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IC RSS-210, ISSUE 8, DECEMBER 2010

TEST AND MEASUREMENT REPORT

For

Ruckus Wireless, Inc.

350 West Java Drive,

Sunnyvale, CA 94089, USA

FCC ID: S9GR300
IC: 5912A-R300

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

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1305151-247	Original Report	2013-08-13

1 General Description

1.1 Product Description for Equipment Under Test (EUT)

This test and measurement report was prepared on behalf of *Ruckus Wireless, Inc*., and their product model: *ZoneFlex R300, FCC ID: S9GR300, IC: 5912A-R300* or the "EUT" as referred to in this report. The EUT is a 2x2 MIMO 802.11 a/b/g/n RLAN Access Point.

1.2 Mechanical Description of EUT

The EUT measures approximately 13 cm (L) x 13 cm (W) x 2.8 cm (H) and weighs 198 g.

The test data gathered are from typical production sample, serial number: 201302003637 assigned by Client.

1.3 Objective

This report is prepared on behalf of *Ruckus Wireless, 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 Part 15.247 and IC RSS-210 rules for Output Power, Antenna Requirements, 6 dB Bandwidth, and power spectral density, 100 kHz Bandwidth of Band Edges Measurement, Spurious Emissions, Conducted and Radiated Spurious Emissions.

1.4 Related Submittal(s)/Grant(s)

FCC Part 15.407, IC RSS-210 NII submission with FCC ID: S9GR300, IC: 5912A-R300.

1.5 Test Methodology

All measurements contained in this report were conducted in accordance with ANSI C63.4-2009, 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 and FCC KDB 558074 D01 DTS Meas Guidance v03r01: Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247

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.

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.: A-0027. 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 an American Association for laboratory Accreditation (A2LA) accredited laboratory (Lab Code 3297-02). The current scope of accreditations can be found at

http://www.a2la.org/scopepdf/3297-02.pdf?CFID=1132286&CFTOKEN=e42a3240dac3f6ba-6DE17DCB-1851-9E57-477422F667031258&jsessionid=8430d44f1f47cf2996124343c704b367816b

2 System Test Configuration

2.1 Justification

The EUT was configured for testing according to ANSI C63.4-2009 and FCC KDB 558074 D01 DTS Meas Guidance v03r01.

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.

2.2 EUT Exercise Software

The test utility used was *R300 ART* was provided by Ruckus Wireless Inc., and was verified *Jeffery Wu* to comply with the standard requirements being tested against.

2.3 Special Equipment

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

2.4 Equipment Modifications

No modifications were made to the EUT.

2.5 Local Support Equipment

Manufacturer	Description	Model	Serial Number
Dell	Laptop	Latitude E5420	-

2.6 EUT Internal Configuration Details

Manufacturer	Description	Model	Serial Number
Ruckus	Motherboard	ASM 120-11255 REV 1	-
Ruckus	Antenna	ASM 120-11258 REV 2	-
Ruckus	Antenna	ASM 120-11259 REV 2	-

2.7 Interface Ports and Cables

Cable Description	Length (m)	To	From
RF Cable	<1.0	PSA	EUT
RJ 45 Cable	<1.0	LAPTOP	EUT

2.8 Power Supply List and Details

Manufacturer	Description	Model	Part Number
Ruckus	Power Supply cord	HK-AD-120A100-CN	-
Ruckus	POE Power Adapter	PA1024-4HU	740-64125-010

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	Compliant
FCC §15.203 IC RSS-Gen §7.1.2	Antenna Requirement	Compliant
FCC §15.207(a) IC RSS-Gen §7.2.4	AC Line Conducted Emissions	Compliant
FCC §15.247 (d) IC RSS-210 §A8.5	Spurious Emissions at Antenna Port	Compliant
FCC §15.205 IC RSS-210 §2.2	Restricted Bands	Compliant
FCC §15.209, §15.247 (d) IC RSS-210 §A8.5	Radiated Spurious Emissions	Compliant
FCC §15.247(a)(2) IC RSS-210 §A8.2	6 dB Emission Bandwidth	Compliant
FCC §15.247(b)(3) IC RSS-210 §A8.4	Maximum Peak Output Power	Compliant
FCC §15.247(d) IC RSS-210 §A8.5	100 kHz Bandwidth of Frequency Band Edge	Compliant
FCC §15.247(e) IC RSS-210 §A8.2(b)	Power Spectral Density	Compliant
IC RSS-210 §2.3 & RSS-Gen §4.10	Receiver Spurious Emission	Compliant

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 IC 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

2.4 GHz band:

Maximum peak output power at antenna input terminal (dBm):	26.92
Maximum peak output power at antenna input terminal (mW):	492.0395
Prediction distance (cm):	20
Prediction frequency (MHz):	2437
Maximum Antenna Gain, typical (dBi):	0
Maximum Antenna Gain (numeric):	1
Power density of prediction frequency at 20.0 cm (mW/cm^2):	0.0979
Power density of prediction frequency at 20.0 cm (W/m^2):	0.979
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

5.8 GH band:

Maximum peak output power at antenna input terminal (dBm):	26.9
Maximum peak output power at antenna input terminal (mW):	489.7788
Prediction distance (cm):	20
Prediction frequency (MHz):	5785
Maximum Antenna Gain, typical (dBi):	3
Maximum Antenna Gain (numeric):	1.995262
Power density of prediction frequency at 20.0 cm (mW/cm^2):	0.194
Power density of prediction frequency at 20.0 cm (W/m^2):	1.944
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 is compliant with the requirement MPE limit for uncontrolled exposure. The maximum power density at the distance of 20 cm is 0.194 mW/cm^2 (1.944 W/m^2). Limit is 1.0 mW/cm^2 (10 W/m^2).

5 FCC §15.203 & IC RSS-Gen §7.1.2 – 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.

According to IC RSS-Gen §7.1.2: 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 mW or less. For devices of output powers greater than 10 mW, 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

Manufacturers	Antenna Type/Pattern	Antenna Gain (dBi) @ 2.4 GHz
Ruckus	Omni	0

Manufacturers	Antenna Type/Pattern	Antenna Gain (dBi) @ 5 GHz
Ruckus	Omni	3

Note: The power setting was controlled by manufacture with different antenna configuration. The power setting of the different antenna will be set with the corresponded value and no more then the level reported.

The antenna consists of non-standard (UFL) connectors with less 6 dBi gain; therefore, it complies with the antenna requirement. Please refer to the internal photos.

6 FCC §15.207 & IC RSS-Gen §7.2.4 – AC Line Conducted Emissions

6.1 Applicable Standards

As per FCC §15.207 and IC RSS-Gen §7.2.4 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 C63.4-2009 measurement procedure. The specification used was FCC §15.207 and IC RSS-Gen §7.2.4 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 EUT was connected with LISN-1 which provided 120 V / 60 Hz AC power.

6.3 Test Procedure

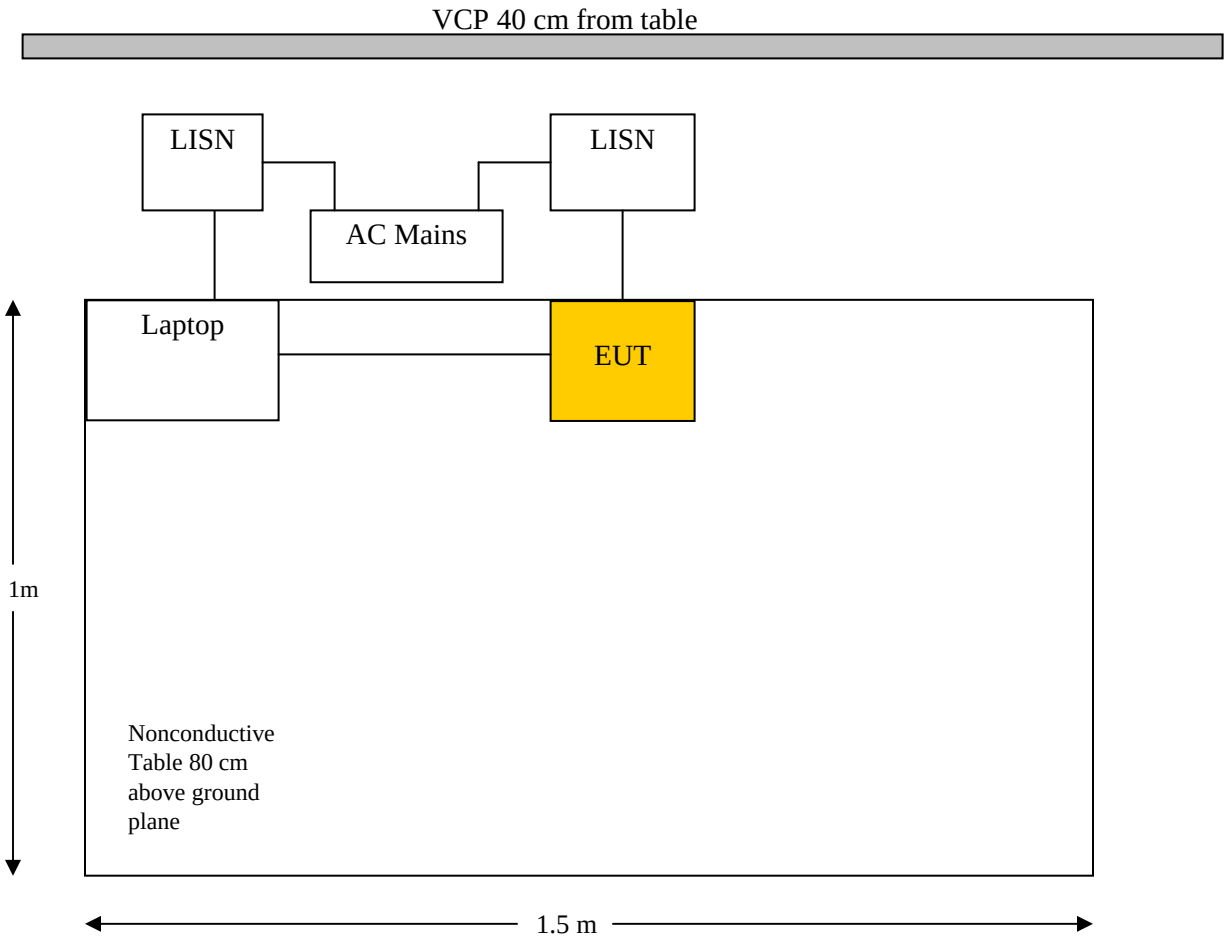
During the conducted emissions test, the power cord of the EUT host system was connected to the mains outlet of the LISN-2.

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

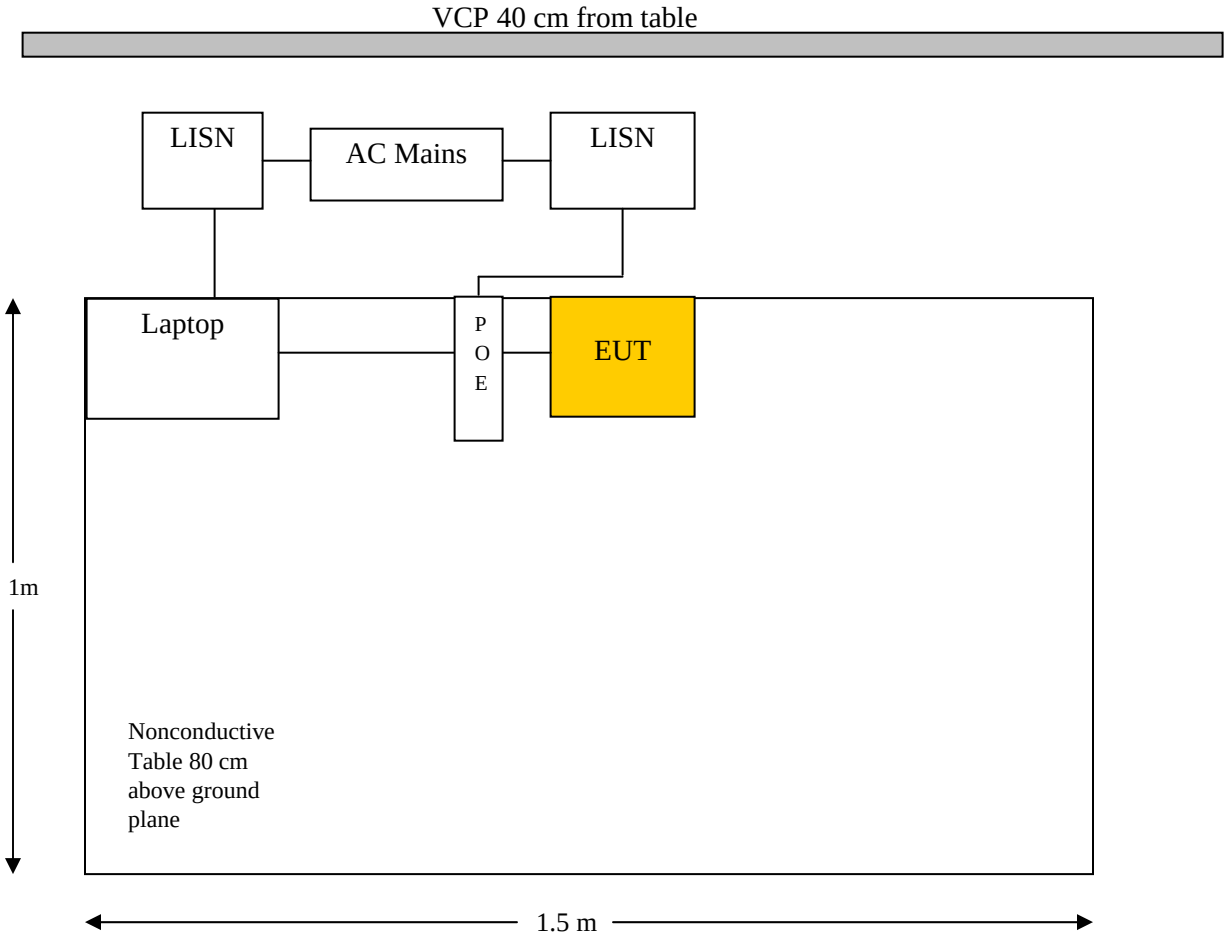
All data was recorded in the peak detection mode, quasi-peak and average. Quasi-Peak readings are distinguished with a “QP.” Average readings are distinguished with an “Ave”.

6.4 Test Setup Block Diagram

AC/DC Adaptor:



POE



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	Calibration Interval
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100337	2013-03-28	1 year
Solar Electronics	LISN	9252-50-R-24-N	511205	2013-06-25	1 year
Solar Electronics	LISN	9252-50-R-24-N	511213	2013-06-25	1 year
TTE	Filter, High Pass	H9962-150K-50-21378	K7133	2013-05-30	1 year

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed per the A2LA requirements, traceable to the NIST.*

6.7 Test Environmental Conditions

Temperature:	22 ºC
Relative Humidity:	52 %
ATM Pressure:	101.89 kPa

The testing was performed by Jeffery Wu on 2013-05-08 in 5 m chamber 3.

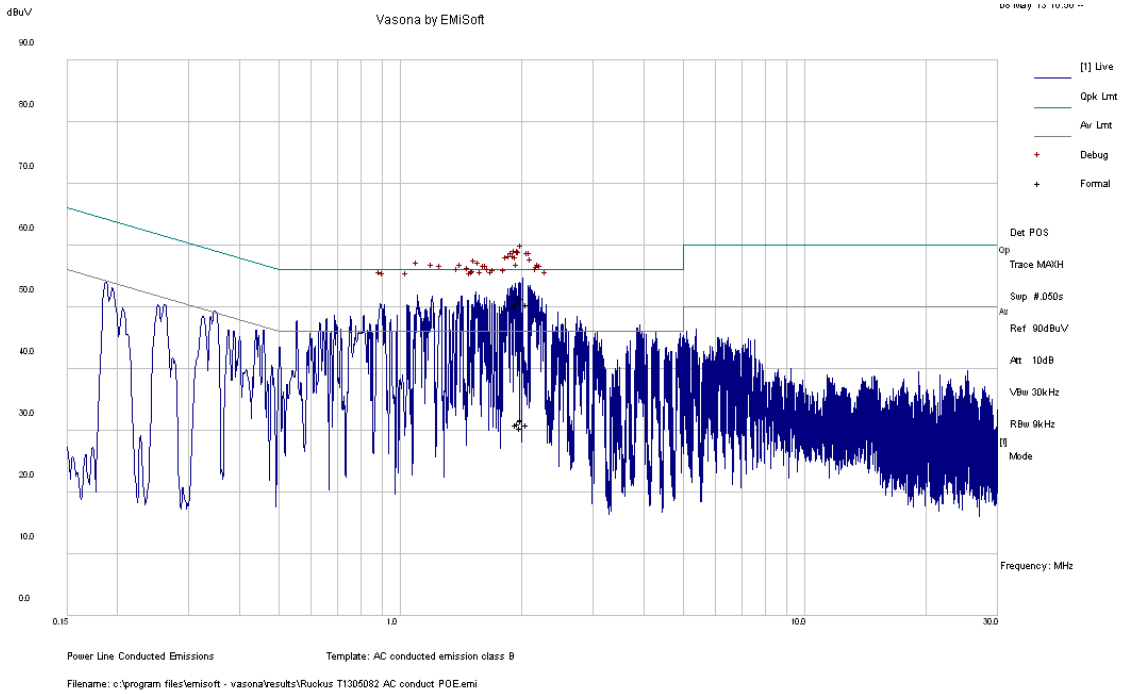
6.8 Summary of Test Results

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

Connection: AC/DC adapter connected to 120 V/60 Hz, AC			
Margin (dB)	**Frequency (MHz)**	**Conductor Mode (Line/Neutral)**	**Range (MHz)**
-3.65	2.00681	Neutral	0.15-30

6.9 Conducted Emissions Test Plots and Data

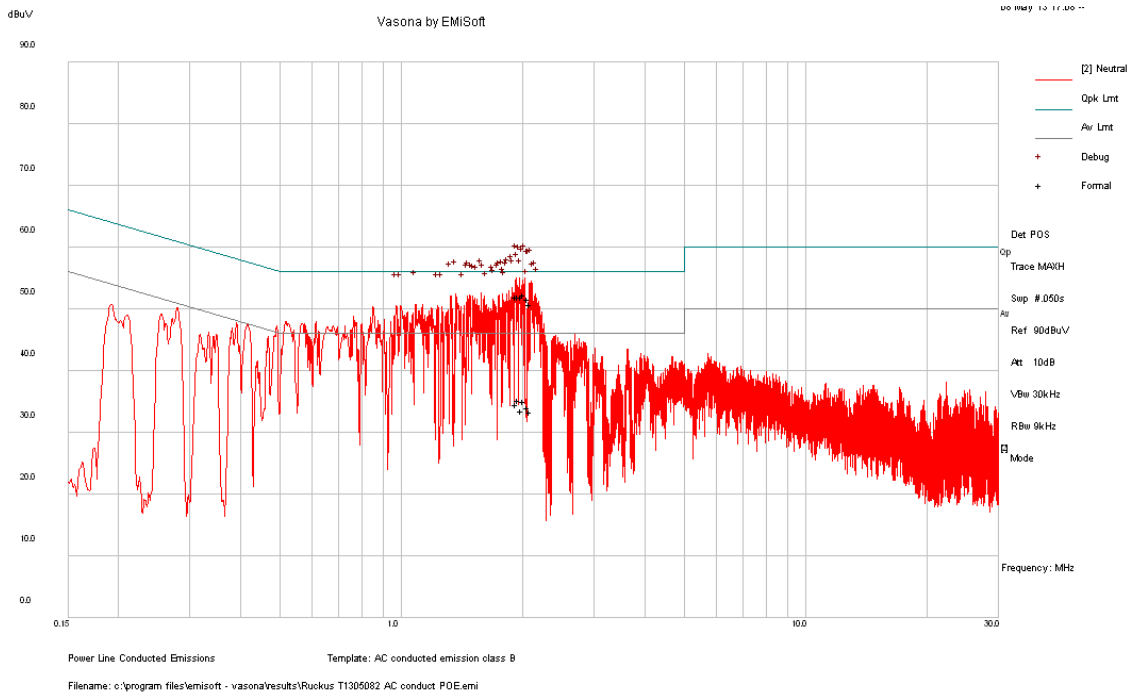
120 V, 60 Hz – Line, AC/DC Adaptor



Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
1.993797	51.46	Line	56	-4.54	QP
1.983882	50.74	Line	56	-5.26	QP
1.938192	50.2	Line	56	-5.8	QP
1.995867	51.51	Line	56	-4.49	QP
1.967007	51.41	Line	56	-4.59	QP
2.058526	50.48	Line	56	-5.52	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
1.993797	31.63	Line	46	-14.37	Ave.
1.983882	30.39	Line	46	-15.61	Ave.
1.938192	30.89	Line	46	-15.11	Ave.
1.995867	31.85	Line	46	-14.15	Ave.
1.967007	31.19	Line	46	-14.81	Ave.
2.058526	30.88	Line	46	-15.12	Ave.

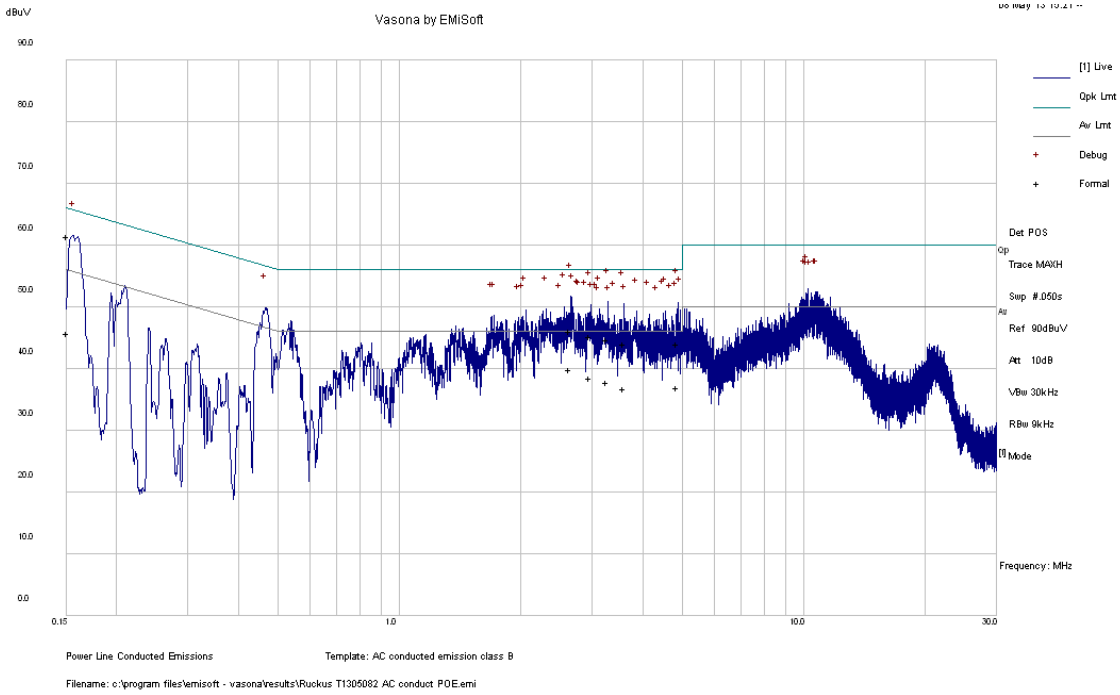
120 V, 60 Hz – Neutral, AC/DC Adaptor



Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
1.931607	52.02	Neutral	56	-3.98	QP
2.00681	52.35	Neutral	56	-3.65	QP
1.953114	51.94	Neutral	56	-4.06	QP
1.985331	52.07	Neutral	56	-3.93	QP
2.080974	50.74	Neutral	56	-5.26	QP
2.057612	51.62	Neutral	56	-4.38	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
1.931607	34.56	Neutral	46	-11.44	Ave.
2.00681	35.01	Neutral	46	-10.99	Ave.
1.953114	35.28	Neutral	46	-10.72	Ave.
1.985331	33.55	Neutral	46	-12.45	Ave.
2.080974	33.36	Neutral	46	-12.64	Ave.
2.057612	34.12	Neutral	46	-11.88	Ave.

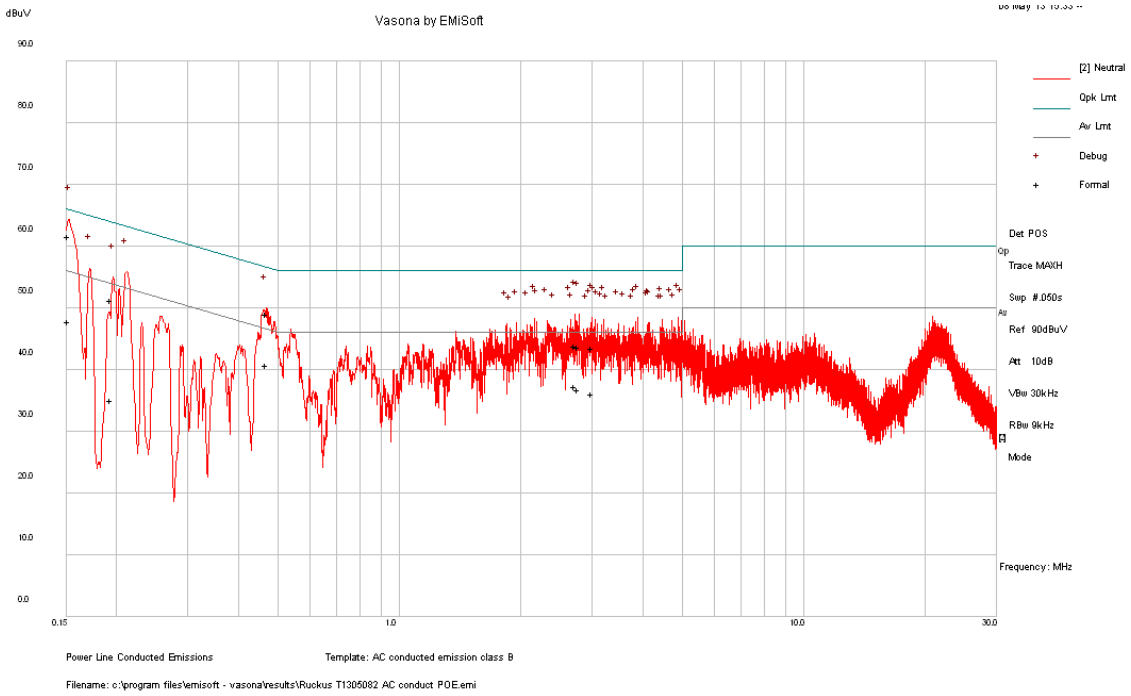
120 V, 60 Hz – Line, POE



Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.150969	61.49	Line	65.95	-4.46	QP
2.647171	46.14	Line	56	-9.86	QP
3.271222	44.77	Line	56	-11.23	QP
4.865042	44.13	Line	56	-11.87	QP
3.59664	44.06	Line	56	-11.94	QP
2.97209	45.28	Line	56	-10.72	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.150969	45.83	Line	55.95	-10.12	Ave.
2.647171	39.97	Line	46	-6.03	Ave.
3.271222	37.92	Line	46	-8.08	Ave.
4.865042	37	Line	46	-9	Ave.
3.59664	36.88	Line	46	-9.12	Ave.
2.97209	38.5	Line	46	-7.5	Ave.

120 V, 60 Hz – Neutral, POE



Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.151899	61.61	Neutral	65.9	-4.29	QP
0.469308	49.1	Neutral	56.53	-7.43	QP
2.727608	43.86	Neutral	56	-12.14	QP
2.778594	43.64	Neutral	56	-12.36	QP
0.193578	51.23	Neutral	63.88	-12.66	QP
2.992292	43.6	Neutral	56	-12.4	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.151899	47.93	Neutral	55.9	-7.96	Ave.
0.469308	40.75	Neutral	46.53	-5.77	Ave.
2.727608	37.37	Neutral	46	-8.63	Ave.
2.778594	36.85	Neutral	46	-9.15	Ave.
0.193578	35.11	Neutral	53.88	-18.77	Ave.
2.992292	36.08	Neutral	46	-9.92	Ave.

7 FCC §2.1051, §15.247(d) & IC RSS-210 §A8.5 – Spurious Emissions at Antenna Terminals

7.1 Applicable Standard

For FCC §15.247(d) and IC 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 Measurement Procedure

The measurements are based on FCC KDB 558074 D01 DTS Meas Guidance v03r01: Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 11: Emissions in non-restricted frequency bands and section 12: Emissions in restricted frequency bands.

7.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4446A	US44300386	2012-09-29	1 year

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed per the A2LA requirements, traceable to the NIST.*

7.4 Test Environmental Conditions

Temperature:	22-24 °C
Relative Humidity:	42-45 %
ATM Pressure:	101-102kPa

The testing was performed by Jeffery Wu from 2013-5-29 and 2013-6-06 at RF site.

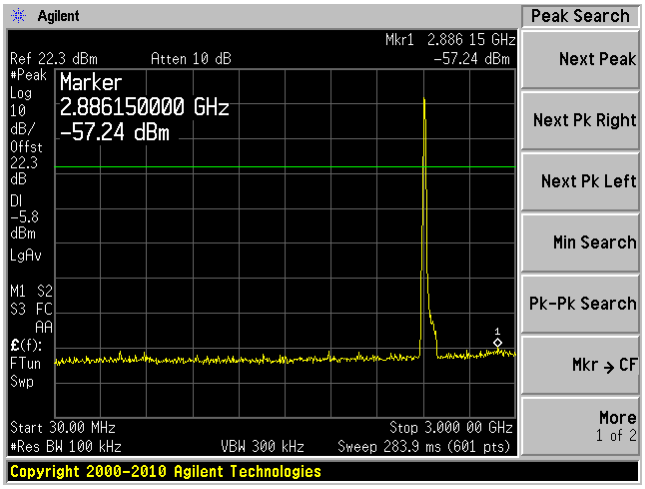
7.5 Test Results

Please refer to following plots of spurious emissions.

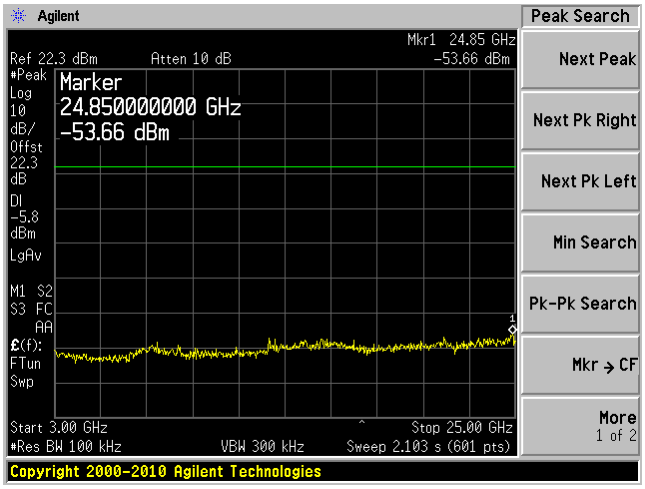
2400-2483.5 MHz

802.11b, Low Channel, 2412 MHz

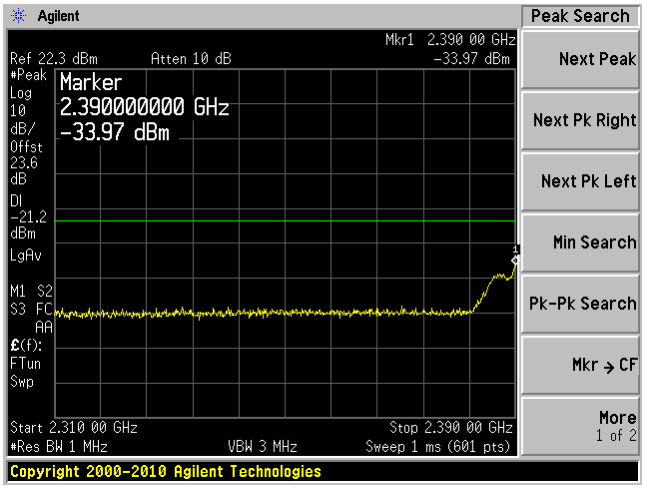
Chain J0, Plot: 30 MHz – 3 GHz



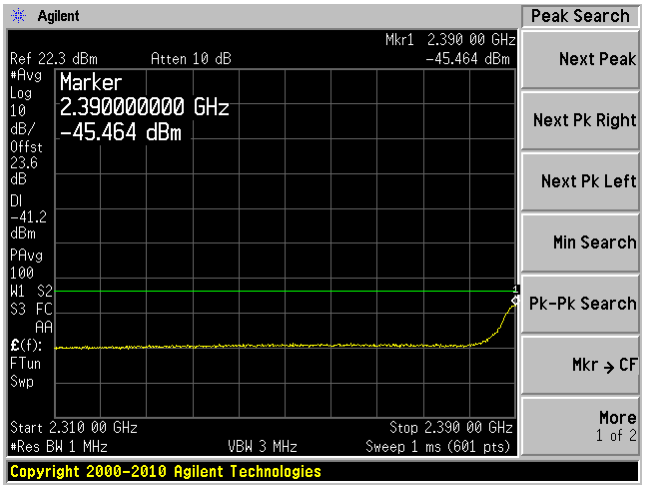
Chain J0, Plot: 3 GHz – 25 GHz



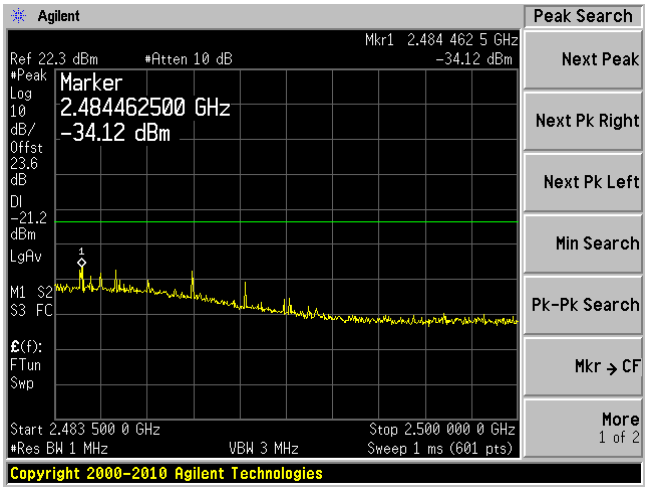
Chain J0, Plot: 2310 MHz – 2390 MHz Peak



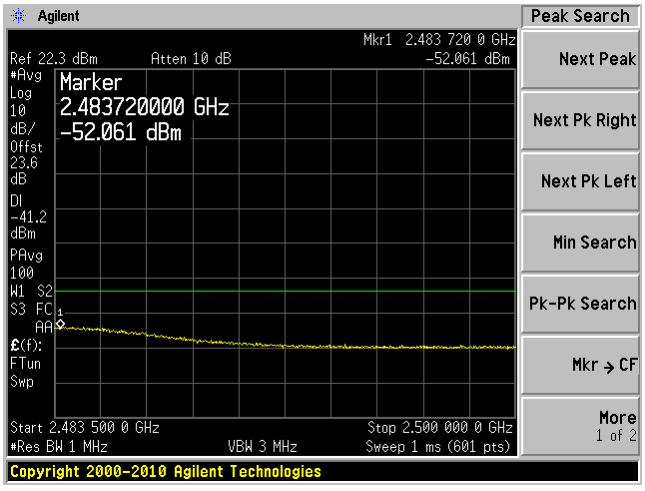
Chain J0, Plot: 2310 MHz – 2390 MHz Ave



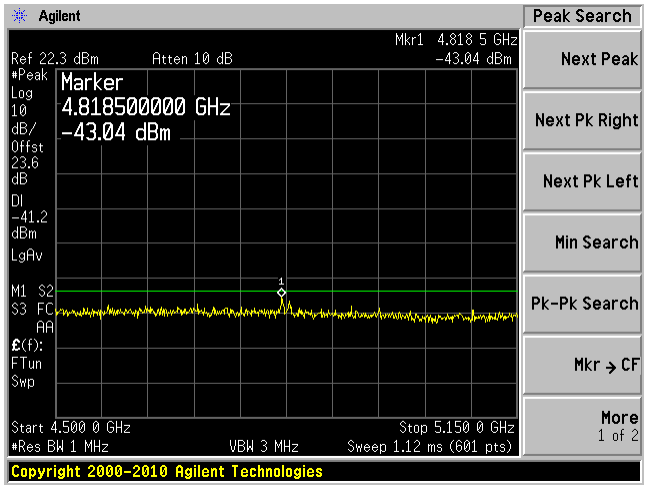
Chain J0, Plot: 2483.5MHz – 2500 MHz Peak



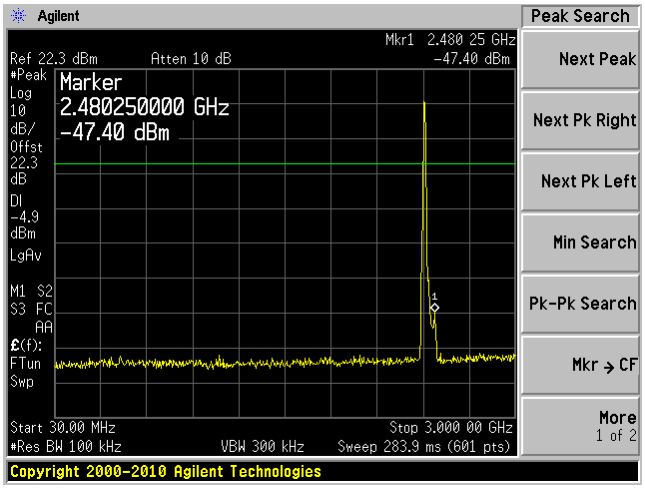
Chain J0, Plot: 2483.5MHz – 2500 MHz Ave



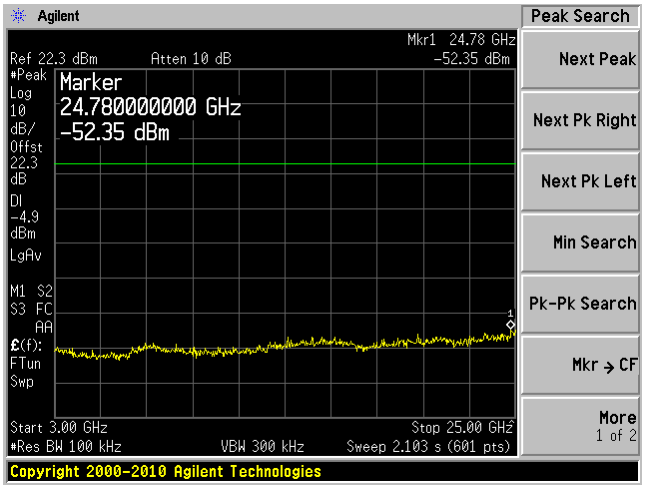
Chain J0, Plot: 4500MHz – 5150 MHz



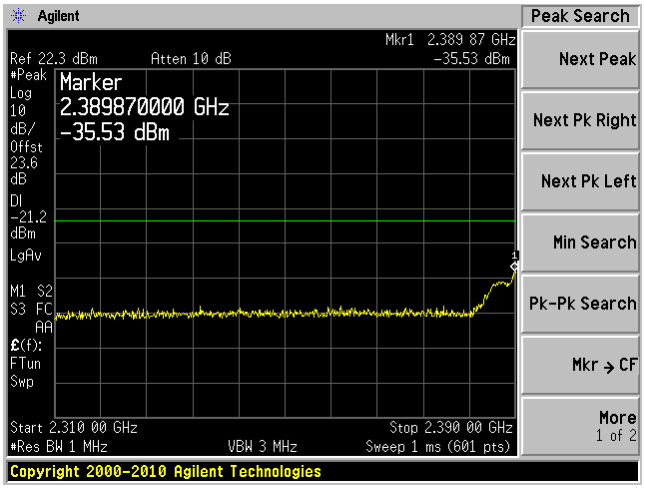
Chain J1, Plot: 30 MHz – 3 GHz



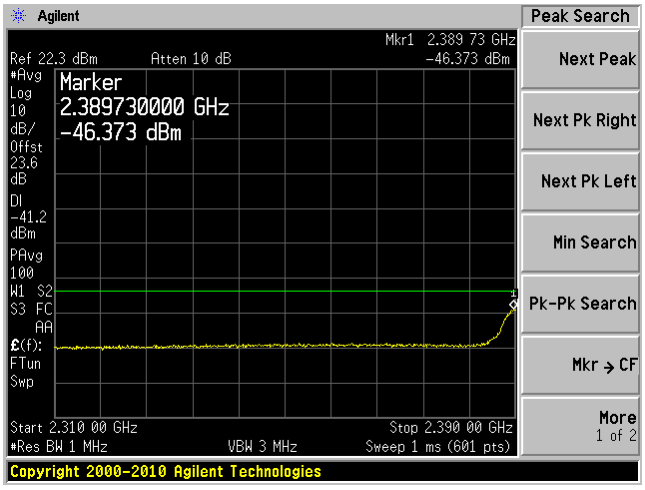
Chain J1, Plot: 3 GHz – 25 GHz



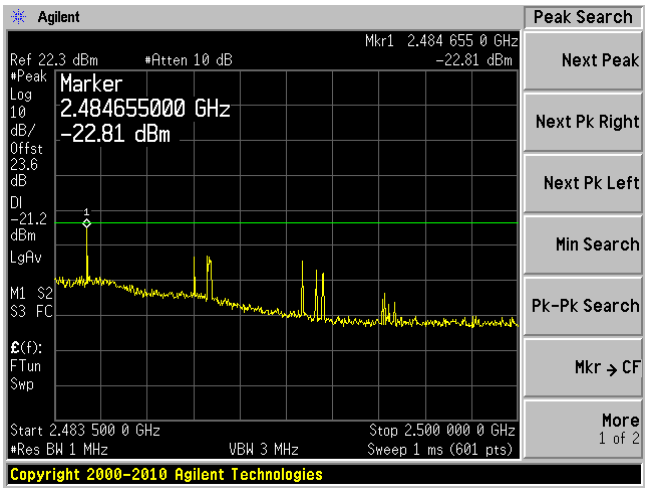
Chain J1, Plot: 2310 MHz – 2390 MHz Peak



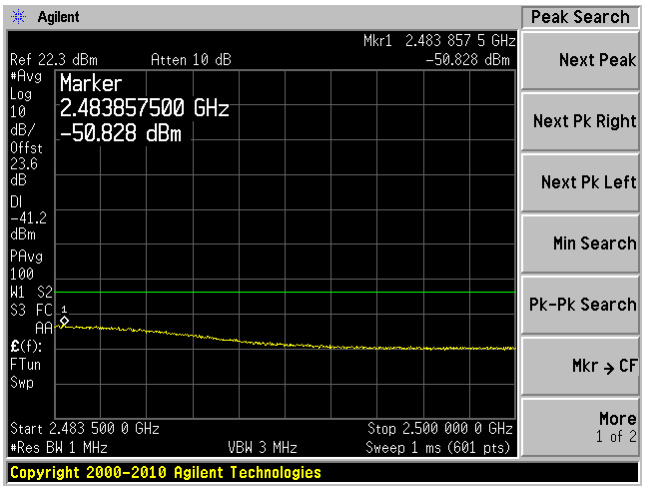
Chain J1, Plot: 2310 MHz – 2390 MHz Ave



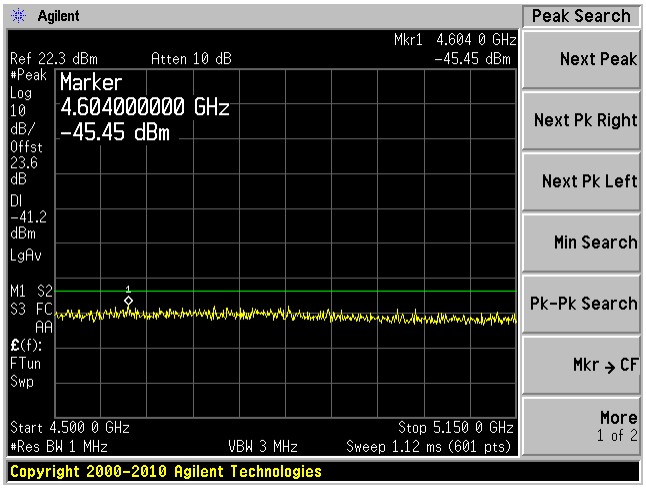
Chain J1, Plot: 2483.5MHz – 2500 MHz Peak



Chain J1, Plot: 2483.5MHz – 2500 MHz Ave

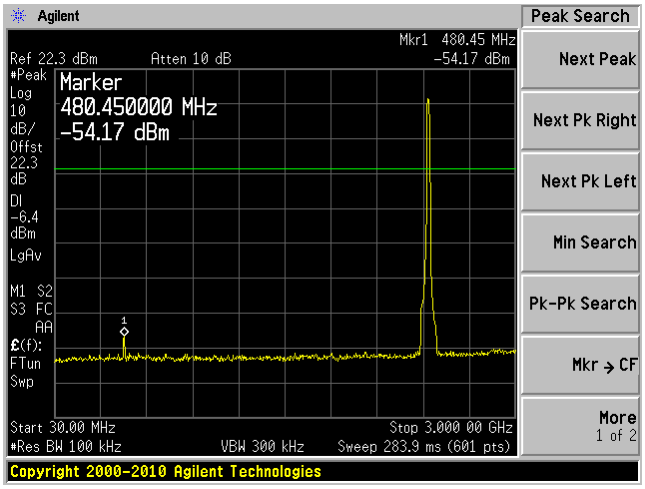


Chain J1, Plot: 4500MHz – 5150 MHz

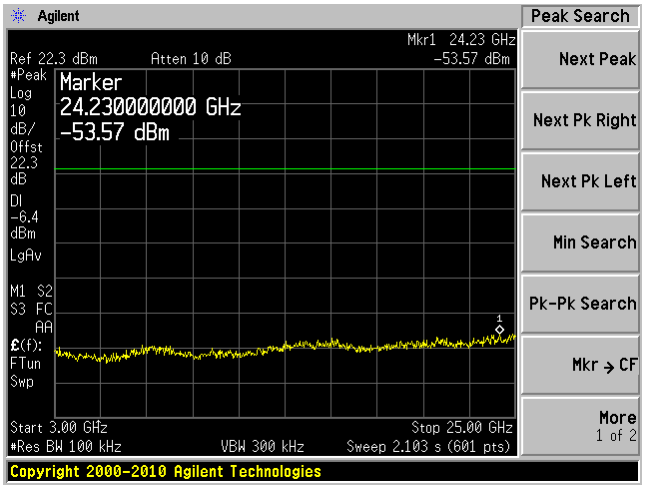


802.11b, Middle Channel, 2437 MHz

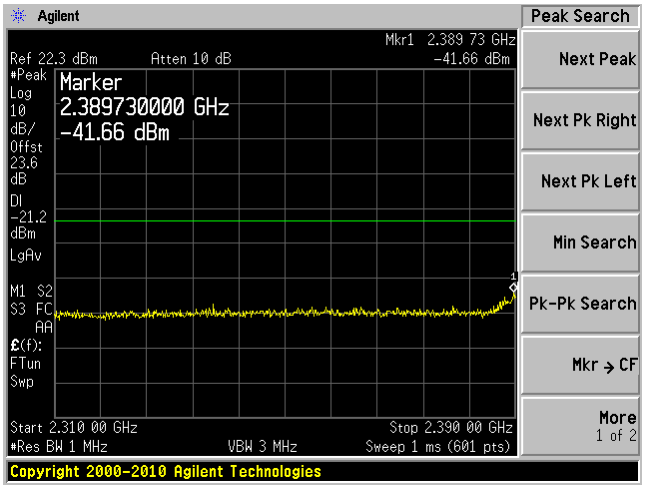
Chain J0, Plot: 30 MHz – 3 GHz



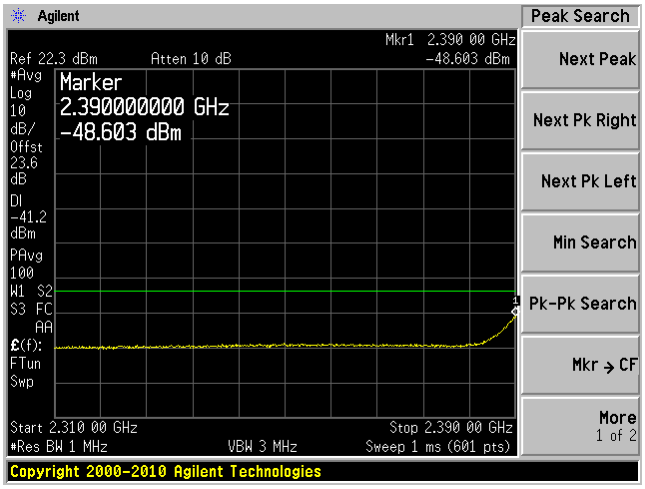
Chain J0, Plot: 3 GHz – 25 GHz



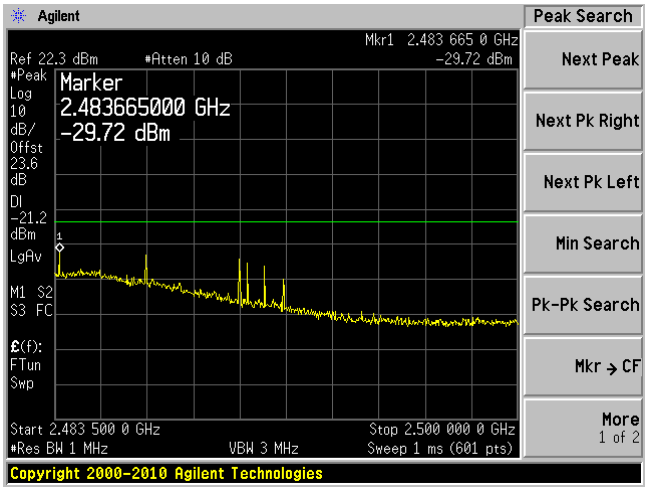
Chain J0, Plot: 2310 MHz – 2390 MHz Peak



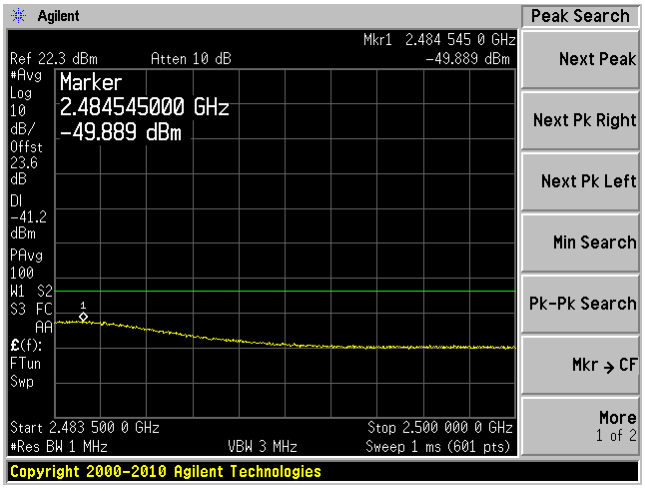
Chain J0, Plot: 2310 MHz – 2390 MHz Ave



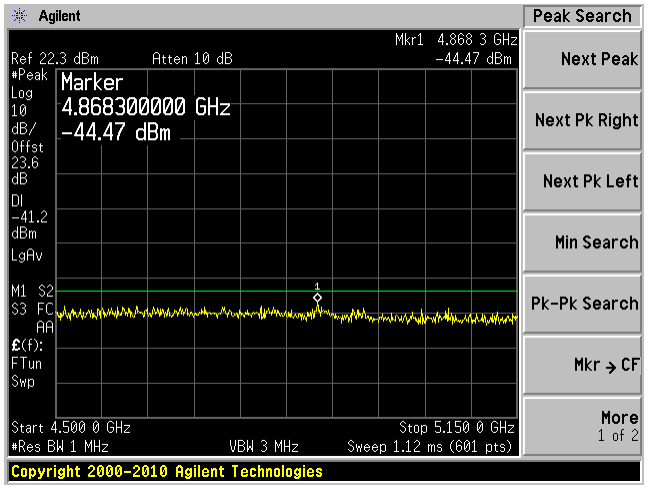
Chain J0, Plot: 2483.5MHz – 2500 MHz Peak



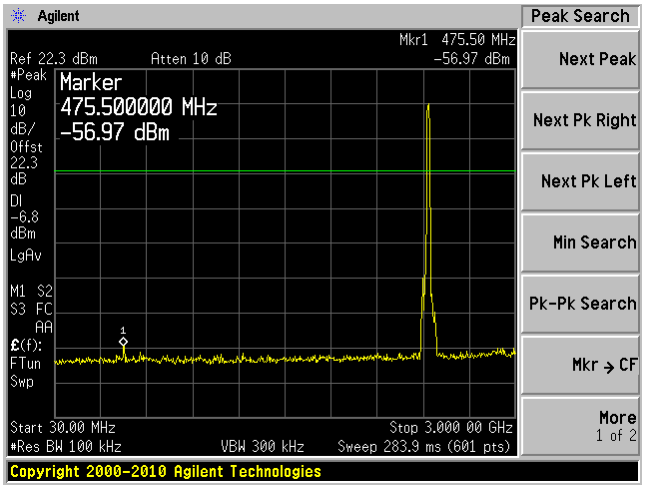
Chain J0, Plot: 2483.5MHz – 2500 MHz Ave



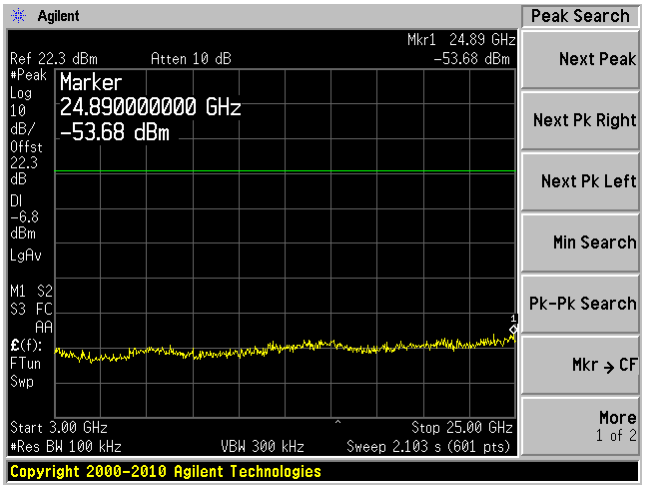
Chain J0, Plot: 4500MHz – 5150 MHz



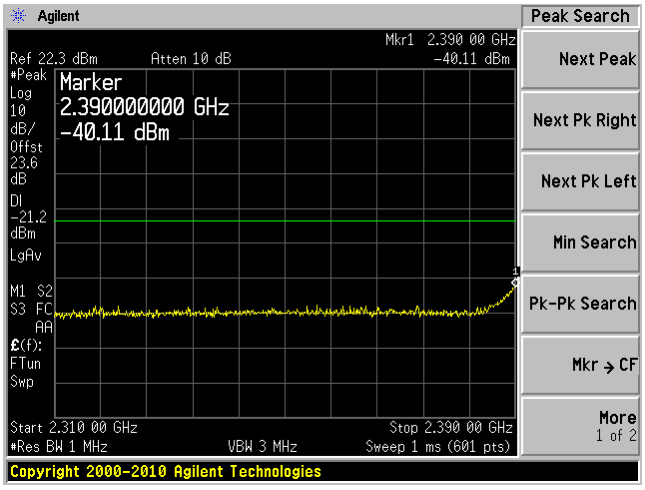
Chain J1, Plot: 30 MHz – 3 GHz



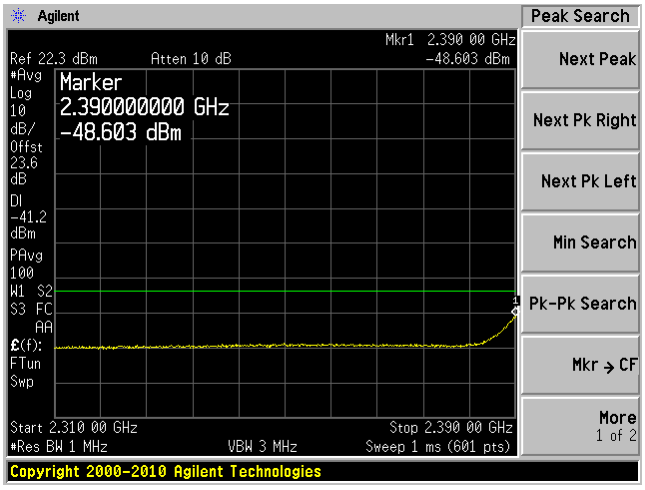
Chain J1, Plot: 3 GHz – 25 GHz



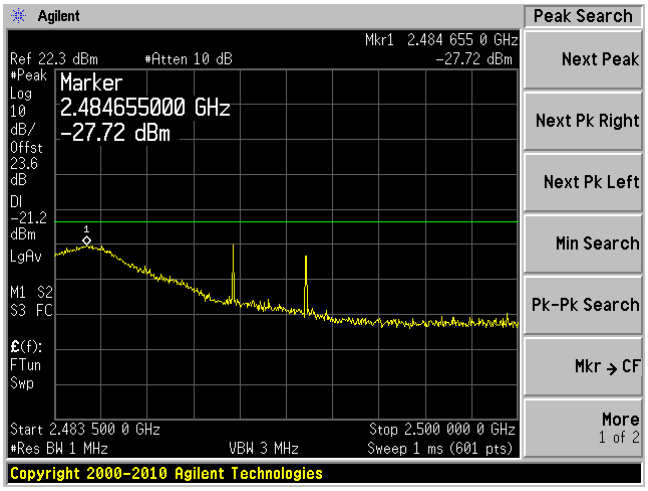
Chain J1, Plot: 2310 MHz – 2390 MHz Peak



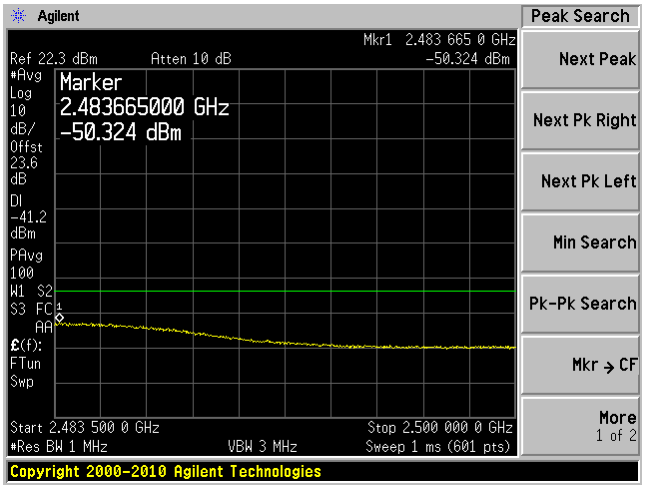
Chain J1, Plot: 2310 MHz – 2390 MHz Ave



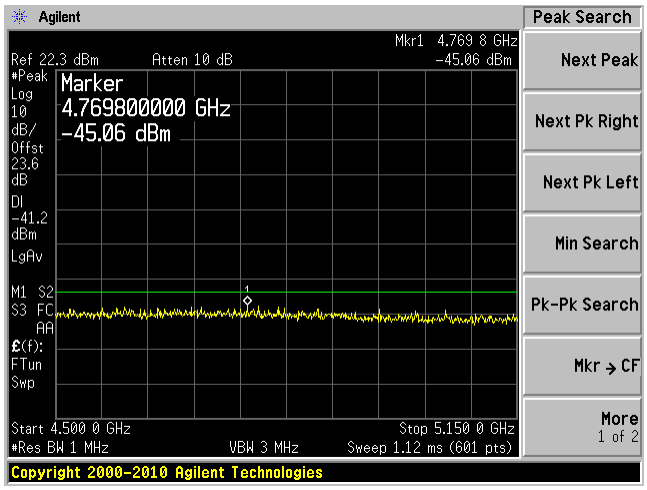
Chain J1, Plot: 2483.5MHz – 2500 MHz Peak



Chain J1, Plot: 2483.5MHz – 2500 MHz Ave

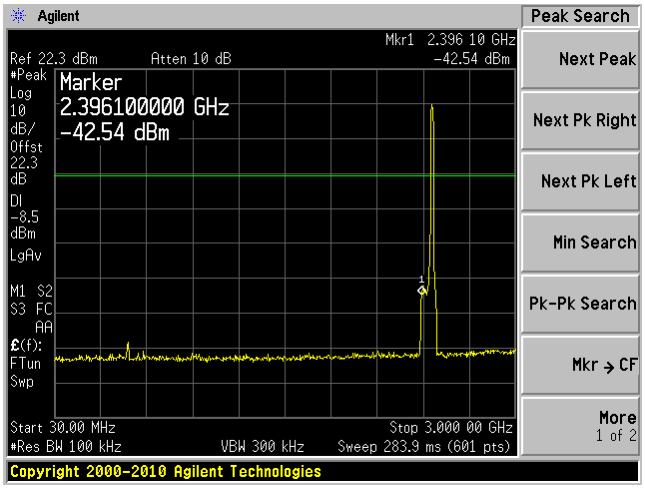


Chain J1, Plot: 4500MHz – 5150 MHz

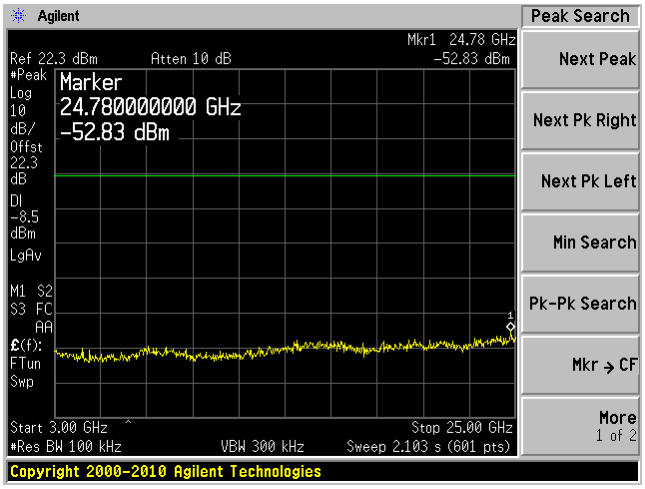


802.11b, High Channel, 2462 MHz

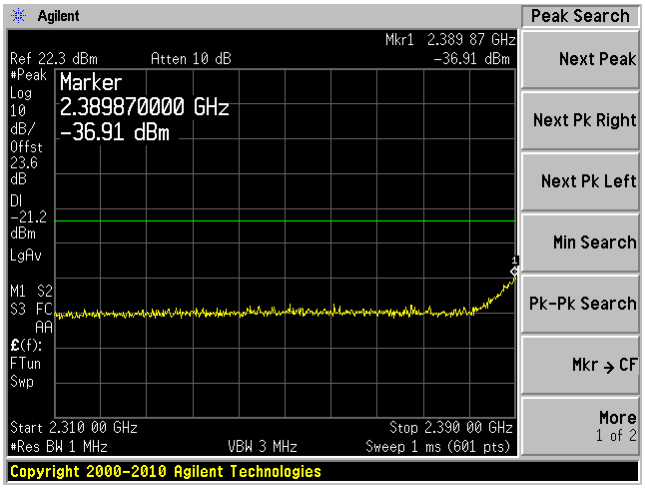
Chain J0, Plot: 30 MHz – 3 GHz



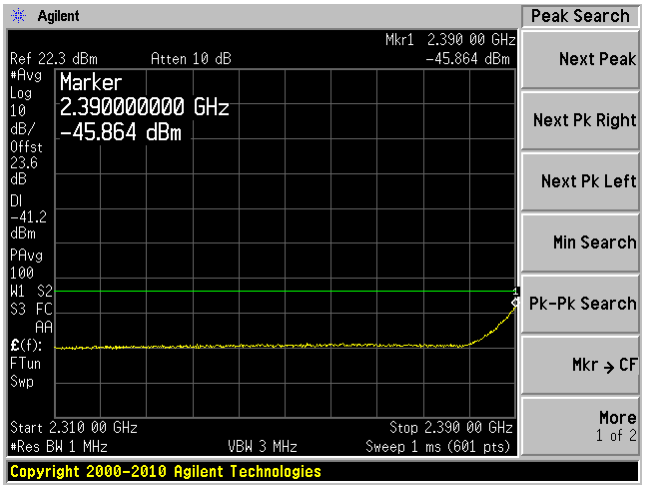
Chain J0, Plot: 3 GHz – 25 GHz



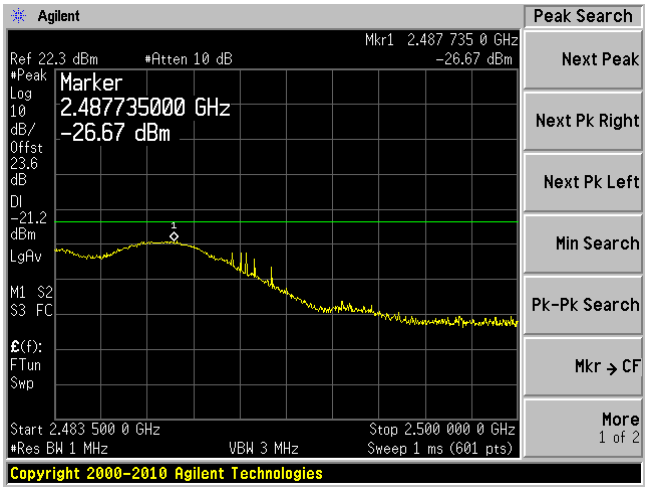
Chain J0, Plot: 2310 MHz – 2390 MHz Peak



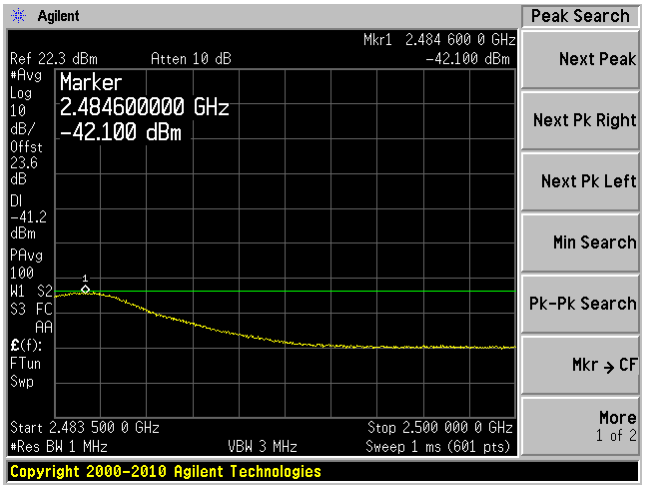
Chain J0, Plot: 2310 MHz – 2390 MHz Ave



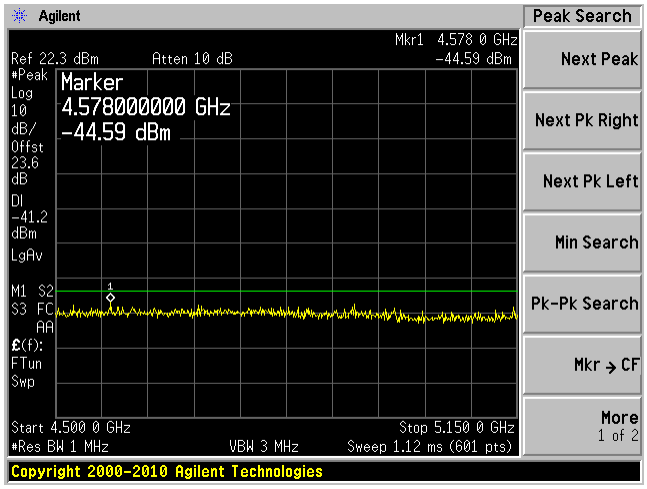
Chain J0, Plot: 2483.5MHz – 2500 MHz Peak



