



FCC PART 15.407
IC RSS-210, ISSUE 8, DEC 2010
TEST AND MEASUREMENT REPORT

For

Ruckus Wireless, Inc.

350 West Java Drive,
Sunnyvale, CA 94089, USA

FCC ID: S9GT300
IC: 5912A-T300

Report Type: CIIPC Report	Product Type: 802.11 a/b/g/n/ac Wireless Access Point
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* This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "*" (b)(3)

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1407029-407	CIIPC Report	2014-08-15

1 General Description

1.1 Product Description for Equipment under Test (EUT)

This test and measurement report was prepared on behalf of *Ruckus Wireless, Inc.*, and their product model: *T301*, *FCC ID: S9GT300*, *IC: 5912A-T300* or the “EUT” as referred to in this report. The EUT is a dual band 2x2 MIMO 802.11 a/b/g/n/ac RLAN Access Point.

1.2 Mechanical Description of EUT

The EUT measures approximately 238mm (L) x 198mm (W) x 115mm (H) and weighs 400 g.
Note: The EUT was tested without enclosure.

The test data gathered are from typical production sample, serial number: 21406000005 assigned by Client.

1.3 Objective

This report is prepared on behalf of *Ruckus Wireless, Inc.*, in accordance with FCC CFR47 §15.407 and IC RSS-210 Issue 8, Dec 2010.

The objective is to determine compliance with FCC Part 15.407 and IC RSS-210.

This is the Class II permission change application of the certified device (FCC ID: S9GT300). The difference between the original device and the current one are the antenna changed and the conducted output power reduced.

For the changes made to the device, the test item: Spurious Emissions at Antenna Port, output power, and Power Spectral Density, Peak Excursion Ratio were tested and reported.

1.4 Related Submittal(s)/Grant(s)

Original submission with FCC ID: S9GT300, IC: 5912A-T300. The Original FCC ID granted on 2014-06-05 for DTS and NII W52 band, 2014-06-25 for NII W53 and W56 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 D01 General UNII Test Procedures v01r03: 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 ± 2.0 dB for Conducted Emissions tests and ± 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 Luminaires 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.

2.2 EUT Exercise Software

The test utility used was *T300 ART* was provided by Ruckus Wireless Inc., and was verified by *Chen Ge* to comply with the standard requirements being tested against.

2.3 Equipment Modifications

No modifications were made to the EUT.

2.4 Special Accessories

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

2.5 Local Support Equipment

Manufacturer	Description	Model	Serial Number
Ruckus	DC Adaptor/POE	NPE-5818	740-64157-001
Ruckus	AC Adaptor	PA10244HUB	740-64125-010

2.6 EUT Internal Configuration Details

Manufacturer	Description	Model	Serial Number
Ruckus	Main Board (SANTORINI)	ASM 120-11257-XXX	RUK01946
Ruckus	RJ45 Port Board	120-11283-001	RUK01957
Ruckus	n version Antenna	Thunderbolt 2, ASM 120-11269-001	-

2.7 Interface Ports and Cables

Cable Description	Length (m)	From	To
RJ45	1m	DC Adaptor/POE	EUT
RJ45	1m	Laptop	DC Adaptor/POE

2.8 Power Supply List and Details

Manufacturer	Description	Model	Part Number
Ruckus	Power Supply cord	PA1024-4HU	-
Ruckus	POE Power Adapter	NPE-5818	740-64157-001

3 Summary of Test Results

FCC & IC Rules	Description of Test	Result
FCC §15.407(f), §2.1091 IC RSS-102	RF Exposure	Compliance
FCC §15.203 IC RSS-Gen §7.1.2	Antenna Requirement	Compliance
FCC §15.207 IC RSS-Gen §7.2.4	AC Power Line Conducted Emissions	Compliance*
FCC §15.209(a), 15.407(b) IC RSS-210 §A9.2	Spurious Radiated Emissions	Compliance*
FCC §15.407(a) IC RSS-210 §A9.2	26 dB and 99% Emission Bandwidth	Compliance*
FCC §407(a)(1) IC RSS-210 §A9.2	Peak Output Power Measurement	Compliance
FCC §2.1051, §15.407(b) IC RSS-210 §A9.2	Band Edges	Compliance
FCC §15.407(a)(1) IC RSS-210 §A9.2	Power Spectral Density	Compliance
FCC §15.407(a)(6)	Peak Excursion Ratio	Compliance
FCC §2.1051, §15.407(b) IC RSS-210 §A9.2	Spurious Emissions at Antenna Terminals	Compliance
FCC §15.407(h) IC RSS-210 §A9.3	DFS	Compliance*

Note: * Please refer to the original certified FCC ID: S9GT300, IC: 5912A-T300, report number: R1403261-407 W52 for W52 band, R1403261-407 W5356 for W53 and W56 band.

4 FCC §2.1091, §15.407(f) & IC RSS-102 - 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

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

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

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

Note: f is frequency in MHz

* = Power density limit is applicable at frequencies greater than 100 MHz

4.2 MPE Prediction

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

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

Where: S = power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

4.3 MPE Results

5150-5250 MHz

<u>Maximum peak output power at antenna input terminal (dBm):</u>	<u>7.68</u>
<u>Maximum peak output power at antenna input terminal (mW):</u>	<u>5.861</u>
<u>Prediction distance (cm):</u>	<u>20</u>
<u>Prediction frequency (MHz):</u>	<u>5210</u>
<u>Maximum Antenna Gain, typical (dBi):</u>	<u>15.0</u>
<u>Maximum Antenna Gain (numeric):</u>	<u>31.622</u>
<u>Power density of prediction frequency at 20.0 cm (mW/cm²):</u>	<u>0.0368</u>
<u>Power density of prediction frequency at 20.0 cm (W/m²):</u>	<u>0.368</u>
<u>MPE limit for uncontrolled exposure at prediction frequency (mW/cm²):</u>	<u>1.0</u>
<u>MPE limit for uncontrolled exposure at prediction frequency (W/m²):</u>	<u>10</u>

5250-5350 MHz

<u>Maximum peak output power at antenna input terminal (dBm):</u>	<u>14.46</u>
<u>Maximum peak output power at antenna input terminal (mW):</u>	<u>27.92</u>
<u>Prediction distance (cm):</u>	<u>20</u>
<u>Prediction frequency (MHz):</u>	<u>5290</u>
<u>Maximum Antenna Gain, typical (dBi):</u>	<u>15.0</u>
<u>Maximum Antenna Gain (numeric):</u>	<u>31.622</u>
<u>Power density of prediction frequency at 20.0 cm (mW/cm²):</u>	<u>0.1756</u>
<u>Power density of prediction frequency at 20.0 cm (W/m²):</u>	<u>1.756</u>
<u>MPE limit for uncontrolled exposure at prediction frequency (mW/cm²):</u>	<u>1.0</u>
<u>MPE limit for uncontrolled exposure at prediction frequency (W/m²):</u>	<u>10</u>

5470-5725 MHz

<u>Maximum peak output power at antenna input terminal (dBm):</u>	<u>14.49</u>
<u>Maximum peak output power at antenna input terminal (mW):</u>	<u>28.11</u>
<u>Prediction distance (cm):</u>	<u>20</u>
<u>Prediction frequency (MHz):</u>	<u>5690</u>
<u>Maximum Antenna Gain, typical (dBi):</u>	<u>15.0</u>
<u>Maximum Antenna Gain (numeric):</u>	<u>31.622</u>
<u>Power density of prediction frequency at 20.0 cm (mW/cm²):</u>	<u>0.1769</u>
<u>Power density of prediction frequency at 20.0 cm (W/m²):</u>	<u>1.769</u>
<u>MPE limit for uncontrolled exposure at prediction frequency (mW/cm²):</u>	<u>1.0</u>
<u>MPE limit for uncontrolled exposure at prediction frequency (W/m²):</u>	<u>10</u>

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

5 FCC §15.203 & IC RSS-Gen §7.1.2 – Antenna Requirements

5.1 Applicable Standard

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

And according to FCC §15.247 (b)(4), if transmitting antennas of directional gain greater than 6 dBi are used the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

As per IC RSS-Gen §7.1.2: Transmitter Antenna:

A transmitter can only be sold or operated with antennas with which it was certified. A transmitter may be certified with multiple antenna types. An antenna type comprises antennas having similar in-band and out-of-band radiation patterns. Testing shall be performed using the highest-gain antenna of each combination of transmitter and antenna type for which certification is being sought, with the transmitter output power set at the maximum level. Any antenna of the same type and having equal or lesser gain as an antenna that had been successfully tested for certification with the transmitter, will also be considered certified with the transmitter, and may be used and marketed with the transmitter. The manufacturer shall include with the application for certification a list of acceptable antenna types to be used with the transmitter.

When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer. Any antenna gain in excess of 6 dBi (6 dB above isotropic gain) shall be added to the measured RF output power before using the power limits specified in RSS-210 or RSS-310 for devices of RF output powers of 10 milliwatts or less. For devices of output powers greater than 10 milliwatts, except devices subject to RSS-210 Annex 8 (Frequency Hopping and Digital Modulation Systems Operating in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz Bands) or RSS-210 Annex 9 (Local Area Network Devices), the total antenna gain shall be added to the measured RF output power before using the specified power limits. For devices subject to RSS-210 Annex 8 or Annex 9, the antenna gain shall not be added.

5.2 Antenna List

Manufacturers	Antenna Type/Pattern	Antenna Gain (dBi) @ 5 GHz
Ruckus	Omni	15

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.

6 FCC §407(a)(1) & IC RSS-210 §A9.2 - Peak Output Power Measurement

6.1 Applicable Standard

According to FCC §15.407(a)(1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or $4 \text{ dBm} + 10 \log B$, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 dBm in any 1-MHz 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.

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 $11 \text{ dBm} + 10 \log B$, 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.

According to IC RSS-210 §A9.2:

5150–5250 MHz:

The maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

5250–5350 MHz:

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10} B$, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHzband. The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

5470–5725 MHz:

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10} B$, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHzband. The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

6.2 Measurement Procedure

The measurements are base on FCC KDB 789033 D01 General UNII Test Procedures v01r03: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices section E: Maximum conducted output power

6.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4446A	US44300386	2013-09-29	1 year

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

6.4 Test Environmental Conditions

Temperature:	21-25° C
Relative Humidity:	41-46 %
ATM Pressure:	101-102 kPa

The testing was performed by Chen Ge from 2014-06-30 to 2014-07-03 at RF site.

6.5 Test Results

For FCC:

5150-5250 MHz

Channel	Frequency (MHz)	Conducted Output Power (dBm)		Total Output Power (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1			
802.11a mode						
Low	5180	2.93	2.75	5.85	8	-2.15
Middle	5200	2.78	2.74	5.77	8	-2.23
High	5240	3.01	2.98	6.01	8	-1.99
802.11n-HT20 mode						
Low	5180	3.02	2.83	5.94	8	-2.06
Middle	5200	2.86	2.82	5.85	8	-2.15
High	5240	3.10	3.07	6.10	8	-1.90
802.11n-HT40 mode						
Low	5190	4.38	4.63	7.52	8	-0.48
High	5230	4.51	4.74	7.64	8	-0.36
802.11ac-80 mode						
-	5210	4.54	4.80	7.68	8	-0.32

5250-5350 MHz

Channel	Frequency (MHz)	TX Chain J0 Power (dBm)	TX Chain J1 Power (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)	Power Setting
802.11a mode							
Low	5260	8.23	8.51	11.38	15	-3.62	9
Middle	5280	8.45	8.62	11.55	15	-3.45	9
High	5320	8.35	8.47	11.42	15	-3.58	9
802.11n-HT20 mode							
Low	5260	8.25	8.36	11.32	15	-3.68	9
Middle	5280	8.18	8.47	11.34	15	-3.66	9
High	5320	8.36	8.58	11.48	15	-3.52	9
802.11n-HT40 mode							
Low	5270	11.25	11.42	14.35	15	-0.65	12
High	5310	11.24	11.35	14.31	15	-0.69	12
802.11ac-80 mode							
-	5290	11.27	11.62	14.46	15	-0.54	12

5470-5725 MHz

Channel	Frequency (MHz)	TX Chain J0 Power (dBm)	TX Chain J1 Power (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)	Power Setting
802.11a mode							
Low	5500	9.32	9.57	12.46	15	-2.54	8
Middle	5580	9.42	9.66	12.55	15	-2.45	8
High	5700	9.25	9.42	12.35	15	-2.65	8
802.11n-HT20 mode							
Low	5500	9.41	9.58	12.51	15	-2.49	8
Middle	5580	9.54	9.64	12.60	15	-2.40	8
High	5700	9.23	9.41	12.33	15	-2.67	8
802.11n-HT40 mode							
Low	5510	11.12	11.32	14.23	15	-0.77	8
Middle	5550	11.21	11.54	14.39	15	-0.61	8
High	5670	11.15	11.47	14.32	15	-0.68	8
802.11ac-80 mode							
Low	5530	11.24	11.56	14.41	15	-0.59	8
High	5690	11.32	11.64	14.49	15	-0.51	8

Note: Adjust limit per FCC Part 15.407, the power limit for W52 band is $17-(15-6)=8$ dBm, and for W53 and W56 bands: $24-(15-6)=15$ dBm.

For IC:**5150-5250 MHz**

Channel	Frequency (MHz)	Conducted Output Power (dBm)		Total E.I.R.P (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1			
802.11a mode						
Low	5180	2.93	2.75	20.85	23	-2.15
Middle	5200	2.78	2.74	20.77	23	-2.23
High	5240	3.01	2.98	21.01	23	-1.99
802.11n-HT20 mode						
Low	5180	3.02	2.83	20.94	23	-2.06
Middle	5200	2.86	2.82	20.85	23	-2.15
High	5240	3.10	3.07	21.1	23	-1.90
802.11n-HT40 mode						
Low	5190	4.38	4.63	22.52	23	-0.48
High	5230	4.51	4.74	22.64	23	-0.36
802.11ac-80 mode						
-	5210	4.54	4.80	22.68	23	-0.32

5250-5350 MHz

Channel	Frequency (MHz)	TX Chain J0 Power (dBm)	TX Chain J1 Power (dBm)	Total E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	Power Setting
802.11a mode							
Low	5260	8.23	8.51	26.38	30	-3.62	9
Middle	5280	8.45	8.62	26.55	30	-3.45	9
High	5320	8.35	8.47	26.42	30	-3.58	9
802.11n-HT20 mode							
Low	5260	8.25	8.36	26.32	30	-3.68	9
Middle	5280	8.18	8.47	26.34	30	-3.66	9
High	5320	8.36	8.58	26.48	30	-3.52	9
802.11n-HT40 mode							
Low	5270	11.25	11.42	29.35	30	-0.65	12
High	5310	11.24	11.35	29.31	30	-0.69	12
802.11ac-80 mode							
-	5290	11.27	11.62	29.46	30	-0.54	12

5470-5725 MHz

Channel	Frequency (MHz)	TX Chain J0 Power (dBm)	TX Chain J1 Power (dBm)	Total E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	Power Setting
802.11a mode							
Low	5500	9.32	9.57	27.46	30	-2.54	8
Middle	5580	9.42	9.66	27.55	30	-2.45	8
High	5700	9.25	9.42	27.35	30	-2.65	8
802.11n-HT20 mode							
Low	5500	9.41	9.58	27.51	30	-2.49	8
Middle	5580	9.54	9.64	27.6	30	-2.40	8
High	5700	9.23	9.41	27.33	30	-2.67	8
802.11n-HT40 mode							
Low	5510	11.12	11.32	29.23	30	-0.77	8
Middle	5550	11.21	11.54	29.39	30	-0.61	8
High	5670	11.15	11.47	29.32	30	-0.68	8
802.11ac-80 mode							
Low	5530	11.24	11.56	29.41	30	-0.59	8
High	5690	11.32	11.64	29.49	30	-0.51	8

7 FCC §15.407(b) & IC RSS-210 §A9.2 - Out of Band Emissions

7.1 Applicable Standard

According to FCC §15.407(b)

(1) For transmitters operating in the 5.15-5.25 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.

(2) 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.

(3) 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.

According to RSS-210 §A9.2

For transmitters operating in the 5.15-5.25 GHz band: Emissions outside the band 5150-5250 MHz shall not exceed -27 dBm/MHz e.i.r.p.

For transmitters operating in the 5.25-5.35 GHz band: Emissions outside the band 5250-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p.

For transmitters operating in the 5.47-5.725 GHz band: Emissions outside the band 5470-5725 MHz shall not exceed -27 dBm/MHz e.i.r.p.

7.2 Measurement Procedure

The measurements are base on FCC KDB 789033 D01 General UNII Test Procedures v01r03: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices section H: Unwanted emissions measurement

7.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4446A	US44300386	2013-09-29	1 year

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

7.4 Test Environmental Conditions

Temperature:	21-25 °C
Relative Humidity:	41-46 %
ATM Pressure:	101-102 kPa

The testing was performed by Chen Ge from 2014-06-30 to 2014-07-03 at RF site.

7.5 Test Results

Please refer to following pages for plots of band edge.

Note: For those channels without plots, please refer to report R1403261-407, there is at least 15 dB margins for all plots.

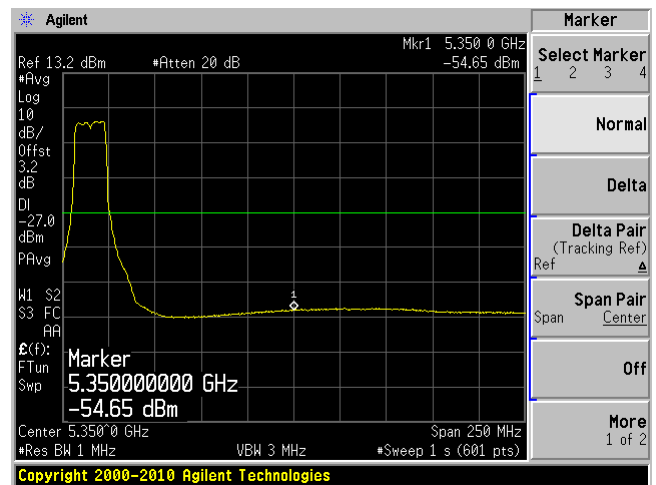
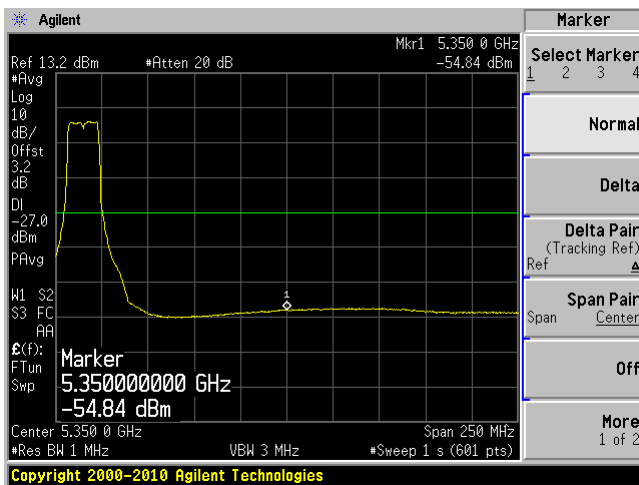
For FCC :

5150-5250 MHz Band

802.11a mode

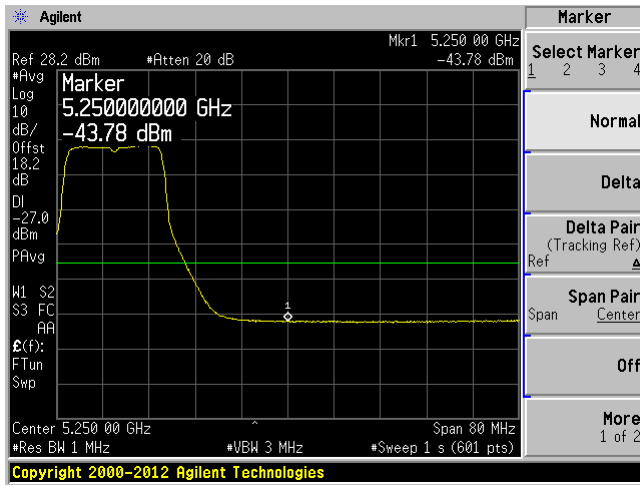
High channel: 5240 MHz Chain J0

High channel: 5240 MHz Chain J1

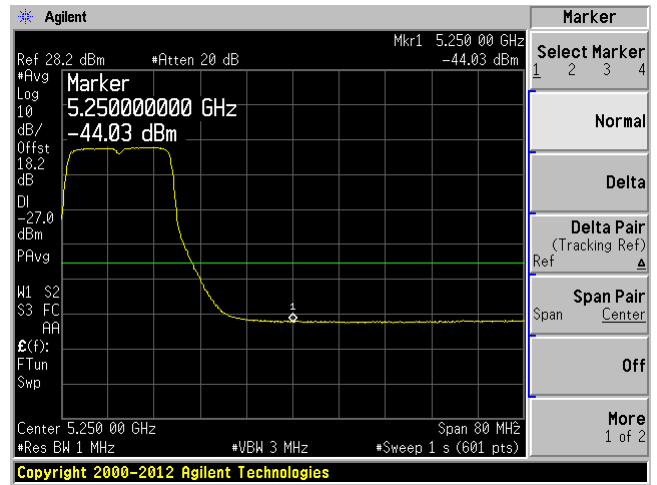


For IC:

High channel: 5220 MHz Chain J0

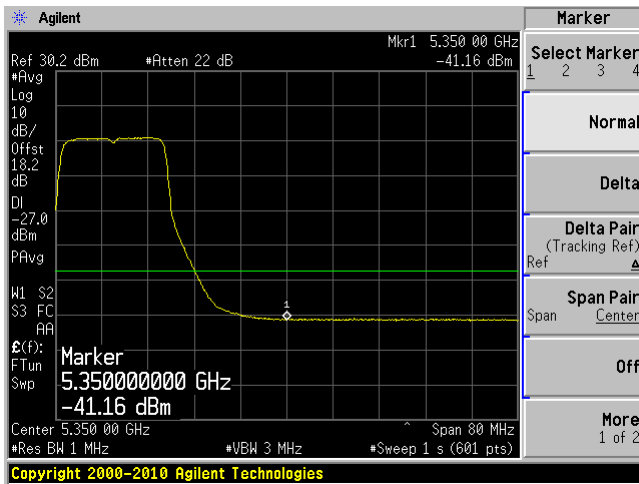


High channel: 5220 MHz Chain J1

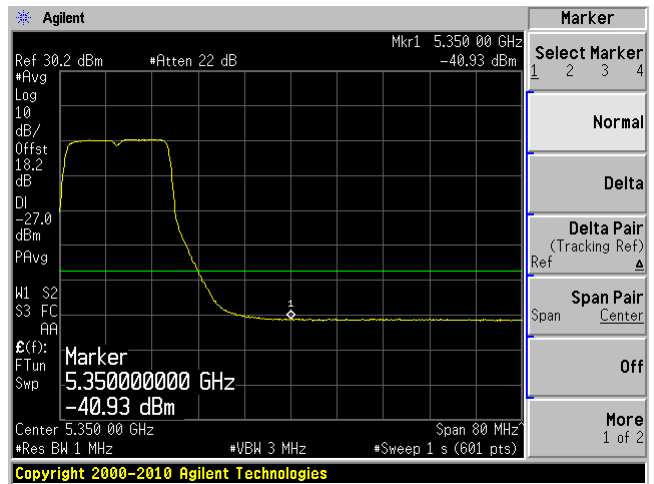


For IC:

High channel: 5220 MHz Chain J0

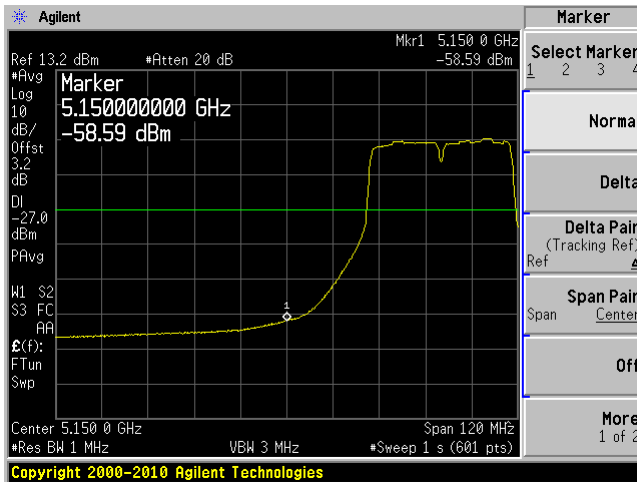


High channel: 5220 MHz Chain J1

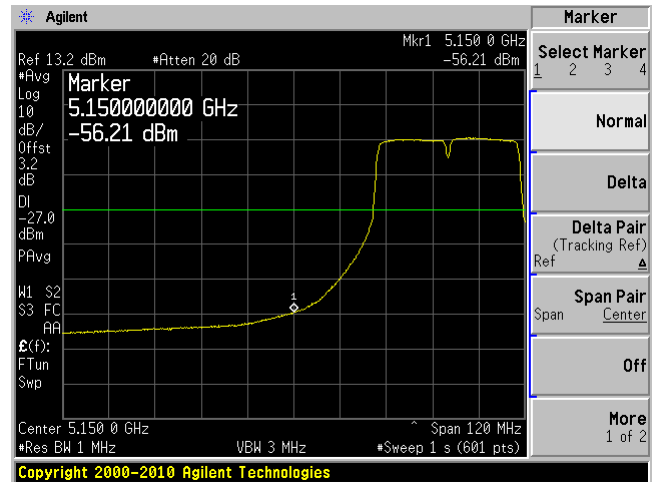


802.11n-HT40 mode

Low channel: 5190 MHz Chain J0

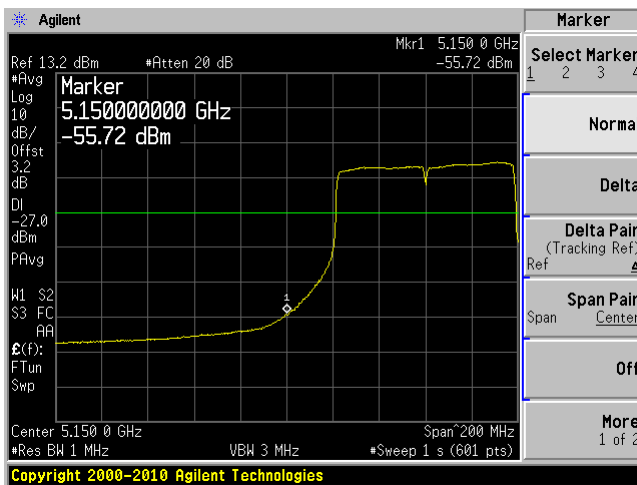


Low channel: 5190 MHz Chain J1

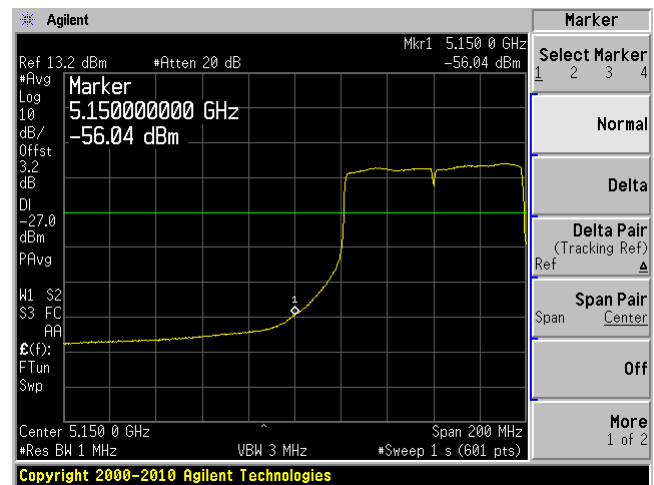


802.11ac-80 mode

Low channel: 5210 MHz Chain J0

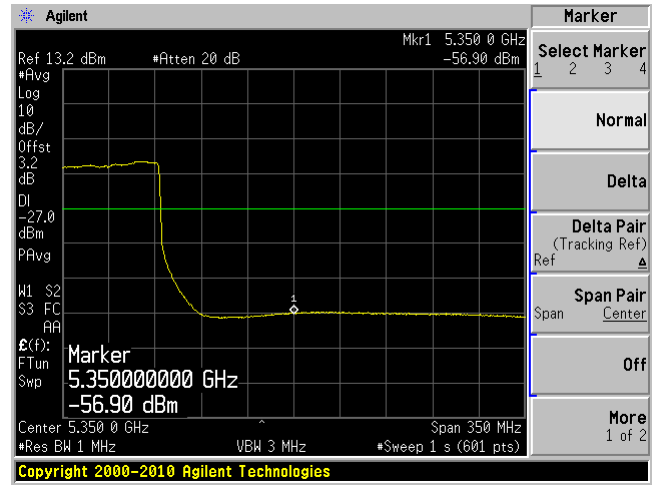
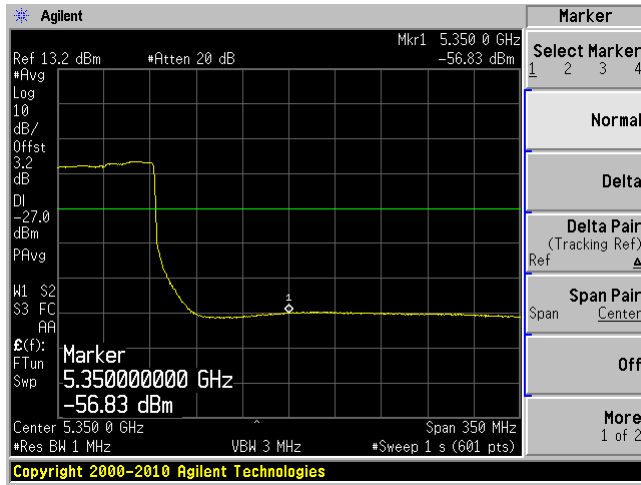


Low channel: 5210 MHz Chain J1



High channel: 5210 MHz Chain J0

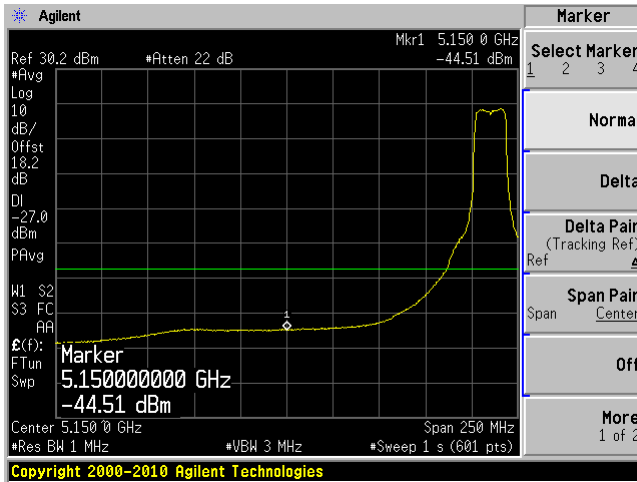
High channel: 5210 MHz Chain J1



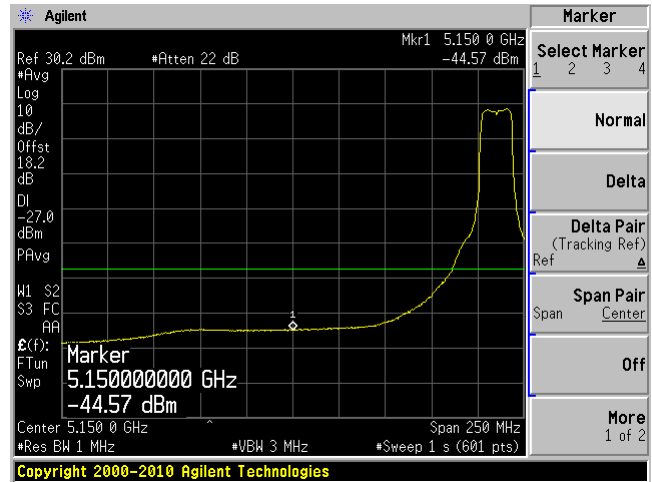
For FCC :

5250-5350 MHz

802.11a mode, 5260 MHz, Chain J0

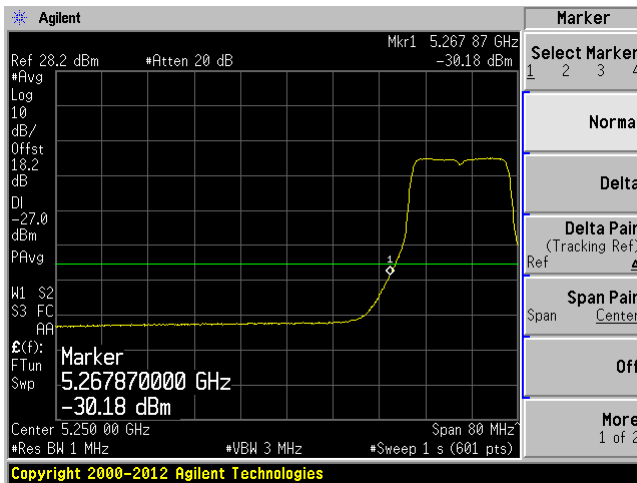


802.11a mode, 5260 MHz, Chain J1

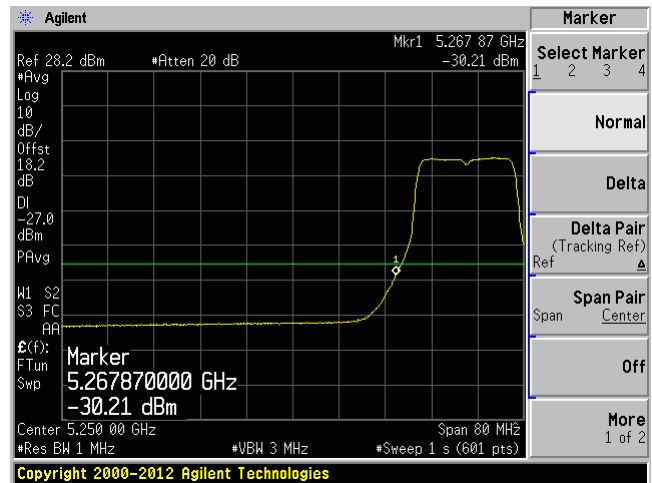


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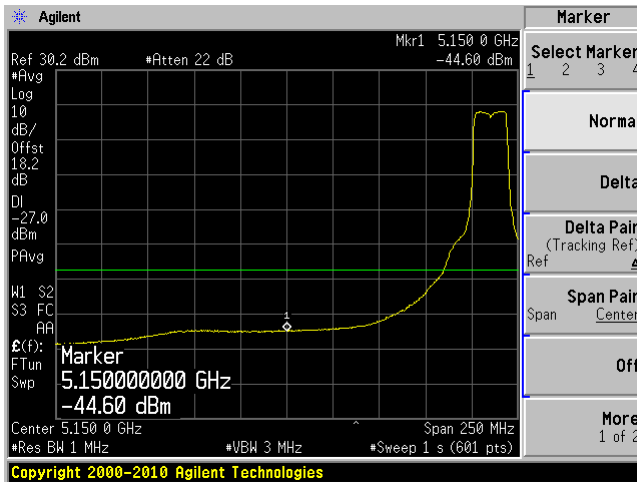
802.11a mode, 5280 MHz, Chain J0



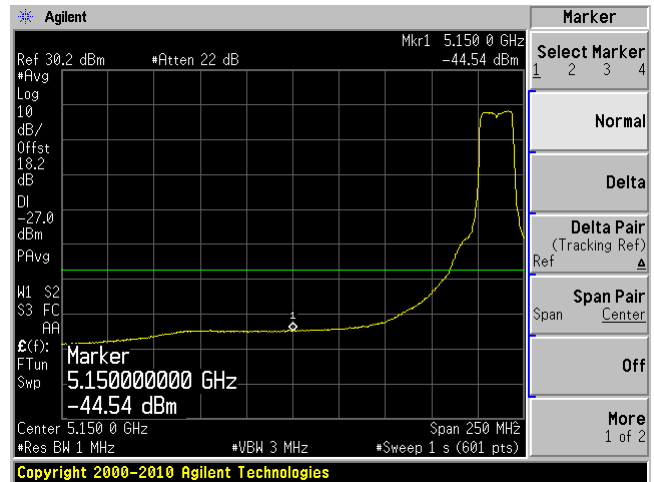
802.11a mode, 5280 MHz, Chain J1



802.11n-HT20 mode, 5260 MHz, Chain J0

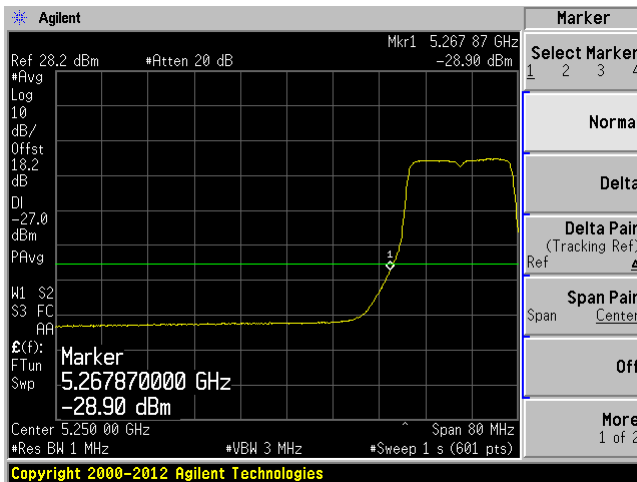


802.11n-HT20 mode, 5260 MHz, Chain J1

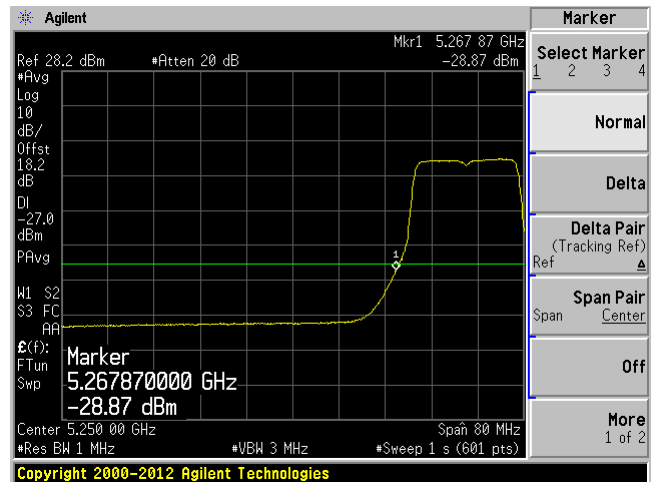


For IC :

802.11n-HT20 mode, 5280 MHz, Chain J0

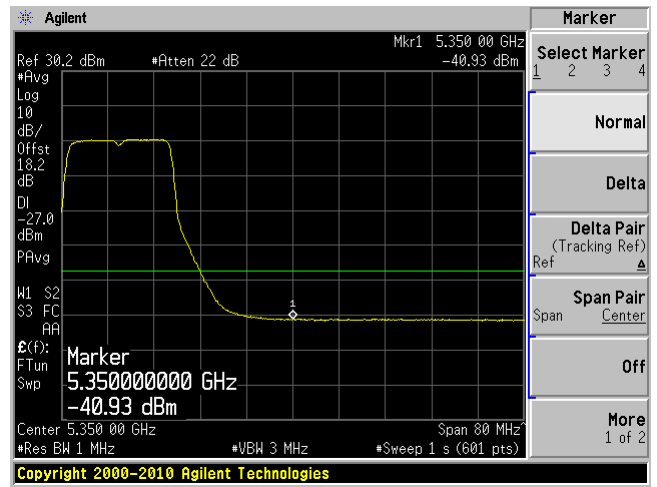
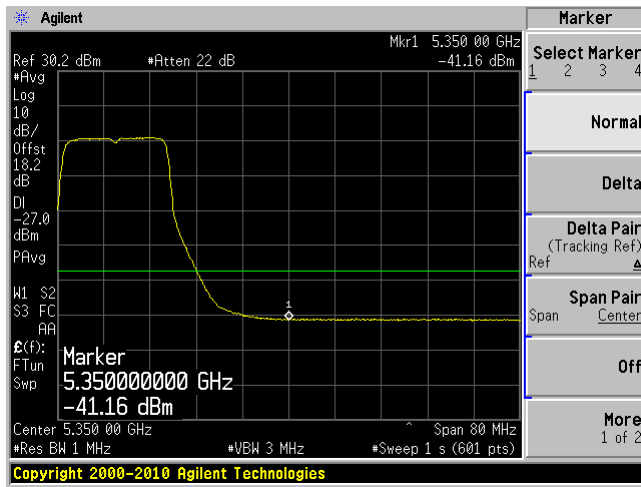


802.11n-HT20 mode, 5280 MHz, Chain J1



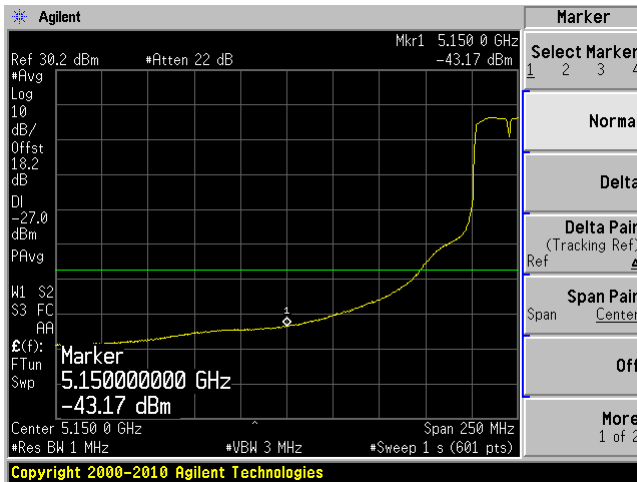
802.11n-HT20 mode, 5320 MHz, Chain J0

802.11n-HT20 mode, 5320 MHz, Chain J1

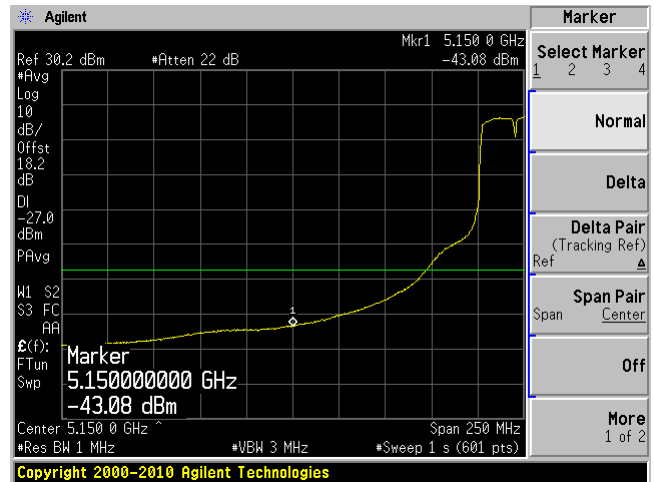


For FCC :

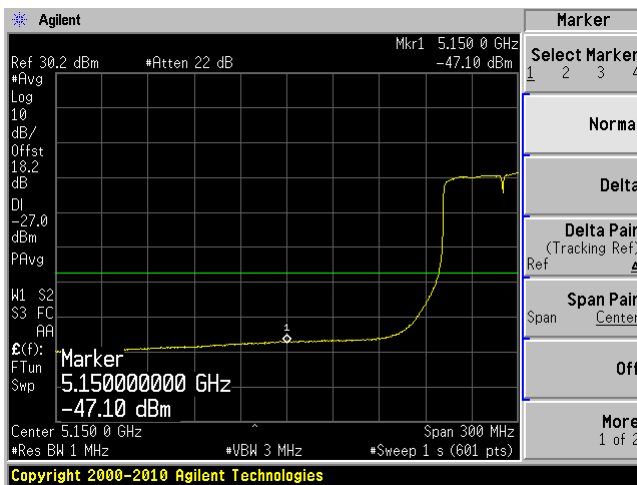
802.11n-HT40 mode, 5270 MHz, Chain J0



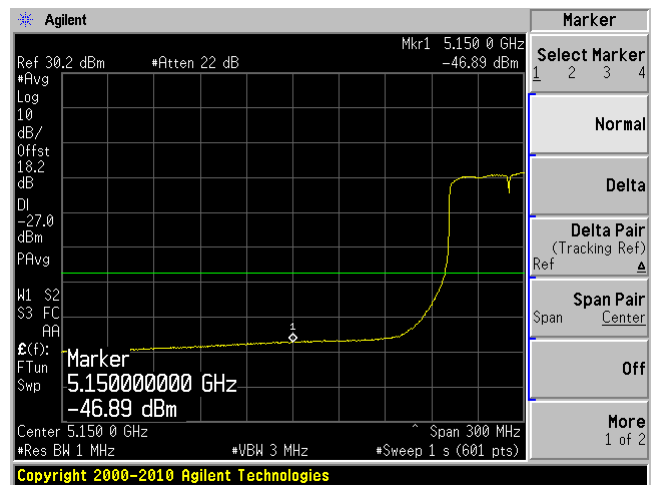
802.11n-HT40 mode, 5270 MHz, Chain J1



802.11ac-80 mode, 5290 MHz, Chain J0

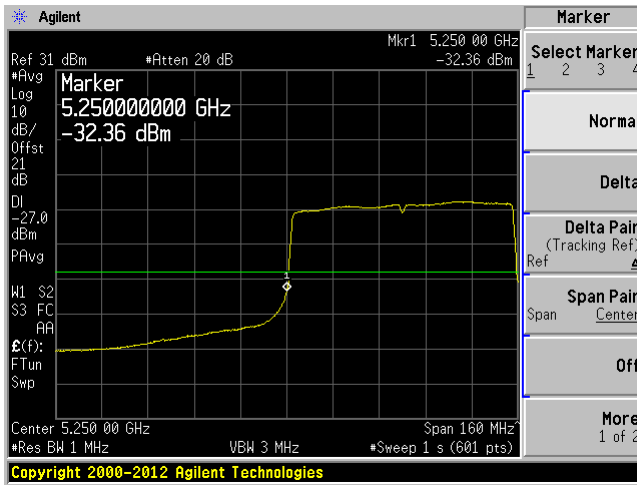


802.11ac-80 mode, 5290 MHz, Chain J1

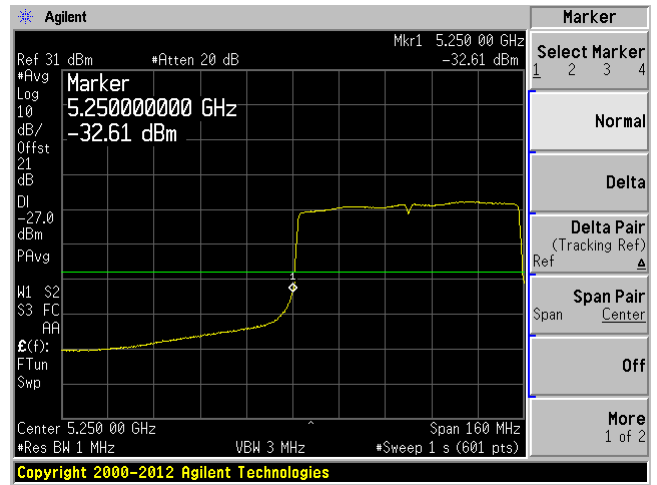


For IC :

