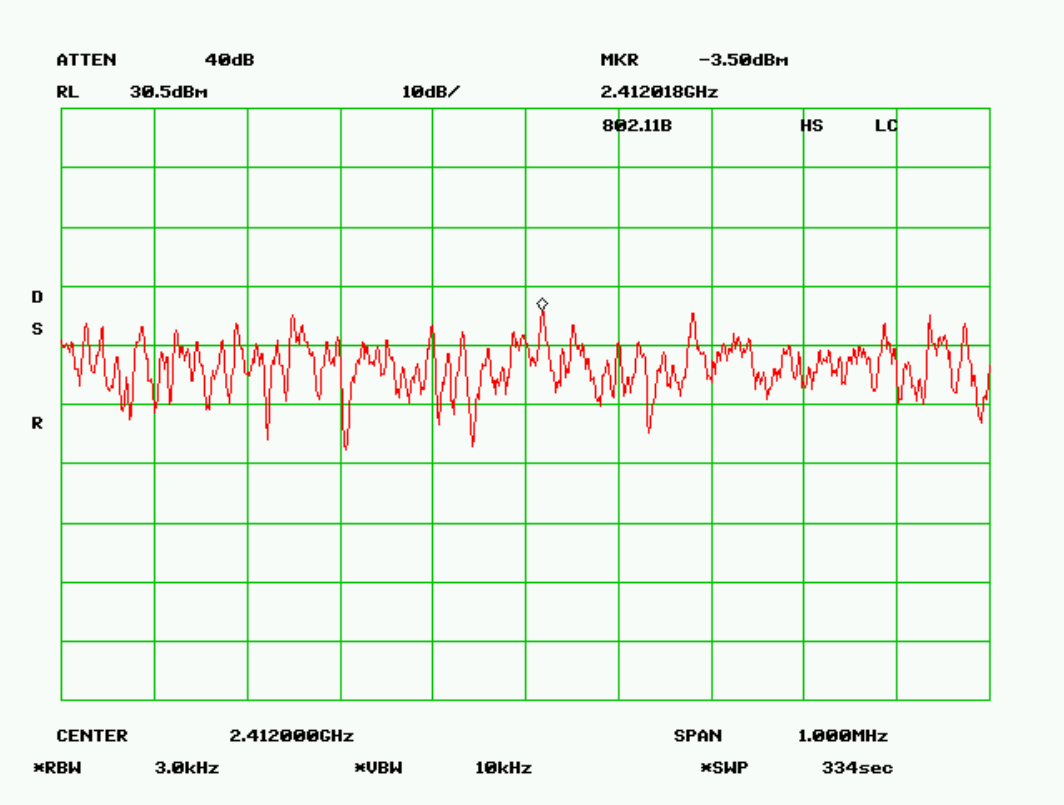
High Channel



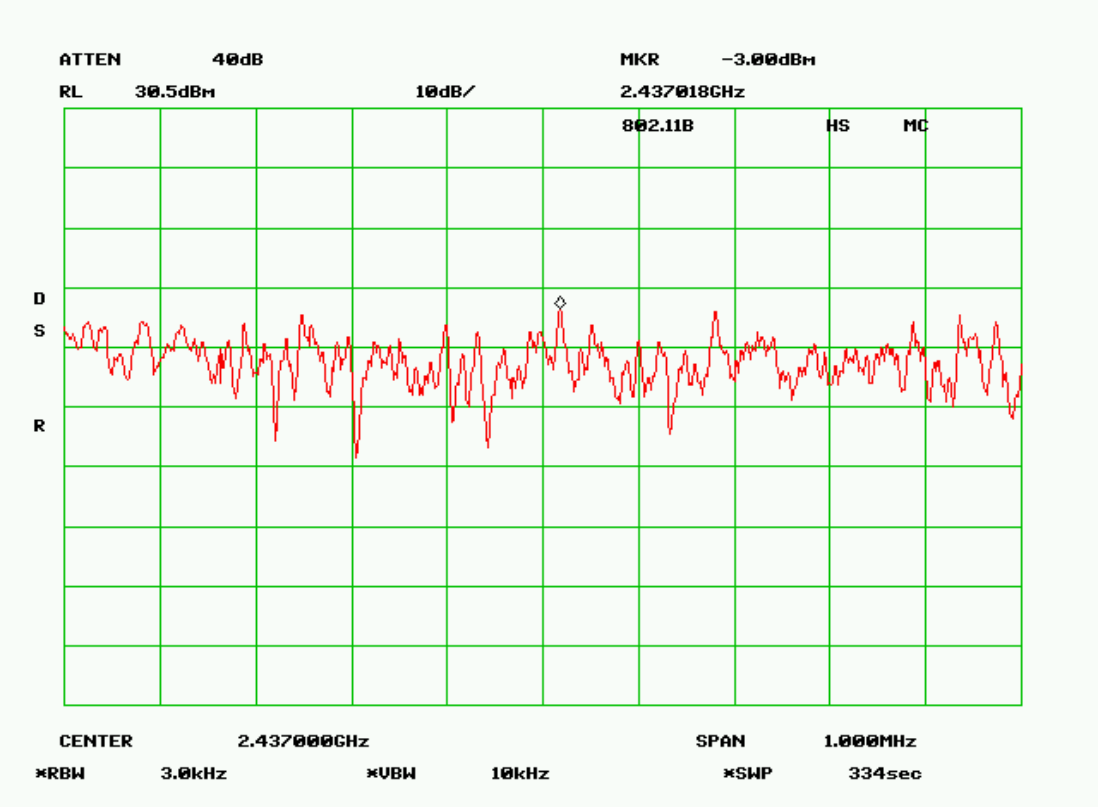
Hand Set (WF6972 & WF6909)

802.11b:

