FCC 47 CFR PART 15 SUBPART C AND ANSI C63.4 : 2003

TEST REPORT

For

D-Link AirPremier N Dual Band PoE Access Point

Model : DAP-2553

Trade Name : D-Link

Issued for

D-Link Corporation

No. 289, Sinhu 3rd Rd., Neihu District,
Taipei City 114, Taiwan, R.O.C

Issued by

Compliance Certification Services Inc.
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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	06/13/2008	Initial Issue	All Page 311	Jason Chang
01	07/29/2008	Update Description Of EUT & Power	Page 5	Jason Chang

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1. TEST REPORT CERTIFICATION

Applicant	：D-Link Corporation
Address	：No. 289, Sinhu 3rd Rd., Neihu District, Taipei City 114, Taiwan, R.O.C.
Equipment Under Test	：D-Link AirPremier N Dual Band PoE Access Point
Model	：DAP-2553
Trade Name	：D-Link
Tested Date	：February 29 ~ June 12, 2008

APPLICABLE STANDARD	
STANDARD	**TEST RESULT**
FCC Part 15 Subpart C:2007 AND ANSI C63.4:2003	No non-compliance noted

Approved by:

Jason Chang

Jason Chang
Team Leader of Hsinchu Laboratory
Compliance Certification Services Inc.

Reviewed by:

Alan Fan
Team Leader of Hsinchu Laboratory
Compliance Certification Services Inc.

WE HEREBY CERTIFY THAT: The measurements shown in the attachment were made in accordance with the procedures indicated, and the energy emitted by the equipment was found to be within the limits applicable. We assume full responsibility for the accuracy and completeness of these measurements and vouch for the qualifications of all persons taking them.

2. EUT DESCRIPTION

2.1 DESCRIPTION OF EUT & POWER

Product Name	D-Link AirPremier N Dual Band PoE Access Point
Model Number	DAP-2553
Frequency Range	IEEE 802.11a, IEEE 802.11n HT20 : 5745MHz ~ 5825MHz IEEE 802.11n HT40 : 5755MHz ~ 5795MHz IEEE 802.11b/g, IEEE 802.11n HT20 : 2412MHz～2462MHz IEEE 802.11n HT40 : 2422MHz～2452MHz
Transmit Power	IEEE 802.11a : 26.01dBm IEEE 802.11n HT20 : 28.43dBm IEEE 802.11n HT40 : 26.79dBm IEEE 802.11b : 24.87dBm IEEE 802.11g : 28.05dBm IEEE 802.11n HT20 : 27.47dBm IEEE 802.11n HT40 : 27.68dBm
Channel Spacing	IEEE 802.11a, IEEE 802.11n 20MHz / HT40 : 40MHz IEEE 802.11b/g, IEEE 802.11n HT20 / HT40 : 5MHz
Channel Number	IEEE 802.11a, IEEE 802.11n HT20 : 5 Channels IEEE 802.11n HT40 : 2 Channels IEEE 802.11b/g, IEEE 802.11n HT20 : 11 Channels IEEE 802.11n HT40 : 7 Channels
Transmit Data Rate	IEEE 802.11a : 54, 48, 36, 24, 18, 12, 9, 6 Mbps IEEE 802.11b : 11, 5.5, 2, 1 Mbps IEEE 802.11g : 54, 48, 36, 24, 18, 12, 9, 6 Mbps IEEE 802.11n HT20 : 144.44, 130, 117, 115.556, 104, 86.667, 78, 72.2, 65, 58.5, 57.8, 57.778, 52, 43.333, 43.3, 39, 28.9, 28.889, 26, 21.7, 19.5, 14.444, 14.4, 13, 7.2, 6.5 Mbps IEEE 802.11n HT40 : 300, 270, 243, 240, 216, 180, 162, 150, 135, 121.5, 120, 108, 90, 81, 60, 54, 45, 40.5, 30, 27, 15, 13.5Mbps

Type of Modulation	IEEE 802.11a : OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11b : DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g : OFDM (64QAM, 16AQM, QPSK, BPSK) IEEE 802.11n HT20/40 : OFDM (64QAM, 16QAM, QPSK, BPSK)
Frequency Selection	by software / firmware
Antenna Type	Dipole Antenna × 3 2.4GHz ~ 2.5GHz Antenna Gain : 3dBi 4.9GHz ~ 5.825GHz Antenna Gain : 5dBi
Power Source	5.0VDC (From Power Adapter)
Note	Atheros Communications Inc. RF Module Model : MB82

Power Adapter :

No.	Manufacturer	Model No.	Power Input	Power Output
1	D-Link	AF1805-A	100-120VAC, 50/60Hz, 0.4A	5VDC, 2.5A
2	D-Link	AF1805-B	100-120VAC, 50/60Hz, 0.4A	5VDC, 2.5A

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: KA2AP2553A1 filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.
3. For more details, please refer to the User's manual of the EUT.

3. DESCRIPTION OF TEST MODES

The EUT is an 802.11n MIMO transceiver in Access Point form factor. It has three transmitter chains and three receive chains (3 × 3 configurations). The 3 × 3 configuration is implemented with three outside chains (Chain 0, 1, 2).

The RF chipset is manufactured by Atheros Communications Inc.

IEEE 802.11a mode, IEEE 802.11n HT20 mode

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	5745
Middle	5785
High	5825

IEEE 802.11a mode : 6Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11n HT20 mode : 6.5Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11n HT40 mode

The EUT had been tested under operating condition.

There are two channels have been tested as following :

Channel	Frequency (MHz)
Low	5755
High	5795

IEEE 802.11n HT40 mode : 13.5Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11b mode, IEEE 802.11g mode, IEEE 802.11n HT20 mode

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	2412
Middle	2437
High	2462

IEEE 802.11b mode : 1Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11g mode : 6Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11n HT20 mode : 6.5Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11n HT40 mode

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	2422
Middle	2437
High	2452

IEEE 802.11n HT40 mode : 13.5Mbps data rate (worst case) were chosen for full testing.

The worst-case data rates are determined according to the description above, based on the investigations by measuring the PSD and average power across all the data rates, bandwidths, modulations and spatial stream modes.

4. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 and FCC CRF 47 2.1046, 2046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, 15.207, 15.209 and 15.247.

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at Rm.258, Bldg.17, NO.195 , Sec. 4, Chung Hsing Rd., Chu-Tung Chen. Hsin-Chu, Taiwan 310 R.O.C.
The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

5.2 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 preselectors 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.”

5.3 LABORATORY ACCREDITATIONS LISTINGS

The test facilities used to perform radiated and conducted emissions tests are accredited by National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code: 200118-0 to perform Electromagnetic Interference tests according to FCC PART 15 AND CISPR 22 requirements. No part of this report may be used to claim or imply product endorsement by TAF or any agency of the Government. In addition, the test facilities are listed with Federal Communications Commission (registration no: 90585 and 90584).

5.4 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3/10 meter Open Area Test Sites to perform FCC Part 15/18 measurements	90585, 90584
Japan	VCCI	3/10 meter Open Area Test Sites to perform conducted/radiated measurements	VCCI R-1229/1189 C-1250/1294
Taiwan	TAF	FCC Method-47 CFR Part 15 Subpart C,D,E CISPR 11, FCC METHOD-47 CFR Part 18, EN 55011, CNS 13803, CISPR 13, CNS 13439, FCC Method-47 CFR Part 15 Subpart B, CISPR 14-1, EN 55014-1, CNS 13783-1, EN 55015, CNS 14115, CISPR 22, EN 55022, VCCI CNS 13438, EN 61000-4-2/3/4/5/6/8/11	Testing Laboratory 0240
Taiwan	BSMI	CNS 13803, CNS 13438, CNS 13439, CNS 13783-1, CNS 14115	SL2-IS-E-0002 SL2-IN-E-0002 SL2-A1-E-0002 SL2-R1-E-0002 SL2-R2-E-0002 SL2-L1-E-0002
Canada	Industry Canada	RSS-GEN Issue 2	Canada IC 4417-1, IC-4417-2

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

6. CALIBRATION AND UNCERTAINTY

6.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

6.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 1000 MHz	+/- 3.2 dB
Radiated Emission, 1 to 26.5 GHz	+/- 3.2 dB
Power Line Conducted Emission	+/- 2.1 dB

Uncertainty figures are valid to a confidence level of 95%

7. SETUP OF EQUIPMENT UNDER TEST

SUPPORT EQUIPMENT

No.	Product	Manufacturer	Model No.	Serial No.	FCC ID
1	Notebook PC	DELL	Latitude D610	CN-0C4708-48643-625-5565	E2K24BNHM
2	Notebook PC	HP	nx6130	CNU543274R	CNTWM3B2200BGA

SETUP DIAGRAM FOR TESTS

EUT & peripherals setup diagram is shown in appendix setup photos.

EUT OPERATING CONDITION

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

8. APPLICABLE LIMITS AND TEST RESULTS

8.1 6dB BANDWIDTH

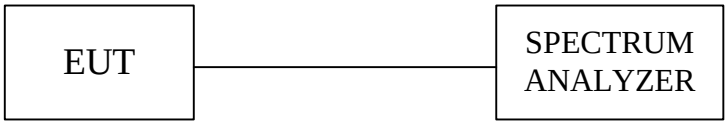
LIMIT

§ 15.207(a) (2) For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz

TEST EQUIPMENT

Description & Manufacturer	Model No.	Serial No.	Date of Calibration
ROHDE & SCHWARZ SPECTRUM ANALYZER	FSEK30	835253/002	October 25, 2007
AGILENT SPECTRUM ANALYZER	E4446A	MY433601.32	June 24, 2008

TEST SETUP



TEST PROCEDURE

The transmitter output was connected to a spectrum analyzer. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 KHz RBW and 300 KHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

TEST RESULTS

No non-compliance noted

IEEE 802.11a mode

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
Low	5745	16.50	16.50	16.50	500	PASS
Middle	5785	16.42	16.25	16.25	500	PASS
High	5825	16.50	16.25	16.50	500	PASS

IEEE 802.11n HT20 mode

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
Low	5745	17.67	14.92	16.50	500	PASS
Middle	5785	17.58	16.75	17.67	500	PASS
High	5825	17.67	17.50	17.42	500	PASS

IEEE 802.11n HT40 mode

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
Low	5755	35.50	36.08	35.17	500	PASS
High	5795	36.42	36.33	36.42	500	PASS

IEEE 802.11b mode

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
Low	2412	9.75	11.00	10.25	500	PASS
Middle	2437	10.17	10.17	10.08	500	PASS
High	2462	11.08	12.50	10.17	500	PASS

IEEE 802.11g mode

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
Low	2412	16.58	16.50	16.33	500	PASS
Middle	2437	16.50	16.33	16.50	500	PASS
High	2462	16.50	16.33	16.50	500	PASS

IEEE 802.11n HT20 mode

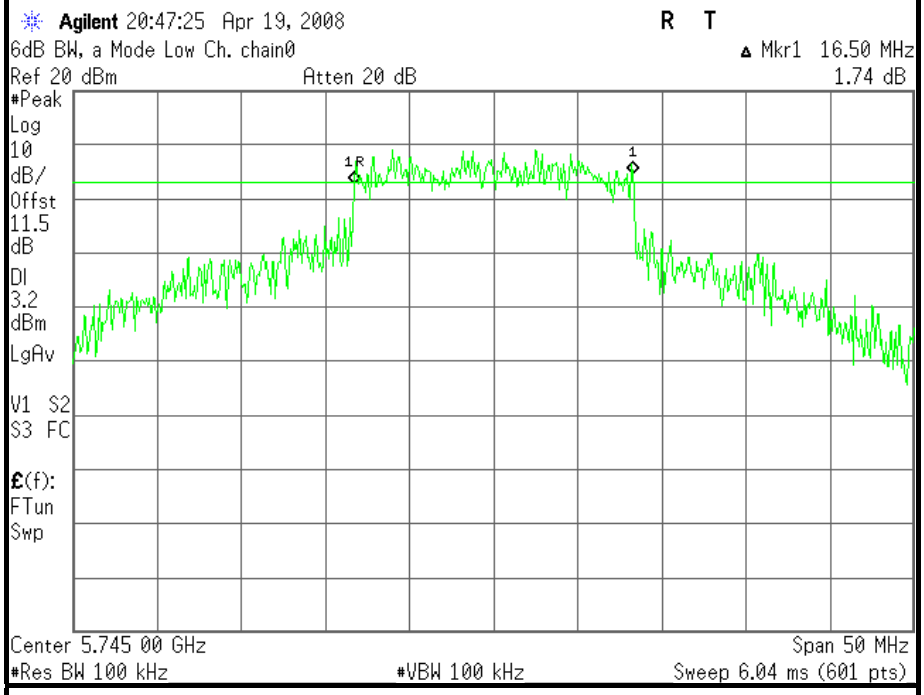
Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
Low	2412	17.50	17.50	17.58	500	PASS
Middle	2437	17.08	16.75	17.50	500	PASS
High	2462	17.67	16.58	17.58	500	PASS

IEEE 802.11n HT40 mode

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
Low	2422	35.92	36.42	36.42	500	PASS
Middle	2437	36.33	36.42	36.33	500	PASS
High	2452	36.42	36.33	36.42	500	PASS

6dB BANDWIDTH (IEEE 802.11a mode)

CH Low (IEEE 802.11a mode - Chain 0)



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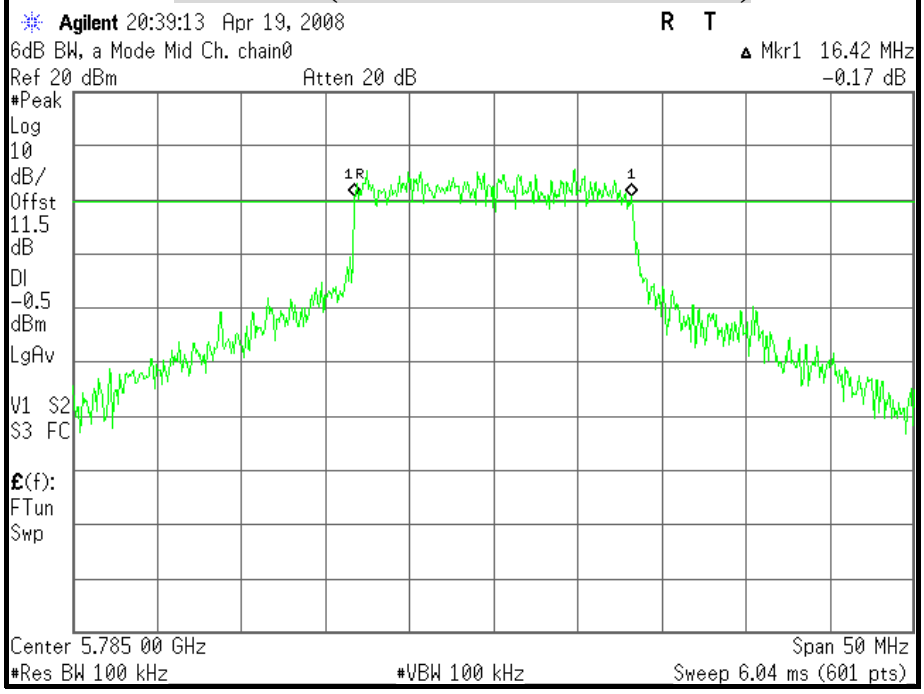

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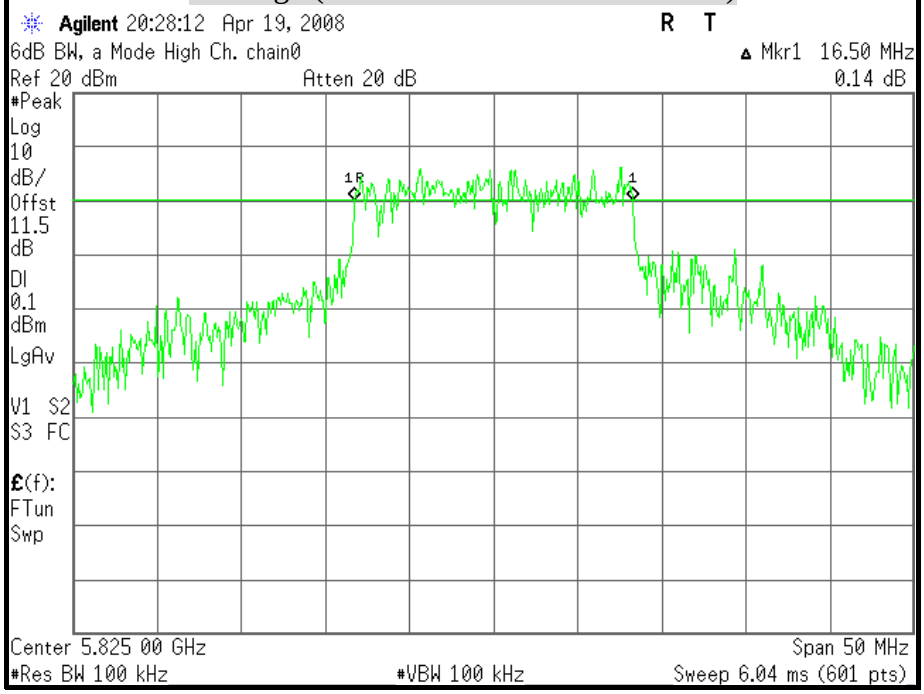

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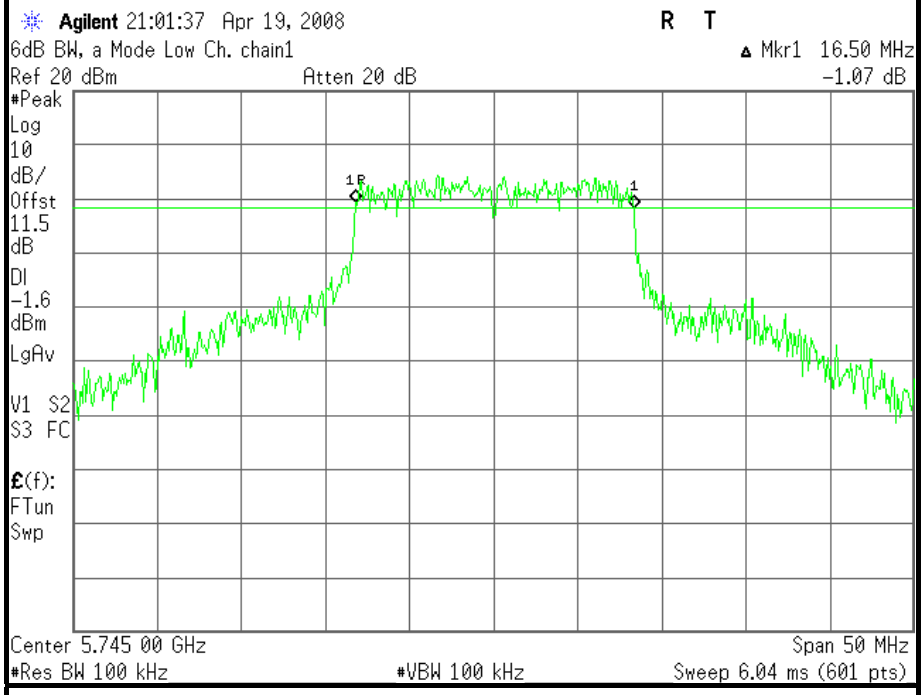

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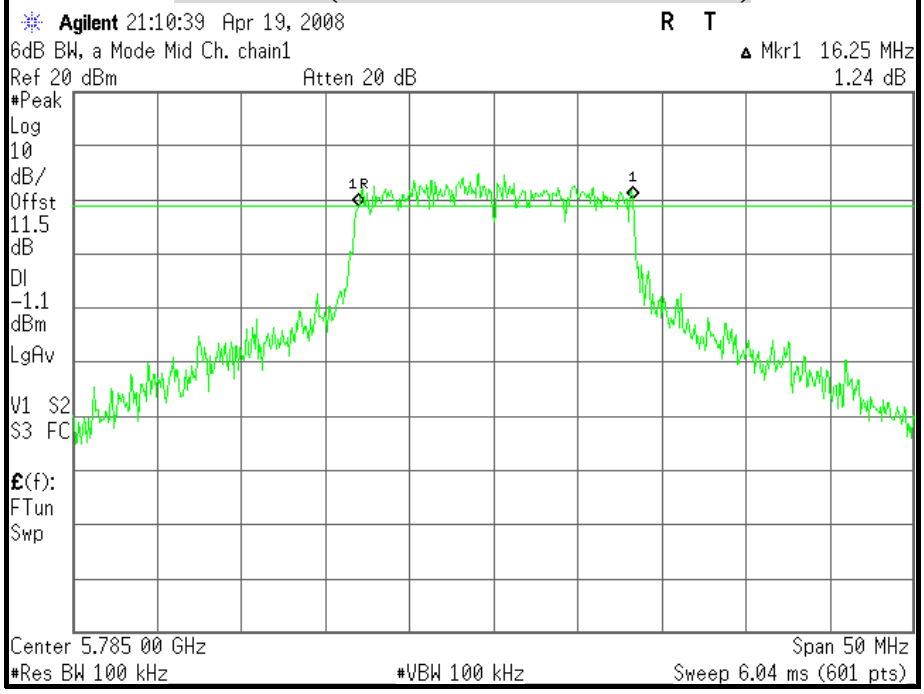

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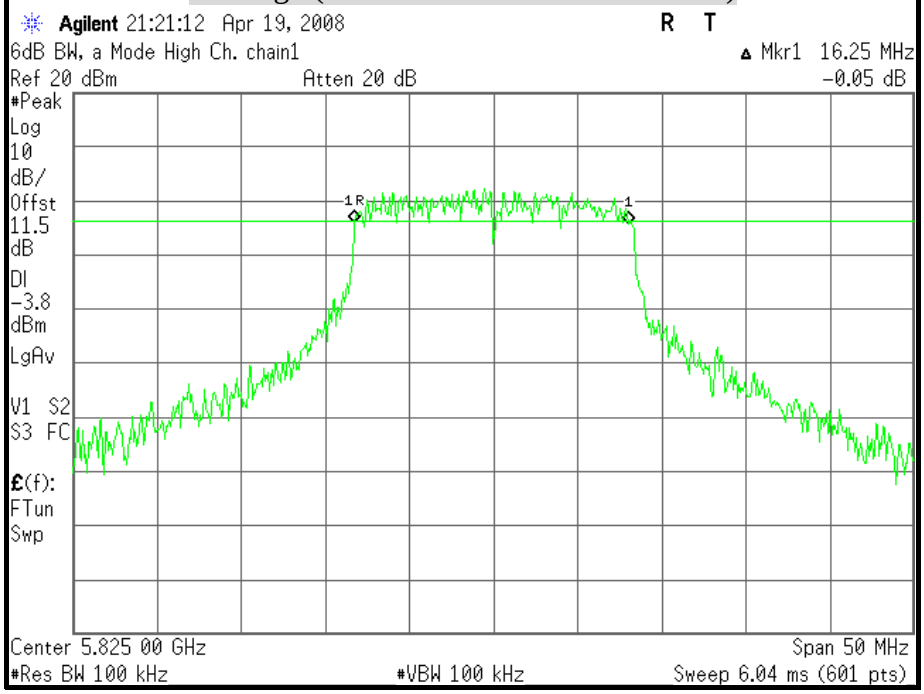

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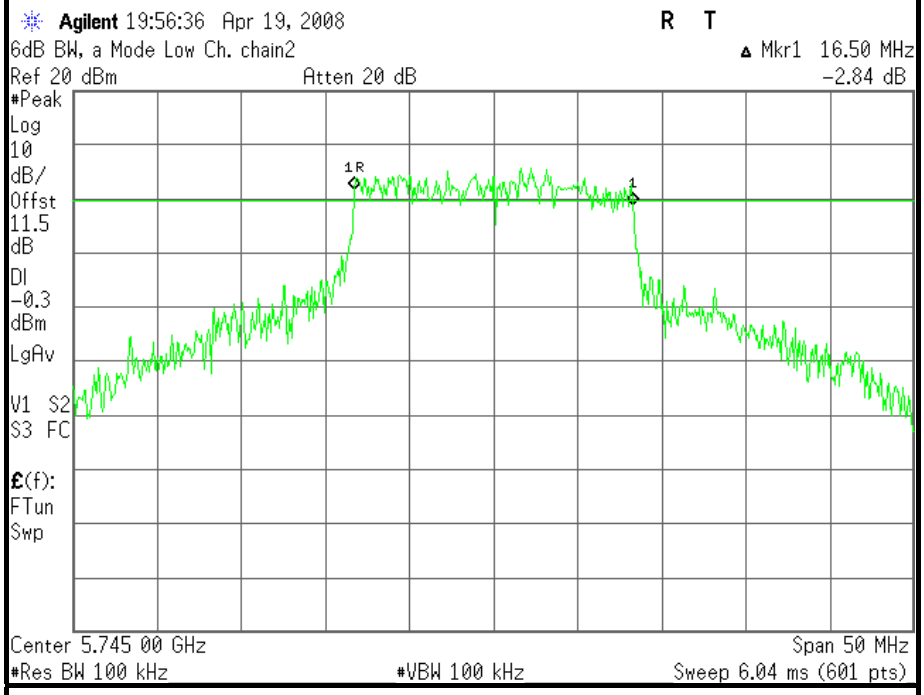

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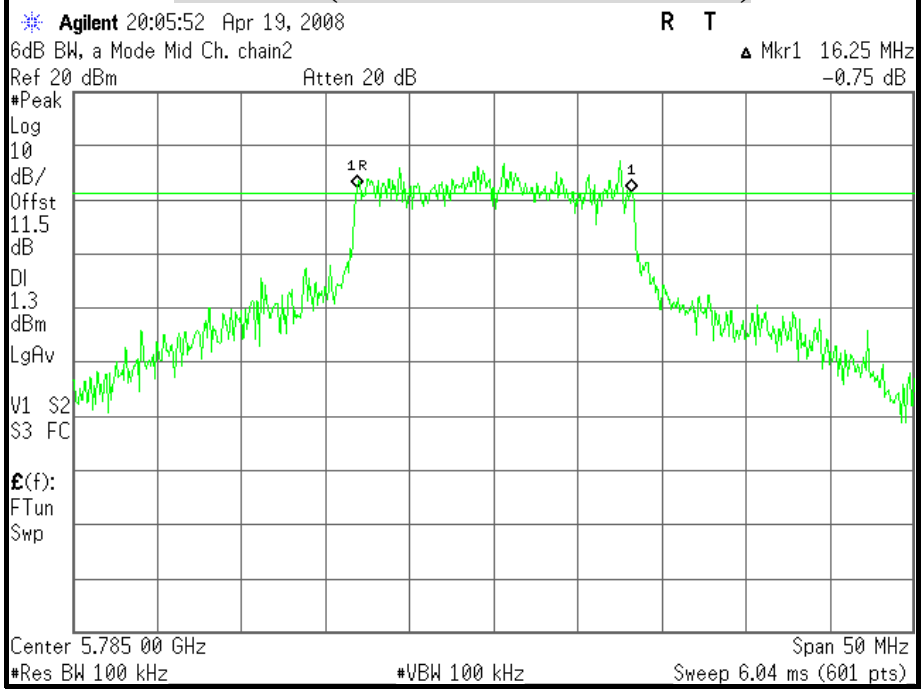

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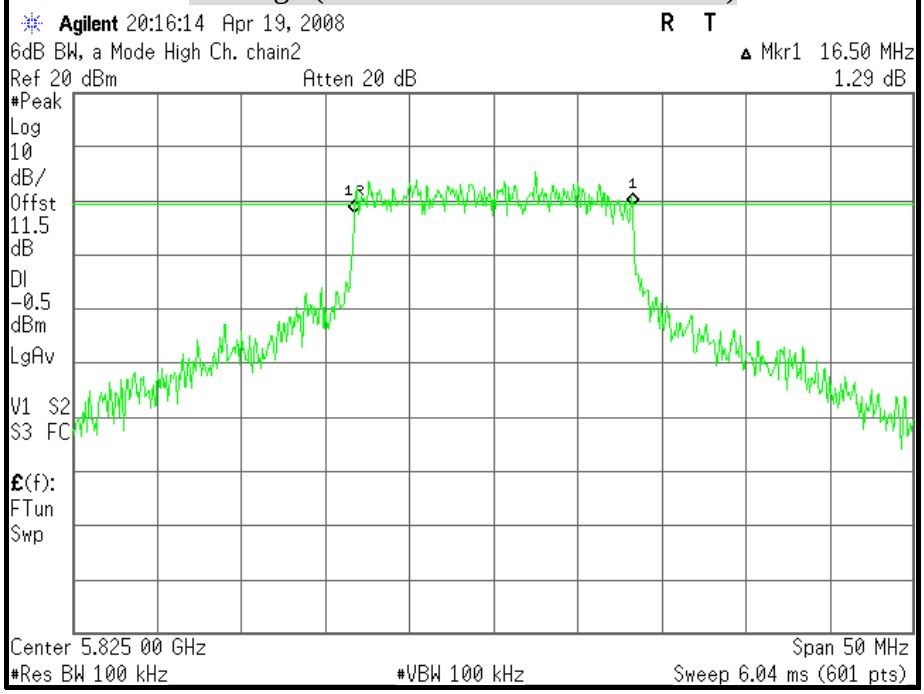
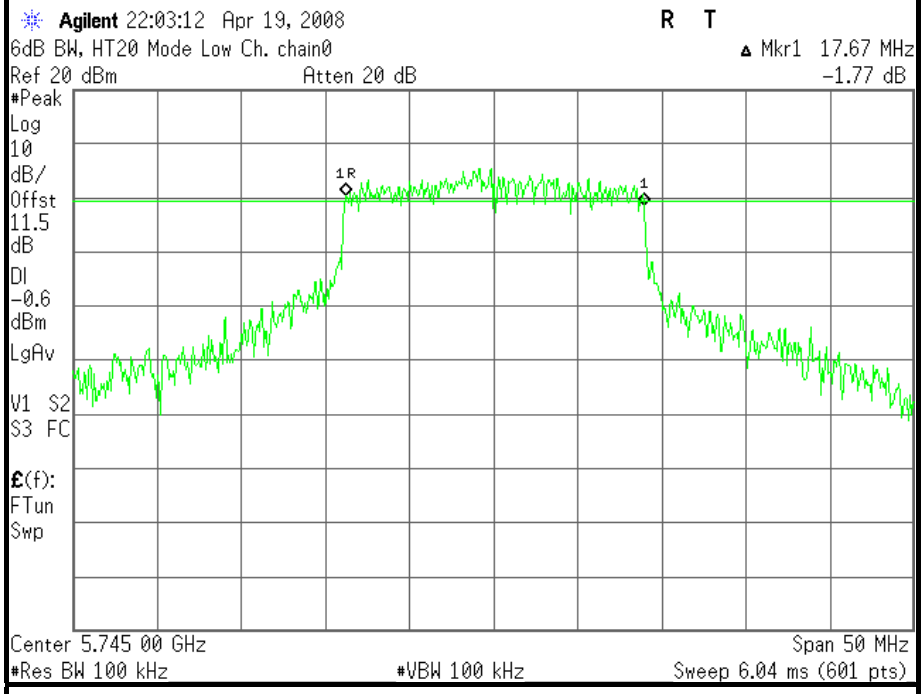


6dB BANDWIDTH (IEEE 802.11n HT20 mode)

CH Low (IEEE 802.11n HT20 mode - Chain 0)



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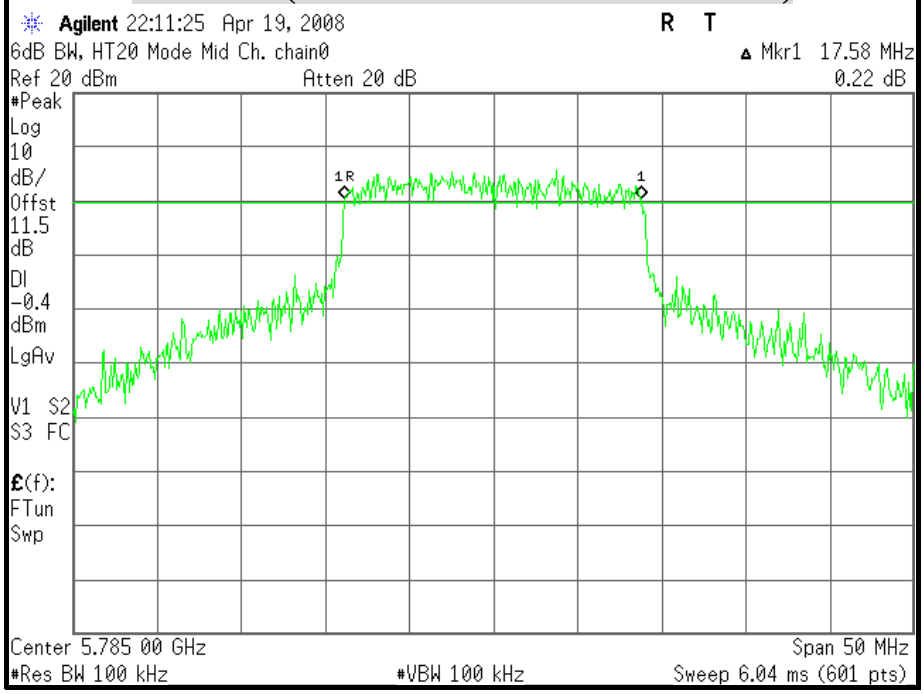
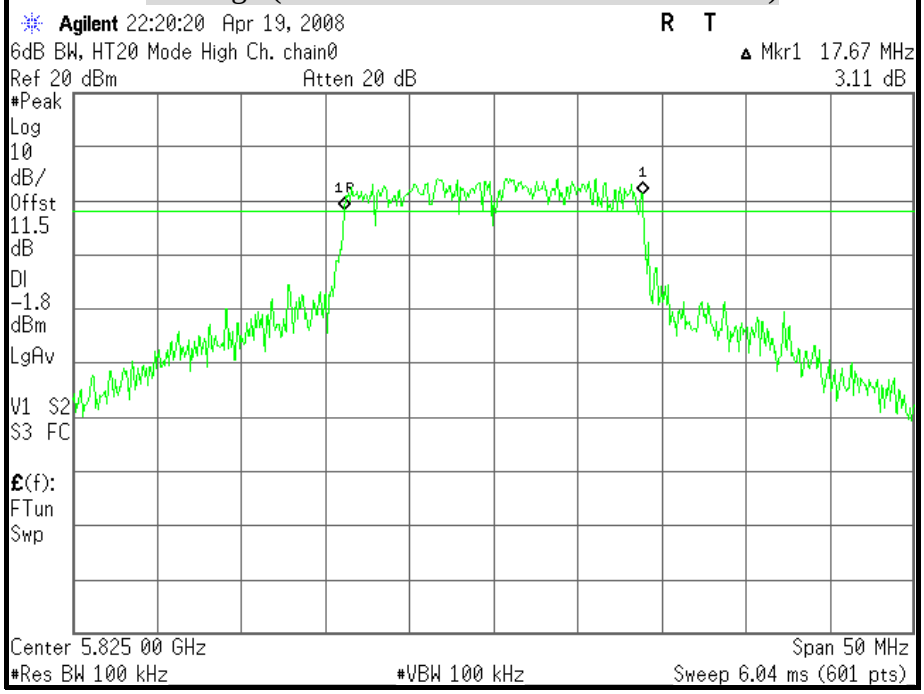
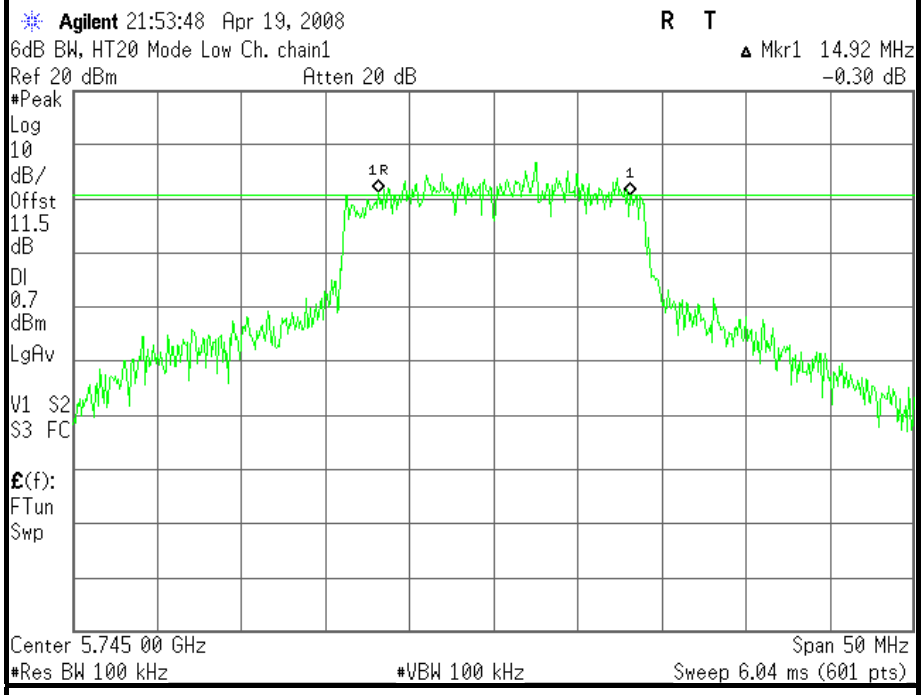


CH High (IEEE 802.11n HT20 mode - Chain 0)



CH Low (IEEE 802.11n HT20 mode - Chain 1)



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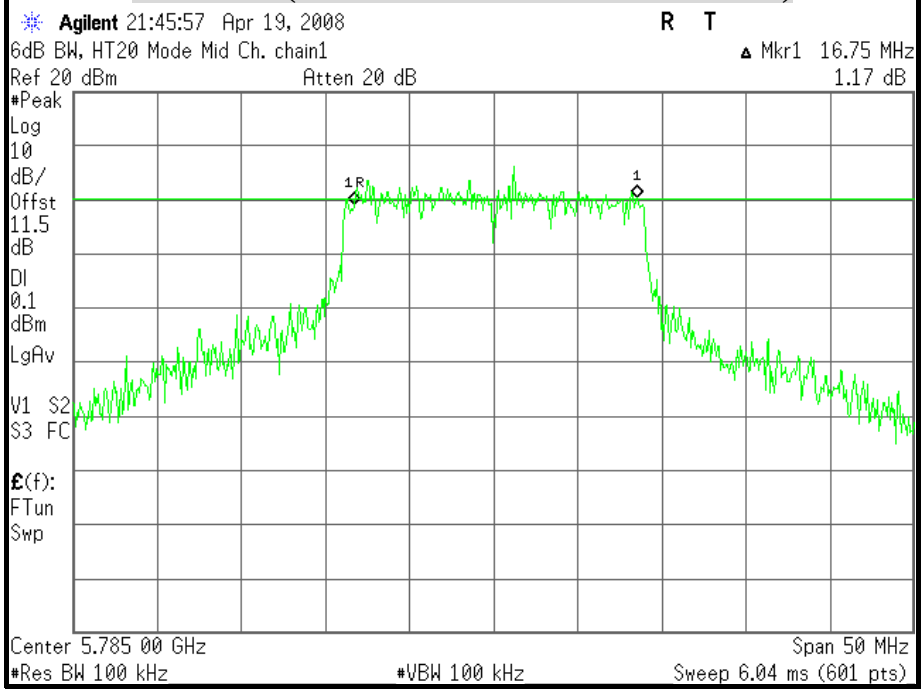

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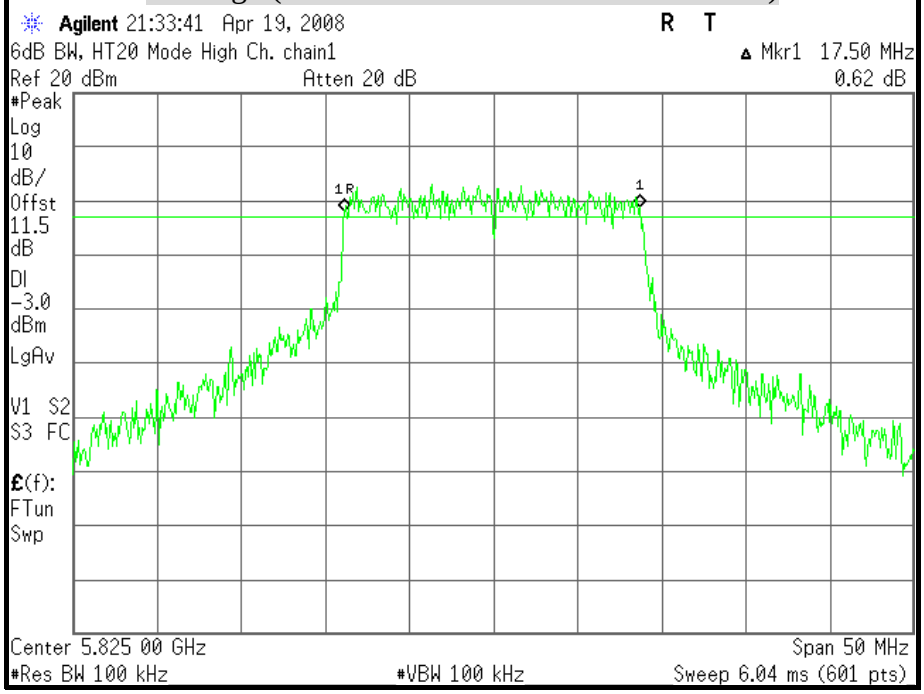

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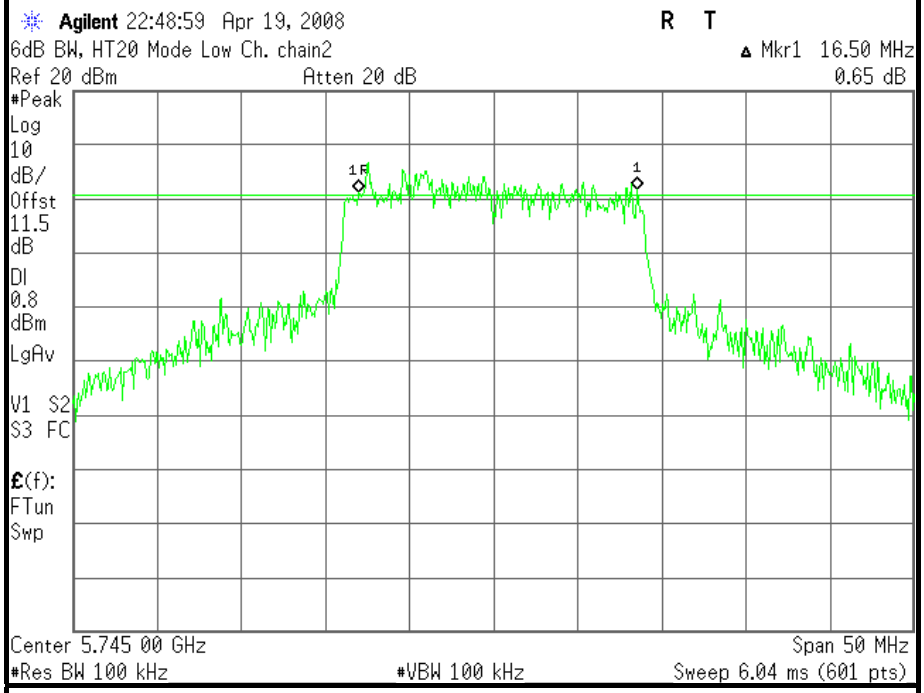
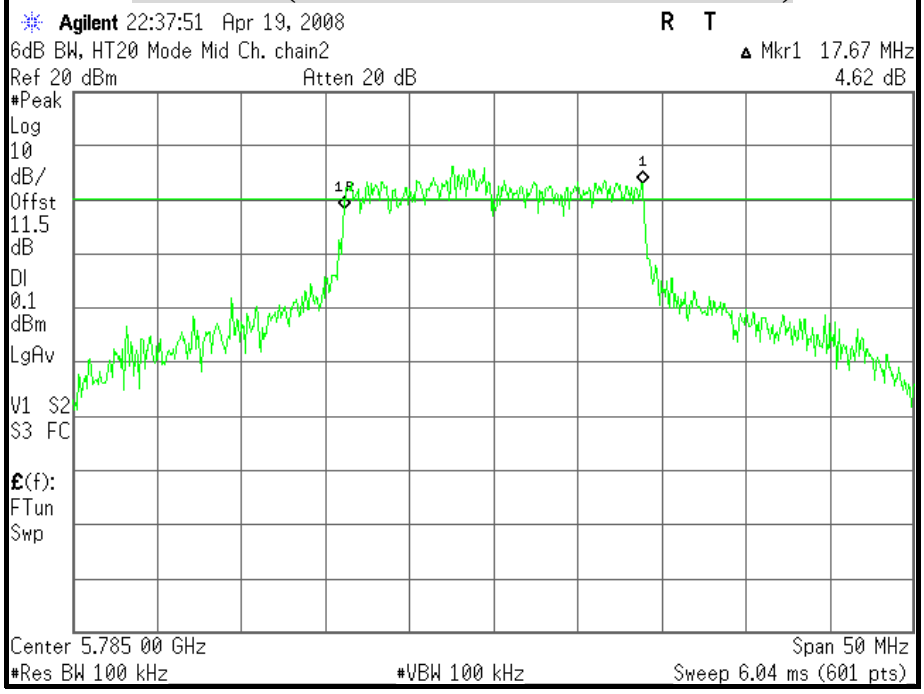


CH Middle (IEEE 802.11n HT20 mode - Chain 2)



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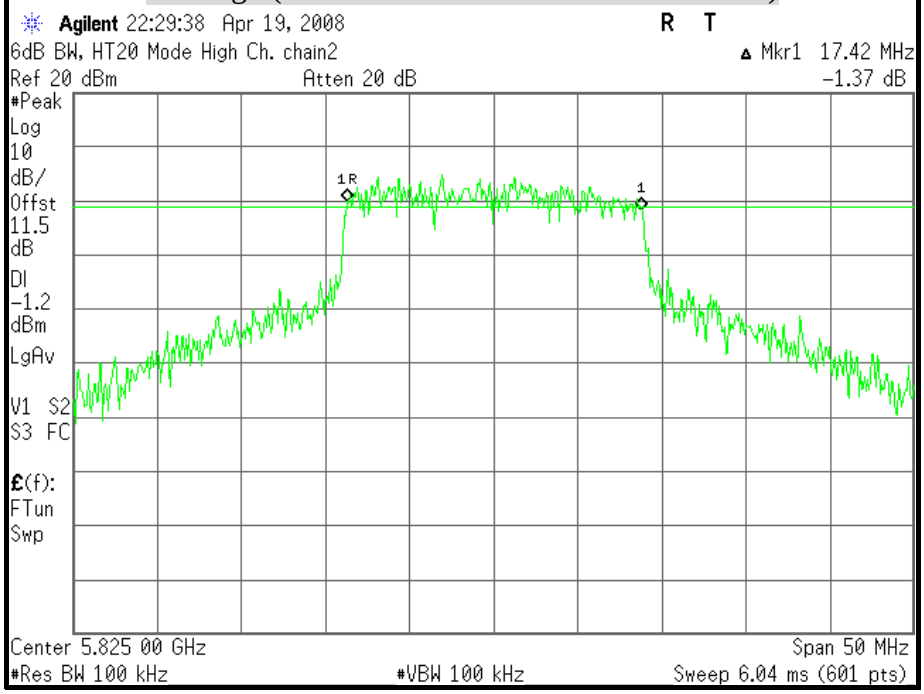
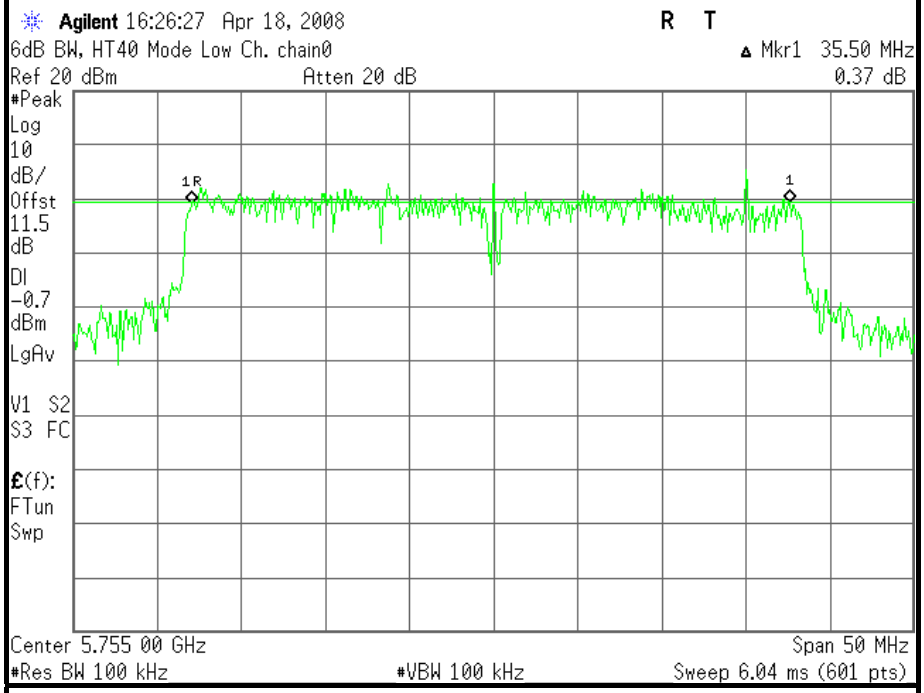


6dB BANDWIDTH (IEEE 802.11n HT40 mode)

CH Low (IEEE 802.11n HT40 mode - Chain 0)



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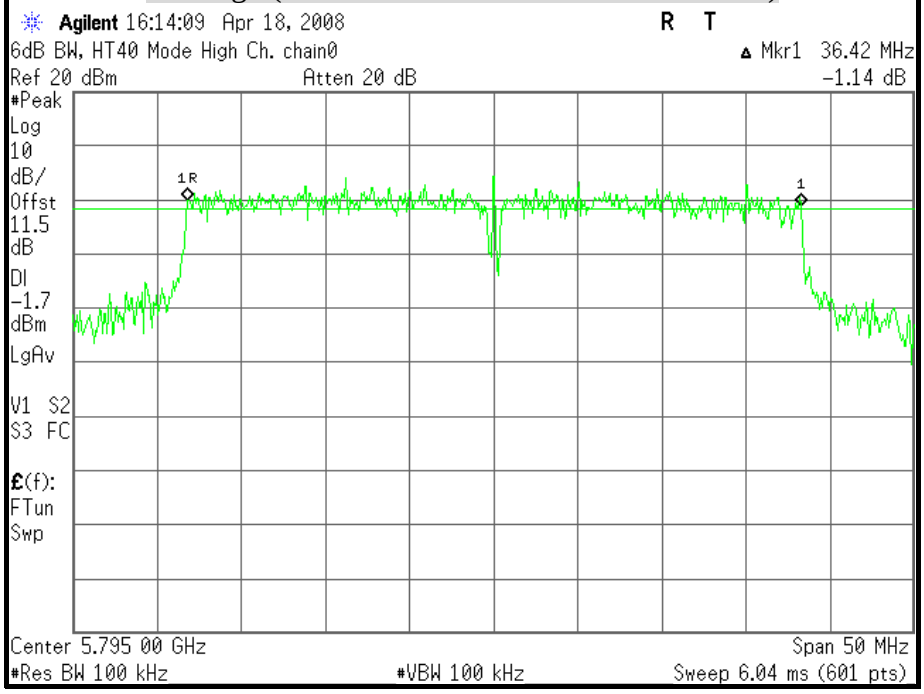
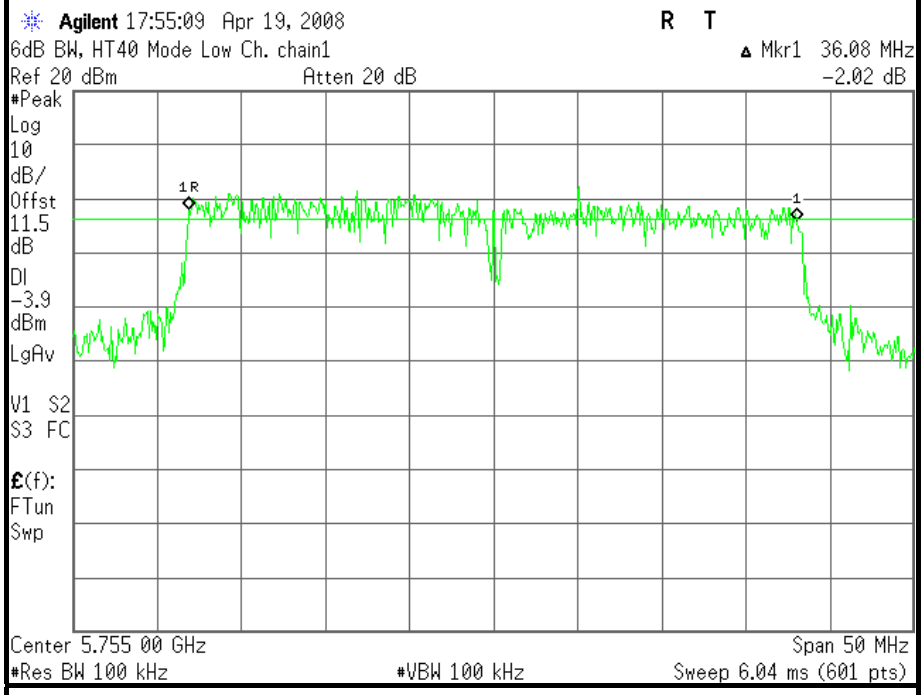
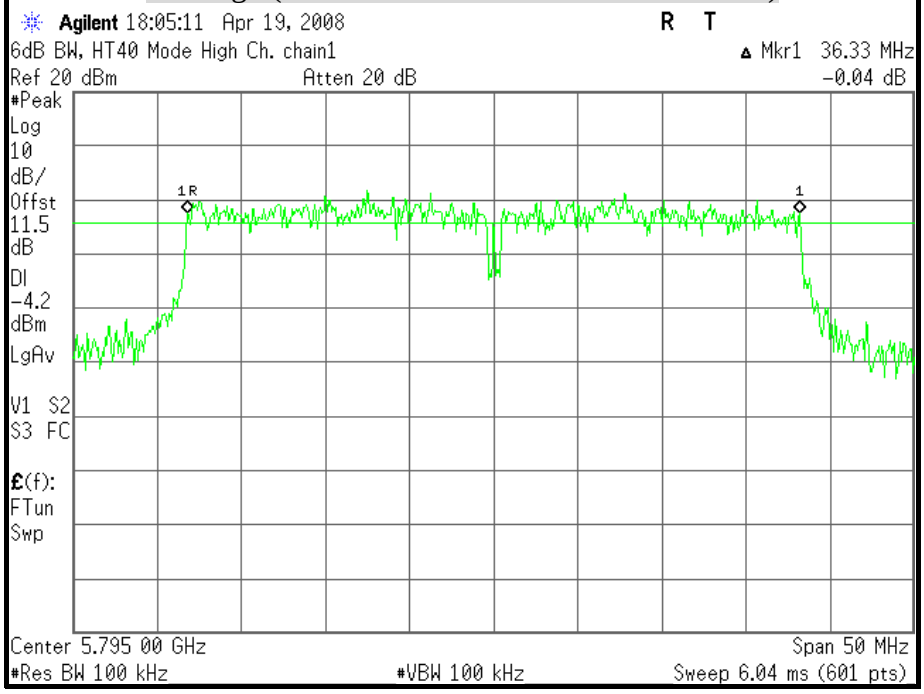


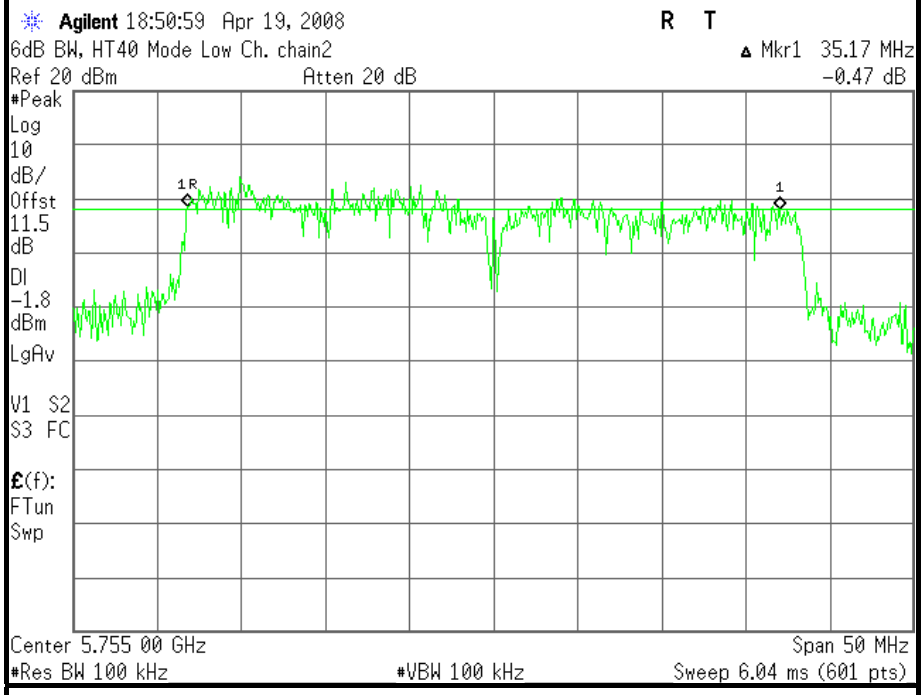
CH Low (IEEE 802.11n HT40 mode - Chain 1)



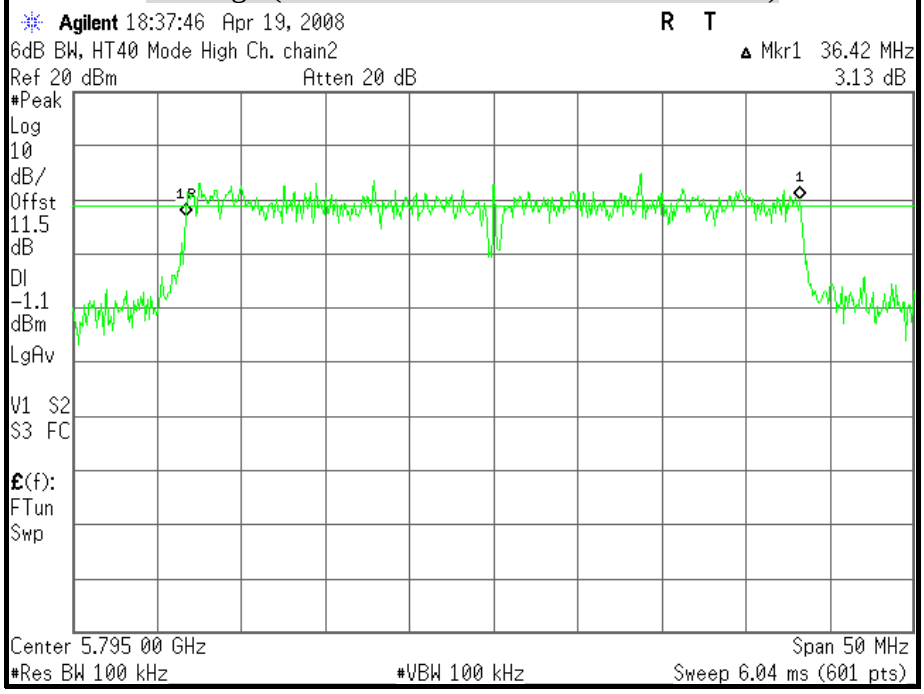
CH High (IEEE 802.11n HT40 mode - Chain 1)



CH Low (IEEE 802.11n HT40 mode - Chain 2)

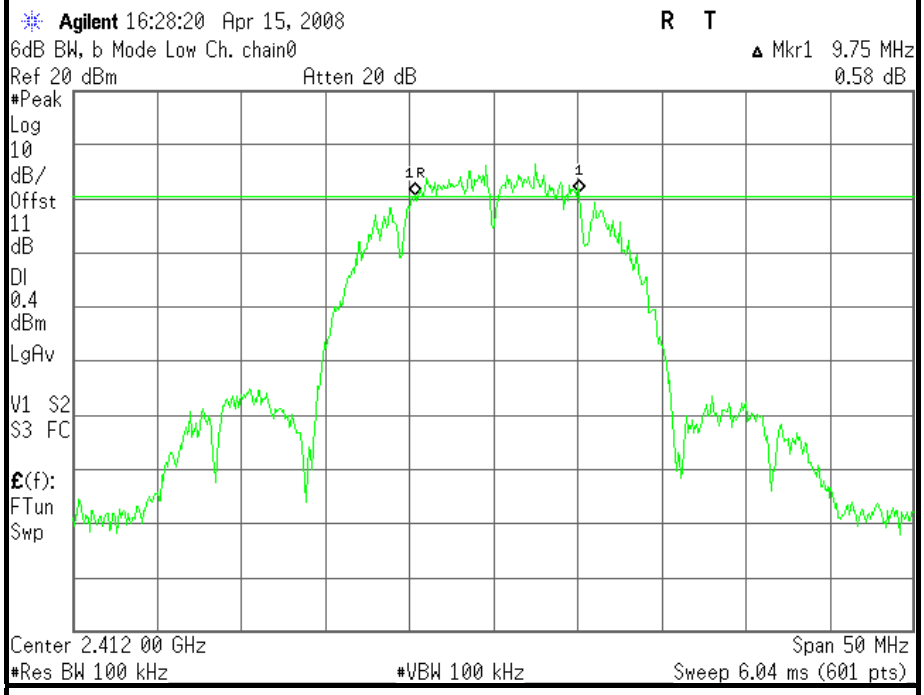


CH High (IEEE 802.11n HT40 mode - Chain 2)

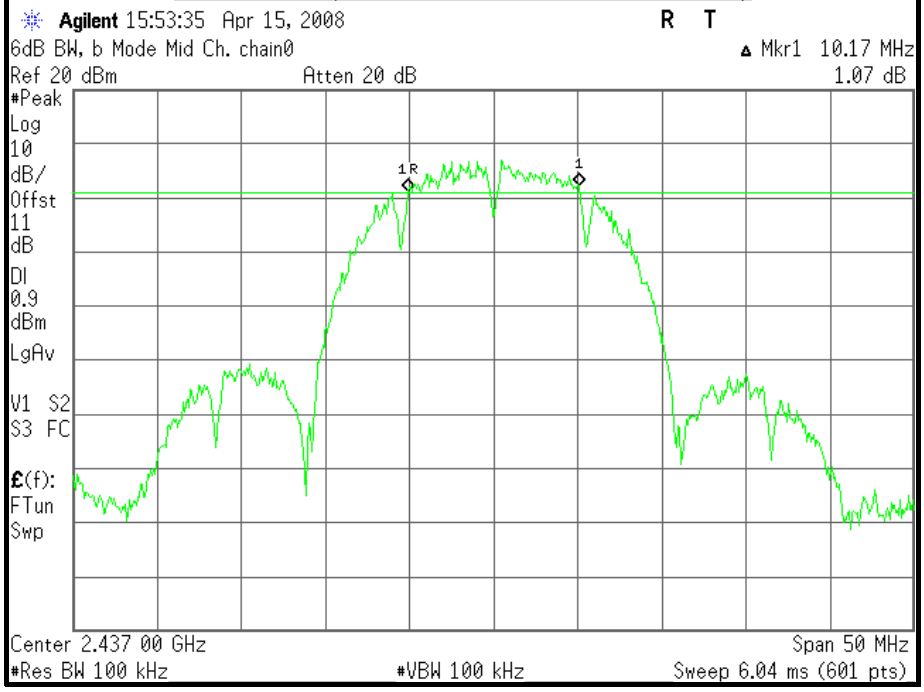


6dB BANDWIDTH (IEEE 802.11b mode)

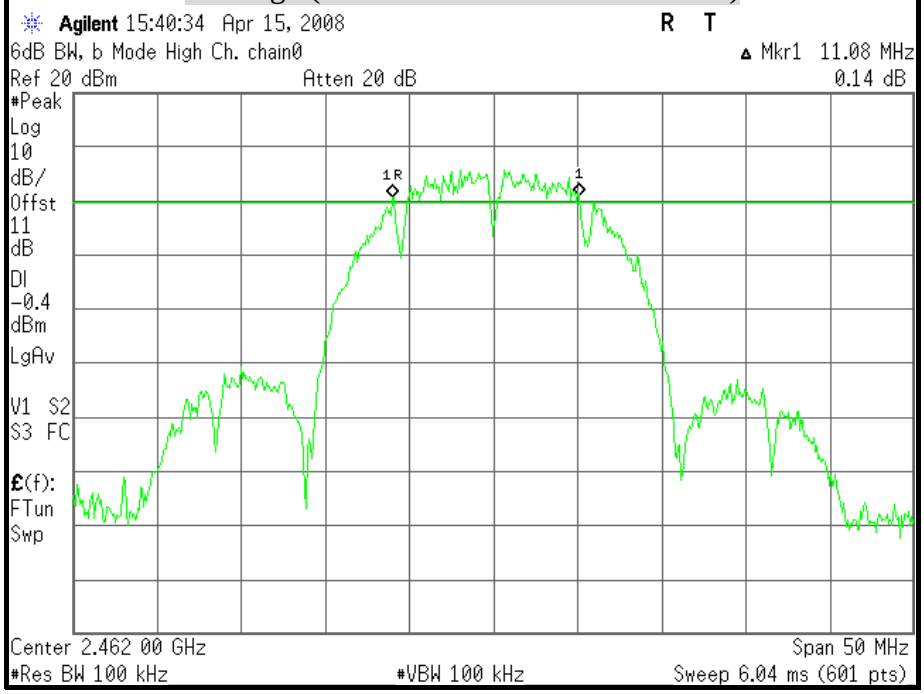
CH Low (IEEE 802.11b mode - Chain 0)



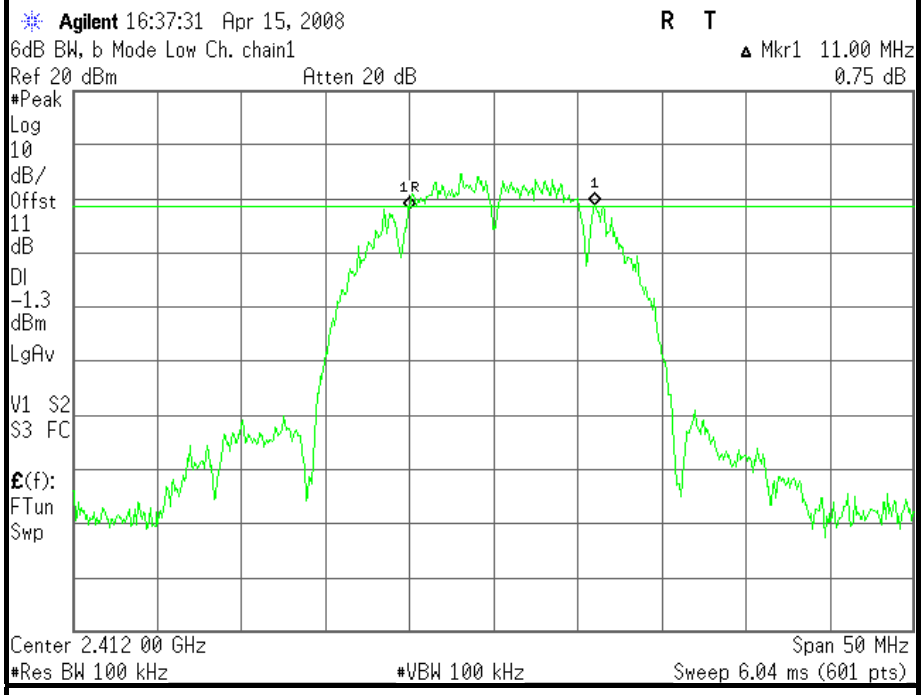
CH Middle (IEEE 802.11b mode - Chain 0)



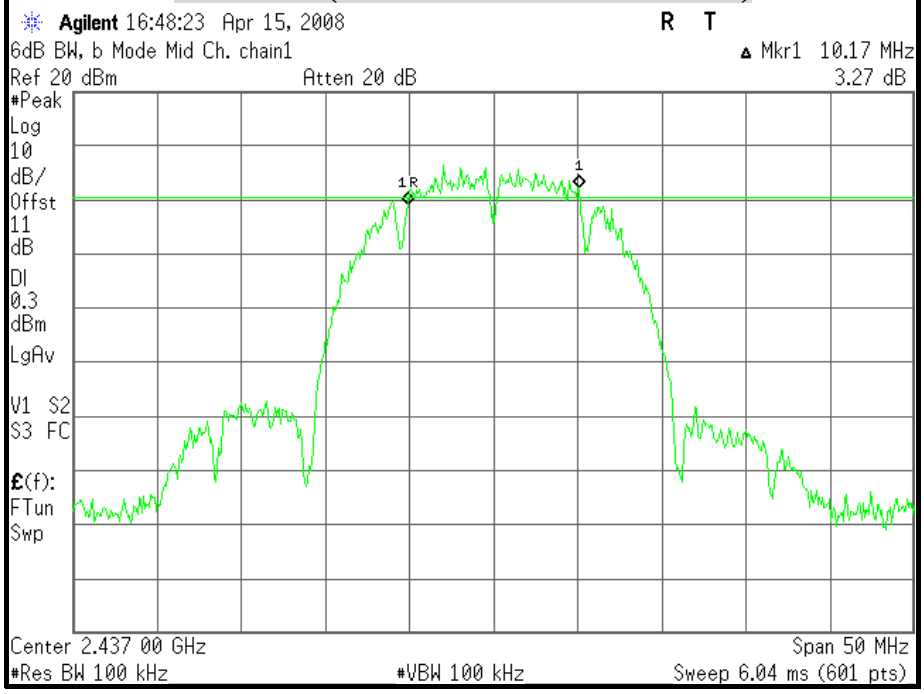
CH High (IEEE 802.11b mode – Chain 0)



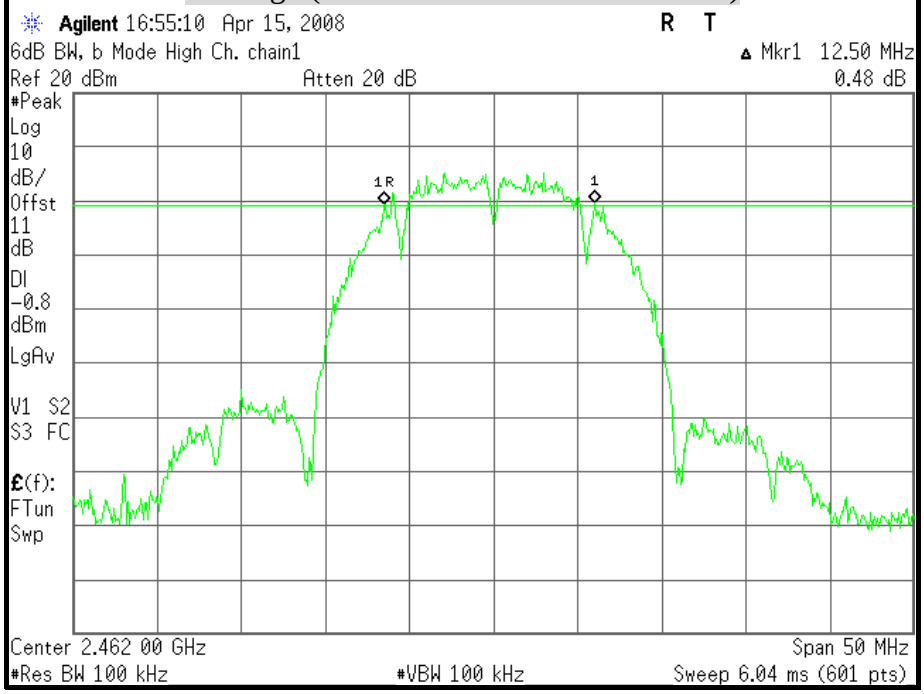
CH Low (IEEE 802.11b mode - Chain 1)



CH Middle (IEEE 802.11b mode - Chain 1)



CH High (IEEE 802.11b mode – Chain 1)



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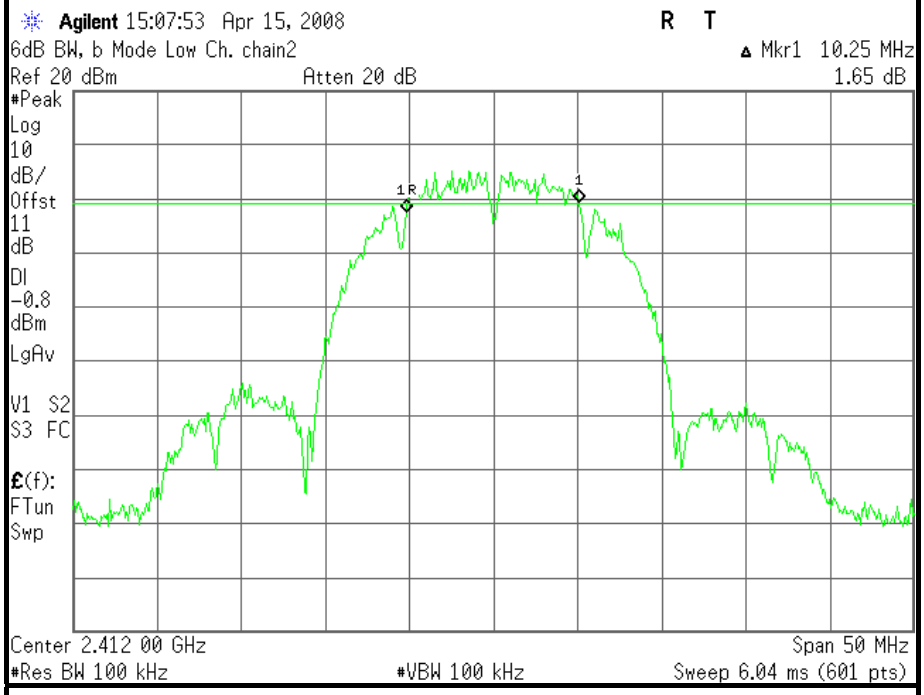
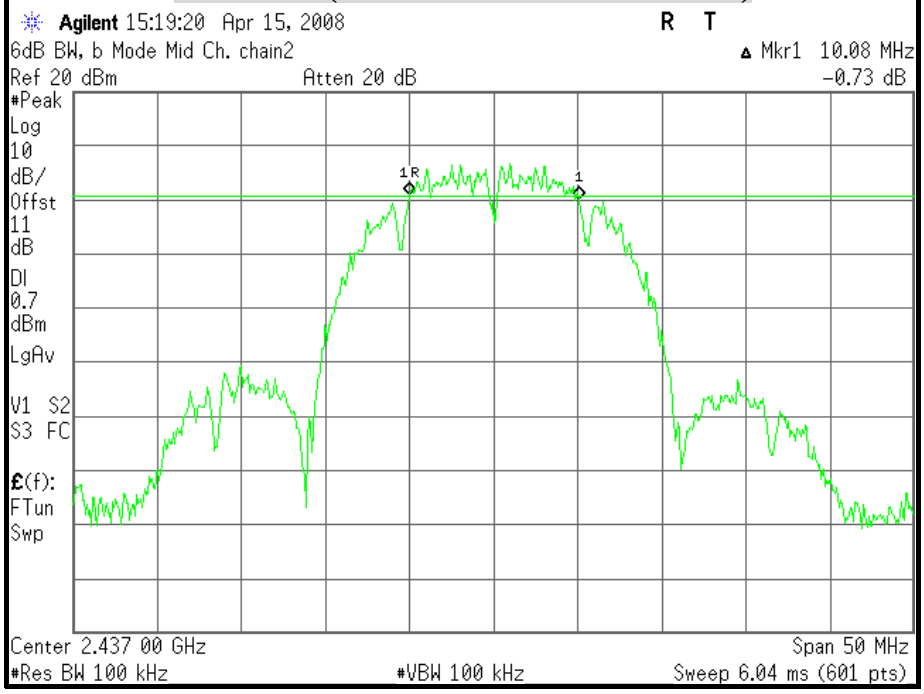
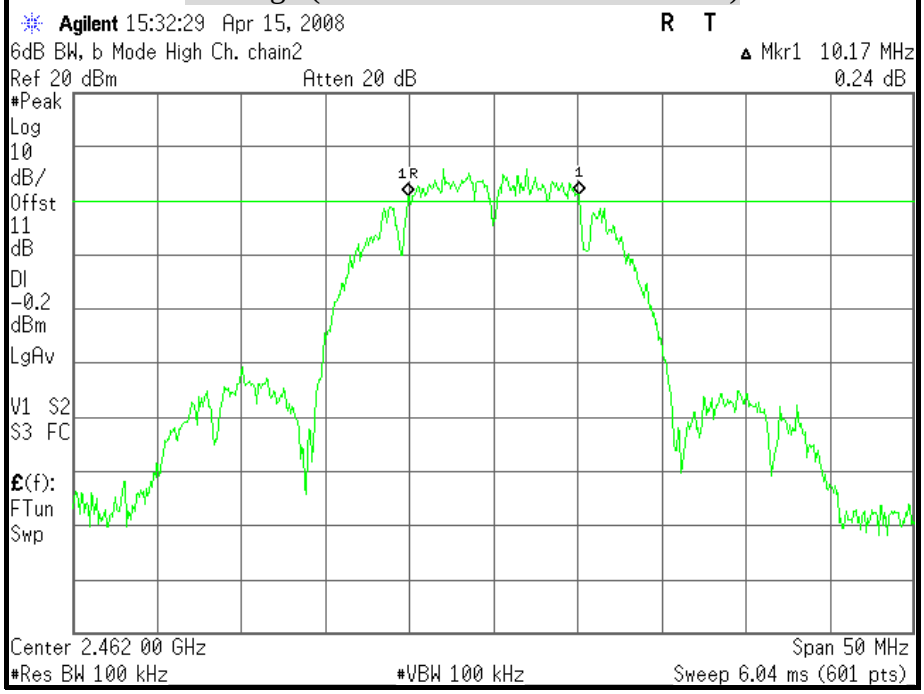


CH Middle (IEEE 802.11b mode - Chain 2)

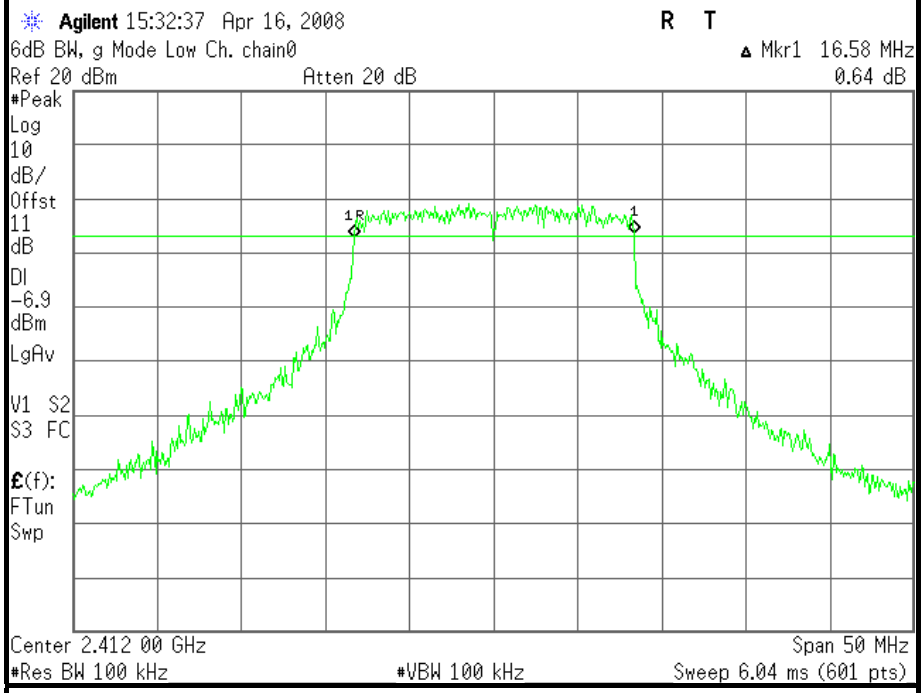


CH High (IEEE 802.11b mode – Chain 2)

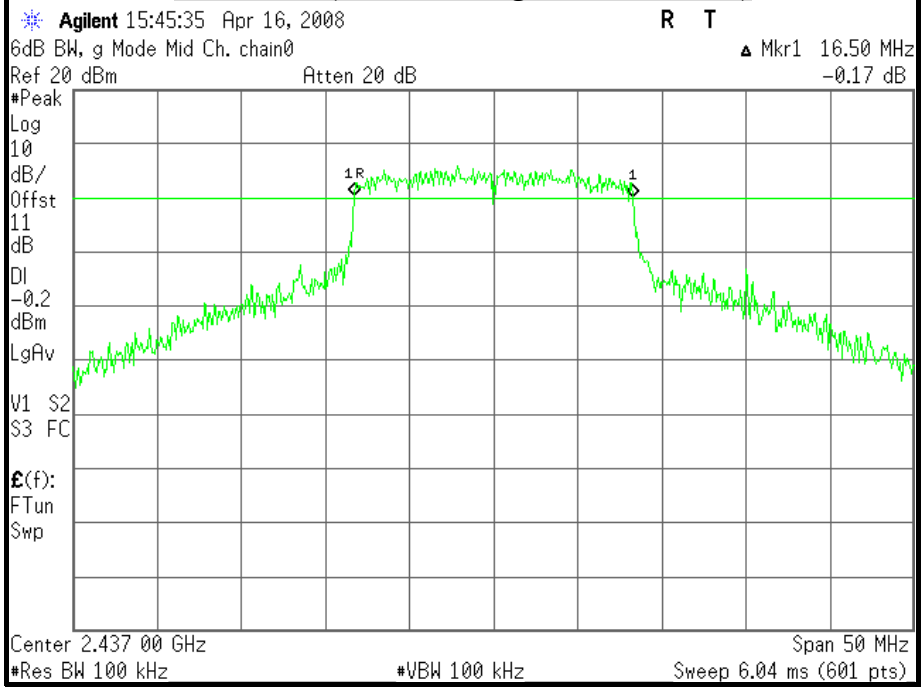


6dB BANDWIDTH (IEEE 802.11g mode)

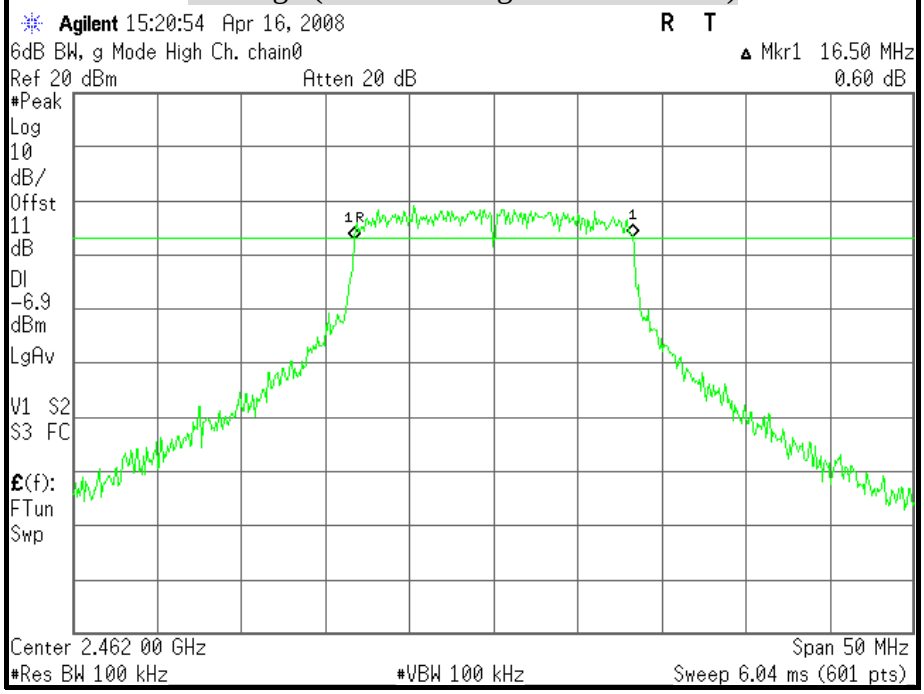
CH Low (IEEE 802.11g mode - Chain 0)



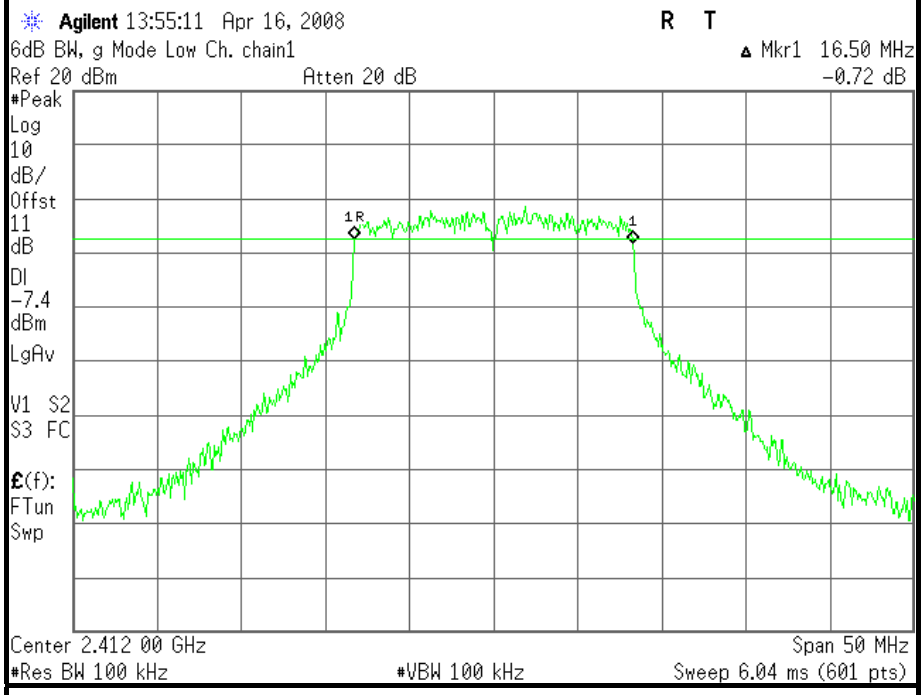
CH Middle (IEEE 802.11g mode - Chain 0)



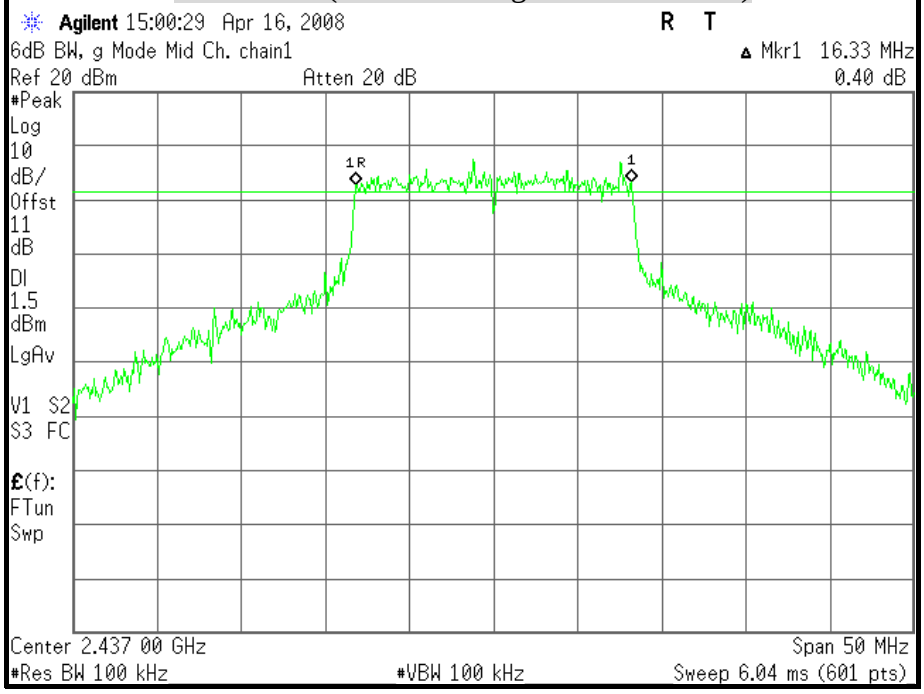
CH High (IEEE 802.11g mode - Chain 0)



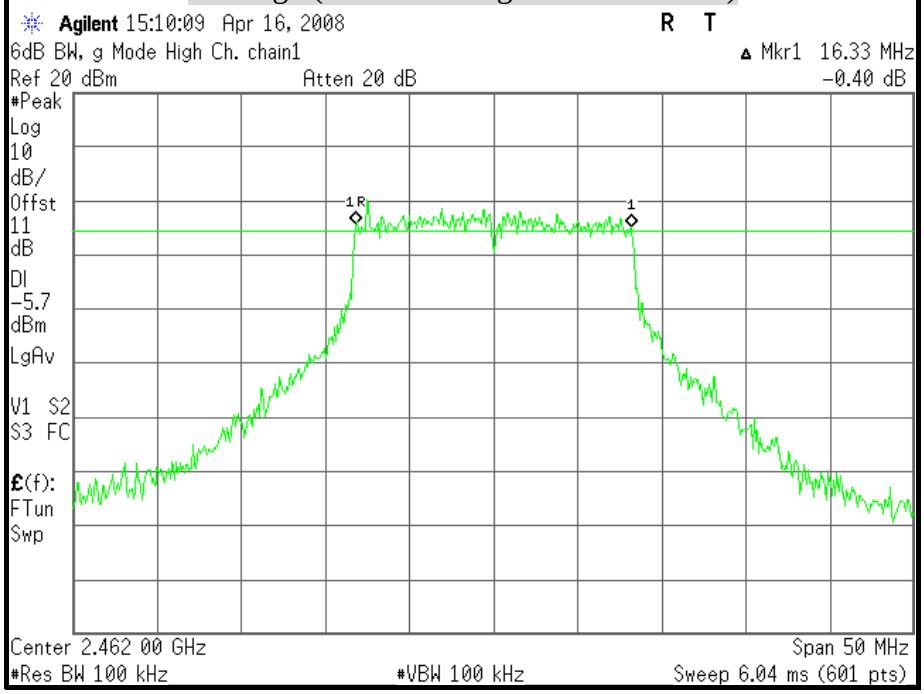
CH Low (IEEE 802.11g mode - Chain 1)



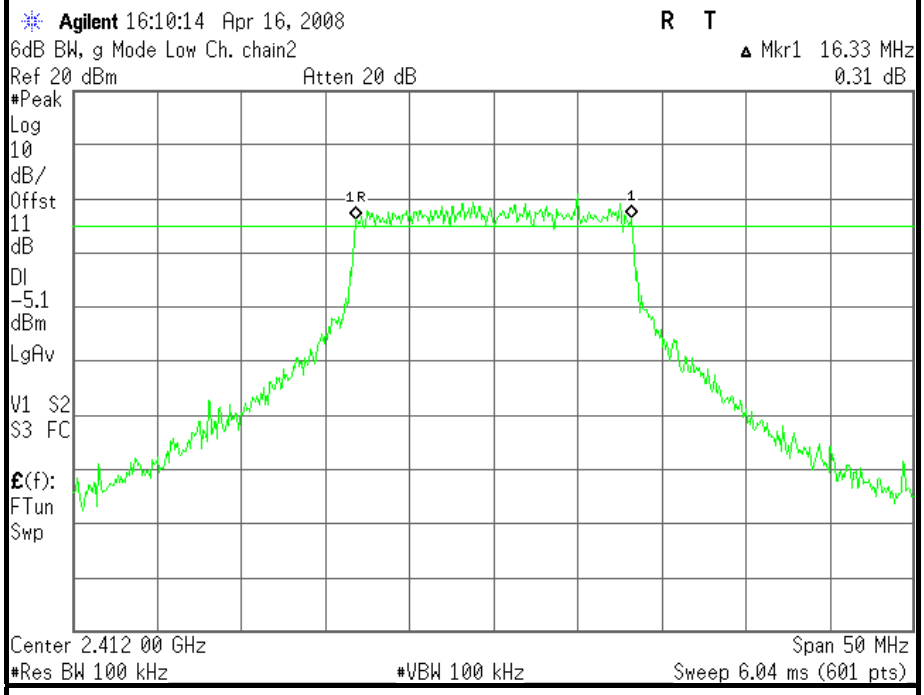
CH Middle (IEEE 802.11g mode - Chain 1)



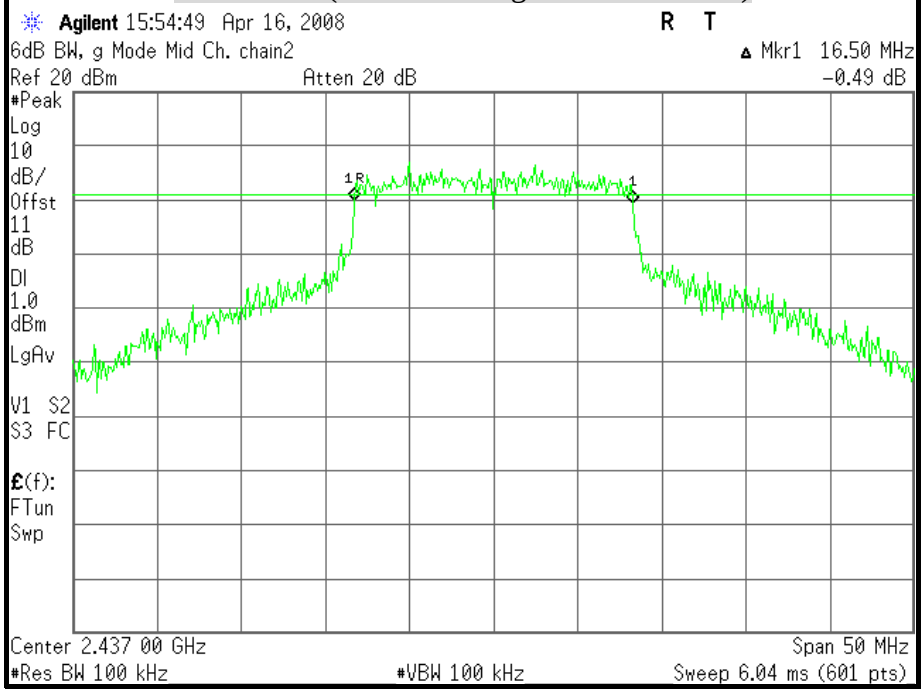
CH High (IEEE 802.11g mode - Chain 1)



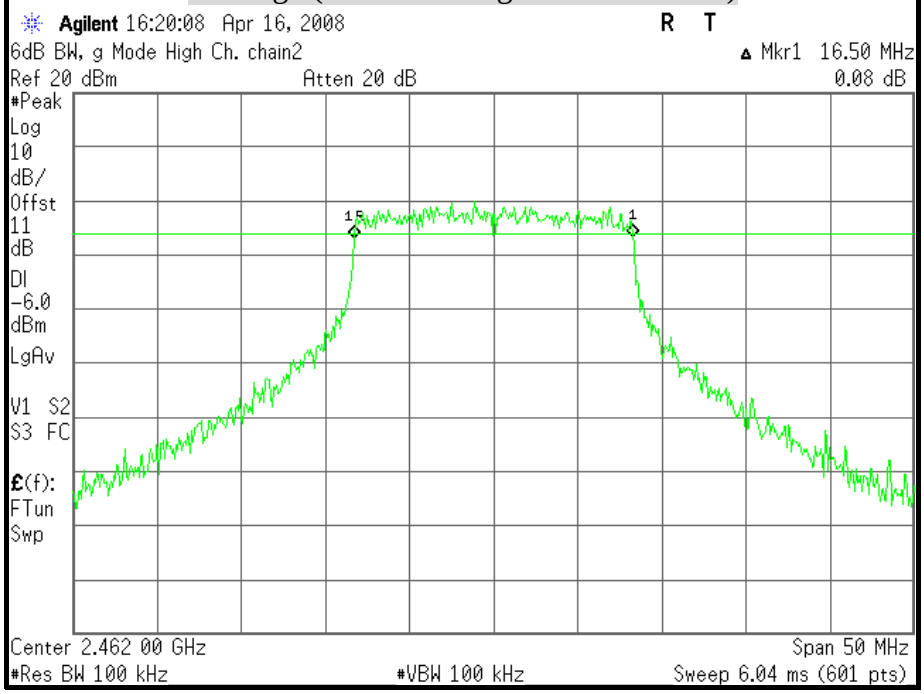
CH Low (IEEE 802.11g mode - Chain 2)



CH Middle (IEEE 802.11g mode - Chain 2)

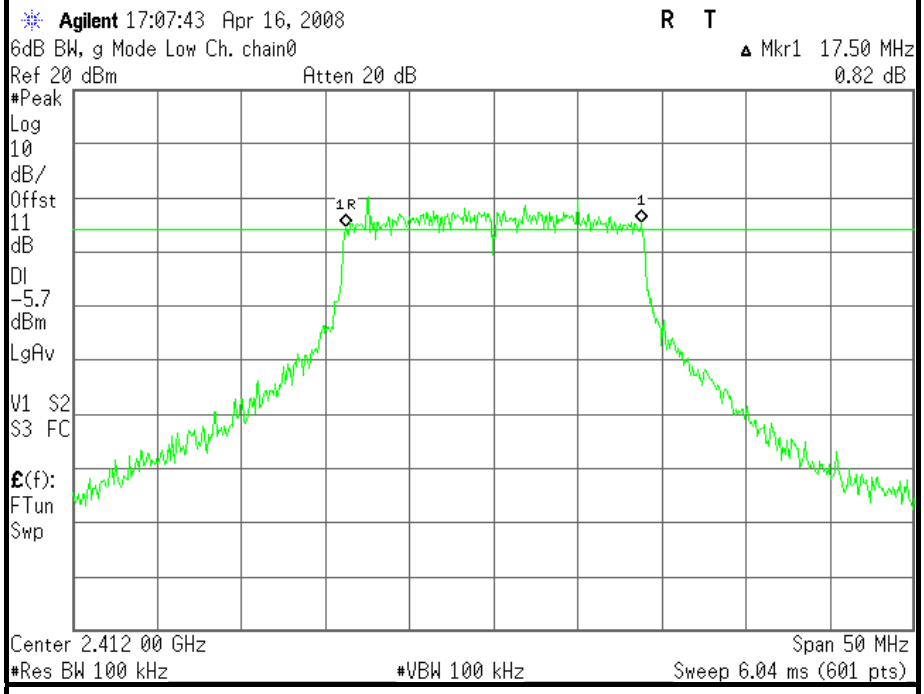


CH High (IEEE 802.11g mode - Chain 2)

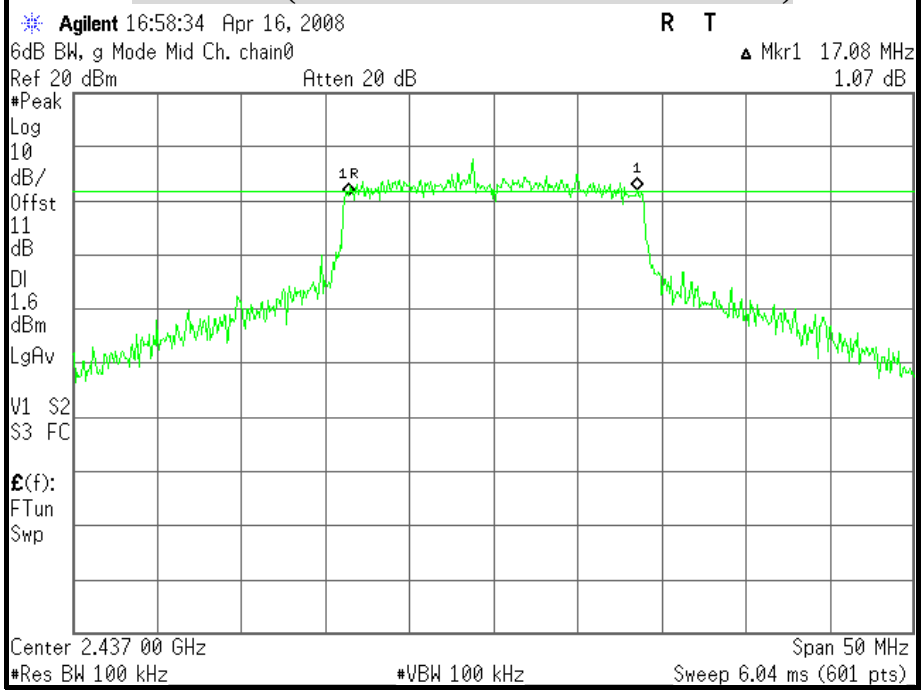


6dB BANDWIDTH (IEEE 802.11n HT20 mode)

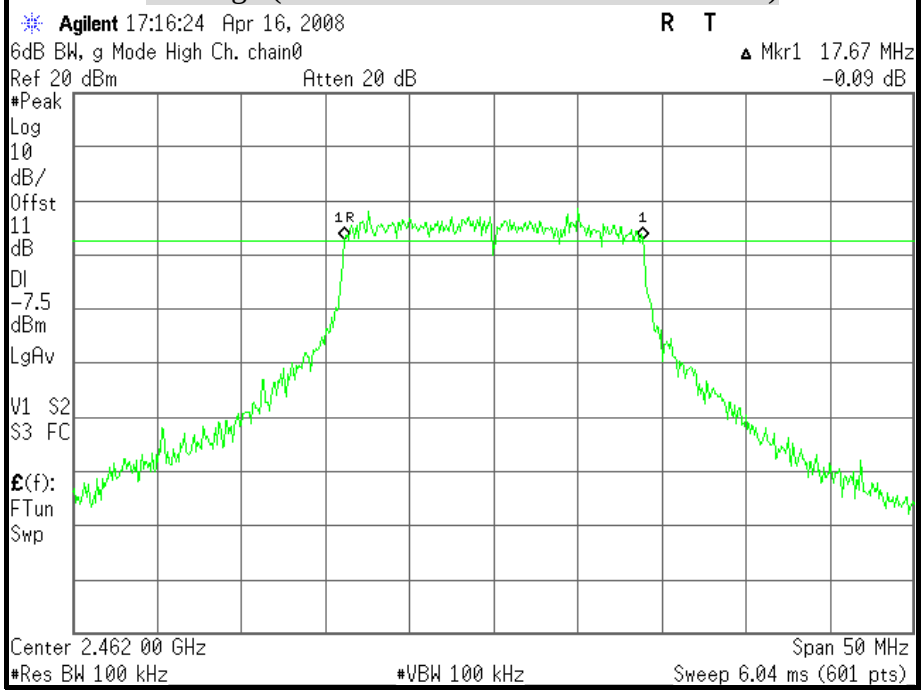
CH Low (IEEE 802.11n HT20 mode - Chain 0)



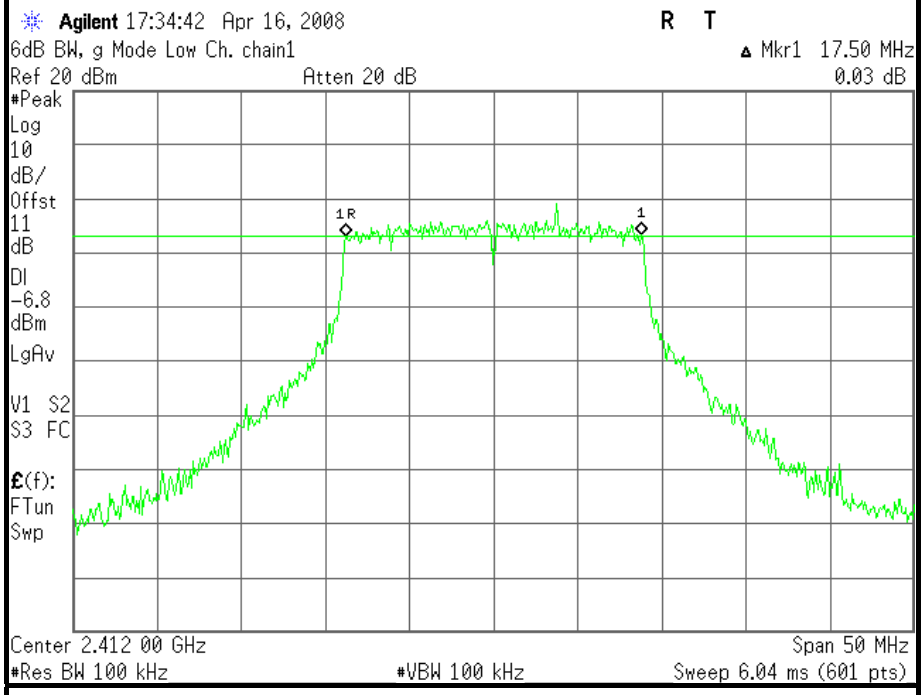
CH Middle (IEEE 802.11n HT20 mode - Chain 0)



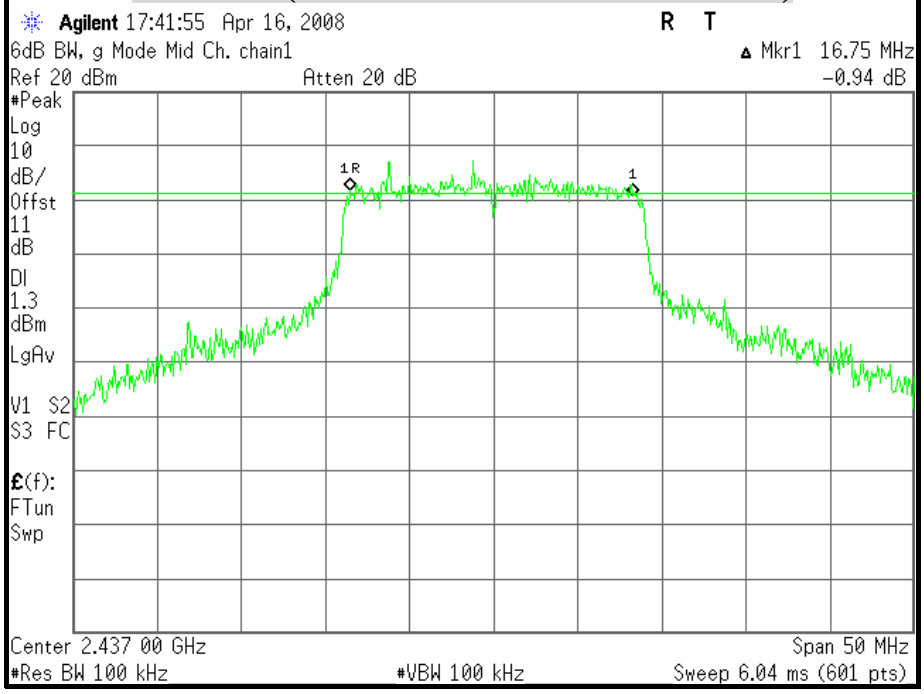
CH High (IEEE 802.11n HT20 mode - Chain 0)



