





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

For

Exalt Communications Inc.

580 Division Street,
Campbell, CA 95008, USA

FCC ID: TTM-105P25U
IC: 6254A-105P25U

Report Type: Class II Permissive Change	Product Type: 802.11 WLAN Module
Test Engineers: Jeffrey Wu	
Report Number: R1302222-407 W5356	
Report Date: 2013-08-15	
Reviewed By: Victor Zhang EMC/RF Lead	
Bay Area Compliance Laboratories Corp. 1274 Anvilwood Avenue, Sunnyvale, CA 94089, USA Tel: (408) 732-9162 Fax: (408) 732-9164	

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report **must not** be used by the customer to claim product certification, approval, or endorsement by A2LA* or any agency of the Federal Government.

* This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "*" (Rev.3)

TABLE OF CONTENTS

1	GENERAL DESCRIPTION.....	6
1.1	PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....	6
1.2	MECHANICAL DESCRIPTION OF EUT.....	6
1.3	OBJECTIVE.....	6
1.4	RELATED SUBMITTAL(S)/GRANT(S).....	6
1.5	TEST METHODOLOGY.....	6
1.6	MEASUREMENT UNCERTAINTY.....	6
1.7	TEST FACILITY.....	7
2	EUT TEST CONFIGURATION.....	9
2.1	JUSTIFICATION.....	9
2.2	EUT EXERCISE SOFTWARE.....	9
2.3	EQUIPMENT MODIFICATIONS.....	9
2.4	SPECIAL ACCESSORIES.....	9
2.5	LOCAL SUPPORT EQUIPMENT.....	9
2.6	EUT INTERNAL CONFIGURATION DETAILS.....	9
2.7	INTERFACE PORTS AND CABLES.....	9
2.8	POWER SUPPLY LIST AND DETAILS.....	9
3	SUMMARY OF TEST RESULTS.....	10
4	FCC §15.407(F), §2.1091 & IC RSS-102 - RF EXPOSURE.....	11
4.1	APPLICABLE STANDARD.....	11
4.2	MPE PREDICTION.....	12
4.3	MPE RESULTS.....	12
5	FCC §15.203 & IC RSS-GEN §7.1.2 – ANTENNA REQUIREMENTS.....	13
5.1	APPLICABLE STANDARD.....	13
5.2	ANTENNA LIST.....	13
6	FCC §15.207 & IC RSS-GEN §7.2.4 - AC POWER LINE CONDUCTED EMISSIONS.....	14
6.1	APPLICABLE STANDARDS.....	14
6.2	TEST SETUP.....	14
6.3	TEST PROCEDURE.....	14
6.4	TEST SETUP BLOCK DIAGRAM.....	15
6.5	CORRECTED AMPLITUDE & MARGIN CALCULATION.....	16
6.6	TEST EQUIPMENT LIST AND DETAILS.....	16
6.7	TEST ENVIRONMENTAL CONDITIONS.....	16
6.8	SUMMARY OF TEST RESULTS.....	16
6.9	CONDUCTED EMISSIONS TEST PLOTS AND DATA.....	17
7	FCC §15.209, §15.407(B) & IC RSS-210 §A9.2 - SPURIOUS RADIATED EMISSIONS.....	19
7.1	APPLICABLE STANDARD.....	19
7.2	TEST SETUP.....	20
7.3	TEST PROCEDURE.....	20
7.4	CORRECTED AMPLITUDE & MARGIN CALCULATION.....	21
7.5	TEST EQUIPMENT LIST AND DETAILS.....	21
7.6	TEST ENVIRONMENTAL CONDITIONS.....	21
7.7	SUMMARY OF TEST RESULTS.....	22

7.8	RADIATED EMISSIONS TEST RESULT DATA	23
8	FCC §15.407(A) & IC RSS-210 §A9.2 – 26 DB & 99% EMISSION BANDWIDTH	43
8.1	APPLICABLE STANDARD	43
8.2	MEASUREMENT PROCEDURE	43
8.3	TEST EQUIPMENT LIST AND DETAILS	43
8.4	TEST ENVIRONMENTAL CONDITIONS.....	43
8.5	TEST RESULTS	43
9	FCC §407(A) & IC RSS-210 §A9.2 - PEAK OUTPUT POWER MEASUREMENT.....	61
9.1	APPLICABLE STANDARD	61
9.2	MEASUREMENT PROCEDURE	61
9.3	TEST EQUIPMENT LIST AND DETAILS	62
9.4	TEST ENVIRONMENTAL CONDITIONS.....	62
9.5	TEST RESULTS	63
10	FCC §15.407(B) & IC RSS-210 §A9.2 - OUT OF BAND EMISSIONS.....	69
10.1	APPLICABLE STANDARD	69
10.2	MEASUREMENT PROCEDURE	69
10.3	TEST EQUIPMENT LIST AND DETAILS	69
10.4	TEST ENVIRONMENTAL CONDITIONS.....	69
10.5	TEST RESULTS	70
11	FCC §15.407(A)(1) & IC RSS-210 §A9.2 - POWER SPECTRAL DENSITY.....	100
11.1	APPLICABLE STANDARD	100
11.2	MEASUREMENT PROCEDURE	100
11.3	TEST EQUIPMENT LIST AND DETAILS	100
11.4	TEST ENVIRONMENTAL CONDITIONS.....	101
11.5	TEST RESULTS	101
12	FCC §15.407(A)(6) – PEAK EXCURSION RATIO.....	135
12.1	APPLICABLE STANDARD	135
12.2	TEST PROCEDURE	135
12.3	TEST EQUIPMENT LIST AND DETAILS	135
12.4	TEST ENVIRONMENTAL CONDITIONS.....	135
12.5	TEST RESULTS	135
13	IC RSS-210 §2.3 & RSS-GEN §6.1 - RECEIVER SPURIOUS RADIATED EMISSIONS	152
13.1	APPLICABLE STANDARD	152
13.2	EUT SETUP.....	152
13.3	TEST PROCEDURE	152
13.4	CORRECTED AMPLITUDE & MARGIN CALCULATION	152
13.5	TEST EQUIPMENT LISTS AND DETAILS	153
13.6	TEST ENVIRONMENTAL CONDITIONS.....	153
13.7	SUMMARY OF TEST RESULTS.....	153
13.8	TEST RESULTS	154
14	FCC §15.407(B) & IC RSS-210 §A9.2 - SPURIOUS EMISSIONS AT ANTENNA TERMINALS.....	155
14.1	APPLICABLE STANDARD	155
14.2	MEASUREMENT PROCEDURE	155
14.3	TEST EQUIPMENT LIST AND DETAILS	156
14.4	TEST ENVIRONMENTAL CONDITIONS.....	156
14.5	TEST RESULTS	156
15	EXHIBIT A – FCC & IC EQUIPMENT LABELING REQUIREMENTS	284
15.1	FCC ID LABEL REQUIREMENTS	284
15.2	IC LABEL REQUIREMENTS	284
15.3	FCC ID & IC LABEL CONTENTS AND LOCATION.....	285

16	EXHIBIT B - EUT SETUP PHOTOGRAPHS	286
16.1	CONDUCTED EMISSIONS FRONT VIEW	286
16.2	CONDUCTED EMISSIONS SIDE VIEW	286
16.3	RADIATED EMISSION FRONT VIEW AT 3 METER	287
16.4	RADIATED EMISSION BELOW 1 GHZ REAR VIEW AT 3 METER	287
16.5	RADIATED EMISSION ABOVE 1 GHZ REAR VIEW AT 3 METER	288
17	EXHIBIT C – EUT PHOTOGRAPHS	289
17.1	EUT – MAIN BOARD WITH SHIELDING TOP VIEW	289
17.2	EUT – MAIN BOARD BOTTOM VIEW	289
17.3	EUT – MAIN BOARD WITHOUT SHIELDING TOP VIEW	290
17.4	EUT – CONNECTOR BOARD TOP VIEW	290
17.5	EUT – CONNECTOR BOARD BOTTOM VIEW	291
17.6	EUT – CONNECTOR BOARD PORT VIEW	291
17.7	EUT – POE ADAPTER TOP VIEW	292
17.8	EUT – POE PORTS VIEW	292

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1302222-407 W5356	Original Report	2013-08-15

1 General Description

1.1 Product Description for Equipment under Test (EUT)

This test and measurement report was prepared on behalf of *Exalt Communications, Inc.*, and their product, FCC: TTM-105P25U and IC: 6254A-105P25U, model: *eMIMO 100*, which will henceforth be referred to as the EUT "Equipment Under Test". The EUT is an 802.11 WLAN module and operates on 4940-4990 MHz, 5250-5350 MHz, 5470-5725 MHz, 5725-5825 MHz UNII bands, and 5725-5850 MHz ISM band. 5 and 10 MHz mode of 4940-4990 MHz cannot transmit both chains simultaneously and will not operate on 5725-5825 MHz UNII band.

1.2 Mechanical Description of EUT

The EUT measures approximately 12.7 cm (L) x 11.4 cm (W) x 1.6 cm (H) and weighs 102.0 g.

The test data gathered are from typical production sample, serial number: PE151390279, provided by manufacture.

1.3 Objective

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

This project is a Permissive Change II submission for the purpose of adding DFS frequency bands (5250-5350 MHz; 5470-5725 MHz) to the certified device (FCC: TTM-105P25U and IC: 6254A-105P25U). The objective is to determine compliance with FCC/IC rules for Antenna Requirements, AC Line Conducted Emissions, Occupied Bandwidth, Maximum Peak Output Power, Power Spectral Density, Radiated and Conducted Spurious Emissions, and Band Edge on the DFS bands (5250-5350 MHz and 5470-5725 MHz.).

1.4 Related Submittal(s)/Grant(s)

FCC Part 15.247 DTS with FCC: TTM-105P25U and IC: 6254A-105P25U

1.5 Test Methodology

FCC CFR 47 Part2, Part15.407 and IC RSS-210 Issue 8, Dec 2010.

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 CISPR16-4-2:2007, 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 BAACL 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.

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

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

2.2 EUT Exercise Software

The software version is exaltExAireMIMO_v1.0.1.0-FAKE-OTPDFS, was provided by customer and verified by Jeffery Wu 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
DELL	Laptop	Inspiron 1405	-

2.6 EUT Internal Configuration Details

N/A, EUT is a module. Please refer to section 1.2 for serial number

2.7 Interface Ports and Cables

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

2.8 Power Supply List and Details

Manufacturer	Description	Model	Part Number
PowerDsine	POE Adapter	PD-3501G/AC	-

3 Summary of Test Results

FCC & IC Rules	Description of Test	Result
FCC §15.407(f), §2.1091 IC RSS-102	RF Exposure	Compliant
FCC §15.203 IC RSS-Gen §7.1.2	Antenna Requirement	Compliant
FCC §15.207 IC RSS-Gen §7.2.4	AC Power Line Conducted Emissions	Compliant
FCC §15.209(a), 15.407(b) IC RSS-210 §A9.2	Spurious Radiated Emissions	Compliant
FCC §15.407(a) IC RSS-210 §A9.2	26 dB and 99% Emission Bandwidth	Compliant
FCC §407(a)(1) IC RSS-210 §A9.2	Peak Output Power Measurement	Compliant
FCC §2.1051, §15.407(b) IC RSS-210 §A9.2	Out of Band Emissions	Compliant
FCC §15.407(a)(1) IC RSS-210 §A9.2	Power Spectral Density	Compliant
FCC §15.407(a)(6)	Peak Excursion Ratio	Compliant
IC RSS-210 §2.3 IC RSS-Gen §6.1	Receiver Spurious Radiated Emissions	Compliant
FCC §2.1051, §15.407(b) IC RSS-210 §A9.2	Spurious Emissions at Antenna Terminals	Compliant
FCC §15.407(h) IC RSS-210 §A9.3	DFS	Note: 1

- **Note:** ¹ please refers to the DFS report, Report number: R1302222-DFS.

4 FCC §15.407(f), §2.1091 & 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 (min)
0.003 - 1	280	2.19	-	6
1 - 10	280 / f	2.19 / f	-	6
10 - 30	28	2.19 / f	-	6
30 - 300	28	0.073	2*	6
300 - 1 500	1.585 f ^{0.5}	0.0042 f ^{0.5}	f / 150	6
1 500 - 15 000	61.4	0.163	10	6
15 000 - 150 000	61.4	0.163	10	616000 / f ^{1.2}
150 000- 300 000	0.158 f ^{0.5}	4.21 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

W53 Band:

<u>Maximum peak output power at antenna input terminal (dBm):</u>	<u>18.46</u>
<u>Maximum peak output power at antenna input terminal (mW):</u>	<u>70.15</u>
<u>Prediction distance (cm):</u>	<u>180</u>
<u>Prediction frequency (MHz):</u>	<u>5320</u>
<u>Maximum Antenna Gain, typical (dBi):</u>	<u>28</u>
<u>Maximum Antenna Gain (numeric):</u>	<u>630.96</u>
<u>Power density of prediction frequency at 180.0 cm (mW/cm²):</u>	<u>0.1087</u>
<u>Power density of prediction frequency at 180.0 cm (W/m²):</u>	<u>1.087</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>

W56 Band:

<u>Maximum peak output power at antenna input terminal (dBm):</u>	<u>20.43</u>
<u>Maximum peak output power at antenna input terminal (mW):</u>	<u>110.41</u>
<u>Prediction distance (cm):</u>	<u>180</u>
<u>Prediction frequency (MHz):</u>	<u>5670</u>
<u>Maximum Antenna Gain, typical (dBi):</u>	<u>28</u>
<u>Maximum Antenna Gain (numeric):</u>	<u>630.96</u>
<u>Power density of prediction frequency at 180.0 cm (mW/cm²):</u>	<u>0.171</u>
<u>Power density of prediction frequency at 180.0 cm (W/m²):</u>	<u>1.71</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>

Note: Above calculation is base on maximum power and the maximum effective gain is 28 dBi (antenna gain + cable loss).

The device is compliant with the requirement MPE limit for uncontrolled exposure. The maximum power density at the distance of 180 cm is 0.1087 mW/cm² (1.087W/m²) for W53 Band; The maximum power density at the distance of 180 cm is 0.171 mW/cm² (1.71 W/m²) for W53 Band; Limit is 1.0 mW/cm² (10 W/m²).

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

The EUT consists of non-standard antenna connectors, and antenna gain varies from 9 dBi to 37.9 dBi. Manufacture will control the effective gain (antenna + cable loss) be equal or less than 9 dBi and 28 dBi, which depends on the point to point or point to multiple point operation output power. Professional installation is needed to ensure the product complies with legal restrictions; therefore, it complies with the antenna requirement

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. Please see attached antenna list for detail information.

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

6.1 Applicable Standards

As per FCC §15.207 and IC RSS-Gen §7.2.4 Conducted limits:

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

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 Note 1	56 to 46 Note 1
0.5-5	56	46
5-30	60	50

Note 1 Decreases with the logarithm of the frequency.

6.2 Test Setup

The measurement was performed at shield room, using the setup per ANSI C63.4-2003 measurement procedure. The specification used was FCC §15.207 and IC RSS-Gen §7.2.4 limits.

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

The AC/DC power adapter of the test support board was connected with LISN-1 which provided 120 V / 60 Hz AC power.

6.3 Test Procedure

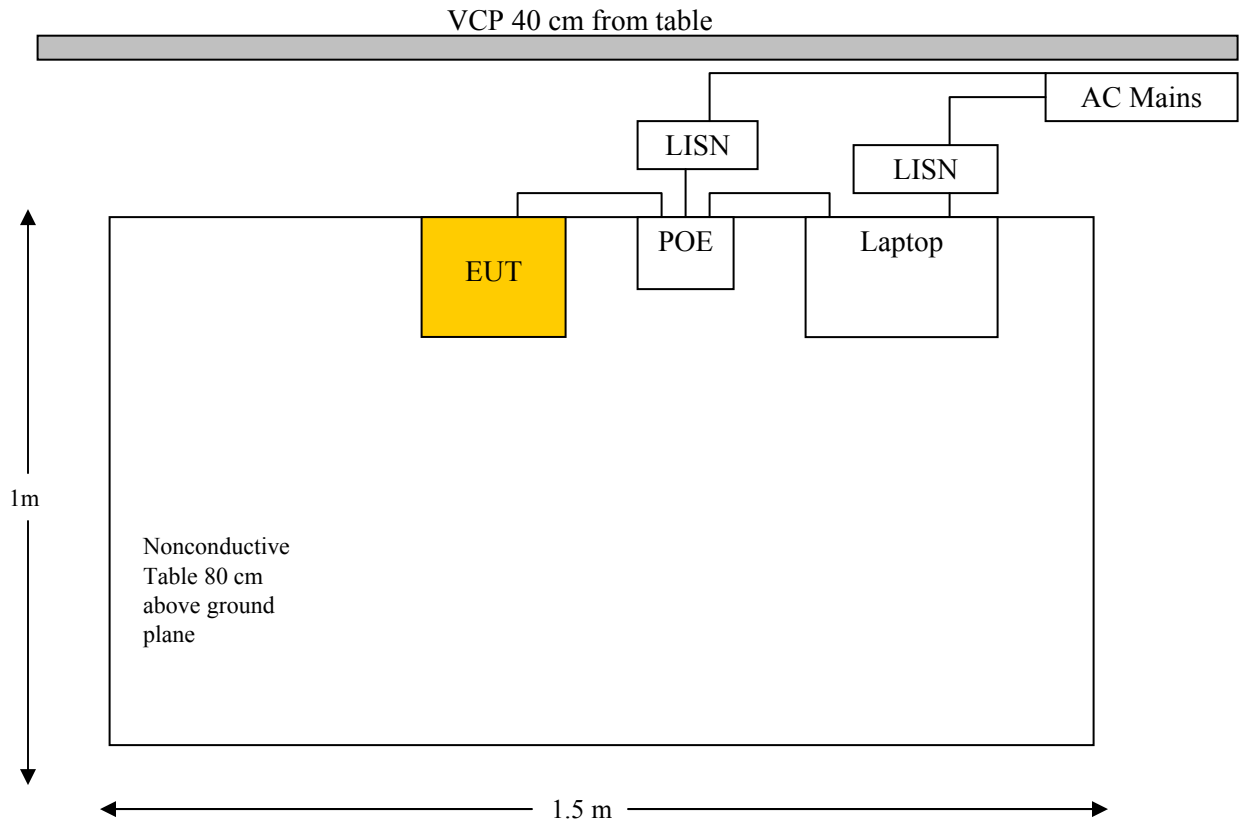
During the conducted emissions test, the power cord of the EUT host system was connected to the mains outlet of the LISN-2.

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

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

6.4 Test Setup Block Diagram

POE



6.5 Corrected Amplitude & Margin Calculation

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

$$CA = A_i + CL + \text{Atten}$$

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

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

$$\text{Margin} = \text{Corrected Amplitude} - \text{Limit}$$

6.6 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100044	2013-03-28	1 year
Solar Electronics	LISN	9252-R-24-BNC	511205	2012-06-25	1 year
TTE	Filter, High Pass	H9962-150K-50-21378	K7133	2012-05-30	1 year

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

6.7 Test Environmental Conditions

Temperature:	22 °C
Relative Humidity:	38 %
ATM Pressure:	102.1 kPa

The testing was performed by Jeffrey Wu on 2013-03-13 in 5 m chamber3.

6.8 Summary of Test Results

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

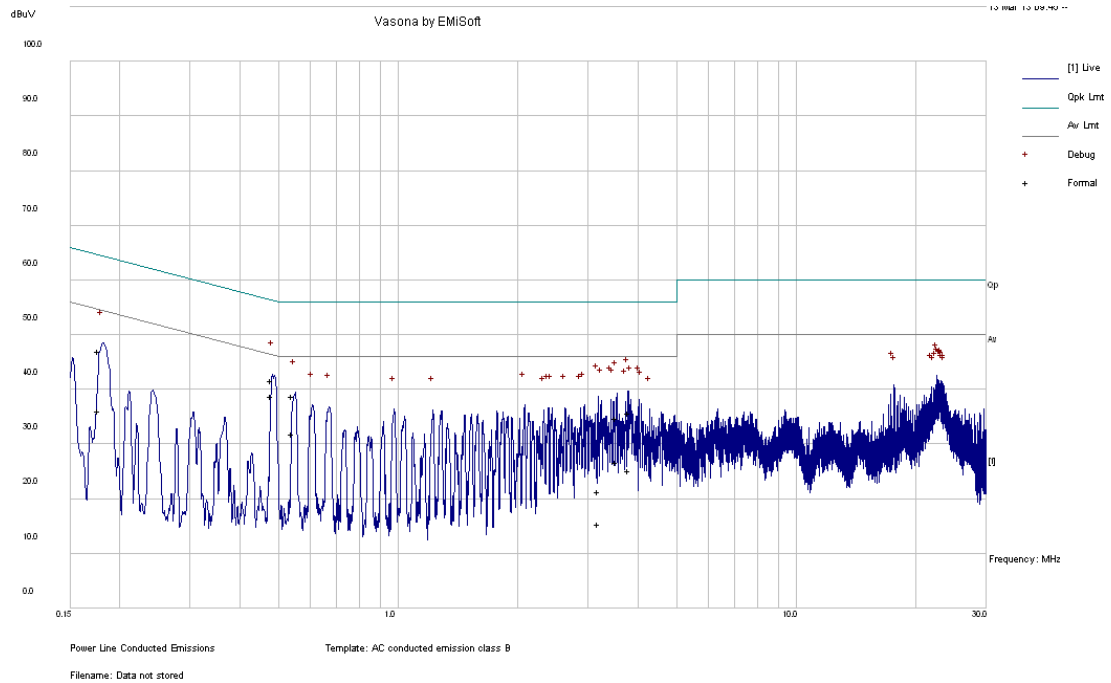
Transmitting Mode:

Connection: 120 V/60 Hz, AC			
Margin (dB)	Frequency (MHz)	Conductor (Line/Neutral)	Range (MHz)
-7.6	0.480345	Line	0.15-30

6.9 Conducted Emissions Test Plots and Data

Worst case in 5 GHz Band:

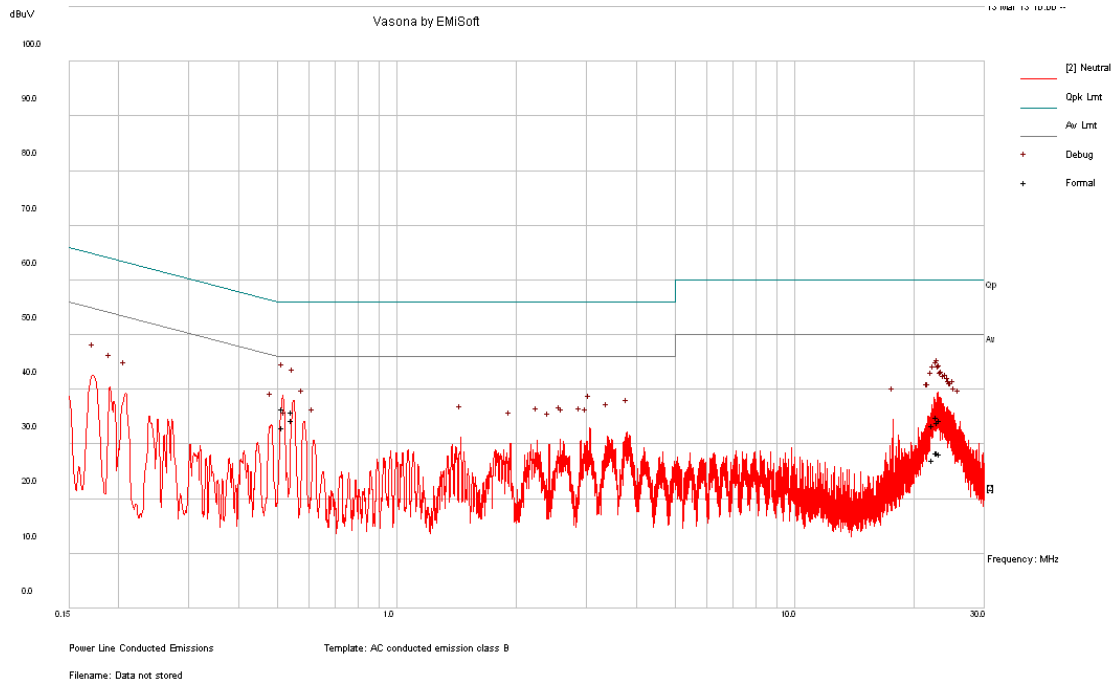
120 V, 60 Hz – Line, POE Adaptor



Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.480345	41.75	Line	56.33	-14.58	QP
0.544638	38.71	Line	56	-17.29	QP
0.176775	47.05	Line	64.64	-17.59	QP
3.795921	35.75	Line	56	-20.25	QP
3.539424	34.75	Line	56	-21.25	QP
3.190614	21.41	Line	56	-34.59	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.480345	38.73	Line	46.33	-7.6	Ave.
0.544638	31.84	Line	46	-14.16	Ave.
0.176775	36.16	Line	54.64	-18.48	Ave.
3.539424	26.66	Line	46	-19.34	Ave.
3.795921	25.24	Line	46	-20.76	Ave.
3.190614	15.43	Line	46	-30.57	Ave.

120 V, 60 Hz – Neutral, POE Adaptor



Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.517875	36.5	Neutral	56	-19.5	QP
0.545955	35.95	Neutral	56	-20.05	QP
22.77151	34.89	Neutral	60	-25.11	QP
23.25104	34.35	Neutral	60	-25.65	QP
22.9323	34.1	Neutral	60	-25.9	QP
22.35332	33.48	Neutral	60	-26.52	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.545955	34.31	Neutral	46	-11.69	Ave.
0.517875	33.14	Neutral	46	-12.86	Ave.
22.77151	28.55	Neutral	50	-21.45	Ave.
22.9323	28.36	Neutral	50	-21.64	Ave.
23.25104	28.21	Neutral	50	-21.79	Ave.
22.35332	27.16	Neutral	50	-22.84	Ave.

7 FCC §15.209, §15.407(b) & IC RSS-210 §A9.2 - Spurious Radiated Emissions

7.1 Applicable Standard

As per FCC §15.35(d): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1 MHz.

As per FCC §15.209(a) and IC RSS-210: Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table

Frequency (MHz)	Field Strength (micro volts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100 Note 1	3
88 - 216	150 Note 1	3
216 - 960	200 Note 1	3
Above 960	500	3

Note 1: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

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

MHz	MHz	MHz	GHz
0.090 – 0.110	16.42 – 16.423	960 – 1240	4.5 – 5.15
0.495 – 0.505	16.69475 – 16.69525	1300 – 1427	5.35 – 5.46
2.1735 – 2.1905	25.5 – 25.67	1435 – 1626.5	7.25 – 7.75
4.125 – 4.128	37.5 – 38.25	1645.5 – 1646.5	8.025 – 8.5
4.17725 – 4.17775	73 – 74.6	1660 – 1710	9.0 – 9.2
4.20725 – 4.20775	74.8 – 75.2	1718.8 – 1722.2	9.3 – 9.5
6.215 – 6.218	108 – 121.94	2200 – 2300	10.6 – 12.7
6.26775 – 6.26825	123 – 138	2310 – 2390	13.25 – 13.4
6.31175 – 6.31225	149.9 – 150.05	2483.5 – 2500	14.47 – 14.5
8.291 – 8.294	156.52475 – 156.52525	2690 – 2900	15.35 – 16.2
8.362 – 8.366	156.7 – 156.9	3260 – 3267	17.7 – 21.4
8.37625 – 8.38675	162.0125 – 167.17	3.332 – 3.339	22.01 – 23.12
8.41425 – 8.41475	167.72 – 173.2	3.3458 – 3.358	23.6 – 24.0
12.29 – 12.293	240 – 285	3.600 – 4.400	31.2 – 31.8
12.51975 – 12.52025	322 – 335.4		36.43 – 36.5
12.57675 – 12.57725	399.9 – 410		Above 38.6
13.36 – 13.41	608 – 614		

As per FCC §15.407(b)(1) and IC RSS-210

(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 EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.

(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 EIRP of -27 dBm/MHz.

As per IC RSS-210 §A9.2. emissions outside the band 5250-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p.

7.2 Test Setup

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

The spacing between the peripherals was 10 centimeters.

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

7.3 Test Procedure

For the radiated emissions test, the EUT host, and all support equipment power cords was connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

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

The spectrum analyzer or receiver is set as:

Below 1000 MHz:

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

Above 1000 MHz:

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

7.4 Corrected Amplitude & Margin Calculation

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

$$CA = A_i + CL + \text{Atten}$$

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

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

$$\text{Margin} = \text{Corrected Amplitude} - \text{Limit}$$

7.5 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Cycle
Sunol Science Corp	System Controller	SC99V	122303-1	N/R	N/R
Sunol Science Corp	Combination Antenna	JB1	A013105-3	2012-07-24	2 years
Hewlett Packard	Pre-amplifier	8447D	2944A06639	2013-06-09	1 year
Mini-Circuits	Pre-amplifier	ZVA-183-S	570400946	2013-05-09	1 year
Agilent	Spectrum Analyzer	E4440A	MY44303352	2012-10-16	1 year
EMCO	Horn Antenna	3115	9511-4627	2012-10-17	1 year
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100337	2013-03-28	1 year

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

7.6 Test Environmental Conditions

Temperature:	18-22 °C
Relative Humidity:	45-48 %
ATM Pressure:	101-102 kPa

The testing was performed by Jeffrey Wu from 2013-07-24 to 2013-08-02 at 5 meter 3.

7.7 Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Part 15.205, 15.209 and 15.407 & IC RSS-210, RSS-Gen standard's radiated emissions limits, and had the worst margin of:

5250-5350 MHz

Mode: Transmitting			
Margin (dB)	Frequency (MHz)	Polarization (Horizontal/Vertical)	Range (MHz)
-0.9	39.4585	Vertical	30 to 1000
-16.682	15781.5	Vertical	1000 to 40000

5470-5725 MHz

Mode: Transmitting			
Margin (dB)	Frequency (MHz)	Polarization (Horizontal/Vertical)	Range (MHz)
-0.56	37.5085	Vertical	30 to 1000
-11.743	17100	Vertical	1000 to 40000

7.8 Radiated Emissions Test Result Data

1) 5250-5350 MHz Band:

(A) 30 MHz - 1 GHz, Radiated Emissions measured at 3 meters, termination method was used.

5 MHz Mode

Frequency (MHz)	Corrected Amplitude (dB μ V/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dB μ V/m)	Margin (dB)	Comment
5 MHz Mode, Low Channel							
41.51575	32	100	V	124	40	-8	QP
172.7968	23.68	152	V	360	43.5	-19.82	QP
399.9998	26.09	258	H	125	46	-19.91	QP
600.0018	31.46	100	V	7	46	-14.54	QP
606.9288	20.09	145	V	22	46	-25.91	QP
629.7973	37.13	106	V	334	46	-8.87	QP
5 MHz Mode, Middle Channel							
41.31675	30.94	104	V	122	40	-9.06	QP
74.574	25.81	131	V	0	40	-14.19	QP
168.8493	25.31	101	V	111	43.5	-18.19	QP
399.981	26.5	100	H	105	46	-19.5	QP
599.9938	38.4	160	V	200	46	-7.6	QP
629.8333	42.48	109	H	274	46	-3.52	QP
5 MHz Mode, High Channel							
38.96875	38.81	141	V	261	40	-1.19	QP
58.7065	29.42	103	V	62	40	-10.58	QP
105.679	31.4	125	V	243	43.5	-12.1	QP
125.0195	20.04	179	V	326	43.5	-23.46	QP
399.9788	29.77	102	H	3	46	-16.23	QP
629.7563	18	100	V	196	46	-28	QP

10 MHz Mode

Frequency (MHz)	Corrected Amplitude (dB μ V/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dB μ V/m)	Margin (dB)	Comment
10 MHz Mode, Low Channel							
40.95325	38.47	100	V	64	40	-1.53	QP
124.992	23.82	101	V	231	43.5	-19.68	QP
172.8278	29.52	147	H	112	43.5	-13.98	QP
399.9853	30.34	101	H	113	46	-15.66	QP
600.4495	39.45	133	H	269	46	-6.55	QP
629.8828	23.46	117	H	267	46	-22.54	QP
10 MHz Mode, Middle Channel							
40.64225	36.65	100	V	47	40	-3.35	QP
125.0005	25.46	100	V	328	43.5	-18.04	QP
155.6248	26.94	121	V	112	43.5	-16.56	QP
400.0023	26.2	100	H	89	46	-19.8	QP
600.4938	39.82	134	H	273	46	-6.18	QP
629.7953	35.67	100	V	249	46	-10.33	QP
10 MHz Mode, High Channel							
39.4585	39.1	116	V	132	40	-0.9	QP
58.708	29.74	133	V	11	40	-10.26	QP
94.09475	23.02	102	H	0	43.5	-20.48	QP
106.7343	24.43	127	V	244	43.5	-19.07	QP
400.0093	29.83	116	H	12	46	-16.17	QP
600.2498	20.61	128	H	8	46	-25.39	QP

802.11a Mode

Frequency (MHz)	Corrected Amplitude (dB μ V/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dB μ V/m)	Margin (dB)	Comment
802.11a Mode, Low Channel							
40.942	33.34	100	V	295	40	-6.66	QP
125.0608	19.76	104	V	269	43.5	-23.74	QP
161.1508	25.49	102	V	269	43.5	-18.01	QP
172.825	27.55	187	H	131	43.5	-15.95	QP
600.498	38.91	124	H	271	46	-7.09	QP
629.7775	43.09	132	H	267	46	-2.91	QP
802.11a Mode, Middle Channel							
40.94125	34.8	106	V	328	40	-5.2	QP
125.048	21.54	100	V	314	43.5	-21.96	QP
172.7698	28.94	202	H	117	43.5	-14.56	QP
399.9953	29.79	100	H	101	46	-16.21	QP
600.509	39.69	132	H	275	46	-6.31	QP
629.753	43.15	113	H	279	46	-2.85	QP
802.11a Mode, High Channel							
39.46175	37.59	126	V	67	40	-2.41	QP
58.708	29.91	129	V	86	40	-10.09	QP
106.685	25.44	103	V	183	43.5	-18.06	QP
125.0058	23.27	126	V	316	43.5	-20.23	QP
600.11	25.79	140	H	9	46	-20.21	QP
630.0545	18.28	124	H	220	46	-27.72	QP

802.11n-HT20 Mode

Frequency (MHz)	Corrected Amplitude (dB μ V/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dB μ V/m)	Margin (dB)	Comment
802.11n-HT20 Mode, Low Channel							
40.79025	33.89	107	V	35	40	-6.11	QP
124.9878	24.25	100	V	0	43.5	-19.25	QP
175.5053	18.61	123	V	256	43.5	-24.89	QP
399.965	26.01	100	H	126	46	-19.99	QP
600.3443	18.96	125	H	287	46	-27.04	QP
629.8875	31.52	141	V	124	46	-14.48	QP
802.11n-HT20 Mode, Middle Channel							
40.4695	35.62	100	V	28	40	-4.38	QP
125.0103	23.73	100	V	150	43.5	-19.77	QP
173.4613	17.36	100	V	0	43.5	-26.14	QP
400.011	28.02	133	V	160	46	-17.98	QP
600.0215	33.09	140	V	204	46	-12.91	QP
629.9763	22.24	150	H	180	46	-23.76	QP
802.11n-HT20 Mode, High Channel							
40.11675	38.53	100	V	99	40	-1.47	QP
82.0855	20.28	176	V	241	40	-19.72	QP
94.102	23.45	99	H	159	43.5	-20.05	QP
108.8083	25.72	116	V	189	43.5	-17.78	QP
143.2543	18.6	100	V	235	43.5	-24.9	QP
399.9915	30.89	100	H	157	46	-15.11	QP

802.11n-HT40 Mode

Frequency (MHz)	Corrected Amplitude (dB μ V/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dB μ V/m)	Margin (dB)	Comment
802.11n-HT40 Mode, Low Channel							
38.9705	36.52	140	V	18	40	-3.48	QP
58.72225	29.02	125	V	33	40	-10.98	QP
108.82	23.58	145	V	212	43.5	-19.92	QP
399.982	30.06	105	H	144	46	-15.94	QP
600.1103	25.41	154	H	23	46	-20.59	QP
629.9698	20.55	113	H	20	46	-25.45	QP
802.11n-HT40 Mode, High Channel							
42.90925	33.22	100	V	10	40	-6.78	QP
124.9773	24.84	100	V	293	43.5	-18.66	QP
173.4343	20.4	141	H	95	43.5	-23.1	QP
400.0053	29.74	99	H	360	46	-16.26	QP
600.6118	18.88	132	H	279	46	-27.12	QP
629.955	22.06	108	H	294	46	-23.94	QP

(B) 1- 40 GHz, Radiated Emissions measured at 3 meters, termination method was used

5 MHz Mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5260.5 MHz, measured at 3 meters											
10521	31.651	0	100	V	38.343	6.14	26.900	49.234	74	-24.766	Peak
10521	32.27	0	100	H	38.343	6.14	26.900	49.853	74	-24.147	Peak
10521	16.77	0	100	V	38.343	6.14	26.900	34.353	54	-19.647	Ave
10521	16.788	0	100	H	38.343	6.14	26.900	34.371	54	-19.629	Ave
15781.5	32.99	0	100	V	37.928	7.71	26.010	52.618	74	-21.382	Peak
15781.5	32.6	0	100	H	37.928	7.71	26.010	52.228	74	-21.772	Peak
15781.5	17.69	0	100	V	37.928	7.71	26.010	37.318	54	-16.682	Ave
15781.5	17.67	0	100	H	37.928	7.71	26.010	37.298	54	-16.702	Ave
Middle Channel 5280.5 MHz, measured at 3 meters											
10561	32.04	0	100	V	38.418	6.14	26.980	49.618	74	-24.382	Peak
10561	31.29	0	100	H	38.418	6.14	26.980	48.868	74	-25.132	Peak
10561	16.82	0	100	V	38.418	6.14	26.980	34.398	54	-19.602	Ave
10561	16.77	0	100	H	38.418	6.14	26.980	34.348	54	-19.652	Ave
15841.5	32.66	0	100	V	37.914	7.71	26.400	51.884	74	-22.116	Peak
15841.5	32.65	0	100	H	37.914	7.71	26.400	51.874	74	-22.126	Peak
15841.5	17.97	0	100	V	37.914	7.71	26.400	37.194	54	-16.806	Ave
15841.5	17.95	0	100	H	37.914	7.71	26.400	37.174	54	-16.826	Ave
High Channel 5320.5 MHz, measured at 3 meters											
10641	31.39	0	100	V	38.418	6.14	26.920	49.028	74	-24.972	Peak
10641	31.61	0	100	H	38.418	6.14	26.920	49.248	74	-24.752	Peak
10641	15.9	0	100	V	38.418	6.14	26.920	33.538	54	-20.462	Ave
10641	16.42	0	100	H	38.418	6.14	26.920	34.058	54	-19.942	Ave
15961.5	32.83	0	100	V	37.867	7.71	26.050	52.357	74	-21.643	Peak
15961.5	32.31	0	100	H	37.867	7.71	26.050	51.837	74	-22.163	Peak
15961.5	17.61	0	100	V	37.867	7.71	26.050	37.137	54	-16.863	Ave
15961.5	17.57	0	100	H	37.867	7.71	26.050	37.097	54	-16.903	Ave

Note: all emissions were under the noise floor.

10 MHz Mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5260 MHz, measured at 3 meters											
10520	31.68	0	100	V	38.343	6.14	26.900	49.263	74	-24.737	Peak
10520	31.35	0	100	H	38.343	6.14	26.900	48.933	74	-25.067	Peak
10520	16.15	0	100	V	38.343	6.14	26.900	33.733	54	-20.267	Ave
10520	16.27	0	100	H	38.343	6.14	26.900	33.853	54	-20.147	Ave
15780	32.91	0	100	V	37.928	7.71	26.010	52.538	74	-21.462	Peak
15780	32.15	0	100	H	37.928	7.71	26.010	51.778	74	-22.222	Peak
15780	16.57	0	100	V	37.928	7.71	26.010	36.198	54	-17.802	Ave
15780	16.42	0	100	H	37.928	7.71	26.010	36.048	54	-17.952	Ave
Middle Channel 5280 MHz, measured at 3 meters											
10560	31.85	0	100	V	38.418	6.14	26.980	49.428	74	-24.572	Peak
10560	31.5	0	100	H	38.418	6.14	26.980	49.078	74	-24.922	Peak
10560	16.33	0	100	V	38.418	6.14	26.980	33.908	54	-20.092	Ave
10560	16.32	0	100	H	38.418	6.14	26.980	33.898	54	-20.102	Ave
15840	32.99	0	100	V	37.914	7.71	26.040	52.574	74	-21.426	Peak
15840	32.8	0	100	H	37.914	7.71	26.040	52.384	74	-21.616	Peak
15840	17.39	0	100	V	37.914	7.71	26.040	36.974	54	-17.026	Ave
15840	17.47	0	100	H	37.914	7.71	26.040	37.054	54	-16.946	Ave
High Channel 5320 MHz, measured at 3 meters											
10640	31.72	0	100	V	38.418	6.14	26.920	49.358	74	-24.642	Peak
10640	31.82	0	100	H	38.418	6.14	26.920	49.458	74	-24.542	Peak
10640	15.9	0	100	V	38.418	6.14	26.920	33.538	54	-20.462	Ave
10640	15.93	0	100	H	38.418	6.14	26.920	33.568	54	-20.432	Ave
15960	33.39	0	100	V	37.867	7.71	26.050	52.917	74	-21.083	Peak
15960	33.11	0	100	H	37.867	7.71	26.050	52.637	74	-21.363	Peak
15960	17.6	0	100	V	37.867	7.71	26.050	37.127	54	-16.873	Ave
15960	17.57	0	100	H	37.867	7.71	26.050	37.097	54	-16.903	Ave

Note: all emissions were under the noise floor.

802.11a Mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5260 MHz, measured at 3 meters											
10520	33.75	0	100	V	38.343	6.14	26.900	51.333	74	-22.667	Peak
10520	33.23	0	100	H	38.343	6.14	26.900	50.813	74	-23.187	Peak
10520	17.92	0	100	V	38.343	6.14	26.900	35.503	54	-18.497	Ave
10520	17.85	0	100	H	38.343	6.14	26.900	35.433	54	-18.567	Ave
15780	33.27	0	100	V	37.928	7.71	26.010	52.898	74	-21.102	Peak
15780	33.08	0	100	H	37.928	7.71	26.010	52.708	74	-21.292	Peak
15780	17.64	0	100	V	37.928	7.71	26.010	37.268	54	-16.732	Ave
15780	17.6	0	100	H	37.928	7.71	26.010	37.228	54	-16.772	Ave
Middle Channel 5280 MHz, measured at 3 meters											
10560	31.56	0	100	V	38.418	6.14	26.980	49.138	74	-24.862	Peak
10560	31.88	0	100	H	38.418	6.14	26.980	49.458	74	-24.542	Peak
10560	16.29	0	100	V	38.418	6.14	26.980	33.868	54	-20.132	Ave
10560	16.34	0	100	H	38.418	6.14	26.980	33.918	54	-20.082	Ave
15840	31.74	0	100	V	37.914	7.71	26.040	51.324	74	-22.676	Peak
15840	31.29	0	100	H	37.914	7.71	26.040	50.874	74	-23.126	Peak
15840	16.82	0	100	V	37.914	7.71	26.040	36.404	54	-17.596	Ave
10560	31.56	0	100	V	38.418	6.14	26.980	49.138	74	-24.862	Ave
High Channel 5320 MHz, measured at 3 meters											
10640	31.36	0	100	V	38.418	6.14	26.920	48.998	74	-25.002	Peak
10640	31.58	0	100	H	38.418	6.14	26.920	49.218	74	-24.782	Peak
10640	16.64	0	100	V	38.418	6.14	26.920	34.278	54	-19.722	Ave
10640	16.49	0	100	H	38.418	6.14	26.920	34.128	54	-19.872	Ave
15960	31.98	0	100	V	37.867	7.71	26.050	51.507	74	-22.493	Peak
15960	31.78	0	100	H	37.867	7.71	26.050	51.307	74	-22.693	Peak
15960	16.57	0	100	V	37.867	7.71	26.050	36.097	54	-17.903	Ave
15960	16.74	0	100	H	37.867	7.71	26.050	36.267	54	-17.733	Ave

Note: all emissions were under the noise floor.

802.11n-HT20 Mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5260 MHz, measured at 3 meters											
10520	32.1	0	100	V	38.343	6.14	26.900	49.683	74	-24.317	Peak
10520	31.68	0	100	H	38.343	6.14	26.900	49.263	74	-24.737	Peak
10520	16.483	0	100	V	38.343	6.14	26.900	34.066	54	-19.934	Ave
10520	16.42	0	100	H	38.343	6.14	26.900	34.003	54	-19.997	Ave
15780	32.99	0	100	V	37.928	7.71	26.010	52.618	74	-21.382	Peak
15780	33.09	0	100	H	37.928	7.71	26.010	52.718	74	-21.282	Peak
15780	17.3	0	100	V	37.928	7.71	26.010	36.928	54	-17.072	Ave
15780	17.29	0	100	H	37.928	7.71	26.010	36.918	54	-17.082	Ave
Middle Channel 5280 MHz, measured at 3 meters											
10560	32.22	0	100	V	38.418	6.14	26.980	49.798	74	-24.202	Peak
10560	32.1	0	100	H	38.418	6.14	26.980	49.678	74	-24.322	Peak
10560	16.48	0	100	V	38.418	6.14	26.980	34.058	54	-19.942	Ave
10560	16.48	0	100	H	38.418	6.14	26.980	34.058	54	-19.942	Ave
15840	32.48	0	100	V	37.914	7.71	26.040	52.064	74	-21.936	Peak
15840	32.64	0	100	H	37.914	7.71	26.040	52.224	74	-21.776	Peak
15840	17.18	0	100	V	37.914	7.71	26.040	36.764	54	-17.236	Ave
15840	17.21	0	100	H	37.914	7.71	26.040	36.794	54	-17.206	Ave
High Channel 5320 MHz, measured at 3 meters											
10640	32.75	0	100	V	38.418	6.14	26.920	50.388	74	-23.612	Peak
10640	33.57	0	100	H	38.418	6.14	26.920	51.208	74	-22.792	Peak
10640	17.16	0	100	V	38.418	6.14	26.920	34.798	54	-19.202	Ave
10640	17.37	0	100	H	38.418	6.14	26.920	35.008	54	-18.992	Ave
15960	32.57	0	100	V	37.867	7.71	26.050	52.097	74	-21.903	Peak
15960	32.28	0	100	H	37.867	7.71	26.050	51.807	74	-22.193	Peak
15960	17.17	0	100	V	37.867	7.71	26.050	36.697	54	-17.303	Ave
15960	17.24	0	100	H	37.867	7.71	26.050	36.767	54	-17.233	Ave

Note: all emissions were under the noise floor.

802.11n-HT40 Mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5270 MHz, measured at 3 meters											
10540	31.79	0	100	V	38.343	6.140	26.900	49.373	74	-24.627	Peak
10540	31.29	0	100	H	38.343	6.140	26.900	48.873	74	-25.127	Peak
10540	16.24	0	100	V	38.343	6.140	26.900	33.823	54	-20.177	Ave
10540	16.07	0	100	H	38.343	6.140	26.900	33.653	54	-20.347	Ave
15810	32.51	0	100	V	37.928	7.710	25.950	52.198	74	-21.802	Peak
15810	32.99	0	100	H	37.928	7.710	25.950	52.678	74	-21.322	Peak
15810	17.57	0	100	V	37.928	7.710	25.950	37.258	54	-16.742	Ave
15810	17.58	0	100	H	37.928	7.710	25.950	37.268	54	-16.732	Ave
High Channel 5310 MHz, measured at 3 meters											
10620	31.38	0	100	V	38.418	6.140	26.970	48.968	74	-25.032	Peak
10620	31.11	0	100	H	38.418	6.140	26.970	48.698	74	-25.302	Peak
10620	16.17	0	100	V	38.418	6.140	26.970	33.758	54	-20.242	Ave
10620	16.14	0	100	H	38.418	6.140	26.970	33.728	54	-20.272	Ave
15930	33.19	0	100	V	37.914	7.710	26.060	52.754	74	-21.246	Peak
15930	32.83	0	100	H	37.914	7.710	26.060	52.394	74	-21.606	Peak
15930	17.62	0	100	V	37.914	7.710	26.060	37.184	54	-16.816	Ave
15930	17.58	0	100	H	37.914	7.710	26.060	37.144	54	-16.856	Ave

Note: all emissions were under the noise floor.

2) 5470-5725 MHz Band:**(A) 30 MHz - 1 GHz, Radiated Emissions measured at 3 meters, termination method was used.**

5 MHz Mode

Frequency (MHz)	Corrected Amplitude (dB μ V/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dB μ V/m)	Margin (dB)	Comment
5 MHz Mode, Low Channel							
42.7385	37.27	106	V	40	40	-2.73	QP
143.2825	29.71	135	V	26	43.5	-13.79	QP
249.9538	22.17	113	H	119	46	-23.83	QP
399.991	24.01	106	H	136	46	-21.99	QP
600.4983	17.25	135	V	0	46	-28.75	QP
629.9378	20.73	108	H	348	46	-25.27	QP
5 MHz Mode, Middle Channel							
38.965	38.03	128	V	235	40	-1.97	QP
58.7115	27.57	100	V	187	40	-12.43	QP
94.1405	22.31	99	H	78	43.5	-21.19	QP
110.7295	20.35	117	V	11	43.5	-23.15	QP
400.017	29.5	100	H	180	46	-16.5	QP
600.1185	23.96	180	H	1	46	-22.04	QP
5 MHz Mode, High Channel							
42.744	34.82	100	V	5	40	-5.18	QP
143.2885	29.18	106	V	15	43.5	-14.32	QP
172.812	30.11	100	V	28	43.5	-13.39	QP
249.955	22.7	141	H	110	46	-23.3	QP
600.1185	20.88	99	V	265	46	-25.12	QP
630.0883	19.92	113	H	7	46	-26.08	QP

10 MHz Mode

Frequency (MHz)	Corrected Amplitude (dB μ V/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dB μ V/m)	Margin (dB)	Comment
10 MHz Mode, Low Channel							
42.906	37.23	100	V	93	40	-2.77	QP
143.2898	28.35	106	V	44	43.5	-15.15	QP
249.9485	19.09	128	H	148	46	-26.91	QP
399.9978	28.8	99	H	137	46	-17.2	QP
600.499	38.62	99	V	0	46	-7.38	QP
629.766	41.26	127	H	271	46	-4.74	QP
10 MHz Mode, Middle Channel							
43.5275	38.01	100	V	80	40	-1.99	QP
145.264	27.43	180	V	40	43.5	-16.07	QP
249.9483	19.19	158	H	125	46	-26.81	QP
400.2273	13.36	113	V	139	46	-32.64	QP
600.5058	17.12	163	V	2	46	-28.88	QP
629.9475	18.74	156	H	4	46	-27.26	QP
10 MHz Mode, High Channel							
37.5085	39.44	105	V	283	40	-0.56	QP
94.1115	20.14	183	H	43	43.5	-23.36	QP
143.2985	23.86	100	V	32	43.5	-19.64	QP
400.0085	30.05	100	H	6	46	-15.95	QP
600.1143	20.46	158	H	205	46	-25.54	QP
622.3313	18.9	145	H	307	46	-27.1	QP

802.11a Mode

Frequency (MHz)	Corrected Amplitude (dB μ V/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dB μ V/m)	Margin (dB)	Comment
802.11a Mode, Low Channel							
42.92825	37.32	100	V	51	40	-2.68	QP
143.2528	27.18	143	V	42	43.5	-16.32	QP
249.9538	20.77	99	H	127	46	-25.23	QP
399.8745	13.48	126	V	138	46	-32.52	QP
600.114	24.59	103	V	29	46	-21.41	QP
629.8303	39.84	104	H	255	46	-6.16	QP
802.11a Mode, Middle Channel							
40.651	33.02	100	V	0	40	-6.98	QP
124.984	24.94	132	H	290	43.5	-18.56	QP
172.8288	27.49	105	H	196	43.5	-16.01	QP
399.9965	29.18	120	V	190	46	-16.82	QP
600.4773	37.61	143	H	296	46	-8.39	QP
629.7563	19.49	100	H	301	46	-26.51	QP
802.11a Mode, High Channel							
37.525	39.25	106	V	142	40	-0.75	QP
64.781	32.28	138	V	62	40	-7.72	QP
143.297	23.39	134	V	31	43.5	-20.11	QP
400.008	30.57	100	H	171	46	-15.43	QP
600.138	22.02	125	H	310	46	-23.98	QP
607.2553	18.49	126	H	197	46	-27.51	QP

802.11n-HT20 Mode

Frequency (MHz)	Corrected Amplitude (dB μ V/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dB μ V/m)	Margin (dB)	Comment
802.11n-HT20 Mode, Low Channel							
37.522	37.95	182	V	240	40	-2.05	QP
66.271	26.9	114	V	79	40	-13.1	QP
94.0835	23.26	102	H	47	43.5	-20.24	QP
400.0043	30.27	100	H	171	46	-15.73	QP
600.111	25.36	156	H	23	46	-20.64	QP
629.9058	19.53	103	H	13	46	-26.47	QP
802.11n-HT20 Mode, Middle Channel							
42.92675	32.02	104	V	21	40	-7.98	QP
125.0085	26.54	99	V	283	43.5	-16.96	QP
163.8743	23.32	99	V	360	43.5	-20.18	QP
399.947	26.12	99	V	203	46	-19.88	QP
600.4578	15.64	147	H	0	46	-30.36	QP
629.8598	23.29	152	H	269	46	-22.71	QP
802.11n-HT20 Mode, High Channel							
37.522	37.95	182	V	240	40	-2.05	QP
66.271	26.9	114	V	79	40	-13.1	QP
94.0835	23.26	102	H	47	43.5	-20.24	QP
400.0043	30.27	100	H	171	46	-15.73	QP
600.111	25.36	156	H	23	46	-20.64	QP
629.9058	19.53	103	H	13	46	-26.47	QP

802.11n-HT40 Mode

Frequency (MHz)	Corrected Amplitude (dB μ V/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dB μ V/m)	Margin (dB)	Comment
802.11n-HT40 Mode, Low Channel							
42.08575	35.79	118	V	54	40	-4.21	QP
125.012	27.26	99	V	119	43.5	-16.24	QP
172.799	25.78	106	V	309	43.5	-17.72	QP
399.9855	27.37	99	H	360	46	-18.63	QP
599.9953	34.89	148	V	196	46	-11.11	QP
629.7075	23.6	122	H	291	46	-22.4	QP
802.11n-HT40 Mode, Middle Channel							
40.7895	28.17	111	V	349	40	-11.83	QP
161.144	25.4	100	V	0	43.5	-18.1	QP
286.8588	10.91	142	V	232	46	-35.09	QP
328.622	10.01	129	V	360	46	-35.99	QP
600.029	25.03	152	H	293	46	-20.97	QP
629.726	23.66	124	H	285	46	-22.34	QP
802.11n-HT40 Mode, High Channel							
38.968	36.8	159	V	216	40	-3.2	QP
58.72225	27.21	113	V	118	40	-12.79	QP
143.2878	24.39	99	V	50	43.5	-19.11	QP
399.9998	30.31	99	H	168	46	-15.69	QP
600.1125	23.94	123	H	360	46	-22.06	QP
629.8603	19.84	110	H	2	46	-26.16	QP

(B) 1-40 GHz, Radiated Emissions measured at 3 meters, termination method was used.

5 MHz Mode

Frequency (MHz)	S.A. Reading (dB μ V)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dB μ V/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dB μ V/m)	Margin (dB)	
Low Channel 5500.5 MHz, measured at 3 meters											
11001	31.36	0	100	V	38.379	6.23	26.920	49.049	74	-24.951	Peak
11001	31.56	0	100	H	38.379	6.23	26.920	49.249	74	-24.751	Peak
11001	16.16	0	100	V	38.379	6.23	26.920	33.849	54	-20.151	Ave
11001	16.18	0	100	H	38.379	6.23	26.920	33.869	54	-20.131	Ave
16501.5	32.86	0	100	V	38.665	8.10	26.100	53.525	74	-20.475	Peak
16501.5	33.11	0	100	H	38.665	8.10	26.100	53.775	74	-20.225	Peak
16501.5	17.3	0	100	V	38.665	8.10	26.100	37.965	54	-16.035	Ave
16501.5	17.27	0	100	H	38.665	8.10	26.100	37.935	54	-16.065	Ave
Middle Channel 5580.5 MHz, measured at 3 meters											
11161	30.66	0	100	V	38.511	6.23	26.940	48.461	74	-25.539	Peak
11161	30.76	0	100	H	38.511	6.23	26.940	48.561	74	-25.439	Peak
11161	15.98	0	100	V	38.511	6.23	26.940	33.781	54	-20.219	Ave
11161	15.86	0	100	H	38.511	6.23	26.940	33.661	54	-20.339	Ave
16741.5	32.18	0	100	V	39.841	8.10	26.120	54.001	74	-19.999	Peak
16741.5	32.97	0	100	H	39.841	8.10	26.120	54.791	74	-19.209	Peak
16741.5	17.07	0	100	V	39.841	8.10	26.120	38.891	54	-15.109	Ave
16741.5	17.21	0	100	H	39.841	8.10	26.120	39.031	54	-14.969	Ave
High Channel 5700.5 MHz, measured at 3 meters											
11401	31.26	0	100	V	38.882	6.20	27.000	49.342	74	-24.658	Peak
11401	31.29	0	100	H	38.882	6.20	27.000	49.372	74	-24.628	Peak
11401	16.11	0	100	V	38.882	6.20	27.000	34.192	54	-19.808	Ave
11401	16.09	0	100	H	38.882	6.20	27.000	34.172	54	-19.828	Ave
17101.5	32.58	0	100	V	42.637	8.31	26.030	57.497	74	-16.503	Peak
17101.5	32.37	0	100	H	42.637	8.31	26.030	57.287	74	-16.713	Peak
17101.5	17.1	0	100	V	42.637	8.31	26.030	42.017	54	-11.983	Ave
17101.5	17.08	0	100	H	42.637	8.31	26.030	41.997	54	-12.003	Ave

Note: all emissions were under the noise floor.

