Lab Code: 200167-0

FCC PART 15.247

IC RSS-210, ISSUE 8, DEC 2010

TEST AND MEASUREMENT REPORT

For

Meru Networks, Inc

894 Ross Drive,

Sunnyvale, CA 94089, USA

FCC ID: RE7-AP433
IC: 6749A-AP433

Report Type:	**Product Type:**
Original Report	802.11 a/b/g/n Wireless Module

Test Engineers:	Ning Ma
Report Number:	R1110122-247
Report Date:	2012-01-25
Reviewed By:	Victor Zhang EMC/RF Lead
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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1110122-247	Original Report	2012-01-25

1 General Description

1.1 Product Description for Equipment under Test (EUT)

This test and measurement report was prepared on behalf of *Meru Networks Inc*. and their product model: *250-02193-010 Peacock_XTAL, FCC ID: RE7-AP433, IC: 6479A-AP433* or the "EUT" as referred to in this report. The EUT is a dual band Wireless 802.11a/b/g/n wireless module.

1.2 Mechanical Description of EUT

The "EUT" measures approximately *5.1cm (L) x 3.0cm (W) x 4.2cm (H),* and weighs approximately *37.0*g.

The test data gathered are from typical production sample, serial number: 8500-601204-02, provided by the manufacturer.

1.3 Objective

This report is prepared on behalf of *Meru Networks Inc.* in accordance with Part 2, Subpart J, and Part 15, Subparts B and C of the Federal Communication Commissions rules and IC RSS-210 Issue 8, Dec 2010.

The objective is to determine compliance with FCC/IC rules for Antenna Requirements, Radiated Spurious Emissions with additional antennas.

1.4 Related Submittal(s)/Grant(s)

FCC Part 15.407, IC RSS-210 NII filing with FCC ID: RE7-AP433, IC: 6749A-AP433.

1.5 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.

1.6 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the 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 CISPR16-4-2:2003, The Treatment of Uncertainty in EMC Measurements, the values ranging from $\pm$2.0 dB 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 Corp.

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.

1.7 Test Facility

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

The test site at BACL Corp. 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 have 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 test site also complies with the test methods and procedures set forth in CISPR 22:2008 §10.4 for measurements below 1 GHz and §10.6 for measurements above 1 GHz as well as ANSI C63.4-2003, ANSI C63.4-2009, TIA/EIA-603 & CISPR 24:2010.

The Federal Communications Commission and Voluntary Control Council for Interference have the reports on file and they are listed under FCC registration number: 90464 and VCCI Registration No.: R-3729, C-4176, G-469, and T-1206. 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 Corp. 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/Standards/scopes/2001670.htm

2 System Test Configuration

2.1 Justification

The EUT was configured for testing according to ANSI C63.4-2009.

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

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

The EUT has two Power settings: 1.High power setting; 2. Low power setting.

1. High Power setting compatible with the antenna:

Antenna model	2.4 GHz Antenna Gain (dBi)	5 GHz Antenna Gain (dBi)
ACC-ANT-ABGN230-W	2	3
ACC-ANT0O6ABGN-0607-PT	6	7
MERU-ANT-PI622	4	5

2. Low Power setting compatible with the antenna:

Antenna model	2.4 GHz Antenna Gain (dBi)	5 GHz Antenna Gain (dBi)
ACC-ANT-BG080-NM	8	-
ACC-ANT-A080-NM-1	-	8

2.2 EUT Exercise Software

The software used, ART_1.8, was provided by customer and verified by Ning Ma to comply with the standard requirements being tested against.

2.3 Equipment Modifications

No modifications were made to the EUT.

2.4 Special Accessories

Manufacturer	Description	Model No.	Serial No.
Meru Networks	Module Supporting Board	V101225 3	-

2.5 Local Support Equipment

Manufacturer	Description	Model No.	Serial No.
Lenovo	Laptop	6460	L3-M6828

2.6 EUT Internal Configuration

NA: Only the module card was tested.

3 Summary of Test Results

Results reported relate only to the product tested.

FCC & IC Rules	Description of Test	Results
FCC §15.247(i), §2.1091 IC RSS-102	RF Exposure Information	Compliance
FCC §15.203 IC RSS-Gen §7.1.4	Antenna Requirement	Compliance
FCC §15.207(a) IC RSS-Gen §7.2.2	AC Line Conducted Emissions	Compliance
FCC §15.247(d) IC RSS-210 §2.6	Spurious Emissions at Antenna Port	Compliance
FCC §15.205 IC RSS-210 §2.2	Restricted Bands	Compliance
FCC §15.209, §15.247 IC RSS-210 §2.6	Radiated Spurious Emissions	Compliance
FCC §15.247(a)(2) IC RSS-210 §A8.2	6 dB Bandwidth	Compliance
FCC §15.247(b)(3) IC RSS-210 §A8.4	Maximum Peak Output Power	Compliance
FCC §15.247(d) IC RSS-210 §A8.5	100 kHz Bandwidth of Frequency Band Edge	Compliance
FCC §15.247(e) IC RSS-210 §A8.2 (b)	Power Spectral Density	Compliance
IC §RSS-210 §2.6 RSS-Gen § 4.10	Receiver Spurious Emission	Compliance

4 FCC §15.247(i), §2.1091 & IC RSS-102 - RF Exposure

4.1 Applicable Standard

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

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minutes)
Limits for General Population/Uncontrolled Exposure				
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

Before equipment certification is granted, the procedure of IC RSS-102 must be followed concerning the exposure of humans to RF fields.

According to RSS-102 Issue 2 section 4.1, RF limits used for general public will be applied to the EUT.

Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m^2)	Time Averaging (min)
0.003 - 1	280	2.19	-	6
1 - 10	280 / f	2.19 / f	-	6
10 - 30	28	2.19 / f	-	6
30 – 300	28	0.073	2*	6
300 – 1 500	$1.585\ f^{0.5}$	$0.0042\ f^{0.5}$	f / 150	6
1 500 – 15 000	61.4	0.163	10	6
15 000 – 150 000	61.4	0.163	10	$616000 / f^{1.2}$
150 000- 300 000	$0.158\ f^{0.5}$	$4.21 \times 10\ -4\ f^{0.5}$	$6.67 \times 10^{-5}\ f$	$616000 / f^{1.2}$

Note: *f* is frequency in MHz
* Power density limit is applicable at frequencies greater than 100 MHz

4.2 MPE Prediction

Predication of MPE limit at a given distance, Equation from 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

4.3 MPE Results

For 2.4 GHz Band, High Power:

Maximum peak output power at antenna input terminal (dBm):	27.48
Maximum peak output power at antenna input terminal (mW):	559.75
Prediction distance (cm):	20
Prediction frequency (MHz):	2412
Maximum Antenna Gain, typical (dBi):	6
Maximum Antenna Gain (numeric):	3.98
Power density of prediction frequency at 20.0 cm (mW/cm^2):	0.4436
Power density of prediction frequency at 20.0 cm (W/m^2):	4.436
MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2):	1.0
MPE limit for uncontrolled exposure at prediction frequency (W/m^2):	10

For 2.4 GHz Band, Lower Power:

Maximum peak output power at antenna input terminal (dBm):	26.55
Maximum peak output power at antenna input terminal (mW):	451.86
Prediction distance (cm):	20
Prediction frequency (MHz):	2412
Maximum Antenna Gain, typical (dBi):	8
Maximum Antenna Gain (numeric):	6.31
Power density of prediction frequency at 20.0 cm (mW/cm^2):	0.567
Power density of prediction frequency at 20.0 cm (W/m^2):	5.67
MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2):	1.0
MPE limit for uncontrolled exposure at prediction frequency (W/m^2):	10

For 5.8 GHz Band, High Power:

Maximum peak output power at antenna input terminal (dBm):	26.57
Maximum peak output power at antenna input terminal (mW):	453.94
Prediction distance (cm):	20
Prediction frequency (MHz):	5745
Maximum Antenna Gain, typical (dBi):	7.0
Maximum Antenna Gain (numeric):	5.01
Power density of prediction frequency at 20.0 cm (mW/cm^2):	0.453
Power density of prediction frequency at 20.0 cm (W/m^2):	4.53
MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2):	1.0
MPE limit for uncontrolled exposure at prediction frequency (W/m^2):	10

For 5.8 GHz Band, Lower Power:

Maximum peak output power at antenna input terminal (dBm):	22.83
Maximum peak output power at antenna input terminal (mW):	191.87
Prediction distance (cm):	20
Prediction frequency (MHz):	5745
Maximum Antenna Gain, typical (dBi):	8
Maximum Antenna Gain (numeric):	6.31
Power density of prediction frequency at 20.0 cm (mW/cm^2):	0.241
Power density of prediction frequency at 20.0 cm (W/m^2):	2.41
MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2):	1.0
MPE limit for uncontrolled exposure at prediction frequency (W/m^2):	10

The device meets MPE both 2.4 GHz and 5.8 GHz bands for the uncontrolled exposure environment.

5 FCC §15.203 & IC RSS-Gen §7.1.4 – Antenna Requirements

5.1 Applicable Standard

According to FCC §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 FCC §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.

As per IC RSS-Gen §7.1.4: Transmitter Antenna

A transmitter can only be sold or operated with antennas with which it was certified. A transmitter may be certified with multiple antenna types. An antenna type comprises antennas having similar in-band and out-of-band radiation patterns. Testing shall be performed using the highest-gain antenna of each combination of transmitter and antenna type for which certification is being sought, with the transmitter output power set at the maximum level. Any antenna of the same type and having equal or lesser gain as an antenna that had been successfully tested for certification with the transmitter, will also be considered certified with the transmitter, and may be used and marketed with the transmitter. The manufacturer shall include with the application for certification a list of acceptable antenna types to be used with the transmitter.
When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer. Any antenna gain in excess of 6 dBi (6 dB above isotropic gain) shall be added to the measured RF output power before using the power limits specified in RSS-210 or RSS-310 for devices of RF output powers of 10 milliwatts or less. For devices of output powers greater than 10 milliwatts, except devices subject to RSS-210 Annex 8 (Frequency Hopping and Digital Modulation Systems Operating in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz Bands) or RSS-210 Annex 9 (Local Area Network Devices), the total antenna gain shall be added to the measured RF output power before using the specified power limits. For devices subject to RSS-210 Annex 8 or Annex 9, the antenna gain shall not be added.

5.2 Antenna List

1. High Power setting compatible with the antenna:

Antenna Type/Model	2.4 GHz Antenna Gain (dBi)	Power Limit	5 GHz Antenna Gain (dBi)	Power Limit
ACC-ANT-ABGN230-W	2	30	3	30
ACC-ANT0O6ABGN-0607-PT	6	30	7	29
MERU-ANT-PI622	4	30	5	30

2. Low Power setting compatible with the antenna:

Antenna Type/Model	2.4 GHz Antenna Gain (dBi)	Power Limit	5 GHz Antenna Gain (dBi)	Power Limit
ACC-ANT-BG080-NM	8	28	-	-
ACC-ANT-A080-NM-1	-	-	8	28

6 FCC §15.207 & RSS-Gen §7.2.2 – AC Line Conducted Emissions

6.1 Applicable Standard

As per FCC §15.207 & RSS-Gen §7.2.2 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 frequencies 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.*

6.2 Test Setup

The measurement was performed at shield room, using the setup per ANSI C63.4-2003 measurement procedure. The specification used was FCC and IC limits.

External I/O cables were draped along the edge of the test table and bundle when necessary.
The AC/DC power adapter of the host was connected with LISN-1 which provided 120 V/60 Hz AC power.

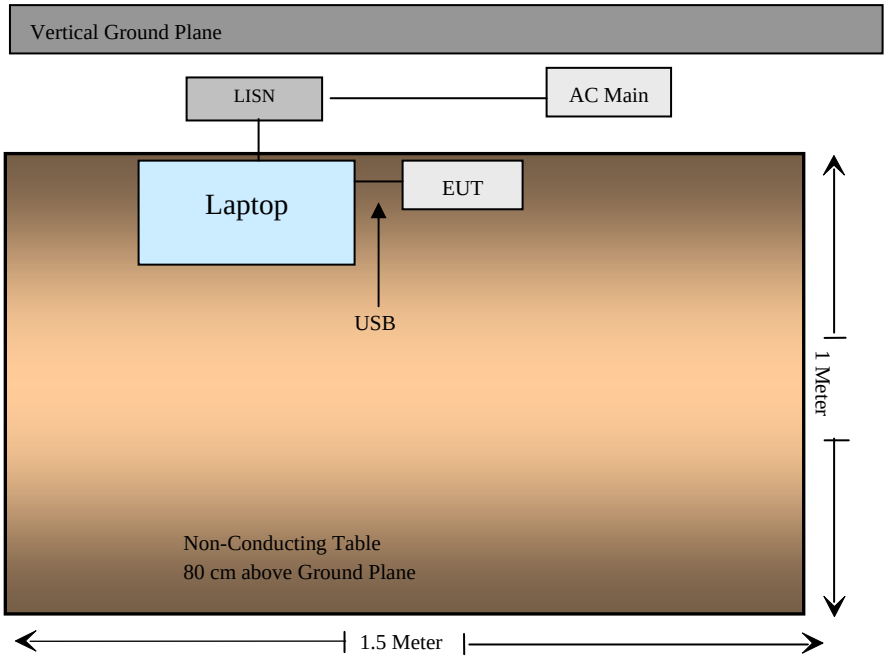
6.3 Test Procedure

During the conducted emissions test, the power cord of the EUT host system was connected to the mains outlet of the LISN-2

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”.

6.4 Test Setup Block Diagram



6.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude (CA) is calculated by adding the Cable Loss (CL), the Attenuator Factor (Atten) to indicated Amplitude (Ai) reading. The basic equation is as follows:

CA = Ai + CL + Atten

For example, a corrected amplitude of 46.2 dBuV = Indicated Reading (32.5 dBuV) + Cable Loss (3.7 dB) + Attenuator (10 dB)

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

Margin = Corrected Amplitude - Limit

6.6 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100044	2011-04-14
Solar Electronics	LISN	9252-R-24-BNC	511205	2011-06-25
TTE	Filter, High Pass	H9962-150K-50-21378	K7133	2011-06-10

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

6.7 Test Environmental Conditions

Temperature:	21~24 °C
Relative Humidity:	38~45 %
ATM Pressure:	101.2-102 kPa

The testing was performed by Jerry Huang on 11-20-2011 to 11-21-2011 in 5 meter chamber 3.

6.8 Summary of Test Results

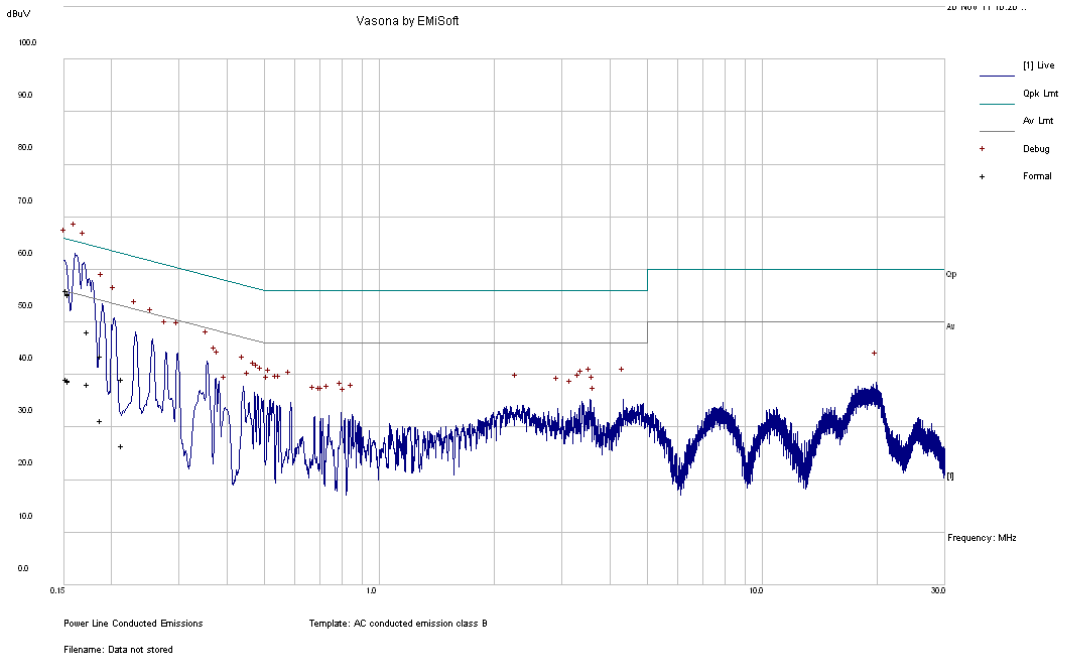
According to the recorded data in following table, the EUT complied with the FCC/IC standard's conducted emissions limits, with the margin reading of:

Connection: 120 V/60 Hz, AC			
Margin (dB)	**Frequency (MHz)**	**Conductor (Line/Neutral)**	**Range (MHz)**
-9.81	0.152739	Neutral	0.15 to 30

6.9 Conducted Emissions Test Plots and Data

2 dBi antenna 2462 MHz High Power Setting

120 V, 60 Hz – Line



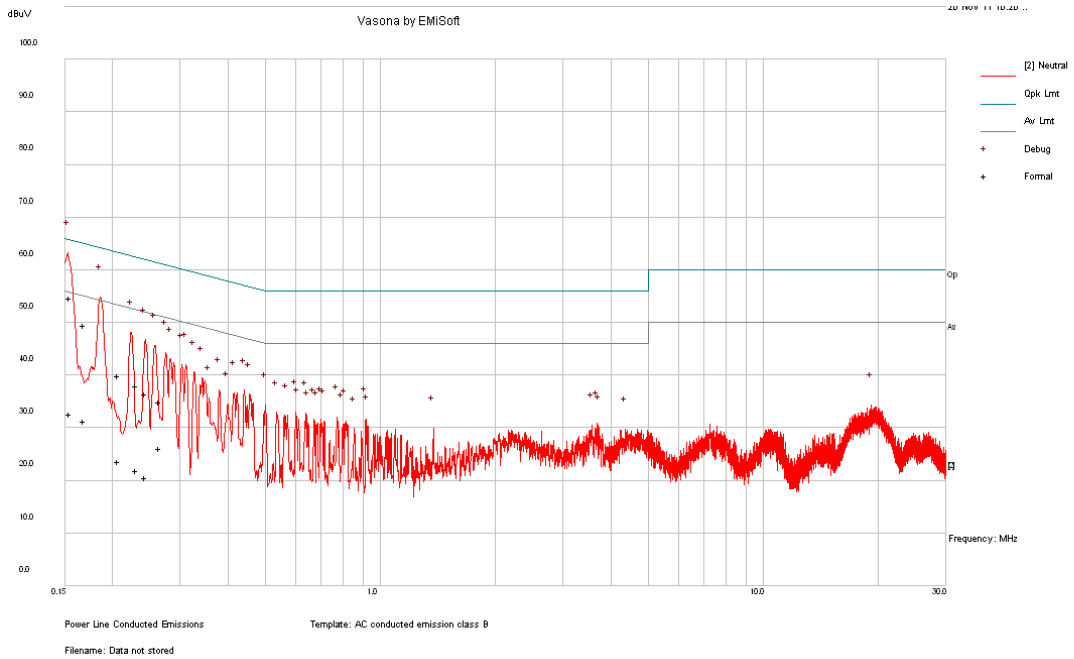
Quasi-Peak Measurements

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.152739	56.04	Line	65.85	-9.81
0.154581	55.24	Line	65.75	-10.51
0.154767	55.53	Line	65.74	-10.21
0.173616	48.11	Line	64.79	-16.67
0.188169	43.65	Line	64.12	-20.47
0.213495	39.28	Line	63.07	-23.79

Average Measurements

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.152739	39.16	Line	55.85	-16.69
0.154581	39.04	Line	55.75	-16.71
0.154767	38.78	Line	55.74	-16.96
0.173616	38.3	Line	54.79	-16.49
0.188169	31.25	Line	54.12	-22.87
0.213495	26.45	Line	53.07	-26.62

120 V, 60 Hz – Neutral



Quasi-Peak Measurements

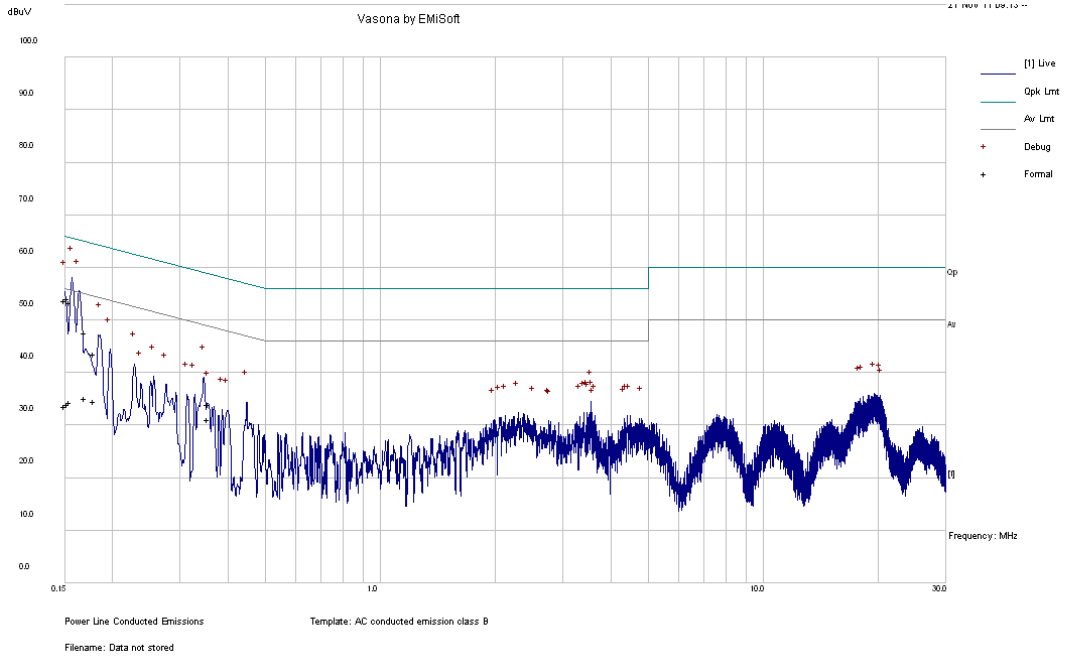
Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.155175	54.77	Neutral	65.72	-10.95
0.168372	49.59	Neutral	65.04	-15.45
0.207453	39.93	Neutral	63.31	-23.38
0.231276	37.98	Neutral	62.4	-24.42
0.244134	36.49	Neutral	61.95	-25.47
0.26604	34.98	Neutral	61.24	-26.26

Average Measurements

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.155175	32.7	Neutral	55.72	-23.02
0.168372	31.36	Neutral	55.04	-23.68
0.207453	23.73	Neutral	53.31	-29.57
0.231276	21.89	Neutral	52.4	-30.52
0.244134	20.66	Neutral	51.95	-31.3
0.26604	26.06	Neutral	51.24	-25.18

2 dBi antenna a mode 5825 MHz High Power Setting

120 V, 60 Hz – Line



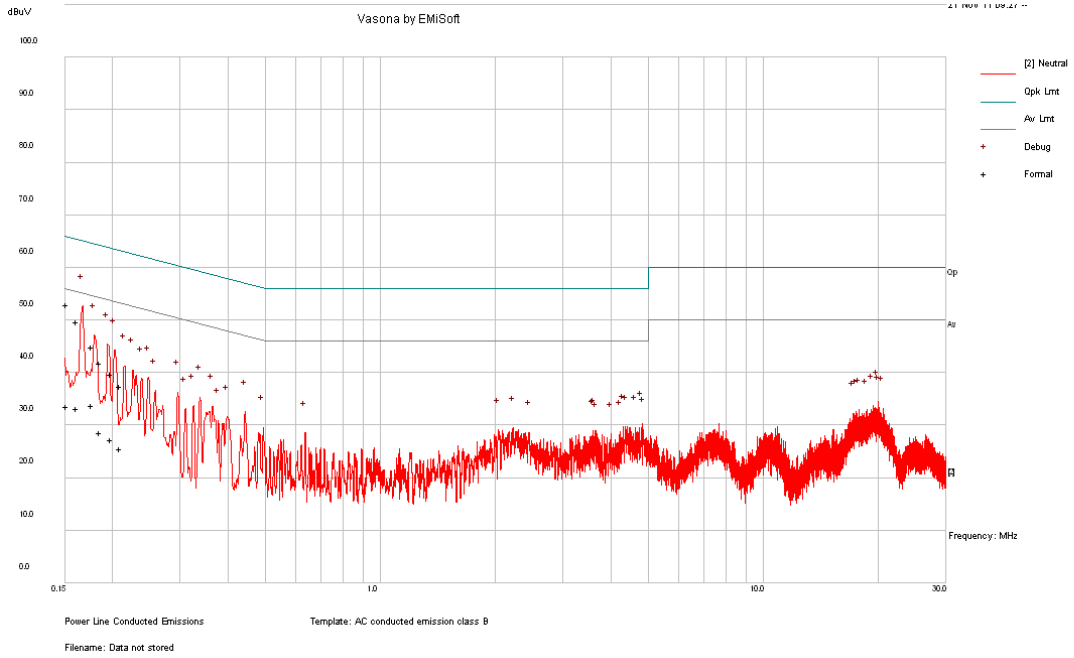
Quasi-Peak Measurements

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.152913	54.09	Line	65.84	-11.75
0.154548	53.45	Line	65.75	-12.30
0.150203	53.75	Line	65.99	-12.24
0.16929	47.6	Line	65	-17.39
0.179154	43.61	Line	64.52	-20.91
0.355002	34.08	Line	58.84	-24.76

Average Measurements

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.152913	34.08	Line	55.84	-21.76
0.154548	34.35	Line	55.75	-21.40
0.150203	33.61	Line	55.99	-22.38
0.16929	35.21	Line	55	-19.79
0.179154	34.5	Line	54.52	-20.02
0.355002	31.13	Line	48.84	-17.72

120 V, 60 Hz – Neutral



Quasi-Peak Measurements

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.15225	52.99	Neutral	65.88	-12.89
0.161427	49.77	Neutral	65.39	-15.62
0.177453	44.96	Neutral	64.6	-19.65
0.185958	41.85	Neutral	64.22	-22.36
0.198303	39.77	Neutral	63.68	-23.92
0.210381	37.55	Neutral	63.19	-25.64

Average Measurements

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.15225	33.56	Neutral	55.88	-22.31
0.161427	33.19	Neutral	55.39	-22.20
0.177453	33.87	Neutral	54.6	-20.74
0.185958	28.62	Neutral	54.22	-25.60
0.198303	27.24	Neutral	53.68	-26.44
0.210381	25.5	Neutral	53.19	-27.69

7 FCC §15.247(d) & IC RSS-210 §A8.5 - Spurious Emissions at Antenna Terminals

7.1 Applicable Standard

For §15.247(d) and RSS-210 § A8.5 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.

7.2 Test 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 10th harmonic.

7.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date
Agilent	Spectrum Analyzer	E4440A	MY44303352	2011-05-10

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

7.4 Test Environmental Conditions

Temperature:	21~24 °C
Relative Humidity:	38~45 %
ATM Pressure:	101.2-102 kPa

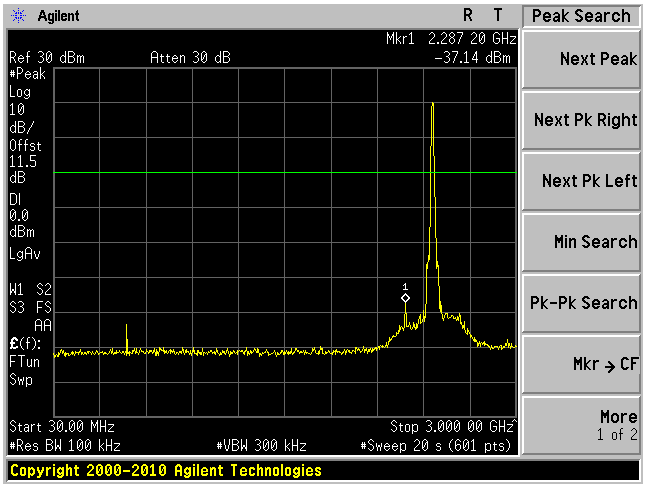
The testing was performed by Ning Ma on 11-05-2011 to 11-10-2011 in RF site.

7.5 Test Results

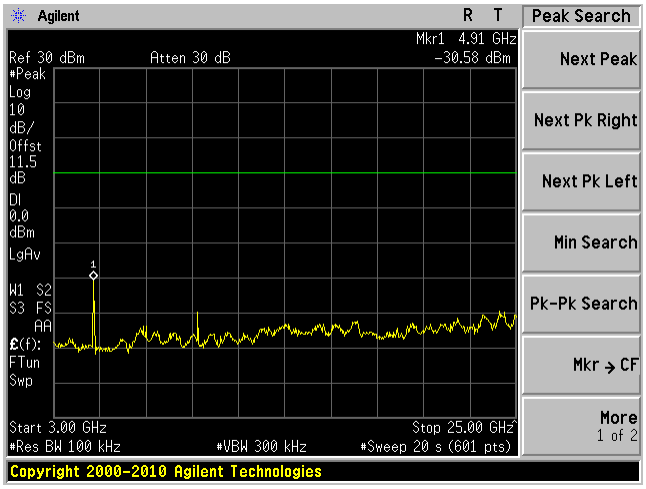
Please refer to following plots.

2400 MHz – 2483 MHz: With High Power Setting Only

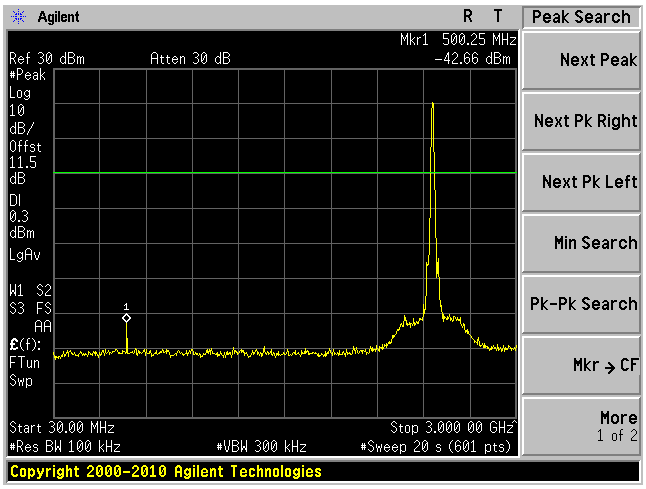
802.11 b mode, High channel, Chain 0
30MHz – 3GHz



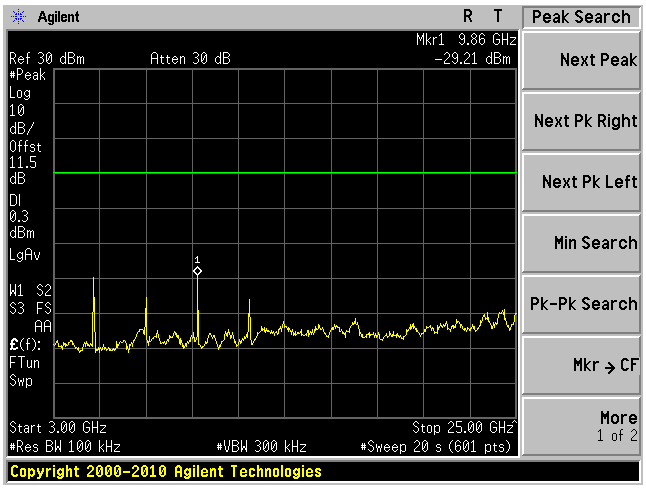
802.11 b mode, High channel, Chain 0
3G – 25 GHz



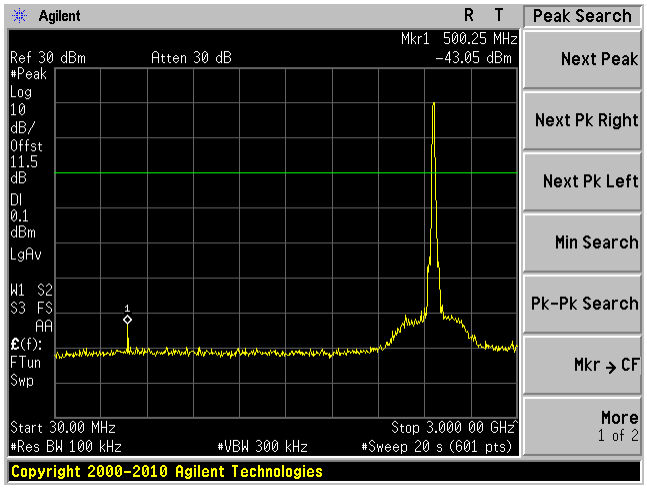
802.11 b mode, High channel, Chain 1
30MHz – 3GHz



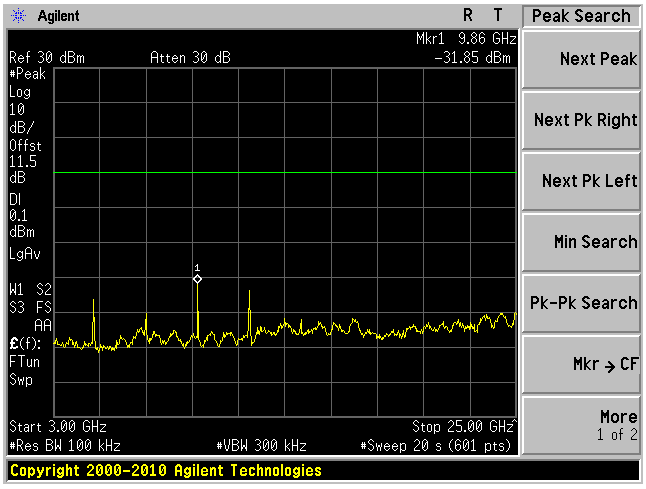
802.11 b mode, High channel, Chain 1
3G – 25 GHz



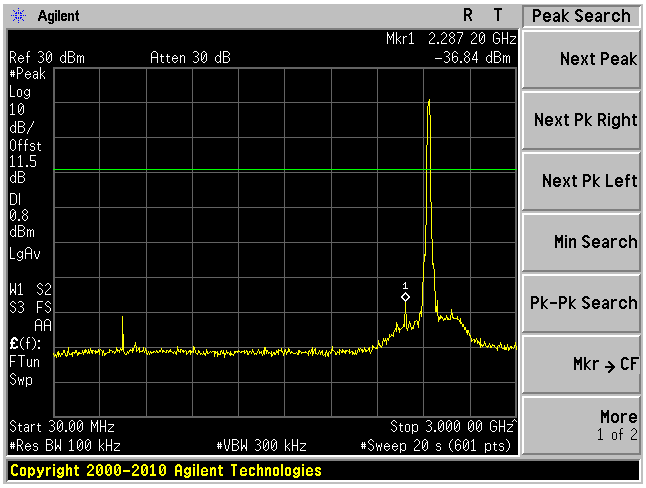
802.11 b mode, High channel, Chain 2
30MHz – 3GHz



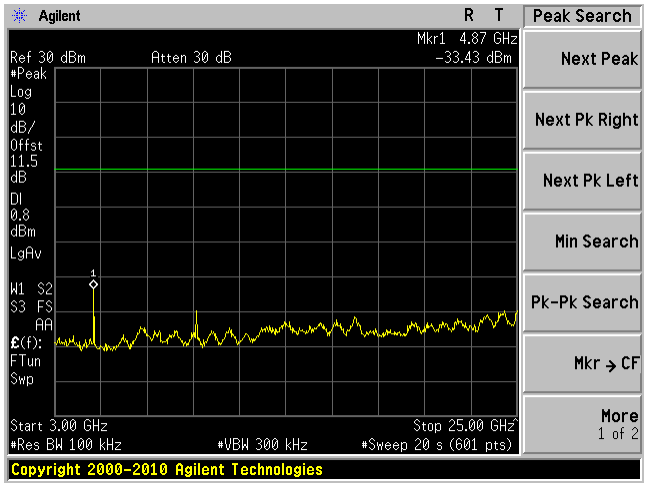
802.11 b mode, High channel, Chain 2
3G – 25 GHz



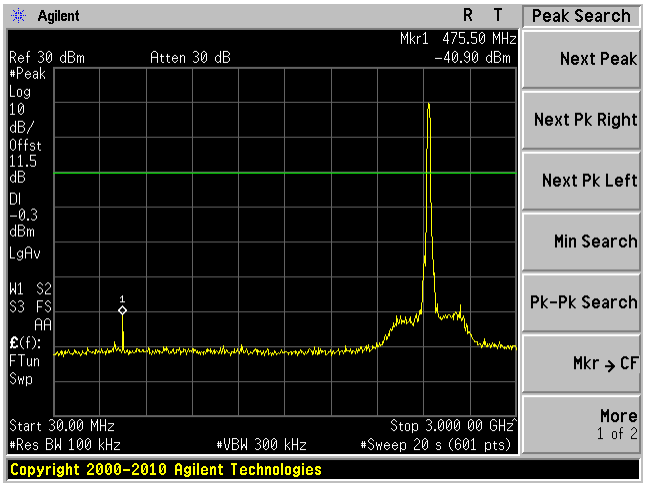
802.11 b mode, Middle channel, Chain 0
30MHz – 3GHz



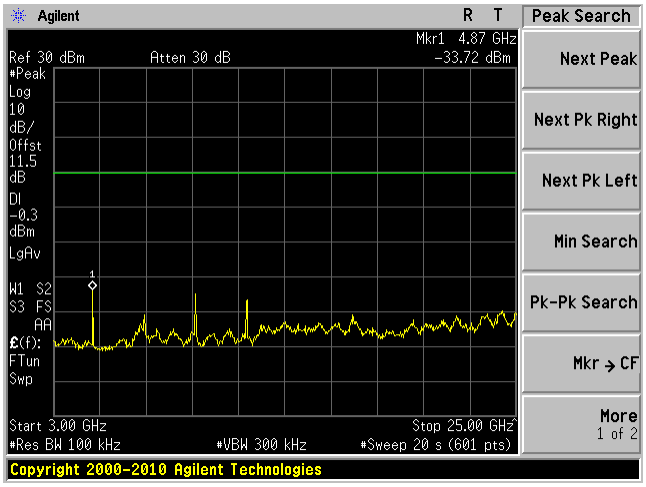
802.11 b mode, Middle channel, Chain 0
3G – 25 GHz



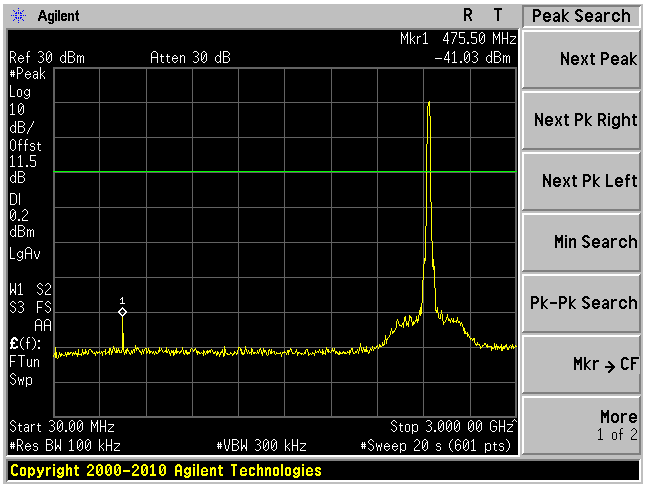
802.11 b mode, Middle channel, Chain 1
30MHz – 3GHz



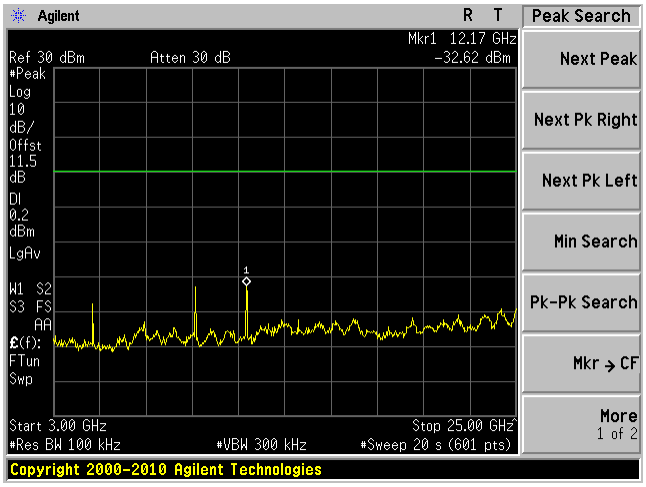
802.11 b mode, Middle channel, Chain 1
3G – 25 GHz



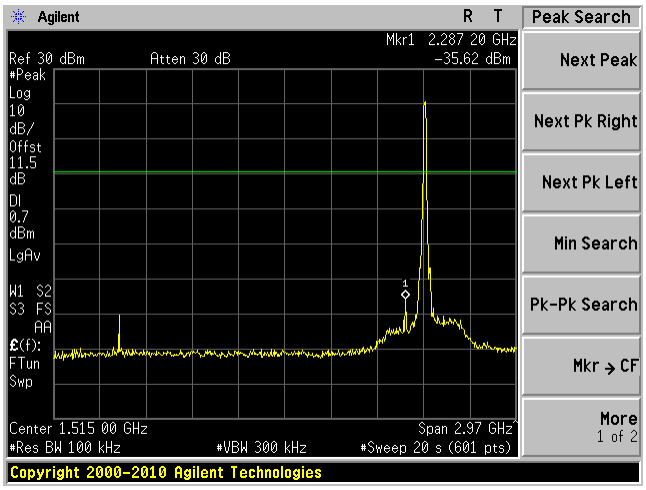
802.11 b mode, Middle channel, Chain 2
30MHz – 3GHz



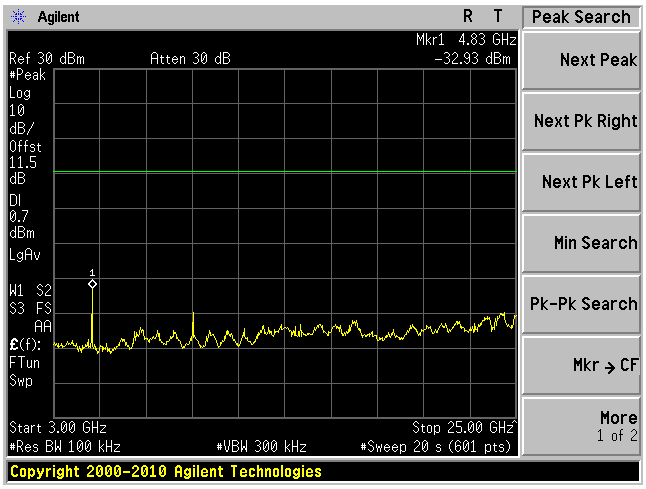
802.11 b mode, Middle channel, Chain 2
3G – 25 GHz



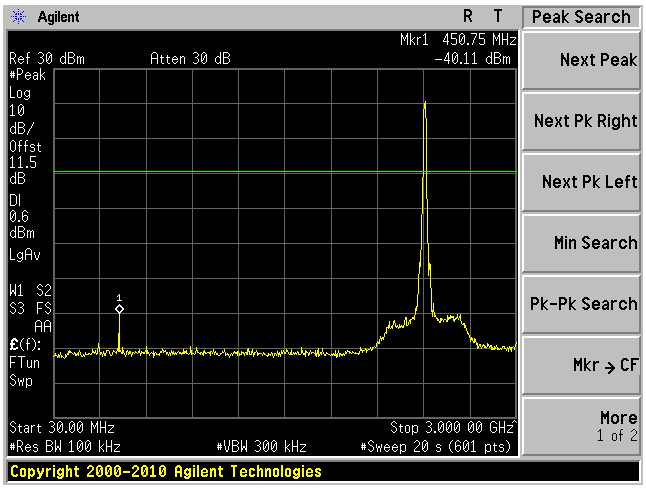
802.11 b mode, Low channel, Chain 0
30MHz – 3GHz



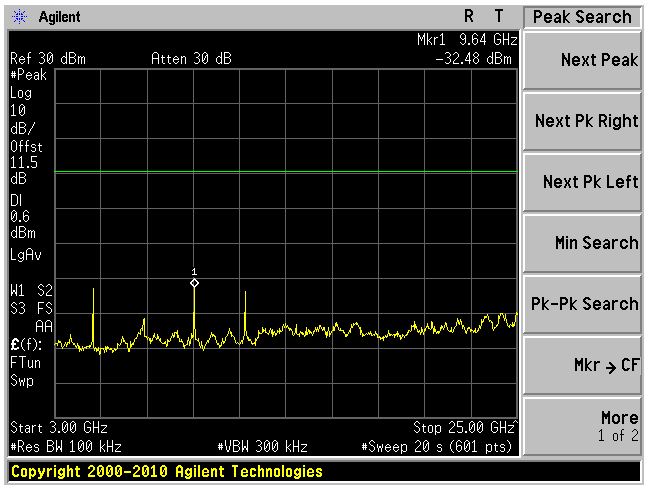
802.11 b mode, Low channel, Chain 0
3G – 25 GHz



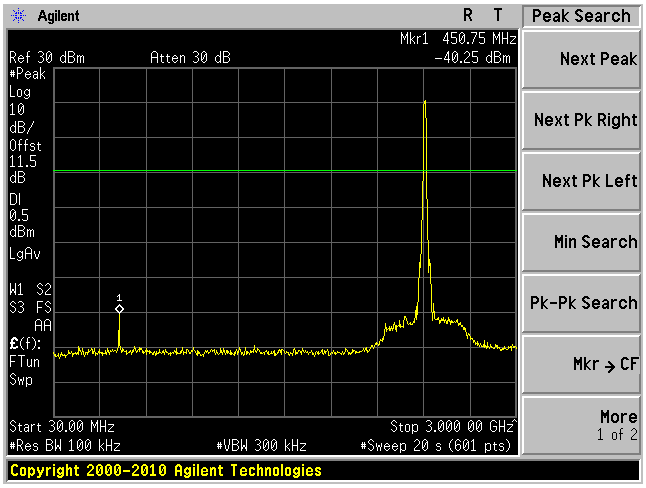
802.11 b mode, Low channel, Chain 1
30MHz – 3GHz



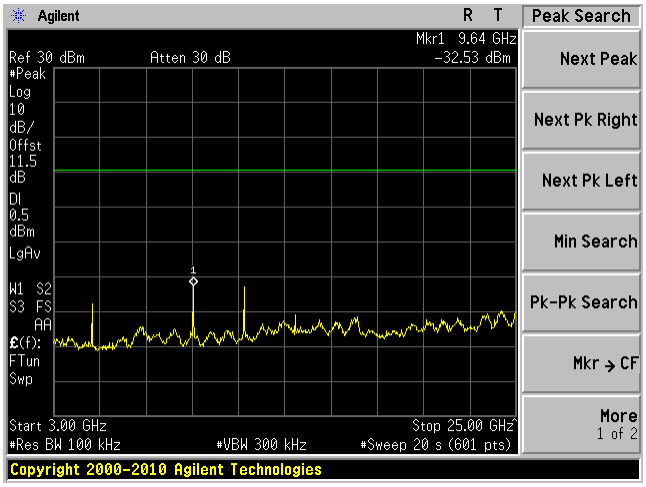
802.11 b mode, Low channel, Chain 1
3G – 25 GHz



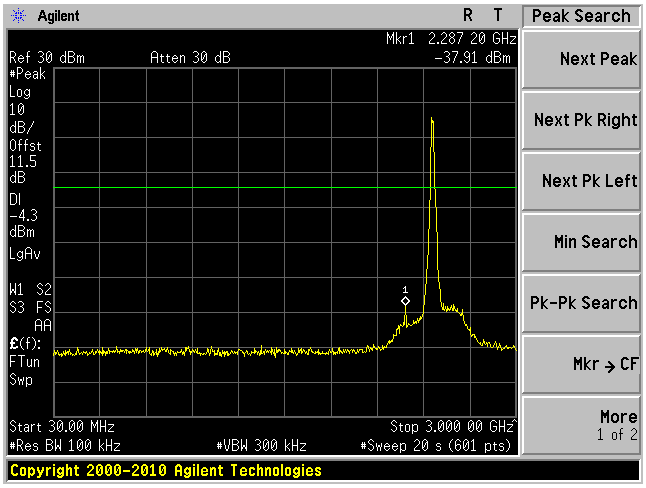
802.11 b mode, Low channel, Chain 2
30MHz – 3GHz



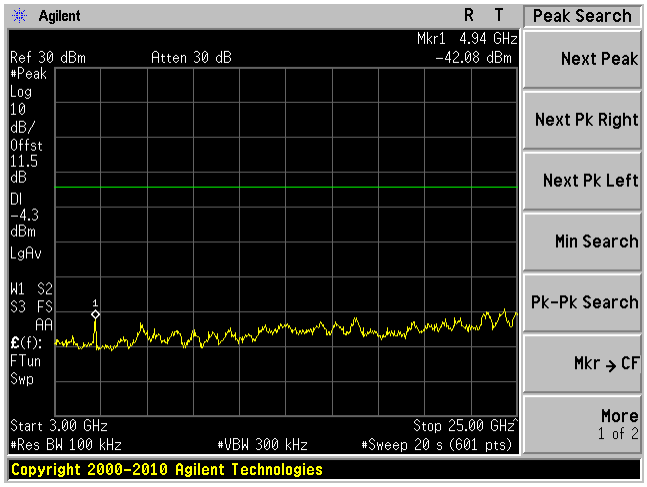
802.11 b mode, Low channel, Chain 2
3G – 25 GHz



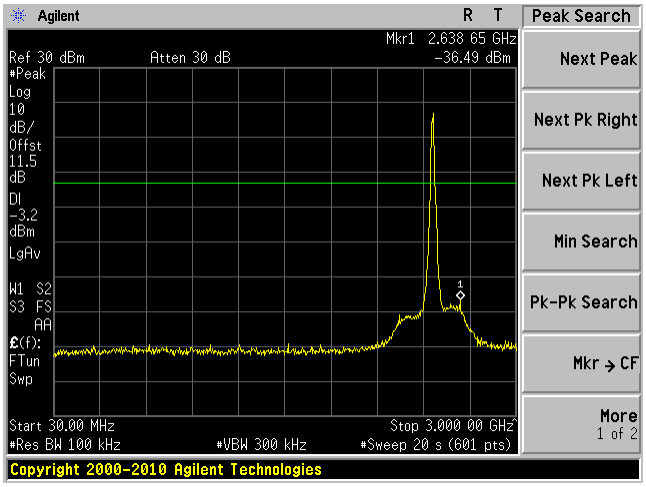
802.11 g mode, High channel, Chain 0
30MHz – 3GHz



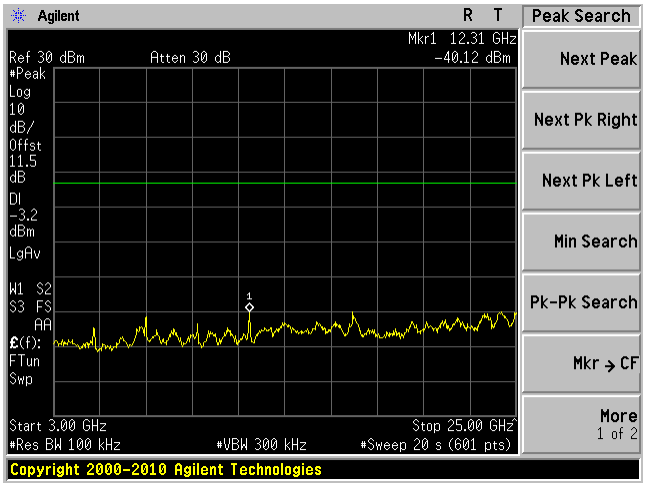
802.11 g mode, High channel, Chain 0
3G – 25 GHz



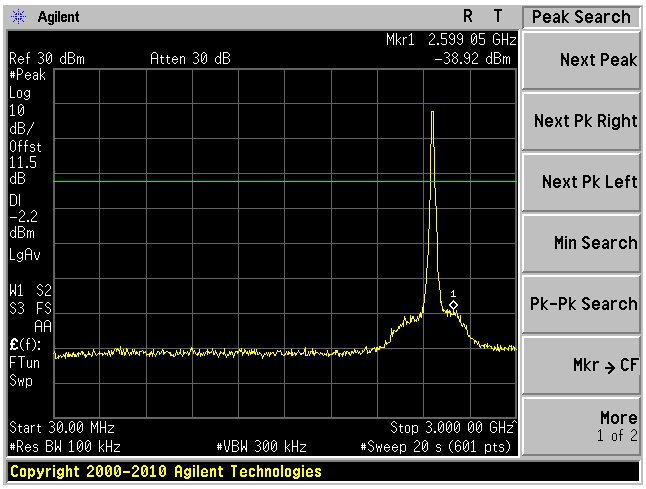
802.11 g mode, High channel, Chain 1
30MHz – 3GHz



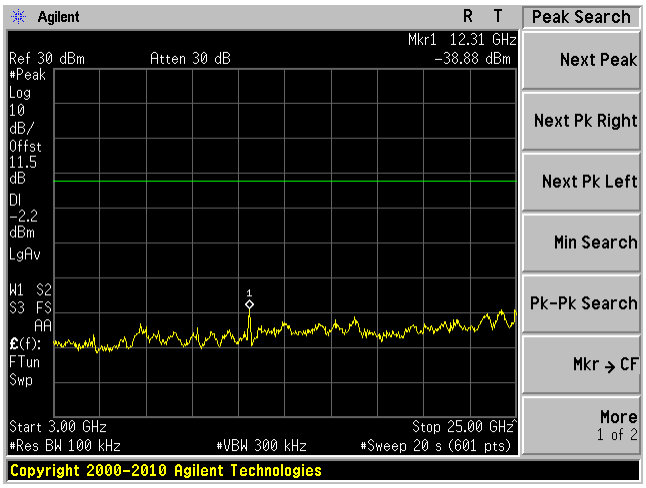
802.11 g mode, High channel, Chain 1
3G – 25 GHz



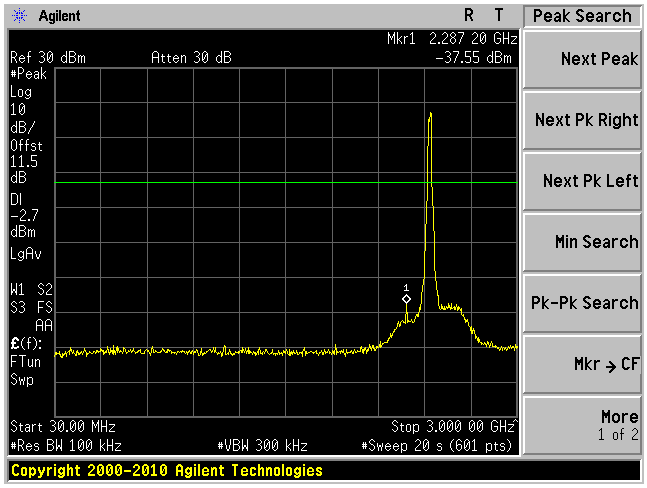
802.11 g mode, High channel, Chain 2
30MHz – 3GHz



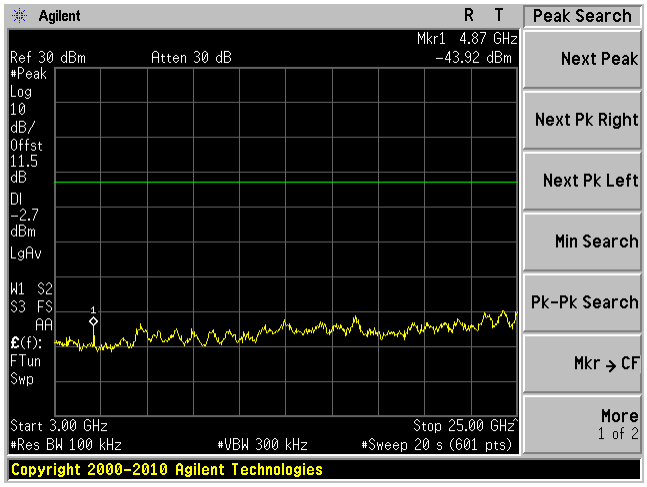
802.11 g mode, High channel, Chain 2
3G – 25 GHz



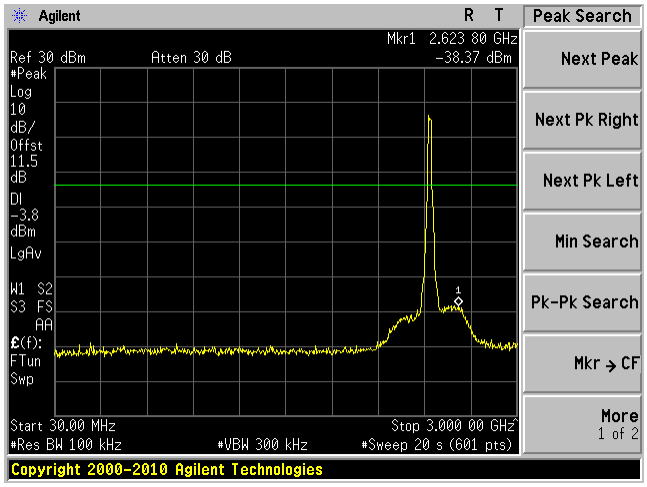
802.11 g mode, Middle channel, Chain 0
30MHz – 3GHz



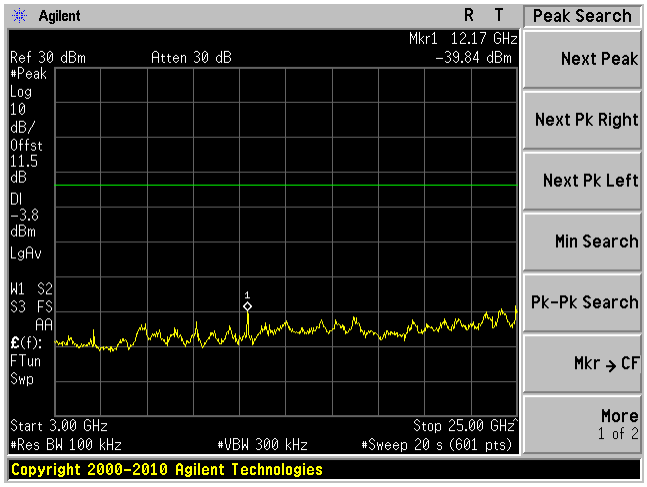
802.11 g mode, Middle channel, Chain 0
3G – 25 GHz



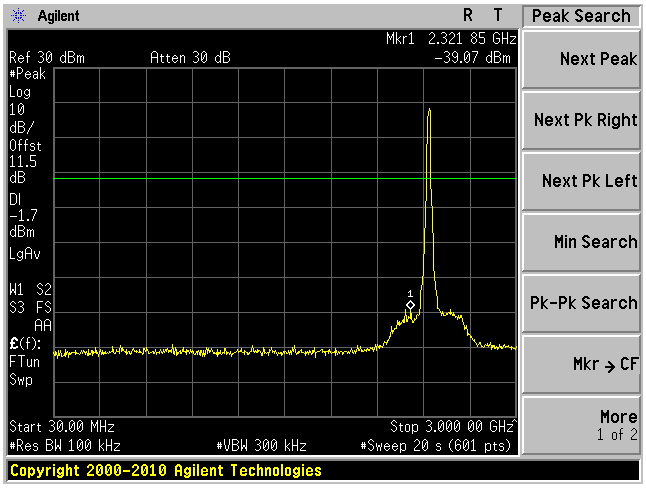
802.11 g mode, Middle channel, Chain 1
30MHz – 3GHz



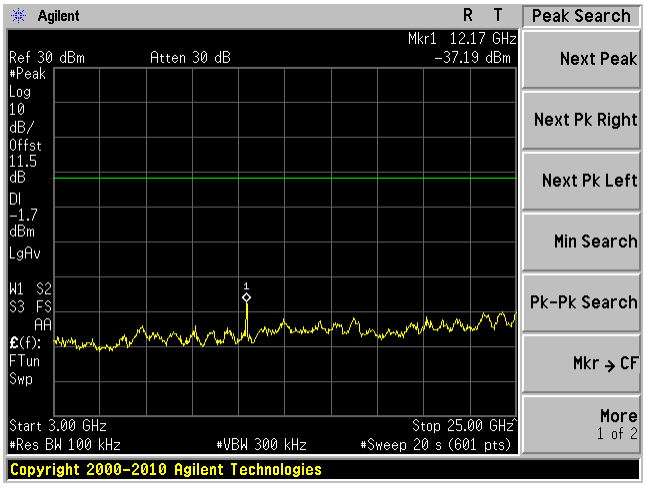
802.11 g mode, Middle channel, Chain 1
3G – 25 GHz



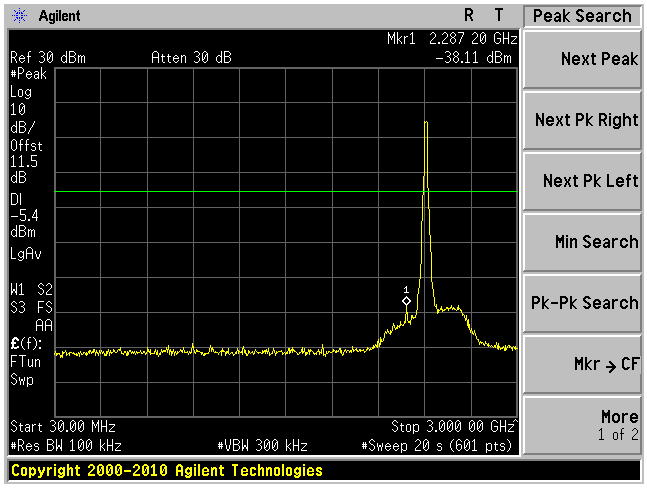
802.11 g mode, Middle channel, Chain 2
30MHz – 3GHz



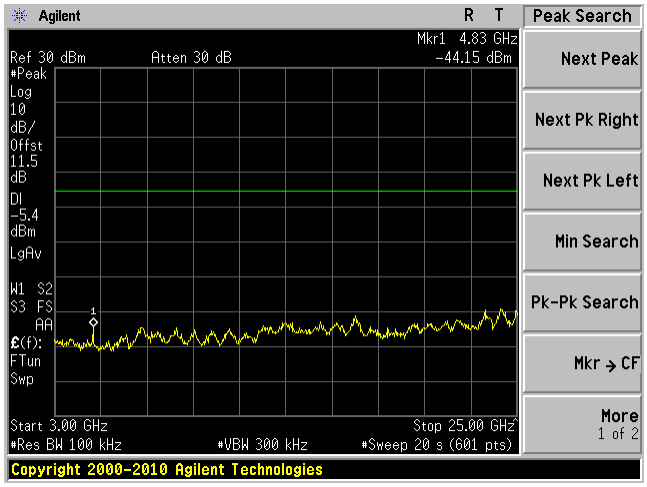
802.11 g mode, Middle channel, Chain 2
3G – 25 GHz



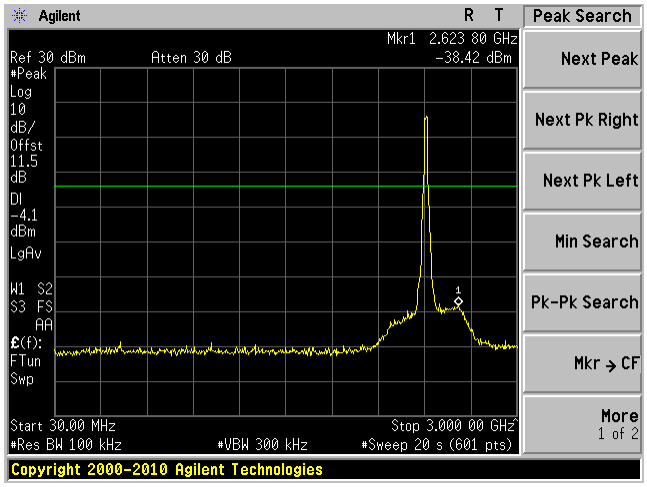
802.11 g mode, Low channel, Chain 0
30MHz – 3GHz



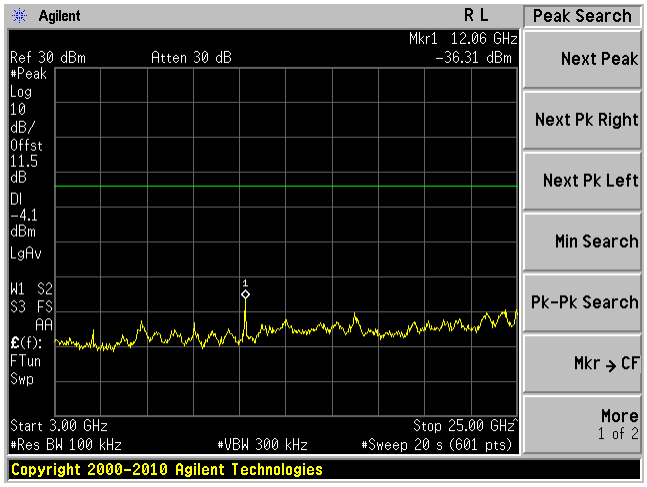
802.11 g mode, Low channel, Chain 0
3G – 25 GHz



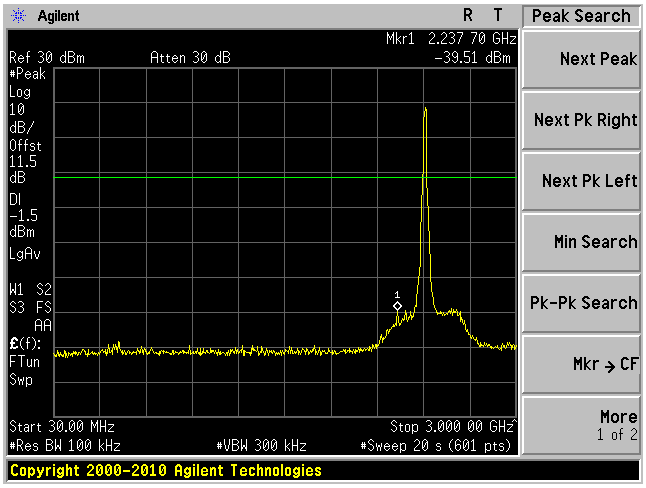
802.11 g mode, Low channel, Chain 1
30MHz – 3GHz



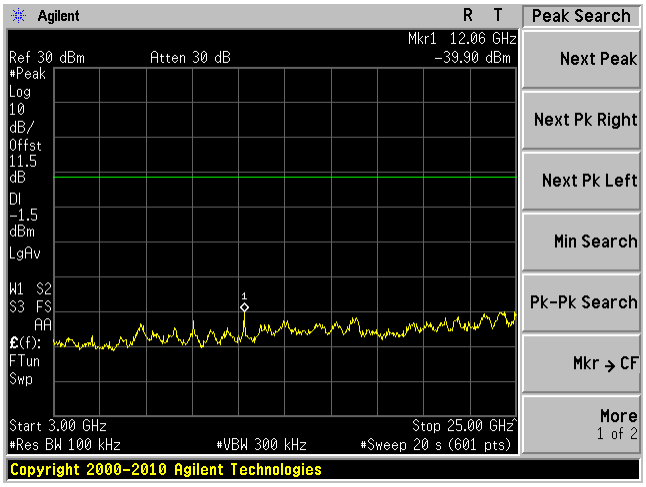
802.11 g mode, Low channel, Chain 1
3G – 25 GHz



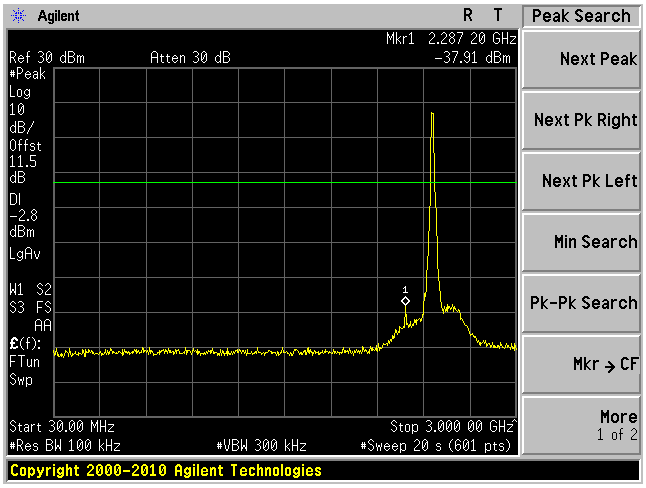
802.11 g mode, Low channel, Chain 2
30MHz – 3GHz



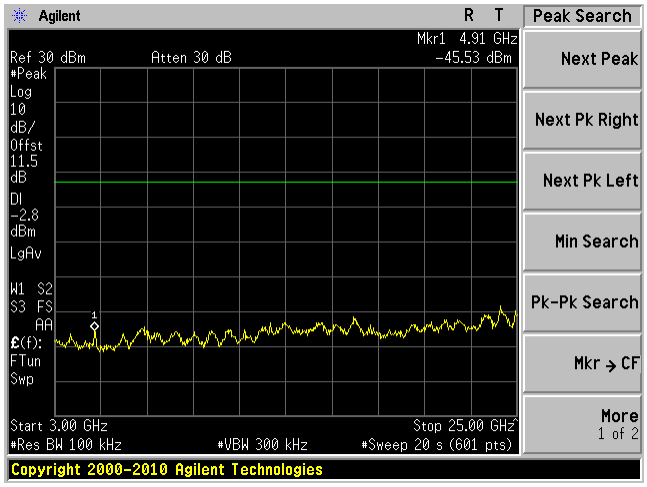
802.11 g mode, Low channel, Chain 2
3G – 25 GHz



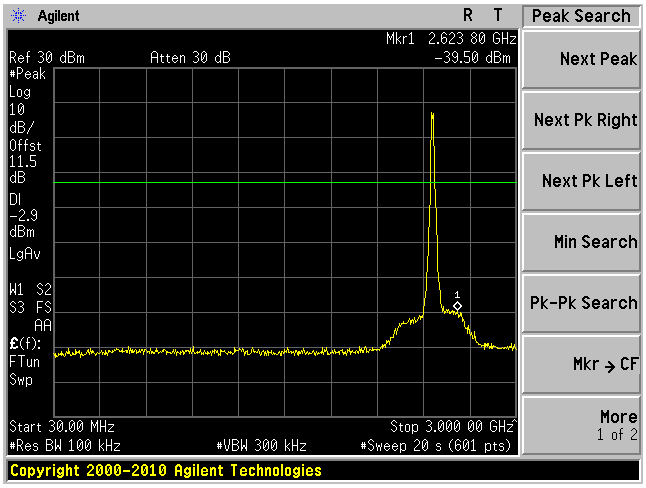
802.11 n20 mode, High channel, Chain 0
30MHz – 3GHz



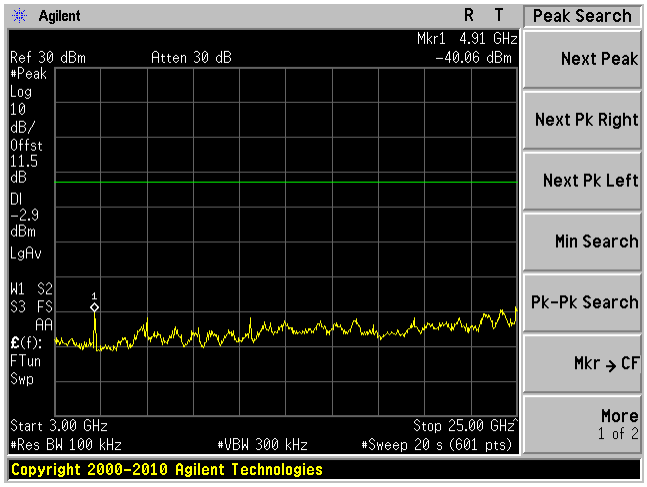
802.11 n20 mode, High channel, Chain 0
3G – 25 GHz



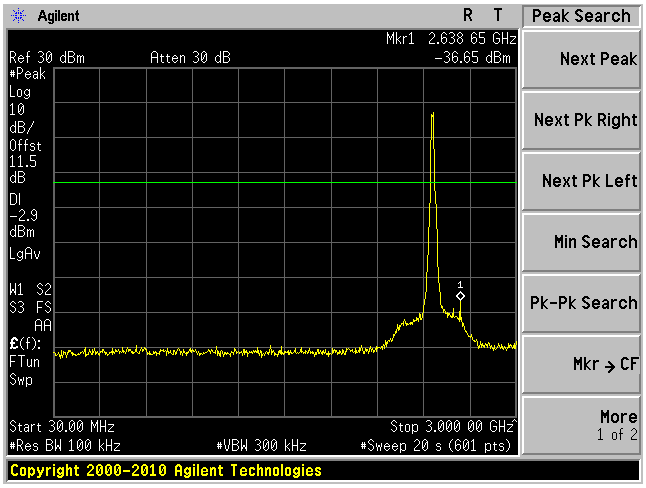
802.11 n20 mode, High channel, Chain 1
30MHz – 3GHz



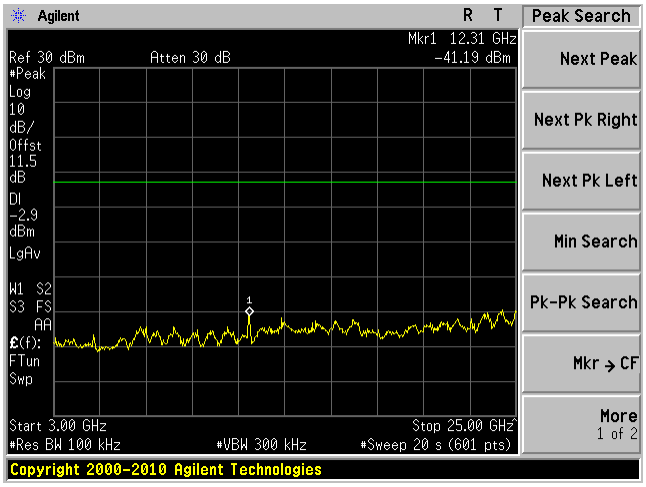
802.11 n20 mode, High channel, Chain 1
3G – 25 GHz



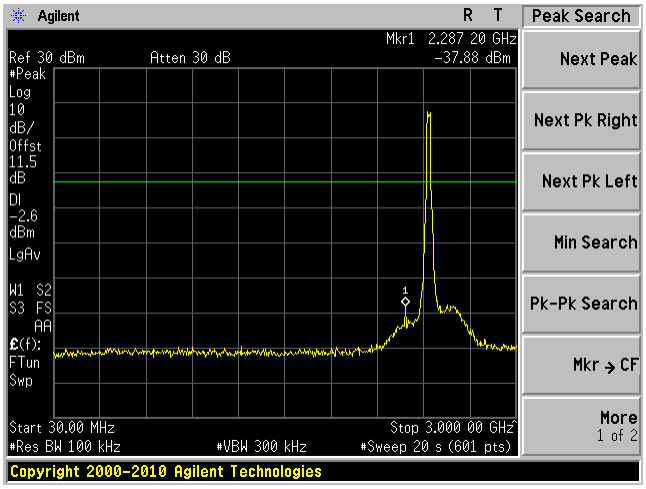
802.11 n20 mode, High channel, Chain 2
30MHz – 3GHz



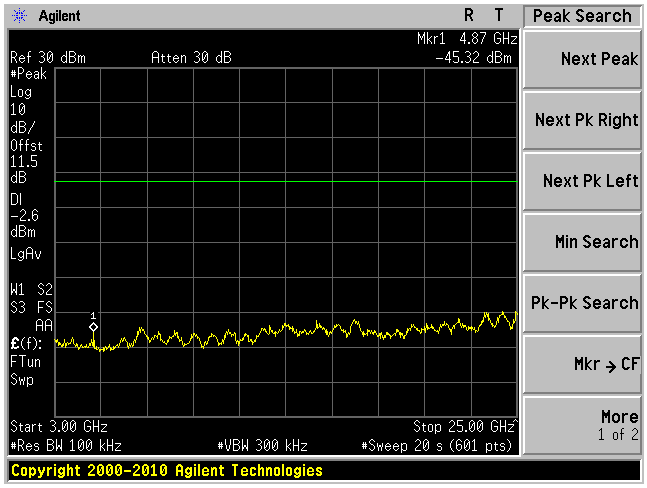
802.11 n20 mode, High channel, Chain 2
3G – 25 GHz



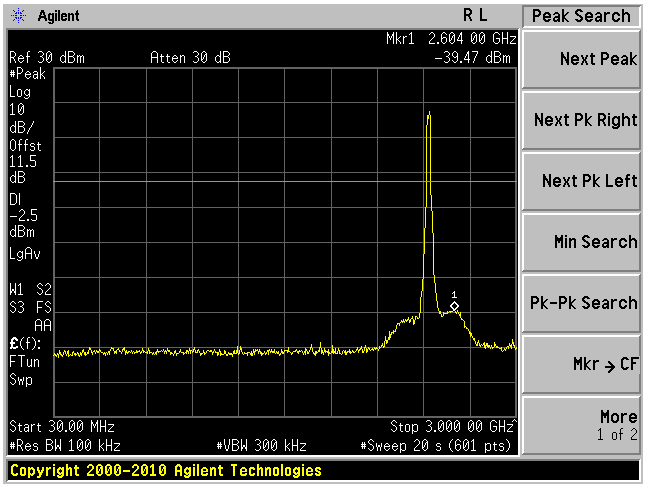
802.11 n20 mode, Middle channel, Chain 0
30MHz – 3GHz



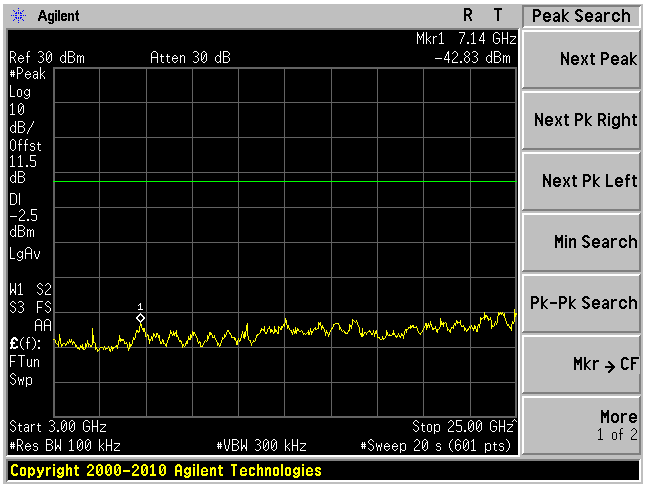
802.11 n20 mode, Middle channel, Chain 0
3G – 25 GHz