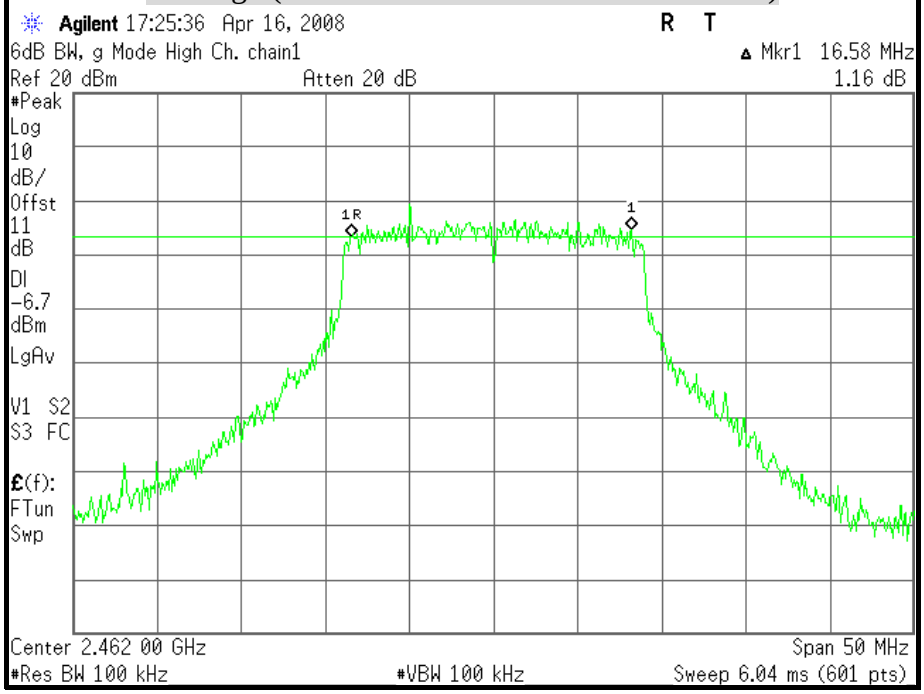
CH Low (IEEE 802.11n HT20 mode - Chain 1)



CH Middle (IEEE 802.11n HT20 mode - Chain 1)



CH High (IEEE 802.11n HT20 mode - Chain 1)



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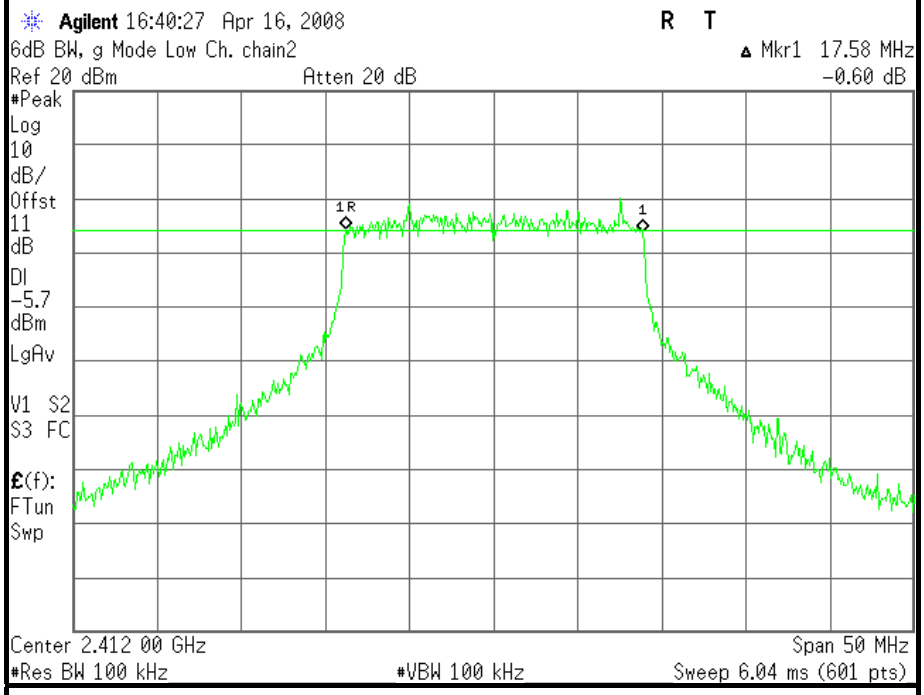
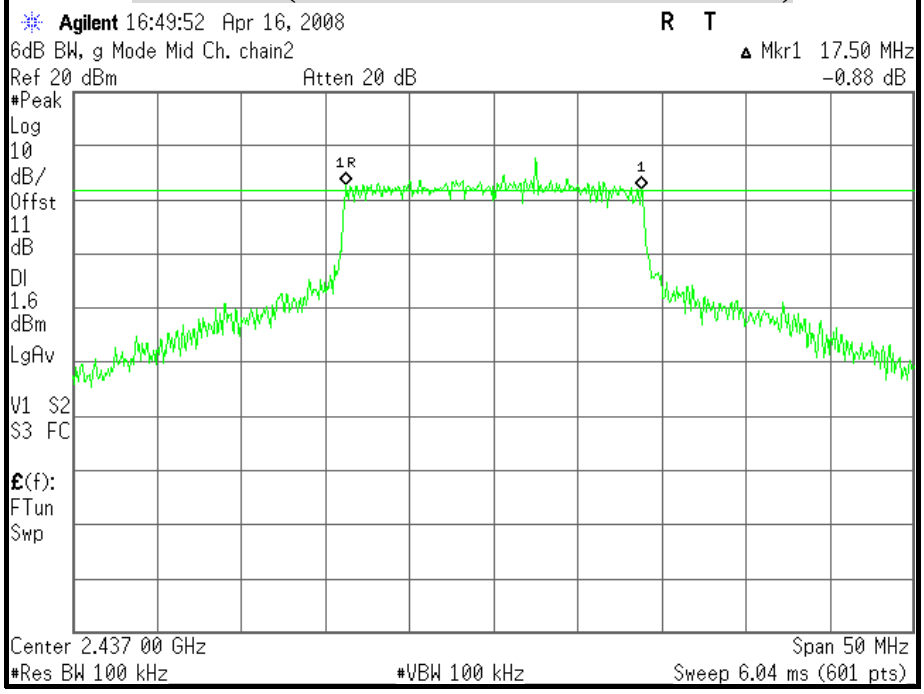
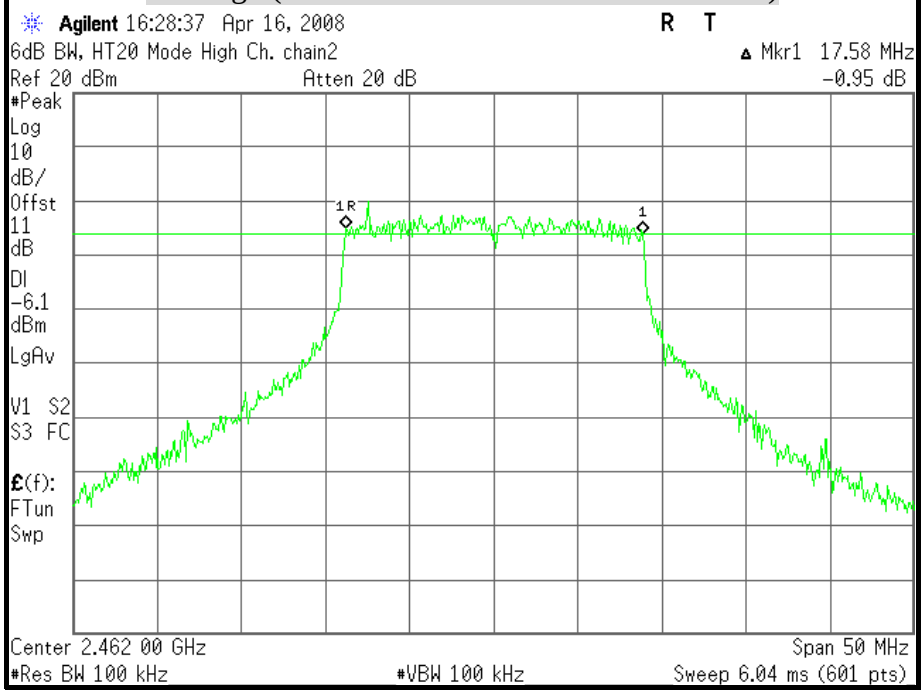


CH Middle (IEEE 802.11n HT20 mode - Chain 2)

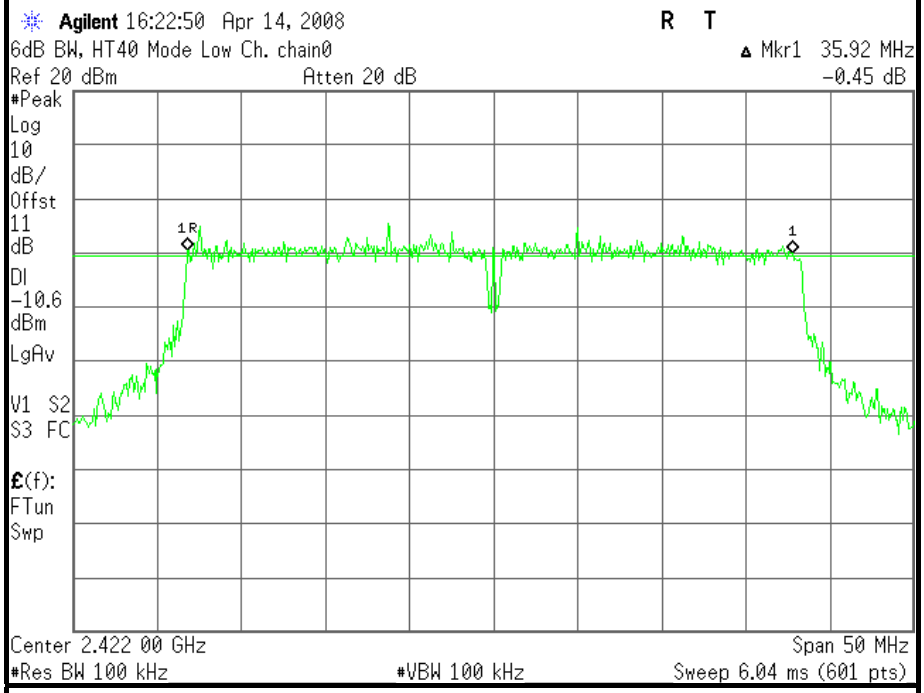


CH High (IEEE 802.11n HT20 mode - Chain 2)

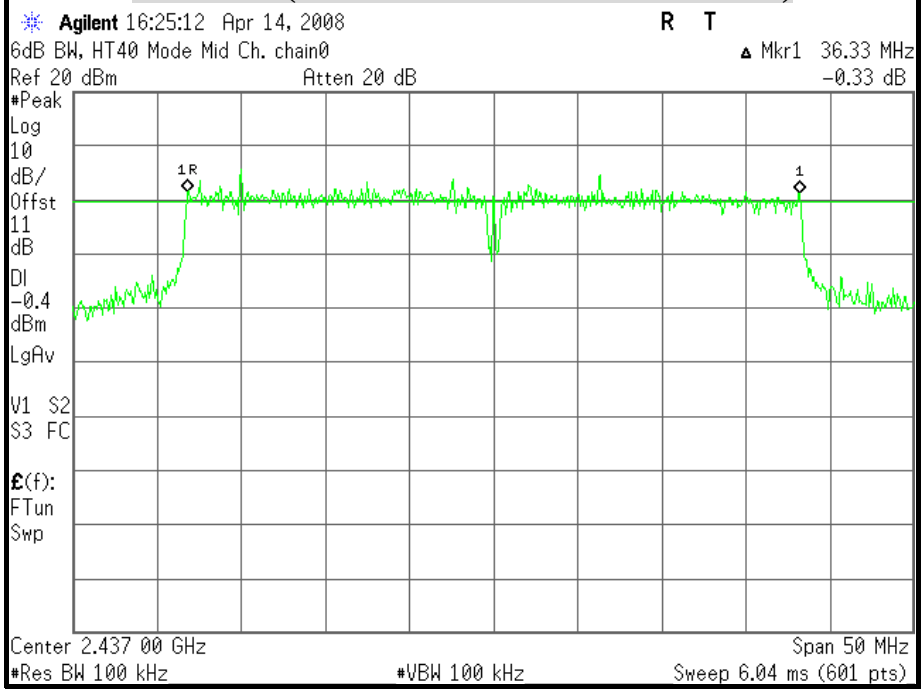


6dB BANDWIDTH (IEEE 802.11n HT40 mode)

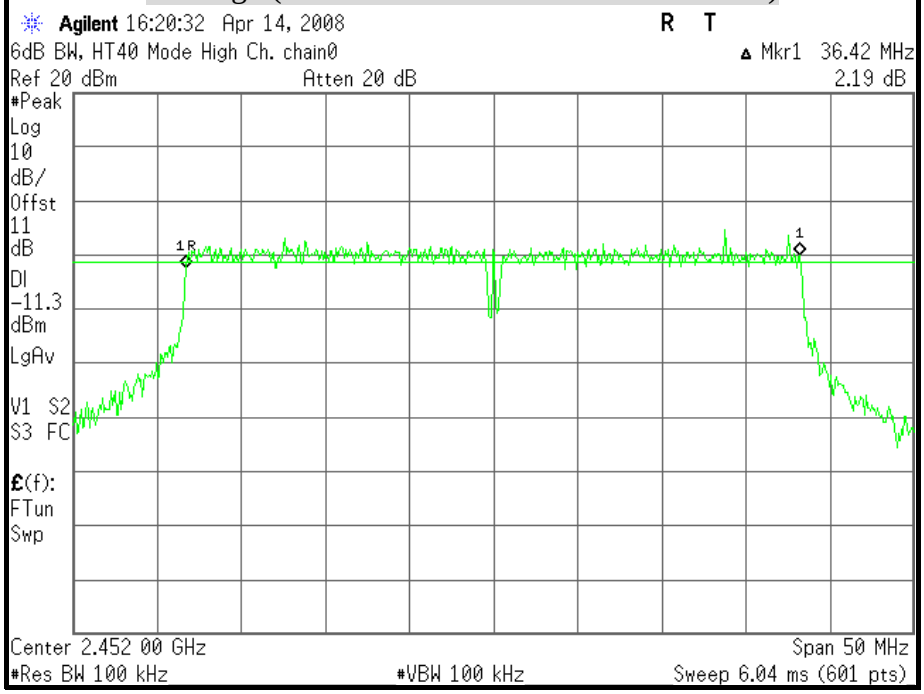
CH Low (IEEE 802.11n HT40 mode - Chain 0)



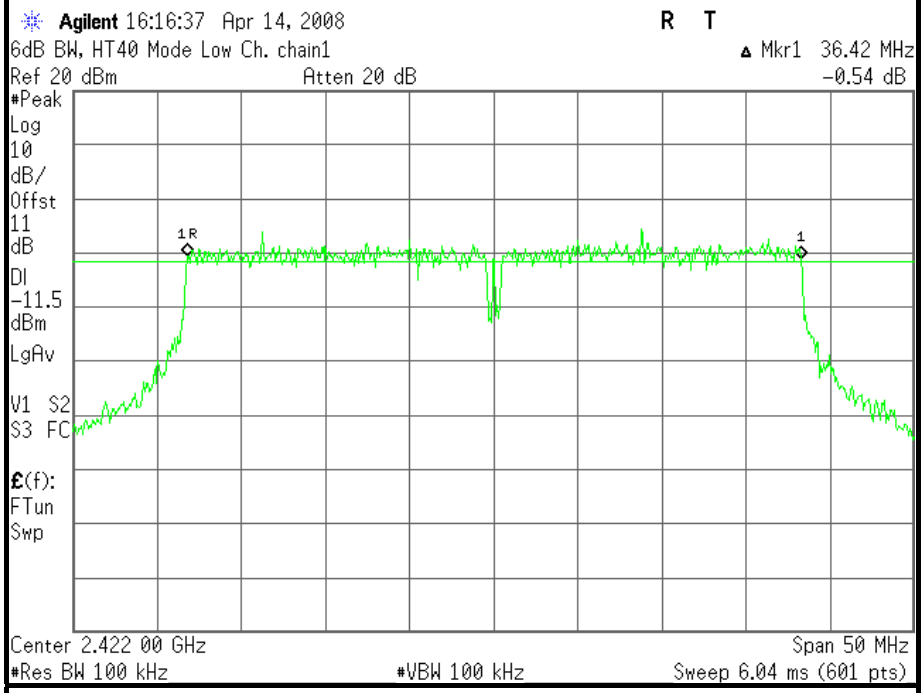
CH Middle (IEEE 802.11n HT40 mode - Chain 0)



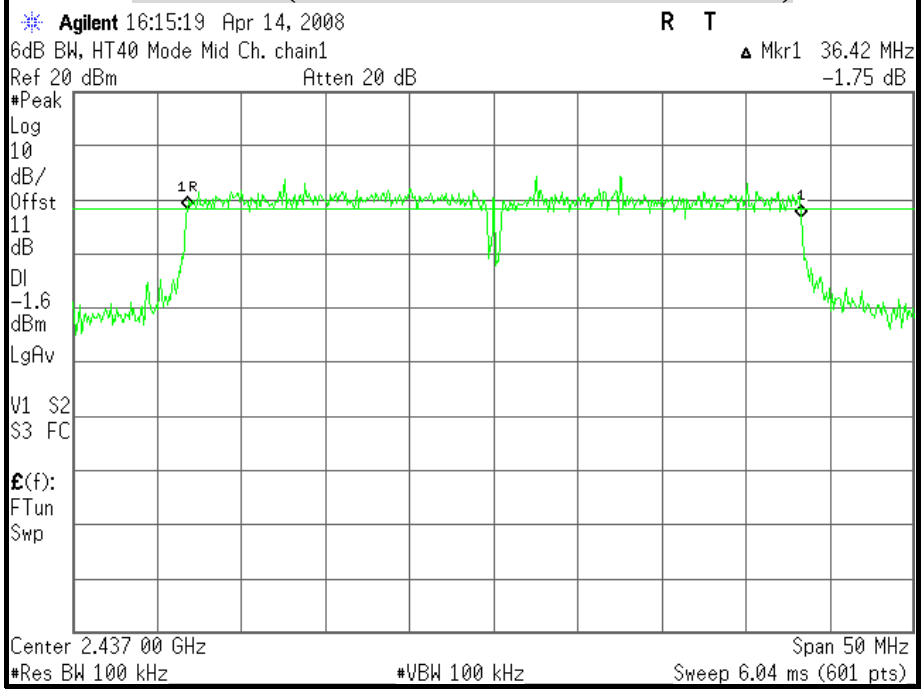
CH High (IEEE 802.11n HT40 mode - Chain 0)



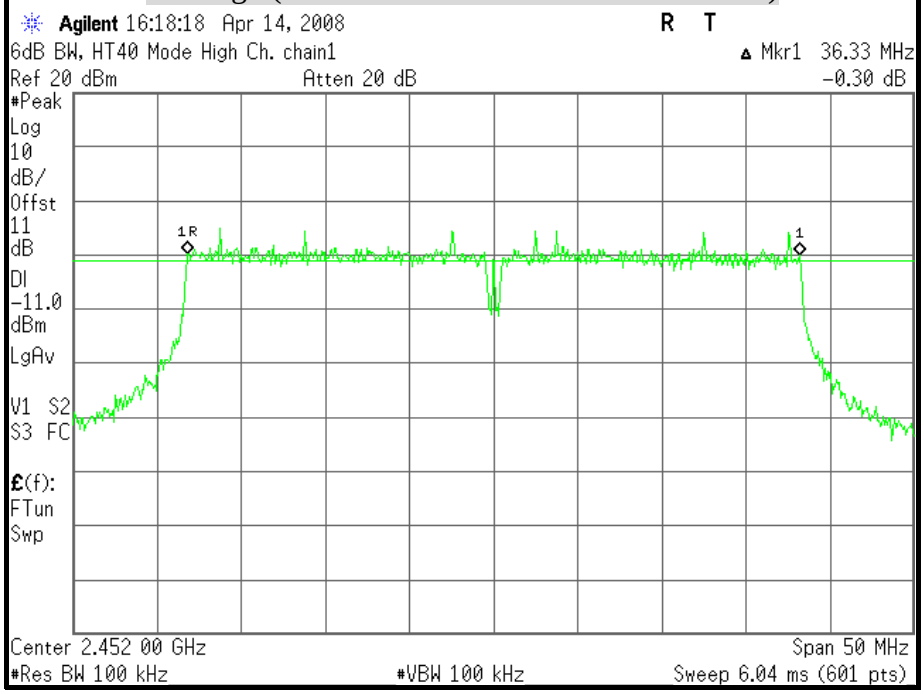
CH Low (IEEE 802.11n HT40 mode - Chain 1)



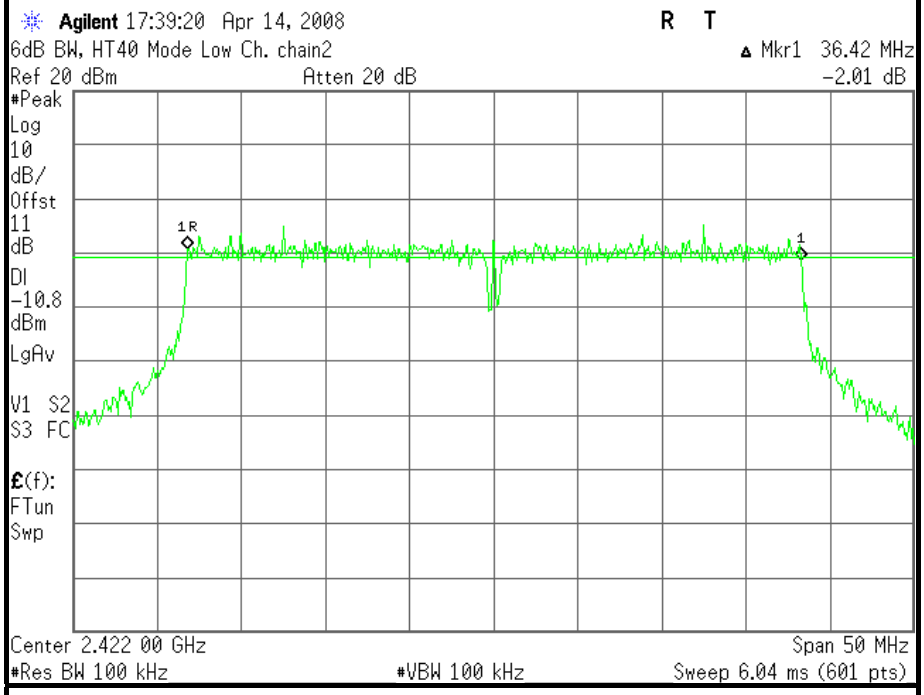
CH Middle (IEEE 802.11n HT40 mode - Chain 1)



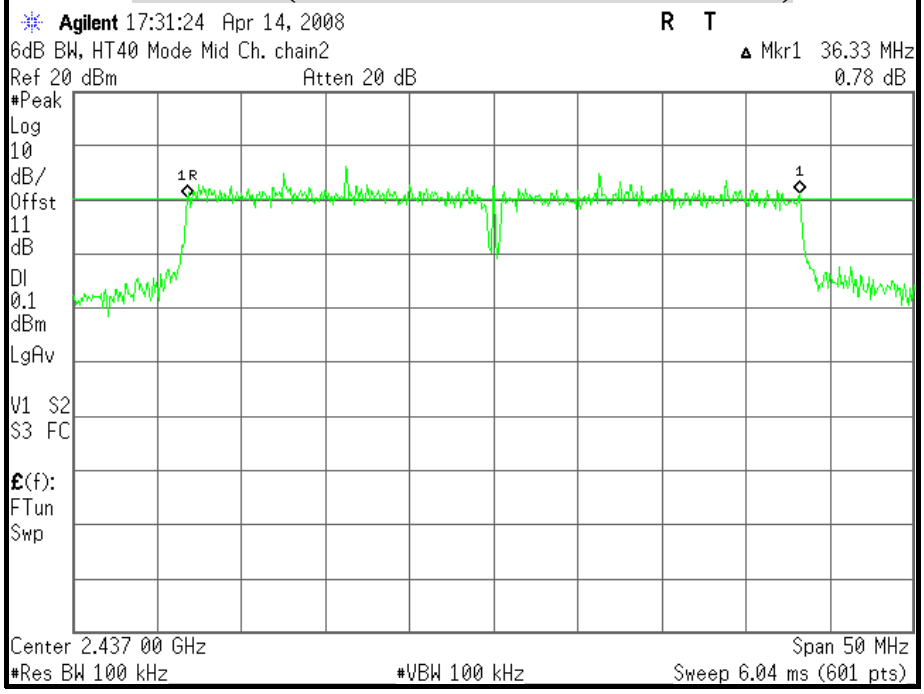
CH High (IEEE 802.11n HT40 mode - Chain 1)



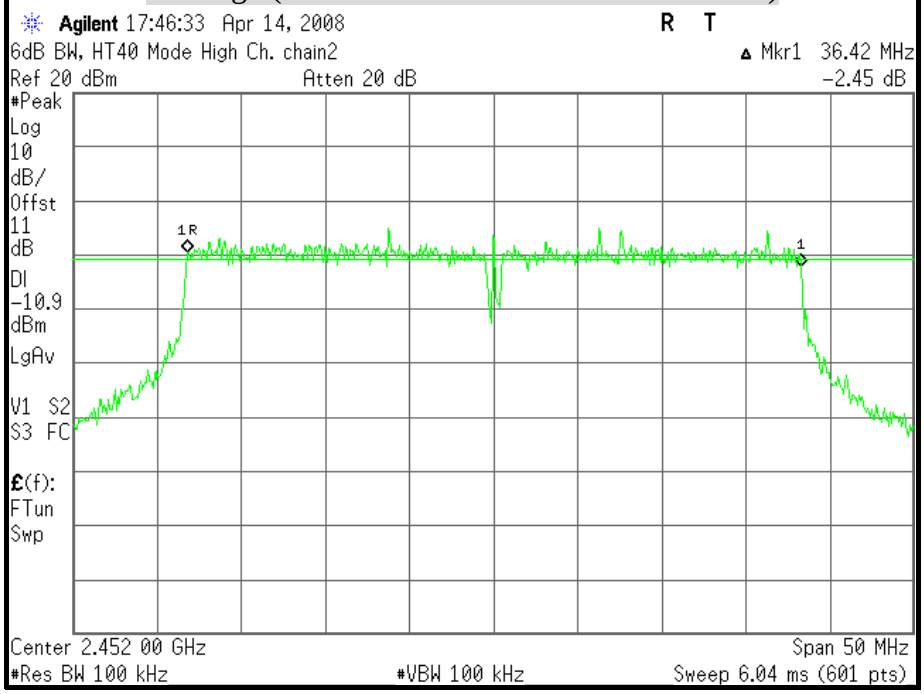
CH Low (IEEE 802.11n HT40 mode - Chain 2)



CH Middle (IEEE 802.11n HT40 mode - Chain 2)



CH High (IEEE 802.11n HT40 mode - Chain 2)



8.2 99% BANDWIDTH

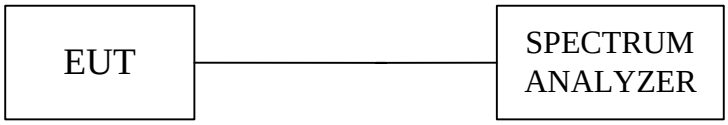
LIMIT

None; for reporting purposes only.

TEST EQUIPMENT

Description & Manufacturer	Model No.	Serial No.	Date of Calibration
ROHDE & SCHWARZ SPECTRUM ANALYZER	FSEK30	835253/002	October 25, 2007
AGILENT SPECTRUM ANALYZER	E4446A	MY433601.32	June 24, 2008

TEST SETUP



TEST PROCEDURE

1. The spectrum shall be set as follows :
   Span : The minimum span to fully display the emission and approximately 20dB below peak level.
   RBW : The set to 1% to 3% of the approximate emission width.
2. Compute the combined power of all signal responses contained in the trace by covering all the data points.
3. For 99% occupied BW, place the markers at the frequency at which 0.5% of the power lies to the right of the right marker and 0.5% of the power lies to the left of the left marker.
4. The 99% BW is the bandwidth between the right and left markers.

TEST RESULTS

No non-compliance noted

IEEE 802.11a mode

Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)		
		Chain 0	Chain 1	Chain 2
Low	5745	16.374	16.421	16.458
Middle	5785	16.355	16.500	16.424
High	5825	16.416	16.503	16.392

IEEE 802.11n HT20 mode

Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)		
		Chain 0	Chain 1	Chain 2
Low	5745	17.753	17.712	17.935
Middle	5785	17.837	17.698	17.799
High	5825	17.765	17.648	17.836

IEEE 802.11n HT40 mode

Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)		
		Chain 0	Chain 1	Chain 2
Low	5755	36.148	36.428	35.918
High	5795	36.251	36.150	36.326

IEEE 802.11b mode

Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)		
		Chain 0	Chain 1	Chain 2
Low	2412	15.365	14.961	15.263
Middle	2437	15.738	15.188	15.576
High	2462	15.585	15.309	15.250

IEEE 802.11g mode

Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)		
		Chain 0	Chain 1	Chain 2
Low	2412	16.364	16.494	16.569
Middle	2437	17.578	16.520	17.572
High	2462	16.400	16.414	16.369

IEEE 802.11n HT20 mode

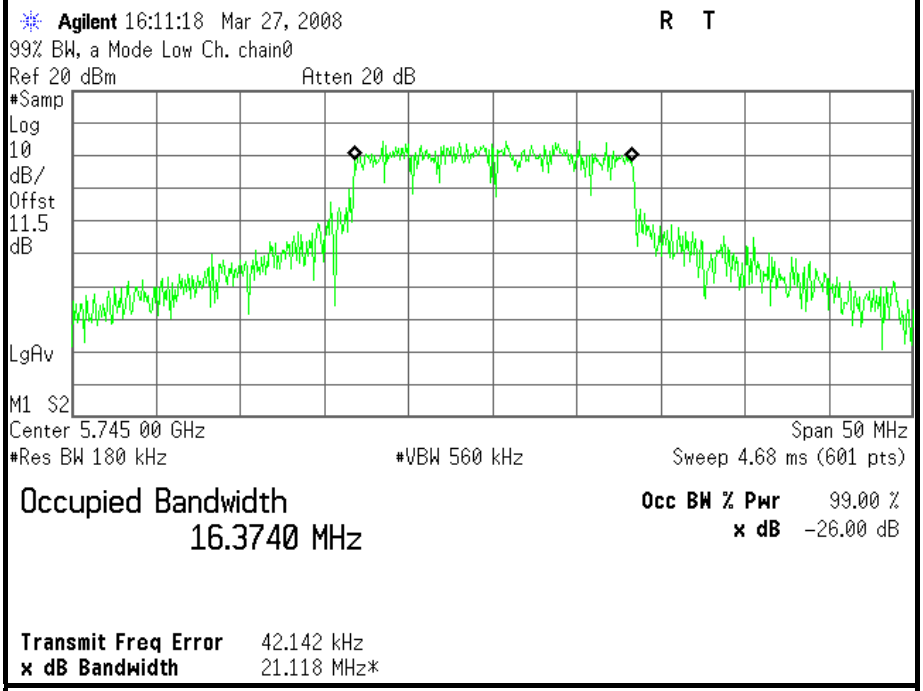
Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)		
		Chain 0	Chain 1	Chain 2
Low	2412	17.530	17.613	17.596
Middle	2437	17.801	17.693	17.865
High	2462	17.571	17.680	17.657

IEEE 802.11n HT40 mode

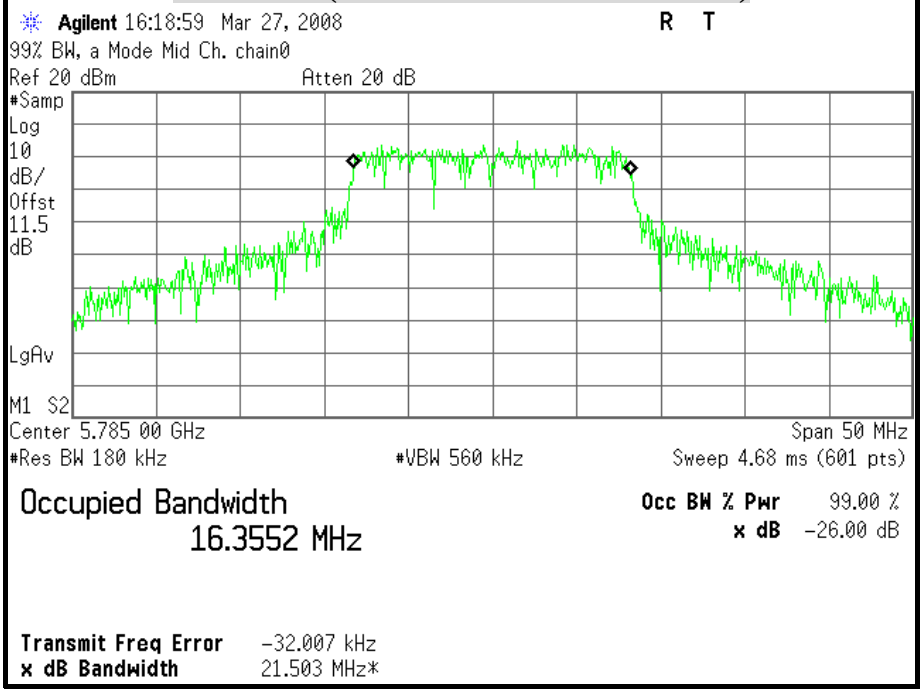
Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)		
		Chain 0	Chain 1	Chain 2
Low	2422	36.194	36.220	36.235
Middle	2437	36.247	36.337	36.343
High	2452	36.300	36.159	36.214

99% BANDWIDTH (IEEE 802.11a mode)

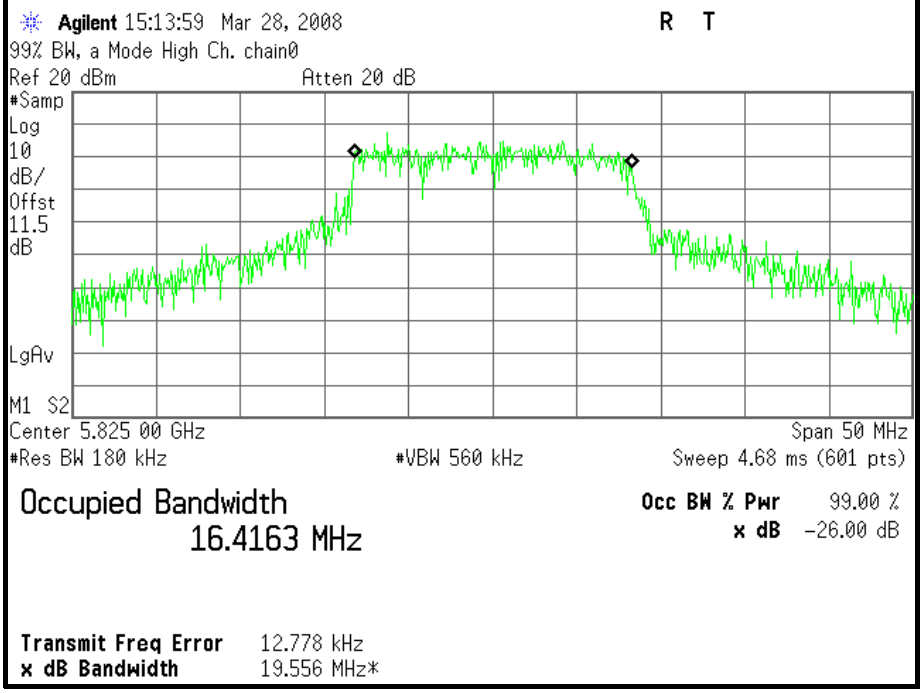
CH Low (IEEE 802.11a mode - Chain 0)



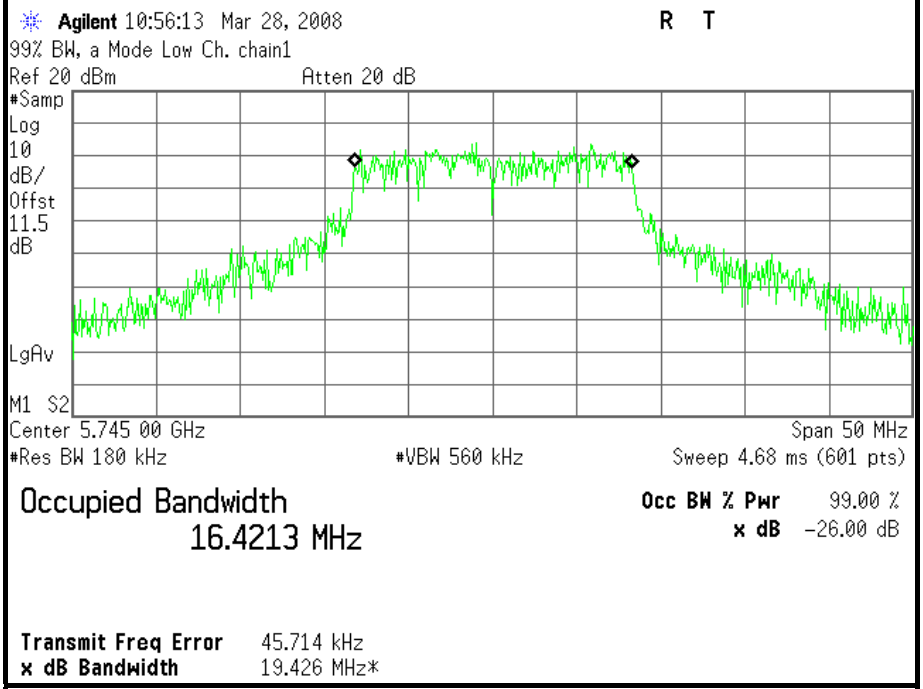
CH Middle (IEEE 802.11a mode - Chain 0)



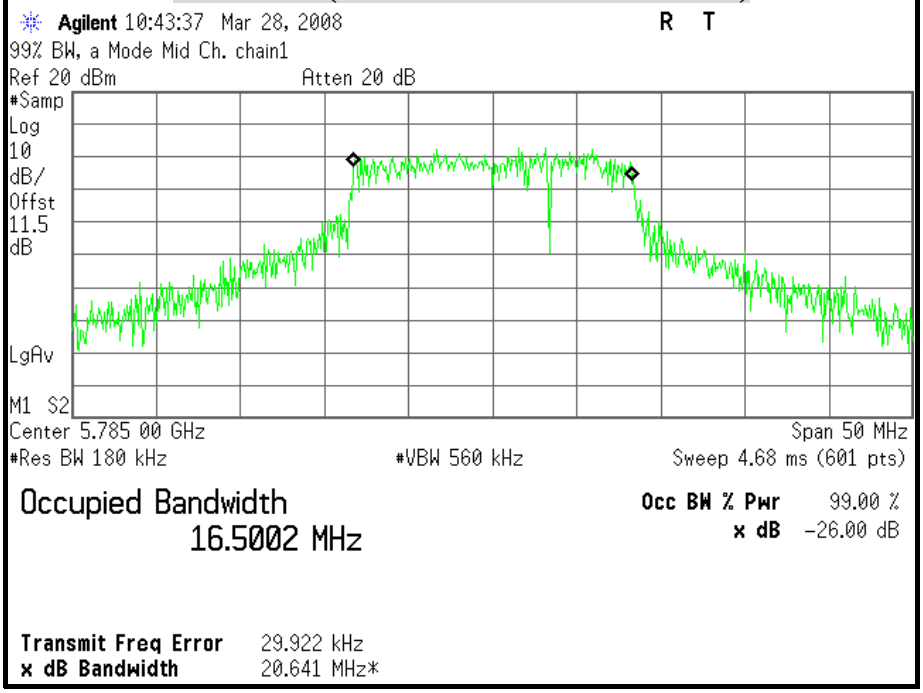
CH High (IEEE 802.11a mode - Chain 0)



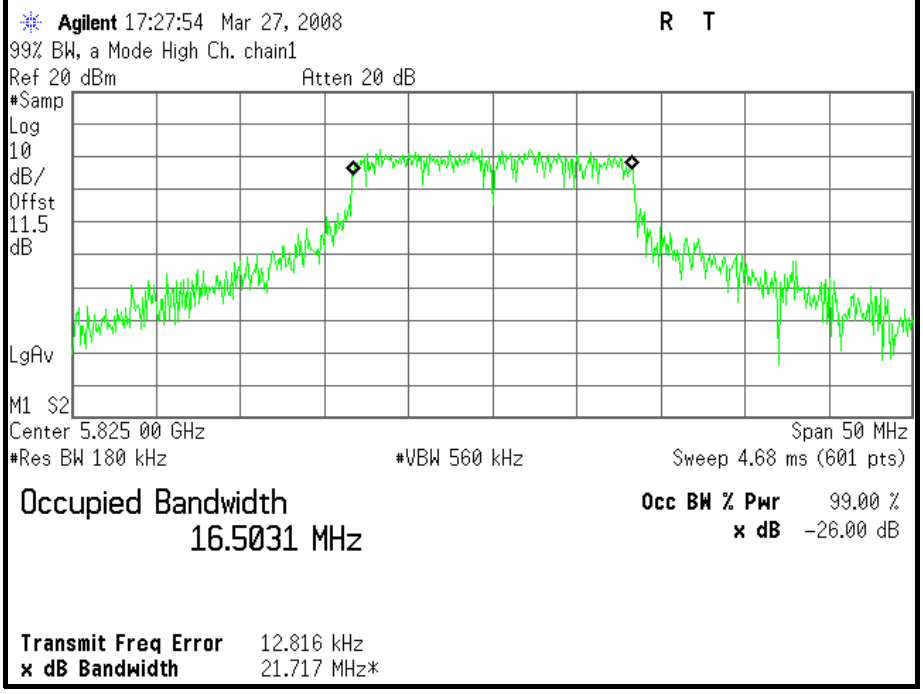
CH Low (IEEE 802.11a mode - Chain 1)



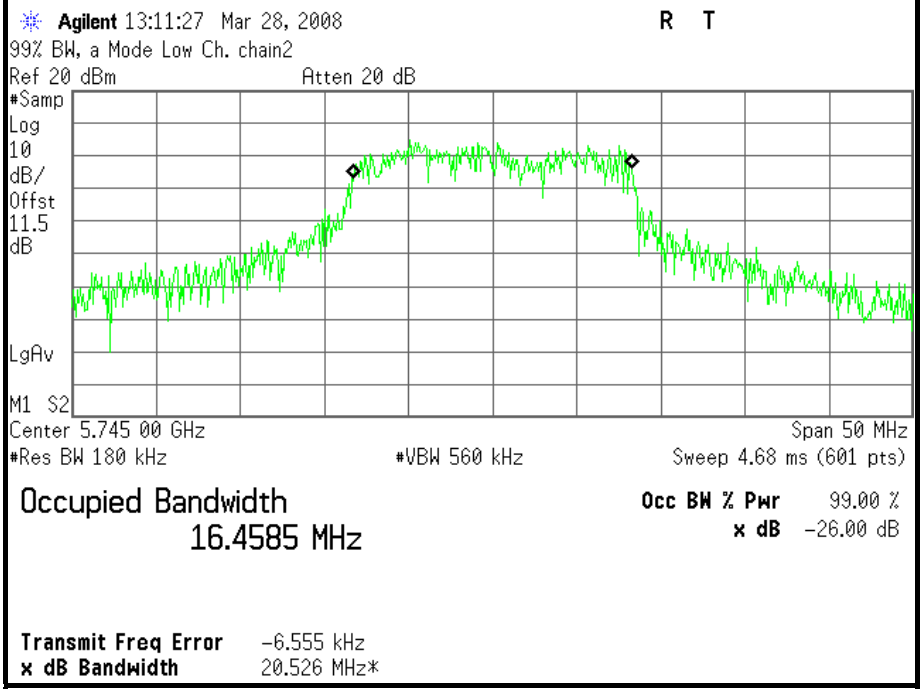
CH Middle (IEEE 802.11a mode - Chain 1)



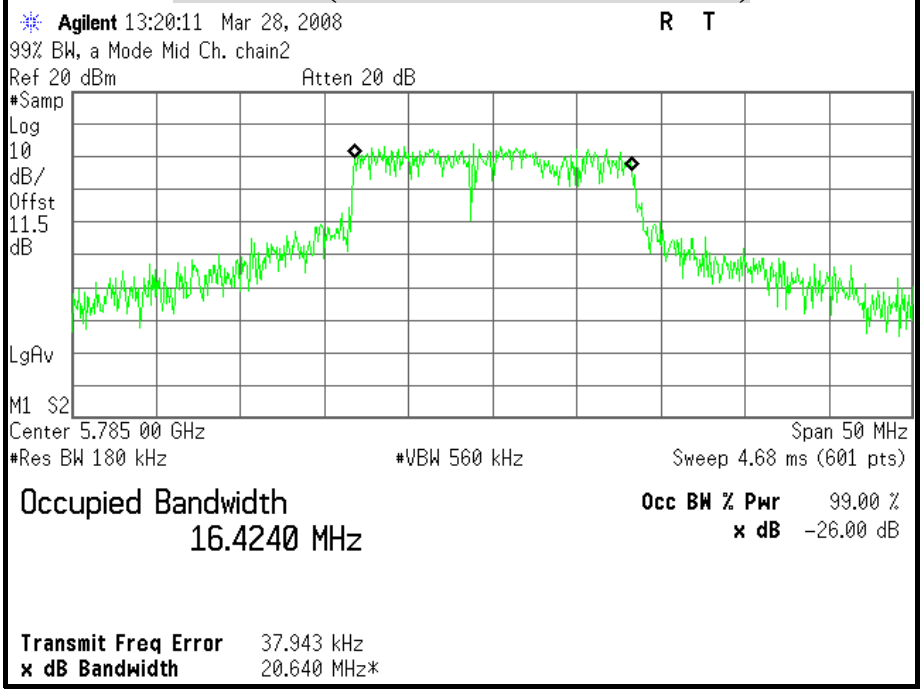
CH High (IEEE 802.11a mode - Chain 1)



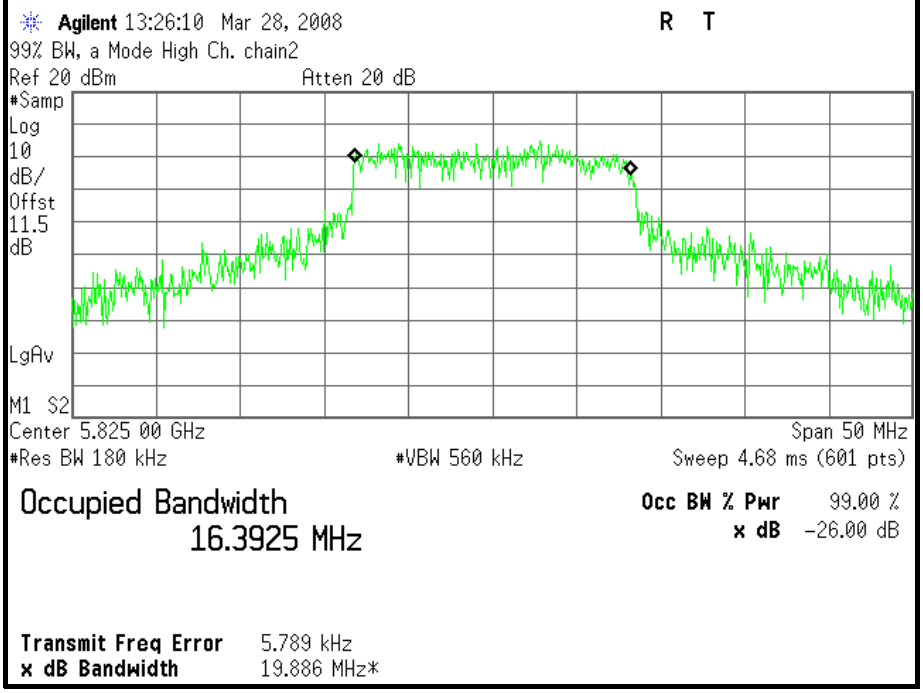
CH Low (IEEE 802.11a mode - Chain 2)



CH Middle (IEEE 802.11a mode - Chain 2)

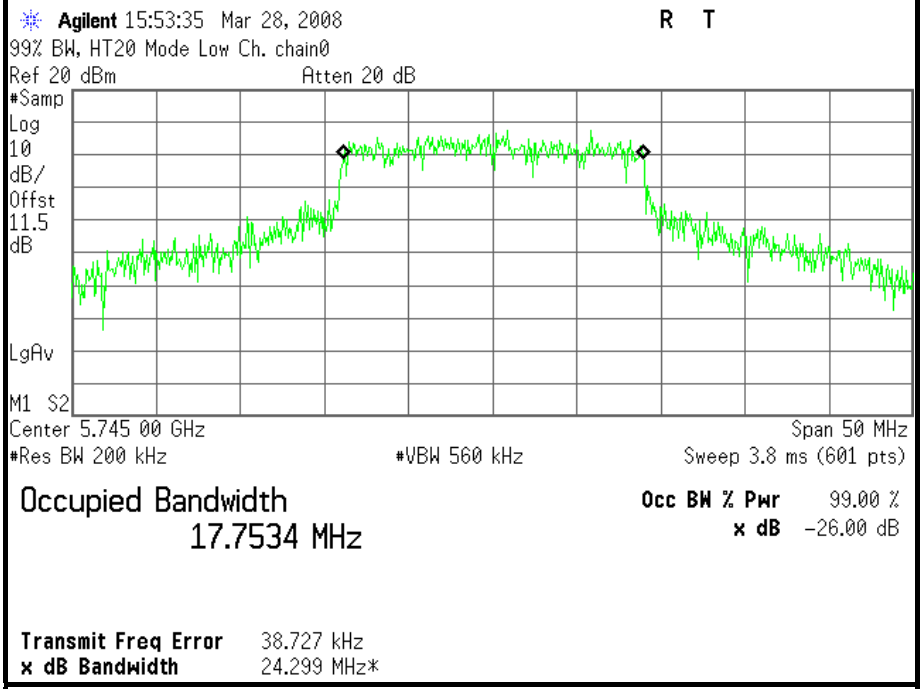


CH High (IEEE 802.11a mode - Chain 2)

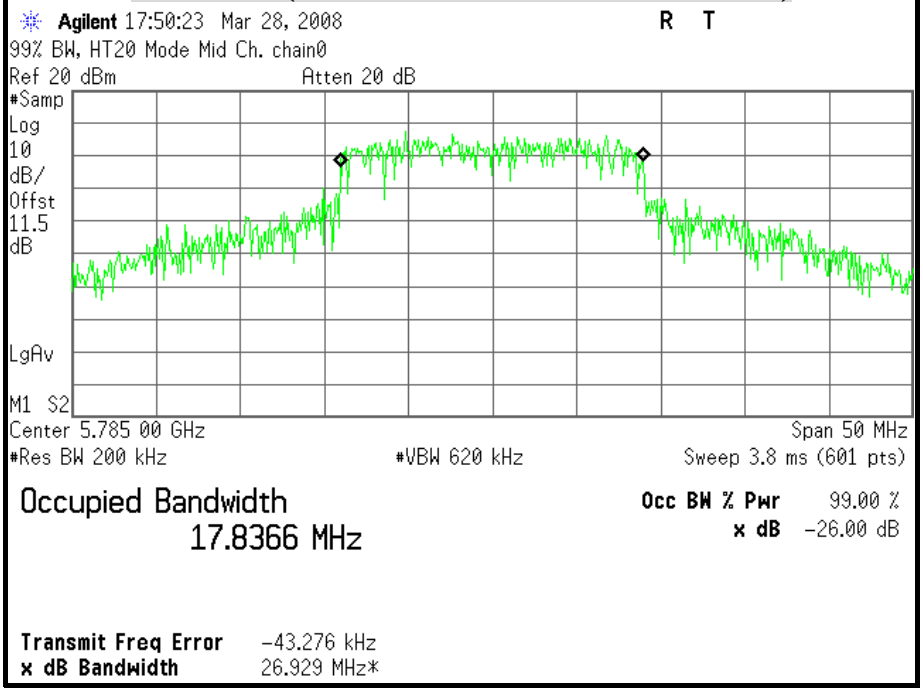


99% BANDWIDTH (IEEE 802.11n HT20 mode)

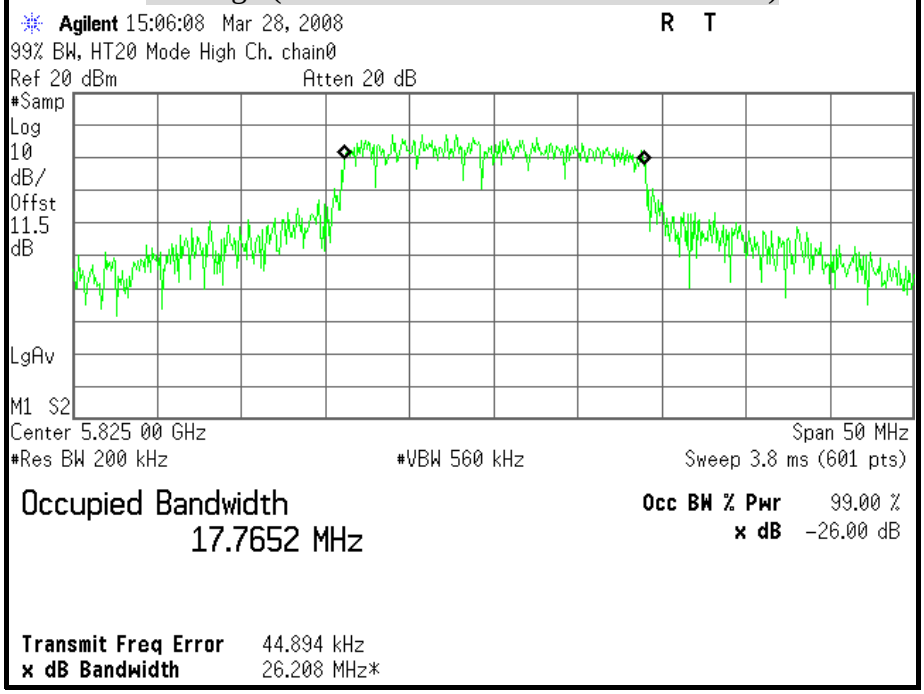
CH Low (IEEE 802.11n HT20 mode - Chain 0)



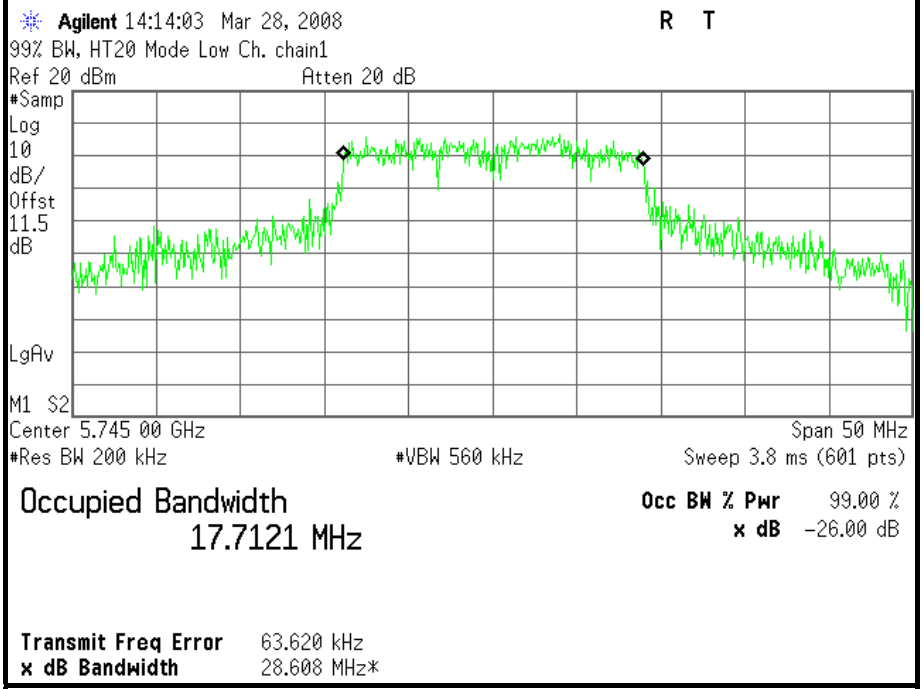
CH Middle (IEEE 802.11n HT20 mode - Chain 0)



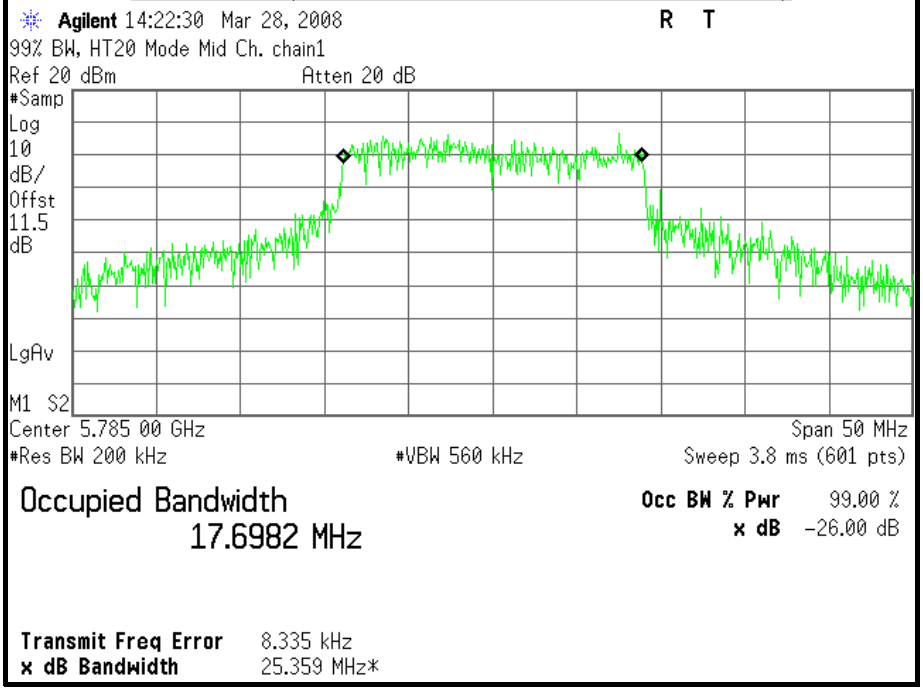
CH High (IEEE 802.11n HT20 mode - Chain 0)



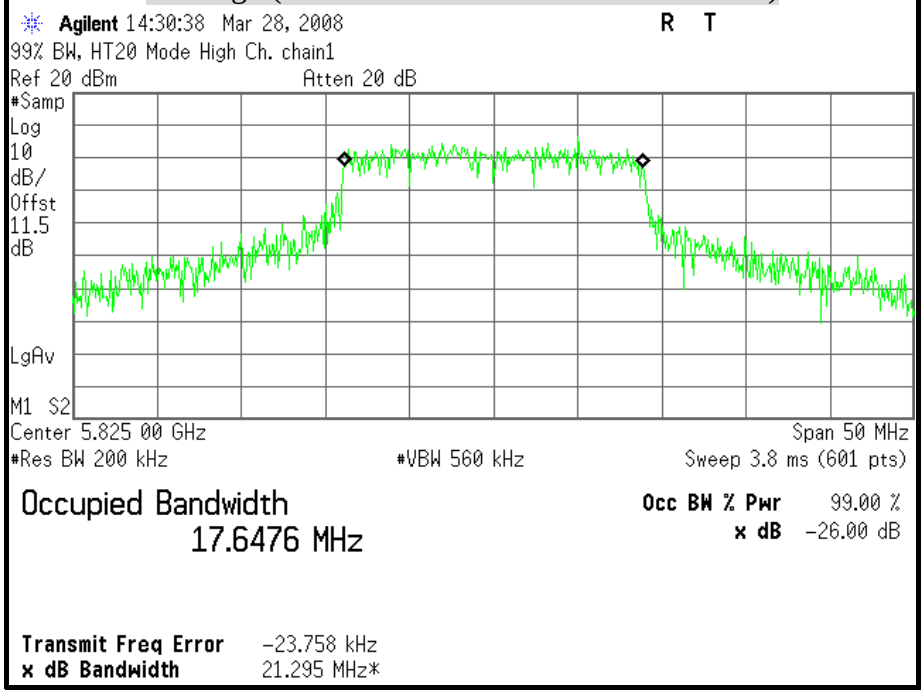
CH Low (IEEE 802.11n HT20 mode - Chain 1)



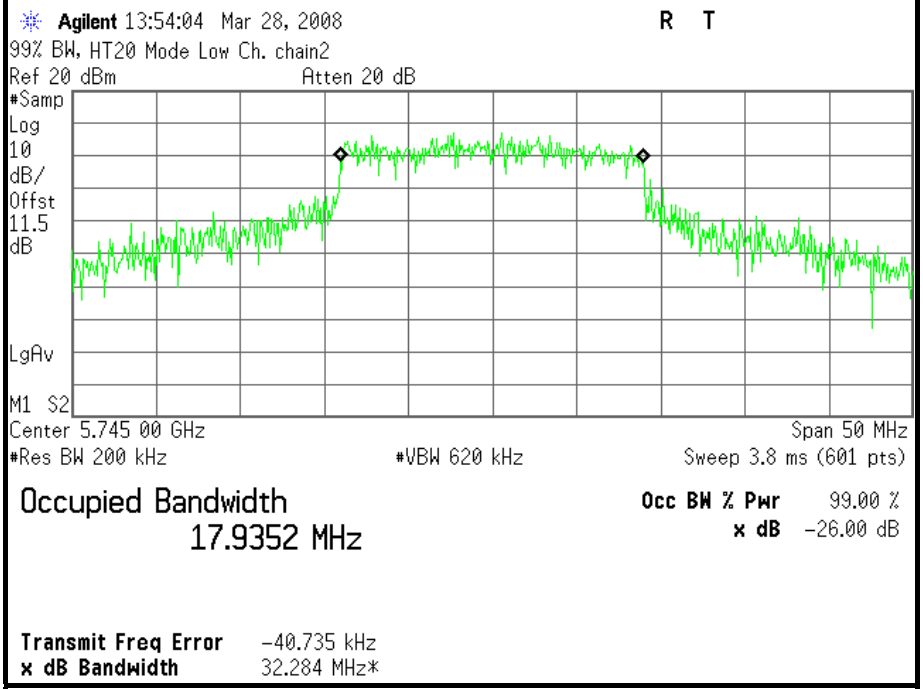
CH Middle (IEEE 802.11n HT20 mode - Chain 1)



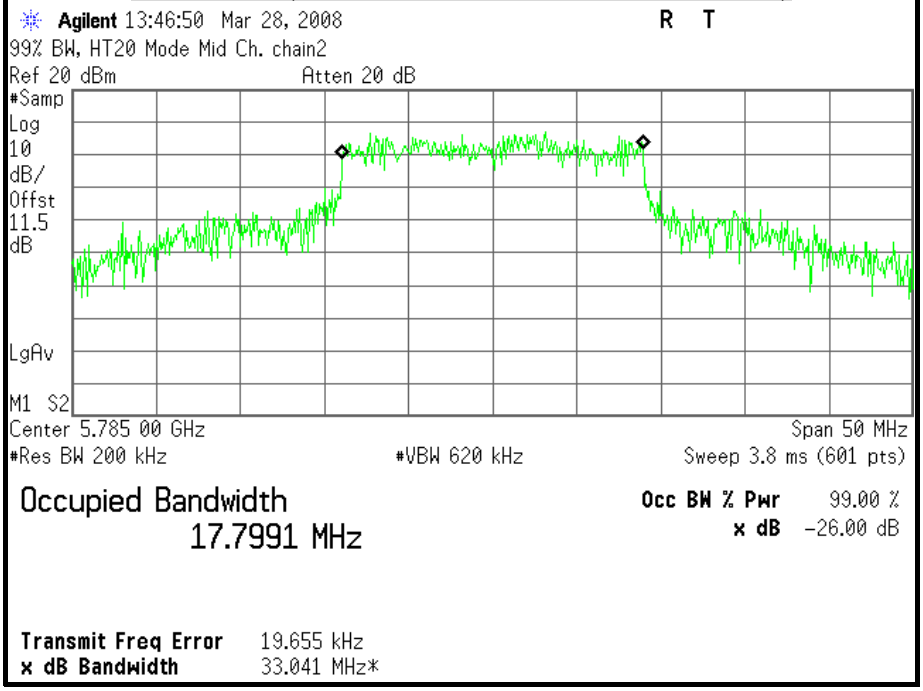
CH High (IEEE 802.11n HT20 mode - Chain 1)



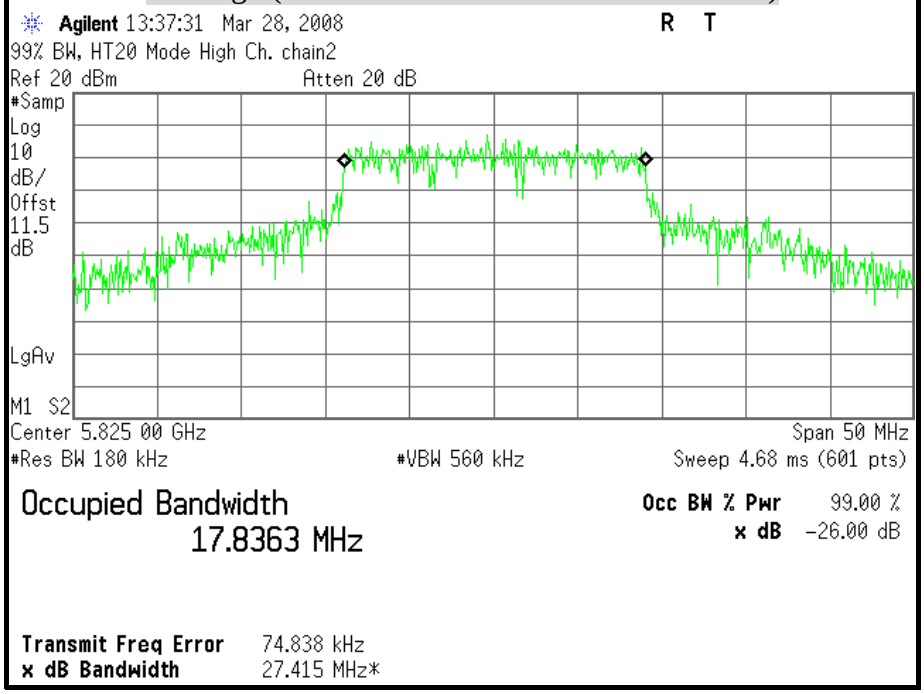
CH Low (IEEE 802.11n HT20 mode - Chain 2)



CH Middle (IEEE 802.11n HT20 mode - Chain 2)

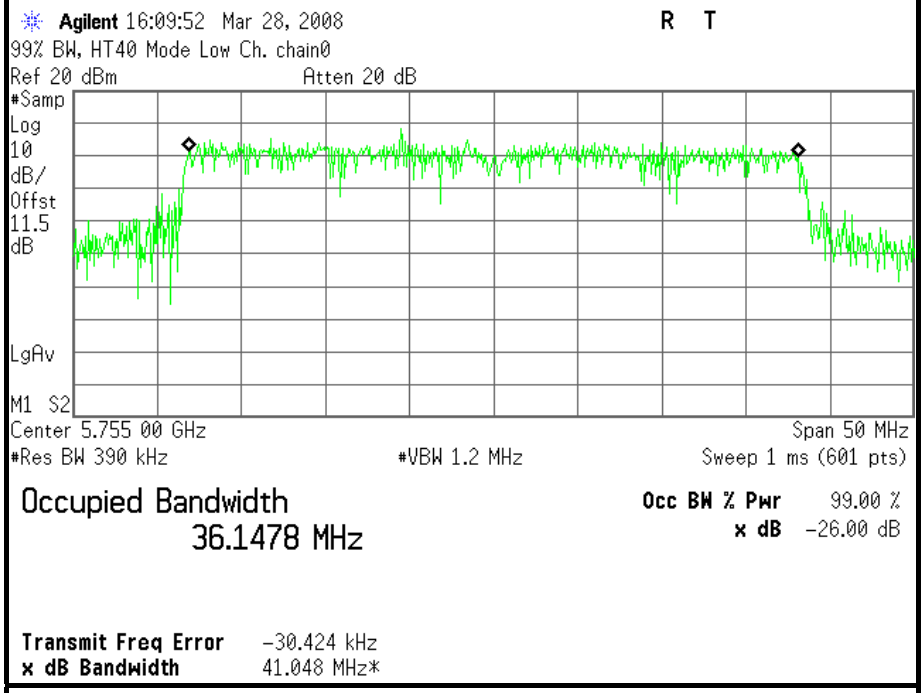


CH High (IEEE 802.11n HT20 mode - Chain 2)

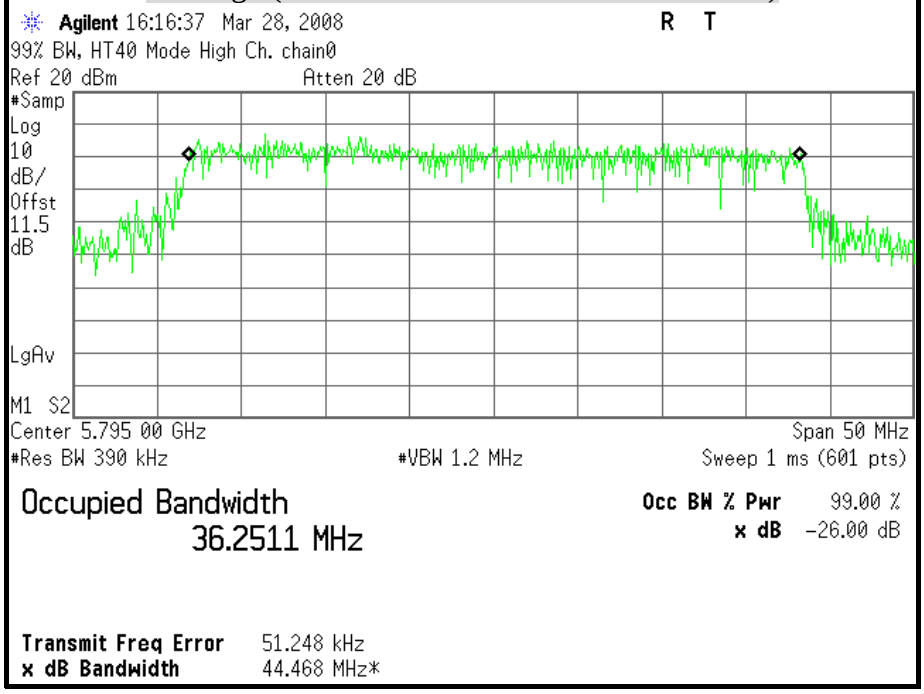


99% BANDWIDTH (IEEE 802.11n HT40 mode)

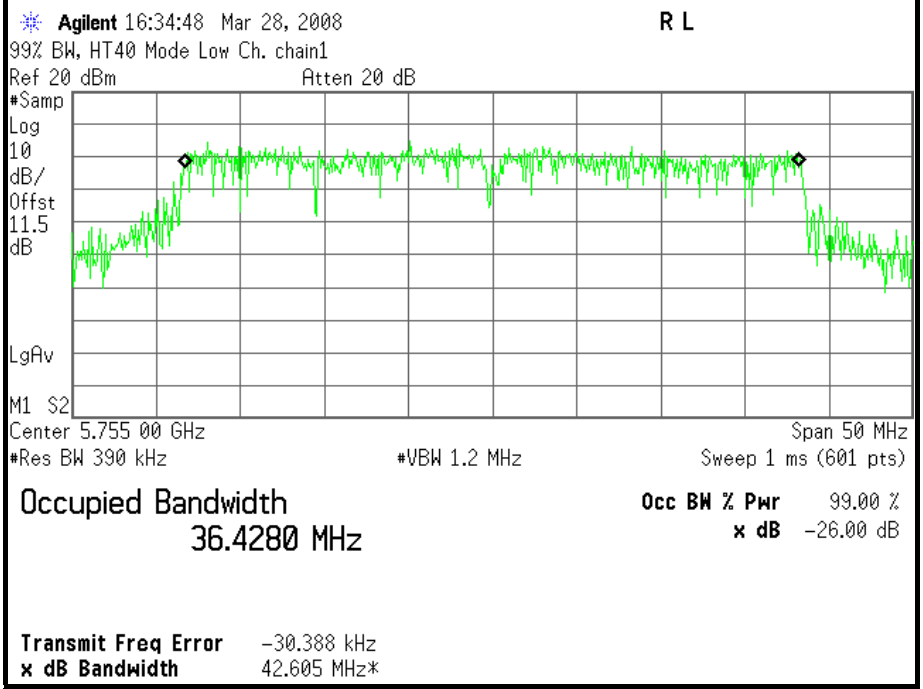
CH Low (IEEE 802.11n HT40 mode - Chain 0)



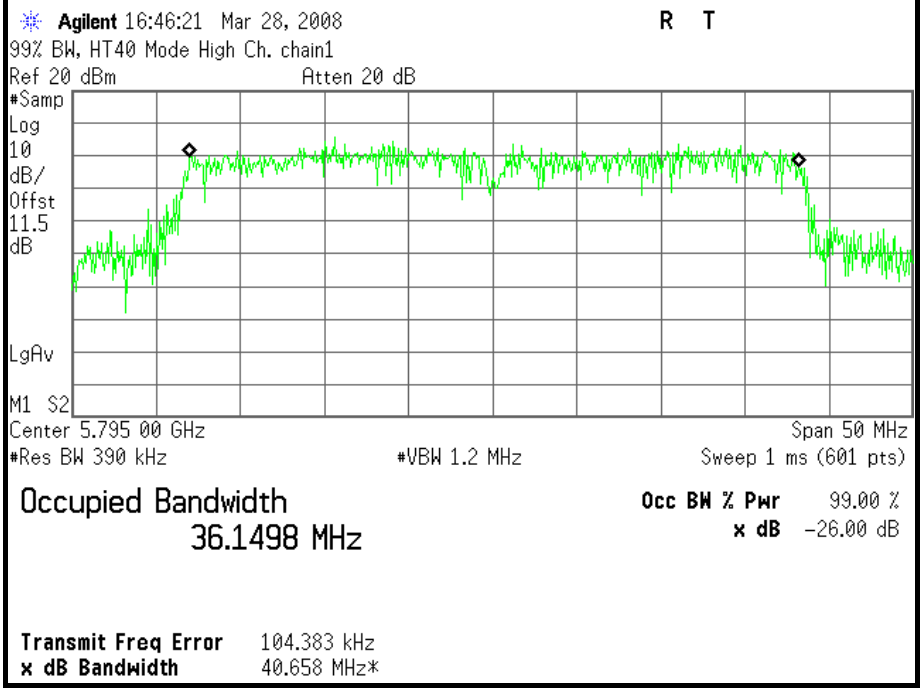
CH High (IEEE 802.11n HT40 mode - Chain 0)



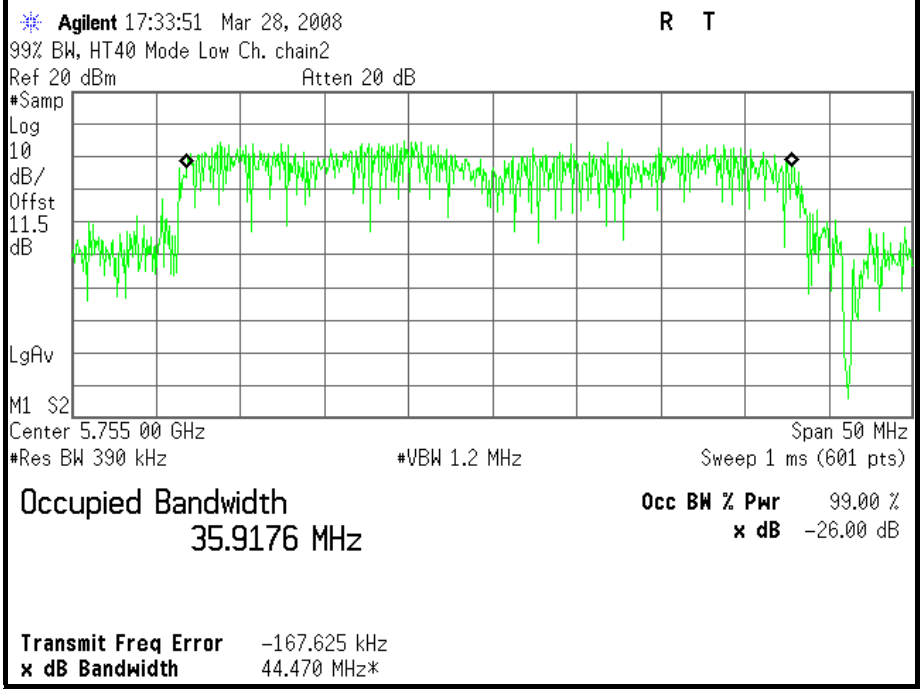
CH Low (IEEE 802.11n HT40 mode - Chain 1)



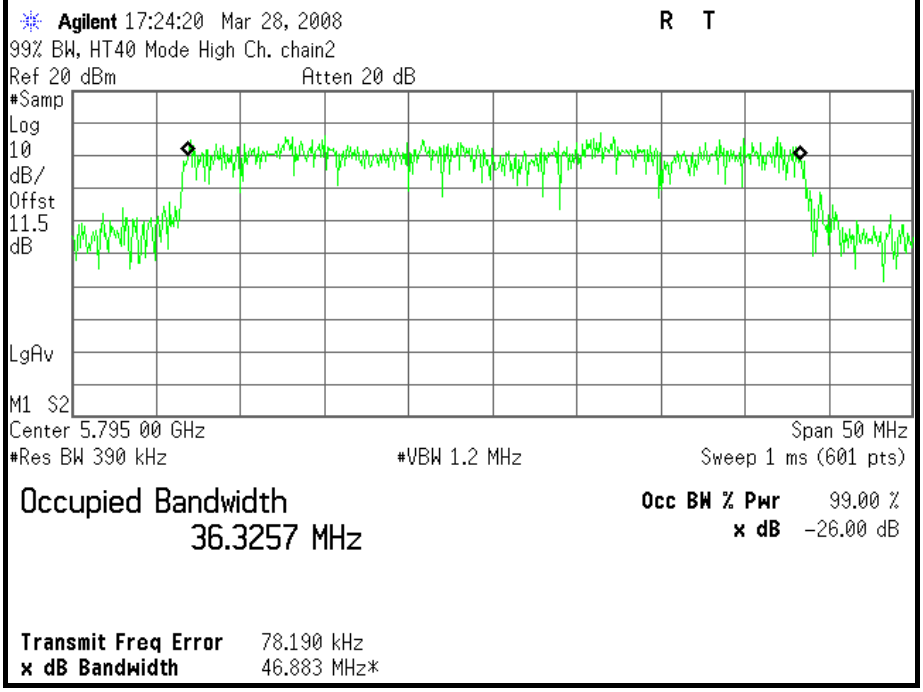
CH High (IEEE 802.11n HT40 mode - Chain 1)



CH Low (IEEE 802.11n HT40 mode - Chain 1)

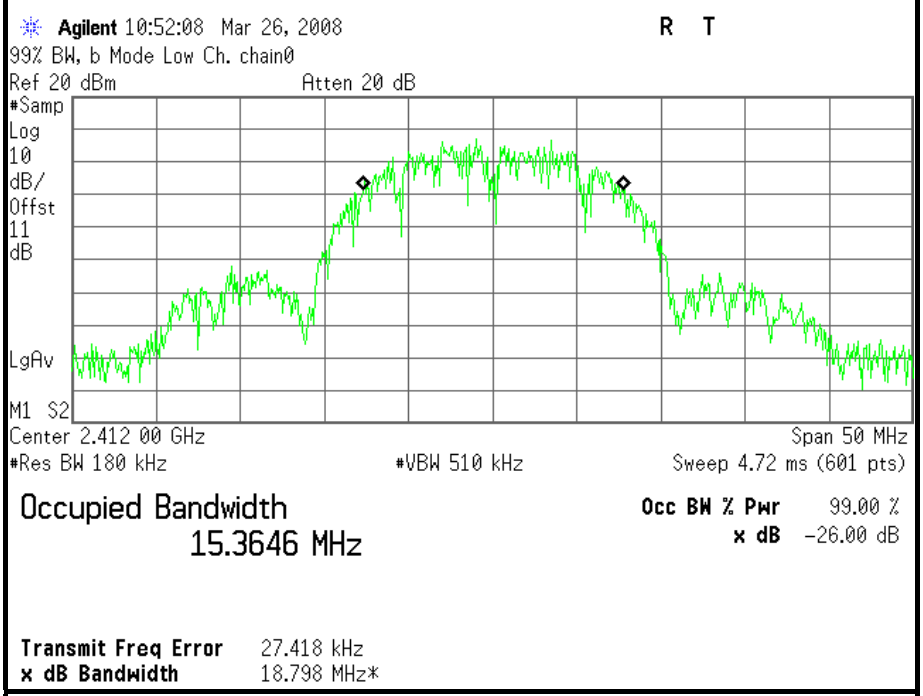


CH High (IEEE 802.11n HT40 mode - Chain 1)

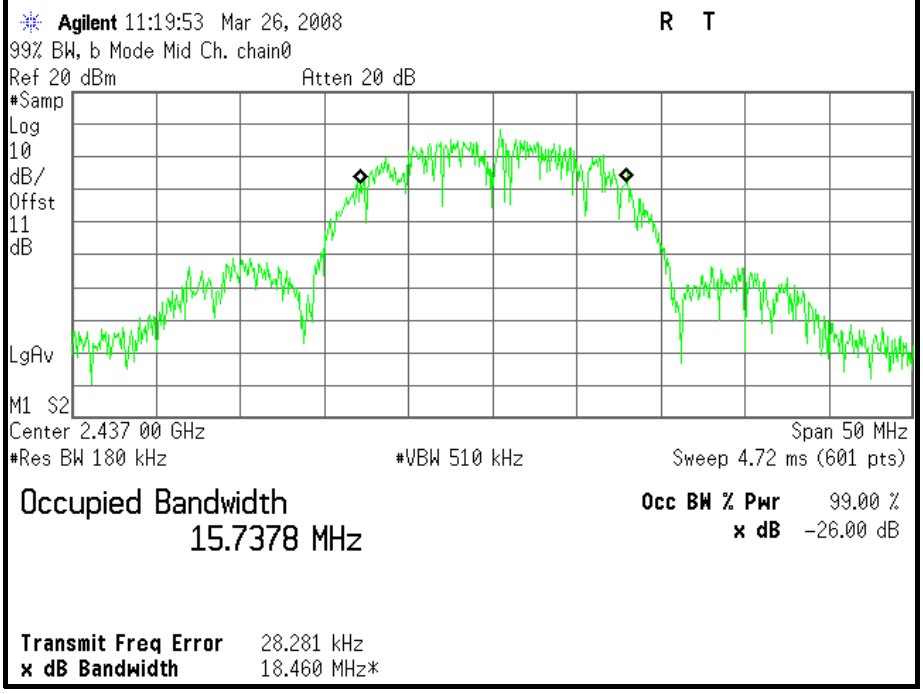


99% BANDWIDTH (IEEE 802.11b mode)

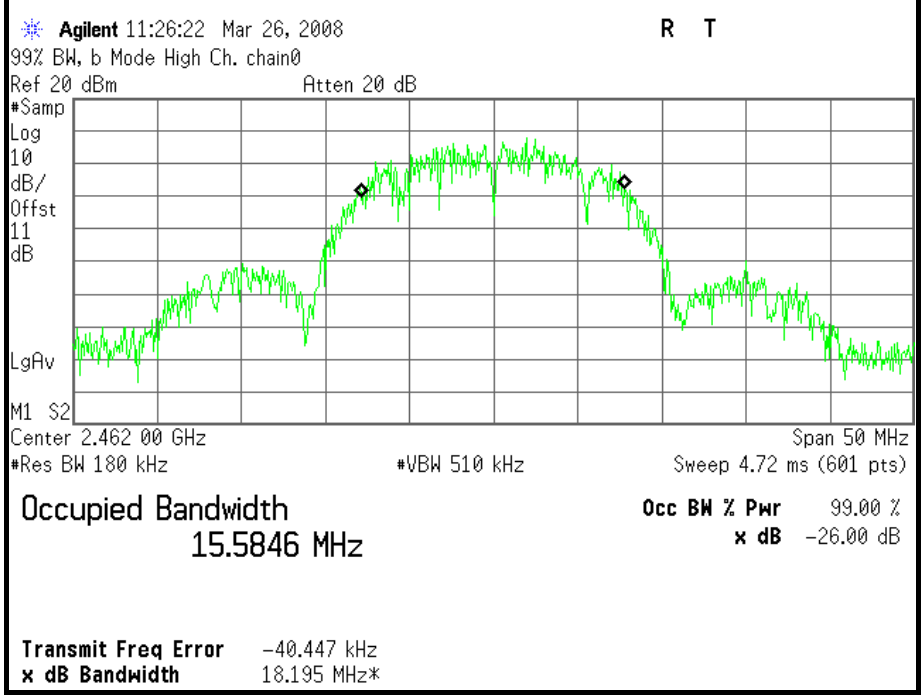
CH Low (IEEE 802.11b mode - Chain 0)



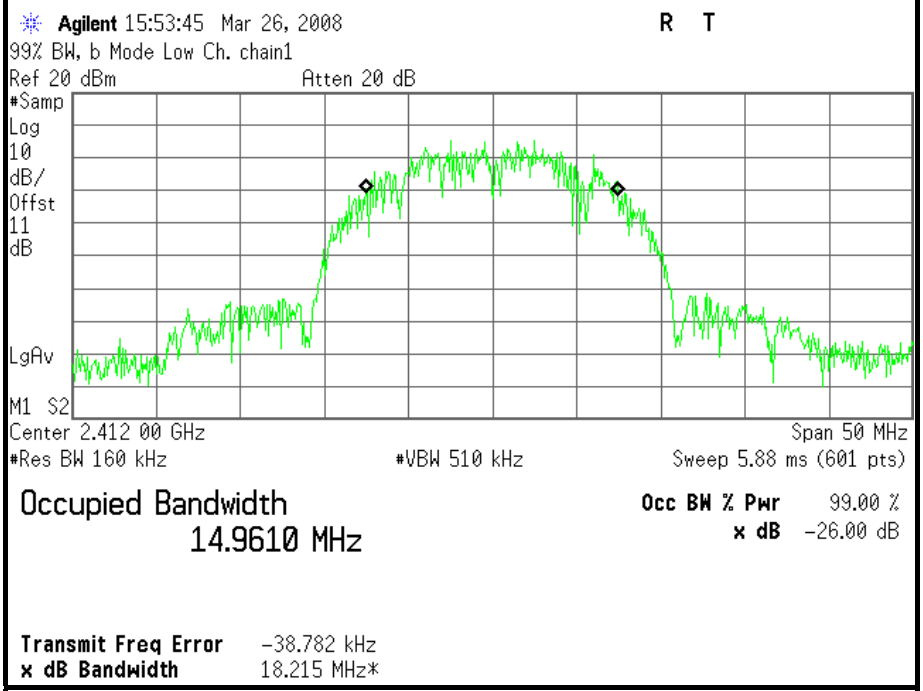
CH Middle (IEEE 802.11b mode - Chain 0)



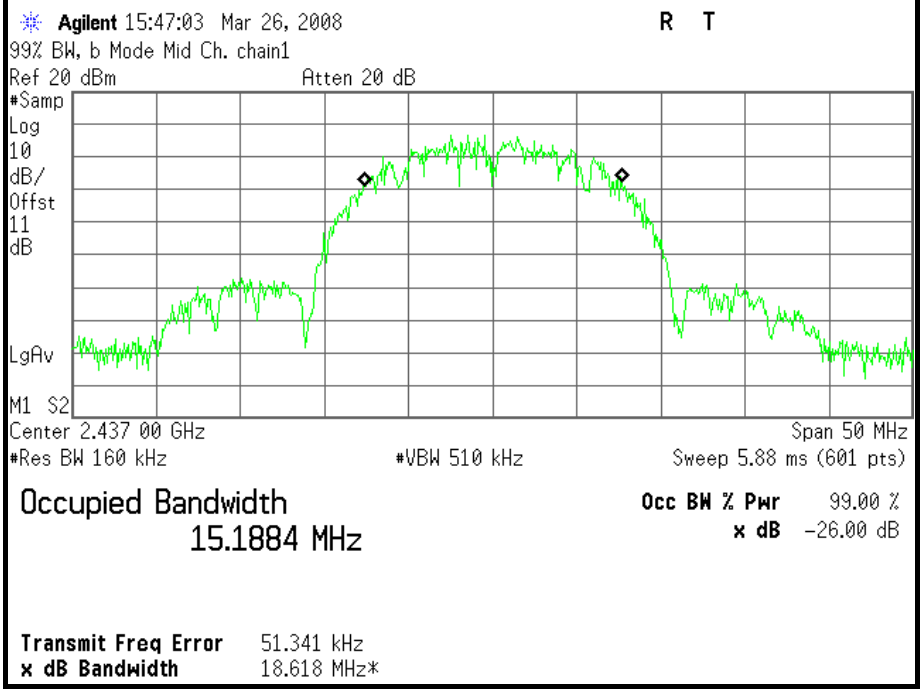
CH High (IEEE 802.11b mode - Chain 0)



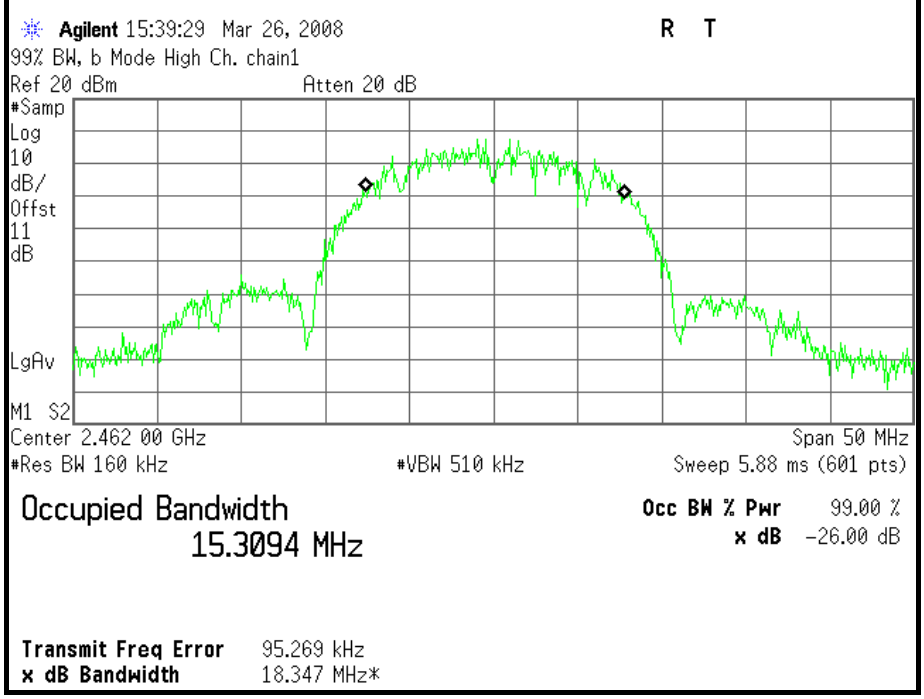
CH Low (IEEE 802.11b mode - Chain 1)



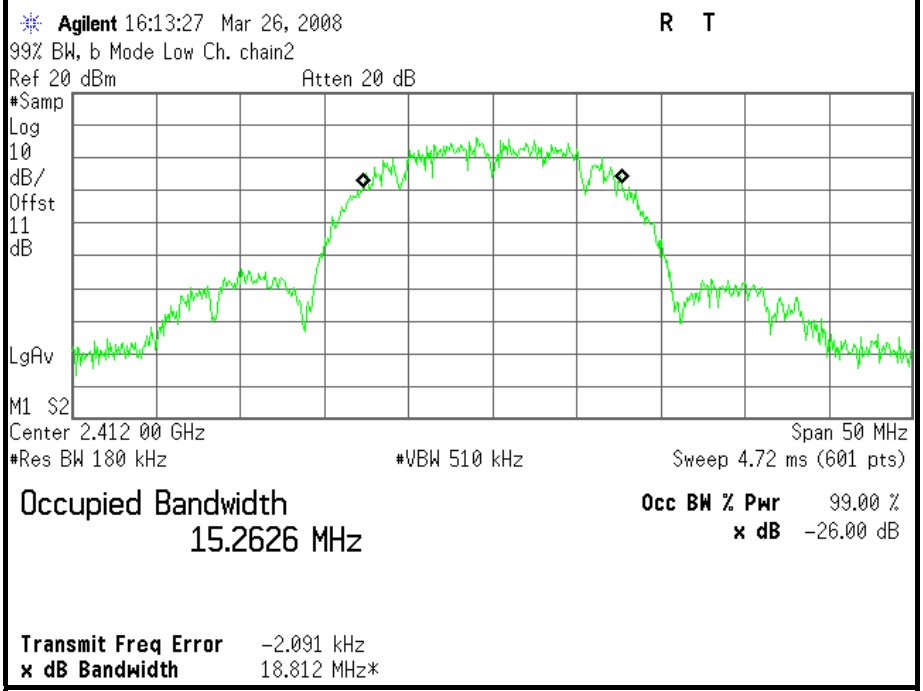
CH Middle (IEEE 802.11b mode - Chain 1)



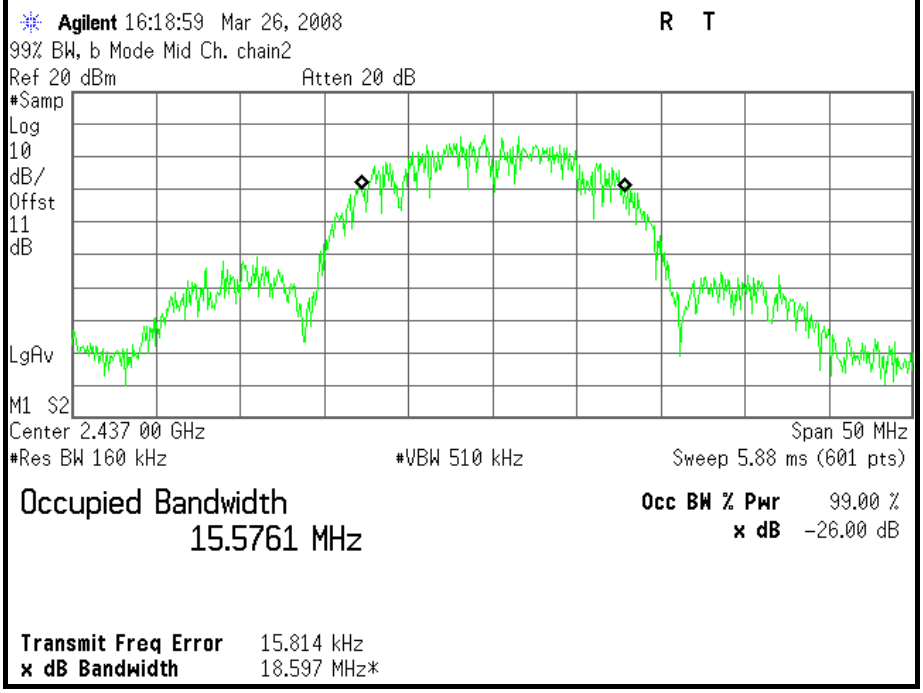
CH High (IEEE 802.11b mode - Chain 1)



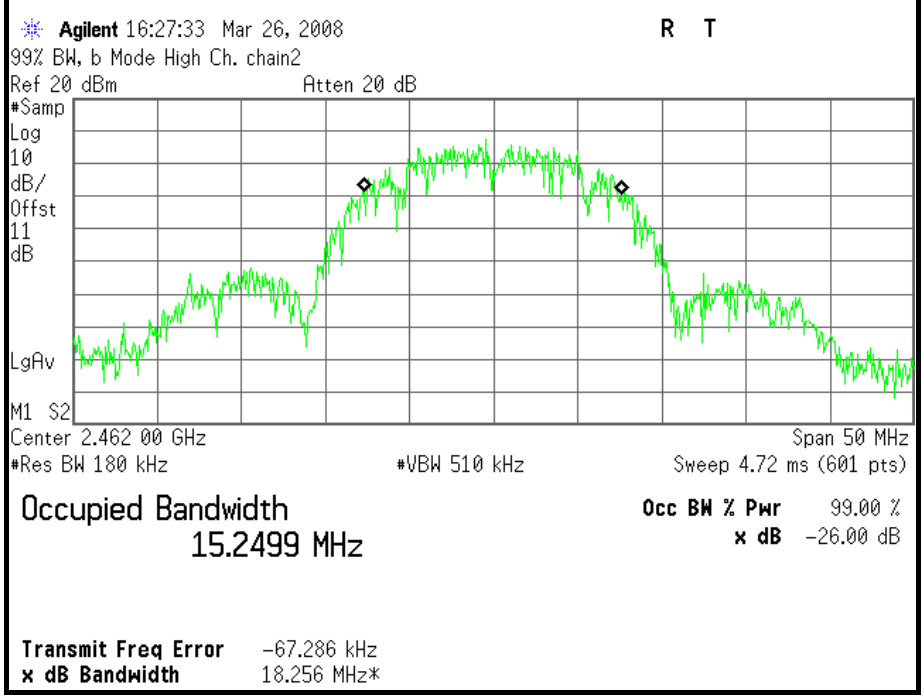
CH Low (IEEE 802.11b mode - Chain 2)



CH Middle (IEEE 802.11b mode - Chain 2)

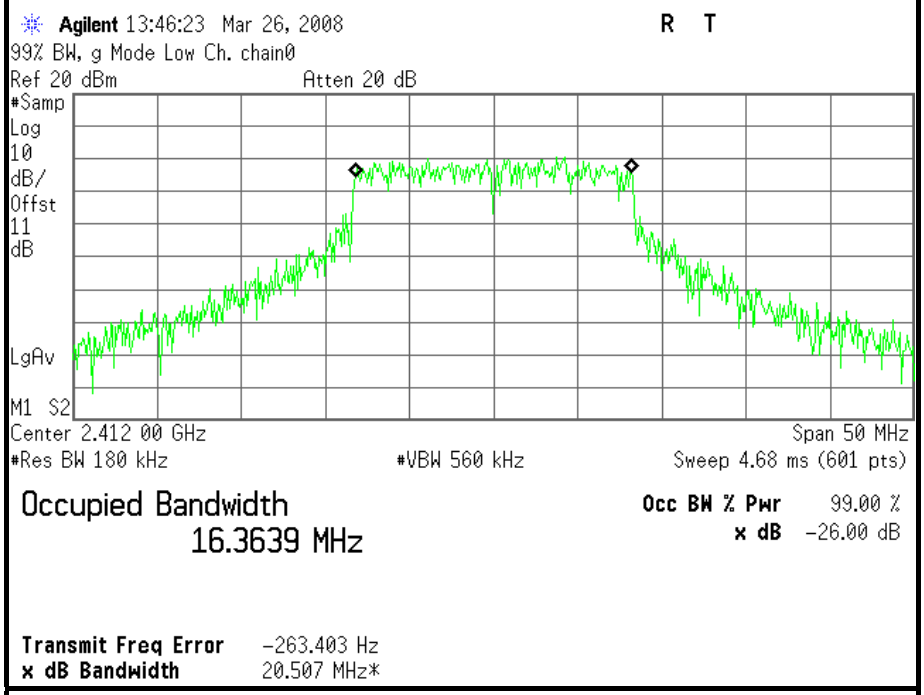


CH High (IEEE 802.11b mode - Chain 2)

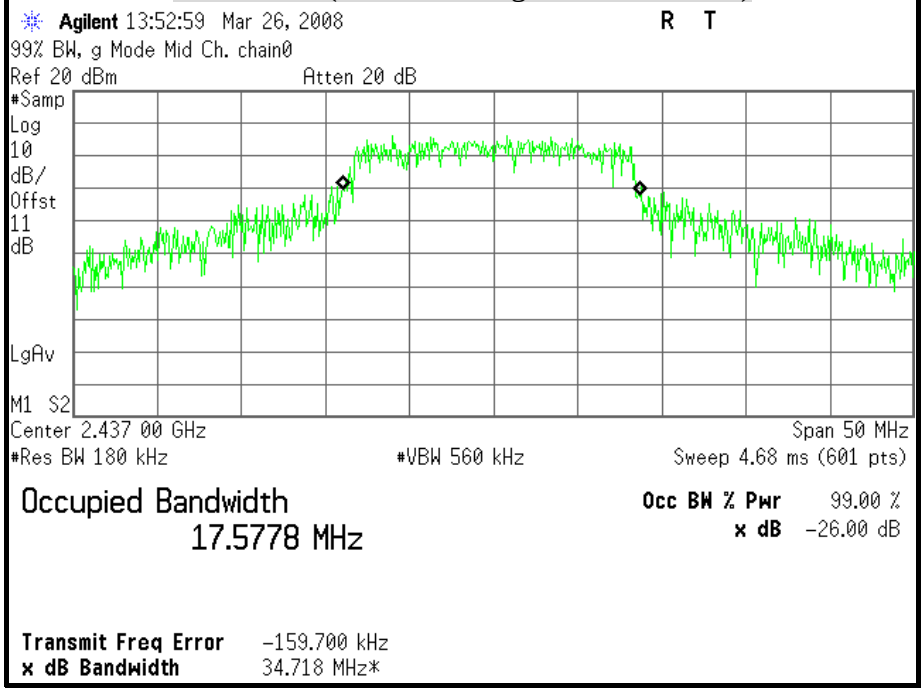


99% BANDWIDTH (IEEE 802.11g mode)

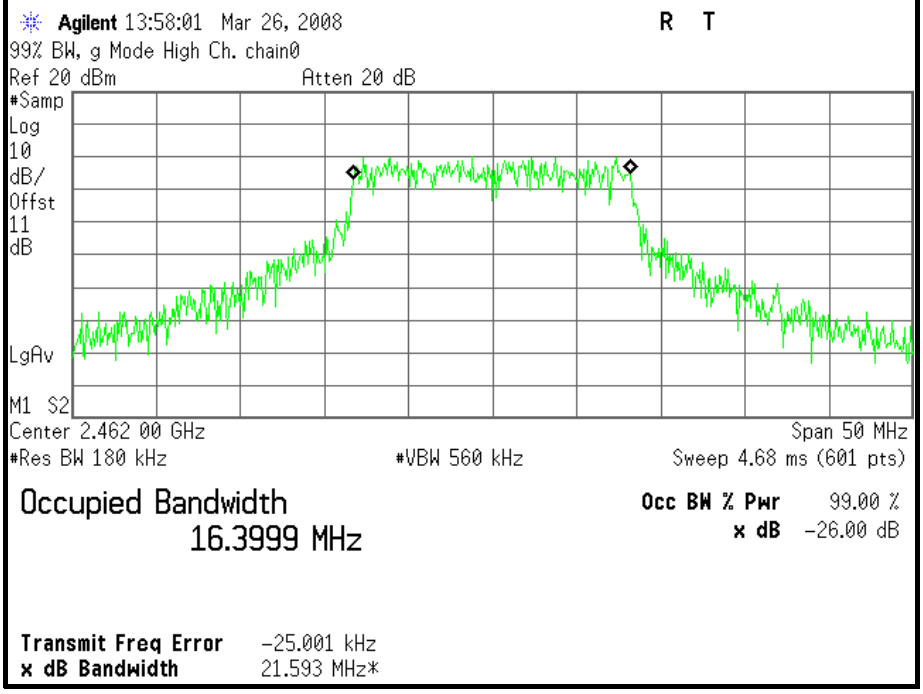
CH Low (IEEE 802.11g mode - Chain 0)



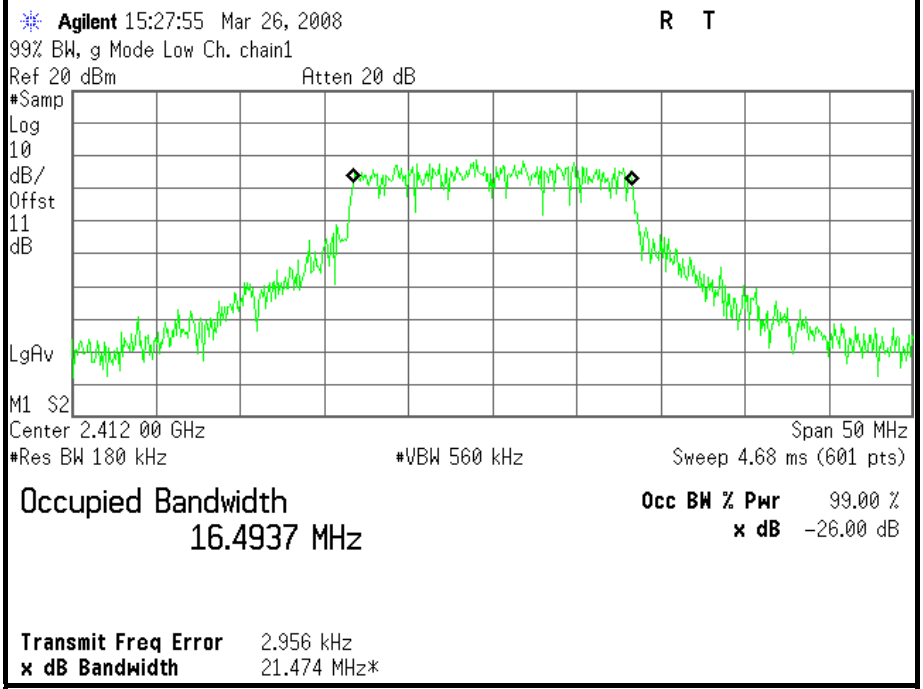
CH Middle (IEEE 802.11g mode - Chain 0)



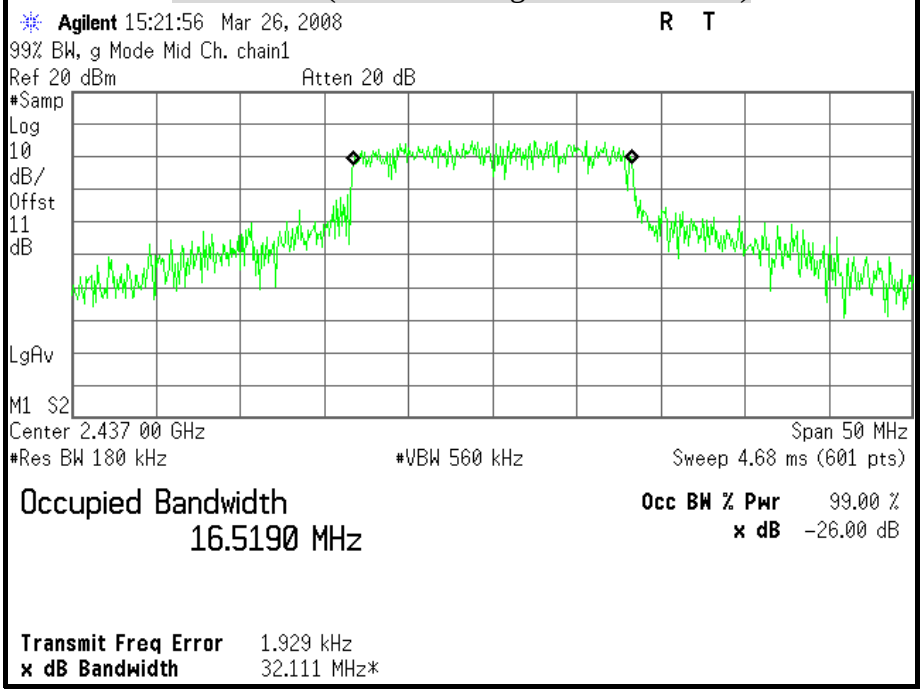
CH High (IEEE 802.11g mode - Chain 0)