10 MHz Mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5500 MHz, measured at 3 meters											
11000	31.22	0	100	V	38.379	6.23	26.920	48.909	74	-25.091	Peak
11000	31.71	0	100	H	38.379	6.23	26.920	49.399	74	-24.601	Peak
11000	16.03	0	100	V	38.379	6.23	26.920	33.719	54	-20.281	Ave
11000	16.04	0	100	H	38.379	6.23	26.920	33.729	54	-20.271	Ave
16500	32.89	0	100	V	38.665	8.10	26.100	53.555	74	-20.445	Peak
16500	32.03	0	100	H	38.665	8.10	26.100	52.695	74	-21.305	Peak
16500	17.22	0	100	V	38.665	8.10	26.100	37.885	54	-16.115	Ave
16500	17.37	0	100	H	38.665	8.10	26.100	38.035	54	-15.965	Ave
Middle Channel 5580 MHz, measured at 3 meters											
11160	31.4	0	100	V	38.511	6.23	26.940	49.201	74	-24.799	Peak
11160	31.15	0	100	H	38.511	6.23	26.940	48.951	74	-25.049	Peak
11160	15.76	0	100	V	38.511	6.23	26.940	33.561	54	-20.439	Ave
11160	15.78	0	100	H	38.511	6.23	26.940	33.581	54	-20.419	Ave
16740	32.64	0	100	V	39.841	8.10	26.120	54.461	74	-19.539	Peak
16740	32.63	0	100	H	39.841	8.10	26.120	54.451	74	-19.549	Peak
16740	17.07	0	100	V	39.841	8.10	26.120	38.891	54	-15.109	Ave
16740	17.09	0	100	H	39.841	8.10	26.120	38.911	54	-15.089	Ave
High Channel 5700 MHz, measured at 3 meters											
11400	31.2	0	100	V	38.882	6.20	27.000	49.282	74	-24.718	Peak
11400	31.27	0	100	H	38.882	6.20	27.000	49.352	74	-24.648	Peak
11400	16.08	0	100	V	38.882	6.20	27.000	34.162	54	-19.838	Ave
11400	16.34	0	100	H	38.882	6.20	27.000	34.422	54	-19.578	Ave
17100	33.02	0	100	V	42.637	8.31	26.030	57.937	74	-16.063	Peak
17100	32.72	0	100	H	42.637	8.31	26.030	57.637	74	-16.363	Peak
17100	17.34	0	100	V	42.637	8.31	26.030	42.257	54	-11.743	Ave
17100	17.1	0	100	H	42.637	8.31	26.030	42.017	54	-11.983	Ave

Note: all emissions were under the noise floor.

802.11a Mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5500 MHz, measured at 3 meters											
11000	31.41	0	100	V	38.379	6.23	26.920	49.099	74	-24.901	Peak
11000	31.35	0	100	H	38.379	6.23	26.920	49.039	74	-24.961	Peak
11000	16.15	0	100	V	38.379	6.23	26.920	33.839	54	-20.161	Ave
11000	16.1	0	100	H	38.379	6.23	26.920	33.789	54	-20.211	Ave
16500	32.4	0	100	V	38.665	8.10	26.100	53.065	74	-20.935	Peak
16500	32.75	0	100	H	38.665	8.10	26.100	53.415	74	-20.585	Peak
16500	17.08	0	100	V	38.665	8.10	26.100	37.745	54	-16.255	Ave
16500	17.38	0	100	H	38.665	8.10	26.100	38.045	54	-15.955	Ave
Middle Channel 5580 MHz, measured at 3 meters											
11160	32.04	0	100	V	38.511	6.23	26.940	49.841	74	-24.159	Peak
11160	30.97	0	100	H	38.511	6.23	26.940	48.771	74	-25.229	Peak
11160	16.03	0	100	V	38.511	6.23	26.940	33.831	54	-20.169	Ave
11160	15.94	0	100	H	38.511	6.23	26.940	33.741	54	-20.259	Ave
16740	32.54	0	100	V	39.841	8.10	26.120	54.361	74	-19.639	Peak
16740	32.14	0	100	H	39.841	8.10	26.120	53.961	74	-20.039	Peak
16740	16.41	0	100	V	39.841	8.10	26.120	38.231	54	-15.769	Ave
16740	16.34	0	100	H	39.841	8.10	26.120	38.161	54	-15.839	Ave
High Channel 5700 MHz, measured at 3 meters											
11400	32.16	0	100	V	38.882	6.20	27.000	50.242	74	-23.758	Peak
11400	331.57	0	100	H	38.882	6.20	27.000	349.652	74	275.652	Peak
11400	16.42	0	100	V	38.882	6.20	27.000	34.502	54	-19.498	Ave
11400	16.05	0	100	H	38.882	6.20	27.000	34.132	54	-19.868	Ave
17100	33.69	0	100	V	42.637	8.31	26.030	58.607	74	-15.393	Peak
17100	33.74	0	100	H	42.637	8.31	26.030	58.657	74	-15.343	Peak
17100	16.74	0	100	V	42.637	8.31	26.030	41.657	54	-12.343	Ave
17100	16.48	0	100	H	42.637	8.31	26.030	41.397	54	-12.603	Ave

Note: all emissions were under the noise floor.

802.11n-HT20 Mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5500 MHz, measured at 3 meters											
11000	31.22	0	100	V	38.379	6.23	26.920	48.909	74	-25.091	Peak
11000	31.28	0	100	H	38.379	6.23	26.920	48.969	74	-25.031	Peak
11000	15.97	0	100	V	38.379	6.23	26.920	33.659	54	-20.341	Ave
11000	15.89	0	100	H	38.379	6.23	26.920	33.579	54	-20.421	Ave
16500	32.32	0	100	V	38.665	8.10	26.100	52.985	74	-21.015	Peak
16500	32.45	0	100	H	38.665	8.10	26.100	53.115	74	-20.885	Peak
16500	17.39	0	100	V	38.665	8.10	26.100	38.055	54	-15.945	Ave
16500	17.42	0	100	H	38.665	8.10	26.100	38.085	54	-15.915	Ave
Middle Channel 5580 MHz, measured at 3 meters											
11160	31.44	0	100	V	38.511	6.23	26.940	49.241	74	-24.759	Peak
11160	31.08	0	100	H	38.511	6.23	26.940	48.881	74	-25.119	Peak
11160	16	0	100	V	38.511	6.23	26.940	33.801	54	-20.199	Ave
11160	15.94	0	100	H	38.511	6.23	26.940	33.741	54	-20.259	Ave
16740	31.32	0	100	V	39.841	8.10	26.120	53.141	74	-20.859	Peak
16740	30.27	0	100	H	39.841	8.10	26.120	52.091	74	-21.909	Peak
16740	15.95	0	100	V	39.841	8.10	26.120	37.771	54	-16.229	Ave
16740	15.49	0	100	H	39.841	8.10	26.120	37.311	54	-16.689	Ave
High Channel 5700 MHz, measured at 3 meters											
11400	31.63	0	100	V	38.882	6.20	27.000	49.712	74	-24.288	Peak
11400	31.72	0	100	H	38.882	6.20	27.000	49.802	74	-24.198	Peak
11400	16.31	0	100	V	38.882	6.20	27.000	34.392	54	-19.608	Ave
11400	16.29	0	100	H	38.882	6.20	27.000	34.372	54	-19.628	Ave
17100	31.59	0	100	V	42.637	8.31	26.030	56.507	74	-17.493	Peak
17100	31.24	0	100	H	42.637	8.31	26.030	56.157	74	-17.843	Peak
17100	16.3	0	100	V	42.637	8.31	26.030	41.217	54	-12.783	Ave
17100	16.28	0	100	H	42.637	8.31	26.030	41.197	54	-12.803	Ave

Note: all emissions were under the noise floor.

802.11n-HT40 Mode

Frequency (MHz)	S.A. Reading (dBμV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBμV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBμV/m)	Margin (dB)	
Low Channel 5510 MHz, measured at 3 meters											
11020	30.27	0	100	V	38.379	6.20	26.920	47.929	74	-26.071	Peak
11020	31.29	0	100	H	38.379	6.20	26.920	48.949	74	-25.051	Peak
11020	16.07	0	100	V	38.379	6.20	26.920	33.729	54	-20.271	Ave
11020	16.06	0	100	H	38.379	6.20	26.920	33.719	54	-20.281	Ave
16530	31.28	0	100	V	38.665	6.20	26.120	50.025	74	-23.975	Peak
16530	31.31	0	100	H	38.665	8.10	26.120	51.955	74	-22.045	Peak
16530	16.37	0	100	V	38.665	8.10	26.120	37.015	54	-16.985	Ave
16530	16.29	0	100	H	38.665	8.10	26.120	36.935	54	-17.065	Ave
Middle Channel 5550 MHz, measured at 3 meters											
11100	32.34	0	100	V	38.511	6.20	26.980	50.071	74	-23.929	Peak
11100	31.64	0	100	H	38.511	6.20	26.980	49.371	74	-24.629	Peak
11100	16.86	0	100	V	38.511	6.20	26.980	34.591	54	-19.409	Ave
11100	16.45	0	100	H	38.511	6.20	26.980	34.181	54	-19.819	Ave
16650	32.38	0	100	V	39.136	8.31	26.110	53.716	74	-20.284	Peak
16650	32.21	0	100	H	39.136	8.31	26.110	53.546	74	-20.454	Peak
16650	17.22	0	100	V	39.136	8.31	26.110	38.556	54	-15.444	Ave
16650	17.23	0	100	H	39.136	8.31	26.110	38.566	54	-15.434	Ave
High Channel 5670 MHz, measured at 3 meters											
11340	33.25	0	100	V	38.844	6.20	26.970	51.324	74	-22.676	Peak
11340	33.84	0	100	H	38.844	6.20	26.970	51.914	74	-22.086	Peak
11340	18.65	0	100	V	38.844	6.20	26.970	36.724	54	-17.276	Ave
11340	18.68	0	100	H	38.844	6.20	26.970	36.754	54	-17.246	Ave
17010	32.06	0	100	V	41.826	8.31	25.990	56.206	74	-17.794	Peak
17010	32.02	0	100	H	41.826	8.31	25.990	56.166	74	-17.834	Peak
17010	16.95	0	100	V	41.826	8.31	25.990	41.096	54	-12.904	Ave
17010	16.91	0	100	H	41.826	8.31	25.990	41.056	54	-12.944	Ave

Note: all emissions were under the noise floor.

8 FCC §15.407(a) & IC RSS-210 §A9.2 – 26 dB & 99% Emission Bandwidth

8.1 Applicable Standard

FCC §15.407(a) and IC RSS-210 §A9.2.

8.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 26 dB from the reference level. Record the frequency difference as the emissions bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

8.3 Test Equipment List and Details

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

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

8.4 Test Environmental Conditions

Temperature:	21-23 °C
Relative Humidity:	43-45 %
ATM Pressure:	101-102 kPa

The testing was performed by Jeffrey Wu from 2013-06-20 to 2013-06-24 in RF site.

8.5 Test Results

Please refer to the following tables and plots.

5250-5350 MHz Band:

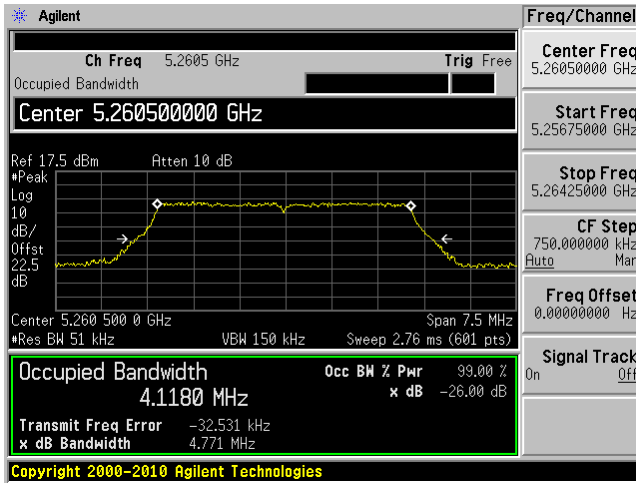
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)		99% Emission Bandwidth (MHz)	
		J0	J1	J0	J1
5 MHz mode					
Low	5260.52	4.771	4.738	4.1180	4.1248
Middle	5280.5	4.813	4.797	4.1221	4.1204
High	5320.5	4.796	4.761	4.1257	4.1218
10 MHz mode					
Low	5260	9.9319	9.301	8.1684	8.1769
Middle	5280	9.379	9.335	8.1943	8.1848
High	5320	9.311	9.320	8.1862	8.1739
802.11a mode					
Low	5260	22.397	22.342	16.7062	16.5904
Middle	5280	21.716	21.413	16.5845	16.5541
High	5320	23.266	22.036	16.7346	16.577
802.11n-HT20 mode					
Low	5260	22.711	22.744	17.8314	17.7416
Middle	5280	23.363	23.284	17.9093	17.7978
High	5320	22.832	22.989	17.8088	17.7925
802.11n-HT40 mode					
Low	5270	47.188	46.616	36.7056	36.5899
High	5310	46.164	46.438	36.5619	36.3996

5470-5725 MHz Band:

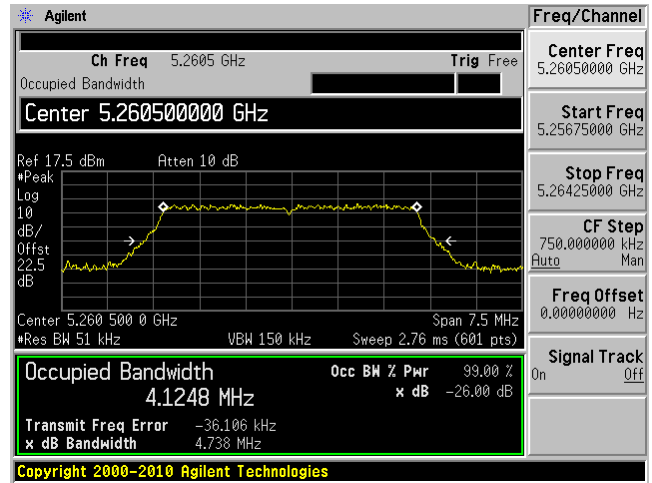
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)		99% Emission Bandwidth (MHz)	
		J0	J1	J0	J1
5 MHz mode					
Low	5500.5	4.802	4.776	4.1274	4.1156
Middle	5580.5	4.848	4.768	4.1279	4.1219
High	5700.5	4.778	4.690	4.1280	4.1304
10 MHz mode					
Low	5500	9.326	9.329	8.1901	8.1816
Middle	5580	9.269	9.306	8.1788	8.1931
High	5700	9.258	9.155	8.1882	8.1721
802.11a mode					
Low	5500	22.273	22.477	16.6284	16.5898
Middle	5580	22.018	20.825	16.6644	16.5167
High	5700	21.569	21.214	16.6814	16.6046
802.11n-HT20 mode					
Low	5500	23.062	22.380	17.7908	17.7001
Middle	5580	23.207	22.380	17.8199	17.6543
High	5700	23.834	22.539	17.7829	17.6625
802.11n-HT40 mode					
Low	5510	46.350	46.225	36.5320	36.5703
Middle	5550	43.245	45.657	36.4259	36.5091
High	5670	48.987	47.645	36.6727	36.4584

5250-5350 MHz Band

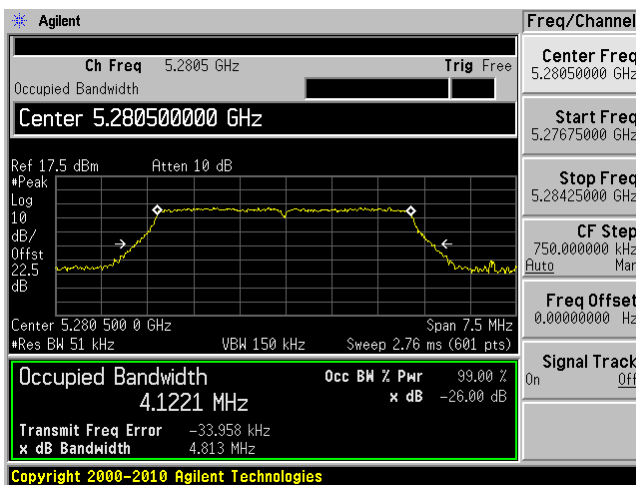
5 MHz mode, 5260.5 MHz, J0



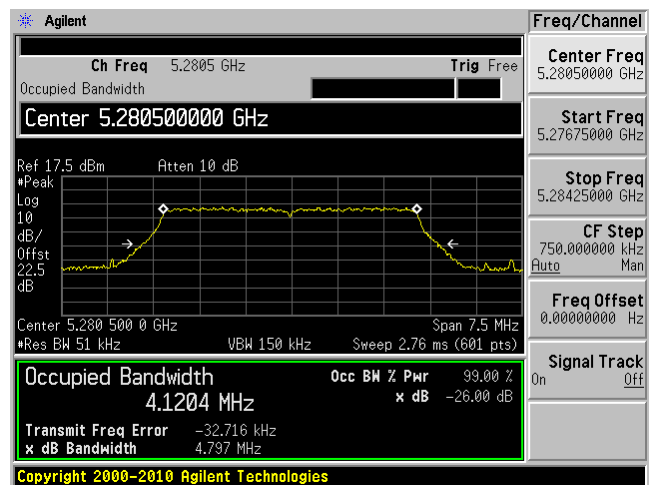
5 MHz mode, 5260.5 MHz, J1



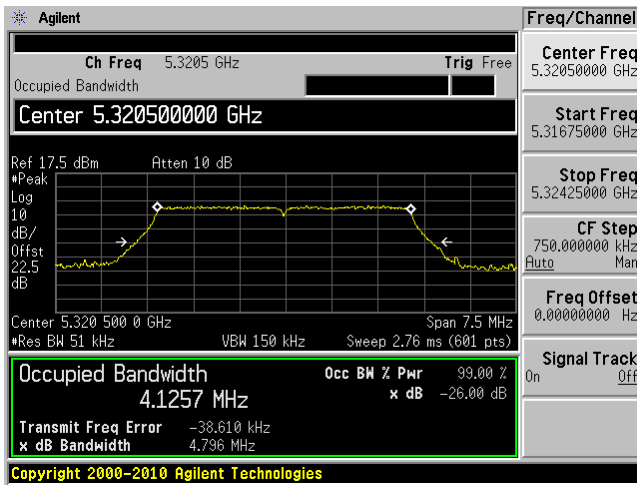
5 MHz mode, 5280.5 MHz, J0



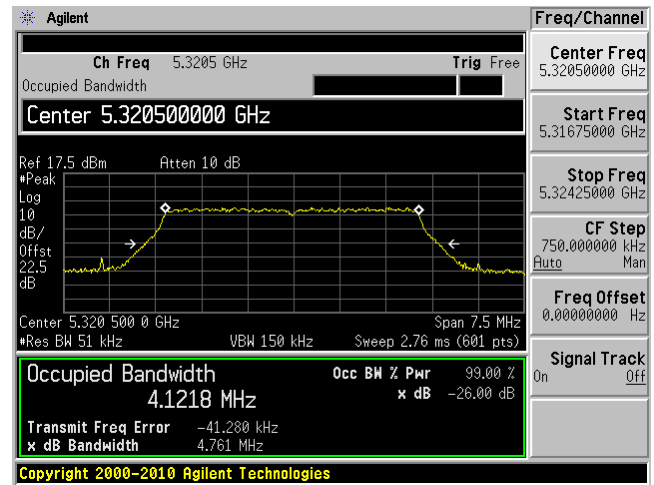
5 MHz mode, 5280.5 MHz, J1



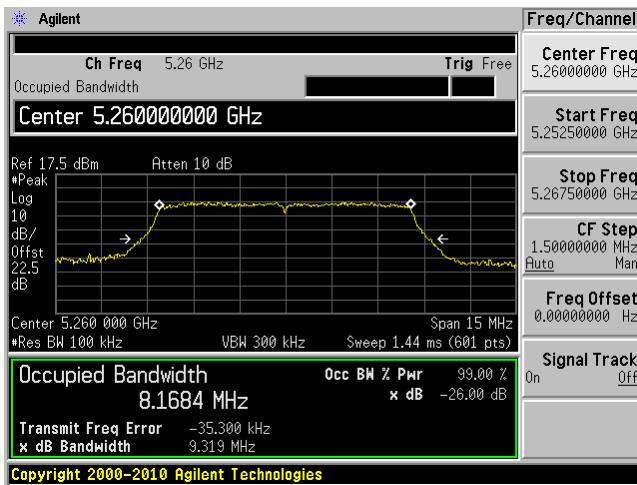
5 MHz mode, 5320.5 MHz, J0



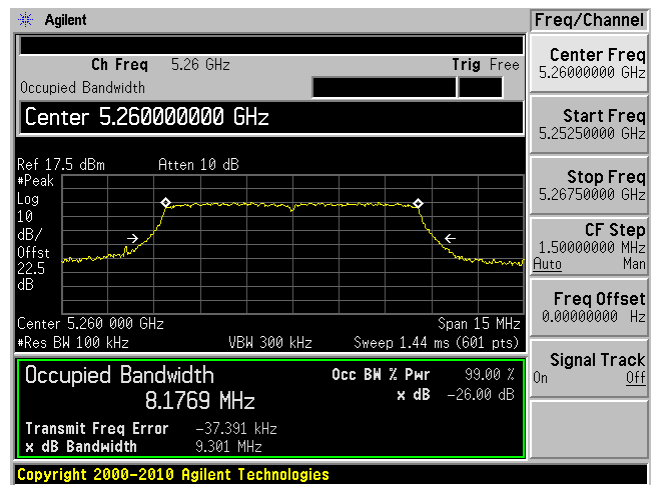
5 MHz mode, 5320.5 MHz, J1



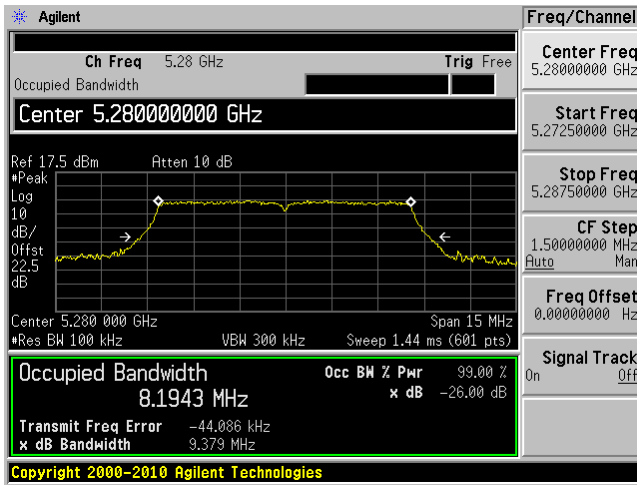
10 MHz mode, 5260 MHz, J0



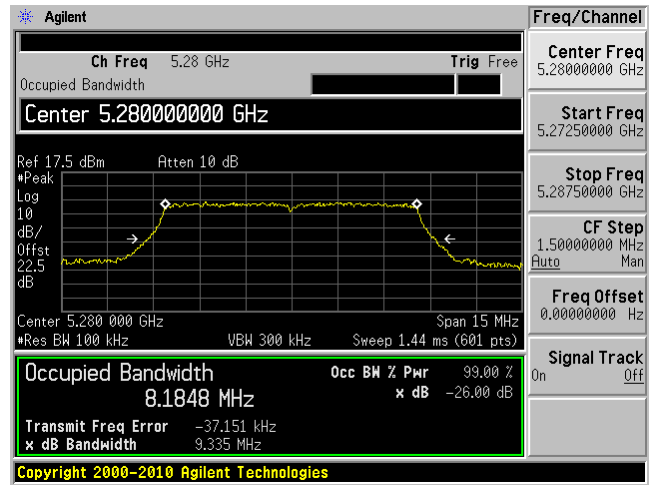
10 MHz mode, 5260 MHz, J1



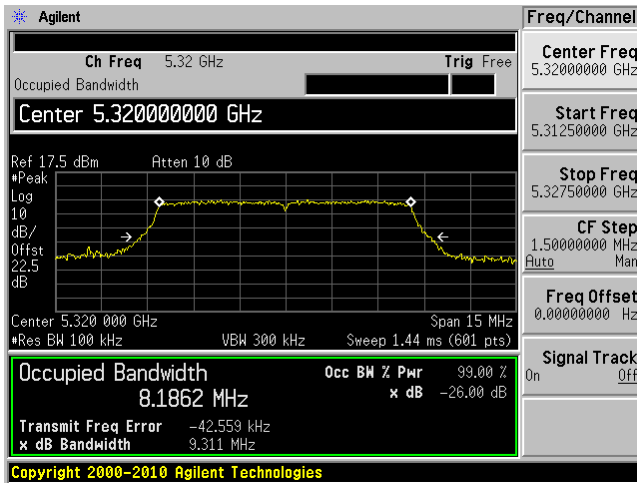
10 MHz mode, 5280 MHz, J0



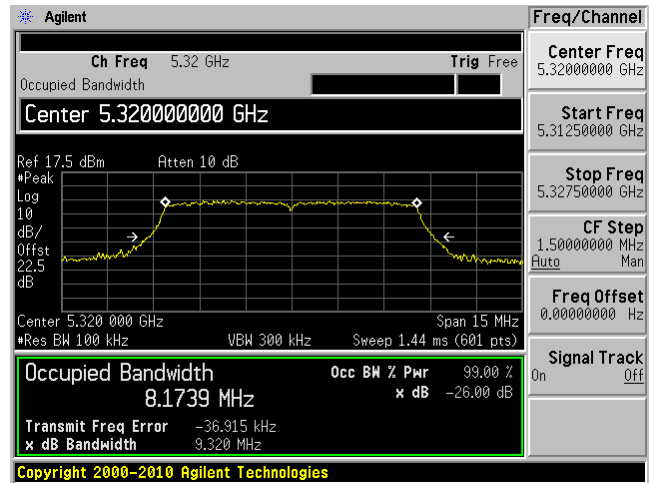
10 MHz mode, 5280 MHz, J1



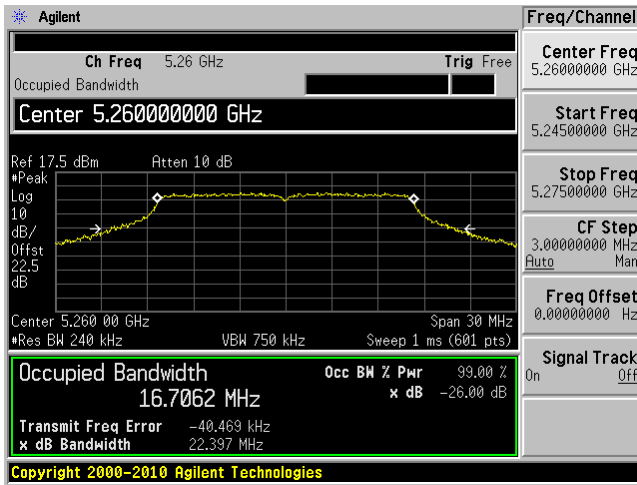
10 MHz mode, 5320 MHz, J0



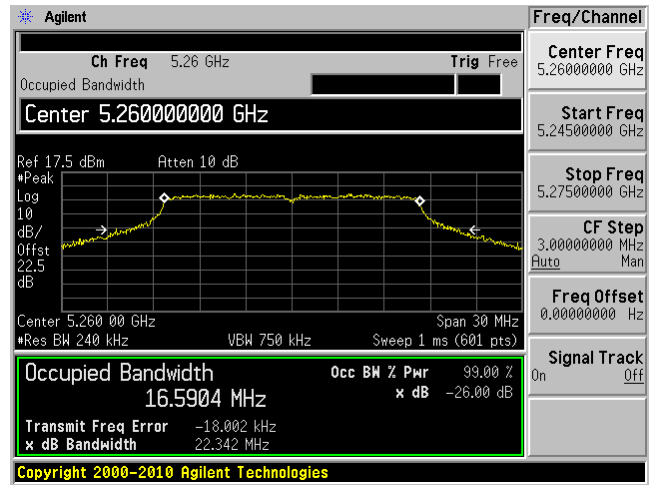
10 MHz mode, 5320 MHz, J1



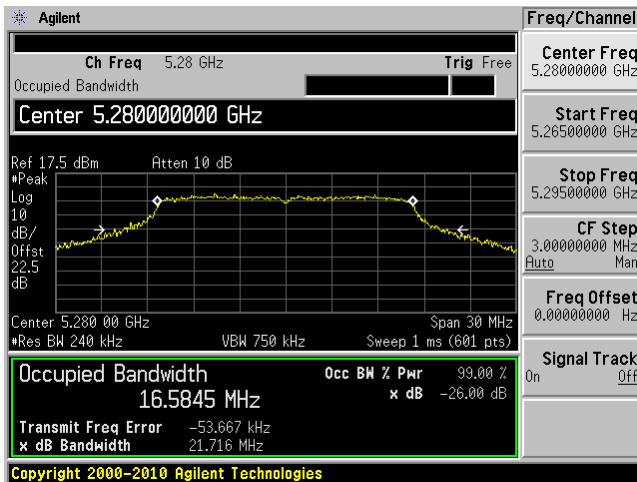
802.11a mode, 5260 MHz, J0



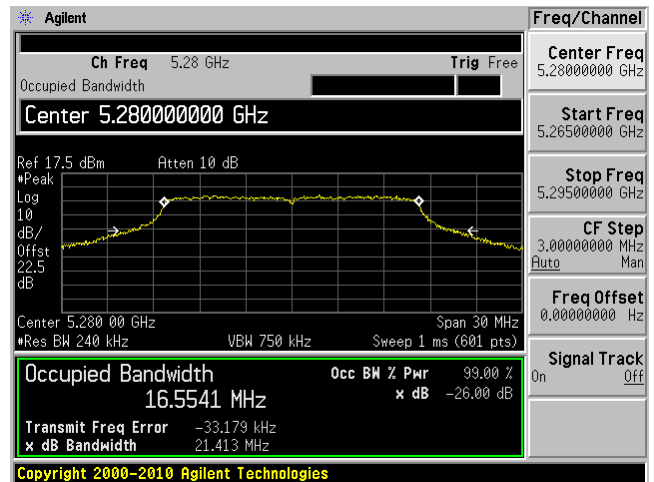
802.11a mode, 5260 MHz, J1



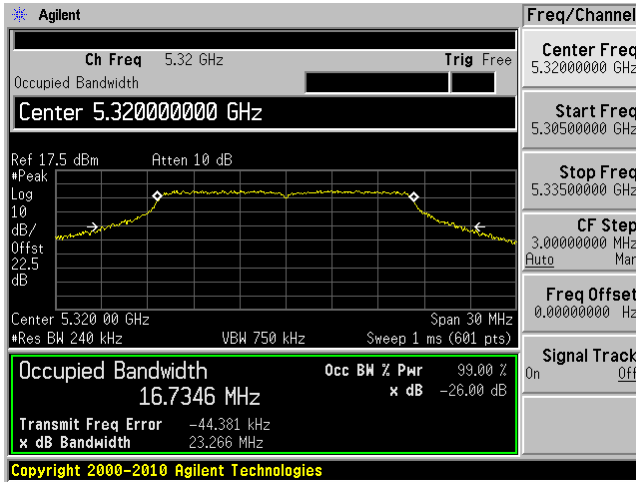
802.11a mode, 5280 MHz, J0



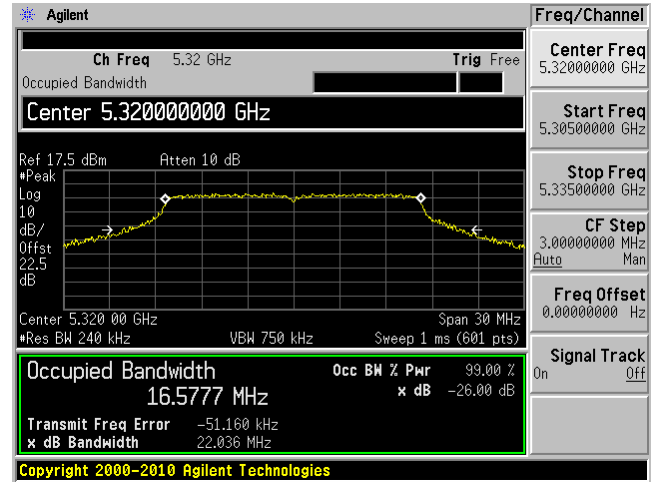
802.11a mode, 5280 MHz, J1



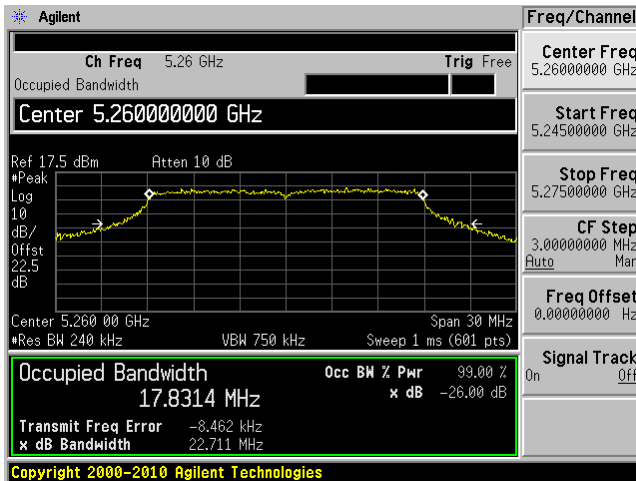
802.11a mode, 5320 MHz, J0



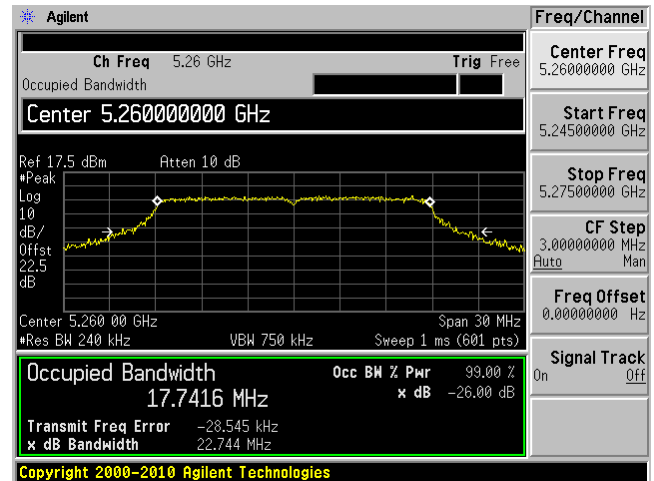
802.11a mode, 5320 MHz, J1



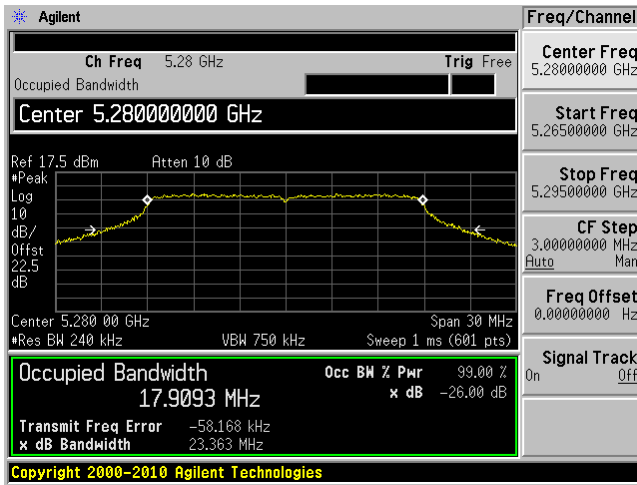
802.11n-HT20 mode, 5260 MHz, J0



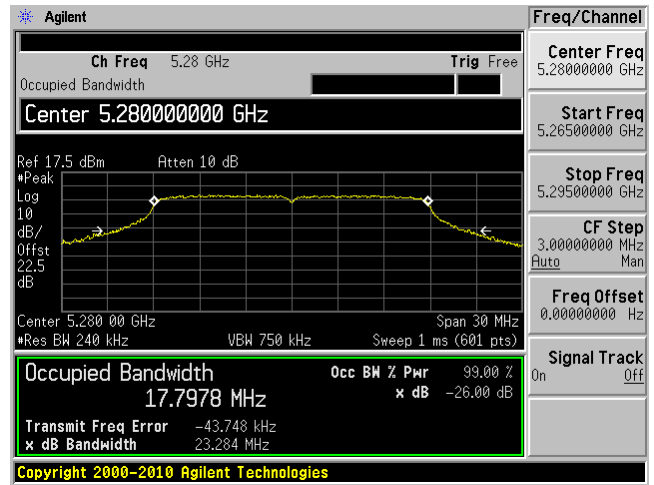
802.11n-HT20 mode, 5260 MHz, J1



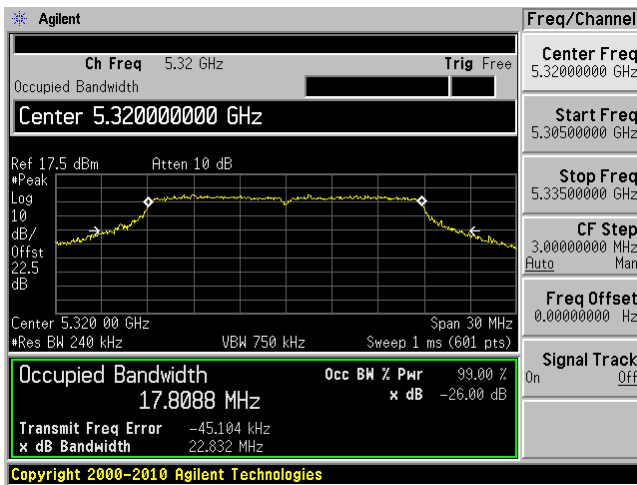
802.11n-HT20 mode, 5280 MHz, J0



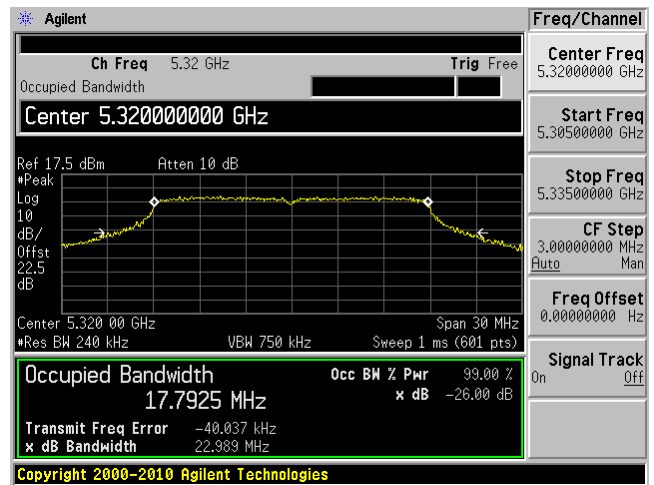
802.11n-HT20 mode, 5280 MHz, J1



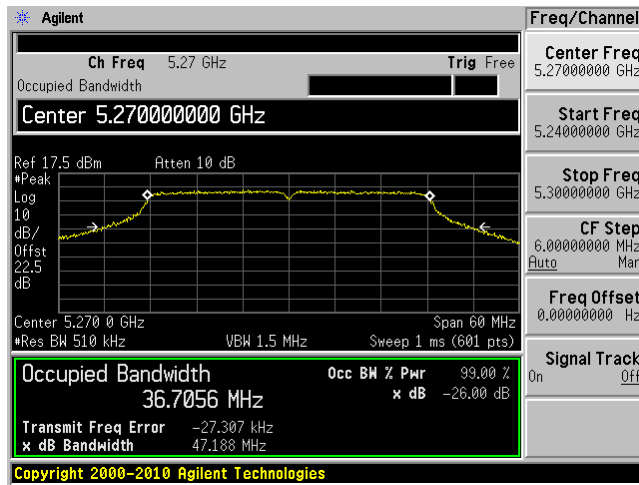
802.11n-HT20 mode, 5320 MHz, J0



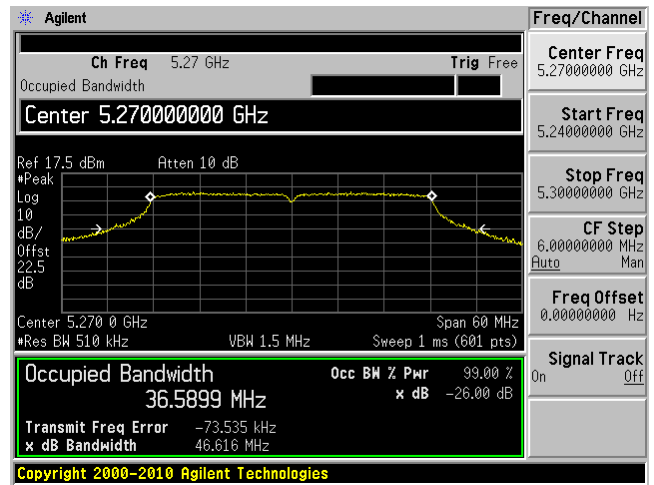
802.11n-HT20 mode, 5320 MHz, J1



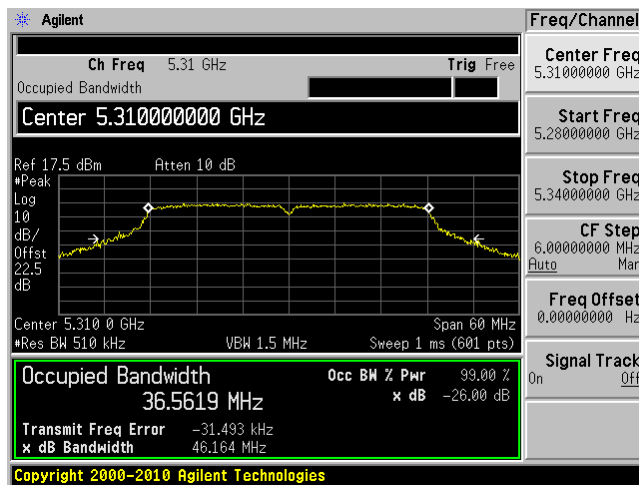
802.11n-HT40 mode, 5270 MHz, J0



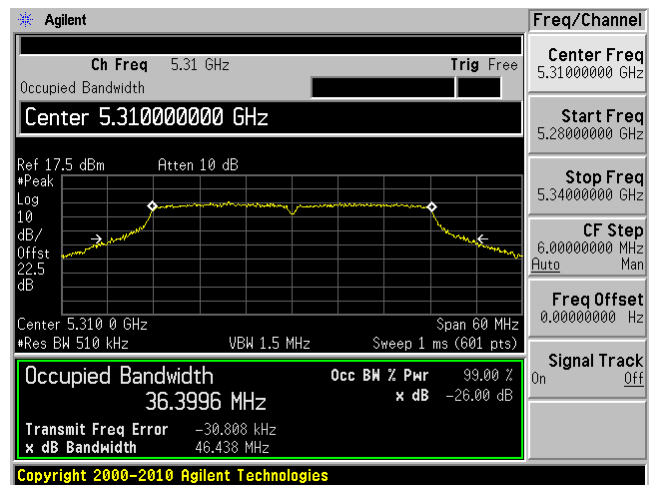
802.11n-HT40 mode, 5270 MHz, J1



802.11n-HT40 mode, 5310 MHz, J0

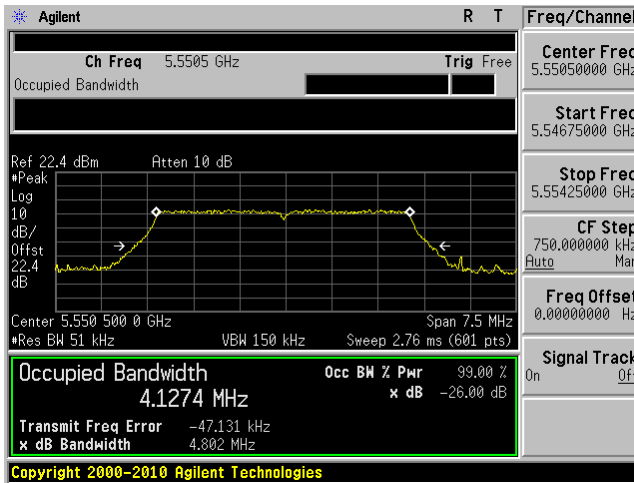


802.11n-HT40 mode, 5310 MHz, J1

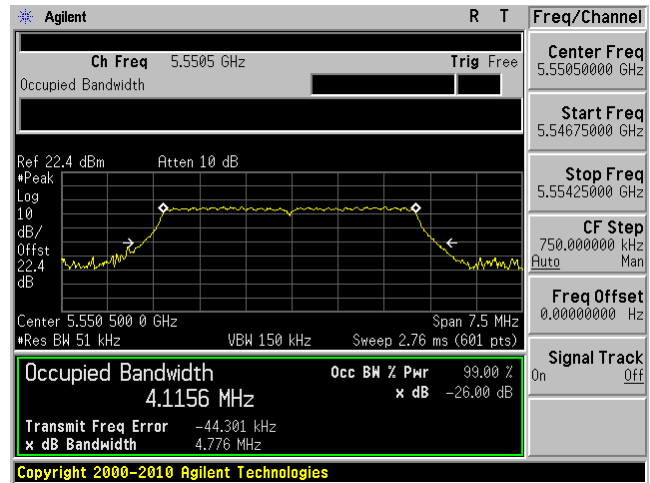


5470-5725 MHz Band

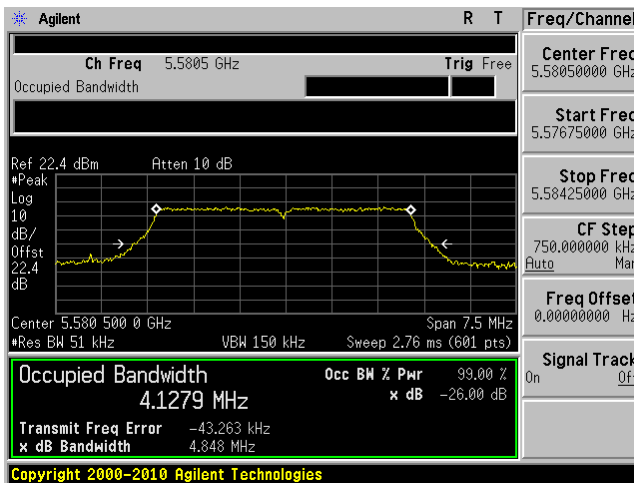
5 MHz mode, 5500.5 MHz, J0



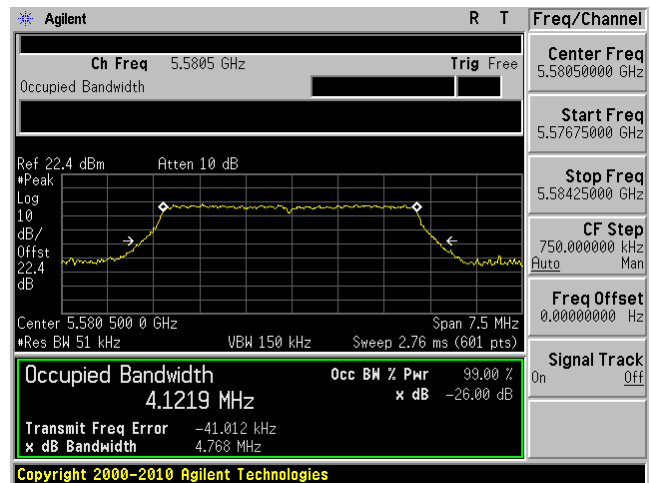
5 MHz mode, 5500.5 MHz, J1



5 MHz mode, 5580.5 MHz, J0

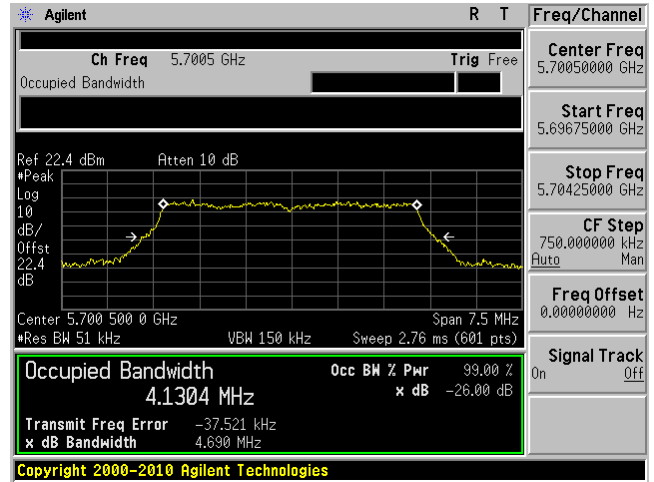
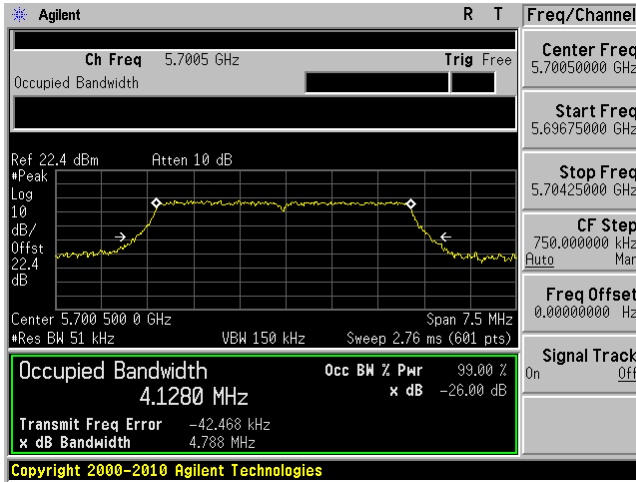


5 MHz mode, 5580.5 MHz, J1



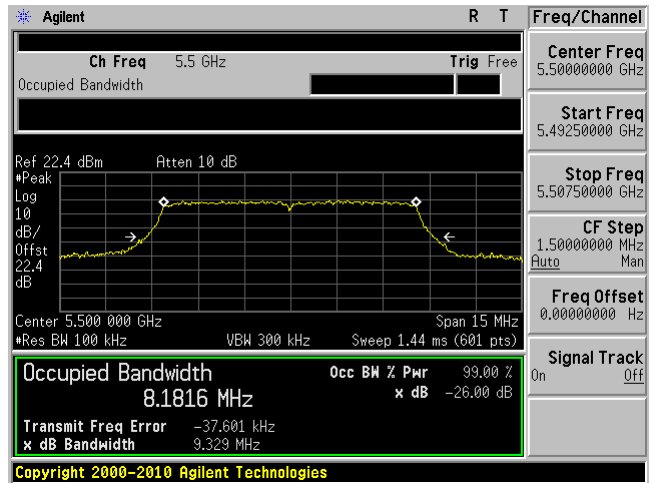
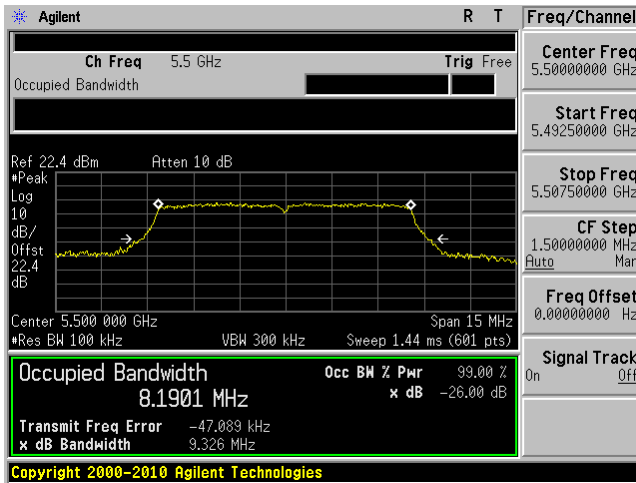
5 MHz mode, 5700.5 MHz, J0

