FCC PART 15.407
TEST AND MEASUREMENT REPORT

For

Tropos Networks, Inc.

555 Del Rey Ave., Sunnyvale, CA 94085, USA

FCC ID: P9J-645801

Report Type:	**Product Type:**
CpassII Permissve Change	802.11a/n Module

Prepared By:	Cipher Chu Test Engineer
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Reviewed By:	Bo Li RF Lead

Bay Area Compliance Laboratories Corp.
1274 Anvilwood Avenue,
Sunnyvale, CA 94089, USA
Tel: (408) 732-9162
Fax: (408) 732-9164

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1409231-407 W53W56	Original Report	2014-12-31
1	R1409231-407 W53W56 Rev A	Update rule parts	2015-04-17

1 General Description

1.1 Product Description for Equipment under Test (EUT)

This test and measurement report was prepared on behalf of *Tropos Networks, Inc.,* and their product model: Bluefin 5G*, FCC ID: P9J-645801* or the "EUT" (Equipment under Test) as referred to in this report. The EUT is a 2x2 MIMO 802.11a/n Wi-Fi module operates in 5 GHz UNII bands.

1.2 Mechanical Description of EUT

The EUT measures approximately 7.2 cm (L) x 5.0cm (W) x 0.1 cm (H) and weighs 15g.

The test data gathered are from typical production sample, serial number: 301317 assigned by client.

1.3 Objective

This report is prepared on behalf of *Tropos Networks, Inc*. in accordance with FCC CFR47 §15.407

The objective is to determine compliance with FCC rules for Antenna Requirments, AC Line Conducted Emissions, Occupied Bandwidth, Maximum Peak Output Power, Power Spectral Density, Radiated and Conducted Spurious Emissions, and Band Edge.

1.4 Related Submittal(s)/Grant(s)

FCC original certification on 5.2 GHz and 5.8 GHz band.

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 789033 D02 General UNII Test Procedures New Rules v01: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E

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: 2011, The Treatment of Uncertainty in EMC Measurements, the values ranging from $\pm$2.0 dB for Conducted Emissions tests and $\pm$4.0 dB for Radiated Emissions tests are the most accurate estimates pertaining to uncertainty of EMC measurements at BACL Corp.

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

1.7 Test Facility

Bay area compliance Laboratories Corp. (BACL) is:
1- An independent Commercial Test Laboratory accredited to **ISO 17025: 2005** by **A2LA**, in the fields of: Electromagnetic Compatibility & Telecommunications covering Emissions, Immunity, Radio, RF Exposure, Safety and Telecom. This includes NEBS (Network Equipment Building System), Wireless RF, Telecommunications Terminal Equipment (TTE); Network Equipment; Information Technology Equipment (ITE); Medical Electrical Equipment; Industrial, Commercial, and Medical Test Equipment; Professional Audio and Video Equipment; Electronic (Digital) Products; Industrial and Scientific Instruments; Cabled Distribution Systems and Energy Efficiency Lighting.

2- An ENERGY STAR Recognized Laboratory, for the LM80 Testing, a wide variety of Luminares and Computers.

3- A NIST Designated Phase-I and Phase-II CAB including: ACMA (Australian Communication and Media Authority), BSMI (Bureau of Standards, Metrology and Inspection of Taiwan), IDA (Infocomm Development Authority of Singapore), IC(Industry Canada), Korea (Ministry of Communications Radio Research Laboratory), NCC (Formerly DGT; Directorate General of Telecommunication of Chinese Taipei) OFTA (Office of the Telecommunications Authority of Hong Kong), Vietnam, VCCI - Voluntary Control Council for Interference of Japan and a designated EU CAB (Conformity Assessment Body) (Notified Body) for the EMC and R&TTE Directives.

4- A Product Certification Body accredited to **ISO Guide 65: 1996** by **A2LA** to certify:
1- Unlicensed, Licensed radio frequency devices and Telephone Terminal Equipment for the FCC. Scope A1, A2, A3, A4, B1, B2, B3, B4 & C.
2. Radio Standards Specifications (RSS) in the Category I Equipment Standards List and All Broadcasting Technical Standards (BETS) in Category I Equipment Standards List for Industry Canada.
3. Radio Communication Equipment for Singapore.
4. Radio Equipment Specifications, GMDSS Marine Radio Equipment Specifications, and Fixed Network Equipment Specifications for Hong Kong.
5. Japan MIC Telecommunication Business Law (A1, A2) and Radio Law (B1, B2 and B3).
6. Audio/Video, Battery Charging Systems, Computers, Displays, Enterprise Servers, Imaging Equipment, Set-Top Boxes, Telephony, Televisions, Ceiling Fans, CFLs (Including GU24s),Decorative Light Strings, Integral LED Lamps, Luminaires, Residential Ventilating Fans.

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 C63.4-2009, 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 EUT Test Configuration

2.1 Justification

The EUT was configured for testing according to ANSI C63.4-2009 and FCC KDB 789033 D02 General UNII Test Procedures New Rules v01

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 *Atheros Radio Test 2* and was provided by *Tropos Networks, Inc.,* and was verified by Isaac Aguilar to comply with the standard requirements being tested against.

2.3 Equipment Modifications

N/A

2.4 Local Support Equipment

Manufacturer	Description	Model	Serial Number
DELL	laptop	E5430	7x4v3x1
DELL	laptop	E5430	8w4v3x1

2.5 EUT Internal Configuration Details

N/A

2.6 Interface Ports and Cables

Cable Description	Length (m)	To	From
RF Cable	< 1	Module Antenna Port	Spectrum Analyzer
CAT5e	< 1	Moldue RJ-45	Laptop

2.7 Power Supply List and Details

Manufacturer	Description	Model	Serial Number
Cincon Electronics	POE 48V 1.2A	TR60A-POE-L	007653

3 Summary of Test Results

FCC Rules	Description of Test	Result
§15.407(f), §2.1091	RF Exposure	Calculation
§15.203, §15.407(a)(2)	Antenna Requirement	Compliant
§15.207	AC Power Line Conducted Emissions	Compliant
§15.209(a), §15.407(b)	Spurious Emissions	Compliant
§15.407, §2.1049	Emission Bandwidth	Compliant
§15.407(a)(2)	Output Power	Compliant
§2.1051, §15.407(b)	Undesirable Emissions	Compliant
§15.407(a)(2)	Power Spectral Density	Compliant
§15.407(h)	DFS	Note*

Note: Please refer to R1409231-DFS report

4 FCC §15.407(f) & §2.1091 - RF Exposure

4.1 Applicable Standard

According to FCC §15.407(f) 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

4.2 MPE Prediction

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

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

5.3 GHz Band:

Maximum peak output power at antenna input terminal (dBm):	21.95
Maximum peak output power at antenna input terminal (mW):	156.67
Prediction distance (cm):	20
Prediction frequency (MHz):	5280
Maximum Antenna Gain, typical (dBi):	8
Maximum Antenna Gain (numeric):	6.31
Power density of prediction frequency at 20 cm (mW/cm^2):	0.197
MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2):	1.0

5.6 GHz Band:

Maximum peak output power at antenna input terminal (dBm):	21.97
Maximum peak output power at antenna input terminal (mW):	157.46
Prediction distance (cm):	20
Prediction frequency (MHz):	5700
Maximum Antenna Gain, typical (dBi):	8
Maximum Antenna Gain (numeric):	6.31
Power density of prediction frequency at 20 cm (mW/cm^2):	0.198
MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2):	1.0

The device meets FCC MPE requirement for uncontrolled exposure environment at 20 cm distance.

5 FCC §15.203 & §15.407 (a)(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 §15.407 (a)(2), If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

5.2 Antenna List

Manufacturers	Antenna Type/Pattern	Antenna Gain (dBi) @ 5 GHz
SmartAnt	Omni-Type	8

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 8 dBi patch antenna consist of MMCX connectors with greater than 6 dBi gain; therefore, the output power and power spectral density limit shall be reduced by 2 dB to comply with the antenna requirement.

6 FCC §15.207 - AC Power Line Conducted Emissions

6.1 Applicable Standard

As per FCC §15.207 Conducted limits:

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

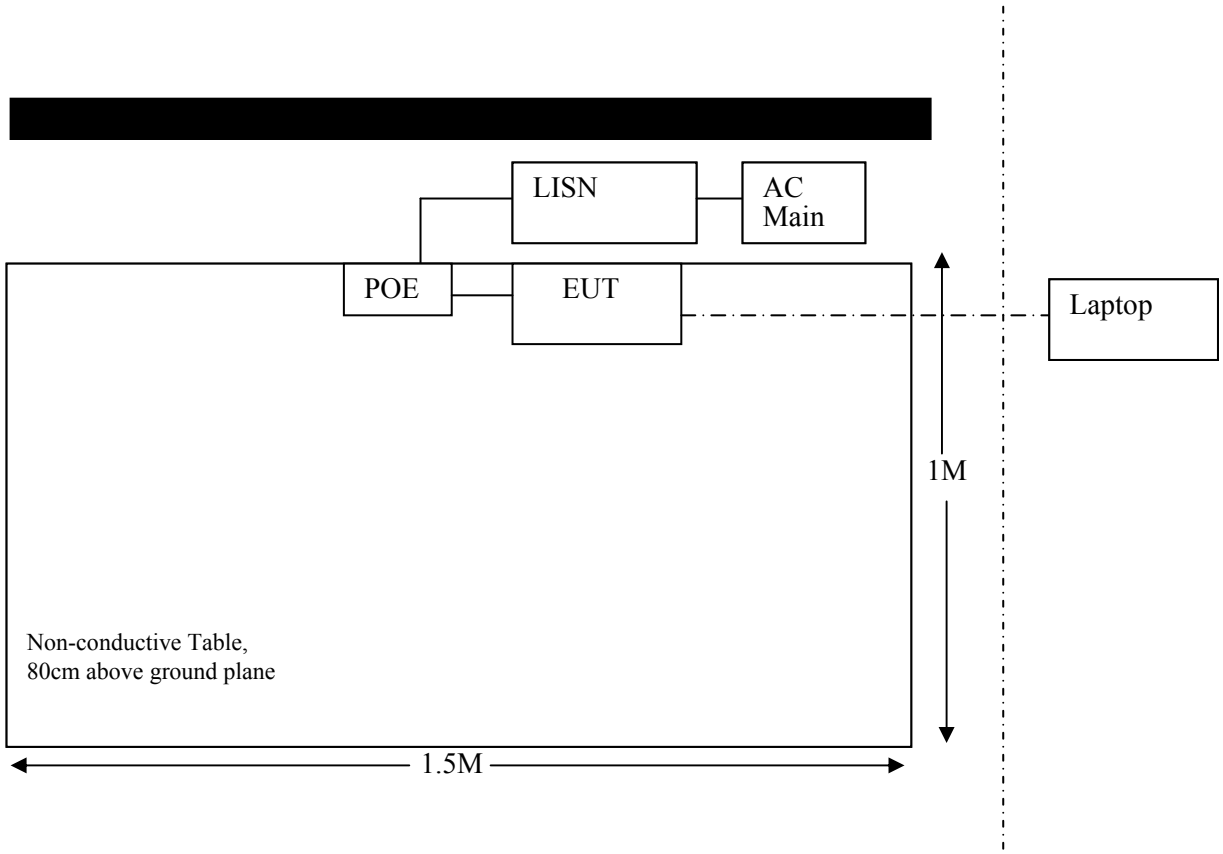
6.3 Test Procedure

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

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

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

6.4 Test Setup Block Diagram



6.5 Corrected Amplitude & Margin Calculation

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

CA = Ai + CL + Atten

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

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

Margin = Corrected Amplitude - Limit

6.6 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100337	2013-10-28	1 year
Solar Electronics	LISN	9252-50-R-24-N	511205	2013-10-25	1 year
TTE	Filter, High Pass	H962-150k-50-21378	K7133	2014-01-30	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:	22-24º C
Relative Humidity:	40-41 %
ATM Pressure:	103.1-104.1 kPa

The testing was performed by Cipher Chu on 2014-10-05 in 5m chamber3.

6.8 Summary of Test Results

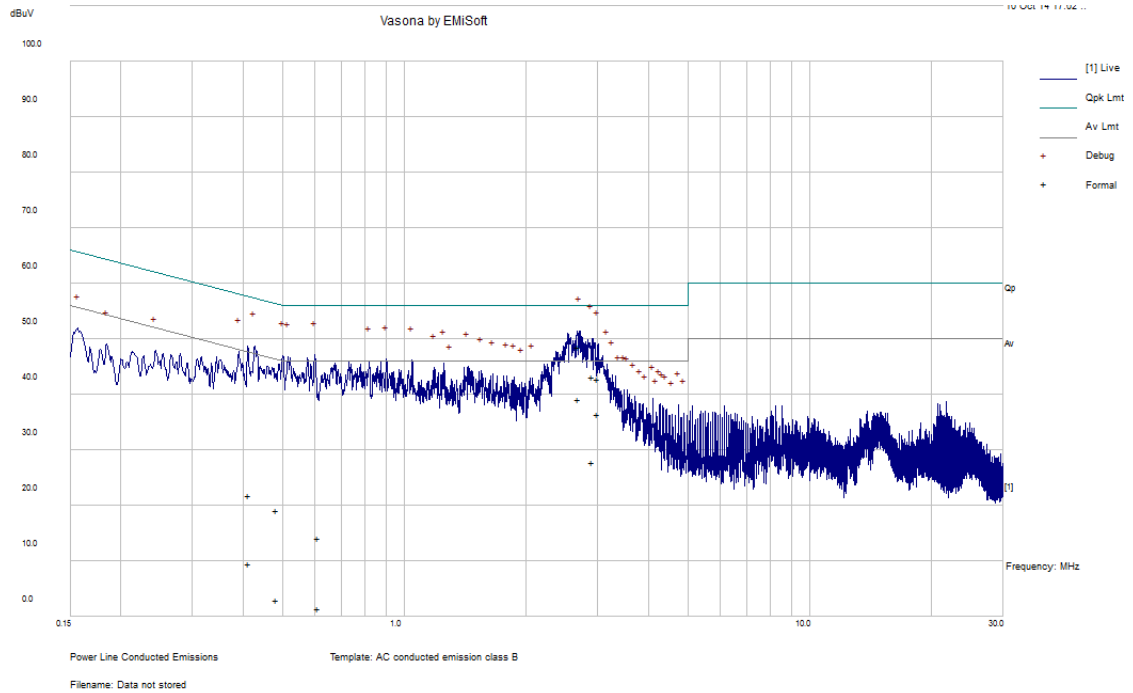
According to the recorded data in following table, the EUT complied with the FCC standard's conducted emissions limits, with the margin reading of:

Connection: Connected to 120 V/60 Hz, AC			
Margin (dB)	**Frequency (MHz)**	**Conductor Mode (Line/Neutral)**	**Range (MHz)**
-3.87	1.982061	Neutral	0.15-30

Note: the worstcase in 5 GHz bands.

6.9 Conducted Emissions Test Plots and Data

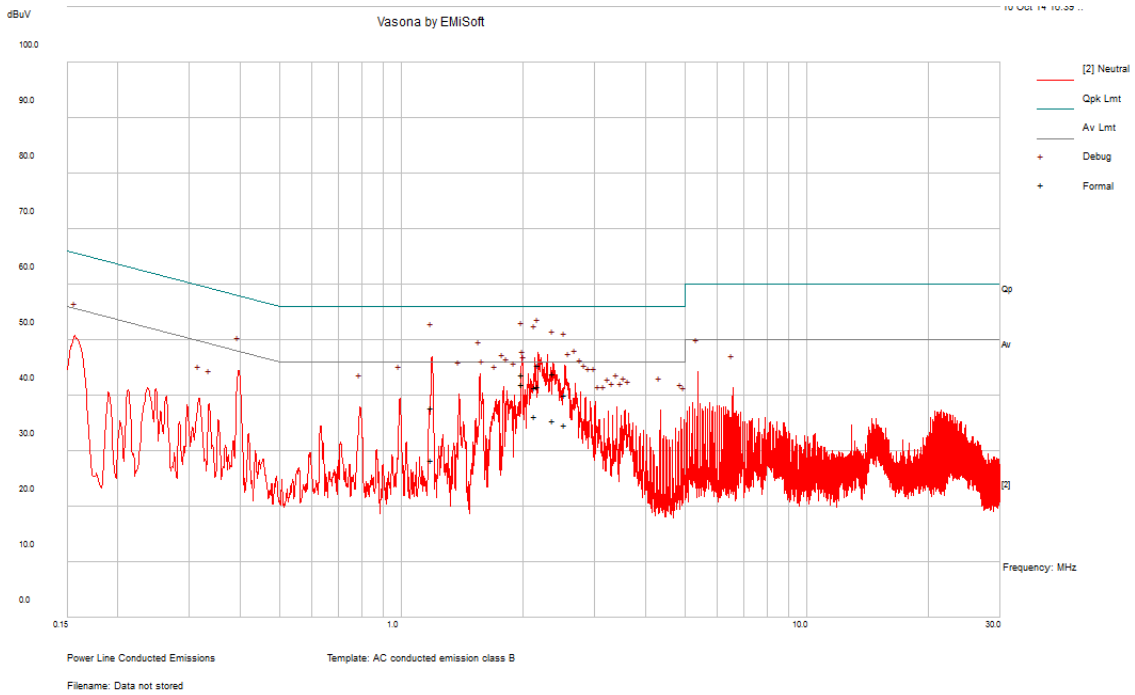
120 V, 60 Hz – Line



Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
2.688608	48.62	Line	56	-7.38	QP
2.909799	43.13	Line	56	-12.87	QP
3.001127	42.77	Line	56	-13.23	QP
0.414771	21.94	Line	57.55	-35.61	QP
0.61437	14.2	Line	56	-41.8	QP
0.485397	19.25	Line	56.25	-37	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
2.688608	39.13	Line	46	-6.87	Ave.
2.909799	27.79	Line	46	-18.21	Ave.
3.001127	36.46	Line	46	-9.54	Ave.
0.414771	9.51	Line	47.55	-38.05	Ave.
0.61437	1.51	Line	46	-44.49	Ave.
0.485397	2.94	Line	46.25	-43.31	Ave.

120 V, 60 Hz – Neutral



Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
2.182031	45.55	Neutral	56	-10.45	QP
1.982061	43.82	Neutral	56	-12.18	QP
1.18848	37.75	Neutral	56	-18.25	QP
2.137459	41.46	Neutral	56	-14.54	QP
2.37174	43.99	Neutral	56	-12.01	QP
2.525873	40.04	Neutral	56	-15.96	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
2.182031	41.57	Neutral	46	-4.43	Ave.
1.982061	42.13	Neutral	46	-3.87	Ave.
1.18848	28.43	Neutral	46	-17.57	Ave.
2.137459	36.24	Neutral	46	-9.76	Ave.
2.37174	35.56	Neutral	46	-10.44	Ave.
2.525873	34.7	Neutral	46	-11.3	Ave.

7 FCC §15.209(a) & §15.407(b)(2)&(b)(3) – Radiated Spurious Emissions

7.1 Applicable Standard

According to FCC §15.407(b)(2) & (b)(3)

For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

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		

7.2 Test Setup

The radiated emissions tests were performed in the 10-meter Chamber, using the setup in accordance with ANSI C63.4-2009. The specification used was the FCC 15 Subpart E limits.

The spacing between the peripherals was 10 centimeters.

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

7.3 Test Procedure

The measurements are base on FCC KDB 789033 D02 General UNII Test Procedures New Rules v01: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E
Section H: Unwanted emissions measurement 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 10 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

7.4 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

7.5 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100337	2013-10-28	1 year
Agilent	Spectrum Analyzer	E4440A	MY44303352	2013-10-16	1 year
Sunol Science Corp	System Controller	SC99V	011003-1	N/R	N/R
Sunol Science Corp	Combination Antenna	JB3	A020106-3	2013-10-18	1 year
EMCO	Horn Antenna	3115	9511-4627	2013-10-17	1 year
Hewlett Packard	Pre-amplifier	8447D	2944A10187	2013-10-08	1 year
Mini-Circuits	Pre-amplifier	ZVA-183-S	570400946	2013-10-09	1 year

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

7.6 Test Environmental Conditions

Temperature:	23-24 °C
Relative Humidity:	43-47 %
ATM Pressure:	101.28 – 101.56 kPa

The testing was performed by Cipher Chu on 2014-10-01 to 2014-10-15 at 5m chamber 3.

7.7 Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Title 47, Part 15.407 standard's radiated emissions limits, and had the worst margin of:

30-1000 MHz:

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Mode, Channel**
-6.02	51.2585	Vertical	20 MHz bandwidth, Middle

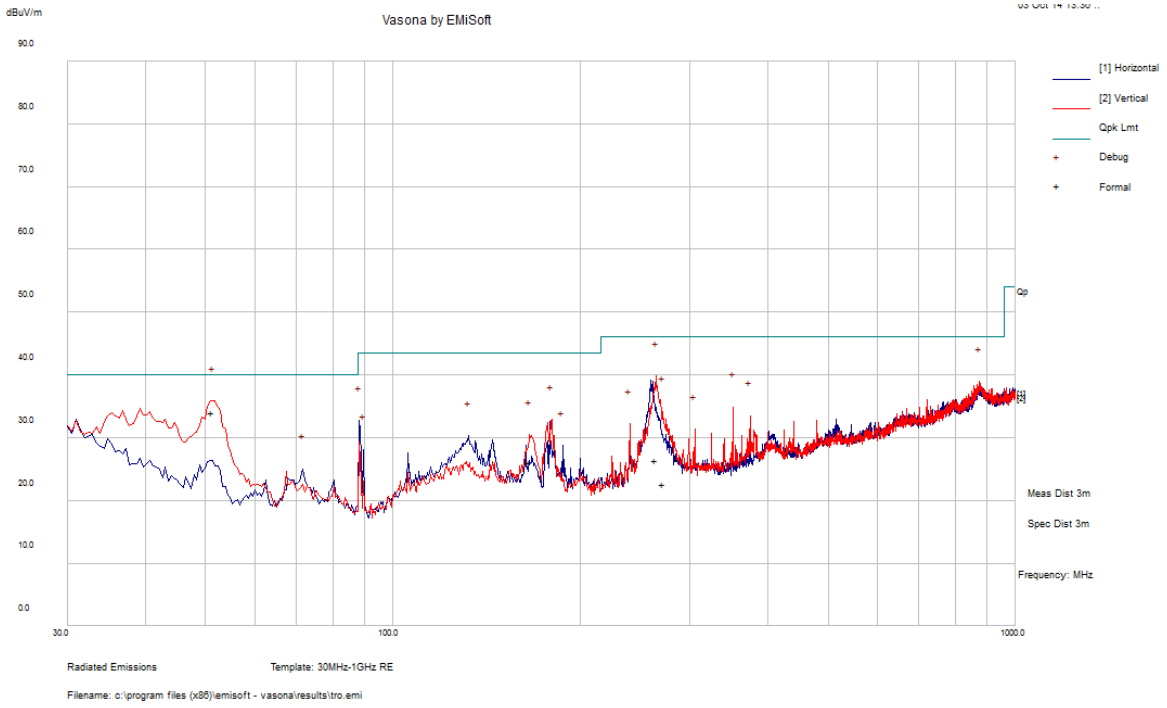
1-40 GHz:

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Mode, Channel**
-0.225	5460	Vertical	20 MHz bandwidth , Low

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

7.8 Radiated Emissions Test Data

1) 30 MHz–1 GHz, Quasi-Peak Measurements



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments (PK/QP/Ave.)
51.2585	33.98	103	V	96	40	-6.02	QP
264.5628	26.41	181	V	55	46	-19.59	QP
271.4175	22.63	150	V	39	46	-23.37	QP
165.919	26	130	V	236	43.5	-17.5	QP

Note: worst case in 5 GHz bands.

2) 1–40 GHz, Measured at 3 meters

5.3 GHz Band:

20 MHz Bandwidth

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5260 MHz, measured at 3 meters											
5260	72.66	273	100	V	33.83	4.59	0	111.08	Fund.	-	Peak/Fund
5260	61.85	229	100	H	33.83	4.59	0	100.27	Fund.	-	Peak/Fund
5260	59.6	273	100	V	33.83	4.59	0	98.02	Fund.	-	Ave/Fund
5260	48.44	229	100	H	33.83	4.59	0	86.86	Fund.	-	Ave/Fund
10520	46.23	0	100	V	38.07	6.14	36.1	54.34	74	-19.66	Peak
10520	46.07	0	100	H	38.07	6.14	36.1	54.18	74	-19.82	Peak
10520	31.86	0	100	V	38.07	6.14	36.1	39.97	54	-14.03	Ave
10520	31.4	0	100	H	38.07	6.14	36.1	39.51	54	-14.49	Ave
15780	41.18	0	100	V	37.88	7.71	33.8	52.97	74	-21.03	Peak
15780	41.06	0	100	H	37.88	7.71	33.8	52.85	74	-21.15	Peak
15780	27.88	0	100	V	37.88	7.71	33.8	39.67	54	-14.33	Ave
15780	27.56	0	100	H	37.88	7.71	33.8	39.35	54	-14.65	Ave
21040	35.29	0	100	V	49.68	9.36	32.5	61.83	74	-12.17	Peak
21040	35.18	0	100	H	49.68	9.36	32.5	61.72	74	-12.28	Peak
21040	20.92	0	100	V	49.68	9.36	32.5	47.46	54	-6.54	Ave
21040	20.28	0	100	H	49.68	9.36	32.5	46.82	54	-7.18	Ave
Middle Channel 5280 MHz, measured at 3 meters											
5280	73.18	274	100	V	33.83	4.59	0	111.6	Fund.	-	Peak/Fund
5280	60.8	231	100	H	33.83	4.59	0	99.22	Fund.	-	Peak/Fund
5280	60.01	274	100	V	33.83	4.59	0	98.43	Fund.	-	Ave/Fund
5280	47.56	231	100	H	33.83	4.59	0	85.98	Fund.	-	Ave/Fund
10560	45.98	0	100	V	38.07	6.14	36.1	54.09	74	-19.91	Peak
10560	45.83	0	100	H	38.07	6.14	36.1	53.94	74	-20.06	Peak
10560	31.55	0	100	V	38.07	6.14	36.1	39.66	54	-14.34	Ave
10560	31.47	0	100	H	38.07	6.14	36.1	39.58	54	-14.42	Ave
15840	40.96	0	100	V	37.88	7.71	33.8	52.75	74	-21.25	Peak
15840	40.23	0	100	H	37.88	7.71	33.8	52.02	74	-21.98	Peak
15840	27.41	0	100	V	37.88	7.71	33.8	39.2	54	-14.8	Ave
15840	27.47	0	100	H	37.88	7.71	33.8	39.26	54	-14.74	Ave
21120	35.68	0	100	V	49.68	9.36	32.5	62.22	74	-11.78	Peak
21120	35.57	0	100	H	49.68	9.36	32.5	62.11	74	-11.89	Peak
21120	21.2	0	100	V	49.68	9.36	32.5	47.74	54	-6.26	Ave
21120	21.11	0	100	H	49.68	9.36	32.5	47.65	54	-6.35	Ave

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5320 MHz, measured at 3 meters											
5320	75.21	275	100	V	33.83	4.59	0	113.63	Fund.	-	Peak/Fund
5320	62.51	228	100	H	33.83	4.59	0	100.93	Fund.	-	Peak/Fund
5320	61.21	275	100	V	33.83	4.59	0	99.63	Fund.	-	Ave/Fund
5320	49.17	228	100	H	33.83	4.59	0	87.59	Fund.	-	Ave/Fund
5350	28.71	275	100	V	33.83	4.59	0	67.13	74	-6.87	Peak
5350	27.67	228	100	H	33.83	4.59	0	66.09	74	-7.91	Peak
5350	15.01	275	100	V	33.83	4.59	0	53.43	54	-0.57	Ave
5350	12.93	228	100	H	33.83	4.59	0	51.35	54	-2.65	Ave
10640	45.38	0	100	V	38.07	6.14	36.1	53.49	74	-20.51	Peak
10640	45.24	0	100	H	38.07	6.14	36.1	53.35	74	-20.65	Peak
10640	31.37	0	100	V	38.07	6.14	36.1	39.48	54	-14.52	Ave
10640	31.07	0	100	H	38.07	6.14	36.1	39.18	54	-14.82	Ave
15960	38.74	0	100	V	37.88	7.71	33.8	50.53	74	-23.47	Peak
15960	38.54	0	100	H	37.88	7.71	33.8	50.33	74	-23.67	Peak
15960	24.77	0	100	V	37.88	7.71	33.8	36.56	54	-17.44	Ave
15960	24.12	0	100	H	37.88	7.71	33.8	35.91	54	-18.09	Ave
21280	33.19	0	100	V	49.68	9.36	32.5	59.73	74	-14.27	Peak
21280	32.96	0	100	H	49.68	9.36	32.5	59.5	74	-14.5	Peak
21280	19.91	0	100	V	49.68	9.36	32.5	46.45	54	-7.55	Ave
21280	19.75	0	100	H	49.68	9.36	32.5	46.29	54	-7.71	Ave