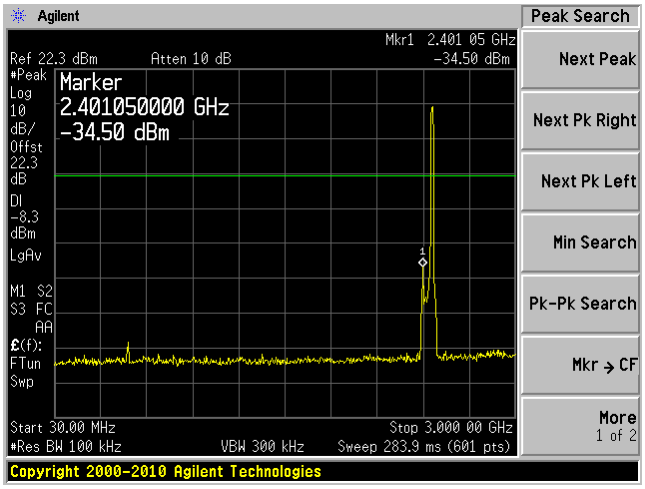
Chain J0, Plot: 2483.5MHz – 2500 MHz Ave



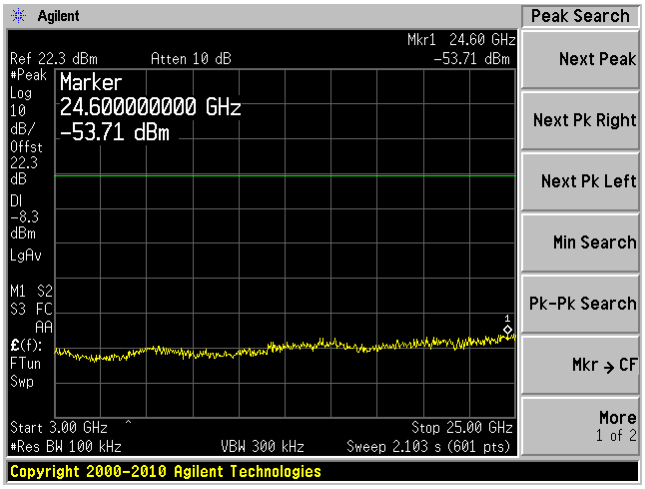
Chain J0, Plot: 4500MHz – 5150 MHz



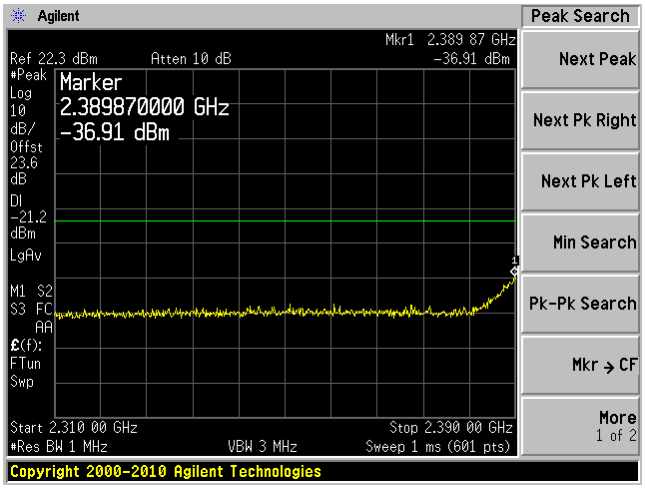
Chain J1, Plot: 30 MHz – 3 GHz



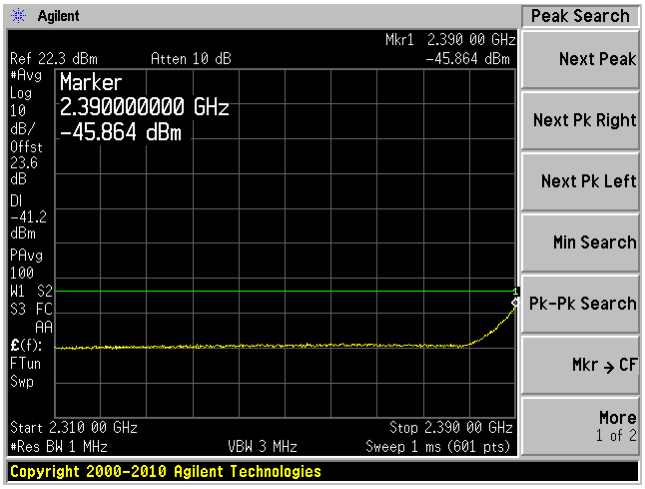
Chain J1, Plot: 3 GHz – 25 GHz



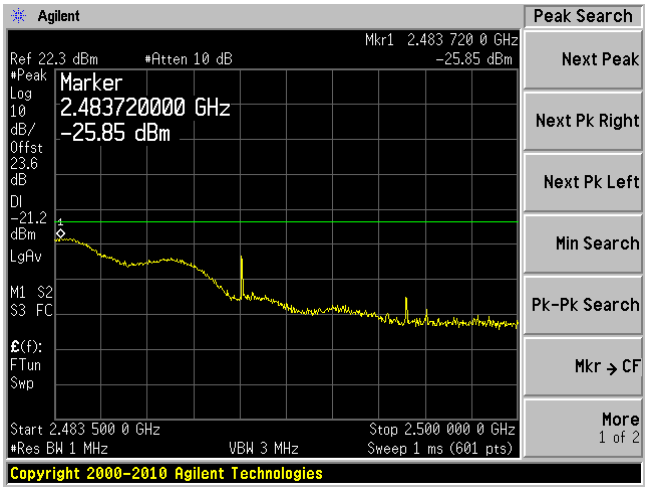
Chain J1, Plot: 2310 MHz – 2390 MHz Peak



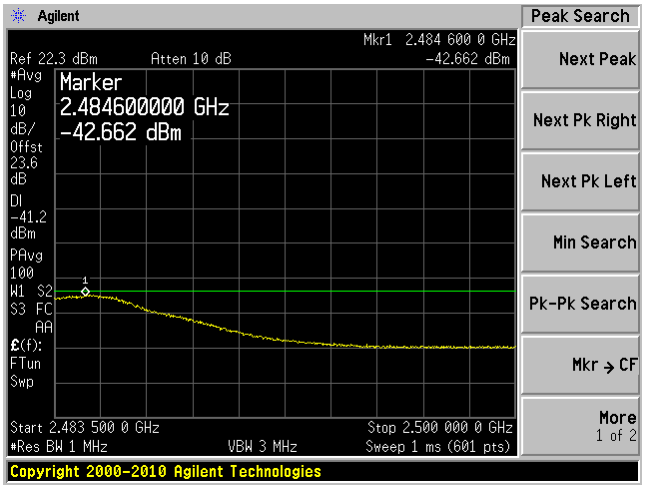
Chain J1, Plot: 2310 MHz – 2390 MHz Ave



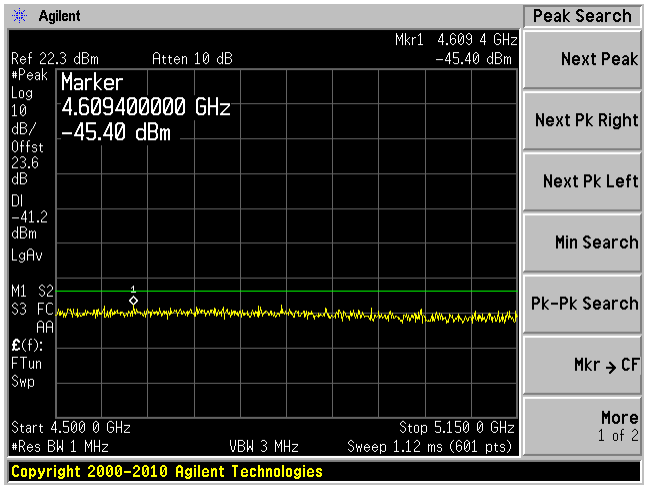
Chain J1, Plot: 2483.5MHz – 2500 MHz Peak



Chain J1, Plot: 2483.5MHz – 2500 MHz Ave

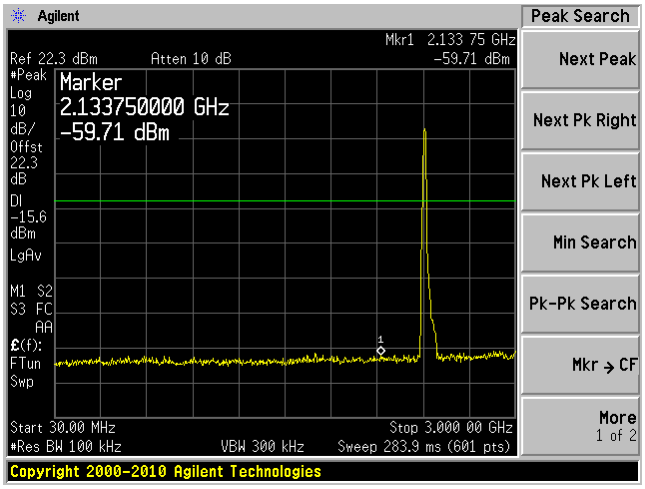


Chain J1, Plot: 4500MHz – 5150 MHz

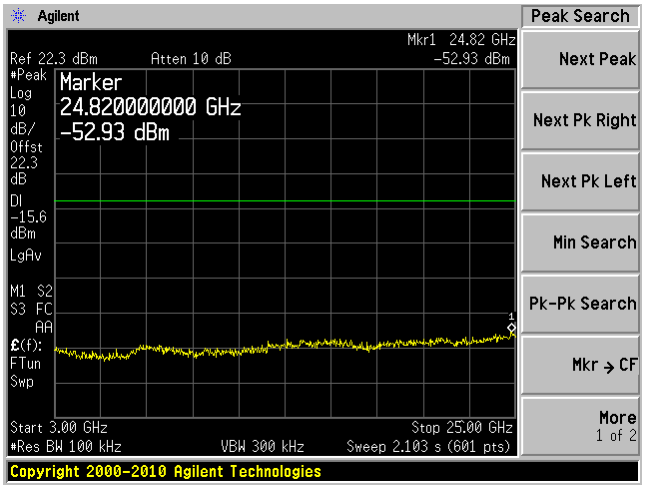


802.11g, Low Channel 2412 MHz

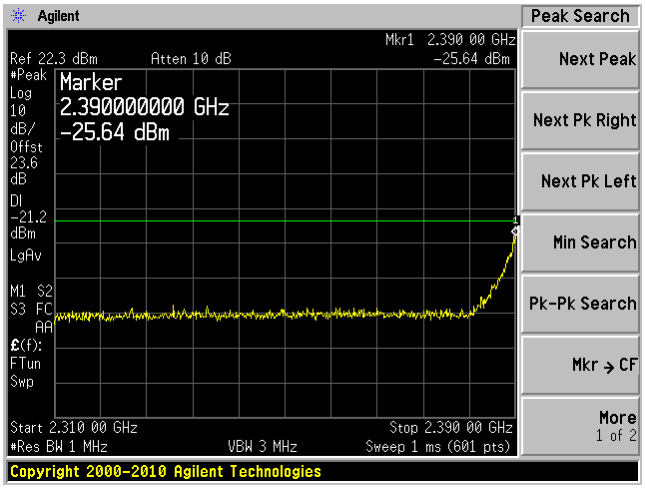
Chain J0, Plot: 30 MHz – 3 GHz



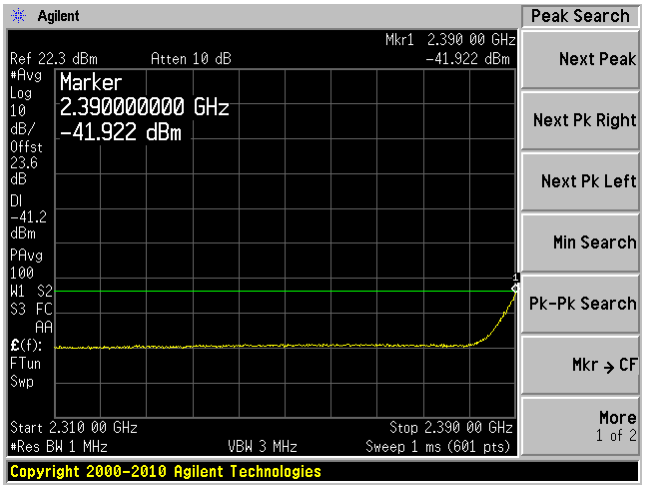
Chain J0, Plot: 3 GHz – 25 GHz



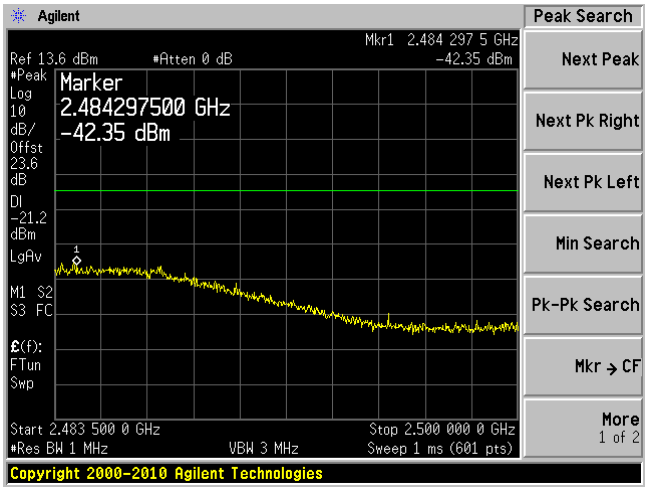
Chain J0, Plot: 2310 MHz – 2390 MHz Peak



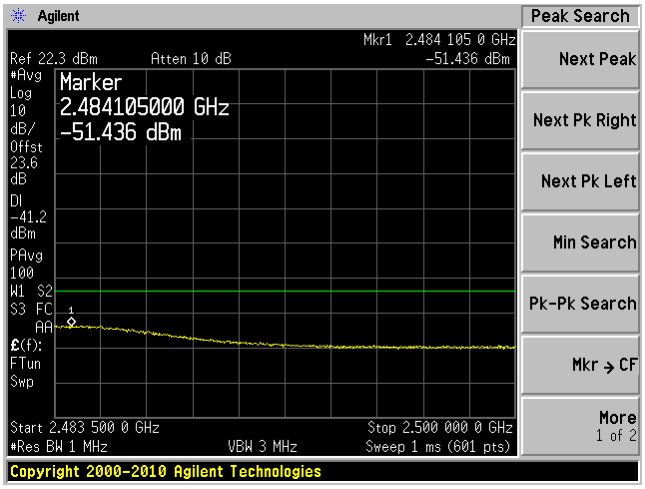
Chain J0, Plot: 2310 MHz – 2390 MHz Ave



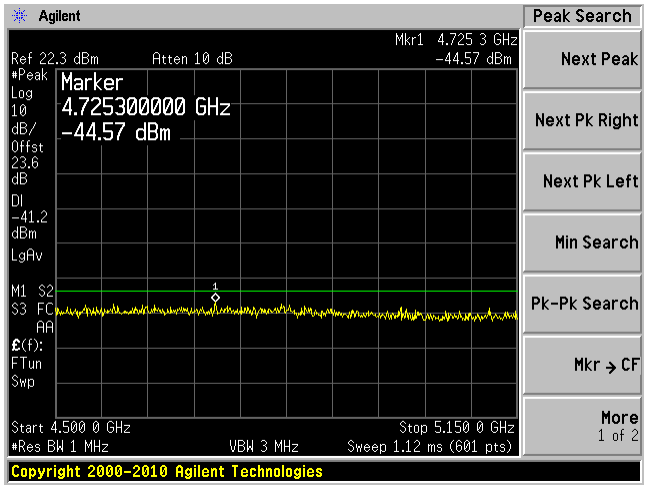
Chain J0, Plot: 2483.5MHz – 2500 MHz Peak



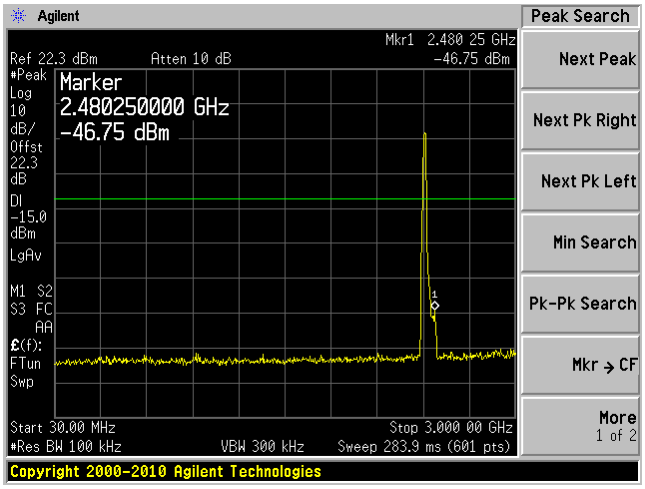
Chain J0, Plot: 2483.5MHz – 2500 MHz Ave



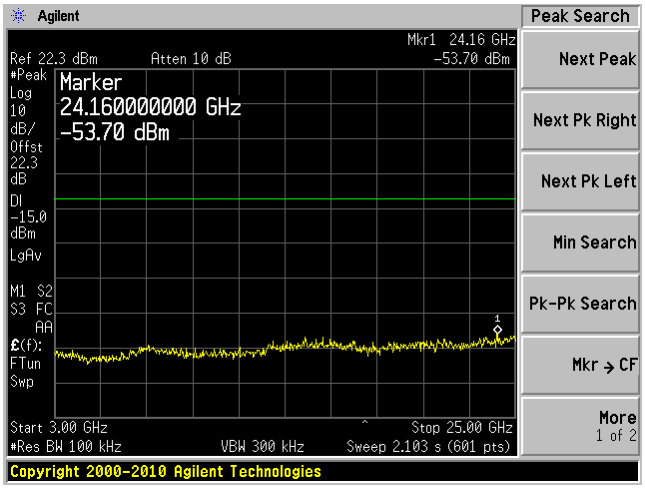
Chain J0, Plot: 4500MHz – 5150 MHz



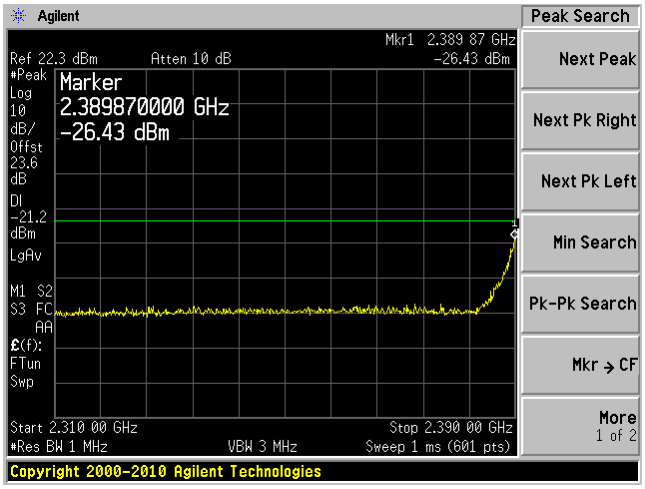
Chain J1, Plot: 30 MHz – 3 GHz



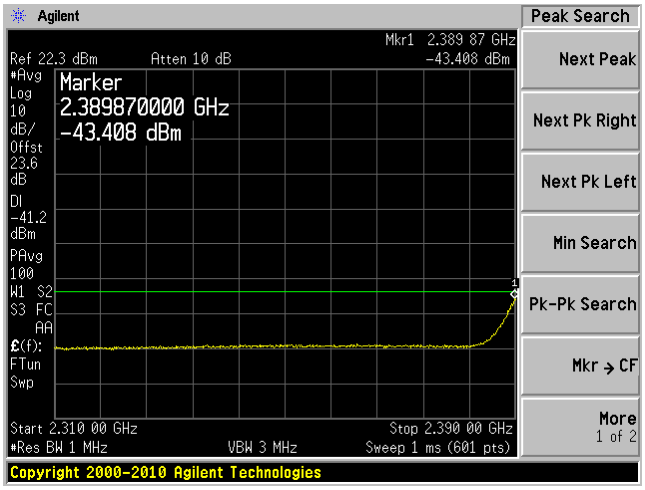
Chain J1, Plot: 3 GHz – 25 GHz



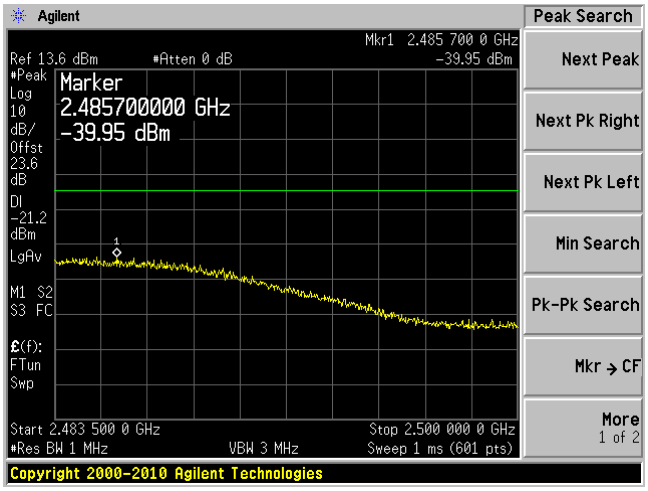
Chain J1, Plot: 2310 MHz – 2390 MHz Peak



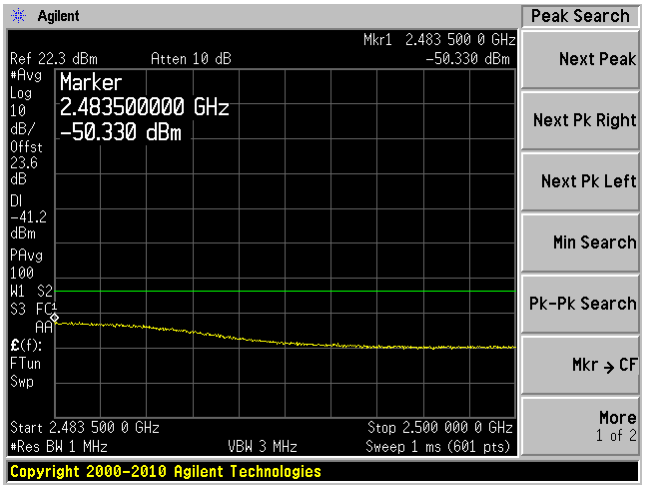
Chain J1, Plot: 2310 MHz – 2390 MHz Ave



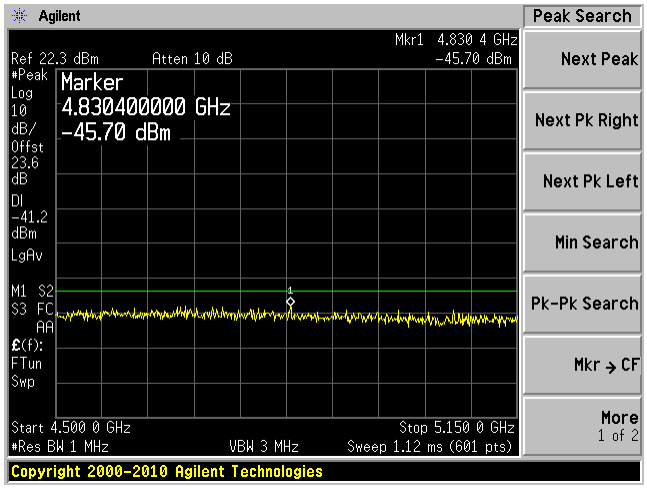
Chain J1, Plot: 2483.5MHz – 2500 MHz Peak



Chain J1, Plot: 2483.5MHz – 2500 MHz Ave

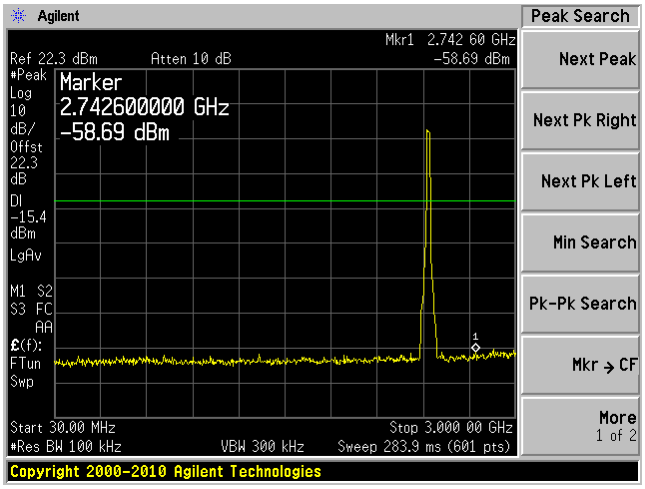


Chain J1, Plot: 4500MHz – 5150 MHz

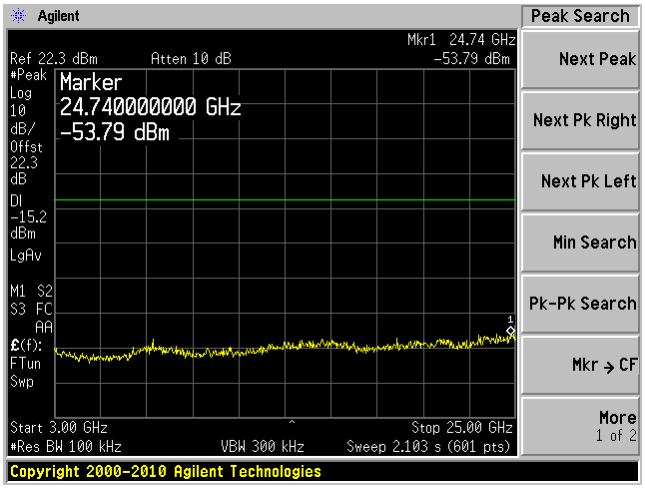


802.11g, Middle Channel 2437 MHz

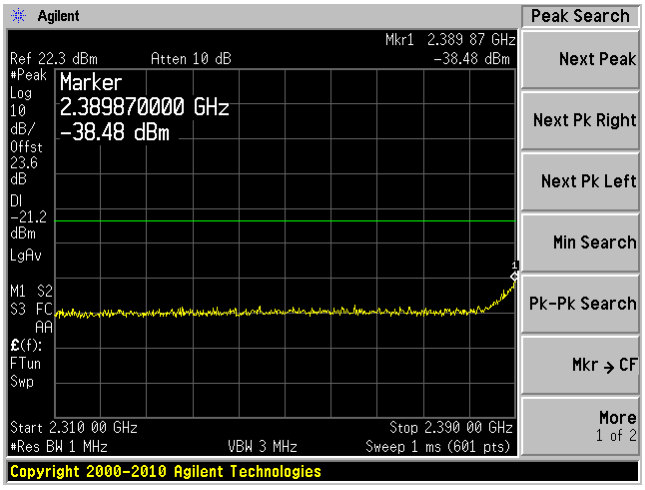
Chain J0, Plot: 30 MHz – 3 GHz



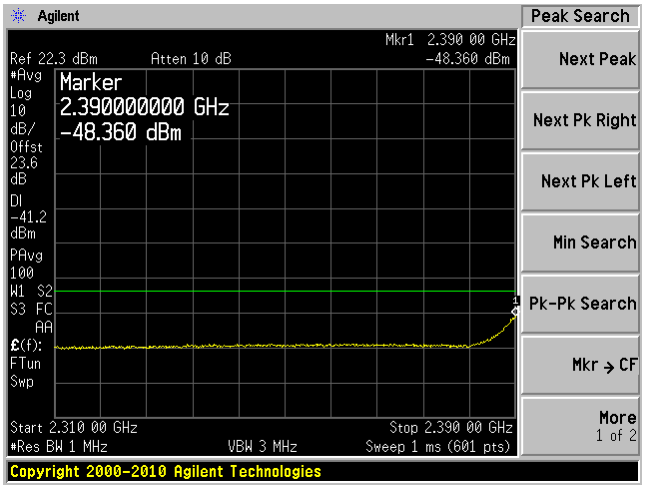
Chain J0, Plot: 3 GHz – 25 GHz



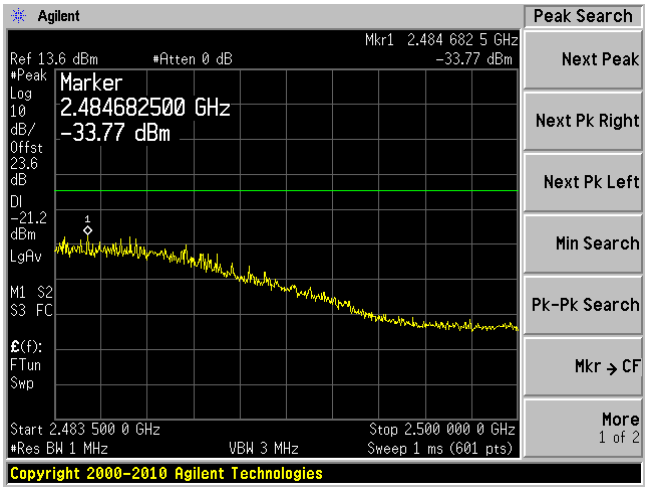
Chain J0, Plot: 2310 MHz – 2390 MHz Peak



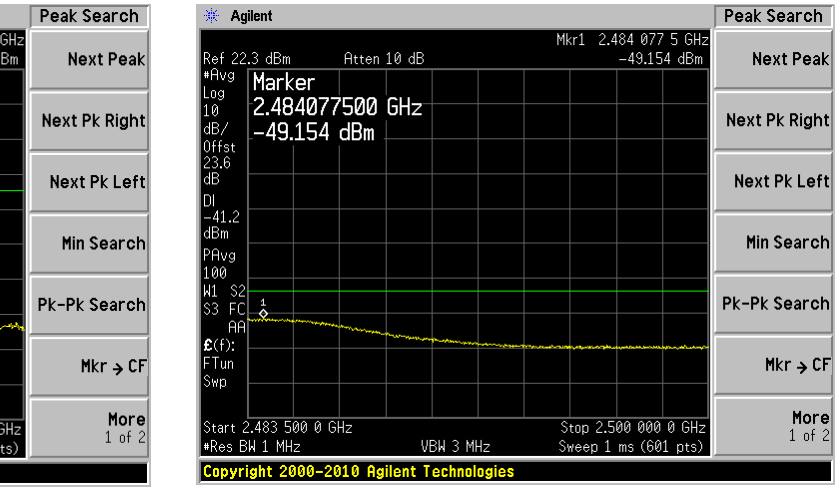
Chain J0, Plot: 2310 MHz – 2390 MHz Ave



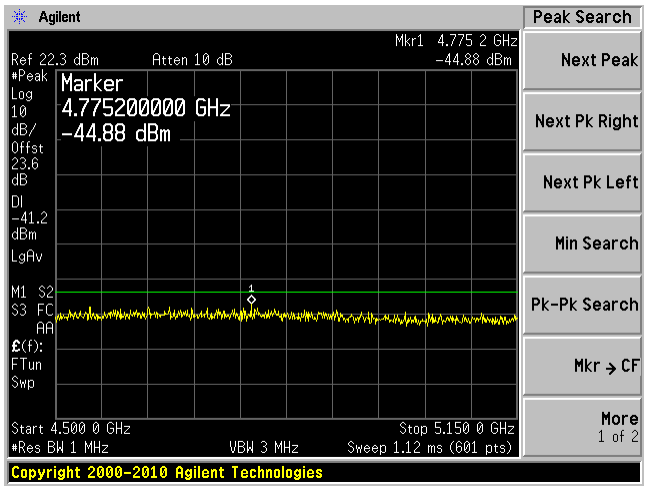
Chain J0, Plot: 2483.5MHz – 2500 MHz Peak



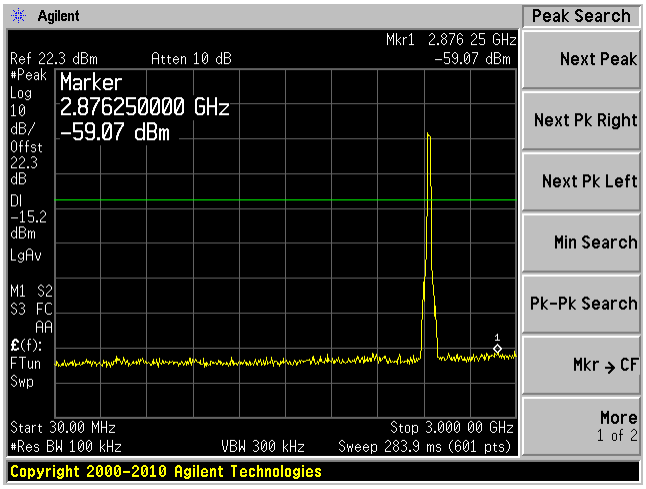
Chain J0, Plot: 2483.5MHz – 2500 MHz Ave



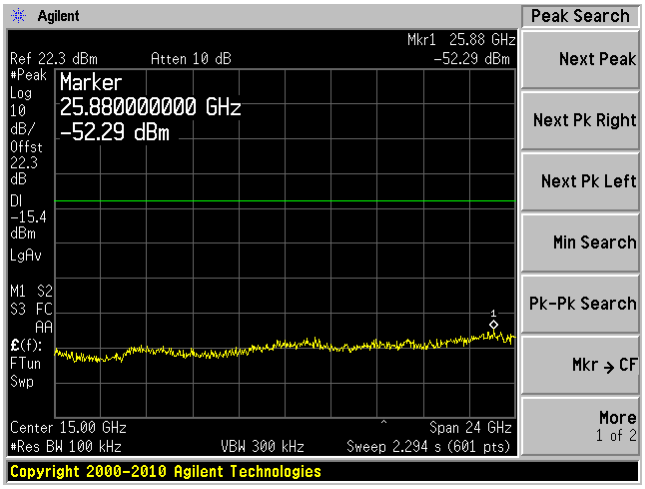
Chain J0, Plot: 4500MHz – 5150 MHz



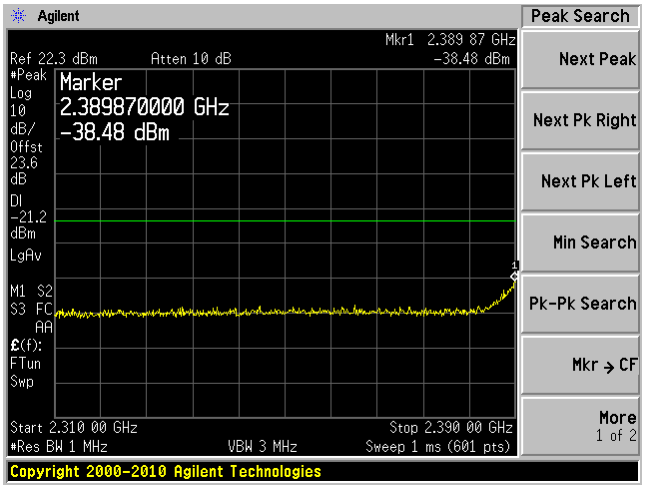
Chain J1, Plot: 30 MHz – 3 GHz



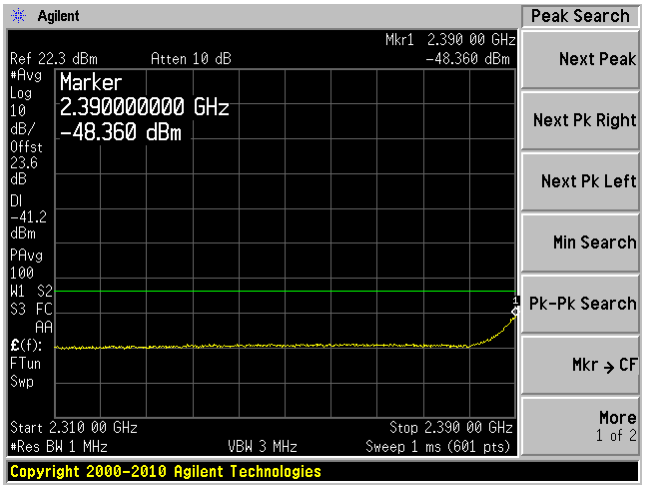
Chain J1, Plot: 3 GHz – 25 GHz



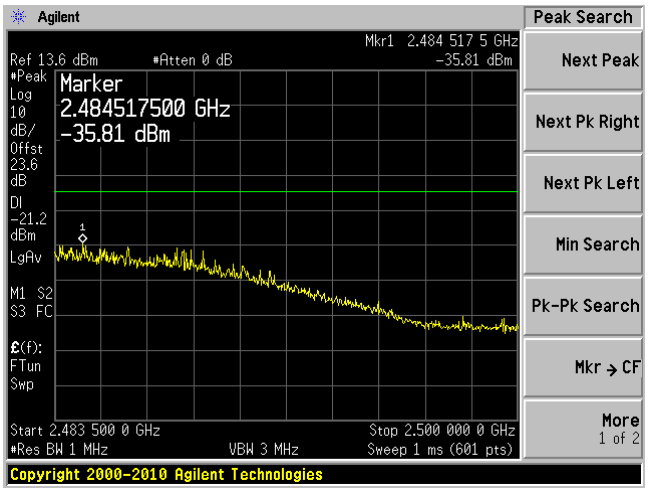
Chain J1, Plot: 2310 MHz – 2390 MHz Peak



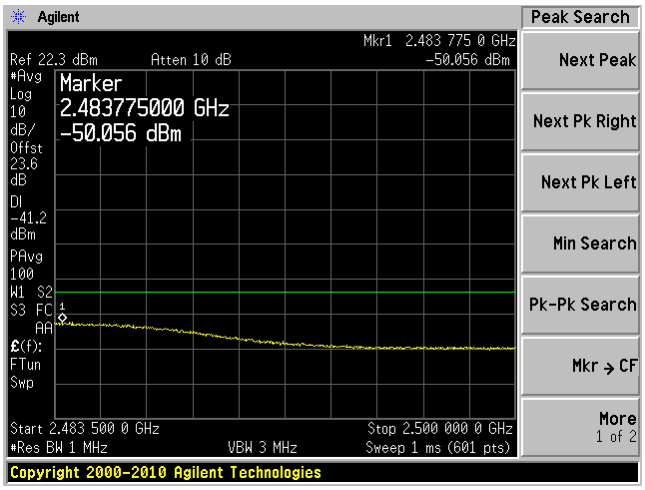
Chain J1, Plot: 2310 MHz – 2390 MHz Ave



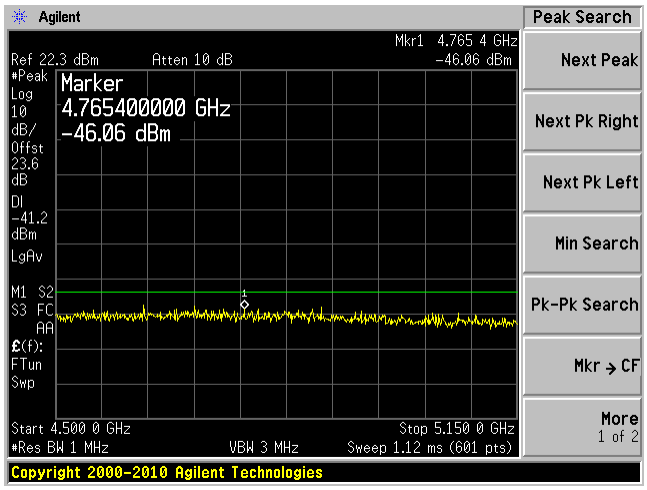
Chain J1, Plot: 2483.5MHz – 2500 MHz Peak



Chain J1, Plot: 2483.5MHz – 2500 MHz Ave

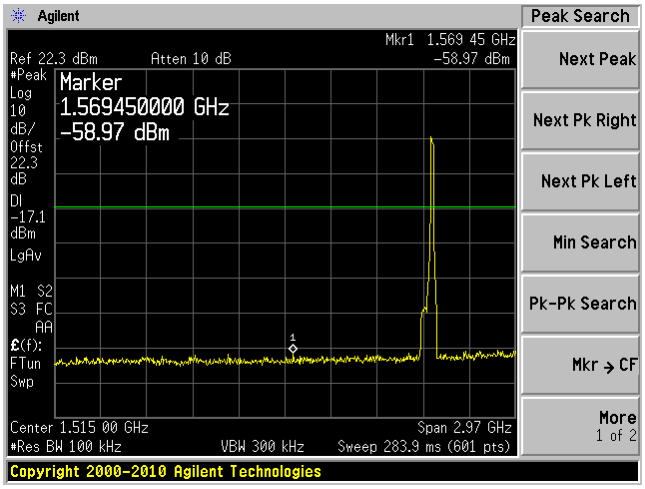


Chain J1, Plot: 4500MHz – 5150 MHz

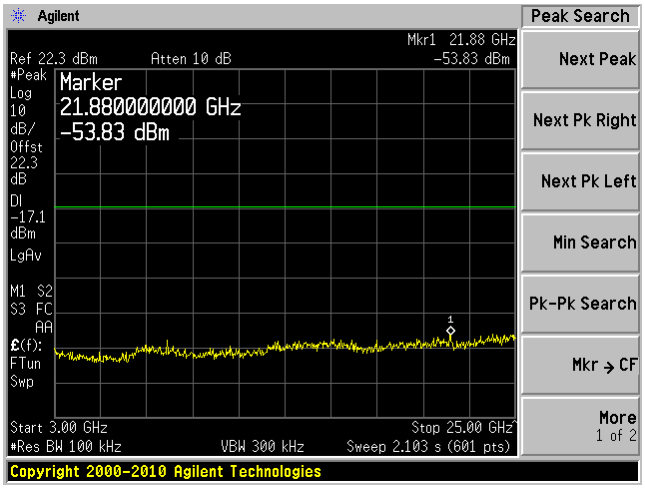


802.11g, High Channel 2462 MHz

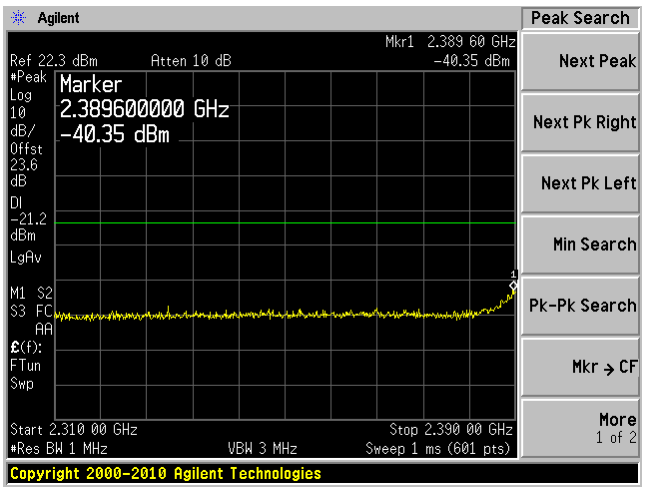
Chain J0, Plot: 30 MHz – 3 GHz



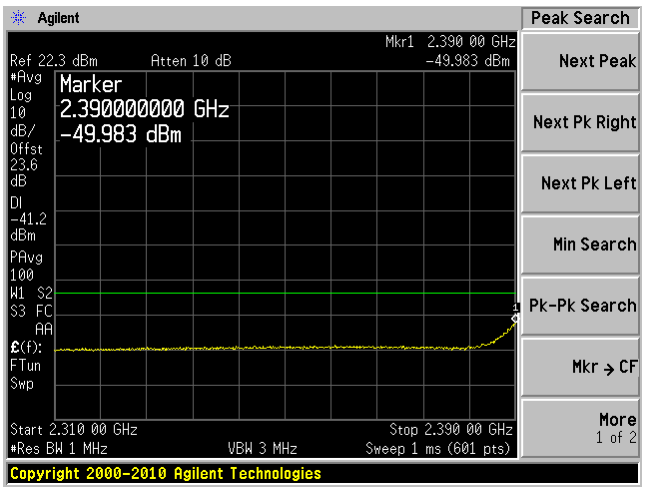
Chain J0, Plot: 3 GHz – 25 GHz



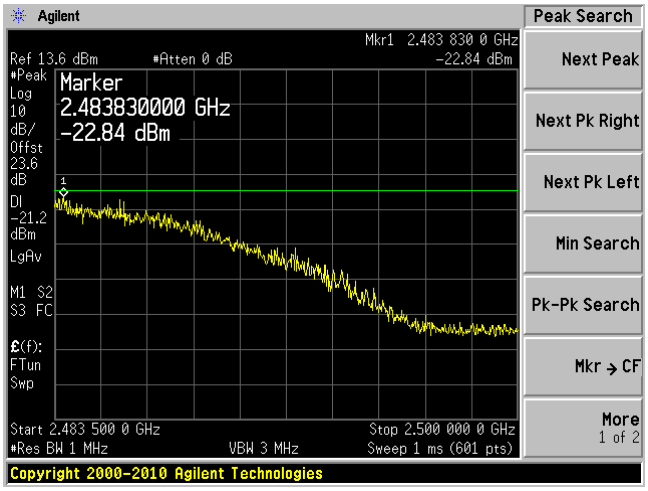
Chain J0, Plot: 2310 MHz – 2390 MHz Peak



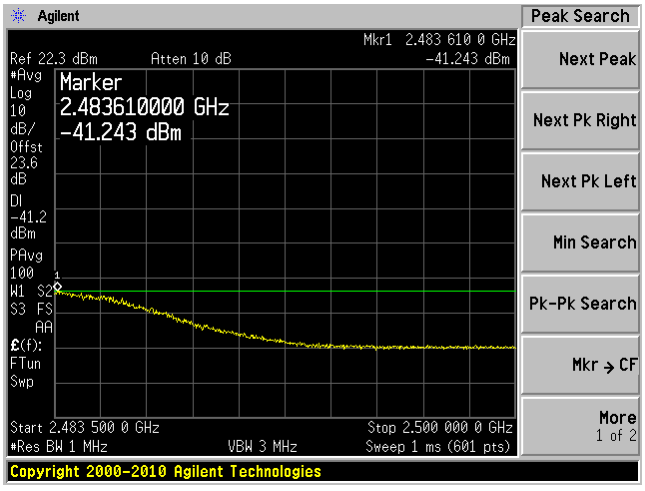
Chain J0, Plot: 2310 MHz – 2390 MHz Ave



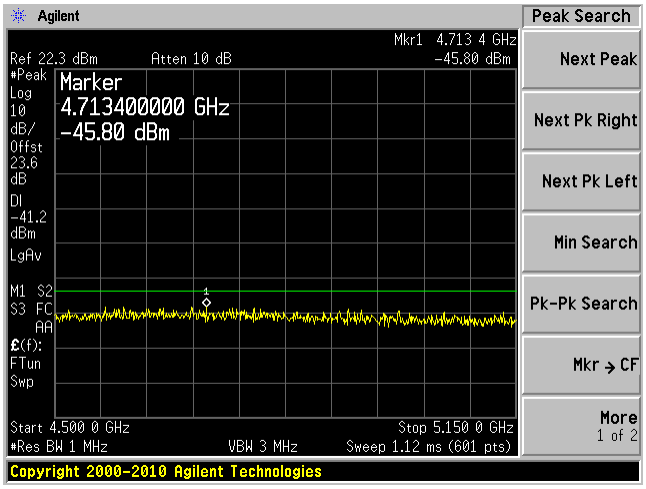
Chain J0, Plot: 2483.5MHz – 2500 MHz Peak



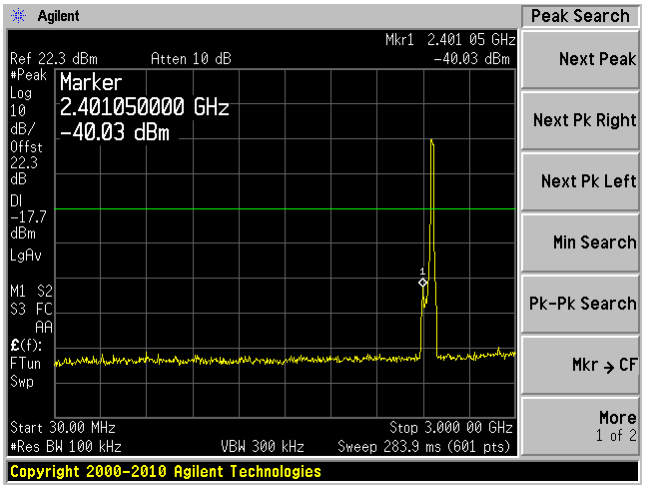
Chain J0, Plot: 2483.5MHz – 2500 MHz Ave



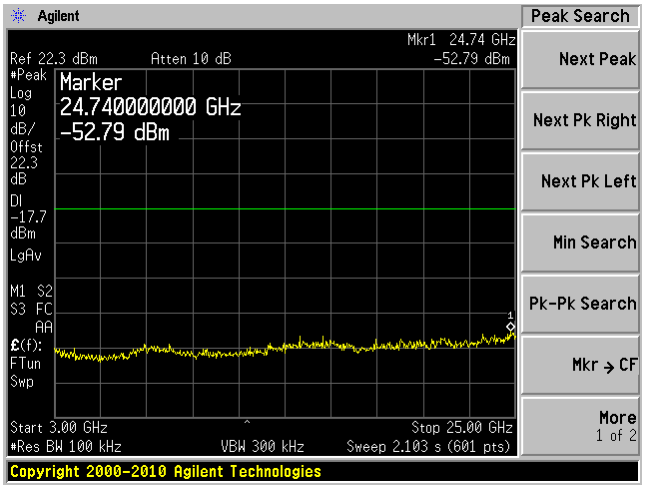
Chain J0, Plot: 4500MHz – 5150 MHz



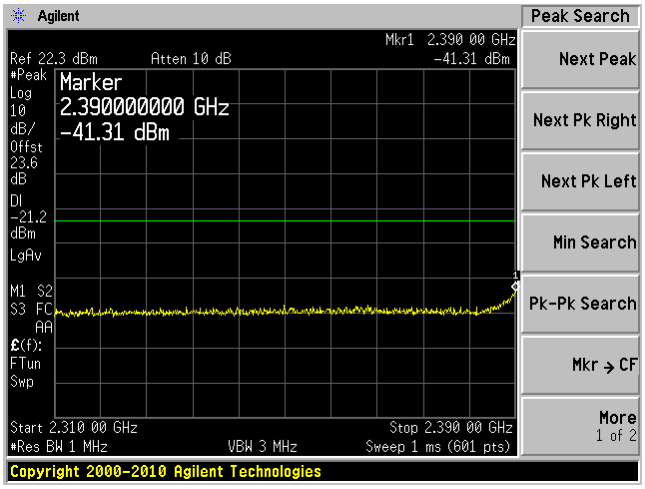
Chain J1, Plot: 30 MHz – 3 GHz



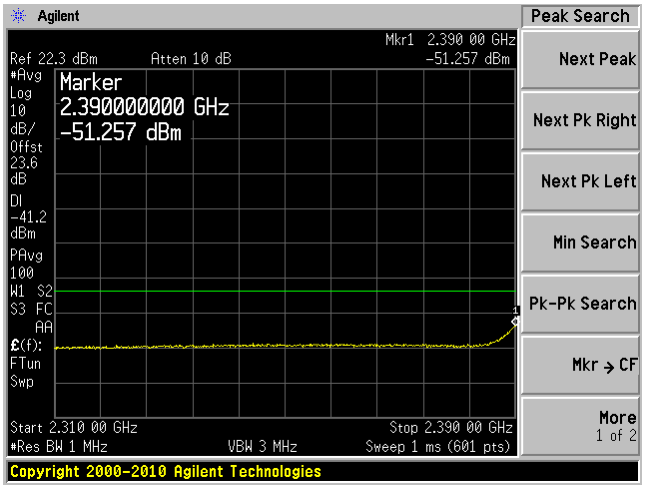
Chain J1, Plot: 3 GHz – 25 GHz



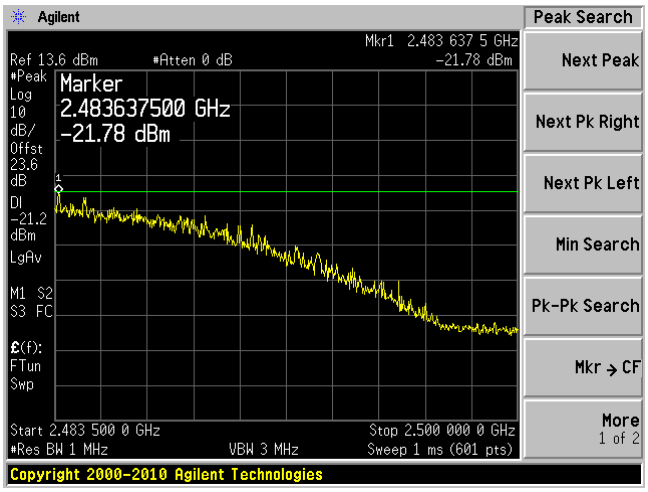
Chain J1, Plot: 2310 MHz – 2390 MHz Peak



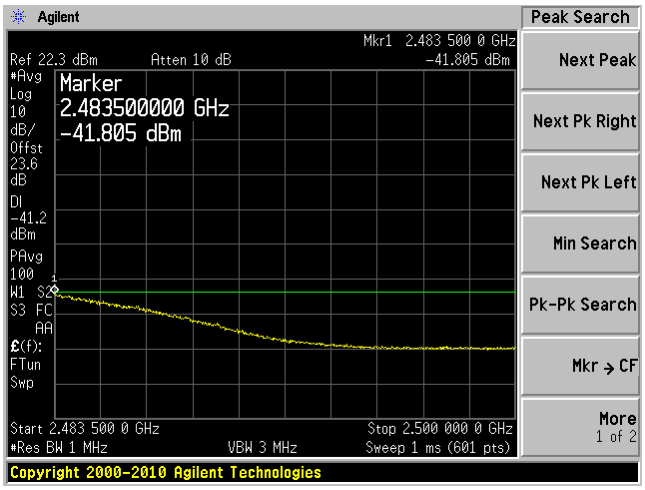
Chain J1, Plot: 2310 MHz – 2390 MHz Ave



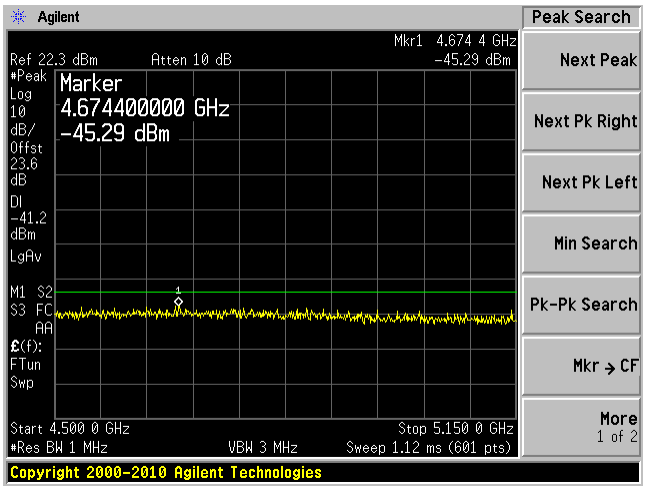
Chain J1, Plot: 2483.5MHz – 2500 MHz Peak



Chain J1, Plot: 2483.5MHz – 2500 MHz Ave

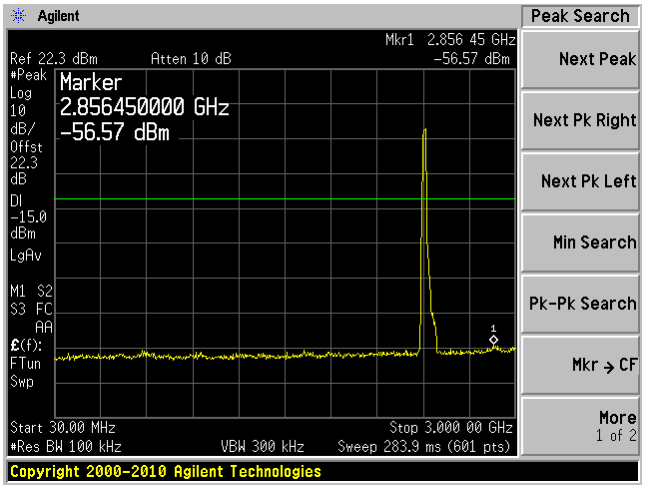


Chain J1, Plot: 4500MHz – 5150 MHz

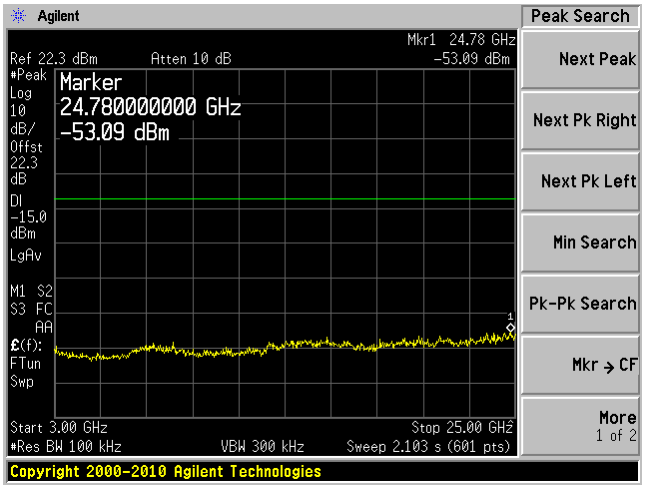


802.11n-HT20, Low Channel 2412 MHz

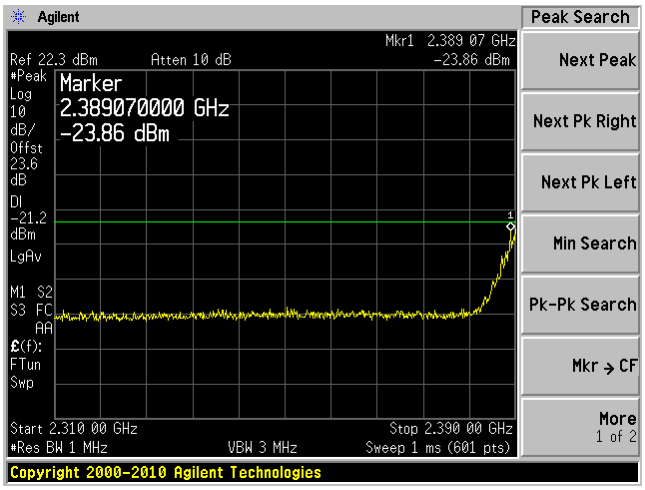
Chain J0, Plot: 30 MHz – 3 GHz



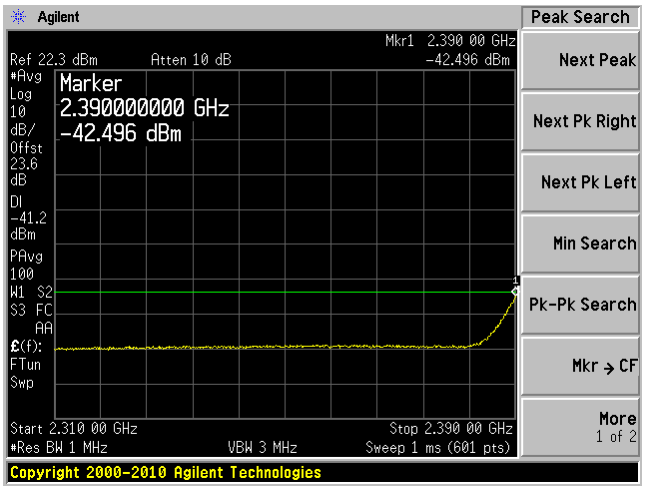
Chain J0, Plot: 3 GHz – 25 GHz



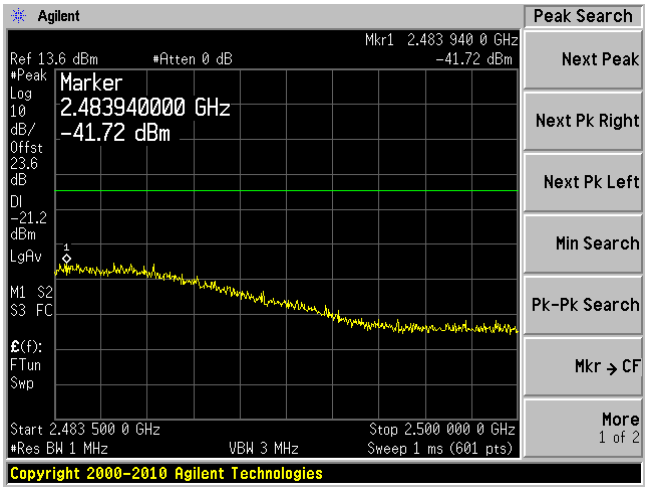
Chain J0, Plot: 2310 MHz – 2390 MHz Peak



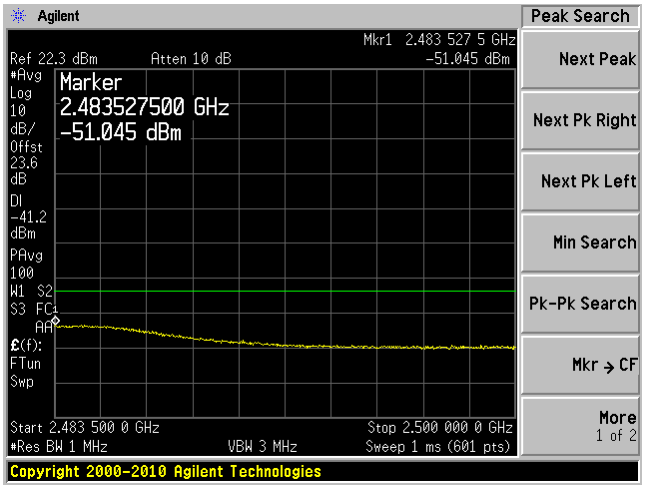
Chain J0, Plot: 2310 MHz – 2390 MHz Ave



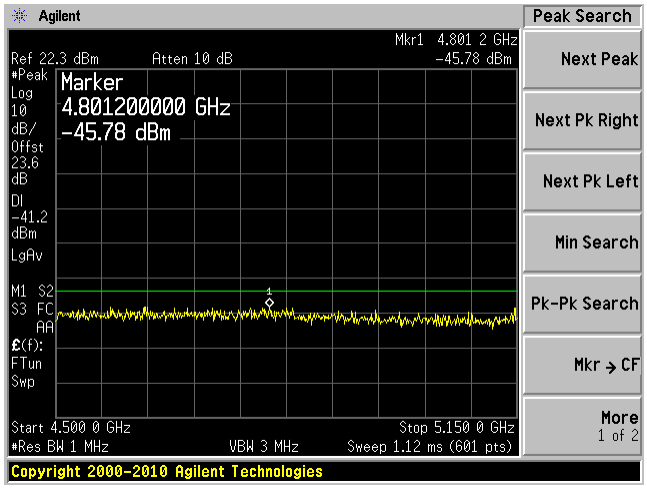
Chain J0, Plot: 2483.5MHz – 2500 MHz Peak



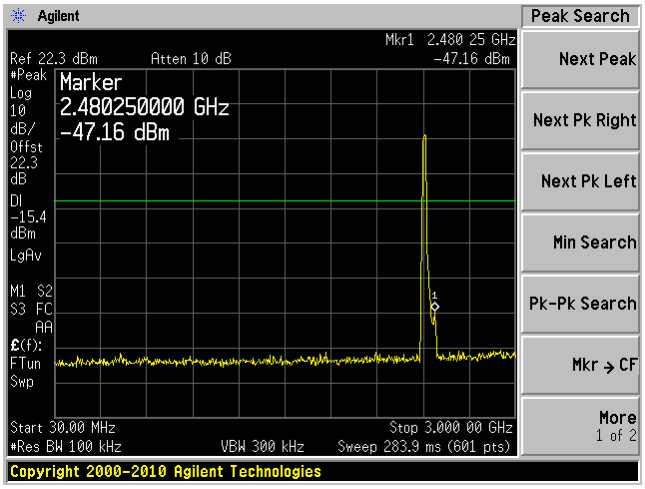
Chain J0, Plot: 2483.5MHz – 2500 MHz Ave



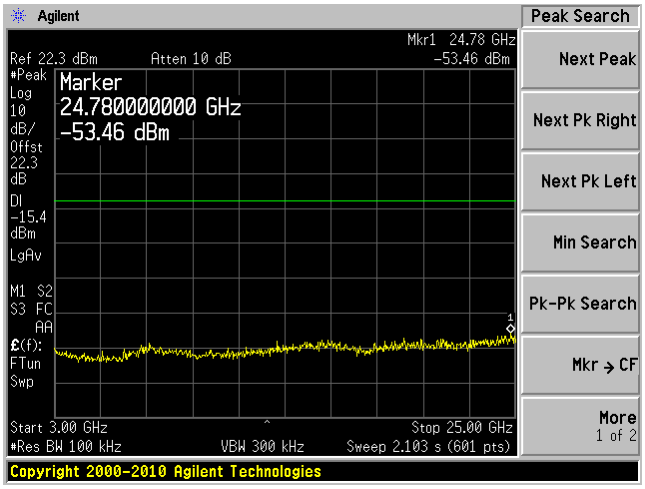
Chain J0, Plot: 4500MHz – 5150 MHz



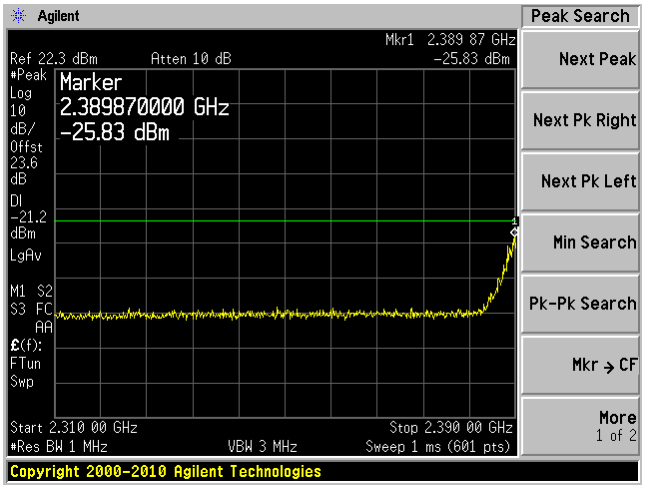
Chain J1, Plot: 30 MHz – 3 GHz



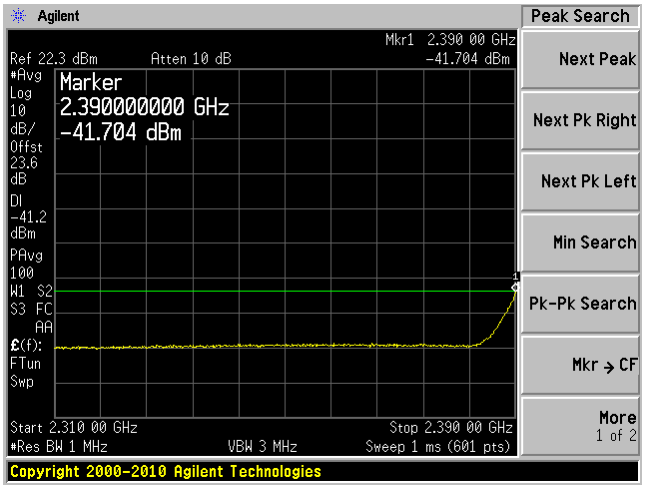
Chain J1, Plot: 3 GHz – 25 GHz



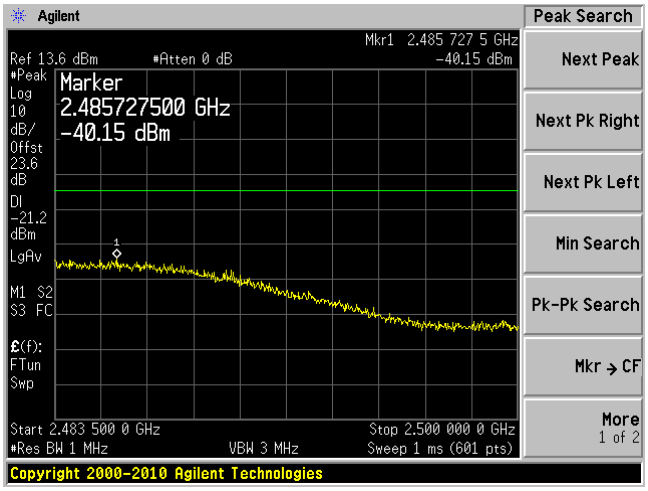
Chain J1, Plot: 2310 MHz – 2390 MHz Peak