5 MHz mode, 5700.5 MHz, J1

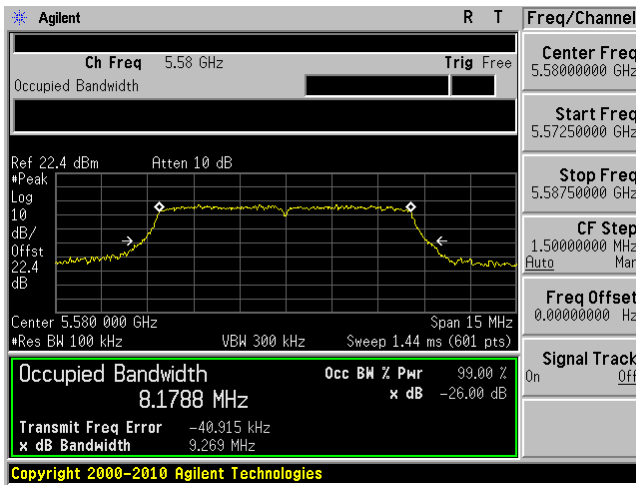


10 MHz mode, 5500 MHz, J0

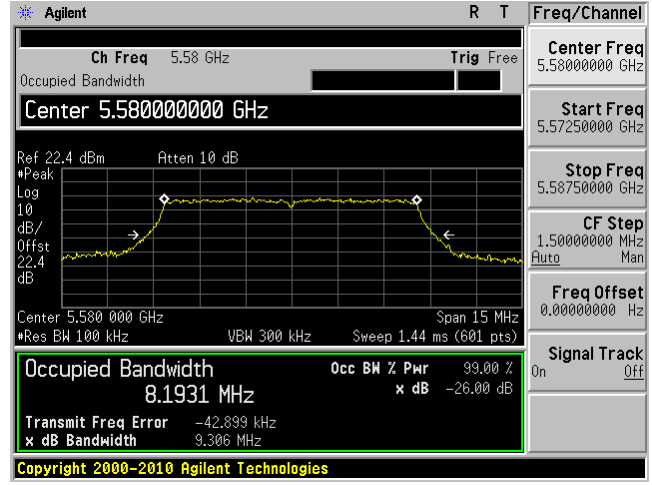
10 MHz mode, 5500 MHz, J1



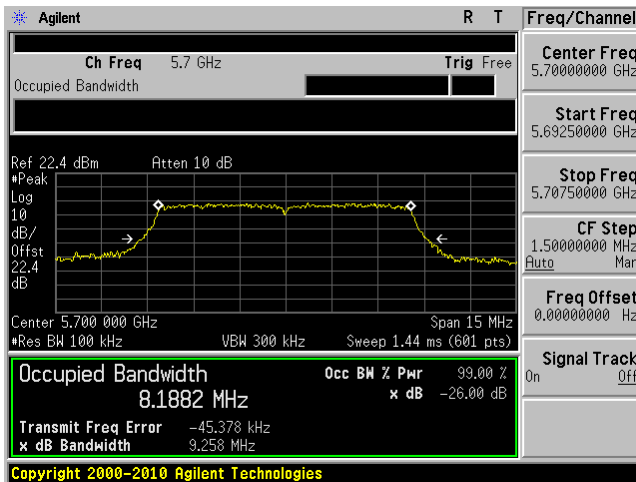
10 MHz mode, 5580 MHz, J0



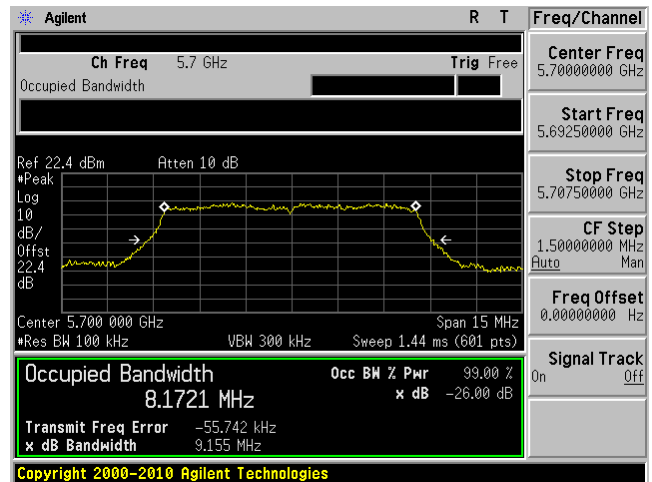
10 MHz mode, 5580 MHz, J1



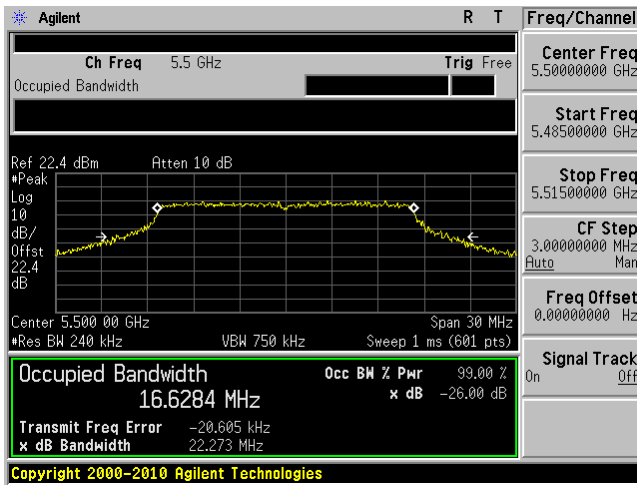
10 MHz mode, 5700 MHz, J0



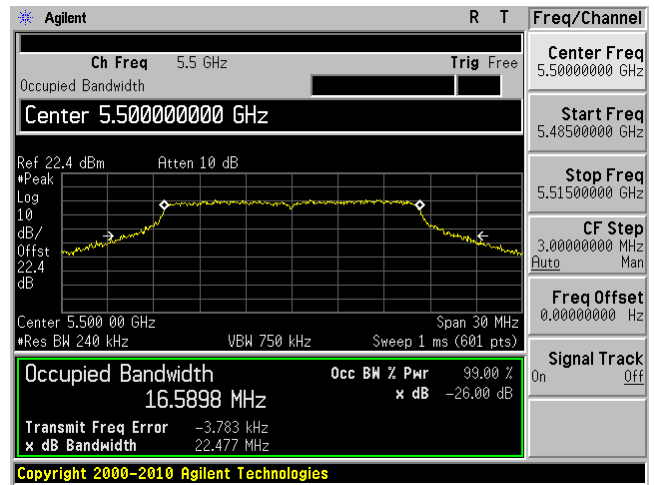
10 MHz mode, 5700 MHz, J1



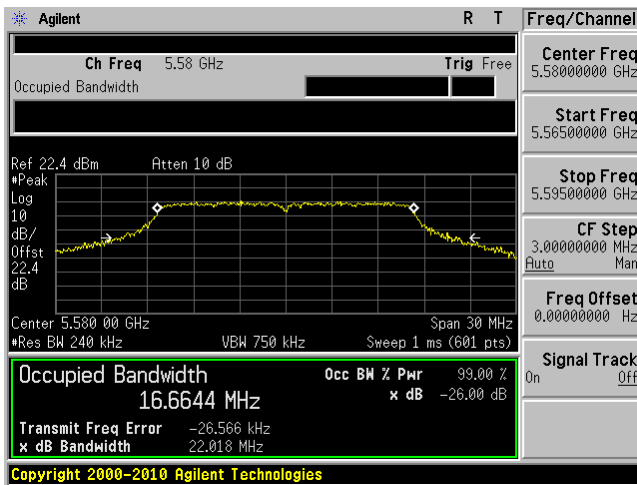
802.11a mode, 5500 MHz, J0



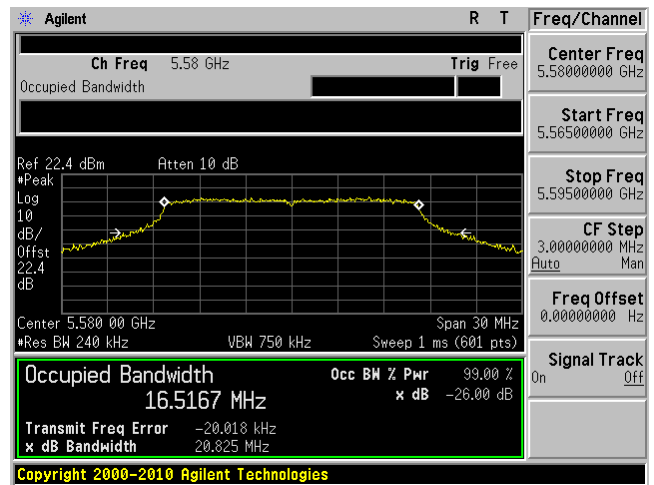
802.11a mode, 5500 MHz, J1



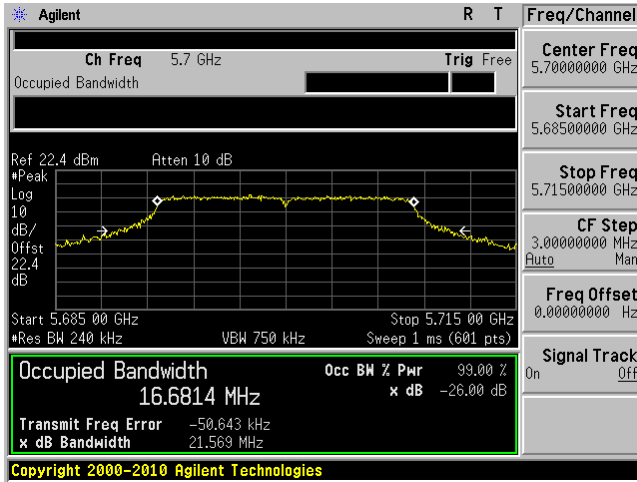
802.11a mode, 5580 MHz, J0



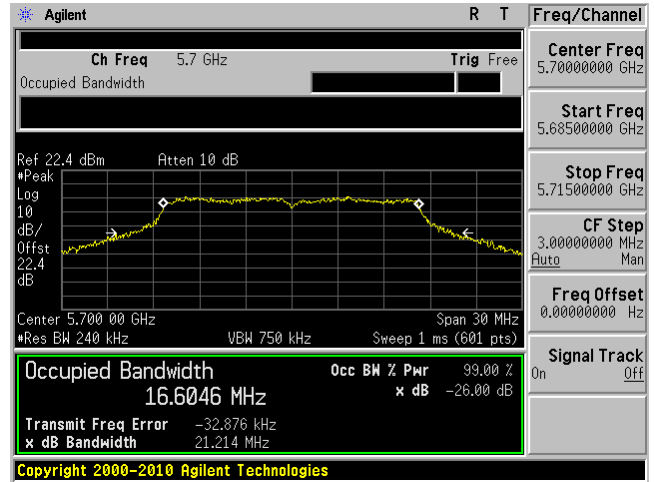
802.11a mode, 5580 MHz, J1



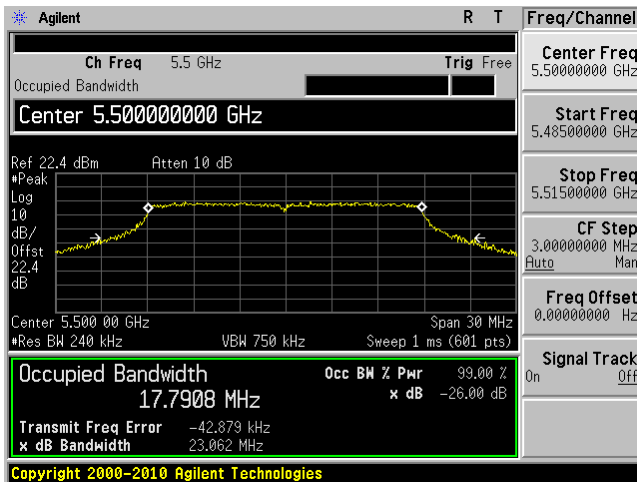
802.11a mode, 5700 MHz, J0



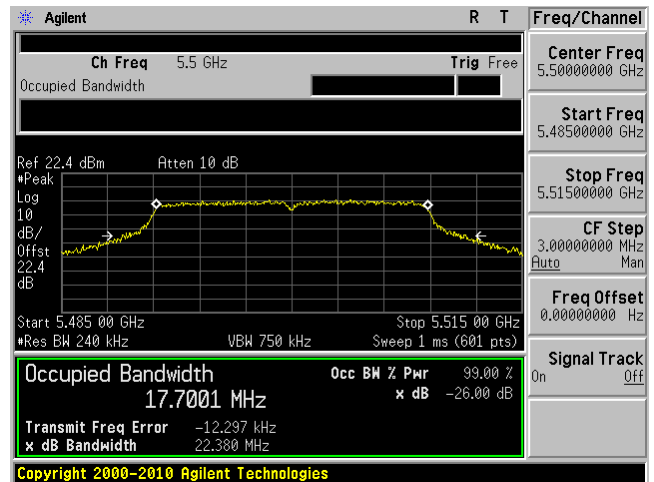
802.11a mode, 5700 MHz, J1



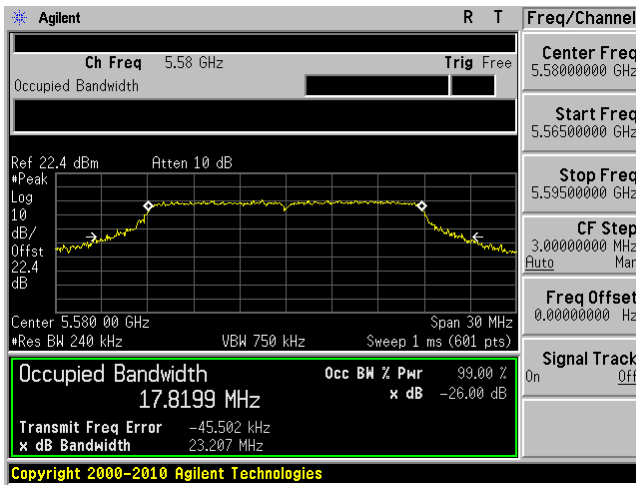
802.11n-HT20 mode, 5500 MHz, J0



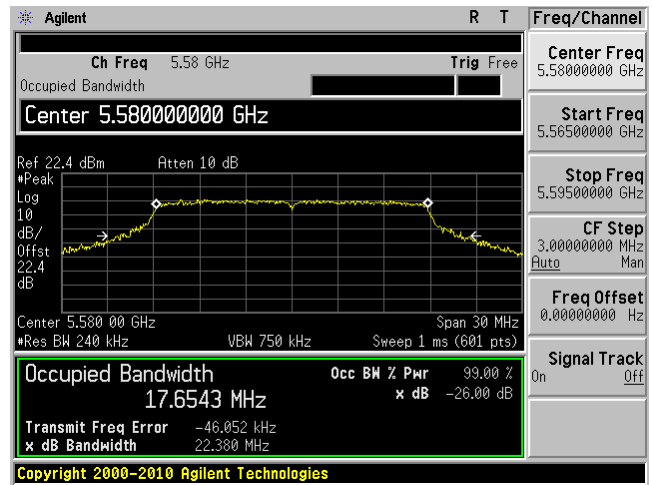
802.11n-HT20 mode, 5500 MHz, J1



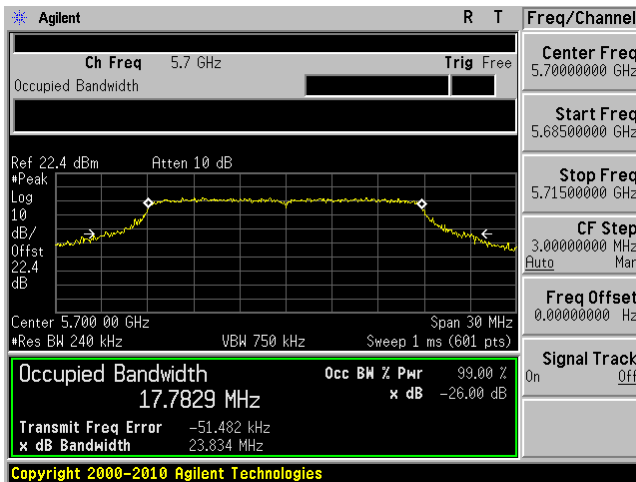
802.11n-HT20 mode, 5580 MHz, J0



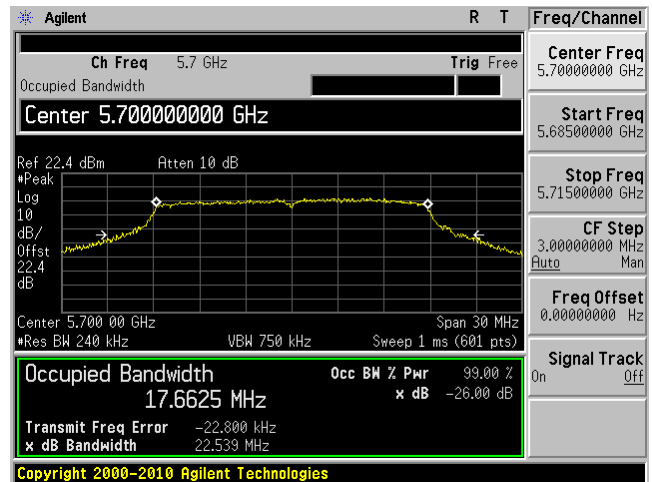
802.11n-HT20 mode, 5580 MHz, J1



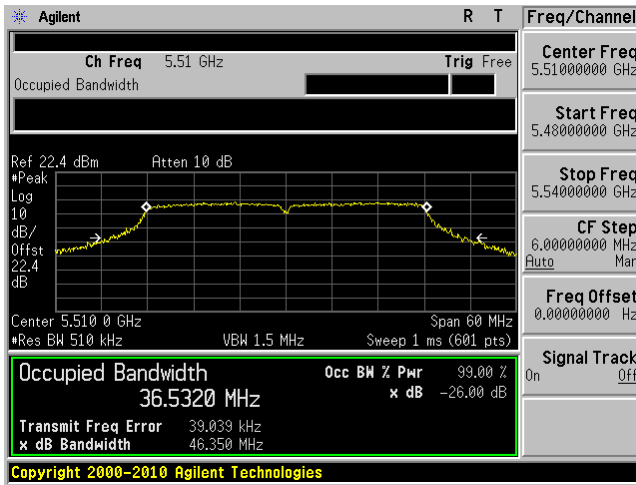
802.11n-HT20 mode, 5700 MHz, J0



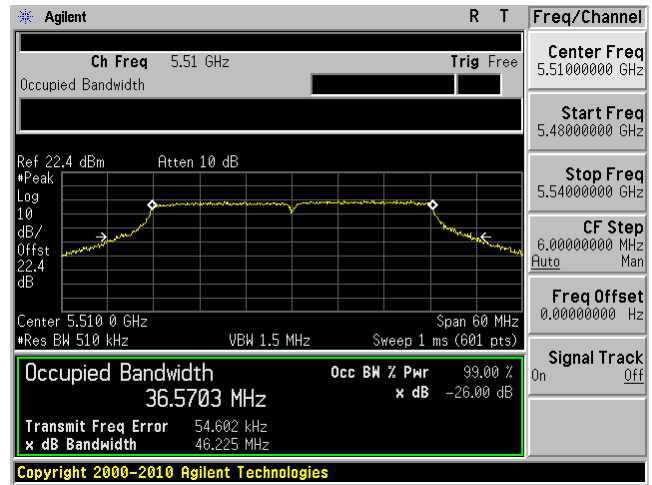
802.11n-HT20 mode, 5700 MHz, J1



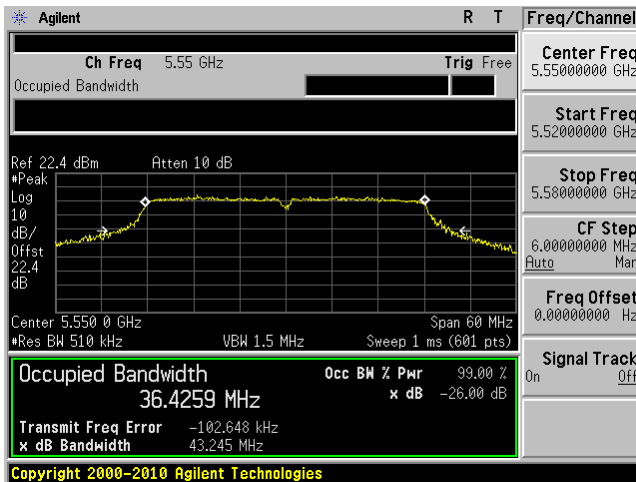
802.11n-HT40 mode, 5510 MHz, J0



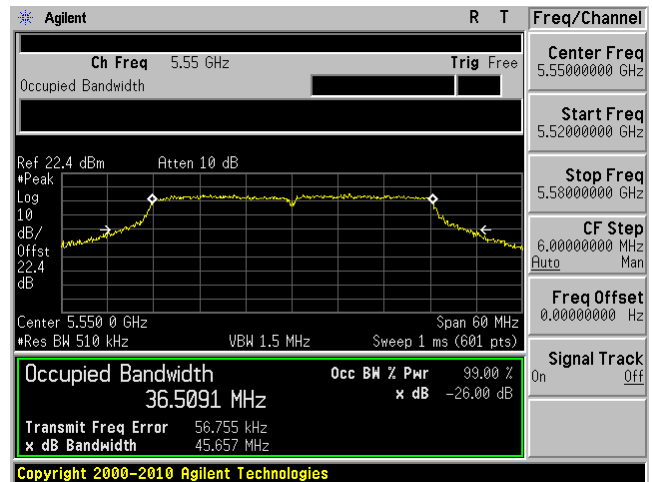
802.11n-HT40 mode, 5510 MHz, J1



802.11n-HT40 mode, 5550 MHz, J0

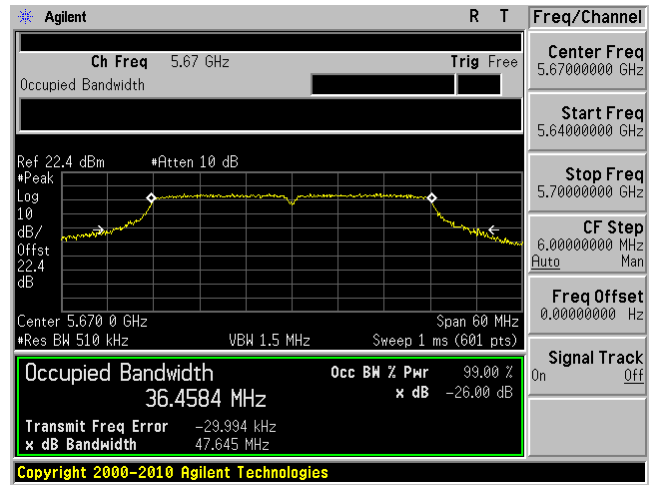
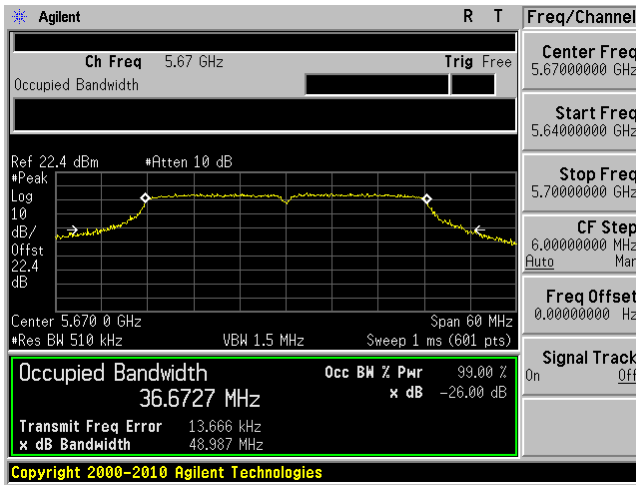


802.11n-HT40 mode, 5550 MHz, J1



802.11n-HT40 mode, 5670 MHz, J0

802.11n-HT40 mode, 5670 MHz, J1



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

9.1 Applicable Standard

According to FCC §15.407(a)(2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, 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.

(h) Transmit Power Control (TPC)

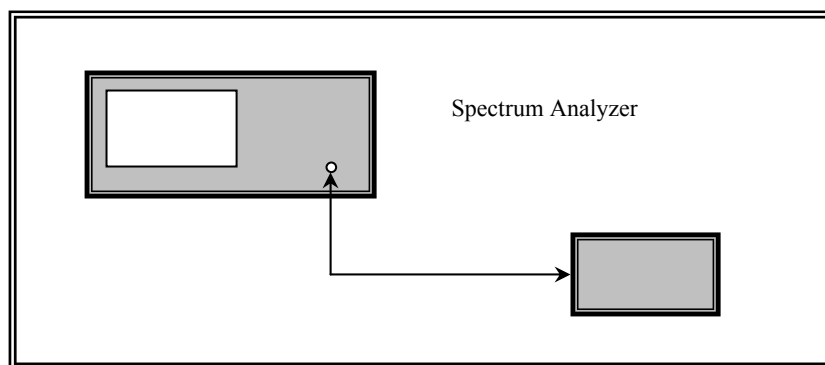
(1) Transmit power control (TPC). U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

According to IC RSS-210 §A9.2:

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10} B$, dBm, whichever power is less. And the 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.

9.2 Measurement Procedure

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



9.3 Test Equipment List and Details

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

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

9.4 Test Environmental Conditions

Temperature:	21-23 °C
Relative Humidity:	43-45 %
ATM Pressure:	101-102 kPa

The testing was performed by Jeffrey Wu from 2013-06-20 to 2013-06-24 in RF site.

9.5 Test Results

(A) 5250 - 5350 MHz Band:

Low Power High Antenna System Gain (28 dBi)

Channel	Frequency (MHz)	Conducted Output Power (dBm)		Total Output Power (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1			
5 MHz mode						
Low	5260.5	-9.89	-9.2	-6.52	2	-8.52
Middle	5280.5	-9.36	-9.05	-6.19	2	-8.19
High	5320.5	-9.61	-9.06	-6.32	2	-8.32
10 MHz Mode						
Low	5260	-7.03	-6.28	-3.63	2	-5.63
Middle	5280	-6.78	-6.09	-3.41	2	-5.41
High	5320	-6.39	-6.04	-3.20	2	-5.20
802.11a Mode						
Low	5260	-3.64	-3.02	-0.31	2	-2.31
Middle	5280	-4.08	-3.11	-0.56	2	-2.56
High	5320	-3.54	-3.01	-0.26	2	-2.26
802.11n-HT20 Mode						
Low	5260	-3.58	-3.03	-0.29	2	-2.29
Middle	5280	-4.01	-3.2	-0.58	2	-2.58
High	5320	-3.52	-3.02	-0.25	2	-2.25
802.11n-HT40 Mode						
Low	5270	-1.66	-1.12	1.63	2	-0.37
High	5310	-7.8	-7.57	-4.67	2	-6.67

*Note: The power limit is 24 dBm, and the conducted output power should be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. Since the device has 28 dBi effective antenna System gain, the power limit has to be reduced to 2 dBm.

High Power Low Antenna Gain (9 dBi)

Channel	Frequency (MHz)	Conducted Output Power (dBm)		Total Output Power (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1			
5 MHz mode						
Low	5260.5	9.28	9.5	12.40	21	-8.60
Middle	5280.5	9.19	9.44	12.33	21	-8.67
High	5320.5	9.48	9.5	12.50	21	-8.50
10 MHz Mode						
Low	5260	11.92	12.19	15.07	21	-5.93
Middle	5280	11.96	12.44	15.22	21	-5.78
High	5320	12.5	12.48	15.50	21	-5.50
802.11a Mode						
Low	5260	15.14	15.44	18.30	21	-2.70
Middle	5280	15.25	15.47	18.37	21	-2.63
High	5320	15.24	15.49	18.38	21	-2.62
802.11n-HT20 Mode						
Low	5260	14.31	15.27	17.83	21	-3.17
Middle	5280	14.58	15.5	18.07	21	-2.93
High	5320	15.39	15.5	18.46	21	-2.54
802.11n-HT40 Mode						
Low	5270	14.19	16.29	18.38	21	-2.62
High	5310	8.71	8.81	11.77	21	-9.23

*Note: The power limit is 24 dBm, and the conducted output power should be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. Since the device has 9 dBi effective antenna system gain, the power limit has to be reduced to 21 dBm.

(B) 5470 - 5725 MHz Band:

Low Power High Antenna System Gain (28 dBi)

Channel	Frequency (MHz)	Conducted Output Power (dBm)		Total Output Power (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1			
5 MHz mode						
Low	5500.5	-12.9	-12.5	-9.69	2	-11.69
Middle	5580.5	-9.01	-9.07	-6.03	2	-8.03
High	5700.5	-9.05	-9.01	-6.02	2	-8.02
10 MHz Mode						
Low	5500	-9.19	-9.07	-6.12	2	-8.12
Middle	5580	-6.03	-6.01	-3.01	2	-5.01
High	5700	-6.02	-6.06	-3.03	2	-5.03
802.11a Mode						
Low	5500	-6.81	-6.6	-3.69	2	-5.69
Middle	5580	-3.16	-3.04	-0.09	2	-2.09
High	5700	-3.11	-3.04	-0.06	2	-2.06
802.11n-HT20 Mode						
Low	5500	-6.56	-6.57	-3.55	2	-5.55
Middle	5580	-3.41	-3.31	-0.35	2	-2.35
High	5700	-3.08	-3.03	-0.04	2	-2.04
802.11n-HT40 Mode						
Low	5510	-7.16	-7.2	-4.17	2	-6.17
Middle	5550	-3.53	-3.69	-0.60	2	-2.60
High	5670	-1.01	-1.03	1.99	3	-1.01

*Note: The power limit is 24 dBm, and the conducted output power should be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. Since the device has 28 dBi effective antenna System gain, the power limit has to be reduced to 2 dBm.

High Power Low Antenna System Gain (9 dBi)

Channel	Frequency (MHz)	Conducted Output Power (dBm)		Total Output Power (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1			
5 MHz mode						
Low	5500.5	5.74	6.8	9.31	21	-11.69
Middle	5580.5	8.64	9.96	12.36	21	-8.64
High	5700.5	9.71	8.66	12.23	21	-8.77
10 MHz Mode						
Low	5500	9.48	9.51	12.51	21	-8.49
Middle	5580	10.86	12.56	14.80	21	-6.20
High	5700	12.86	11.21	15.12	21	-5.88
802.11a Mode						
Low	5500	11.32	12.65	15.05	21	-5.95
Middle	5580	14.03	15.46	17.81	21	-3.19
High	5700	15.22	14.05	17.68	21	-3.32
802.11n-HT20 Mode						
Low	5500	11.97	12.63	15.32	21	-5.68
Middle	5580	14.59	15.15	17.89	21	-3.11
High	5700	15.38	14.77	18.10	21	-2.90
802.11n-HT40 Mode						
Low	5510	7.75	8.55	11.18	21	-9.82
Middle	5550	15.42	15.43	18.44	21	-2.56
High	5670	17.48	17.35	20.43	21	-0.57

*Note: The power limit is 24 dBm, and the conducted output power should be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. Since the device has 9 dBi effective antenna System gain, the power limit has to be reduced to 21 dBm.

TPC:**5250 - 5350 MHz Band:**

Low Power High Antenna System Gain (28 dBi)

Channel	Frequency (MHz)	Conducted Output Power (dBm)		Total Output Power (dBm)	Antenna Gain (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1					
5 MHz Mode								
Low	5260.5	-7.03	-6.28	-6.52	28.0	21.48	24	-2.52
Middle	5280.5	-6.78	-6.09	-6.19	28.0	21.81	24	-2.19
High	5320.5	-6.39	-6.04	-6.32	28.0	21.68	24	-2.32
10 MHz Mode								
Low	5260	-7.49	-7.16	-4.31	28.0	23.69	24	-0.31
Middle	5280	-7.08	-7.08	-4.07	28.0	23.93	24	-0.07
High	5320	-7.7	-7.04	-4.35	28.0	23.65	24	-0.35
802.11a Mode								
Low	5260	-7.57	-7.34	-4.44	28.0	23.56	24	-0.44
Middle	5280	-7.3	-7.07	-4.17	28.0	23.83	24	-0.17
High	5320	-7.57	-7.17	-4.36	28.0	23.64	24	-0.36
802.11n-HT20 Mode								
Low	5260	-7.54	-7.13	-4.32	28.0	23.68	24	-0.32
Middle	5280	-7.5	-7.11	-4.29	28.0	23.71	24	-0.29
High	5320	-8.06	-7.21	-4.60	28.0	23.40	24	-0.60
802.11n-HT40 Mode								
Low	5270	-7.69	-7.03	-4.34	28.0	23.66	24	-0.34
High	5310	-7.6	-7.54	-4.56	28.0	23.44	24	-0.56

5470 - 5725 MHz Bnad:

Low Power High Antenna System Gain (28 dBi)

Channel	Frequency (MHz)	Conducted Output Power (dBm)		Total Output Power (dBm)	Antenna Gain (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1					
5 MHz Mode								
Low	5500.5	-12.9	-12.5	-9.69	28.00	18.31	24	-5.69
Middle	5580.5	-9.01	-9.07	-6.03	28.00	21.97	24	-2.03
High	5700.5	-9.05	-9.01	-6.02	28.00	21.98	24	-2.02
10 MHz Mode								
Low	5500	-9.19	-9.07	-6.12	28.00	21.88	24	-2.12
Middle	5580	-7.22	-7.13	-4.16	28.00	23.84	24	-0.16
High	5700	-7.19	-7.09	-4.13	28.00	23.87	24	-0.13
802.11a Mode								
Low	5500	-7.07	-7.15	-4.10	28.00	23.90	24	-0.10
Middle	5580	-7.01	-7.17	-4.08	28.00	23.92	24	-0.08
High	5700	-7.11	-7.09	-4.09	28.00	23.91	24	-0.09
802.11n-HT20 Mode								
Low	5500	-7.04	-7.1	-4.06	28.00	23.94	24	-0.06
Middle	5580	-7.01	-7.3	-4.14	28.00	23.86	24	-0.14
High	5700	-7.05	-7.1	-4.06	28.00	23.94	24	-0.06
802.11n-HT40 Mode								
Low	5510	-7.16	-7.2	-4.17	28.00	23.83	24	-0.17
Middle	5550	-7.1	-7.1	-4.09	28.00	23.91	24	-0.09
High	5670	-7.21	-7.27	-4.23	28.00	23.77	24	-0.23

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

10.1 Applicable Standard

According to FCC §15.407(b)

(1) 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 EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.

(2) 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 EIRP of -27 dBm/MHz.

According to RSS-210 §A9.2,

Emissions outside of the 5.25–5.35 GHz and 5.470–5.725 GHz band and shall not exceed an EIRP of -27 dBm/MHz, e.r.i.p.

10.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

10.3 Test Equipment List and Details

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

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

10.4 Test Environmental Conditions

Temperature:	21-23 °C
Relative Humidity:	43-45 %
ATM Pressure:	101-102 kPa

The testing was performed by Jeffrey Wu from 2013-06-20 to 2013-06-27 in RF site.

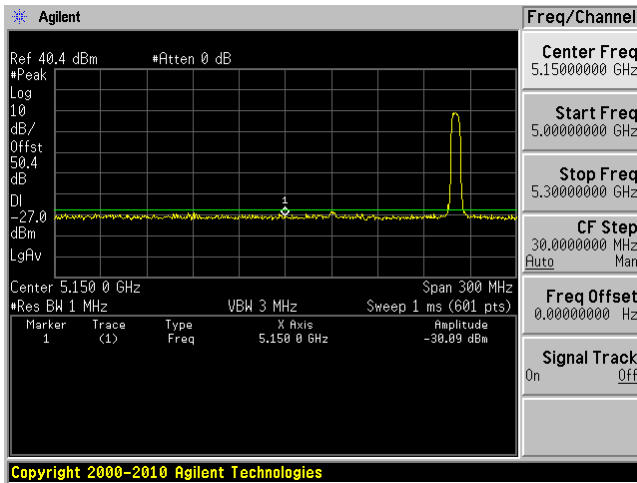
10.5 Test Results

Please refer to following pages for plots of band edge.

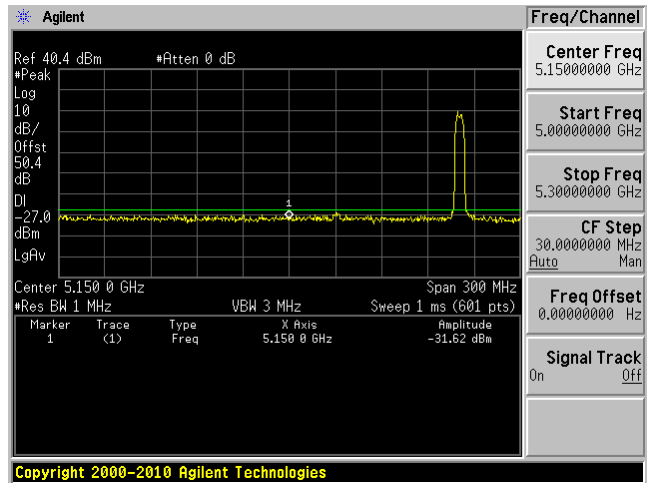
5250-5350 MHz Band

Low Power High Gain (28 dBi)

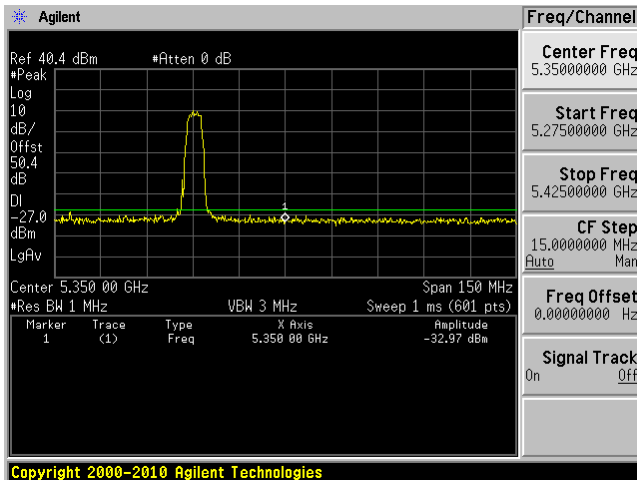
5 MHz mode, Lowest Channel J0



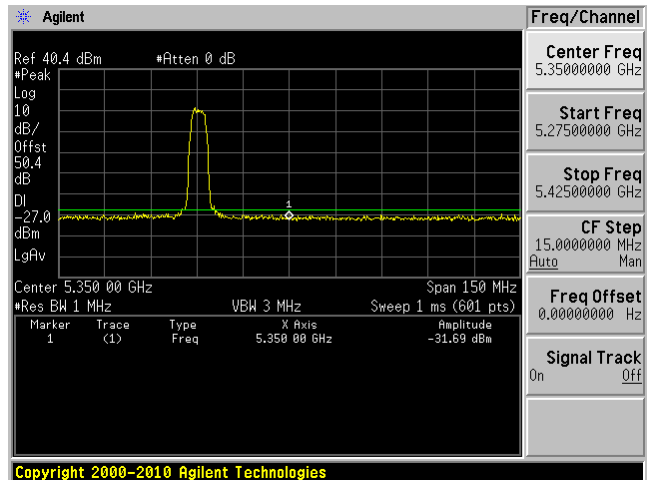
5 MHz mode, Lowest Channel J1



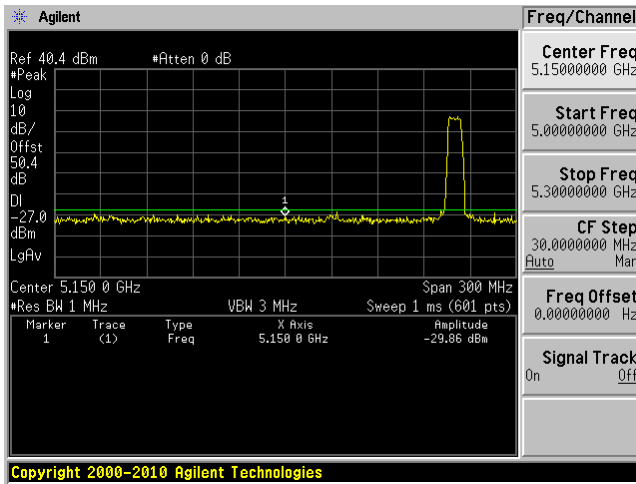
5 MHz mode, Highest Channel J0



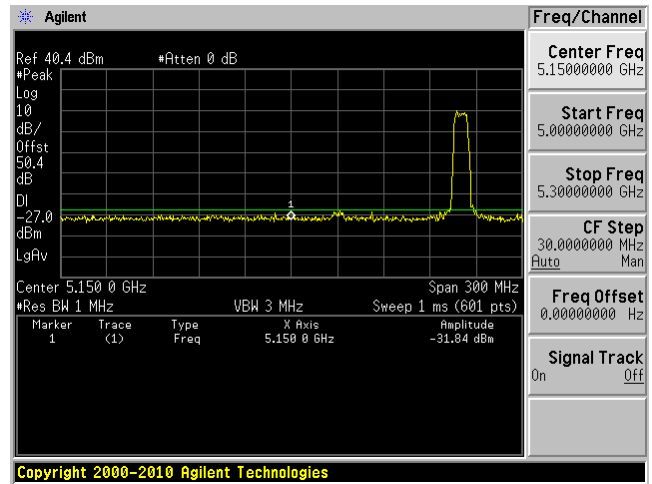
5 MHz mode, Highest Channel J1



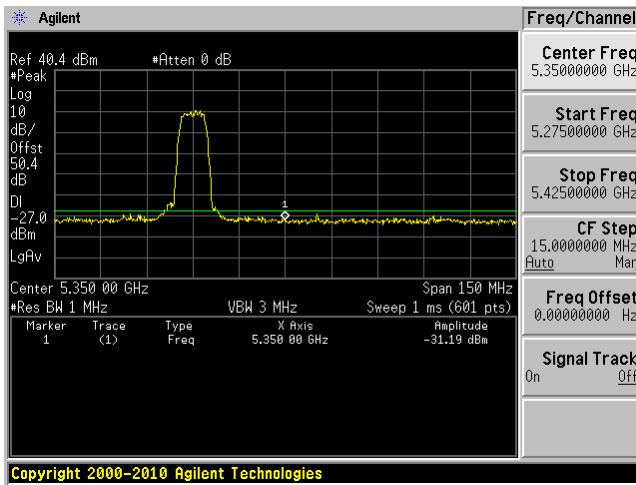
10 MHz mode, Lowest Channel J0



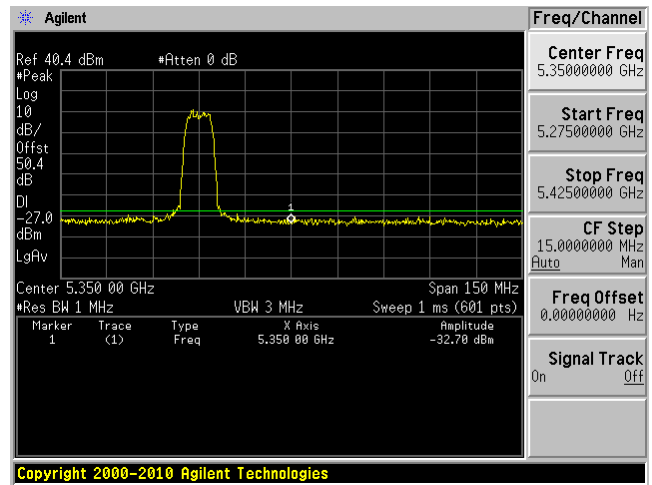
10 MHz mode, Lowest Channel J1



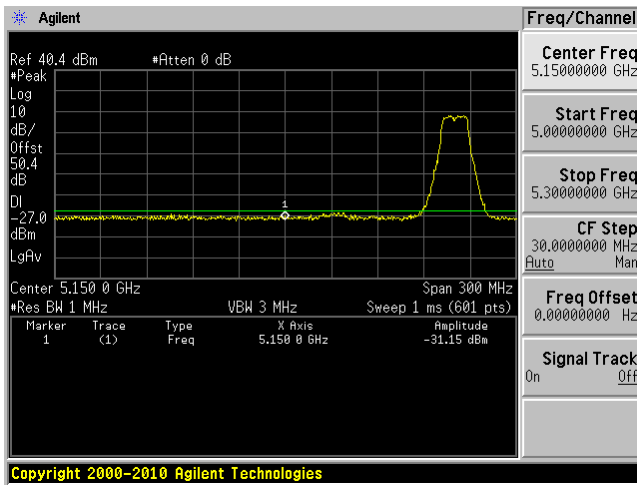
10 MHz mode, Highest Channel J0



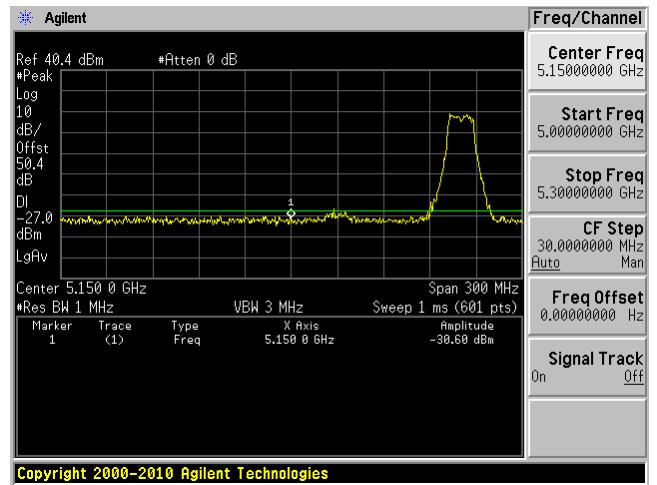
10 MHz mode, Highest Channel J1



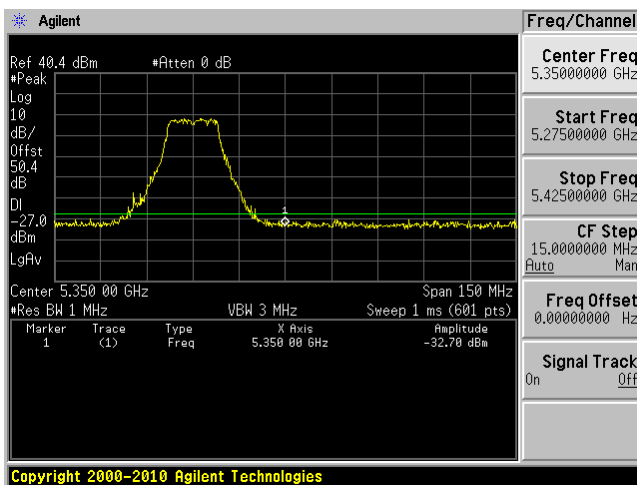
802.11a mode, Lowest Channel J0



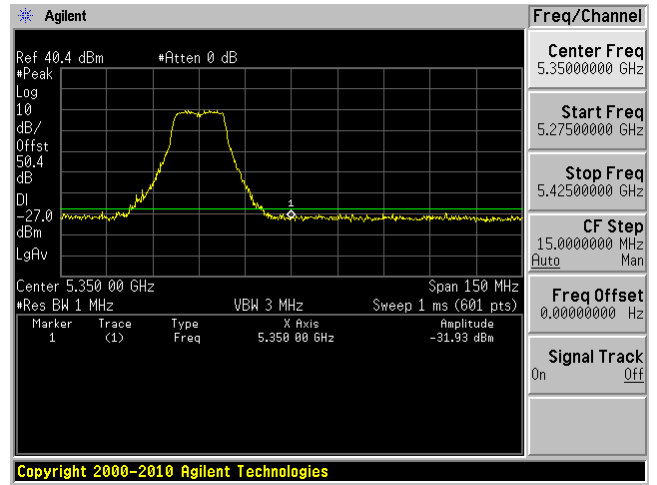
802.11a mode, Lowest Channel J1



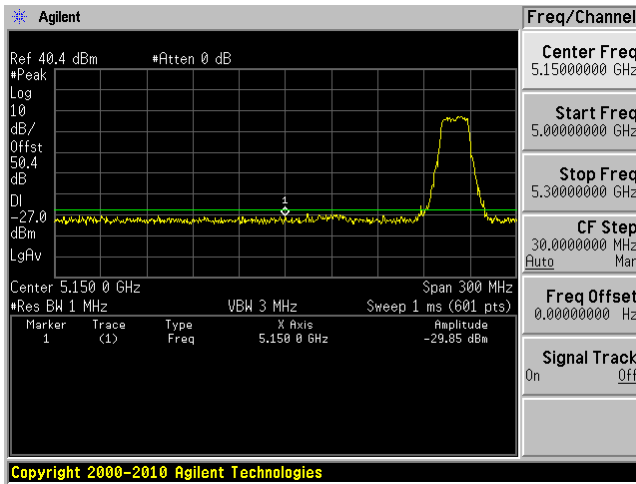
802.11a mode, Highest Channel J0



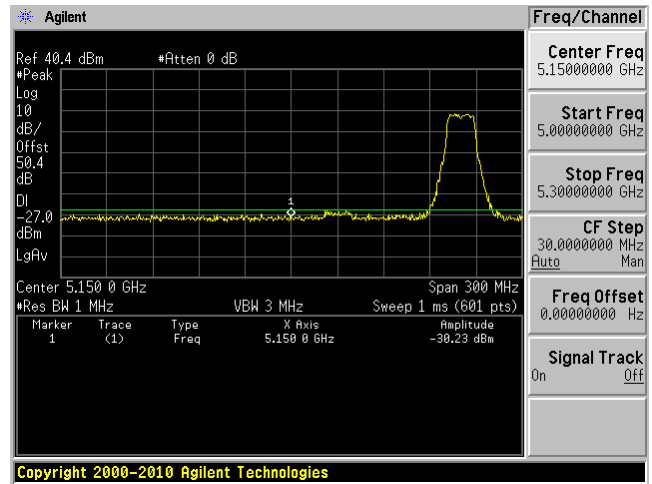
802.11a mode, Highest Channel J1



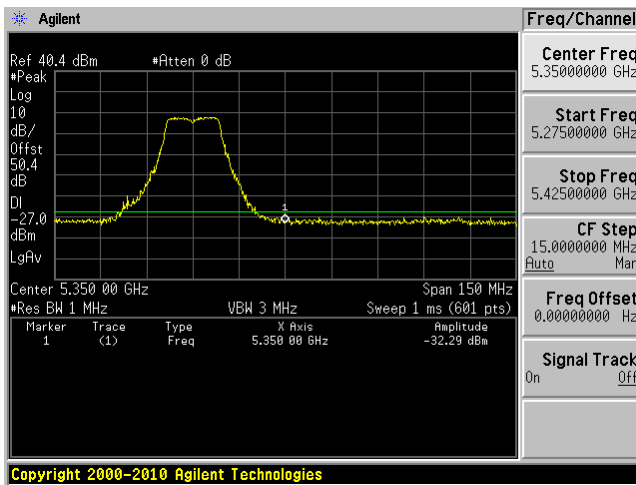
802.11n-HT20 mode, Lowest Channel J0



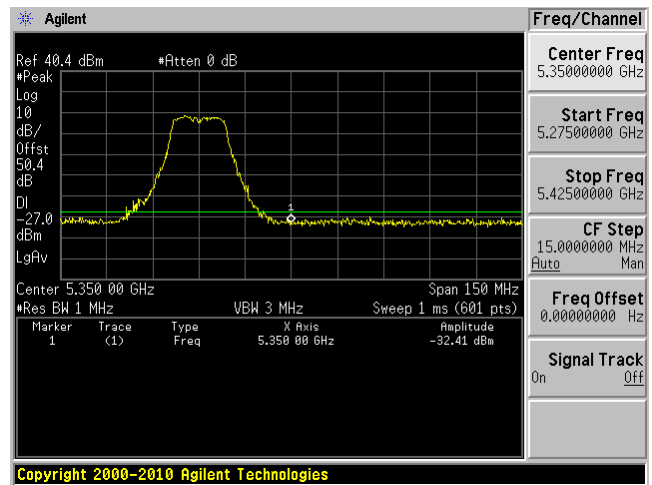
802.11n-HT20 mode, Lowest Channel J1



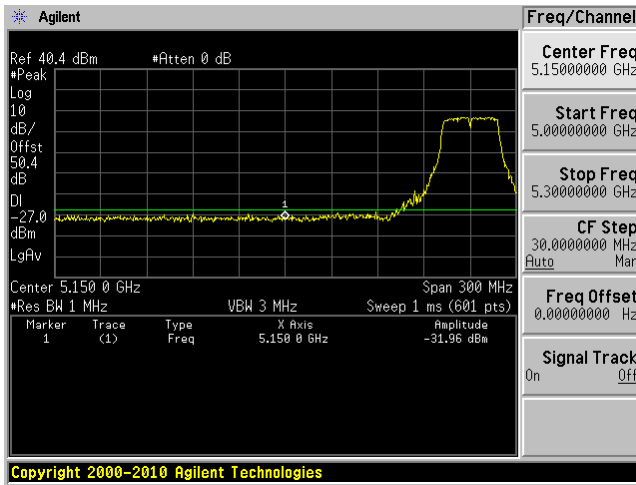
802.11n-HT20 mode, Highest Channel J0



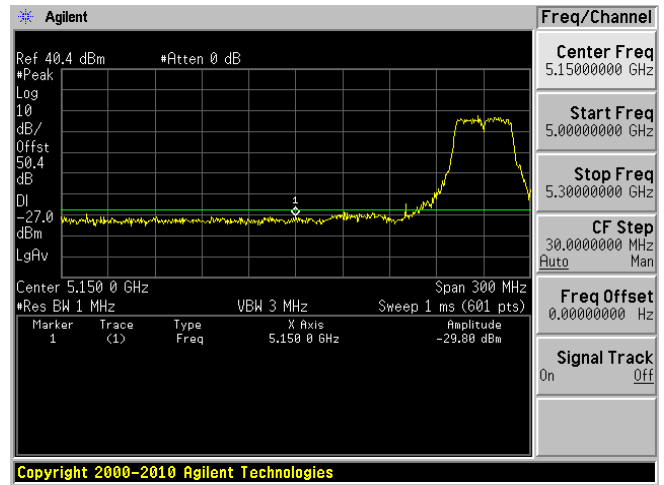
802.11n-HT20 mode, Highest Channel J1



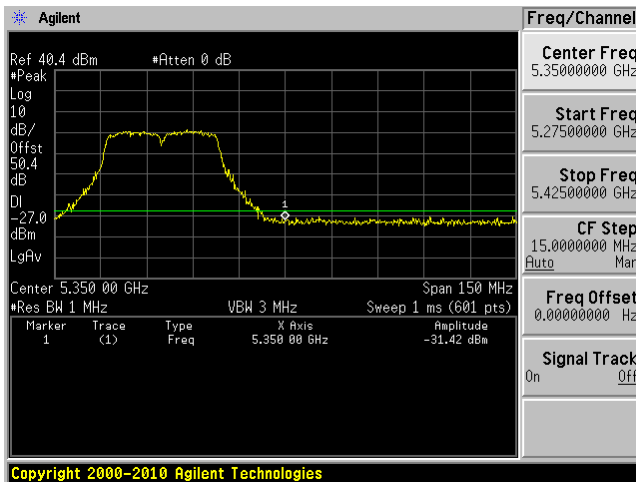
802.11n-HT40 mode, Lowest Channel J0



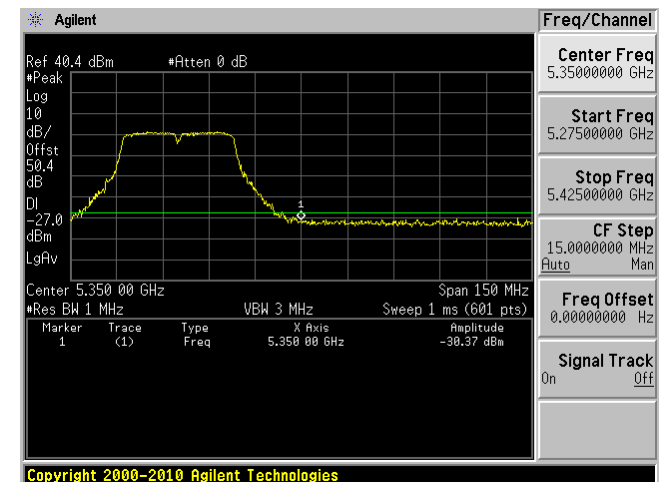
802.11n-HT40 mode, Lowest Channel J1



802.11n-HT40 mode, Highest Channel J0

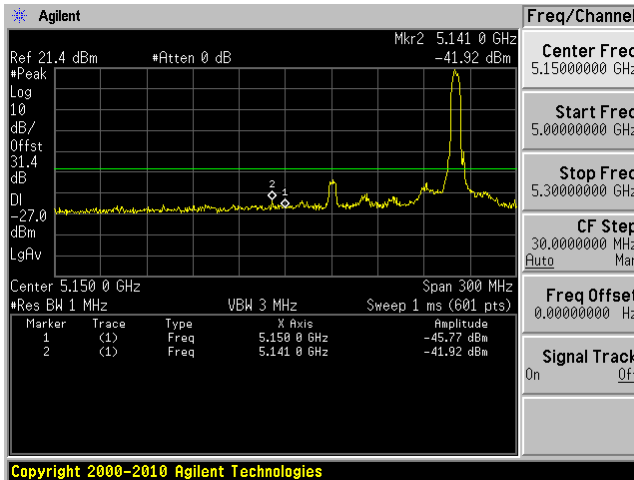


802.11n-HT40 mode, Highest Channel J1

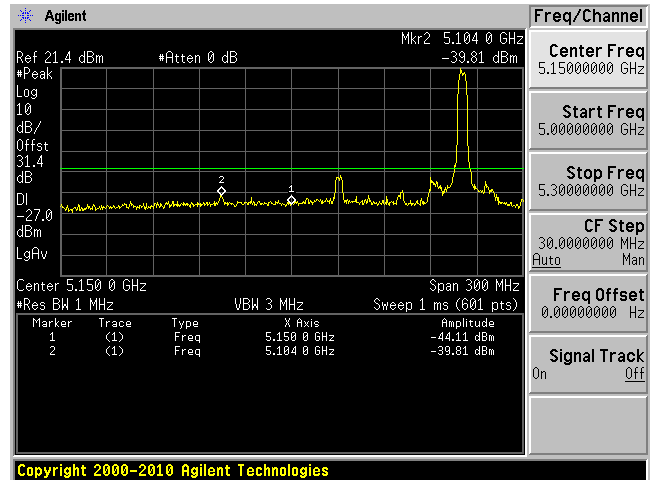


High Power Low Gain (9 dBi)

