FCC 47 CFR PART 15 SUBPART C

TEST REPORT

For

Pronto Point Service Controller
Model: PN-PPSC-A-1412-10
Trade Name: Proto Networks

Issued to

Pronto Networks
4637 Chabot Drive，Suite#206 Pleasanton，California，CA 94588 USA

Prepared by

COMPLIANCE CERTIFICATION SERVICES (KUNSHAN) INC.
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TEST RESULT CERTIFICATION

Applicant:	**Pronto Networks** 4637 Chabot Drive，Suite#206 Pleasanton，California，CA 94588 USA
Equipment Under Test:	Pronto Point Service Controller
Trade Name:	Pronto Networks
Model:	PN-PPSC-A-1412-10
Date of Test:	November 18,2009 ~ December 3,2009

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
FCC 47 CFR Part 15 Subpart C	No non-compliance noted

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2003 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

The test results of this report relate only to the tested sample EUT identified in this report.

Approved by:

Miro Chueh
EMC Manager
Compliance Certification Service Inc.

Reviewed by:

Lin Zhang
EMC Section Manager
Compliance Certification Service Inc.

EUT DESCRIPTION

Product	Pronto Point Service Controller
Trade Name	Pronto Networks
Model Number	PN-PPSC-A-1412-10
Frequency Range	2412 ~ 2462 MHz
EUT Power Rating	Powered from an AC/DC power supply For AC Adapter: Trade name: DVE Model number: DSA-12W-20 FUS Input: 100V-240V, 50/60Hz,0.3A Output:+24V, 0.5A
Transmit Power	IEEE 802.11b mode: 18.99 dBm IEEE 802.11g mode: 14.62 dBm IEEE 802.11 Super g mode: 14.12 dBm
Modulation Technique	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: DSSS (CCK, DQPSK, DBPSK) + OFDM (QPSK, BPSK, 16-QAM, 64-QAM)
Number of Channels	IEEE 802.11b/g mode: 11 Channels
Antenna Specification	Dipole Antenna 2.00dBi gain (Max)

Remark:

1. *The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*
2. *This submittal(s) (test report) is intended for FCC ID: TVV-PN-PPSC-A-10 filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.*

TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 2003and FCC CFR 47 15.207, 15.209 and 15.247.

EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

EUT EXERCISE

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4 2003 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4 2003.

FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown 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	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	([2])
13.36 - 13.41	322 - 335.4		

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2] Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

DESCRIPTION OF TEST MODES

The EUT had been tested under operating condition.

Software used to control the EUT for staying in continuous transmitting mode was programmed.

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz, which worst case was in normal link mode only.

IEEE802.11b: Channel low(2412MHz), Channel middle(2437MHz) and Channel high (2462MHz) with preliminary test 11, 5.5, 2, and 1, After the preliminary scan , the following test mode 11Mbps highest data rate (the worst case) are chosen for the final testing.

IEEE802.11g: Channel low(2412MHz), Channel middle(2437MHz) and Channel high(2462MHz) with preliminary test 54/48/36/24/18/12/9/6, After the preliminary scan , the following test mode 6Mbps data rate (the worst case) are chosen for the final testing.

INSTRUMENT CALIBRATION

MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

Equipment Used for Emissions Measurement

Remark: *Each piece of equipment is scheduled for calibration once a year.*

Conducted Emissions Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY44020154	11/12/2010
Peak and Avg Power Sensor	Agilent	E9327A	US40441788	09/11/2010
EPM-P Series Power Meter	Agilent	E4416A	QB41292714	09/11/2010

3M Semi Anechoic Chamber				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY44020154	11/12/2010
Pre-Amplfier	Miteq	NSP4000-NF	870731	01/21/2010
Horn Antenna	Austriah	BBHA9120D	D267	05/09/2010
SHF-EHF Horn Antenna	Schwarzbeck	BBHA9170	BBHA9170171	04/12/2010
Turn Table	CT	CT123	4162	N.C.R
Antenna Tower	CT	CTERG23	3253	N.C.R
Controller	CT	CT1OO	95635	N.C.R
Coax Switch	Anitsu	MP 598	M 80094	N/A
Site NSA	CCS Lab.	N/A	N/A	12/11/2009
ESPI3 EMI RECEIVER	R&S	ESPI3	101026	05/06/2010
Pre-Amplfier	MINI	ZFL-1000VH2	d041703	02/28/2010
Bilog Antenna	Sunol Sciences	JB1	A110204-2	11/22/2010

Remark: *The measurement uncertainty is less than +/- 4.83dB (vertical 30MHz ~ 200MHz),+/- 4.70dB(vertical 200MHz ~1000MHz), +/- 4.72dB(Horizontal 30MHz ~ 1GHz) +/- 3.92dB (1000MHz ~5000MHz) +/- 3.94dB(5000MHz ~18000MHz) which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV. Expanded Uncertainty (95% CONFIDENCE INTERVAL): K=2*

Power Line Conducted Emission Test Site A				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI Test Receiver	SCHAFFNER	SCR3501	343	04/22/2010
V (V-LISN)	Schwarzbeck	NNLK 8129	8129-143	04/11/2010
LISN (EUT)	FCC	FCC-LISN-50/250-50-2-02	SN:05012	04/11/2010
TRANSIENT LIMITER	SCHAFFNER	CFL9206	1710	04/06/2010

Remark: *The measurement uncertainty is less than +/- 3.43dB dB, which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.*

Expanded Uncertainty (95% CONFIDENCE INTERVAL): K=2

FACILITIES AND ACCREDITATIONS

FACILITIES

All measurement facilities used to collect the measurement data are located at
CCS China Kunshan Lab at 10#Weiye Rd, Innovation Park Eco. & Tec. Development Zone

Kunshan city JiangSu, (215300), CHINA.

The sites are constructed in conformance with the requirements of ANSI C63.4 2003 and CISPR Publication 22.

EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

LABORATORY ACCREDITATIONS AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by American Association for Laboratory Accreditation Program for the specific scope accreditation under Lab Code: 2541.01 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listed with Industry Canada, Certification and Engineering Bureau, IC 2324E-1 for 3/10m Chamber.

TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	A2LA	47 CFR FCC Part 15/18 (using ANSI C63.4 :2003)；VCCI V3; CNS 13438; CNS 13439; CNS 13803; CISPR 11; EN 55011; CISPR 13; EN 55013; CISPR 22:2005; CISPR 22:1997 +A1 :2000+A2 :2002；EN 55022:2006; EN55022 :1998 +A1 :2001+A2 :2003；EN 61000-6-3 (excluding discontinuous interference); EN 61000-6-4; AS/NZS CISPR 22；CAN/CSA-CEI/IEC CISPR 22；EN 61000-3-2；EN 61000-3-3；EN550024； EN 61000-4-2；EN 61000-4-3；EN61000-4-4；EN 61000-4-5； EN 61000-4-6；IEC 61000-4-8；EN 61000-4-11；IEC61000-3-2；IEC61000-3-3；IEC 61000-4-2；IEC 61000-4-3；IEC 61000-4-4； IEC 61000-4-5；IEC 61000-4-6；IEC 61000-4-8；IEC 61000-4-11；EN 300 220-3; EN 300 328; EN 300 330-2; EN 300 440-1; EN 300-440-2; EN 300 893; EN 301 489-01; EN 301 489-3; EN 301 489-07; EN 301 489-17；47 CFR FCC Part 15, 22, 24	
USA	FCC	3/10 meter Sites to perform FCC Part 15/18 measurements	93105, 90471
Japan	VCCI	3/10 meter Sites and conducted test sites to perform radiated/conducted measurements	VCCI R-1600 C-1707 T-1499

** No part of this report may be used to claim or imply product endorsement by A2LA or any agency of the US Government.*

SETUP OF EQUIPMENT UNDER TEST

SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

SUPPORT EQUIPMENT

No.	Equipment	Model No.	Serial No.	FCC ID	Trade Name	Data Cable	Power Cord
1	Notebook PC	2672	998W21C	DoC	IBM	LAN cable: Un-Shielded 1.8m	Shielded, 1.8m

Remark:

1. *All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.*
2. *Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.*

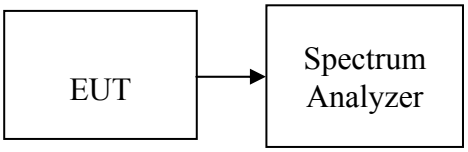
FCC PART 15.247 REQUIREMENTS

6DB BANDWIDTH

LIMIT

According to §15.247(a)(2), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6dB bandwidth shall be at least 500 kHz.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 100kHz, VBW = RBW, Sweep = auto.
4. Mark the peak frequency and –6dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Result
Low	2412	12045	>500	PASS
Mid	2437	12402		PASS
High	2462	11979		PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Result
Low	2412	16481	>500	PASS
Mid	2437	16489		PASS
High	2462	16449		PASS

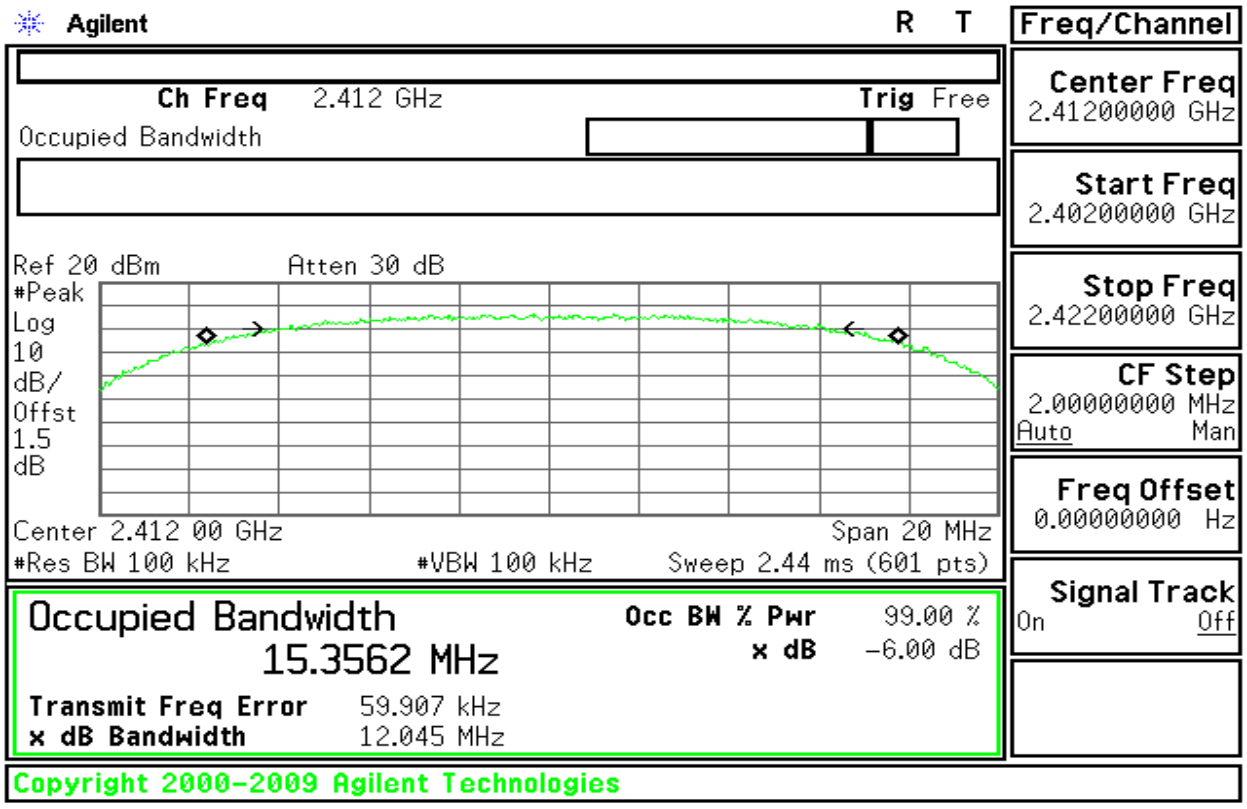
Test mode: IEEE 802.11 Super g mode

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Result
6	2437	32776	>500	PASS

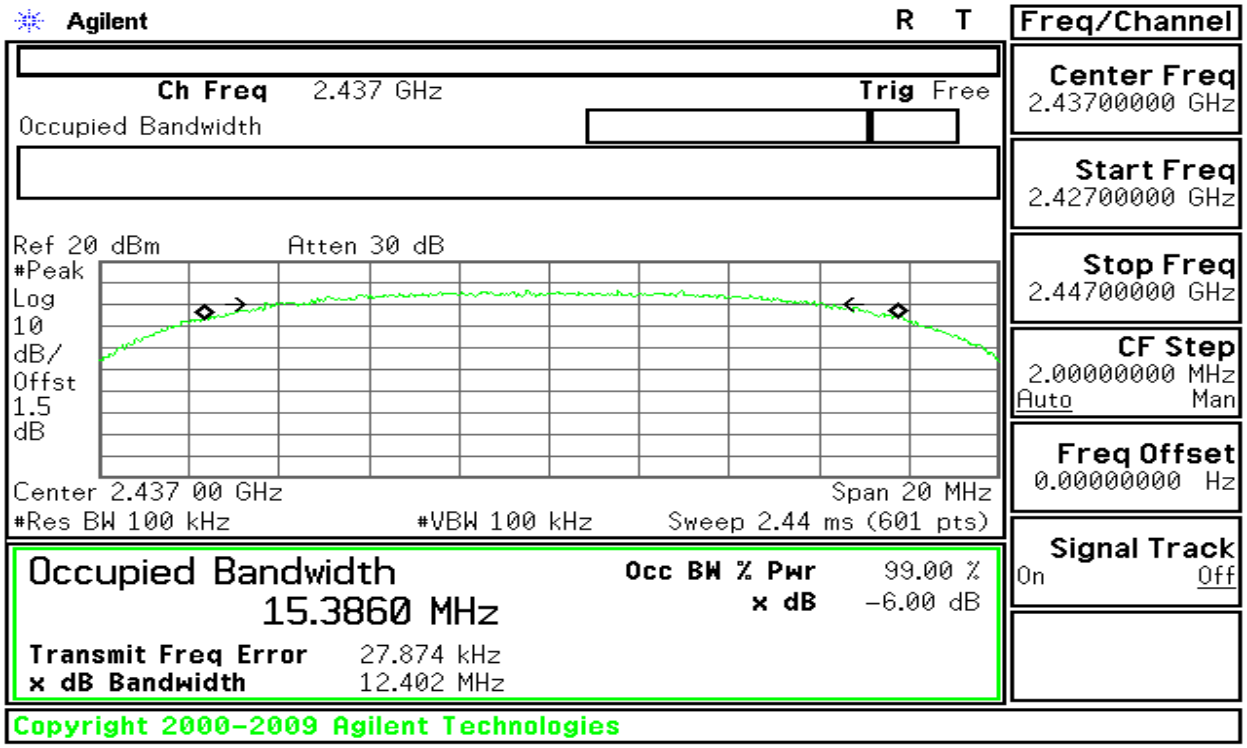
Test Plot

IEEE 802.11b MODE

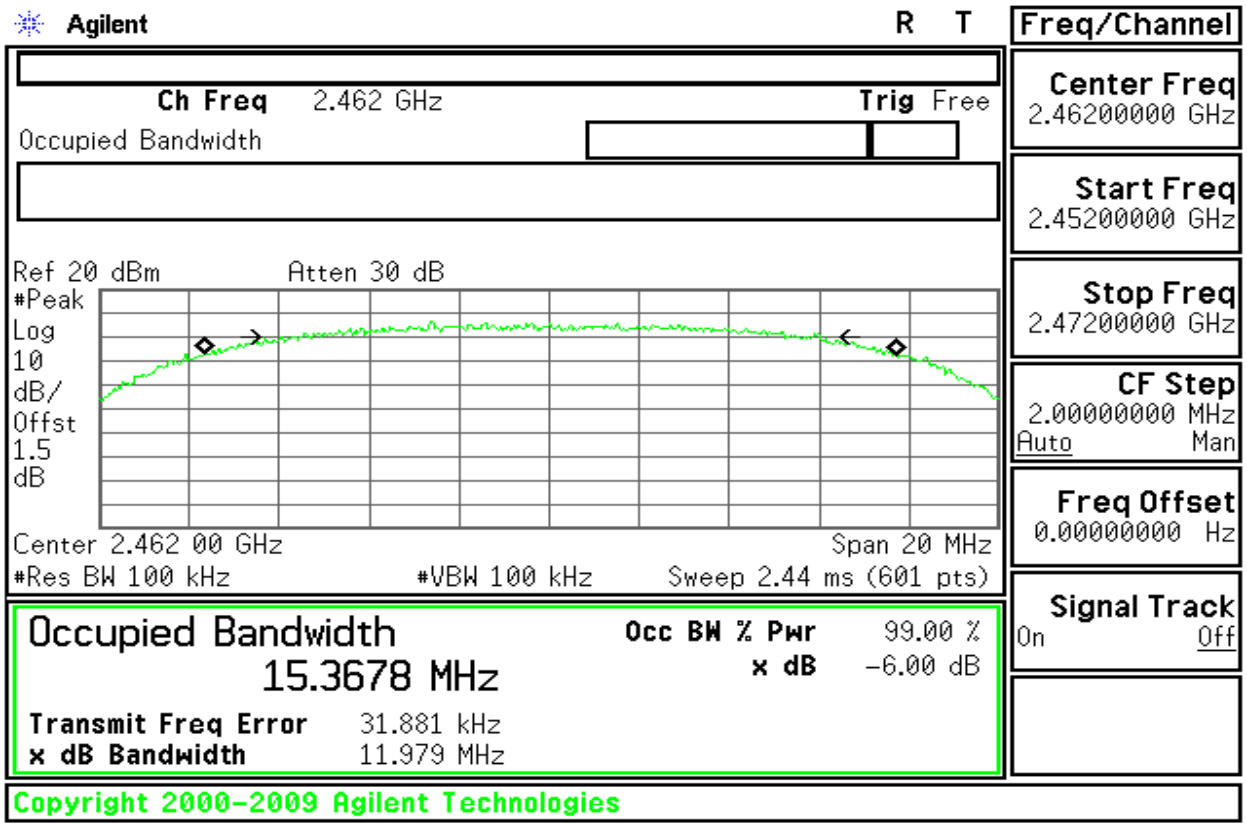
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

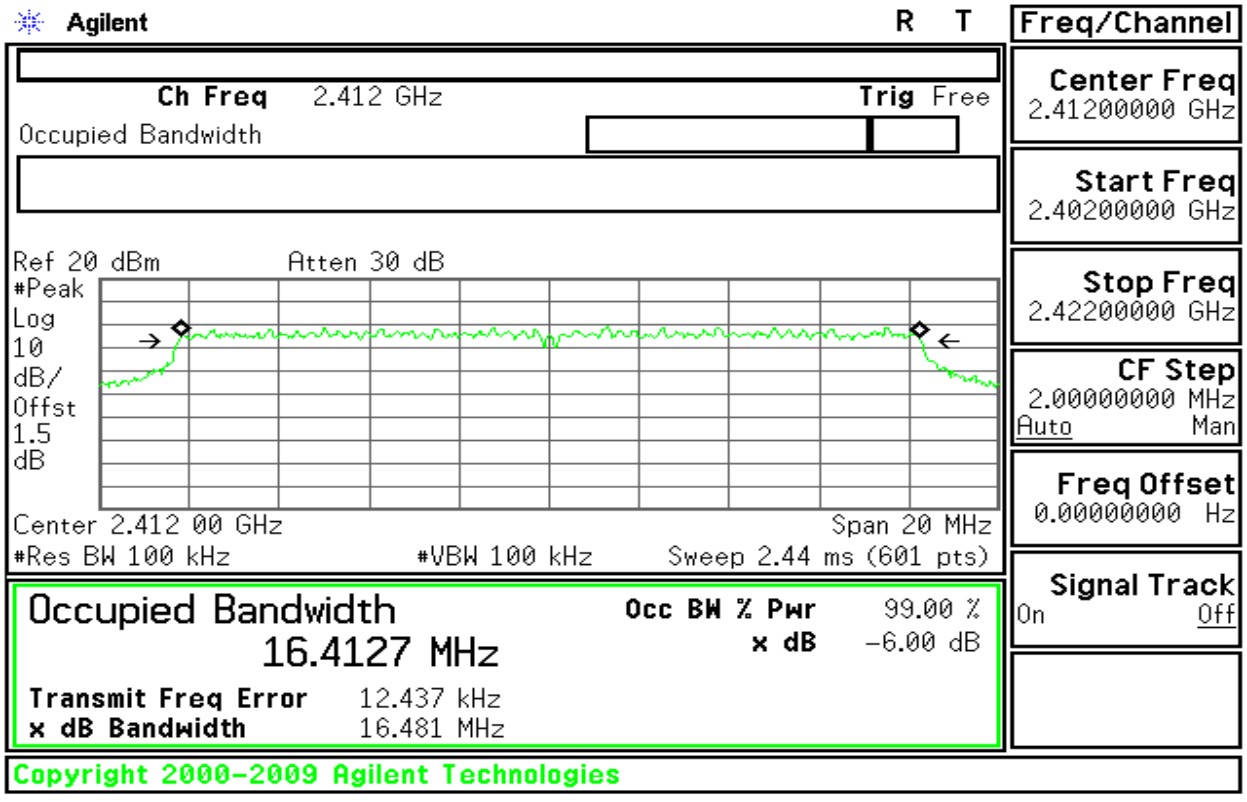


6dB Bandwidth (CH High)

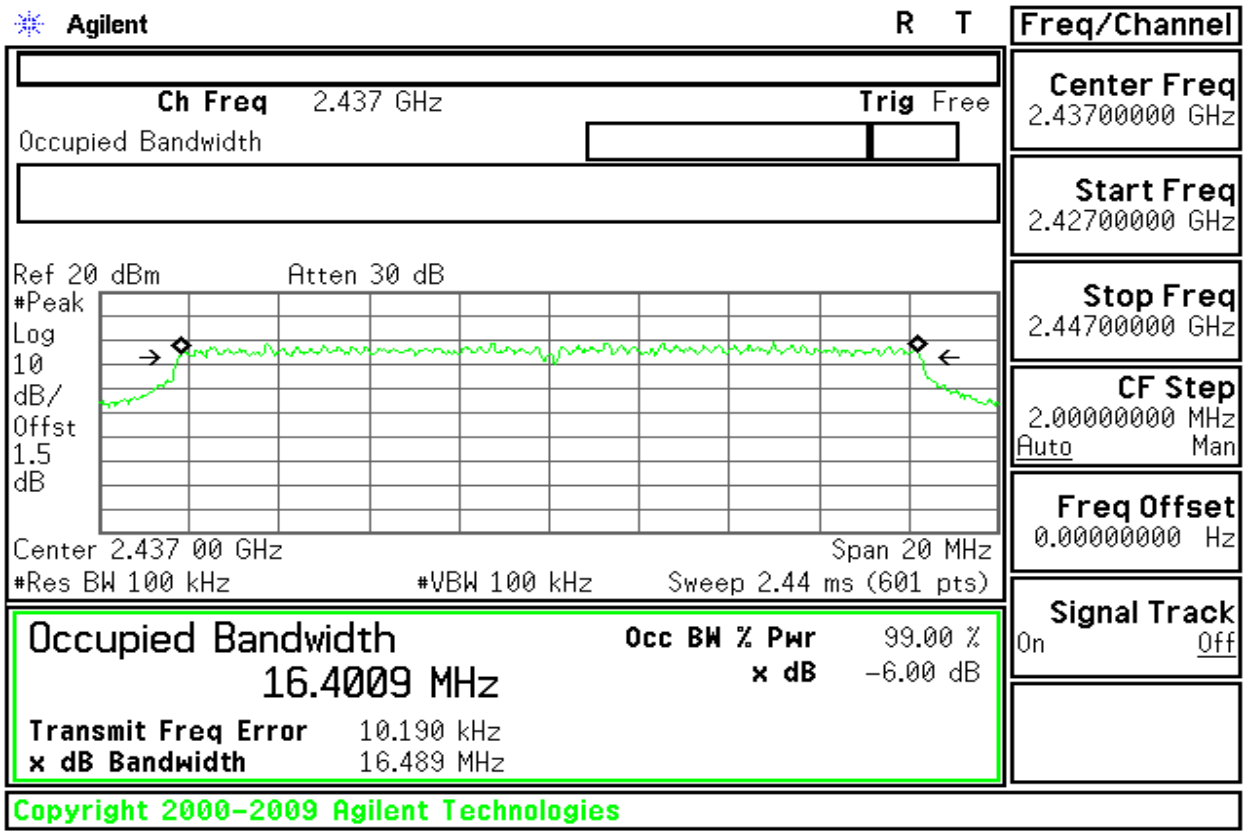


IEEE 802.11g mode

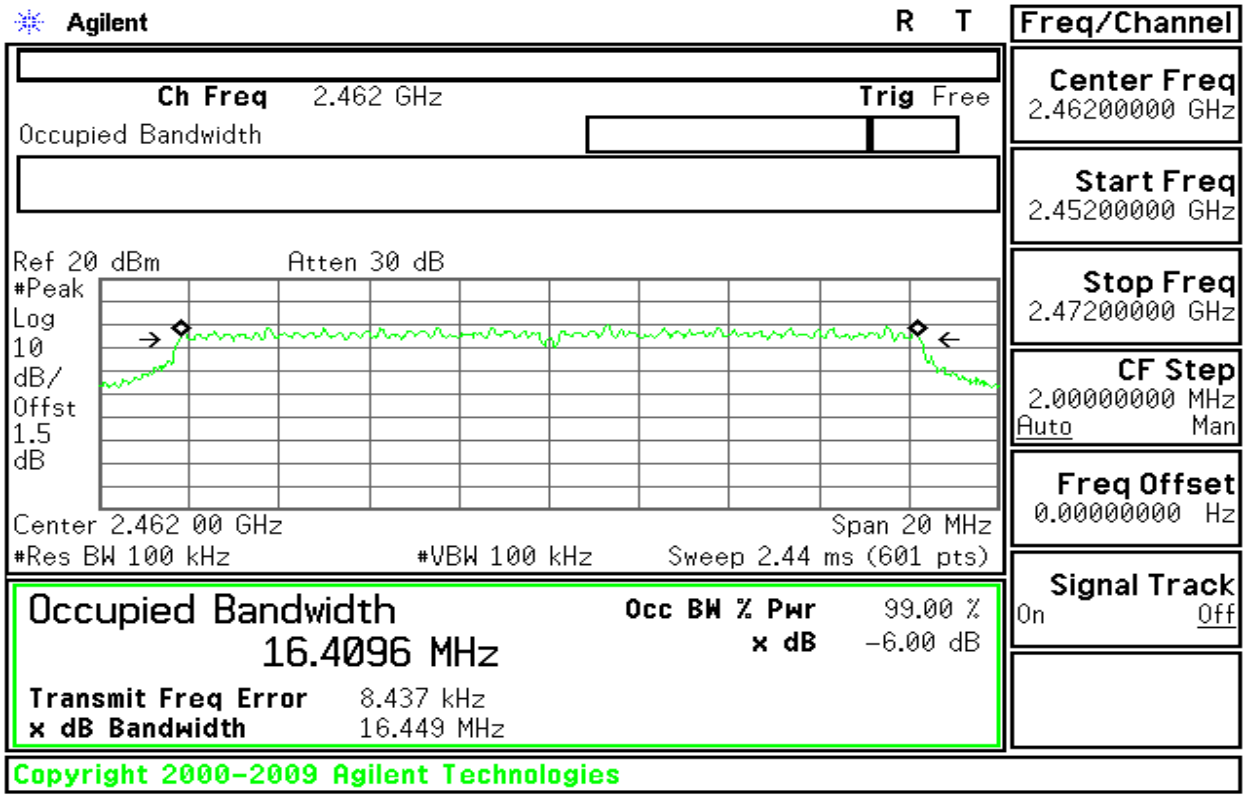
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