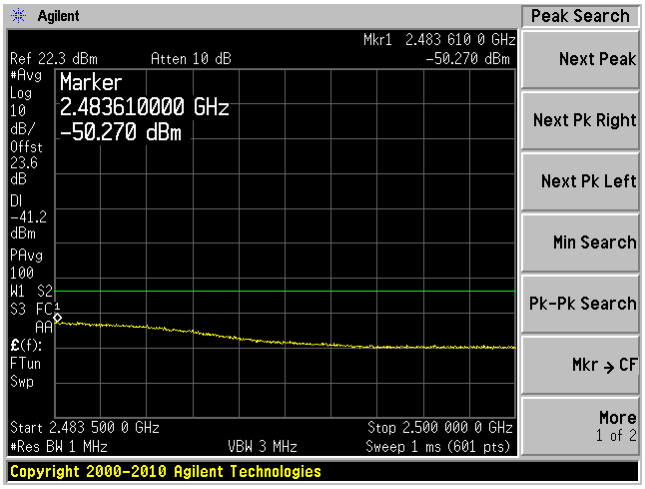
Chain J1, Plot: 2310 MHz – 2390 MHz Ave



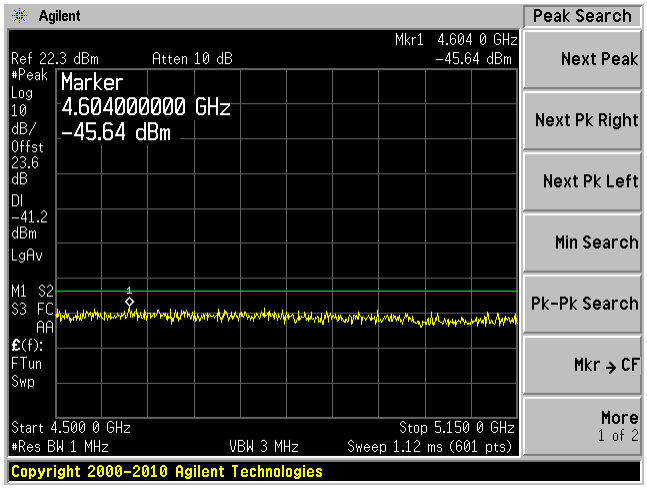
Chain J1, Plot: 2483.5MHz – 2500 MHz Peak



Chain J1, Plot: 2483.5MHz – 2500 MHz Ave

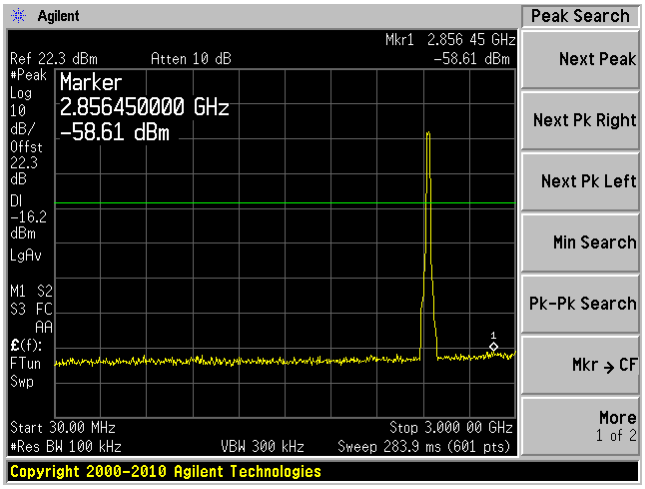


Chain J1, Plot: 4500MHz – 5150 MHz

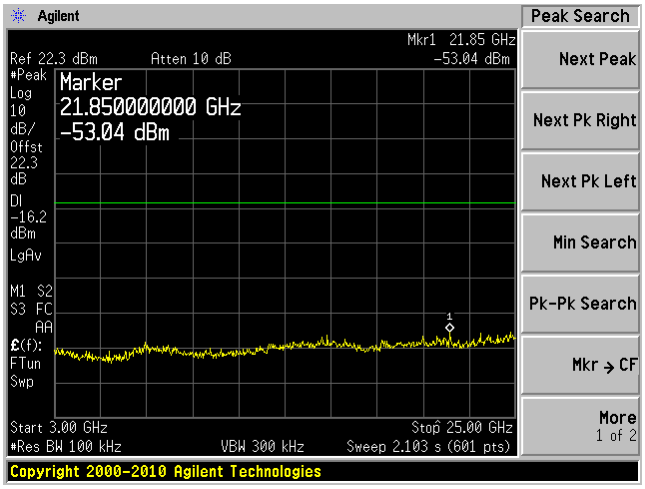


802.11n-HT20, Middle Channel 2437 MHz

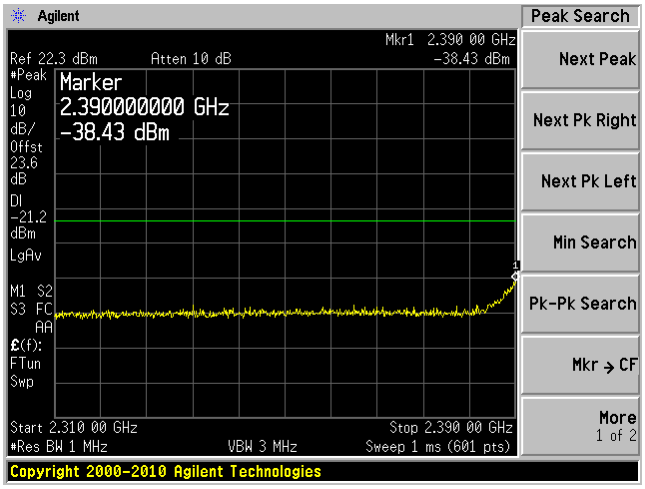
Chain J0, Plot: 30 MHz – 3 GHz



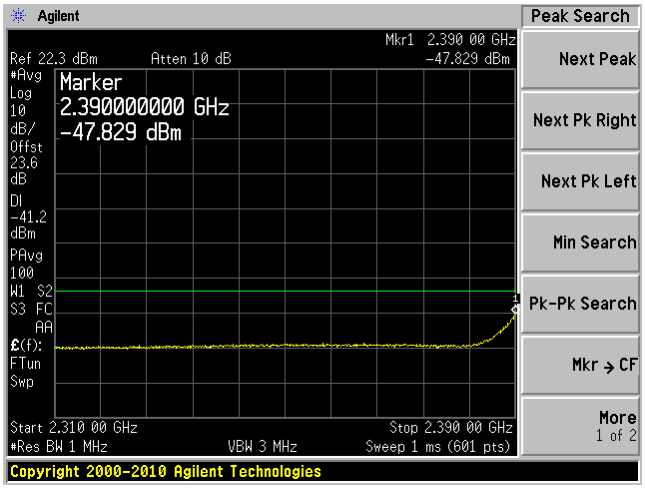
Chain J0, Plot: 3 GHz – 25 GHz



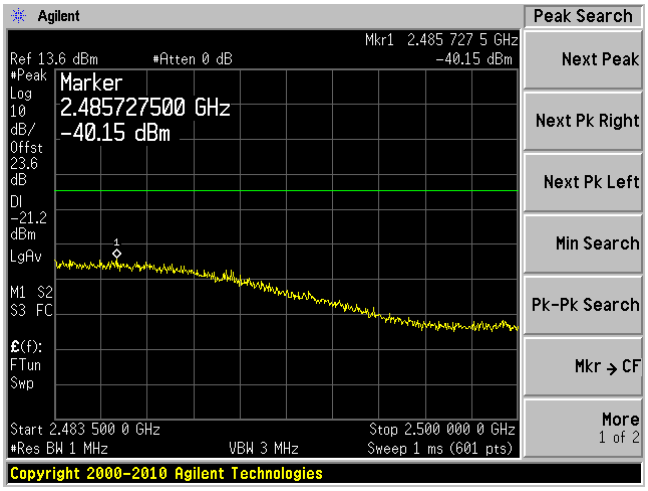
Chain J0, Plot: 2310 MHz – 2390 MHz Peak



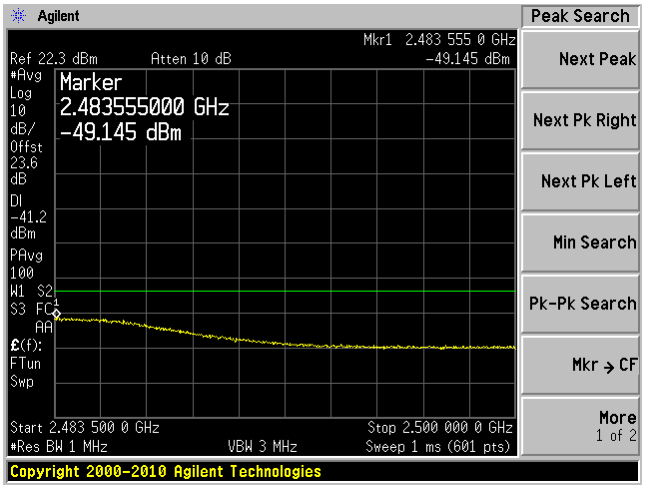
Chain J0, Plot: 2310 MHz – 2390 MHz Ave



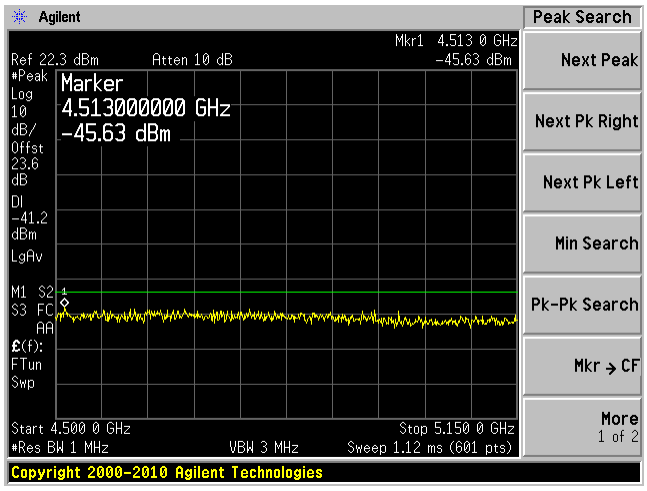
Chain J0, Plot: 2483.5MHz – 2500 MHz Peak



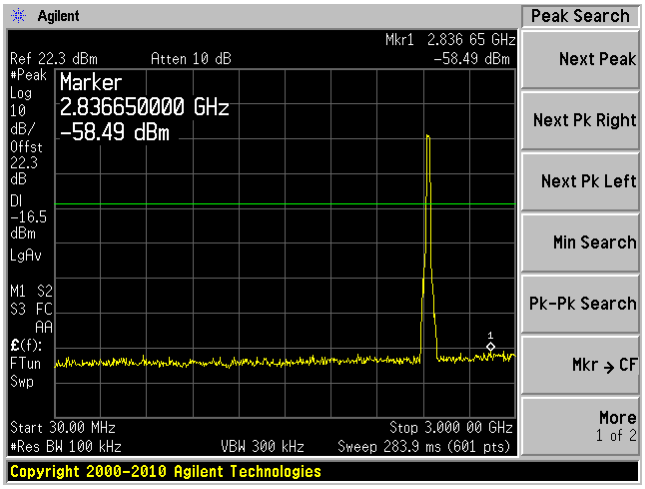
Chain J0, Plot: 2483.5MHz – 2500 MHz Ave



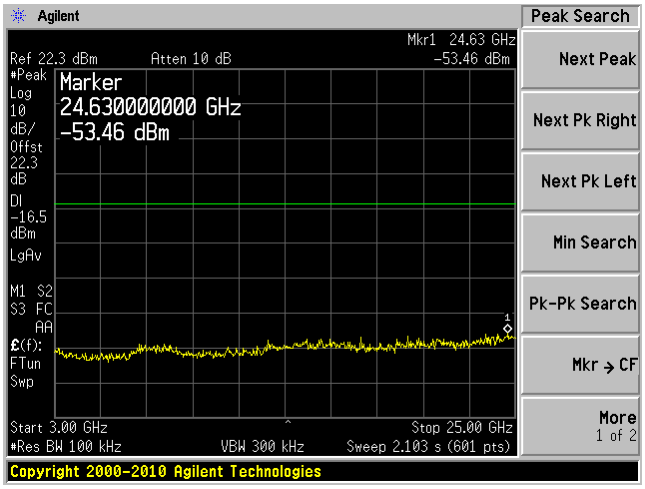
Chain J0, Plot: 4500MHz – 5150 MHz



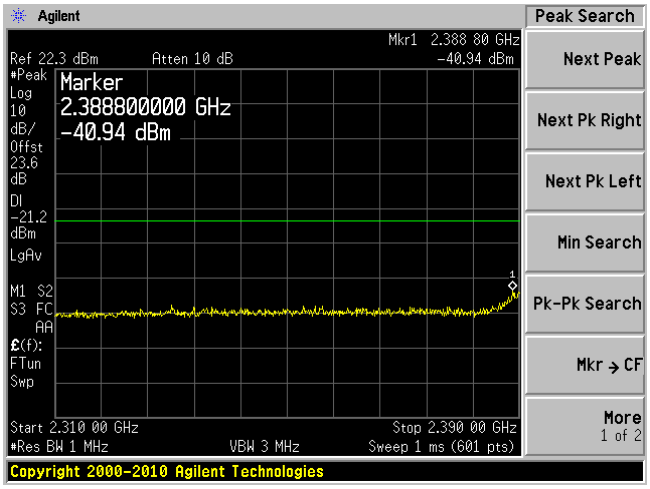
Chain J1, Plot: 30 MHz – 3 GHz



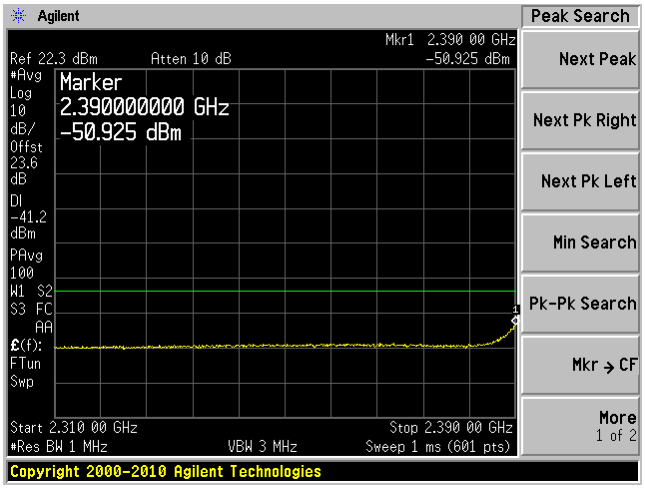
Chain J1, Plot: 3 GHz – 25 GHz



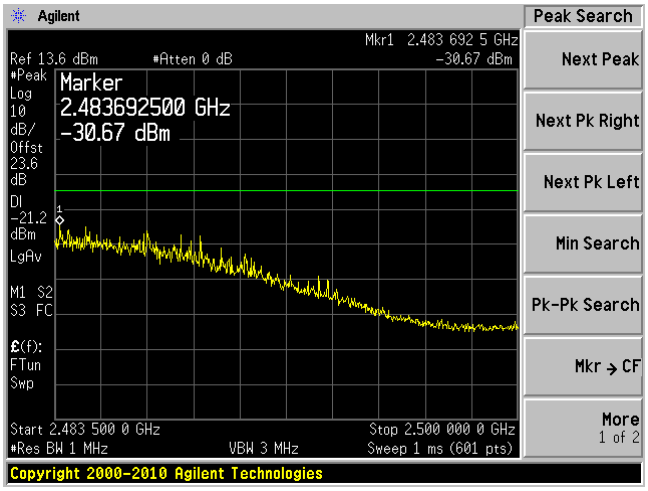
Chain J1, Plot: 2310 MHz – 2390 MHz Peak



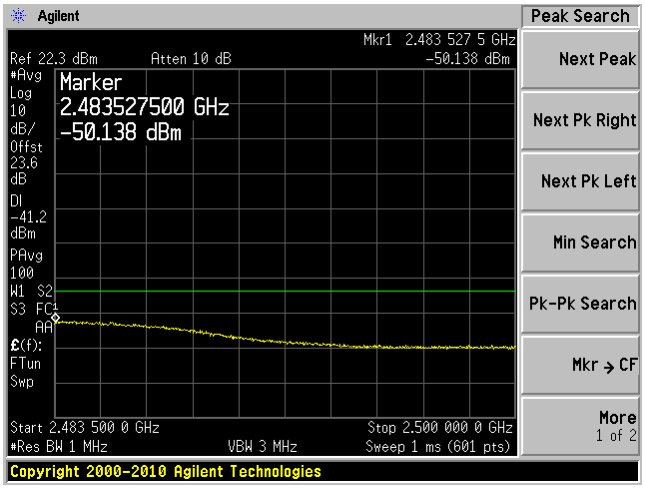
Chain J1, Plot: 2310 MHz – 2390 MHz Ave



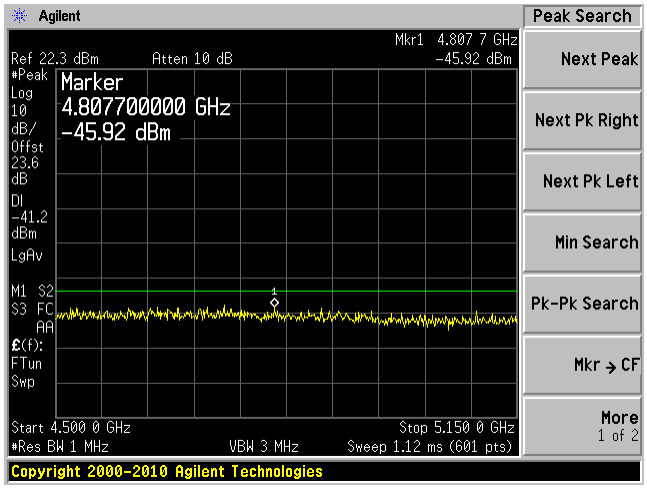
Chain J1, Plot: 2483.5MHz – 2500 MHz Peak



Chain J1, Plot: 2483.5MHz – 2500 MHz Ave

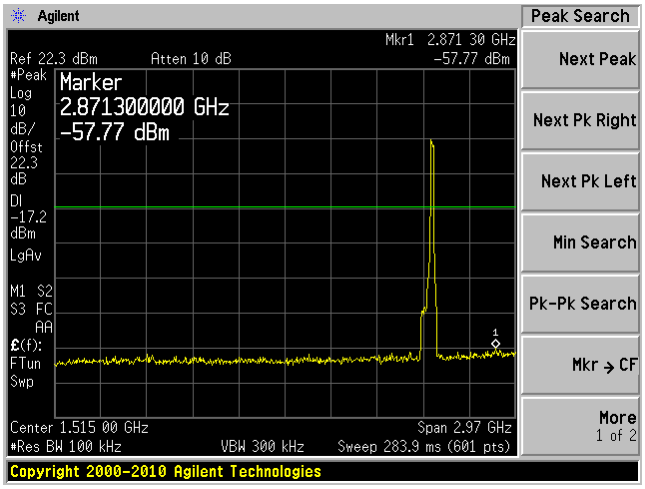


Chain J1, Plot: 4500MHz – 5150 MHz

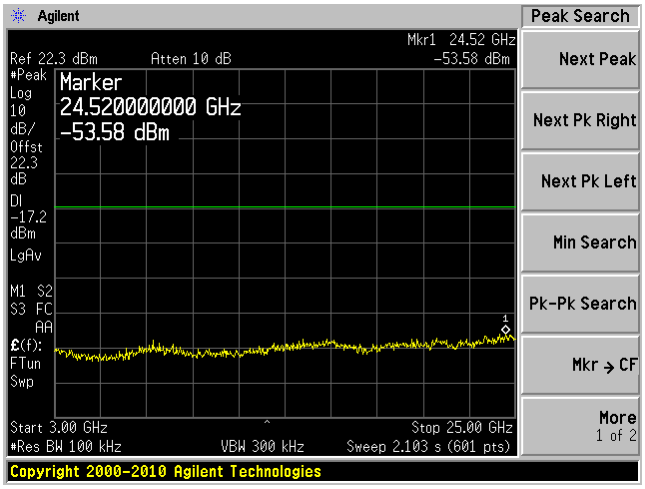


802.11n-HT20, High Channel 2462 MHz

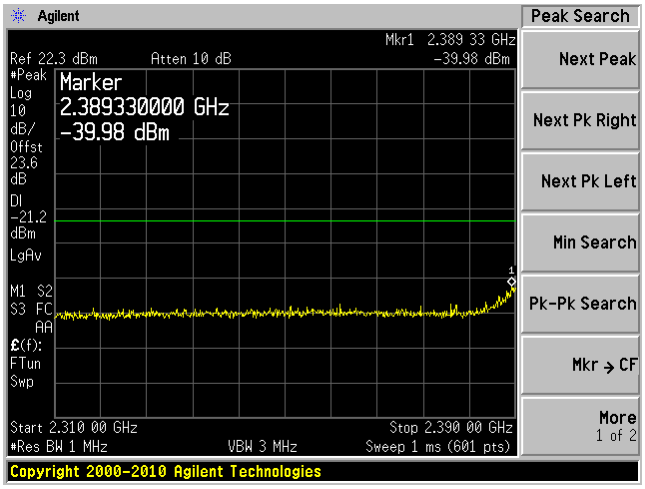
Chain J0, Plot: 30 MHz – 3 GHz



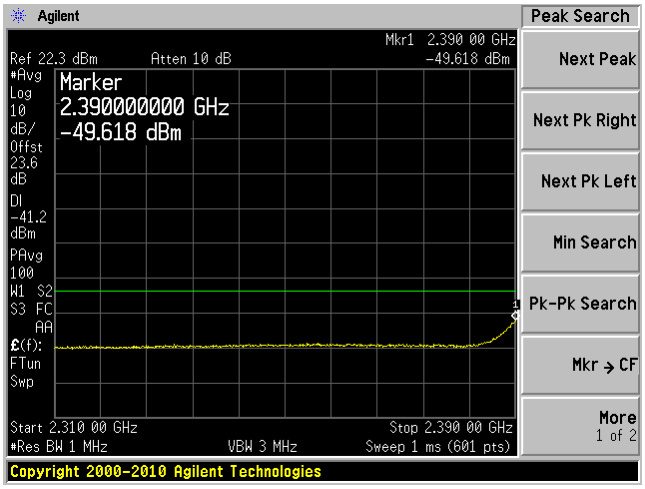
Chain J0, Plot: 3 GHz – 25 GHz



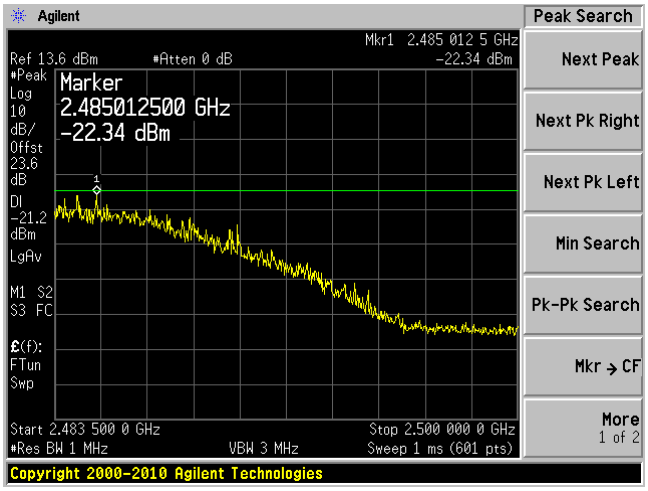
Chain J0, Plot: 2310 MHz – 2390 MHz Peak



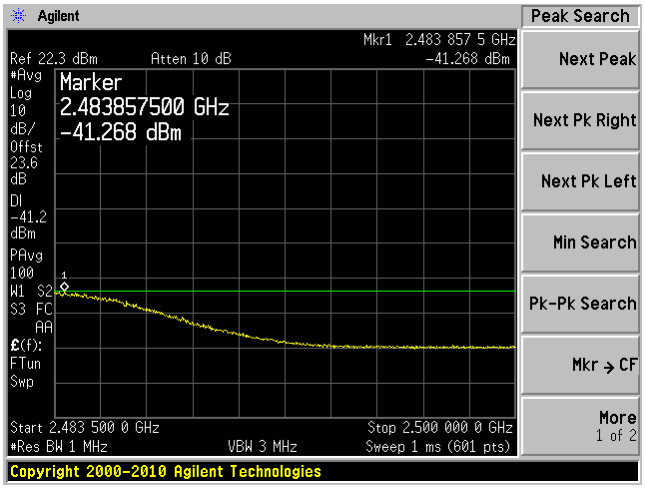
Chain J0, Plot: 2310 MHz – 2390 MHz Ave



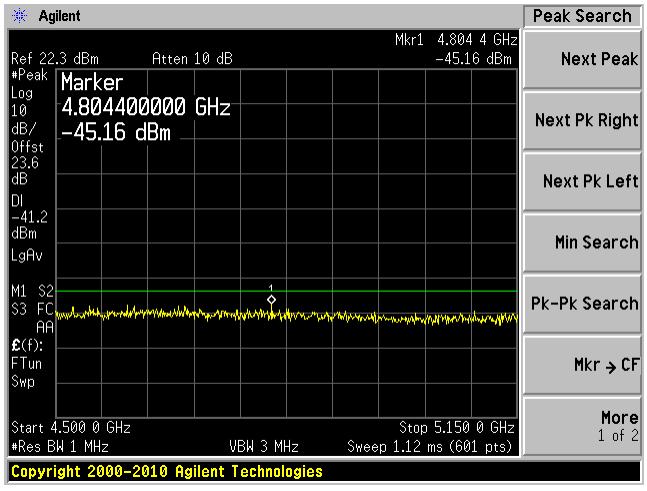
Chain J0, Plot: 2483.5MHz – 2500 MHz Peak



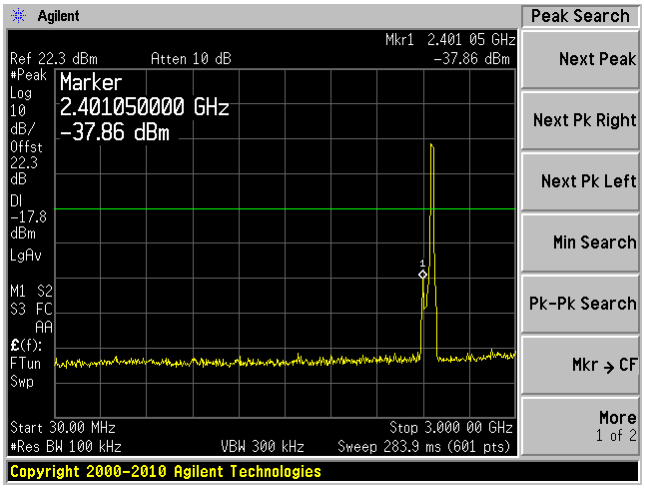
Chain J0, Plot: 2483.5MHz – 2500 MHz Ave



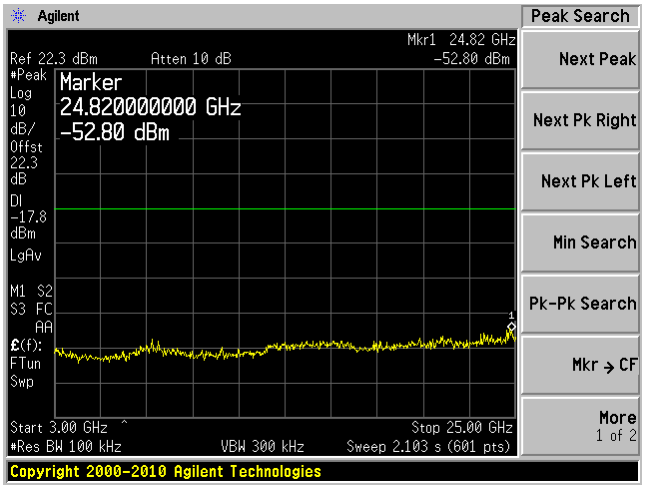
Chain J0, Plot: 4500MHz – 5150 MHz



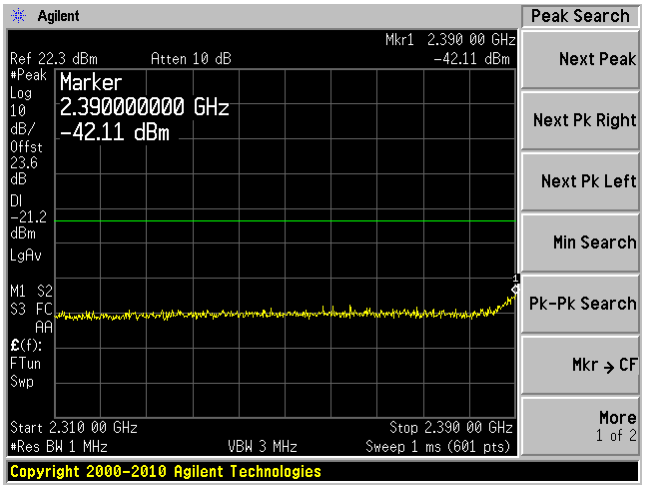
Chain J1, Plot: 30 MHz – 3 GHz



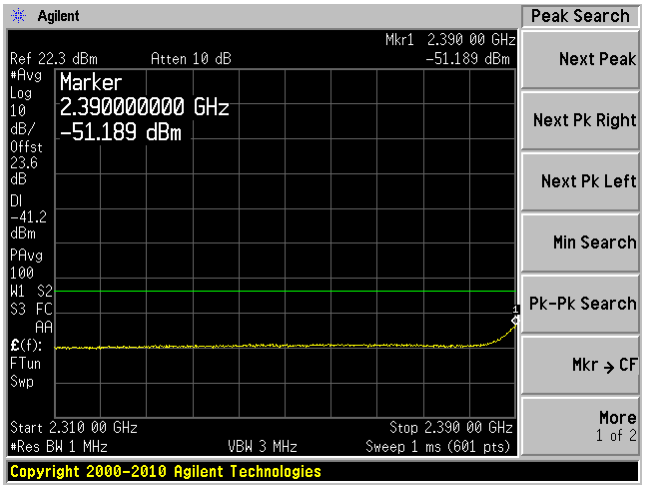
Chain J1, Plot: 3 GHz – 25 GHz



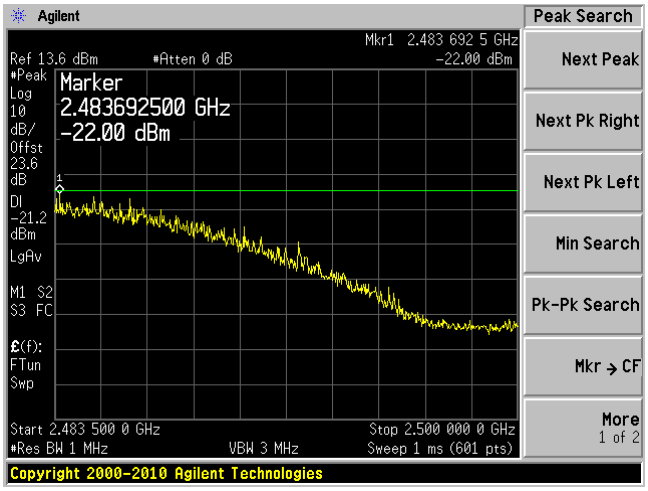
Chain J1, Plot: 2310 MHz – 2390 MHz Peak



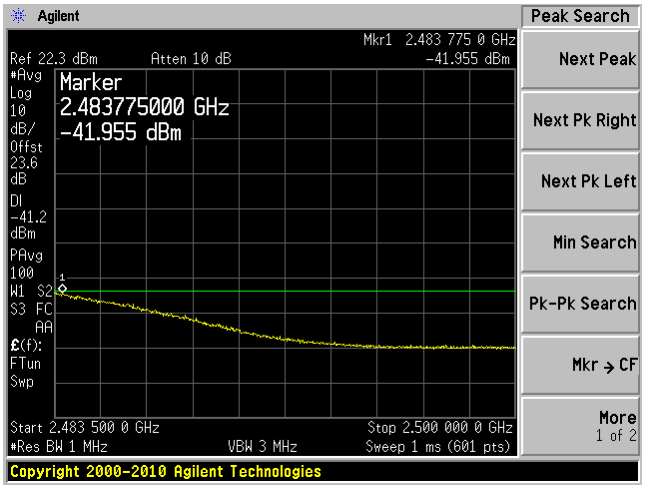
Chain J1, Plot: 2310 MHz – 2390 MHz Ave



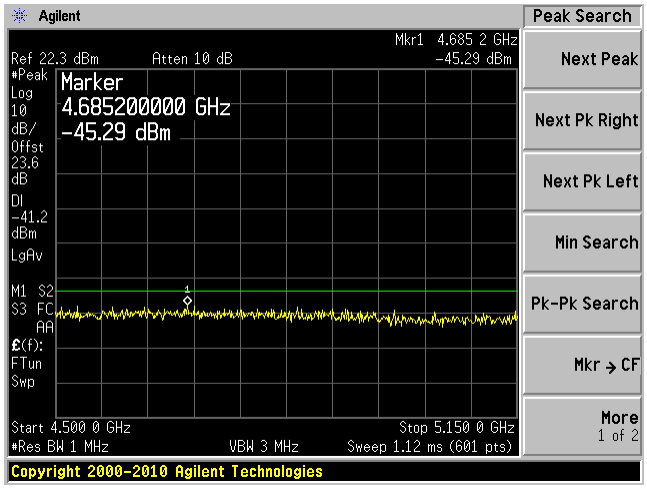
Chain J1, Plot: 2483.5MHz – 2500 MHz Peak



Chain J1, Plot: 2483.5MHz – 2500 MHz Ave

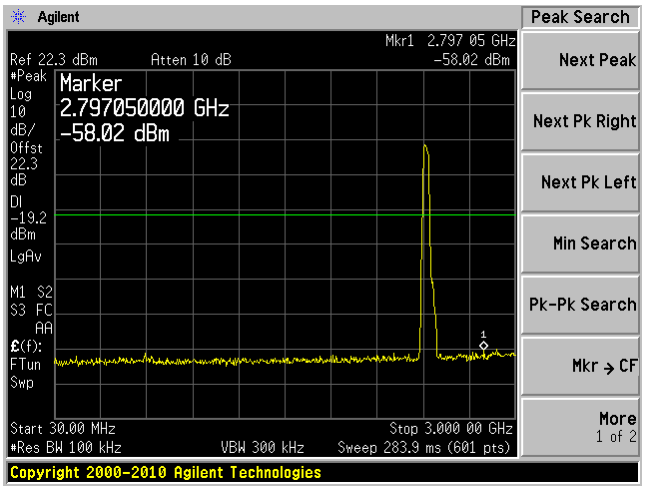


Chain J1, Plot: 4500MHz – 5150 MHz

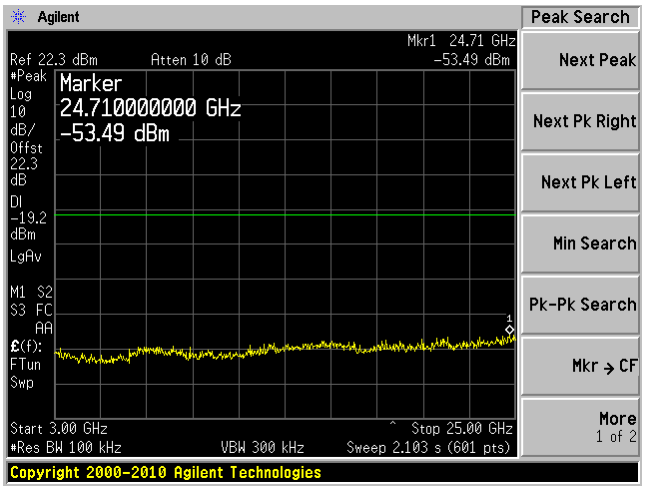


802.11n HT40, Low Channel 2422 MHz

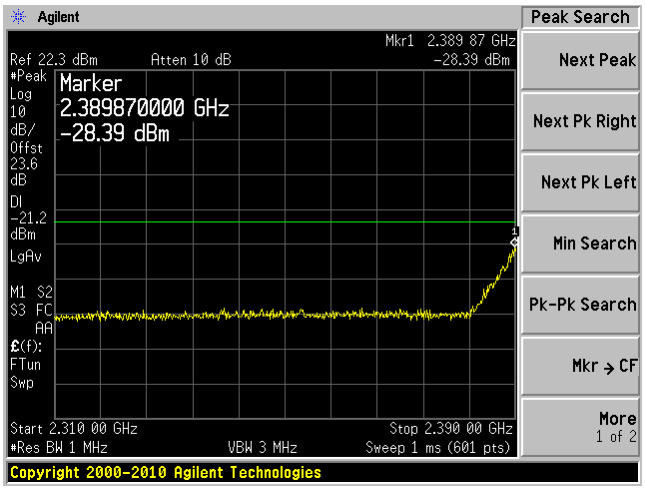
Chain J0, Plot: 30 MHz – 3 GHz



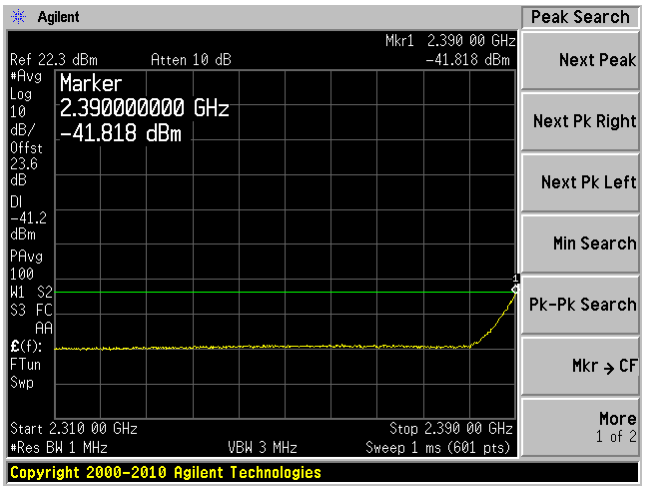
Chain J0, Plot: 3 GHz – 25 GHz



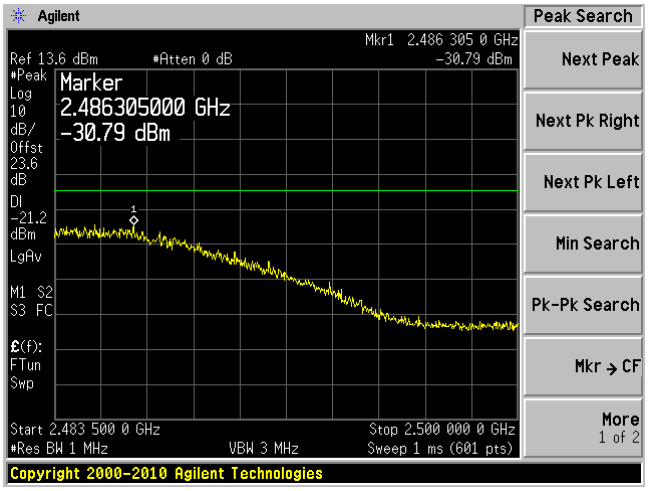
Chain J0, Plot: 2310 MHz – 2390 MHz Peak



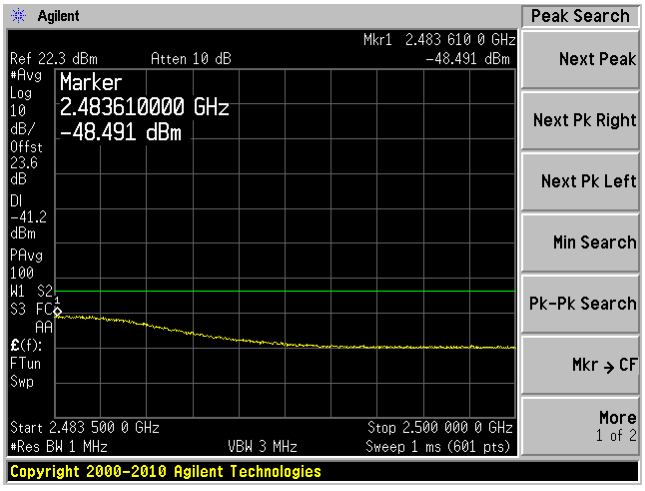
Chain J0, Plot: 2310 MHz – 2390 MHz Ave



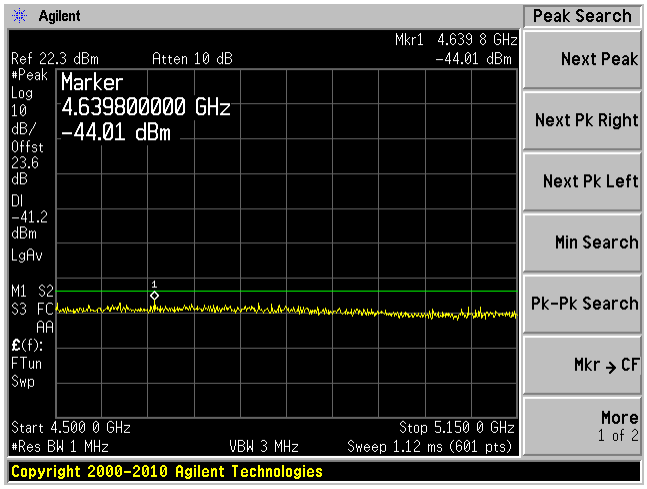
Chain J0, Plot: 2483.5MHz – 2500 MHz Peak



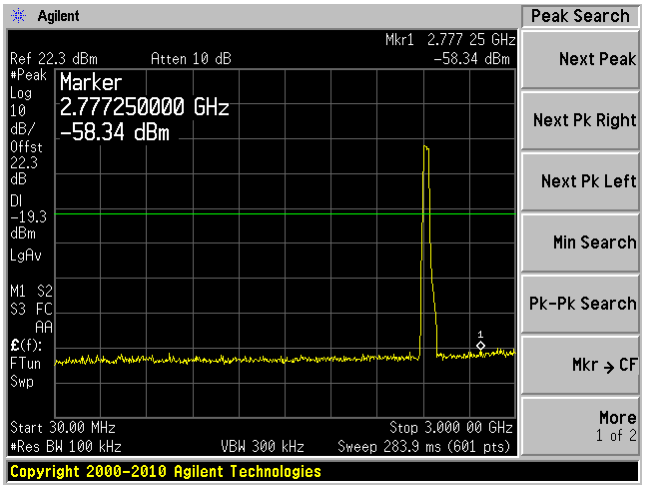
Chain J0, Plot: 2483.5MHz – 2500 MHz Ave



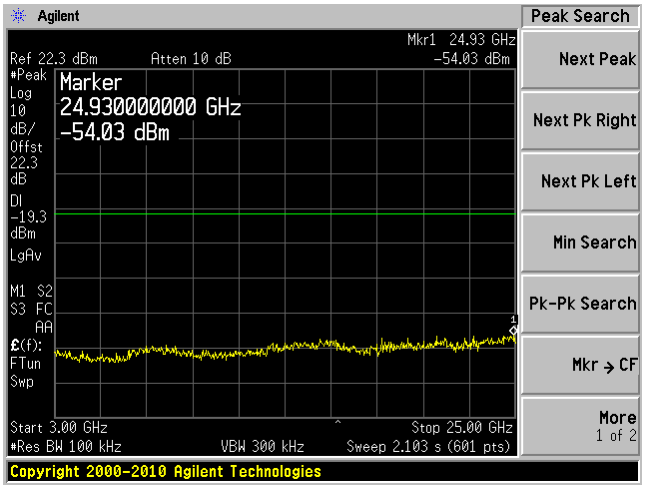
Chain J0, Plot: 4500MHz – 5150 MHz



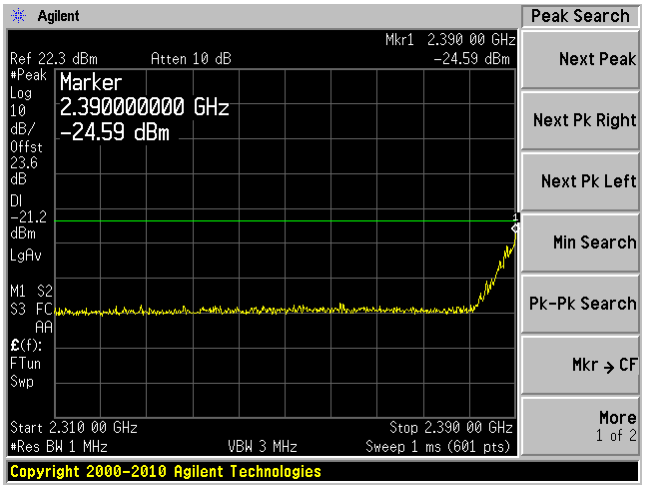
Chain J1, Plot: 30 MHz – 3 GHz



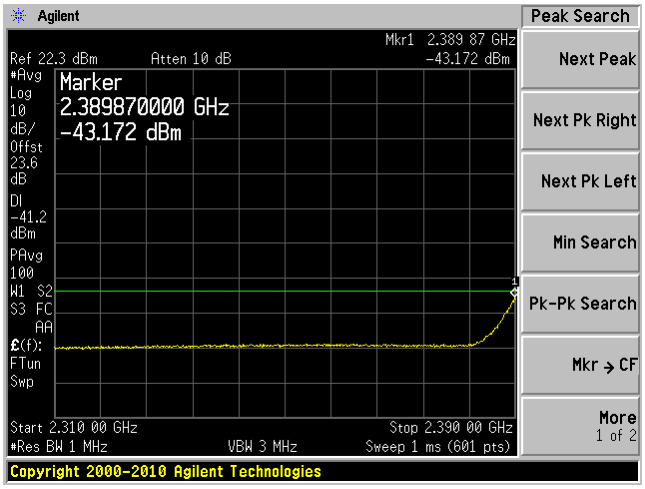
Chain J1, Plot: 3 GHz – 25 GHz



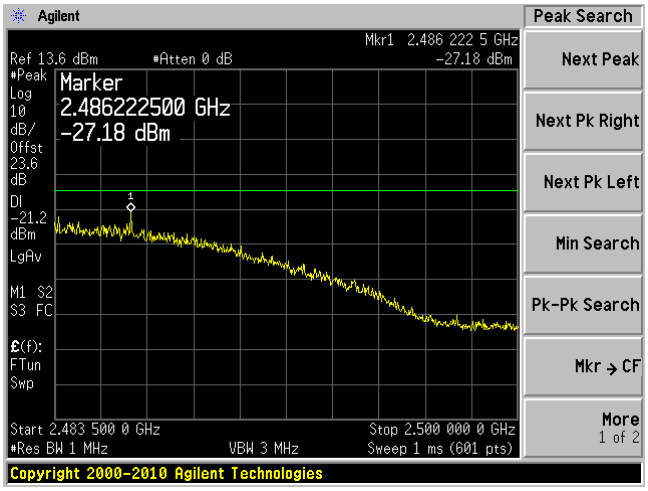
Chain J1, Plot: 2310 MHz – 2390 MHz Peak



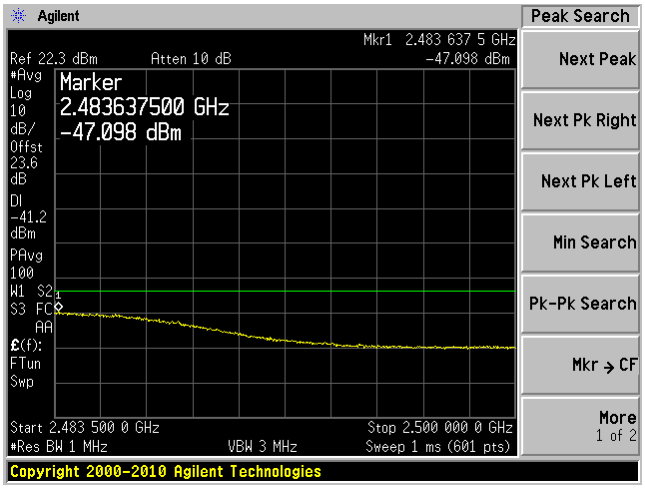
Chain J1, Plot: 2310 MHz – 2390 MHz Ave



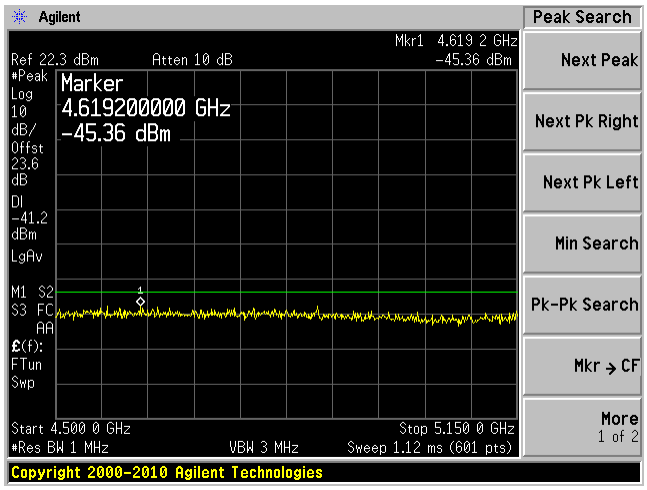
Chain J1, Plot: 2483.5MHz – 2500 MHz Peak



Chain J1, Plot: 2483.5MHz – 2500 MHz Ave

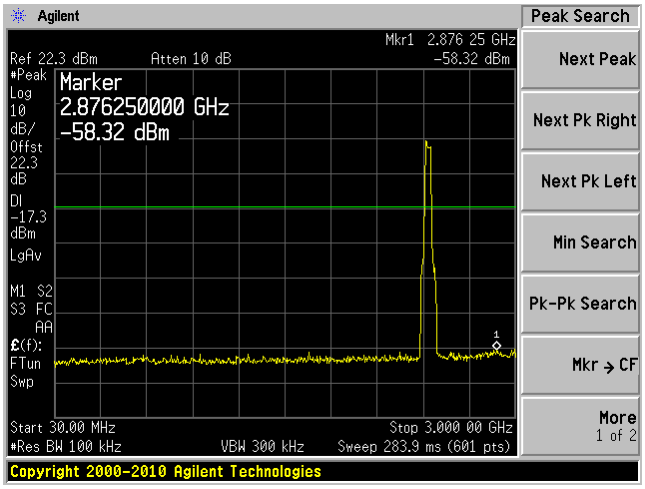


Chain J1, Plot: 4500MHz – 5150 MHz

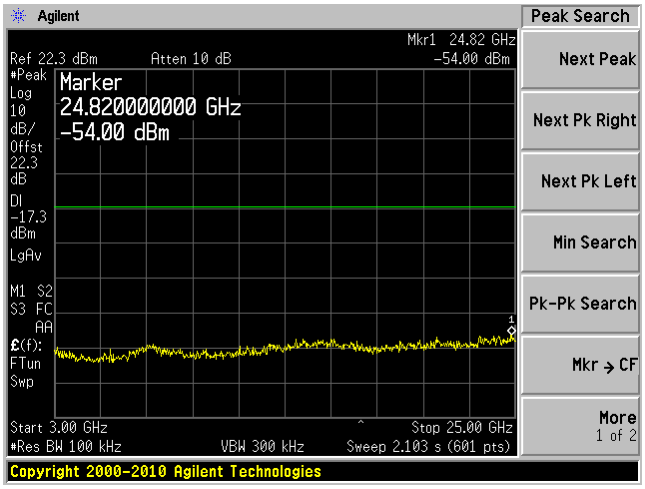


802.11n-HT40, Middle Channel 2437 MHz

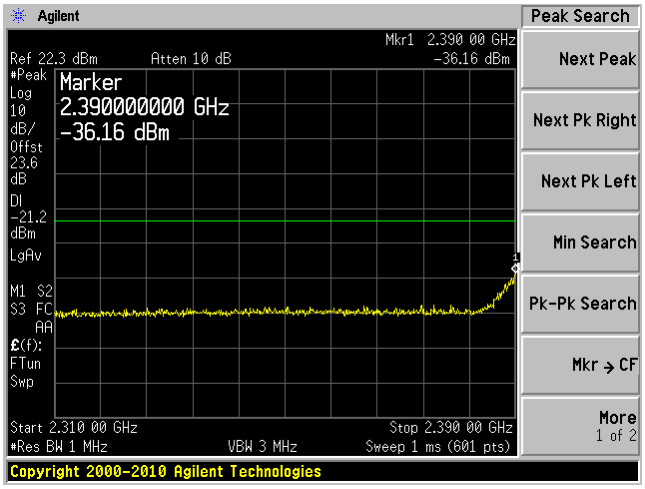
Chain J0, Plot: 30 MHz – 3 GHz



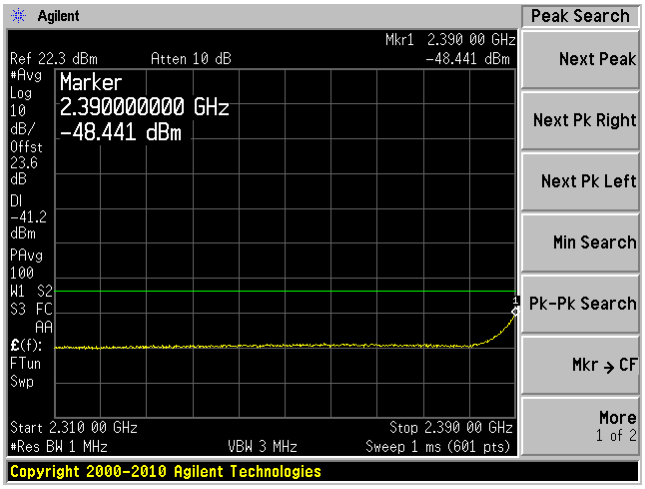
Chain J0, Plot: 3 GHz – 25 GHz



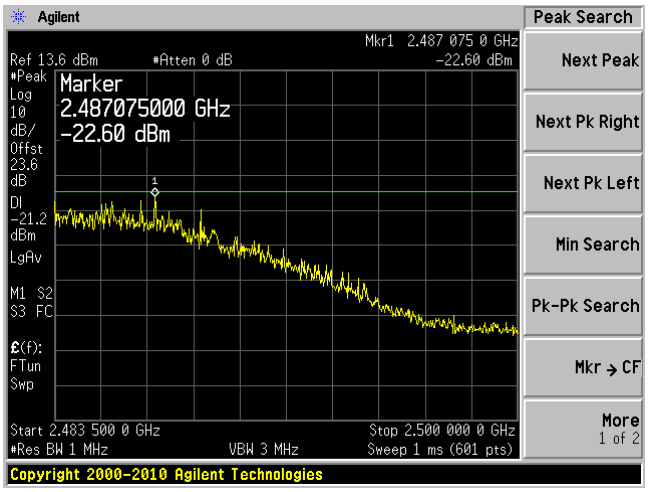
Chain J0, Plot: 2310 MHz – 2390 MHz Peak



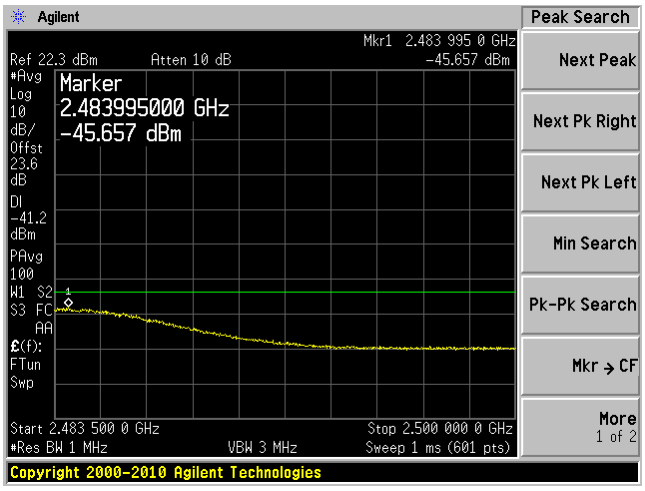
Chain J0, Plot: 2310 MHz – 2390 MHz Ave



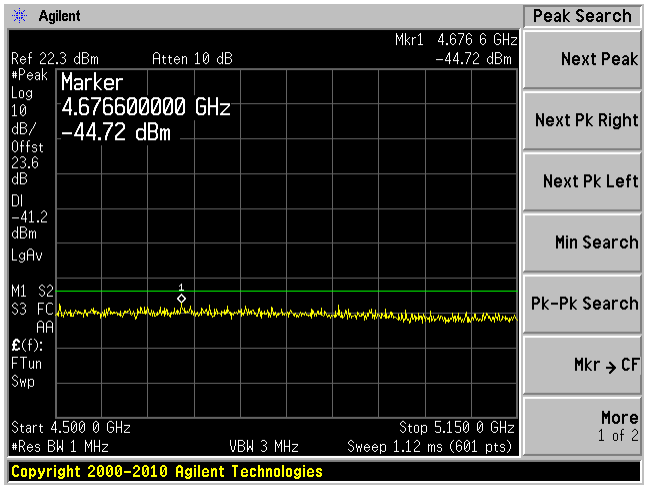
Chain J0, Plot: 2483.5MHz – 2500 MHz Peak



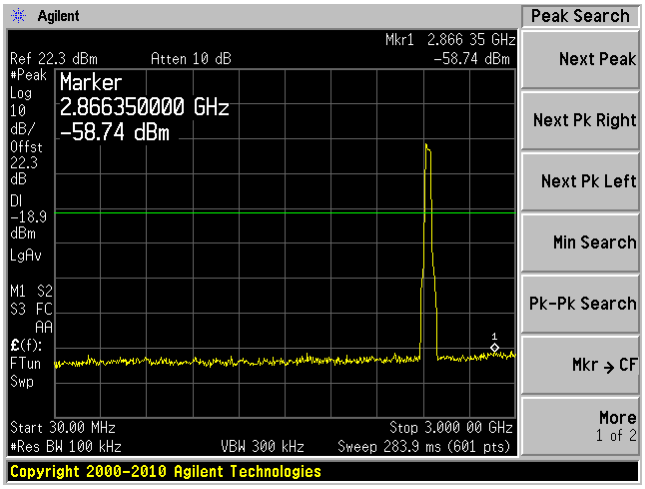
Chain J0, Plot: 2483.5MHz – 2500 MHz Ave



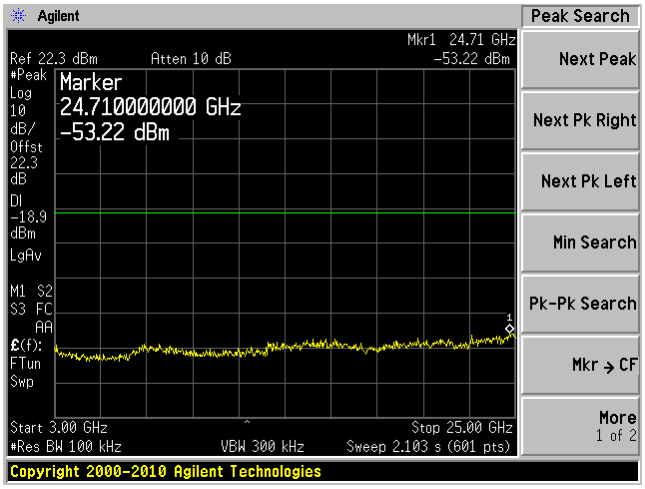
Chain J0, Plot: 4500MHz – 5150 MHz



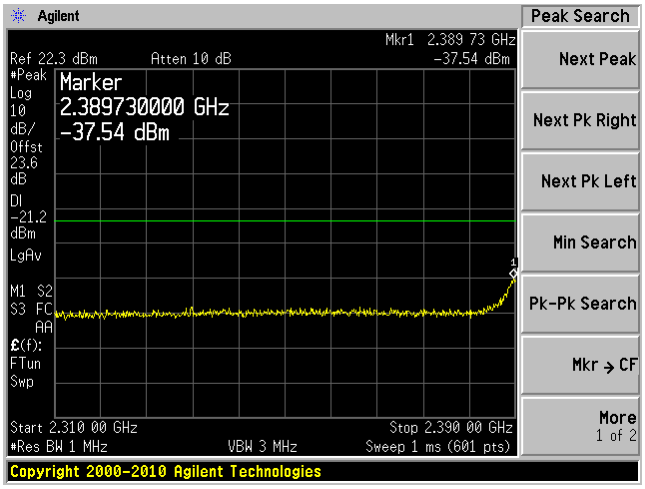
Chain J1, Plot: 30 MHz – 3 GHz



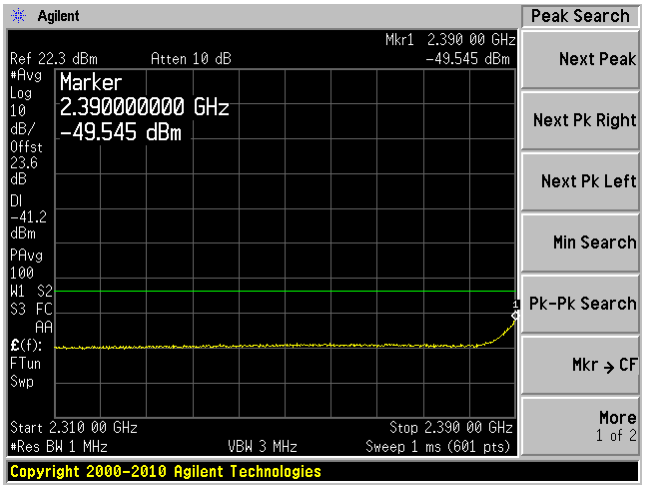
Chain J1, Plot: 3 GHz – 25 GHz



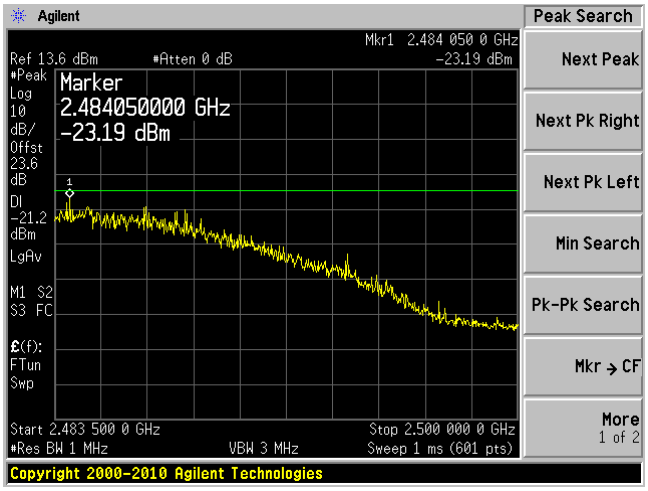
Chain J1, Plot: 2310 MHz – 2390 MHz Peak



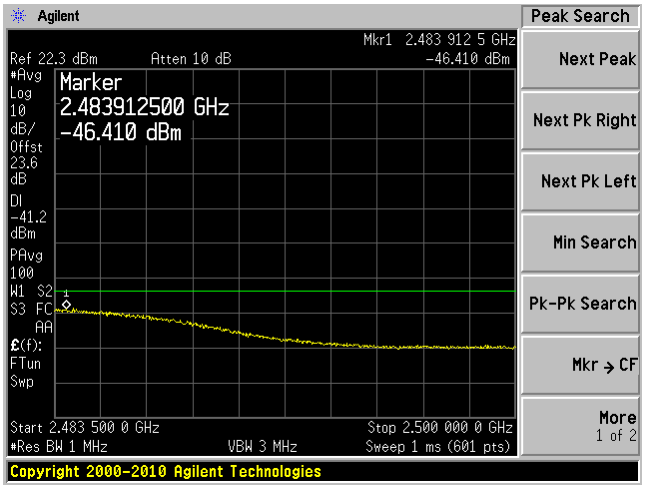
Chain J1, Plot: 2310 MHz – 2390 MHz Ave



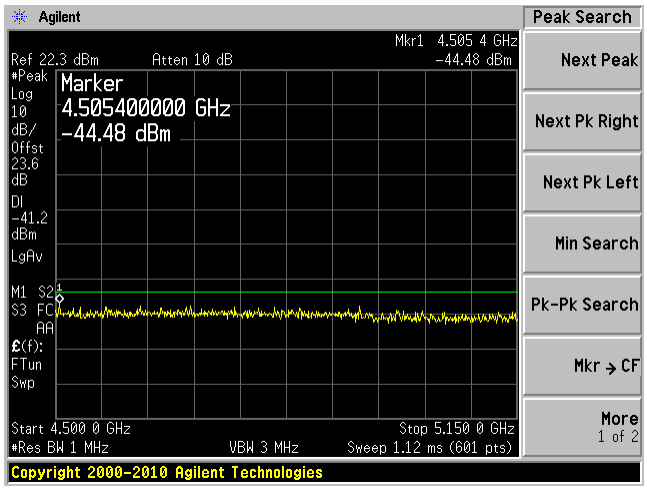
Chain J1, Plot: 2483.5MHz – 2500 MHz Peak