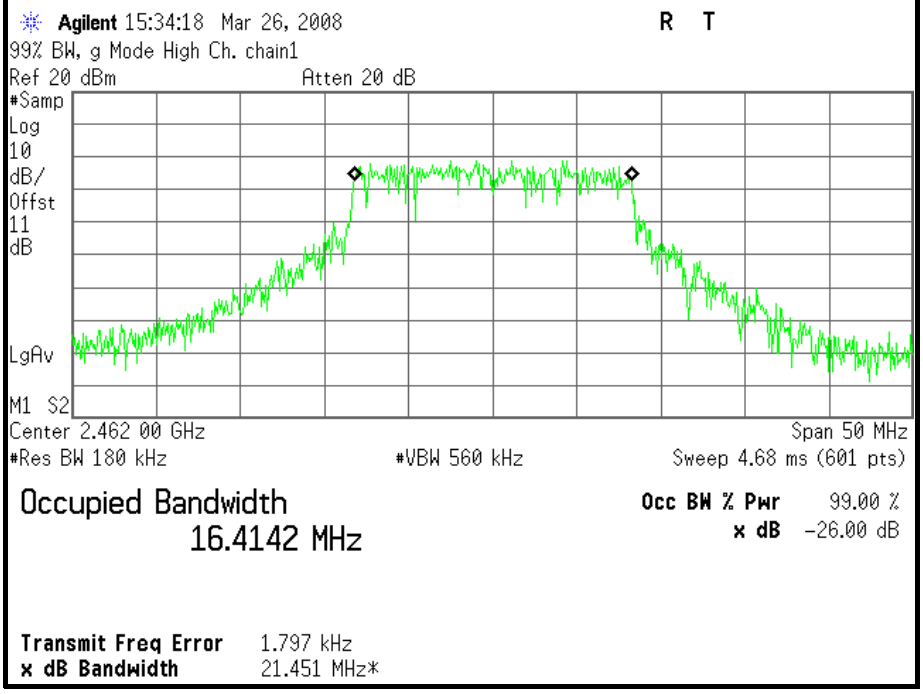
CH Low (IEEE 802.11g mode - Chain 1)



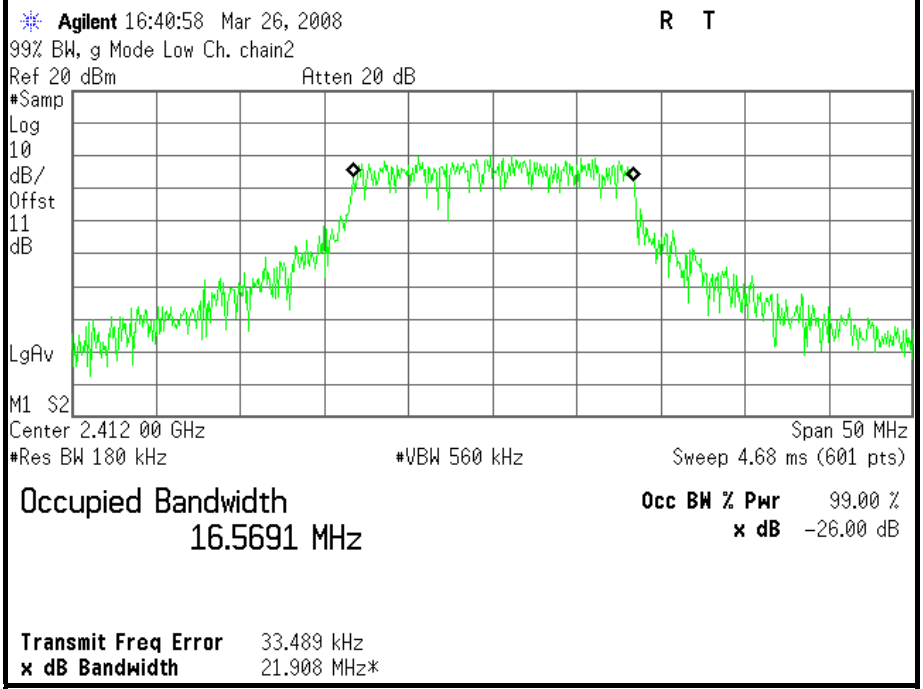
CH Middle (IEEE 802.11g mode - Chain 1)



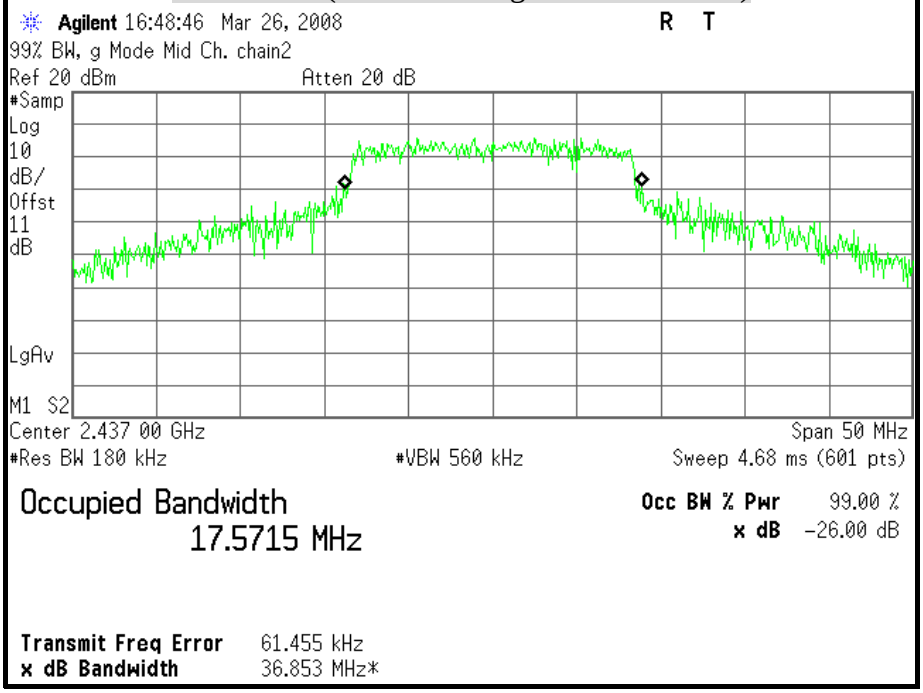
CH High (IEEE 802.11g mode - Chain 1)



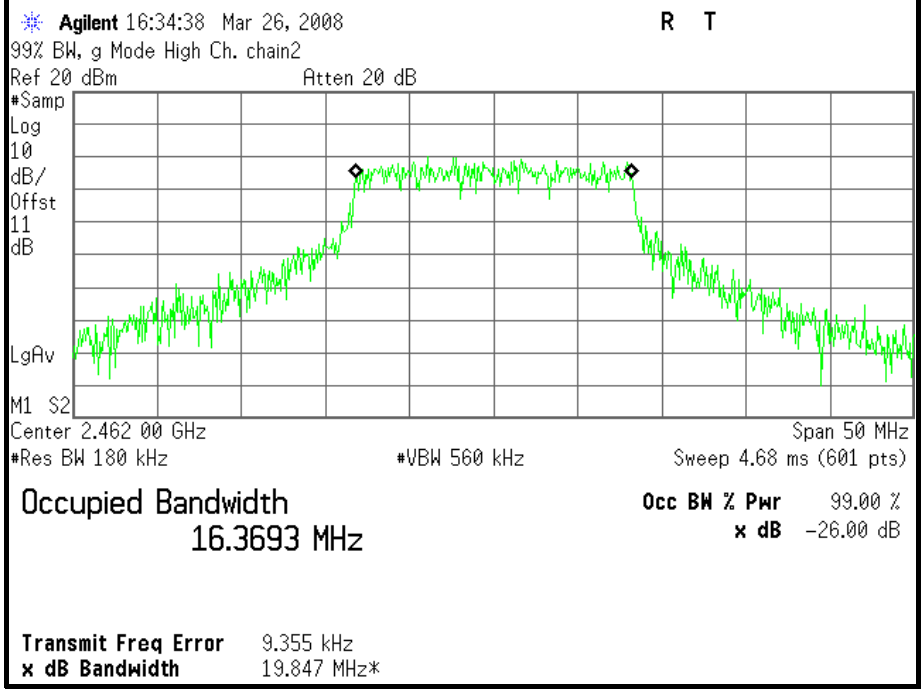
CH Low (IEEE 802.11g mode - Chain 2)



CH Middle (IEEE 802.11g mode - Chain 2)

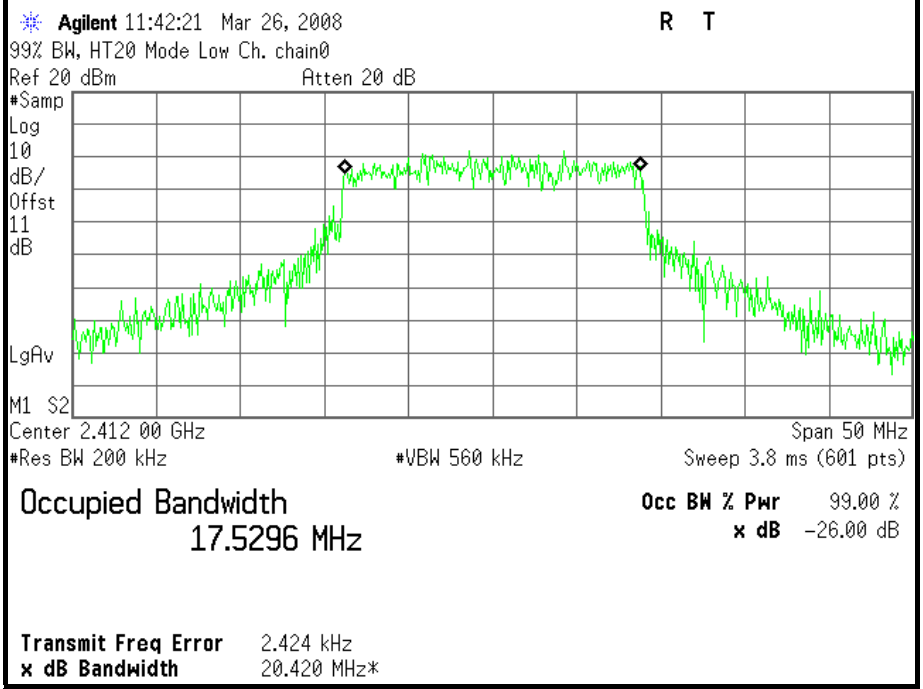


CH High (IEEE 802.11g mode - Chain 2)

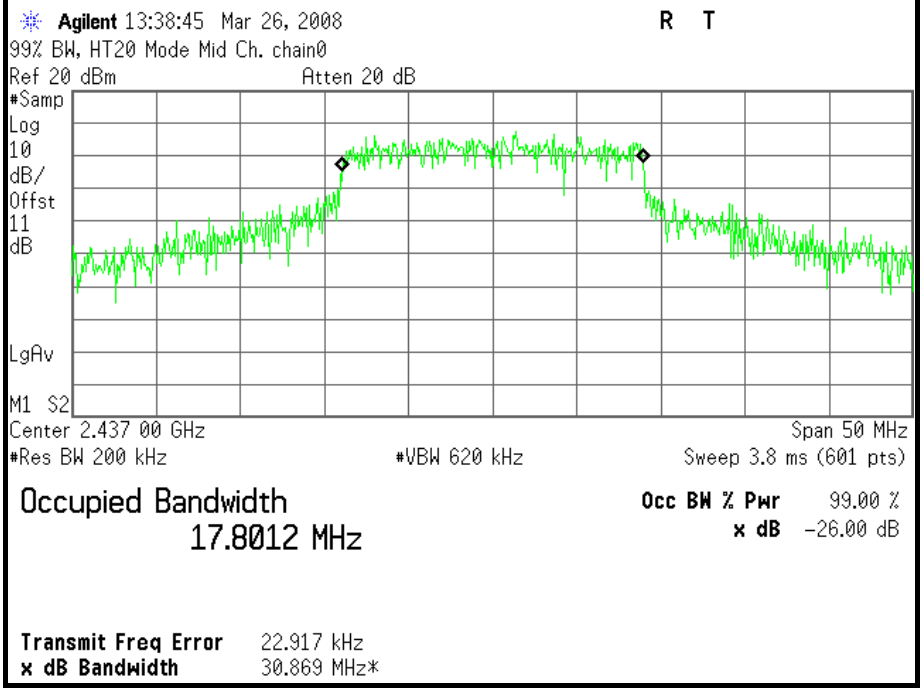


99% BANDWIDTH (IEEE 802.11n HT20 mode)

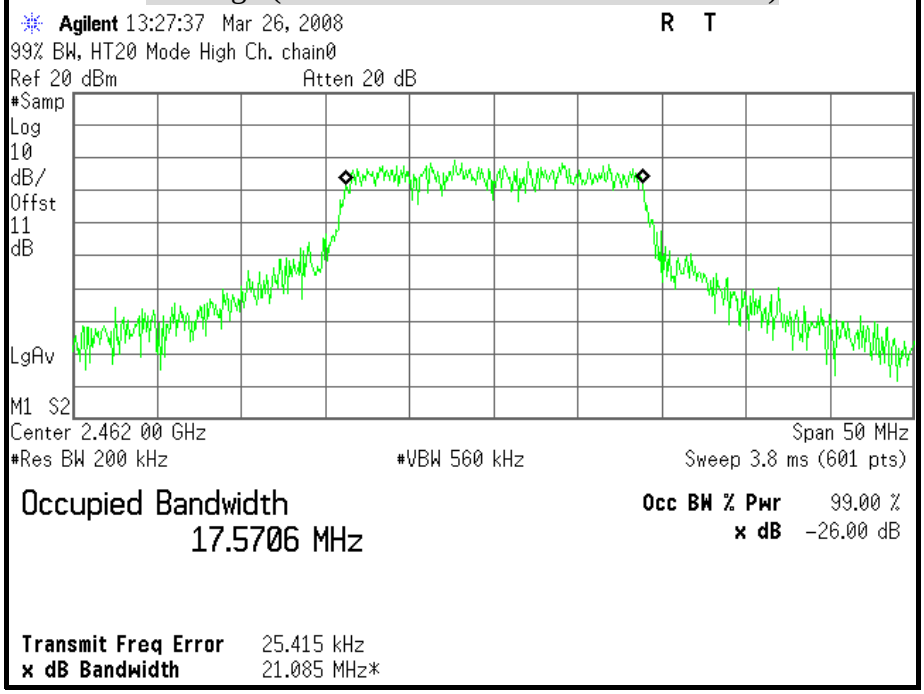
CH Low (IEEE 802.11n HT20 mode - Chain 0)



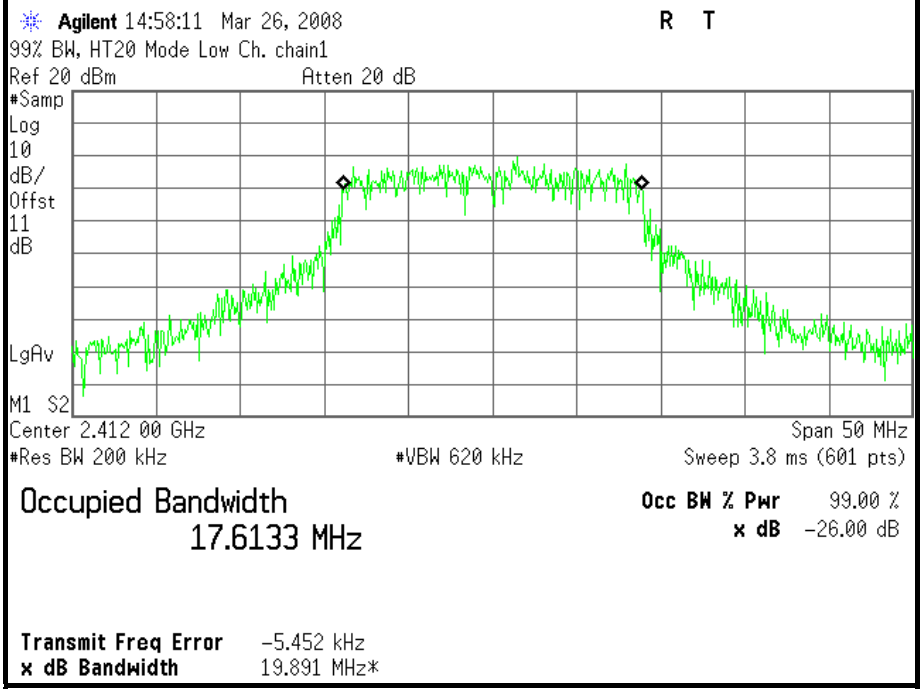
CH Middle (IEEE 802.11n HT20 mode - Chain 0)



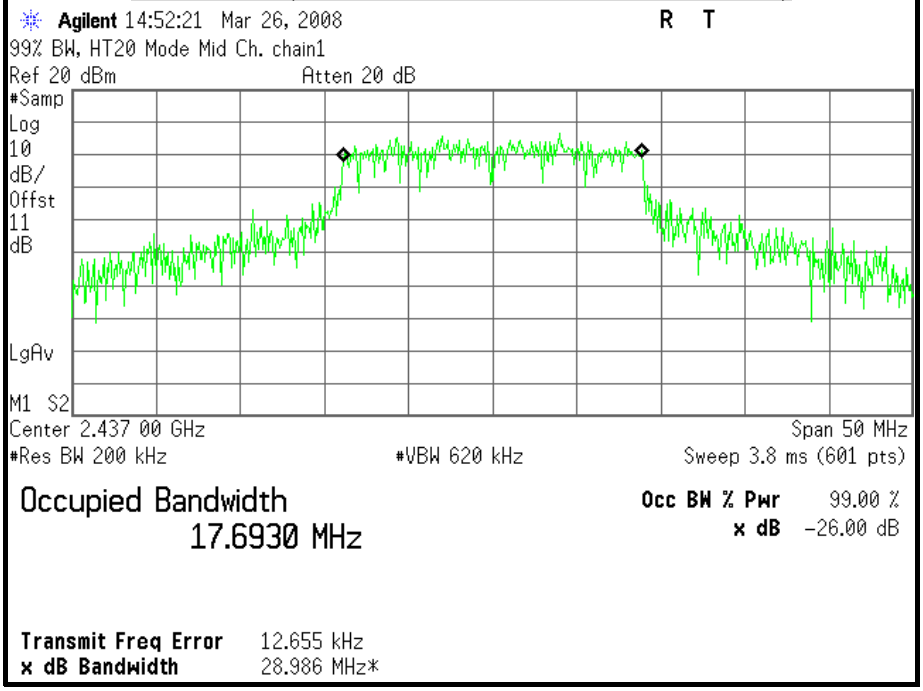
CH High (IEEE 802.11n HT20 mode - Chain 0)



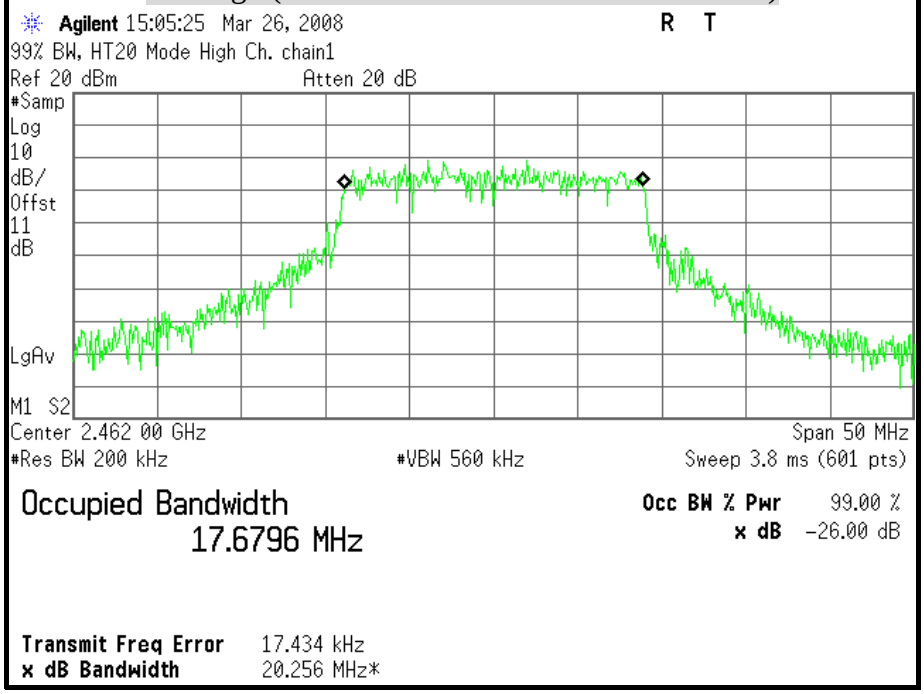
CH Low (IEEE 802.11n HT20 mode - Chain 1)



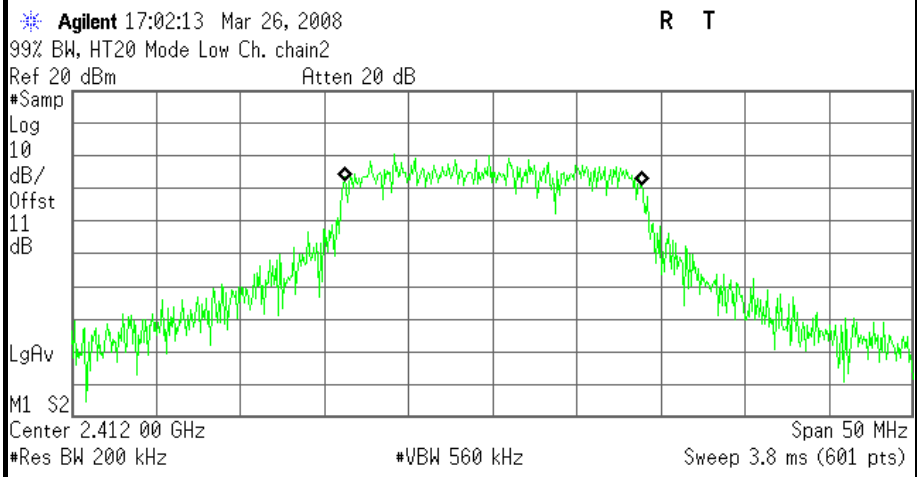
CH Middle (IEEE 802.11n HT20 mode - Chain 1)



CH High (IEEE 802.11n HT20 mode - Chain 1)



CH Low (IEEE 802.11n HT20 mode - Chain 2)

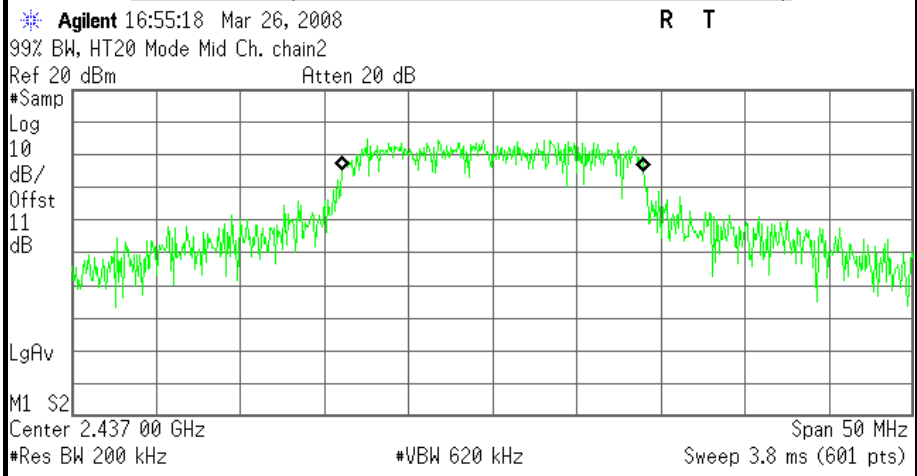


Occupied Bandwidth
17.5959 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 14.414 kHz
x dB Bandwidth 21.573 MHz*

CH Middle (IEEE 802.11n HT20 mode - Chain 2)

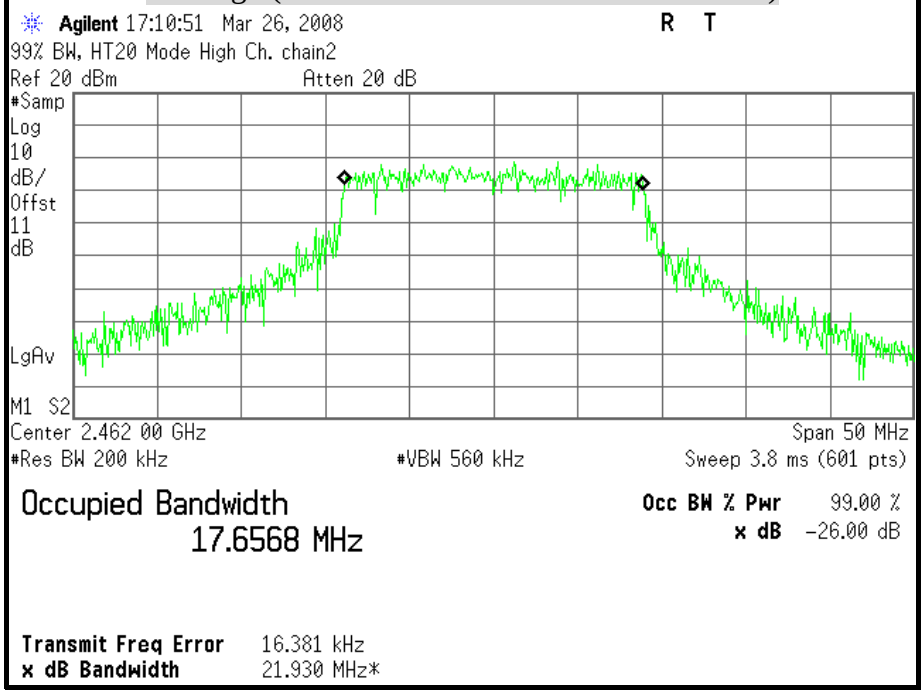


Occupied Bandwidth
17.8652 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

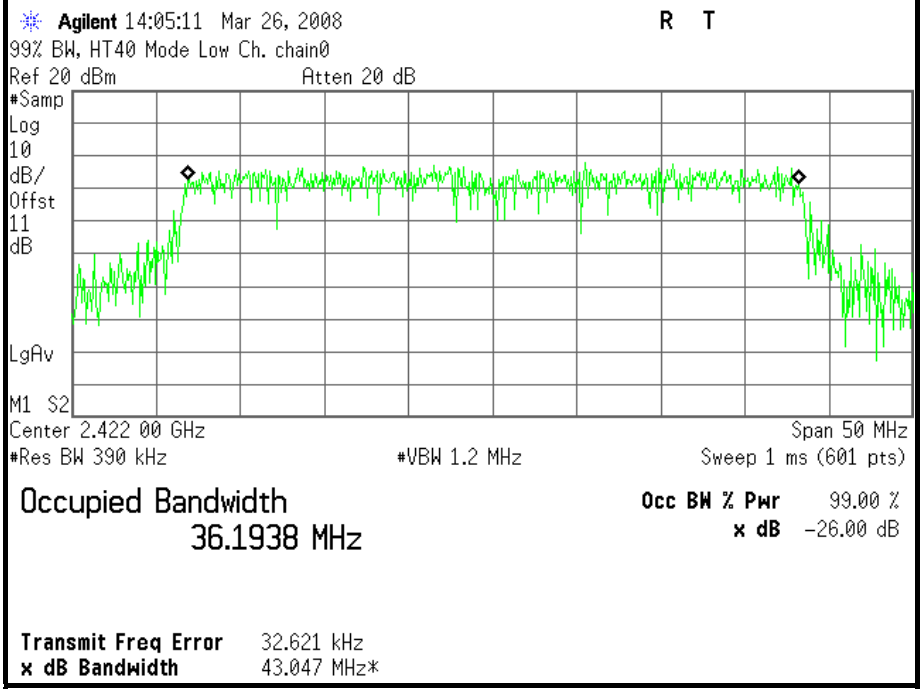
Transmit Freq Error 9.747 kHz
x dB Bandwidth 33.059 MHz*

CH High (IEEE 802.11n HT20 mode - Chain 2)

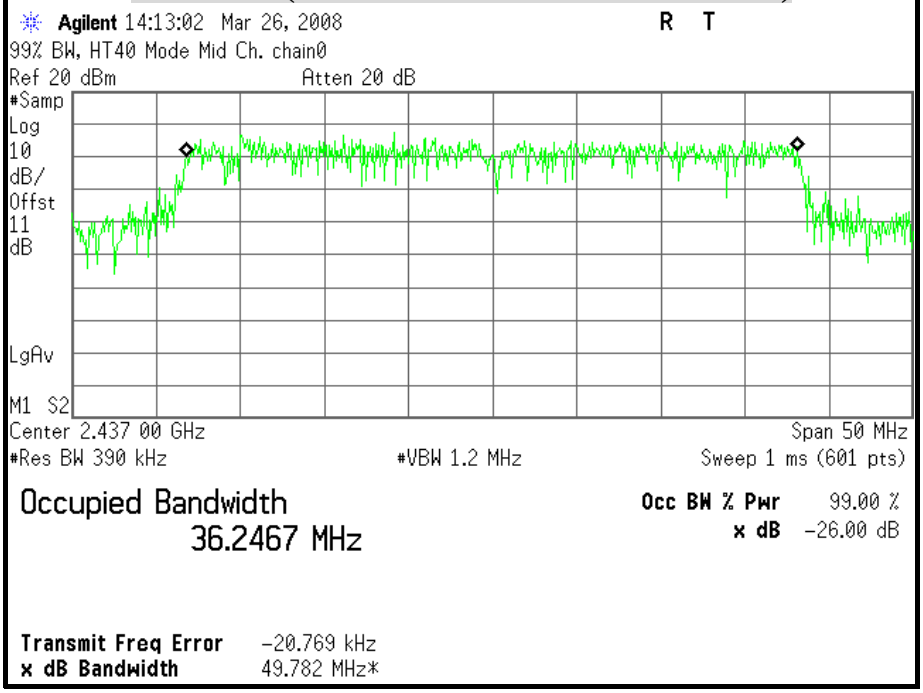


99% BANDWIDTH (IEEE 802.11n HT40 mode)

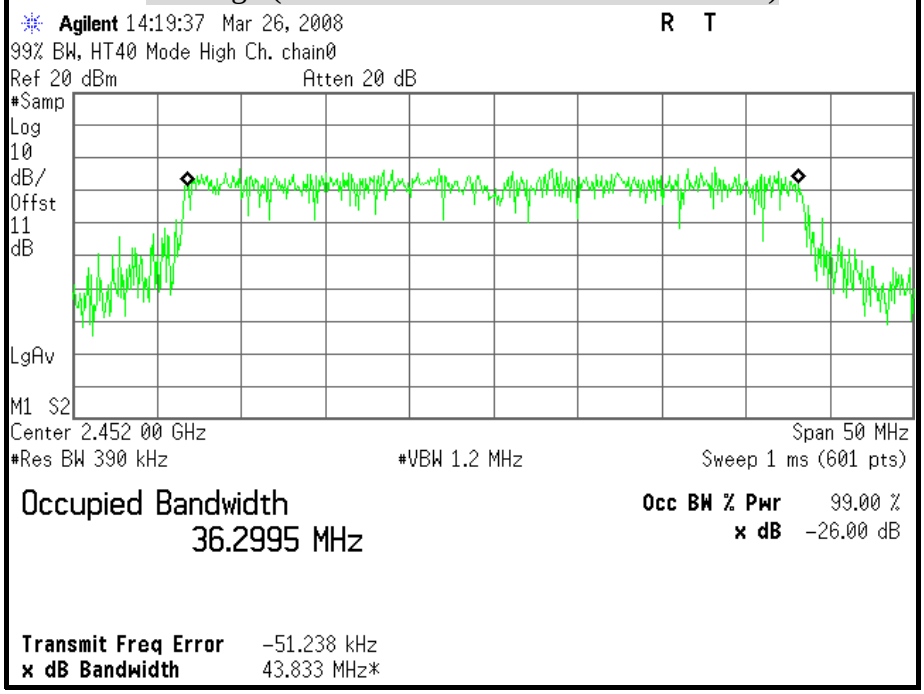
CH Low (IEEE 802.11n HT40 mode - Chain 0)



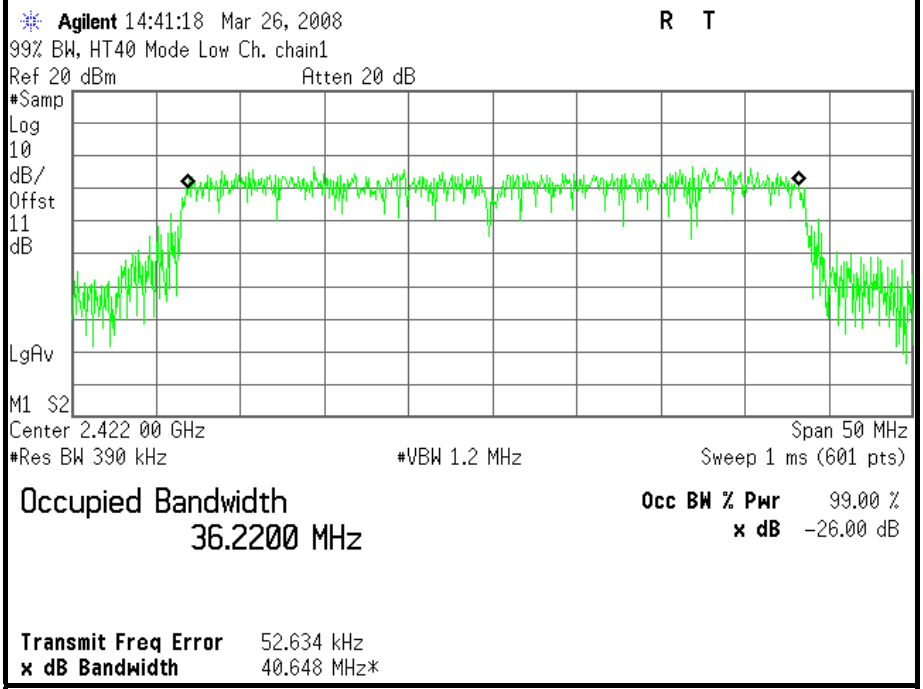
CH Middle (IEEE 802.11n HT40 mode - Chain 0)



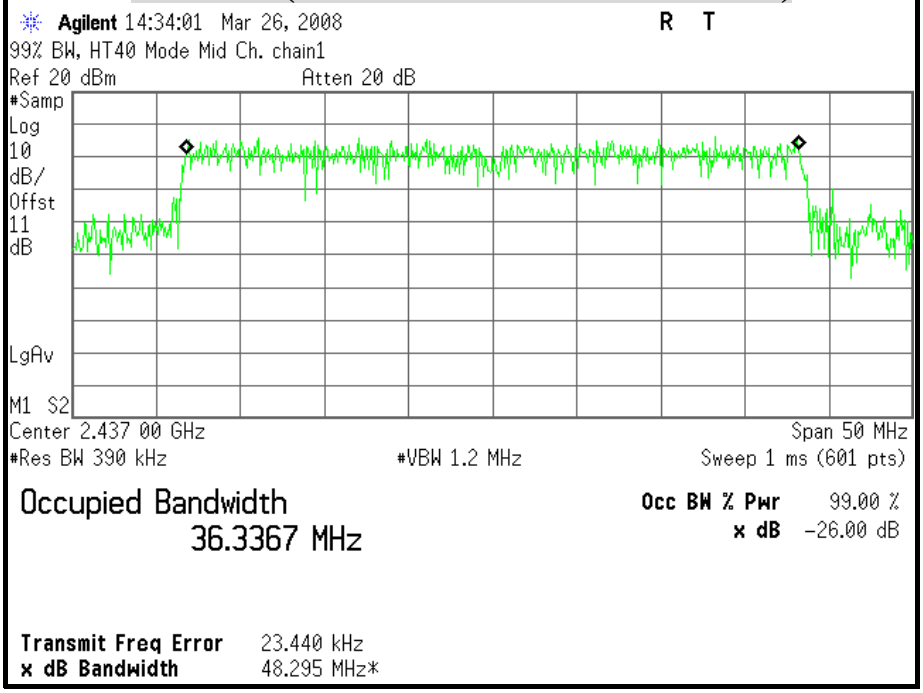
CH High (IEEE 802.11n HT40 mode - Chain 0)



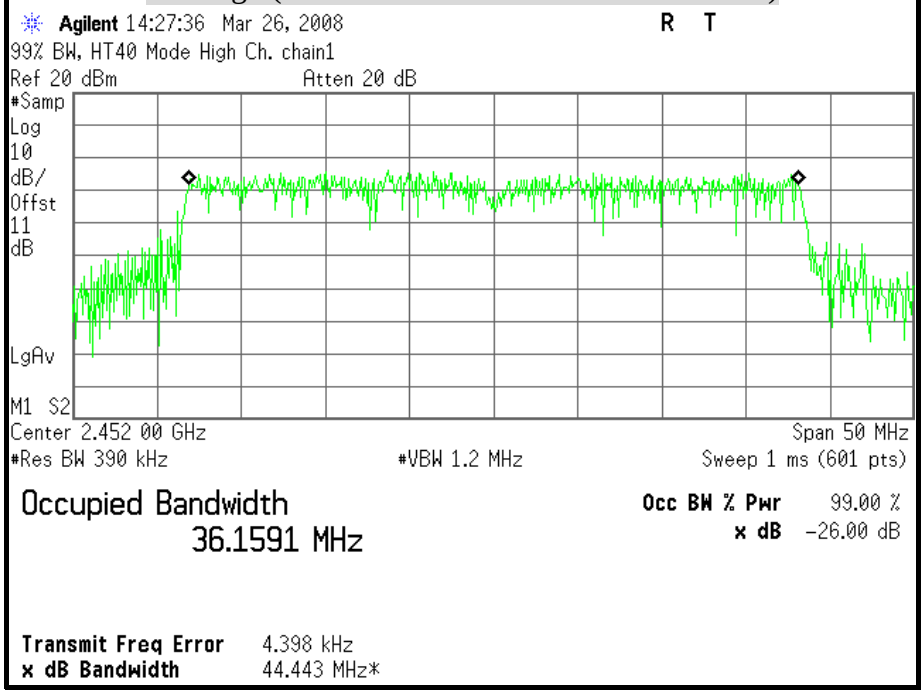
CH Low (IEEE 802.11n HT40 mode - Chain 1)



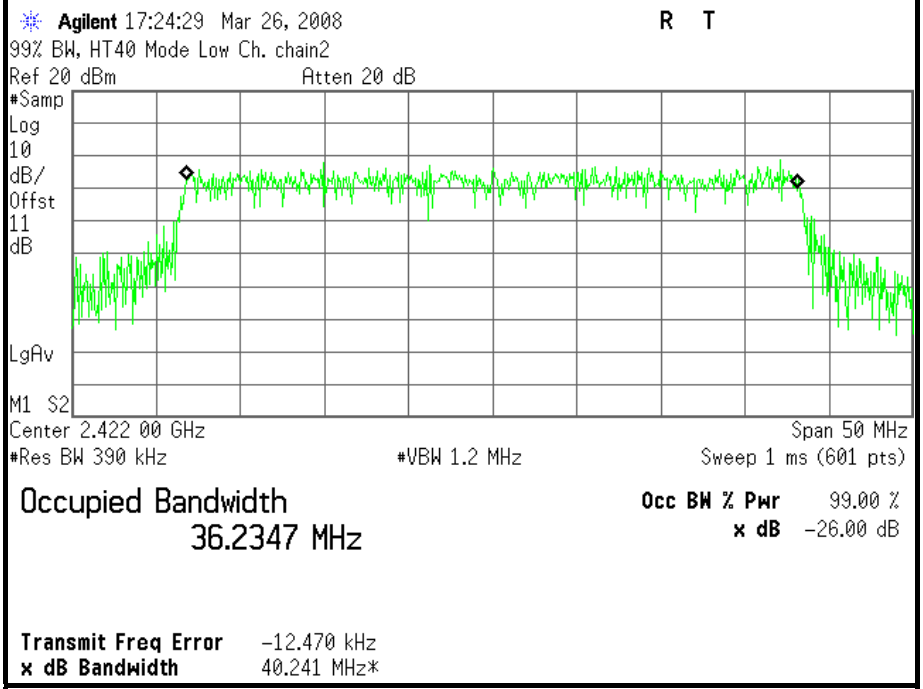
CH Middle (IEEE 802.11n HT40 mode - Chain 1)



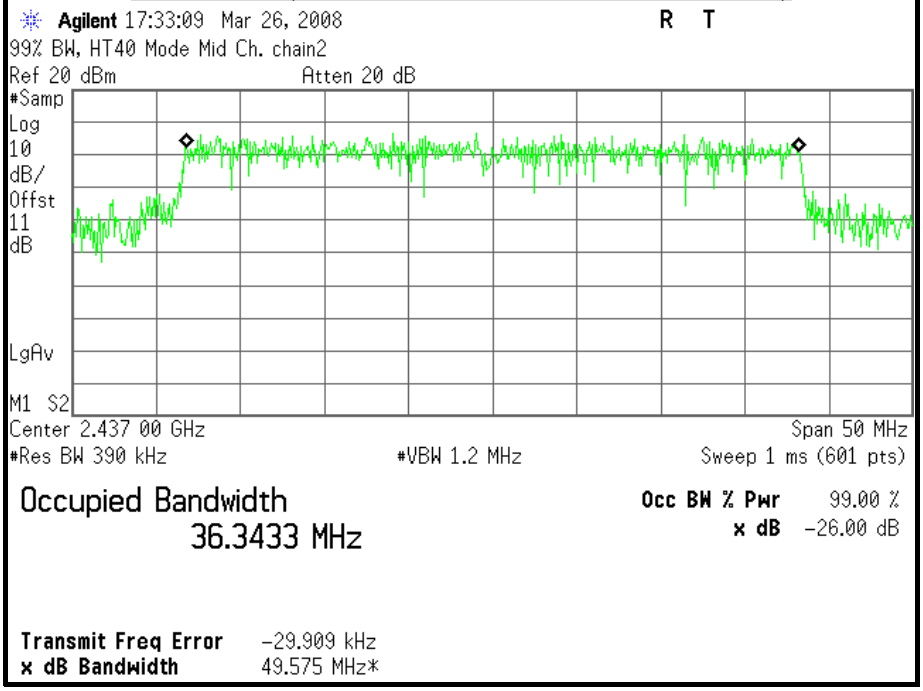
CH High (IEEE 802.11n HT40 mode - Chain 1)



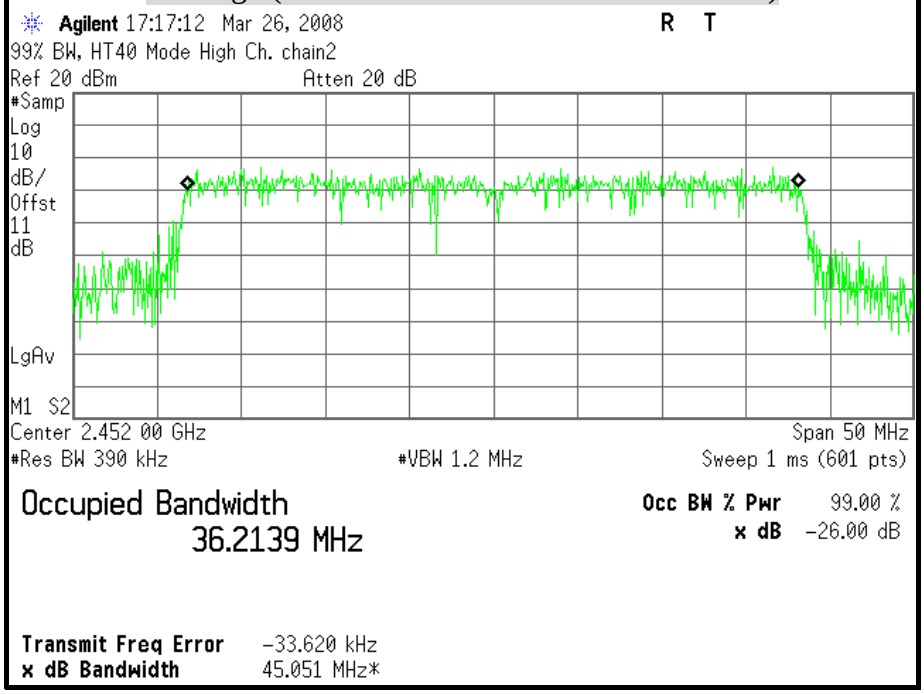
CH Low (IEEE 802.11n HT40 mode - Chain 2)



CH Middle (IEEE 802.11n HT40 mode - Chain 2)



CH High (IEEE 802.11n HT40 mode - Chain 2)



8.3 MAXIMUM PEAK OUTPUT POWER

LIMIT

§ 15.247(b) The maximum peak output power of the intentional radiator shall not exceed the following :

§ 15.247(b) (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands : 1 watt.

§ 15.247(b) (4) Except as shown in paragraphs (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (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 EQUIPMENT

Description & Manufacturer	Model No.	Serial No.	Date of Calibration
ROHDE & SCHWARZ SPECTRUM ANALYZER	FSEK30	835253/002	October 25, 2007
AGILENT SPECTRUM ANALYZER	E4446A	MY433601.32	June 24, 2008

TEST SETUP

TEST PROCEDURE

1. The spectrum shall be set as follows :
   Span : 1.5 times channel integration bandwidth.
   RBW : 1MHz
   VBW : 3MHz
   Detector : Peak
   Sweep : Single trace
2. Compute the combined power of all signal responses contained in the trace by covering all the data points.
3. For 99% occupied BW, place the markers at the frequency at which 0.5% of the power lies to the right of the right marker and 0.5% of the power lies to the left of the left marker.
4. The peak output power is the channel power integrated over 99% bandwidth.

TEST RESULTS

No non-compliance noted

Total peak power calculation formula:
10 log (10^ (Chain 0 Power / 10) + 10^ (Chain1 Power / 10) + 10^ (Chain2 Power / 10)).

For 5GHz : The maximum antenna gain is 5 dBi, therefore the limit is 30 dBm.
In the legacy mode, the effective antenna gain is 5 + 10 × Log (3) = 9.77 dBi.

For 2.4GHz : The maximum antenna gain is 3 dBi, therefore the limit is 30 dBm.
In the legacy mode, the effective antenna gain is 3 + 10 × Log (3) = 7.77 dBi.

IEEE 802.11a mode

Channel	Channel Frequency (MHz)	Peak Power (dBm)			Peak Power Total (dBm)	Peak Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2			
Low	5745	20.57	20.40	20.81	25.37	26.23	PASS
Middle	5785	21.02	20.20	20.60	25.39	26.23	PASS
High	5825	21.43	20.70	21.53	26.01	26.23	PASS

Remark:

1. *At finial test to get the worst-case emission at 6 Mbps.*
2. *The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT20 mode

Channel	Channel Frequency (MHz)	Peak Power (dBm)			Peak Power Total (dBm)	Peak Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2			
Low	5745	23.57	23.75	23.66	28.43	30	PASS
Middle	5785	23.77	22.77	23.26	28.06	30	PASS
High	5825	23.92	21.99	23.08	27.84	30	PASS

Remark:

1. *At finial test to get the worst-case emission at 6.5 Mbps.*
2. *The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT40 mode

Channel	Channel Frequency (MHz)	Peak Power (dBm)			Peak Power Total (dBm)	Peak Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2			
Low	5755	22.10	21.63	22.11	26.72	30	PASS
High	5795	22.54	21.20	22.22	26.79	30	PASS

Remark:

1. *At finial test to get the worst-case emission at 13.5 Mbps.*
2. *The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11b mode

Channel	Channel Frequency (MHz)	Peak Power (dBm)			Peak Power Total (dBm)	Peak Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2			
Low	2412	19.45	18.41	19.15	23.80	28.23	PASS
Middle	2437	20.55	19.88	19.82	24.87	28.23	PASS
High	2462	19.97	19.55	19.84	24.56	28.23	PASS

Remark:

1. *At finial test to get the worst-case emission at 1 Mbps.*
2. *The cable assembly insertion loss of 11.0 dB (including 10 dB pad and 1.0 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11g mode

Channel	Channel Frequency (MHz)	Peak Power (dBm)			Peak Power Total (dBm)	Peak Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2			
Low	2412	16.69	16.22	17.08	21.45	28.23	PASS
Middle	2437	23.70	23.01	23.10	28.05	28.23	PASS
High	2462	16.63	16.03	16.32	21.10	28.23	PASS

Remark:

1. *At finial test to get the worst-case emission at 6 Mbps.*
2. *The cable assembly insertion loss of 11.0 dB (including 10 dB pad and 1.0 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT20 mode

Channel	Channel Frequency (MHz)	Peak Power (dBm)			Peak Power Total (dBm)	Peak Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2			
Low	2412	17.05	15.13	15.62	20.78	30	PASS
Middle	2437	23.28	22.33	22.42	27.47	30	PASS
High	2462	15.15	14.95	15.48	19.97	30	PASS

Remark:

1. At finial test to get the worst-case emission at 6.5Mbps.
2. The cable assembly insertion loss of 11.0 dB (including 10 dB pad and 1.0 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 mode

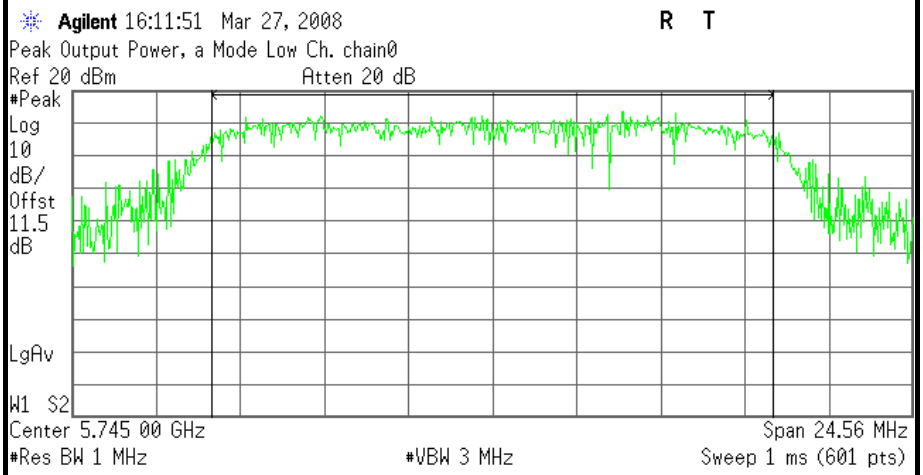
Channel	Channel Frequency (MHz)	Peak Power (dBm)			Peak Power Total (dBm)	Peak Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2			
Low	2422	14.29	13.26	14.08	18.67	30	PASS
Middle	2437	23.26	22.61	22.82	27.68	30	PASS
High	2452	13.53	13.11	13.75	18.24	30	PASS

Remark:

1. At finial test to get the worst-case emission at 13.5 Mbps.
2. The cable assembly insertion loss of 11.0 dB (including 10 dB pad and 1.0 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

MAXIMUM PEAK OUTPUT POWER (IEEE 802.11a mode)

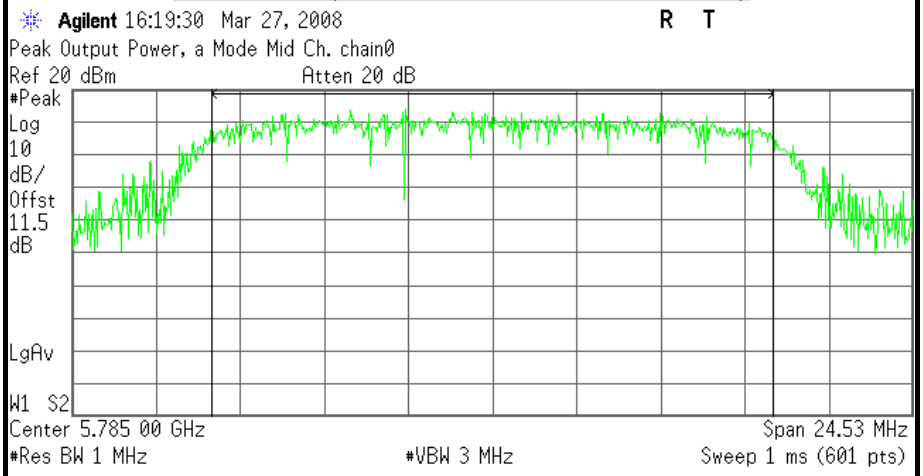
CH Low (IEEE 802.11a mode - Chain 0)



Channel Power 20.57 dBm /16.3740 MHz

Power Spectral Density -51.57 dBm/Hz

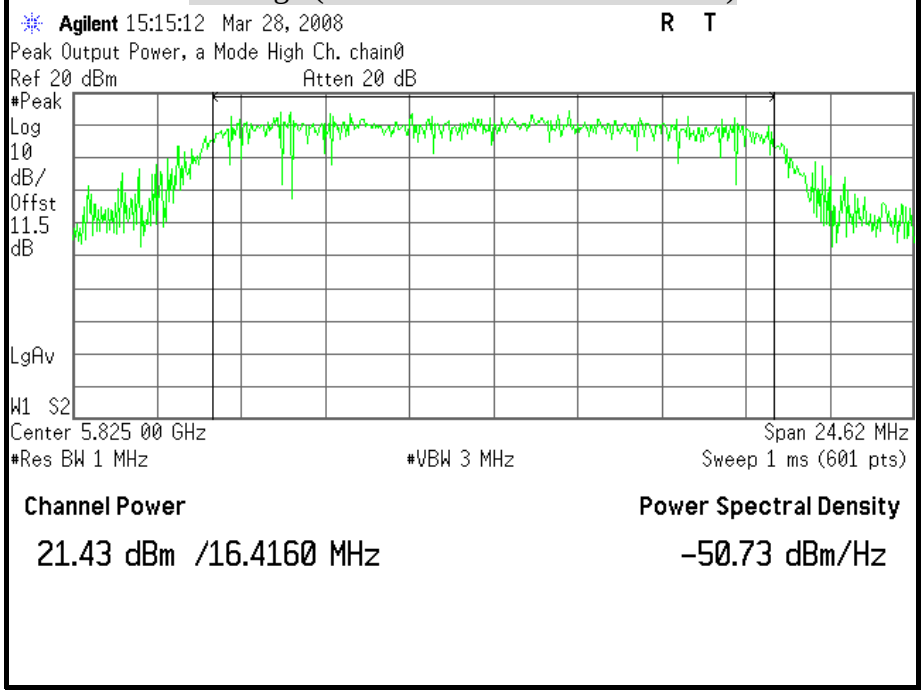
CH Middle (IEEE 802.11a mode - Chain 0)



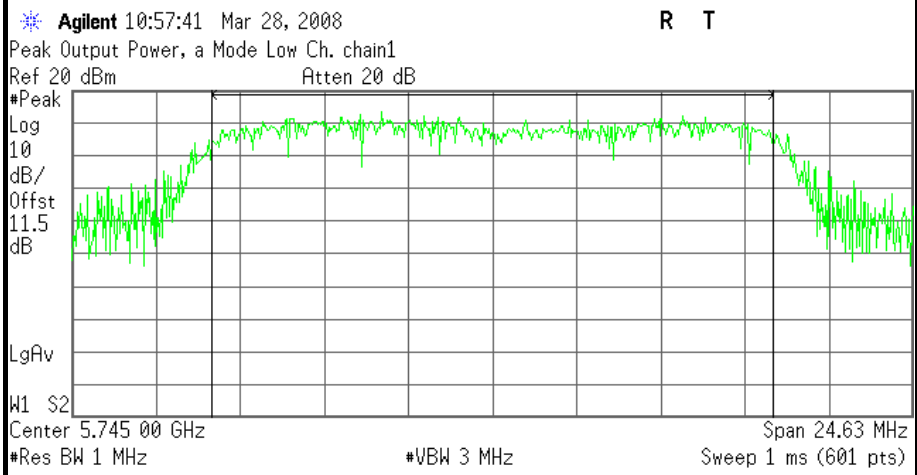
Channel Power 21.02 dBm /16.3550 MHz

Power Spectral Density -51.11 dBm/Hz

CH High (IEEE 802.11a mode - Chain 0)



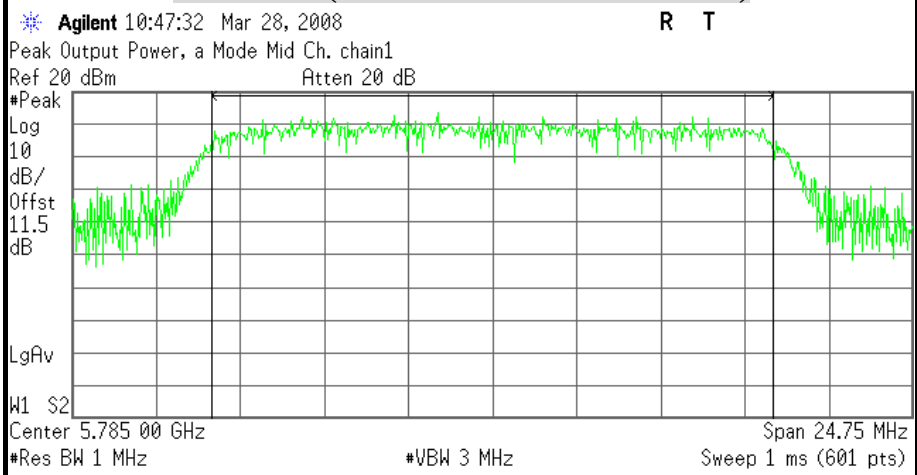
CH Low (IEEE 802.11a mode - Chain 1)



Channel Power 20.40 dBm /16.4210 MHz

Power Spectral Density -51.75 dBm/Hz

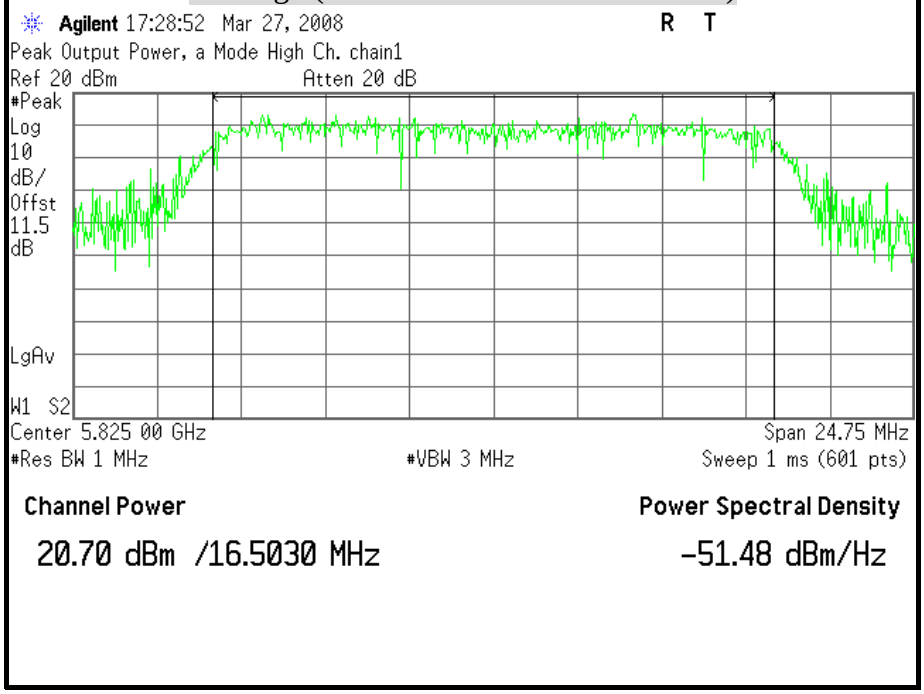
CH Middle (IEEE 802.11a mode - Chain 1)



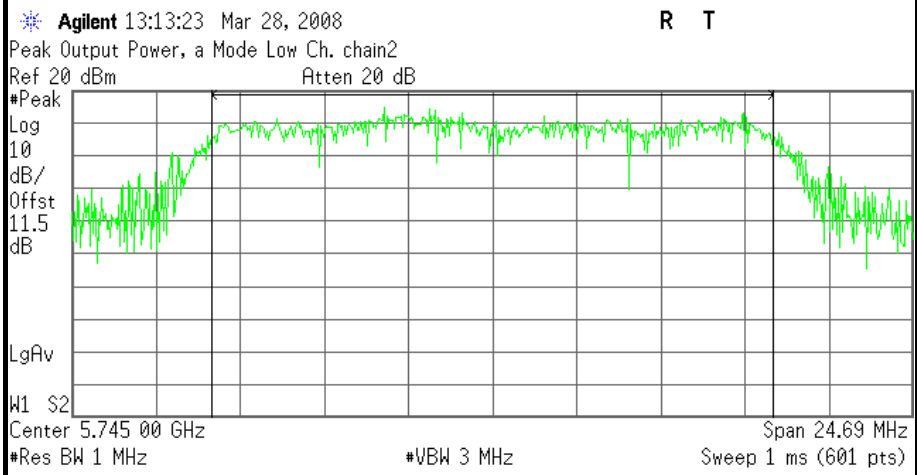
Channel Power 20.20 dBm /16.5000 MHz

Power Spectral Density -51.98 dBm/Hz

CH High (IEEE 802.11a mode - Chain 1)



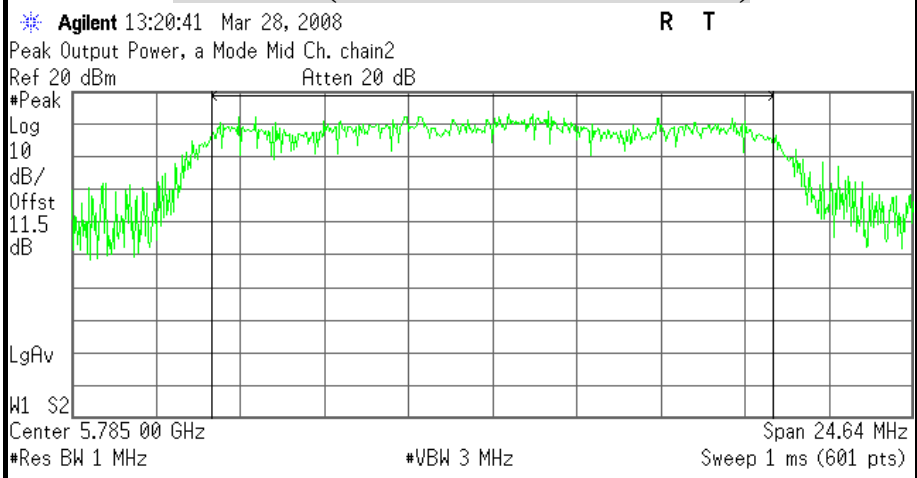
CH Low (IEEE 802.11a mode - Chain 2)



Channel Power 20.81 dBm /16.4590 MHz

Power Spectral Density -51.35 dBm/Hz

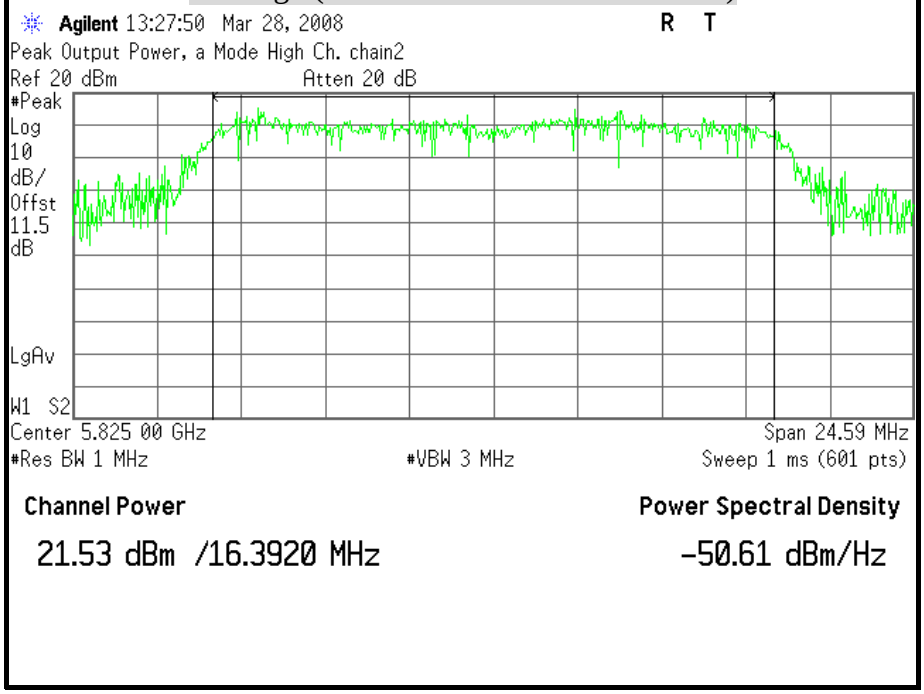
CH Middle (IEEE 802.11a mode - Chain 2)



Channel Power 20.60 dBm /16.4240 MHz

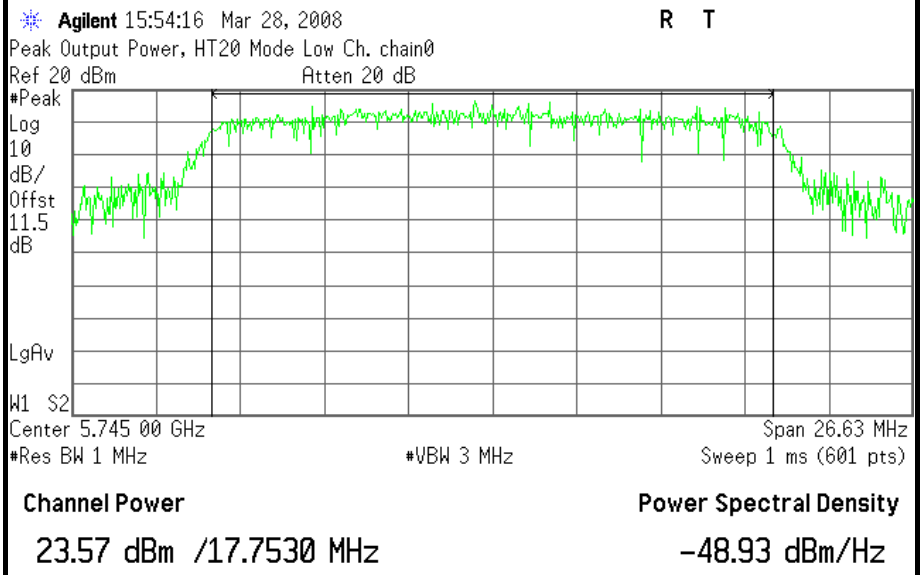
Power Spectral Density -51.56 dBm/Hz

CH High (IEEE 802.11a mode - Chain 2)

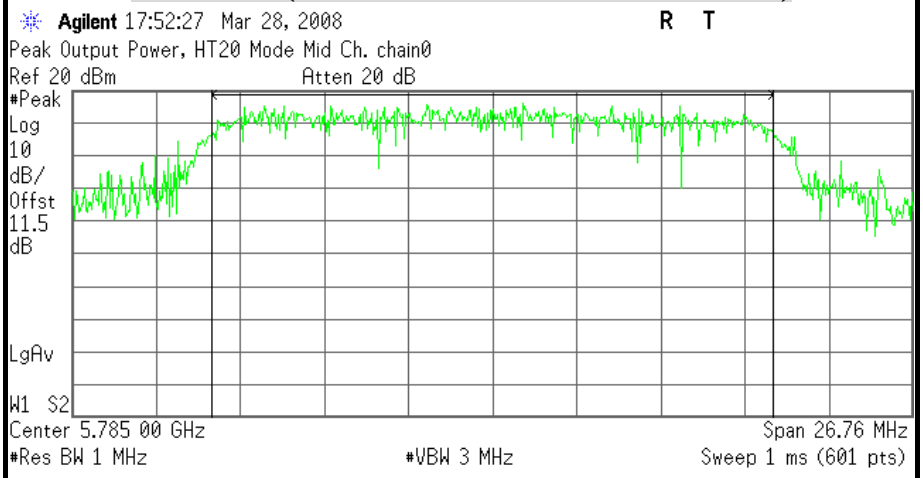


MAXIMUM PEAK OUTPUT POWER (IEEE 802.11n HT20 mode)

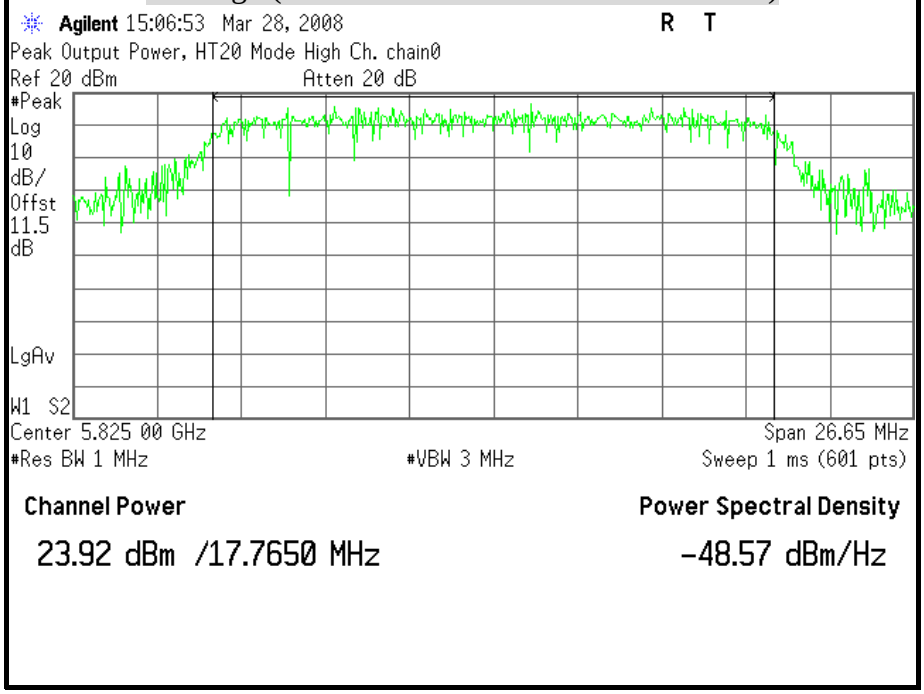
CH Low (IEEE 802.11n HT20 mode - Chain 0)



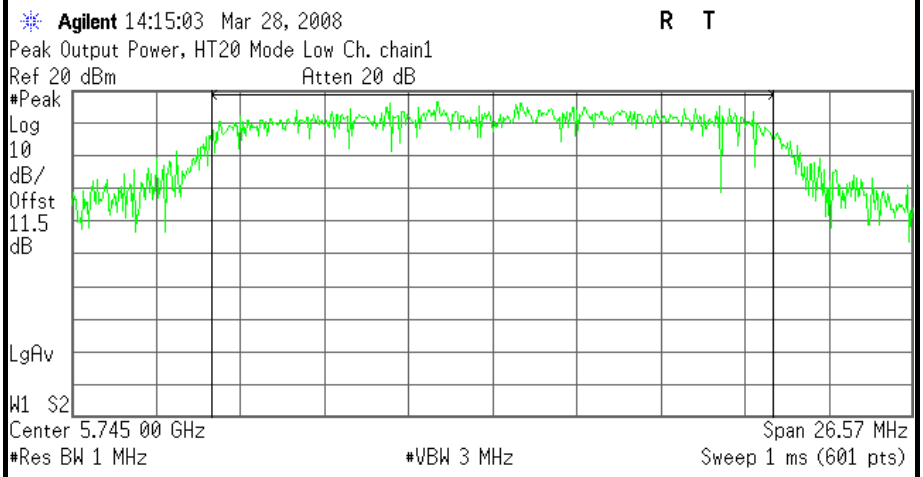
CH Middle (IEEE 802.11n HT20 mode - Chain 0)



CH High (IEEE 802.11n HT20 mode - Chain 0)



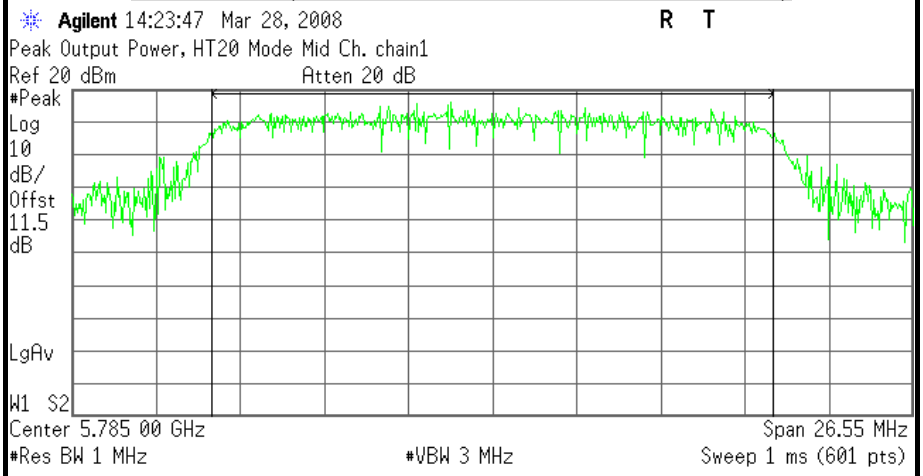
CH Low (IEEE 802.11n HT20 mode - Chain 1)



Channel Power 23.75 dBm /17.7120 MHz

Power Spectral Density -48.73 dBm/Hz

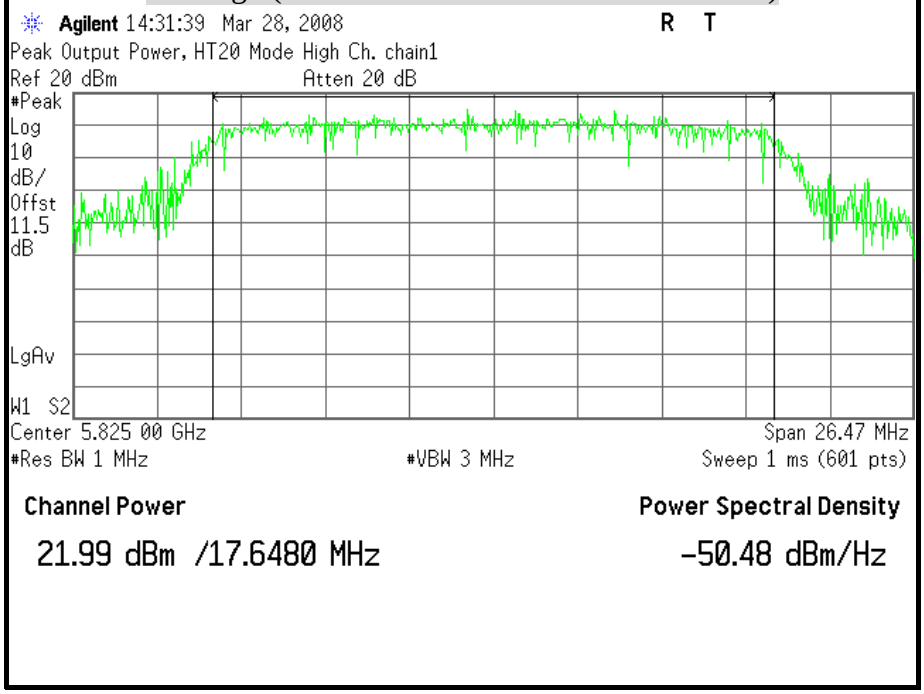
CH Middle (IEEE 802.11n HT20 mode - Chain 1)



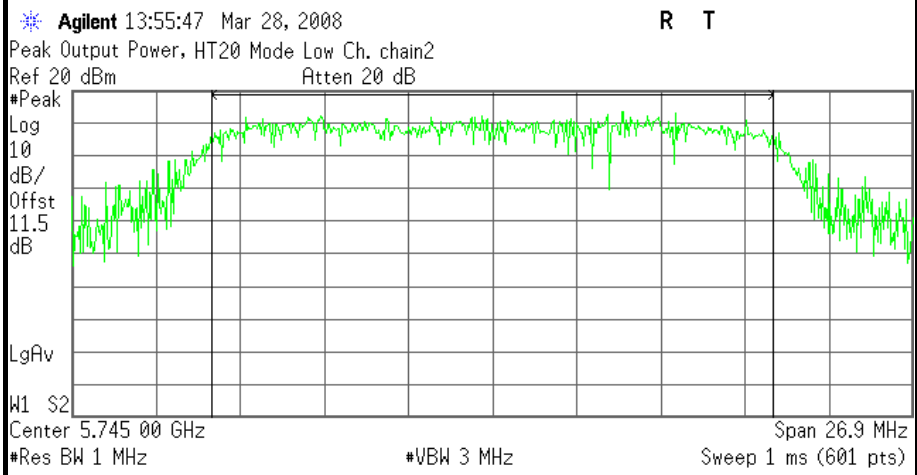
Channel Power 22.77 dBm /17.6980 MHz

Power Spectral Density -49.71 dBm/Hz

CH High (IEEE 802.11n HT20 mode - Chain 1)



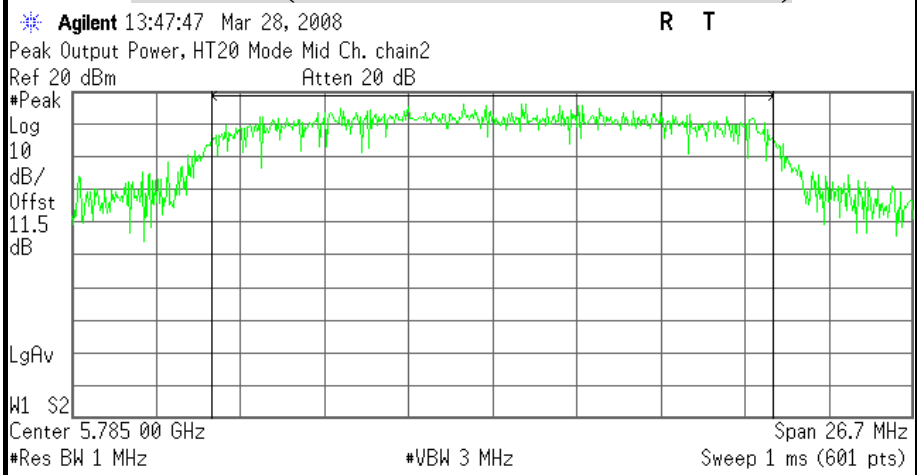
CH Low (IEEE 802.11n HT20 mode - Chain 2)



Channel Power 23.66 dBm /17.9350 MHz

Power Spectral Density -53.15 dBm/Hz

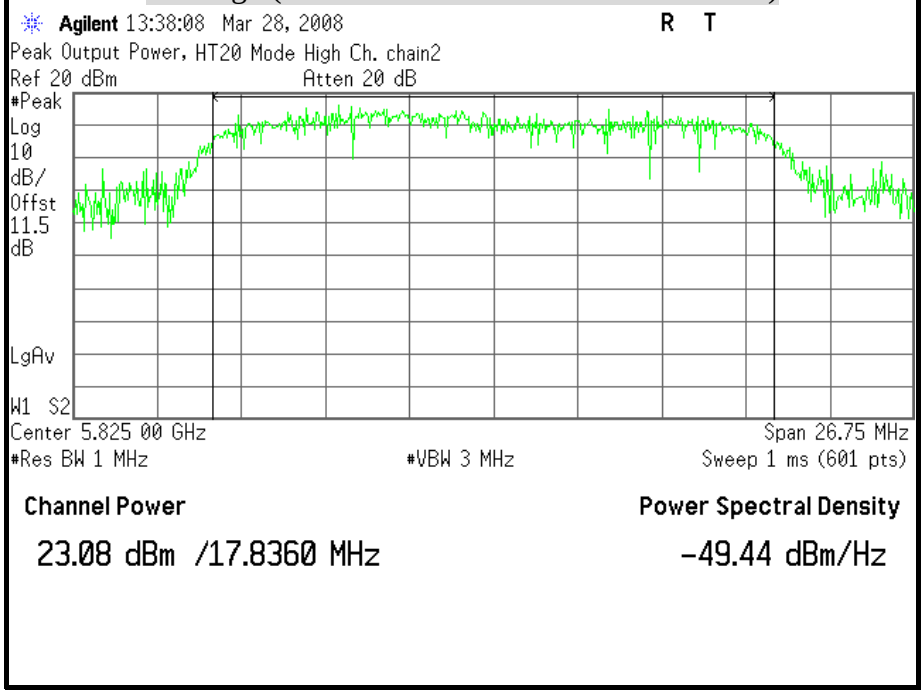
CH Middle (IEEE 802.11n HT20 mode - Chain 2)



Channel Power 23.26 dBm /17.7990 MHz

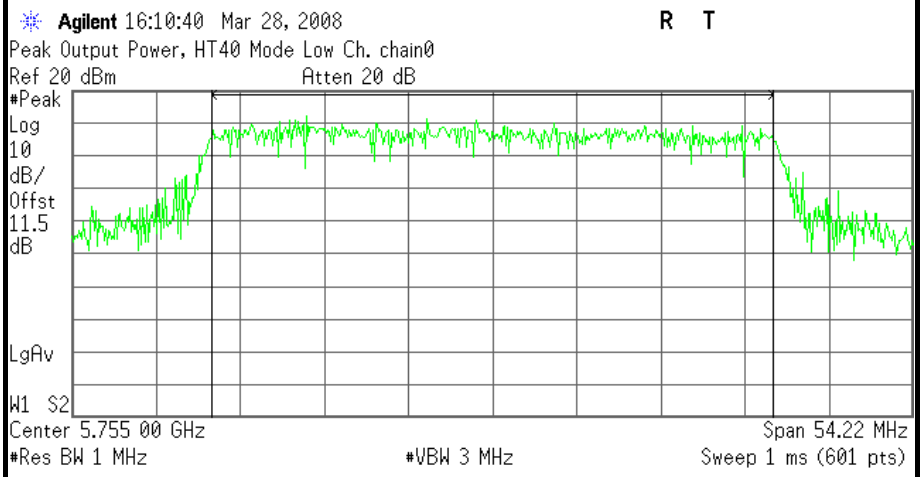
Power Spectral Density -49.24 dBm/Hz

CH High (IEEE 802.11n HT20 mode - Chain 2)



MAXIMUM PEAK OUTPUT POWER (IEEE 802.11n HT40 mode)

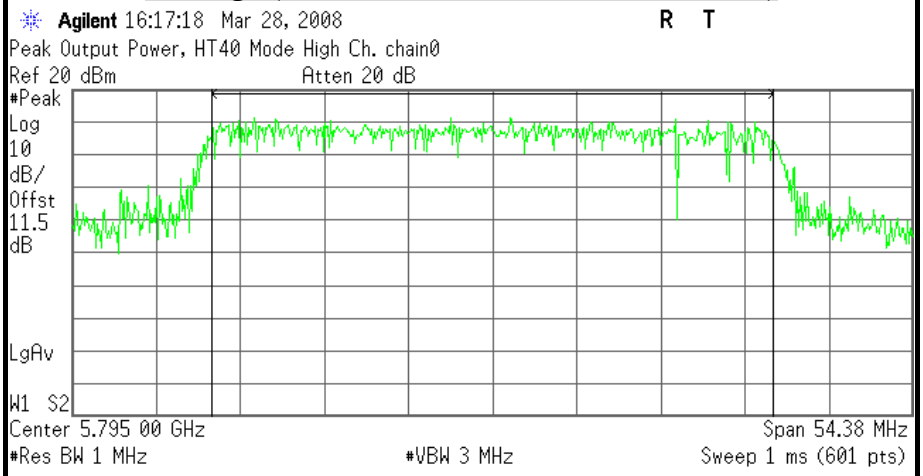
CH Low (IEEE 802.11n HT40 mode - Chain 0)



Channel Power 22.10 dBm /36.1480 MHz

Power Spectral Density -53.48 dBm/Hz

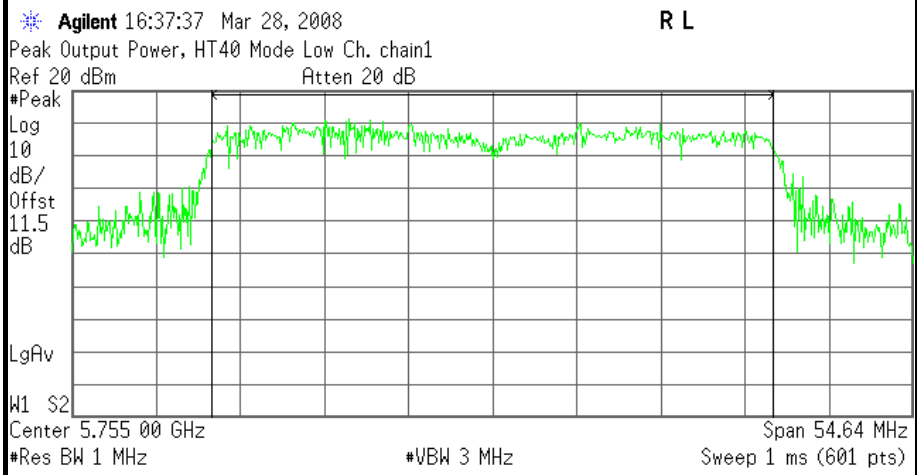
CH High (IEEE 802.11n HT40 mode - Chain 0)



Channel Power 22.54 dBm /36.2510 MHz

Power Spectral Density -53.06 dBm/Hz

CH Low (IEEE 802.11n HT40 mode - Chain 1)



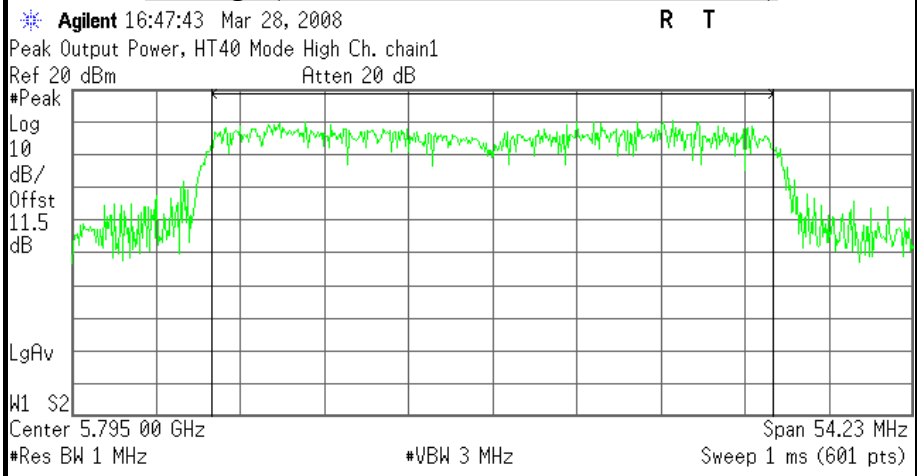
Channel Power

21.63 dBm /36.4280 MHz

Power Spectral Density

-53.98 dBm/Hz

CH High (IEEE 802.11n HT40 mode - Chain 1)



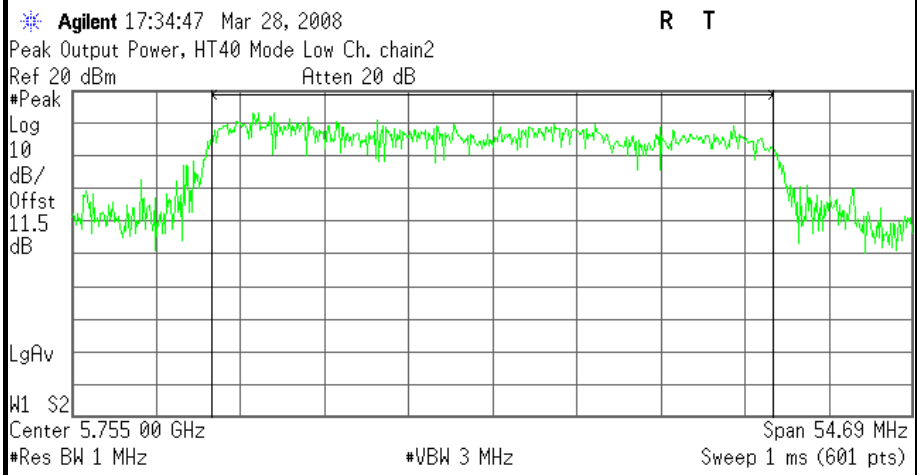
Channel Power

21.20 dBm /36.1500 MHz

Power Spectral Density

-54.38 dBm/Hz

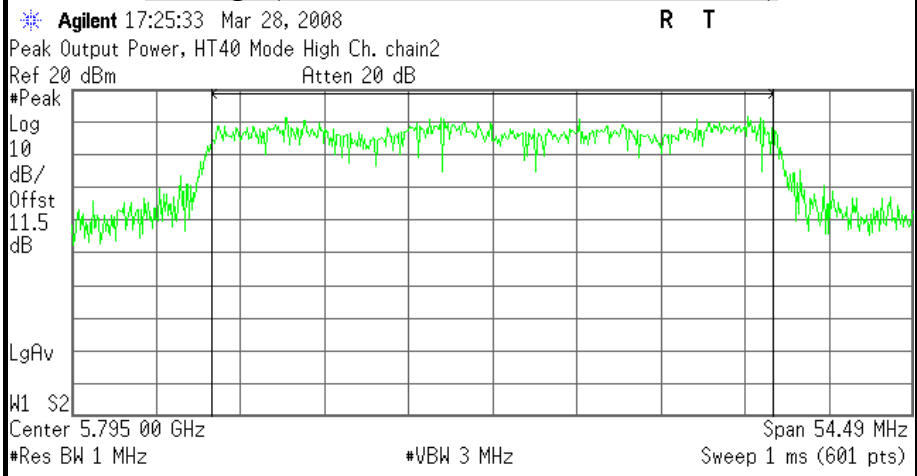
CH Low (IEEE 802.11n HT40 mode - Chain 2)



Channel Power 22.11 dBm /36.4630 MHz

Power Spectral Density -53.51 dBm/Hz

CH High (IEEE 802.11n HT40 mode - Chain 2)

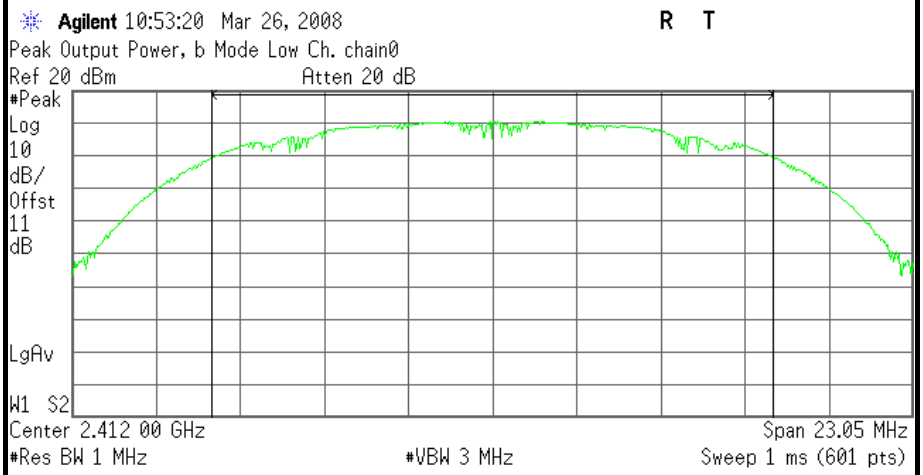


Channel Power 22.22 dBm /36.3260 MHz

Power Spectral Density -53.38 dBm/Hz

MAXIMUM PEAK OUTPUT POWER (IEEE 802.11b mode)

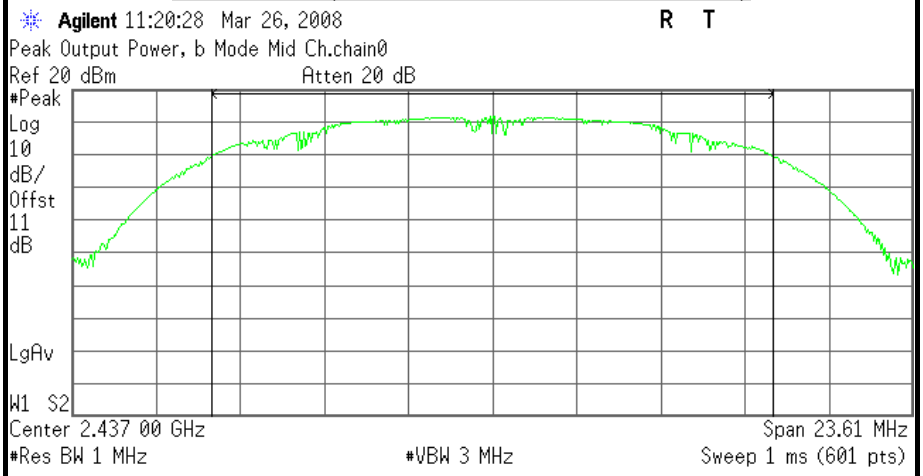
CH Low (IEEE 802.11b mode - Chain 0)



Channel Power
19.45 dBm /15.3650 MHz

Power Spectral Density
-52.42 dBm/Hz

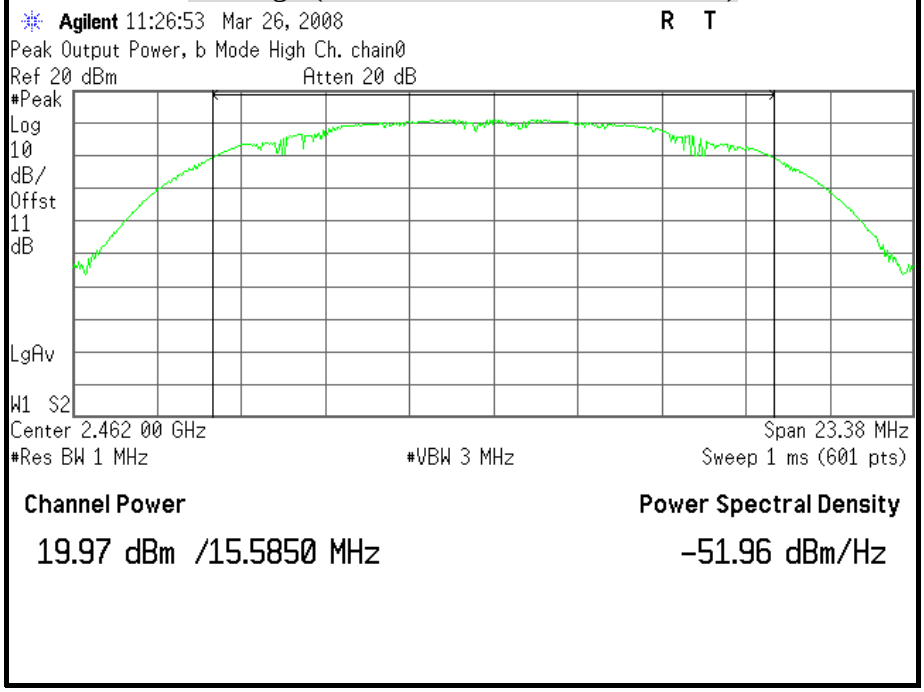
CH Middle (IEEE 802.11b mode - Chain 0)



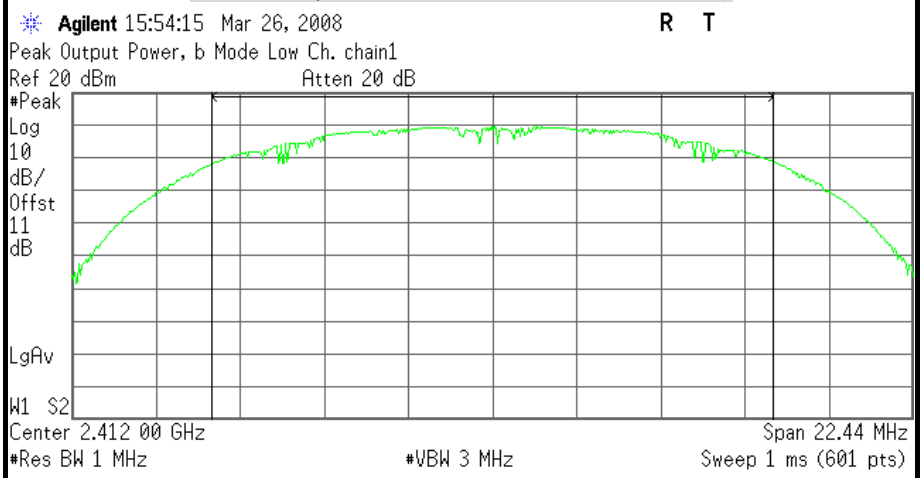
Channel Power
20.55 dBm /15.7380 MHz

Power Spectral Density
-51.42 dBm/Hz

CH High (IEEE 802.11b mode - Chain 0)



CH Low (IEEE 802.11b mode - Chain 1)



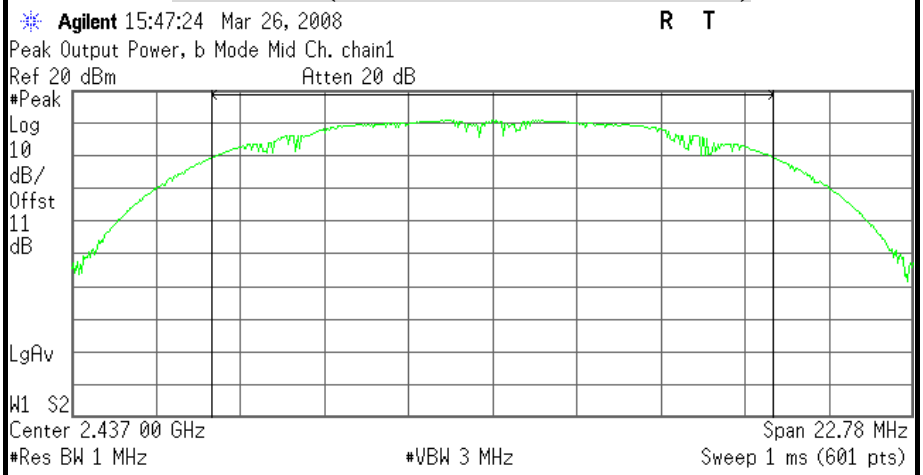
Channel Power

18.41 dBm /14.9610 MHz

Power Spectral Density

-53.33 dBm/Hz

CH Middle (IEEE 802.11b mode - Chain 1)



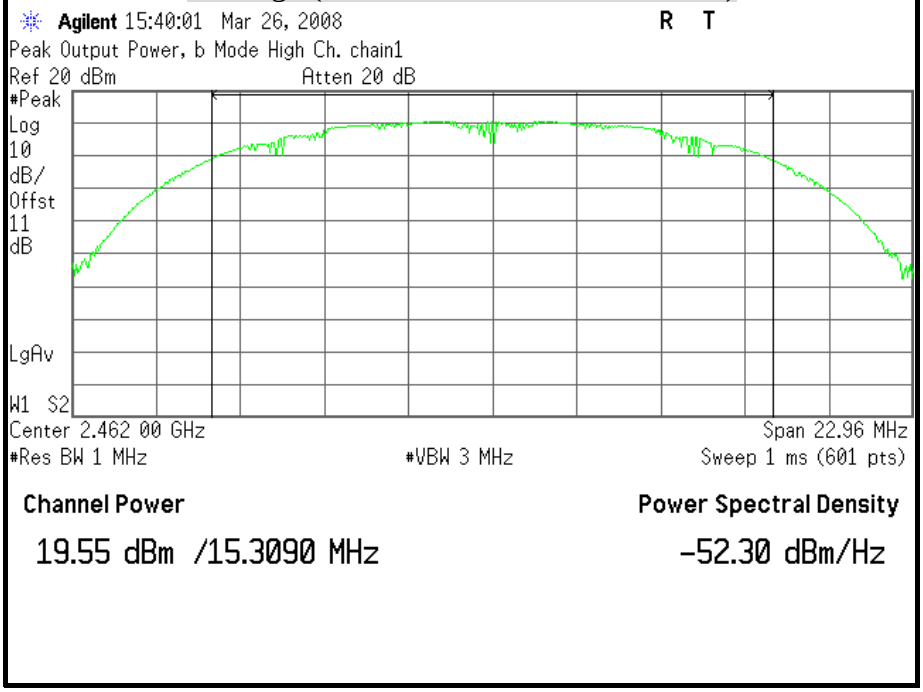
Channel Power

19.88 dBm /15.1880 MHz

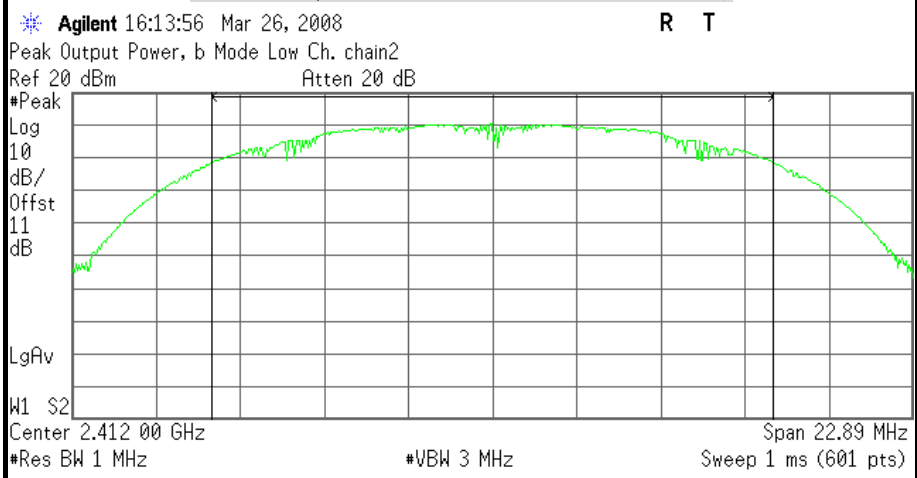
Power Spectral Density

-51.93 dBm/Hz

CH High (IEEE 802.11b mode - Chain 0)



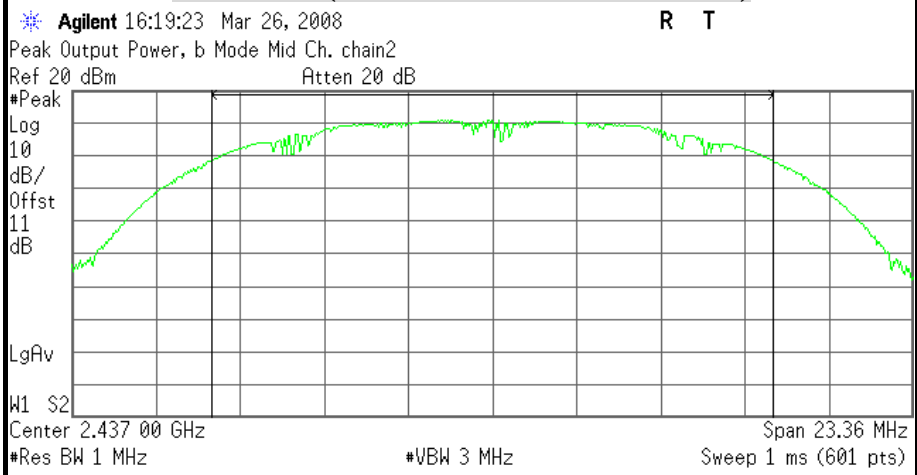
CH Low (IEEE 802.11b mode - Chain 2)



Channel Power 19.15 dBm /15.2630 MHz

Power Spectral Density -52.69 dBm/Hz

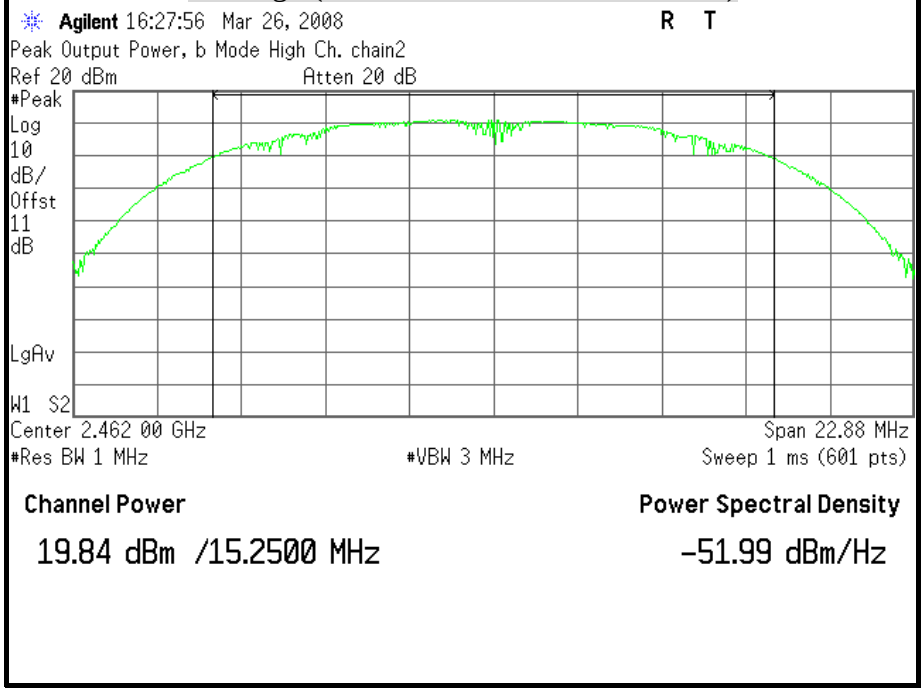
CH Middle (IEEE 802.11b mode - Chain 2)



Channel Power 19.82 dBm /15.5760 MHz

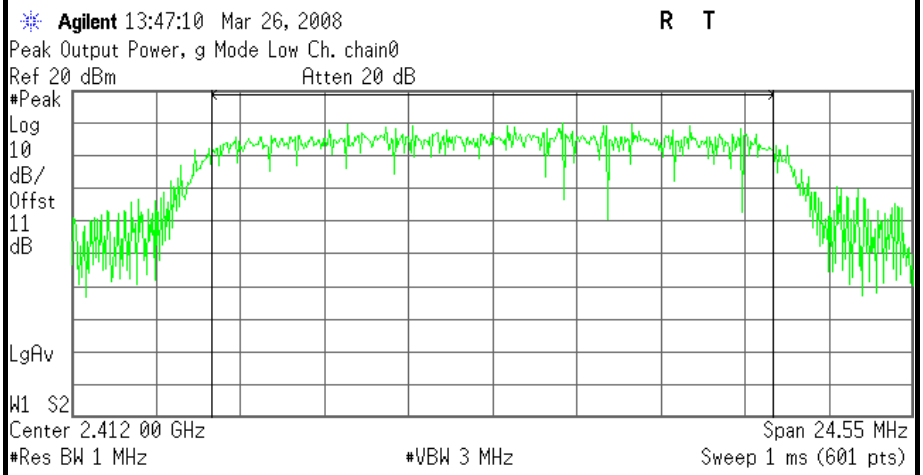
Power Spectral Density -52.10 dBm/Hz

CH High (IEEE 802.11b mode - Chain 2)