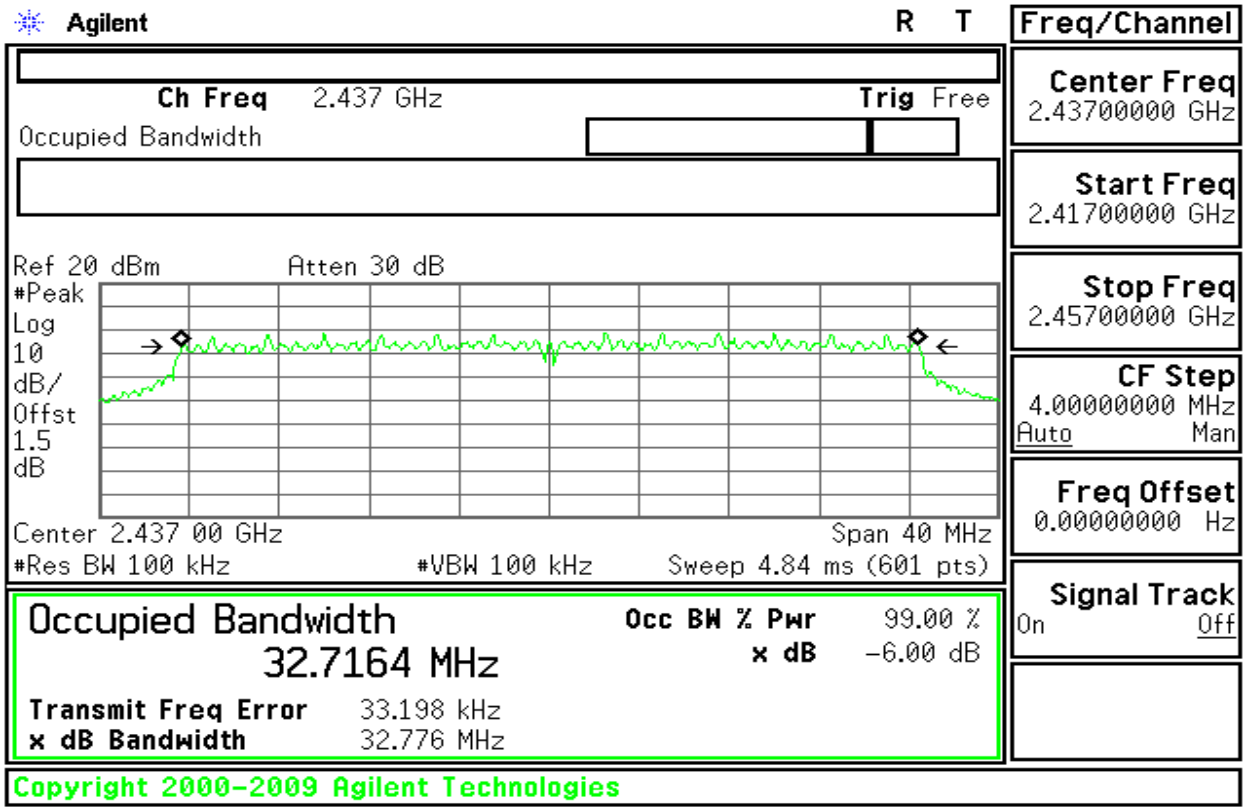


6dB Bandwidth (CH High)



IEEE 802.11 Super g mode

6dB Bandwidth (CH 6)



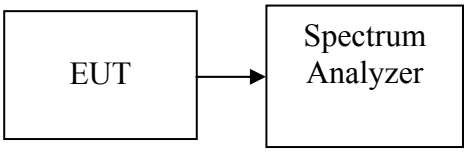
PEAK POWER

LIMIT

The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
2. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Configuration



TEST PROCEDURE

1 Set span to encompass the entire emission bandwidth (EBW) of the signal.
2 Set RBW = 1 MHz.
3 Set VBW ≥ 3 MHz.
4 Use sample detector mode if bin width (i.e., span/number of points in spectrum display) < 0.5 RBW. Otherwise use peak detector mode.
5 Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep. If the device transmits continuously, with no off intervals or reduced power intervals, the trigger may be set to ôhichfree runöhich.
6 Trace average 100 traces in power averaging mode.
7 Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer's b and power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	18.99	0.07925	1.00	PASS
Mid	2437	18.77	0.07534		PASS
High	2462	18.58	0.07211		PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	14.62	0.02897	1.00	PASS
Mid	2437	14.31	0.02698		PASS
High	2462	14.22	0.02642		PASS

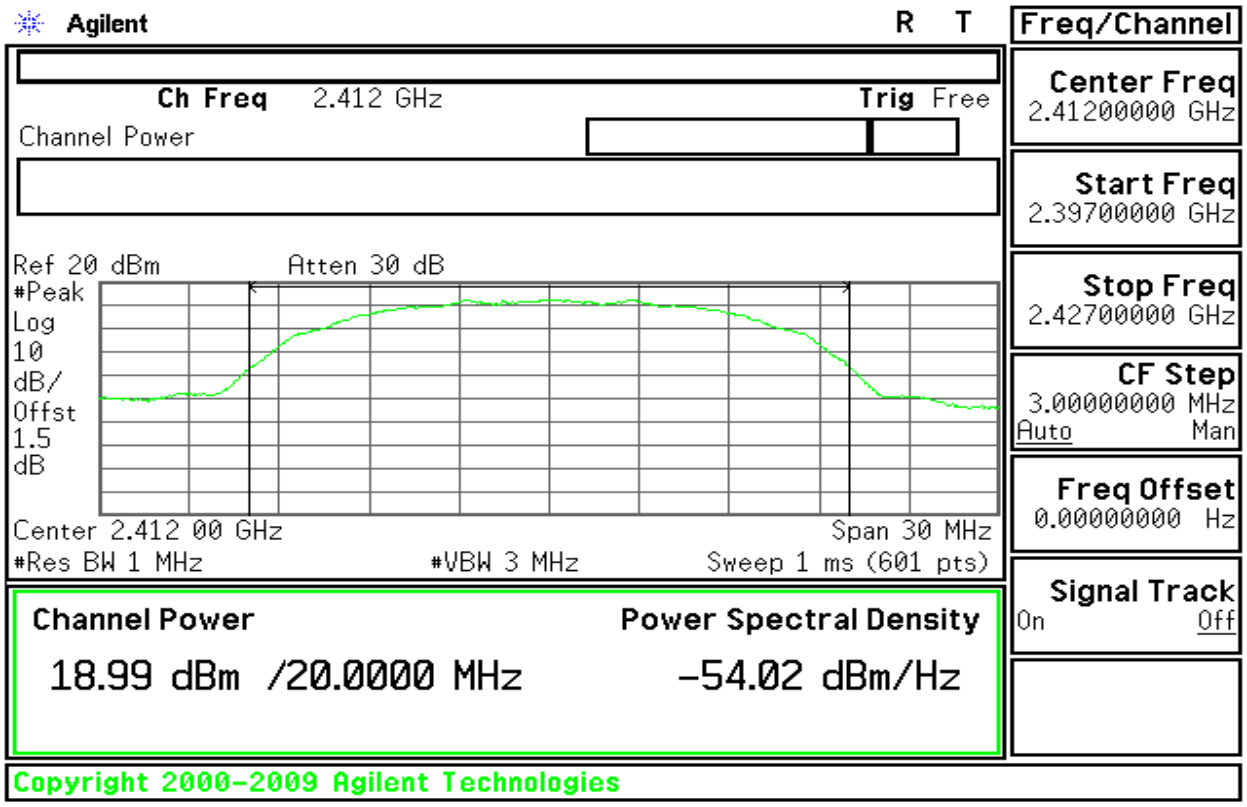
Test mode: IEEE 802.11 Super g mode

Channel	Frequency (MHz)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
6	2437	14.12	0.02582	1.00	PASS

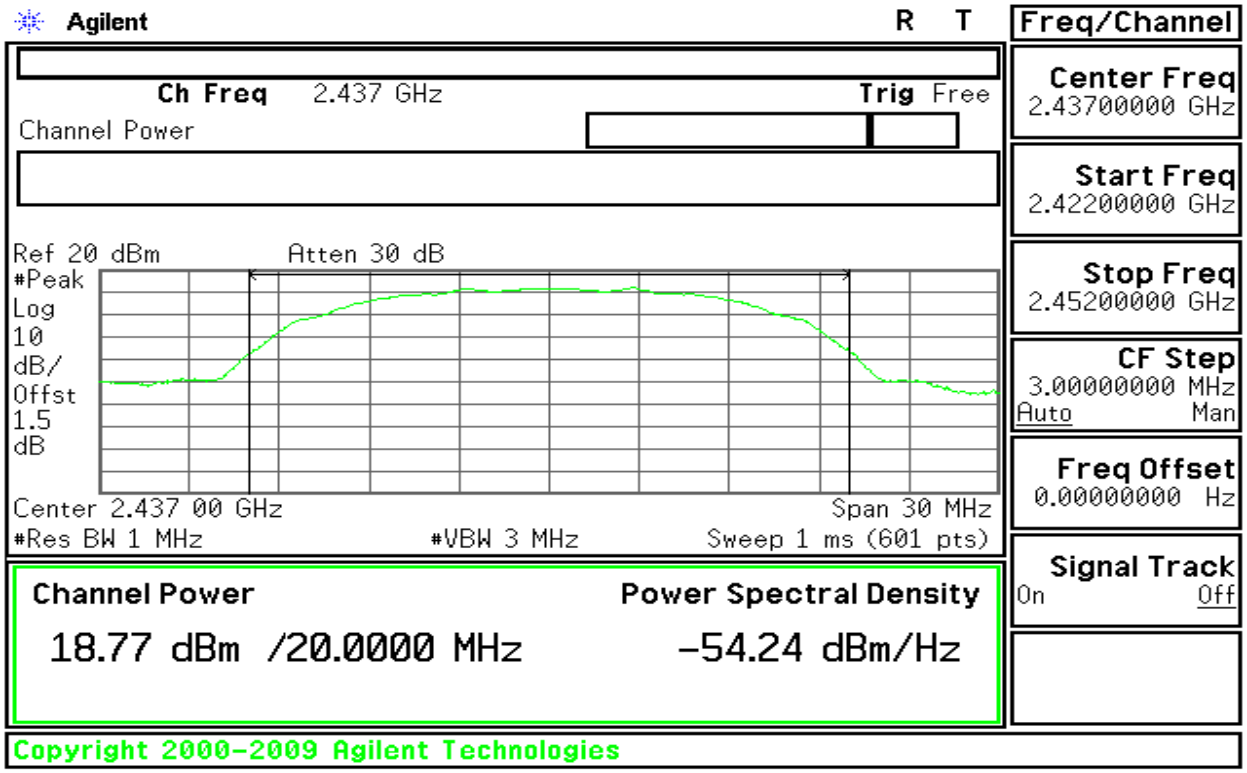
Test Plot

IEEE 802.11b mode

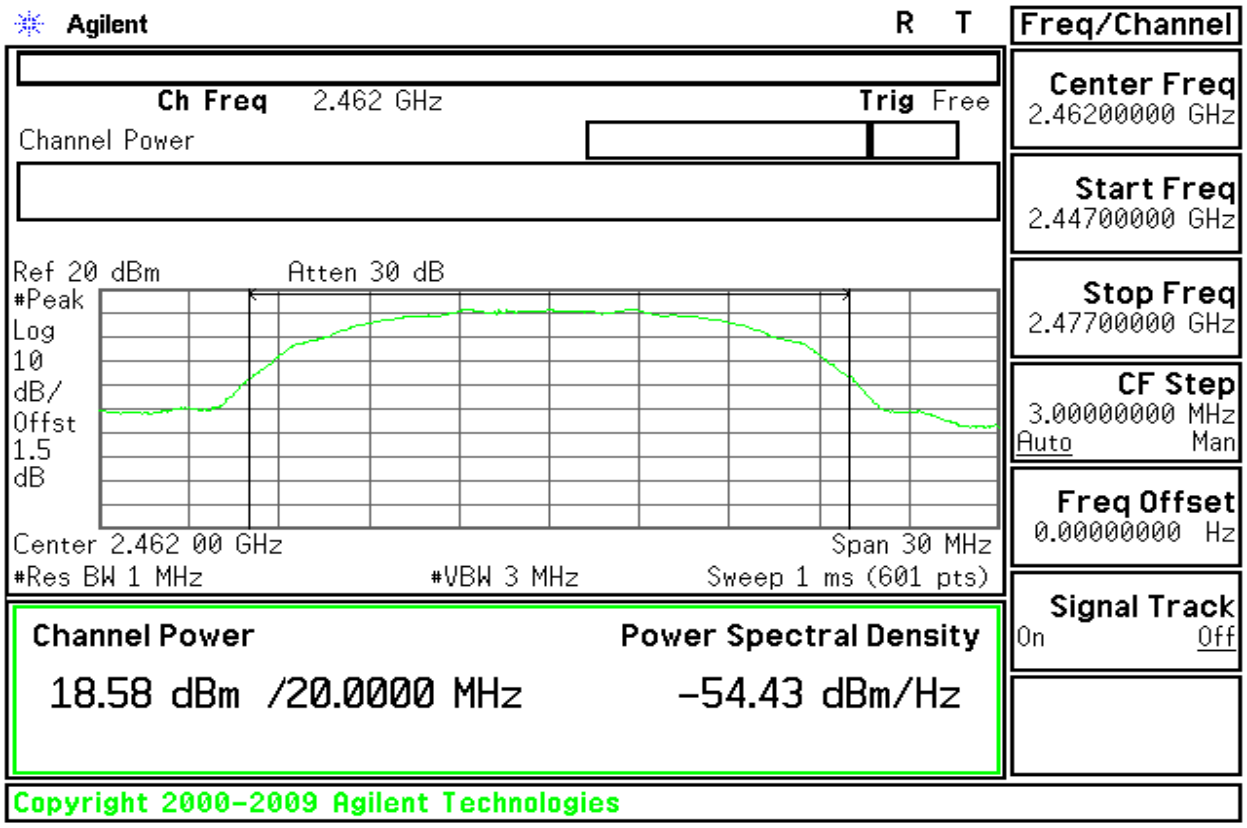
Peak Power (CH Low)



Peak Power (CH Mid)

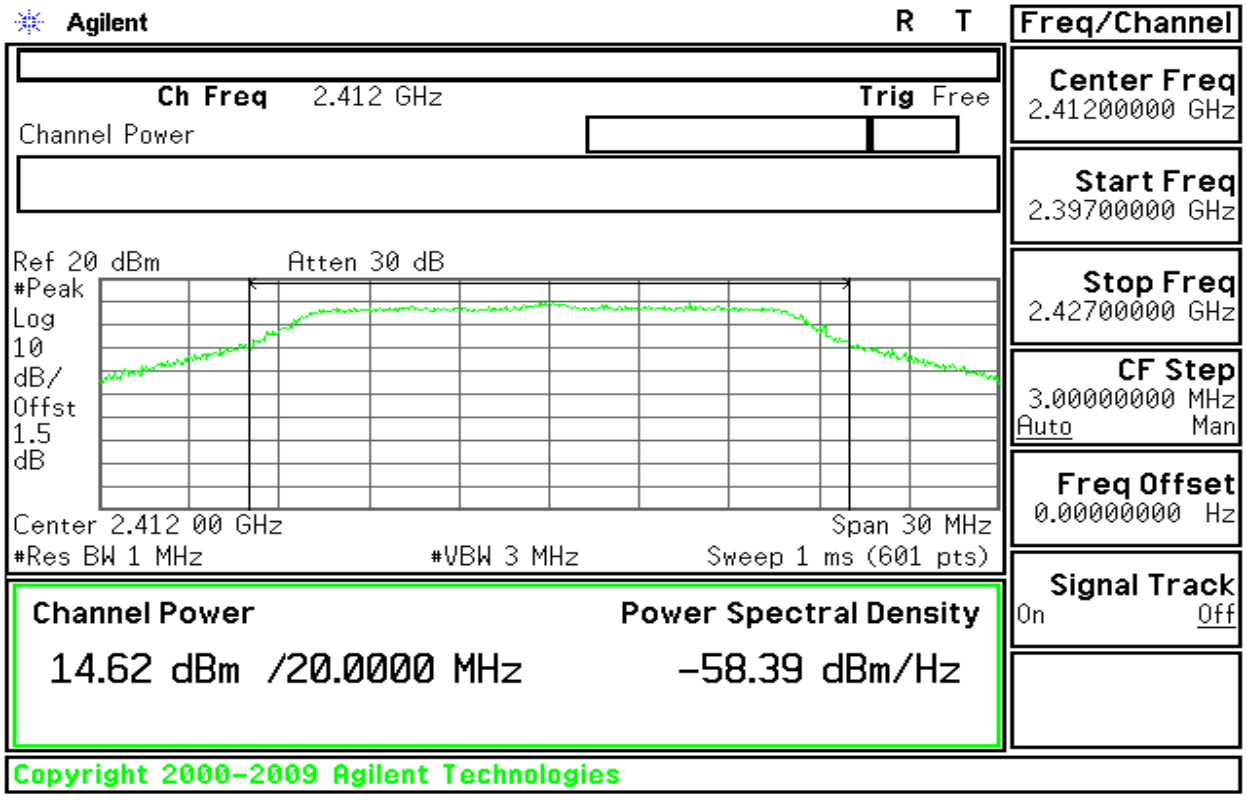


Peak Power (CH High)

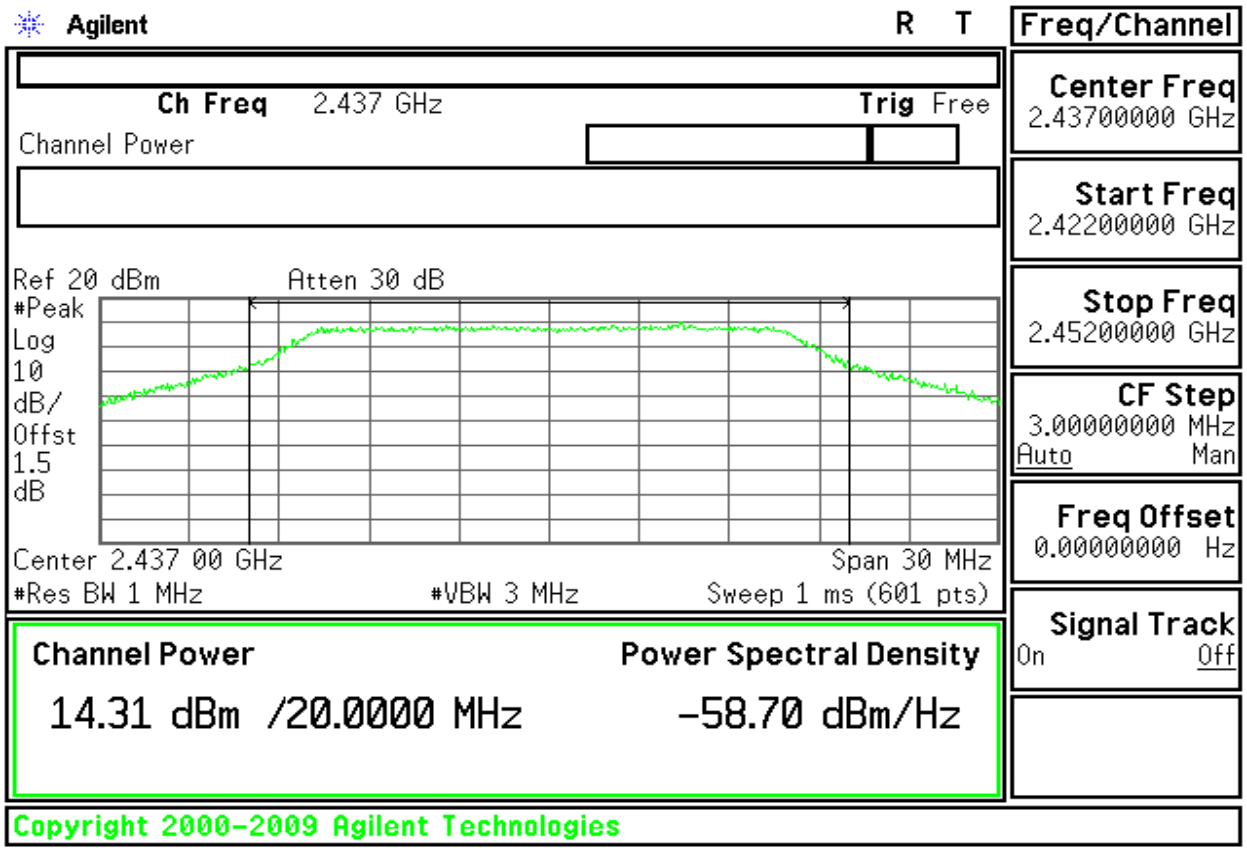


IEEE 802.11g mode

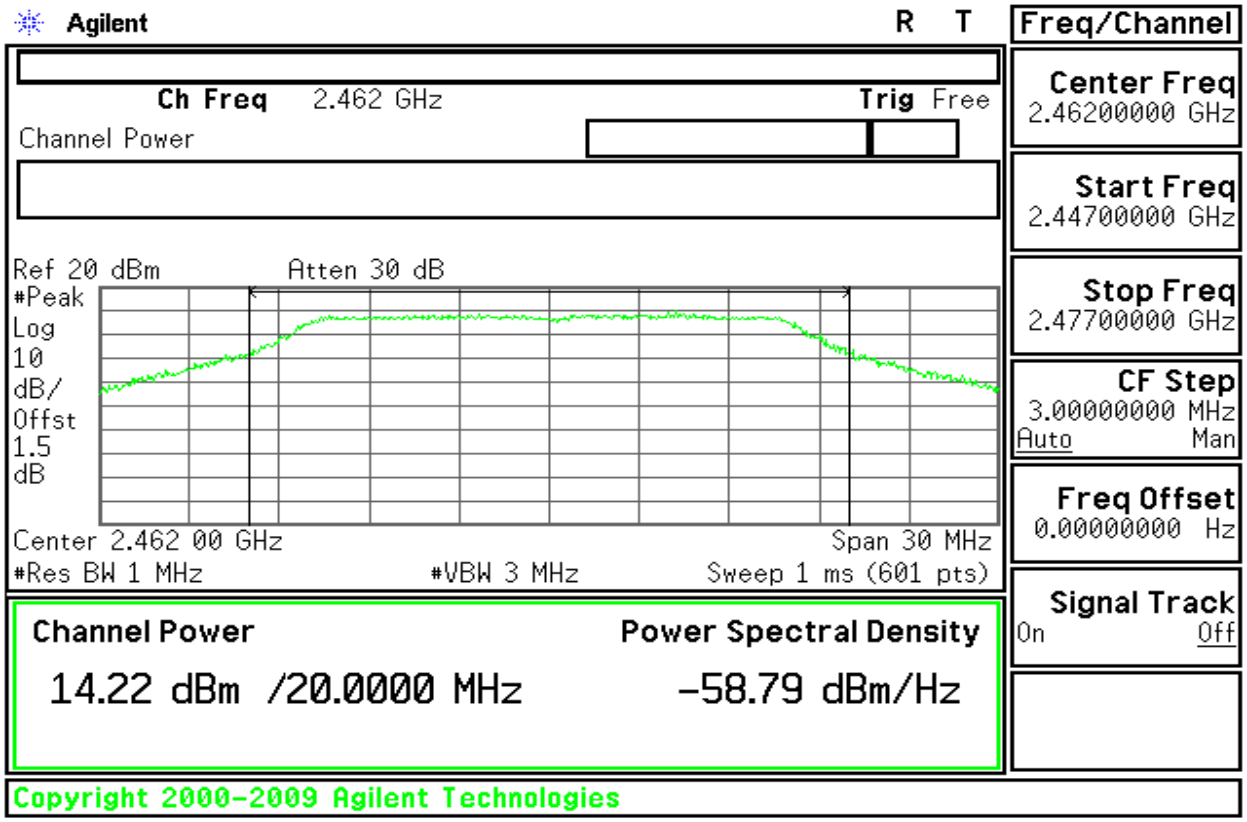
Peak Power (CH Low)



Peak Power (CH Mid)

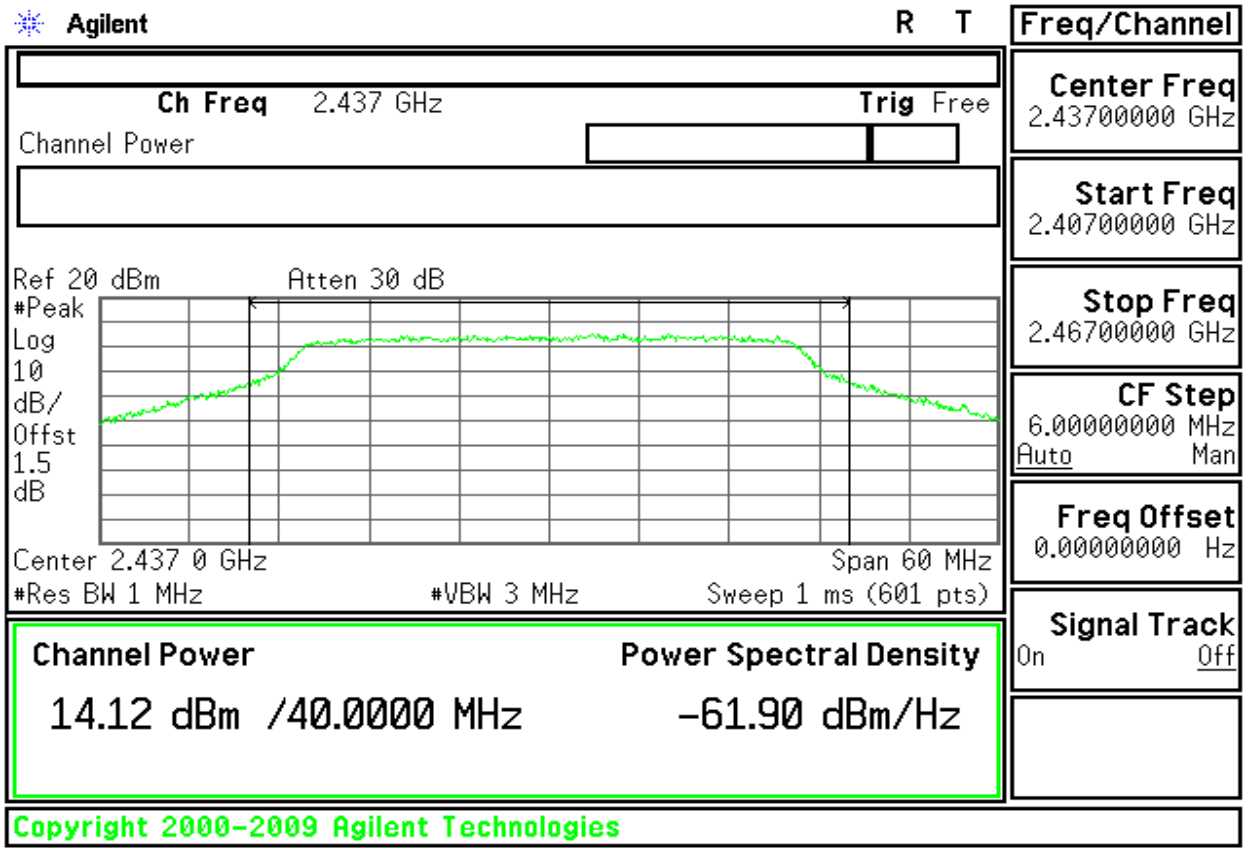


Peak Power (CH High)



IEEE 802.11 Super g mode

Peak Power (CH 6)

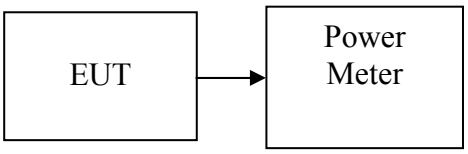


AVERAGE POWER

LIMIT

None; for reporting purposes only.