Chain J1, Plot: 2483.5MHz – 2500 MHz Ave

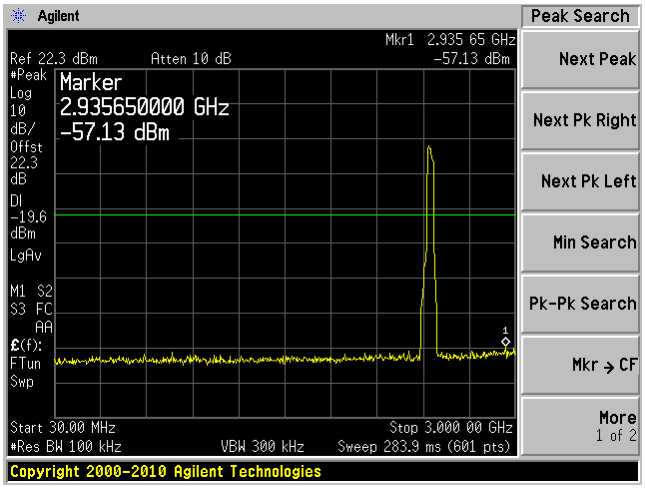


Chain J1, Plot: 4500MHz – 5150 MHz

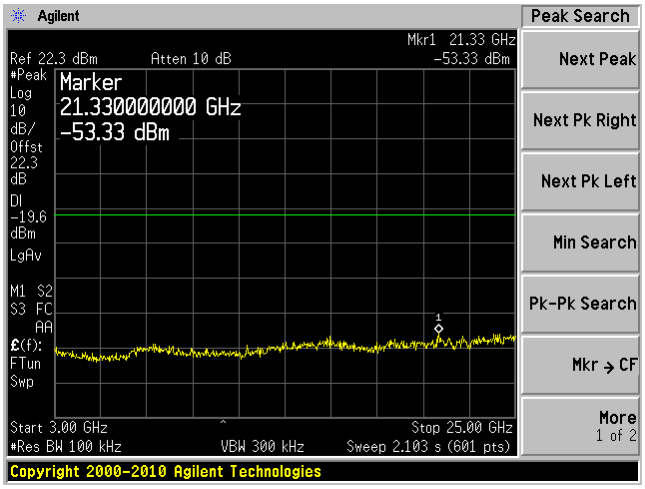


802.11n-HT40, High Channel 2452 MHz

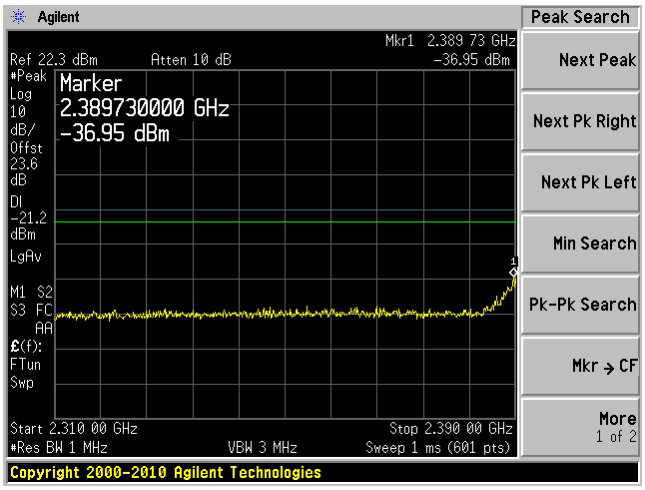
Chain J0, Plot: 30 MHz – 3 GHz



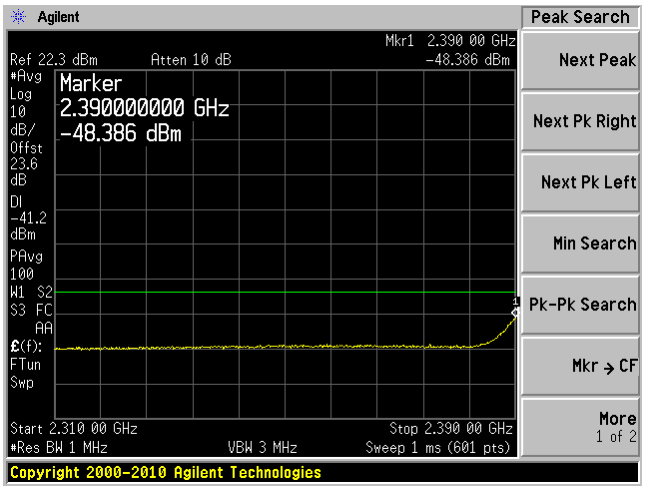
Chain J0, Plot: 3 GHz – 25 GHz



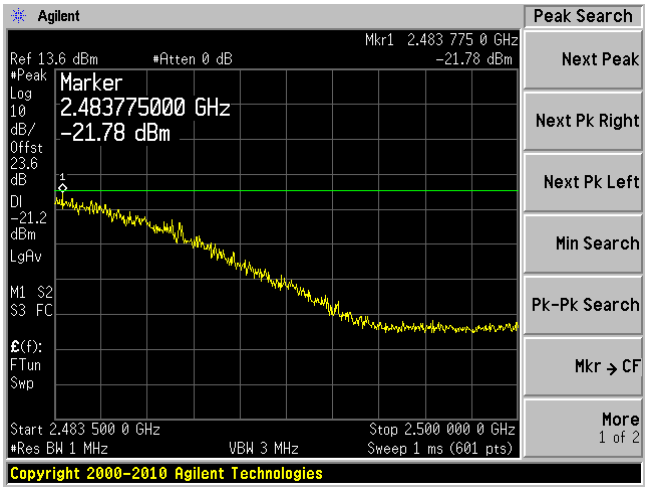
Chain J0, Plot: 2310 MHz – 2390 MHz Peak



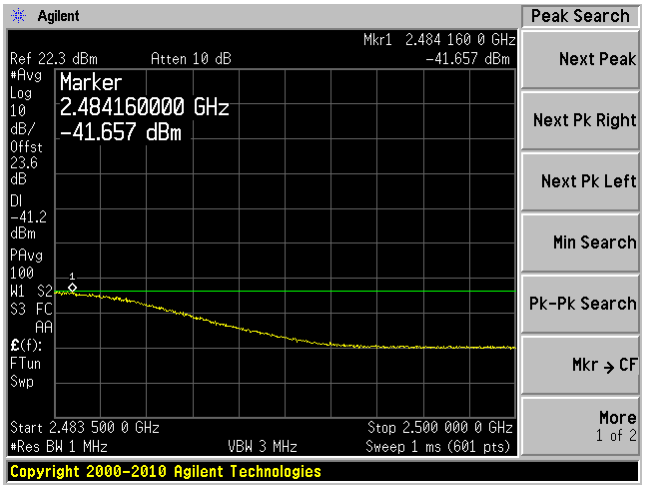
Chain J0, Plot: 2310 MHz – 2390 MHz Ave



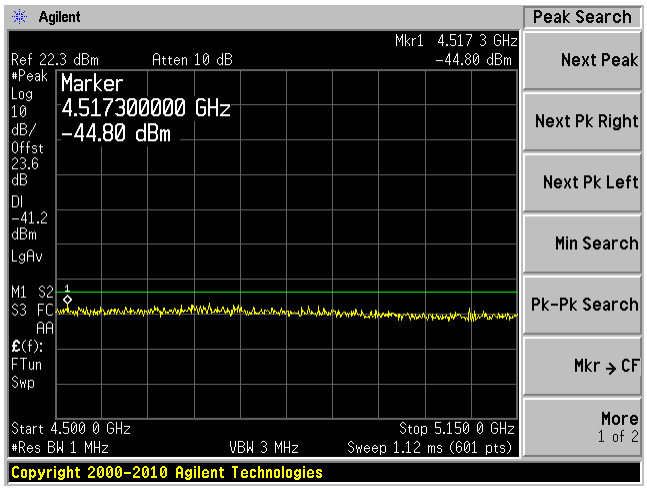
Chain J0, Plot: 2483.5MHz – 2500 MHz Peak



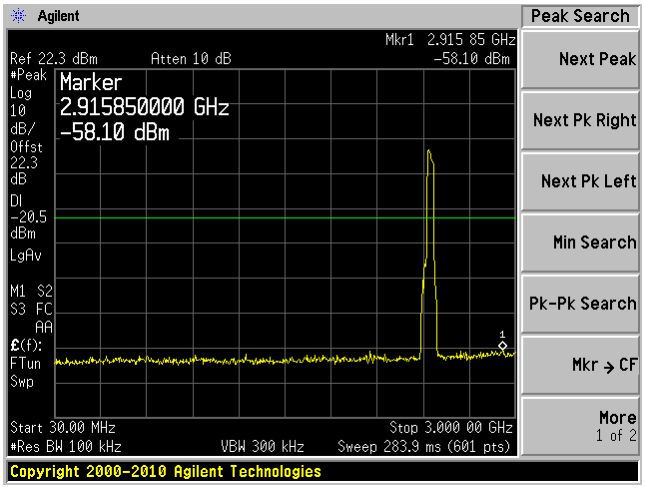
Chain J0, Plot: 2483.5MHz – 2500 MHz Ave



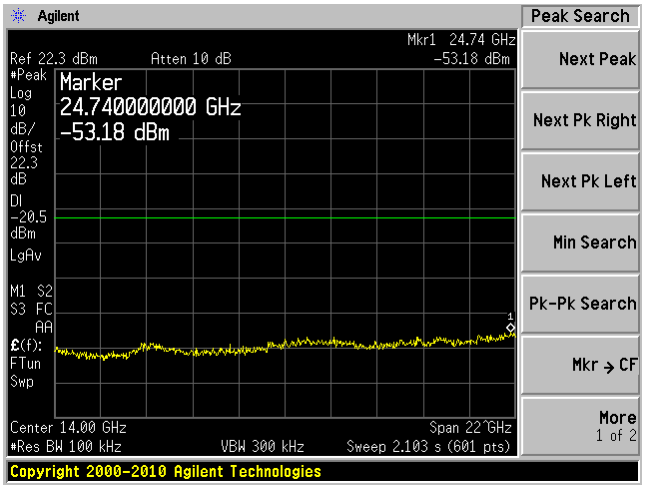
Chain J0, Plot: 4500MHz – 5150 MHz



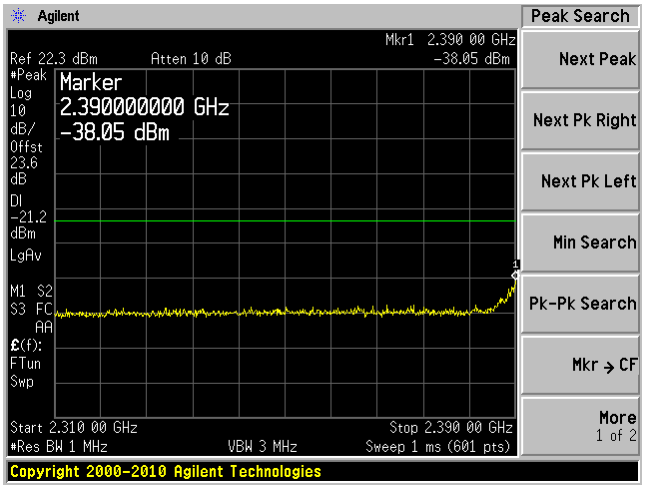
Chain J1, Plot: 30 MHz – 3 GHz



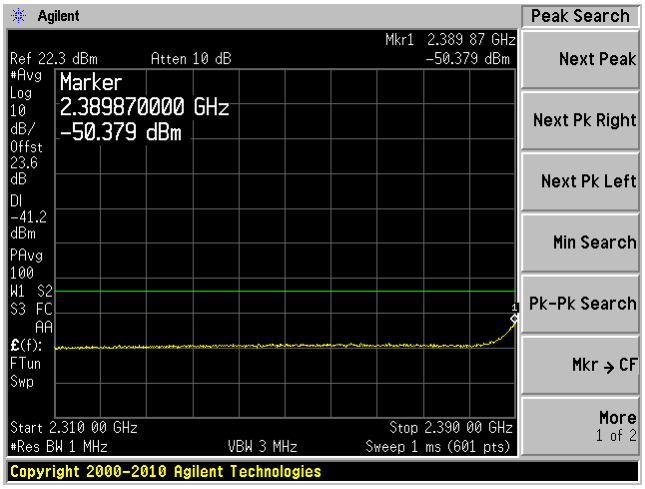
Chain J1, Plot: 3 GHz – 25 GHz



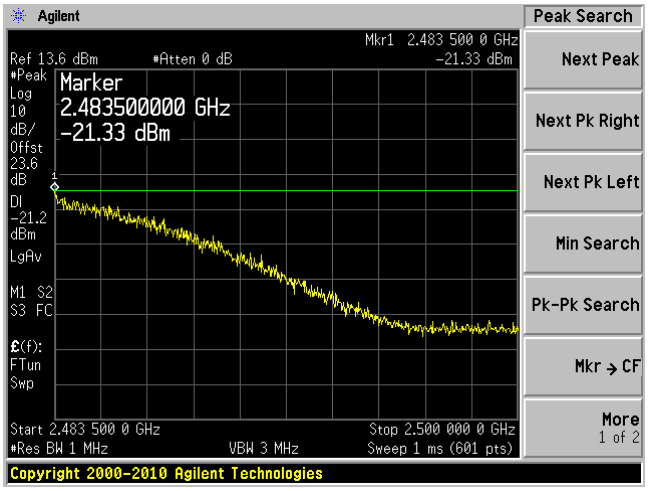
Chain J1, Plot: 2310 MHz – 2390 MHz Peak



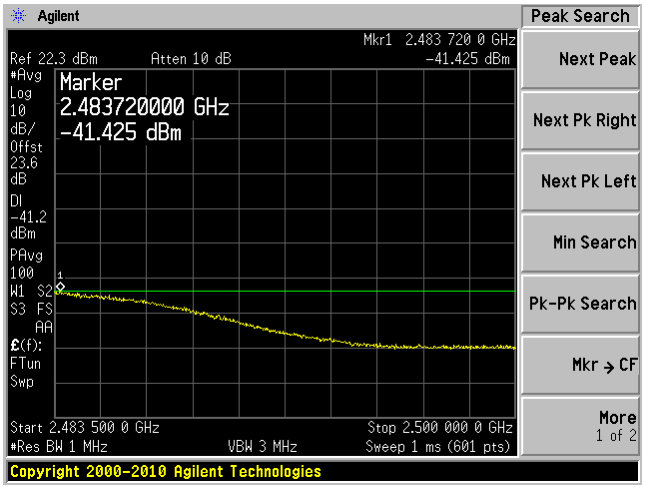
Chain J1, Plot: 2310 MHz – 2390 MHz Ave



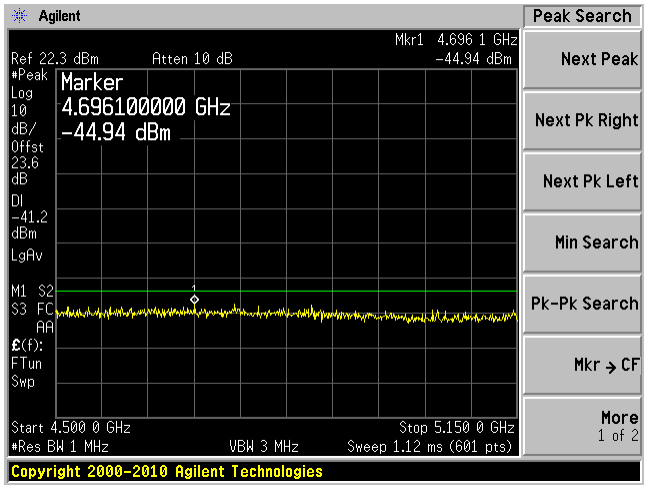
Chain J1, Plot: 2483.5MHz – 2500 MHz Peak



Chain J1, Plot: 2483.5MHz – 2500 MHz Ave



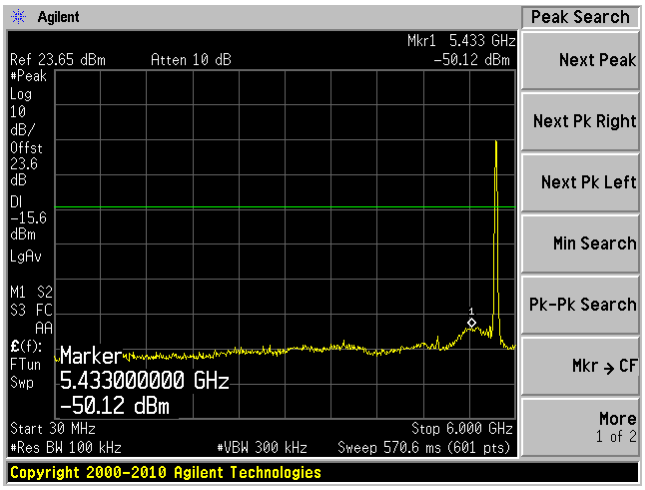
Chain J1, Plot: 4500MHz – 5150 MHz



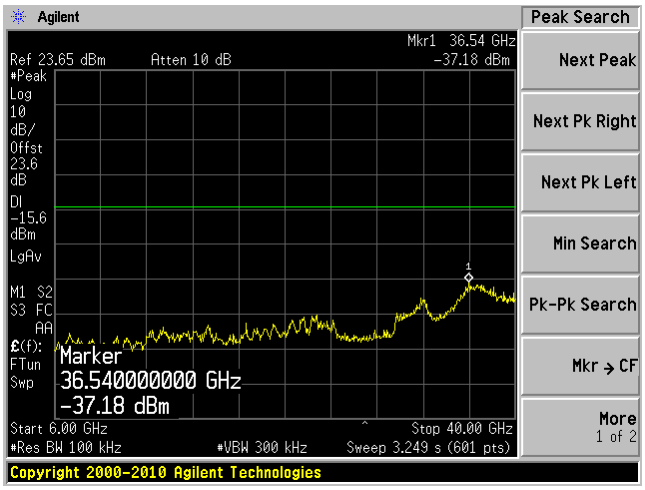
5725-5845 MHz

802.11a, Low Channel 5745 MHz

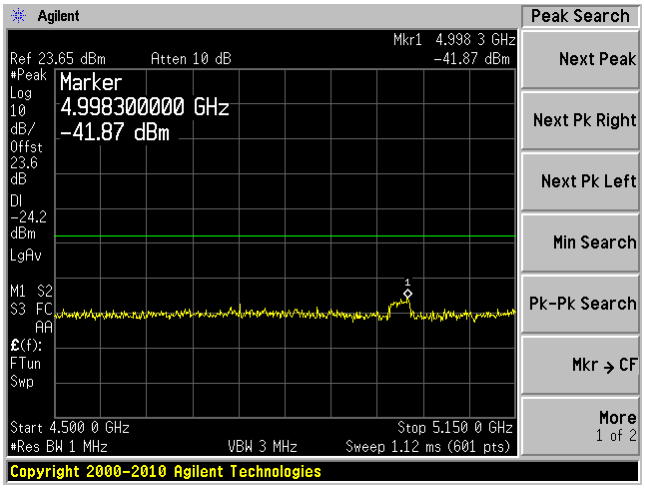
Chain J0, Plot: 30 MHz – 6 GHz



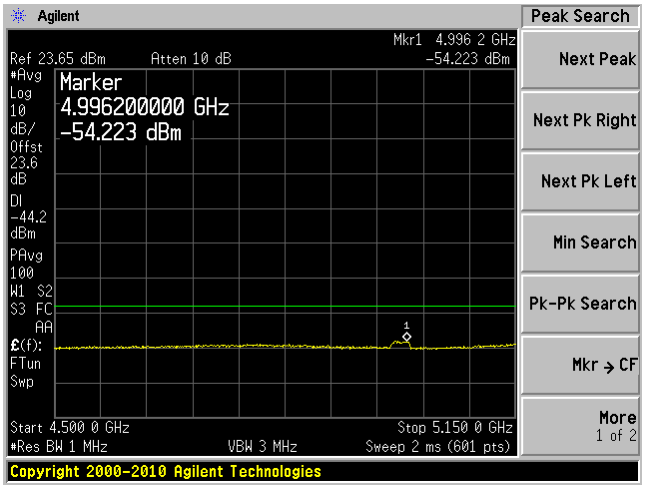
Chain J0, Plot: 6 GHz – 40 GHz



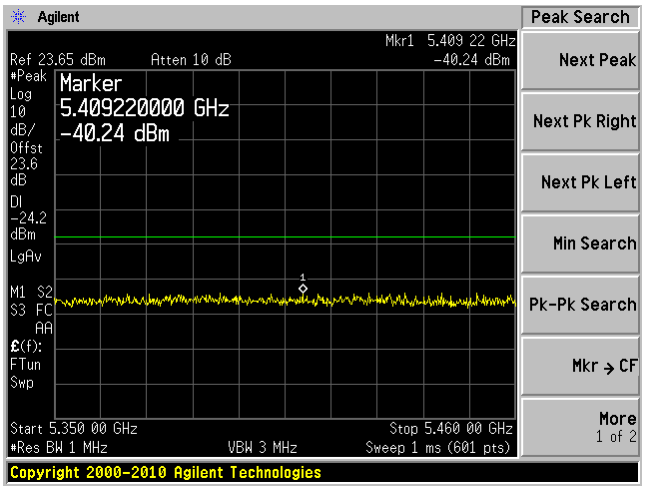
Chain J0, Plot: 4500 MHz – 5150 MHz Peak



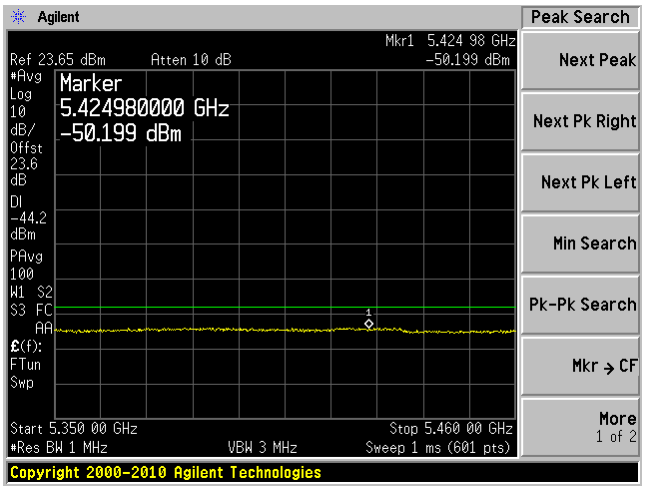
Chain J0, Plot: 4500 MHz – 5150MHz Ave



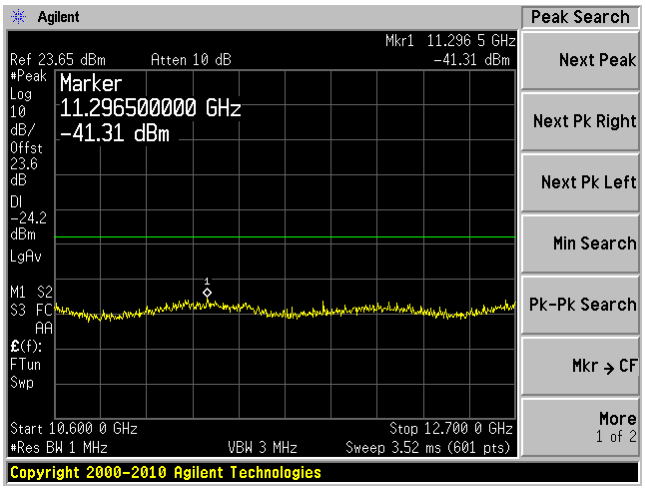
Chain J0, Plot: 5350MHz – 5460 MHz Peak



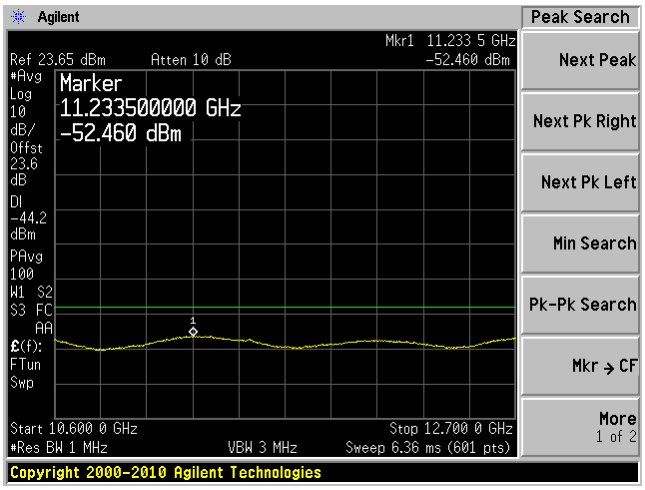
Chain J0, Plot: 5350MHz – 5460 MHz Ave



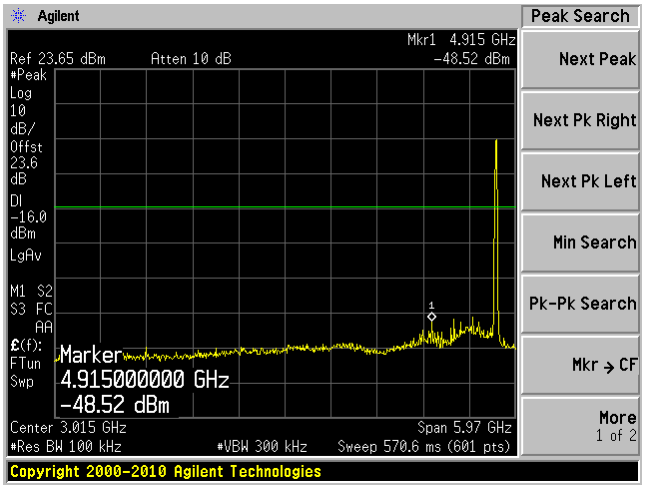
Chain J0, Plot: 10600MHz – 12700MHz Peak



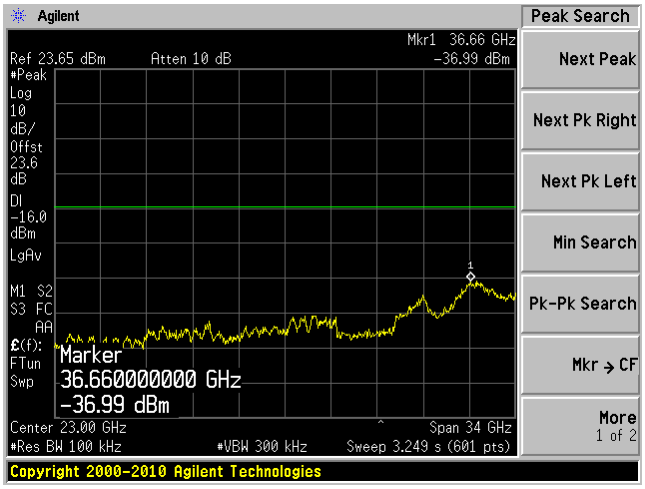
Chain J0, Plot: 10600MHz – 12700MHz Ave



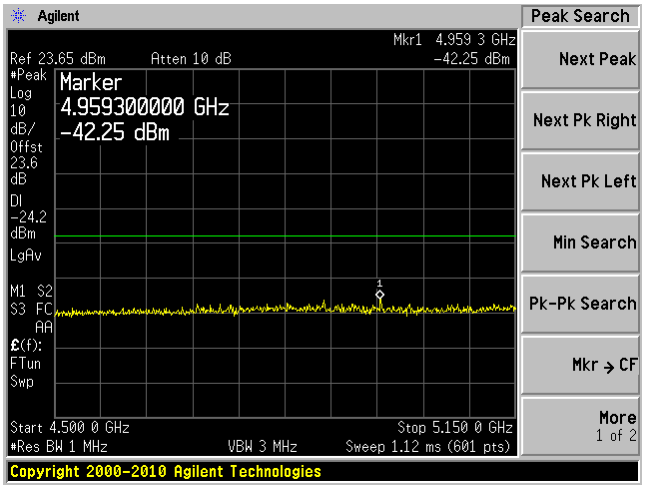
Chain J1, Plot: 30 MHz – 6 GHz



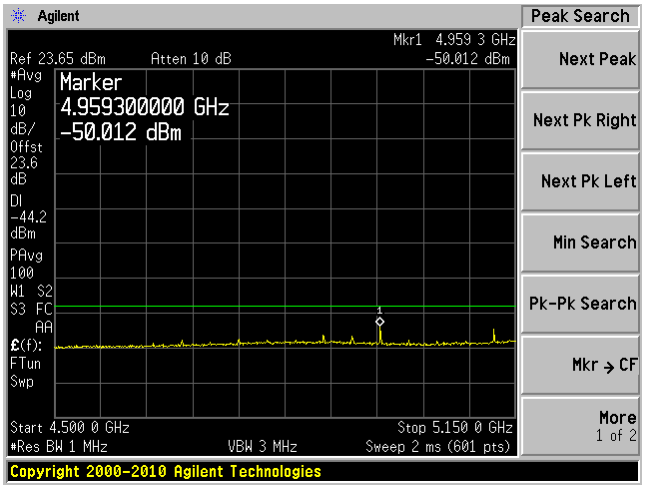
Chain J1, Plot: 6 GHz – 40 GHz



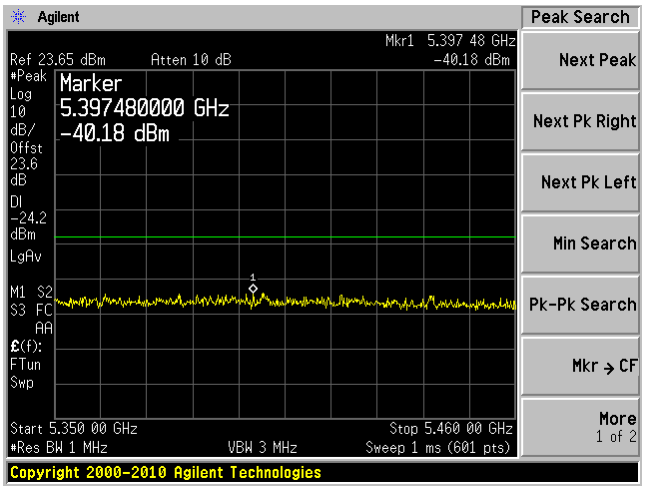
Chain J1, Plot: 4500 MHz – 5150 MHz Peak



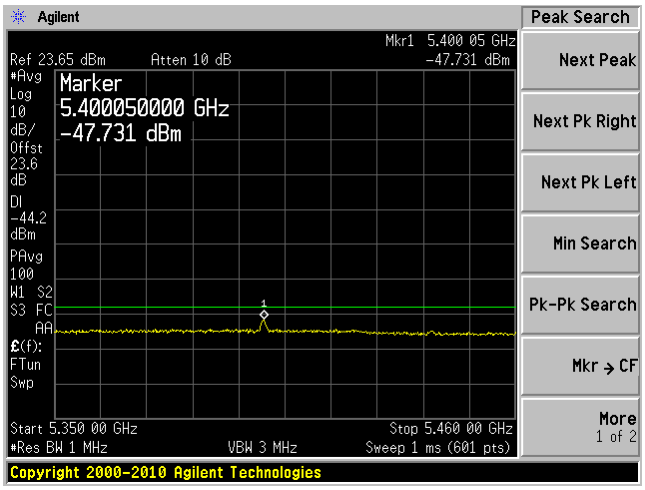
Chain J1, Plot: 4500 MHz – 5150MHz Ave



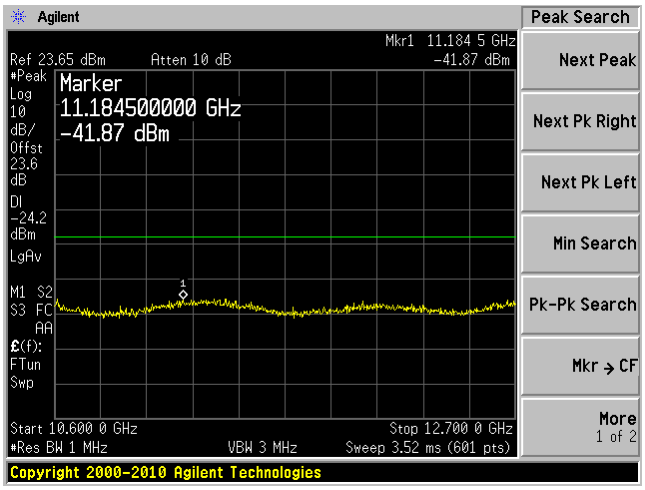
Chain J1, Plot: 5350MHz – 5460 MHz Peak



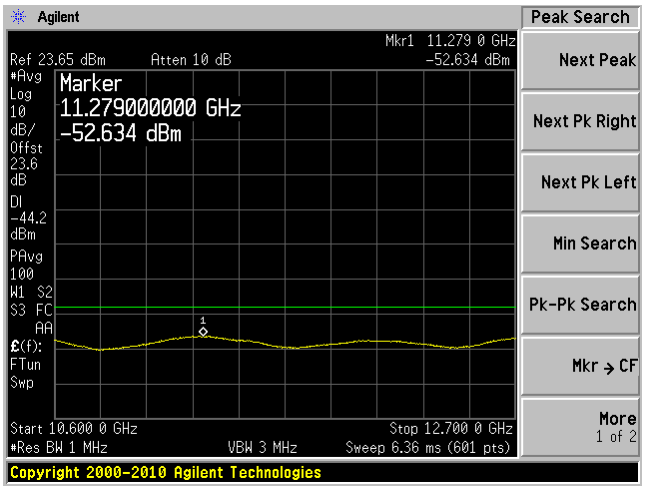
Chain J1, Plot: 5350MHz – 5460 MHz Ave



Chain J1, Plot: 10600MHz – 12700MHz Peak

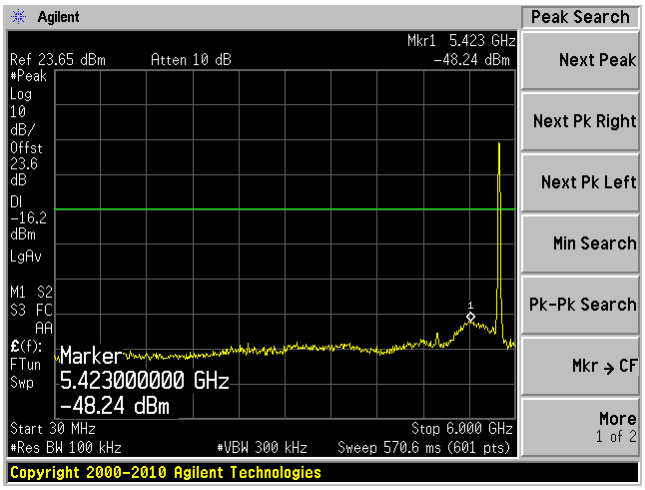


Chain J1, Plot: 10600MHz – 12700MHz Ave

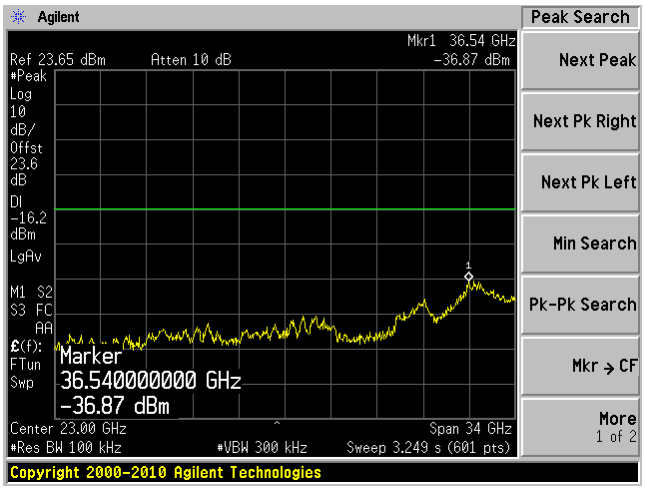


802.11a, Middle Channel 5785 MHz

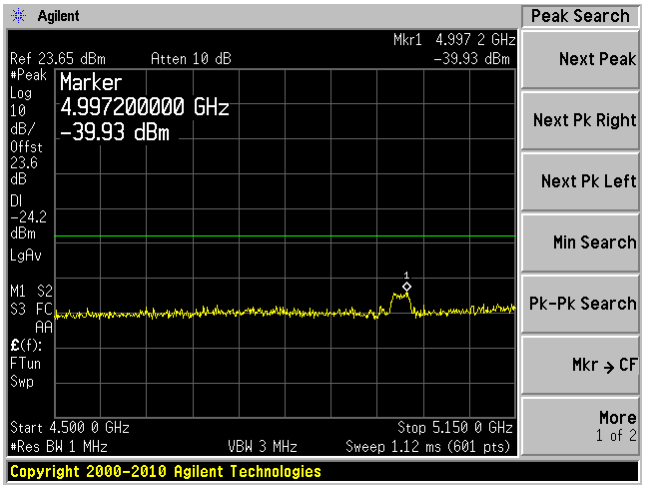
Chain J0, Plot: 30 MHz – 6 GHz



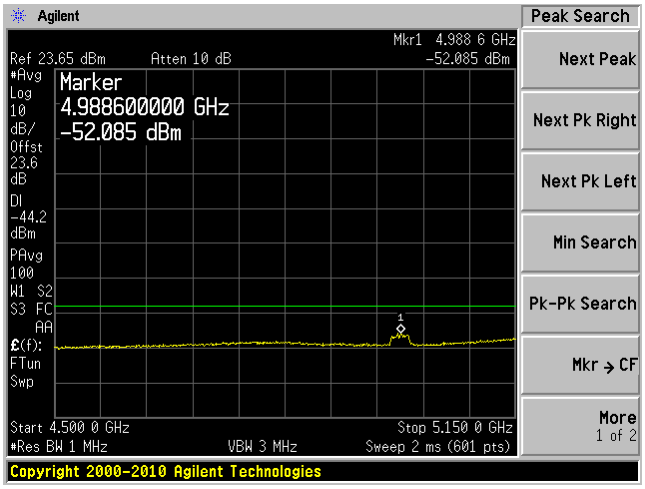
Chain J0, Plot: 6 GHz – 40 GHz



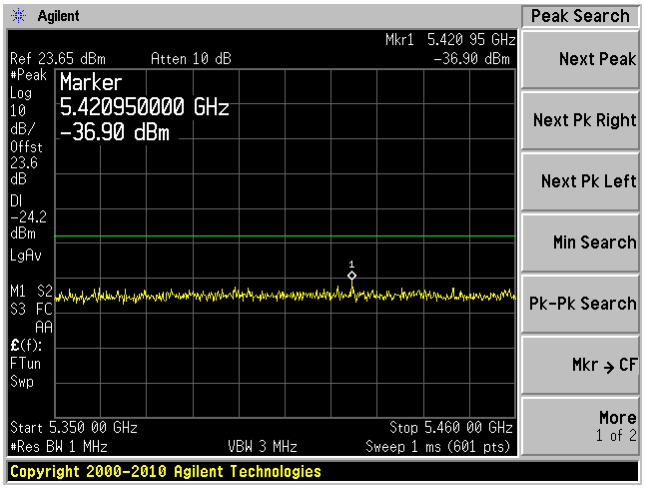
Chain J0, Plot: 4500 MHz – 5150 MHz Peak



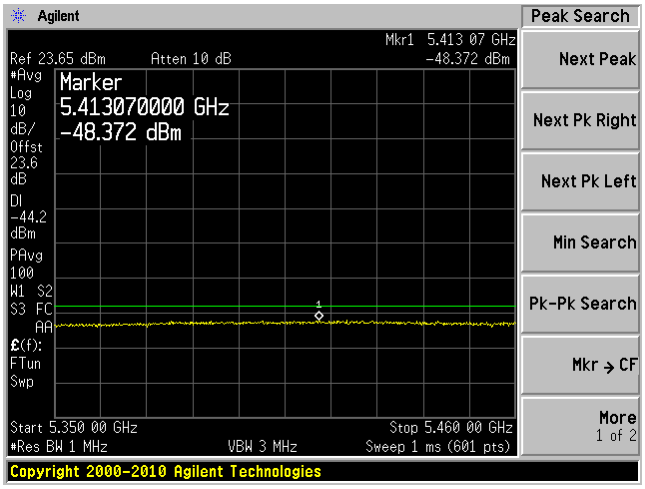
Chain J0, Plot: 4500 MHz – 5150MHz Ave



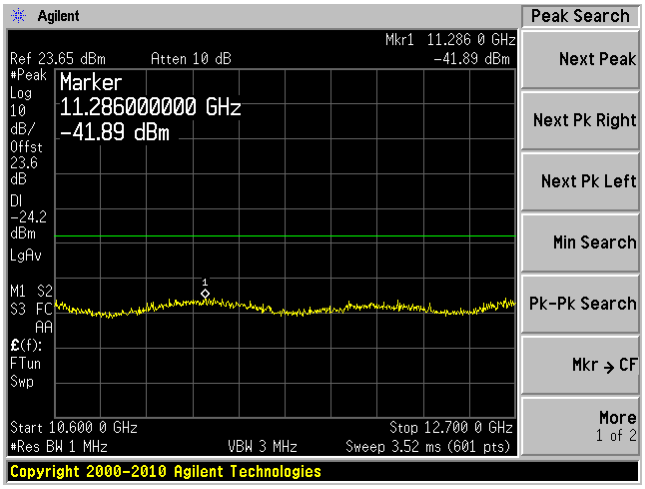
Chain J0, Plot: 5350MHz – 5460 MHz Peak



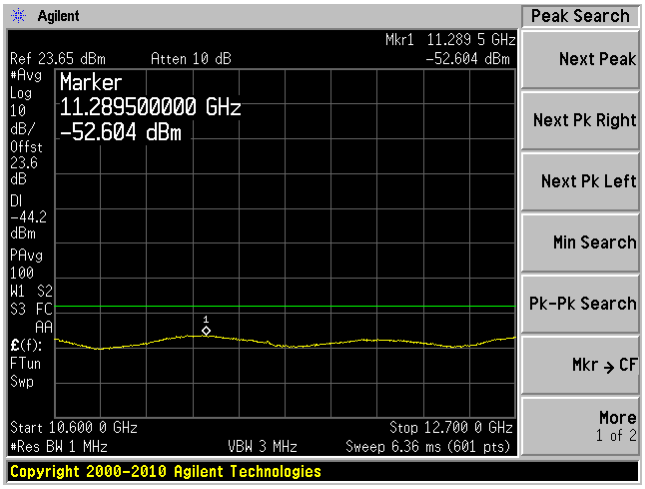
Chain J0, Plot: 5350MHz – 5460 MHz Ave



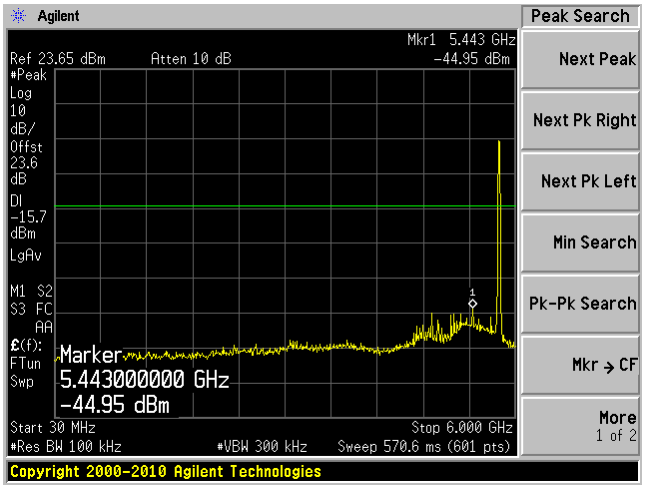
Chain J0, Plot: 10600MHz – 12700MHz Peak



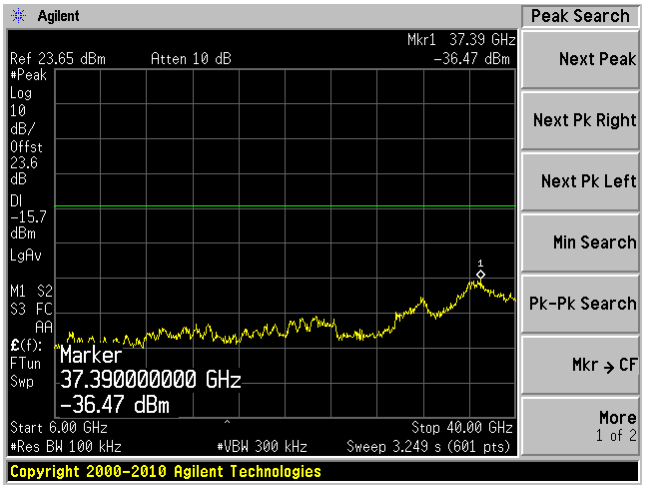
Chain J0, Plot: 10600MHz – 12700MHz Ave



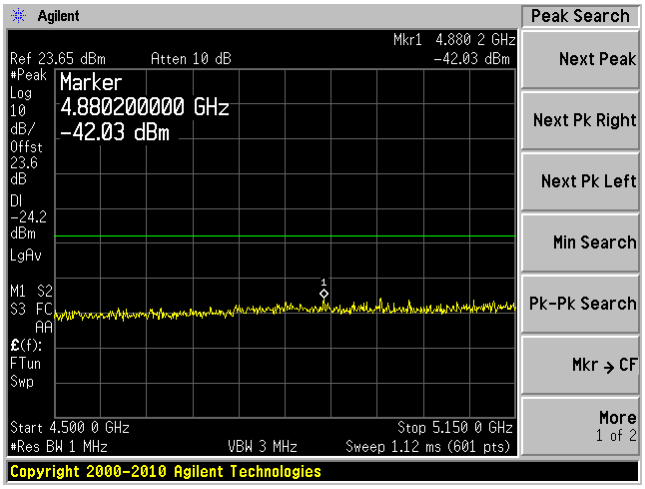
Chain J1, Plot: 30 MHz – 6 GHz



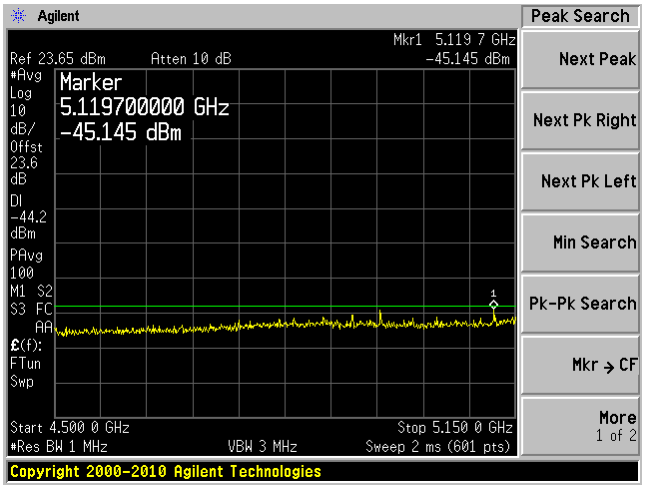
Chain J1, Plot: 6 GHz – 40 GHz



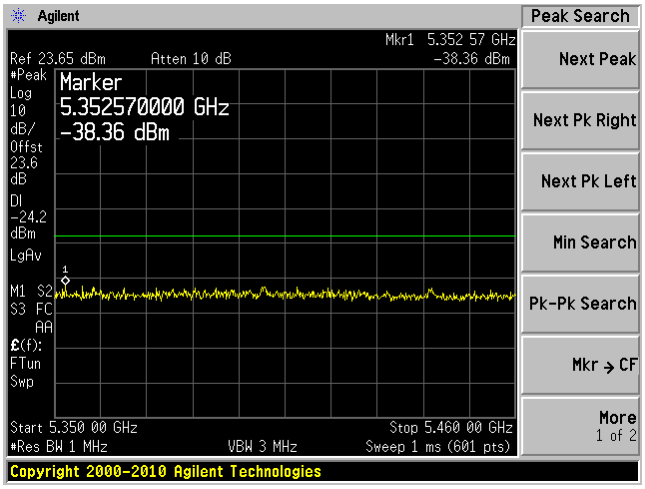
Chain J1, Plot: 4500 MHz – 5150 MHz Peak



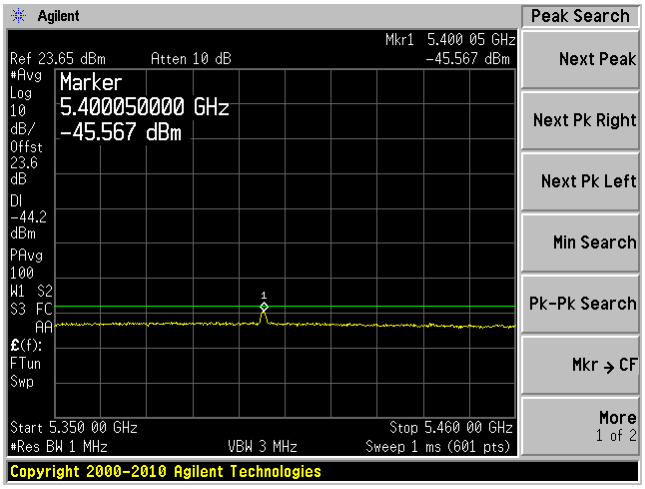
Chain J1, Plot: 4500 MHz – 5150MHz Ave



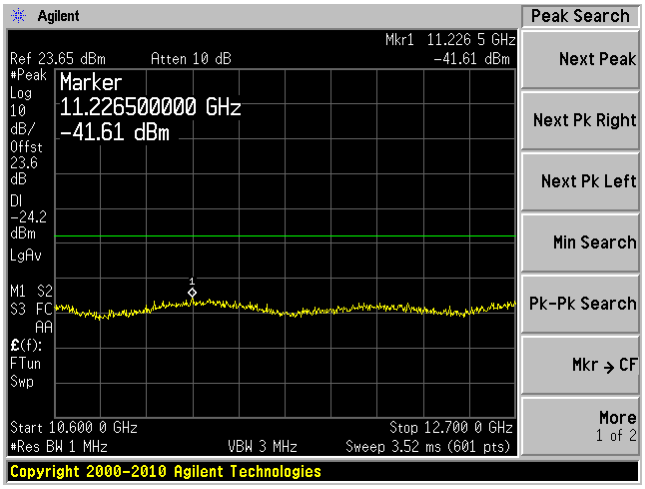
Chain J1, Plot: 5350MHz – 5460 MHz Peak



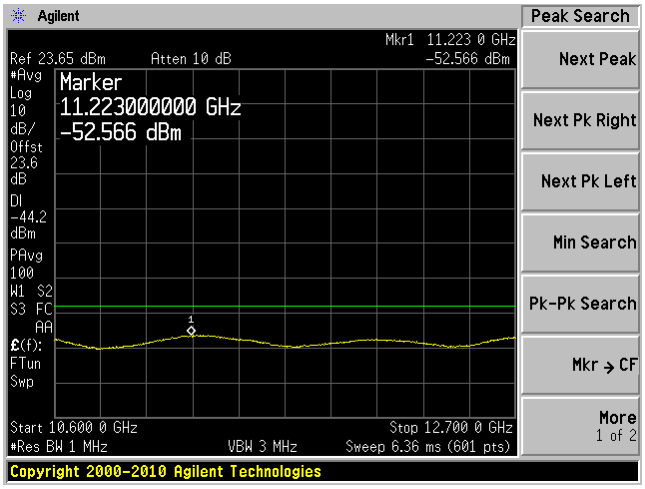
Chain J1, Plot: 5350MHz – 5460 MHz Ave



Chain J1, Plot: 10600MHz – 12700MHz Peak

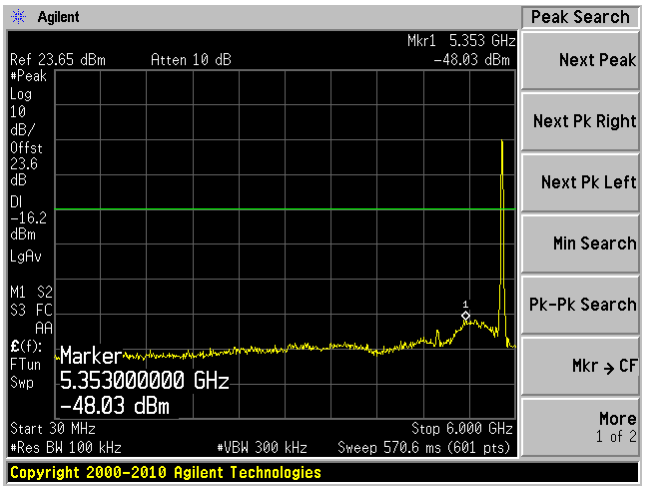


Chain J1, Plot: 10600MHz – 12700MHz Ave

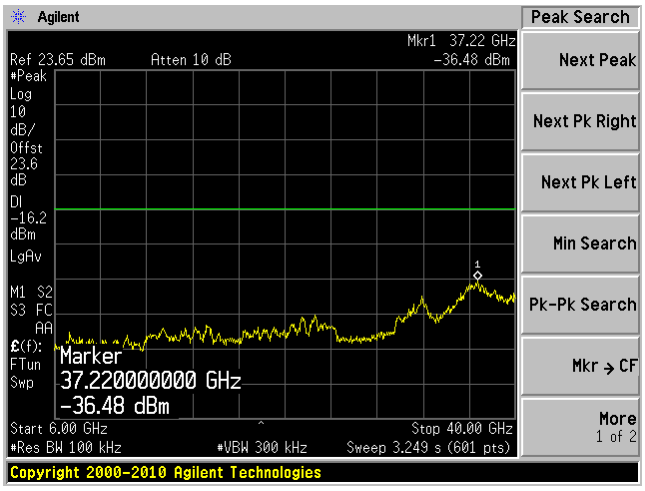


802.11a, High Channel 5825 MHz

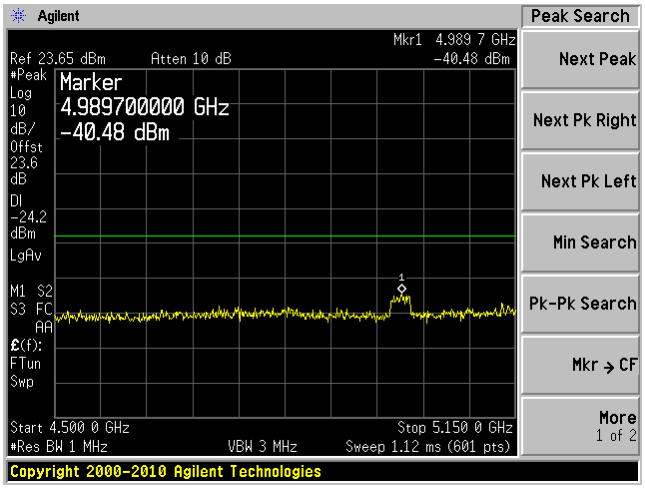
Chain J0, Plot: 30 MHz – 6 GHz



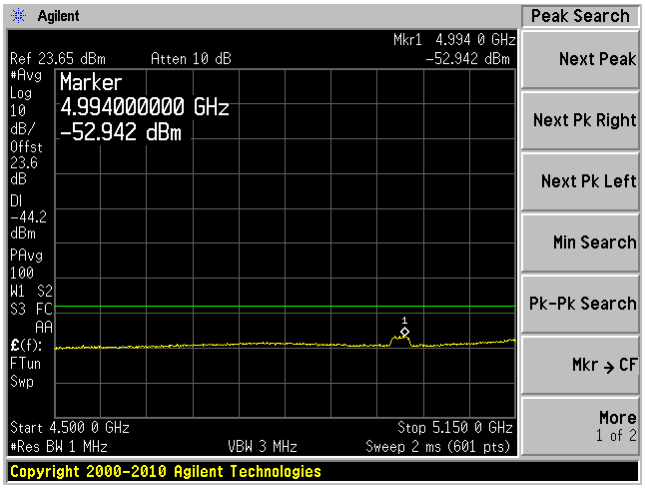
Chain J0, Plot: 6 GHz – 40 GHz



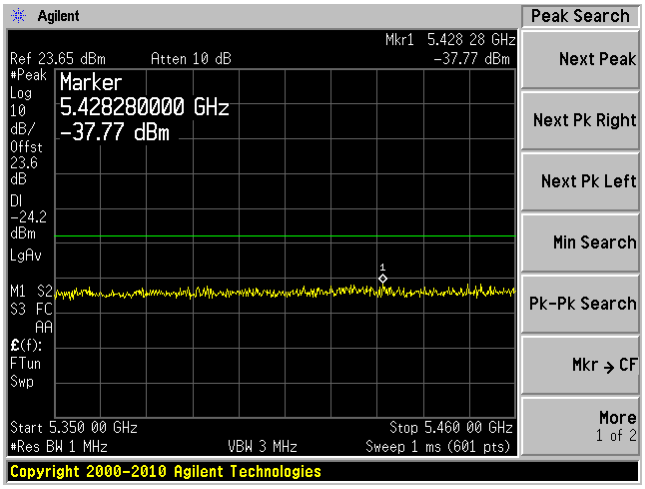
Chain J0, Plot: 4500 MHz – 5150 MHz Peak



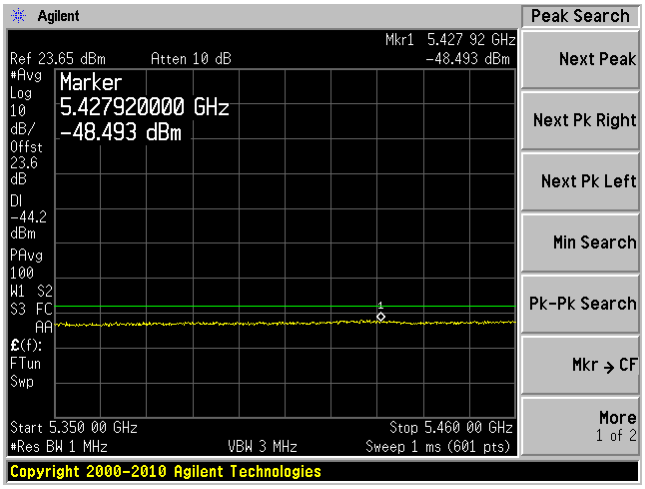
Chain J0, Plot: 4500 MHz – 5150MHz Ave



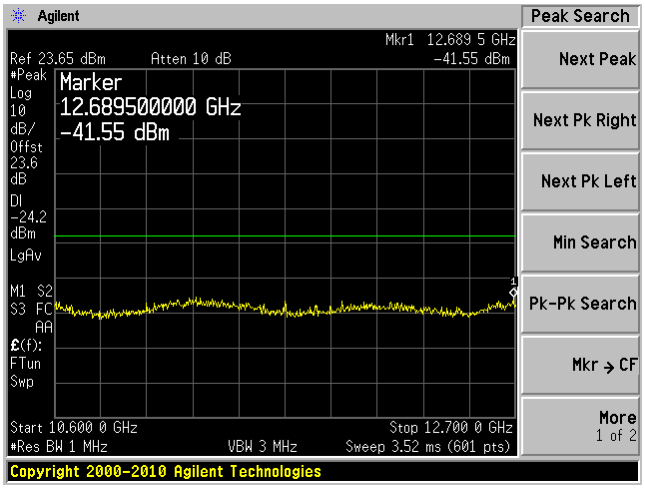
Chain J0, Plot: 5350MHz – 5460 MHz Peak



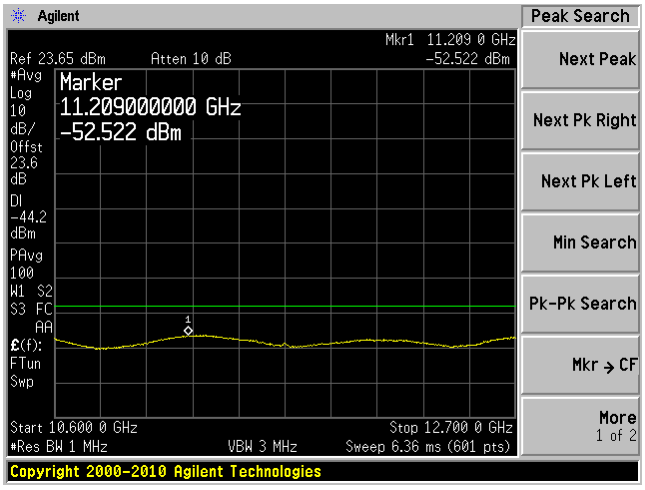
Chain J0, Plot: 5350MHz – 5460 MHz Ave



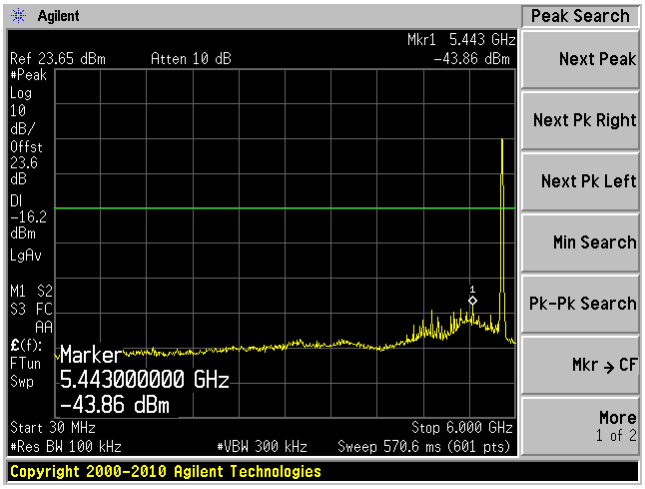
Chain J0, Plot: 10600MHz – 12700MHz Peak



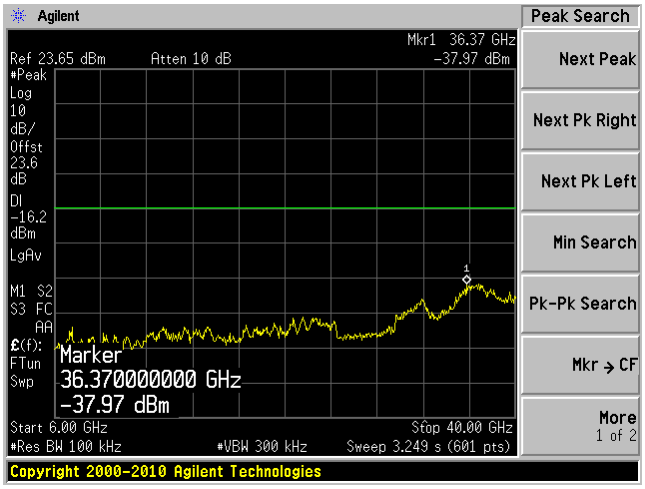
Chain J0, Plot: 10600MHz – 12700MHz Ave



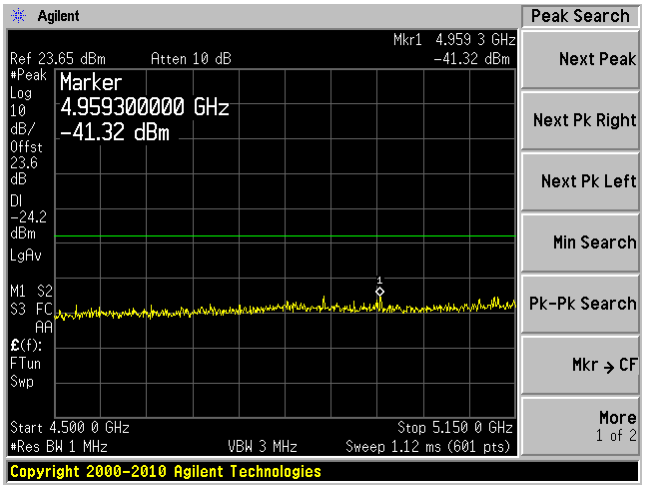
Chain J1, Plot: 30 MHz – 6 GHz



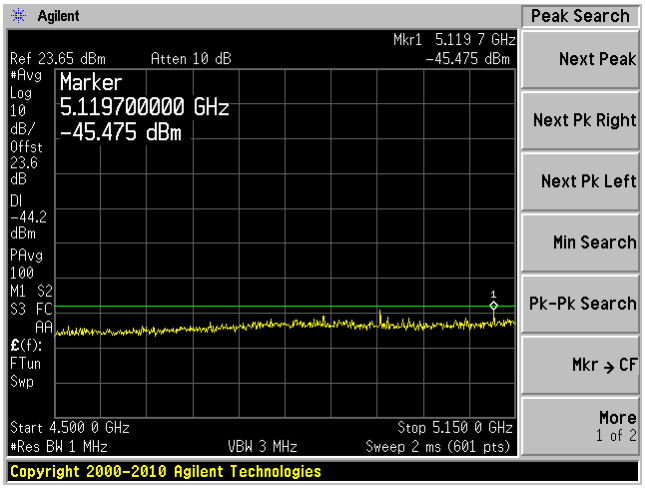
Chain J1, Plot: 6 GHz – 40 GHz



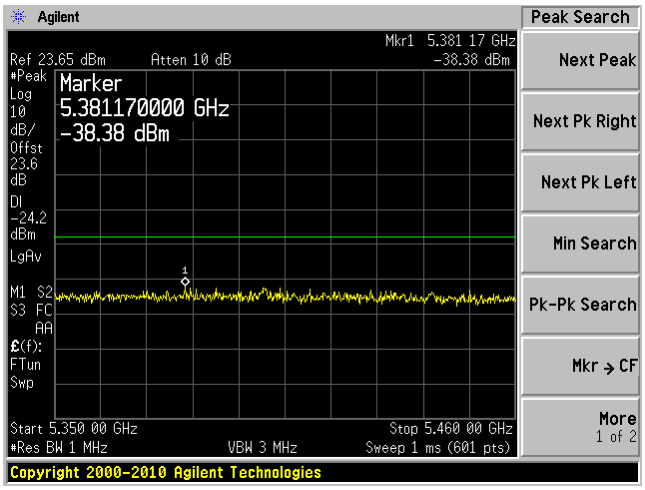
Chain J1, Plot: 4500 MHz – 5150 MHz Peak



