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

TEST REPORT

For

WLAN USB Stick a/b/g/n Adapter

Model : 65-VF438-P2

Trade Name : Qualcomm

Issued for

QUALCOMM INCORPORATED

5775 Morehouse Drive San Diego California United States 92121

Issued by

Compliance Certification Services Inc.
Hsinchu Lab.
Rm. 258, Bldg. 17, NO.195, Sec.4 Chung Hsing Rd.,
ChuTung Chen, Hsinchu, Taiwan 310, R.O.C
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NVLAP LAB CODE 200118-0

Testing Laboratory 0240

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1. TEST REPORT CERTIFICATION

Applicant ：QUALCOMM INCORPORATED

Address ：5775 Morehouse Drive San Diego California United States 92121

Equipment Under Test：WLAN USB Stick a/b/g/n Adapter

Model ：65-VF438-P2

Trade Name ：Qualcomm

Tested Date ：November 08 ~ December 03, 2007

APPLICABLE STANDARD	
STANDARD	**TEST RESULT**
FCC Part 15 Subpart E:2006 AND ANSI C63.4:2003	No non-compliance noted

Approved by: ***Reviewed by:***

S. B. Lu

S. B. Lu
Assistant Manager of Hsinchu Laboratory
Compliance Certification Services Inc.

Jason Chang

Jason Chang
Test Engineer 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	WLAN USB Stick a/b/g/n Adapter
Model Number	65-VF438-P2
Frequency Range	IEEE 802.11a, IEEE 802.11n HT20/HT40 : 5150MHz ~ 5250MHz, 5250MHz ~ 5350MHz, 5470MHz ~ 5725MHz
Transmit Power	IEEE 802.11a mode for UNII(5150~5250MHz) : 14.20dBm IEEE 802.11n HT20 : 14.25dBm IEEE 802.11n HT40 : 15.66dBm IEEE 802.11a mode for UNII(5250~5350MHz) : 15.81dBm IEEE 802.11n HT20 : 15.60dBm IEEE 802.11n HT40 : 15.76dBm IEEE 802.11a mode for UNII(5470~5725MHz) : 15.85dBm IEEE 802.11n HT20 : 15.82dBm IEEE 802.11n HT40 : 15.69dBm
Channel Spacing	IEEE 802.11a, IEEE 802.11n HT20: 20MHz , HT40 : 40MHz
Channel Number	IEEE 802.11a, IEEE 802.11n HT20 : 19 Channels IEEE 802.11n HT40 : 7 Channels
Transmit Data Rate	IEEE 802.11a : 54, 48 ,36, 24, 18, 12, 9, 6Mbps IEEE 802.11n HT20 : 6.5-144 Mbps IEEE 802.11n HT40 : 13.5-300 Mbps
Type of Modulation	IEEE 802.11a : OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20/40 :
Frequency Selection	by software / firmware
Antenna Type	5.15~5.35GHz : Chip Antenna, Antenna Peak Gain : 0.47dBi (× 2). 5.47~5.725GHz : Chip Antenna, Antenna Peak Gain : 1.85dBi (× 2).
Power Source	5.0VDC (From Notebook PC, Powered From Host Device)

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: J9C-65VF438P2 filing to comply with Section 15.407 FCC Part 15, Subpart E 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 USB form factor. It has two transmitter chains and two receive chains (2 × 2 configurations). The 2 × 2 configuration is implemented with two outside chains (Chain 0, 1).

The RF chipset is manufactured by QUALCOMM International, Inc.
The antenna peak gain 0.47 dBi for 5.15~5.35GHz / 1.85 dBi for 5.47~5.725GHz(highest gain) were chosen for full testing.

IEEE 802.11a mode, IEEE 802.11n HT20 mode (5150MHz ~ 5250MHz)

The EUT had been tested under operating condition.
There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	5180
Middle	5220
High	5240

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 (5150MHz ~ 5250MHz)

The EUT had been tested under operating condition.
There are two channels have been tested as following :

Channel	Frequency (MHz)
Low	5190
High	5230

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

IEEE 802.11a mode, IEEE 802.11n HT20 mode (5250MHz ~ 5350MHz)

The EUT had been tested under operating condition.
There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	5260
Middle	5280
High	5320

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 (5250MHz ~ 5350MHz)

The EUT had been tested under operating condition.

There are two channels have been tested as following :

Channel	Frequency (MHz)
Low	5270
High	5310

IEEE 802.11n HT40 mode : 6Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11a mode, IEEE 802.11n HT20 mode (5470MHz ~ 5725MHz)

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	5500
Middle	5600
High	5700

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 (5470MHz ~ 5725MHz)

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	5510
Middle	5590
High	5670

IEEE 802.11n HT40 mode : 13.5 Mbps 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 CFR 47 2.1046, 2046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, 15.207, 15.209 and 15.407.

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 NVLAP or any agency of the US 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	NVLAP	EN 55014-1, AS/NZS 1044, CNS 13783-1, IEC/CISPR 14-1, IEC/CISPR 22, EN 55022, EN 61000-3-2, EN 61000-3-3, ANSI C63.4, AS/NZS CISPR 22, AS/NZS 3548, IEC 61000-4-2/3/4/5/6/8/11	200118-0
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	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	RSS212, Issue 1	IC 4417-1

** No part of this report may be used to claim or imply product endorsement by NVLAP 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	IBM	X60	LV-R1400	DoC

SETUP DIAGRAM FOR TESTS

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

8. APPLICABLE LIMITS AND TEST RESULTS

8.1 26dB BANDWIDTH

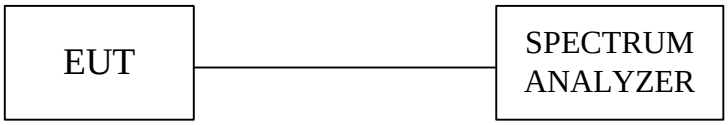
LIMIT

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	MY433602.52	March 22, 2007

TEST SETUP



TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low-loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 1%EBW, VBW = RBW, Span = 50MHz and Sweep = auto. Or Set the spectrum analyzer as RBW > 1%EBW, VBW > RBW, Span >26dB bandwith (Base Mode) and Sweep = auto.
4. Mark the peak frequency and –26dB (upper and lower) frequency.
5. Repeat until all the rest channels were investigated.

TEST RESULTS

No non-compliance noted

IEEE 802.11a mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	26dB Bandwidth (kHz)		Pass / Fail
		Chain 0	Chain 1	
Low	5180	20.26	20.06	N/A
Middle	5220	19.82	20.71	N/A
High	5240	19.98	21.41	N/A

IEEE 802.11n HT20 mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	26dB Bandwidth (kHz)		Pass / Fail
		Chain 0	Chain 1	
Low	5180	21.54	21.59	N/A
Middle	5220	21.16	20.51	N/A
High	5240	20.69	21.67	N/A

IEEE 802.11n HT40 mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	26dB Bandwidth (kHz)		Pass / Fail
		Chain 0	Chain 1	
Low	5190	40.08	40.42	N/A
High	5230	41.03	39.84	N/A

IEEE 802.11a mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	26dB Bandwidth (kHz)		Pass / Fail
		Chain 0	Chain 1	
Low	5260	20.08	20.13	N/A
Middle	5280	19.84	19.81	N/A
High	5320	19.92	20.12	N/A

IEEE 802.11n HT20 mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	26dB Bandwidth (kHz)		Pass / Fail
		Chain 0	Chain 1	
Low	5260	21.15	22.53	N/A
Middle	5280	21.66	20.57	N/A
High	5320	20.67	21.76	N/A

IEEE 802.11n HT40 mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	6dB Bandwidth (kHz)		Pass / Fail
		Chain 0	Chain 1	
Low	5270	40.04	36.68	N/A
High	5310	40.31	39.53	N/A

IEEE 802.11a mode (5470MHz ~ 5725MHz)

Channel	Channel Frequency (MHz)	26dB Bandwidth (kHz)		Pass / Fail
		Chain 0	Chain 1	
Low	5500	20.17	19.63	N/A
Middle	5600	20.17	19.94	N/A
High	5700	20.07	19.97	N/A

IEEE 802.11n HT20 mode (5470MHz ~ 5725MHz)

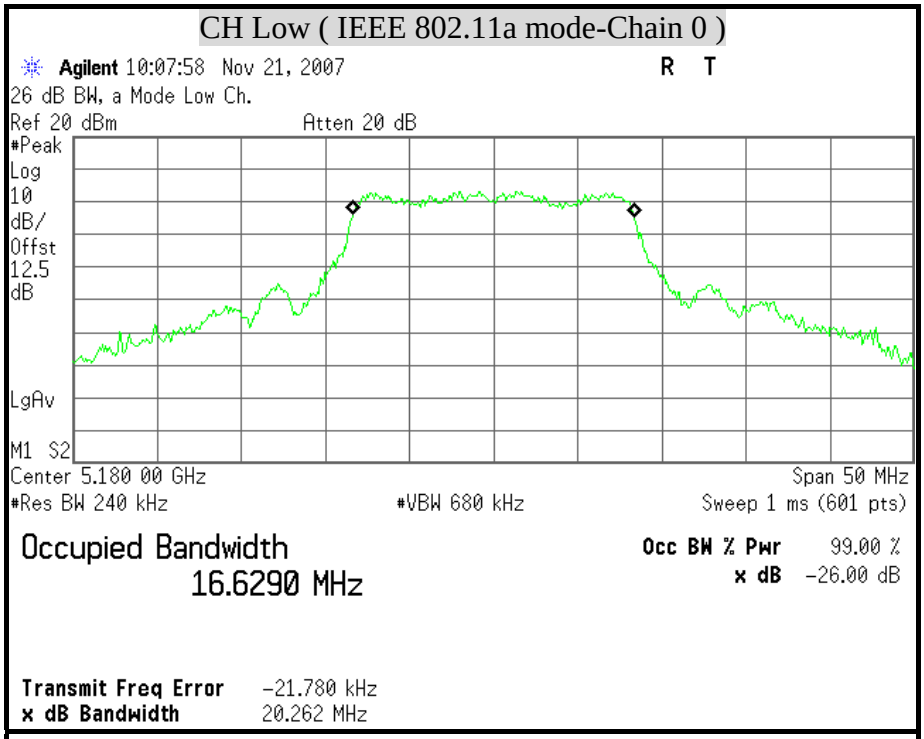
Channel	Channel Frequency (MHz)	26dB Bandwidth (kHz)		Pass / Fail
		Chain 0	Chain 1	
Low	5500	20.02	20.78	N/A
Middle	5600	19.81	21.77	N/A
High	5700	19.69	20.61	N/A

IEEE 802.11n HT40 mode (5470MHz ~ 5725MHz)

Channel	Channel Frequency (MHz)	26dB Bandwidth (kHz)		Pass / Fail
		Chain 0	Chain 1	
Low	5510	40.44	39.58	N/A
Middle	5590	40.34	40.27	N/A
High	5670	40.58	39.90	N/A

26dB BANDWIDTH (IEEE 802.11a mode / 5150MHz ~ 5250MHz)

CH Low (IEEE 802.11a mode-Chain 0)



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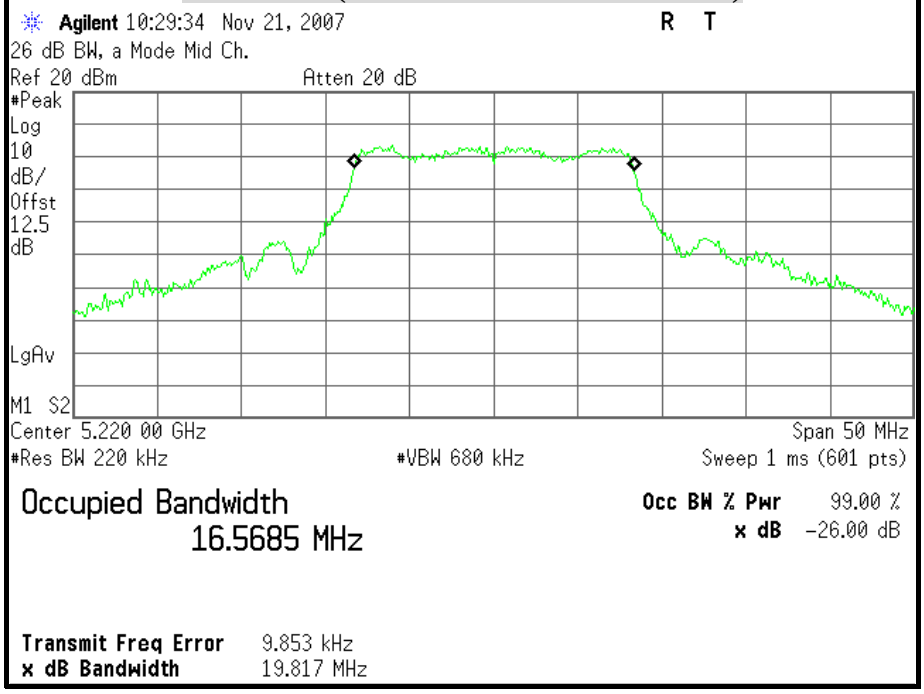

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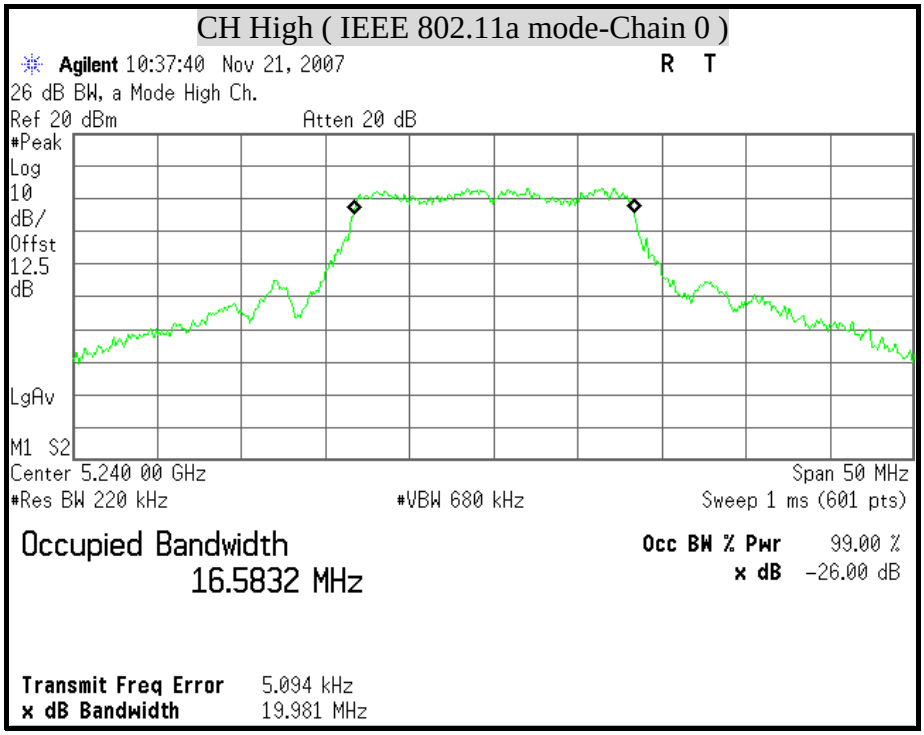

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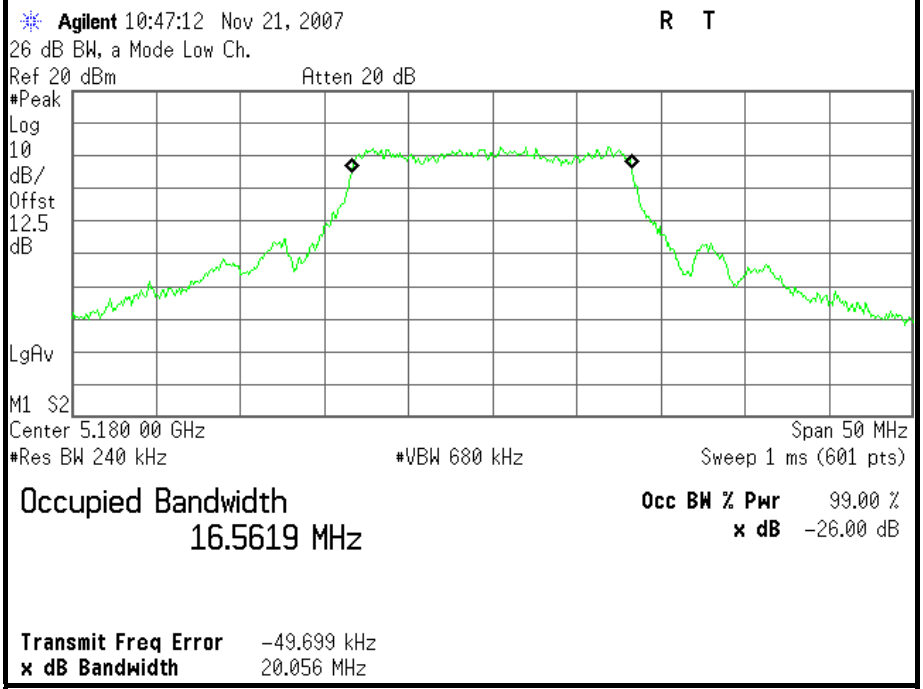