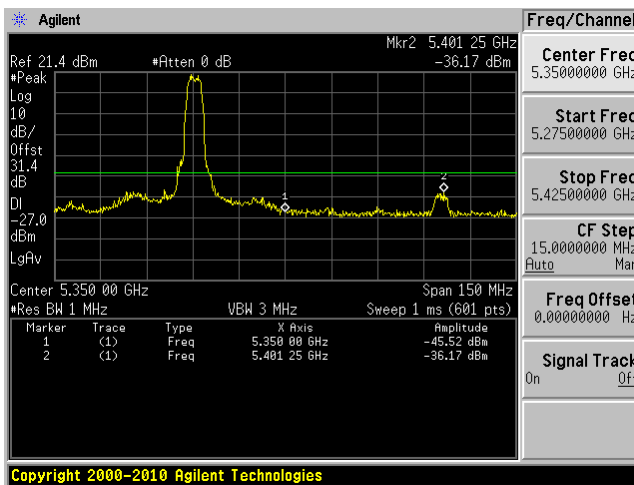
5 MHz mode, Lowest Channel J0



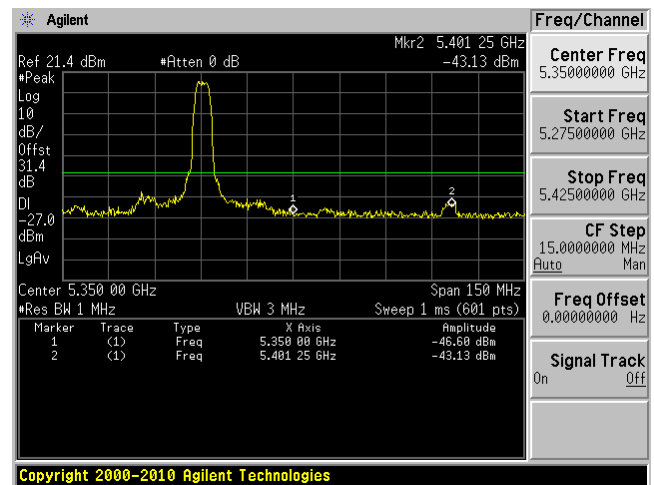
5 MHz mode, Lowest Channel J1



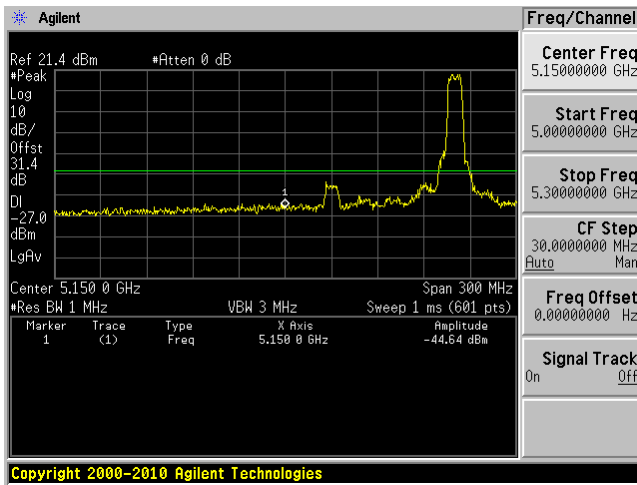
5 MHz mode, Highest Channel J0



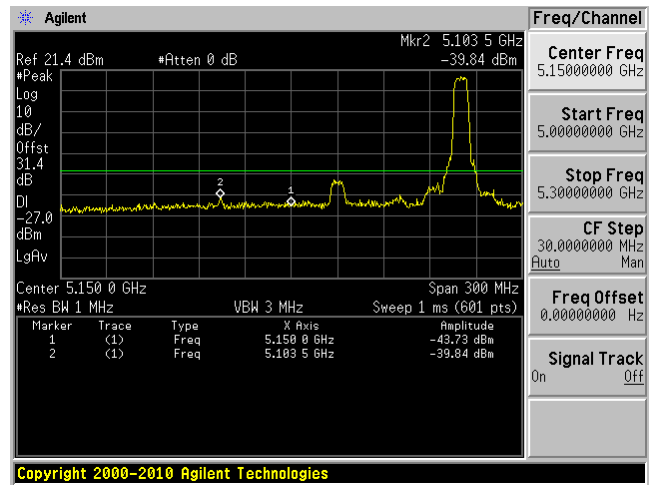
5 MHz mode, Highest Channel J1



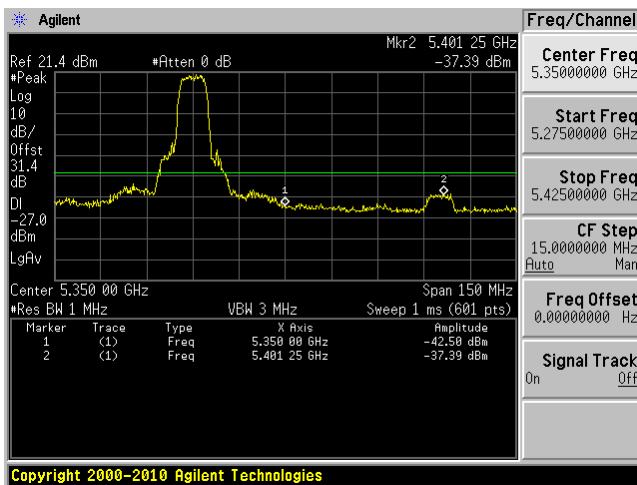
10 MHz mode, Lowest Channel J0



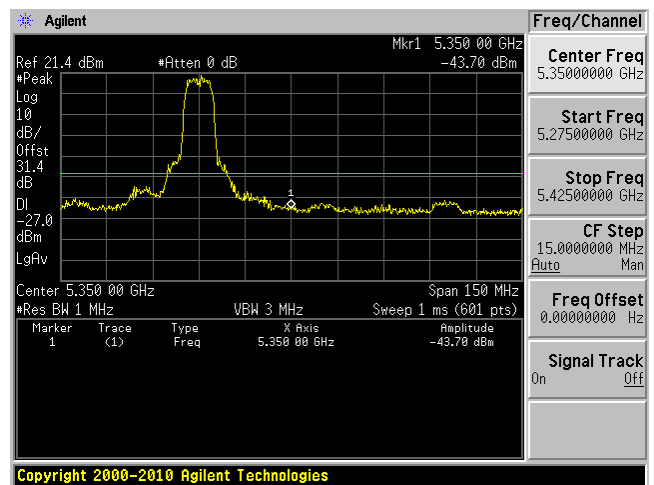
10 MHz mode, Lowest Channel J1



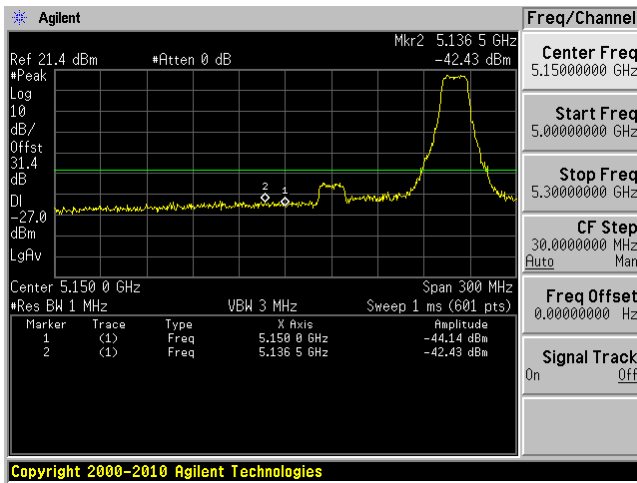
10 MHz mode, Highest Channel J0



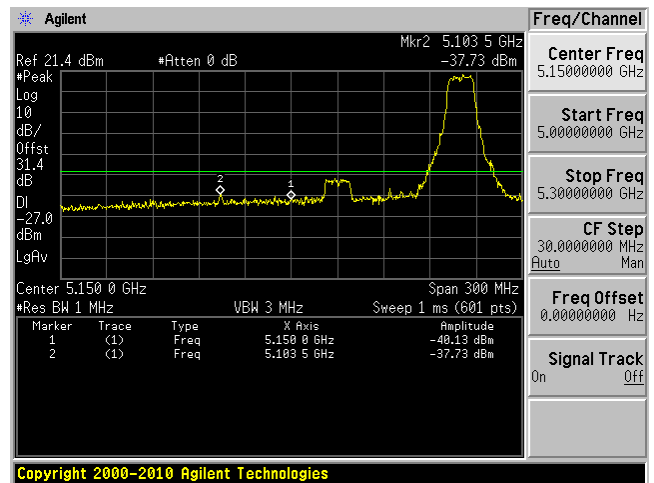
10 MHz mode, Highest Channel J1



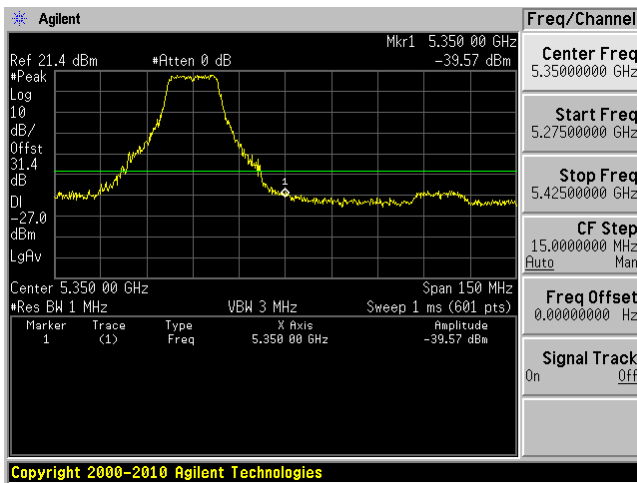
802.11a mode, Lowest Channel J0



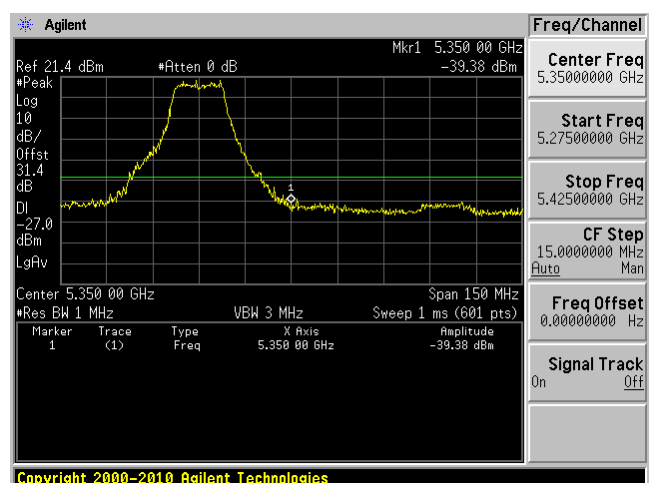
802.11a mode, Lowest Channel J1



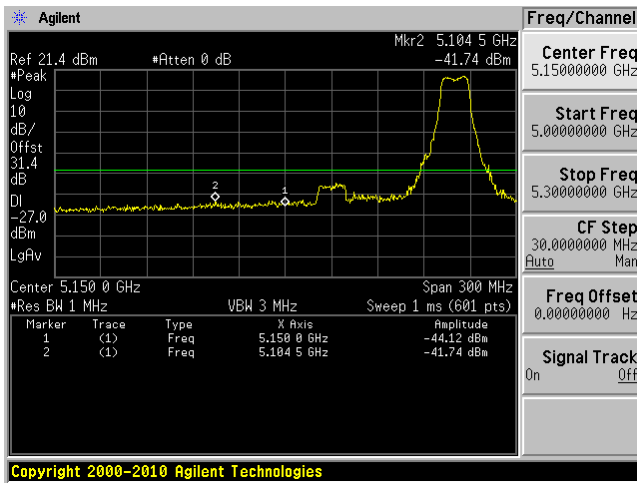
802.11a mode, Highest Channel J0



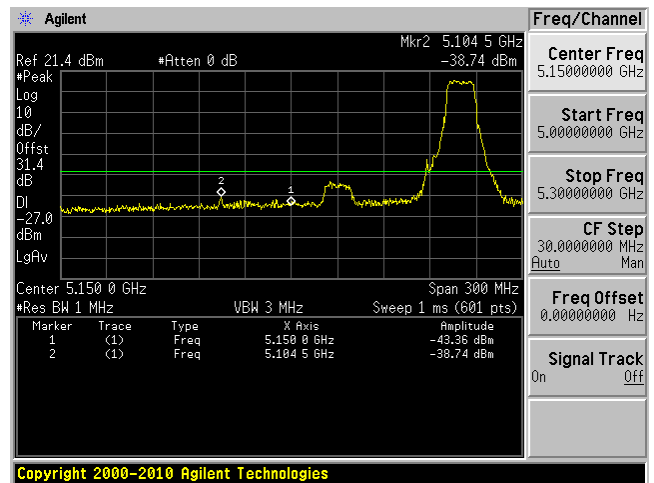
802.11a mode, Highest Channel J1



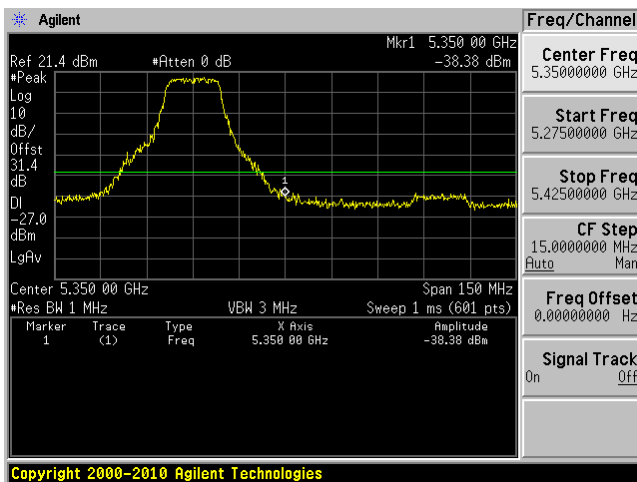
802.11n-HT20 mode, Lowest Channel J0



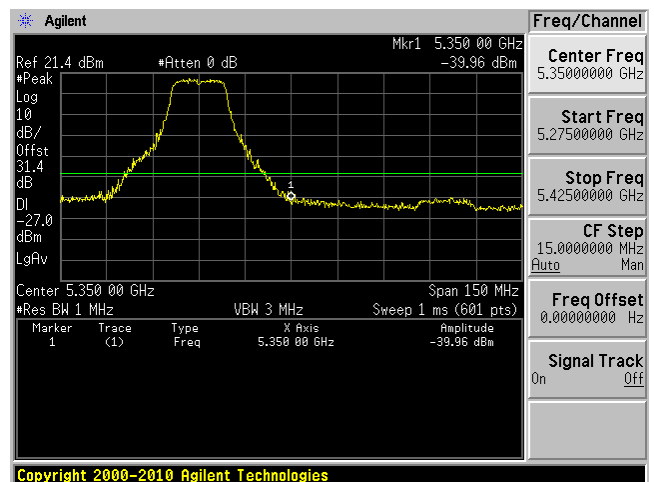
802.11n-HT20 mode, Lowest Channel J1



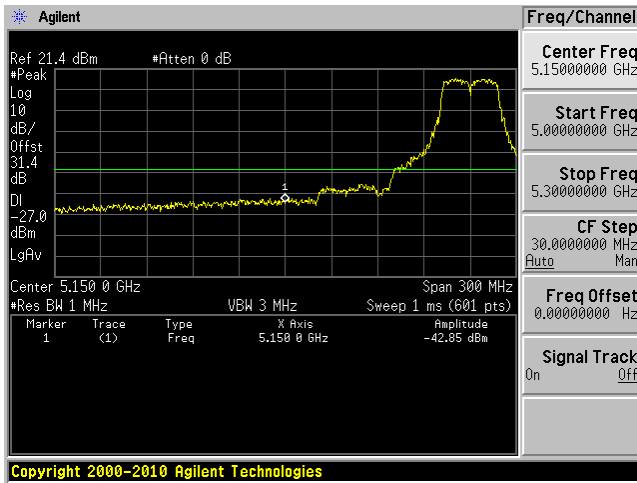
802.11n-HT20 mode, Highest Channel J0



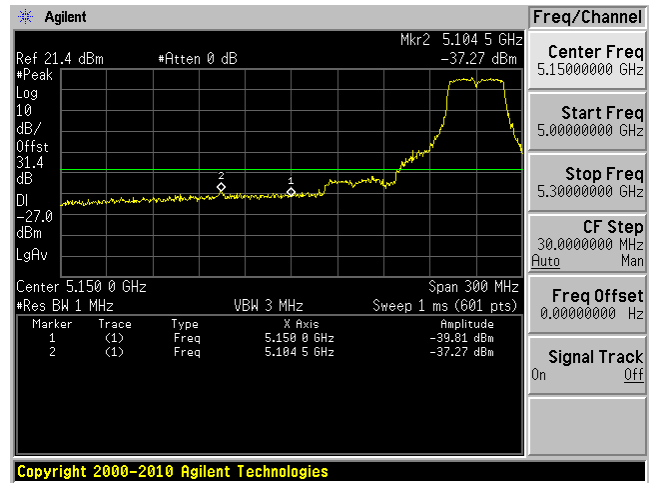
802.11n-HT20 mode, Highest Channel J1



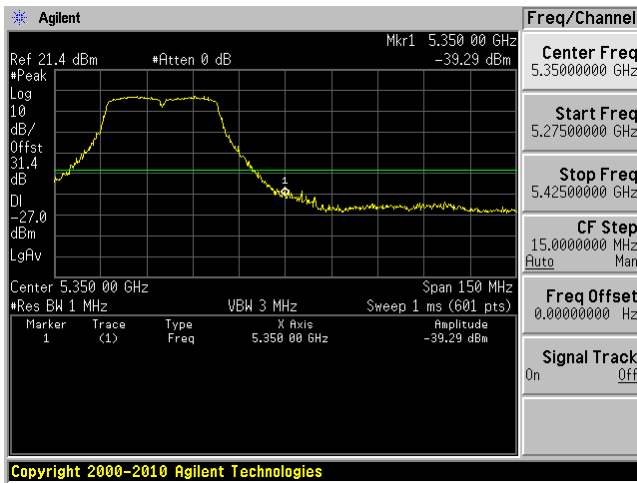
802.11n-HT40 mode, Lowest Channel J0



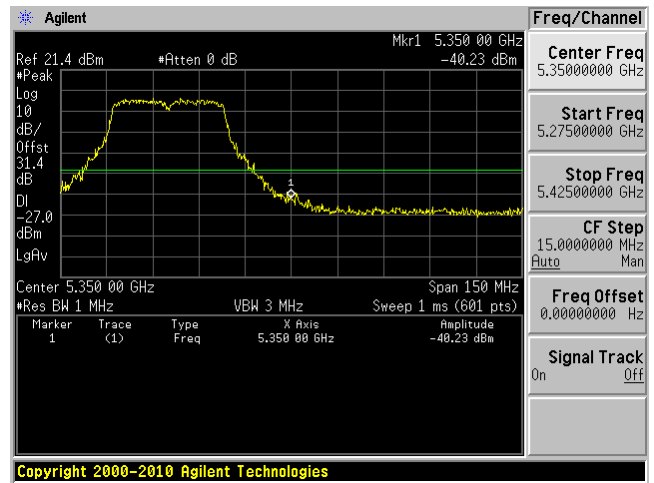
802.11n-HT40 mode, Lowest Channel J1



802.11n-HT40 mode, Highest Channel J0



802.11n-HT40 mode, Highest Channel J1

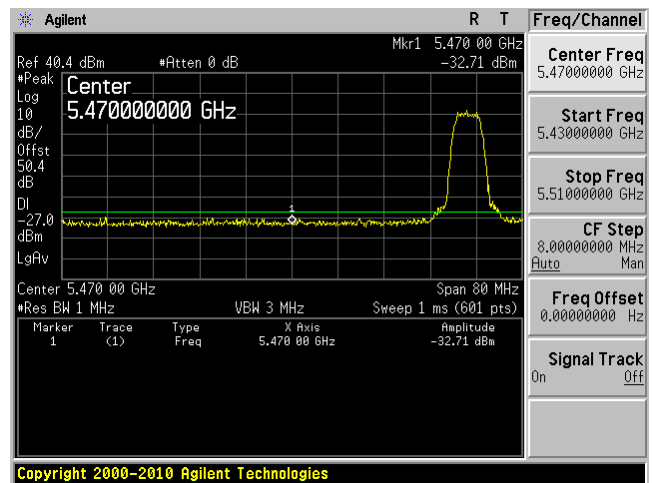
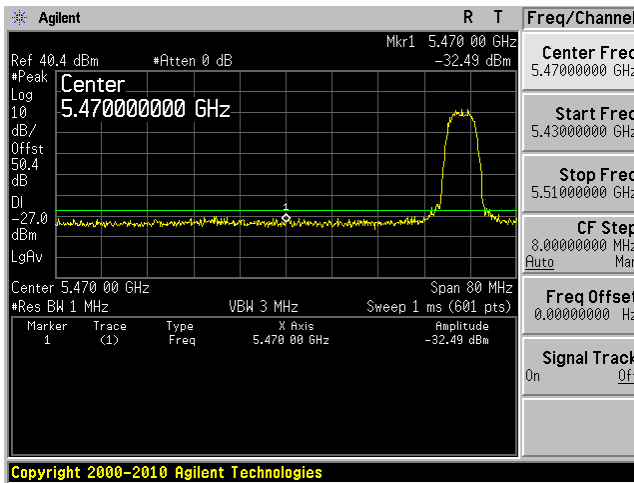


5470-5725 MHz Band

Low Power High Gain (28 dBi)

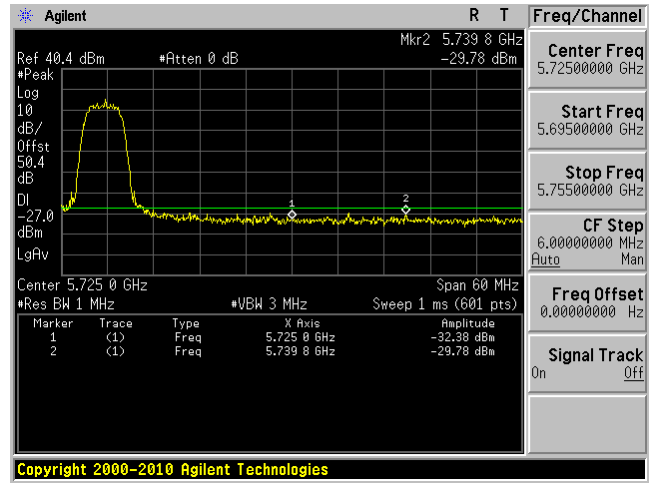
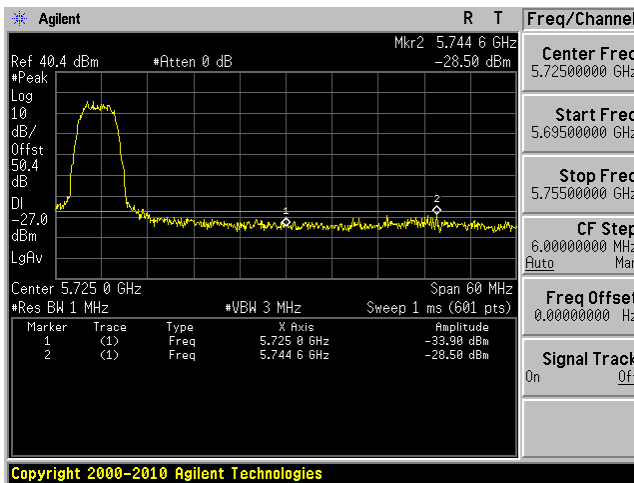
5 MHz mode, Lowest Channel J0

5 MHz mode, Lowest Channel J1

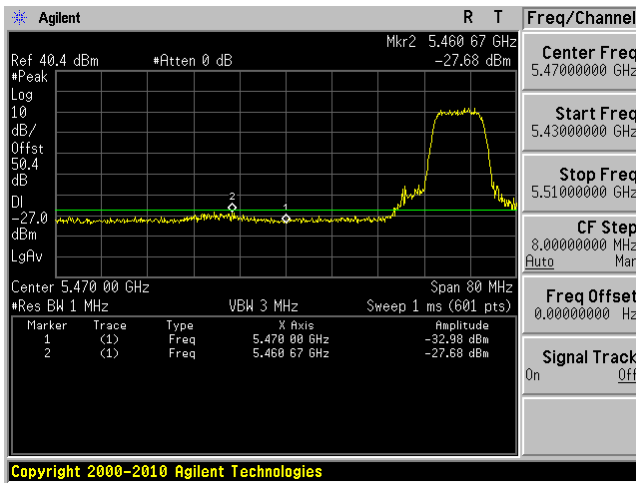


5 MHz mode, Highest Channel J0

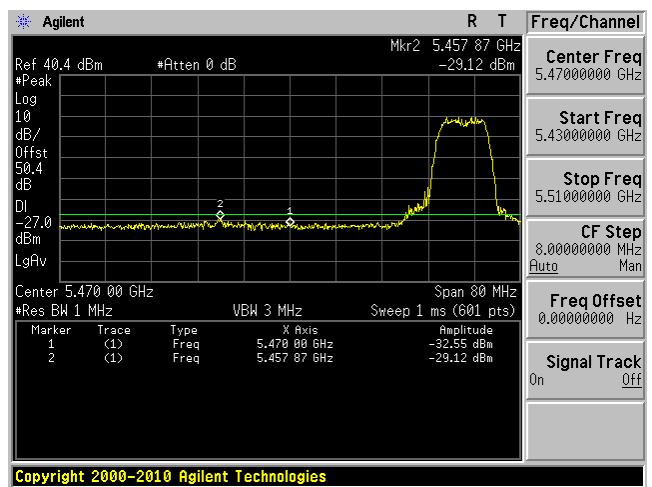
5 MHz mode, Highest Channel J1



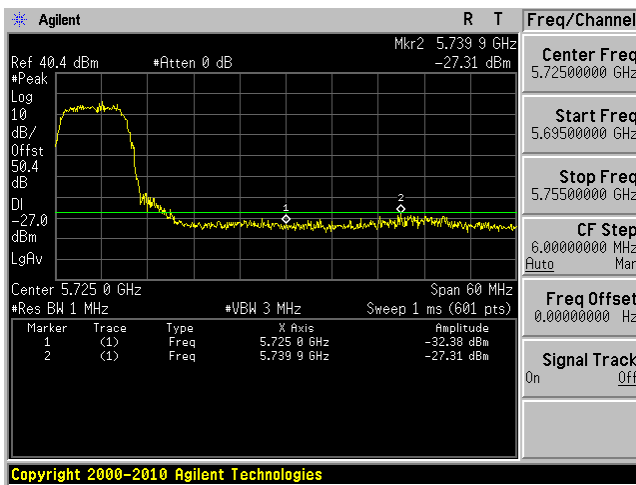
10 MHz mode, Lowest Channel J0



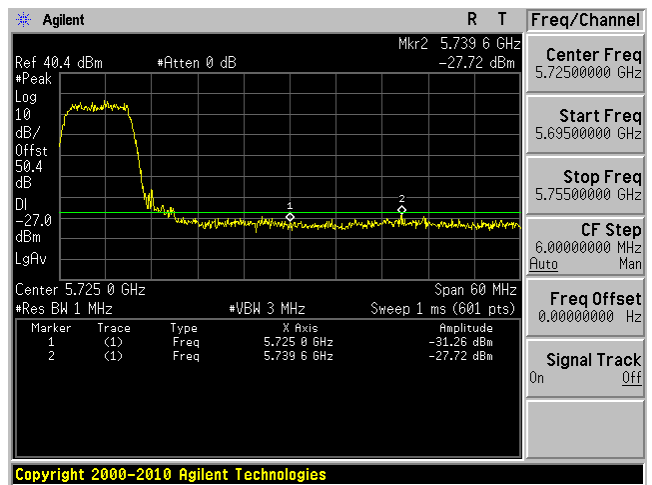
10 MHz mode, Lowest Channel J1



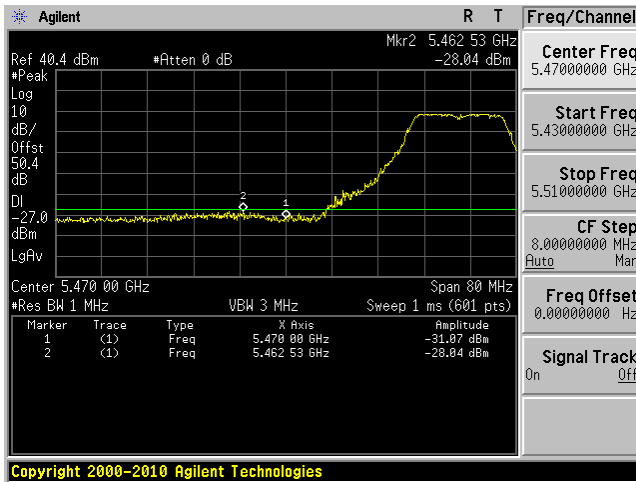
10 MHz mode, Highest Channel J0



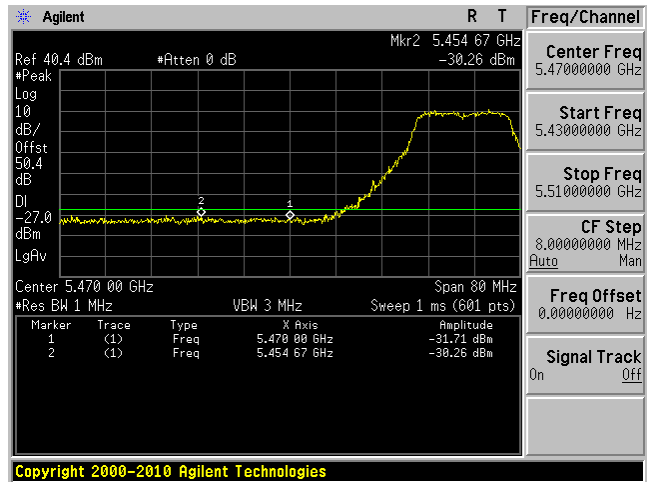
10 MHz mode, Highest Channel J1



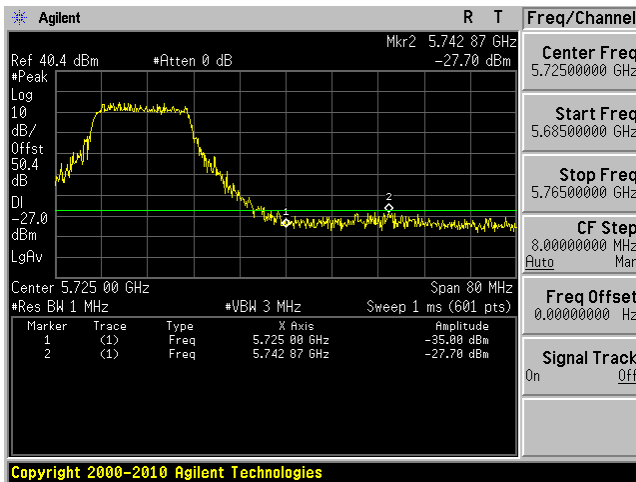
802.11a mode, Lowest Channel J0



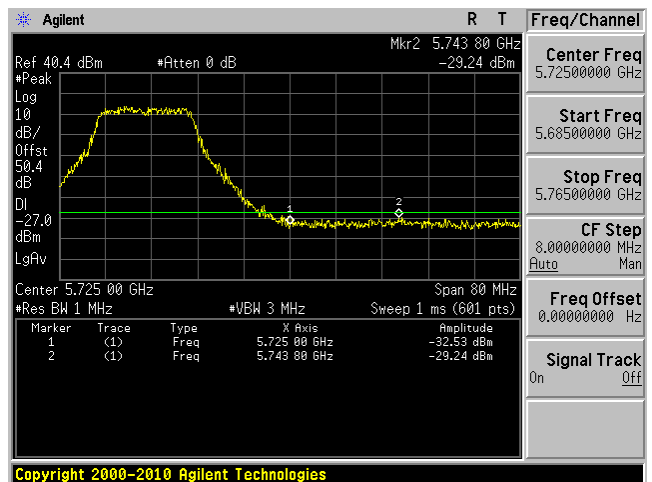
802.11a mode, Lowest Channel J1



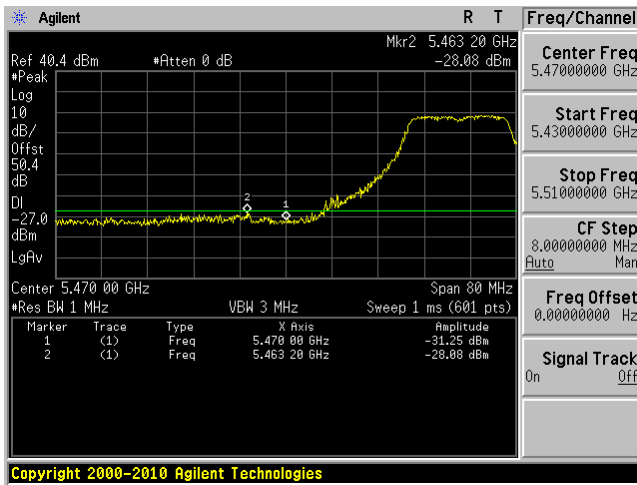
802.11a mode, Highest Channel J0



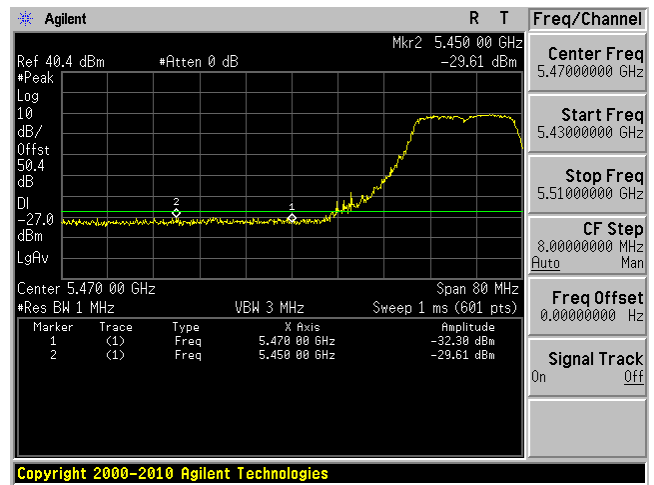
802.11a mode, Highest Channel J1



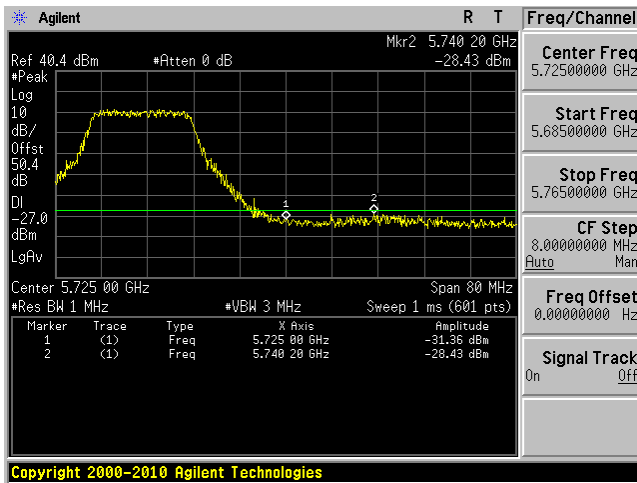
802.11n-HT20 mode, Lowest Channel J0



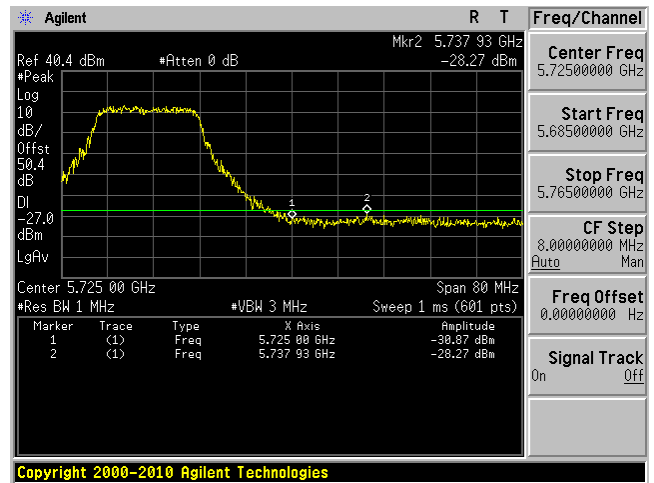
802.11n-HT20 mode, Lowest Channel J1



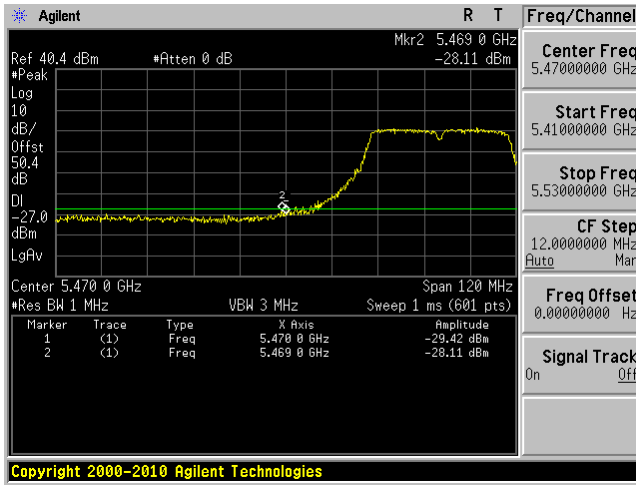
802.11n-HT20 mode, Highest Channel J0



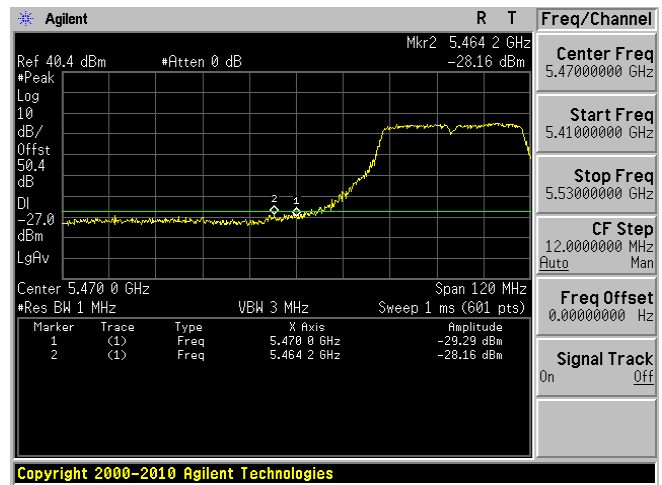
802.11n-HT20 mode, Highest Channel J1



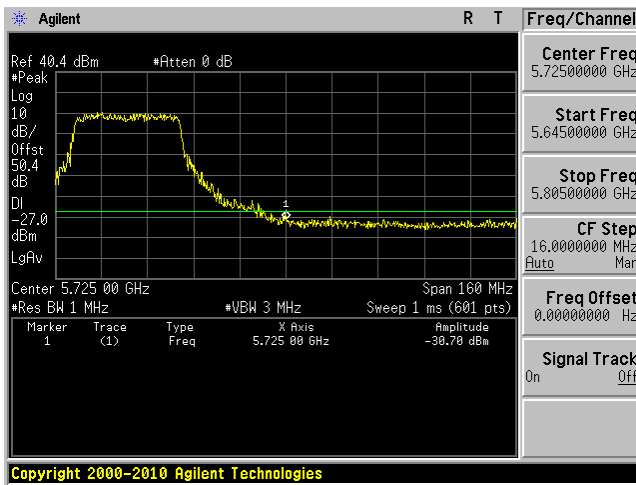
802.11n-HT40 mode, Lowest Channel J0



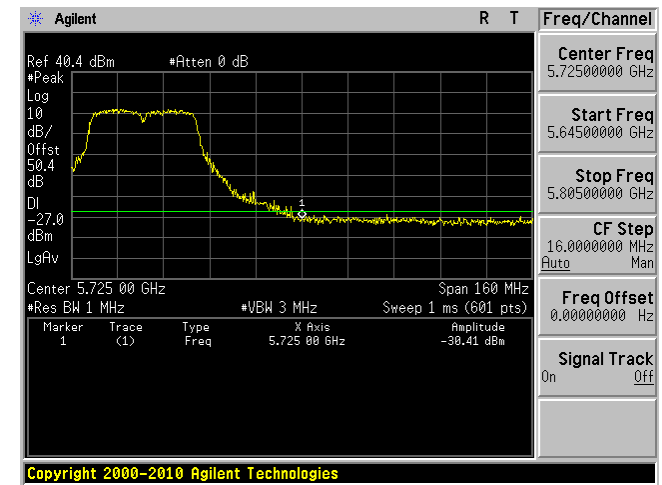
802.11n-HT40 mode, Lowest Channel J1



802.11n-HT40 mode, Highest Channel J0

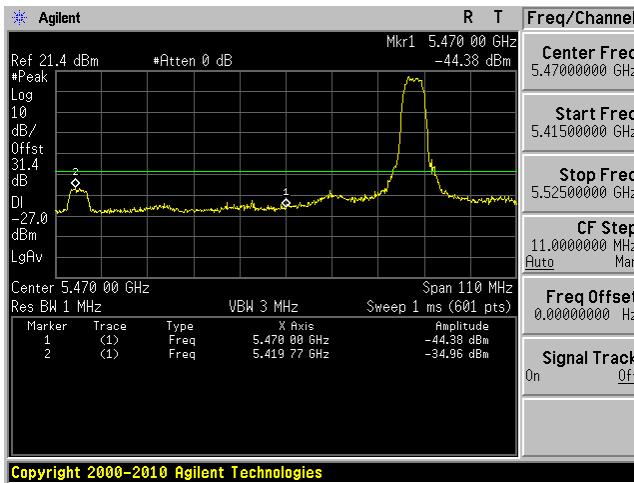


802.11n-HT40 mode, Highest Channel J1

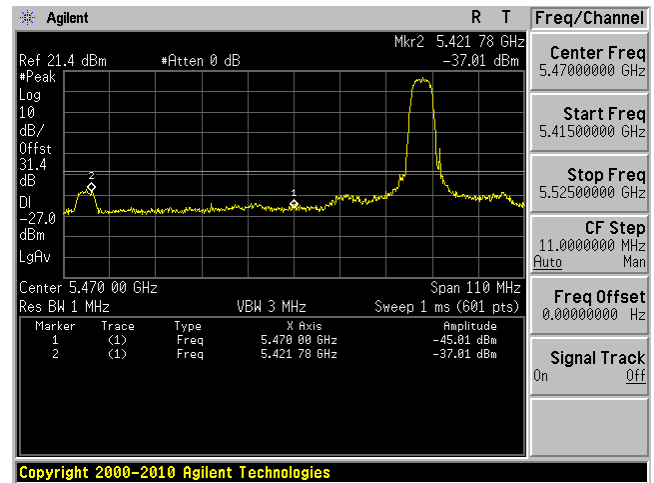


High Power Low Gain (9 dBi)

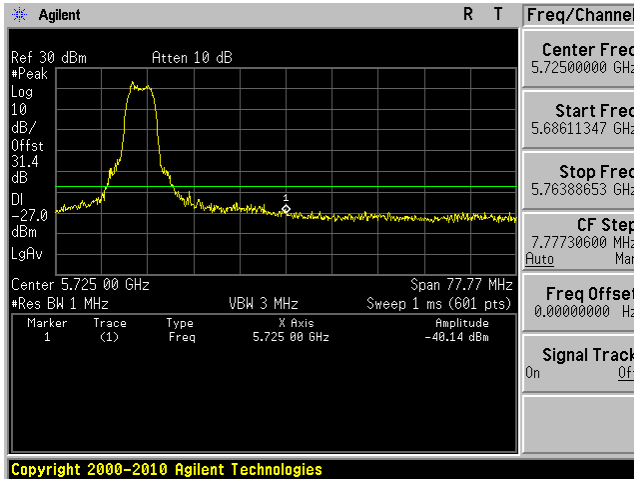
5 MHz mode, Lowest Channel J0



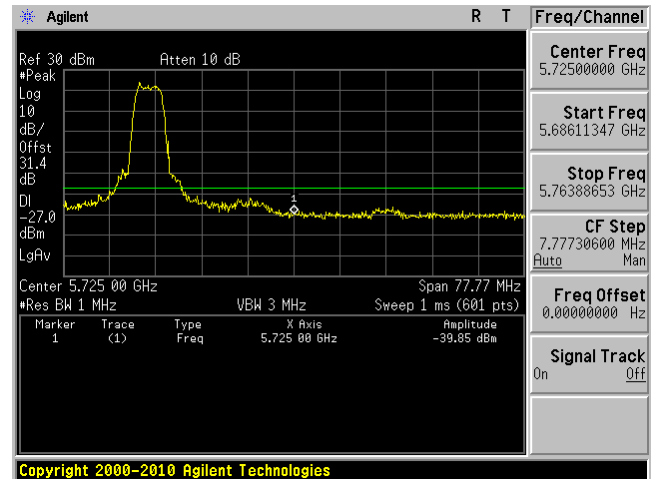
5 MHz mode, Lowest Channel J1



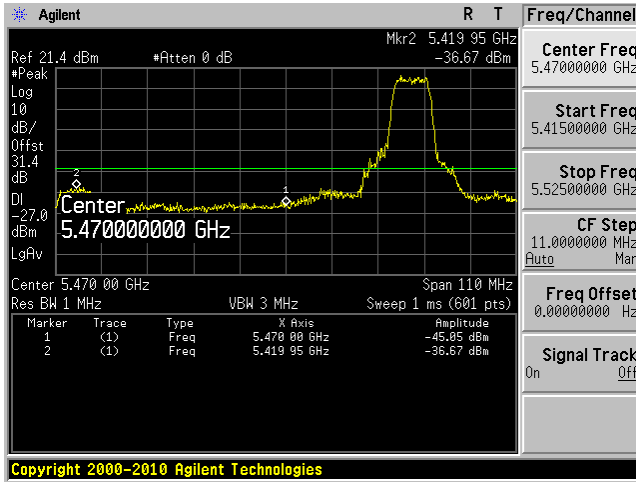
5 MHz mode, Highest Channel J0



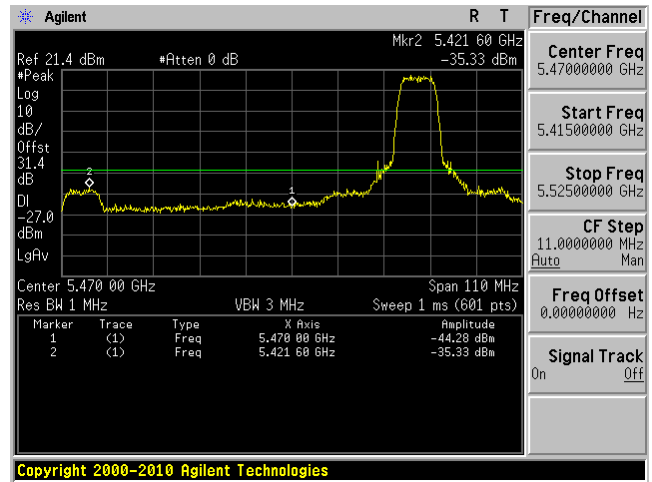
5 MHz mode, Highest Channel J1



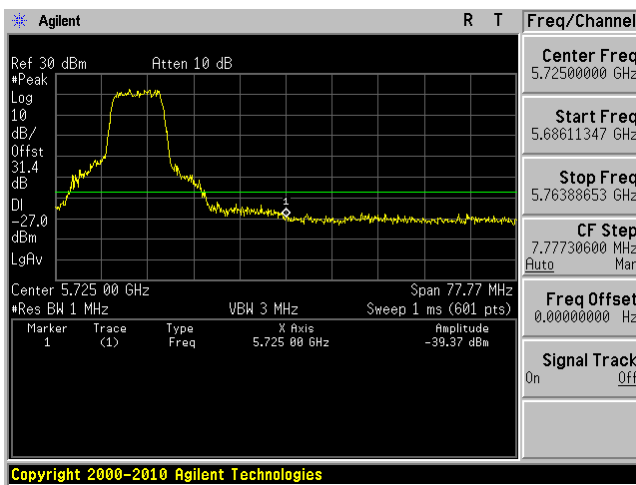
10 MHz mode, Lowest Channel J0



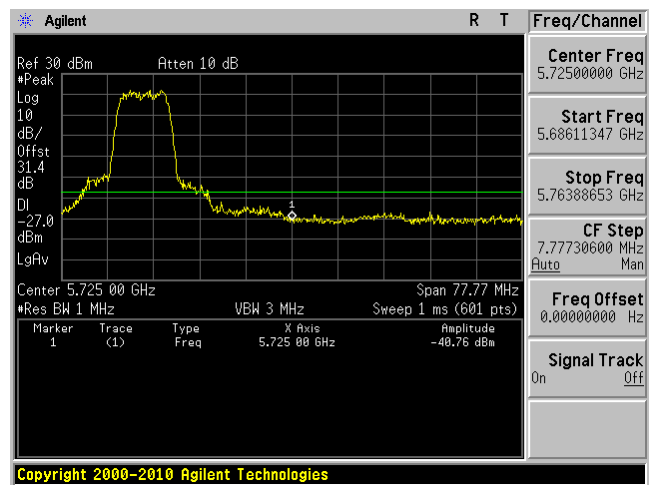
10 MHz mode, Lowest Channel J1



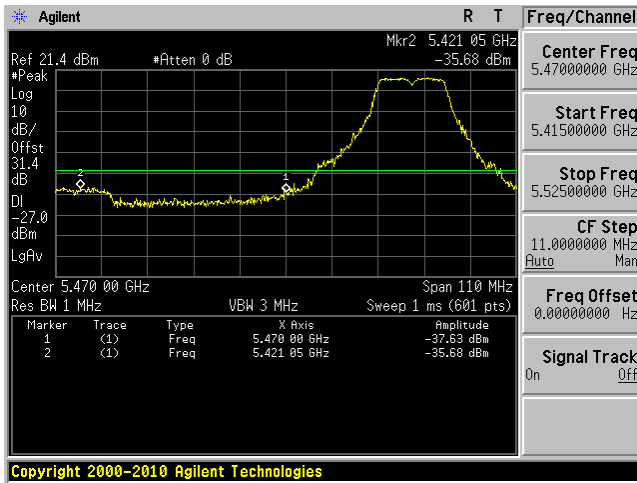
10 MHz mode, Highest Channel J0



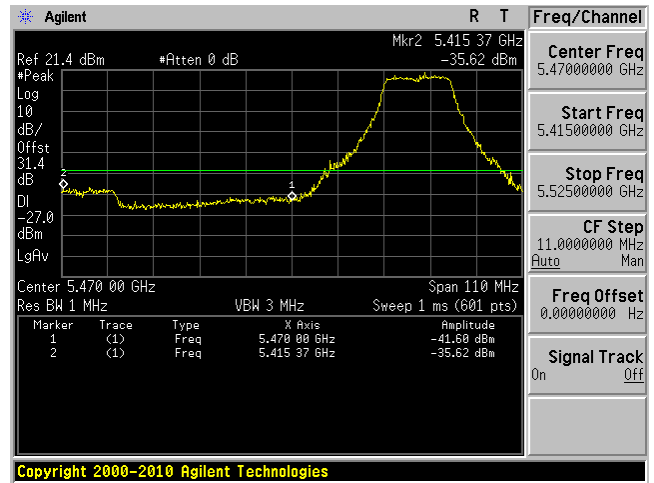
10 MHz mode, Highest Channel J1



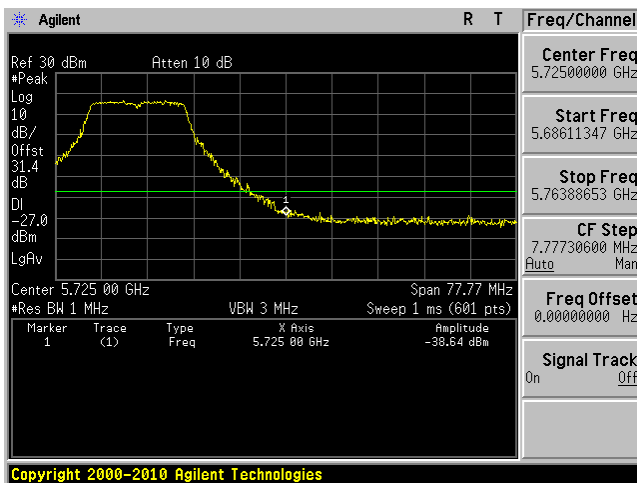
802.11a mode, Lowest Channel J0



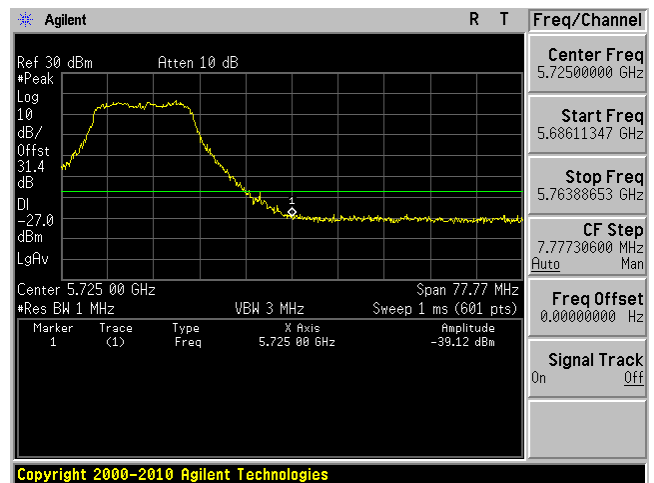
802.11a mode, Lowest Channel J1



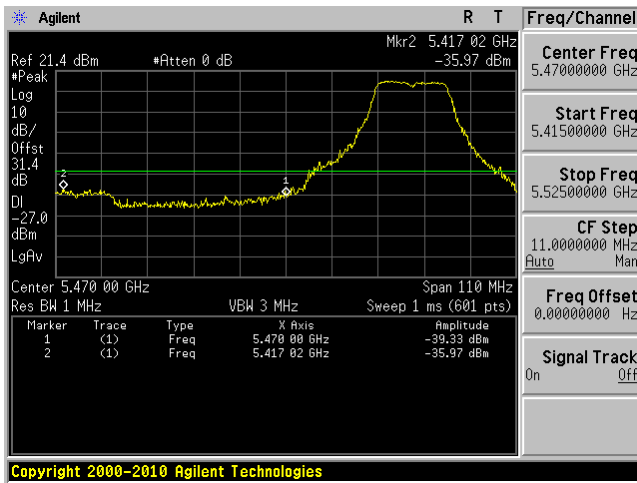
802.11a mode, Highest Channel J0



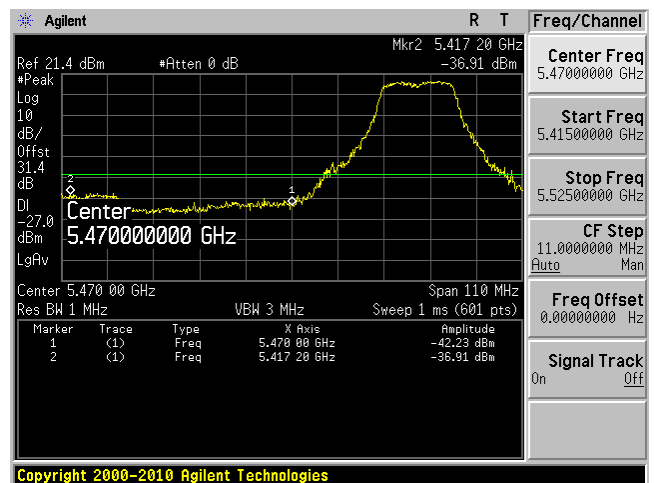
802.11a mode, Highest Channel J1



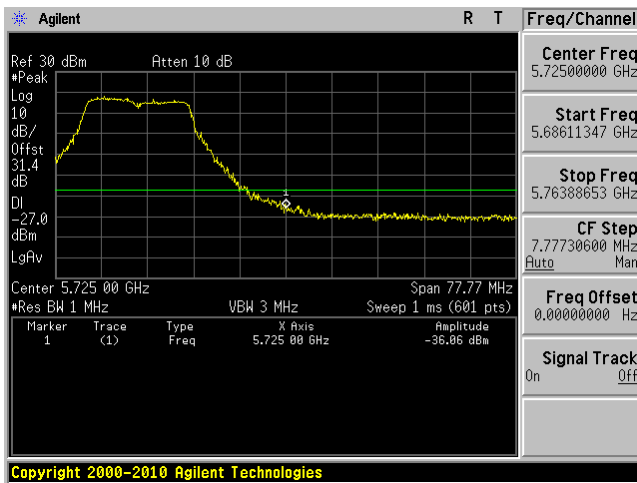
802.11n-HT20 mode, Lowest Channel J0



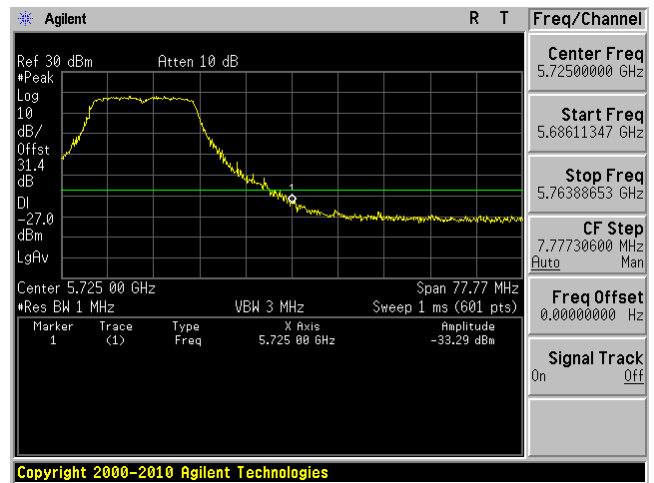
802.11n-HT20 mode, Lowest Channel J1



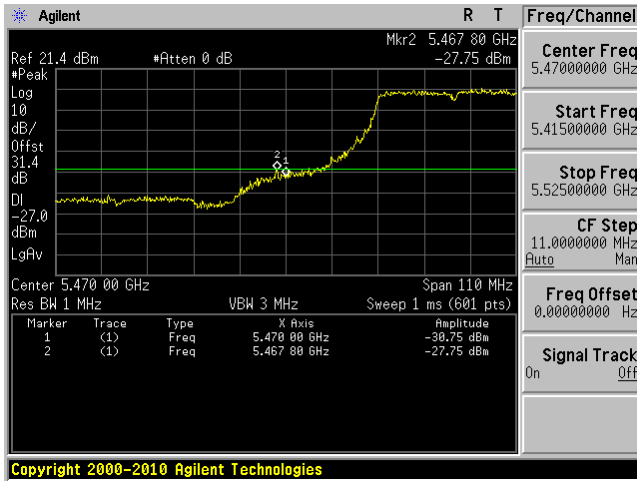
802.11n-HT20 mode, Highest Channel J0



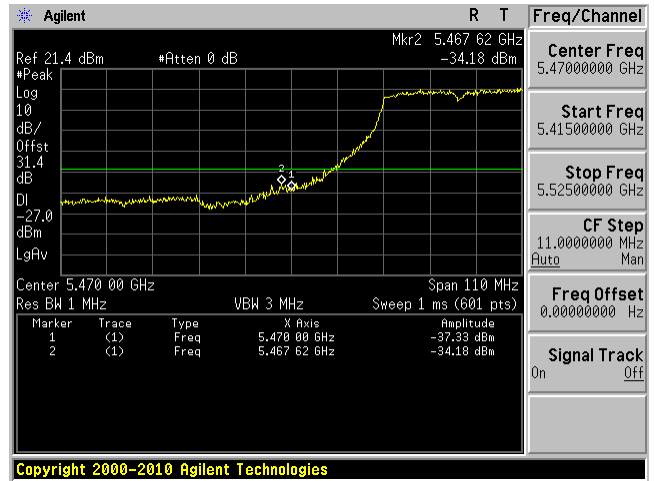
802.11n-HT20 mode, Highest Channel J1



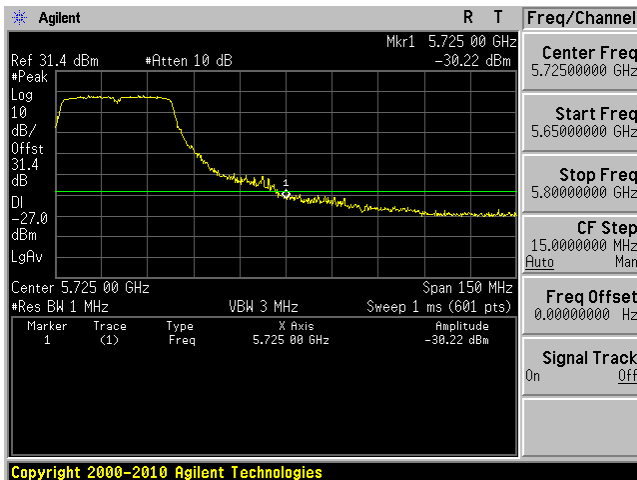
802.11n-HT40 mode, Lowest Channel J0



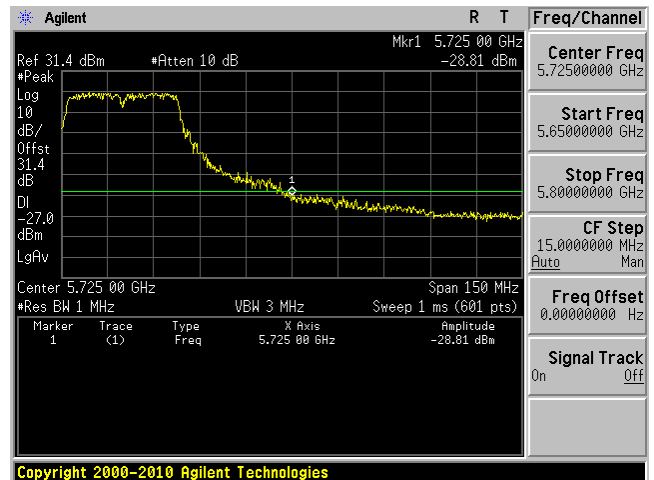
802.11n-HT40 mode, Lowest Channel J1



802.11n-HT40 mode, Highest Channel J0



802.11n-HT40 mode, Highest Channel J1

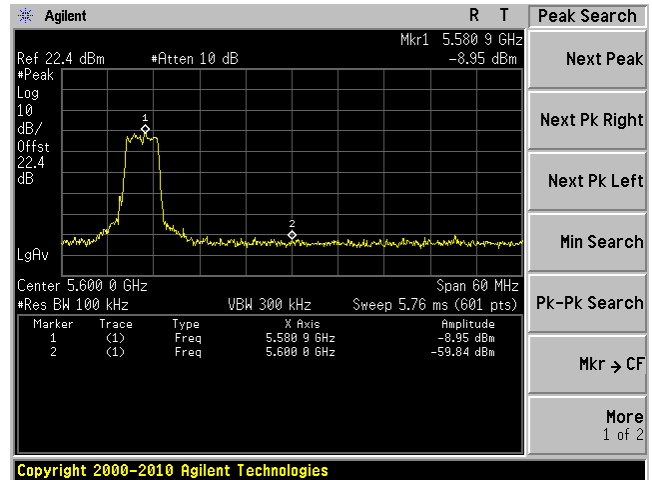
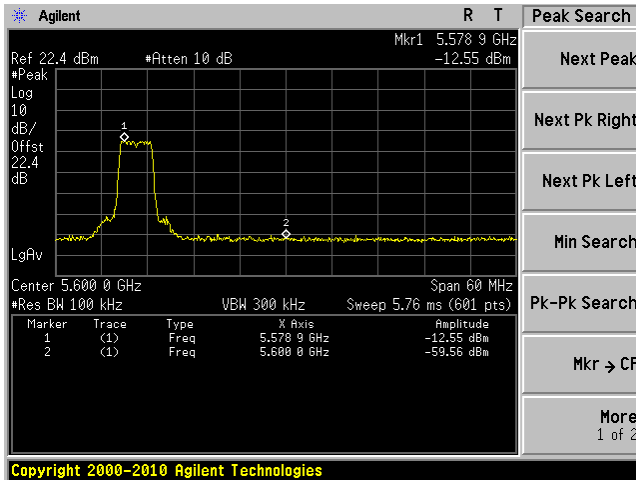


Restricted band for Weather Radar 5600 to 5650 MHz

Low Power High Gain (28 dBi)

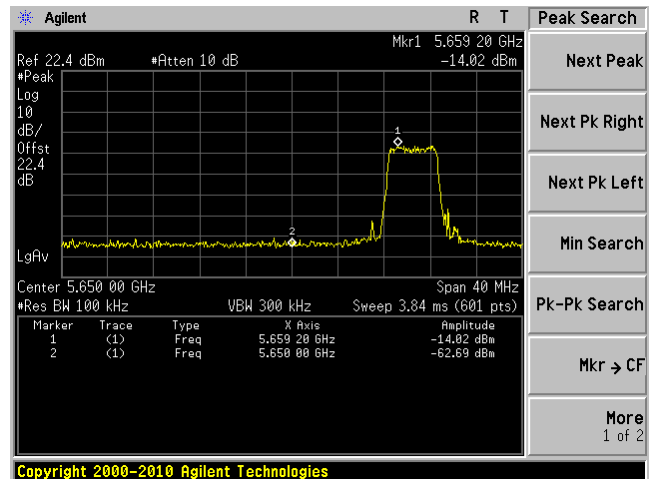
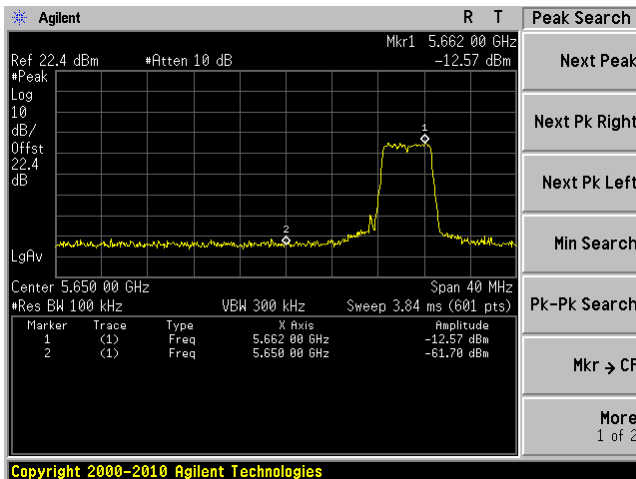
5 MHz mode, 5580 MHz J0