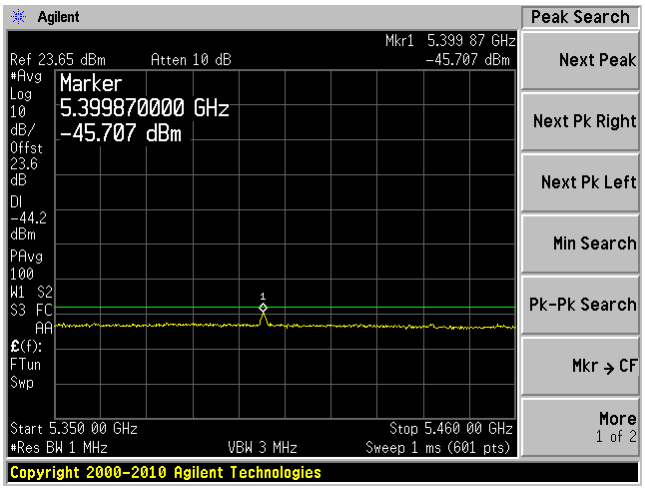
Chain J1, Plot: 4500 MHz – 5150MHz Ave



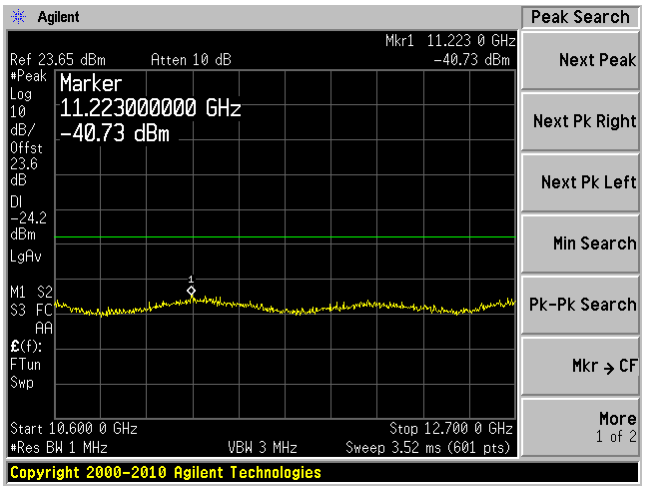
Chain J1, Plot: 5350MHz – 5460 MHz Peak



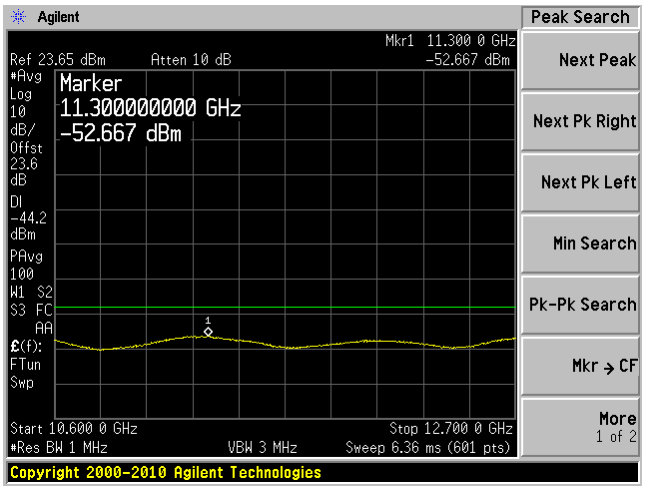
Chain J1, Plot: 5350MHz – 5460 MHz Ave



Chain J1, Plot: 10600MHz – 12700MHz Peak

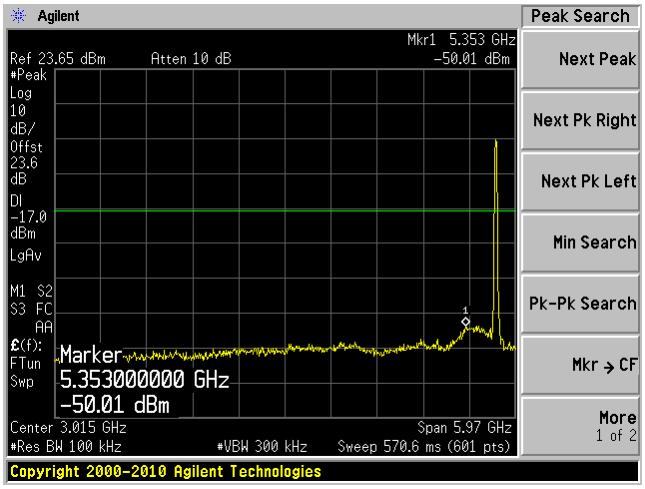


Chain J1, Plot: 10600MHz – 12700MHz Ave

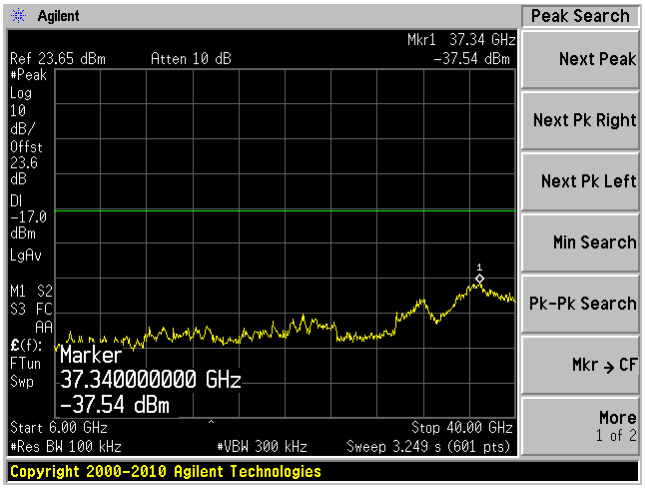


802.11n-HT20, Low Channel 5745 MHz

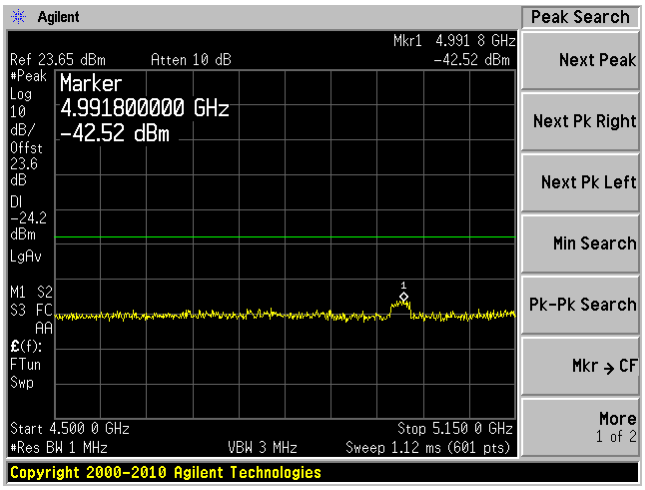
Chain J0, Plot: 30 MHz – 6 GHz



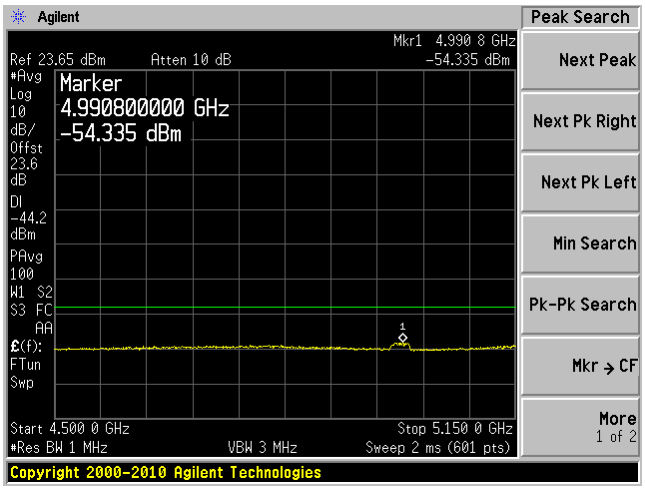
Chain J0, Plot: 6 GHz – 40 GHz



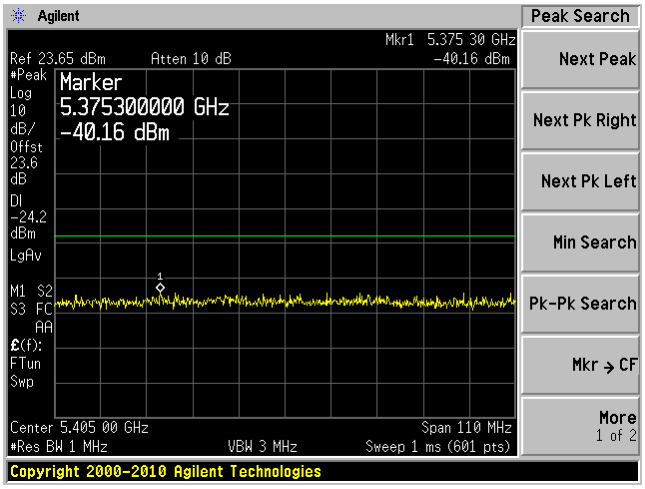
Chain J0, Plot: 4500 MHz – 5150 MHz Peak



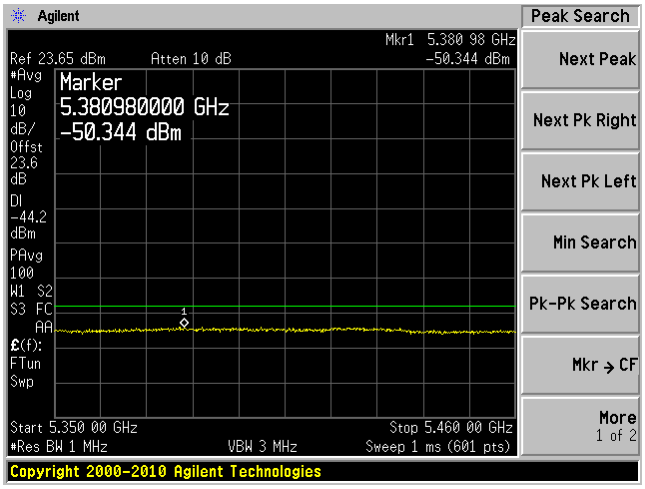
Chain J0, Plot: 4500 MHz – 5150MHz Ave



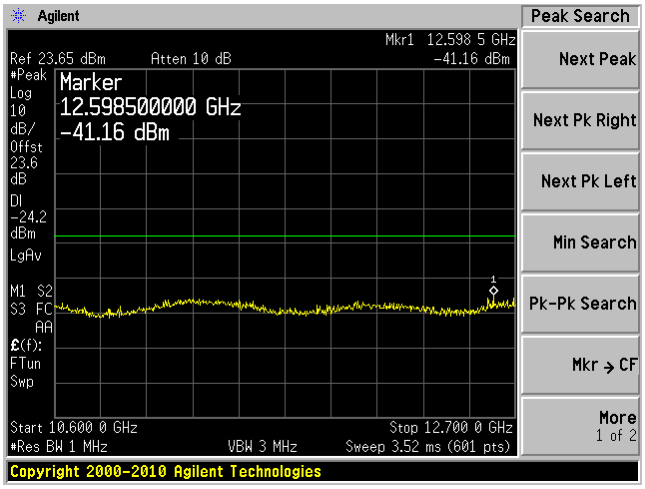
Chain J0, Plot: 5350MHz – 5460 MHz Peak



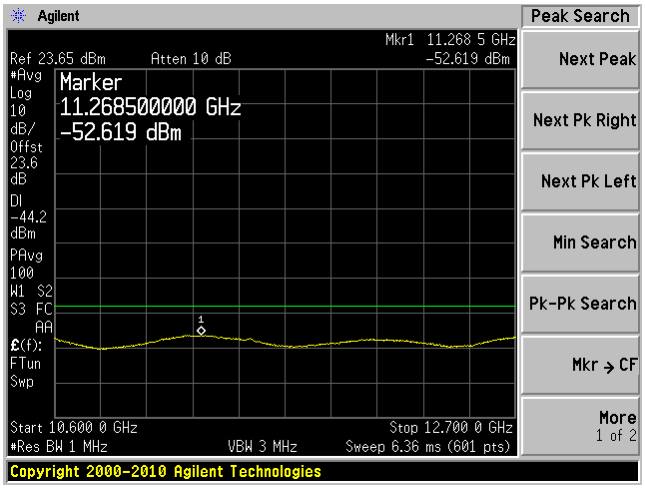
Chain J0, Plot: 5350MHz – 5460 MHz Ave



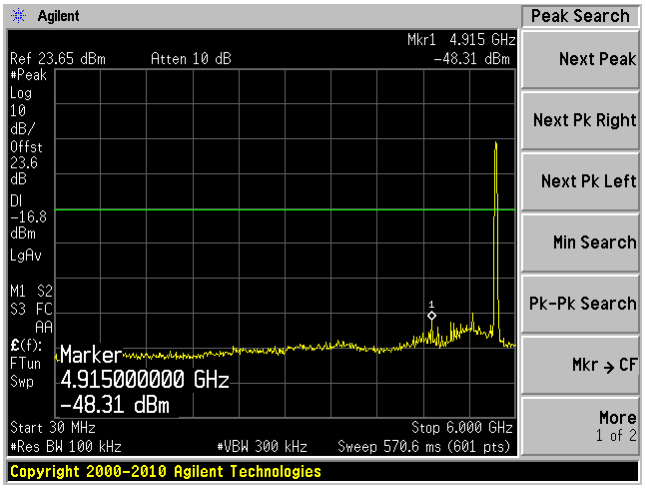
Chain J0, Plot: 10600MHz – 12700MHz Peak



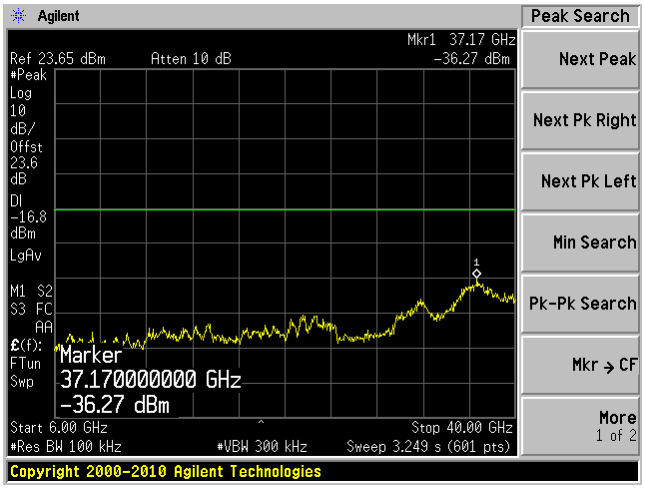
Chain J0, Plot: 10600MHz – 12700MHz Ave



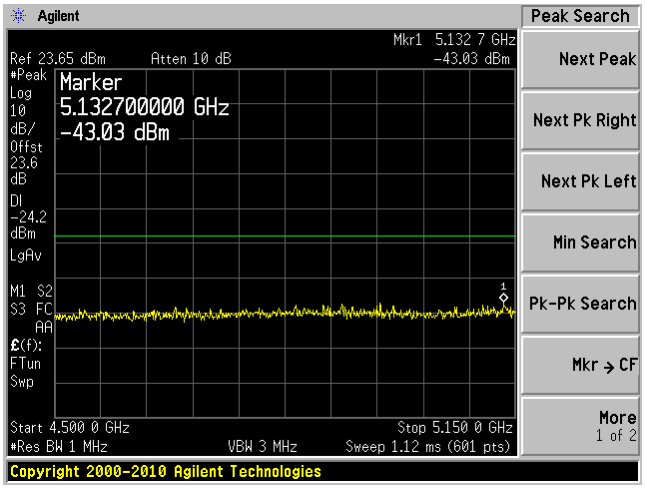
Chain J1, Plot: 30 MHz – 6 GHz



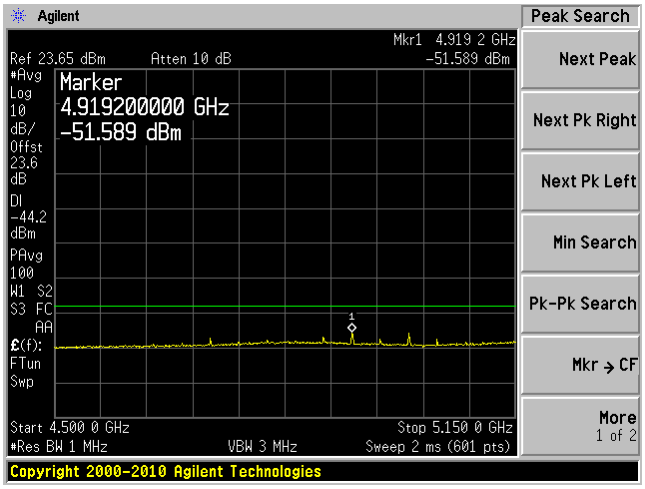
Chain J1, Plot: 6 GHz – 40 GHz



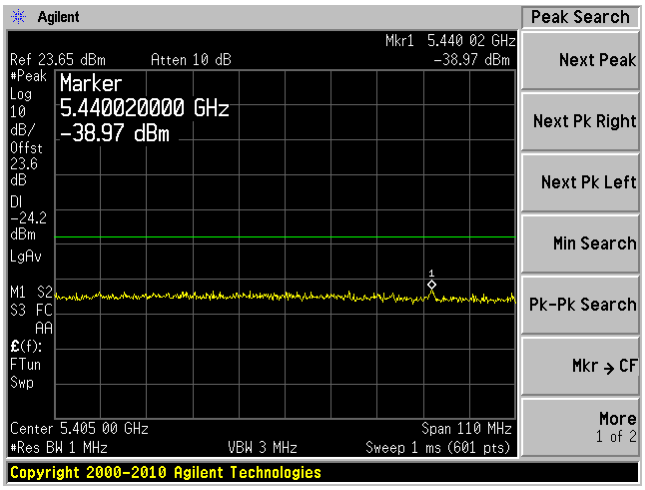
Chain J1, Plot: 4500 MHz – 5150 MHz Peak



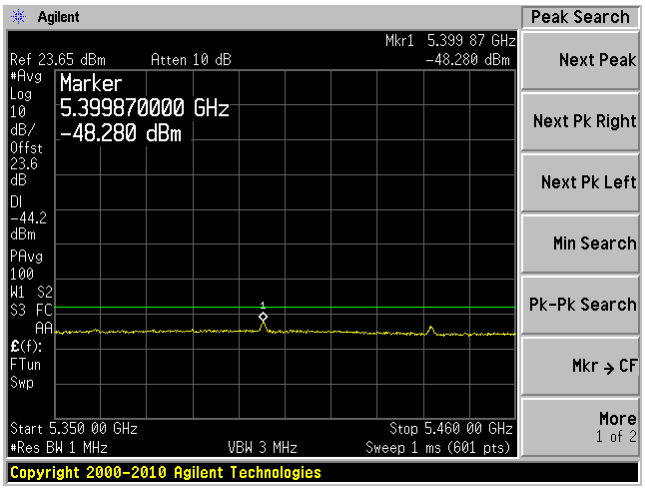
Chain J1, Plot: 4500 MHz – 5150MHz Ave



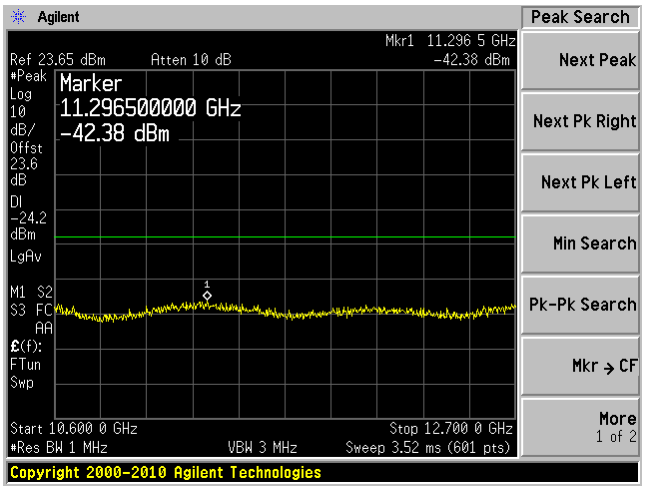
Chain J1, Plot: 5350MHz – 5460 MHz Peak



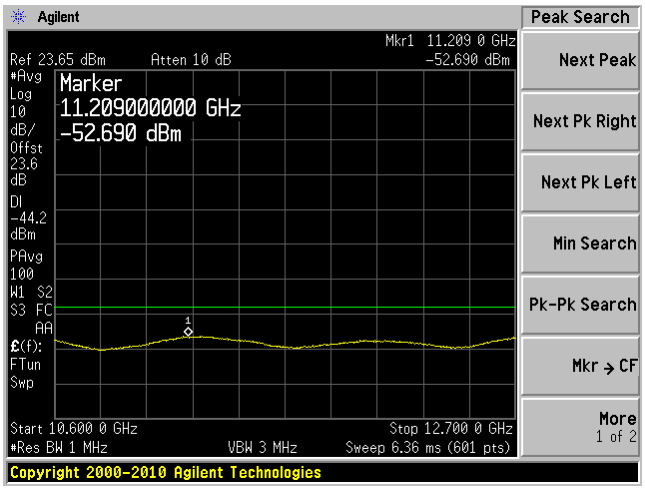
Chain J1, Plot: 5350MHz – 5460 MHz Ave



Chain J1, Plot: 10600MHz – 12700MHz Peak

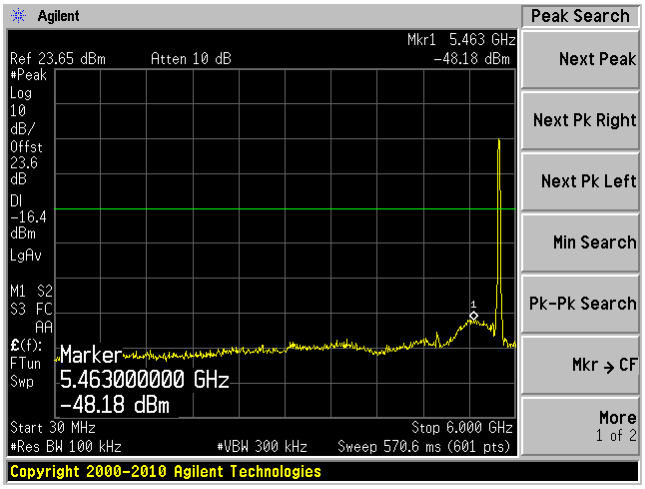


Chain J1, Plot: 10600MHz – 12700MHz Ave

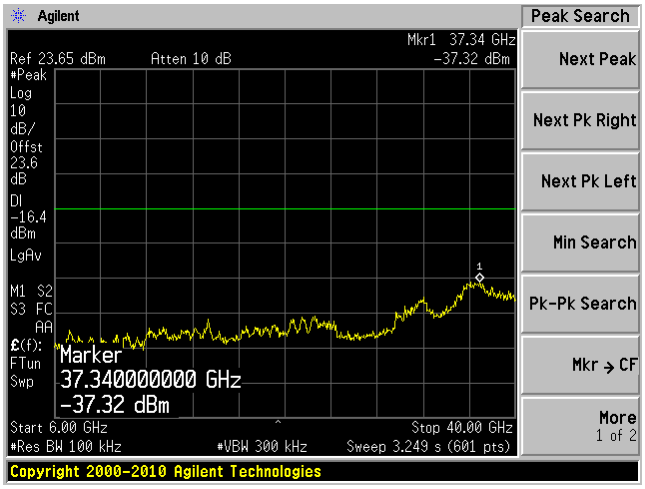


802.11n-HT20, Middle Channel 5785 MHz

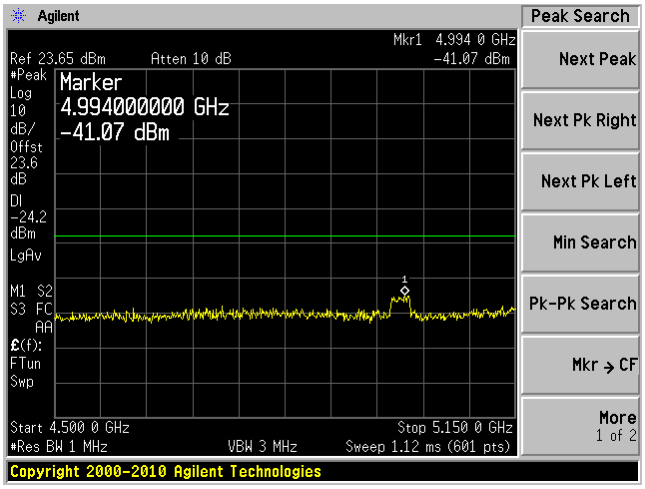
Chain J0, Plot: 30 MHz – 6 GHz



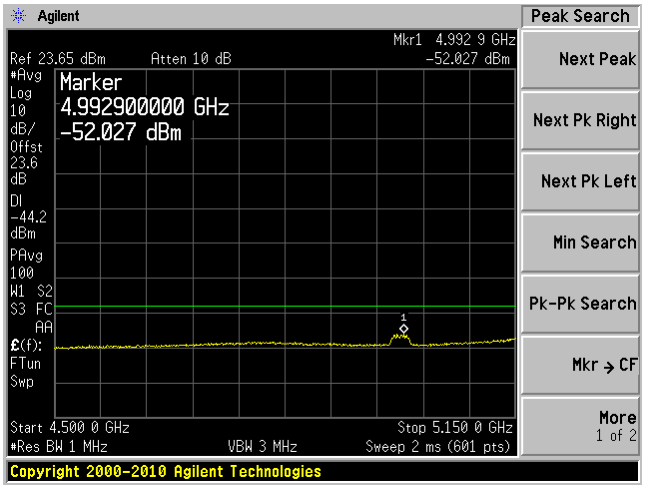
Chain J0, Plot: 6 GHz – 40 GHz



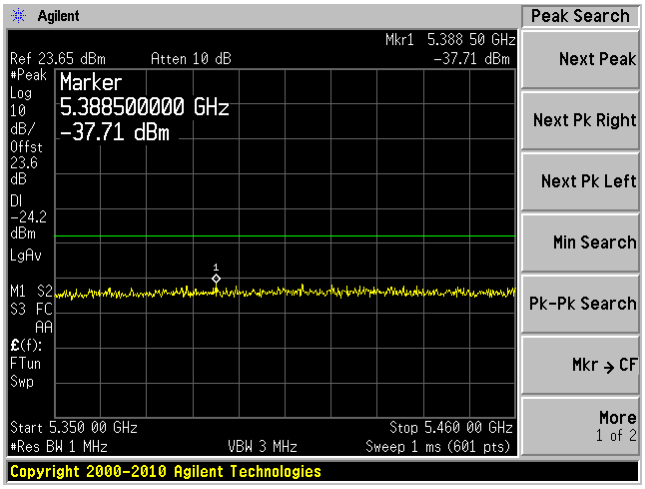
Chain J0, Plot: 4500 MHz – 5150 MHz Peak



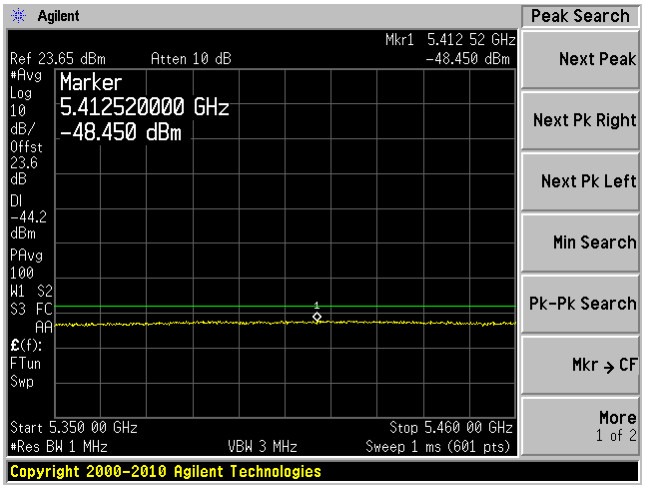
Chain J0, Plot: 4500 MHz – 5150MHz Ave



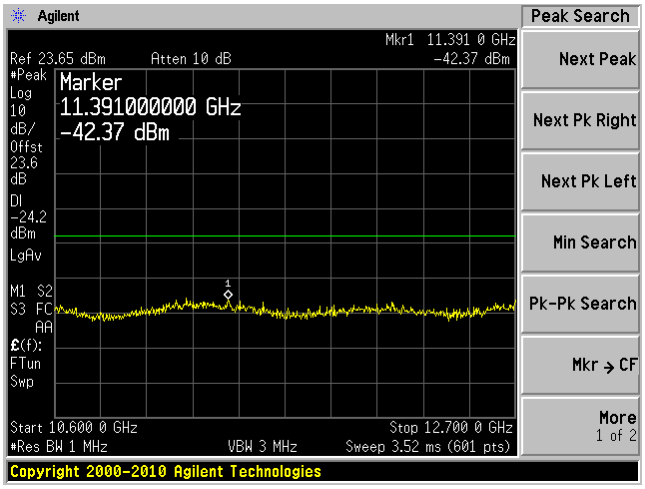
Chain J0, Plot: 5350MHz – 5460 MHz Peak



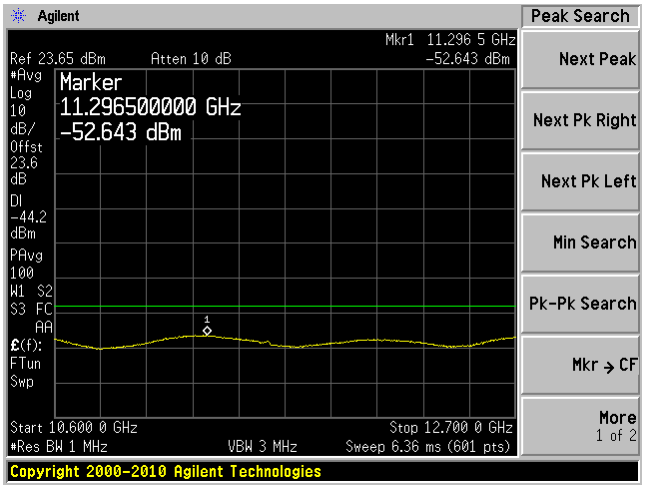
Chain J0, Plot: 5350MHz – 5460 MHz Ave



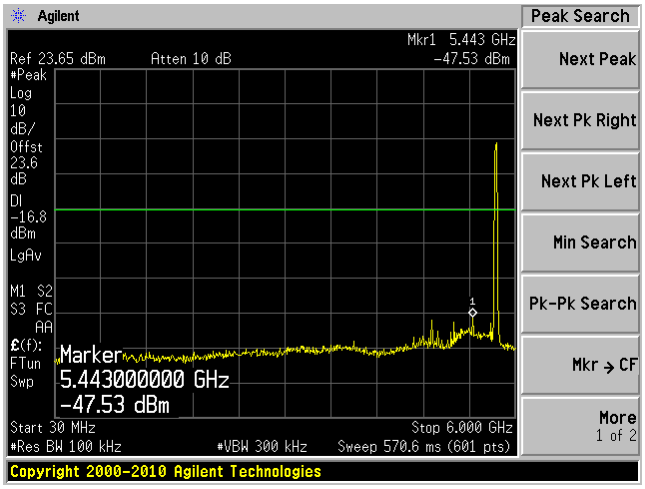
Chain J0, Plot: 10600MHz – 12700MHz Peak



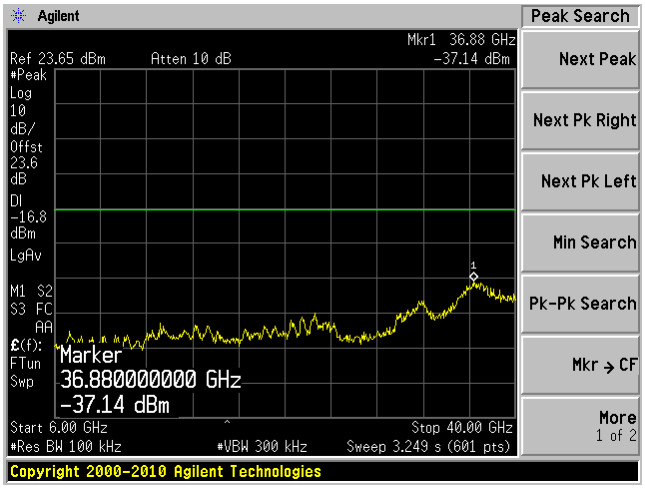
Chain J0, Plot: 10600MHz – 12700MHz Ave



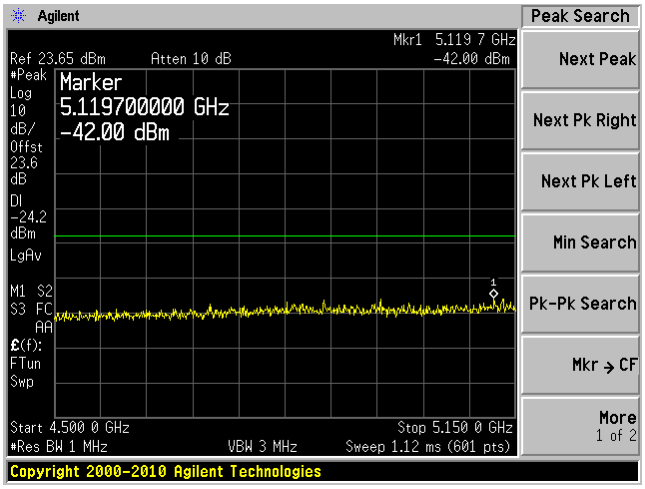
Chain J1, Plot: 30 MHz – 6 GHz



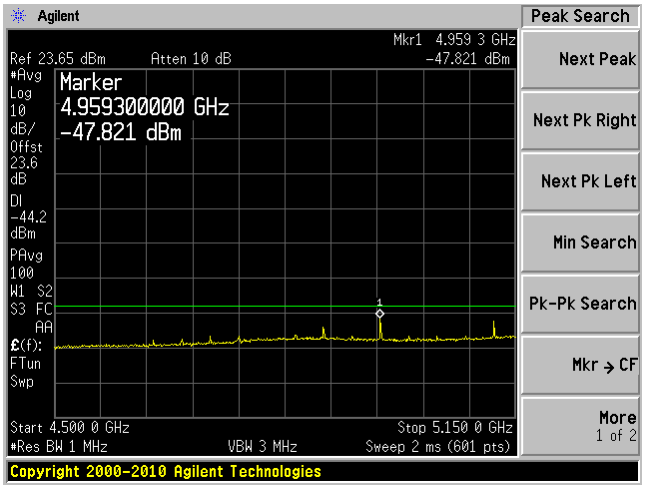
Chain J1, Plot: 6 GHz – 40 GHz



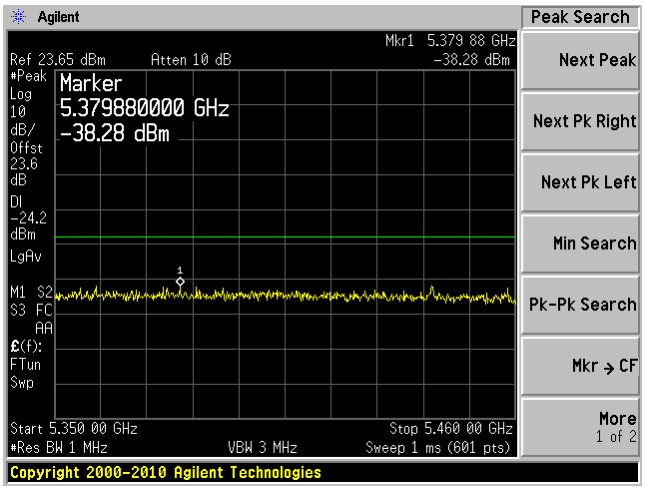
Chain J1, Plot: 4500 MHz – 5150 MHz Peak



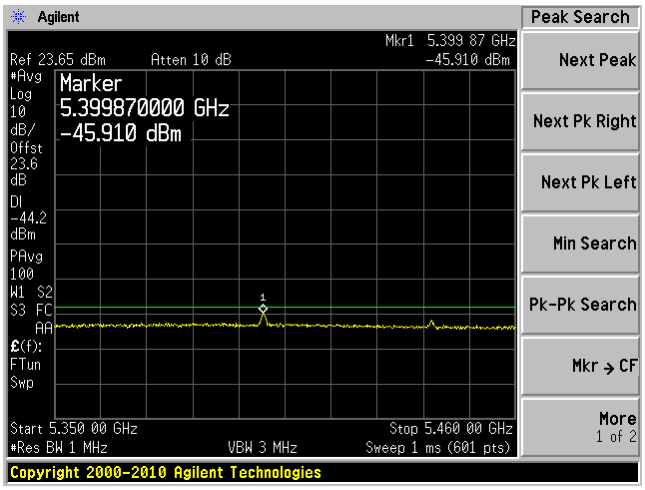
Chain J1, Plot: 4500 MHz – 5150MHz Ave



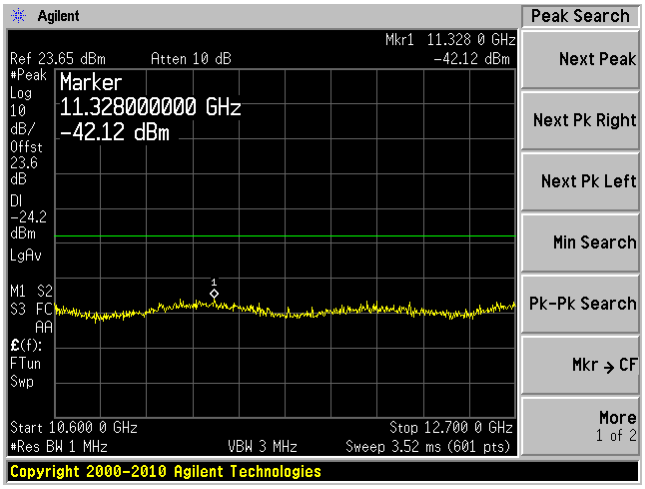
Chain J1, Plot: 5350MHz – 5460 MHz Peak



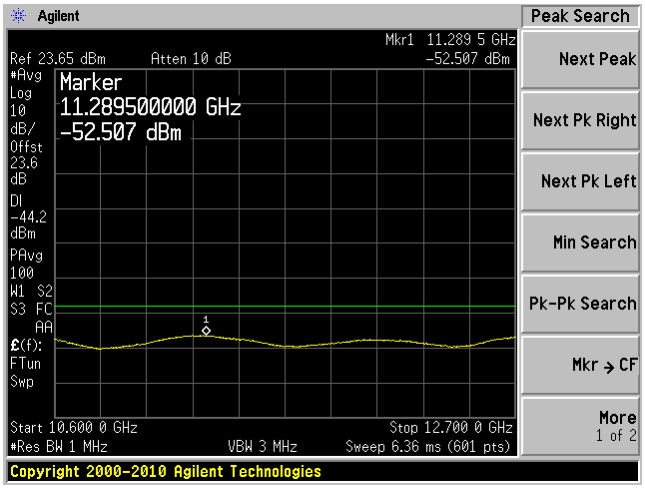
Chain J1, Plot: 5350MHz – 5460 MHz Ave



Chain J1, Plot: 10600MHz – 12700MHz Peak

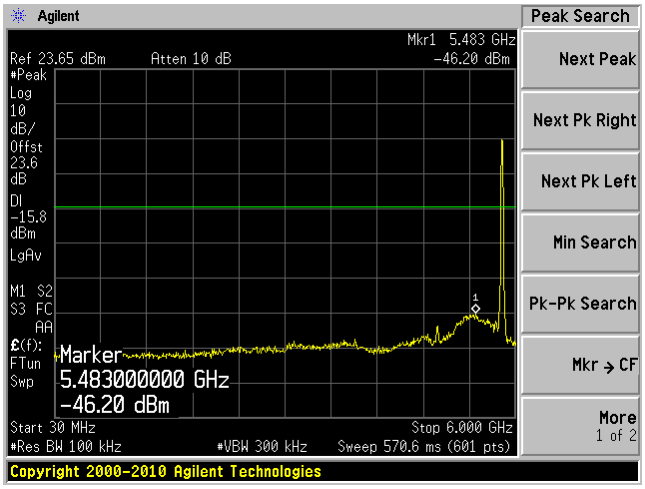


Chain J1, Plot: 10600MHz – 12700MHz Ave

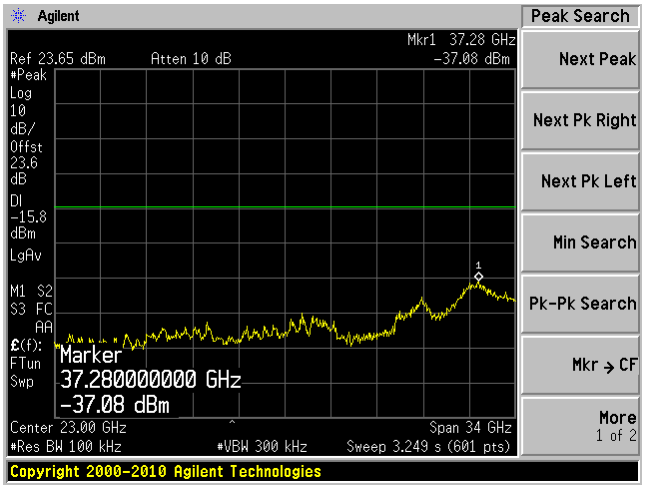


802.11n-HT20, High Channel 5825 MHz

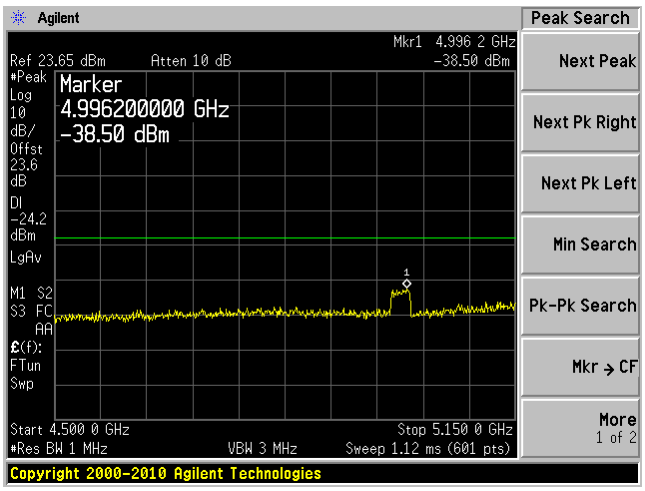
Chain J0, Plot: 30 MHz – 6 GHz



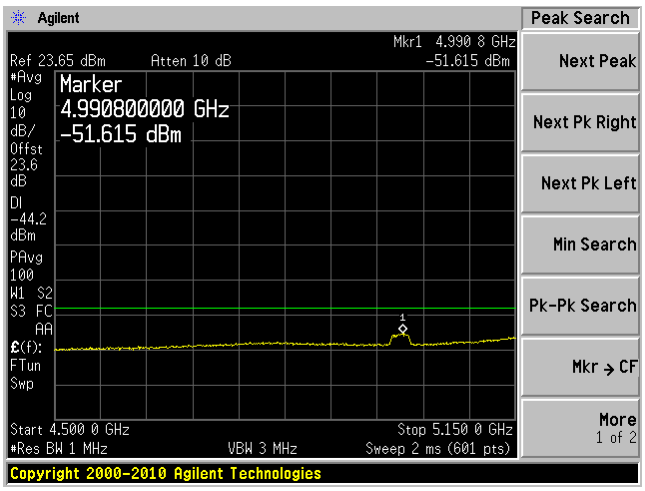
Chain J0, Plot: 6 GHz – 40 GHz



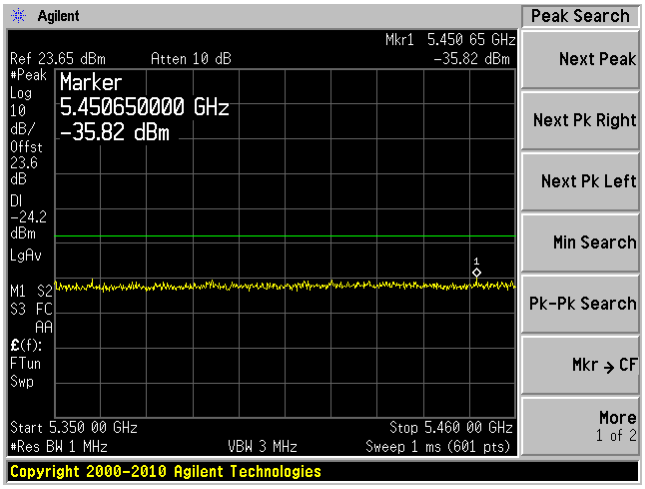
Chain J0, Plot: 4500 MHz – 5150 MHz Peak



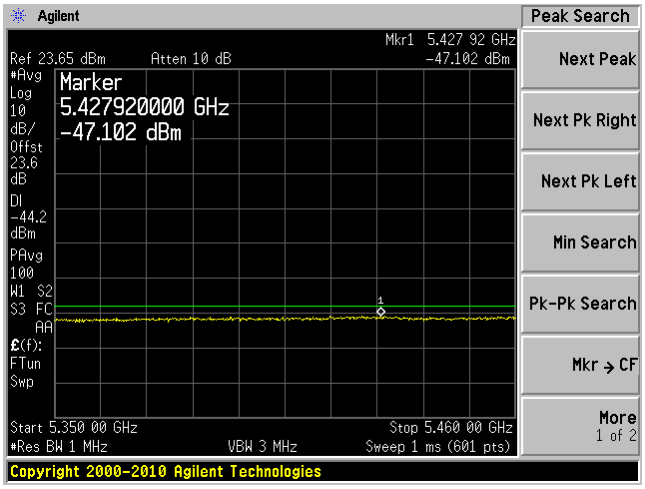
Chain J0, Plot: 4500 MHz – 5150MHz Ave



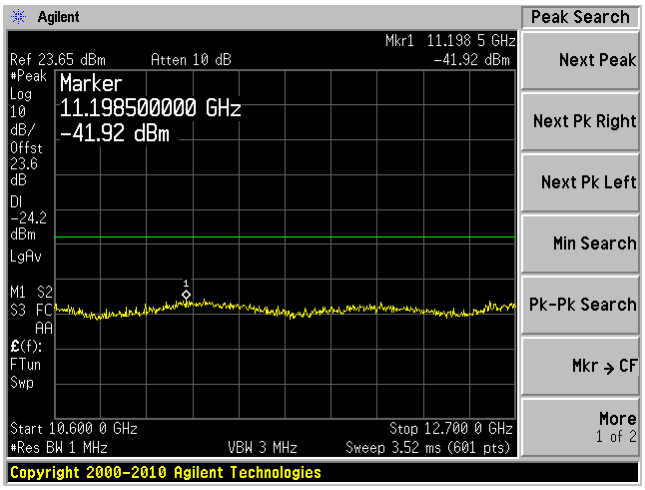
Chain J0, Plot: 5350MHz – 5460 MHz Peak



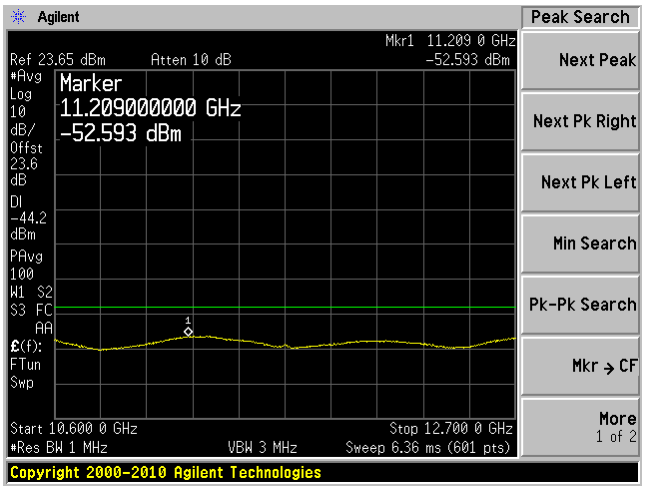
Chain J0, Plot: 5350MHz – 5460 MHz Ave



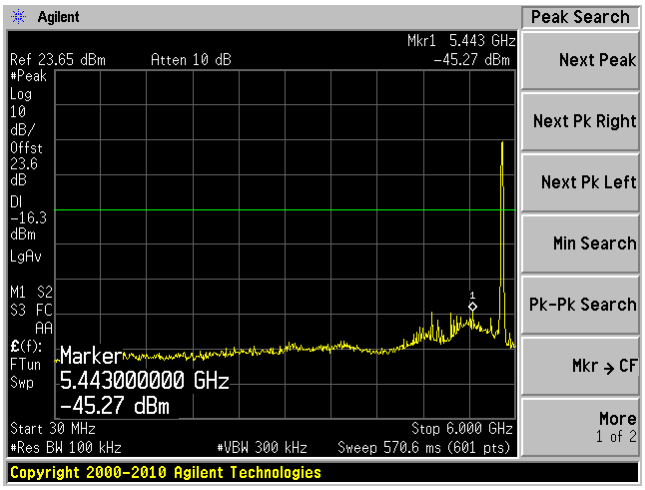
Chain J0, Plot: 10600MHz – 12700MHz Peak



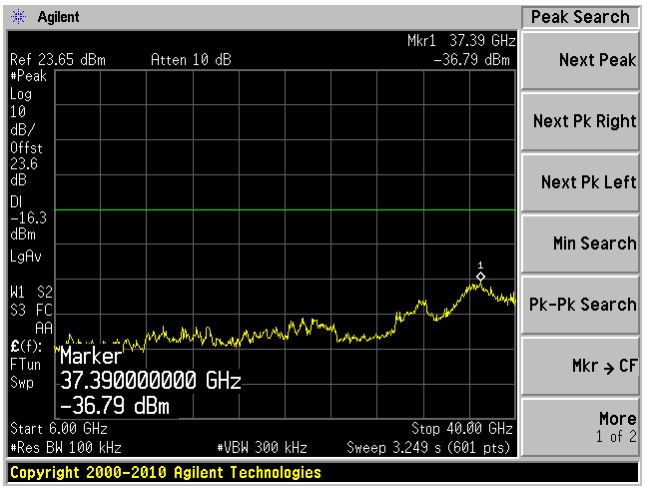
Chain J0, Plot: 10600MHz – 12700MHz Ave



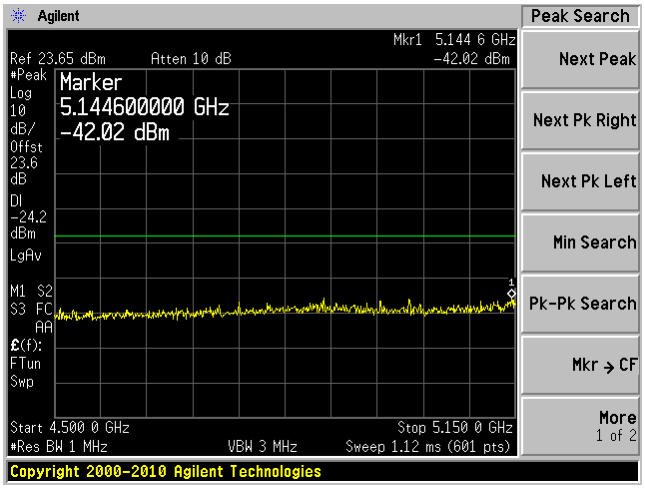
Chain J1, Plot: 30 MHz – 6 GHz



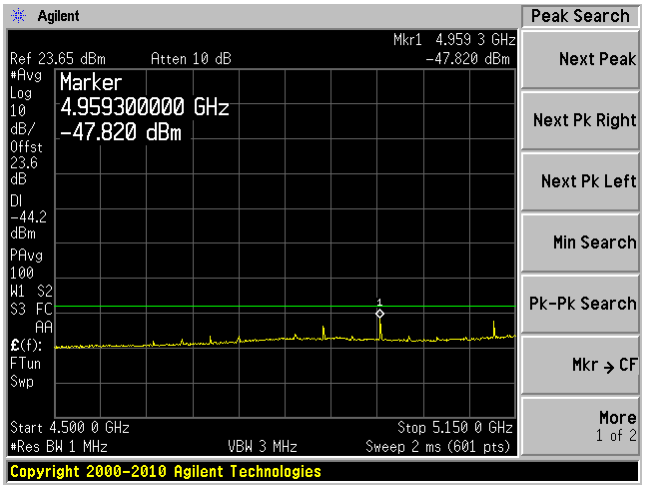
Chain J1, Plot: 6 GHz – 40 GHz



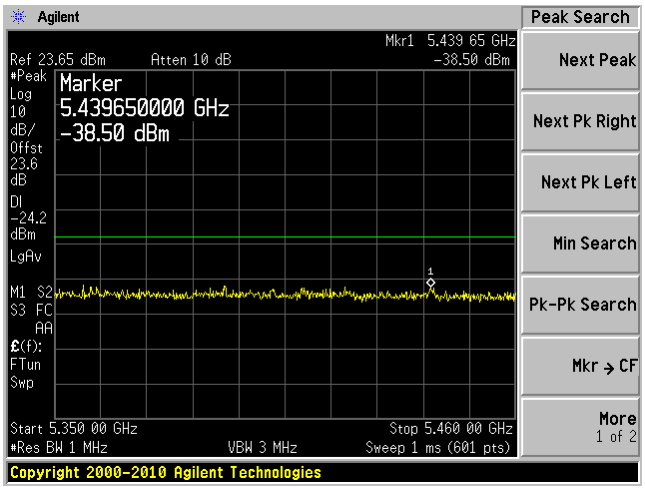
Chain J1, Plot: 4500 MHz – 5150 MHz Peak



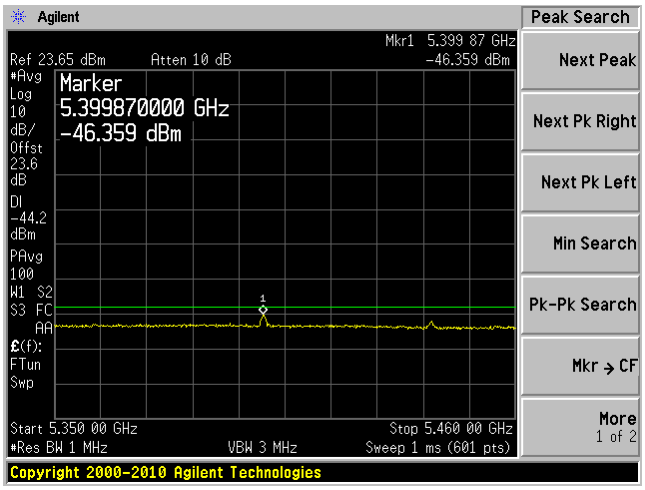
Chain J1, Plot: 4500 MHz – 5150MHz Ave



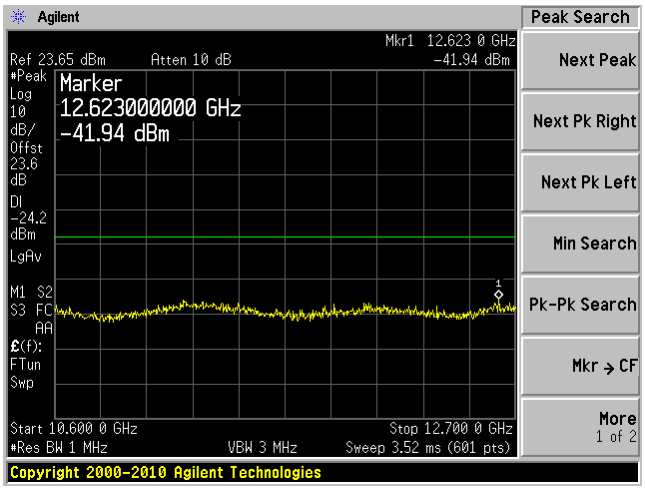
Chain J1, Plot: 5350MHz – 5460 MHz Peak



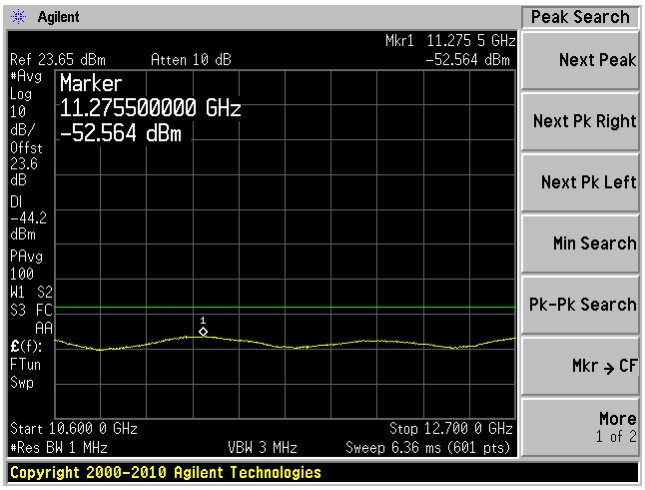
Chain J1, Plot: 5350MHz – 5460 MHz Ave



Chain J1, Plot: 10600MHz – 12700MHz Peak

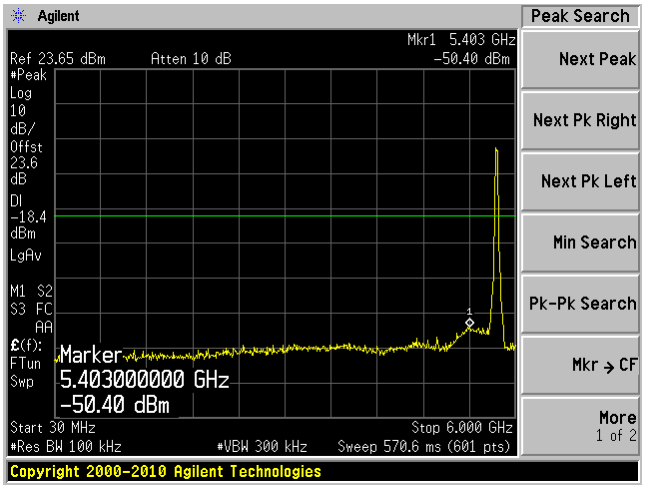


Chain J1, Plot: 10600MHz – 12700MHz Ave

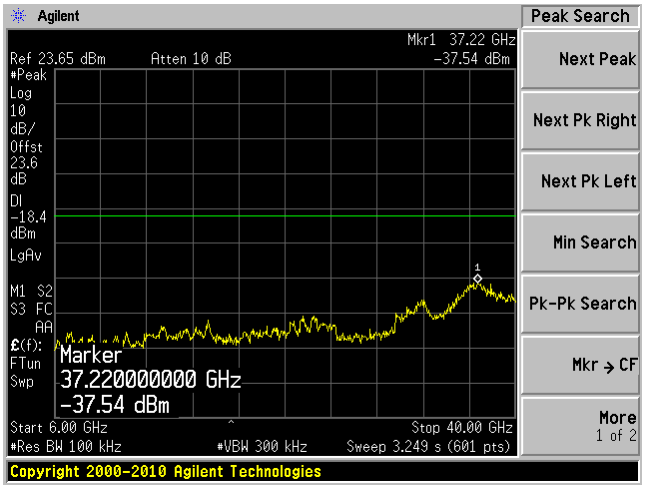


802.11n-HT40, Low Channel 5755 MHz

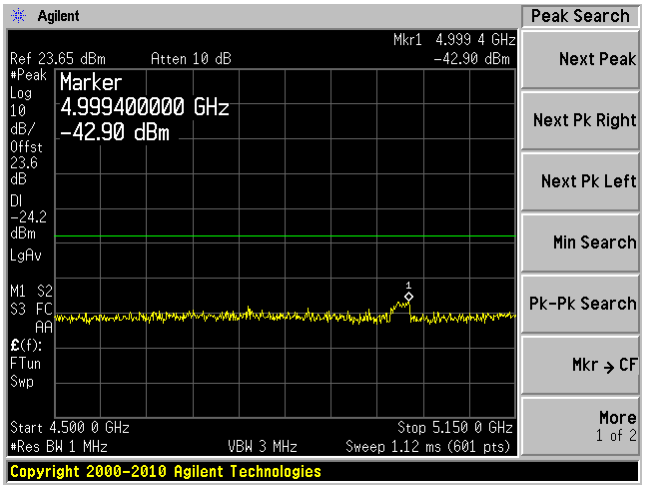
Chain J0, Plot: 30 MHz – 6 GHz



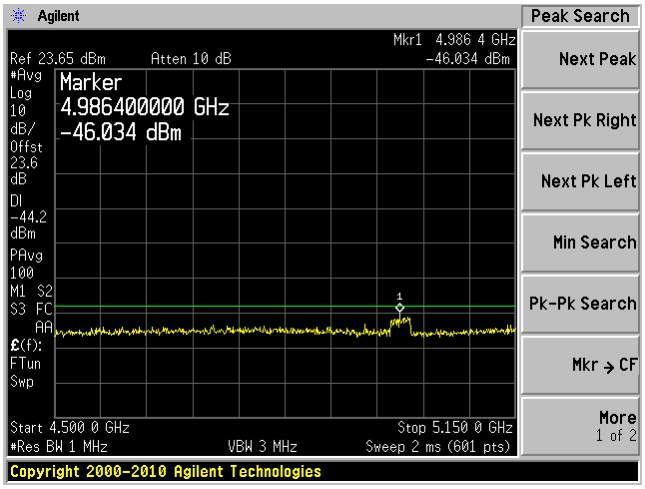
Chain J0, Plot: 6 GHz – 40 GHz



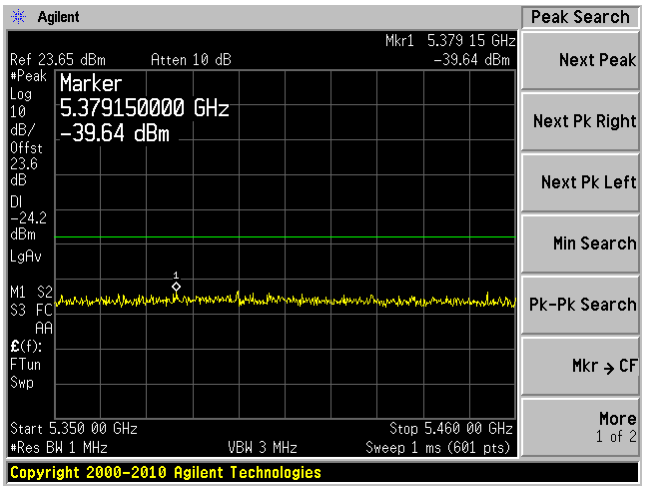
Chain J0, Plot: 4500 MHz – 5150 MHz Peak



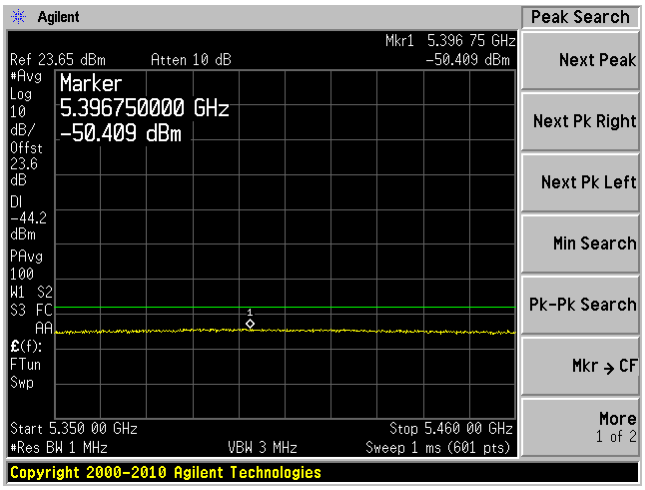
Chain J0, Plot: 4500 MHz – 5150MHz Ave



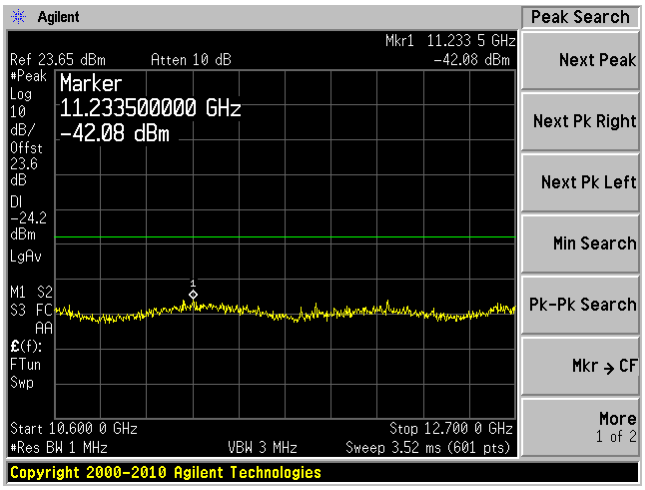
Chain J0, Plot: 5350MHz – 5460 MHz Peak



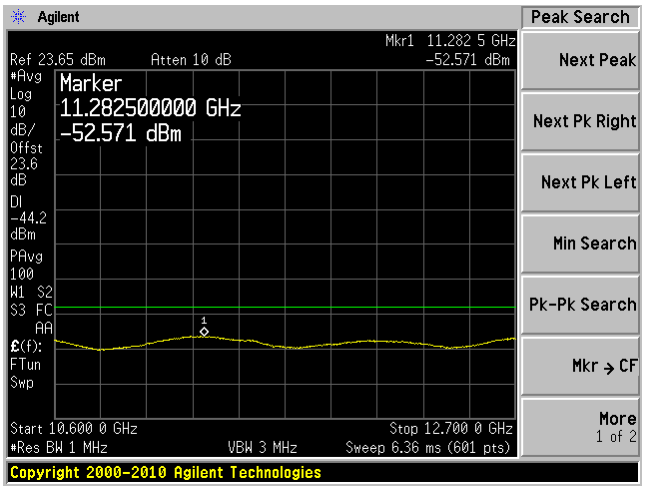
Chain J0, Plot: 5350MHz – 5460 MHz Ave



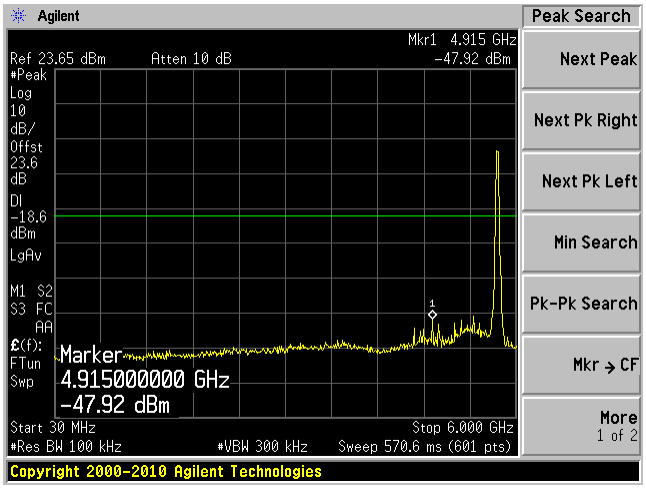
Chain J0, Plot: 10600MHz – 12700MHz Peak



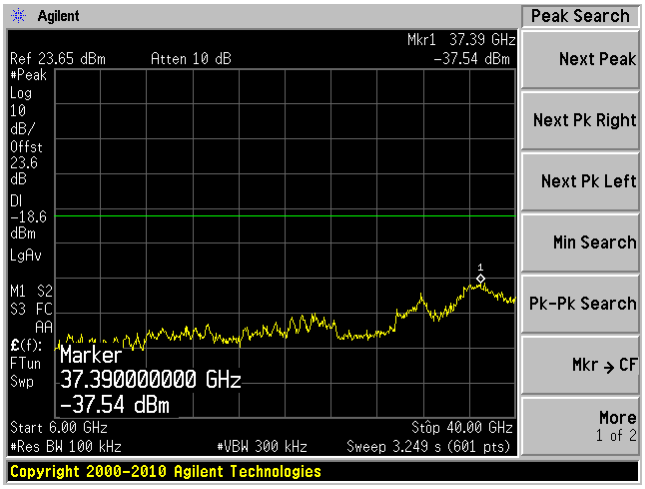
Chain J0, Plot: 10600MHz – 12700MHz Ave



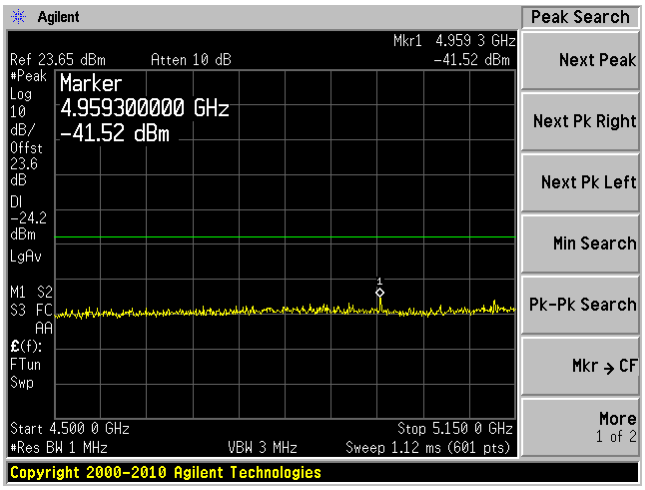
Chain J1, Plot: 30 MHz – 6 GHz



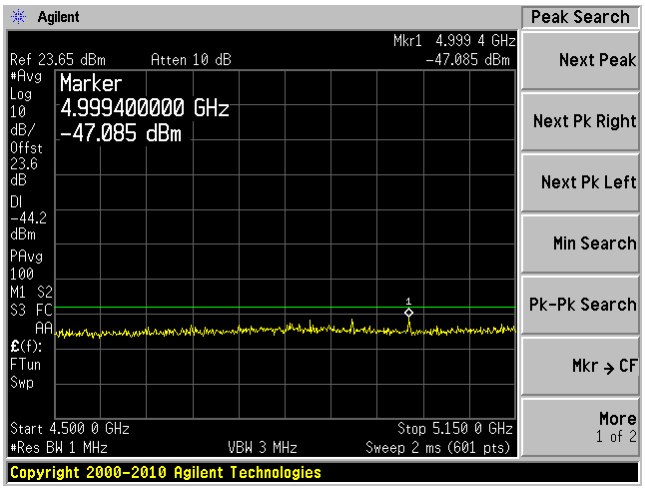
Chain J1, Plot: 6 GHz – 40 GHz



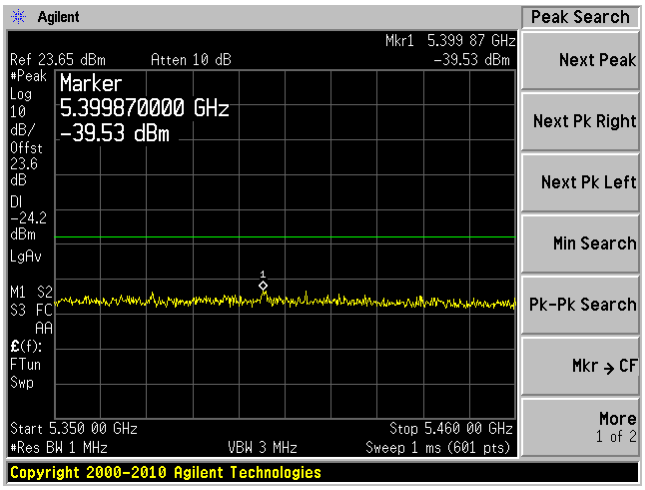
Chain J1, Plot: 4500 MHz – 5150 MHz Peak