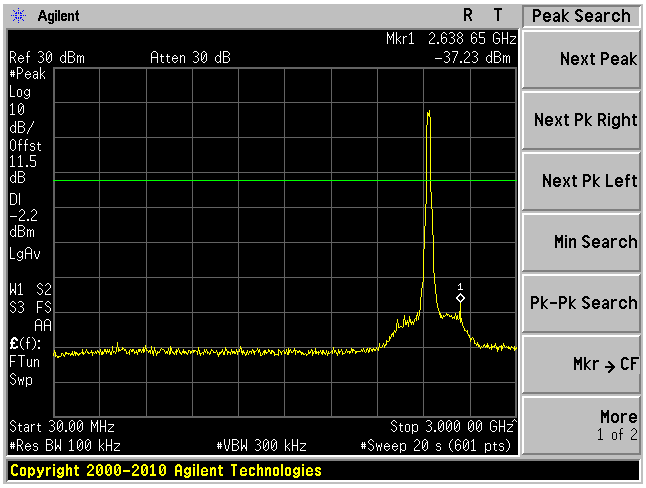
802.11 n20 mode, Middle channel, Chain 1
30MHz – 3GHz



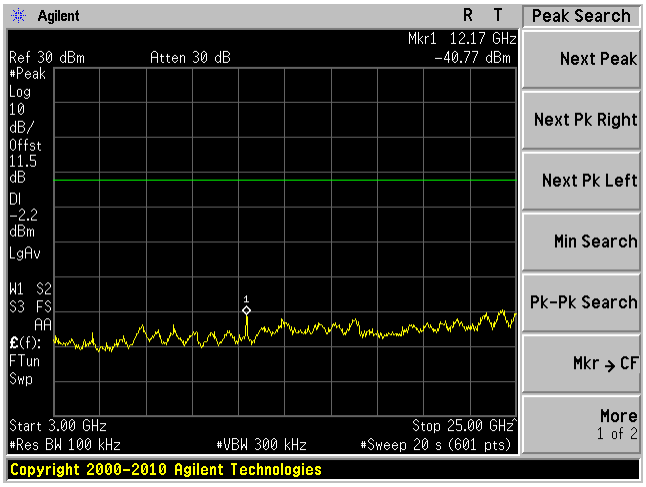
802.11 n20 mode, Middle channel, Chain 1
3G – 25 GHz



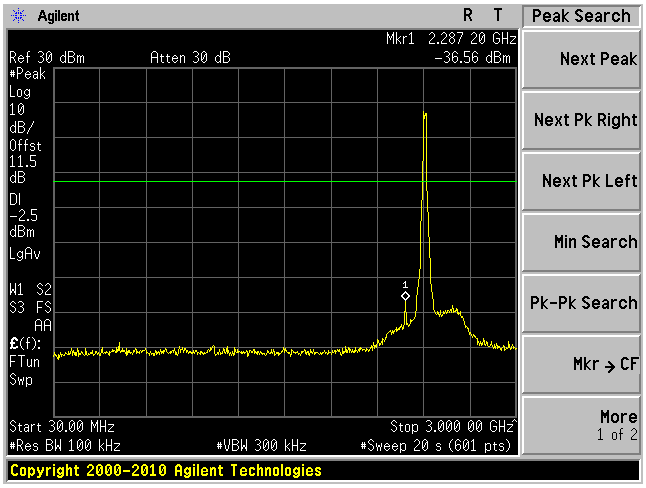
802.11 n20 mode, Middle channel, Chain 2
30MHz – 3GHz



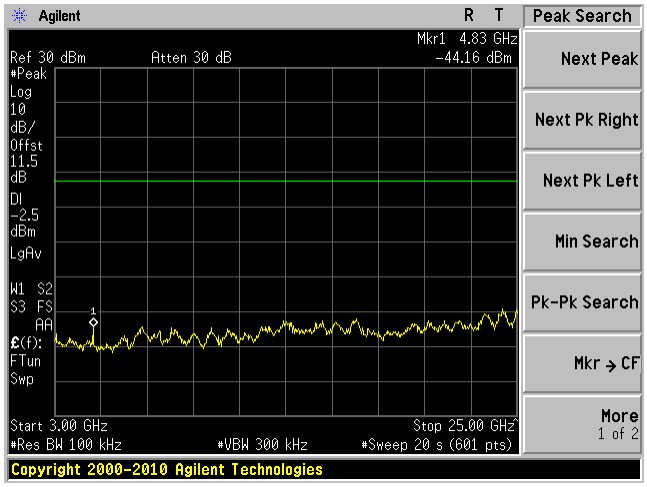
802.11 n20 mode, Middle channel, Chain 2
3G – 25 GHz



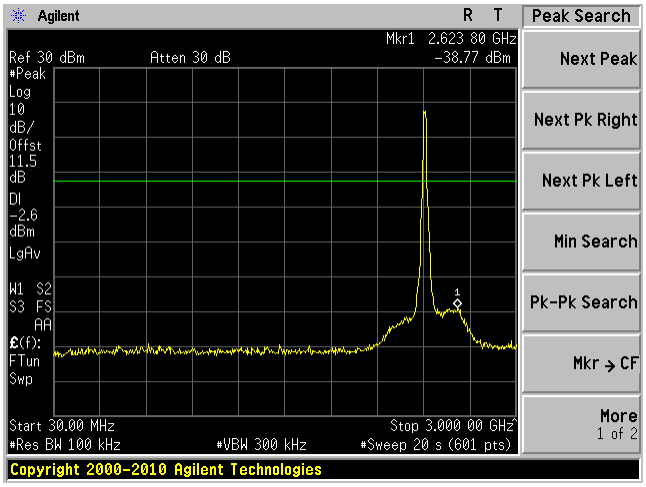
802.11 n20 mode, Low channel, Chain 0
30MHz – 3GHz



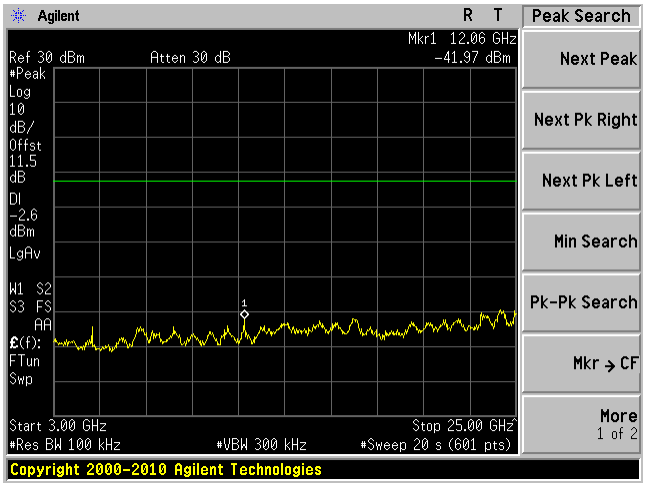
802.11 n20 mode, Low channel, Chain 0
3G – 25 GHz



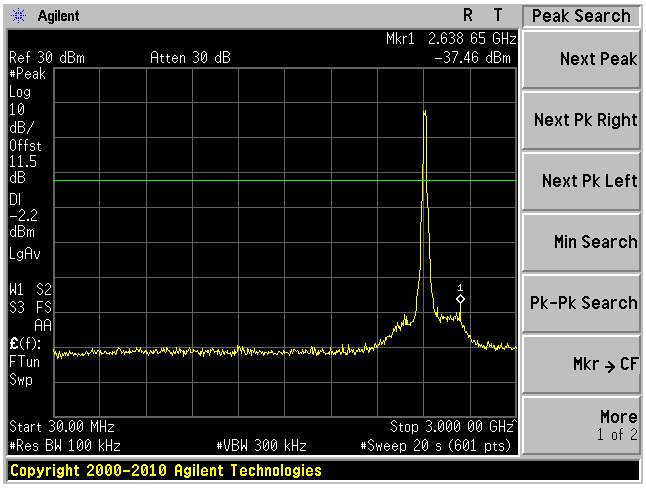
802.11 n20 mode, Low channel, Chain 1
30MHz – 3GHz



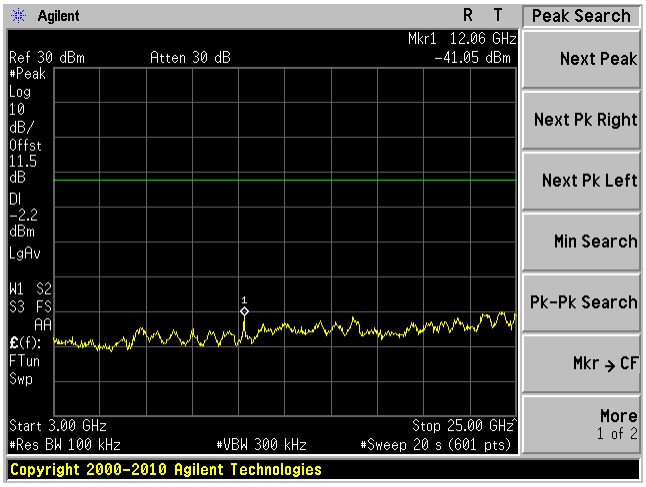
802.11 n20 mode, Low channel, Chain 1
3G – 25 GHz



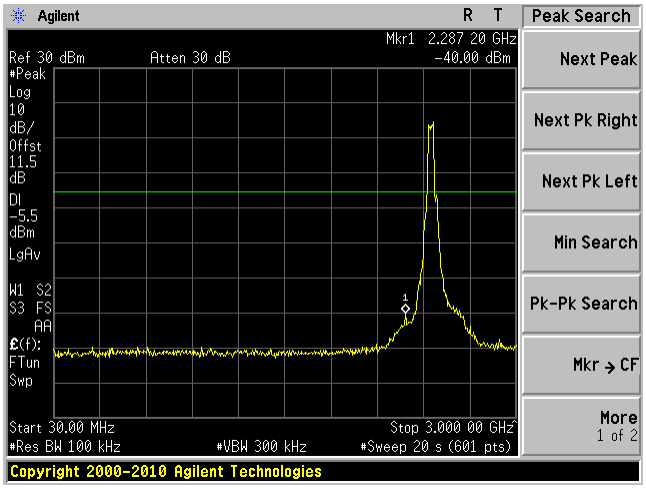
802.11 n20 mode, Low channel, Chain 2
30MHz – 3GHz



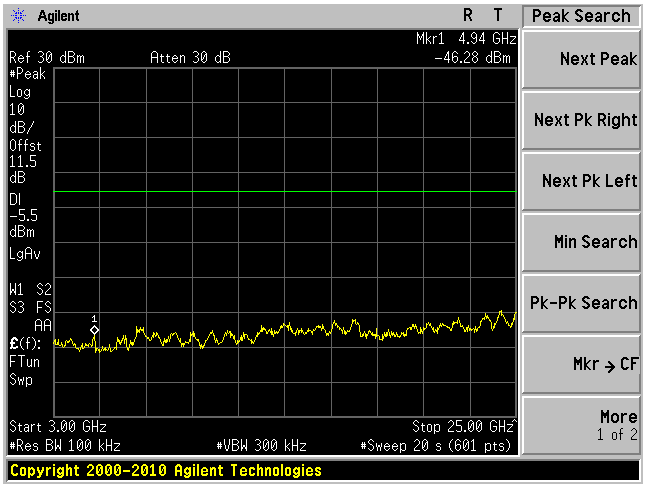
802.11 n20 mode, Low channel, Chain 2
3G – 25 GHz



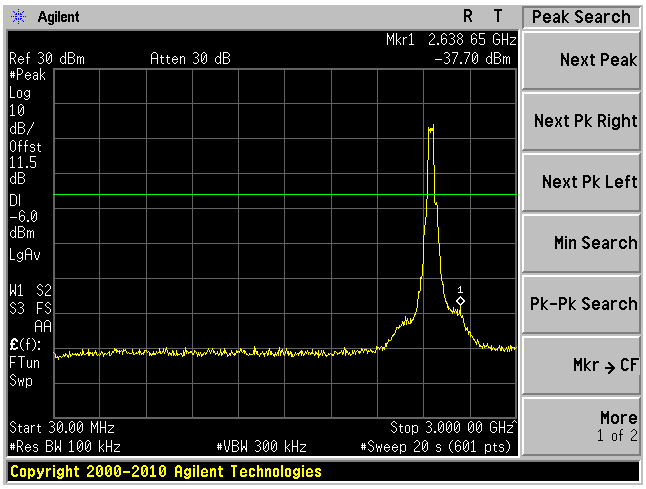
802.11 n40 mode, High channel, Chain 0
30MHz – 3GHz



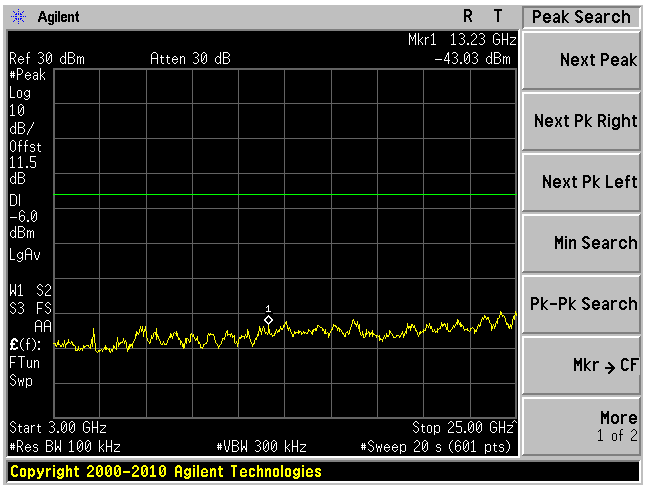
802.11 n40 mode, High channel, Chain 0
3G – 25 GHz



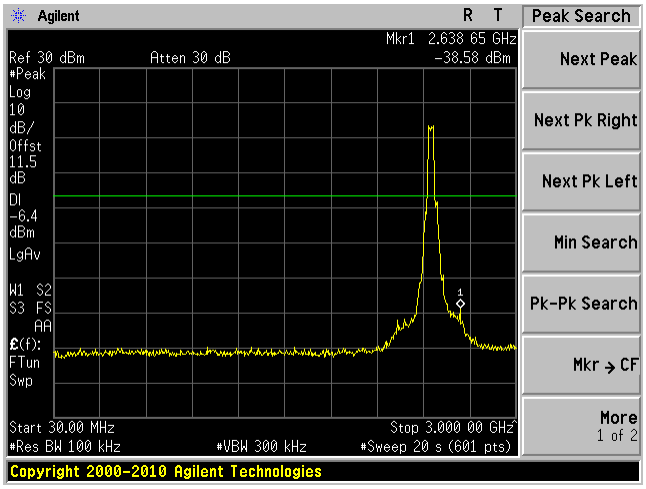
802.11 n40 mode, High channel, Chain 1
30MHz – 3GHz



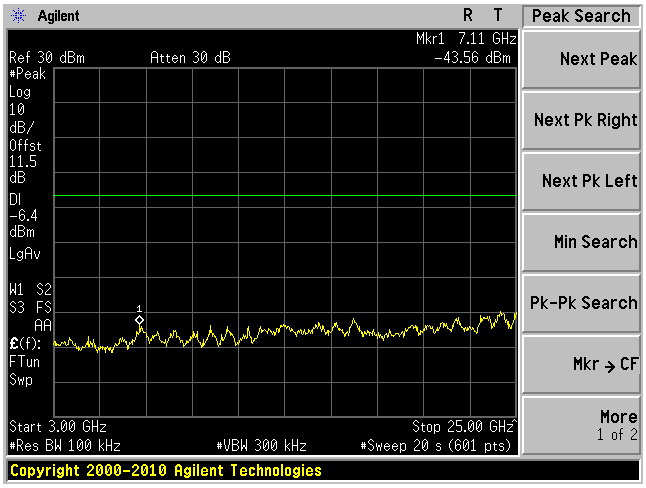
802.11 n40 mode, High channel, Chain 1
3G – 25 GHz



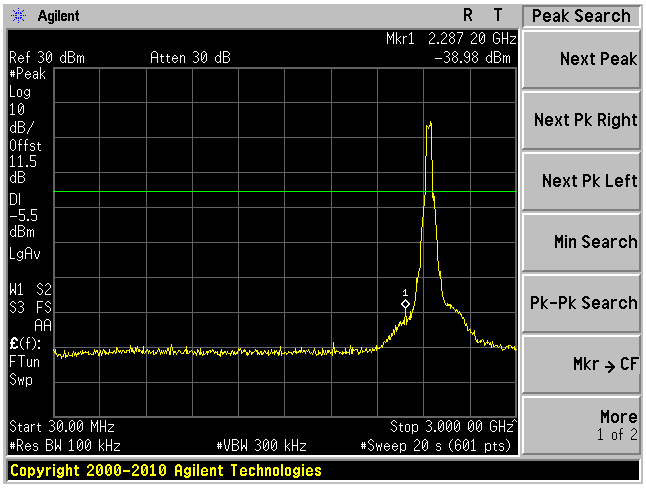
802.11 n40 mode, High channel, Chain 2
30MHz – 3GHz



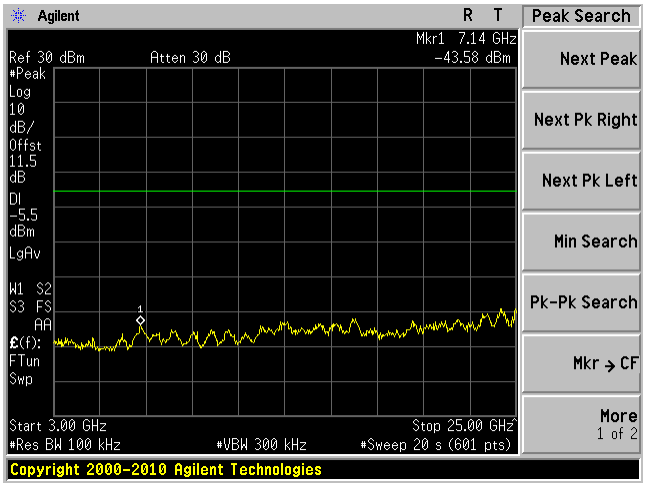
802.11 n40 mode, High channel, Chain 2
3G – 25 GHz



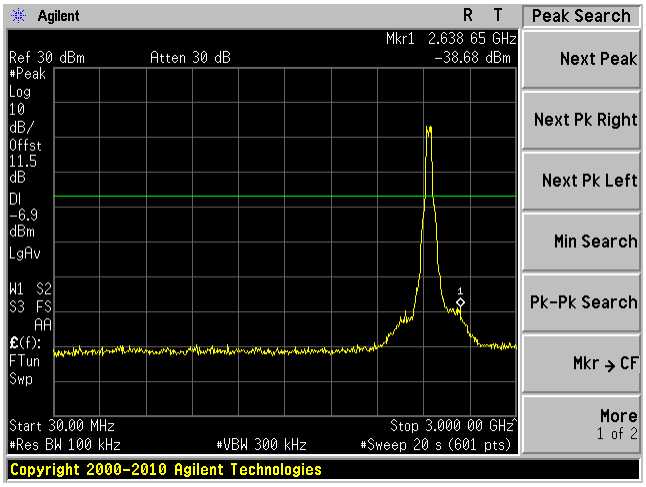
802.11 n40 mode, Middle channel, Chain 0
30MHz – 3GHz



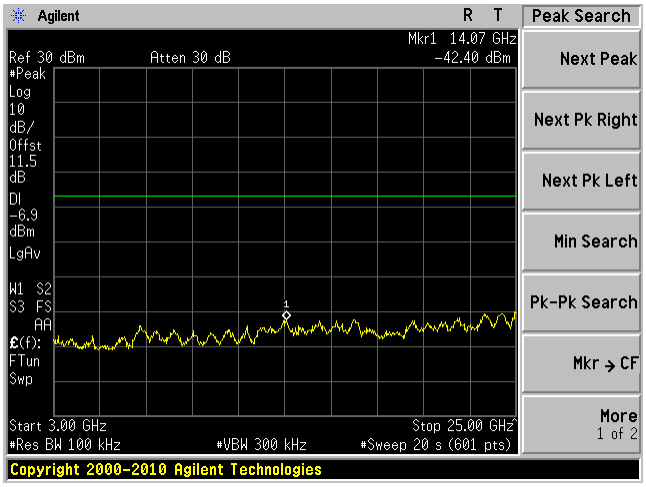
802.11 n40 mode, Middle channel, Chain 0
3G – 25 GHz



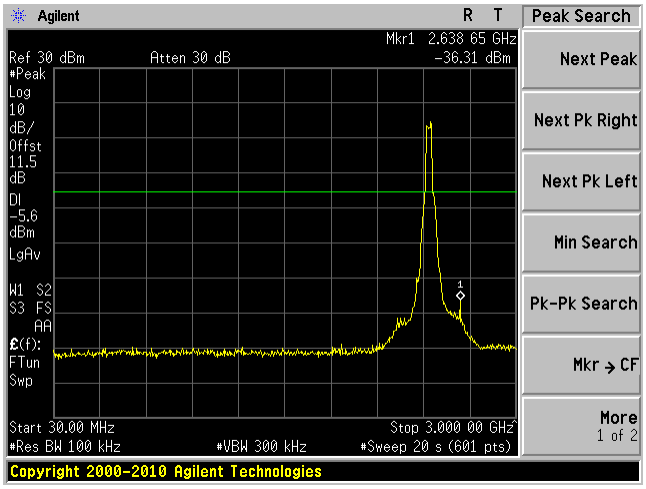
802.11 n40 mode, Middle channel, Chain 1
30MHz – 3GHz



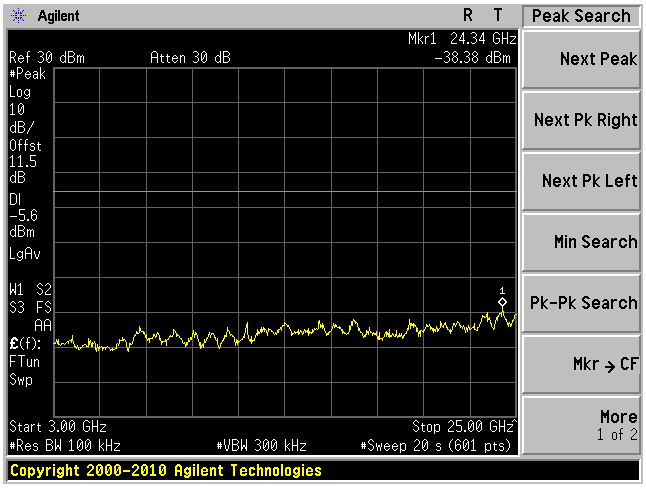
802.11 n40 mode, Middle channel, Chain 1
3G – 25 GHz



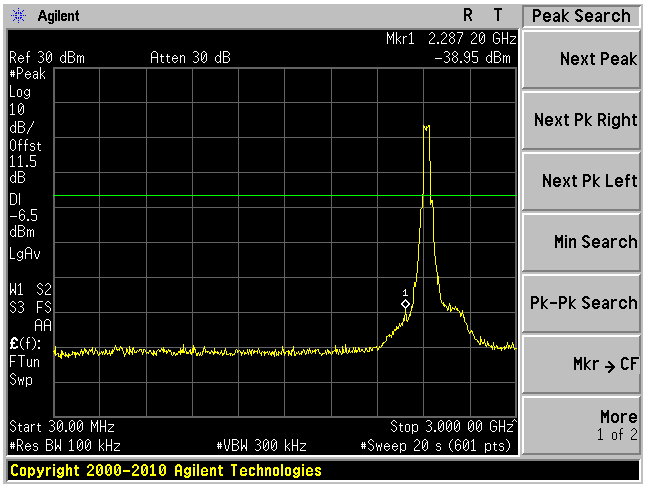
802.11 n40 mode, Middle channel, Chain 2
30MHz – 3GHz



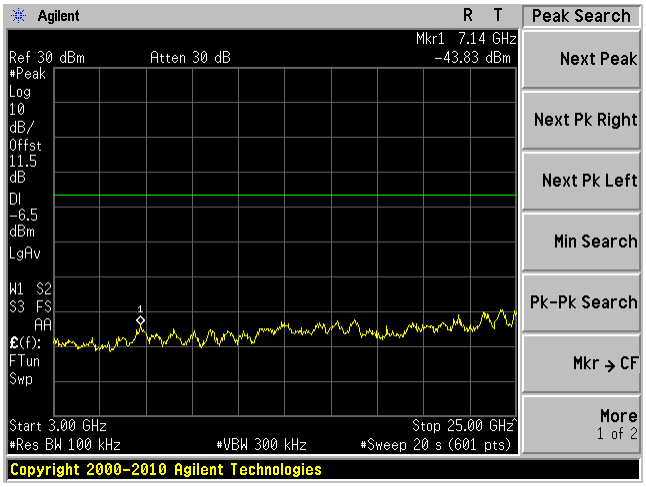
802.11 n40 mode, Middle channel, Chain 2
3G – 25 GHz



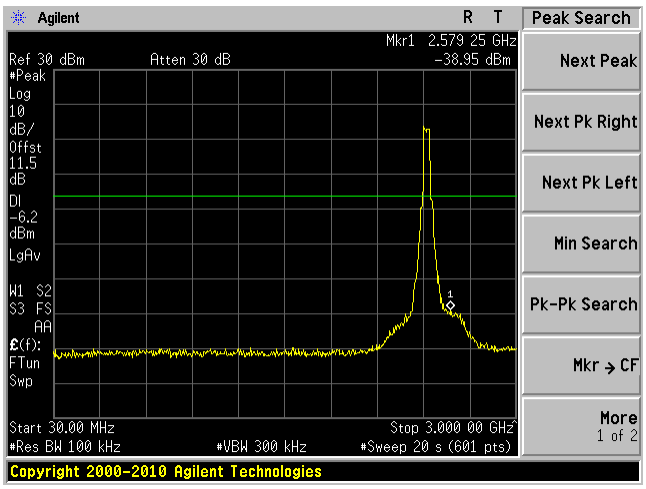
802.11 n40 mode, Low channel, Chain 0
30MHz – 3GHz



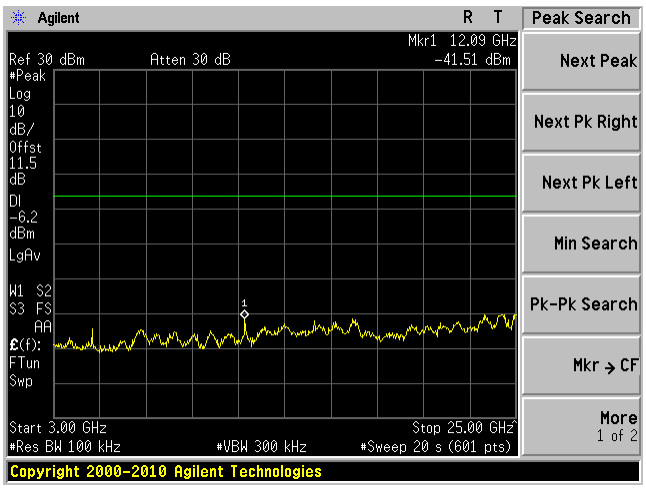
802.11 n40 mode, Low channel, Chain 0
3G – 25 GHz



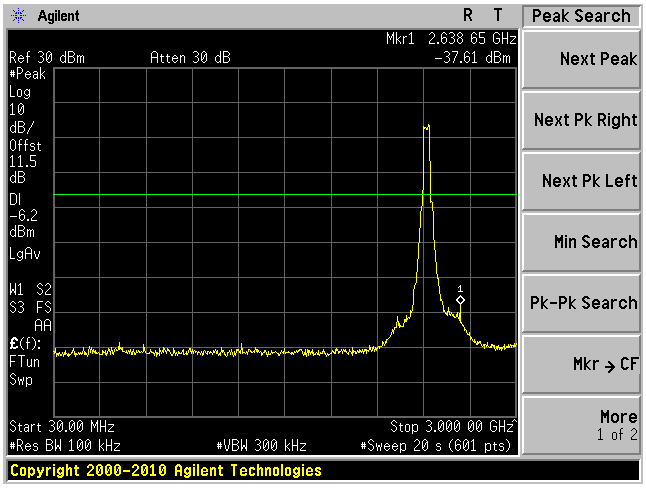
802.11 n40 mode, Low channel, Chain 1
30MHz – 3GHz



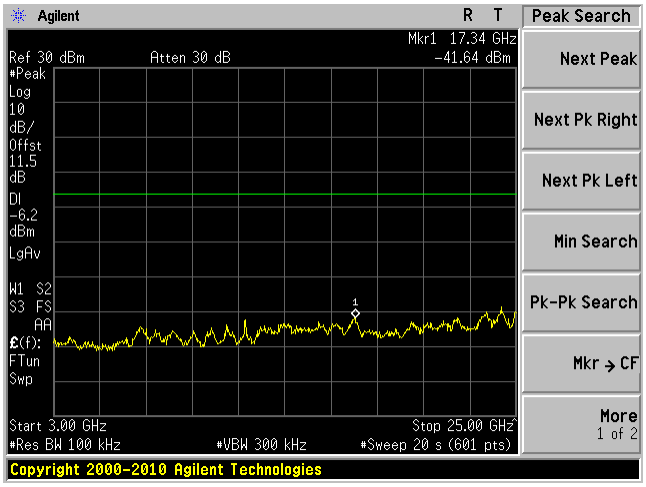
802.11 n40 mode, Low channel, Chain 1
3G – 25 GHz



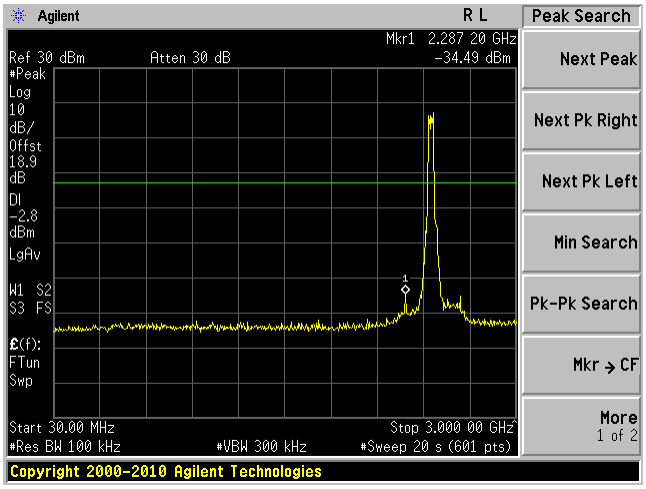
802.11 n40 mode, Low channel, Chain 2
30MHz – 3GHz



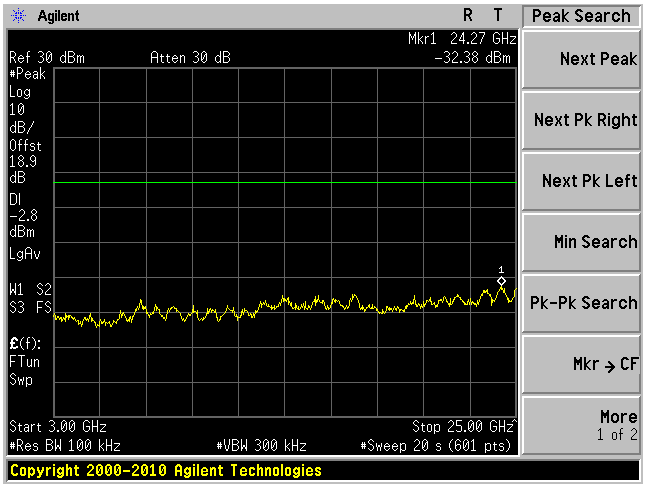
802.11 n40 mode, Low channel, Chain 2
3G – 25 GHz



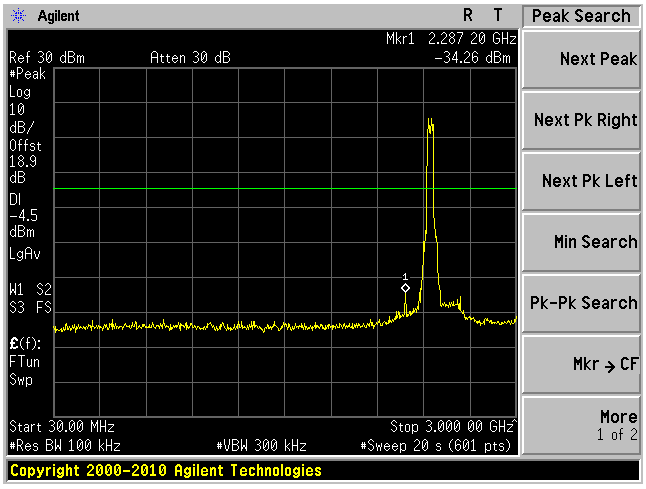
802.11 n40 mode, High channel, Chain 012
30MHz – 3GHz



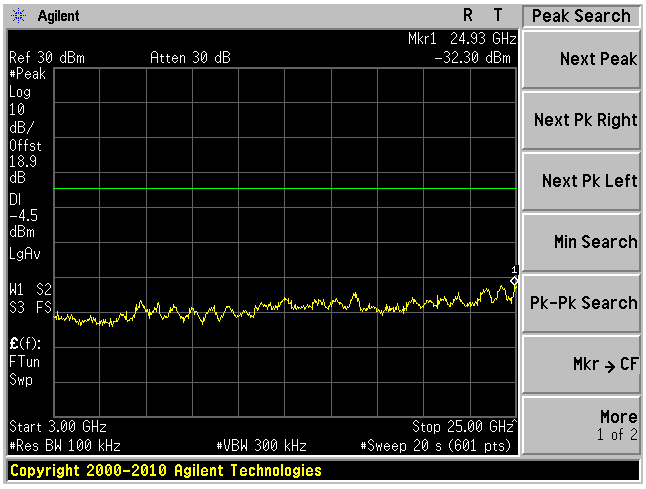
802.11 n40 mode, High channel, Chain 012
3G – 25 GHz



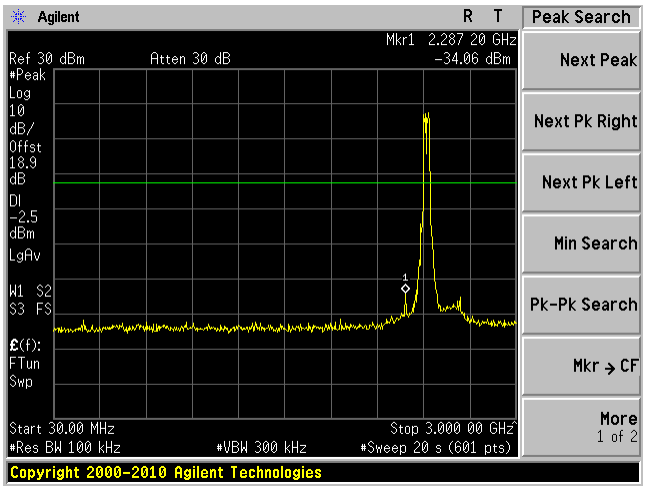
802.11 n40 mode, Middle channel, Chain 012
30MHz – 3GHz



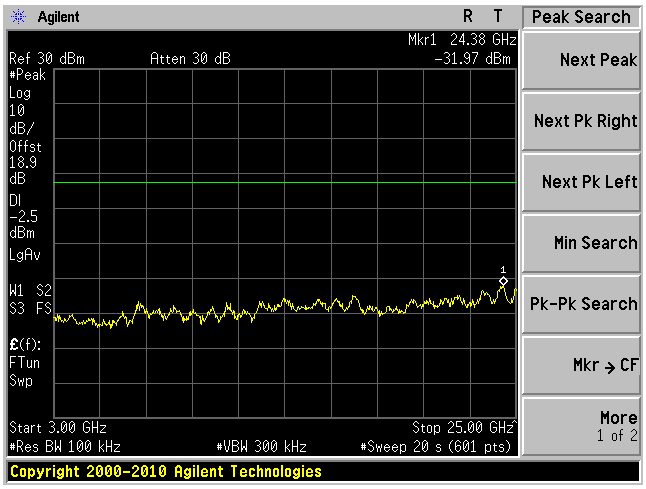
802.11 n40 mode, Middle channel, Chain 012
3G – 25 GHz



802.11 n40 mode, Low channel, Chain 012
30MHz – 3GHz

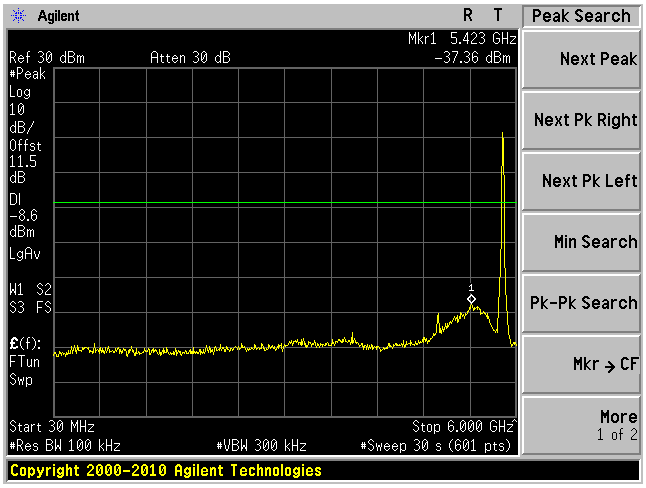


802.11 n40 mode, Low channel, Chain 012
3G – 25 GHz

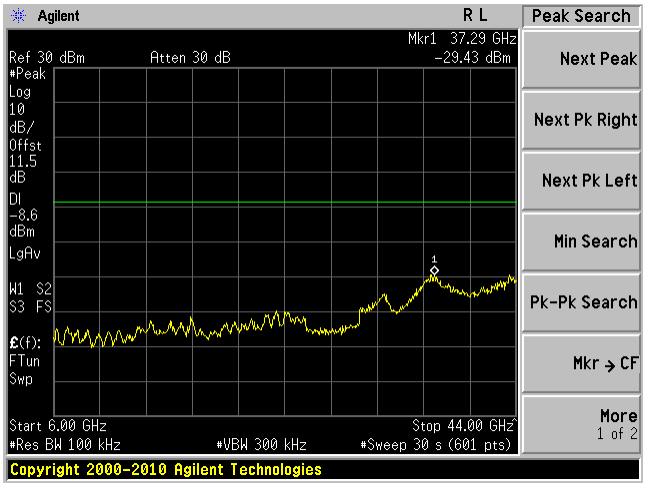


5725 MHz – 5845 MHz

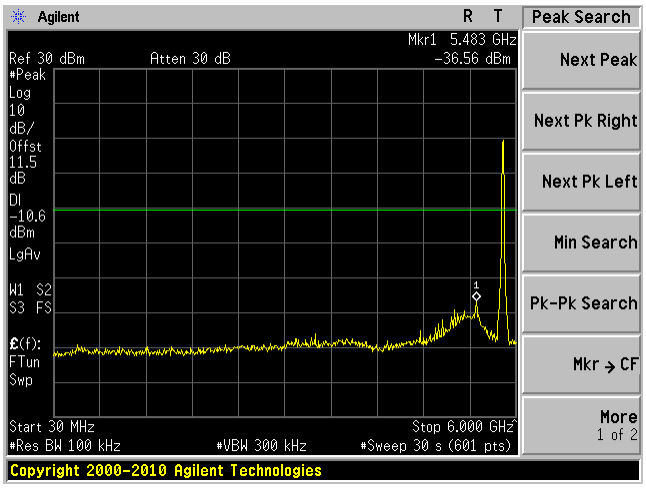
802.11 a mode, High channel, Chain 0
30MHz – 6GHz



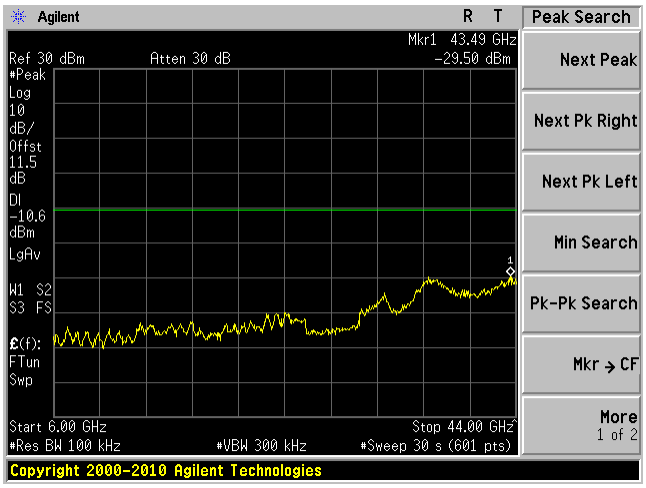
802.11 a mode, High channel, Chain 0
6G – 44 GHz



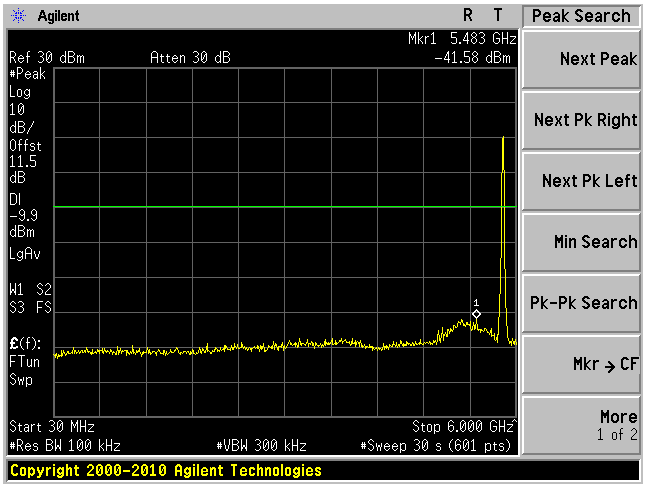
802.11 a mode, High channel, Chain 1
30MHz – 6GHz



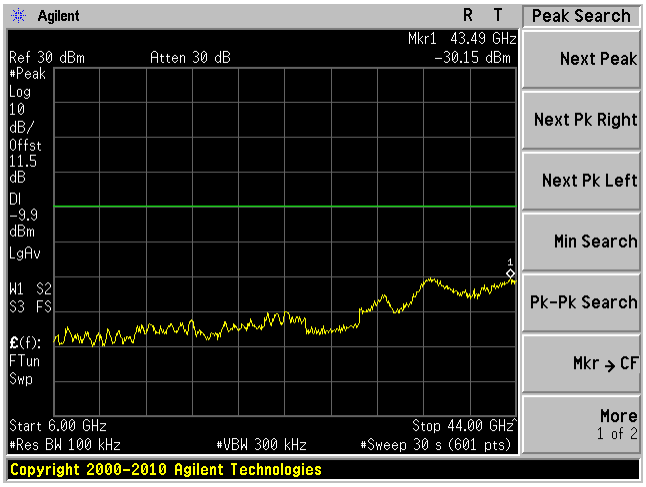
802.11 a mode, High channel, Chain 1
6G – 44 GHz



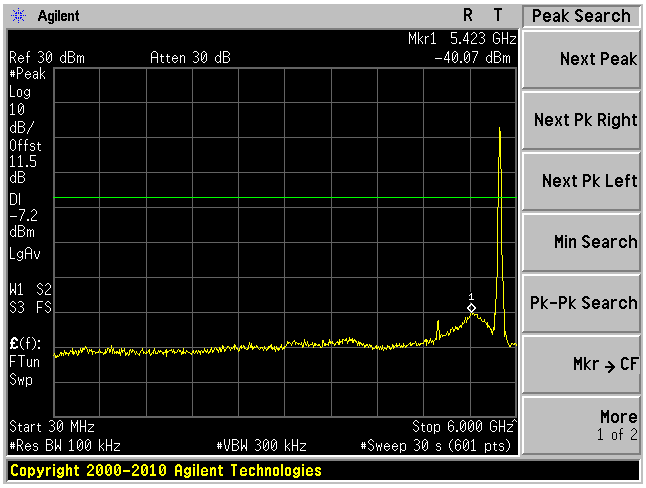
802.11 a mode, High channel, Chain 2
30MHz – 6GHz



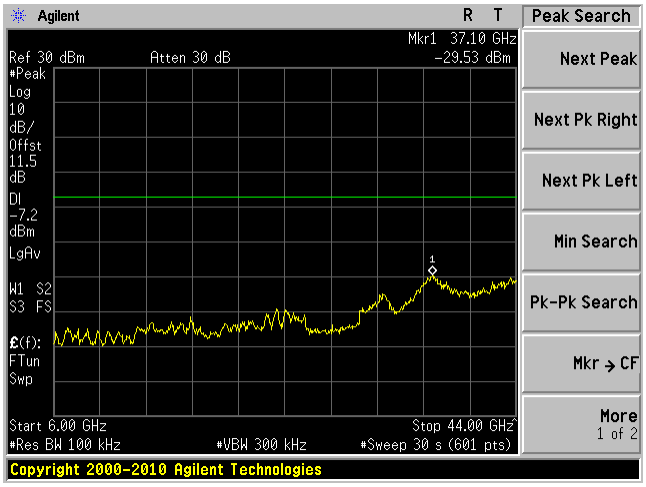
802.11 a mode, High channel, Chain 2
6G – 44 GHz



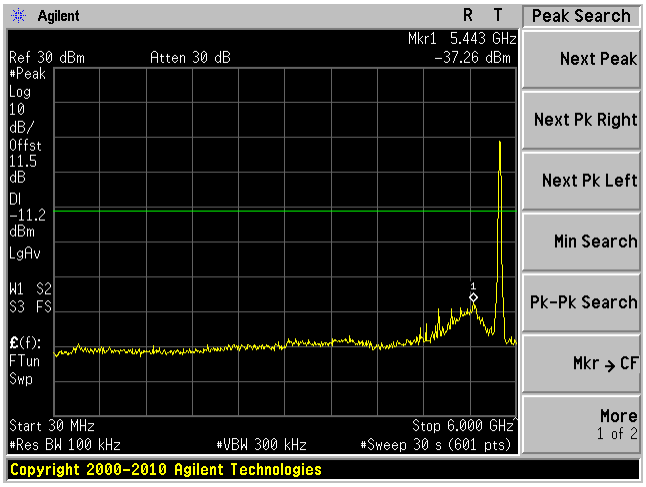
802.11 a mode, Middle channel, Chain 0
30MHz – 6GHz



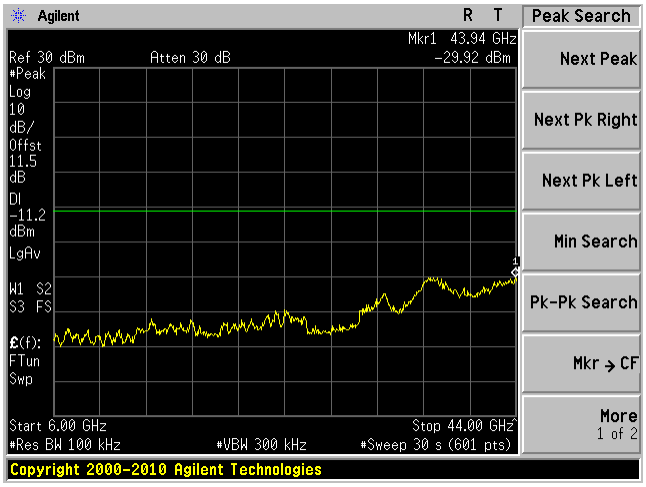
802.11 a mode, Middle channel, Chain 0
6G – 44 GHz



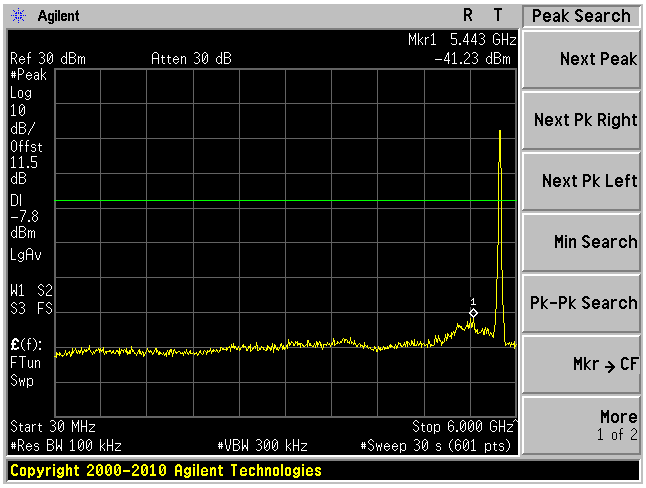
802.11 a mode, Middle channel, Chain 1
30MHz – 6GHz



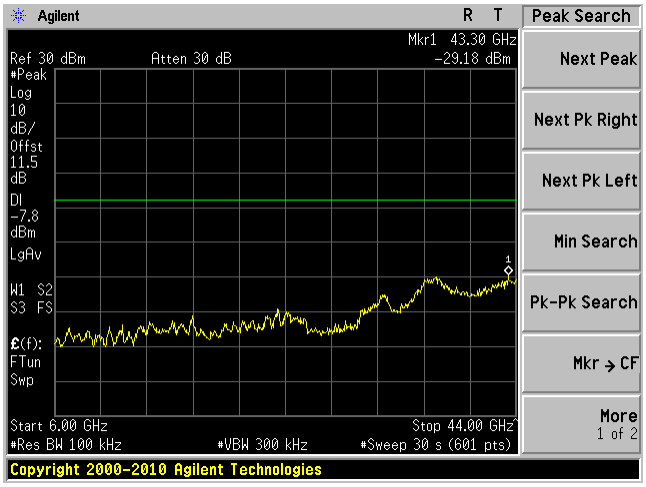
802.11 a mode, Middle channel, Chain 1
6G – 44 GHz



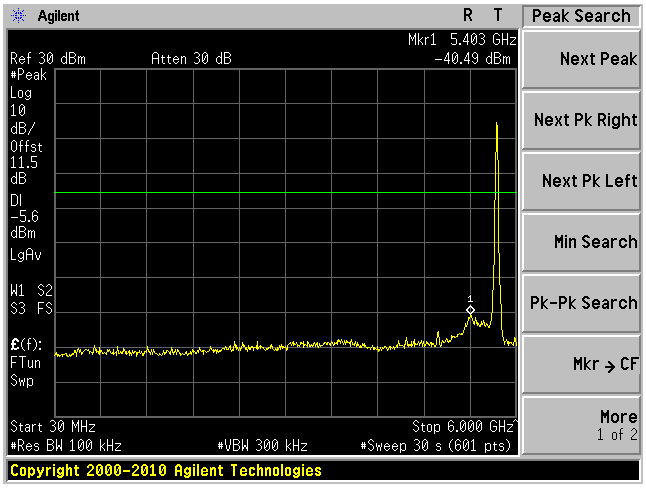
802.11 a mode, Middle channel, Chain 2
30MHz – 6GHz



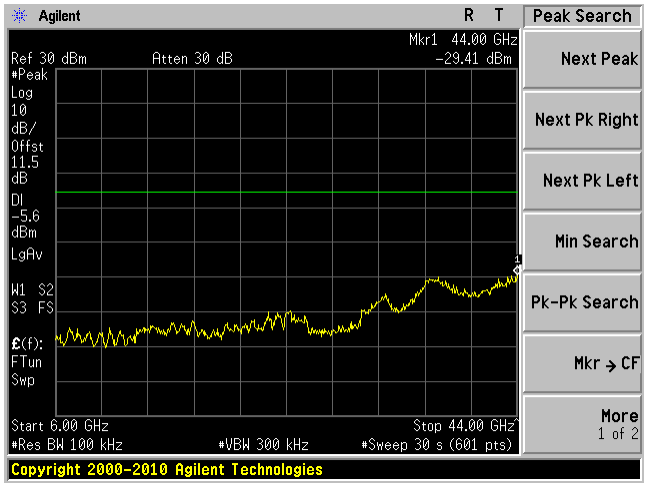
802.11 a mode, Middle channel, Chain 2
6G – 44 GHz



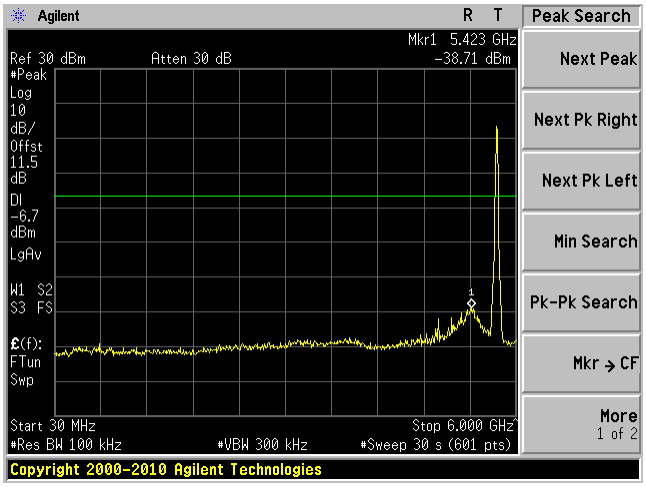
802.11 a mode, Low channel, Chain 0
30MHz – 6GHz



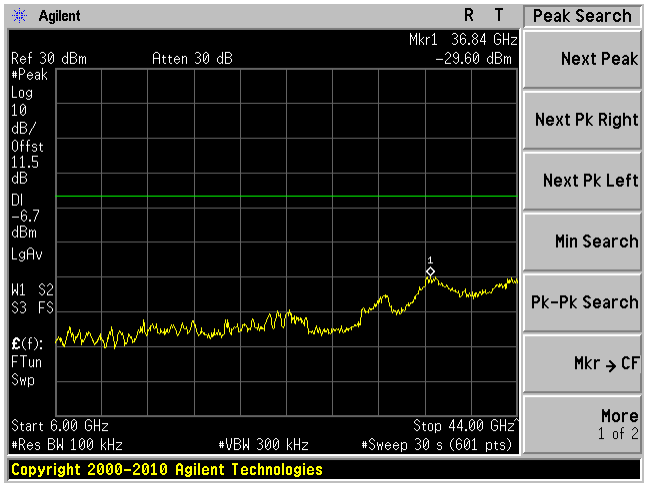
802.11 a mode, Low channel, Chain 0
6G – 44 GHz



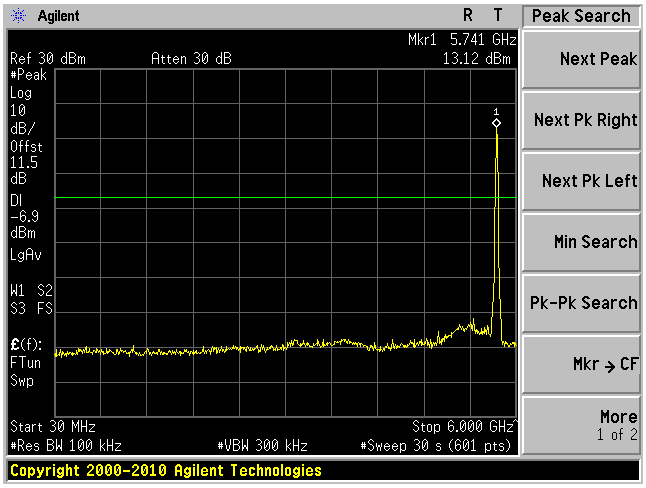
802.11 a mode, Low channel, Chain 1
30MHz – 6GHz



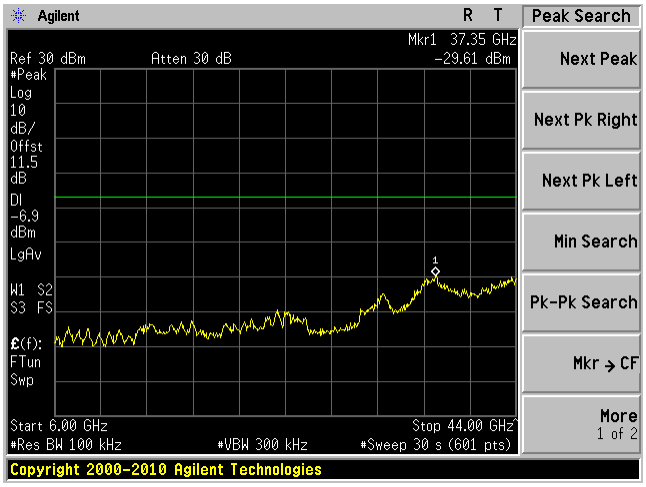
802.11 a mode, Low channel, Chain 1
6G – 44 GHz



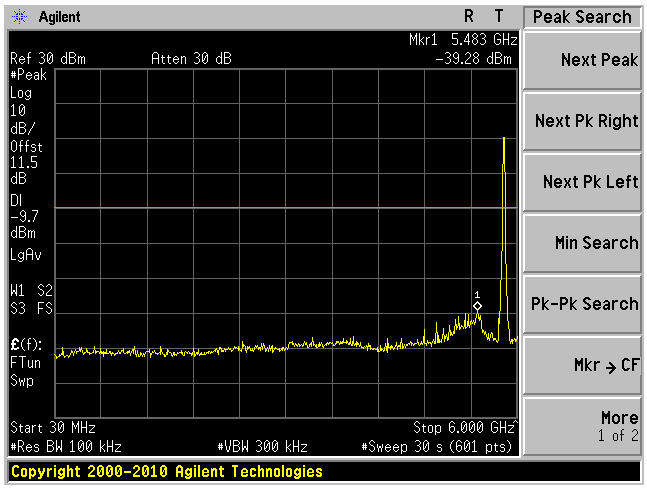
802.11 a mode, Low channel, Chain 2
30MHz – 6GHz



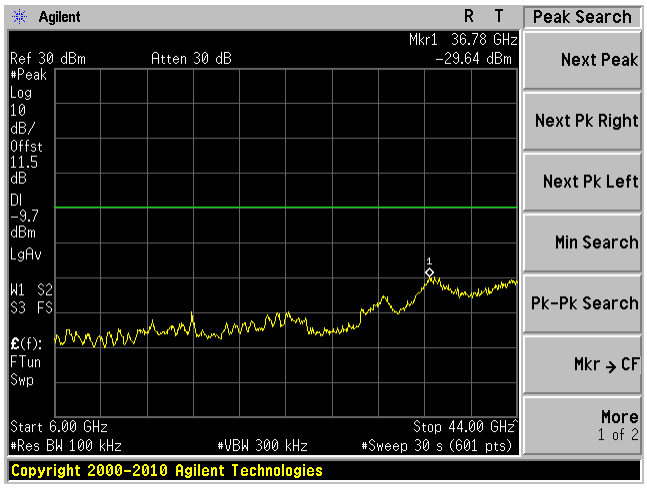
802.11 a mode, Low channel, Chain 2
6G – 44 GHz



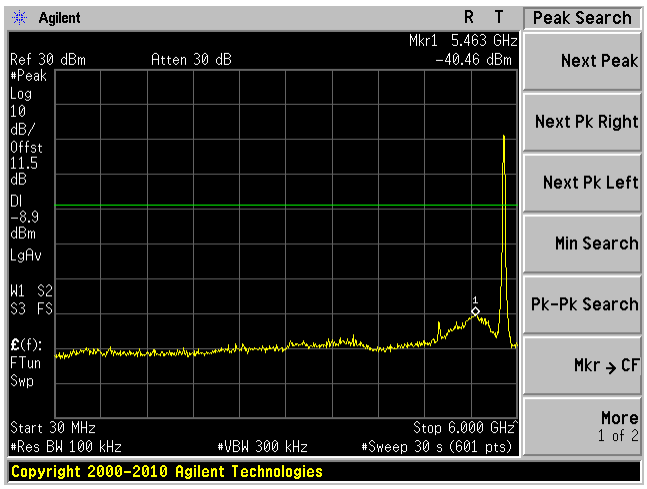
802.11 n20 mode, High channel, Chain 0
30MHz – 6GHz



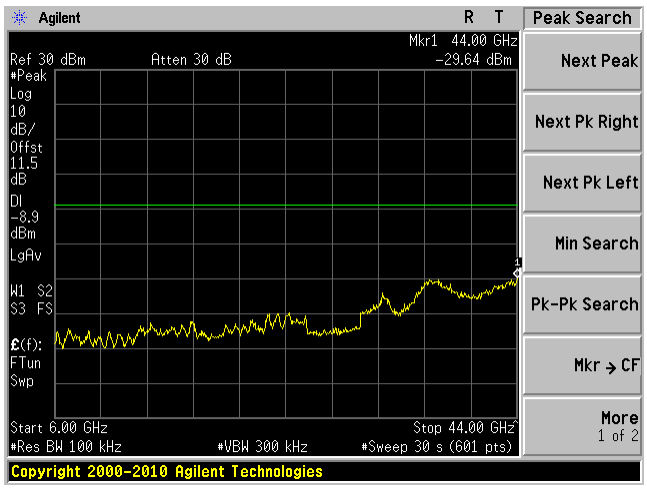
802.11 n20 mode, High channel, Chain 0
6G – 44 GHz



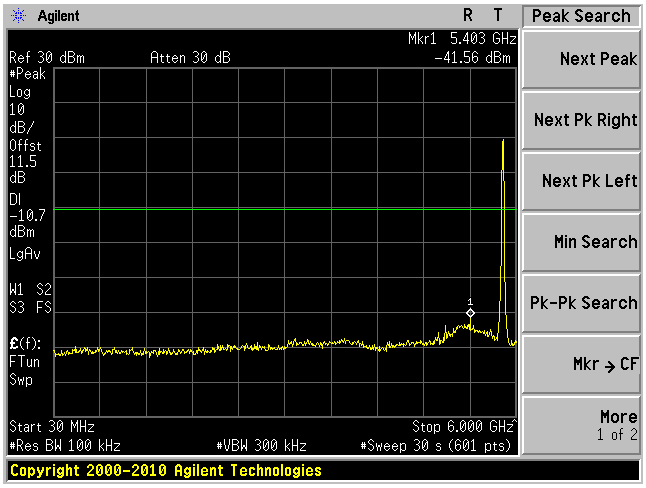
802.11 n20 mode, High channel, Chain 1
30MHz – 6GHz



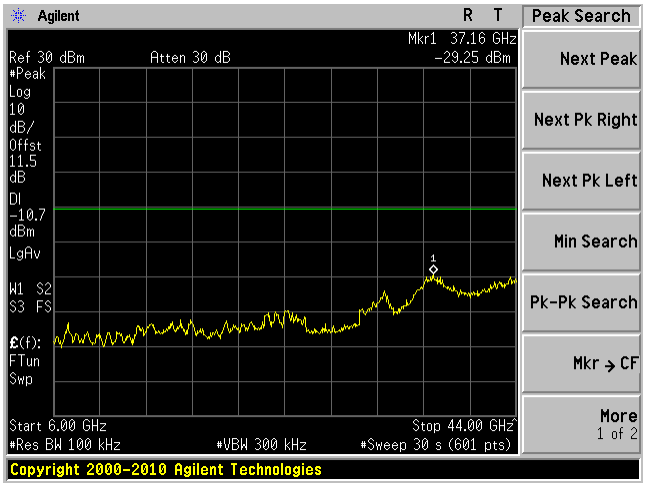
802.11 n20 mode, High channel, Chain 1
6G – 44 GHz



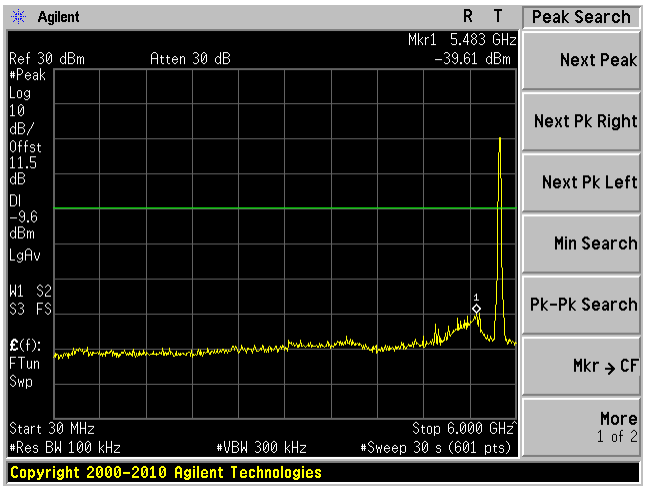
802.11 n20 mode, High channel, Chain 2
30MHz – 6GHz



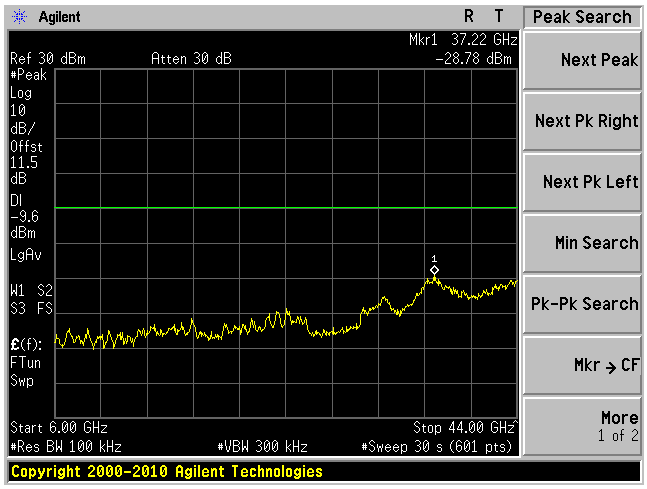
802.11 n20 mode, High channel, Chain 2
6G – 44 GHz



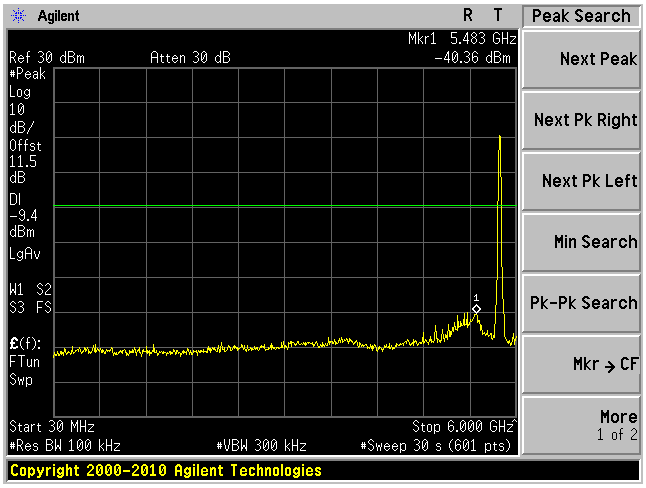
802.11 n20 mode, Middle channel, Chain 0
30MHz – 6GHz



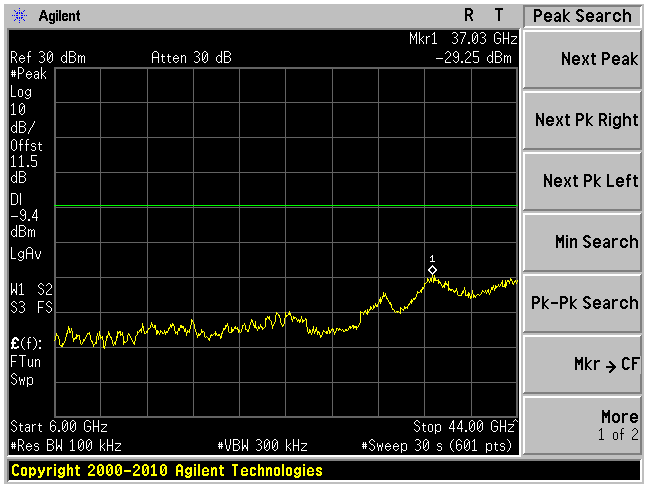
802.11 n20 mode, Middle channel, Chain 0
6G – 44 GHz



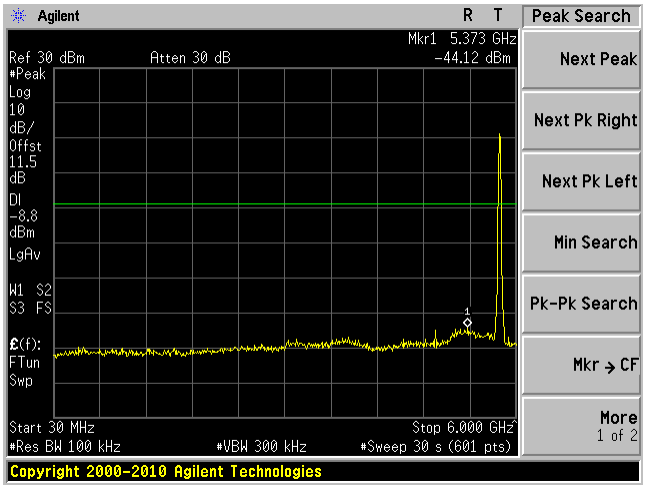
802.11 n20 mode, Middle channel, Chain 1
30MHz – 6GHz



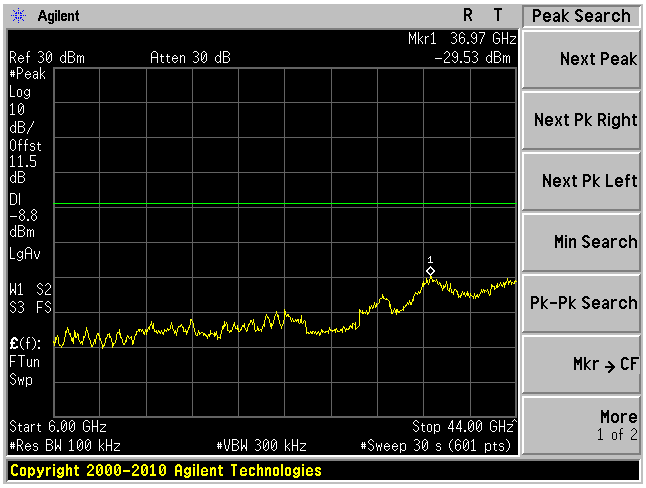
802.11 n20 mode, Middle channel, Chain 1
6G – 44 GHz



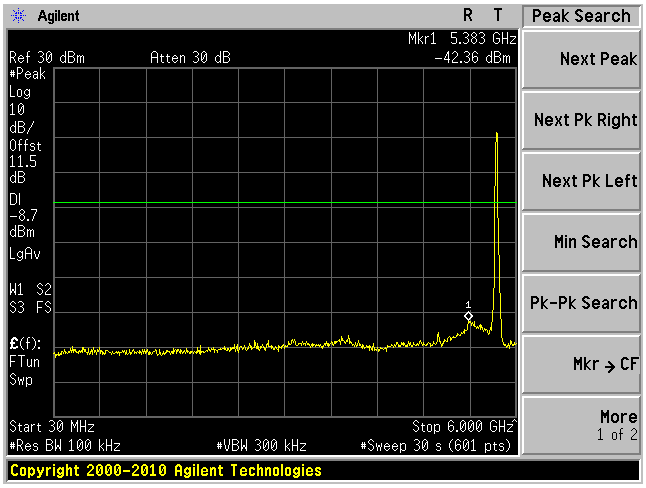
802.11 n20 mode, Middle channel, Chain 2
30MHz – 6GHz



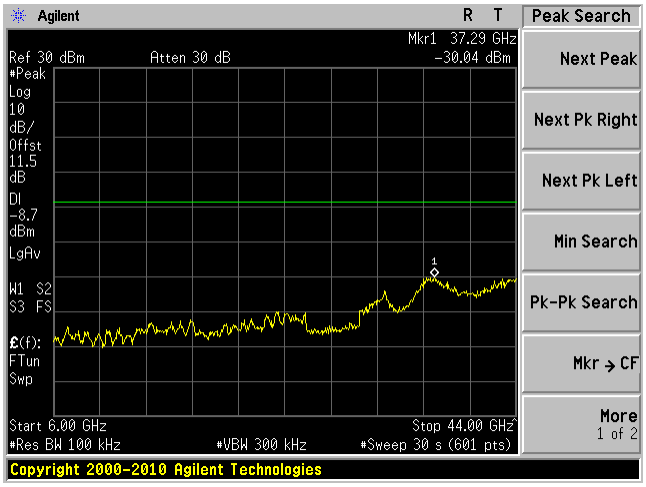
802.11 n20 mode, Middle channel, Chain 2
6G – 44 GHz



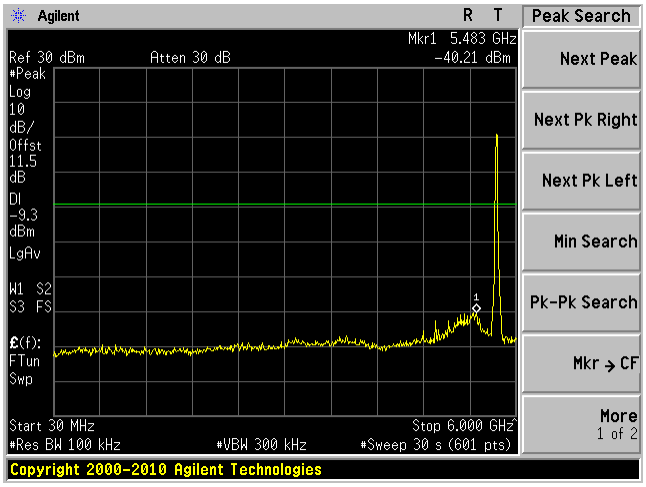
802.11 n20 mode, Low channel, Chain 0
30MHz – 6GHz



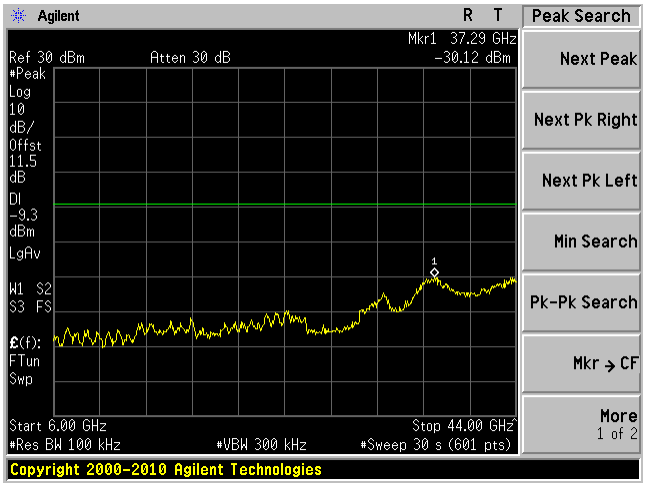
802.11 n20 mode, Low channel, Chain 0
6G – 44 GHz



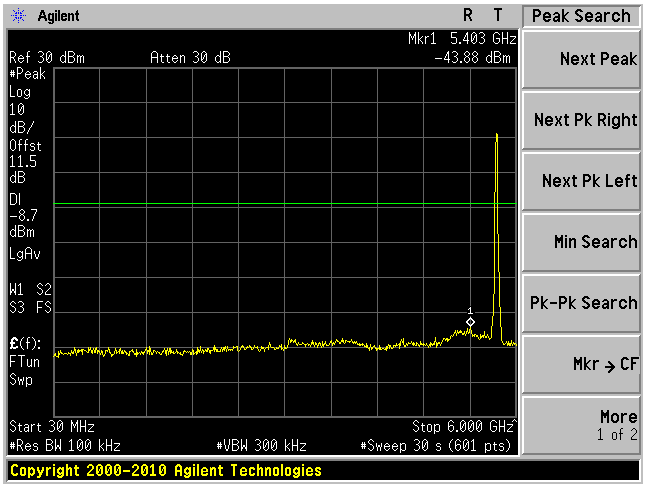
802.11 n20 mode, Low channel, Chain 1
30MHz – 6GHz



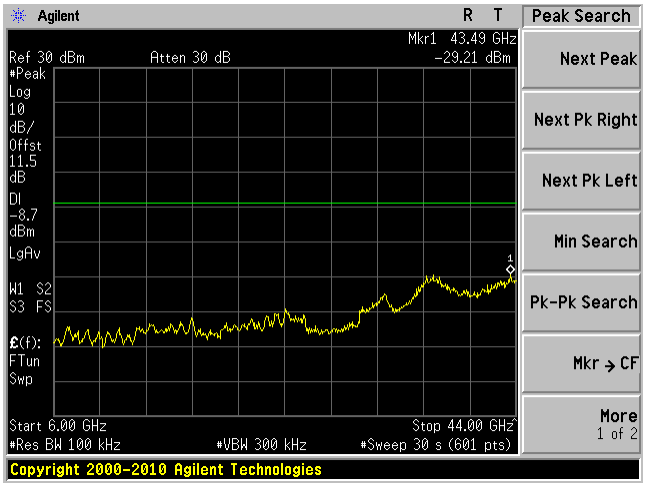
802.11 n20 mode, Low channel, Chain 1
6G – 44 GHz



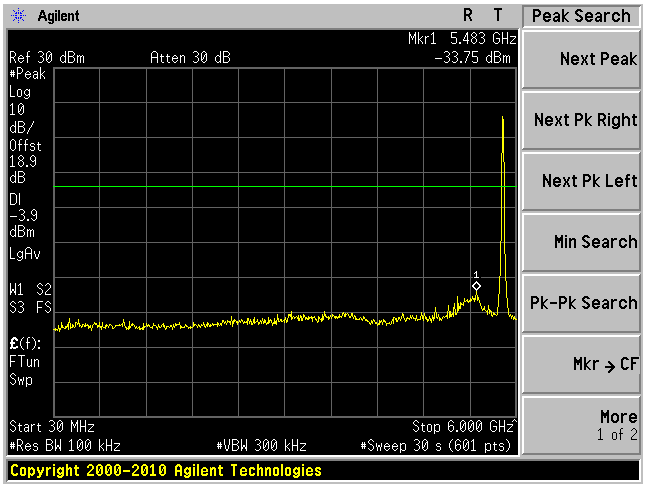
802.11 n20 mode, Low channel, Chain 2
30MHz – 6GHz



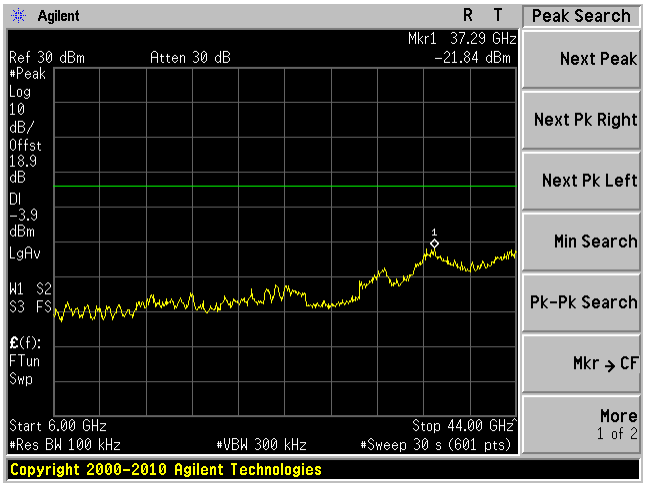
802.11 n20 mode, Low channel, Chain 2
6G – 44 GHz



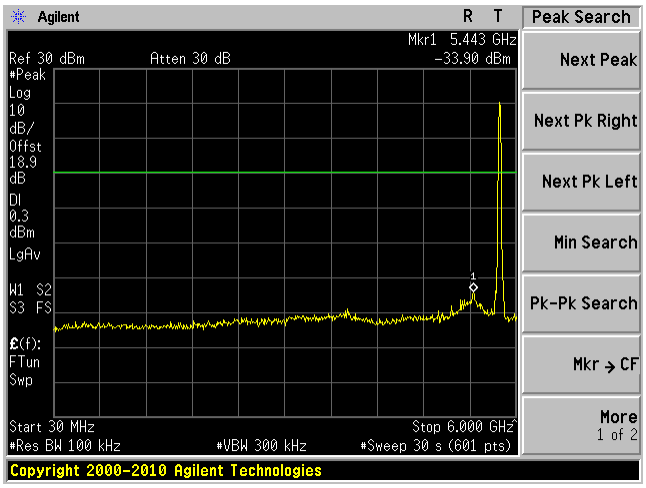
802.11 n20 mode, High channel, Chain 012
30MHz – 6GHz