5 MHz mode, 5580 MHz J1

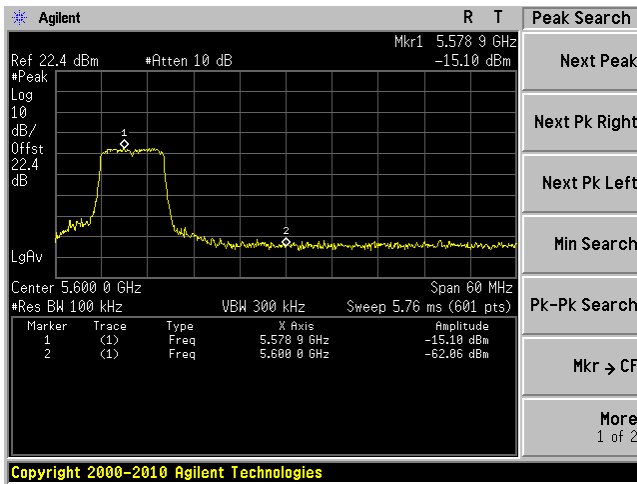


5 MHz mode, 5660 MHz J0

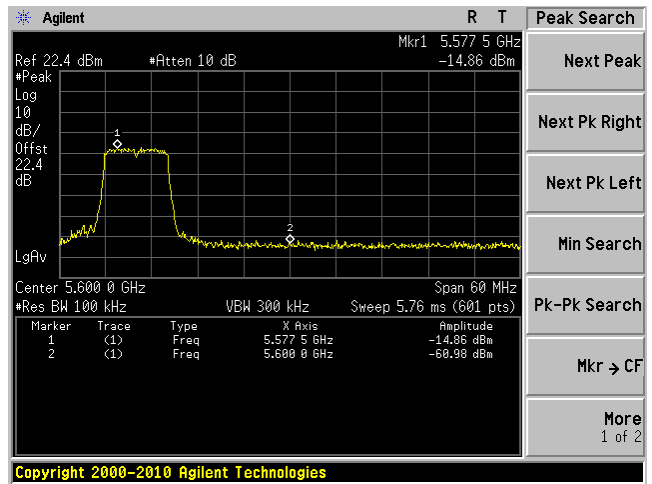
5 MHz mode, 5660 MHz J1



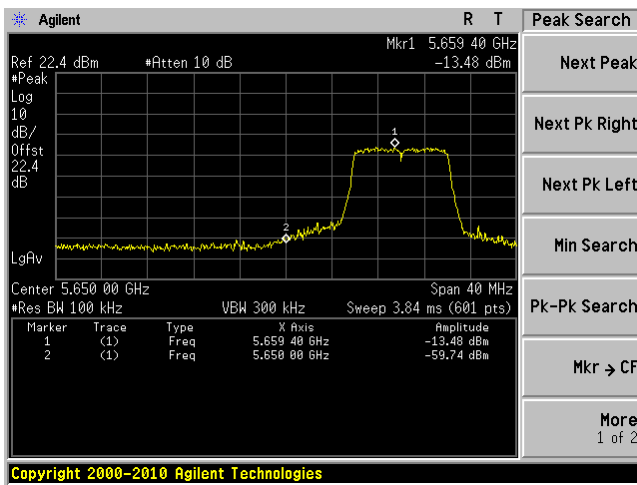
10 MHz mode, 5580 MHz J0



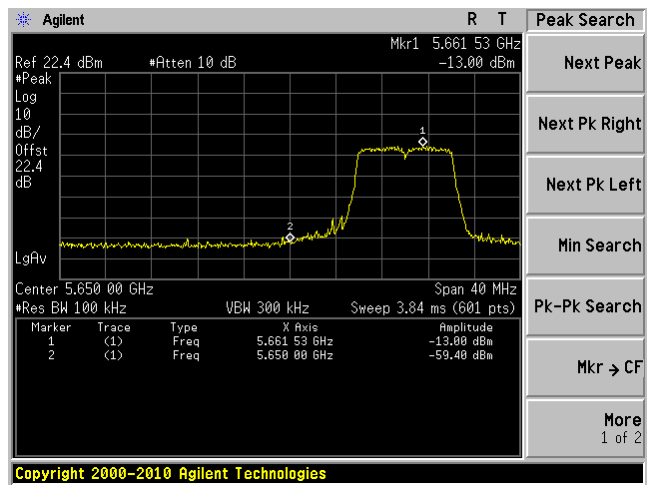
10 MHz mode, 5580 MHz J1



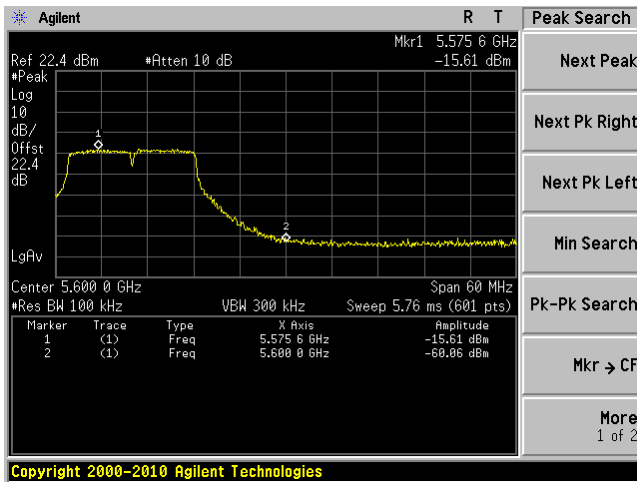
10 MHz mode, 5660 MHz J0



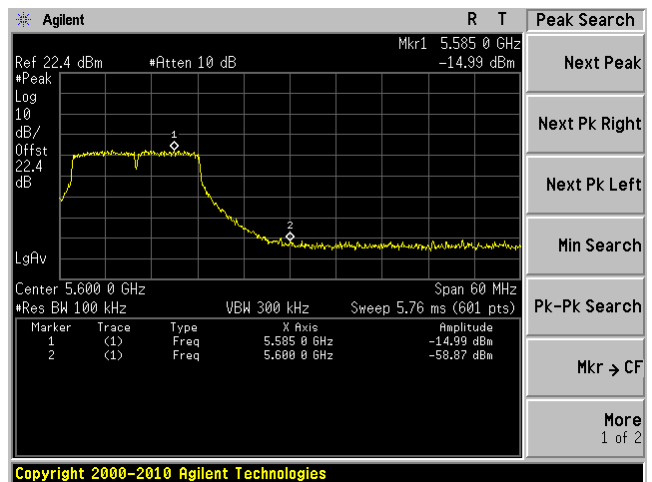
10 MHz mode, 5660 MHz J1



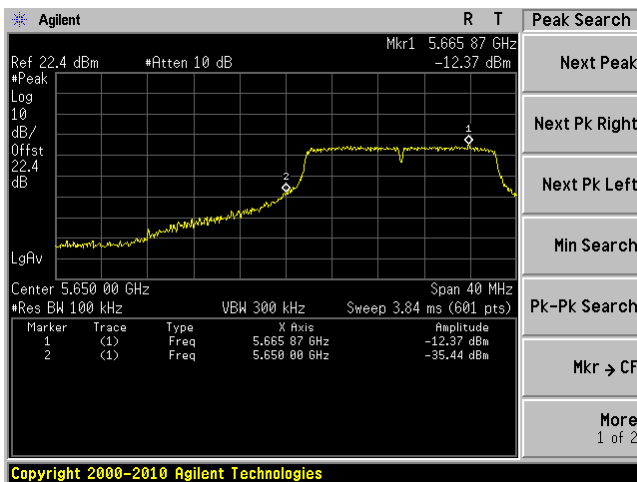
802.11a mode, 5580 MHz J0



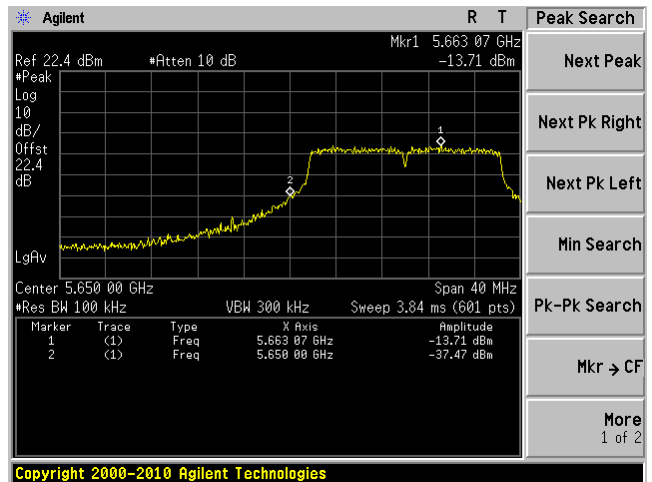
802.11a mode, 5580 MHz J1



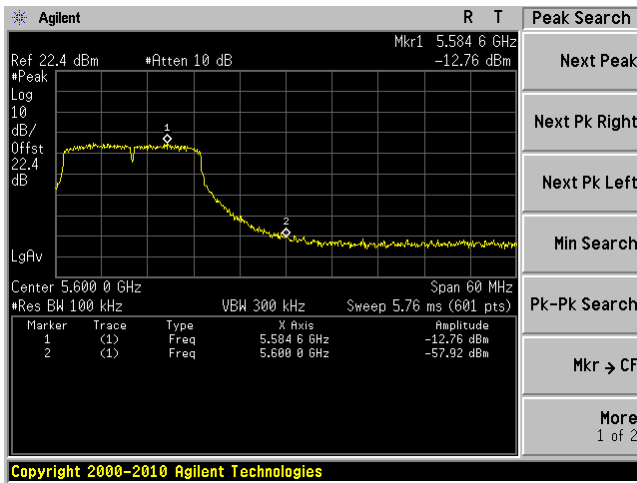
802.11a mode, 5660 MHz J0



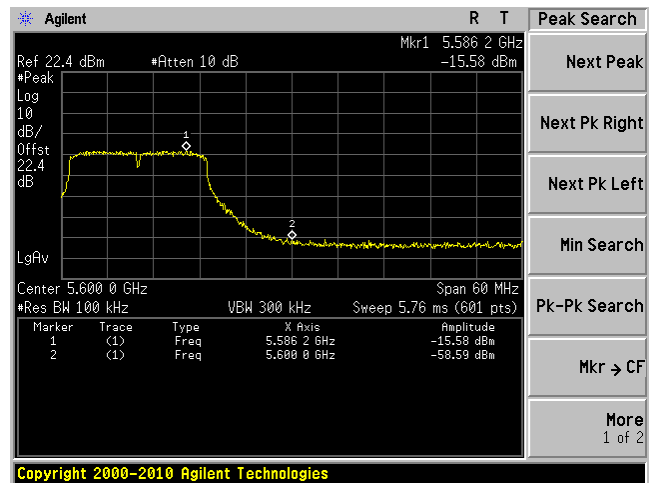
802.11a mode, 5660 MHz J1



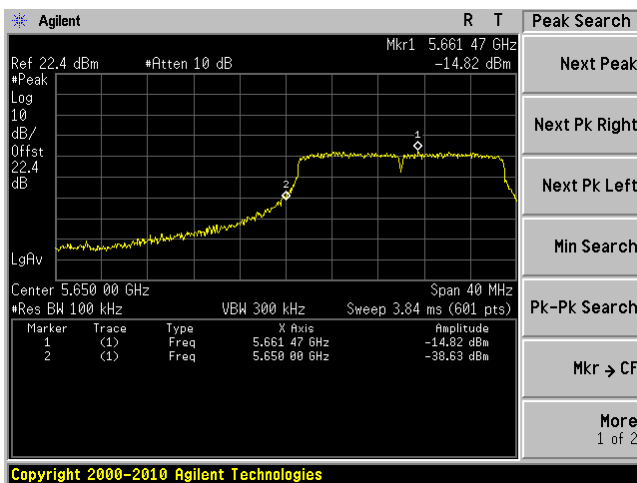
802.11n-HT20 mode, 5580 MHz J0



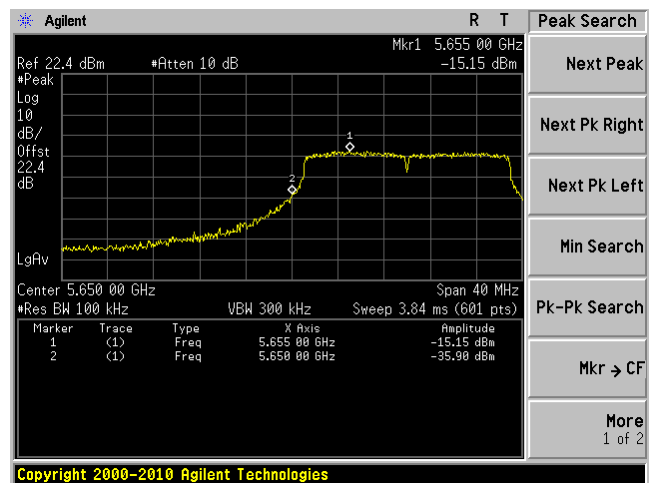
802.11n-HT20 mode, 5580 MHz J1



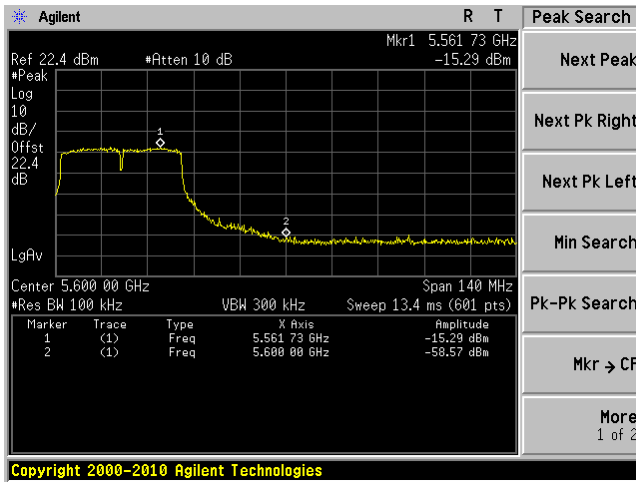
802.11n-HT20 mode, 5660 MHz J0



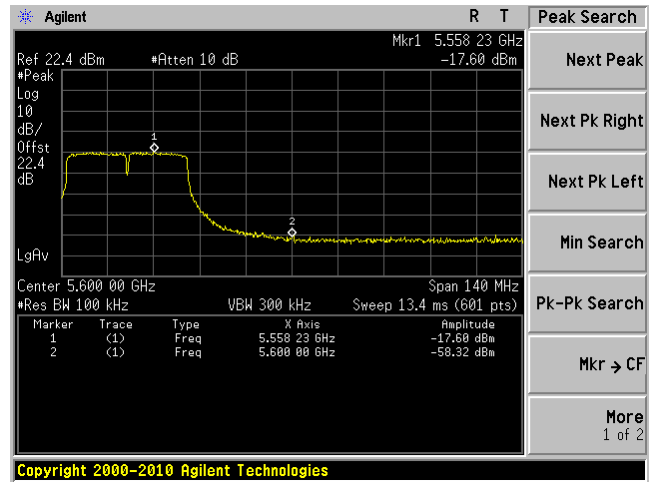
802.11n-HT20 mode, 5660 MHz J1



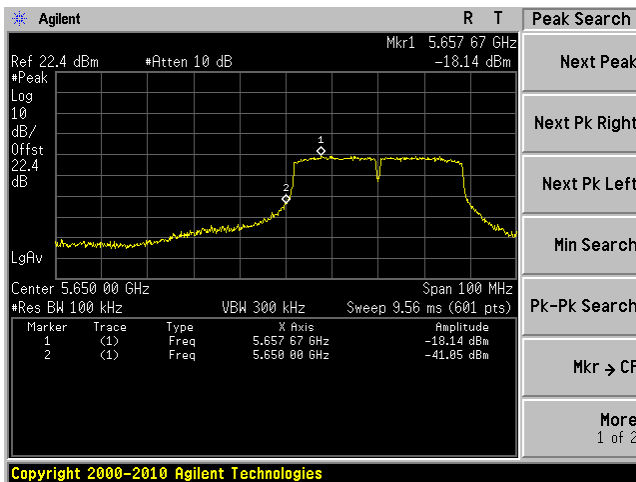
802.11n-HT40 mode, 5550 MHz J0



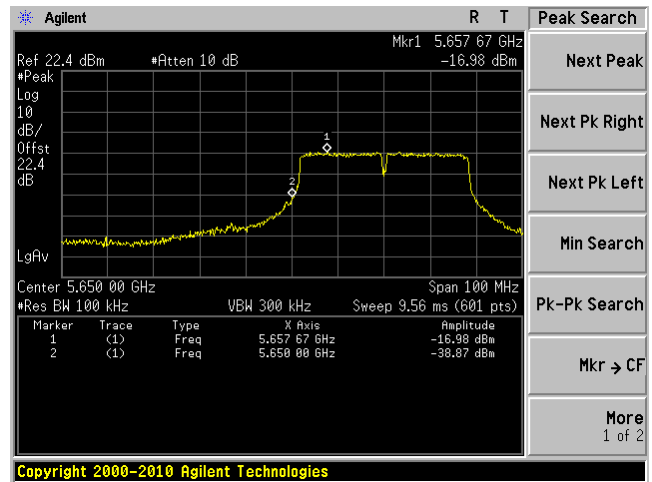
802.11n-HT40 mode, 5550 MHz J1



802.11n-HT40 mode, 5670 MHz J0

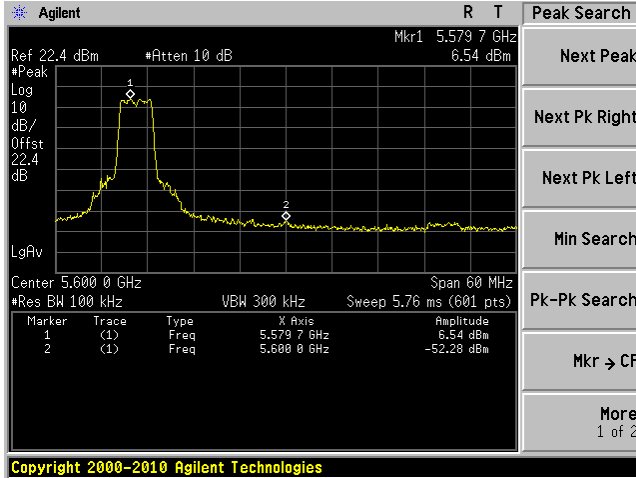


802.11n-HT40 mode, 5670 MHz J1

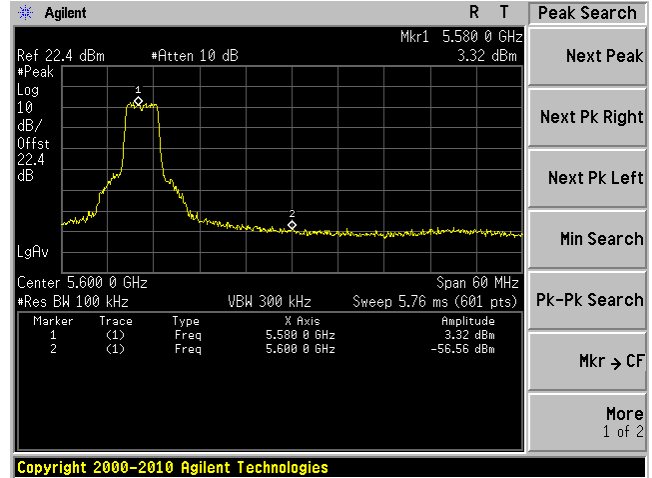


High Power Low Gain (9 dBi)

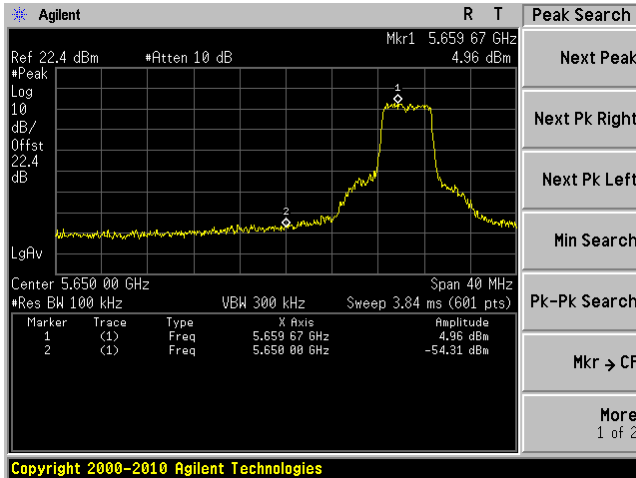
5 MHz mode, 5580 MHz J0



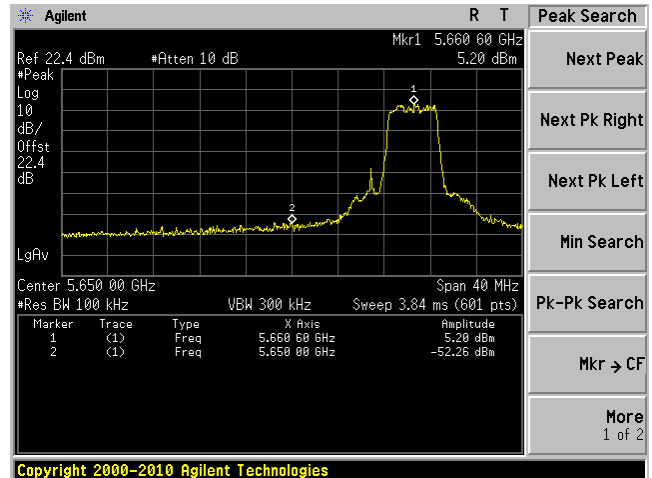
5 MHz mode, 5580 MHz J1



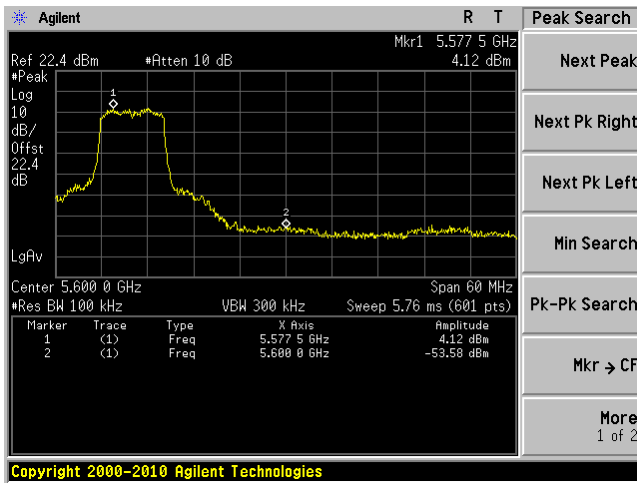
5 MHz mode, 5660 MHz J0



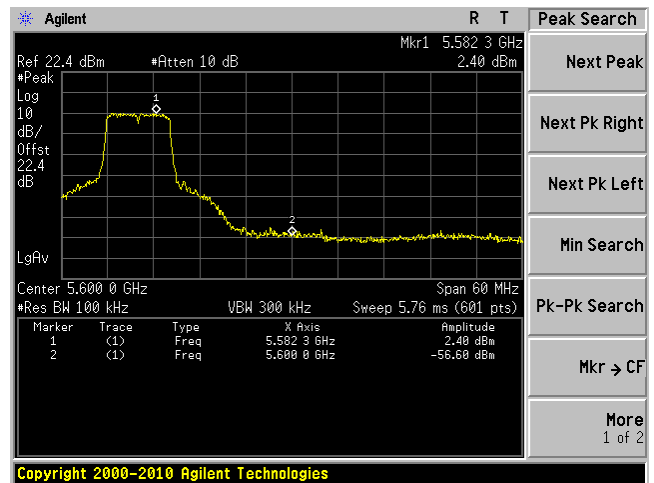
5 MHz mode, 5660 MHz J1



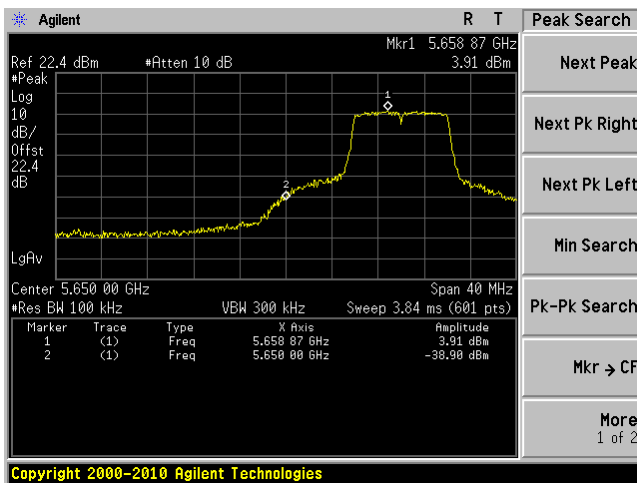
10 MHz mode, 5580 MHz J0



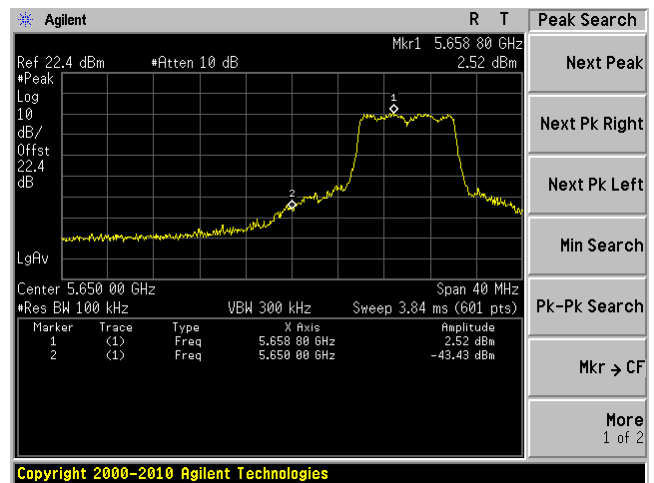
10 MHz mode, 5580 MHz J1



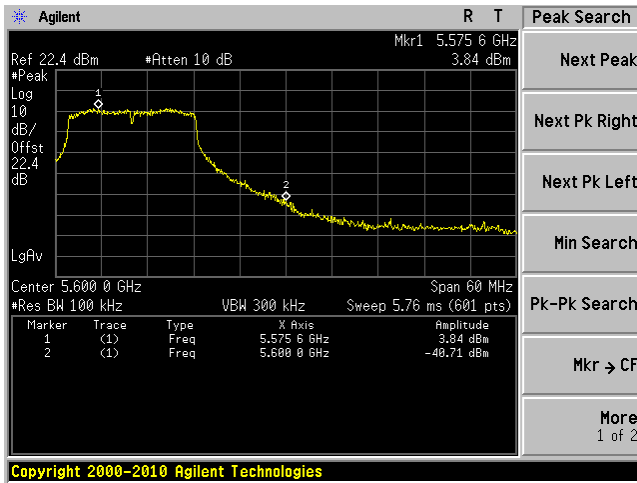
10 MHz mode, 5660 MHz J0



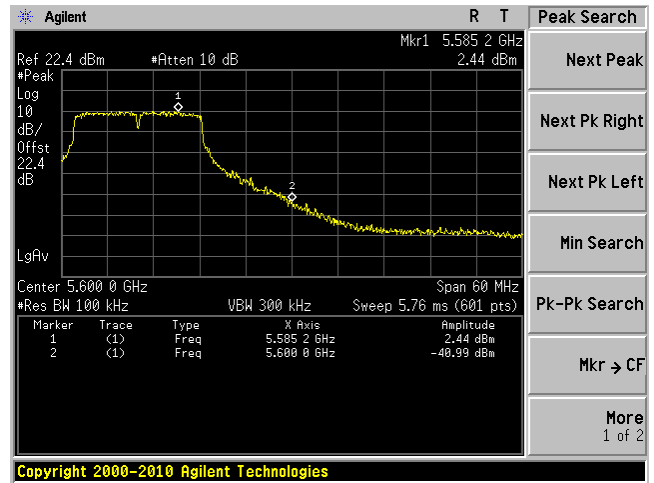
10 MHz mode, 5660 MHz J1



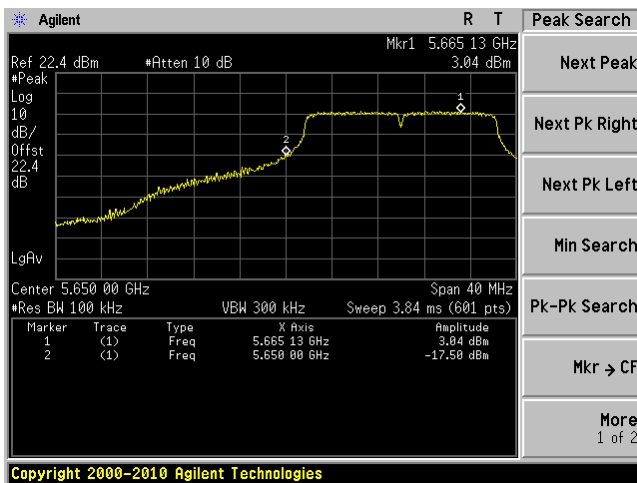
802.11a mode, 5580 MHz J0



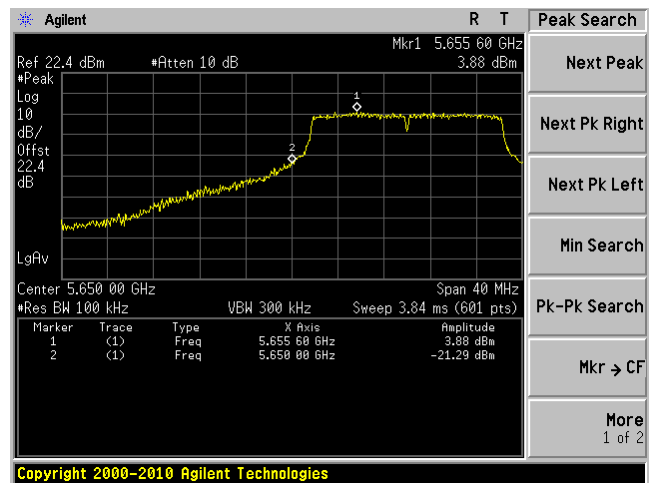
802.11a mode, 5580 MHz J1



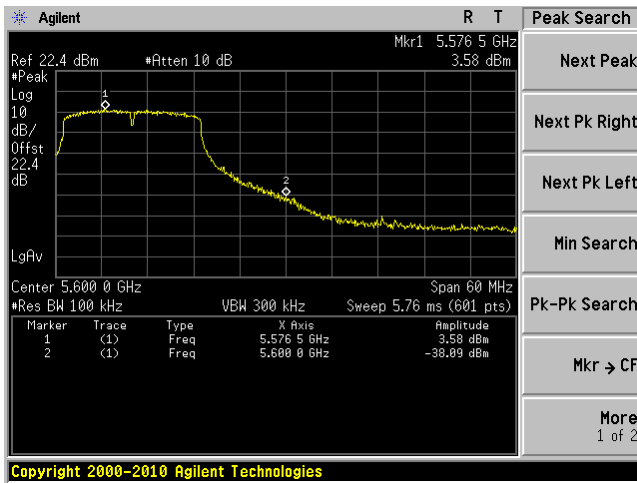
802.11a mode, 5660 MHz J0



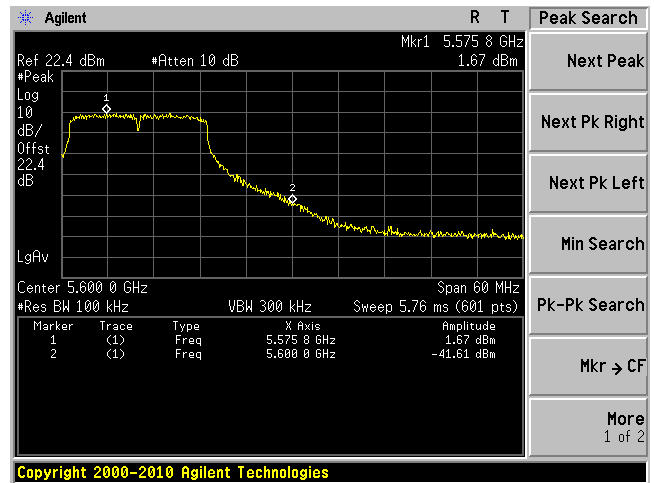
802.11a mode, 5660 MHz J1



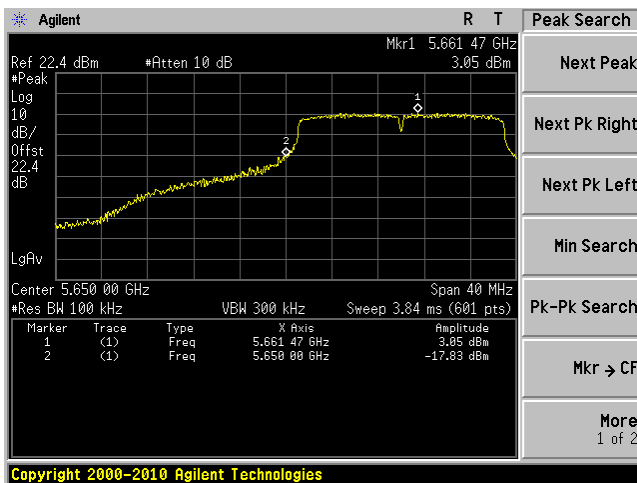
802.11n-HT20 mode, 5580 MHz J0



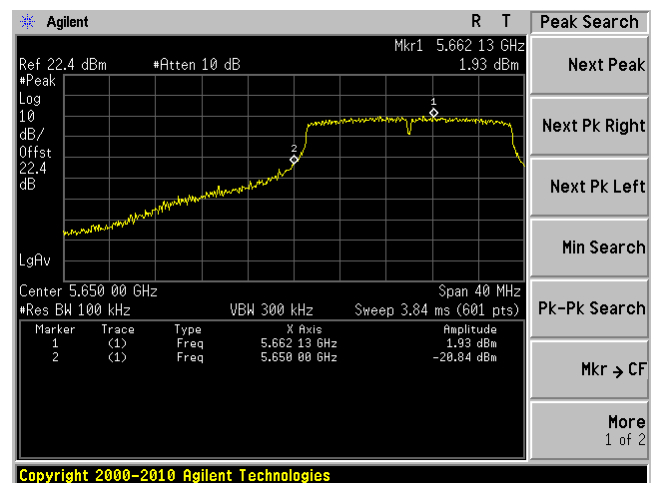
802.11n-HT20 mode, 5580 MHz J1



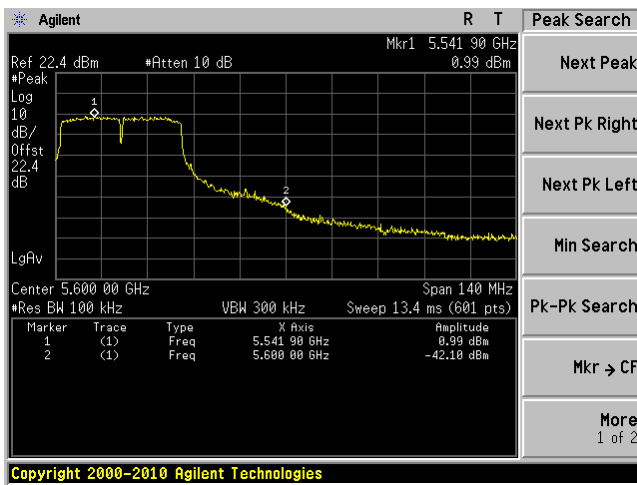
802.11n-HT20 mode, 5660 MHz J0



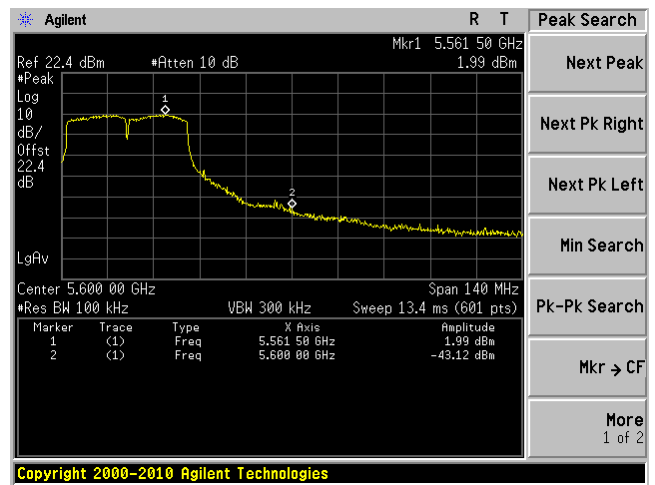
802.11n-HT20 mode, 5660 MHz J1



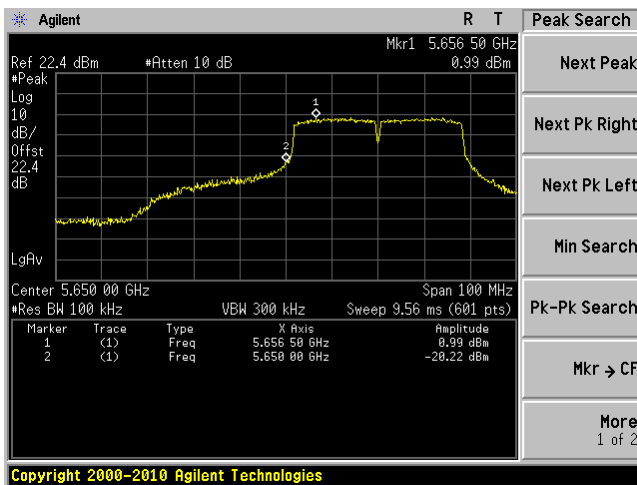
802.11n-HT40 mode, 5550 MHz J0



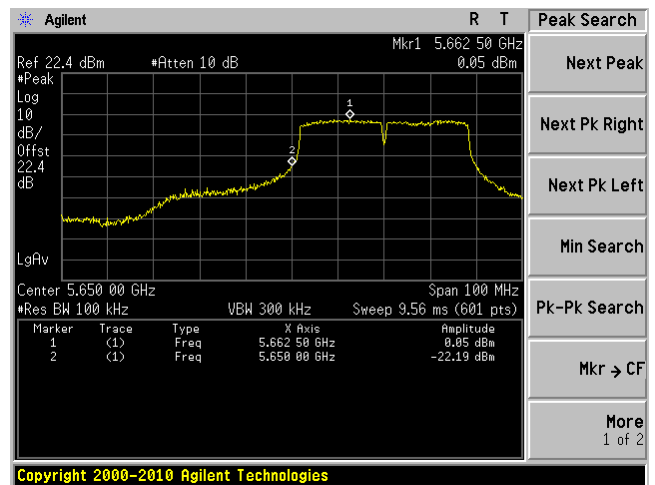
802.11n-HT40 mode, 5550 MHz J1



802.11n-HT40 mode, 5670 MHz J0



802.11n-HT40 mode, 5670 MHz J1



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

11.1 Applicable Standard

According to FCC §15.407(a)(2)

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

According to IC RSS-210 §A9.2:

For 5250-5350 MHz and 5470-5725 MHz bands, the power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

11.2 Measurement Procedure

- (i) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- (ii) Set RBW = 1 MHz.
- (iii) Set VBW \geq 3 MHz.
- (iv) Number of points in sweep \geq 2 Span / RBW. (This ensures that bin-to-bin spacing is \leq RBW/2, so that narrowband signals are not lost between frequency bins.)
- (v) Sweep time = auto.
- (vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- (vii) If transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle \geq 98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run".
- (viii) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- (ix) Compute power by integrating the spectrum across the 26 dB EBW of the signal using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges. If the spectrum analyzer does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW of the spectrum.

11.3 Test Equipment List and Details

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

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

11.4 Test Environmental Conditions

Temperature:	21-23 °C
Relative Humidity:	43-45 %
ATM Pressure:	101-102 kPa

The testing was performed by Jeffrey Wu from 2013-06-20 to 2013-06-24 in RF site.

11.5 Test Results

5250-5350 MHz Band:

Low Power High Antenna System Gain (28 dBi)

Channel	Frequency (MHz)	PDS (dBm)		Total PDS (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1			
5 MHz mode						
Low	5260.5	-16.709	-17.9	-14.25	-11	-3.25
Middle	5280.5	-18.492	-17.564	-14.99	-11	-3.99
High	5320.5	-18.698	-19.108	-15.89	-11	-4.89
10 MHz Mode						
Low	5260	-18.575	-19.451	-15.98	-11	-4.98
Middle	5280	-18.979	-18.461	-15.70	-11	-4.70
High	5320	-18.535	-18.452	-15.48	-11	-4.48
802.11a Mode						
Low	5260	-19.59	-18.667	-16.09	-11	-5.09
Middle	5280	-19.781	-19.36	-16.56	-11	-5.56
High	5320	-19.484	-19.038	-16.24	-11	-5.24
802.11n-HT20 Mode						
Low	5260	-19.66	-19.001	-16.31	-11	-5.31
Middle	5280	-20.337	-19.513	-16.90	-11	-5.90
High	5320	-19.905	-19.424	-16.65	-11	-5.65
802.11n-HT40 Mode						
Low	5270	-19.66	-19.001	-16.31	-11	-5.31
High	5310	-20.337	-19.513	-16.90	-11	-5.90

*Note: The peak power spectral density shall not exceed 11 dBm in any 1-MHz band, and the peak power spectral density should be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. Since the device has 28 dBi effective antenna system gain, the power limit has to be reduced to -11 dBm.

High Power Low Antenna System Gain (9 dBi)

Channel	Frequency (MHz)	PDS (dBm)		Total PDS (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1			
5 MHz mode						
Low	5260.5	-2.096	-2.633	0.65	8	-7.35
Middle	5280.5	-2.054	-2.343	0.81	8	-7.19
High	5320.5	-1.845	-2.605	0.80	8	-7.20
10 MHz Mode						
Low	5260	-1.666	-1.706	1.32	8	-6.68
Middle	5280	-1.061	-1.827	1.58	8	-6.42
High	5320	-0.997	-1.177	1.92	8	-6.08
802.11a Mode						
Low	5260	-0.508	-1.325	2.11	8	-5.89
Middle	5280	-0.95	-1.487	1.80	8	-6.20
High	5320	-0.302	-1.392	2.20	8	-5.80
802.11n-HT20 Mode						
Low	5260	-1.873	-1.608	1.27	8	-6.73
Middle	5280	-2.12	-1.991	0.96	8	-7.04
High	5320	-0.792	-1.036	2.10	8	-5.90
802.11n-HT40 Mode						
Low	5270	-1.539	-2.691	0.93	8	-7.07
High	5310	-10.835	-11.33	-8.07	8	-16.07

*Note: The peak power spectral density shall not exceed 11 dBm in any 1-MHz band, and the peak power spectral density should be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. Since the device has 9 dBi effective antenna system gain, the power limit has to be reduced to 8 dBm.

5470-5725 MHz Band:

Low Power High Antenna System Gain (28 dBi)

Channel	Frequency (MHz)	PDS (dBm)		Total PDS (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1			
5 MHz mode						
Low	5500.5	-19.804	-19.098	-16.43	-11	-5.43
Middle	5580.5	-15.09	-15.587	-12.32	-11	-1.32
High	5700.5	-15.635	-15.837	-12.72	-11	-1.72
10 MHz Mode						
Low	5500	-19.138	-18.222	-15.65	-11	-4.65
Middle	5580	-15.257	-14.561	-11.88	-11	-0.88
High	5700	-15.385	-14.26	-11.78	-11	-0.78
802.11a Mode						
Low	5500	-19.545	-18.492	-15.98	-11	-4.98
Middle	5580	-16.202	-15.658	-12.91	-11	-1.91
High	5700	-15.413	-14.699	-12.03	-11	-1.03
802.11n-HT20 Mode						
Low	5500	-20.365	-19.762	-17.04	-11	-6.04
Middle	5580	-16.26	-15.723	-12.97	-11	-1.97
High	5700	-15.711	-15.742	-12.72	-11	-1.72
802.11n-HT40 Mode						
Low	5510	-24.11	-23.575	-20.82	-11	-9.82
Middle	5550	-19.389	-18.357	-15.83	-11	-4.83
High	5670	-15.741	-15.486	-12.60	-11	-1.60

*Note: The peak power spectral density shall not exceed 11 dBm in any 1-MHz band, and the peak power spectral density should be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. Since the device has 28 dBi effective antenna system gain, the power limit has to be reduced to -11 dBm.

High Power Low Antenna System Gain (9 dBi)

Channel	Frequency (MHz)	PDS (dBm)		Total PDS (dBm)	Limit (dBm)	Margin (dB)
		Chain J0	Chain J1			
5 MHz mode						
Low	5500.5	-1.037	1.995	3.75	8	-4.25
Middle	5580.5	2.676	3.483	6.11	8	-1.89
High	5700.5	3.514	3.518	6.53	8	-1.47
10 MHz Mode						
Low	5500	-1.745	-0.66	1.84	8	-6.16
Middle	5580	1.366	3.157	5.36	8	-2.64
High	5700	3.513	2.516	6.05	8	-1.95
802.11a Mode						
Low	5500	0.655	1.991	4.38	8	-3.62
Middle	5580	-0.109	1.599	3.84	8	-4.16
High	5700	2.592	2.25	5.43	8	-2.57
802.11n-HT20 Mode						
Low	5500	-0.084	1.031	3.52	8	-4.48
Middle	5580	0.745	2.715	4.85	8	-3.15
High	5700	2.006	1.315	4.68	8	-3.32
802.11n-HT40 Mode						
Low	5510	-7.776	-6.705	-4.20	8	-12.20
Middle	5550	0.417	2.251	4.44	8	-3.56
High	5670	1.881	2.917	5.44	8	-2.56

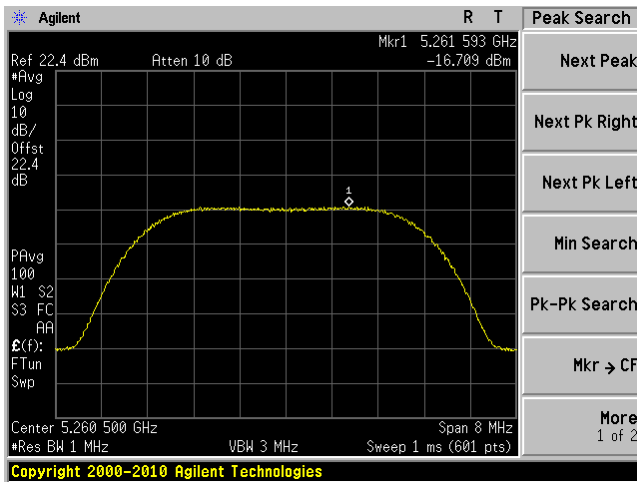
*Note: The peak power spectral density shall not exceed 11 dBm in any 1-MHz band, and the peak power spectral density should be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. Since the device has 9 dBi effective antenna system gain, the power limit has to be reduced to 8 dBm.

Please refer to the following plots.

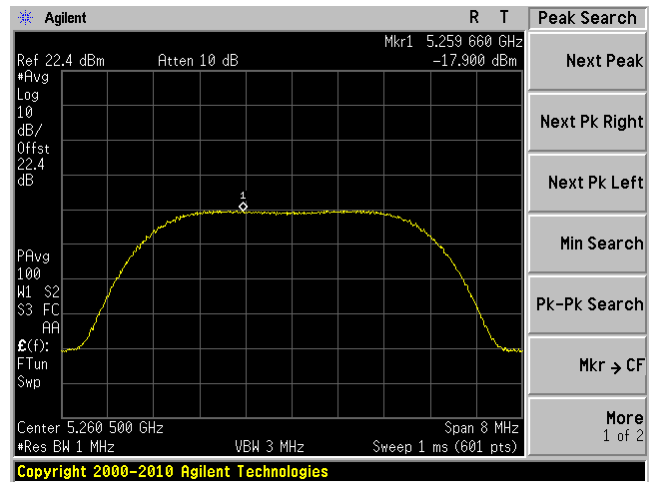
5250-5350 MHz Band

Low Power High Gain (28 dBi)