40 MHz Bandwidth

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5270 MHz, measured at 3 meters											
5270	74.4	276	100	V	33.83	4.59	0	112.82	Fund.	-	Peak/Fund
5270	59.07	67	100	H	33.83	4.59	0	97.49	Fund.	-	Peak/Fund
5270	59.97	276	100	V	33.83	4.59	0	98.39	Fund.	-	Ave/Fund
5270	46.01	67	100	H	33.83	4.59	0	84.43	Fund.	-	Ave/Fund
10540	45.74	0	100	V	38.07	6.14	36.1	53.85	74	-20.15	Peak
10540	45.77	0	100	H	38.07	6.14	36.1	53.88	74	-20.12	Peak
10540	31.6	0	100	V	38.07	6.14	36.1	39.71	54	-14.29	Ave
10540	31.57	0	100	H	38.07	6.14	36.1	39.68	54	-14.32	Ave
15810	38.48	0	100	V	37.88	7.71	33.8	50.27	74	-23.73	Peak
15810	38.33	0	100	H	37.88	7.71	33.8	50.12	74	-23.88	Peak
15810	24.59	0	100	V	37.88	7.71	33.8	36.38	54	-17.62	Ave
15810	24.55	0	100	H	37.88	7.71	33.8	36.34	54	-17.66	Ave
21080	36.8	0	100	V	49.68	9.36	32.5	63.34	74	-10.66	Peak
21080	36.78	0	100	H	49.68	9.36	32.5	63.32	74	-10.68	Peak
21080	23	0	100	V	49.68	9.36	32.5	49.54	54	-4.46	Ave
21080	22.88	0	100	H	49.68	9.36	32.5	49.42	54	-4.58	Ave
High Channel 5310 MHz, measured at 3 meters											
5310	72.39	276	100	V	33.83	4.59	0	110.81	Fund.	-	Peak/Fund
5310	57.9	68	100	H	33.83	4.59	0	96.32	Fund.	-	Peak/Fund
5310	57.97	276	100	V	33.83	4.59	0	96.39	Fund.	-	Ave/Fund
5310	42.36	68	100	H	33.83	4.59	0	80.78	Fund.	-	Ave/Fund
5350	30.43	276	100	V	33.83	4.59	0	68.85	74	-5.15	Peak
5350	29.17	68	100	H	33.83	4.59	0	67.59	74	-6.41	Peak
5350	15.09	276	100	V	33.83	4.59	0	53.51	54	-0.49	Ave
5350	14.83	68	100	H	33.83	4.59	0	53.25	54	-0.75	Ave
10620	46.74	0	100	V	38.07	6.14	36.1	54.85	74	-19.15	Peak
10620	45.5	0	100	H	38.07	6.14	36.1	53.61	74	-20.39	Peak
10620	32.07	0	100	V	38.07	6.14	36.1	40.18	54	-13.82	Ave
10620	32.15	0	100	H	38.07	6.14	36.1	40.26	54	-13.74	Ave
15930	38.4	0	100	V	37.88	7.71	33.8	50.19	74	-23.81	Peak
15930	38.33	0	100	H	37.88	7.71	33.8	50.12	74	-23.88	Peak
15930	25.65	0	100	V	37.88	7.71	33.8	37.44	54	-16.56	Ave
15930	25.54	0	100	H	37.88	7.71	33.8	37.33	54	-16.67	Ave
21240	35.85	0	100	V	49.68	9.36	32.5	62.39	74	-11.61	Peak
21240	35.81	0	100	H	49.68	9.36	32.5	62.35	74	-11.65	Peak
21240	22.65	0	100	V	49.68	9.36	32.5	49.19	54	-4.81	Ave
21240	22.63	0	100	H	49.68	9.36	32.5	49.17	54	-4.83	Ave

5.6 GHz Band:

20 MHz Bandwidth

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5500 MHz, measured at 3 meters											
5500	79.61	283	100	V	34.965	4.7	0	119.275	Fund.	-	Peak/Fund
5500	68.07	141	100	H	34.965	4.7	0	107.735	Fund.	-	Peak/Fund
5500	56.45	283	100	V	34.965	4.7	0	96.115	Fund.	-	Ave/Fund
5500	47.61	141	100	H	34.965	4.7	0	87.275	Fund.	-	Ave/Fund
5460	29.34	283	100	V	34.965	4.7	0	69.005	74	-4.995	Peak
5460	28.08	141	100	H	34.965	4.7	0	67.745	74	-6.255	Peak
5460	14.11	283	100	V	34.965	4.7	0	53.775	54	-0.225	Ave
5460	12.75	141	100	H	34.965	4.7	0	52.415	54	-1.585	Ave
11000	46.14	0	100	V	39.406	7.4	36.1	56.846	74	-17.154	Peak
11000	46.11	0	100	H	39.406	7.4	36.1	56.816	74	-17.184	Peak
11000	31.64	0	100	V	39.406	7.4	36.1	42.346	54	-11.654	Ave
11000	31.4	0	100	H	39.406	7.4	36.1	42.106	54	-11.894	Ave
16500	42.87	0	100	V	39.269	7.4	33.8	55.739	74	-18.261	Peak
16500	42.86	0	100	H	39.269	7.4	33.8	55.729	74	-18.271	Peak
16500	29.15	0	100	V	39.269	7.4	33.8	42.019	54	-11.981	Ave
16500	29.33	0	100	H	39.269	7.4	33.8	42.199	54	-11.801	Ave
Middle Channel 5580 MHz, measured at 3 meters											
5580	83.32	137	115	V	34.965	4.7	0	122.985	Fund.	-	Peak/Fund
5580	69.73	136	100	H	34.965	4.7	0	109.395	Fund.	-	Peak/Fund
5580	59.65	137	115	V	34.965	4.7	0	99.315	Fund.	-	Ave/Fund
5580	48.76	136	100	H	34.965	4.7	0	88.425	Fund.	-	Ave/Fund
11160	45.55	0	100	V	39.406	7.4	36.1	56.256	74	-17.744	Peak
11160	44.98	0	100	H	39.406	7.4	36.1	55.686	74	-18.314	Peak
11160	31.01	0	100	V	39.406	7.4	36.1	41.716	54	-12.284	Ave
11160	31.43	0	100	H	39.406	7.4	36.1	42.136	54	-11.864	Ave
16740	45.44	0	100	V	39.269	7.4	33.8	58.309	74	-15.691	Peak
16740	45.37	0	100	H	39.269	7.4	33.8	58.239	74	-15.761	Peak
16740	30.16	0	100	V	39.269	7.4	33.8	43.029	54	-10.971	Ave
16740	30.14	0	100	H	39.269	7.4	33.8	43.009	54	-10.991	Ave
22320	35.88	0	100	V	48.128	9.04	32.5	60.548	74	-13.452	Peak
22320	35.87	0	100	H	48.128	9.04	32.5	60.538	74	-13.462	Peak
22320	21.02	0	100	V	48.128	9.04	32.5	45.688	54	-8.312	Ave
22320	21.01	0	100	H	48.128	9.04	32.5	45.678	54	-8.322	Ave

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5700 MHz, measured at 3 meters											
5700	86.06	139	111	V	34.965	4.7	0	125.725	Fund.	-	Peak/Fund
5700	73.38	138	100	H	34.965	4.7	0	113.045	Fund.	-	Peak/Fund
5700	62.09	139	111	V	34.965	4.7	0	101.755	Fund.	-	Ave/Fund
5700	51.54	138	100	H	34.965	4.7	0	91.205	Fund.	-	Ave/Fund
11400	46.57	0	100	V	39.406	7.4	36.1	57.276	74	-16.724	Peak
11400	46.34	0	100	H	39.406	7.4	36.1	57.046	74	-16.954	Peak
11400	31.84	0	100	V	39.406	7.4	36.1	42.546	54	-11.454	Ave
11400	31.73	0	100	H	39.406	7.4	36.1	42.436	54	-11.564	Ave
17100	45.35	0	100	V	39.269	7.4	33.8	58.219	74	-15.781	Peak
17100	45.33	0	100	H	39.269	7.4	33.8	58.199	74	-15.801	Peak
17100	31.04	0	100	V	39.269	7.4	33.8	43.909	54	-10.091	Ave
17100	31.06	0	100	H	39.269	7.4	33.8	43.929	54	-10.071	Ave
22800	35.67	0	100	V	48.128	9.04	32.5	60.338	74	-13.662	Peak
22800	35.55	0	100	H	48.128	9.04	32.5	60.218	74	-13.782	Peak
22800	21.49	0	100	V	48.128	9.04	32.5	46.158	54	-7.842	Ave
22800	20.77	0	100	H	48.128	9.04	32.5	45.438	54	-8.562	Ave

40 MHz Bandwidth

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5510 MHz, measured at 3 meters											
5510	76.47	143	100	V	34.965	4.7	0	116.135	Fund.	-	Peak/Fund
5510	61.61	259	100	H	34.965	4.7	0	101.275	Fund.	-	Peak/Fund
5510	61.65	143	100	V	34.965	4.7	0	101.315	Fund.	-	Ave/Fund
5510	47.71	259	100	H	34.965	4.7	0	87.375	Fund.	-	Ave/Fund
5460	29.52	143	100	V	34.965	4.7	0	69.185	74	-4.815	Peak
5460	29.04	259	100	H	34.965	4.7	0	68.705	74	-5.295	Peak
5460	14.03	143	100	V	34.965	4.7	0	53.695	54	-0.305	Ave
5460	13.78	259	100	H	34.965	4.7	0	53.445	54	-0.555	Ave
11020	46.51	0	100	V	39.406	7.4	36.1	57.216	74	-16.784	Peak
11020	46.33	0	100	H	39.406	7.4	36.1	57.036	74	-16.964	Peak
11020	32.59	0	100	V	39.406	7.4	36.1	43.296	54	-10.704	Ave
11020	32.54	0	100	H	39.406	7.4	36.1	43.246	54	-10.754	Ave
16530	45.33	0	100	V	39.269	7.4	33.8	58.199	74	-15.801	Peak
16530	44.97	0	100	H	39.269	7.4	33.8	57.839	74	-16.161	Peak
16530	30.87	0	100	V	39.269	7.4	33.8	43.739	54	-10.261	Ave
16530	30.85	0	100	H	39.269	7.4	33.8	43.719	54	-10.281	Ave
22040	36.09	0	100	V	48.128	9.04	32.5	60.758	74	-13.242	Peak
22040	36.07	0	100	H	48.128	9.04	32.5	60.738	74	-13.262	Peak
22040	22.39	0	100	V	48.128	9.04	32.5	47.058	54	-6.942	Ave
22040	22.31	0	100	H	48.128	9.04	32.5	46.978	54	-7.022	Ave
Middle Channel 5550 MHz, measured at 3 meters											
5550	76.23	161	100	V	34.965	4.7	0	115.895	Fund.	-	Peak/Fund
5550	60.89	138	100	H	34.965	4.7	0	100.555	Fund.	-	Peak/Fund
5550	62.09	161	100	V	34.965	4.7	0	101.755	Fund.	-	Ave/Fund
5550	47.25	138	100	H	34.965	4.7	0	86.915	Fund.	-	Ave/Fund
11100	46.32	0	100	V	39.406	7.4	36.1	57.026	74	-16.974	Peak
11100	46.11	0	100	H	39.406	7.4	36.1	56.816	74	-17.184	Peak
11100	32.14	0	100	V	39.406	7.4	36.1	42.846	54	-11.154	Ave
11100	31.77	0	100	H	39.406	7.4	36.1	42.476	54	-11.524	Ave
16650	43.16	0	100	V	39.269	7.4	33.8	56.029	74	-17.971	Peak
16650	43.15	0	100	H	39.269	7.4	33.8	56.019	74	-17.981	Peak
16650	30.74	0	100	V	39.269	7.4	33.8	43.609	54	-10.391	Ave
16650	30.77	0	100	H	39.269	7.4	33.8	43.639	54	-10.361	Ave
22200	37.05	0	100	V	48.128	9.04	32.5	61.718	74	-12.282	Peak
22200	36.88	0	100	H	48.128	9.04	32.5	61.548	74	-12.452	Peak
22200	23.1	0	100	V	48.128	9.04	32.5	47.768	54	-6.232	Ave
22200	23.11	0	100	H	48.128	9.04	32.5	47.778	54	-6.222	Ave

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5670 MHz, measured at 3 meters											
5670	79.03	139	100	V	34.965	4.7	0	118.695	Fund.	-	Peak/Fund
5670	63.97	134	100	H	34.965	4.7	0	103.635	Fund.	-	Peak/Fund
5670	64.55	139	100	V	34.965	4.7	0	104.215	Fund.	-	Ave/Fund
5670	49.49	134	100	H	34.965	4.7	0	89.155	Fund.	-	Ave/Fund
11340	45.15	0	100	V	39.406	7.4	36.1	55.856	74	-18.144	Peak
11340	45.06	0	100	H	39.406	7.4	36.1	55.766	74	-18.234	Peak
11340	31.4	0	100	V	39.406	7.4	36.1	42.106	54	-11.894	Ave
11340	31.26	0	100	H	39.406	7.4	36.1	41.966	54	-12.034	Ave
17010	46.07	0	100	V	39.269	7.4	33.8	58.939	74	-15.061	Peak
17010	45.89	0	100	H	39.269	7.4	33.8	58.759	74	-15.241	Peak
17010	32.14	0	100	V	39.269	7.4	33.8	45.009	54	-8.991	Ave
17010	31.77	0	100	H	39.269	7.4	33.8	44.639	54	-9.361	Ave
22680	36.52	0	100	V	48.128	9.04	32.5	61.188	74	-12.812	Peak
22680	36.71	0	100	H	48.128	9.04	32.5	61.378	74	-12.622	Peak
22680	23.1	0	100	V	48.128	9.04	32.5	47.768	54	-6.232	Ave
22680	22.74	0	100	H	48.128	9.04	32.5	47.408	54	-6.592	Ave

8 FCC §15.407 & §2.1049– Emission Bandwidth

8.1 Applicable Standards

FCC §15.407& §2.1049

8.2 Measurement Procedure

The measurements are base on FCC KDB 789033 D02 General UNII Test Procedures New Rules v01: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices section C: Emission bandwidth and section D: 99 Percent Occupied Bandwidth

8.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	MY44303352	2013-10-16	1 year

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

8.4 Test Environmental Conditions

Temperature:	22° C
Relative Humidity:	53 %
ATM Pressure:	101 kPa

The testing was performed by Cipher Chu on 2014-10-01 to 2014-10-15 at the RF Site.

8.5 Test Results

Please refer to the following tables and plots

5.3 GHz Band:

Radio Mode	Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)
802.11a	Chain J0			
	Low	5260	22.190	16.8378
	Middle	5280	21.128	16.8033
	High	5320	21.364	16.8183
	Chain J1			
	Low	5260	22.007	16.7241
	Middle	5280	21.605	16.7389
	High	5320	21.252	16.7289
802.11n-HT20 mode	Chain J0			
	Low	5260	22.093	17.9362
	Middle	5280	22.958	17.9645
	High	5320	22.424	17.9998
	Chain J1			
	Low	5260	23.573	18.0376
	Middle	5280	23.470	17.9704
	High	5320	22.566	17.8940
802.11n-HT40 mode	Chain J0			
	Low	5270	46.657	36.2811
	High	5310	41.680	36.2127
	Chain J1			
	Low	5270	59.934	36.5899
	High	5310	45.704	36.2704

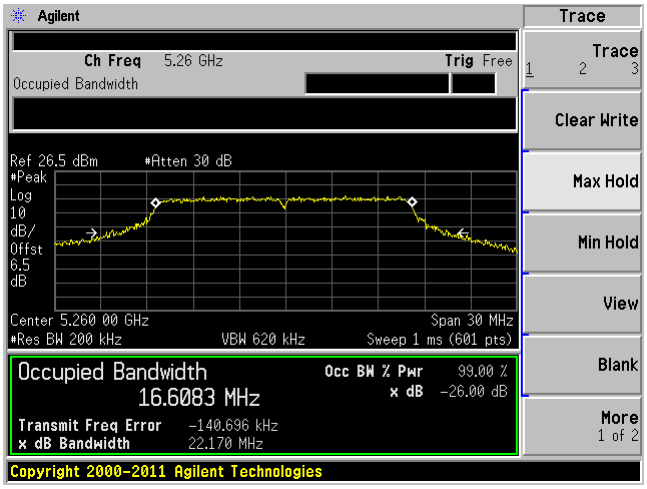
5.6 GHz Band:

Radio Mode	Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)
802.11a	Chain J0			
	Low	5500	21.721	16.5975
	Middle	5580	21.410	16.5437
	High	5700	21.897	16.5045
	Chain J1			
	Low	5500	20.889	16.5498
	Middle	5580	22.245	16.5908
	High	5700	21.685	16.5458
802.11n-HT20 mode	Chain J0			
	Low	5500	22.668	17.6697
	Middle	5580	22.779	17.6762
	High	5700	22.729	17.6667
	Chain J1			
	Low	5500	22.473	17.6875
	Middle	5580	22.433	17.6893
	High	5700	30	17.8626
802.11n-HT40 mode	Chain J0			
	Low	5510	44.979	36.2414
	Middle	5550	43.901	36.3327
	High	5670	44.687	36.3233
	Chain J1			
	Low	5510	45.626	36.33
	Middle	5550	44.368	36.2552
	High	5670	44.255	36.2311

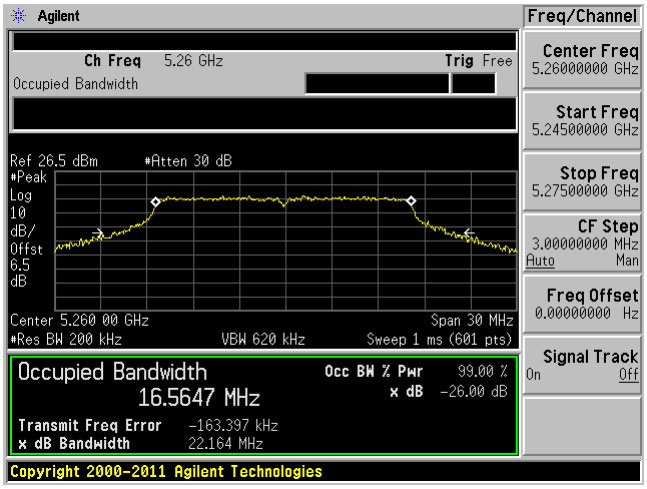
5.3 GHz Band:

802.11a mode

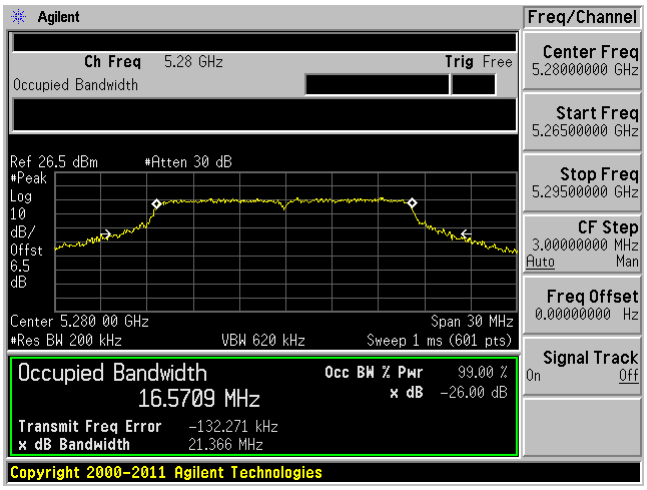
802.11a mode, 5260 MHz, Chain J0



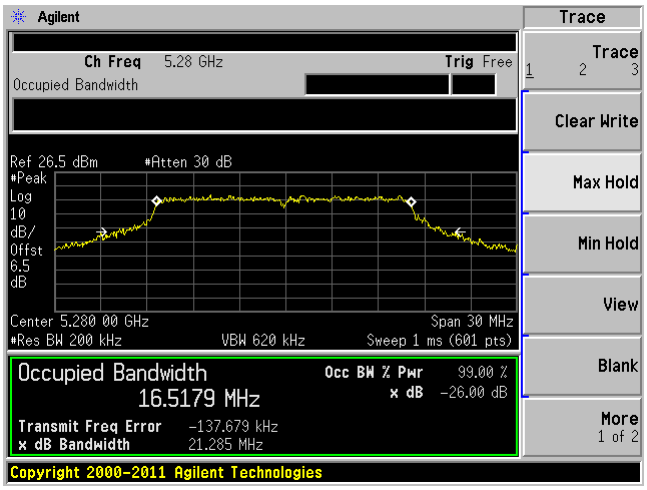
802.11a mode, 5260 MHz, Chain J1



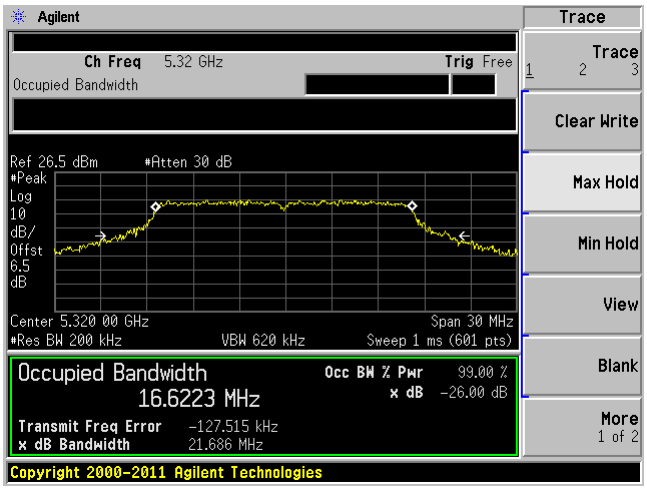
802.11a mode, 5280 MHz, Chain J0



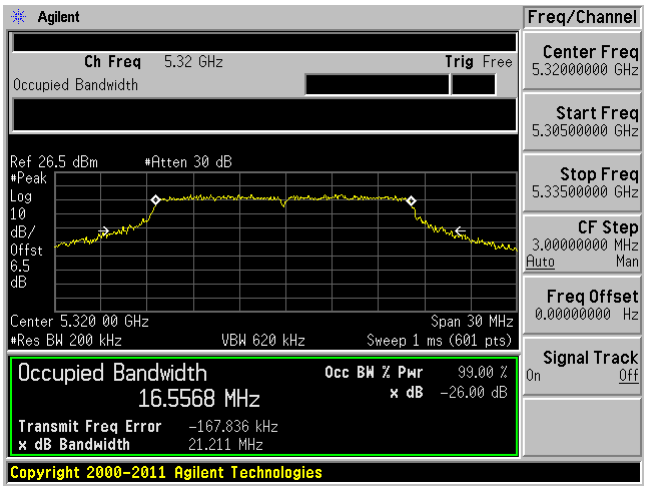
802.11a mode, 5280 MHz, Chain J1



802.11a mode, 5320 MHz, Chain J0

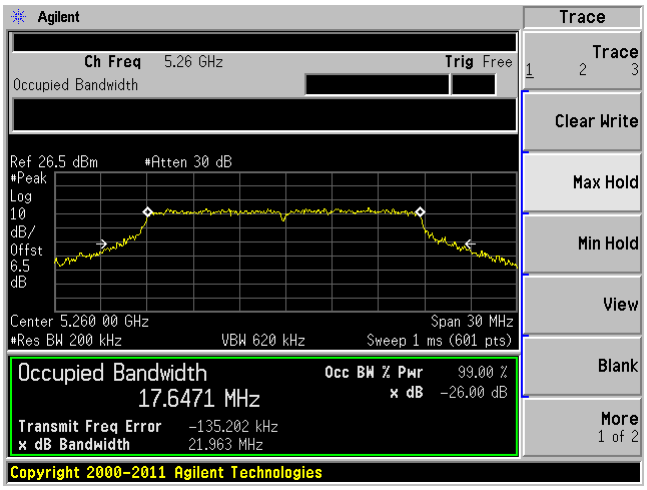


802.11a mode, 5320 MHz, Chain J1

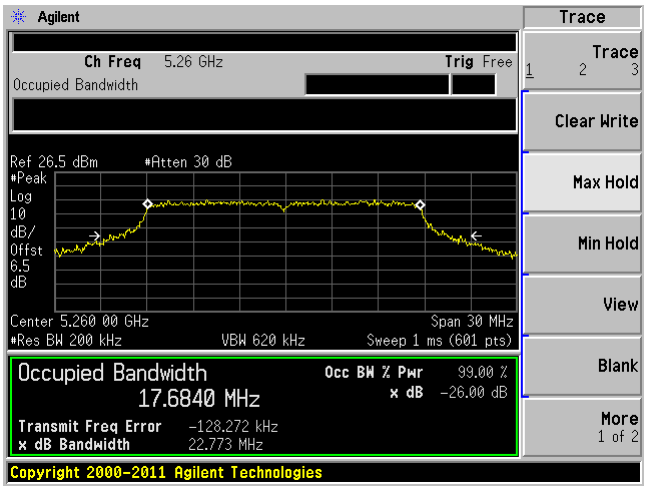


802.11n-HT20 mode

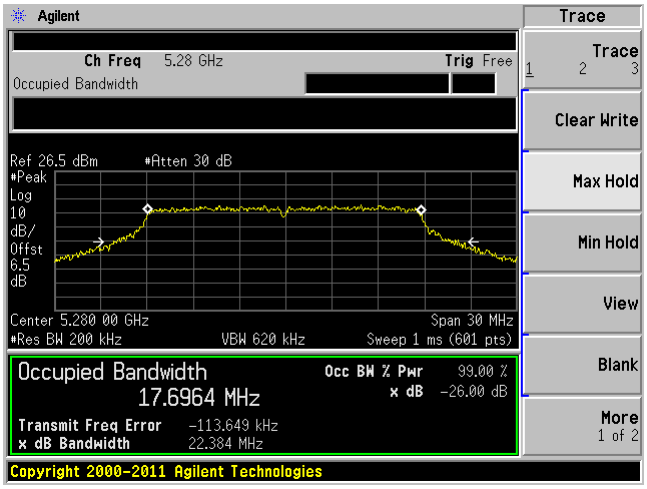
802.11n-HT20 mode, 5260 MHz, Chain J0



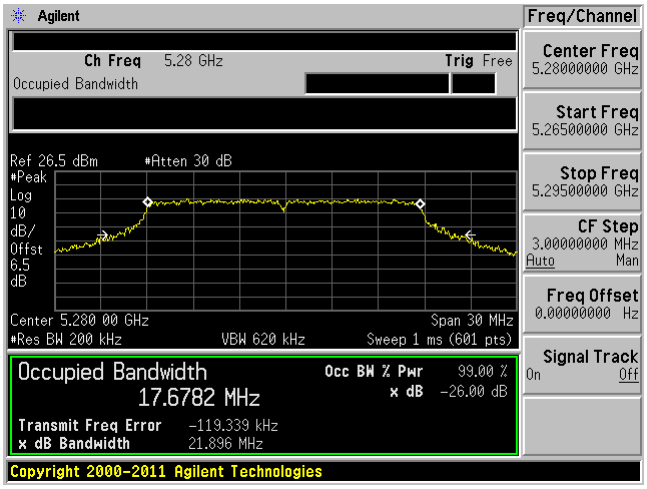
802.11n-HT20 mode, 5260 MHz, Chain J1



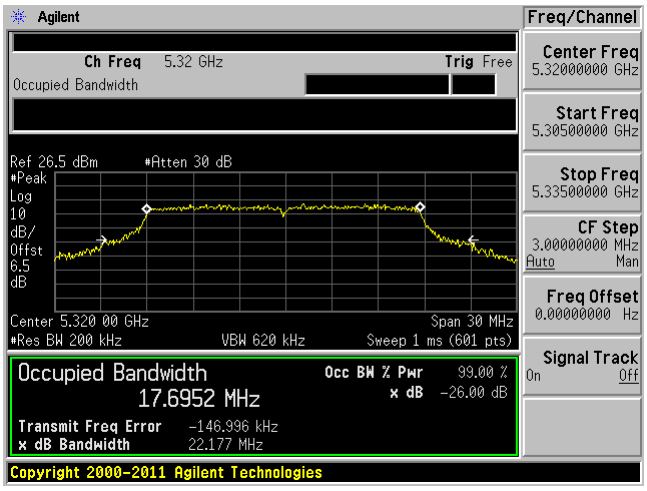
802.11n-HT20 mode, 5280 MHz, Chain J0



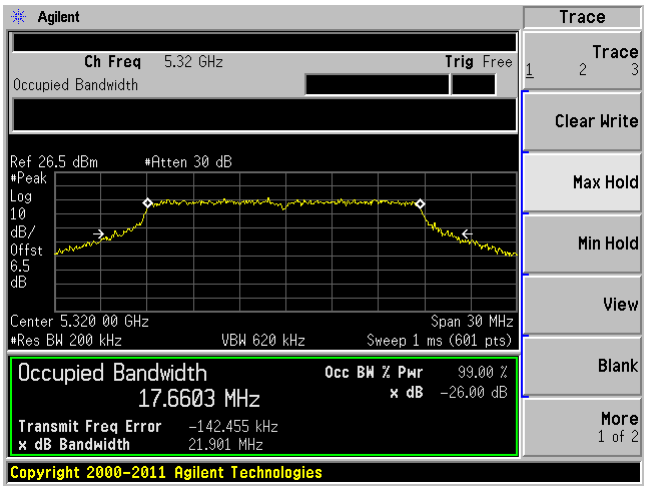
802.11n-HT20 mode, 5280 MHz, Chain J1



802.11n-HT20 mode, 5320 MHz, Chain J0

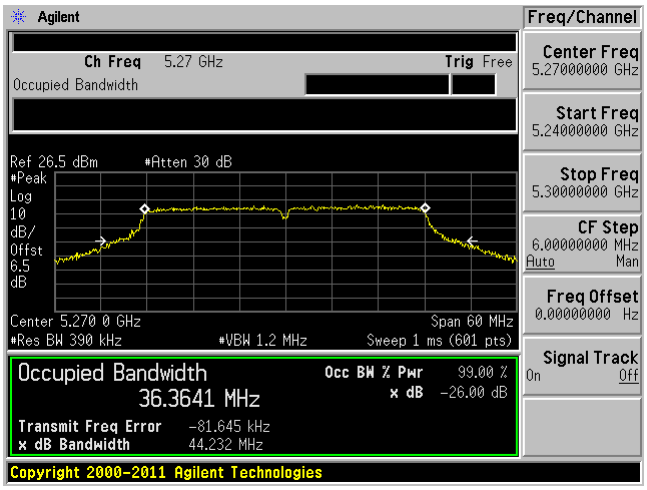


802.11n-HT20 mode, 5320 MHz, Chain J1

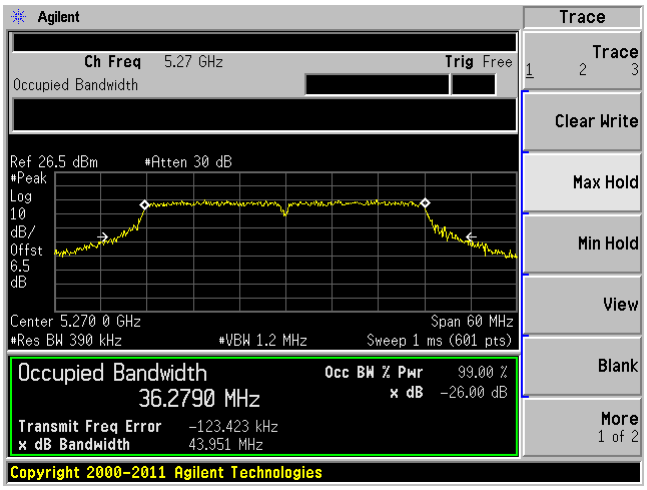


802.11n-HT40 mode

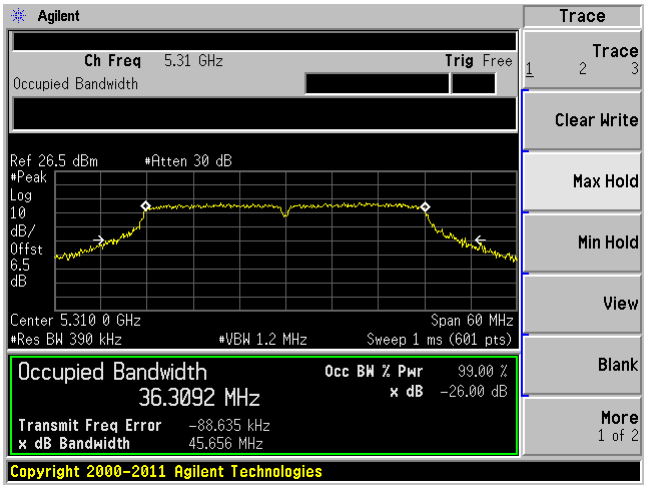
802.11n-HT40 mode, 5270 MHz, Chain J0



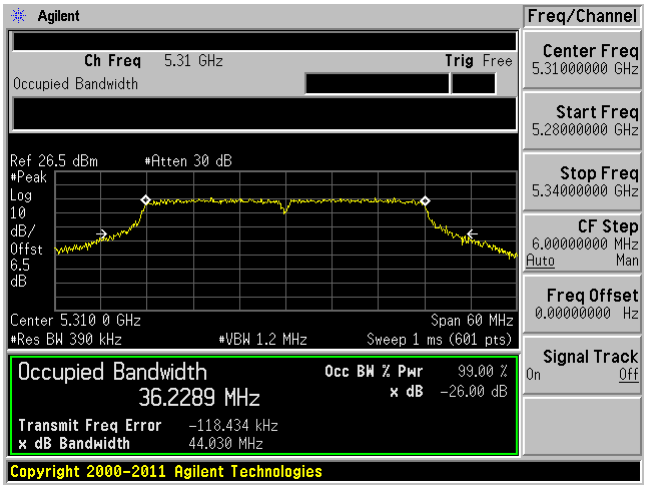
802.11n-HT40 mode, 5270 MHz, Chain J1



802.11n-HT40 mode, 5310 MHz, Chain J0



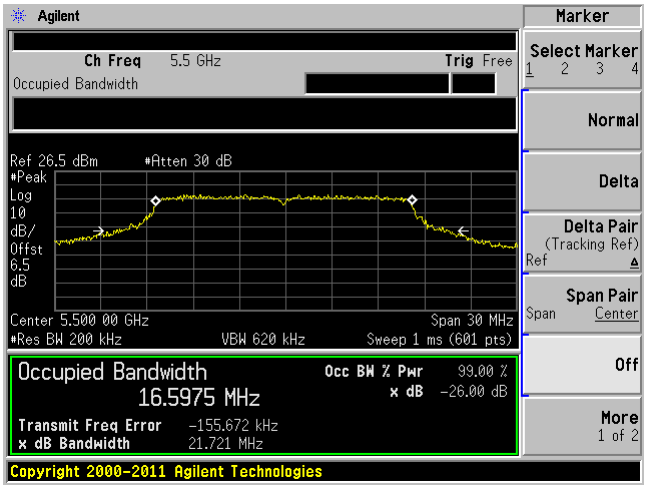
802.11n-HT40 mode, 5310 MHz, Chain J1



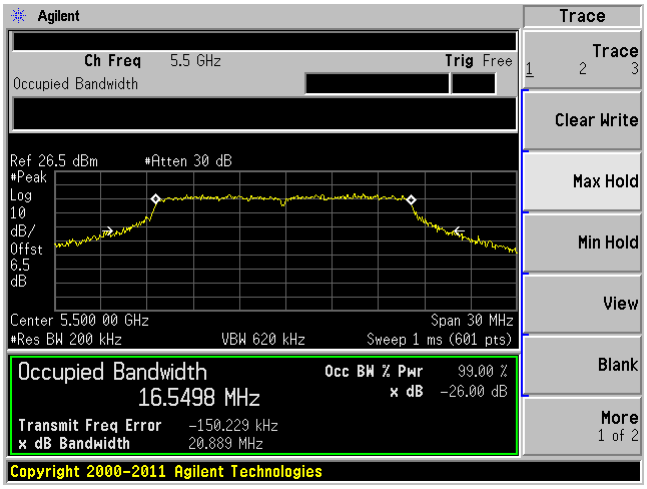
5.6 GHz Band:

802.11a mode

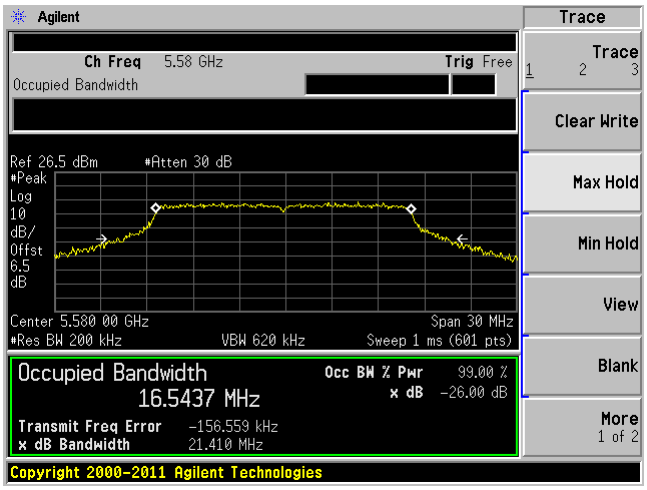
802.11a mode, 5550 MHz, Chain J0



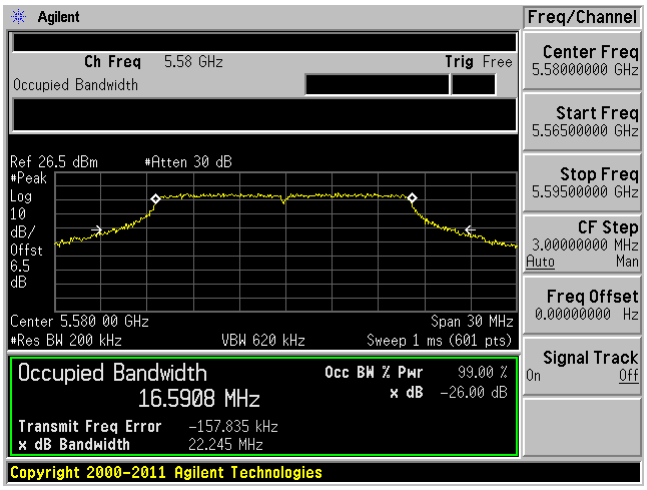
802.11a mode, 5550 MHz, Chain J1



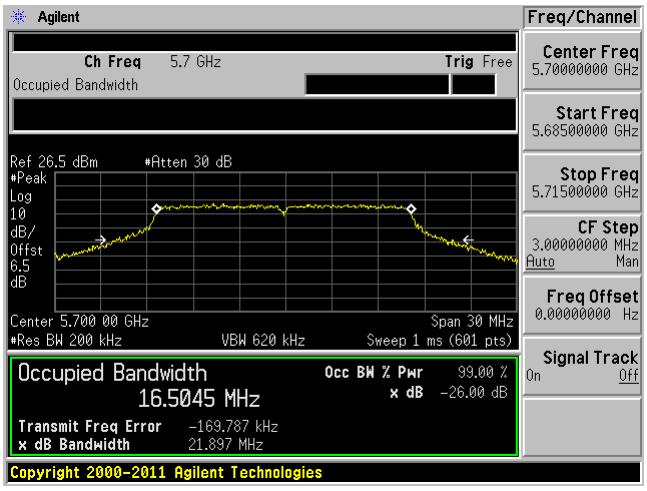
802.11a mode, 5580 MHz, Chain J0



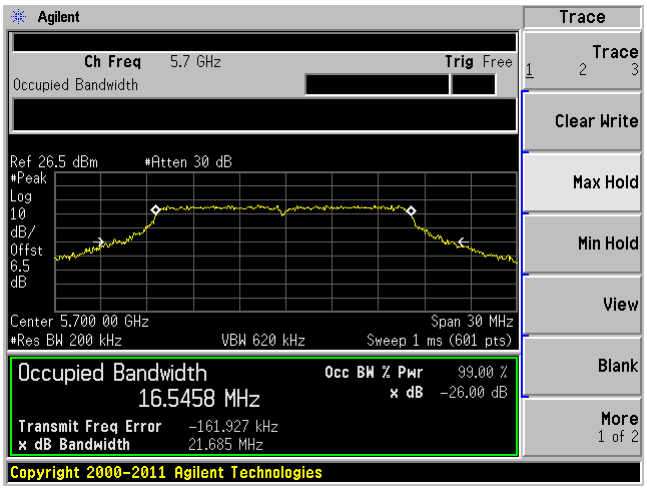
802.11a mode, 5580 MHz, Chain J1



802.11a mode, 5700 MHz, Chain J0

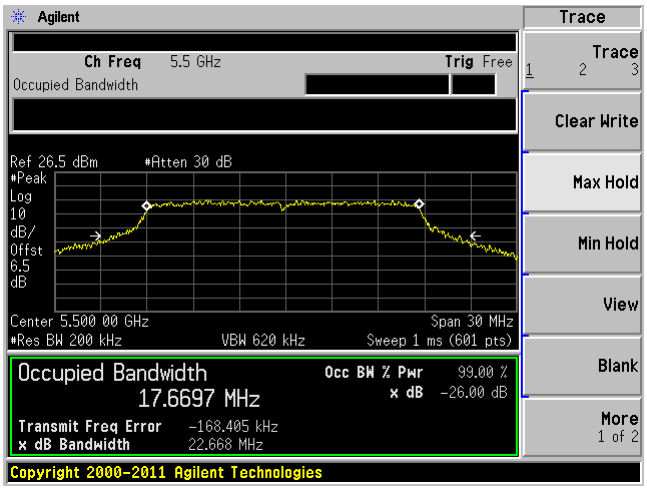


802.11a mode, 5700 MHz, Chain J1

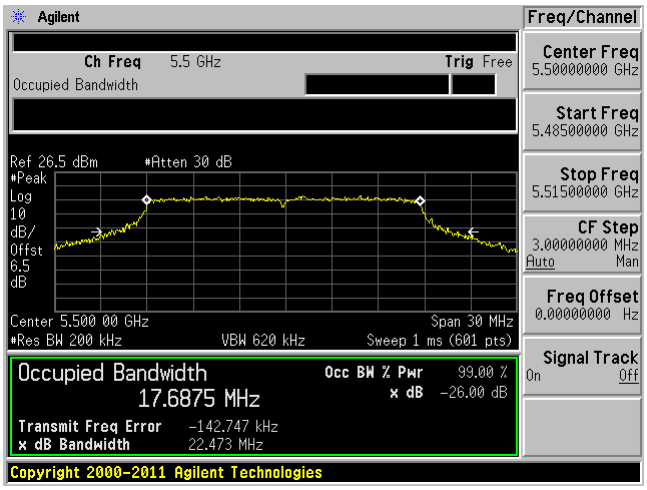


802.11n-HT20 mode

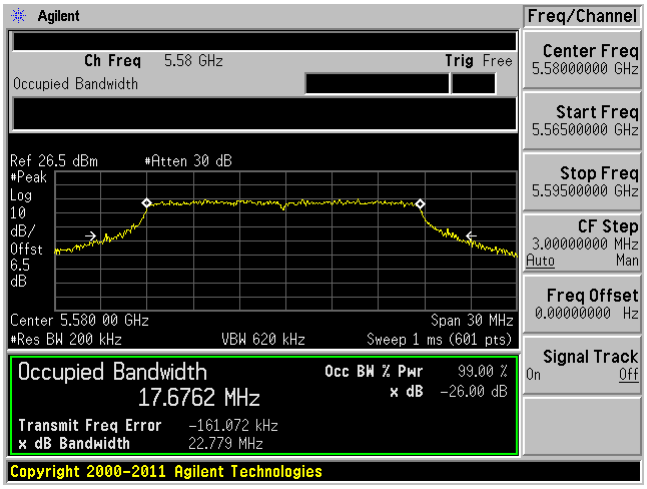
802.11n-HT20 mode, 5500 MHz, Chain J0



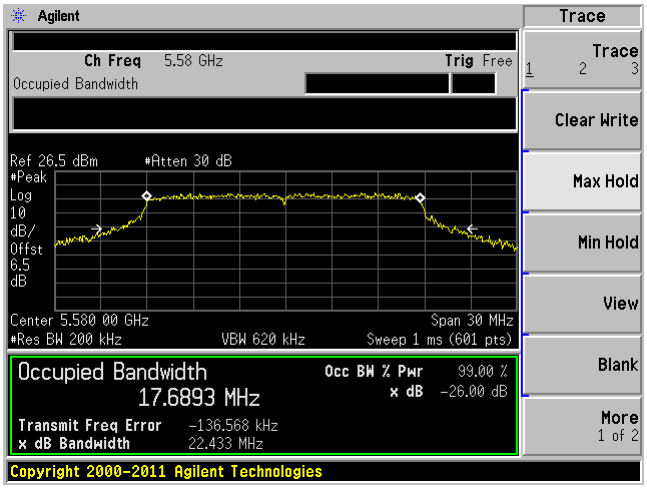
802.11n-HT20 mode, 5500 MHz, Chain J1



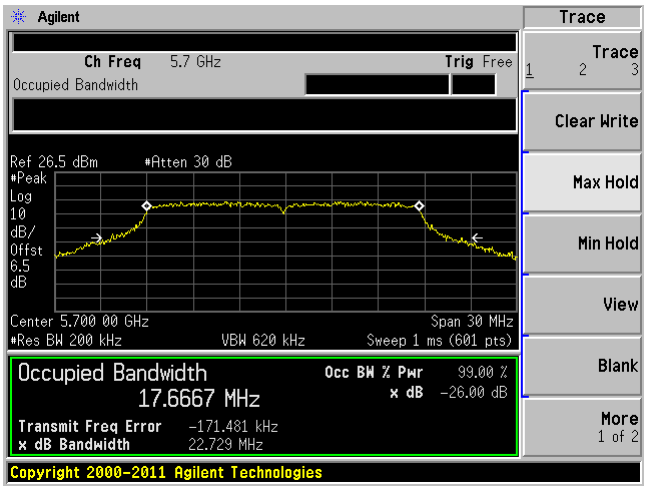
802.11n-HT20 mode, 5580 MHz, Chain J0



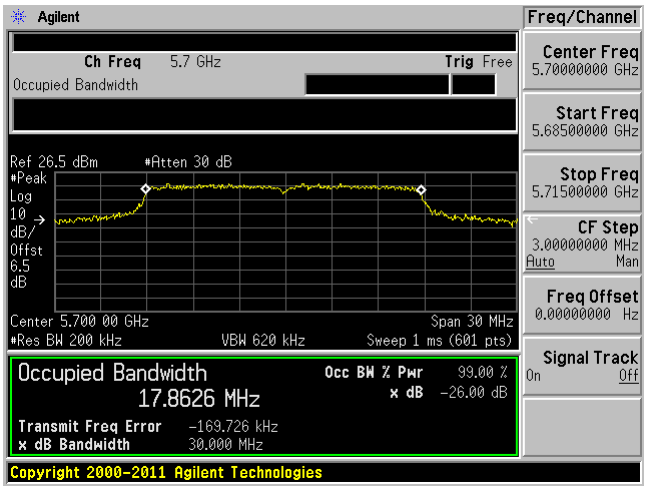
802.11n-HT20 mode, 5580 MHz, Chain J1



802.11n-HT20 mode, 5700 MHz, Chain J0

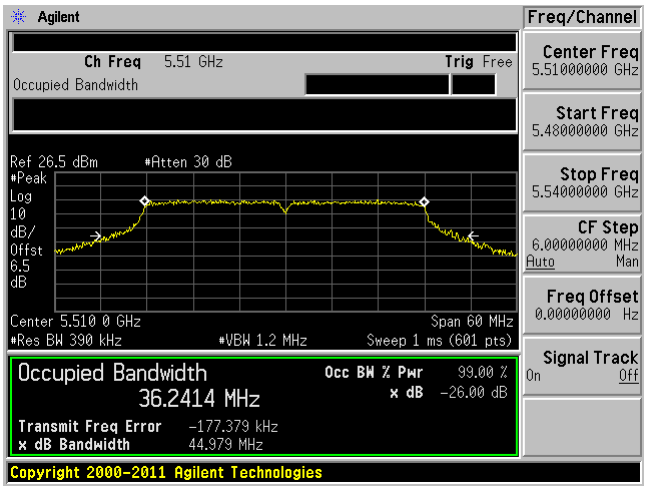


802.11n-HT20 mode, 5700 MHz, Chain J1

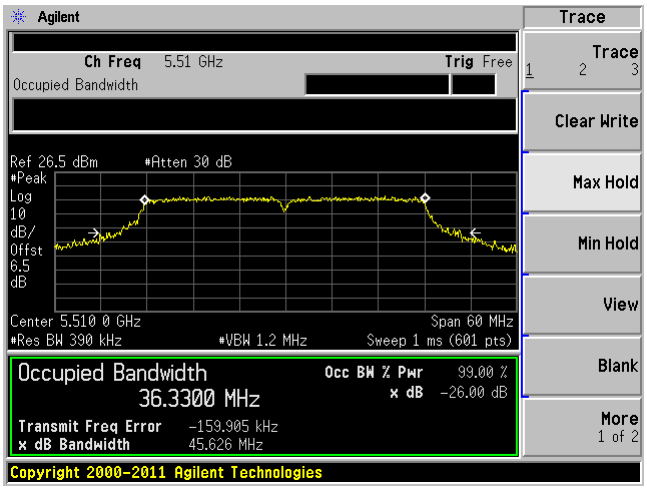


802.11n-HT40 mode

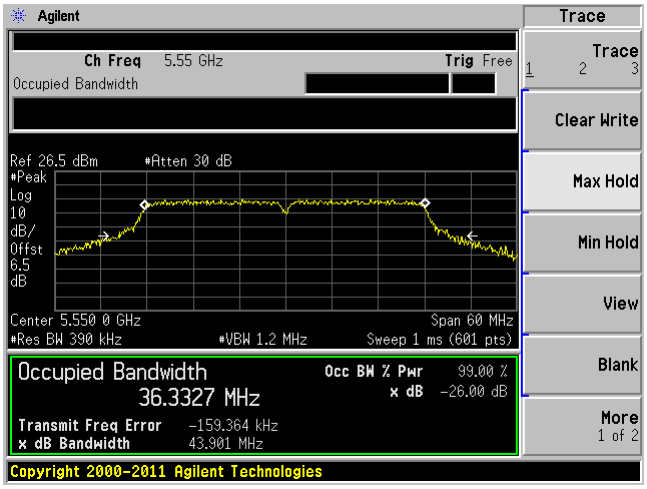
802.11n-HT40 mode, 5510 MHz, Chain J0



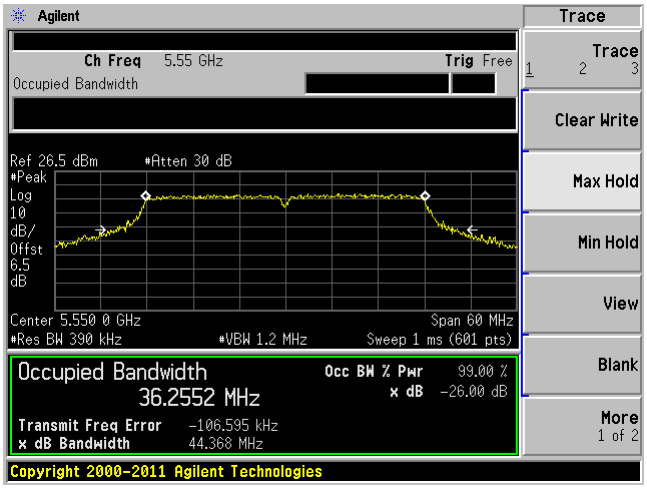
802.11n-HT40 mode, 5510 MHz, Chain J1



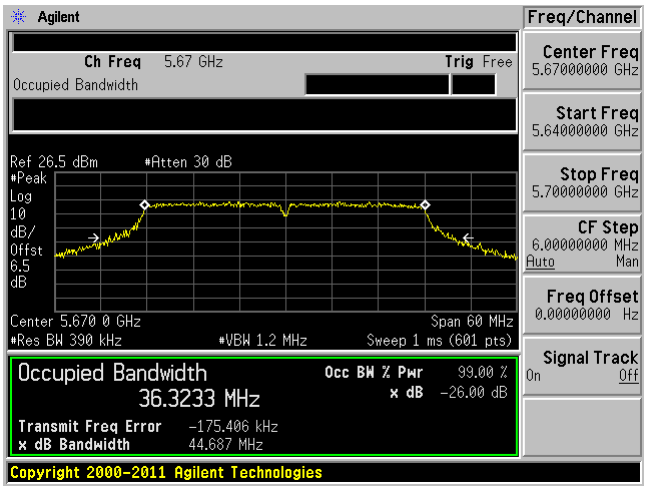
802.11n-HT40 mode, 5550 MHz, Chain J0



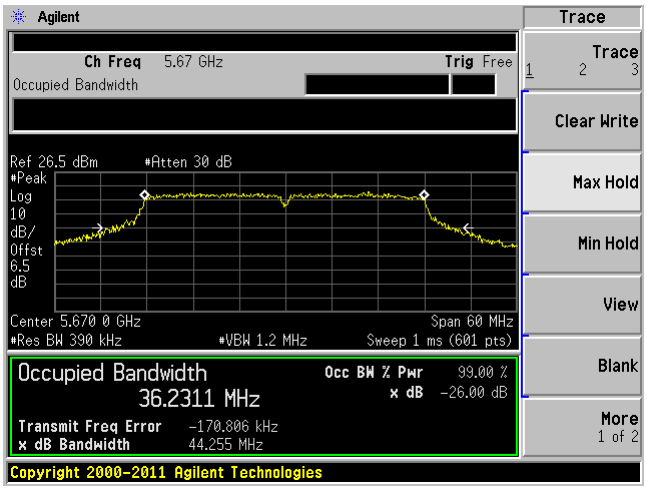
802.11n-HT40 mode, 5550 MHz, Chain J1



802.11n-HT40 mode, 5670 MHz, Chain J0



802.11n-HT40 mode, 5670 MHz, Chain J1



9 FCC §15.407(a)(2) - Output Power

9.1 Applicable Standards

According to FCC §15.407(a)(2)

For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB Emission Bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

9.2 Measurement Procedure

The measurements are base on FCC KDB 789033 D02 General UNII Test Procedures New Rules v01: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices section E: Maximum conducted output power

9.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	MY44303352	2013-10-16	1 year

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

9.4 Test Environmental Conditions

Temperature:	21-23° C
Relative Humidity:	43-48 %
ATM Pressure:	101.1-101.3 kPa

The testing was performed by Cipher Chu on 2014-10-01 to 2014-10-15 at the RF Site.

9.5 Test Results

5.3 GHz Band

Channel	Frequency (MHz)	TX Chain J0 Power (dBm)	TX Chain J1 Power (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
802.11a						
Low	5260	18.55	18.76	21.67	22	-0.33
Middle	5280	18.78	19.04	21.92	22	-0.08
High	5320	18.48	18.83	21.67	22	-0.33
802.11n-HT20						
Low	5260	18.62	18.80	21.72	22	-0.28
Middle	5280	18.86	19.01	21.95	22	-0.05
High	5320	18.58	18.63	21.62	22	-0.38
802.11n-HT40						
Low	5270	18.83	18.62	21.74	22	-0.26
High	5310	18.69	18.73	21.72	22	-0.28

5.6 GHz Band

Channel	Frequency (MHz)	TX Chain J0 Power (dBm)	TX Chain J1 Power (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
802.11a						
Low	5500	18.54	18.87	21.72	22	-0.28
Middle	5580	18.55	18.84	21.71	22	-0.29
High	5700	18.85	19.07	21.97	22	-0.03
802.11n-HT20						
Low	5500	18.71	18.90	21.82	22	-0.18
Middle	5580	18.68	18.63	21.67	22	-0.33
High	5700	18.13	18.70	21.43	22	-0.57
802.11n-HT40						
Low	5510	18.63	18.67	21.66	22	-0.34
Middle	5550	18.70	18.58	21.65	22	-0.35
High	5670	18.50	18.91	21.72	22	-0.28

The 8 dBi patch antenna consist of MMCX connectors with greater than 6 dBi gain; therefore, the output power and power spectral density limit shall be reduced by 2 dB to comply with the antenna requirement.