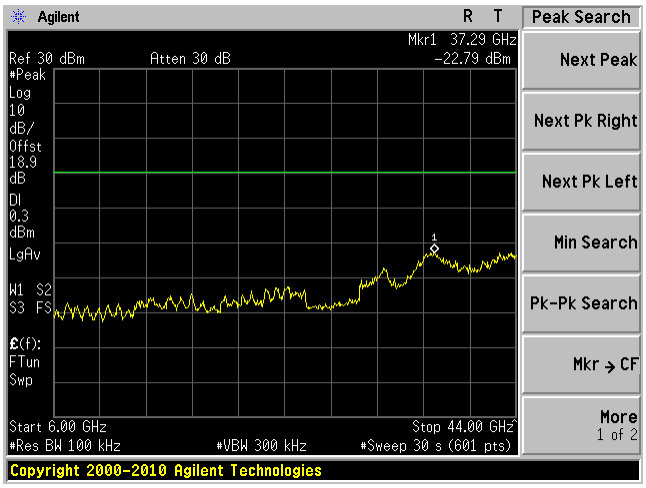
802.11 n20 mode, High channel, Chain 012
6G – 44 GHz



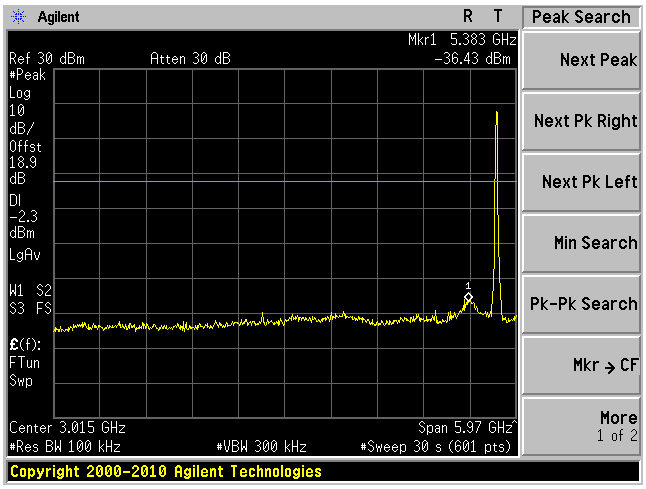
802.11 n20 mode, Middle channel, Chain 012
30MHz – 6GHz



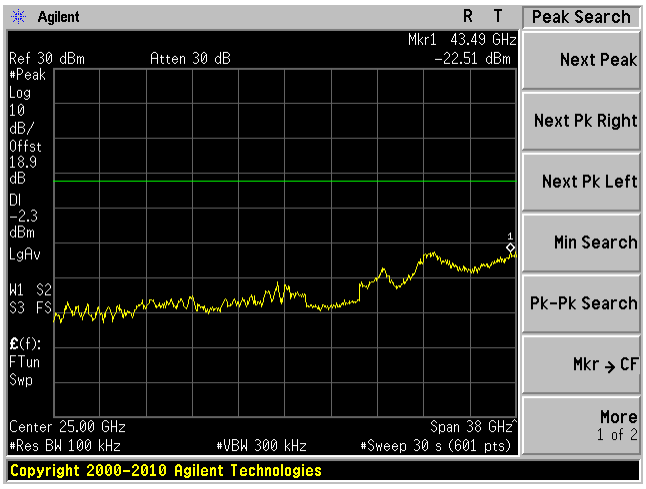
802.11 n20 mode, Middle channel, Chain 012
6G – 44 GHz



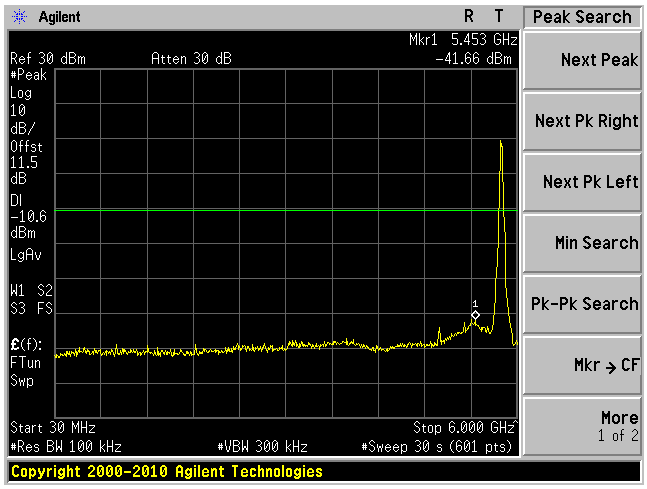
802.11 n20 mode, Low channel, Chain 012
30MHz – 6GHz



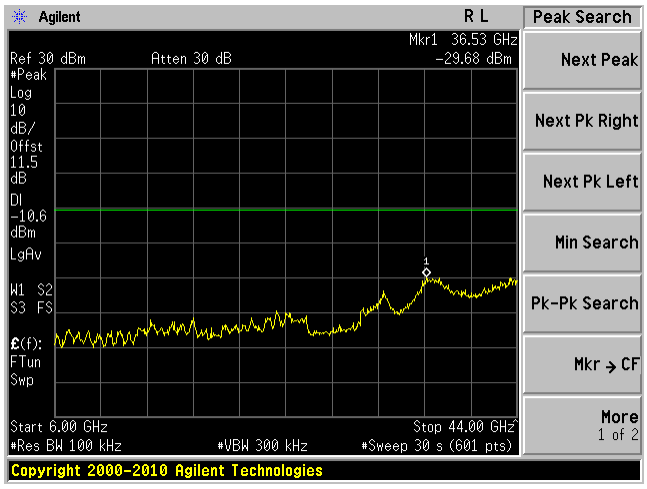
802.11 n20 mode, Low channel, Chain 012
6G – 44 GHz



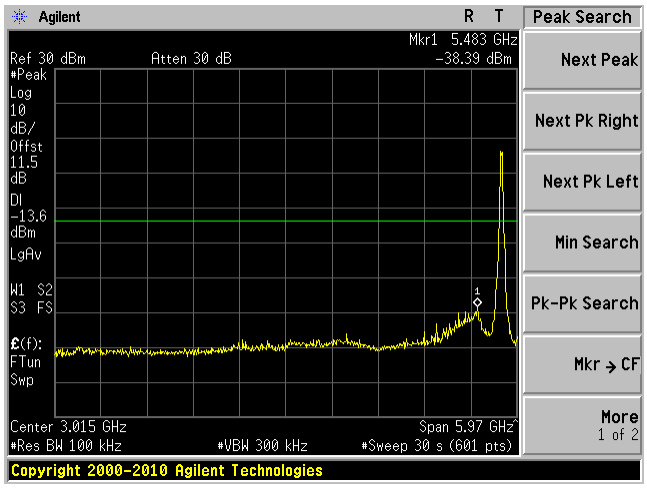
802.11 n40 mode, High channel, Chain 0
30MHz – 6GHz



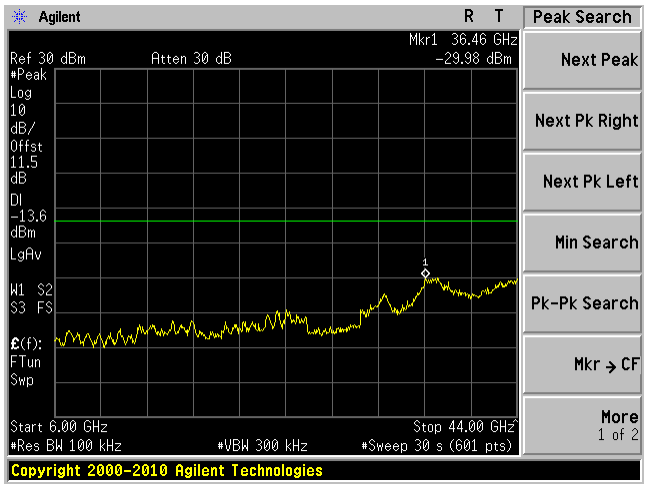
802.11 n40 mode, High channel, Chain 0
6G – 44 GHz



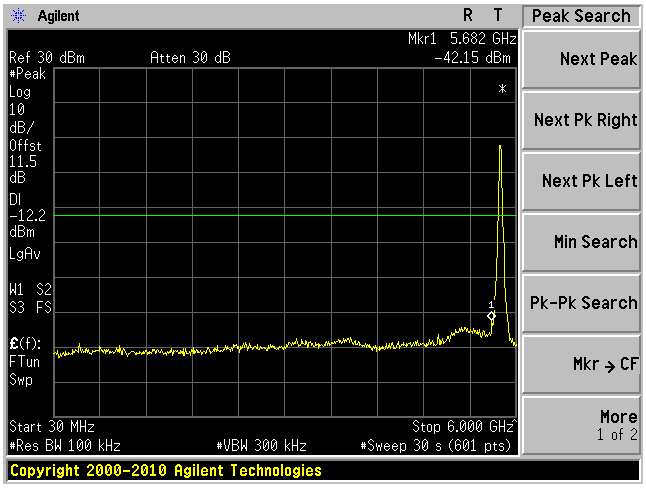
802.11 n40 mode, High channel, Chain 1
30MHz – 6GHz



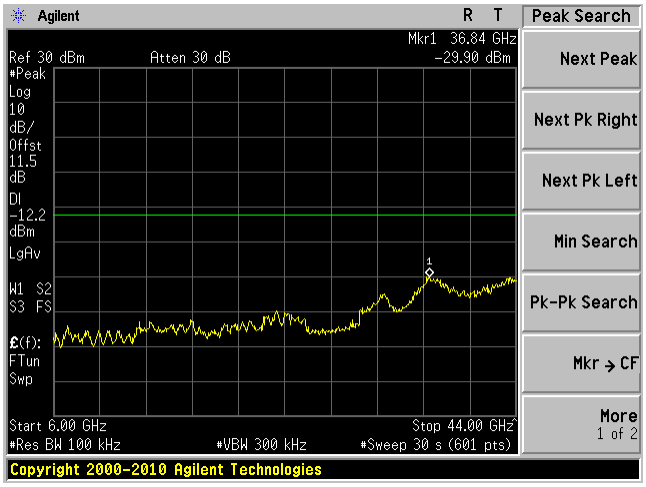
802.11 n40 mode, High channel, Chain 1
6G – 44 GHz



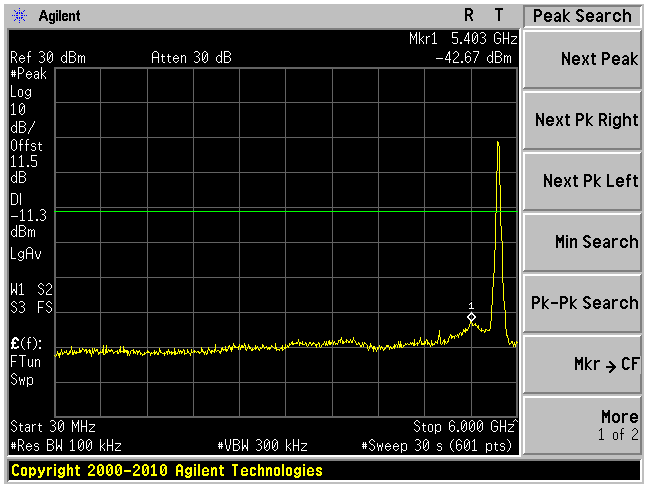
802.11 n40 mode, High channel, Chain 2
30MHz – 6GHz



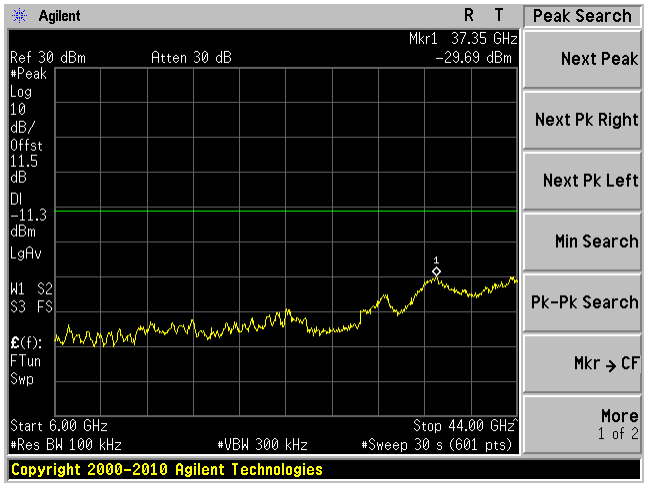
802.11 n40 mode, High channel, Chain 2
6G – 44 GHz



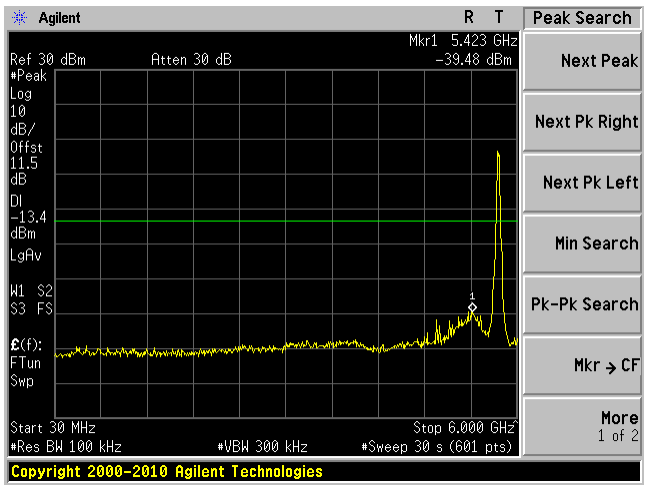
802.11 n40 mode, Low channel, Chain 0
30MHz – 6GHz



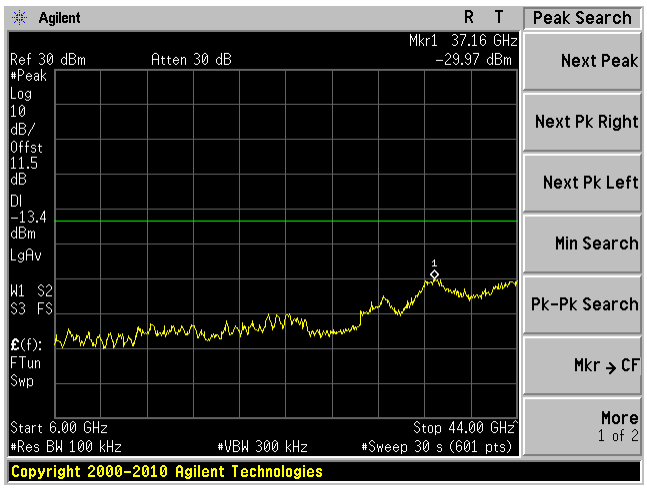
802.11 n40 mode, Low channel, Chain 0
6G – 44 GHz



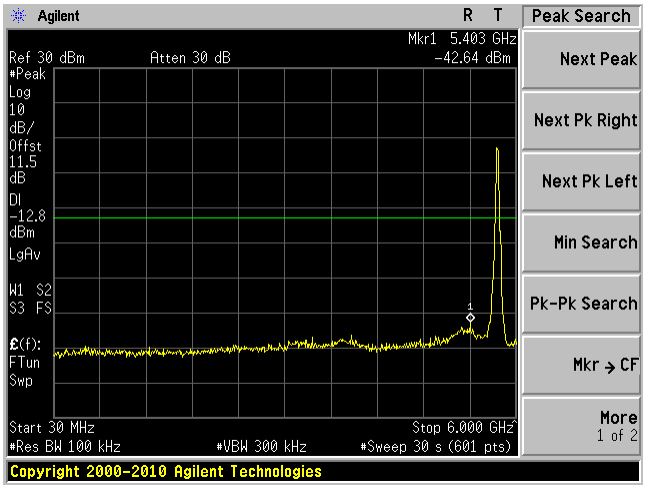
802.11 n40 mode, Low channel, Chain 1
30MHz – 6GHz



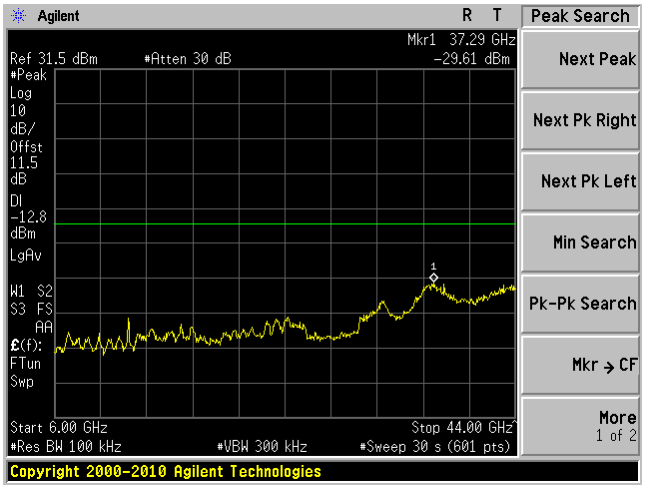
802.11 n40 mode, Low channel, Chain 1
6G – 44 GHz



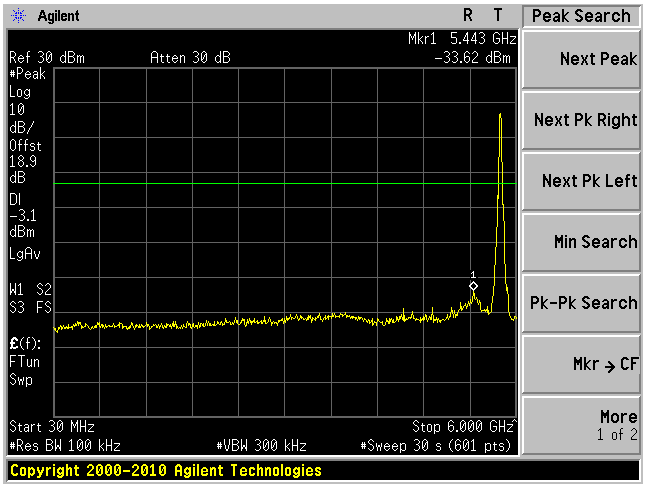
802.11 n40 mode, Low channel, Chain 2
30MHz – 6GHz



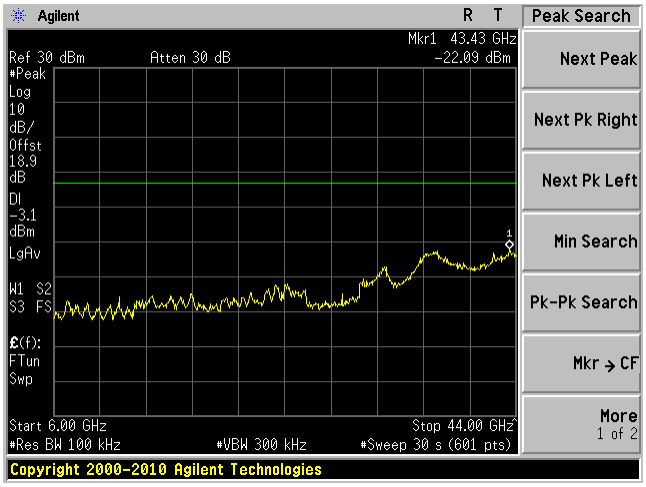
802.11 n40 mode, Low channel, Chain 2
6G – 44 GHz



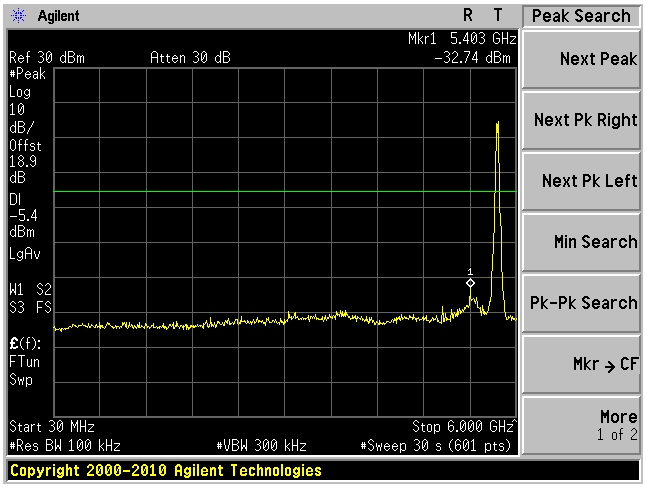
802.11 n40 mode, High channel, Chain 012
30MHz – 6GHz



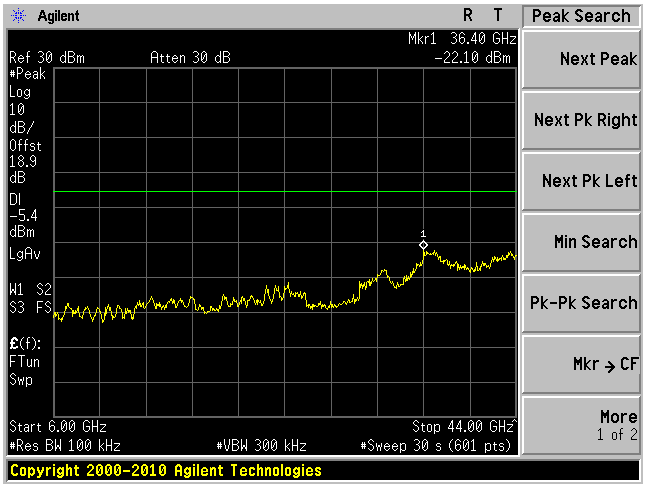
802.11 n40 mode, High channel, Chain 012
6G – 44 GHz



802.11 n40 mode, Low channel, Chain 012
30MHz – 6GHz



802.11 n40 mode, Low channel, Chain 012
6G – 44 GHz



8 FCC §15.205, §15.209, §15.247(d) & IC RSS-210 §A8.5 – Unwanted Emissions

8.1 Applicable Standard

As per FCC §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 FCC §15.209(a) and RSS-210: 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 (micro volts/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 Note [1]	3
88 - 216	150 Note [1]	3
216 - 960	200 Note [1]	3
Above 960	500	3

Note [1] 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 FCC §15.205(a) except as show in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 – 0.110	16.42 – 16.423	960 – 1240	4. 5 – 5. 15
0.495 – 0.505	16.69475 – 16.69525	1300 – 1427	5. 35 – 5. 46
2.1735 – 2.1905	25.5 – 25.67	1435 – 1626.5	7.25 – 7.75
4.125 – 4.128	37.5 – 38.25	1645.5 – 1646.5	8.025 – 8.5
4.17725 – 4.17775	73 – 74.6	1660 – 1710	9.0 – 9.2
4.20725 – 4.20775	74.8 – 75.2	1718.8 – 1722.2	9.3 – 9.5
6.215 – 6.218	108 – 121.94	2200 – 2300	10.6 – 12.7
6.26775 – 6.26825	123 – 138	2310 – 2390	13.25 – 13.4
6.31175 – 6.31225	149.9 – 150.05	2483.5 – 2500	14.47 – 14.5
8.291 – 8.294	156.52475 – 156.52525	2690 – 2900	15.35 – 16.2
8.362 – 8.366	156.7 – 156.9	3260 – 3267	17.7 – 21.4
8.37625 – 8.38675	162.0125 –167.17	3.332 – 3.339	22.01 – 23.12
8.41425 – 8.41475	167.72 – 173.2	3 3458 – 3 358	23.6 – 24.0
12.29 – 12.293	240 – 285	3.600 – 4.400	31.2 – 31.8
12.51975 – 12.52025	322 – 335.4		36.43 – 36.5
12.57675 – 12.57725	399.9 – 410		Above 38.6
13.36 – 13.41	608 – 614		

As per FCC §15.247 (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the

conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c).

8.2 Test Setup

The radiated emissions tests were performed in the 5-meter Chamber, using the setup in accordance with ANSI C63.4-2003. The specification used was the FCC 15 Subpart C and IC RSS-210 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.

8.3 Test Procedure

For the radiated emissions test, the EUT host, 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.

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 meter, and the EUT is placed on a turntable, which is 0.8 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical.

The spectrum analyzer or receiver is set as:

Below 1000 MHz:

RBW = 100 kHz / VBW = 300 kHz / Sweep = Auto

Above 1000 MHz:

(1) Peak: RBW = 1MHz / VBW = 1MHz / Sweep = Auto
(2) Average: RBW = 1MHz / VBW = 10Hz / Sweep = Auto

8.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude (CA) is calculated by adding the Antenna Factor (AF), the Cable Loss (CL), the Attenuator Factor (Atten) and subtracting the Amplifier Gain (Ga) to the indicated Amplitude (Ai) reading. The basic equation is as follows:

CA = Ai + AF + CL + Atten – Ga

For example, the Corrected Amplitude (CA) of 40.3 dBuV/m = indicated Amplitude reading (Ai) 32.5 dBuV + Antenna Factor (AF) 23.5dB + Cable Loss (CL) 3.7 dB + Attenuator (Atten) 10 dB - Amplifier Gain (Ga) 29.4 dB

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

Margin = Corrected Amplitude - Limit

8.5 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100337	2011-03-21
Agilent	Spectrum Analyzer	E4440A	MY44303352	2011-05-10
Sunol Science Corp	System Controller	SC99V	122303-1	N/R
Sunol Science Corp	Combination Antenna	JB3	A0020106-3	2011-06-29
A.R.A Inc	Horn antenna	DRG-1181A	1132	2010-11-29
Hewlett Packard	Pre amplifier	8447D	2944A06639	2011-06-09
Mini-Circuits	Pre Amplifier	ZVA-183-S	570400946	2011-05-09

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

8.6 Test Environmental Conditions

Temperature:	18~21 °C
Relative Humidity:	30~35 %
ATM Pressure:	101.2-102.2kPa

The testing was performed by Jerry Huang from 2011-11-14 to 2011-11-18 in 5 meter chamber 2.

8.7 Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Part 15, Subpart C, section 15.205, 15.209 and 15.247 & IC RSS-210, RSS-Gen standard's radiated emissions limits, and had the worst margin of:

30-1000 MHz:

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Channel, Range**
-1.447	99.909	Horizontal	30 MHz-1 GHz

Above 1GHz:

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Channel, Range**
-1.02	4924	Vertical	Above 1 GHz

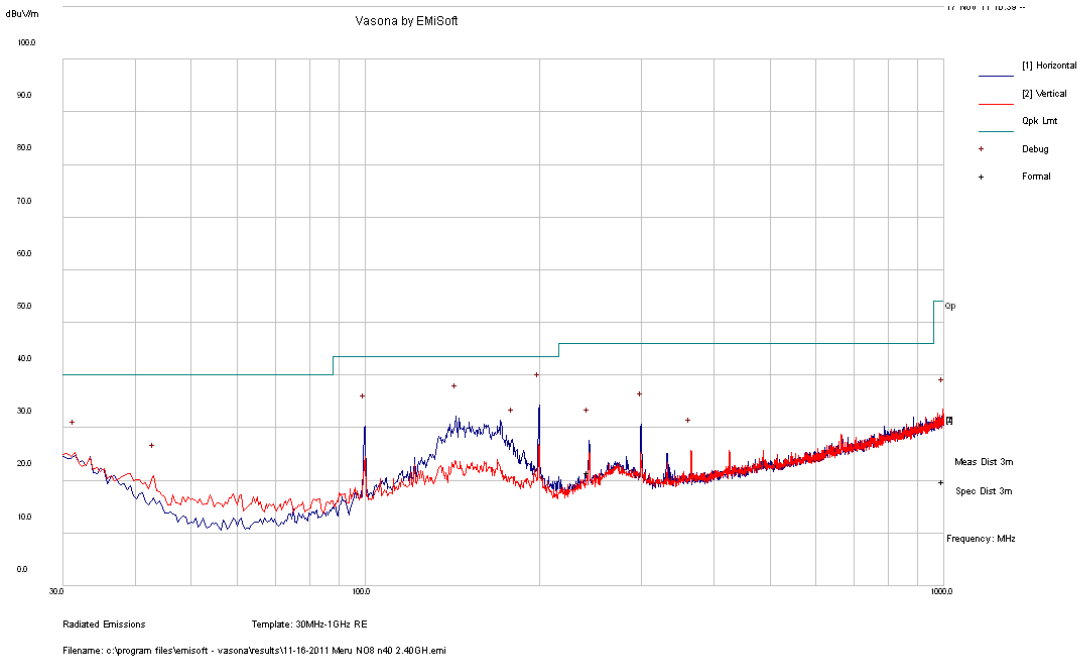
Please refer to the following table and plots for specific test result details

8.8 Radiated Emissions Test Result Data

Radiated Emission at 3 meters, 30 MHz – 1 GHz

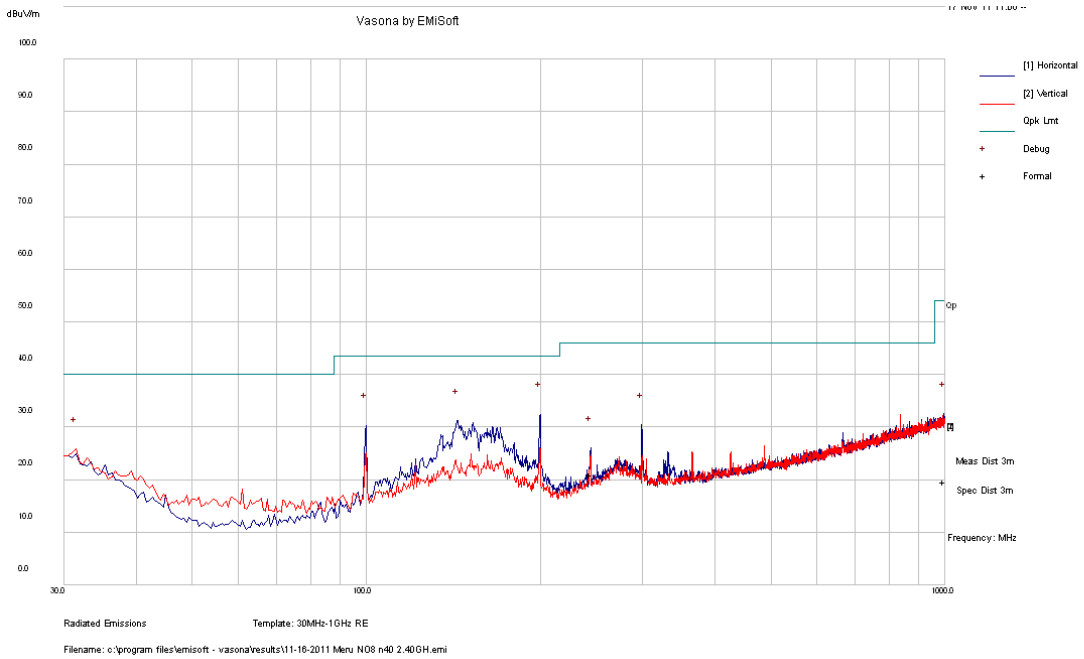
2.4 GHz Band, 2dBi Antenna

802.11 n20 mode (2462 MHz) High Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
243.1438	21.64	155	H	277	46	-24.36
995.8933	19.91	136	V	174	54	-34.09

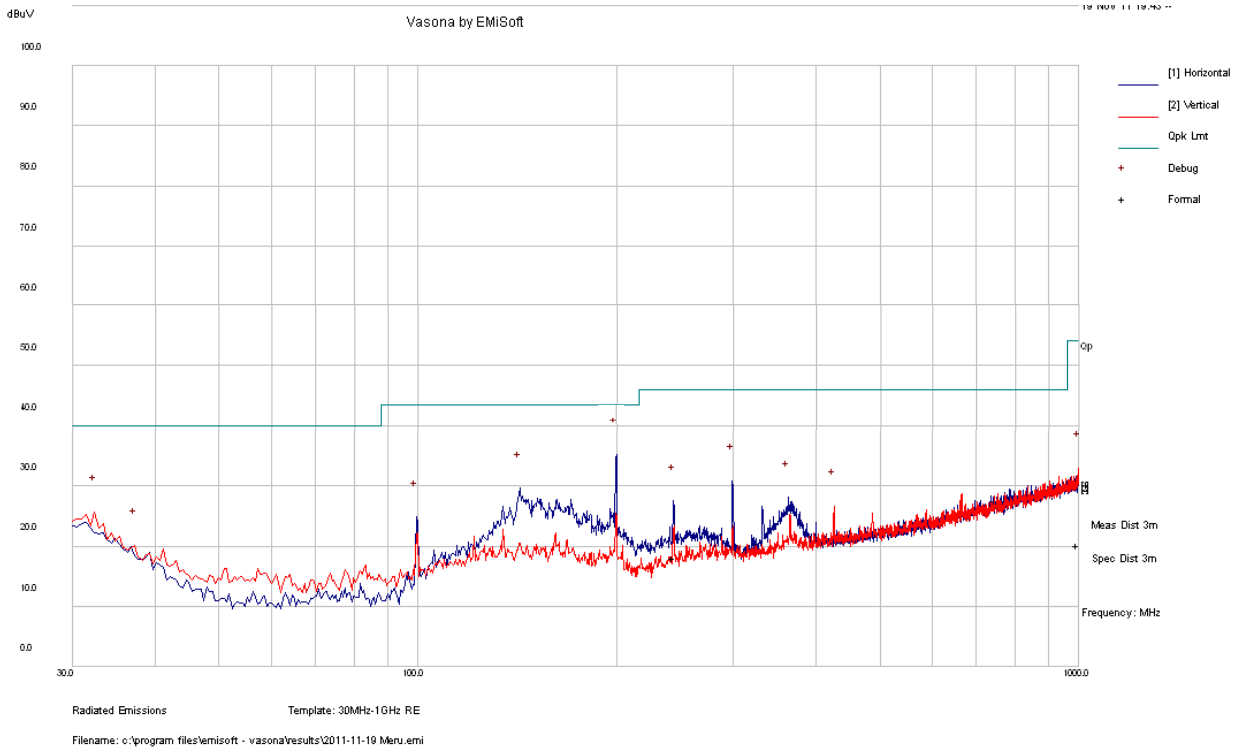
802.11 n40 mode (2422 MHz) High Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
243.7633	20.94	172	H	311	46	-25.06
995.4513	19.66	185	H	342	54	-34.34

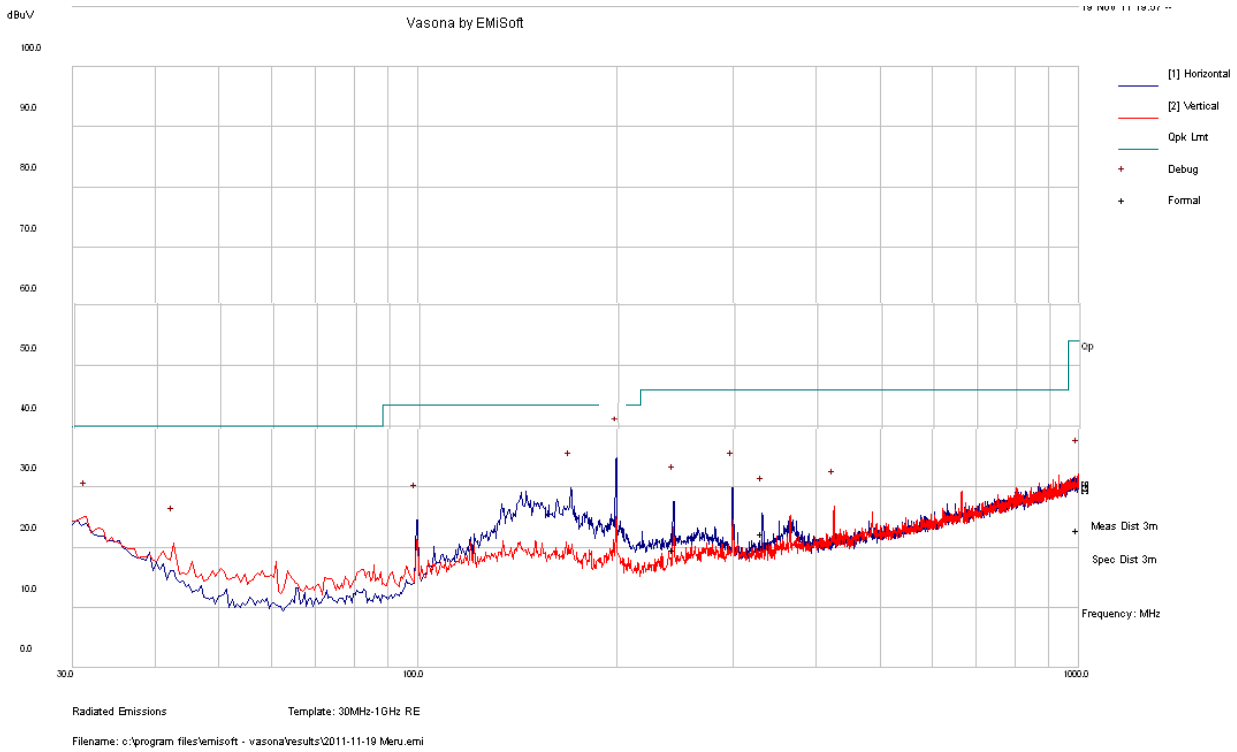
5.8 GHz Band, 3 dBi Antenna

802.11 a mode (5825 MHz) High Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
243.4843	18.12	102	H	222	46	-27.88
997.074	20.25	168	V	299	54	-33.75

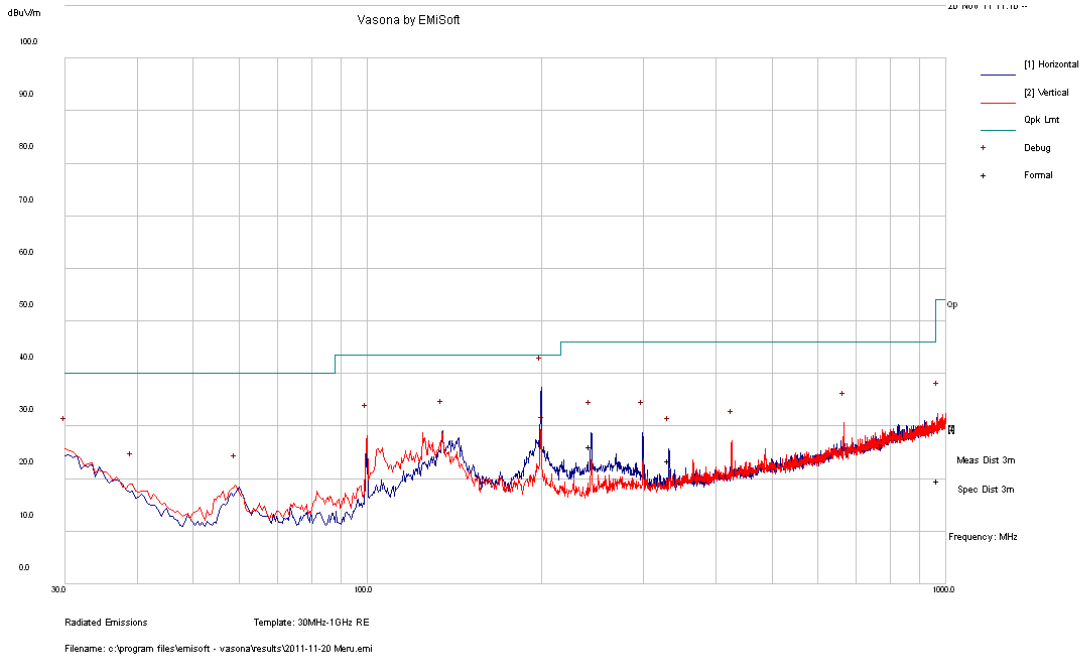
802.11 n40 mode (5795 MHz) High Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
243.3603	19.6	100	H	0	46	-26.40
331.8393	22.34	120	H	360	46	-23.66
997.7698	22.8	147	V	175	54	-31.20

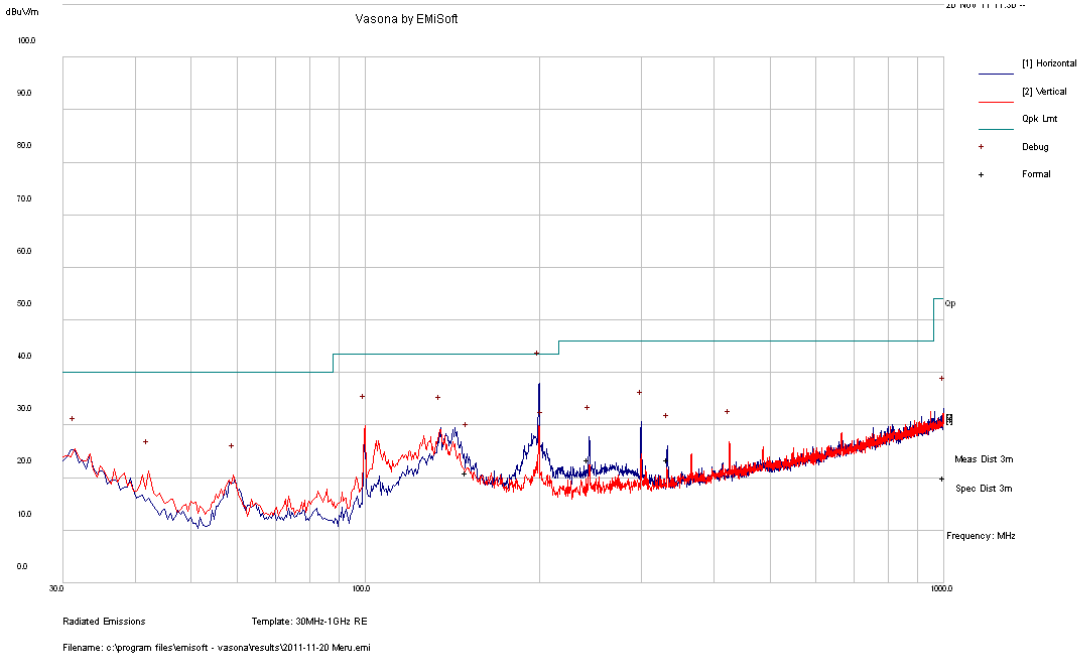
2.4 GHz Band, 6 dBi Antenna

802.11 n20 mode (2462 MHz) High Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
243.0913	26.11	142	H	289	46	-19.89
331.9038	23.38	116	H	11	46	-22.62
966.4758	19.56	192	V	171	54	-34.44

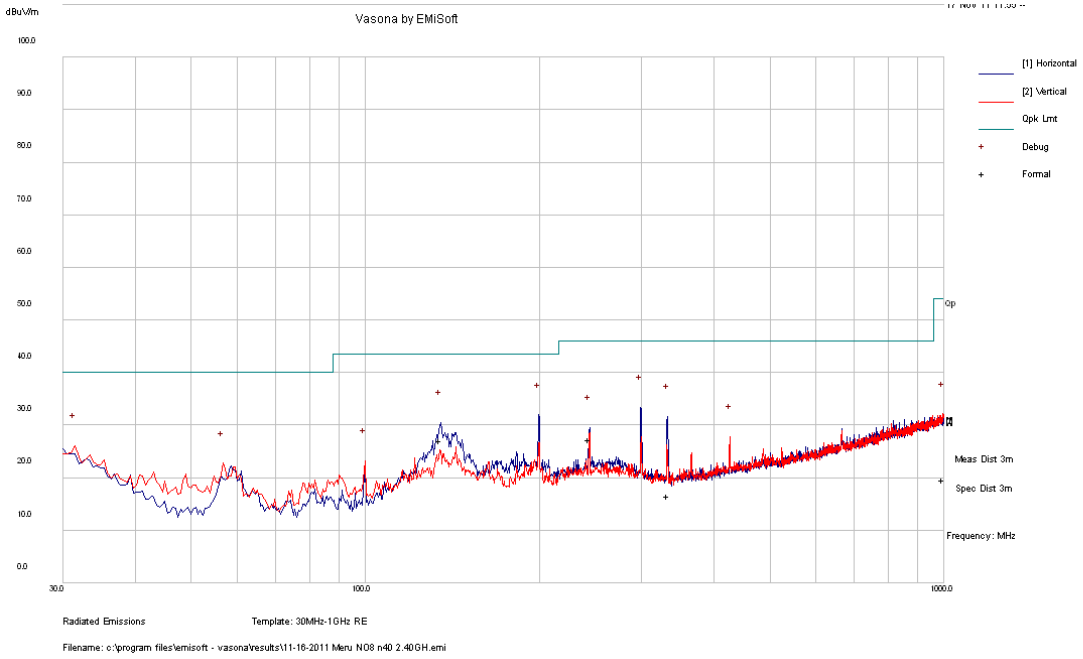
802.11 n20 mode (2452 MHz) High Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
243.2158	23.49	148	H	293	46	-22.51
149.5735	20.89	191	H	268	43.5	-22.61
333.097	23.43	132	H	349	46	-22.57
1000	20.01	103	H	139	54	-33.99

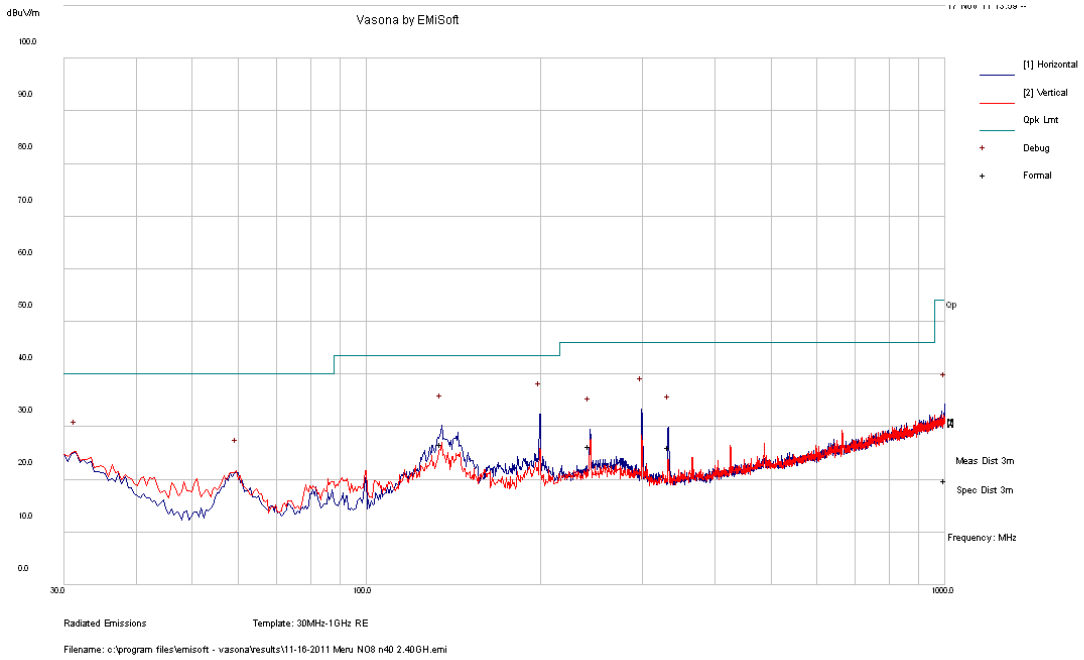
5.8 GHz Band, 6 dBi Antenna

802.11a mode (5825 MHz) High Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
134.878	27.14	174	H	162	43.5	-16.36
333.1658	16.59	160	H	341	46	-29.41
243.735	27.25	129	H	86	46	-18.75
996.0273	19.67	147	H	292	54	-34.33

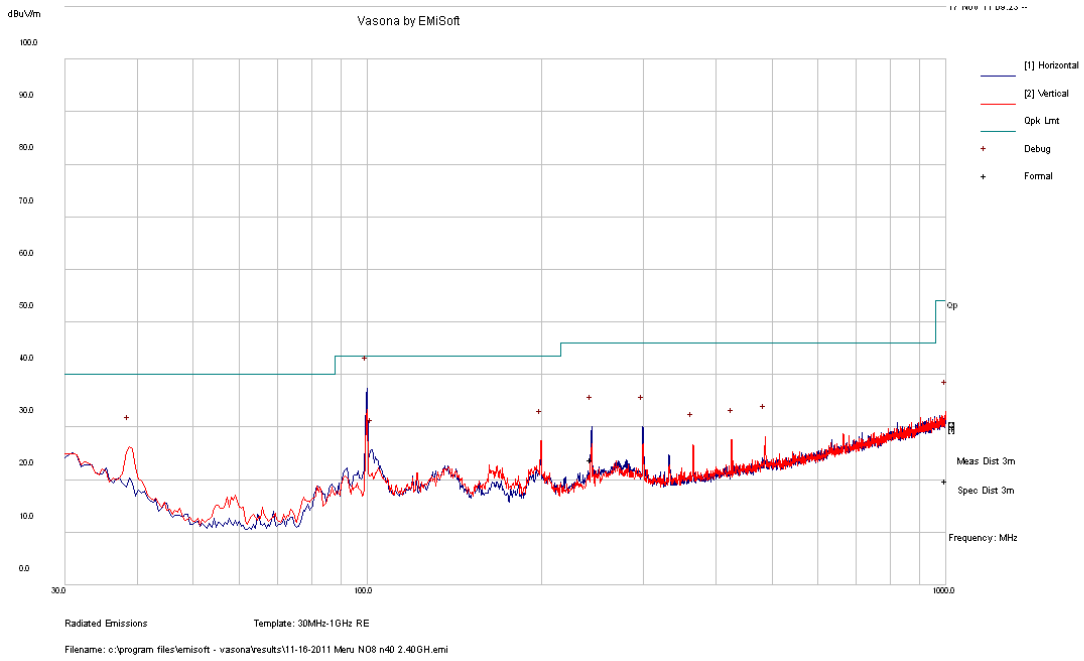
802.11 n40 mode (5895 MHz) High Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
134.8263	26.79	170	H	174	43.5	-16.71
333.106	26.18	123	H	165	46	-19.82
243.0958	26.44	137	H	102	46	-19.56
1000	19.77	196	H	34	54	-34.23

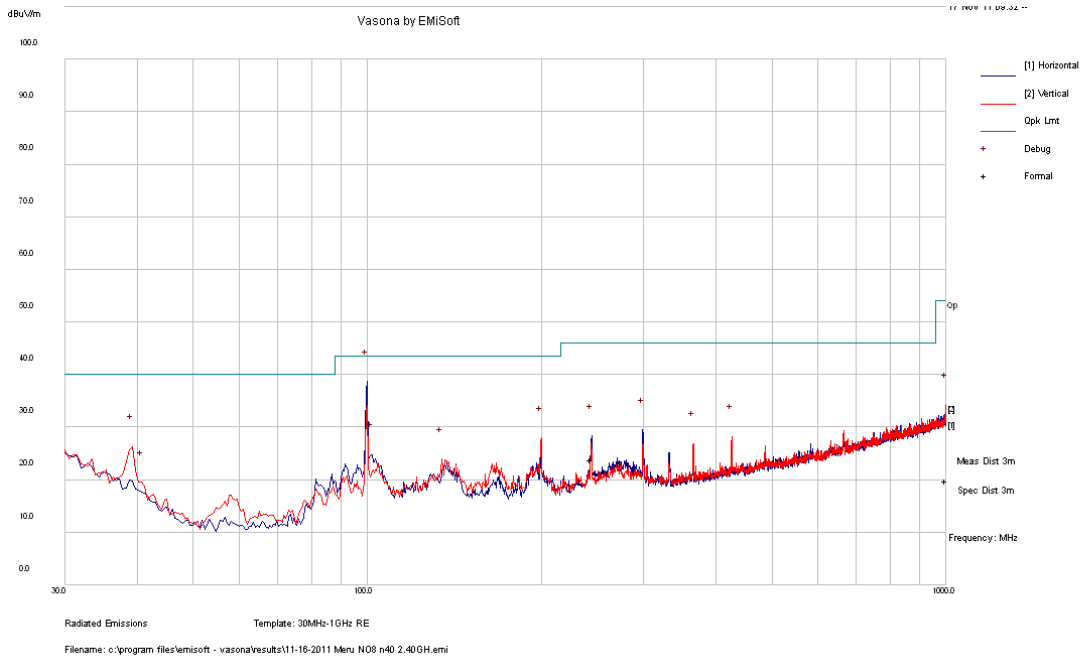
2.4 GHz Band, 8 dBi Antenna

802.11 n20 mode (2462 MHz) Low Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
243.7658	23.91	138	H	290	46	-22.09
999.422	19.87	178	V	29	54	-34.13

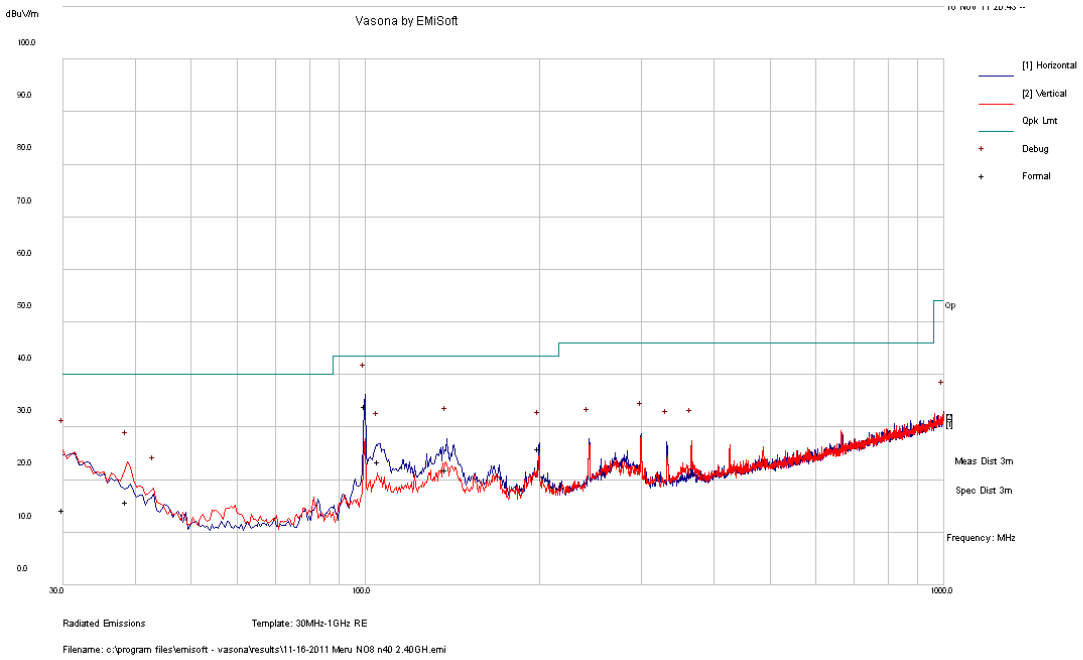
802.11 n40 mode (2452 MHz) Low Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
243.7805	25.98	120	H	312	46	-20.02
134.467	14.67	176	H	209	43.5	-28.83
999.13	20.8	201	H	242	54	-33.20

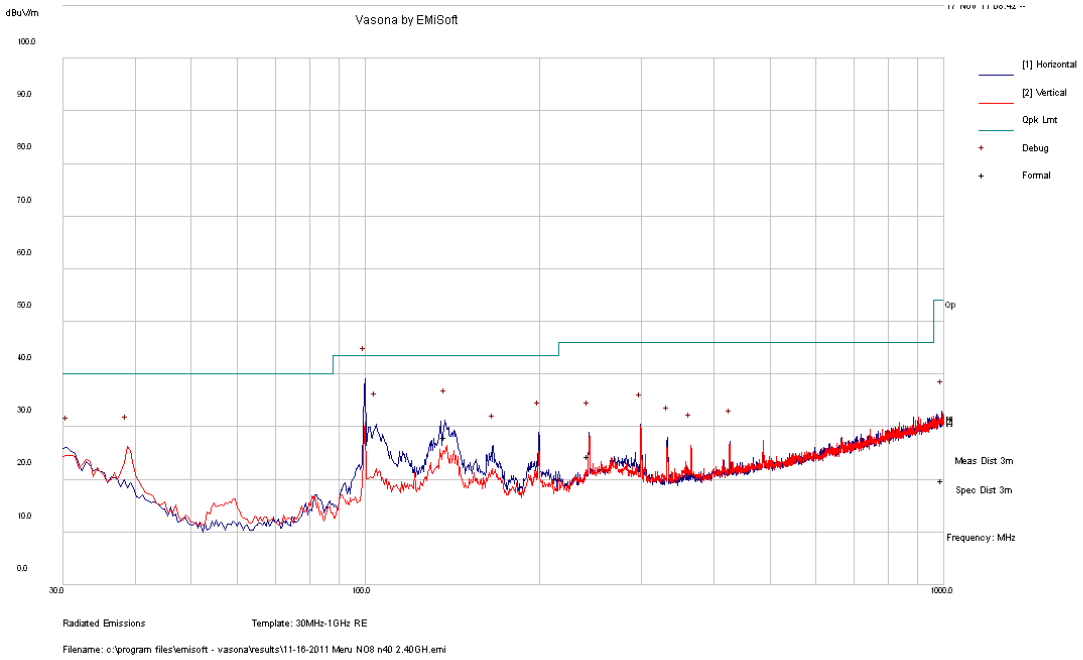
5.8 GHz Band, 8 dBi Antenna

802.11 n 20 mode (5825 MHz) Low Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
99.909	34.02	193	H	24	43.5	-9.48
30.01152	14.26	111	V	224	40	-25.74
137.9055	22	199	H	360	43.5	-21.50
199.82	25.98	150	H	208	43.5	-17.52
105.378	23.42	202	H	193	43.5	-20.08
38.686	15.79	148	V	242	40	-24.21

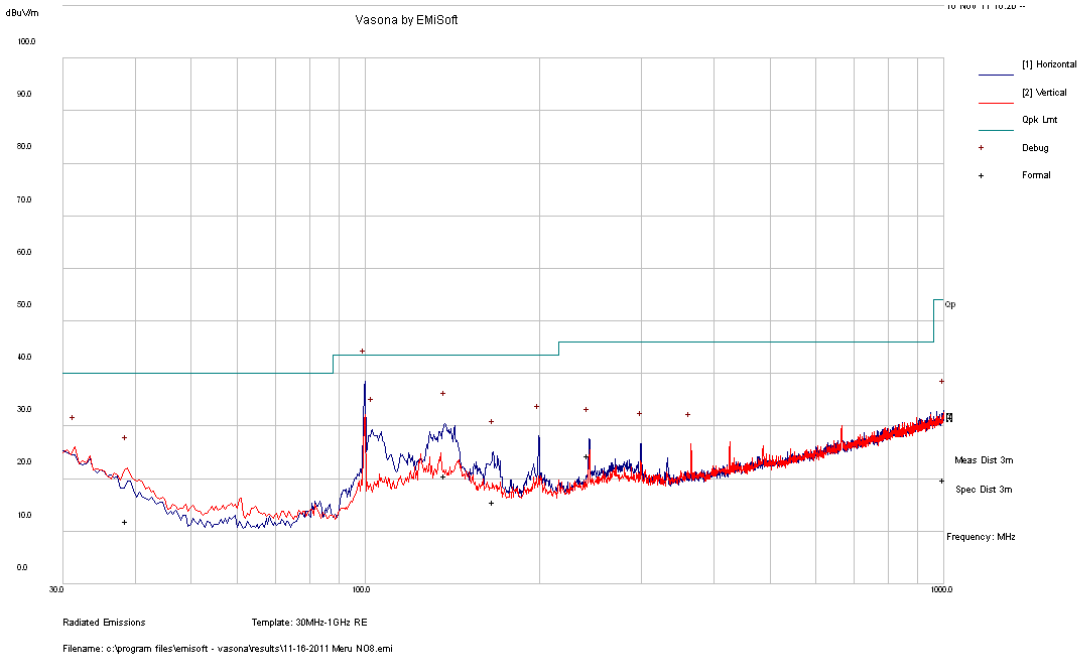
802.11 n40 mode (5745 MHz) Low Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
137.3195	28.09	140	H	207	43.5	-15.41
243.048	24.4	125	H	294	46	-21.60
990.5808	19.75	128	H	288	54	-34.25

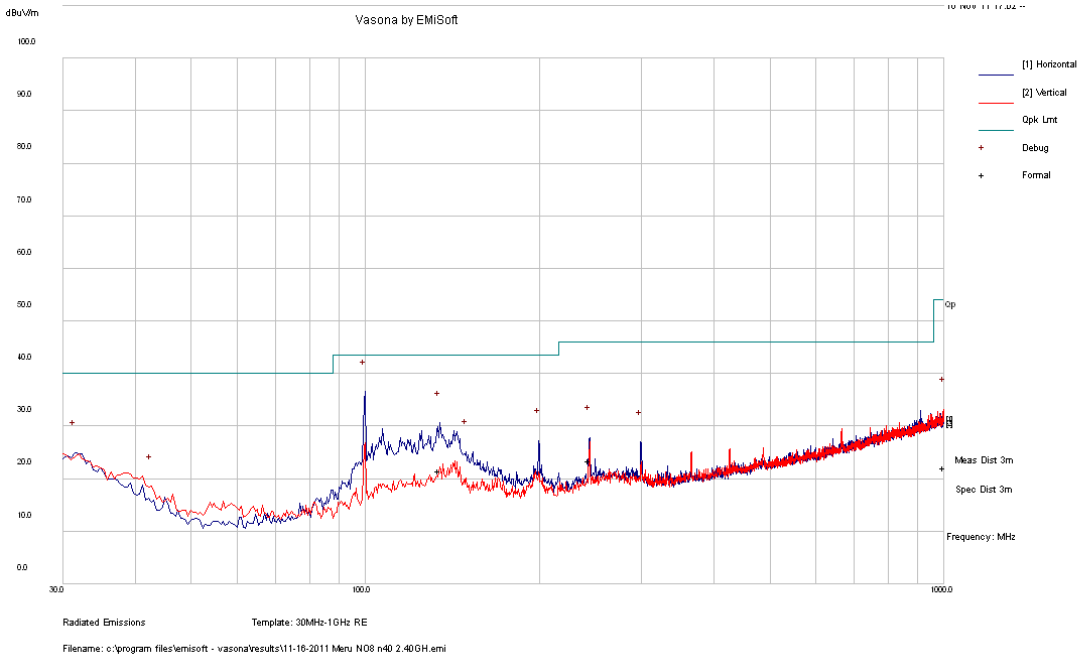
2.4 GHz Band, 4 dBi Antenna

802.11 b mode (2462 MHz) High Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
137.2483	20.68	258	H	158	43.5	-22.82
38.71625	11.92	282	V	249	40	-28.08
166.2818	15.63	165	H	240	43.5	-27.87
243.0678	24.44	107	H	269	46	-21.56
1000	19.9	382	H	60	54	-34.10

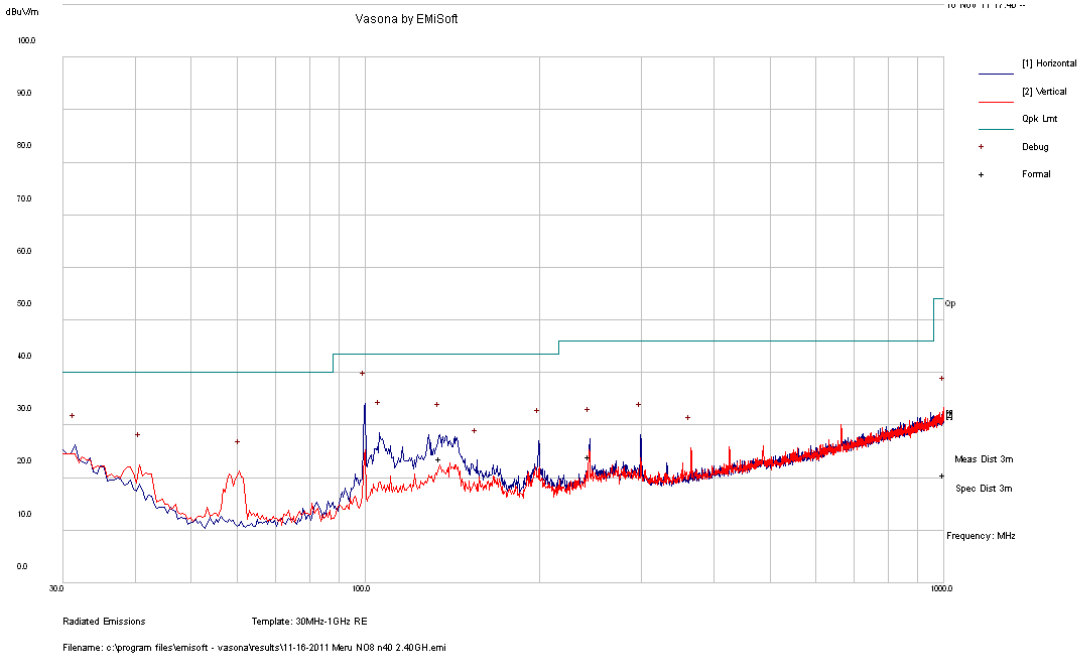
802.11 n40 mode (2452 MHz) High Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
134.0813	21.52	146	H	214	43.5	-21.98
243.7955	23.5	108	H	283	46	-22.50
998.901	22.08	131	H	181	54	-31.92

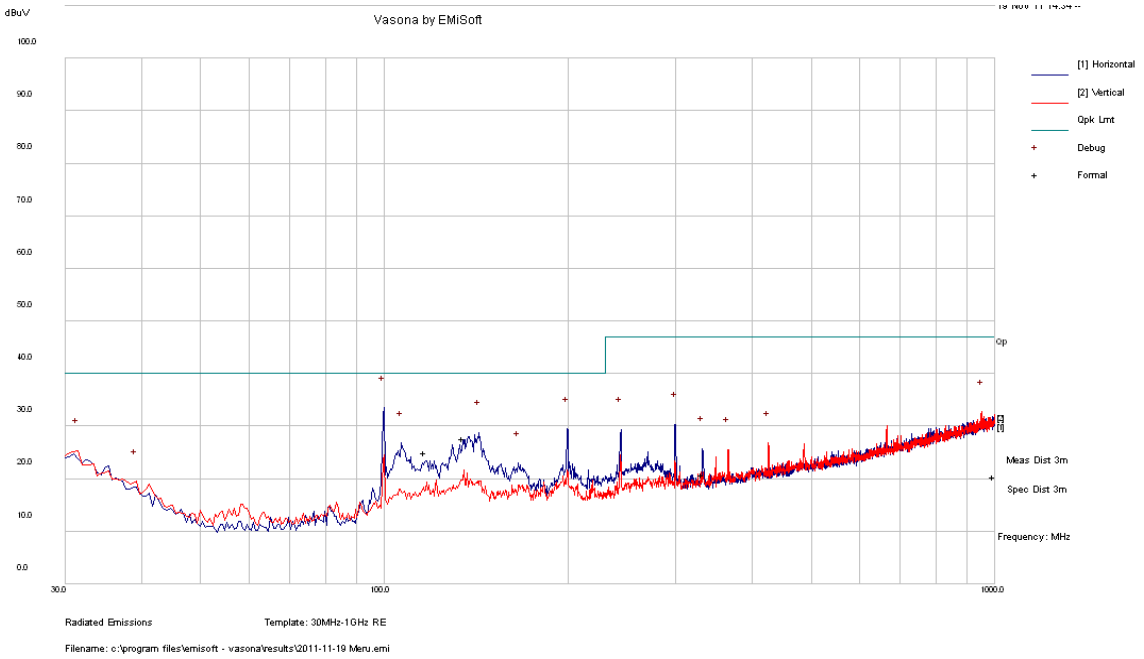
5.8 GHz Band, 5 dBi Antenna

802.11a mode (5825 MHz) High Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
134.5248	23.65	184	H	336	43.5	-19.85
243.7058	23.96	132	H	304	46	-22.04
999.978	20.68	99	V	265	54	-33.32

802.11 n40 mode (5230 MHz) High Power Setting



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
166.021	19.1	124	H	0	43	-24.40
243.7665	25.28	113	H	360	46	-20.72
331.8428	20.21	105	V	175	54	-33.79

Radiated Emission at 3 meters, above 1GHz

2.4 GHz Band, 2 dBi Antenna

802.11 b Mode High Power Setting

Low Channel 2412 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4824	40.33	140	134	V	32.603	4.56	27.769	49.724	74	-24.276	Peak
4824	35.02	268	160	H	32.629	4.56	27.769	44.44	74	-29.56	Peak
4824	37.29	140	134	V	32.603	4.56	27.769	46.684	54	-7.316	Ave
4824	28.43	160	160	H	32.629	4.56	27.769	37.85	54	-16.15	Ave

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4874	45.12	161	128	V	32.603	4.54	27.76	54.503	74	-19.497	Peak
4874	34.1	268	133	H	32.629	4.54	27.76	43.509	74	-30.491	Peak
4874	43.17	161	128	V	32.603	4.54	27.76	52.553	54	-1.447	Ave
4874	27.88	268	133	H	32.629	4.54	27.76	37.289	54	-16.711	Ave

High Channel 2462 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4924	43.14	167	125	V	32.732	4.52	27.71	52.682	74	-21.318	Peak
4924	33.84	322	132	H	32.8	4.52	27.71	43.45	74	-30.55	Peak
4924	42.35	167	125	V	32.732	4.52	27.71	51.892	54	-2.108	Ave
4924	28.49	322	132	H	32.8	4.52	27.71	38.1	54	-15.9	Ave

802.11 g Mode High Power Setting

Low Channel 2412 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4824	54.46	12	118	V	32.603	4.56	27.769	63.854	74	-10.146	Peak
4824	45.74	132	127	H	32.629	4.56	27.769	55.16	74	-18.84	Peak
4824	38.41	12	118	V	32.603	4.56	27.769	47.804	54	-6.196	Ave
4824	27.47	132	127	H	32.629	4.56	27.769	36.89	54	-17.11	Ave

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4874	54.12	11	103	V	32.603	4.54	27.76	63.503	74	-10.497	Peak
4874	42.32	117	137	H	32.629	4.54	27.76	51.729	74	-22.271	Peak
4874	36.69	11	103	V	32.603	4.54	27.76	46.073	54	-7.927	Ave
4874	26.12	117	137	H	32.629	4.54	27.76	35.529	54	-18.471	Ave

High Channel 2462 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4924	54.86	21	133	V	32.732	4.52	27.71	64.402	74	-9.598	Peak
4924	43.04	131	140	H	32.8	4.52	27.71	52.65	74	-21.35	Peak
4924	36.44	21	133	V	32.732	4.52	27.71	45.982	54	-8.018	Ave
4924	25.34	131	140	H	32.8	4.52	27.71	34.95	54	-19.05	Ave

802.11 n20 Mode High Power Setting

Low Channel 2412 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4824	48.04	26	118	V	32.603	4.56	27.769	57.434	74	-16.566	Peak
4824	47.5	180	126	H	32.629	4.56	27.769	56.92	74	-17.08	Peak
4824	28.08	27	118	V	32.603	4.56	27.769	37.474	54	-16.526	Ave
4824	25.72	180	126	H	32.629	4.56	27.769	35.14	54	-18.86	Ave

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4874	47.68	27	118	V	32.603	4.54	27.76	57.063	74	-16.937	Peak
4874	47.83	171	127	H	32.629	4.54	27.76	57.239	74	-16.761	Peak
4874	26.79	27	118	V	32.603	4.54	27.76	36.173	54	-17.827	Ave
4874	26.16	171	127	H	32.629	4.54	27.76	35.569	54	-18.431	Ave

High Channel 2462 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4924	46.99	29	118	V	32.732	4.52	27.71	56.532	74	-17.468	Peak
4924	48.06	169	126	H	32.8	4.52	27.71	57.67	74	-16.33	Peak
4924	25.85	29	118	V	32.732	4.52	27.71	35.392	54	-18.608	Ave
4924	27.65	169	126	H	32.8	4.52	27.71	37.26	54	-16.74	Ave

802.11 n40 Mode High Power Setting

Low Channel 2422 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4844	39.86	131	112	V	32.603	4.56	27.769	49.254	74	-24.746	Peak
4844	32.12	261	100	H	32.629	4.56	27.769	41.54	74	-32.46	Peak
4844	22.63	131	112	V	32.603	4.56	27.769	32.024	54	-21.976	Ave
4844	17.65	261	100	H	32.629	4.56	27.769	27.07	54	-26.93	Ave

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4874	39.17	124	112	V	32.5874	4.54	27.76	48.5374	108	-59.46	Peak
4874	32.32	256	100	H	32.5926	4.54	27.76	41.6926	100	-58.30	Peak
4874	21.21	124	112	V	32.5978	4.54	27.76	30.5878	92	-61.41	Ave
4874	18.12	256	100	H	32.603	4.54	27.76	27.503	84	-56.497	Ave

High Channel 2452 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4924	40.26	150	123	V	25.147	2.29	27.4	40.297	74	-33.703	Peak
4924	32.23	162	101	H	25.378	2.29	27.4	32.498	74	-41.502	Peak
4924	21.35	150	123	V	25.147	2.29	27.4	21.387	54	-32.613	Ave
4924	17.35	162	101	H	25.378	2.29	27.4	17.618	54	-36.382	Ave

5.8 GHz Band, 3 dBi Antenna

802.11 a Mode High Power Setting

Low Channel 5745 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 5785MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

High Channel 5825 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

802.11 n 20 Mode High Power Setting

Low Channel 5745 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 5785MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

High Channel 5825 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

802.11 n 40 Mode High Power Setting

Low Channel 5755 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 5795MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

2.4 GHz Band, 6dBi Antenna

802.11 b Mode High Power Setting

Low Channel 2412 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

High Channel 2462 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

802.11 g Mode High Power Setting

Low Channel 2412 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

High Channel 2462 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (m)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

802.11 n20 Mode High Power Setting

Low Channel 2412 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

High Channel 2462 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

802.11 n40 Mode High Power Setting

Low Channel 2422 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

High Channel 2452 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

5.8 GHz Band, 7 dBi Antenna

802.11 a Mode High Power Setting

Low Channel 5745 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 5785 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

High Channel 5825 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

802.11 n 20 Mode High Power Setting

Low Channel 5745 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 5785 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

High Channel 5825 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

802.11 n 40 Mode High Power Setting

Low Channel 5755 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 5795 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

2.4 GHz Band, 8dBi Antenna

802.11 b Mode Low Power Setting

Low Channel 2412 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

High Channel 2462 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

802.11 g Mode Low Power Setting

Low Channel 2412 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

High Channel 2462 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

802.11 n20 Mode Low Power Setting

Low Channel 2412 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

High Channel 2462 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

802.11 n40 Mode Low Power Setting

Low Channel 2412 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

High Channel 2462 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

5.8 GHz Band, 8 dBi Antenna

802.11 a Mode Low Power Setting

Low Channel 5745 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
1395	47.42	194	112	V	32.603	4.54	27.76	56.803	74	-17.197	Peak
1395	43.17	291	117	H	32.629	4.54	27.76	52.579	74	-21.421	Peak
1395	25.7	194	112	V	32.603	4.54	27.76	35.083	54	-18.917	Ave
1395	24.66	291	117	H	32.629	4.54	27.76	34.069	54	-19.931	Ave

Middle Channel 5785MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

High Channel 5825 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

802.11 n 20 Mode Low Power Setting

Low Channel 5745 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 5785MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

High Channel 5825 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

802.11 n 40 Mode Low Power Setting

Low Channel 5755 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Middle Channel 5795MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
-	-	-	-	-	-	-	-	-	-	-	-

Note: All the Restricted Band Frequencies are more than 20 dB below the margin

2.4 GHz Band, 4 dBi Antenna

802.11 b Mode High Power Setting

Low Channel 2412 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4824	44.25	57	112	V	32.603	4.56	27.769	53.644	74	-20.356	Peak
4824	38.83	229	114	H	32.629	4.56	27.769	48.25	74	-25.75	Peak
4824	41.71	57	112	V	32.603	4.56	27.769	51.104	54	-2.896	Ave
4824	35.11	229	114	H	32.629	4.56	27.769	44.53	54	-9.47	Ave

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4874	43.44	331	112	V	32.603	4.54	27.76	52.823	74	-21.177	Peak
4874	40.86	229	116	H	32.629	4.54	27.76	50.269	74	-23.731	Peak
4874	40.73	331	112	V	32.603	4.54	27.76	50.113	54	-3.887	Ave
4874	37.22	229	116	H	32.629	4.54	27.76	46.629	54	-7.371	Ave

High Channel 2462 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4924	45.16	333	109	V	32.732	4.52	27.71	54.702	74	-19.298	Peak
4924	41.5	247	128	H	32.8	4.52	27.71	51.11	74	-22.89	Peak
4924	43.98	333	109	V	32.732	4.52	27.71	53.522	54	-0.478	Ave
4924	38.72	247	128	H	32.8	4.52	27.71	48.33	54	-5.67	Ave

802.11 g Mode High Power Setting

Low Channel 2412 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4824	52.03	334	112	V	32.603	4.56	27.769	61.424	74	-12.576	Peak
4824	43.85	243	162	H	32.629	4.56	27.769	53.27	74	-20.73	Peak
4824	33.92	334	112	V	32.603	4.56	27.769	43.314	54	-10.686	Ave
4824	26.81	243	162	H	32.629	4.56	27.769	36.23	54	-17.77	Ave

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (ccm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4874	52.1	333	107	V	32.603	4.54	27.76	61.483	74	-12.517	Peak
4874	44.69	243	148	H	32.629	4.54	27.76	54.099	74	-19.901	Peak
4874	34.14	333	107	V	32.603	4.54	27.76	43.523	54	-10.477	Ave
4874	27.24	243	148	H	32.629	4.54	27.76	36.649	54	-17.351	Ave

High Channel 2462 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4924	56.11	338	106	V	32.732	4.52	27.71	65.652	74	-8.348	Peak
4924	46.95	222	115	H	32.8	4.52	27.71	56.56	74	-17.44	Peak
4924	36.72	338	106	V	32.732	4.52	27.71	46.262	54	-7.738	Ave
4924	29.3	222	115	H	32.8	4.52	27.71	38.91	54	-15.09	Ave

802.11 n20 Mode High Power Setting

Low Channel 2412 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4824	44.58	340	111	V	32.603	4.56	27.769	53.974	74	-20.026	peak
4824	38.15	135	116	H	32.629	4.56	27.769	47.57	74	-26.43	peak
4824	25.71	340	111	V	32.603	4.56	27.769	35.104	54	-18.896	Ave
4824	16.93	135	116	H	32.629	4.56	27.769	26.35	54	-27.65	Ave
1395	43.05	211	102	V	32.603	4.54	27.76	52.433	74	-21.567	peak
1395	40.59	165	100	H	32.629	4.54	27.76	49.999	74	-24.001	peak
1395	27.23	211	102	V	32.603	4.54	27.76	36.613	54	-17.387	Ave
1395	24.87	165	100	H	32.629	4.54	27.76	34.279	54	-19.721	Ave