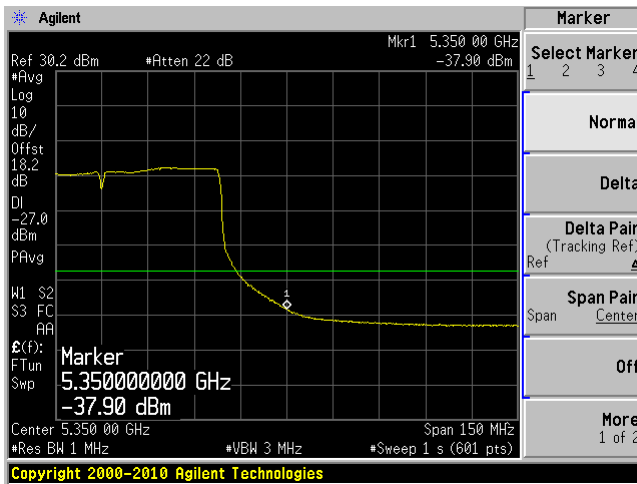
802.11ac-80 mode, 5290 MHz, Chain J0



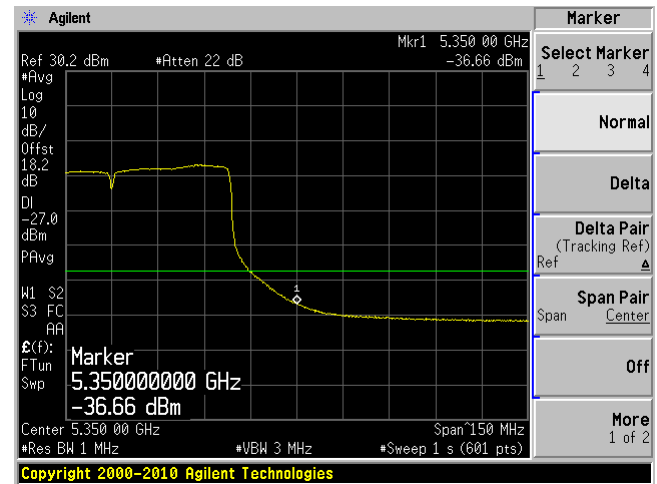
802.11ac-80 mode, 5290 MHz, Chain J1



802.11ac-80 mode, 5290 MHz, Chain J0

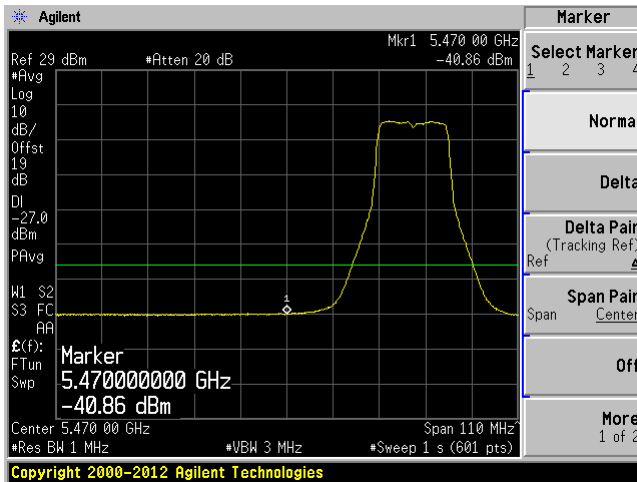


802.11ac-80 mode, 5290 MHz, Chain J1

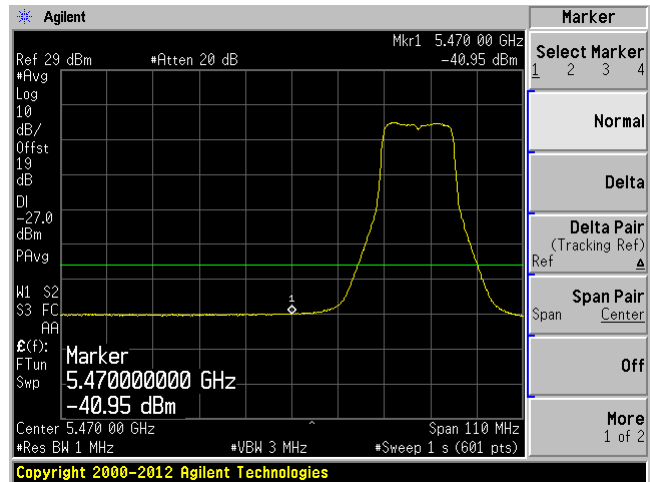


5470-5725 MHz

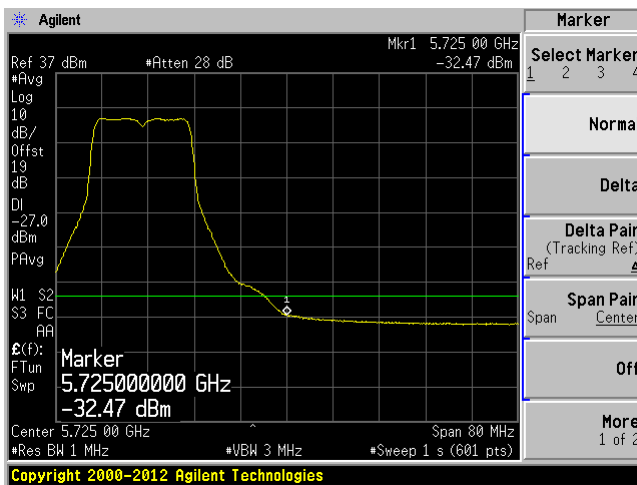
802.11a mode, 5550 MHz, Chain J0



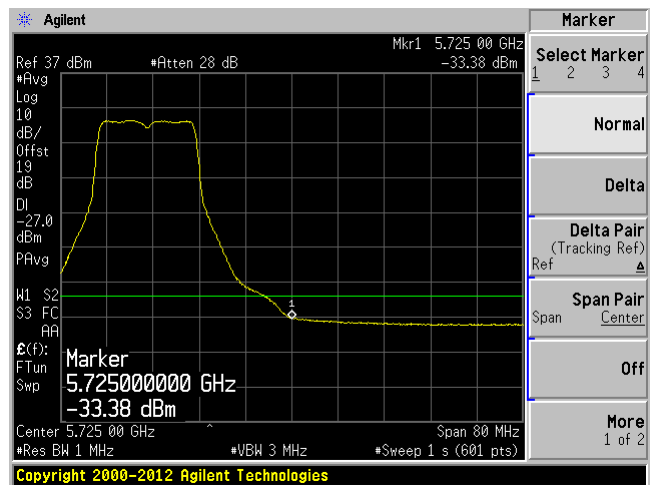
802.11a mode, 5550 MHz, Chain J1



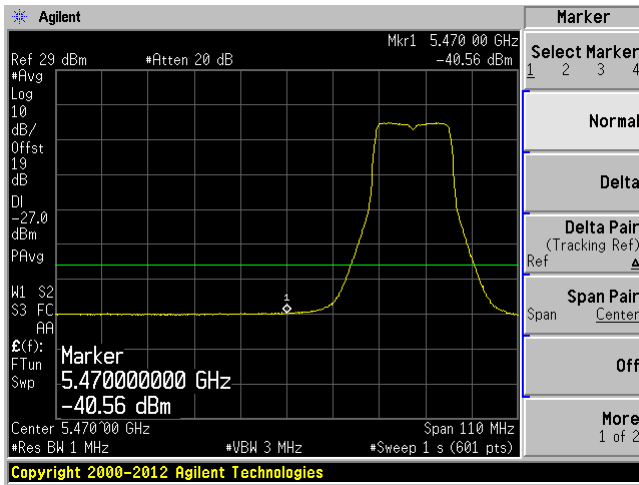
802.11a mode, 5700 MHz, Chain J0



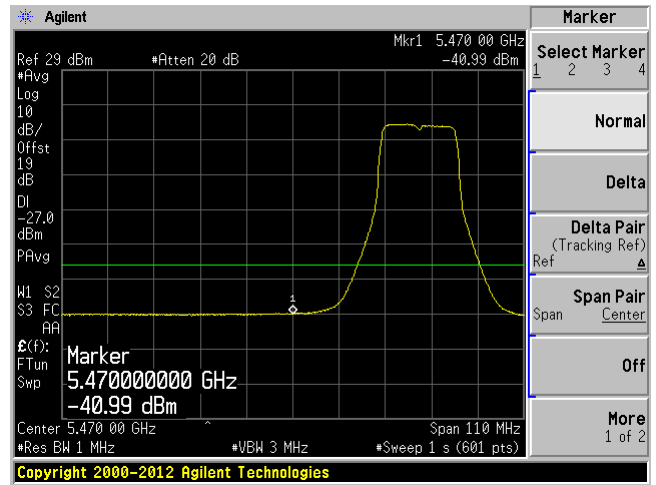
802.11a mode, 5700 MHz, Chain J1



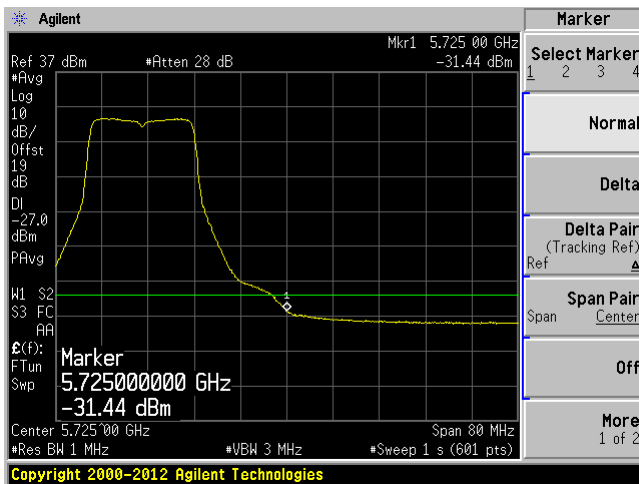
802.11n-HT20 mode, 5500 MHz, Chain J0



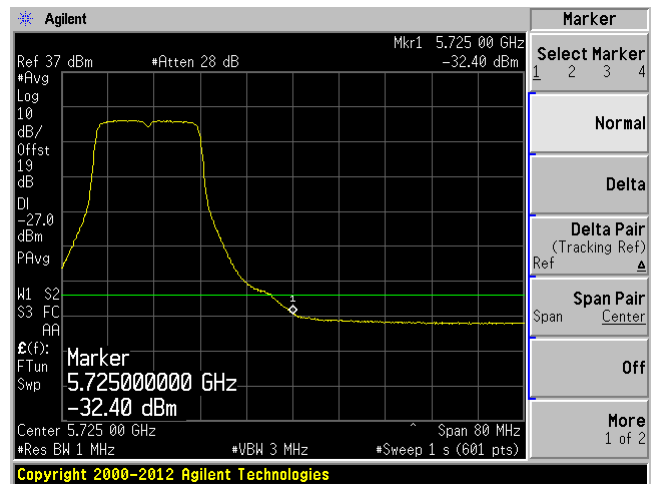
802.11n-HT20 mode, 5500 MHz, Chain J1



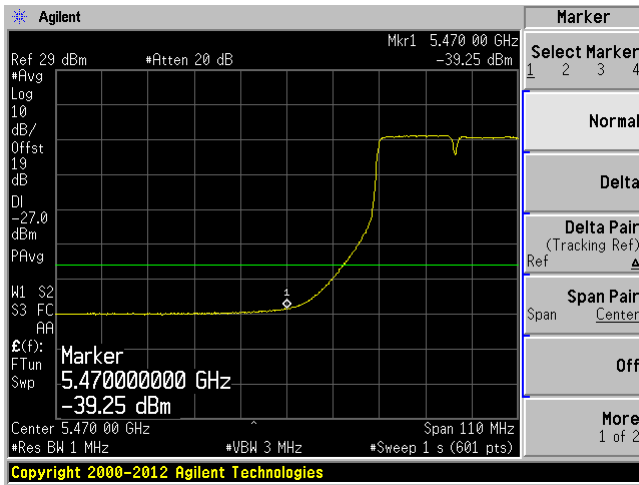
802.11n-HT20 mode, 5700 MHz, Chain J0



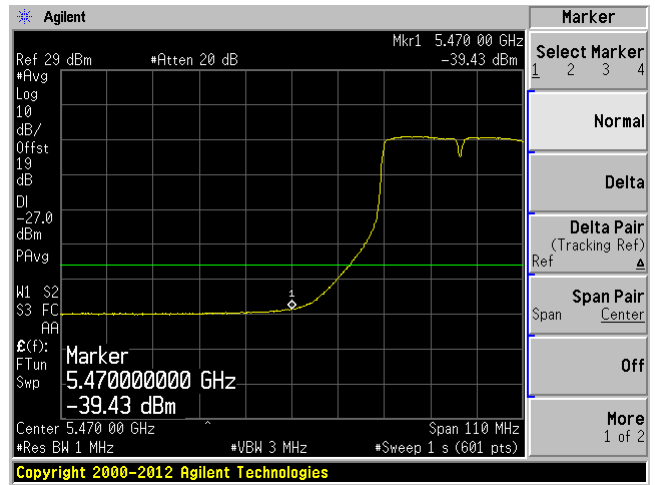
802.11n-HT20 mode, 5700 MHz, Chain J1



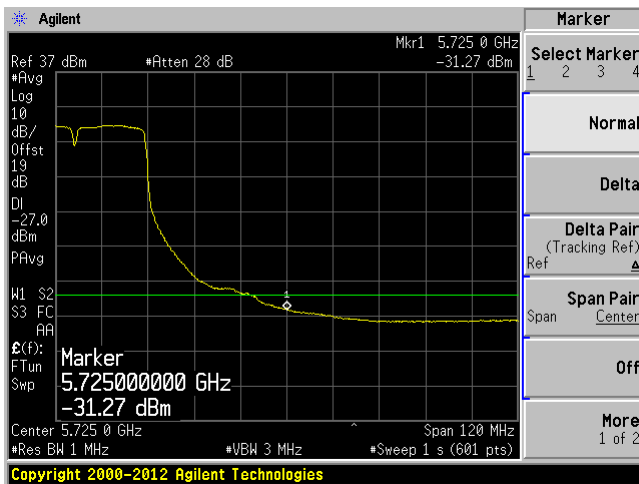
802.11n-HT40 mode, 5510 MHz, Chain J0



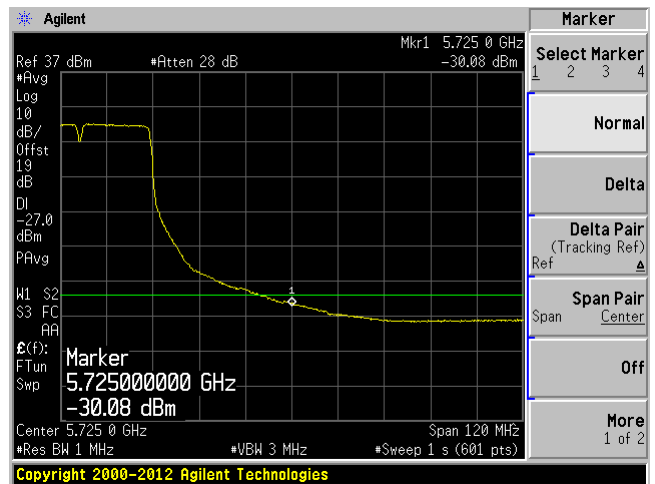
802.11n-HT40 mode, 5510 MHz, Chain J1



802.11n-HT40 mode, 5670 MHz, Chain J0

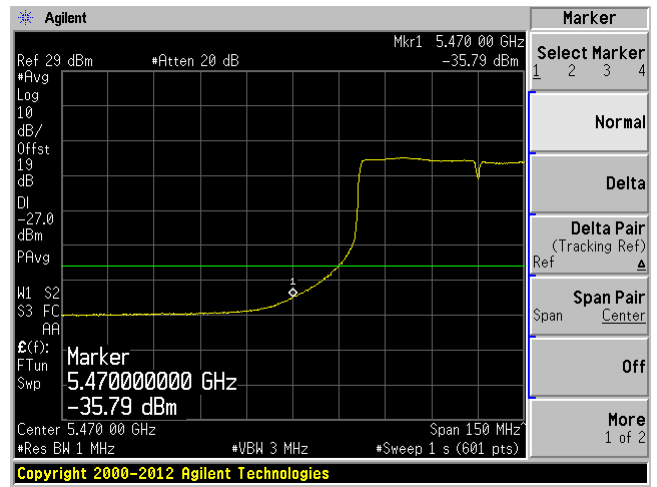
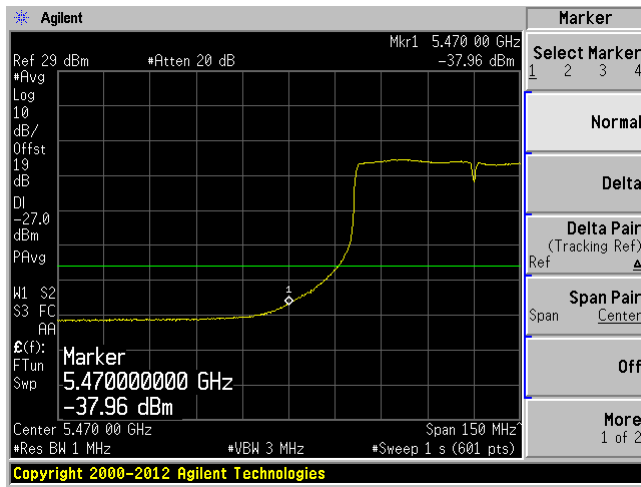


802.11n-HT40 mode, 5670 MHz, Chain J1



802.11ac-80 mode, 5530 MHz, Chain J0

802.11ac-80 mode, 5530 MHz, Chain J1



8 FCC §15.407(a)(1) & IC RSS-210 §A9.2 - Power Spectral Density

8.1 Applicable Standard

According to FCC §15.407(a)(1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 dBm in any 1-MHz 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.

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.

According to IC RSS-210 §A9.2:

5150–5250 MHz:

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log₁₀ B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

5250–5350 MHz:

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log₁₀ B, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHzband. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log₁₀ B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

5470–5725 MHz:

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log₁₀ B, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHzband. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log₁₀ B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

8.2 Measurement Procedure

The measurements are base on FCC KDB 789033 D01 General UNII Test Procedures v01r03: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices section F:
Peak power spectral density (PPSD)

8.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4446A	US44300386	2013-09-29	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:	21-25° C
Relative Humidity:	41-46 %
ATM Pressure:	101-102 kPa

The testing was performed by Chen Ge from 2014-06-30 to 2014-07-03 at RF site.

8.5 Test Results

For FCC:

5150-5250 MHz

Channel	Frequency (MHz)	PSD (dBm)		Total PSD (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1			
802.11a mode						
Low	5180	-8.931	-8.505	-5.70	-5	-0.70
Middle	5200	-8.836	-8.777	-5.80	-5	-0.80
High	5240	-8.894	-8.619	-5.74	-5	-0.74
802.11n-HT20 mode						
Low	5180	-9.122	-8.821	-5.96	-5	-0.96
Middle	5200	-9.013	-9.115	-6.05	-5	-1.05
High	5240	-8.753	-8.802	-5.77	-5	-0.77
802.11n-HT40 mode						
Low	5190	-9.809	-9.611	-6.70	-5	-1.70
High	5230	-9.689	-9.624	-6.65	-5	-1.65
802.11ac- 80 mode						
-	5210	-12.648	-12.665	-9.65	-5	-4.65

5250-5350 MHz

Channel	Frequency (MHz)	TX Chain J0 PSD (dBm)	TX Chain J1 PSD (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)	Power Setting
802.11a mode							
Low	5260	-2.105	-1.955	0.98	2	-1.02	9
Middle	5280	-2.08	-1.845	1.05	2	-0.95	9
High	5320	-2.146	-2.11	0.88	2	-1.12	9
802.11n-HT20 mode							
Low	5260	-2.396	-2.429	0.60	2	-1.40	9
Middle	5280	-2.501	-2.462	0.53	2	-1.47	9
High	5320	-2.643	-2.435	0.47	2	-1.53	9
802.11n-HT40 mode							
Low	5270	-2.787	-2.842	0.20	2	-1.80	12
High	5310	-2.509	-2.823	0.35	2	-1.65	12
802.11ac-80 mode							
-	5290	-5.768	-5.824	-2.79	2	-4.79	12

5470-5725 MHz

Channel	Frequency (MHz)	TX Chain J0 PSD (dBm)	TX Chain J1 PSD (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)	Power Setting
802.11a mode							
Low	5550	-1.512	-1.085	1.72	2	-0.28	8
Middle	5580	-1.494	-1.441	1.54	2	-0.46	8
High	5700	-1.535	-1.17	1.66	2	-0.34	8
802.11n-HT20 mode							
Low	5500	-1.525	-1.541	1.48	2	-0.52	8
Middle	5580	-1.822	-1.862	1.17	2	-0.83	8
High	5700	-1.501	-1.749	1.39	2	-0.61	8
802.11n-HT40 mode							
Low	5510	-3.232	-3.178	-0.19	2	-2.19	10
Middle	5550	-3.474	-3.61	-0.53	2	-2.53	10
High	5670	-2.87	-2.742	0.20	2	-1.80	10
802.11ac-80 mode							
Low	5530	-6.704	-6.577	-3.63	2	-5.63	10
High	5690	-6.287	-6.219	-3.24	2	-5.24	10

Note: Adjust limit per FCC Part 15.407, the power limit for W52 band is $4-(15-6)=-5$ dBm, and for W53 and W56 bands: $11-(15-6)=2$ dBm.

For IC:**5150-5250 MHz**

Channel	Frequency (MHz)	PSD (dBm)		Total E.I.R.P density (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1			
802.11a mode						
Low	5180	-8.931	-8.505	9.3	10	-0.7
Middle	5200	-8.836	-8.777	9.2	10	-0.8
High	5240	-8.894	-8.619	9.26	10	-0.74
802.11n-HT20 mode						
Low	5180	-9.122	-8.821	9.04	10	-0.96
Middle	5200	-9.013	-9.115	8.95	10	-1.05
High	5240	-8.753	-8.802	9.23	10	-0.77
802.11n-HT40 mode						
Low	5190	-9.809	-9.611	8.3	10	-1.7
High	5230	-9.689	-9.624	8.35	10	-1.65
802.11ac- 80 mode						
-	5210	-12.648	-12.665	5.35	10	-4.65

5250-5350 MHz

Channel	Frequency (MHz)	TX Chain J0 PSD (dBm)	TX Chain J1 PSD (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)	Power Setting
802.11a mode							
Low	5260	-2.105	-1.955	0.98	11	-10.02	9
Middle	5280	-2.08	-1.845	1.05	11	-9.95	9
High	5320	-2.146	-2.11	0.88	11	-10.12	9
802.11n-HT20 mode							
Low	5260	-2.396	-2.429	0.60	11	-10.4	9
Middle	5280	-2.501	-2.462	0.53	11	-10.47	9
High	5320	-2.643	-2.435	0.47	11	-10.53	9
802.11n-HT40 mode							
Low	5270	-2.787	-2.842	0.20	11	-10.8	12
High	5310	-2.509	-2.823	0.35	11	-10.65	12
802.11ac-80 mode							
-	5290	-5.768	-5.824	-2.79	11	-13.79	12

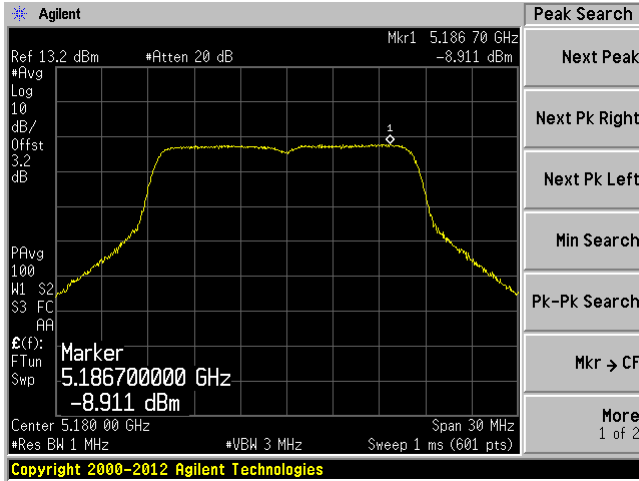
5470-5725 MHz

Channel	Frequency (MHz)	TX Chain J0 PSD (dBm)	TX Chain J1 PSD (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)	Power Setting
802.11a mode							
Low	5550	-1.512	-1.085	1.72	11	-9.28	8
Middle	5580	-1.494	-1.441	1.54	11	-9.46	8
High	5700	-1.535	-1.17	1.66	11	-9.34	8
802.11n-HT20 mode							
Low	5500	-1.525	-1.541	1.48	11	-9.52	8
Middle	5580	-1.822	-1.862	1.17	11	-9.83	8
High	5700	-1.501	-1.749	1.39	11	-9.61	8
802.11n-HT40 mode							
Low	5510	-3.232	-3.178	-0.19	11	-11.19	10
Middle	5550	-3.474	-3.61	-0.53	11	-11.53	10
High	5670	-2.87	-2.742	0.20	11	-10.8	10
802.11ac-80 mode							
Low	5530	-6.704	-6.577	-3.63	11	-14.63	10
High	5690	-6.287	-6.219	-3.24	11	-14.24	10

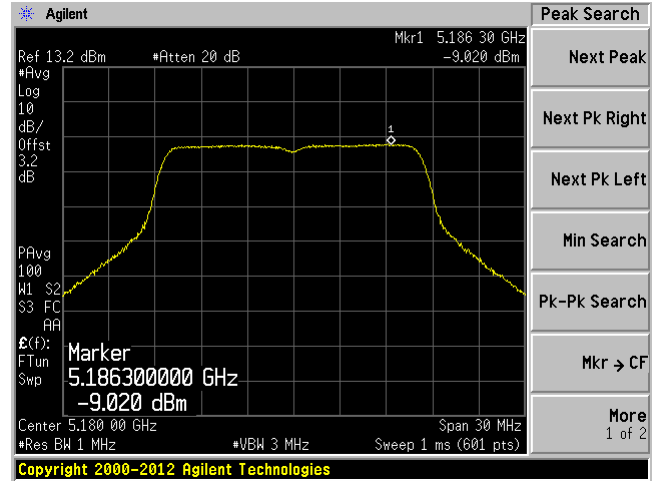
Please refer to the following plots.

5150-5250 MHz Band 802.11a mode

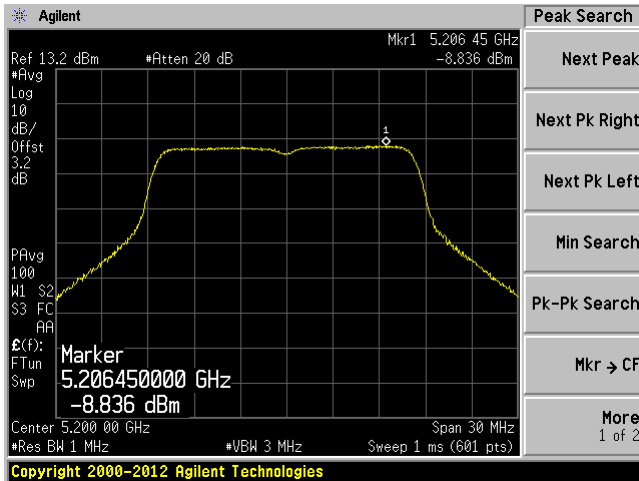
Low channel: 5180 MHz Chain J0



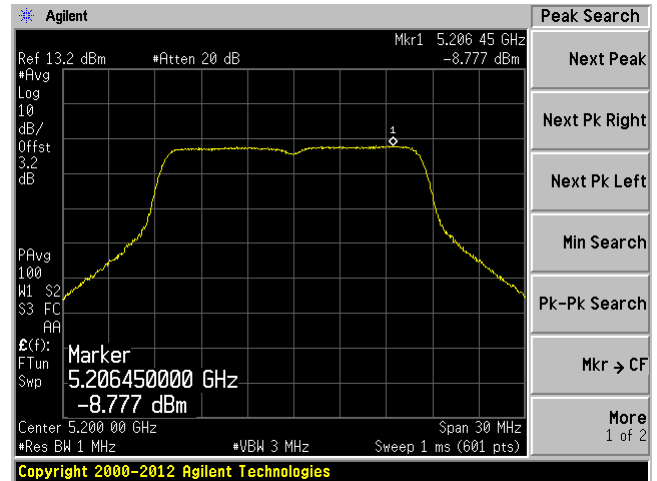
Low channel: 5180 MHz Chain J1



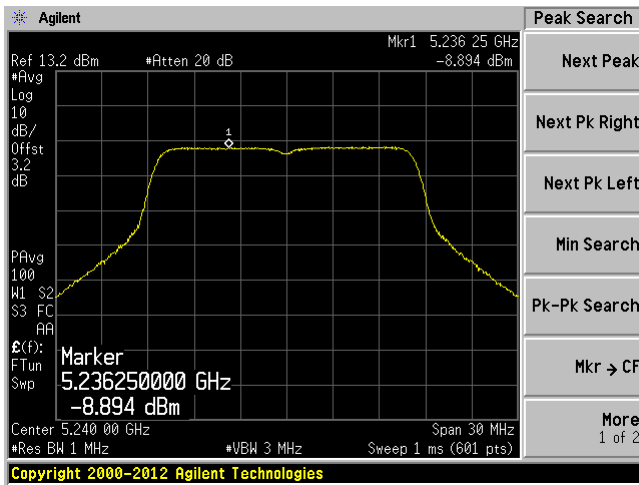
Middle channel: 5200 MHz Chain J0



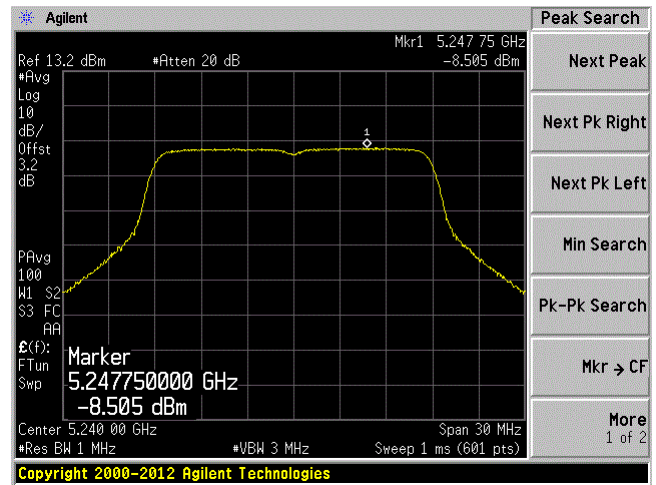
Middle channel: 5200 MHz Chain J1



High channel: 5240 MHz Chain J0

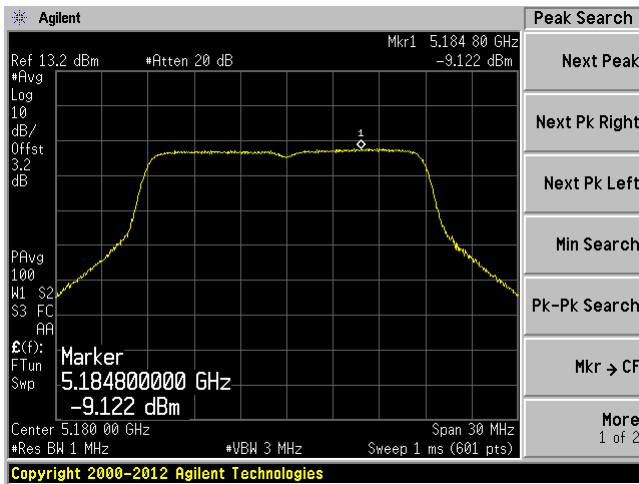


High channel: 5240 MHz Chain J1

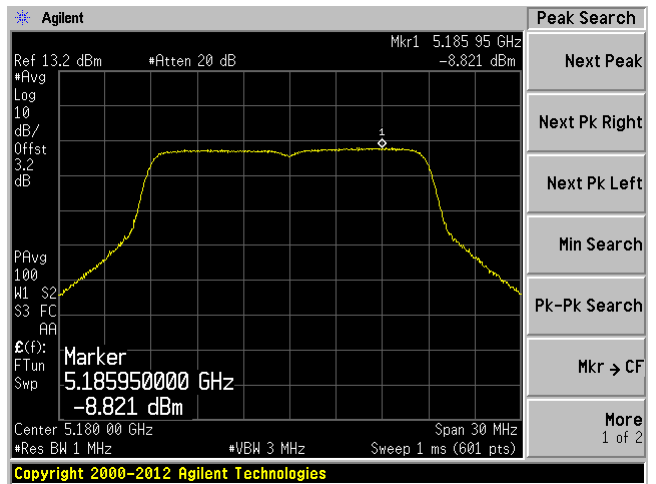


802.11n-HT20 mode

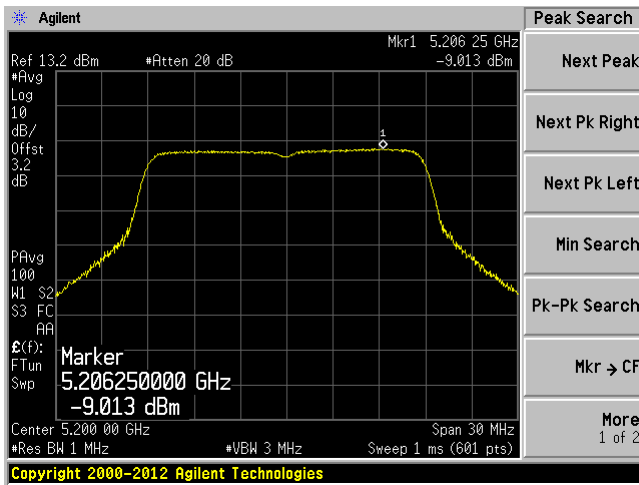
Low channel: 5180 MHz Chain J0



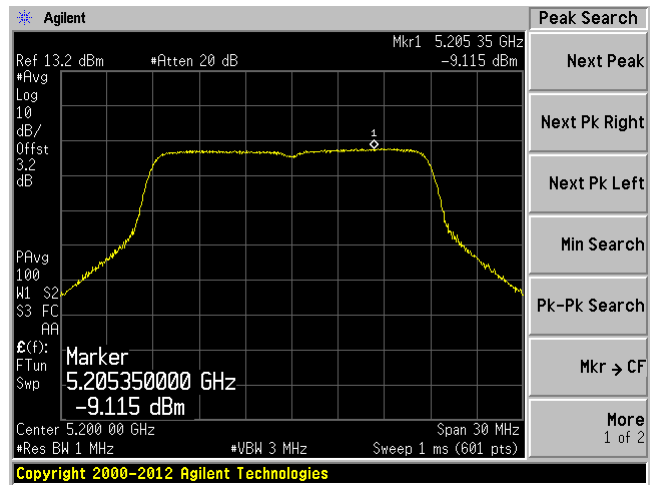
Low channel: 5180 MHz Chain J1



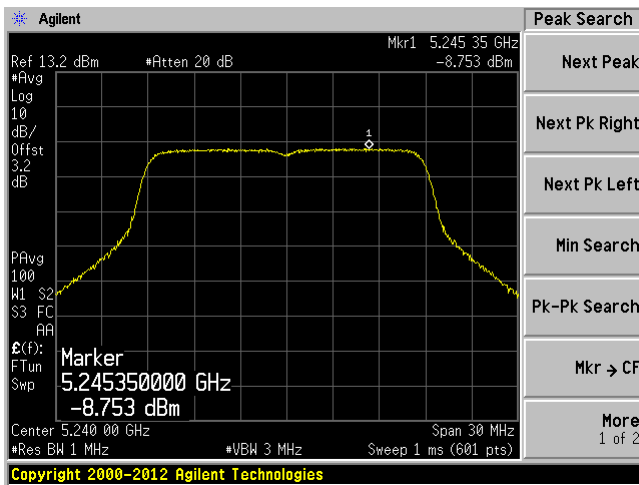
Middle channel: 5200 MHz Chain J0



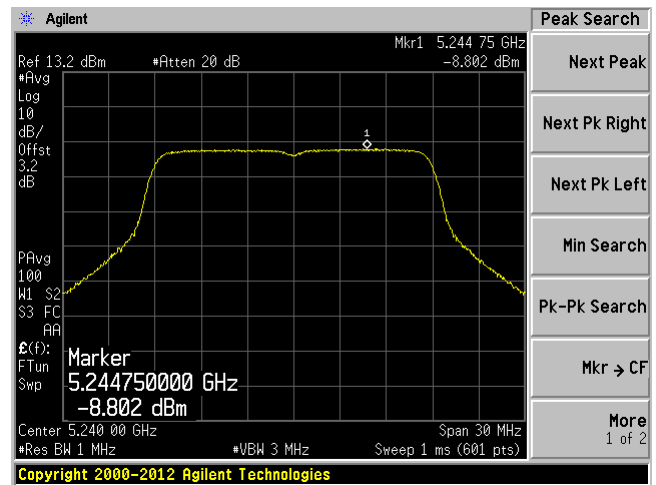
Middle channel: 5200 MHz Chain J1



High channel: 5240 MHz Chain J0

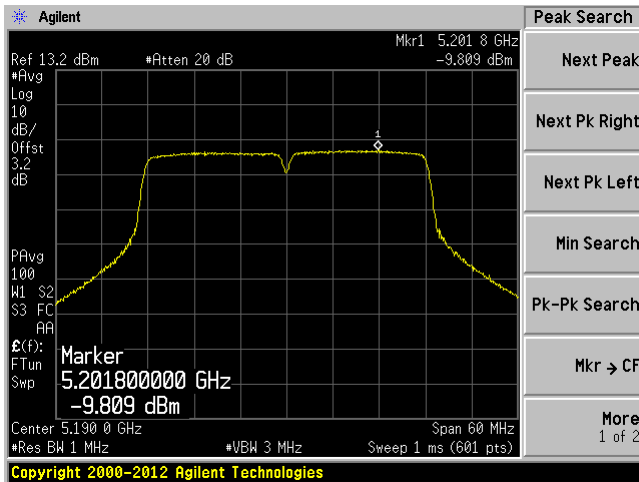


High channel: 5240 MHz Chain J1

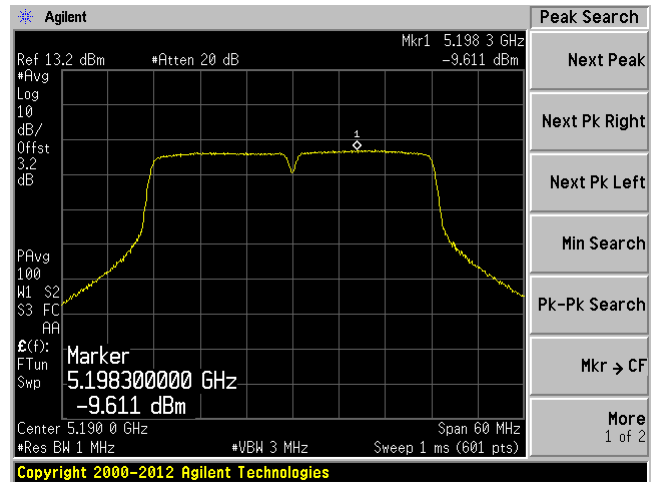


802.11n-HT40 mode

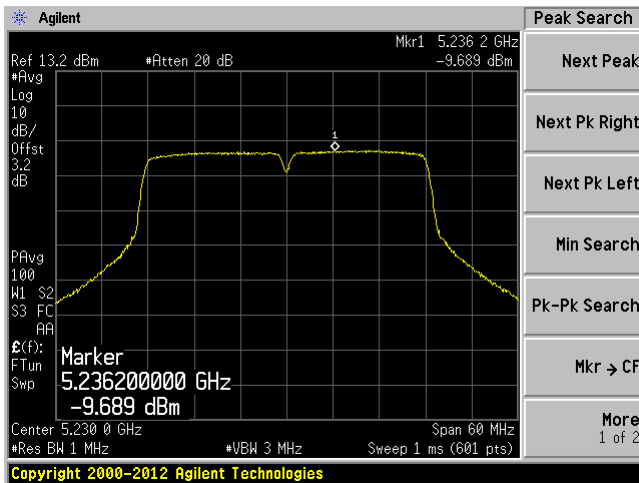
Low channel: 5190 MHz Chain J0



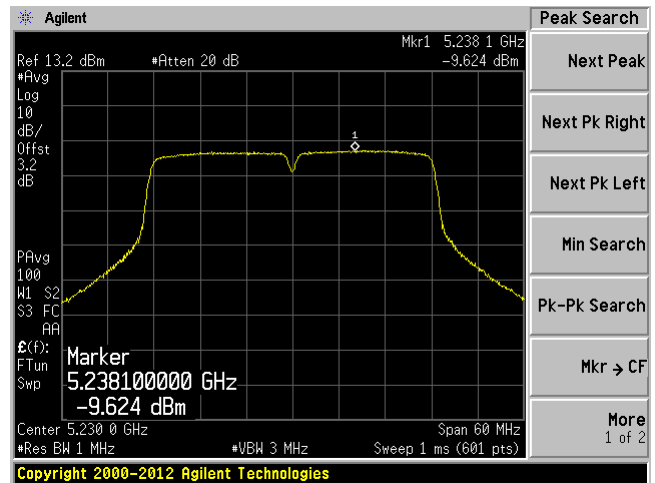
Low channel: 5190 MHz Chain J1



High channel: 5230 MHz Chain J0

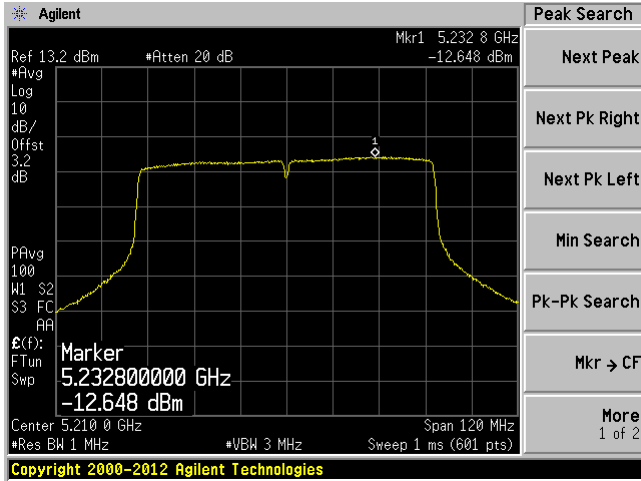


High channel: 5230 MHz Chain J1

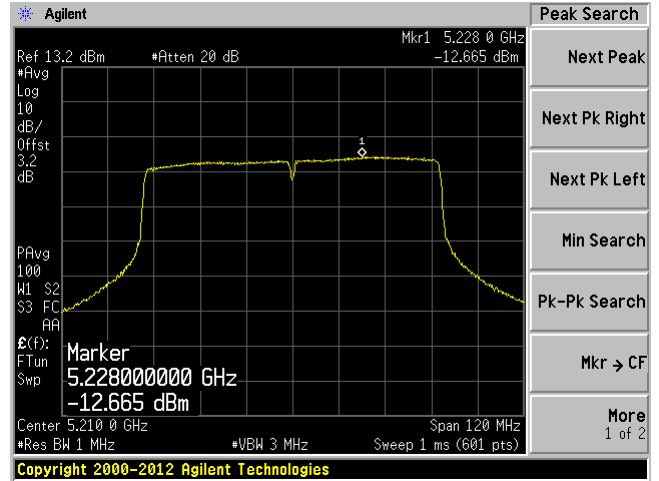


802.11ac-80 mode

Channel: 5210 MHz Chain J0

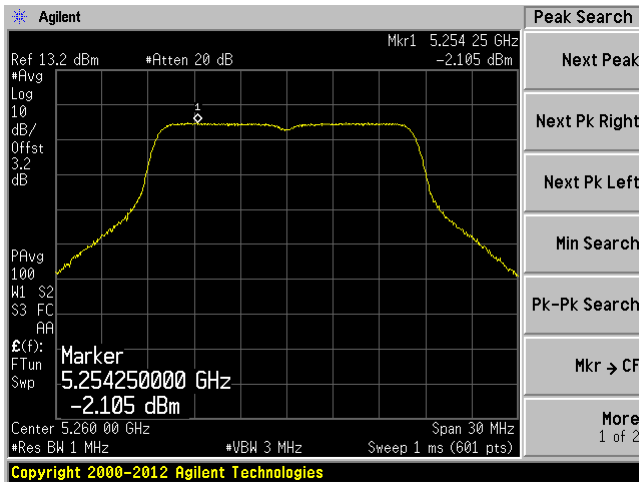


Channel: 5210 MHz Chain J1

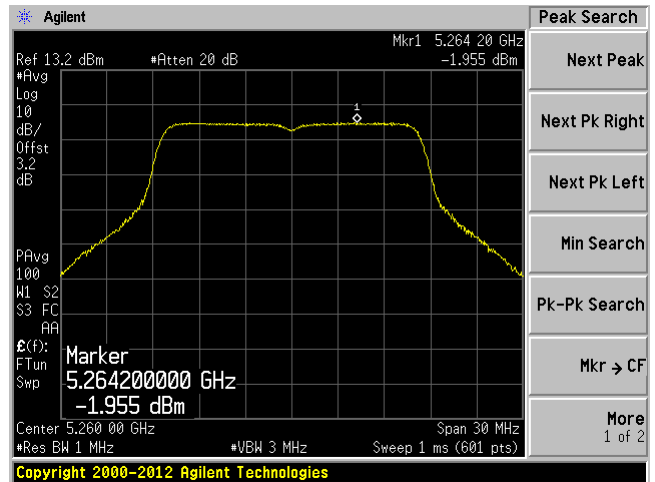


5250-5350 MHz

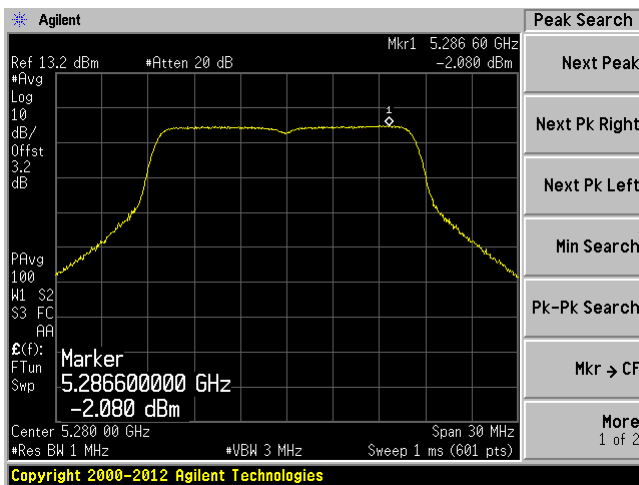
802.11a mode, 5260 MHz, Chain J0



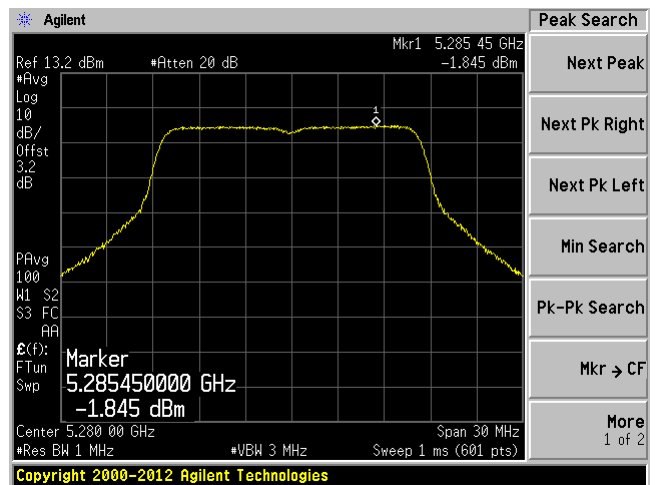
802.11a mode, 5260 MHz, Chain J1



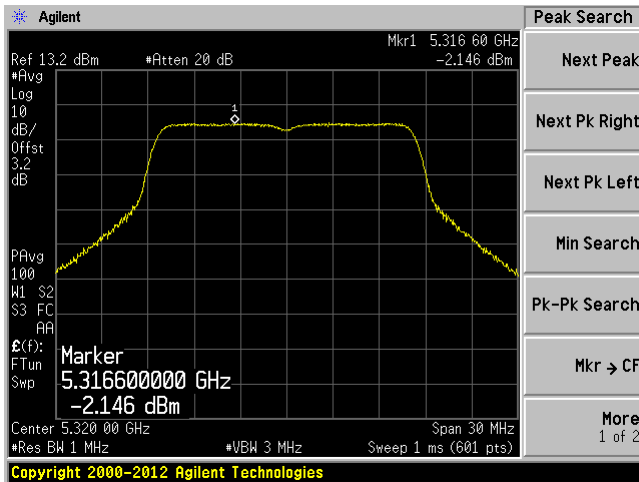
802.11a mode, 5280 MHz, Chain J0



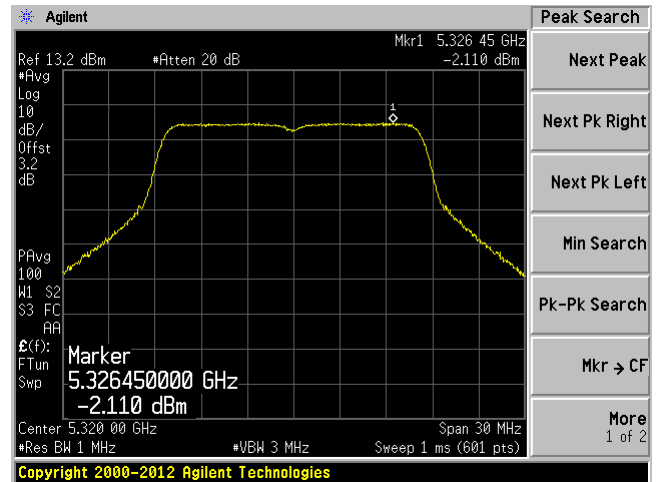
802.11a mode, 5280 MHz, Chain J1



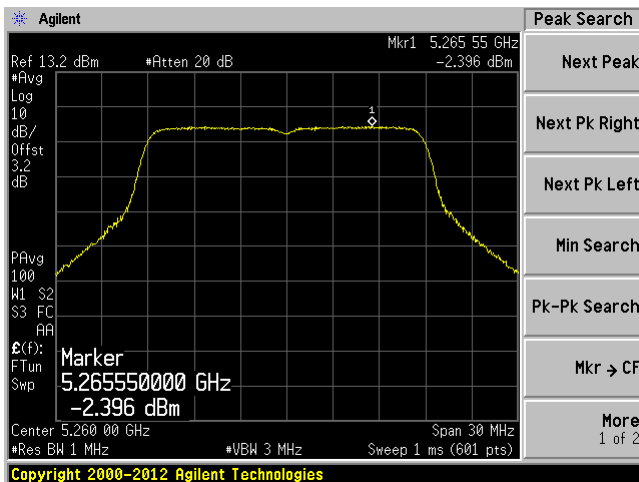
802.11a mode, 5320 MHz, Chain J0



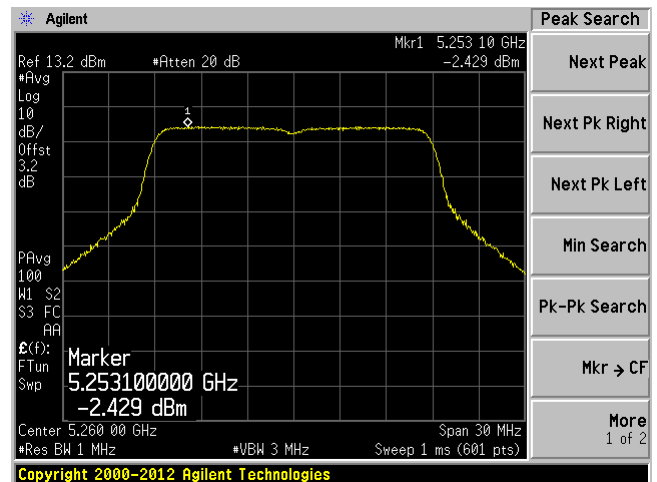
802.11a mode, 5320 MHz, Chain J1



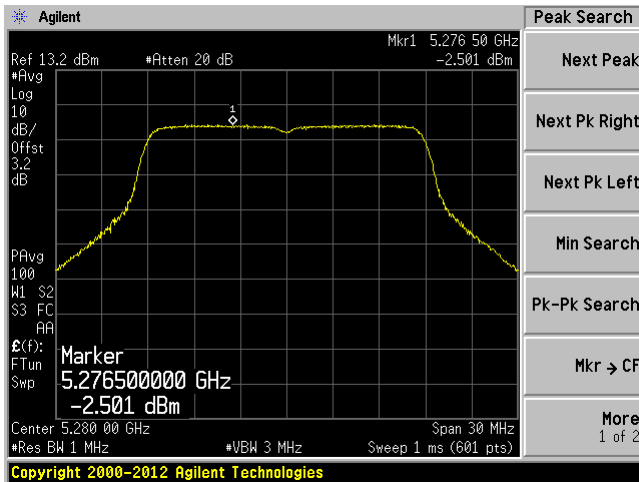
802.11n-HT20 mode, 5260 MHz, Chain J0



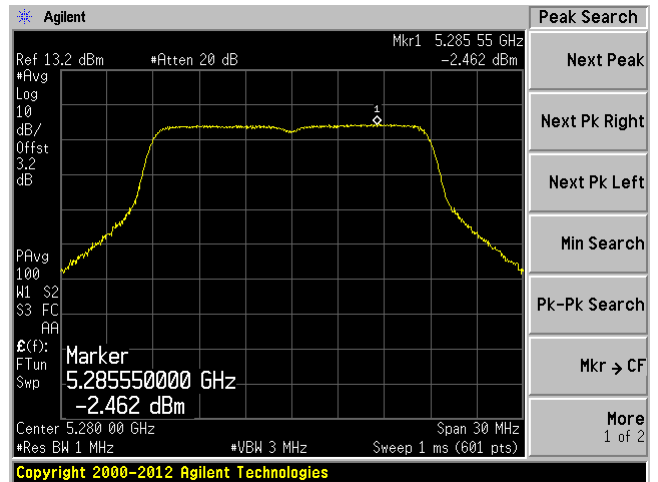
802.11n-HT20 mode, 5260 MHz, Chain J1



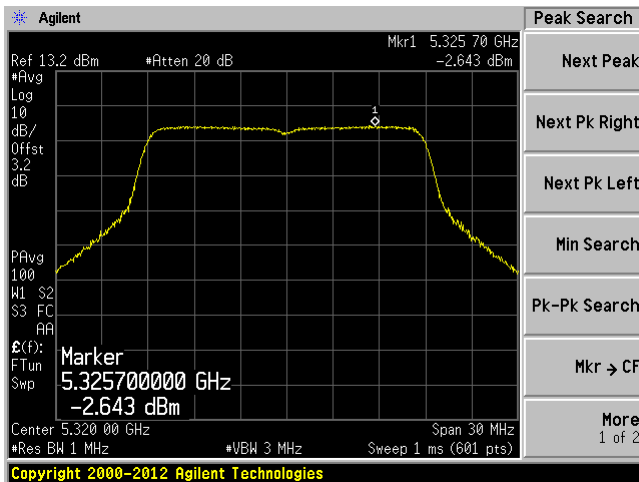
802.11n-HT20 mode, 5280 MHz, Chain J0



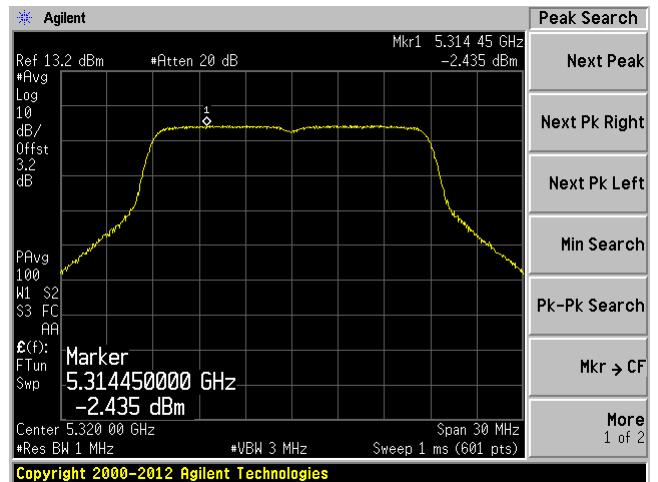
802.11n-HT20 mode, 5280 MHz, Chain J1



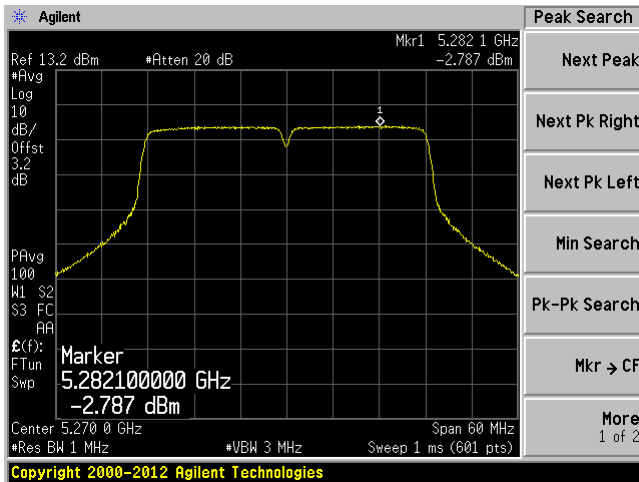
802.11n-HT20 mode, 5320 MHz, Chain J0



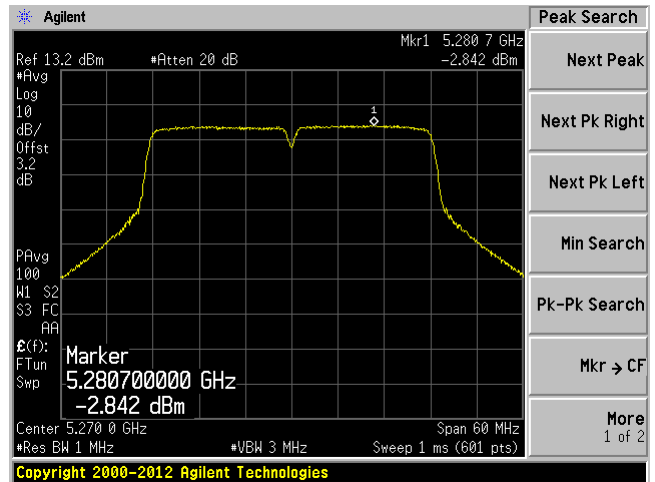
802.11n-HT20 mode, 5320 MHz, Chain J1



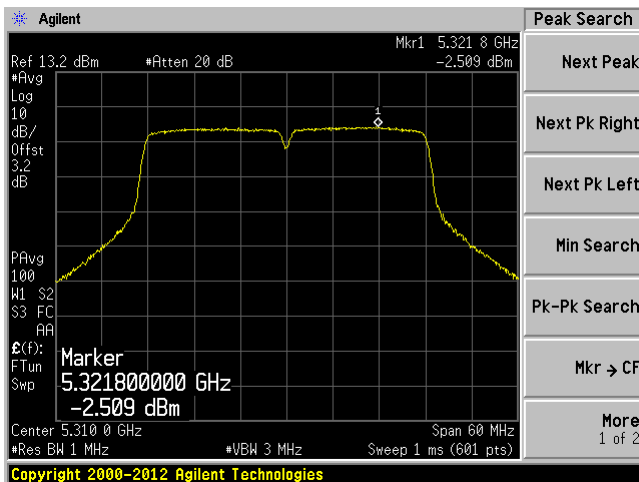
802.11n-HT40 mode, 5270 MHz, Chain J0



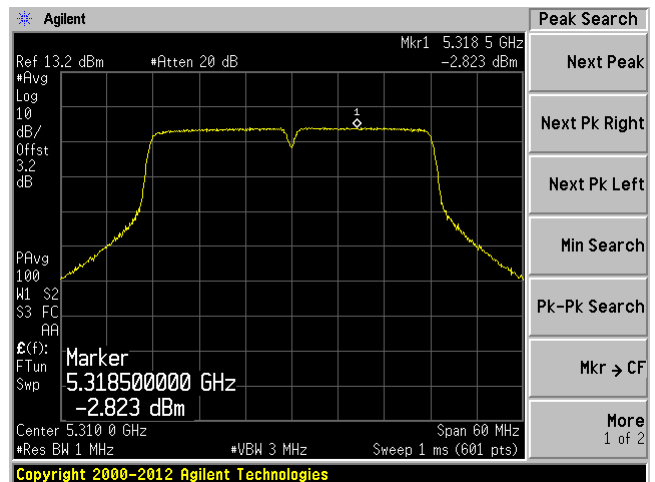
802.11n-HT40 mode, 5270 MHz, Chain J1



802.11n-HT40 mode, 5310 MHz, Chain J0

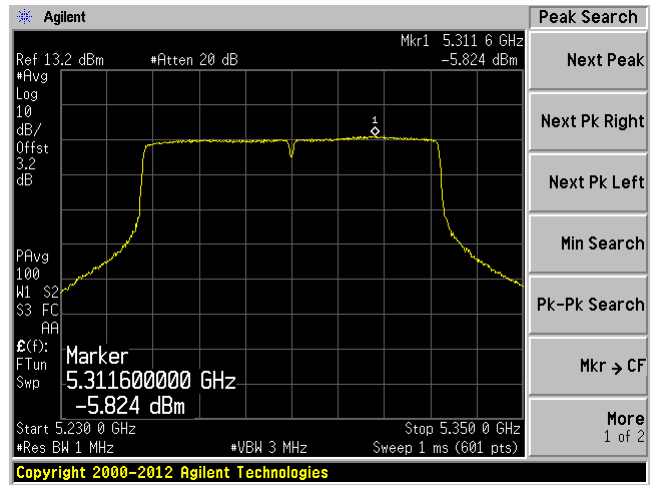
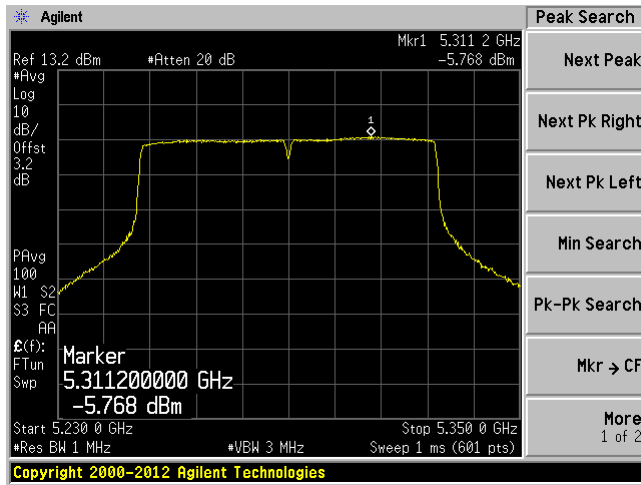