Test Configuration



TEST PROCEDURE

The transmitter output is connected to the Power meter.

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Result
Low	2412	16.11	0.04083	PASS
Mid	2437	15.86	0.03855	PASS
High	2462	15.61	0.03639	PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Result
Low	2412	11.14	0.01300	PASS
Mid	2437	10.87	0.01222	PASS
High	2462	10.40	0.01096	PASS

Test mode: IEEE 802.11 Super g mode

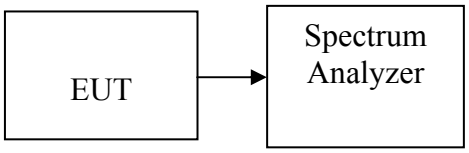
Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Result
6	2437	10.31	0.01074	PASS

PEAK POWER SPECTRAL DENSITY

LIMIT

1. According to §15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.
2. According to §15.247(f), the digital modulation operation of the hybrid system, with the frequency hopping turned off, shall comply with the power density requirements of paragraph (d) of this section.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
   Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set the spectrum analyzer as RBW = 3 kHz, VBW = 10 kHz, Span = 300 kHz, Sweep = 100 s
3. Record the max reading.
4. Repeat the above procedure until the measurements for all frequencies are completed.

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-8.01	8.00	PASS
Mid	2437	-8.94		PASS
High	2462	-8.64		PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-7.84	8.00	PASS
Mid	2437	-8.60		PASS
High	2462	-9.53		PASS

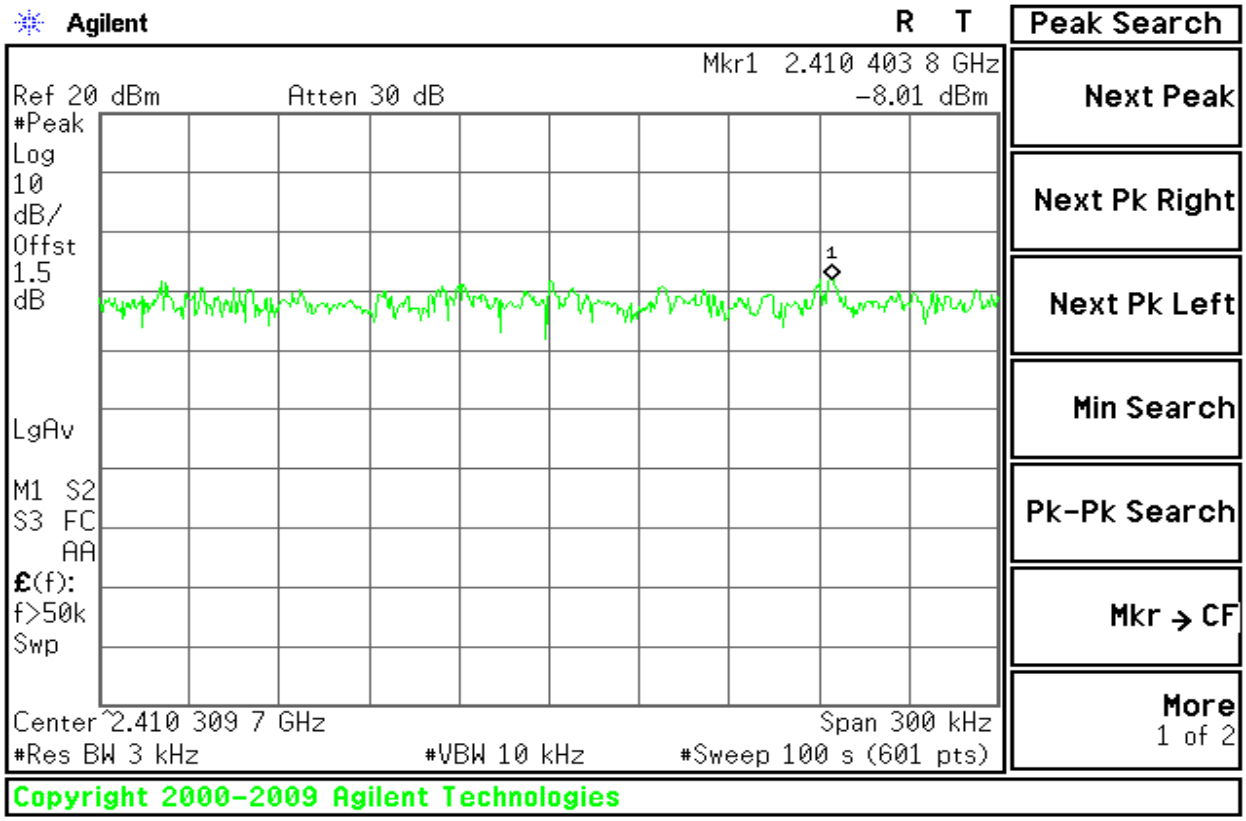
Test mode: IEEE 802.11 Super g mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
6	2437	-9.08	8.00	PASS

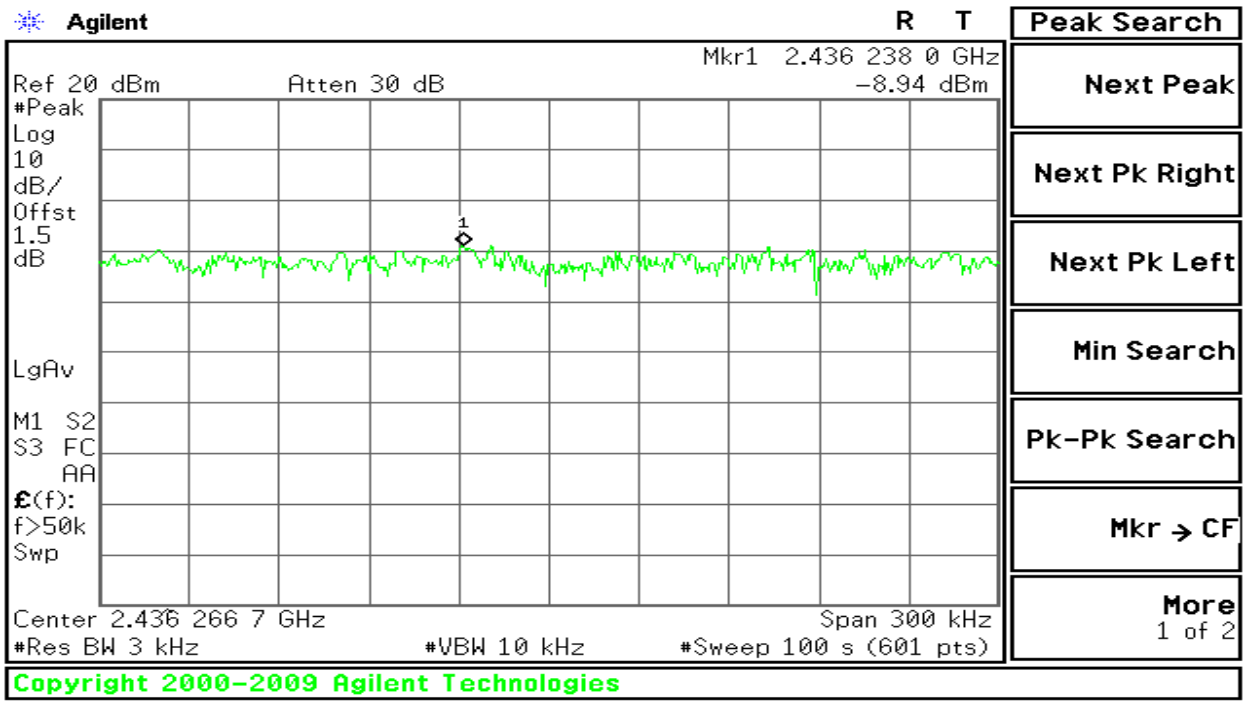
Test Plot

IEEE 802.11b mode

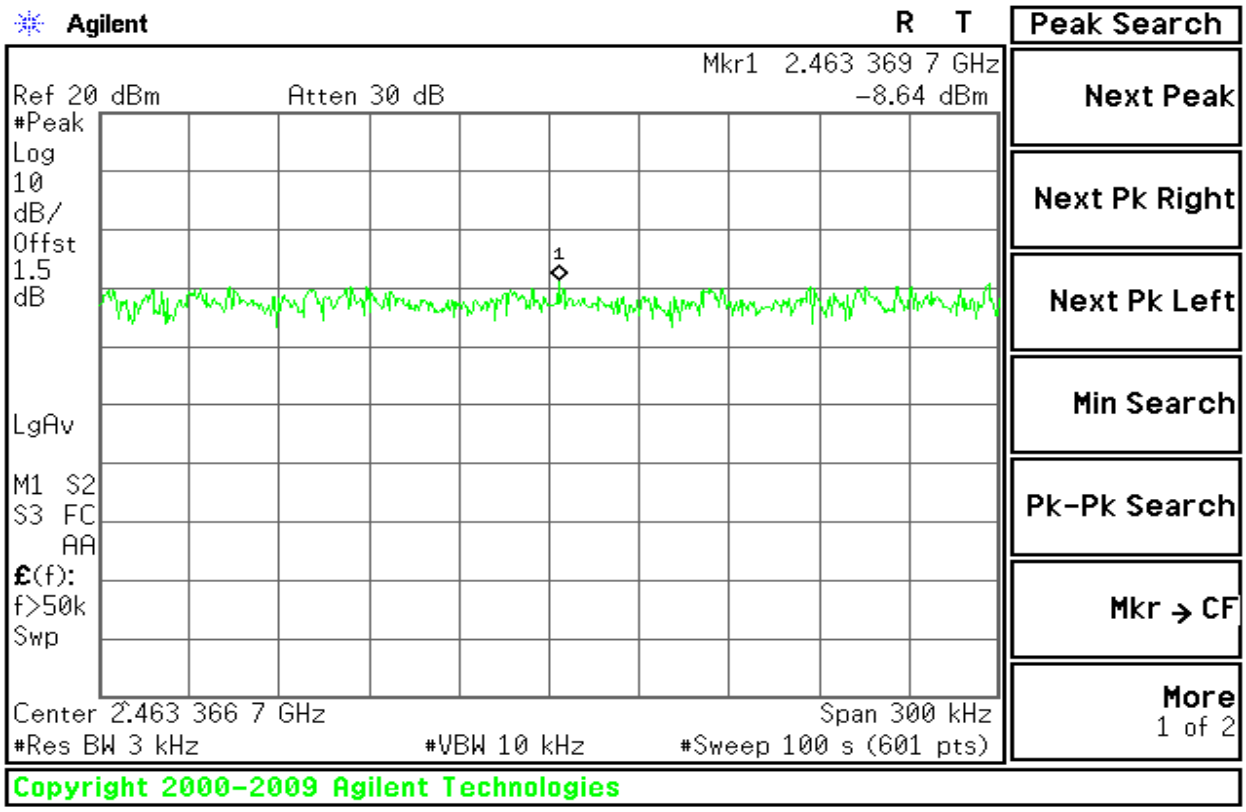
PPSD (CH Low)



PPSD (CH Mid)

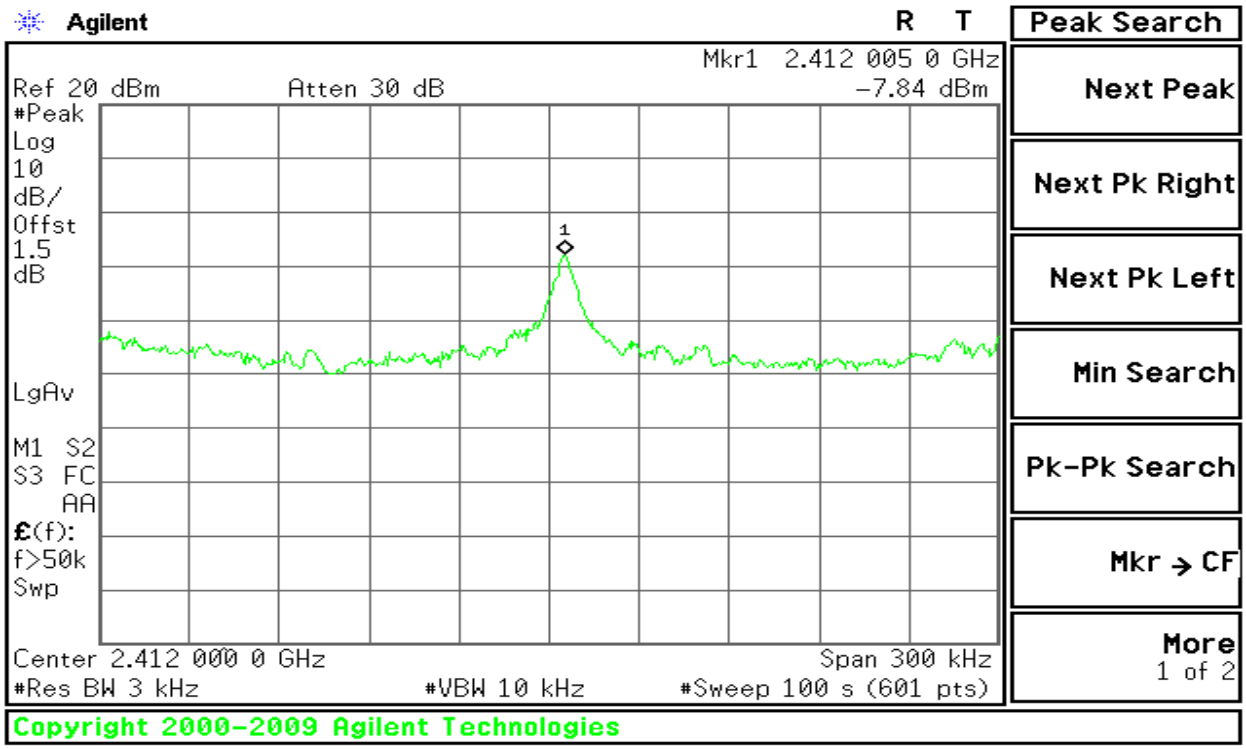


PPSD (CH High)

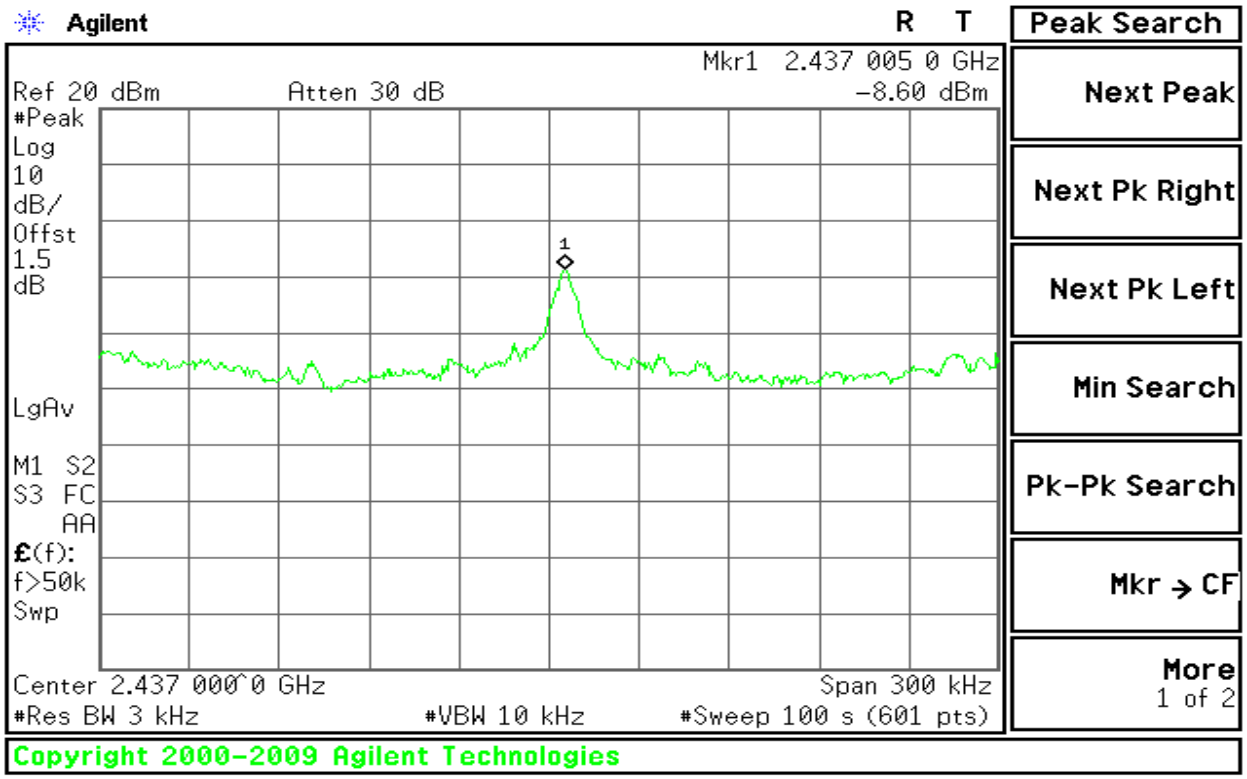


IEEE 802.11g mode

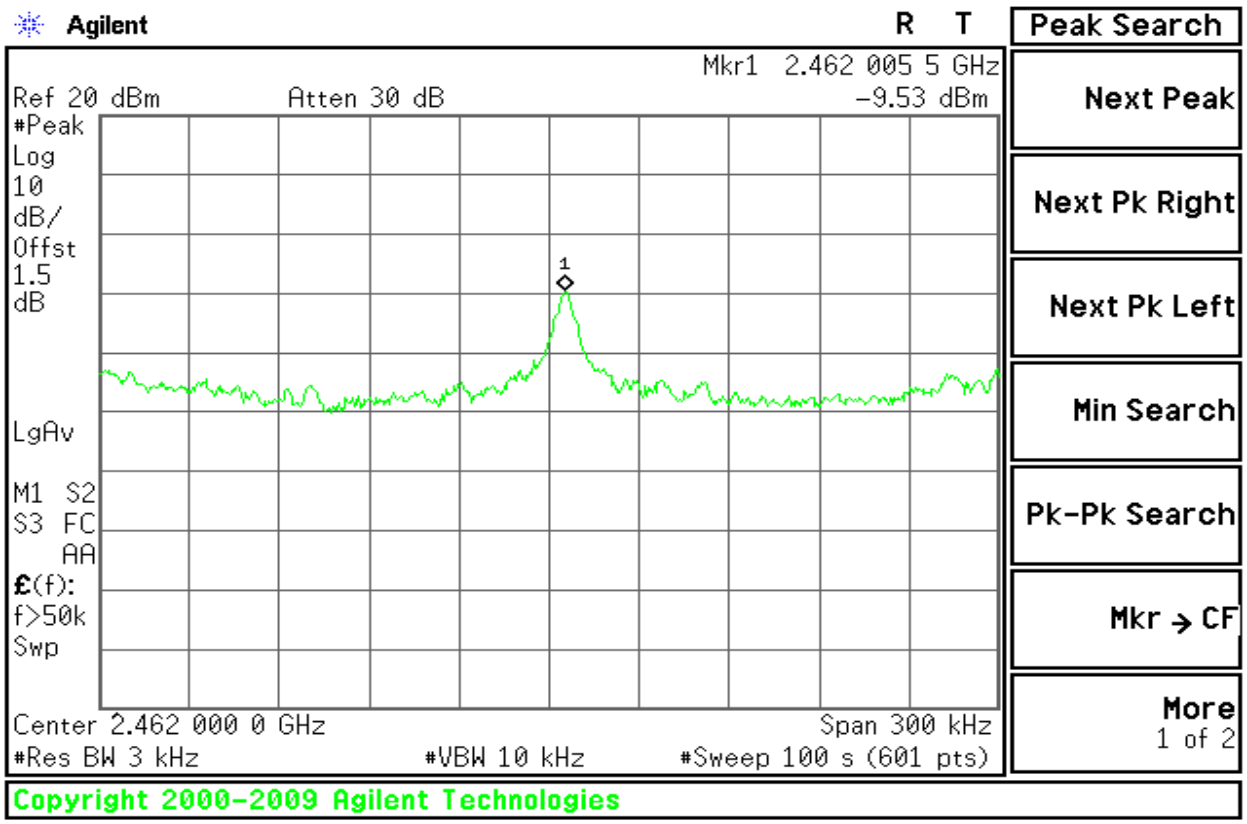
PPSD (CH Low)



PPSD (CH Mid)

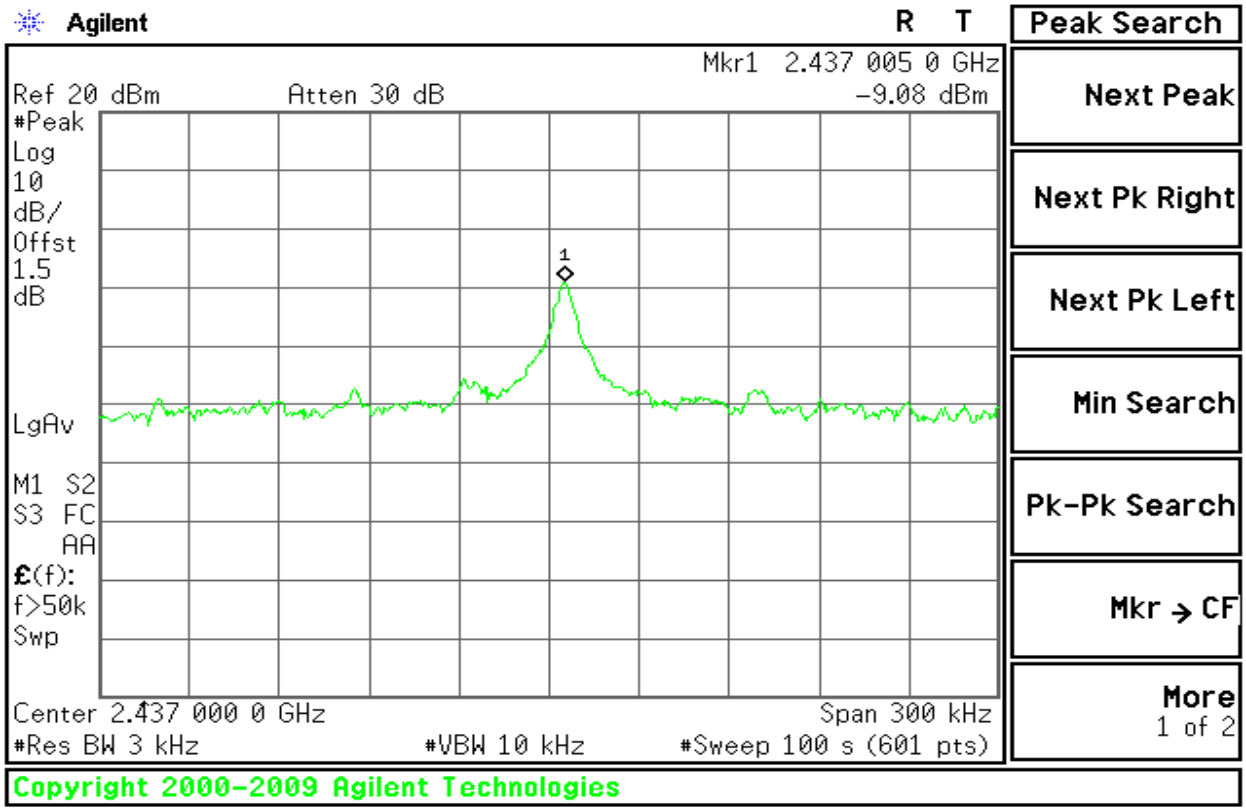


PPSD (CH High)



IEEE 802.11 Super g mode

PPSD (CH 6)



SPURIOUS EMISSIONS

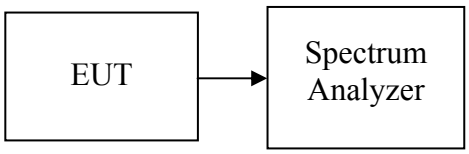
Conducted Measurement

LIMIT

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

Conducted power was measured based on the use of RMS averaging over a time interval,therefore the required attenuntion is 30 dB.

Test Configuration



TEST PROCEDURE

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 100 kHz.