MAXIMUM PEAK OUTPUT POWER (IEEE 802.11g mode)

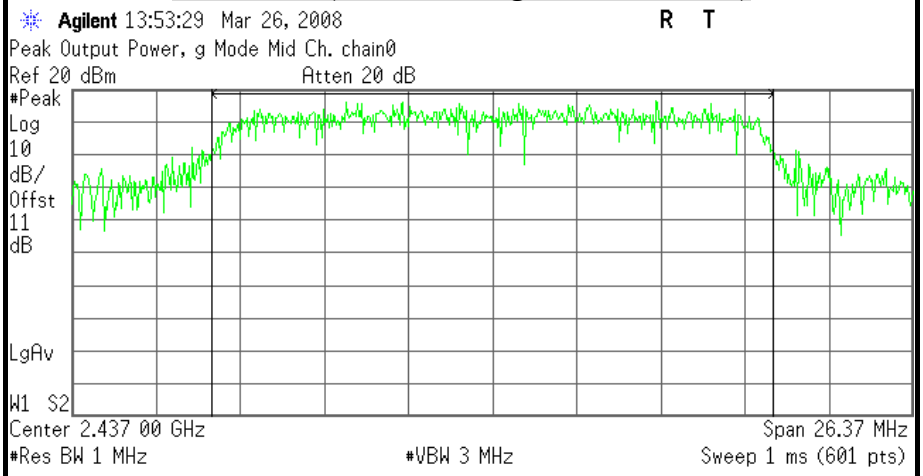
CH Low (IEEE 802.11g mode - Chain 0)



Channel Power 16.69 dBm /16.3640 MHz

Power Spectral Density -55.45 dBm/Hz

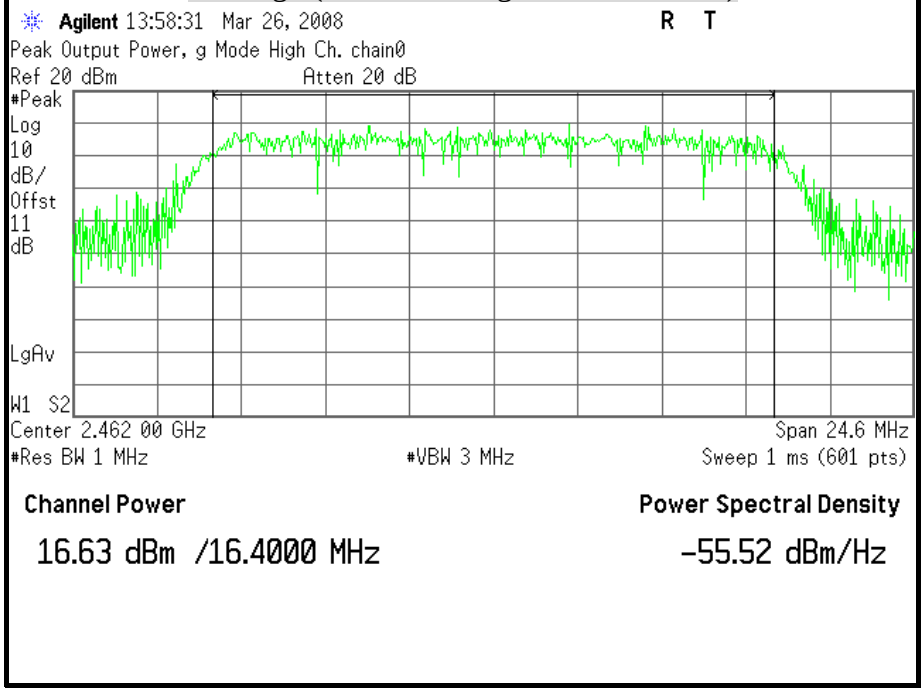
CH Middle (IEEE 802.11g mode - Chain 0)



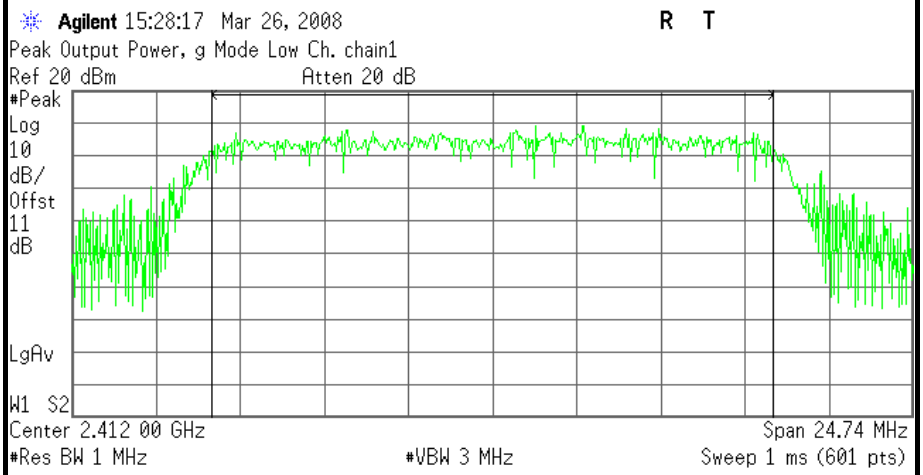
Channel Power 23.70 dBm /17.5780 MHz

Power Spectral Density -48.75 dBm/Hz

CH High (IEEE 802.11g mode - Chain 0)



CH Low (IEEE 802.11g mode - Chain 1)



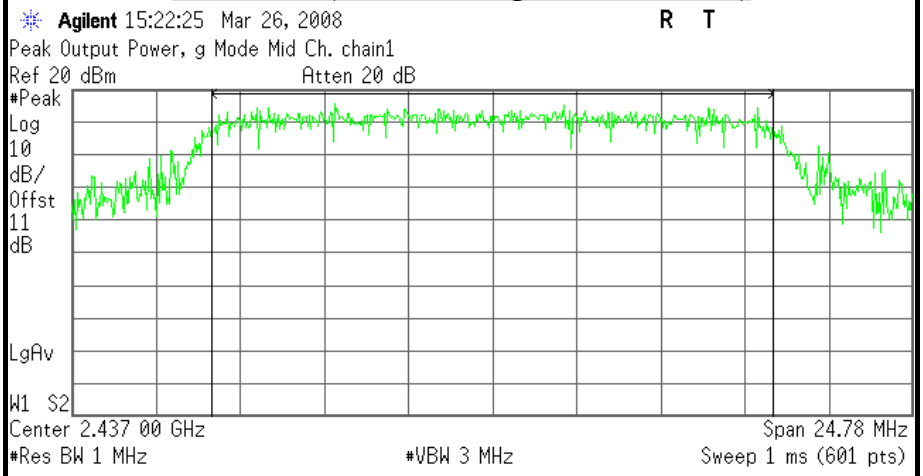
Channel Power

16.22 dBm /16.4940 MHz

Power Spectral Density

-55.96 dBm/Hz

CH Middle (IEEE 802.11g mode - Chain 1)



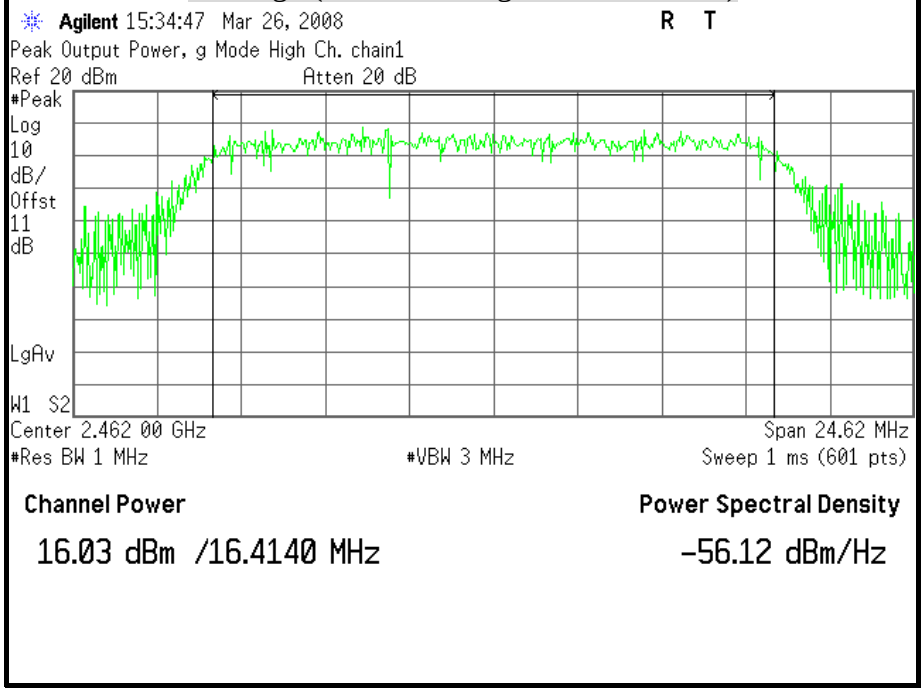
Channel Power

23.01 dBm /16.5190 MHz

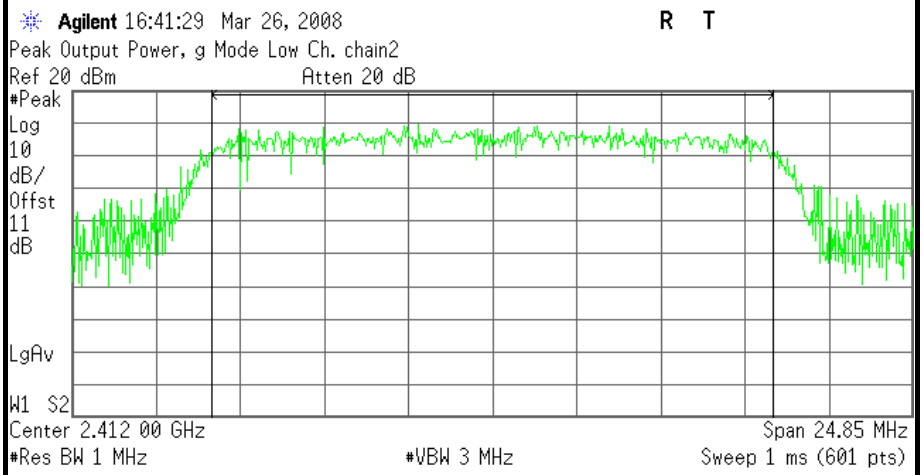
Power Spectral Density

-49.17 dBm/Hz

CH High (IEEE 802.11g mode - Chain 1)



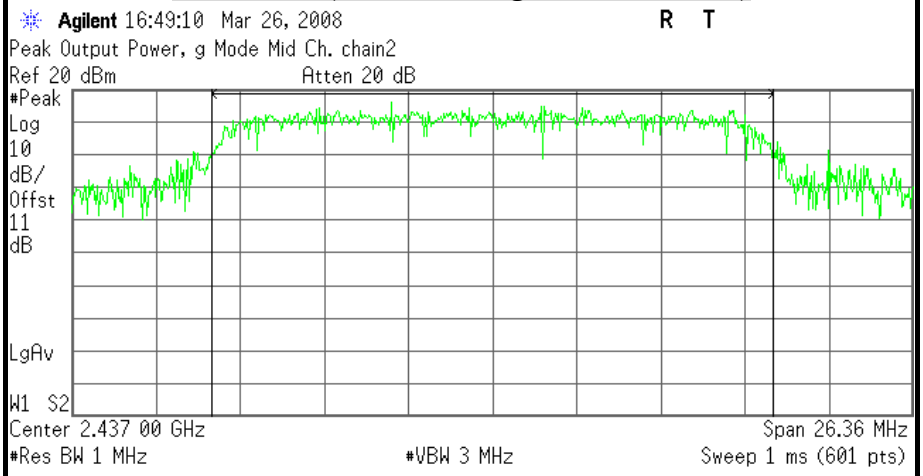
CH Low (IEEE 802.11g mode - Chain 2)



Channel Power 17.08 dBm /16.5690 MHz

Power Spectral Density -55.11 dBm/Hz

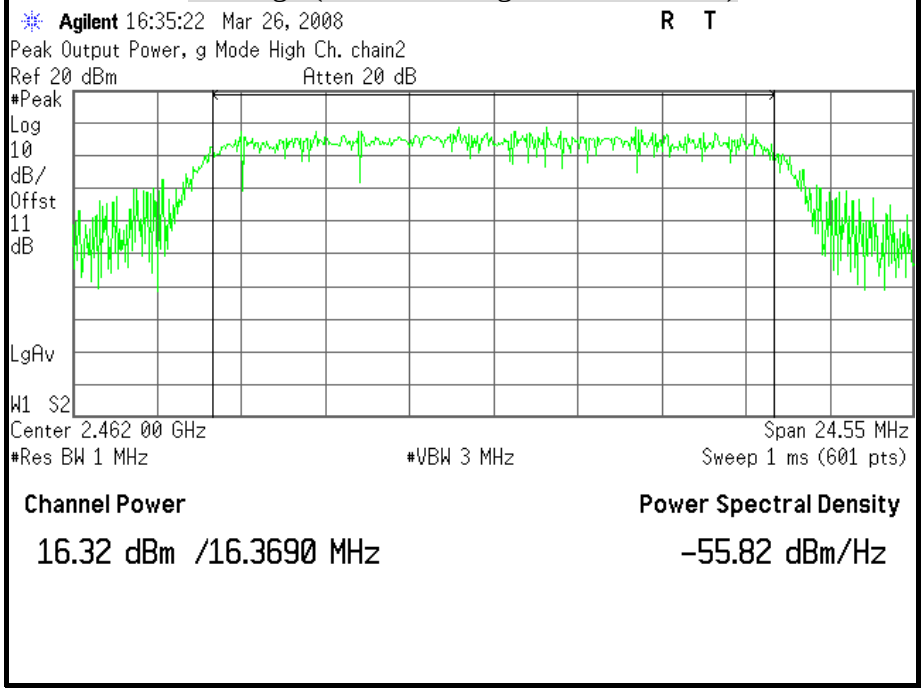
CH Middle (IEEE 802.11g mode - Chain 2)



Channel Power 23.10 dBm /17.5710 MHz

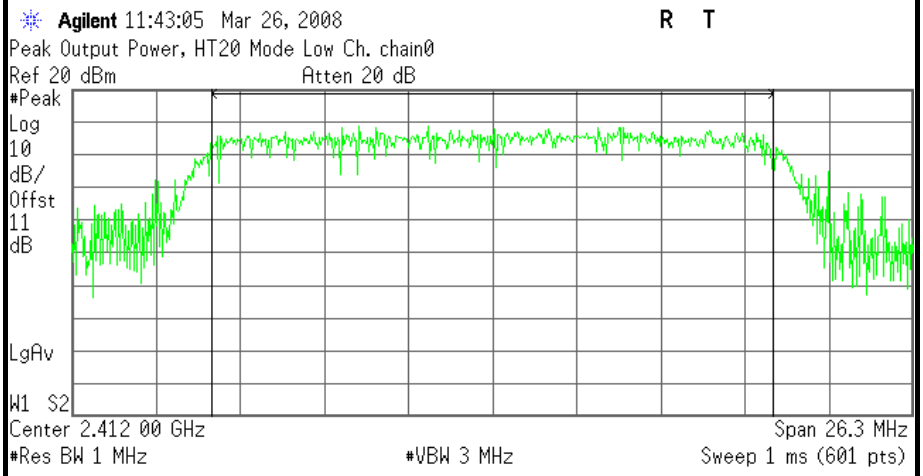
Power Spectral Density -49.34 dBm/Hz

CH High (IEEE 802.11g mode - Chain 2)



MAXIMUM PEAK OUTPUT POWER (IEEE 802.11n HT20 mode)

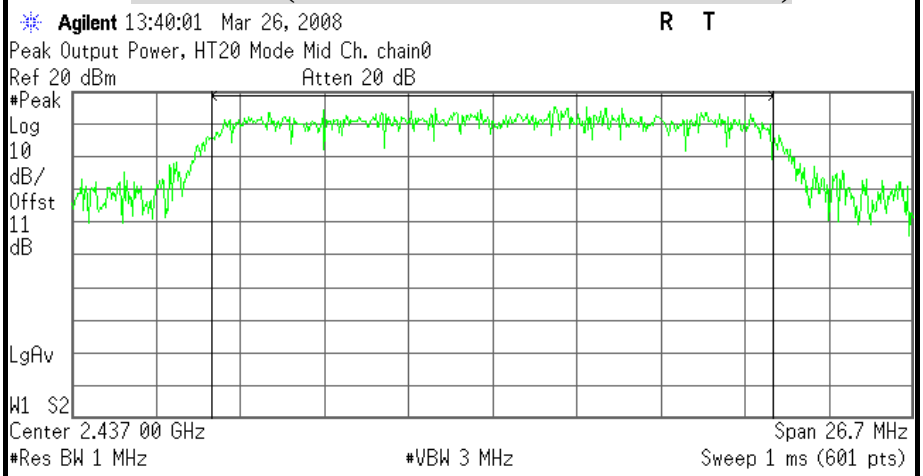
CH Low (IEEE 802.11n HT20 mode - Chain 0)



Channel Power 17.05 dBm /17.5300 MHz

Power Spectral Density -55.39 dBm/Hz

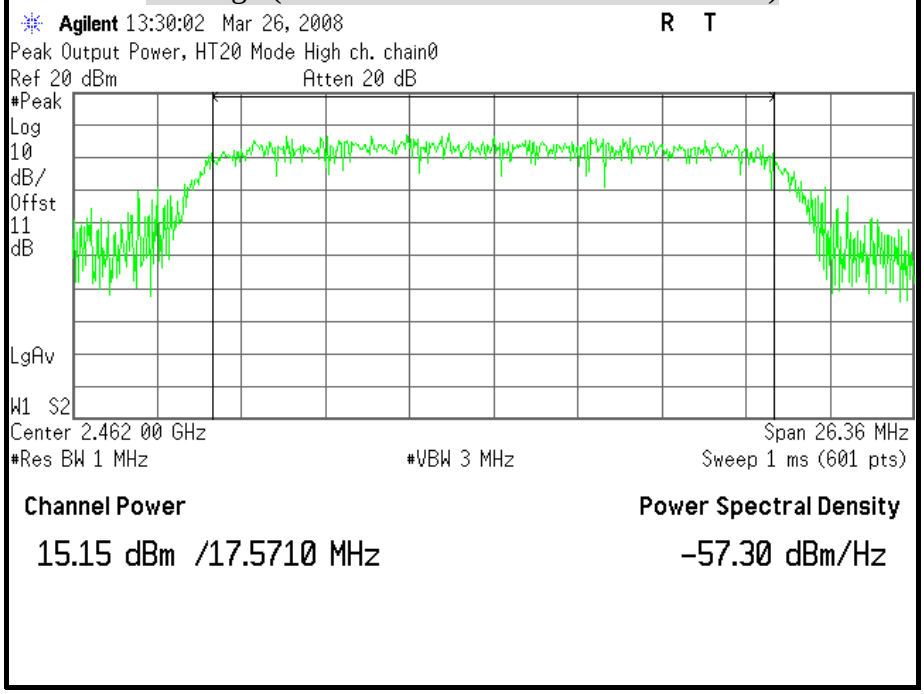
CH Middle (IEEE 802.11n HT20 mode - Chain 0)



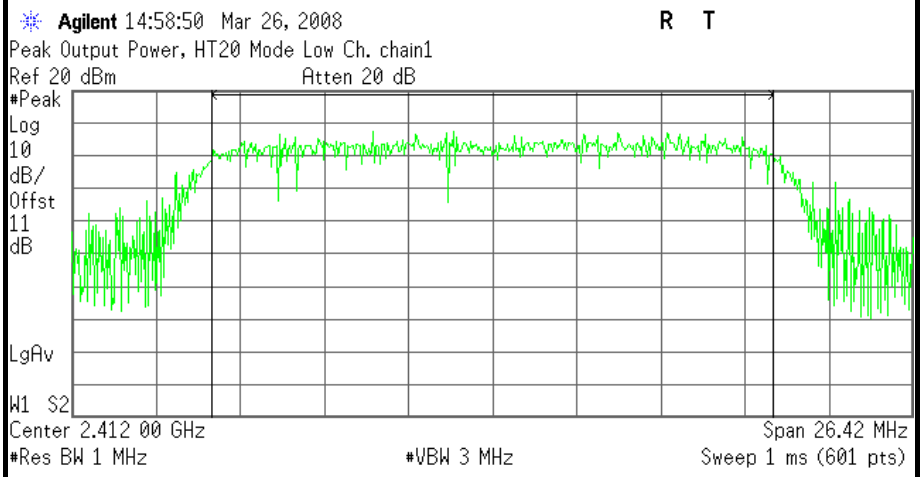
Channel Power 23.28 dBm /17.8010 MHz

Power Spectral Density -49.23 dBm/Hz

CH High (IEEE 802.11n HT20 mode - Chain 0)



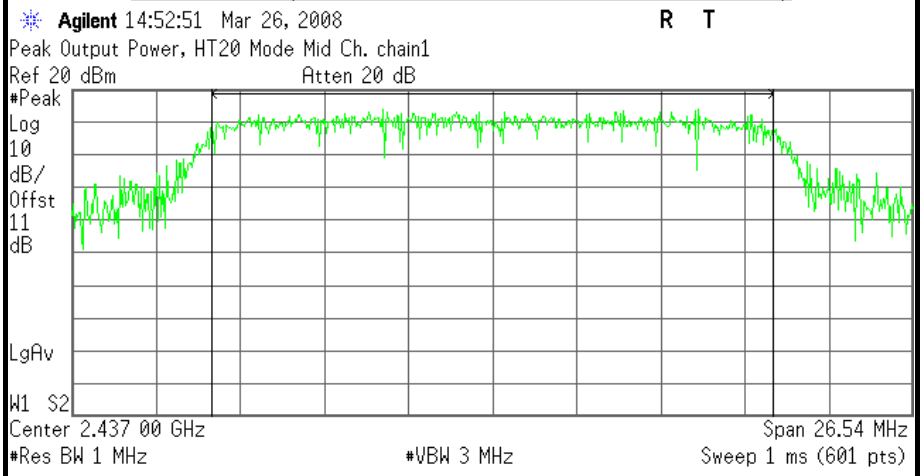
CH Low (IEEE 802.11n HT20 mode - Chain 1)



Channel Power 15.13 dBm /17.6130 MHz

Power Spectral Density -57.33 dBm/Hz

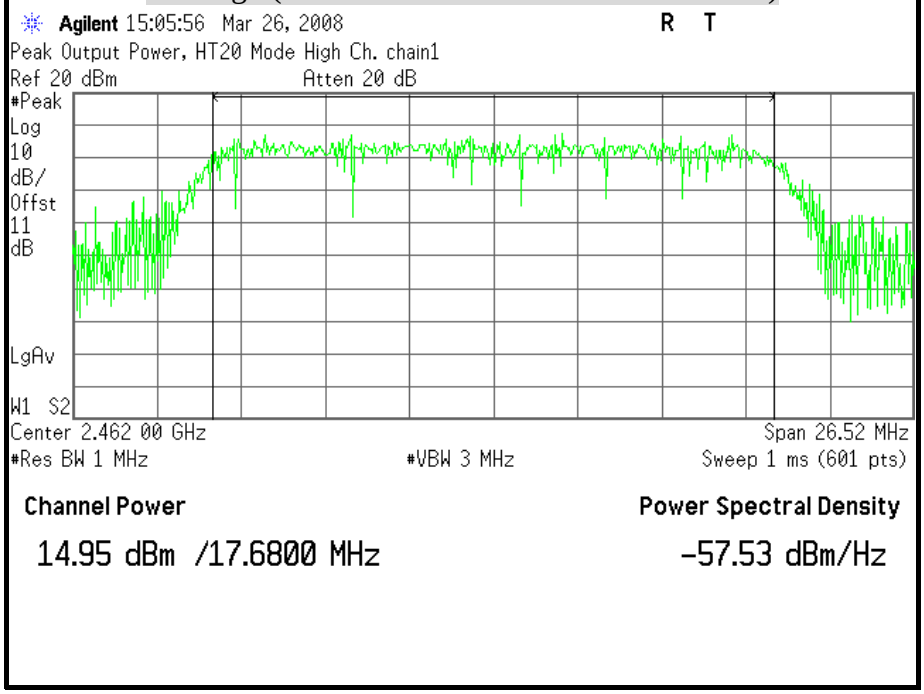
CH Middle (IEEE 802.11n HT20 mode - Chain 1)



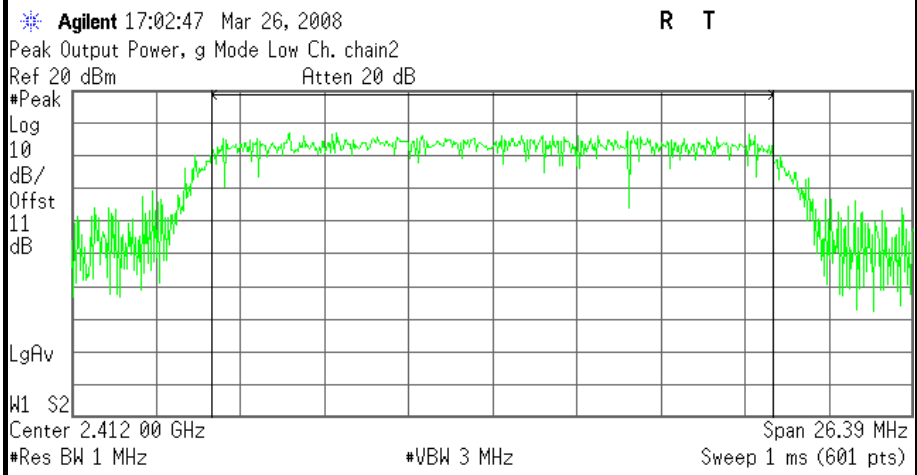
Channel Power 22.33 dBm /17.6930 MHz

Power Spectral Density -50.15 dBm/Hz

CH High (IEEE 802.11n HT20 mode - Chain 1)



CH Low (IEEE 802.11n HT20 mode - Chain 2)



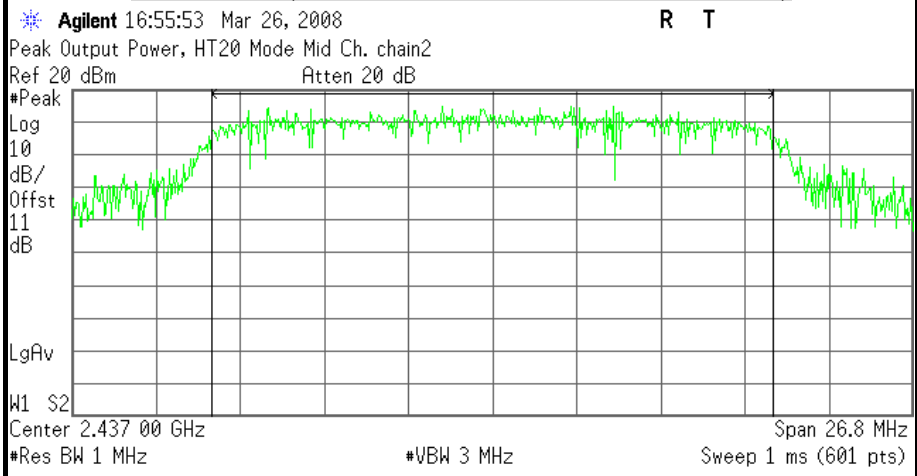
Channel Power

15.62 dBm /17.5960 MHz

Power Spectral Density

-56.83 dBm/Hz

CH Middle (IEEE 802.11n HT20 mode - Chain 2)



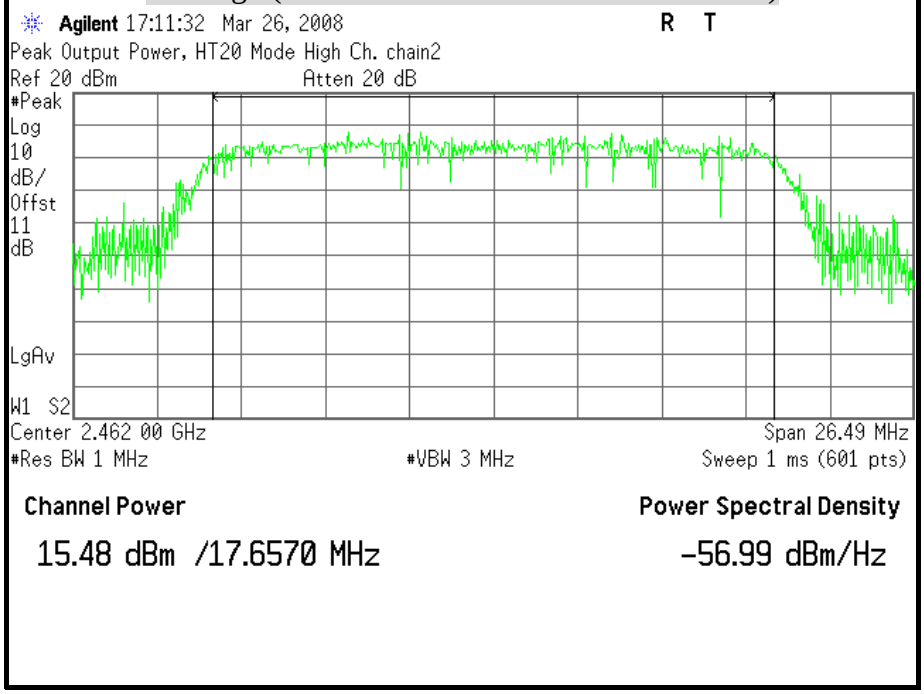
Channel Power

22.42 dBm /17.8650 MHz

Power Spectral Density

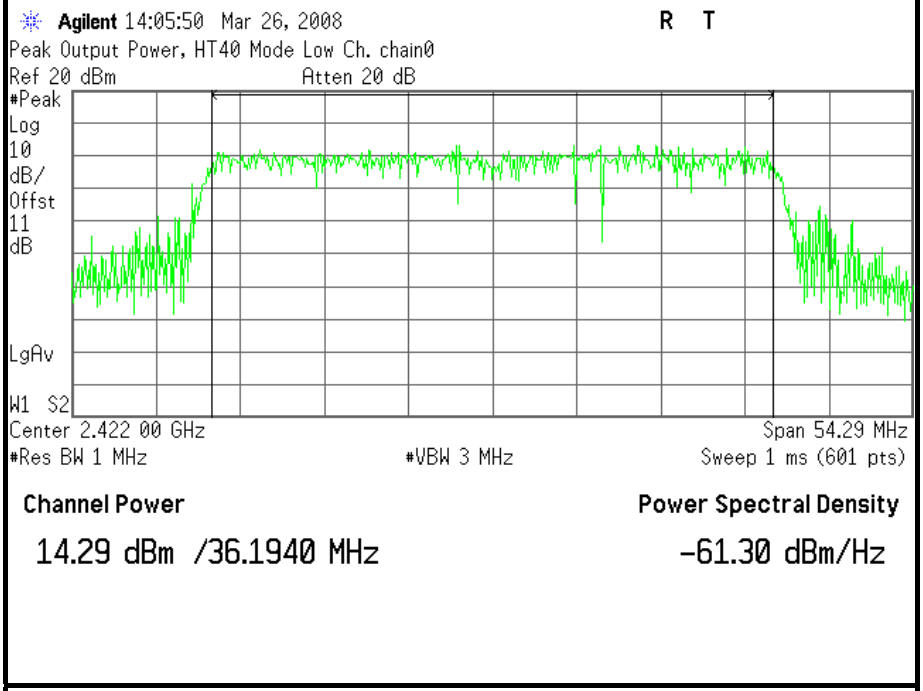
-50.10 dBm/Hz

CH High (IEEE 802.11n HT20 mode - Chain 2)

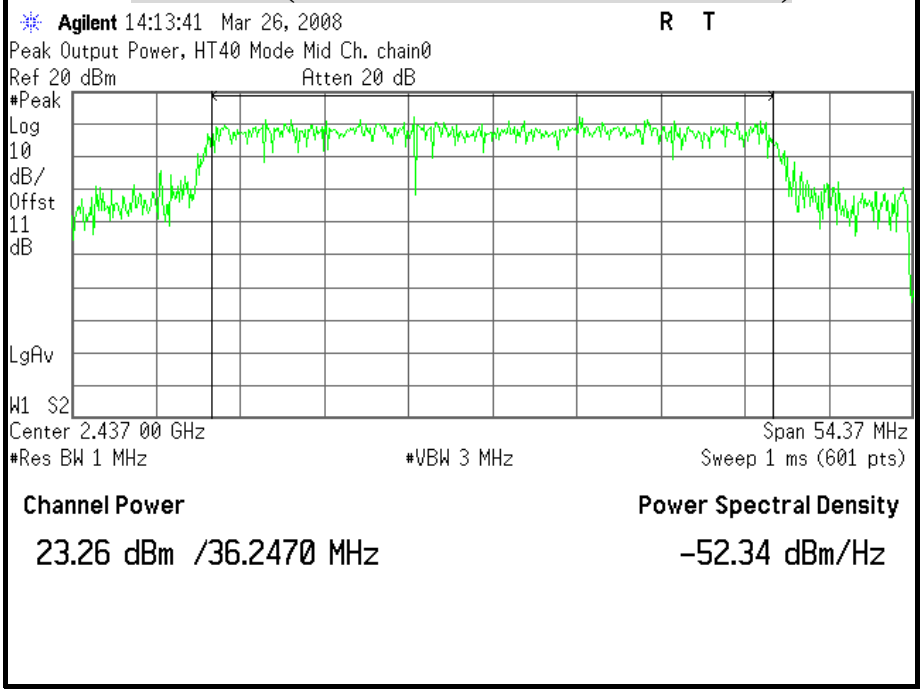


MAXIMUM PEAK OUTPUT POWER (IEEE 802.11n HT40 mode)

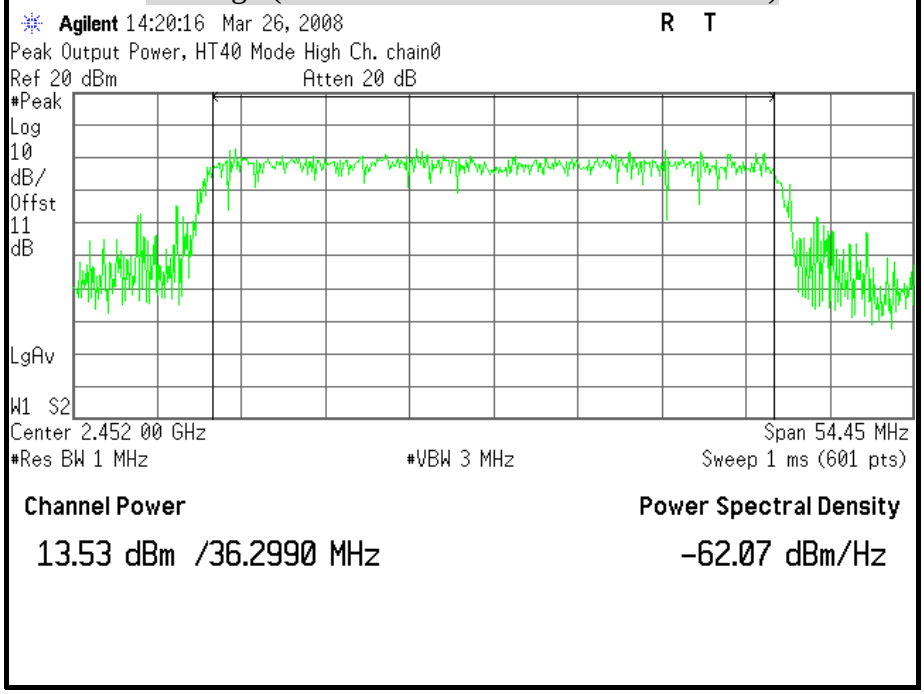
CH Low (IEEE 802.11n HT40 mode - Chain 0)



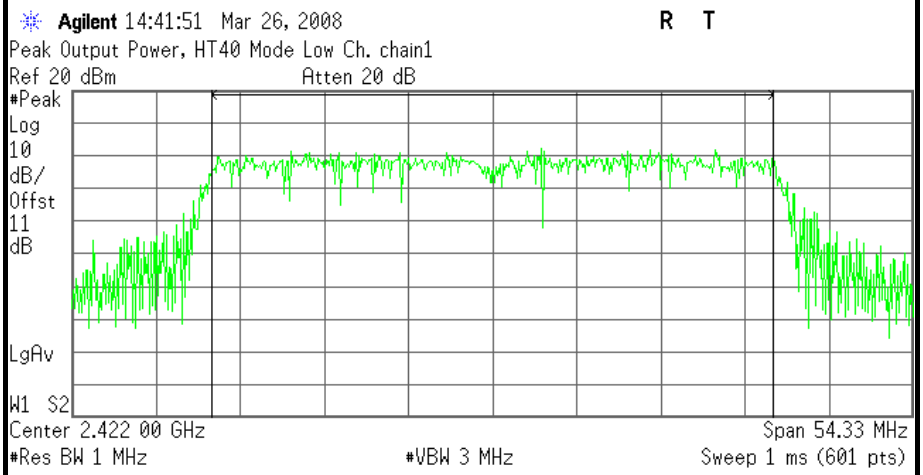
CH Middle (IEEE 802.11n HT40 mode - Chain 0)



CH High (IEEE 802.11n HT40 mode - Chain 0)



CH Low (IEEE 802.11n HT40 mode - Chain 1)



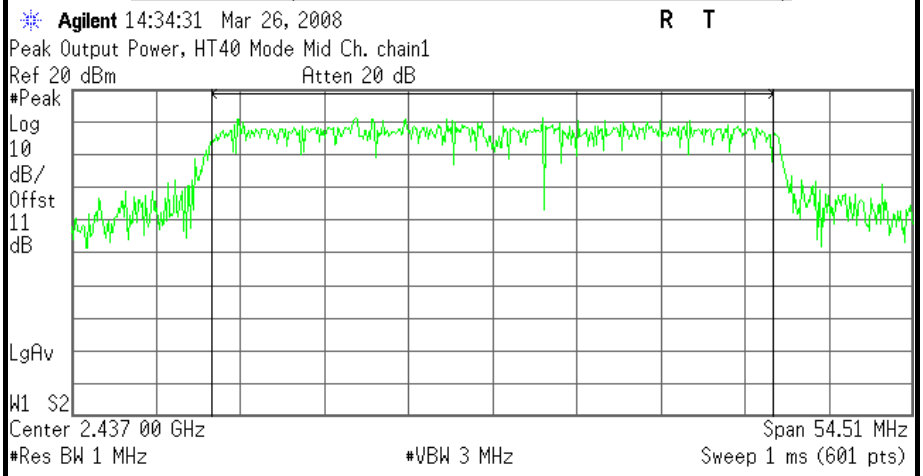
Channel Power

13.26 dBm /36.2200 MHz

Power Spectral Density

-62.33 dBm/Hz

CH Middle (IEEE 802.11n HT40 mode - Chain 1)



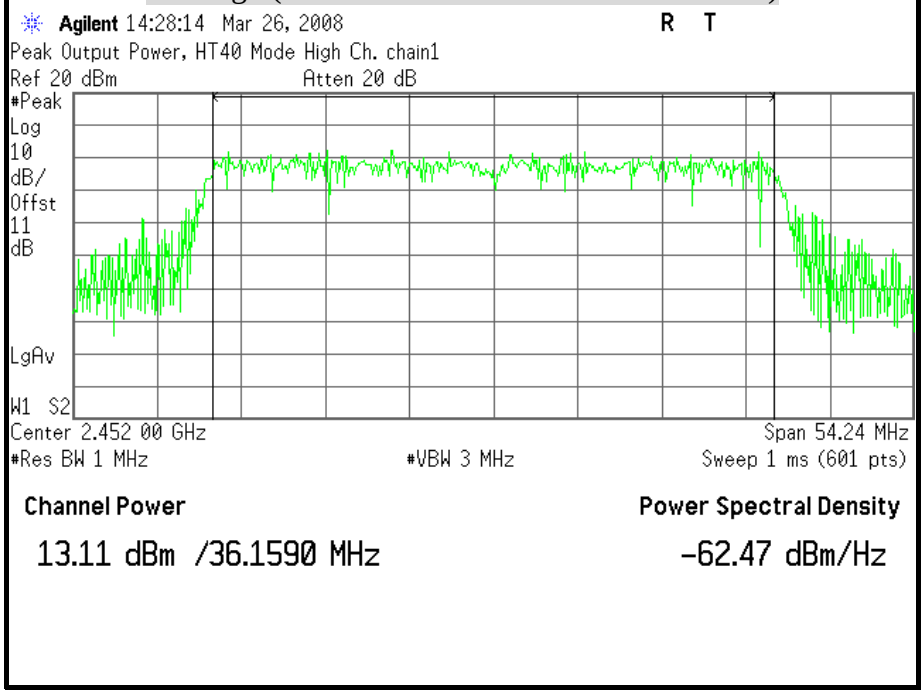
Channel Power

22.61 dBm /36.3370 MHz

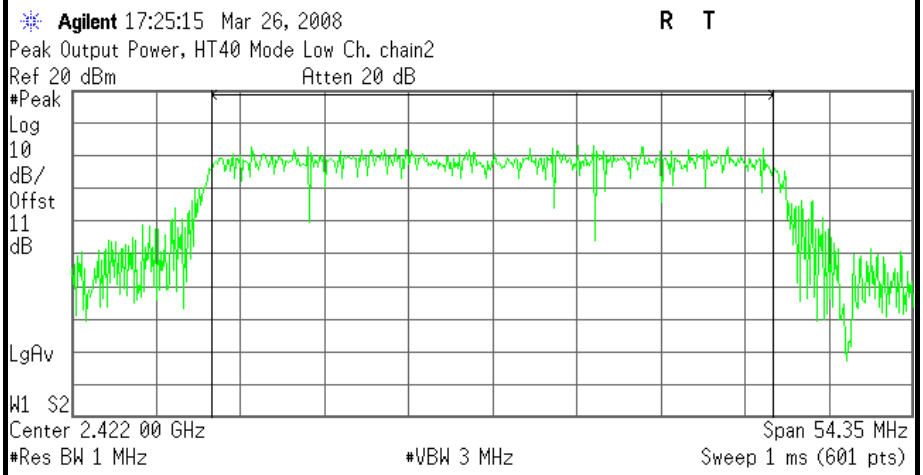
Power Spectral Density

-53.00 dBm/Hz

CH High (IEEE 802.11n HT40 mode - Chain 1)



CH Low (IEEE 802.11n HT40 mode - Chain 2)



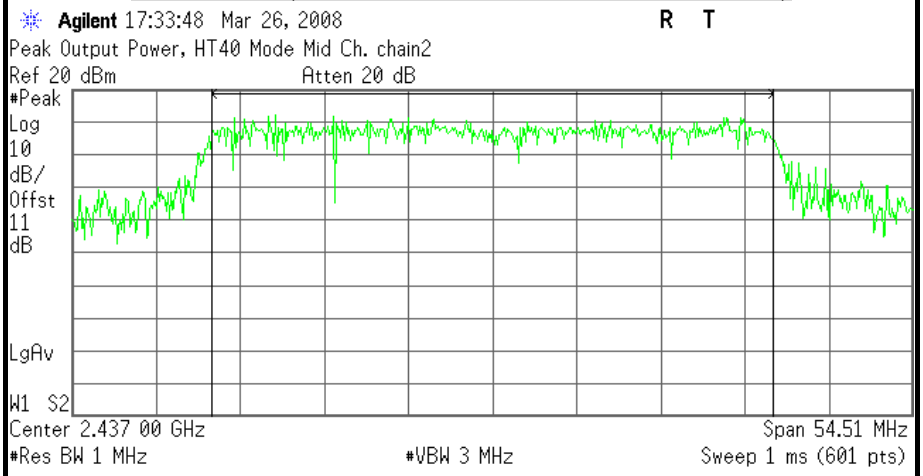
Channel Power

14.08 dBm /36.2350 MHz

Power Spectral Density

-61.51 dBm/Hz

CH Middle (IEEE 802.11n HT40 mode - Chain 2)



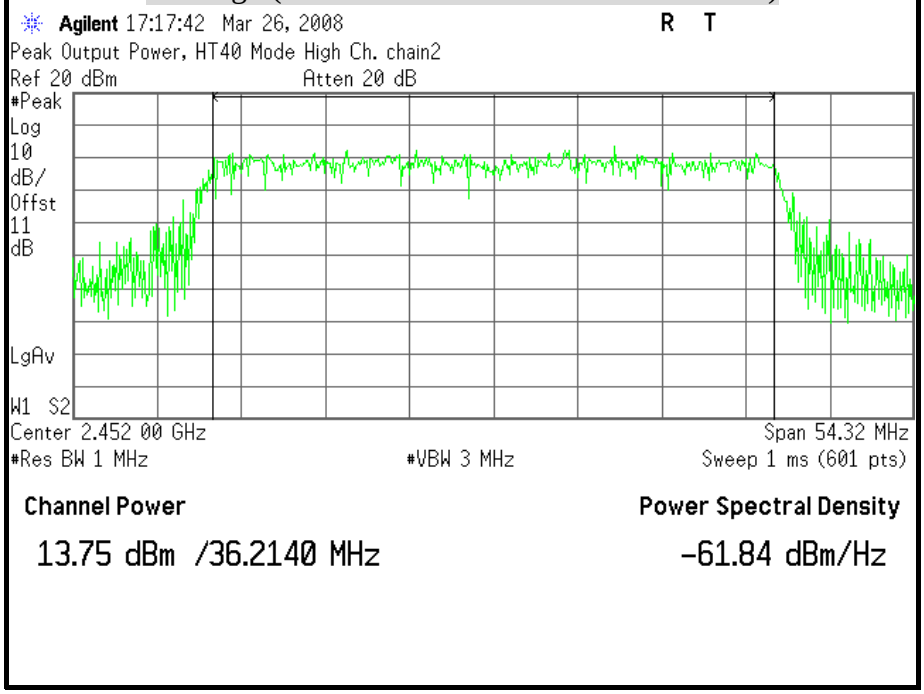
Channel Power

22.82 dBm /36.3430 MHz

Power Spectral Density

-52.78 dBm/Hz

CH High (IEEE 802.11n HT40 mode - Chain 2)



8.4 MAXIMUM PERMISSIBLE EXPOSURE

According to FCC 1.1310 : The criteria listed in the following table shall be used to evaluate theenvironment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time
(A) Limits for Occupational / Control Exposures				
300-1,500	--	--	F/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Population / Uncontrol Exposures				
300-1,500	--	--	F/1500	6
1,500-100,000	--	--	1	30

CALCULATIONS

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{3770}$

Where *E = Field strength in Volts / meter*

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{3770 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{3770 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$

Where *d = Distance in cm*

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

LIMIT

Power Density Limit, S=1.0mW/cm^2

TEST RESULTS

No non-compliance noted

Mode	Minimum separation distance (cm)	Output Power (dBm)	Antenna Gain (dBi)	Power Density Limit (mW/cm^2)	Power Density at 20cm (mW/cm^2)
IEEE 802.11a	20	21.53	5	1.00	0.089479
IEEE 802.11n HT20	20	23.92	5	1.00	0.155139
IEEE802.11n HT40	20	22.54	5	1.00	0.112907
IEEE 802.11b	20	20.55	3	1.00	0.071404
IEEE 802.11g	20	23.70	3	1.00	0.147476
IEEE 802.11n HT20	20	23.28	3	1.00	0.133881
IEEE 802.11n HT40	20	23.26	3	1.00	0.133266

Remark: *For mobile or fixed location transmitters, the maximum power density is 1.0 mW/cm^2 even if the calculation indicates that the power density would be larger.*

8.5 AVERAGE POWER

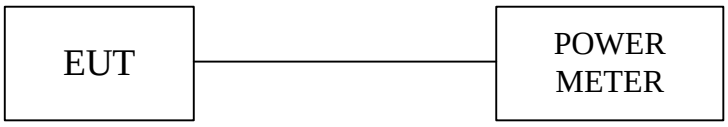
LIMIT

None; for reporting purposes only.

TEST EQUIPMENT

Description & Manufacturer	Model No.	Serial No.	Date of Calibration
ANRITSU POWER METER	ML2487A MAL2491A	6K00001783 030982	May 03, 2008

TEST SETUP



TEST PROCEDURE

The transmitter output is connected to a power meter.

TEST RESULTS

No non-compliance noted

Total avg power calculation formula:
10 log (10^ (Chain 0 Power / 10) + 10^ (Chain1 Power / 10) + 10^ (Chain2 Power / 10)).

IEEE 802.11a mode

Channel	Channel Frequency (MHz)	AVG Power (dBm)			AVG Power Total (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
Low	5745	17.02	16.84	17.59	21.93	N/A
Middle	5785	17.33	16.25	17.31	21.76	N/A
High	5825	18.39	16.83	17.50	22.39	N/A

Remark:

1. *At finial test to get the worst-case emission at 6 Mbps.*
2. *The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT20 mode

Channel	Channel Frequency (MHz)	AVG Power (dBm)			AVG Power Total (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
Low	5745	20.28	20.07	19.39	24.70	N/A
Middle	5785	20.36	19.57	19.31	24.54	N/A
High	5825	20.50	18.53	19.21	24.26	N/A

Remark:

1. *At finial test to get the worst-case emission at 6.5 Mbps.*
2. *The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT40 mode

Channel	Channel Frequency (MHz)	AVG Power (dBm)			AVG Power Total (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
Low	5755	18.65	18.03	18.35	23.12	N/A
High	5795	18.82	18.01	18.58	23.25	N/A

Remark:

1. *At finial test to get the worst-case emission at 13.5 Mbps.*
2. *The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11b mode

Channel	Channel Frequency (MHz)	AVG Power (dBm)			AVG Power Total (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
Low	2412	17.40	15.99	16.70	21.51	N/A
Middle	2437	18.03	17.35	17.95	22.56	N/A
High	2462	17.90	17.12	17.43	22.27	N/A

Remark:

1. *At finial test to get the worst-case emission at 1 Mbps.*
2. *The cable assembly insertion loss of 11.0 dB (including 10 dB pad and 1.0 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11g mode

Channel	Channel Frequency (MHz)	AVG Power (dBm)			AVG Power Total (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
Low	2412	14.33	12.89	14.02	18.56	N/A
Middle	2437	20.25	19.67	19.96	24.74	N/A
High	2462	13.78	12.66	13.56	18.13	N/A

Remark:

1. *At finial test to get the worst-case emission at 6 Mbps.*
2. *The cable assembly insertion loss of 11.0 dB (including 10 dB pad and 1.0 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT20 mode

Channel	Channel Frequency (MHz)	AVG Power (dBm)			AVG Power Total (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
Low	2412	13.57	11.79	13.03	17.63	N/A
Middle	2437	19.82	19.15	19.45	24.25	N/A
High	2462	12.36	11.63	12.58	16.98	N/A

Remark:

1. At finial test to get the worst-case emission at 6.5Mbps.
2. The cable assembly insertion loss of 11.0 dB (including 10 dB pad and 1.0 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 mode

Channel	Channel Frequency (MHz)	AVG Power (dBm)			AVG Power Total (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
Low	2422	10.82	9.94	11.07	15.41	N/A
Middle	2437	19.66	19.12	19.29	24.13	N/A
High	2452	10.29	9.66	10.26	14.85	N/A

Remark:

1. At finial test to get the worst-case emission at 13.5 Mbps.
2. The cable assembly insertion loss of 11.0 dB (including 10 dB pad and 1.0 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

8.6 POWER SPECTRAL DENSITY

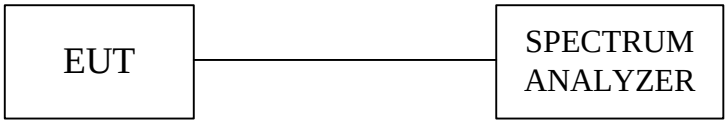
LIMIT

§ 15.247(e) For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

TEST EQUIPMENT

Description & Manufacturer	Model No.	Serial No.	Date of Calibration
ROHDE & SCHWARZ SPECTRUM ANALYZER	FSEK30	835253/002	October 25, 2007
AGILENT SPECTRUM ANALYZER	E4446A	MY433601.32	June 24, 2008

TEST SETUP



Combined mode

TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using RBW＝3KHz and VBW≧RBW, set sweep time＝span / 3KHz.

The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span / 3KHz for a full response of the mixer in the spectrum analyzer.

TEST RESULTS

No non-compliance noted

Total power spectral density calculation formula:
10 log (10^ (Chain 0 PPSD / 10) + 10^ (Chain1 PPSD / 10) + 10^ (Chain2 PPSD / 10)).

IEEE 802.11a mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)			PPSD Total (dBm)	Maxmum Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2			
Low	5745	-0.31	-7.37	-3.77	1.86	8	PASS
Middle	5785	-2.23	-7.97	-3.55	0.79	8	PASS
High	5825	-2.20	-7.16	-2.85	1.19	8	PASS

Remark:

1. *At finial test to get the worst-case emission at 6 Mbps.*
2. *The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11a Combined mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	5745	3.44	8	PASS
Middle	5785	6.74	8	PASS
High	5825	6.02	8	PASS

Remark:

1. *At finial test to get the worst-case emission at 6Mbps.*
2. *The cable assembly insertion loss of 19.0 dB (including 10 dB pad and 9.0 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT20 mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)			PPSD Total (dBm)	Maxmum Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2			
Low	5745	0.96	-4.97	-0.82	3.79	8	PASS
Middle	5785	2.35	-3.87	-0.13	4.91	8	PASS
High	5825	1.84	-6.54	-0.01	4.39	8	PASS

Remark:

1. *At finial test to get the worst-case emission at 6.5 Mbps.*
2. *The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT20 Combined mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	5745	4.83	8	PASS
Middle	5785	6.39	8	PASS
High	5825	6.17	8	PASS

Remark:

1. *At finial test to get the worst-case emission at 6.5 Mbps.*
2. *The cable assembly insertion loss of 19.0 dB (including 10 dB pad and 9.0 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT40 mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)			PPSD Total (dBm)	Maxmum Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2			
Low	5755	0.31	-6.04	0.44	3.86	8	PASS
High	5795	2.91	-5.74	-0.54	4.92	8	PASS

Remark:

1. *At finial test to get the worst-case emission at 13.5 Mbps.*
2. *The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT40 Combined mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	5755	7.03	8	PASS
High	5795	6.49	8	PASS

Remark:

1. *At finial test to get the worst-case emission at 13.5 Mbps.*
2. *The cable assembly insertion loss of 19.0 dB (including 10 dB pad and 9.0 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11b mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)			PPSD Total (dBm)	Maxmum Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2			
Low	2412	-5.88	-8.04	-7.26	-2.20	8	PASS
Middle	2437	-4.77	-5.50	-4.99	-0.30	8	PASS
High	2462	-4.05	-5.98	-6.63	-0.64	8	PASS

Remark:

1. *At finial test to get the worst-case emission at 1 Mbps.*
2. *The cable assembly insertion loss of 11.0 dB (including 10 dB pad and 1.0 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11b Combined mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	2412	1.07	8	PASS
Middle	2437	2.91	8	PASS
High	2462	3.23	8	PASS

Remark:

1. *At finial test to get the worst-case emission at 1 Mbps.*
2. *The cable assembly insertion loss of 16.5 dB (including 10 dB pad and 6.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11g mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)			PPSD Total (dBm)	Maxmum Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2			
Low	2412	-8.14	-11.37	-4.67	-2.46	8	PASS
Middle	2437	-0.90	-4.86	0.44	3.51	8	PASS
High	2462	-8.75	-12.00	-5.09	-2.96	8	PASS

Remark:

1. *At finial test to get the worst-case emission at 6 Mbps.*
2. *The cable assembly insertion loss of 11.0 dB (including 10 dB pad and 1.0 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11g Combined mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	2412	-1.14	8	PASS
Middle	2437	5.52	8	PASS
High	2462	-0.23	8	PASS

Remark:

1. *At finial test to get the worst-case emission at 6 Mbps.*
2. *The cable assembly insertion loss of 16.5 dB (including 10 dB pad and 6.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT20 mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)			PPSD Total (dBm)	Maxmum Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2			
Low	2412	-8.52	-12.71	-5.31	-3.11	8	PASS
Middle	2437	-2.02	-4.99	-1.32	2.26	8	PASS
High	2462	-10.48	-12.93	-8.09	-5.29	8	PASS

Remark:

1. *At finial test to get the worst-case emission at 6.5 Mbps.*
2. *The cable assembly insertion loss of 11.0 dB (including 10 dB pad and 1.0 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT20 Combined mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	2412	-0.98	8	PASS
Middle	2437	5.32	8	PASS
High	2462	-1.63	8	PASS

Remark:

1. *At finial test to get the worst-case emission at 6.5 Mbps.*
2. *The cable assembly insertion loss of 16.5 dB (including 10 dB pad and 6.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT40 mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)			PPSD Total (dBm)	Maxmum Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2			
Low	2422	-10.85	-13.77	-5.06	-3.60	8	PASS
Middle	2437	1.01	-3.63	1.54	4.94	8	PASS
High	2452	-11.28	-13.54	-8.13	-5.64	8	PASS

Remark:

1. *At finial test to get the worst-case emission at 13.5 Mbps.*
2. *The cable assembly insertion loss of 11.0 dB (including 10 dB pad and 1.0 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT40 Combined mode

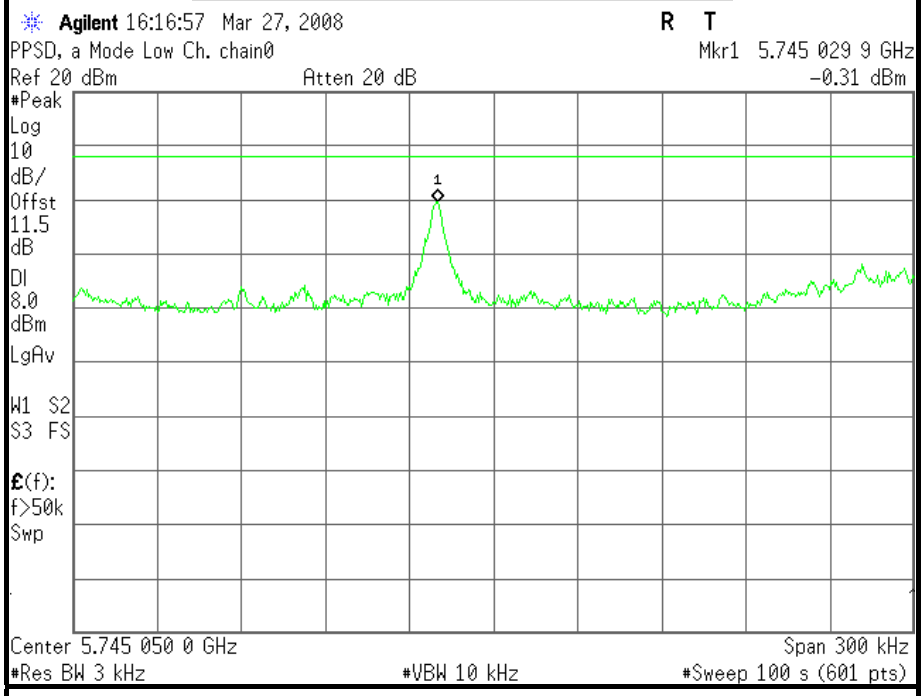
Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	2422	-1.83	8	PASS
Middle	2437	7.03	8	PASS
High	2452	-2.32	8	PASS

Remark:

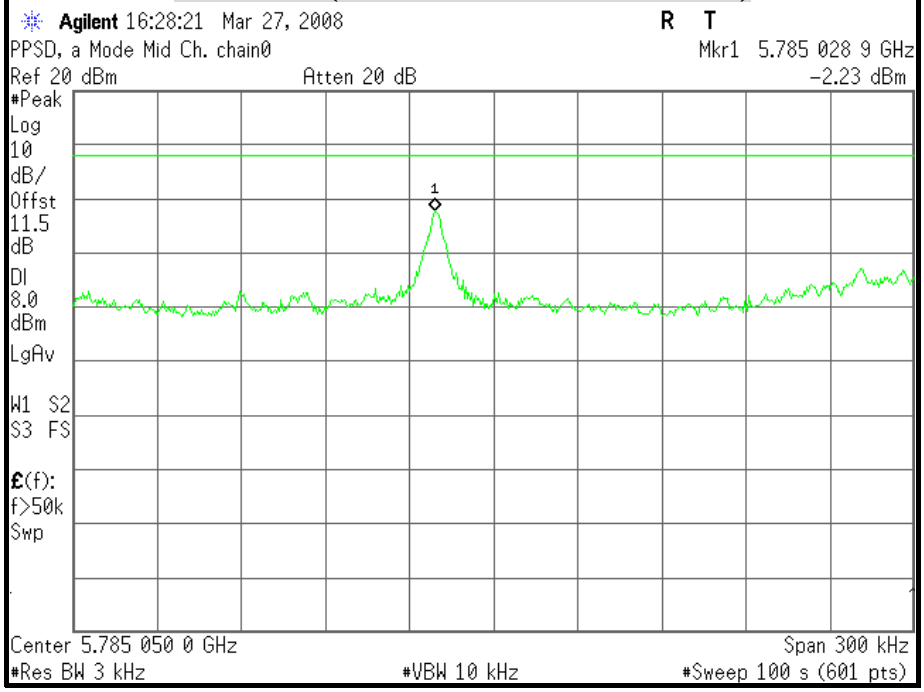
1. *At finial test to get the worst-case emission at 13.5 Mbps.*
2. *The cable assembly insertion loss of 16.5 dB (including 10 dB pad and 6.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

POWER SPECTRAL DENSITY (IEEE 802.11a mode)

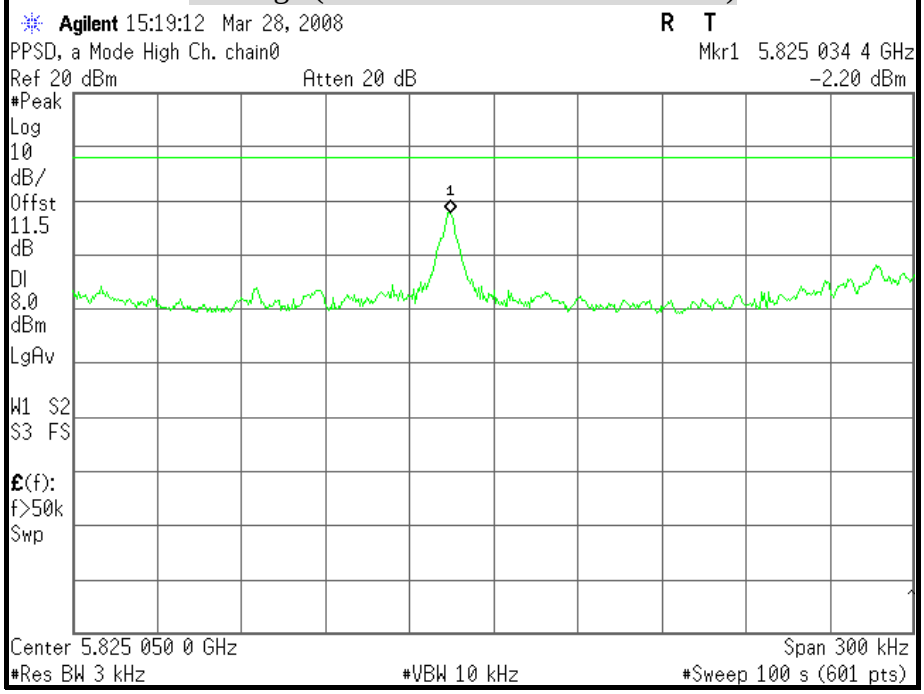
CH Low (IEEE 802.11a mode - Chain 0)



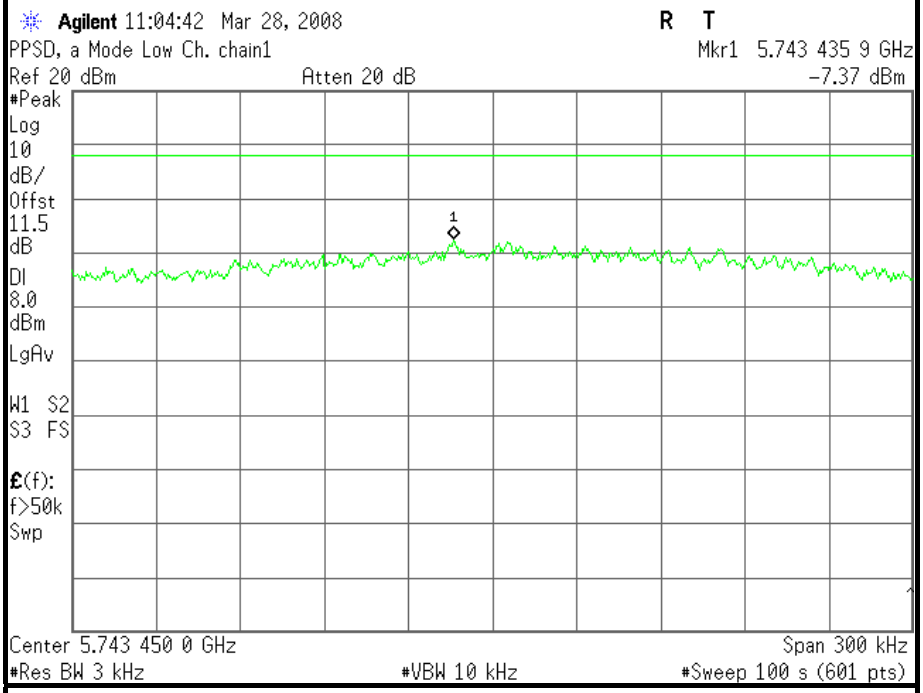
CH Middle (IEEE 802.11a mode - Chain 0)



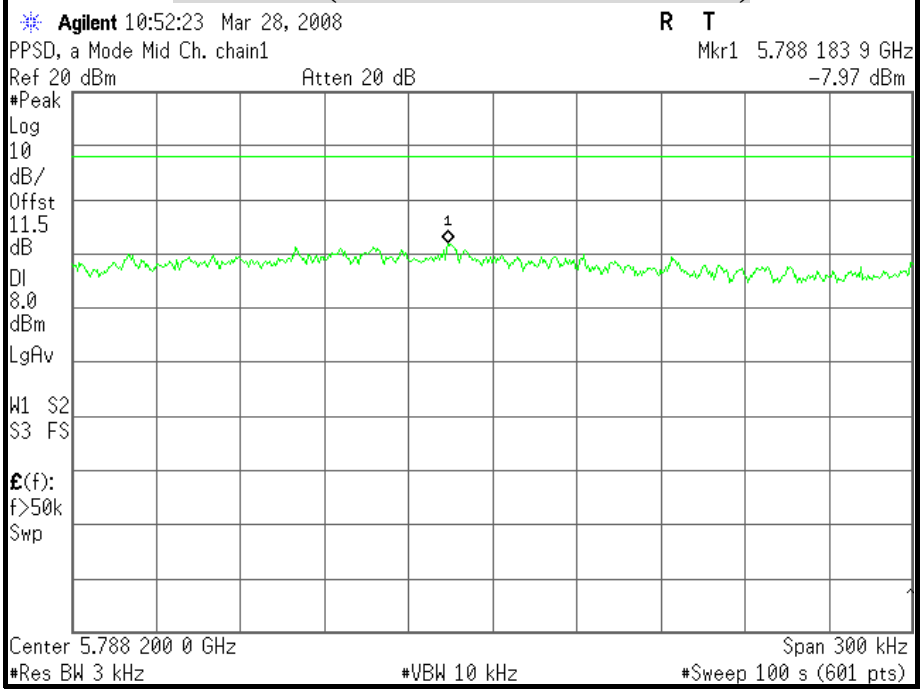
CH High (IEEE 802.11a mode - Chain 0)



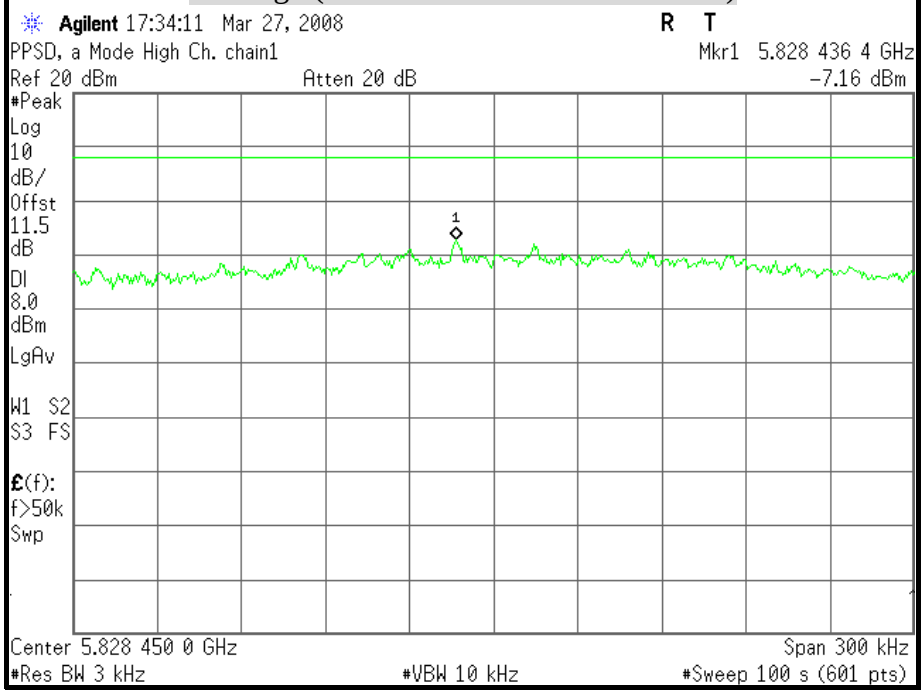
CH Low (IEEE 802.11a mode - Chain 1)



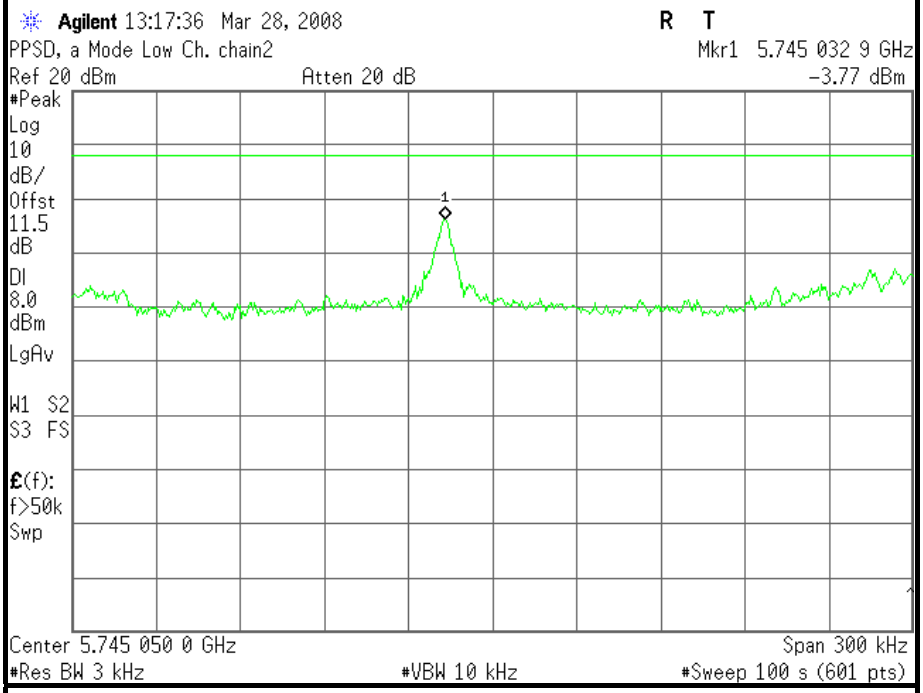
CH Middle (IEEE 802.11a mode - Chain 1)



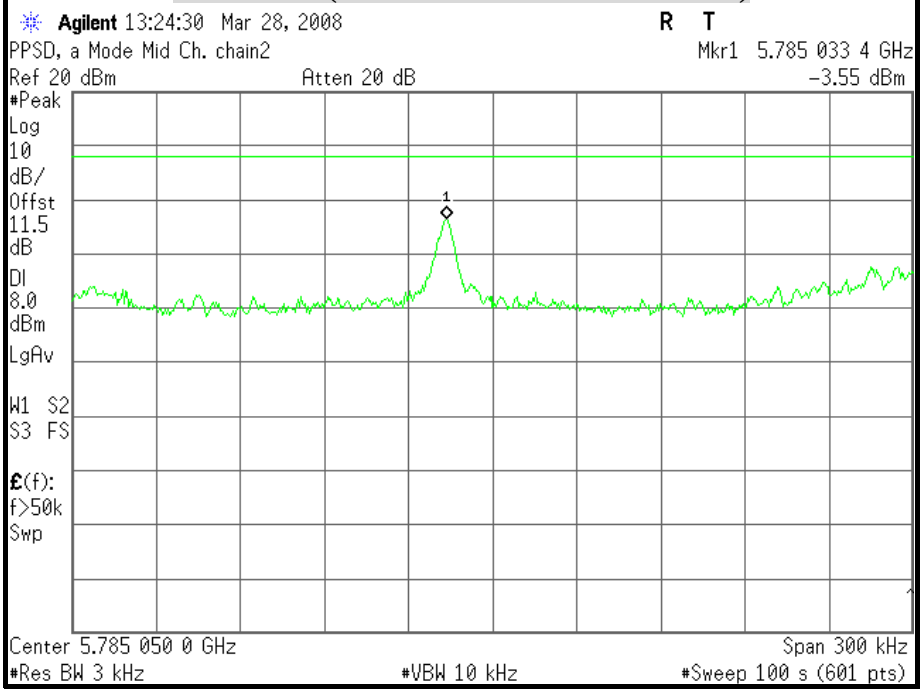
CH High (IEEE 802.11a mode - Chain 1)



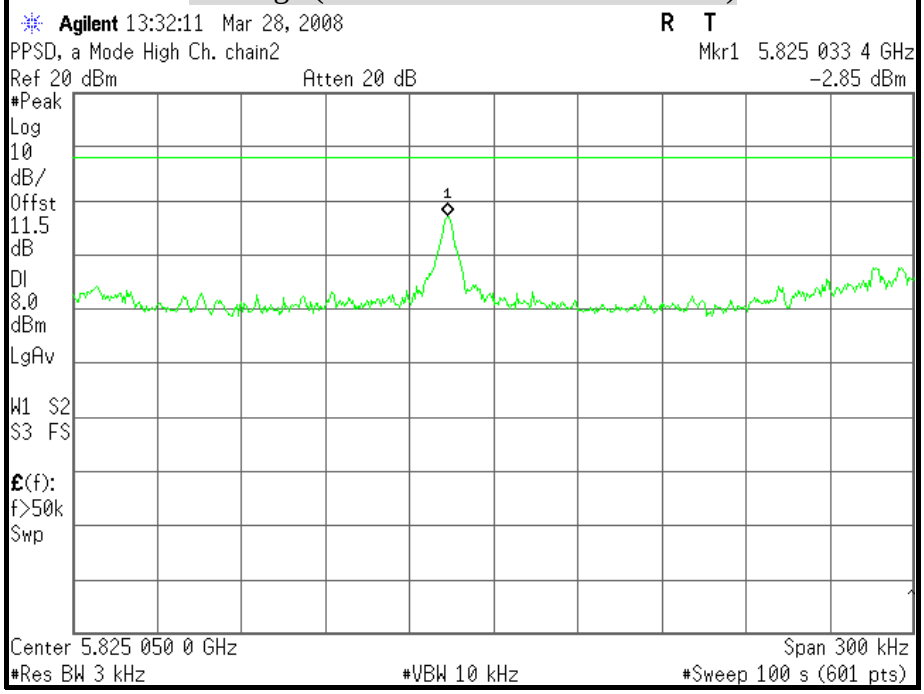
CH Low (IEEE 802.11a mode - Chain 2)



CH Middle (IEEE 802.11a mode - Chain 2)

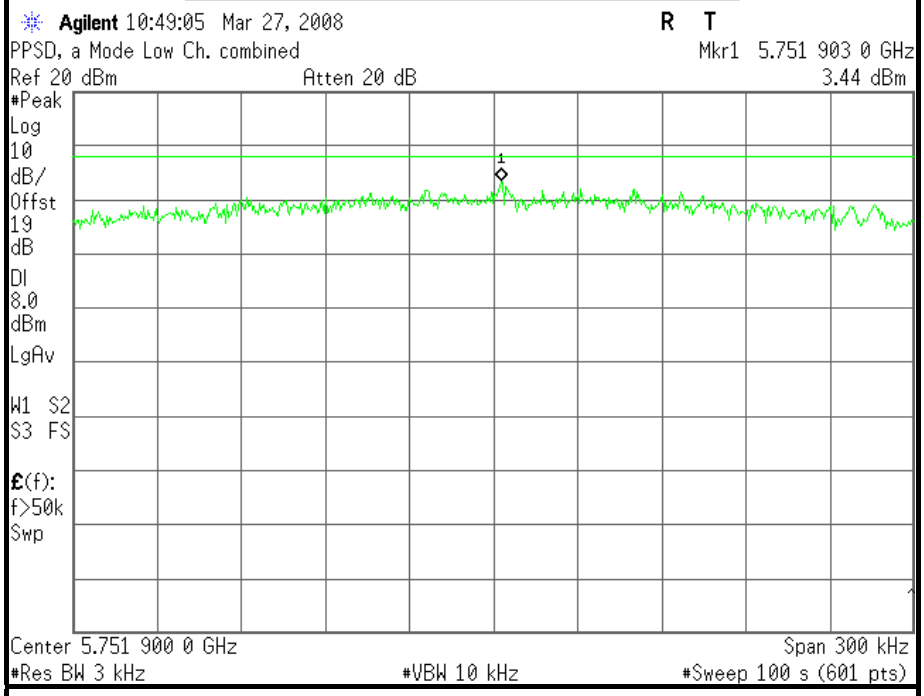


CH High (IEEE 802.11a mode - Chain 2)

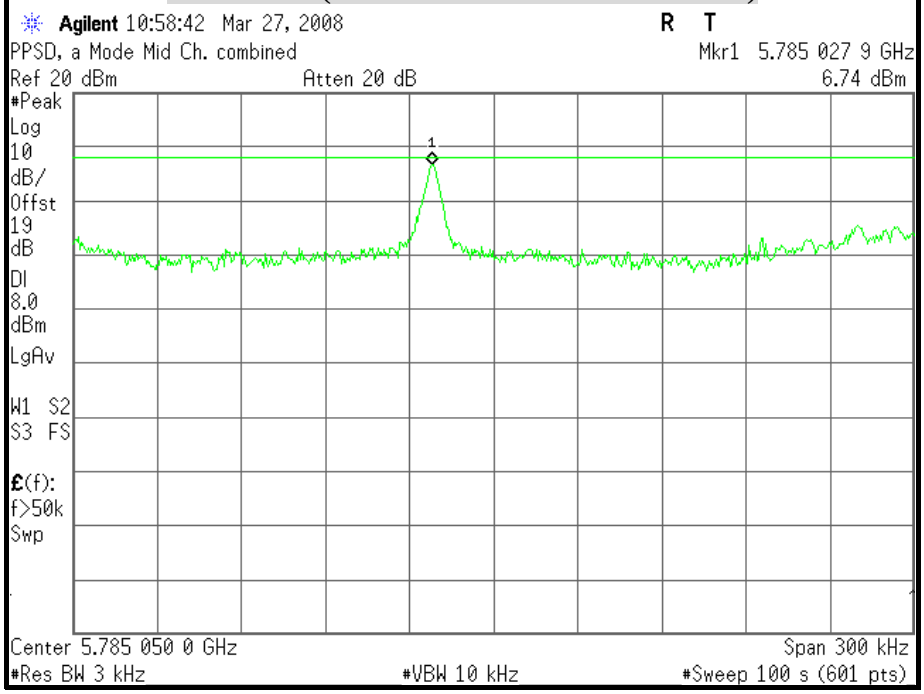


POWER SPECTRAL DENSITY (IEEE 802.11a Combined mode)

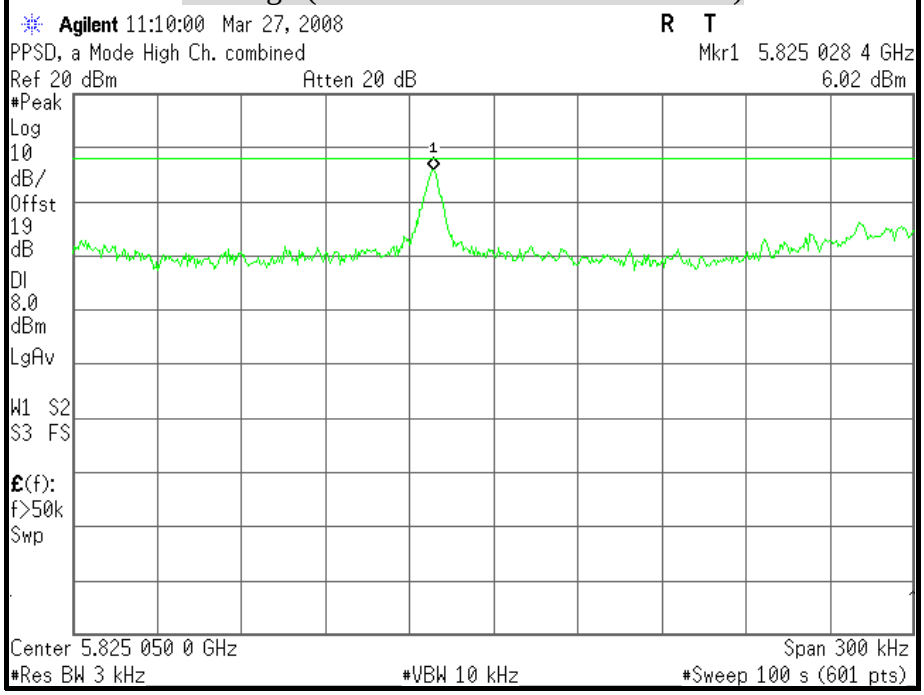
CH Low (IEEE 802.11a Combined mode)



CH Middle (IEEE 802.11a Combined mode)

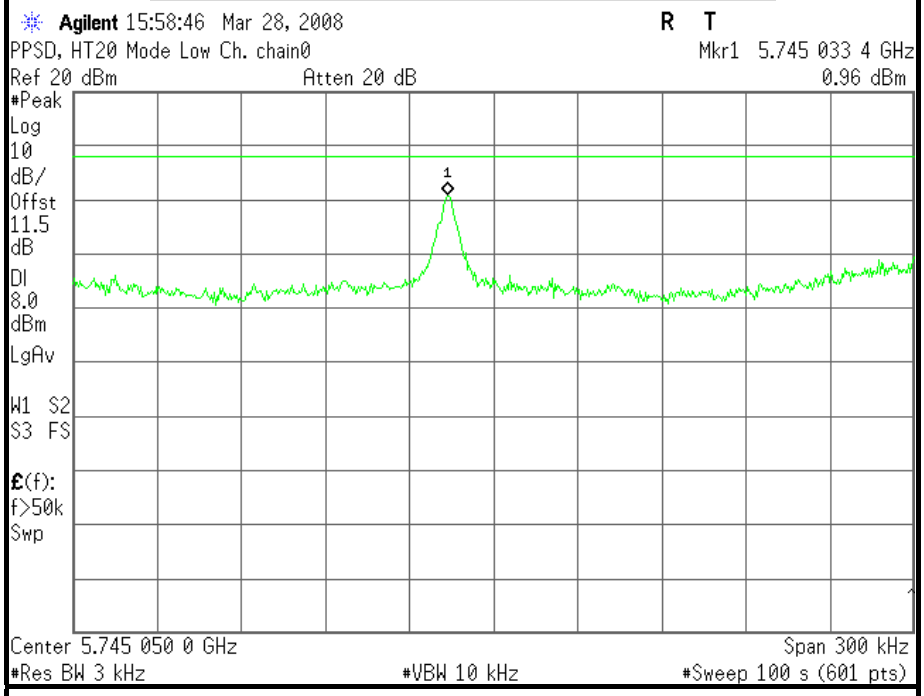


CH High (IEEE 802.11a Combined mode)

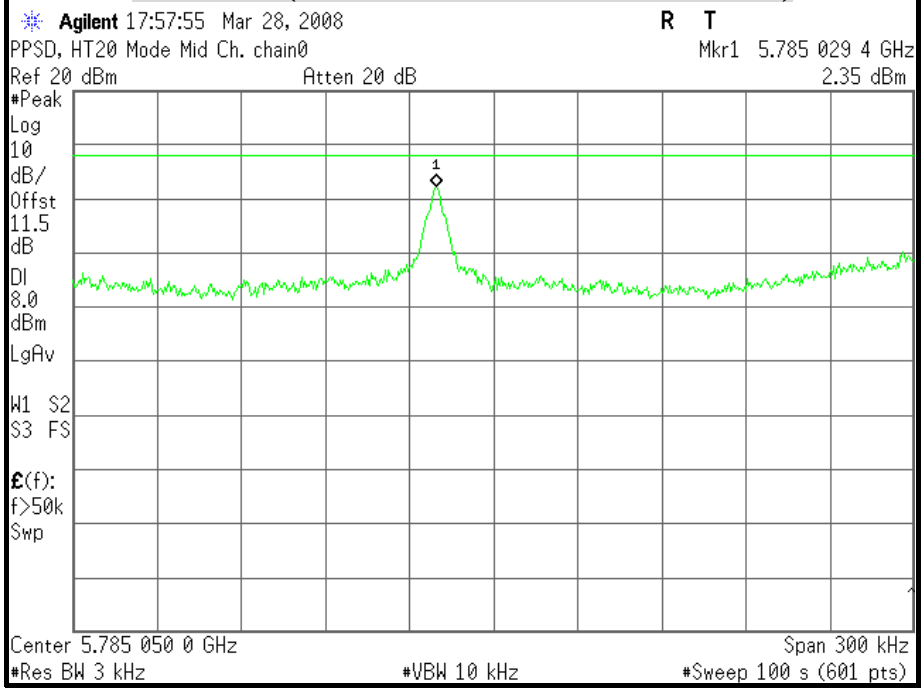


POWER SPECTRAL DENSITY (IEEE 802.11n HT20 mode)

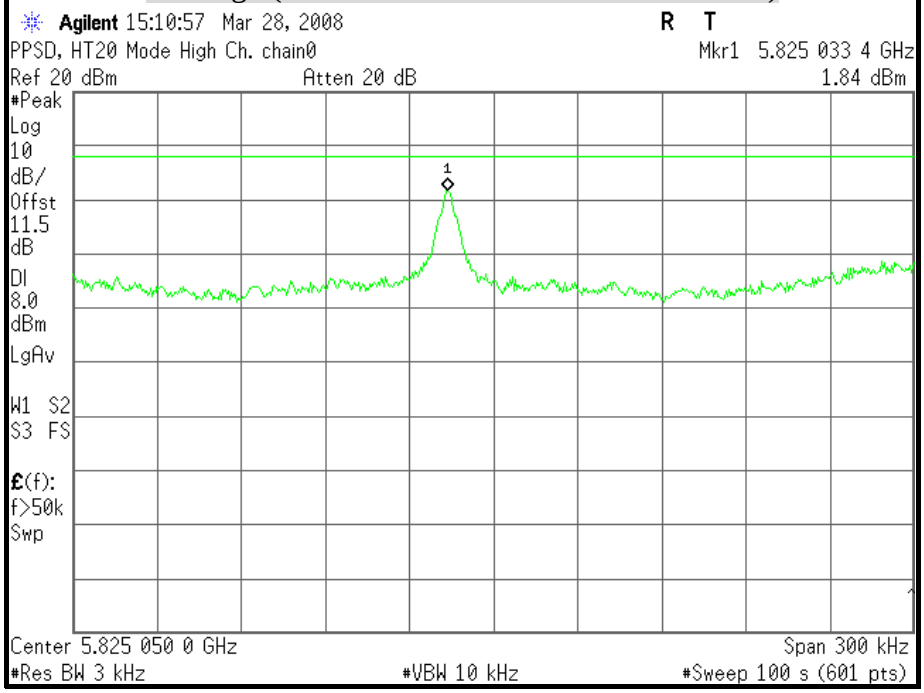
CH Low (IEEE 802.11n HT20 mode - Chain 0)



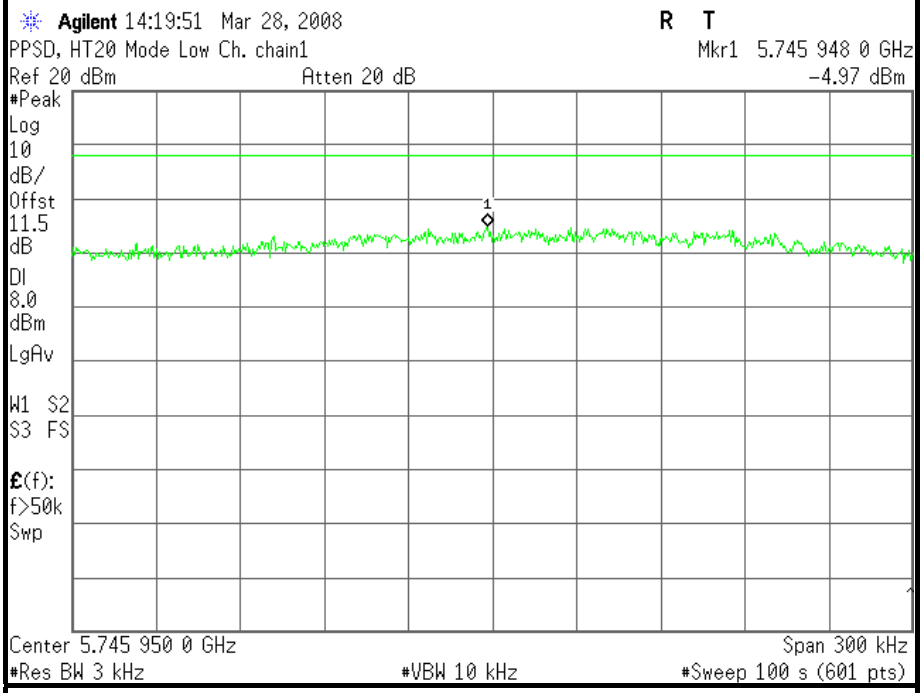
CH Middle (IEEE 802.11n HT20 mode - Chain 0)



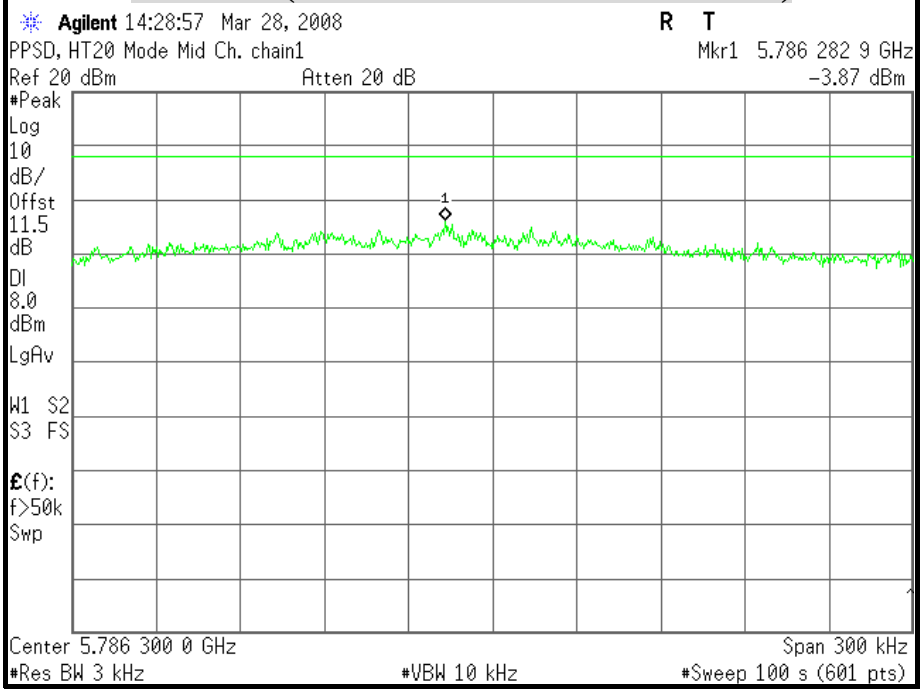
CH High (IEEE 802.11n HT20 mode - Chain 0)



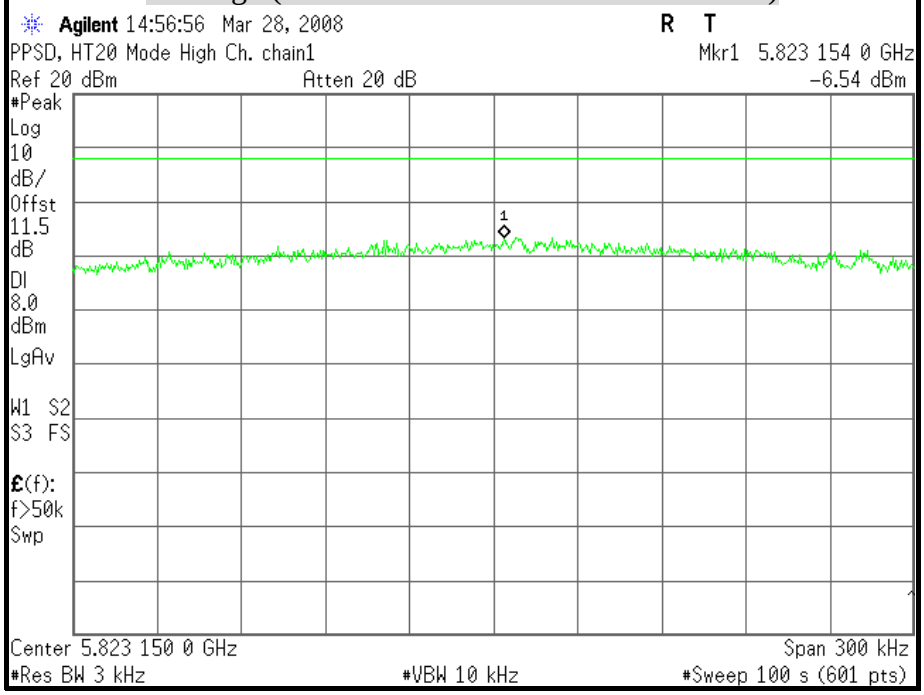
CH Low (IEEE 802.11n HT20 mode - Chain 1)



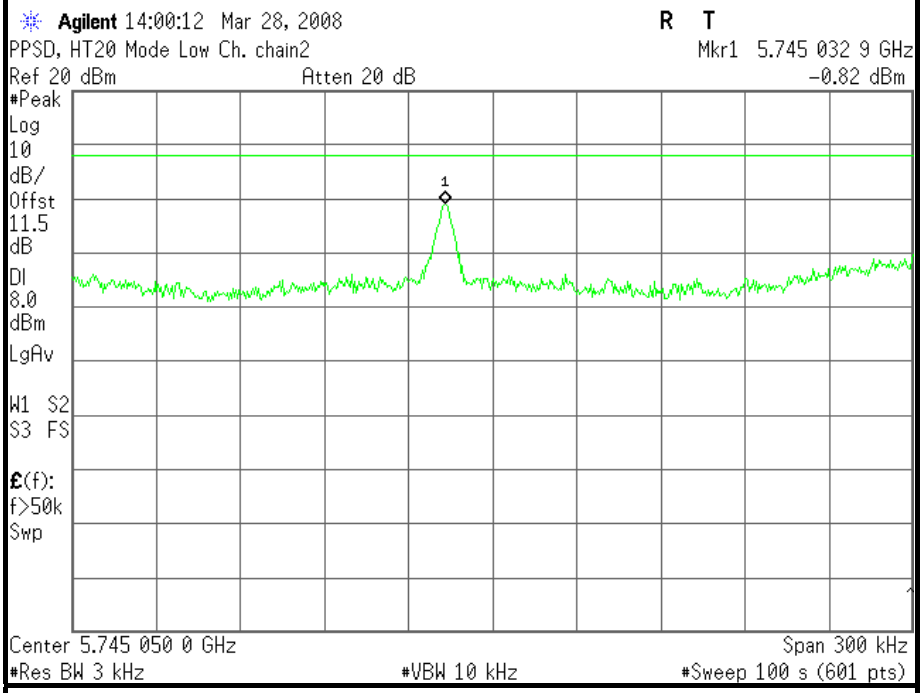
CH Middle (IEEE 802.11n HT20 mode - Chain 1)



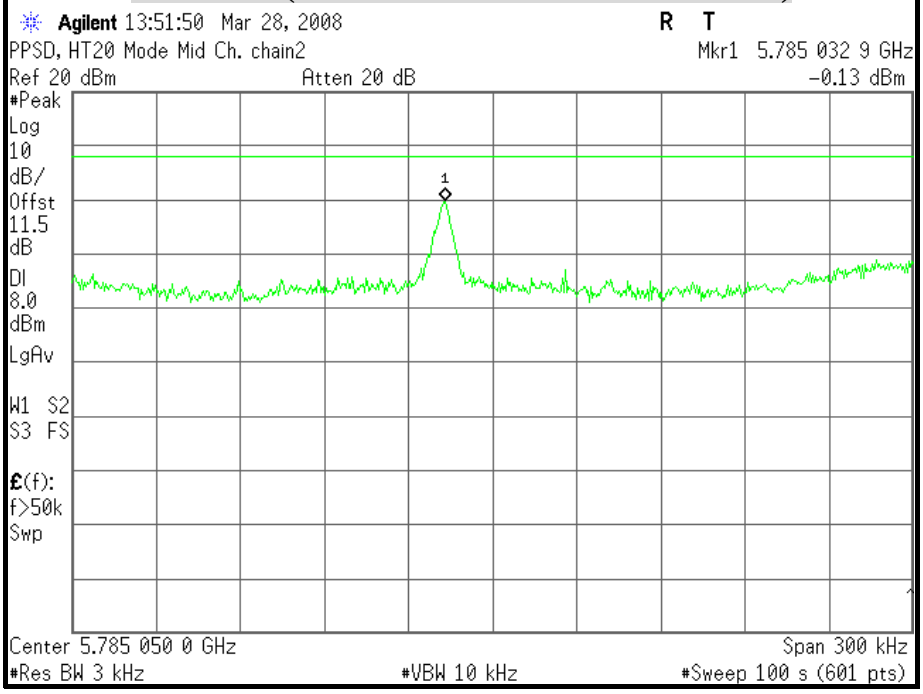
CH High (IEEE 802.11n HT20 mode - Chain 1)



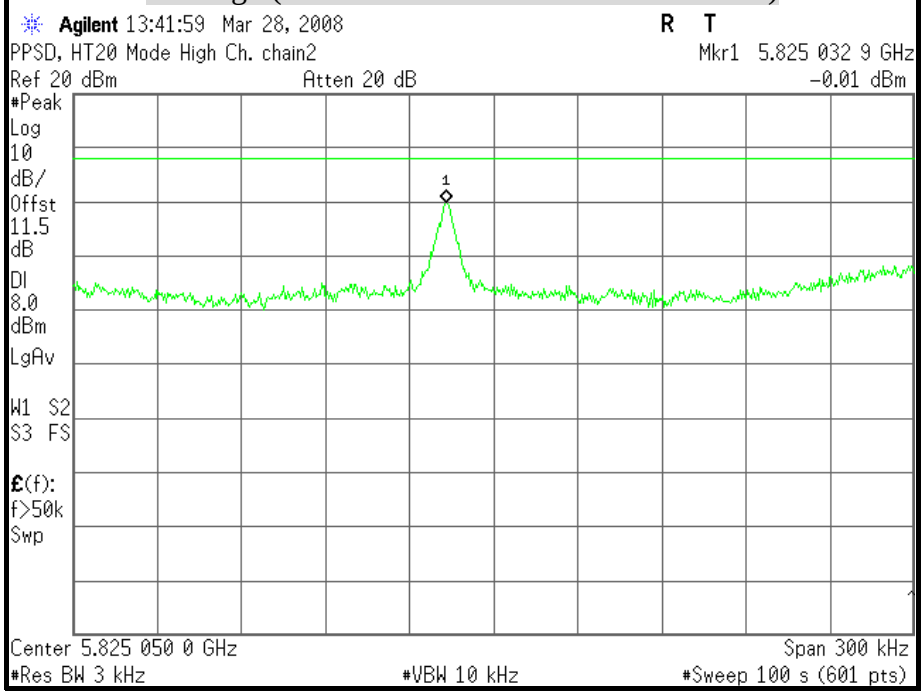
CH Low (IEEE 802.11n HT20 mode - Chain 2)



CH Middle (IEEE 802.11n HT20 mode - Chain 2)

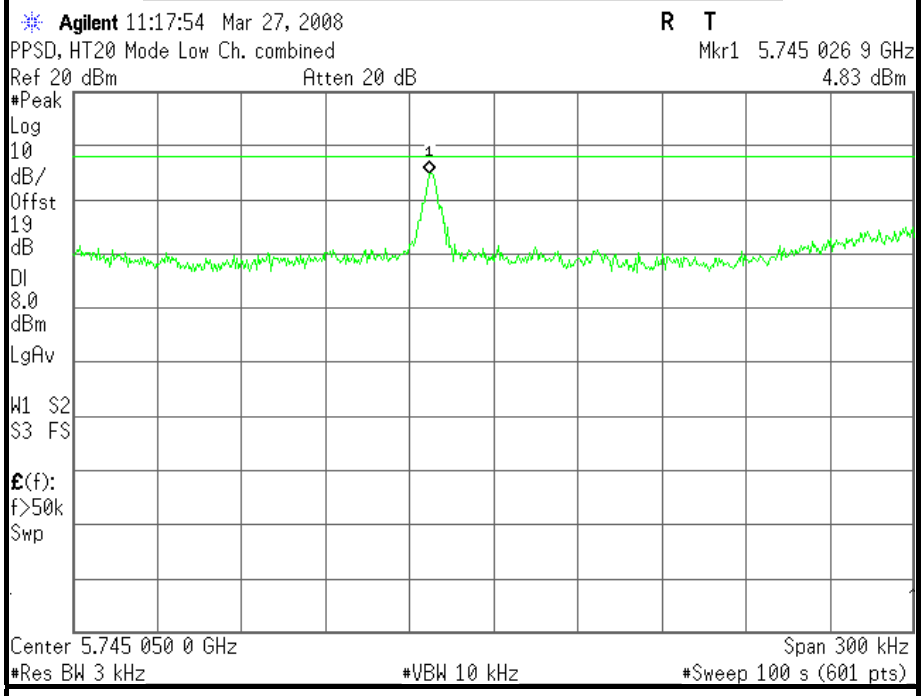


CH High (IEEE 802.11n HT20 mode - Chain 2)

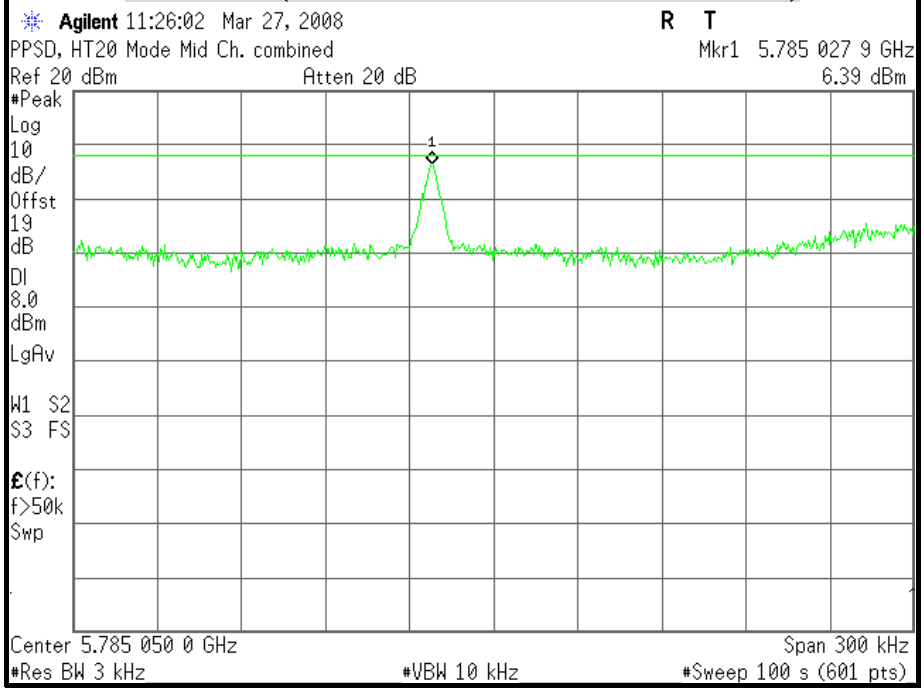


POWER SPECTRAL DENSITY (IEEE 802.11n HT20 Combined mode)

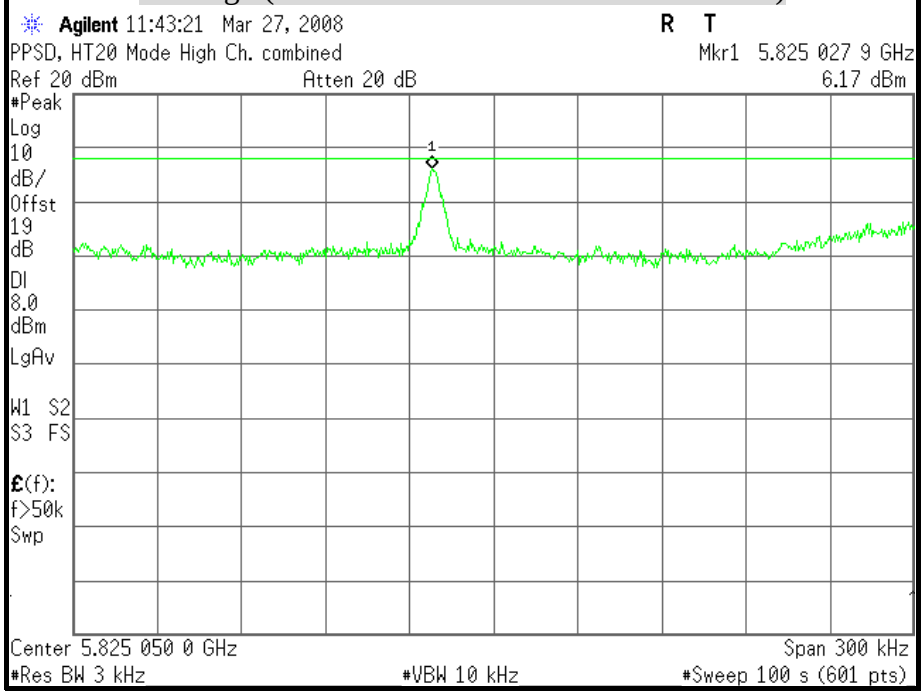
CH Low (IEEE 802.11n HT20 Combined mode)