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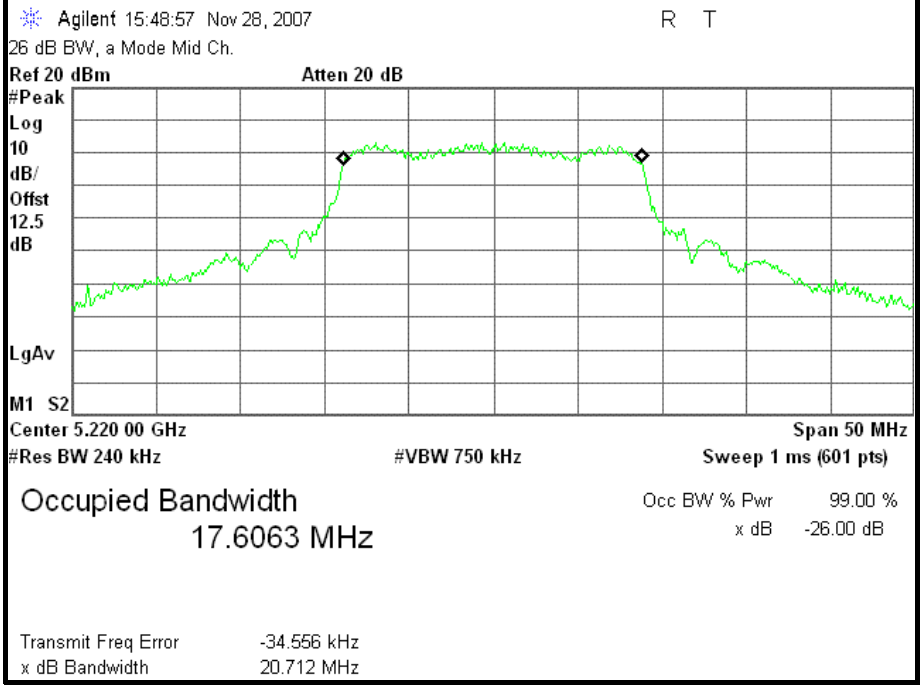

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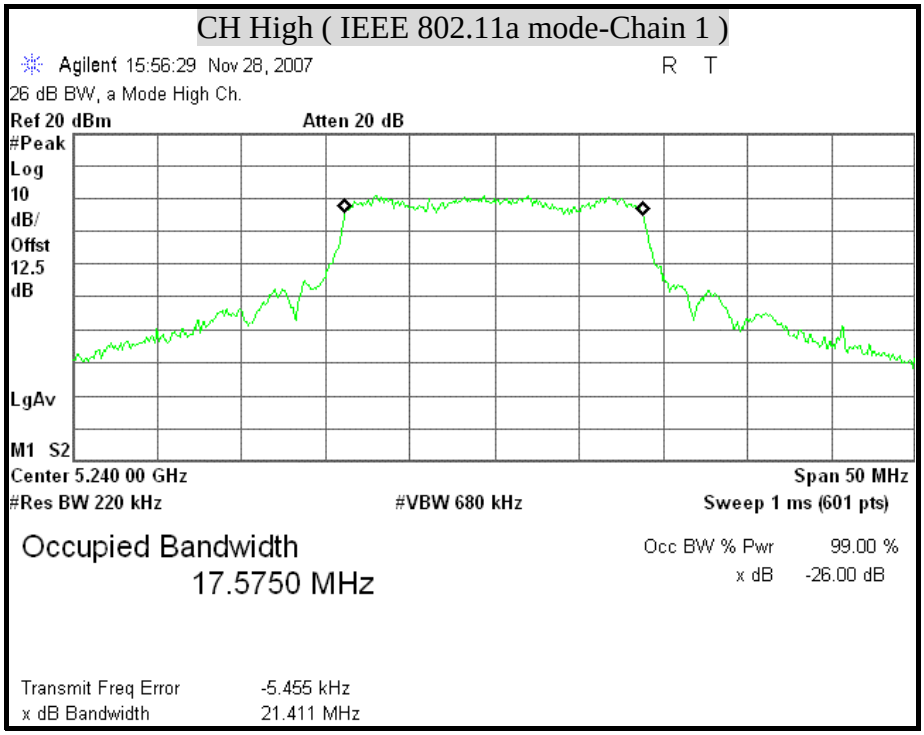

26dB BANDWIDTH (IEEE 802.11n HT20 mode / 5150MHz ~ 5250MHz)

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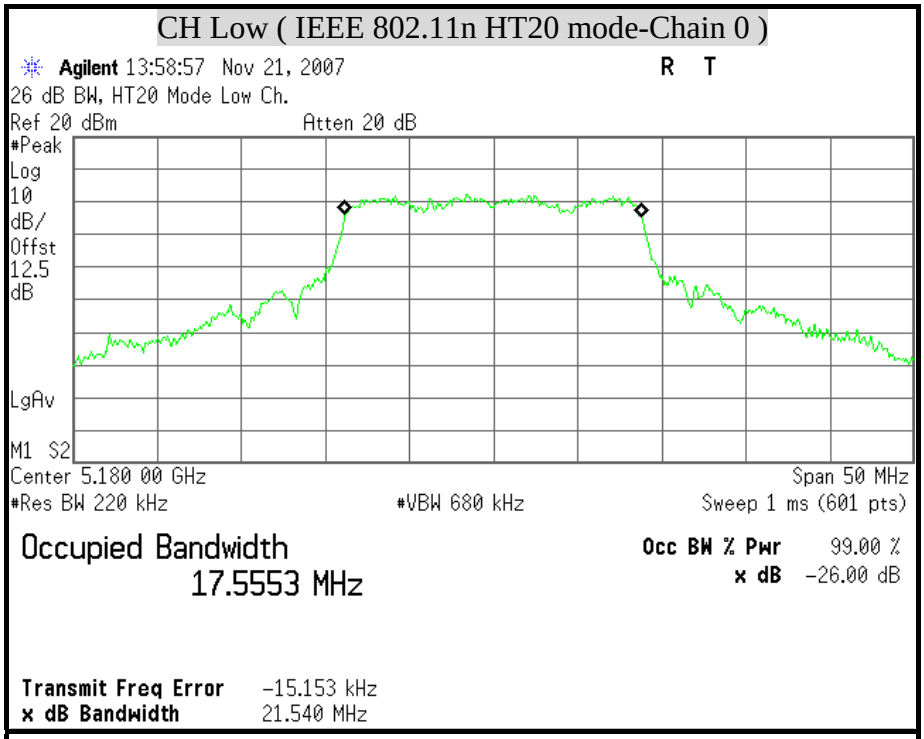

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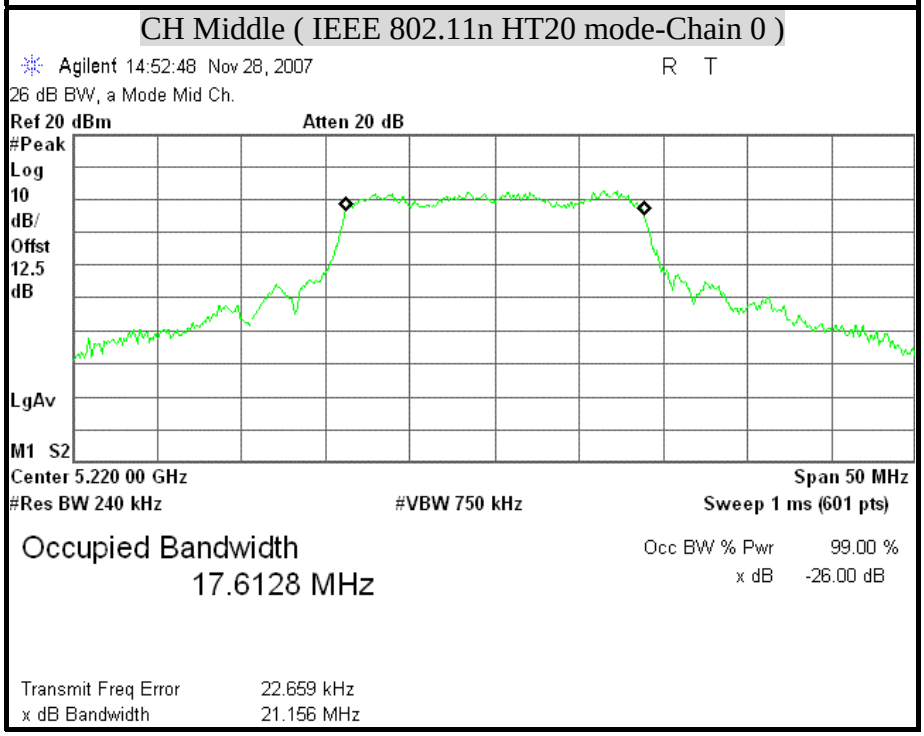

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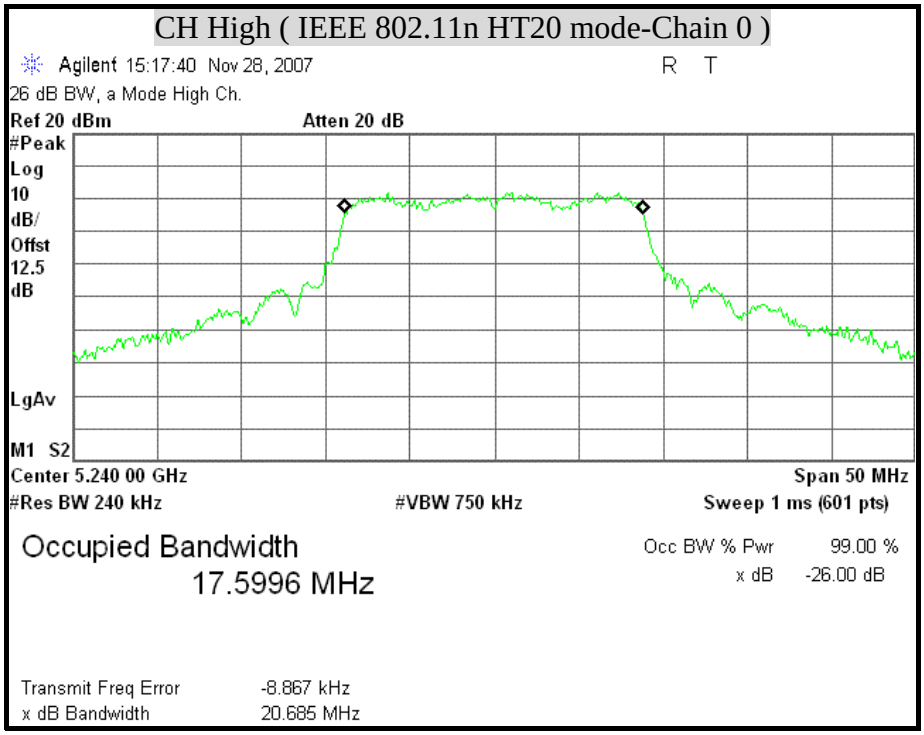

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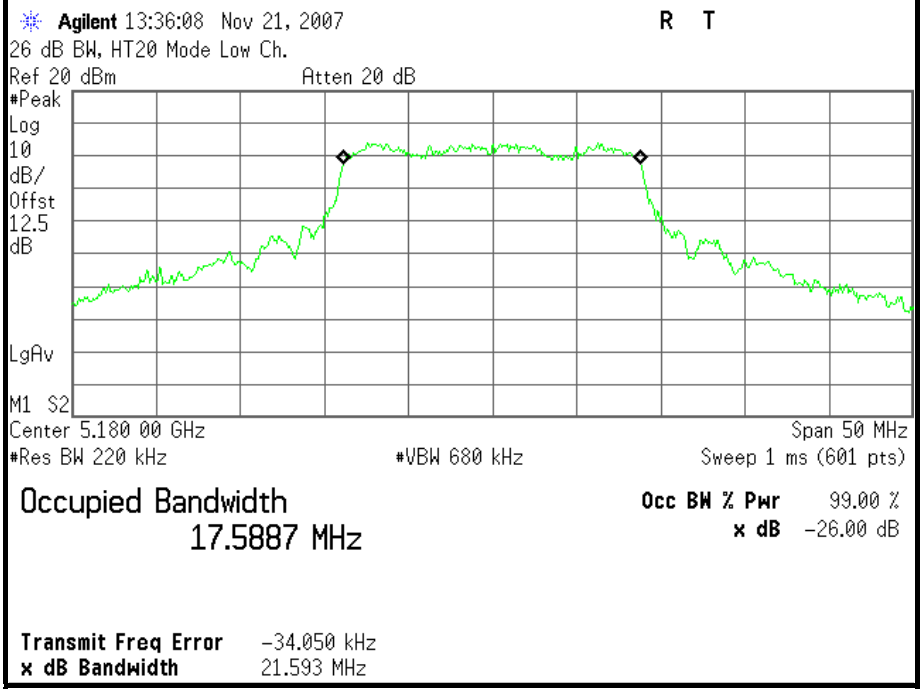