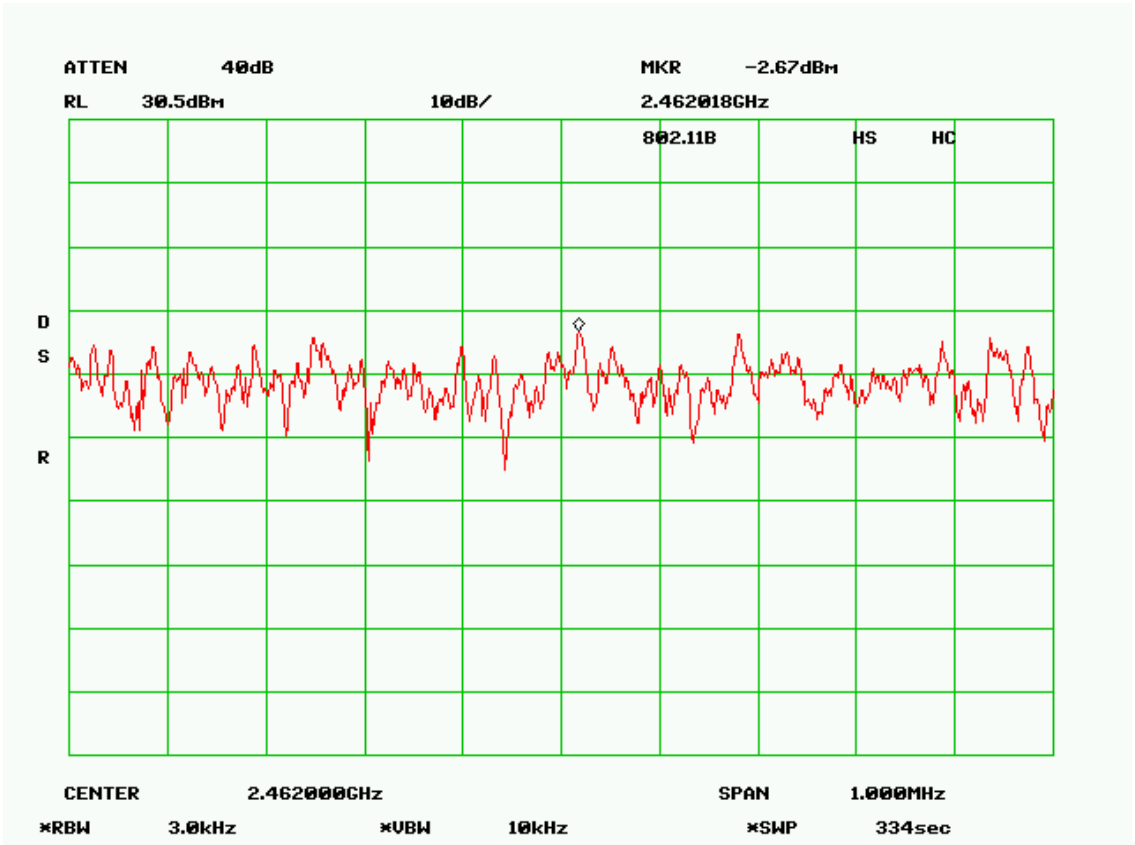
Low Channel



Middle Channel