Measurements are made over the 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

TEST RESULTS

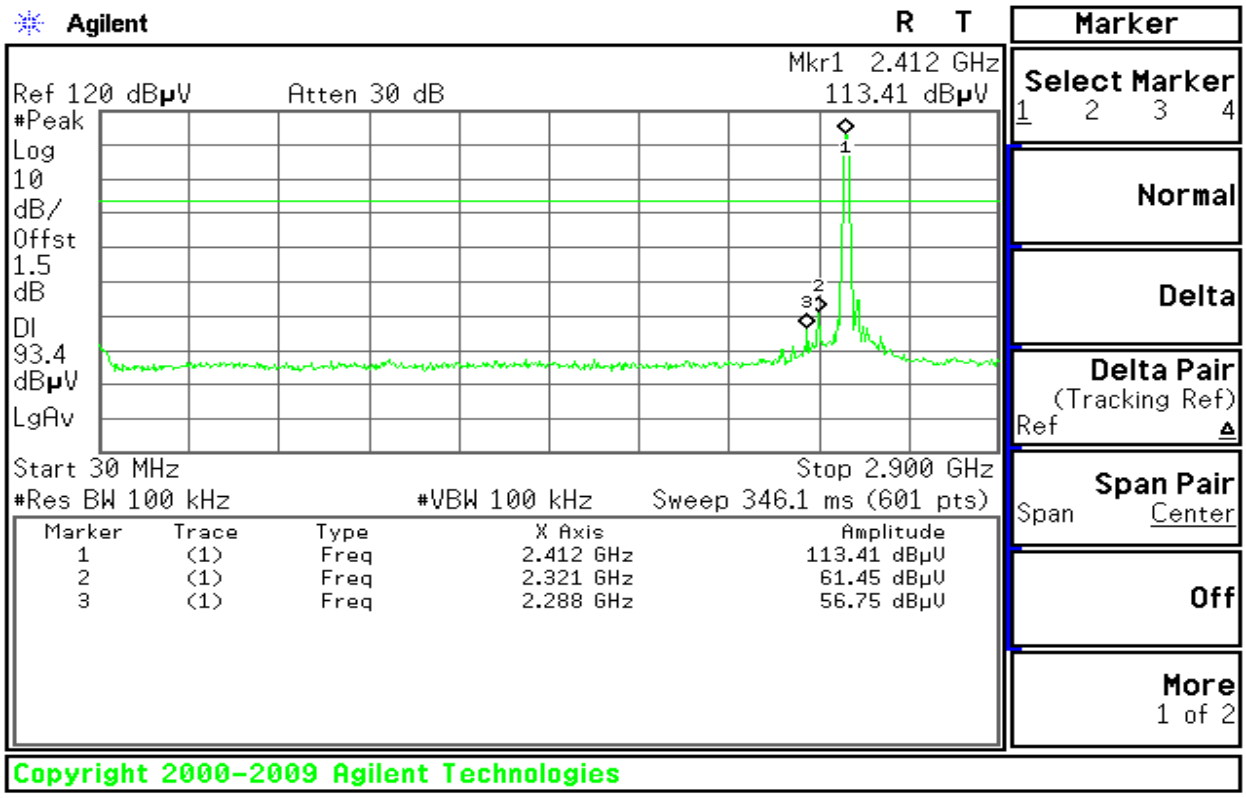
No non-compliance noted

Test Plot

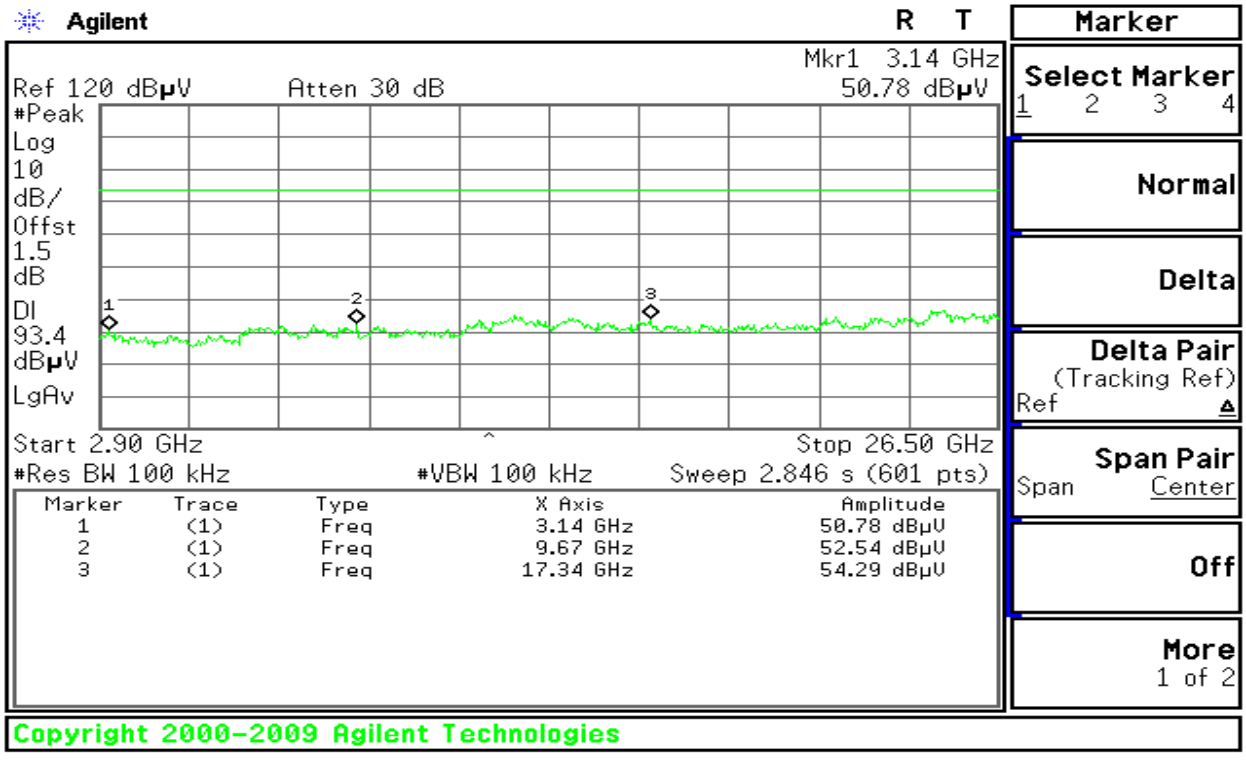
IEEE 802.11b mode

CH Low

30MHz ~ 2.9GHz

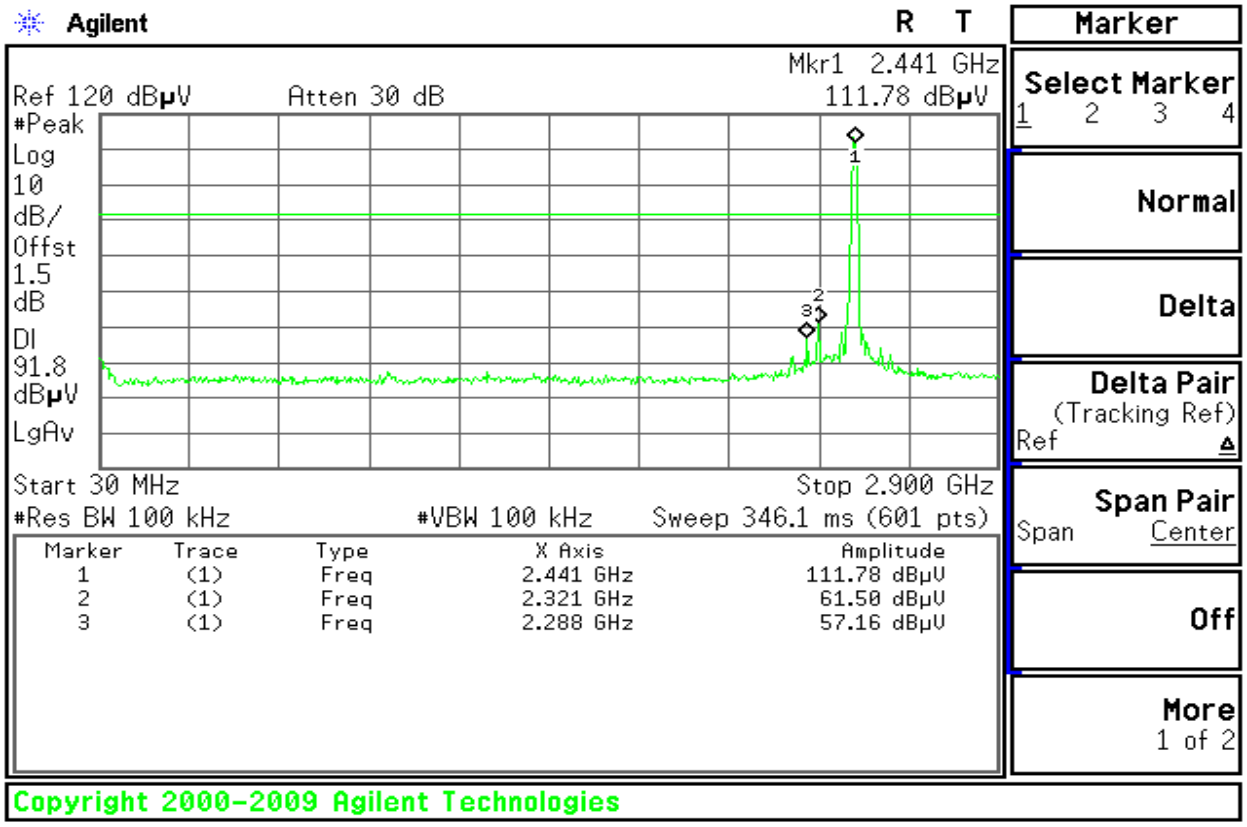


2.9GHz ~ 26.5GHz

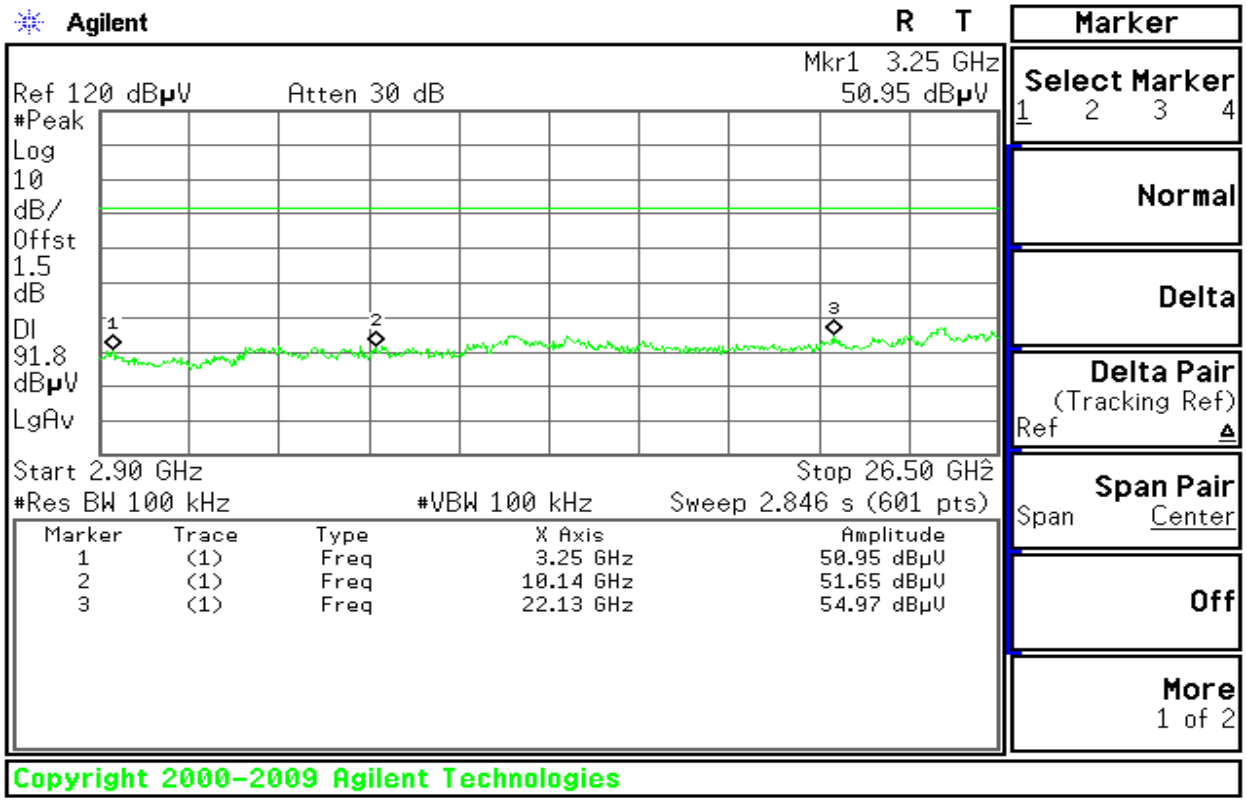


CH Mid

30MHz ~ 2.9GHz

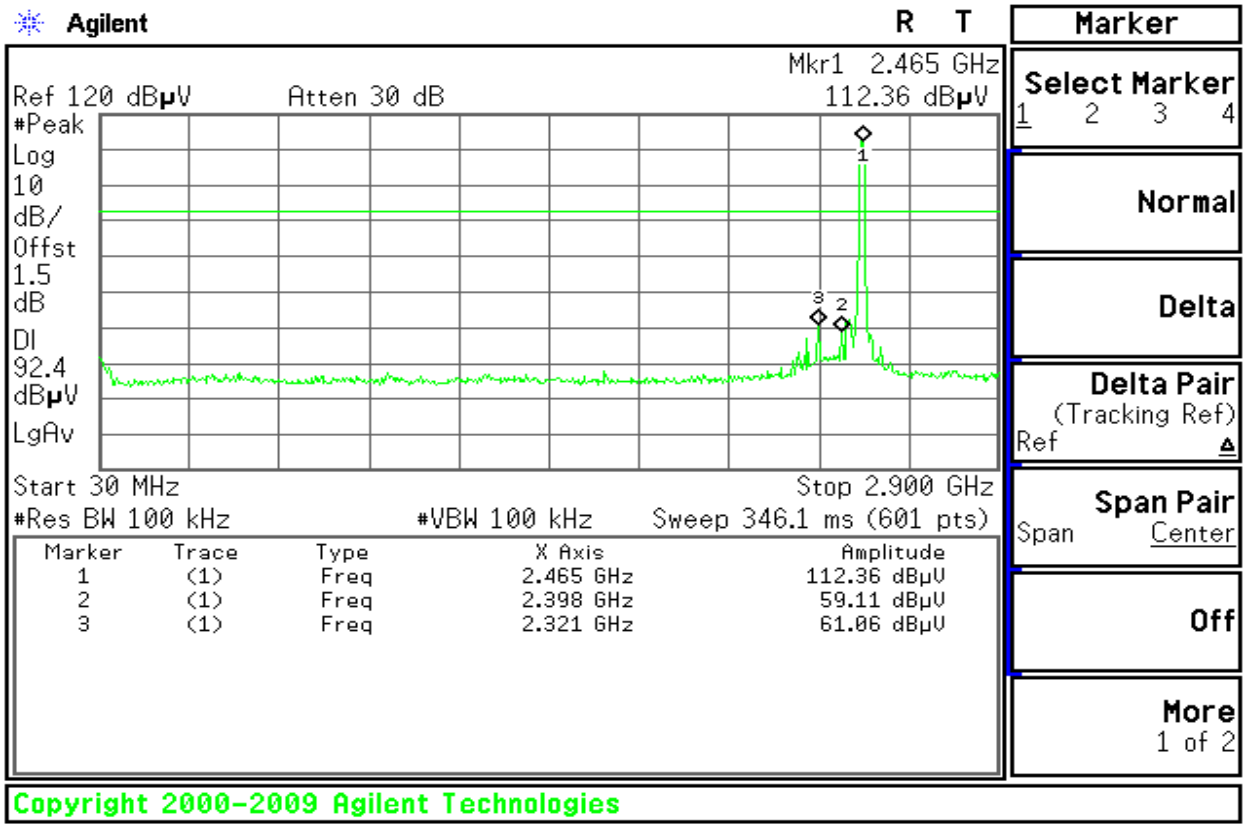


2.9GHz ~ 26.5GHz

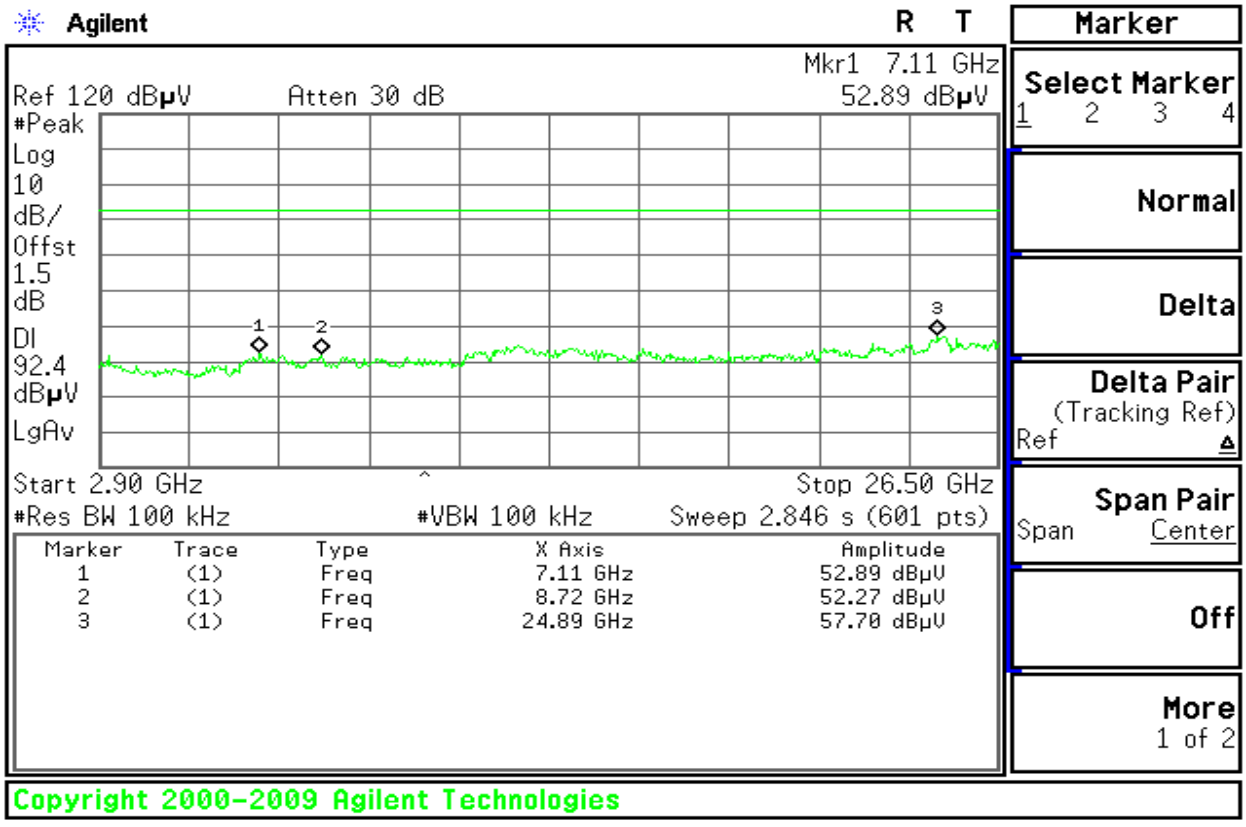


CH High

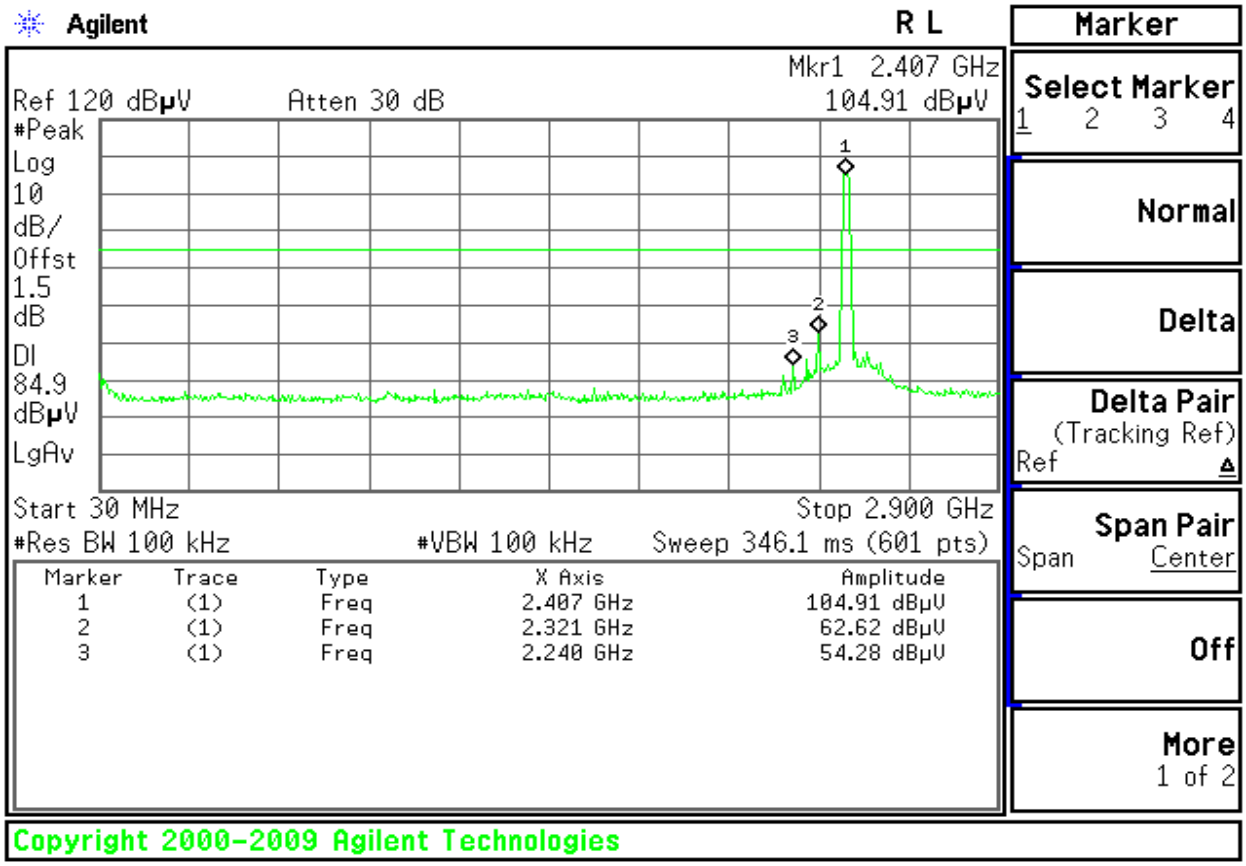
30MHz ~ 2.9GHz



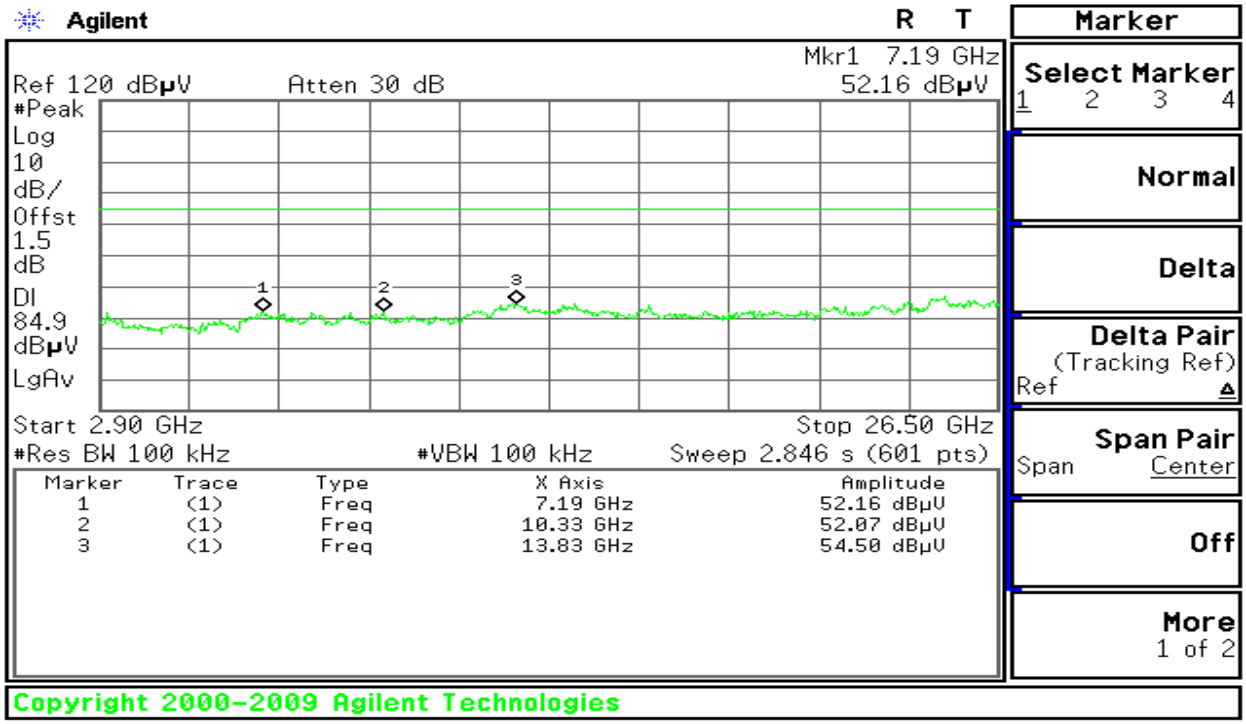
2.9GHz ~ 26.5GHz



Test Plot (IEEE 802.11g mode)
CH Low
30MHz ~ 2.9GHz

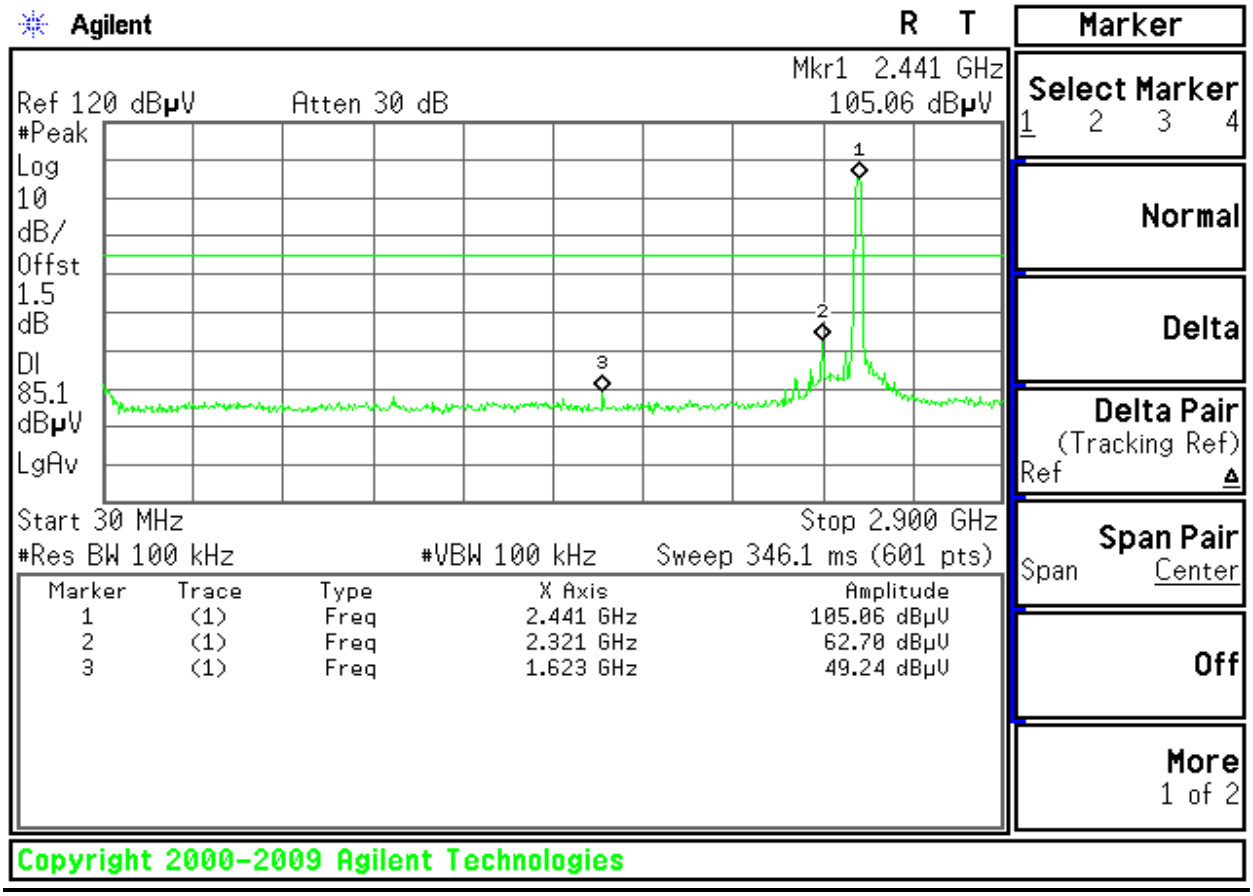


2.9GHz ~ 26.5GHz

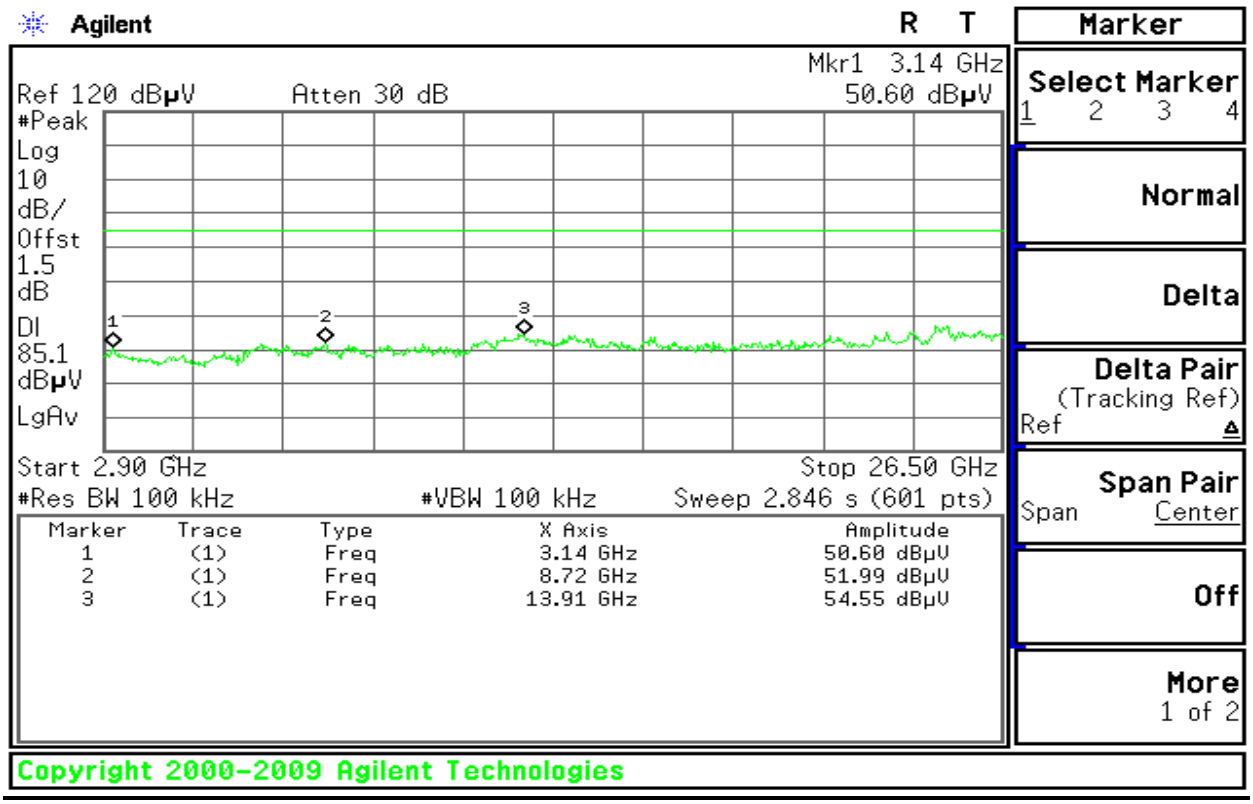


CH Mid

30MHz ~ 2.9GHz

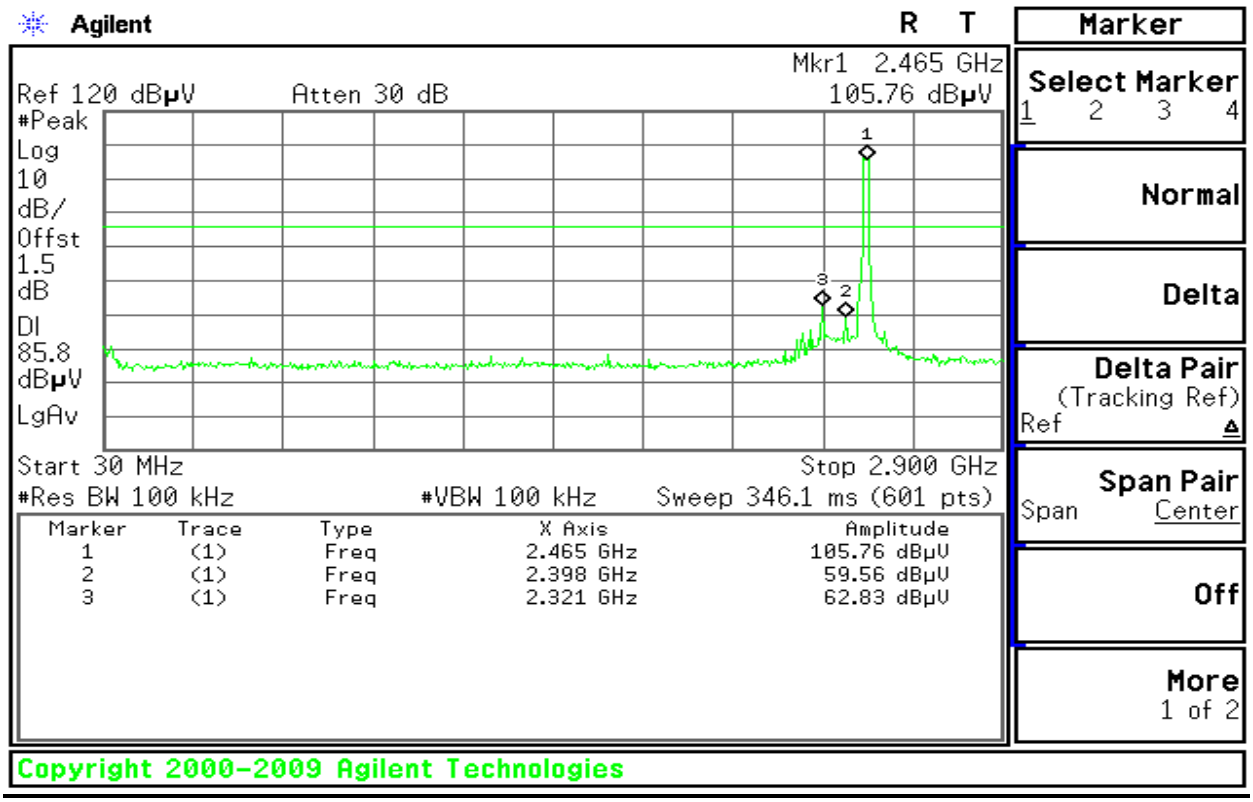


2.9GHz ~ 26.5GHz

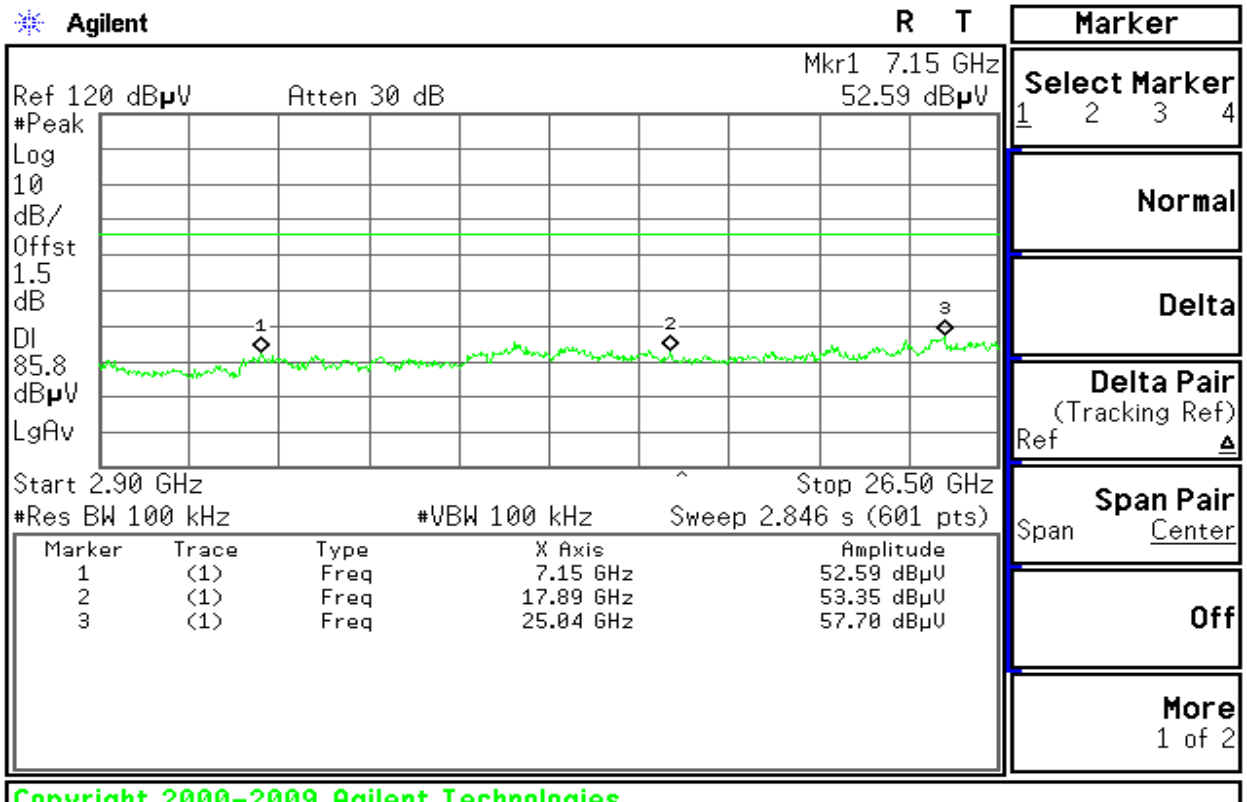


CH High

30MHz ~ 2.9GHz



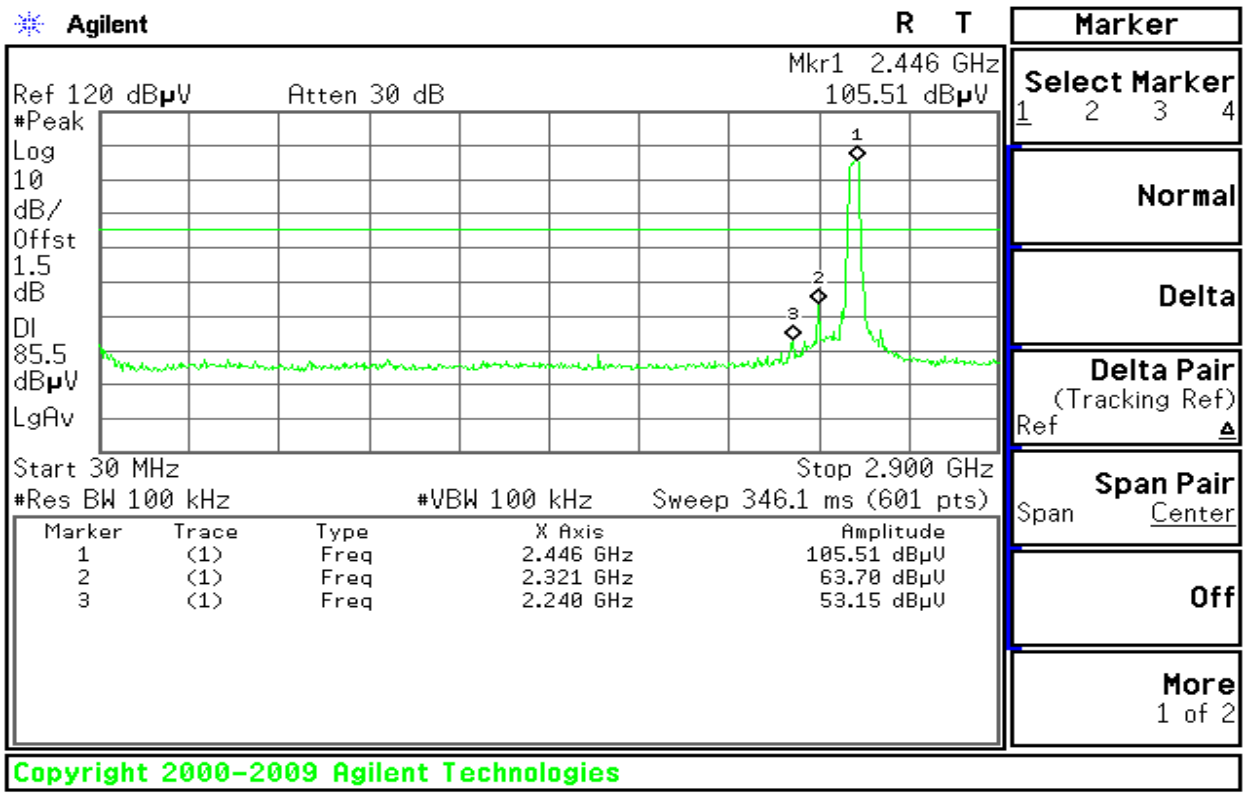
2.9GHz ~ 26.5GHz



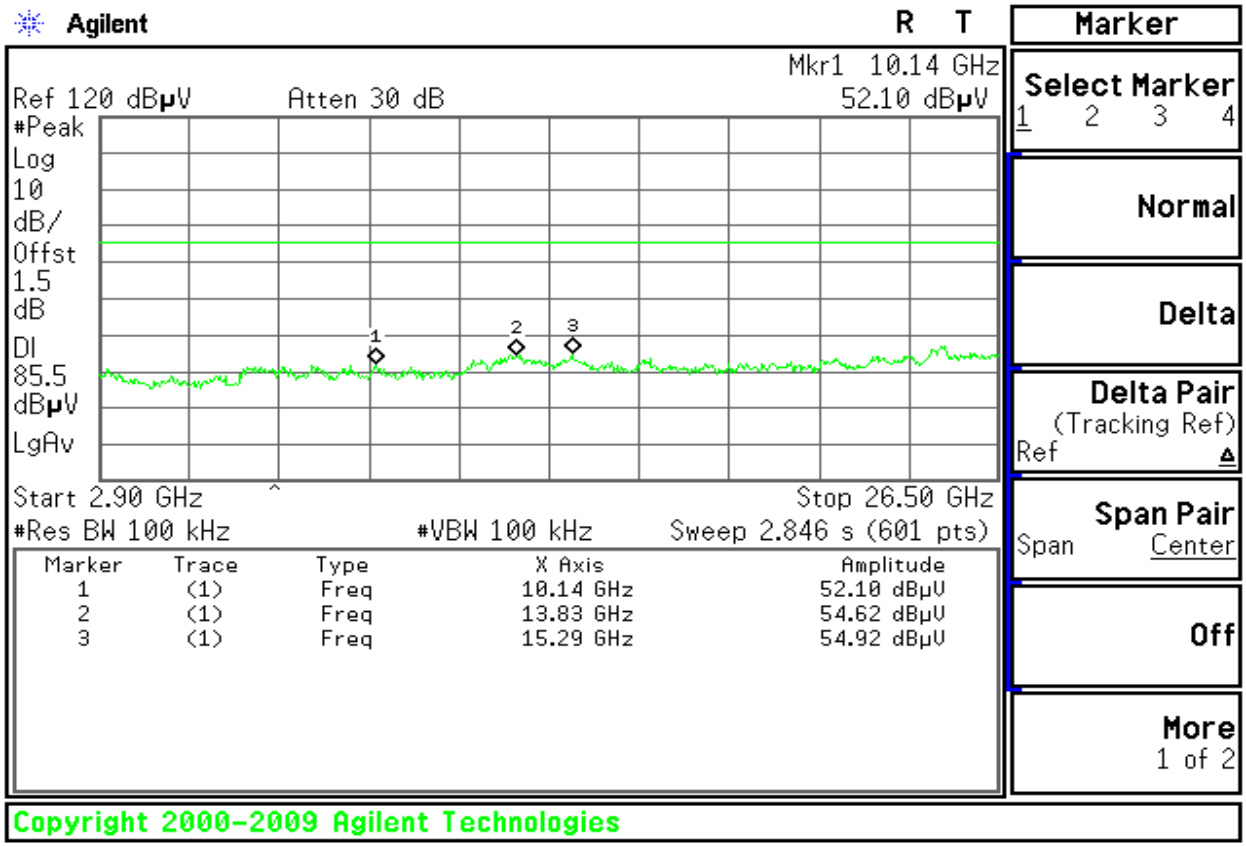
Test Plot (IEEE 802.11 Super g mode)

CH 6

30MHz ~ 2.9GHz



2.9GHz ~ 26.5GHz



RADIATED EMISSIONS

LIMIT

1. According to §15.209(a), 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 (μV/m)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

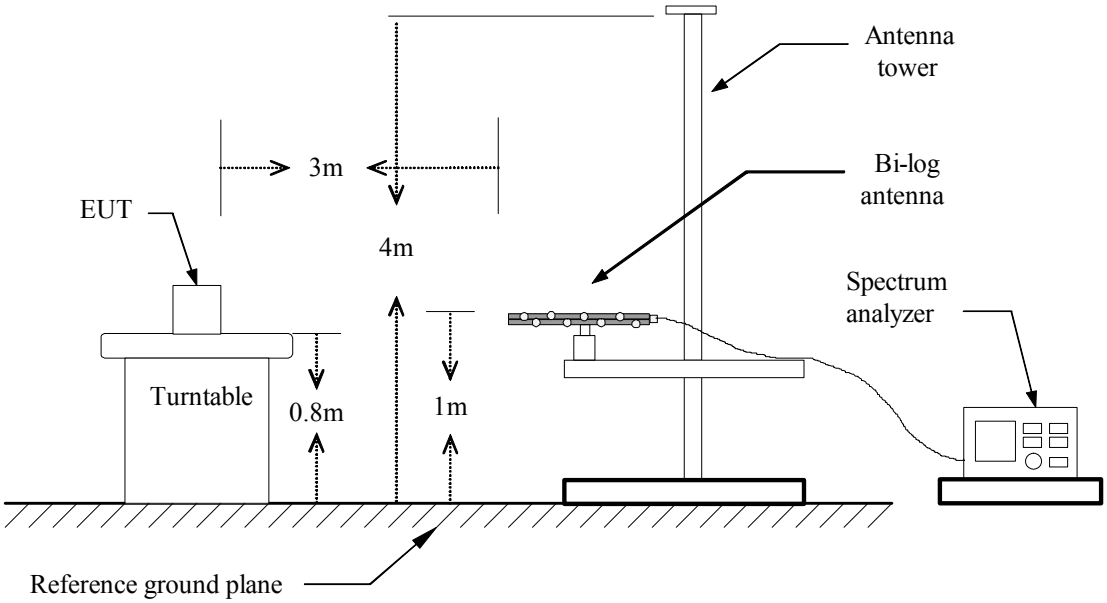