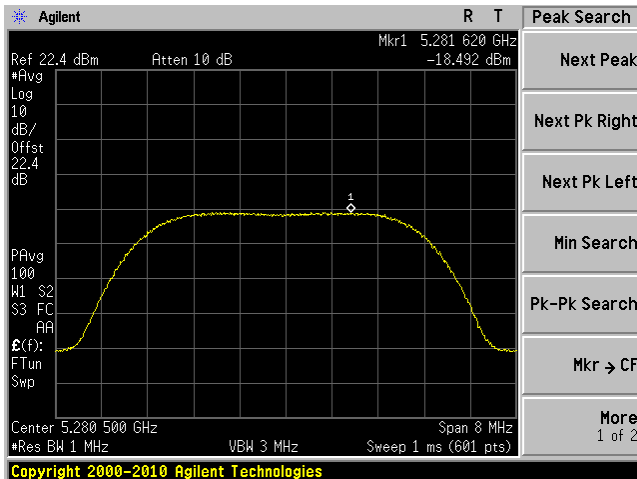
5 MHz mode, 5260.5 MHz J0



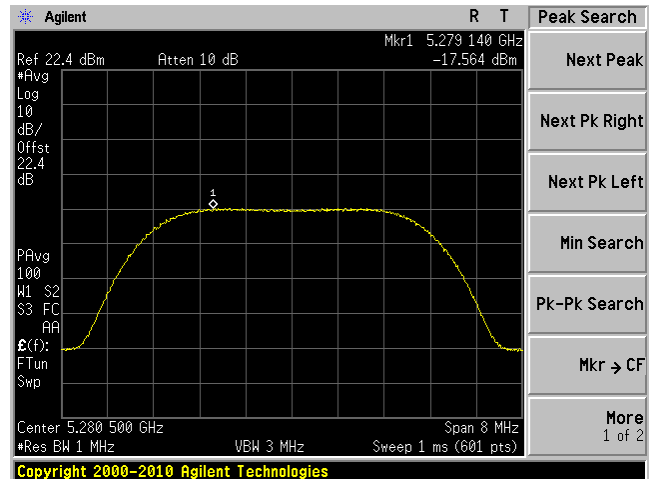
5 MHz mode, 5260.5 MHz J1



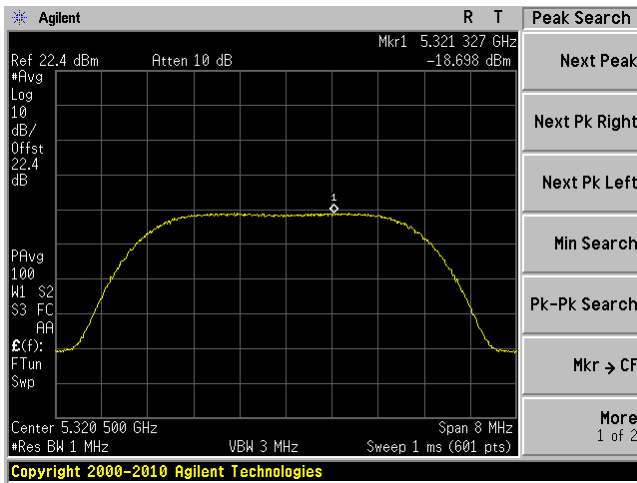
5 MHz mode, 5280.5 MHz J0



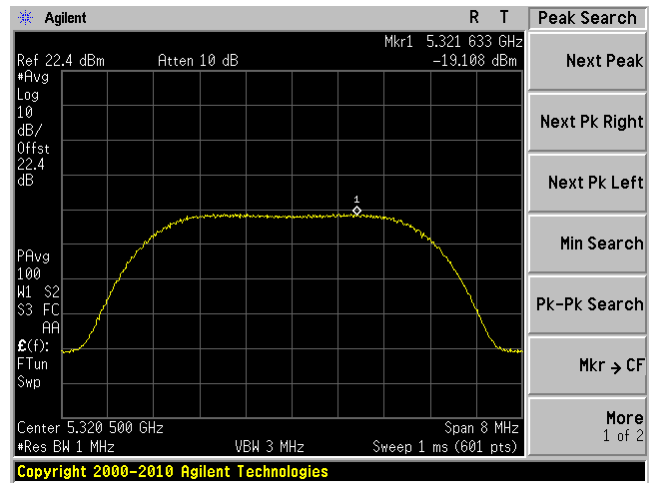
5 MHz mode, 5280.5 MHz J1



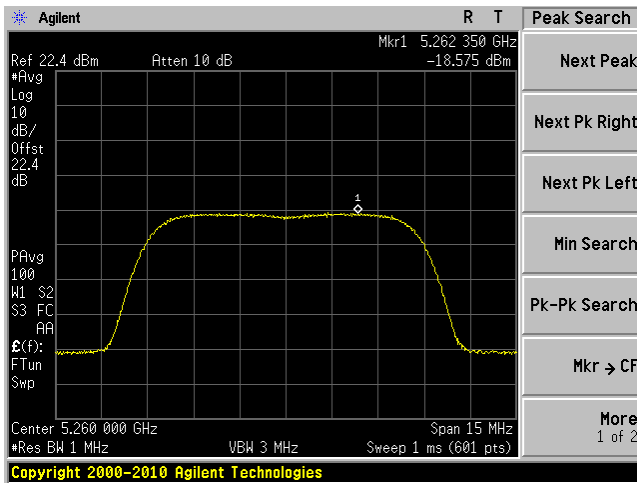
5 MHz mode, 5320.5 MHz J0



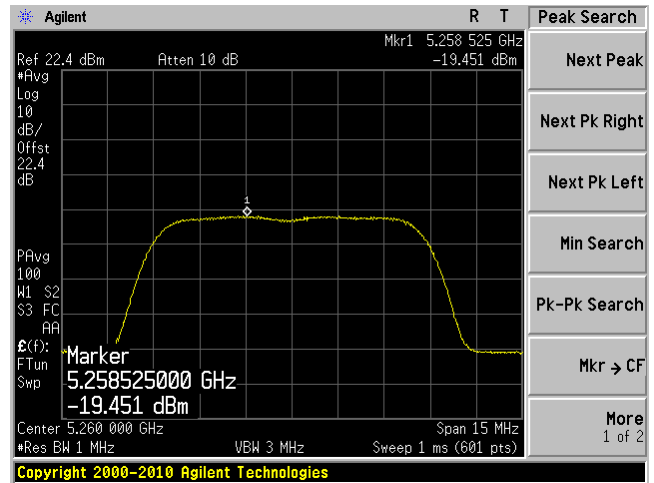
5 MHz mode, 5320.5 MHz J1



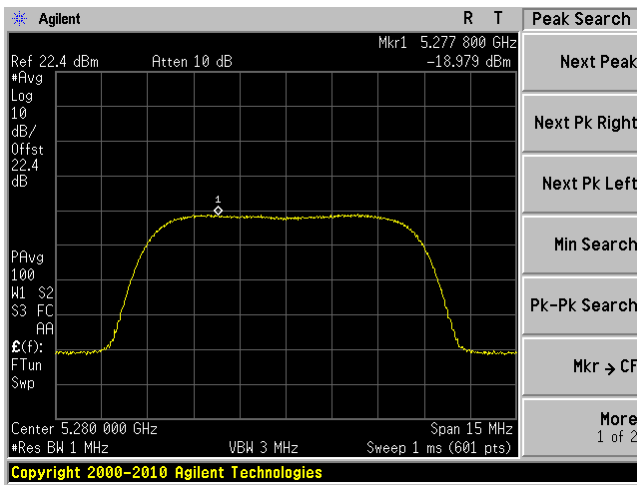
10 MHz mode, 5260 MHz J0



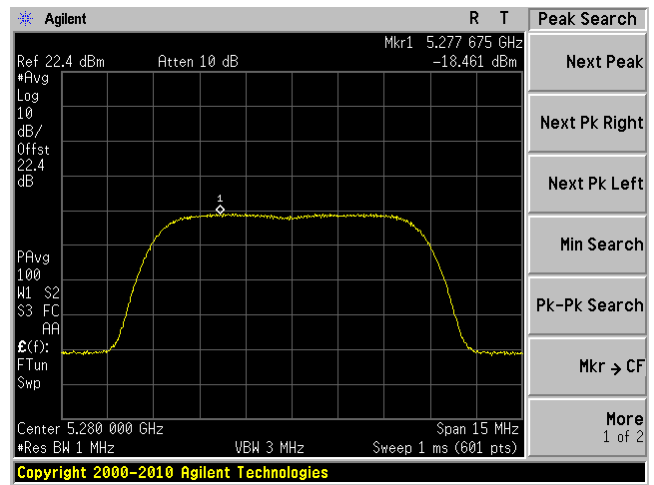
10 MHz mode, 5260 MHz J1



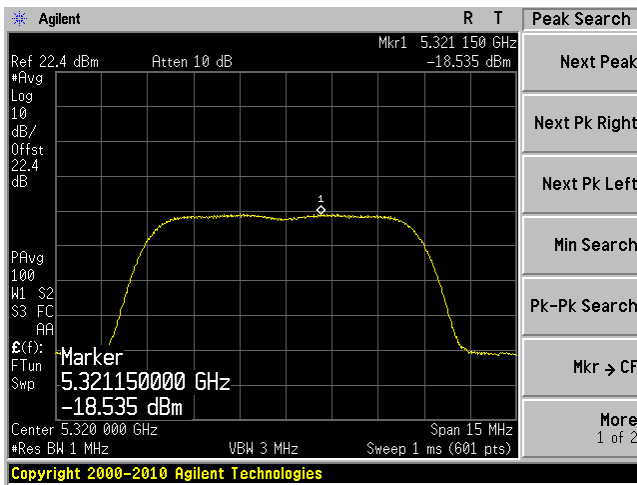
10 MHz mode, 5280MHz J0



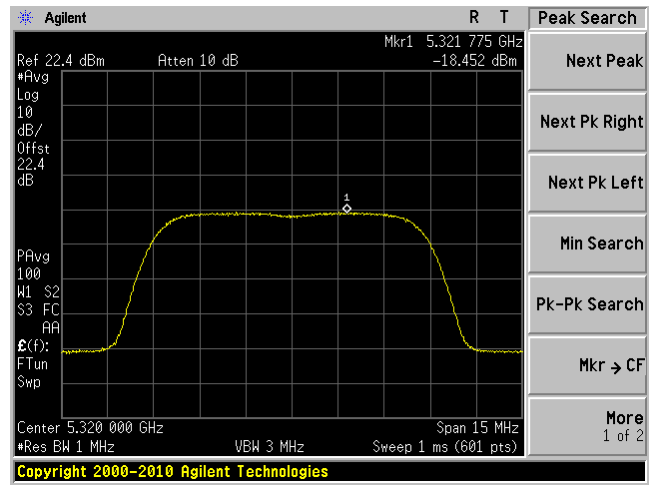
10 MHz mode, 5280 MHz J1



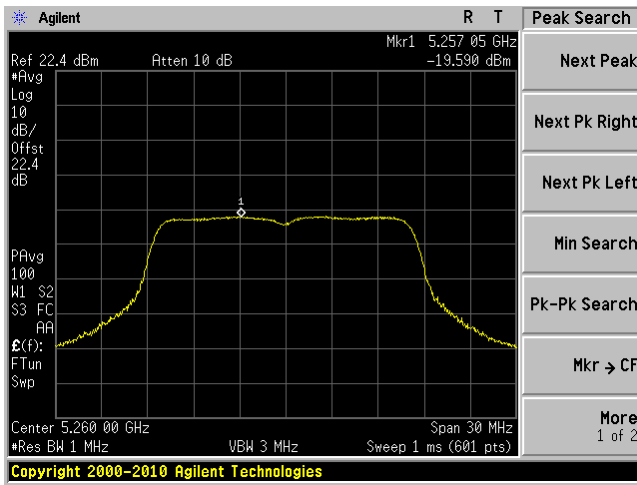
10 MHz mode, 5320 MHz J0



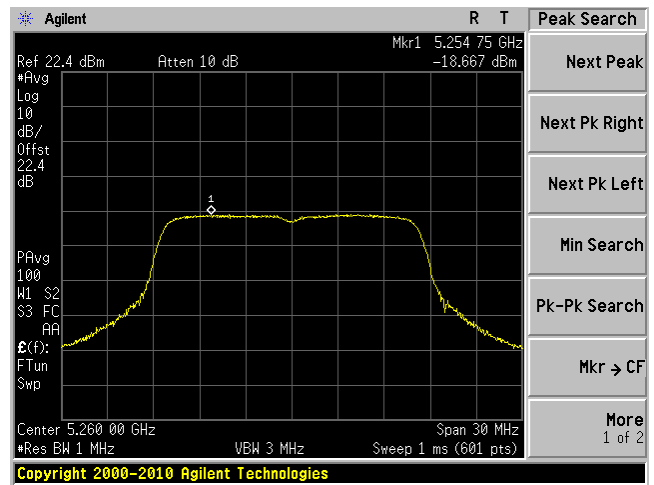
10 MHz mode, 5320 MHz J1



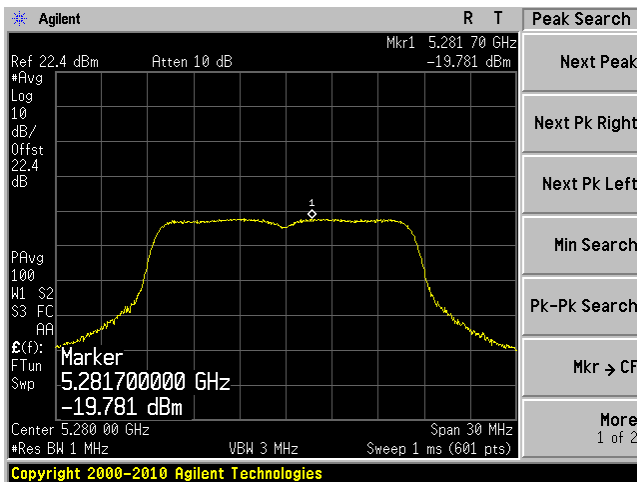
802.11a mode, 5260 MHz J0



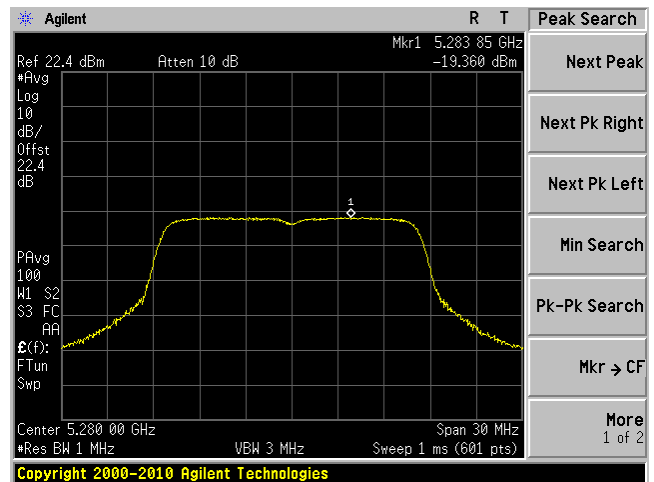
802.11a mode, 5260 MHz J1



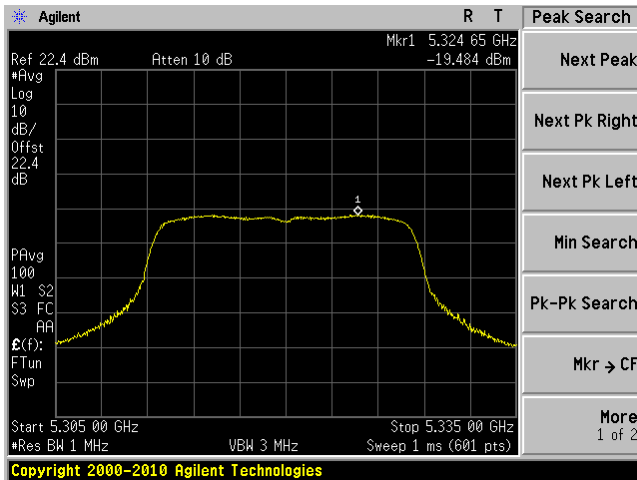
802.11a mode, 5280MHz J0



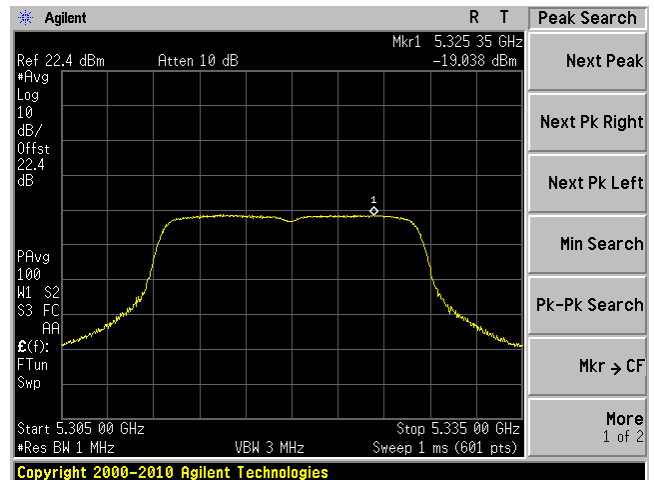
802.11a mode, 5280 MHz J1



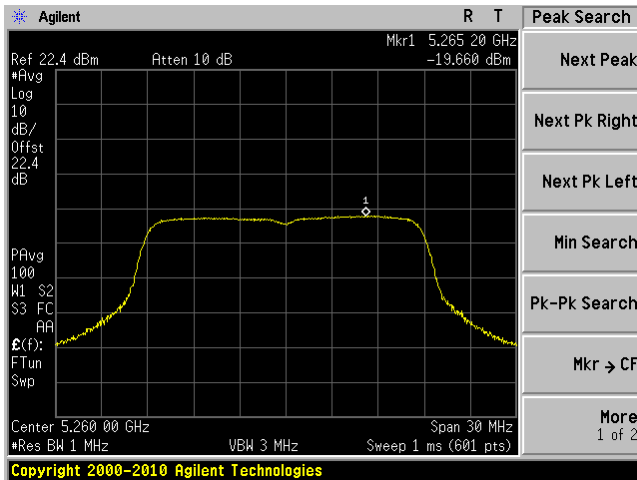
802.11a mode, 5320 MHz J0



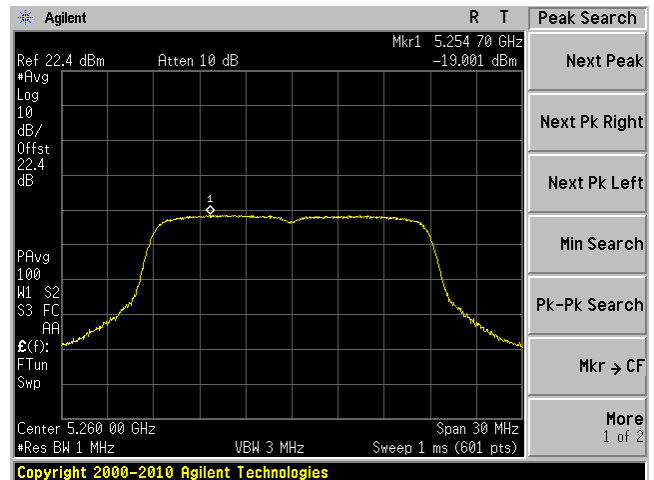
802.11a mode, 5320 MHz J1



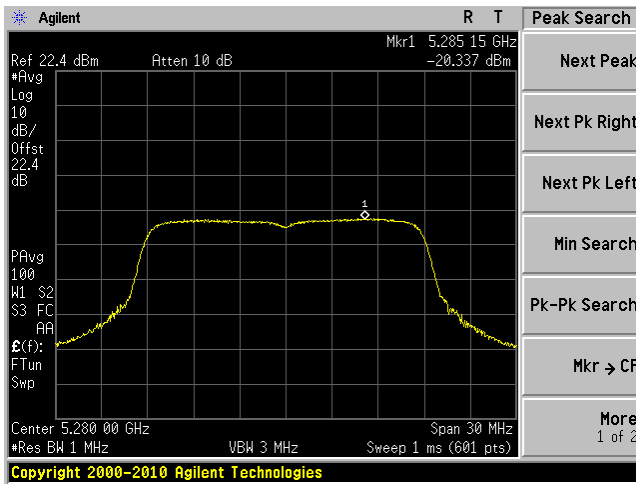
802.11n-HT20 mode, 5260 MHz



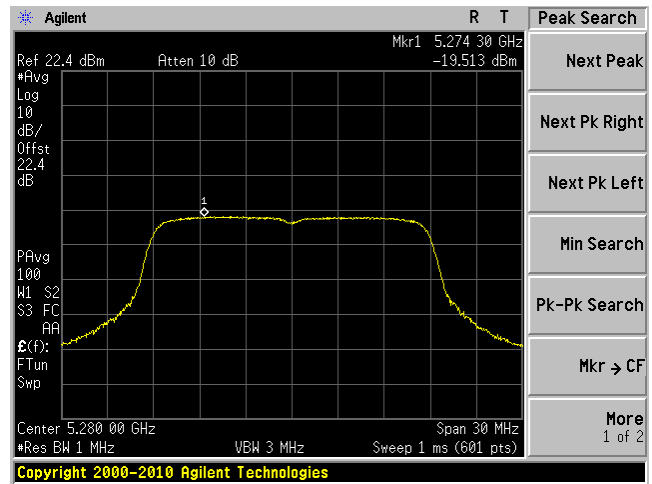
802.11n-HT20 mode, 5260 MHz



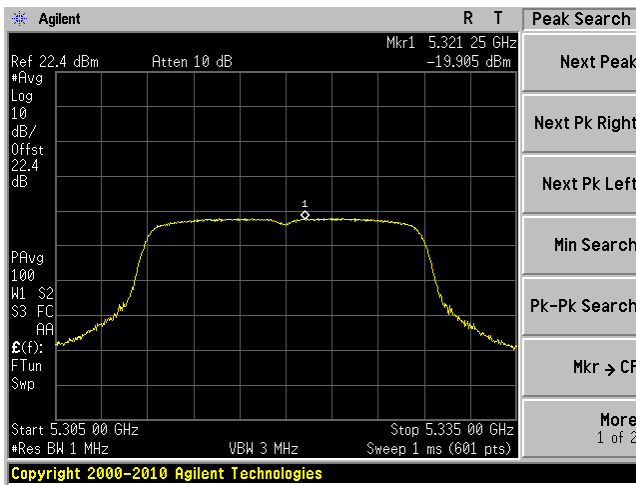
802.11n-HT20 mode, 5280 MHz



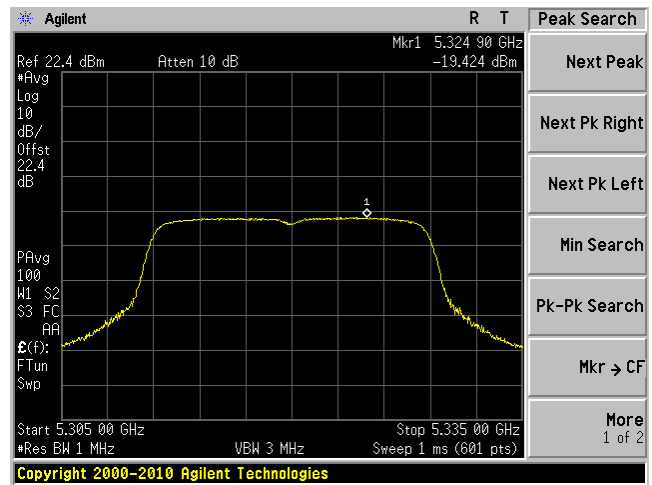
802.11n-HT20 mode, 5280 MHz



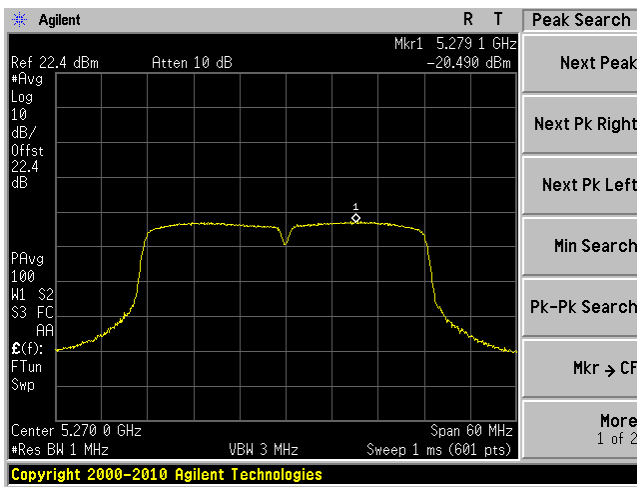
802.11n-HT20 mode, 5320 MHz



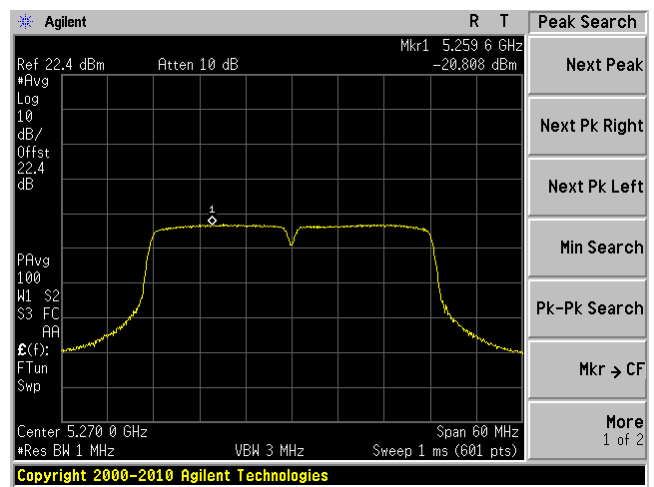
802.11n-HT20 mode, 5320 MHz



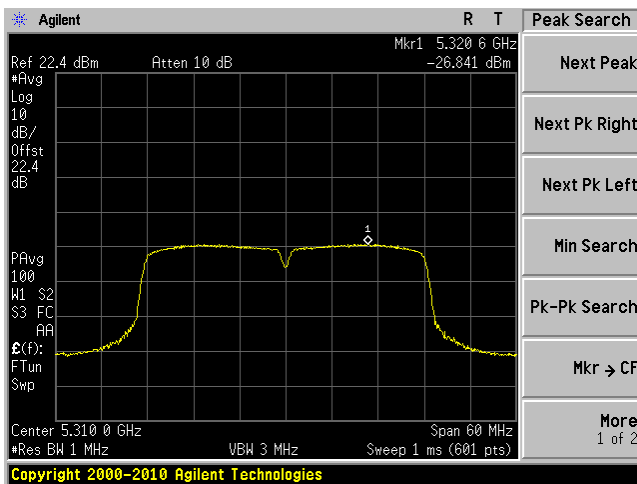
802.11n-HT40 mode, 5270 MHz



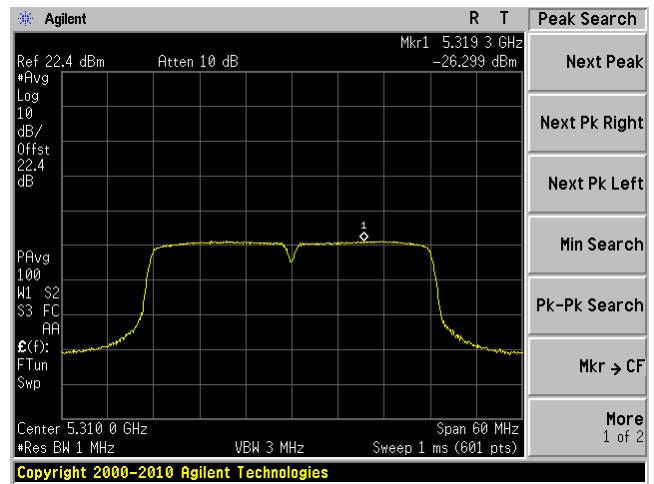
802.11n-HT20 mode, 5270 MHz



802.11n-HT20 mode, 5310 MHz

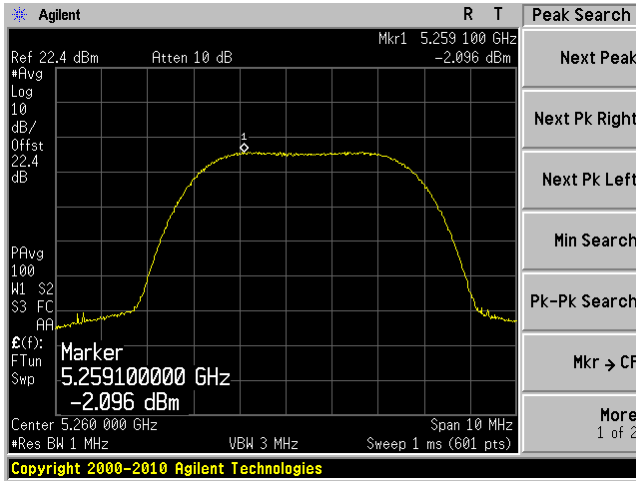


802.11n-HT20 mode, 5310 MHz

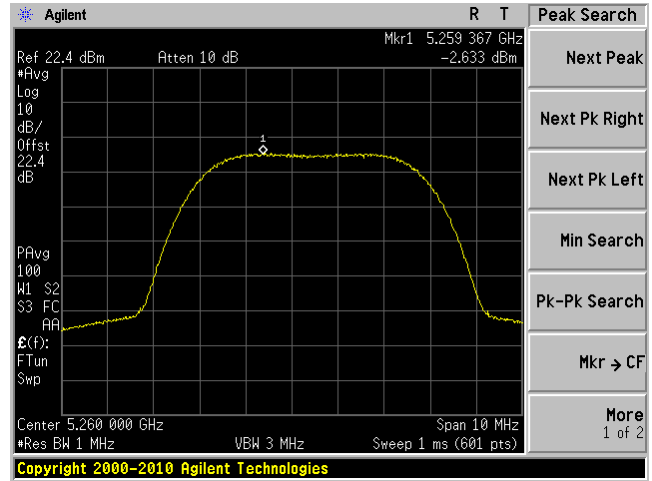


High Power Low Gain (9 dBi)

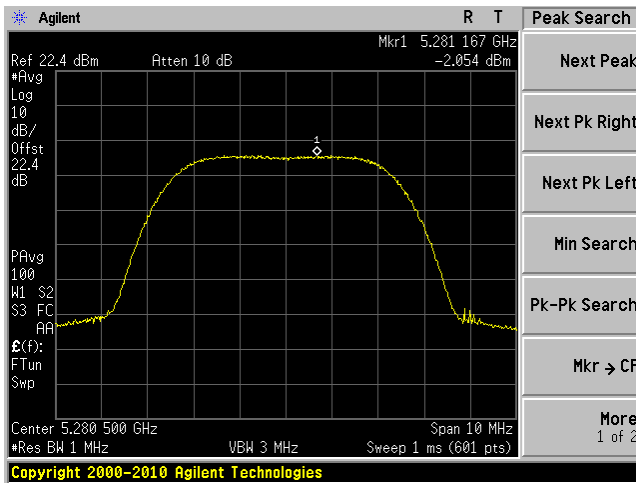
5 MHz mode, 5260.5 MHz J0



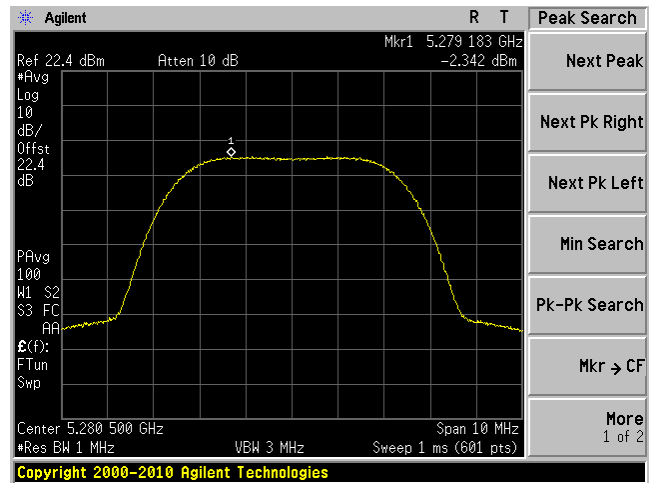
5 MHz mode, 5260.5 MHz J1



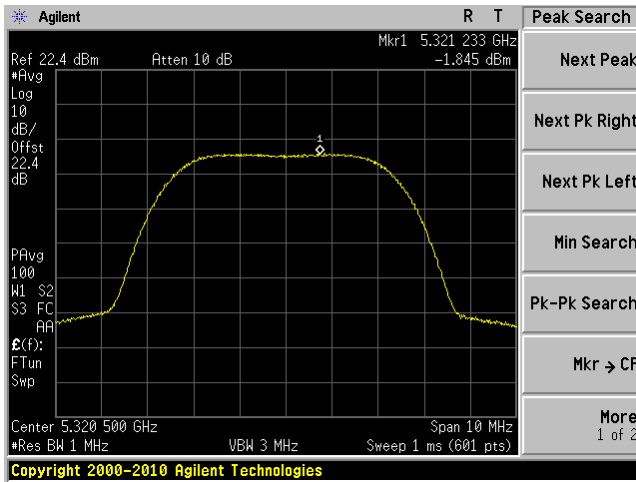
5 MHz mode, 5280.5 MHz J0



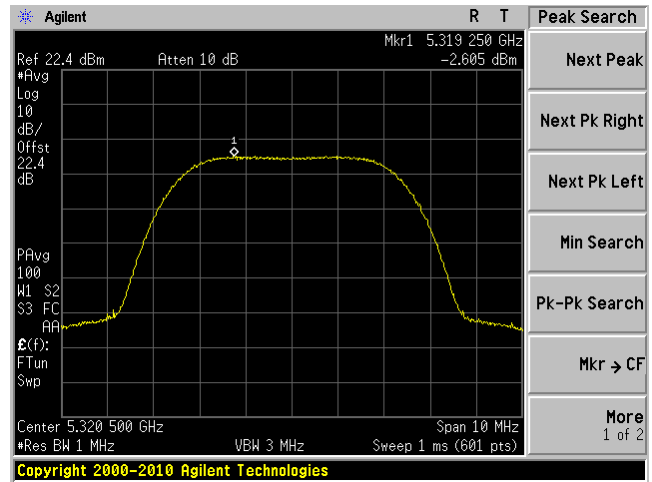
5 MHz mode, 5280.5 MHz J1



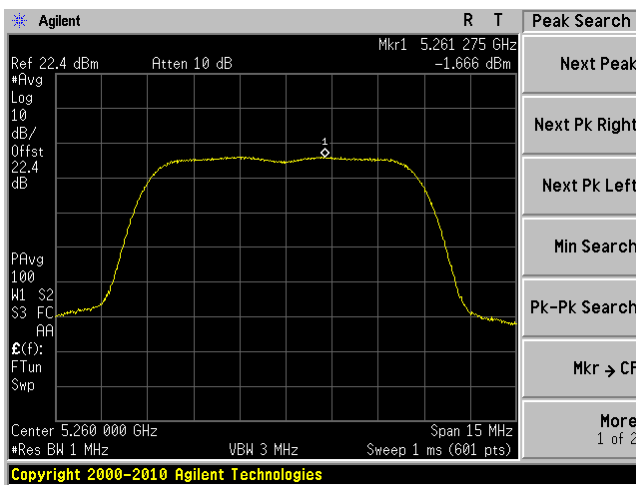
5 MHz mode, 5320.5 MHz J0



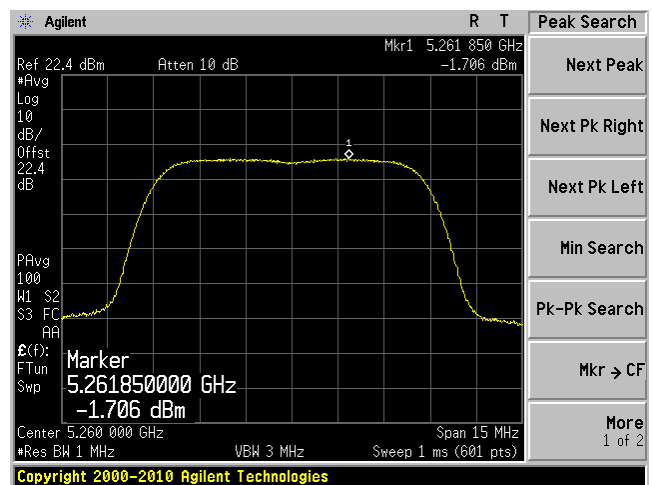
5 MHz mode, 5320.5 MHz J1



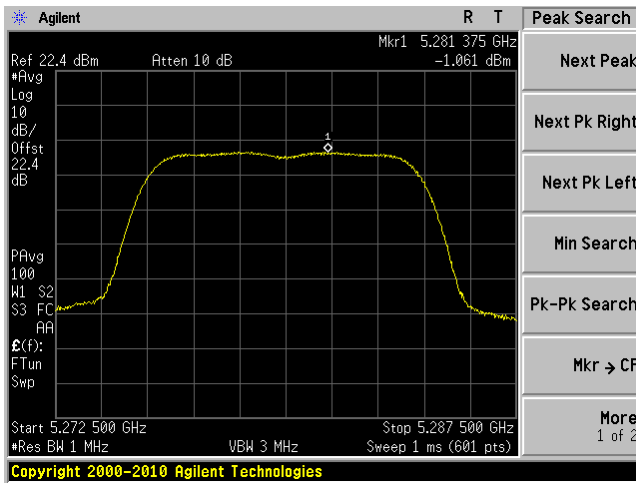
10 MHz mode, 5260 MHz J0



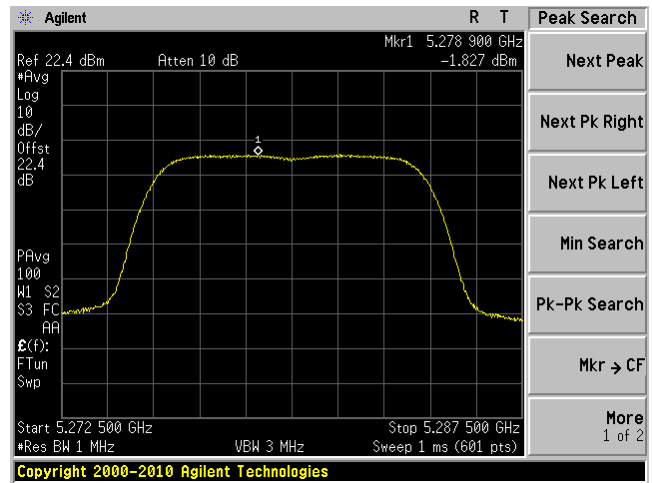
10 MHz mode, 5260 MHz J1



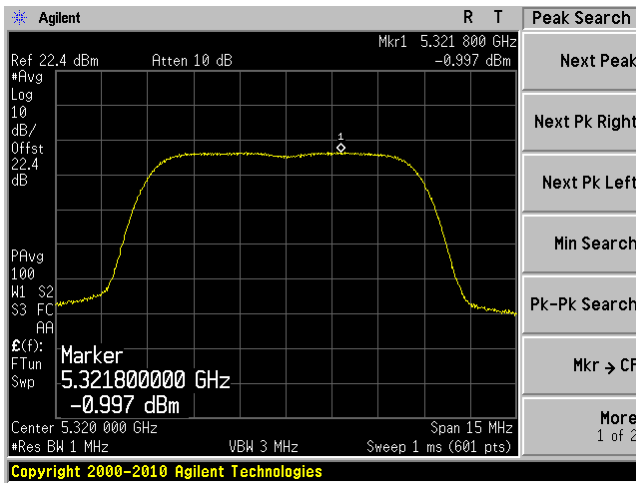
10 MHz mode, 5280MHz J0



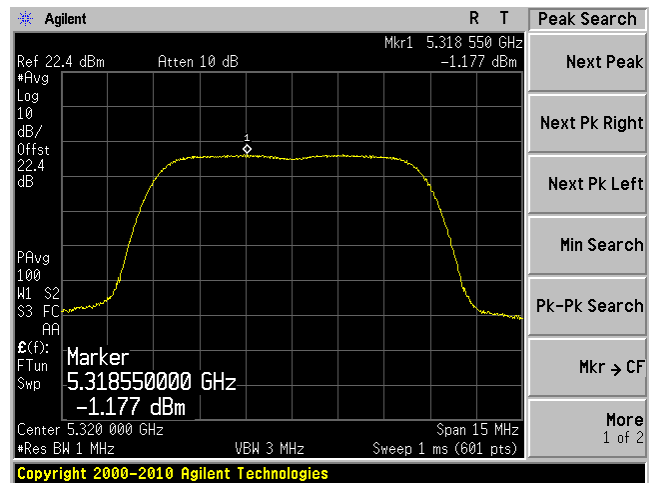
10 MHz mode, 5280 MHz J1



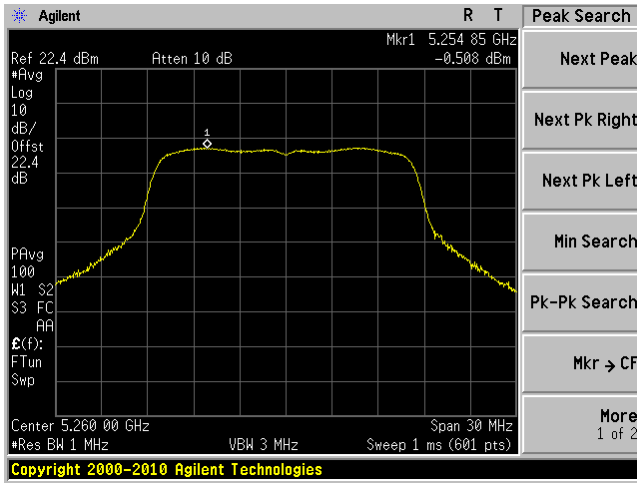
10 MHz mode, 5320 MHz J0



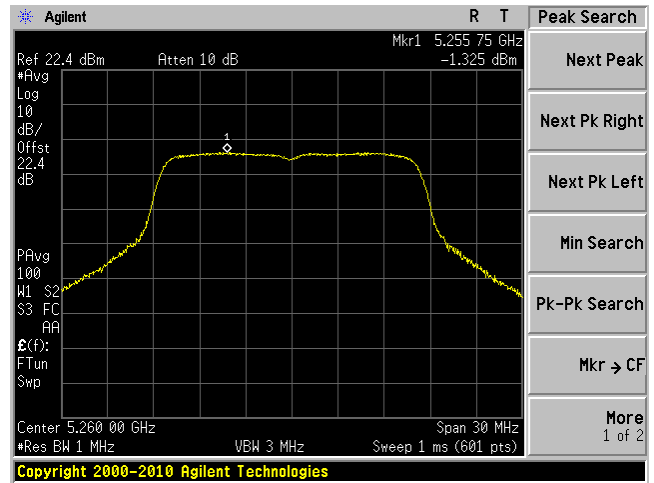
10 MHz mode, 5320 MHz J1



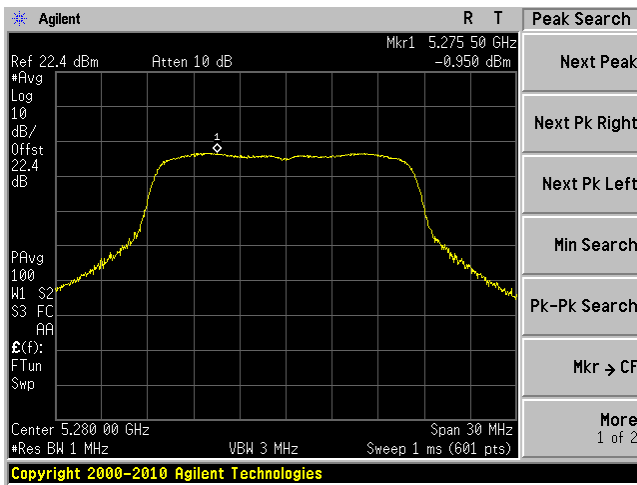
802.11a mode, 5260 MHz J0



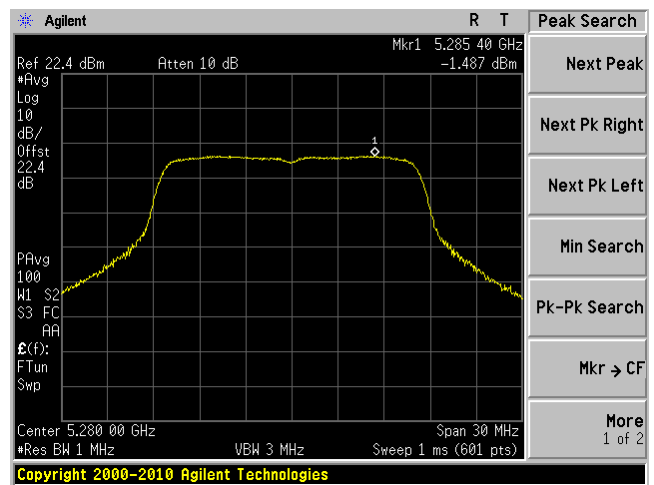
802.11a mode, 5260 MHz J1



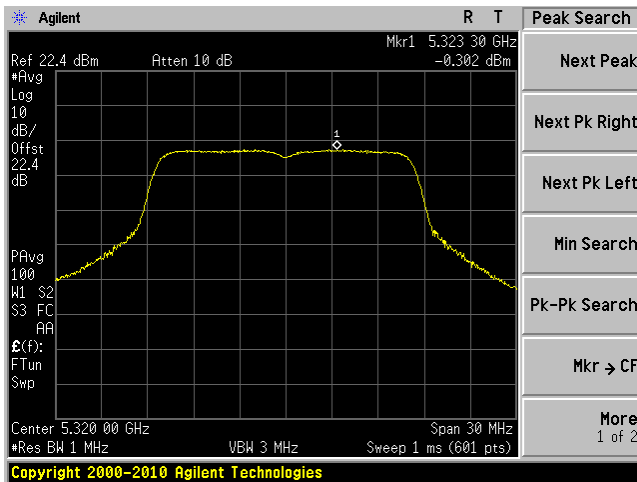
802.11a mode, 5280MHz J0



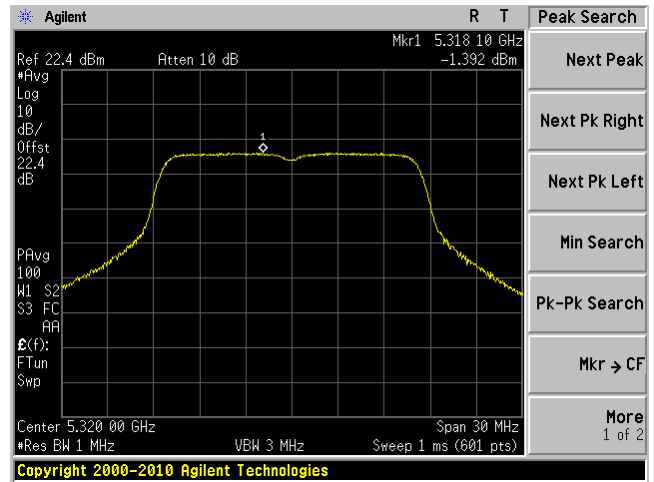
802.11a mode, 5280 MHz J1



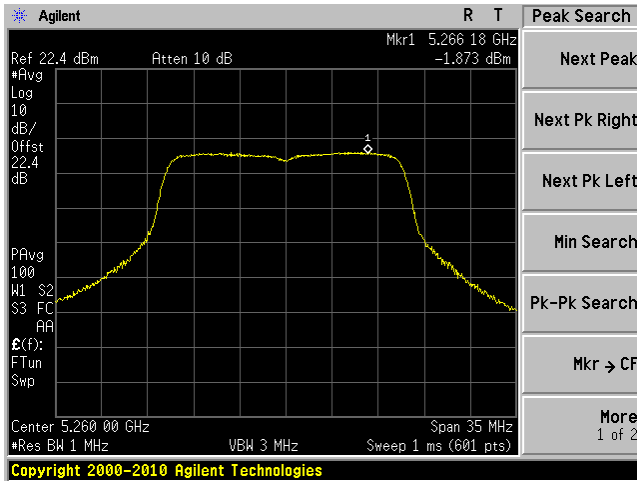
802.11a mode, 5320 MHz J0



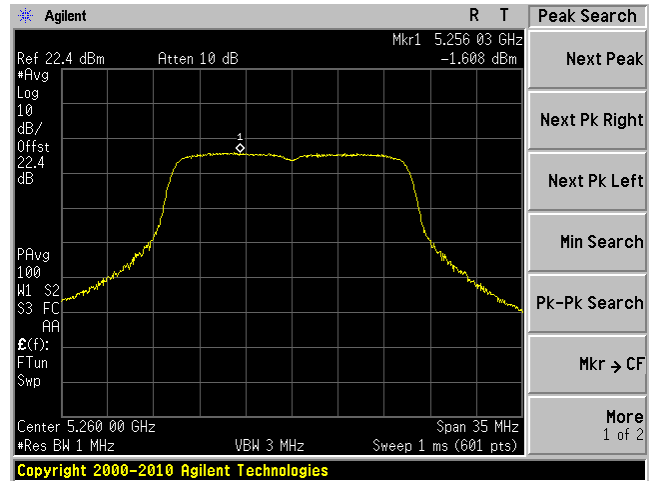
802.11a mode, 5320 MHz J1



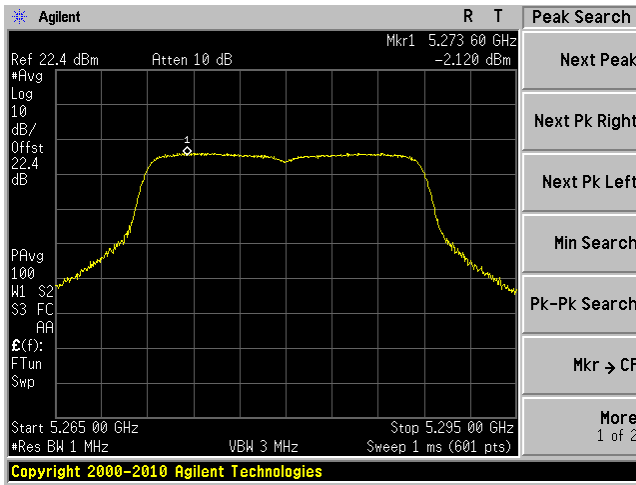
802.11n-HT20 mode, 5260 MHz



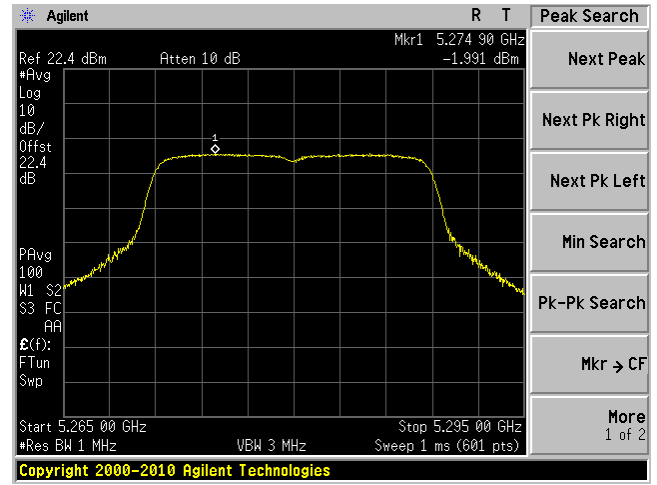
802.11n-HT20 mode, 5260 MHz



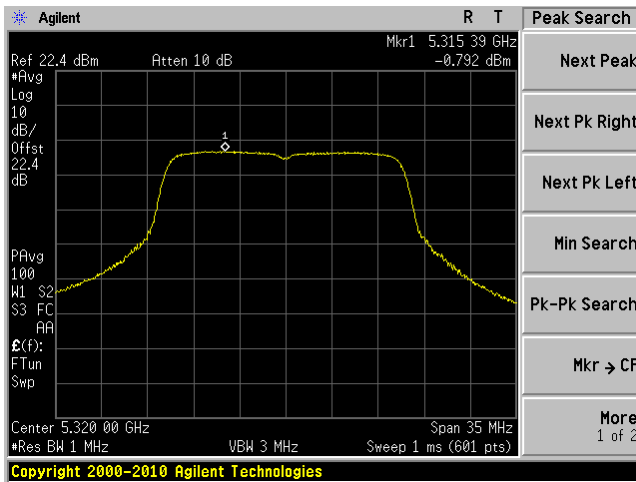
802.11n-HT20 mode, 5280 MHz



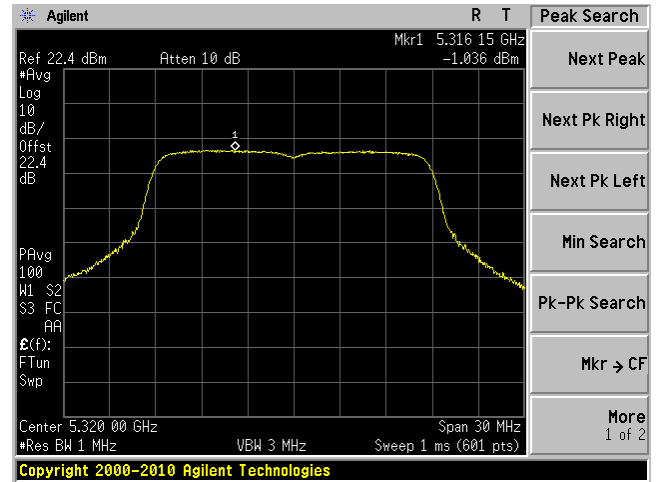
802.11n-HT20 mode, 5280 MHz



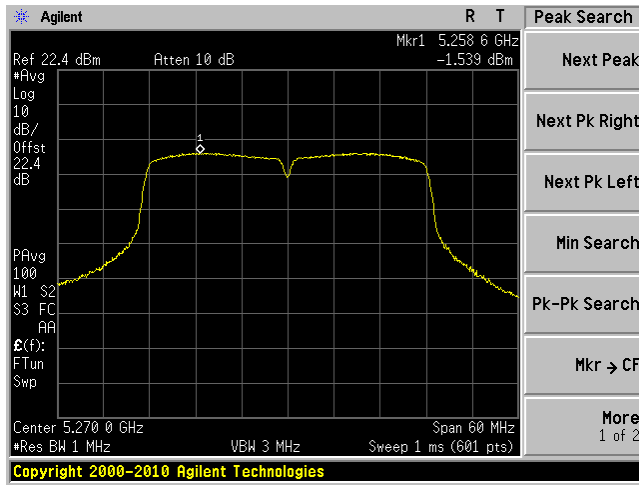
802.11n-HT20 mode, 5320 MHz



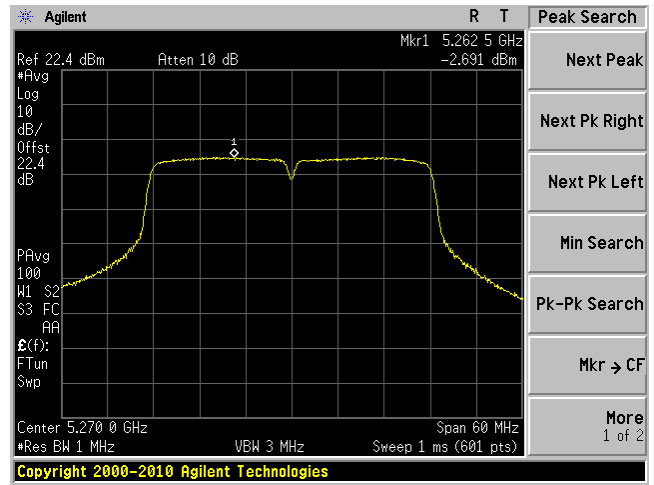
802.11n-HT20 mode, 5320 MHz



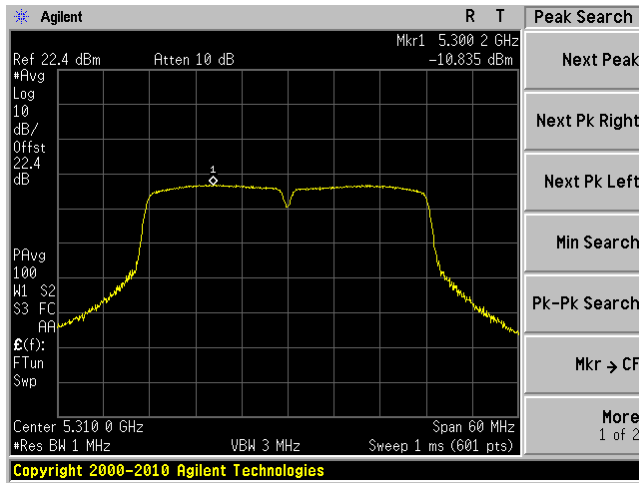
802.11n-HT40 mode, 5270 MHz



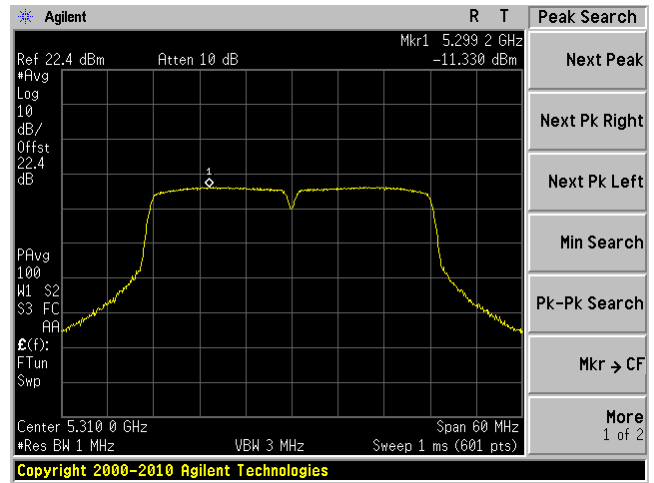
802.11n-HT20 mode, 5270 MHz



802.11n-HT40 mode, 5310 MHz

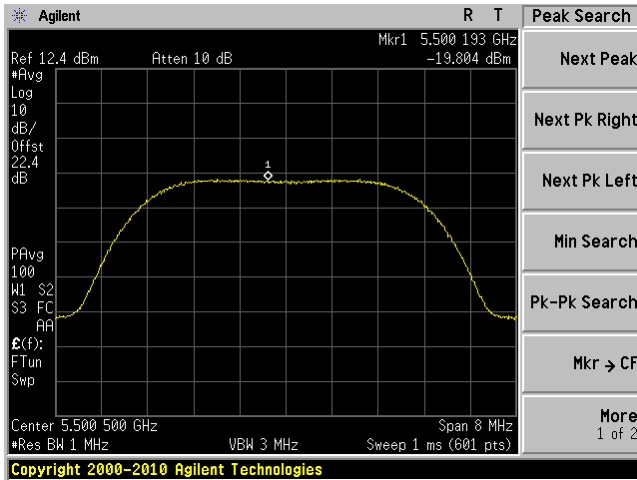


802.11n-HT40 mode, 5310 MHz

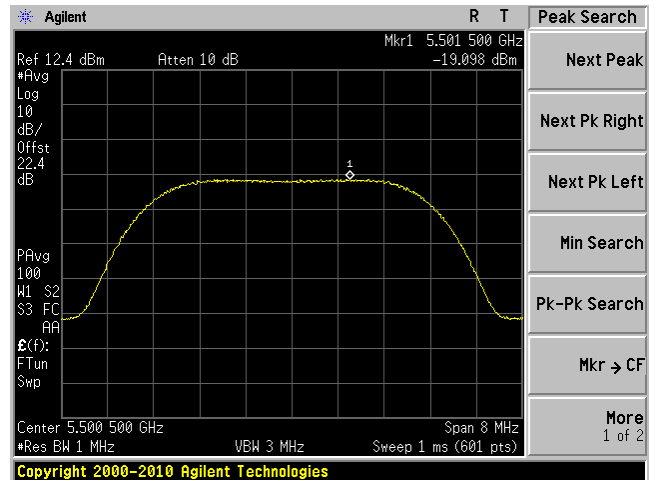


5470 - 5725 MHz Bnad Low Power High Gain (28 dBi)