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4874	45.87	336	113	V	32.603	4.54	27.76	55.253	74	-18.747	peak
4874	37.3	246	146	H	32.629	4.54	27.76	46.709	74	-27.291	peak
4874	25.2	336	113	V	32.603	4.54	27.76	34.583	54	-19.417	Ave
4874	19.68	246	146	H	32.629	4.54	27.76	29.089	54	-24.911	Ave
1395	43.17	208	100	V	32.603	4.54	27.76	52.553	74	-21.447	peak
1395	40.48	165	100	H	32.629	4.54	27.76	49.889	74	-24.111	peak
1395	27.33	208	100	V	32.603	4.54	27.76	36.713	54	-17.287	Ave
1395	24.75	165	100	H	32.629	4.54	27.76	34.159	54	-19.841	Ave

High Channel 2462 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
4924	48.56	333	113	V	32.732	4.52	27.71	58.102	74	-15.898	peak
4924	38.45	232	156	H	32.8	4.52	27.71	48.06	74	-25.94	peak
4924	29.23	333	113	V	32.732	4.52	27.71	38.772	54	-15.228	Ave
4924	21.51	232	156	H	32.8	4.52	27.71	31.12	54	-22.88	Ave
1395	43.35	207	100	V	32.603	4.54	27.76	52.733	74	-21.267	peak
1395	40.57	166	100	H	32.629	4.54	27.76	49.979	74	-24.021	peak
1395	27.65	207	100	V	32.603	4.54	27.76	37.033	54	-16.967	Ave
1395	24.58	166	100	H	32.629	4.54	27.76	33.989	54	-20.011	Ave

802.11 n40 Mode High Power Setting

Low Channel 2422 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
1395	43.12	212	100	V	32.603	4.56	27.769	52.514	74	-21.486	Peak
1395	40.22	168	100	H	32.629	4.56	27.769	49.64	74	-24.36	Peak
1395	27.63	212	100	V	32.603	4.56	27.769	37.024	54	-16.976	Ave
1395	24.53	168	100	H	32.629	4.56	27.769	33.95	54	-20.05	Ave

Middle Channel 2437 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
1395	43	209	100	V	32.603	4.54	27.76	52.383	74	-21.617	Peak
1395	40.61	169	100	H	32.629	4.54	27.76	50.019	74	-23.981	Peak
1395	27.54	209	100	V	32.603	4.54	27.76	36.923	54	-17.077	Ave
1395	24.92	169	100	H	32.629	4.54	27.76	34.329	54	-19.671	Ave

High Channel 2452 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
1395	43.25	215	100	V	25.147	2.29	27.4	43.287	74	-30.713	Peak
1395	40.57	168	101	H	25.378	2.29	27.4	40.838	74	-33.162	Peak
1395	27.79	215	100	V	25.147	2.29	27.4	27.827	54	-26.173	Ave
1395	24.85	168	101	H	25.378	2.29	27.4	25.118	54	-28.882	Ave

5.8 GHz Band, 5 dBi Antenna

802.11 a Mode High Power Setting

Low Channel 5745 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
11490	43.1	80	117	V	38.69	7.59	27.54	61.84	74	-12.16	Peak
11490	41.58	91	100	H	38.691	7.59	27.54	60.321	74	-13.679	Peak
11490	28.42	80	117	V	38.69	7.59	27.54	47.16	54	-6.84	Ave
11490	27.64	91	100	H	38.691	7.59	27.54	46.381	54	-7.619	Ave

Middle Channel 5785MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
11570	41.77	77	115	V	38.835	7.69	27.38	60.915	74	-13.085	Peak
11570	42.2	91	101	H	38.834	7.69	27.38	61.344	74	-12.656	Peak
11570	27.97	77	115	V	38.835	7.69	27.38	47.115	54	-6.885	Ave
11570	27.59	91	101	H	38.834	7.69	27.38	46.734	54	-7.266	Ave

High Channel 5825 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
11650	42.97	78	114	V	38.835	7.78	27.08	62.505	74	-11.495	Peak
11650	41.56	92	102	H	38.834	7.78	27.08	61.094	74	-12.906	Peak
11650	28.12	78	114	V	38.835	7.78	27.08	47.655	54	-6.345	Ave
11650	27.16	92	102	H	38.834	7.78	27.08	46.694	54	-7.306	Ave

802.11 n 20 Mode High Power Setting

Low Channel 5745 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
11490	40.8	82	104	V	38.69	7.59	27.54	59.54	74	-14.46	Peak
11490	40.67	89	100	H	38.691	7.59	27.54	59.411	74	-14.589	Peak
11490	26	82	104	V	38.69	7.59	27.54	44.74	54	-9.26	Ave
11490	26.1	89	100	H	38.691	7.59	27.54	44.841	54	-9.159	Ave

Middle Channel 5785MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
11570	41.05	80	110	V	38.835	7.69	27.38	60.195	74	-13.805	Peak
11570	40.7	92	107	H	38.834	7.69	27.38	59.844	74	-14.156	Peak
11570	26.13	80	110	V	38.835	7.69	27.38	45.275	54	-8.725	Ave
11570	25.41	92	107	H	38.834	7.69	27.38	44.554	54	-9.446	Ave

High Channel 5825 MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
11650	41.11	80	118	V	38.835	7.78	27.08	60.645	74	-13.355	Peak
11650	41.52	91	108	H	38.834	7.78	27.08	61.054	74	-12.946	Peak
11650	26.52	80	118	V	38.835	7.78	27.08	46.055	54	-7.945	Ave
11650	24.29	91	108	H	38.834	7.78	27.08	43.824	54	-10.176	Ave

802.11 n 40 Mode High Power Setting

Low Channel 5755 MHz, measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
11510	37.87	44	143	V	38.69	7.6	27.51	56.65	74	-17.35	Peak
11510	27.42	93	103	H	38.691	7.6	27.51	46.201	74	-27.799	Peak
11510	23.23	44	143	V	38.69	7.6	27.51	42.01	54	-11.99	Ave
11510	22.31	93	103	H	38.691	7.6	27.51	41.091	54	-12.909	Ave

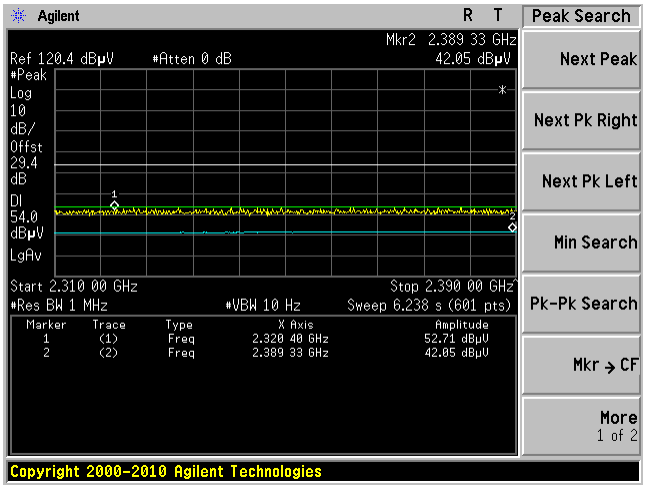
Middle Channel 5795MHz measured at 3 meters

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
11580	37.97	43	121	V	38.835	7.69	27.38	57.115	74	-16.885	Peak
11580	37.33	96	107	H	38.834	7.69	27.38	56.474	74	-17.526	Peak
11580	23.68	43	121	V	38.835	7.69	27.38	42.825	54	-11.175	Ave
11580	22.29	96	107	H	38.834	7.69	27.38	41.434	54	-12.566	Ave

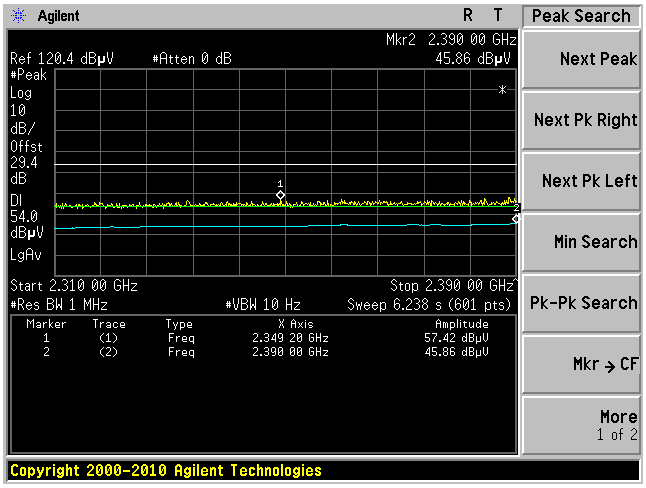
Restricted Band Emissions

2 dBi antenna: 2.4 GHz

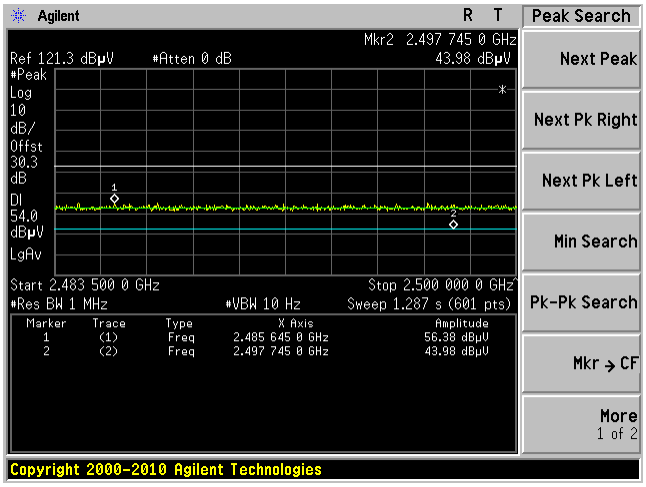
802.11 b, Lowest Channel at Horizontal



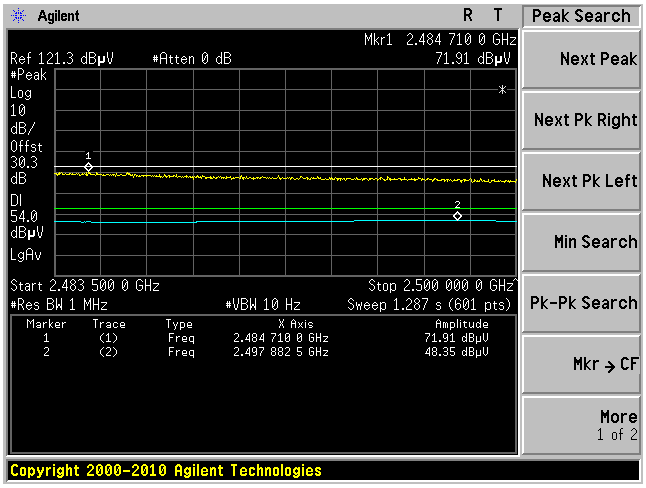
802.11b, Lowest Channel at Vertical



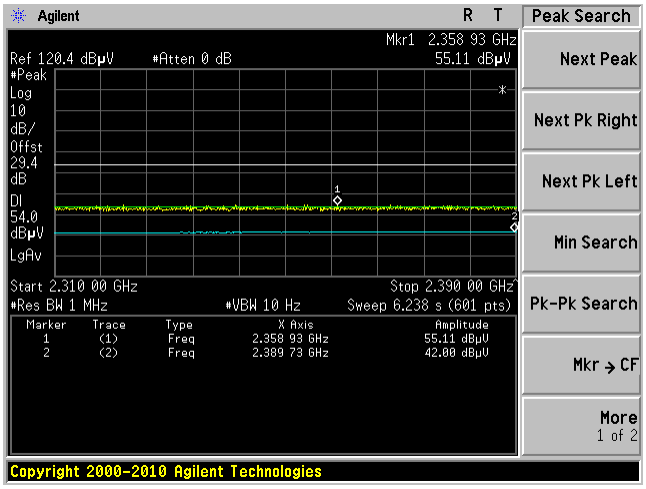
802.11b, Highest Channel at Horizontal



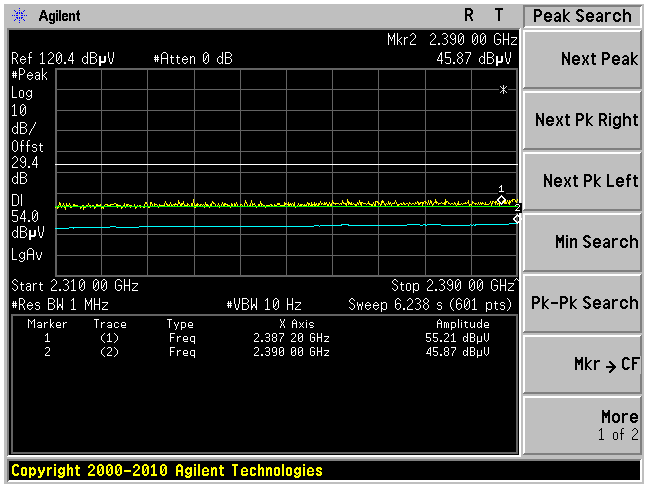
802.11b, Highest Channel at Vertical



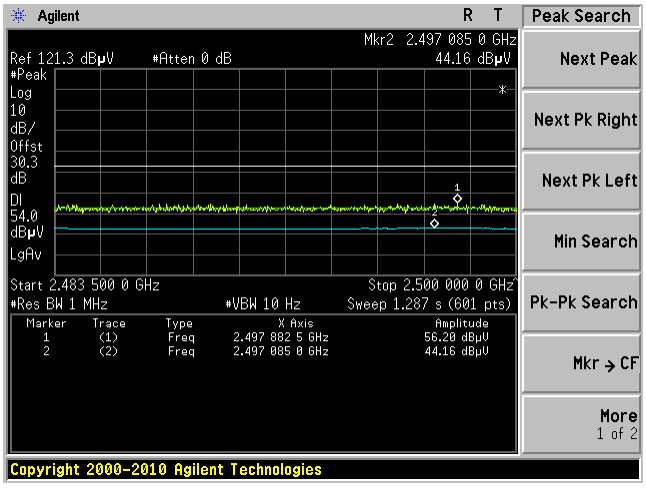
802.11g, Lowest Channel at Horizontal



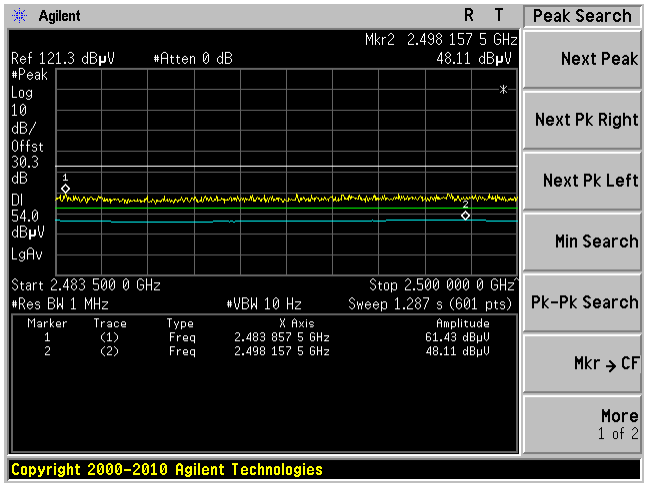
802.11g, Lowest Channel at Vertical



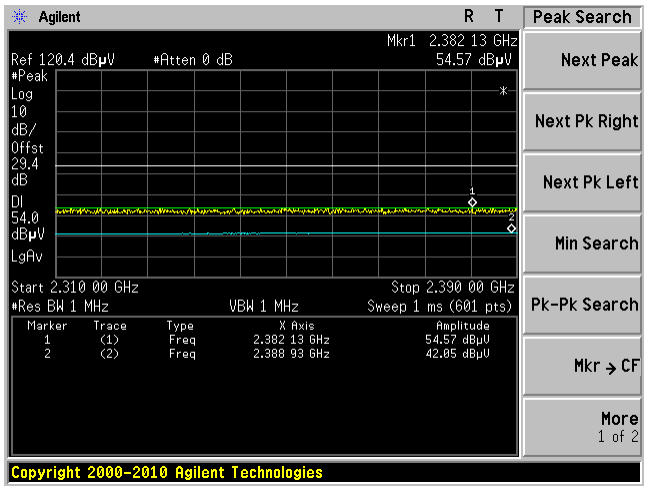
802.11g, Highest Channel at Horizontal



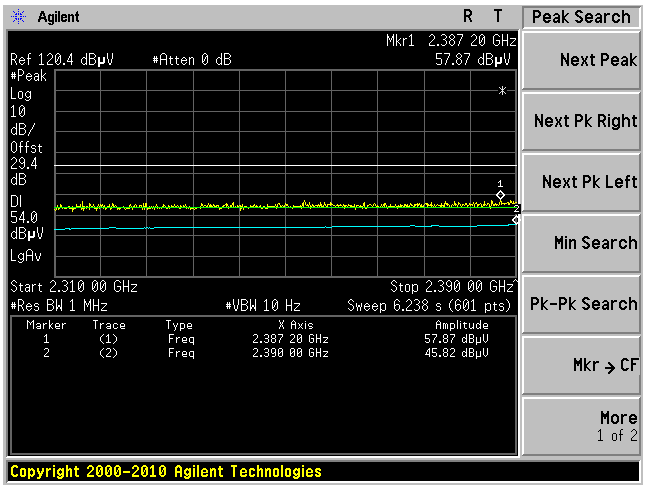
802.11g, Highest Channel at Vertical



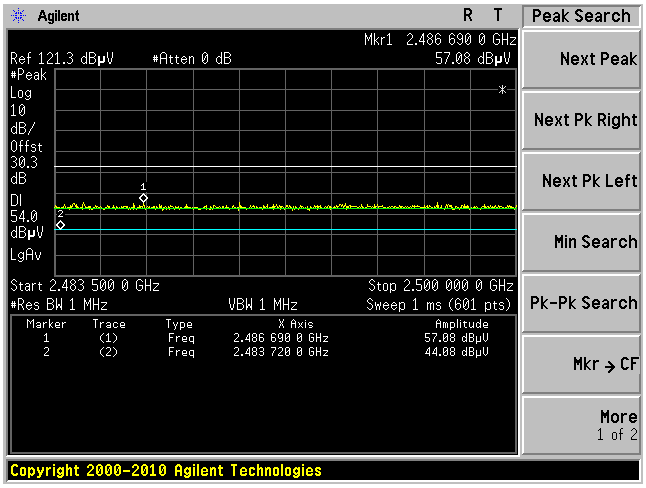
802.11 n20, Lowest Channel at Horizontal



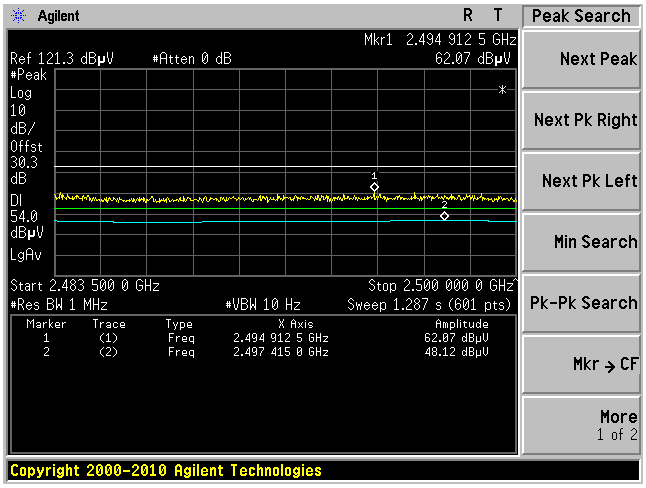
802.11 n20, Lowest Channel at Vertical



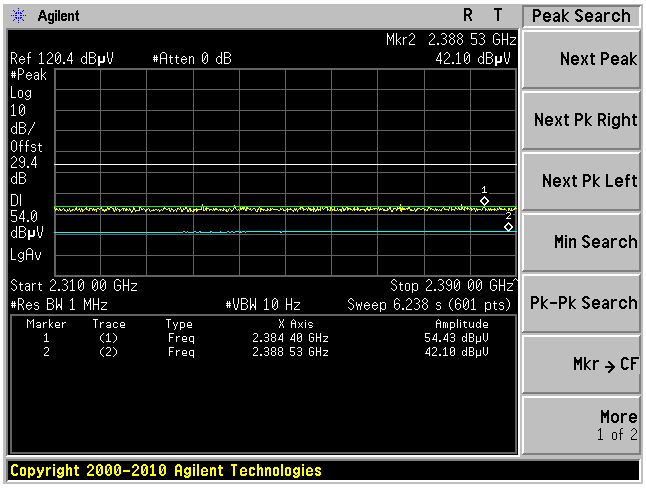
802.11 n20, Highest Channel at Horizontal



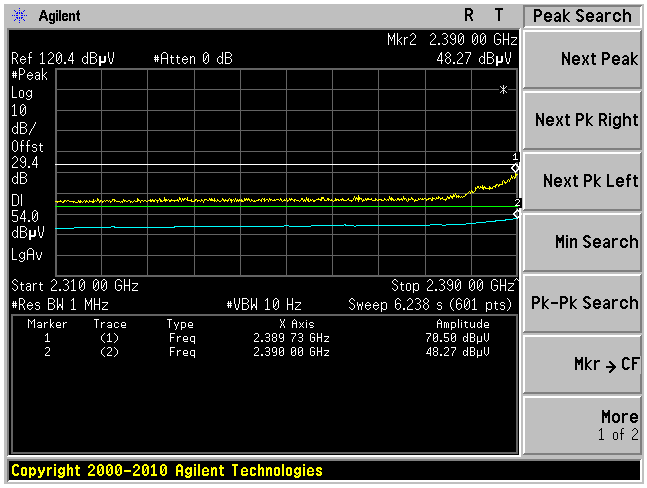
802.11 n20, Highest Channel at Vertical



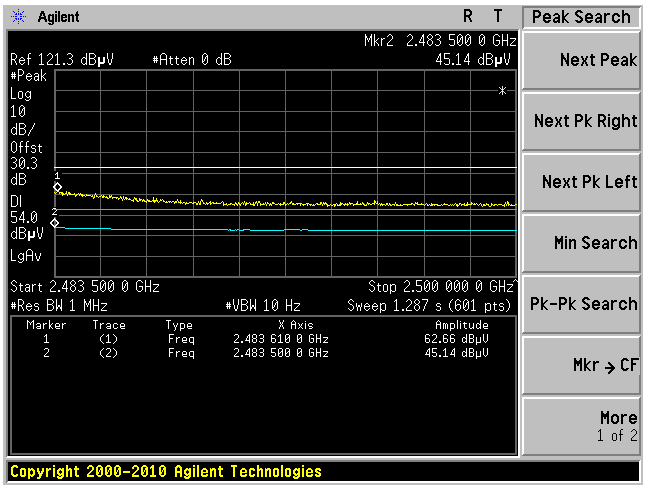
802.11n40, Lowest Channel at Horizontal



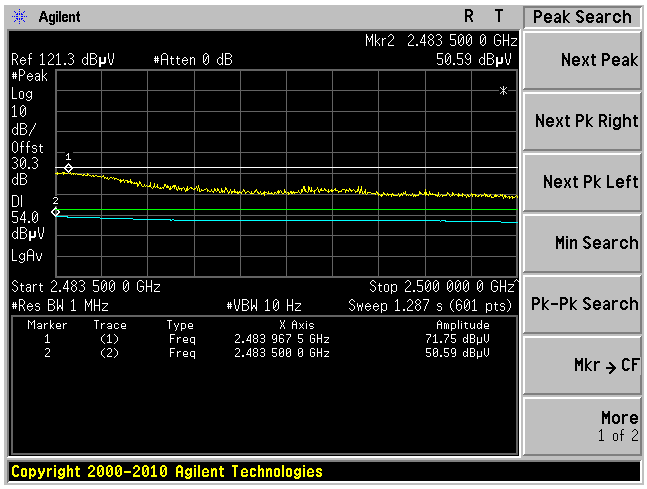
80.211n40, Lowest Channel at Vertical



802.11n40, Highest Channel at Horizontal

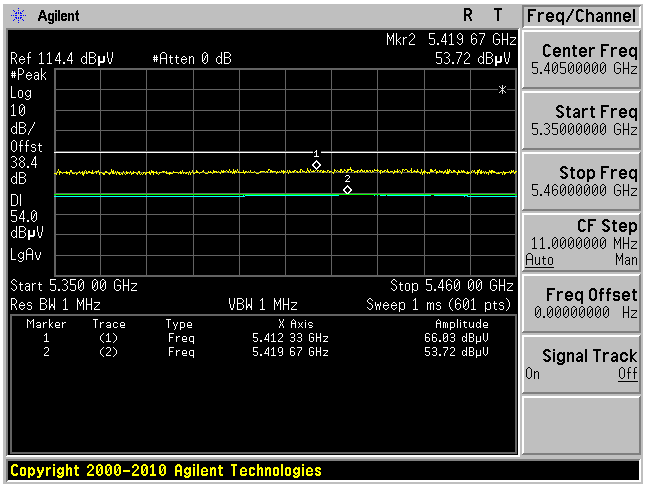


802.11n40, Highest Channel at Vertical

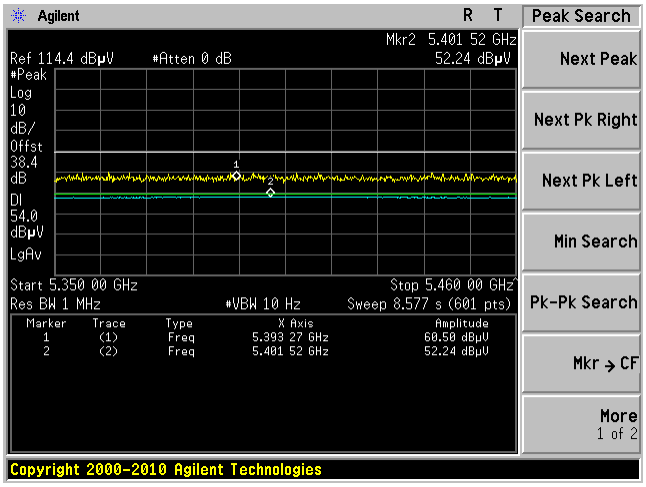


3 dBi antenna: 5.8 GHz

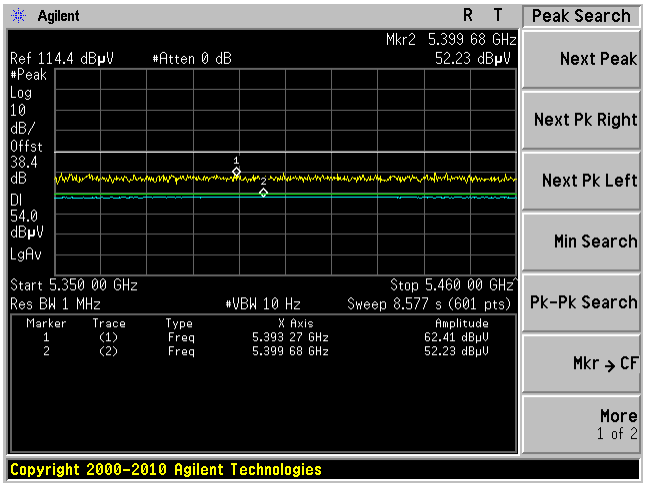
802.11a, Lowest Channel at Horizontal



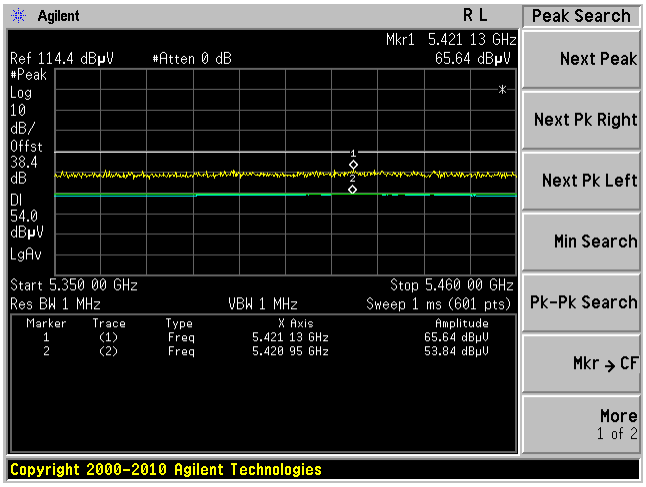
802.11a, Lowest Channel at Vertical



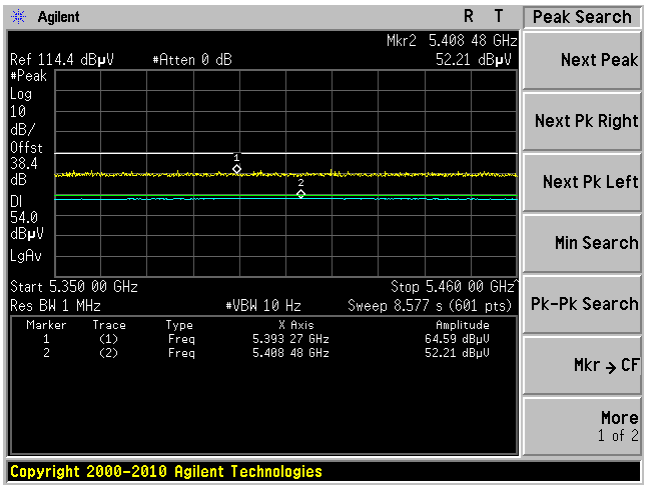
802.11n20, Lowest Channel at Horizontal



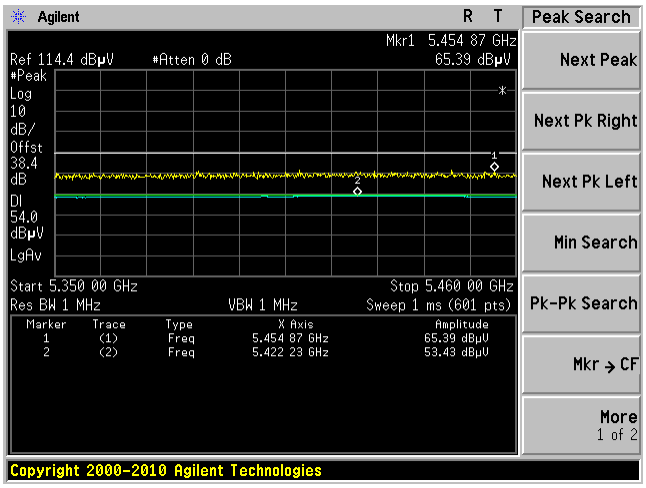
802.11n20, Lowest Channel at Vertical



802.11n40, Lowest Channel at Horizontal

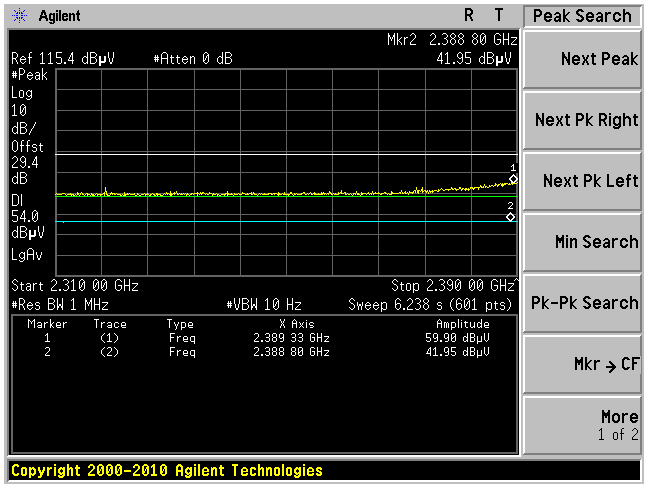


802.11n40, Lowest Channel at Vertical

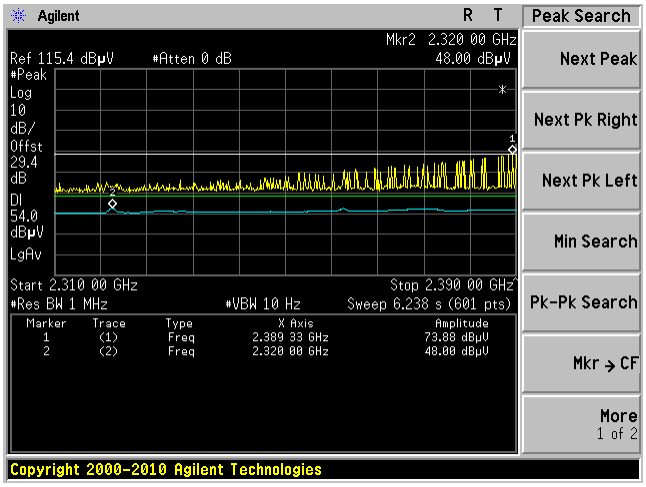


6 dBi antenna: 2.4 GHz

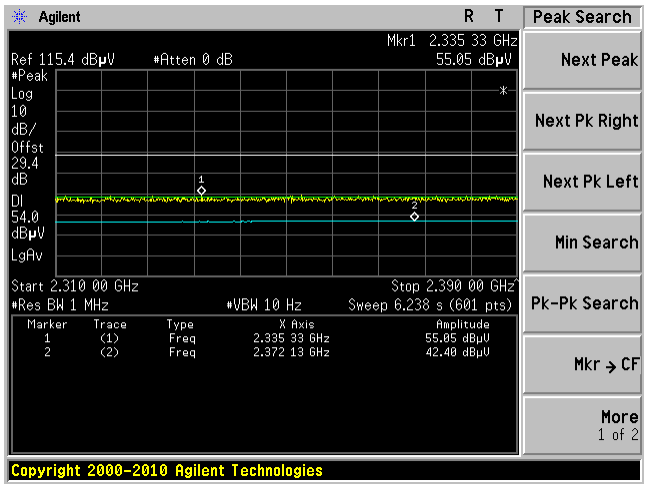
802.11 b, Lowest Channel at Horizontal



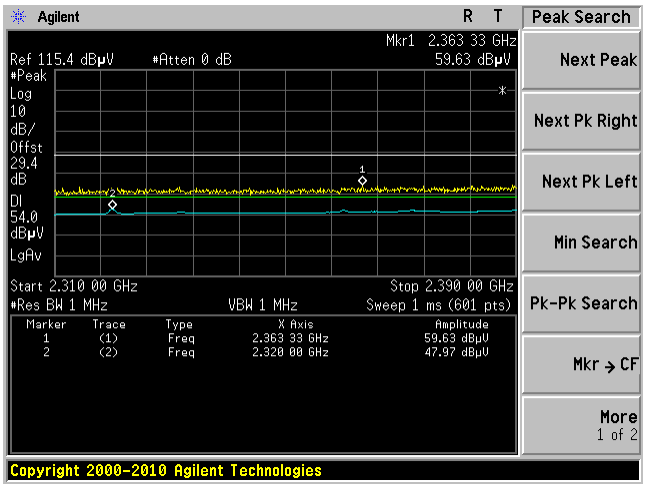
802.11 b, Lowest Channel at Vertical



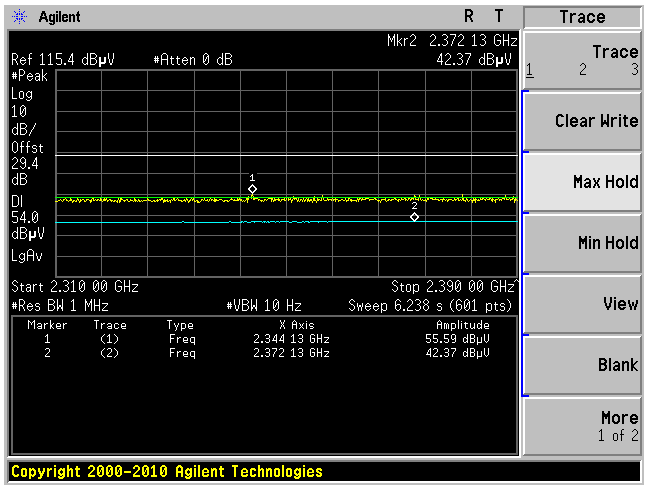
802.11 g, Lowest Channel at Horizontal



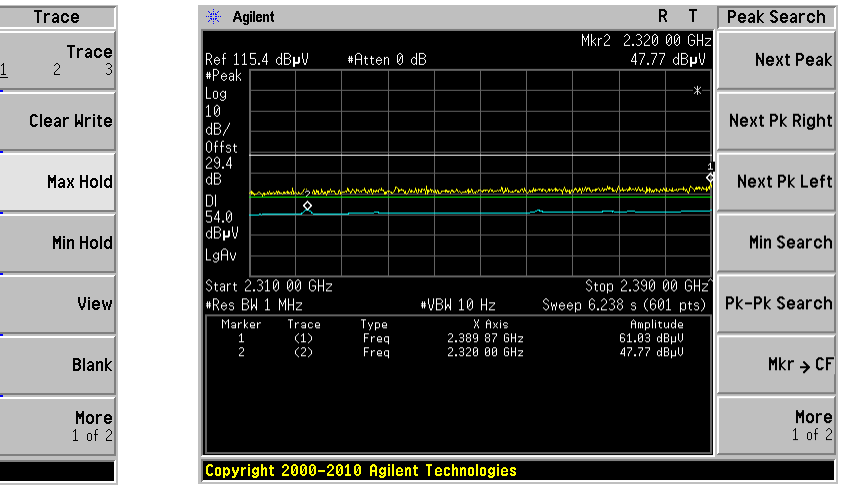
802.11 g, Lowest Channel at Vertical



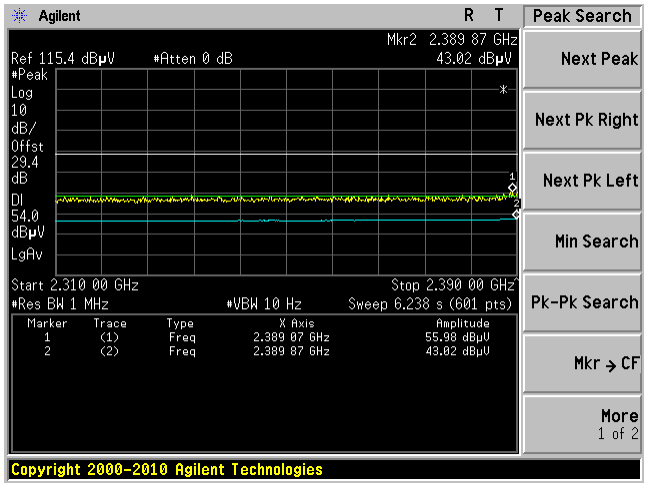
802.11 n20, Lowest Channel at Horizontal



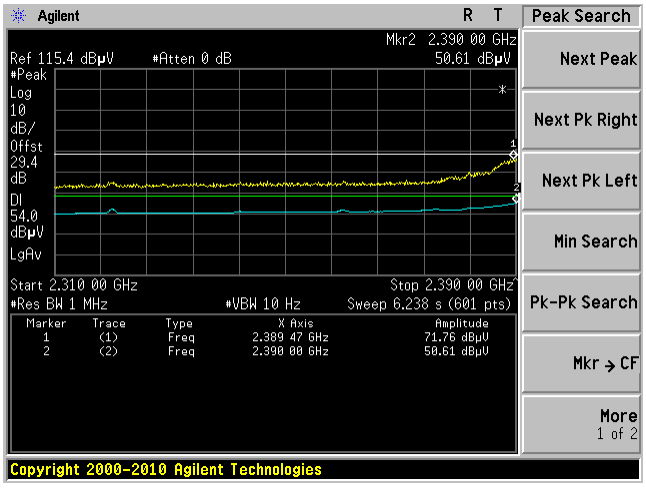
802.11 n20, Lowest Channel at Vertical



802.11 n40, Lowest Channel at Horizontal

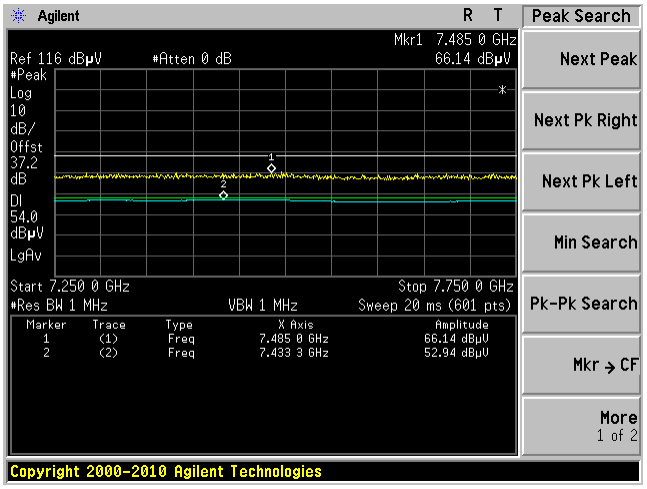


802.11 n40, Lowest Channel at Vertical

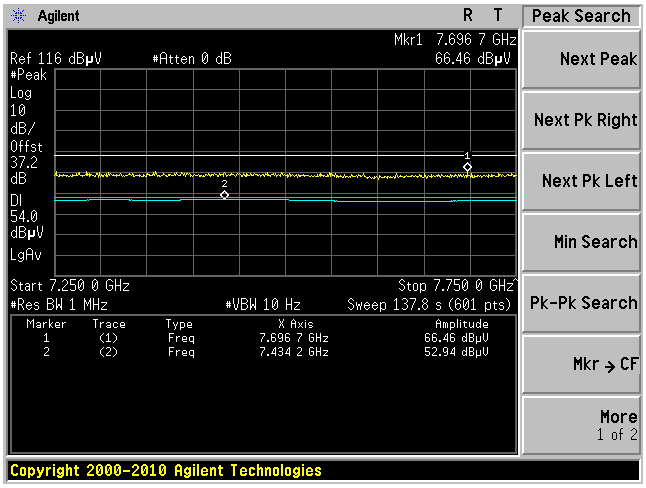


7 dBi antenna: 5.8 GHz

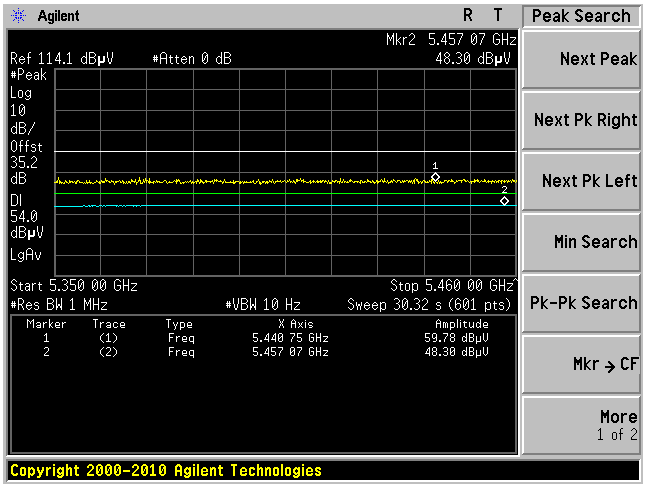
802.11a, Highest Channel at Horizontal



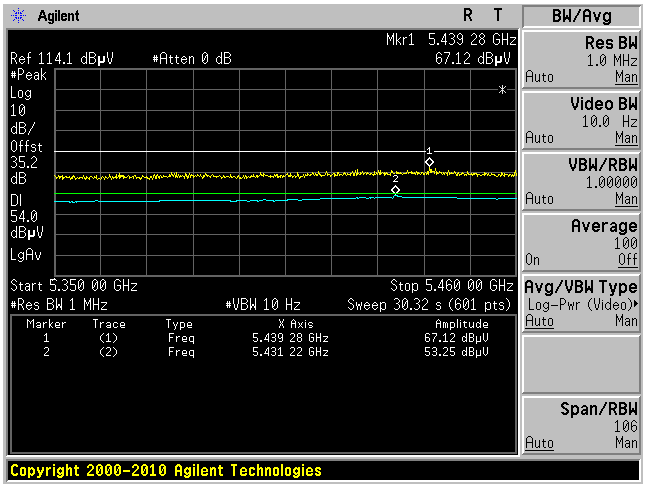
802.11a, Highest Channel at Vertical



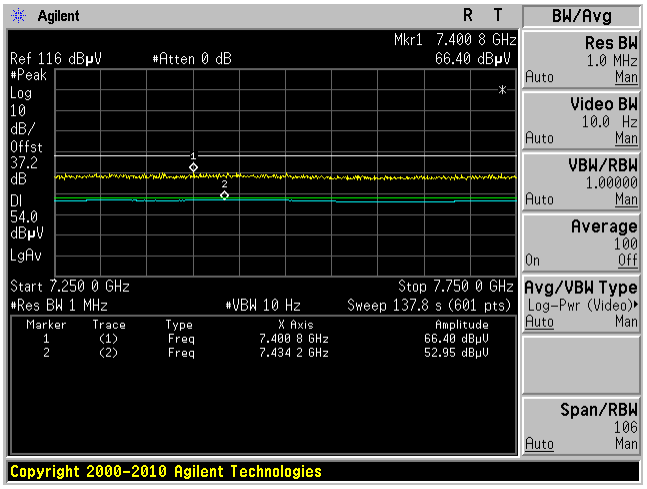
802.11a, Lowest Channel at Horizontal



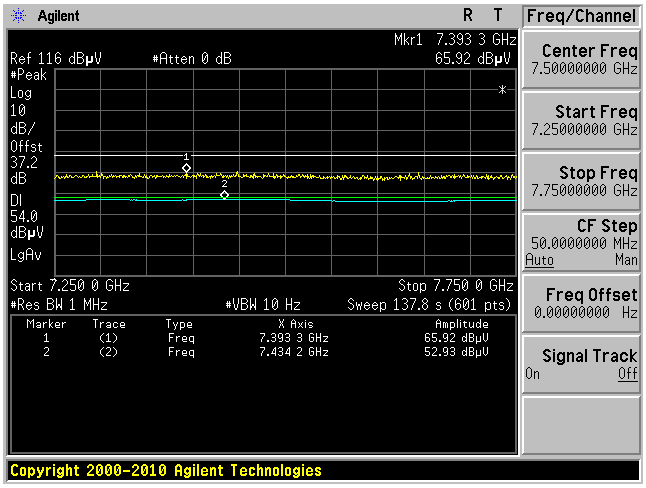
802.11a, Lowest Channel at Vertical



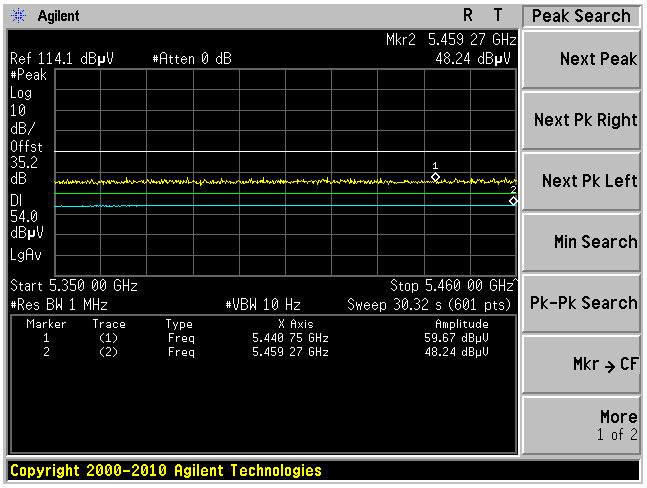
802.11n20, Highest Channel at Horizontal



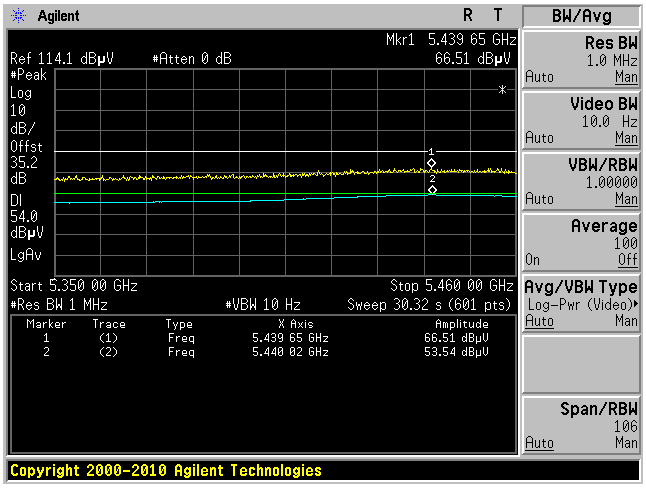
802.11n20, Highest Channel at Vertical



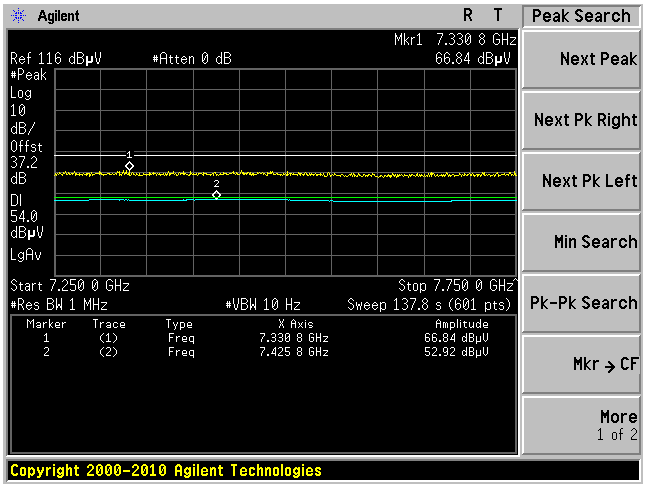
802.11n20, Lowest Channel at Horizontal



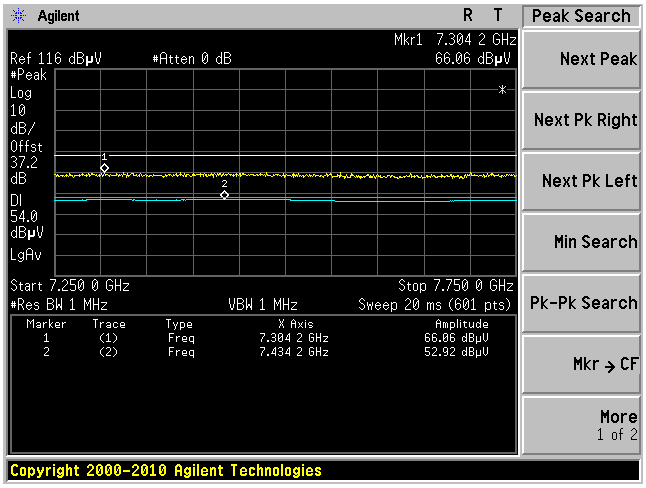
802.11n20, Lowest Channel at Vertical



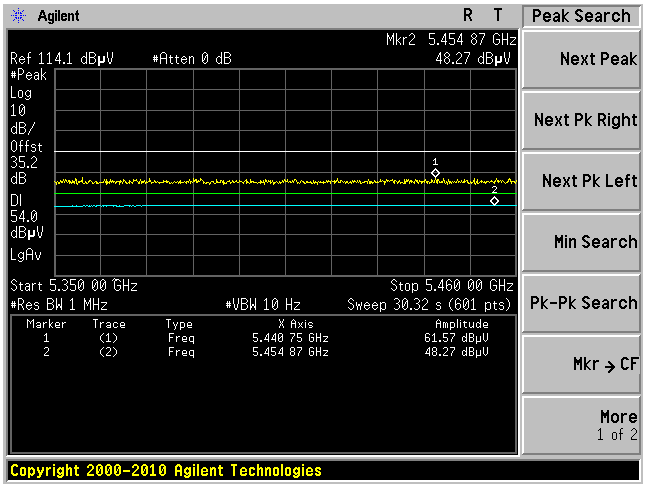
802.11n40, Highest Channel at Horizontal



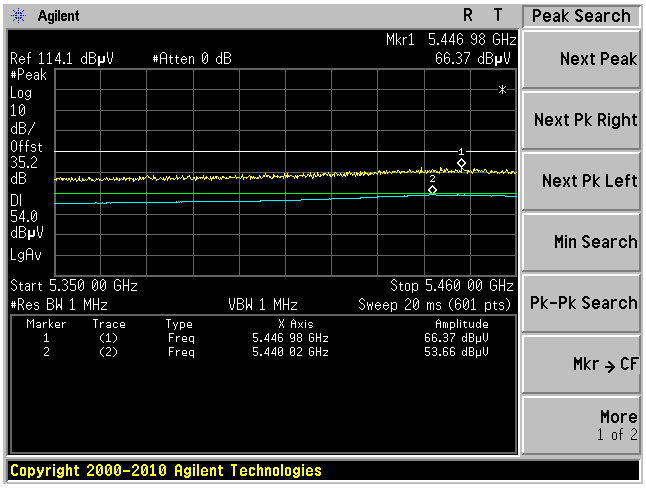
802.11n40, Highest Channel at Vertical



802.11n40, Lowest Channel at Horizontal

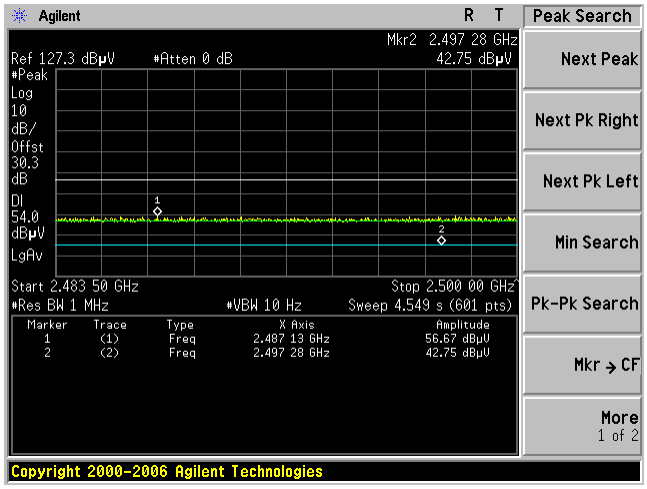


802.11n40, Lowest Channel at Vertical

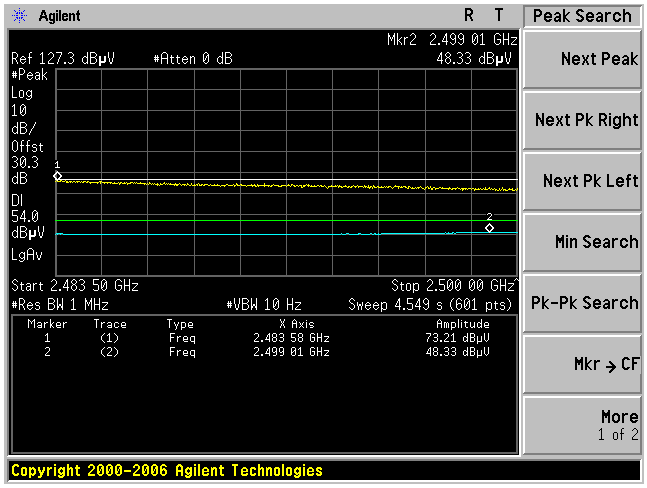


8 dBi antenna: 2.4 GHz

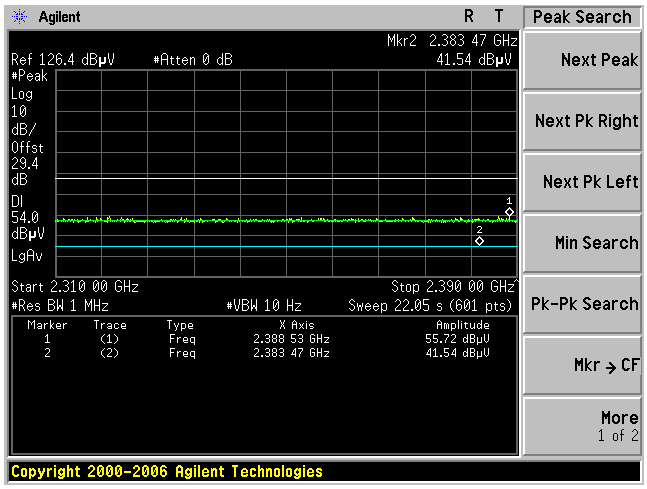
802.11b, Highest Channel at Horizontal



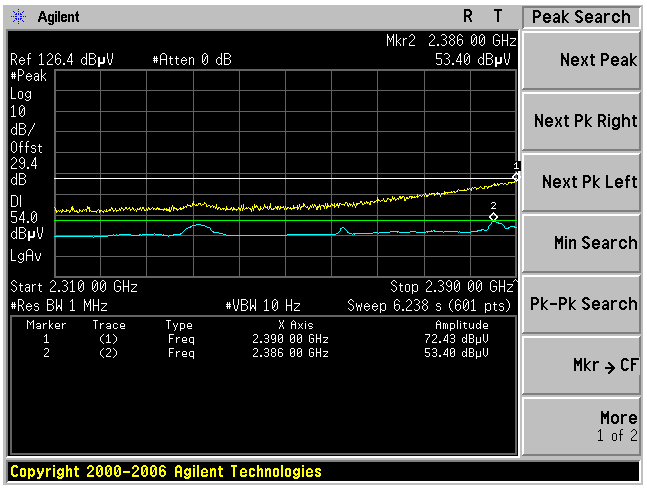
802.11b, Highest Channel at Vertical



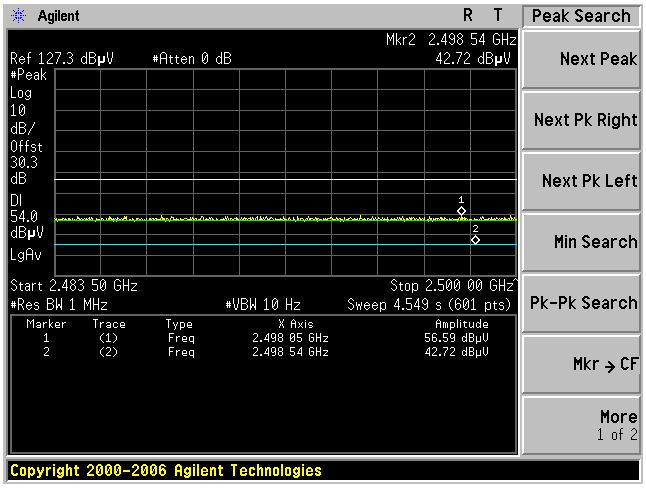
802.11b, Lowest Channel at Horizontal



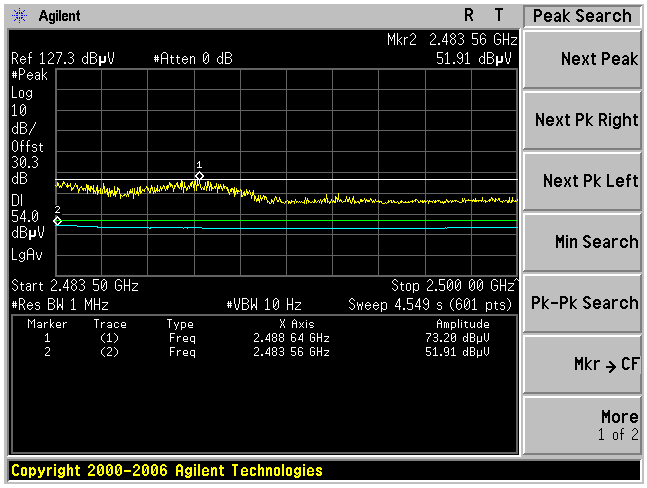
802.11b, Lowest Channel at Vertical



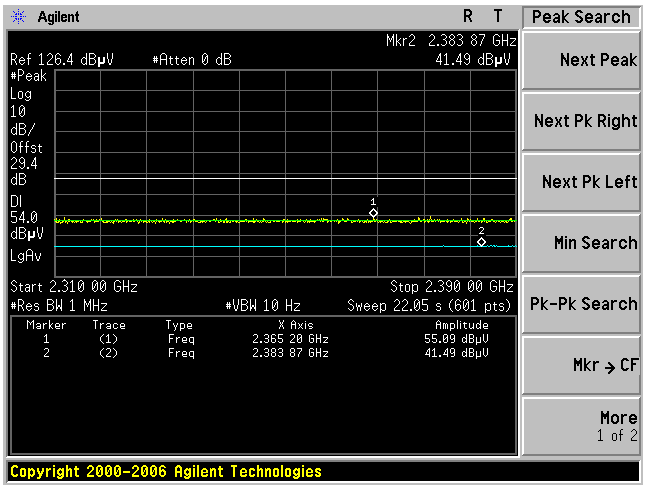
802.11g, Highest Channel at Horizontal



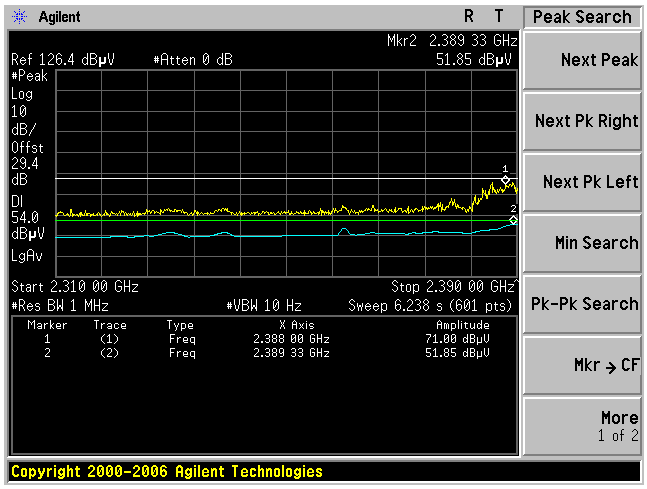
802.11g, Highest Channel at Vertical



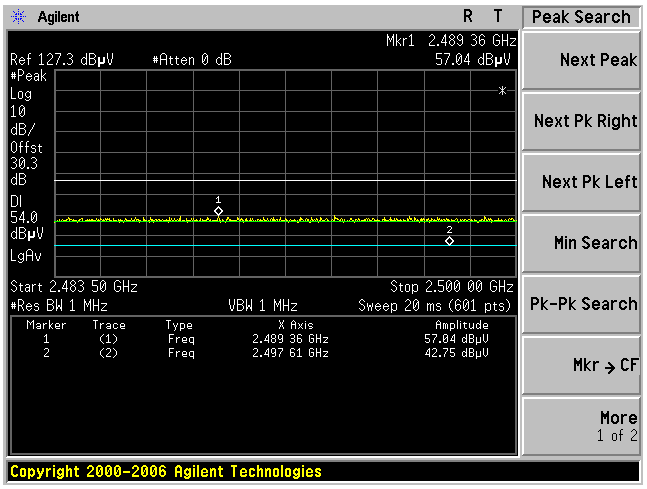
802.11g, Lowest Channel at Horizontal



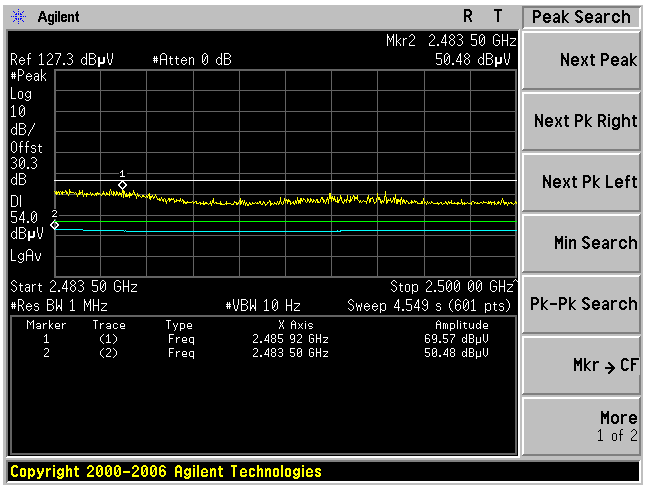
802.11g, Lowest Channel at Vertical



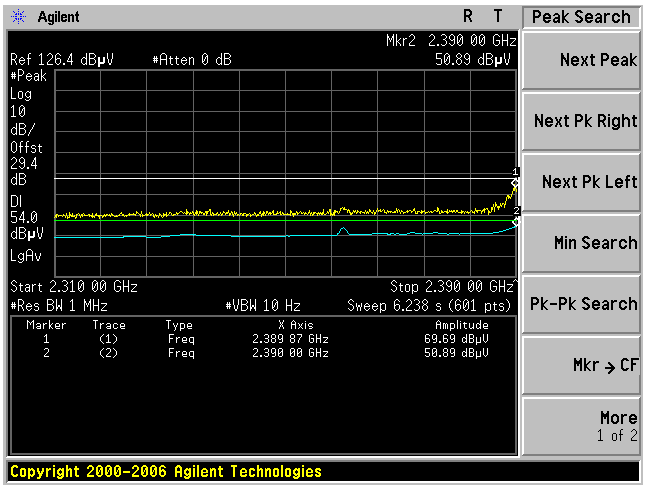
802.11n20, Highest Channel at Horizontal



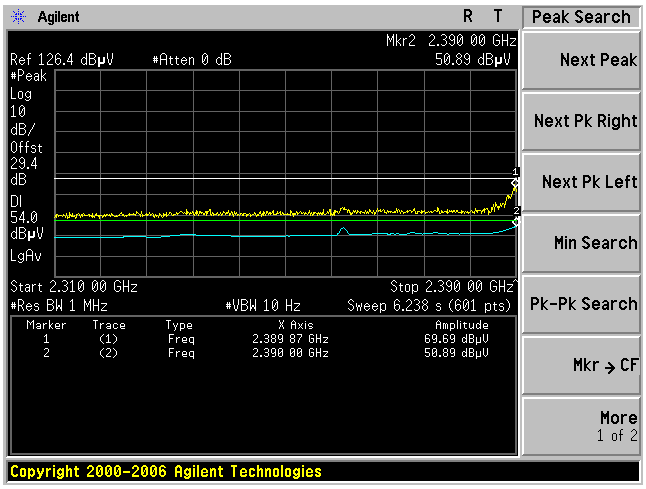
802.11n20, Highest Channel at Vertical



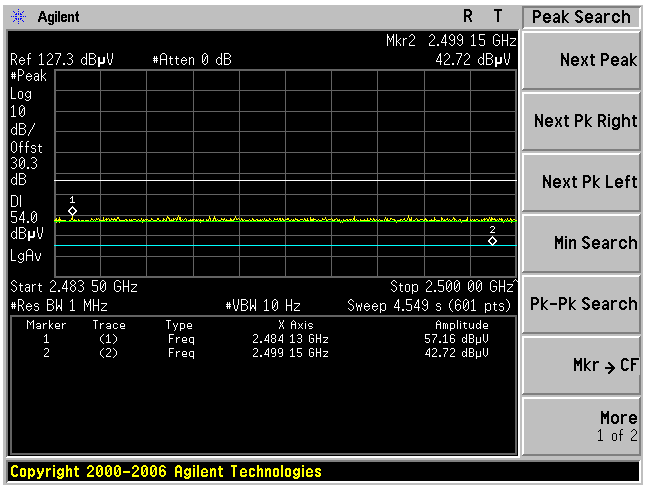
802.11n20, Lowest Channel at Horizontal



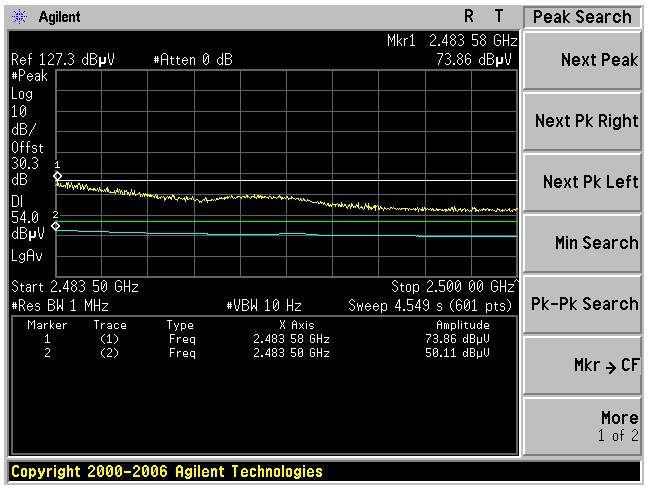
802.11n20, Lowest Channel at Vertical



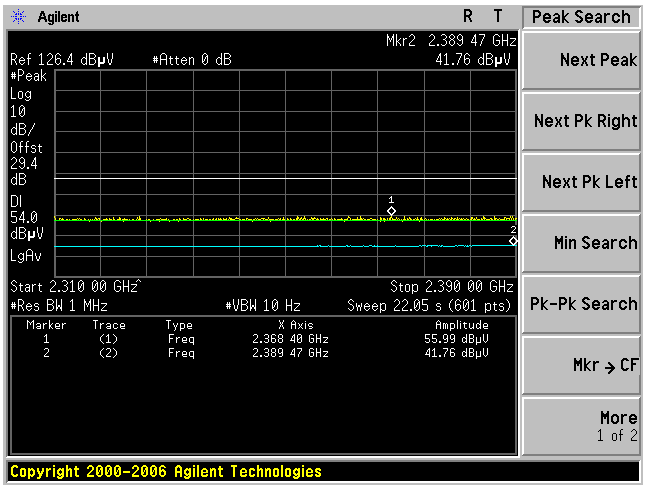
802.11n40, Highest Channel at Horizontal



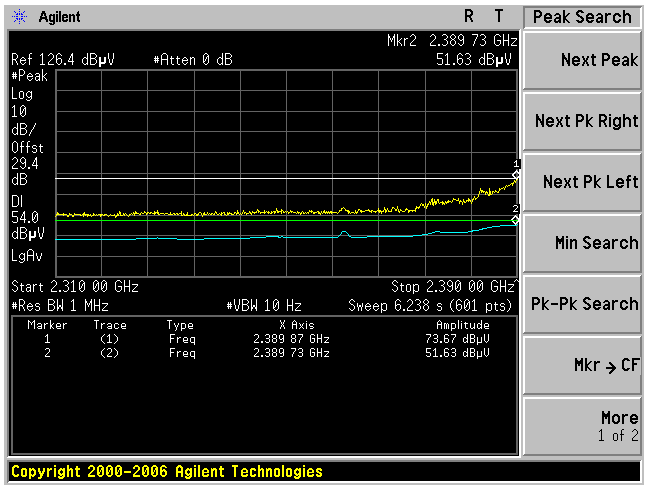
802.11n40, Highest Channel at Vertical



802.11n40, Lowest Channel at Horizontal

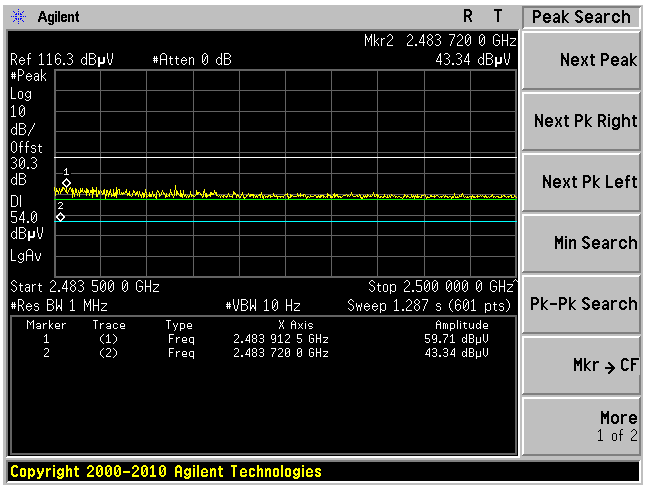


802.11n40, Lowest Channel at Vertical

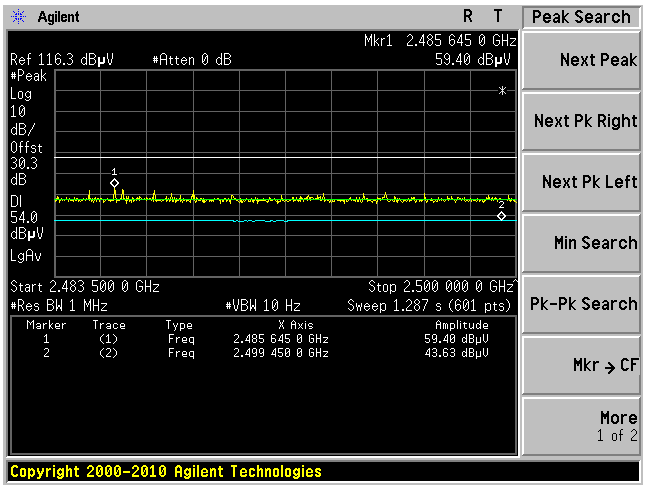


4 dBi antenna: 2.4 GHz

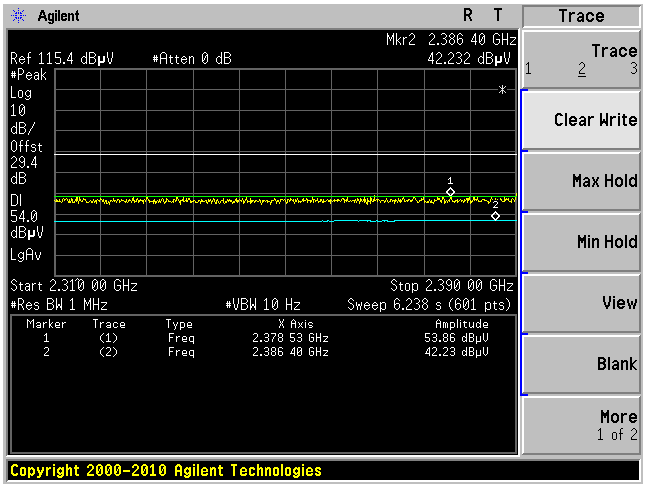
802.11b, Highest Channel at Horizontal



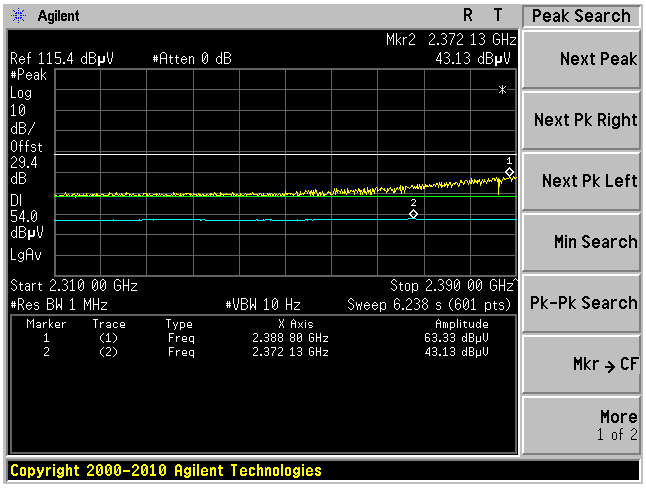
802.11b, Highest Channel at Vertical



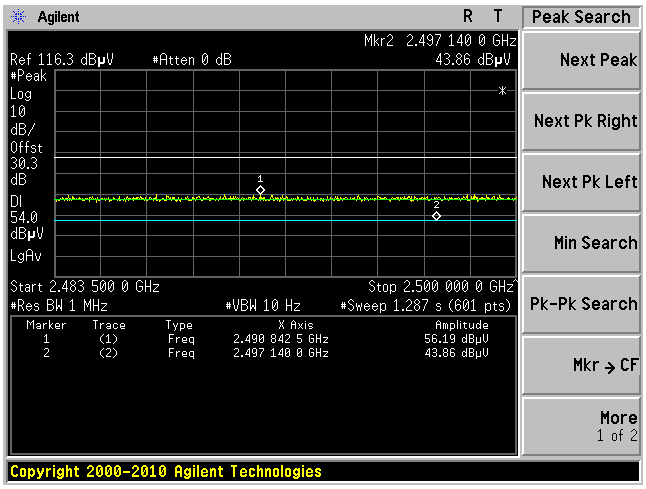
802.11b, Lowest Channel at Horizontal



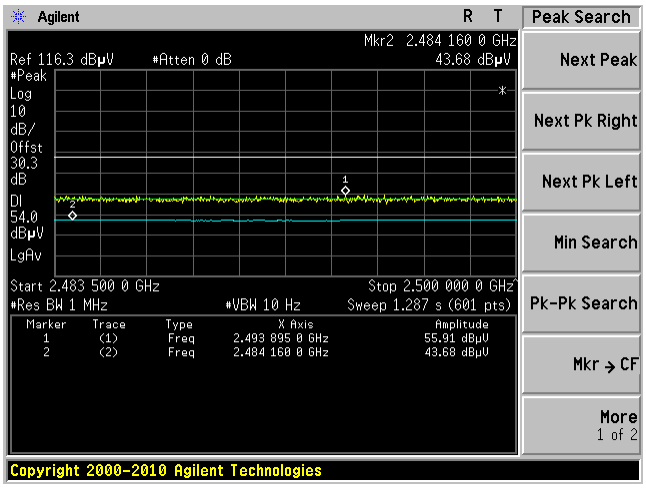
802.11b, Lowest Channel at Vertical



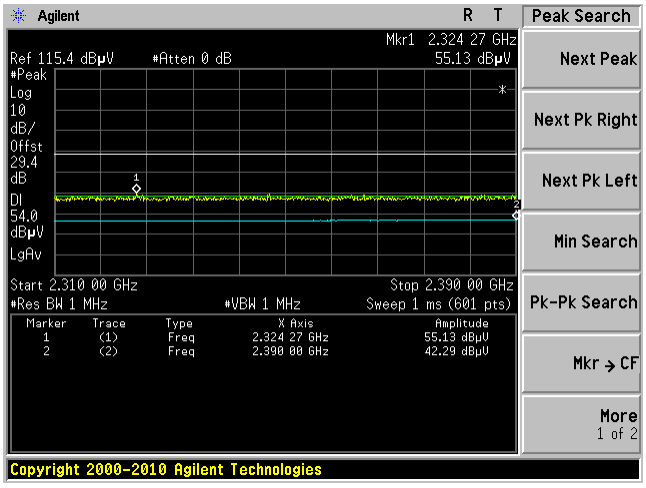
802.11g, Highest Channel at Horizontal



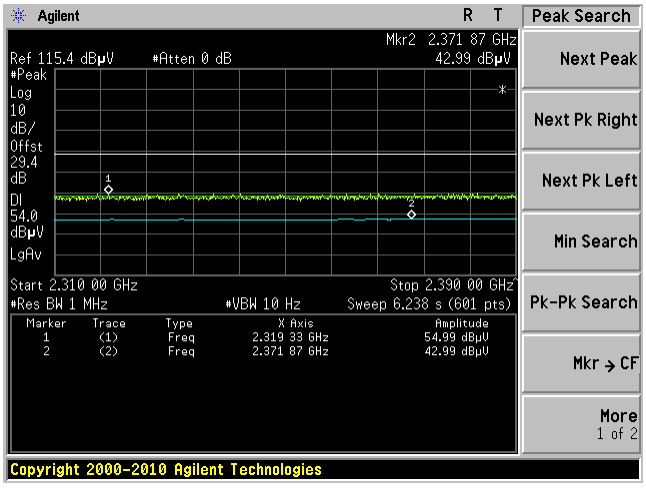
802.11g, Highest Channel at Vertical



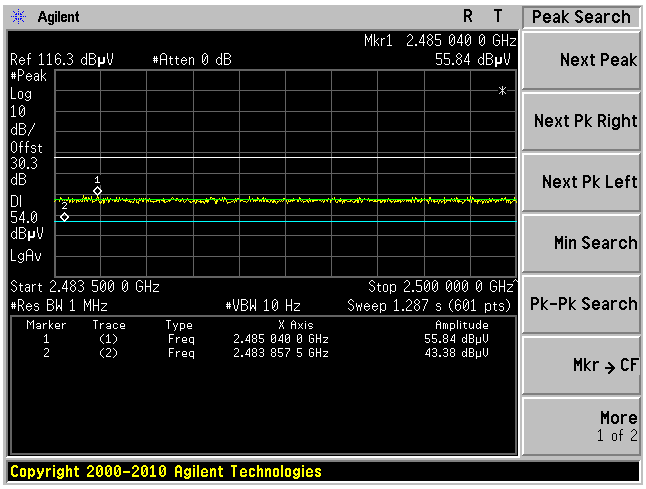
802.11g, Lowest Channel at Horizontal



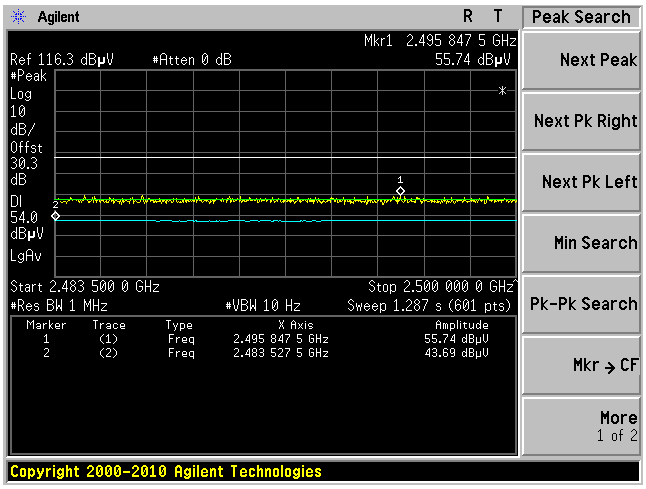
802.11g, Lowest Channel at Vertical



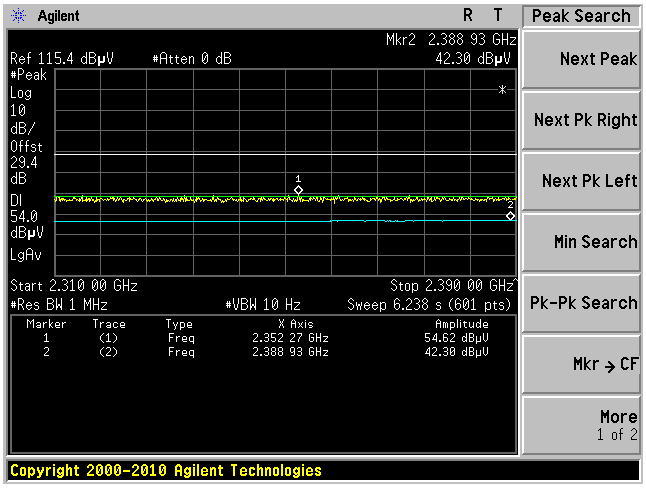
802.11n20, Highest Channel at Horizontal