802.11n-HT40 mode, 5310 MHz, Chain J1



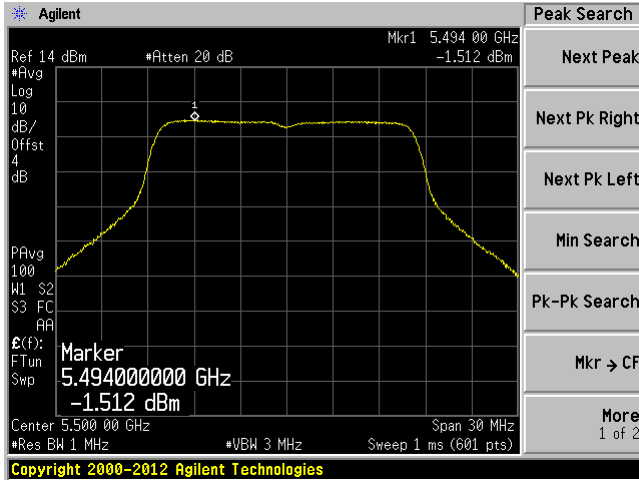
802.11ac-80 mode, 5290 MHz, Chain J0

802.11ac-80 mode, 5290 MHz, Chain J1

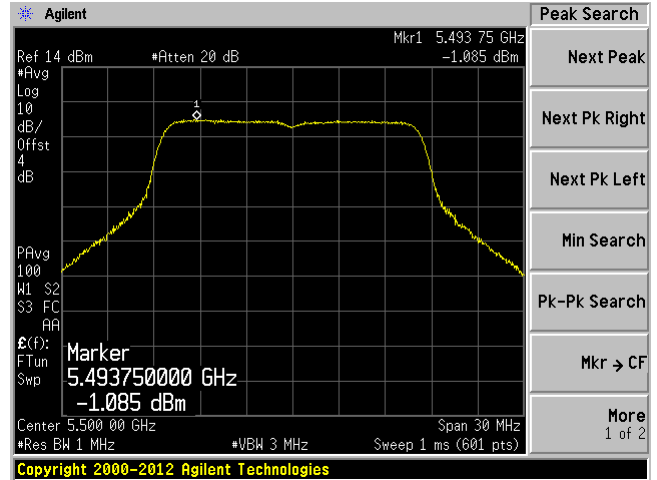


5470-5725 MHz

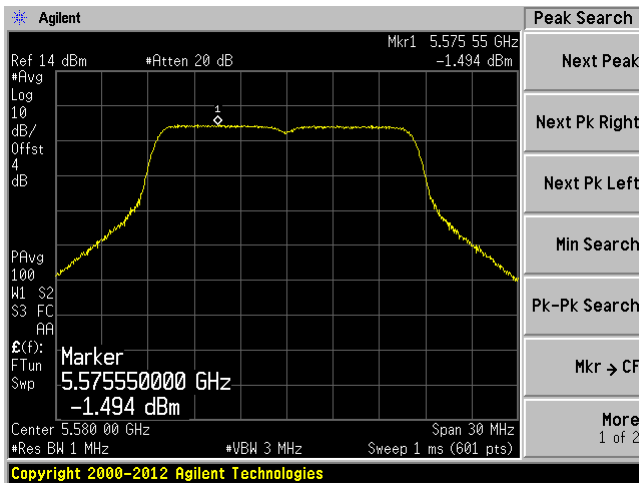
802.11a mode, 5500 MHz, Chain J0



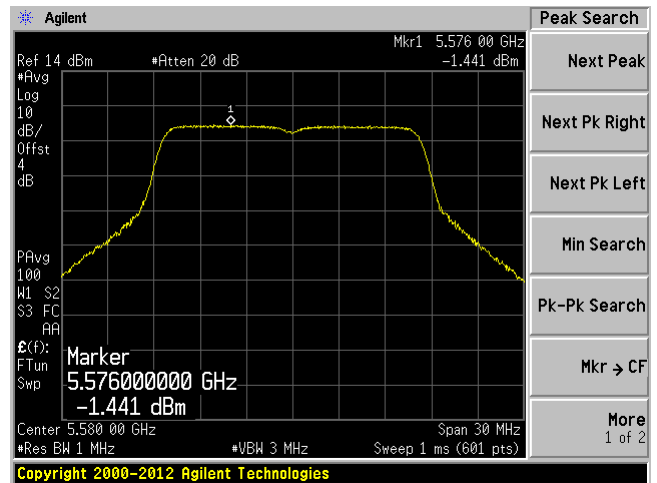
802.11a mode, 5500 MHz, Chain J1



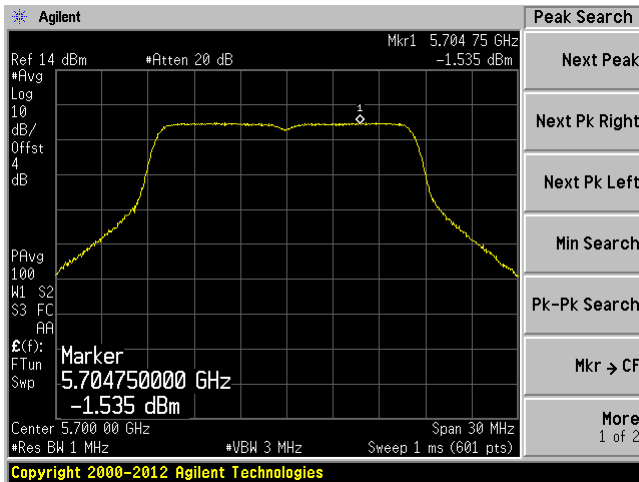
802.11a mode, 5580 MHz, Chain J0



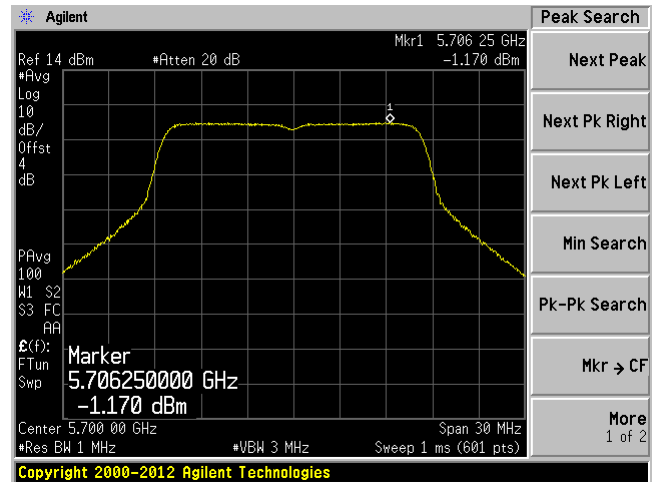
802.11a mode, 5580 MHz, Chain J1



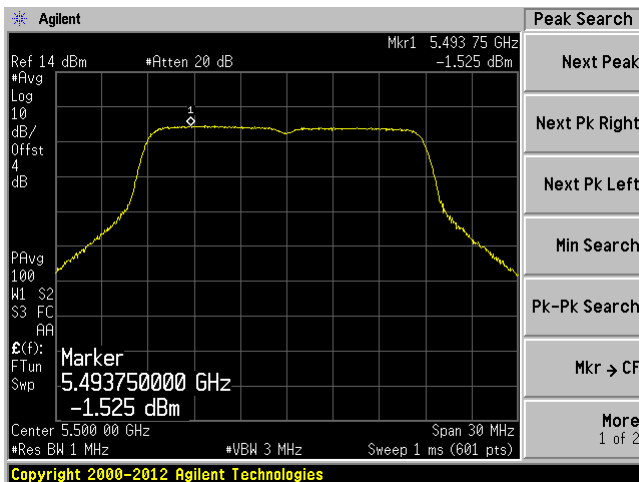
802.11a mode, 5700 MHz, Chain J0



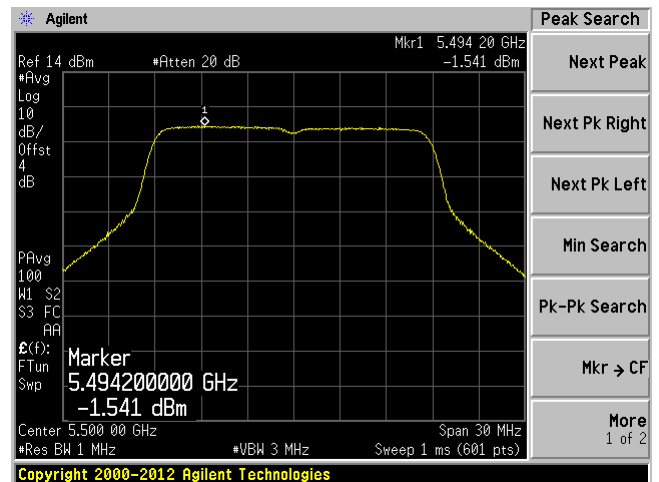
802.11a mode, 5700 MHz, Chain J1



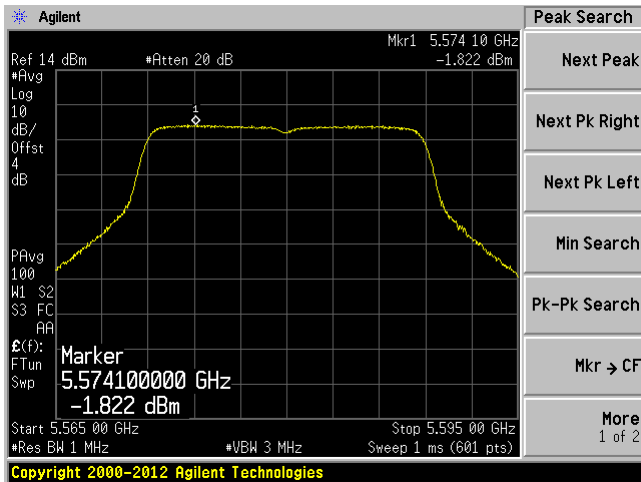
802.11n-HT20 mode, 5500 MHz, Chain J0



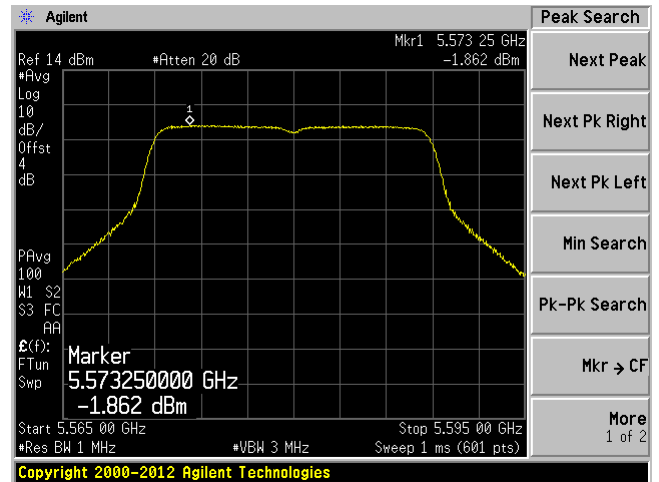
802.11n-HT20 mode, 5500 MHz, Chain J1



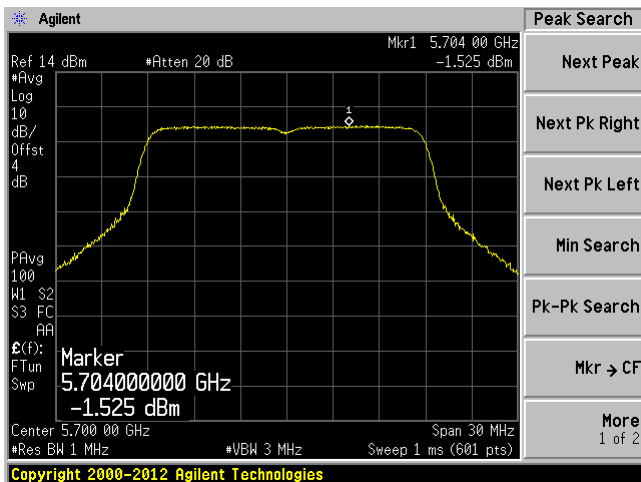
802.11n-HT20 mode, 5580 MHz, Chain J0



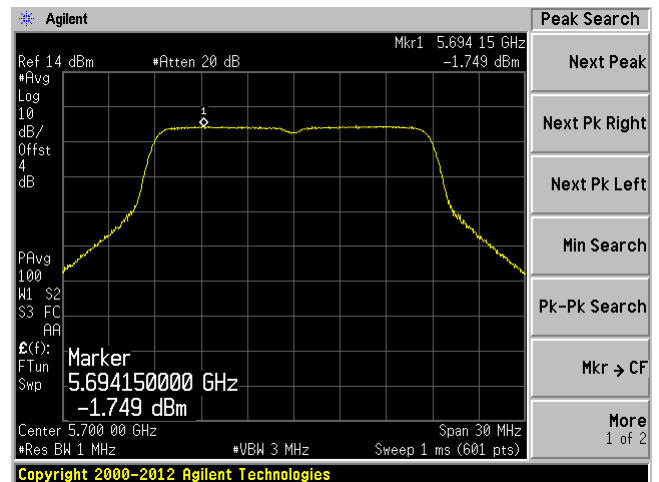
802.11n-HT20 mode, 5580 MHz, Chain J1



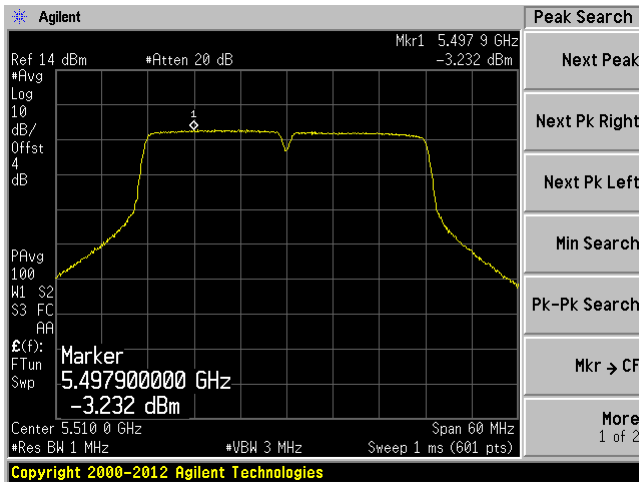
802.11n-HT20 mode, 5700 MHz, Chain J0



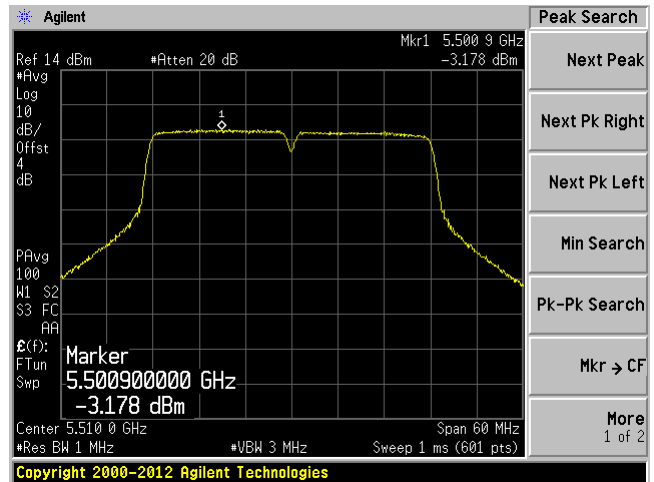
802.11n-HT20 mode, 5700 MHz, Chain J1



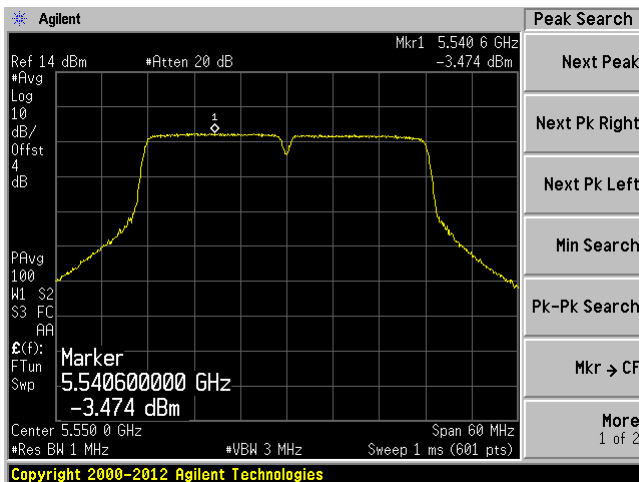
802.11n-HT40 mode, 5510 MHz, Chain J0



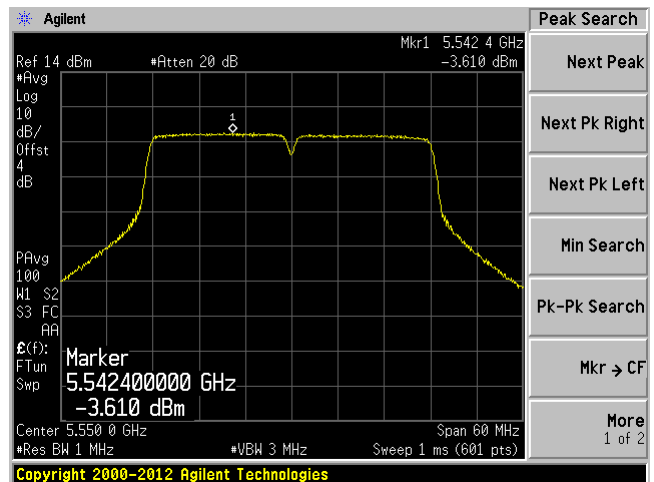
802.11n-HT40 mode, 5510 MHz, Chain J1



802.11n-HT40 mode, 5550 MHz, Chain J0

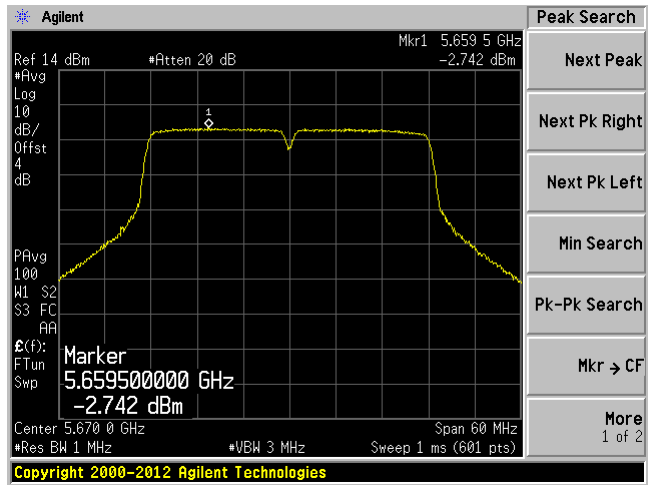
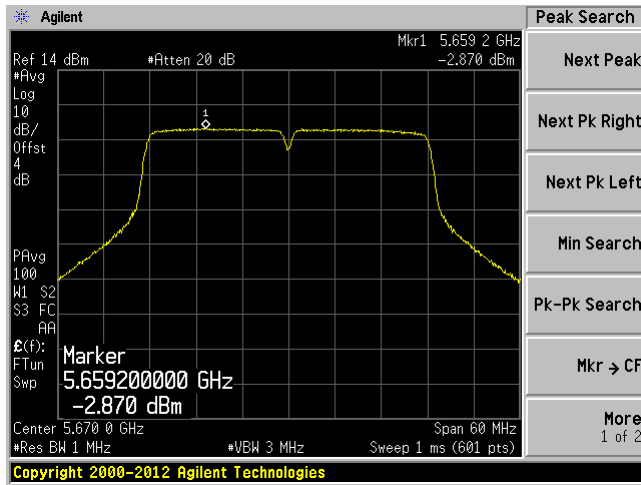


802.11n-HT40 mode, 5550 MHz, Chain J1

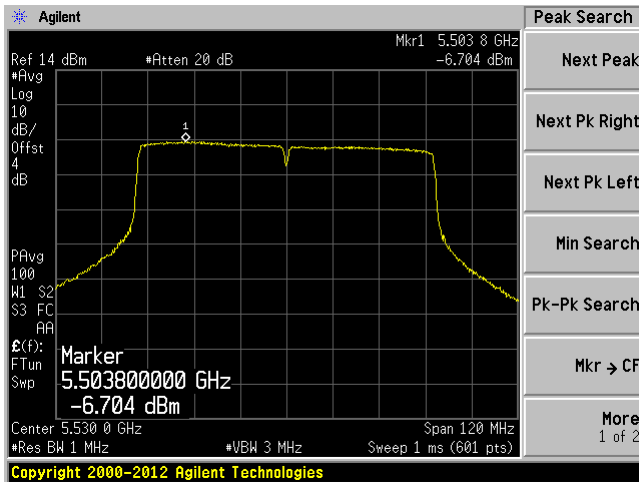


802.11n-HT40 mode, 5670 MHz, Chain J0

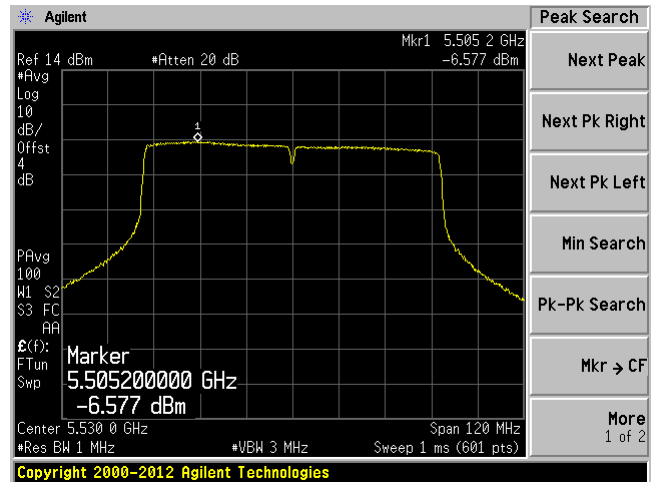
802.11n-HT40 mode, 5670 MHz, Chain J1



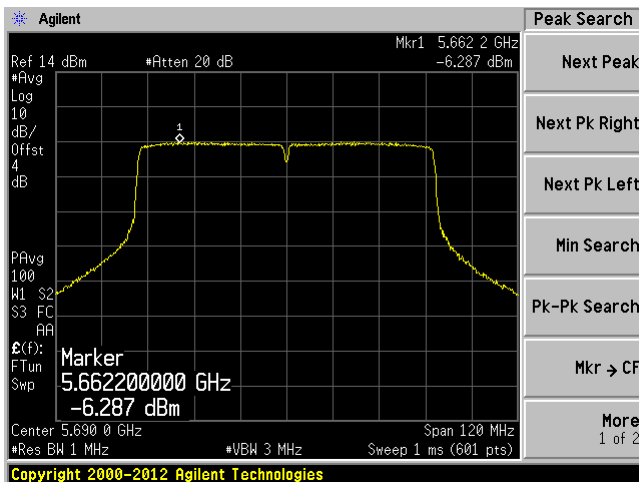
802.11ac-80 mode, 5530 MHz, Chain J0



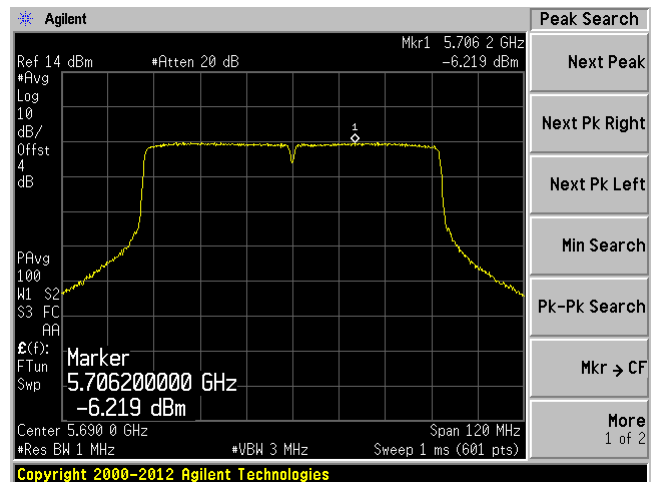
802.11ac-80 mode, 5530 MHz, Chain J1



802.11ac-80 mode, 5690 MHz, Chain J0



802.11ac-80 mode, 5690 MHz, Chain J1



9 FCC §15.407(a)(6) – Peak Excursion Ratio

9.1 Applicable Standard

According to FCC §15.407(a) (6), the ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

9.2 Test Procedure

The measurements are base on FCC KDB 789033 D01 General UNII Test Procedures v01r03: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices section G: Peak excursion measurement

9.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4446A	US44300386	2013-09-29	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:	21-25° C
Relative Humidity:	41-46 %
ATM Pressure:	101-102 kPa

The testing was performed by Chen Ge from 2014-06-30 to 2014-07-03 at RF site.

9.5 Test Results**5150-5250 MHz**

Channel	Frequency (MHz)	TX Chain J0 (dB)	TX Chain J1 (dB)	Limit (dB)
802.11a mode				
Low	5180	8.054	8.459	13
Middle	5200	8.724	7.959	
High	5240		7.217	
802.11n HT20 mode				
Low	5180	7.984	7.521	13
Middle	5200	7.993	6.908	
High	5240	7.176	7.636	
802.11n HT40 mode				
Low	5190	8.722	9.252	13
High	5230	8.076	7.953	
802.11ac 80 mode				
-	5210	7.979	8.078	13

5250-5350 MHz

Channel	Frequency (MHz)	TX Chain J0 PER (dB)	TX Chain J1 PER (dB)	Limit (dB)
802.11a mode				
Low	5260	7.538	7.528	13
Middle	5280	7.834	7.857	
High	5320	7.780	8.303	
802.11n-HT20 mode				
Low	5260	8.189	7.821	13
Middle	5280	7.490	8.187	
High	5320	8.985	7.979	
802.11n-HT40 mode				
Low	5270	7.817	8.085	13
High	5310	7.864	7.911	
802.11ac-80 mode				
-	5290	7.652	7.685	13

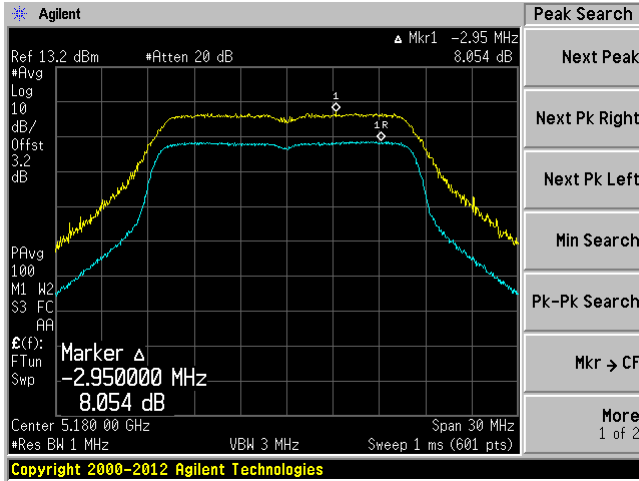
5470-5725 MHz Band

Channel	Frequency (MHz)	TX Chain J0 PER (dB)	TX Chain J1 PER (dB)	Limit (dB)
802.11a mode				
Low	5500	7.602	7.765	13
Middle	5580	7.382	8.157	
High	5700	8.122	8.002	
802.11n-HT20 mode				
Low	5500	8.003	7.939	13
Middle	5580	7.852	7.749	
High	5700	8.085	8.439	
802.11n-HT40 mode				
Low	5510	7.638	7.828	13
Middle	5550	7.987	7.795	
High	5670	7.458	7.132	
802.11ac-80 mode				
Low	5530	4.359	4.904	13
High	5690	5.496	5.958	

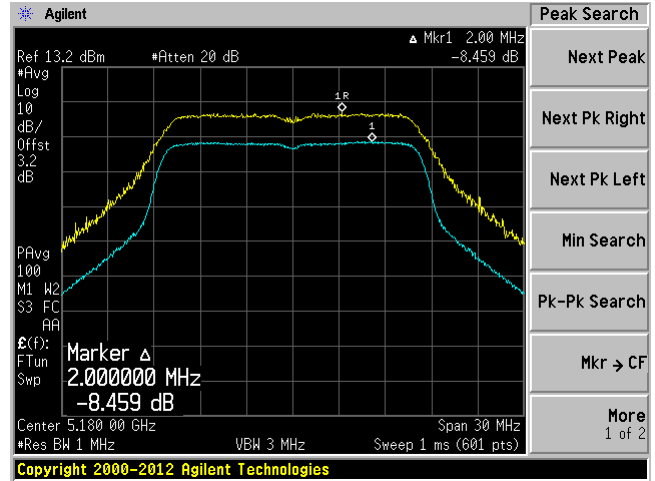
Please refer to the following plots for detailed test results:

5150-5250 MHz 802.11a mode

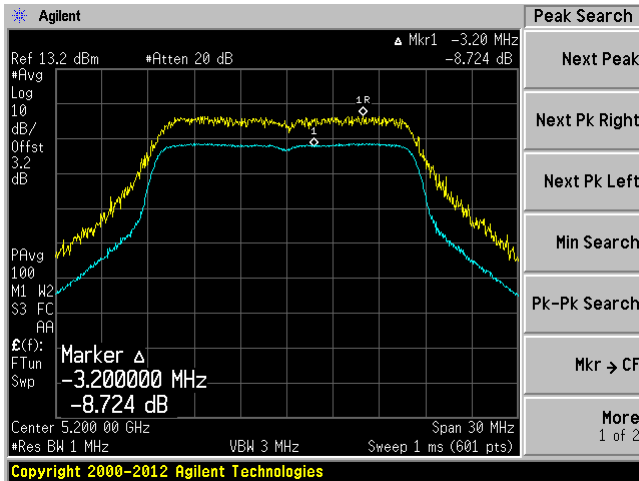
Low channel: 5180 MHz Chain J0



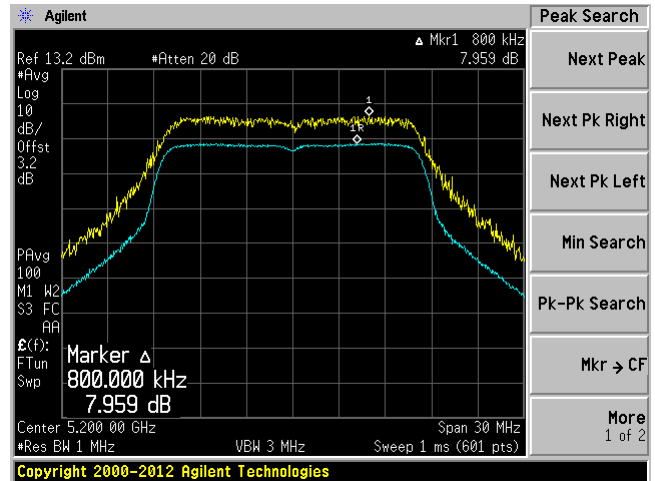
Low channel: 5180 MHz Chain J1



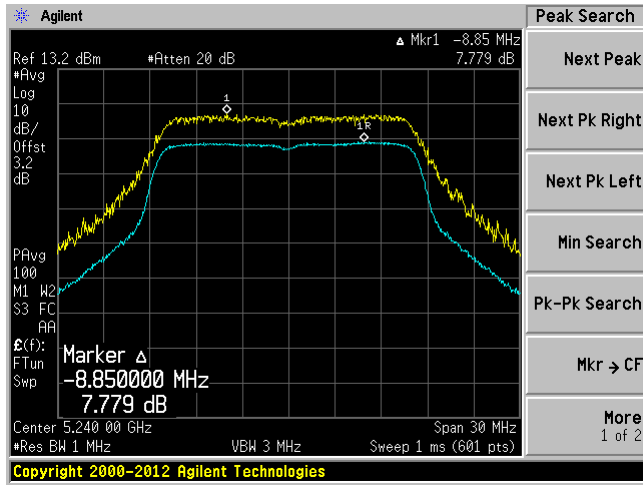
Middle channel: 5200 MHz Chain J0



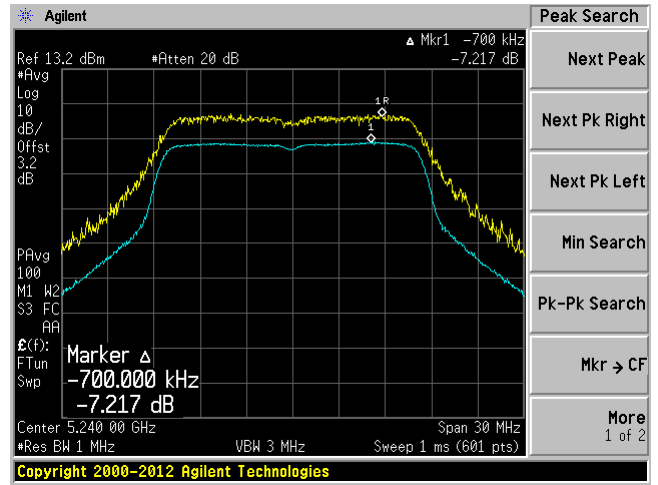
Middle channel: 5200 MHz Chain J1



High channel: 5240 MHz Chain J0

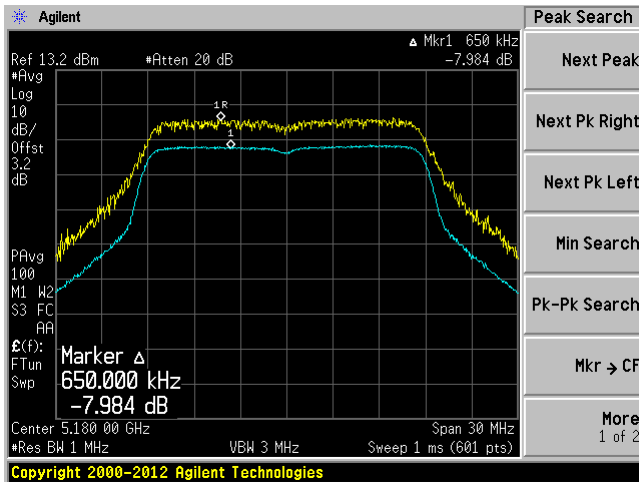


High channel: 5240 MHz Chain J1

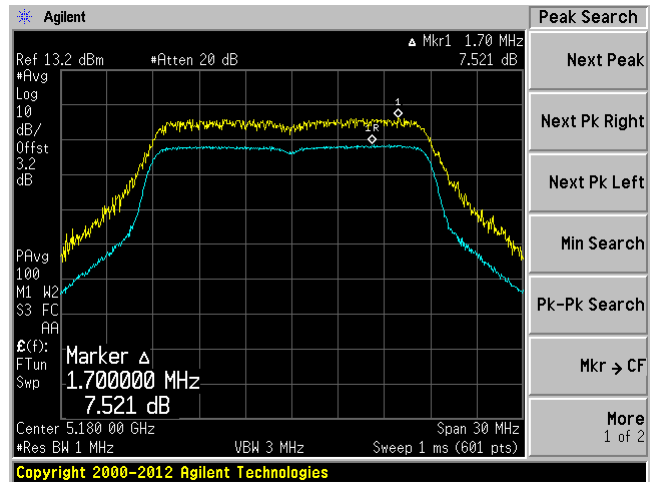


802.11n-HT20 mode

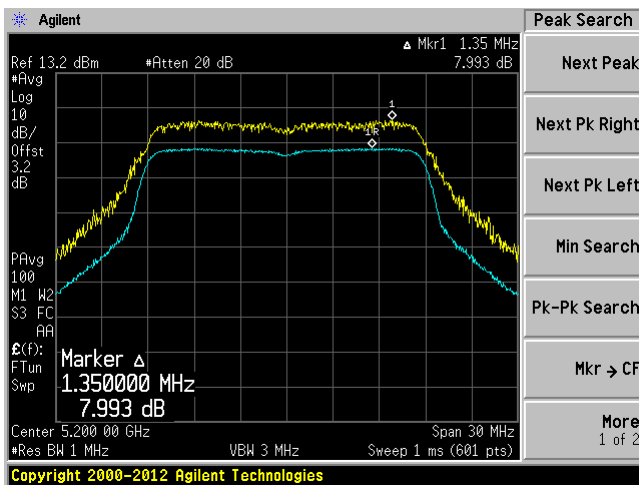
Low channel: 5180 MHz Chain J0



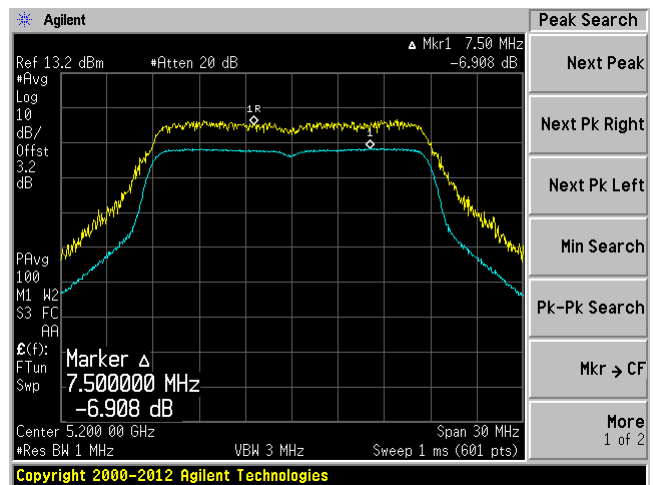
Low channel: 5180 MHz Chain J1



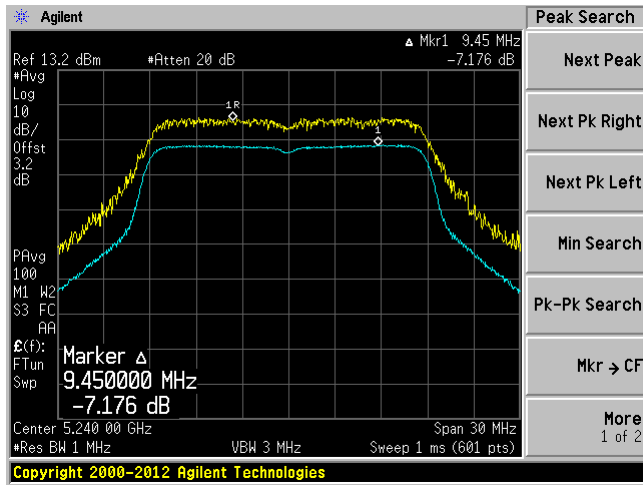
Middle channel: 5200 MHz Chain J0



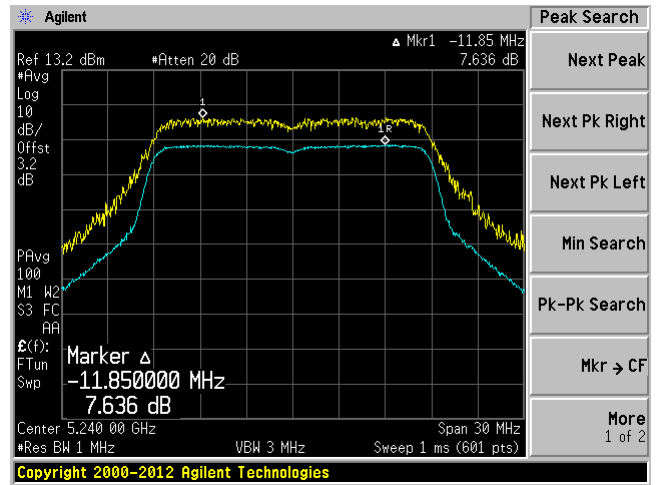
Middle channel: 5200 MHz Chain J1



High channel: 5240 MHz Chain J0

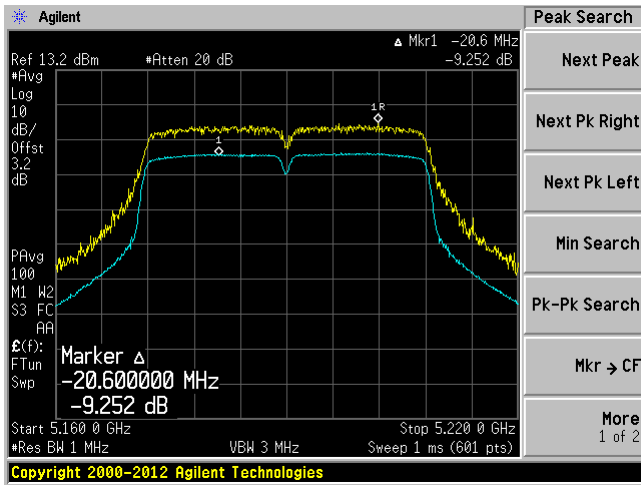


High channel: 5240 MHz Chain J1

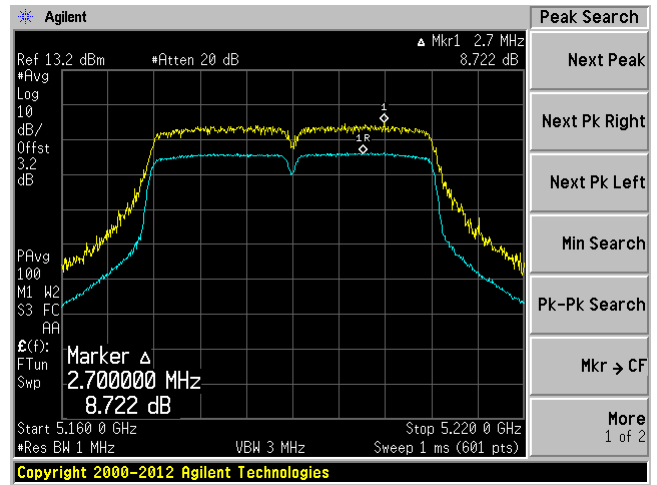


802.11n-HT40 mode

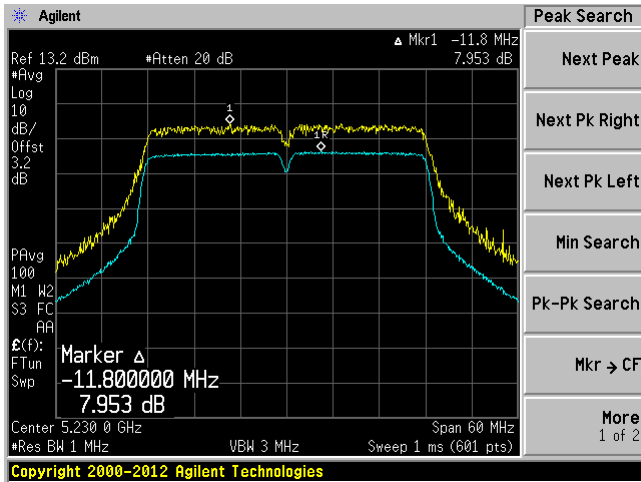
Low channel: 5190 MHz Chain J0



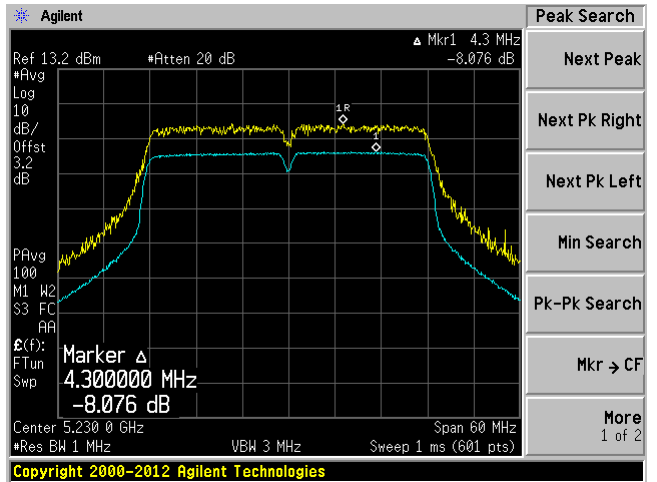
Low channel: 5190 MHz Chain J1



High channel: 5230 MHz Chain J0

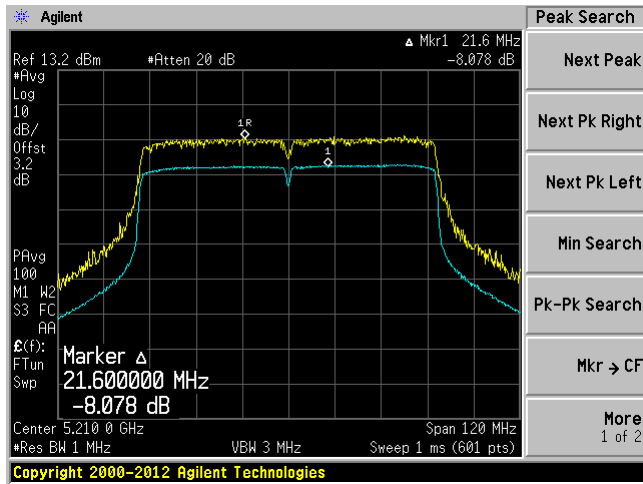


High channel: 5230 MHz Chain J1

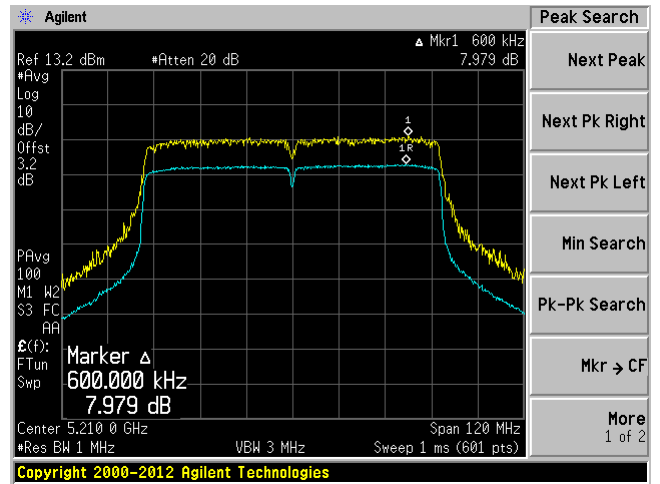


802.11ac-80 mode

Low channel: 5210 MHz Chain J0

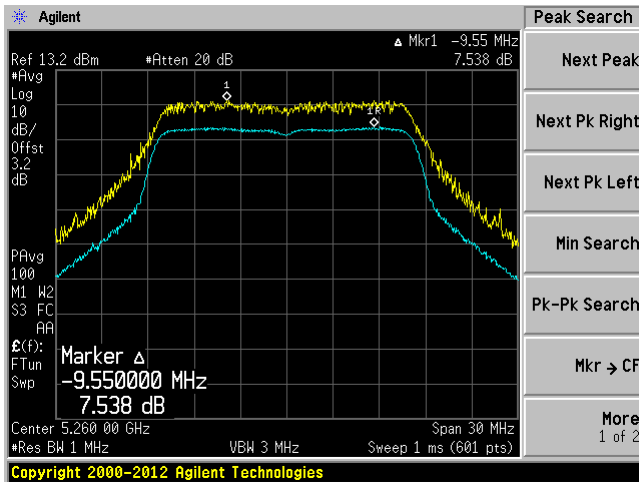


Low channel: 5210 MHz Chain J1

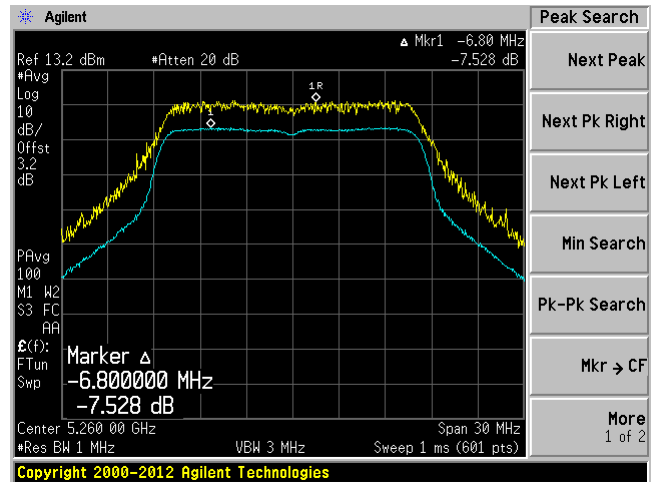


5250-5350 MHz

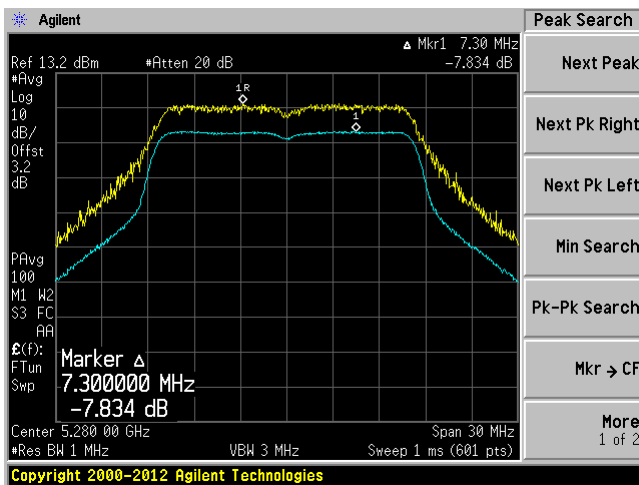
802.11a mode, 5260 MHz, Chain J0



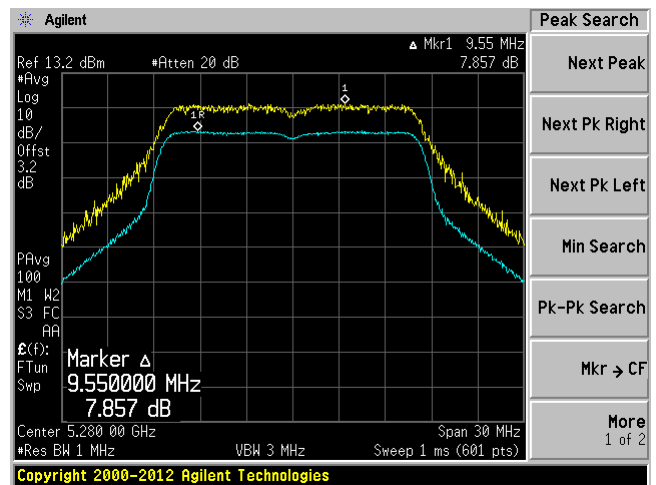
802.11a mode, 5260 MHz, Chain J1



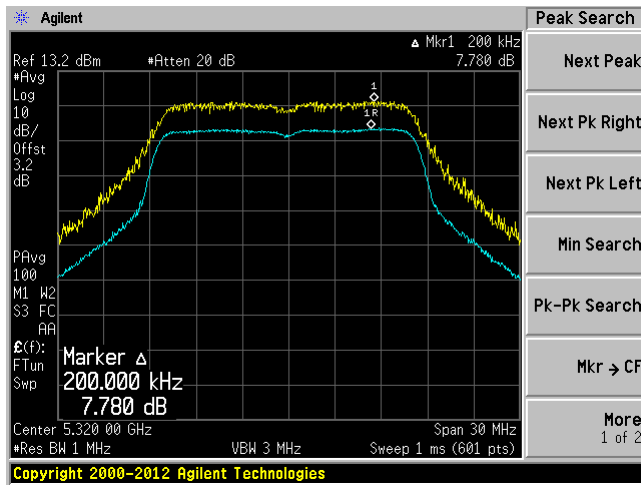
802.11a mode, 5280 MHz, Chain J0



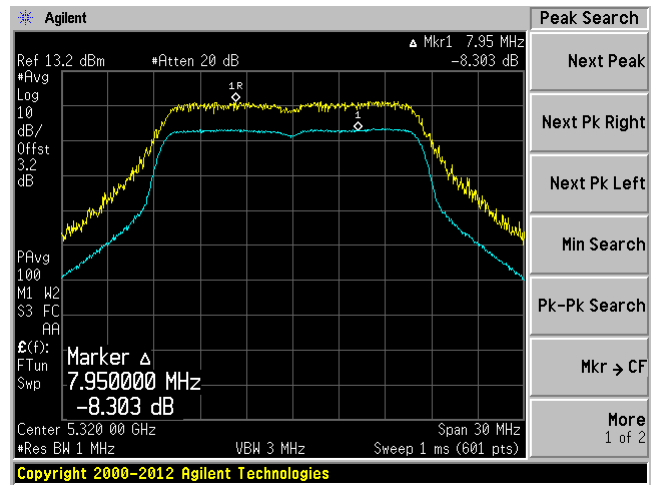
802.11a mode, 5280 MHz, Chain J1



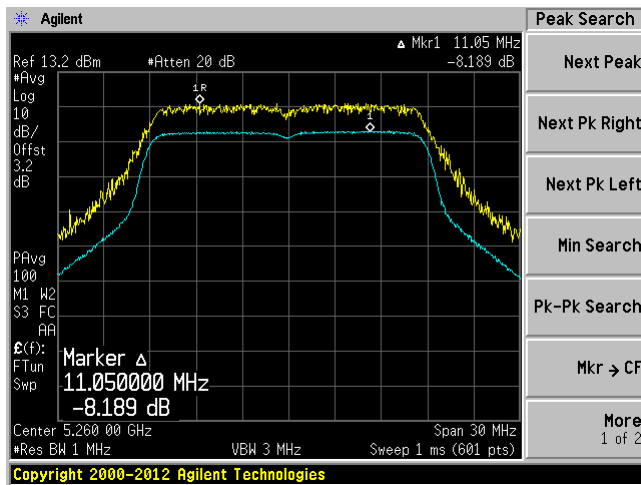
802.11a mode, 5320 MHz, Chain J0



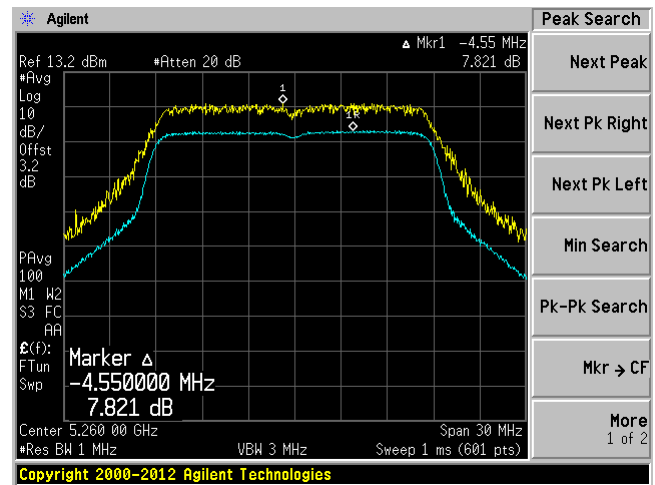
802.11a mode, 5320 MHz, Chain J1



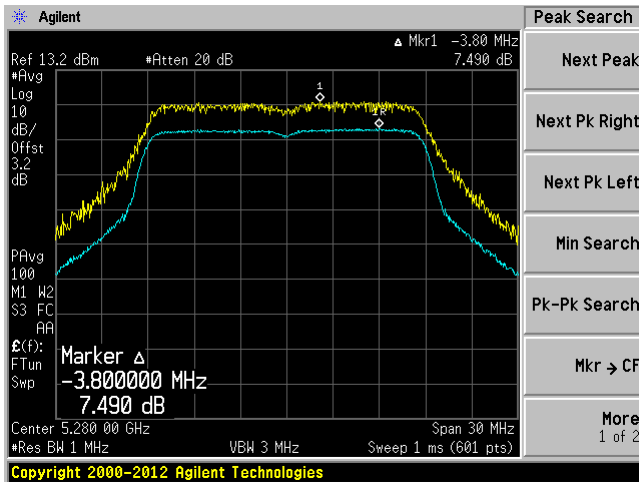
802.11n-HT20 mode, 5260 MHz, Chain J0



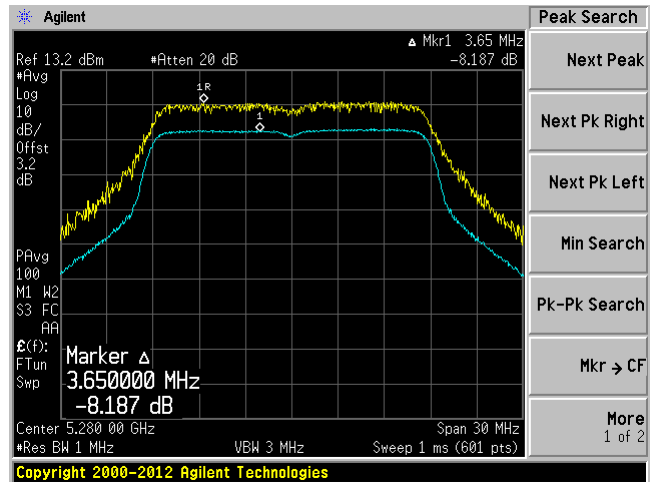
802.11n-HT20 mode, 5260 MHz, Chain J1



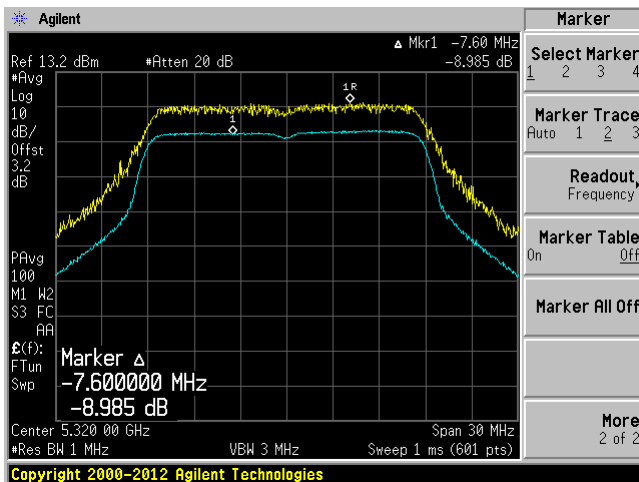
802.11n-HT20 mode, 5280 MHz, Chain J0



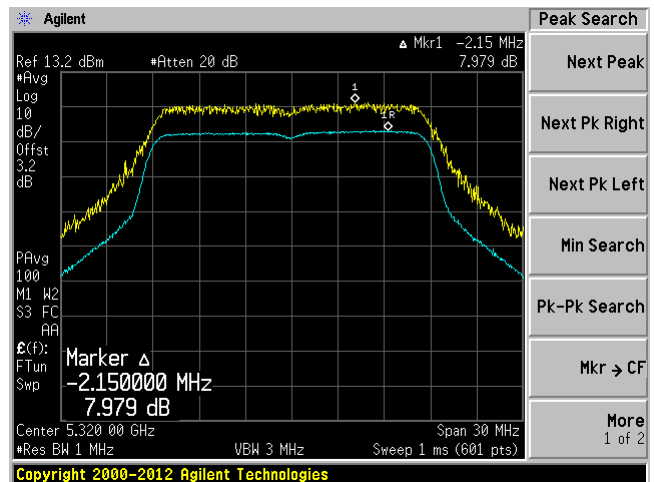
802.11n-HT20 mode, 5280 MHz, Chain J1



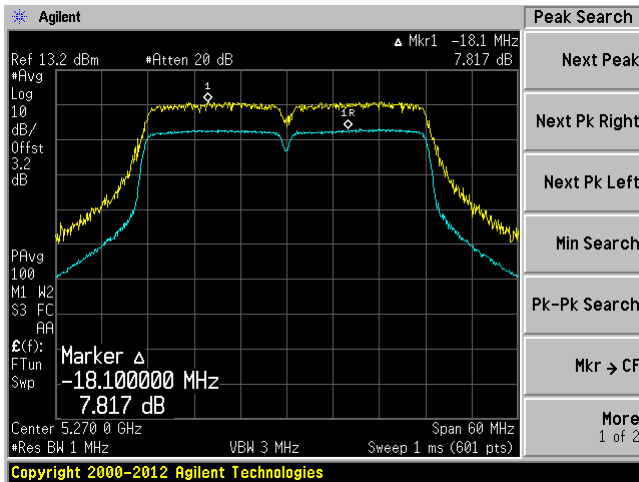
802.11n-HT20 mode, 5320 MHz, Chain J0



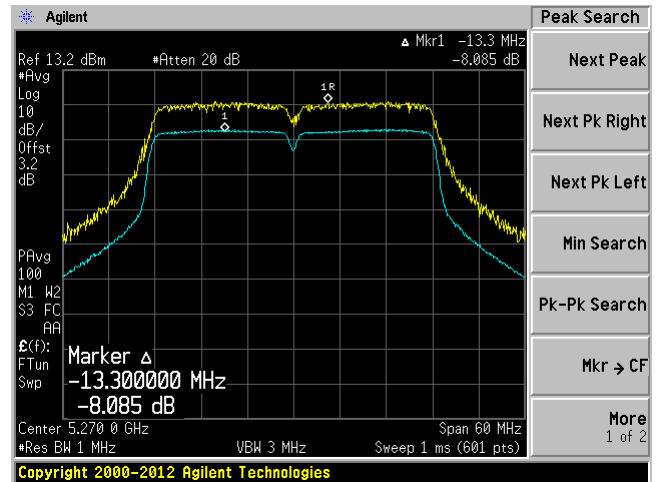
802.11n-HT20 mode, 5320 MHz, Chain J1



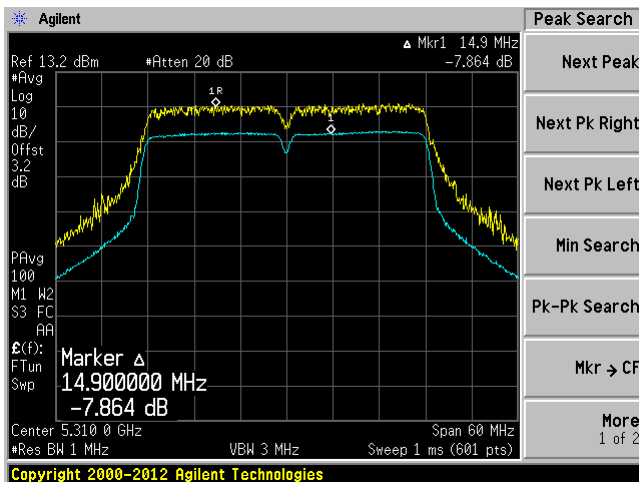
802.11n-HT40 mode, 5270 MHz, Chain J0



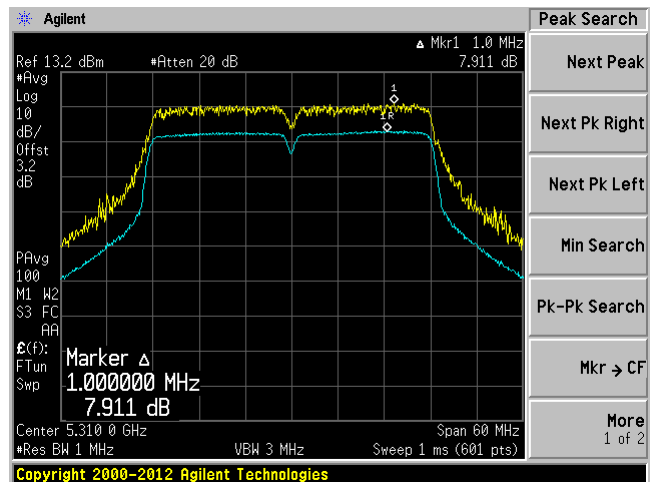
802.11n-HT40 mode, 5270 MHz, Chain J1



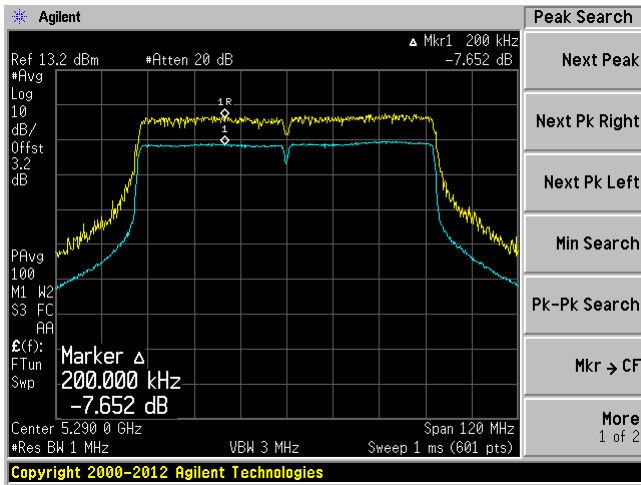
802.11n-HT40 mode, 5310 MHz, Chain J0



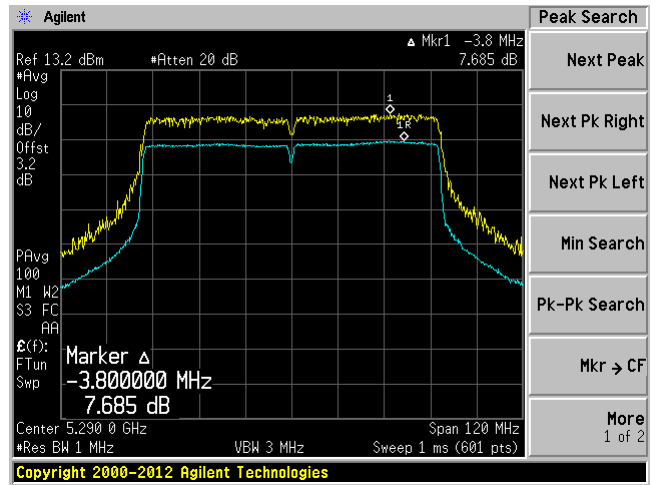
802.11n-HT40 mode, 5310 MHz, Chain J1



802.11ac-80 mode, 5290 MHz, Chain J0

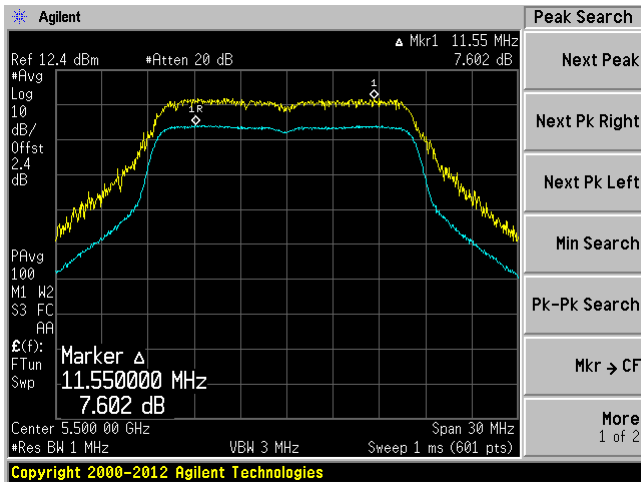


802.11ac-80 mode, 5290 MHz, Chain J1

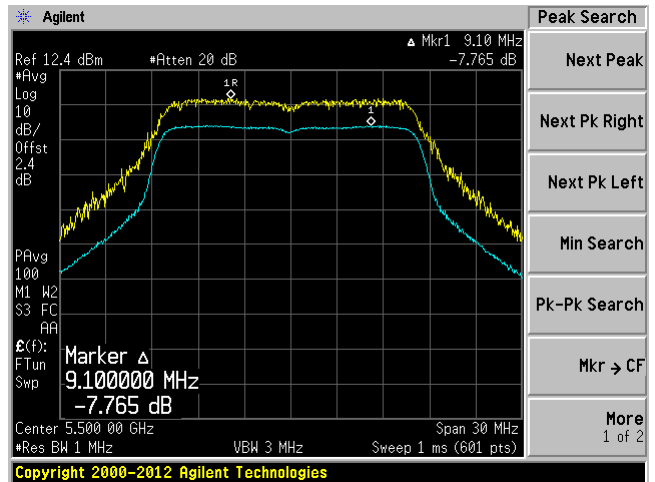


5470-5725 MHz

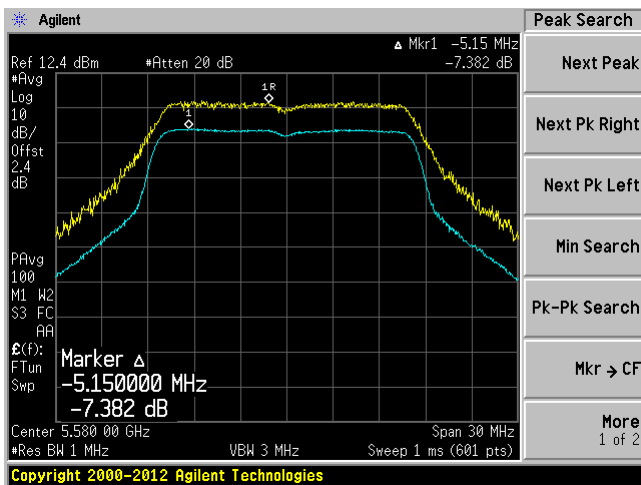
802.11a mode, 5500 MHz, Chain J0



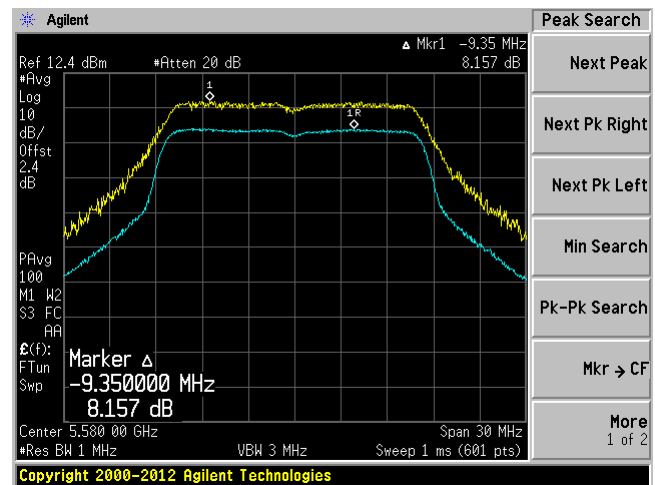
802.11a mode, 5500 MHz, Chain J1



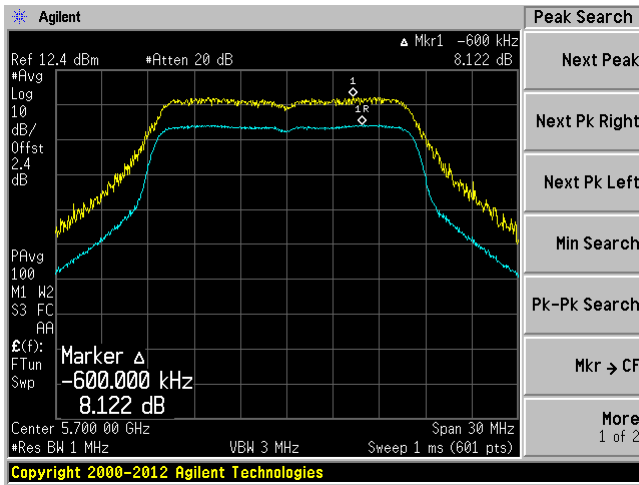
802.11a mode, 5580 MHz, Chain J0



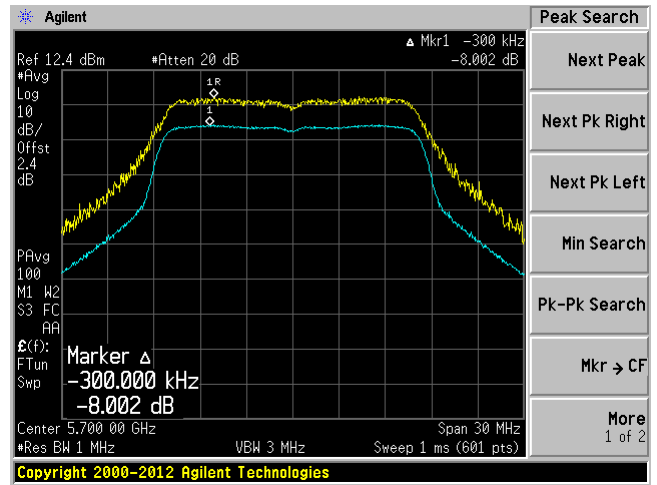
802.11a mode, 5580 MHz, Chain J1



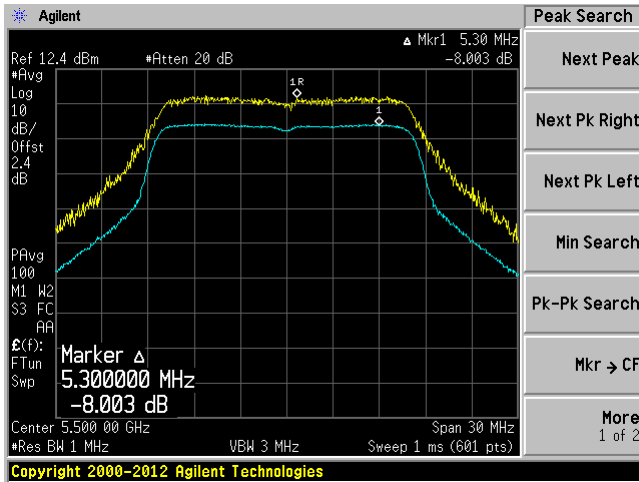
802.11a mode, 5700 MHz, Chain J0



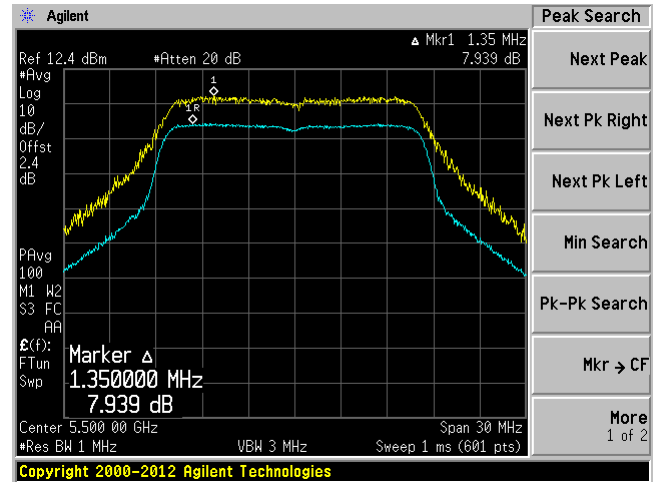
802.11a mode, 5700 MHz, Chain J1



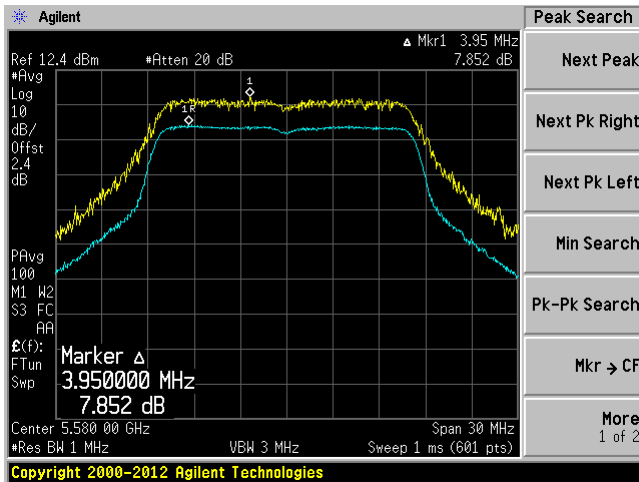
802.11n-HT20 mode, 5500 MHz, Chain J0



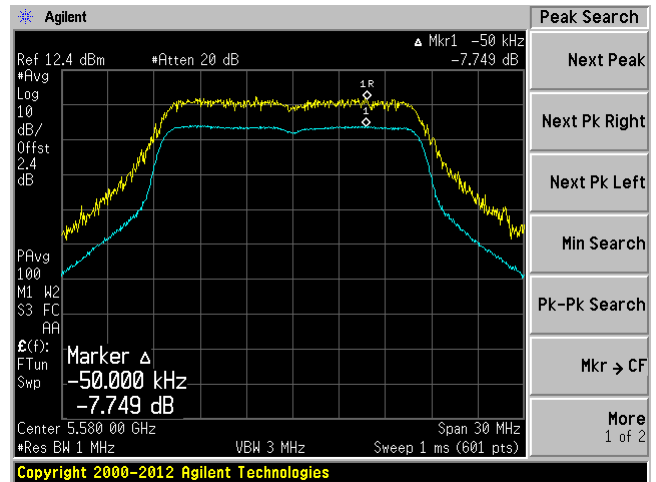
802.11n-HT20 mode, 5500 MHz, Chain J1



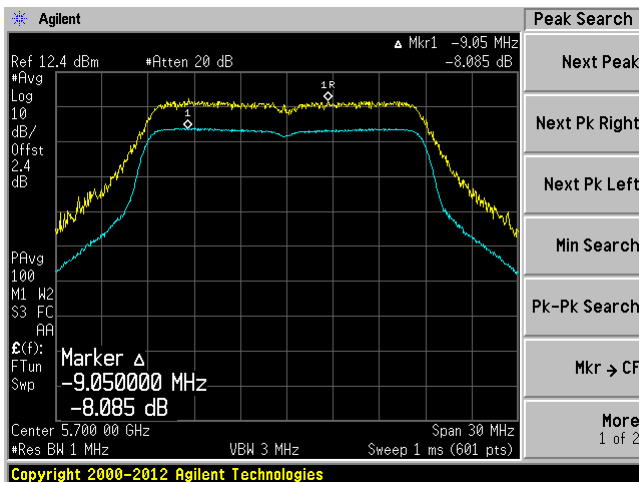
802.11n-HT20 mode, 5580 MHz, Chain J0



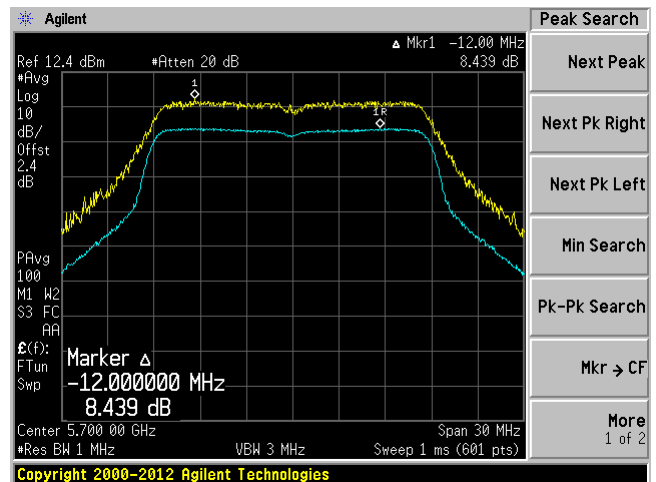
802.11n-HT20 mode, 5580 MHz, Chain J1



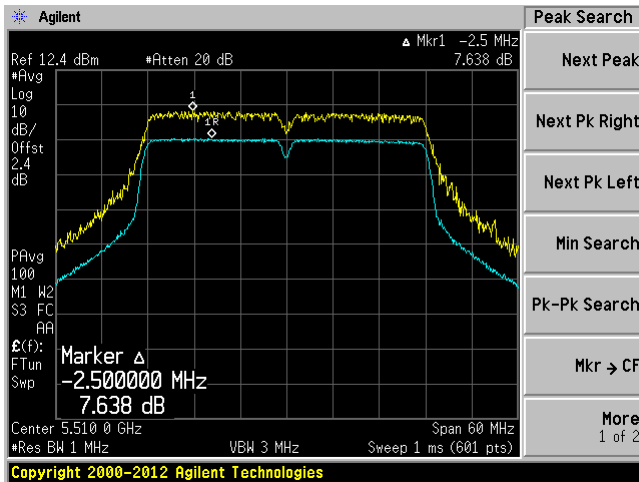
802.11n-HT20 mode, 5700 MHz, Chain J0



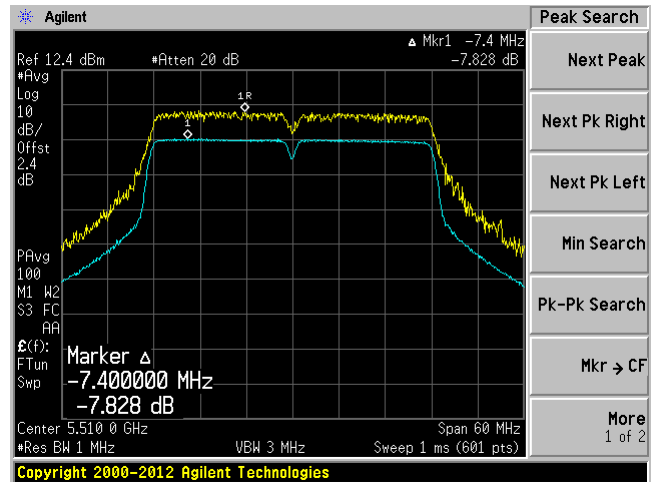
802.11n-HT20 mode, 5700 MHz, Chain J1



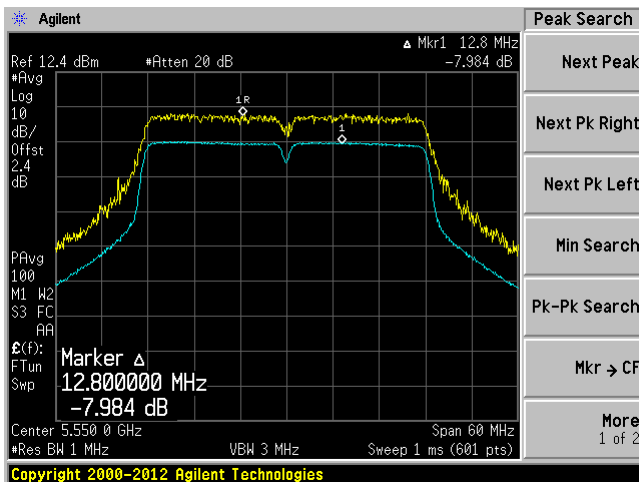
802.11n-HT40 mode, 5510 MHz, Chain J0



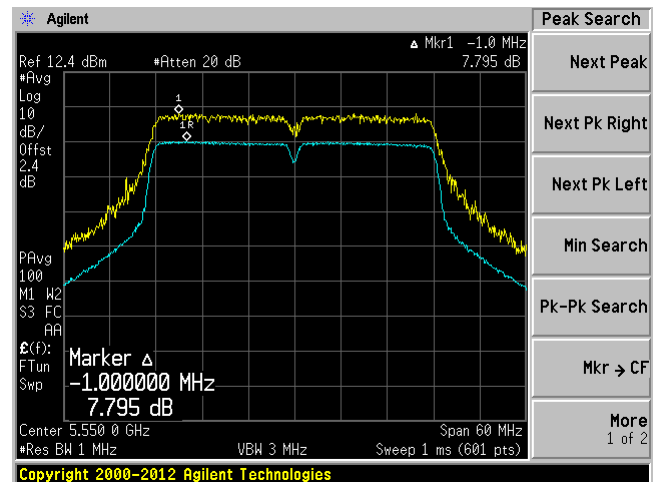
802.11n-HT40 mode, 5510 MHz, Chain J1



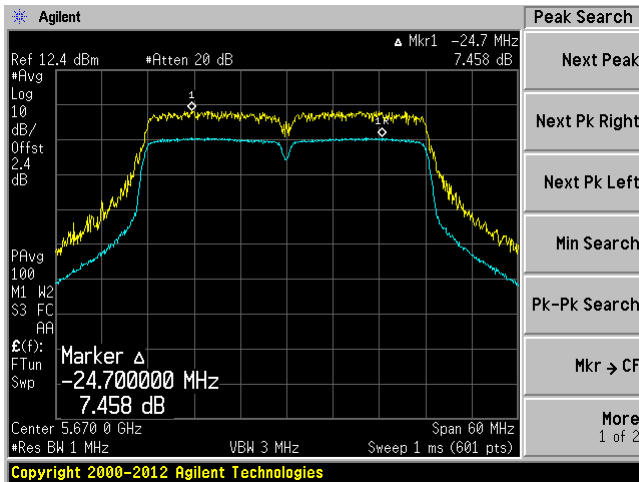
802.11n-HT40 mode, 5550 MHz, Chain J0



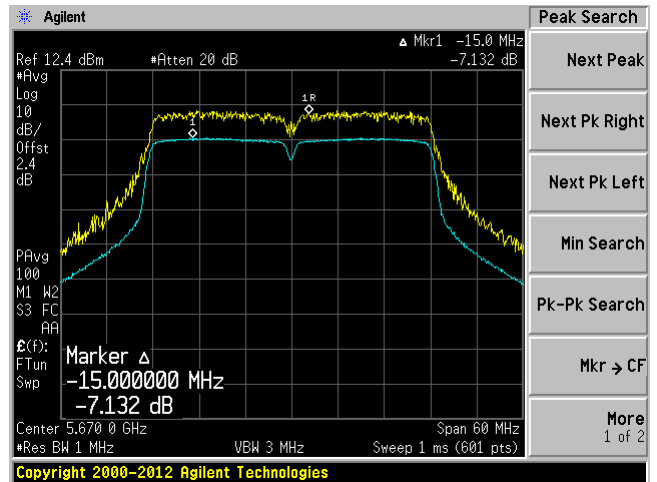
802.11n-HT40 mode, 5550 MHz, Chain J1



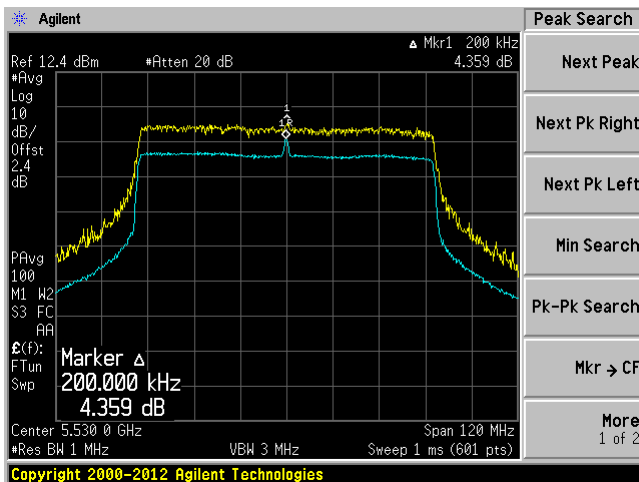
802.11n-HT40 mode, 5670 MHz, Chain J0



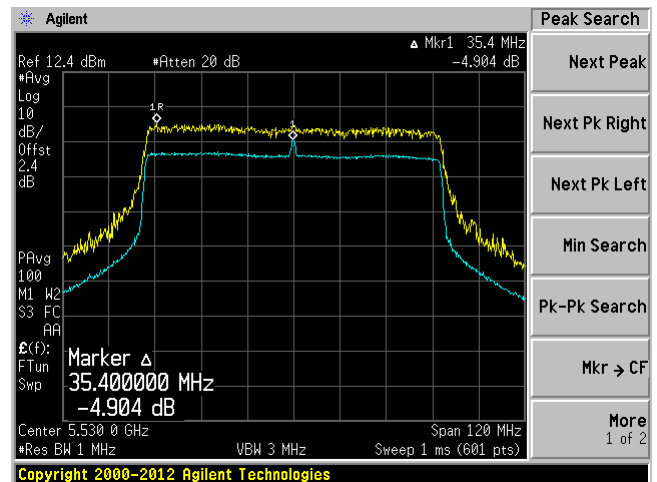
802.11n-HT40 mode, 5670 MHz, Chain J1



802.11a-80 mode, 5530 MHz, Chain J0

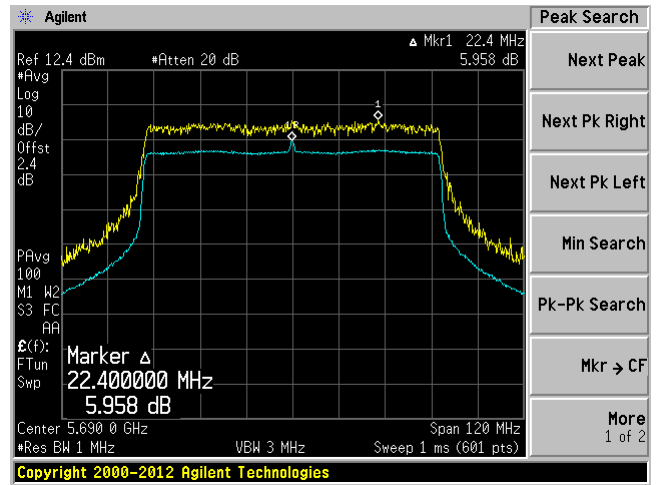
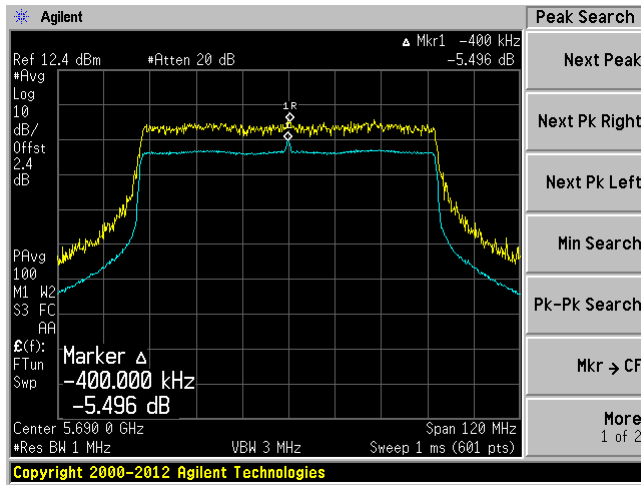


802.11a-80 mode, 5530 MHz, Chain J1



802.11ac-80 mode, 5690 MHz, Chain J0

802.11ac-80 mode, 5690 MHz, Chain J1



10 FCC §15.407(b) & IC RSS-210 §A9.2 - Spurious Emissions at Antenna Terminals

10.1 Applicable Standard

According to FCC §15.407(b)

(1) For transmitters operating in the 5.15-5.25 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.

(2) 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.

(3) 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.

According to RSS-210 §A9.2

For transmitters operating in the 5.15-5.25 GHz band: Emissions outside the band 5150-5250 MHz shall not exceed -27 dBm/MHz e.i.r.p.

For transmitters operating in the 5.25-5.35 GHz band: Emissions outside the band 5250-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p.

For transmitters operating in the 5.47-5.725 GHz band: Emissions outside the band 5470-5725 MHz shall not exceed -27 dBm/MHz e.i.r.p.

10.2 Measurement Procedure

The measurements are based on FCC KDB 789033 D01 General UNII Test Procedures v01r03: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices section H: Unwanted emissions measurement

10.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4446A	US44300386	2013-09-29	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:	21-25° C
Relative Humidity:	41-46 %
ATM Pressure:	101-102 kPa

The testing was performed by Chen Ge from 2014-06-30 to 2014-07-03 at RF site.

10.5 Test Results

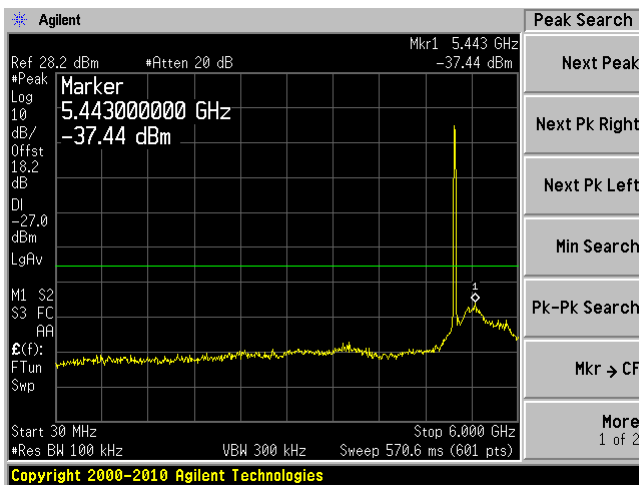
Note: the antenna gain and cable loss were offset in the display.

Please refer to following plots of spurious emissions.