CH Middle (IEEE 802.11n HT20 Combined mode)

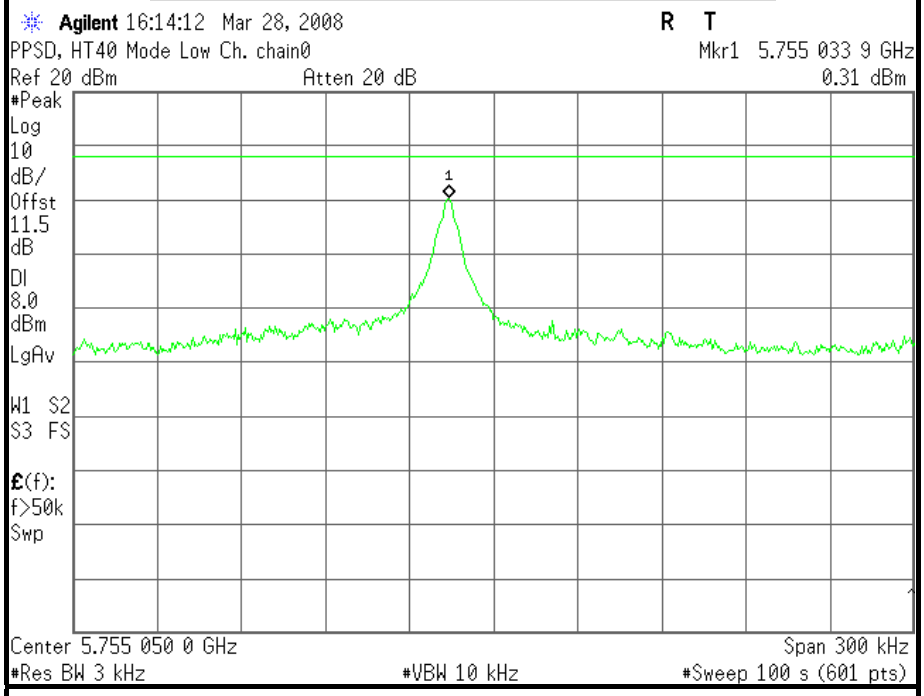


CH High (IEEE 802.11n HT20 Combined mode)

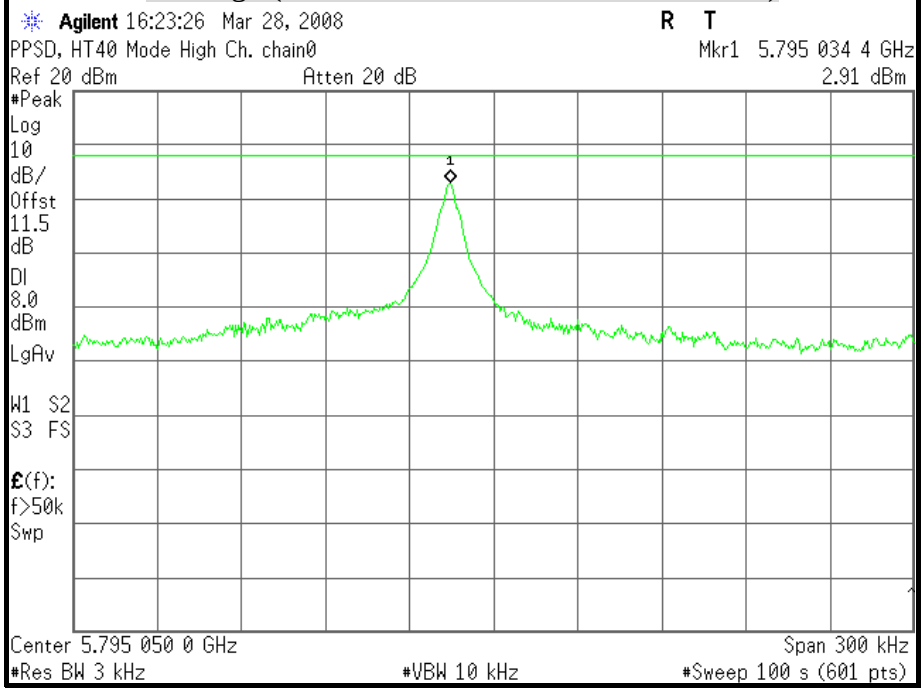


POWER SPECTRAL DENSITY (IEEE 802.11n HT40 mode)

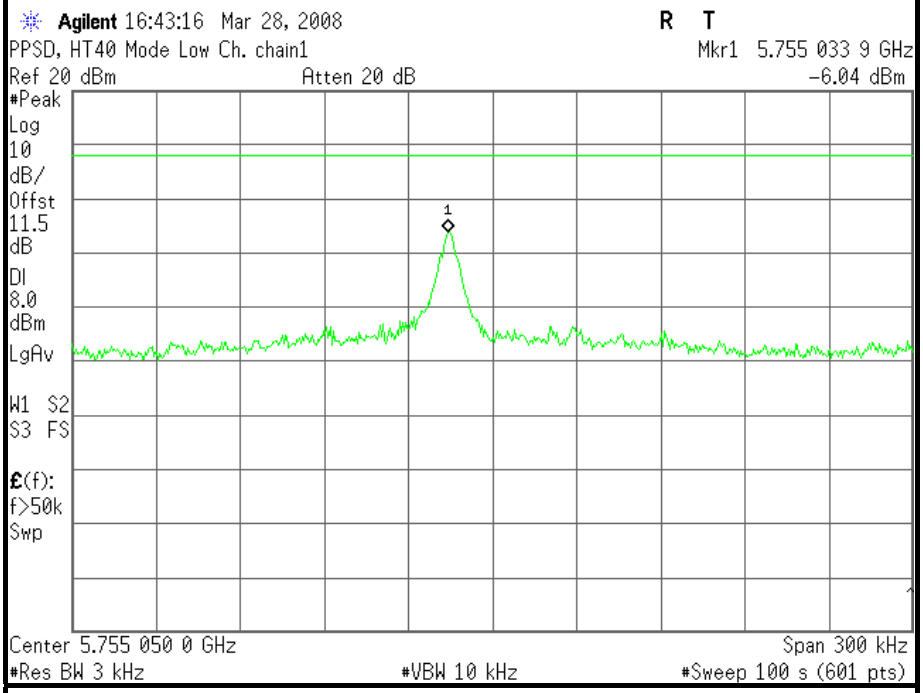
CH Low (IEEE 802.11n HT40 mode - Chain 0)



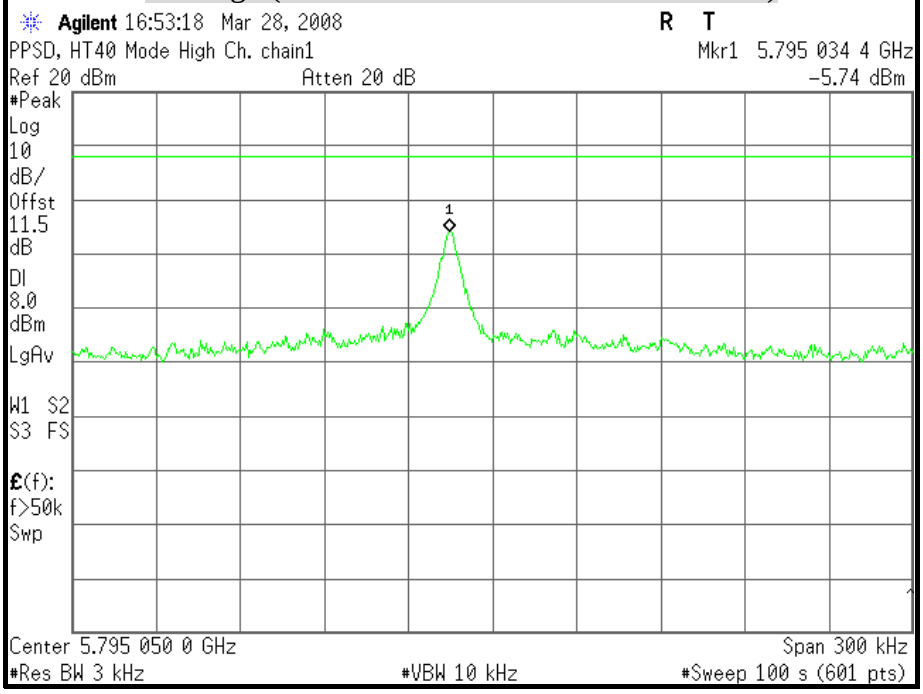
CH High (IEEE 802.11n HT40 mode - Chain 0)



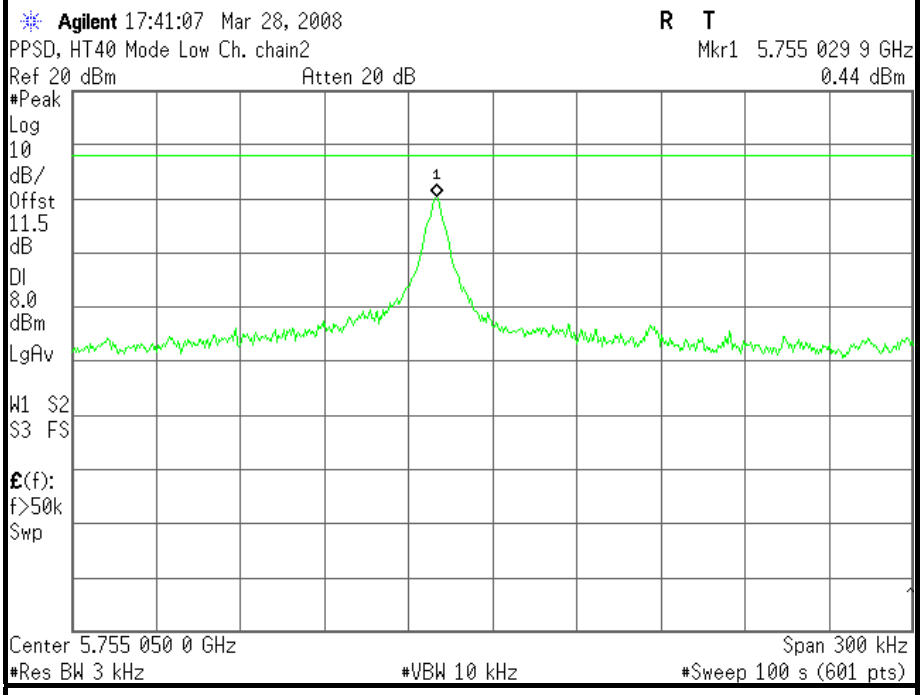
CH Low (IEEE 802.11n HT40 mode - Chain 1)



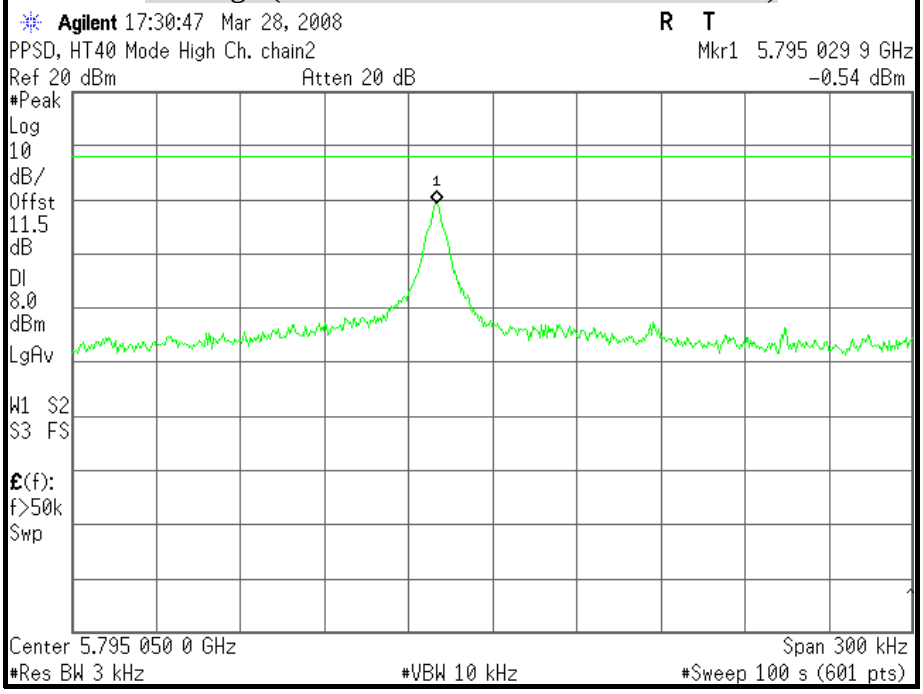
CH High (IEEE 802.11n HT40 mode - Chain 1)



CH Low (IEEE 802.11n HT40 mode - Chain 2)

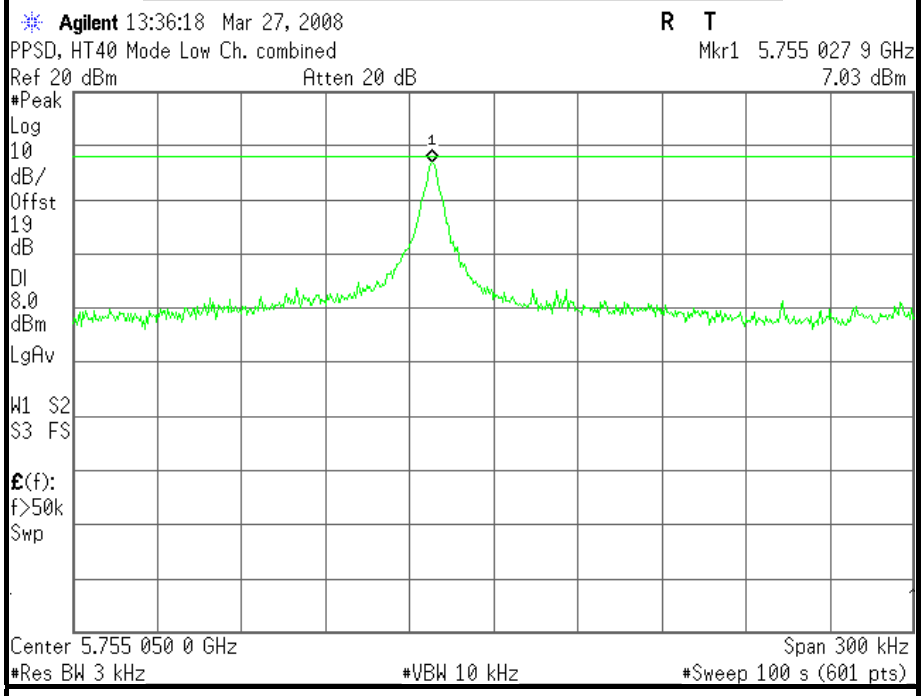


CH High (IEEE 802.11n HT40 mode - Chain 2)

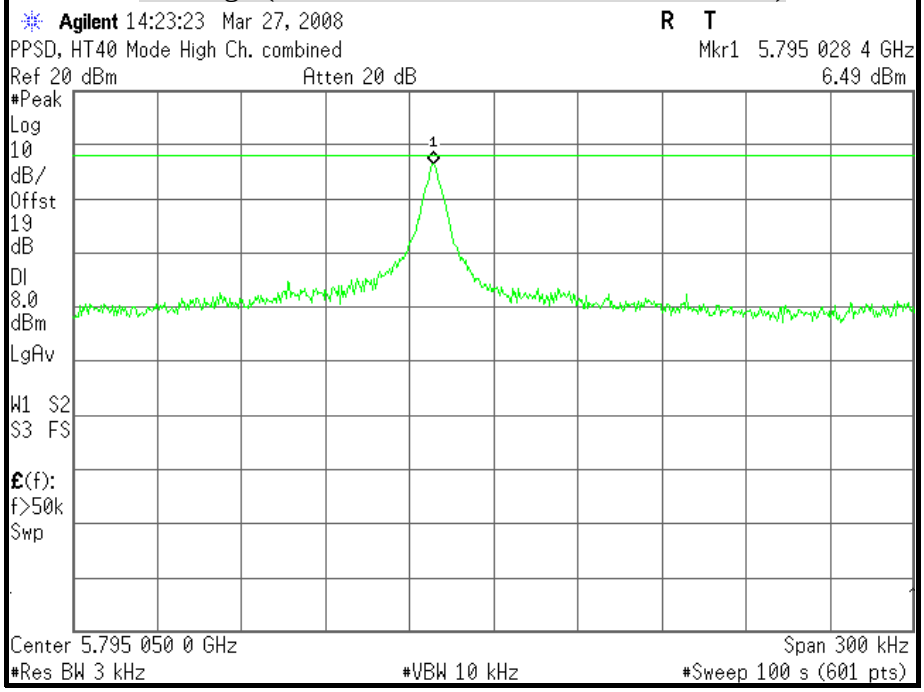


POWER SPECTRAL DENSITY (IEEE 802.11n HT40 Combined mode)

CH Low (IEEE 802.11n HT40 Combined mode)

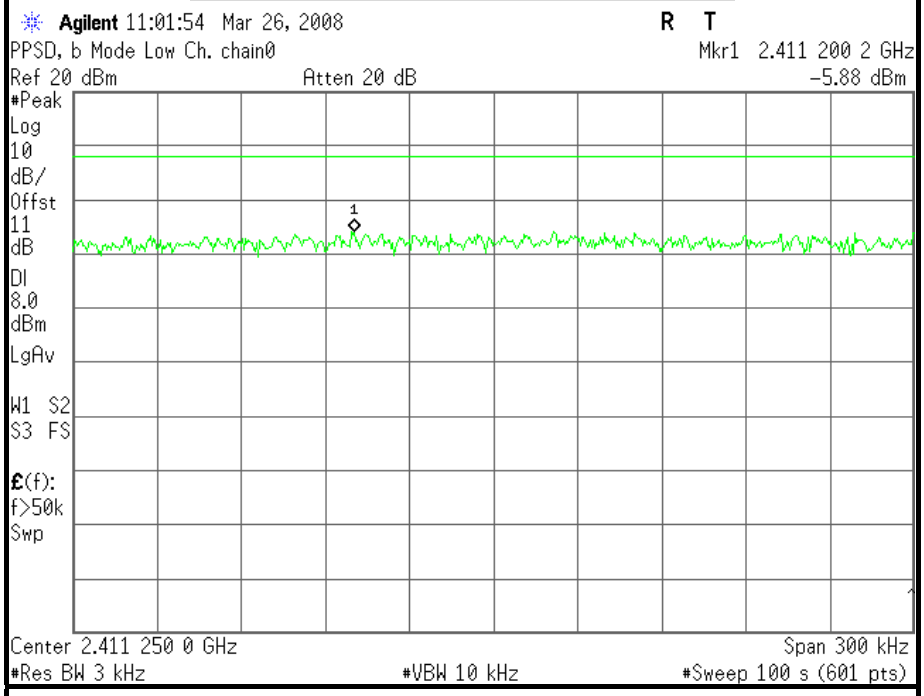


CH High (IEEE 802.11n HT40 Combined mode)

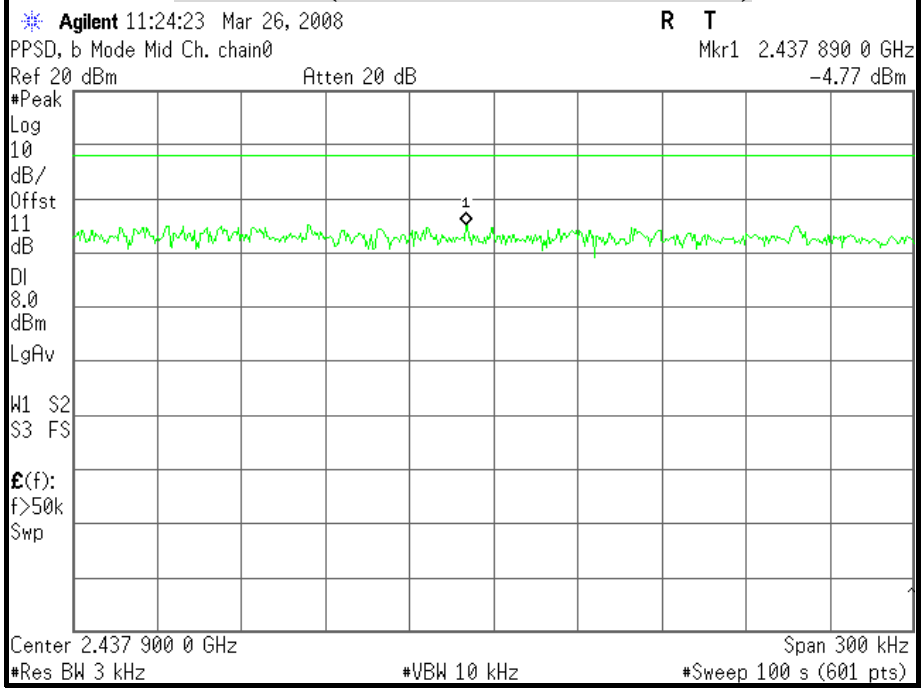


POWER SPECTRAL DENSITY (IEEE 802.11b mode)

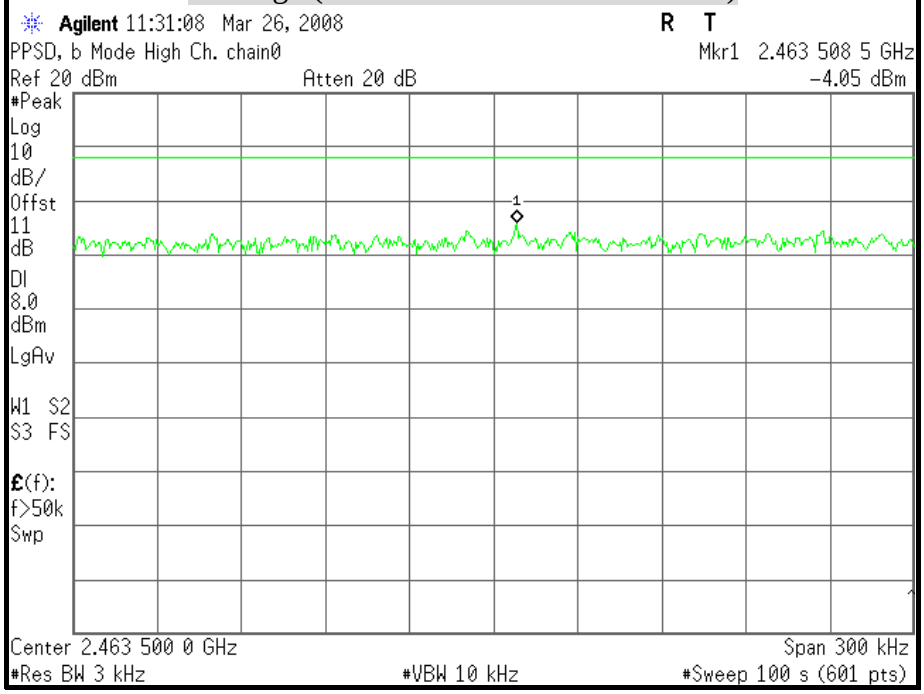
CH Low (IEEE 802.11b mode - Chain 0)



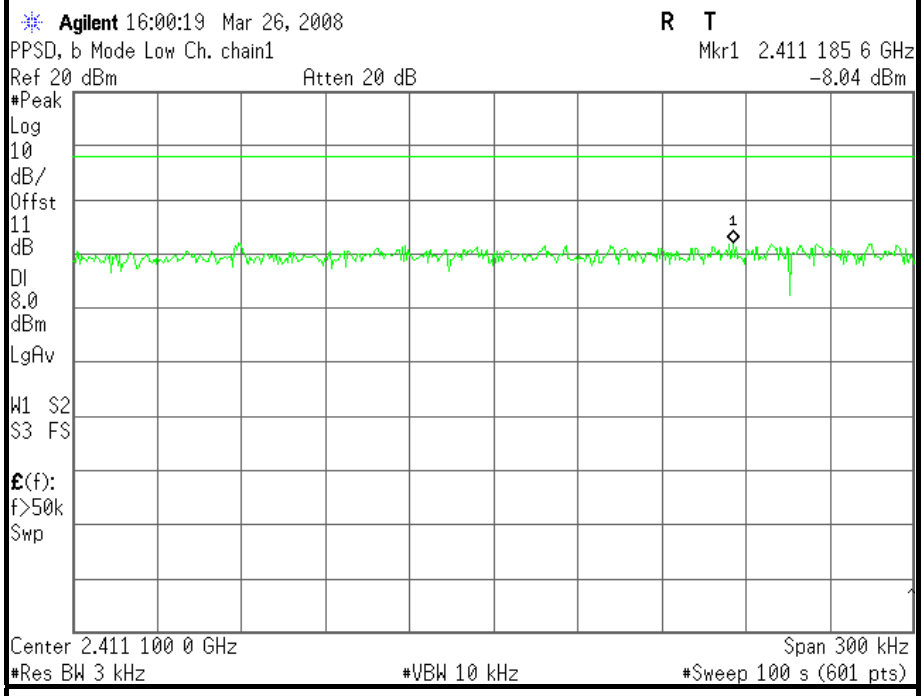
CH Middle (IEEE 802.11b mode - Chain 0)



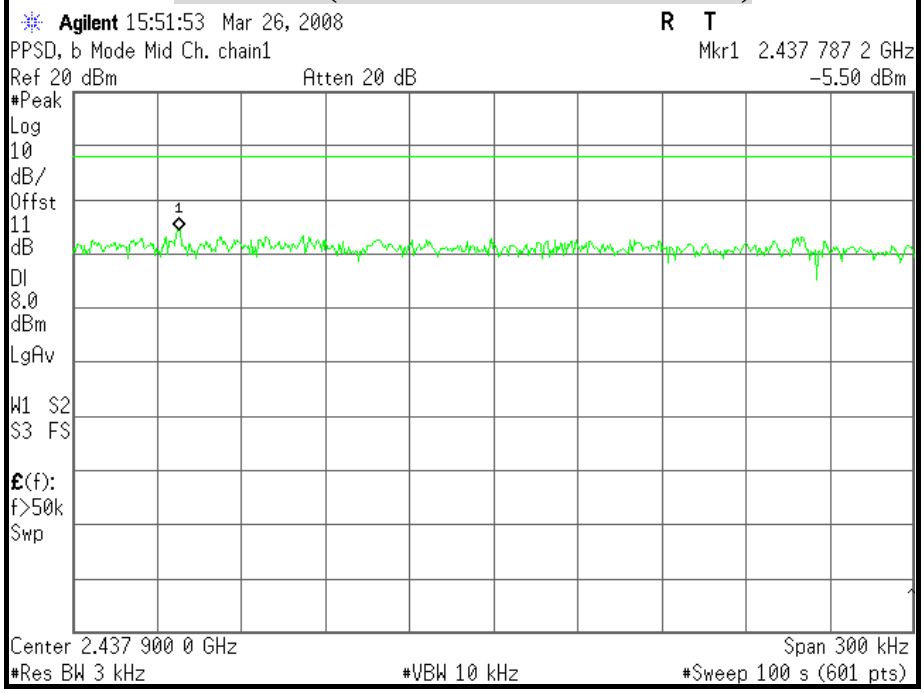
CH High (IEEE 802.11b mode - Chain 0)



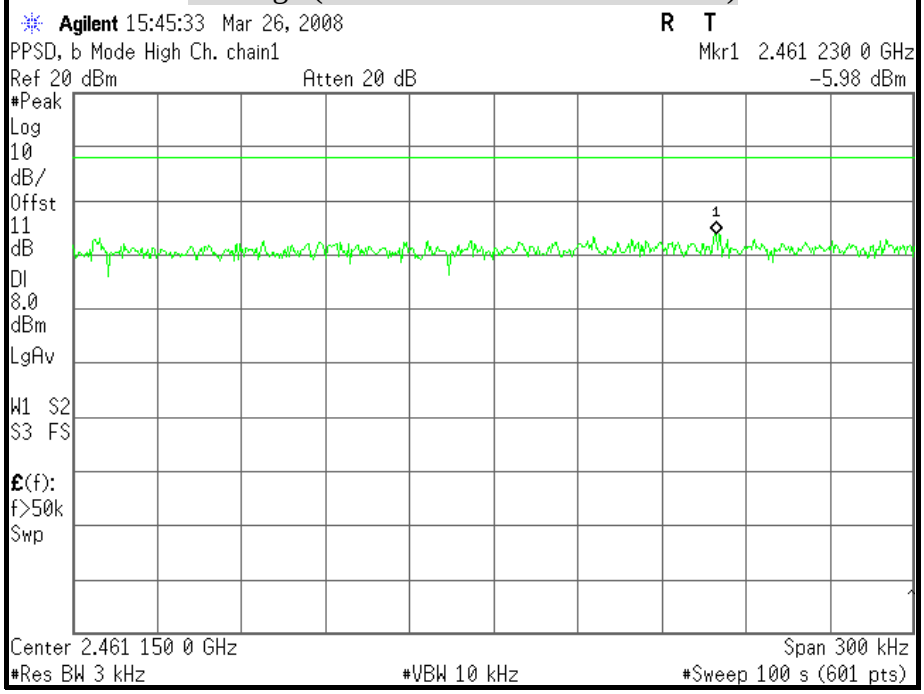
CH Low (IEEE 802.11b mode - Chain 1)



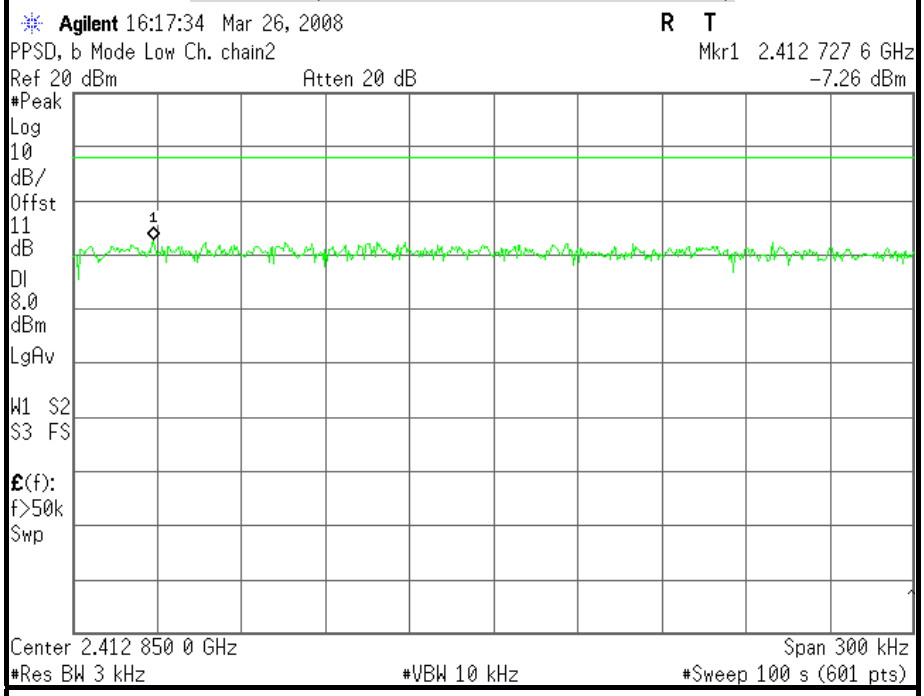
CH Middle (IEEE 802.11b mode - Chain 1)



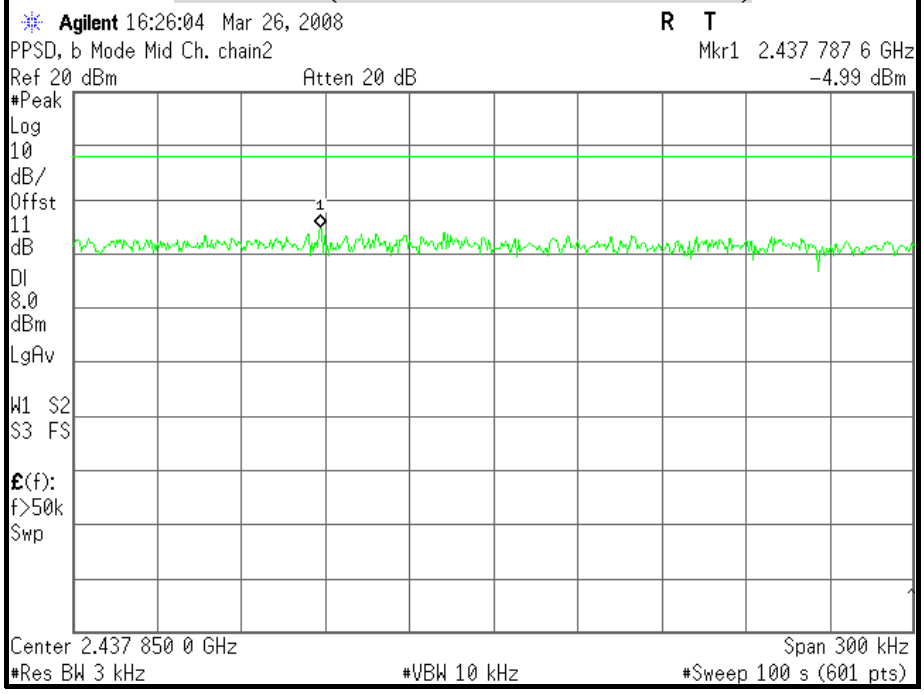
CH High (IEEE 802.11b mode - Chain 1)



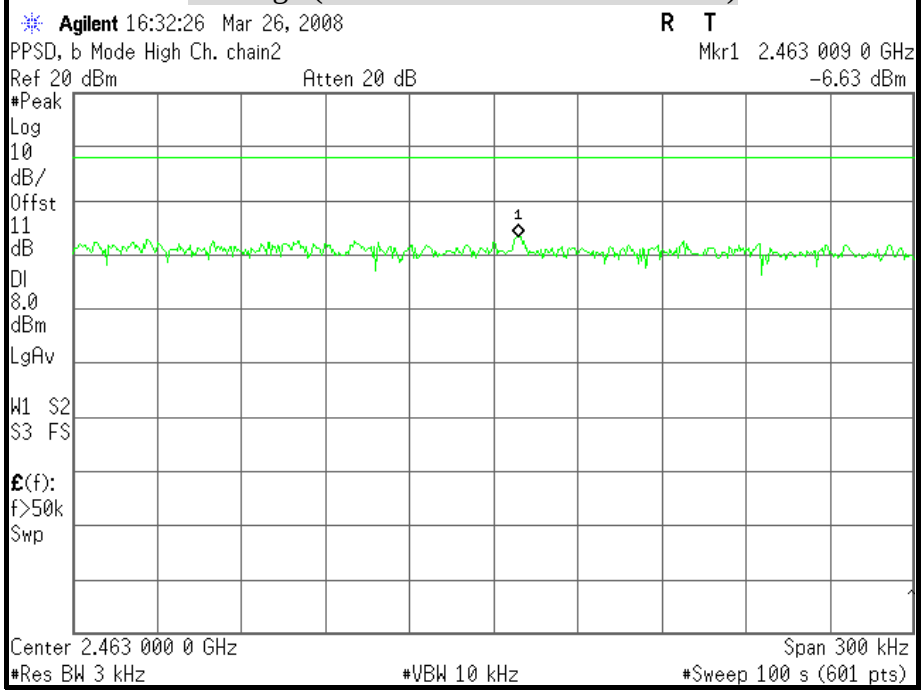
CH Low (IEEE 802.11b mode - Chain 2)



CH Middle (IEEE 802.11b mode - Chain 2)

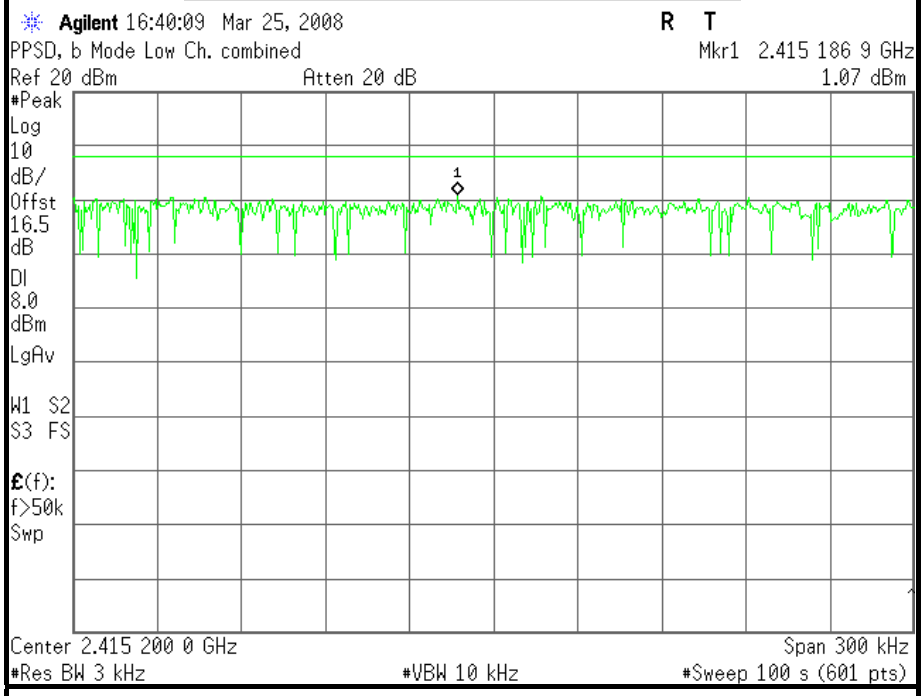


CH High (IEEE 802.11b mode - Chain 2)

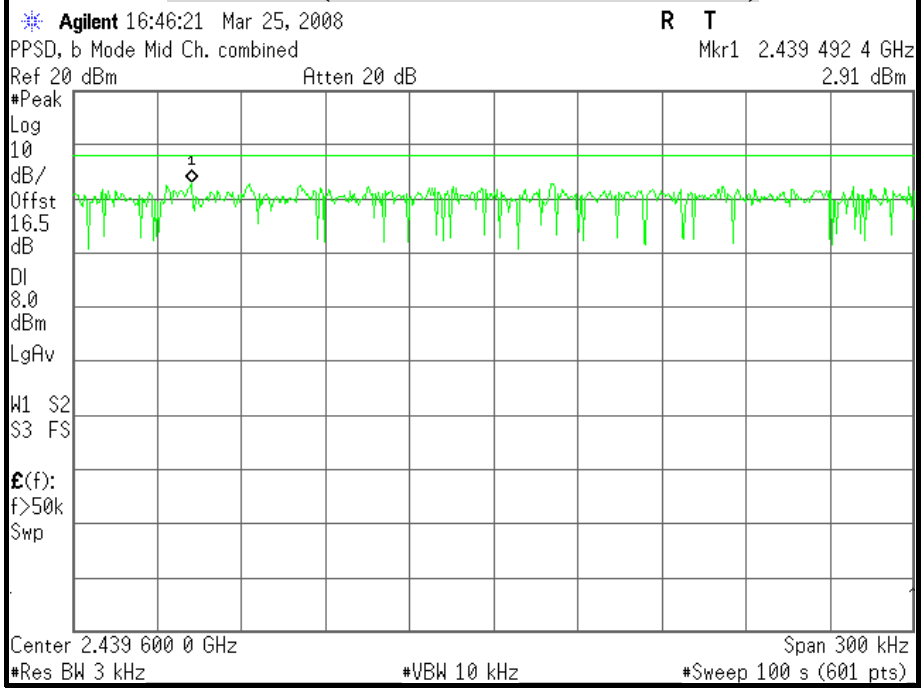


POWER SPECTRAL DENSITY (IEEE 802.11b Combined mode)

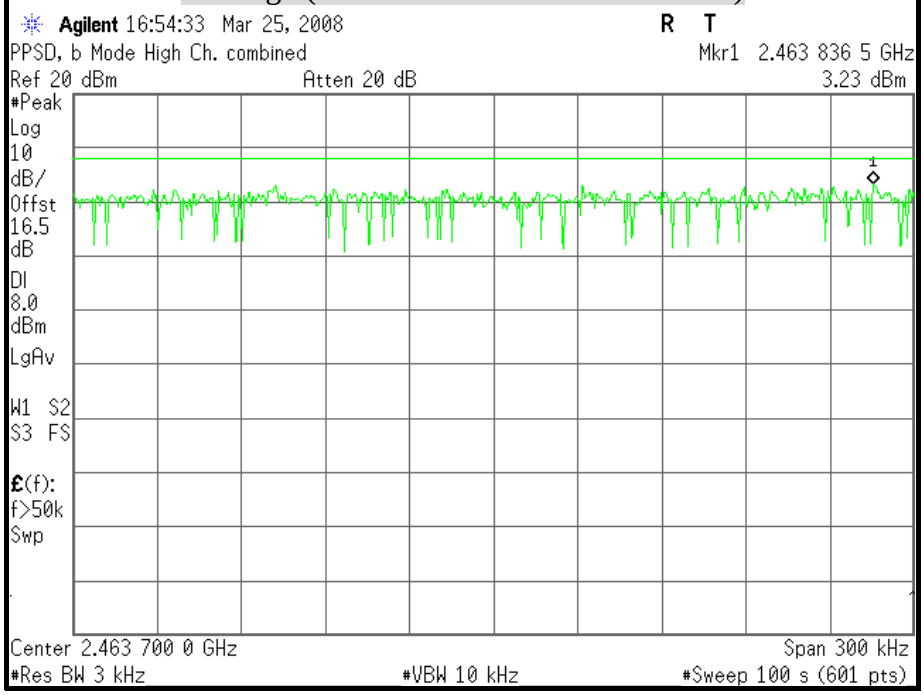
CH Low (IEEE 802.11b Combined mode)



CH Middle (IEEE 802.11b Combined mode)

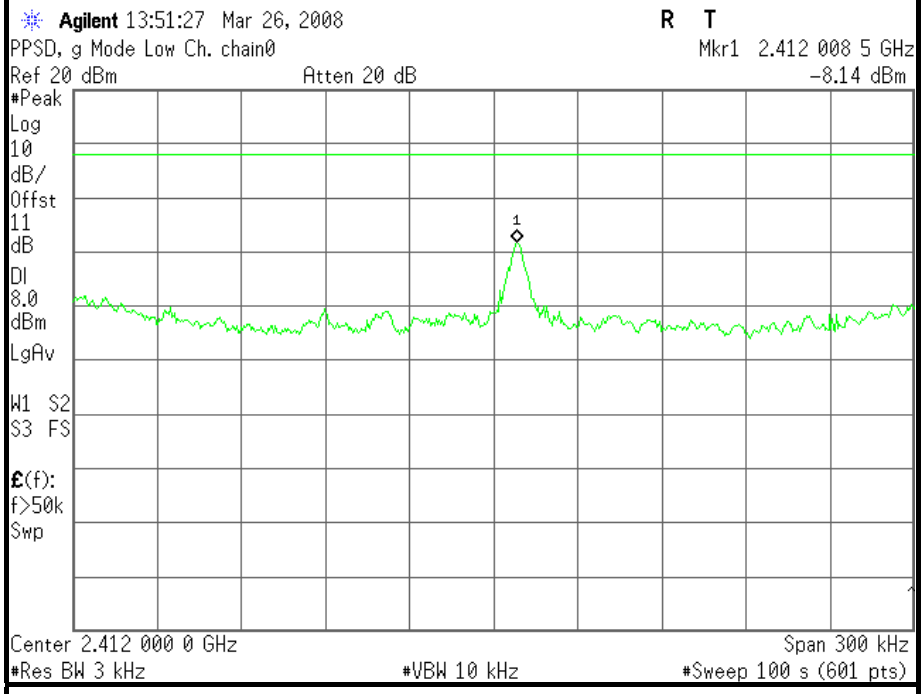


CH High (IEEE 802.11b Combined mode)

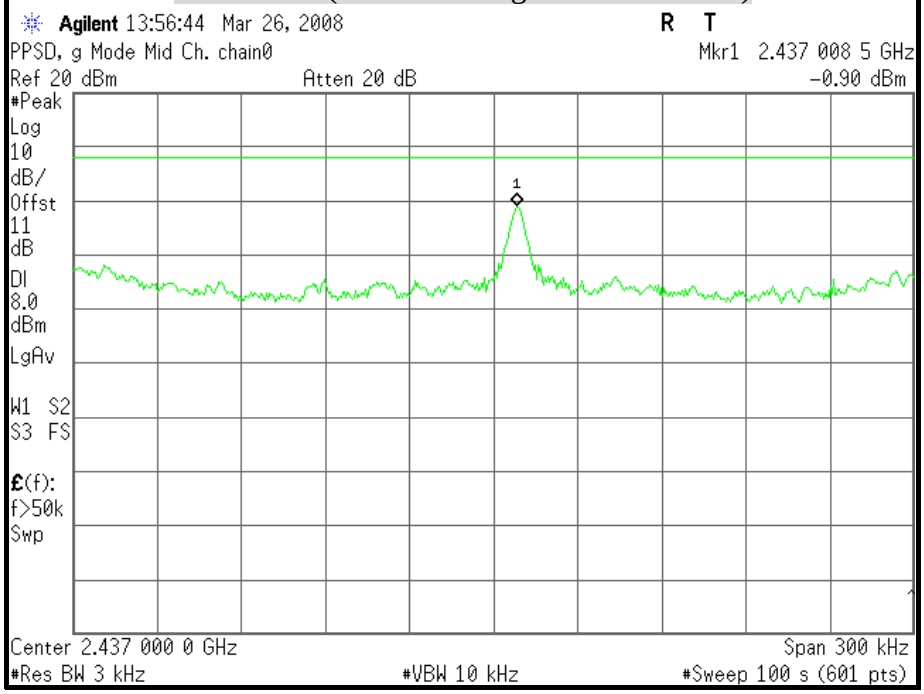


POWER SPECTRAL DENSITY (IEEE 802.11g mode)

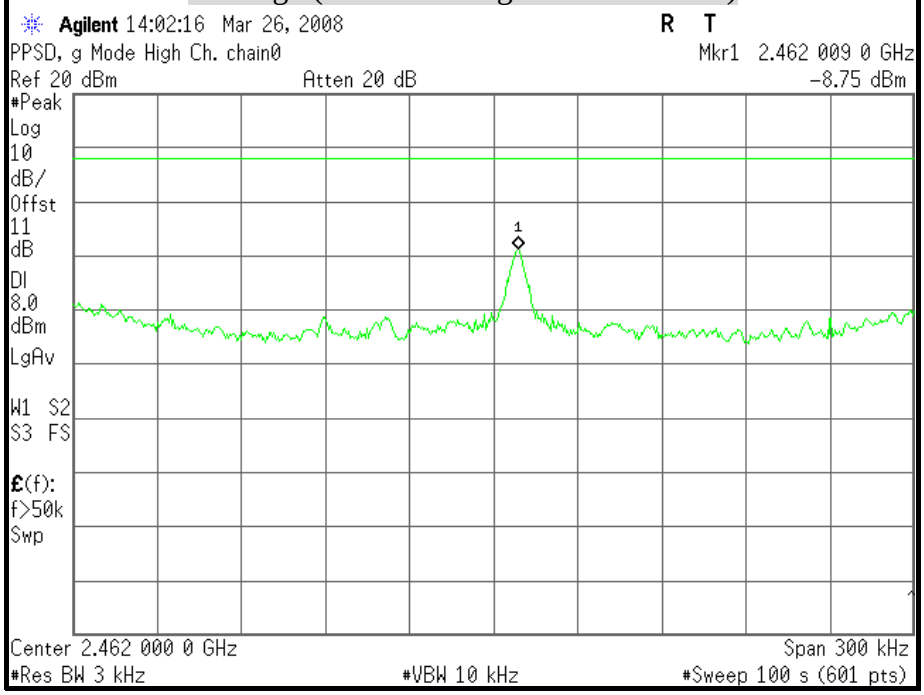
CH Low (IEEE 802.11g mode - Chain 0)



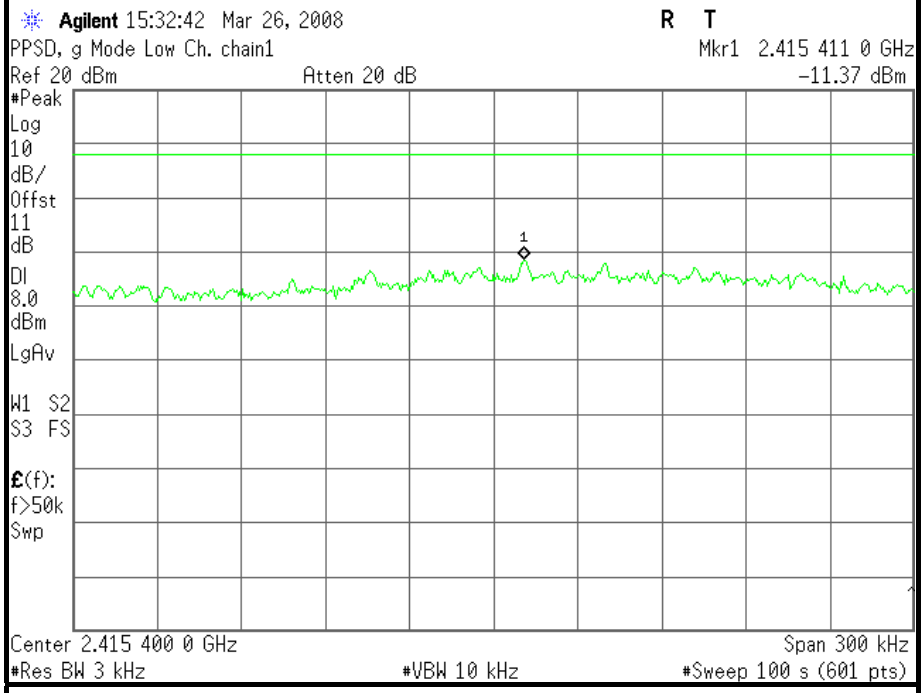
CH Middle (IEEE 802.11g mode - Chain 0)



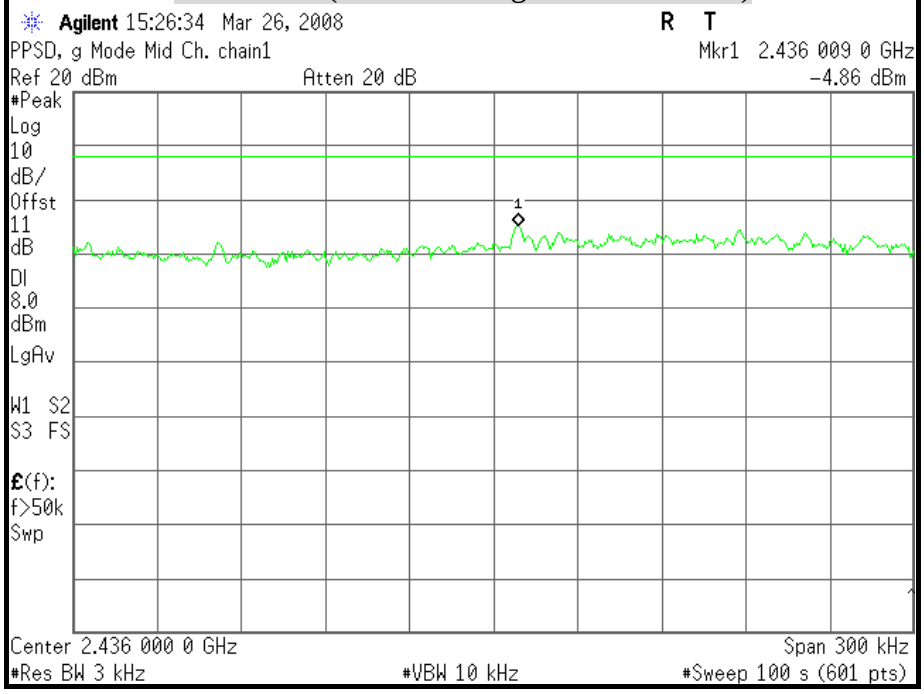
CH High (IEEE 802.11g mode - Chain 0)



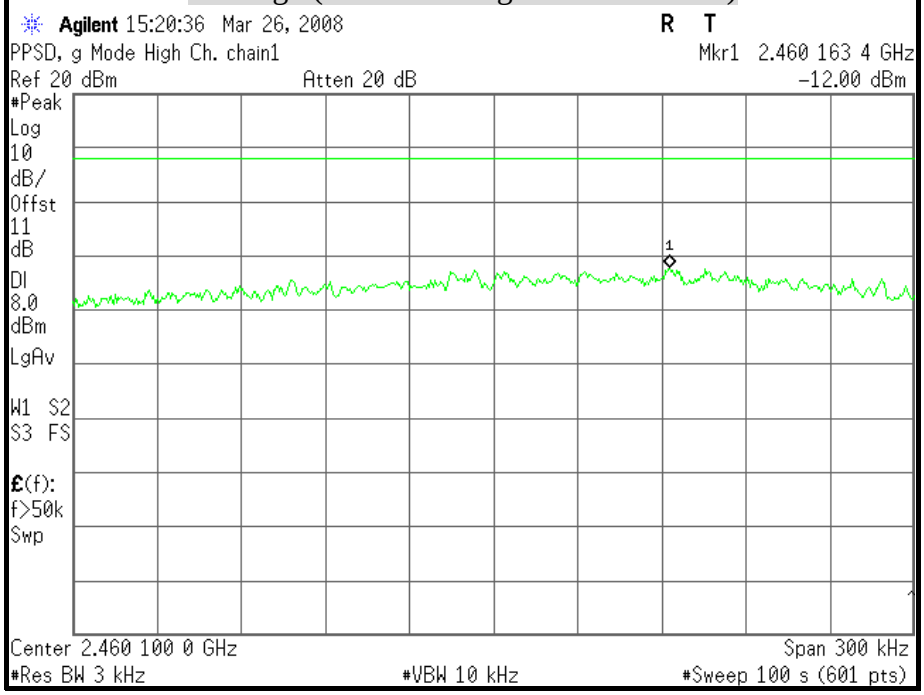
CH Low (IEEE 802.11g mode - Chain 1)



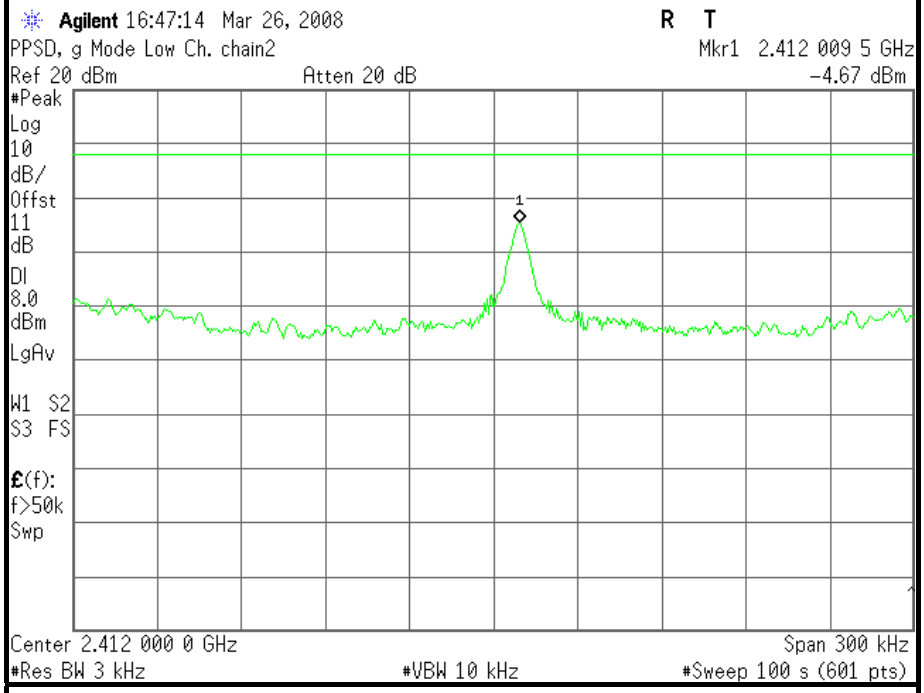
CH Middle (IEEE 802.11g mode - Chain 1)



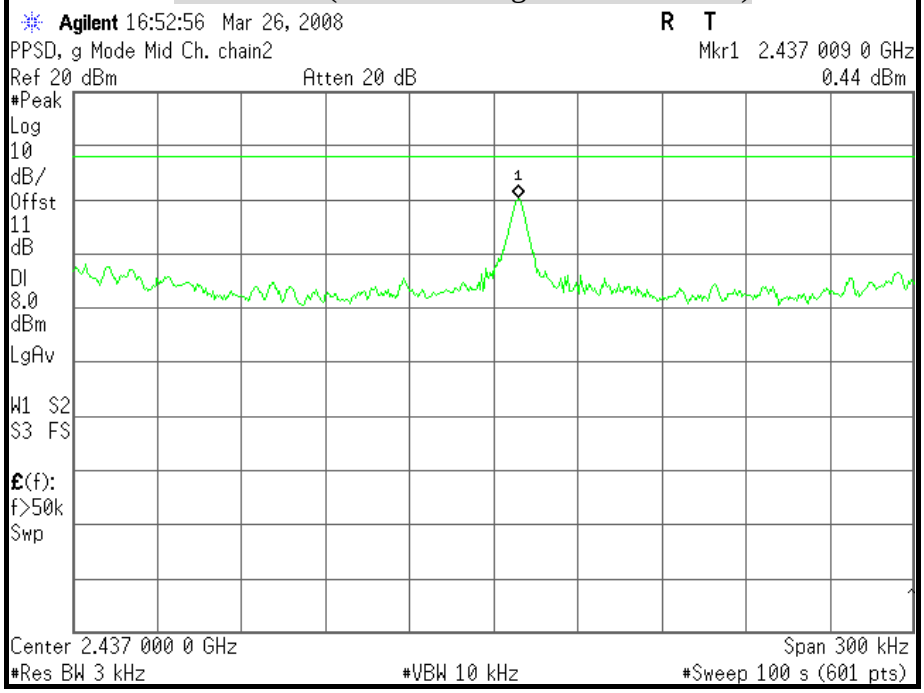
CH High (IEEE 802.11g mode - Chain 1)



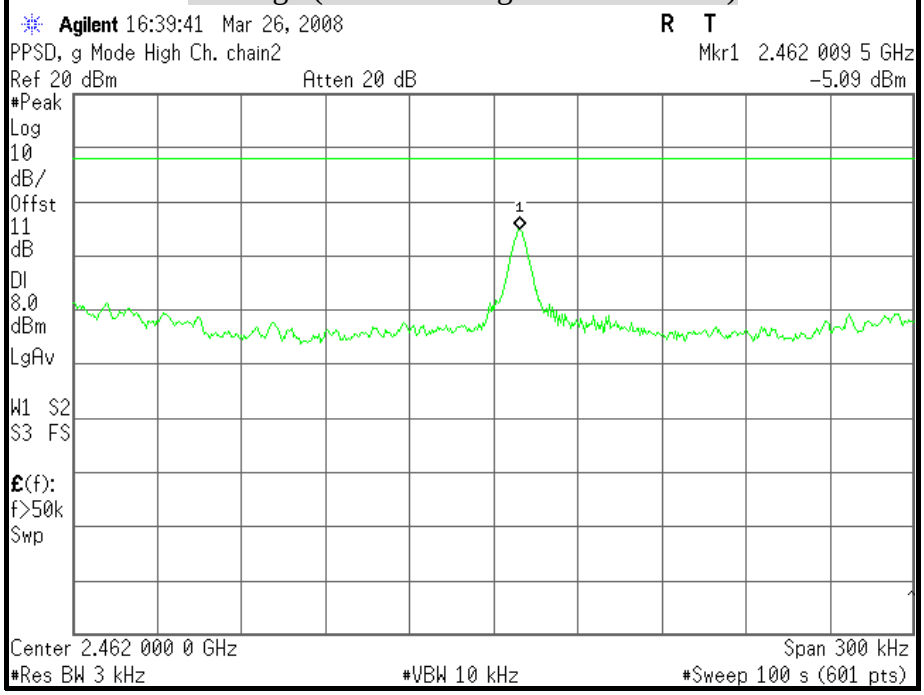
CH Low (IEEE 802.11g mode - Chain 2)



CH Middle (IEEE 802.11g mode - Chain 2)

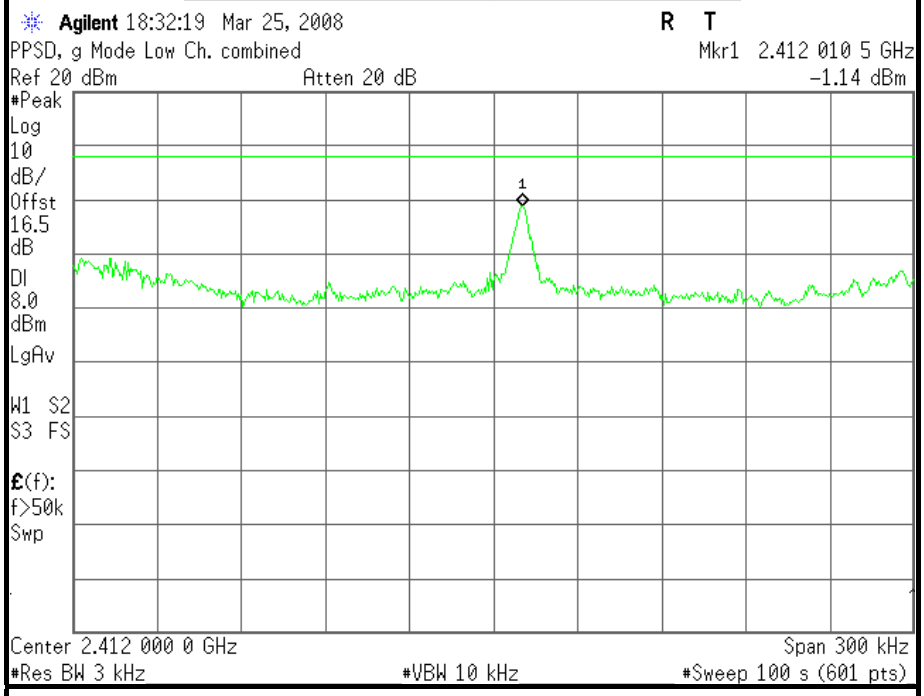


CH High (IEEE 802.11g mode - Chain 2)

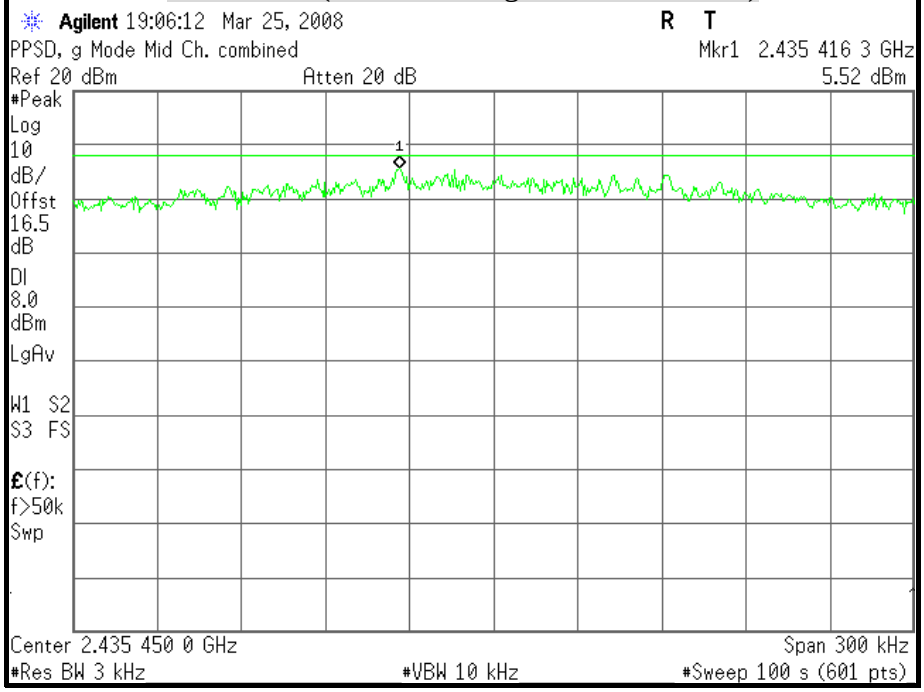


POWER SPECTRAL DENSITY (IEEE 802.11g Combined mode)

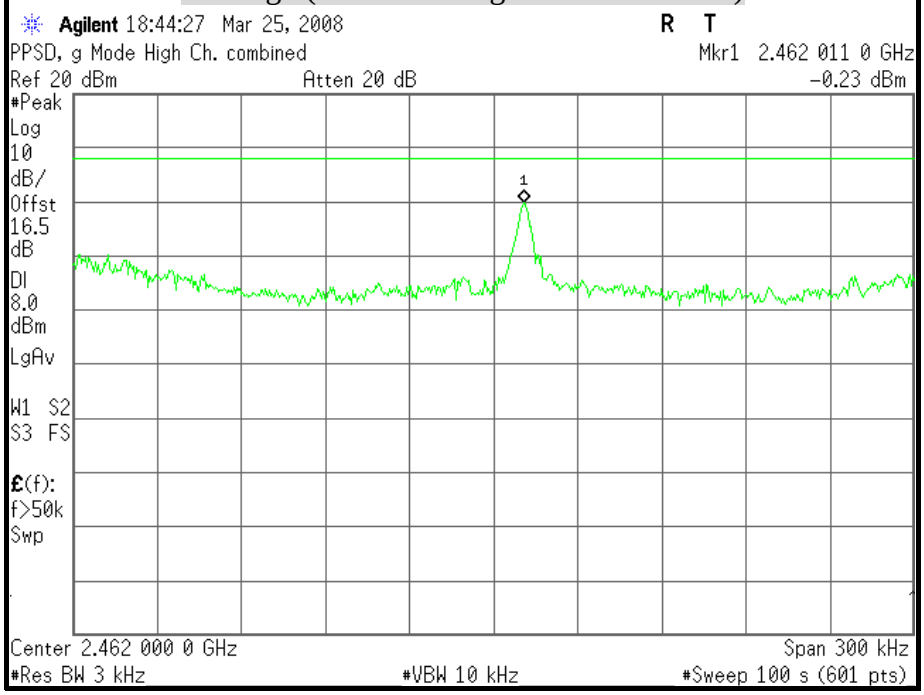
CH Low (IEEE 802.11g Combined mode)



CH Middle (IEEE 802.11g Combined mode)

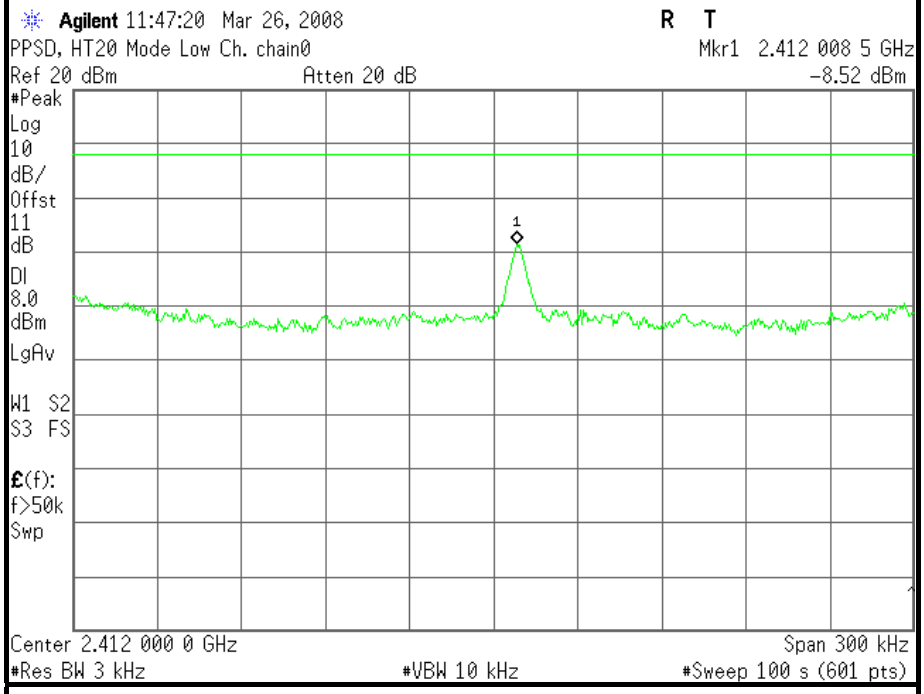


CH High (IEEE 802.11g Combined mode)

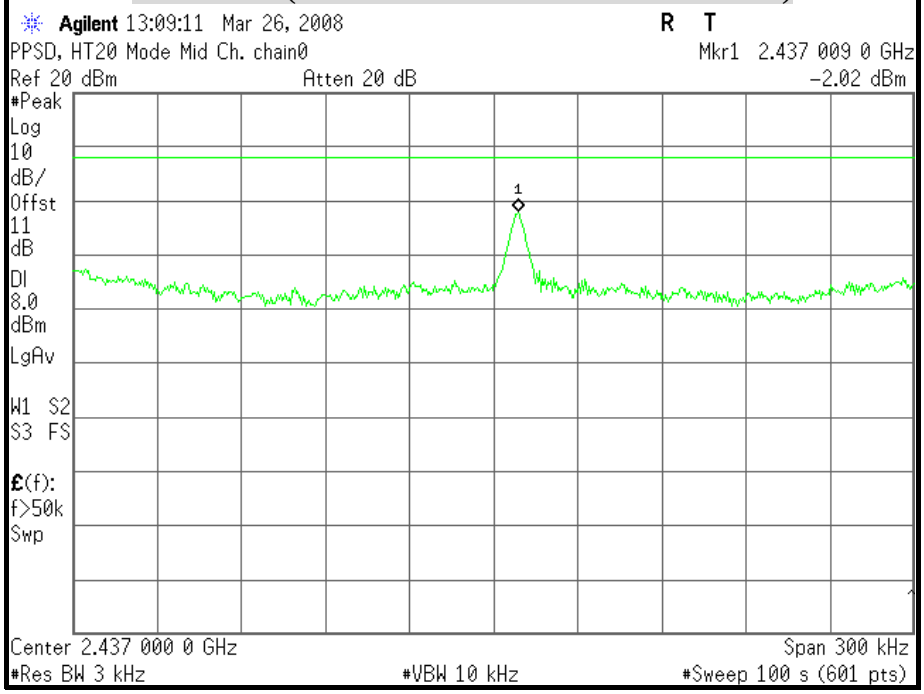


POWER SPECTRAL DENSITY (IEEE 802.11n HT20 mode)

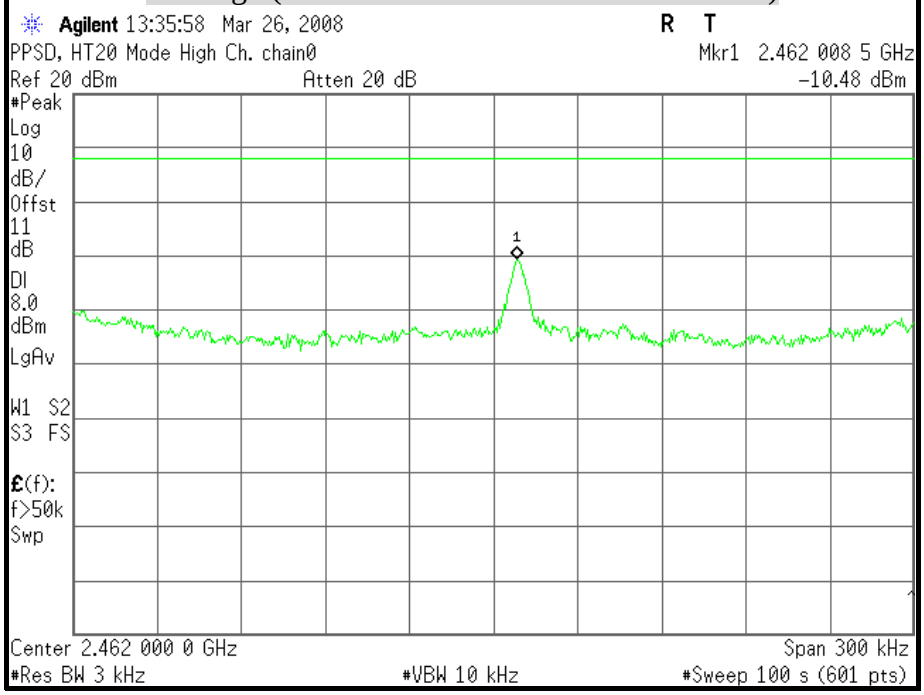
CH Low (IEEE 802.11n HT20 mode - Chain 0)



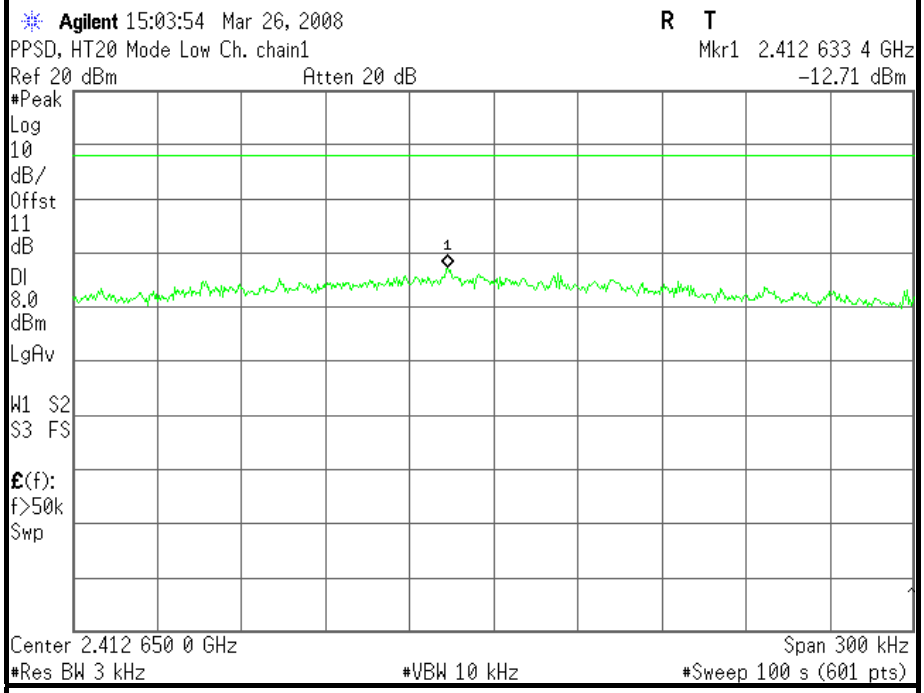
CH Middle (IEEE 802.11n HT20 mode - Chain 0)



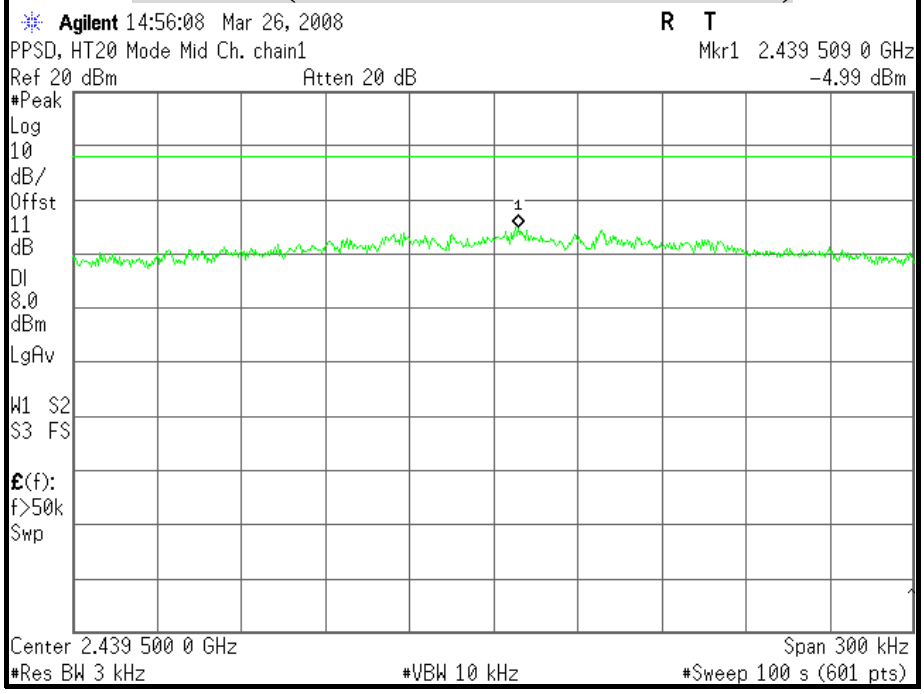
CH High (IEEE 802.11n HT20 mode - Chain 0)



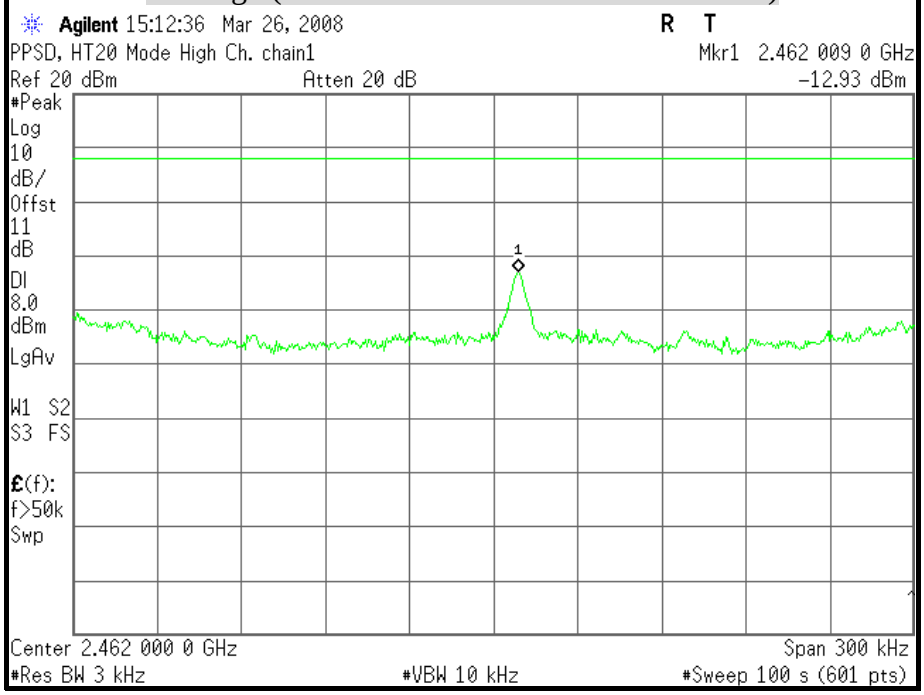
CH Low (IEEE 802.11n HT20 mode - Chain 1)



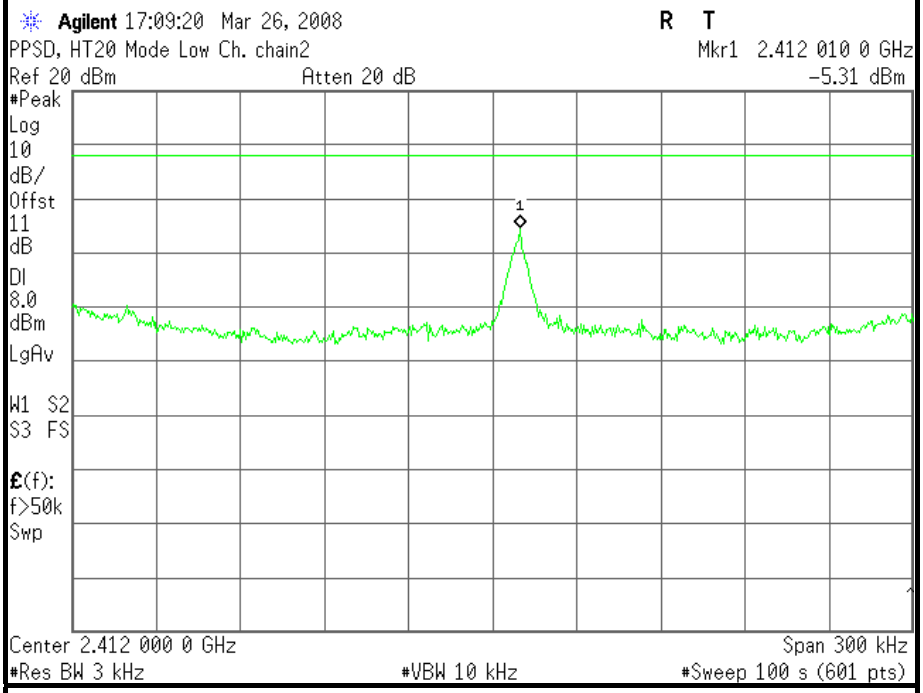
CH Middle (IEEE 802.11n HT20 mode - Chain 1)



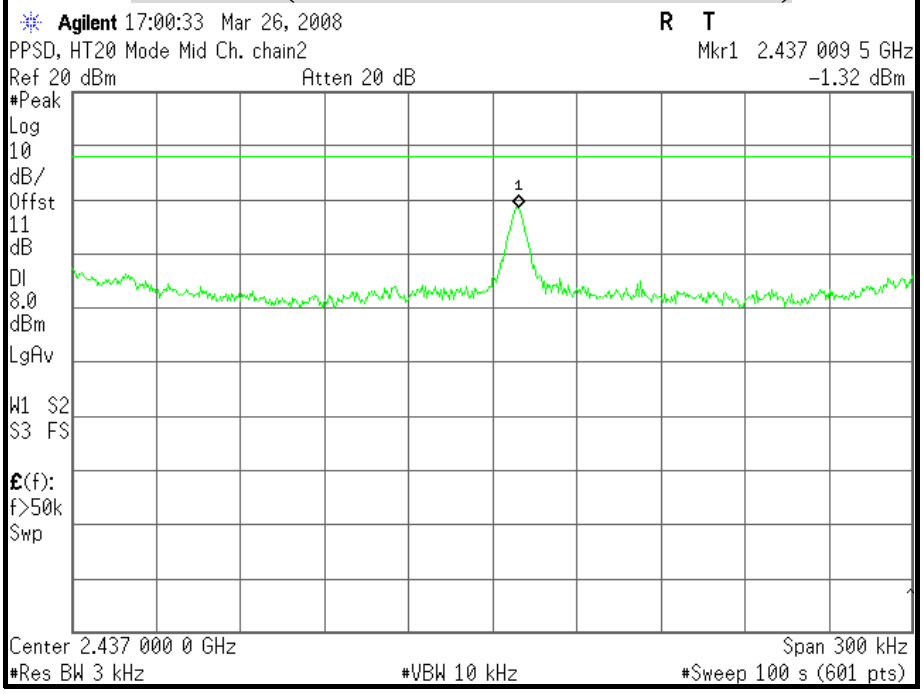
CH High (IEEE 802.11n HT20 mode - Chain 1)



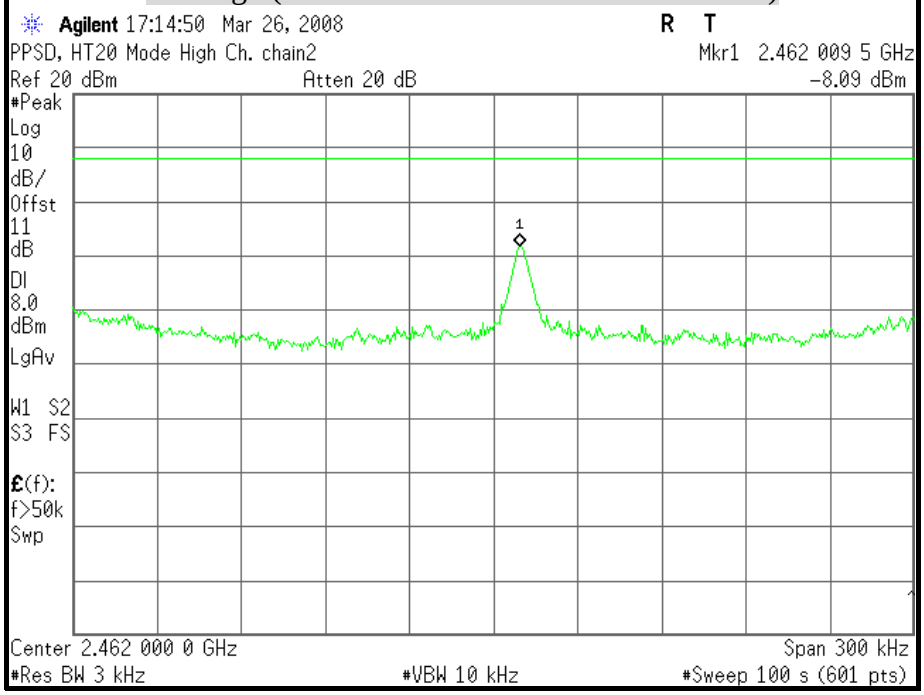
CH Low (IEEE 802.11n HT20 mode - Chain 2)



CH Middle (IEEE 802.11n HT20 mode - Chain 2)

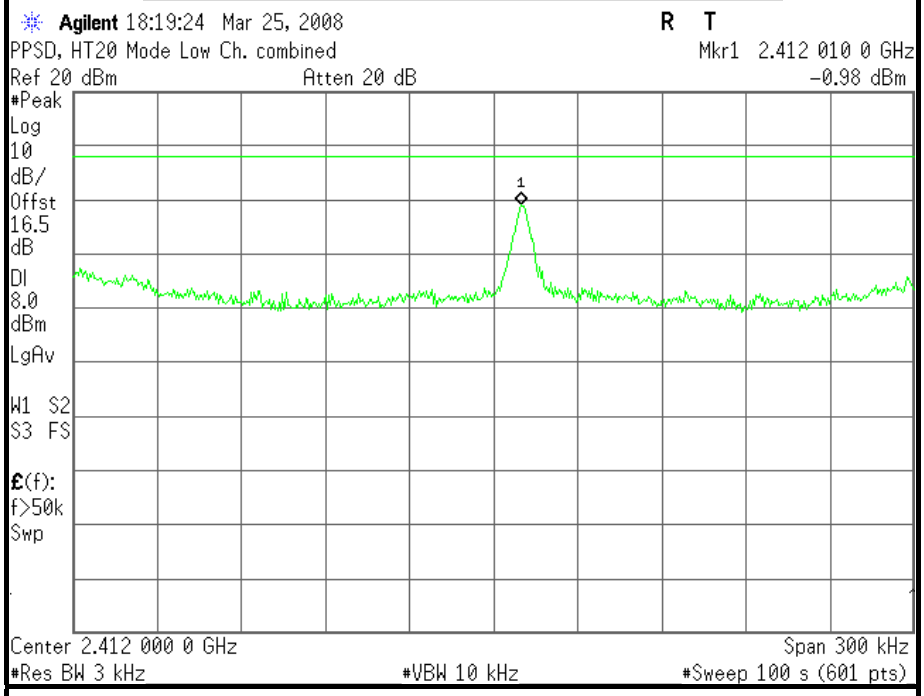


CH High (IEEE 802.11n HT20 mode - Chain 2)

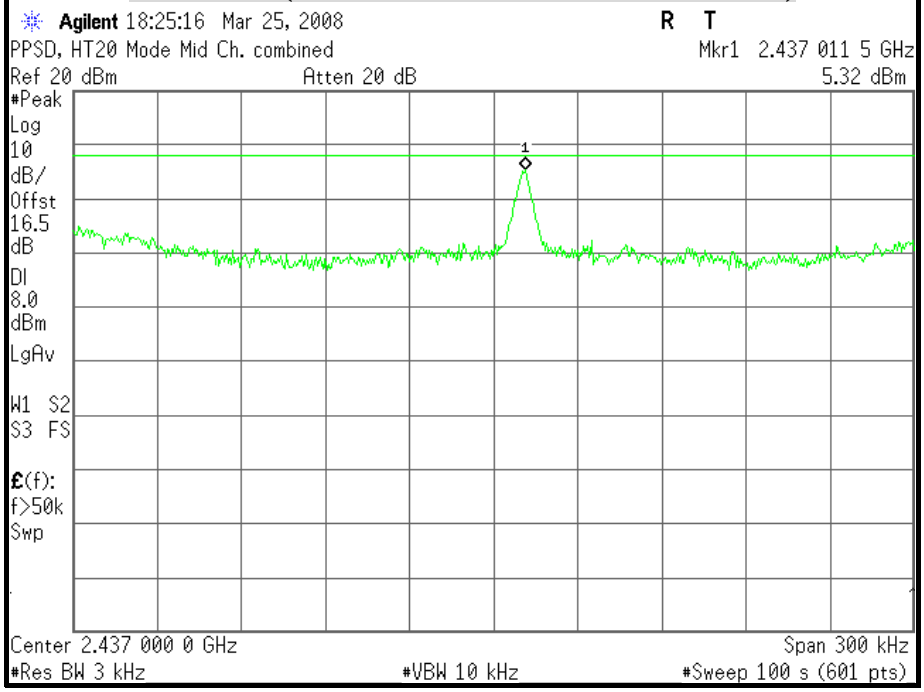


POWER SPECTRAL DENSITY (IEEE 802.11n HT20 Combined mode)

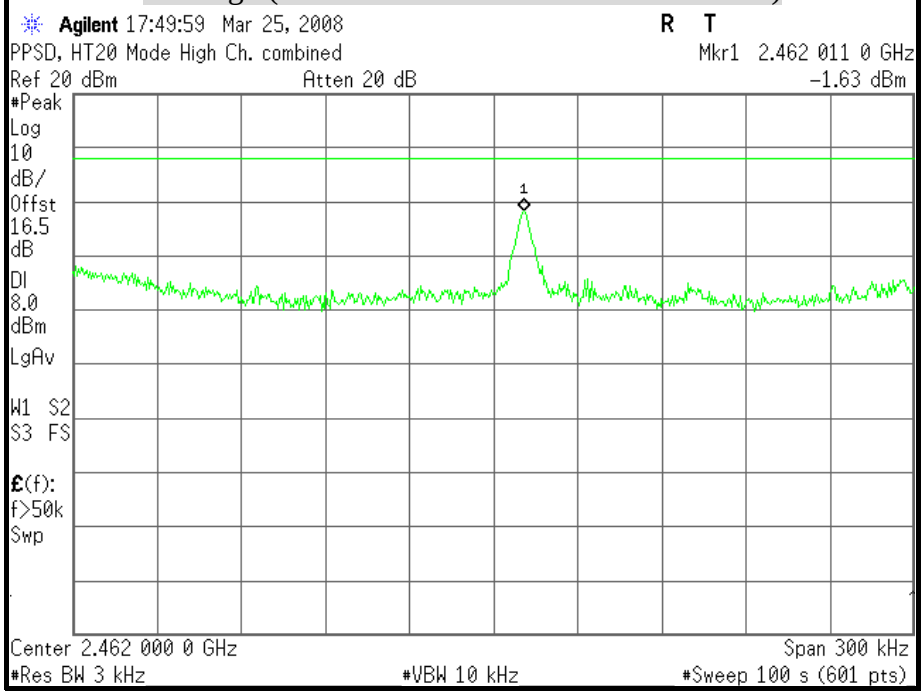
CH Low (IEEE 802.11n HT20 Combined mode)



CH Middle (IEEE 802.11n HT20 Combined mode)

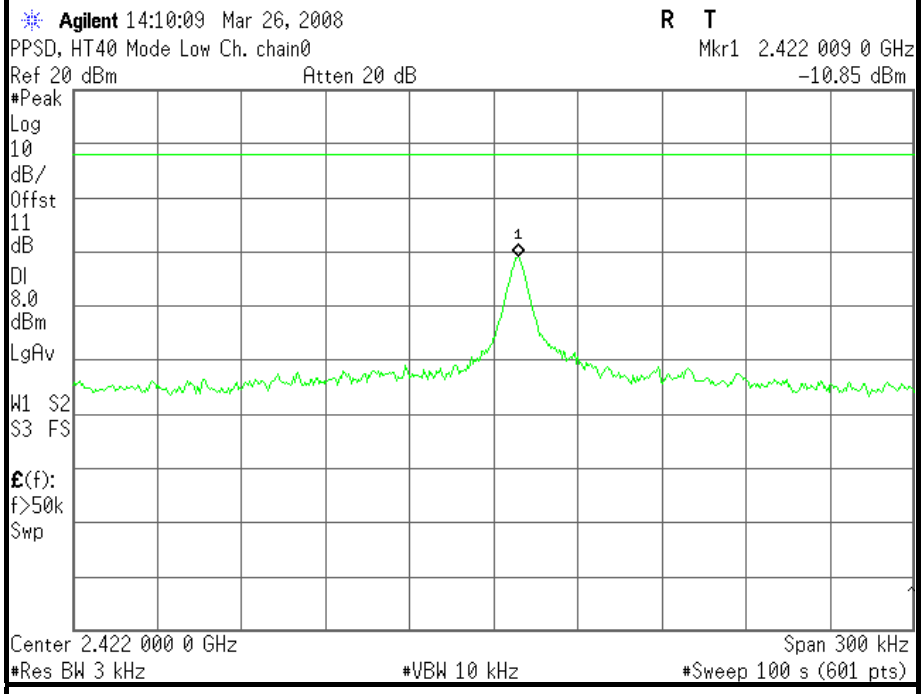


CH High (IEEE 802.11n HT20 Combined mode)

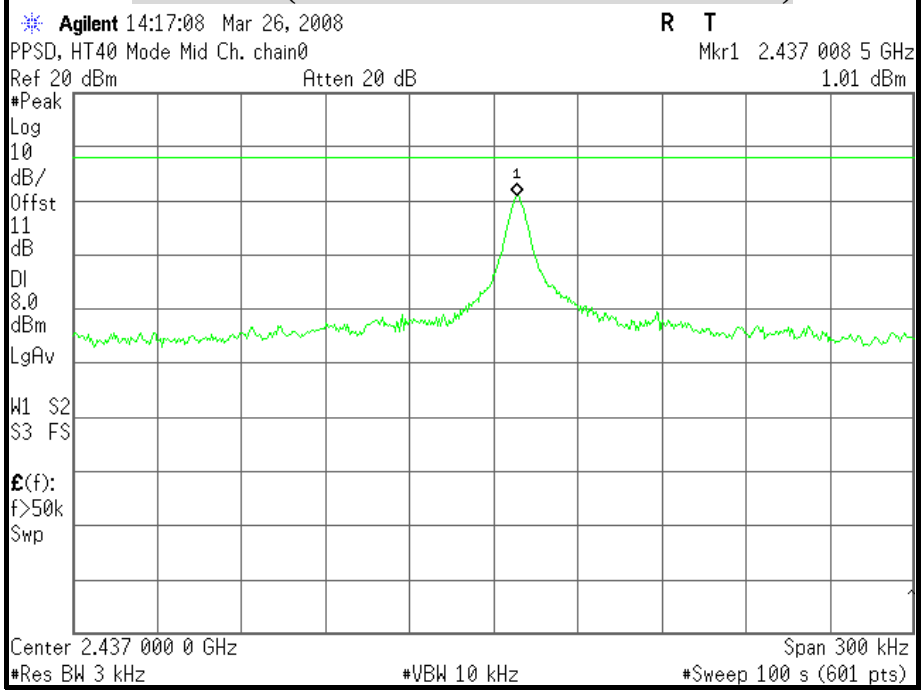


POWER SPECTRAL DENSITY (IEEE 802.11n HT40 mode)

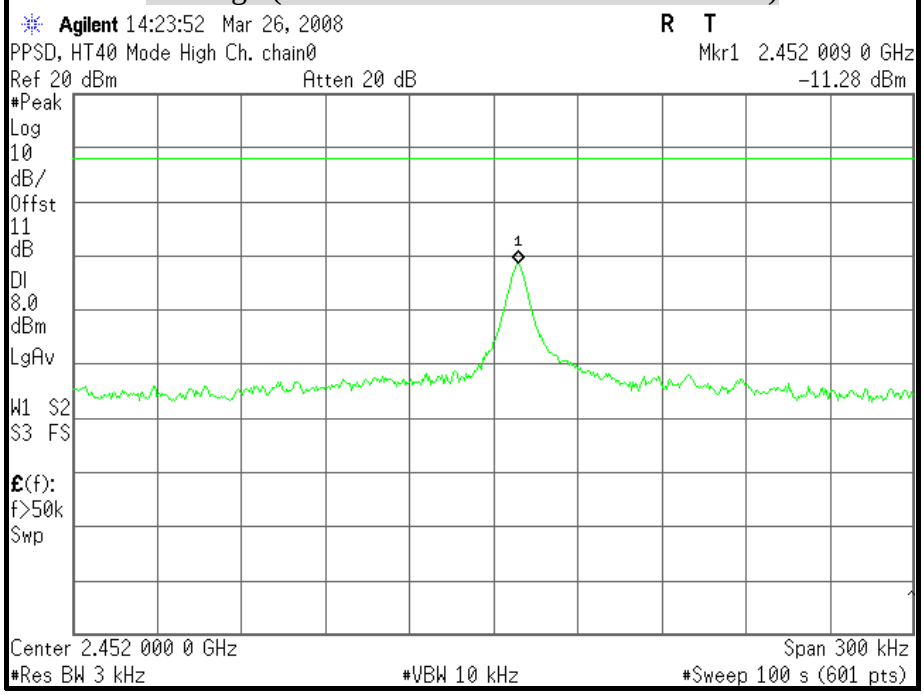
CH Low (IEEE 802.11n HT40 mode - Chain 0)



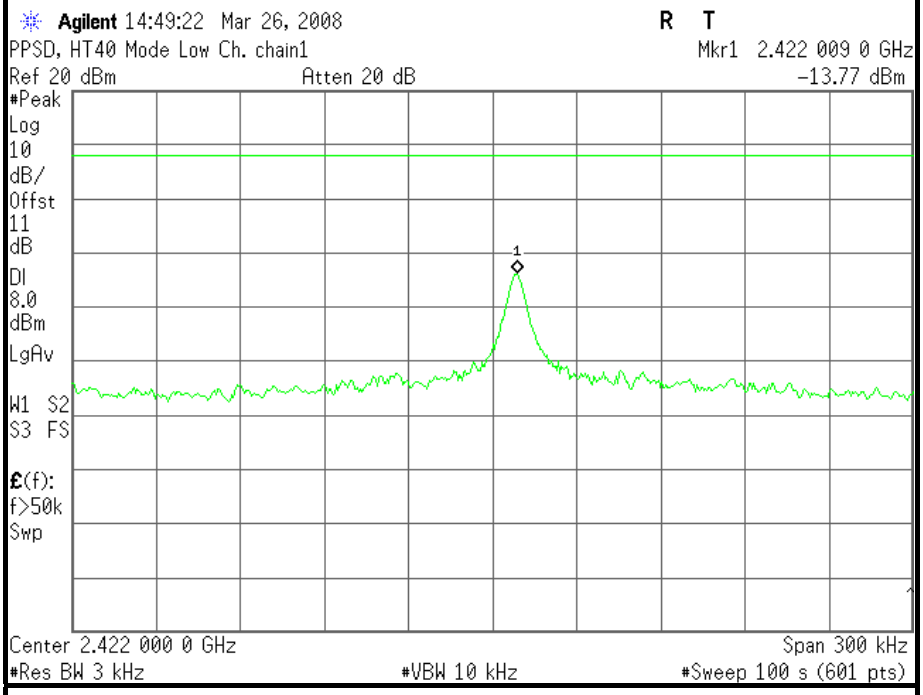
CH Middle (IEEE 802.11n HT40 mode - Chain 0)



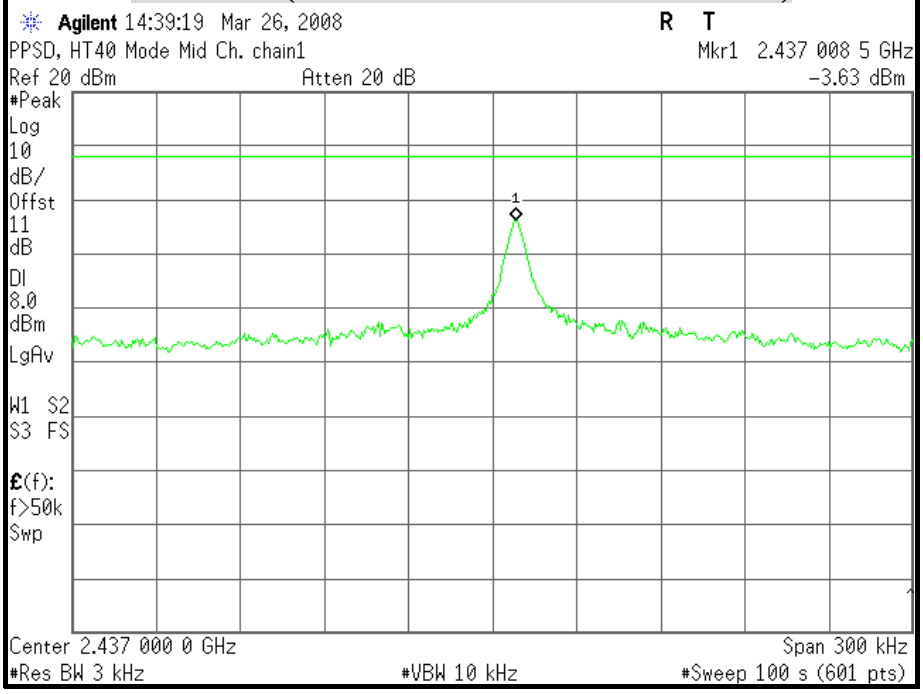
CH High (IEEE 802.11n HT40 mode - Chain 0)



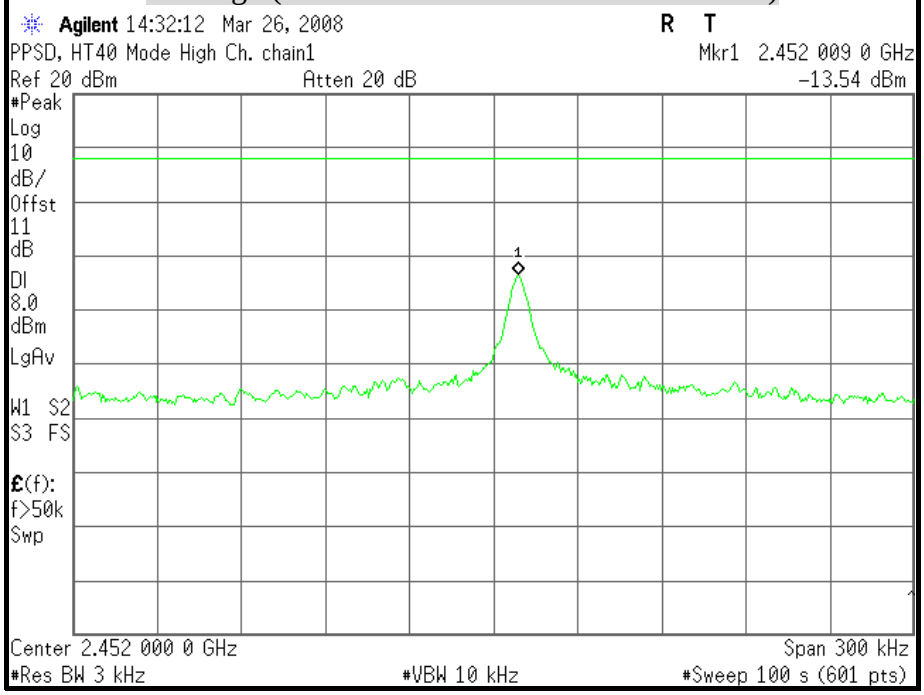
CH Low (IEEE 802.11n HT40 mode - Chain 1)



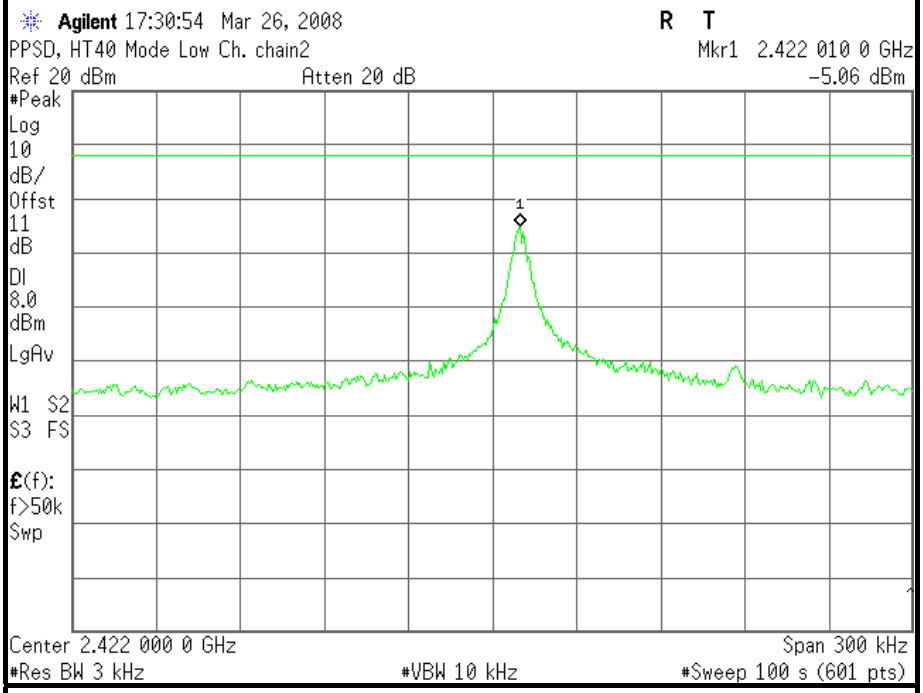
CH Middle (IEEE 802.11n HT40 mode - Chain 1)



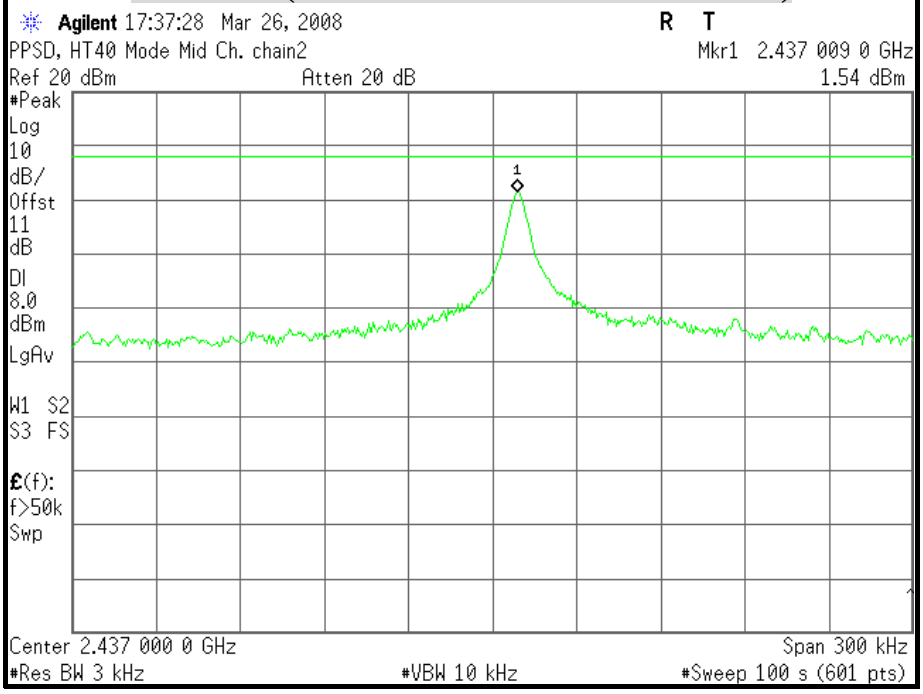
CH High (IEEE 802.11n HT40 mode - Chain 1)



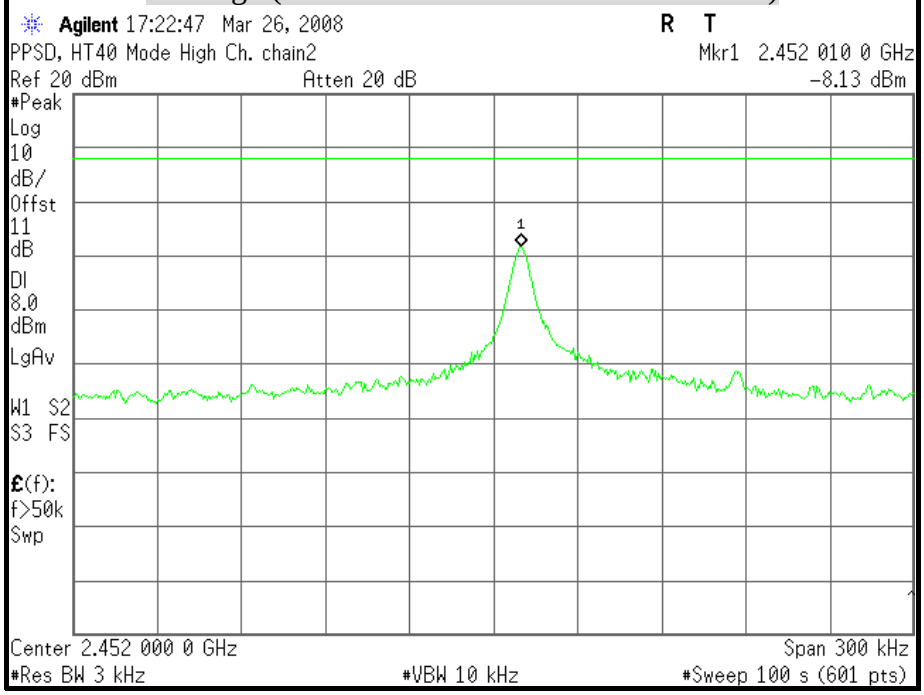
CH Low (IEEE 802.11n HT40 mode - Chain 2)



CH Middle (IEEE 802.11n HT40 mode - Chain 2)

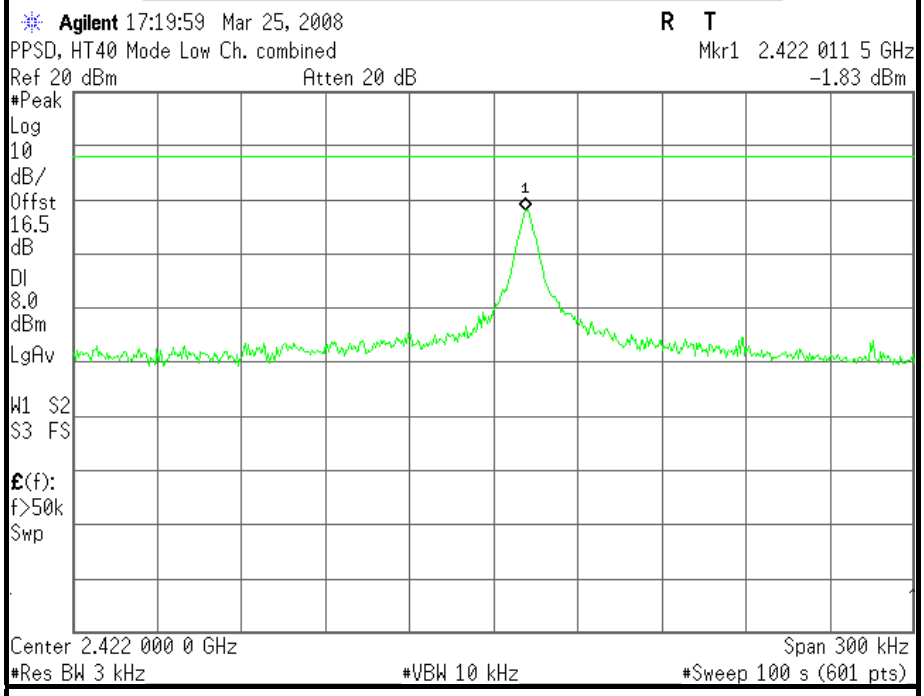


CH High (IEEE 802.11n HT40 mode - Chain 2)

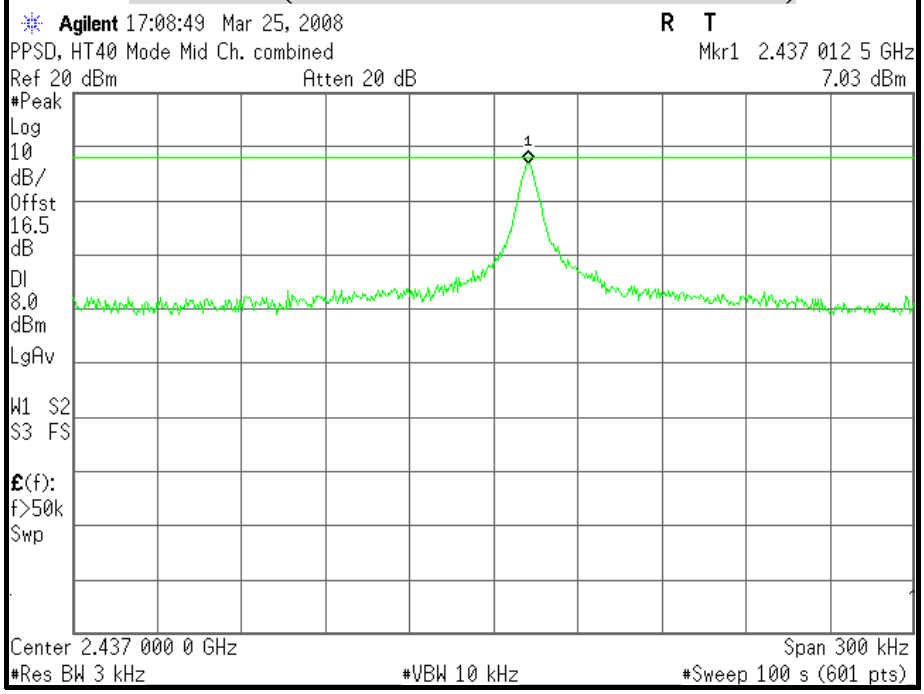


POWER SPECTRAL DENSITY (IEEE 802.11n HT40 Combined mode)

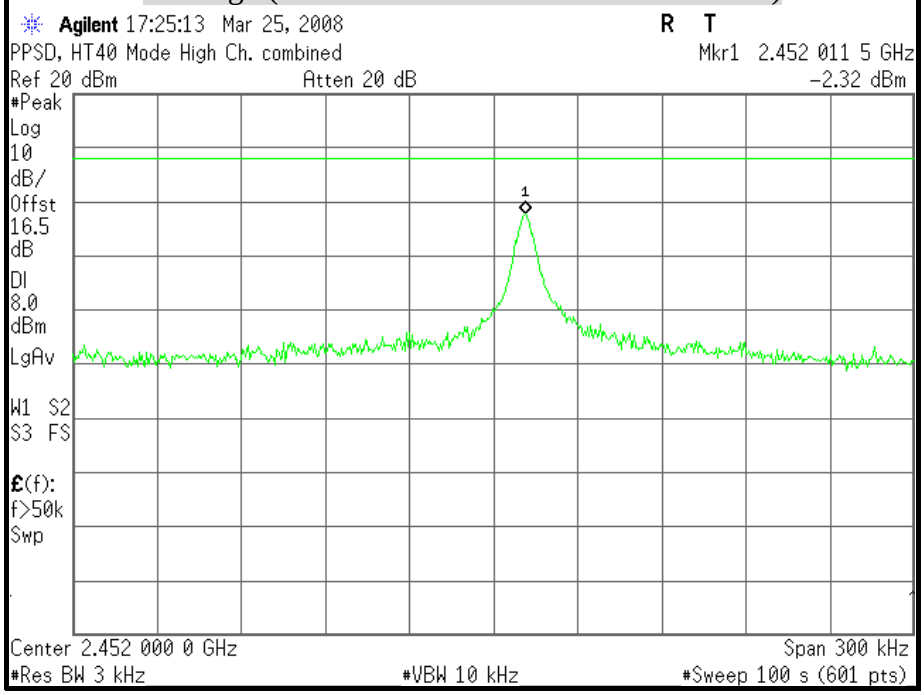
CH Low (IEEE 802.11n HT40 Combined mode)



CH Middle (IEEE 802.11n HT40 Combined mode)



CH High (IEEE 802.11n HT40 Combined mode)



8.7 CONDUCTED SPURIOUS EMISSION

LIMITS

§ 15.247(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the and that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

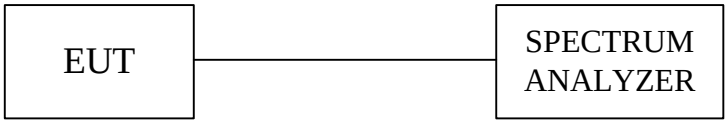
TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 5.0 GHz band.