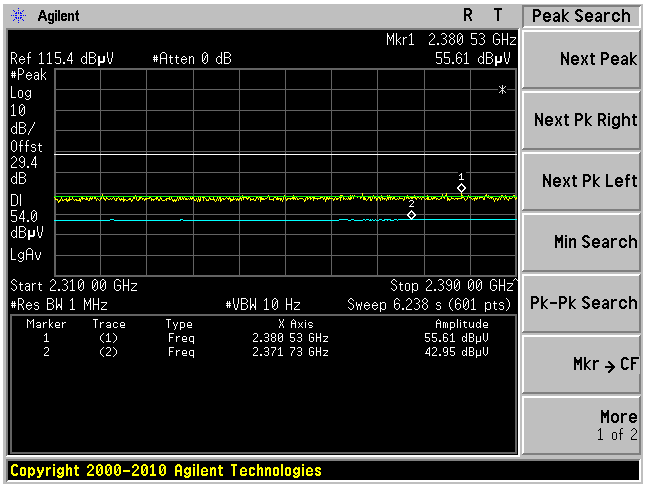
802.11n20, Highest Channel at Vertical



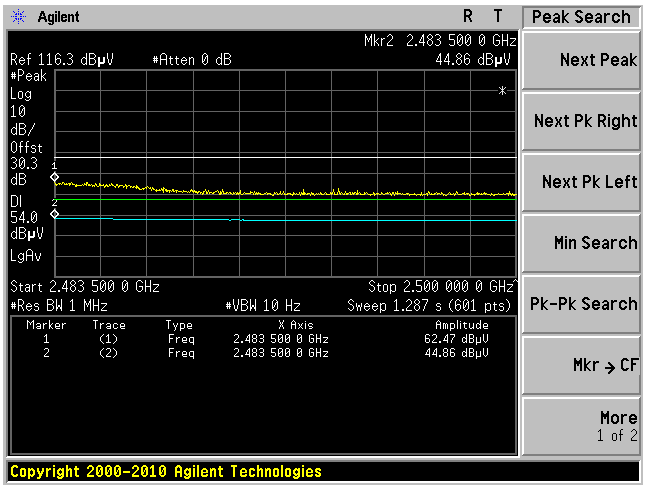
802.11n20, Lowest Channel at Horizontal



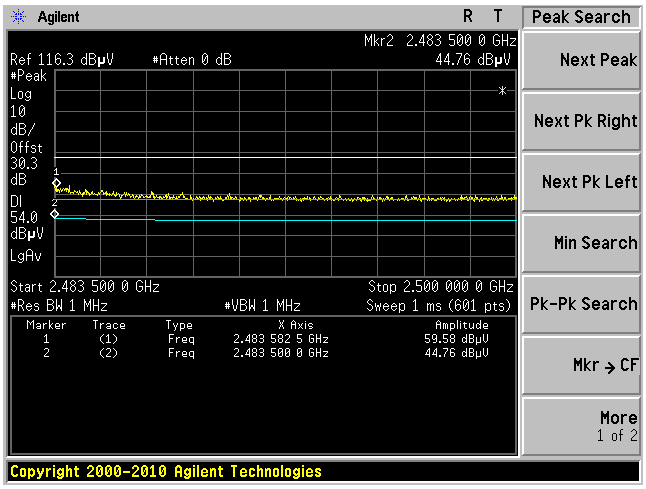
802.11n20, Lowest Channel at Vertical



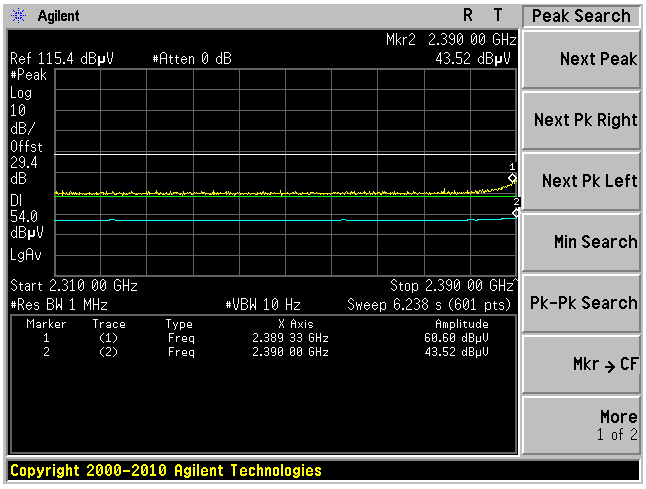
802.11n40, Highest Channel at Horizontal



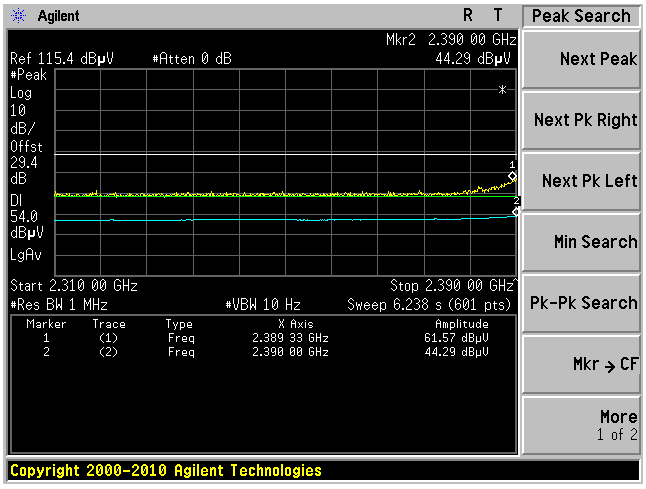
802.11n40, Highest Channel at Vertical



802.11n40, Lowest Channel at Horizontal

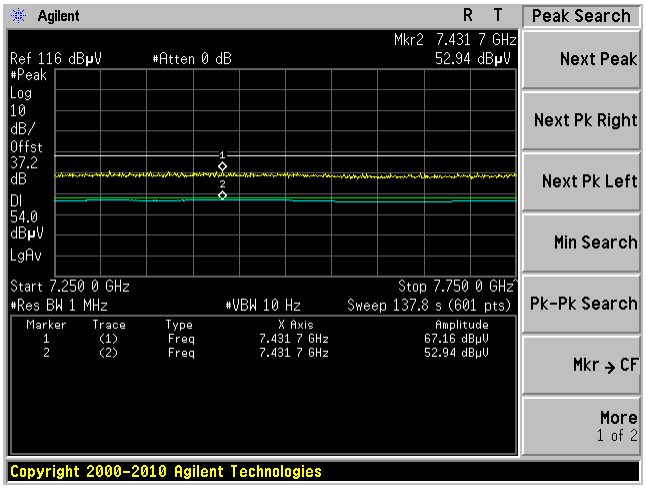


802.11n40, Lowest Channel at Vertical

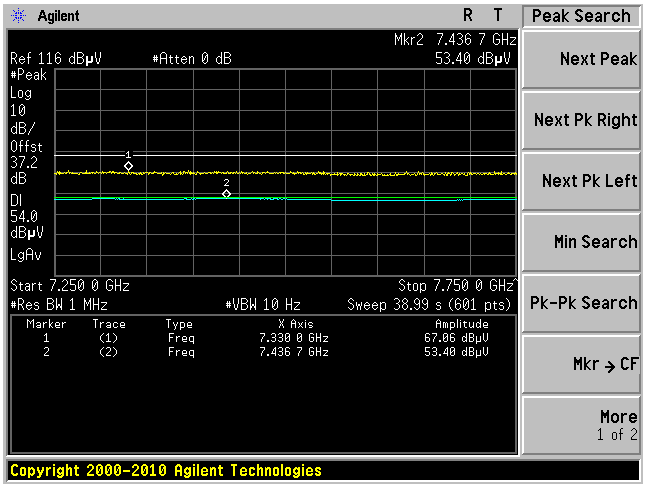


5 dBi antenna: 5.8 GHz

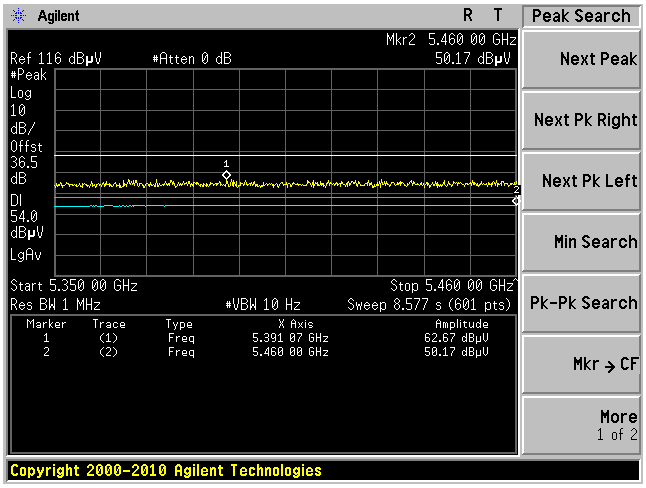
802.11a, Highest Channel at Horizontal



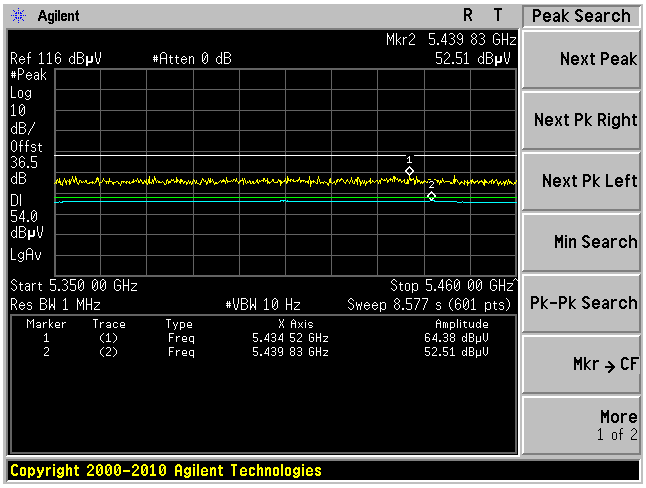
802.11a, Highest Channel at Vertical



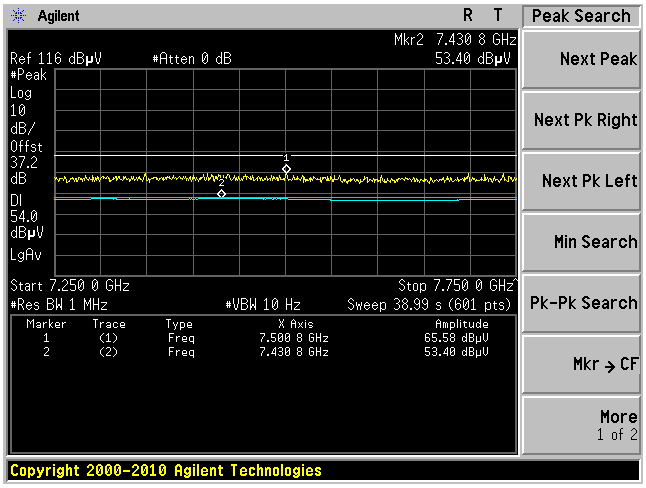
802.11a, Lowest Channel at Horizontal



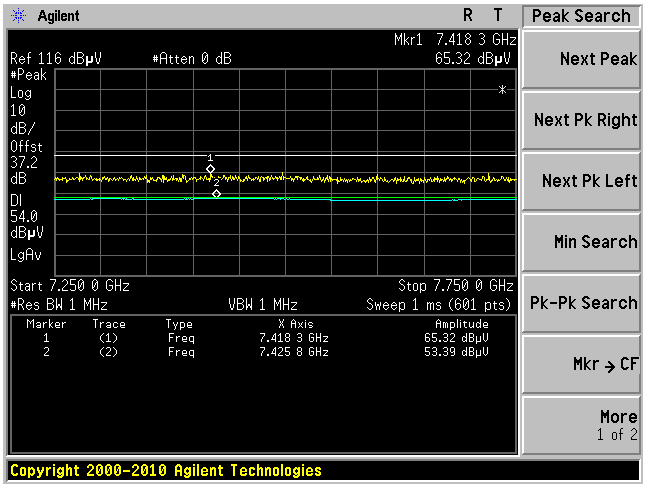
802.11a, Lowest Channel at Vertical



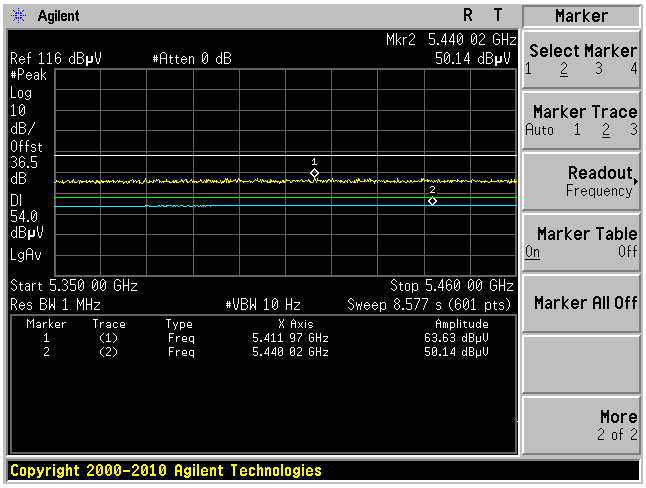
802.11n20, Highest Channel at Horizontal



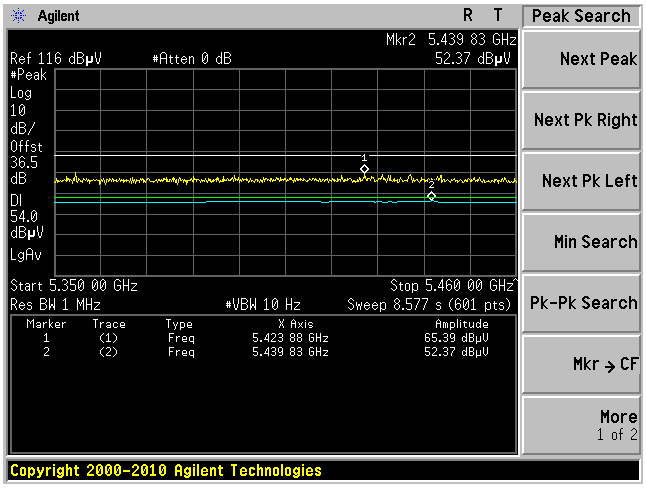
802.11n20, Highest Channel at Vertical



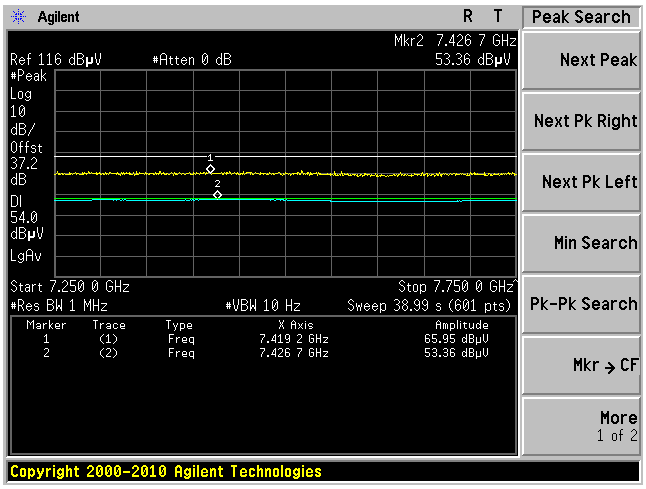
802.11n20, Lowest Channel at Horizontal



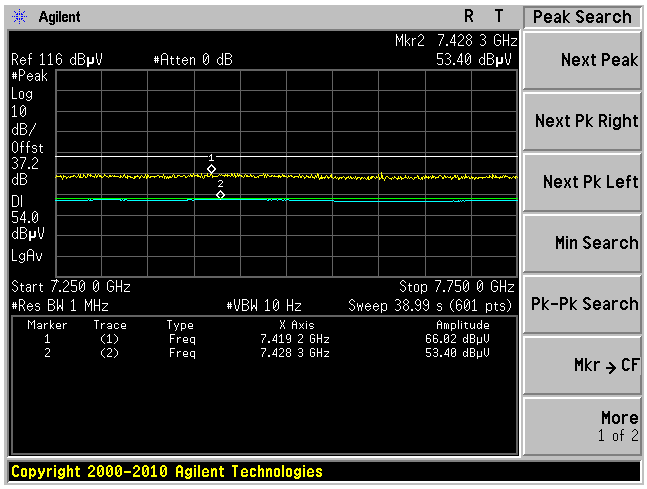
802.11n20, Lowest Channel at Vertical



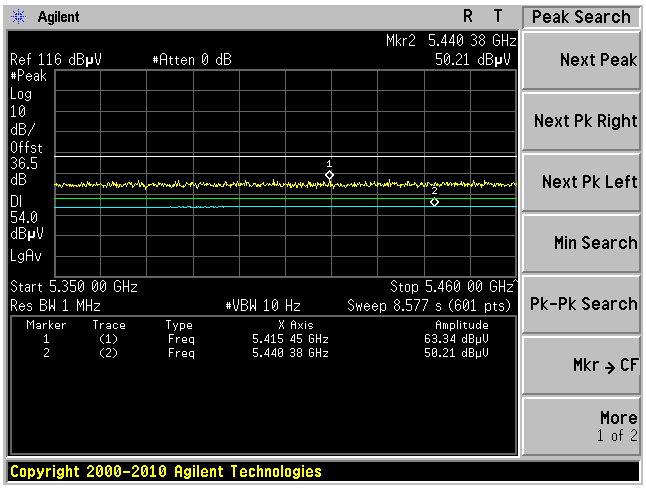
802.11n40, Highest Channel at Horizontal



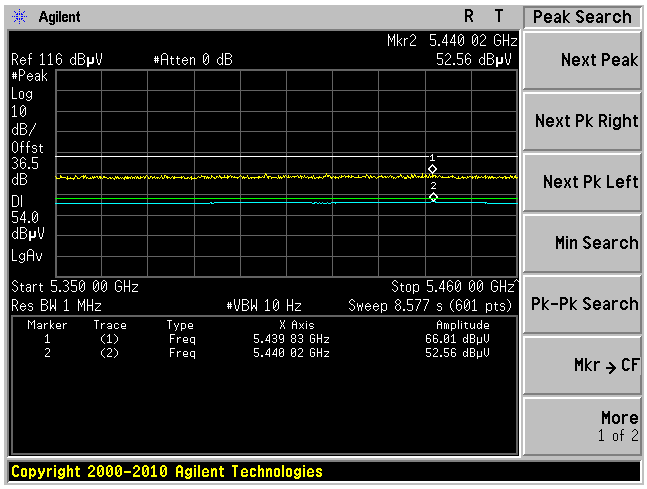
802.11n40, Highest Channel at Vertical



802.11n40, Lowest Channel at Horizontal



802.11n40, Lowest Channel at Vertical



9 FCC§15.247(a)(2) & RSS-210 §A8.2– 6 dB & 99% Bandwidth

9.1 Applicable Standard

According to FCC §15.247(a)(2) and IC RSS-210 A8.2 (a), 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

9.2 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.
4. Repeat above procedures until all frequencies measured were complete.

9.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date
Agilent	Spectrum Analyzer	E4440A	MY44303352	2011-05-10

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

9.4 Test Environmental Conditions

Temperature:	21~24 °C
Relative Humidity:	38~45 %
ATM Pressure:	101.2-102 kPa

The testing was performed by Victor Zhang on 11-05-2011 to 11-07-2011 in RF site.

2400-2483.5 MHz

802.11b mode High Power Setting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Limit (kHz)	Results
Chain 0					
Low	2412	10.243	15.2890	> 500	Compliant
Middle	2437	10.261	15.2652	> 500	Compliant
High	2462	10.240	15.3383	> 500	Compliant
Chain 1					
Low	2412	10.265	15.9696	> 500	Compliant
Middle	2437	10.239	15.2494	> 500	Compliant
High	2462	10.229	15.5562	> 500	Compliant
Chain 2					
Low	2412	10.244	15.3710	> 500	Compliant
Middle	2437	10.255	15.4275	> 500	Compliant
High	2462	10.235	15.2787	> 500	Compliant

802.11b mode Low Power Setting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Limit (kHz)	Results
Chain 0					
Low	2412	10.162	14.2999	> 500	Compliant
Middle	2437	10.187	14.3358	> 500	Compliant
High	2462	10.196	14.3048	> 500	Compliant
Chain 1					
Low	2412	10.223	14.8052	> 500	Compliant
Middle	2437	10.217	14.5722	> 500	Compliant
High	2462	10.207	14.5762	> 500	Compliant
Chain 2					
Low	2412	10.216	14.6055	> 500	Compliant
Middle	2437	10.193	14.5841	> 500	Compliant
High	2462	10.213	14.5029	> 500	Compliant

802.11g mode High Power Setting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Limit (kHz)	Results
Chain 0					
Low	2412	16.699	17.9526	> 500	Compliant
Middle	2437	16.698	18.0054	> 500	Compliant
High	2462	16.702	17.9373	> 500	Compliant
Chain 1					
Low	2412	16.707	18.3408	> 500	Compliant
Middle	2437	16.700	17.4059	> 500	Compliant
High	2462	16.717	17.2894	> 500	Compliant
Chain 2					
Low	2412	16.705	18.2291	> 500	Compliant
Middle	2437	16.696	18.2484	> 500	Compliant
High	2462	16.719	17.8310	> 500	Compliant

802.11g mode Low Power Setting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Limit (kHz)	Results
Chain 0					
Low	2412	16.698	16.7049	> 500	Compliant
Middle	2437	16.692	16.7057	> 500	Compliant
High	2462	16.706	16.6995	> 500	Compliant
Chain 1					
Low	2412	16.709	16.8392	> 500	Compliant
Middle	2437	16.707	16.6978	> 500	Compliant
High	2462	16.715	16.7146	> 500	Compliant
Chain 2					
Low	2412	16.696	16.7132	> 500	Compliant
Middle	2437	16.708	16.7090	> 500	Compliant
High	2462	16.710	16.7029	> 500	Compliant

802.11n 20 mode High Power Setting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Limit (kHz)	Results
Chain 0					
Low	2412	17.930	18.3581	> 500	Compliant
Middle	2437	17.927	18.1298	> 500	Compliant
High	2462	17.931	18.3919	> 500	Compliant
Chain 1					
Low	2412	17.936	18.6953	> 500	Compliant
Middle	2437	17.917	18.0719	> 500	Compliant
High	2462	17.917	18.1045	> 500	Compliant
Chain 2					
Low	2412	17.934	18.2092	> 500	Compliant
Middle	2437	17.925	18.2433	> 500	Compliant
High	2462	17.931	18.1320	> 500	Compliant

802.11n 20 mode Low Power Setting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Limit (kHz)	Results
Chain 0					
Low	2412	17.922	17.8306	> 500	Compliant
Middle	2437	17.923	17.8270	> 500	Compliant
High	2462	17.919	17.8299	> 500	Compliant
Chain 1					
Low	2412	17.921	17.8618	> 500	Compliant
Middle	2437	17.922	17.8154	> 500	Compliant
High	2462	17.924	17.8201	> 500	Compliant
Chain 2					
Low	2412	17.914	17.8352	> 500	Compliant
Middle	2437	17.927	17.8390	> 500	Compliant
High	2462	17.920	17.8147	> 500	Compliant

802.11n 40 mode High Power Setting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Limit (kHz)	Results
Chain 0					
Low	2422	36.711	36.7087	> 500	Compliant
Middle	2437	36.708	36.7028	> 500	Compliant
High	2452	36.705	36.6704	> 500	Compliant
Chain 1					
Low	2422	36.733	36.7863	> 500	Compliant
Middle	2437	36.725	36.5812	> 500	Compliant
High	2452	36.730	36.5394	> 500	Compliant
Chain 2					
Low	2422	36.717	36.7164	> 500	Compliant
Middle	2437	36.732	36.6147	> 500	Compliant
High	2452	36.718	36.5445	> 500	Compliant

802.11n 40 mode Low Power Setting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Limit (kHz)	Results
Chain 0					
Low	2422	36.719	36.4028	> 500	Compliant
Middle	2437	36.702	36.3940	> 500	Compliant
High	2452	36.716	36.3931	> 500	Compliant
Chain 1					
Low	2422	36.718	36.3991	> 500	Compliant
Middle	2437	36.725	36.3844	> 500	Compliant
High	2452	36.730	36.3675	> 500	Compliant
Chain 2					
Low	2422	36.734	36.4060	> 500	Compliant
Middle	2437	36.709	36.4015	> 500	Compliant
High	2452	36.723	36.3690	> 500	Compliant

5725-5845 MHz

802.11a mode High Power Setting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Limit (kHz)	Results
Chain 0					
Low	5745	16.713	18.1437	> 500	Compliant
Middle	5785	16.712	18.2263	> 500	Compliant
High	5825	16.716	17.7883	> 500	Compliant
Chain 1					
Low	5745	16.722	18.7336	> 500	Compliant
Middle	5785	16.717	17.5589	> 500	Compliant
High	5825	16.713	17.8019	> 500	Compliant
Low	5745	16.719	17.7322	> 500	Compliant
Middle	5785	16.718	18.0939	> 500	Compliant
High	5825	16.706	18.2659	> 500	Compliant

802.11a mode Low Power Setting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Limit (kHz)	Results
Chain 0					
Low	5745	16.713	16.9479	> 500	Compliant
Middle	5785	16.702	16.7906	> 500	Compliant
High	5825	16.708	16.8072	> 500	Compliant
Chain 1					
Low	5745	16.724	16.6719	> 500	Compliant
Middle	5785	16.711	16.6663	> 500	Compliant
High	5825	16.726	16.7438	> 500	Compliant
Chain 2					
Low	5745	16.717	16.7511	> 500	Compliant
Middle	5785	16.699	16.6722	> 500	Compliant
High	5825	16.714	16.6891	> 500	Compliant

802.11n 20 mode High Power Setting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Limit (kHz)	Results
Chain 0					
Low	5745	17.897	19.8251	> 500	Compliant
Middle	5785	17.921	19.3140	> 500	Compliant
High	5825	17.944	19.2502	> 500	Compliant
Chain 1					
Low	5745	17.927	17.1628	> 500	Compliant
Middle	5785	17.940	18.5349	> 500	Compliant
High	5825	17.953	19.0111	> 500	Compliant
Low	5745	17.935	19.1275	> 500	Compliant
Middle	5785	17.904	19.5680	> 500	Compliant
High	5825	17.926	19.9782	> 500	Compliant

802.11n 20 mode Low Power Setting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Limit (kHz)	Results
Chain 0					
Low	5745	17.890	185108	> 500	Compliant
Middle	5785	17.921	18.1466	> 500	Compliant
High	5825	17.936	17.9541	> 500	Compliant
Chain 1					
Low	5745	17.923	17.8833	> 500	Compliant
Middle	5785	17.944	17.8994	> 500	Compliant
High	5825	17.940	17.8933	> 500	Compliant
Chain 2					
Low	5745	17.913	17.8735	> 500	Compliant
Middle	5785	17.888	17.8917	> 500	Compliant
High	5825	17.925	17.8646	> 500	Compliant

802.11n 40 mode High Power Setting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Limit (kHz)	Results
Chain 0					
Low	5755	36.654	36.6958	> 500	Compliant
High	5795	36.673	38.4444	> 500	Compliant
Chain 1					
Low	5755	36.721	36.5836	> 500	Compliant
High	5795	36.708	36.6770	> 500	Compliant
Chain 2					
Low	5755	36.659	36.7527	> 500	Compliant
High	5795	36.677	38.1834	> 500	Compliant

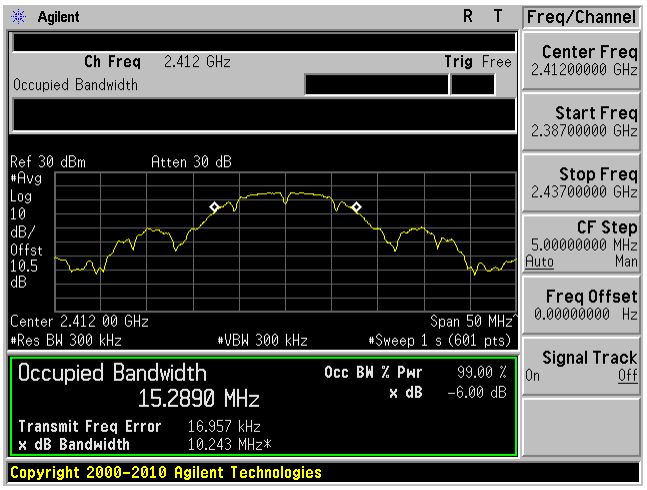
802.11n 40 mode Low Power Setting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Limit (kHz)	Results
Chain 0					
Low	5755	36.652	36.4662	> 500	Compliant
High	5795	36.643	36.6415	> 500	Compliant
Chain 1					
Low	5755	36.719	36.3696	> 500	Compliant
High	5795	36.665	36.4566	> 500	Compliant
Chain 2					
Low	5755	36.656	36.4394	> 500	Compliant
High	5795	36.671	36.5162	> 500	Compliant

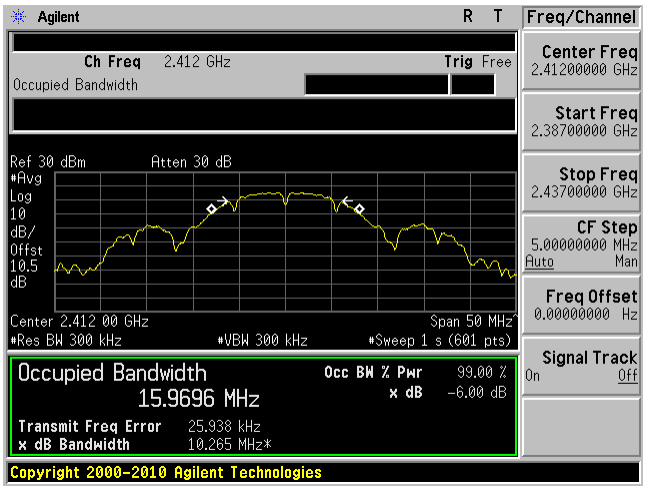
Please refer to the following plots.

2400 -2483.5 MHz

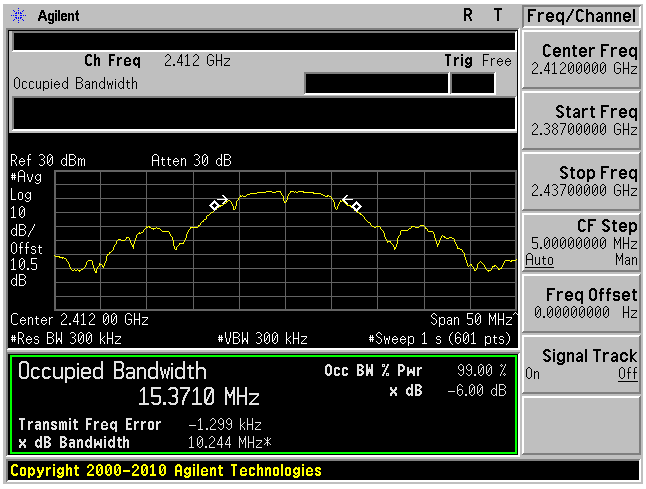
2412 MHz, b mode, High power, Chain 0



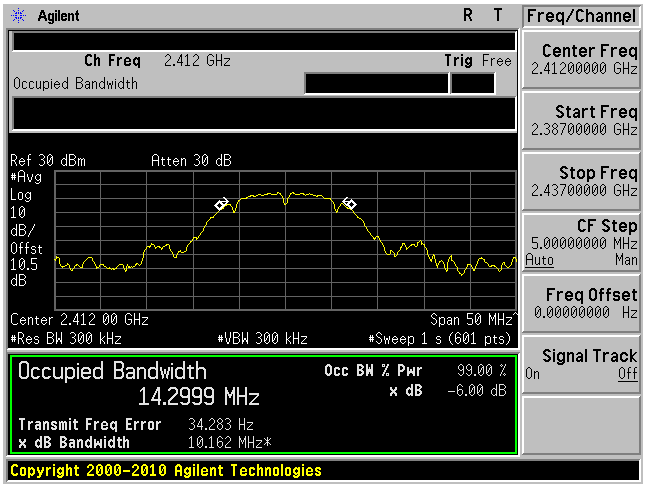
2412 MHz, b mode, High power, Chain 1



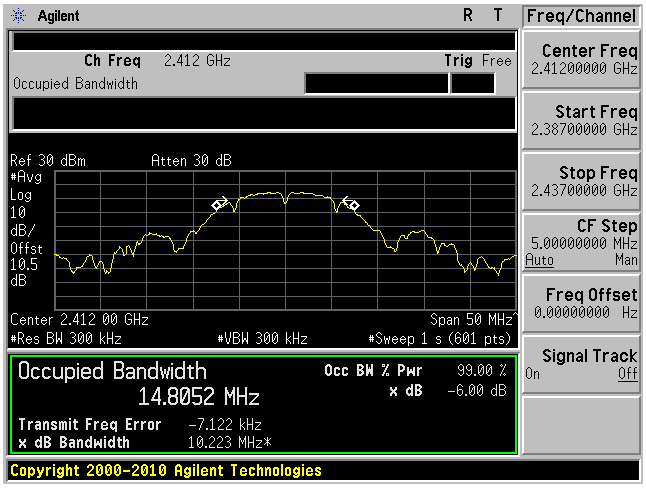
2412 MHz, b mode, High power, Chain 2



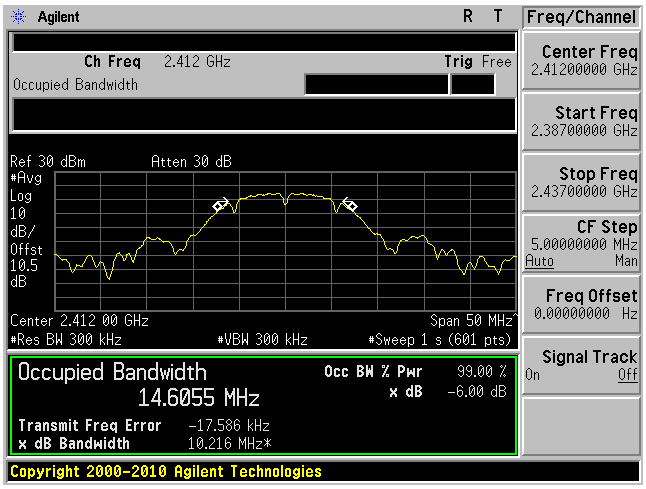
2412 MHz, b mode, Low power, Chain 0



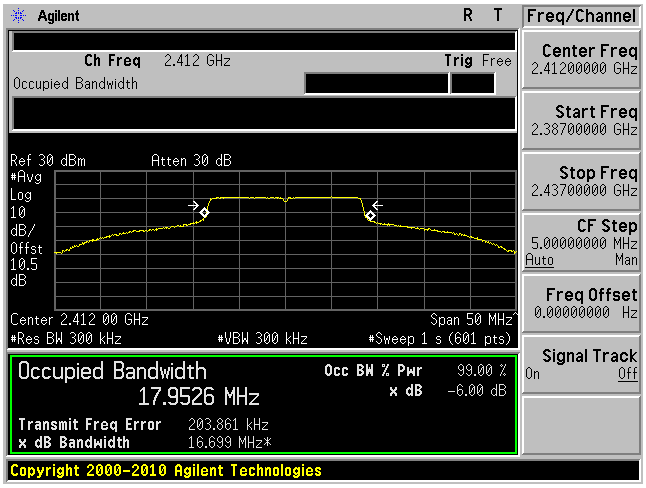
2412 MHz, b mode, Low power, Chain 1



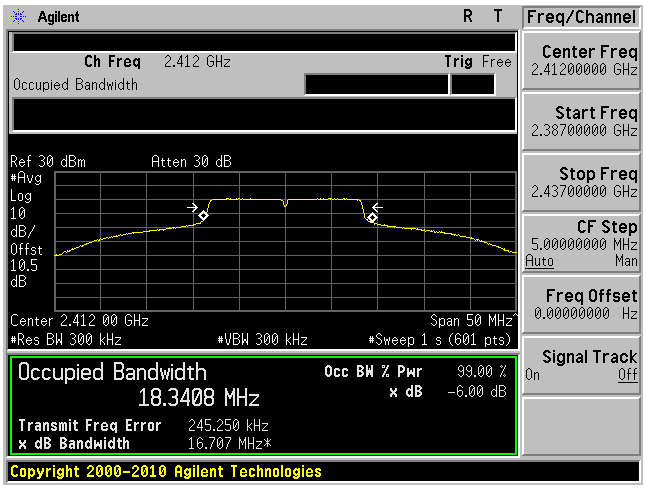
2412 MHz, b mode, Low power, Chain 2



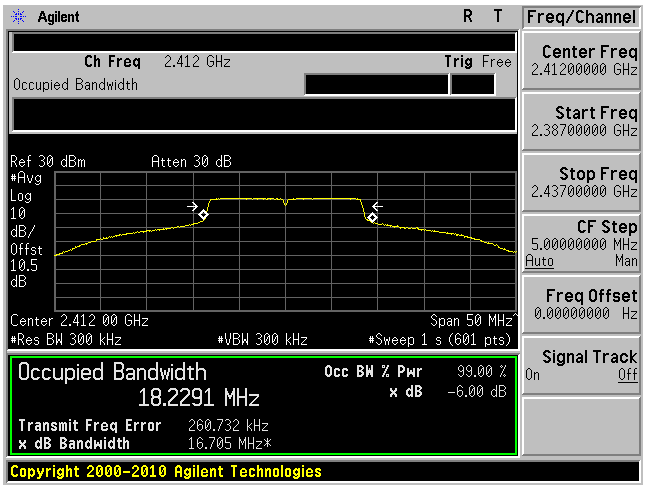
2412 MHz, g mode, High power, Chain 0



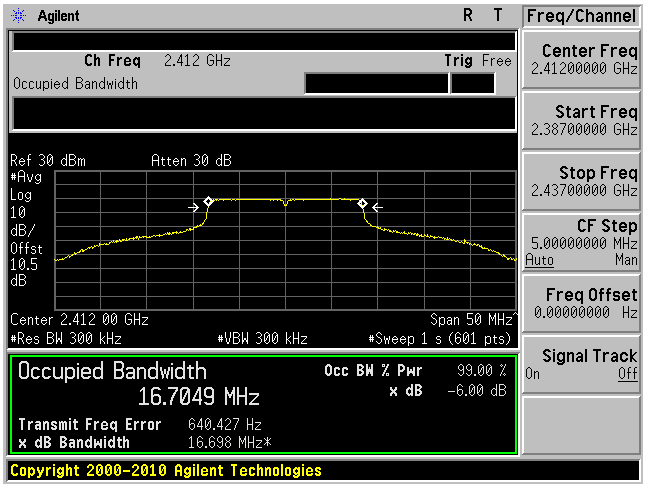
2412 MHz, g mode, High power, Chain 1



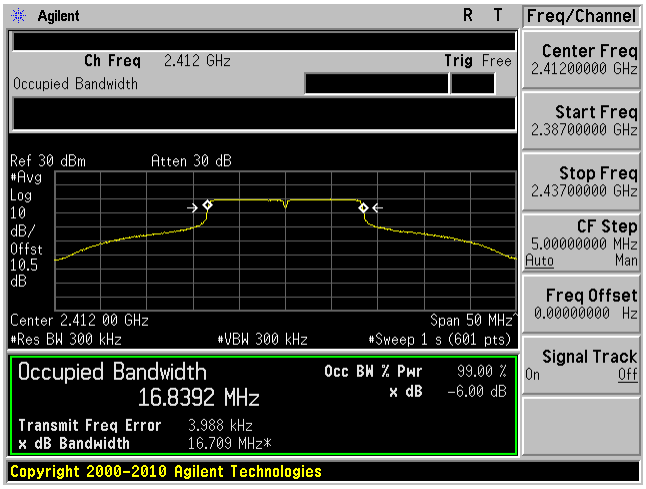
2412 MHz, g mode, High power, Chain 2



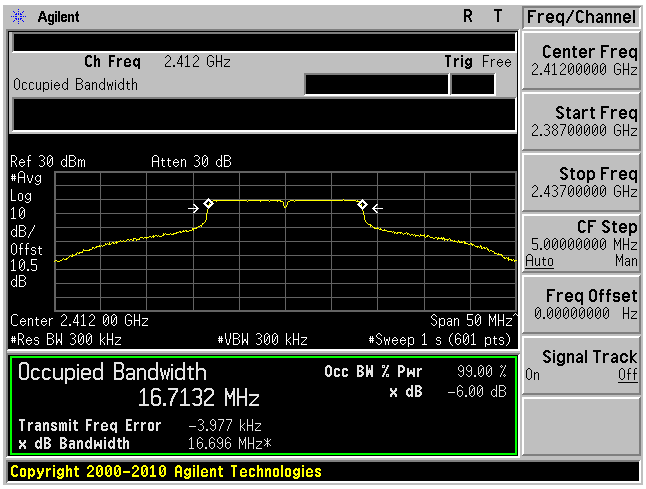
2412 MHz, g mode, Low power, Chain 0



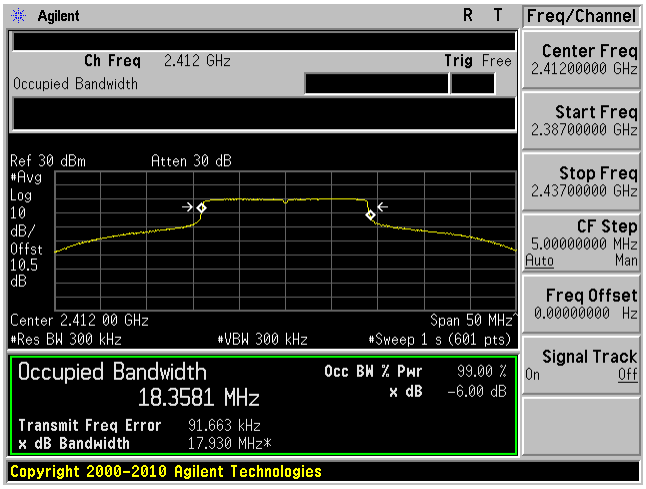
2412 MHz, g mode, Low power, Chain 1



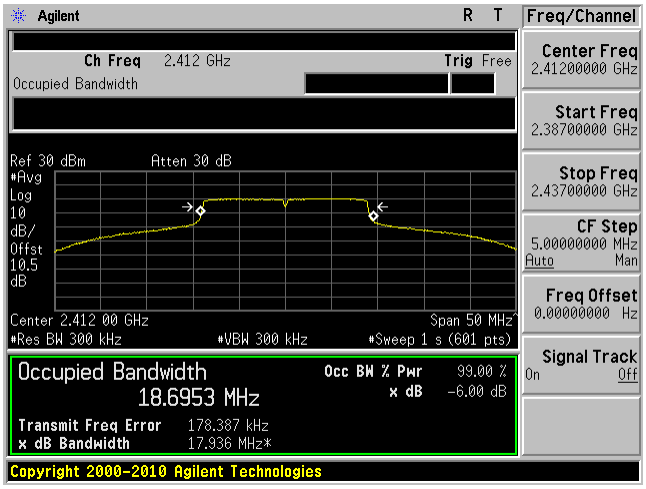
2412 MHz, g mode, Low power, Chain 2



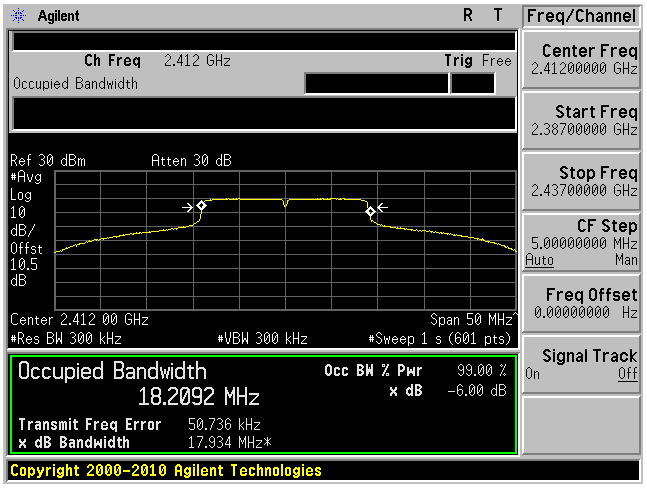
2412 MHz, n20 mode, high power, Chain 0



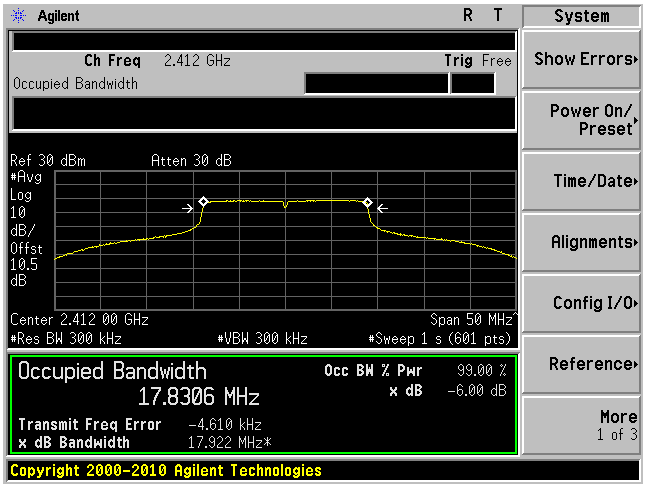
2412 MHz, n20 mode, high power, Chain 1



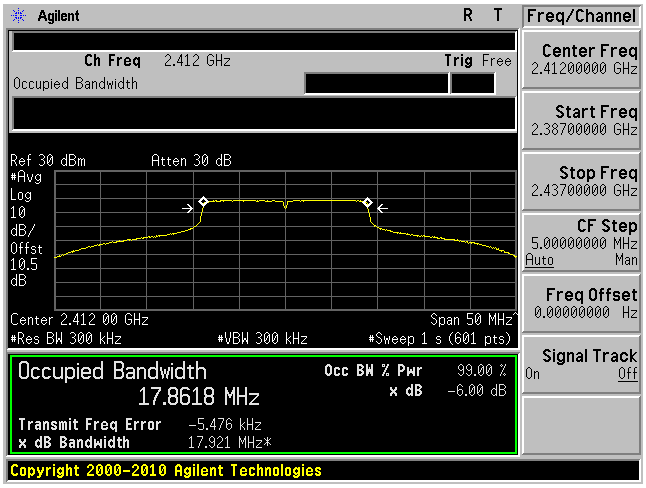
2412 MHz, n20 mode, high power, Chain 2



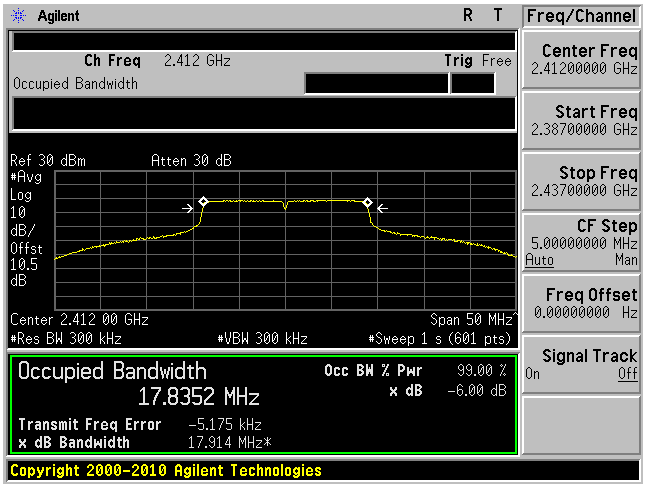
2412 MHz, n20 mode, Low power, Chain 0



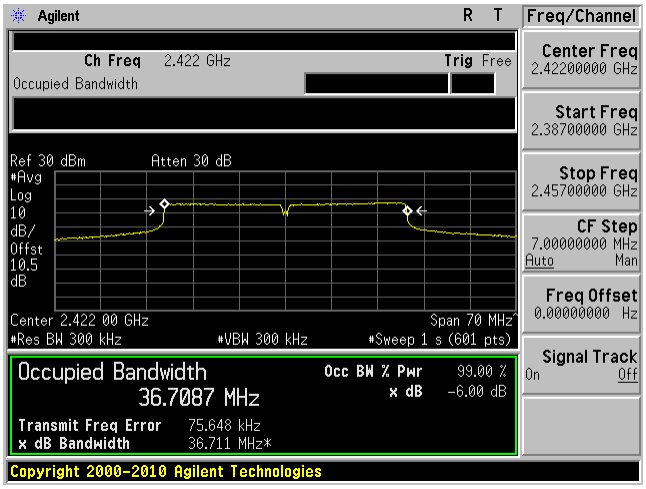
2412 MHz, n20 mode, Low power, Chain 1



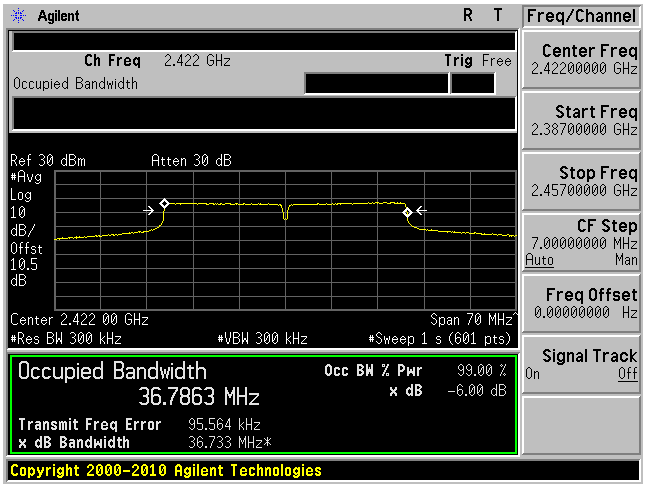
2412 MHz, n20 mode, Low power, Chain 2



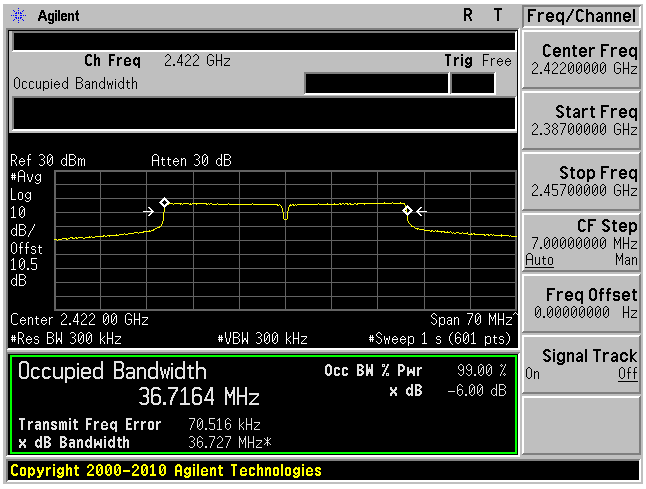
2422 MHz, n40 mode, High power, Chain 0



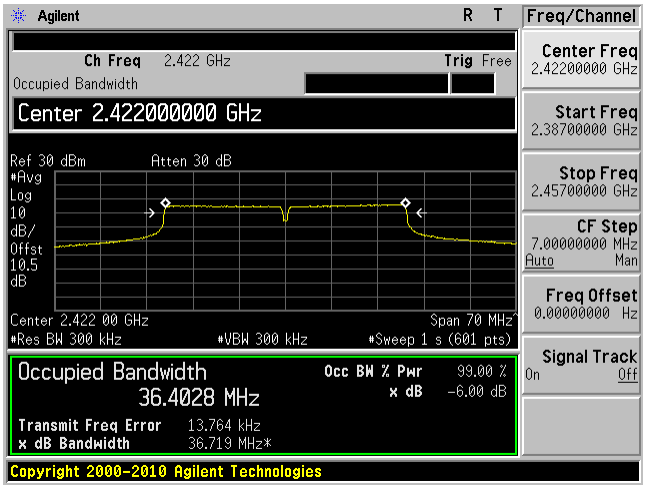
2422 MHz, n40 mode, High power, Chain 1



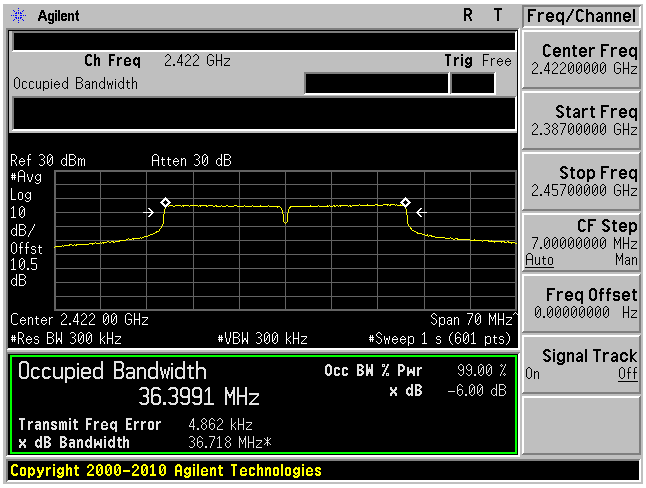
2422 MHz, n40 mode, High power, Chain 2



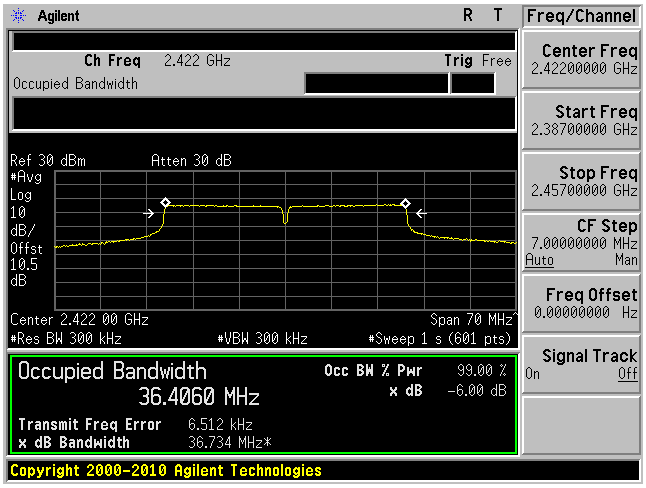
2422 MHz, n40 mode, Low power, Chain 0



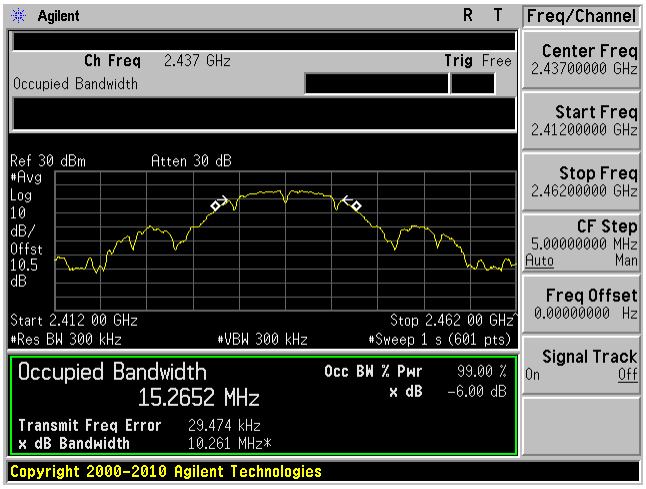
2422 MHz, n40 mode, Low power, Chain 1



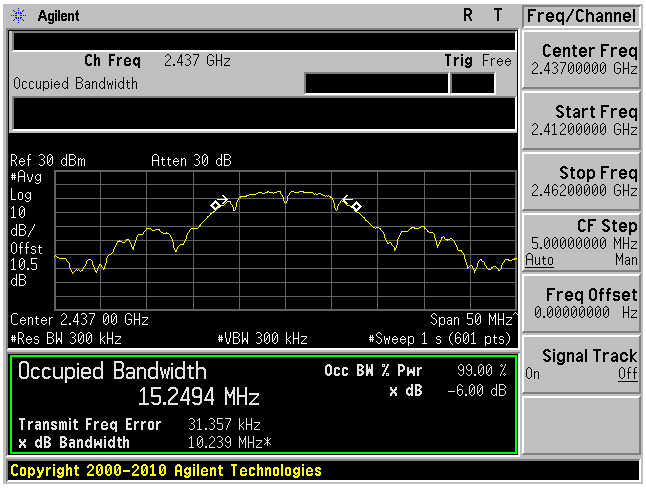
2422 MHz, n40 mode, Low power, Chain 2



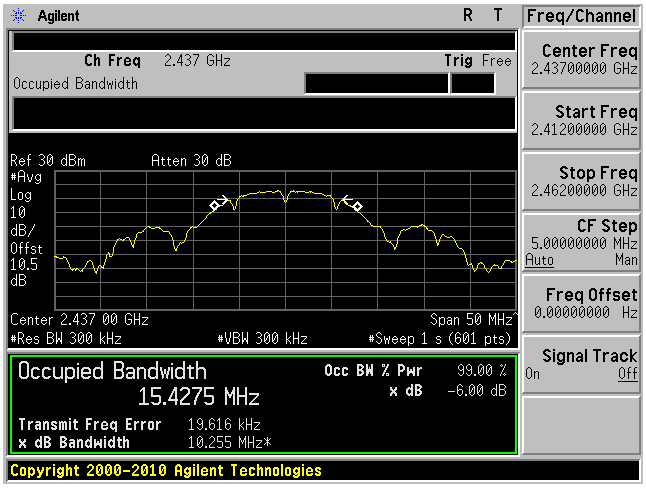
2437 MHz, b mode, High power, Chain 0



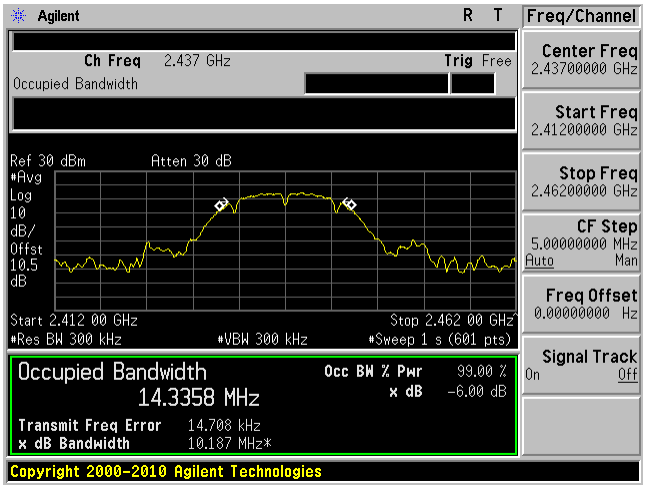
2437 MHz, b mode, High power, Chain 1



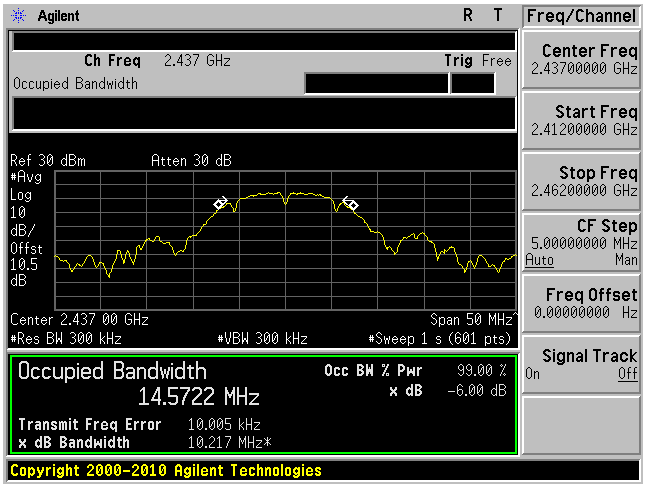
2437 MHz, b mode, High power, Chain 2



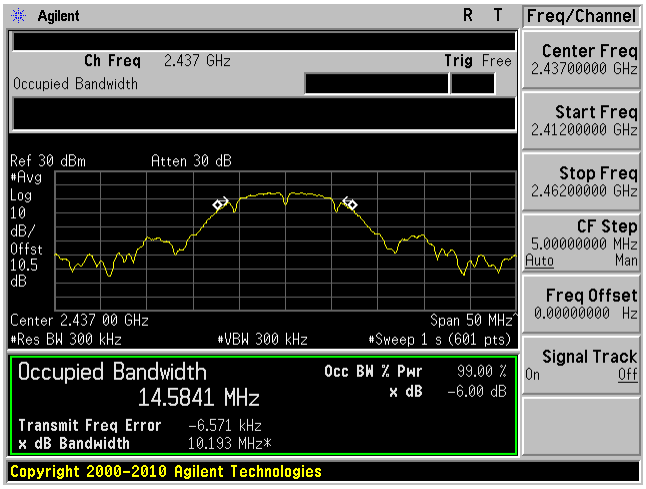
2437 MHz, b mode, Low power, Chain 0



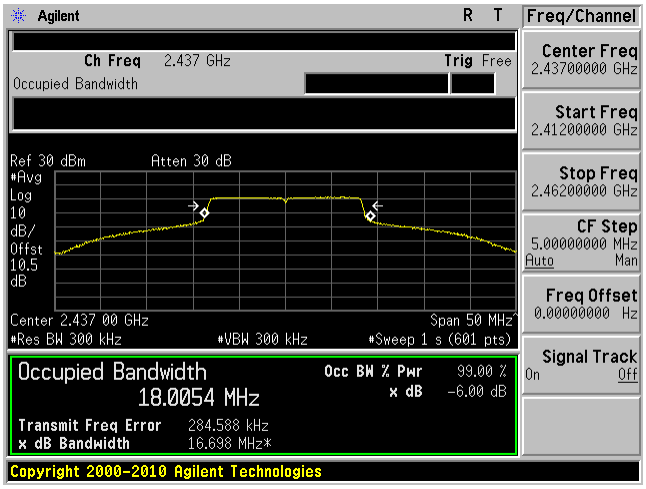
2437 MHz, b mode, Low power, Chain 1



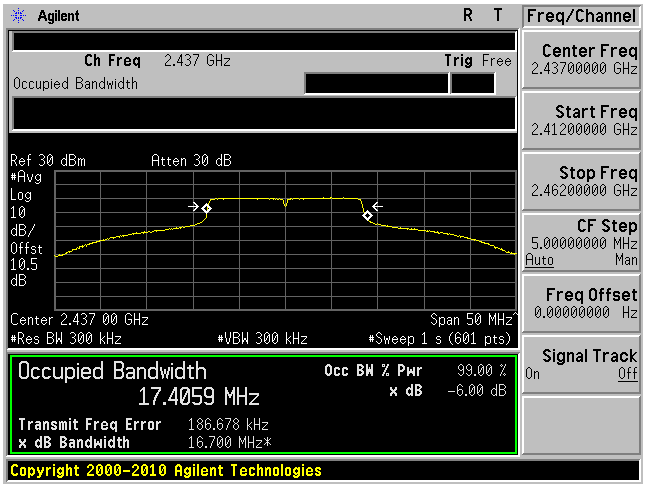
2437 MHz, b mode, Low power, Chain 2



2437 MHz, g mode, High power, Chain 0



2437 MHz, g mode, High power, Chain 1



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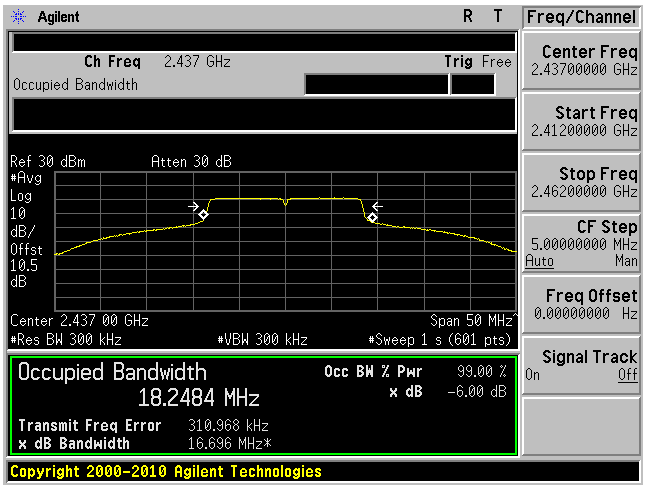
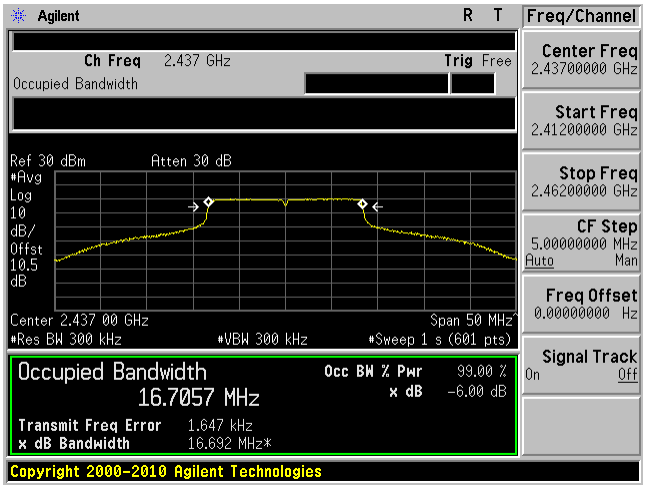
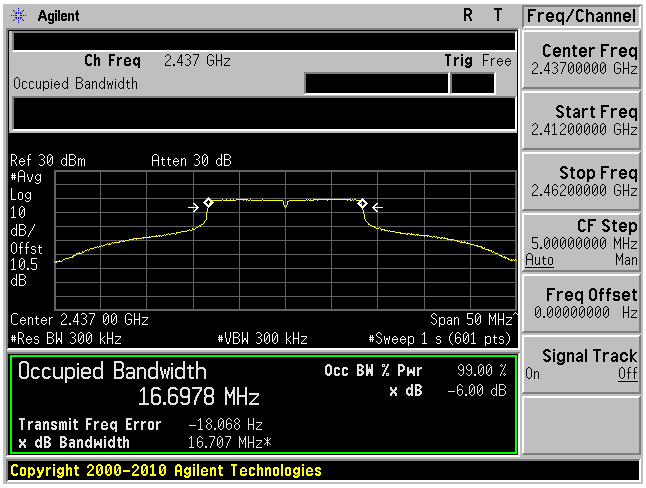