10 FCC §15.407(a)(2) - Power Spectral Density

10.1 Applicable Standard

According to FCC §15.407(a)(2)

For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 226 dB Emission Bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

10.2 Measurement Procedure

The measurements are base on FCC KDB 789033 D02 General UNII Test Procedures New Rules v01: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices section F: Peak power spectral density (PPSD)

10.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	MY44303352	2013-10-16	1 year

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

10.4 Test Environmental Conditions

Temperature:	21-23° C
Relative Humidity:	43-48 %
ATM Pressure:	101-101.3 kPa

The testing was performed by Cipher Chu on 2014-10-01 to 2014-10-15 at the RF Site.

10.5 Test Results

5.3 GHz Band

Channel	Frequency (MHz)	TX Chain J0 PSD (dBm)	TX Chain J1 PSD (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
802.11a mode						
Low	5260	4.147	5.594	7.94	9	-1.06
Middle	5280	4.618	4.374	7.51	9	-1.49
High	5320	4.126	5.614	7.94	9	-1.06
802.11n-HT20 mode						
Low	5260	3.213	3.664	6.45	9	-2.55
Middle	5280	3.073	3.093	6.09	9	-2.91
High	5320	2.21	3.508	5.92	9	-3.08
802.11n-HT40 mode						
Low	5270	2.305	2.834	5.59	9	-3.41
High	5310	2.18	2.831	5.53	9	-3.47

5.6 GHz Band

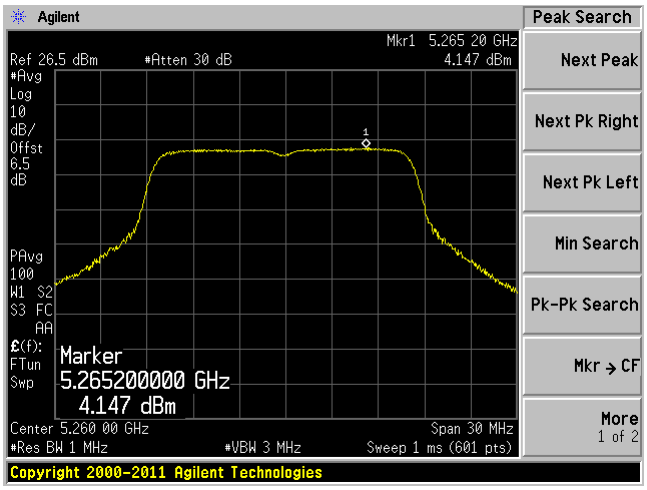
Channel	Frequency (MHz)	TX Chain J0 PSD (dBm)	TX Chain J1 PSD (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
802.11a mode						
Low	5550	4.924	5.188	8.07	9	-0.93
Middle	5580	4.11	5.68	7.98	9	-1.02
High	5700	4.217	4.579	7.41	9	-1.59
802.11n-HT20 mode						
Low	5500	3.136	3.451	6.31	9	-2.69
Middle	5580	3.935	3.358	6.67	9	-2.33
High	5700	3.423	3.607	6.53	9	-2.47
802.11n-HT40 mode						
Low	5510	1.753	2.51	5.16	9	-3.84
Middle	5550	1.393	2.71	5.11	9	-3.89
High	5670	1.094	2.162	4.67	9	-4.33

The 8 dBi patch antenna consist of MMCX connectors with greater than 6 dBi gain; therefore, the output power and power spectral density limit shall be reduced by 2 dB to comply with the antenna requirement.

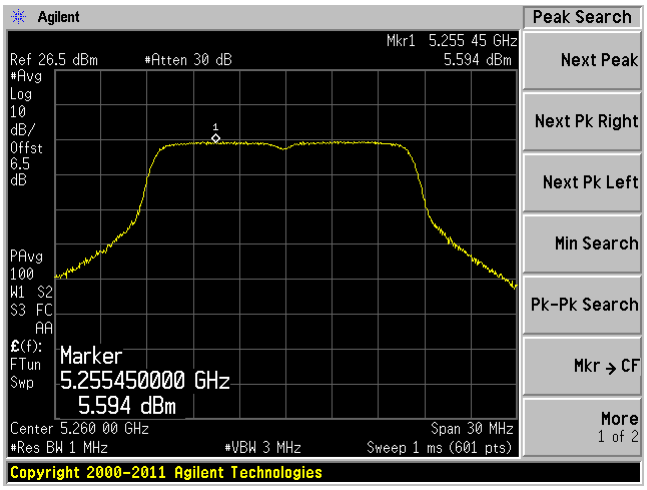
Please refer to the following plots.