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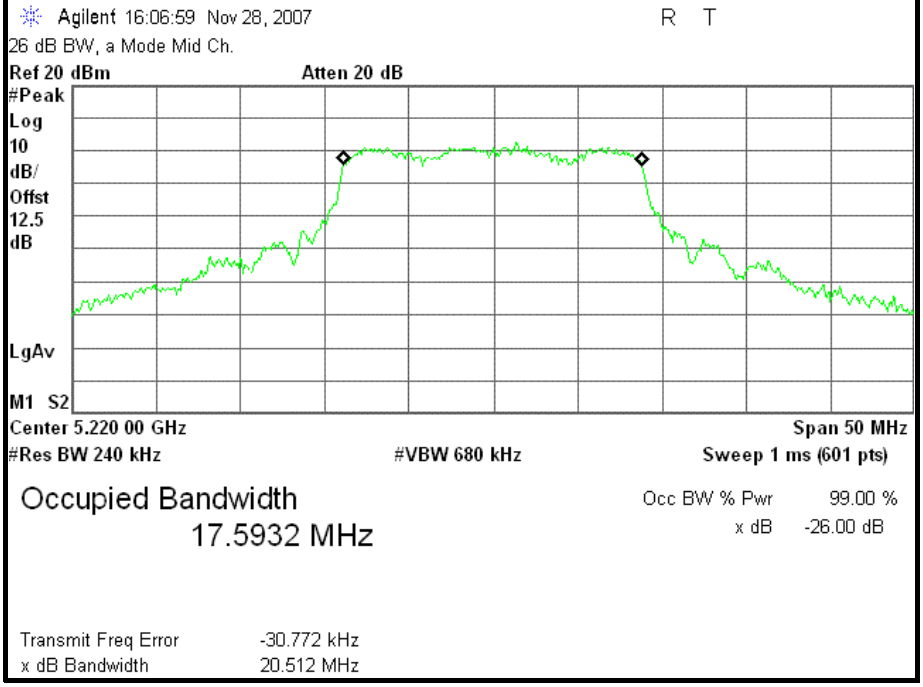
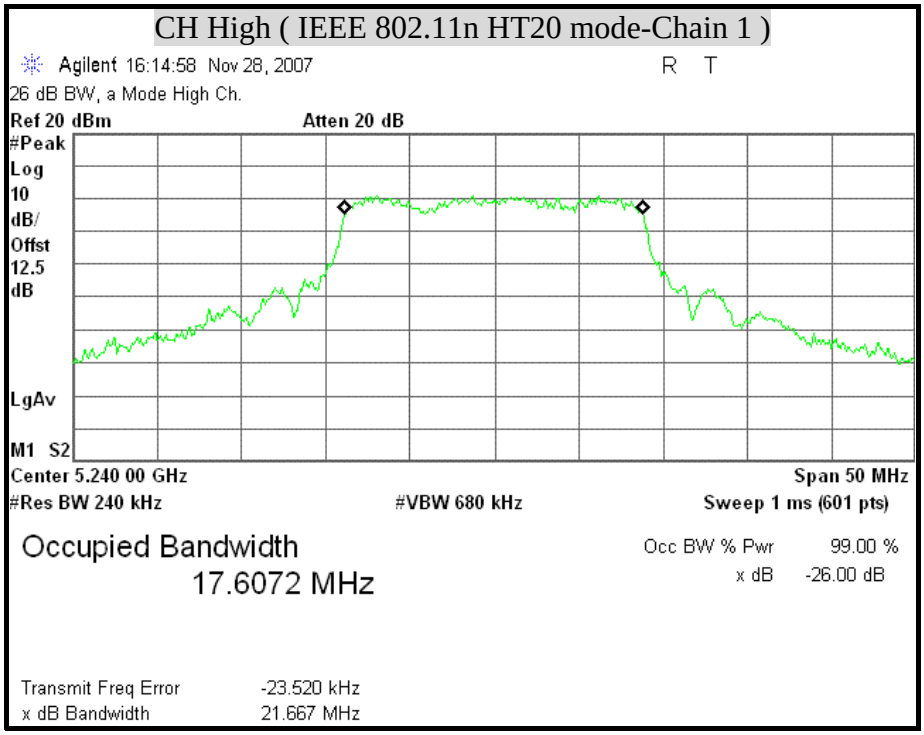
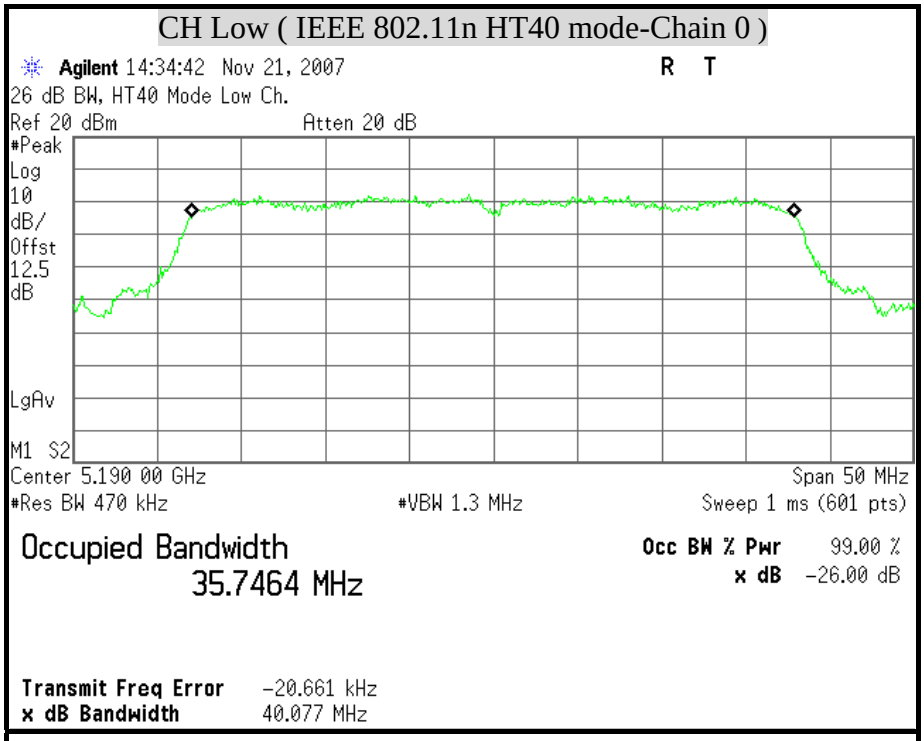


CH High (IEEE 802.11n HT20 mode-Chain 1)



26dB BANDWIDTH (IEEE 802.11n HT40 mode / 5150MHz ~ 5250MHz)

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



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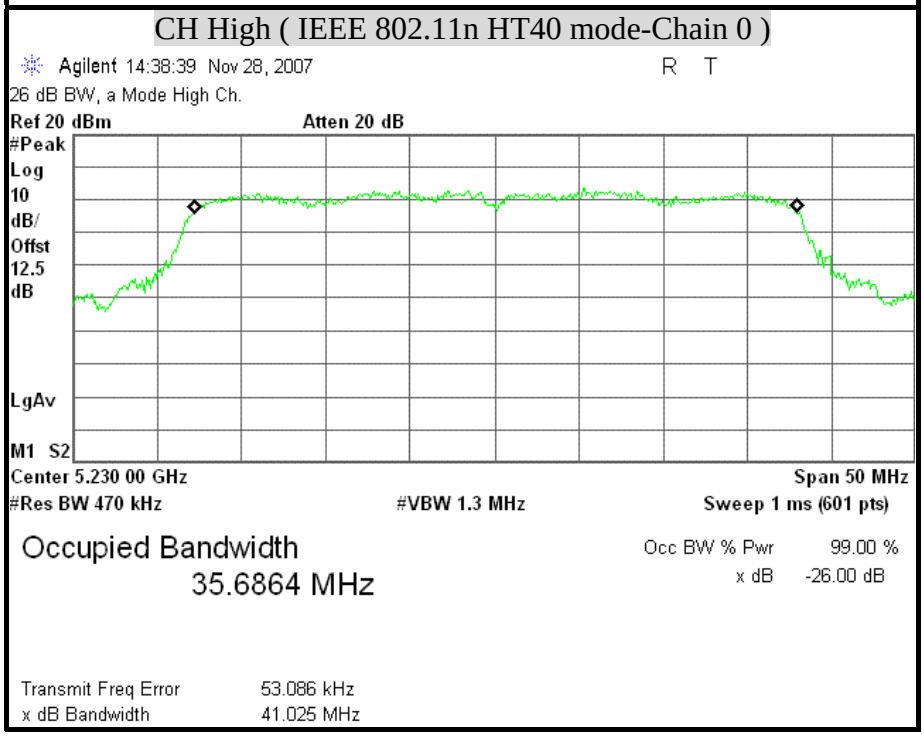
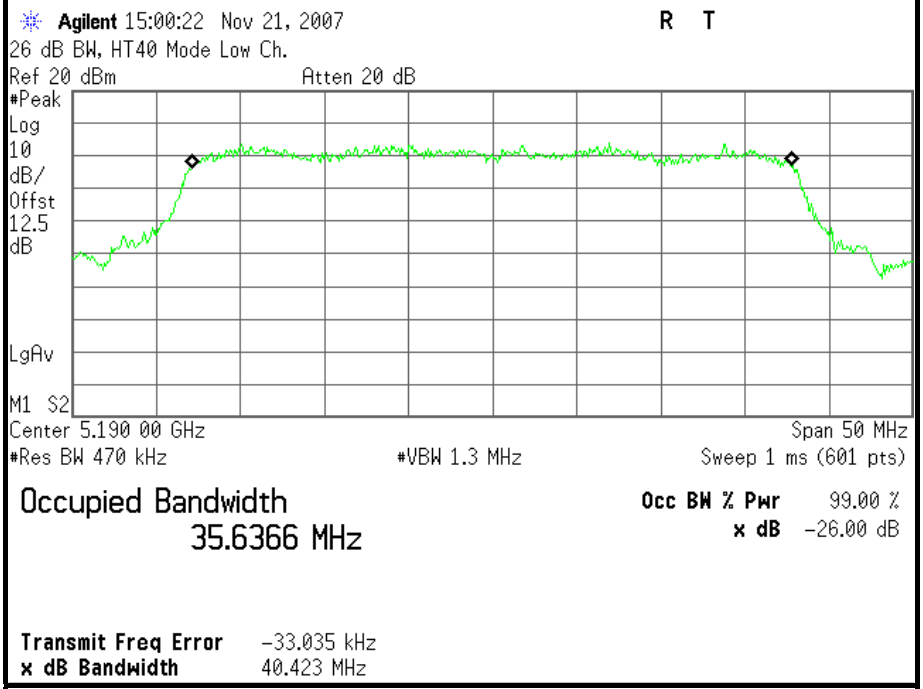
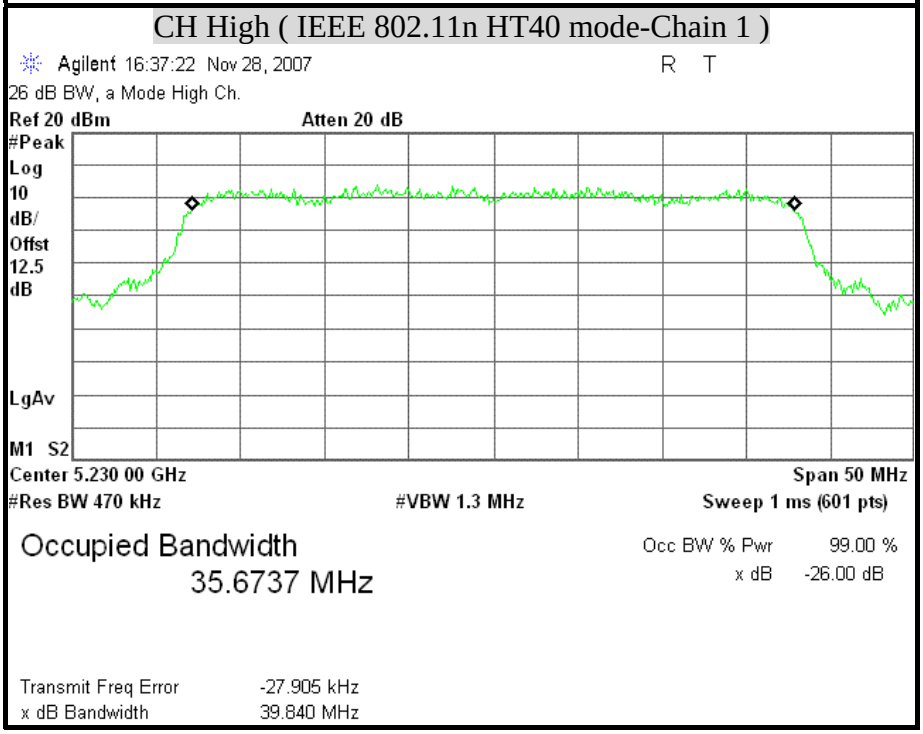


CH Low (IEEE 802.11n HT40 mode-Chain 1)

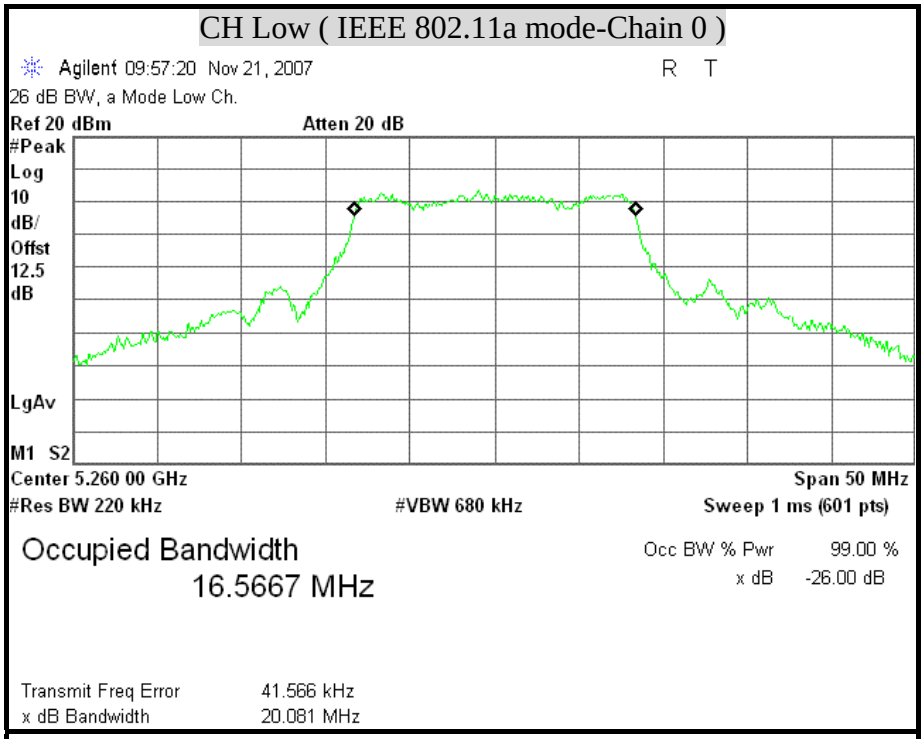


CH High (IEEE 802.11n HT40 mode-Chain 1)



26dB BANDWIDTH (IEEE 802.11a mode / 5250MHz ~ 5350MHz)

CH Low (IEEE 802.11a mode-Chain 0)



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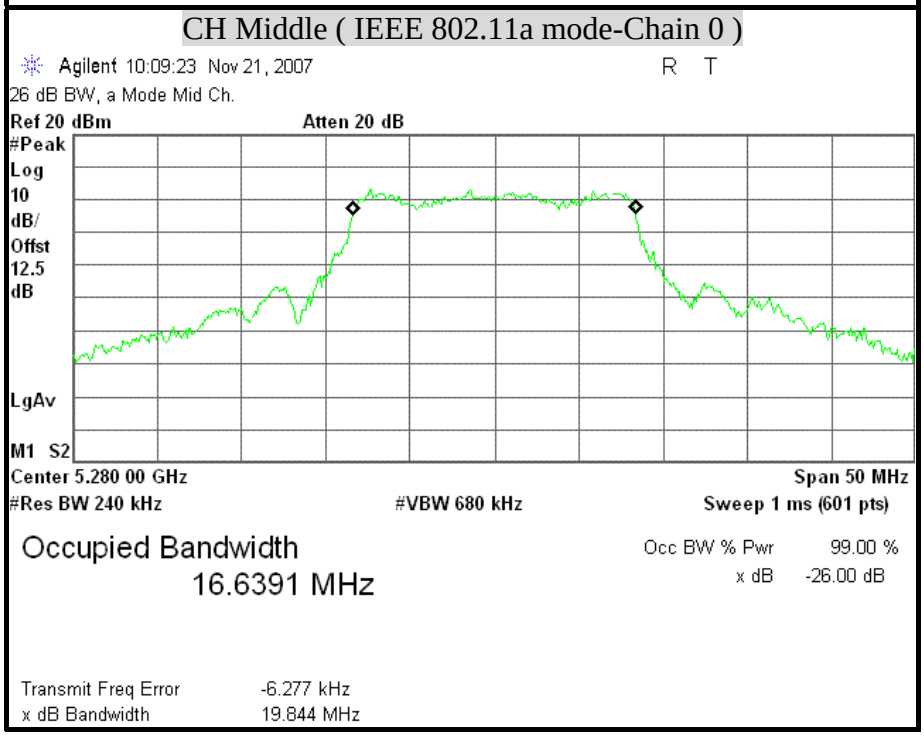

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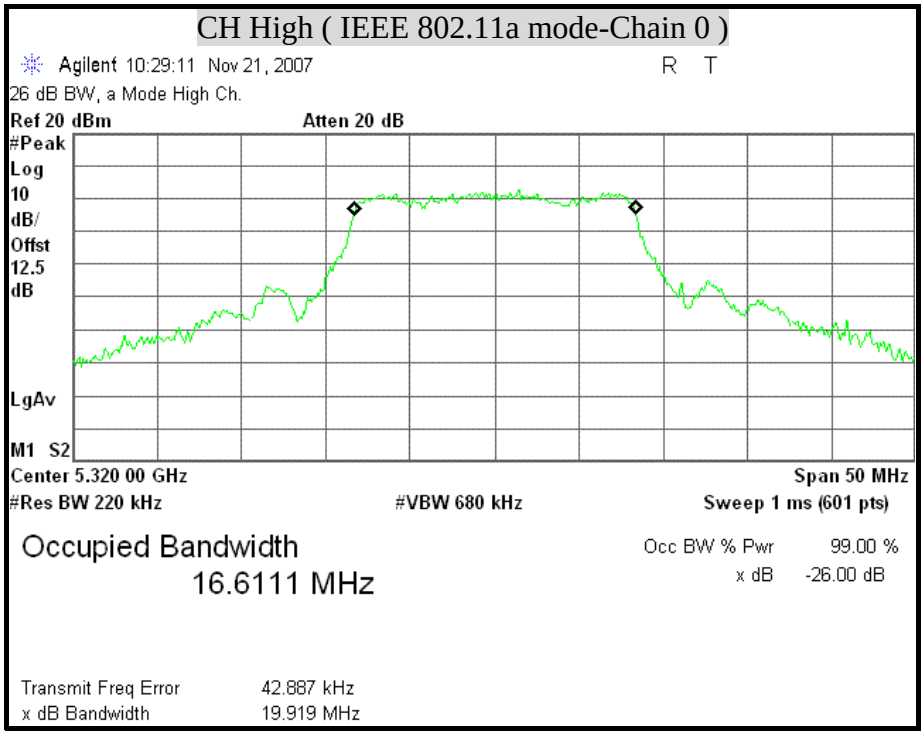