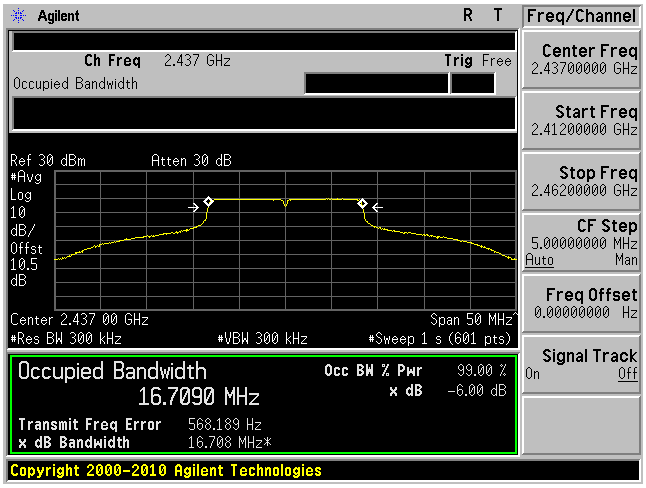
2437 MHz, g mode, Low power, Chain 0



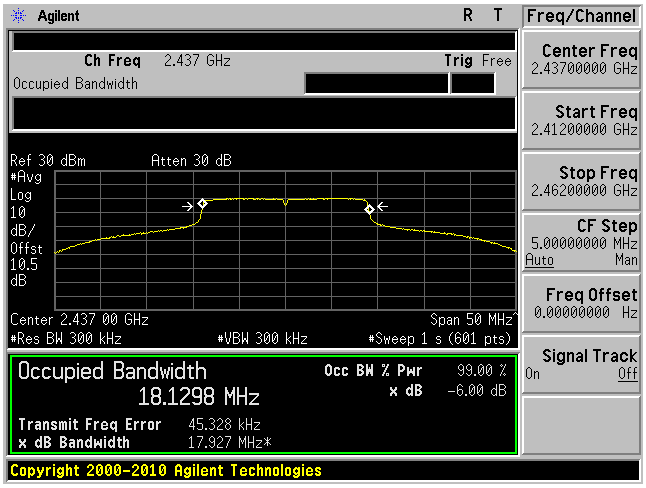
2437 MHz, g mode, Low power, Chain 1



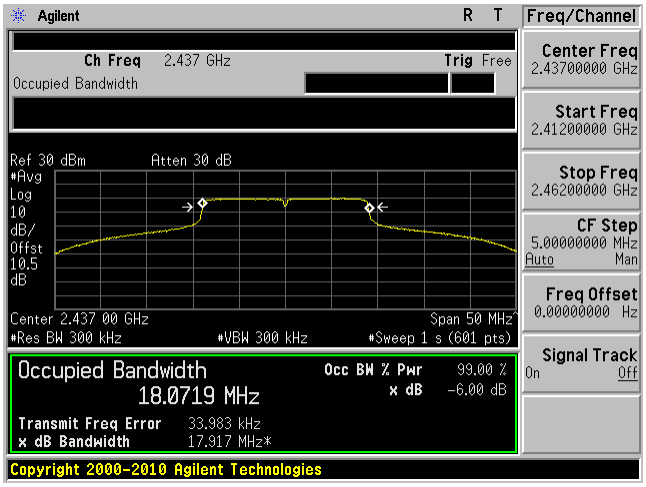
2437 MHz, g mode, Low power, Chain 2



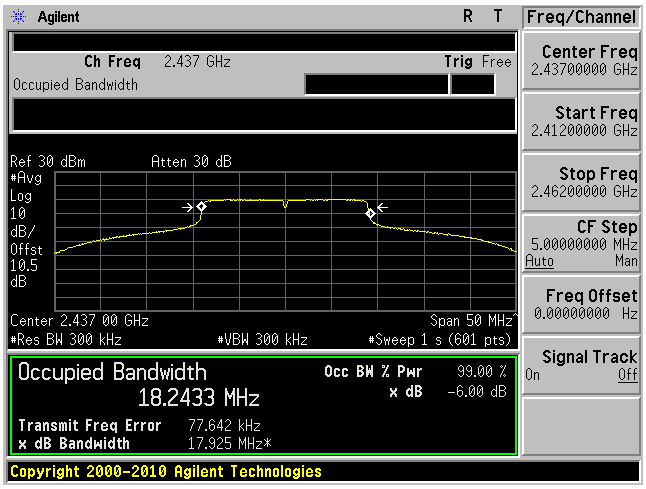
2437 MHz, n20 mode, High power, Chain 0



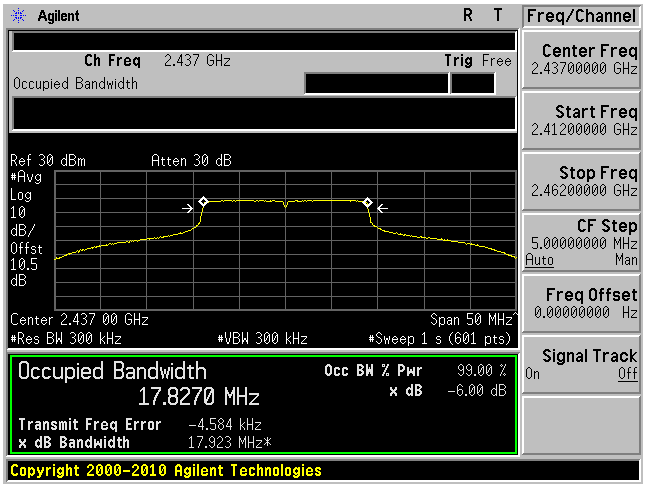
2437 MHz, n20 mode, High power, Chain 1



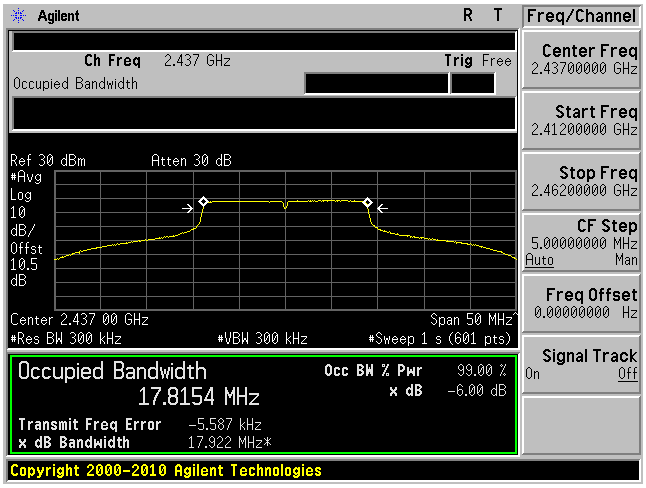
2437 MHz, n20 mode, High power, Chain 2



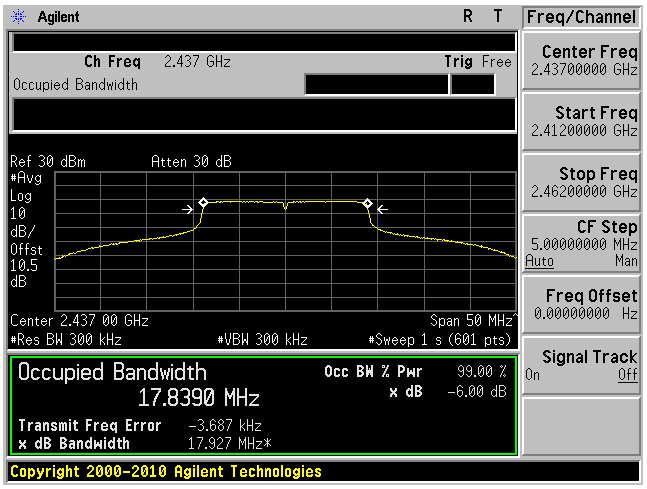
2437 MHz, n20 mode, Low power, Chain 0



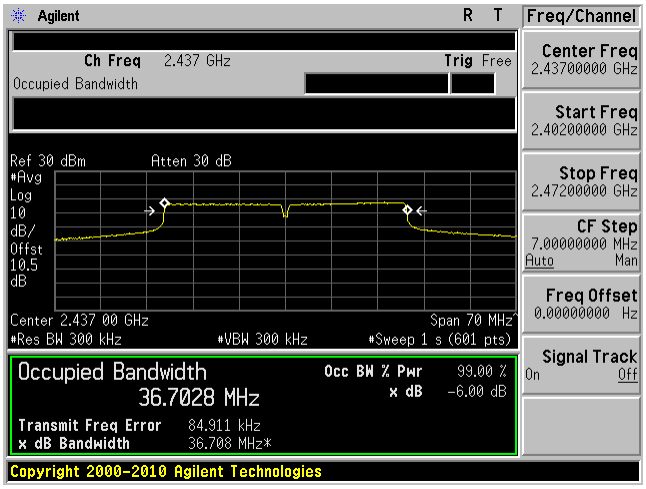
2437 MHz, n20 mode, Low power, Chain 1



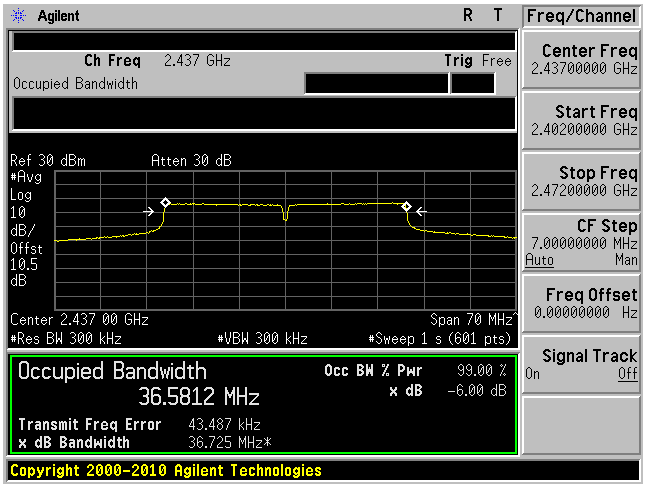
2437 MHz, n20 mode, Low power, Chain 2



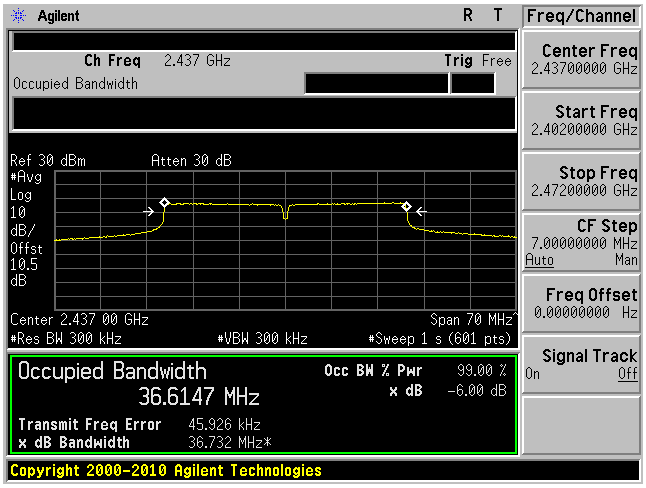
2437 MHz, n40 mode, High power, Chain 0



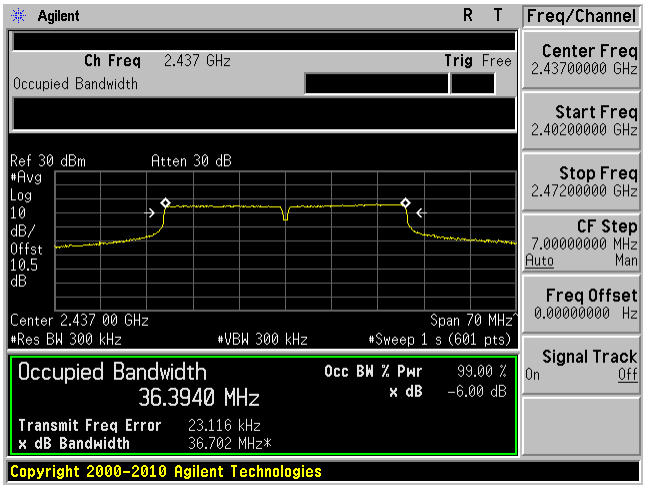
2437 MHz, n40 mode, High power, Chain 1



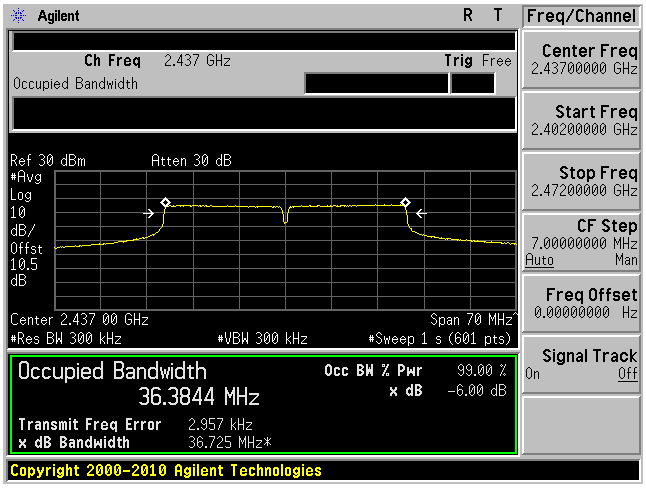
2437 MHz, n40 mode, High power, Chain 2



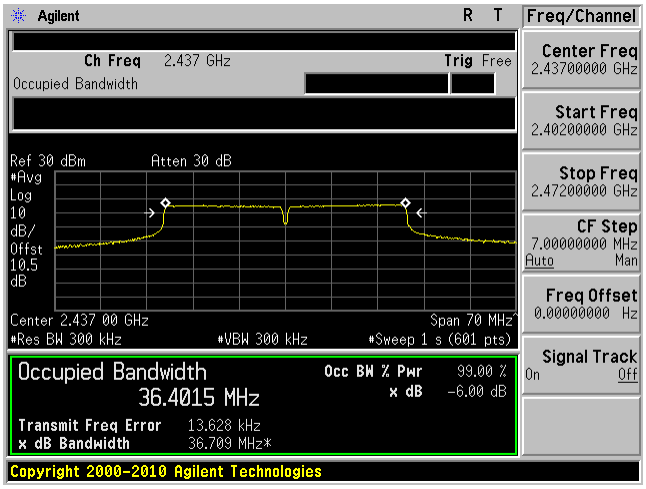
2437 MHz, n40 mode, Low power, Chain 0



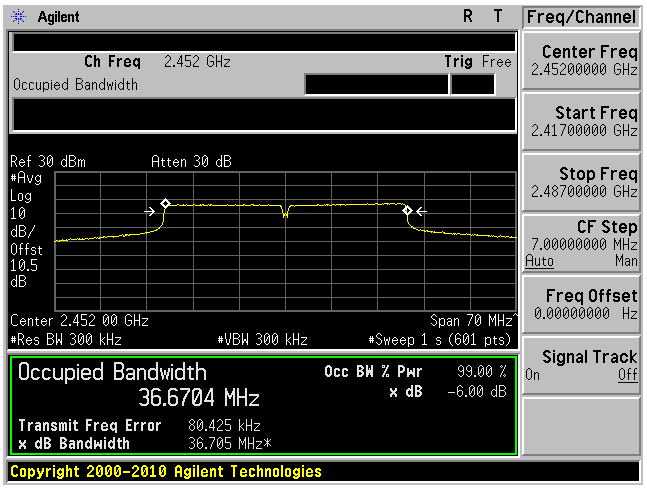
2437 MHz, n40 mode, Low power, Chain 1



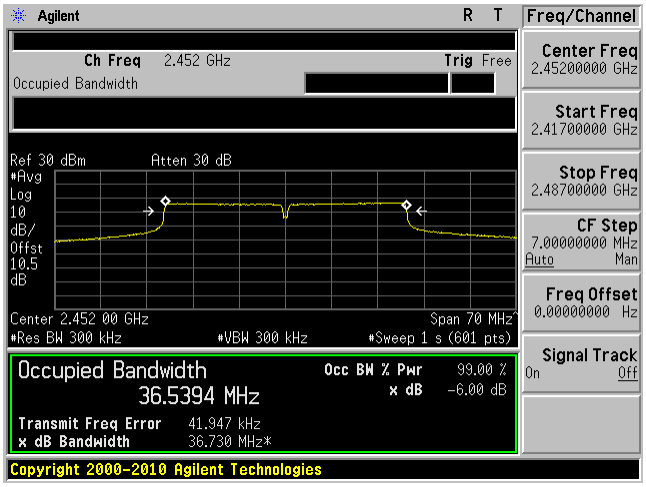
2437 MHz, n40 mode, Low power, Chain 2



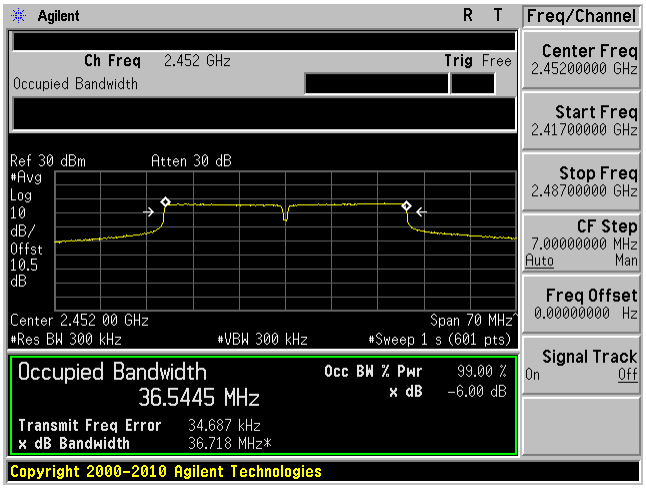
2452 MHz, n40 mode, High power, Chain 0



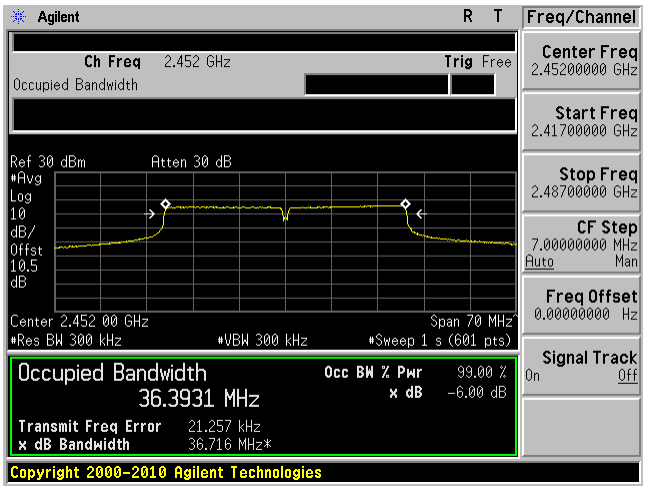
2452 MHz, n40 mode, High power, Chain 1



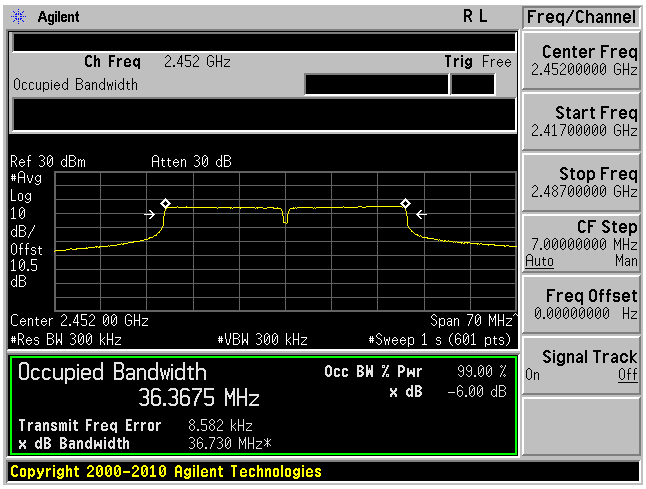
2452 MHz, n40 mode, High power, Chain 2



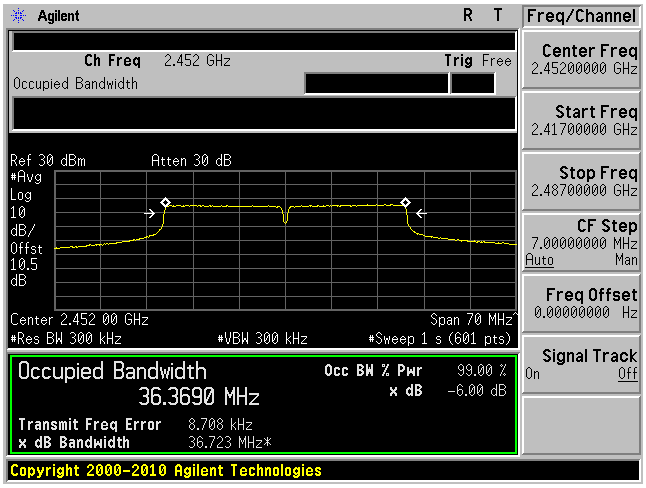
2452 MHz, n40 mode, Low power, Chain 0



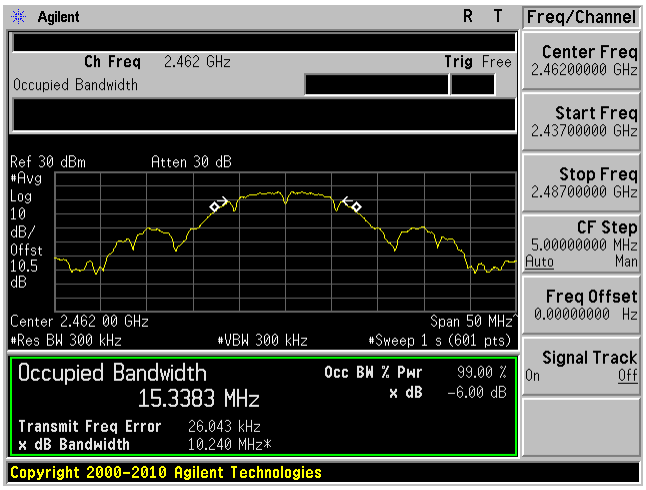
2452 MHz, n40 mode, Low power, Chain 1



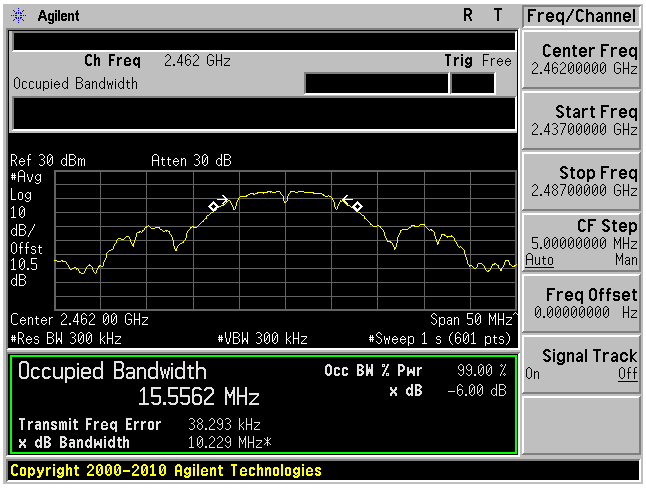
2452 MHz, n40 mode, Low power, Chain 2



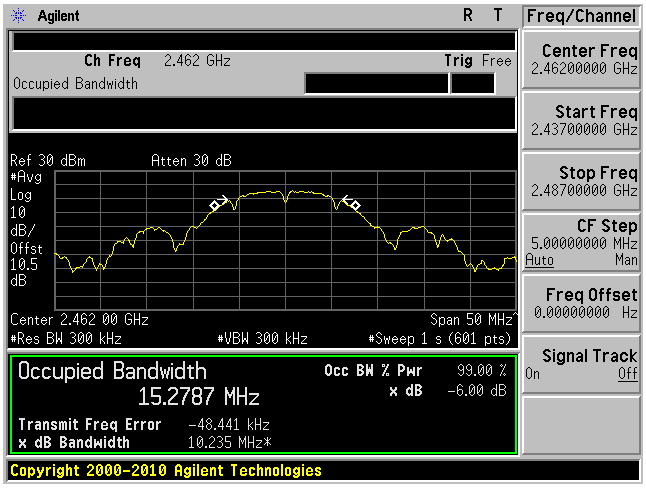
2462 MHz, b mode, High power, Chain 0



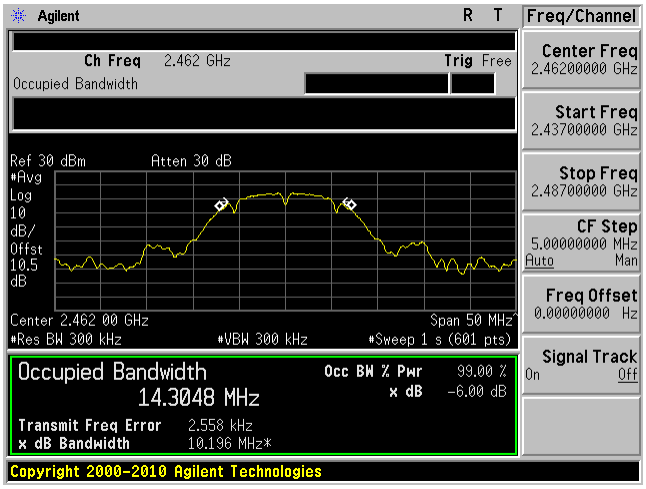
2462 MHz, b mode, High power, Chain 1



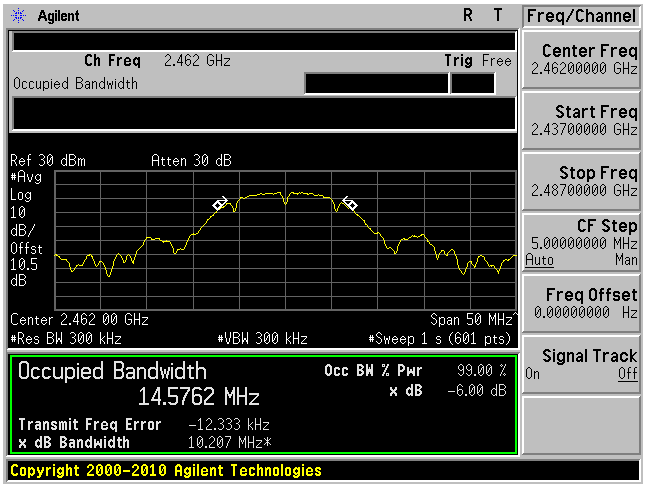
2462 MHz, b mode, High power, Chain 2



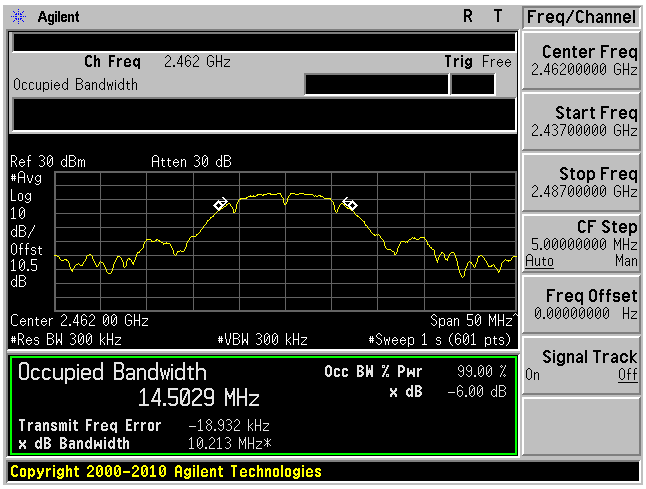
2462 MHz, b mode, Low power, Chain 0



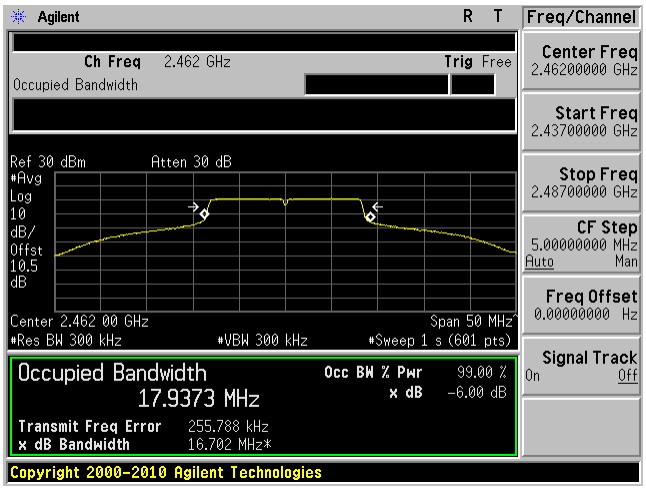
2462 MHz, b mode, Low power, Chain 1



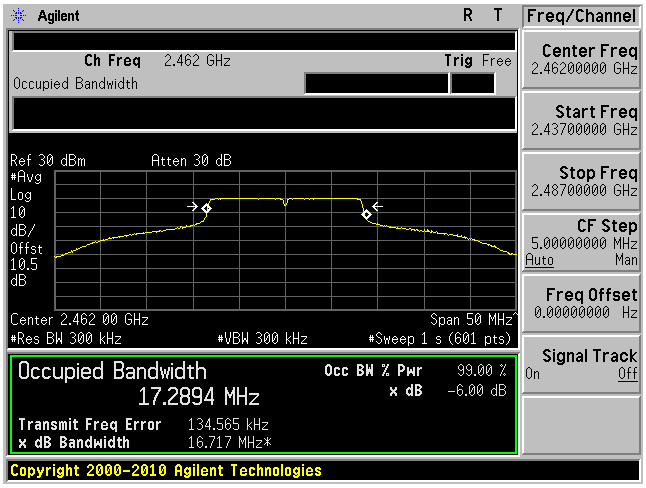
2462 MHz, b mode, Low power, Chain 2



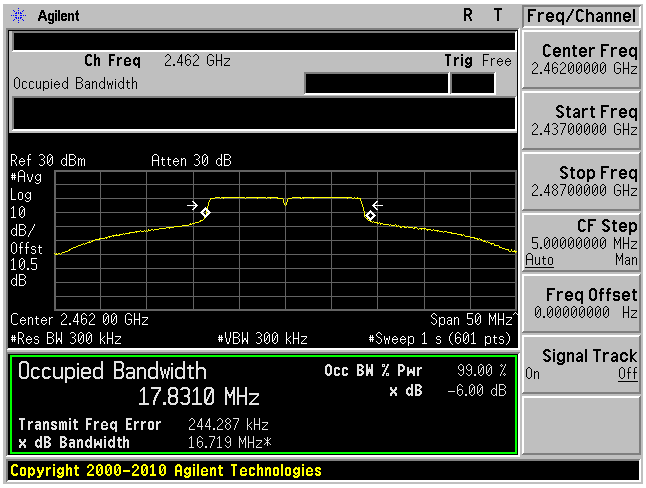
2462 MHz, g mode, High power, Chain 0



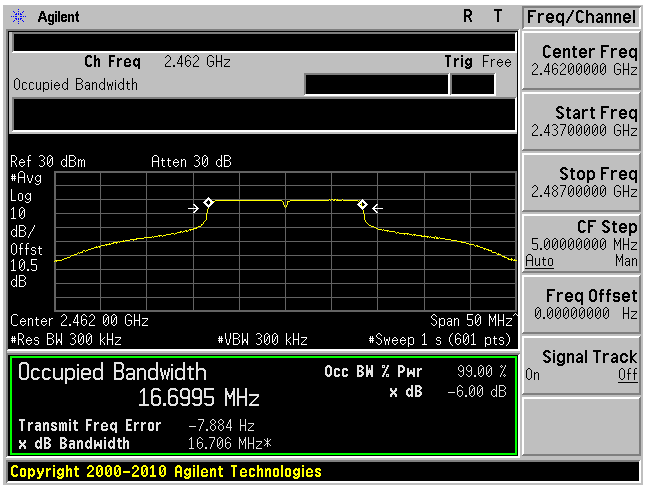
2462 MHz, g mode, High power, Chain 1



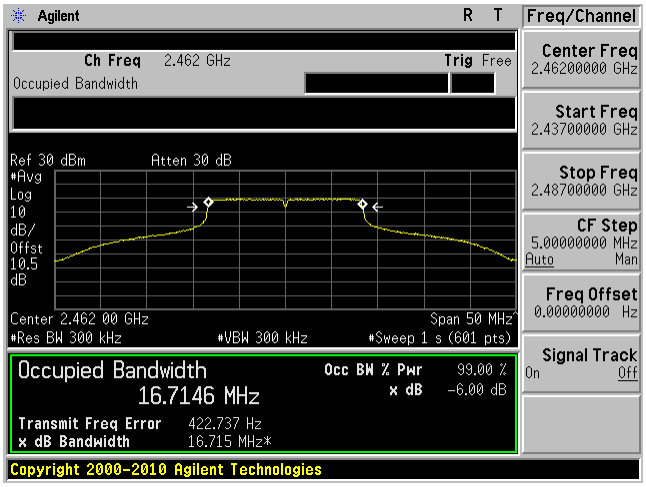
2462 MHz, g mode, High power, Chain 2



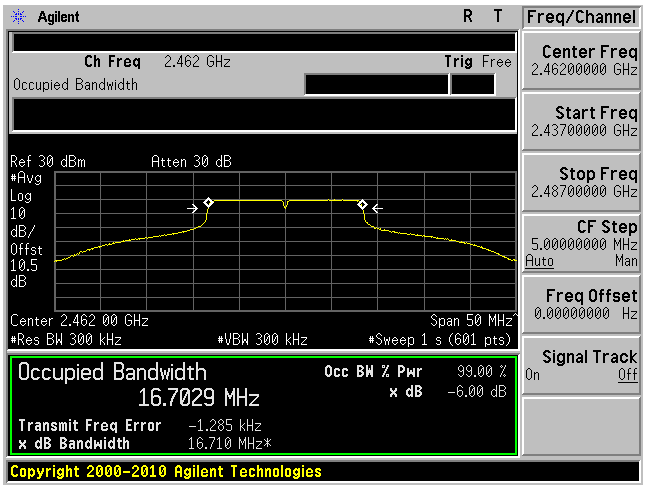
2462 MHz, g mode, Low power, Chain 0



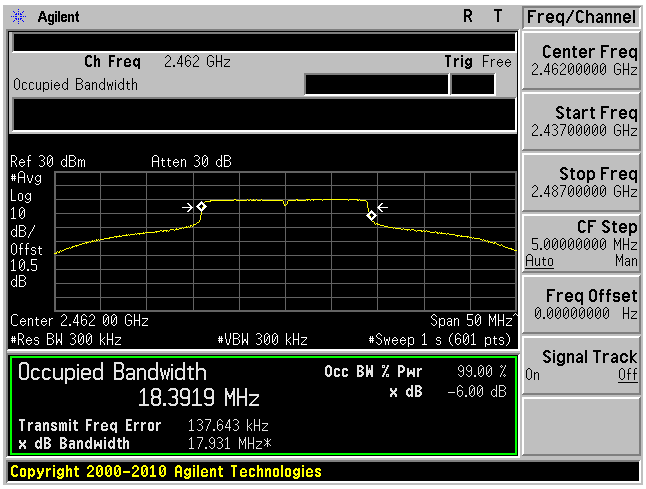
2462 MHz, g mode, Low power, Chain 1



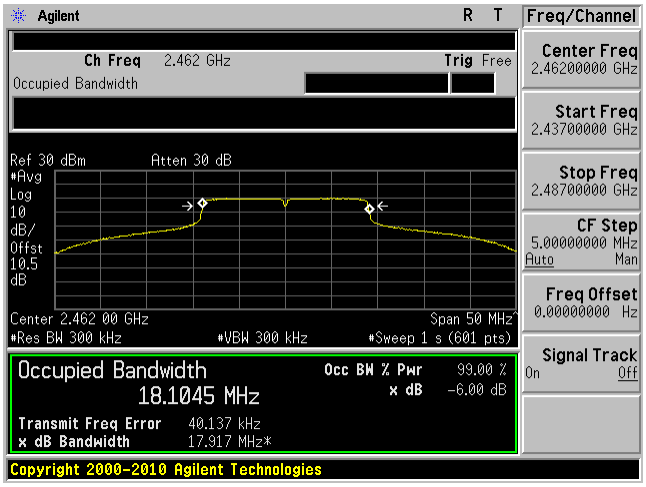
2462 MHz, g mode, Low power, Chain 2



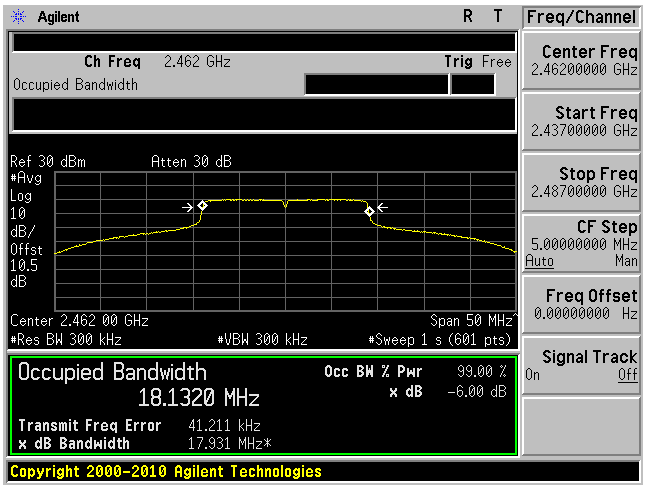
2462 MHz, n20 mode, High power, Chain 0



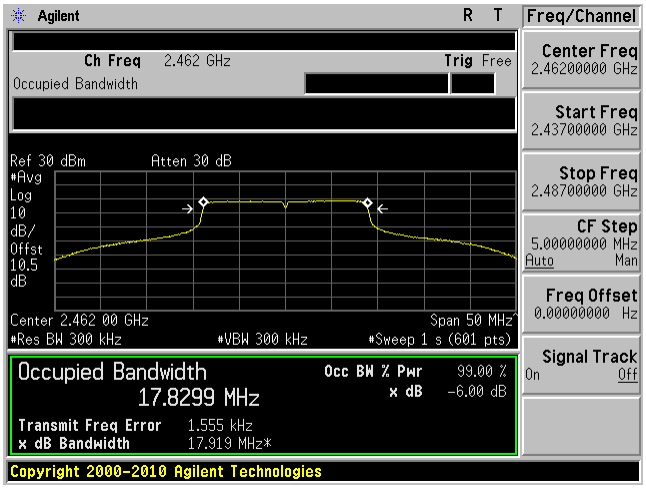
2462 MHz, n20 mode, High power, Chain 1



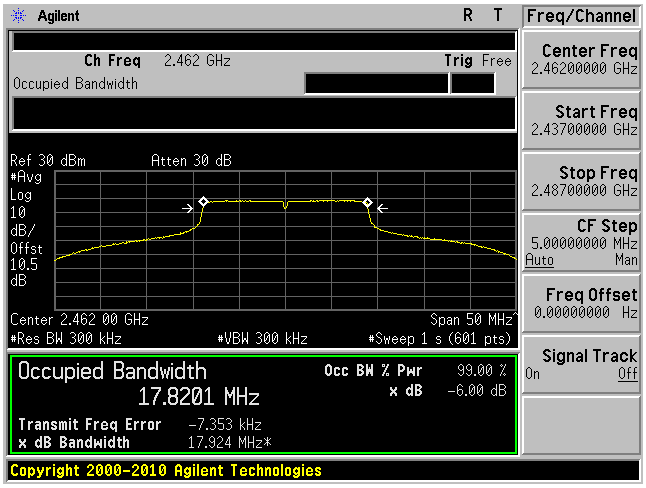
2462 MHz, n20 mode, High power, Chain 2



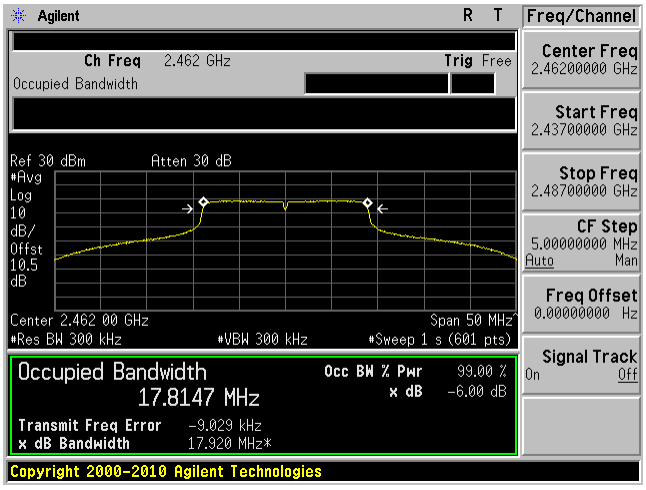
2462 MHz, n20 mode, Low power, Chain 0



2462 MHz, n20 mode, Low power, Chain 1

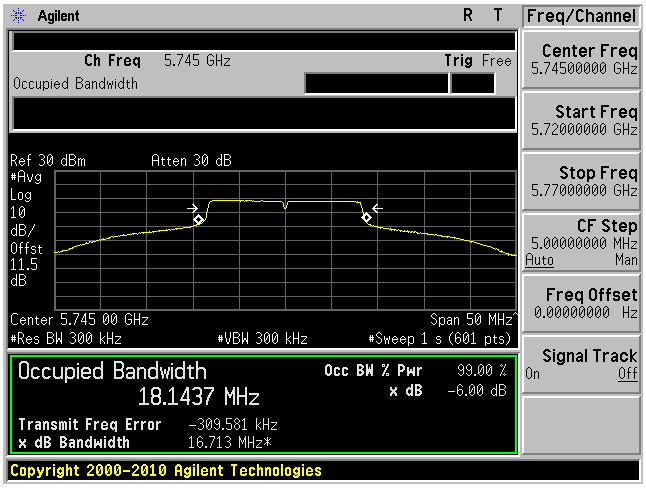


2462 MHz, n20 mode, Low power, Chain 2

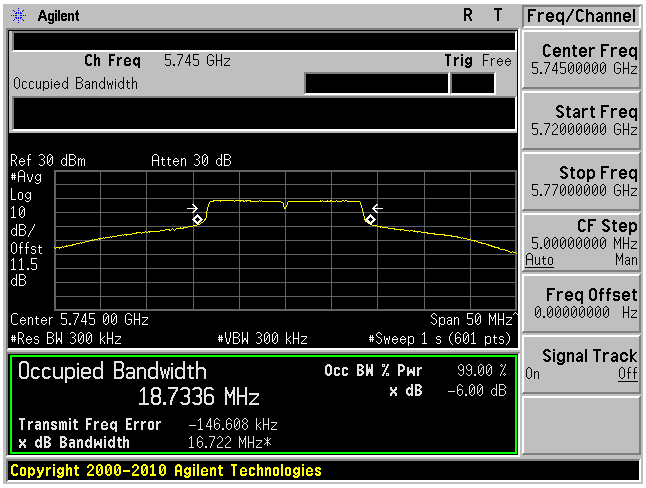


5725 MHz – 5845 MHz

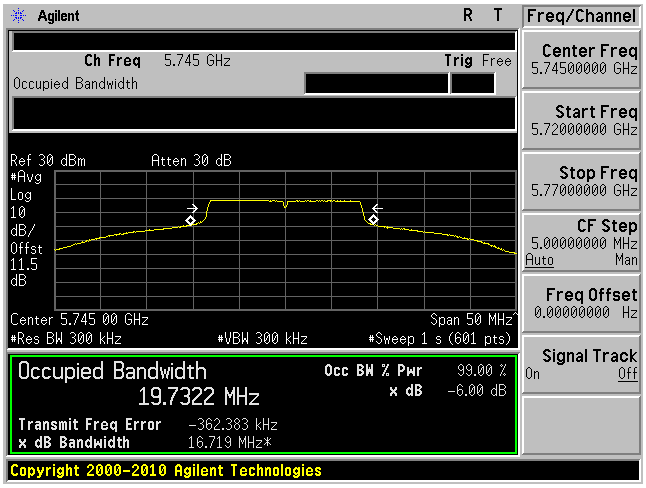
5745 MHz, a mode, High power, Chain 0



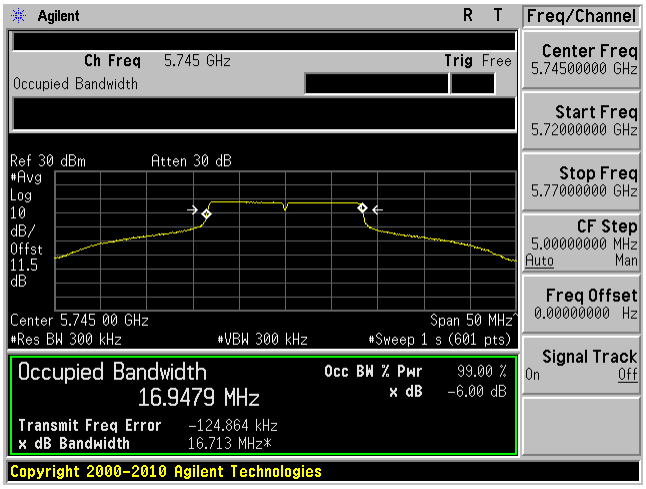
5745 MHz, a mode, High power, Chain 1



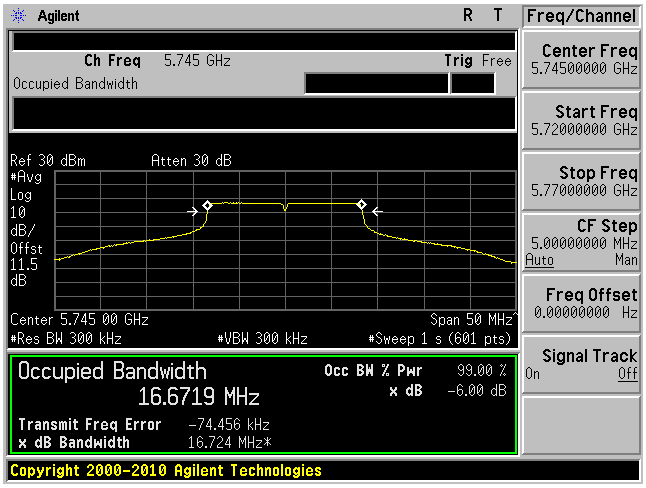
5745 MHz, a mode, High power, Chain 2



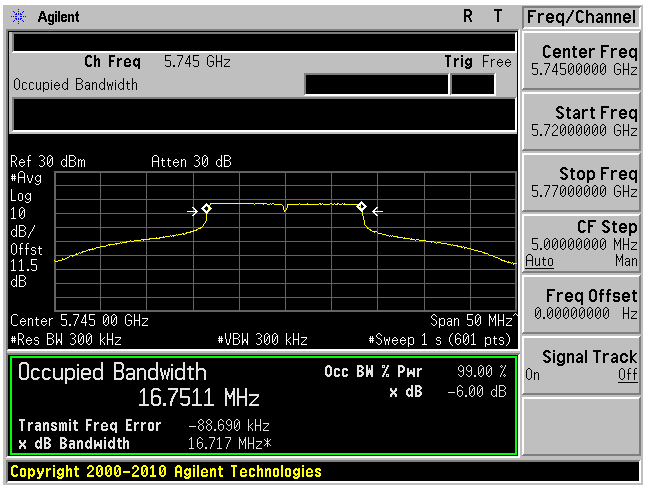
5745 MHz, a mode, Low power, Chain 0



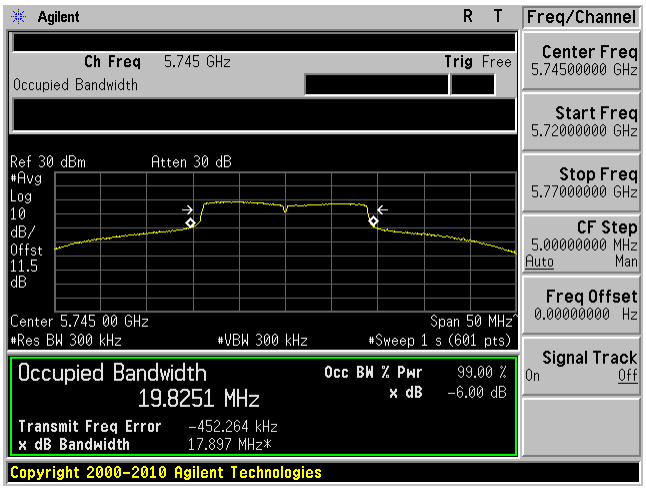
5745 MHz, a mode, Low power, Chain 1



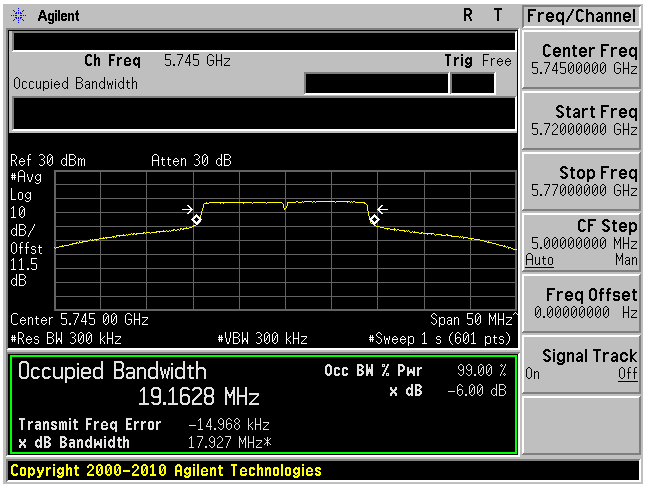
5745 MHz, a mode, Low power, Chain 2



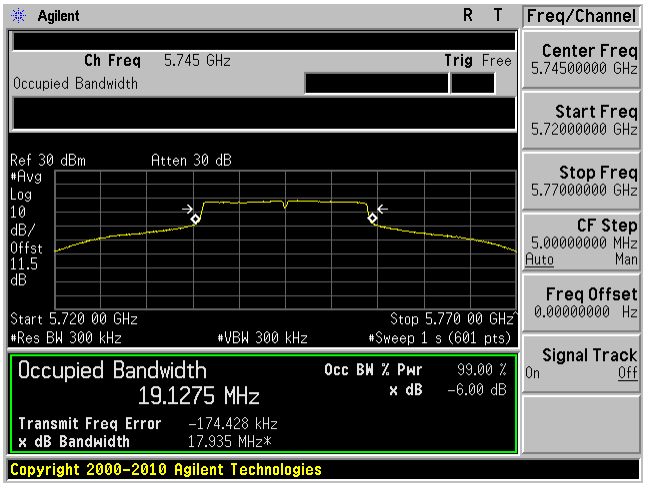
5745 MHz, n20 mode, High power, Chain 0



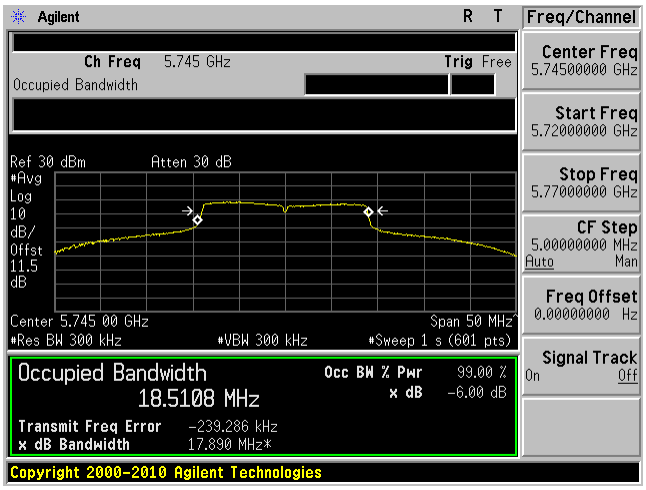
5745 MHz, n20 mode, High power, Chain 1



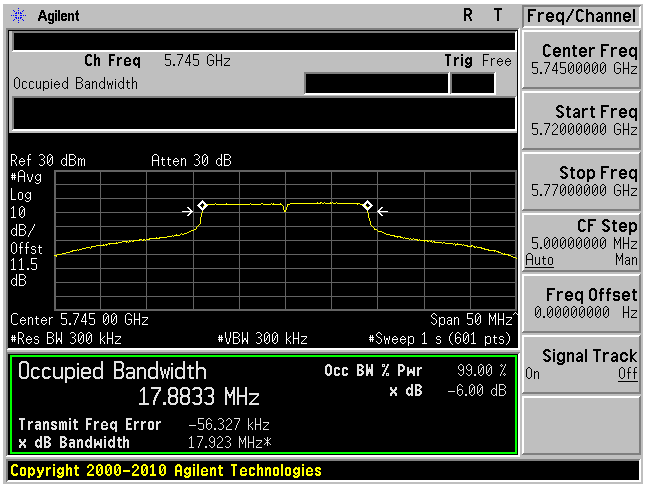
5745 MHz, n20 mode, High power, Chain 2



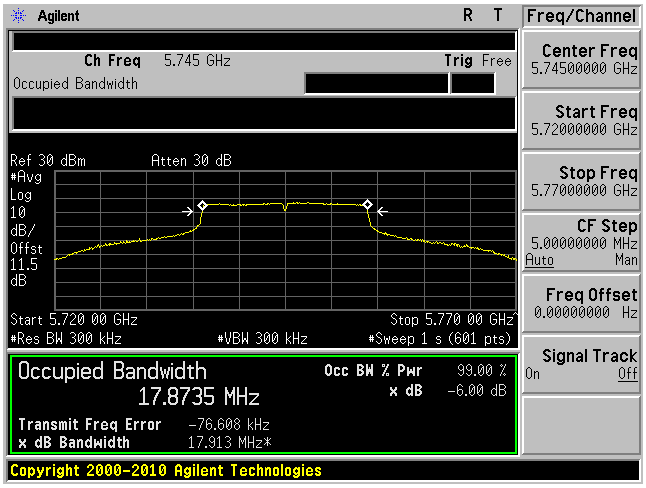
5745 MHz, n20 mode, Low power, Chain 0



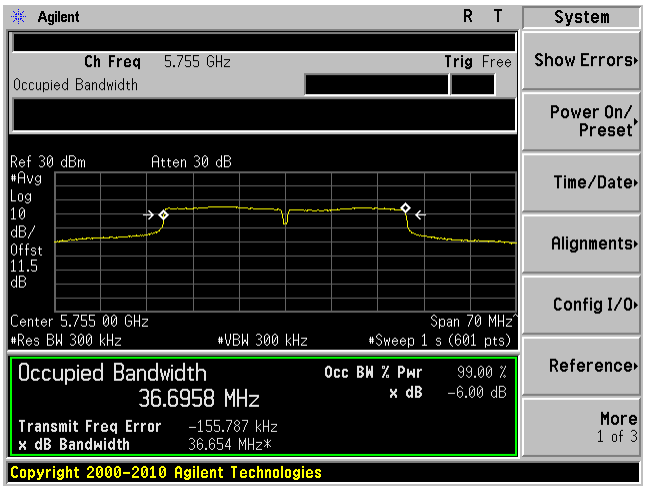
5745 MHz, n20 mode, Low power, Chain 1



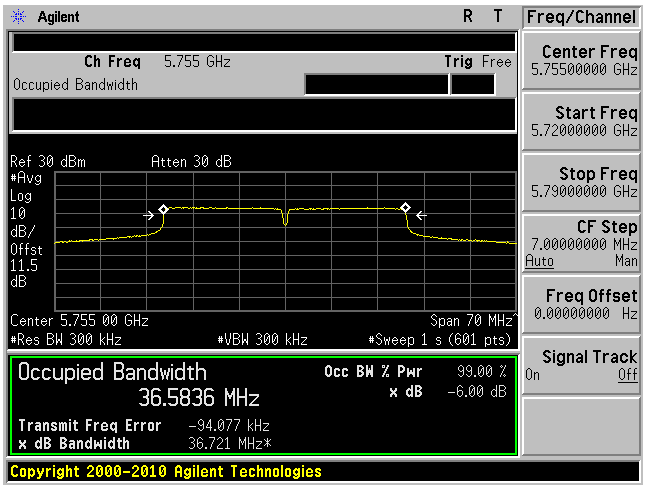
5745 MHz, n20 mode, Low power, Chain 2



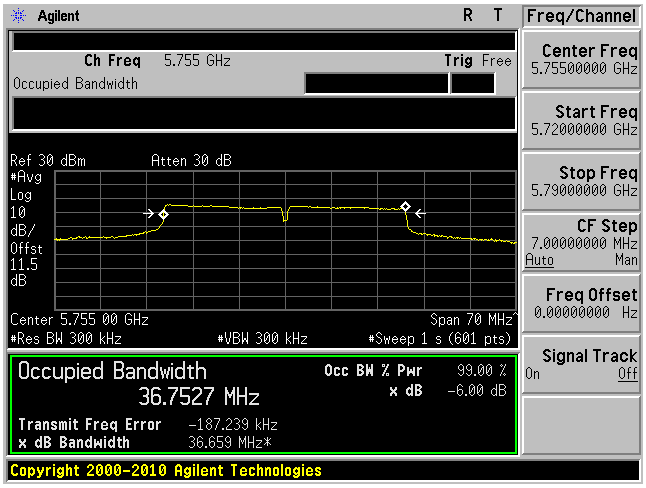
5755 MHz, n40 mode, High power, Chain 0



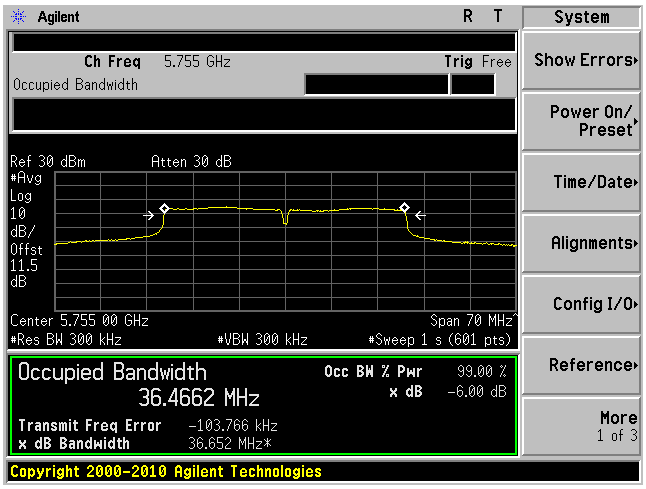
5755 MHz, n40 mode, High power, Chain 1



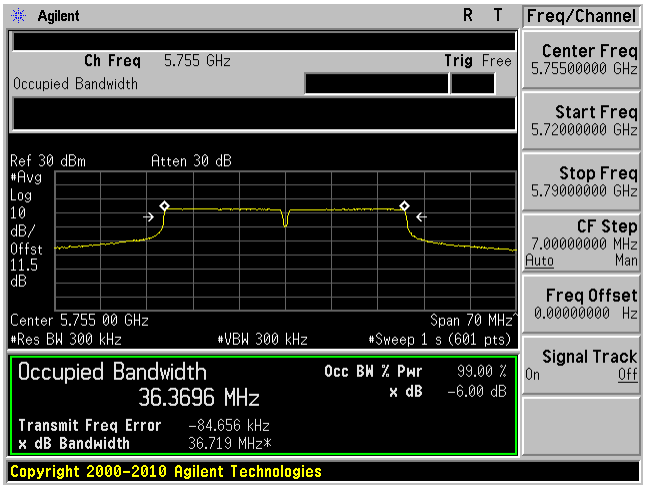
5755 MHz, n40 mode, High power, Chain 2



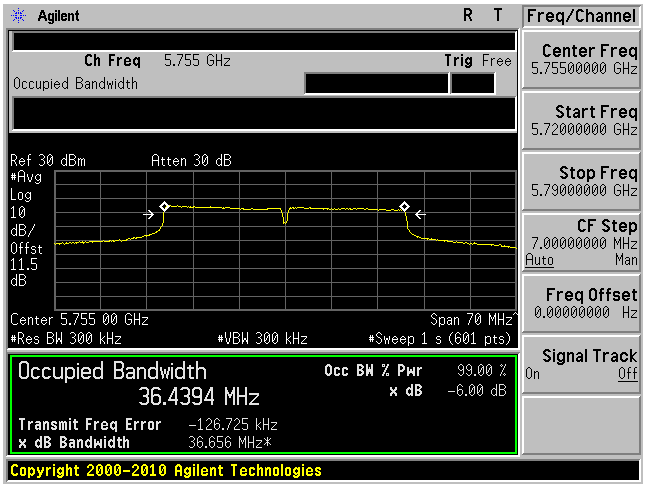
5755 MHz, n40 mode, Low power, Chain 0



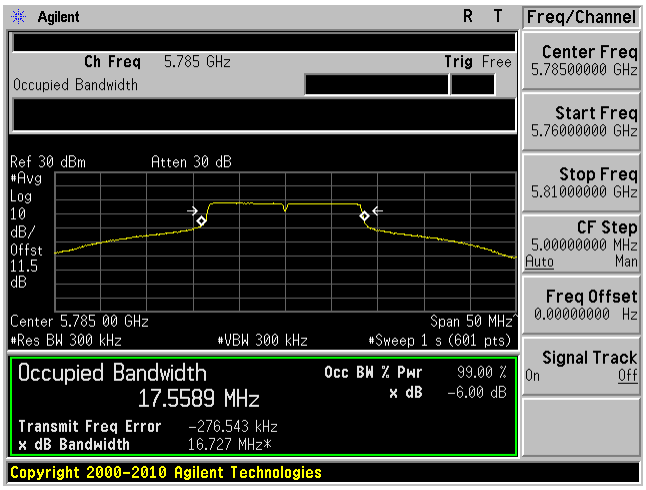
5755 MHz, n40 mode, Low power, Chain 1



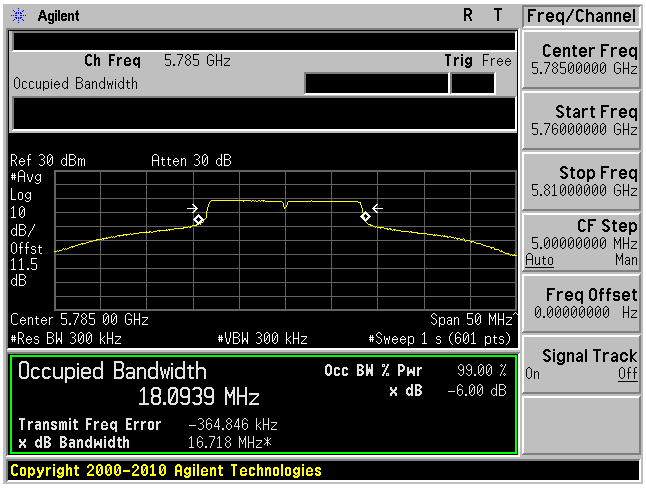
5755 MHz, n40 mode, Low power, Chain 2



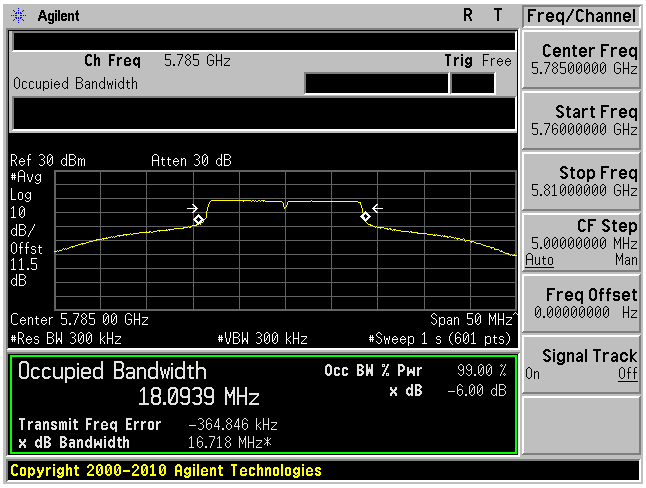
5785 MHz, a mode, High power, Chain 0



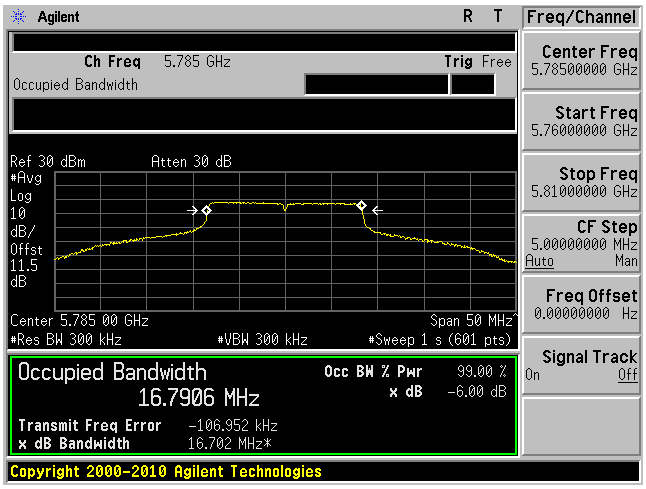
5785 MHz, a mode, High power, Chain 1



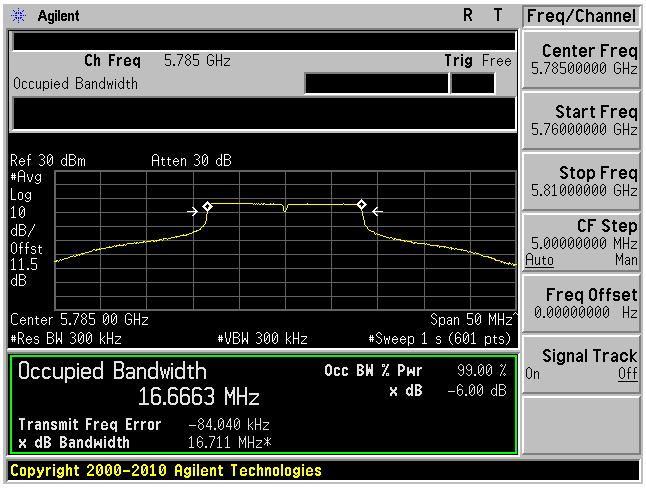
5785 MHz, a mode, High power, Chain 2



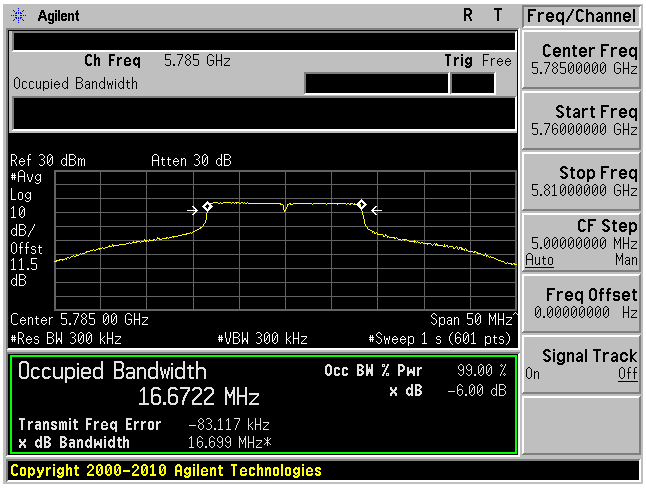
5785 MHz, a mode, Low power, Chain 0



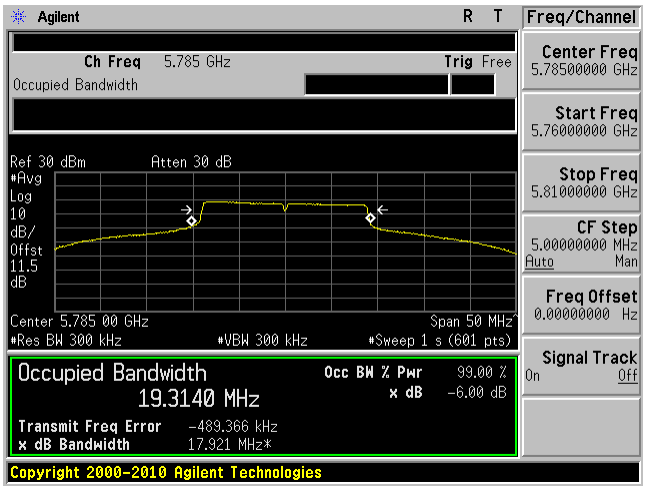
5785 MHz, a mode, Low power, Chain 1



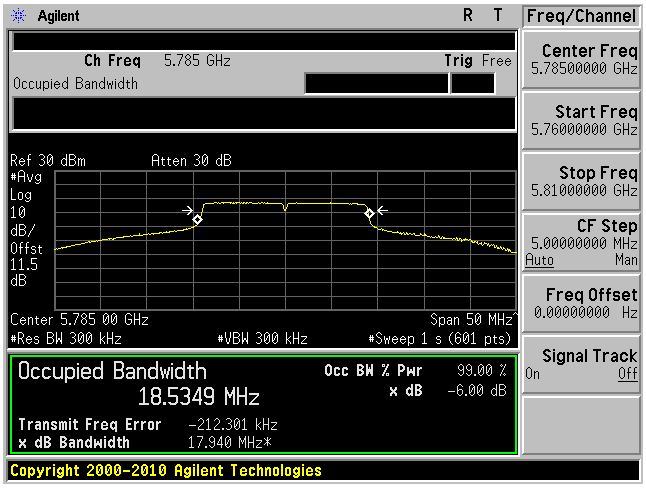
5785 MHz, a mode, Low power, Chain 2



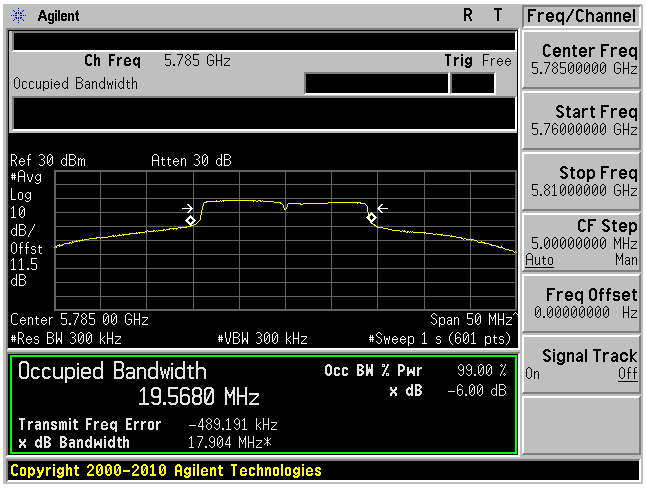
5785 MHz, n20 mode, High power, Chain 0



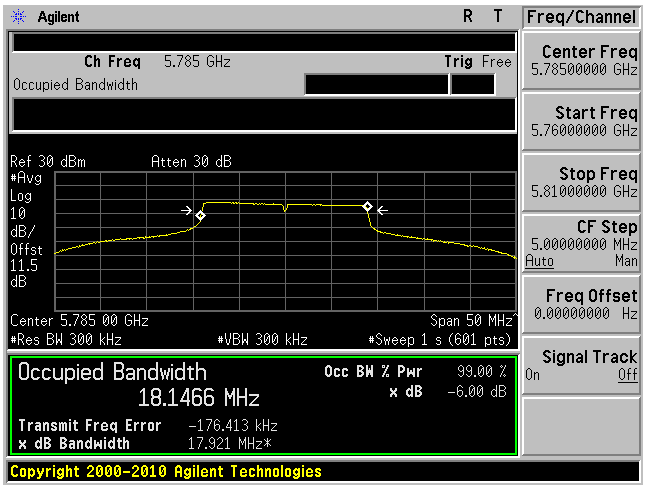
5785 MHz, n20 mode, High power, Chain 1



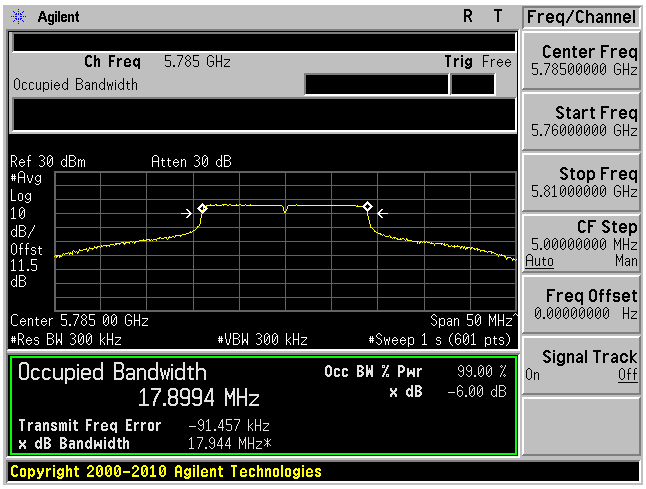
5785 MHz, n20 mode, High power, Chain 2



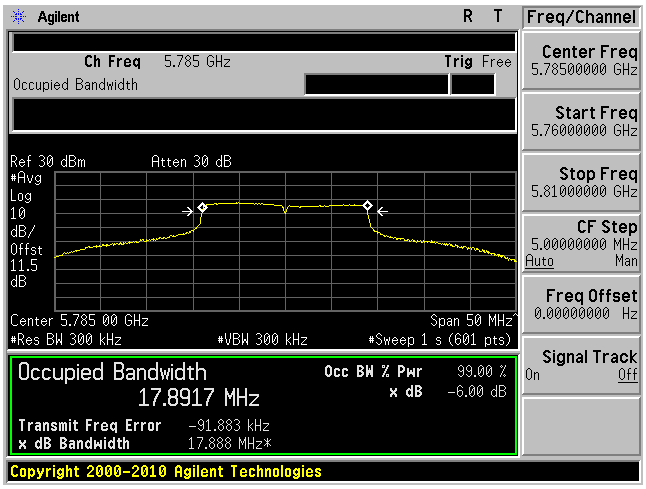
5785 MHz, n20 mode, Low power, Chain 0



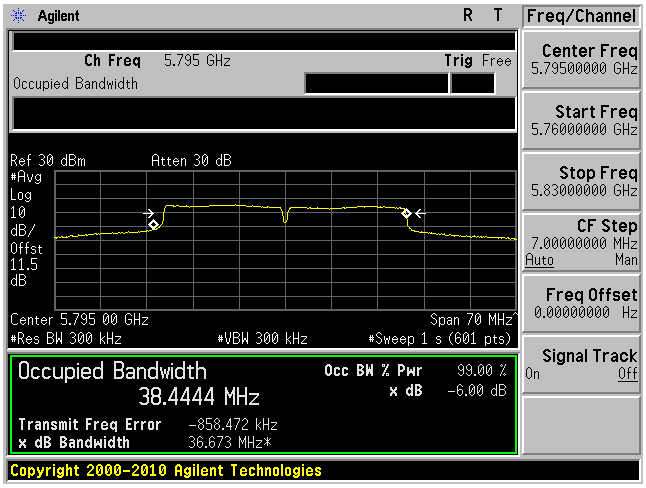
5785 MHz, n20 mode, Low power, Chain 1



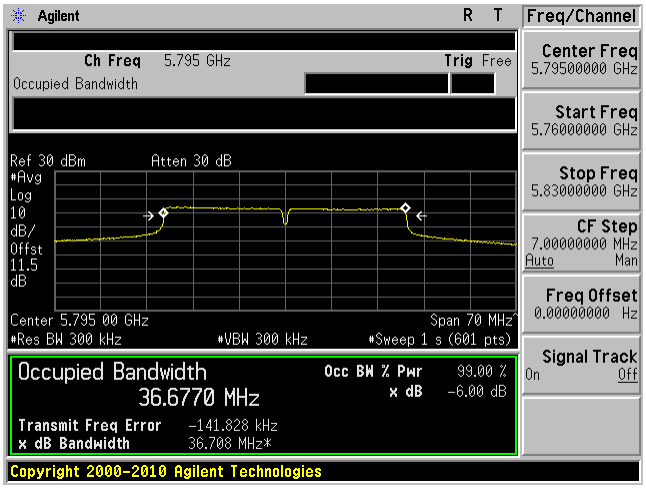
5785 MHz, n20 mode, Low power, Chain 2



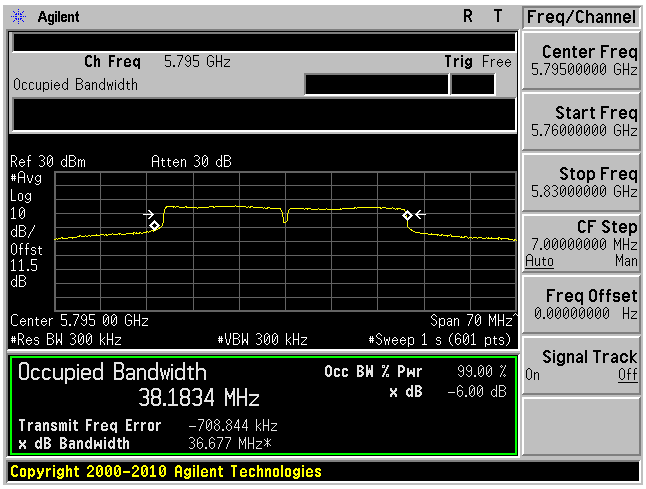
5795 MHz, n40 mode, High power, Chain 0



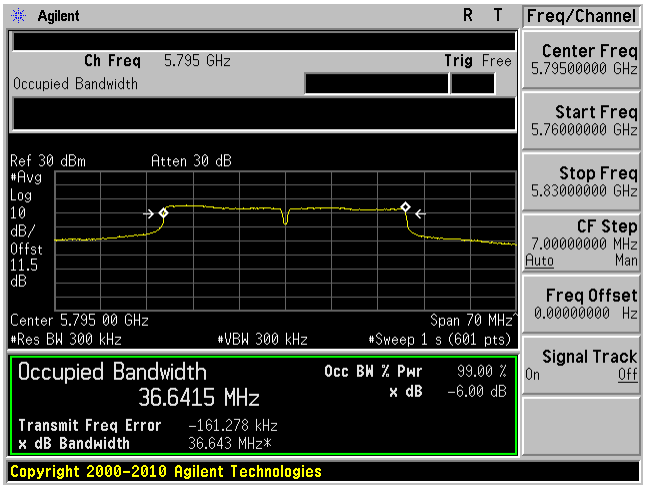
5795 MHz, n40 mode, High power, Chain 1



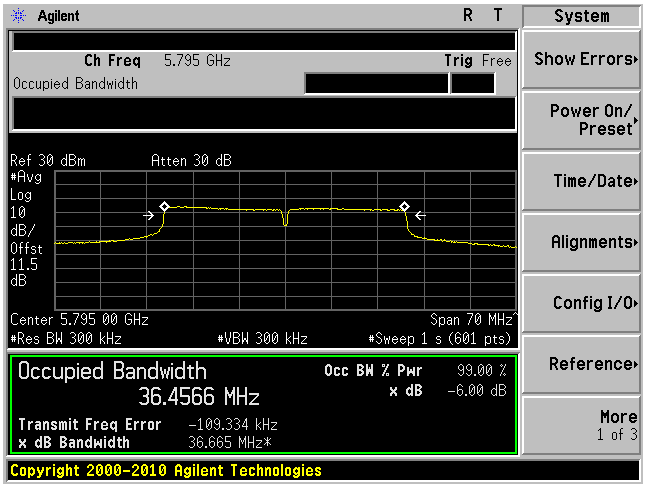
5795 MHz, n40 mode, High power, Chain 2



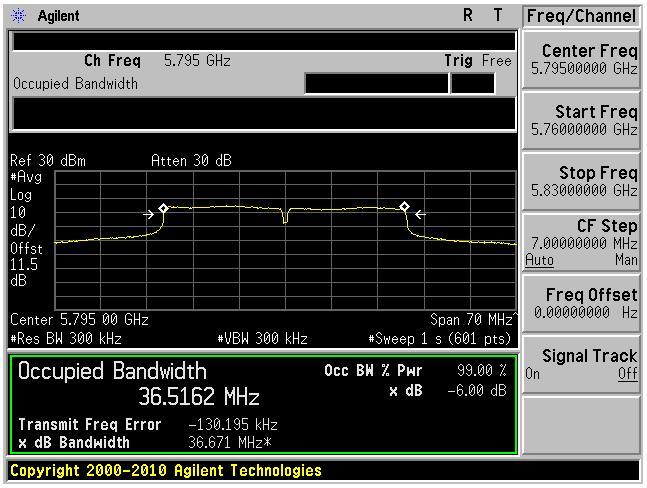
5795 MHz, n40 mode, Low power, Chain 0



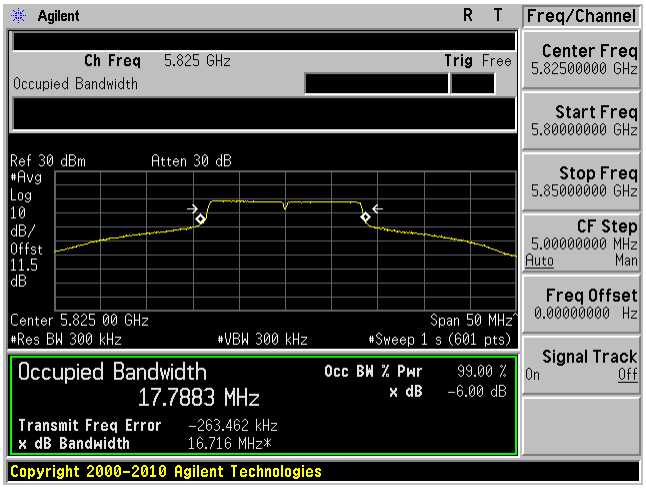
5795 MHz, n40 mode, Low power, Chain 1



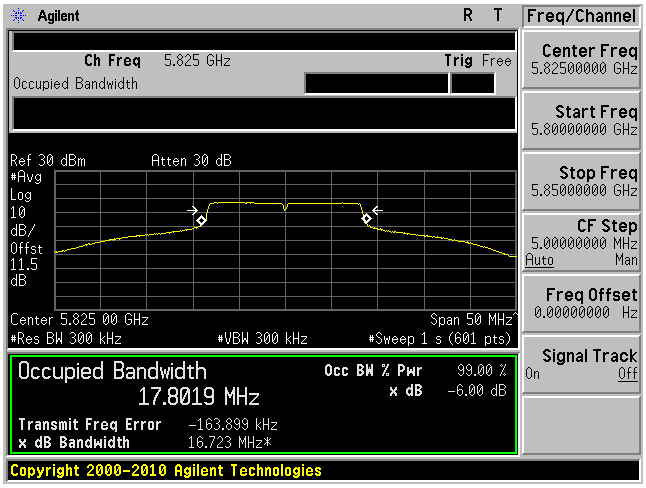
5795 MHz, n40 mode, Low power, Chain 2



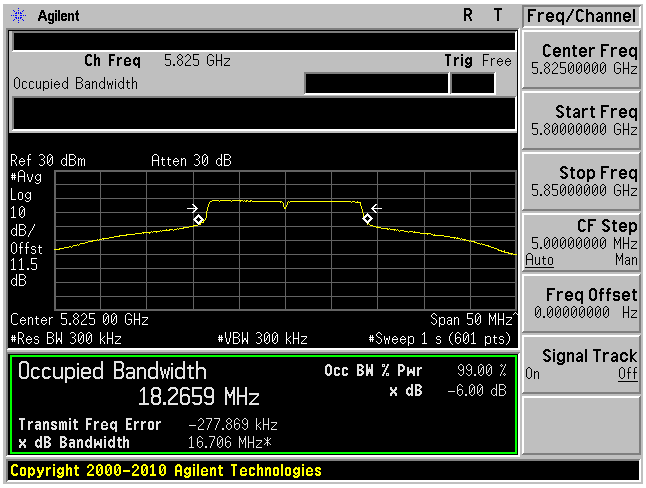
5825 MHz, a mode, High power, Chain 0



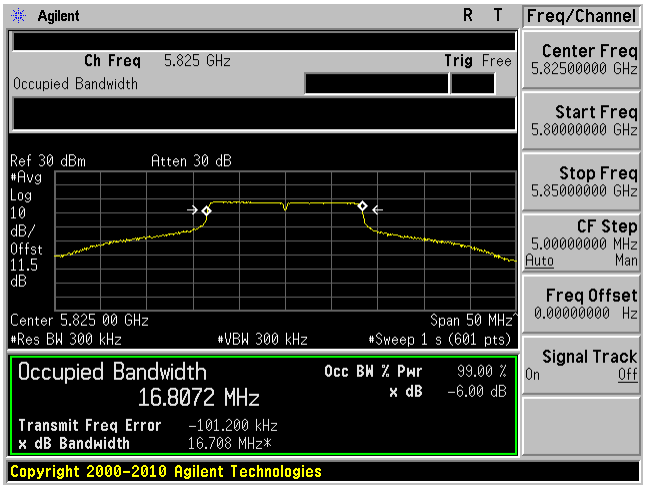
5825 MHz, a mode, High power, Chain 1



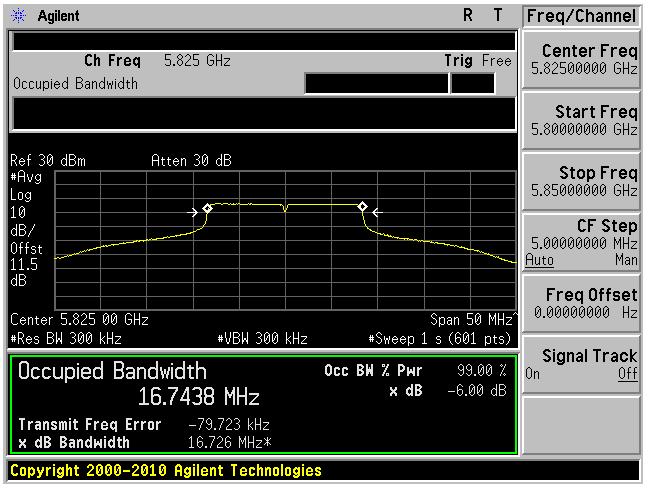
5825 MHz, a mode, High power, Chain 2



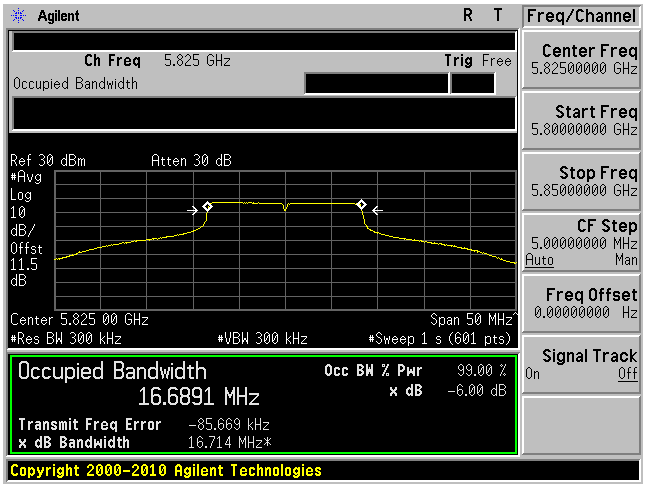
5825 MHz, a mode, Low power, Chain 0



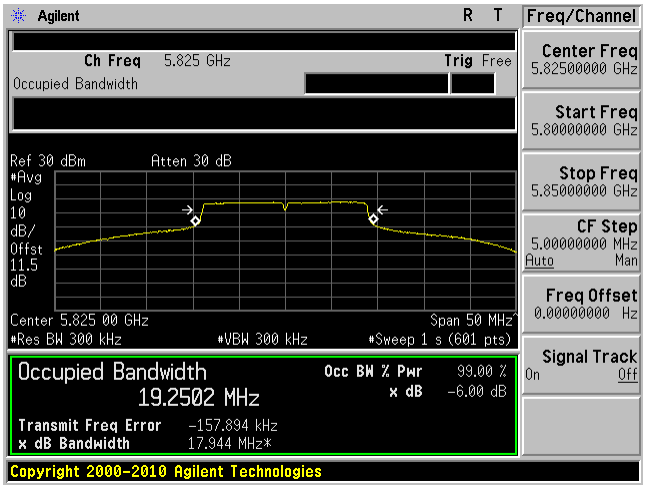
5825 MHz, a mode, Low power, Chain 1



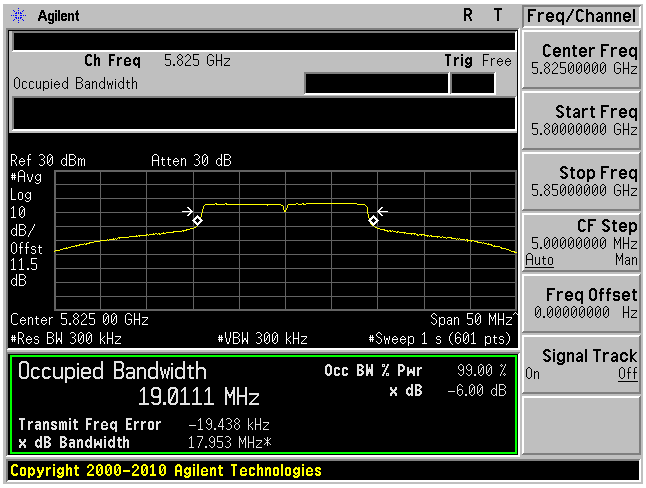
5825 MHz, a mode, Low power, Chain 2



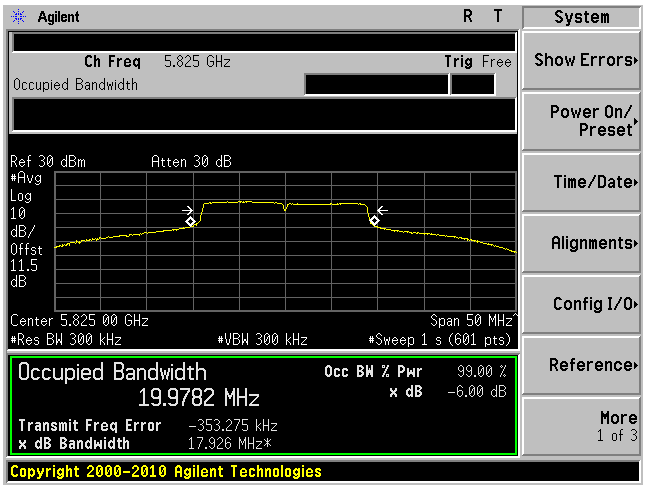
5825 MHz, n20 mode, High power, Chain 0



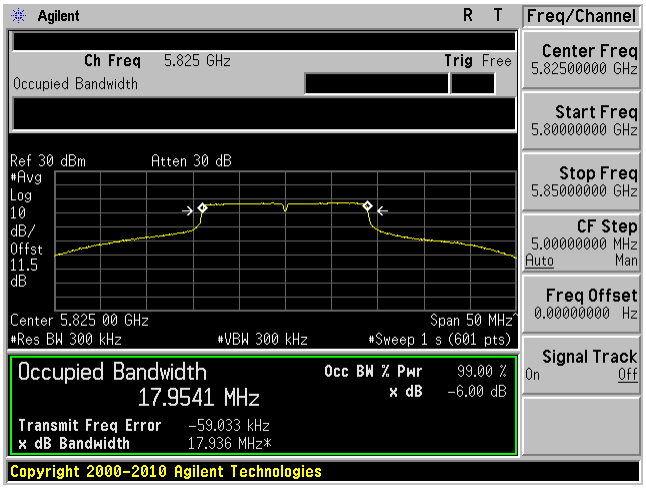
5825 MHz, n20 mode, High power, Chain 1



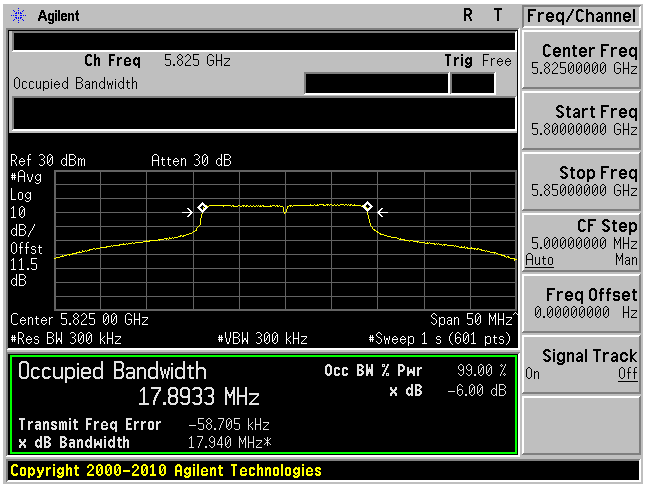
5825 MHz, n20 mode, High power, Chain 2



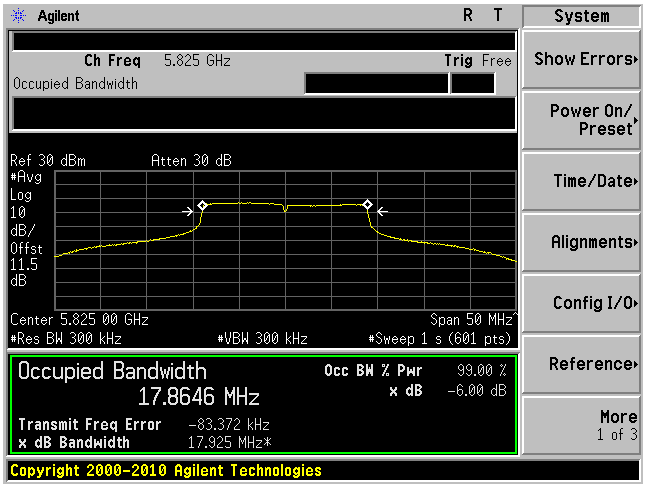
5825 MHz, n20 mode, Low power, Chain 0



5825 MHz, n20 mode, Low power, Chain 1



5825 MHz, n20 mode, Low power, Chain 2



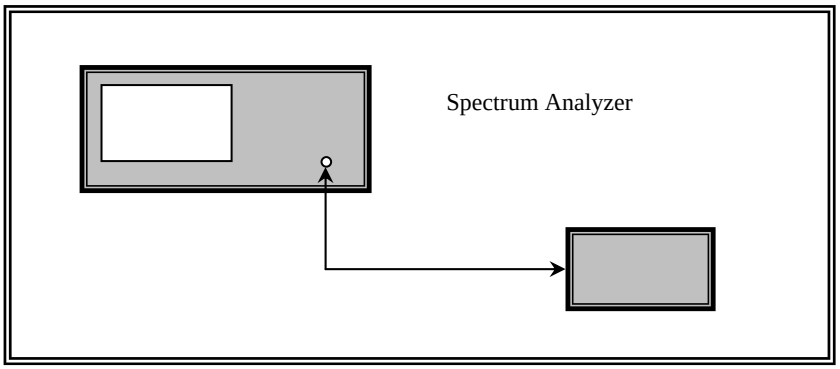
10 FCC §15.247(b) & IC RSS-210 §A8.4 - Peak Output Power Measurement

10.1 Applicable Standard

According to §15.247(b) (3) and RSS210 § A8.4 (4) for systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

10.2 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.