Remark: *Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of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

2. In the emission table above, the tighter limit applies at the band edges.

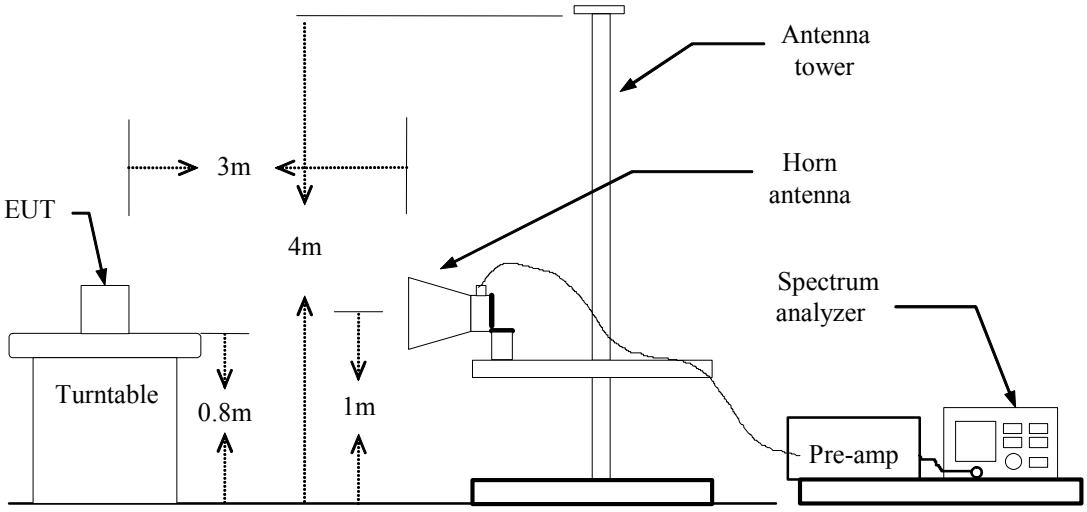
Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

Below 1 GHz



Above 1 GHz



TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

   Below 1GHz:

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

   Above 1GHz:

   (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

   (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
7. Repeat above procedures until the measurements for all frequencies are complete.

TEST RESULTS

Test Data

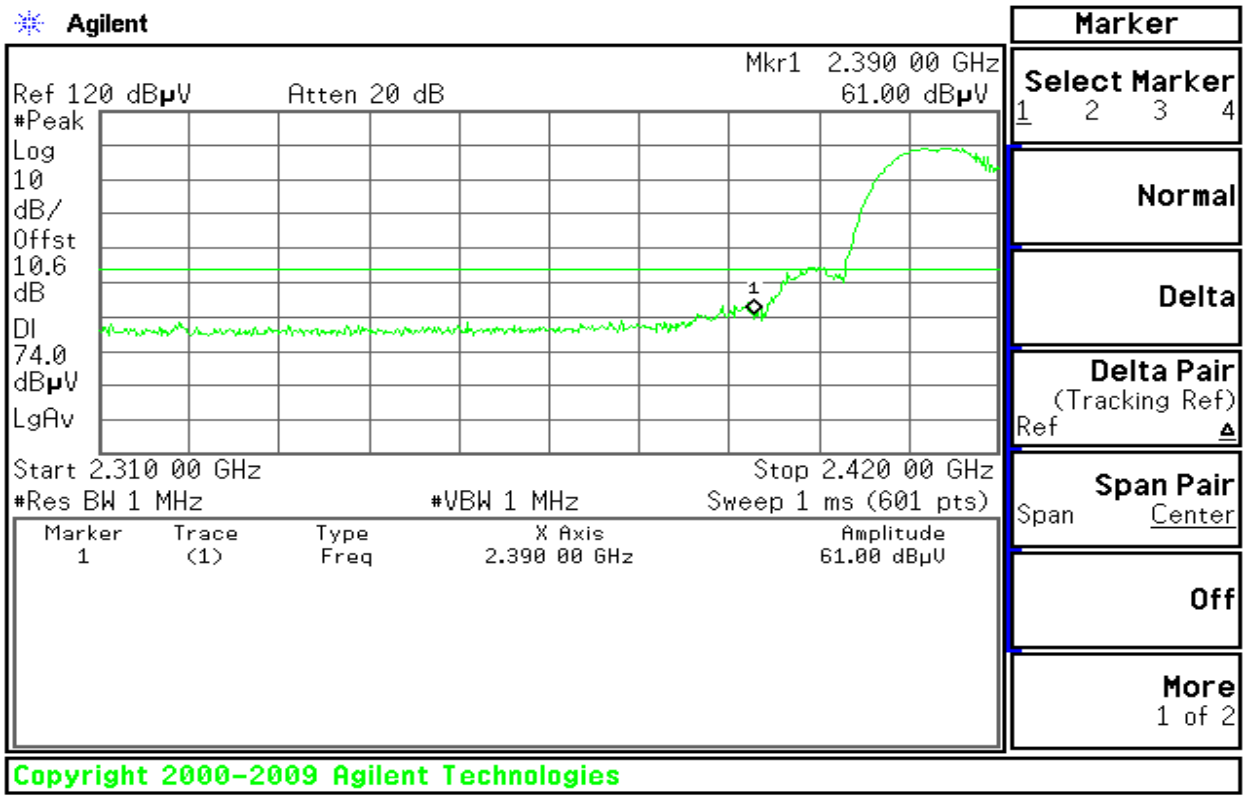
Test Plot (IEEE 802.11b mode)

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2390.00	V	50.40	38.88	10.60	61.00	49.48	74	54	-13	-4.52
2386.27	V		42.91	10.60		53.51		54		-0.49
2483.50	V	47.60	37.23	10.60	58.2	47.83	74	54	-15.8	-6.17
2488.83	V		41.50	10.60		52.10		54		-1.90
2390.00	H	43.69	35.58	10.60	54.29	46.18	74	54	-19.71	-7.82
2483.50	H	45.60	34.93	10.60	56.2	45.53	74	54	-17.80	-8.47

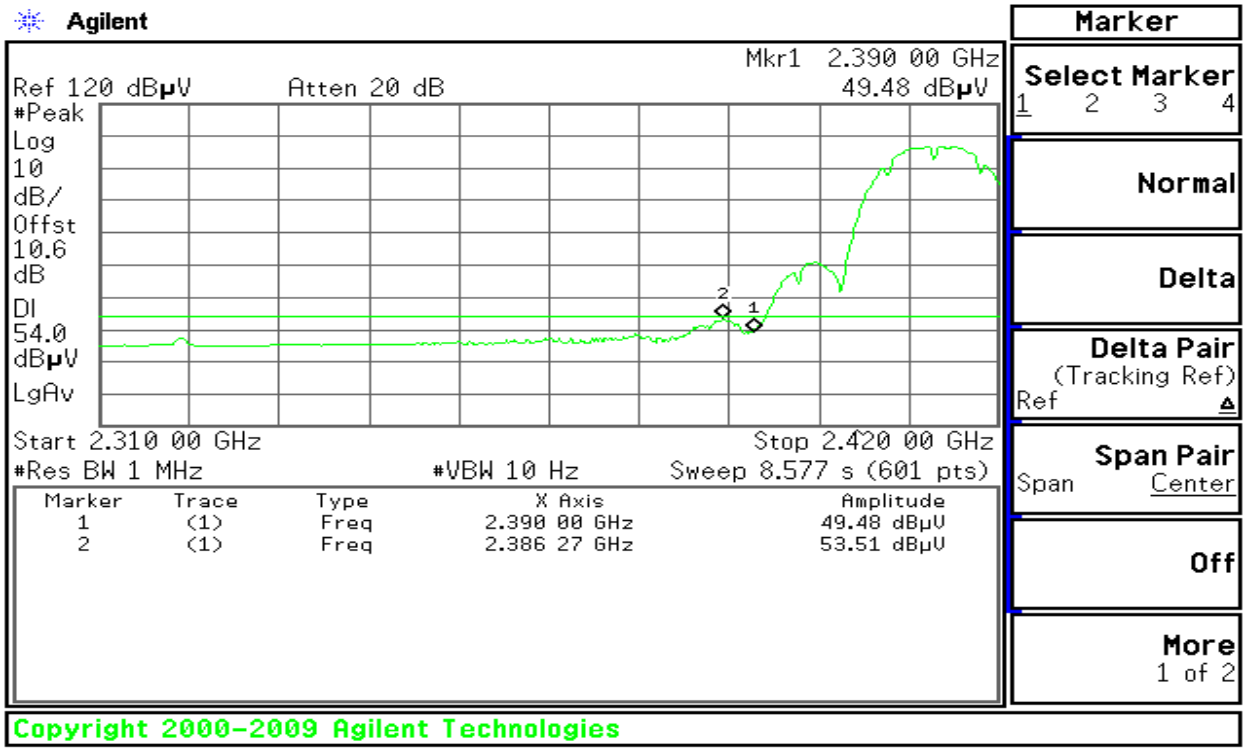
Test Plot (IEEE 802.11b mode)

Band Edges (CH Low)

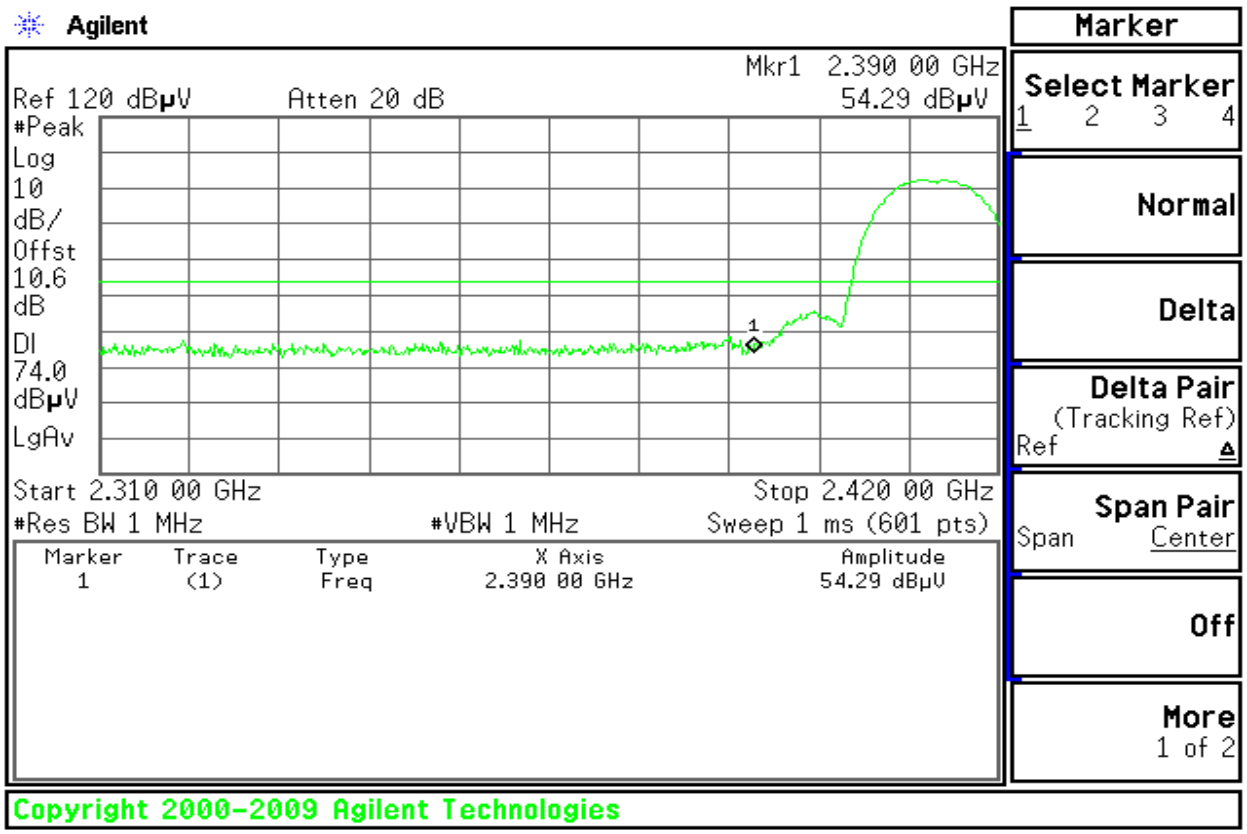
Detector mode: Peak **Polarity: Vertical**