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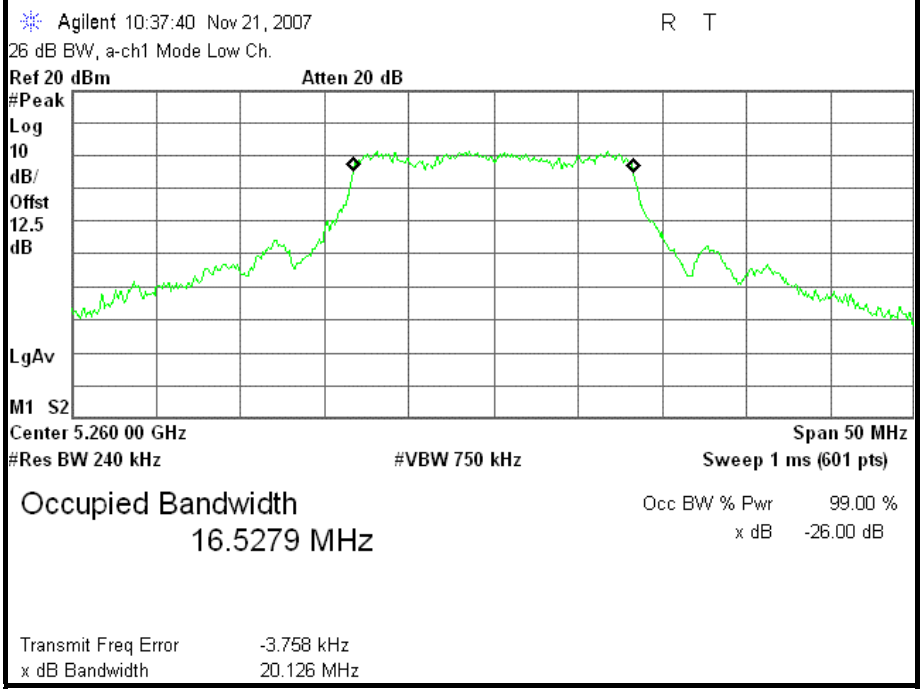

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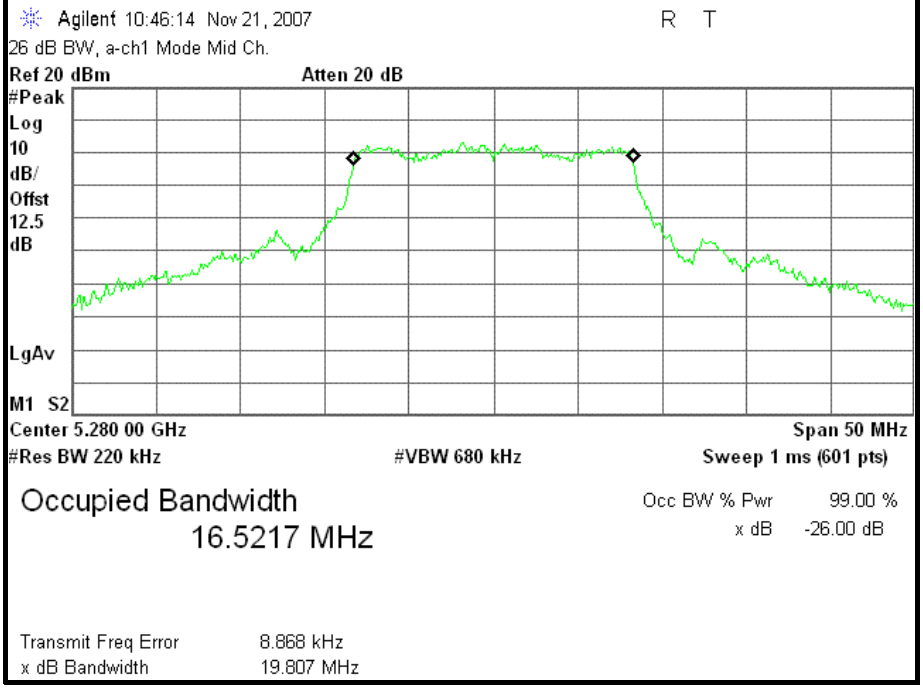
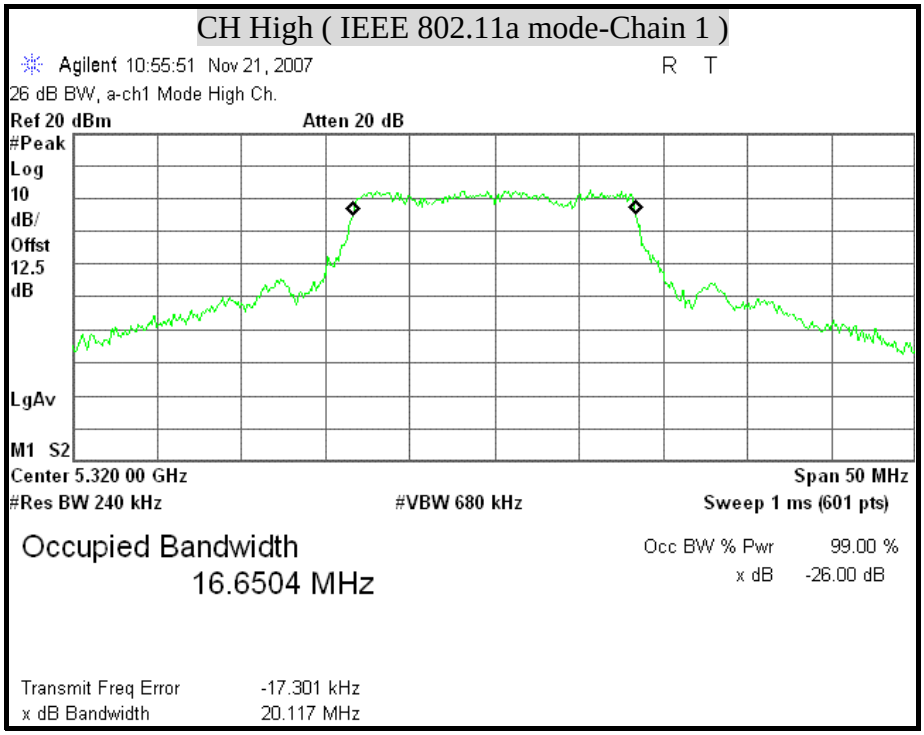
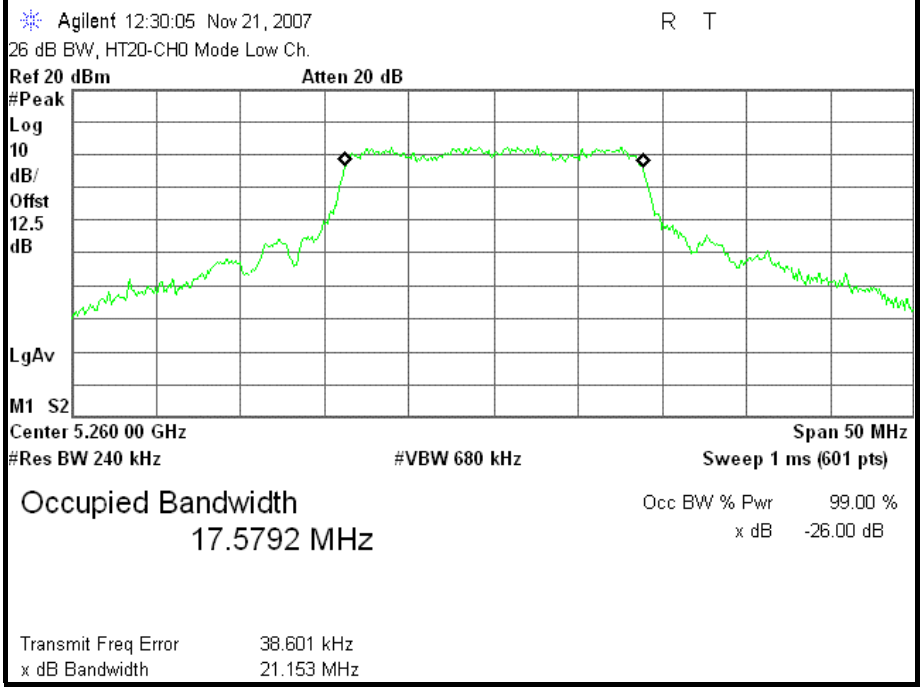


CH High (IEEE 802.11a mode-Chain 1)



26dB BANDWIDTH (IEEE 802.11n HT20 mode / 5250MHz ~ 5350MHz)

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



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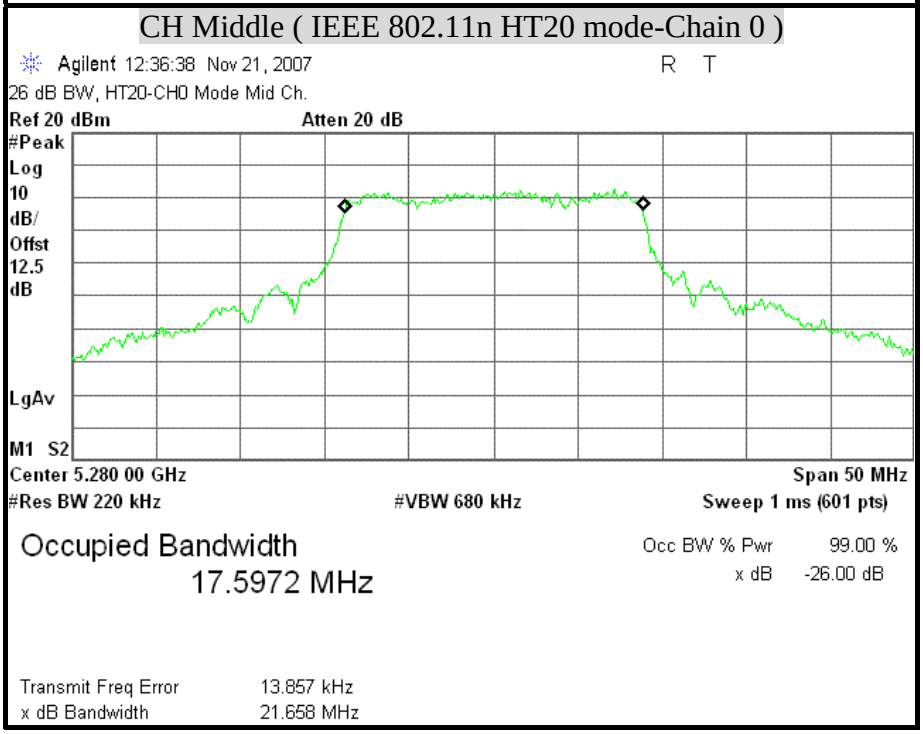
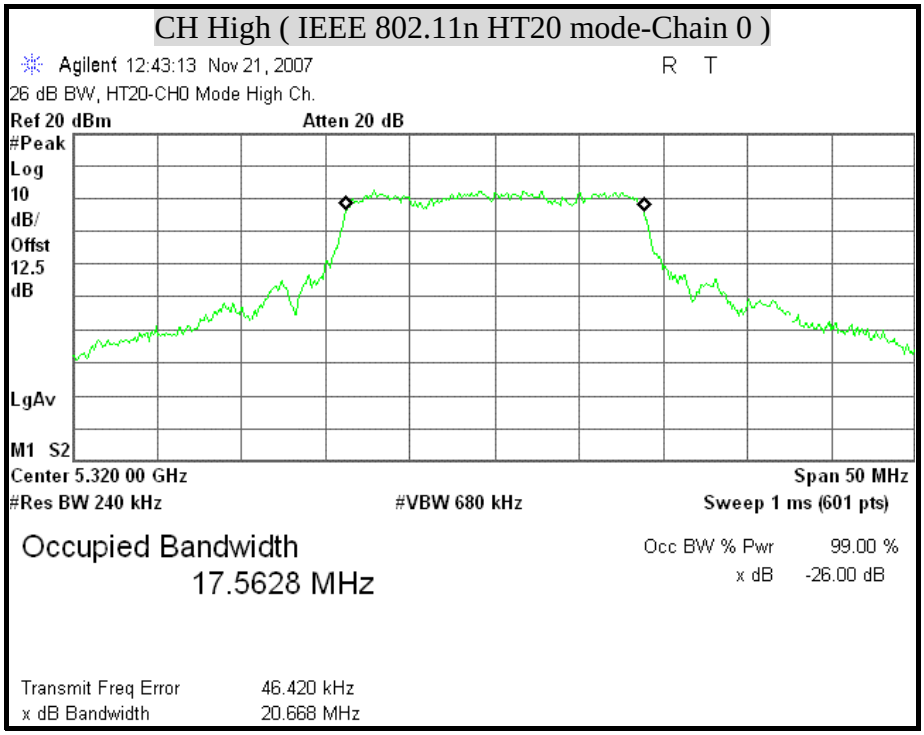
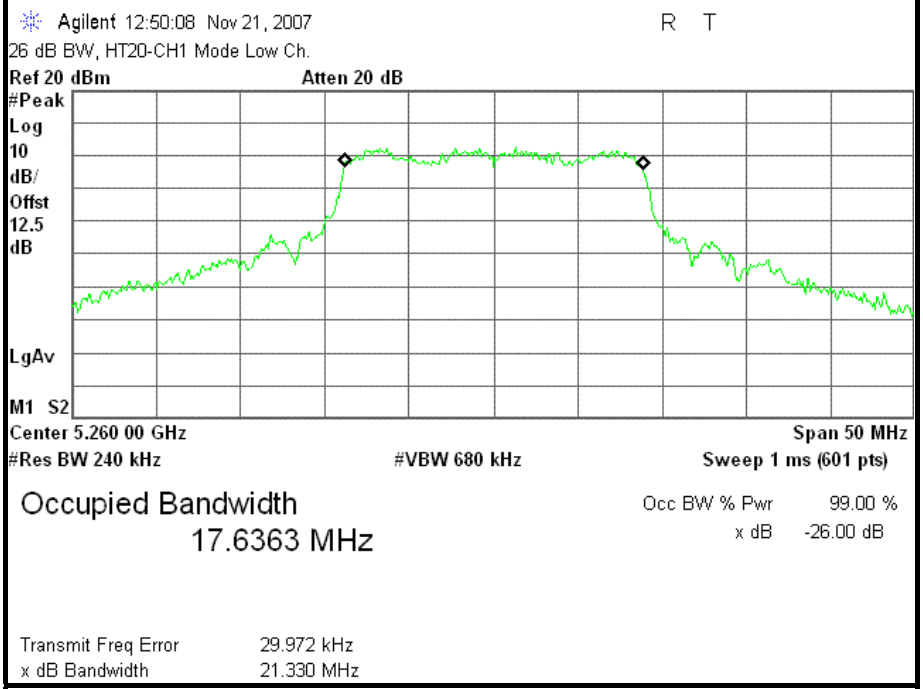


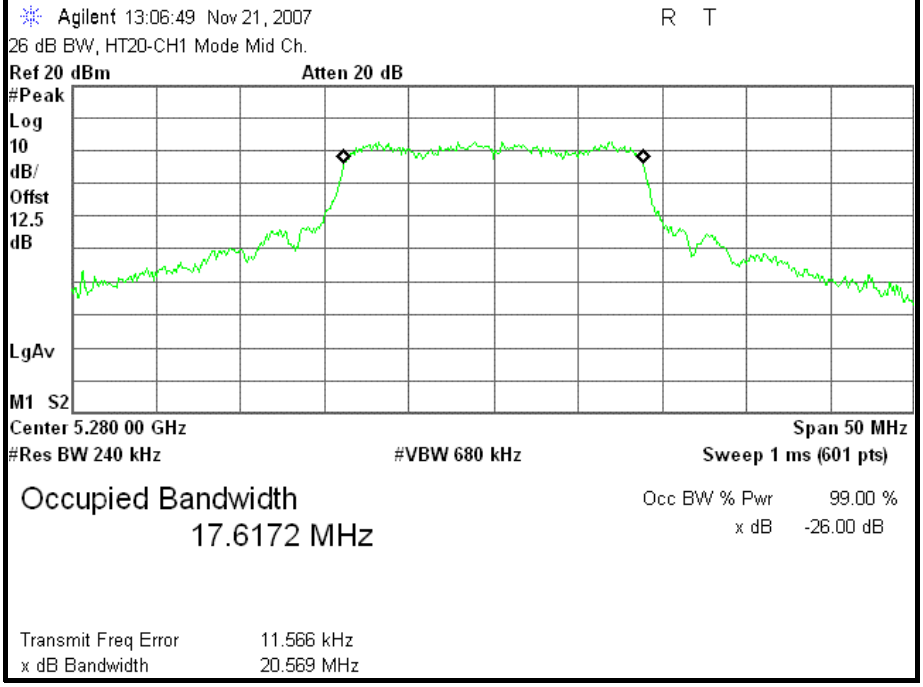
CH High (IEEE 802.11n HT20 mode-Chain 0)