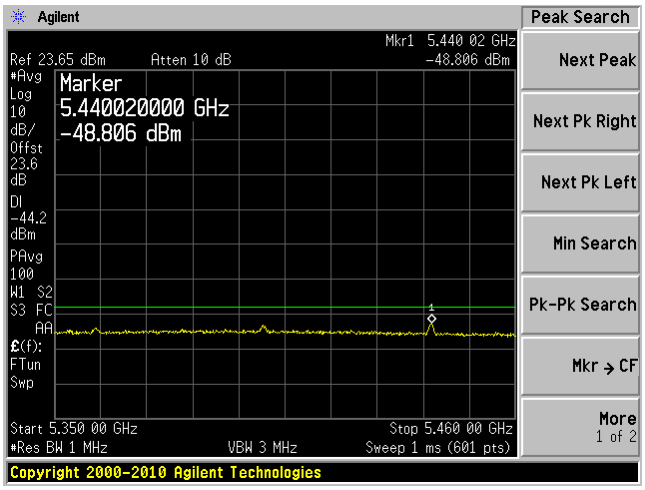
Chain J1, Plot: 4500 MHz – 5150MHz Ave



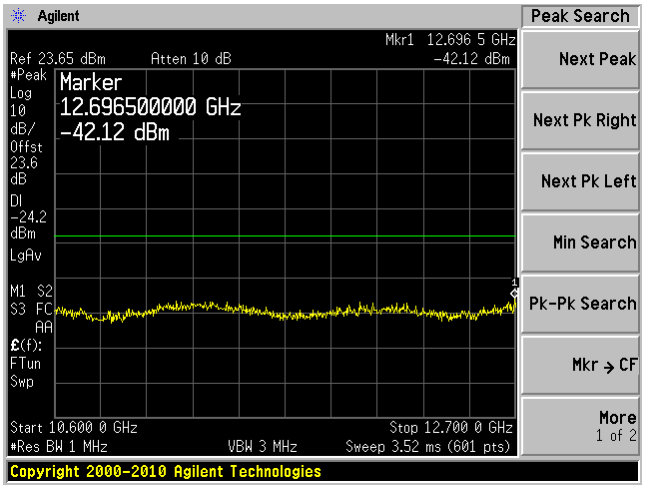
Chain J1, Plot: 5350MHz – 5460 MHz Peak



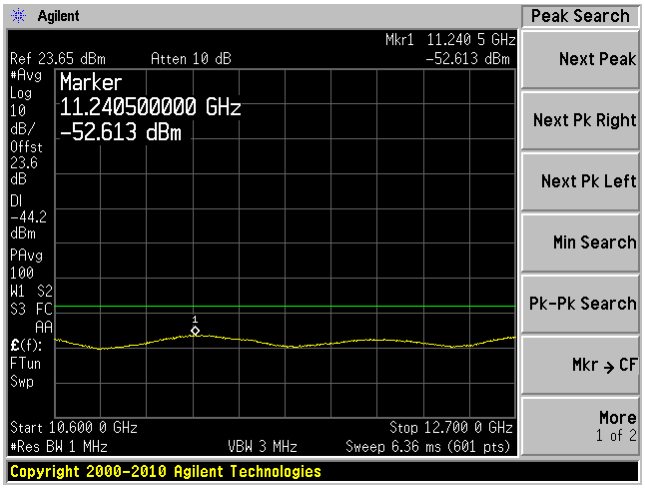
Chain J1, Plot: 5350MHz – 5460 MHz Ave



Chain J1, Plot: 10600MHz – 12700MHz Peak

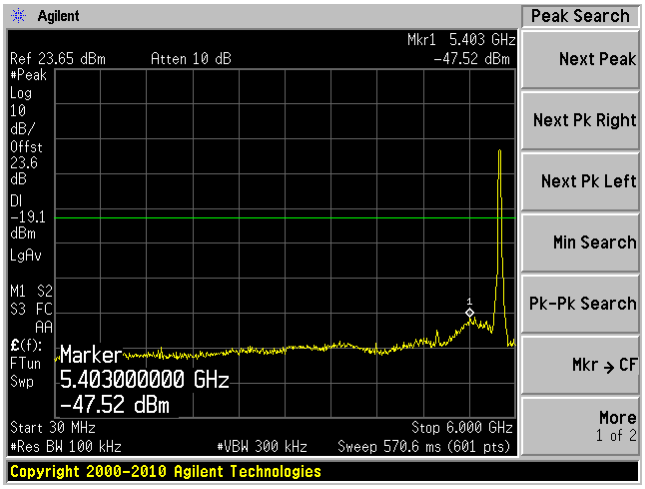


Chain J1, Plot: 10600MHz – 12700MHz Ave

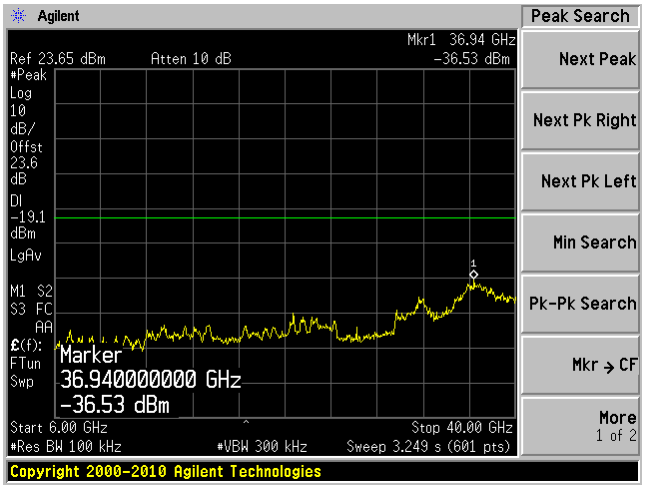


802.11n-HT40, High Channel 5795 MHz

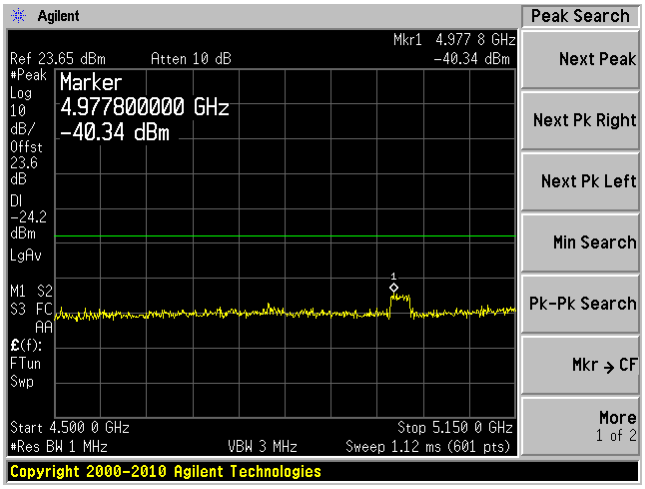
Chain J0, Plot: 30 MHz – 6 GHz



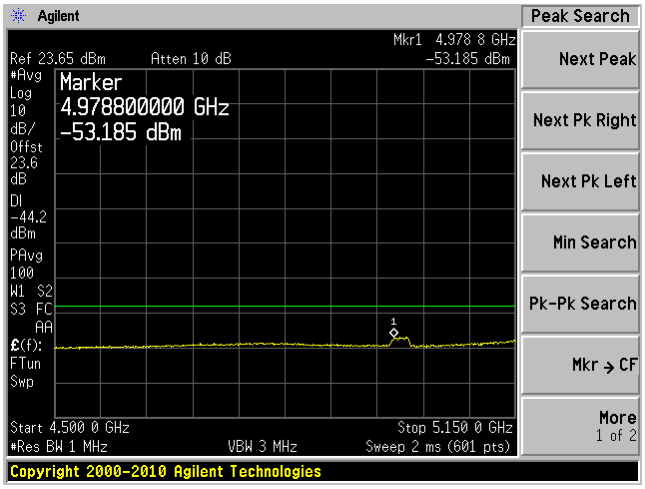
Chain J0, Plot: 6 GHz – 40 GHz



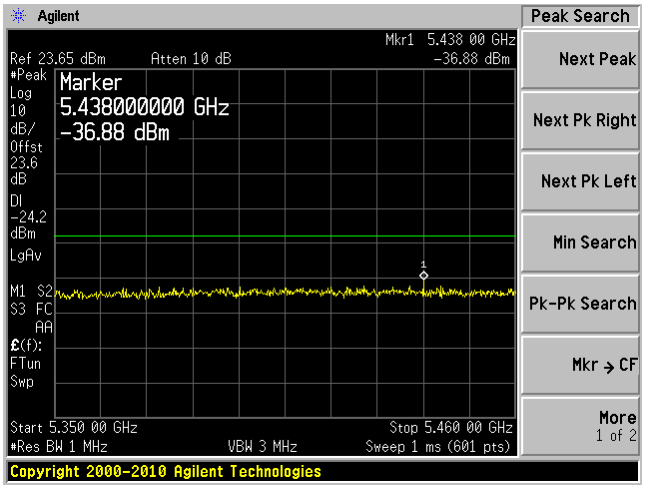
Chain J0, Plot: 4500 MHz – 5150 MHz Peak



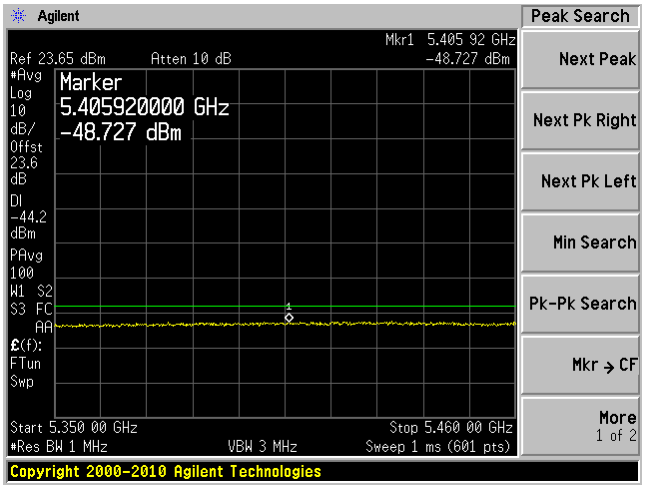
Chain J0, Plot: 4500 MHz – 5150MHz Ave



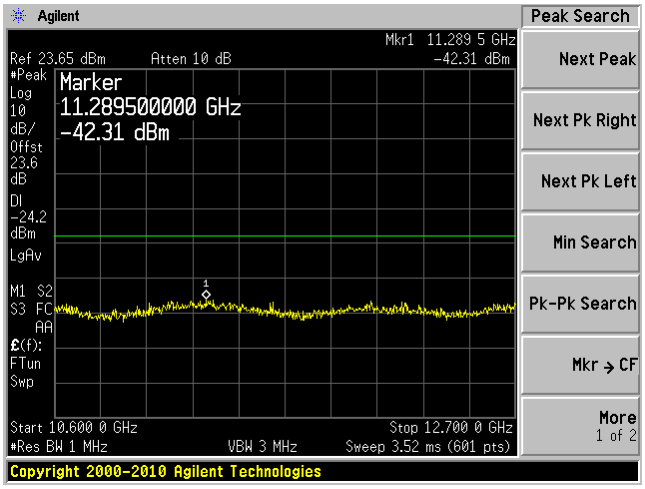
Chain J0, Plot: 5350MHz – 5460 MHz Peak



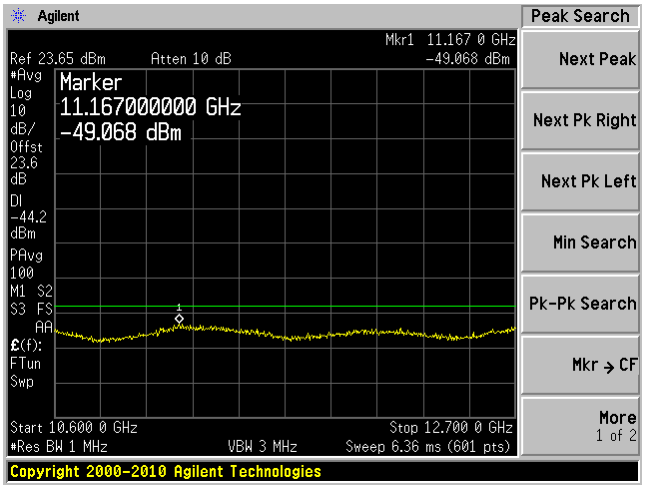
Chain J0, Plot: 5350MHz – 5460 MHz Ave



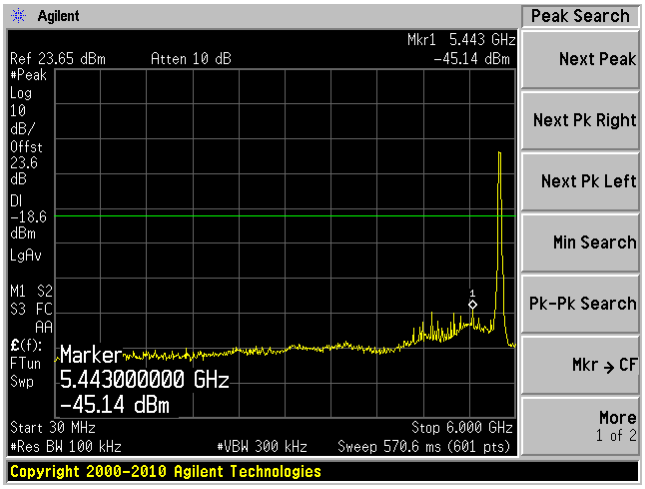
Chain J0, Plot: 10600MHz – 12700MHz Peak



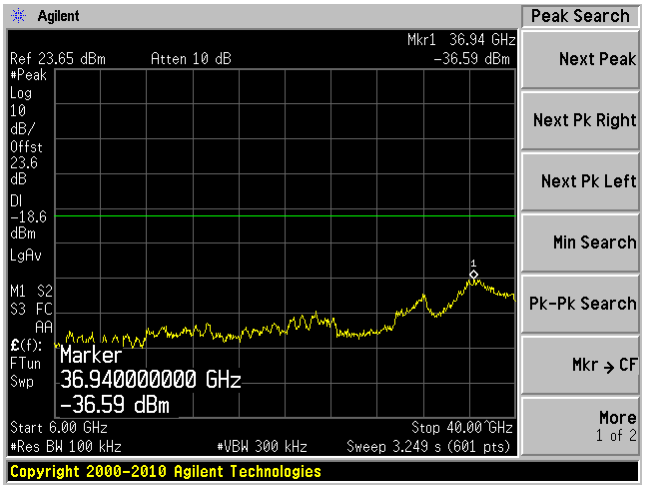
Chain J0, Plot: 10600MHz – 12700MHz Ave



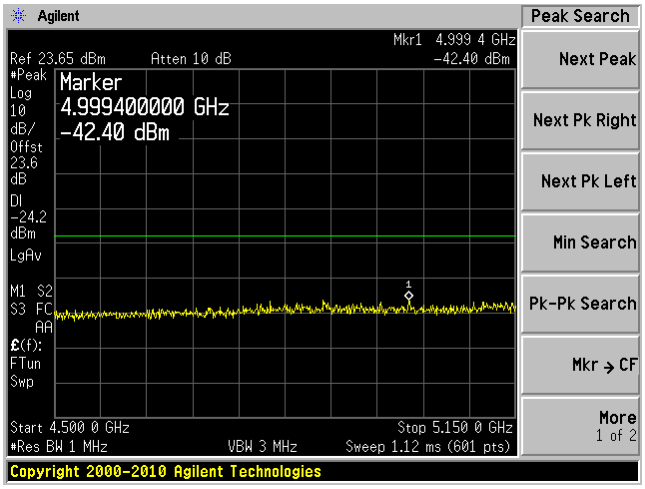
Chain J1, Plot: 30 MHz – 6 GHz



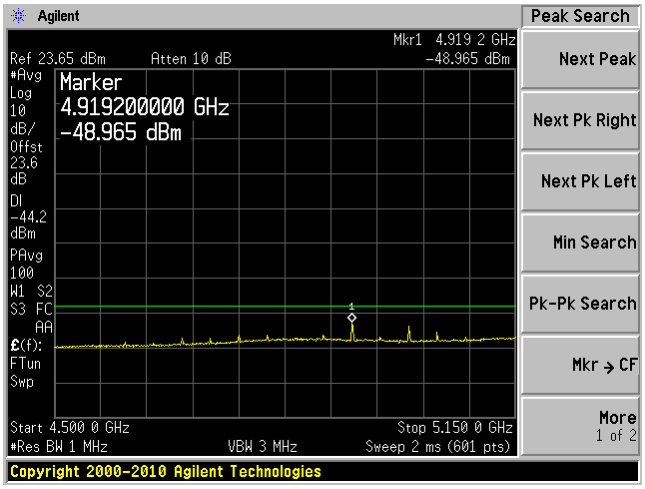
Chain J1, Plot: 6 GHz – 40 GHz



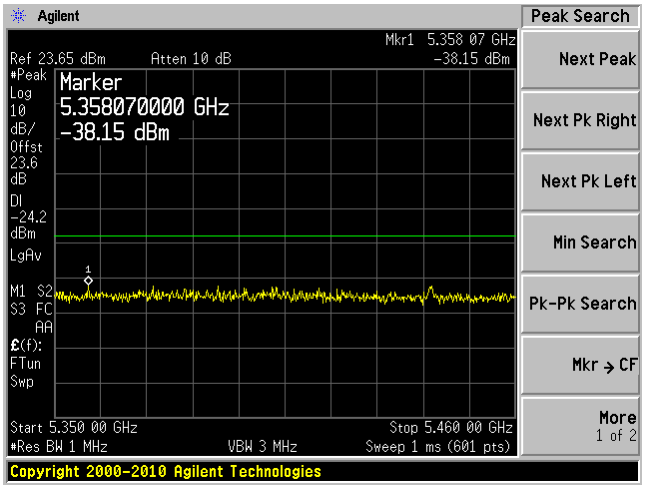
Chain J1, Plot: 4500 MHz – 5150 MHz Peak



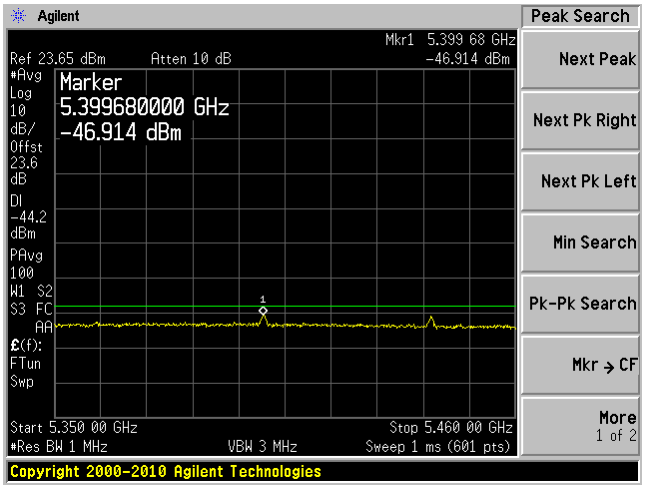
Chain J1, Plot: 4500 MHz – 5150MHz Ave



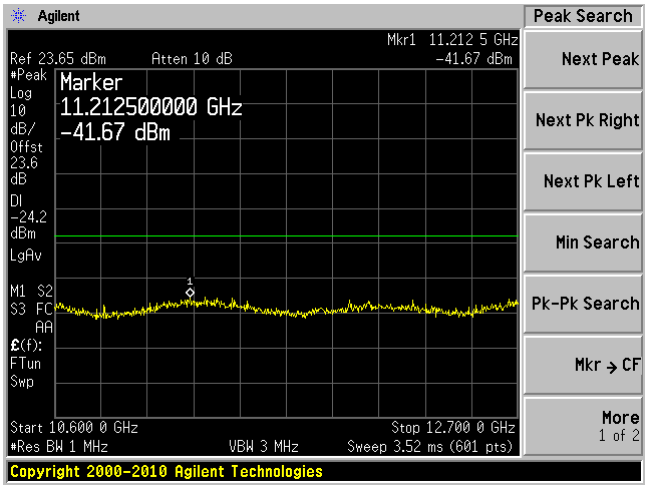
Chain J1, Plot: 5350MHz – 5460 MHz Peak



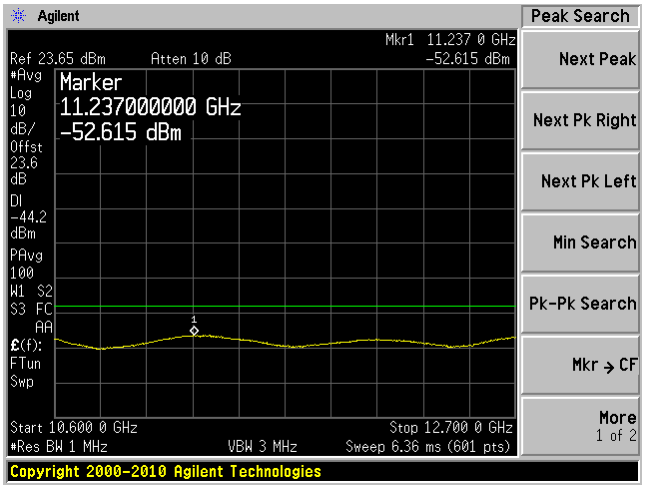
Chain J1, Plot: 5350MHz – 5460 MHz Ave



Chain J1, Plot: 10600MHz – 12700MHz Peak



Chain J1, Plot: 10600MHz – 12700MHz Ave



8 FCC §15.205, §15.209 & §15.247(d) & IC RSS-210 §A8.5 – Spurious Radiated 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**	3
88 - 216	150**	3
216 - 960	200**	3
Above 960	500	3

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

As Per 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).

As per IC RSS-210 A8.5 Out-of-band Emissions, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF 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 that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square 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 field strength limits specified in RSS-Gen is not required.

8.2 Test Setup

The radiated emissions tests were performed in the 5-meter Chamber, using the setup in accordance with ANSI C63.4-2009. The specification used was the FCC 15 Subpart C and IC RSS-210 limits.

The spacing between the peripherals was 3 centimeters.

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

8.3 Test Procedure

The measurements are base on FCC KDB 558074 D01 DTS Meas Guidance v03r01: Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 11: Emissions in non-restricted frequency bands and section 12: Emissions in restricted frequency bands. As well as ANSI C63.4: 2009 as described below:

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 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

8.5 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Sunol Science Corp	System Controller	SC99V	122303-1	N/R	N/R
Sunol Science Corp	Combination Antenna	JB3	A020106-3	2013-06-18	1 year
Hewlett Packard	Pre-amplifier	8447D	2944A06639	2013-06-09	1 year
Mini-Circuits	Pre-amplifier	ZVA-183-S	570400946	2013-05-09	1 year
Agilent	Spectrum Analyzer	E4446A	US44300386	2012-09-29	1 year
EMCO	Horn Antenna	3315	9511-4627	2012-10-17	1 year
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100337	2013-03-28	1 year

Statement of Traceability: BACL *attests that all calibrations have been performed per the A2LA requirements, traceable to NIST.*

8.6 Test Environmental Conditions

Temperature:	22 ºC
Relative Humidity:	52 %
ATM Pressure:	101.89 kPa

The testing was performed by Jeffery Wu on 2013-05-08 in 5 m chamber 3.

8.7 Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Title 47, Part 15C and IC RSS-210 standard's radiated emissions limits, and had the worst margin of:

30-1000 MHz:

2.4 GHz Band

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Mode, Channel**
-2.72	35.56825	Vertical	802.11n-HT40 mode

5.8 GHz Band

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Mode, Channel**
-4.25	37.31925	Vertical	802.11n-HT20 mode

1–25 GHz:

2.4 GHz Band

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Mode, Channel**
-0.203	4824	Horizontal	802.11b mode Low Channel

1-40 GHz:

5.8 GHz Band

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Mode, Channel**
-2.447	11650	Horizontal	802.11a mode High Channel

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

8.8 Radiated Emissions Test Results

1) 30 MHz – 1 GHz, Measured at 3 meters, EUT antenna port was terminated

2.4 GHz Band, Quasi-Peak Measurements @ 3m

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
802.11b mode						
36.05525	36.85	136	V	226	40	-3.15
750.00425	37.24	155	V	101	46	-8.76
105.776	24.55	156	V	245	43.5	-18.95
950.56425	23.45	188	V	75	46	-22.55
249.95425	25.3	147	H	310	46	-20.7
802.11g mode						
37.0525	36.41	155	V	35	40	-3.59
624.99925	39.57	100	V	244	46	-6.43
249.952	31.56	100	H	77	46	-14.44
178.07325	23.16	100	V	360	43.5	-20.34
374.98425	28.56	100	H	275	46	-17.44
309.93875	21.71	100	H	98	46	-24.29
802.11n-HT20 mode						
41.401	30.71	157	V	105	40	-9.29
624.987	39.3	102	V	87	46	-6.7
393.6185	12.94	367	V	26	46	-33.06
105.7175	27.24	100	V	272	43.5	-16.26
249.94325	29.81	114	H	287	46	-16.19
299.97175	25.08	124	H	78	46	-20.92
802.11n-HT40 mode						
35.56825	37.28	100	V	286	40	-2.72
624.98325	40.4	100	V	239	46	-5.6
249.95125	31.33	100	H	293	46	-14.67
178.13425	18.67	286	V	330	43.5	-24.83
375.02575	25.86	100	H	61	46	-20.14

Note: All 30 MHz – 1 GHz spurious are digital, other emissions are on the noise floor level. The worst case result was reported.

5.8 GHz Band, Quasi-Peak Measurements @ 3m

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
802.11a mode						
42.335	34.51	120	V	319	40	-5.49
624.99625	37.63	175	V	98	46	-8.37
275.03075	33.52	115	H	69	46	-12.48
108.6865	27.89	105	V	15	43.5	-15.61
374.98925	29.55	103	H	61	46	-16.45
299.9995	23.78	134	H	62	46	-22.22
802.11n-HT20 mode						
37.31925	35.75	123	V	5	40	-4.25
624.9785	39.98	100	V	254	46	-6.02
165.26525	27.8	128	V	307	43.5	-15.7
249.95225	31.91	108	H	280	46	-14.09
305.0755	20.31	100	H	92	46	-25.69
802.11n-HT40 mode						
41.1015	34.35	128	V	108	40	-5.65
624.9925	38.2	101	V	122	46	-7.8
274.99425	34.51	100	H	70	46	-11.49
153.20475	21.85	112	V	151	43.5	-21.65
374.9885	30.53	100	H	51	46	-15.47
300.0145	25.67	100	H	275	46	-20.33

Note: All 30 MHz – 1 GHz spurious are digital, other emissions are on the noise floor level. The worst case result was reported.

2) 1–25 GHz, Measured at 3 meters, EUT antenna port was terminated

2.4 GHz Band

802.11b mode

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)	
Low Channel 2412 MHz, measured at 3 meters											
4824	43.42	53	100	V	33.097	4.56	27.7	53.377	74	-20.623	Peak
4824	45.84	120	100	H	33.097	4.56	27.7	55.797	74	-18.203	Peak
4824	40.97	53	100	V	33.097	4.56	27.7	50.927	54	-3.073	Ave
4824	43.84	120	100	H	33.097	4.56	27.7	53.797	54	-0.203	Ave
7236	35.86	102	100	V	35.928	5.49	27.58	49.698	74	-24.302	Peak
7236	39.45	133	126	H	35.928	5.49	27.58	53.288	74	-20.712	Peak
7236	24.87	102	100	V	35.928	5.49	27.58	38.708	54	-15.292	Ave
7236	32.16	133	126	H	35.928	5.49	27.58	45.998	54	-8.002	Ave
9648	37.32	146	100	V	37.954	6.54	27.06	54.754	74	-19.246	Peak
9648	40.65	37	100	H	37.954	6.54	27.06	58.084	74	-15.916	Peak
9648	30.43	146	100	V	37.954	6.54	27.06	47.864	54	-6.136	Ave
9648	36.13	37	100	H	37.954	6.54	27.06	53.564	54	-0.436	Ave
Middle Channel 2437 MHz, measured at 3 meters											
4874	39.98	36	100	V	33.327	4.54	27.76	50.087	74	-23.913	Peak
4874	41.23	119	100	H	33.327	4.54	27.76	51.337	74	-22.663	Peak
4874	35.53	36	100	V	33.327	4.54	27.76	45.637	54	-8.363	Ave
4874	37.65	119	100	H	33.327	4.54	27.76	47.757	54	-6.243	Ave
7311	34.65	120	100	V	36.369	5.57	27.51	49.079	74	-24.921	Peak
7311	37.46	130	124	H	36.369	5.57	27.51	51.889	74	-22.111	Peak
7311	20.82	120	100	V	36.369	5.57	27.51	35.249	54	-18.751	Ave
7311	28.29	130	124	H	36.369	5.57	27.51	42.719	54	-11.281	Ave
9748	36.98	61	100	V	38.087	6.62	26.98	54.707	74	-19.293	Peak
9748	37.99	34	100	H	38.087	6.62	26.98	55.717	74	-18.283	Peak
9748	30.19	61	100	V	38.087	6.62	26.98	47.917	54	-6.083	Ave
9748	33.12	34	100	H	38.087	6.62	26.98	50.847	54	-3.153	Ave

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											
4924	40.13	67	100	V	33.327	4.52	27.75	50.227	74	-23.773	Peak
4924	44.75	88	100	H	33.327	4.52	27.75	54.847	74	-19.153	Peak
4924	36.48	67	100	V	33.327	4.52	27.75	46.577	54	-7.423	Ave
4924	42.68	88	100	H	33.327	4.52	27.75	52.777	54	-1.223	Ave
7386	33.98	0	100	V	36.565	5.62	27.51	48.655	74	-25.345	Peak
7386	33.98	0	100	H	36.565	5.62	27.51	48.655	74	-25.345	Peak
7386	18.79	0	100	V	36.565	5.62	27.51	33.465	54	-20.535	Ave
7386	18.76	0	100	H	36.565	5.62	27.51	33.435	54	-20.565	Ave
9848	32.96	0	100	V	38.287	6.55	26.98	50.817	74	-23.183	Peak
9848	32.75	0	100	H	38.287	6.55	26.98	50.607	74	-23.393	Peak
9848	18.01	0	100	V	38.287	6.55	26.98	35.867	54	-18.133	Ave
9848	18.29	0	100	H	38.287	6.55	26.98	36.147	54	-17.853	Ave

802.11g mode

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)	
Low Channel 2412 MHz, measured at 3 meters											
4824	47.12	60	120	V	33.097	4.56	27.7	57.077	74	-16.923	Peak
4824	50.87	89	100	H	33.097	4.56	27.7	60.827	74	-13.173	Peak
4824	30.53	60	120	V	33.097	4.56	27.7	40.487	54	-13.513	Ave
4824	33.91	89	100	H	33.097	4.56	27.7	43.867	54	-10.133	Ave
7236	35.31	0	100	V	35.928	5.49	27.58	49.148	74	-24.852	Peak
7236	42.36	134	128	H	35.928	5.49	27.58	56.198	74	-17.802	Peak
7236	20.3	0	100	V	35.928	5.49	27.58	34.138	54	-19.862	Ave
7236	27.52	134	128	H	35.928	5.49	27.58	41.358	54	-12.642	Ave
9648	35.22	90	100	V	37.954	6.54	27.06	52.654	74	-21.346	Peak
9648	39.95	30	100	H	37.954	6.54	27.06	57.384	74	-16.616	Peak
9648	21.02	90	100	V	37.954	6.54	27.06	38.454	54	-15.546	Ave
9648	25.12	30	100	H	37.954	6.54	27.06	42.554	54	-11.446	Ave
Middle Channel 2437 MHz, measured at 3 meters											
4874	45.32	61	124	V	33.327	4.54	27.76	55.427	74	-18.573	Peak
4874	48.54	88	100	H	33.327	4.54	27.76	58.647	74	-15.353	Peak
4874	28.96	61	124	V	33.327	4.54	27.76	39.067	54	-14.933	Ave
4874	32.02	88	100	H	33.327	4.54	27.76	42.127	54	-11.873	Ave
7311	34.06	0	100	V	36.369	5.57	27.51	48.489	74	-25.511	Peak
7311	39.44	128	114	H	36.369	5.57	27.51	53.869	74	-20.131	Peak
7311	19.4	0	100	V	36.369	5.57	27.51	33.829	54	-20.171	Ave
7311	24.22	128	114	H	36.369	5.57	27.51	38.649	54	-15.351	Ave
9748	33.55	0	100	V	38.087	6.62	26.98	51.277	74	-22.723	Peak
9748	39.72	24	100	H	38.087	6.62	26.98	57.447	74	-16.553	Peak
9748	19.04	0	100	V	38.087	6.62	26.98	36.767	54	-17.233	Ave
9748	23.54	24	100	H	38.087	6.62	26.98	41.267	54	-12.733	Ave

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											
4924	47.3	62	100	V	33.327	4.52	27.75	57.397	74	-16.603	Peak
4924	52.14	90	100	H	33.327	4.52	27.75	62.237	74	-11.763	Peak
4924	30.76	62	100	V	33.327	4.52	27.75	40.857	54	-13.143	Ave
4924	35.67	90	100	H	33.327	4.52	27.75	45.767	54	-8.233	Ave
7386	33.95	0	100	V	36.565	5.62	27.51	48.625	74	-25.375	Peak
7386	34.12	0	100	H	36.565	5.62	27.51	48.795	74	-25.205	Peak
7386	18.77	0	100	V	36.565	5.62	27.51	33.445	54	-20.555	Ave
7386	18.88	0	100	H	36.565	5.62	27.51	33.555	54	-20.445	Ave
9848	32.77	0	100	V	38.287	6.55	26.98	50.627	74	-23.373	Peak
9848	36.92	23	100	H	38.287	6.55	26.98	54.777	74	-19.223	Peak
9848	18.37	0	100	V	38.287	6.55	26.98	36.227	54	-17.773	Ave
9848	20.8	23	100	H	38.287	6.55	26.98	38.657	54	-15.343	Ave

802.11n-HT20 mode

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)	
Low Channel 2412 MHz, measured at 3 meters											
4824	48	53	100	V	33.097	4.56	27.7	57.957	74	-16.043	Peak
4824	53.82	89	100	H	33.097	4.56	27.7	63.777	74	-10.223	Peak
4824	31.54	53	100	V	33.097	4.56	27.7	41.497	54	-12.503	Ave
4824	37.79	89	100	H	33.097	4.56	27.7	47.747	54	-6.253	Ave
7236	36.14	99	100	V	35.928	5.49	27.58	49.978	74	-24.022	Peak
7236	43.08	131	125	H	35.928	5.49	27.58	56.918	74	-17.082	Peak
7236	21.57	99	100	V	35.928	5.49	27.58	35.408	54	-18.592	Ave
7236	27.77	131	125	H	35.928	5.49	27.58	41.608	54	-12.392	Ave
9648	36.57	94	100	V	37.954	6.54	27.06	54.004	74	-19.996	Peak
9648	40.79	29	100	H	37.954	6.54	27.06	58.224	74	-15.776	Peak
9648	21.75	94	100	V	37.954	6.54	27.06	39.184	54	-14.816	Ave
9648	26.22	29	100	H	37.954	6.54	27.06	43.654	54	-10.346	Ave
Middle Channel 2437 MHz, measured at 3 meters											
4874	49.01	61	124	V	33.327	4.54	27.76	59.117	74	-14.883	Peak
4874	52.55	88	100	H	33.327	4.54	27.76	62.657	74	-11.343	Peak
4874	32.47	61	124	V	33.327	4.54	27.76	42.577	54	-11.423	Ave
4874	36.27	88	100	H	33.327	4.54	27.76	46.377	54	-7.623	Ave
7311	34.9	0	100	V	36.369	5.57	27.51	49.329	74	-24.671	Peak
7311	41	130	100	H	36.369	5.57	27.51	55.429	74	-18.571	Peak
7311	19.43	0	100	V	36.369	5.57	27.51	33.859	54	-20.141	Ave
7311	22.8	130	100	H	36.369	5.57	27.51	37.229	54	-16.771	Ave
9748	34.68	92	100	V	38.087	6.62	26.98	52.407	74	-21.593	Peak
9748	39.43	27	100	H	38.087	6.62	26.98	57.157	74	-16.843	Peak
9748	20.46	92	100	V	38.087	6.62	26.98	38.187	54	-15.813	Ave
9748	23.56	27	100	H	38.087	6.62	26.98	41.287	54	-12.713	Ave

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											
4924	48.8	61	100	V	33.327	4.52	27.75	58.897	74	-15.103	Peak
4924	53.68	90	100	H	33.327	4.52	27.75	63.777	74	-10.223	Peak
4924	33.06	61	100	V	33.327	4.52	27.75	43.157	54	-10.843	Ave
4924	37.29	90	100	H	33.327	4.52	27.75	47.387	54	-6.613	Ave
7386	33.85	0	100	V	36.565	5.62	27.51	48.525	74	-25.475	Peak
7386	35.14	130	129	H	36.565	5.62	27.51	49.815	74	-24.185	Peak
7386	19.21	0	100	V	36.565	5.62	27.51	33.885	54	-20.115	Ave
7386	21.53	130	129	H	36.565	5.62	27.51	36.205	54	-17.795	Ave
9848	33.57	0	100	V	38.287	6.55	26.98	51.427	74	-22.573	Peak
9848	38.44	24	100	H	38.287	6.55	26.98	56.297	74	-17.703	Peak
9848	18.59	0	100	V	38.287	6.55	26.98	36.447	54	-17.553	Ave
9848	21.57	24	100	H	38.287	6.55	26.98	39.427	54	-14.573	Ave

802.11n-HT40 mode

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)	
Low Channel 2422 MHz, measured at 3 meters											
4844	45.56	60	119	V	33.097	4.56	27.7	55.517	74	-18.483	Peak
4844	50.45	86	129	H	33.097	4.56	27.7	60.407	74	-13.593	Peak
4844	31.43	60	119	V	33.097	4.56	27.7	41.387	54	-12.613	Ave
4844	34.41	86	129	H	33.097	4.56	27.7	44.367	54	-9.633	Ave
7266	34.6	0	100	V	35.928	5.49	27.56	48.458	74	-25.542	Peak
7266	38.56	132	125	H	35.928	5.49	27.56	52.418	74	-21.582	Peak
7266	20.1	0	100	V	35.928	5.49	27.56	33.958	54	-20.042	Ave
7266	24.44	132	125	H	35.928	5.49	27.56	38.298	54	-15.702	Ave
9688	34.12	0	100	V	37.954	6.54	26.98	51.634	74	-22.366	Peak
9688	37.88	28	100	H	37.954	6.54	26.98	55.394	74	-18.606	Peak
9688	19.38	0	100	V	37.954	6.54	26.98	36.894	54	-17.106	Ave
9688	22.07	28	100	H	37.954	6.54	26.98	39.584	54	-14.416	Ave
Middle Channel 2437 MHz, measured at 3 meters											
4874	45.35	61	100	V	33.327	4.54	27.76	55.457	74	-18.543	Peak
4874	50.08	88	100	H	33.327	4.54	27.76	60.187	74	-13.813	Peak
4874	30.92	61	100	V	33.327	4.54	27.76	41.027	54	-12.973	Ave
4874	30.33	88	100	H	33.327	4.54	27.76	40.437	54	-13.563	Ave
7311	34.2	0	100	V	36.369	5.57	27.51	48.629	74	-25.371	Peak
7311	36.76	135	123	H	36.369	5.57	27.51	51.189	74	-22.811	Peak
7311	19.45	0	100	V	36.369	5.57	27.51	33.879	54	-20.121	Ave
7311	22.22	135	123	H	36.369	5.57	27.51	36.649	54	-17.351	Ave
9748	33.45	0	100	V	38.087	6.62	26.98	51.177	74	-22.823	Peak
9748	35.22	25	100	H	38.087	6.62	26.98	52.947	74	-21.053	Peak
9748	18.81	0	100	V	38.087	6.62	26.98	36.537	54	-17.463	Ave
9748	20.81	25	100	H	38.087	6.62	26.98	38.537	54	-15.463	Ave

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 2452 MHz, measured at 3 meters											
4904	44.89	61	100	V	33.327	4.52	27.67	55.067	74	-18.933	Peak
4904	48.92	88	100	H	33.327	4.52	27.67	59.097	74	-14.903	Peak
4904	29.76	61	100	V	33.327	4.52	27.67	39.937	54	-14.063	Ave
4904	33.01	88	100	H	33.327	4.52	27.67	43.187	54	-10.813	Ave
7356	33.72	0	100	V	36.565	5.62	27.57	48.335	74	-25.665	Peak
7356	33.92	0	100	H	36.565	5.62	27.57	48.535	74	-25.465	Peak
7356	19.26	0	100	V	36.565	5.62	27.57	33.875	54	-20.125	Ave
7356	19.39	0	100	H	36.565	5.62	27.57	34.005	54	-19.995	Ave
9808	33	0	100	V	38.287	6.55	27.02	50.817	74	-23.183	Peak
9808	33.09	0	100	H	38.287	6.55	27.02	50.907	74	-23.093	Peak
9808	18.3	0	100	V	38.287	6.55	27.02	36.117	54	-17.883	Ave
9808	18.54	0	100	H	38.287	6.55	27.02	36.357	54	-17.643	Ave

3) 1–40 GHz, Measured at 3 meters, EUT antenna port was terminated

5.8 GHz Band

802.11a mode

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)	
Low Channel 5745 MHz, measured at 3 meters											
11490	42.93	283	100	V	39.047	7.6	26.94	62.637	74	-11.363	Peak
11490	47.14	325	116	H	39.047	7.6	26.94	66.847	74	-7.153	Peak
11490	22.13	283	100	V	39.047	7.6	26.94	41.837	54	-12.163	Ave
11490	24.65	325	116	H	39.047	7.6	26.94	44.357	54	-9.643	Ave
17235	38.59	226	100	V	43.239	8.63	25.93	64.529	74	-9.471	Peak
17235	36.61	209	115	H	43.239	8.63	25.93	62.549	74	-11.451	Peak
17235	21	226	100	V	43.239	8.63	25.93	46.939	54	-7.061	Ave
17235	20.8	209	115	H	43.239	8.63	25.93	46.739	54	-7.261	Ave
22980	32.9	0	100	V	35.2	10.07	34.74	43.43	74	-30.57	Peak
22980	32.48	0	100	H	35.2	10.07	34.74	43.01	74	-30.99	Peak
22980	17.92	0	100	V	35.2	10.07	34.74	28.45	54	-25.55	Ave
22980	17.92	0	100	H	35.2	10.07	34.74	28.45	54	-25.55	Ave
Middle Channel 5785 MHz, measured at 3 meters											
11570	40.39	287	100	V	39.203	7.69	26.99	60.293	74	-13.707	Peak
11570	44.81	320	109	H	39.203	7.69	26.99	64.713	74	-9.287	Peak
11570	20.94	287	100	V	39.203	7.69	26.99	40.843	54	-13.157	Ave
11570	23.73	320	109	H	39.203	7.69	26.99	43.633	54	-10.367	Ave
17355	33.18	0	100	V	45.311	8.64	25.84	61.291	74	-12.709	Peak
17355	32.56	0	100	H	45.311	8.64	25.84	60.671	74	-13.329	Peak
17355	17.02	0	100	V	45.311	8.64	25.84	45.131	54	-8.869	Ave
17355	17.62	0	100	H	45.311	8.64	25.84	45.731	54	-8.269	Ave
23140	32.85	0	100	V	35.2	10.23	34.74	43.54	74	-30.46	Peak
23140	33.61	0	100	H	35.2	10.23	34.74	44.3	74	-29.7	Peak
23140	18.29	0	100	V	35.2	10.23	34.74	28.98	54	-25.02	Ave
23140	18.29	0	100	H	35.2	10.23	34.74	28.98	54	-25.02	Ave

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											
11650	42.71	287	100	V	39.203	7.78	27	62.693	74	-11.307	Peak
11650	51.57	317	105	H	39.203	7.78	27	71.553	74	-2.447	Peak
11650	23.82	287	100	V	39.203	7.78	27	43.803	54	-10.197	Ave
11650	29.29	317	105	H	39.203	7.78	27	49.273	54	-4.727	Ave
17475	35.48	324	100	V	46.782	8.74	25.79	65.212	74	-8.788	Peak
17475	32.93	354	100	H	46.782	8.74	25.79	62.662	74	-11.338	Peak
17475	19.61	324	100	V	46.782	8.74	25.79	49.342	54	-4.658	Ave
17475	17.64	354	100	H	46.782	8.74	25.79	47.372	54	-6.628	Ave
23300	32.85	0	100	V	35.2	10.13	34.74	43.44	74	-30.56	Peak
23300	32.89	0	100	H	35.2	10.13	34.74	43.48	74	-30.52	Peak
23300	17.93	0	100	V	35.2	10.13	34.74	28.52	54	-25.48	Ave
23300	17.89	0	100	H	35.2	10.13	34.74	28.48	54	-25.52	Ave

802.11n-HT20 mode

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)	
Low Channel 5745 MHz, measured at 3 meters											
11490	44.25	284	100	V	39.047	7.6	26.94	63.957	74	-10.043	Peak
11490	44.56	322	113	H	39.047	7.6	26.94	64.267	74	-9.733	Peak
11490	21.84	284	100	V	39.047	7.6	26.94	41.547	54	-12.453	Ave
11490	22.11	322	113	H	39.047	7.6	26.94	41.817	54	-12.183	Ave
17235	35.88	231	100	V	43.239	8.63	25.93	61.819	74	-12.181	Peak
17235	33.76	21	100	H	43.239	8.63	25.93	59.699	74	-14.301	Peak
17235	19.58	231	100	V	43.239	8.63	25.93	45.519	54	-8.481	Ave
17235	18.41	21	100	H	43.239	8.63	25.93	44.349	54	-9.651	Ave
22980	32.5	0	100	V	35.2	10.07	34.74	43.03	74	-30.97	Peak
22980	32.61	0	100	H	35.2	10.07	34.74	43.14	74	-30.86	Peak
22980	17.92	0	100	V	35.2	10.07	34.74	28.45	54	-25.55	Ave
22980	17.92	0	100	H	35.2	10.07	34.74	28.45	54	-25.55	Ave
Middle Channel 5785 MHz, measured at 3 meters											
11570	41.15	286	100	V	39.203	7.69	26.99	61.053	74	-12.947	Peak
11570	44.84	323	103	H	39.203	7.69	26.99	64.743	74	-9.257	Peak
11570	21.18	286	100	V	39.203	7.69	26.99	41.083	54	-12.917	Ave
11570	22.02	323	103	H	39.203	7.69	26.99	41.923	54	-12.077	Ave
17355	33.13	228	100	V	45.311	8.64	25.84	61.241	74	-12.759	Peak
17355	32.53	0	100	H	45.311	8.64	25.84	60.641	74	-13.359	Peak
17355	18.63	228	100	V	45.311	8.64	25.84	46.741	54	-7.259	Ave
17355	17.42	0	100	H	45.311	8.64	25.84	45.531	54	-8.469	Ave
23140	33.51	0	100	V	35.2	10.23	34.74	44.2	74	-29.8	Peak
23140	32.88	0	100	H	35.2	10.23	34.74	43.57	74	-30.43	Peak
23140	18.23	0	100	V	35.2	10.23	34.74	28.92	54	-25.08	Ave
23140	18.22	0	100	H	35.2	10.23	34.74	28.91	54	-25.09	Ave

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											
11650	41.77	283	100	V	39.203	7.78	27	61.753	74	-12.247	Peak
11650	47.28	319	100	H	39.203	7.78	27	67.263	74	-6.737	Peak
11650	22.25	283	100	V	39.203	7.78	27	42.233	54	-11.767	Ave
11650	24.53	319	100	H	39.203	7.78	27	44.513	54	-9.487	Ave
17475	31.92	0	100	V	46.782	8.74	25.79	61.652	74	-12.348	Peak
17475	33	0	100	H	46.782	8.74	25.79	62.732	74	-11.268	Peak
17475	17.08	0	100	V	46.782	8.74	25.79	46.812	54	-7.188	Ave
17475	17.56	0	100	H	46.782	8.74	25.79	47.292	54	-6.708	Ave
23300	33	0	100	V	35.2	10.13	34.74	43.59	74	-30.41	Peak
23300	33	0	100	H	35.2	10.13	34.74	43.59	74	-30.41	Peak
23300	17.91	0	100	V	35.2	10.13	34.74	28.5	54	-25.5	Ave
23300	17.91	0	100	H	35.2	10.13	34.74	28.5	54	-25.5	Ave

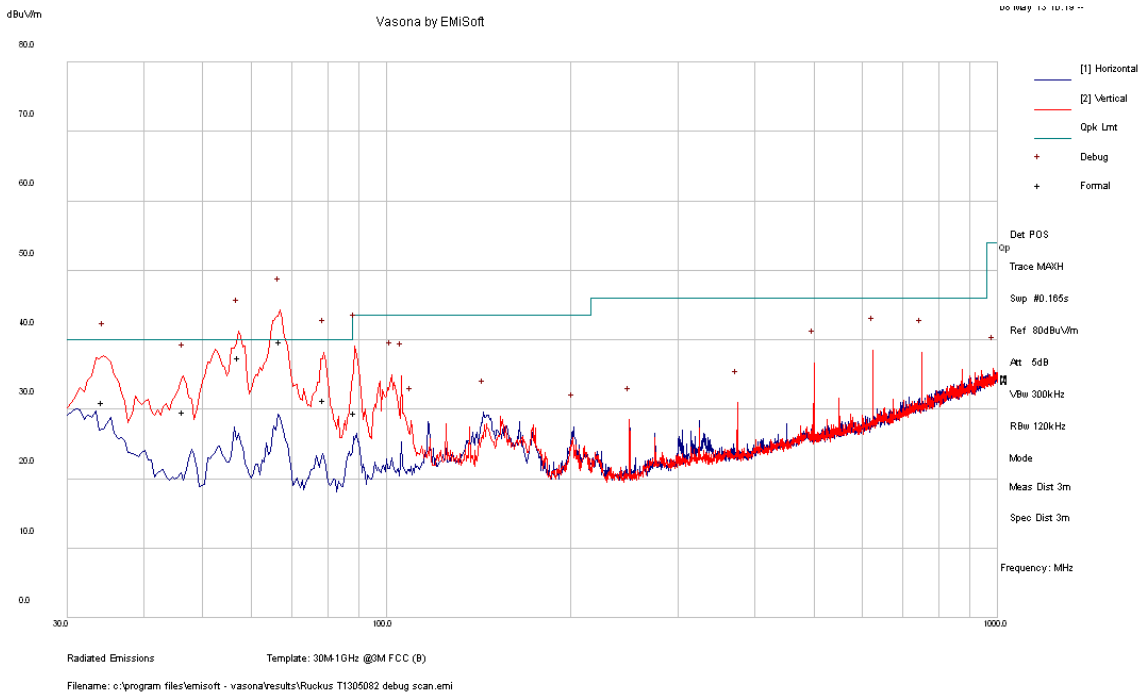
802.11n-HT40 mode

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)	
Low Channel 5755 MHz, measured at 3 meters											
11510	39.37	285	100	V	39.047	7.6	26.99	59.027	74	-14.973	Peak
11510	41.47	324	106	H	39.047	7.6	26.99	61.127	74	-12.873	Peak
11510	21.82	285	100	V	39.047	7.6	26.99	41.477	54	-12.523	Ave
11510	23.05	324	106	H	39.047	7.6	26.99	42.707	54	-11.293	Ave
17265	32.5	0	100	V	43.239	8.63	25.94	58.429	74	-15.571	Peak
17265	31.94	0	100	H	43.239	8.63	25.94	57.869	74	-16.131	Peak
17265	18.58	0	100	V	43.239	8.63	25.94	44.509	54	-9.491	Ave
17265	17.85	0	100	H	43.239	8.63	25.94	43.779	54	-10.221	Ave
23020	33.73	0	100	V	35.2	10.07	34.74	44.26	74	-29.74	Peak
23020	32.98	0	100	H	35.2	10.07	34.74	43.51	74	-30.49	Peak
23020	17.97	0	100	V	35.2	10.07	34.74	28.5	54	-25.5	Ave
23020	18	0	100	H	35.2	10.07	34.74	28.53	54	-25.47	Ave
High Channel 5795 MHz, measured at 3 meters											
11590	38.46	289	100	V	39.203	7.69	26.99	58.363	74	-15.637	Peak
11590	41.6	322	106	H	39.203	7.69	26.99	61.503	74	-12.497	Peak
11590	20.74	289	100	V	39.203	7.69	26.99	40.643	54	-13.357	Ave
11590	23.26	322	106	H	39.203	7.69	26.99	43.163	54	-10.837	Ave
17385	32.05	0	100	V	45.311	8.64	25.86	60.141	74	-13.859	Peak
17385	31.58	0	100	H	45.311	8.64	25.86	59.671	74	-14.329	Peak
17385	17.01	0	100	V	45.311	8.64	25.86	45.101	54	-8.899	Ave
17385	17.22	0	100	H	45.311	8.64	25.86	45.311	54	-8.689	Ave
23180	32.46	0	100	V	35.2	10.23	34.74	43.15	74	-30.85	Peak
23180	33.55	0	100	H	35.2	10.23	34.74	44.24	74	-29.76	Peak
23180	18.15	0	100	V	35.2	10.23	34.74	28.84	54	-25.16	Ave
23180	18.15	0	100	H	35.2	10.23	34.74	28.84	54	-25.16	Ave

4) Co-Location

With AC/DC Adaptor

a) 30-1000 MHz:



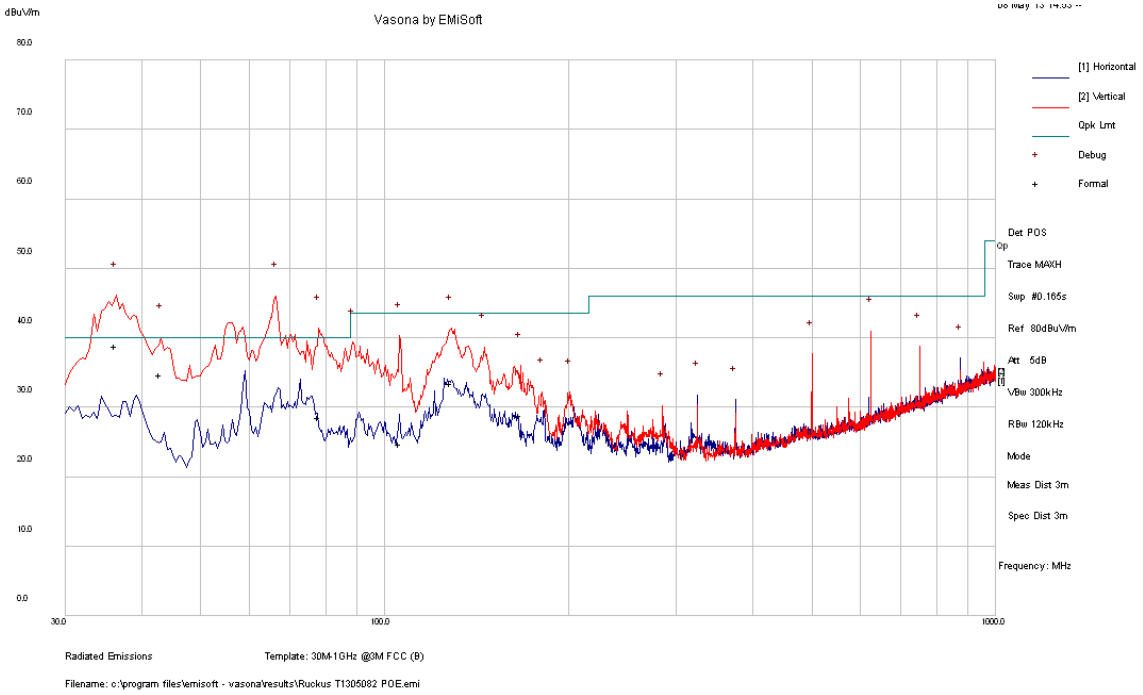
Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
624.998	37.28	170	V	81	46	-8.72
105.6835	34.69	123	V	197	43.5	-8.81
109.59575	20.11	164	V	13	43.5	-23.39
249.955	25.09	100	V	332	46	-20.91
984.14475	22.93	387	V	309	54	-31.07

b) 1 to 40 GHz:

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	42.9	116	112	V	32.7	4.56	27.70	52.471	74	-21.529	Peak
4824	46.71	144	156	H	32.7	4.56	27.70	56.281	74	-17.719	Peak
4824	29.5	116	112	V	32.7	4.56	27.70	39.071	54	-14.929	Ave
4824	32.87	144	156	H	32.7	4.56	27.70	42.441	54	-11.559	Ave
7236	37.04	274	146	V	36.2	5.49	27.6	51.196	74	-22.804	Peak
7236	40.47	271	151	H	36.2	5.49	27.6	54.626	74	-19.374	Peak
7236	28.68	274	146	V	36.2	5.49	27.6	42.836	54	-11.164	Ave
7236	33.76	271	151	H	36.2	5.49	27.6	47.916	54	-6.084	Ave
11487	40.45	131	141	V	39.4	7.59	26.94	60.508	74	-13.492	Peak
11487	46.82	117	140	H	39.4	7.59	26.94	66.878	74	-7.122	Peak
11487	23.62	131	141	V	39.4	7.59	26.94	43.678	54	-10.322	Ave
11487	28.32	117	140	H	39.4	7.59	26.94	48.378	54	-5.622	Ave

With POE

a) 30-1000 MHz:



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
78.0675	28.62	139	V	212	40	-11.38
36.3045	38.88	139	V	276	40	-1.12
42.979	34.77	171	V	46	40	-5.23
128.384	33.53	130	V	342	43.5	-9.97
105.89475	24.69	145	V	317	43.5	-18.81
166.817	28.88	117	V	180	43.5	-14.62
66.16975	28.94	294	V	202	40	-11.06

b) 1 to 40 GHz:

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	42.9	116	112	V	32.7	4.56	27.70	52.471	74	-21.529	Peak
4824	46.71	144	156	H	32.7	4.56	27.70	56.281	74	-17.719	Peak
4824	29.5	116	112	V	32.7	4.56	27.70	39.071	54	-14.929	Ave
4824	32.87	144	156	H	32.7	4.56	27.70	42.441	54	-11.559	Ave
7236	37.04	274	146	V	36.2	5.49	27.6	51.196	74	-22.804	Peak
7236	40.47	271	151	H	36.2	5.49	27.6	54.626	74	-19.374	Peak
7236	28.68	274	146	V	36.2	5.49	27.6	42.836	54	-11.164	Ave
7236	33.76	271	151	H	36.2	5.49	27.6	47.916	54	-6.084	Ave
11487	40.45	131	141	V	39.4	7.59	26.94	60.508	74	-13.492	Peak
11487	46.82	117	140	H	39.4	7.59	26.94	66.878	74	-7.122	Peak
11487	23.62	131	141	V	39.4	7.59	26.94	43.678	54	-10.322	Ave
11487	28.32	117	140	H	39.4	7.59	26.94	48.378	54	-5.622	Ave

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

The measurements are base on FCC KDB 558074 D01 DTS Meas Guidance v03r01: Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 8: DTS bandwidth

9.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4446A	US44300386	2012-09-29	1 year

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed per the A2LA requirements, traceable to the NIST.*

9.4 Test Environmental Conditions

Temperature:	22-24 °C
Relative Humidity:	42-45 %
ATM Pressure:	101-102 kPa

The testing was performed by Jeffery Wu from 2013-5-29 and 2013-6-06 at RF site.