5.3 GHz Band

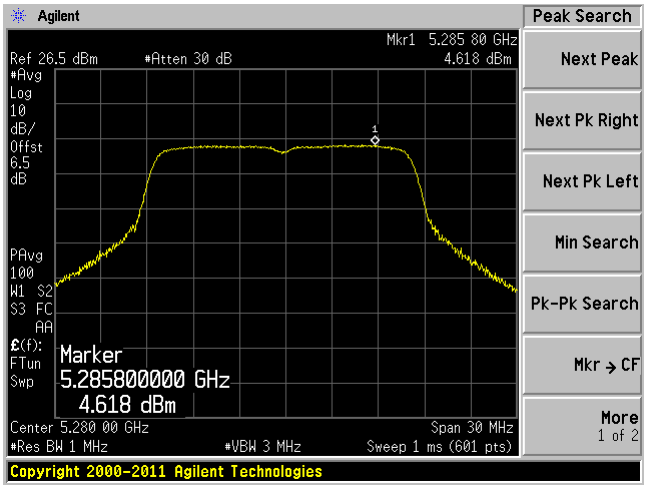
802.11a mode, 5260 MHz, Chain J0



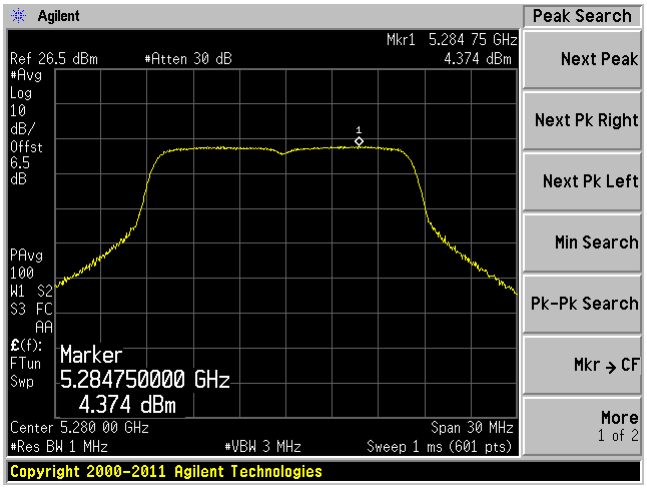
802.11a mode, 5260 MHz, Chain J1



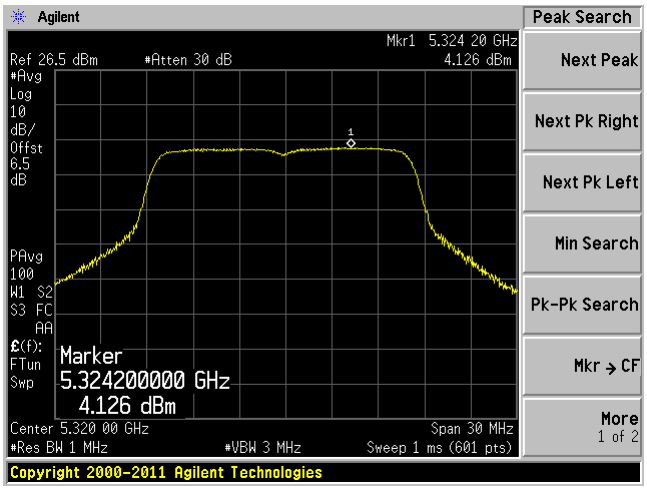
802.11a mode, 5280 MHz, Chain J0



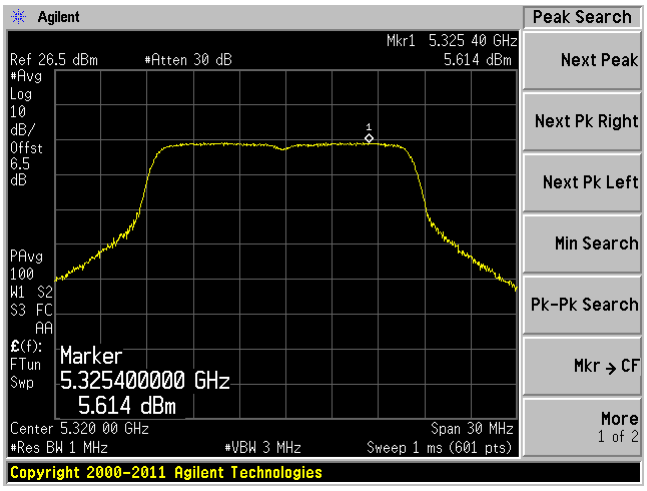
802.11a mode, 5280 MHz, Chain J1



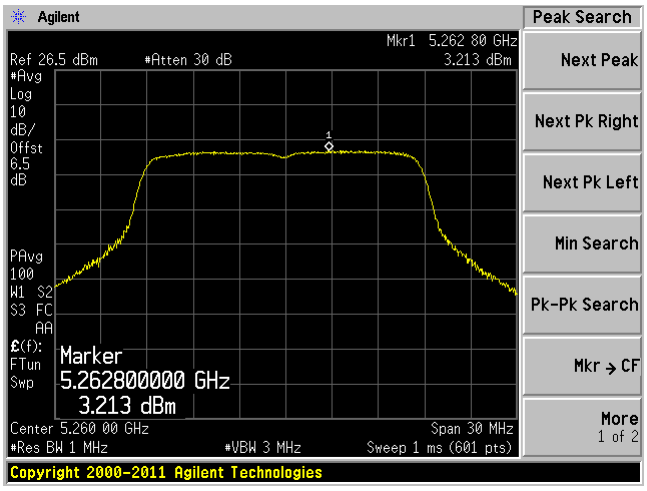
802.11a mode, 5320 MHz, Chain J0



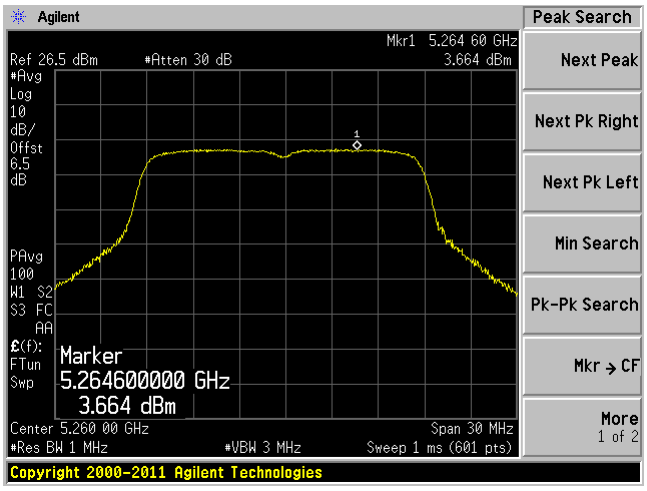
802.11a mode, 5320 MHz, Chain J1



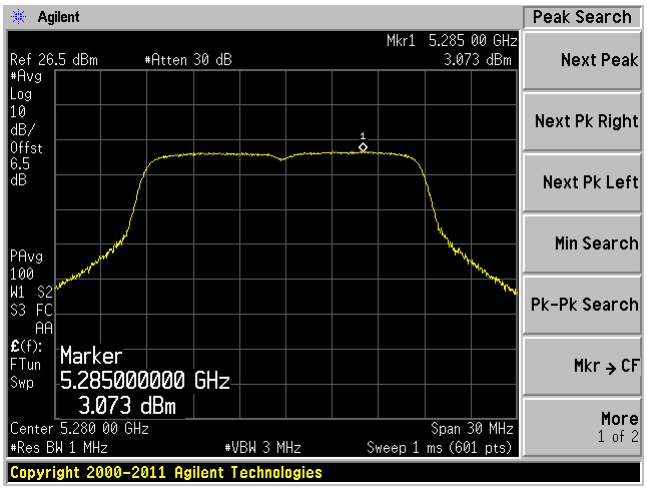
802.11n-HT20 mode, 5260 MHz, Chain J0



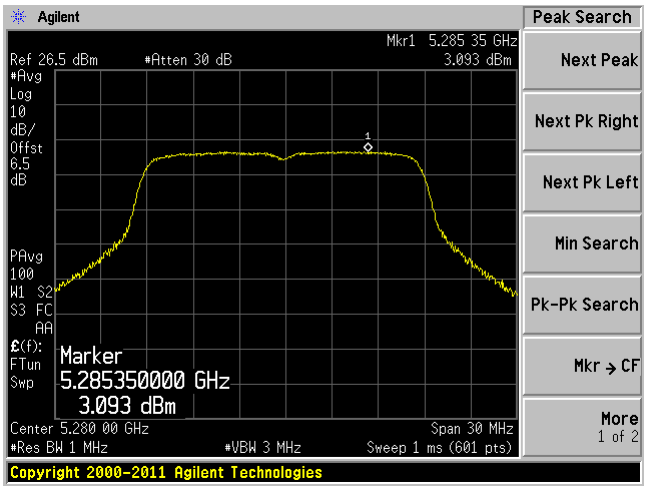
802.11n-HT20 mode, 5260 MHz, Chain J1



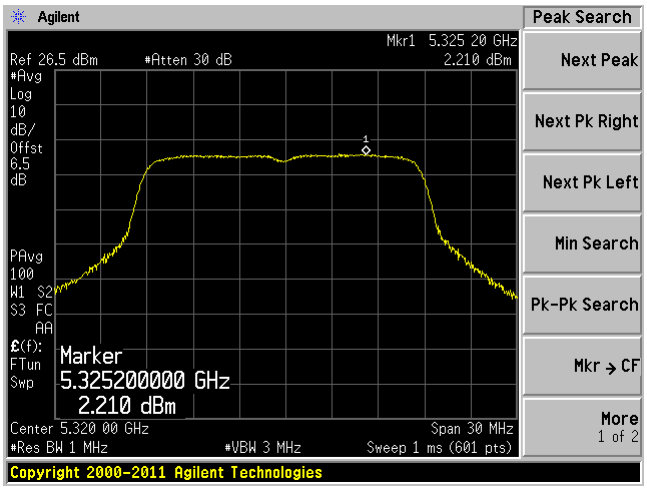
802.11n-HT20 mode, 5280 MHz, Chain J0



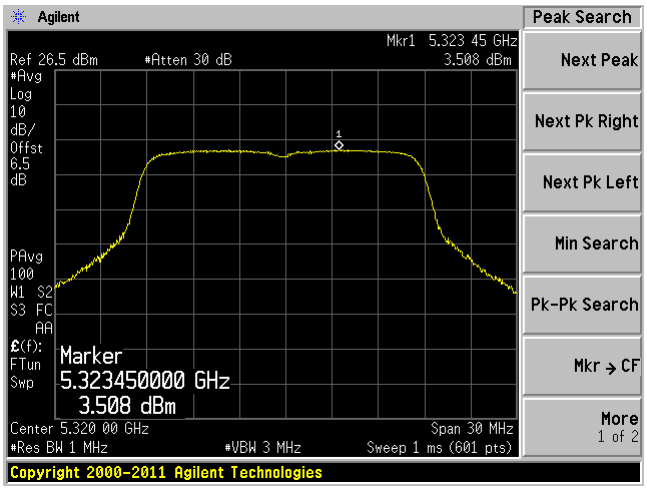
802.11n-HT20 mode, 5280 MHz, Chain J1



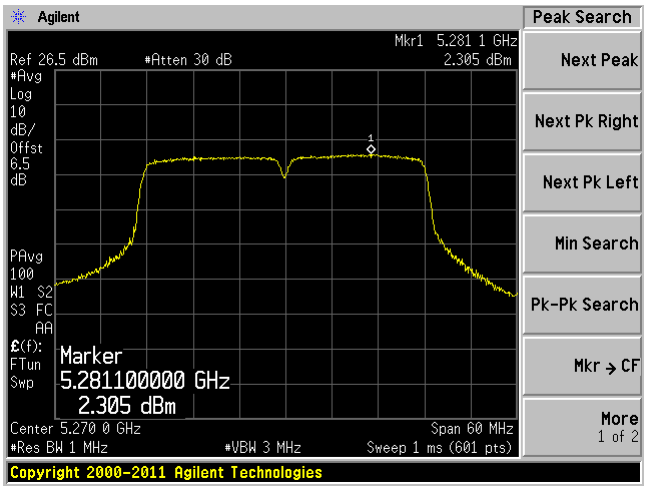
802.11n-HT20 mode, 5320 MHz, Chain J0



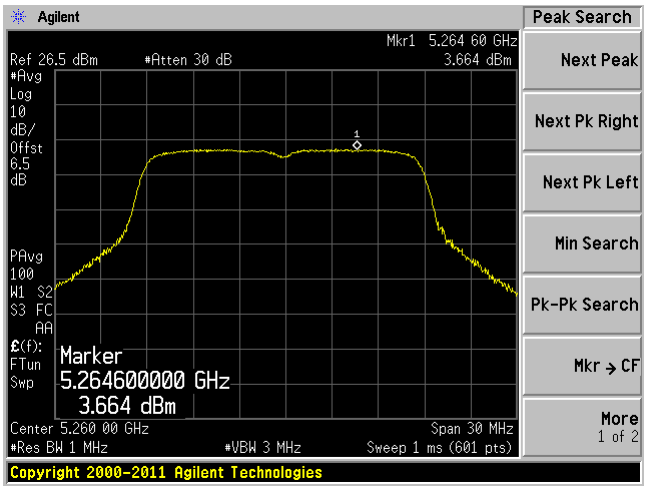
802.11n-HT20 mode, 5320 MHz, Chain J1



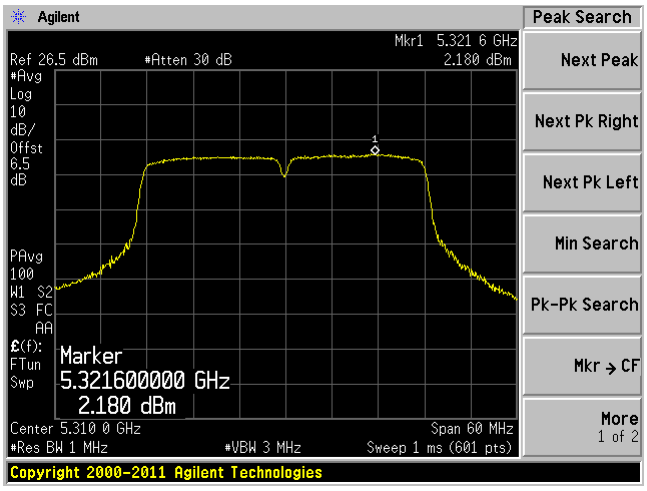
802.11n-HT40 mode, 5270 MHz, Chain J0



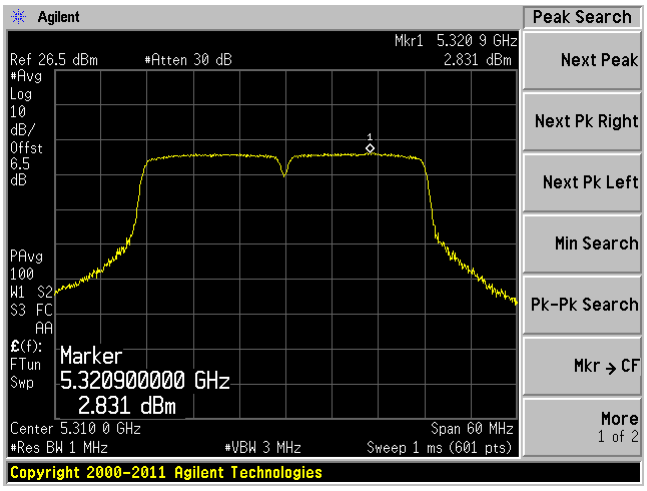
802.11n-HT40 mode, 5270 MHz, Chain J1



802.11n-HT40 mode, 5310 MHz, Chain J0

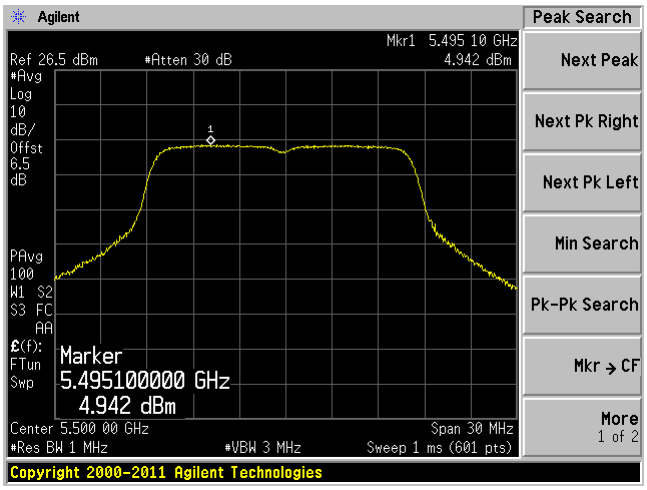


802.11n-HT40 mode, 5310 MHz, Chain J1

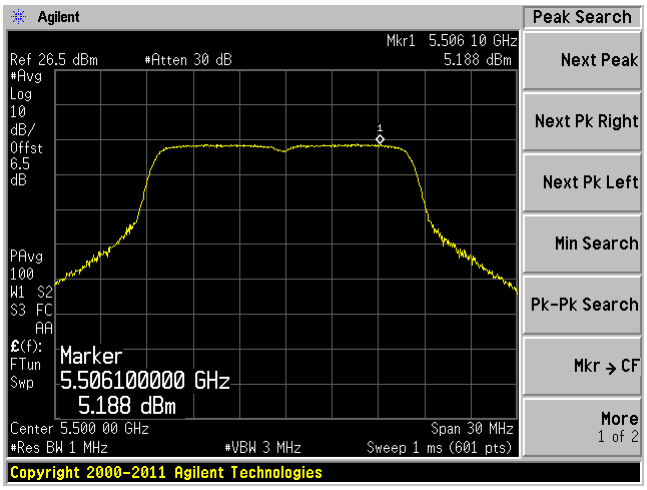


5.6 GHz Band

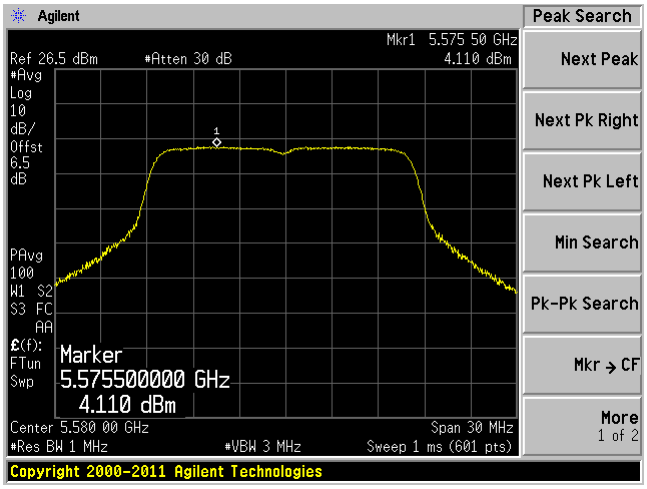
802.11a mode, 5500 MHz, Chain J0



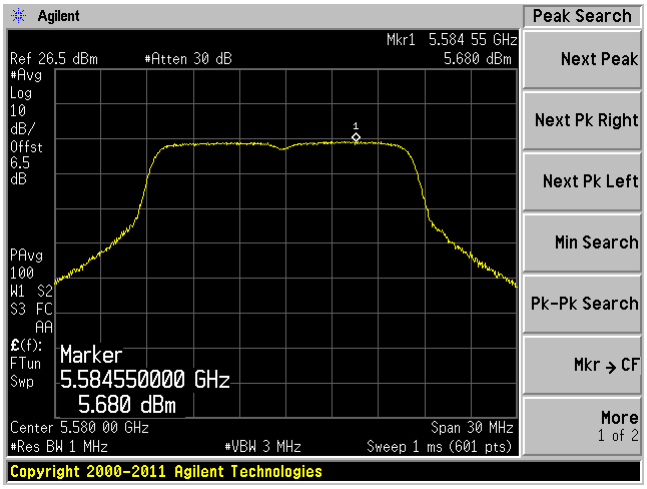
802.11a mode, 5500 MHz, Chain J1



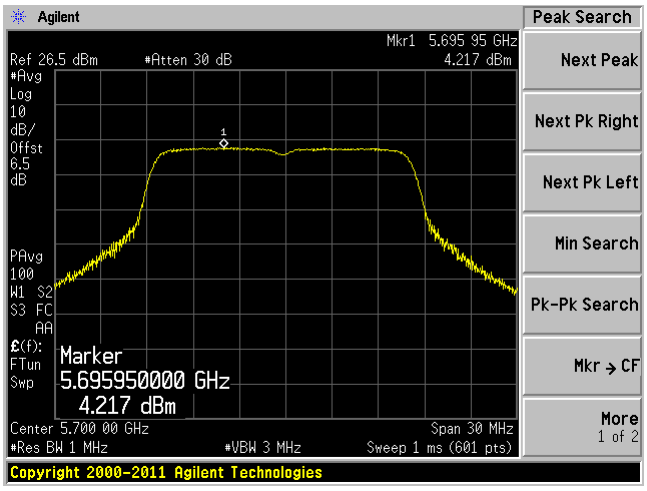
802.11a mode, 5580 MHz, Chain J0



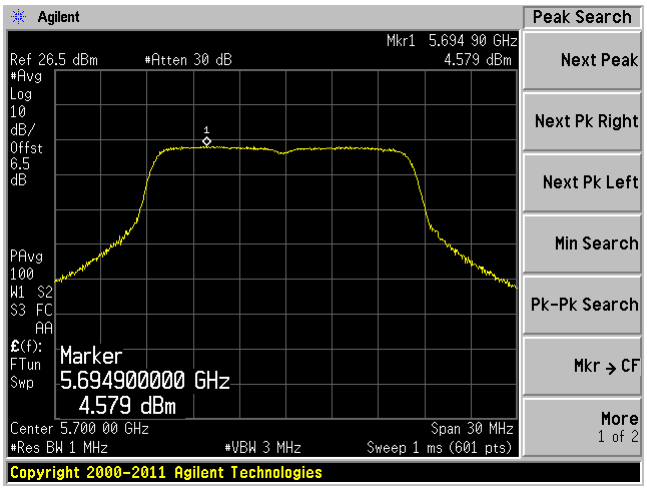
802.11a mode, 5580 MHz, Chain J1



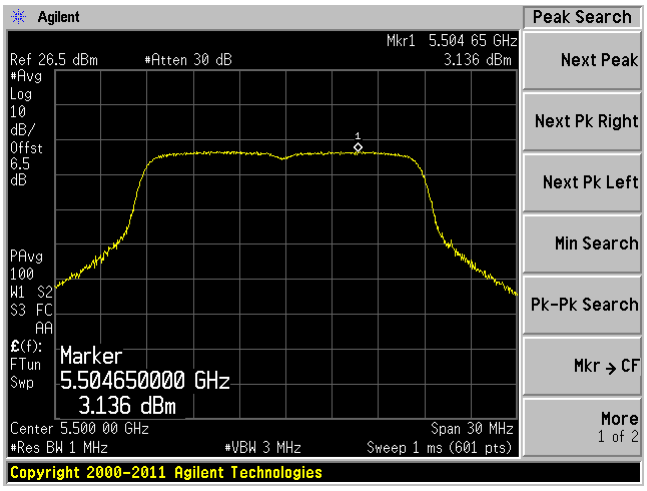
802.11a mode, 5700 MHz, Chain J0



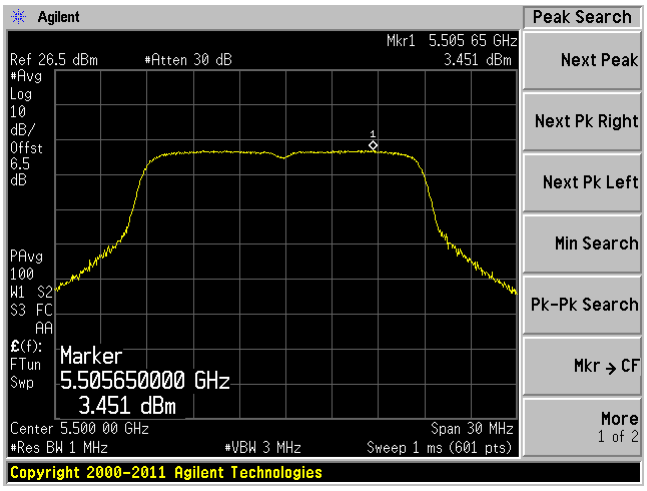
802.11a mode, 5700 MHz, Chain J1



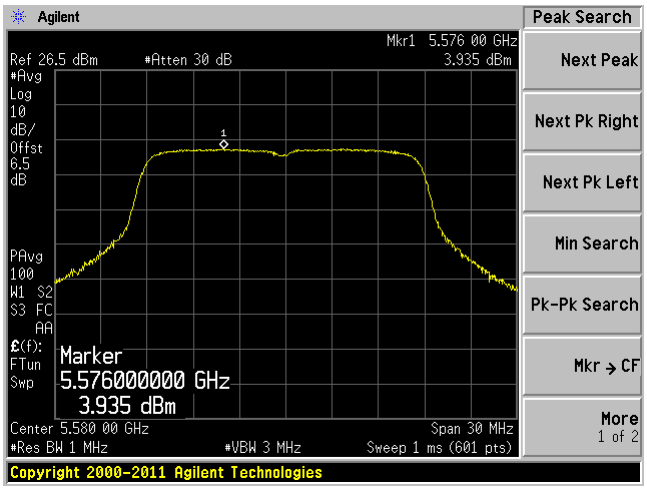
802.11n-HT20 mode, 5500 MHz, Chain J0



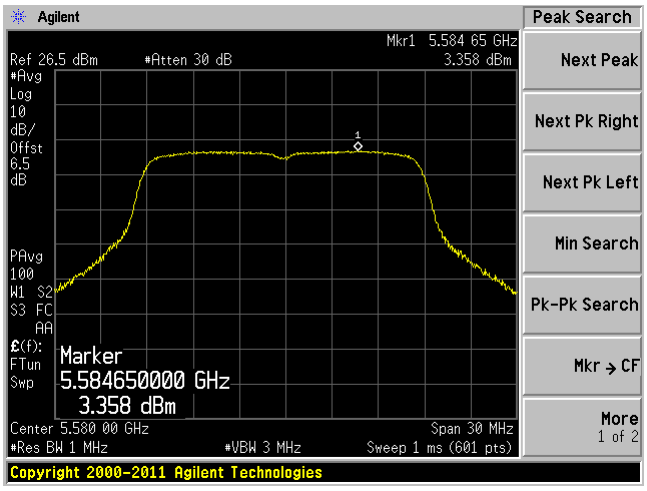
802.11n-HT20 mode, 5500 MHz, Chain J1



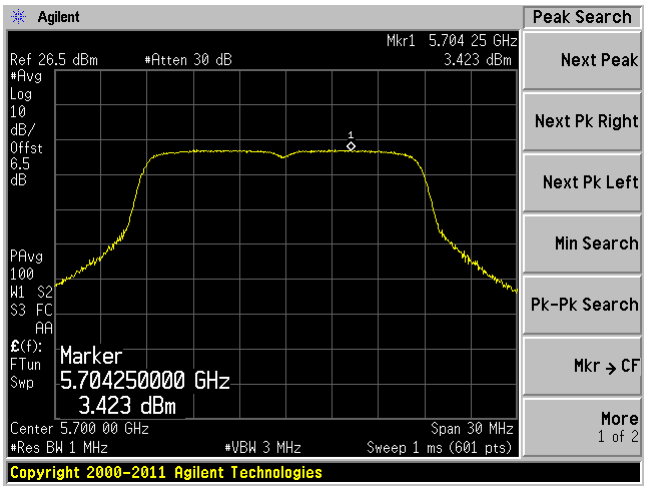
802.11n-HT20 mode, 5580 MHz, Chain J0



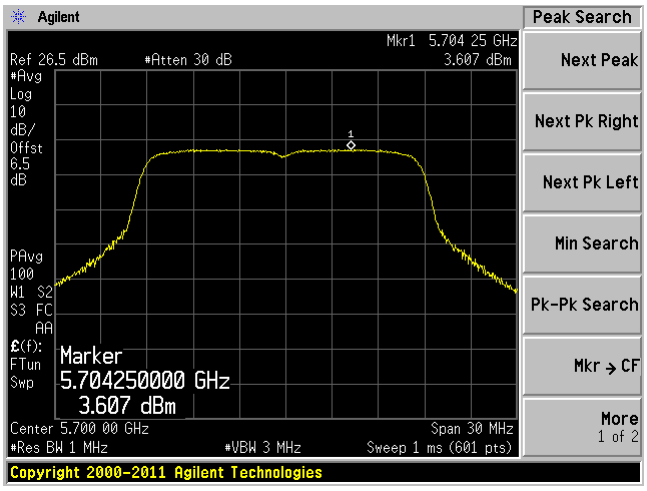
802.11n-HT20 mode, 5580 MHz, Chain J1



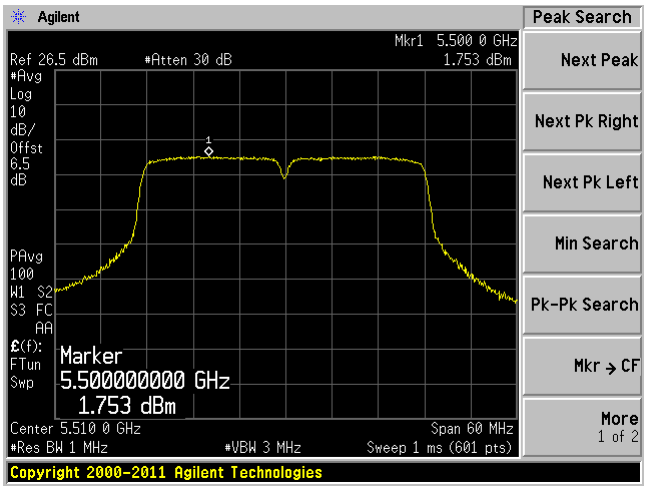
802.11n-HT20 mode, 5700 MHz, Chain J0



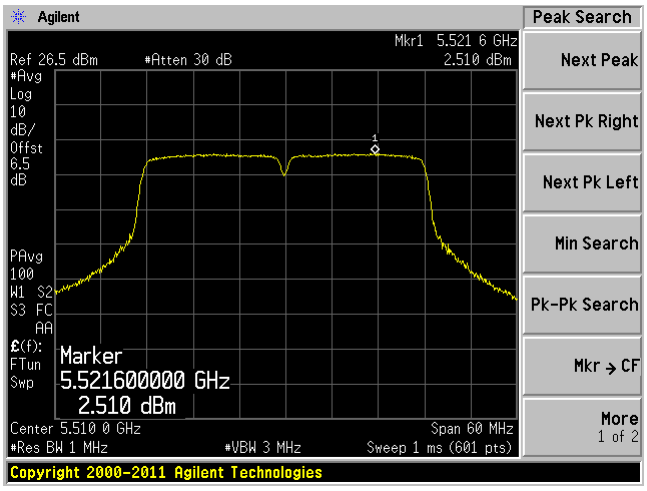
802.11n-HT20 mode, 5700 MHz, Chain J1



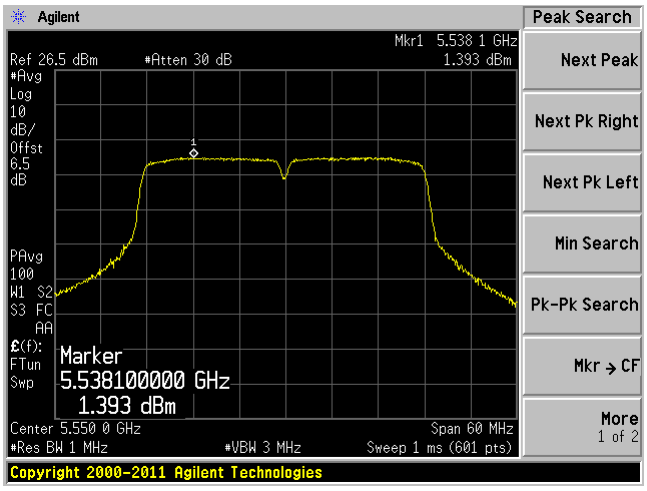
802.11n-HT40 mode, 5510 MHz, Chain J0



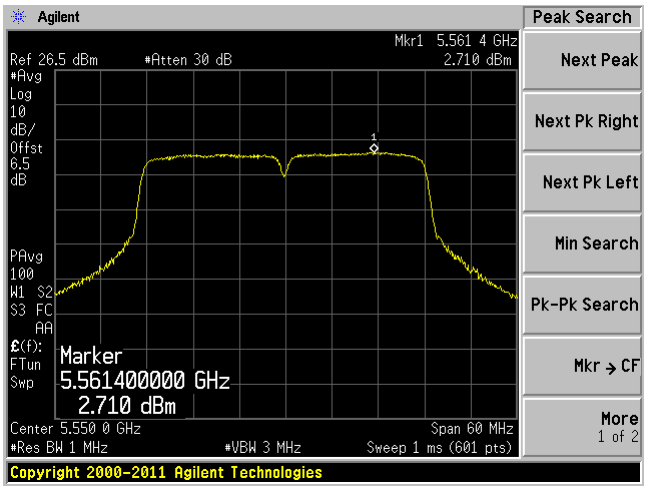
802.11n-HT40 mode, 5510 MHz, Chain J1



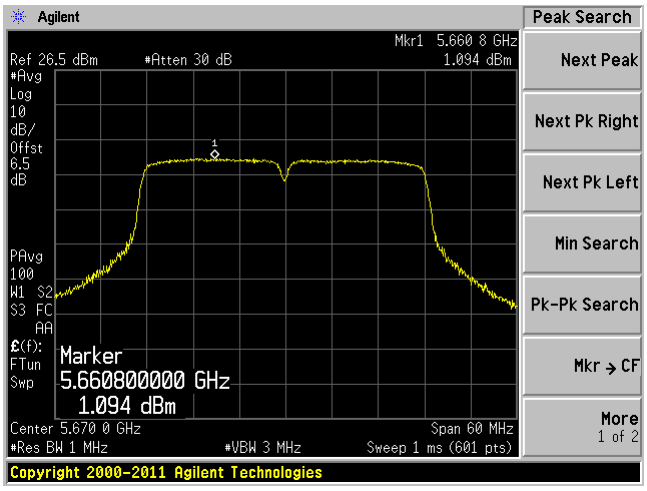
802.11n-HT40 mode, 5550 MHz, Chain J0



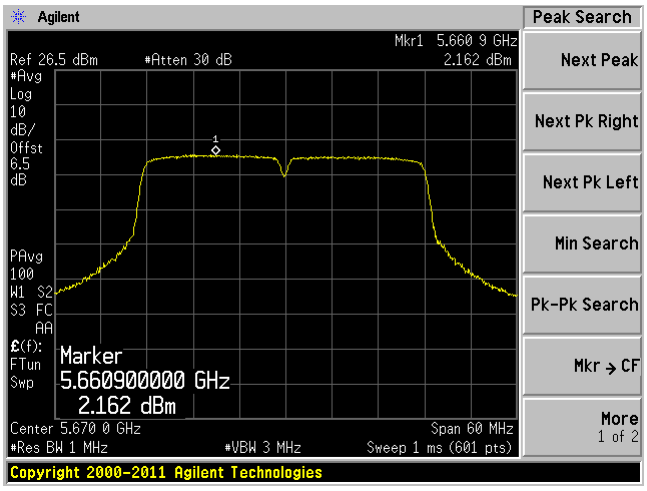
802.11n-HT40 mode, 5550 MHz, Chain J1



802.11n-HT40 mode, 5670 MHz, Chain J0



802.11n-HT40 mode, 5670 MHz, Chain J1



11 FCC §15.407(b) - Spurious Emissions at Antenna Terminals

11.1 Applicable Standard

According to FCC §15.407(b) (2) & (b) (3)

For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

11.2 Measurement Procedure

The measurements are base on FCC KDB 789033 D02 General UNII Test Procedures New Rules v01: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices section G: Unwanted emissions measurement

11.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	MY44303352	2013-10-16	1 year

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

11.4 Test Environmental Conditions

Temperature:	21-23° C
Relative Humidity:	43-48 %
ATM Pressure:	101.1-101.3 kPa

The testing was performed by Cipher Chu on 2014-10-01 to 2014-10-15 at the RF Site.

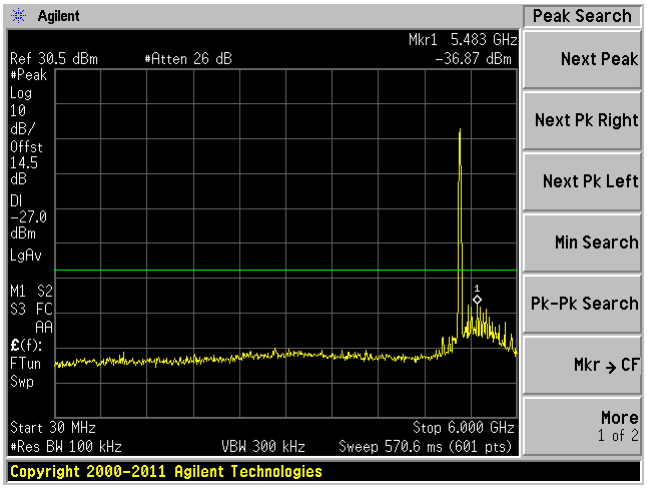
11.5 Test Results

Please refer to following pages for plots of band edge.

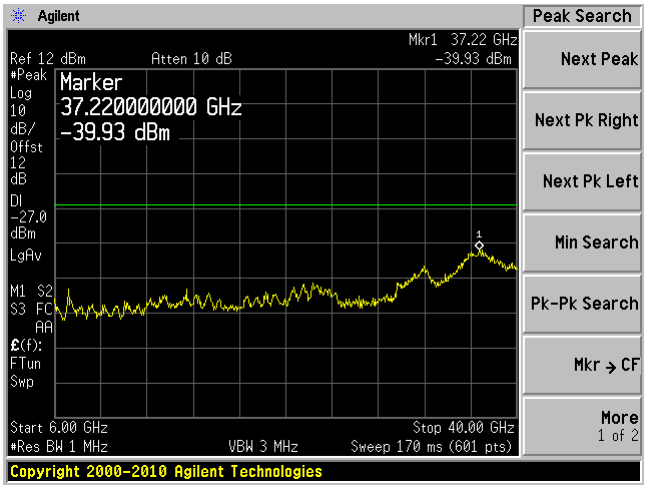
(1) 5.3 GHz Band Conducted Spurious Emissions:

802.11a, Low Channel, 5260 MHz

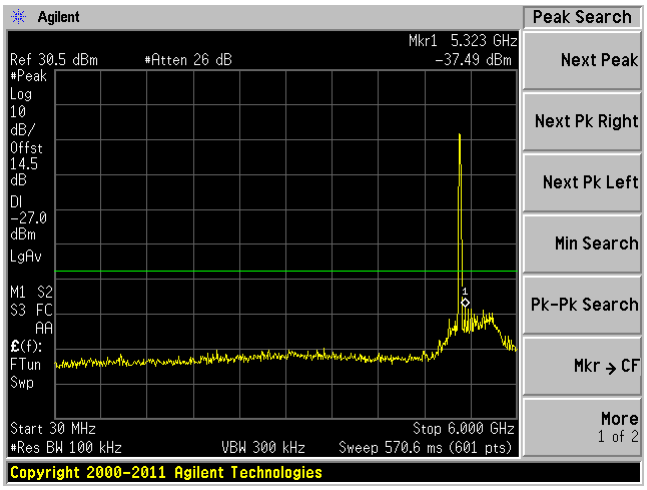
Chain J0, Plot: 30 MHz – 6 GHz



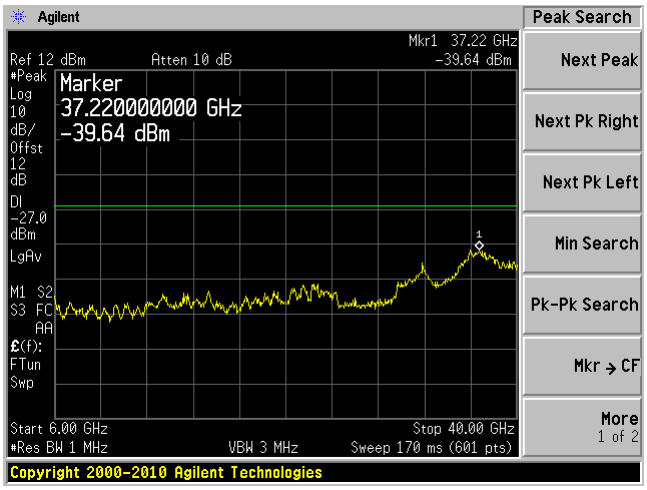
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

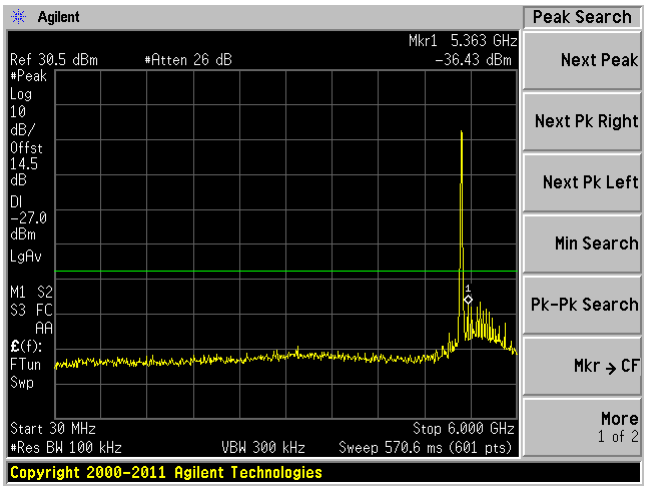


Chain J1, Plot: 6 GHz – 40 GHz

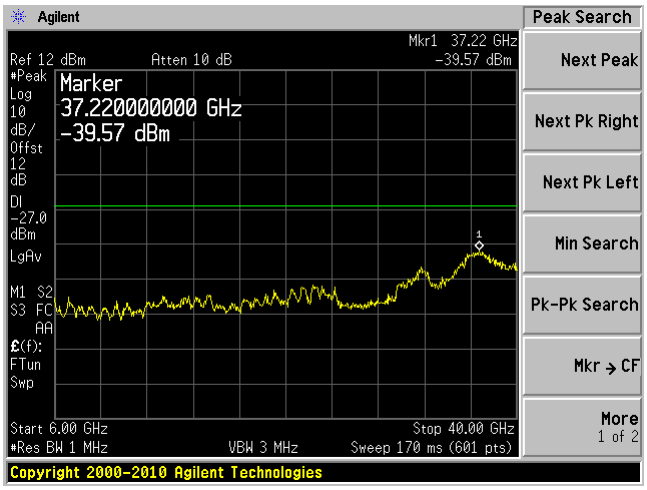


802.11a, Middle Channel, 5280 MHz

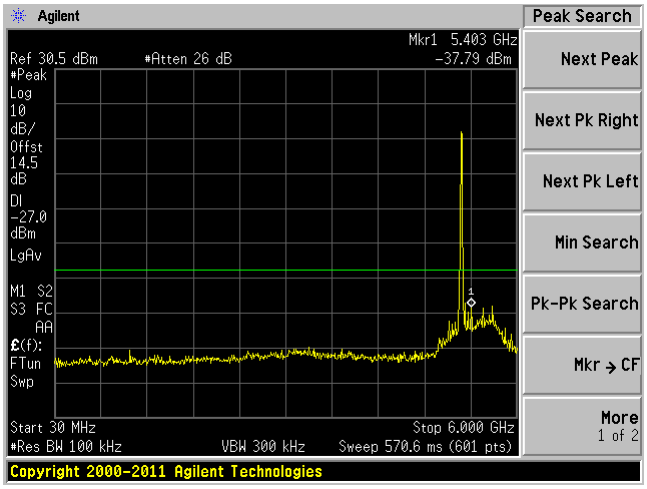
Chain J0, Plot: 30 MHz – 6 GHz



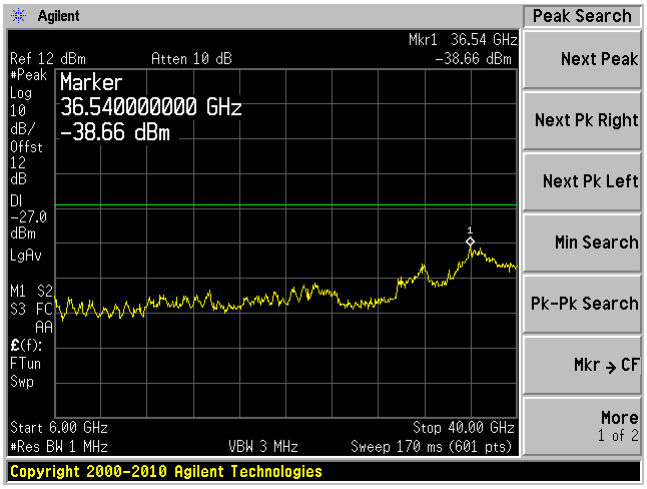
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

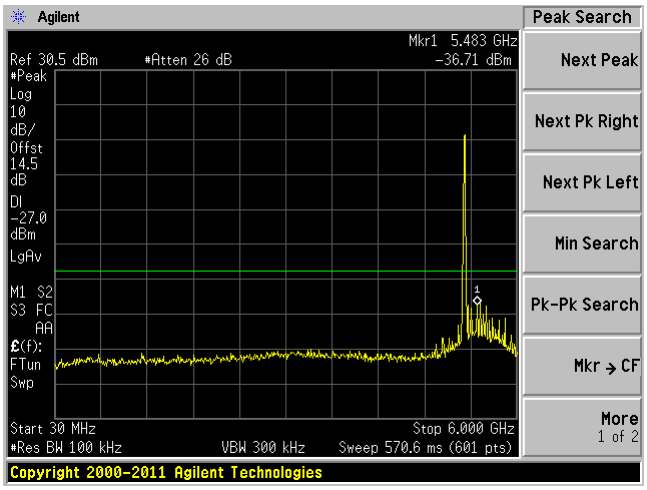


Chain J1, Plot: 6 GHz – 40 GHz

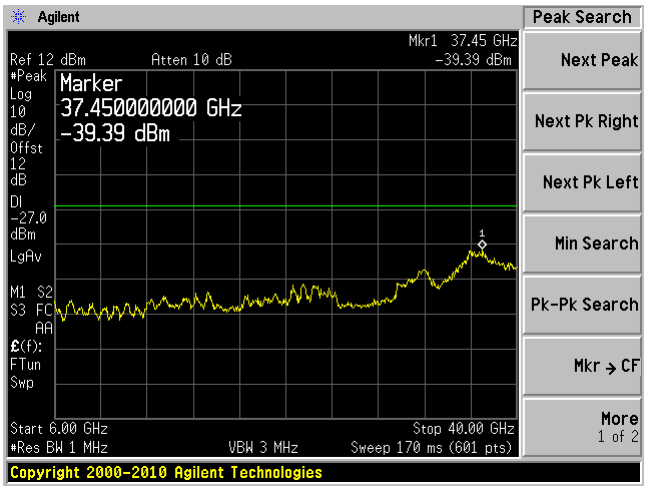


802.11a, High Channel, 5320 MHz

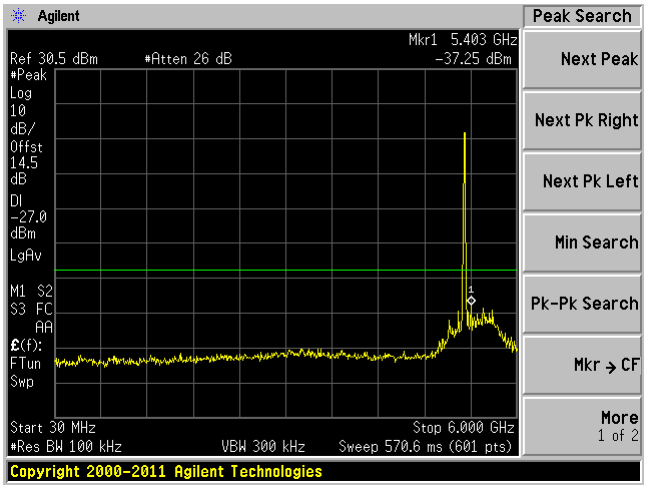
Chain J0, Plot: 30 MHz – 6 GHz



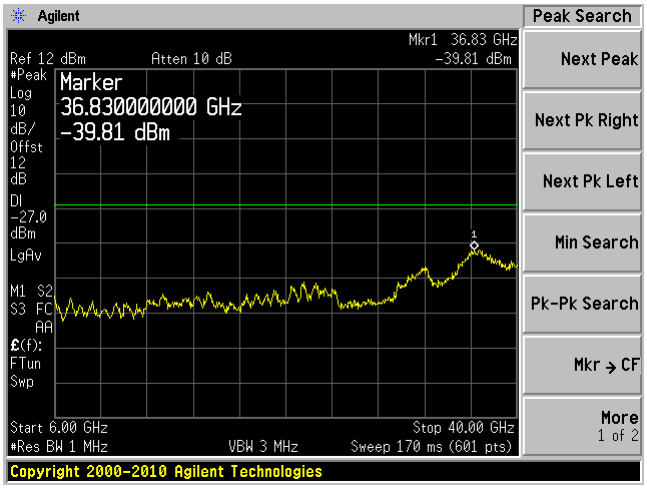
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

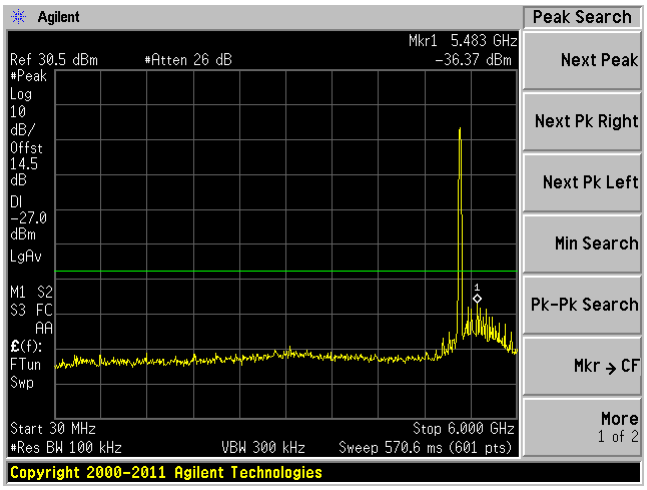


Chain J1, Plot: 6 GHz – 40 GHz

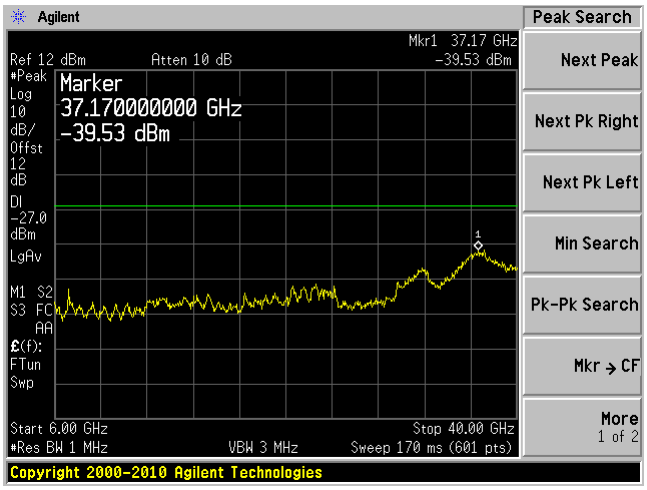


802.11n-HT20, Low Channel 5260 MHz

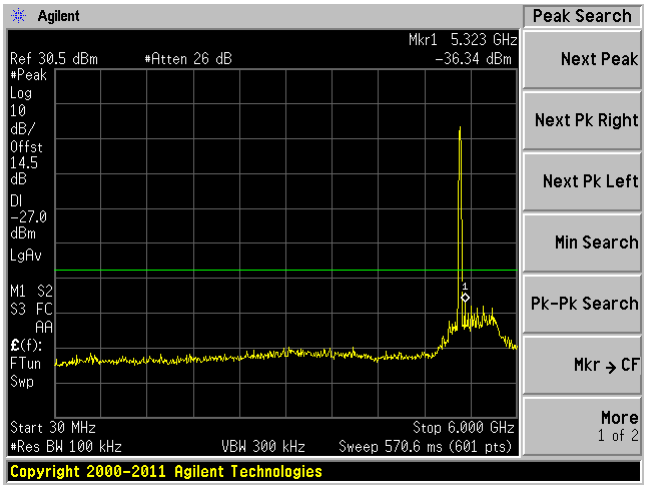
Chain J0, Plot: 30 MHz – 6 GHz



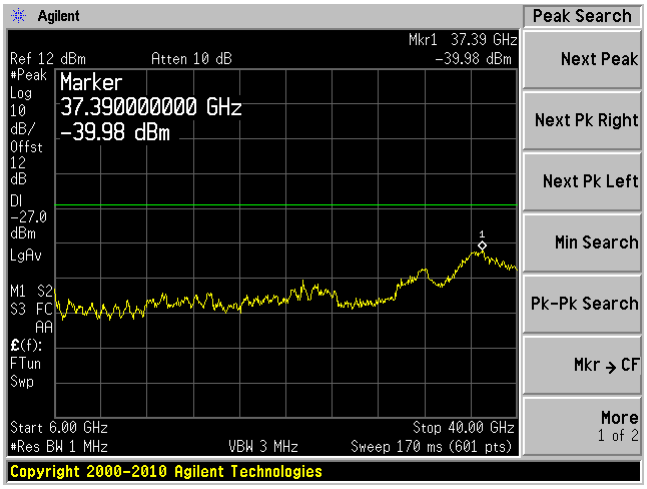
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