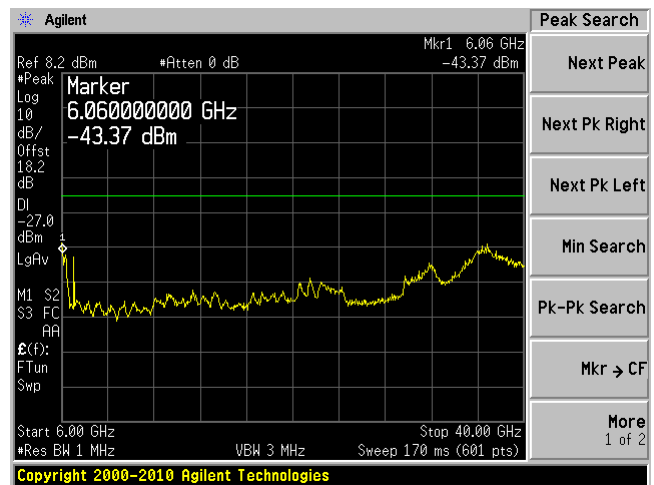
5150-5250 MHz

802.11a, Low Channel, 5180 MHz

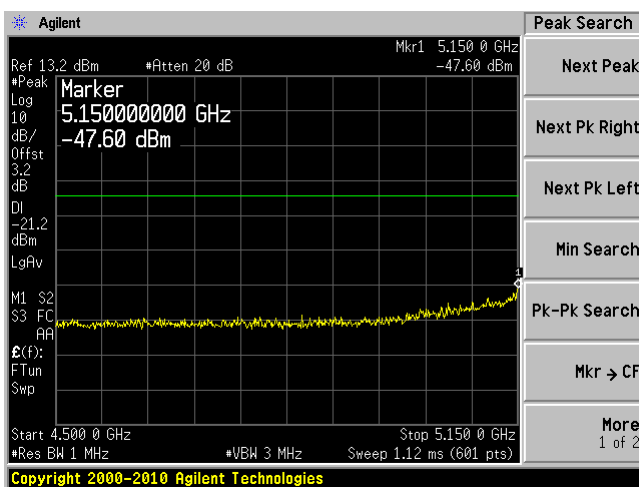
Chain J0, Plot: 30 MHz – 6 GHz



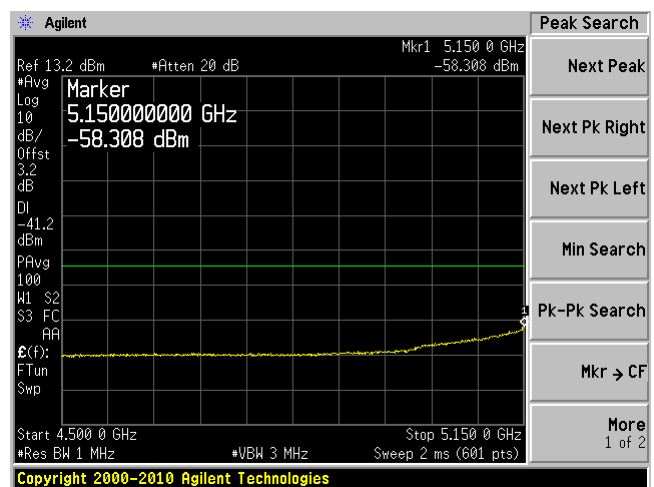
Chain J0, Plot: 6 GHz – 40 GHz



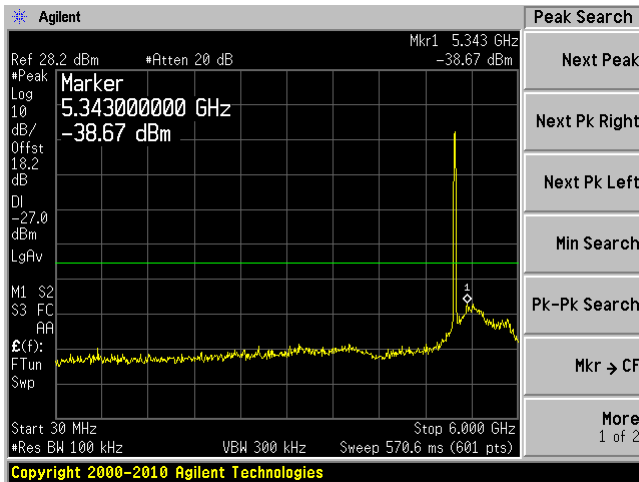
Chain J0, Plot: 4500 MHz – 5150 MHz Peak



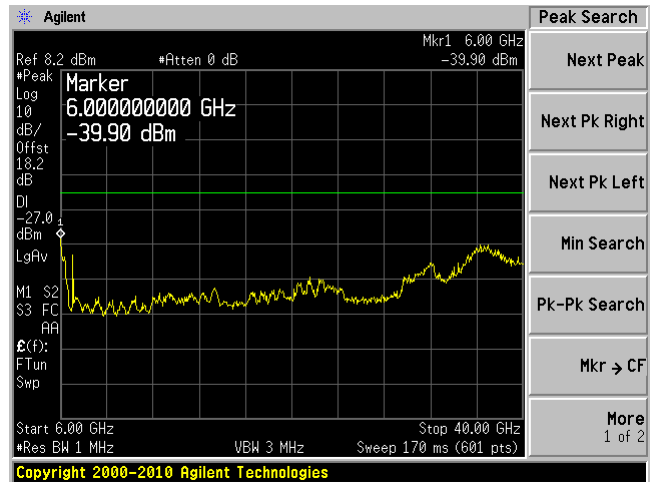
Chain J0, Plot: 4500 MHz – 5150 MHz Ave



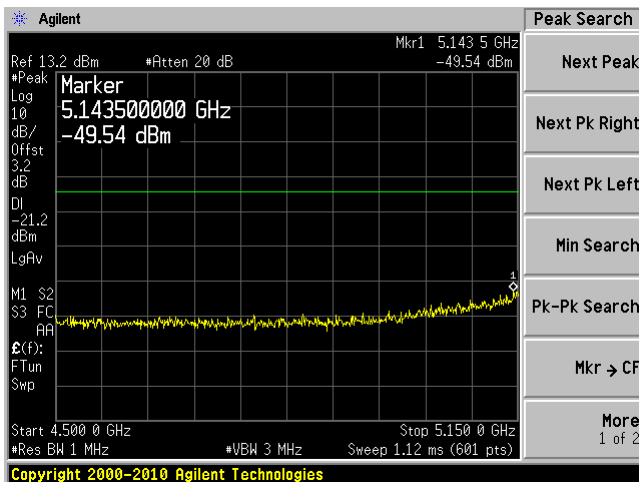
Chain J1, Plot: 30 MHz – 6 GHz



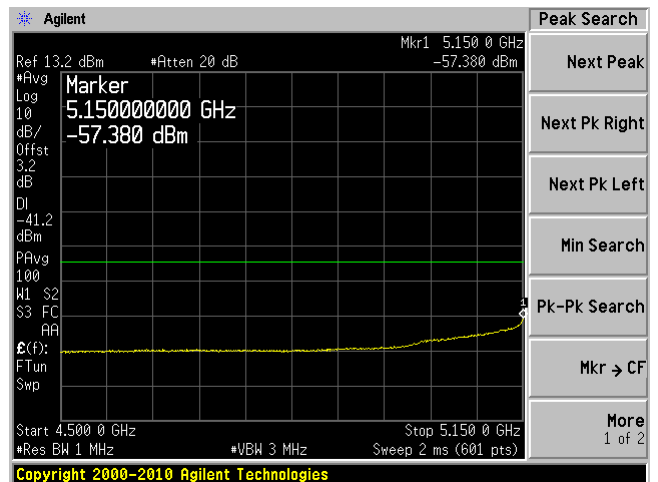
Chain J1, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 4500 MHz – 5150 MHz Peak

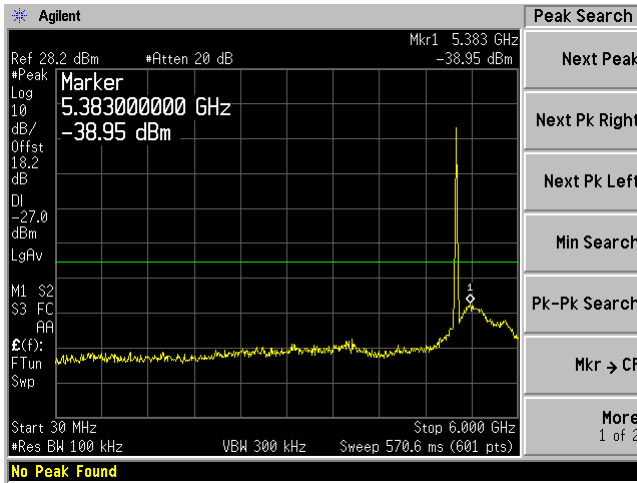


Chain J1, Plot: 4500 MHz – 5150 MHz Ave

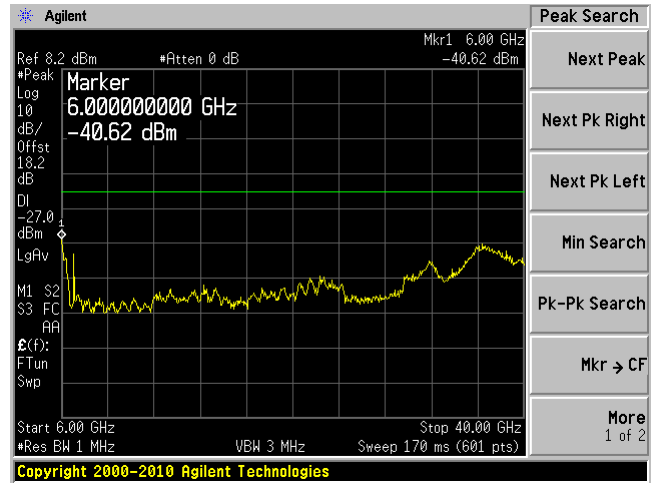


802.11a, Middle Channel, 5200 MHz

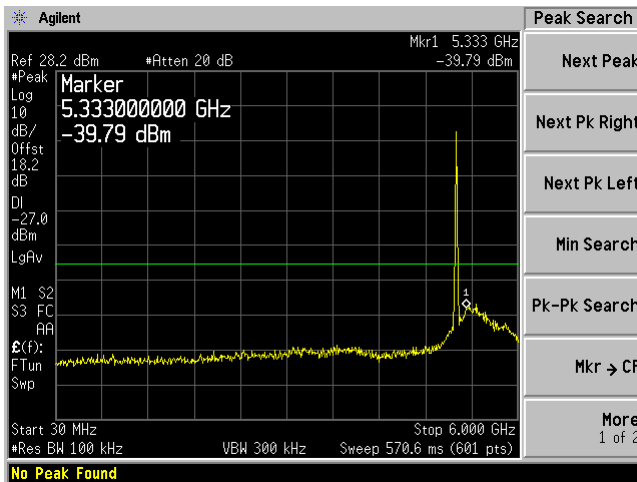
Chain J0, Plot: 30 MHz – 6 GHz



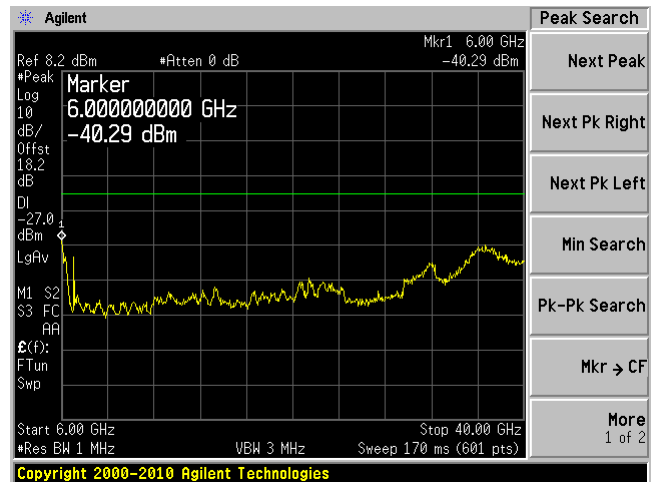
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

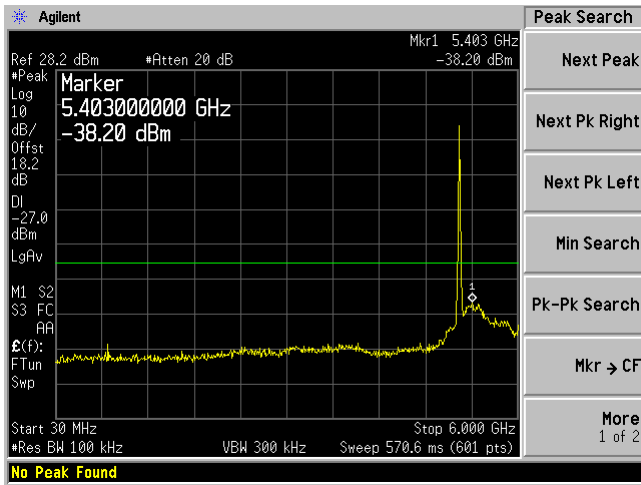


Chain J1, Plot: 6 GHz – 40 GHz

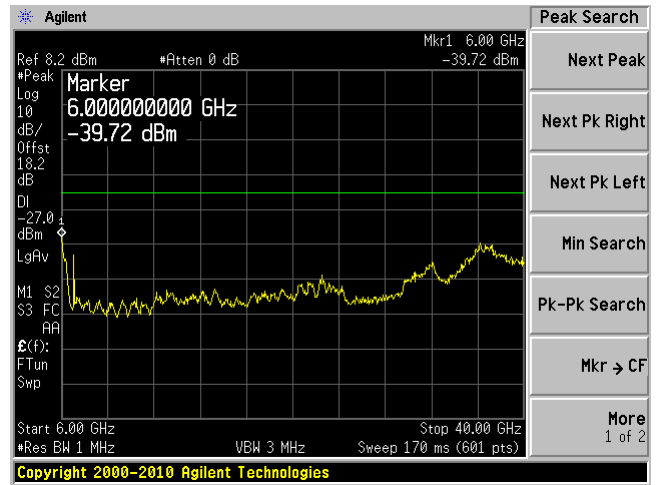


802.11a, High Channel, 5240 MHz

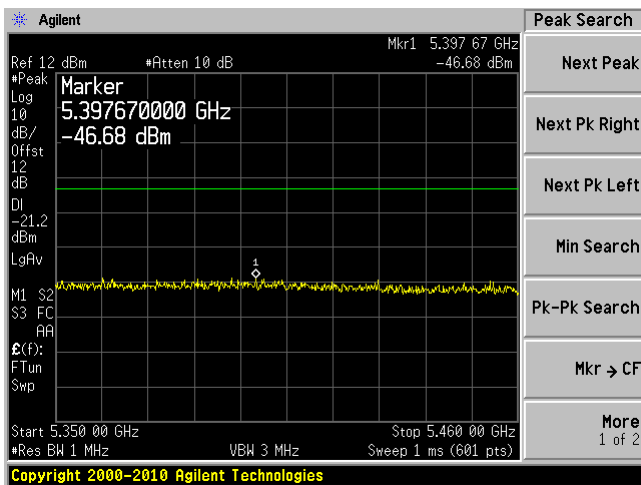
Chain J0, Plot: 30 MHz – 6 GHz



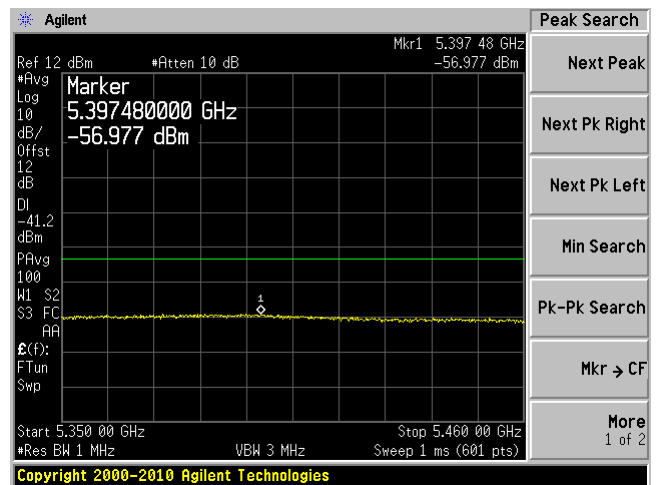
Chain J0, Plot: 6 GHz – 40 GHz



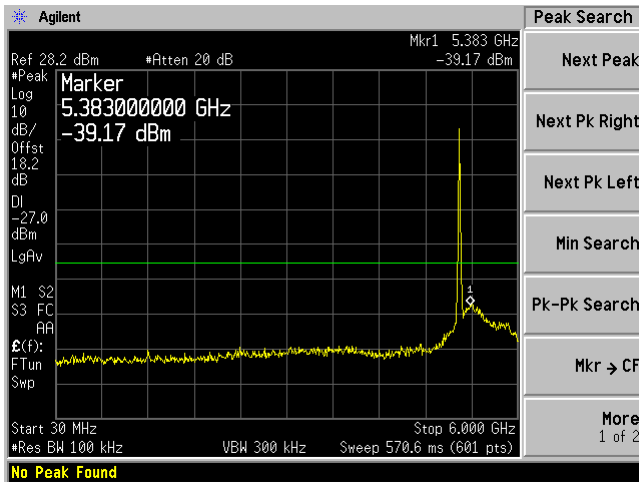
Chain J0, Plot: 5350MHz – 5460 MHz Peak



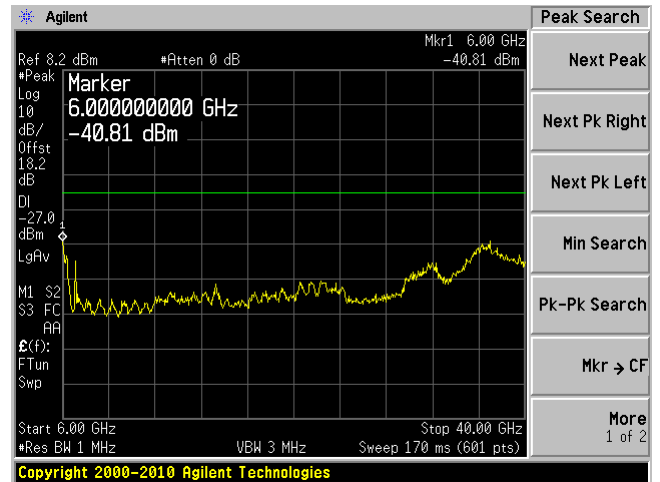
Chain J0, Plot: 5350MHz – 5460 MHz Ave



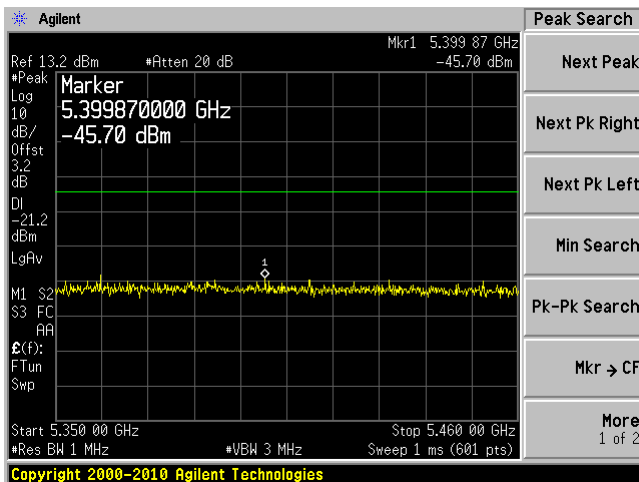
Chain J1, Plot: 30 MHz – 6 GHz



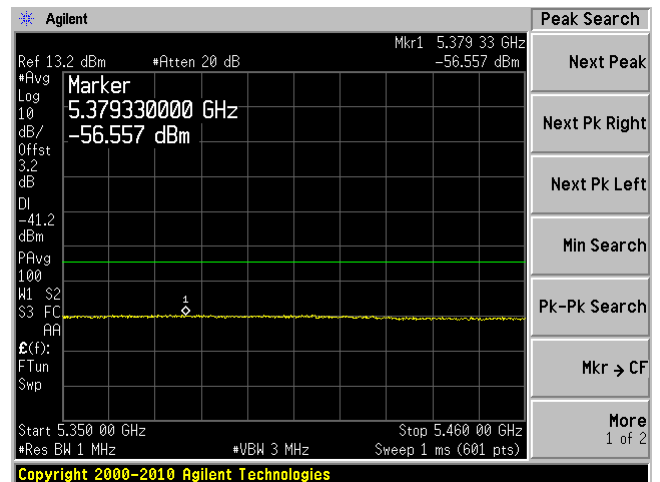
Chain J1, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 5350MHz – 5460 MHz Peak

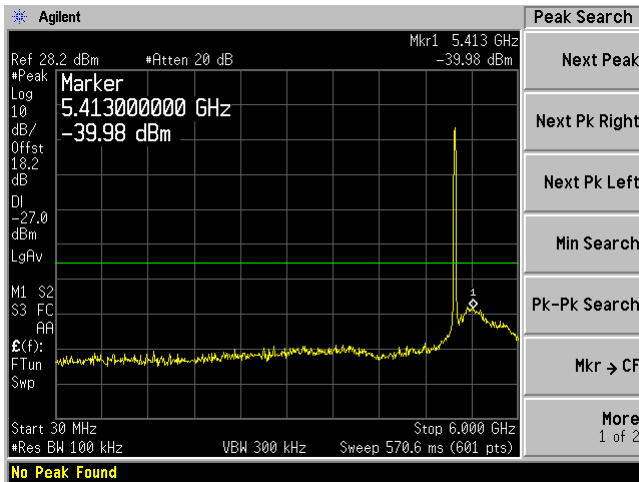


Chain J1, Plot: 5350MHz – 5460 MHz Ave

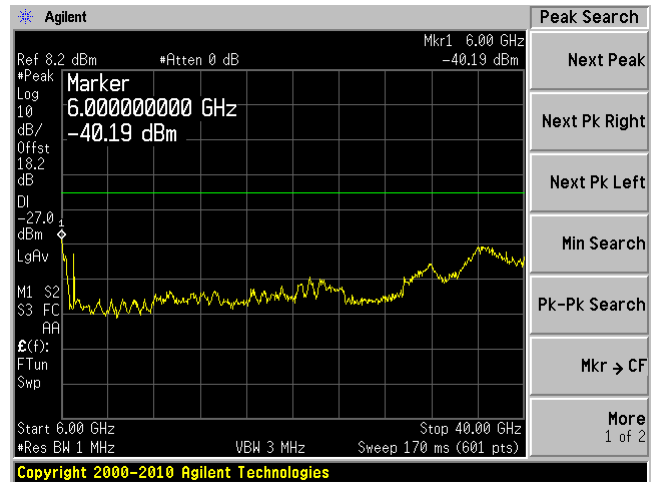


802.11n-HT 20, Low Channel 5180 MHz

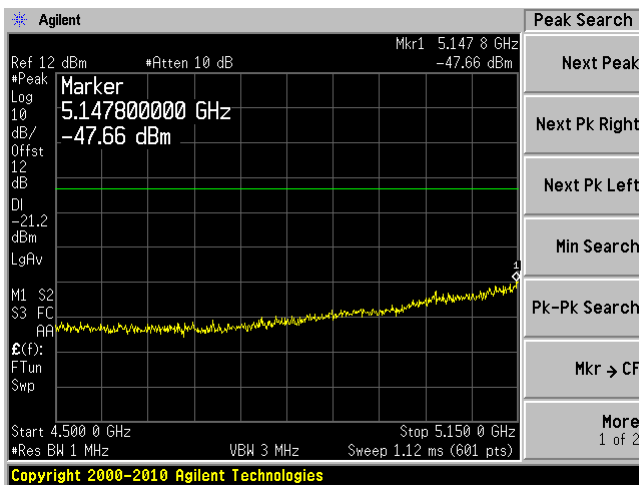
Chain J0, Plot: 30 MHz – 6 GHz



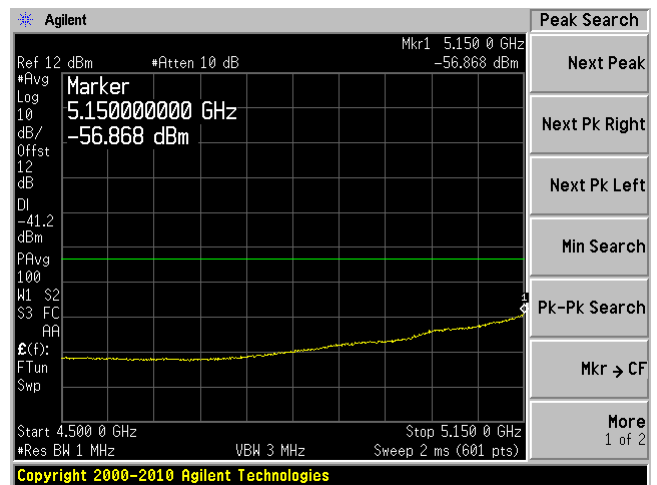
Chain J0, Plot: 6 GHz – 40 GHz



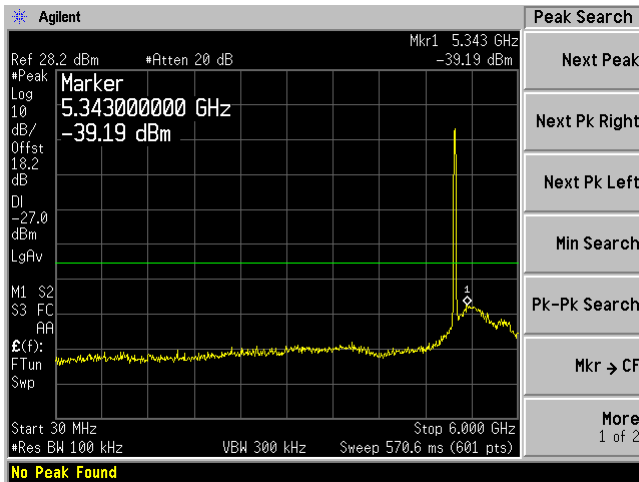
Chain J0, Plot: 4500 MHz – 5150 MHz Peak



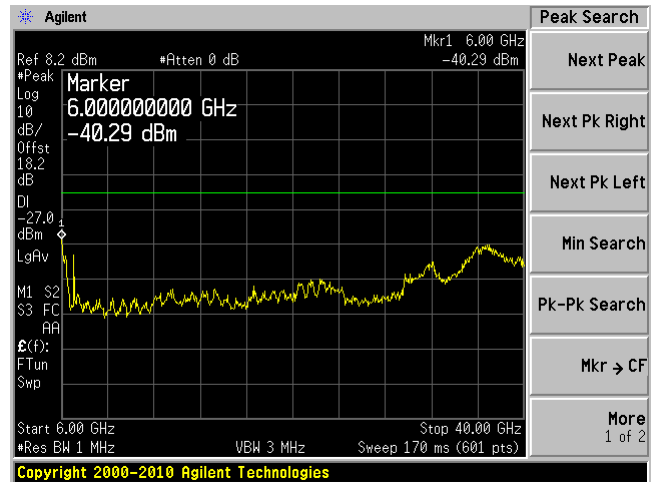
Chain J0, Plot: 4500 MHz – 5150 MHz Ave



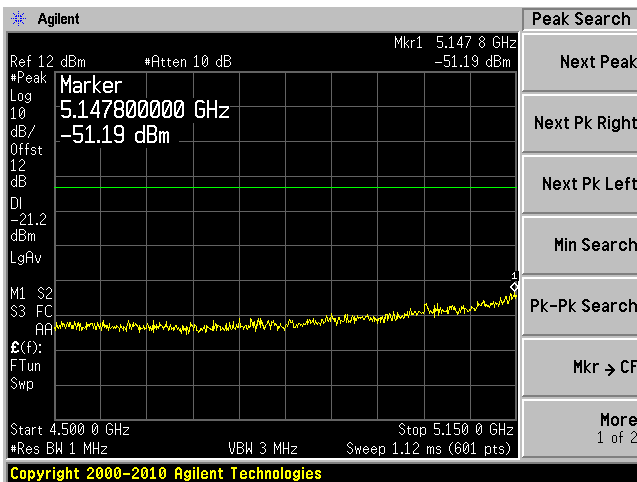
Chain J1, Plot: 30 MHz – 6 GHz



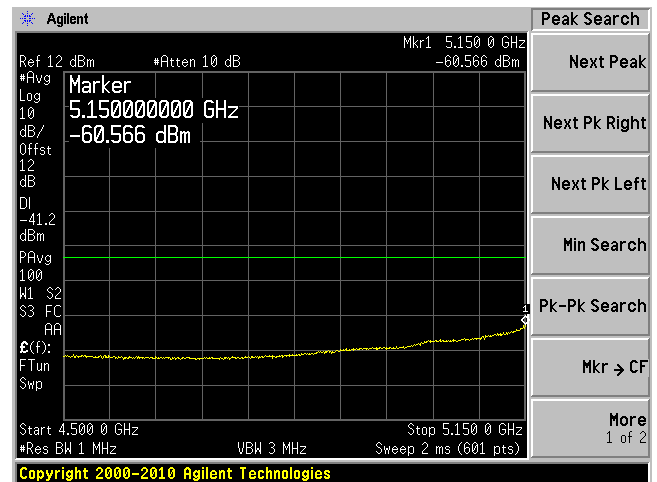
Chain J1, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 4500 MHz – 5150 MHz Peak

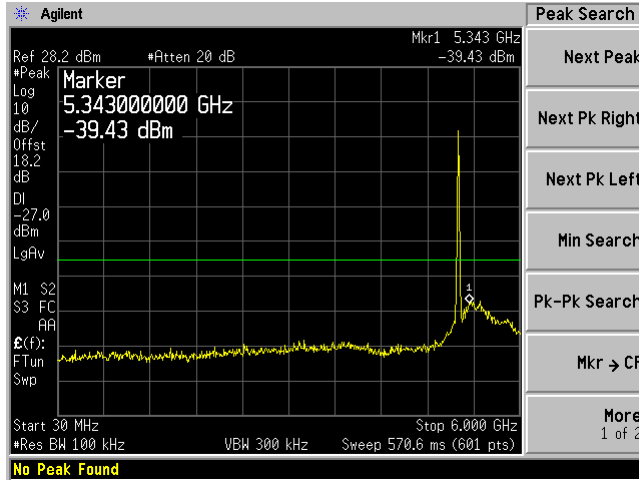


Chain J1, Plot: 4500 MHz – 5150 MHz Ave

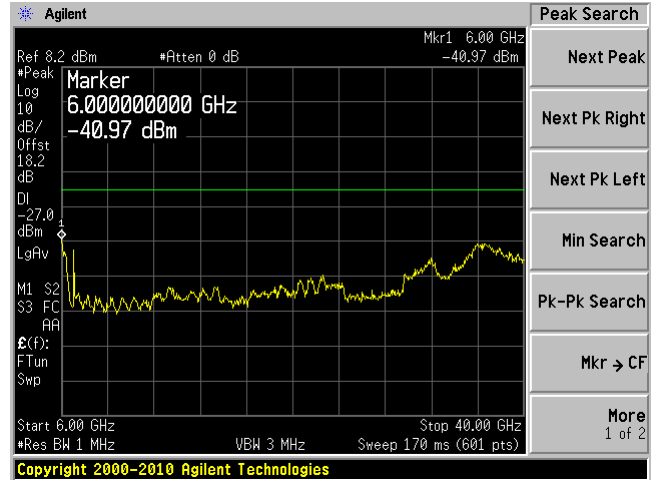


802.11n-HT20, Middle Channel 5200 MHz

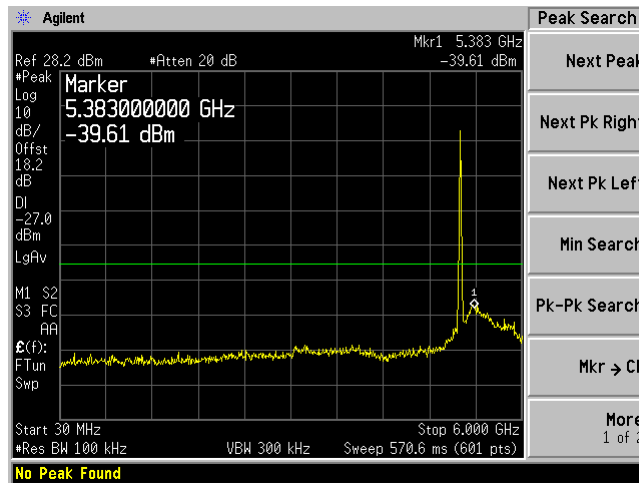
Chain J0, Plot: 30 MHz – 6 GHz



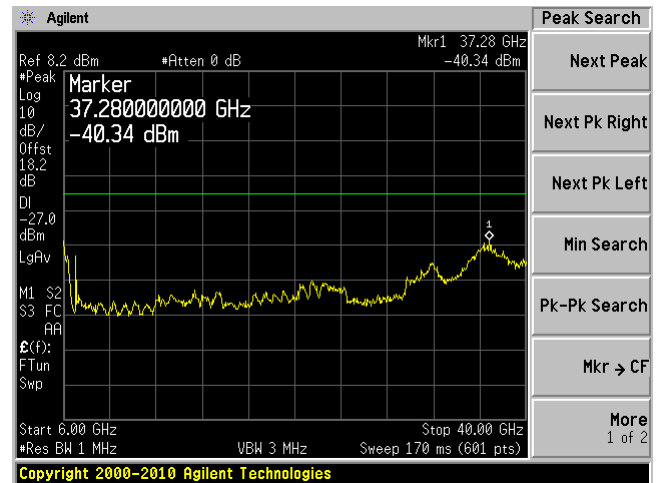
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

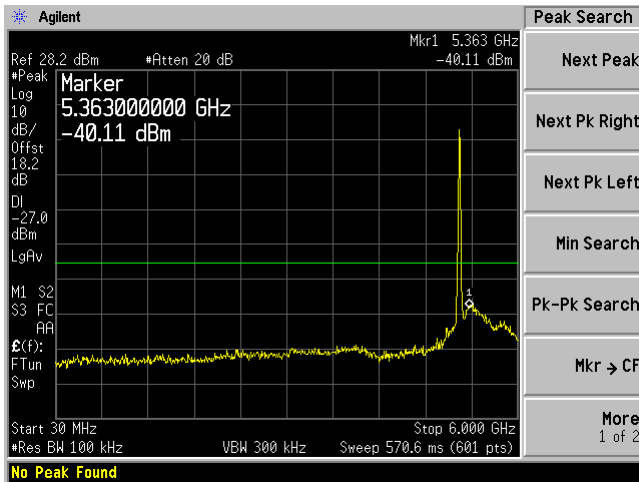


Chain J1, Plot: 6 GHz – 40 GHz

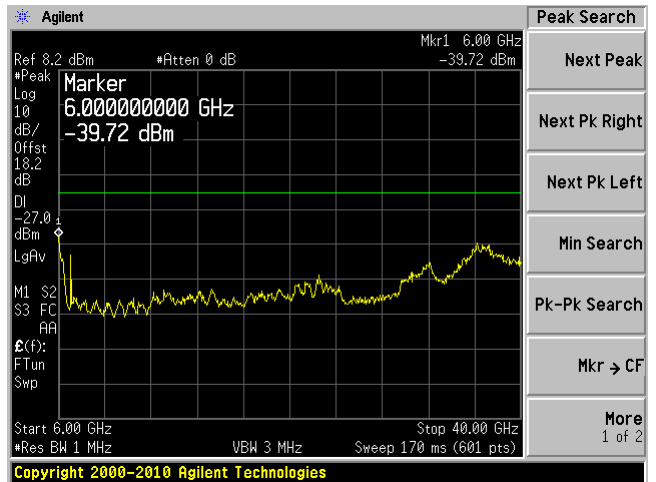


802.11n-HT 20, High Channel 5240 MHz

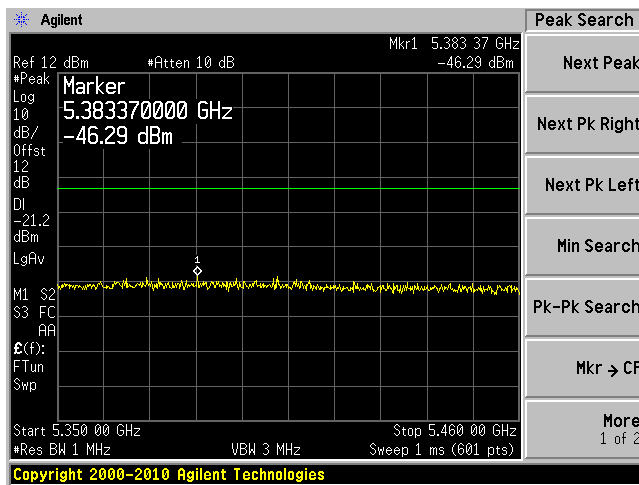
Chain J0, Plot: 30 MHz – 6 GHz



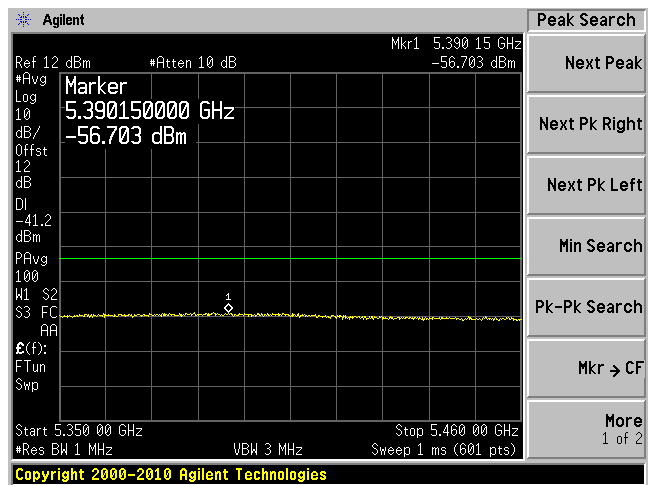
Chain J0, Plot: 6 GHz – 40 GHz



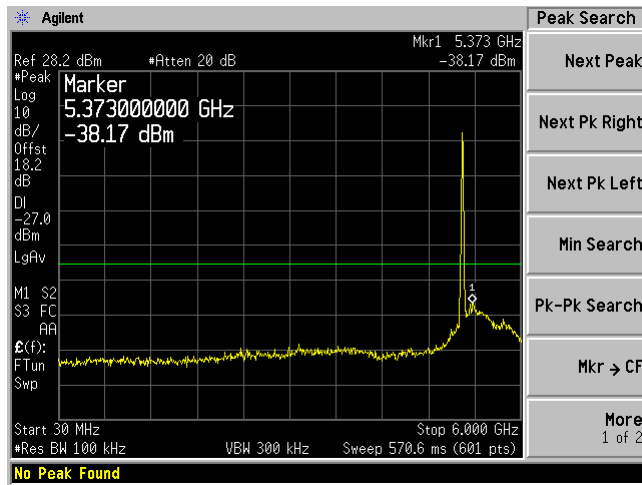
Chain J0, Plot: 5350 MHz – 5460 MHz Peak



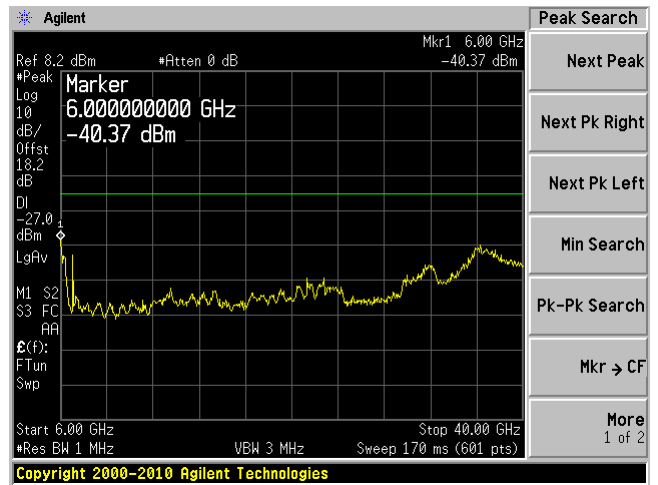
Chain J0, Plot: 5350 MHz – 5460 MHz Ave



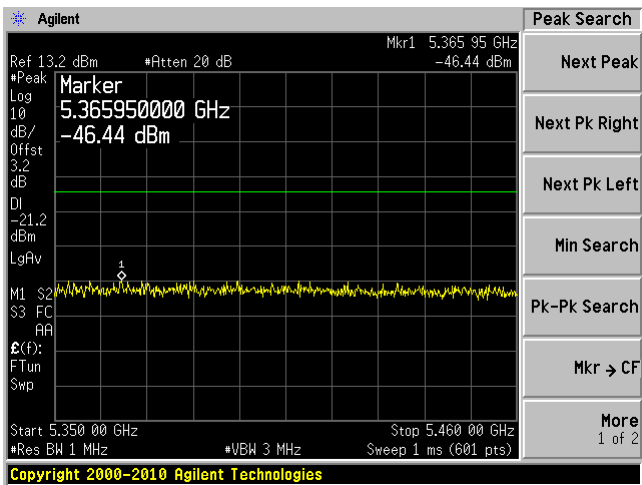
Chain J1, Plot: 30 MHz – 6 GHz



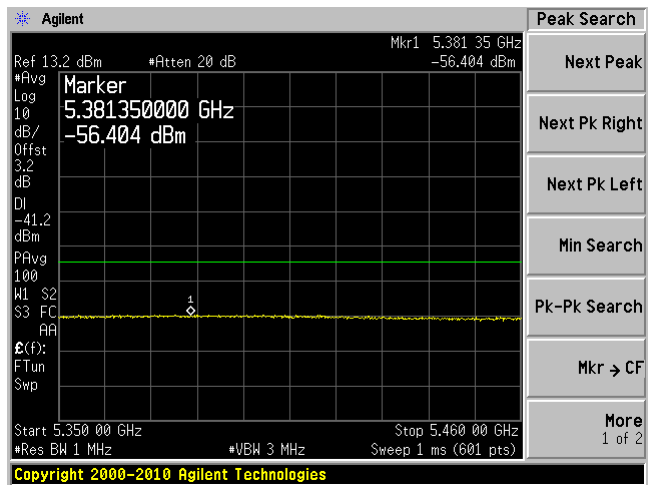
Chain J1, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 5350 MHz – 5460 MHz Peak

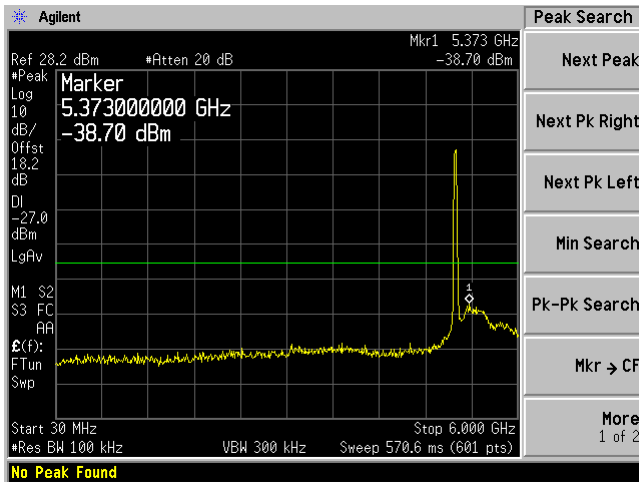


Chain J1, Plot: 5350 MHz – 5460 MHz Ave

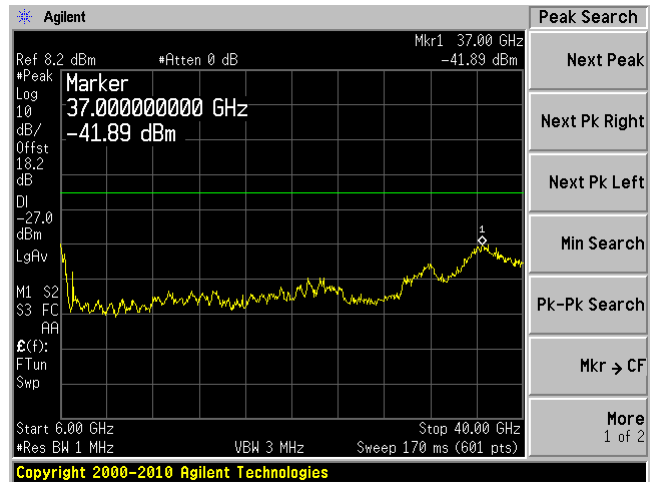


802.11n-HT40, Low Channel 5190 MHz

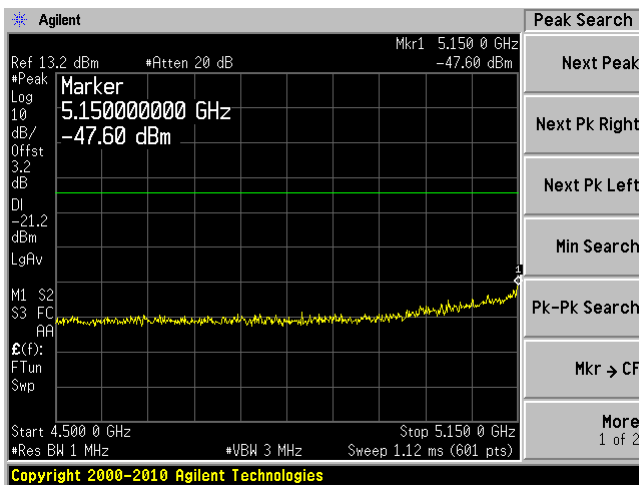
Chain J0, Plot: 30 MHz – 6 GHz



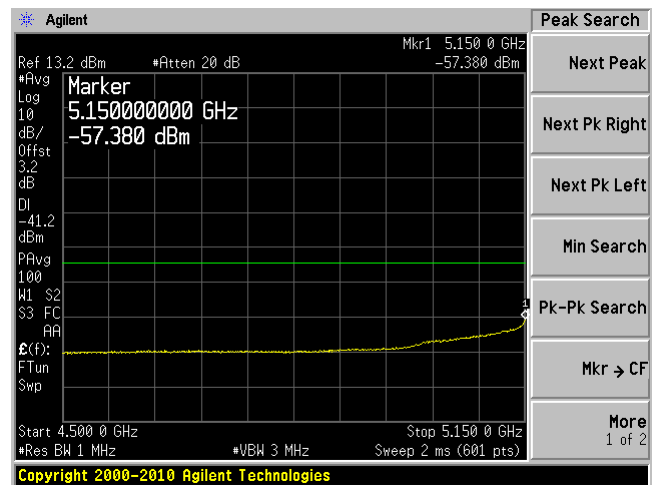
Chain J0, Plot: 6 GHz – 40 GHz



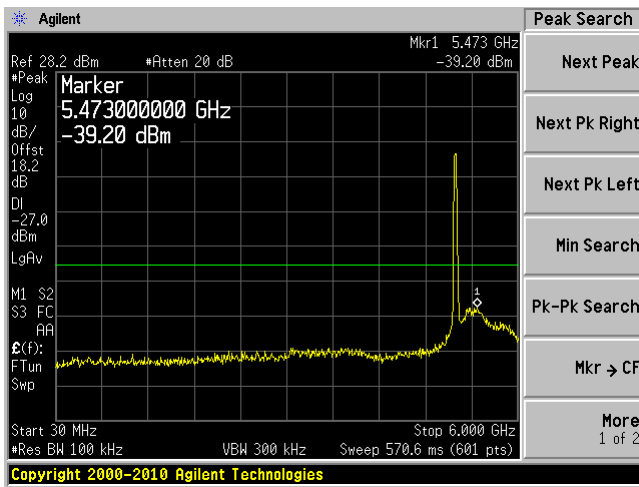
Chain J0, Plot: 4500 MHz – 5150 MHz Peak



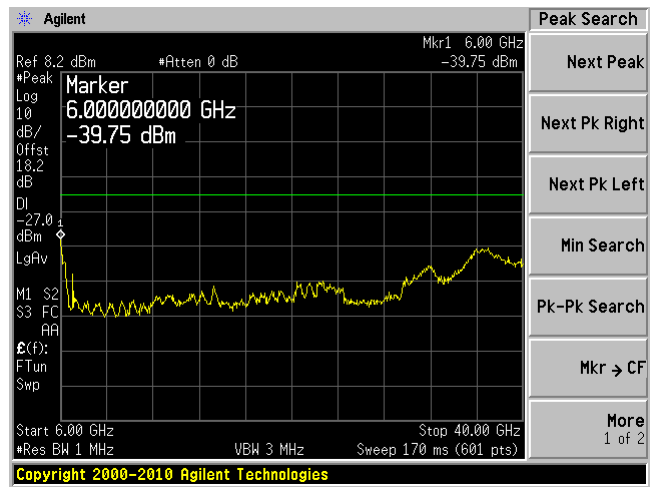
Chain J0, Plot: 4500 MHz – 5150 MHz Ave



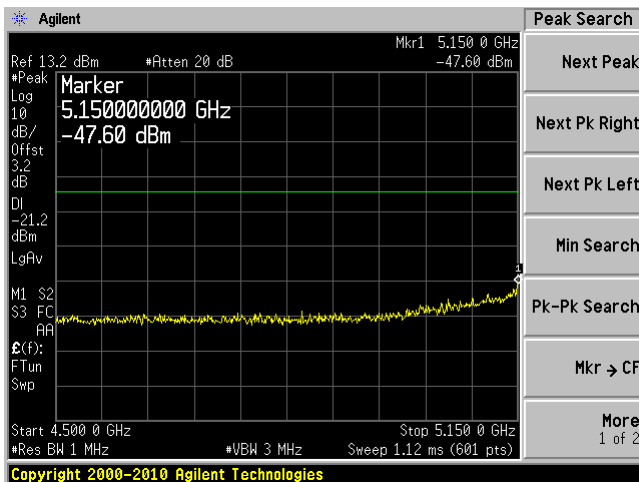
Chain J1, Plot: 30 MHz – 6 GHz



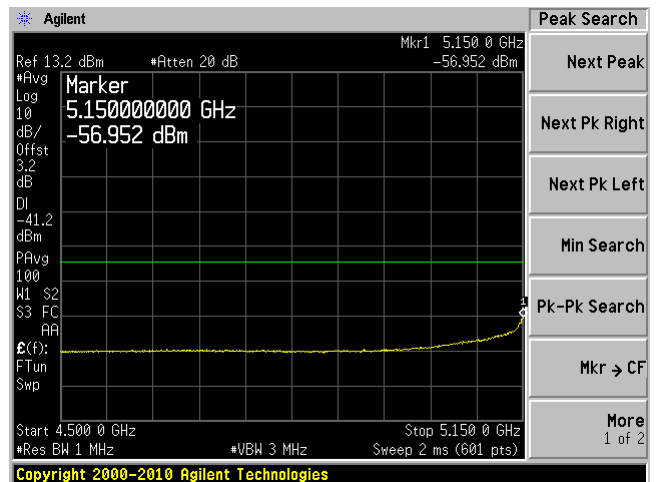
Chain J1, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 4500 MHz – 5150 MHz Peak

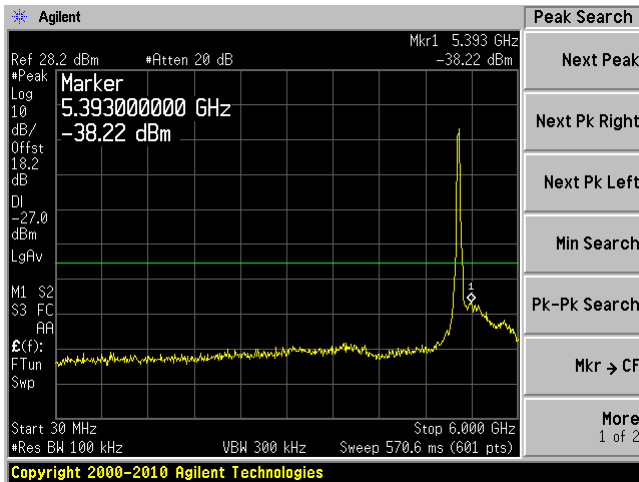


Chain J1, Plot: 4500 MHz – 5150 MHz Ave

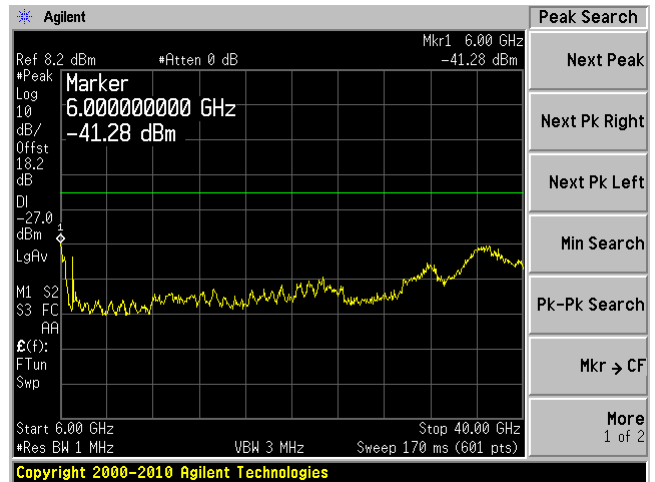


802.11n-HT40, High Channel 5230 MHz

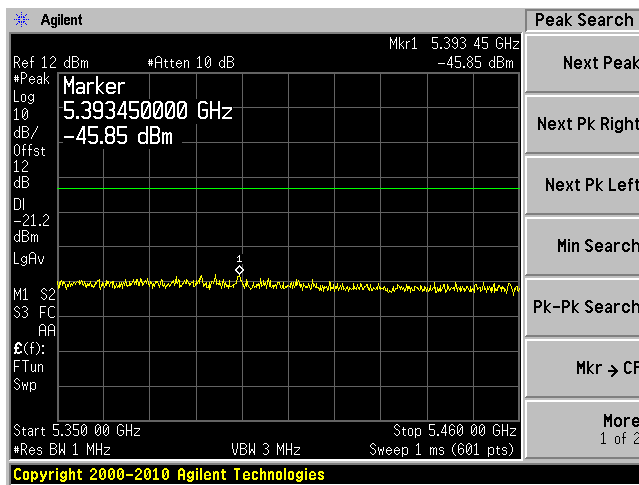
Chain J0, Plot: 30 MHz – 6 GHz



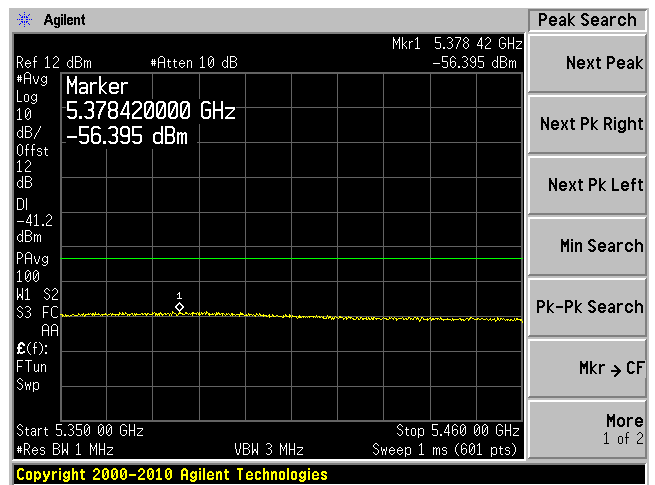
Chain J0, Plot: 6 GHz – 40 GHz



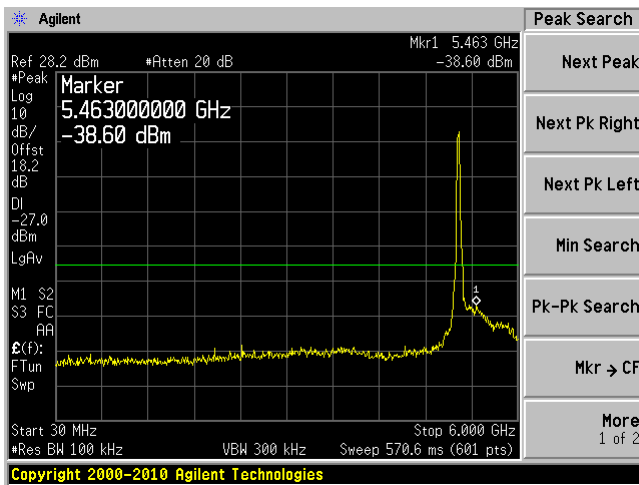
Chain J0, Plot: 5350MHz – 5460 MHz Peak



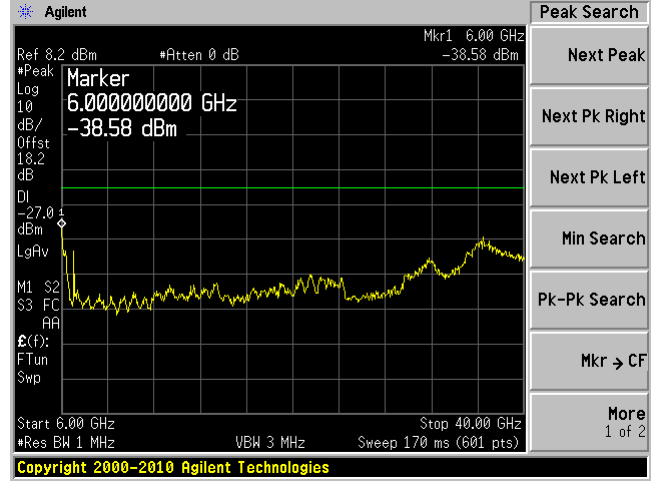
Chain J0, Plot: 5350MHz – 5460 MHz Ave



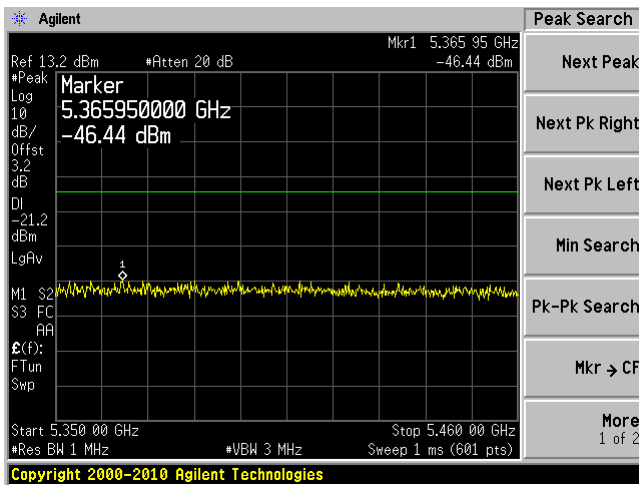
Chain J1, Plot: 30 MHz – 6 GHz



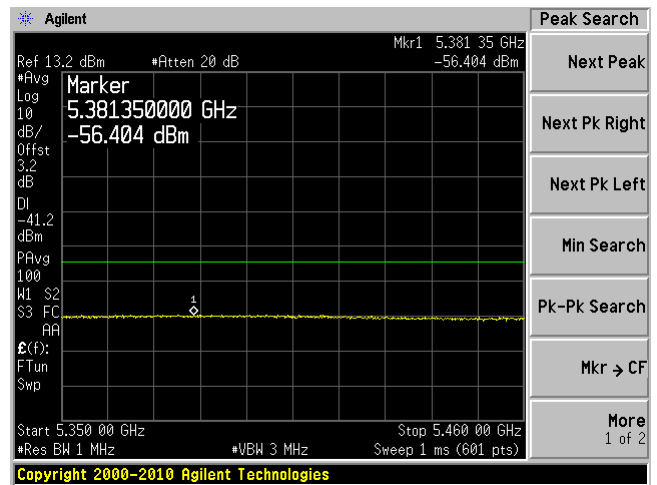
Chain J1, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 5350MHz – 5460 MHz Peak