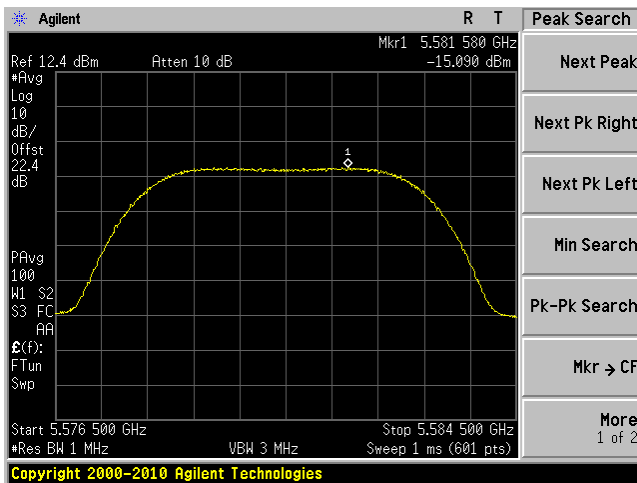
5 MHz mode, 5500.5 MHz J0



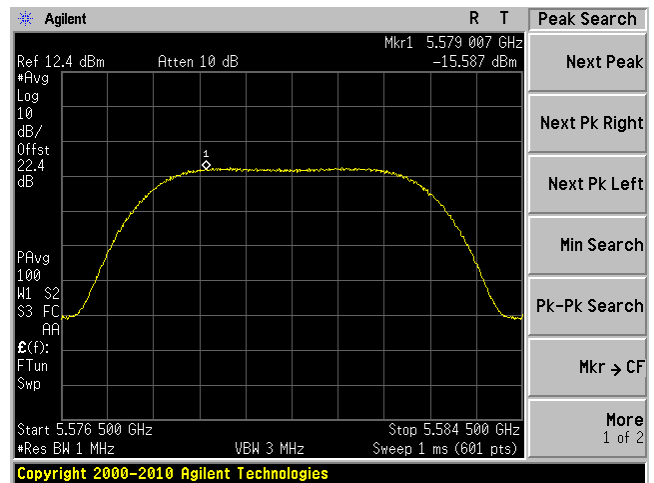
5 MHz mode, 5500.5 MHz J1



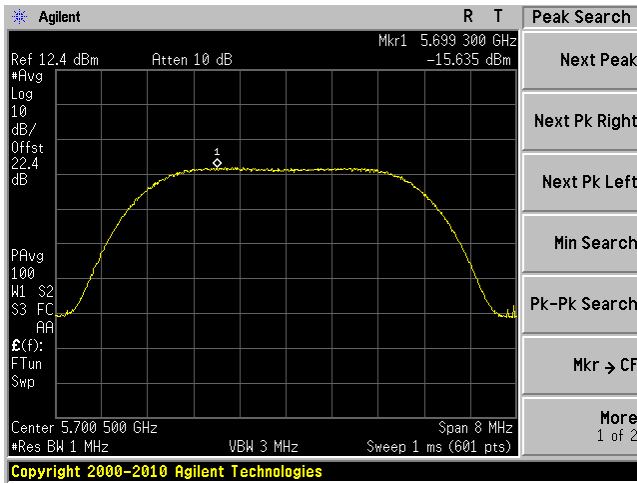
5 MHz mode, 5580.5 MHz J0



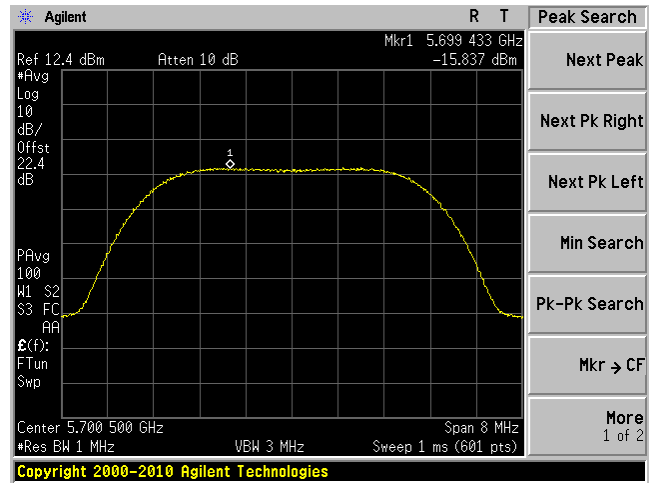
5 MHz mode, 5580.5 MHz J1



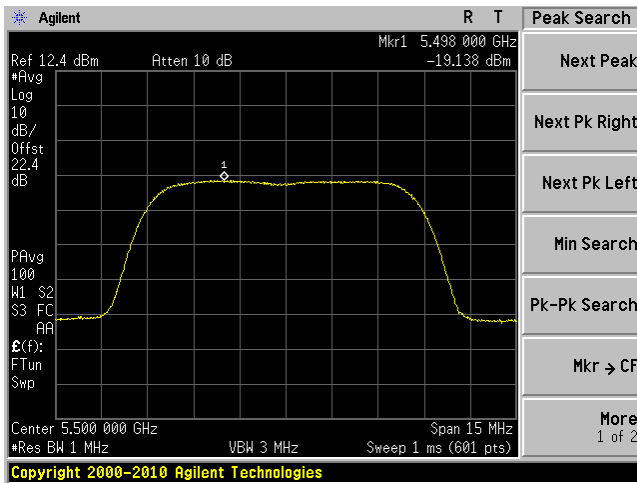
5 MHz mode, 5700.5 MHz J0



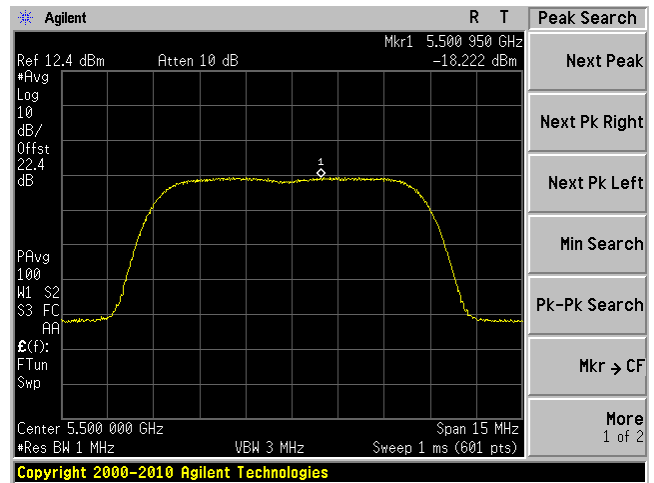
5 MHz mode, 5700.5 MHz J1



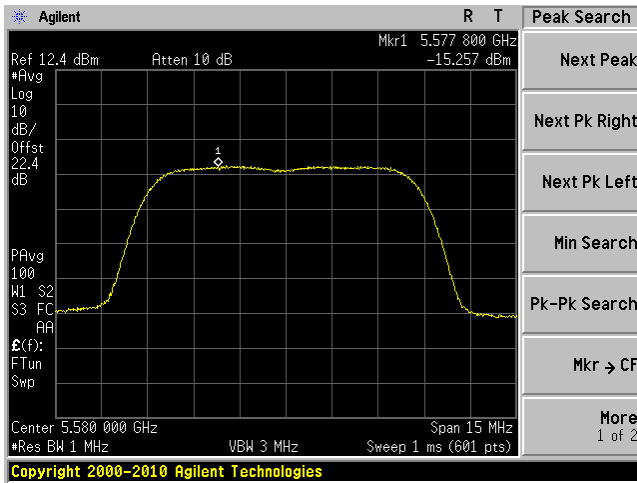
10 MHz mode, 5500 MHz J0



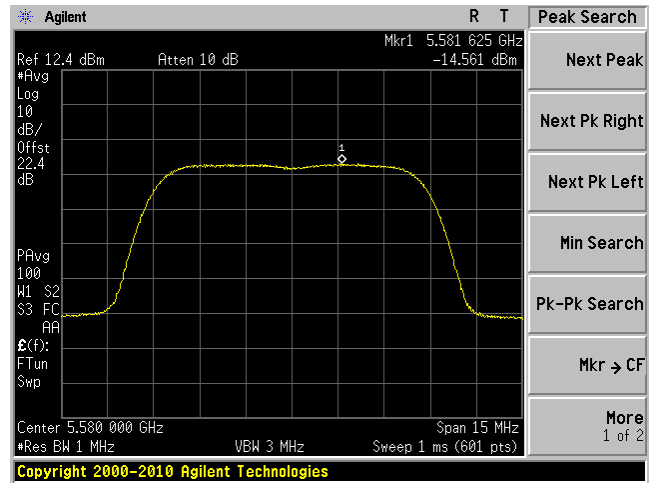
10 MHz mode, 5500 MHz J1



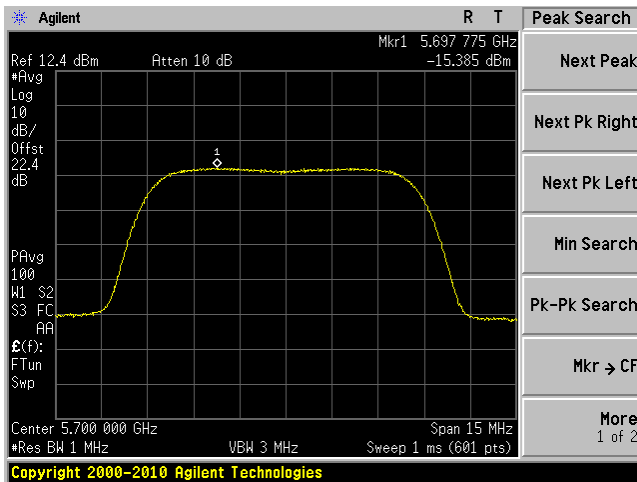
10 MHz mode, 5580MHz J0



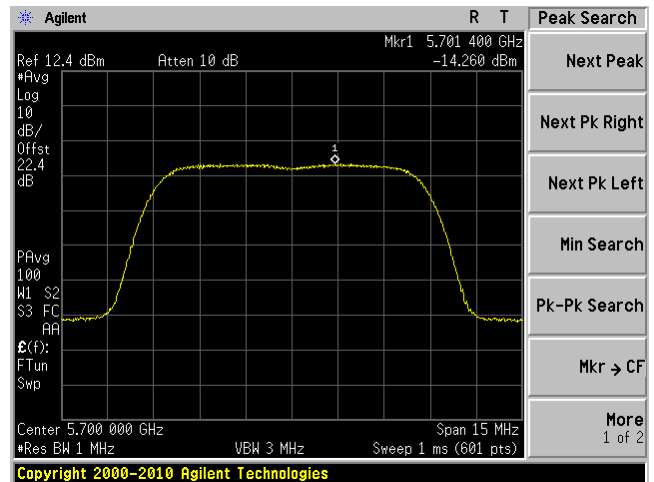
10 MHz mode, 5580 MHz J1



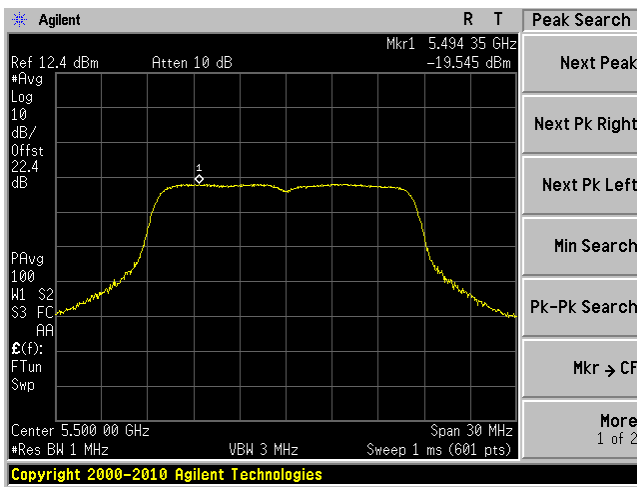
10 MHz mode, 5700 MHz J0



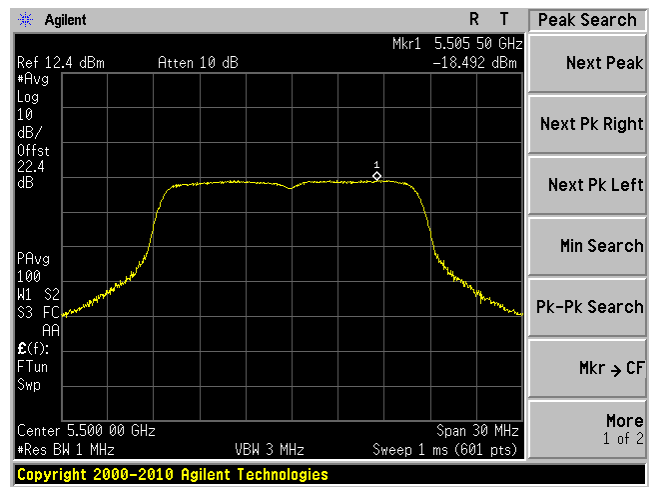
10 MHz mode, 5700 MHz J1



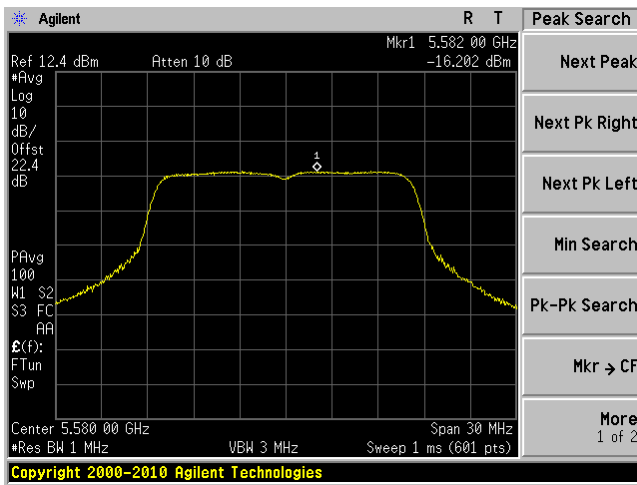
802.11a mode, 5500 MHz J0



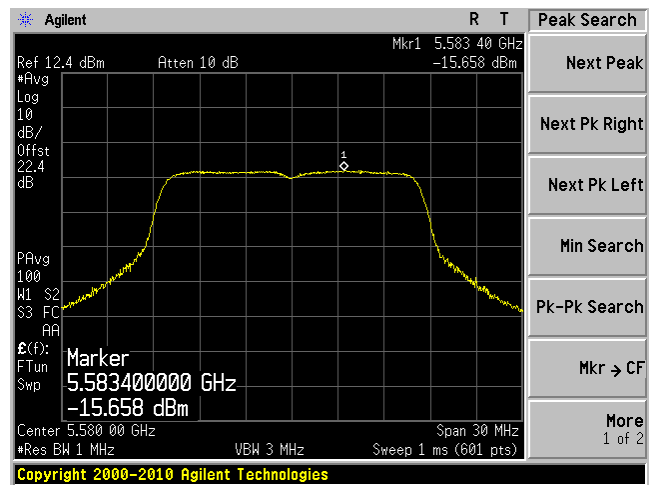
802.11a mode, 5500 MHz J1



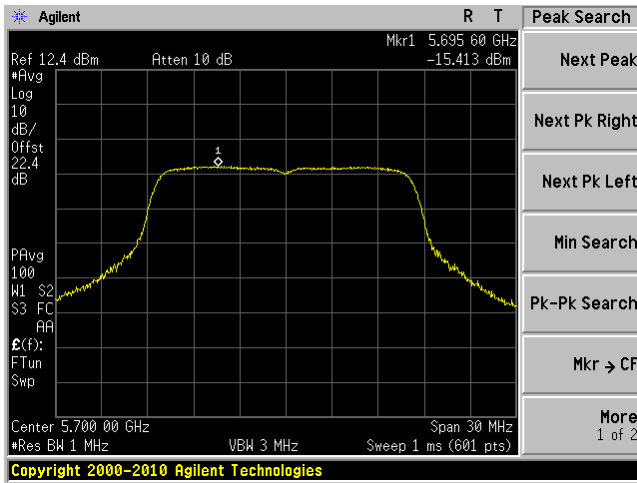
802.11a mode, 5580MHz J0



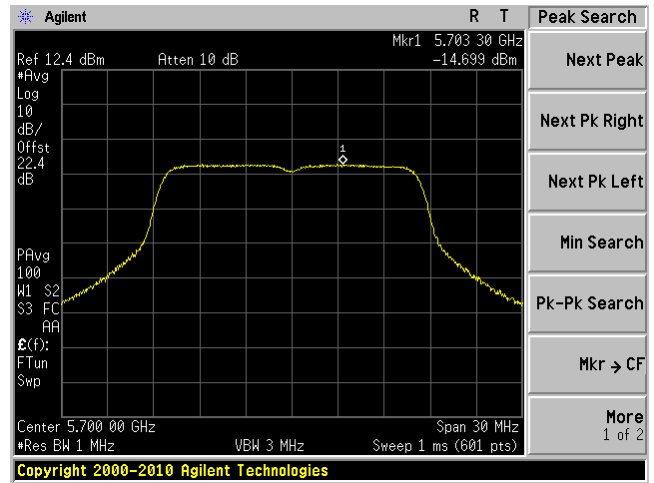
802.11a mode, 5580 MHz J1



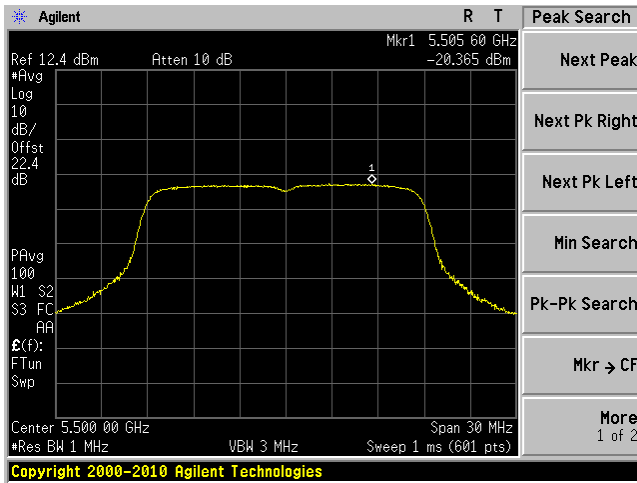
802.11a mode, 5700 MHz J0



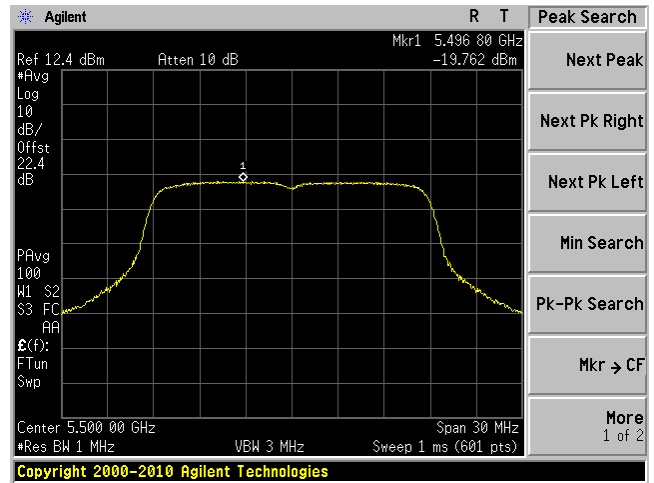
802.11a mode, 5700 MHz J1



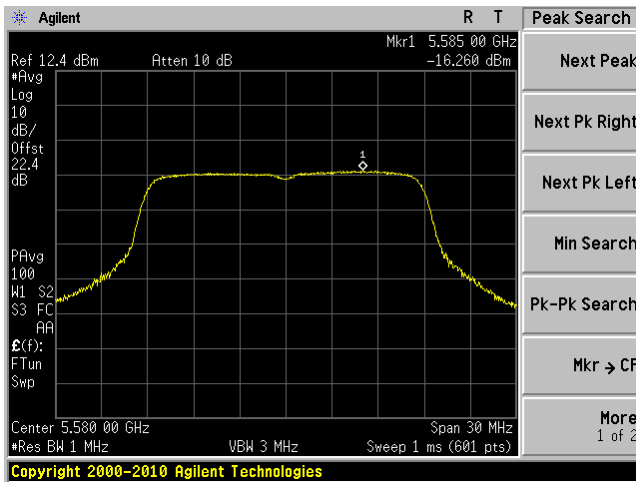
802.11n-HT20 mode, 5500 MHz J0



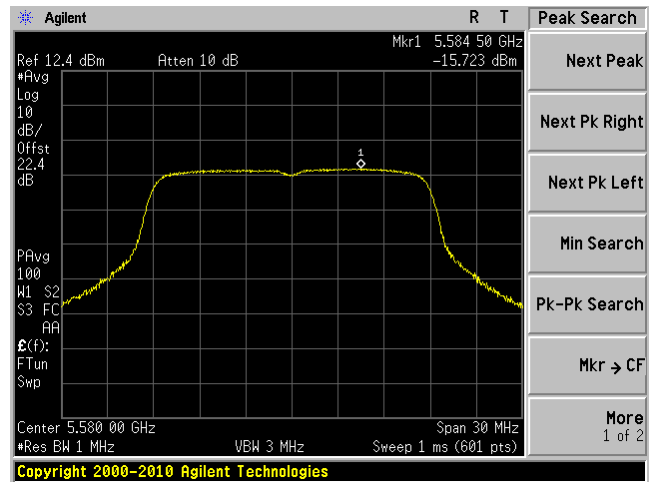
802.11n-HT20 mode, 5500 MHz J1



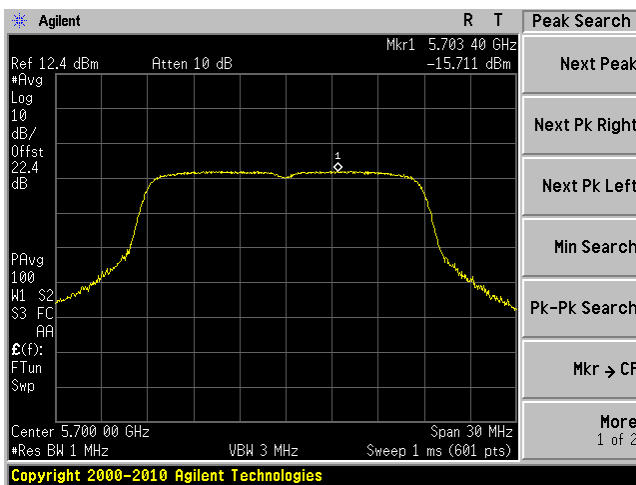
802.11n-HT20 mode, 5580 MHz J0



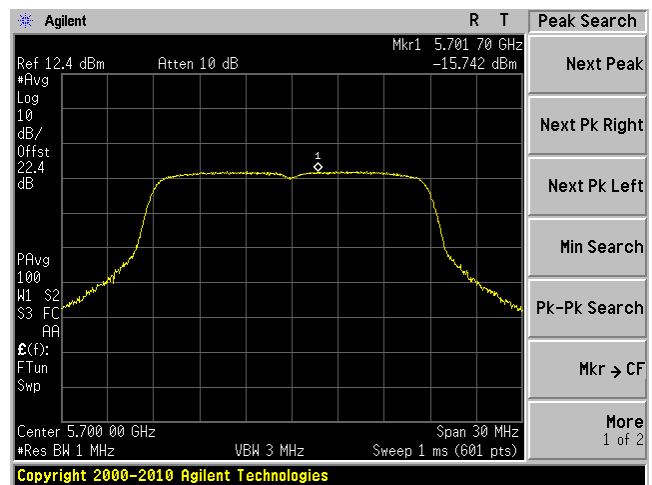
802.11n-HT20 mode, 5580 MHz J1



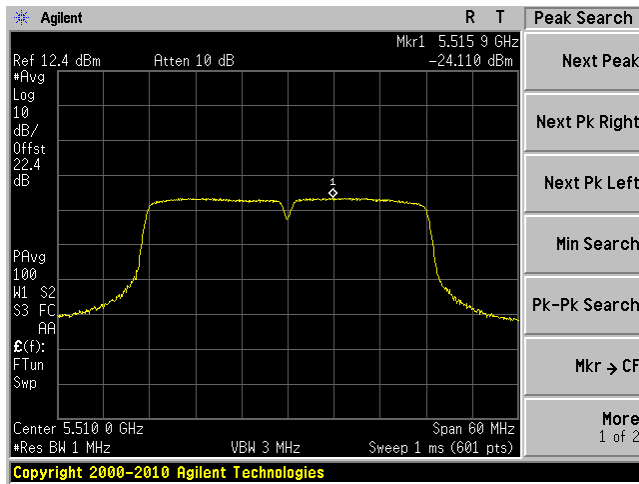
802.11n-HT20 mode, 5700 MHz J0



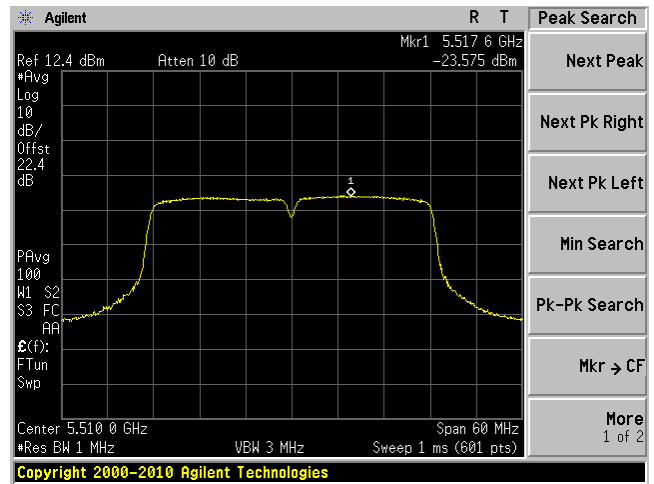
802.11n-HT20 mode, 5700 MHz J1



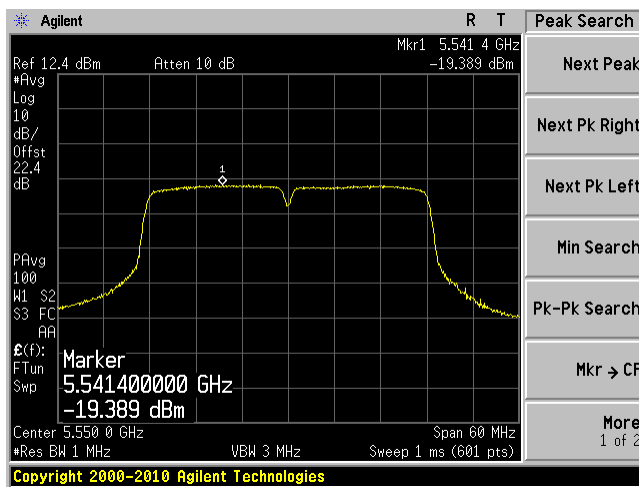
802.11n-HT40 mode, 5510 MHz J0



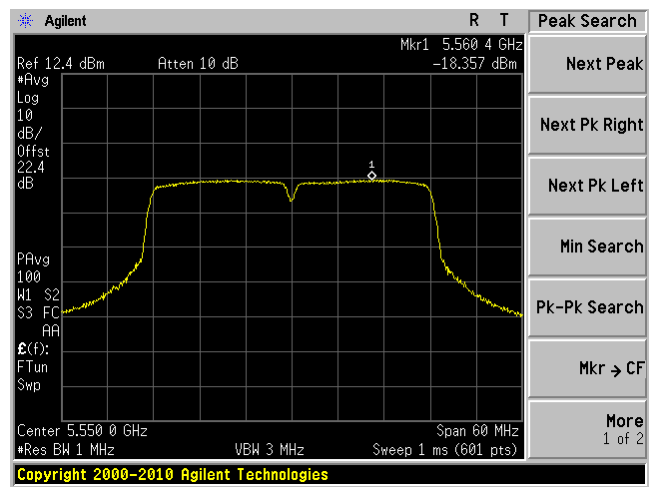
802.11n-HT40 mode, 5510 MHz J1



802.11n-HT40 mode, 5550 MHz J0

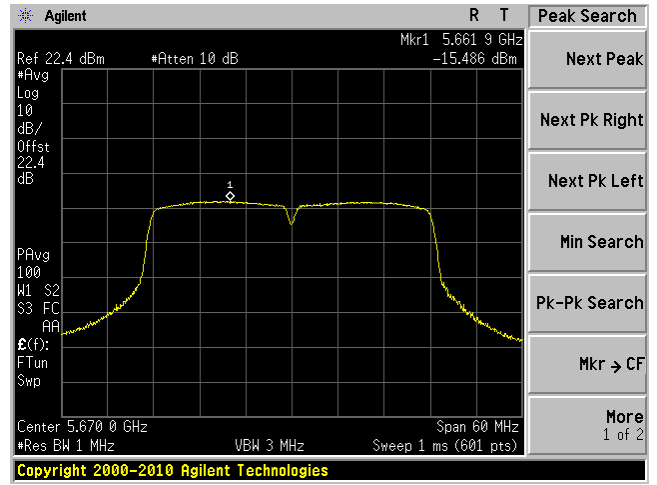
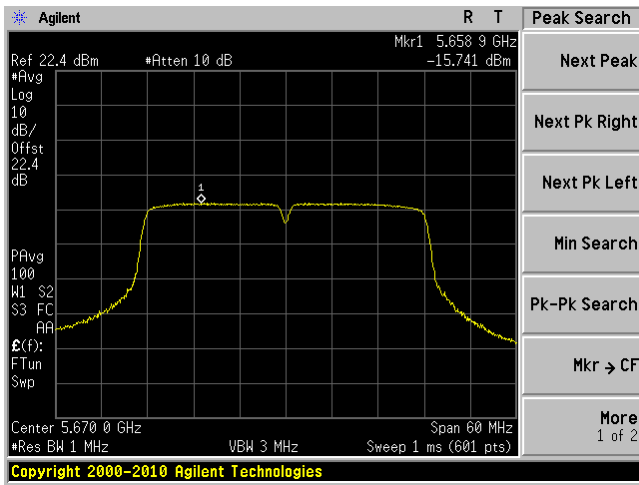


802.11n-HT40 mode, 5550 MHz J1



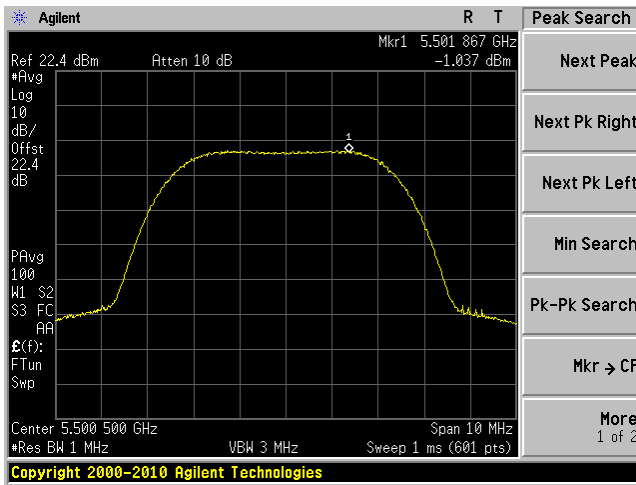
802.11n-HT40 mode, 5670 MHz J0

802.11n-HT40 mode, 5670 MHz J1

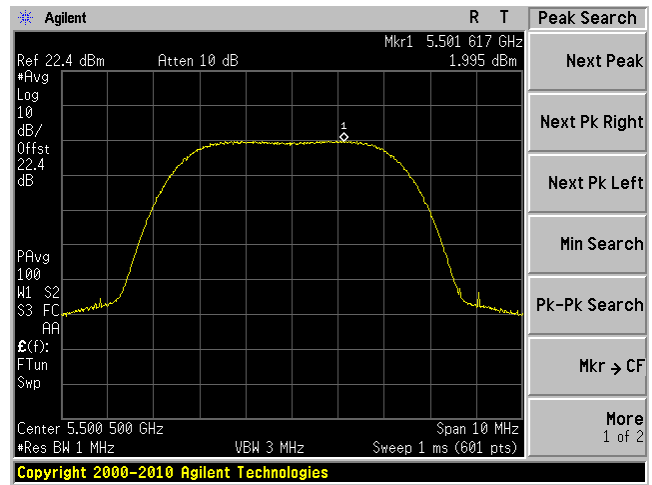


High Power Low System Gain (9 dBi)

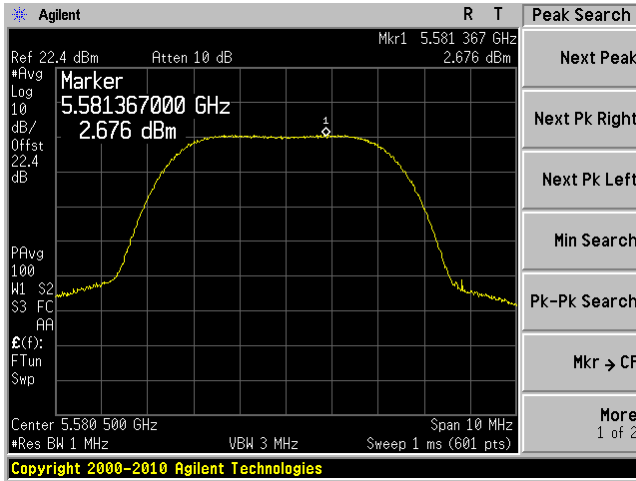
5 MHz mode, 5500.5 MHz J0



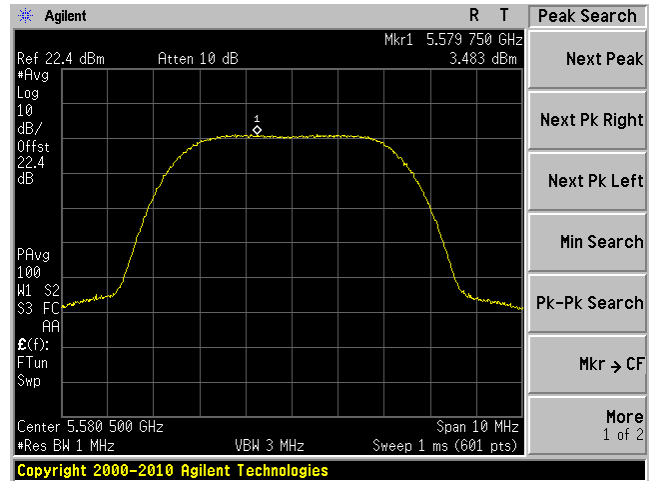
5 MHz mode, 5500.5 MHz J1



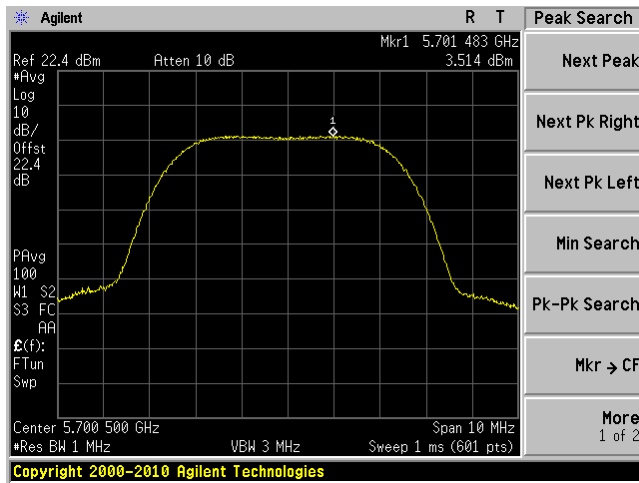
5 MHz mode, 5580.5 MHz J0



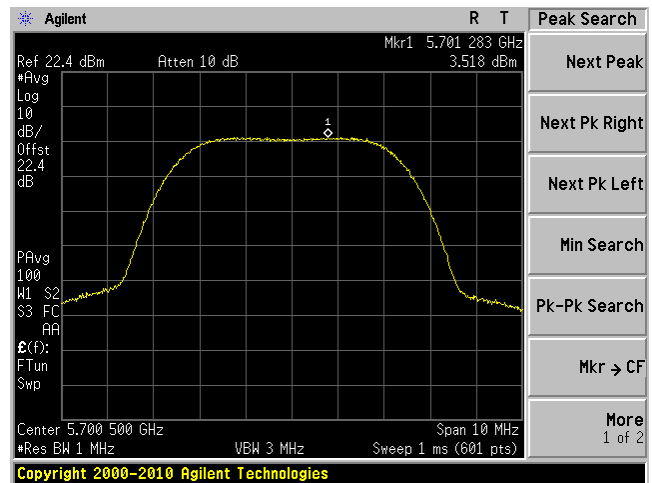
5 MHz mode, 5580.5 MHz J1



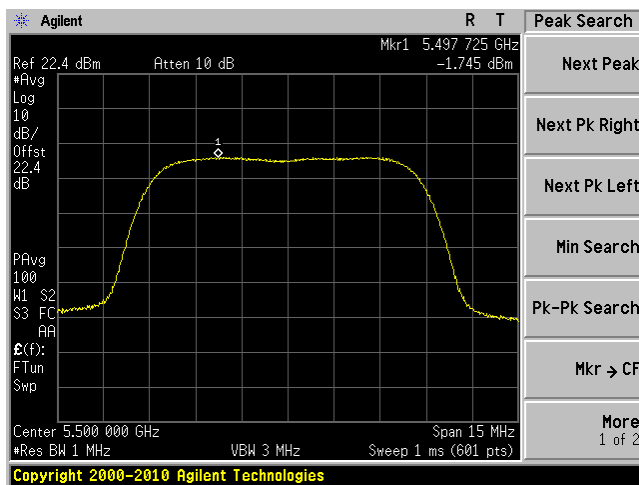
5 MHz mode, 5700.5 MHz J0



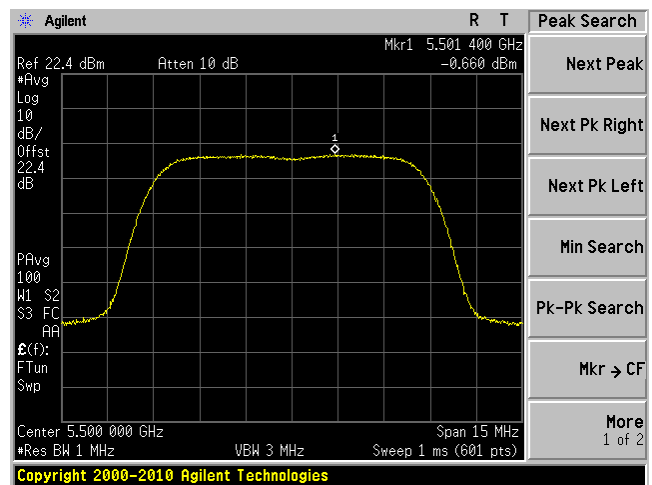
5 MHz mode, 5700.5 MHz J1



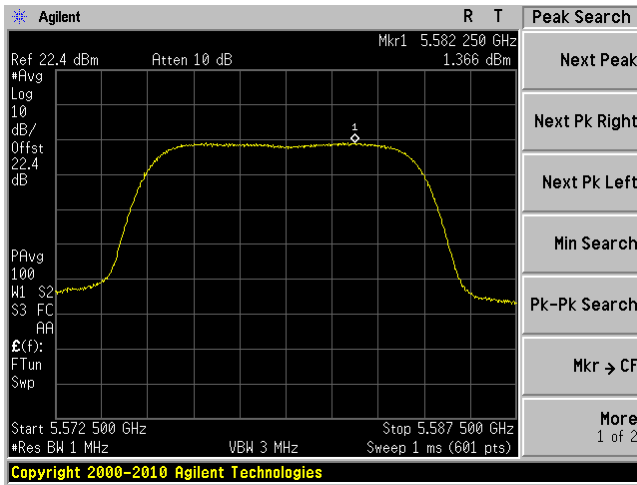
10 MHz mode, 5500 MHz J0



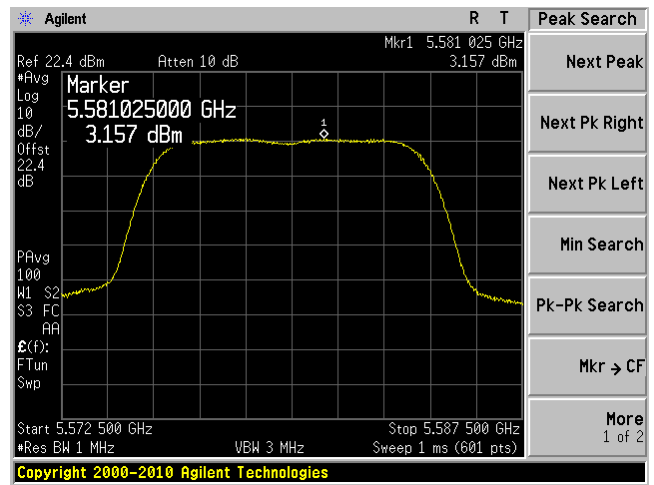
10 MHz mode, 5500 MHz J1



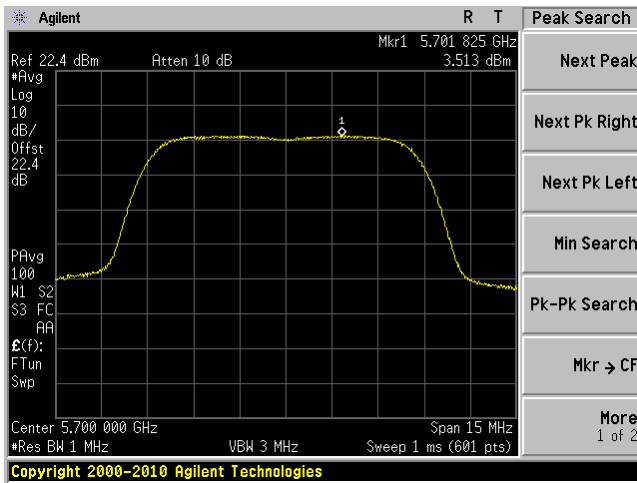
10 MHz mode, 5580MHz J0



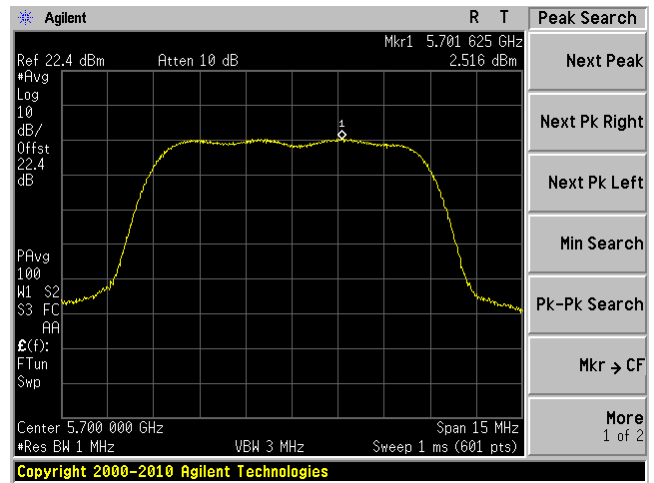
10 MHz mode, 5580 MHz J1



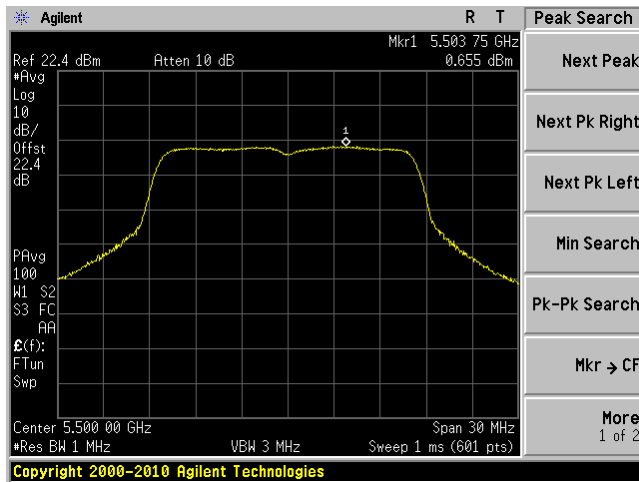
10 MHz mode, 5700 MHz J0



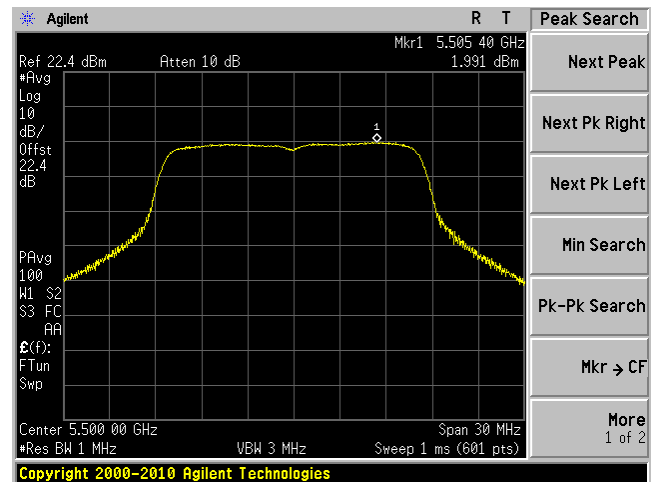
10 MHz mode, 5700 MHz J1



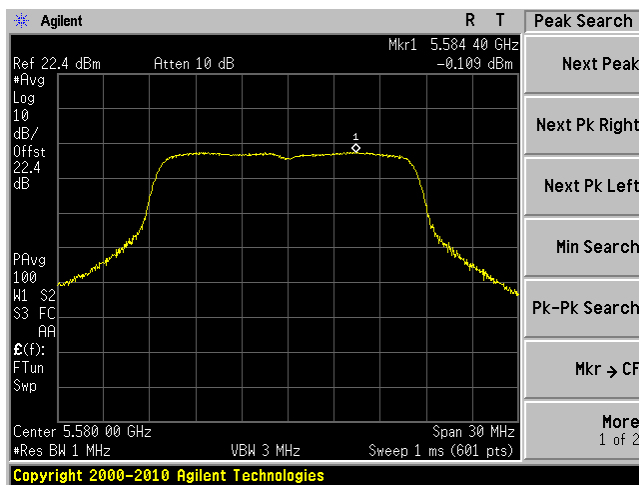
802.11a mode, 5500 MHz J0



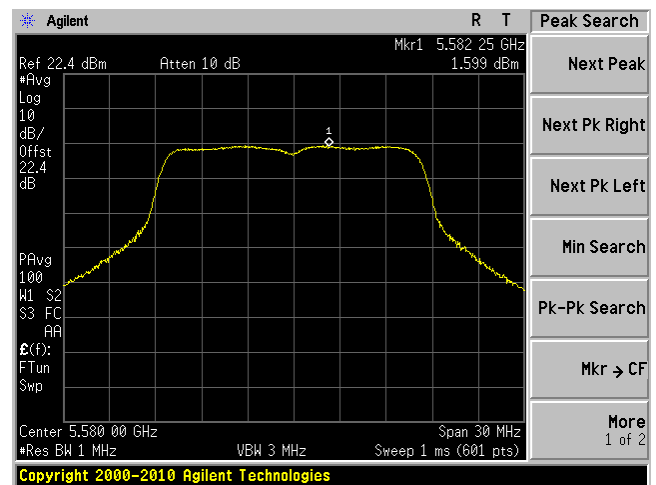
802.11a mode, 5500 MHz J1



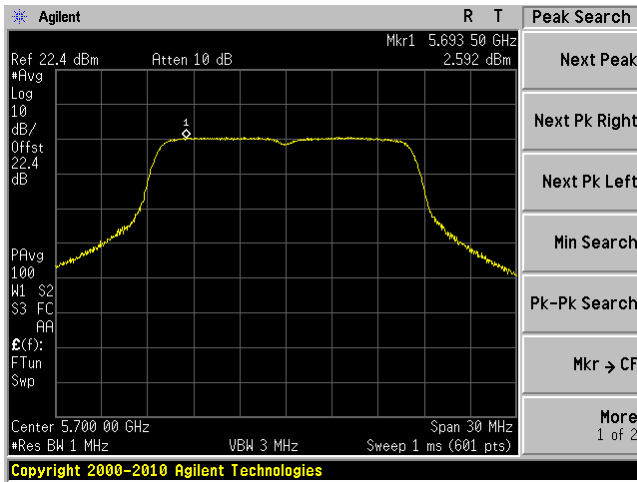
802.11a mode, 5580MHz J0



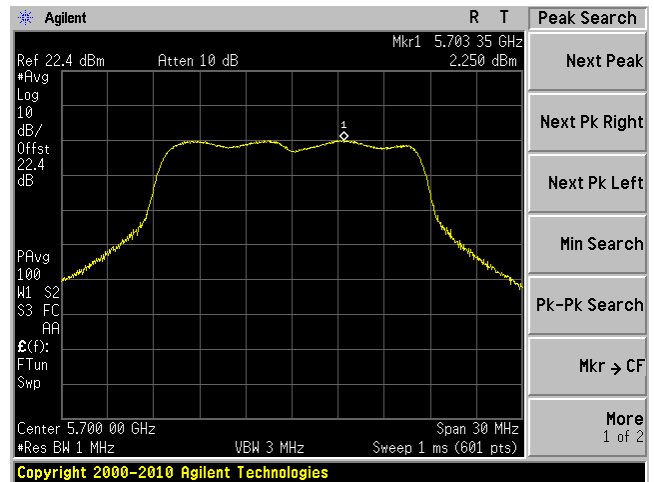
802.11a mode, 5580 MHz J1



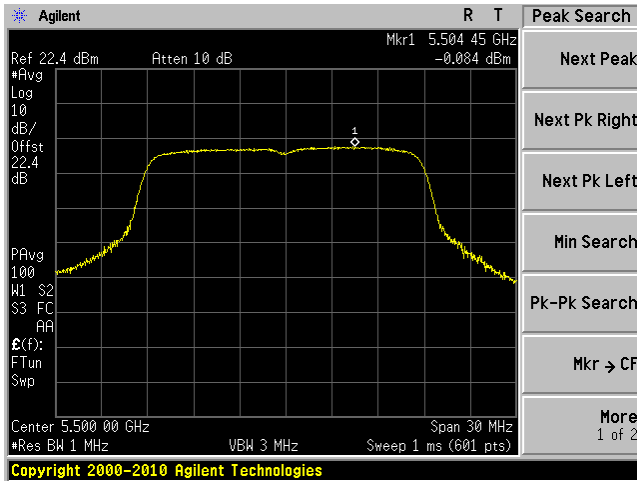
802.11a mode, 5700 MHz J0



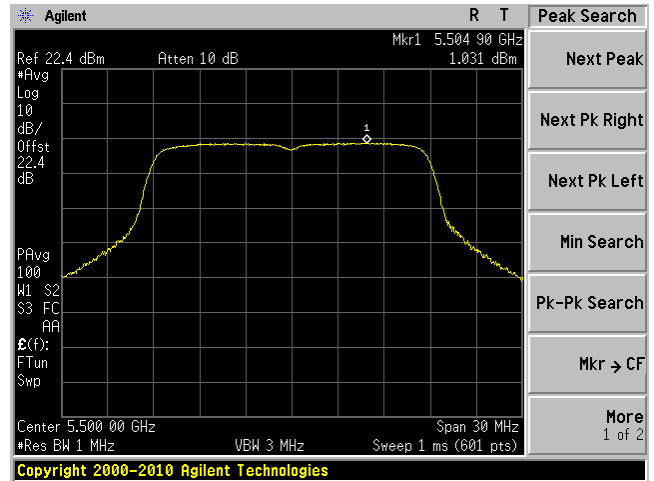
802.11a mode, 5700 MHz J1



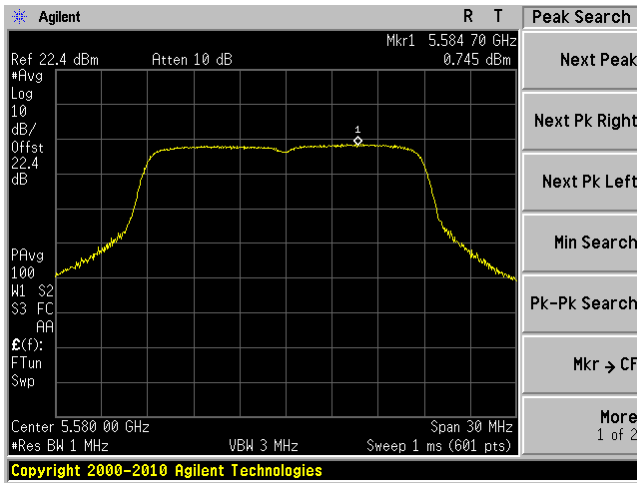
802.11n-HT20 mode, 5500 MHz J0



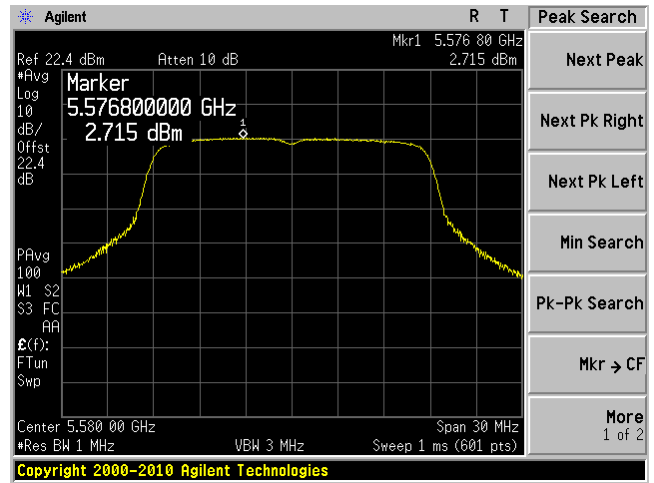
802.11n-HT20 mode, 5500 MHz J1



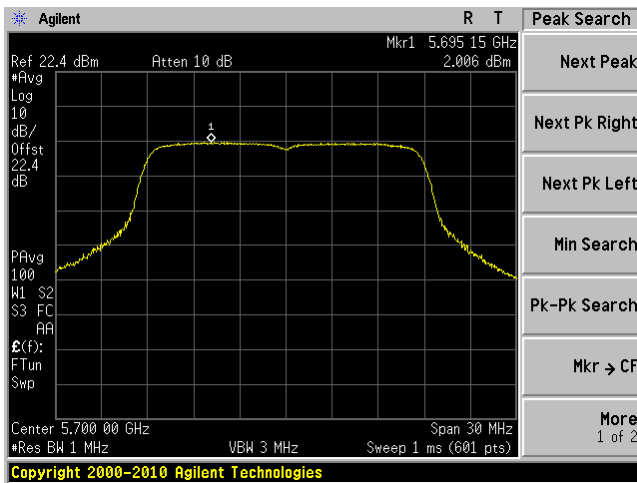
802.11n-HT20 mode, 5580 MHz J0



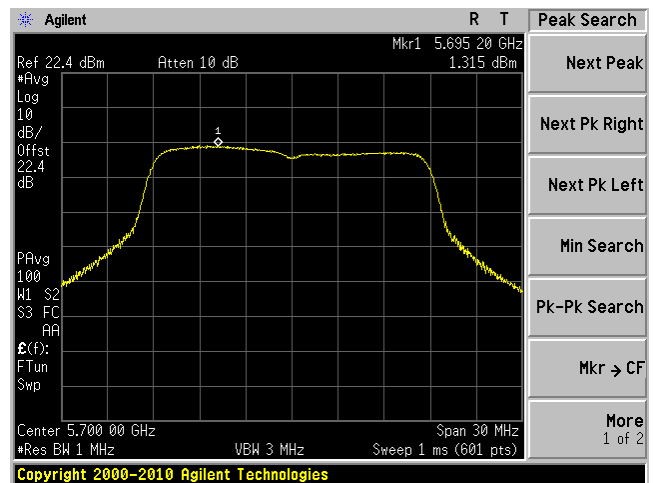
802.11n-HT20 mode, 5580 MHz J1



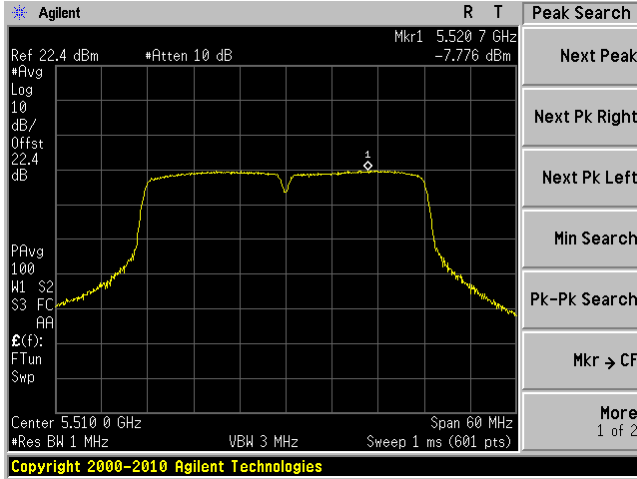
802.11n-HT20 mode, 5700 MHz J0



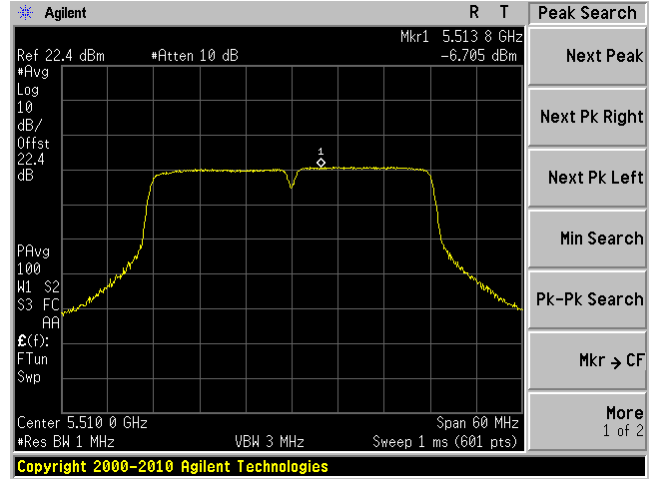
802.11n-HT20 mode, 5700 MHz J1



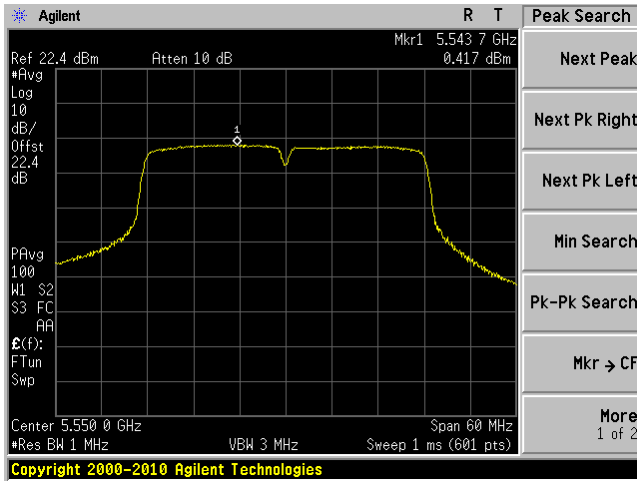
802.11n-HT40 mode, 5510 MHz J0



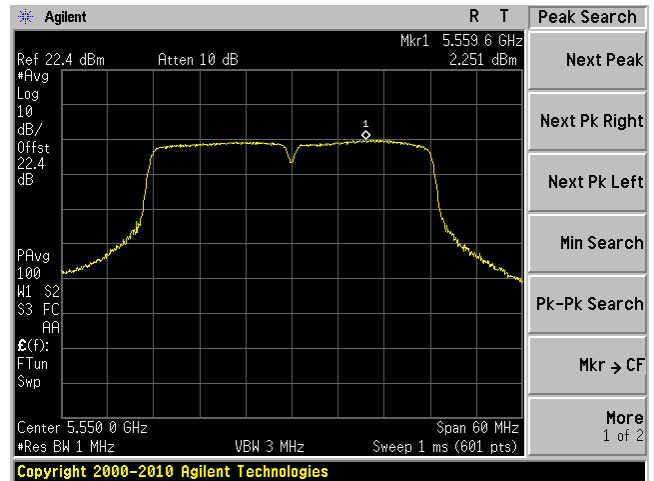
802.11n-HT40 mode, 5510 MHz J1



802.11n-HT40 mode, 5550 MHz J0

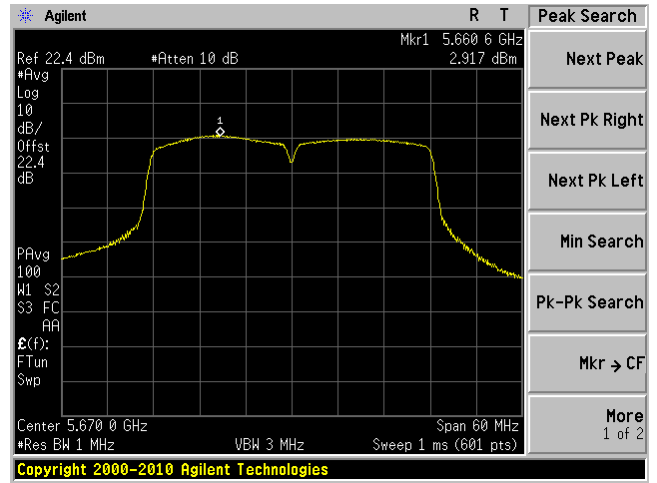
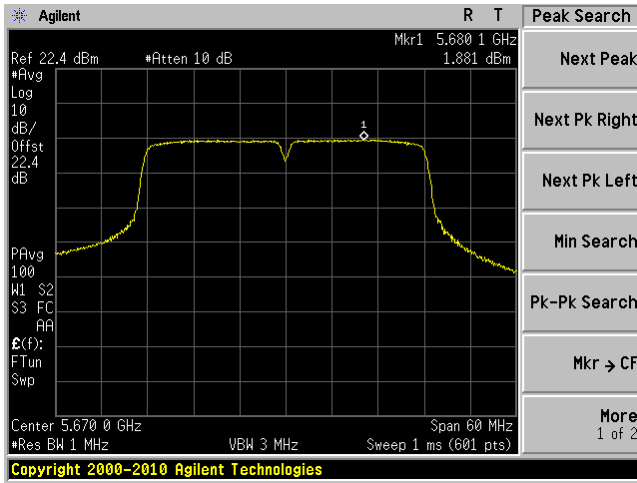


802.11n-HT40 mode, 5550 MHz J1



802.11n-HT40 mode, 5670 MHz J0

802.11n-HT40 mode, 5670 MHz J1



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

12.1 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.

12.2 Test Procedure

Set the spectrum analyzer span to view the entire emission bandwidth.

The largest difference between the following two traces must be ≤ 13 dB for all frequencies across the emission bandwidth. Submit a plot.

1st Trace:

- Set RBW = 1 MHz, VBW ≥ 3 MHz with peak detector and maxhold settings.

2nd Trace:

- create the 2nd trace using the settings described in the section “FCC §15.407(a)(1)(2) – CONDUCTED TRANSMITTER OUTPUT POWER”.

12.3 Test Equipment List and Details

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

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

12.4 Test Environmental Conditions

Temperature:	21-23 °C
Relative Humidity:	43-45 %
ATM Pressure:	101-102 kPa

The testing was performed by Jeffrey Wu from 2013-06-20 to 2013-06-24 in RF site.

12.5 Test Results

Please refer to the following tables and plots.