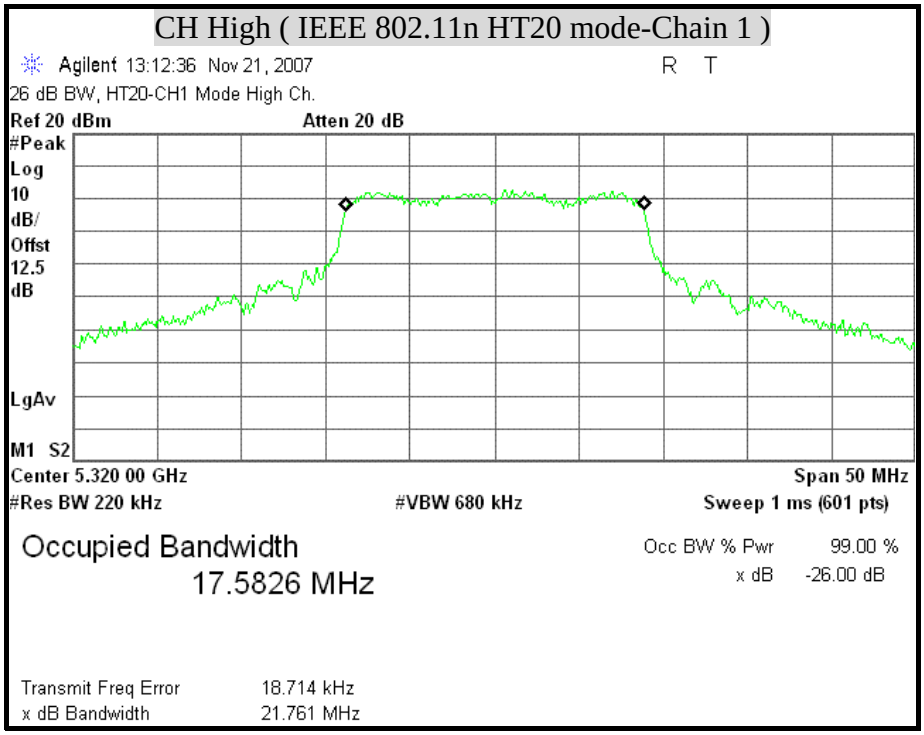
CH Low (IEEE 802.11n HT20 mode-Chain 1)



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

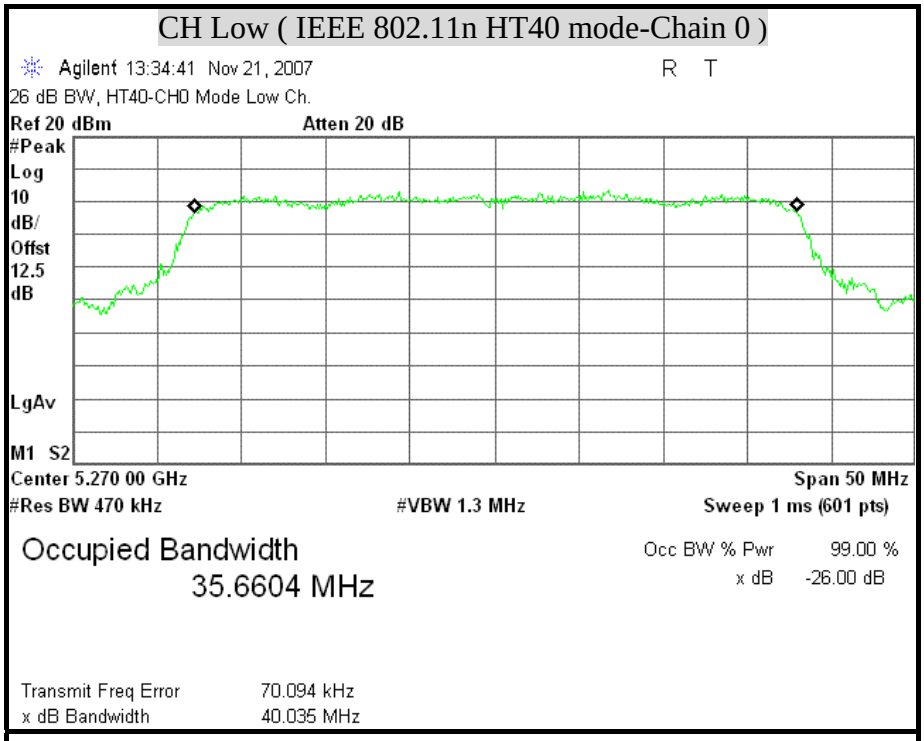


CH High (IEEE 802.11n HT20 mode-Chain 1)

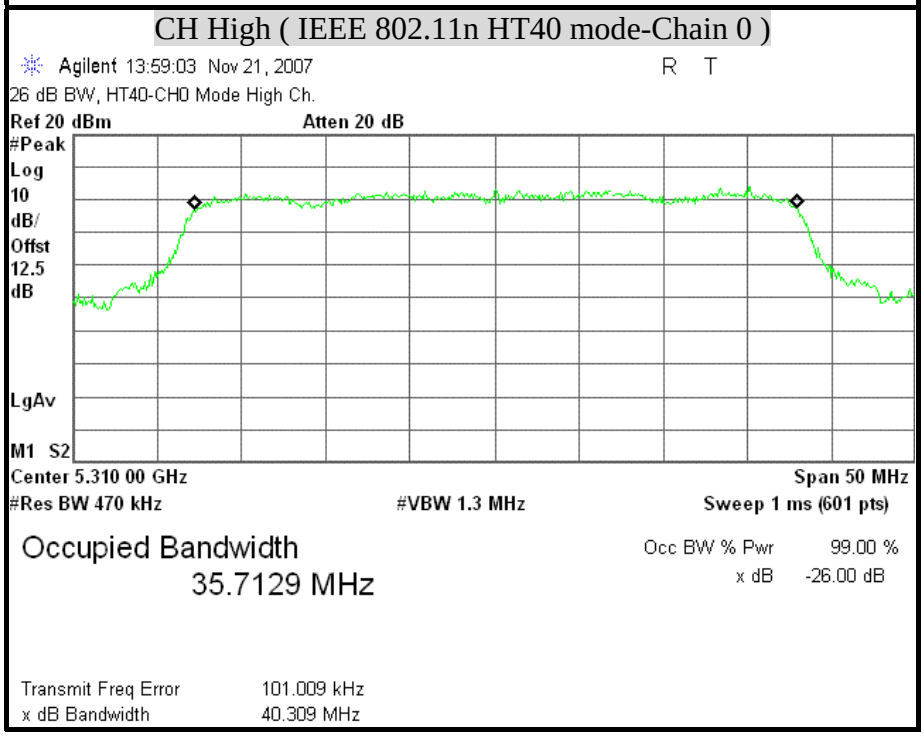


26dB BANDWIDTH (IEEE 802.11n HT40 mode / 5250MHz ~ 5350MHz)

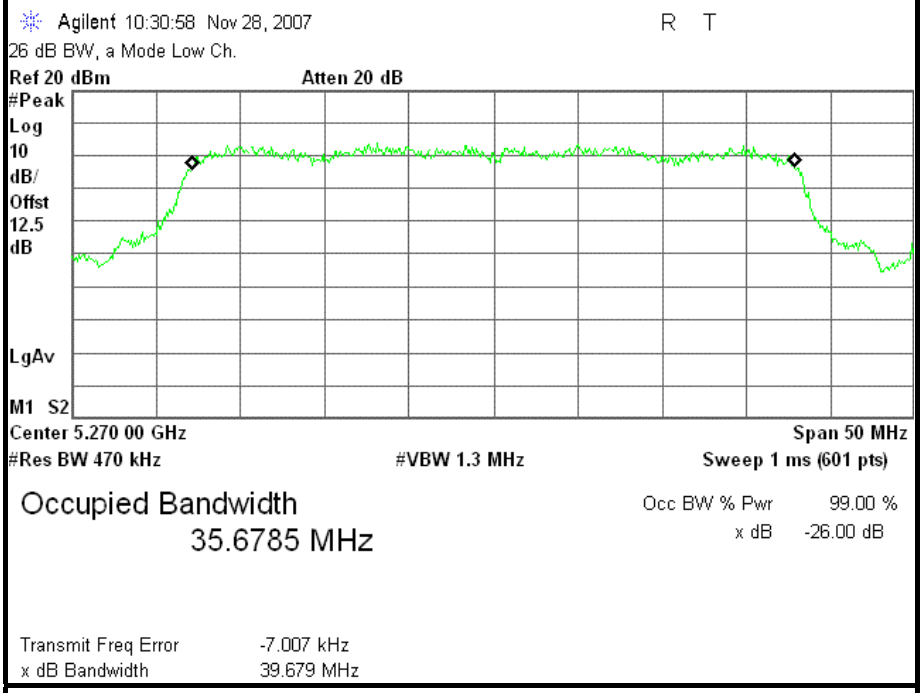
CH Low (IEEE 802.11n HT40 mode-Chain 0)



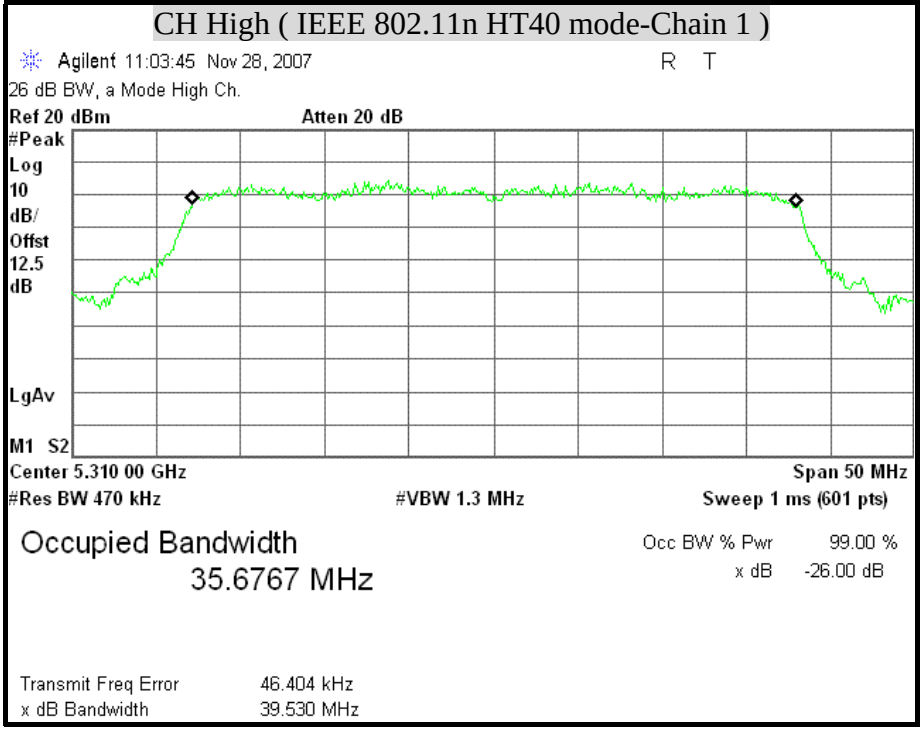
CH High (IEEE 802.11n HT40 mode-Chain 0)



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

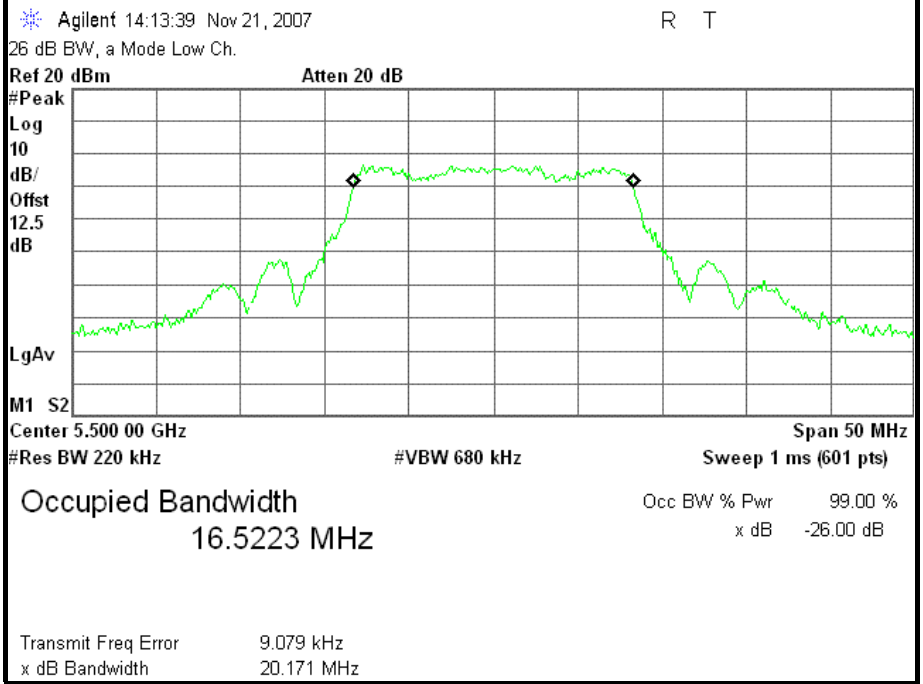


CH High (IEEE 802.11n HT40 mode-Chain 1)

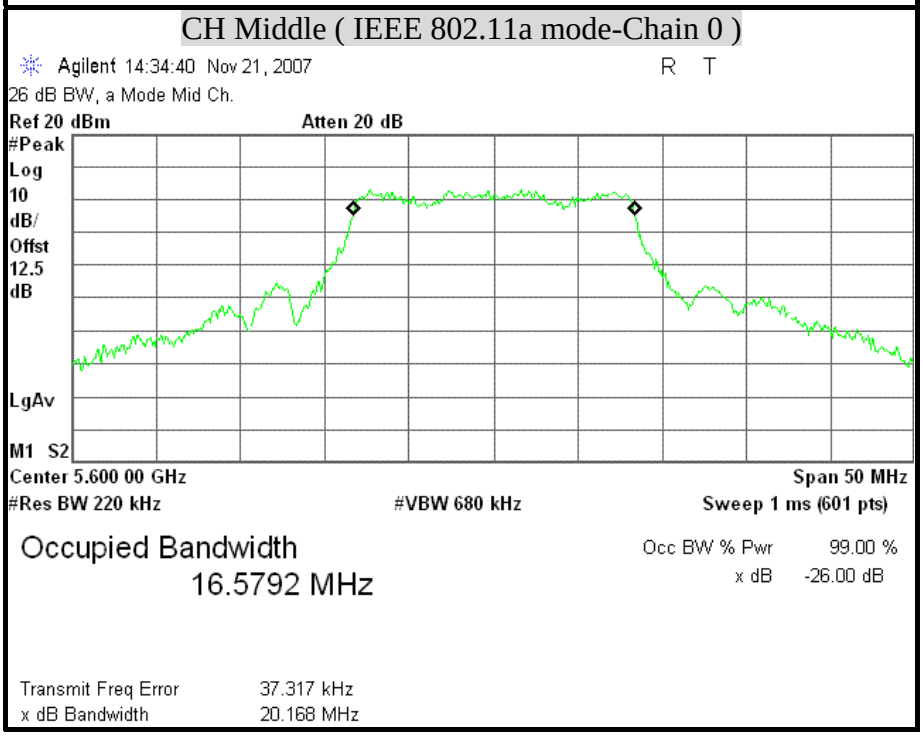


26dB BANDWIDTH (IEEE 802.11a mode / 5470MHz ~ 5725MHz)