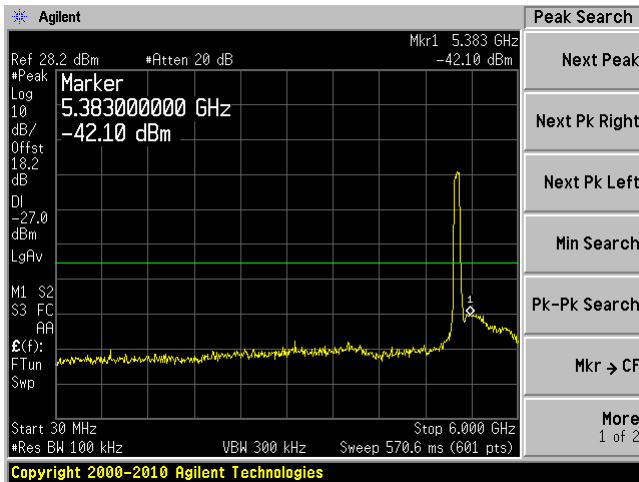


Chain J1, Plot: 5350MHz – 5460 MHz Ave

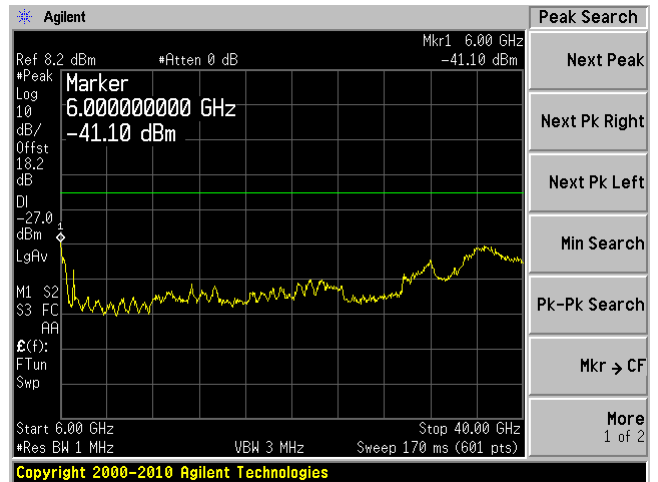


802.11ac-80, Channel 5210MHz

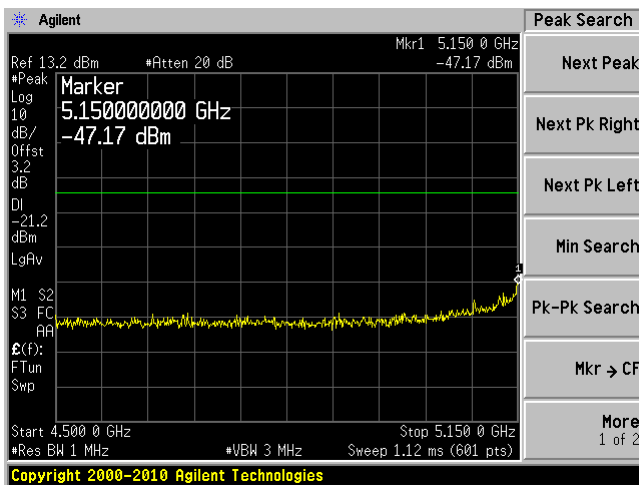
Chain J0, Plot: 30 MHz – 6 GHz



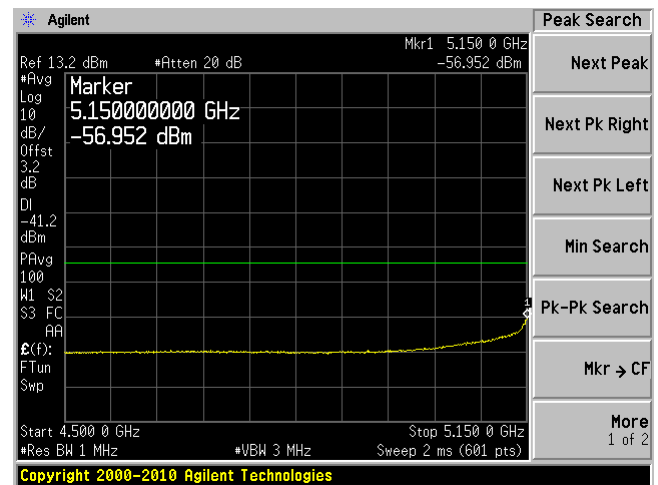
Chain J0, Plot: 6 GHz – 40 GHz



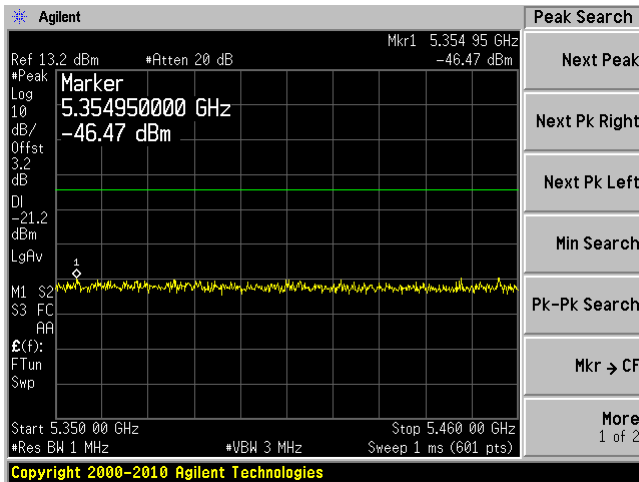
Chain J0, Plot: 4500 MHz – 5150 MHz Peak



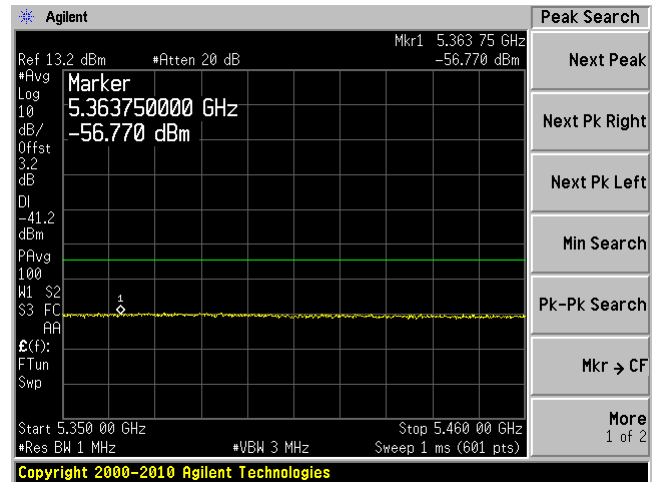
Chain J0, Plot: 4500 MHz – 5150 MHz Ave



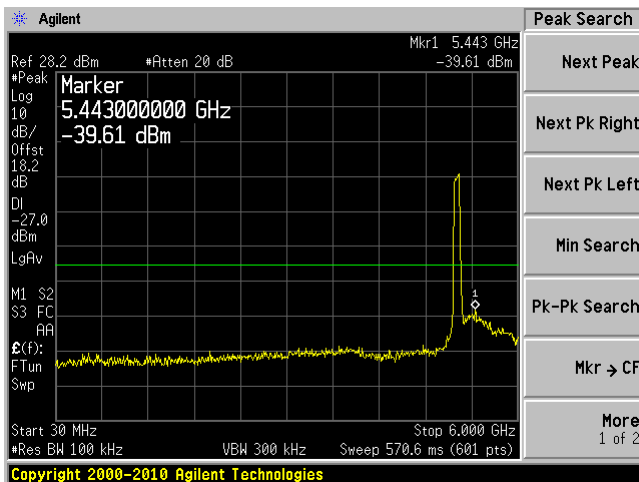
Chain J0, Plot: 5350 MHz – 5460 MHz Peak



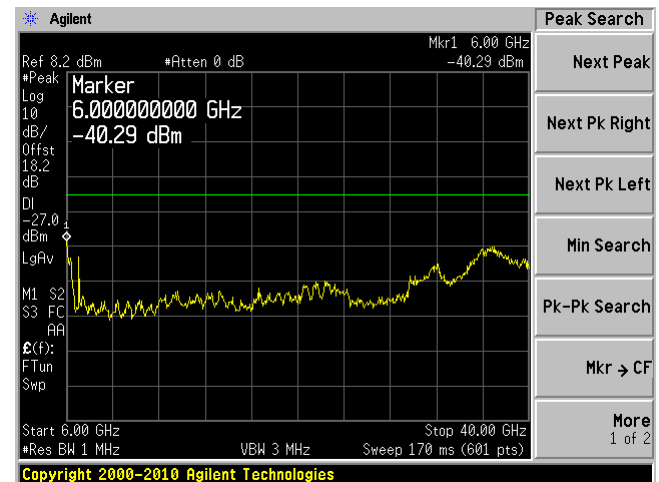
Chain J0, Plot: 5350 MHz – 5460 MHz Ave



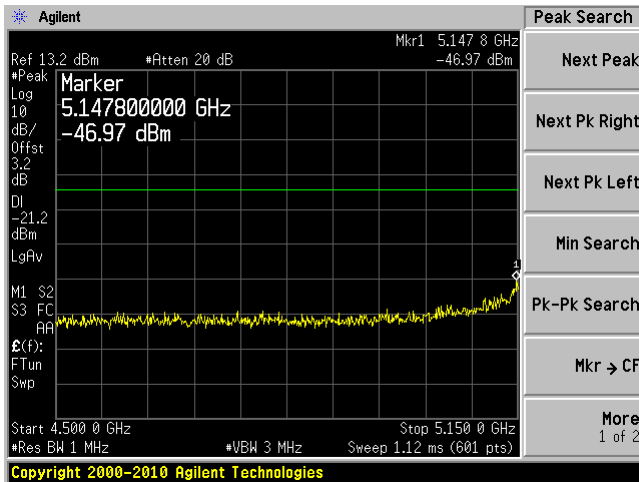
Chain J1, Plot: 30 MHz – 6 GHz



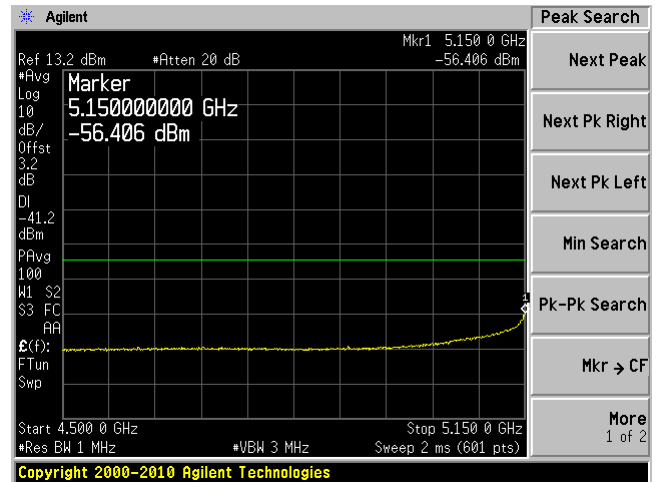
Chain J1, Plot: 6 GHz – 40 GHz



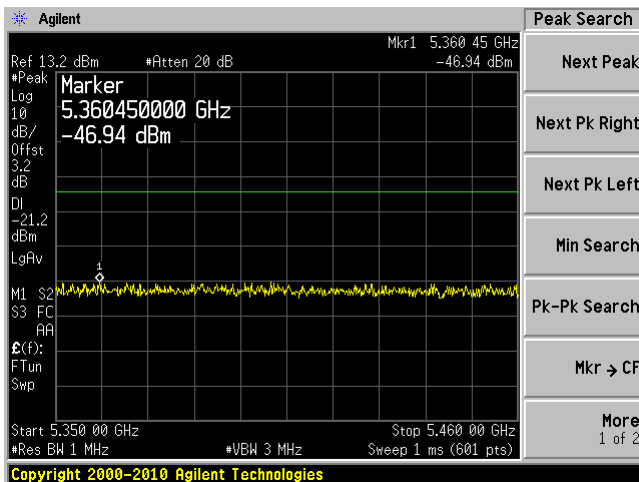
Chain J1, Plot: 4500 MHz – 5150 MHz Peak



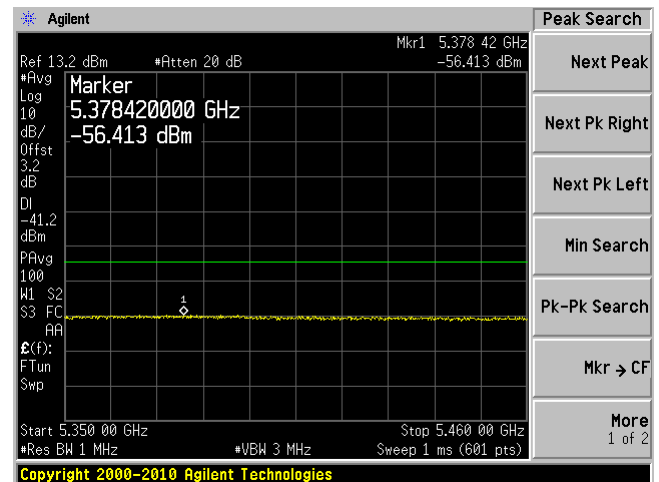
Chain J1, Plot: 4500 MHz – 5150 MHz Ave



Chain J1, Plot: 5350 MHz – 5460 MHz Peak



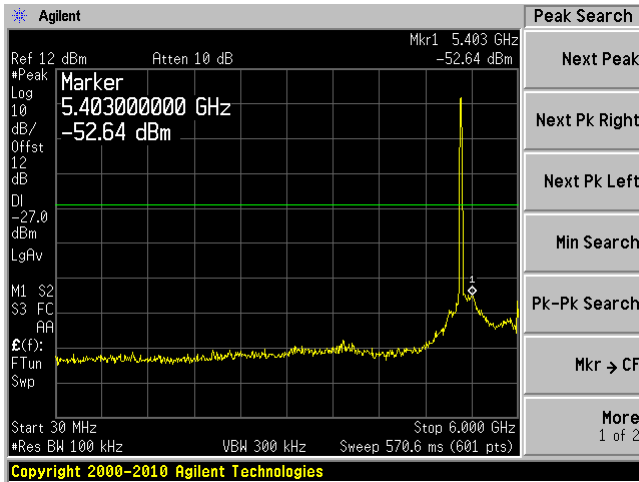
Chain J1, Plot: 5350 MHz – 5460 MHz Ave



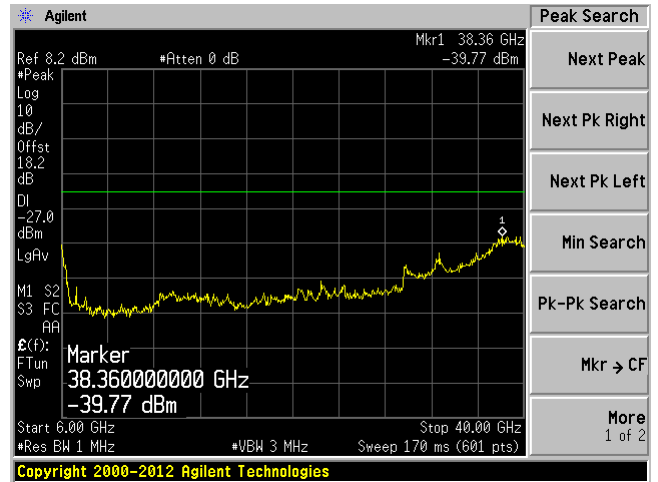
5250-5350 MHz

802.11a, Low Channel, 5260 MHz

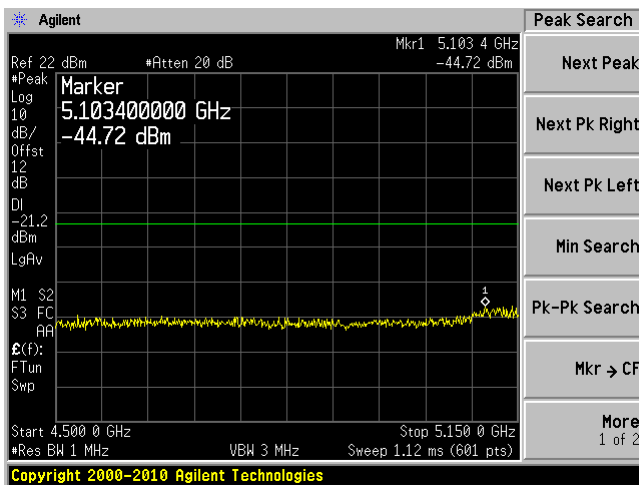
Chain J0, Plot: 30 MHz – 6 GHz



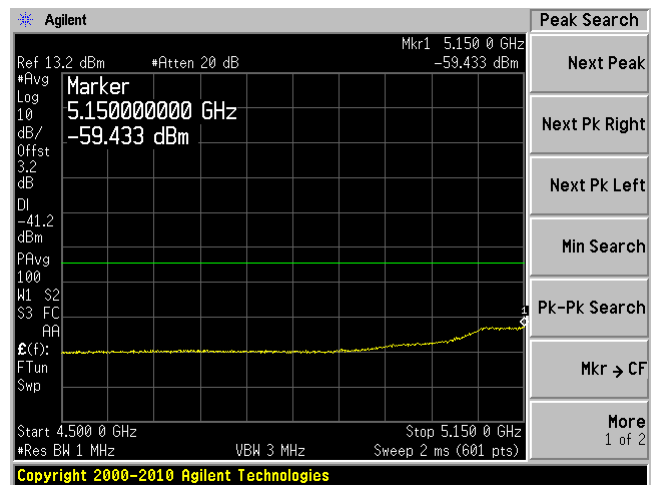
Chain J0, Plot: 6 GHz – 40 GHz



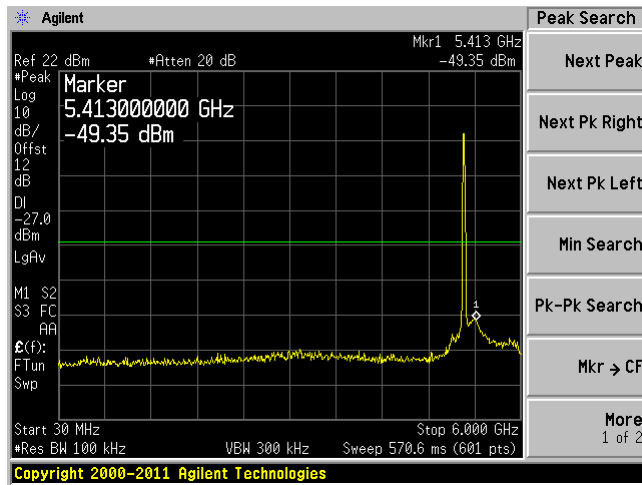
Chain J0, Plot: 4500 MHz – 5150 MHz-Peak



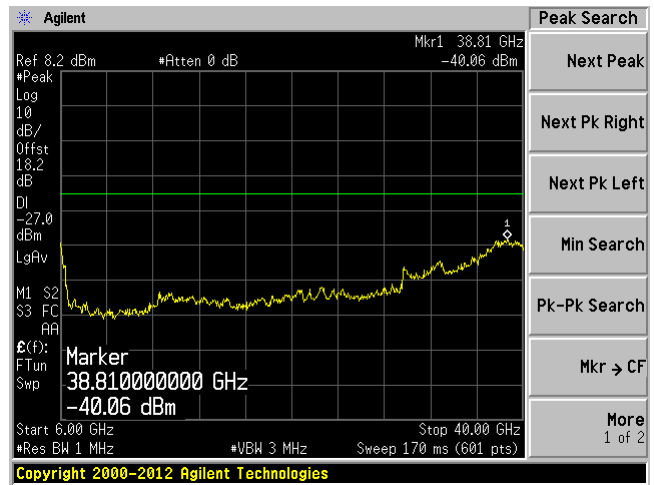
Chain J0, Plot: 4500 MHz – 5150MHz -Ave



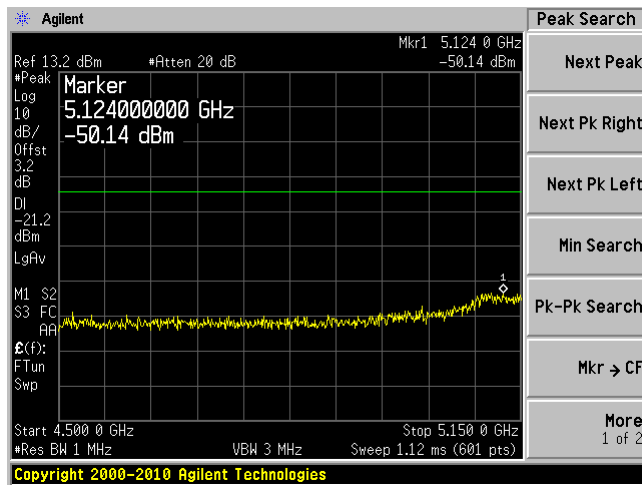
Chain J1, Plot: 30 MHz – 6 GHz



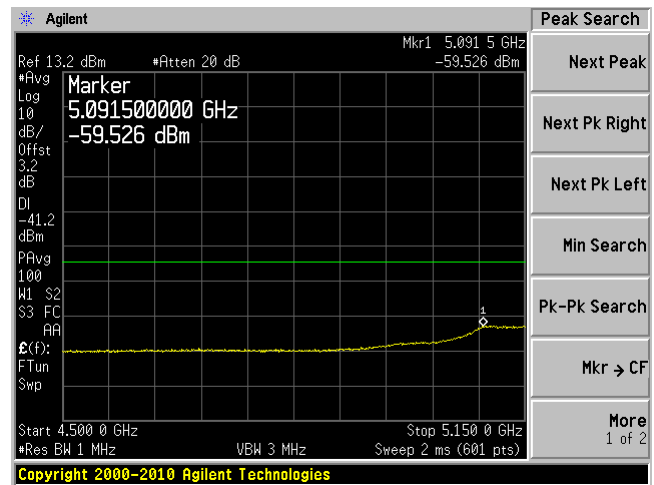
Chain J1, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 4500 MHz – 5150 MHz-Peak

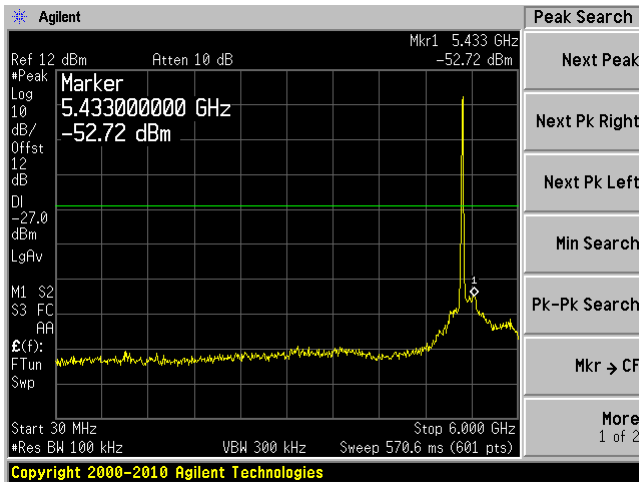


Chain J1, Plot: 4500 MHz – 5150 MHz-Ave

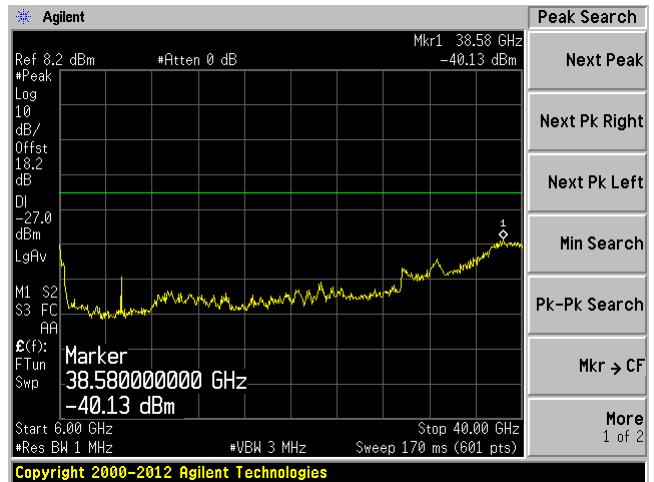


802.11a, Middle Channel, 5280 MHz

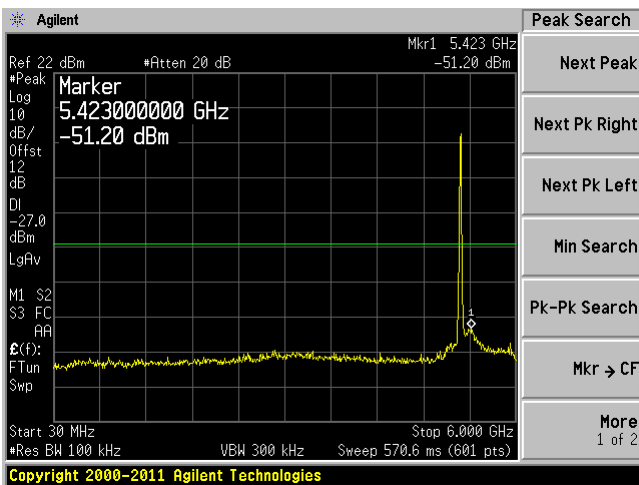
Chain J0, Plot: 30 MHz – 6 GHz



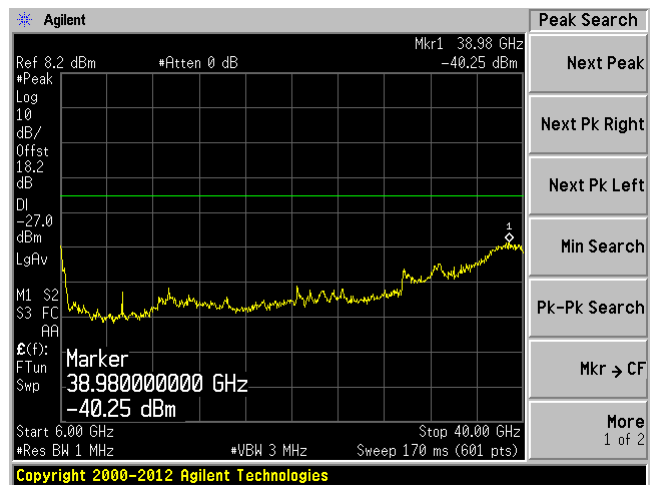
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

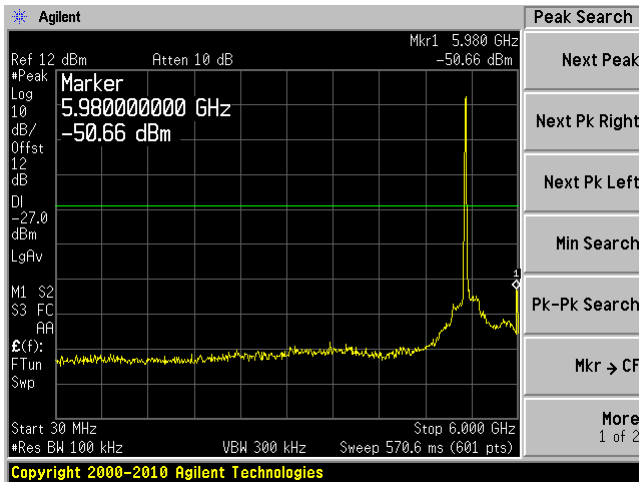


Chain J1, Plot: 6 GHz – 40 GHz

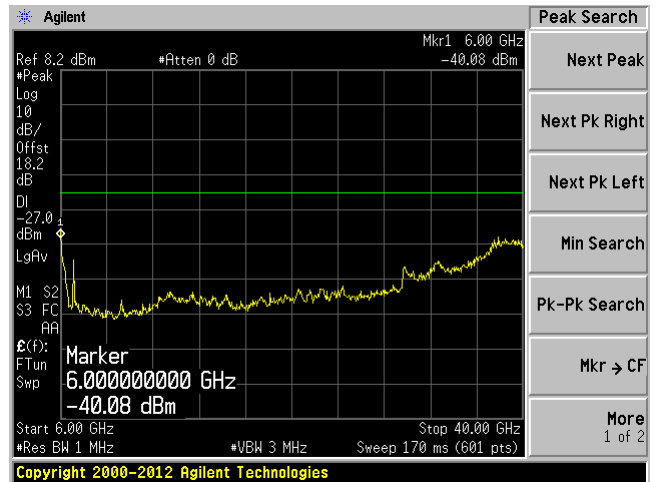


802.11a, High Channel, 5320 MHz

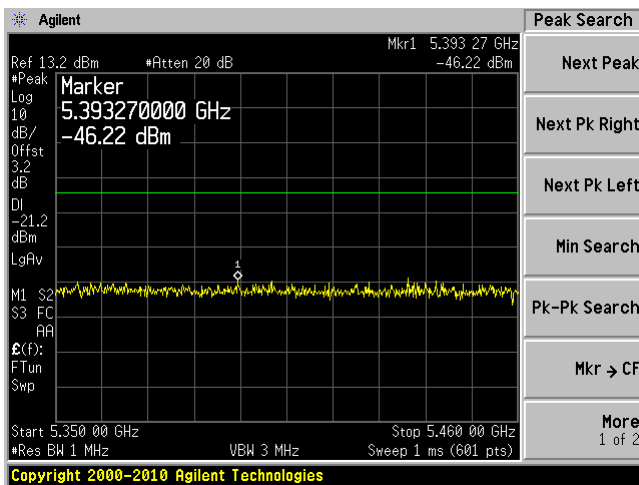
Chain J0, Plot: 30 MHz – 6 GHz



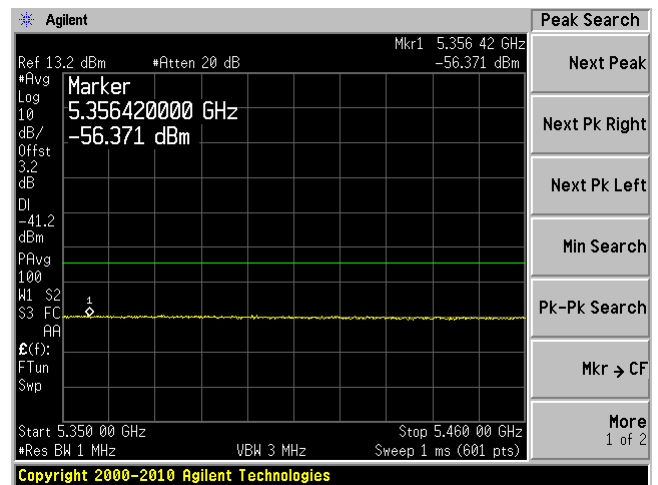
Chain J0, Plot: 6 GHz – 40 GHz



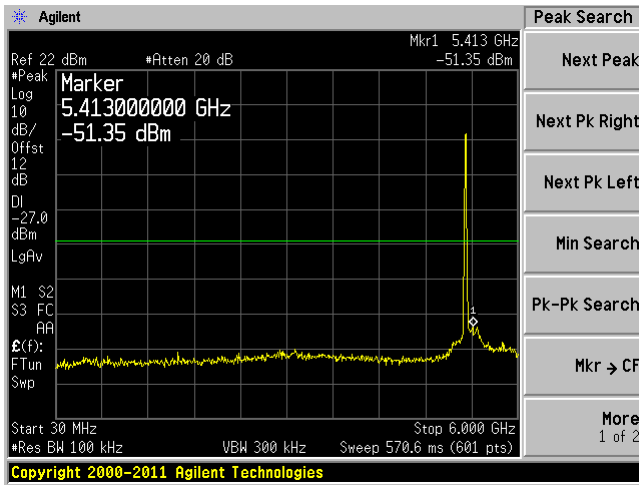
Chain J0, Plot: 5350MHz – 5460 MHz-Peak



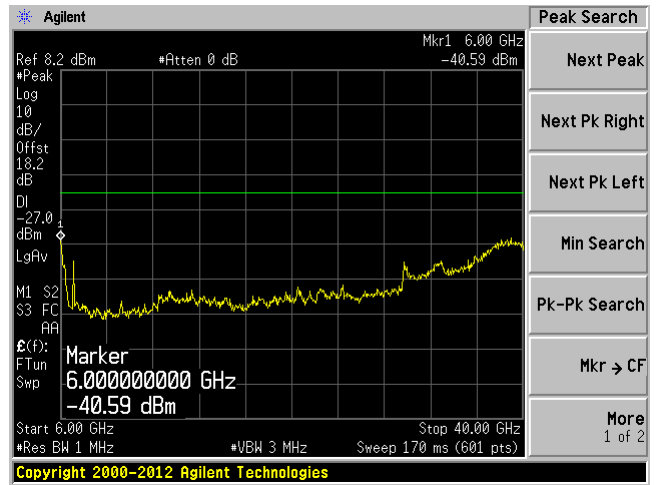
Chain J0, Plot: 5350MHz – 5460 MHz-Ave



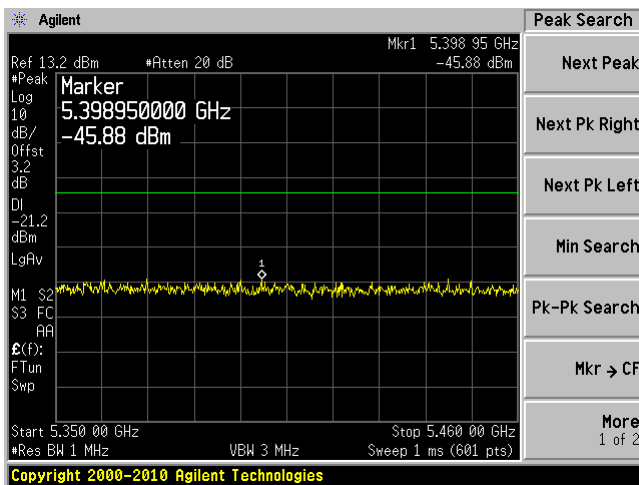
Chain J1, Plot: 30 MHz – 6 GHz



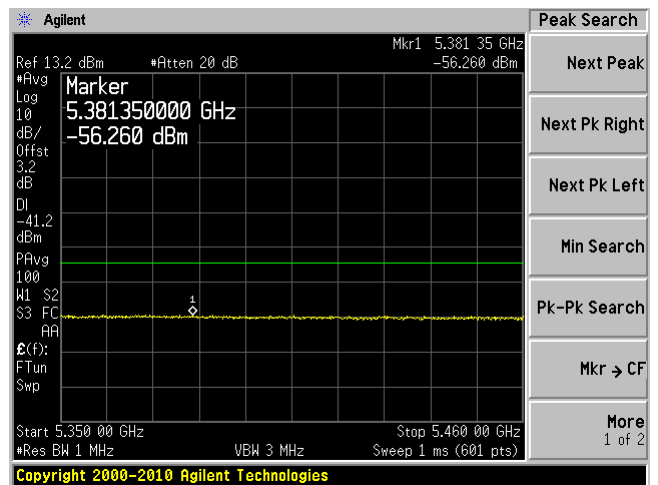
Chain J1, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 5350MHz – 5460 MHz-Ave

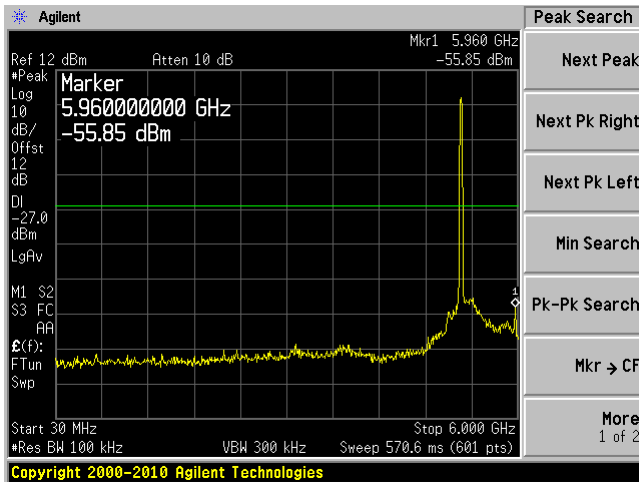


Chain J1, Plot: 5350MHz – 5460 MHz-Ave

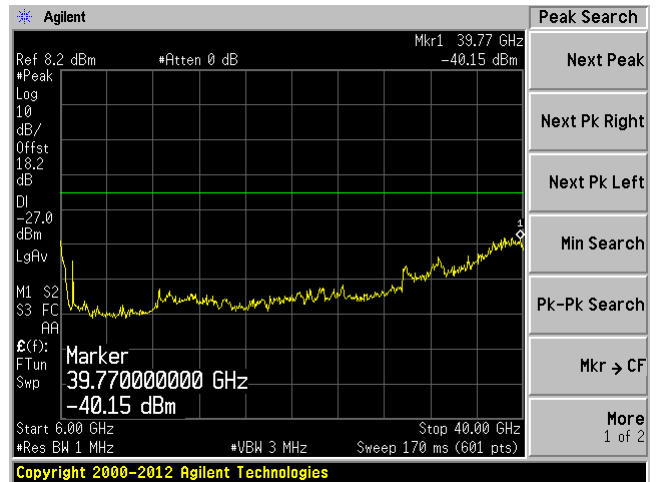


802.11n-HT 20, Low Channel 5260 MHz

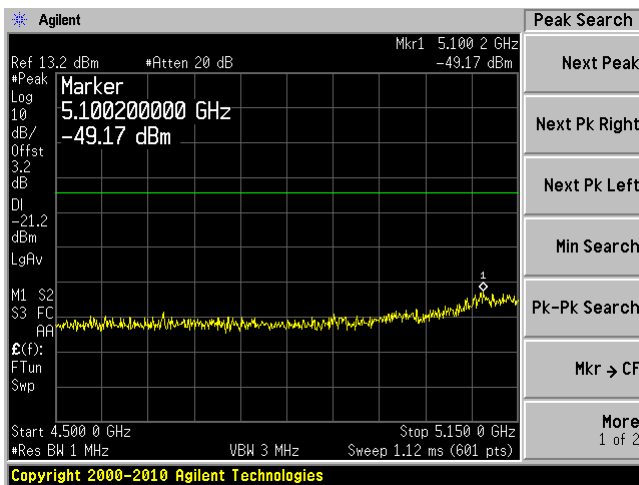
Chain J0, Plot: 30 MHz – 6 GHz



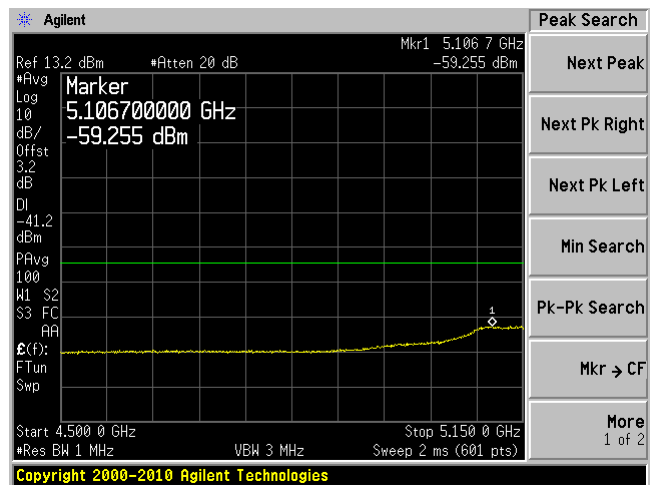
Chain J0, Plot: 6 GHz – 40 GHz



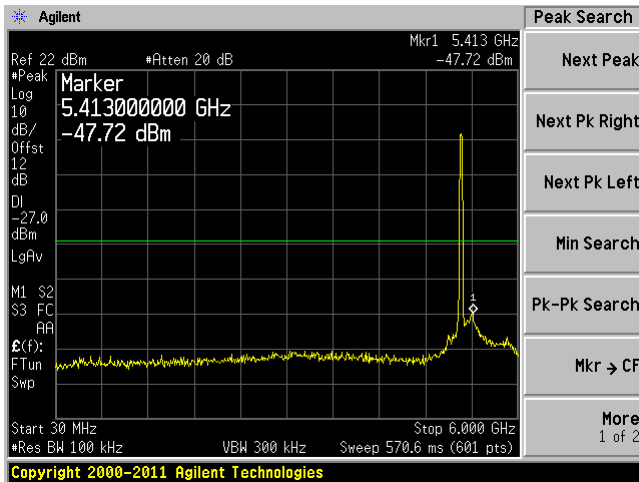
Chain J0, Plot: 4500 MHz – 5150 MHz-Peak



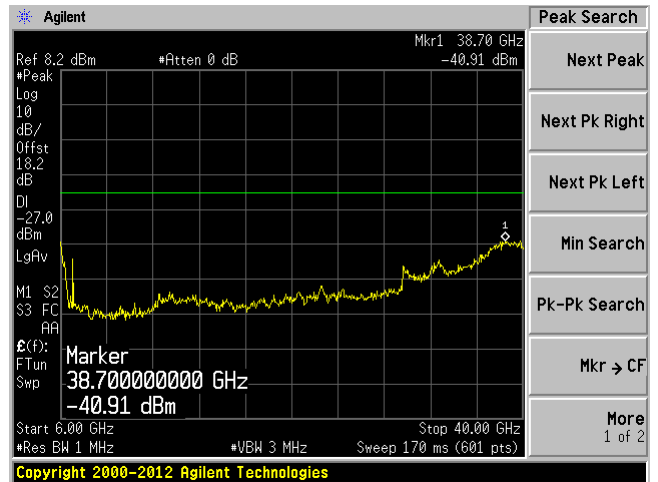
Chain J0, Plot: 4500 MHz – 5150 MHz-Ave



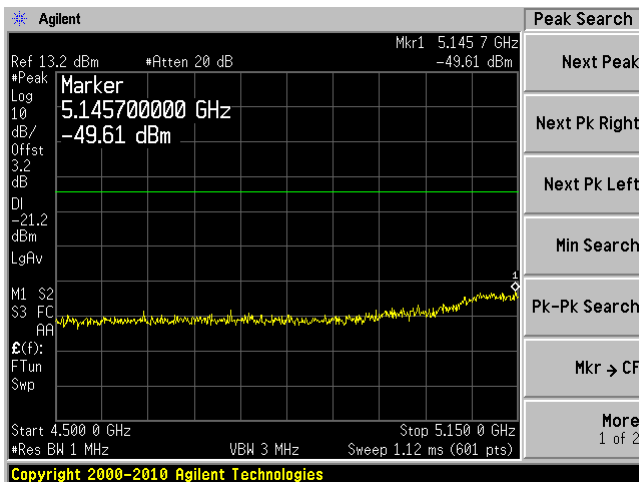
Chain J1, Plot: 30 MHz – 6 GHz



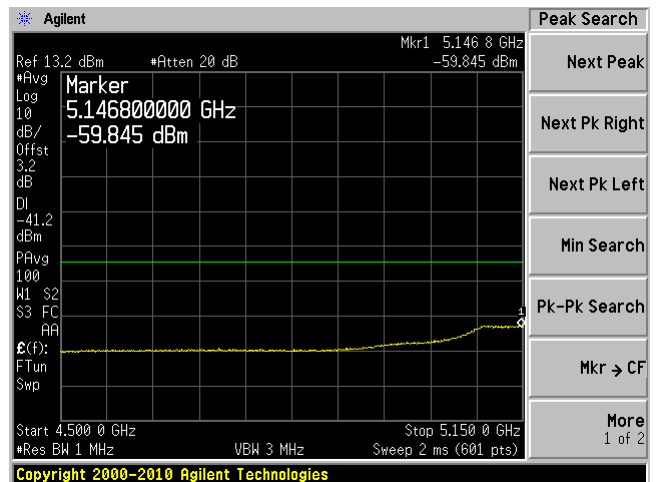
Chain J1, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 4500 MHz – 5150 MHz-Peak

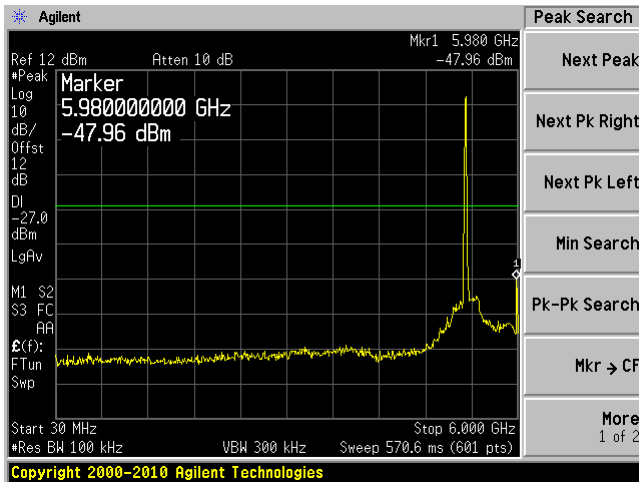


Chain J1, Plot: 4500 MHz – 5150 MHz-Ave

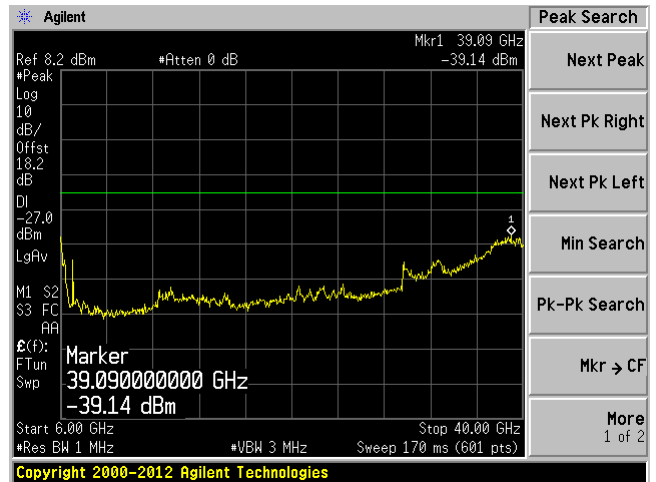


802.11n-HT20, Middle Channel 5280 MHz

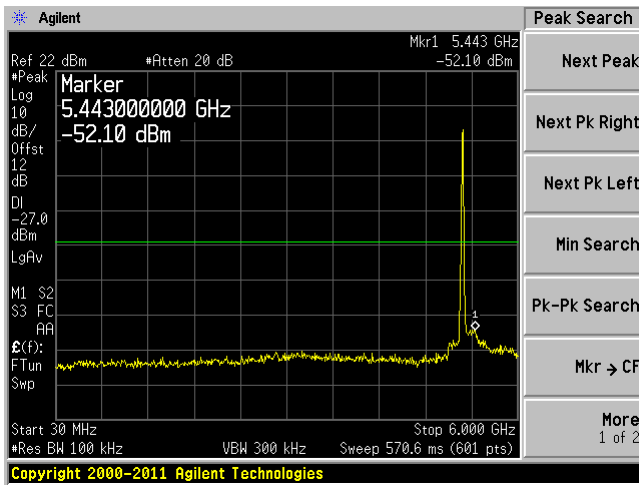
Chain J0, Plot: 30 MHz – 6 GHz



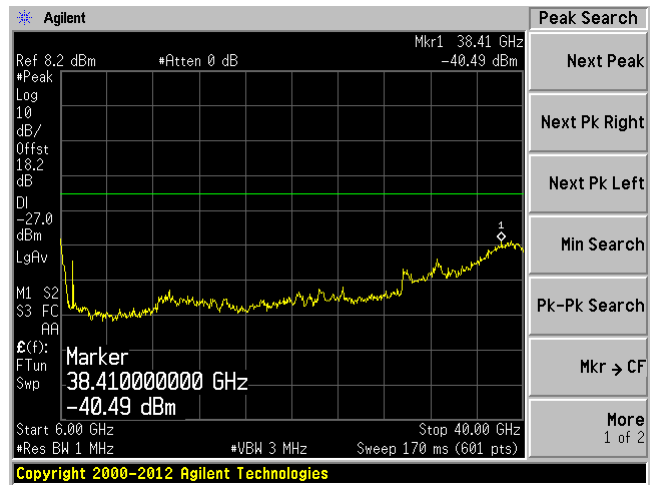
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