5250-5350 MHz Band

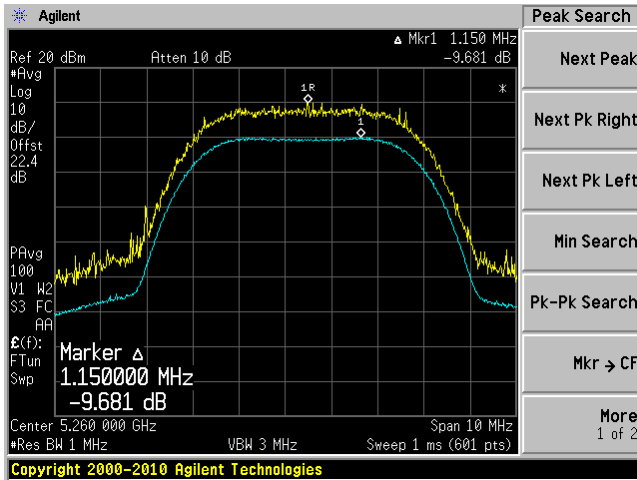
Channel	Frequency (MHz)	Peak Excurision Ratio (dB)		Limit (dB)	
		J0	J1		
5 MHz Mode					
Low	5260.5	9.681	9.784	13	
Middle	5280.5	9.002	9.165		
High	5320.5	11.335	10.836		
10 MHz Mode					
Low	5260	9.116	10.317		
Middle	5280	10.035	9.501		
High	5320	9.305	10.881		
802.11a Mode					
Low	5260	7.872	10.127		
Middle	5280	7.811	10.104		
High	5320	8.455	9.115		
802.11n-HT20 Mode					
Low	5260	9.361	9.301		
Middle	5280	8.858	8.625		
High	5320	8.137	8.513		
802.11n-HT40 Mode					
Low	5270	8.958	9.860		
High	5310	12.654	8.876		

5470-5725 MHz Band

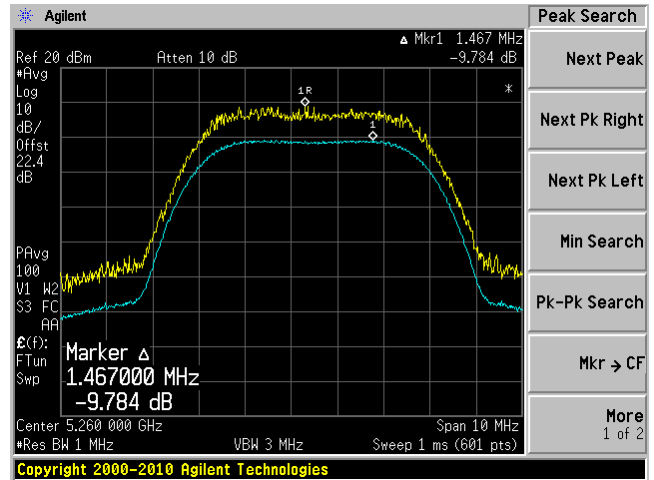
Channel	Frequency (MHz)	Peak Excurision Ratio (dB)		Limit (dB)	
		J0	J1		
5 MHz Mode					
Low	5500.5	9.737	9.737	13	
Middle	5580.5	9.641	10.097		
High	5700.5	9.705	10.680		
10 MHz Mode					
Low	5500	9.159	9.610		
Middle	5580	10.012	9.996		
High	5700	9.476	9.732		
802.11a Mode					
Low	5500	7.709	8.228		
Middle	5580	8.686	8.521		
High	5700	7.583	8.976		
802.11n-HT20 Mode					
Low	5500	8.644	8.745		
Middle	5580	8.403	9.561		
High	5700	8.239	7.796		
802.11n-HT40 Mode					
Low	5510	7.849	9.314		
Middle	5550	9.635	9.034		
High	5670	8.468	9.141		

5250-5350 MHz Band

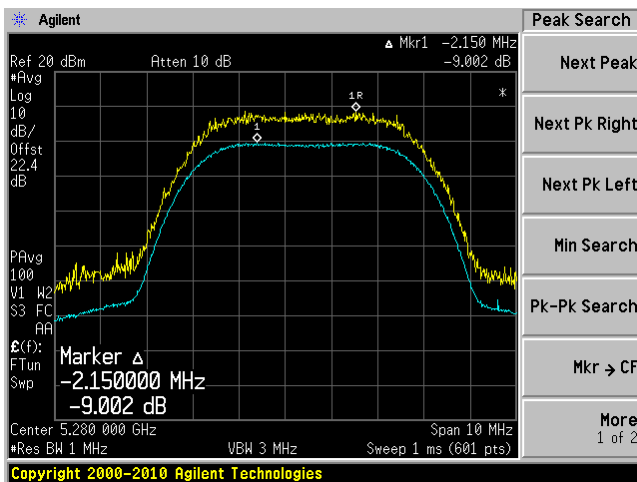
5 MHz mode, 5260.5 MHz J0



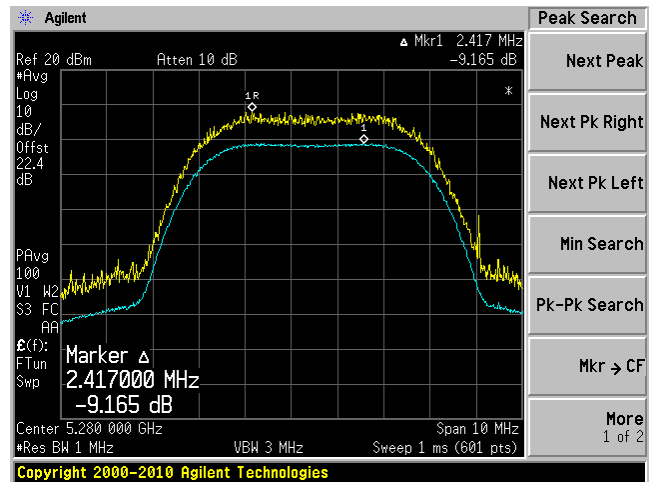
5 MHz mode, 5260.5 MHz J1



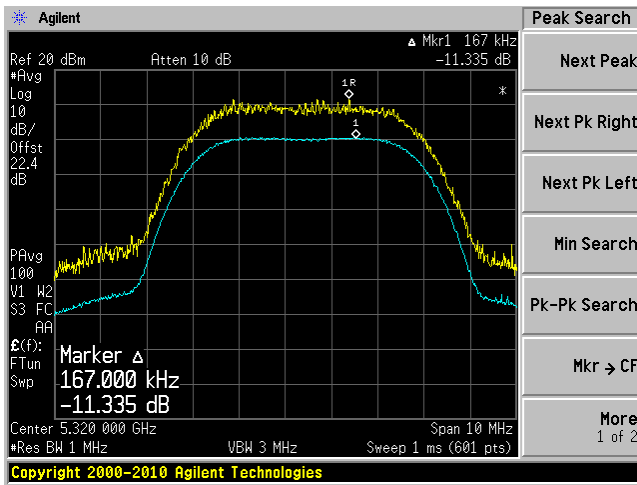
5 MHz mode, 5280.5 MHz J0



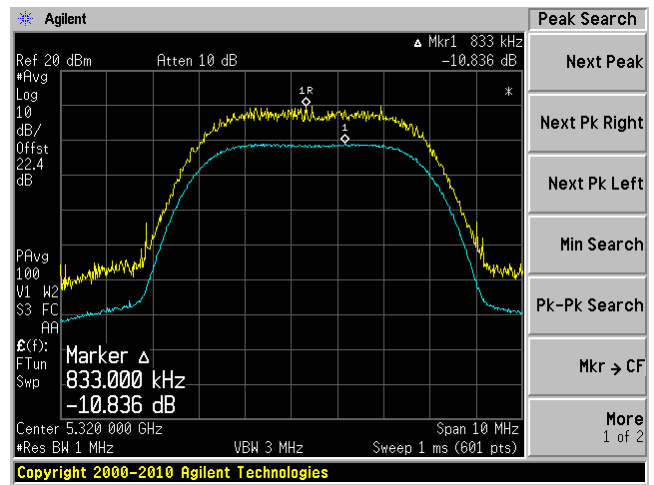
5 MHz mode, 5280.5 MHz J1



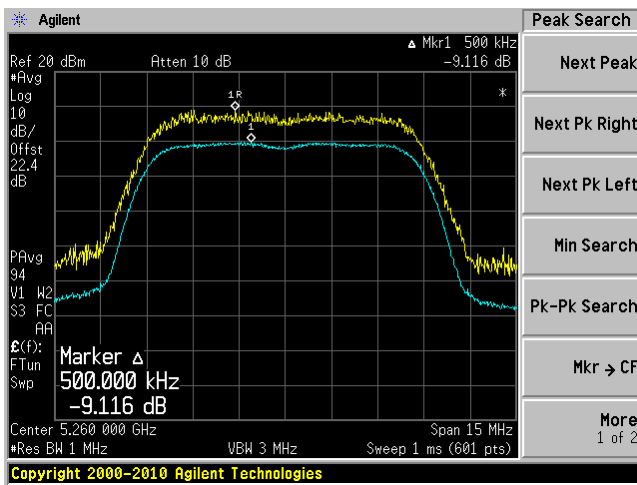
5 MHz mode, 5320.5 MHz J0



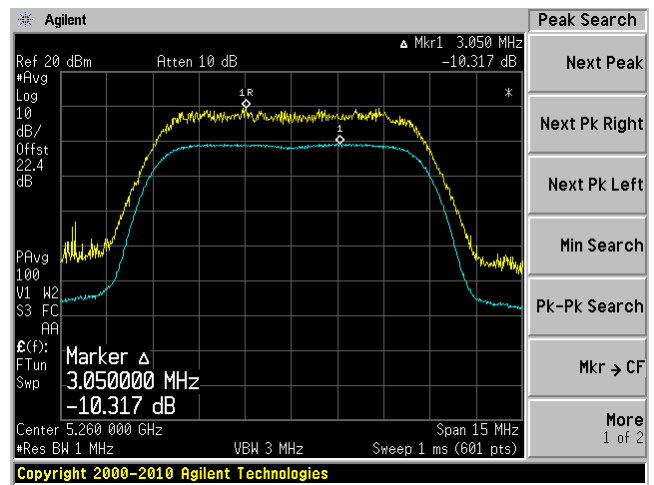
5 MHz mode, 5320.5 MHz J1



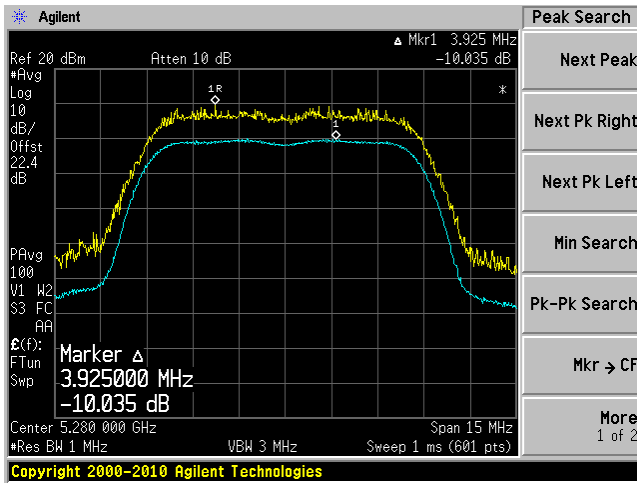
10 MHz mode, 5260 MHz J0



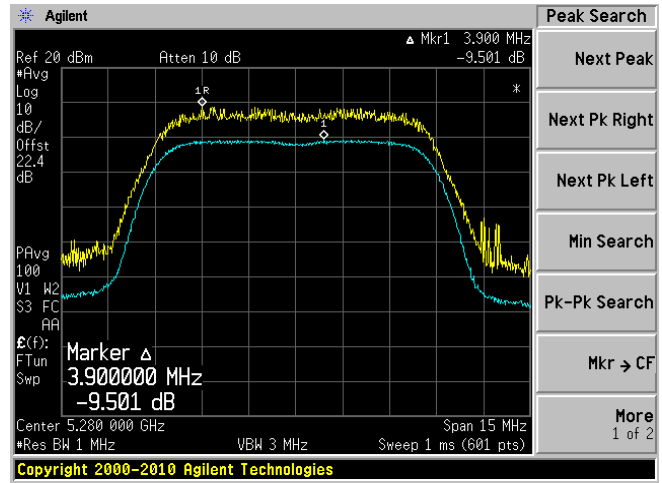
10 MHz mode, 5260 MHz J1



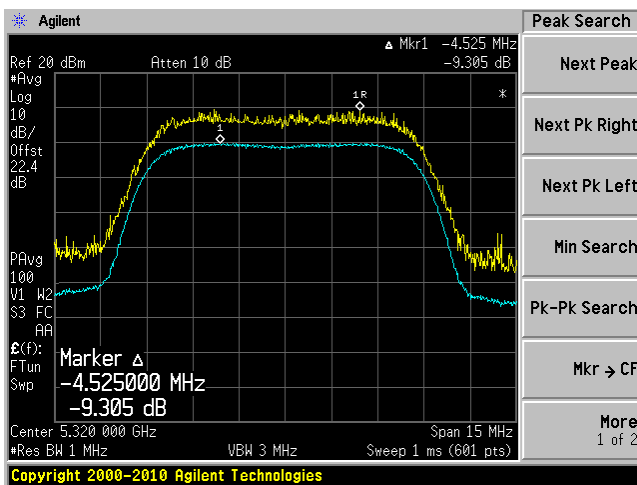
10 MHz mode, 5280 MHz J0



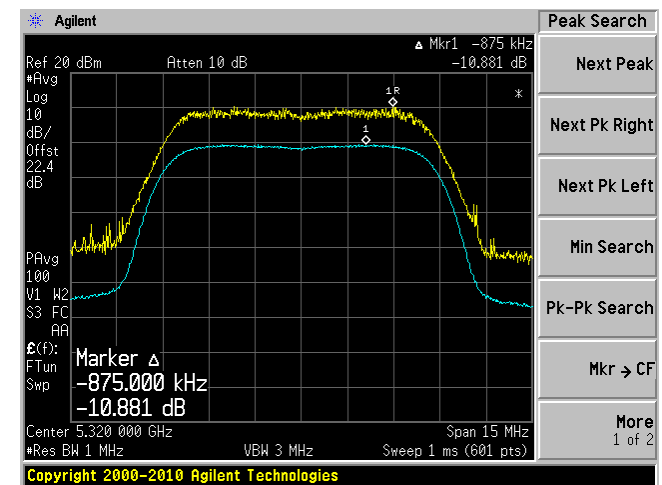
10 MHz mode, 5280 MHz J1



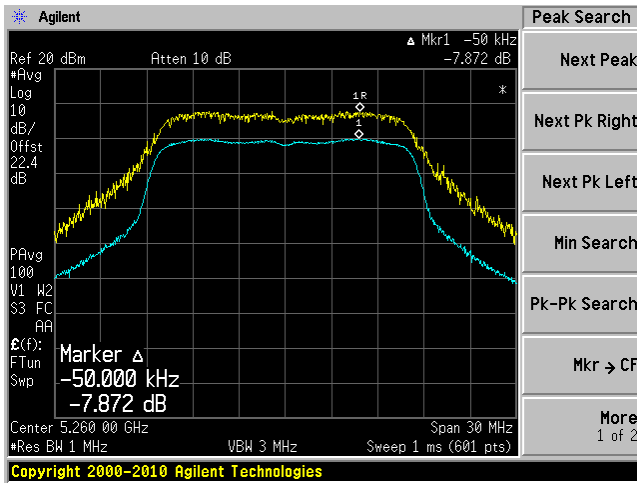
10 MHz mode, 5320 MHz J0



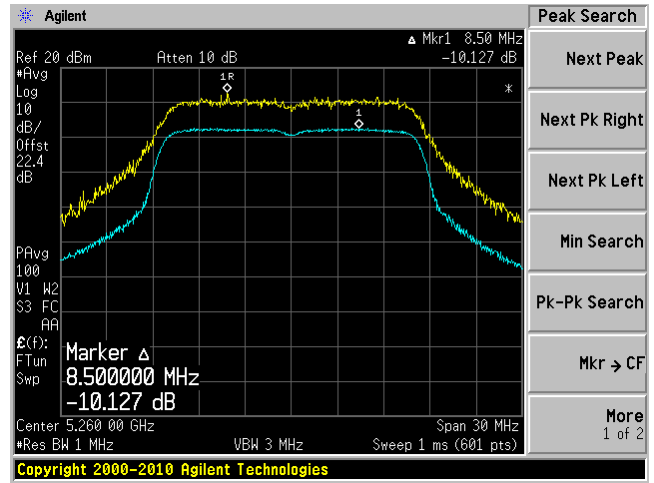
10 MHz mode, 5320 MHz J1



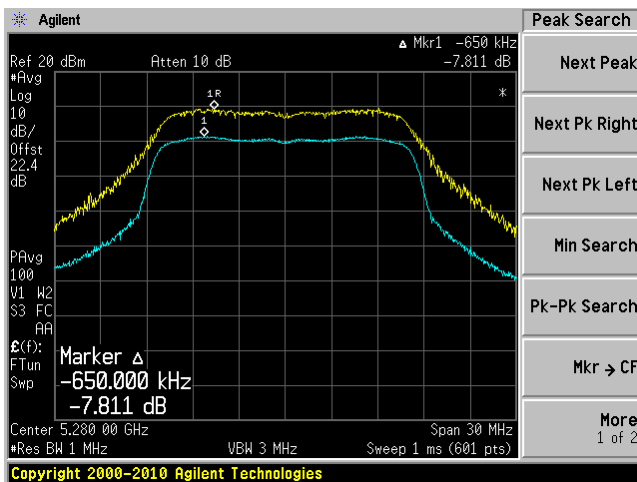
802.11a mode, 5260 MHz J0



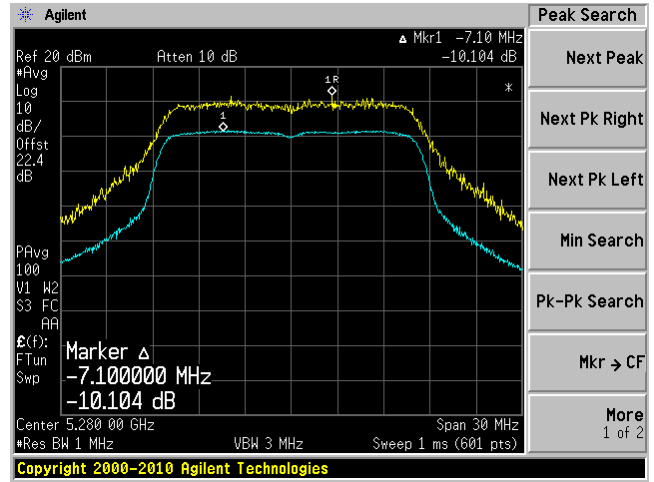
802.11a mode, 5260 MHz J1



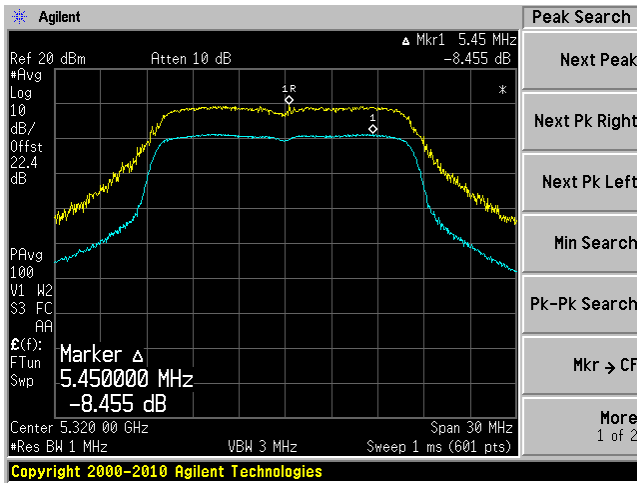
802.11a mode, 5280 MHz J0



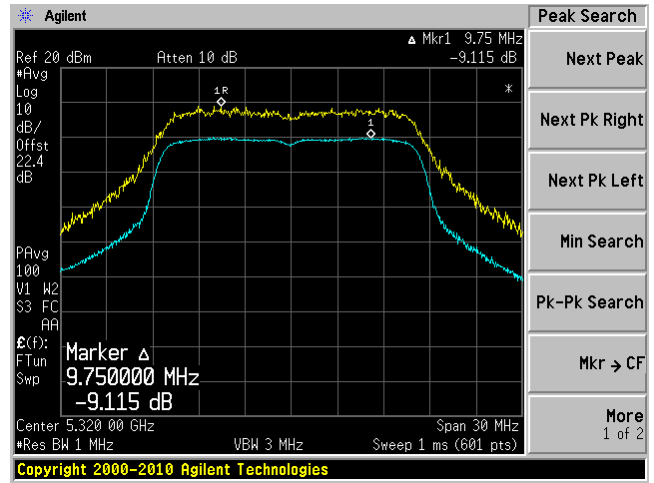
802.11a mode, 5280 MHz J1



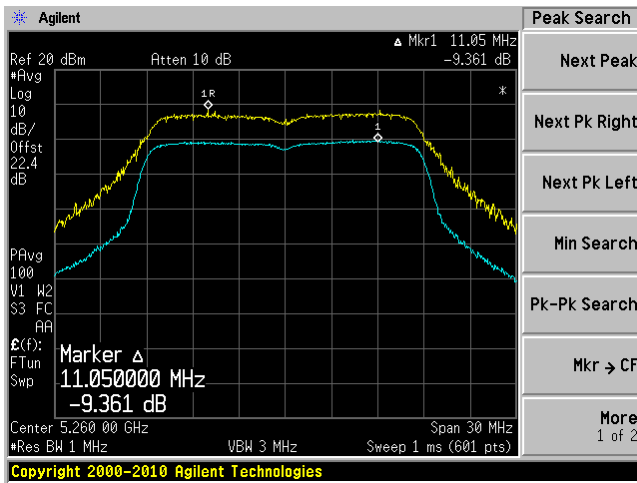
802.11a mode, 5320 MHz J0



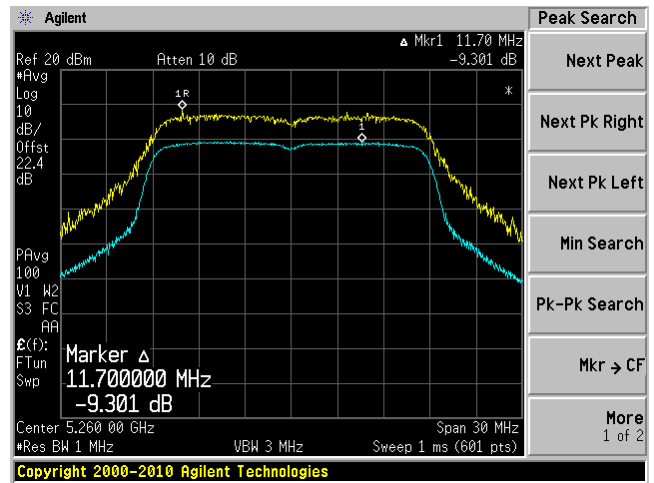
802.11a mode, 5320 MHz J1



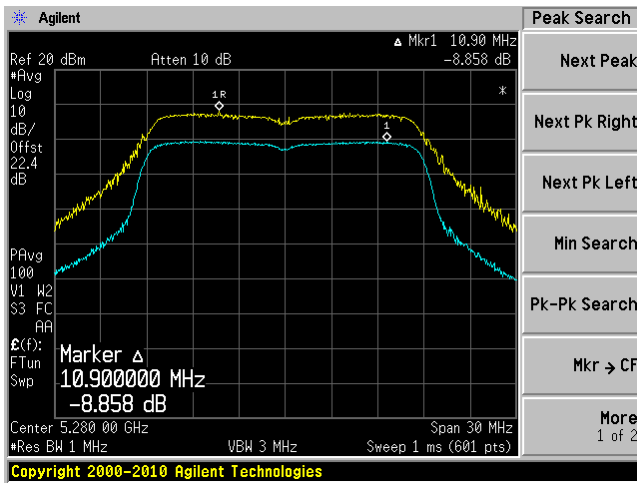
802.11n-HT20 mode, 5260 MHz J0



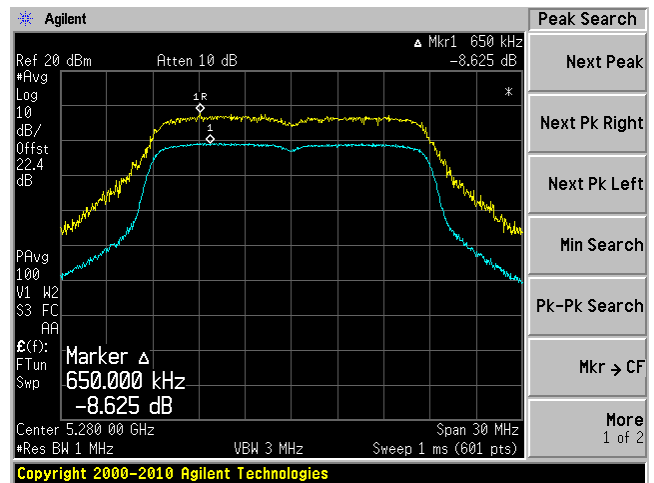
802.11n-HT20 mode, 5260 MHz J1



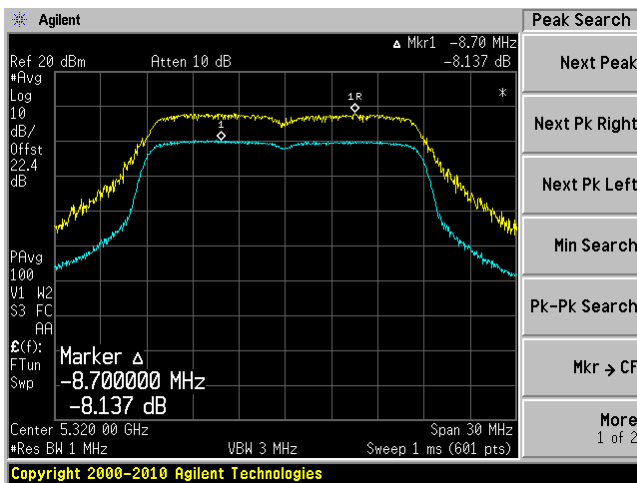
802.11n-HT20, 5280 MHz J0



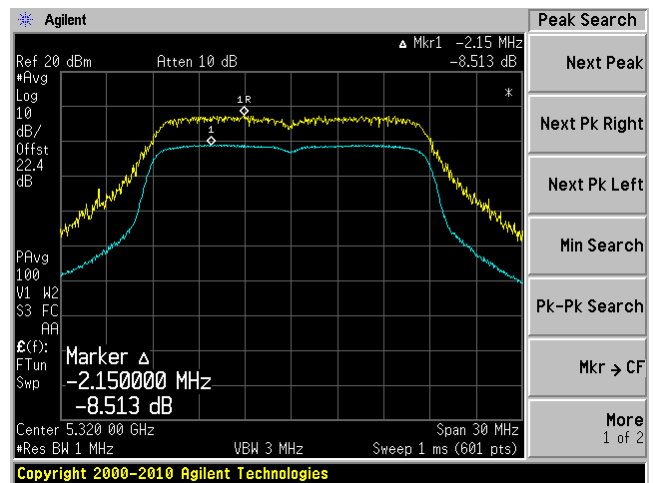
802.11n-HT20 mode, 5280 MHz J1



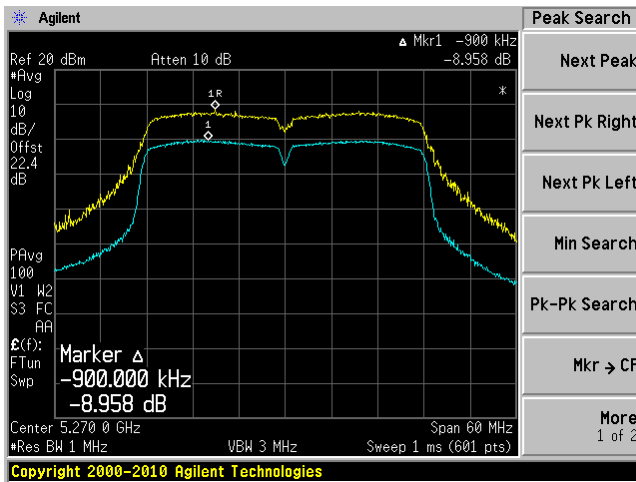
802.11n-HT20 mode, 5320 MHz J0



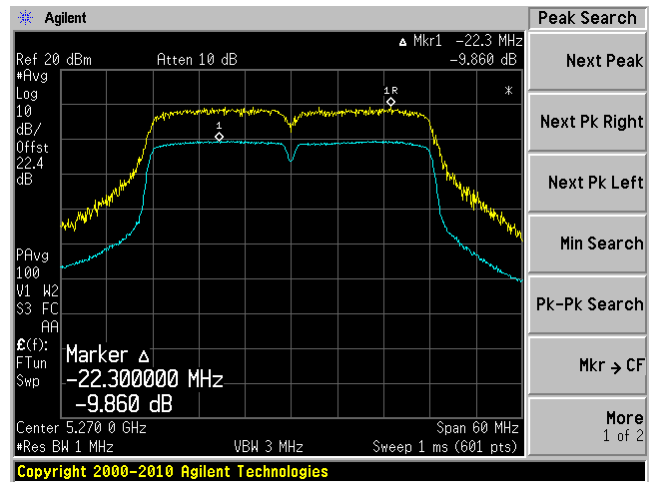
802.11n-HT20 mode, 5320 MHz J1



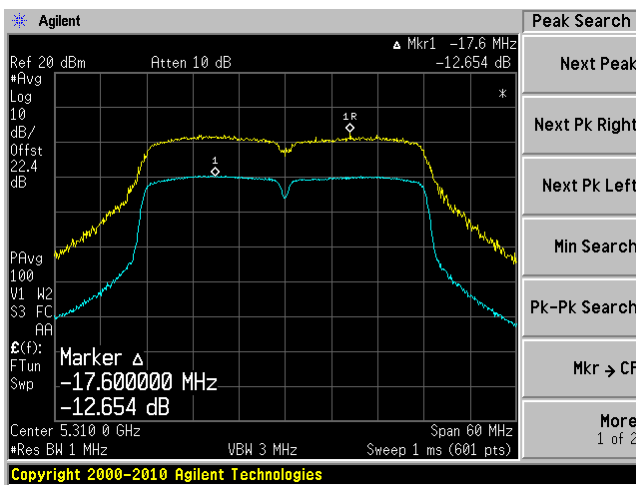
802.11n-HT40 mode, 5270 MHz J0



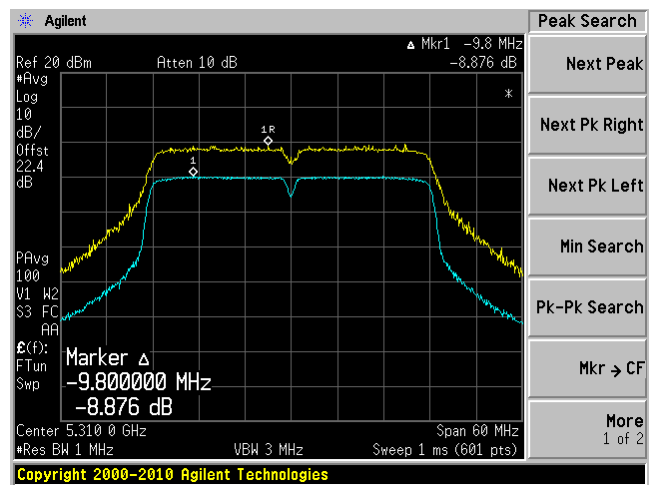
802.11n-HT40 mode, 5270 MHz J1



802.11n-HT40 mode, 5310 MHz J0

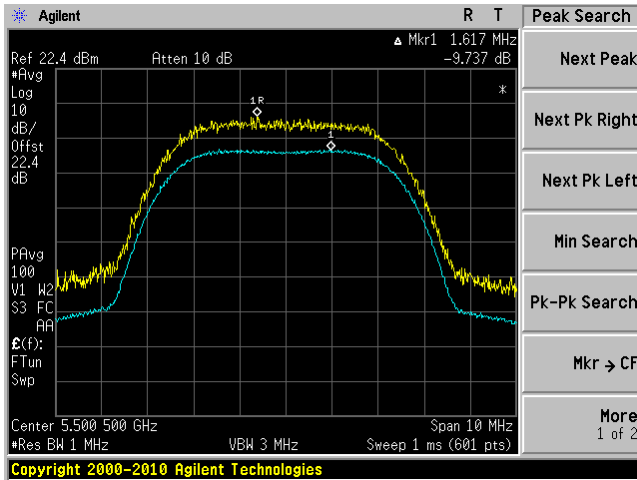


802.11n-HT40 mode, 5310 MHz J1

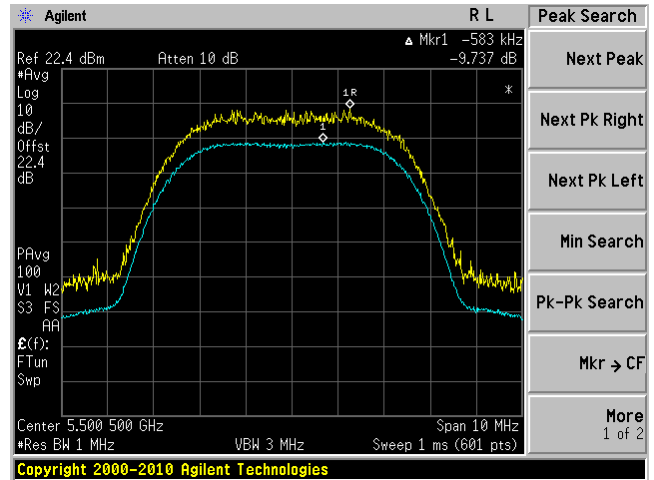


5470-5725 MHz Band

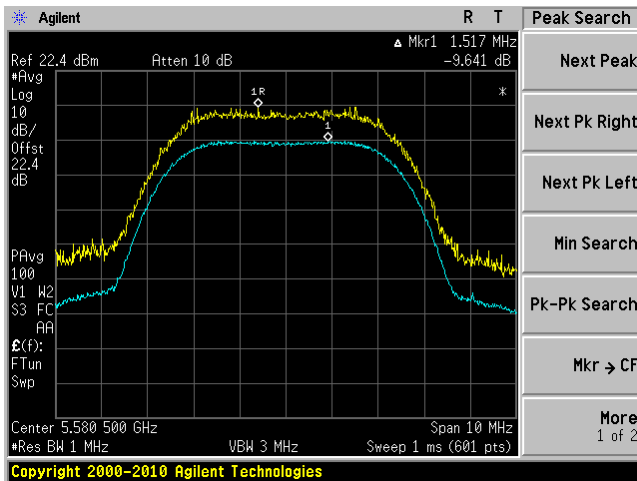
5 MHz mode, 5500.5 MHz J0



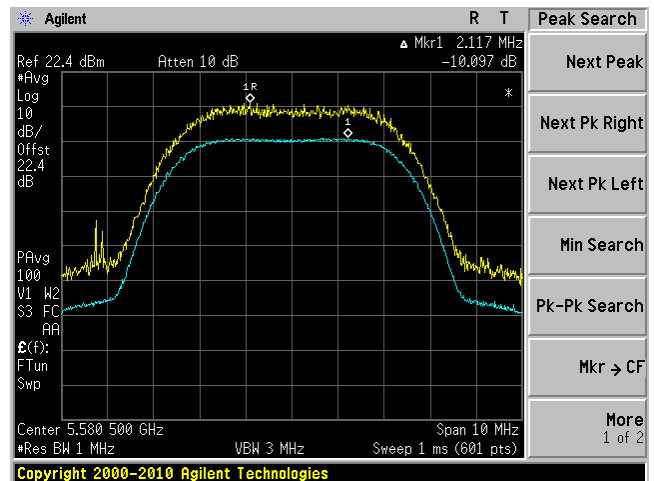
5 MHz mode, 5500.5 MHz J1



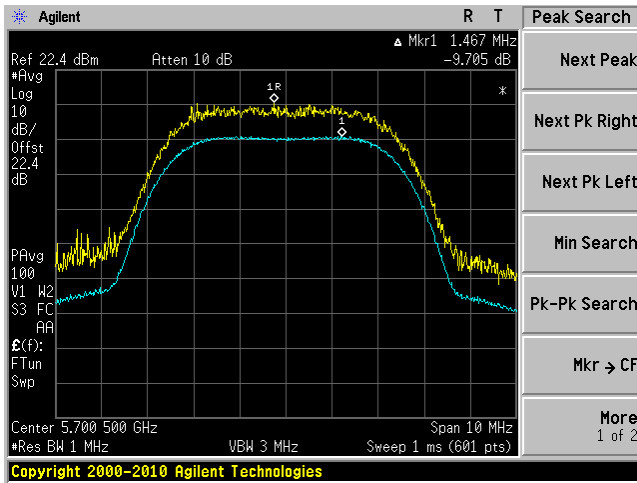
5 MHz mode, 5580.5 MHz J0



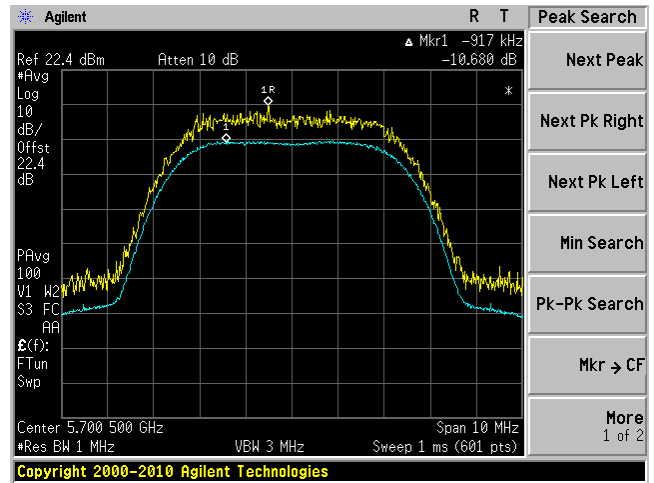
5 MHz mode, 5580.5 MHz J1



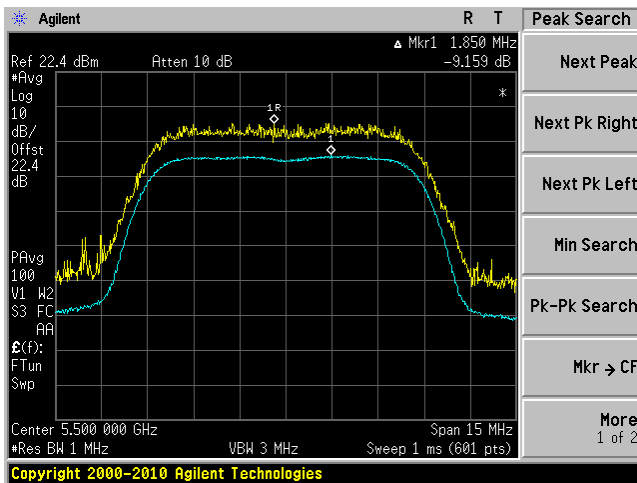
5 MHz mode, 5700.5 MHz J0



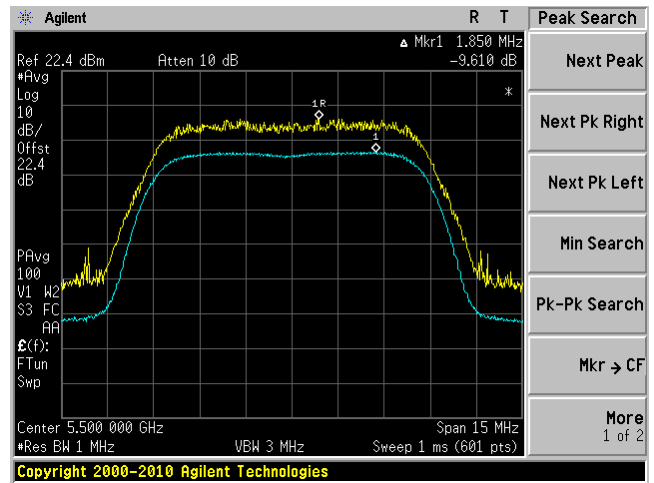
5 MHz mode, 5700.5 MHz J1



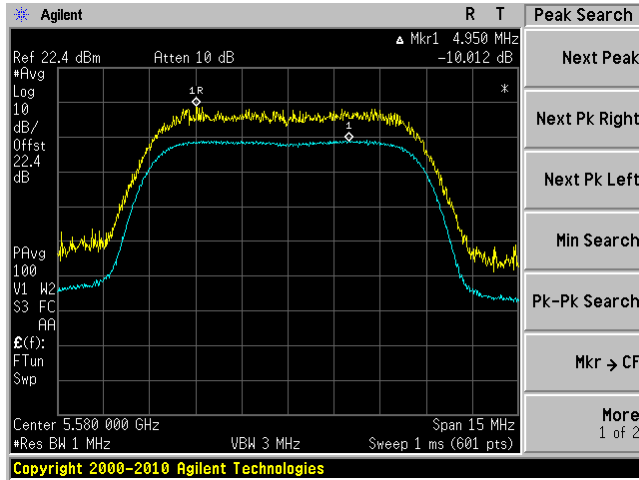
10 MHz mode, 5500 MHz J0



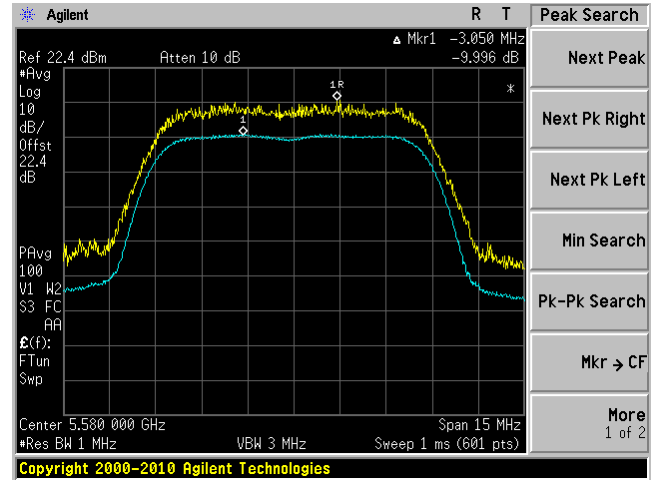
10 MHz mode, 5500 MHz J1



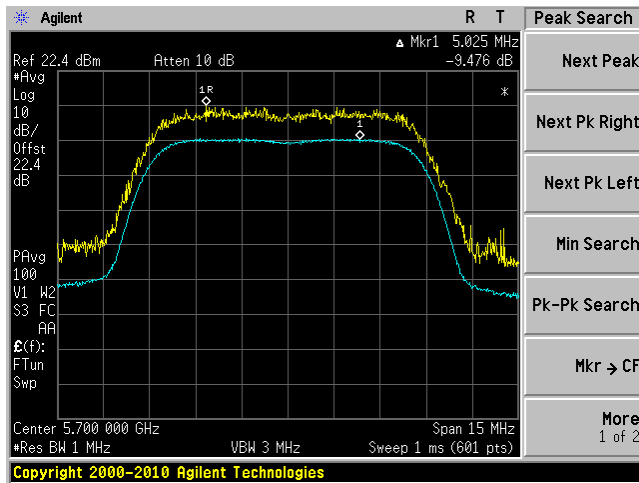
10 MHz mode, 5580 MHz J0



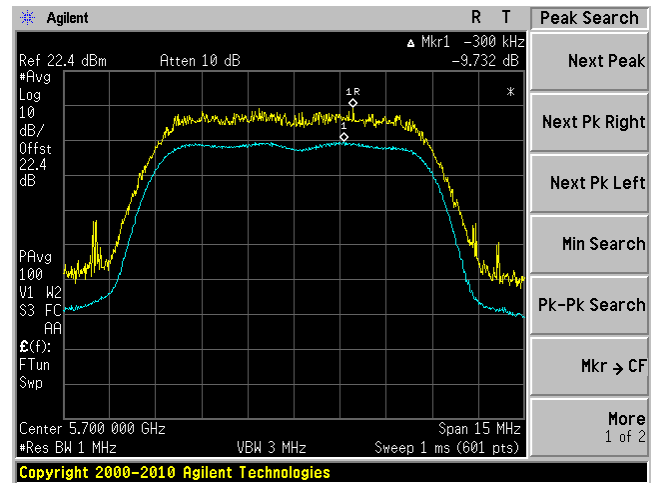
10 MHz mode, 5580 MHz J1



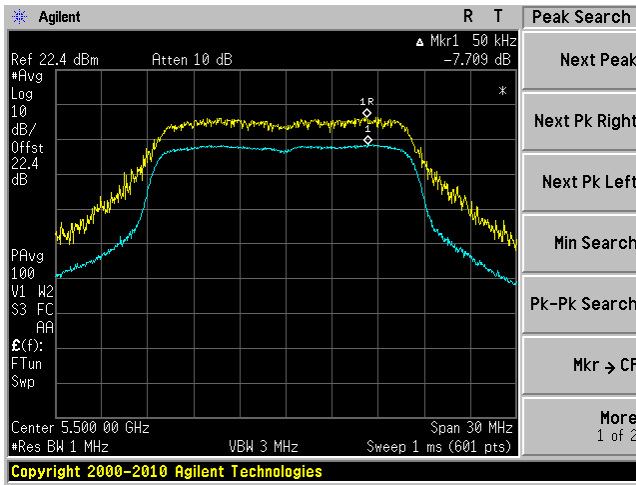
10 MHz mode, 5700 MHz J0



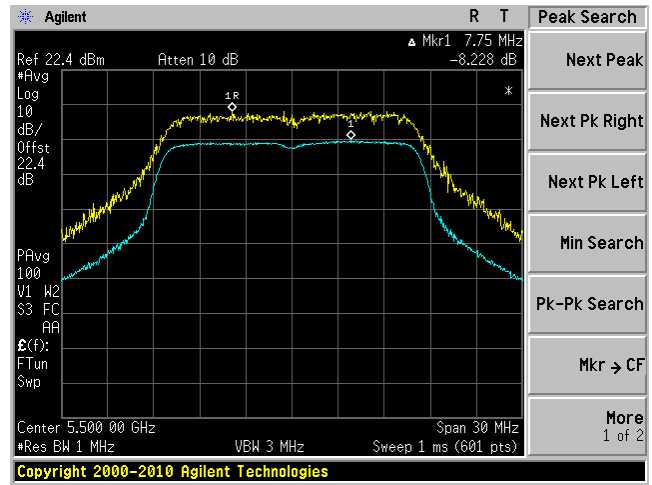
10 MHz mode, 5700 MHz J1



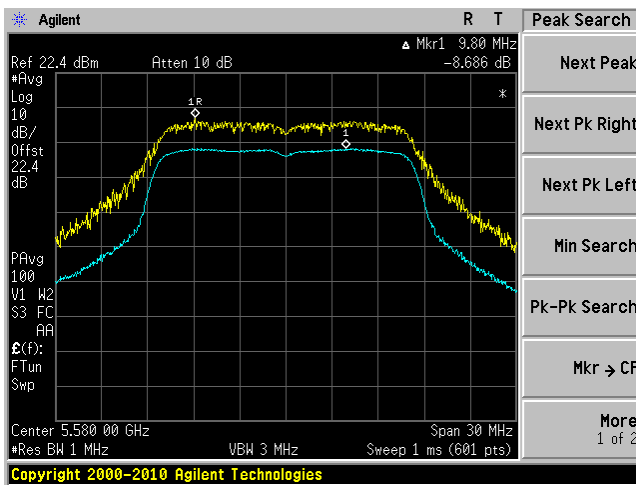
802.11a mode, 5500 MHz J0



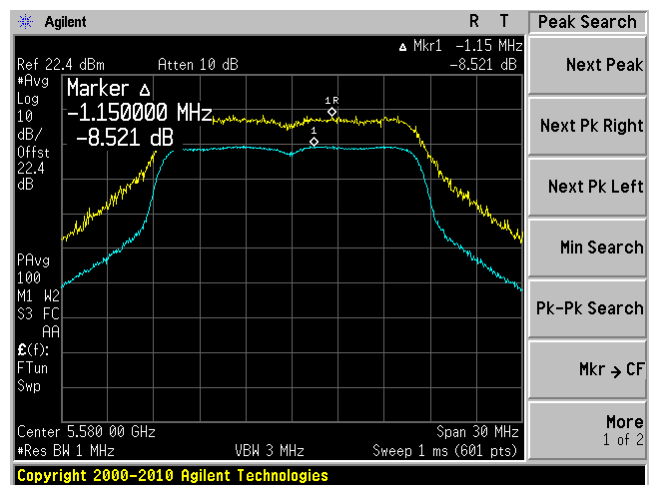
802.11a mode, 5500 MHz J1



802.11a mode, 5580 MHz J0

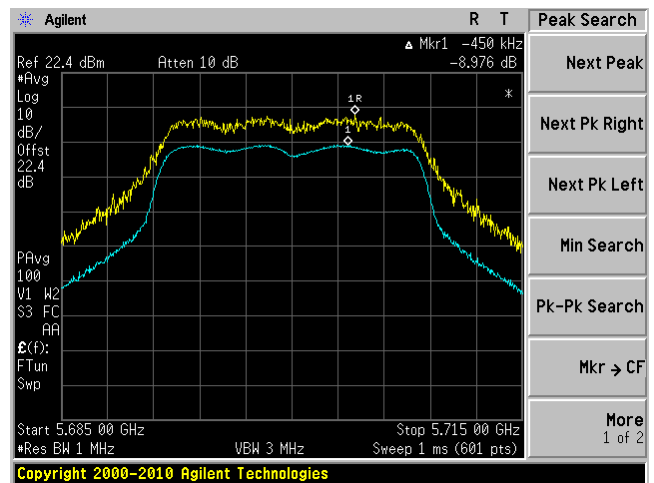
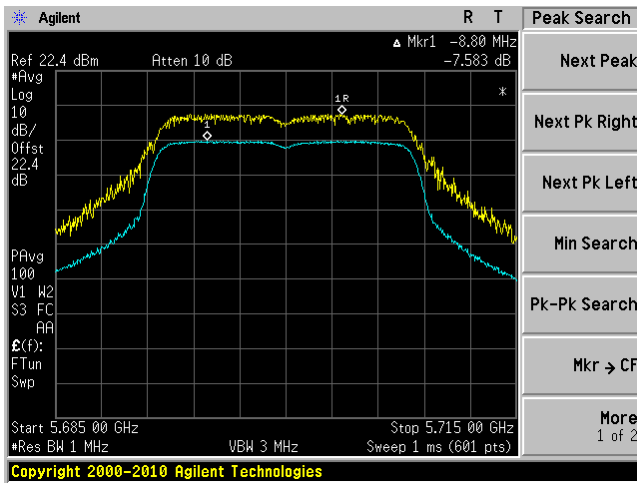


802.11a mode, 5580 MHz J1



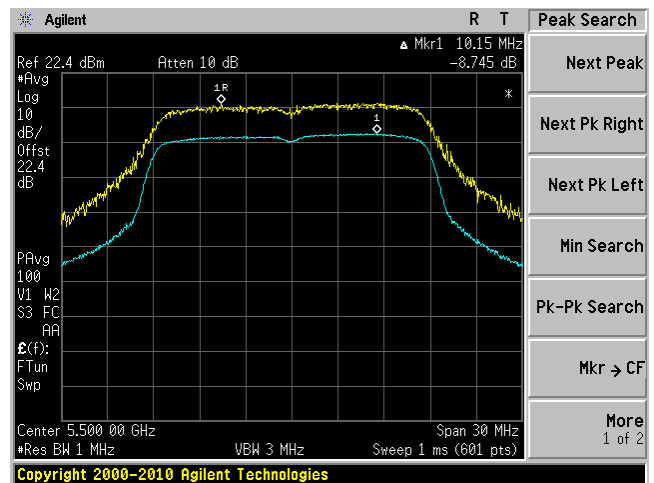
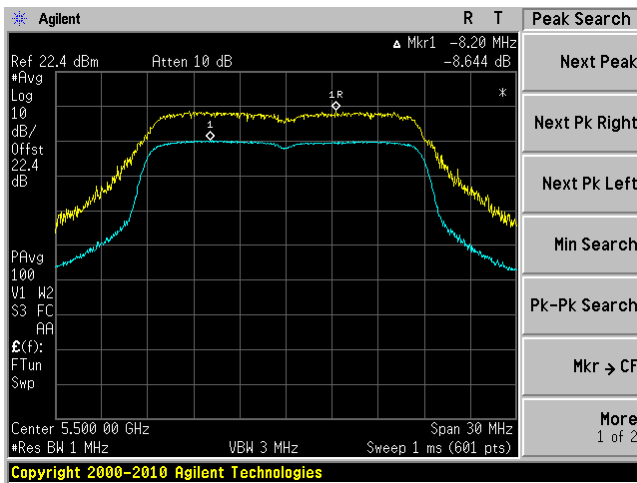
802.11a mode, 5700 MHz J0

802.11a mode, 5700 MHz J1

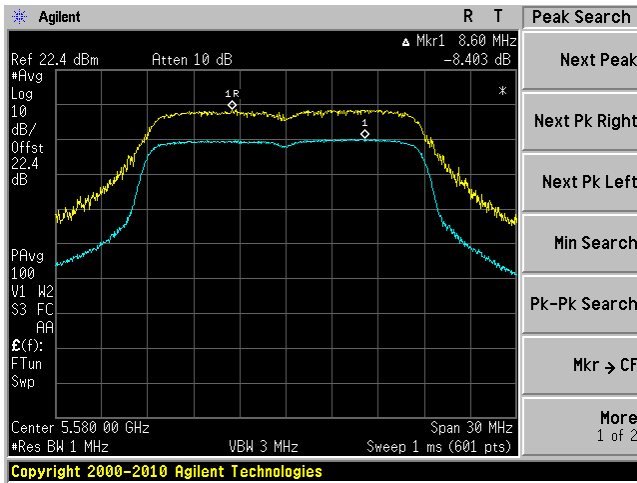


802.11n-HT20 mode, 5500 MHz J0

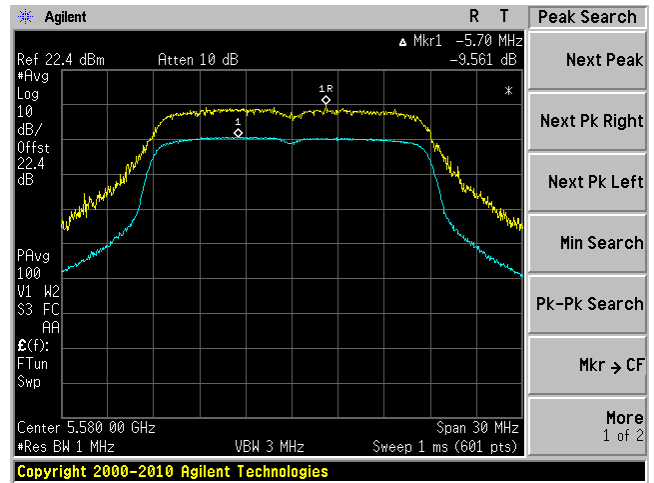
802.11n-HT20 mode, 5500 MHz J1



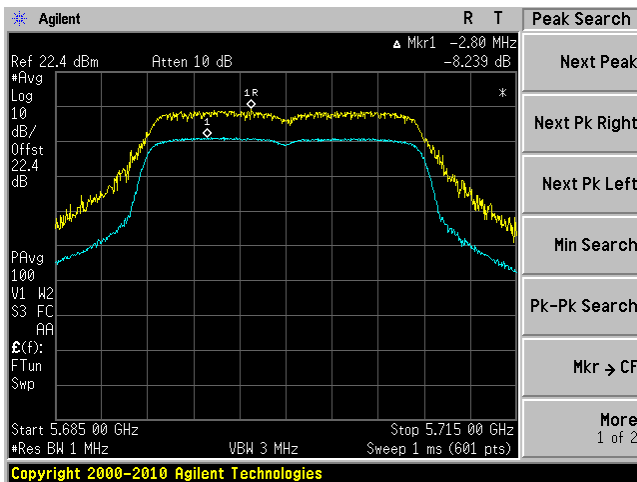
802.11n-HT20, 5580 MHz J0



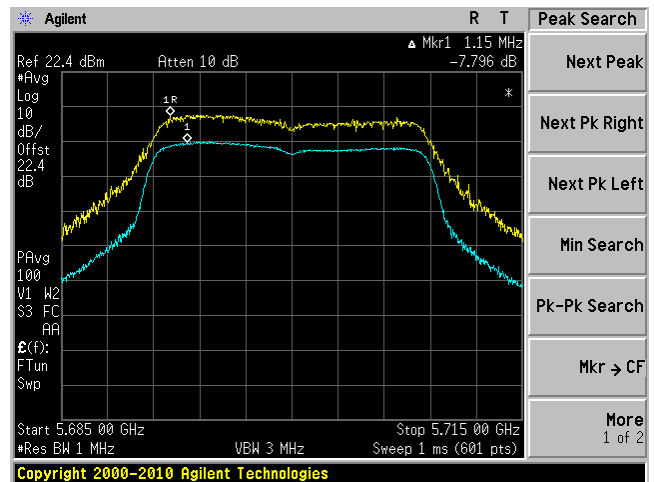
802.11n-HT20 mode, 5580 MHz J1



802.11n-HT20 mode, 5700 MHz J0

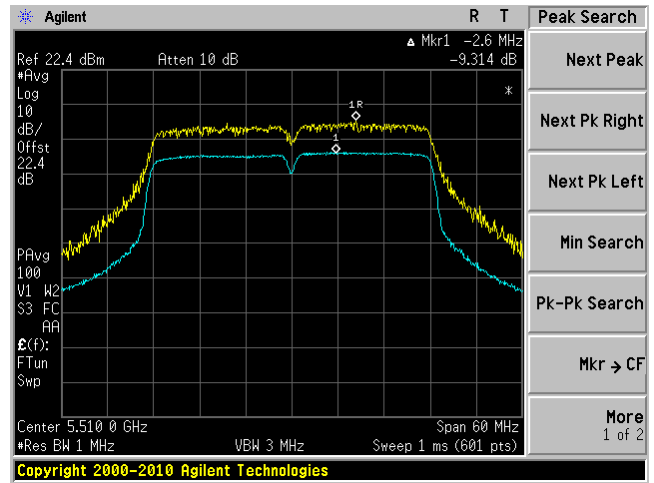
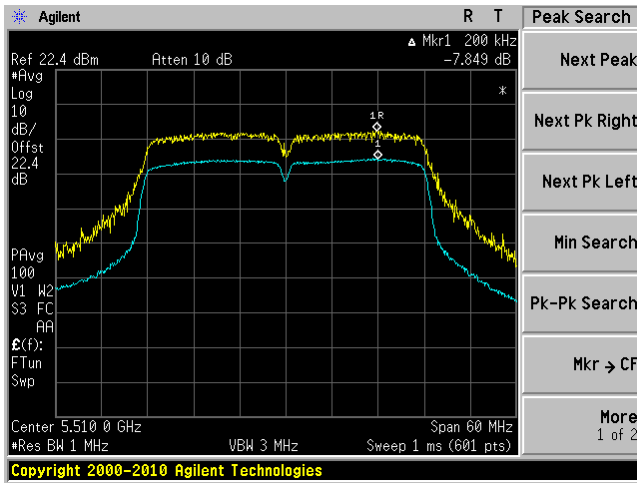


802.11n-HT20 mode, 5700 MHz J1



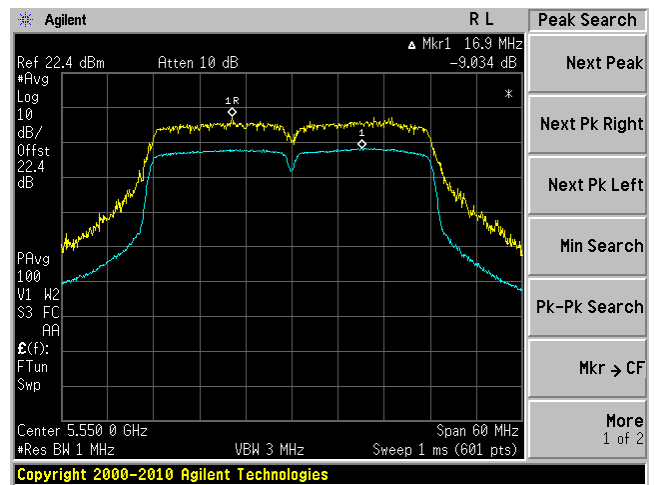
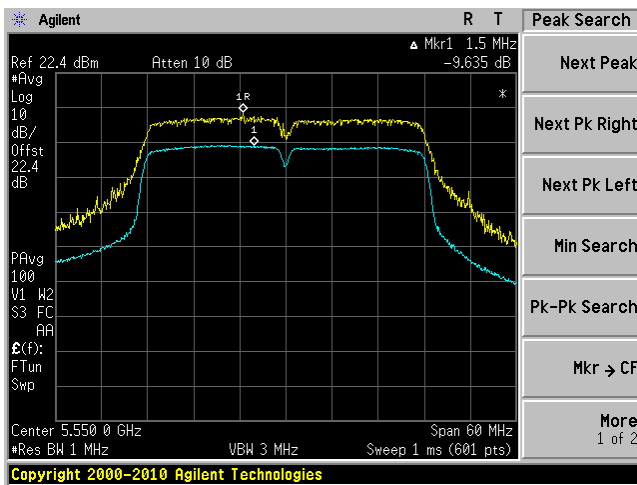
802.11n-HT40 mode, 5510 MHz J0

802.11n-HT40 mode, 5510 MHz J1



802.11n-HT40 mode, 5550 MHz J0

802.11n-HT40 mode, 5550 MHz J1



802.11n-HT40 mode, 5670 MHz J0

802.11n-HT40 mode, 5670 MHz J1