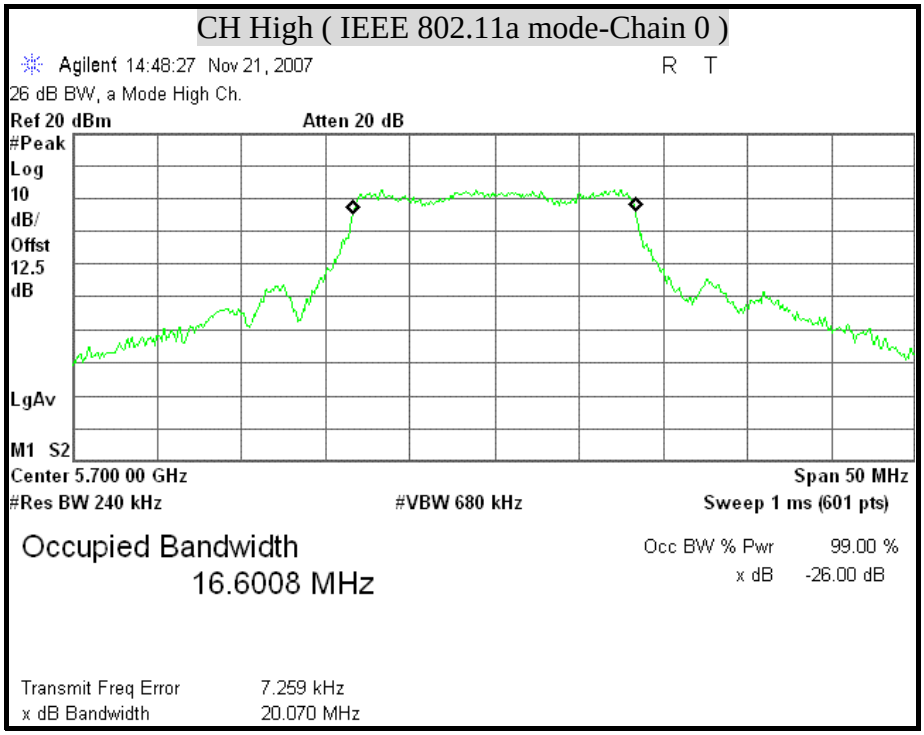
CH Low (IEEE 802.11a mode-Chain 0)



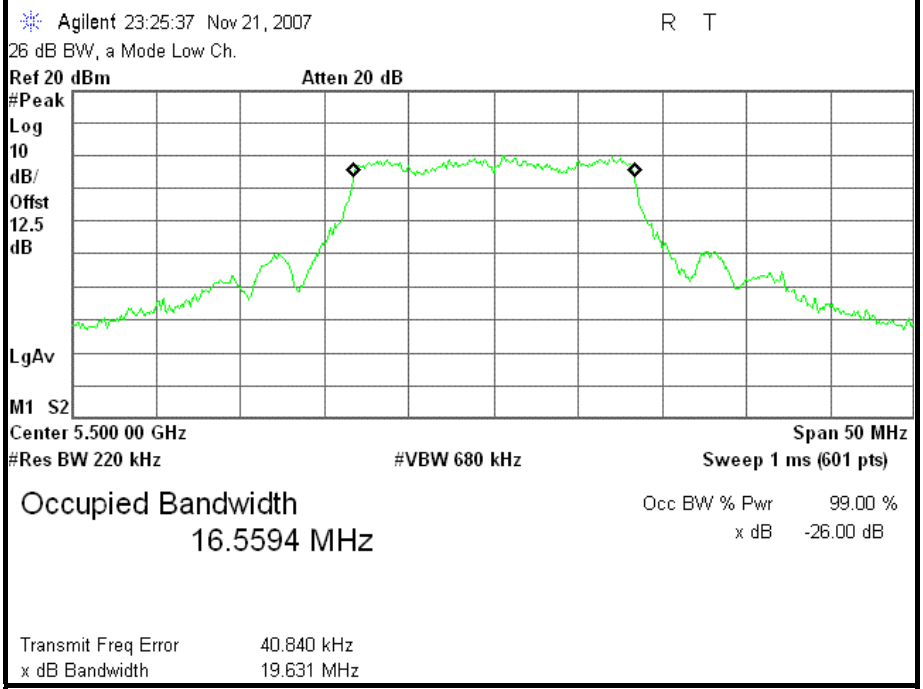
CH Middle (IEEE 802.11a mode-Chain 0)



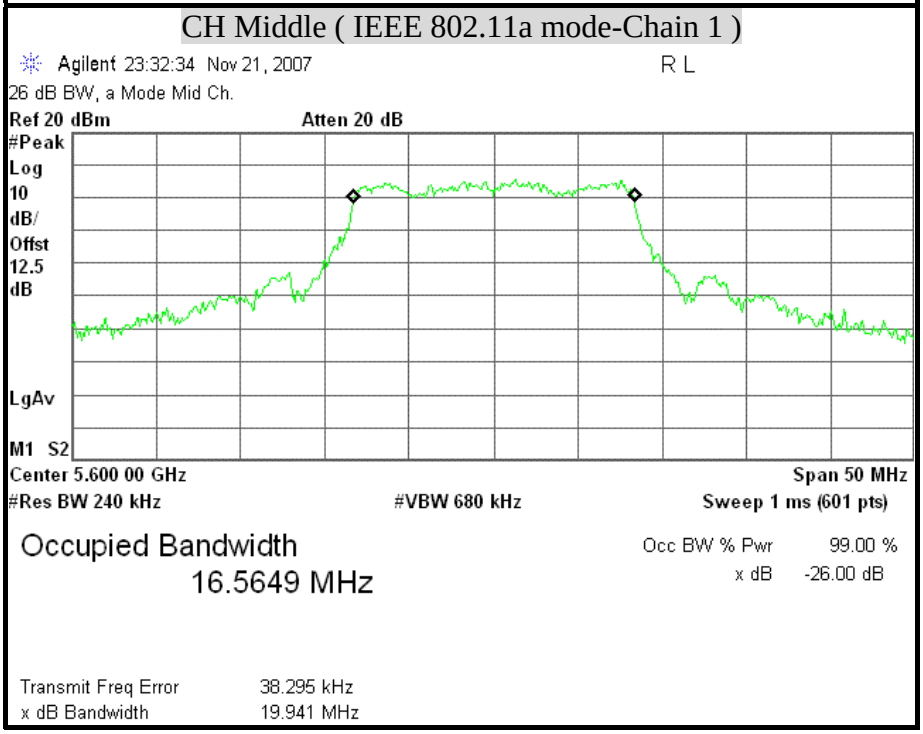
CH High (IEEE 802.11a mode-Chain 0)



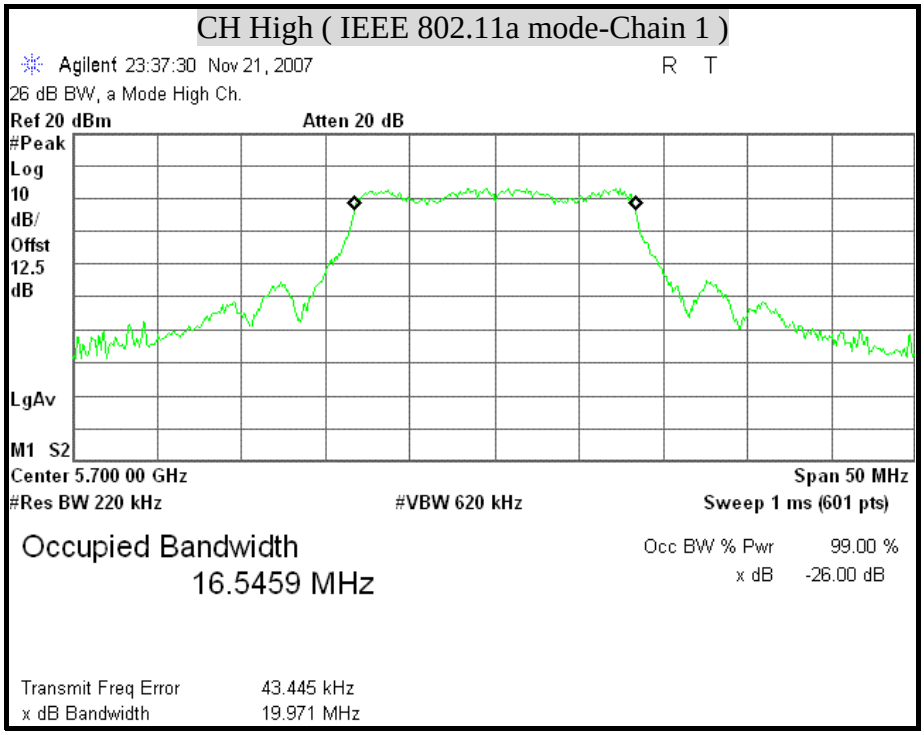
CH Low (IEEE 802.11a mode-Chain 1)



CH Middle (IEEE 802.11a mode-Chain 1)

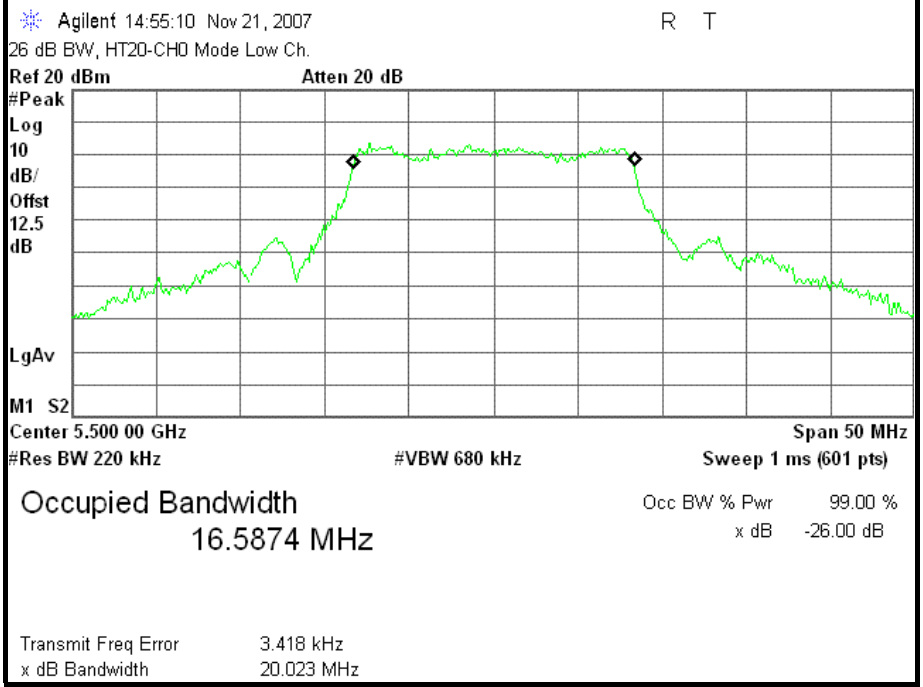


CH High (IEEE 802.11a mode-Chain 1)

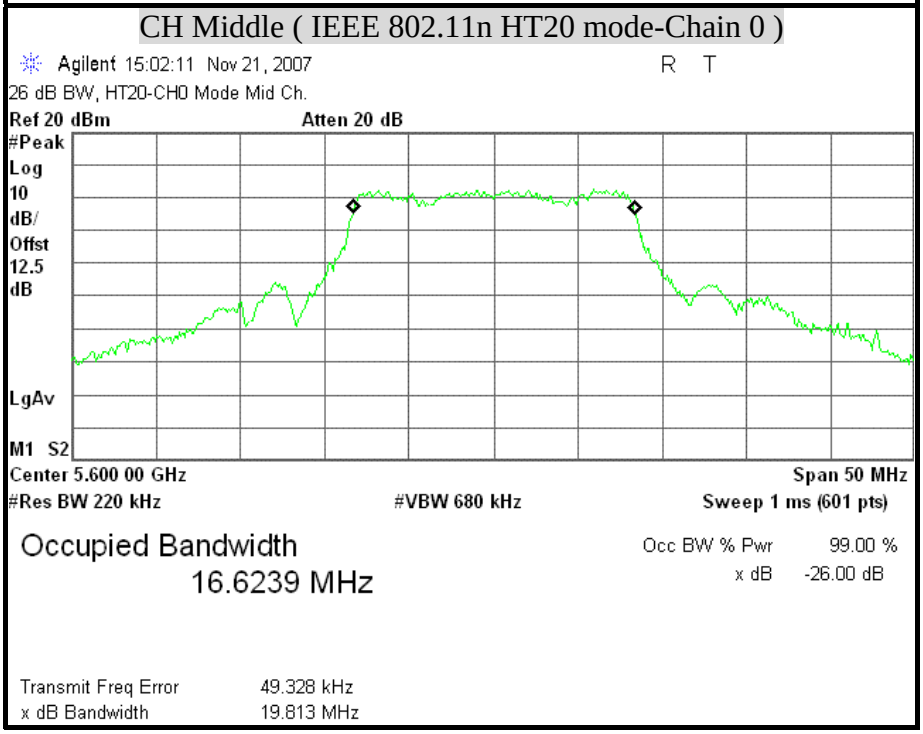


26dB BANDWIDTH (IEEE 802.11n HT20 mode / 5470MHz ~ 5725MHz)

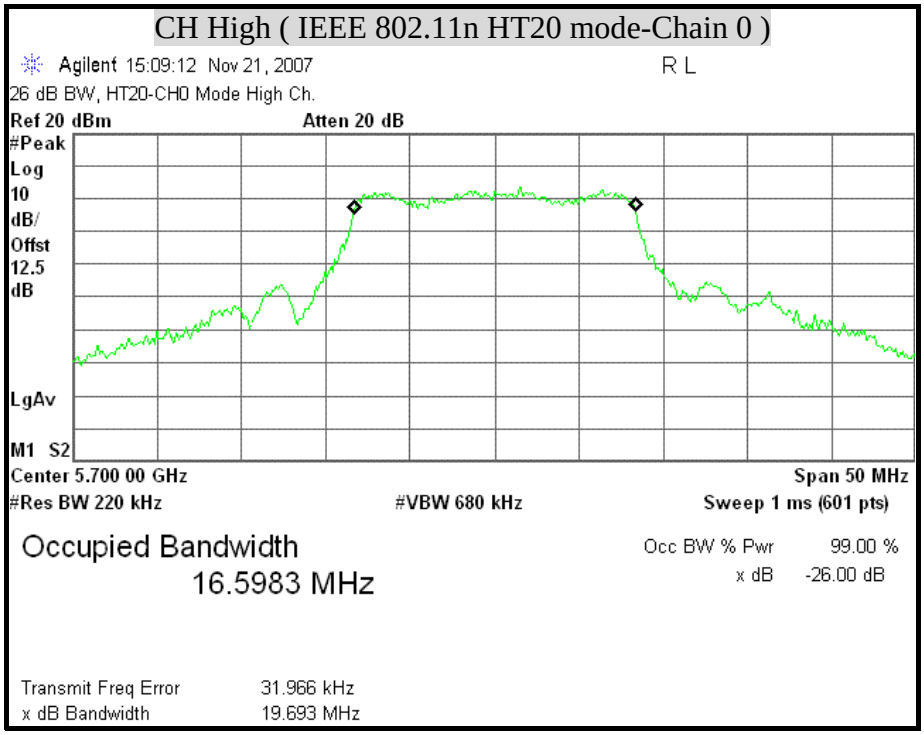
CH Low (IEEE 802.11n HT20 mode-Chain 0)



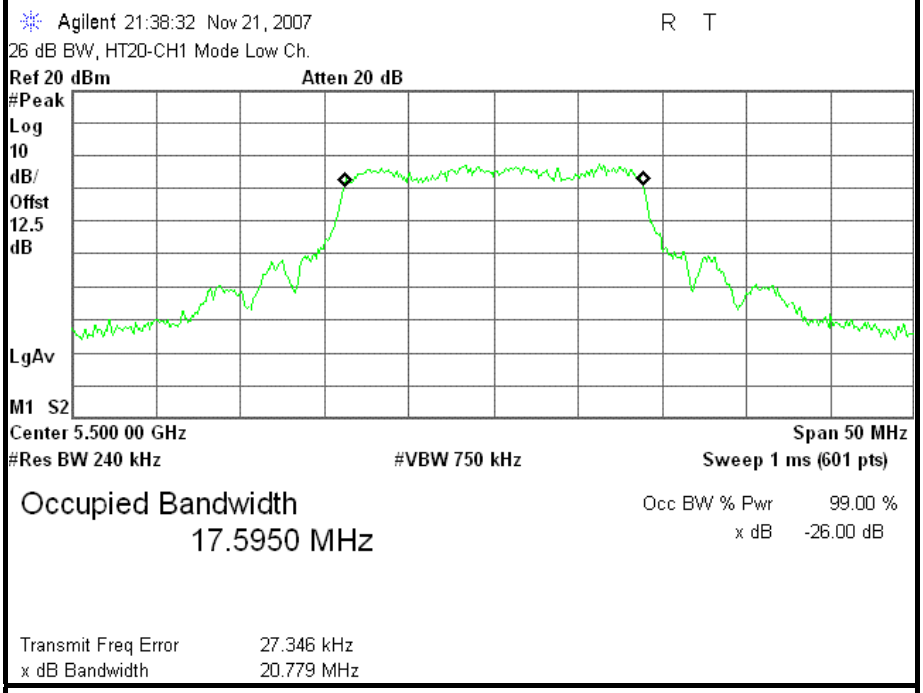
CH Middle (IEEE 802.11n HT20 mode-Chain 0)