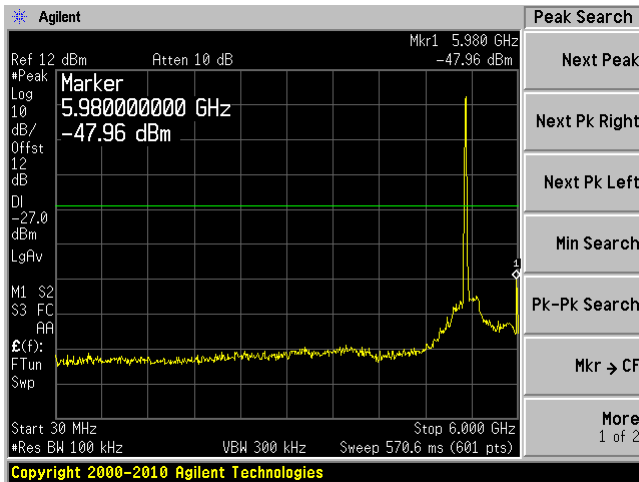


Chain J1, Plot: 6 GHz – 40 GHz

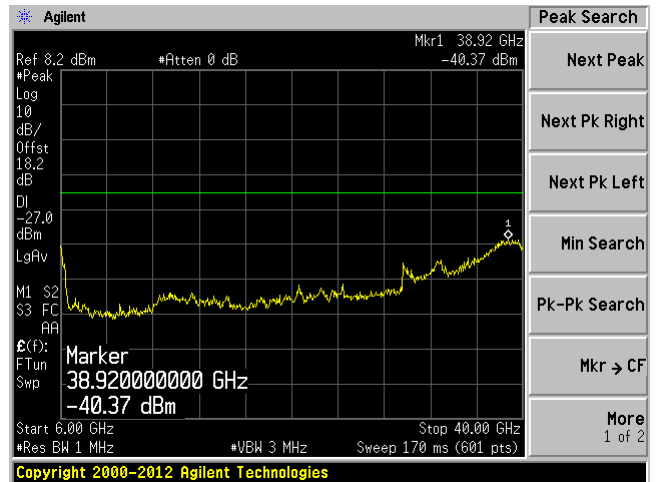


802.11n-HT20, High Channel, 5320 MHz

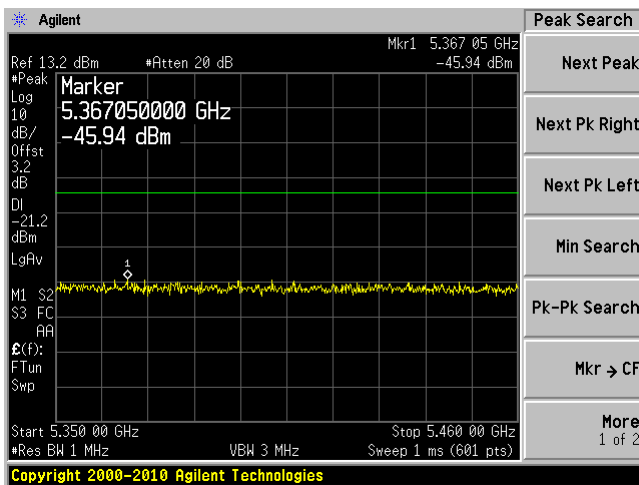
Chain J0, Plot: 30 MHz – 6 GHz



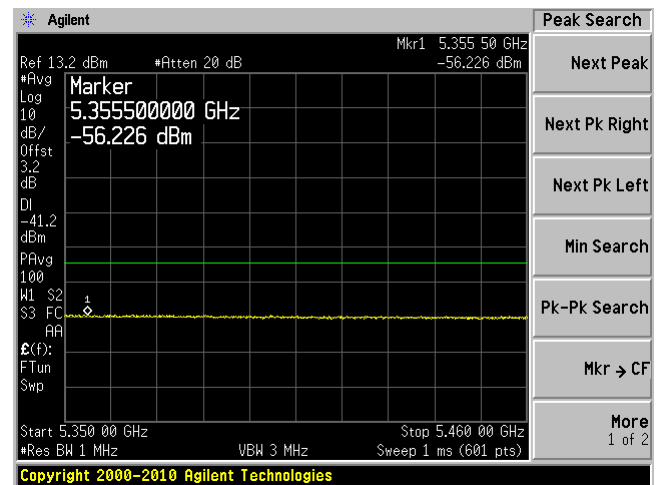
Chain J0, Plot: 6 GHz – 40 GHz



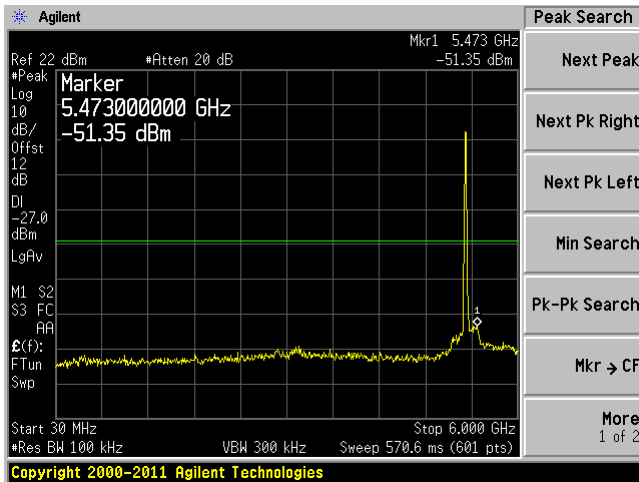
Chain J0, Plot: 5350MHz – 5460 MHz-Peak



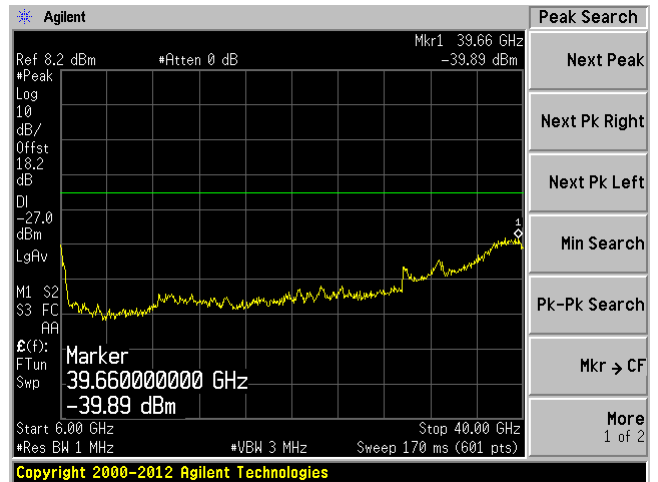
Chain J0, Plot: 5350MHz – 5460 MHz-Ave



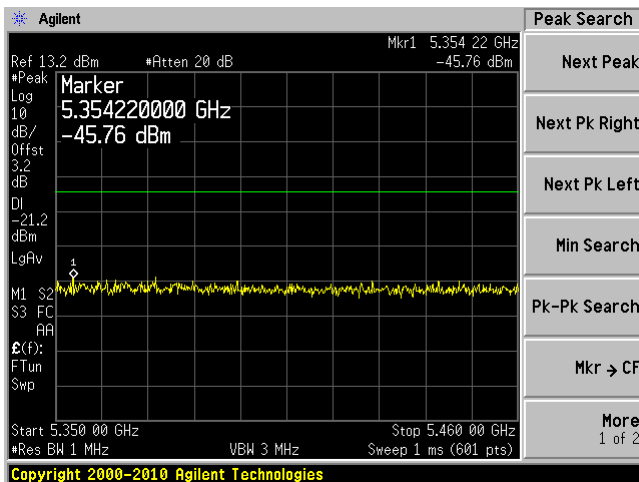
Chain J1, Plot: 30 MHz – 6 GHz



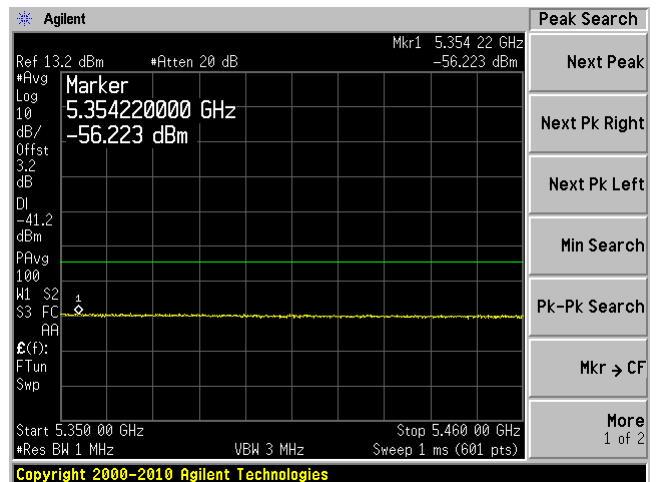
Chain J1, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 5350MHz – 5460 MHz-Peak

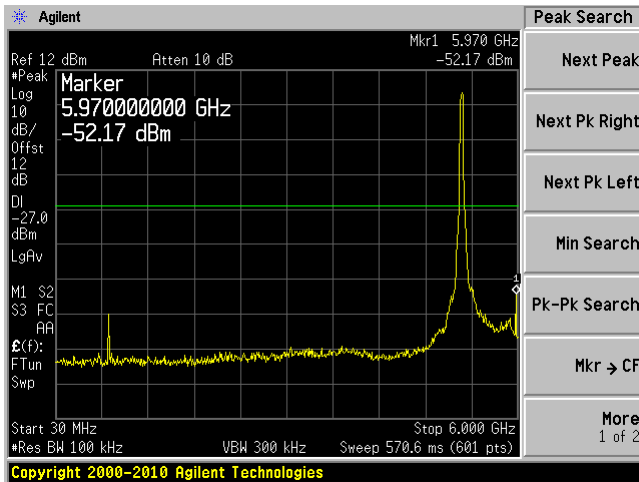


Chain J1, Plot: 5350MHz – 5460 MHz-Peak

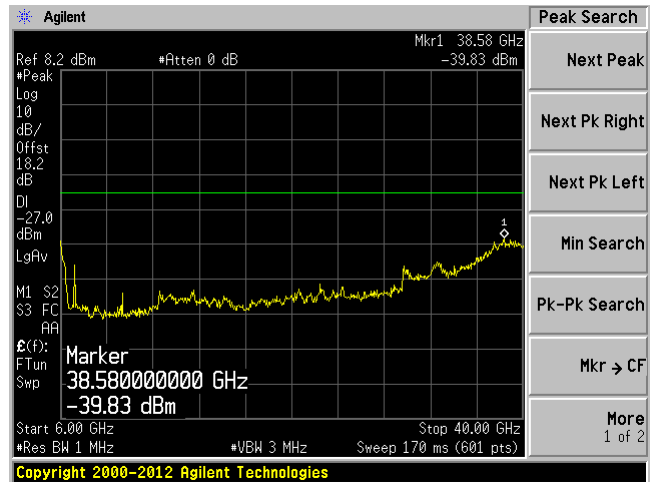


802.11n-HT40, Low Channel 5270 MHz

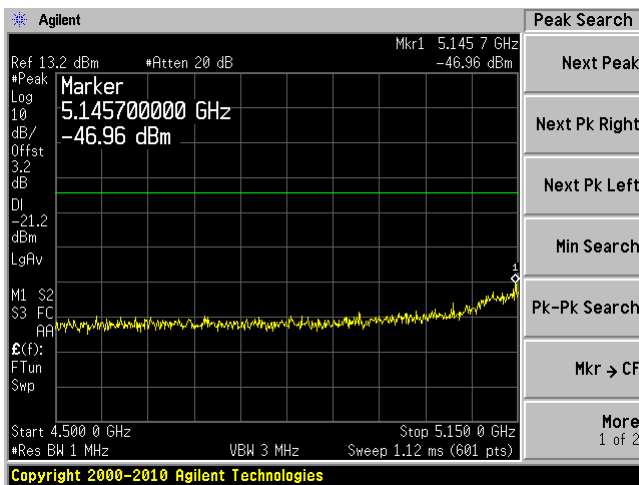
Chain J0, Plot: 30 MHz – 6 GHz



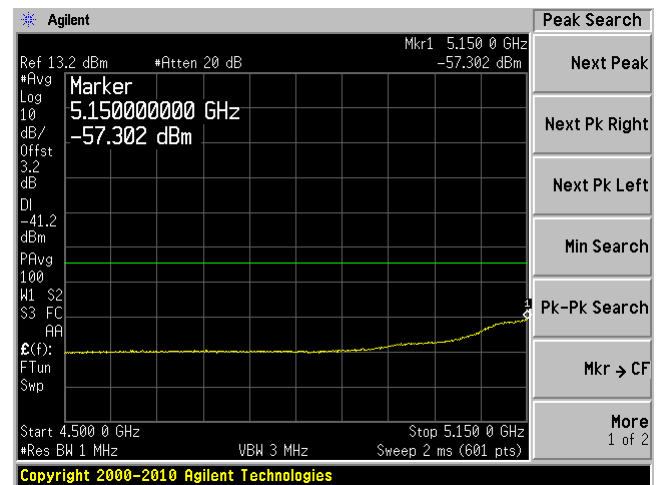
Chain J0, Plot: 6 GHz – 40 GHz



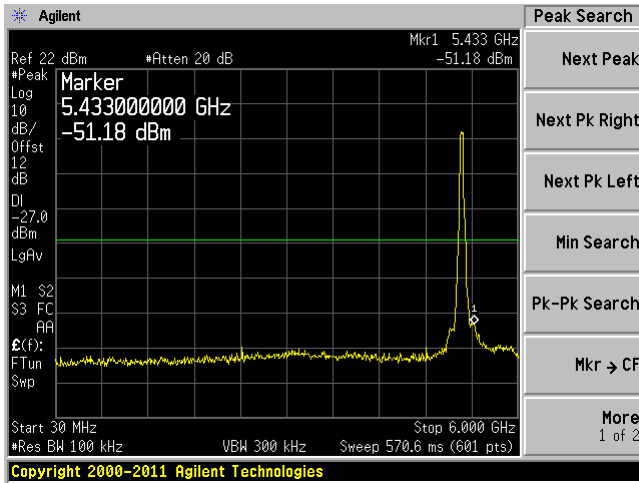
Chain J0, Plot: 4500 MHz – 5150 MHz-Peak



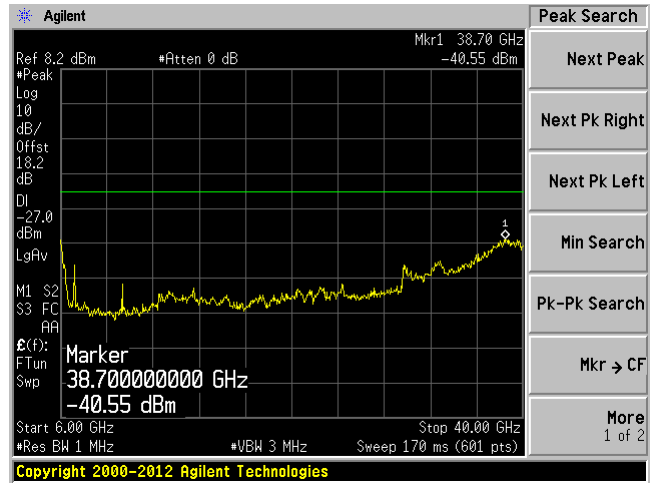
Chain J0, Plot: 4500 MHz – 5150 MHz-Ave



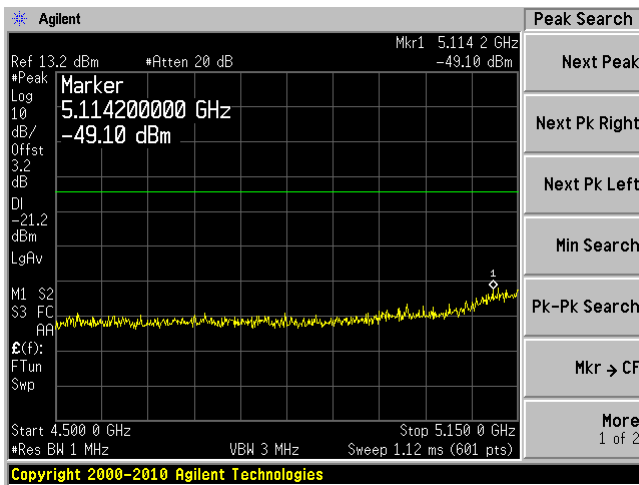
Chain J1, Plot: 30 MHz – 6 GHz



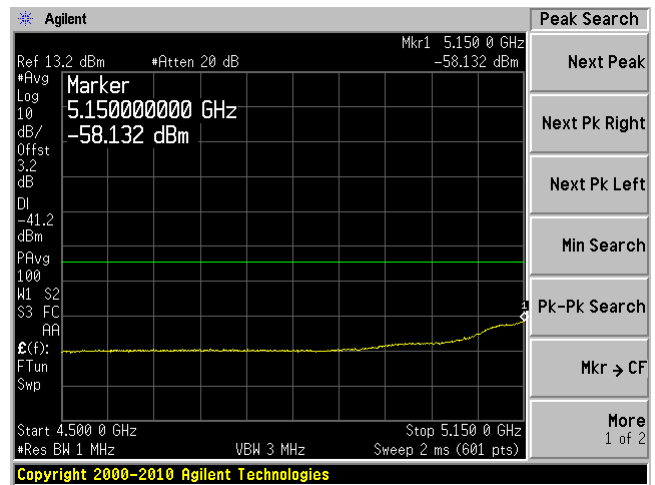
Chain J1, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 4500 MHz – 5150 MHz-Peak

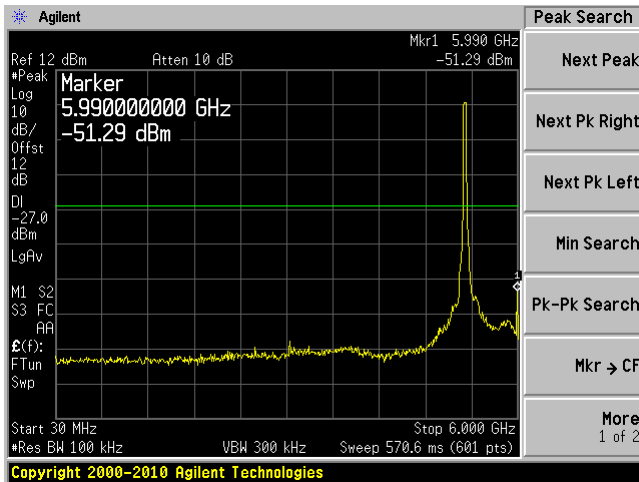


Chain J1, Plot: 4500 MHz – 5150 MHz-Ave

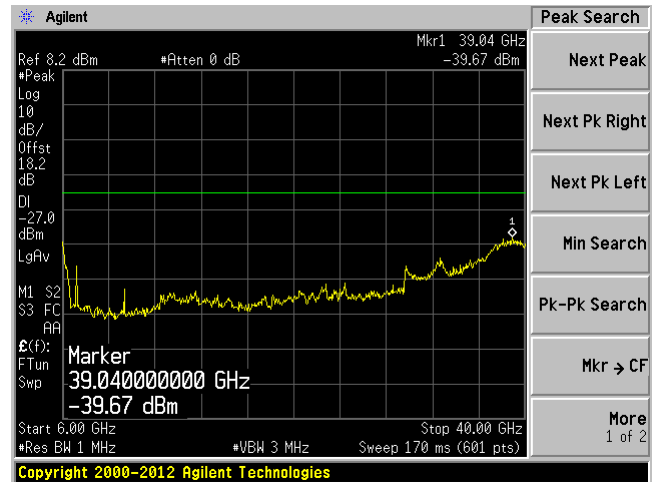


802.11n-HT40, High Channel 5310 MHz

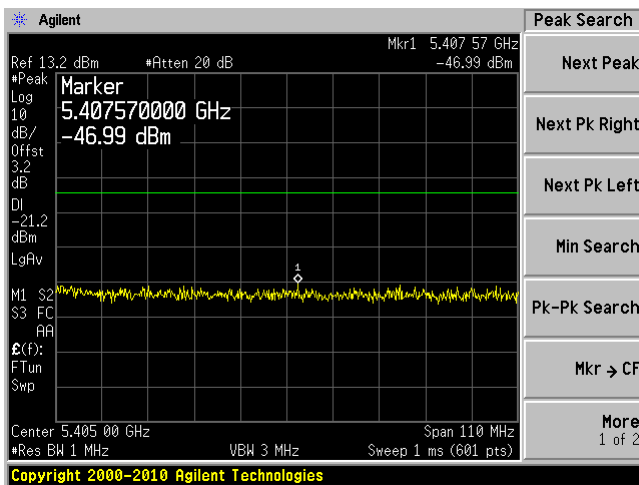
Chain J0, Plot: 30 MHz – 6 GHz



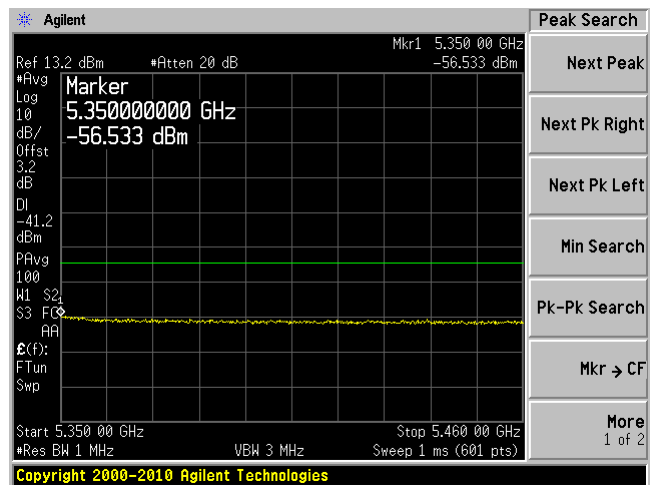
Chain J0, Plot: 6 GHz – 40 GHz



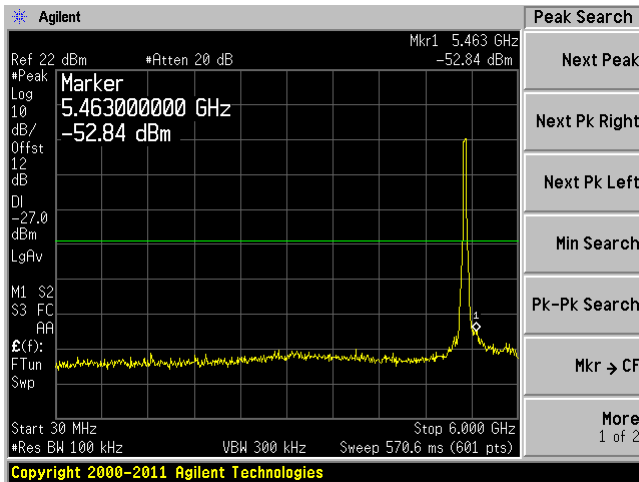
Chain J0, Plot: 5350MHz – 5460 MHz-Peak



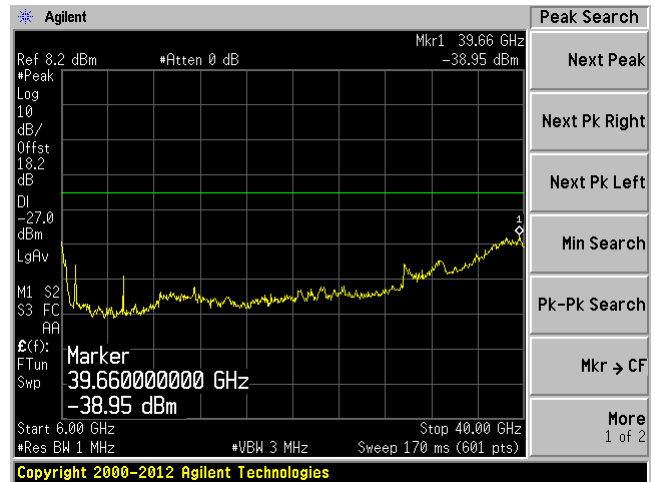
Chain J0, Plot: 5350MHz – 5460 MHz-Ave



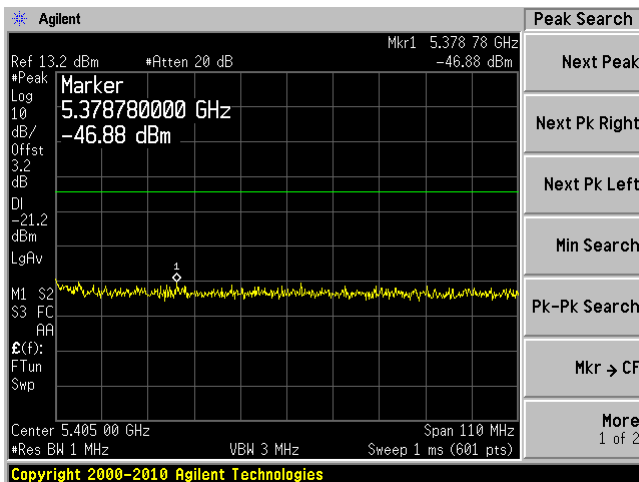
Chain J1, Plot: 30 MHz – 6 GHz



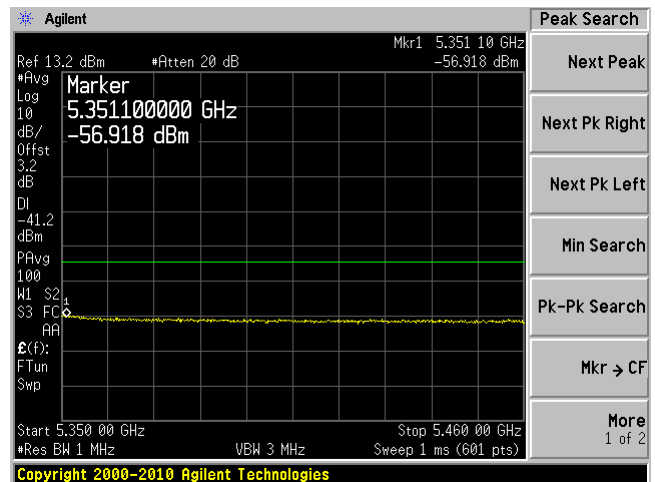
Chain J1, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 5350MHz – 5460 MHz-Peak

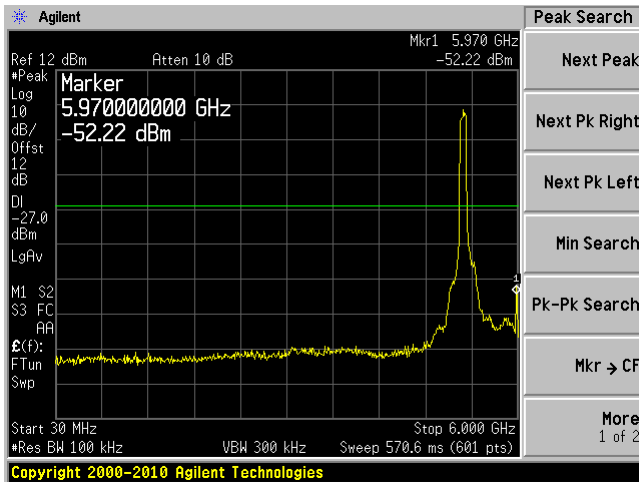


Chain J1, Plot: 5350MHz – 5460 MHz-Ave

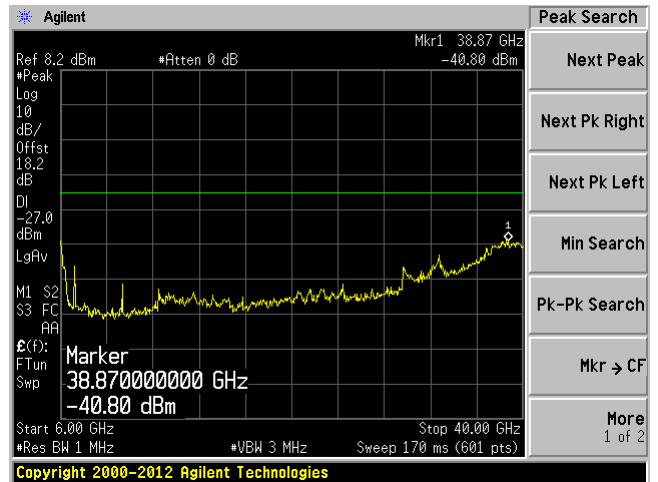


802.11ac-80, Channel 5290 MHz

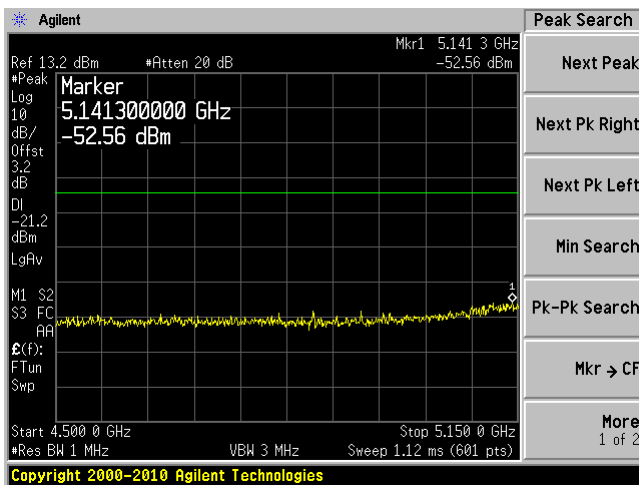
Chain J0, Plot: 30 MHz – 6 GHz



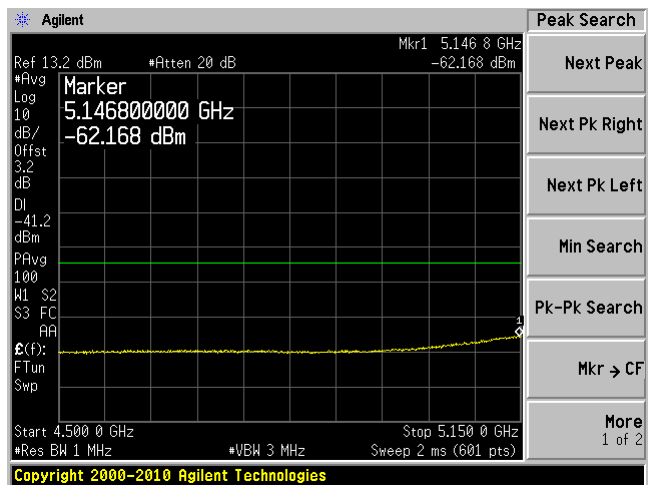
Chain J0, Plot: 6 GHz – 40 GHz



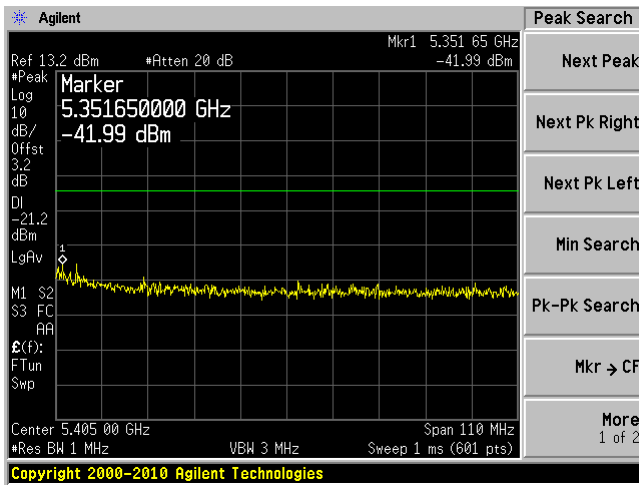
Chain J0, Plot: 4500MHz – 5150 MHz-Peak



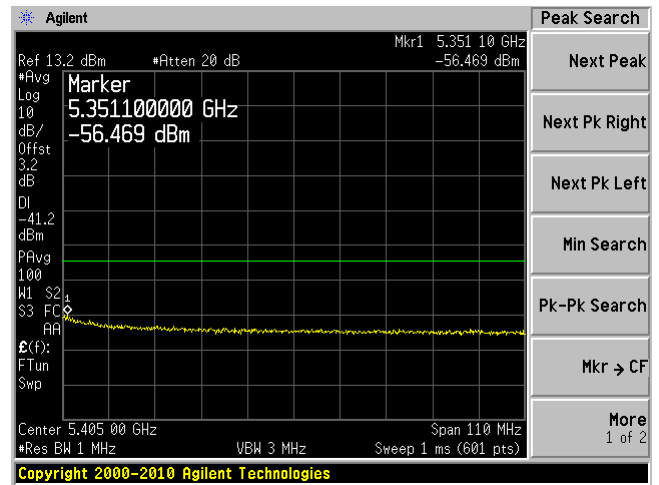
Chain J0, Plot: 4500MHz – 5150 MHz-Ave



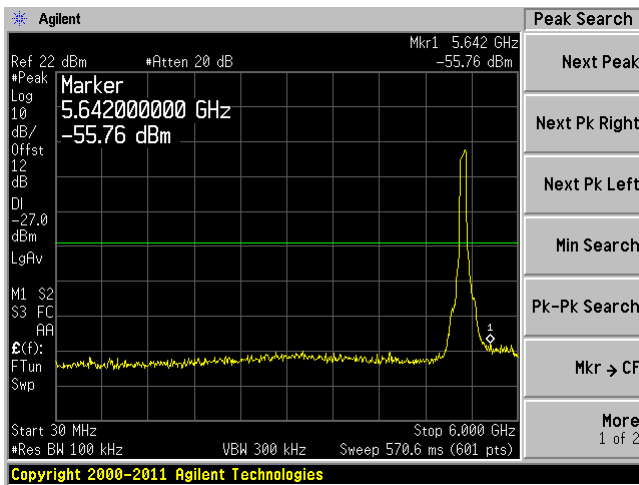
Chain J0, Plot: 5350MHz – 5460 MHz-Peak



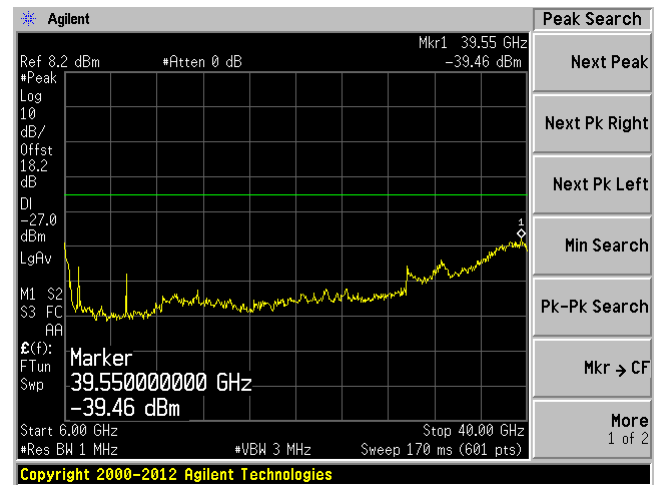
Chain J0, Plot: 5350MHz – 5460 MHz-Ave



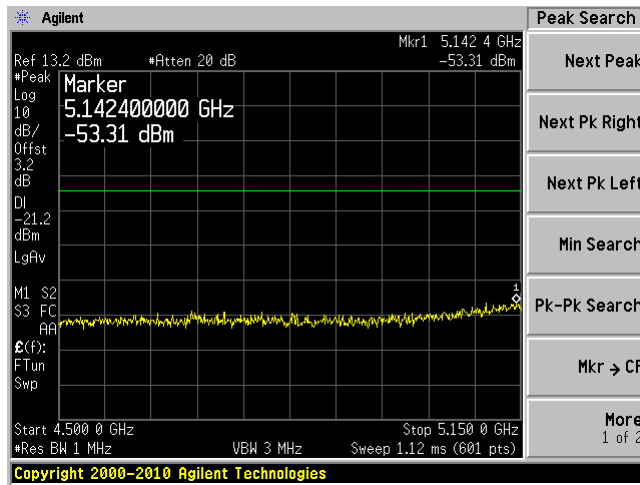
Chain J1, Plot: 30 MHz – 6 GHz



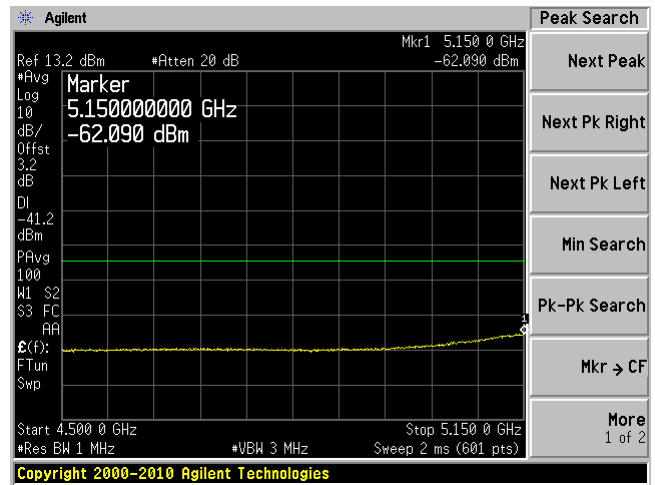
Chain J1, Plot: 6 GHz – 40 GHz



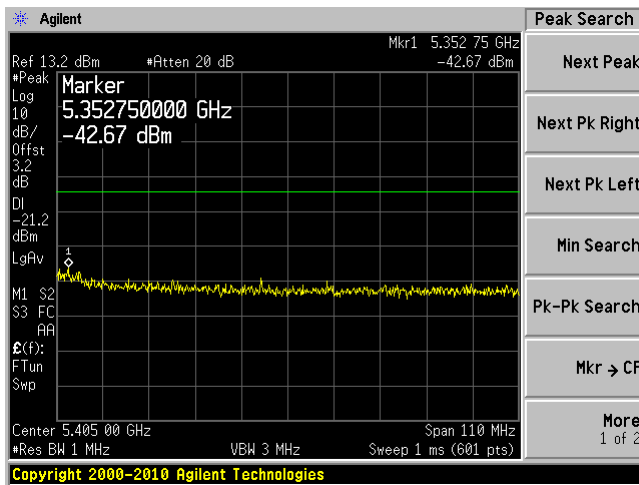
Chain J1, Plot: 4500MHz – 5150 MHz-Peak



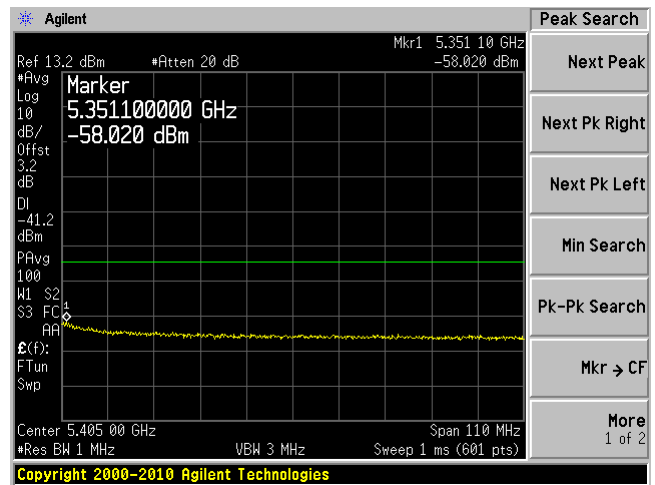
Chain J1, Plot: 4500MHz – 5150 MHz-Ave



Chain J1, Plot: 5350MHz – 5460 MHz-Peak



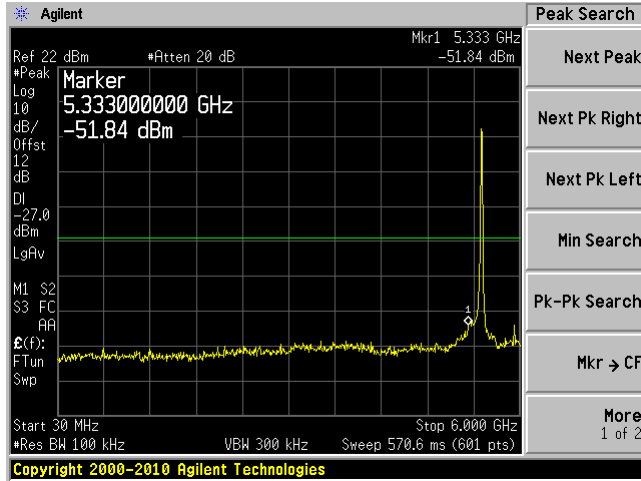
Chain J1, Plot: 5350MHz – 5460 MHz-Ave



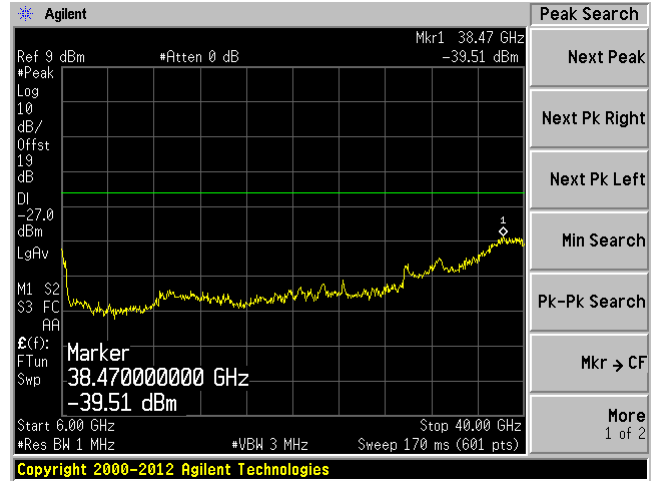
5470-5725 MHz

802.11a, Low Channel, 5500 MHz

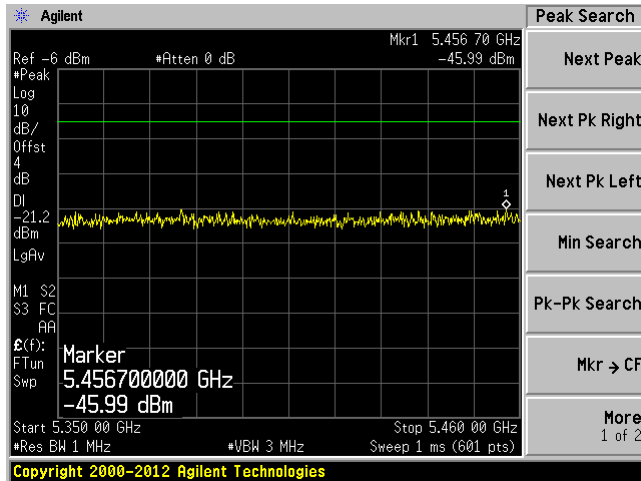
Chain J0, Plot: 30 MHz – 6 GHz



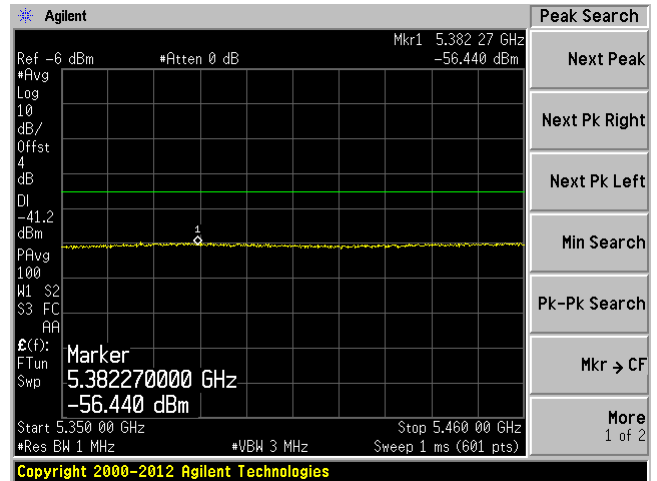
Chain J0, Plot: 6 GHz – 40 GHz



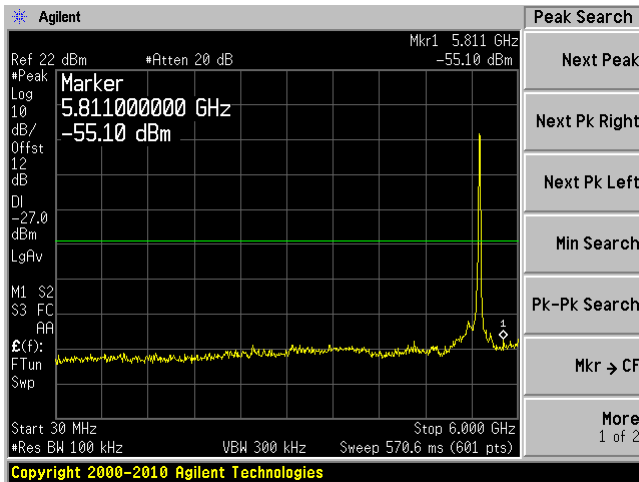
Chain J0, Plot: 5350MHz – 5460 MHz-Peak



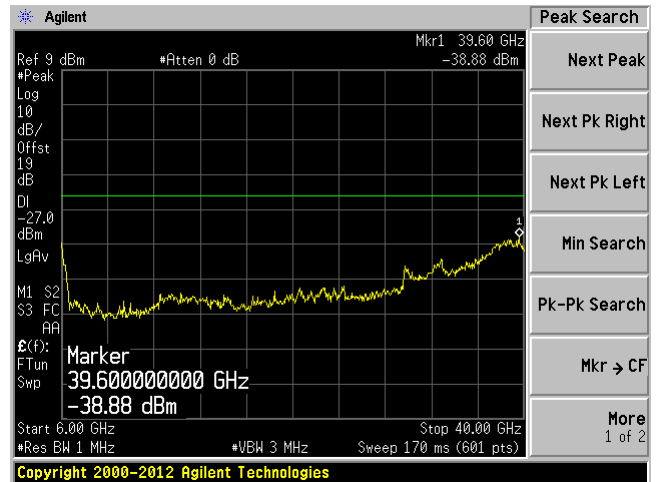
Chain J0, Plot: 5350MHz – 5460 MHz-Ave



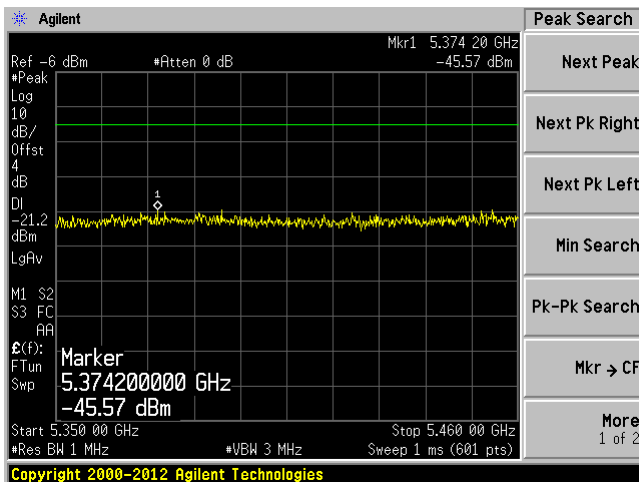
Chain J1, Plot: 30 MHz – 6 GHz



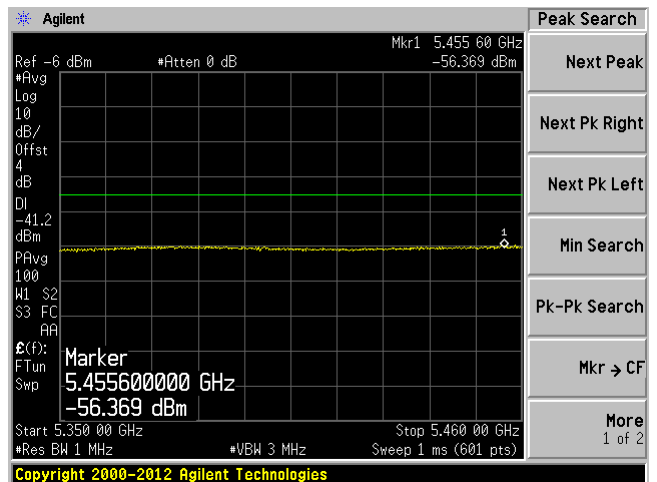
Chain J1, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 5350MHz – 5460 MHz-Peak

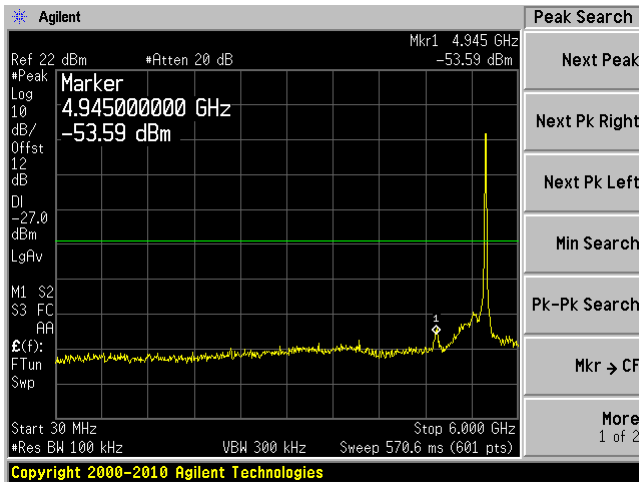


Chain J1, Plot: 5350MHz – 5460 MHz-Ave

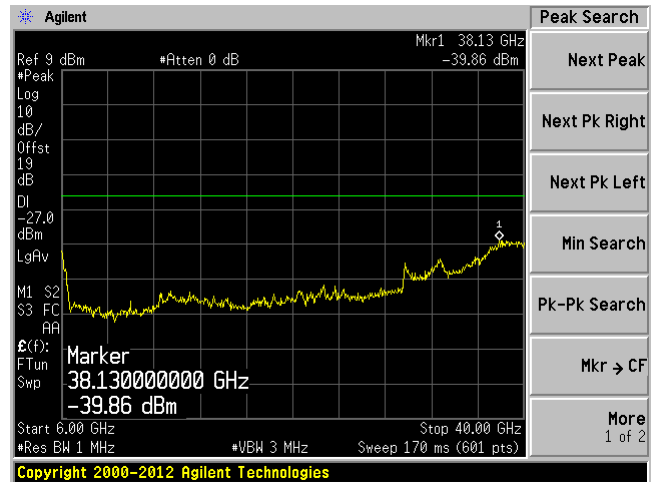


802.11a, Middle Channel, 5580 MHz

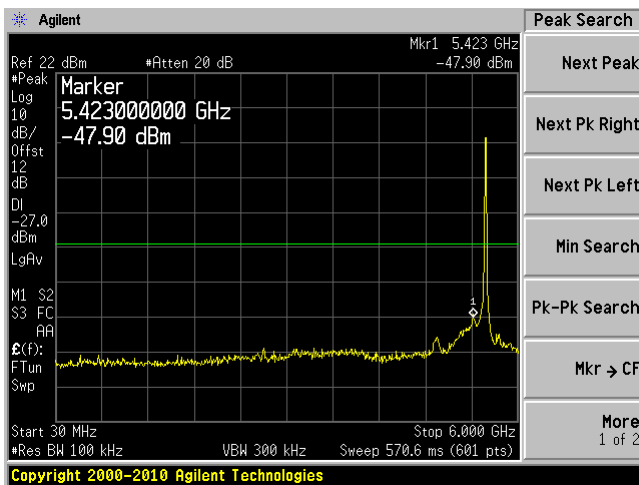
Chain J0, Plot: 30 MHz – 6 GHz



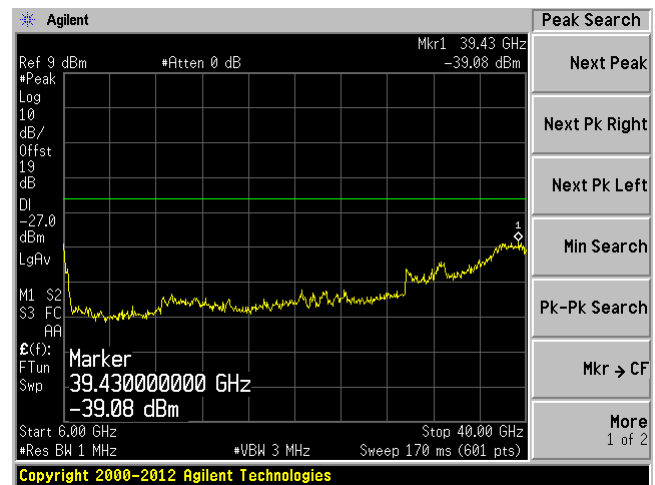
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