9.5 Test Results and Plots

2.4 GHz Band:

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz) J0	6 dB Emission Bandwidth (MHz) J1	99% Emission Bandwidth (MHz) J0	99% Emission Bandwidth (MHz) J1	Limit (MHz)	Results
802.11b mode							
Low	2412	9.712	10.427	13.637	13.5902	> 0.5	Compliant
Middle	2437	10.490	10.474	13.7106	13.7081	> 0.5	Compliant
High	2462	10.569	10.644	13.9516	13.9563	> 0.5	Compliant
802.11g mode							
Low	2412	16.495	16.545	16.4491	16.496	> 0.5	Compliant
Middle	2437	16.618	16.559	16.5552	16.4779	> 0.5	Compliant
High	2462	16.563	16.536	16.6908	16.5370	> 0.5	Compliant
802.11n-HT20 mode							
Low	2412	17.741	17.808	17.6182	17.6895	> 0.5	Compliant
Middle	2437	17.826	17.831	17.7452	17.7103	> 0.5	Compliant
High	2462	17.791	17.814	17.9024	17.7350	> 0.5	Compliant
802.11n-HT40 mode							
Low	2422	36.560	36.589	36.2176	36.1871	> 0.5	Compliant
Middle	2437	36.242	36.559	36.0480	36.1601	> 0.5	Compliant
High	2452	36.195	36.446	36.1160	36.1666	> 0.5	Compliant

5.8 GHz Band:

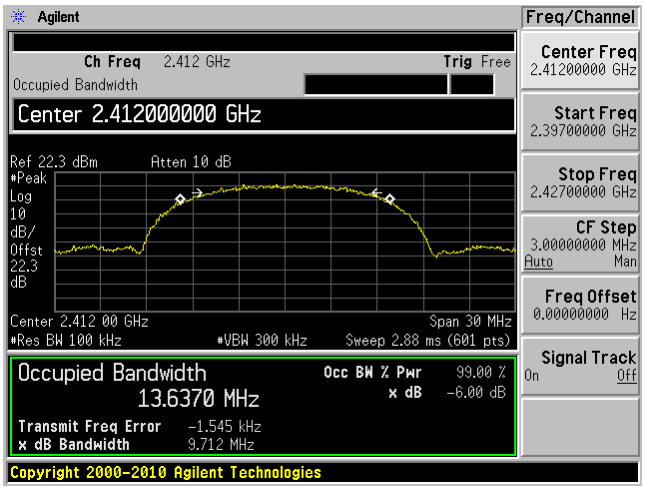
Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz) J0	6 dB Emission Bandwidth (MHz) J1	99% Emission Bandwidth (MHz) J0	99% Emission Bandwidth (MHz) J1	Limit (MHz)	Results
802.11a mode							
Low	5745	16.582	16.491	16.4854	16.4354	> 0.5	Compliant
Middle	5785	16.554	16.482	16.5046	16.4225	> 0.5	Compliant
High	5825	16.537	16.482	16.4497	16.4228	> 0.5	Compliant
802.11n-HT20 mode							
Low	5745	17.748	17.767	17.643	17.6523	> 0.5	Compliant
Middle	5785	17.706	17.795	17.6196	17.6477	> 0.5	Compliant
High	5825	17.748	17.746	17.631	17.6503	> 0.5	Compliant
802.11n-HT40 mode							
Low	5755	36.581	36.533	36.1712	36.1536	> 0.5	Compliant
High	5795	36.527	36.534	36.1408	36.1578	> 0.5	Compliant

Please refer to the following plots for detailed test results

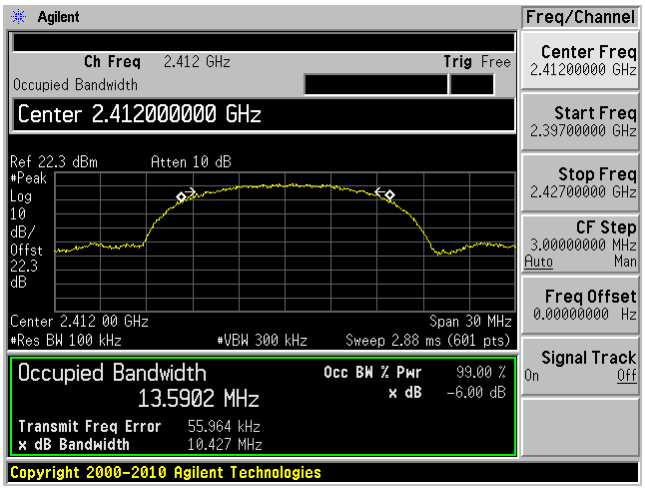
2.4 GHz Band

802.11 b mode

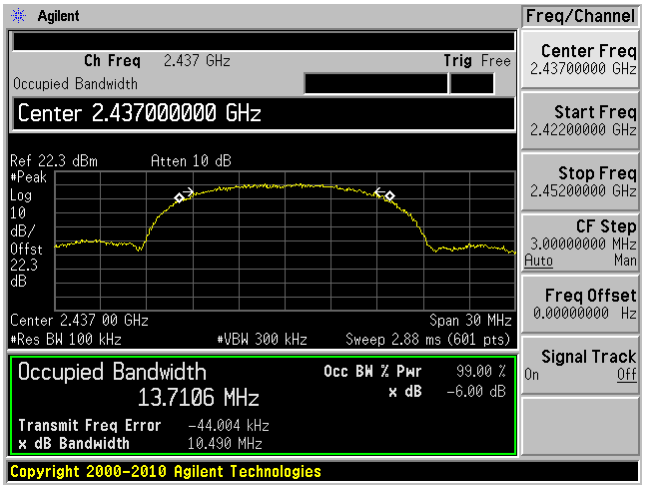
Low channel: 2412 MHz Chain J0



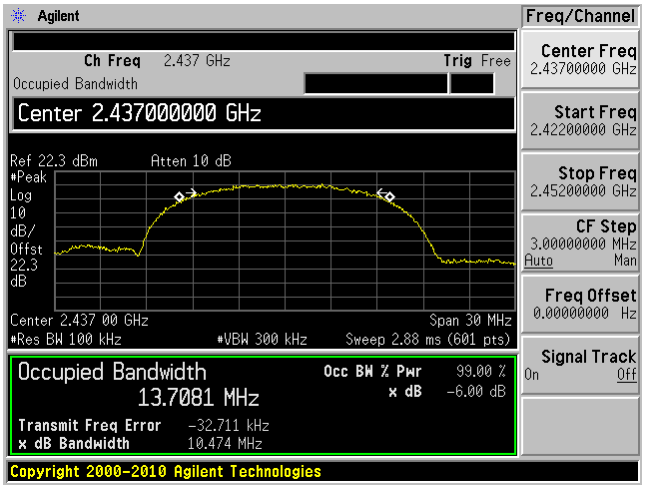
Low channel: 2412 MHz Chain J1



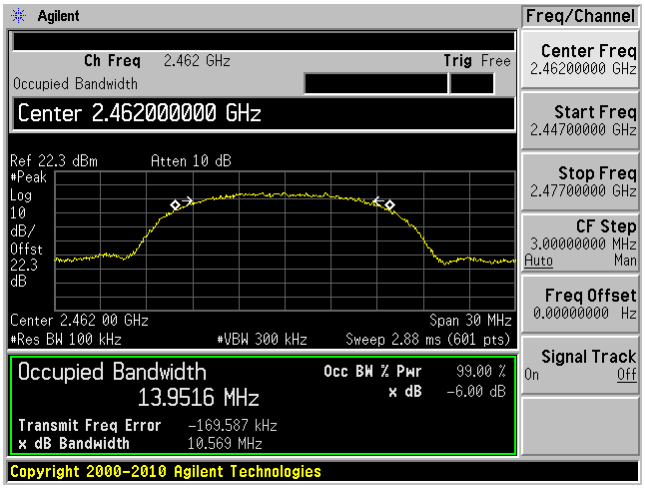
Middle channel: 2437 MHz Chain J0



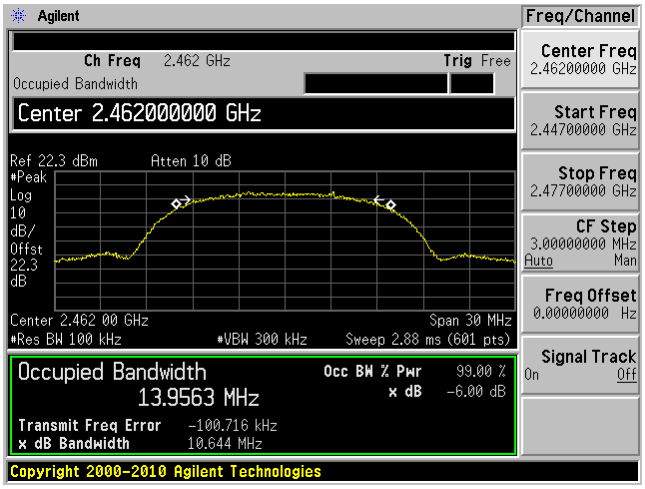
Middle channel: 2437 MHz Chain J1



High channel: 2462 MHz Chain J0

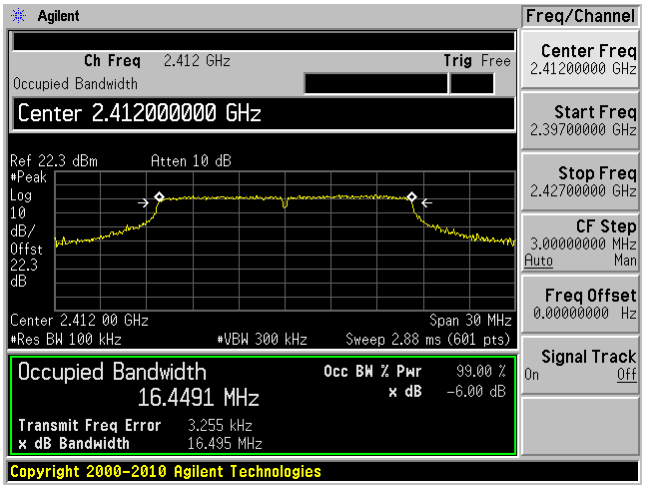


High channel: 2462 MHz Chain J1

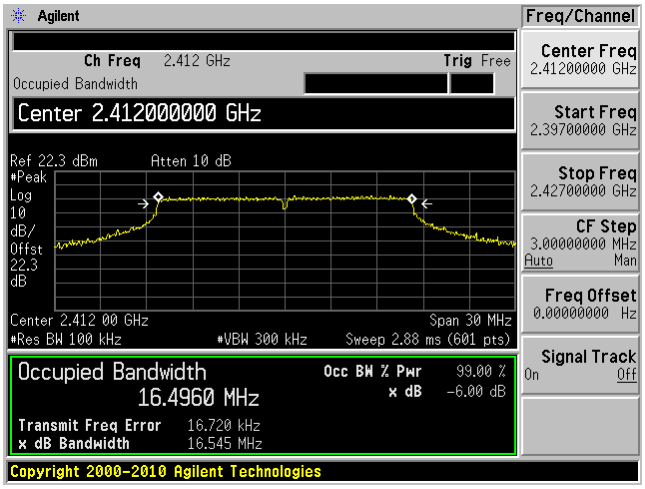


802.11 g mode

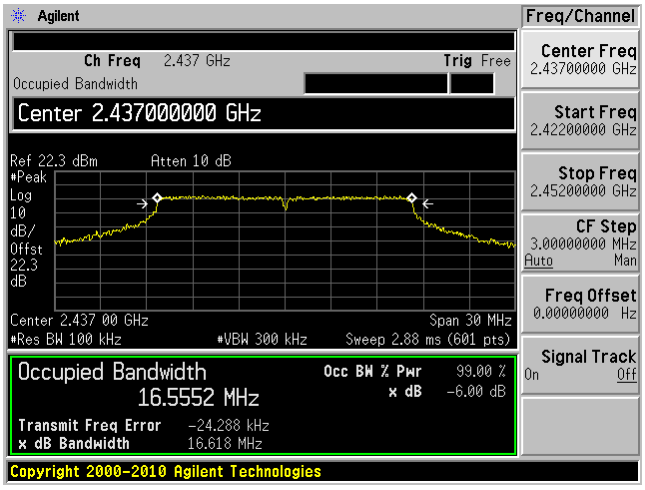
Low channel: 2412 MHz Chain J0



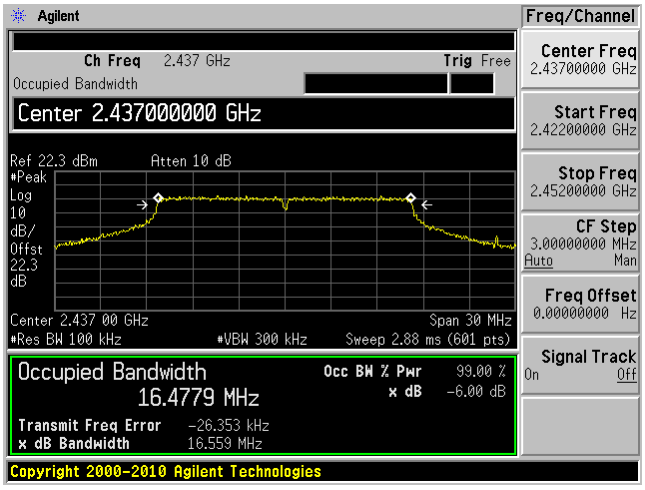
Low channel: 2412 MHz Chain J1



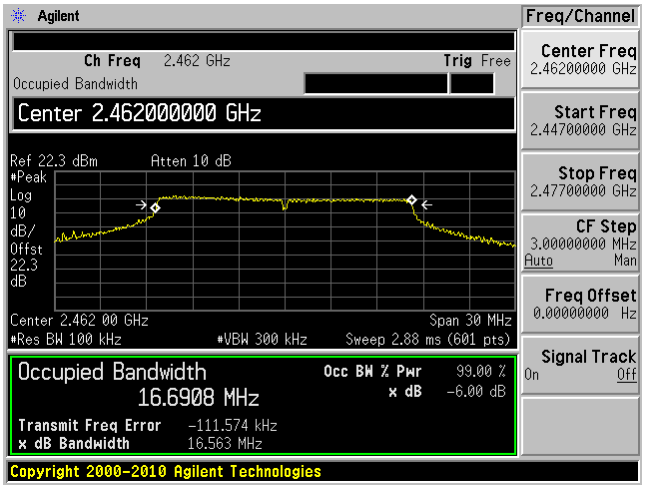
Middle channel: 2437 MHz Chain J0



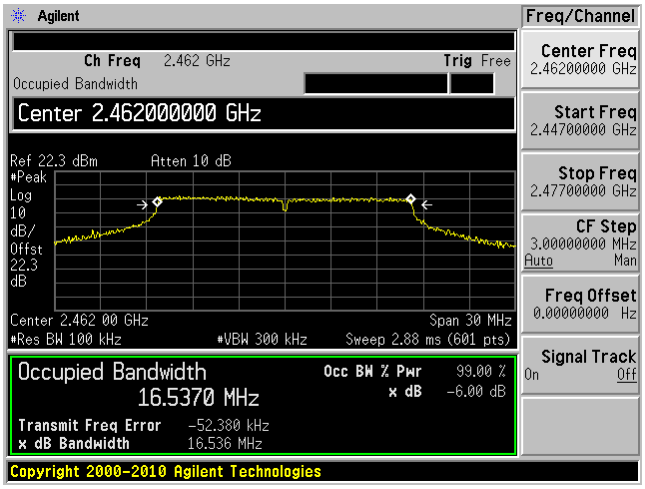
Middle channel: 2437 MHz Chain J1



High channel: 2462 MHz Chain J0

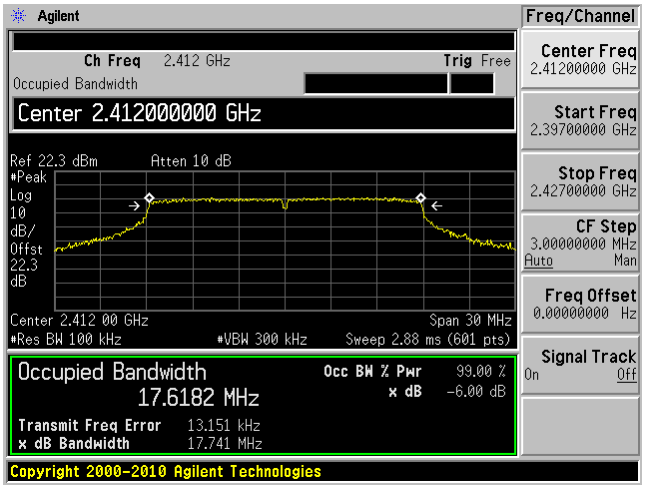


High channel: 2462 MHz Chain J1

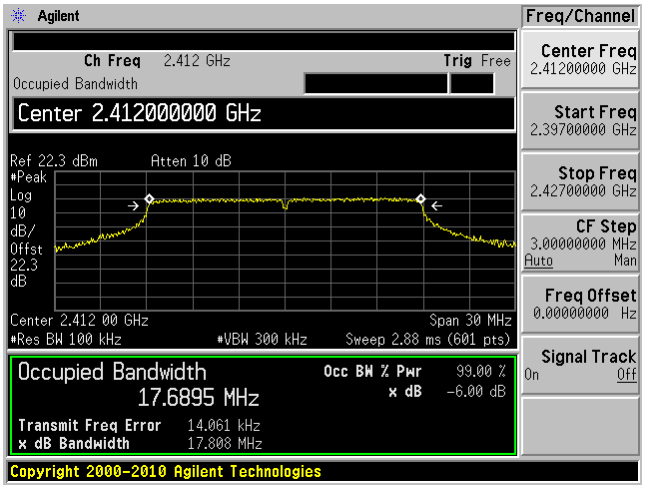


802.11n-HT20 mode

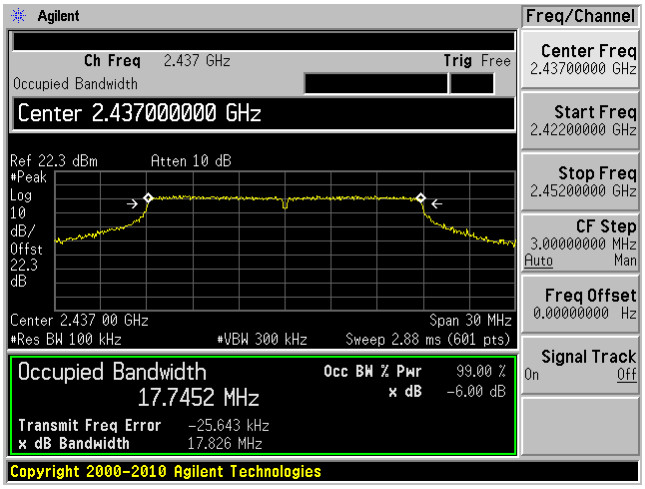
Low channel: 2412 MHz Chain J0



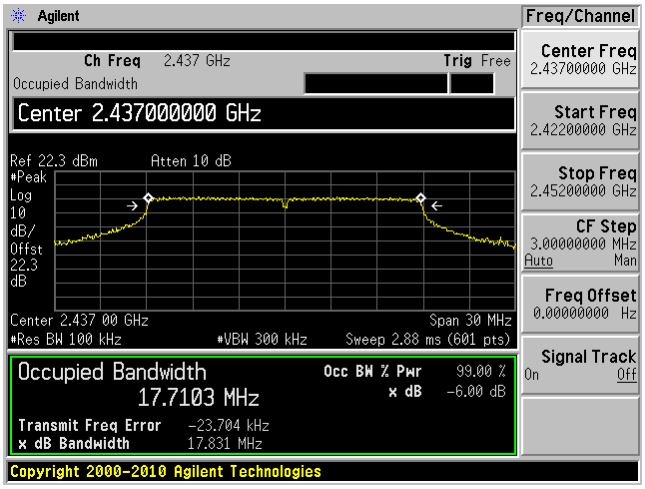
Low channel: 2412 MHz Chain J1



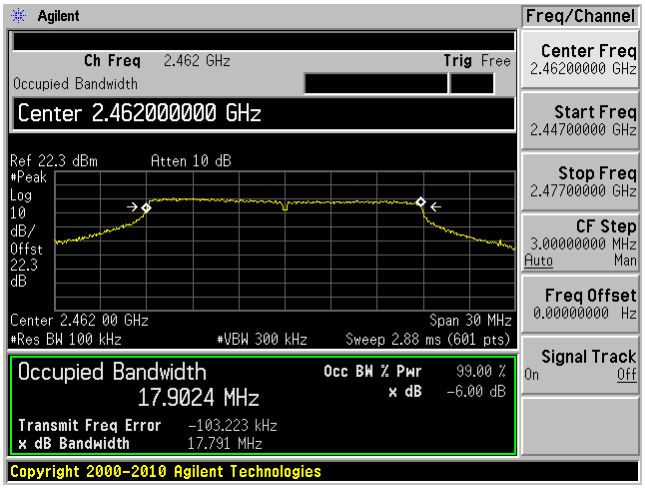
Middle channel: 2437 MHz Chain J0



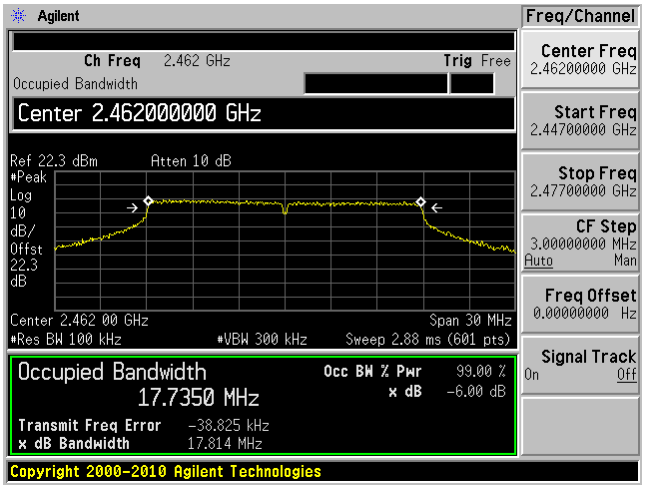
Middle channel: 2437 MHz Chain J1



High channel: 2462 MHz Chain J0

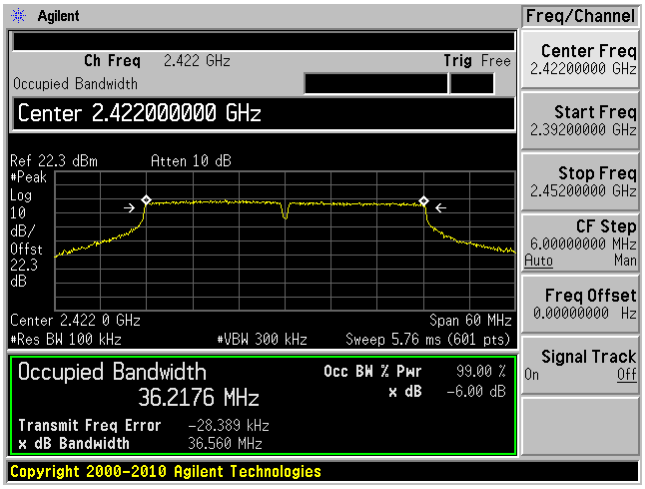


High channel: 2462 MHz Chain J1

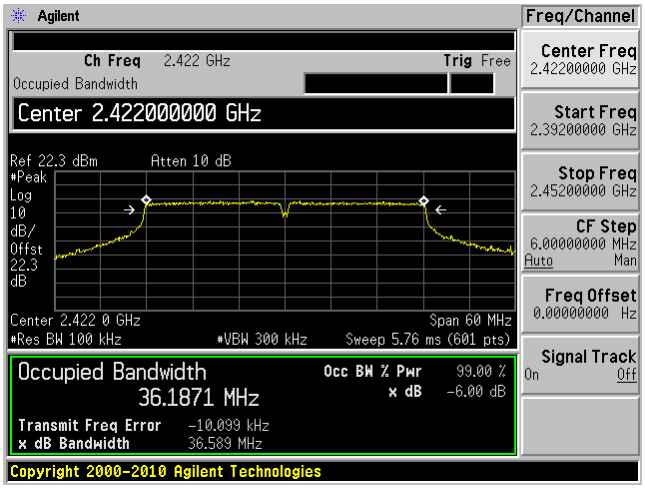


802.11n-HT40 mode

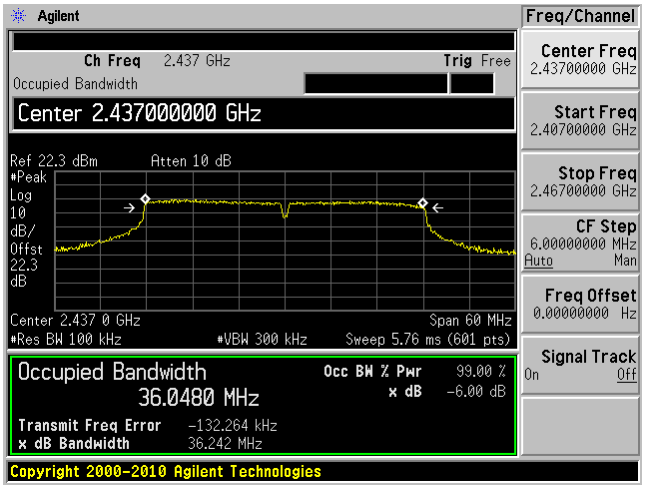
Low channel: 2422 MHz Chain J0



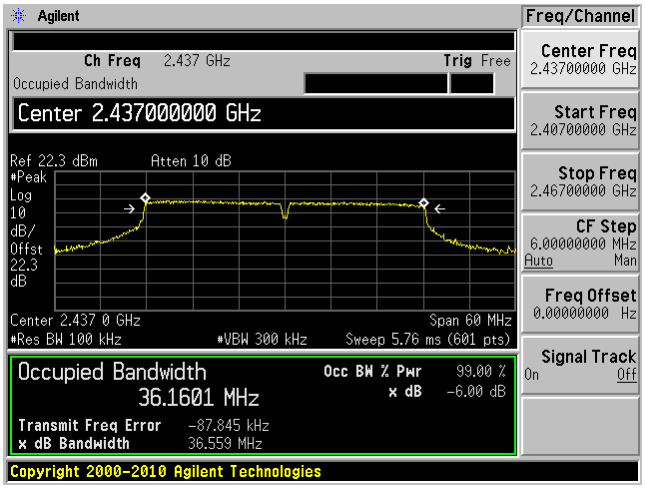
Low channel: 2422 MHz Chain J1



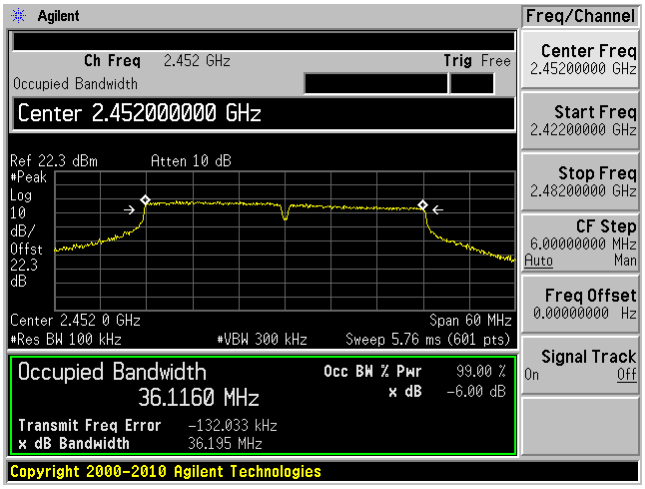
Middle channel: 2437 MHz Chain J0



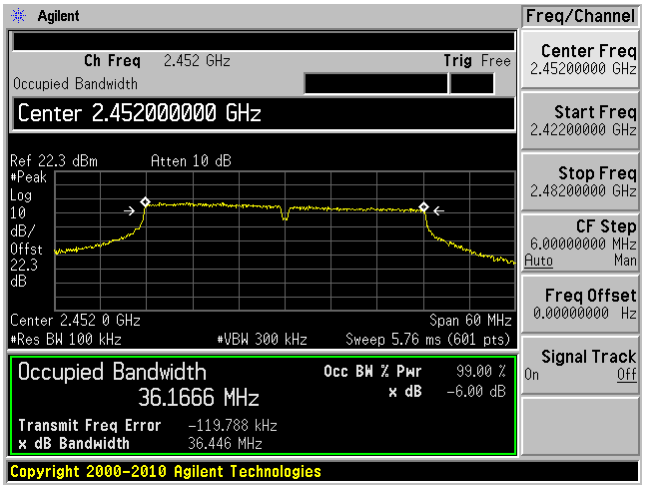
Middle channel: 2437 MHz Chain J1



High channel: 2452 MHz Chain J0



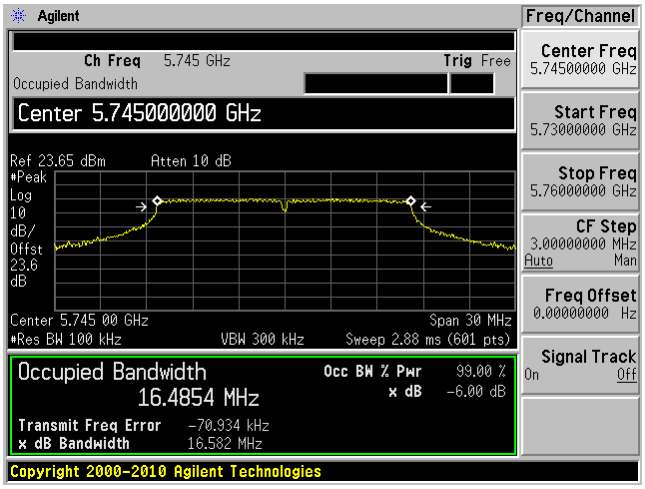
High channel: 2452 MHz Chain J1



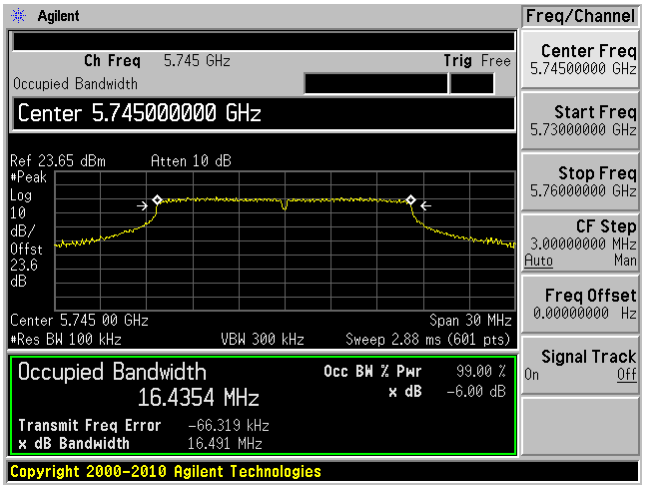
5.8 GHz Band

802.11a mode

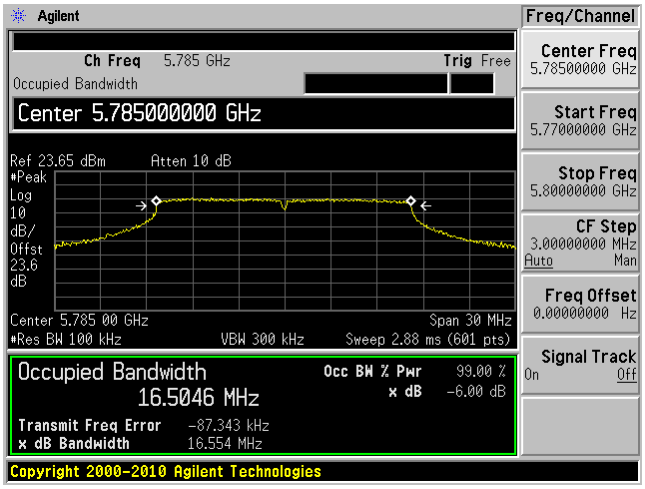
Low channel: 5745 MHz Chain J0



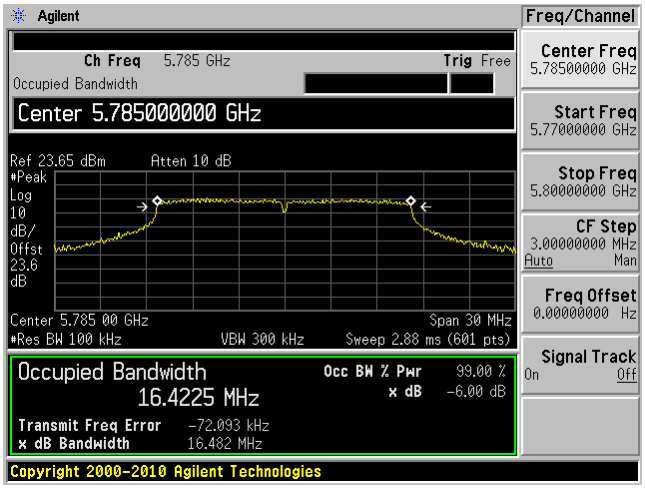
Low channel: 5745 MHz Chain J1



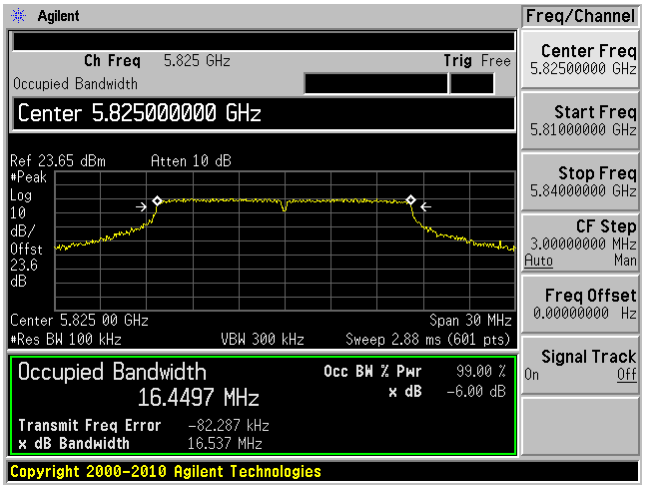
Middle channel: 5785 MHz Chain J0



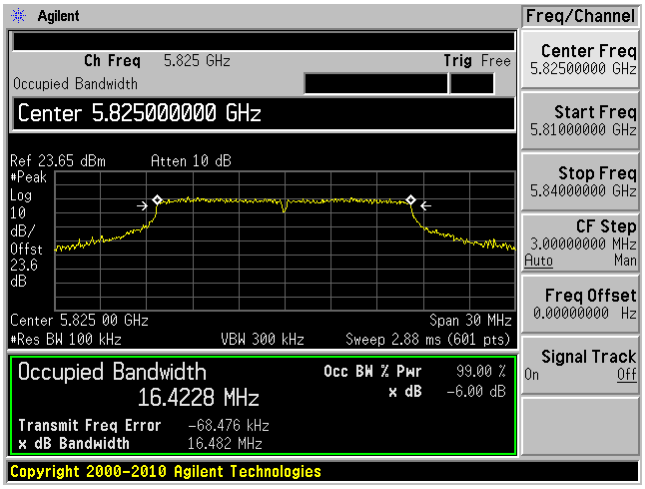
Middle channel: 5785 MHz Chain J1



High channel: 5825 MHz Chain J0

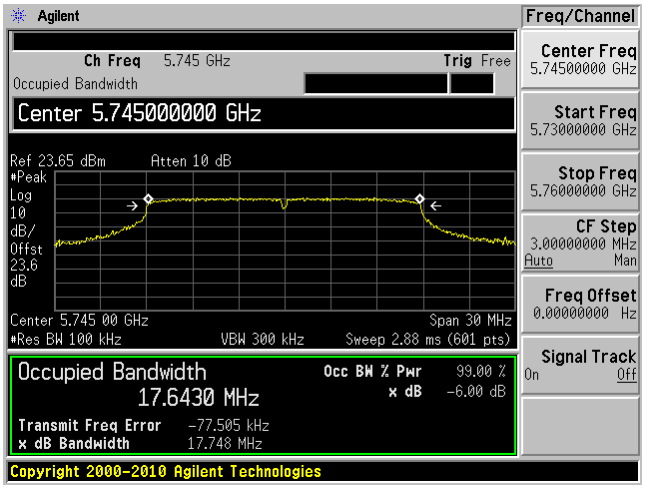


High channel: 5825 MHz Chain J1

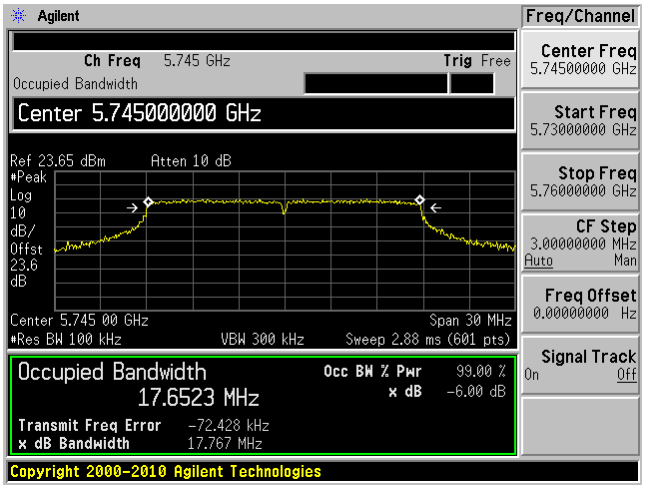


802.11n-HT20 mode

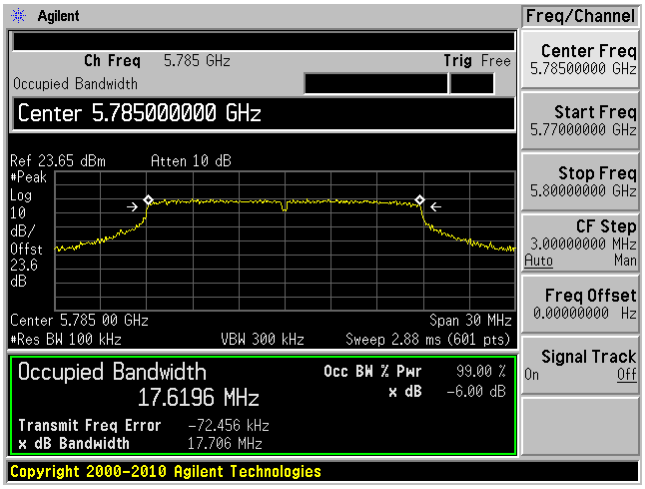
Low channel: 5745 MHz Chain J0



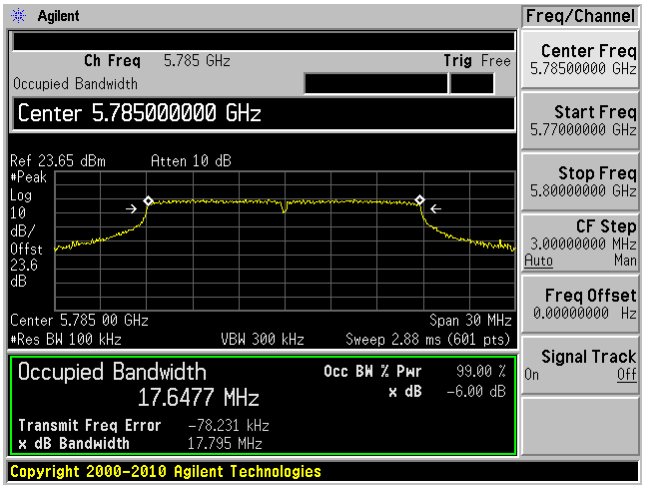
Low channel: 5745 MHz Chain J1



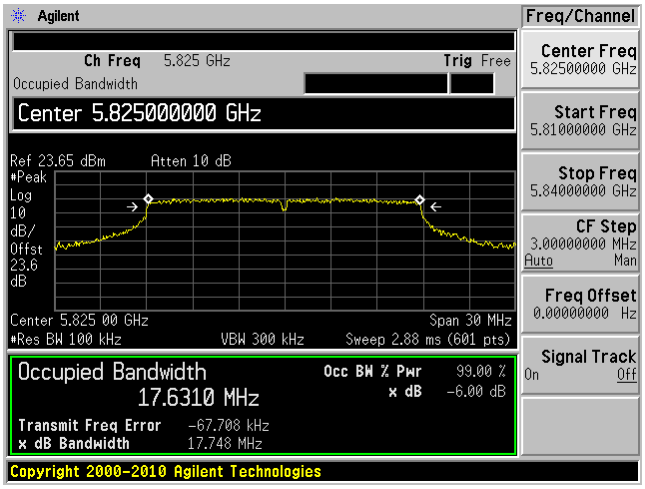
Middle channel: 5785 MHz Chain J0



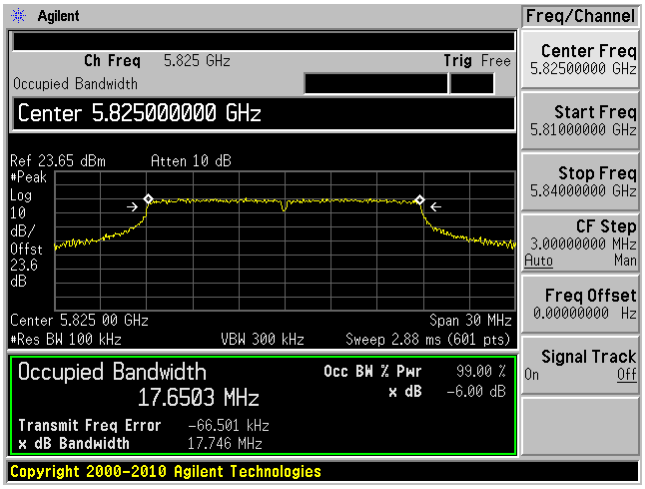
Middle channel: 5785 MHz Chain J1



High channel: 5825 MHz Chain J0

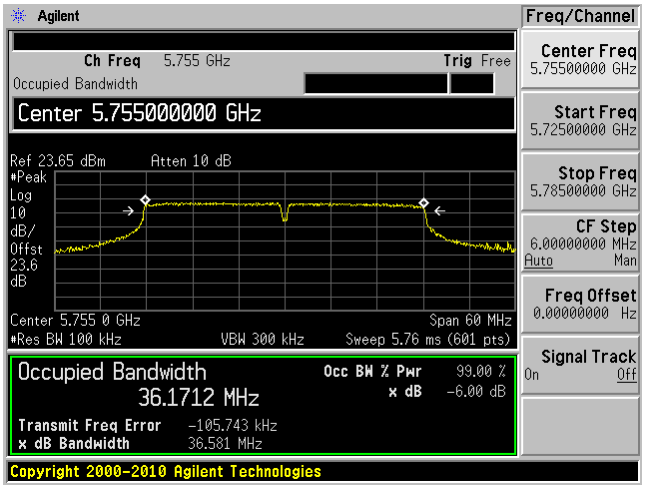


High channel: 5825 MHz Chain J1

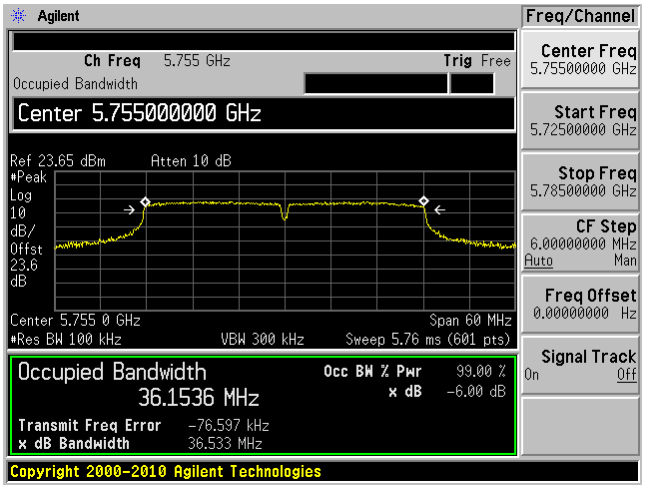


802.11n-HT40 mode

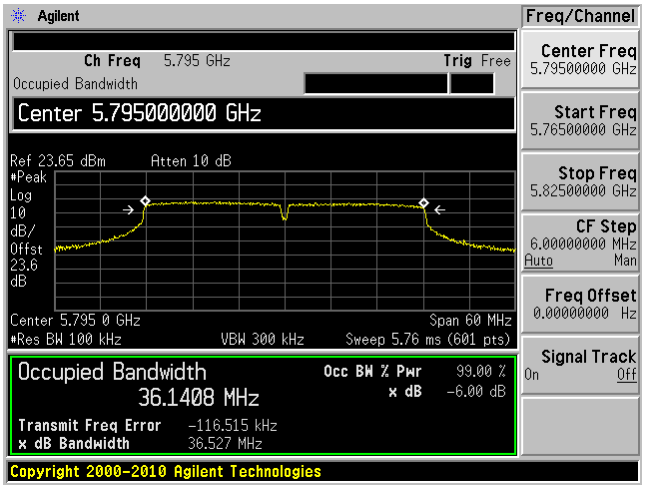
Low channel: 5755 MHz Chain J0



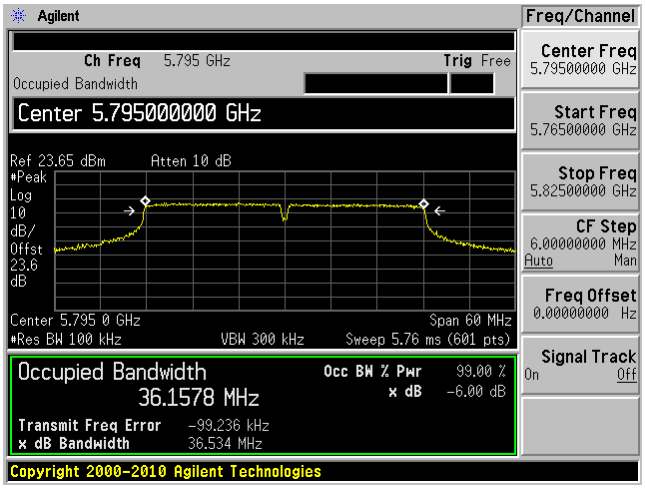
Low channel: 5755 MHz Chain J1



High channel: 5795 MHz Chain J0



High channel: 5795 MHz Chain J1



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

10.1 Applicable Standard

According to FCC §15.247(b) and IC RSS-210 §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

The measurements are base on FCC KDB 558074 D01 DTS Meas Guidance v03r01: Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 9: Fundamental emission output power

10.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4446A	US44300386	2012-09-29	1 year

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed per the A2LA requirements, traceable to the NIST.*

10.4 Test Environmental Conditions

Temperature:	22-24 °C
Relative Humidity:	42-45 %
ATM Pressure:	101-102 kPa

The testing was performed by Jeffery Wu from 2013-5-29 and 2013-6-06 at RF site.

10.5 Test Results

2.4 GHz Band:

Channel	Frequency (MHz)	Conducted Output Power (dBm)		Total Output Power (dBm)	Limit (dBm)	Margin (dB)	Power Setting
		Chain J0	Chain J1				
802.11b mode							
Low	2412	25.6	25.23	28.43	30	-1.57	26
Middle	2437	25.59	25.51	28.56	30	-1.44	26
High	2462	23.98	24.58	27.30	30	-2.70	26
802.11g mode							
Low	2412	26.91	26.79	29.86	30	-0.14	21.5
Middle	2437	26.74	26.74	29.75	30	-0.25	21.5
High	2462	23.5	23.73	26.63	30	-3.37	19.5
802.11n-HT20 mode							
Low	2412	26.8	26.03	29.44	30	-0.56	21.5
Middle	2437	26.92	26.1	29.54	30	-0.46	21.5
High	2462	23.69	23.32	26.52	30	-3.48	19.5
802.11n-HT40 mode							
Low	2422	25.56	25.77	28.68	30	-1.32	21
Middle	2437	26.62	25.99	29.33	30	-0.67	21
High	2452	24.45	23.7	27.10	30	-2.90	19.5

5.8 GHz Band:

Channel	Frequency (MHz)	Conducted Output Power (dBm)		Total Output Power (dBm)	Limit (dBm)	Margin (dB)	Power Setting
		Chain J0	Chain J1				
802.11a mode							
Low	5745	26.67	26.86	29.78	30	-0.22	20
Middle	5785	26.55	26.6	29.59	30	-0.41	20
High	5825	26.46	26.67	29.58	30	-0.42	20.5
802.11n-HT20 mode							
Low	5745	26.43	26.32	29.39	30	-0.61	20
Middle	5785	26.9	26.18	29.57	30	-0.43	20
High	5825	26.11	26.44	29.29	30	-0.71	21
802.11n-HT40 mode							
Low	5755	26.88	26.56	29.73	30	-0.27	21
High	5795	26.33	26.47	29.41	30	-0.59	21

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 Measurement Procedure

The measurements are base on FCC KDB 558074 D01 DTS Meas Guidance v03r01: Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 13: Band-edge measurements

11.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4446A	US44300386	2012-09-29	1 year

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed per the A2LA requirements, traceable to the NIST.*

11.4 Test Environmental Conditions

Temperature:	22-24 °C
Relative Humidity:	42-45 %
ATM Pressure:	101-102 kPa

The testing was performed by Jeffery Wu from 2013-5-29 and 2013-6-06 at RF site.

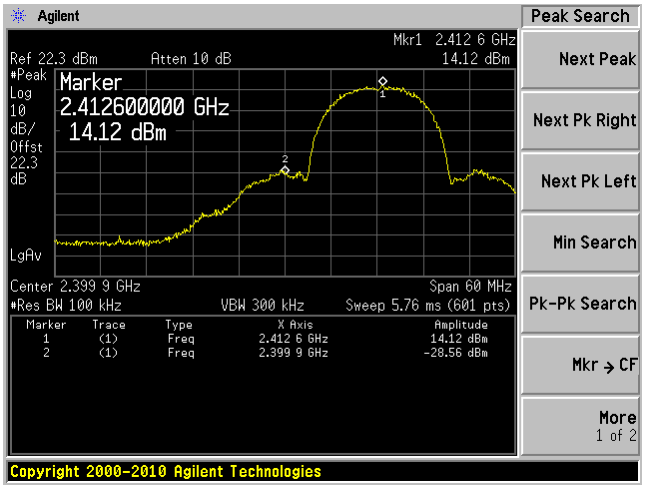
11.5 Test Results

Please refer to following pages for plots of band edge.

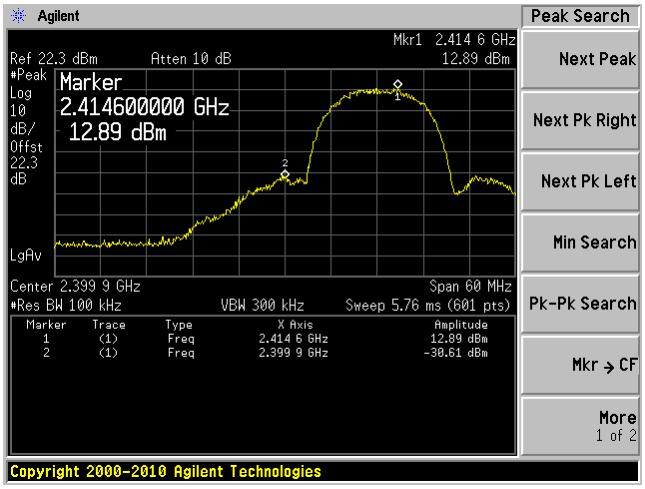
2.4 GHz Band

802.11b mode

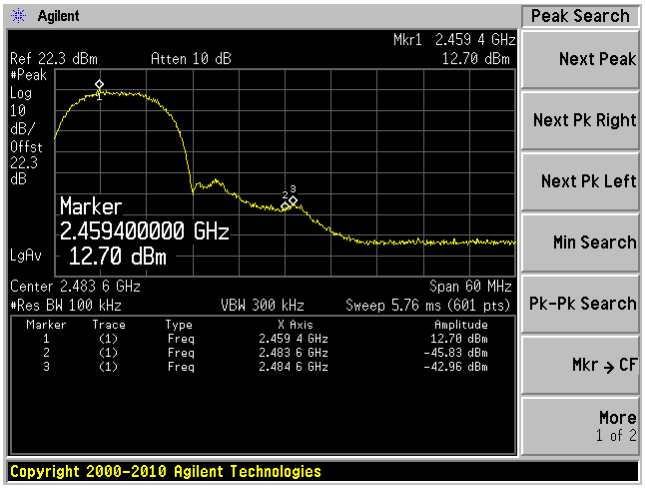
802.11b, Chain J0 Low Band Edge



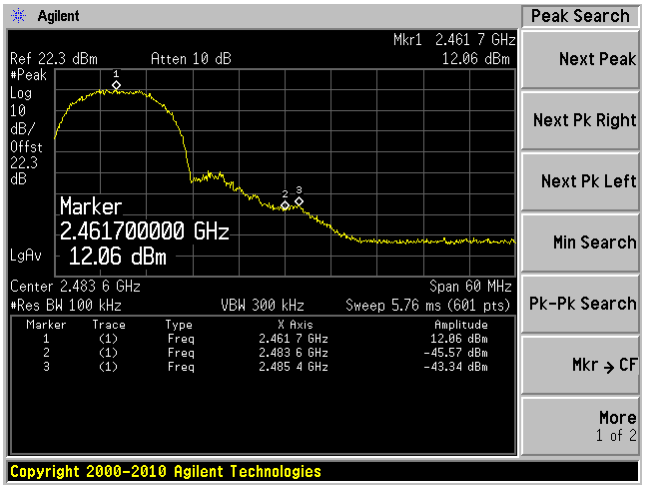
802.11b, Chain J1 Low Band Edge



802.11b, Chain J0 High Band Edge

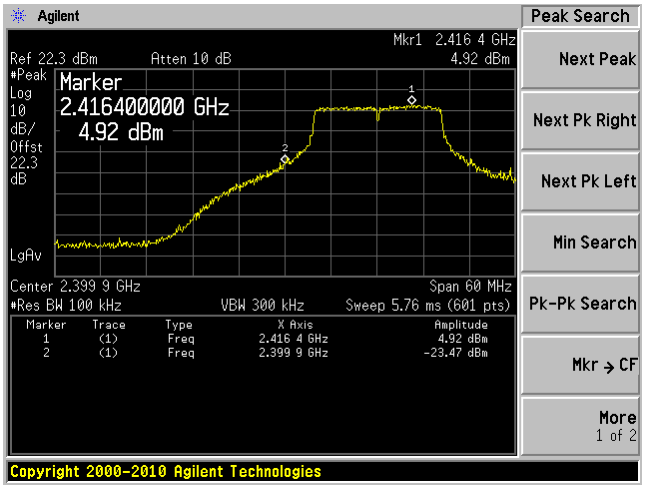


802.11b, Chain J1 High Band Edge

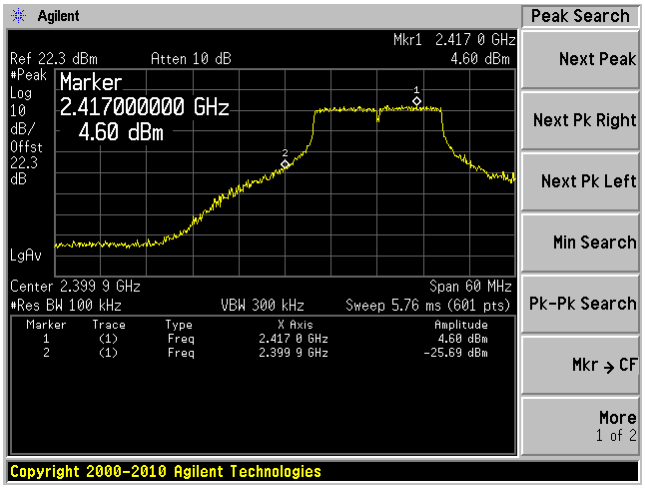


802.11g mode

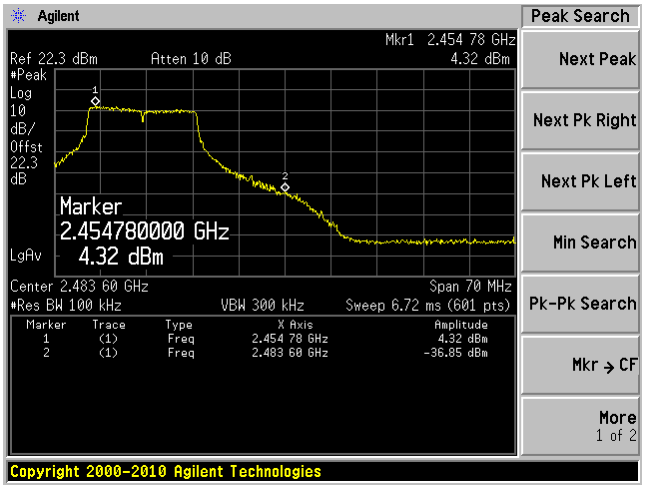
802.11g, Chain J0 Low Band Edge



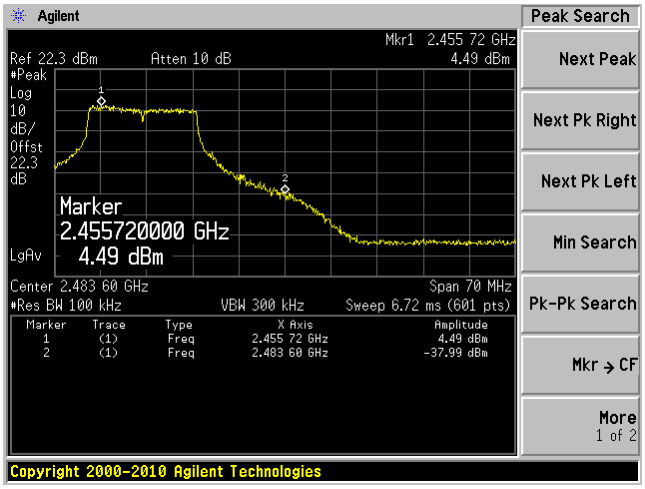
802.11g, Chain J1 Low Band Edge



802.11g, Chain J0 High Band Edge

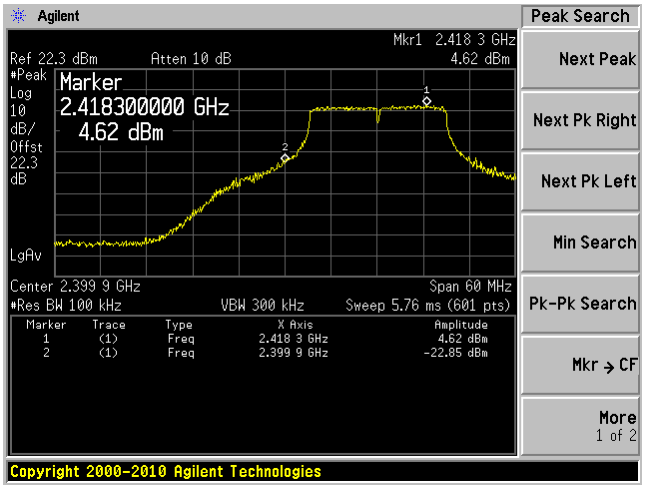


802.11g, Chain J1 High Band Edge

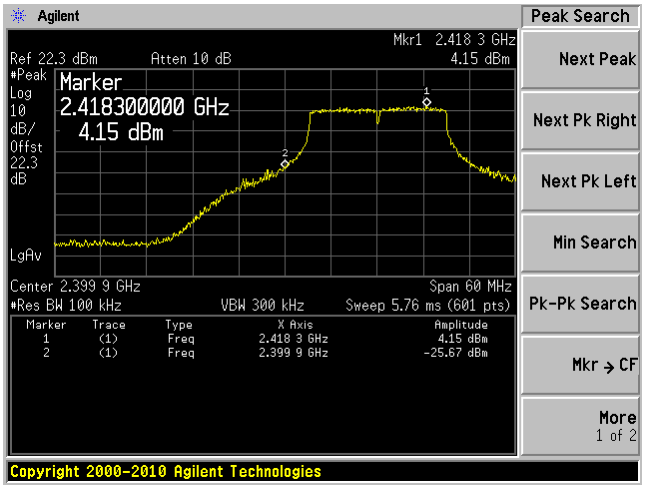


802.11n-HT20 mode

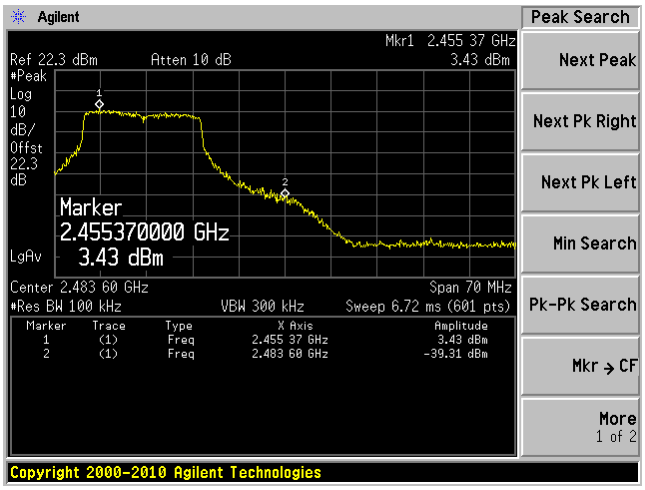
802.11n-HT20, Chain J0 Low Band Edge



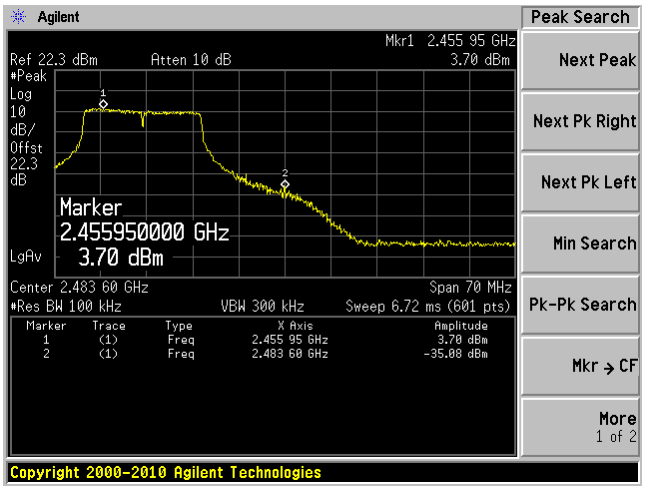
802.11n-HT20, Chain J1 Low Band Edge



802.11n-HT20, Chain J0 High Band Edge

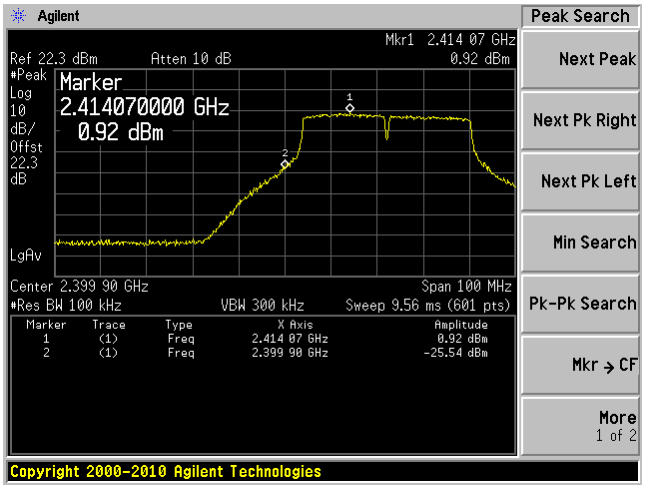


802.11n-HT20, Chain J1 High Band Edge

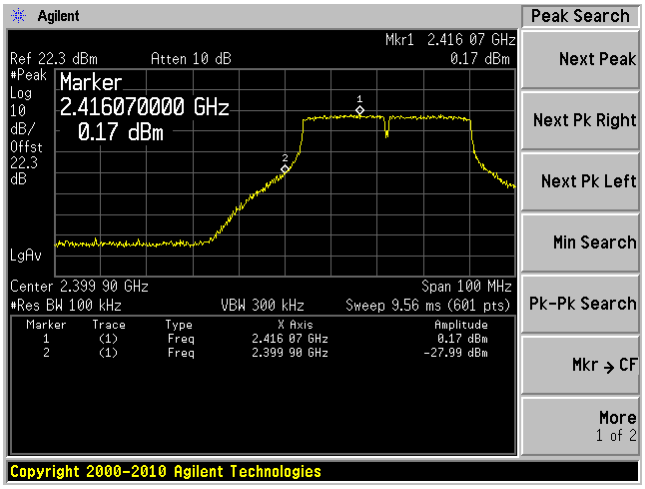


802.11n-HT40 mode

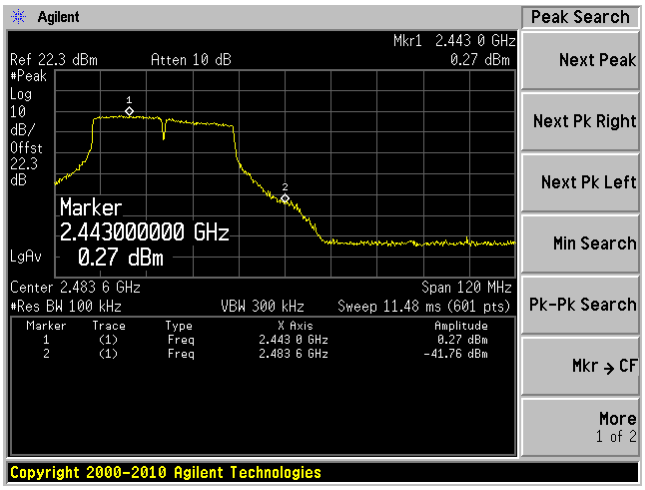
802.11n-HT40, Chain J0 Low Band Edge



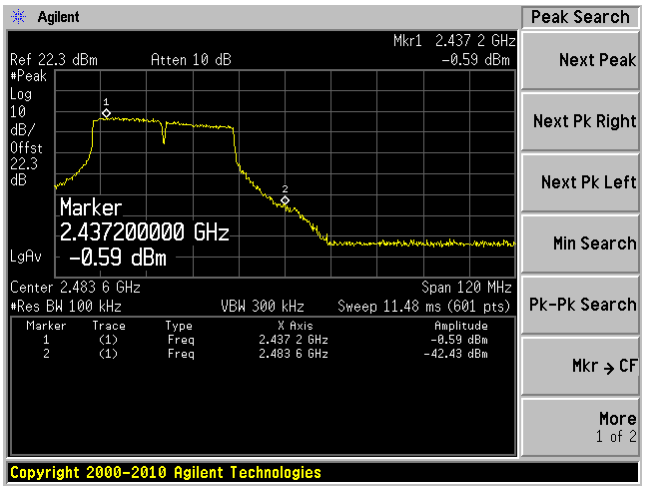
802.11n-HT40, Chain J1 Low Band Edge



802.11n-HT40, Chain J0 High Band Edge



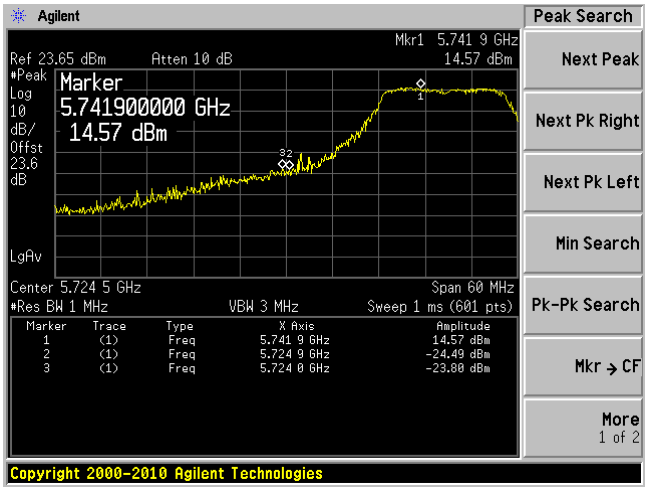
802.11n-HT40, Chain J1 High Band Edge



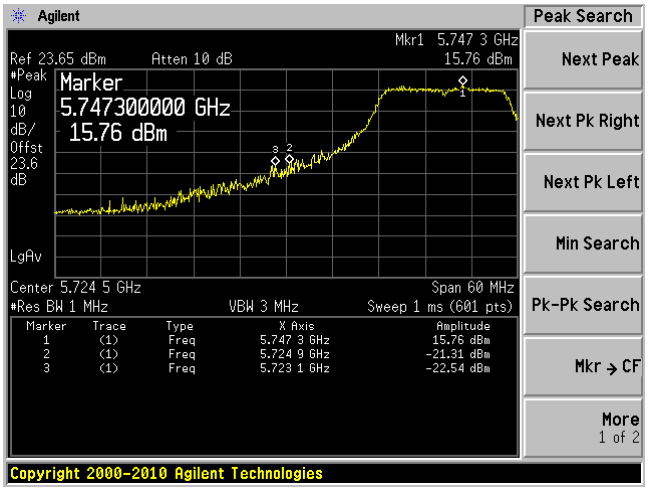
5.8 GHz Band

802.11a mode

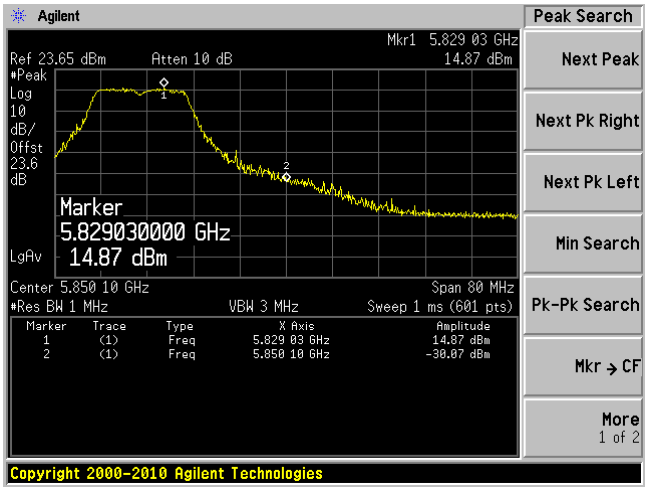
802.11a, Chain J0 Low Band Edge



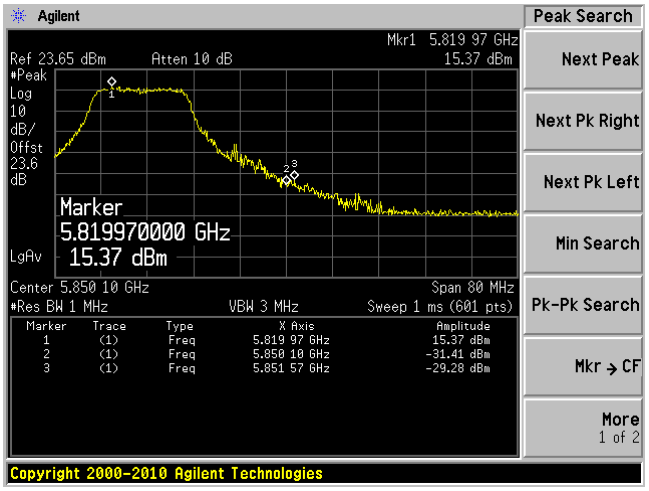
802.11a, Chain J1 Low Band Edge



802.11a, Chain J0 High Band Edge

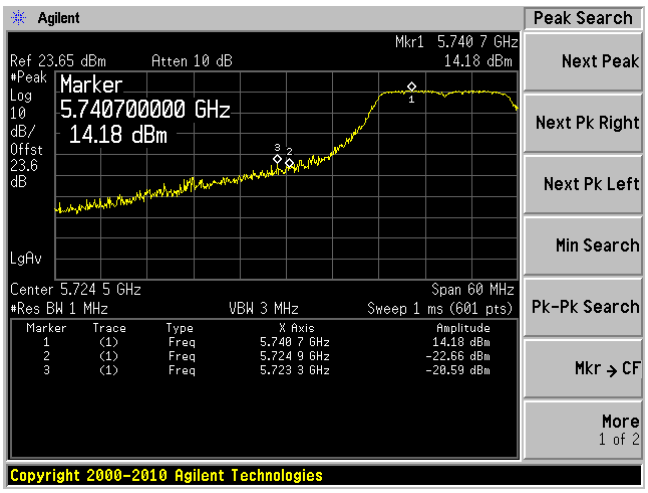


802.11a, Chain J1 High Band Edge

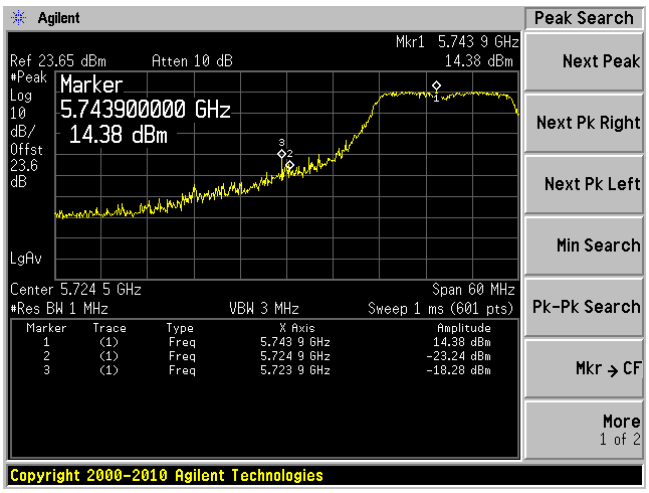


802.11n -T20 mode

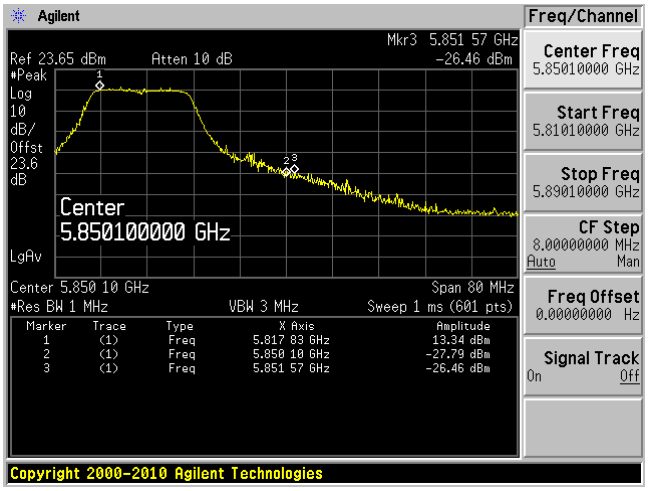
802.11n-HT20, Chain J0 Low Band Edge



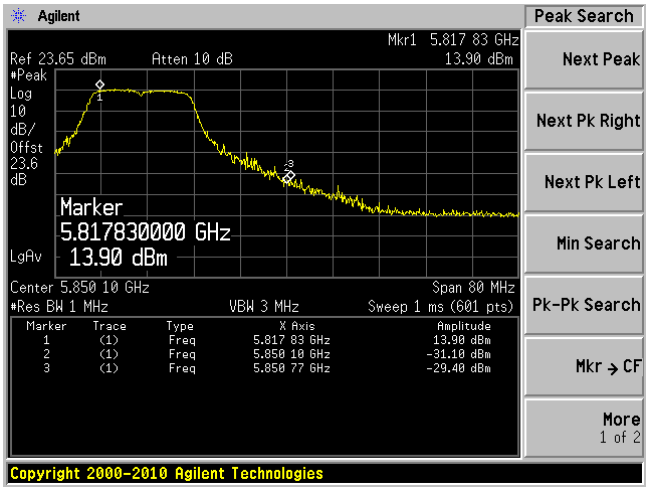
802.11n-HT20, Chain J1 Low Band Edge



802.11n-HT20, Chain J0 High Band Edge

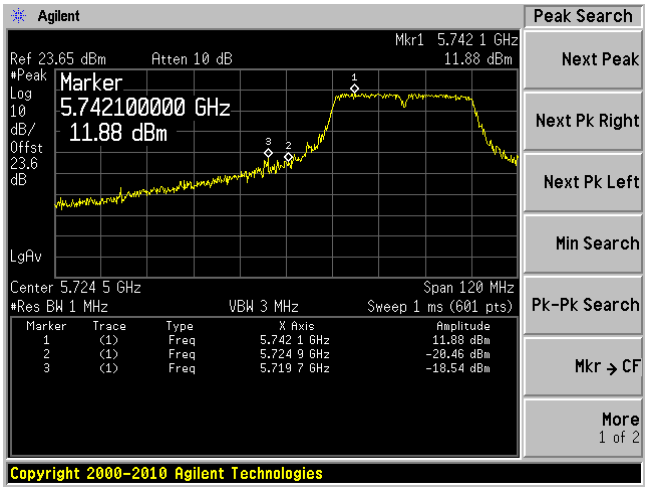


802.11n-HT20, Chain J1 High Band Edge

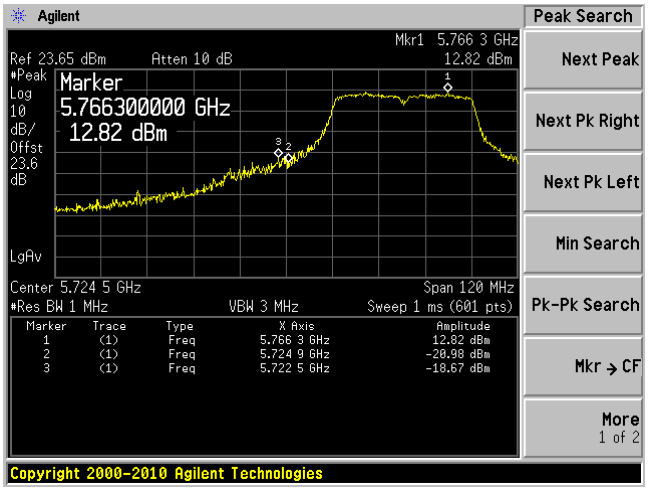


802.11n-HT40 mode

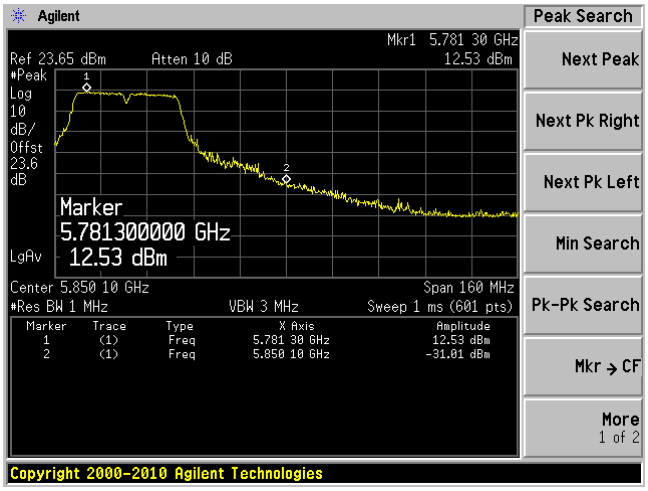
802.11n-HT40, Chain J0 Low Band Edge



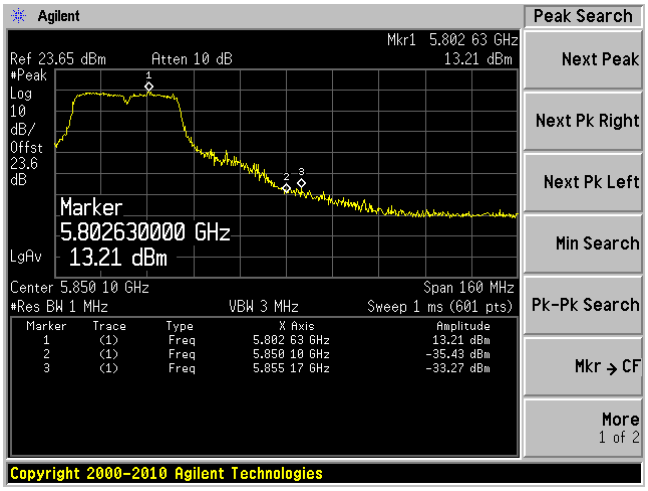
802.11n-HT40, Chain J1 Low Band Edge



802.11n-HT40, Chain J0 High Band Edge



802.11n-HT40, Chain J1 High Band Edge



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 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 Measurement Procedure

The measurements are base on FCC KDB 558074 D01 DTS Meas Guidance v03r01: Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 10: Maximum power spectral density level in the fundamental emission

12.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4446A	US44300386	2012-09-29	1 year

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed per the A2LA requirements, traceable to the NIST.*

12.4 Test Environmental Conditions

Temperature:	22-24 °C
Relative Humidity:	42-45 %
ATM Pressure:	101-102 kPa

The testing was performed by Jeffery Wu from 2013-5-29 and 2013-6-06 at RF site.