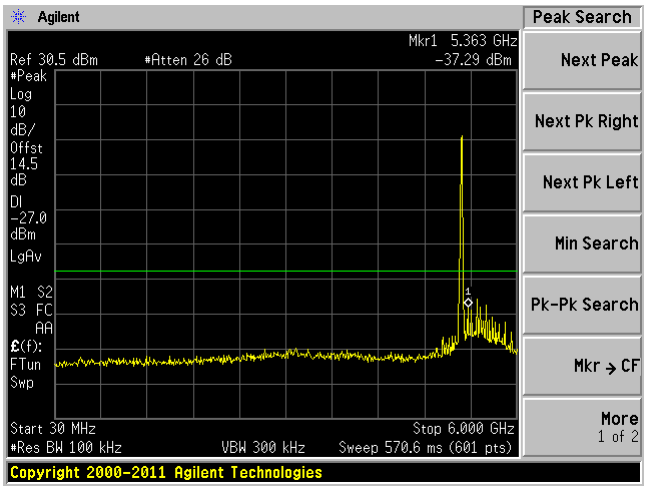


Chain J1, Plot: 6 GHz – 40 GHz

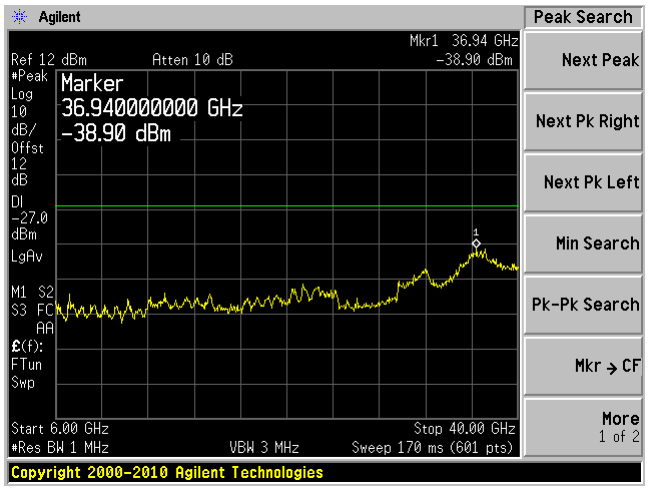


802.11n-HT20, Middle Channel 5280 MHz

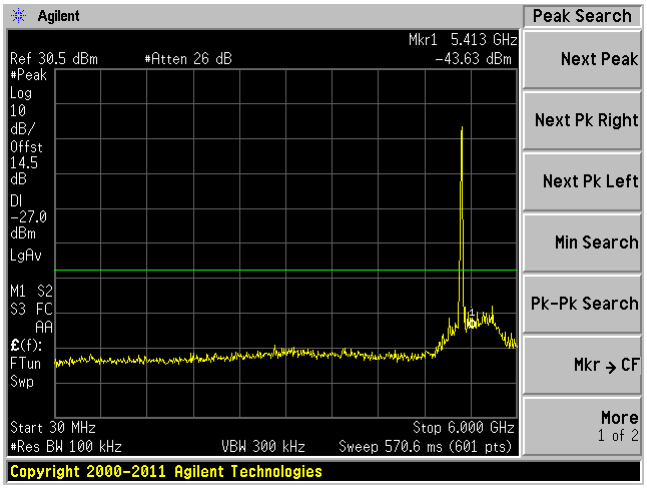
Chain J0, Plot: 30 MHz – 6 GHz



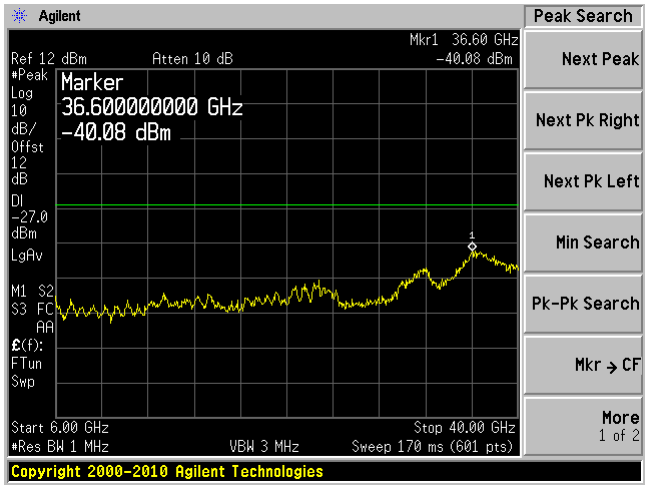
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

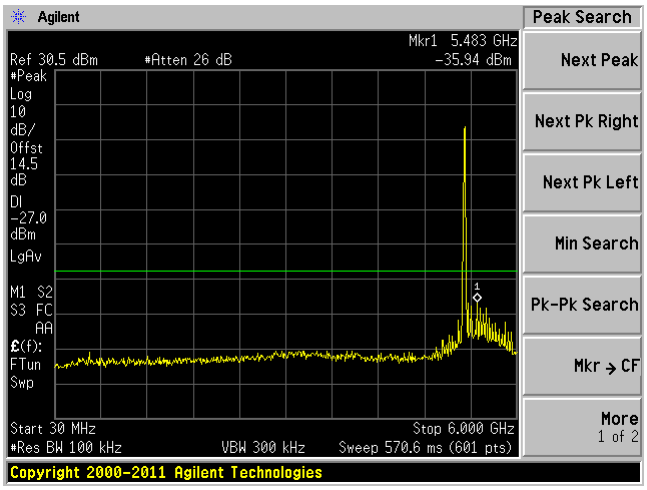


Chain J1, Plot: 6 GHz – 40 GHz

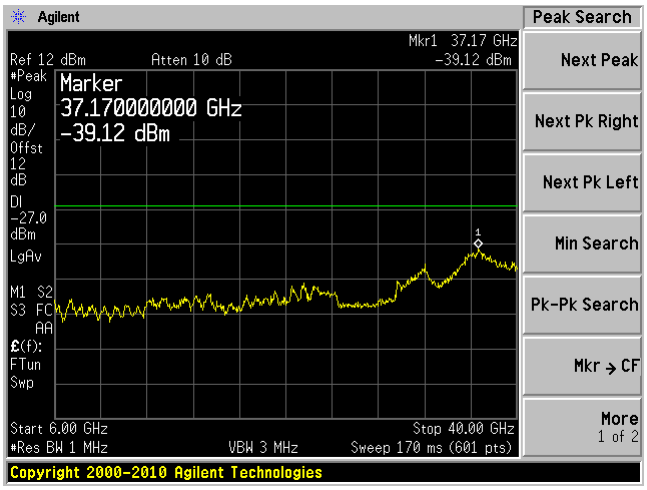


802.11n-HT20, High Channel, 5320 MHz

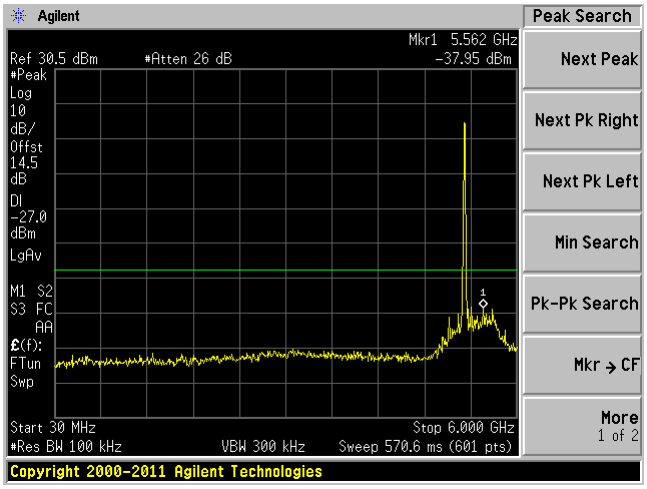
Chain J0, Plot: 30 MHz – 6 GHz



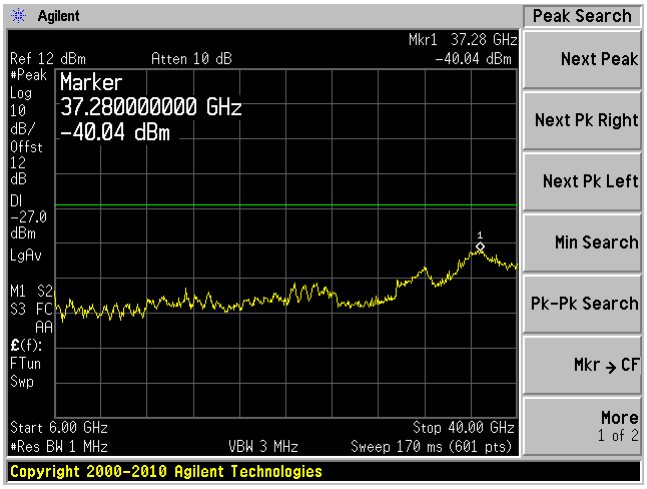
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

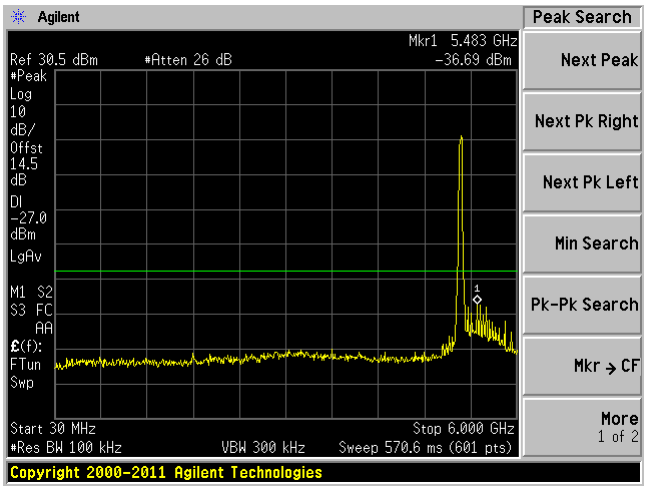


Chain J1, Plot: 6 GHz – 40 GHz

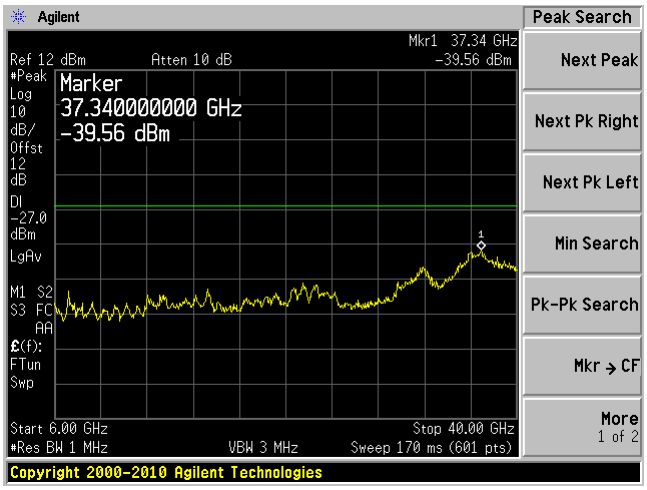


802.11n-HT40, Low Channel 5270 MHz

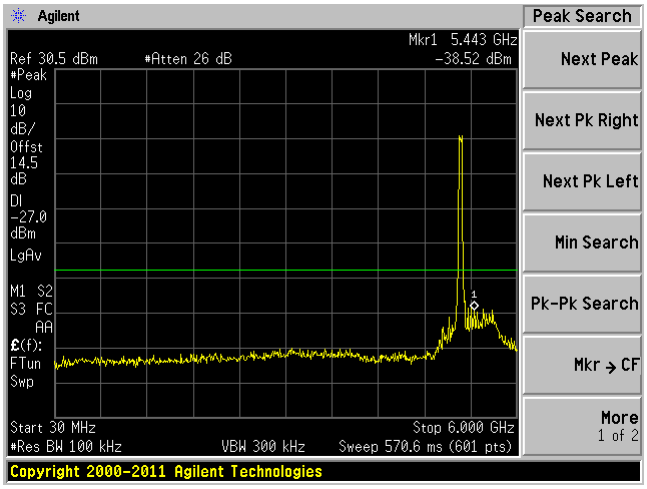
Chain J0, Plot: 30 MHz – 6 GHz



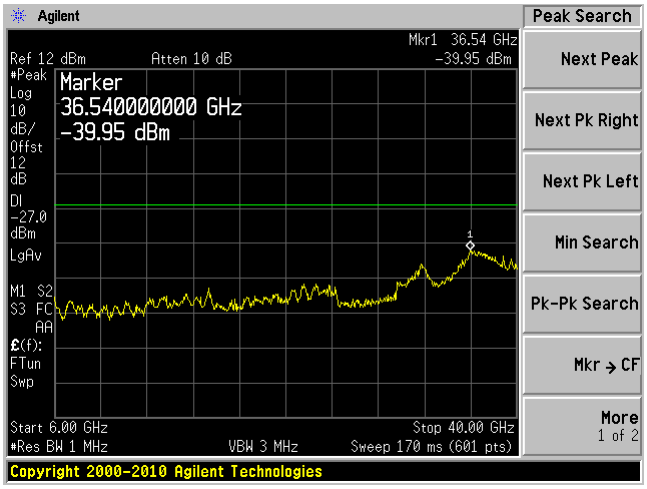
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

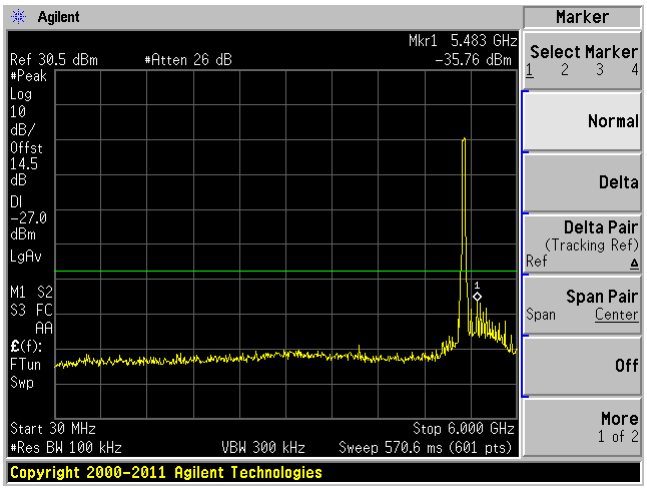


Chain J1, Plot: 6 GHz – 40 GHz

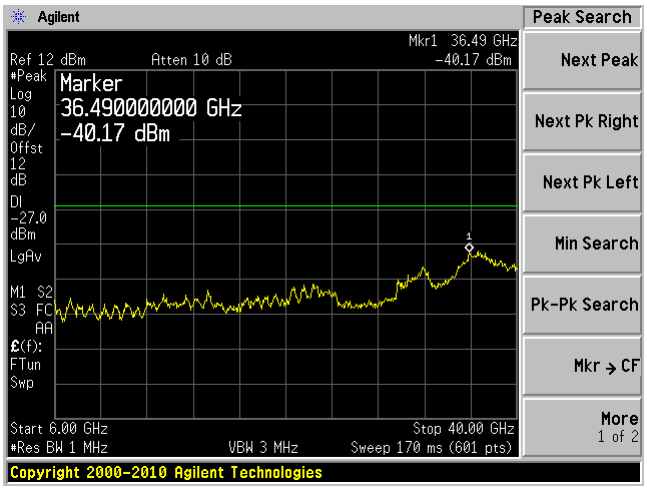


802.11n-HT40, High Channel 5310 MHz

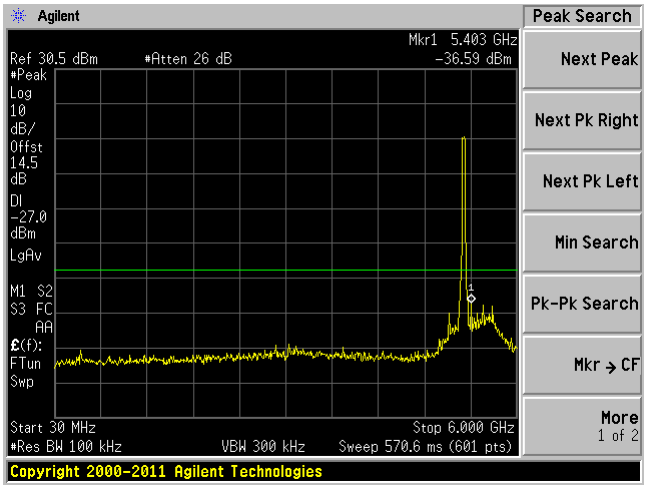
Chain J0, Plot: 30 MHz – 6 GHz



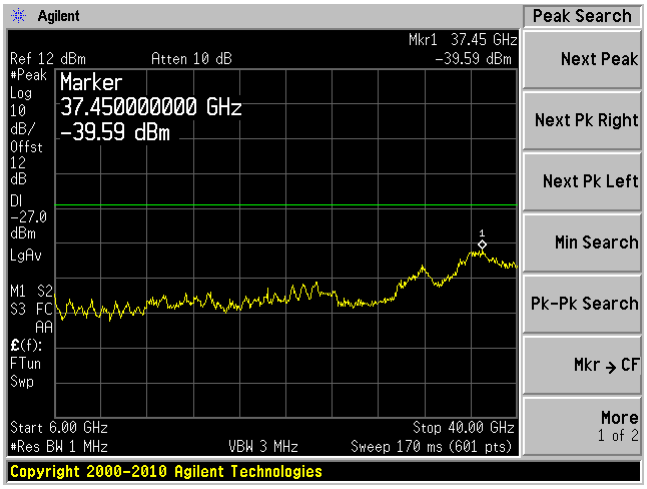
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

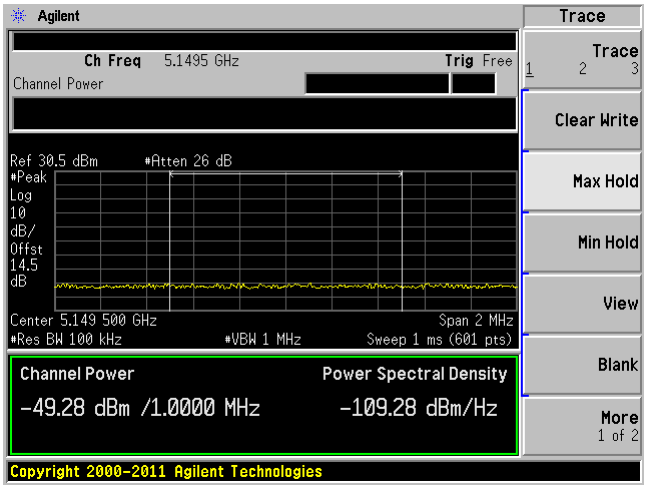


Chain J1, Plot: 6 GHz – 40 GHz

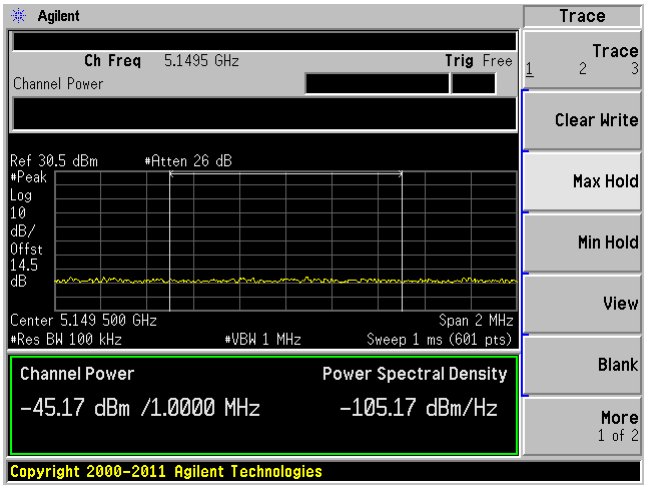


(2) 5.3 GHz Band Edge :