10.3 Test Equipment List and Details

Manufacturers	Description	Models	Serial Numbers	Calibration Dates
Agilent	Spectrum Analyzer	E4445A	MY44020562	2011-04-05

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

10.4 Test Environmental Conditions

Temperature:	16.5~20°C
Relative Humidity:	30.9~43.3 %
ATM Pressure:	101-103 kPa

The testing was performed by Victor zhang on 2011-11-05 ~ 2011-11-07.

10.5 Test Results

High power:

2.4 GHz Band, b mode

Antenna Gain 6 dBi

Channel	Frequency (MHz)	TX Chain 0 Power (dBm)	TX Chain 1 Power (dBm)	TX Chain 2 Power (dBm)	Worst Power (dBm))	Limit (dBm)	Margin (dB)
Low	2412	18.16	17.89	18.01	18.16	30	-11.84
Middle	2437	18.01	17.71	18.19	18.19	30	-11.81
High	2462	17.82	18	18.13	18.13	30	-11.87

2.4 GHz Band, g mode

Antenna Gain 6 dBi

Channel	Frequency (MHz)	TX Chain 0 Power (dBm)	TX Chain 1 Power (dBm)	TX Chain 2 Power (dBm)	Worst Power (dBm))	Limit (dBm)	Margin (dB)
Low	2412	21.96	22.52	22.57	22.57	30	-7.43
Middle	2437	23.14	23.52	22.19	23.52	30	-6.48
High	2462	22.33	22.53	23.11	23.11	30	-6.89

2.4 GHz Band, n20 mode

Antenna Gain 6 dBi

Channel	Frequency (MHz)	TX Chain 0 Power (dBm)	TX Chain 1 Power (dBm)	TX Chain 2 Power (dBm)	Total Power (dBm))	Limit (dBm)	Margin (dB)
Low	2412	20.54	21.22	20.97	25.69	30	-4.30
Middle	2437	22.43	23.12	22.59	27.48	30	-2.50
High	2462	21.19	22.58	22.3	26.83	30	-3.16

2.4 GHz Band, n40 mode

Antenna Gain 6 dBi

Channel	Frequency (MHz)	TX Chain 0 Power (dBm)	TX Chain 1 Power (dBm)	TX Chain 2 Power (dBm)	Total Power (dBm))	Limit (dBm)	Margin (dB)
Low	2422	15.33	15.91	14.82	20.14	30	-9.85
Middle	2437	14.98	15.18	15.89	20.13	30	-9.86
High	2452	15.29	15.64	15.39	20.21	30	-9.78

Low power:

2.4 GHz Band, b mode

Antenna Gain 8 dBi

Channel	Frequency (MHz)	TX Chain 0 Power (dBm)	TX Chain 1 Power (dBm)	TX Chain 2 Power (dBm)	Worst Power (dBm))	Limit (dBm)	Margin (dB)
Low	2412	14.93	15.13	15.02	15.13	28	-12.87
Middle	2437	14.93	13.93	15.82	15.82	28	-12.18
High	2462	14.73	15.46	15.63	15.63	28	-12.37

2.4 GHz Band, g mode

Antenna Gain 8 dBi

Channel	Frequency (MHz)	TX Chain 0 Power (dBm)	TX Chain 1 Power (dBm)	TX Chain 2 Power (dBm)	Worst Power (dBm))	Limit (dBm)	Margin (dB)
Low	2412	18.99	18.57	17.93	18.99	28	-9.01
Middle	2437	20.15	19.89	19.97	20.15	28	-7.85
High	2462	18.37	19.24	18.65	19.24	28	-8.76

2.4 GHz Band, n20 mode

Antenna Gain 8 dBi

Channel	Frequency (MHz)	TX Chain 0 Power (dBm)	TX Chain 1 Power (dBm)	TX Chain 2 Power (dBm)	Total Power (dBm))	Limit (dBm)	Margin (dB)
Low	2412	17.51	18.17	17.35	22.46	28	-5.53
Middle	2437	21.96	21.73	21.67	26.55	28	-1.44
High	2462	18.79	18.93	19.11	23.71	28	-4.28

2.4 GHz Band, n40 mode

Antenna Gain 8 dBi

Channel	Frequency (MHz)	TX Chain 0 Power (dBm)	TX Chain 1 Power (dBm)	TX Chain 2 Power (dBm)	Total Power (dBm))	Limit (dBm)	Margin (dB)
Low	2422	13.87	12.69	11.32	17.52	28	-10.47
Middle	2437	11.85	12.13	13.96	17.52	28	-10.47
High	2452	12.99	13.2	11.91	17.50	28	-10.49

High power:

5.8 GHz Band, a mode

Antenna Gain 7 dBi

Channel	Frequency (MHz)	TX Chain 0 Power (dBm)	TX Chain 1 Power (dBm)	TX Chain 2 Power (dBm)	Worst Power (dBm))	Limit (dBm)	Margin (dB)
Low	5745	21.93	22.26	23.42	22.26	29	-6.74
Middle	5785	22.14	21.87	22.36	22.36	29	-6.64
High	5825	20.84	22.71	20.93	20.71	29	-8.29

5.8 GHz Band, n20 mode

Antenna Gain 7 dBi,

Channel	Frequency (MHz)	TX Chain 0 Power (dBm)	TX Chain 1 Power (dBm)	TX Chain 2 Power (dBm)	Total Power (dBm))	Limit (dBm)	Margin (dB)
Low	5745	21.86	22.43	20.98	26.57	29	-2.43
Middle	5785	21.67	21.32	20.85	26.06	29	-2.94
High	5825	20.97	20.13	21.34	25.61	29	-3.39

5.8 GHz Band, n40 mode

Antenna Gain 7 dBi

Channel	Frequency (MHz)	TX Chain 0 Power (dBm)	TX Chain 1 Power (dBm)	TX Chain 2 Power (dBm)	Total Power (dBm))	Limit (dBm)	Margin (dB)
Low	5755	18.79	19.13	18.73	23.66	29	-5.34
High	5795	17.94	18.89	17.92	23.05	29	-5.95

Low power:

5.8 GHz Band, a mode

Antenna Gain 8 dBi,

Channel	Frequency (MHz)	TX Chain 0 Power (dBm)	TX Chain 1 Power (dBm)	TX Chain 2 Power (dBm)	Worst Power (dBm))	Limit (dBm)	Margin (dB)
Low	5745	19.89	20.16	18.96	20.16	28	-7.84
Middle	5785	19.14	17.92	18.59	19.14	28	-8.86
High	5825	18.1	17.23	18.67	18.67	28	-9.33

5.8 GHz Band, n20 mode

Antenna Gain 8 dBi

Channel	Frequency (MHz)	TX Chain 0 Power (dBm)	TX Chain 1 Power (dBm)	TX Chain 2 Power (dBm)	Total Power (dBm))	Limit (dBm)	Margin (dB)
Low	5745	18.77	18.12	17.16	22.83	28	-5.17
Middle	5785	18.24	18.51	17.34	22.82	28	-5.18
High	5825	17.81	18.22	17.23	22.54	28	-5.46

5.8 GHz Band, n40 mode

Antenna Gain 8 dBi

Channel	Frequency (MHz)	TX Chain 0 Power (dBm)	TX Chain 1 Power (dBm)	TX Chain 2 Power (dBm)	Total Power (dBm))	Limit (dBm)	Margin (dB)
Low	5755	15.63	16.03	15.55	20.51	28	-7.49
High	5795	15.1	15.63	15.71	20.26	28	-7.74

11 FCC §15.247(d) & IC RSS-210 §A8.5 - 100 kHz Bandwidth of Band Edges

11.1 Applicable Standard

According to FCC §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).

According to IC RSS-210 §A8.5, in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the radio frequency power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under section A8.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Tables 2 and 3 is not required.

11.2 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set 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..

11.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date
Agilent	Spectrum Analyzer	E4440A	MY44303352	2011-05-10

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

11.4 Test Environmental Conditions

Temperature:	23-25 °C
Relative Humidity:	35-50 %
ATM Pressure:	101-103kPa

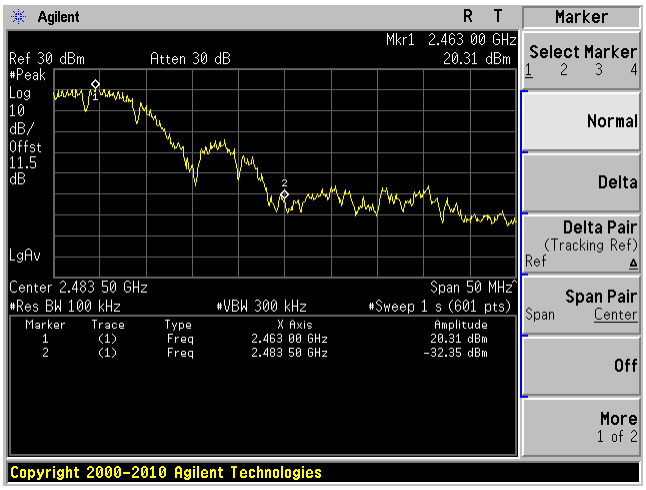
The testing was performed by Ning Ma on 2011-11-05~ 2011-11-07 at RF Site.

11.5 Test Results

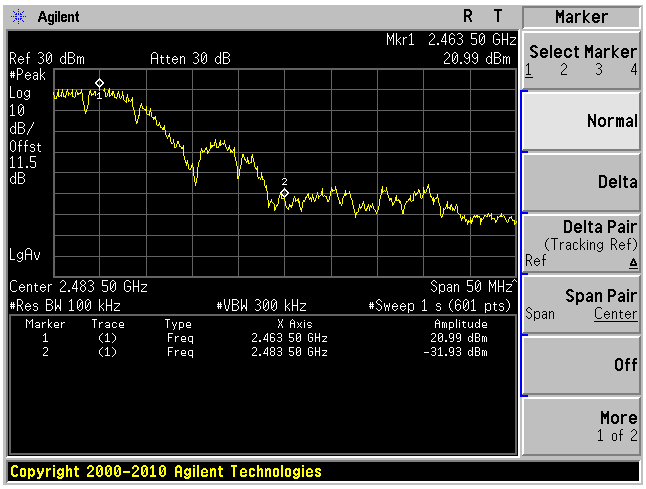
Please refer to following pages for plots of band edge.

2400 – 2483 MHz

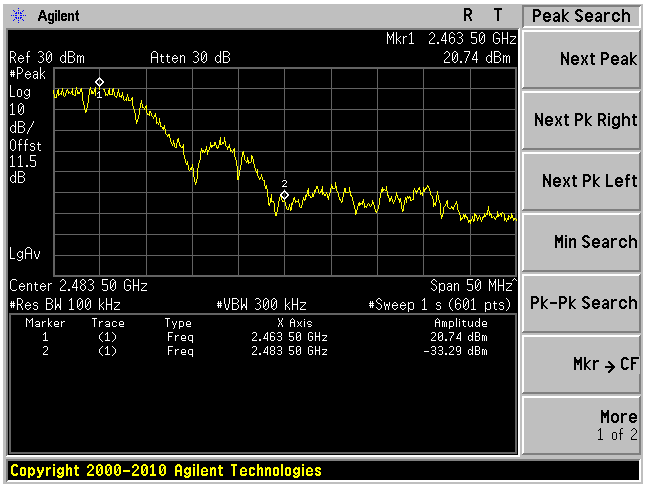
802.11 b mode, High power, Chain 0



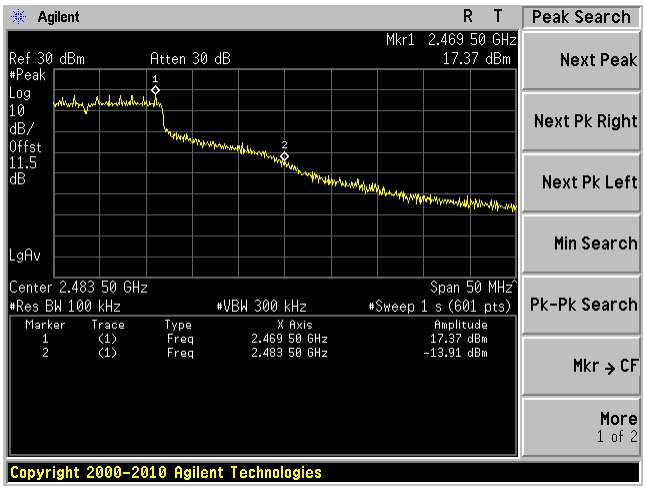
802.11 b mode, High power, Chain 1



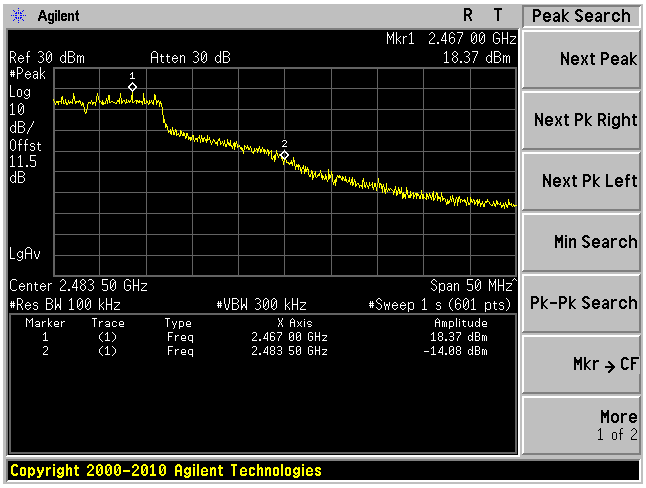
802.11 b mode, High power, Chain 2



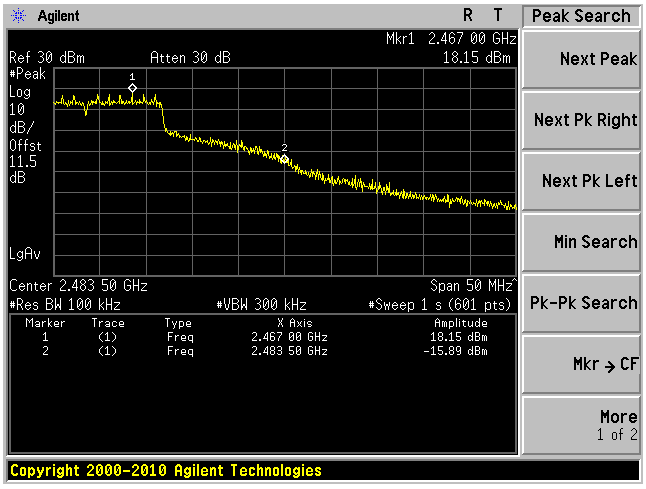
802.11 g mode, High power, Chain 0



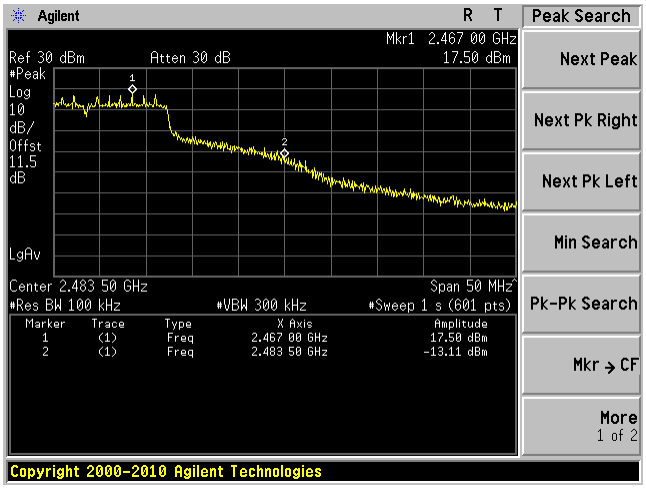
802.11 g mode, High power, Chain 1



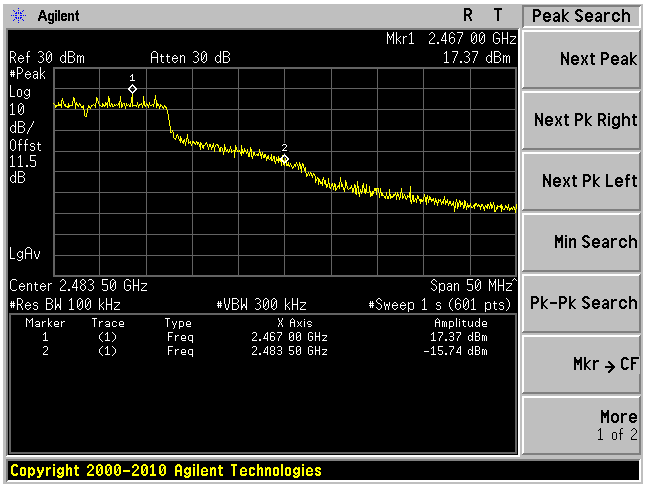
802.11 g mode, High power, Chain 2



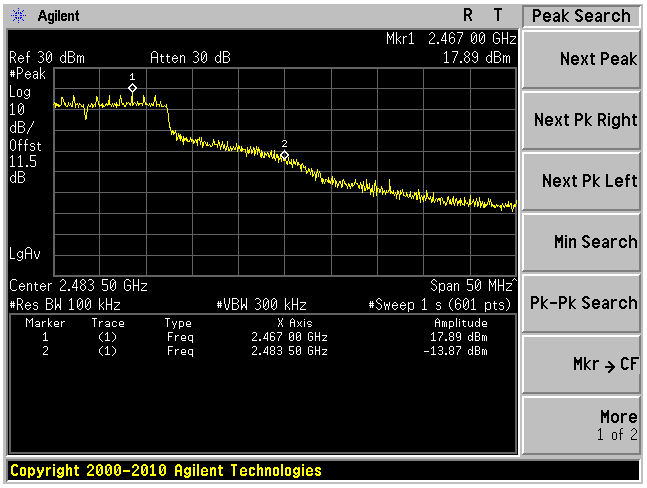
802.11 n20 mode, High power, Chain 0



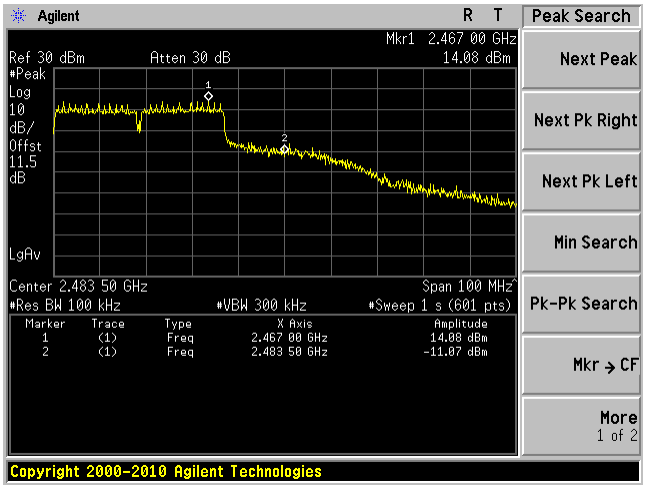
802.11 n20 mode, High power, Chain 1



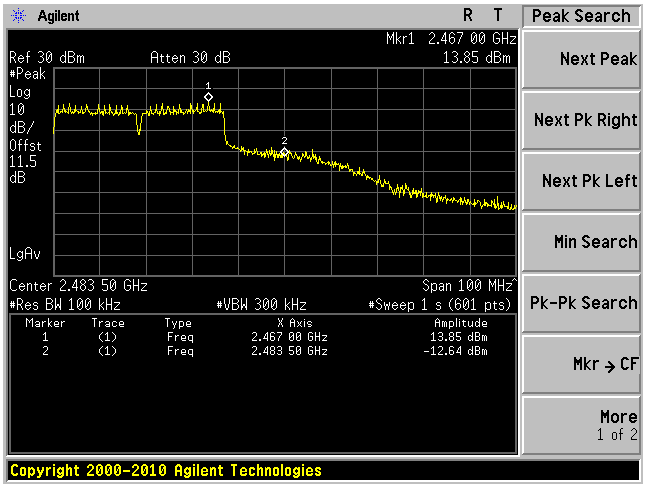
802.11 n20 mode, High power, Chain 2



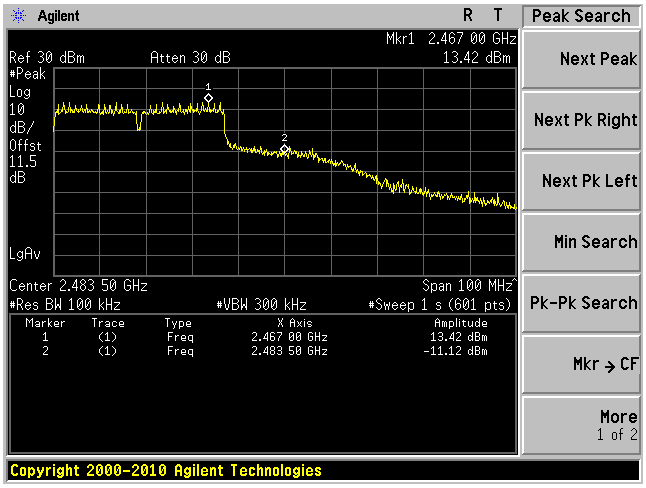
802.11 n40 mode, High power, Chain 0



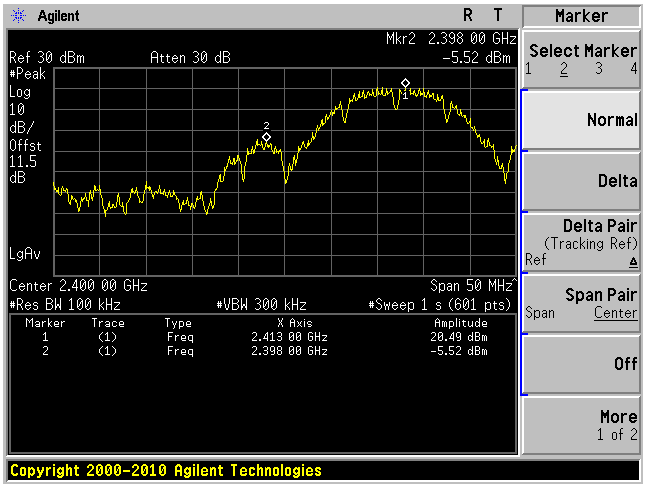
802.11 n40 mode, High power, Chain 1



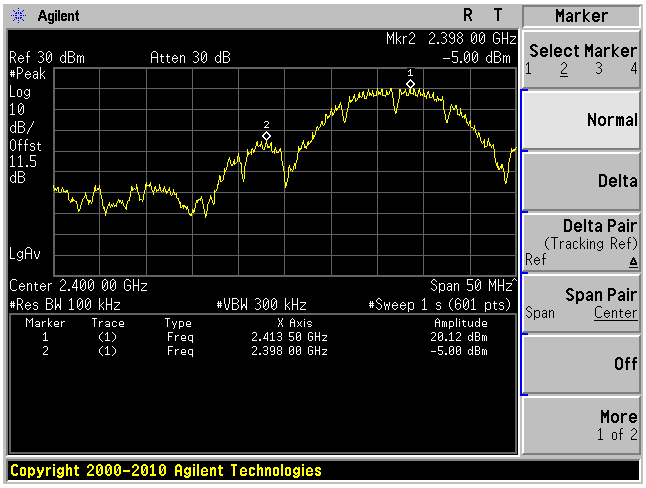
802.11 n40 mode, High power, Chain 2



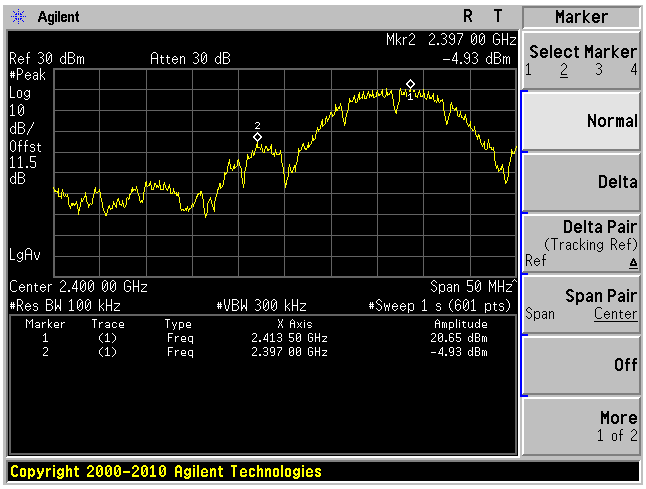
802.11 b mode, Low power, Chain 0



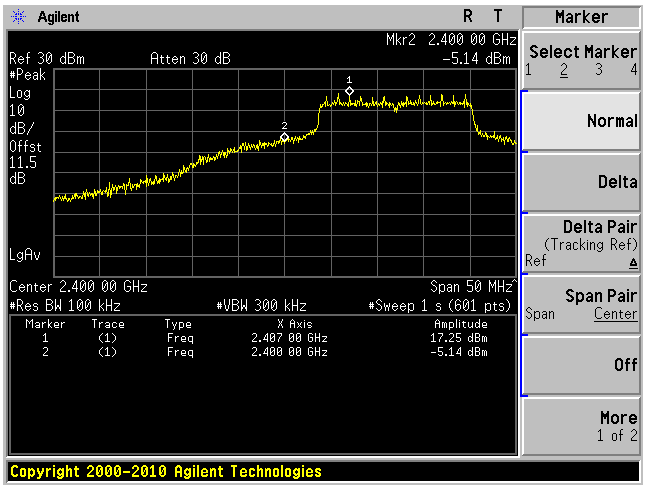
802.11 b mode, Low power, Chain 1



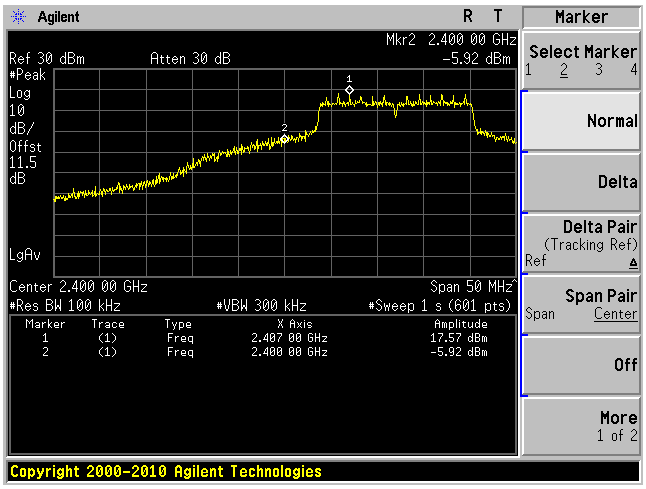
802.11 b mode, Low power, Chain 2



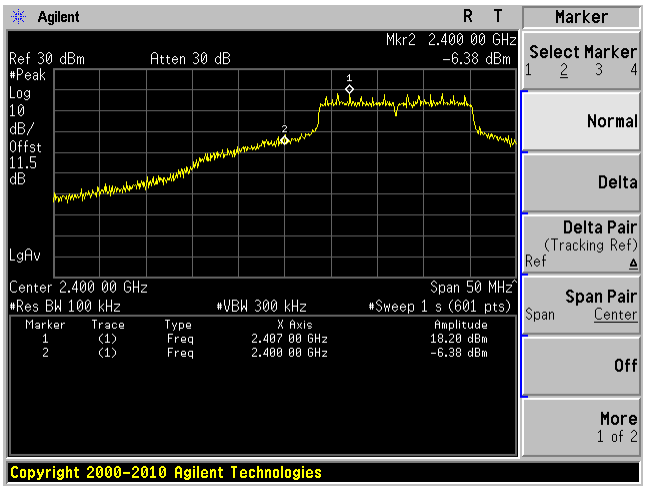
802.11 g mode, Low power, Chain 0



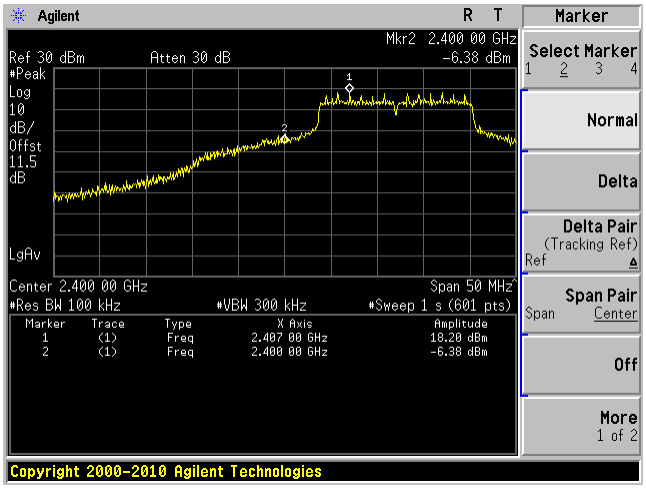
802.11 g mode, Low power, Chain 1



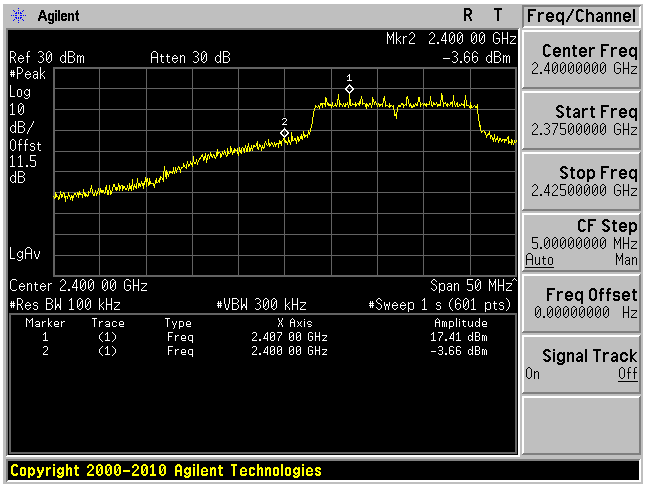
802.11 g mode, Low power, Chain 2



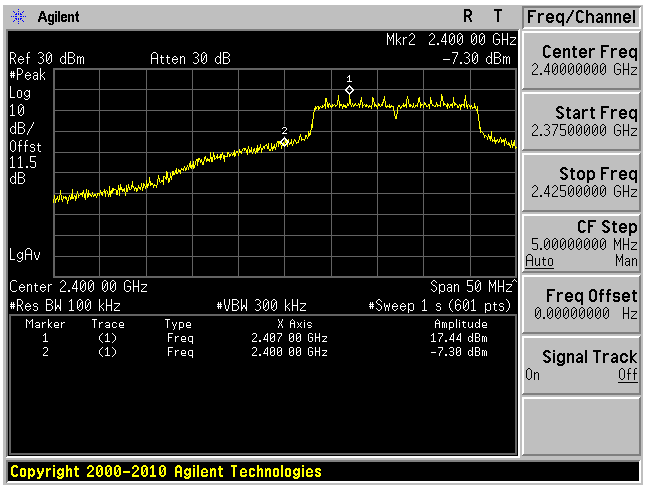
802.11 n20 mode, Low power, Chain 0



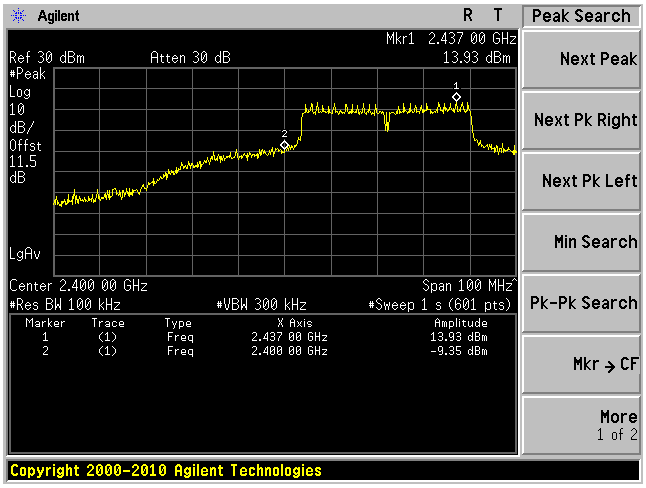
802.11 n20 mode, Low power, Chain 1



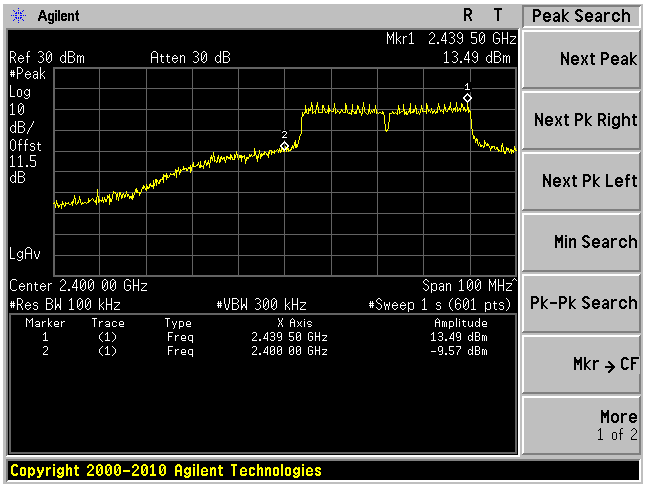
802.11 n20 mode, Low power, Chain 2



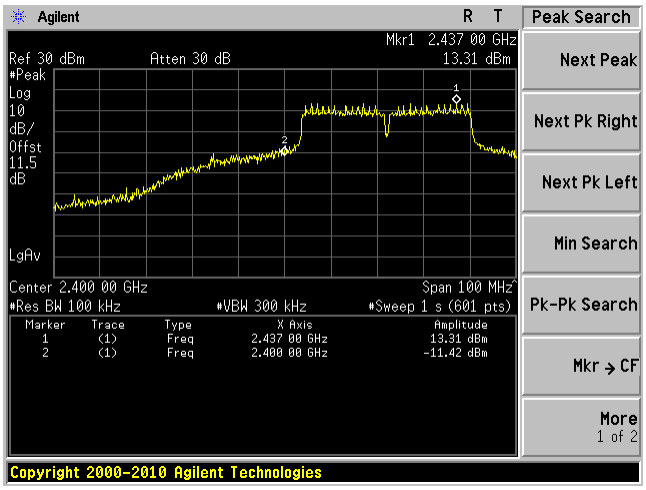
802.11 n40 mode, Low power, Chain 0



802.11 n40 mode, Low power, Chain 1

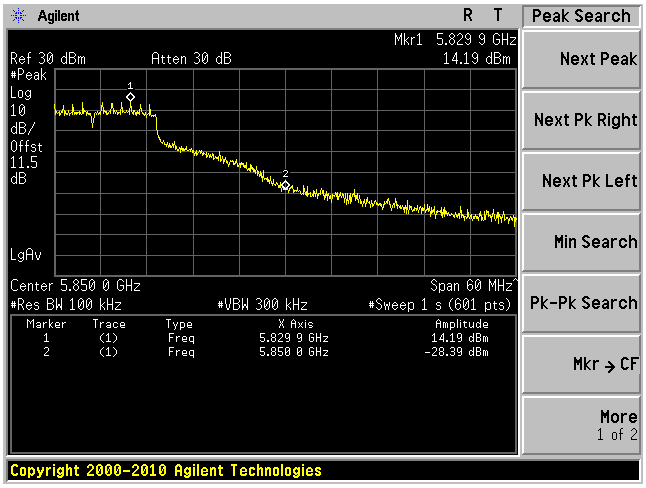


802.11 n40 mode, Low power, Chain 2

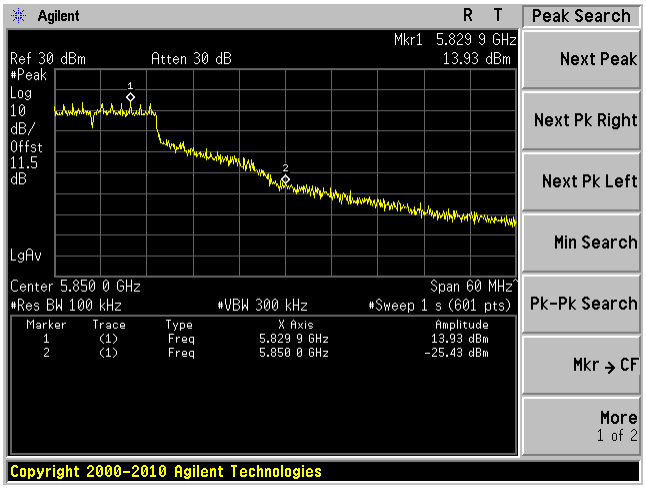


5725 – 5845 MHz

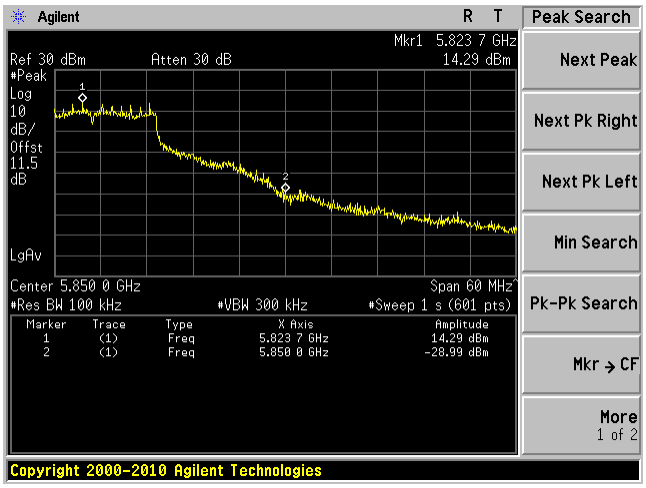
802.11 a mode, High power, Chain 0



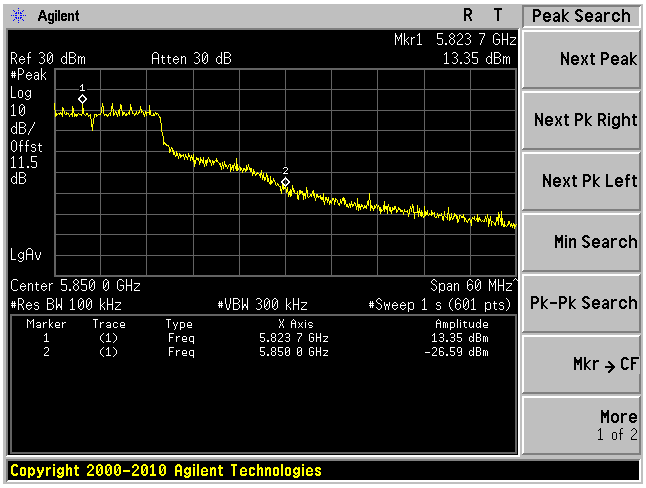
802.11 a mode, High power, Chain 1



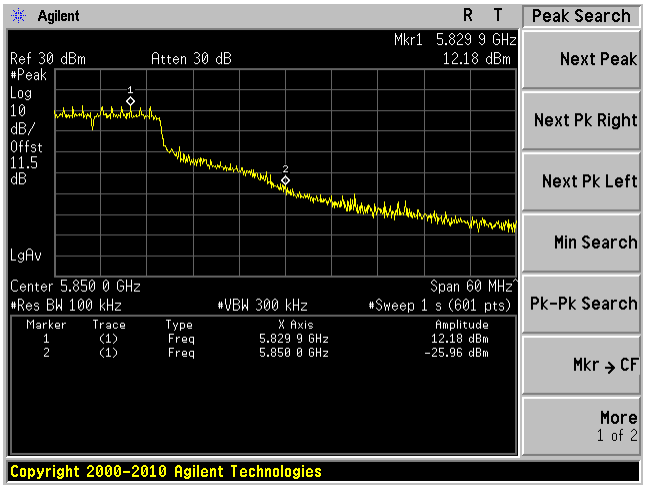
802.11 a mode, High power, Chain 2



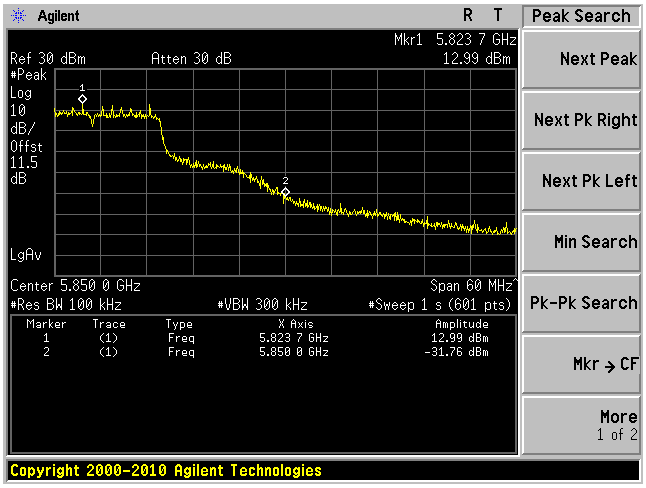
802.11 n20 mode, High power, Chain 0



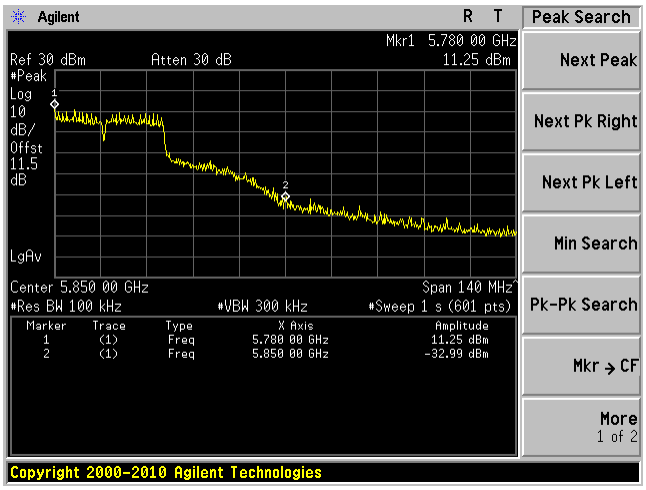
802.11 n20 mode, High power, Chain 1



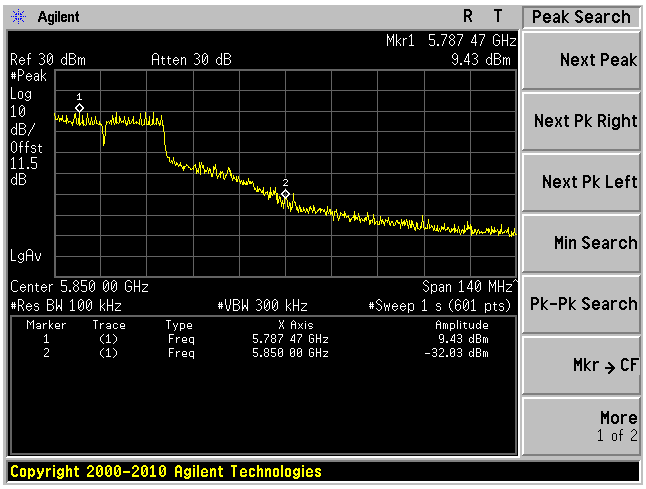
802.11 n20 mode, High power, Chain 2



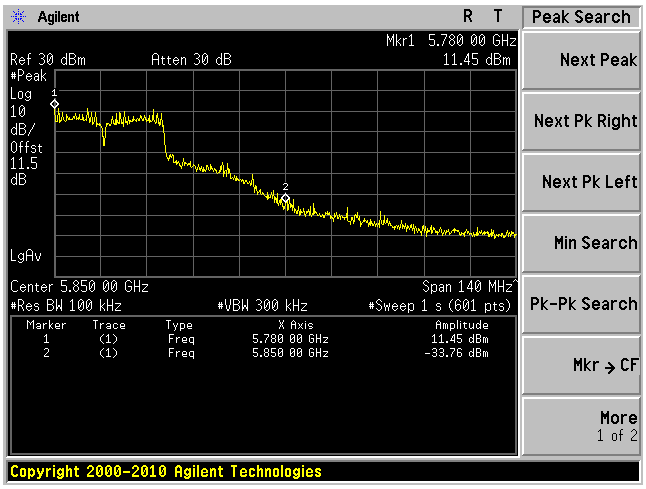
802.11 n40 mode, High power, Chain 0



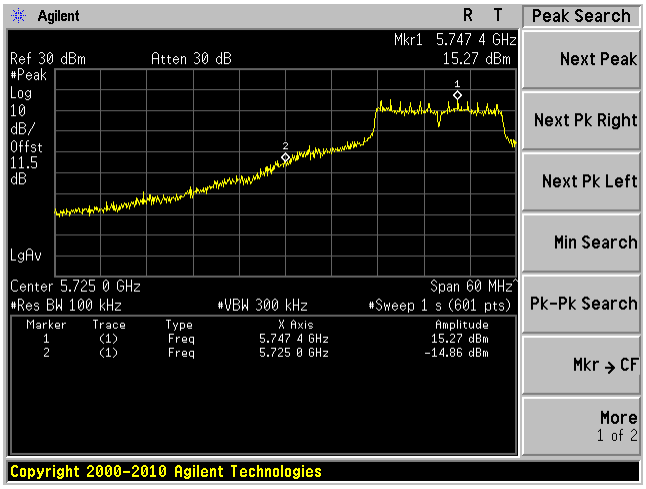
802.11 n40 mode, High power, Chain 1



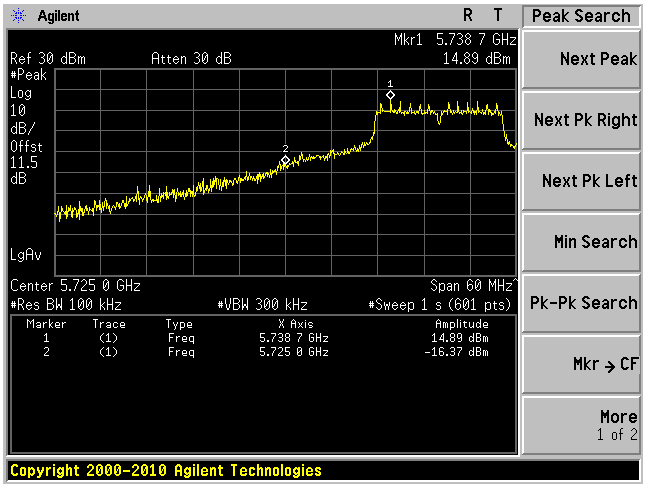
802.11 n40 mode, High power, Chain 2



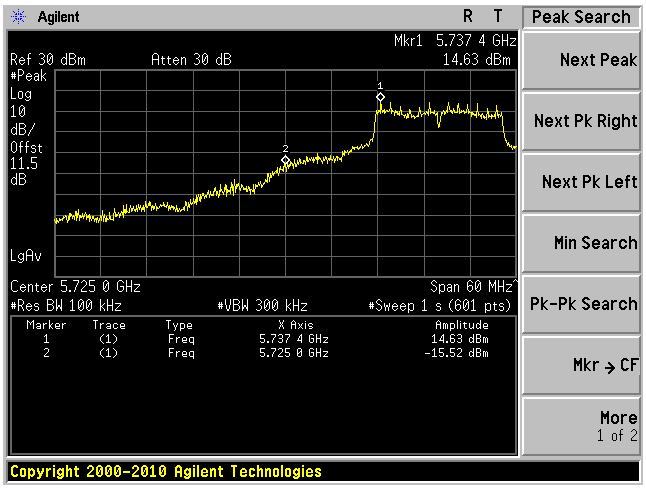
802.11 a mode, Low power, Chain 0



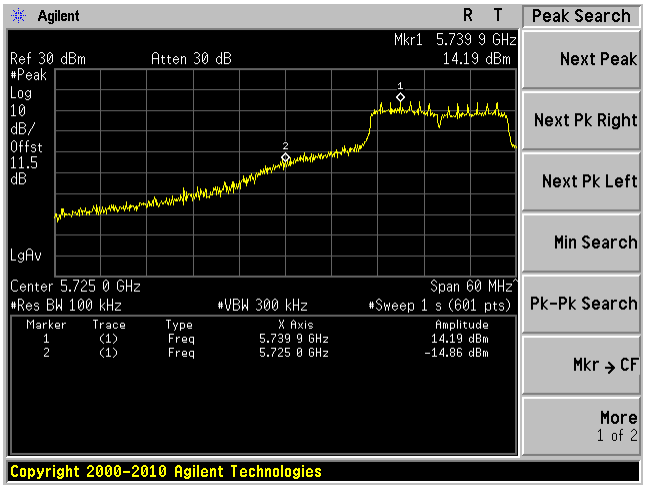
802.11 a mode, Low power, Chain 1



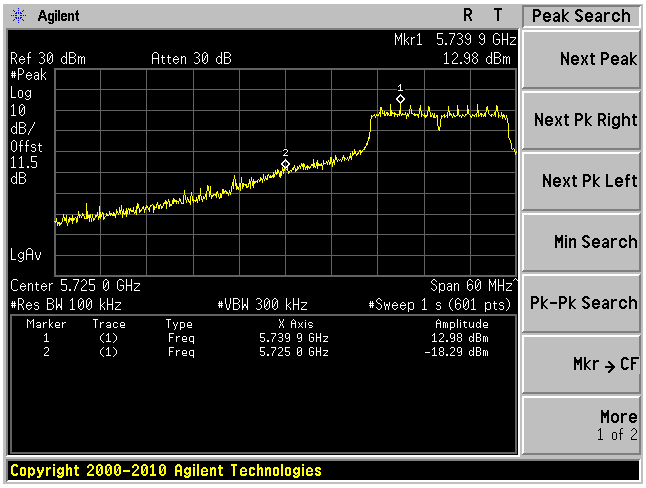
802.11 a mode, Low power, Chain 2



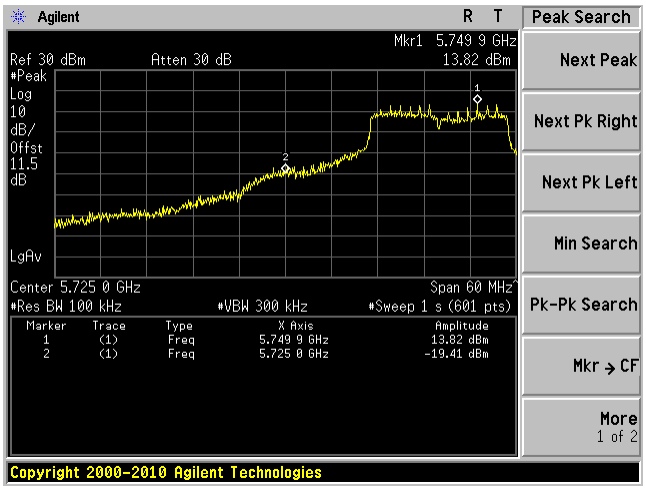
802.11 n20 mode, Low power, Chain 0



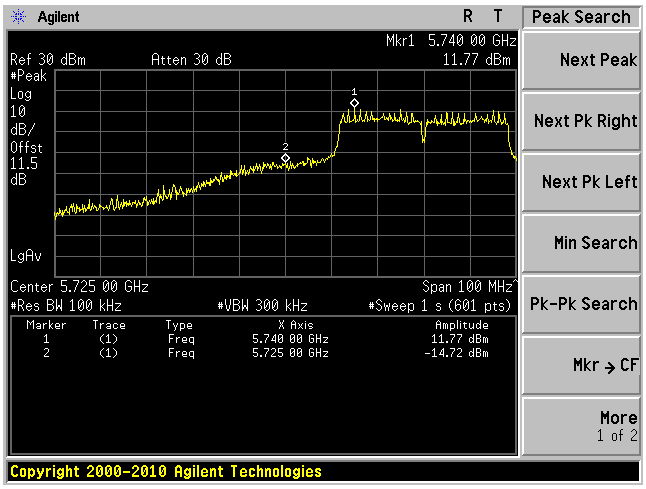
802.11 n20 mode, Low power, Chain 1



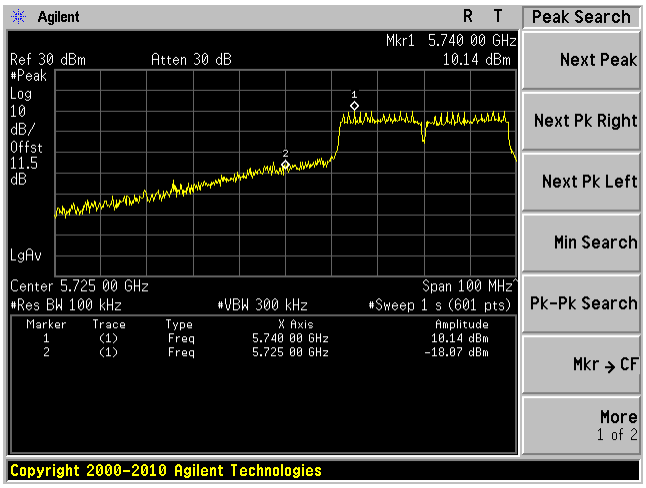
802.11 n20 mode, Low power, Chain 2



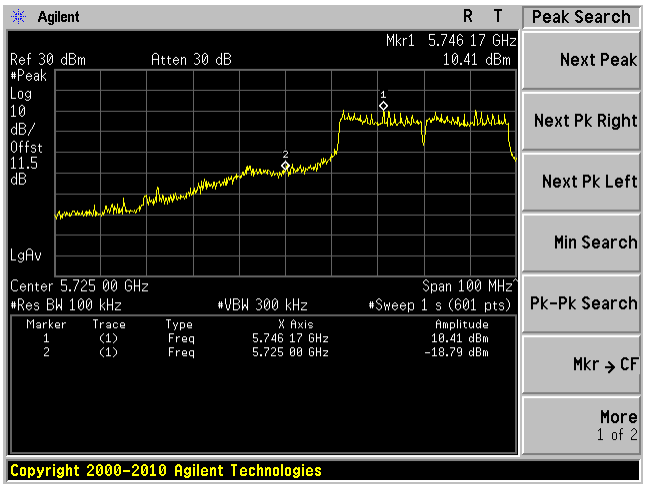
802.11 n40 mode, Low power, Chain 0



802.11 n40 mode, Low power, Chain 1



802.11 n40 mode, Low power, Chain 2



12 FCC §15.247(e) & IC RSS-210 § A8.2 (b) - Power Spectral Density

12.1 Applicable Standard

According to FCC §15.247 (e) and IC RSS-210 §A8.2 (b) , 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.

12.2 Test Procedure

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

12.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date
Agilent	Spectrum Analyzer	E4440A	MY44303352	2011-05-10

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

12.4 Test Environmental Conditions

Temperature:	23-25 °C
Relative Humidity:	35-50 %
ATM Pressure:	101-103kPa

The testing was performed by Ning Ma on 2011-11-05~ 2011-11-07 at RF Site.

12.5 Test Results

2400-2483.5MHz High Power Setting Only

802.11b mode

Channel	Frequency (MHz)	TX Chain 0 PDS (dBm)	TX Chain 1 PSD (dBm))	TX Chain 2 PDS (dBm	Worst PSD (dBm)	Limit (dBm/3kHz)	Margin (dB)
Low	2412	0.39	-2.38	-2.04	0.39	8	-7.61
Middle	2437	0.57	-2.97	-2.59	0.57	8	-7.43
High	2462	-0.78	-2.6	-2.36	-0.78	8	-8.78

802.11g mode

Channel	Frequency (MHz)	TX Chain 0 PDS (dBm)	TX Chain 1 PSD (dBm))	TX Chain 2 PDS (dBm	Worst PSD (dBm)	Limit (dBm/3kHz)	Margin (dB)
Low	2412	3.74	-1.87	-0.31	3.74	8	-7.61
Middle	2437	5.4	-2.12	-2.7	5.4	8	-7.43
High	2462	2.93	1.09	-0.05	2.93	8	-8.78

802.11n 20 mode

Channel	Frequency (MHz)	TX Chain 0 PDS (dBm)	TX Chain 1 PSD (dBm))	TX Chain 2 PDS (dBm	Total PSD (dBm)	Limit (dBm/3kHz)	Margin (dB)
Low	2412	3.95	-2.79	-1.75	5.65	8	-7.61
Middle	2437	3.43	-2.37	-0.9	5.55	8	-7.43
High	2462	2.29	-0.64	-4.09	4.69	8	-8.78

802.11n 40 mode

Channel	Frequency (MHz)	TX Chain 0 PDS (dBm)	TX Chain 1 PSD (dBm))	TX Chain 2 PDS (dBm	Total PSD (dBm)	Limit (dBm/3kHz)	Margin (dB)
Low	2422	2.99	-3.97	-5.32	4.289936	8	-7.61
Middle	2437	2.29	-3.62	-6.46	3.719525	8	-7.43
High	2452	3.34	-4.58	-5.52	4.450785	8	-8.78

5725-5845 MHz High Power Setting Only

802.11a mode

Channel	Frequency (MHz)	TX Chain 0 PDS (dBm)	TX Chain 1 PSD (dBm))	TX Chain 2 PDS (dBm	Worst PSD (dBm)	Limit (dBm/3kHz)	Margin (dB)
Low	5745	-4.53	-5.49	-5.35	-4.53	8	-7.61
Middle	5785	-5.05	-6.54	-6.86	-5.05	8	-7.43
High	5825	-5.61	-6.36	-8.87	-5.61	8	-8.78

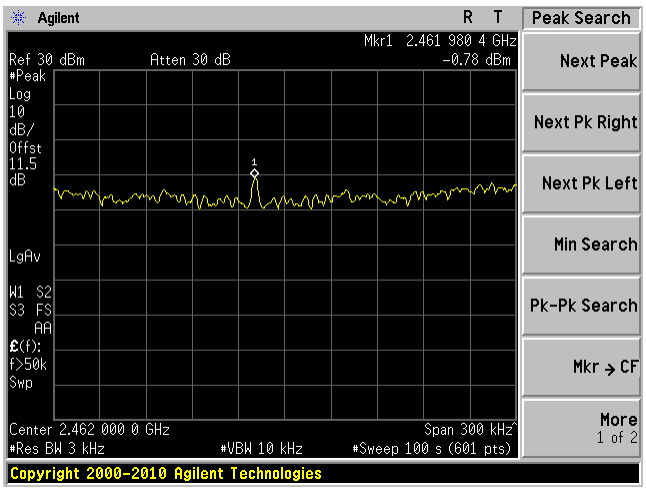
802.11n 20 mode

Channel	Frequency (MHz)	TX Chain 0 PDS (dBm)	TX Chain 1 PSD (dBm))	TX Chain 2 PDS (dBm	Total PSD (dBm)	Limit (dBm/3kHz)	Margin (dB)
Low	5755	-11.52	-12.08	-10.47	-6.53	8	-7.61
High	5795	-9.34	-9.51	-12	-5.35	8	-8.78

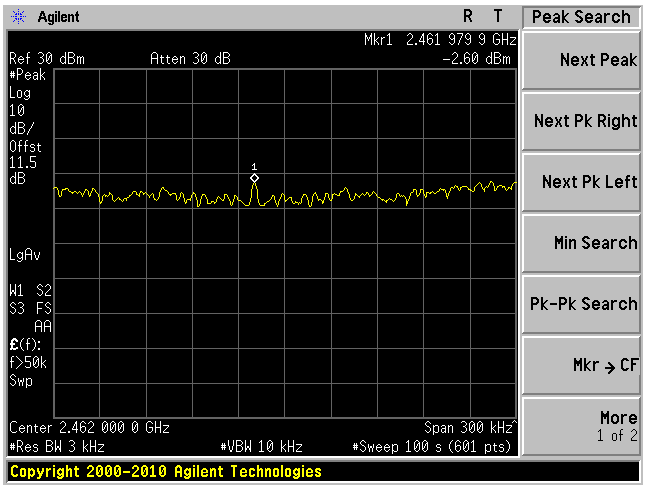
Please refer to the following plots.

2400 – 2483 MHz

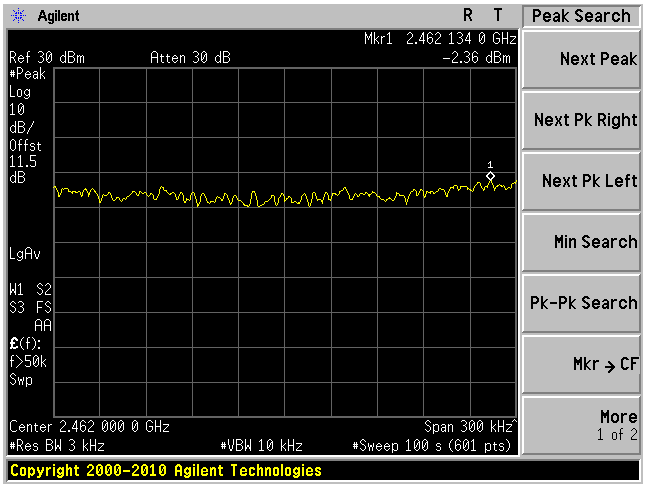
802.11 b mode, High channel, Chain 0



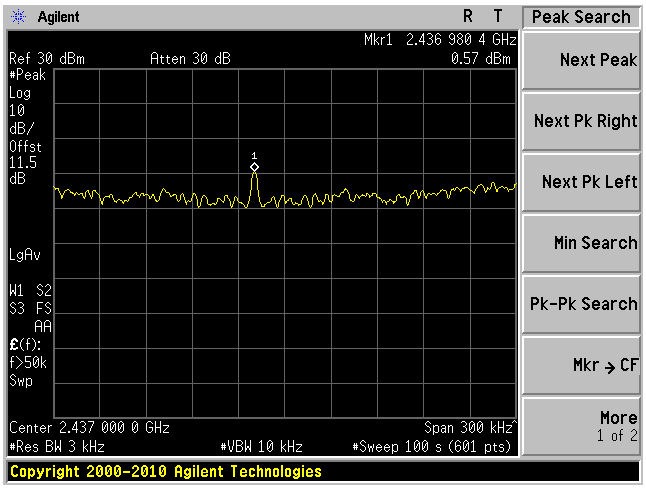
802.11 b mode, High channel, Chain 1



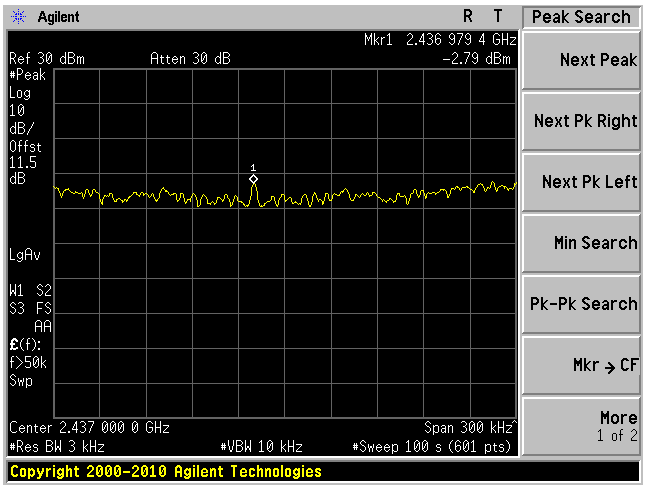
802.11 b mode, High channel, Chain 2



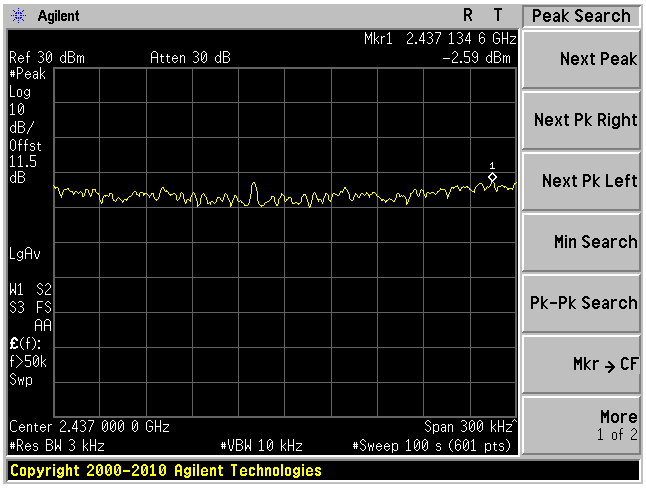
802.11 b mode, Middle channel, Chain 0



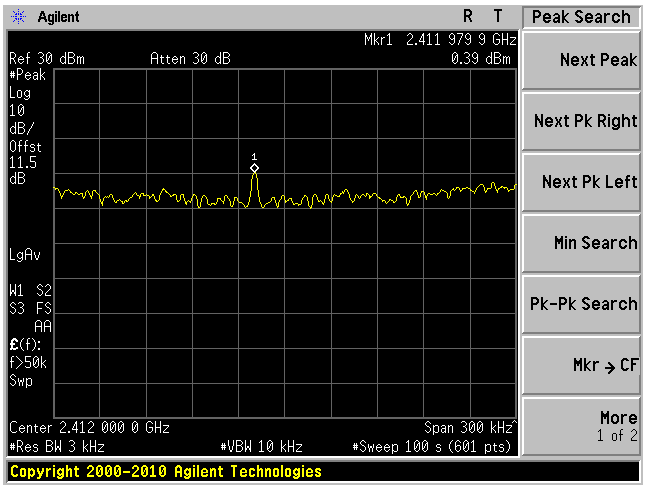
802.11 b mode, Middle channel, Chain 1



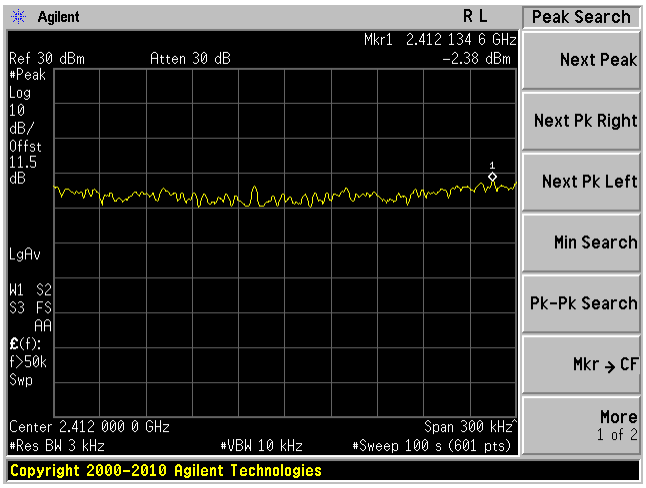
802.11 b mode, Middle channel, Chain 2



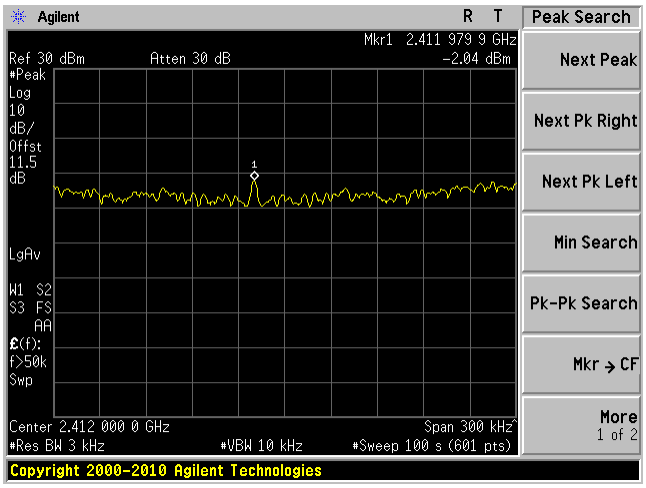
802.11 b mode, Low channel, Chain 0



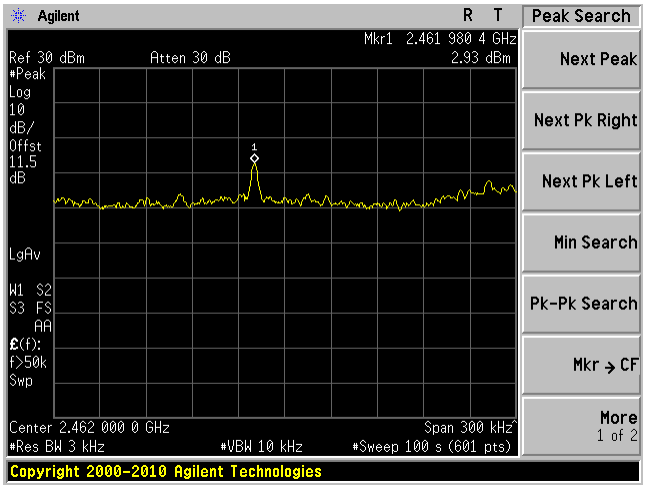
802.11 b mode, Low channel, Chain 1



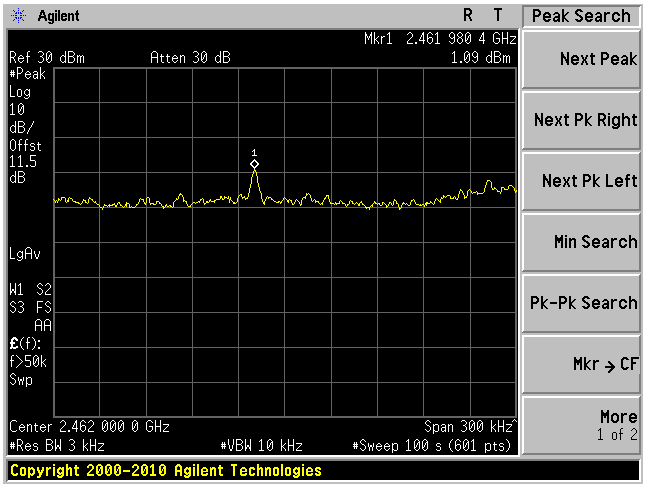
802.11 b mode, Low channel, Chain 2



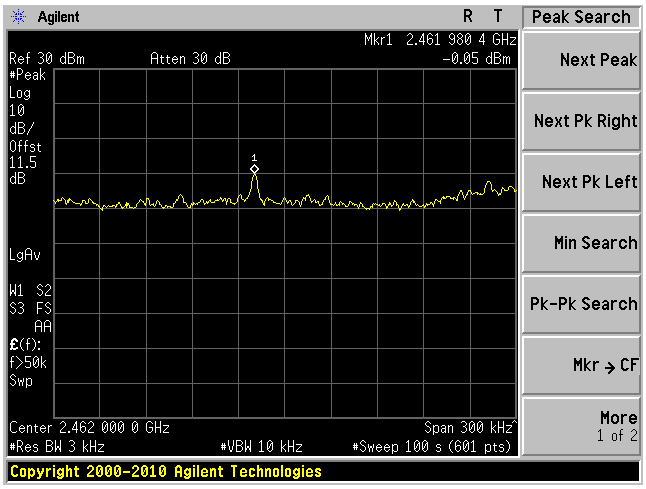
802.11 g mode, High channel, Chain 0



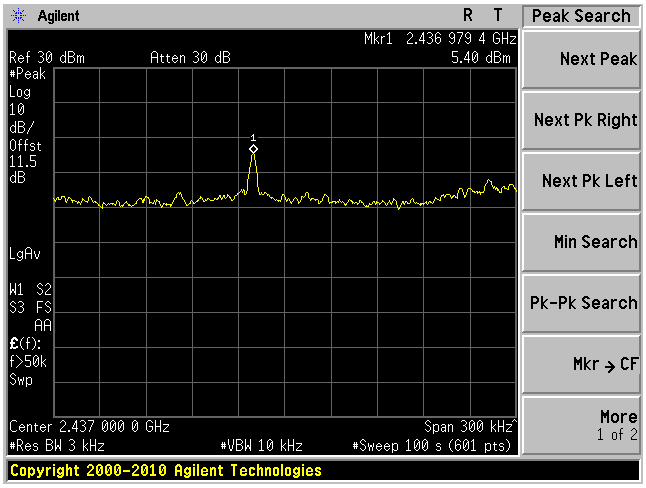
802.11 g mode, High channel, Chain 1



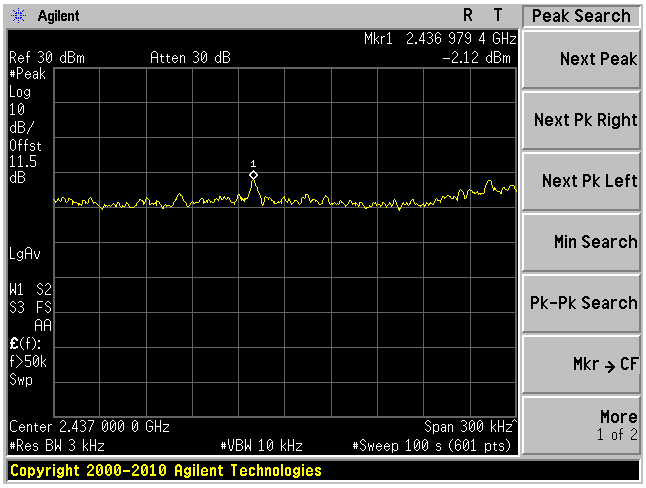
802.11 g mode, High channel, Chain 2



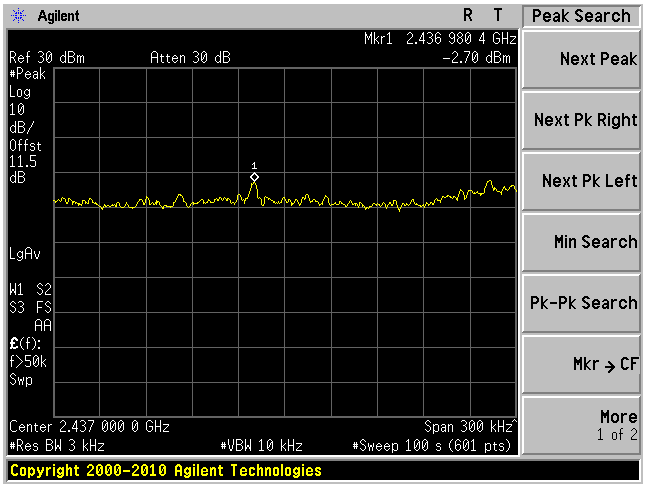
802.11 g mode, Middle channel, Chain 0



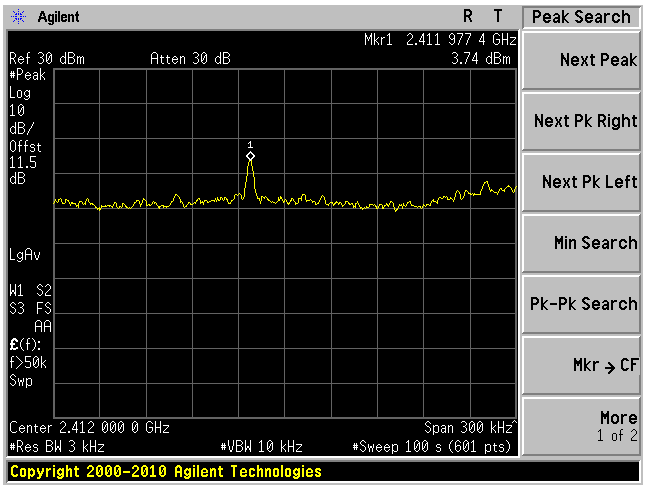
802.11 g mode, Middle channel, Chain 1



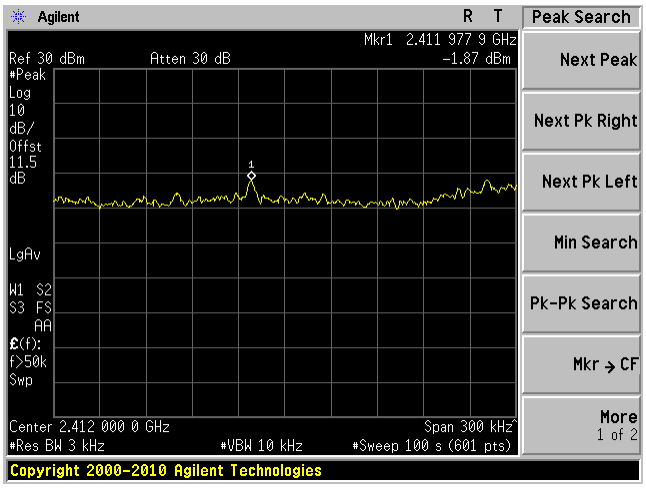
802.11 g mode, Middle channel, Chain 2



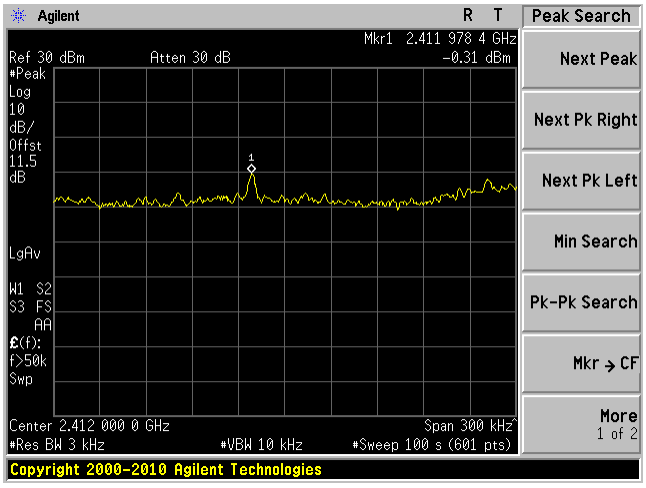
802.11 g mode, Low channel, Chain 0



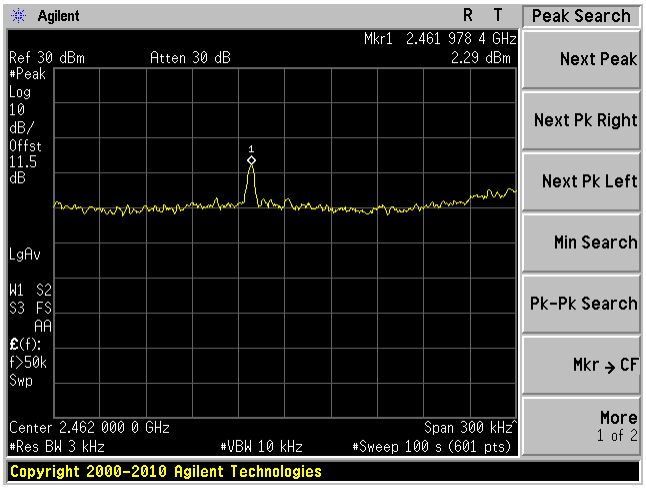
802.11 g mode, Low channel, Chain 1



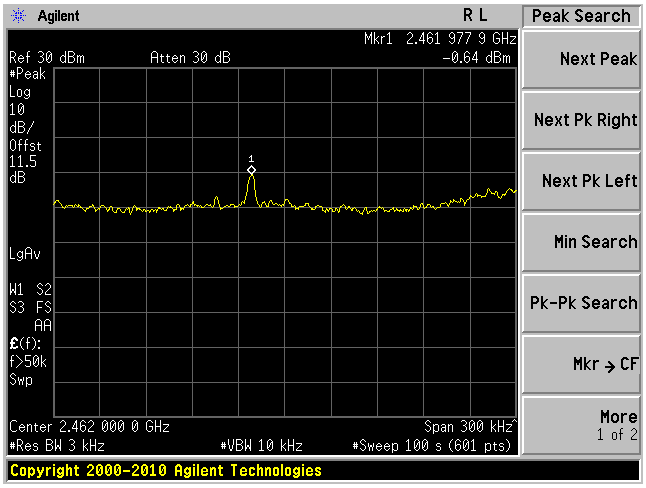
802.11 g mode, Low channel, Chain 2



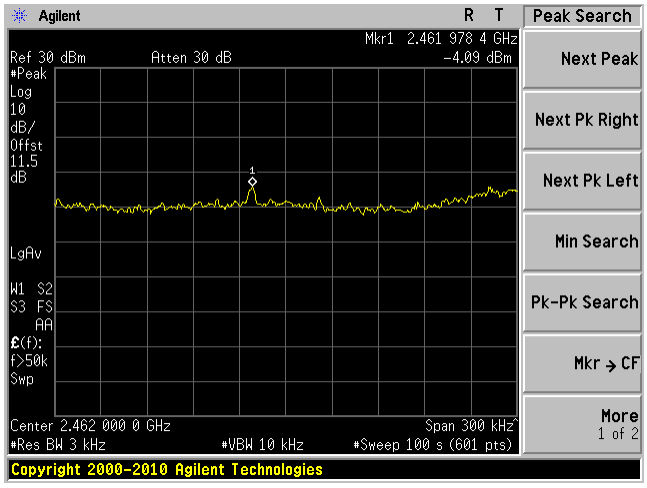
802.11 n20 mode, High channel, Chain 0



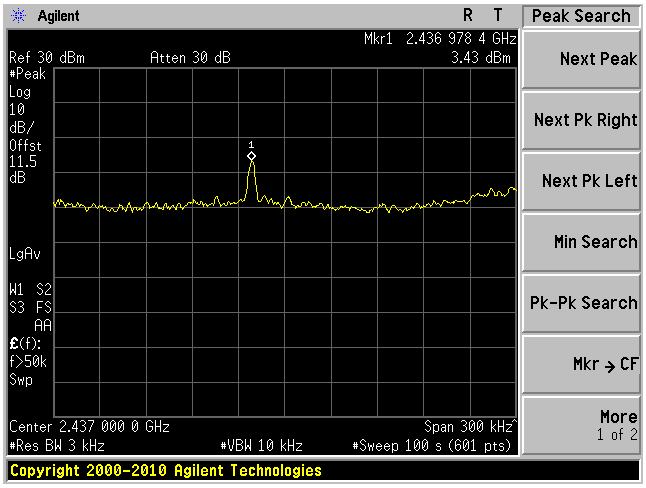
802.11 n20 mode, High channel, Chain 1



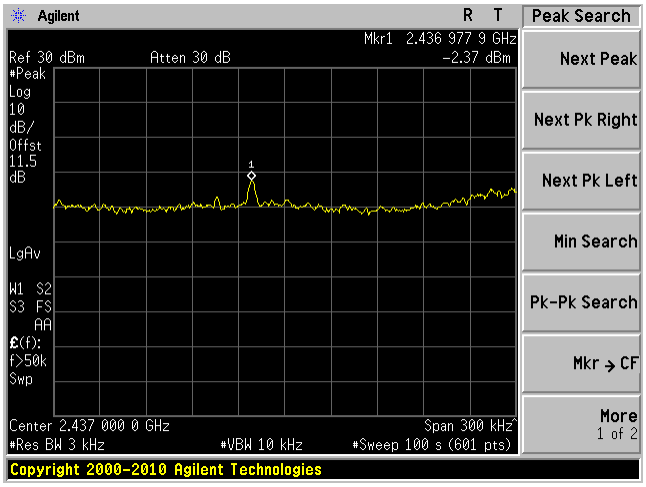
802.11 n20 mode, High channel, Chain 2



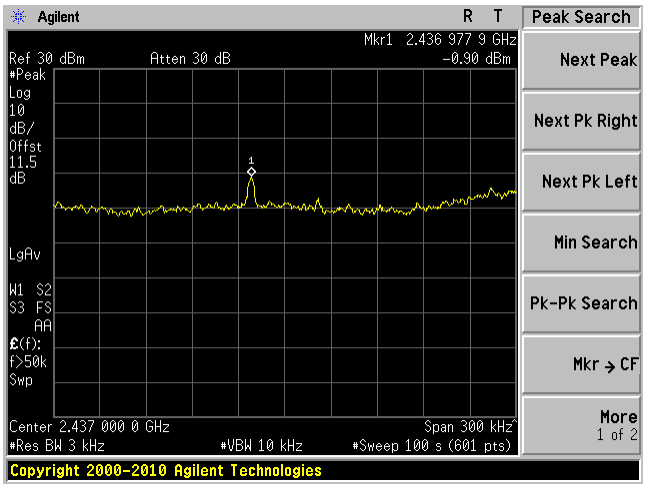
802.11 n20 mode, Middle Channel, Chain 0