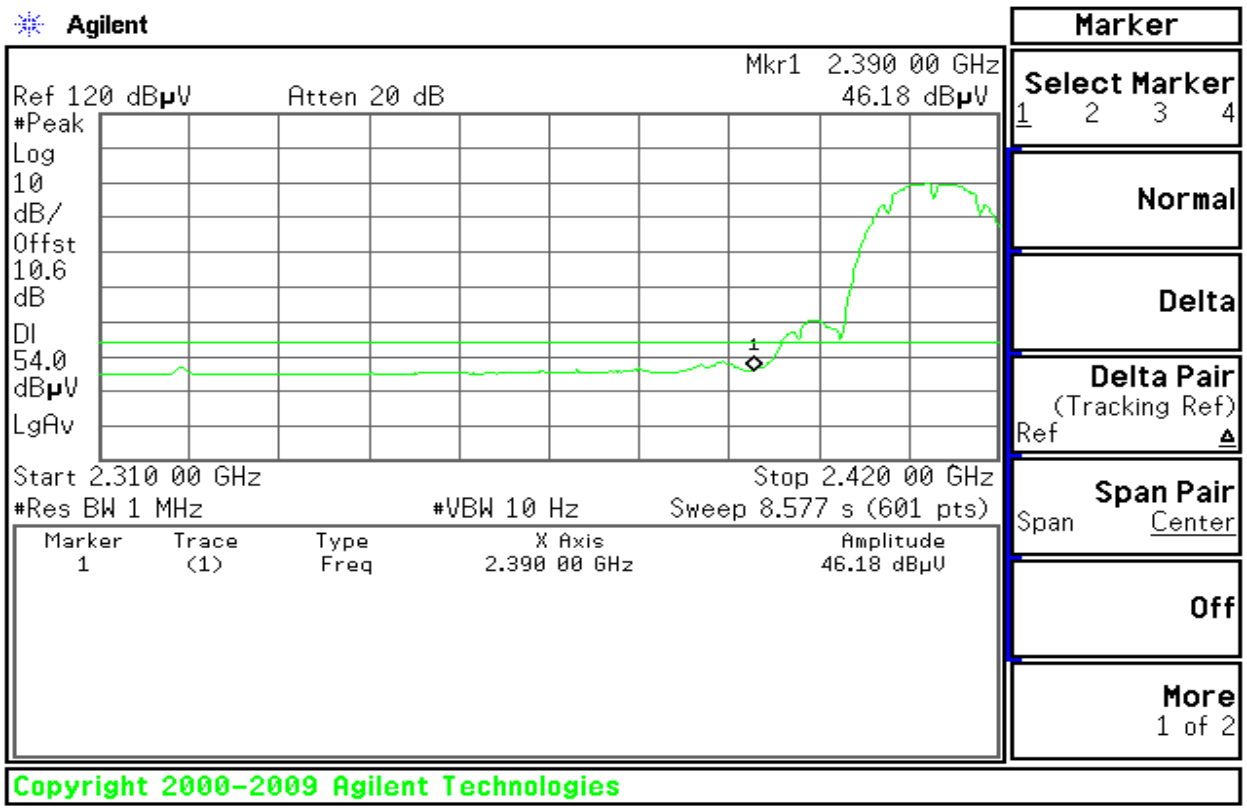
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

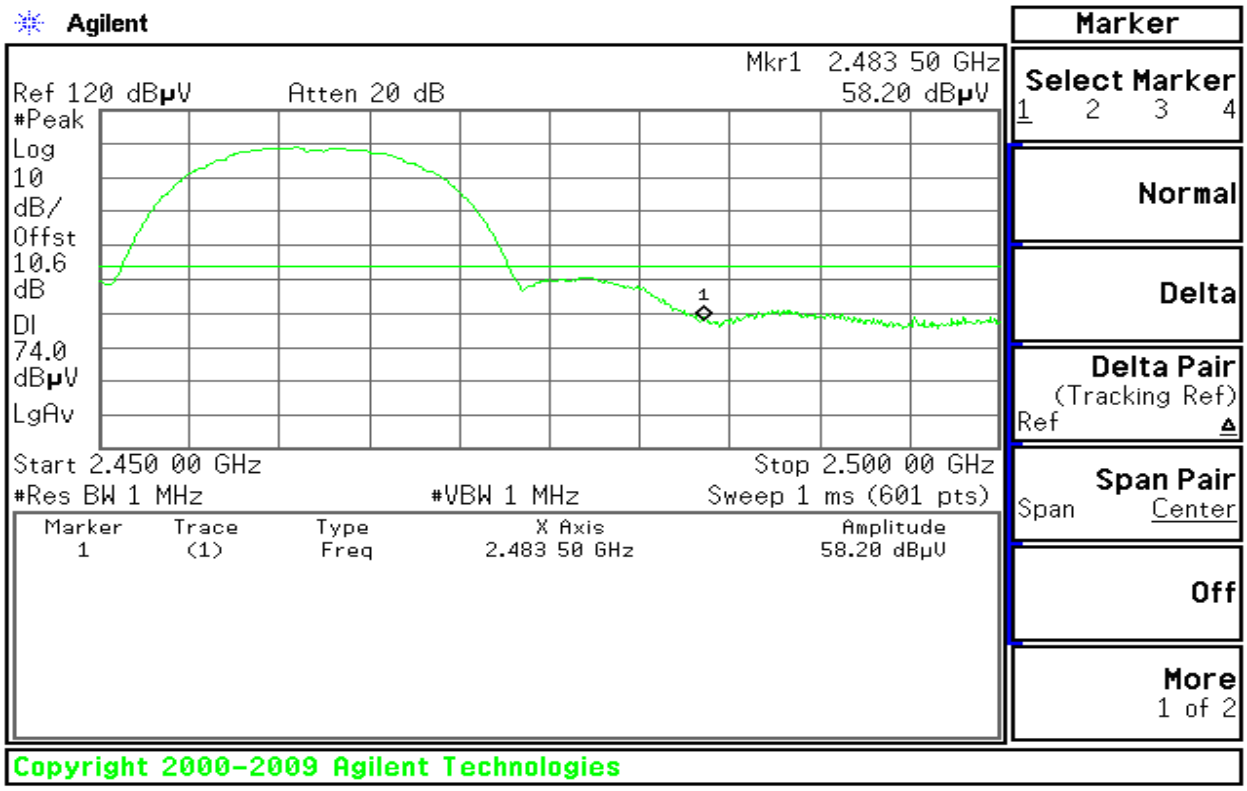


Detector mode: Average **Polarity: Horizontal**

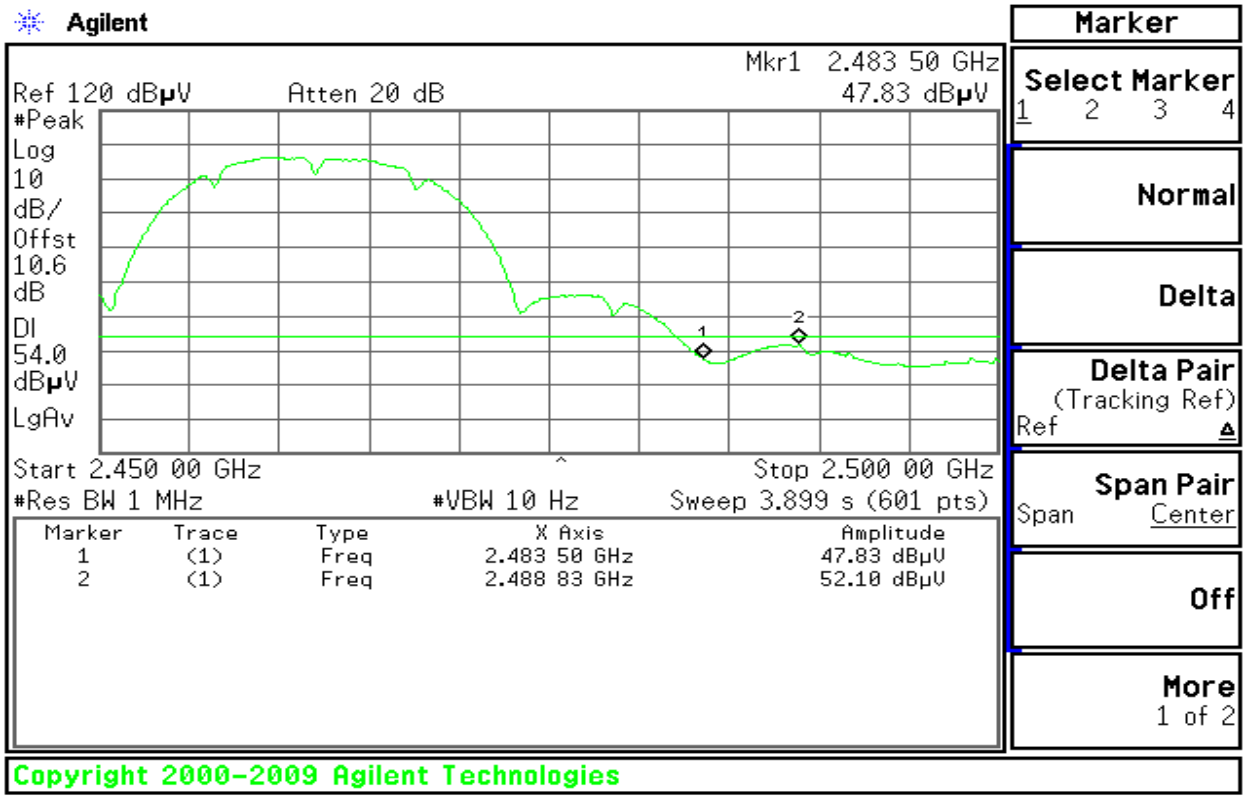


Band Edges (CH High)

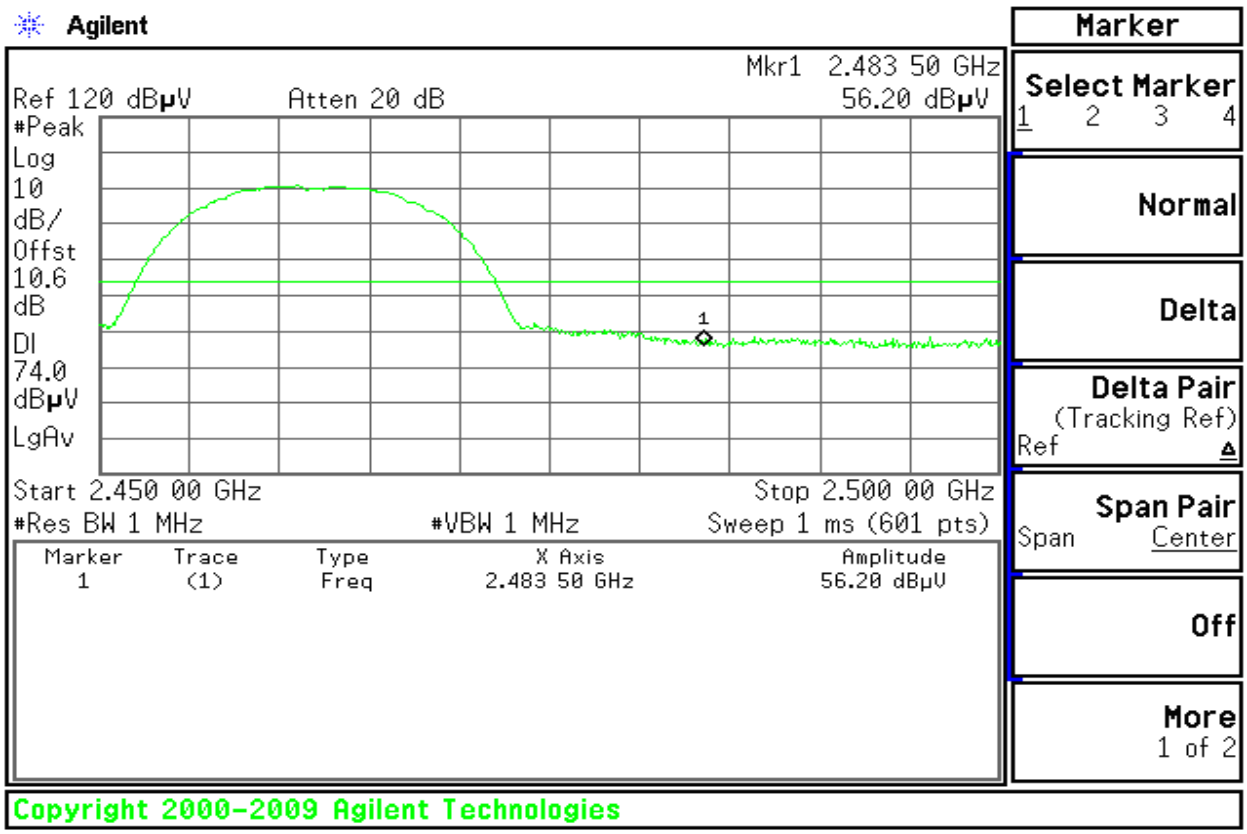
Detector mode: Peak **Polarity: Vertical**



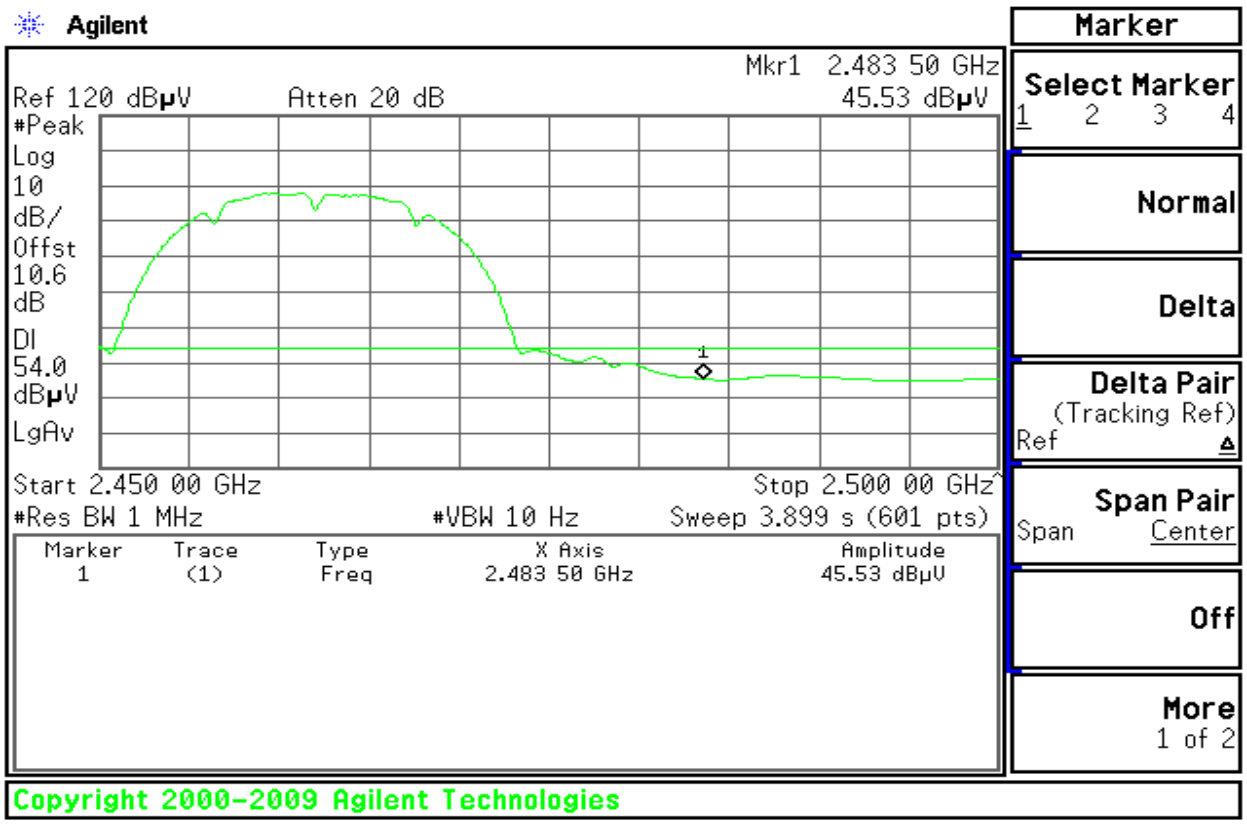
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak Polarity: Horizontal



Detector mode: Average Polarity: Horizontal



Test Data

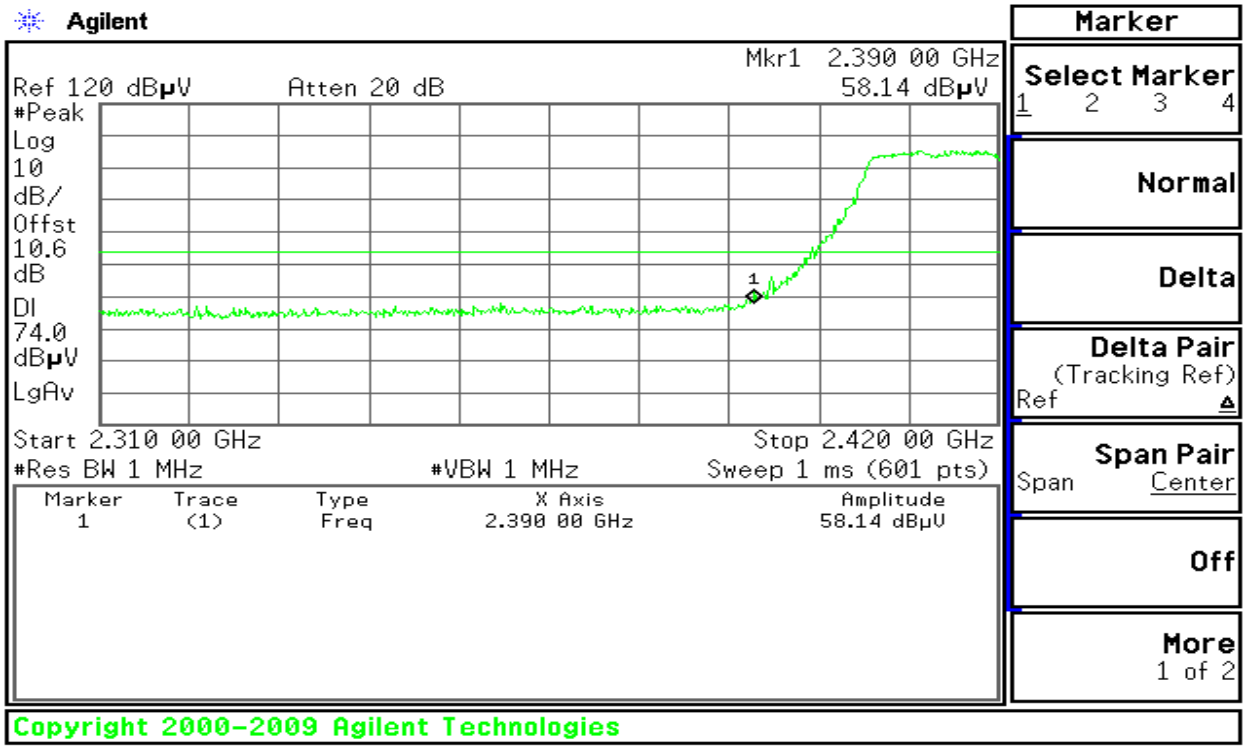
Test Plot (IEEE 802.11g mode)

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2390.00	V	47.54	37.14	10.60	58.14	47.74	74	54	-15.86	-6.26
2483.50	V	52.50	39.19	10.60	63.1	49.79	74	54	-10.9	-4.21
2390.00	H	46.49	35.47	10.60	57.09	46.07	74	54	-16.91	-7.93
2483.50	H	44.84	35.40	10.60	55.44	46.00	74	54	-18.56	-8.00

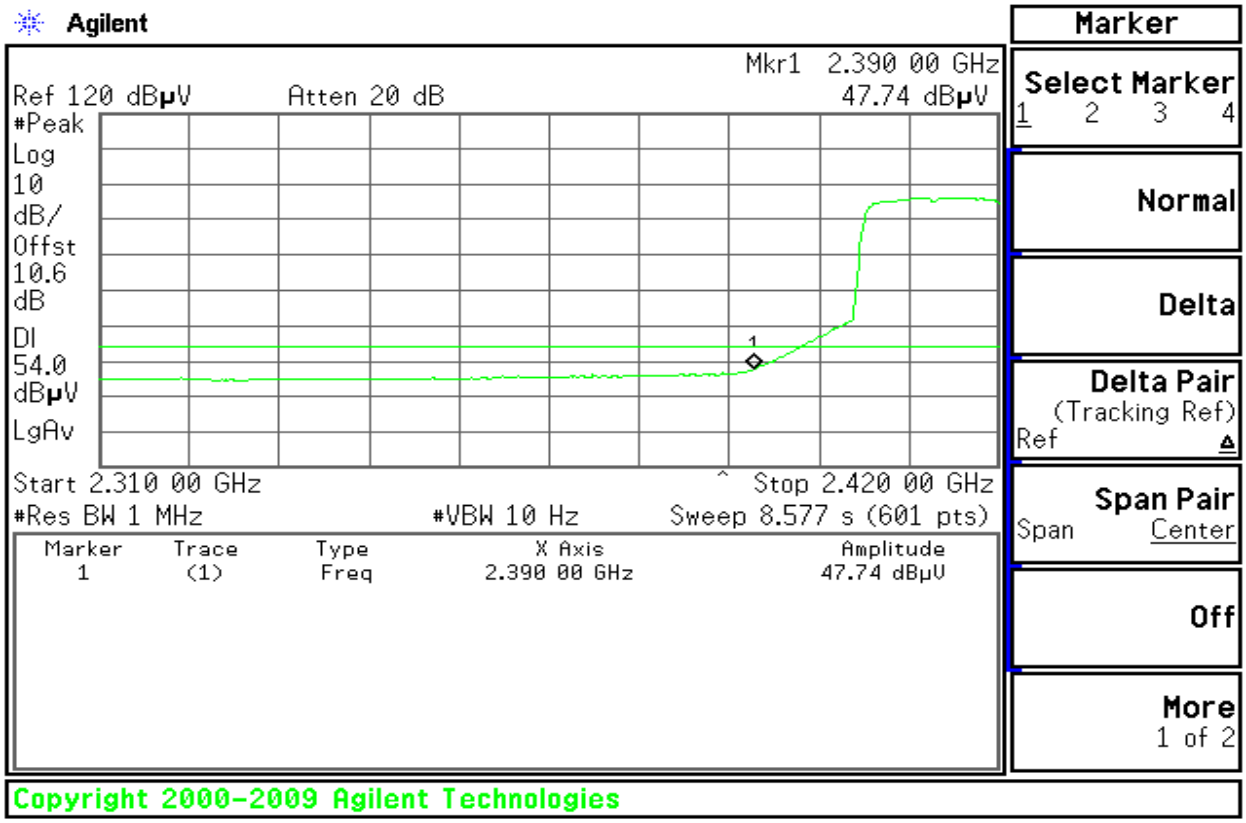
Test Plot (IEEE 802.11g mode)

Band Edges (CH Low)

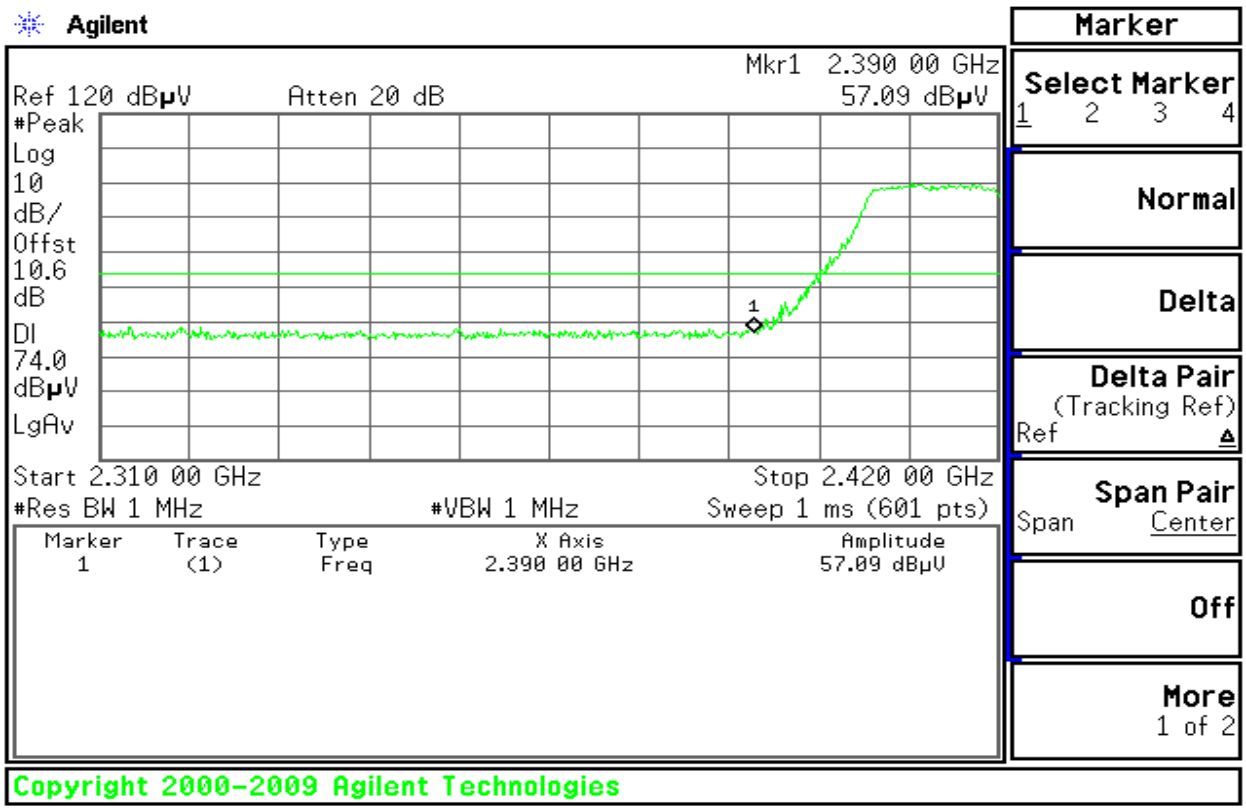
Detector mode: Peak **Polarity: Vertical**