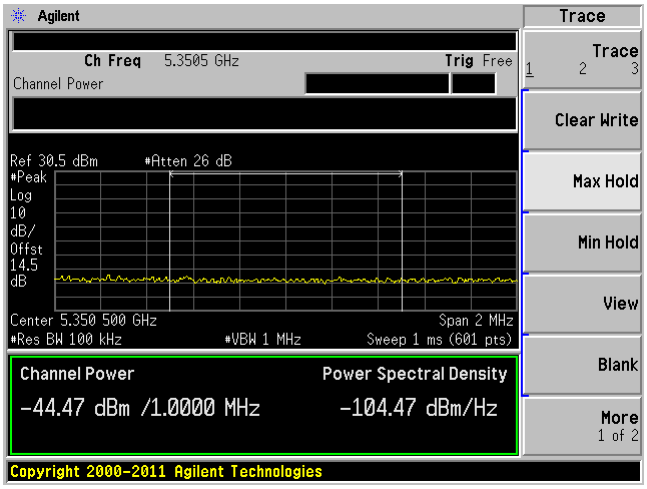
802.11a mode, 5260 MHz, Chain J0



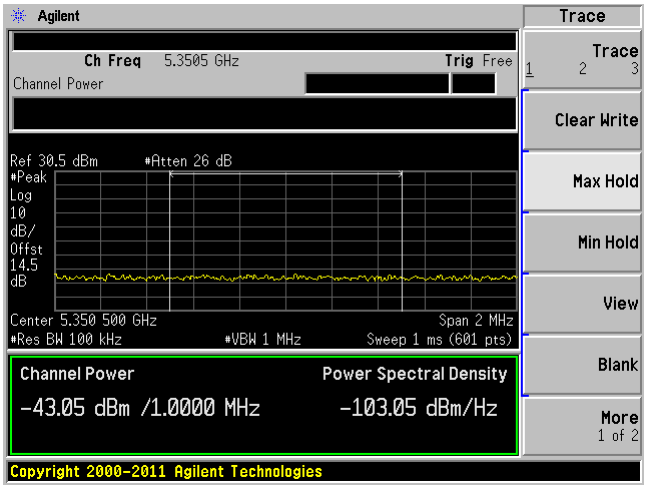
802.11a mode, 5260 MHz, Chain J1



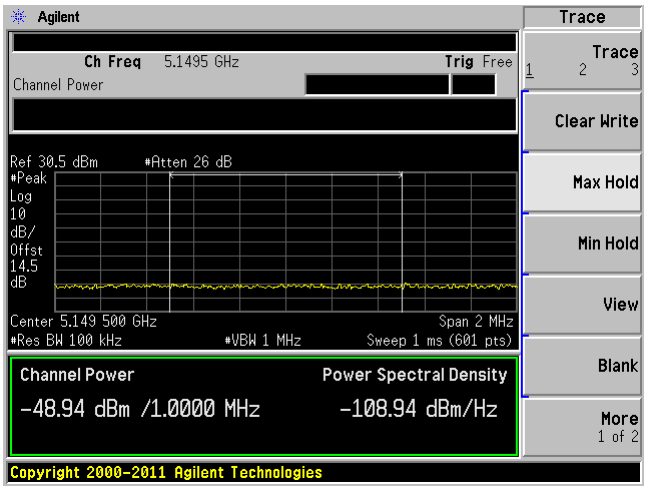
802.11a mode, 5320 MHz, Chain J0



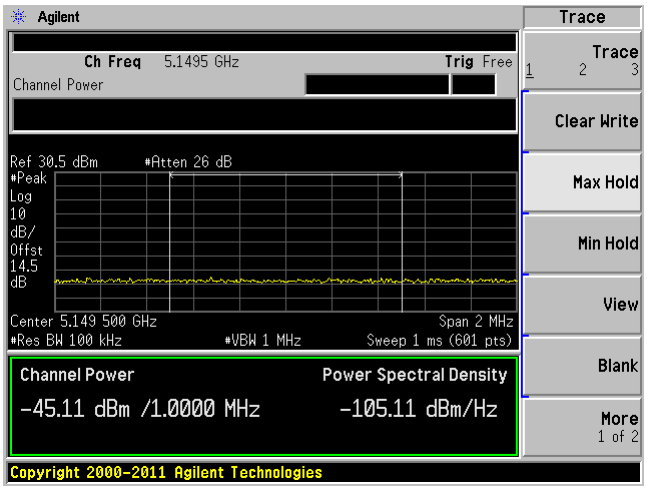
802.11a mode, 5320 MHz, Chain J1



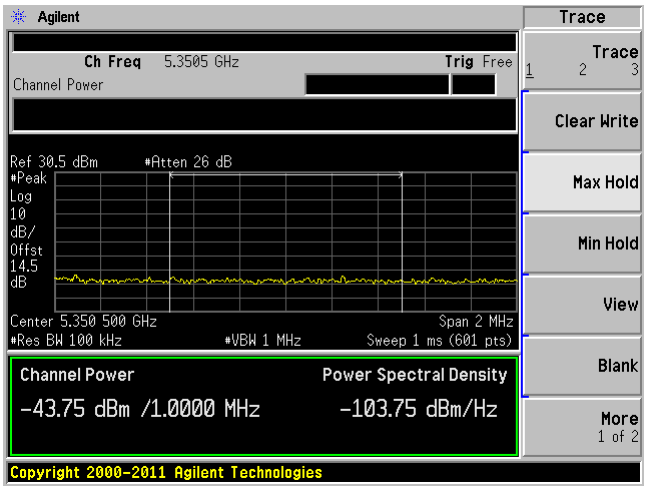
802.11n-HT20 mode, 5260 MHz, Chain J0



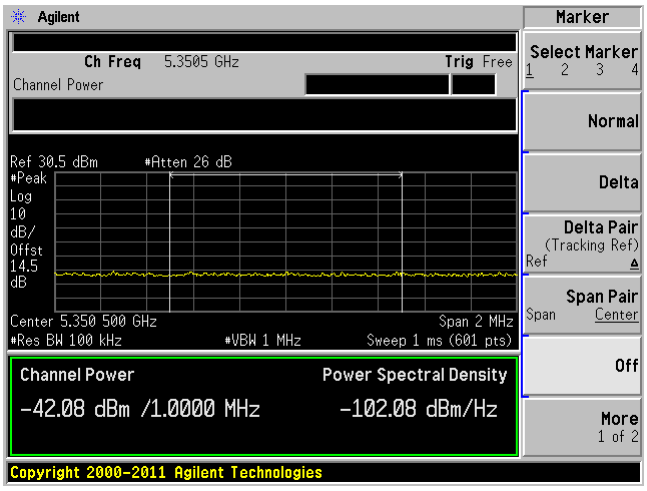
802.11n-HT20 mode, 5260 MHz, Chain J1



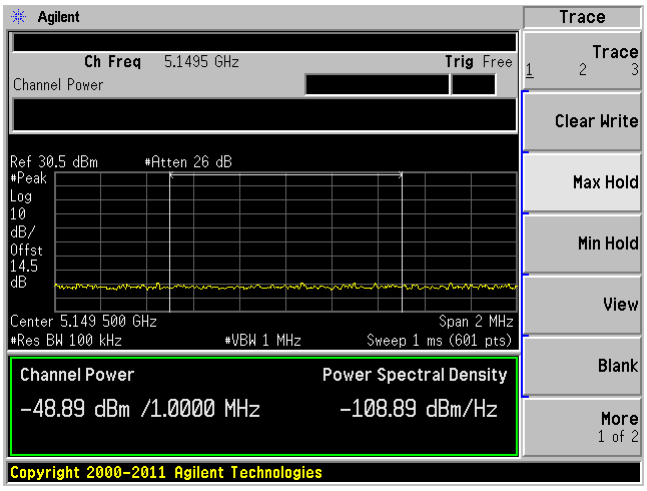
802.11n-HT20 mode, 5320 MHz, Chain J0



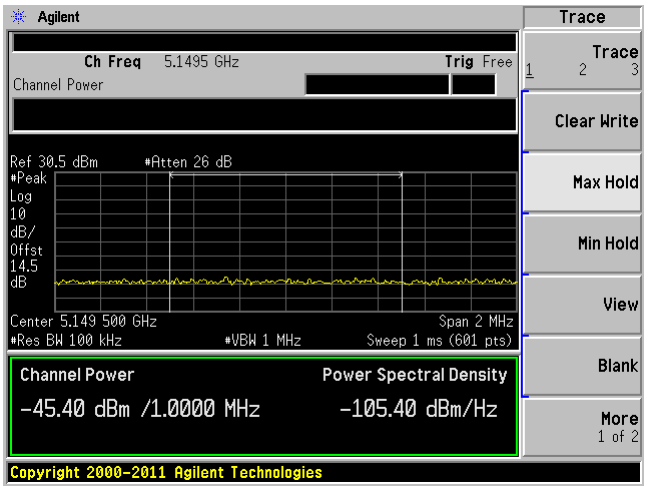
802.11n-HT20 mode, 5320 MHz, Chain J1



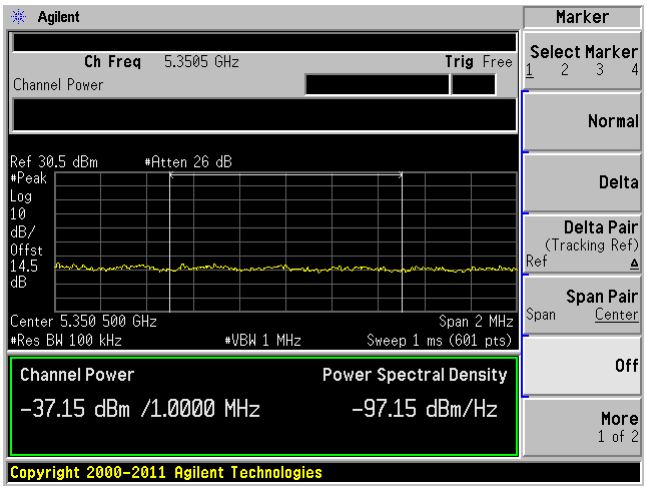
802.11n-HT40 mode, 5270 MHz, Chain J0



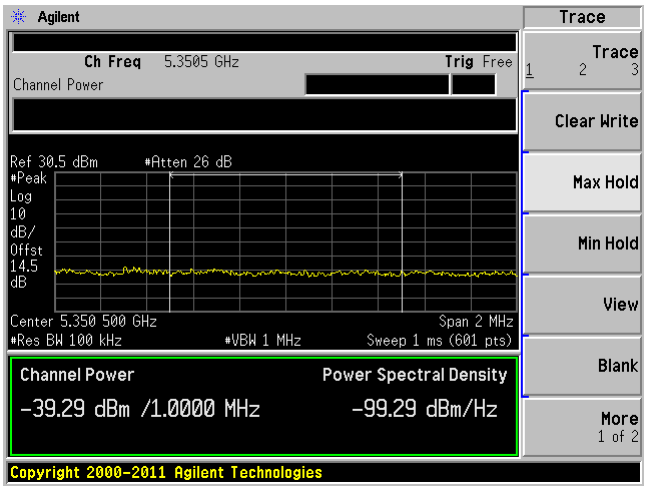
802.11n-HT40 mode, 5270 MHz, Chain J1



802.11n-HT40 mode, 5310 MHz, Chain J0



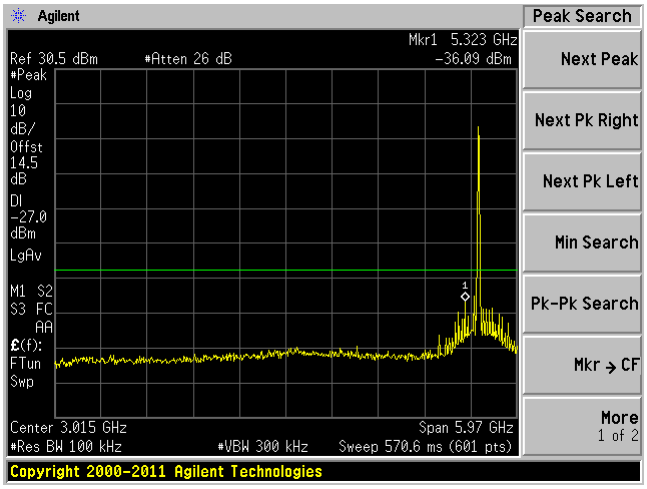
802.11n-HT40 mode, 5310 MHz, Chain J1



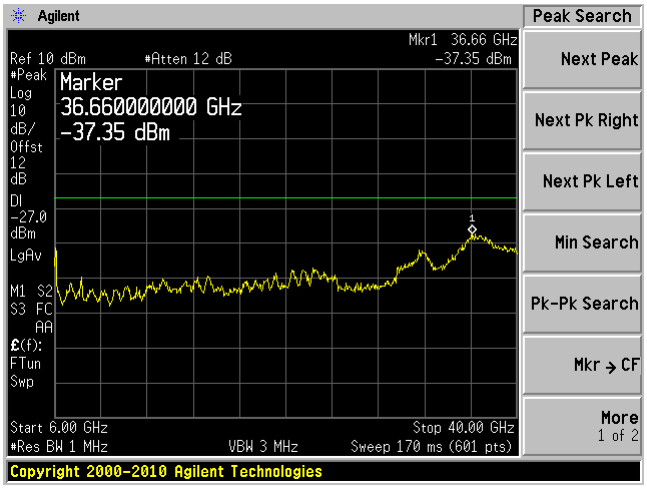
(3) 5.6 GHz Band Conducted Spurious Emissions:

802.11a, Low Channel, 5500 MHz

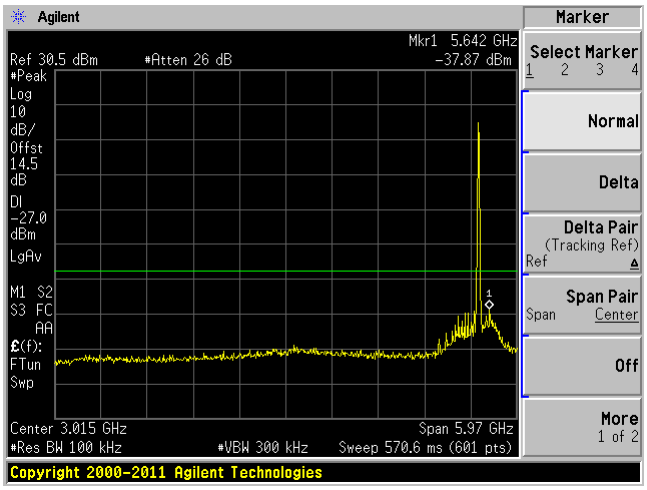
Chain J0, Plot: 30 MHz – 6 GHz



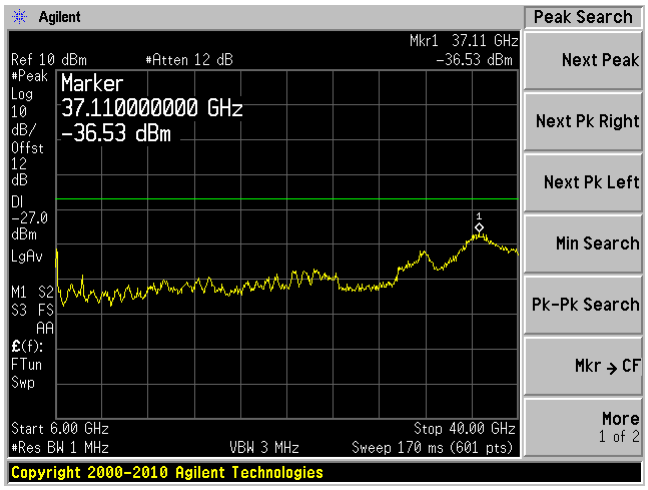
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

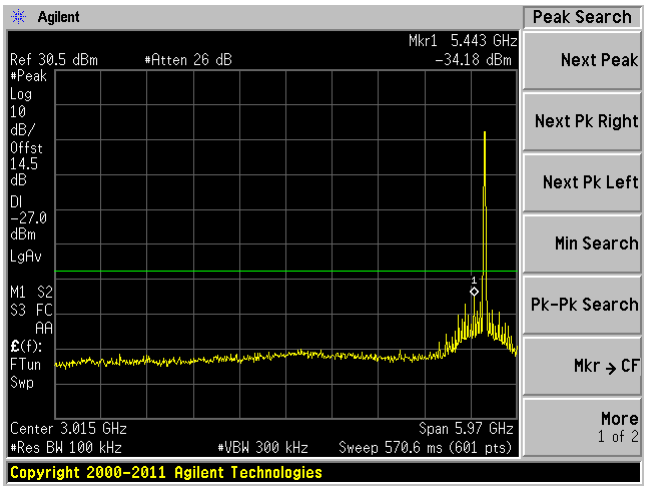


Chain J1, Plot: 6 GHz – 40 GHz

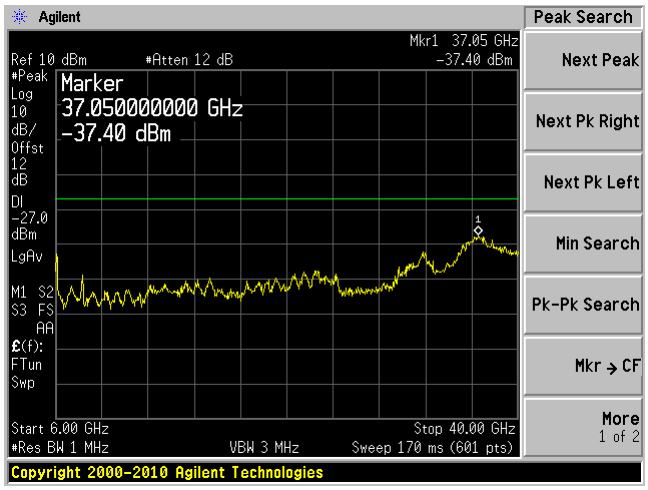


802.11a, Middle Channel, 5580 MHz

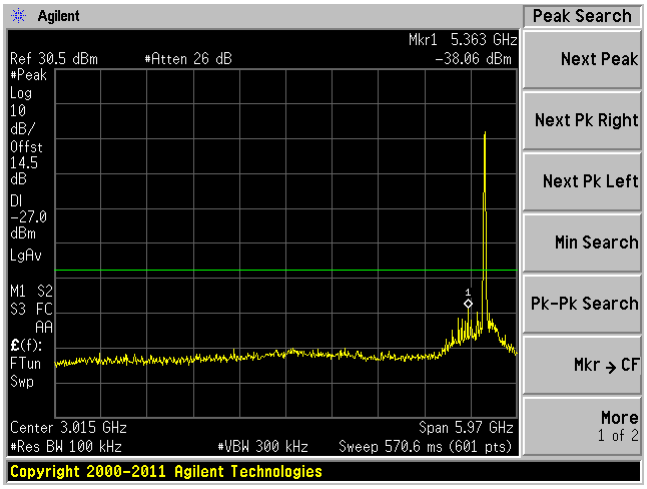
Chain J0, Plot: 30 MHz – 6 GHz



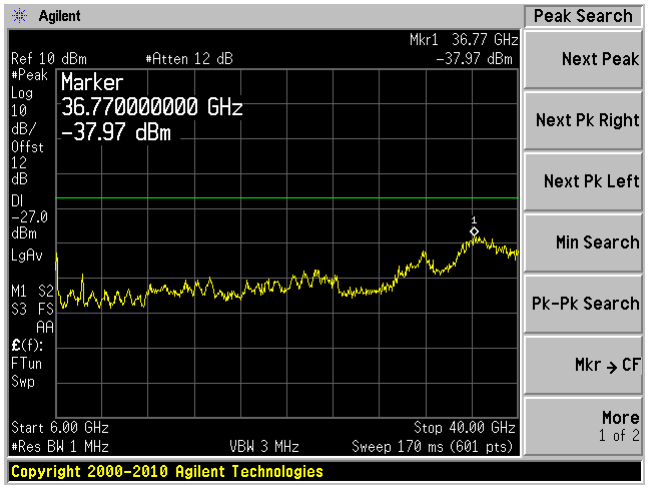
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

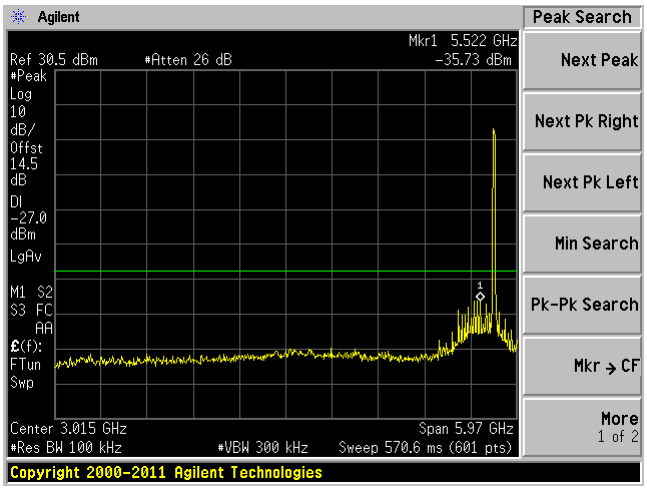


Chain J1, Plot: 6 GHz – 40 GHz

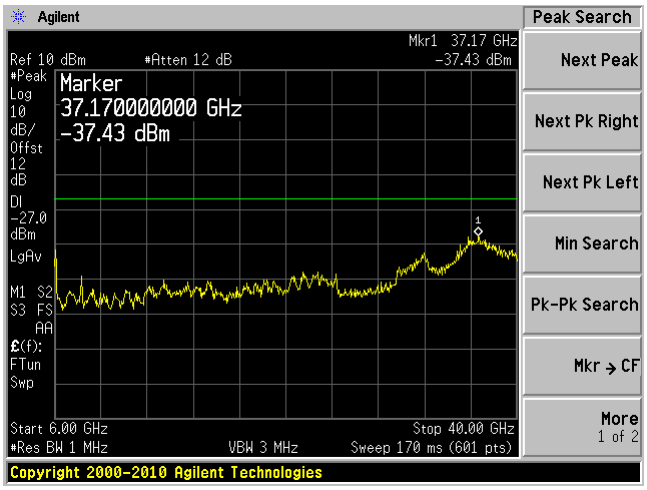


802.11a, High Channel, 5700 MHz

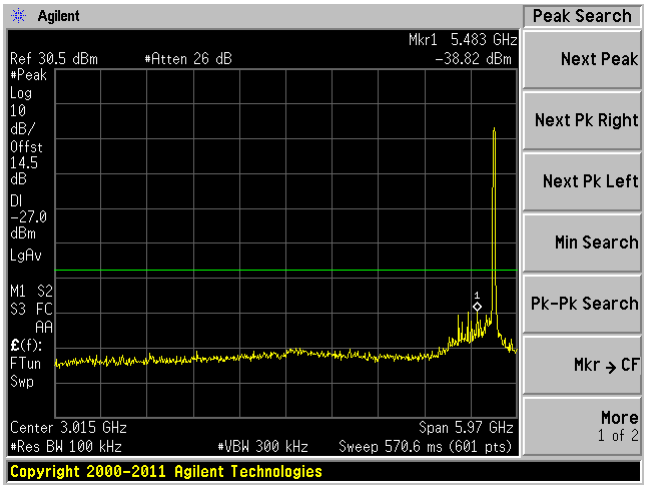
Chain J0, Plot: 30 MHz – 6 GHz



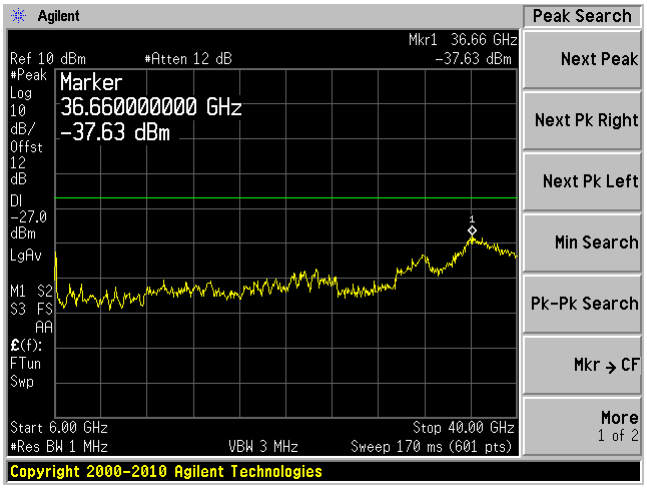
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

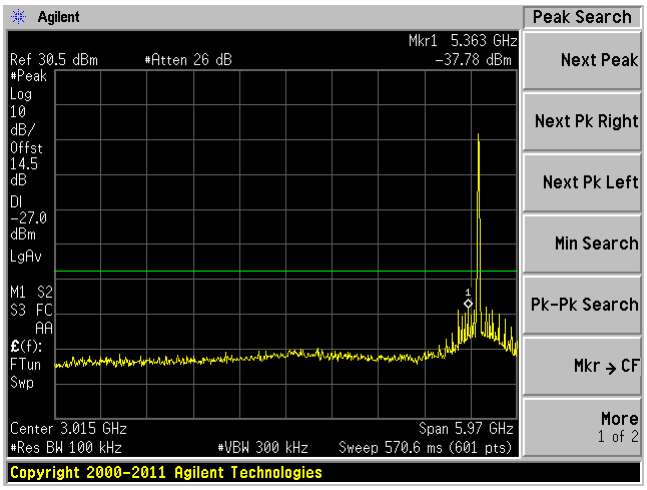


Chain J1, Plot: 6 GHz – 40 GHz

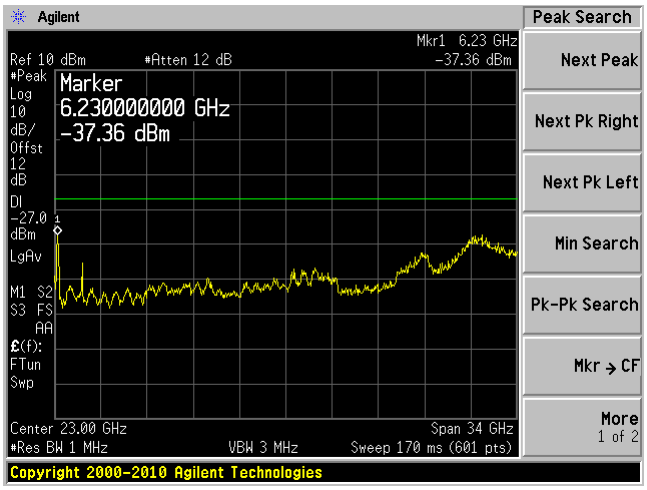


802.11n-HT20, Low Channel 5500 MHz

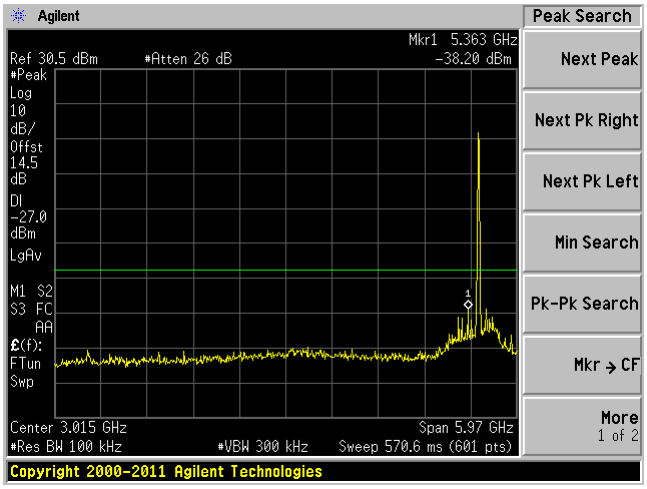
Chain J0, Plot: 30 MHz – 6 GHz



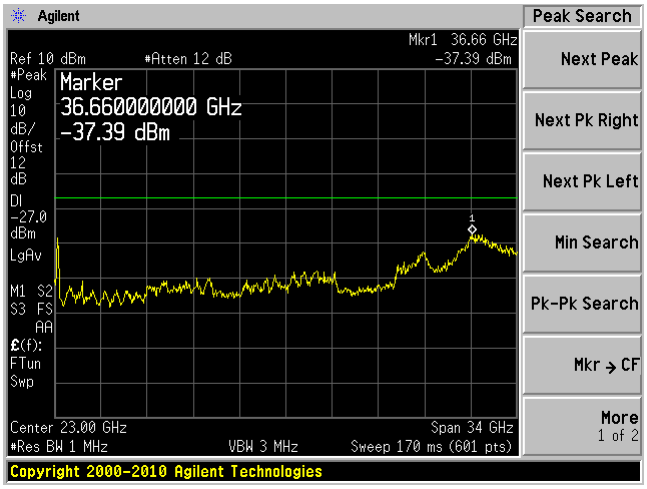
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

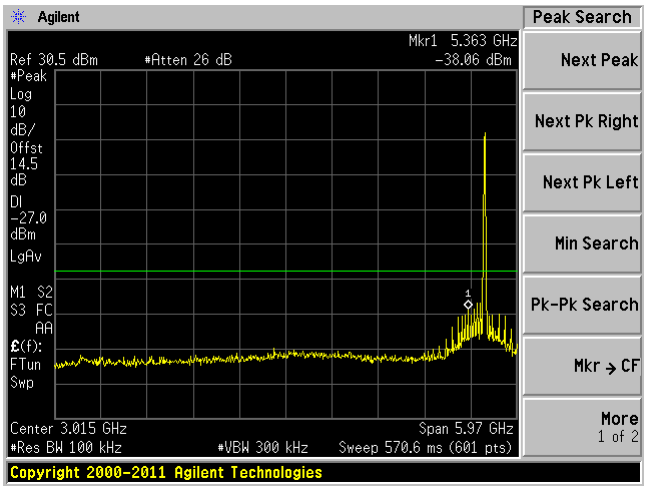


Chain J1, Plot: 6 GHz – 40 GHz

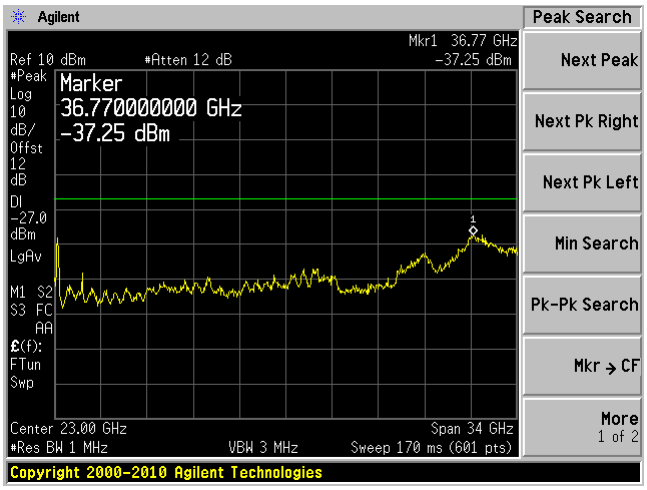


802.11n-HT20, Middle Channel 5580 MHz

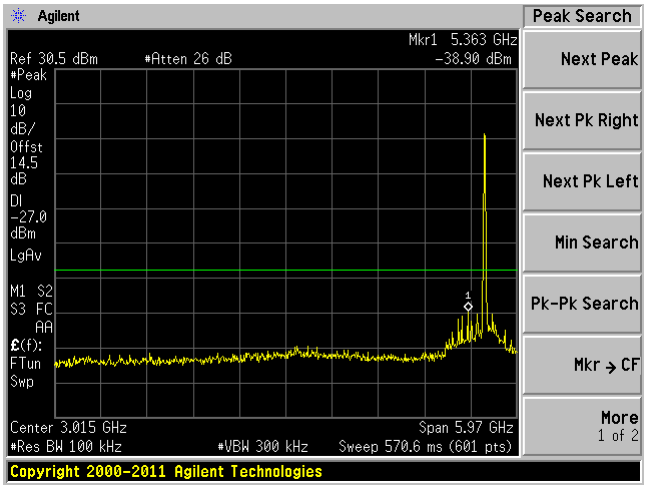
Chain J0, Plot: 30 MHz – 6 GHz



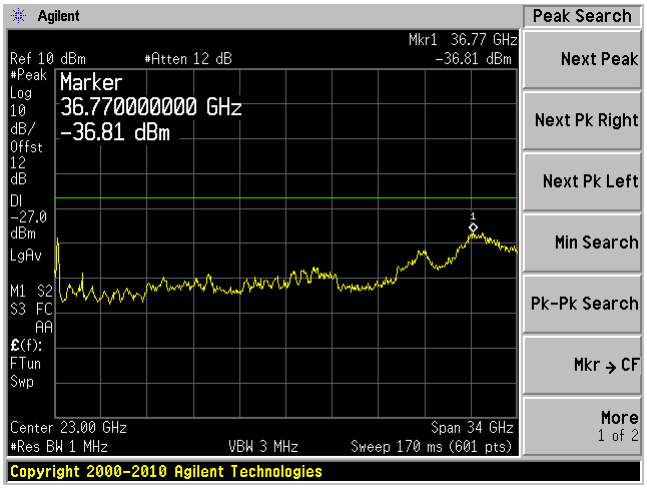
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