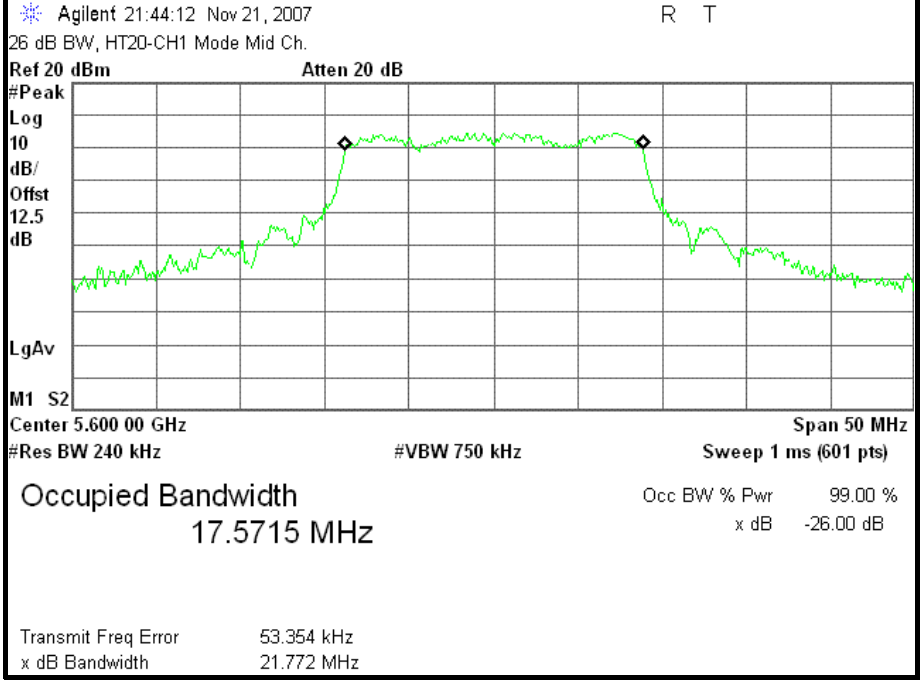
CH High (IEEE 802.11n HT20 mode-Chain 0)



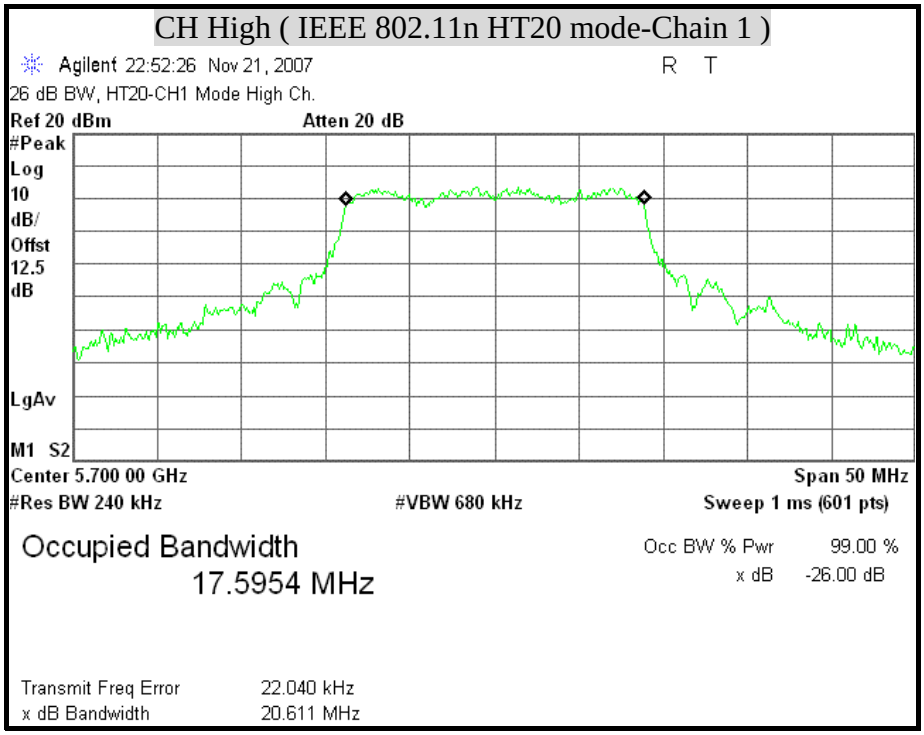
CH Low (IEEE 802.11n HT20 mode-Chain 1)



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

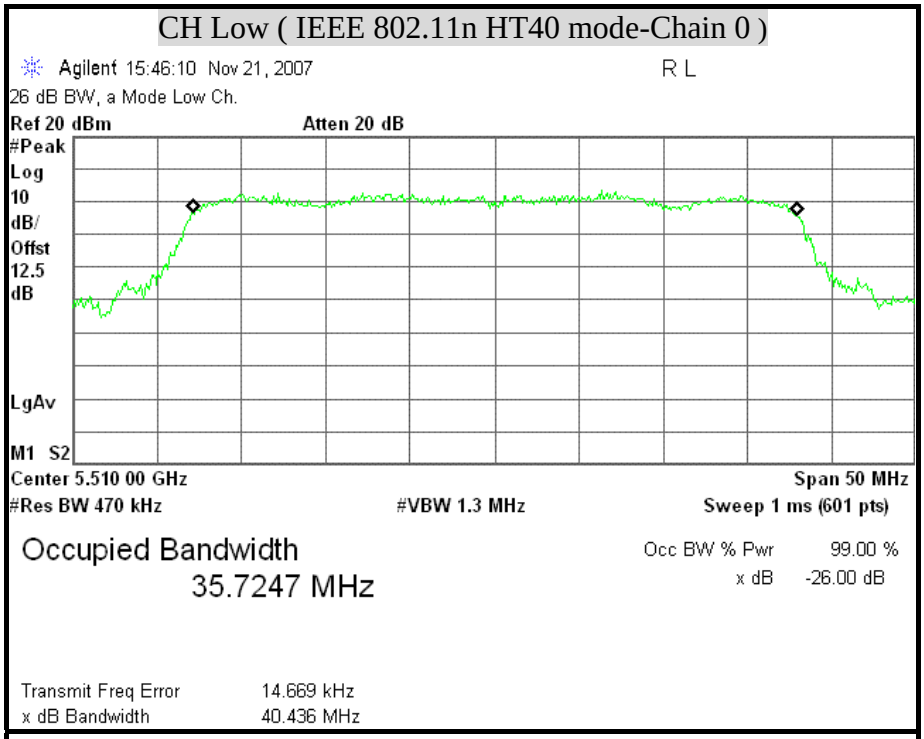


CH High (IEEE 802.11n HT20 mode-Chain 1)

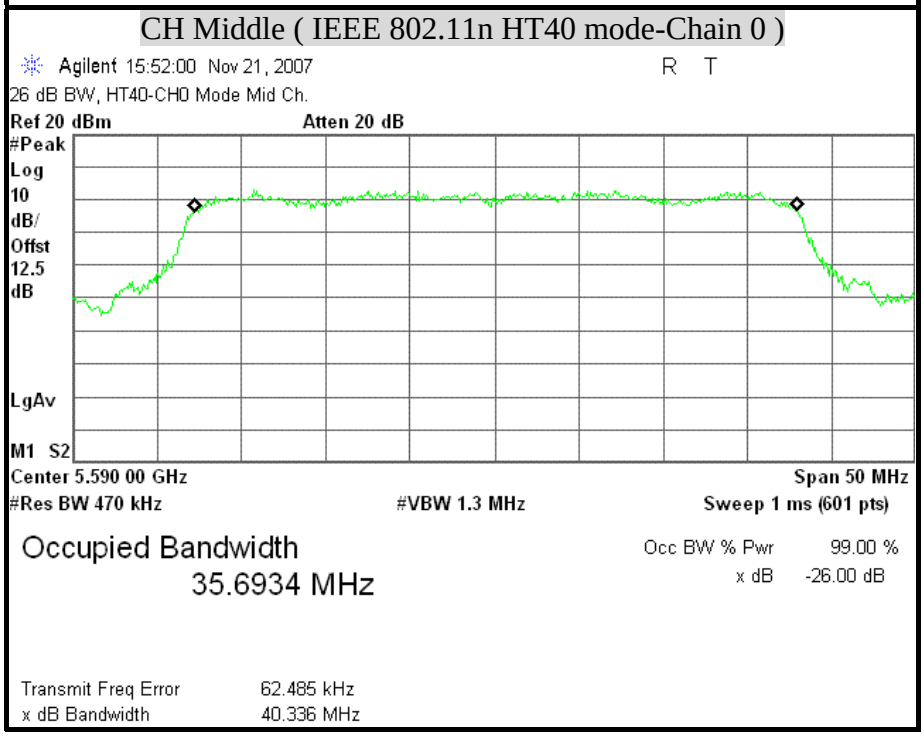


26dB BANDWIDTH (IEEE 802.11n HT40 mode / 5470MHz ~ 5725MHz)

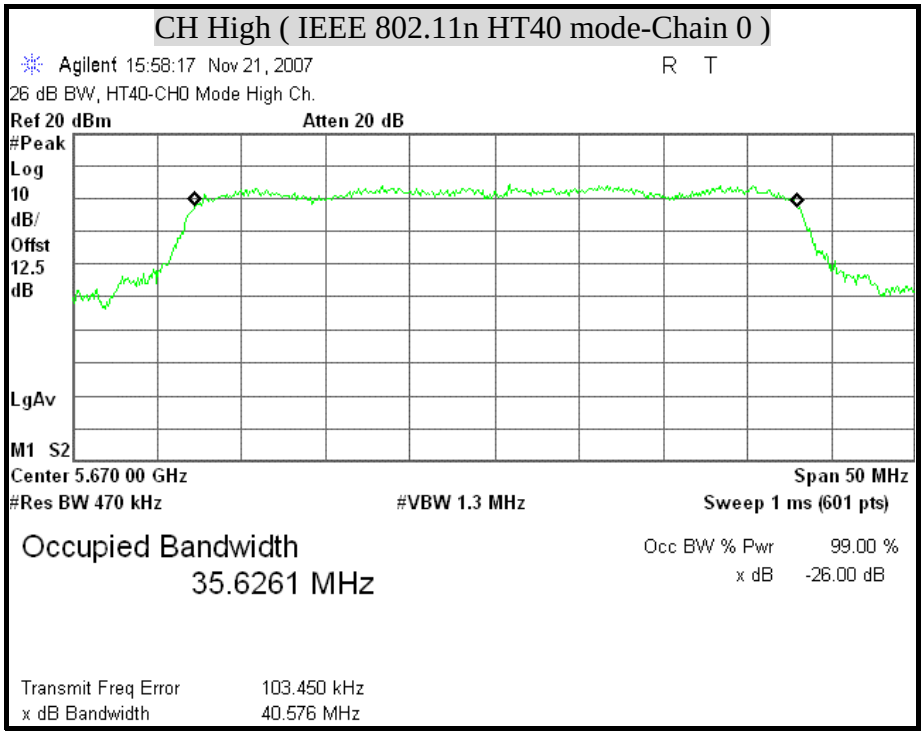
CH Low (IEEE 802.11n HT40 mode-Chain 0)



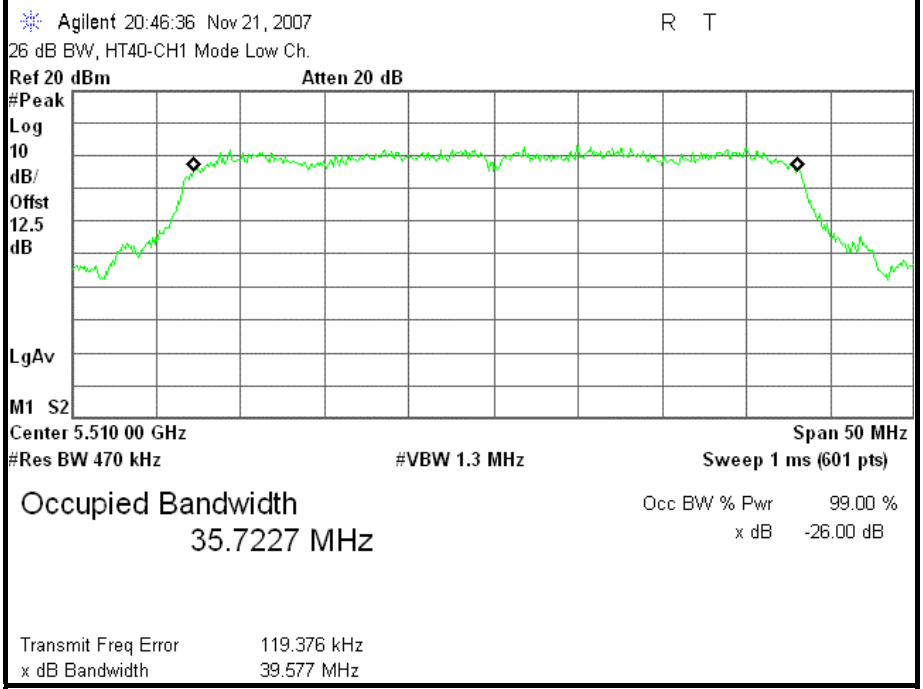
CH Middle (IEEE 802.11n HT40 mode-Chain 0)



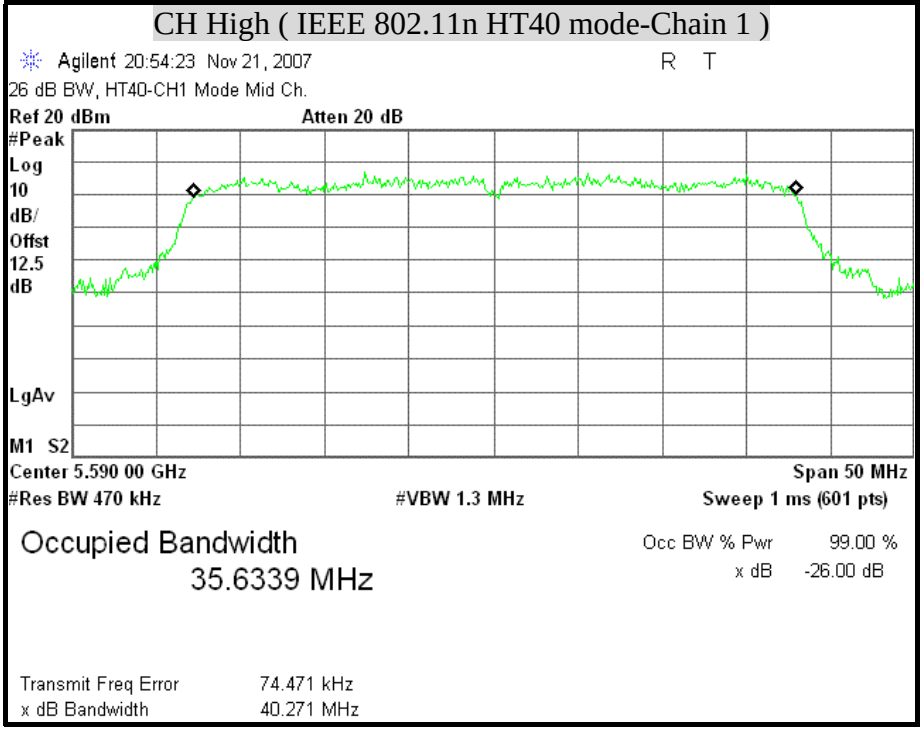
CH High (IEEE 802.11n HT40 mode-Chain 0)