TEST SETUP



Combined mode

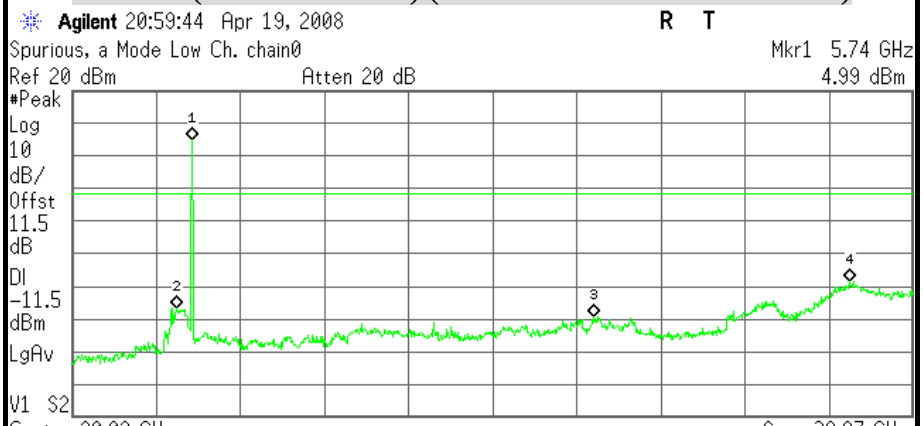
TEST RESULTS

No non-compliance noted

OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

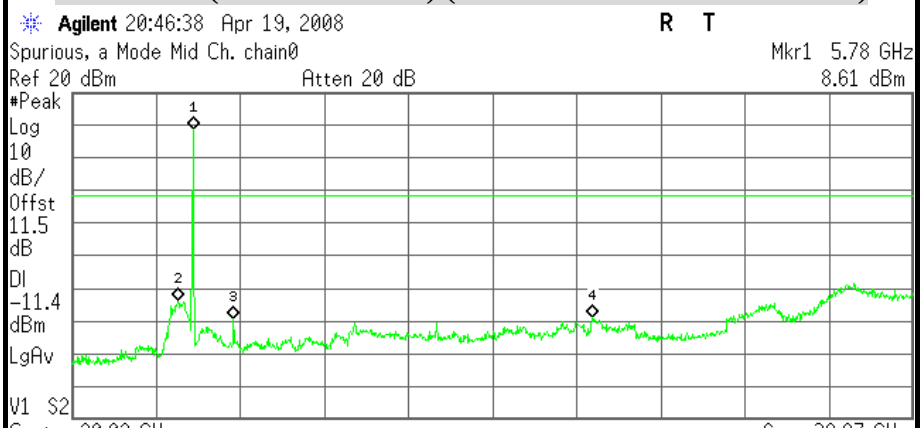
(IEEE 802.11a mode)

CH Low (30MHz~40GHz) (IEEE 802.11a mode - Chain 0)



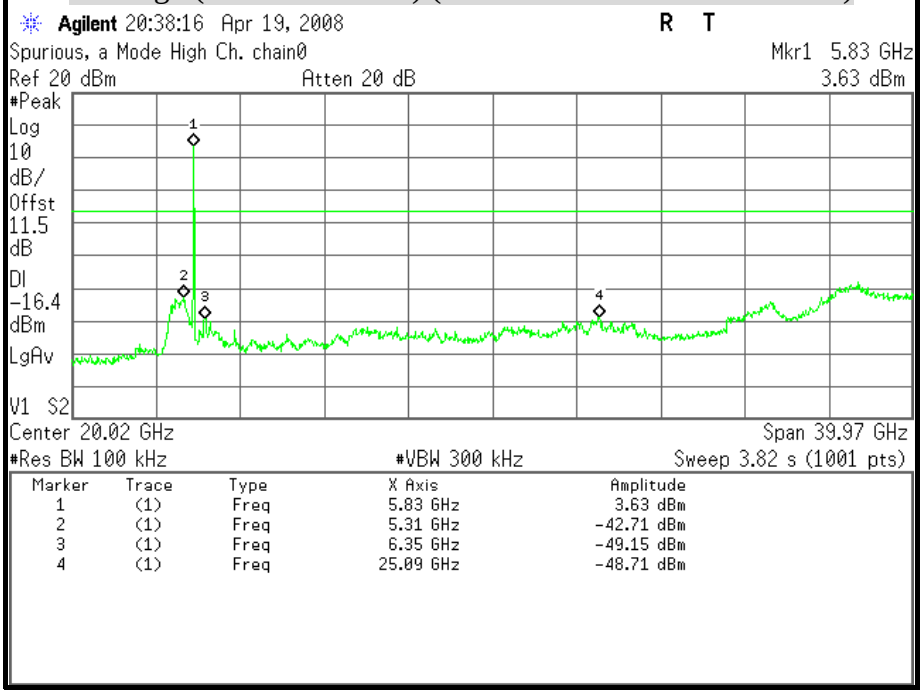
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.74 GHz	4.99 dBm
2	(1)	Freq	5.03 GHz	-46.48 dBm
3	(1)	Freq	24.81 GHz	-49.10 dBm
4	(1)	Freq	36.96 GHz	-38.44 dBm

CH Middle (30MHz~40GHz) (IEEE 802.11a mode - Chain 0)



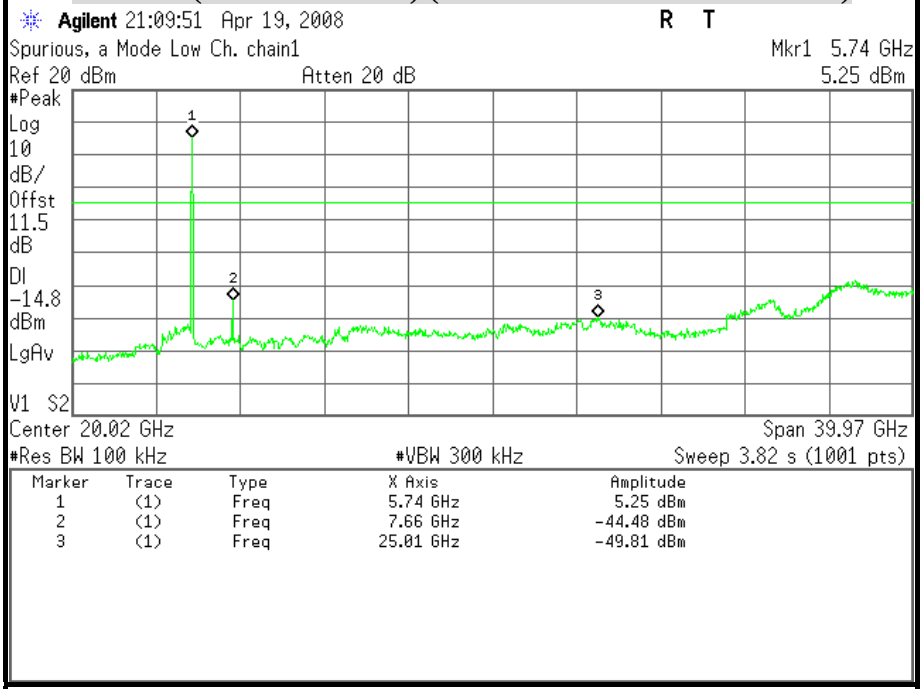
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.78 GHz	8.61 dBm
2	(1)	Freq	5.07 GHz	-43.85 dBm
3	(1)	Freq	7.70 GHz	-49.07 dBm
4	(1)	Freq	24.73 GHz	-48.63 dBm

CH High (30MHz~40GHz) (IEEE 802.11a mode - Chain 0)

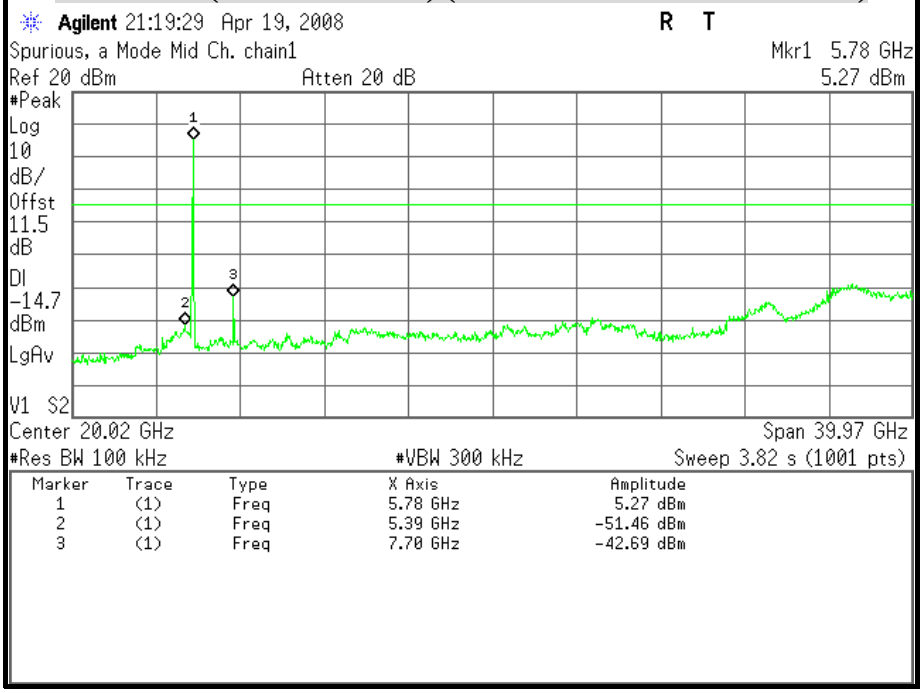


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.83 GHz	3.63 dBm
2	(1)	Freq	5.31 GHz	-42.71 dBm
3	(1)	Freq	6.35 GHz	-49.15 dBm
4	(1)	Freq	25.09 GHz	-48.71 dBm

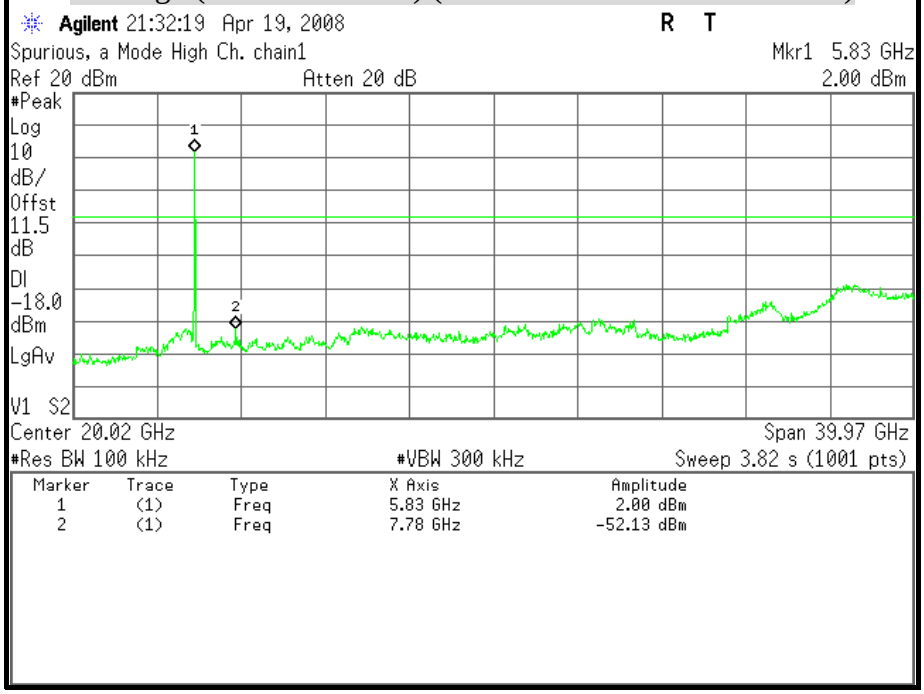
CH Low (30MHz~40GHz) (IEEE 802.11a mode - Chain 1)



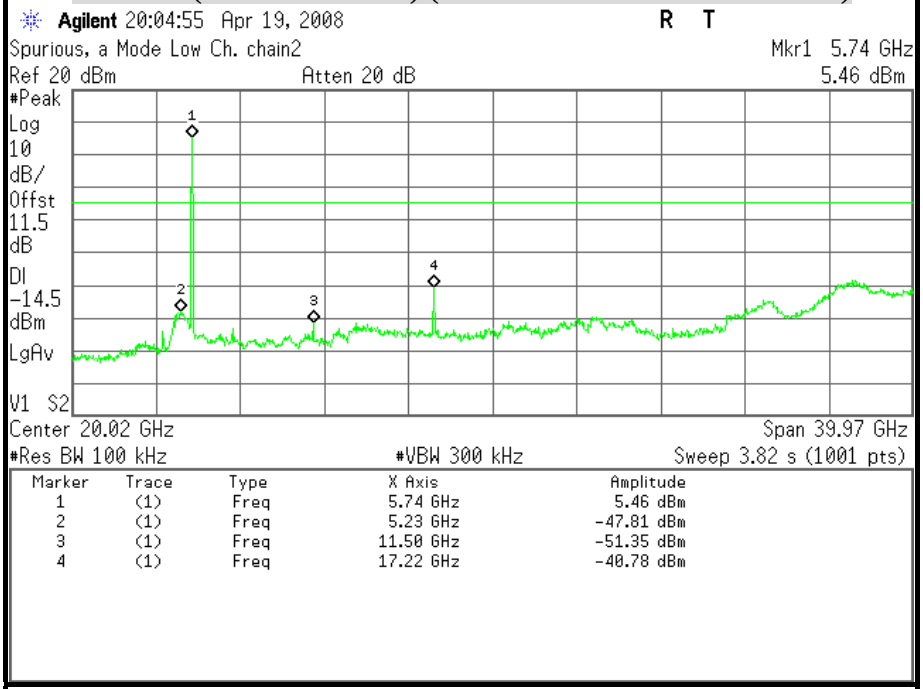
CH Middle (30MHz~40GHz) (IEEE 802.11a mode - Chain 1)



CH High (30MHz~40GHz) (IEEE 802.11a mode - Chain 1)

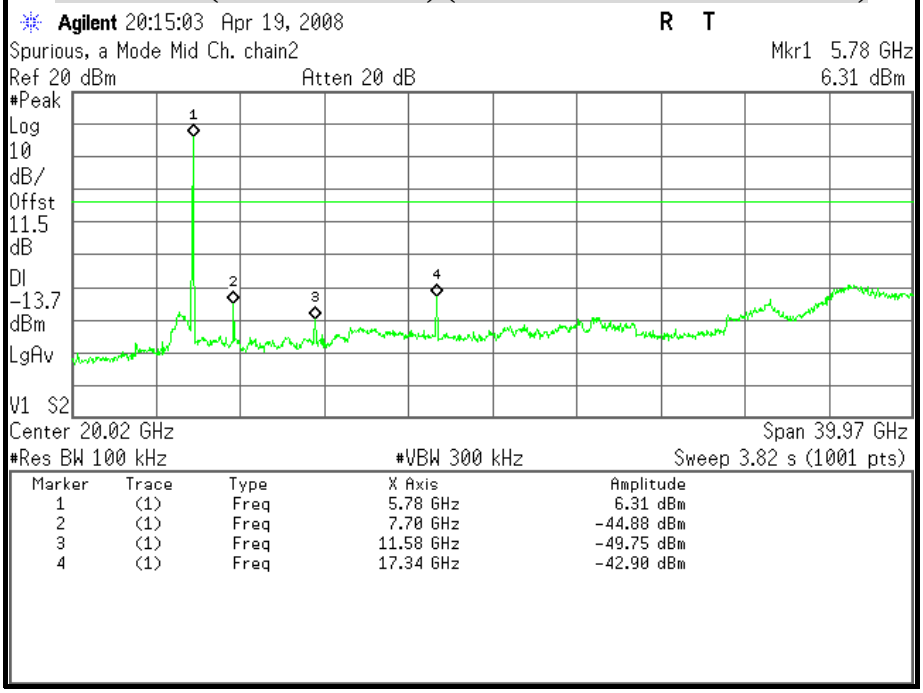


CH Low (30MHz~40GHz) (IEEE 802.11a mode - Chain 2)



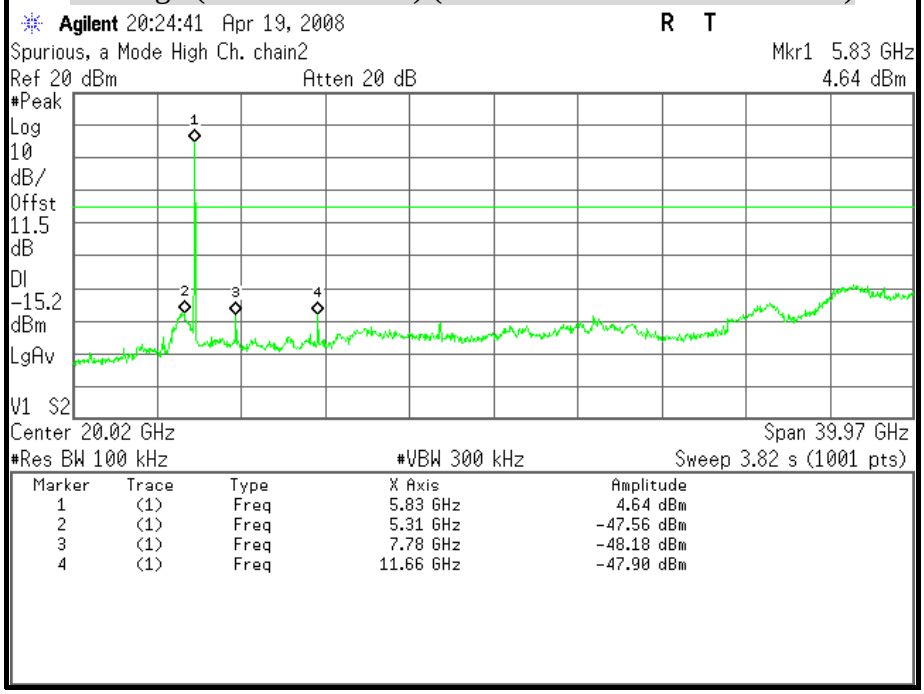
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.74 GHz	5.46 dBm
2	(1)	Freq	5.23 GHz	-47.81 dBm
3	(1)	Freq	11.50 GHz	-51.35 dBm
4	(1)	Freq	17.22 GHz	-40.78 dBm

CH Middle (30MHz~40GHz) (IEEE 802.11a mode - Chain 2)



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.78 GHz	6.31 dBm
2	(1)	Freq	7.70 GHz	-44.88 dBm
3	(1)	Freq	11.58 GHz	-49.75 dBm
4	(1)	Freq	17.34 GHz	-42.90 dBm

CH High (30MHz~40GHz) (IEEE 802.11a mode - Chain 2)

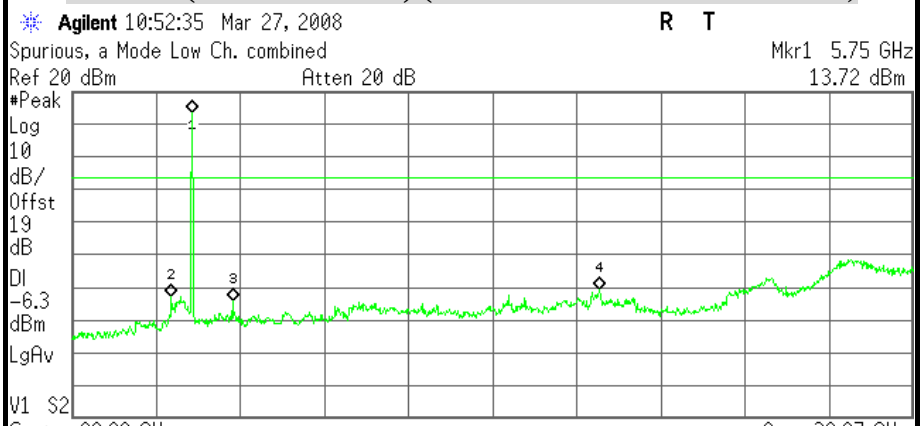


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.83 GHz	4.64 dBm
2	(1)	Freq	5.31 GHz	-47.56 dBm
3	(1)	Freq	7.78 GHz	-48.18 dBm
4	(1)	Freq	11.66 GHz	-47.90 dBm

OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

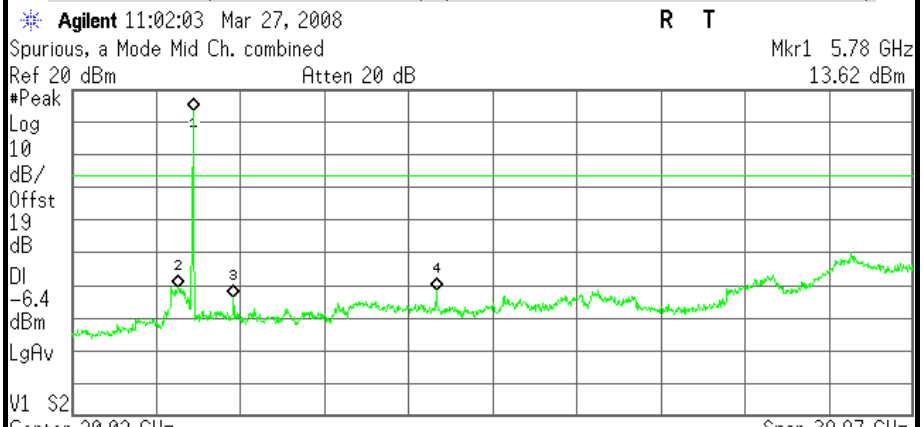
(IEEE 802.11a Combined mode)

CH Low (30MHz~40GHz) (IEEE 802.11a Combined mode)



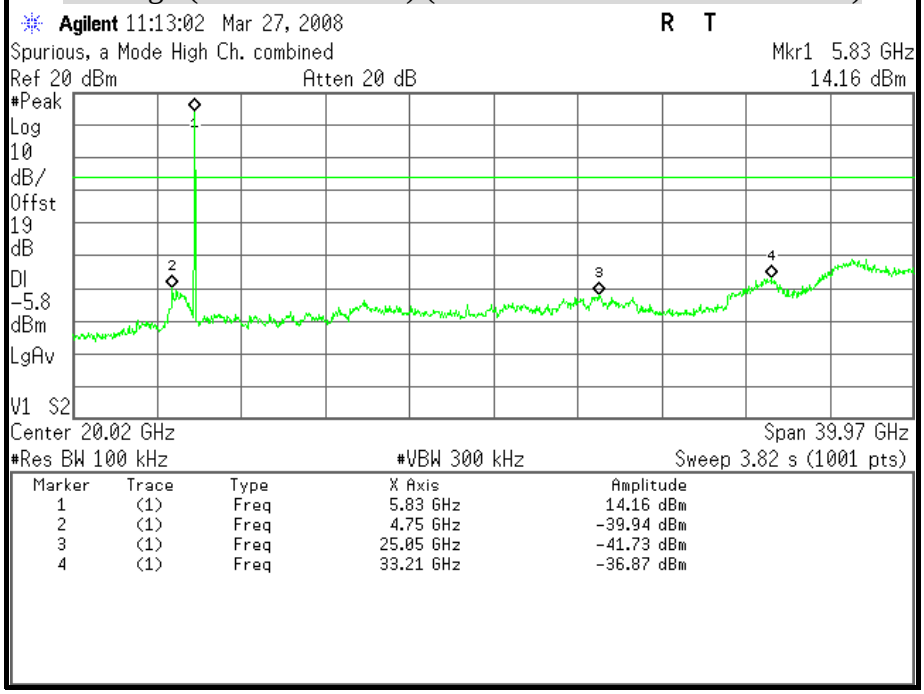
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.75 GHz	13.72 dBm
2	(1)	Freq	4.75 GHz	-42.97 dBm
3	(1)	Freq	7.66 GHz	-44.10 dBm
4	(1)	Freq	25.09 GHz	-40.59 dBm

CH Middle (30MHz~40GHz) (IEEE 802.11a Combined mode)



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.78 GHz	13.62 dBm
2	(1)	Freq	5.07 GHz	-40.67 dBm
3	(1)	Freq	7.70 GHz	-43.64 dBm
4	(1)	Freq	17.34 GHz	-41.61 dBm

CH High (30MHz~40GHz) (IEEE 802.11a Combined mode)

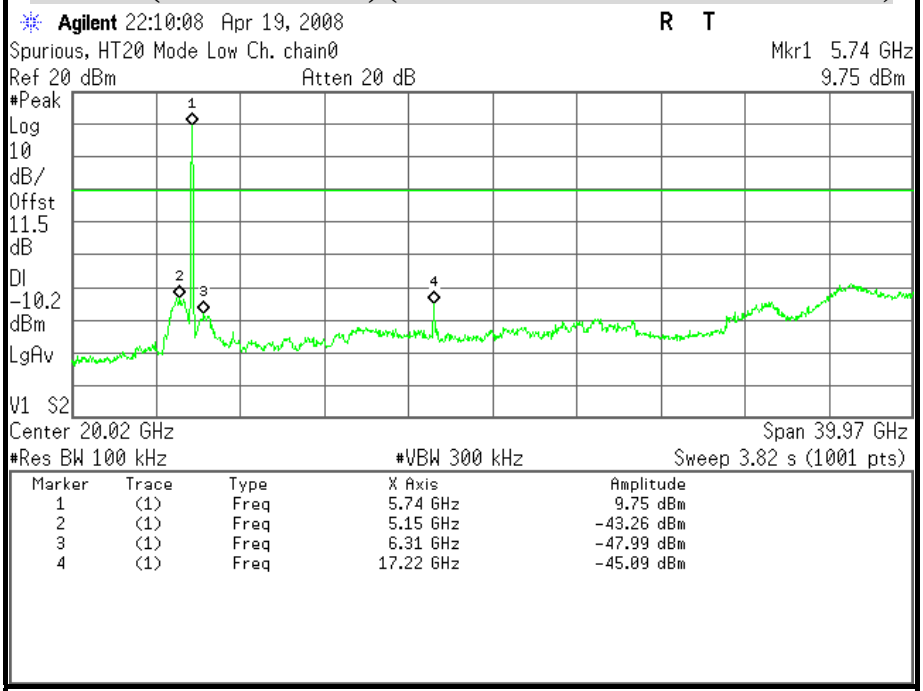


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.83 GHz	14.16 dBm
2	(1)	Freq	4.75 GHz	-39.94 dBm
3	(1)	Freq	25.05 GHz	-41.73 dBm
4	(1)	Freq	33.21 GHz	-36.87 dBm

OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

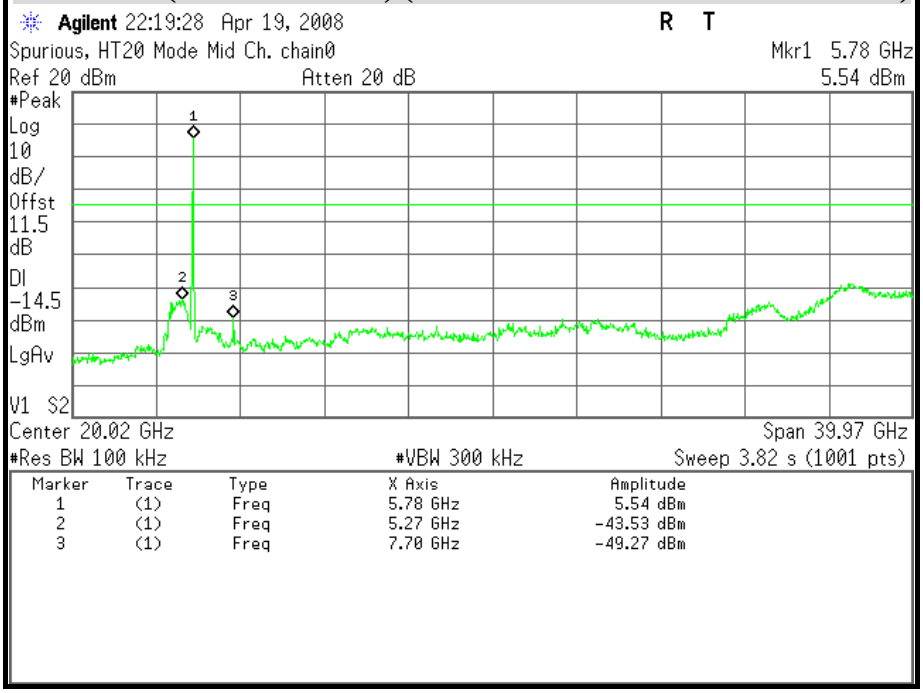
(IEEE 802.11n HT20 mode)

CH Low (30MHz~40GHz) (IEEE 802.11n HT20 mode - Chain 0)



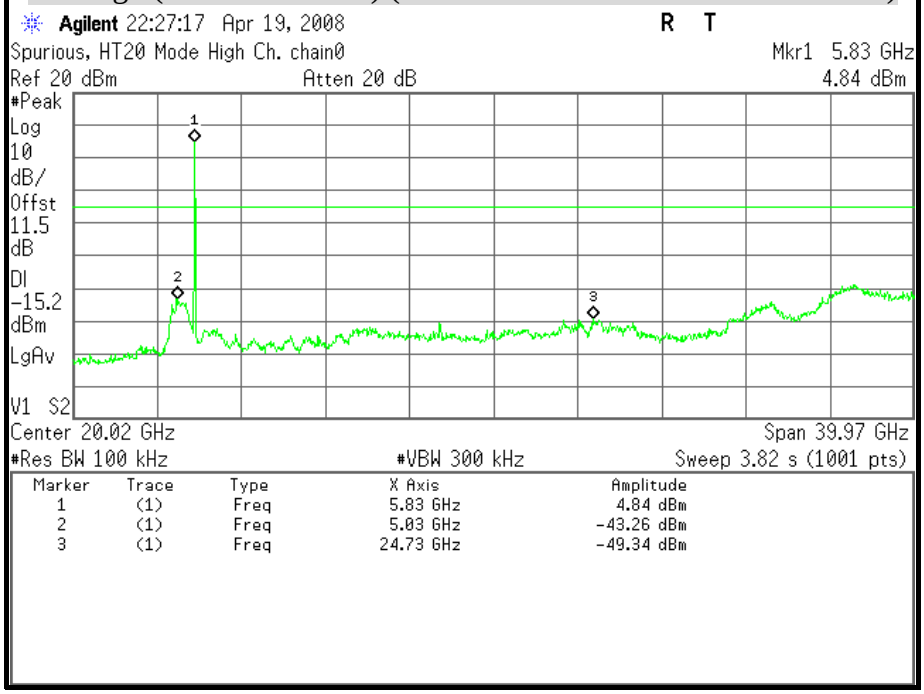
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.74 GHz	9.75 dBm
2	(1)	Freq	5.15 GHz	-43.26 dBm
3	(1)	Freq	6.31 GHz	-47.99 dBm
4	(1)	Freq	17.22 GHz	-45.09 dBm

CH Middle (30MHz~26GHz) (IEEE 802.11n HT20 mode - Chain 0)

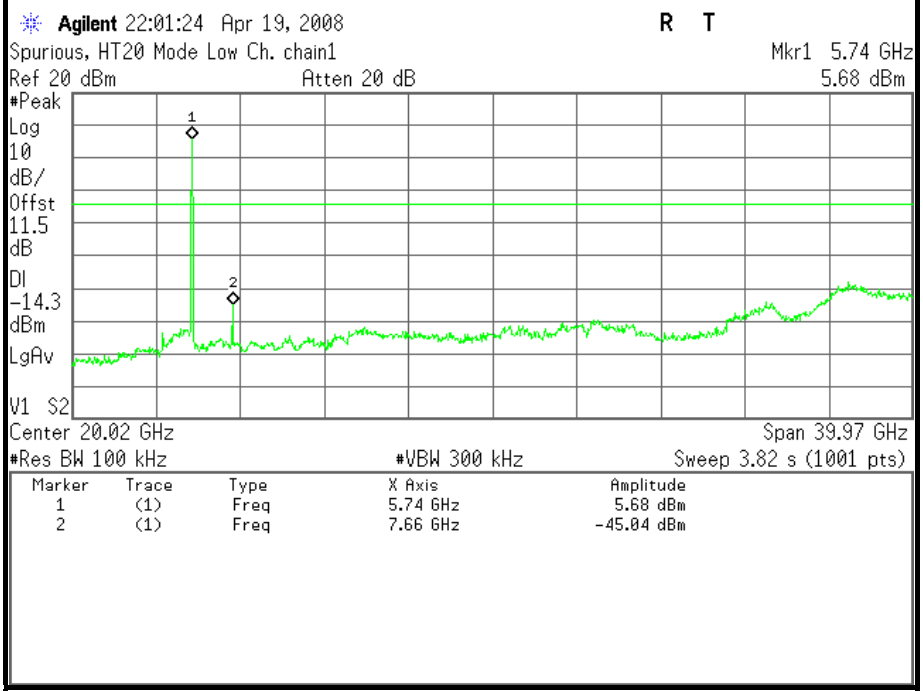


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.78 GHz	5.54 dBm
2	(1)	Freq	5.27 GHz	-43.53 dBm
3	(1)	Freq	7.70 GHz	-49.27 dBm

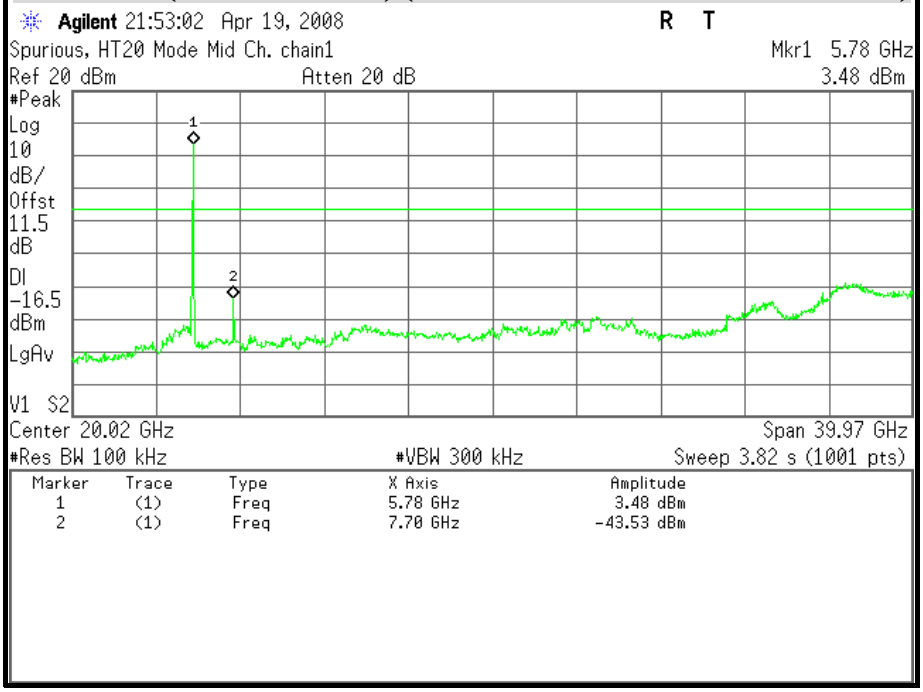
CH High (30MHz~40GHz) (IEEE 802.11n HT20 mode - Chain 0)



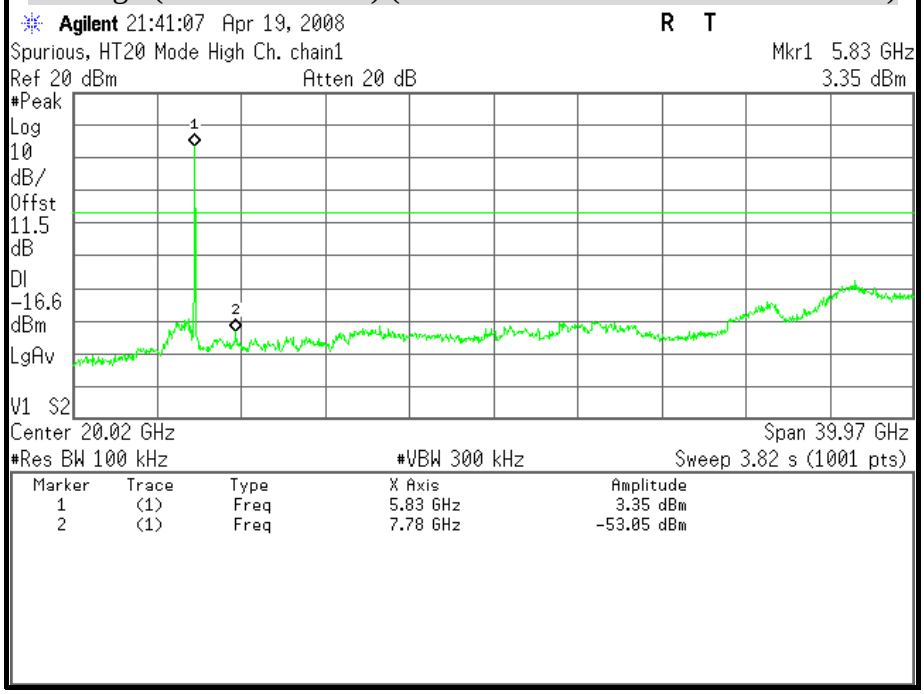
CH Low (30MHz~40GHz) (IEEE 802.11n HT20 mode - Chain 1)



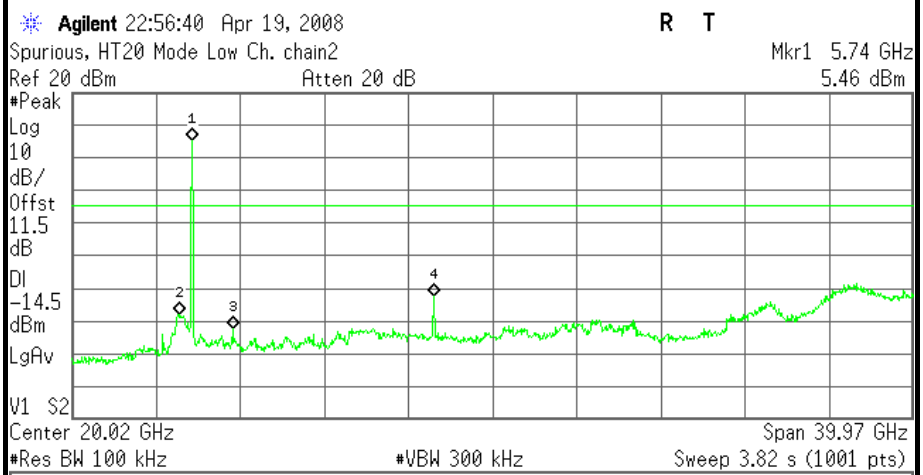
CH Middle (30MHz~40GHz) (IEEE 802.11n HT20 mode - Chain 1)



CH High (30MHz~40GHz) (IEEE 802.11n HT20 mode - Chain 1)

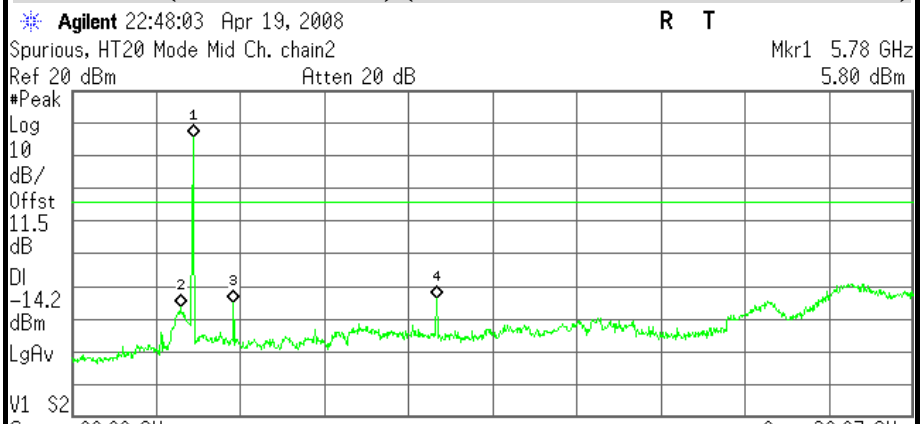


CH Low (30MHz~40GHz) (IEEE 802.11n HT20 mode - Chain 2)



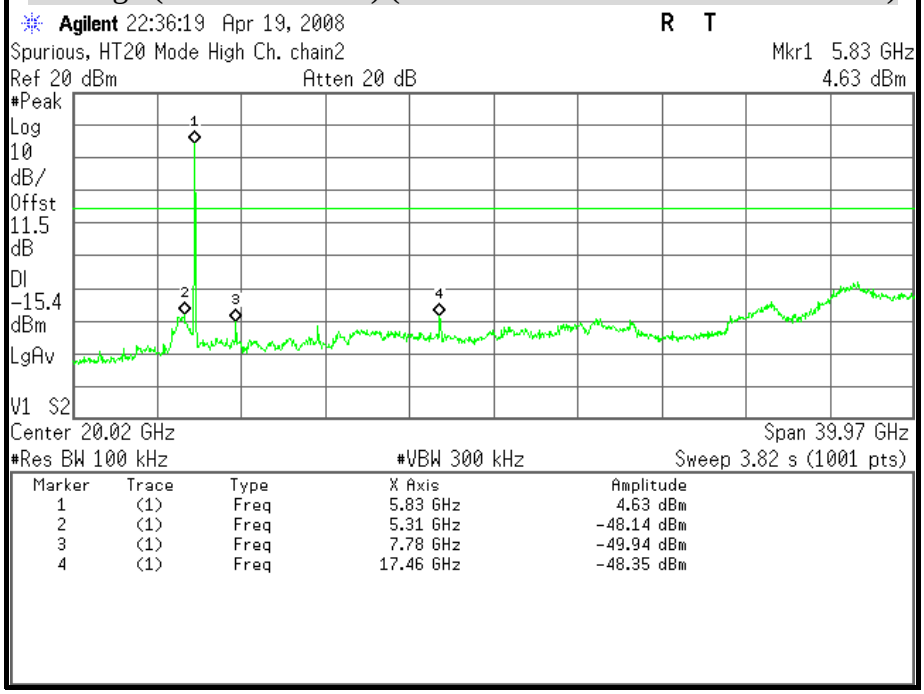
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.74 GHz	5.46 dBm
2	(1)	Freq	5.11 GHz	-47.93 dBm
3	(1)	Freq	7.66 GHz	-52.31 dBm
4	(1)	Freq	17.22 GHz	-42.16 dBm

CH Middle (30MHz~40GHz) (IEEE 802.11n HT20 mode - Chain 2)



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.78 GHz	5.80 dBm
2	(1)	Freq	5.19 GHz	-46.09 dBm
3	(1)	Freq	7.70 GHz	-44.76 dBm
4	(1)	Freq	17.34 GHz	-43.47 dBm

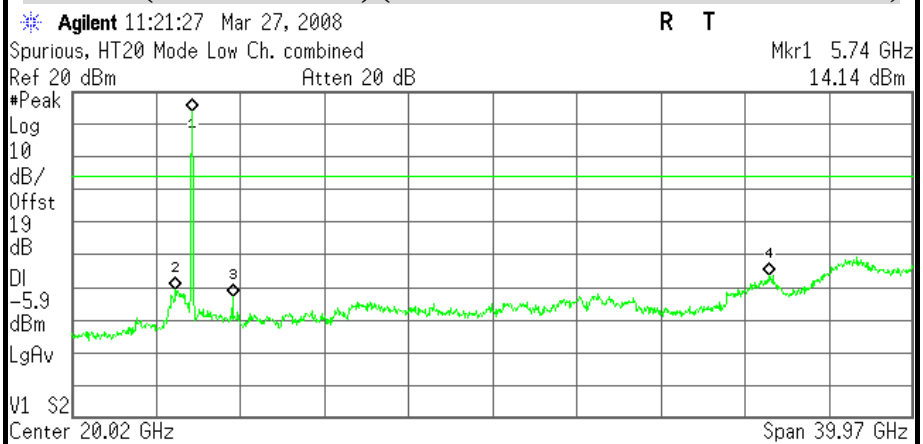
CH High (30MHz~40GHz) (IEEE 802.11n HT20 mode - Chain 2)



OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

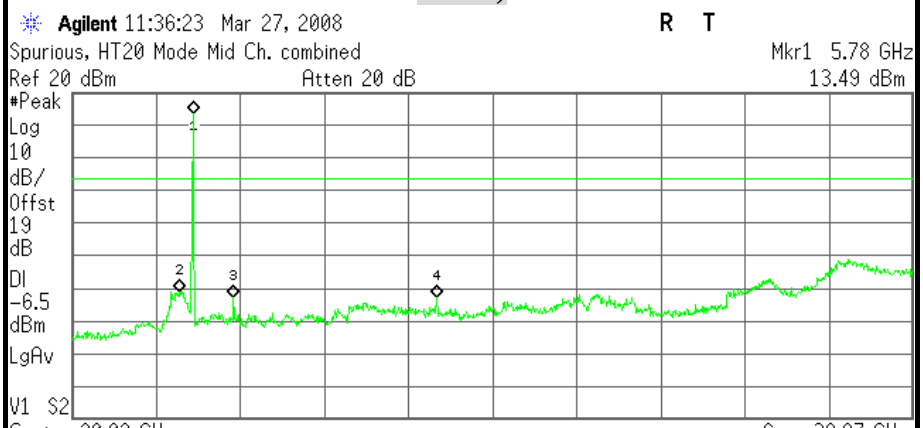
(IEEE 802.11n HT20 Combined mode)

CH Low (30MHz~40GHz) (IEEE 802.11n HT20 Combined mode)



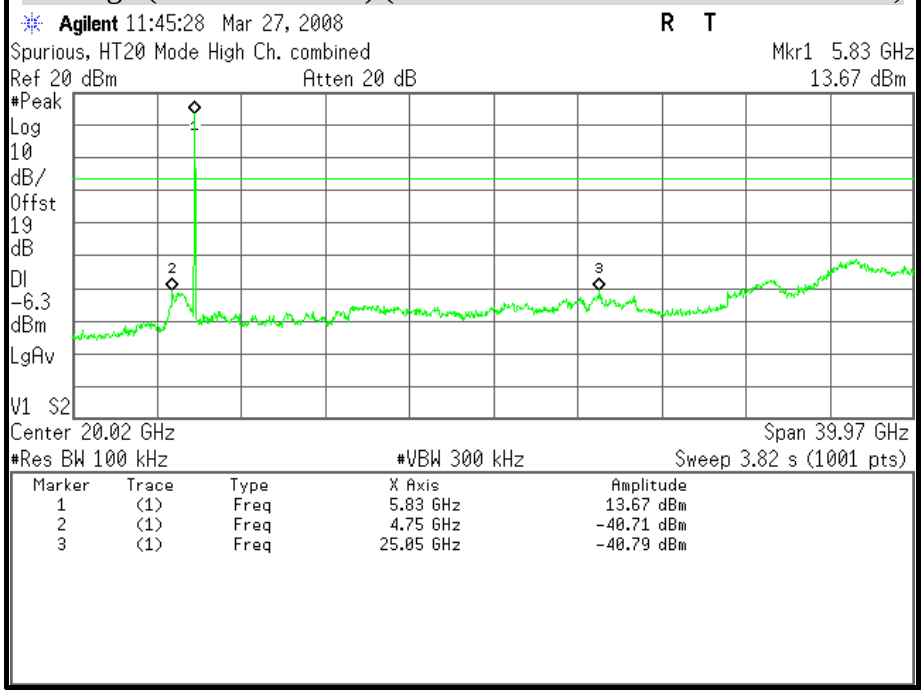
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.74 GHz	14.14 dBm
2	(1)	Freq	4.95 GHz	-40.81 dBm
3	(1)	Freq	7.66 GHz	-42.61 dBm
4	(1)	Freq	33.13 GHz	-36.14 dBm

CH Middle (30MHz~40GHz) (IEEE 802.11n HT20 Combined mode)



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.78 GHz	13.49 dBm
2	(1)	Freq	5.11 GHz	-41.01 dBm
3	(1)	Freq	7.70 GHz	-42.95 dBm
4	(1)	Freq	17.34 GHz	-42.77 dBm

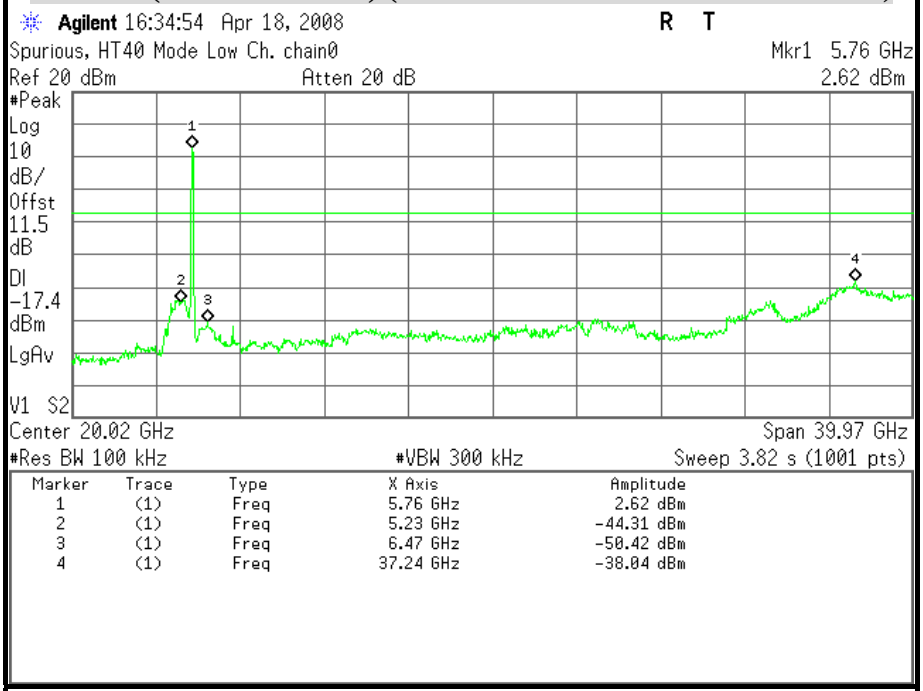
CH High (30MHz~40GHz) (IEEE 802.11n HT20 Combined mode)



OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

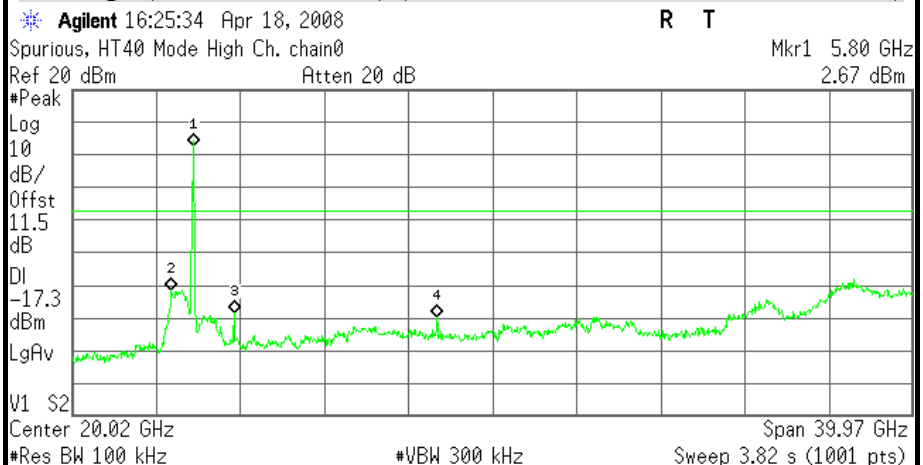
(IEEE 802.11n HT40 mode)

CH Low (30MHz~40GHz) (IEEE 802.11n HT40 mode - Chain 0)



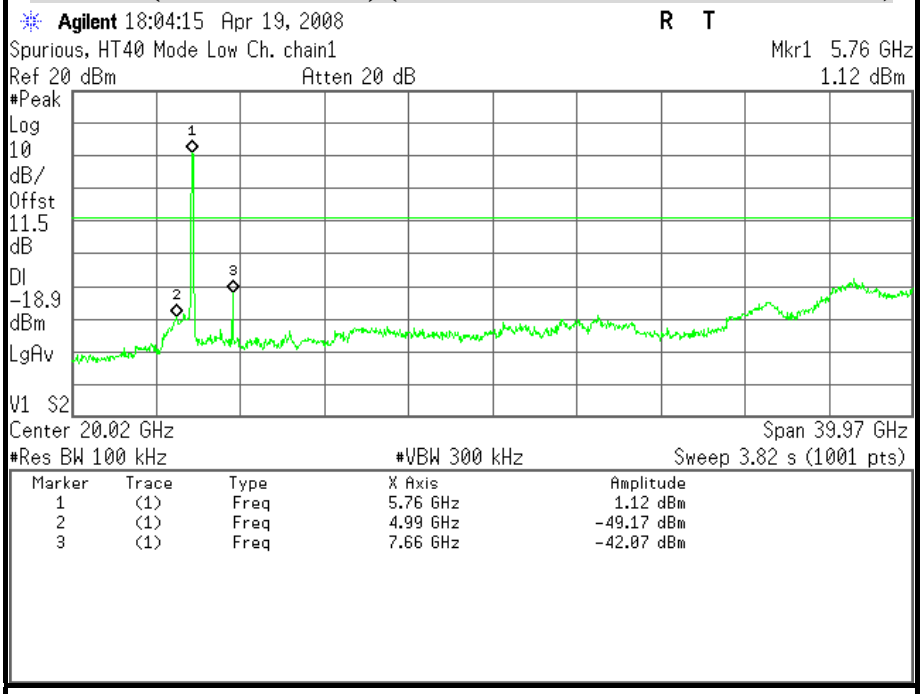
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.76 GHz	2.62 dBm
2	(1)	Freq	5.23 GHz	-44.31 dBm
3	(1)	Freq	6.47 GHz	-50.42 dBm
4	(1)	Freq	37.24 GHz	-38.04 dBm

CH High (30MHz~406GHz) (IEEE 802.11n HT40 mode - Chain 0)

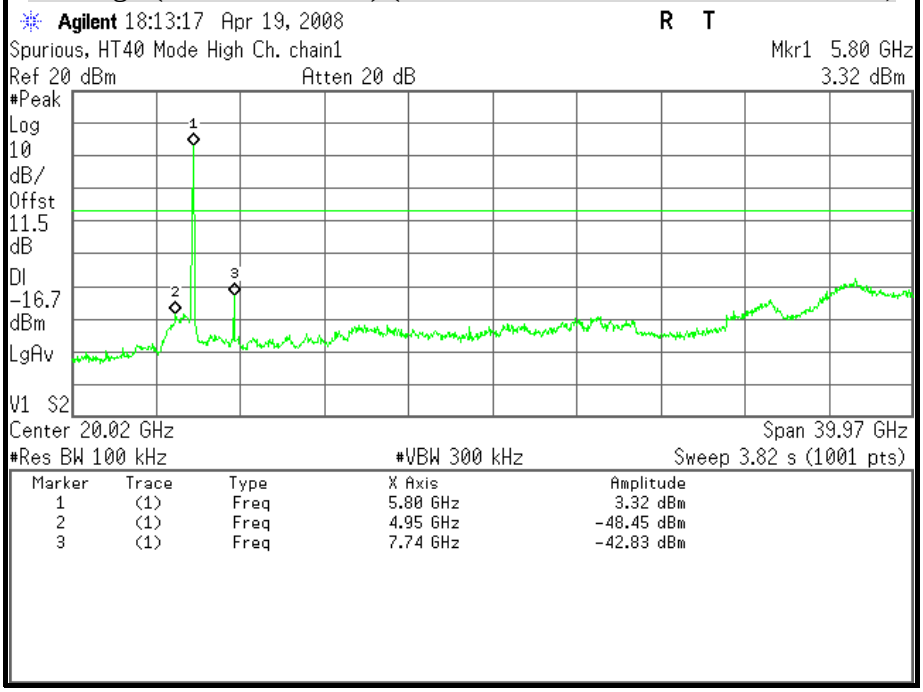


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.80 GHz	2.67 dBm
2	(1)	Freq	4.75 GHz	-41.55 dBm
3	(1)	Freq	7.74 GHz	-48.36 dBm
4	(1)	Freq	17.38 GHz	-49.60 dBm

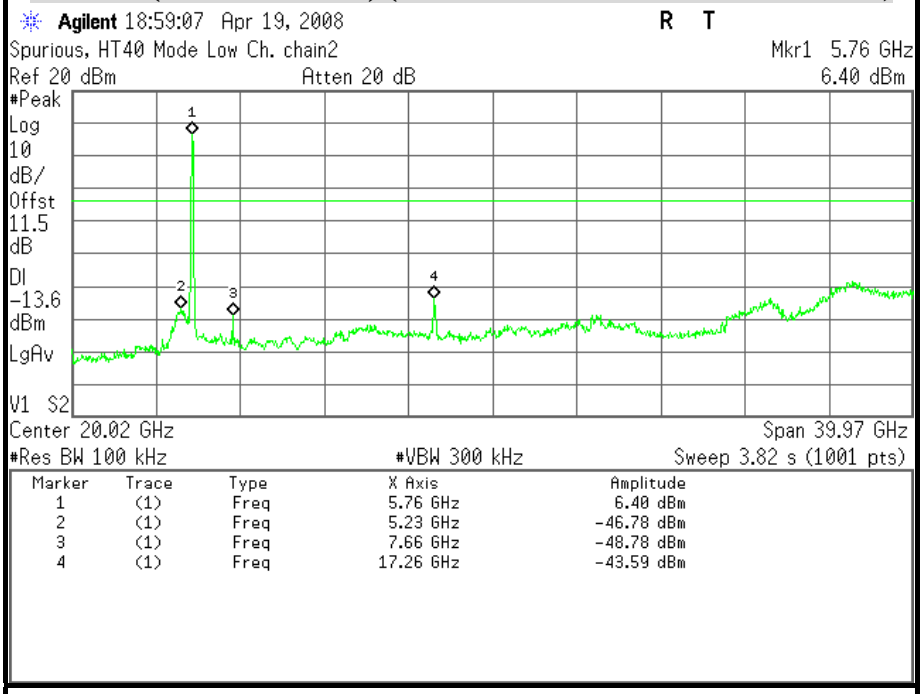
CH Low (30MHz~40GHz) (IEEE 802.11n HT40 mode - Chain 1)



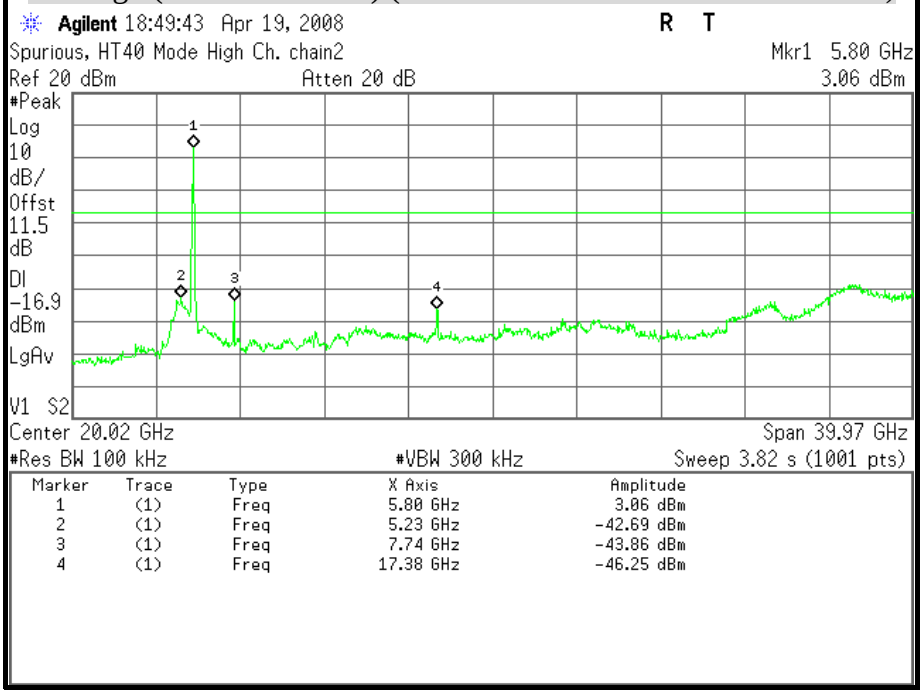
CH High (30MHz~40GHz) (IEEE 802.11n HT40 mode - Chain 1)



CH Low (30MHz~40GHz) (IEEE 802.11n HT40 mode - Chain 2)



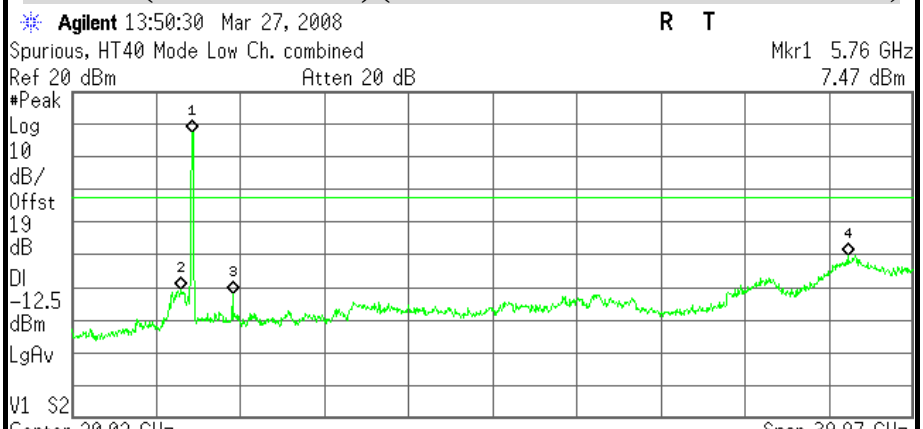
CH High (30MHz~40GHz) (IEEE 802.11n HT40 mode - Chain 2)



OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

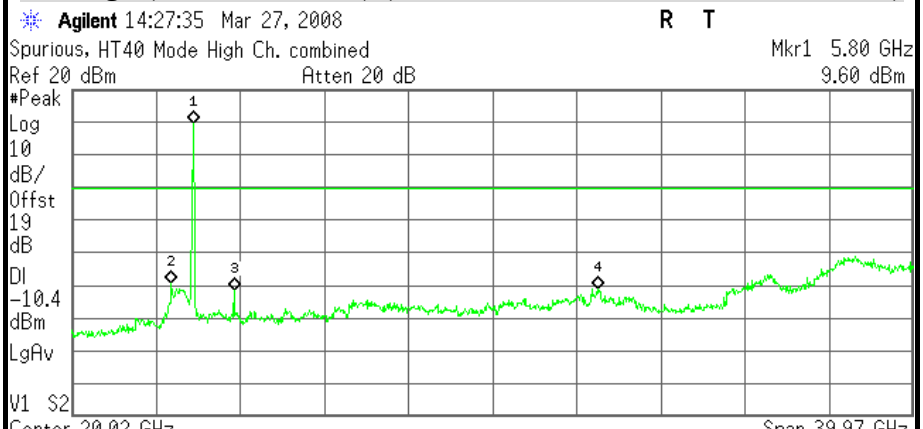
(IEEE 802.11n HT40 Combined mode)

CH Low (30MHz~40GHz) (IEEE 802.11n HT40 Combined mode)



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.76 GHz	7.47 dBm
2	(1)	Freq	5.23 GHz	-40.70 dBm
3	(1)	Freq	7.66 GHz	-41.72 dBm
4	(1)	Freq	36.88 GHz	-30.08 dBm

CH High (30MHz~40GHz) (IEEE 802.11n HT40 Combined mode)

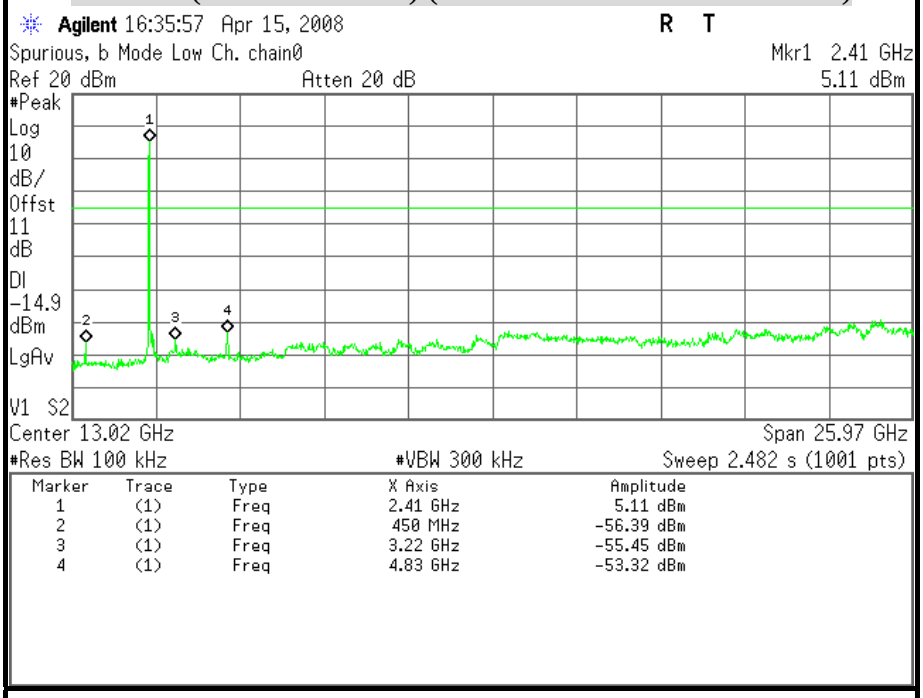


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.80 GHz	9.60 dBm
2	(1)	Freq	4.75 GHz	-39.43 dBm
3	(1)	Freq	7.74 GHz	-41.55 dBm
4	(1)	Freq	25.01 GHz	-40.83 dBm

OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

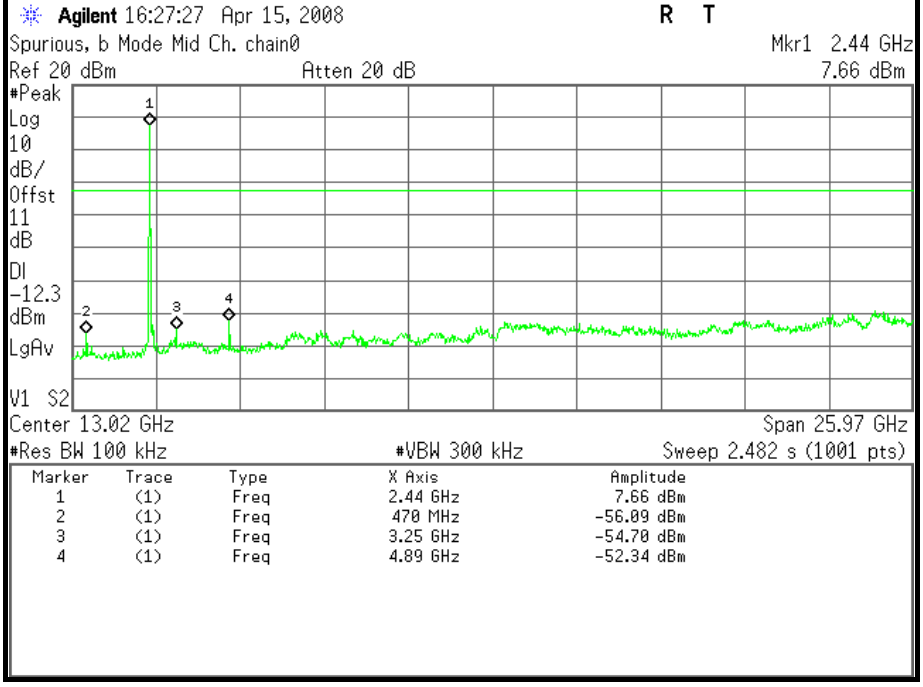
(IEEE 802.11b mode)

CH Low (30MHz~26GHz) (IEEE 802.11b mode - Chain 0)



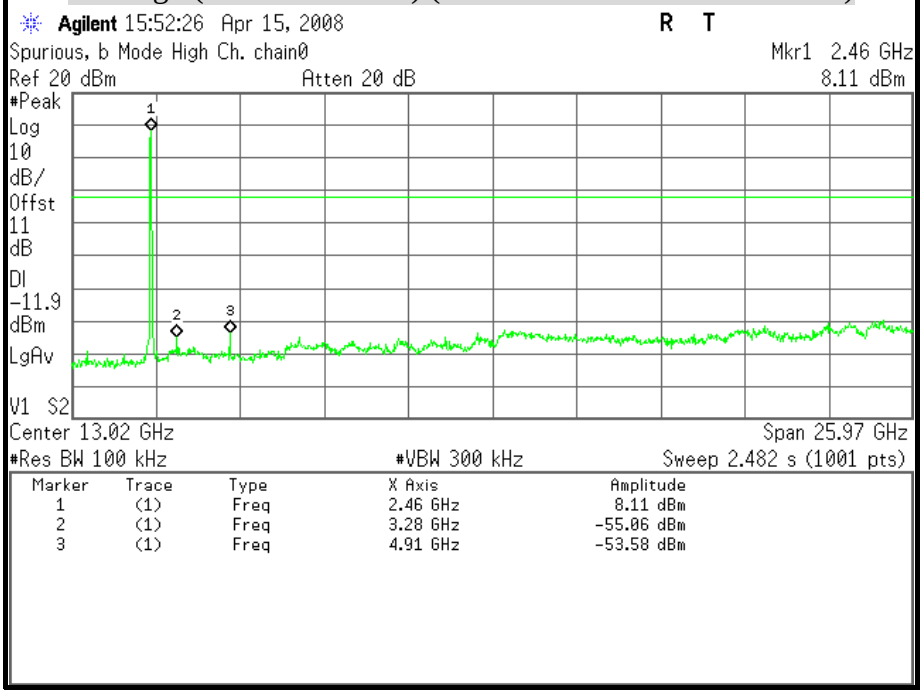
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.41 GHz	5.11 dBm
2	(1)	Freq	450 MHz	-56.39 dBm
3	(1)	Freq	3.22 GHz	-55.45 dBm
4	(1)	Freq	4.83 GHz	-53.32 dBm

CH Middle (30MHz~26GHz) (IEEE 802.11b mode - Chain 0)

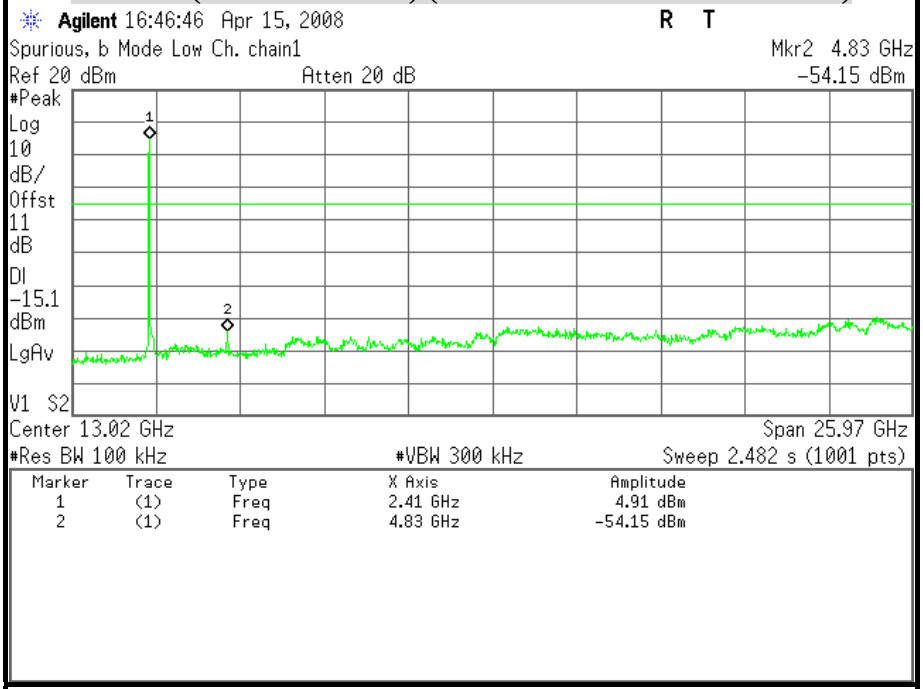


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.44 GHz	7.66 dBm
2	(1)	Freq	470 MHz	-56.09 dBm
3	(1)	Freq	3.25 GHz	-54.70 dBm
4	(1)	Freq	4.89 GHz	-52.34 dBm

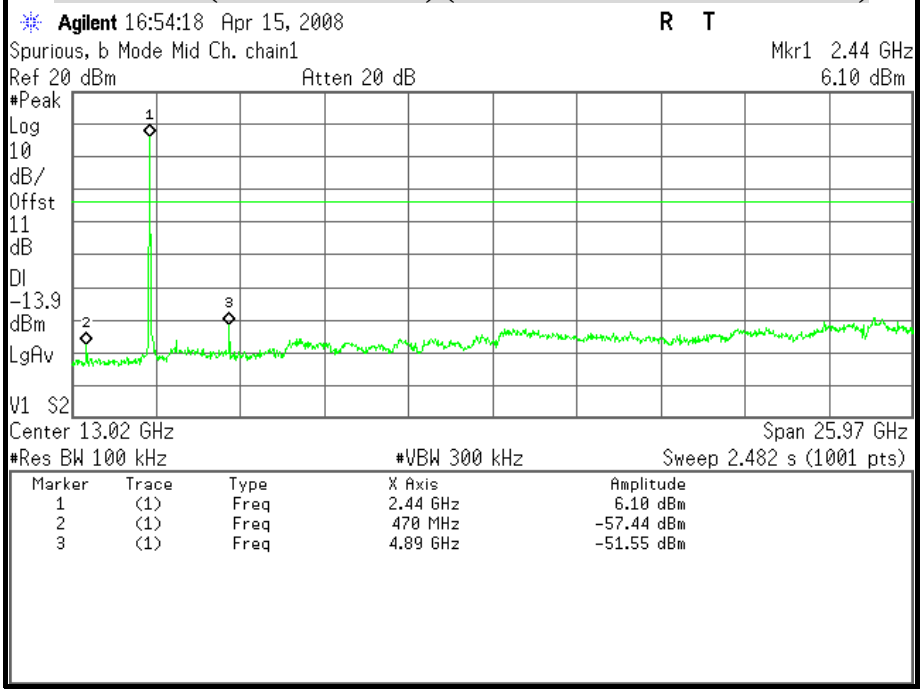
CH High (30MHz~26GHz) (IEEE 802.11b mode - Chain 0)



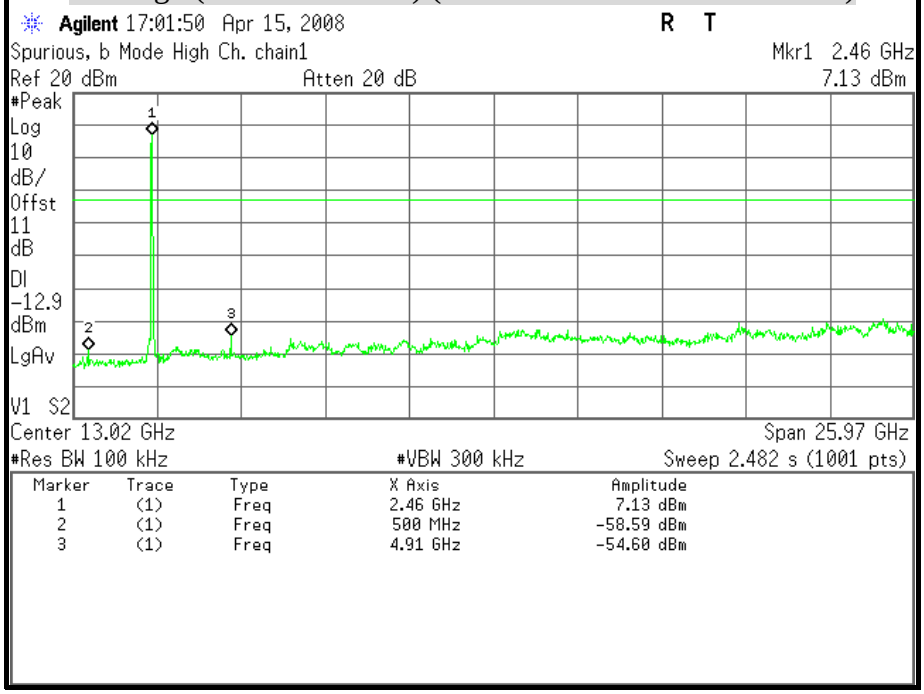
CH Low (30MHz~26GHz) (IEEE 802.11b mode - Chain 1)



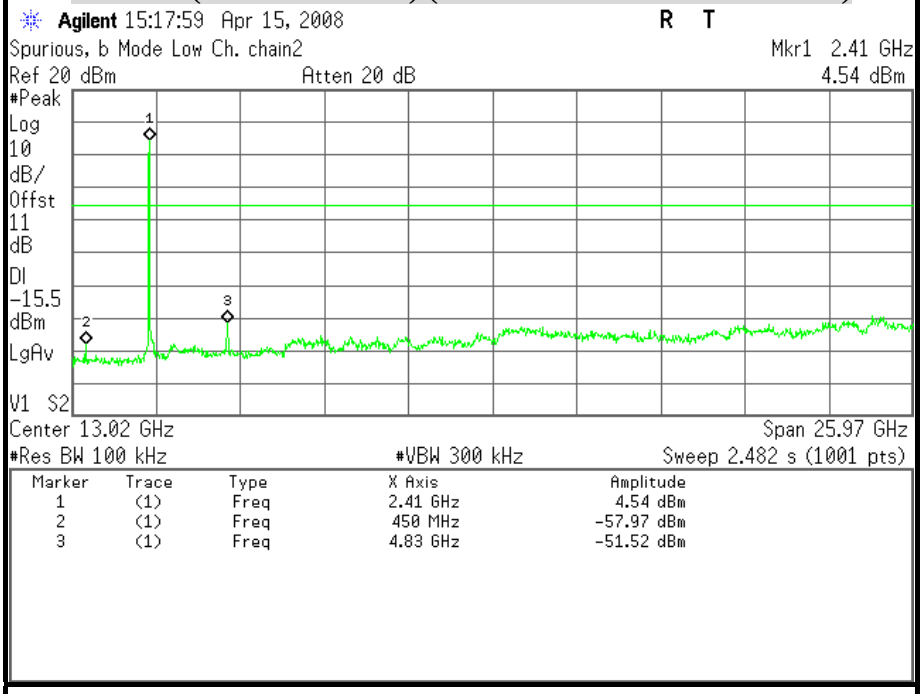
CH Middle (30MHz~26GHz) (IEEE 802.11b mode - Chain 1)



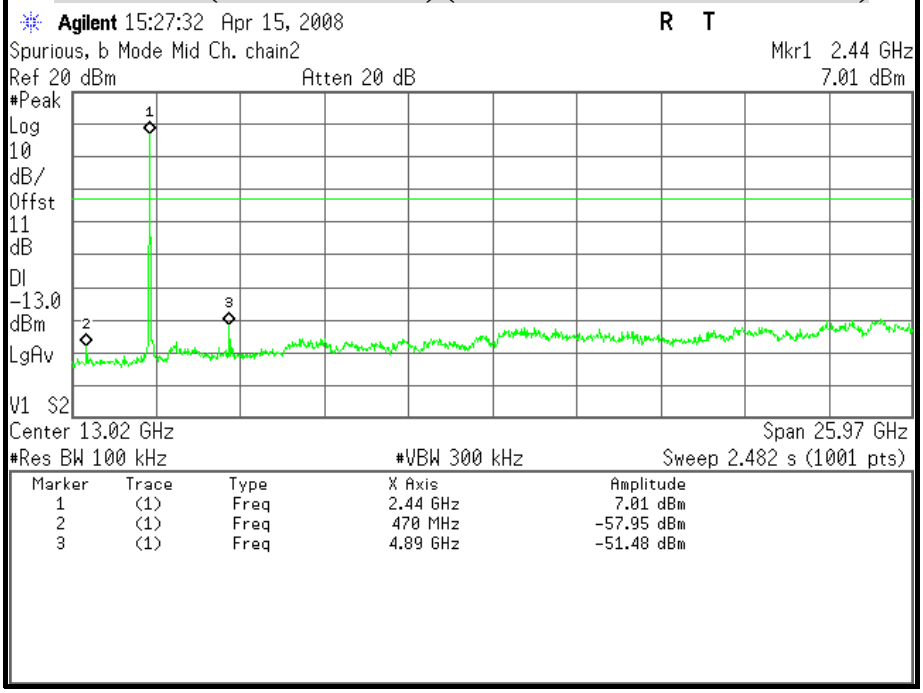
CH High (30MHz~26GHz) (IEEE 802.11b mode - Chain 1)



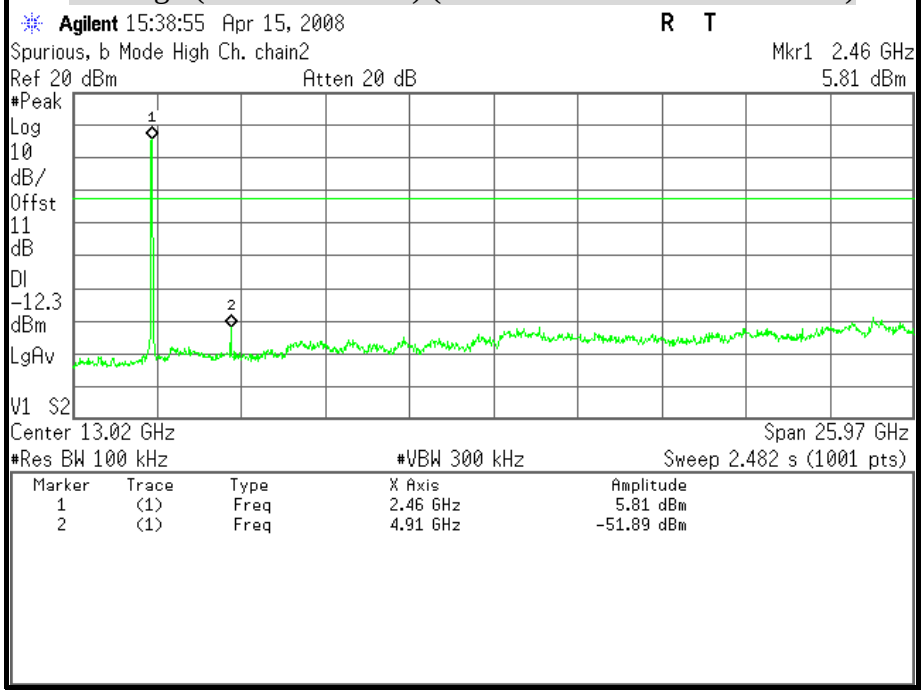
CH Low (30MHz~26GHz) (IEEE 802.11b mode - Chain 2)



CH Middle (30MHz~26GHz) (IEEE 802.11b mode - Chain 2)



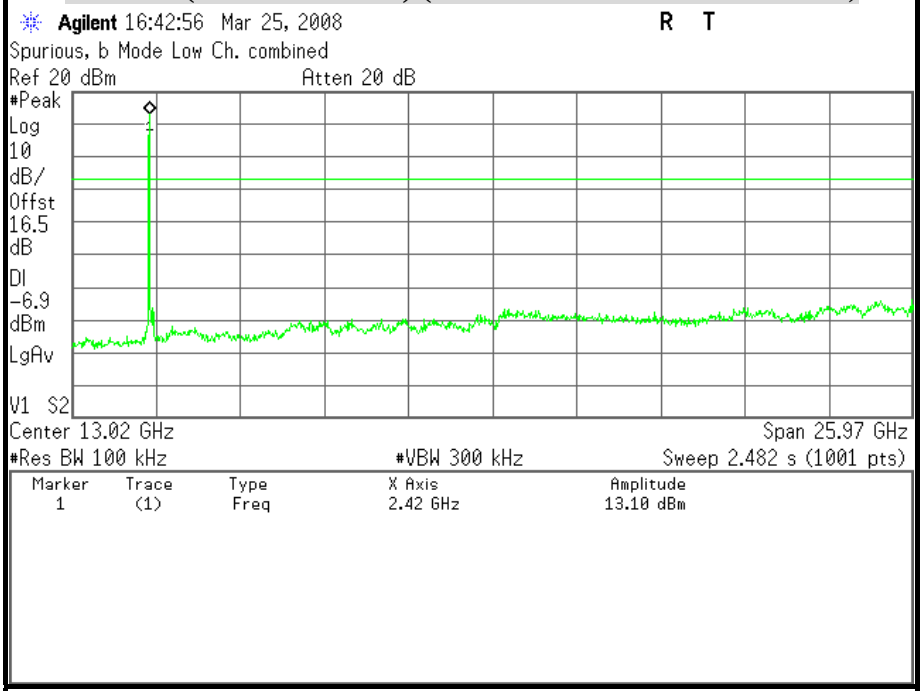
CH High (30MHz~26GHz) (IEEE 802.11b mode - Chain 2)



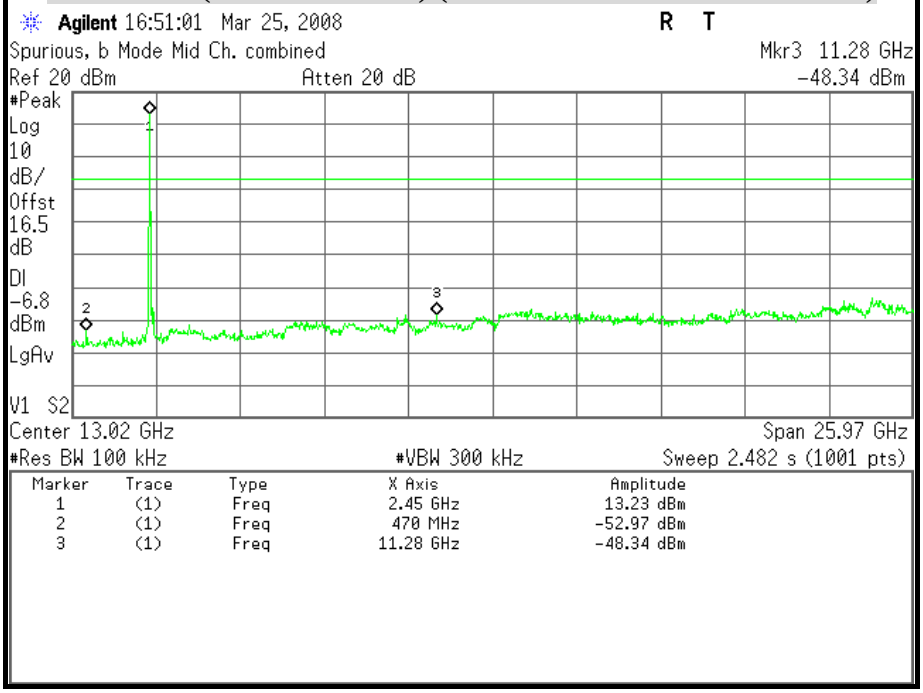
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11b Combined mode)

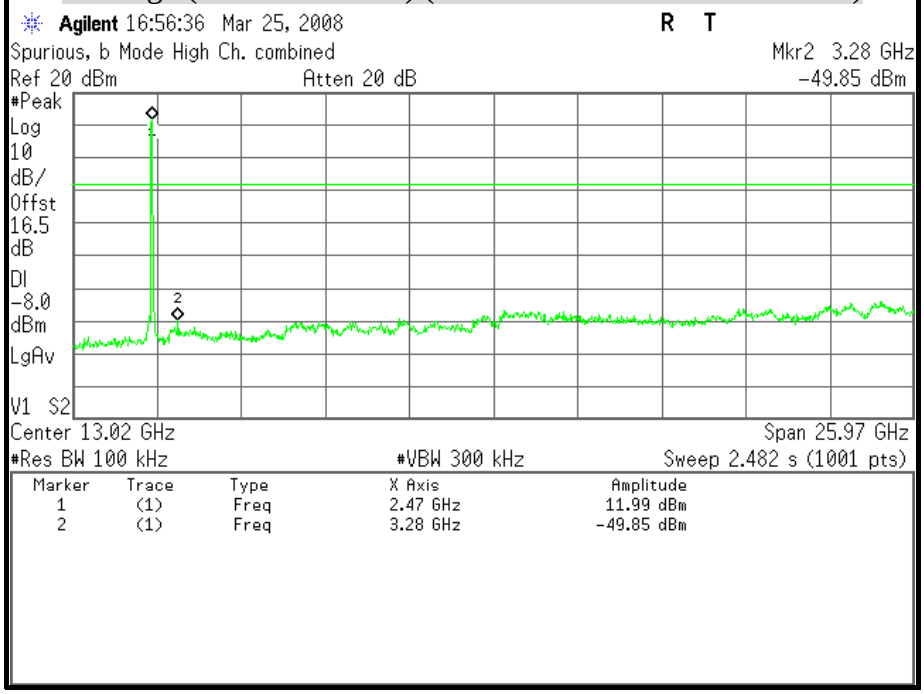
CH Low (30MHz~26GHz) (IEEE 802.11b Combined mode)



CH Middle (30MHz~26GHz) (IEEE 802.11b Combined mode)



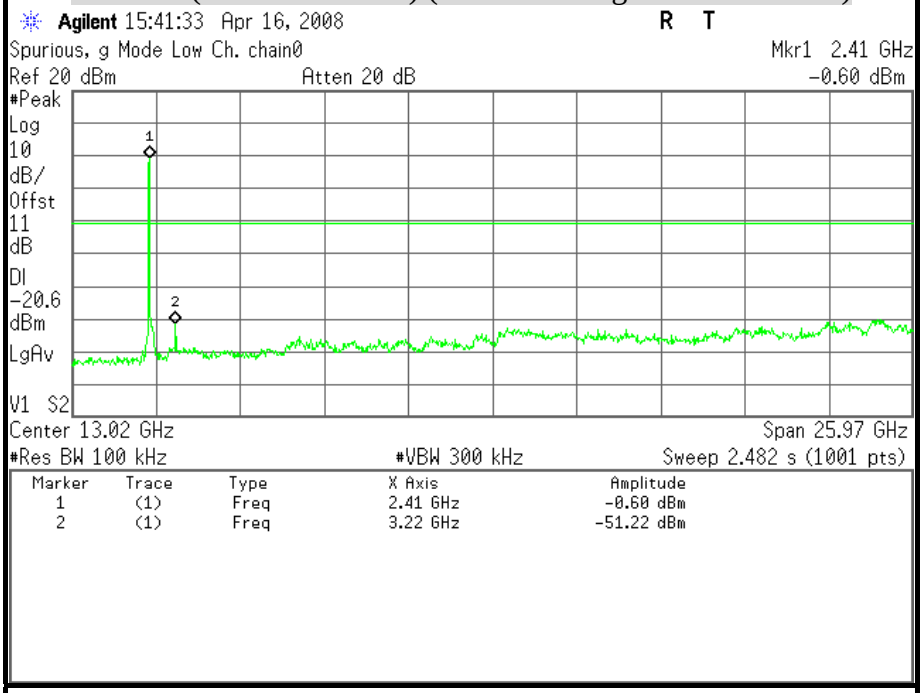
CH High (30MHz~26GHz) (IEEE 802.11b Combined mode)



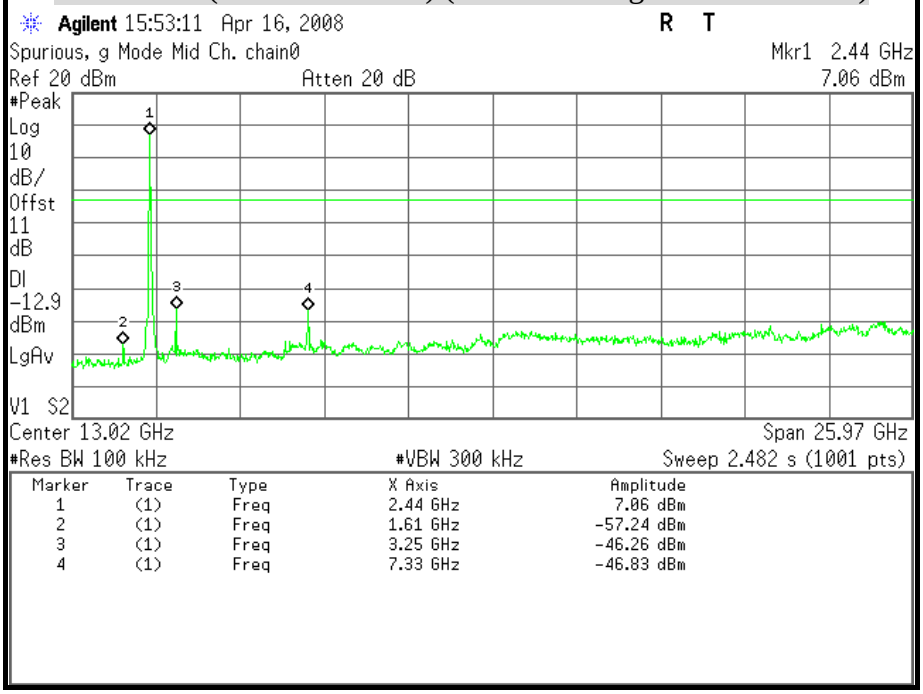
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11g mode)

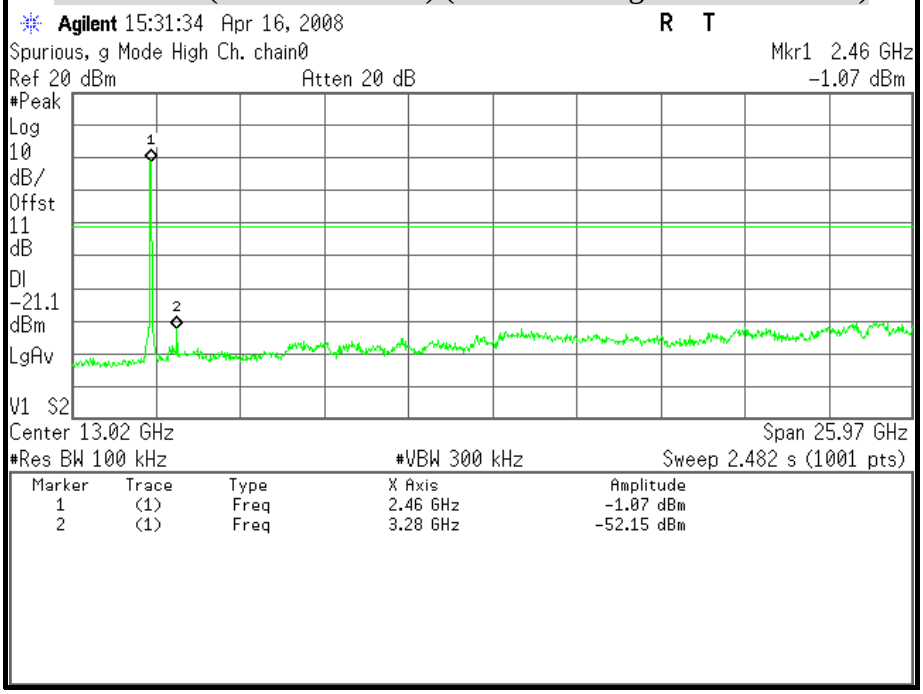
CH Low (30MHz~26GHz) (IEEE 802.11g mode - Chain 0)



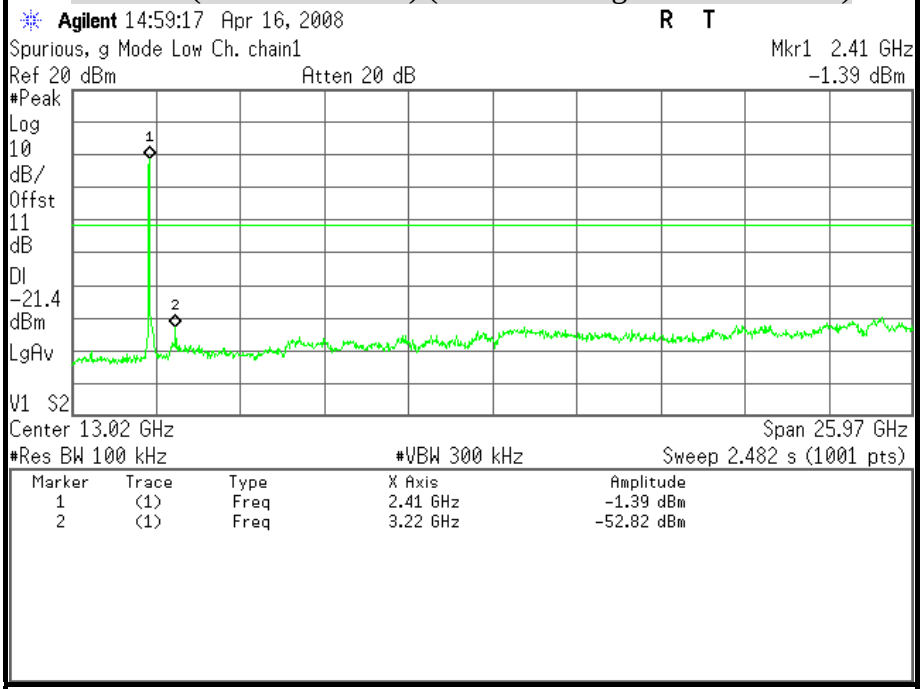
CH Middle (30MHz~26GHz) (IEEE 802.11g mode - Chain 0)