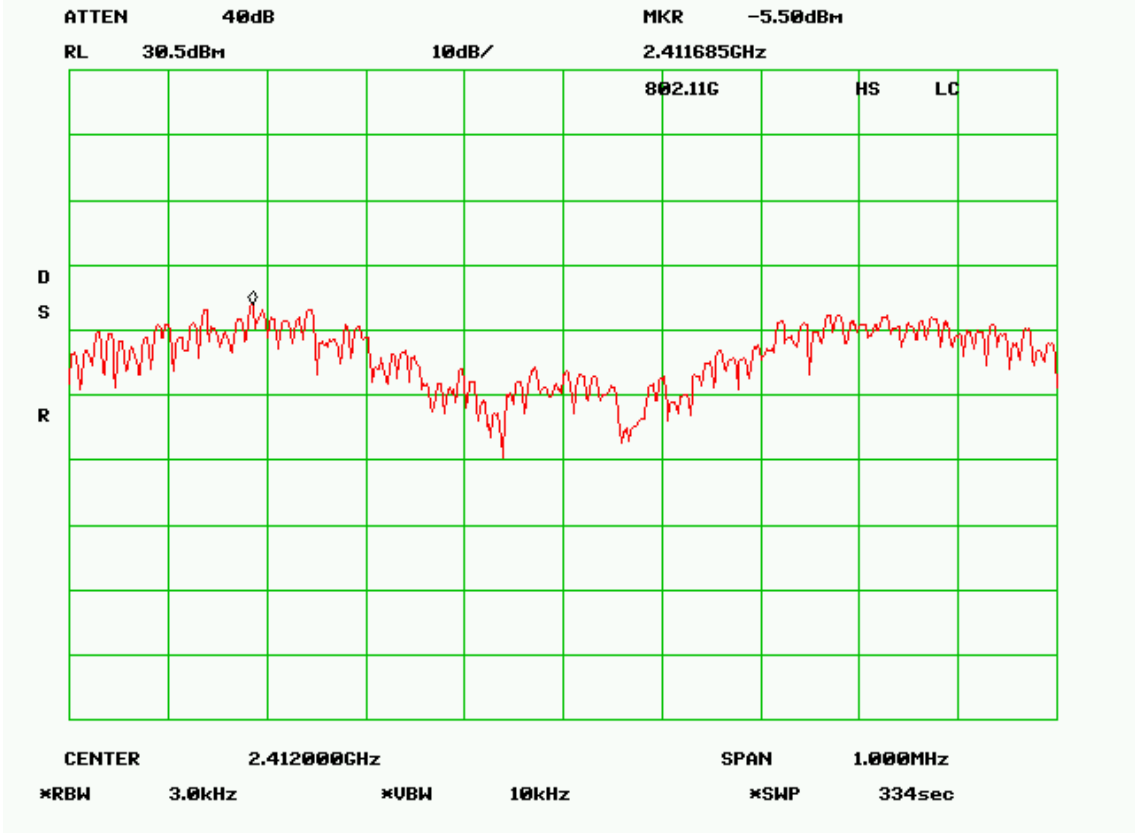


High Channel

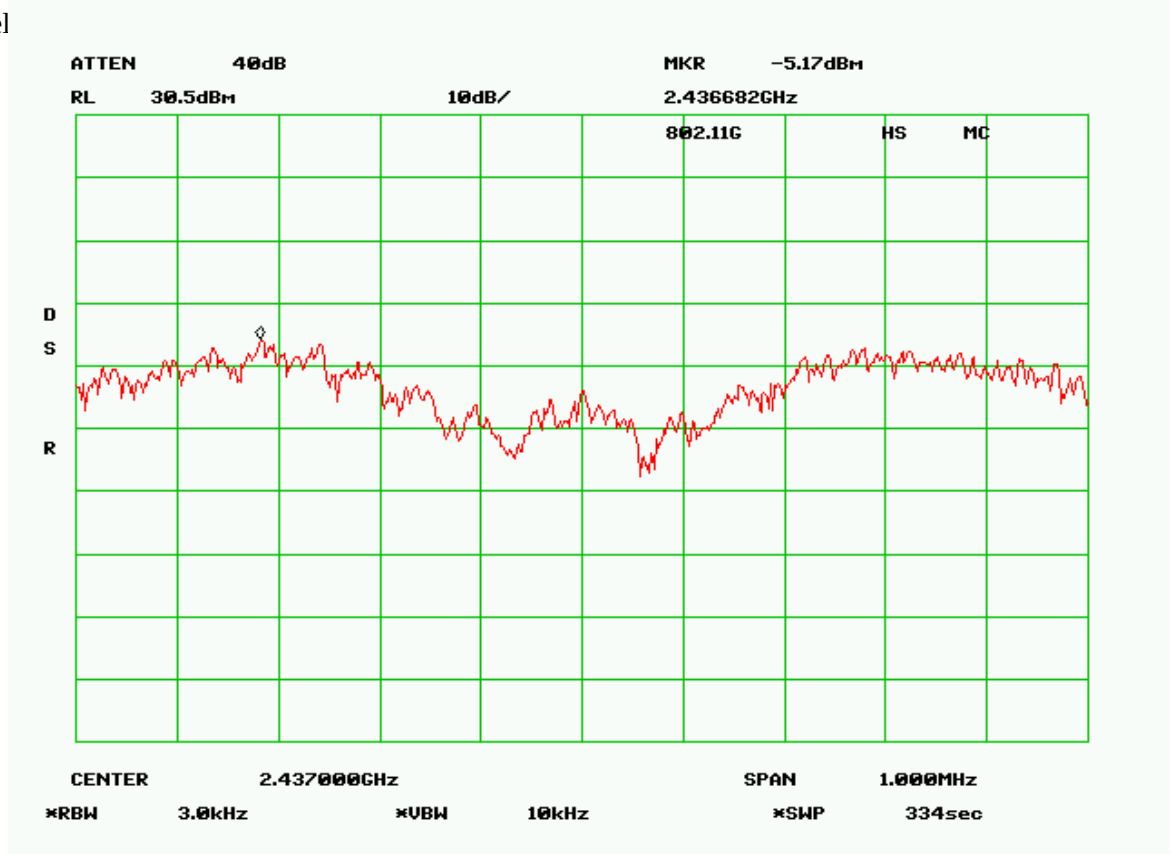


802.11b:

Low Channel



Middle Channel



High Channel