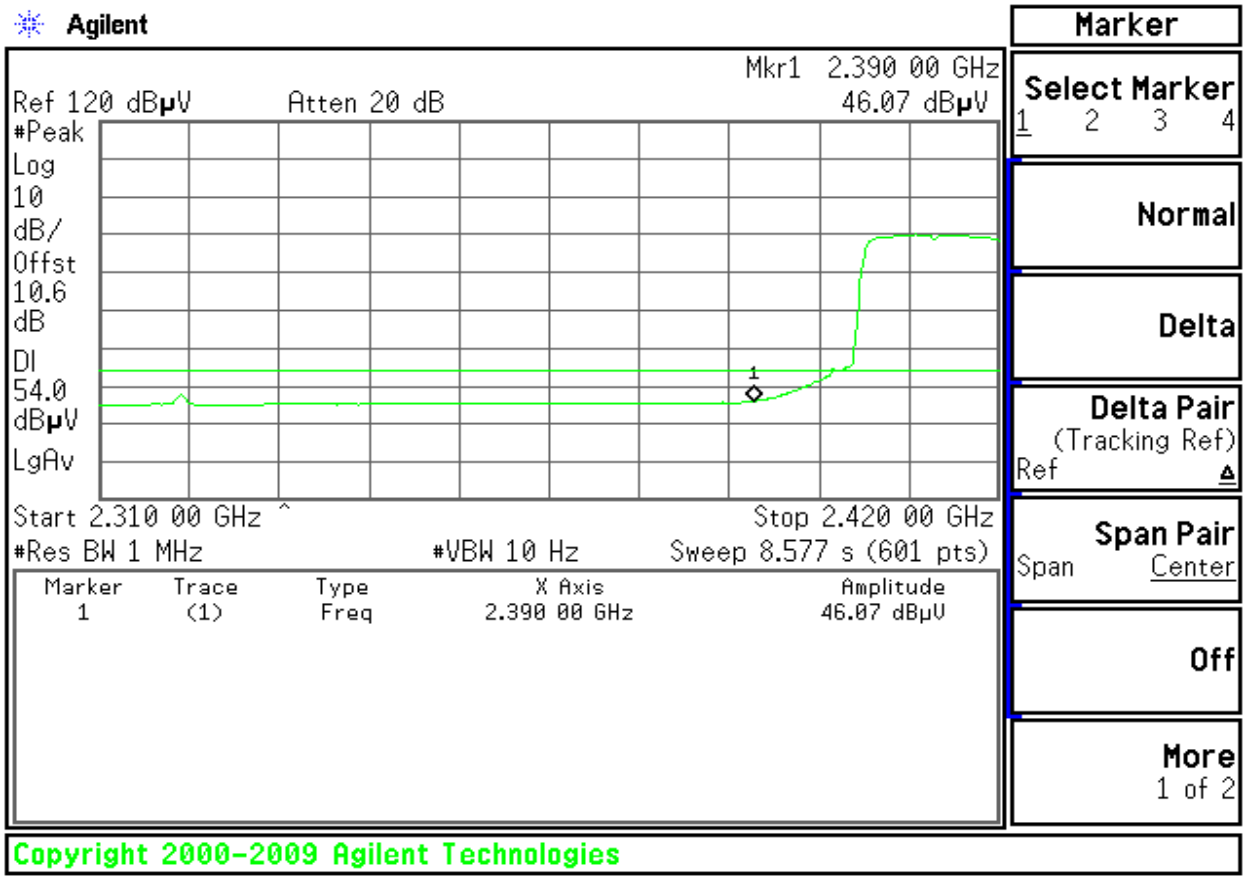
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak Polarity: Horizontal

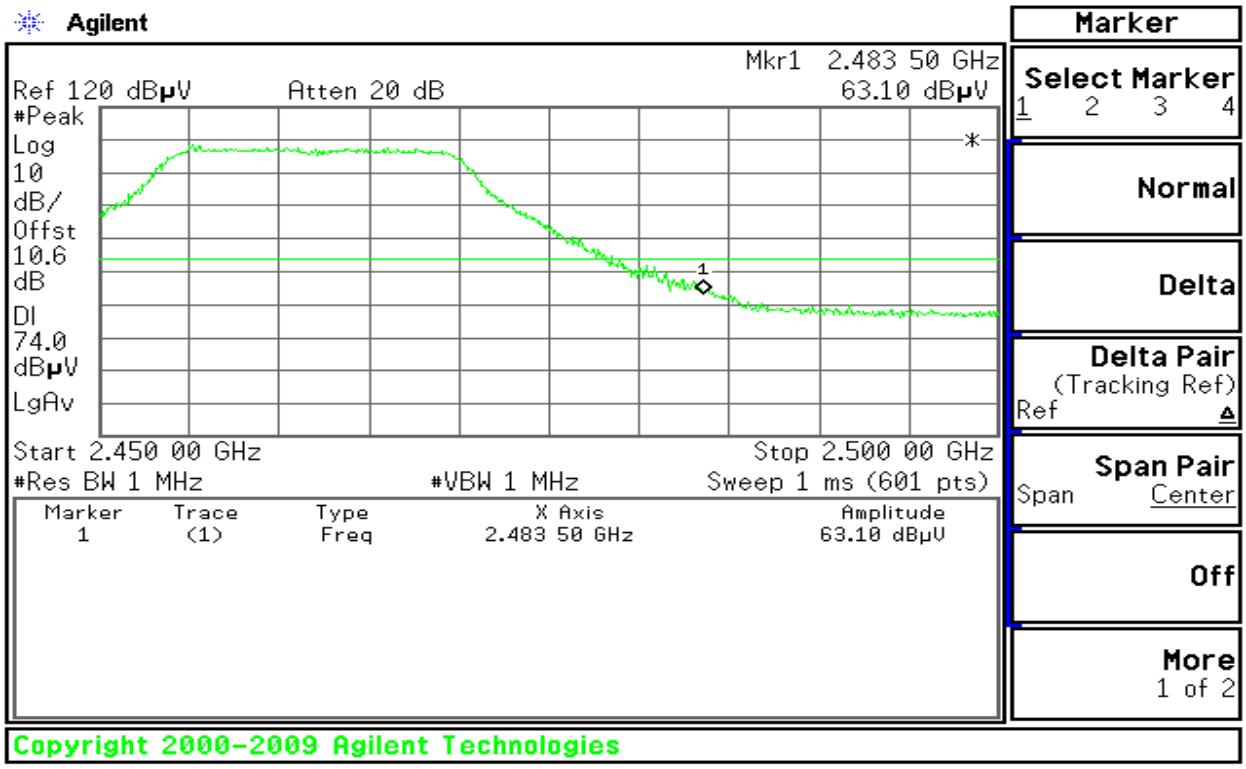


Detector mode: Average Polarity: Horizontal

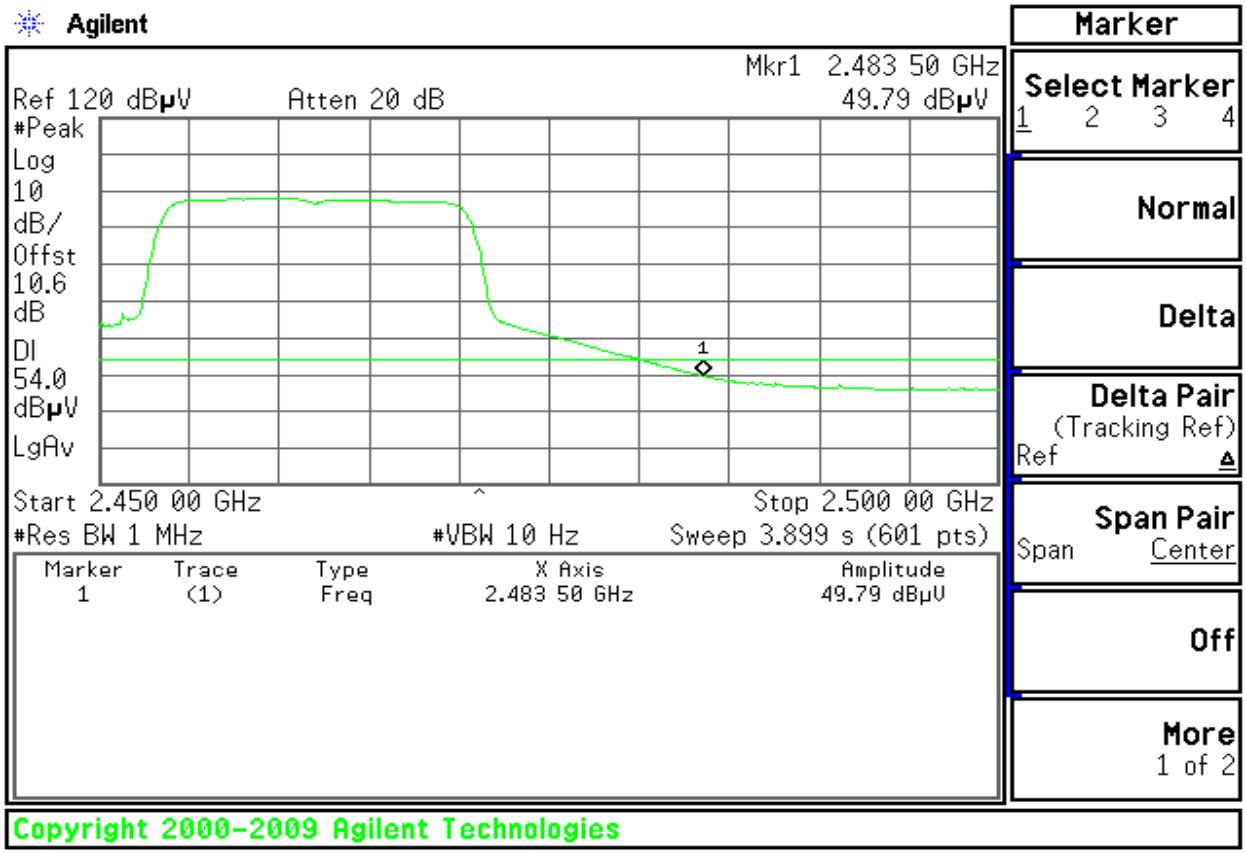


Band Edges (CH High)

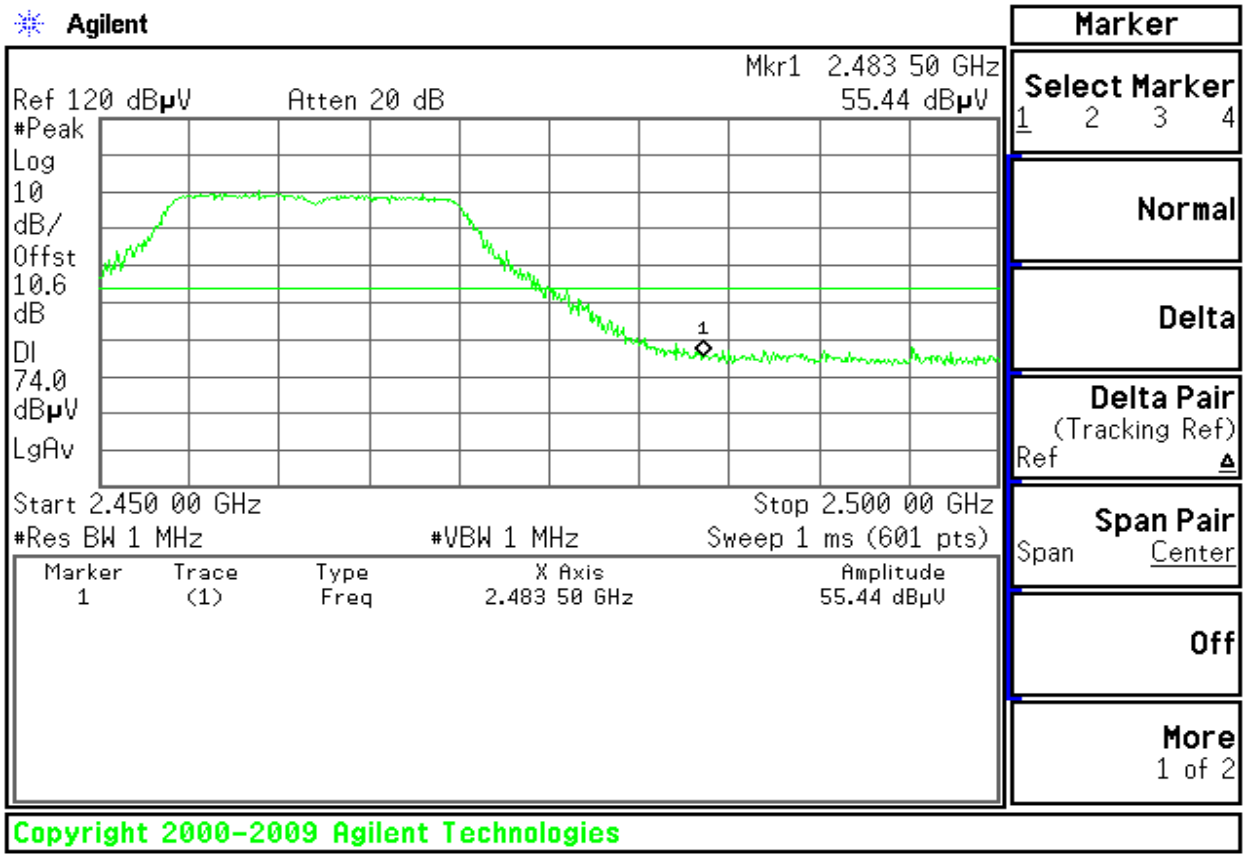
Detector mode: Peak **Polarity: Vertical**



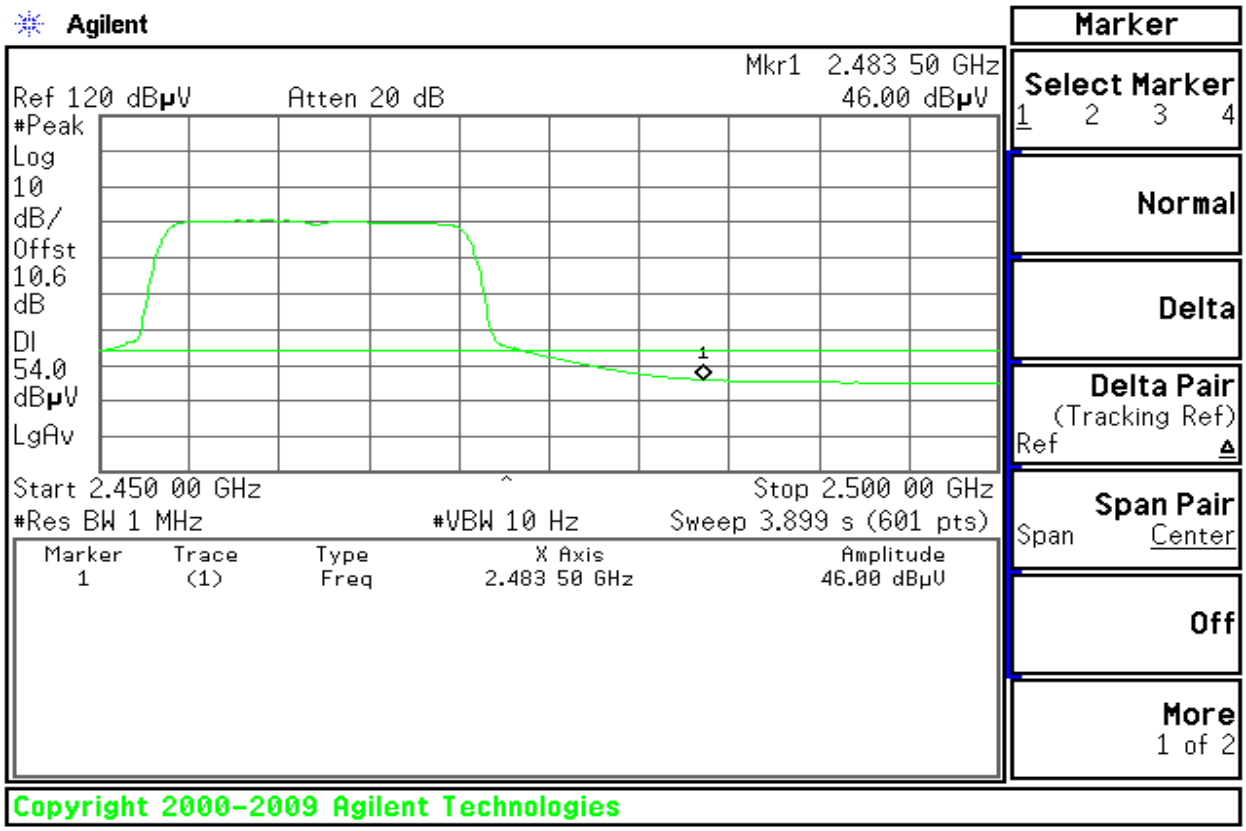
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



Test Data

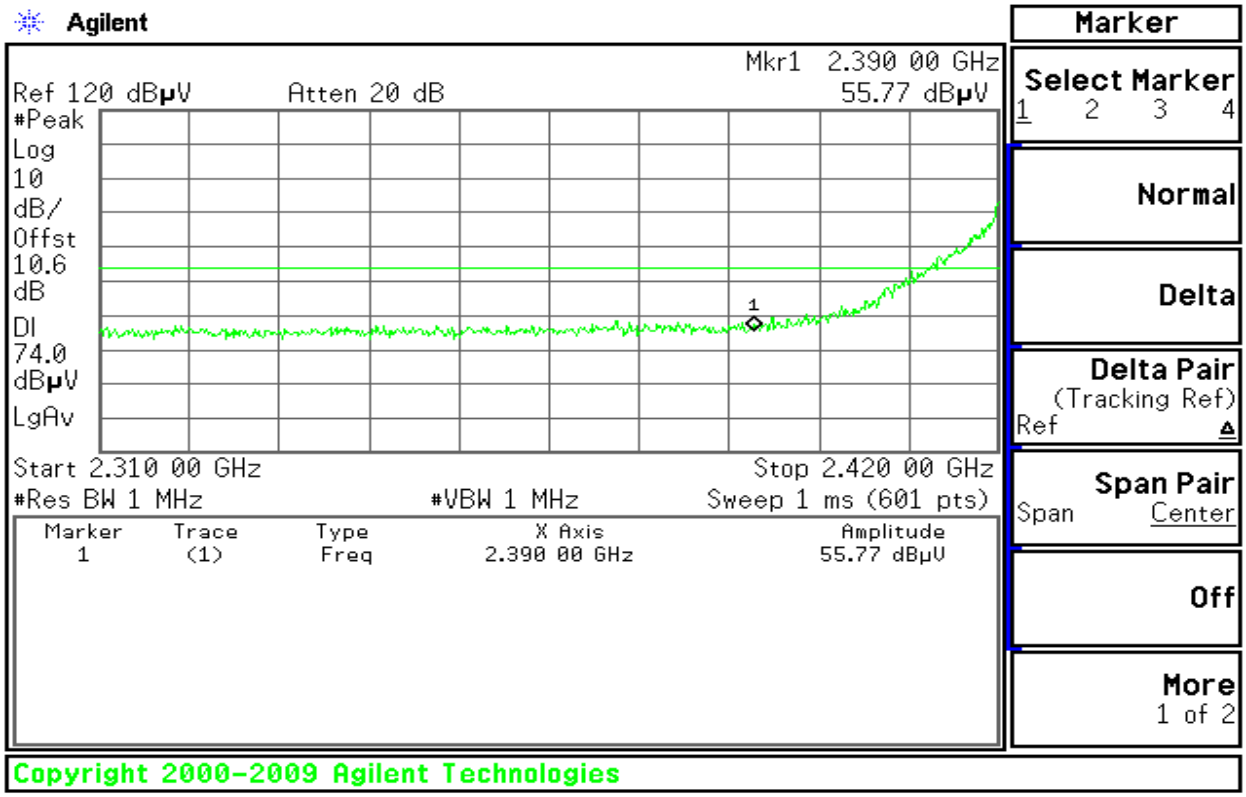
Test Plot (IEEE 802.11 Super g mode)

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2390.00	V	45.17	35.93	10.60	55.77	46.53	74	54	-18.23	-7.47
2483.50	V	45.10	35.39	10.60	55.7	45.99	74	54	-18.3	-8.01
2390.00	H	45.48	34.73	10.60	56.08	45.33	74	54	-17.92	-8.67
2483.50	H	44.49	34.50	10.60	55.09	45.10	74	54	-18.91	-8.90

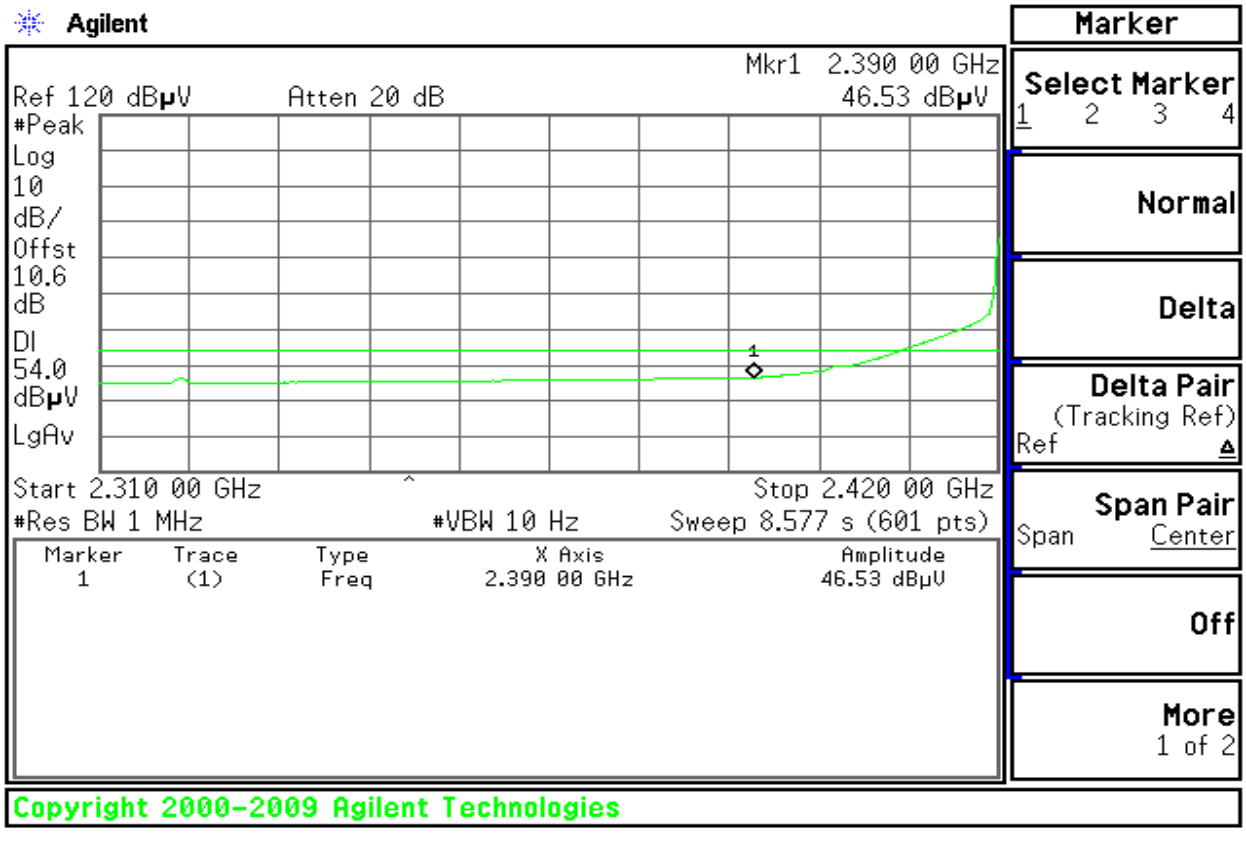
Test Plot (IEEE 802.11 Super g mode)

Band Edges (CH 6)

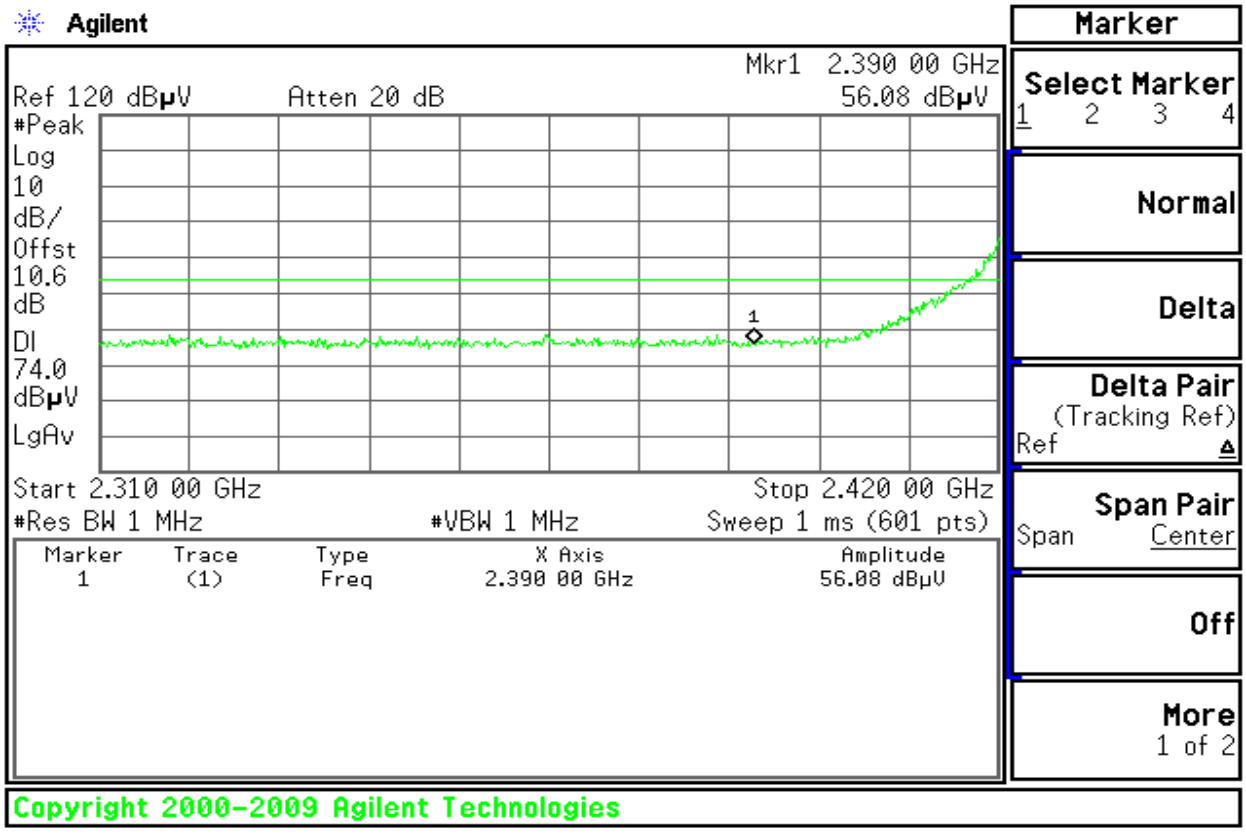
Detector mode: Peak Polarity: Vertical



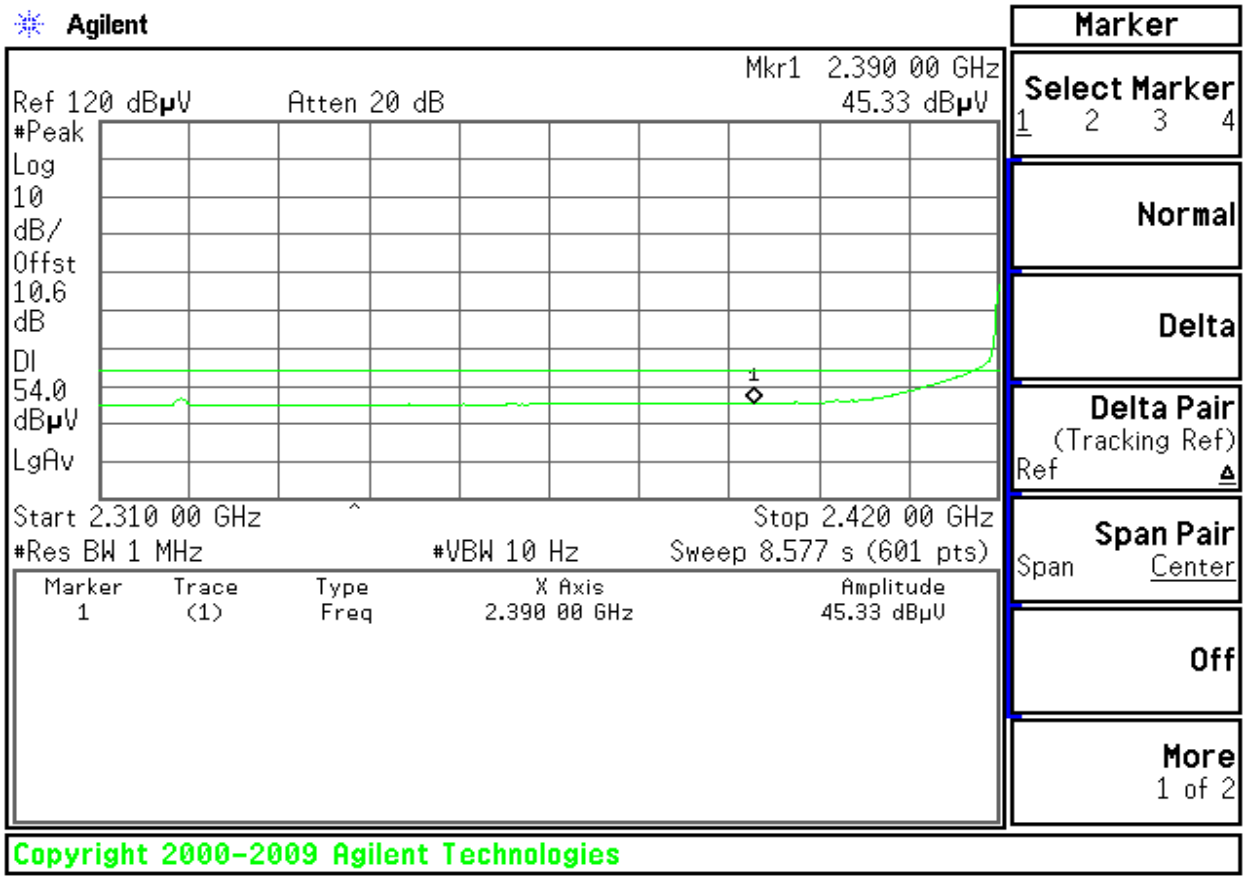
Detector mode: Average Polarity: Vertical