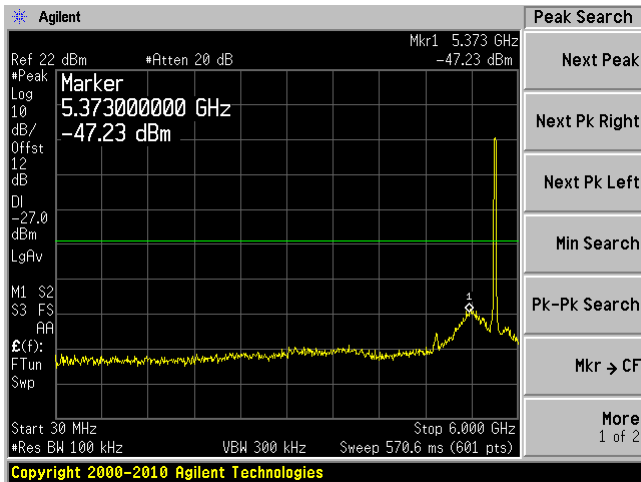


Chain J1, Plot: 6 GHz – 40 GHz

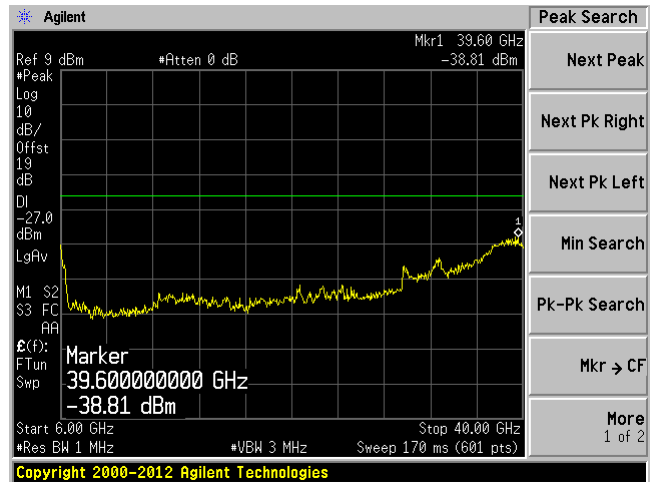


802.11a, High Channel, 5700 MHz

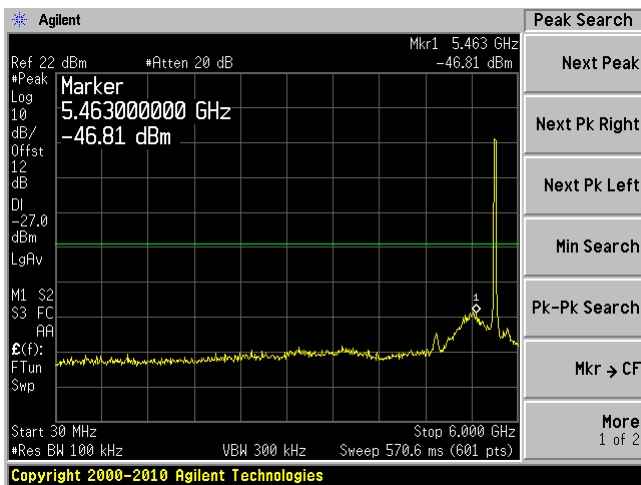
Chain J0, Plot: 30 MHz – 6 GHz



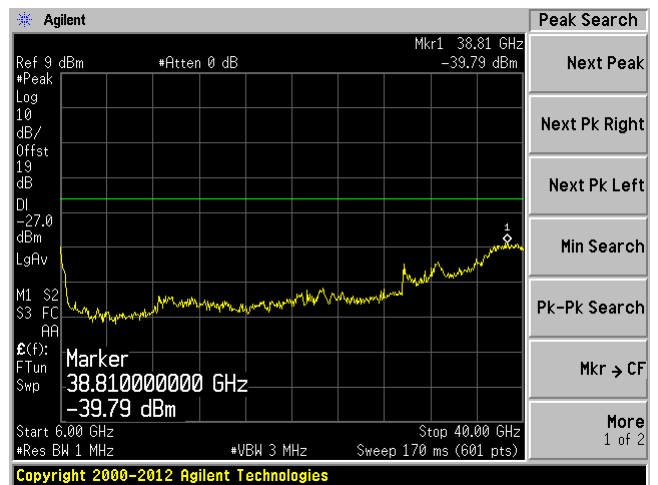
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

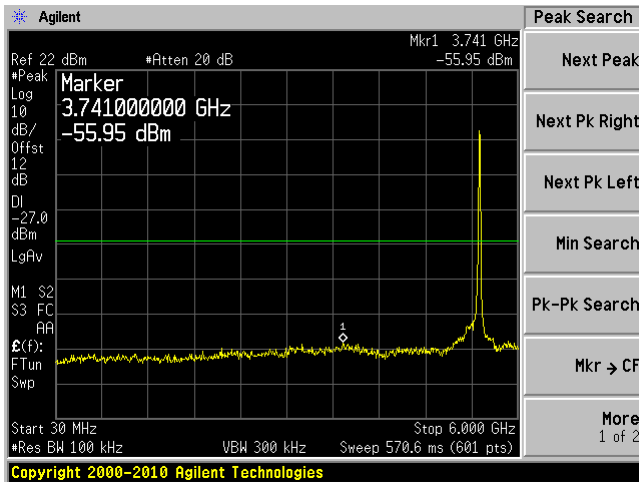


Chain J1, Plot: 6 GHz – 40 GHz

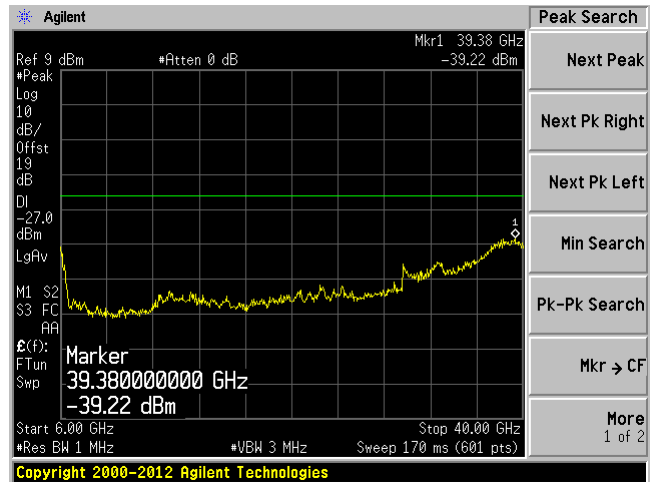


802.11n-HT 20, Low Channel 5500 MHz

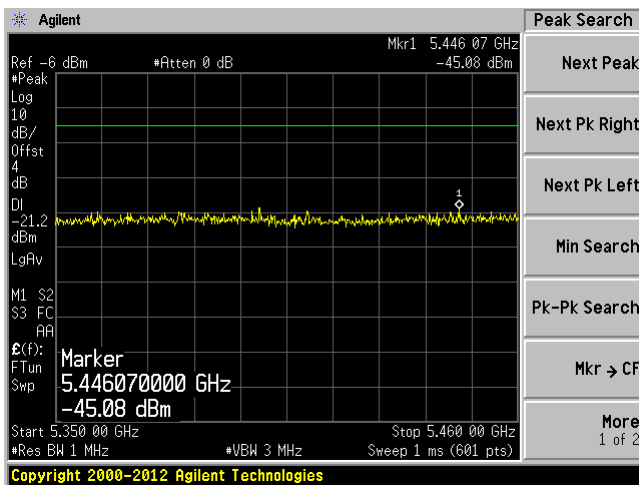
Chain J0, Plot: 30 MHz – 6 GHz



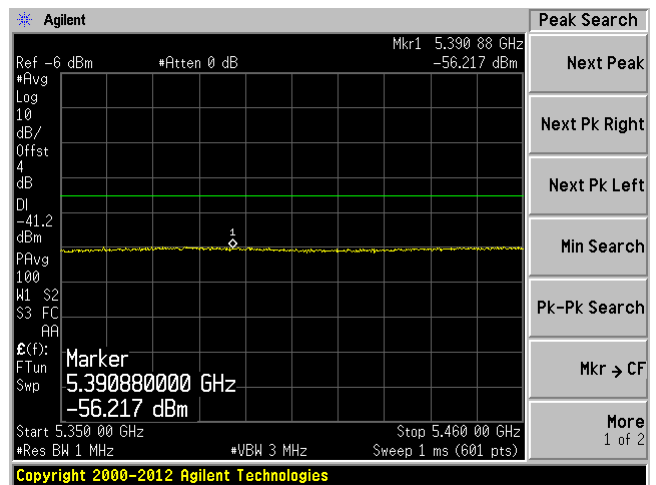
Chain J0, Plot: 6 GHz – 40 GHz



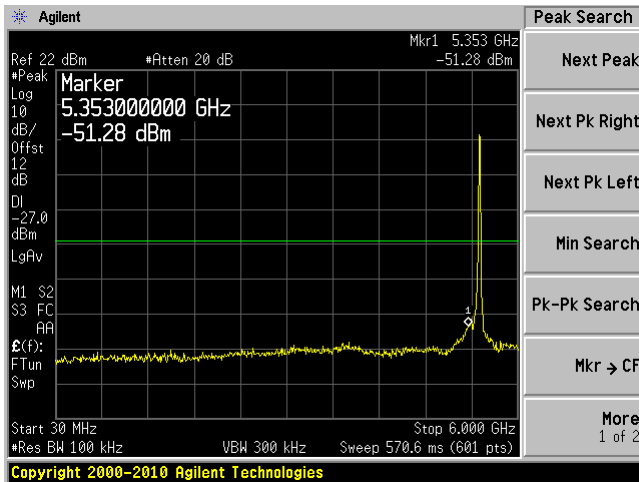
Chain J0, Plot: 5350MHz – 5460 MHz-Peak



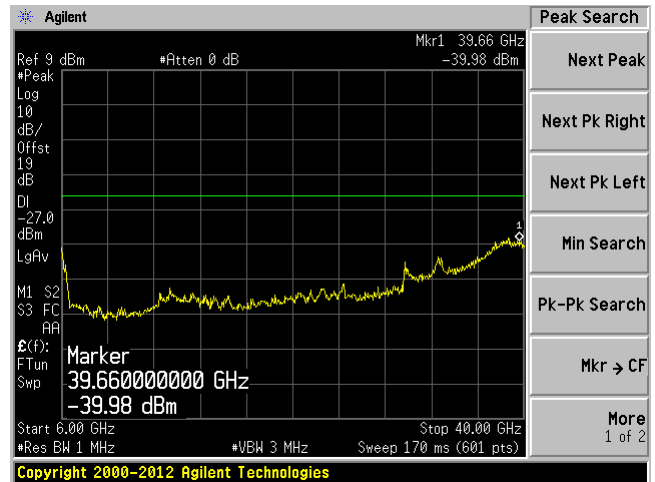
Chain J0, Plot: 5350MHz – 5460 MHz-Ave



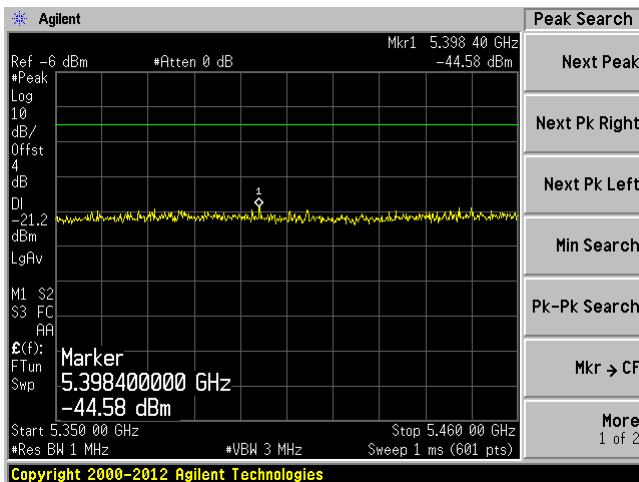
Chain J1, Plot: 30 MHz – 6 GHz



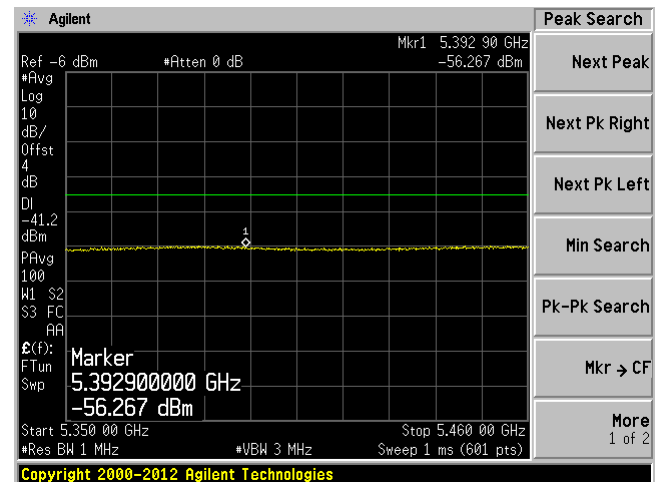
Chain J1, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 5350MHz – 5460 MHz-Peak

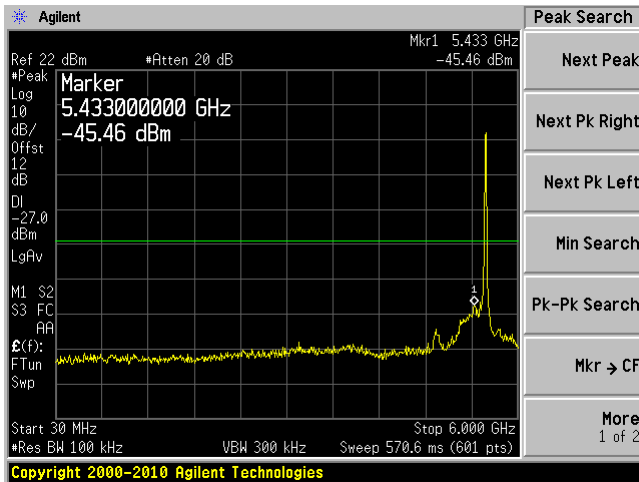


Chain J1, Plot: 5350MHz – 5460 MHz-Ave

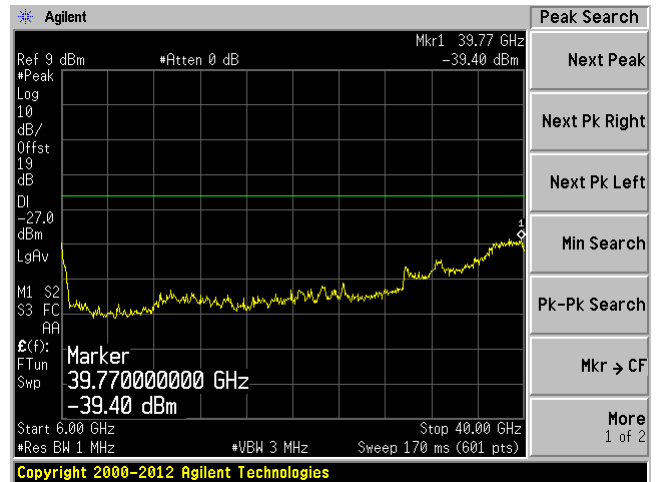


802.11n-HT20, Middle Channel 5580 MHz

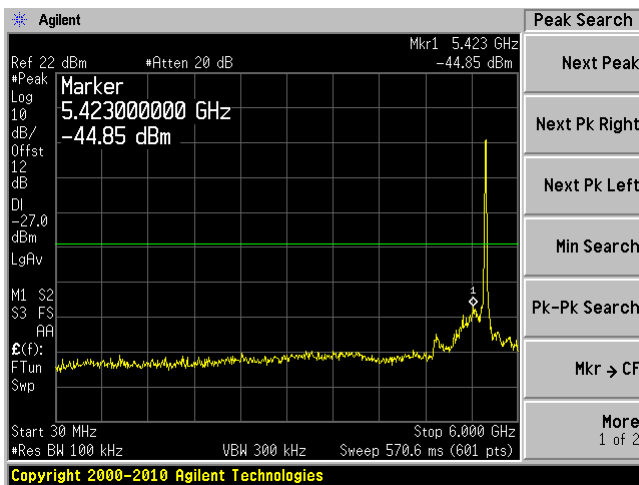
Chain J0, Plot: 30 MHz – 6 GHz



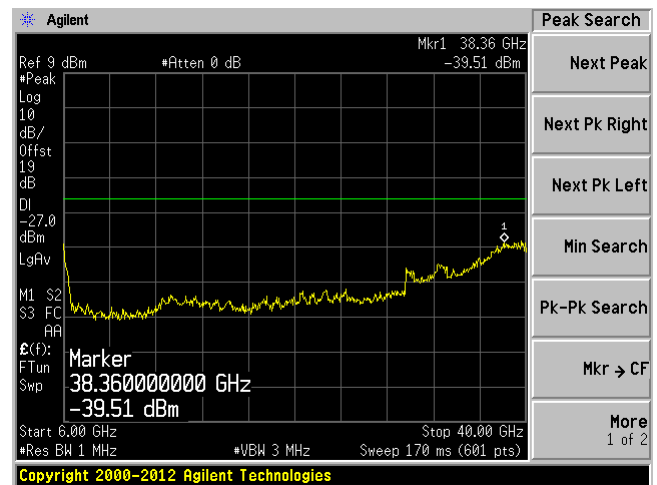
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

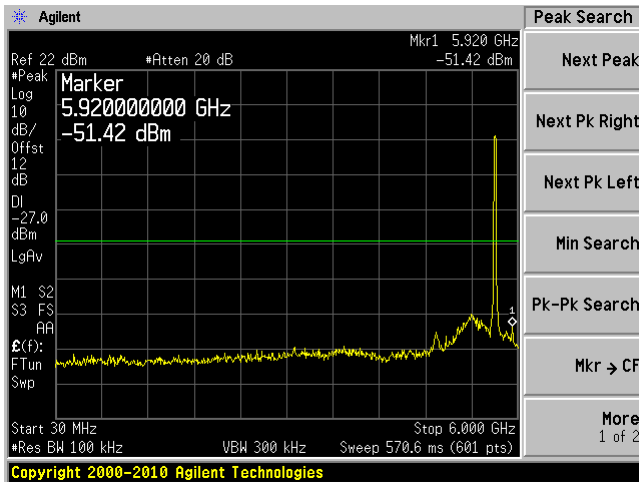


Chain J1, Plot: 6 GHz – 40 GHz

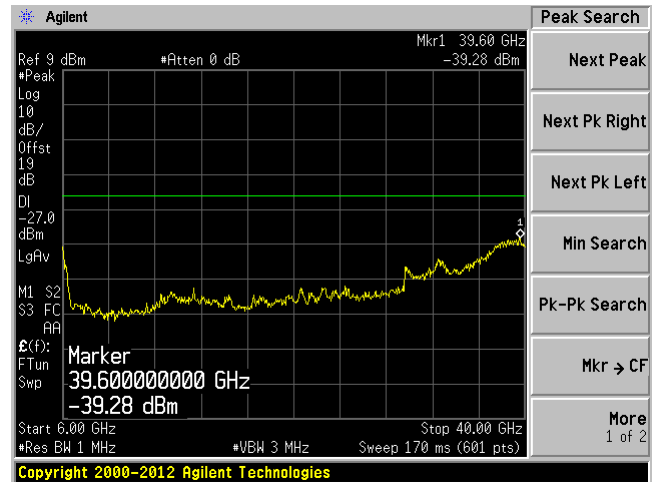


802.11n-HT20, High Channel 5700 MHz

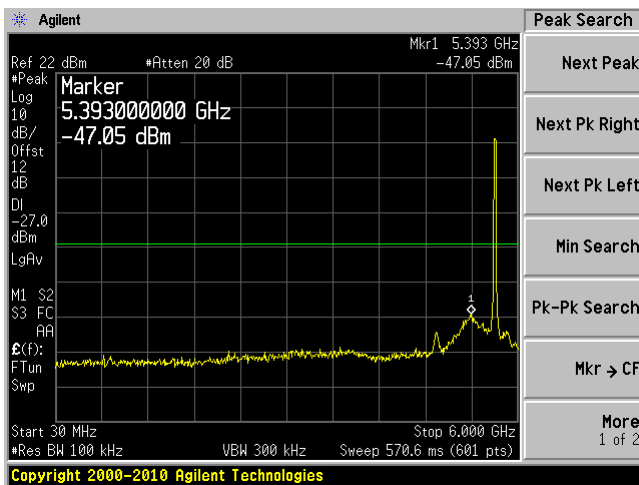
Chain J0, Plot: 30 MHz – 6 GHz



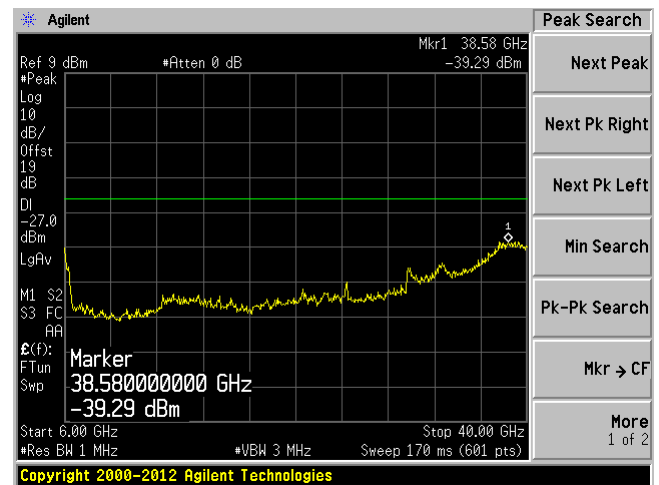
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

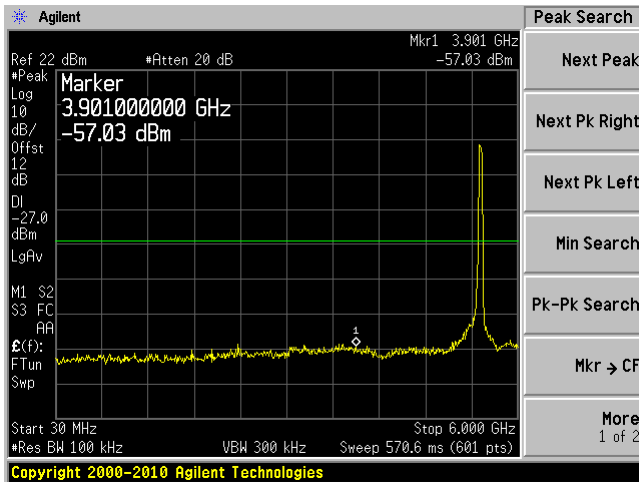


Chain J1, Plot: 6 GHz – 40 GHz

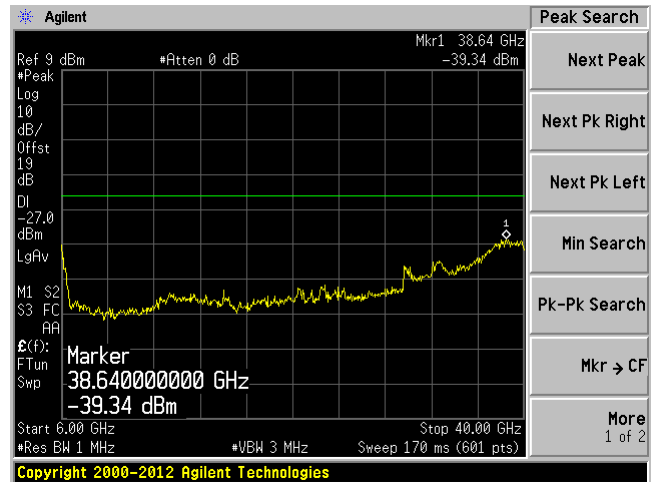


802.11n-HT40, Low Channel 5510 MHz

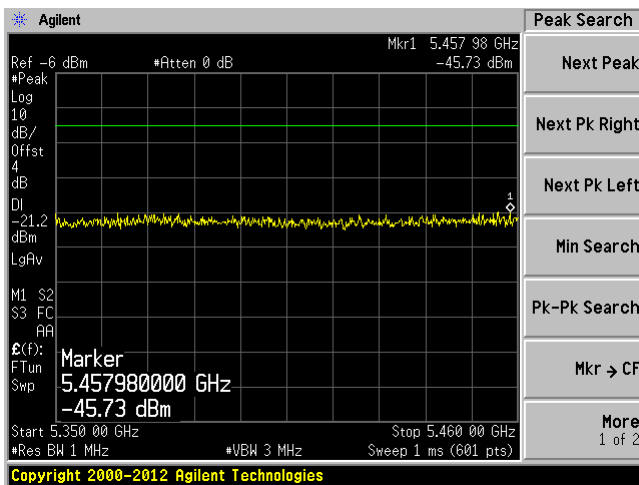
Chain J0, Plot: 30 MHz – 6 GHz



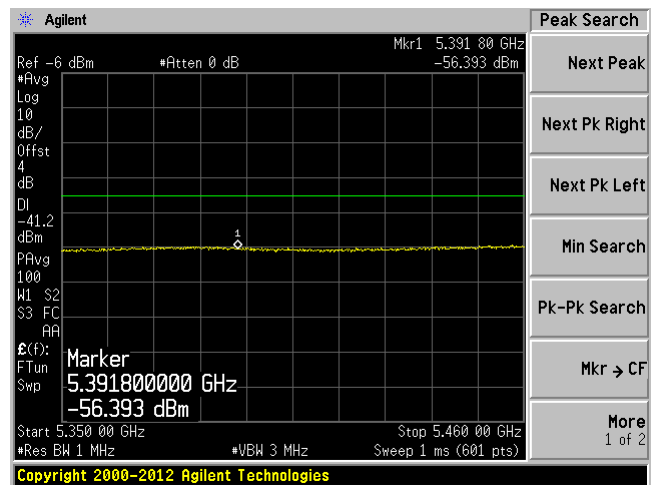
Chain J0, Plot: 6 GHz – 40 GHz



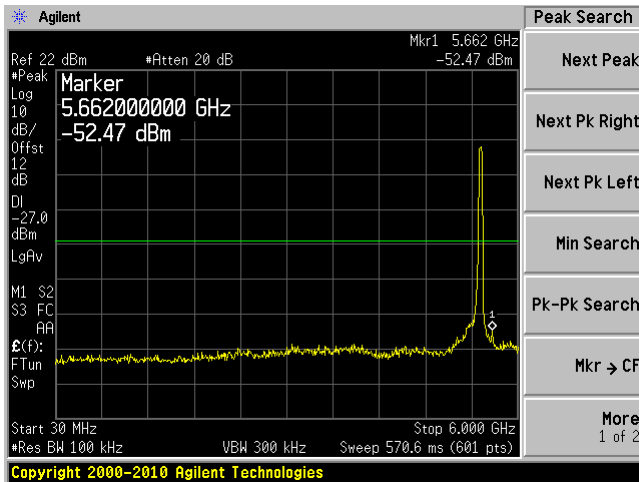
Chain J0, Plot: 5350MHz – 5460 MHz-Peak



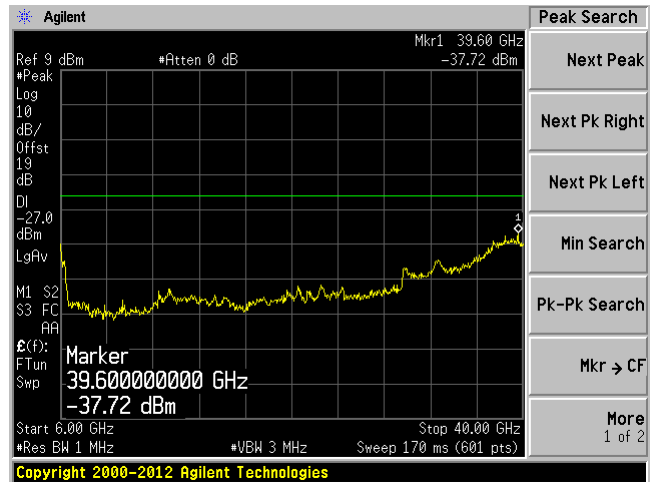
Chain J0, Plot: 5350MHz – 5460 MHz-Ave



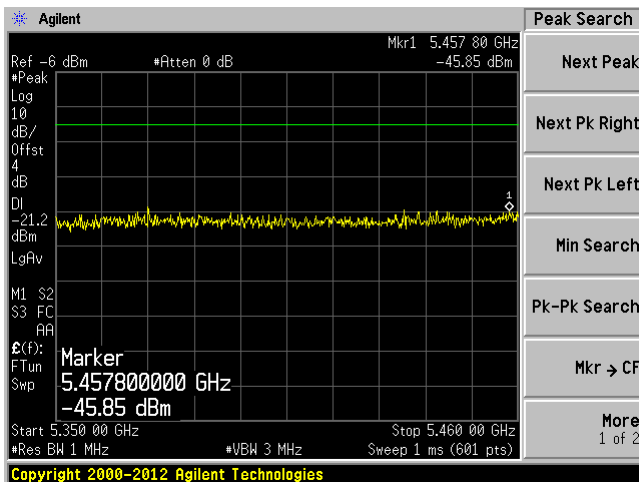
Chain J1, Plot: 30 MHz – 6 GHz



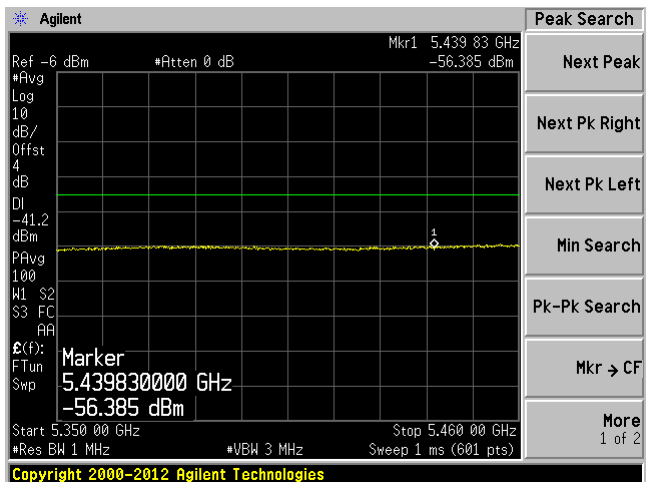
Chain J1, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 5350MHz – 5460 MHz-Peak

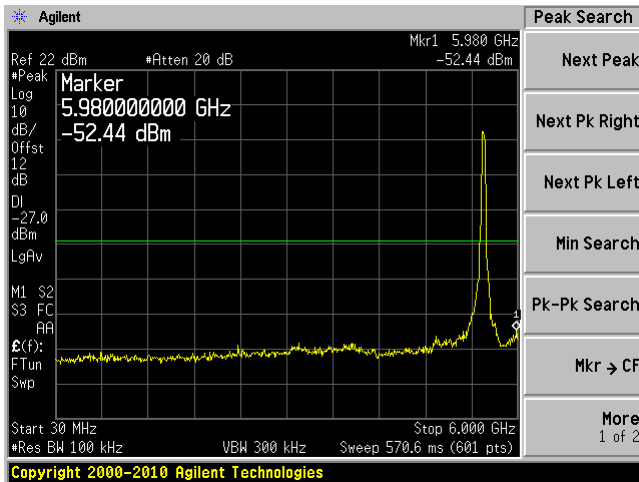


Chain J1, Plot: 5350MHz – 5460 MHz-Ave

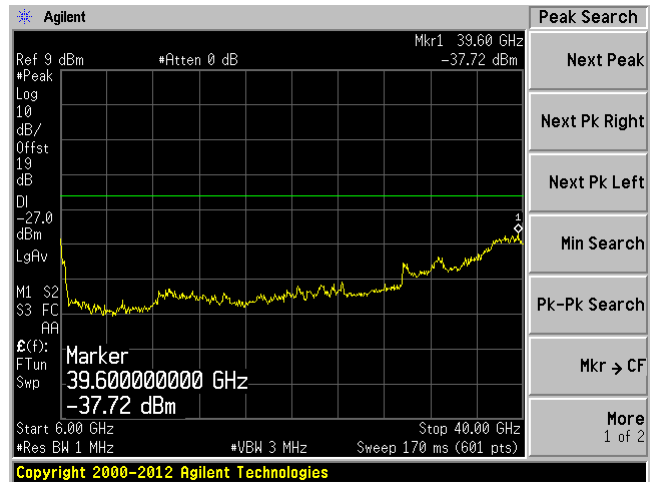


802.11n-HT40, Middle Channel 5550 MHz

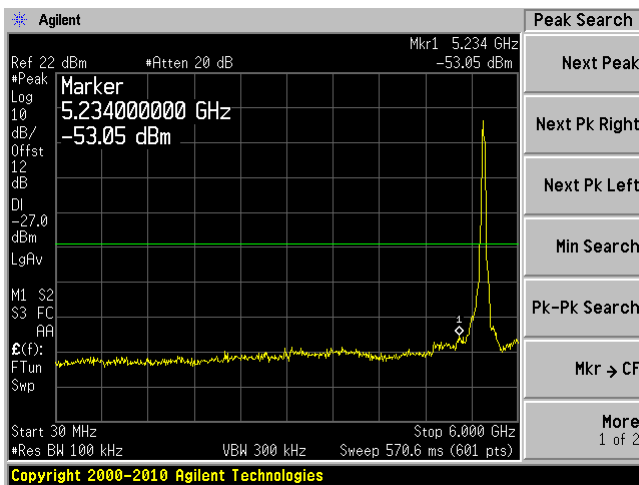
Chain J0, Plot: 30 MHz – 6 GHz



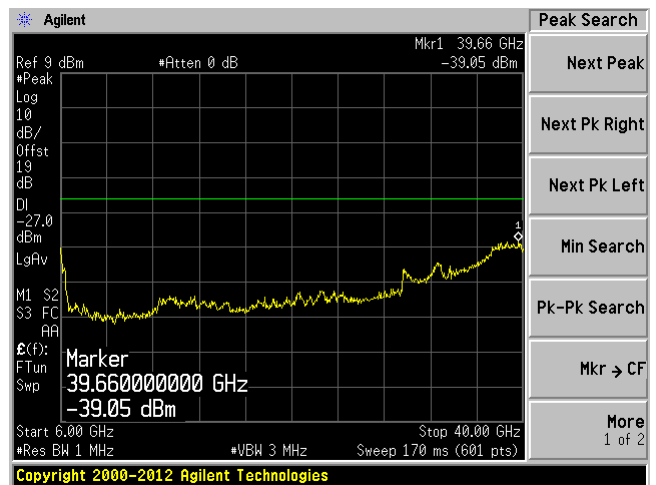
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

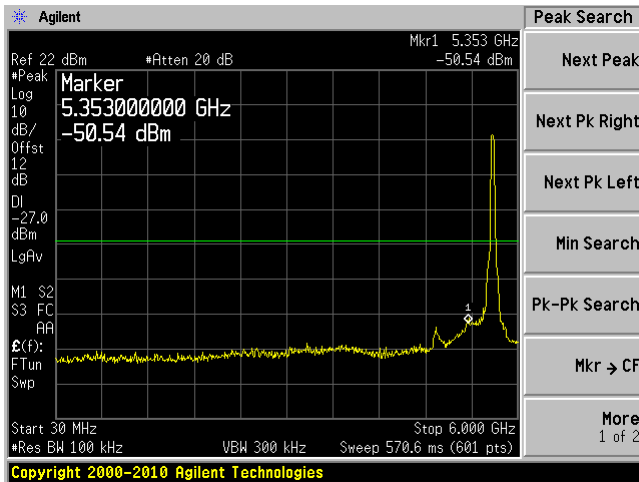


Chain J1, Plot: 6 GHz – 40 GHz

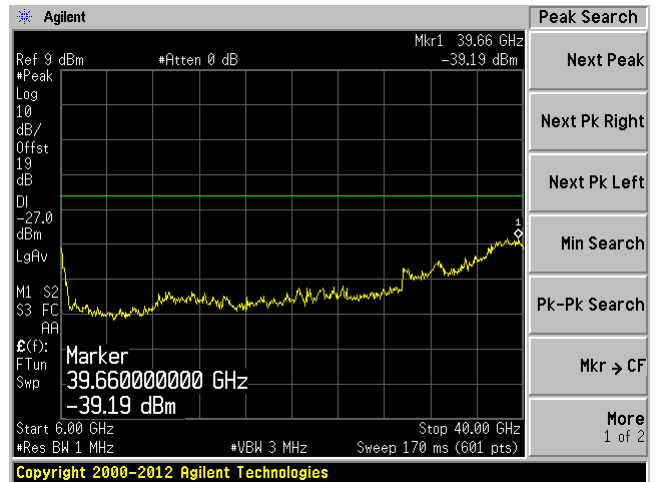


802.11n-HT40, High Channel 5670 MHz

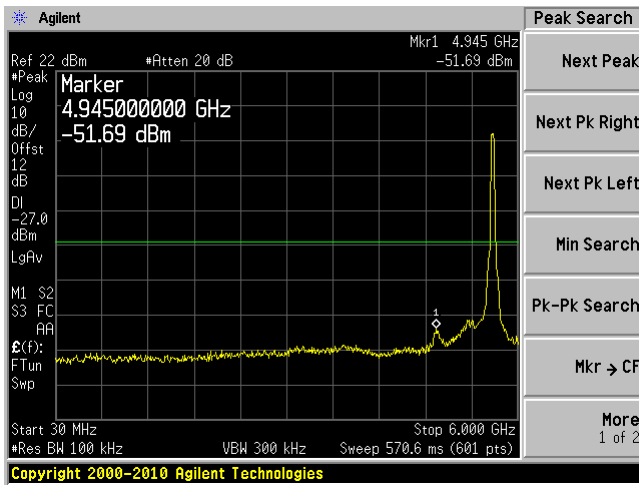
Chain J0, Plot: 30 MHz – 6 GHz



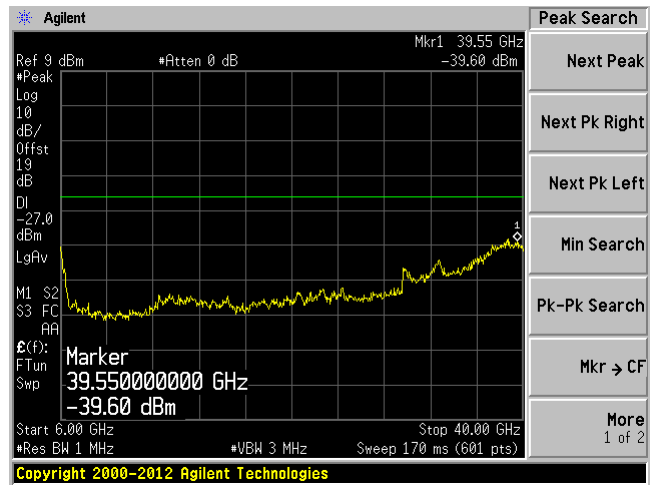
Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz

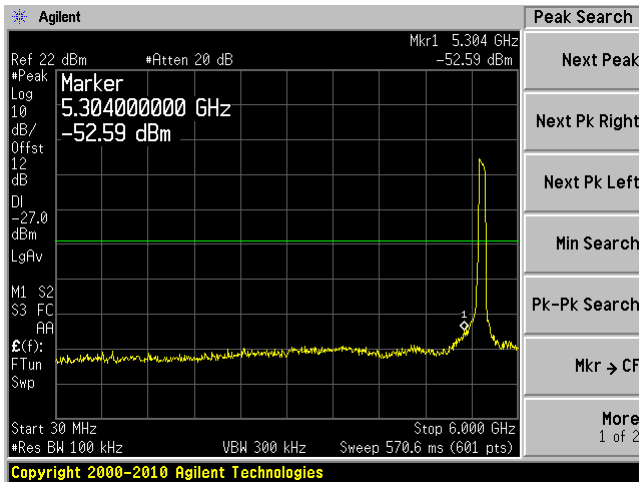


Chain J1, Plot: 6 GHz – 40 GHz

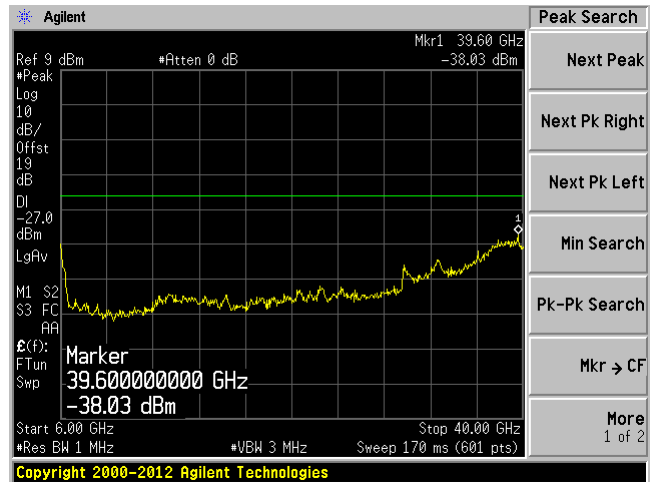


802.11ac-80, Low Channel 5530 MHz

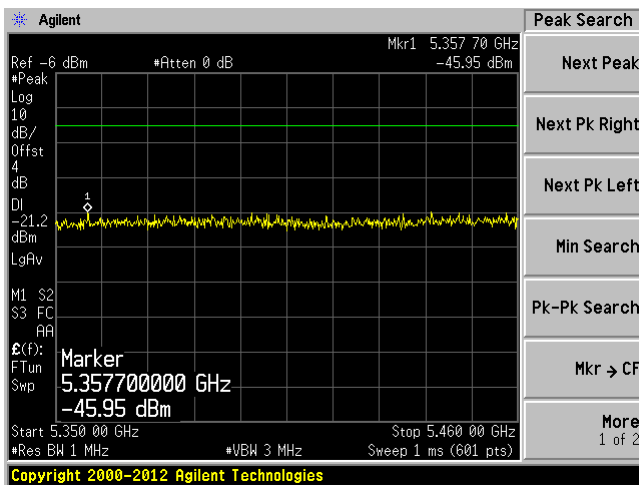
Chain J0, Plot: 30 MHz – 6 GHz



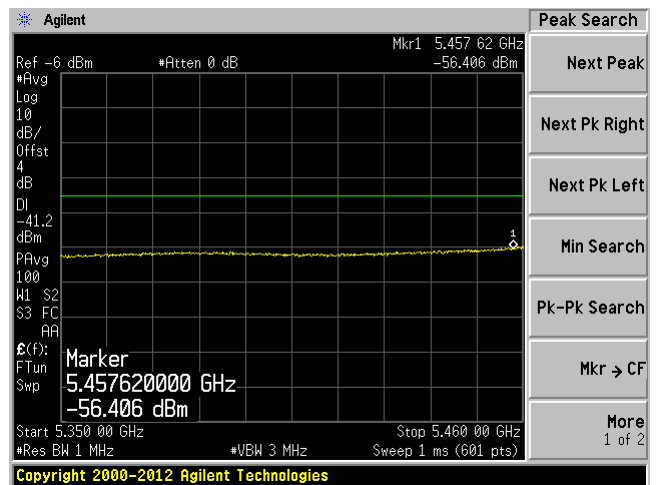
Chain J0, Plot: 6 GHz – 40 GHz



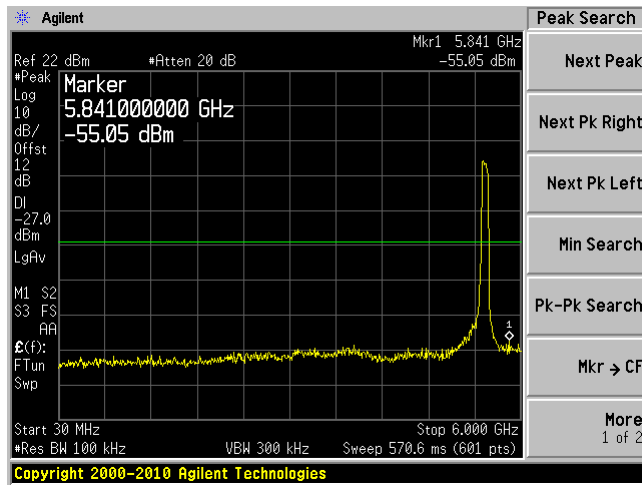
Chain J0, Plot: 5350MHz – 5460 MHz-Peak



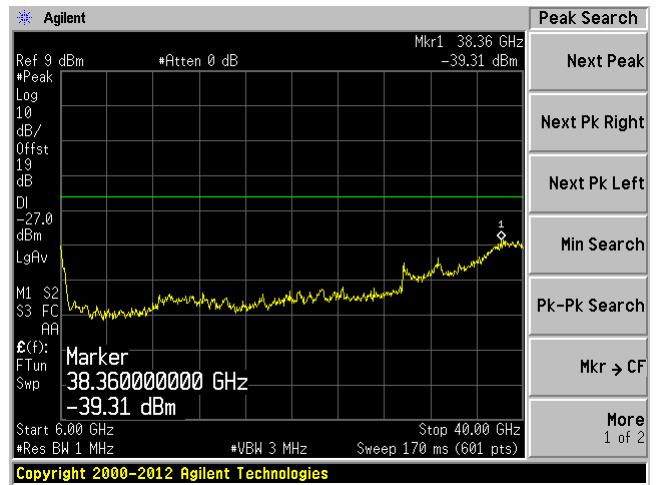
Chain J0, Plot: 5350MHz – 5460 MHz-Ave



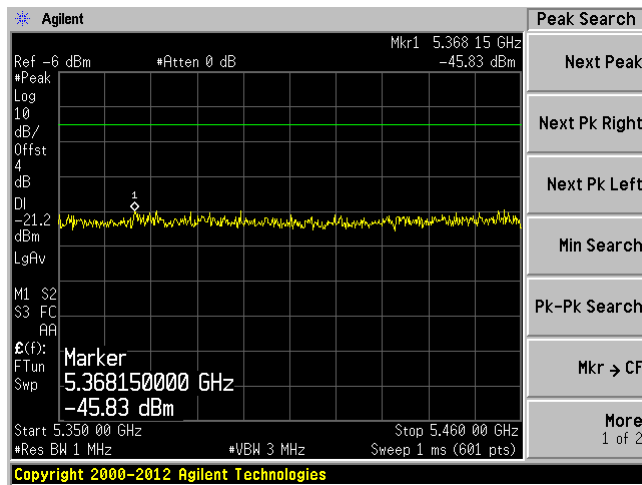
Chain J1, Plot: 30 MHz – 6 GHz



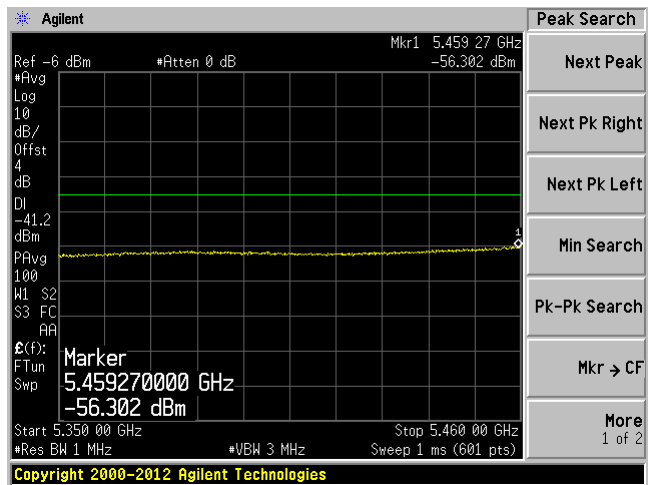
Chain J1, Plot: 6 GHz – 40 GHz



Chain J0, Plot: 5350MHz – 5460 MHz-Peak

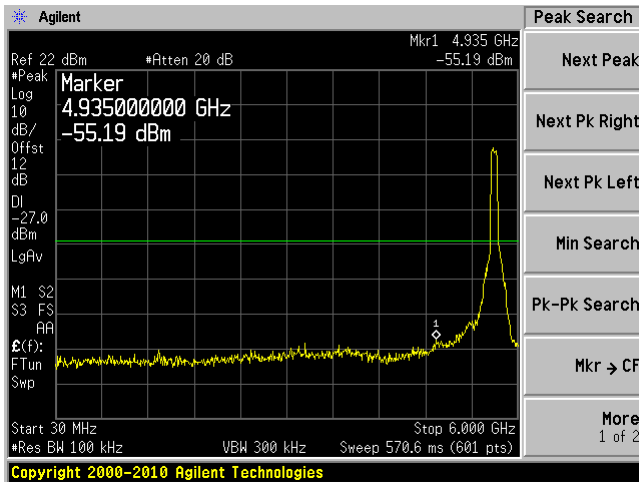


Chain J0, Plot: 5350MHz – 5460 MHz-Ave

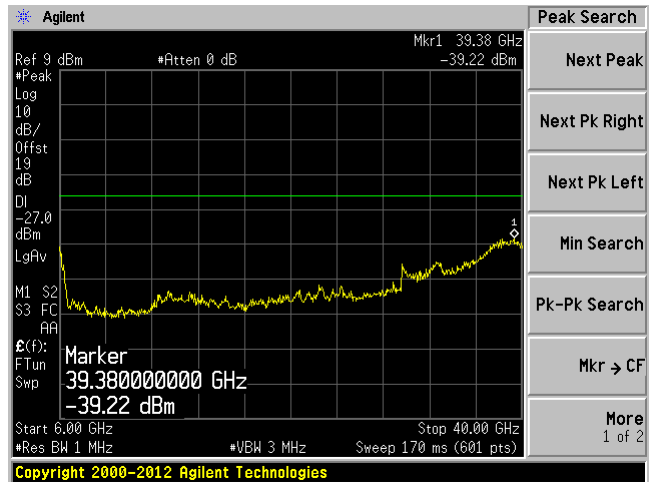


802.11ac-80, High Channel 5690 MHz

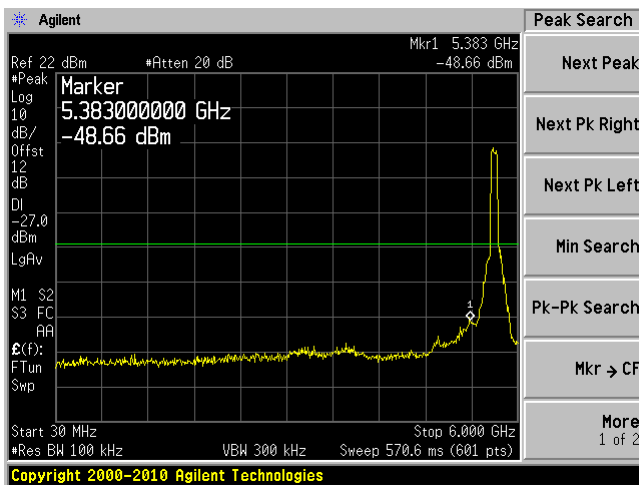
Chain J0, Plot: 30 MHz – 6 GHz



Chain J0, Plot: 6 GHz – 40 GHz



Chain J1, Plot: 30 MHz – 6 GHz



Chain J1, Plot: 6 GHz – 40 GHz