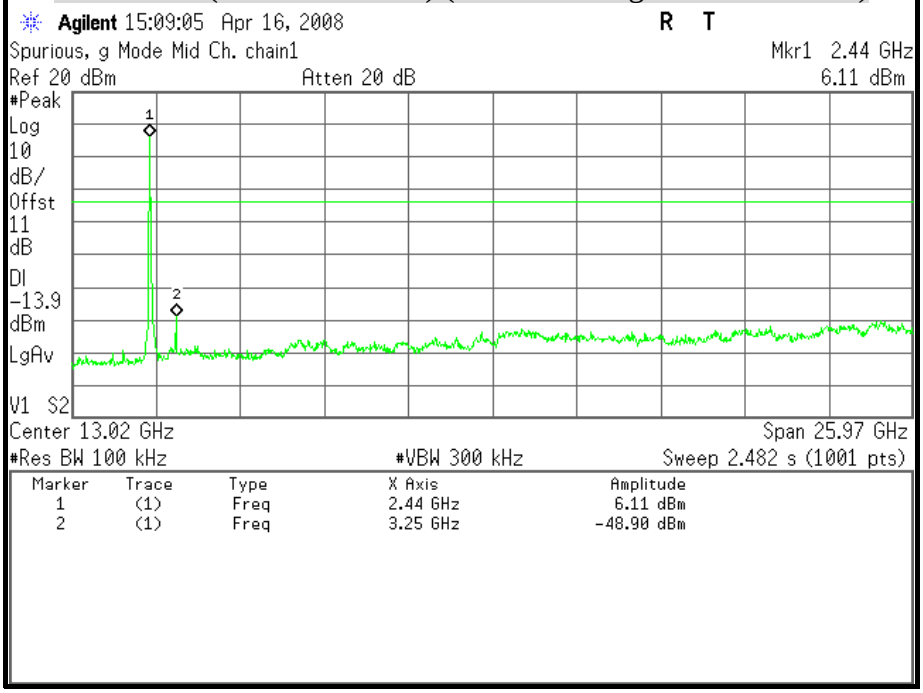
CH Middle (30MHz~26GHz) (IEEE 802.11g mode - Chain 0)



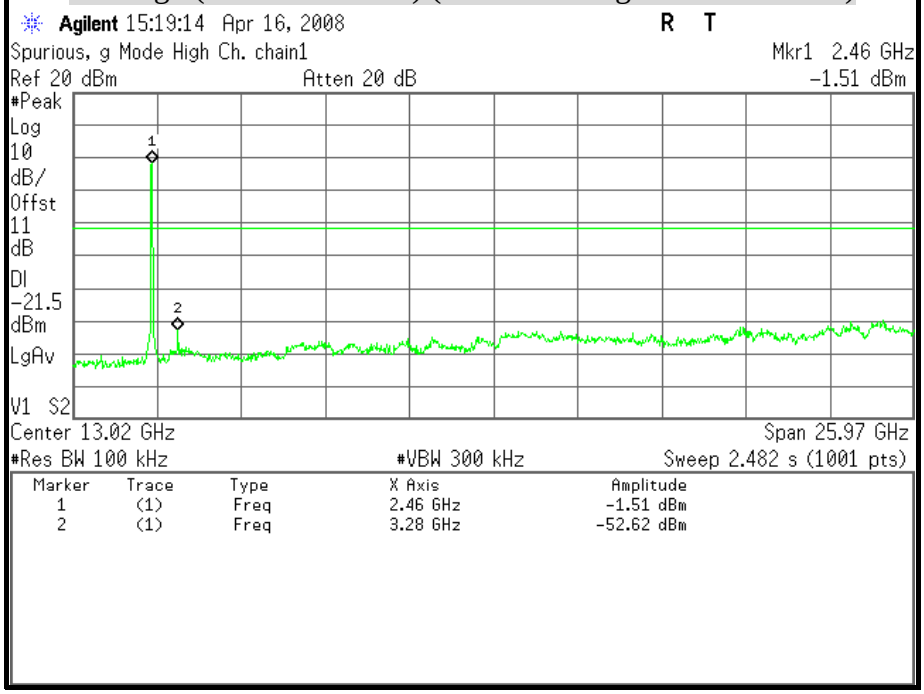
CH Low (30MHz~26GHz) (IEEE 802.11g mode - Chain 1)



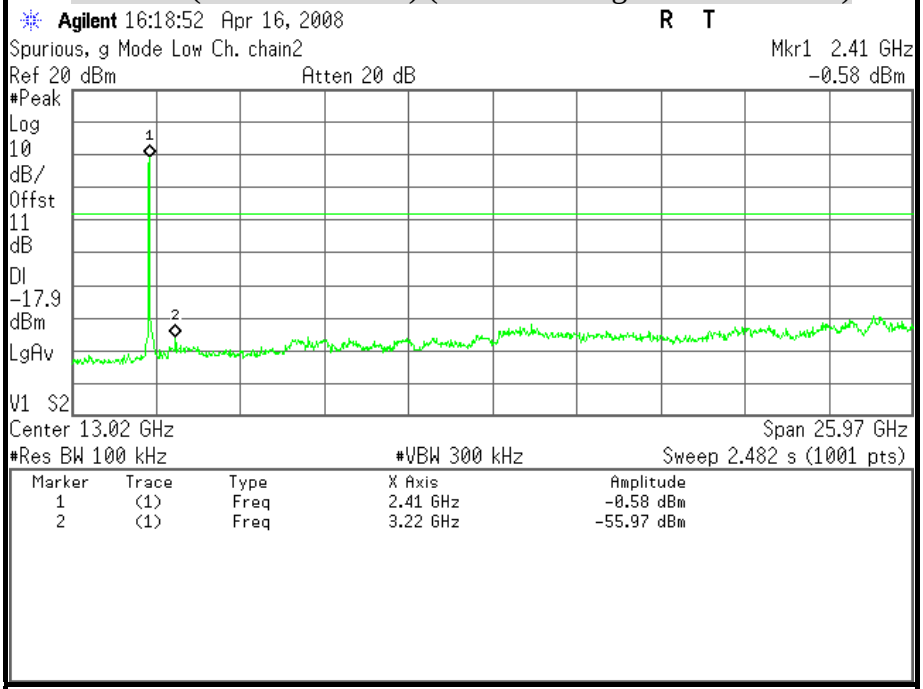
CH Middle (30MHz~26GHz) (IEEE 802.11g mode - Chain 1)



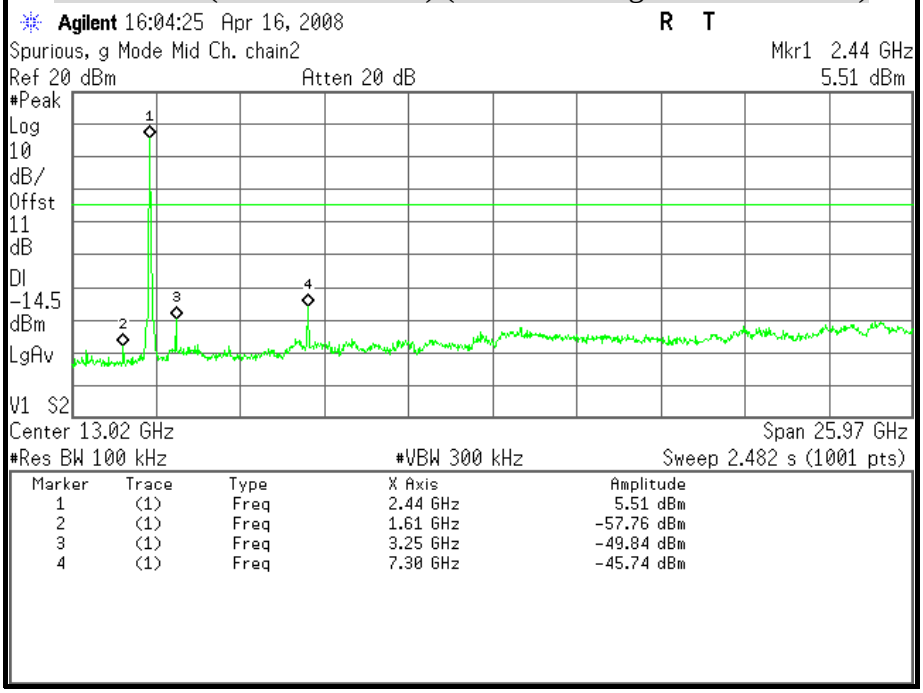
CH High (30MHz~26GHz) (IEEE 802.11g mode - Chain 1)



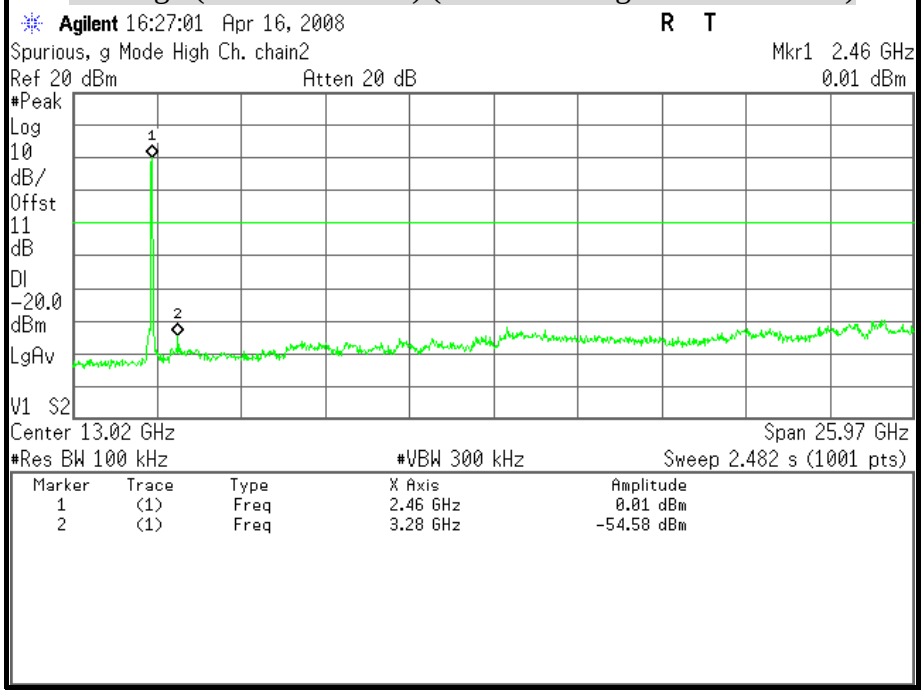
CH Low (30MHz~26GHz) (IEEE 802.11g mode - Chain 2)



CH Middle (30MHz~26GHz) (IEEE 802.11g mode - Chain 2)



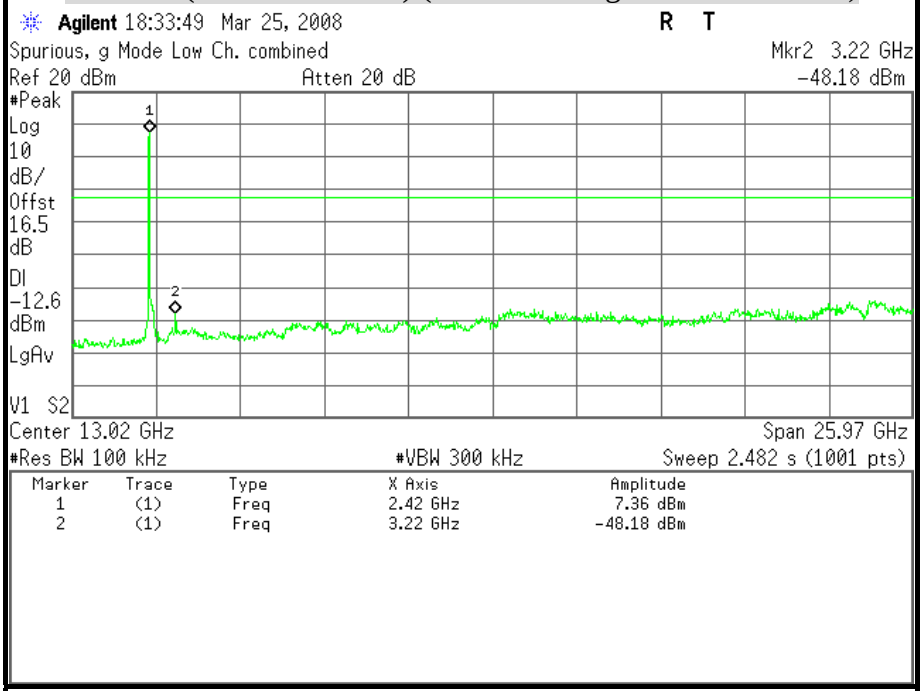
CH High (30MHz~26GHz) (IEEE 802.11g mode - Chain 2)



OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

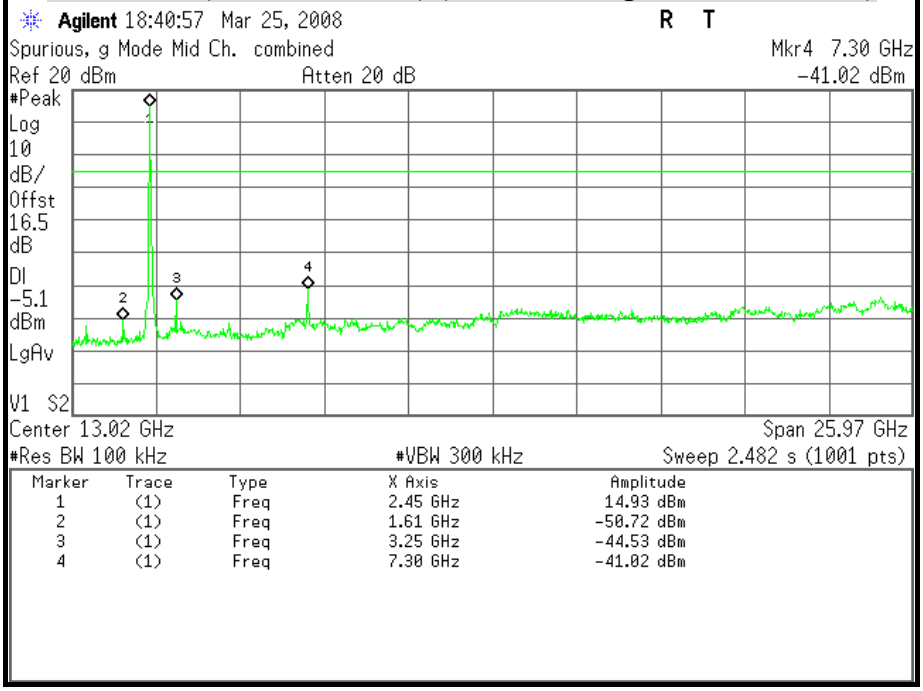
(IEEE 802.11g Combined mode)

CH Low (30MHz~26GHz) (IEEE 802.11g Combined mode)



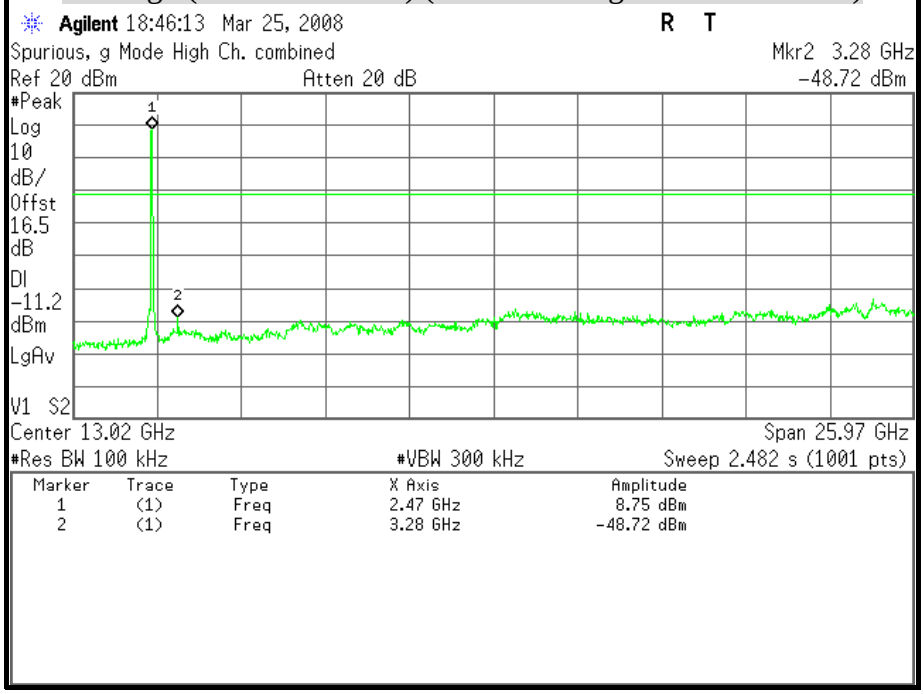
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.42 GHz	7.36 dBm
2	(1)	Freq	3.22 GHz	-48.18 dBm

CH Middle (30MHz~26GHz) (IEEE 802.11g Combined mode)



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.45 GHz	14.93 dBm
2	(1)	Freq	1.61 GHz	-50.72 dBm
3	(1)	Freq	3.25 GHz	-44.53 dBm
4	(1)	Freq	7.30 GHz	-41.02 dBm

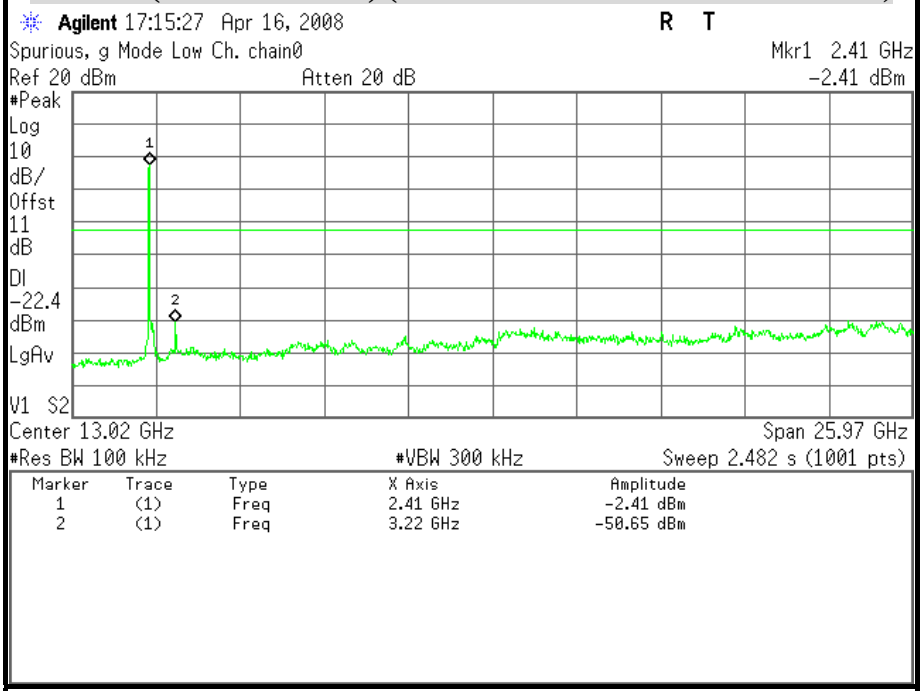
CH High (30MHz~26GHz) (IEEE 802.11g Combined mode)



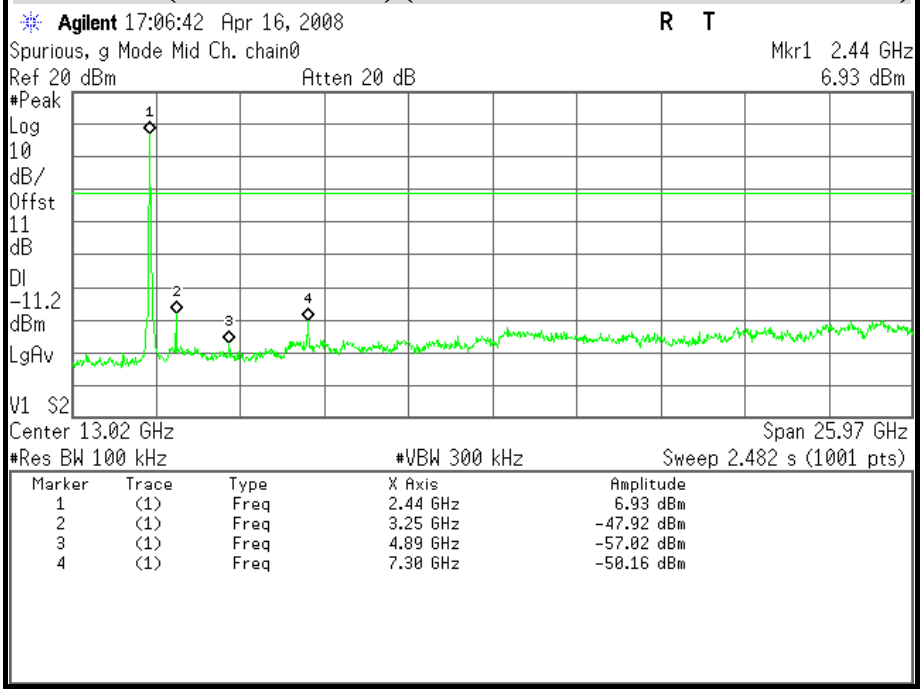
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11n HT20 mode)

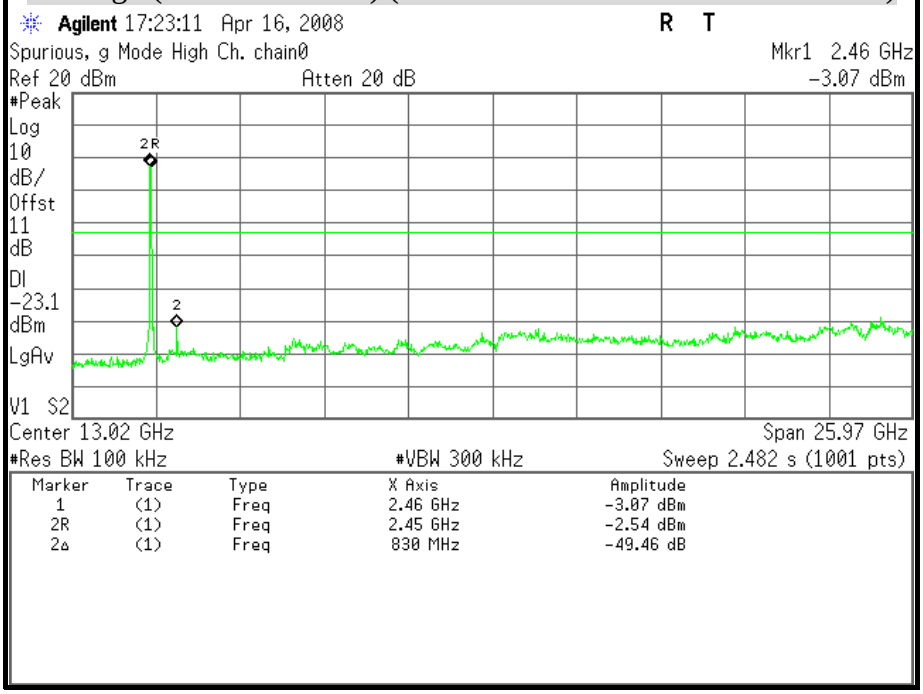
CH Low (30MHz~26GHz) (IEEE 802.11n HT20 mode - Chain 0)



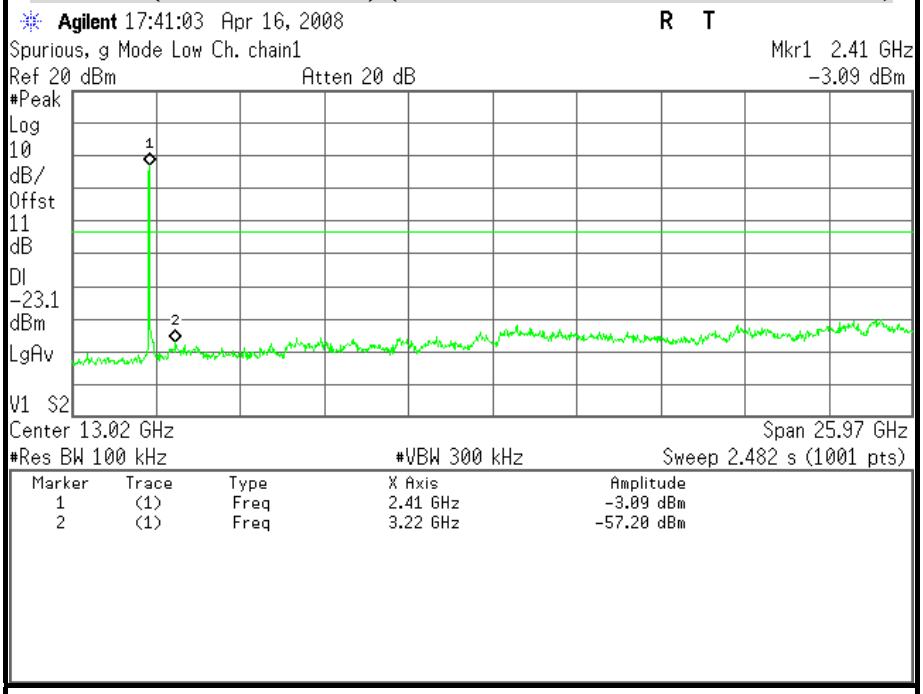
CH Middle (30MHz~26GHz) (IEEE 802.11n HT20 mode - Chain 0)



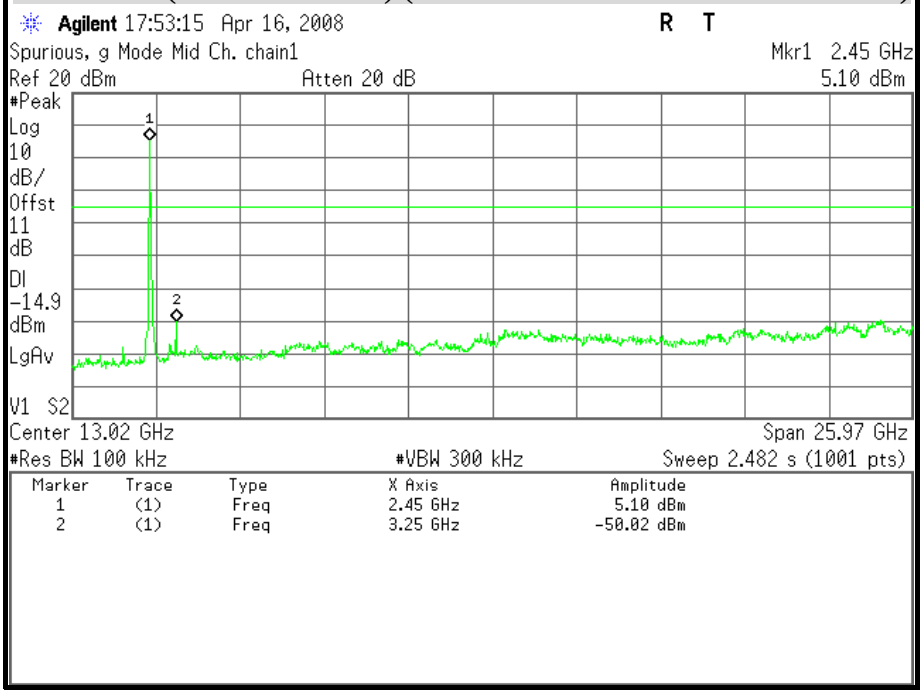
CH High (30MHz~26GHz) (IEEE 802.11n HT20 mode - Chain 0)



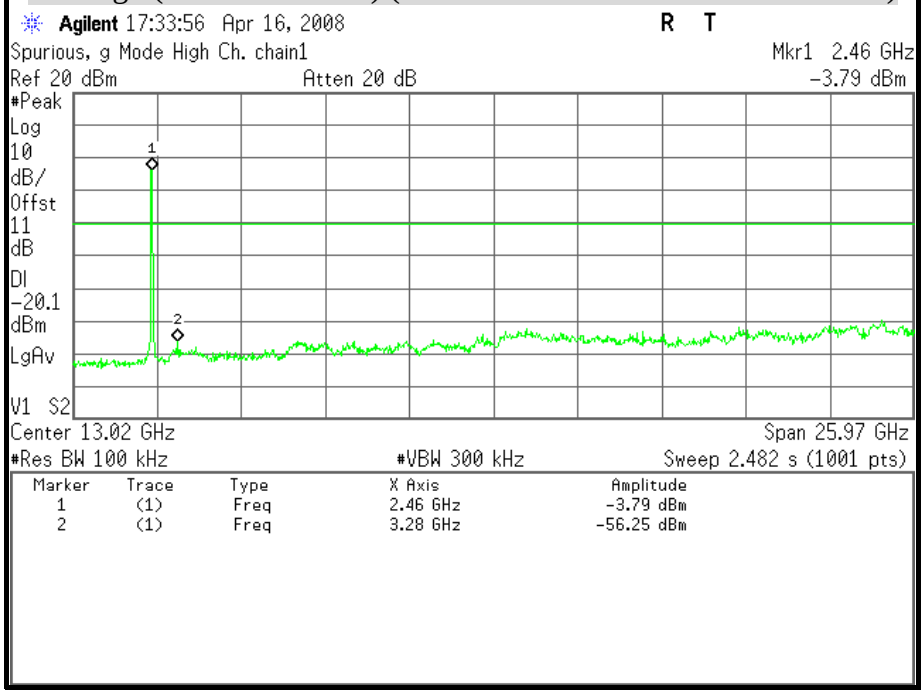
CH Low (30MHz~26GHz) (IEEE 802.11n HT20 mode - Chain 1)



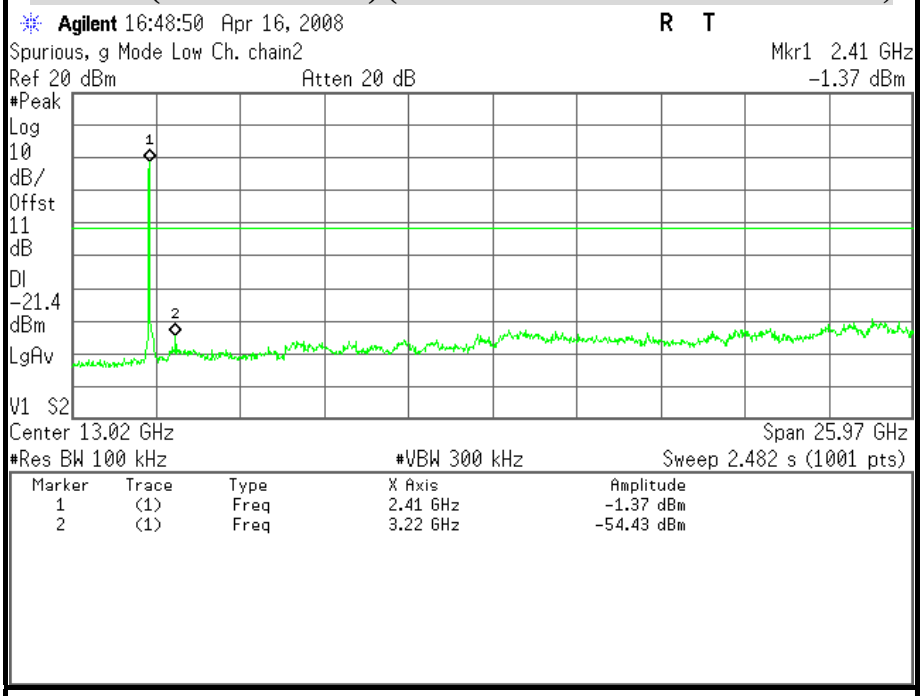
CH Middle (30MHz~26GHz) (IEEE 802.11n HT20 mode - Chain 1)



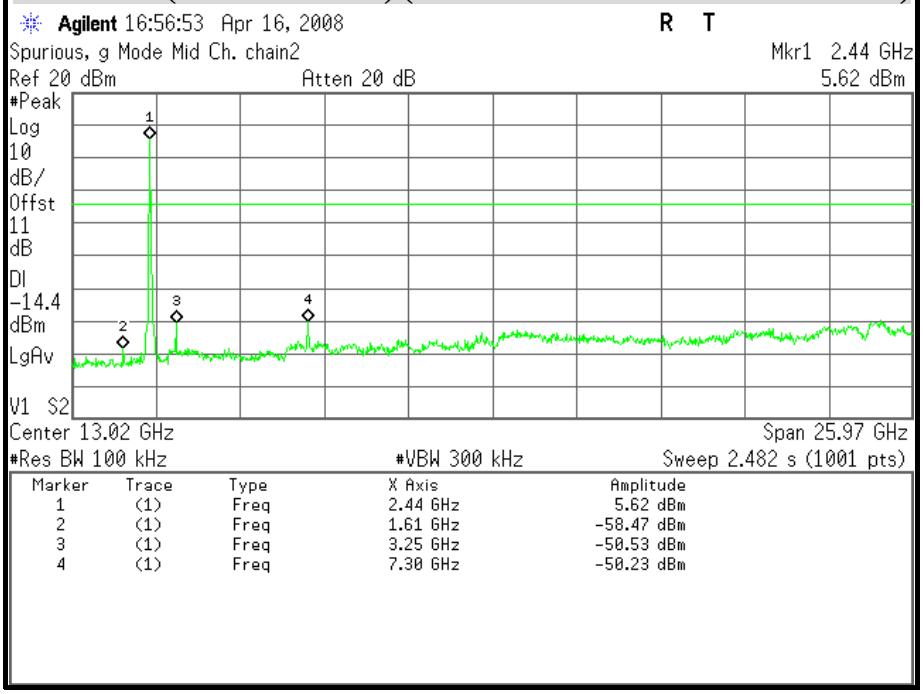
CH High (30MHz~26GHz) (IEEE 802.11n HT20 mode - Chain 1)



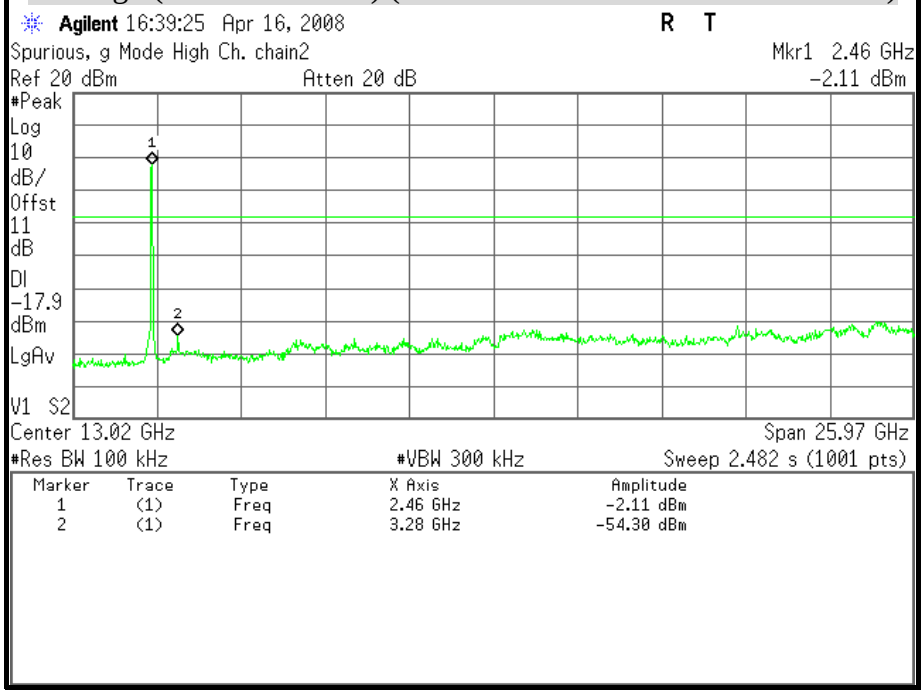
CH Low (30MHz~26GHz) (IEEE 802.11n HT20 mode - Chain 2)



CH Middle (30MHz~26GHz) (IEEE 802.11n HT20 mode - Chain 2)



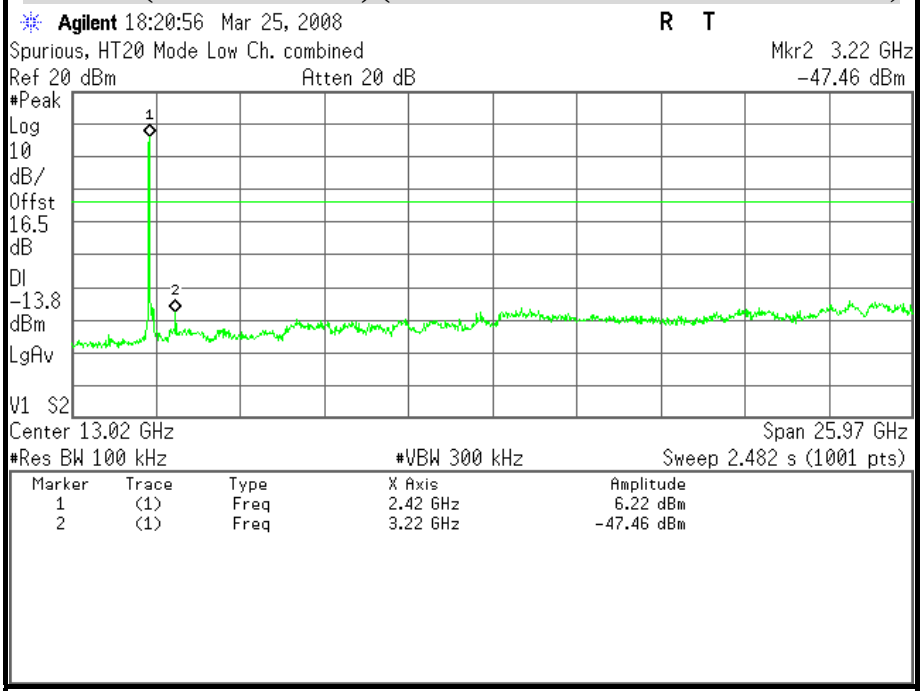
CH High (30MHz~26GHz) (IEEE 802.11n HT20 mode - Chain 2)



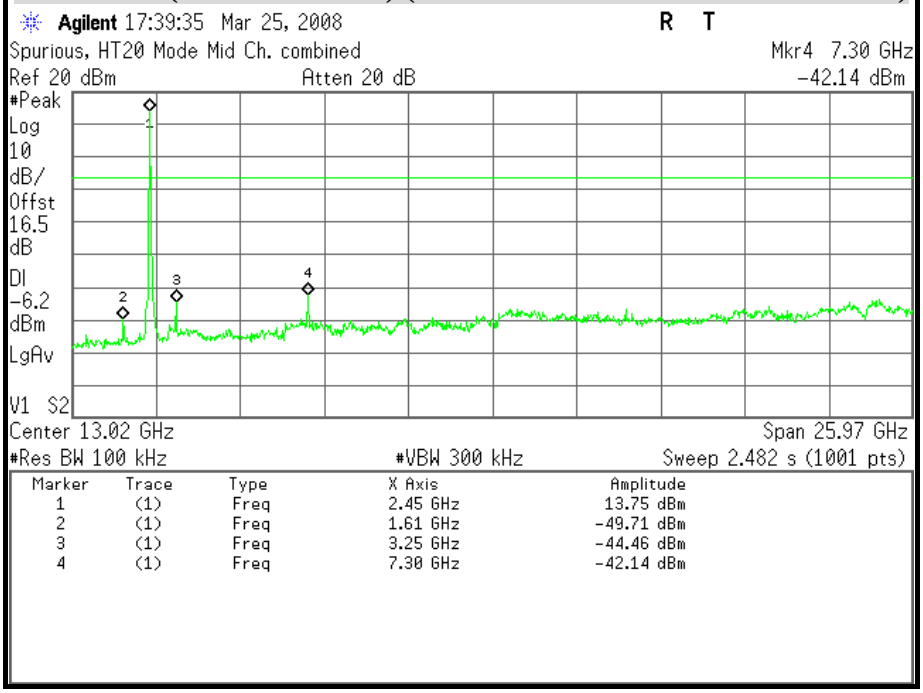
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11n HT20 Combined mode)

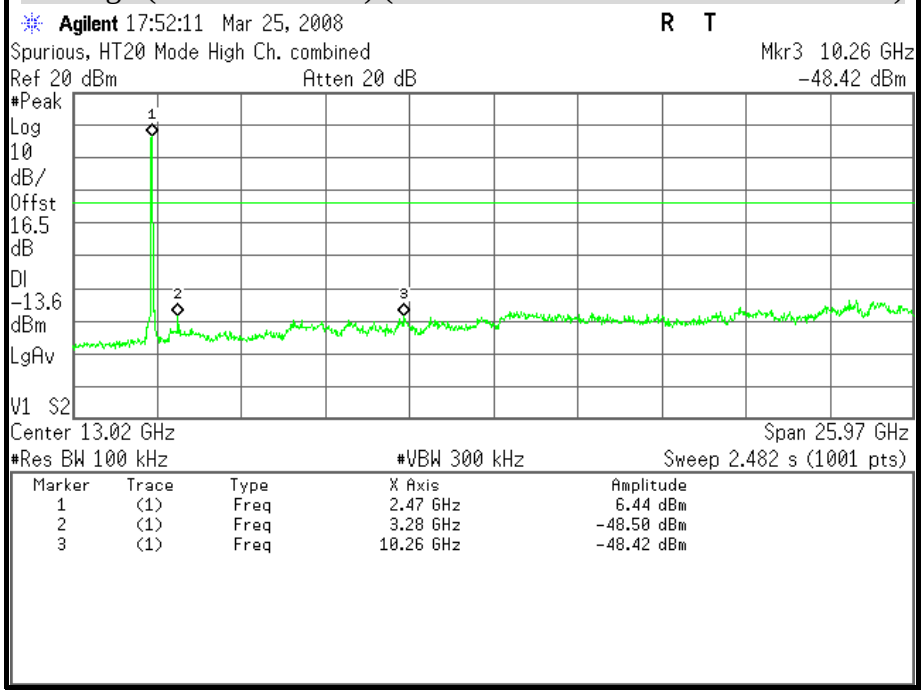
CH Low (30MHz~26GHz) (IEEE 802.11n HT20 Combined mode)



CH Middle (30MHz~26GHz) (IEEE 802.11n HT20 Combined mode)



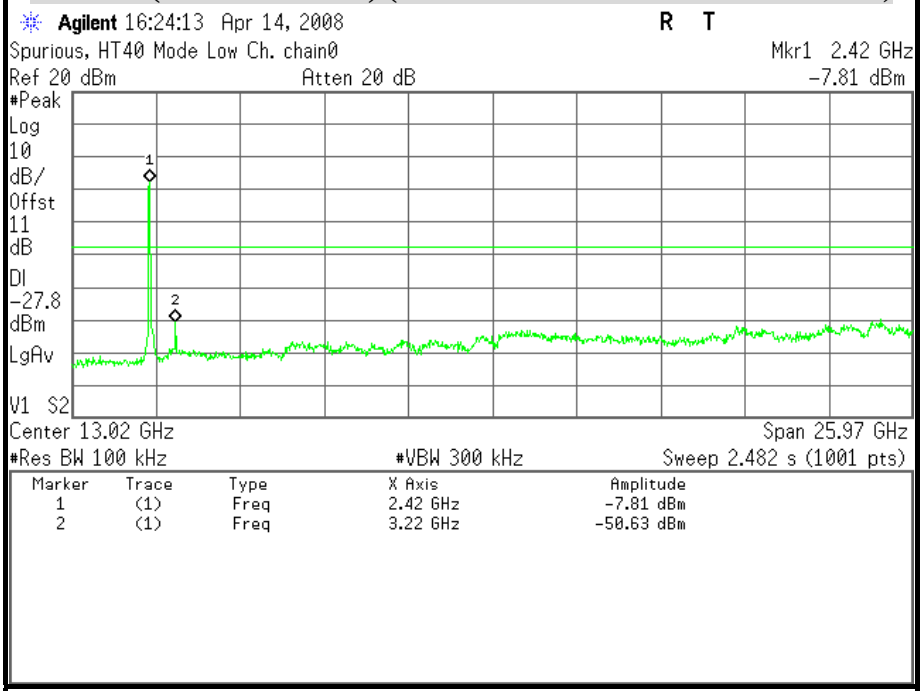
CH High (30MHz~26GHz) (IEEE 802.11n HT20 Combined mode)



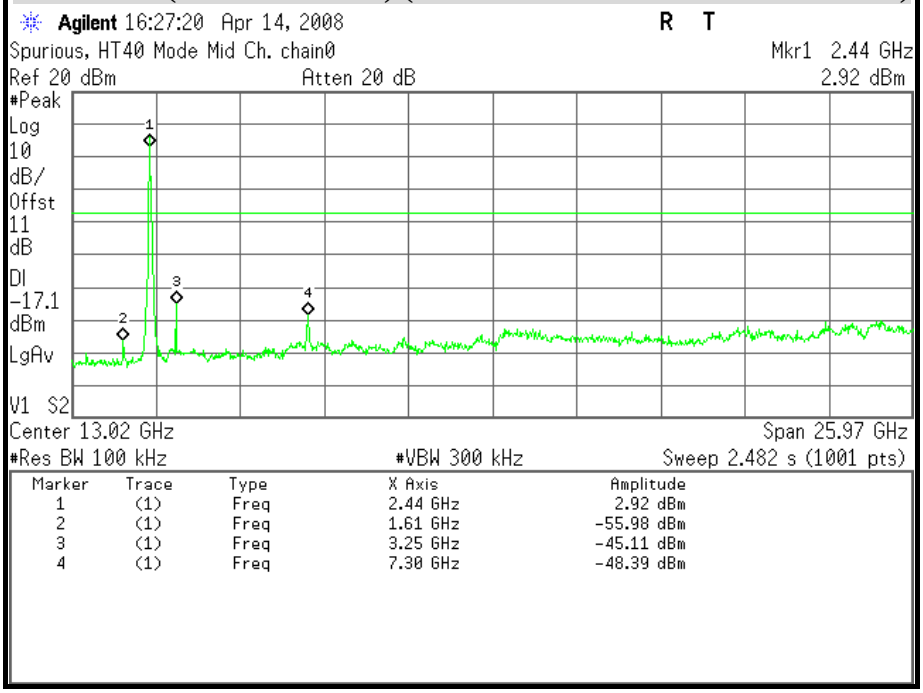
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11n HT40 mode)

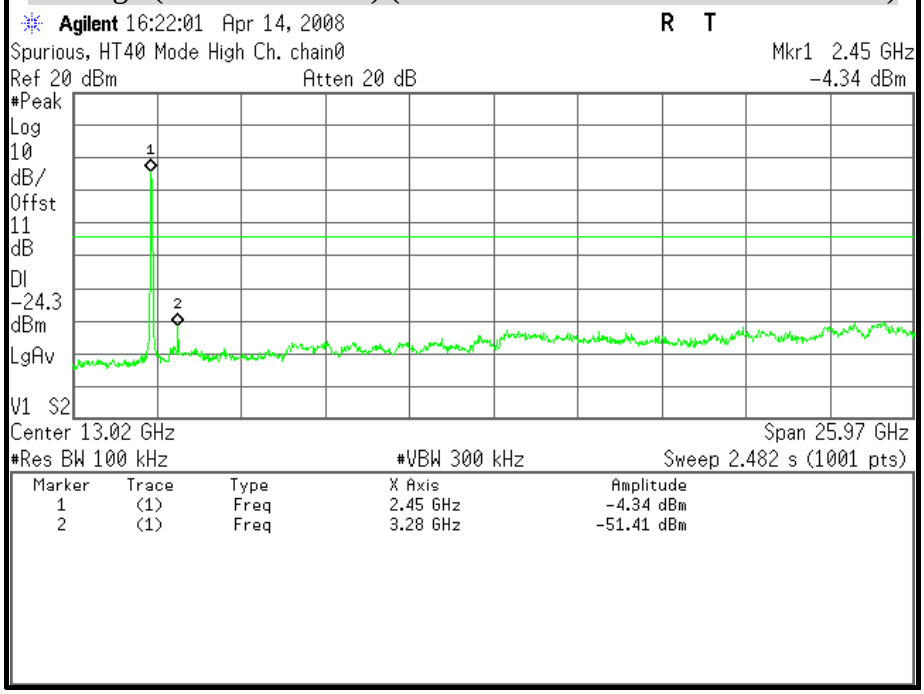
CH Low (30MHz~26GHz) (IEEE 802.11n HT40 mode - Chain 0)



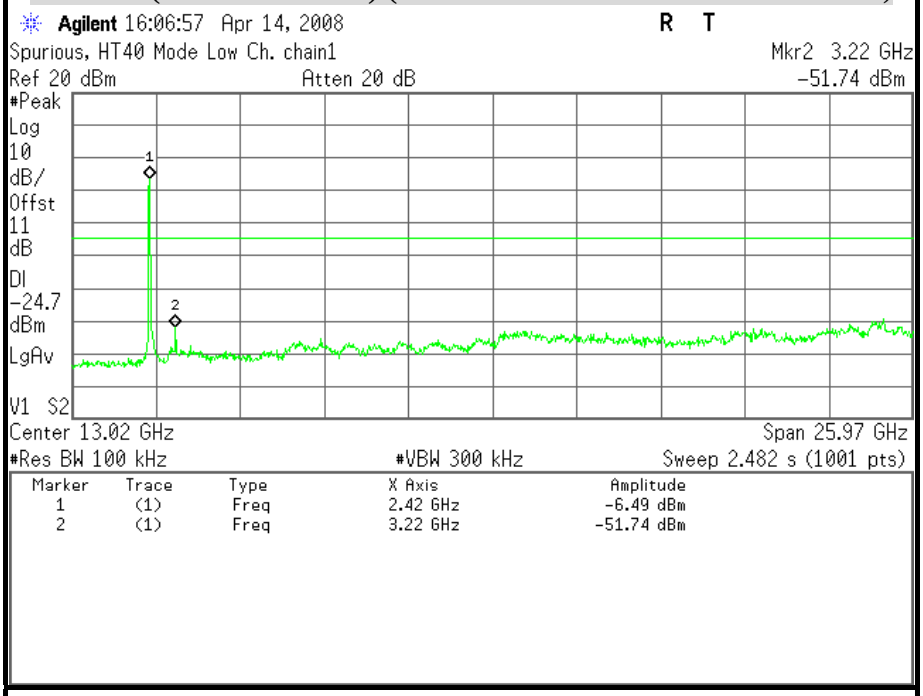
CH Middle (30MHz~26GHz) (IEEE 802.11n HT40 mode - Chain 0)



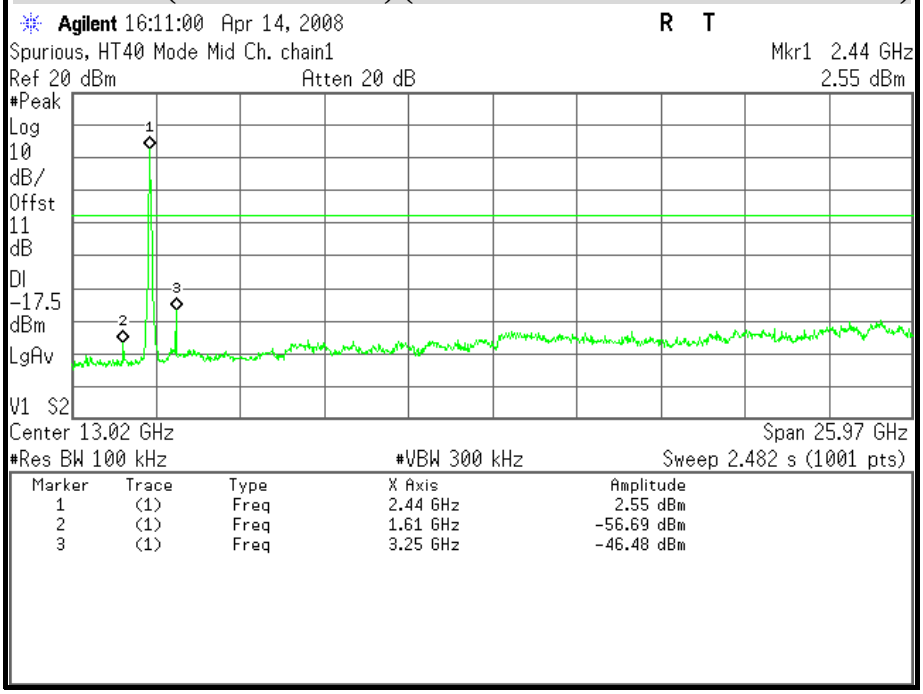
CH High (30MHz~26GHz) (IEEE 802.11n HT40 mode - Chain 0)



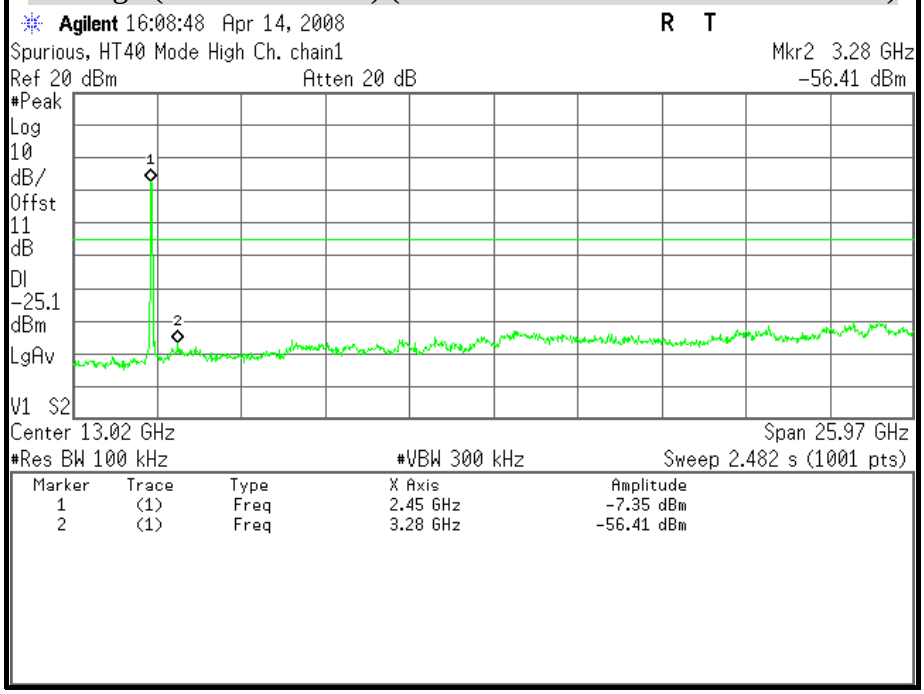
CH Low (30MHz~26GHz) (IEEE 802.11n HT40 mode - Chain 1)



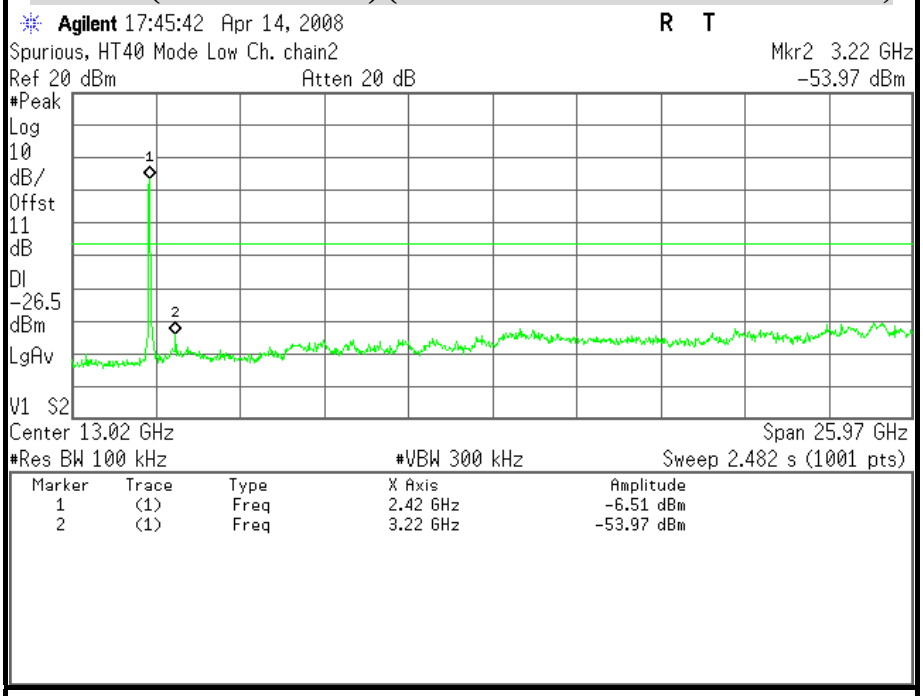
CH Middle (30MHz~26GHz) (IEEE 802.11n HT40 mode - Chain 1)



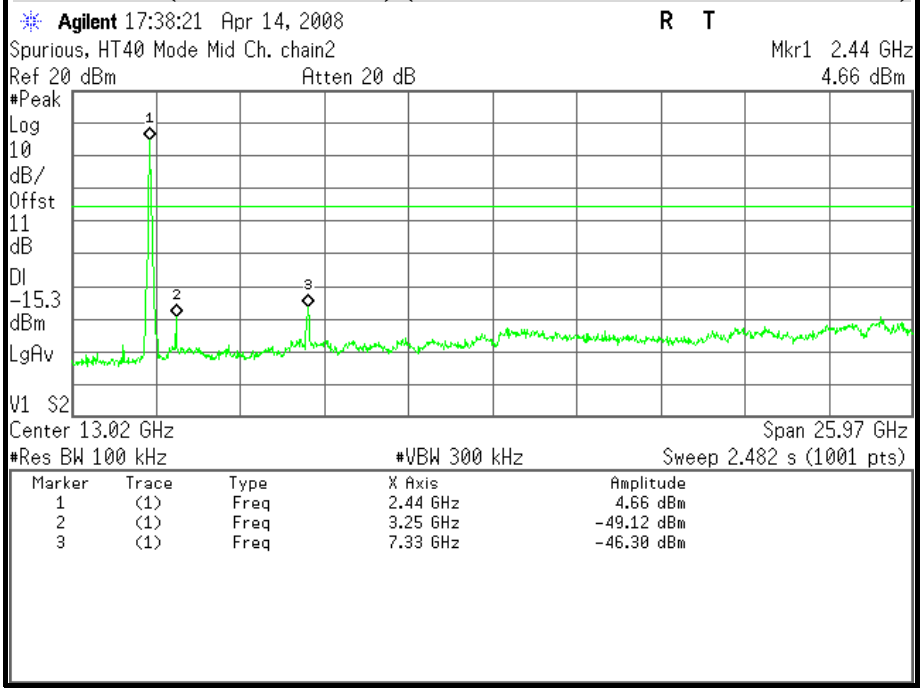
CH High (30MHz~26GHz) (IEEE 802.11n HT40 mode - Chain 1)



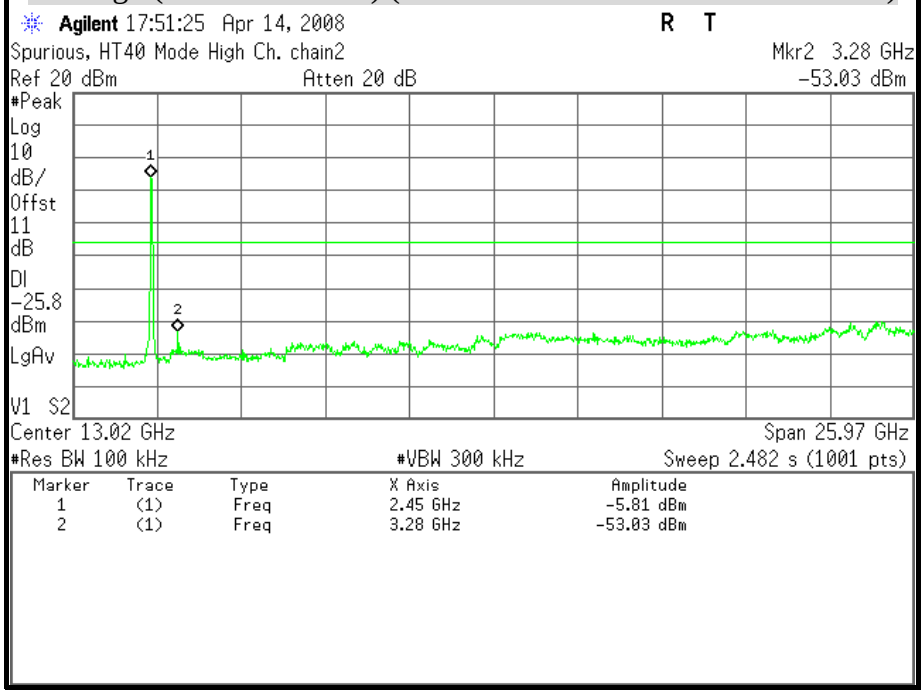
CH Low (30MHz~26GHz) (IEEE 802.11n HT40 mode - Chain 2)



CH Middle (30MHz~26GHz) (IEEE 802.11n HT40 mode - Chain 2)



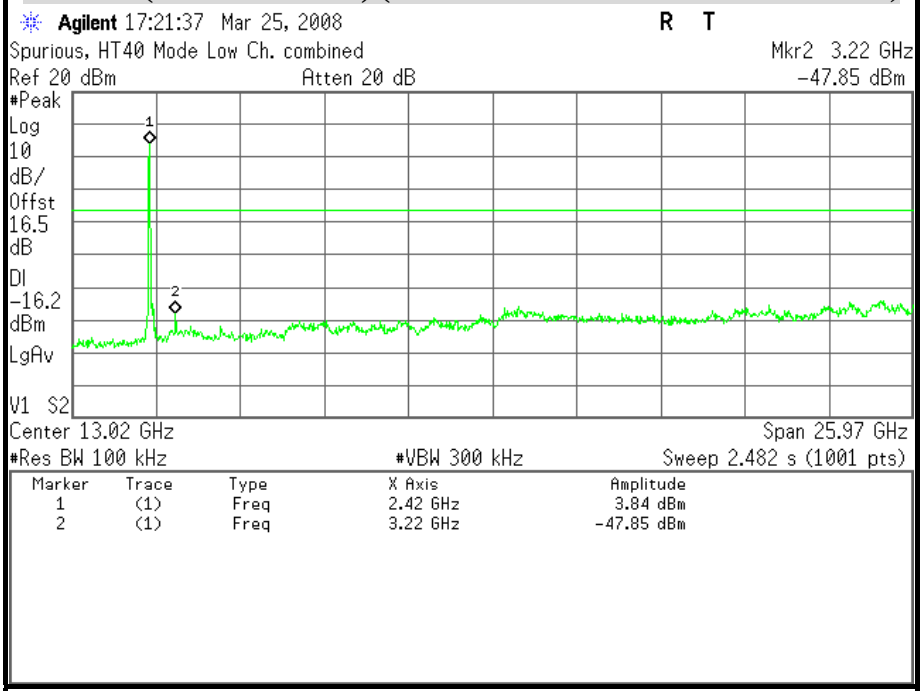
CH High (30MHz~26GHz) (IEEE 802.11n HT40 mode - Chain 2)



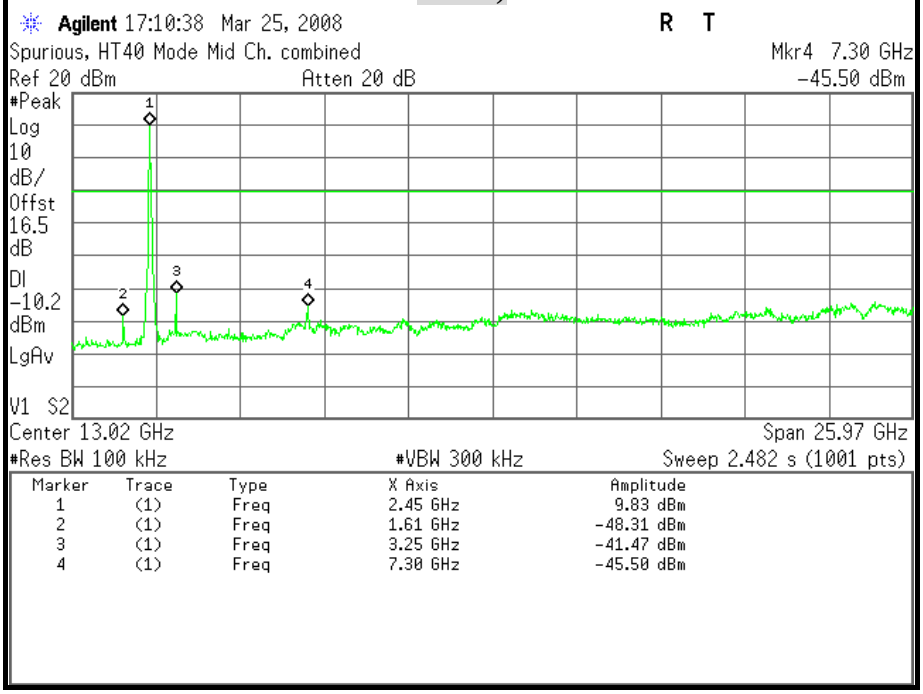
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11n HT40 Combined mode)

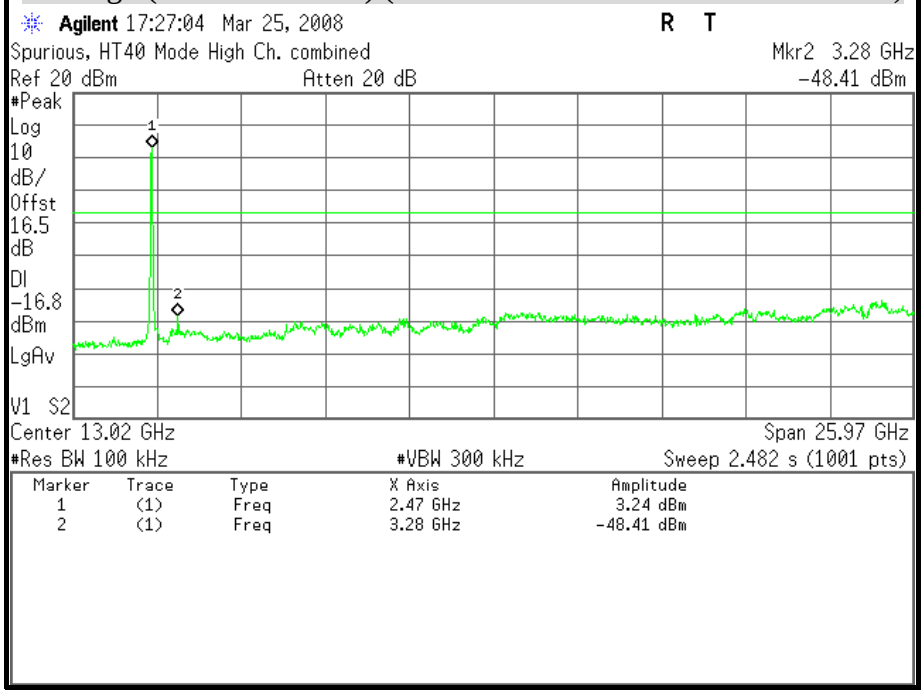
CH Low (30MHz~26GHz) (IEEE 802.11n HT40 Combined mode)



CH Middle (30MHz~26GHz) (IEEE 802.11n HT40 Combined mode)



CH High (30MHz~26GHz) (IEEE 802.11n HT40 Combined mode)



8.8 RADIATED EMISSIONS

8.8.1 TRANSMITTER RADIATED SUPURIOUS EMSSIONS

LIMITS

§ 15.205 (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 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3338	36.43 - 36.5
12.57675 - 12.57725	322 -335.4	3600 - 4400	([2])
13.36 - 13.41			

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

[2] Above 38.6

§ 15.205 (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 is 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.

§ 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 (microvolts/meter)	Measurement Distance (meters)
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

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

§ 15.209 (b) In the emission table above, the tighter limit applies at the band edges.

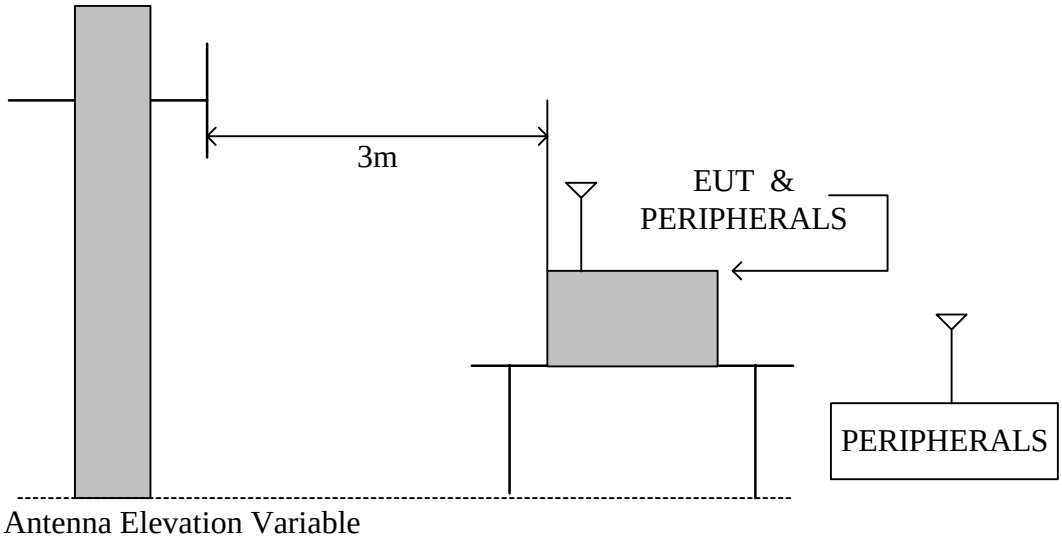
TEST EQUIPMENT

The following test equipment is utilized in making the measurements contained in this report.

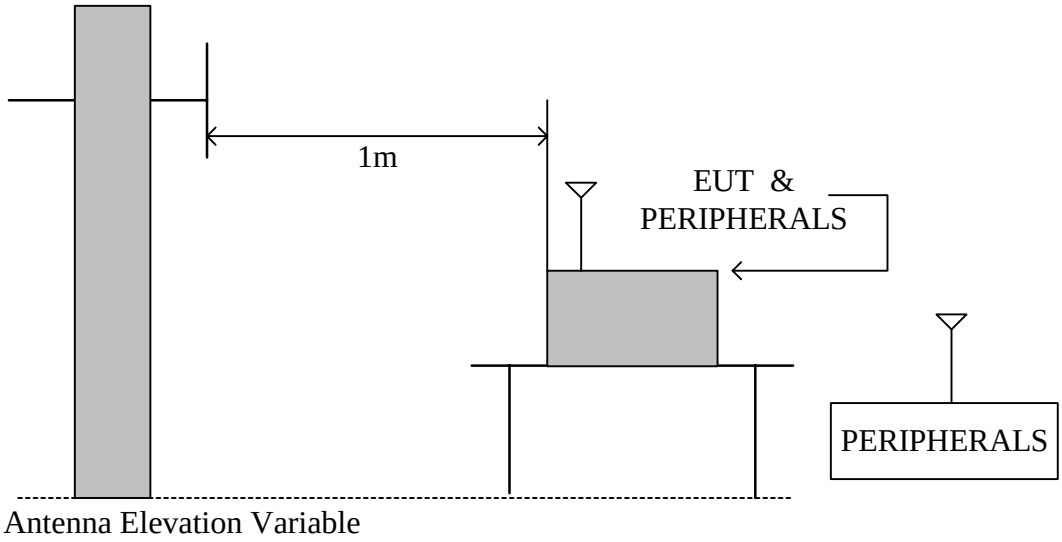
Manufacturer or Type	Model No.	Serial No.	Date of Calibration	Calibration Period	Remark
CHASE BILOG ANTENNA	CBL6112B	2817	December 21, 2007	1 Year	FINAL
R/S SPECTRUM ANALYZER	FSEK30	835253/002	October 25, 2007	1 Year	FINAL
AGILENT SPECTRUM ANALYZER	E4446A	MY433601.32	June 24, 2008	1 Year	FINAL
R/S EMI TEST RECEIVER	ESCS30	835418/008	October 16, 2007	1 Year	FINAL
OPEN SITE	----------	No.2	May 07, 2008	1 Year	FINAL
MIYAZAKI N TYPE COAXIAL CABLE	8D-FB	02	May 16, 2008	1 Year	FINAL
Horn Antenna	AH-118	10089	October 18, 2007	1 Year	FINAL
Horn Antenna	AH-840	03077	December 25, 2007	1 Year	FINAL
Agilent Pre-amplifier	8449B	3008A01471	December 20, 2007	1 Year	FINAL
HP Amplifier	8447D	2944A10052	December 24, 2007	1 Year	FINAL
HP High pass filter	84300/80038	002	CAL. ON USE	1 Year	FINAL
HP High pass filter	84300/80039	003	CAL. ON USE	1 Year	FINAL

TEST SETUP

The diagram below shows the test setup that is utilized to make the measurements for emission from 30 to 1GHz.



The diagram below shows the test setup that is utilized to make the measurements for emission above 1GHz.



TEST PROCEDURE

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

b. White measuring the radiated emission below 1GHz, the EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. White measuring the radiated emission above 1GHz, the EUT was set 1 meters away from the interference-receiving antenna

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarization of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold mode.

f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Note：

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.

2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection and frequency above 1GHz.

3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

TEST RESULTS

No non-compliance noted

8.8.2 WORST-CASE RADIATED EMISSION BELOW 1 GHz

Product Name	D-Link AirPremier N Dual Band PoE Access Point	**Test Date**	2008/06/07
Model	DAP-2553	**Test By**	Alan Fan
Test Mode	Normal operating (worst-case)	**TEMP & Humidity**	33°C, 60%

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading at 3m(dBμV)		Limits (dBμV/m)	Emission Level at 3m(dBμV/m)	
			Horizontal	Vertical		Horizontal	Vertical
75.00	7.05	1.23	10.00	22.00	40.00	18.28	30.28
225.00	11.50	2.18	7.00	7.50	46.00	20.68	21.18
249.99	12.80	2.33	10.50	11.70	46.00	25.63	26.83
300.00	13.90	2.62	11.10	10.00	46.00	27.62	26.52
375.00	15.85	3.00	11.00	7.80	46.00	29.85	26.65
400.00	16.50	3.13	12.70	13.20	46.00	32.33	32.83
499.99	17.70	3.61	11.50	16.00	46.00	32.81	37.31
600.00	19.00	3.95	8.00	9.50	46.00	30.95	32.45
630.00	19.18	4.07	6.50	5.00	46.00	29.75	28.25
650.00	19.30	4.14	7.00	5.30	46.00	30.44	28.74
730.00	19.90	4.44	4.00	2.80	46.00	28.34	27.14
750.00	20.10	4.51	5.00	3.20	46.00	29.61	27.81

Remark: *Emission level (dBμV/m) =Antenna Factor (dB/m) + Cable loss (dB) + Meter Reading (dBμV).*

8.8.3 TRANSMITTER RADIATED EMISSION ABOVE 1 GHz

Product Name	D-Link AirPremier N Dual Band PoE Access Point	**Test Date**	2008/03/19
Model	DAP-2553	**Test By**	Gumdam Lin
Test Mode	IEEE 802.11a TX (CH Low)	**TEMP & Humidity**	22°C, 78%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3830.00	46.37	31.29	5.84	35.40	9.50	0.41	39.01	74.00	-34.99	P	1.00
3830.00	32.09	31.29	5.84	35.40	9.50	0.41	24.73	54.00	-29.27	A	1.00
7660.05	48.35	40.02	8.35	36.03	9.50	0.66	51.85	74.00	-22.15	P	1.00
7660.05	36.55	40.02	8.35	36.03	9.50	0.66	40.05	54.00	-13.95	A	1.00
11486.20	52.35	40.17	10.02	35.30	9.50	0.71	58.46	74.00	-15.54	P	1.00
11486.20	38.25	40.17	10.02	35.30	9.50	0.71	44.36	54.00	-9.64	A	1.00

`

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3830.00	46.25	31.29	5.84	35.40	9.50	0.41	38.89	74.00	-35.11	P	1.00
3830.00	32.02	31.29	5.84	35.40	9.50	0.41	24.66	54.00	-29.34	A	1.00
7660.05	50.72	40.02	8.35	36.03	9.50	0.66	54.22	74.00	-19.78	P	1.00
7660.05	43.83	40.02	8.35	36.03	9.50	0.66	47.33	54.00	-6.67	A	1.00
11486.20	58.56	40.17	10.02	35.30	9.50	0.71	64.67	74.00	-9.33	P	1.00
11486.20	43.43	40.17	10.02	35.30	9.50	0.71	49.54	54.00	-4.46	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/20
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11a TX (CH Middle)	TEMP & Humidity	27°C, 57%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3856.66	46.31	31.34	5.85	35.39	9.50	0.36	38.97	74.00	-35.03	P	1.00
3856.66	32.80	31.34	5.85	35.39	9.50	0.36	25.46	54.00	-28.54	A	1.00
7713.39	50.89	40.10	8.34	36.04	9.50	0.66	54.45	74.00	-19.55	P	1.00
7713.39	43.65	40.10	8.34	36.04	9.50	0.66	47.21	54.00	-6.79	A	1.00
11576.10	53.64	40.37	10.11	35.33	9.50	0.67	59.96	74.00	-14.04	P	1.00
11576.10	39.50	40.37	10.11	35.33	9.50	0.67	45.82	54.00	-8.18	A	1.00

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3856.66	47.27	31.34	5.85	35.39	9.50	0.36	39.93	74.00	-34.07	P	1.00
3856.66	34.09	31.34	5.85	35.39	9.50	0.36	26.75	54.00	-27.25	A	1.00
7713.39	53.53	40.10	8.34	36.04	9.50	0.66	57.09	74.00	-16.91	P	1.00
7713.39	48.38	40.10	8.34	36.04	9.50	0.66	51.94	54.00	-2.06	A	1.00
11576.10	59.14	40.37	10.11	35.33	9.50	0.67	65.46	74.00	-8.54	P	1.00
11576.10	44.35	40.37	10.11	35.33	9.50	0.67	50.67	54.00	-3.33	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/19
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11a TX (CH High)	TEMP & Humidity	22°C, 78%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3883.33	46.55	31.39	5.85	35.37	9.50	0.31	39.23	74.00	-34.77	P	1.00
3883.33	32.36	31.39	5.85	35.37	9.50	0.31	25.04	54.00	-28.96	A	1.00
7766.76	50.40	40.17	8.34	36.05	9.50	0.65	54.01	74.00	-19.99	P	1.00
7766.76	42.28	40.17	8.34	36.05	9.50	0.65	45.89	54.00	-8.11	A	1.00
11646.10	56.96	40.52	10.19	35.36	9.50	0.63	63.45	74.00	-10.55	P	1.00
11646.10	41.87	40.52	10.19	35.36	9.50	0.63	48.36	54.00	-5.64	A	1.00

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3883.33	48.12	31.39	5.85	35.37	9.50	0.31	40.80	74.00	-33.20	P	1.00
3883.33	34.91	31.39	5.85	35.37	9.50	0.31	27.59	54.00	-26.41	A	1.00
7766.76	53.43	40.17	8.34	36.05	9.50	0.65	57.04	74.00	-16.96	P	1.00
7766.76	48.85	40.17	8.34	36.05	9.50	0.65	52.46	54.00	-1.54	A	1.00
11646.10	60.38	40.52	10.19	35.36	9.50	0.63	66.87	74.00	-7.13	P	1.00
11646.10	46.15	40.52	10.19	35.36	9.50	0.63	52.64	54.00	-1.36	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/19
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11n HT20 TX (CH Low)	TEMP & Humidity	22°C, 78%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3830.00	45.56	31.29	5.84	35.40	9.50	0.41	38.20	74.00	-35.80	P	1.00
3830.00	31.85	31.29	5.84	35.40	9.50	0.41	24.49	54.00	-29.51	A	1.00
7659.93	48.47	40.02	8.35	36.03	9.50	0.66	51.97	74.00	-22.03	P	1.00
7659.93	37.02	40.02	8.35	36.03	9.50	0.66	40.52	54.00	-13.48	A	1.00
11490.76	51.51	40.18	10.03	35.30	9.50	0.71	57.63	74.00	-16.37	P	1.00
11490.76	36.76	40.18	10.03	35.30	9.50	0.71	42.88	54.00	-11.12	A	1.00

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3830.00	46.08	31.29	5.84	35.40	9.50	0.41	38.72	74.00	-35.28	P	1.00
3830.00	32.75	31.29	5.84	35.40	9.50	0.41	25.39	54.00	-28.61	A	1.00
7659.93	51.50	40.02	8.35	36.03	9.50	0.66	55.00	74.00	-19.00	P	1.00
7659.93	44.93	40.02	8.35	36.03	9.50	0.66	48.43	54.00	-5.57	A	1.00
11490.76	57.75	40.18	10.03	35.30	9.50	0.71	63.87	74.00	-10.13	P	1.00
11490.76	41.86	40.18	10.03	35.30	9.50	0.71	47.98	54.00	-6.02	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/20
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11n HT20 TX (CH Middle)	TEMP & Humidity	27°C, 57%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3856.66	45.36	31.34	5.85	35.39	9.50	0.36	38.02	74.00	-35.98	P	1.00
3856.66	32.17	31.34	5.85	35.39	9.50	0.36	24.83	54.00	-29.17	A	1.00
7713.46	51.52	40.10	8.34	36.04	9.50	0.66	55.08	74.00	-18.92	P	1.00
7713.46	43.05	40.10	8.34	36.04	9.50	0.66	46.61	54.00	-7.39	A	1.00
11574.60	52.88	40.36	10.11	35.33	9.50	0.67	59.20	74.00	-14.80	P	1.00
11574.60	39.07	40.36	10.11	35.33	9.50	0.67	45.39	54.00	-8.61	A	1.00

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3856.66	46.12	31.34	5.85	35.39	9.50	0.36	38.78	74.00	-35.22	P	1.00
3856.66	34.78	31.34	5.85	35.39	9.50	0.36	27.44	54.00	-26.56	A	1.00
7713.46	54.02	40.10	8.34	36.04	9.50	0.66	57.58	74.00	-16.42	P	1.00
7713.46	48.80	40.10	8.34	36.04	9.50	0.66	52.36	54.00	-1.64	A	1.00
11574.60	59.35	40.36	10.11	35.33	9.50	0.67	65.67	74.00	-8.33	P	1.00
11574.60	44.95	40.36	10.11	35.33	9.50	0.67	51.27	54.00	-2.73	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/19
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11n HT20 TX (CH High)	TEMP & Humidity	22°C, 78%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3883.33	46.48	31.39	5.85	35.37	9.50	0.31	39.16	74.00	-34.84	P	1.00
3883.33	32.50	31.39	5.85	35.37	9.50	0.31	25.18	54.00	-28.82	A	1.00
7766.75	50.73	40.17	8.34	36.05	9.50	0.65	54.34	74.00	-19.66	P	1.00
7766.75	42.22	40.17	8.34	36.05	9.50	0.65	45.83	54.00	-8.17	A	1.00
11642.68	55.35	40.51	10.19	35.36	9.50	0.64	61.83	74.00	-12.17	P	1.00
11642.68	40.52	40.51	10.19	35.36	9.50	0.64	47.00	54.00	-7.00	A	1.00

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3883.33	46.16	31.39	5.85	35.37	9.50	0.31	38.84	74.00	-35.16	P	1.00
3883.33	34.68	31.39	5.85	35.37	9.50	0.31	27.36	54.00	-26.64	A	1.00
7766.75	53.05	40.17	8.34	36.05	9.50	0.65	56.66	74.00	-17.34	P	1.00
7766.75	48.46	40.17	8.34	36.05	9.50	0.65	52.07	54.00	-1.93	A	1.00
11642.68	60.75	40.51	10.19	35.36	9.50	0.64	67.23	74.00	-6.77	P	1.00
11642.68	46.17	40.51	10.19	35.36	9.50	0.64	52.65	54.00	-1.35	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/19
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11n HT40 TX (CH Low)	TEMP & Humidity	22°C, 78%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3836.83	45.77	31.31	5.84	35.40	9.50	0.39	38.42	74.00	-35.58	P	1.00
3836.83	32.21	31.31	5.84	35.40	9.50	0.39	24.86	54.00	-29.14	A	1.00
7673.43	49.71	40.04	8.35	36.03	9.50	0.66	53.22	74.00	-20.78	P	1.00
7673.43	39.69	40.04	8.35	36.03	9.50	0.66	43.20	54.00	-10.80	A	1.00
11502.48	50.28	40.21	10.03	35.30	9.50	0.71	56.43	74.00	-17.57	P	1.00
11502.48	36.25	40.21	10.03	35.30	9.50	0.71	42.40	54.00	-11.60	A	1.00

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3836.83	46.46	31.31	5.84	35.40	9.50	0.39	39.11	74.00	-34.89	P	1.00
3836.83	34.33	31.31	5.84	35.40	9.50	0.39	26.98	54.00	-27.02	A	1.00
7673.43	52.43	40.04	8.35	36.03	9.50	0.66	55.94	74.00	-18.06	P	1.00
7673.43	46.85	40.04	8.35	36.03	9.50	0.66	50.36	54.00	-3.64	A	1.00
11502.48	55.05	40.21	10.03	35.30	9.50	0.71	61.20	74.00	-12.80	P	1.00
11502.48	41.84	40.21	10.03	35.30	9.50	0.71	47.99	54.00	-6.01	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/19
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11n HT40 TX (CH High)	TEMP & Humidity	22°C, 78%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3863.32	45.36	31.35	5.85	35.38	9.50	0.34	38.02	74.00	-35.98	P	1.00
3863.32	32.11	31.35	5.85	35.38	9.50	0.34	24.77	54.00	-29.23	A	1.00
7726.64	50.59	40.12	8.34	36.05	9.50	0.66	54.16	74.00	-19.84	P	1.00
7726.64	42.89	40.12	8.34	36.05	9.50	0.66	46.46	54.00	-7.54	A	1.00
11590.00	51.71	40.40	10.13	35.34	9.50	0.66	58.06	74.00	-15.94	P	1.00
11590.00	38.28	40.40	10.13	35.34	9.50	0.66	44.63	54.00	-9.37	A	1.00

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
3863.32	46.82	31.35	5.85	35.38	9.50	0.34	39.48	74.00	-34.52	P	1.00
3863.32	34.16	31.35	5.85	35.38	9.50	0.34	26.82	54.00	-27.18	A	1.00
7726.64	53.68	40.12	8.34	36.05	9.50	0.66	57.25	74.00	-16.75	P	1.00
7726.64	49.49	40.12	8.34	36.05	9.50	0.66	53.06	54.00	-0.94	A	1.00
11590.00	56.96	40.40	10.13	35.34	9.50	0.66	63.31	74.00	-10.69	P	1.00
11590.00	43.79	40.40	10.13	35.34	9.50	0.66	50.14	54.00	-3.86	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/03
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11b TX (CH Low)	TEMP & Humidity	25°C, 59%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1608.00	47.98	27.38	3.77	35.26	9.50	0.00	34.37	74.00	-39.63	P	1.00
1608.00	36.92	27.38	3.77	35.26	9.50	0.00	23.31	54.00	-30.69	A	1.00
3215.87	47.67	30.64	5.63	35.60	9.50	0.00	38.84	74.00	-35.16	P	1.00
3215.87	36.12	30.64	5.63	35.60	9.50	0.00	27.29	54.00	-26.71	A	1.00
4824.12	48.54	34.71	6.32	35.66	9.50	0.35	44.75	74.00	-29.25	P	1.00
4824.12	36.86	34.71	6.32	35.66	9.50	0.35	33.07	54.00	-20.93	A	1.00
7236.00	46.75	39.22	8.27	35.89	9.50	0.90	49.75	74.00	-24.25	P	1.00
7236.00	33.81	39.22	8.27	35.89	9.50	0.90	36.81	54.00	-17.19	A	1.00
12060.00	47.57	41.36	10.56	35.40	9.50	0.43	55.02	74.00	-18.98	P	1.00
12060.00	34.17	41.36	10.56	35.40	9.50	0.43	41.62	54.00	-12.38	A	1.00

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1608.00	48.95	27.38	3.77	35.26	9.50	0.00	35.34	74.00	-38.66	P	1.00
1608.00	40.60	27.38	3.77	35.26	9.50	0.00	26.99	54.00	-27.01	A	1.00
3215.87	55.05	30.64	5.63	35.60	9.50	0.00	46.22	74.00	-27.78	P	1.00
3215.87	51.98	30.64	5.63	35.60	9.50	0.00	43.15	54.00	-10.85	A	1.00
4824.12	60.37	34.71	6.32	35.66	9.50	0.35	56.58	74.00	-17.42	P	1.00
4824.12	57.24	34.71	6.32	35.66	9.50	0.35	53.45	54.00	-0.55	A	1.00
7236.00	47.11	39.22	8.27	35.89	9.50	0.90	50.11	74.00	-23.89	P	1.00
7236.00	33.84	39.22	8.27	35.89	9.50	0.90	36.84	54.00	-17.16	A	1.00
12060.00	47.20	41.36	10.56	35.40	9.50	0.43	54.65	74.00	-19.35	P	1.00
12060.00	34.12	41.36	10.56	35.40	9.50	0.43	41.57	54.00	-12.43	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/05
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11b TX (CH Middle)	TEMP & Humidity	18°C, 68%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1625.13	47.50	27.50	3.80	35.25	9.50	0.00	34.05	74.00	-39.95	P	1.00
1625.13	35.08	27.50	3.80	35.25	9.50	0.00	21.63	54.00	-32.37	A	1.00
3249.42	47.57	30.65	5.65	35.60	9.50	0.00	38.77	74.00	-35.23	P	1.00
3249.42	34.18	30.65	5.65	35.60	9.50	0.00	25.38	54.00	-28.62	A	1.00
4874.11	48.86	34.82	6.32	35.67	9.50	0.30	45.12	74.00	-28.88	P	1.00
4874.11	38.13	34.82	6.32	35.67	9.50	0.30	34.39	54.00	-19.61	A	1.00
7236.00	47.23	39.22	8.27	35.89	9.50	0.90	50.23	74.00	-23.77	P	1.00
7236.00	33.69	39.22	8.27	35.89	9.50	0.90	36.69	54.00	-17.31	A	1.00
12185.00	46.68	41.49	10.52	35.20	9.50	0.39	54.38	74.00	-19.62	P	1.00
12185.00	33.71	41.49	10.52	35.20	9.50	0.39	41.41	54.00	-12.59	A	1.00

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1625.13	49.33	27.50	3.80	35.25	9.50	0.00	35.88	74.00	-38.12	P	1.00
1625.13	38.84	27.50	3.80	35.25	9.50	0.00	25.39	54.00	-28.61	A	1.00
3249.42	51.99	30.65	5.65	35.60	9.50	0.00	43.19	74.00	-30.81	P	1.00
3249.42	47.81	30.65	5.65	35.60	9.50	0.00	39.01	54.00	-14.99	A	1.00
4874.11	58.96	34.82	6.32	35.67	9.50	0.30	55.22	74.00	-18.78	P	1.00
4874.11	56.86	34.82	6.32	35.67	9.50	0.30	53.12	54.00	-0.88	A	1.00
7236.00	48.17	39.22	8.27	35.89	9.50	0.90	51.17	74.00	-22.83	P	1.00
7236.00	34.92	39.22	8.27	35.89	9.50	0.90	37.92	54.00	-16.08	A	1.00
12185.00	46.97	41.49	10.52	35.20	9.50	0.39	54.67	74.00	-19.33	P	1.00
12185.00	33.79	41.49	10.52	35.20	9.50	0.39	41.49	54.00	-12.51	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/03
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11b TX (CH High)	TEMP & Humidity	25°C, 59%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1641.38	47.36	27.62	3.82	35.24	9.50	0.00	34.06	74.00	-39.94	P	1.00
1641.38	33.26	27.62	3.82	35.24	9.50	0.00	19.96	54.00	-34.04	A	1.00
3282.76	48.27	30.66	5.67	35.60	9.50	0.00	39.49	74.00	-34.51	P	1.00
3282.76	33.95	30.66	5.67	35.60	9.50	0.00	25.17	54.00	-28.83	A	1.00
4924.07	48.71	34.93	6.32	35.68	9.50	0.25	45.02	74.00	-28.98	P	1.00
4924.07	38.07	34.93	6.32	35.68	9.50	0.25	34.38	54.00	-19.62	A	1.00
7386.00	47.56	39.55	8.33	35.95	9.50	0.76	50.75	74.00	-23.25	P	1.00
7386.00	33.79	39.55	8.33	35.95	9.50	0.76	36.98	54.00	-17.02	A	1.00
12310.00	47.78	41.61	10.49	35.00	9.50	0.35	55.72	74.00	-18.28	P	1.00
12310.00	34.37	41.61	10.49	35.00	9.50	0.35	42.31	54.00	-11.69	A	1.00

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1641.38	49.56	27.62	3.82	35.24	9.50	0.00	36.26	74.00	-37.74	P	1.00
1641.38	39.41	27.62	3.82	35.24	9.50	0.00	26.11	54.00	-27.89	A	1.00
3282.76	53.48	30.66	5.67	35.60	9.50	0.00	44.70	74.00	-29.30	P	1.00
3282.76	48.27	30.66	5.67	35.60	9.50	0.00	39.49	54.00	-14.51	A	1.00
4924.07	58.53	34.93	6.32	35.68	9.50	0.25	54.84	74.00	-19.16	P	1.00
4924.07	55.78	34.93	6.32	35.68	9.50	0.25	52.09	54.00	-1.91	A	1.00
7386.00	47.86	39.55	8.33	35.95	9.50	0.76	51.05	74.00	-22.95	P	1.00
7386.00	33.67	39.55	8.33	35.95	9.50	0.76	36.86	54.00	-17.14	A	1.00
12310.00	47.63	41.61	10.49	35.00	9.50	0.35	55.57	74.00	-18.43	P	1.00
12310.00	34.29	41.61	10.49	35.00	9.50	0.35	42.23	54.00	-11.77	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/02/29
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11g TX (CH Low)	TEMP & Humidity	18°C, 75%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1608.05	47.16	27.38	3.77	35.26	9.50	0.00	33.55	74.00	-40.45	P	1.00
1608.05	34.70	27.38	3.77	35.26	9.50	0.00	21.09	54.00	-32.91	A	1.00
3216.07	48.71	30.64	5.63	35.60	9.50	0.00	39.88	74.00	-34.12	P	1.00
3216.07	40.08	30.64	5.63	35.60	9.50	0.00	31.25	54.00	-22.75	A	1.00
4824.33	47.56	34.71	6.32	35.66	9.50	0.35	43.77	74.00	-30.23	P	1.00
4824.33	33.67	34.71	6.32	35.66	9.50	0.35	29.88	54.00	-24.12	A	1.00
7236.00	46.95	39.22	8.27	35.89	9.50	0.90	49.95	74.00	-24.05	P	1.00
7236.00	33.46	39.22	8.27	35.89	9.50	0.90	36.46	54.00	-17.54	A	1.00
12060.00	47.39	41.36	10.56	35.40	9.50	0.43	54.84	74.00	-19.16	P	1.00
12060.00	33.87	41.36	10.56	35.40	9.50	0.43	41.32	54.00	-12.68	A	1.00

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1608.05	48.25	27.38	3.77	35.26	9.50	0.00	34.64	74.00	-39.36	P	1.00
1608.05	34.76	27.38	3.77	35.26	9.50	0.00	21.15	54.00	-32.85	A	1.00
3216.07	57.24	30.64	5.63	35.60	9.50	0.00	48.41	74.00	-25.59	P	1.00
3216.07	54.82	30.64	5.63	35.60	9.50	0.00	45.99	54.00	-8.01	A	1.00
4824.33	54.31	34.71	6.32	35.66	9.50	0.35	50.52	74.00	-23.48	P	1.00
4824.33	39.74	34.71	6.32	35.66	9.50	0.35	35.95	54.00	-18.05	A	1.00
7236.00	46.72	39.22	8.27	35.89	9.50	0.90	49.72	74.00	-24.28	P	1.00
7236.00	33.53	39.22	8.27	35.89	9.50	0.90	36.53	54.00	-17.47	A	1.00
12060.00	47.76	41.36	10.56	35.40	9.50	0.43	55.21	74.00	-18.79	P	1.00
12060.00	34.35	41.36	10.56	35.40	9.50	0.43	41.80	54.00	-12.20	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/03
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11g TX (CH Middle)	TEMP & Humidity	25°C, 59%

Measurement Distance at 1m Horizontal polarity

Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1624.87	48.18	27.50	3.80	35.25	9.50	0.00	34.73	74.00	-39.27	P	1.00
1624.87	36.00	27.50	3.80	35.25	9.50	0.00	22.55	54.00	-31.45	A	1.00
3249.38	51.10	30.65	5.65	35.60	9.50	0.00	42.30	74.00	-31.70	P	1.00
3249.38	43.34	30.65	5.65	35.60	9.50	0.00	34.54	54.00	-19.46	A	1.00
4874.97	47.36	34.82	6.32	35.67	9.50	0.30	43.62	74.00	-30.38	P	1.00
4874.97	33.67	34.82	6.32	35.67	9.50	0.30	29.93	54.00	-24.07	A	1.00
7302.16	60.87	39.36	8.29	35.92	9.50	0.84	63.95	74.00	-10.05	P	1.00
7302.16	36.67	39.36	8.29	35.92	9.50	0.84	39.75	54.00	-14.25	A	1.00
12185.00	47.21	41.49	10.52	35.20	9.50	0.39	54.91	74.00	-19.09	P	1.00
12185.00	33.75	41.49	10.52	35.20	9.50	0.39	41.45	54.00	-12.55	A	1.00

Measurement Distance at 1m Vertical polarity

Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1624.87	54.22	27.50	3.80	35.25	9.50	0.00	40.77	74.00	-33.23	P	1.00
1624.87	45.04	27.50	3.80	35.25	9.50	0.00	31.59	54.00	-22.41	A	1.00
3249.38	62.05	30.65	5.65	35.60	9.50	0.00	53.25	74.00	-20.75	P	1.00
3249.38	59.38	30.65	5.65	35.60	9.50	0.00	50.58	54.00	-3.42	A	1.00
4874.97	62.18	34.82	6.32	35.67	9.50	0.30	58.44	74.00	-15.56	P	1.00
4874.97	47.19	34.82	6.32	35.67	9.50	0.30	43.45	54.00	-10.55	A	1.00
7302.16	67.36	39.36	8.29	35.92	9.50	0.84	70.44	74.00	-3.56	P	1.00
7302.16	45.13	39.36	8.29	35.92	9.50	0.84	48.21	54.00	-5.79	A	1.00
12176.29	52.77	41.48	10.53	35.22	9.50	0.39	60.45	74.00	-13.55	P	1.00
12176.29	35.26	41.48	10.53	35.22	9.50	0.39	42.94	54.00	-11.06	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/02/29
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11g TX (CH High)	TEMP & Humidity	18°C, 75%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1641.03	47.63	27.62	3.82	35.24	9.50	0.00	34.32	74.00	-39.68	P	1.00
1641.03	33.96	27.62	3.82	35.24	9.50	0.00	20.65	54.00	-33.35	A	1.00
3282.70	49.02	30.66	5.67	35.60	9.50	0.00	40.24	74.00	-33.76	P	1.00
3282.70	37.78	30.66	5.67	35.60	9.50	0.00	29.00	54.00	-25.00	A	1.00
4927.72	47.75	34.94	6.32	35.69	9.50	0.24	44.07	74.00	-29.93	P	1.00
4927.72	34.29	34.94	6.32	35.69	9.50	0.24	30.61	54.00	-23.39	A	1.00
7386.00	47.62	39.55	8.33	35.95	9.50	0.76	50.81	74.00	-23.19	P	1.00
7386.00	33.71	39.55	8.33	35.95	9.50	0.76	36.90	54.00	-17.10	A	1.00
12310.00	47.79	41.61	10.49	35.00	9.50	0.35	55.73	74.00	-18.27	P	1.00
12310.00	34.39	41.61	10.49	35.00	9.50	0.35	42.33	54.00	-11.67	A	1.00

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1641.03	48.04	27.62	3.82	35.24	9.50	0.00	34.73	74.00	-39.27	P	1.00
1641.03	39.81	27.62	3.82	35.24	9.50	0.00	26.50	54.00	-27.50	A	1.00
3282.70	56.37	30.66	5.67	35.60	9.50	0.00	47.59	74.00	-26.41	P	1.00
3282.70	53.66	30.66	5.67	35.60	9.50	0.00	44.88	54.00	-9.12	A	1.00
4927.72	52.19	34.94	6.32	35.69	9.50	0.24	48.51	74.00	-25.49	P	1.00
4927.72	37.66	34.94	6.32	35.69	9.50	0.24	33.98	54.00	-20.02	A	1.00
7386.00	46.76	39.55	8.33	35.95	9.50	0.76	49.95	74.00	-24.05	P	1.00
7386.00	33.25	39.55	8.33	35.95	9.50	0.76	36.44	54.00	-17.56	A	1.00
12310.00	47.01	41.61	10.49	35.00	9.50	0.35	54.95	74.00	-19.05	P	1.00
12310.00	33.42	41.61	10.49	35.00	9.50	0.35	41.36	54.00	-12.64	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/03
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11n HT20 TX (CH Low)	TEMP & Humidity	25°C, 59%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1608.00	48.14	27.38	3.77	35.26	9.50	0.00	34.53	74.00	-39.47	P	1.00
1608.00	34.27	27.38	3.77	35.26	9.50	0.00	20.66	54.00	-33.34	A	1.00
3216.08	49.77	30.64	5.63	35.60	9.50	0.00	40.94	74.00	-33.06	P	1.00
3216.08	39.52	30.64	5.63	35.60	9.50	0.00	30.69	54.00	-23.31	A	1.00
4824.21	46.01	34.71	6.32	35.66	9.50	0.35	42.22	74.00	-31.78	P	1.00
4824.21	33.28	34.71	6.32	35.66	9.50	0.35	29.49	54.00	-24.51	A	1.00
7236.00	46.99	39.22	8.27	35.89	9.50	0.90	49.99	74.00	-24.01	P	1.00
7236.00	33.30	39.22	8.27	35.89	9.50	0.90	36.30	54.00	-17.70	A	1.00
12060.00	47.58	41.36	10.56	35.40	9.50	0.43	55.03	74.00	-18.97	P	1.00
12060.00	33.69	41.36	10.56	35.40	9.50	0.43	41.14	54.00	-12.86	A	1.00

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1608.00	47.73	27.38	3.77	35.26	9.50	0.00	34.12	74.00	-39.88	P	1.00
1608.00	34.35	27.38	3.77	35.26	9.50	0.00	20.74	54.00	-33.26	A	1.00
3216.08	58.10	30.64	5.63	35.60	9.50	0.00	49.27	74.00	-24.73	P	1.00
3216.08	55.11	30.64	5.63	35.60	9.50	0.00	46.28	54.00	-7.72	A	1.00
4824.21	54.86	34.71	6.32	35.66	9.50	0.35	51.07	74.00	-22.93	P	1.00
4824.21	37.72	34.71	6.32	35.66	9.50	0.35	33.93	54.00	-20.07	A	1.00
7236.00	47.72	39.22	8.27	35.89	9.50	0.90	50.72	74.00	-23.28	P	1.00
7236.00	33.14	39.22	8.27	35.89	9.50	0.90	36.14	54.00	-17.86	A	1.00
12060.00	47.85	41.36	10.56	35.40	9.50	0.43	55.30	74.00	-18.70	P	1.00
12060.00	33.74	41.36	10.56	35.40	9.50	0.43	41.19	54.00	-12.81	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/03
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11n HT20 TX (CH Middle)	TEMP & Humidity	23°C, 51%

Measurement Distance at 1m Horizontal polarity

Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1624.54	49.42	27.50	3.80	35.25	9.50	0.00	35.96	74.00	-38.04	P	1.00
1624.54	36.00	27.50	3.80	35.25	9.50	0.00	22.54	54.00	-31.46	A	1.00
3249.32	51.19	30.65	5.65	35.60	9.50	0.00	42.39	74.00	-31.61	P	1.00
3249.32	43.87	30.65	5.65	35.60	9.50	0.00	35.07	54.00	-18.93	A	1.00
4873.26	48.05	34.82	6.32	35.67	9.50	0.30	44.31	74.00	-29.69	P	1.00
4873.26	34.66	34.82	6.32	35.67	9.50	0.30	30.92	54.00	-23.08	A	1.00
7310.69	60.08	39.38	8.30	35.92	9.50	0.83	63.17	74.00	-10.83	P	1.00
7310.69	37.45	39.38	8.30	35.92	9.50	0.83	40.54	54.00	-13.46	A	1.00
12183.97	47.63	41.48	10.52	35.21	9.50	0.39	55.32	74.00	-18.68	P	1.00
12183.97	33.85	41.48	10.52	35.21	9.50	0.39	41.54	54.00	-12.46	A	1.00

Measurement Distance at 1m Vertical polarity

Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1624.54	53.71	27.50	3.80	35.25	9.50	0.00	40.25	74.00	-33.75	P	1.00
1624.54	43.47	27.50	3.80	35.25	9.50	0.00	30.01	54.00	-23.99	A	1.00
3249.32	62.24	30.65	5.65	35.60	9.50	0.00	53.44	74.00	-20.56	P	1.00
3249.32	59.91	30.65	5.65	35.60	9.50	0.00	51.11	54.00	-2.89	A	1.00
4873.26	64.59	34.82	6.32	35.67	9.50	0.30	60.85	74.00	-13.15	P	1.00
4873.26	47.48	34.82	6.32	35.67	9.50	0.30	43.74	54.00	-10.26	A	1.00
7310.69	68.89	39.38	8.30	35.92	9.50	0.83	71.98	74.00	-2.02	P	1.00
7310.69	41.79	39.38	8.30	35.92	9.50	0.83	44.88	54.00	-9.12	A	1.00
12183.97	53.29	41.48	10.52	35.21	9.50	0.39	60.98	74.00	-13.02	P	1.00
12183.97	34.50	41.48	10.52	35.21	9.50	0.39	42.19	54.00	-11.81	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/04
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11n HT20 TX (CH High)	TEMP & Humidity	24°C, 55%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1641.38	47.82	27.62	3.82	35.24	9.50	0.00	34.52	74.00	-39.48	P	1.00
1641.38	33.77	27.62	3.82	35.24	9.50	0.00	20.47	54.00	-33.53	A	1.00
3282.75	48.25	30.66	5.67	35.60	9.50	0.00	39.47	74.00	-34.53	P	1.00
3282.75	36.40	30.66	5.67	35.60	9.50	0.00	27.62	54.00	-26.38	A	1.00
4924.52	46.59	34.93	6.32	35.68	9.50	0.25	42.90	74.00	-31.10	P	1.00
4924.52	32.87	34.93	6.32	35.68	9.50	0.25	29.18	54.00	-24.82	A	1.00
7386.00	46.96	39.55	8.33	35.95	9.50	0.76	50.15	74.00	-23.85	P	1.00
7386.00	33.77	39.55	8.33	35.95	9.50	0.76	36.96	54.00	-17.04	A	1.00
12310.00	47.61	41.61	10.49	35.00	9.50	0.35	55.55	74.00	-18.45	P	1.00
12310.00	35.05	41.61	10.49	35.00	9.50	0.35	42.99	54.00	-11.01	A	1.00