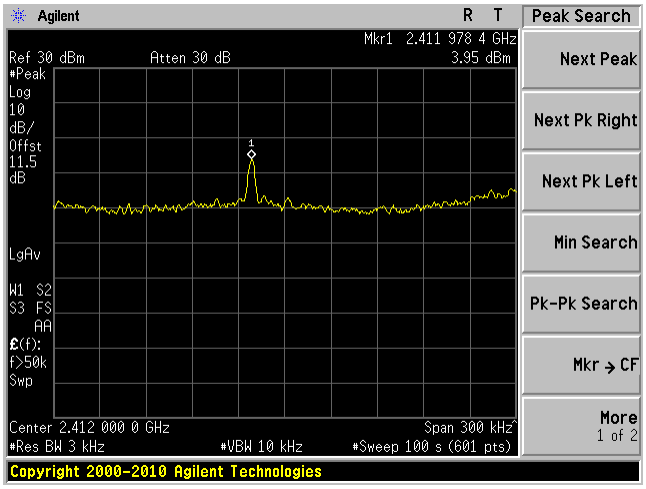
802.11 n20 mode, Middle Channel, Chain 1



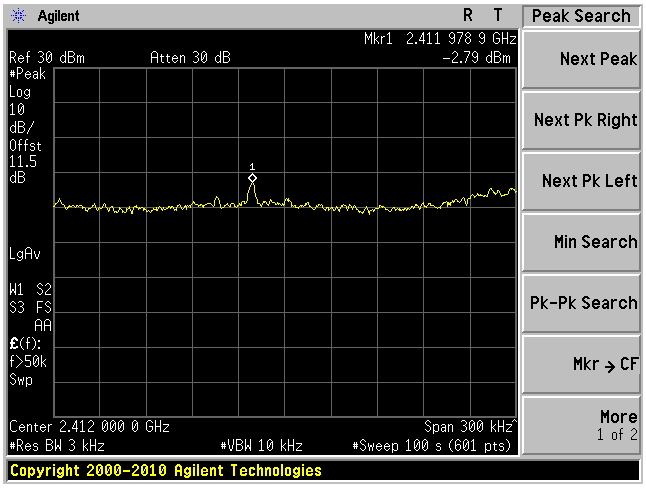
802.11 n20 mode, Middle Channel, Chain 2



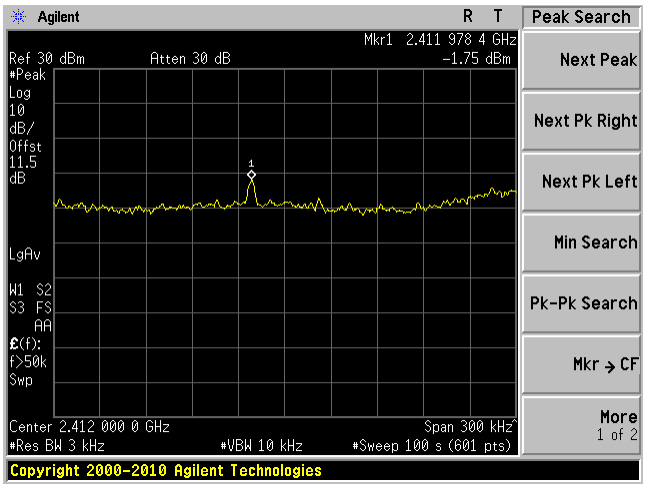
802.11 n20 mode, Low Channel, Chain 0



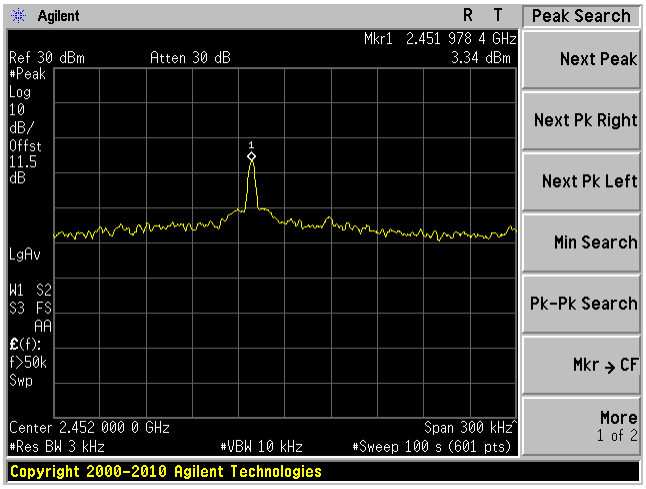
802.11 n20 mode, Low Channel, Chain 1



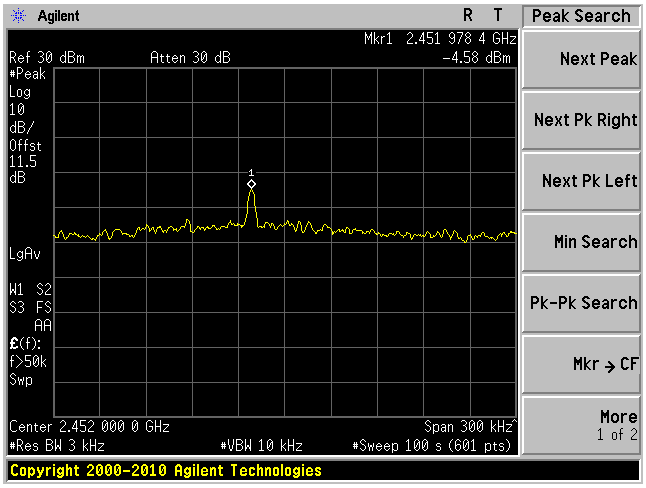
802.11 n20 mode, Low Channel, Chain 2



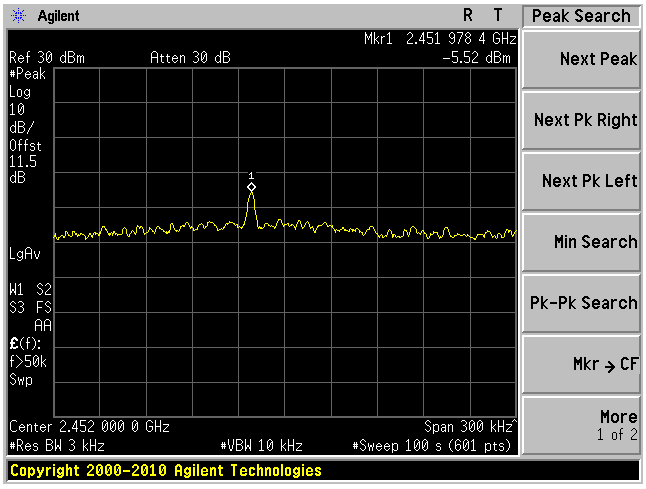
802.11 n40 mode, High Channel, Chain 0



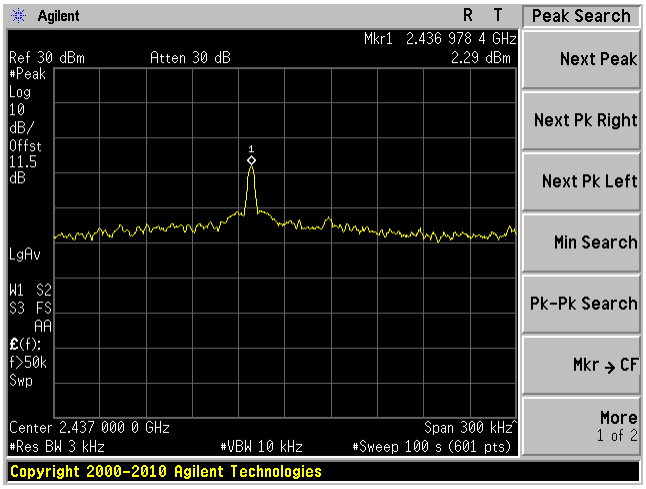
802.11 n40 mode, High Channel, Chain 1



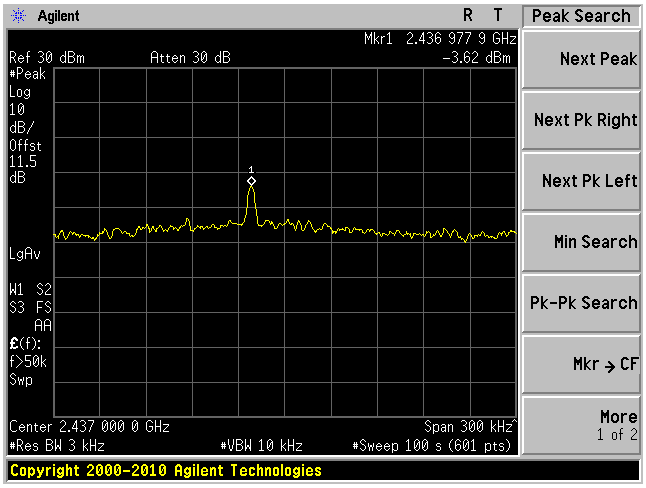
802.11 n40 mode, High Channel, Chain 2



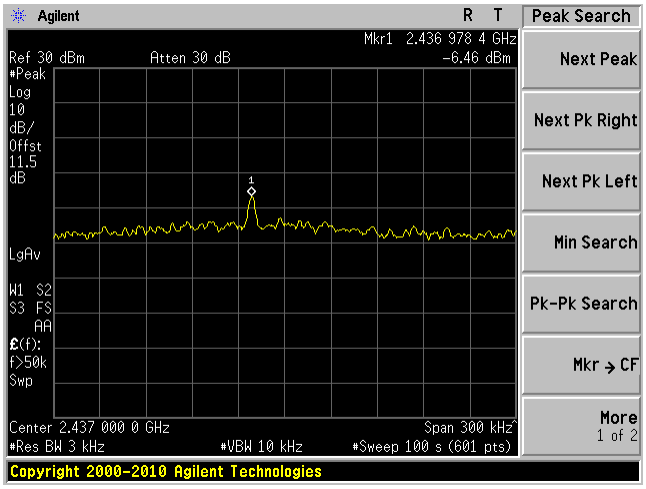
802.11 n40 mode, Middle Channel, Chain 0



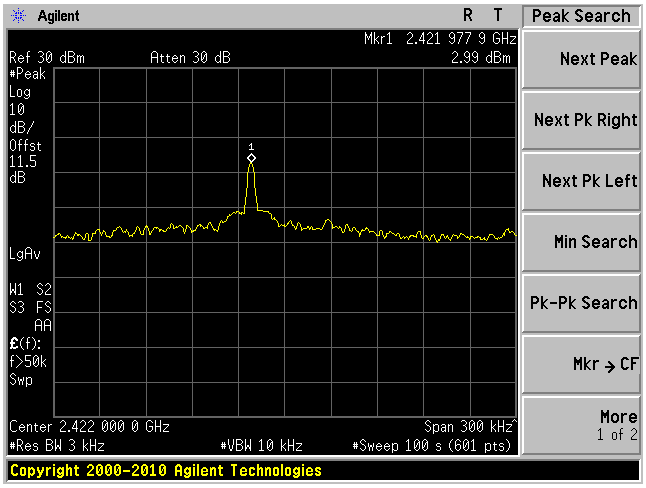
802.11 n40 mode, Middle Channel, Chain 1



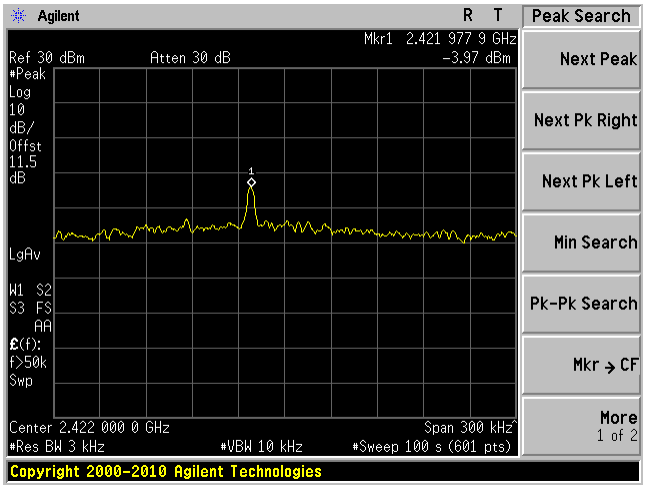
802.11 n40 mode, Middle Channel, Chain 2



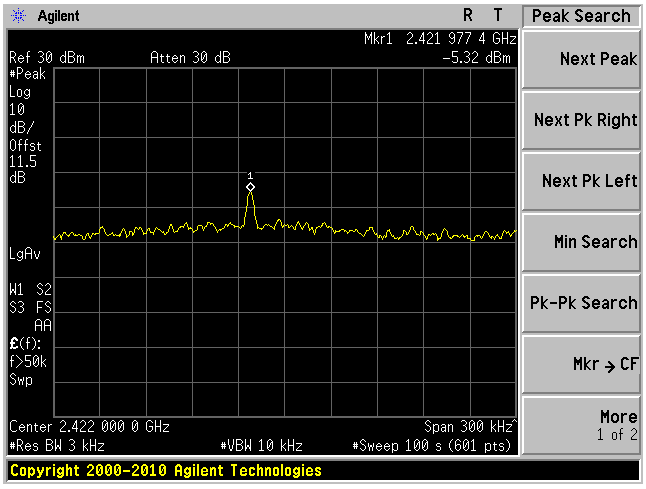
802.11 n40 mode, Low Channel, Chain 0



802.11 n40 mode, Low Channel, Chain 1

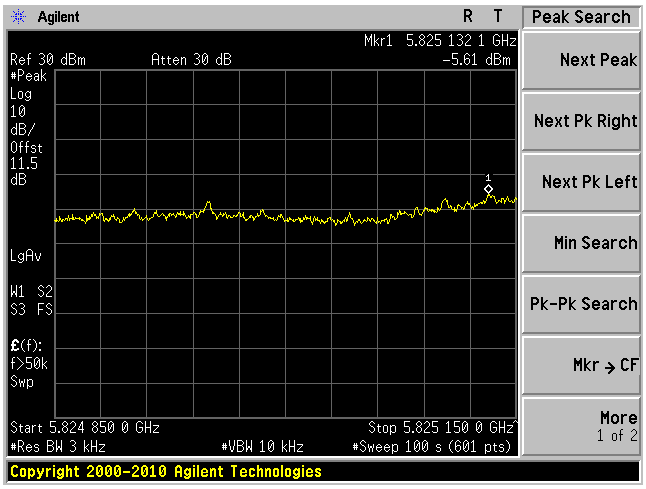


802.11 n40 mode, Low Channel, Chain 2

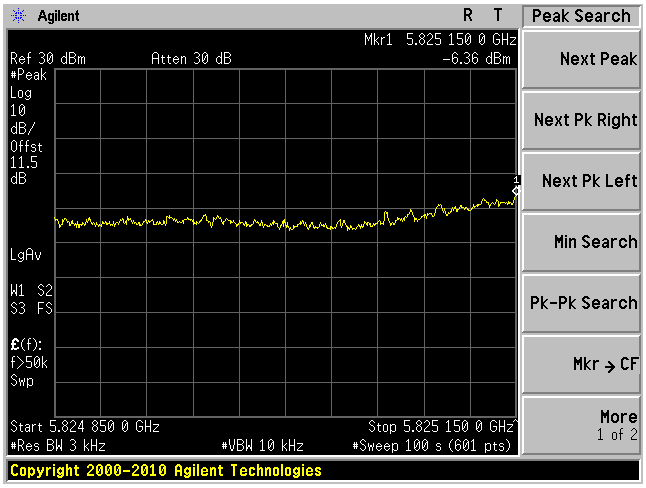


5725 – 5845 MHz

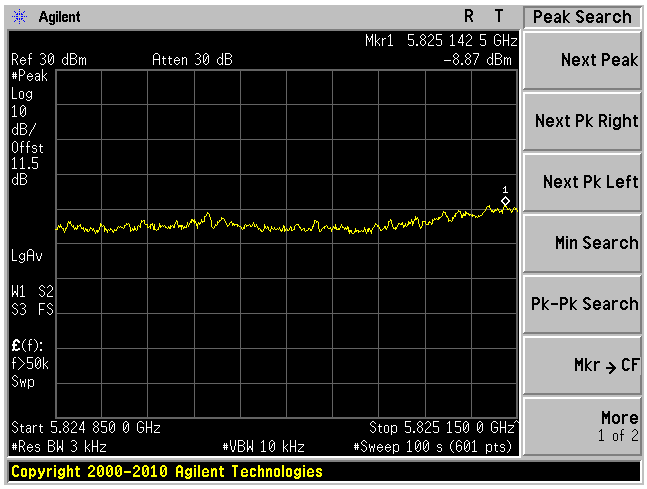
802.11 a mode, High Channel, Chain 0



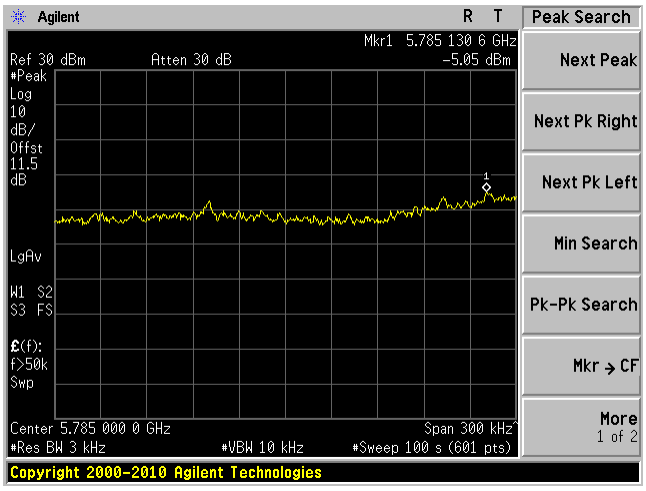
802.11 a mode, High Channel, Chain 1



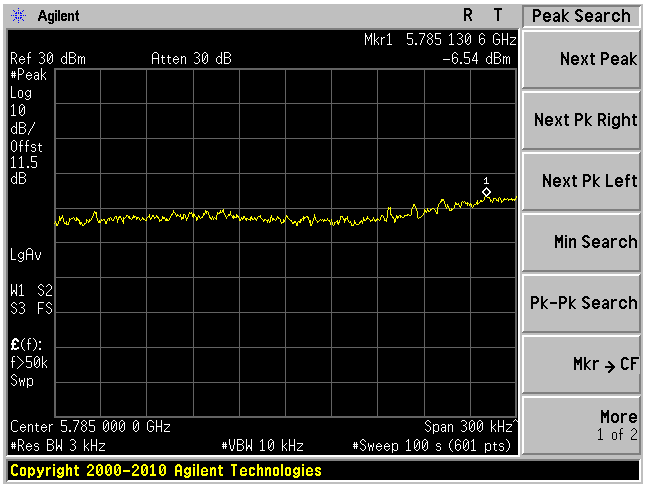
802.11 a mode, High Channel, Chain 2



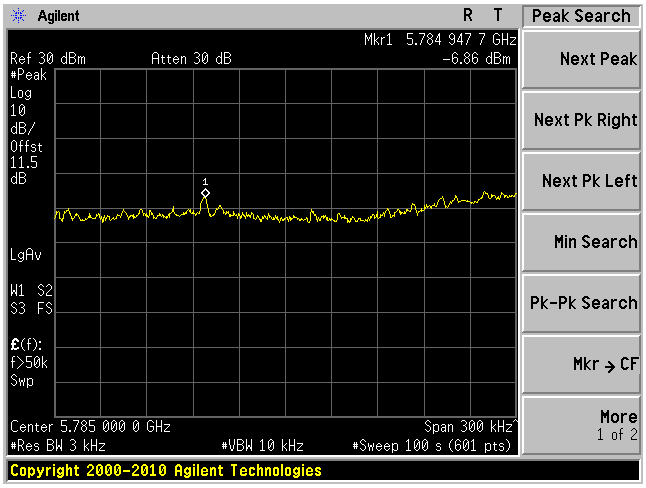
802.11 a mode, Middle Channel, Chain 0



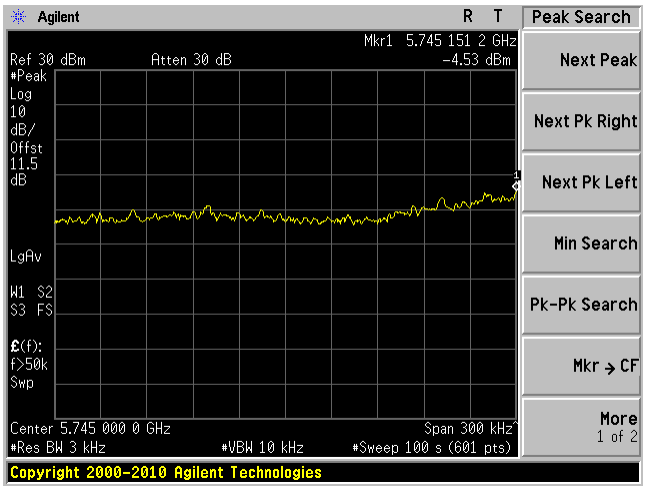
802.11 a mode, Middle Channel, Chain 1



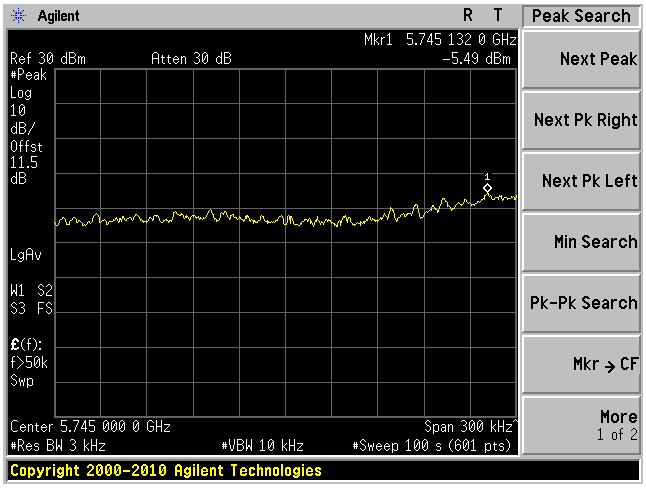
802.11 a mode, Middle Channel, Chain 2



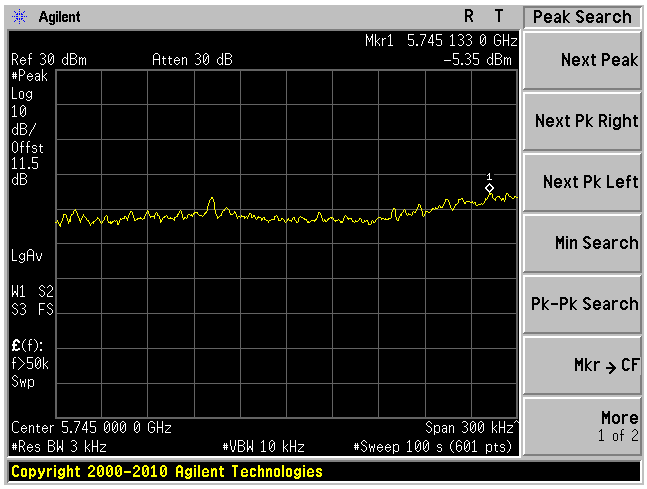
802.11 a mode, Low Channel, Chain 0



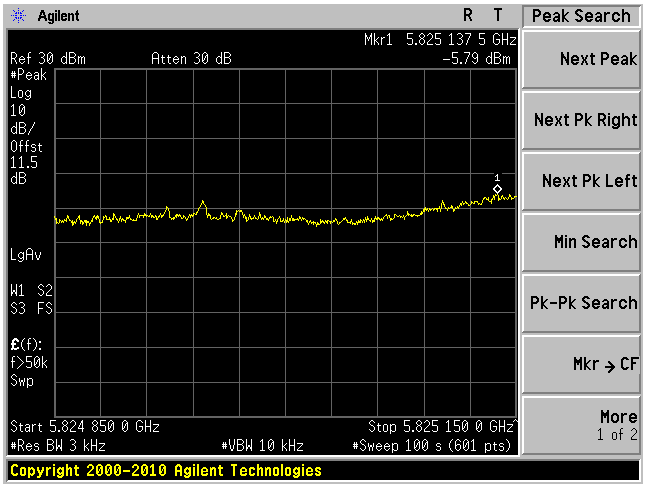
802.11 a mode, Low Channel, Chain 1



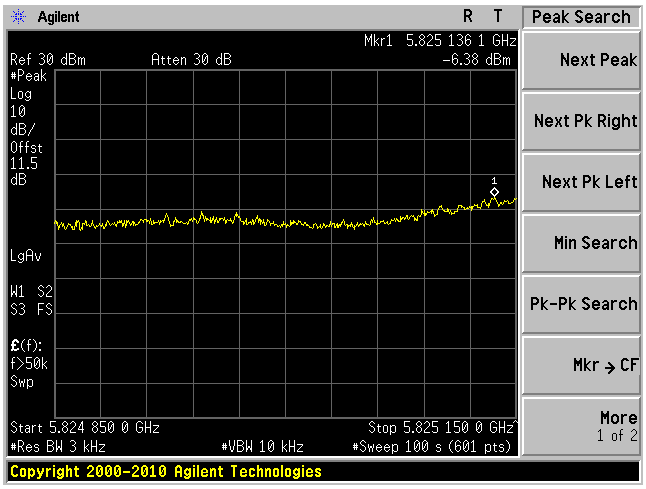
802.11 a mode, Low Channel, Chain 2



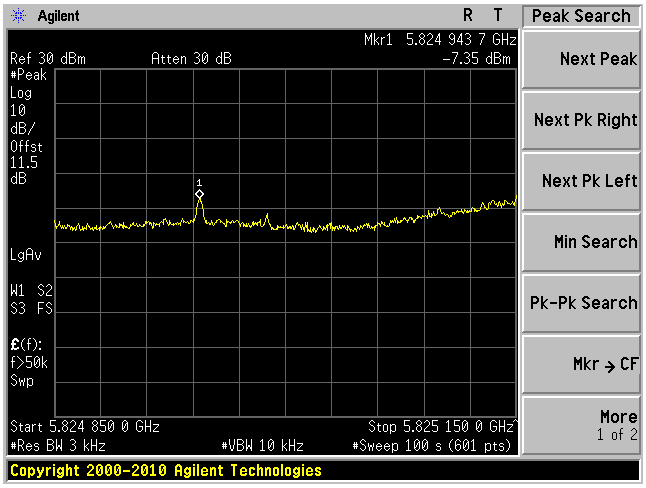
802.11 n20 mode, High Channel, Chain 0



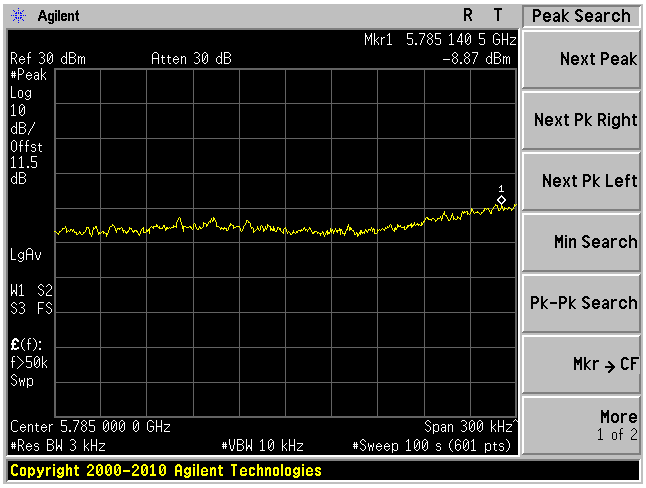
802.11 n20 mode, High Channel, Chain 1



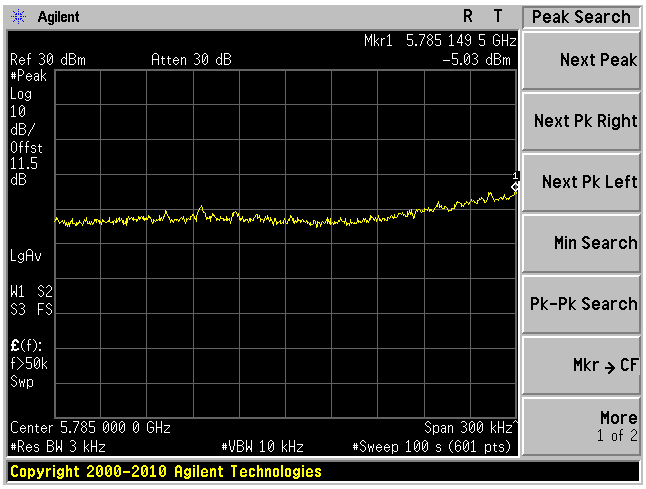
802.11 n20 mode, High Channel, Chain 2



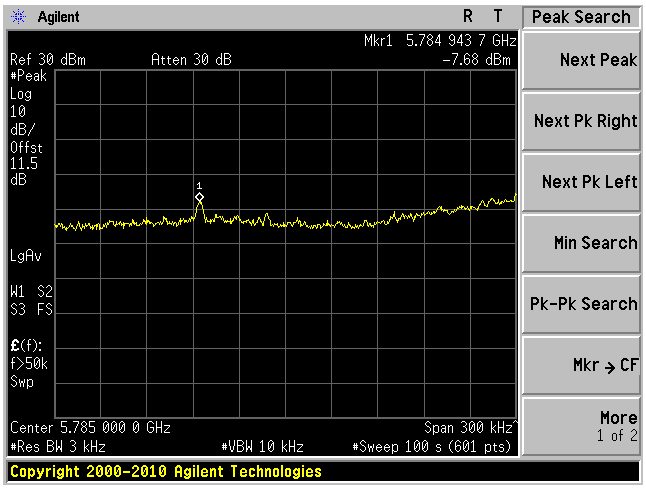
802.11 n20 mode, Middle Channel, Chain 0



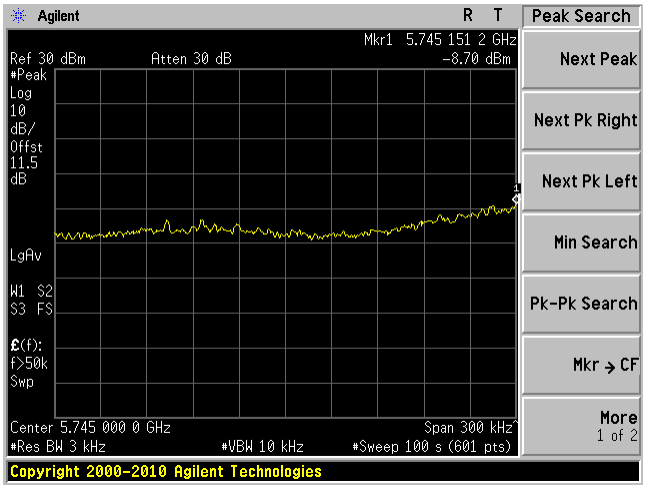
802.11 n20 mode, Middle Channel, Chain 1



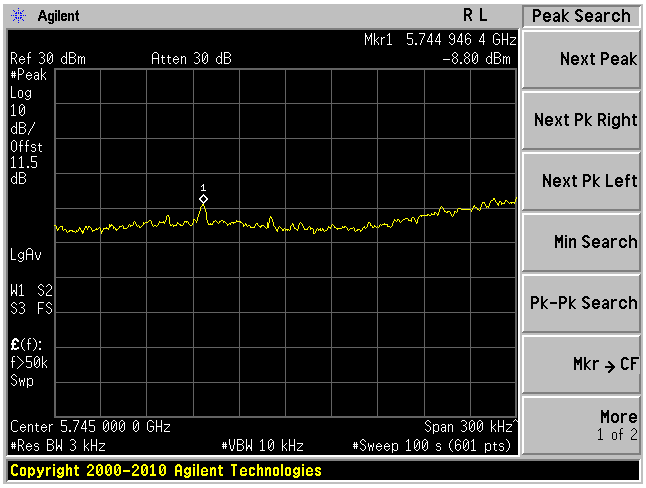
802.11 n20 mode, Middle Channel, Chain 2



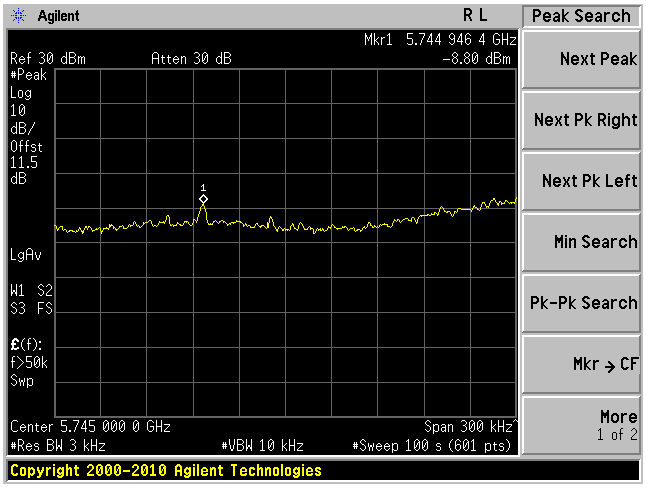
802.11 n20 mode, Low Channel, Chain 0



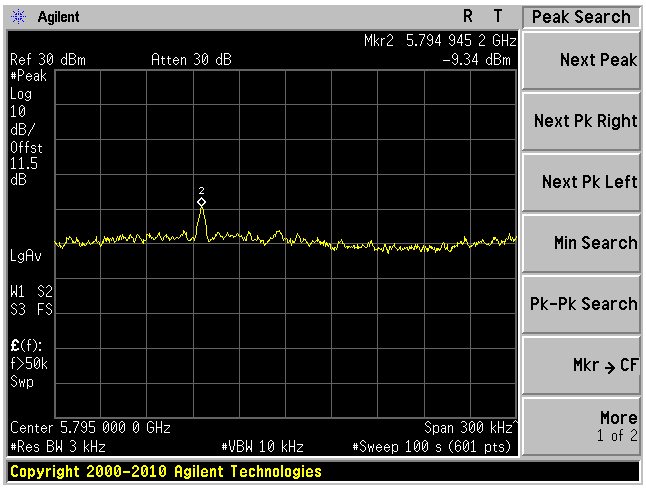
802.11 n20 mode, Low Channel, Chain 1



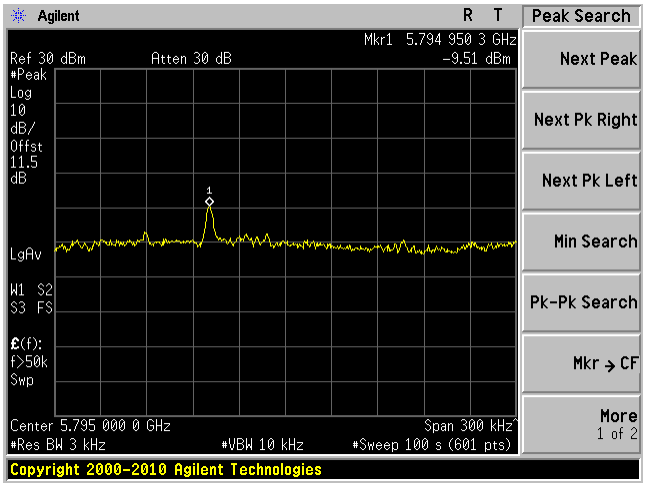
802.11 n20 mode, Low Channel, Chain 2



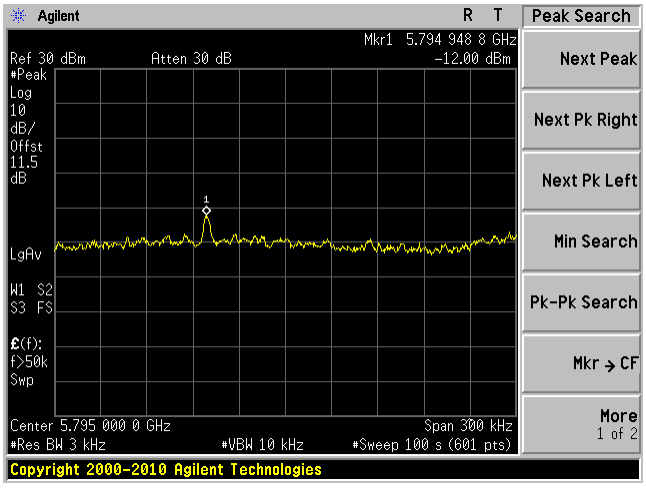
802.11 n40 mode, High Channel, Chain 0



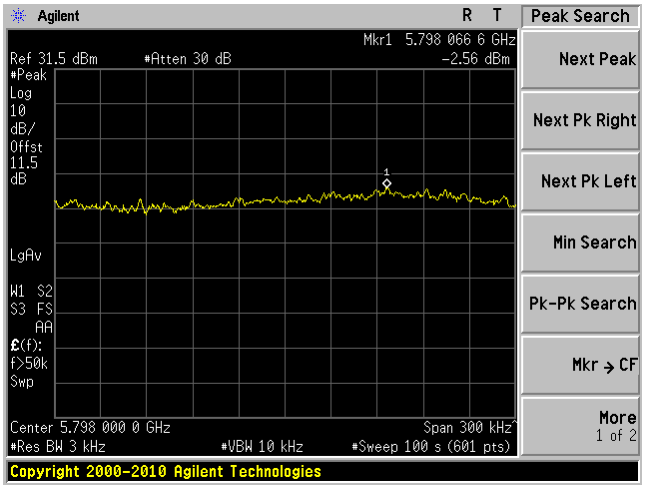
802.11 n40 mode, High Channel, Chain 1



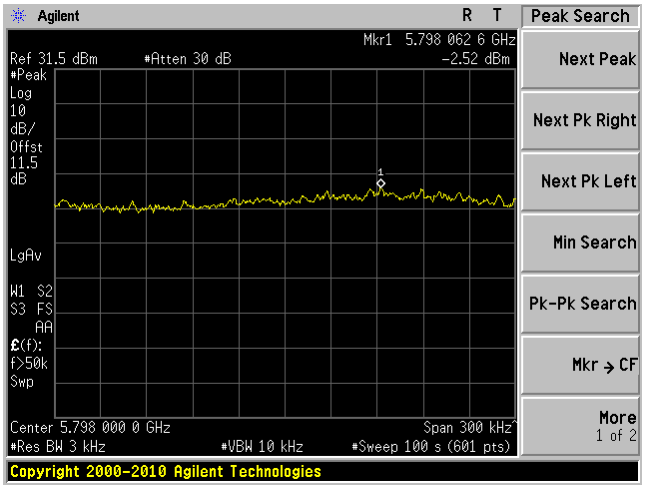
802.11 n40 mode, High Channel, Chain 2



802.11 n40 mode, Middle Channel, Chain 0



802.11 n40 mode, Middle Channel, Chain 1



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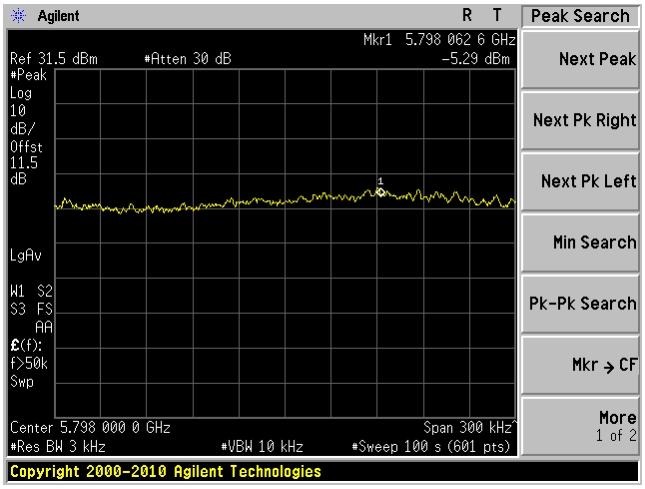

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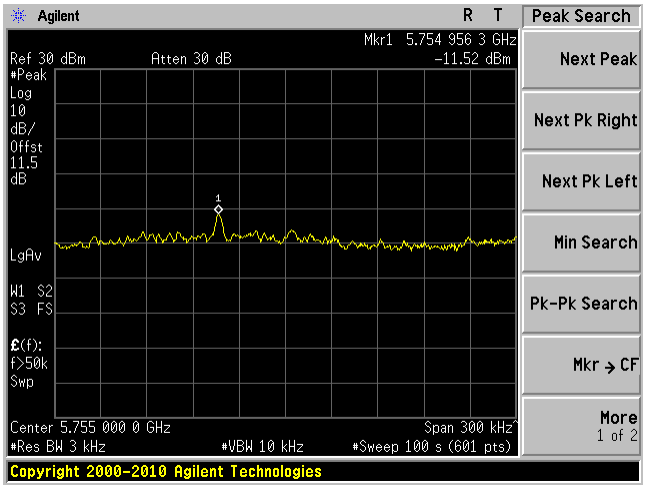
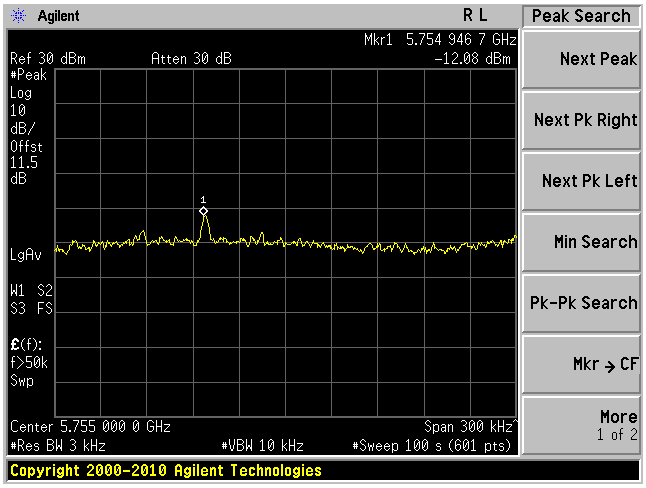


802.11 n40 mode, Low channel, Chain 1



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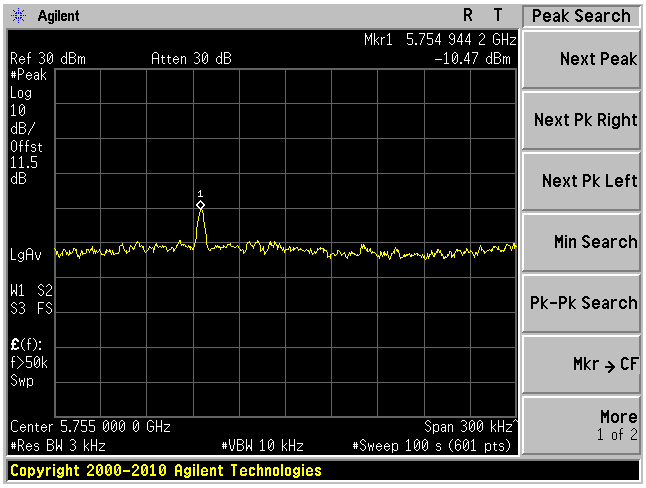


13 IC RSS-210 §2.6 & RSS-Gen §4.10 - Receiver Spurious Radiated Emissions

13.1 Applicable Standard

According to IC RSS-Gen §4.10, the receiver shall be operated in the normal receive mode near the mid-point of the band over which the receiver is designed to operate.

Unless otherwise specified in the applicable RSS, the radiated emission measurement is the standard measurement method (with the device's antenna in place) to measure receiver spurious emissions.

Radiated emission measurements are to be performed using a calibrated open-area test site.

For either method, the search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tuneable or local oscillator frequency, whichever is the higher, without exceeding 40 GHz.

For emissions below 1 GHz, measurements shall be performed using a CISPR quasi-peak detector and the related measurement bandwidth. As an alternative to CISPR quasi-peak measurement, compliance with the emission limit can be demonstrated using measuring equipment employing a peak detector with the same measurement bandwidth as that for CISPR quasi-peak measurements. Above 1 GHz, measurements shall be performed using an average detector and a resolution bandwidth of 300 kHz to 1 MHz.

According to RSS-210 §2.6, Tables 2 and 3 show the general field strength limits of unwanted emissions, where applicable, for transmitters and receivers operating in accordance with the provisions specified in this RSS. Transmitters whose wanted emissions are also within the limits shown in Tables 2 and 3 may operate in any of the frequency bands of Tables 2 and 3, other than the restricted bands of Table 1 and the TV bands, and shall be certified under RSS-210.

Table 2: General Field Strength Limits for Transmitters and Receivers at Frequencies above 30 MHz **(Note)**

Frequency (MHz)	Field Strength Microvolts/m at 3 meters (watts, e.i.r.p.)	
	Transmitters	**Receivers**
30-88	100 (3 nW)	100 (3 nW)
88-216	150 (6.8 nW)	150 (6.8 nW)
216-960	200 (12 nW)	200 (12 nW)
Above 960	500 (75 nW)	500 (75 nW)

Note: Transmitting devices are not permitted in Table 1 bands or in TV bands (54-72 MHz, 76-88 MHz, 174-216 MHz, 470-608 MHz, and 614-806 MHz). Prohibition of operation in TV bands does not apply to momentary devices, or to medical telemetry devices in the band 174-216 MHz, and to perimeter protection systems in the bands 54-72 and 76-88 MHz. The perimeter protection devices are to meet Table 3 field strengths limits.

Table 3: General Field Strength Limits for Transmitters at Frequencies below 30 MHz (Transmit)

Frequency (fundamental or spurious)	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/377F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/377F (F in kHz)	30
1.705-30 MHz	30	N/A	30

Note: The emission limits for the bands 9-90 kHz and 110-490 kHz are based on measurements employing an average detector.

13.2 EUT Setup

The radiated emissions tests were performed in the 3 meter chamber, using the setup in accordance with ANSI C63.4-2003.

13.3 Test Procedure

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations.

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

13.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude (CA) is calculated by adding the Antenna Factor (AF), the Cable Loss (CL), the Attenuator Factor (Atten) and subtracting the Amplifier Gain (Ga) to indicated Amplitude (Ai) reading. The basic equation is as follows:

CA = Ai + AF + CL + Atten – Ga

For example, a corrected amplitude of 40.3 dBuV/m = Indicated Reading (32.5 dBuV) + Antenna Factor (+23.5dB) + Cable Loss (3.7 dB) + Attenuator (10 dB) - Amplifier Gain (29.4 dB)

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

Margin = Corrected Amplitude - Limit

13.5 Test Equipment Lists and Details

Manufacturer	Description	Model	Serial Number	Calibration Date
Sunol Science Corp	Combination Antenna	JB3	A020106-3	2011-06-29
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100337	2011-03-21
Sunol Science Corp	System Controller	SC99V	122303-1	N/R
A.R.A Inc	Horn antenna	DRG-1181A	1132	2010-11-29
Agilent	Spectrum Analyzer	E4440A	MY44303352	2011-05-10
HP	Pre Amplifier	8449B	3147A00400	2011-02-03

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

13.6 Test Environmental Conditions

Temperature:	18~21 °C
Relative Humidity:	30~35 %
ATM Pressure:	101.2-102.2kPa

The testing was performed by Jerry Huang from 2011-11-14 in 5 meter chamber 2.

13.7 Summary of Test Results

According to the test data, the EUT complied with the with the RSS-210/RSS-Gen, with the closest margins from the limit listed below:

30-1000 MHz:

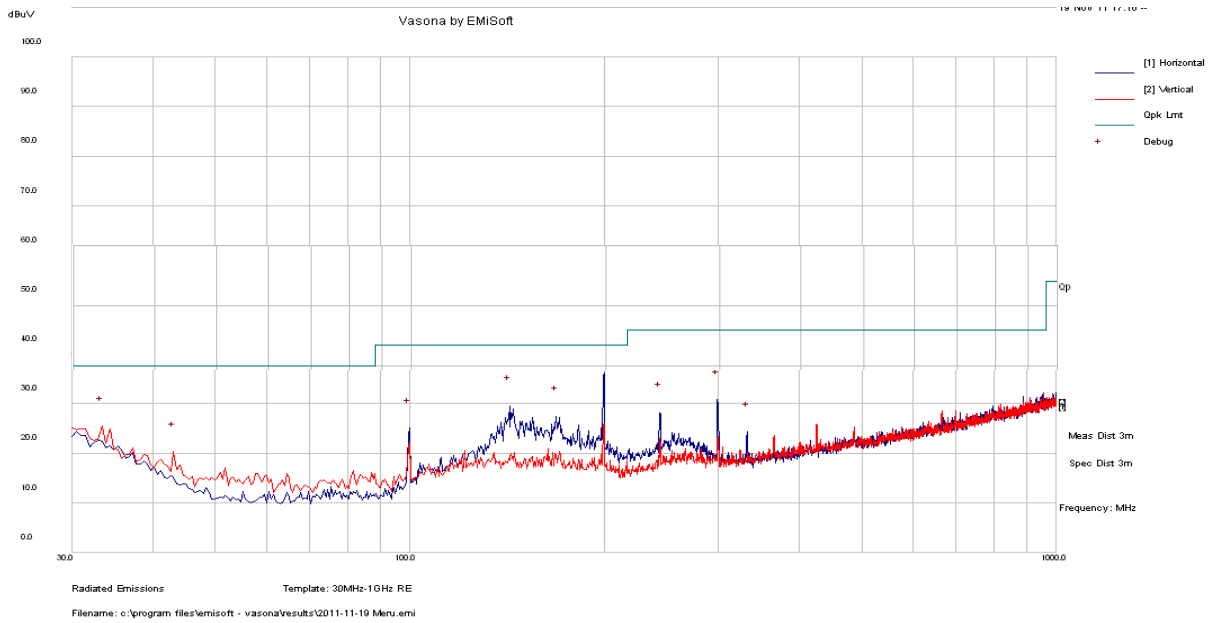
Mode: Receiving			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Range (MHz)**
-0.96	99.91975	Horizontal	30 to 1000

Above 1000 MHz:

Mode: Receiving			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Range (GHz)**
-17.167	1395	Vertical	1 to 13

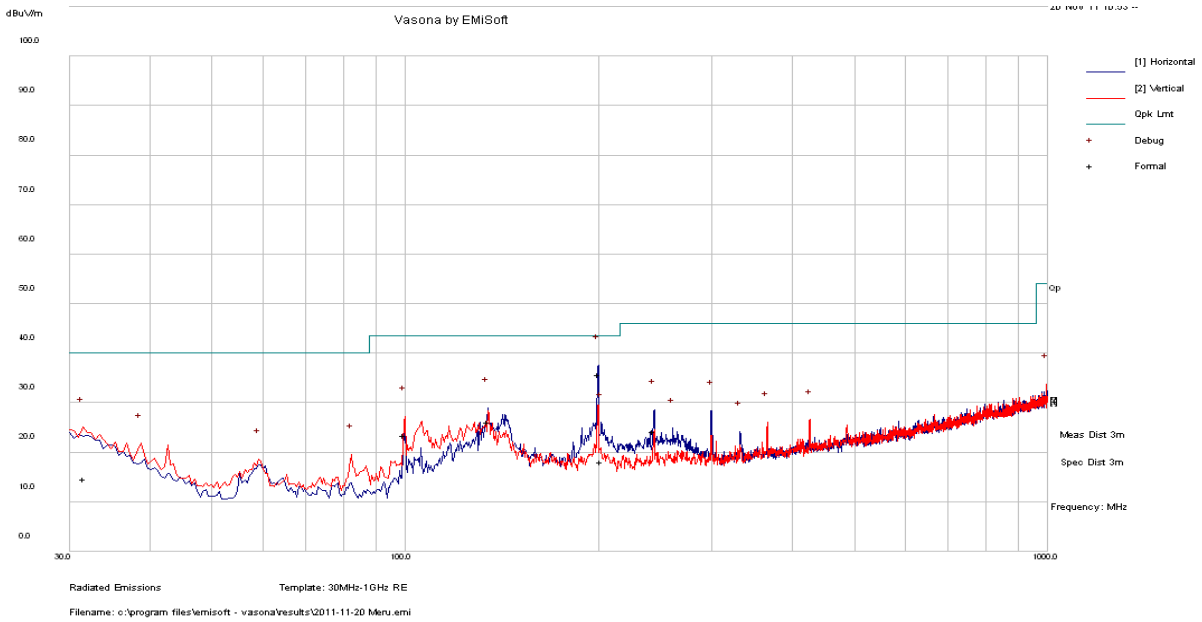
Radiated Emission at 3 meters, 30 MHz -1GHz

2.4 GHz Band, 2 dBi Antenna



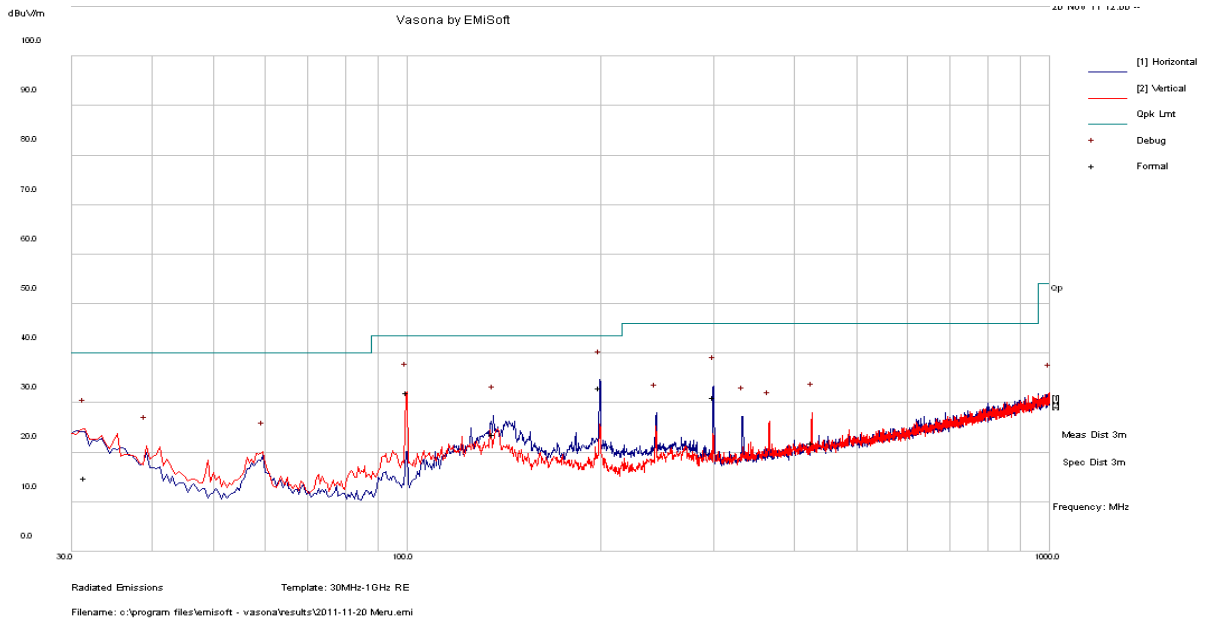
Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Ant. Polarity (H/V)	Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
199.825	34.05	167	H	7	43.5	-9.45
99.918	27.53	161	H	205	43.5	-15.97
142.6918	24.9	156	H	232	43.5	-18.60
167.993	21.02	100	H	117	43.5	-22.48
33.172	13.31	175	V	192	40	-26.69

2.4 GHz Band, 6 dBi Antenna



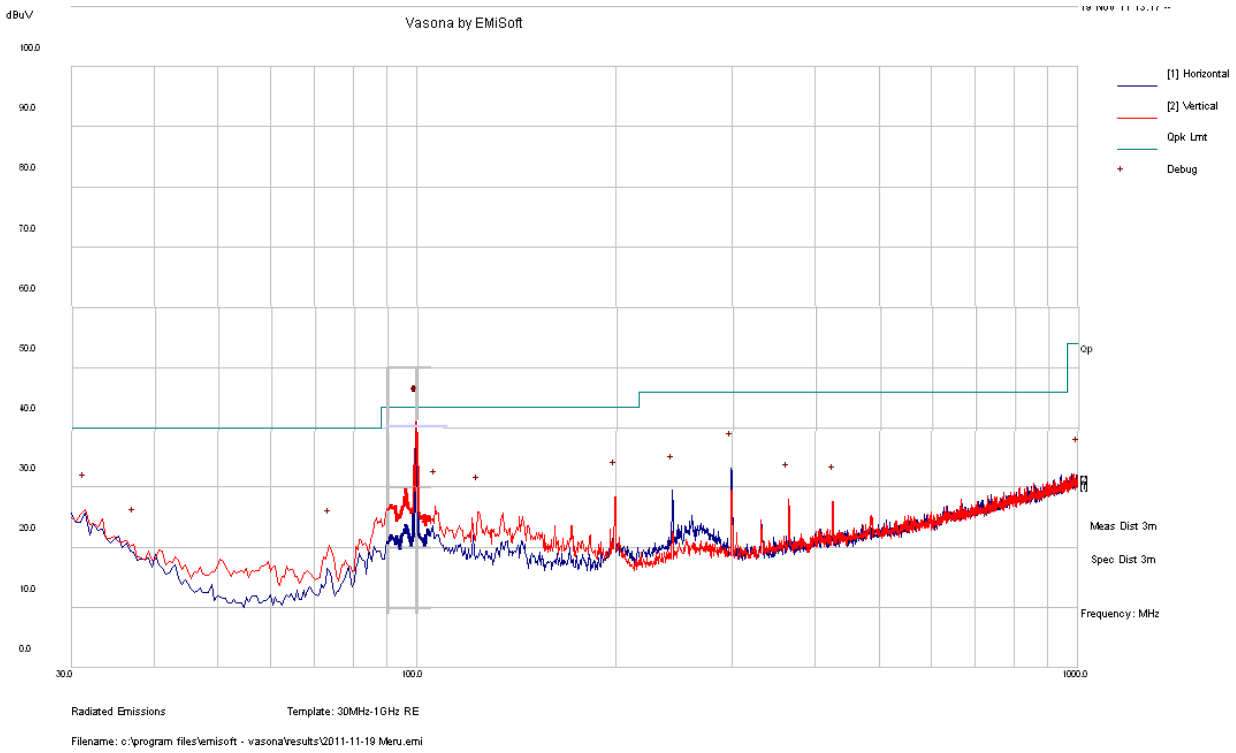
Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
199.8518	35.79	159	H	185	43.5	-7.71
134.496	26.11	162	H	223	43.5	-17.39
99.715	23.42	142	V	259	43.5	-20.08
243.7588	24.29	109	H	241	46	-21.71
31.59725	14.73	115	V	215	40	-25.27
201.6878	18.08	177	H	360	43.5	-25.42

5.8 GHz Band, 7 dBi Antenna



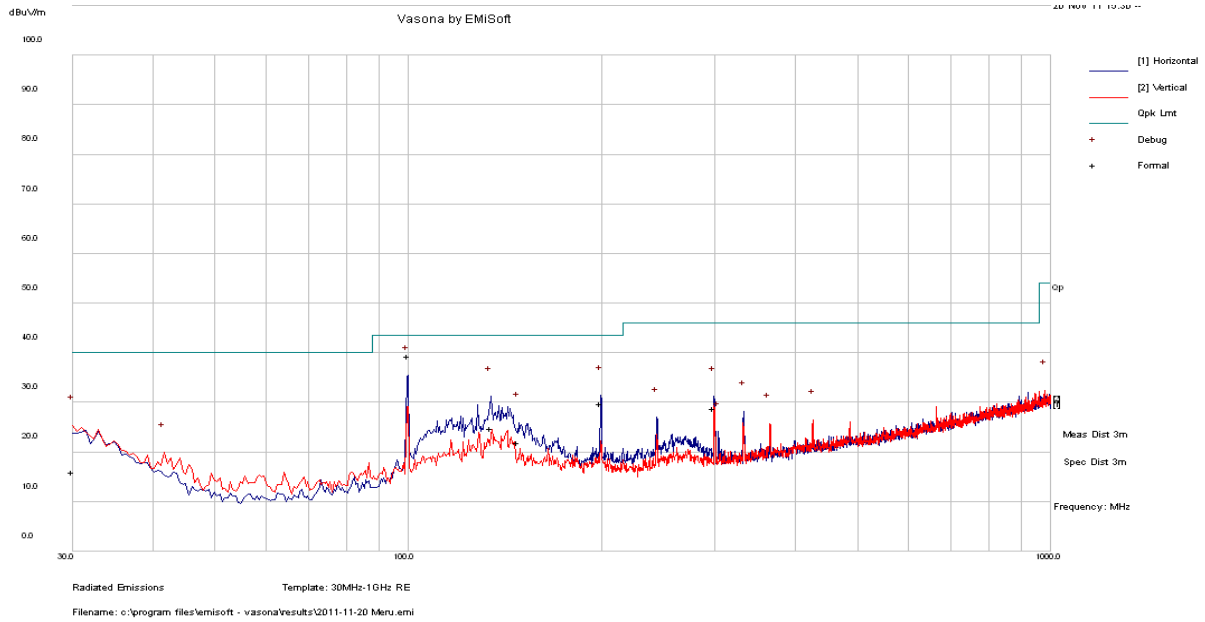
Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
199.8518	35.79	159	H	185	43.5	-7.71
134.496	26.11	162	H	223	43.5	-17.39
99.715	23.42	142	V	259	43.5	-20.08
243.7588	24.29	109	H	241	46	-21.71
31.59725	14.73	115	V	215	40	-25.27
201.6878	18.08	177	H	360	43.5	-25.42

2.4 GHz Band, 8 dBi Antenna



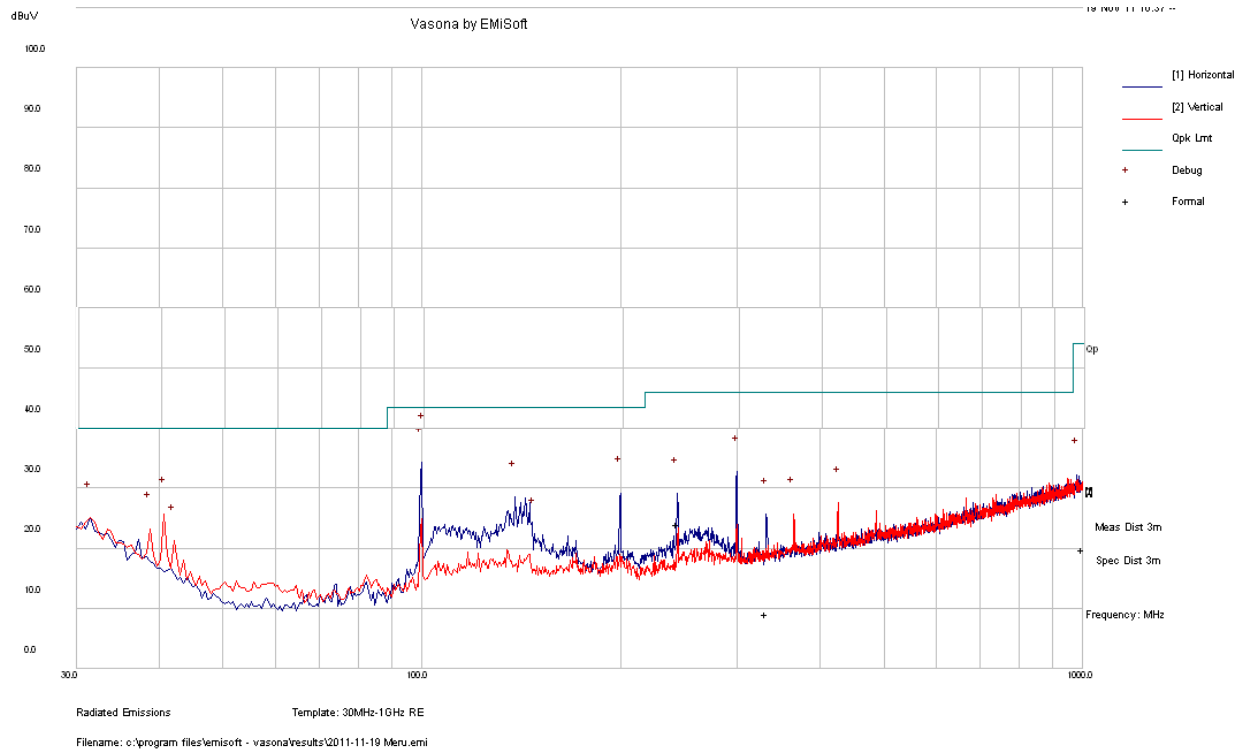
Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
199.1735	25.26	164	V	178	43.5	18.24
123.7505	13.83	124	V	335	46	32.17
298.7268	32.88	100	H	1	43.5	10.62
106.6038	20.47	114	V	125	43.5	23.03
99.91675	39.04	100	V	174	40	0.96
31.34975	14.5	140	V	10	43.5	29

5.8 GHz Band, 8 dBi Antenna



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
99.91975	39.42	176	H	213	43.5	-4.08
199.1583	29.72	132	H	214	43.5	-13.78
134.424	24.81	135	H	0	43.5	-18.69
30.01154	15.93	106	V	194	40	-24.07
298.723	28.89	110	H	344	46	-17.11
148.4228	21.91	140	H	22	43.5	-21.59

5.8 GHz Band, 5 dBi Antenna



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
99.93025	36.06	166	H	216	43.5	-7.44
199.8448	27.17	173	H	188	43.5	-16.33
299.797	29.01	99	H	128	46	-16.99
138.2793	22.41	154	H	211	43.5	-21.09
40.458	8.42	131	V	313	40	-31.58
978.0895	19.72	185	H	34	54	-34.28

Radiated Emission at 3 meters, above 1 GHz

2.4 GHz Band, 2 dBi Antenna

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
1395	41.99	350	100	V	32.603	4.54	27.76	51.373	74	-22.627	peak
1395	38.45	233	106	H	32.629	4.54	27.76	47.859	74	-26.141	peak
1395	26.78	350	100	V	32.603	4.54	27.76	36.163	54	-17.837	Ave
1395	24.45	233	106	H	32.629	4.54	27.76	33.859	54	-20.141	Ave

2.4 GHz Band, 6 dBi Antenna

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
1395	41.21	359	103	V	32.603	4.54	27.76	50.593	74	-23.407	peak
1395	38.14	293	100	H	32.629	4.54	27.76	47.549	74	-26.451	peak
1395	26.93	359	103	V	32.603	4.54	27.76	36.313	54	-17.687	Ave
1395	24.13	293	100	H	32.629	4.54	27.76	33.539	54	-20.461	Ave

2.4 GHz Band, 8 dBi Antenna

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
1395	41.66	311	100	V	32.603	4.54	27.76	51.043	74	-22.957	peak
1395	38.62	314	100	H	32.629	4.54	27.76	48.029	74	-25.971	peak
1395	26.82	311	100	V	32.603	4.54	27.76	36.203	54	-17.797	Ave
1395	23.96	314	100	H	32.629	4.54	27.76	33.369	54	-20.631	Ave

5.8 GHz Band, 8 dBi Antenna

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
1395	52.53	332	100	V	32.603	4.54	27.76	61.913	74	-12.087	peak
1395	38.71	302	100	H	32.629	4.54	27.76	48.119	74	-25.881	peak
1395	27.45	311	100	V	32.603	4.54	27.76	36.833	54	-17.167	Ave
1395	24.35	314	100	H	32.629	4.54	27.76	33.759	54	-20.241	Ave

5.8 GHz Band, 8 dBi Antenna

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
1395	42.32	343	100	V	32.603	4.54	27.76	51.703	74	-22.297	peak
1395	38.45	220	100	H	32.629	4.54	27.76	47.859	74	-26.141	peak
1395	26.95	343	100	V	32.603	4.54	27.76	36.333	54	-17.667	Ave
1395	24.69	220	100	H	32.629	4.54	27.76	34.099	54	-19.901	Ave