12.5 Test Results

2.4 GHz Band:

Channel	Frequency (MHz)	PSD (dBm)		Total PSD (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1			
802.11b mode						
Low	2412	-2.18	-0.25	1.90	8	-6.10
Middle	2437	0.16	-2.42	2.07	8	-5.93
High	2462	-2.8	-3.04	0.09	8	-7.91
802.11g mode						
Low	2412	-6.97	-7.26	-4.10	8	-12.10
Middle	2437	-6.16	-6.32	-3.23	8	-11.23
High	2462	-10.51	-10.29	-7.39	8	-15.39
802.11n-HT20 mode						
Low	2412	-6.55	-8	-4.20	8	-12.20
Middle	2437	-7.13	-7.64	-4.37	8	-12.37
High	2462	-10.1	-9.79	-6.93	8	-14.93
802.11n-HT40 mode						
Low	2422	-9.75	-11.67	-7.59	8	-15.59
Middle	2437	-9.51	-9.6	-6.54	8	-14.54
High	2452	-10	-11.66	-7.74	8	-15.74

5.8 GHz Band:

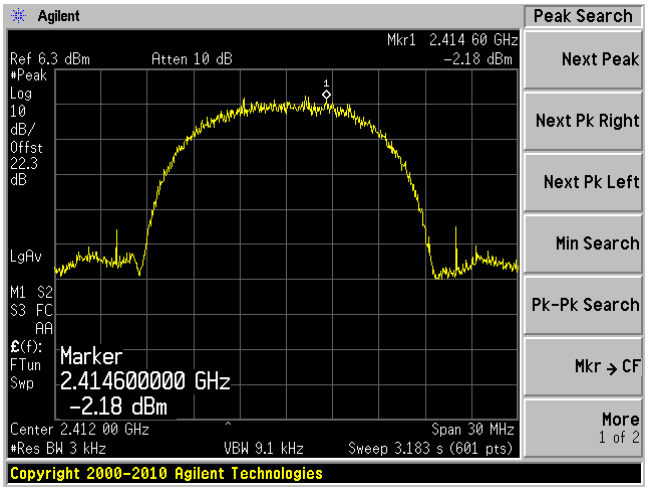
Channel	Frequency (MHz)	PSD (dBm)		Total PSD (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1			
802.11a mode						
Low	5745	-3.65	-6.05	-1.68	8	-9.68
Middle	5785	-7.74	-6.9	-4.29	8	-12.29
High	5825	-5.72	-7.7	-3.59	8	-11.59
802.11n-HT20 mode						
Low	5745	-7.67	-6.82	-4.21	8	-12.21
Middle	5785	-5.82	-5.75	-2.77	8	-10.77
High	5825	-8.48	-6.81	-4.55	8	-12.55
802.11n-HT40 mode						
Low	5755	-8.21	-8.42	-5.30	8	-13.30
High	5795	-10.06	-8.94	-6.45	8	-14.45

Please refer to the following plots for detailed test results:

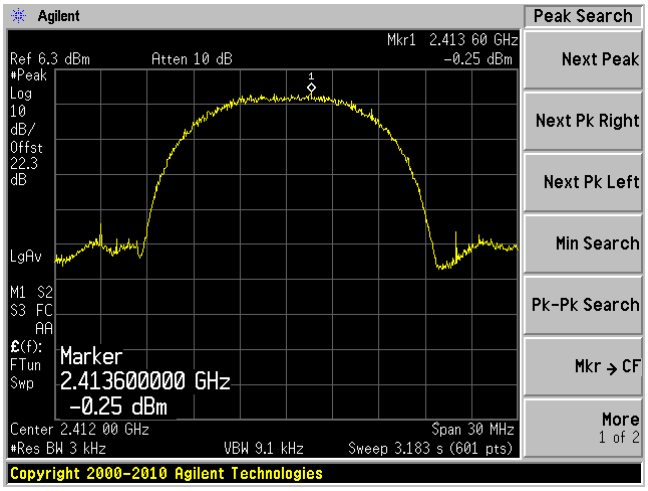
2.4 GHz Band

802.11b mode

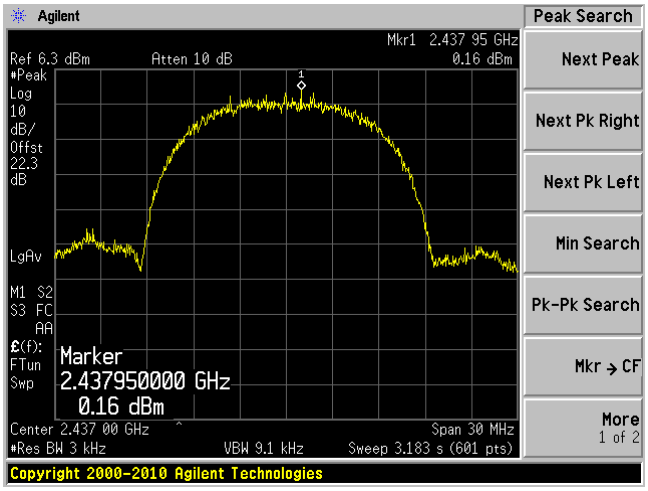
Low channel J0: 2412 MHz



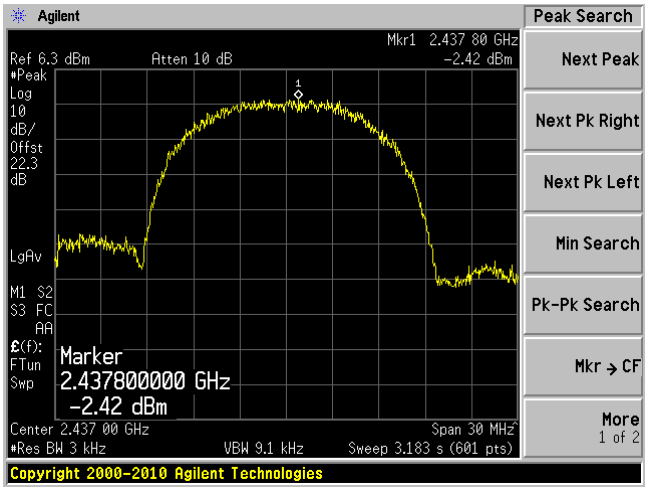
Low channel J1: 2412 MHz



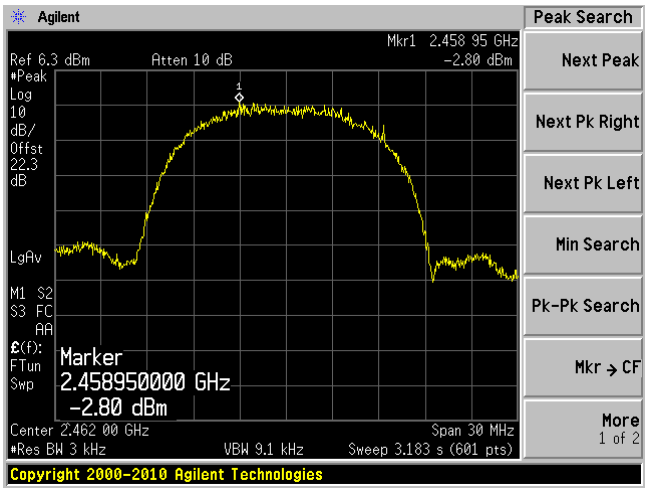
Middle channel J0: 2437 MHz



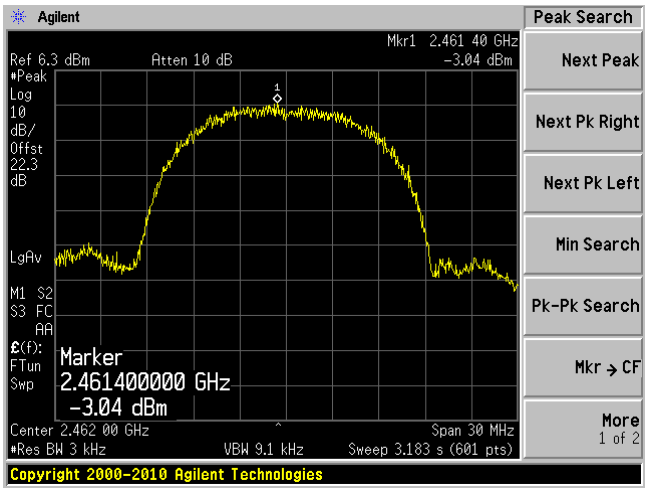
Middle channel J1: 2437 MHz



High channel J0: 2462 MHz

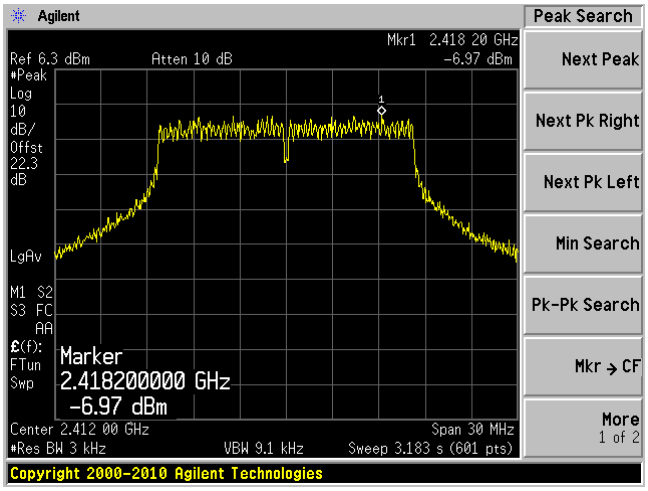


High channel J1: 2462 MHz

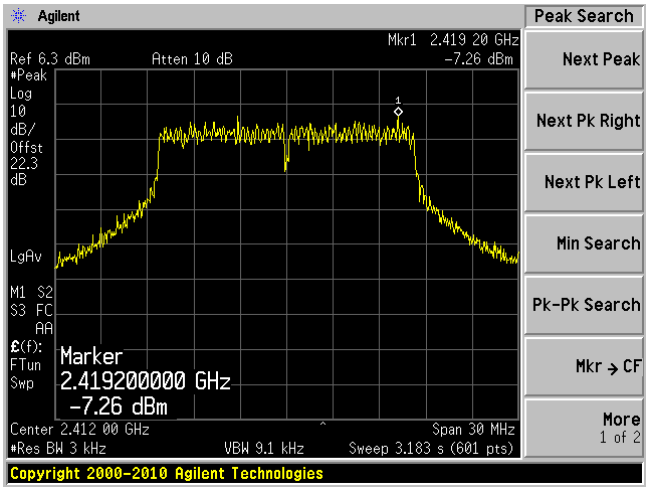


802.11g mode

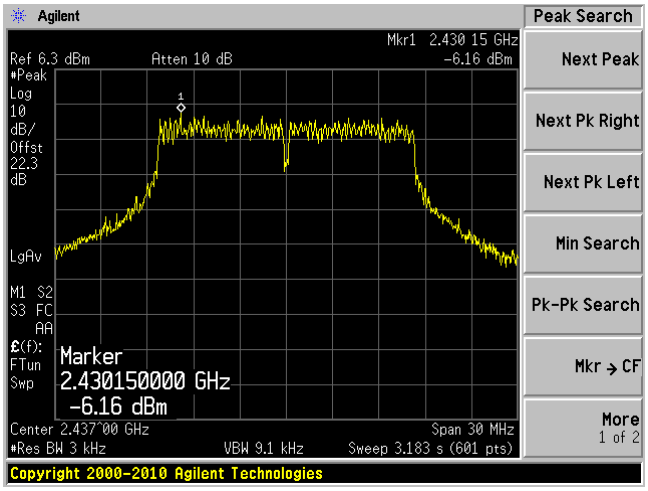
Low channel J0: 2412 MHz



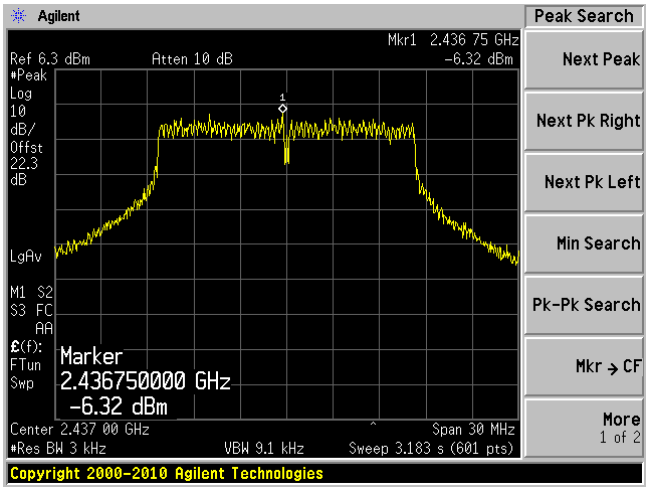
Low channel J1: 2412 MHz



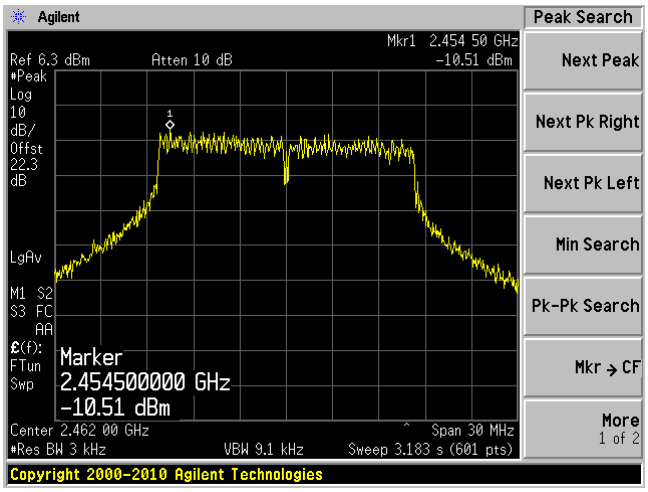
Middle channel J0: 2437 MHz



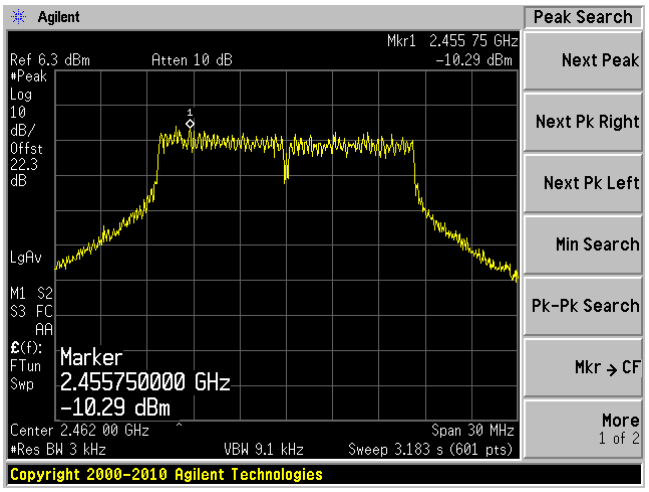
Middle channel J1: 2437 MHz



High channel J0: 2462 MHz

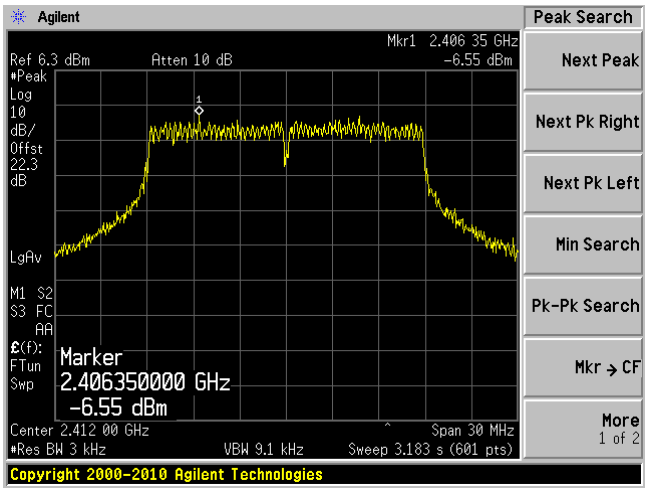


High channel J1: 2462 MHz

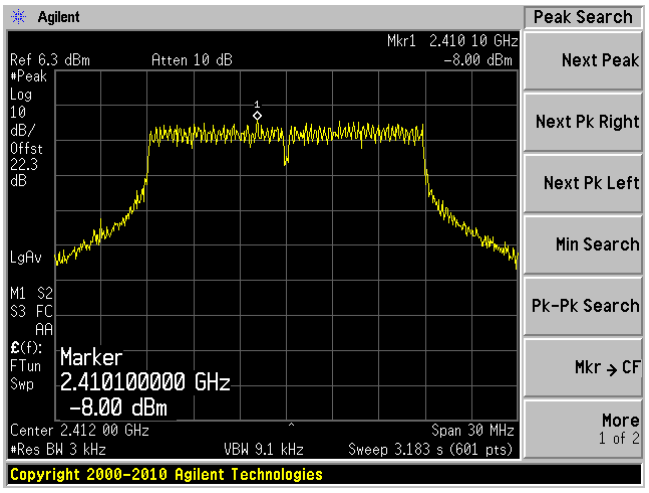


802.11n-HT20 mode

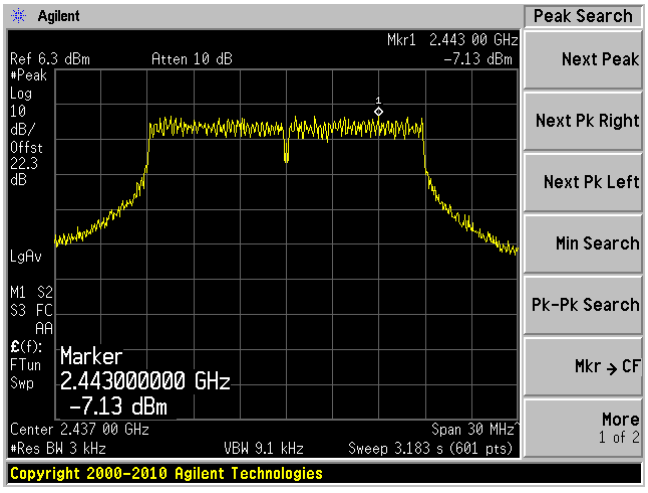
Low channel J0: 2412 MHz



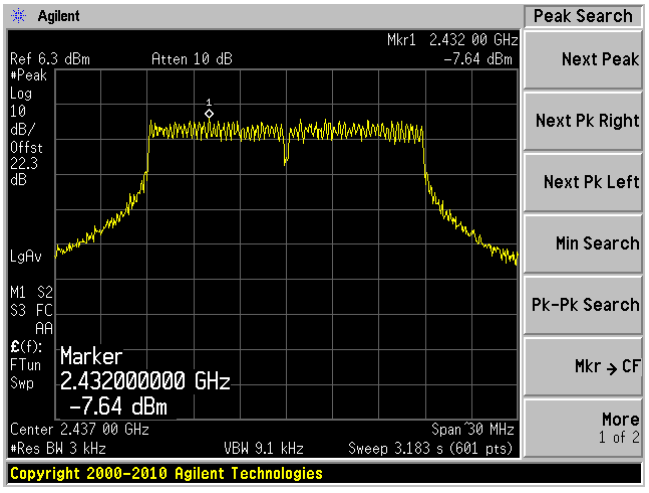
Low channel J1: 2412 MHz



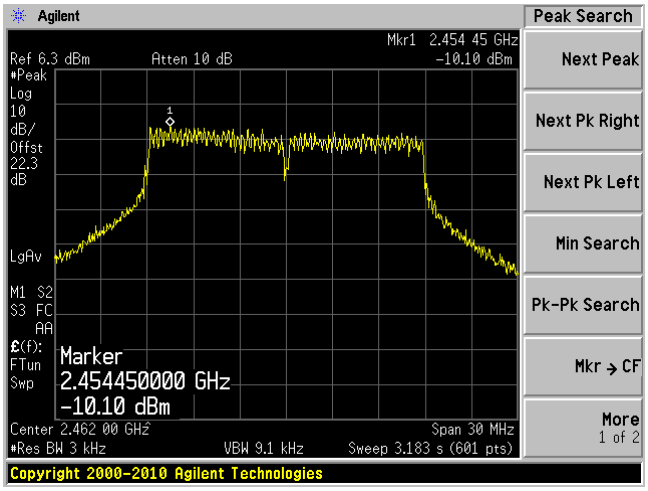
Middle channel J0: 2437 MHz



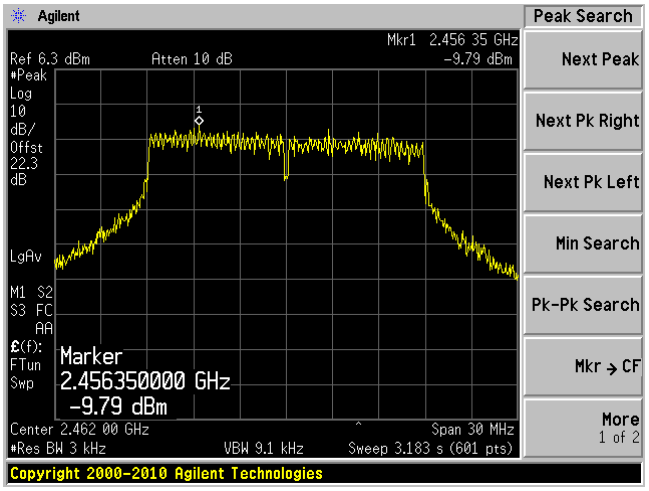
Middle channel J1: 2437 MHz



High channel J0: 2462 MHz

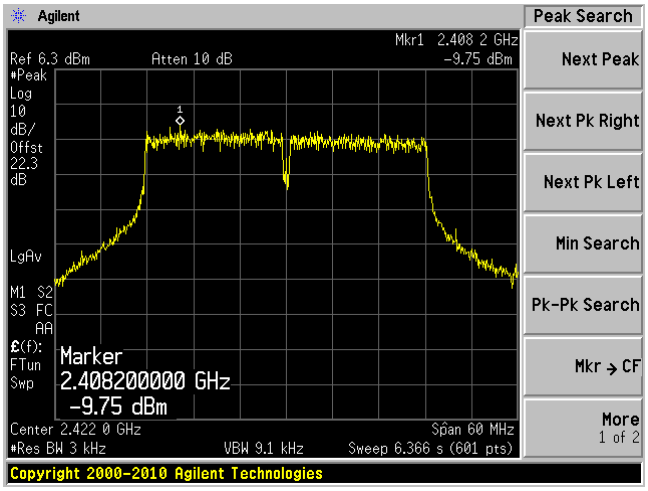


High channel J1: 2462 MHz

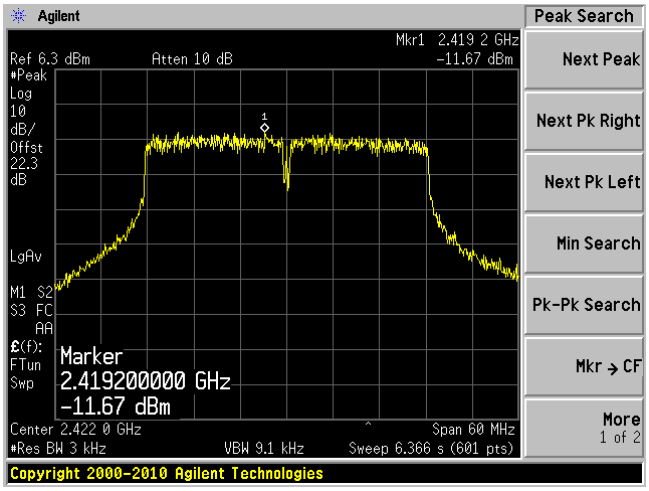


802.11n-HT40 mode

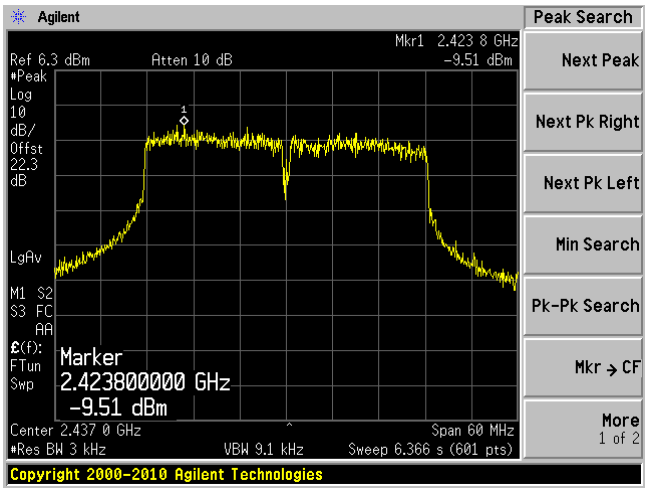
Low channel J0: 2422 MHz



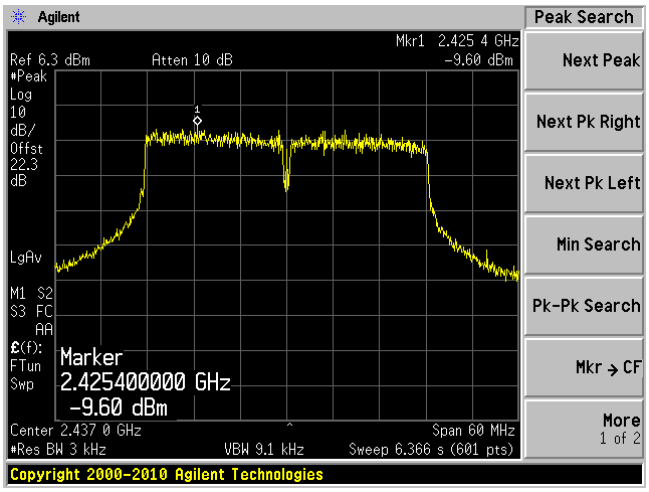
Low channel J1: 2422 MHz



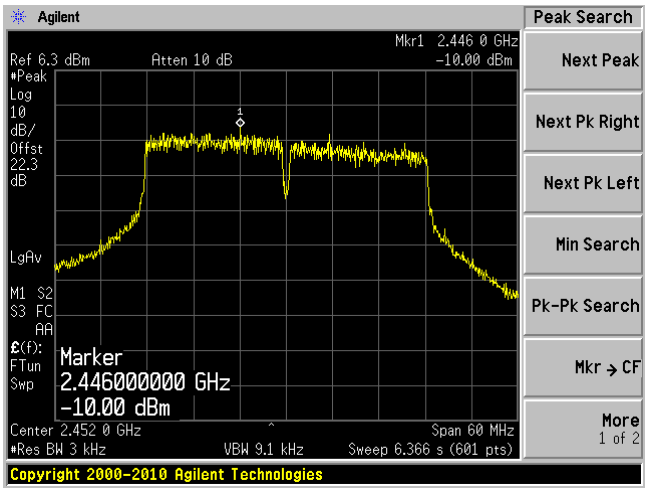
Middle channel J0: 2437 MHz



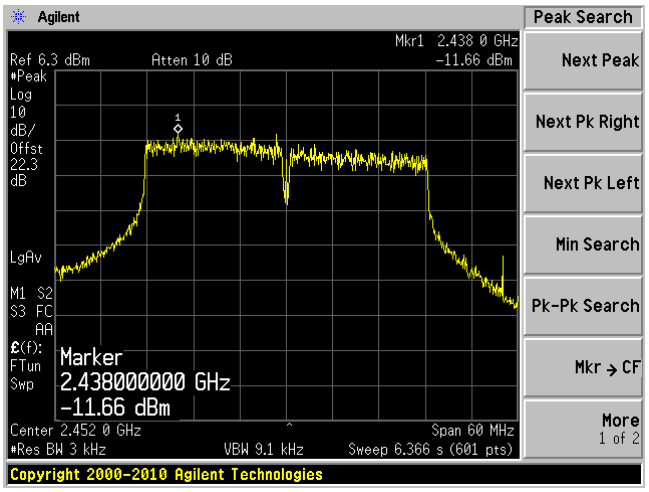
Middle channel J1: 2437 MHz



High channel J0: 2452 MHz



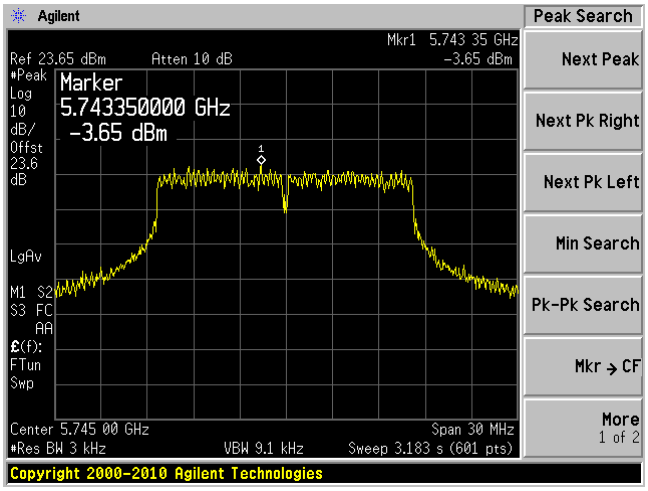
High channel J1: 2452 MHz



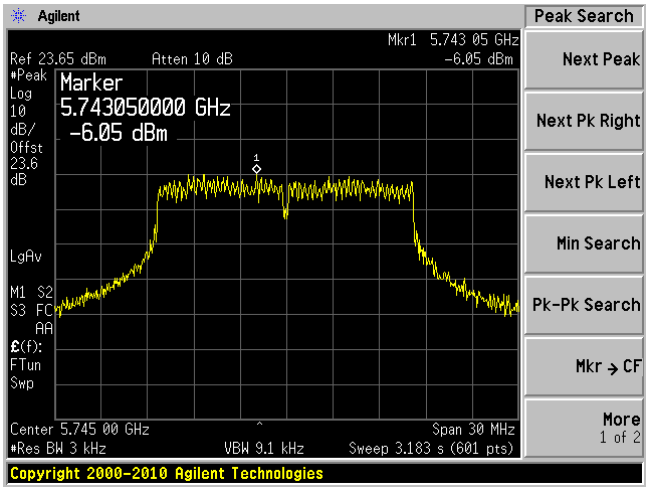
5.8 GHz Band

802.11a mode

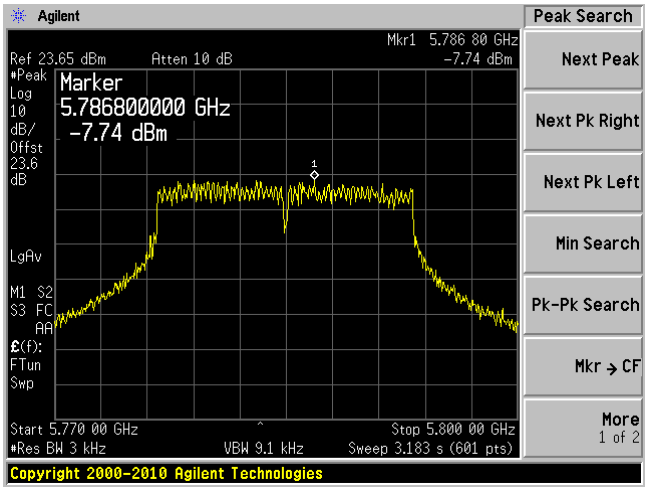
Low channel J0: 5745 MHz



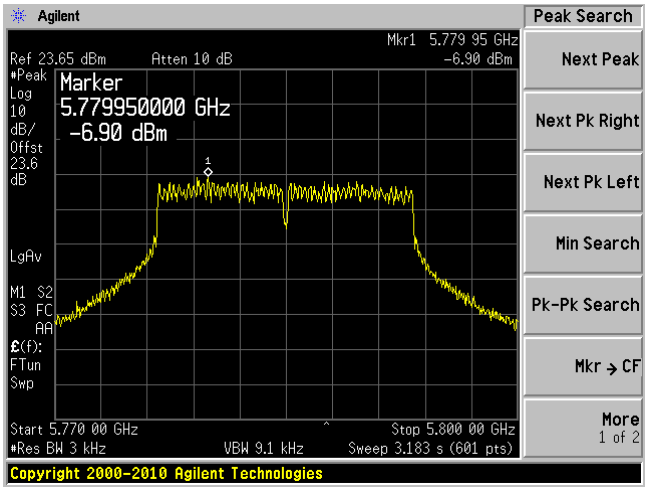
Low channel J1: 5745 MHz



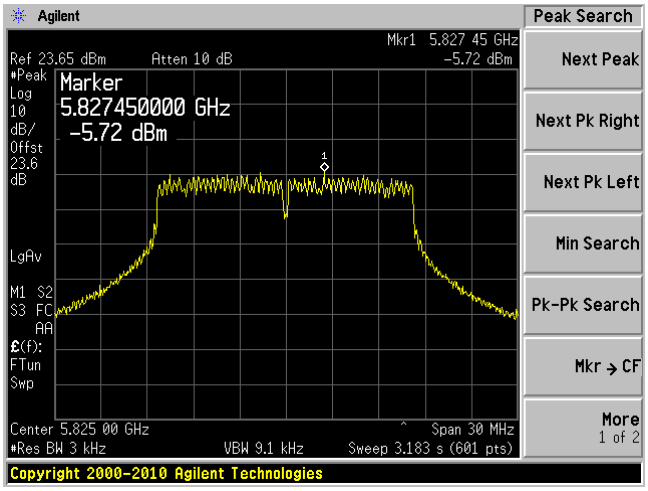
Middle channel J0: 5785 MHz



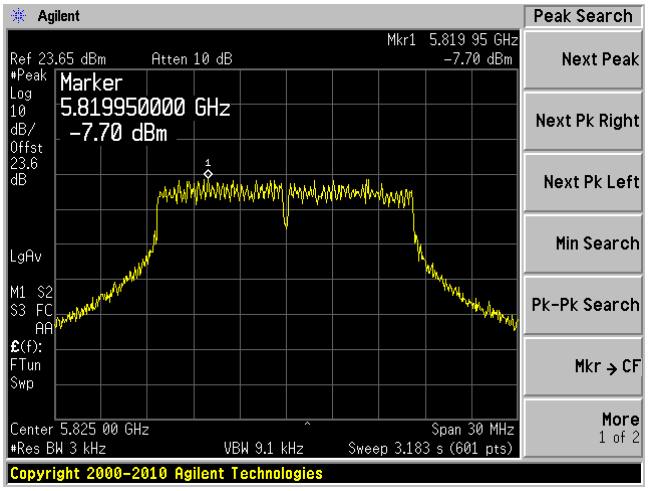
Middle channel J1: 5785 MHz



High channel J0: 5825 MHz

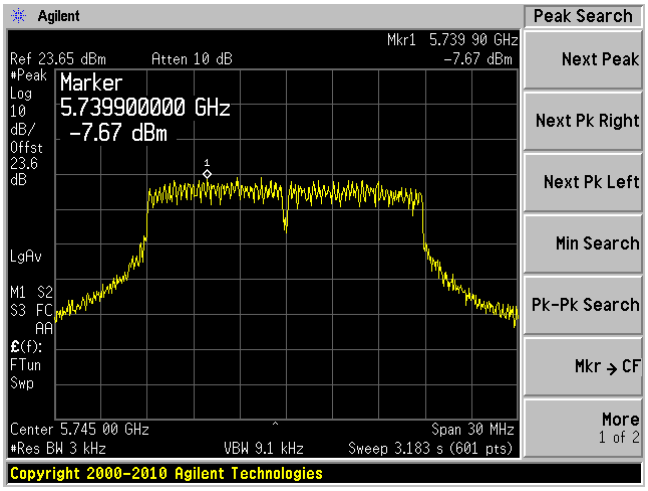


High channel J1: 5825 MHz

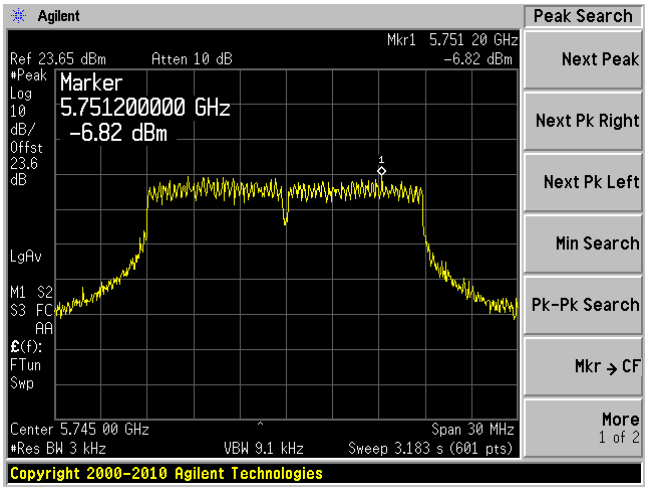


802.11n-HT20 mode

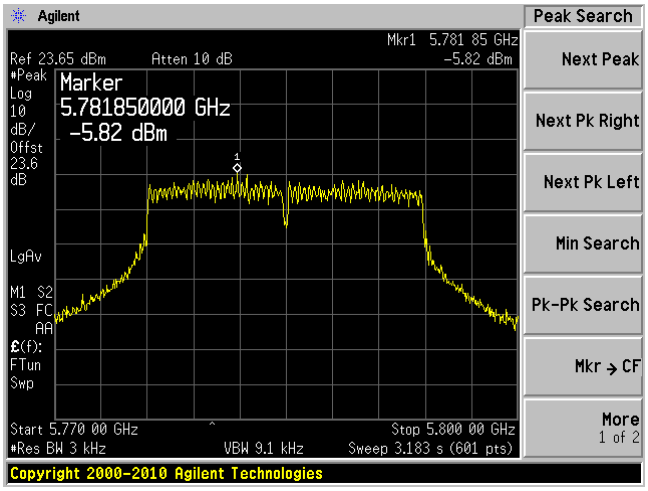
Low channel J0: 5745 MHz



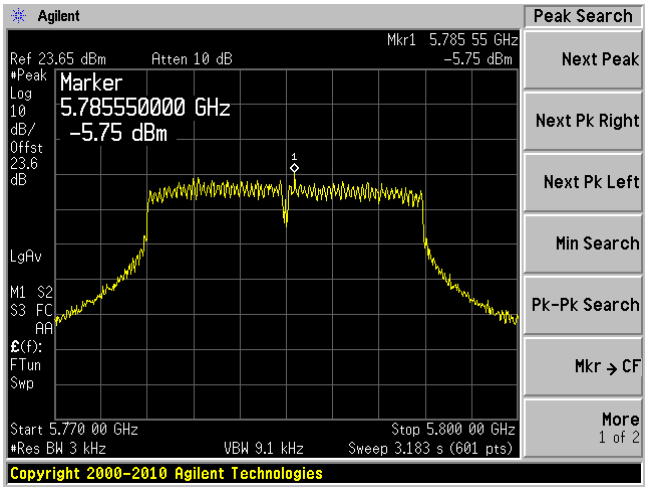
Low channel J1: 5745 MHz



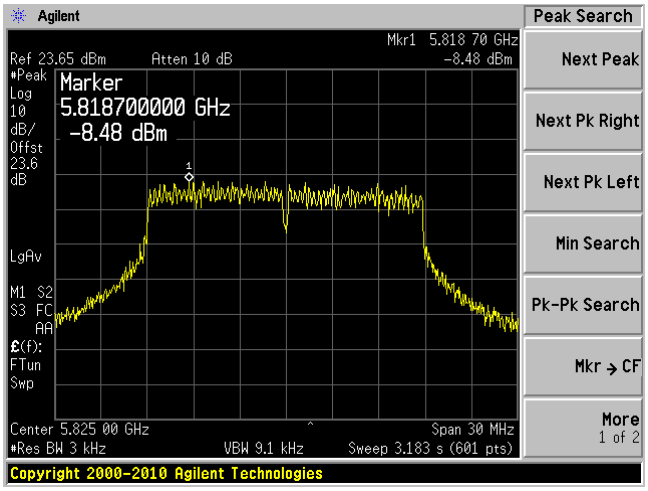
Middle channel J0: 5785 MHz



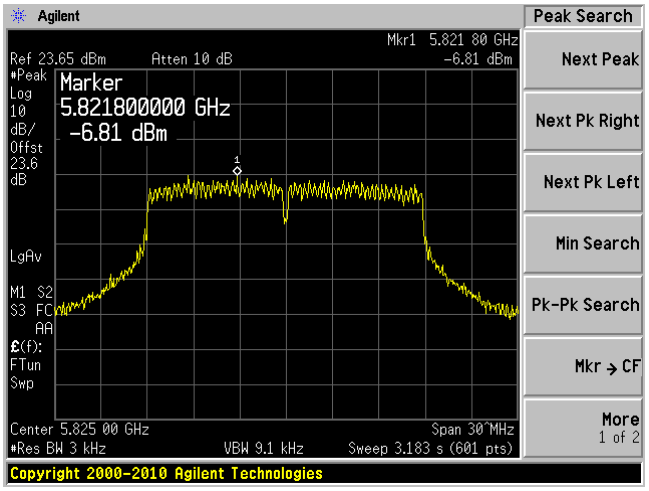
Middle channel J1: 5785 MHz



High channel J0: 5825 MHz

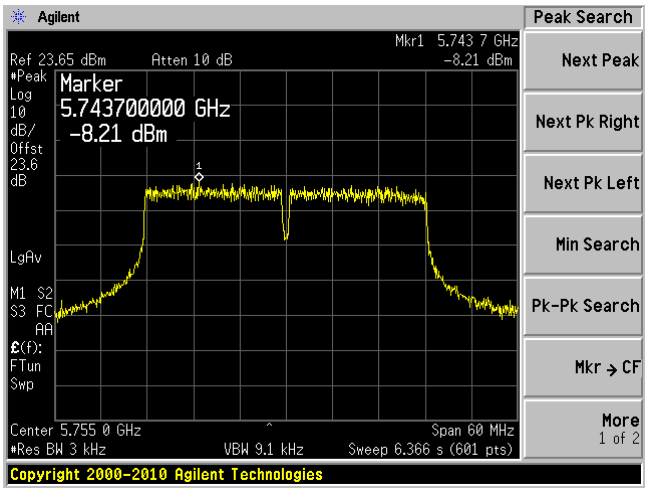


High channel J1: 5825 MHz

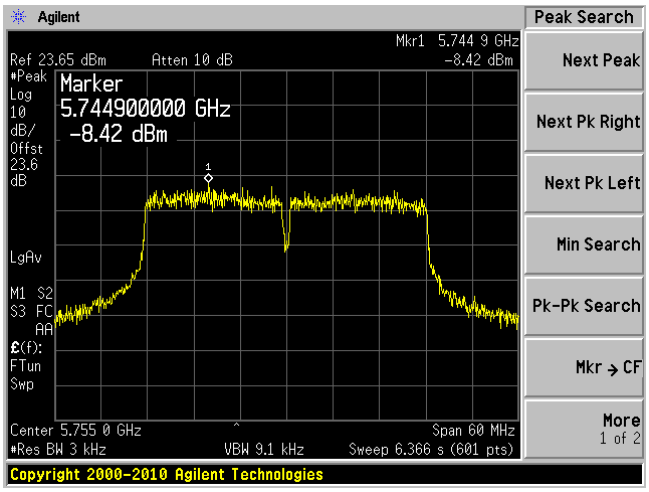


802.11n-HT40 mode

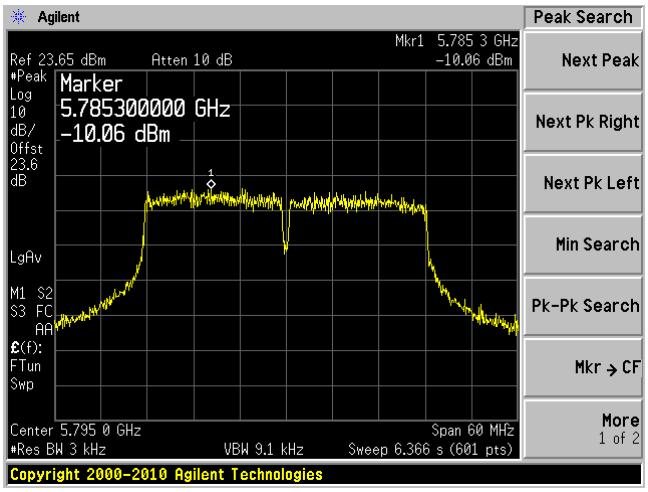
Low channel J0: 5755 MHz



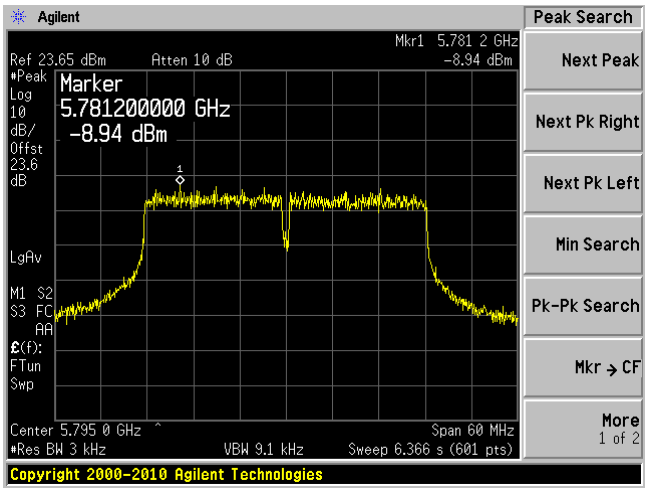
Low channel J1: 5755 MHz



High channel J0: 5795 MHz



High channel J1: 5795 MHz



13 IC RSS-210 §2.3 & 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-Gen §6.1, Tables 2 show the general field strength limits of receiver spurious emissions

Table 2: Radiated Limits of Receiver Spurious Emissions

Frequency (MHz)	Field Strength (Microvolts/m at 3 meters)
30-88	100
88-216	150
216-960	200
Above 960	500

13.2 EUT Setup

The radiated emissions tests were performed in the 3 meter chamber, using the setup in accordance with ANSI C63.4-2009.

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 No.	Serial No.	Calibration Date	Calibration Interval
Sunol Science Corp	System Controller	SC99V	122303-1	N/R	N/R
Sunol Science Corp	Combination Antenna	JB3	A020106-3	2013-06-18	1 year
Hewlett Packard	Pre-amplifier	8447D	2944A06639	2013-06-09	1 year
Mini-Circuits	Pre-amplifier	ZVA-183-S	570400946	2013-05-09	1 year
Agilent	Spectrum Analyzer	E4446A	US44300386	2012-09-29	1 year
EMCO	Horn Antenna	3315	9511-4627	2012-10-17	1 year
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100337	2013-03-28	1 year

Statement of Traceability: *BACL attests that all calibrations have been performed per the A2LA requirements, traceable to NIST.*

13.6 Test Environmental Conditions

Temperature:	22 °C
Relative Humidity:	47 %
ATM Pressure:	102.1 kPa

The testing was performed by Bo Li from 2013-6-11 at 5 meter 3.

13.7 Summary of Test Results

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

30 MHz – 1 GHz

2.4 GHz Band:

Mode: Receiving			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Range (MHz)**
-2.39	73.5445	Vertical	30-1000

5.8 GHz Band:

Mode: Receiving			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Range (MHz)**
-11.2	45.223	Vertical	30-1000

1–12.75 GHz

2.4 GHz Band

Mode: Receiving			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Range (MHz)**
-4.388	17356.8	Horizontal	1000-12750

5.8 GHz Band:

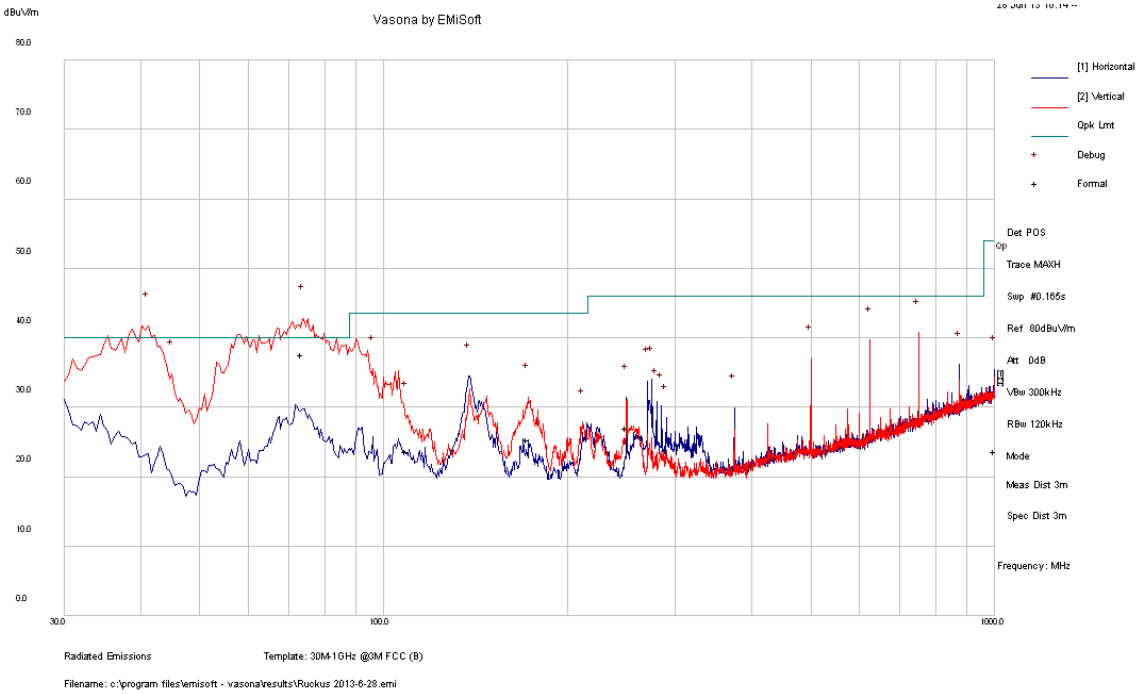
Mode: Receiving			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Range (MHz)**
-11.582	14226.3	Horizontal	1000-12750

13.8 Test Results and Plots

1) 30-1000 MHz, Measured at 3 meters

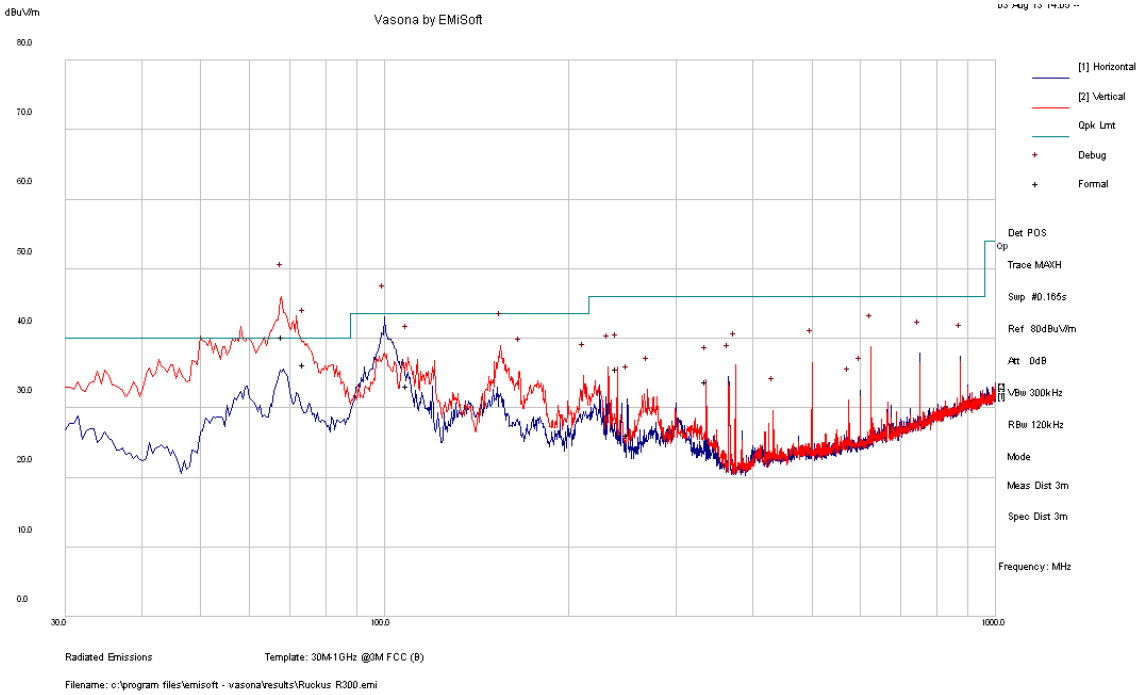
2.4 GHz Band

With AC/DC Adaptor



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (QP/Ave.)
73.5445	37.61	106	V	263	40	-2.39	QP
172.24075	25.42	100	V	231	43.5	-18.08	QP
249.953	27.08	102	H	292	46	-18.92	QP
108.816	23.71	138	V	229	43.5	-19.79	QP
999.146	23.75	238	H	310	54	-30.25	QP

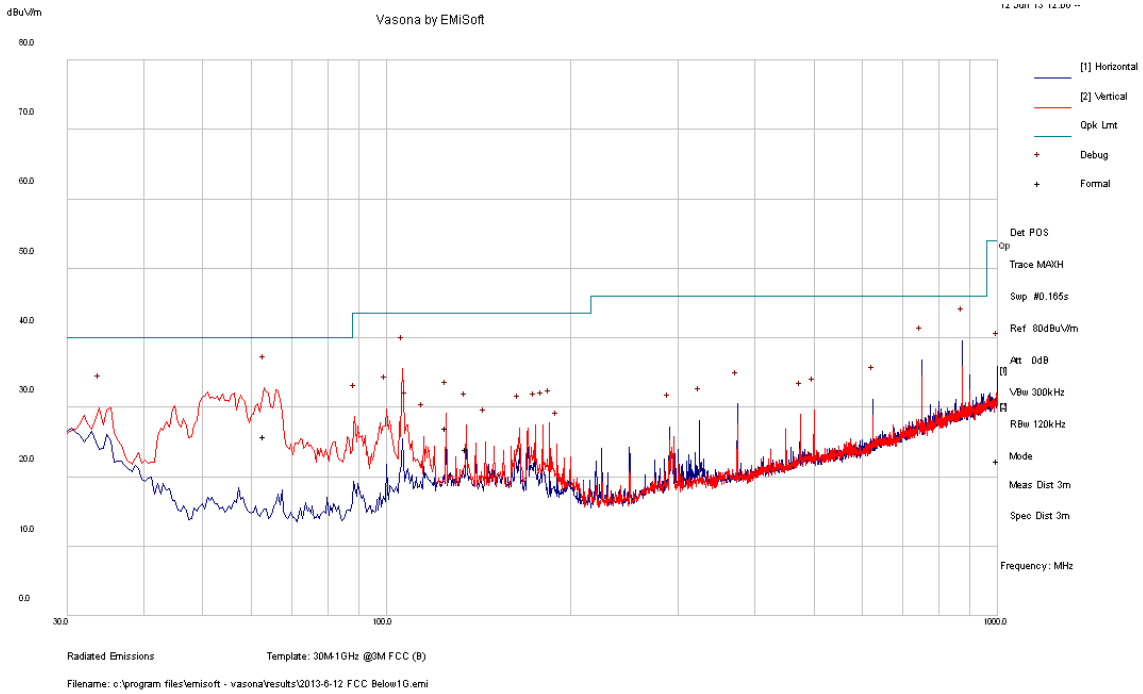
With POE



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (QP/Ave.)
73.67975	36.23	109	V	307	40	-3.77	Ave.
108.9715	33.14	99	V	59	43.5	-10.36	Ave.
240.0015	35.7	100	V	259	46	-10.3	Ave.
336.01575	33.87	99	V	222	46	-12.13	Ave.
249.93525	26.13	127	H	57	46	-19.87	Ave.

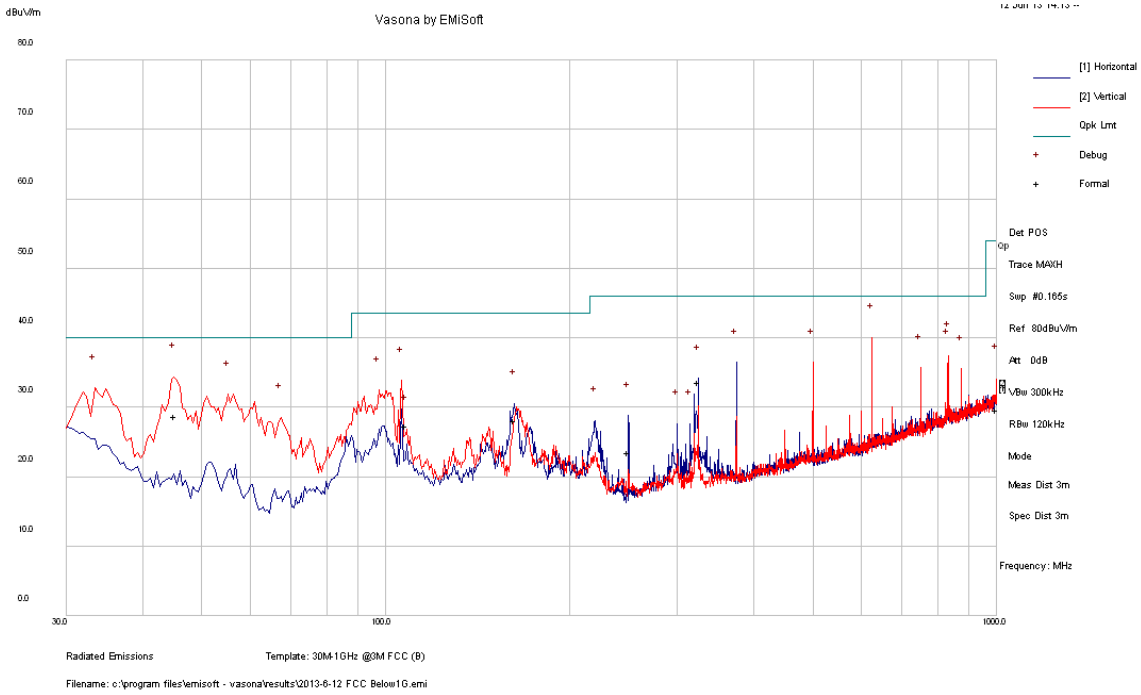
5.8 GHz Band

With AC/DC Adaptor



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (QP/Ave.)
63.01425	25.76	156	V	306	40	-14.24	QP
125.0055	27.03	156	V	0	43.5	-16.47	QP
135.006	23.96	125	V	1	43.5	-19.54	QP
999.364	22.33	99	H	255	54	-31.67	QP

With POE



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (QP/Ave.)
45.223	28.8	113	V	76	40	-11.2	QP
325.0035	33.69	110	H	41	46	-12.31	QP
162.52275	28.09	168	H	106	43.5	-15.41	QP
108.01225	27.38	99	V	260	43.5	-16.12	QP
249.95175	23.58	102	H	305	46	-22.42	QP
999.954	29.72	104	V	0	54	-24.28	QP

2) Above 1 GHz Measured at 3 meters

2.4 GHz Band

With AC/DC Adaptor

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
1425	37.749	100	V	0	74	-36.251	Peak
1425	37.709	100	H	0	74	-36.291	Peak
1425	23.439	100	V	0	54	-30.561	Ave
1425	23.389	100	H	0	54	-30.611	Ave
17356.8	63.932	100	V	0	74	-10.068	Peak
17356.8	64.112	100	H	0	74	-9.888	Peak
17356.8	49.611	100	V	0	54	-4.389	Ave
17356.8	49.612	100	H	0	54	-4.388	Ave

With POE

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
1349.77	43.254	100	V	319	74	-30.746	Peak
1349.77	42.354	100	H	204	74	-31.646	Peak
1349.77	24.694	100	V	319	54	-29.306	Ave
1349.77	34.694	100	H	204	54	-19.306	Ave
1599.57	54.417	100	V	261	74	-19.583	Peak
1599.57	48.377	100	H	194	74	-25.623	Peak
1599.57	23.178	100	V	261	54	-30.822	Ave
1599.57	22.487	100	H	194	54	-31.513	Ave

5.8 GHz Band

With AC/DC Adaptor

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
14226.3	57.608	100	V	0	74	-16.392	Peak
14226.3	57.108	100	H	0	74	-16.892	Peak
14226.3	42.388	100	V	0	54	-11.612	Ave
14226.3	42.418	100	H	0	54	-11.582	Ave
1184.83	37.378	100	V	0	74	-36.622	Peak
1184.83	38.028	100	H	0	74	-35.972	Peak
1184.83	23.078	100	V	0	54	-30.922	Ave
1184.83	23.018	100	H	0	54	-30.982	Ave

With POE

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
1350	43.794	100	V	141	74	-30.206	Peak
1350	41.384	100	H	206	74	-32.616	Peak
1350	33.224	100	V	141	54	-20.776	Ave
1350	34.544	100	H	206	54	-19.456	Ave
1996	58.766	100	V	141	74	-15.234	Peak
1996	51.936	100	H	251	74	-22.064	Peak
1996	26.166	100	V	141	54	-27.834	Ave
1996	25.196	100	H	251	54	-28.804	Ave