Detector mode: Peak Polarity: Horizontal

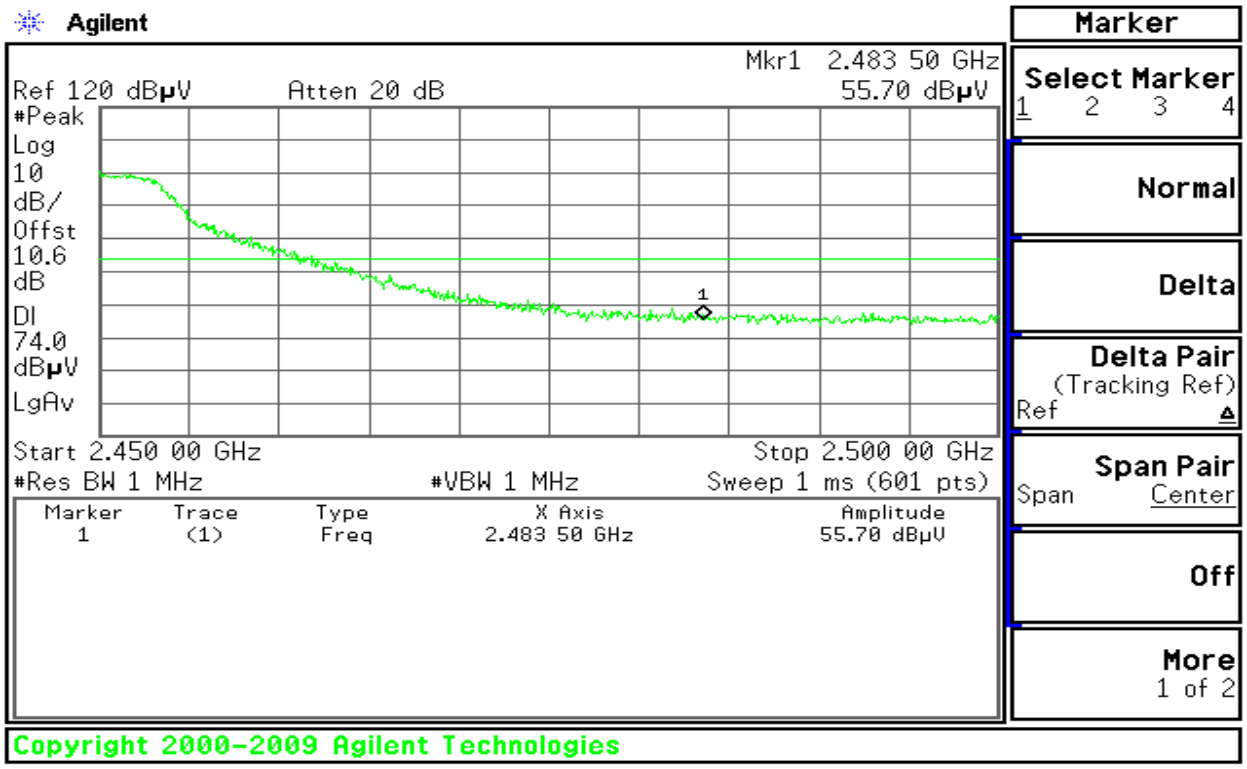


Detector mode: Average Polarity: Horizontal

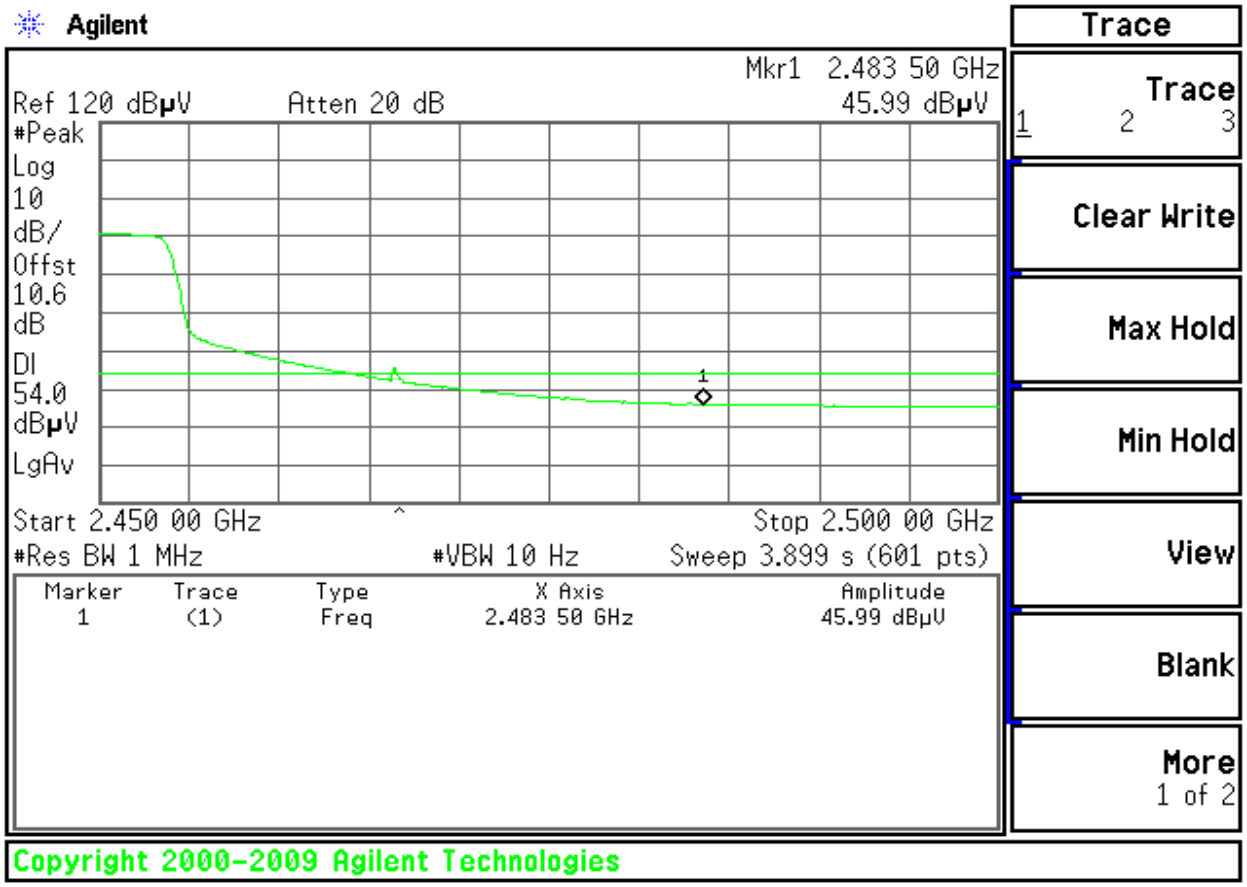


Band Edges (CH 6)

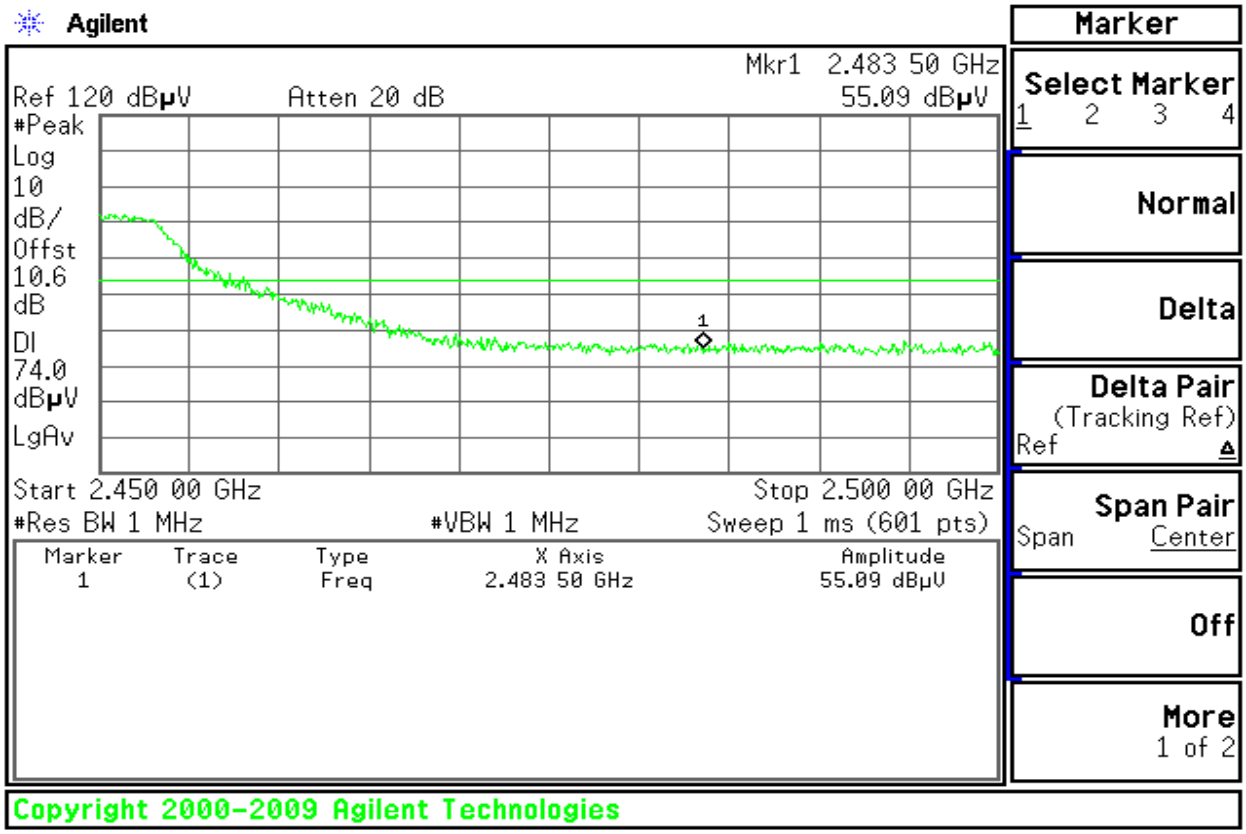
Detector mode: Peak **Polarity: Vertical**



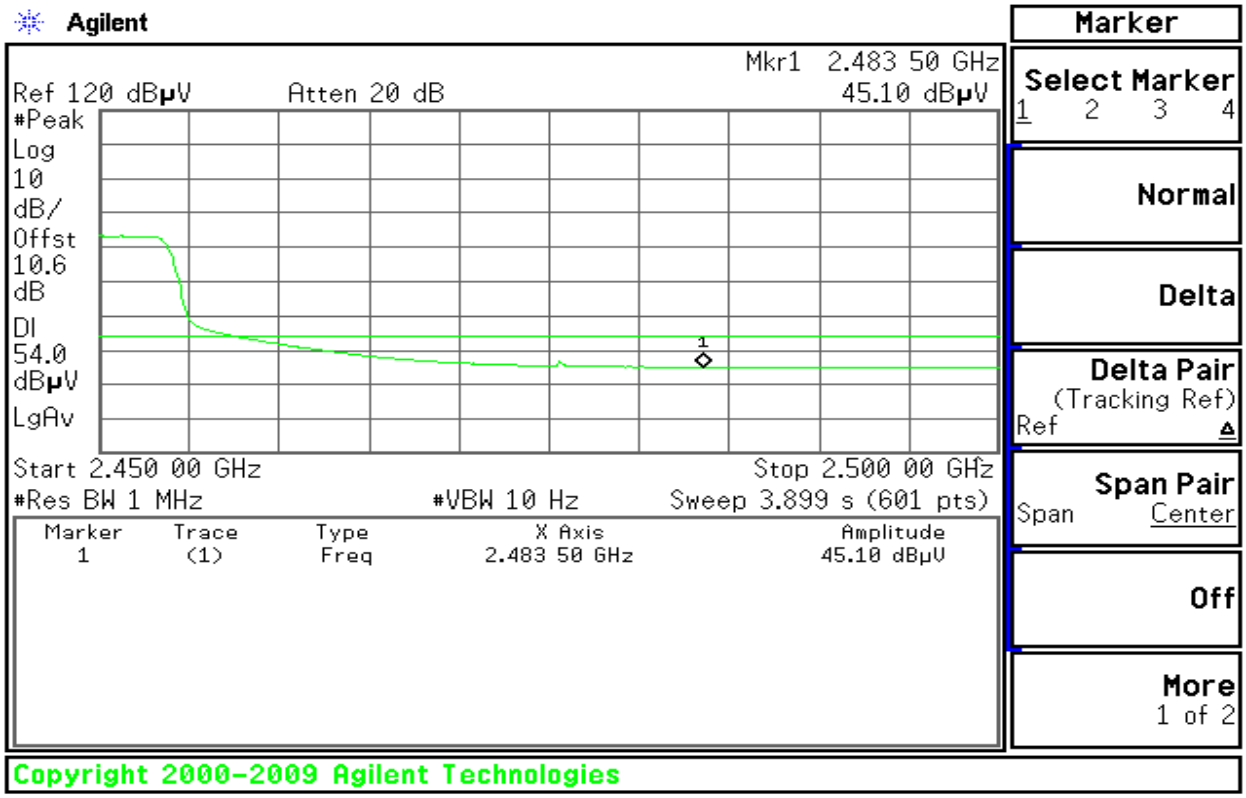
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



Below 1GHz

Operation Mode: Normal Link **Test Date:** November 19, 2009

Temperature: 25°C **Tested by:** Jeff

Humidity: 51% RH **Polarity:** Ver. / Hor.

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)
178.79	V	Peak	46.3	-6.71	39.59	43.5	-3.91
600.20	V	Peak	40	3.34	43.34	46.0	-2.66
667.53	V	Peak	39.01	4.67	43.68	46.0	-2.32
802.20	V	Peak	35.11	7.25	42.36	46.0	-3.64
901.80	V	Peak	32.75	8.64	41.39	46.0	-4.61
935.47	V	Peak	36.75	9	45.75	46.0	-0.25
200.44	H	Peak	43.98	-5.49	38.49	43.5	-5.01
225.87	H	Peak	48.61	-6.74	41.87	46.0	-4.13
332.26	H	Peak	45.48	-2.44	43.04	46.0	-2.96
667.53	H	Peak	41.06	4.67	45.73	46.0	-0.27
751.70	H	Peak	39.04	5.82	44.86	46.0	-1.14
901.80	H	Peak	34.64	8.64	43.28	46.0	-2.72

Remark:

1. *Measuring frequencies from 30 MHz to the 1GHz (No emission found between lowest internal used/generated frequency to 30 MH)z.*
2. *Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.*
3. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
4. *Margin (dB) = Result (dBuV/m) – Limit (dBuV/m).*

Above 1 GHz

Operation Mode: TX / IEEE 802.11b / CH Low **Test Date:** November 19, 2009

Temperature: 25°C **Tested by:** jeff

Humidity: 51 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1330.00	V	60.2	*33.99*	0.53	60.73	*34.52*	74.00	54.00	-19.48	average
4825.00	V	27.86	*18.73*	12.37	40.23	*31.1*	74.00	54.00	-22.90	average
7233.34	V	35.94	*23.41*	19.48	55.42	*42.89*	74.00	54.00	-11.11	average
1330.00	H	57.23	*35.08*	0.53	57.76	*35.61*	74.00	54.00	-18.39	average
4825.00	H	30.18	*20.1*	12.37	42.55	*32.47*	74.00	54.00	-21.53	average
7234.33	H	34.81	*22.27*	19.48	54.29	*41.75*	74.00	54.00	-12.25	average

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Operation Mode: TX / IEEE 802.11b / CH Mid **Test Date:** November 19, 2009

Temperature: 25°C **Tested by:** jeff

Humidity: 51 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1860.00	V	53.89	*29.63*	1.84	55.73	*31.47*	74.00	54.00	-22.53	average
4874.67	V	29.08	*18.93*	12.51	41.59	*31.44*	74.00	54.00	-22.56	average
7312.45	V	36.11	*20.93*	20.13	56.24	*41.06*	74.00	54.00	-12.94	average
1596.67	H	47.28	*34.44*	0.76	48.04	*35.2*	74.00	54.00	-18.80	average
4875.00	H	28.38	*18.17*	12.5	40.88	*30.67*	74.00	54.00	-23.33	average
7311.34	H	35.31	*20.26*	20.13	55.44	*40.39*	74.00	54.00	-13.61	average

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Operation Mode: TX / IEEE 802.11b / CH High **Test Date:** November 19, 2009

Temperature: 25°C **Tested by:** jeff

Humidity: 51 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1330.00	V	59.29	*33.63*	0.53	59.82	*34.16*	74.00	54.00	-19.84	average
4924.67	V	32.87	*20.11*	12.74	45.61	*32.85*	74.00	54.00	-21.15	average
7388.66	V	35.36	*21.73*	20.43	55.79	*42.16*	74.00	54.00	-11.84	average
1326.67	H	56.37	*35.59*	0.52	56.89	*36.11*	74.00	54.00	-17.89	average
4925.00	H	31.98	*19.44*	12.74	44.72	*32.18*	74.00	54.00	-21.82	average
7389.97	H	34.18	*21.14*	20.43	54.61	*41.57*	74.00	54.00	-12.43	average

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Operation Mode: TX / IEEE 802.11g / CH Low **Test Date:** November 19, 2009

Temperature: 25°C **Tested by:** jeff

Humidity: 51 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1330.00	V	58.2	*31.66*	0.53	58.73	*32.19*	74.00	54.00	-21.81	average
4824.33	V	28.98	*19.64*	12.37	41.35	*32.01*	74.00	54.00	-21.99	average
7234.56	V	34.8	*23.77*	19.48	54.28	*43.25*	74.00	54.00	-10.75	average
1326.67	H	58.20	*33.76*	0.52	56.97	*34.28*	74.00	54.00	-19.72	average
4825.00	H	28.98	*19.96*	12.37	42.58	*32.33*	74.00	54.00	-21.67	average
7235.43	H	34.80	*24.39*	19.48	55.02	*43.87*	74.00	54.00	-10.13	average

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Operation Mode: TX / IEEE 802.11g / CH Mid **Test Date:** November 19, 2009

Temperature: 25°C **Tested by:** jeff

Humidity: 51 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1293.33	V	54.52	*35.4*	0.39	54.91	*35.79*	74.00	54.00	-18.21	average
4873.67	V	29.82	*19.38*	12.51	42.33	*31.89*	74.00	54.00	-22.11	average
7312.56	V	35.74	*21.13*	20.13	55.87	*41.26*	74.00	54.00	-12.74	average
1233.33	H	51.52	*40.04*	-0.08	51.44	*39.96*	74.00	54.00	-14.04	average
4875.00	H	30.51	*19.67*	12.51	43.02	*32.18*	74.00	54.00	-21.82	average
7315.42	H	34.7	*20.42*	20.13	54.83	*40.55*	74.00	54.00	-13.45	average

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Operation Mode: TX / IEEE 802.11g / CH High **Test Date:** November 19, 2009

Temperature: 25°C **Tested by:** jeff

Humidity: 51 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1330.00	V	59.13	*33.34*	0.53	59.66	*33.87*	74.00	54.00	-20.13	average
4925.00	V	33.37	*20.32*	12.74	46.11	*33.06*	74.00	54.00	-20.94	average
7385.00	V	35.71	*22.86*	20.43	56.14	*43.29*	74.00	54.00	-10.71	average
1326.67	H	55.92	*33.59*	0.53	56.45	*34.12*	74.00	54.00	-19.88	average
4924.53	H	33.08	*19.81*	12.74	45.82	*32.55*	74.00	54.00	-21.45	average
7383.45	H	35.31	*21.76*	20.43	55.74	*42.19*	74.00	54.00	-11.81	average

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

Operation Mode: TX / IEEE 802.11 Super g / CH 6 **Test Date:** November 19, 2009

Temperature: 25°C **Tested by:** jeff

Humidity: 51 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1301.32	V	53.49	*34.74*	0.4	53.89	*35.14*	74.00	54.00	-18.86	average
4874.33	V	30.55	*20.26*	12.51	43.06	*32.77*	74.00	54.00	-21.23	average
7313.45	V	35.83	*20.62*	20.13	55.96	*40.75*	74.00	54.00	-13.25	average
1233.33	H	51.52	*40.04*	-0.08	51.44	*39.96*	74.00	54.00	-14.04	average
4875.00	H	30.51	*19.67*	12.51	43.02	*32.18*	74.00	54.00	-21.82	average
7316.23	H	34.93	*19.74*	20.13	55.06	*39.87*	74.00	54.00	-14.13	average

Remark:

7. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
8. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
9. Average test would be performed if the peak result were greater than the average limit.
10. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
11. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
12. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

POWERLINE CONDUCTED EMISSIONS

LIMIT

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

** Decreases with the logarithm of the frequency.*

Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

TEST RESULTS

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Test Data

Operation Mode:	Normal Link	**Test Date:**	November 19, 2009
Temperature:	25°C	Tested by:	Jeff
Humidity:	51% RH		

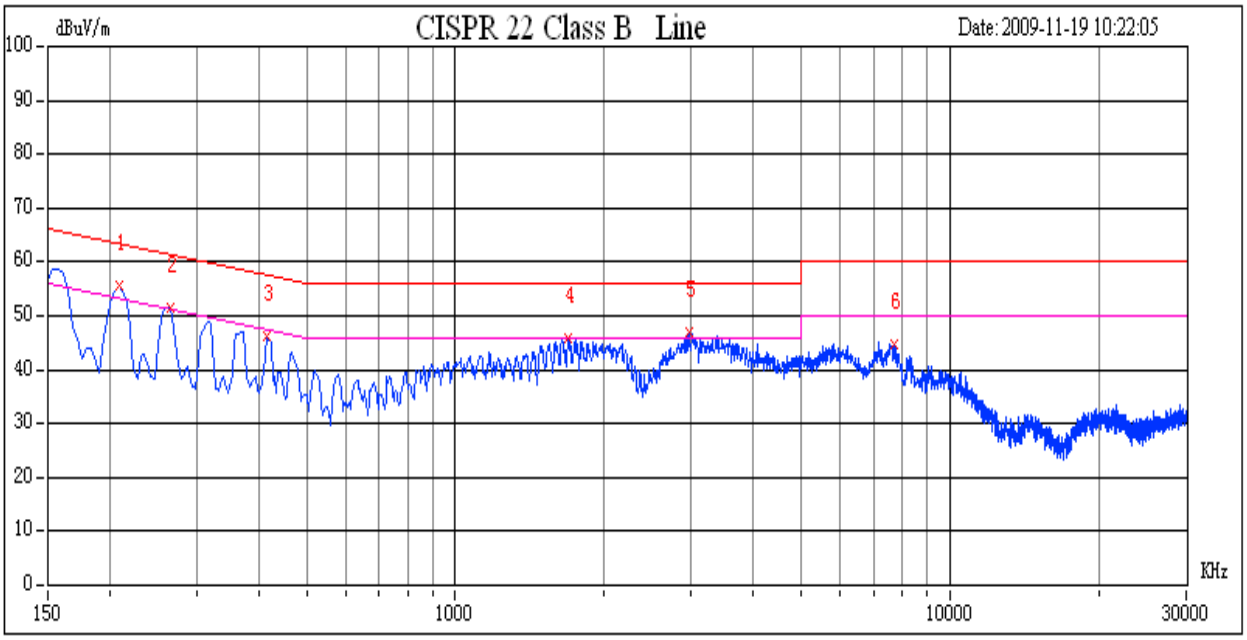
Freq. (MHz)	PEAK. Raw (dBuV)	Q.P. Raw (dBuV)	AVG Raw (dBuV)	Q.P. Limit (dBuV)	AVG Limit (dBuV)	Q.P. Margin (dB)	AVG Margin (dB)	Factor (dB)	Remark
0.209	55.52	51.16	38.55	64.31	54.31	-13.15	-15.76	10.12	Line
0.264	51.45	47.75	39.28	62.72	52.72	-14.97	-13.44	10.21	Line
0.416	46.36	39.57	34.58	58.39	48.39	-18.82	-13.81	10.48	Line
1.689	45.92	42.17	32.91	56.00	46.00	-13.83	-13.09	11.07	Line
2.960	46.82	41.44	30.87	56.00	46.00	-14.56	-15.13	11.15	Line
7.728	44.73	36.54	27.32	60.00	50.00	-23.46	-22.68	11.20	Line
0.157	65.54	56.02	40.37	65.79	55.79	-9.77	-15.42	10.15	Neutral
0.209	62.35	56.60	40.57	64.31	54.31	-7.71	-13.74	10.18	Neutral
0.261	58.85	52.60	37.69	62.83	52.83	-10.23	-15.14	10.17	Neutral
0.312	55.60	49.15	35.02	61.35	51.35	-12.20	-16.33	10.16	Neutral
1.737	45.75	39.89	29.53	56.00	46.00	-16.11	-16.47	10.48	Neutral
3.032	44.65	38.74	26.93	56.00	46.00	-17.26	-19.07	10.76	Neutral

Remark:

1. *Measuring frequencies from 0.15 MHz to 30MHz.*
2. *The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Quasi-peak detector and average detector.*
3. *The IF bandwidth of SPA between 0.15MHz and 30MHz was 10 kHz; the IF bandwidth of Test Receiver between 0.15MHz and 30MHz was 9 kHz;*
4. *L1 = Line One (Live Line) / L2 = Line Two (Neutral Line)*

Test Plots

Conducted emissions (Line 1)



Conducted emissions (Line 2)