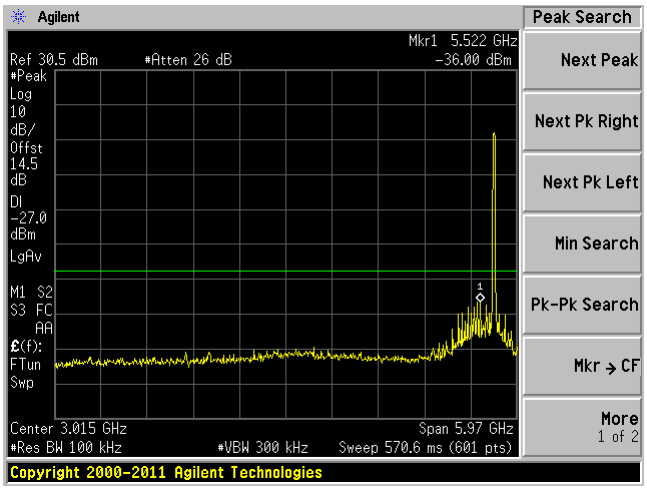


Chain J1, Plot: 6 GHz – 40 GHz

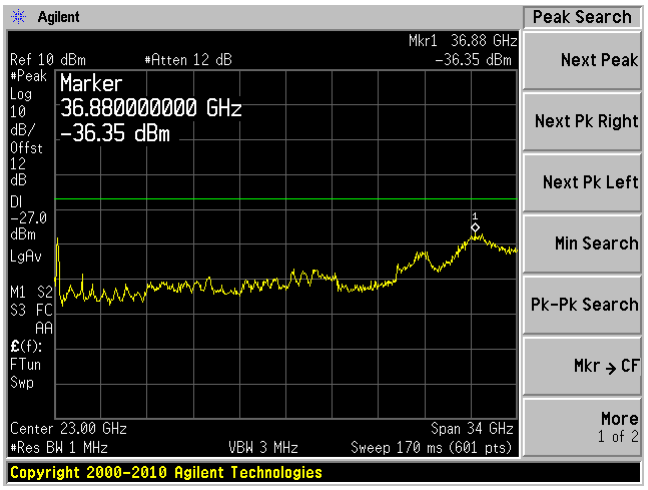


802.11n-HT20, High Channel 5700 MHz

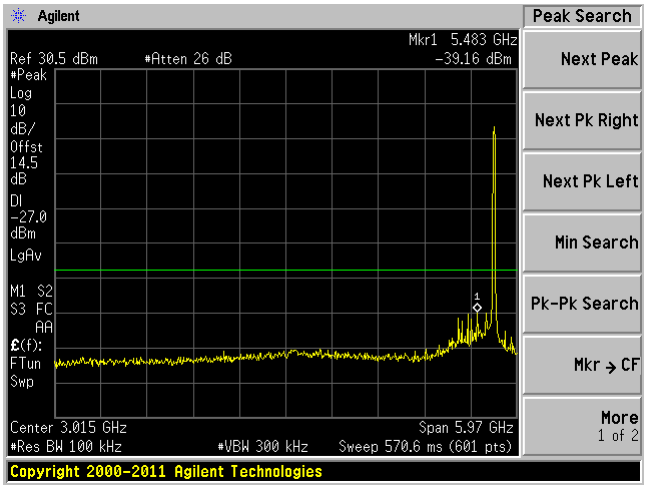
Chain J0, Plot: 30 MHz – 6 GHz



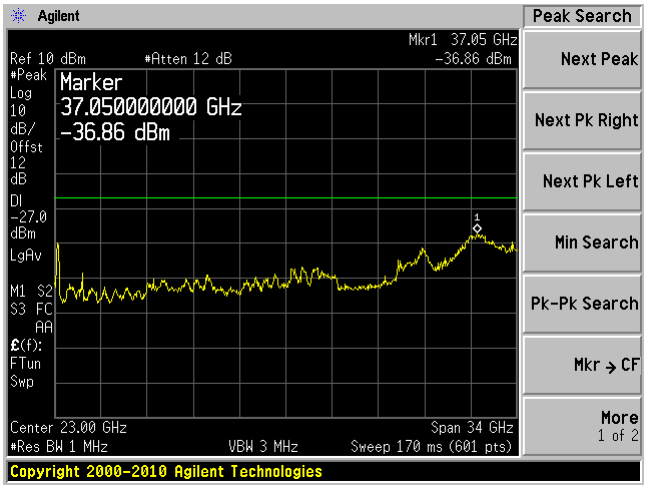
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

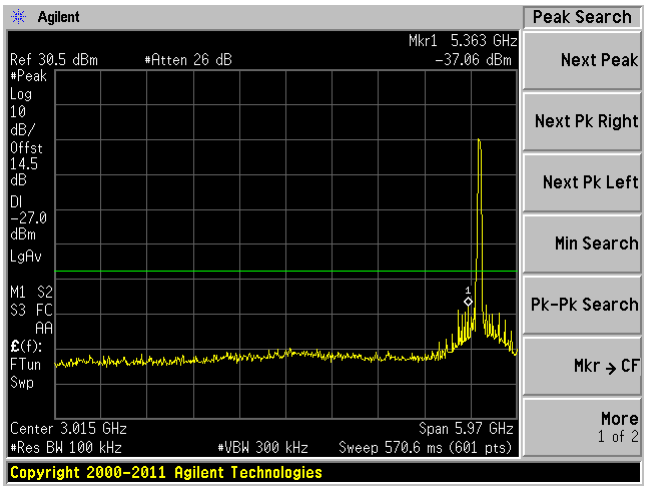


Chain J1, Plot: 6 GHz – 40 GHz

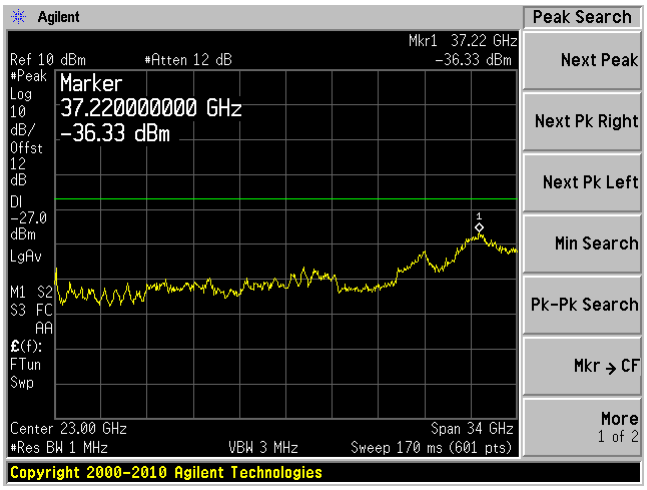


802.11n-HT40, Low Channel 5510 MHz

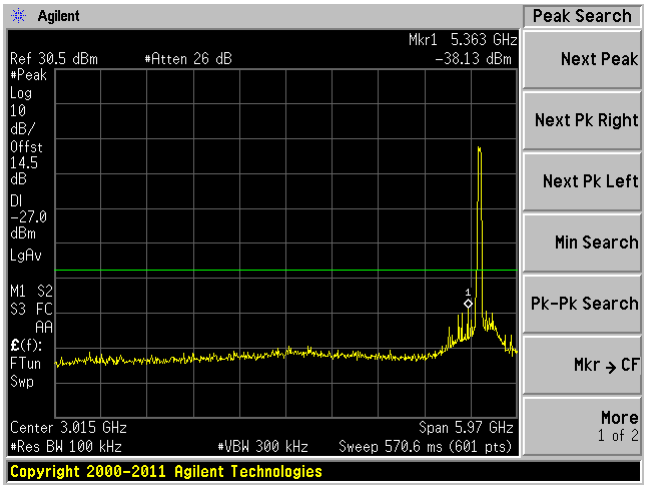
Chain J0, Plot: 30 MHz – 6 GHz



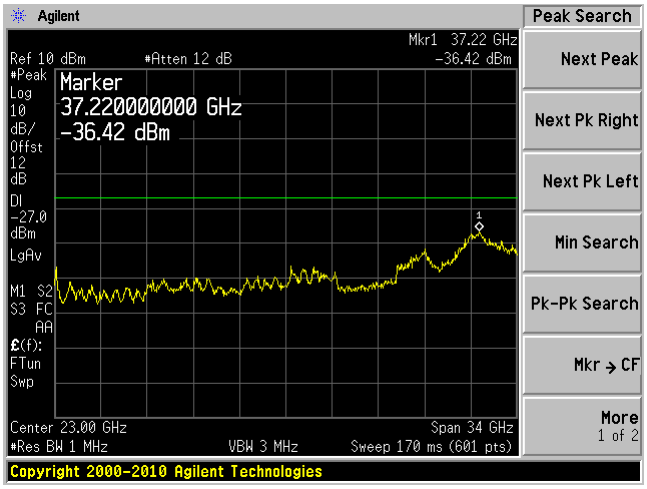
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

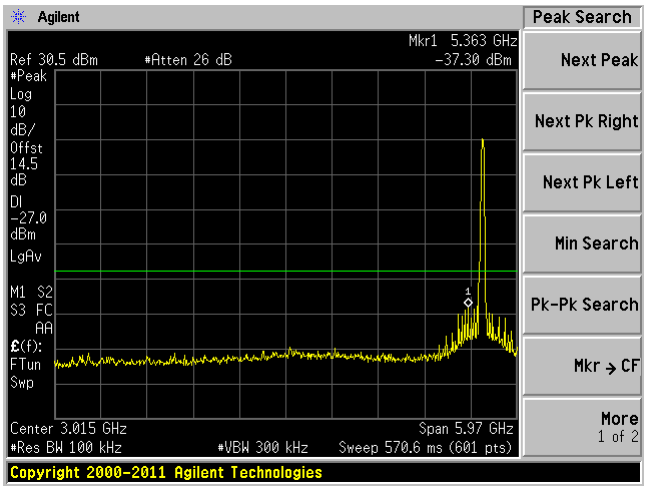


Chain J1, Plot: 6 GHz – 40 GHz

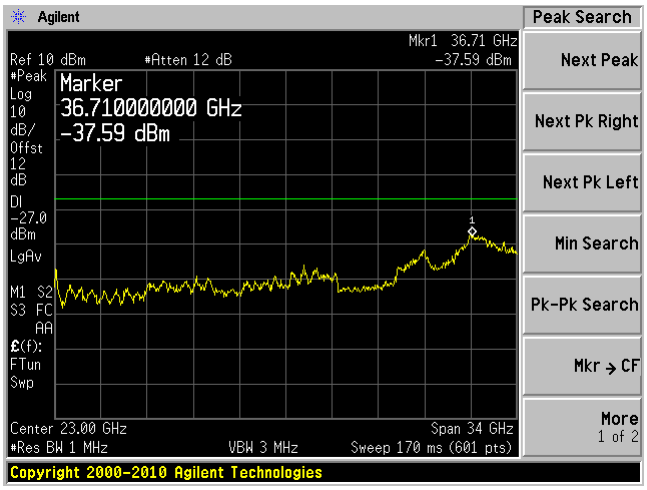


802.11n-HT40, Middle Channel 5550 MHz

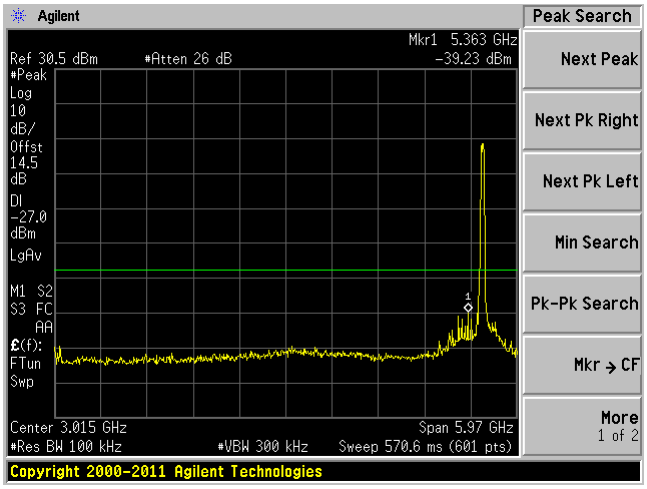
Chain J0, Plot: 30 MHz – 6 GHz



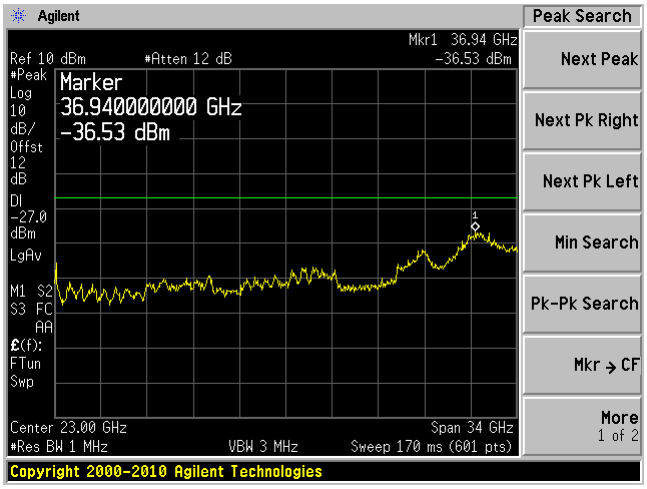
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

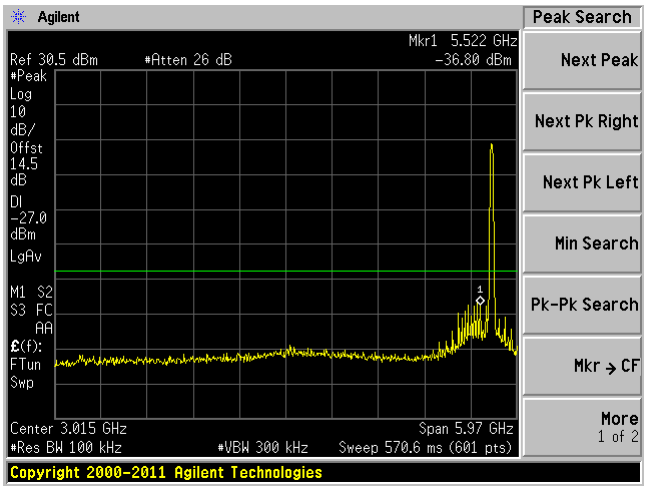


Chain J1, Plot: 6 GHz – 40 GHz

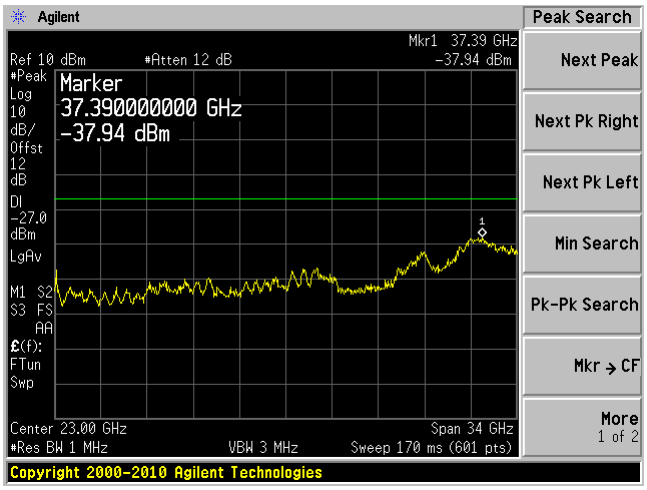


802.11n-HT40, High Channel 5670 MHz

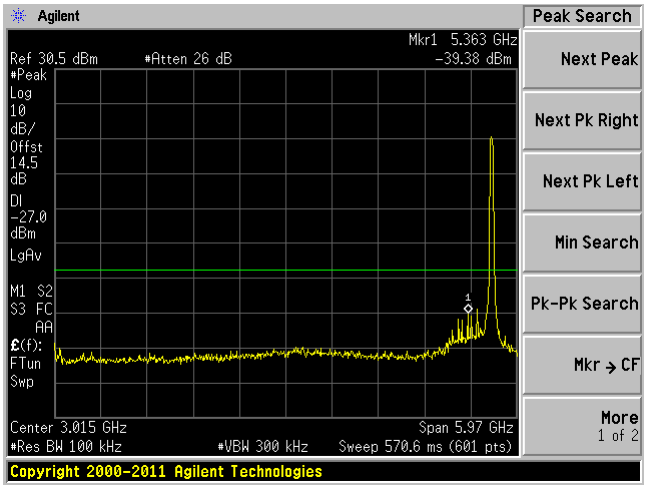
Chain J0, Plot: 30 MHz – 6 GHz



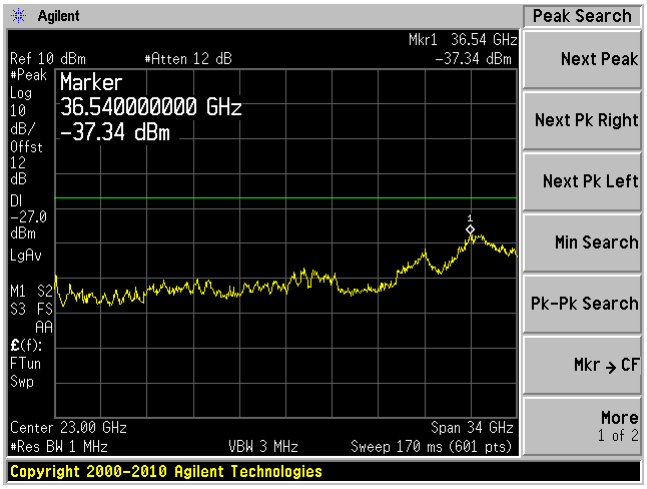
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

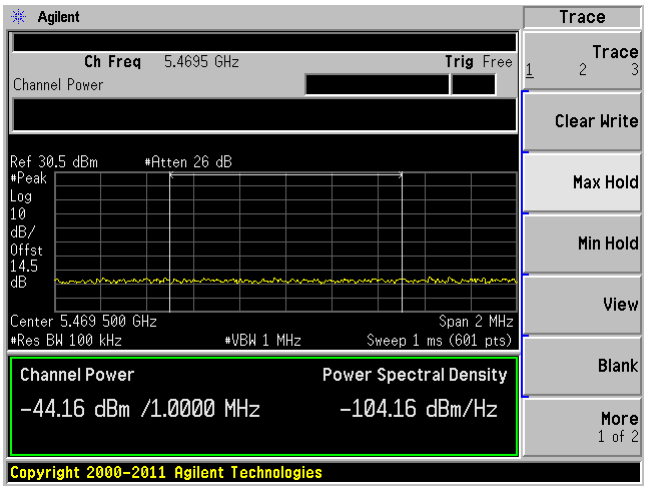


Chain J1, Plot: 6 GHz – 40 GHz

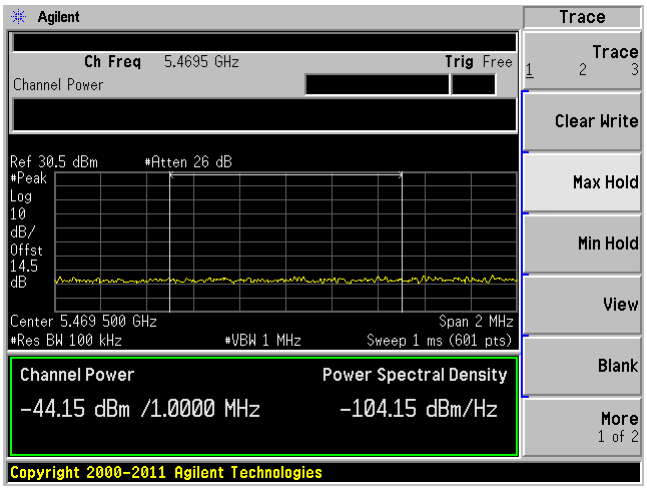


(4) 5.6 GHz Band Edge:

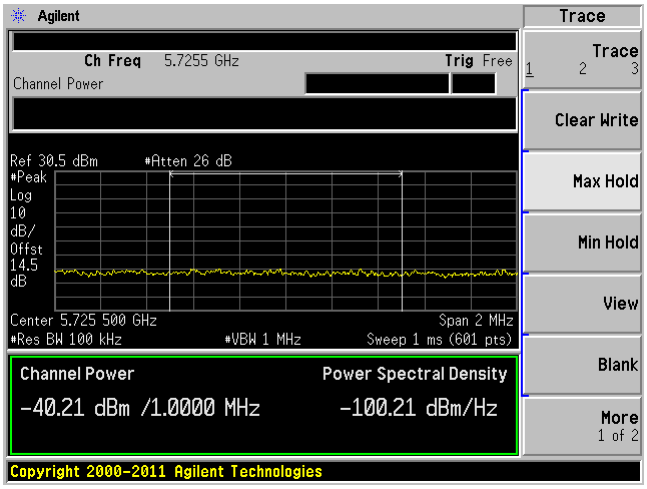
802.11a mode, 5550 MHz, Chain J0



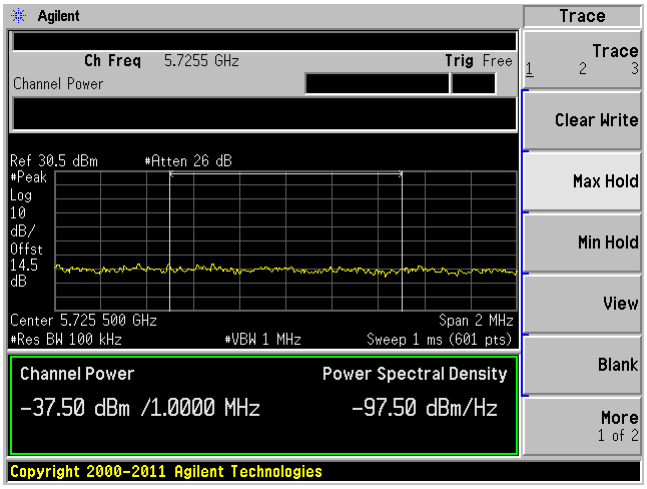
802.11a mode, 5550 MHz, Chain J1



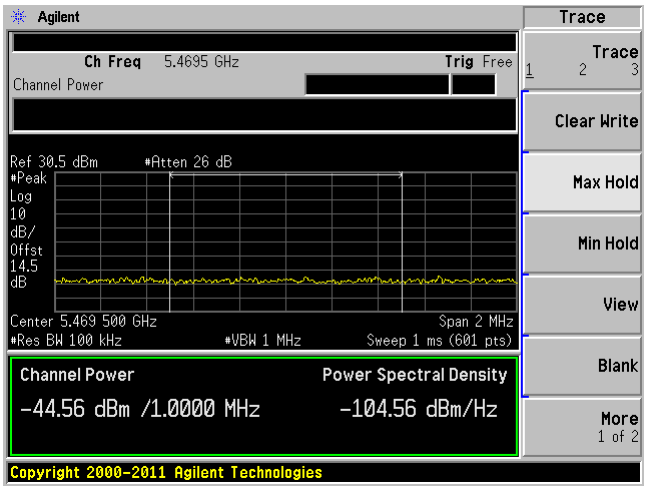
802.11a mode, 5700 MHz, Chain J0



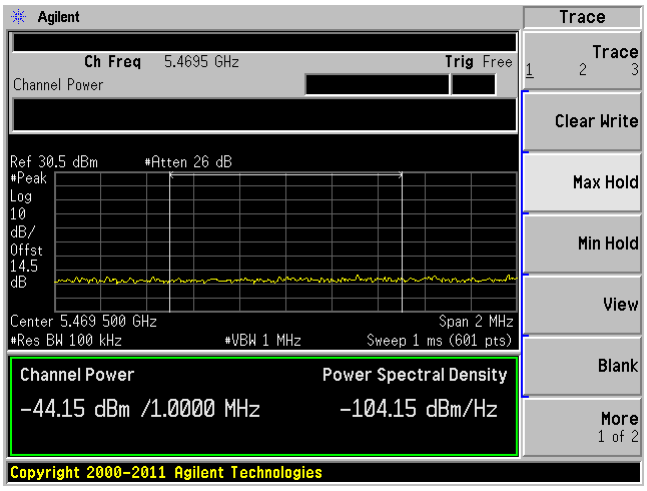
802.11a mode, 5700 MHz, Chain J1



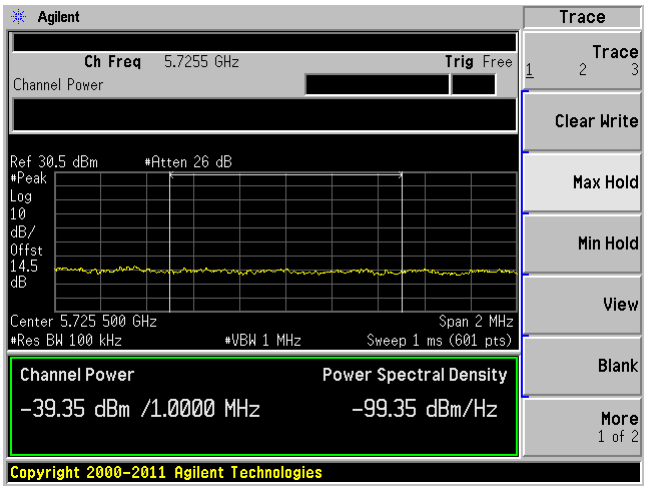
802.11n-HT20 mode, 5500 MHz, Chain J0



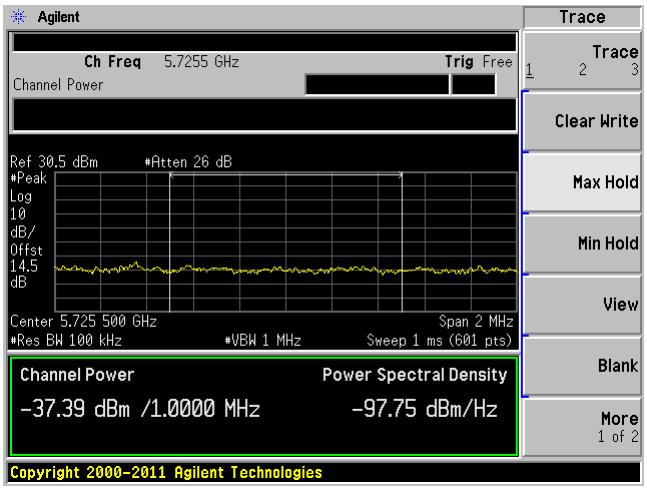
802.11n-HT20 mode, 5500 MHz, Chain J1



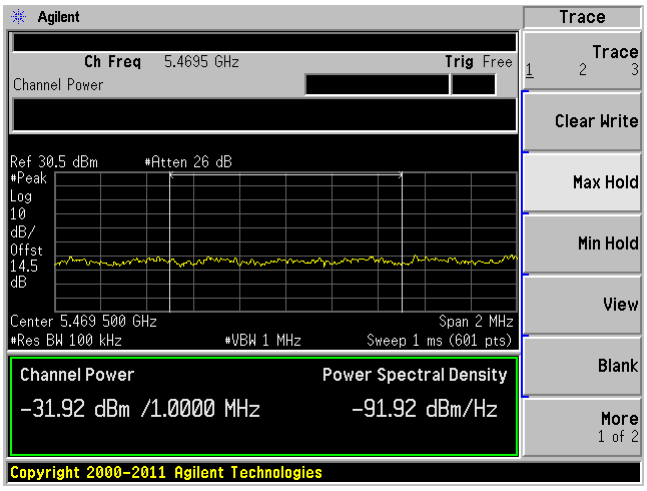
802.11n-HT20 mode, 5700 MHz, Chain J0



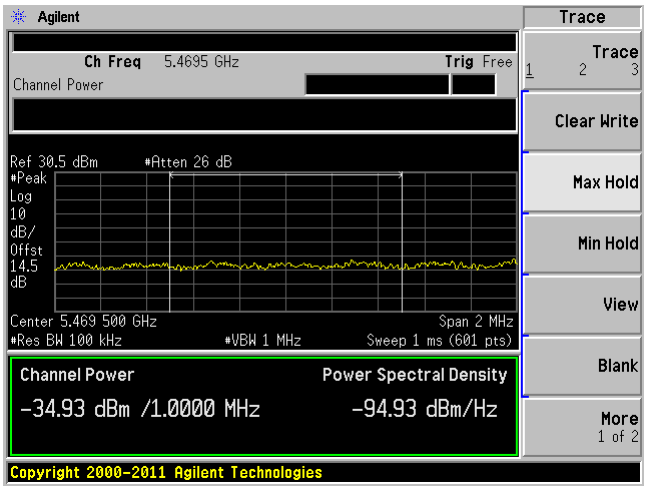
802.11n-HT20 mode, 5700 MHz, Chain J1



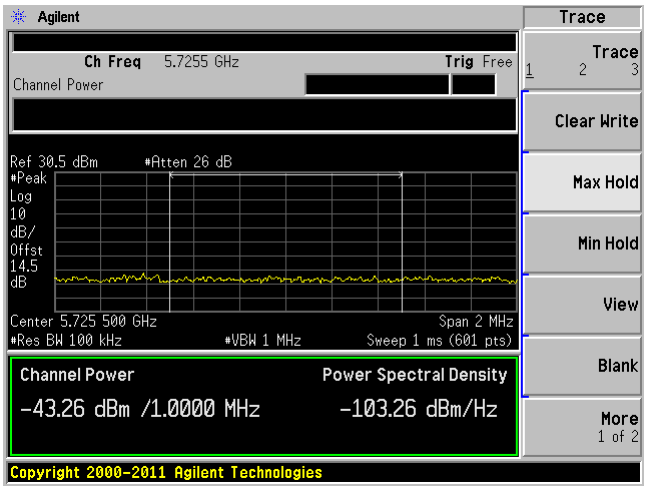
802.11n-HT40 mode, 5510 MHz, Chain J0



802.11n-HT40 mode, 5510 MHz, Chain J1



802.11n-HT40 mode, 5670 MHz, Chain J0



802.11n-HT40 mode, 5670 MHz, Chain J1