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1641.38	48.71	27.62	3.82	35.24	9.50	0.00	35.41	74.00	-38.59	P	1.00
1641.38	38.10	27.62	3.82	35.24	9.50	0.00	24.80	54.00	-29.20	A	1.00
3282.75	56.19	30.66	5.67	35.60	9.50	0.00	47.41	74.00	-26.59	P	1.00
3282.75	52.50	30.66	5.67	35.60	9.50	0.00	43.72	54.00	-10.28	A	1.00
4924.52	50.57	34.93	6.32	35.68	9.50	0.25	46.88	74.00	-27.12	P	1.00
4924.52	35.85	34.93	6.32	35.68	9.50	0.25	32.16	54.00	-21.84	A	1.00
7386.00	47.55	39.55	8.33	35.95	9.50	0.76	50.74	74.00	-23.26	P	1.00
7386.00	33.82	39.55	8.33	35.95	9.50	0.76	37.01	54.00	-16.99	A	1.00
12310.00	47.83	41.61	10.49	35.00	9.50	0.35	55.77	74.00	-18.23	P	1.00
12310.00	34.07	41.61	10.49	35.00	9.50	0.35	42.01	54.00	-11.99	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/04
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11n HT40 TX (CH Low)	TEMP & Humidity	24°C, 55%

Measurement Distance at 1m Horizontal polarity

Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1614.73	48.23	27.43	3.78	35.25	9.50	0.00	34.68	74.00	-39.32	P	1.00
1614.73	33.42	27.43	3.78	35.25	9.50	0.00	19.87	54.00	-34.13	A	1.00
3229.39	47.85	30.65	5.64	35.60	9.50	0.00	39.03	74.00	-34.97	P	1.00
3229.39	36.12	30.65	5.64	35.60	9.50	0.00	27.30	54.00	-26.70	A	1.00
4842.94	46.82	34.75	6.32	35.67	9.50	0.33	43.05	74.00	-30.95	P	1.00
4842.94	33.15	34.75	6.32	35.67	9.50	0.33	29.38	54.00	-24.62	A	1.00
7266.00	47.23	39.29	8.28	35.91	9.50	0.88	50.27	74.00	-23.73	P	1.00
7266.00	33.41	39.29	8.28	35.91	9.50	0.88	36.45	54.00	-17.55	A	1.00
12110.00	47.87	41.41	10.55	35.32	9.50	0.41	55.42	74.00	-18.58	P	1.00
12110.00	33.05	41.41	10.55	35.32	9.50	0.41	40.60	54.00	-13.40	A	1.00

Measurement Distance at 1m Vertical polarity

Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1614.73	48.52	27.43	3.78	35.25	9.50	0.00	34.97	74.00	-39.03	P	1.00
1614.73	33.78	27.43	3.78	35.25	9.50	0.00	20.23	54.00	-33.77	A	1.00
3229.39	56.37	30.65	5.64	35.60	9.50	0.00	47.55	74.00	-26.45	P	1.00
3229.39	52.45	30.65	5.64	35.60	9.50	0.00	43.63	54.00	-10.37	A	1.00
4842.94	48.05	34.75	6.32	35.67	9.50	0.33	44.28	74.00	-29.72	P	1.00
4842.94	34.53	34.75	6.32	35.67	9.50	0.33	30.76	54.00	-23.24	A	1.00
7266.00	47.12	39.29	8.28	35.91	9.50	0.88	50.16	74.00	-23.84	P	1.00
7266.00	33.43	39.29	8.28	35.91	9.50	0.88	36.47	54.00	-17.53	A	1.00
12110.00	47.59	41.41	10.55	35.32	9.50	0.41	55.14	74.00	-18.86	P	1.00
12110.00	33.01	41.41	10.55	35.32	9.50	0.41	40.56	54.00	-13.44	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/03
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11n HT40 TX (CH Middle)	TEMP & Humidity	23°C, 51%

Measurement Distance at 1m Horizontal polarity

Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1624.75	48.13	27.50	3.80	35.25	9.50	0.00	34.68	74.00	-39.32	P	1.00
1624.75	35.22	27.50	3.80	35.25	9.50	0.00	21.77	54.00	-32.23	A	1.00
3249.45	50.49	30.65	5.65	35.60	9.50	0.00	41.69	74.00	-32.31	P	1.00
3249.45	42.03	30.65	5.65	35.60	9.50	0.00	33.23	54.00	-20.77	A	1.00
4867.68	47.26	34.81	6.32	35.67	9.50	0.30	43.52	74.00	-30.48	P	1.00
4867.68	32.99	34.81	6.32	35.67	9.50	0.30	29.25	54.00	-24.75	A	1.00
7327.53	58.18	39.42	8.30	35.93	9.50	0.82	61.29	74.00	-12.71	P	1.00
7327.53	37.61	39.42	8.30	35.93	9.50	0.82	40.72	54.00	-13.28	A	1.00
12205.62	47.56	41.51	10.52	35.17	9.50	0.38	55.30	74.00	-18.70	P	1.00
12205.62	33.90	41.51	10.52	35.17	9.50	0.38	41.64	54.00	-12.36	A	1.00

Measurement Distance at 1m Vertical polarity

Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1624.75	53.69	27.50	3.80	35.25	9.50	0.00	40.24	74.00	-33.76	P	1.00
1624.75	45.62	27.50	3.80	35.25	9.50	0.00	32.17	54.00	-21.83	A	1.00
3249.45	63.73	30.65	5.65	35.60	9.50	0.00	54.93	74.00	-19.07	P	1.00
3249.45	59.83	30.65	5.65	35.60	9.50	0.00	51.03	54.00	-2.97	A	1.00
4867.68	59.95	34.81	6.32	35.67	9.50	0.30	56.21	74.00	-17.79	P	1.00
4867.68	44.50	34.81	6.32	35.67	9.50	0.30	40.76	54.00	-13.24	A	1.00
7327.53	67.97	39.42	8.30	35.93	9.50	0.82	71.08	74.00	-2.92	P	1.00
7327.53	45.17	39.42	8.30	35.93	9.50	0.82	48.28	54.00	-5.72	A	1.00
12205.62	50.38	41.51	10.52	35.17	9.50	0.38	58.12	74.00	-15.88	P	1.00
12205.62	35.33	41.51	10.52	35.17	9.50	0.38	43.07	54.00	-10.93	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/03/03
Model	DAP-2553	Test By	Gumdam Lin
Test Mode	IEEE 802.11n HT40 TX (CH High)	TEMP & Humidity	23°C, 51%

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1634.73	47.57	27.57	3.81	35.25	9.50	0.00	34.21	74.00	-39.79	P	1.00
1634.73	33.38	27.57	3.81	35.25	9.50	0.00	20.02	54.00	-33.98	A	1.00
3269.40	48.45	30.65	5.66	35.60	9.50	0.00	39.66	74.00	-34.34	P	1.00
3269.40	36.39	30.65	5.66	35.60	9.50	0.00	27.60	54.00	-26.40	A	1.00
4904.05	46.69	34.89	6.32	35.68	9.50	0.27	42.98	74.00	-31.02	P	1.00
4904.05	32.36	34.89	6.32	35.68	9.50	0.27	28.65	54.00	-25.35	A	1.00
7356.00	47.31	39.48	8.32	35.94	9.50	0.79	50.46	74.00	-23.54	P	1.00
7356.00	33.57	39.48	8.32	35.94	9.50	0.79	36.72	54.00	-17.28	A	1.00
12260.00	47.63	41.56	10.50	35.08	9.50	0.37	55.47	74.00	-18.53	P	1.00
12260.00	33.55	41.56	10.50	35.08	9.50	0.37	41.39	54.00	-12.61	A	1.00

Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBµV)	AF (dBµV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1634.73	48.70	27.57	3.81	35.25	9.50	0.00	35.34	74.00	-38.66	P	1.00
1634.73	38.52	27.57	3.81	35.25	9.50	0.00	25.16	54.00	-28.84	A	1.00
3269.40	56.09	30.65	5.66	35.60	9.50	0.00	47.30	74.00	-26.70	P	1.00
3269.40	52.39	30.65	5.66	35.60	9.50	0.00	43.60	54.00	-10.40	A	1.00
4904.05	47.66	34.89	6.32	35.68	9.50	0.27	43.95	74.00	-30.05	P	1.00
4904.05	33.95	34.89	6.32	35.68	9.50	0.27	30.24	54.00	-23.76	A	1.00
7356.00	47.28	39.48	8.32	35.94	9.50	0.79	50.43	74.00	-23.57	P	1.00
7356.00	33.43	39.48	8.32	35.94	9.50	0.79	36.58	54.00	-17.42	A	1.00
12260.00	47.76	41.56	10.50	35.08	9.50	0.37	55.60	74.00	-18.40	P	1.00
12260.00	33.77	41.56	10.50	35.08	9.50	0.37	41.61	54.00	-12.39	A	1.00

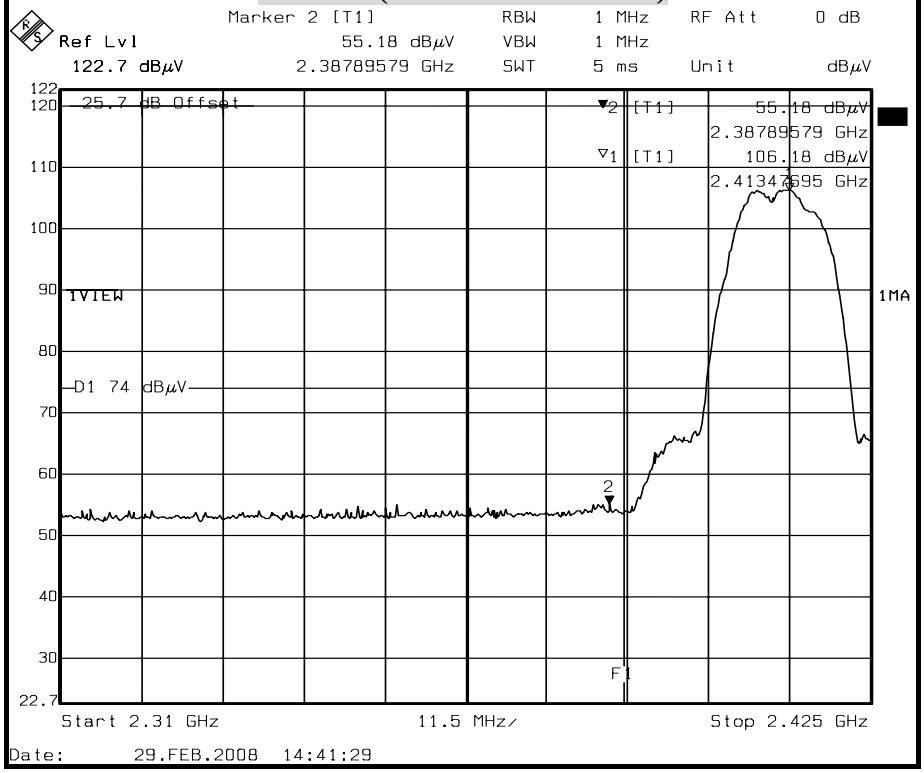
Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist : correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

8.8.4 RESTRICTED BAND EDGES

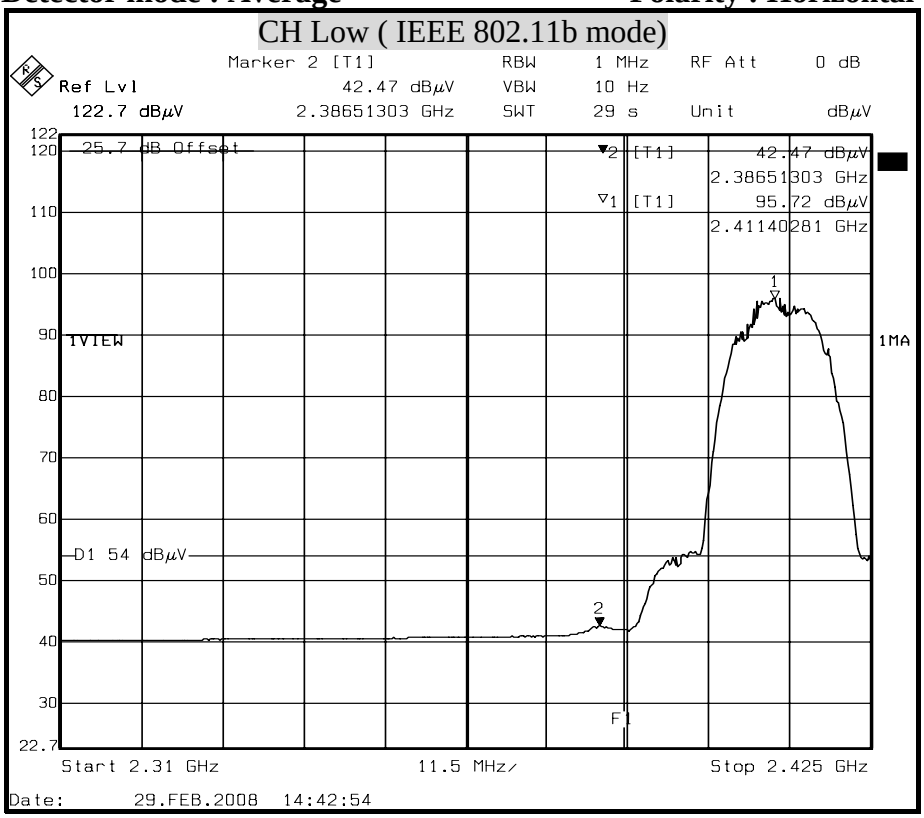
Detector mode : Peak **Polarity : Horizontal**

CH Low (IEEE 802.11b mode)

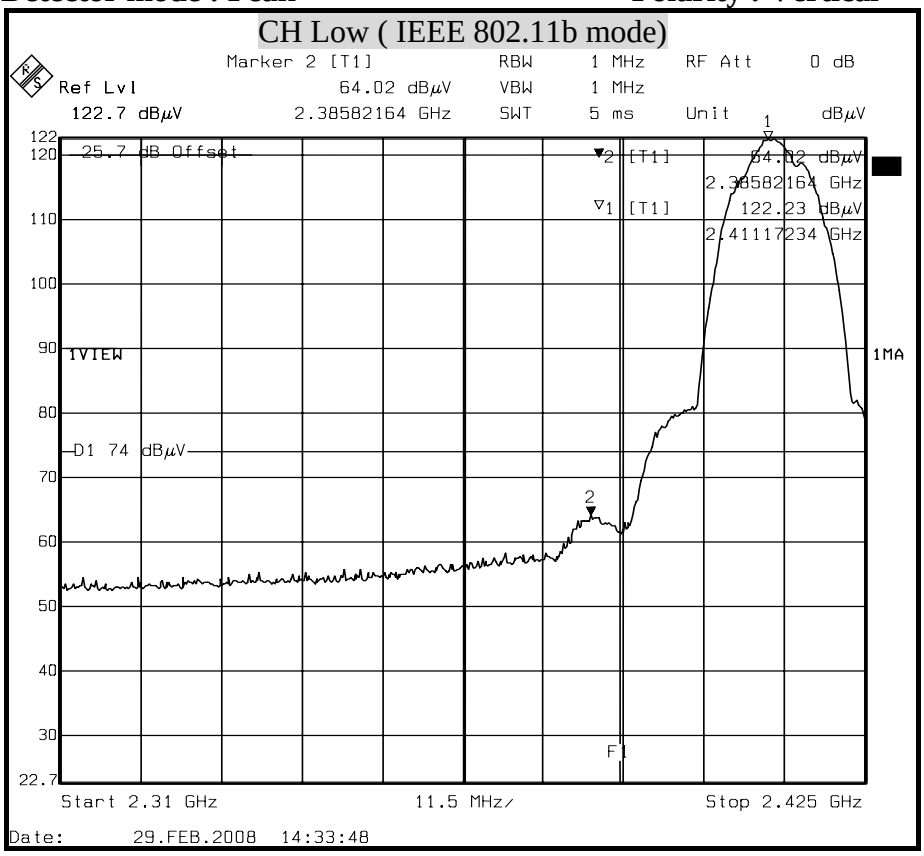


Detector mode : Average **Polarity : Horizontal**

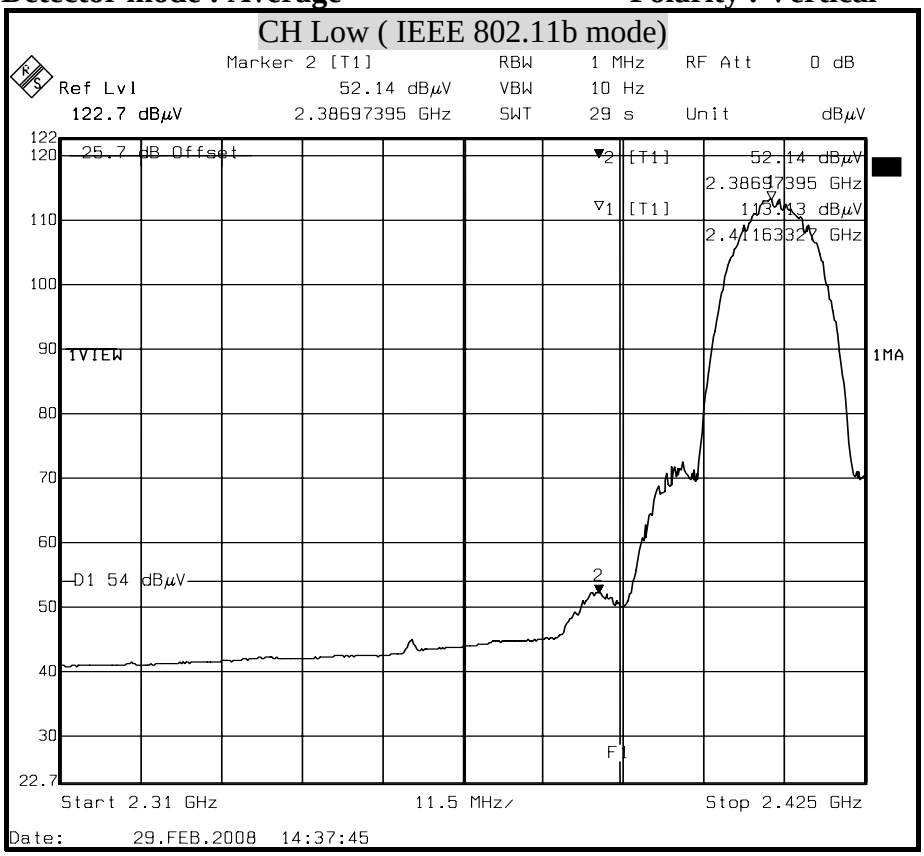
CH Low (IEEE 802.11b mode)



Detector mode : Peak **Polarity : Vertical**

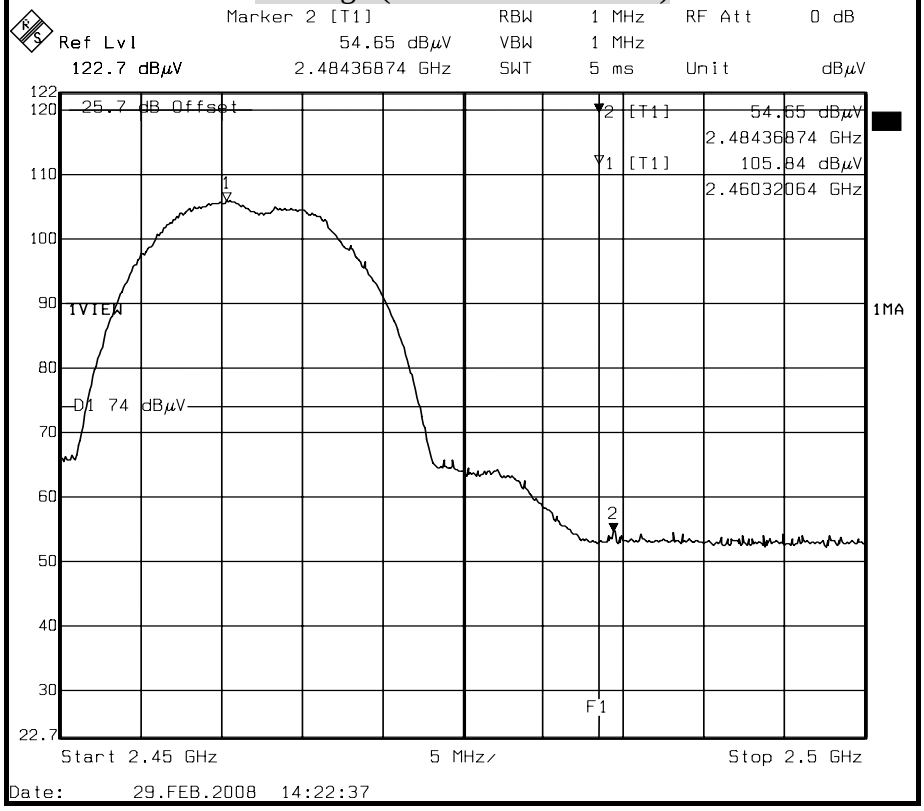


Detector mode : Average **Polarity : Vertical**



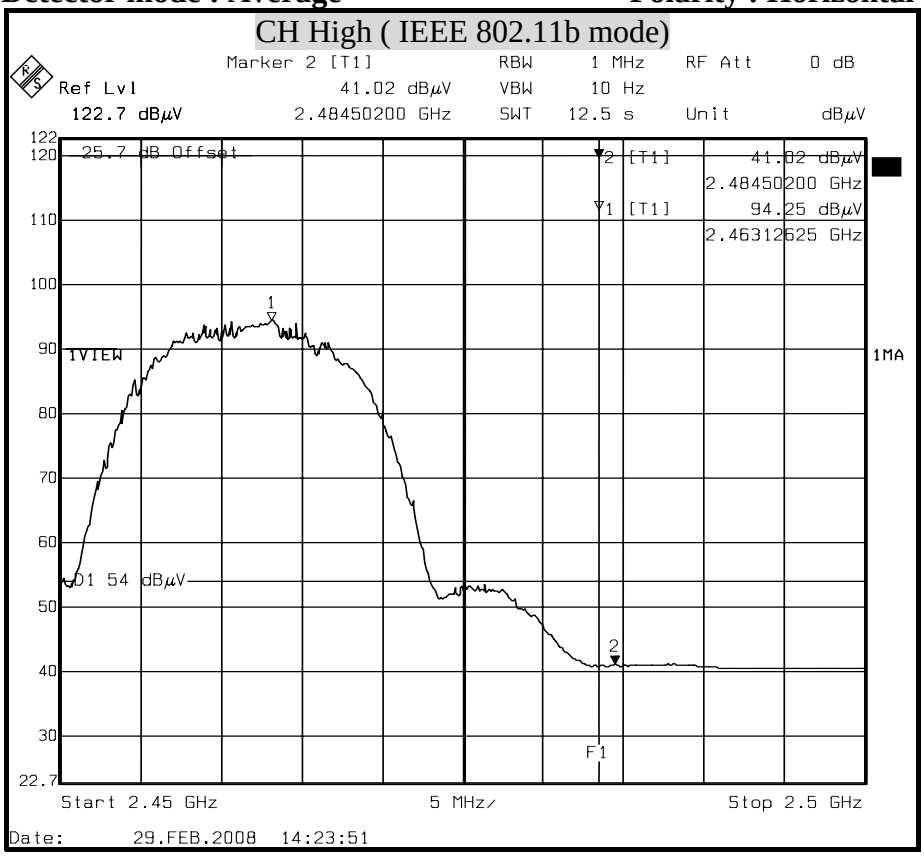
Detector mode : Peak **Polarity : Horizontal**

CH High (IEEE 802.11b mode)



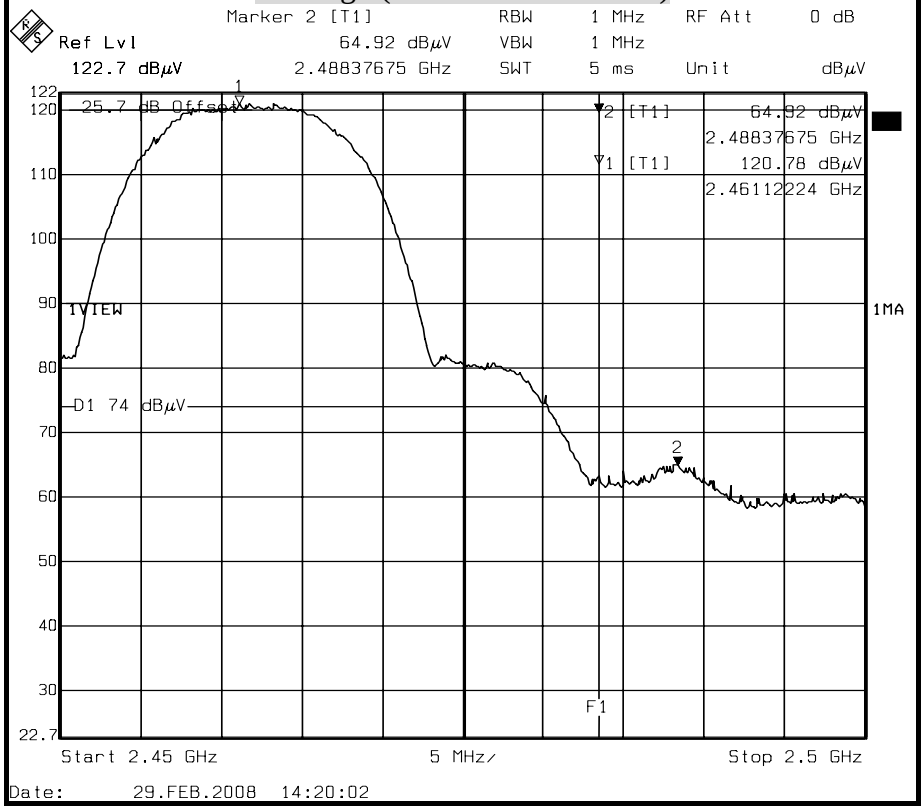
Detector mode : Average **Polarity : Horizontal**

CH High (IEEE 802.11b mode)



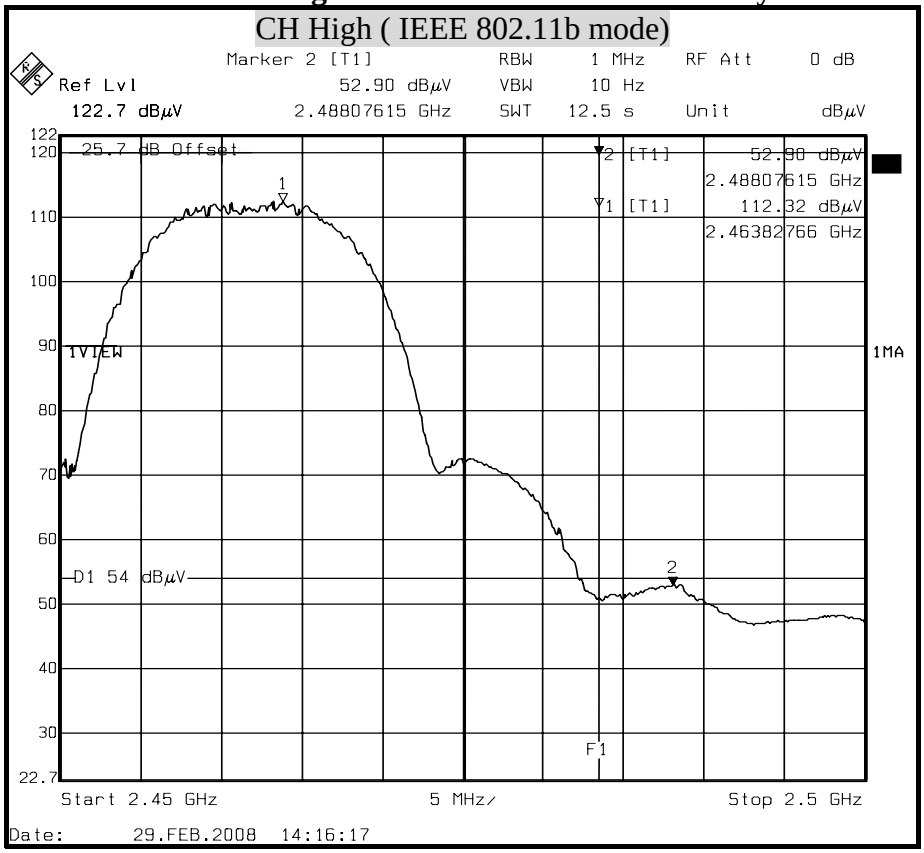
Detector mode : Peak **Polarity : Vertical**

CH High (IEEE 802.11b mode)



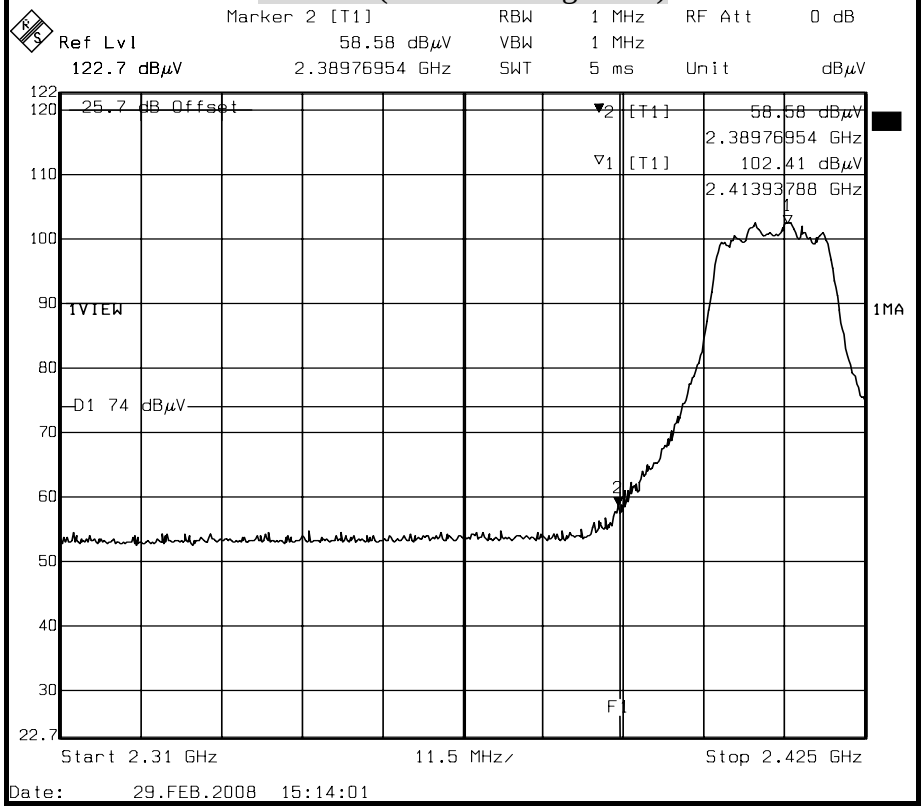
Detector mode : Average **Polarity : Vertical**

CH High (IEEE 802.11b mode)



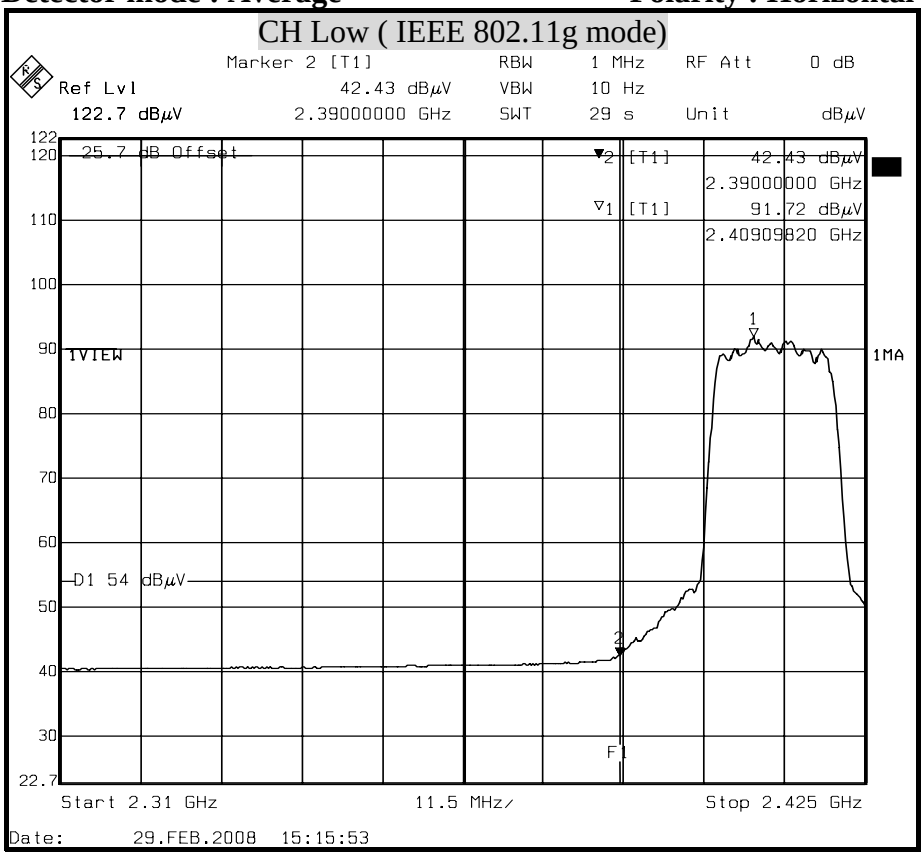
Detector mode : Peak **Polarity : Horizontal**

CH Low (IEEE 802.11g mode)



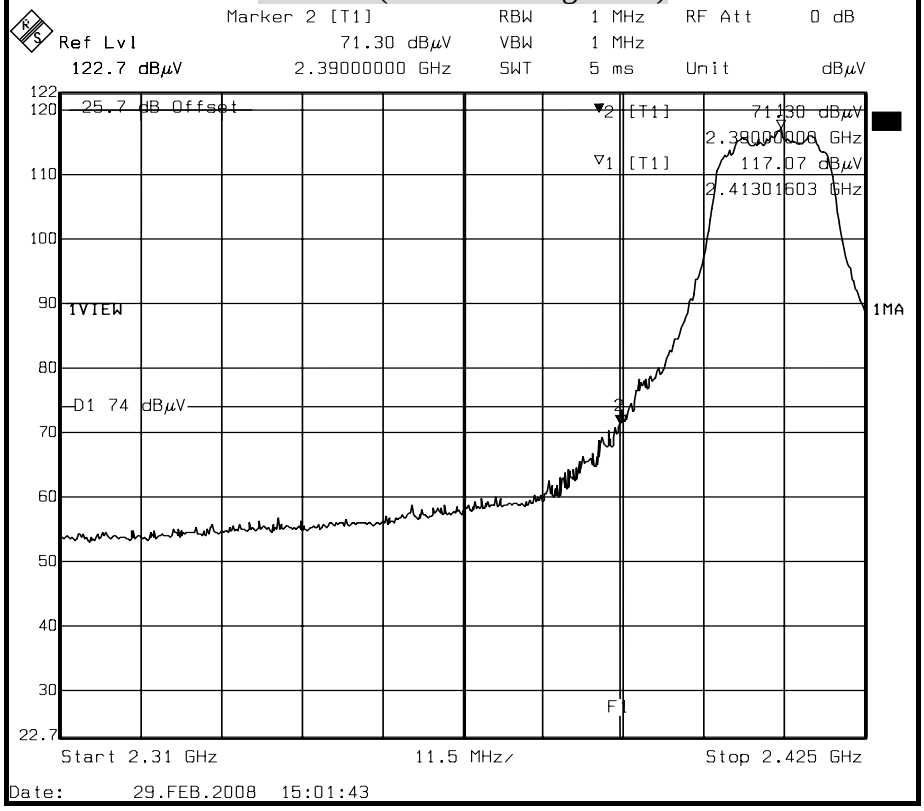
Detector mode : Average **Polarity : Horizontal**

CH Low (IEEE 802.11g mode)



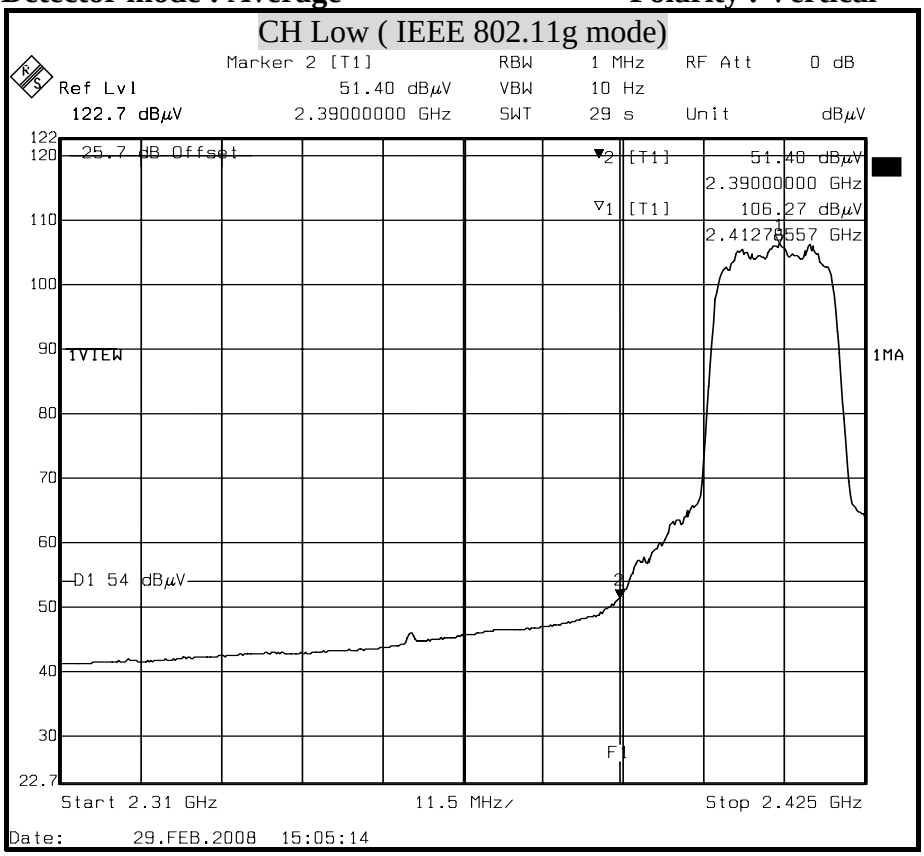
Detector mode : Peak **Polarity : Vertical**

CH Low (IEEE 802.11g mode)



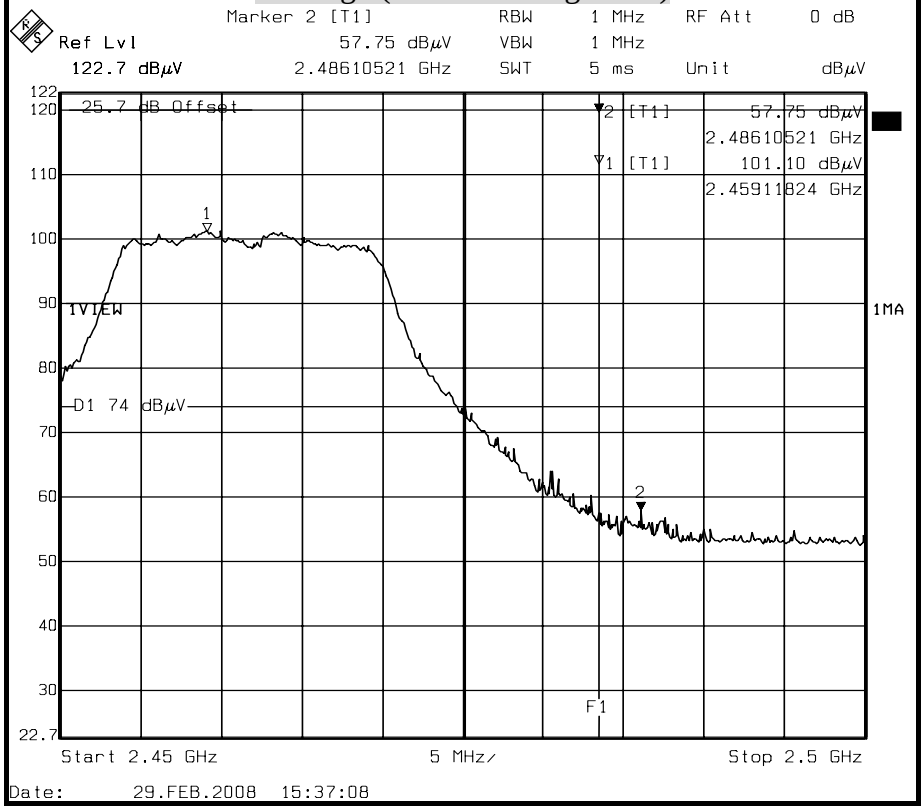
Detector mode : Average **Polarity : Vertical**

CH Low (IEEE 802.11g mode)



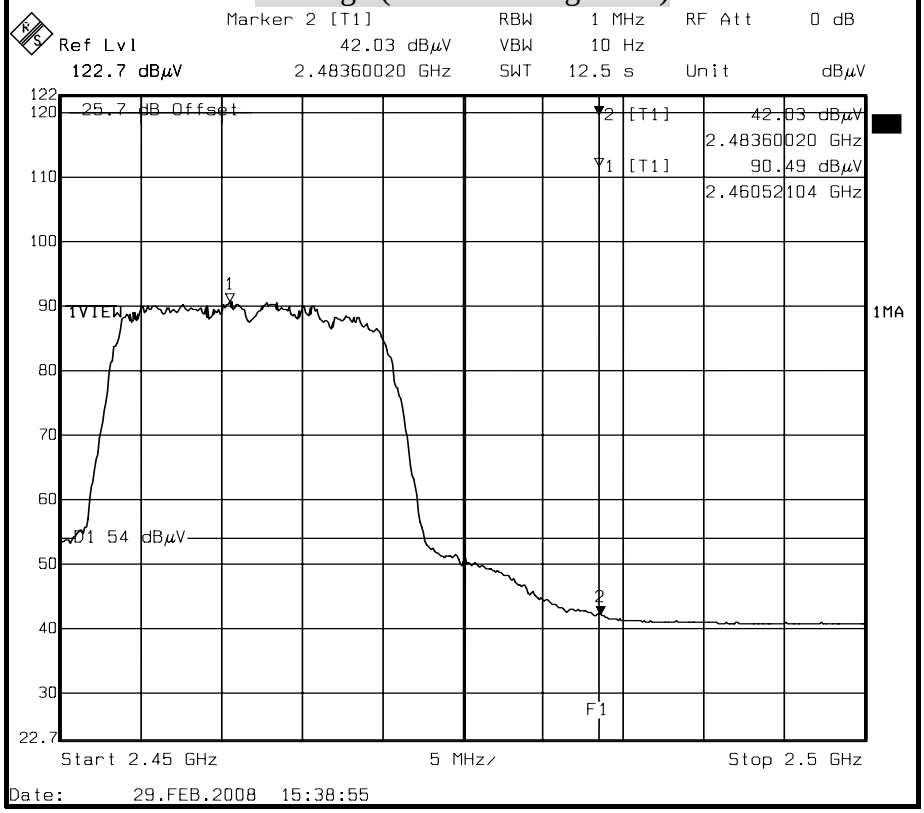
Detector mode : Peak **Polarity : Horizontal**

CH High (IEEE 802.11g mode)



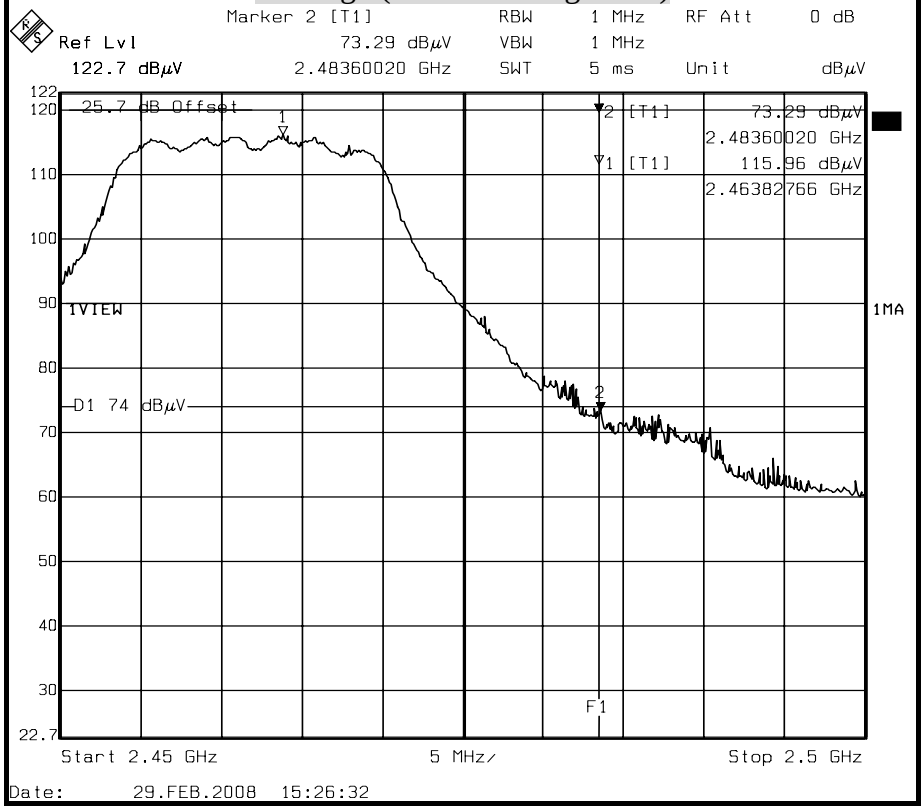
Detector mode : Average **Polarity : Horizontal**

CH High (IEEE 802.11g mode)



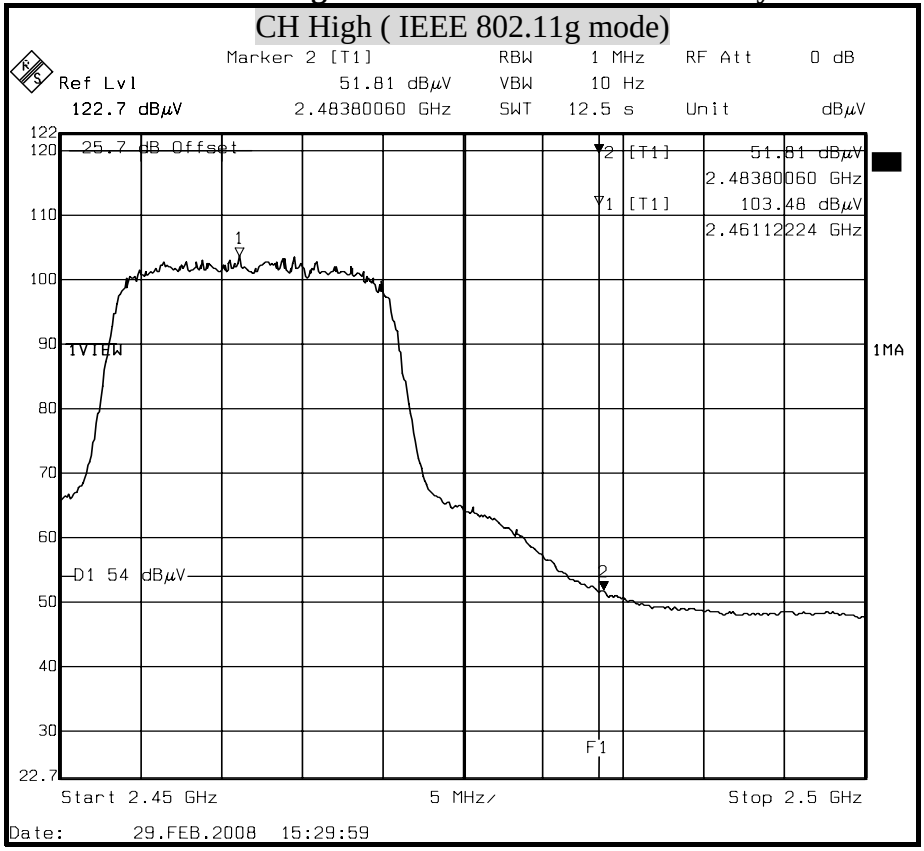
Detector mode : Peak **Polarity : Vertical**

CH High (IEEE 802.11g mode)

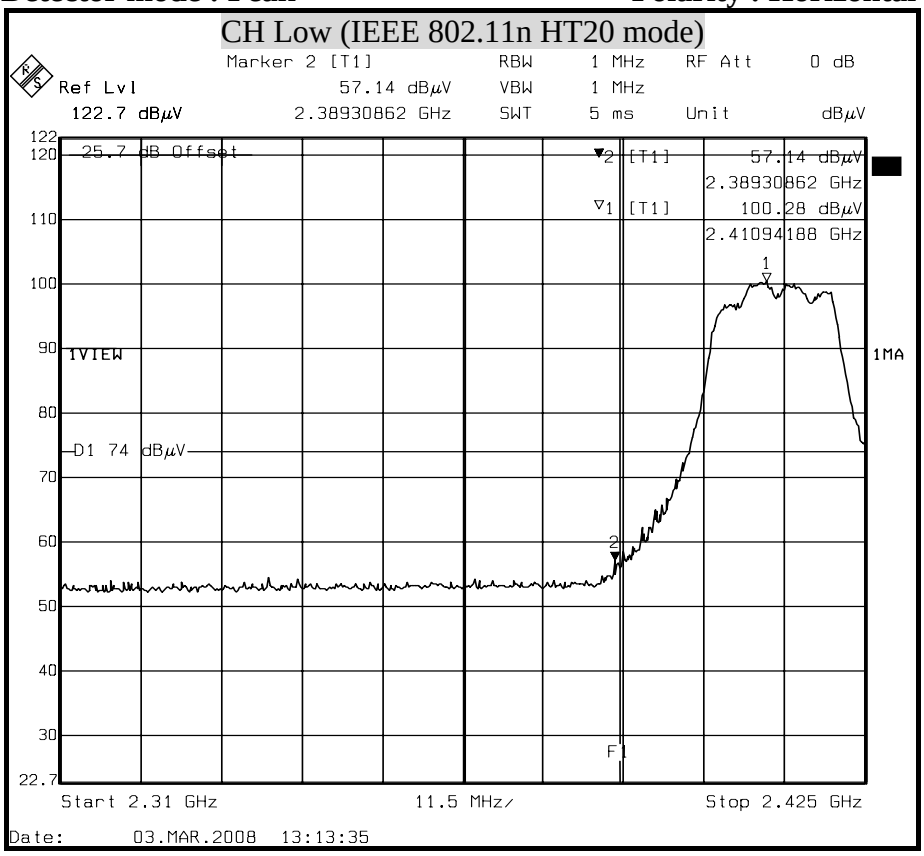


Detector mode : Average **Polarity : Vertical**

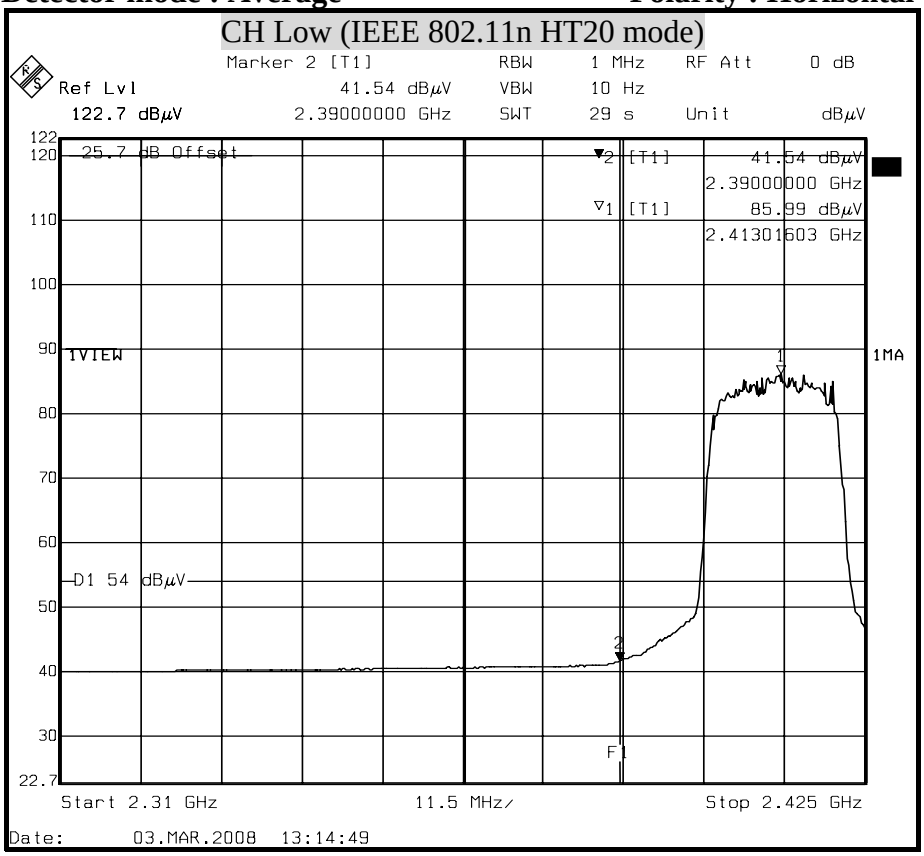
CH High (IEEE 802.11g mode)



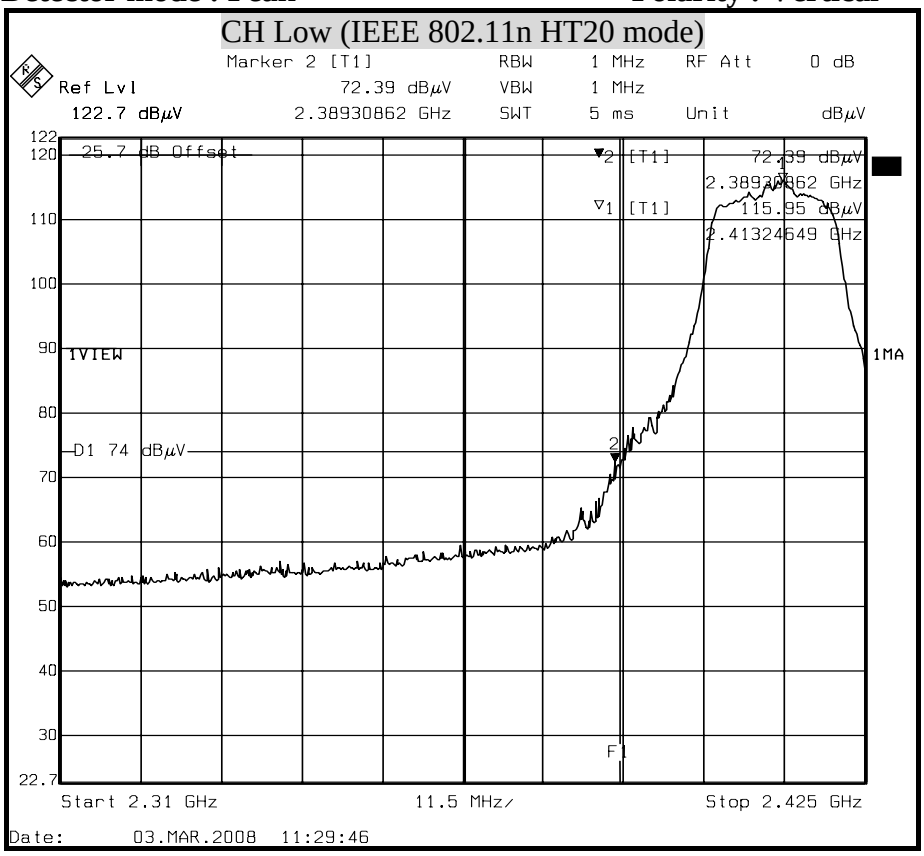
Detector mode : Peak **Polarity : Horizontal**



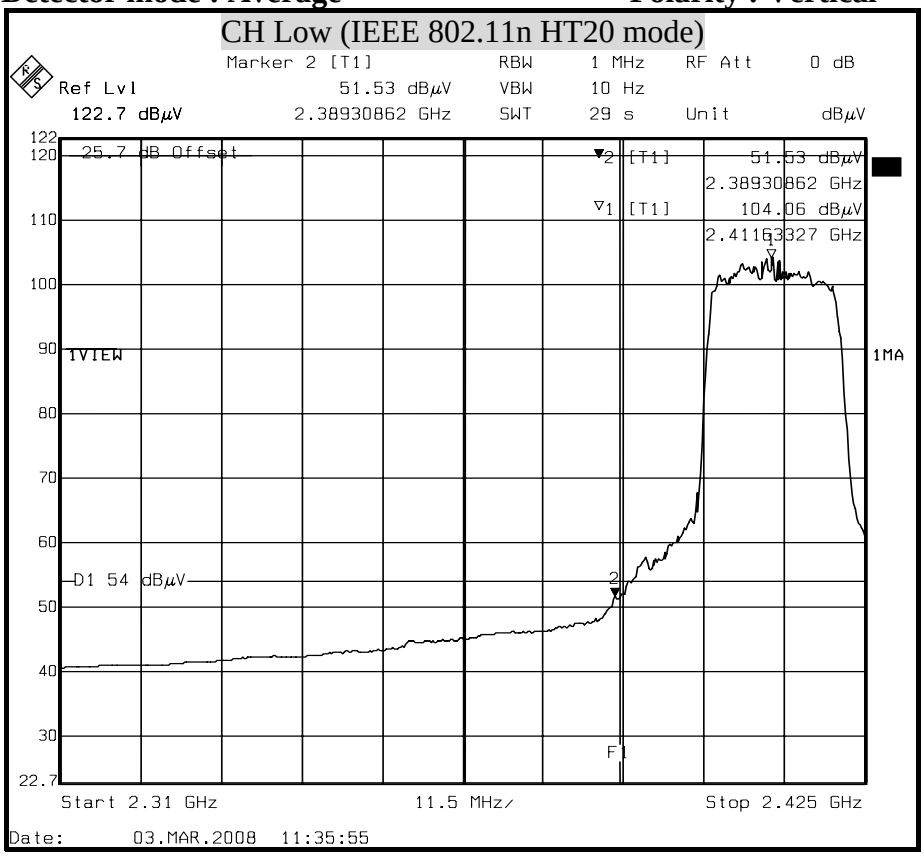
Detector mode : Average **Polarity : Horizontal**



Detector mode : Peak **Polarity : Vertical**

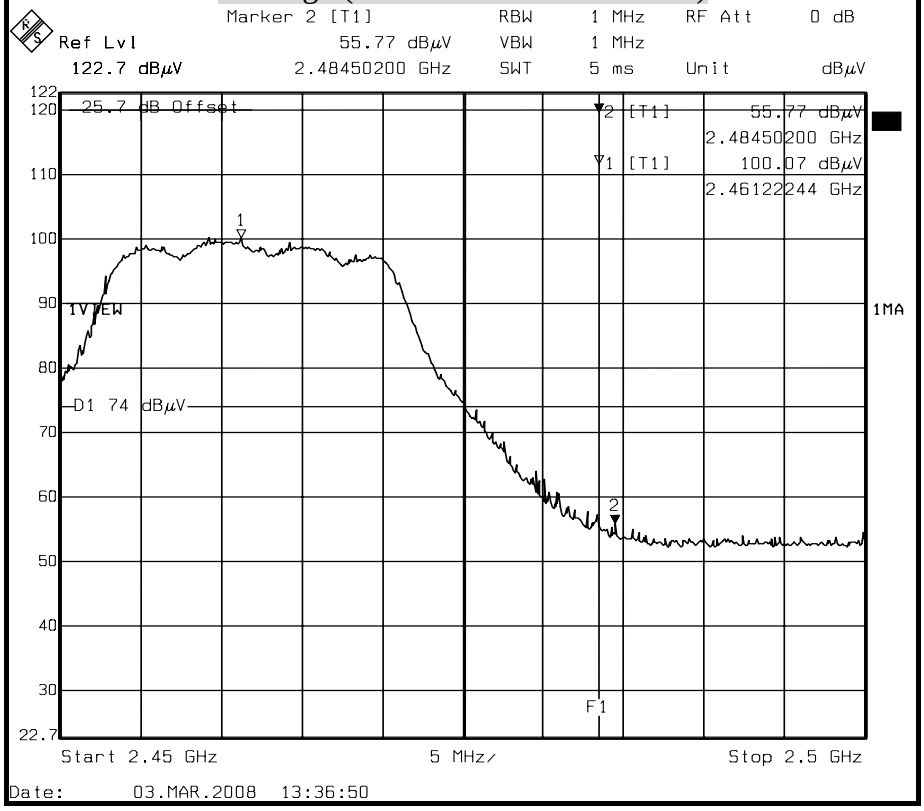


Detector mode : Average **Polarity : Vertical**



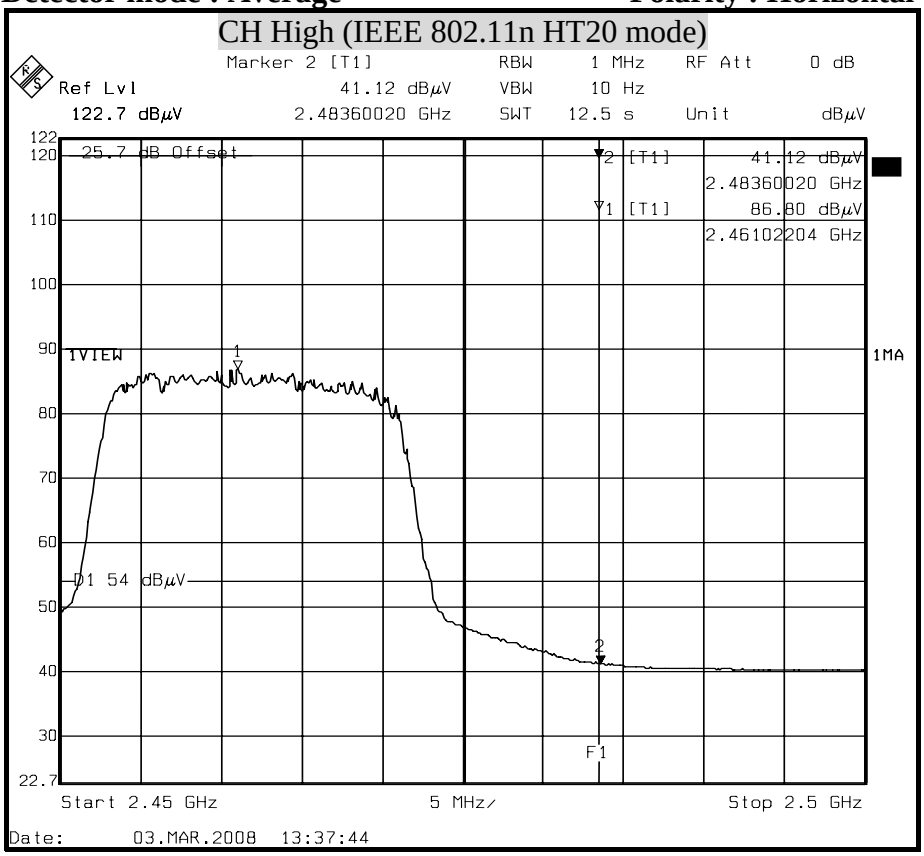
Detector mode : Peak **Polarity : Horizontal**

CH High (IEEE 802.11n HT20 mode)



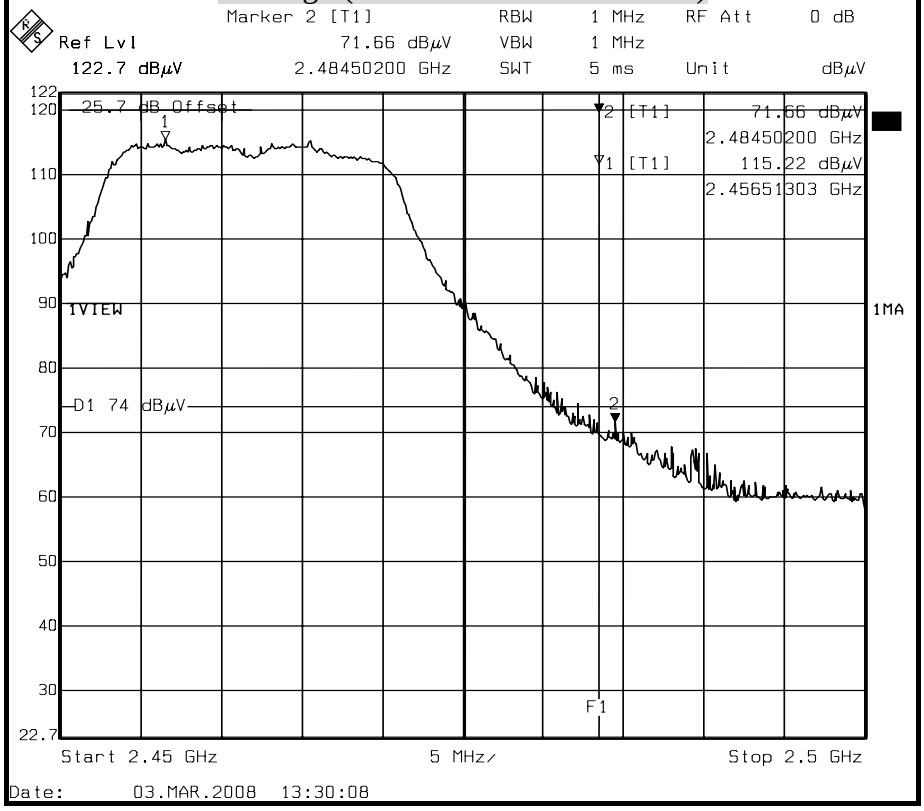
Detector mode : Average **Polarity : Horizontal**

CH High (IEEE 802.11n HT20 mode)



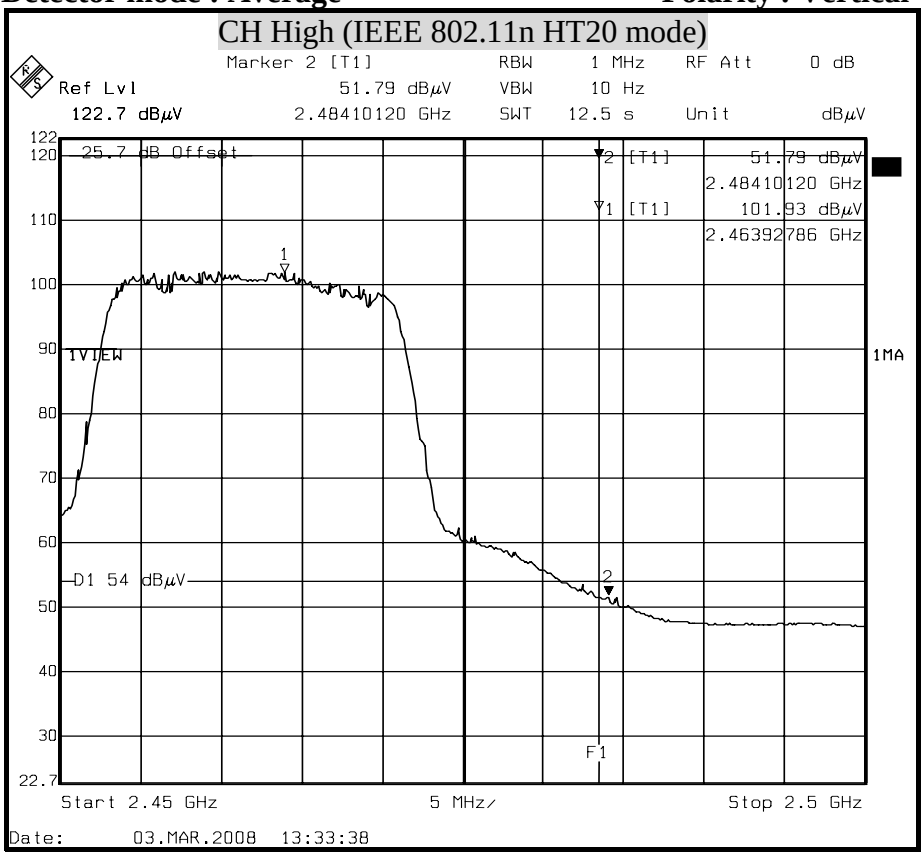
Detector mode : Peak **Polarity : Vertical**

CH High (IEEE 802.11n HT20 mode)



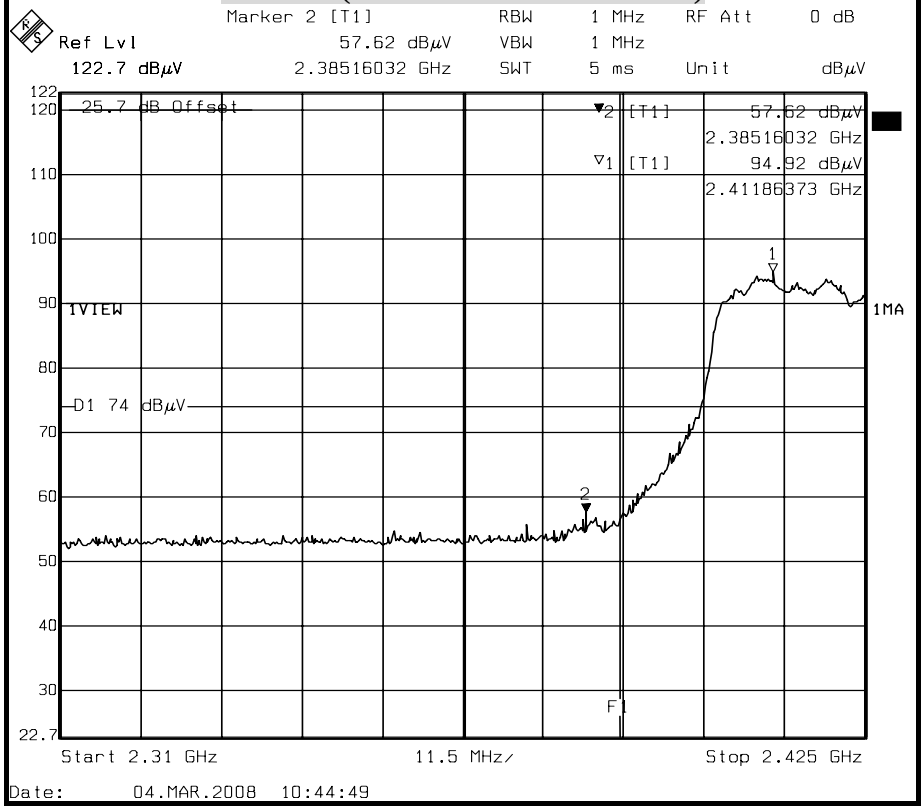
Detector mode : Average **Polarity : Vertical**

CH High (IEEE 802.11n HT20 mode)



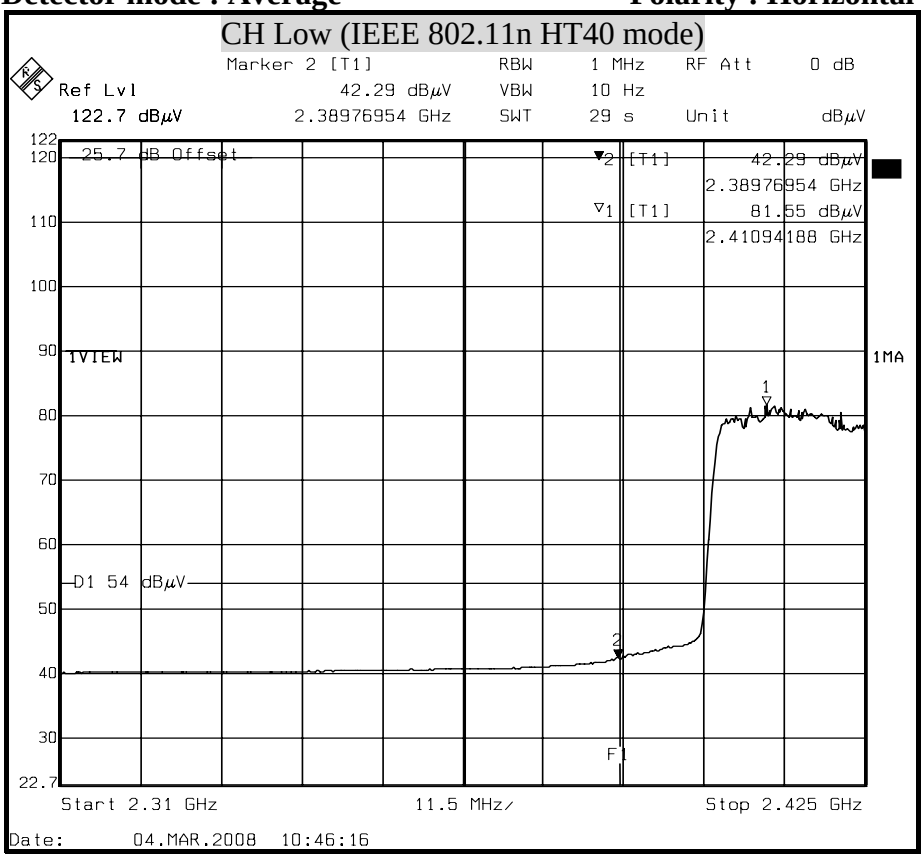
Detector mode : Peak **Polarity : Horizontal**

CH Low (IEEE 802.11n HT40 mode)

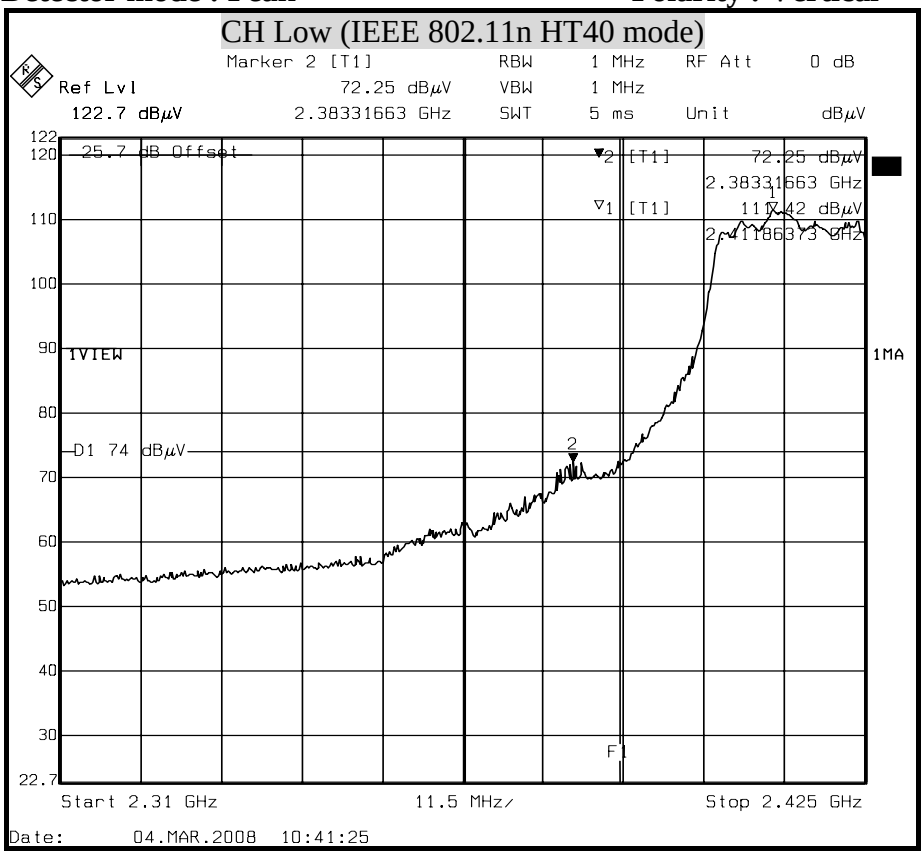


Detector mode : Average **Polarity : Horizontal**

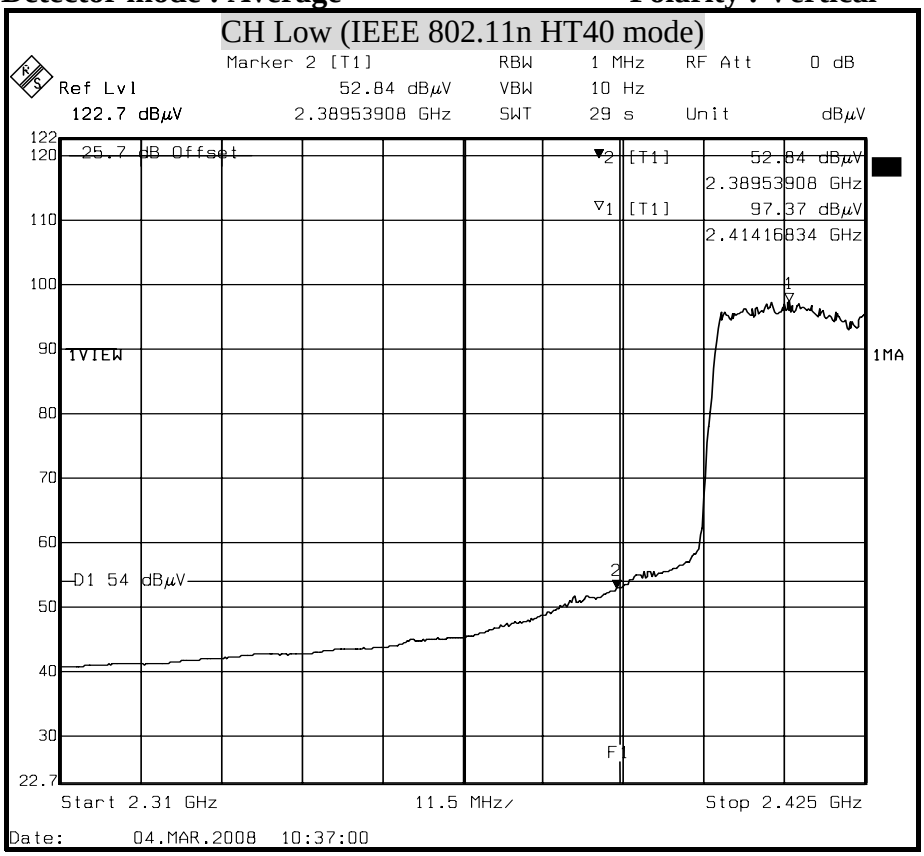
CH Low (IEEE 802.11n HT40 mode)



Detector mode : Peak **Polarity : Vertical**

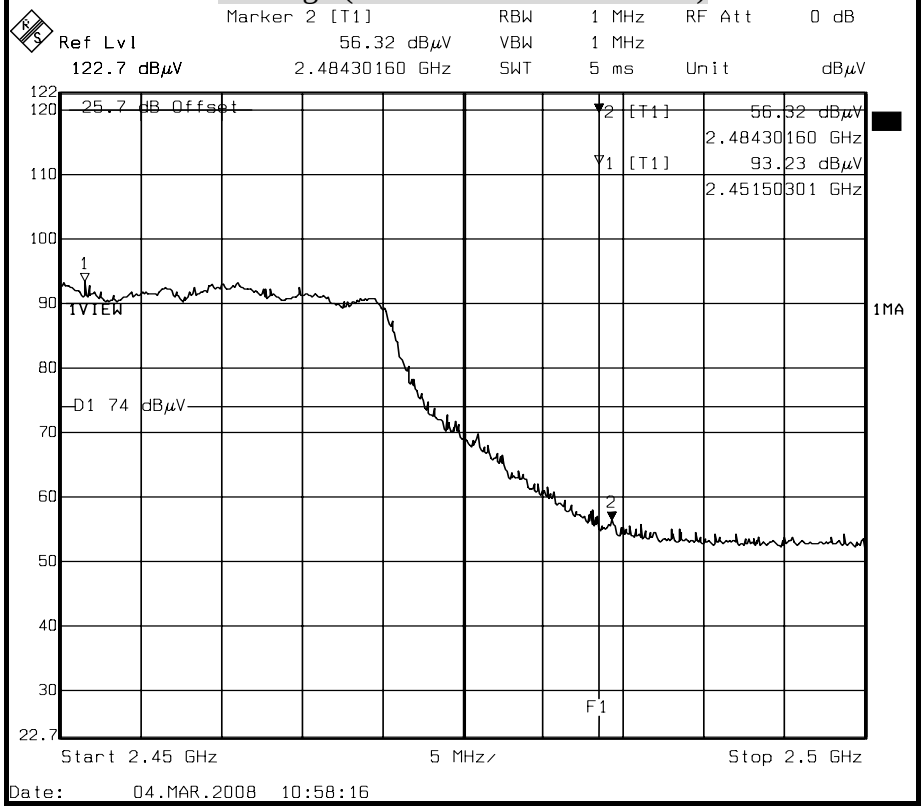


Detector mode : Average **Polarity : Vertical**



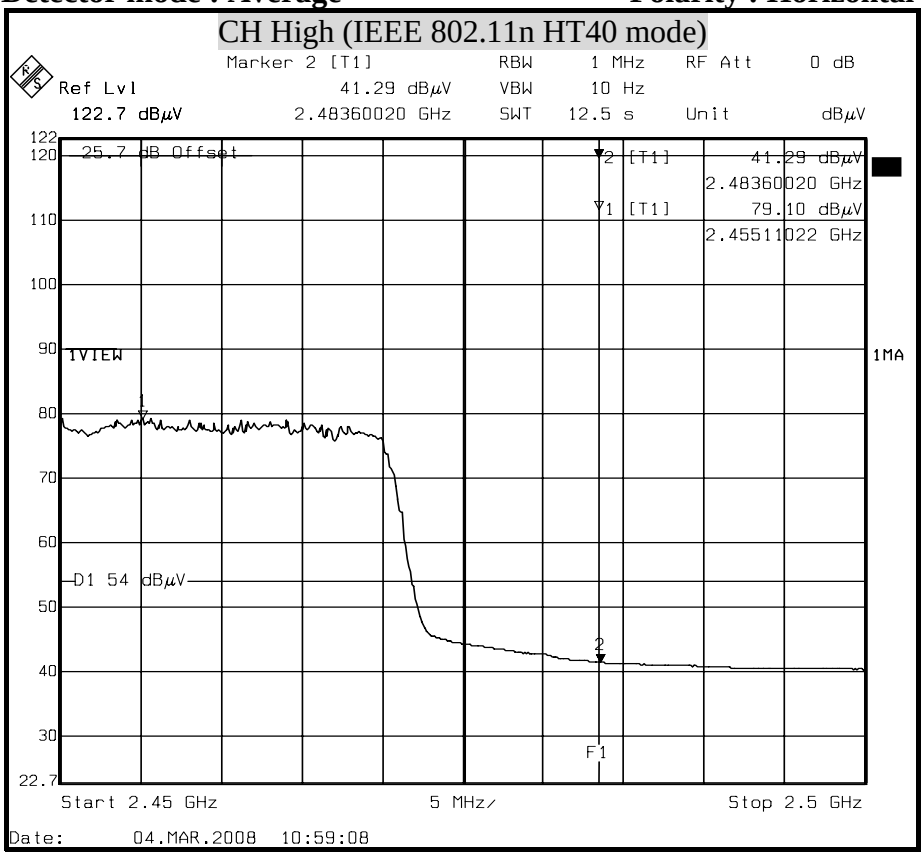
Detector mode : Peak **Polarity : Horizontal**

CH High (IEEE 802.11n HT40 mode)



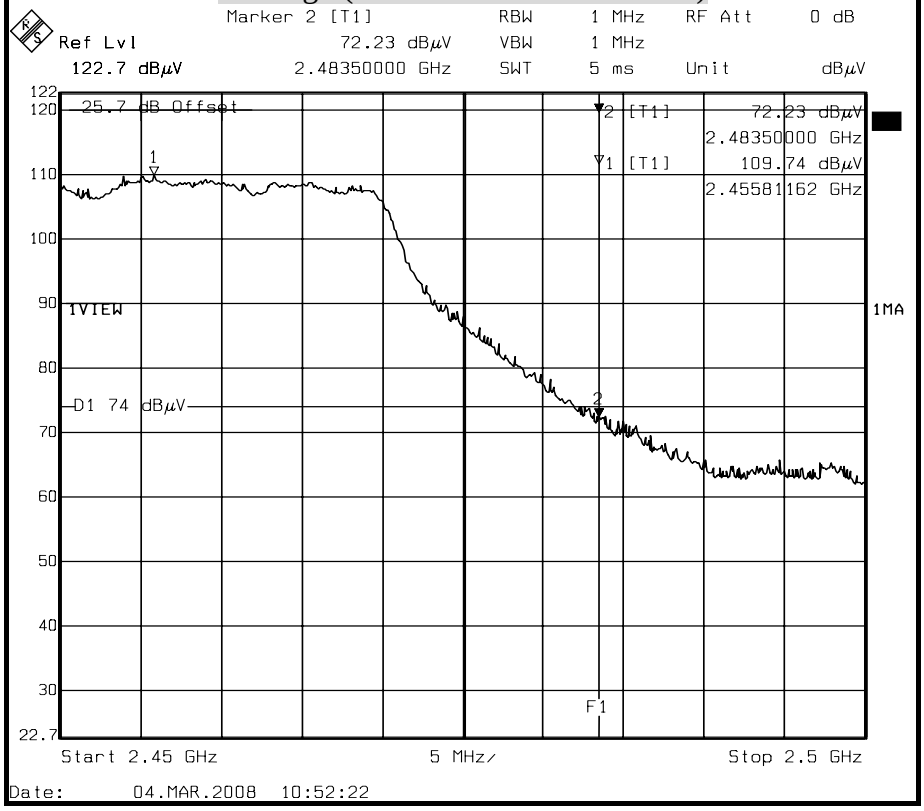
Detector mode : Average **Polarity : Horizontal**

CH High (IEEE 802.11n HT40 mode)



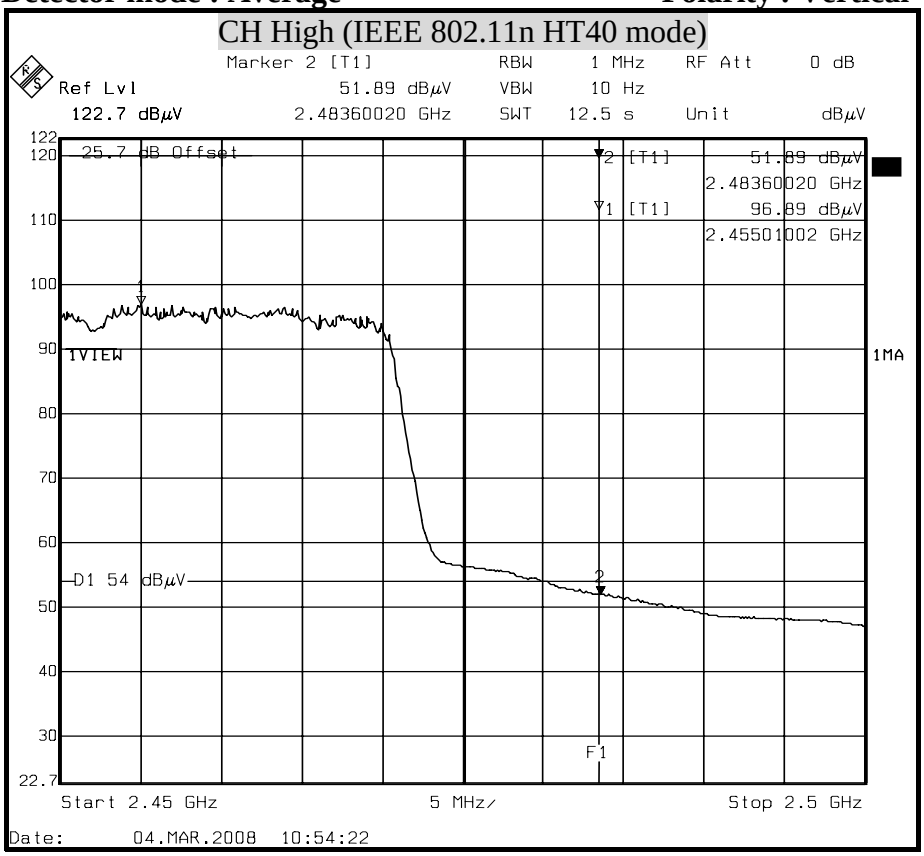
Detector mode : Peak **Polarity : Vertical**

CH High (IEEE 802.11n HT40 mode)



Detector mode : Average **Polarity : Vertical**

CH High (IEEE 802.11n HT40 mode)



8.9 POWERLINE CONDUCTED EMISSIONS

LIMITS

§ 15.207 (a) Except as shown in paragraph (b) and (c) 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.

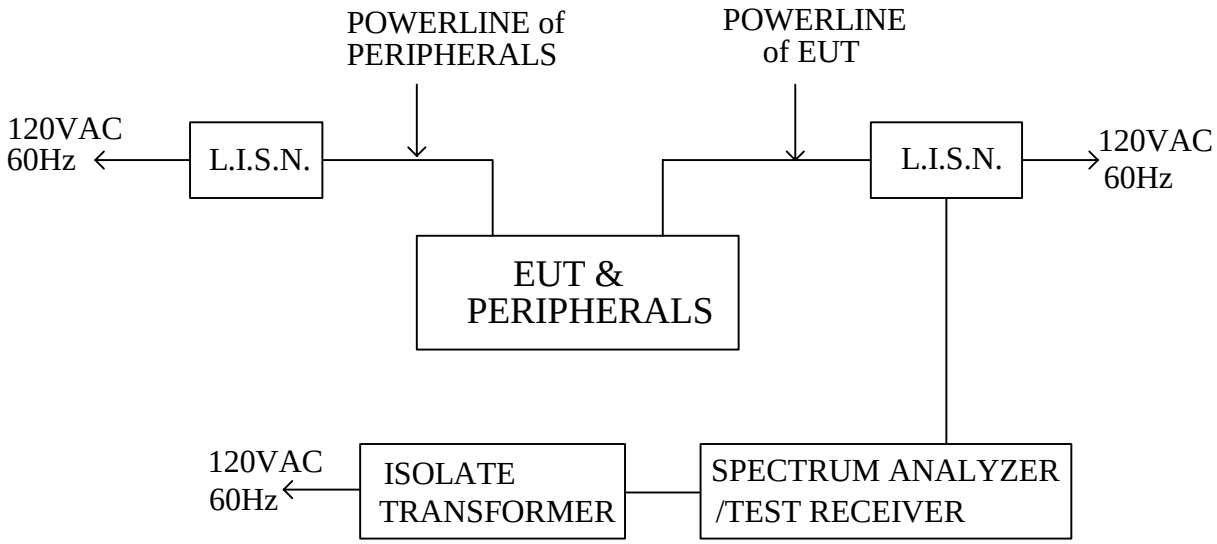
Frequency of Emission (MHz)	Conducted limit (dBµv)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.5 - 5	56	46
5 - 30	60	50

TEST EQUIPMENT

The following test equipment is used during the conducted powerline tests：

Manufacturer or Type	Model No.	Serial No.	Date of Calibration	Calibration Period	Remark
SCHWARZBECK L.I.S.N	NSLK 8127	8127-465	July 09, 2007	1 Year	FINAL
SCHWARZBECK L.I.S.N	NSLK 8127	8127-473	October 04, 2007	1 Year	FINAL
R & S TEST RECEIVER	ESHS30	838550/003	January 23, 2008	1 Year	FINAL
KEENE SHIELDED ROOM	5983	No.1	N/A	N/A	FINAL
R & S PULSE LIMIT	ESH3-Z2	10117	September 17, 2007	1 Year	FINAL
BELDEN N TYPE COAXIAL CABLE	8268 M17/164	003	September 14, 2007	1 Year	FINAL

TEST SETUP



TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80cm above the horizontal ground plane. The EUT IS CONFIGURED IN ACCORDANCE WITH ANSI C63.4.

The resolution bandwidth is set to 9 kHz for both quasi-peak detection and average detection measurements.

Line conducted data is recorded for both NEUTRAL and LINE.

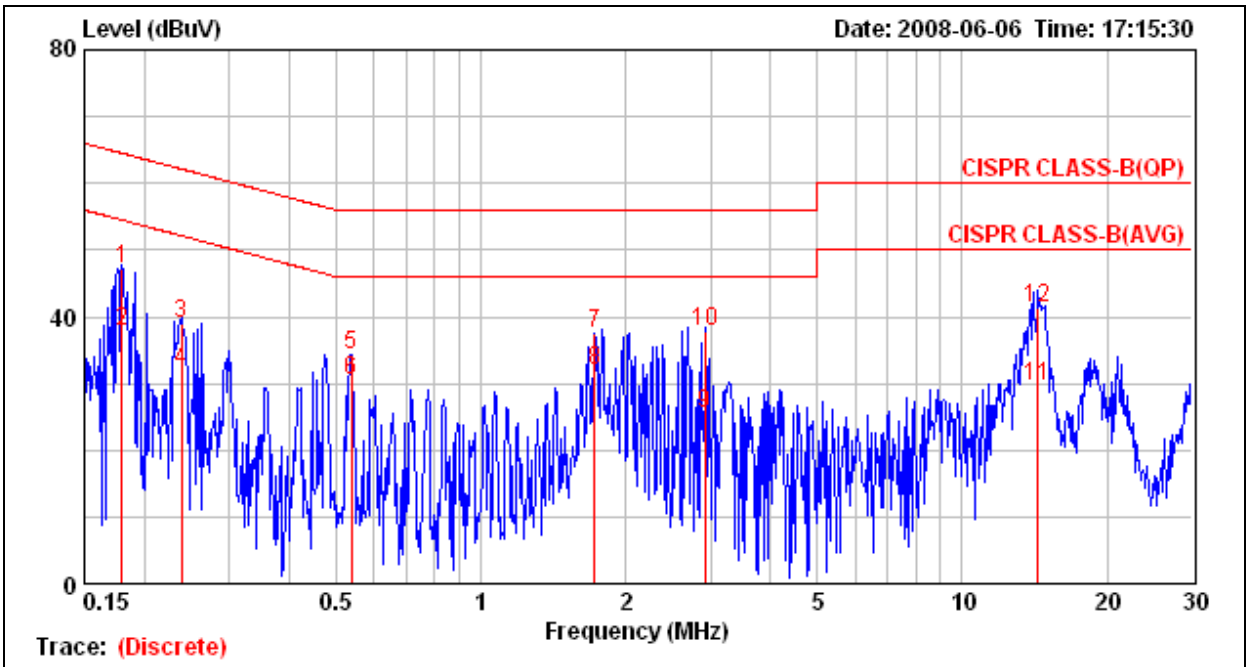
TEST RESULTS

No non-compliance noted

CONDUCTED RF VOLTAGE MEASUREMENT

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/06/06
Model	DAP-2553	Test By	Vic Lin
Test Mode	Power Adapter (1)	TEMP & Humidity	23.9°C, 72%

LINE



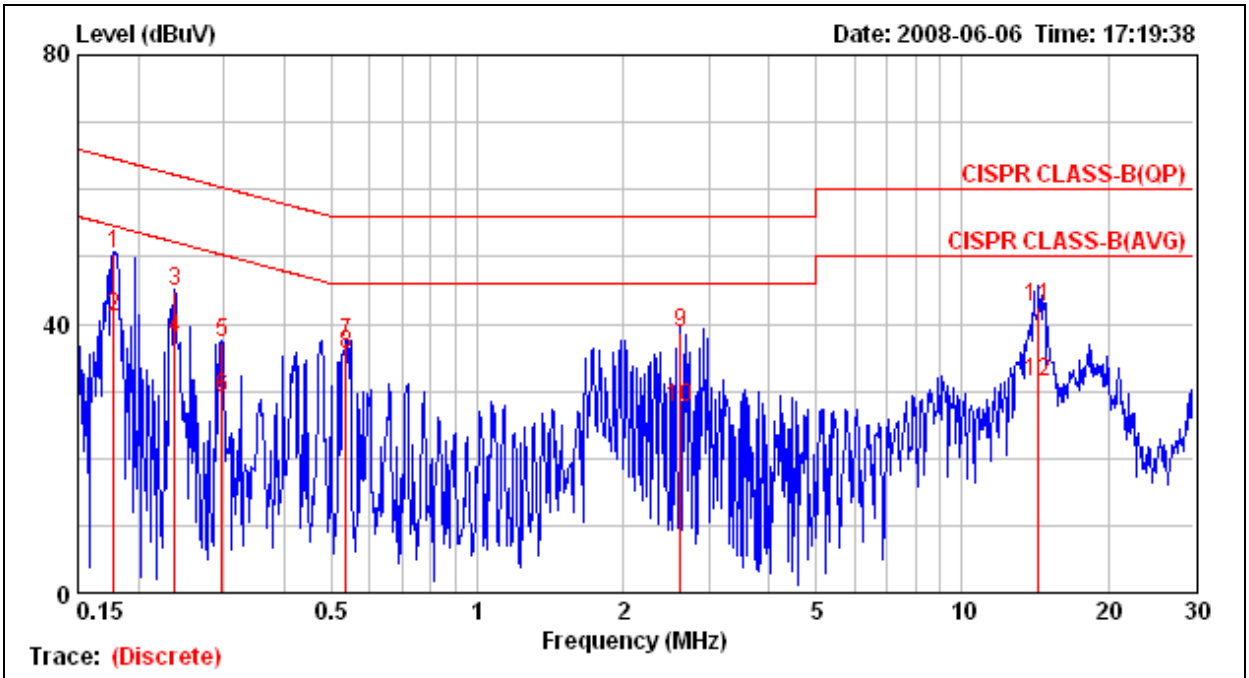
Freq. MHz	Corr. Factor dB	Reading Value dBuV Q.P.	Reading Value dBuV Ave.	Emission Level dBuV Q.P.	Emission Level dBuV Ave.	Limit dBuV Q.P.	Limit dBuV Ave.	Margin dBuV Q.P.	Margin dBuV Ave.
0.179	0.06	46.99	37.85	47.05	37.91	64.52	54.52	-17.47	-16.61
0.239	0.06	38.90	31.85	38.96	31.91	62.13	52.13	-23.17	-20.22
0.538	0.05	34.14	30.28	34.19	30.33	56.00	46.00	-21.81	-15.67
1.724	0.10	37.48	31.76	37.58	31.86	56.00	46.00	-18.42	-14.14
2.922	0.13	37.59	25.41	37.72	25.54	56.00	46.00	-18.28	-20.46
14.364	0.37	40.96	29.25	41.33	29.62	60.00	50.00	-18.67	-20.38

Remark:

1. *Correction Factor = Insertion loss + cable loss*
2. *Margin value = Emission level – Limit value*

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/06/06
Model	DAP-2553	Test By	Vic Lin
Test Mode	Power Adapter (1)	TEMP & Humidity	23.9°C, 72%

NEUTRAL



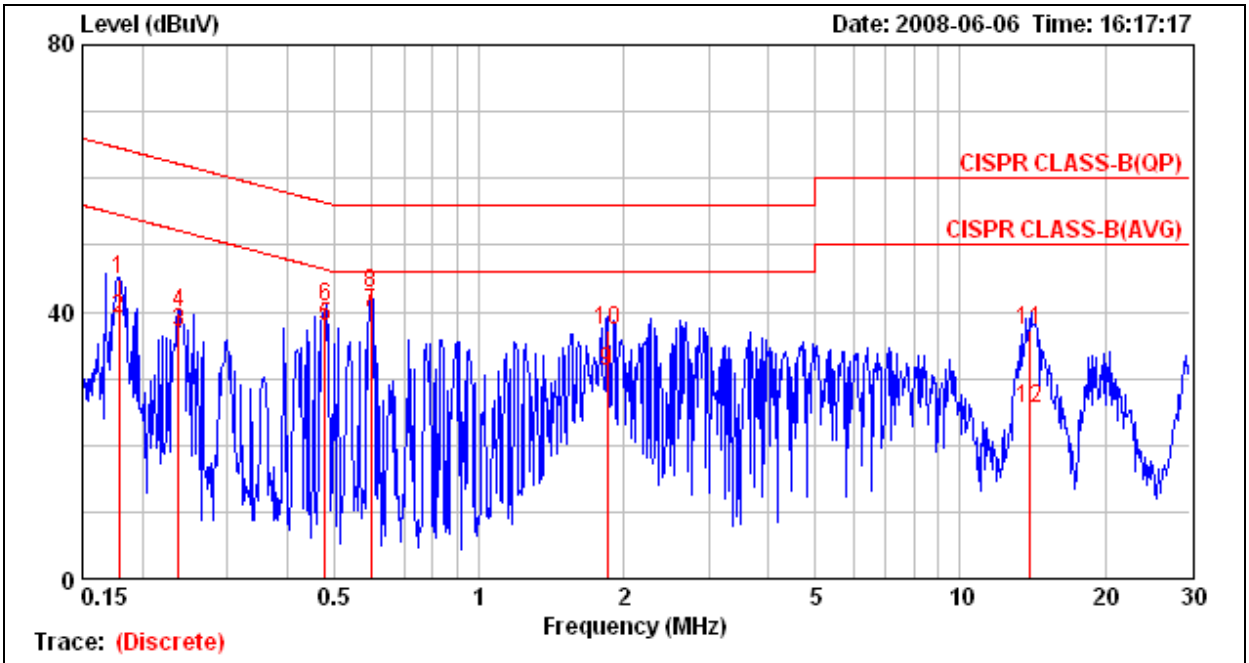
Freq. MHz	Corr. Factor dB	Reading Value dBuV Q.P.	Reading Value dBuV Ave.	Emission Level dBuV Q.P.	Emission Level dBuV Ave.	Limit dBuV Q.P.	Limit dBuV Ave.	Margin dBuV Q.P.	Margin dBuV Ave.
0.178	0.06	50.41	41.05	50.47	41.11	64.57	54.57	-14.10	-13.46
0.238	0.06	44.78	37.77	44.84	37.83	62.17	52.17	-17.33	-14.34
0.297	0.06	37.13	29.02	37.19	29.08	60.32	50.32	-23.14	-21.25
0.536	0.05	37.25	35.51	37.30	35.56	56.00	46.00	-18.70	-10.44
2.622	0.12	38.68	27.32	38.80	27.44	56.00	46.00	-17.20	-18.56
14.364	0.37	42.22	30.95	42.59	31.32	60.00	50.00	-17.41	-18.68

Remark:

1. Correction Factor = Insertion loss + cable loss
2. Margin value = Emission level – Limit value

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/06/06
Model	DAP-2553	Test By	Vic Lin
Test Mode	Power Adapter (2)	TEMP & Humidity	23.9°C, 72%

LINE



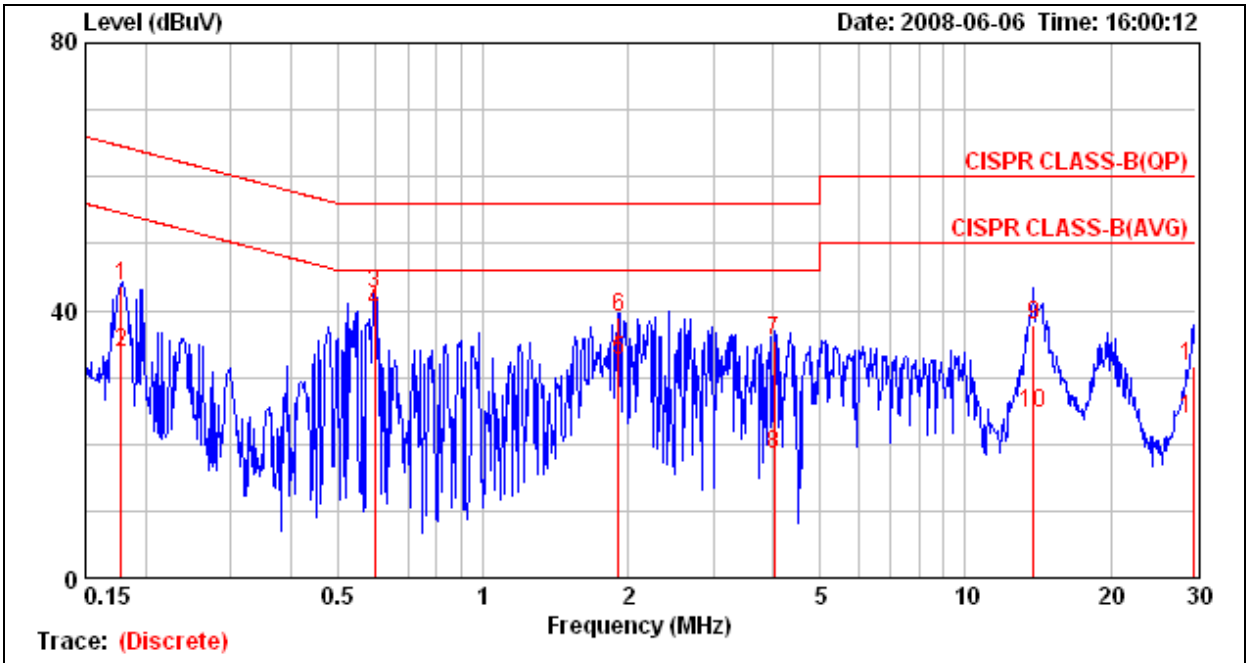
Freq. MHz	Corr. Factor dB	Reading Value dBuV Q.P.	Reading Value dBuV Ave.	Emission Level dBuV Q.P.	Emission Level dBuV Ave.	Limit dBuV Q.P.	Limit dBuV Ave.	Margin dBuV Q.P.	Margin dBuV Ave.
0.179	0.06	44.90	39.06	44.96	39.12	64.54	54.54	-19.58	-15.42
0.238	0.06	39.80	36.98	39.86	37.04	62.17	52.17	-22.31	-15.13
0.479	0.05	40.68	37.69	40.73	37.74	56.35	46.35	-15.62	-8.61
0.598	0.06	42.75	39.82	42.81	39.88	56.00	46.00	-13.19	-6.12
1.850	0.11	37.09	30.93	37.20	31.04	56.00	46.00	-18.80	-14.96
13.970	0.37	36.84	25.15	37.21	25.52	60.00	50.00	-22.79	-24.48

Remark:

1. Correction Factor = Insertion loss + cable loss
2. Margin value = Emission level – Limit value

Product Name	D-Link AirPremier N Dual Band PoE Access Point	Test Date	2008/06/06
Model	DAP-2553	Test By	Vic Lin
Test Mode	Power Adapter (2)	TEMP & Humidity	23.9°C, 72%

NEUTRAL



Freq. MHz	Corr. Factor dB	Reading Value dBuV Q.P.	Reading Value dBuV Ave.	Emission Level dBuV Q.P.	Emission Level dBuV Ave.	Limit dBuV Q.P.	Limit dBuV Ave.	Margin dBuV Q.P.	Margin dBuV Ave.
0.178	0.06	43.68	33.68	43.74	33.74	64.59	54.59	-20.85	-20.85
0.595	0.06	42.51	39.93	42.57	39.99	56.00	46.00	-13.43	-6.01
1.910	0.11	38.74	32.47	38.85	32.58	56.00	46.00	-17.15	-13.42
4.006	0.15	35.25	18.42	35.40	18.57	56.00	46.00	-20.60	-27.43
13.837	0.36	37.35	24.35	37.71	24.71	60.00	50.00	-22.29	-25.29
29.684	0.61	31.04	23.20	31.65	23.81	60.00	50.00	-28.35	-26.19

Remark:

1. Correction Factor = Insertion loss + cable loss
2. Margin value = Emission level – Limit value

9. ANTENNA REQUIREMENT

9.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 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.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

9.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used for this product is Dipole antenna. The peak Gain of this antenna is 3dBi at 2.4GHz and 5dBi at 5.0GHz