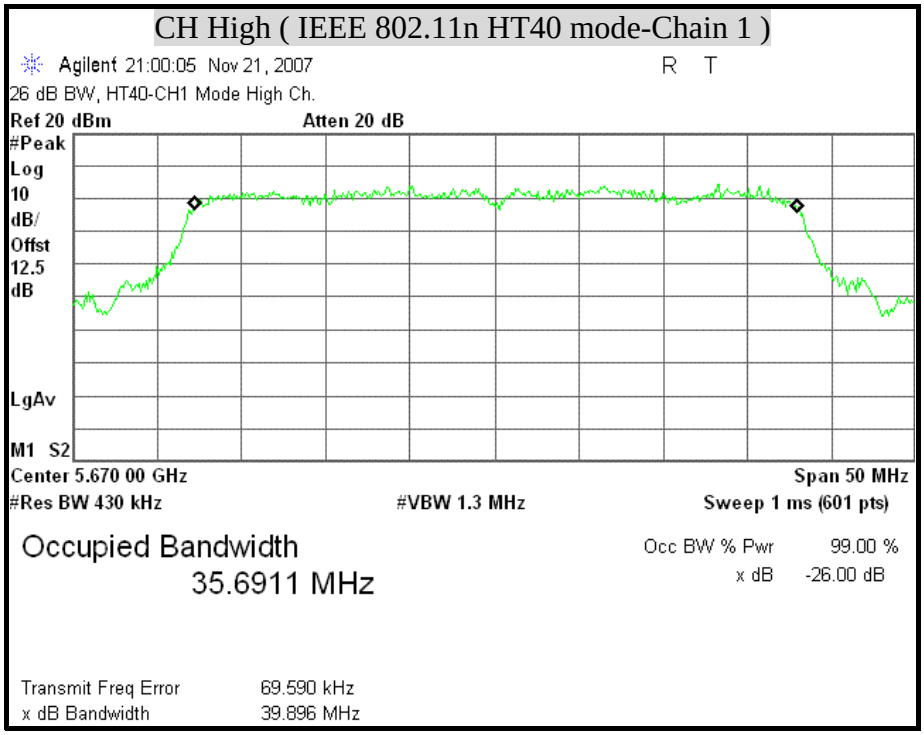
CH Low (IEEE 802.11n HT40 mode-Chain 1)



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



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



8.2 99% BANDWIDTH

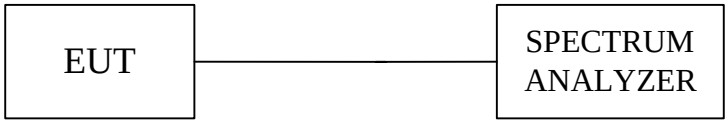
LIMIT

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	MY433602.52	June 06, 2007

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 (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)	
		Chain 0	Chain 1
Low	5180	16.54	16.52
Middle	5220	16.56	17.59
High	5240	16.58	17.64

IEEE 802.11n HT20 mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)	
		Chain 0	Chain 1
Low	5180	17.57	17.59
Middle	5220	17.57	17.58
High	5240	17.62	17.61

IEEE 802.11n HT40 mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)	
		Chain 0	Chain 1
Low	5190	35.65	35.63
High	5230	35.71	35.69

IEEE 802.11a mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)	
		Chain 0	Chain 1
Low	5260	16.47	16.52
Middle	5280	16.51	16.51
High	5320	16.54	16.54

IEEE 802.11n HT20 mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)	
		Chain 0	Chain 1
Low	5260	17.60	17.63
Middle	5280	17.61	17.60
High	5320	17.55	17.60

IEEE 802.11n HT40 mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)	
		Chain 0	Chain 1
Low	5270	35.61	35.53
High	5310	35.62	35.70

IEEE 802.11a mode (5470MHz ~ 5725MHz)

Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)	
		Chain 0	Chain 1
Low	5500	16.52	16.49
Middle	5600	16.53	16.55
High	5700	16.58	16.52

IEEE 802.11n HT20 mode (5470MHz ~ 5725MHz)

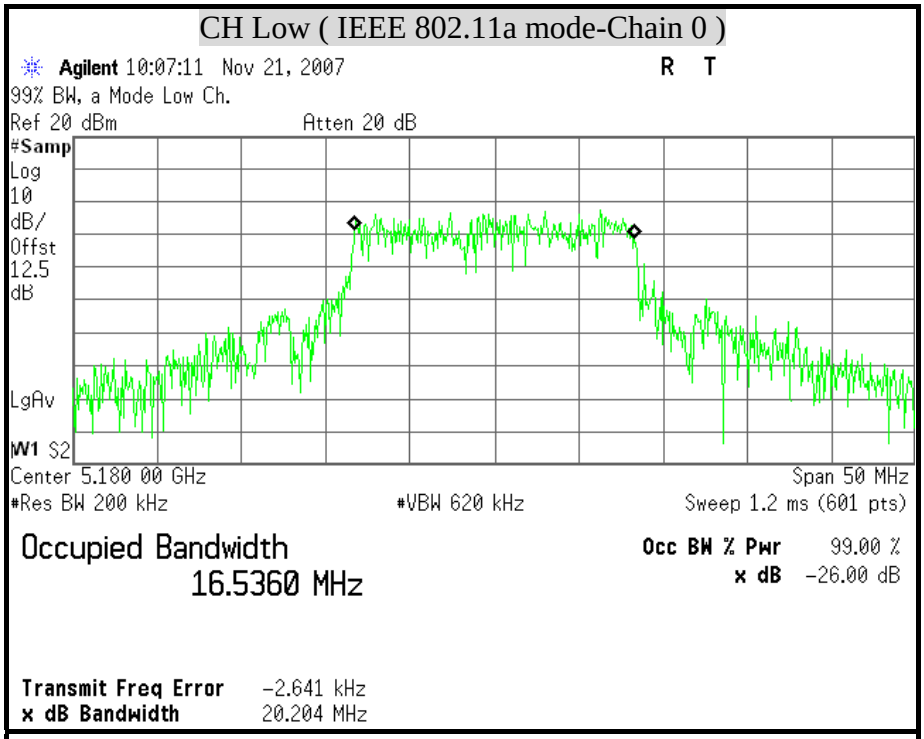
Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)	
		Chain 0	Chain 1
Low	5500	16.57	17.54
Middle	5600	16.55	17.59
High	5700	16.60	17.57

IEEE 802.11n HT40 mode (5470MHz ~ 5725MHz)

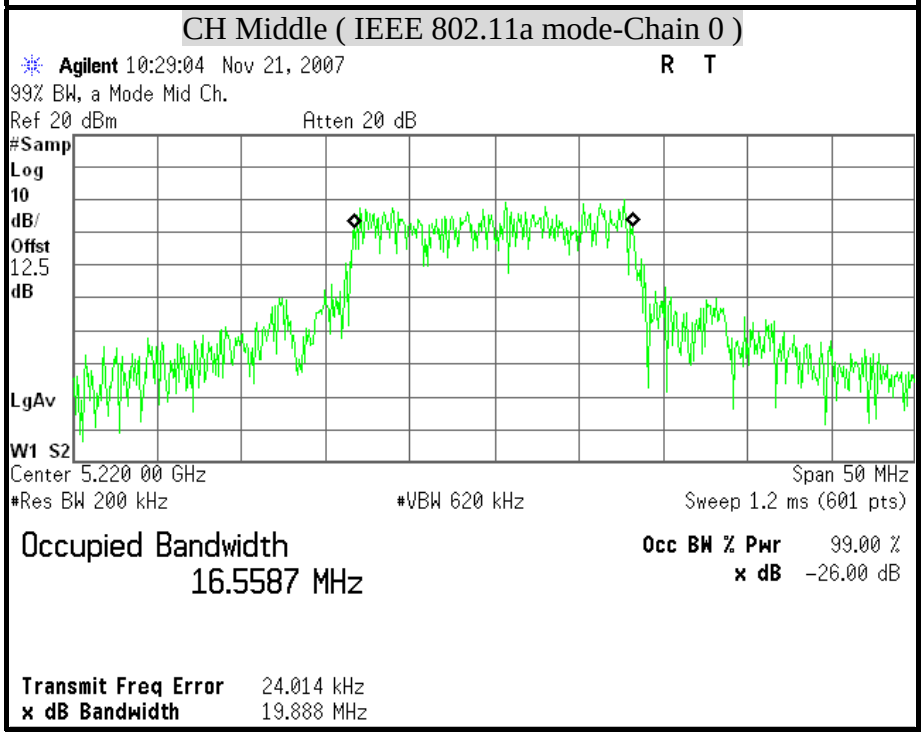
Channel	Channel Frequency (MHz)	99% Occupied power bandwidth (MHz)	
		Chain 0	Chain 1
Low	5510	35.65	35.69
Middle	5590	35.66	35.60
High	5670	35.66	35.72

99% BANDWIDTH (IEEE 802.11a mode / 5150MHz ~ 5250MHz)

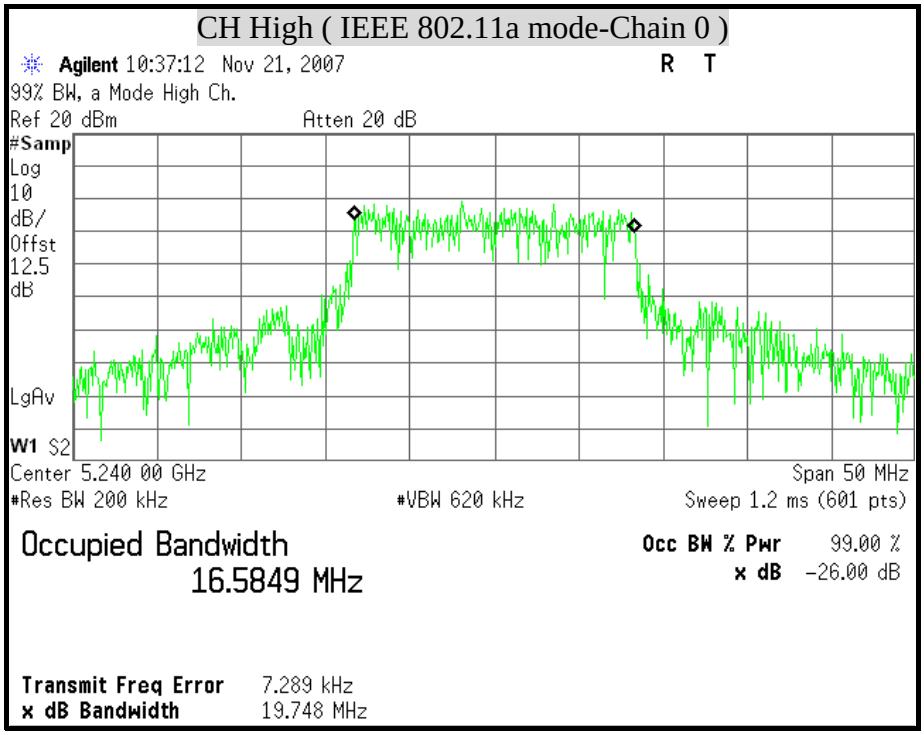
CH Low (IEEE 802.11a mode-Chain 0)



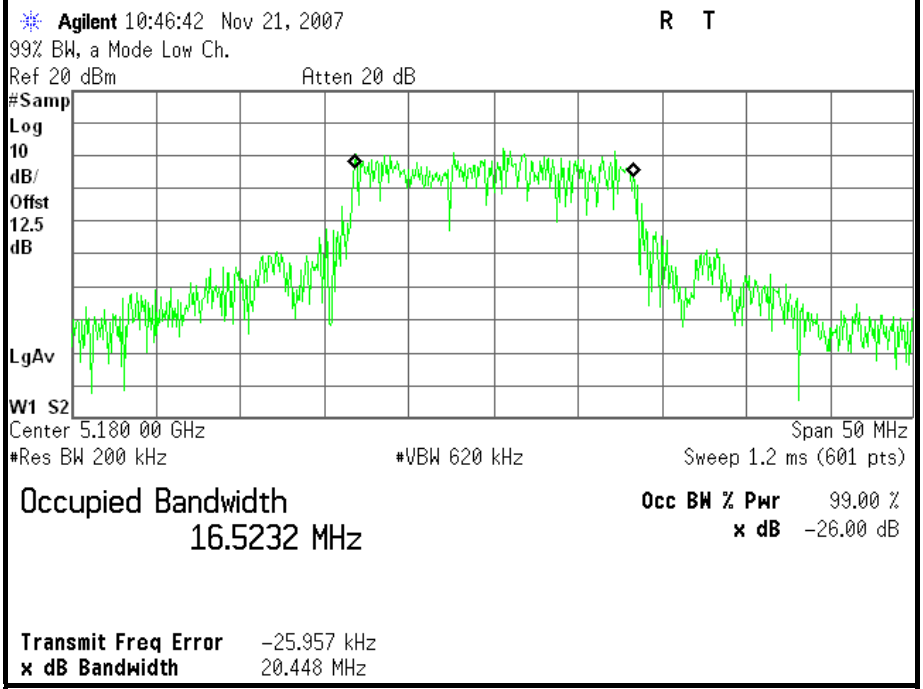
CH Middle (IEEE 802.11a mode-Chain 0)



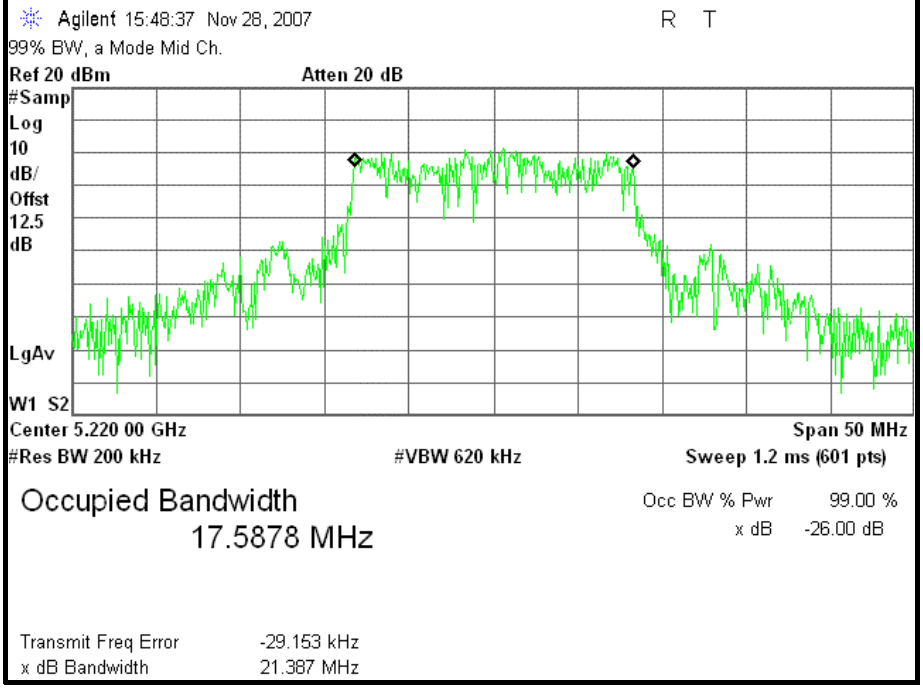
CH High (IEEE 802.11a mode-Chain 0)



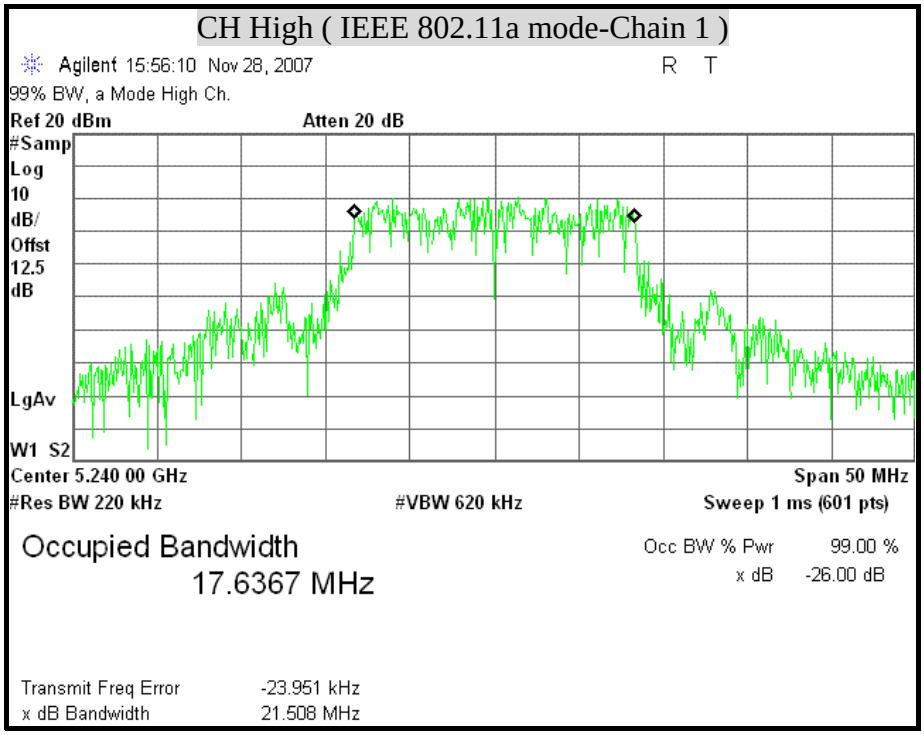
CH Low (IEEE 802.11a mode-Chain 1)



CH Middle (IEEE 802.11a mode-Chain 1)

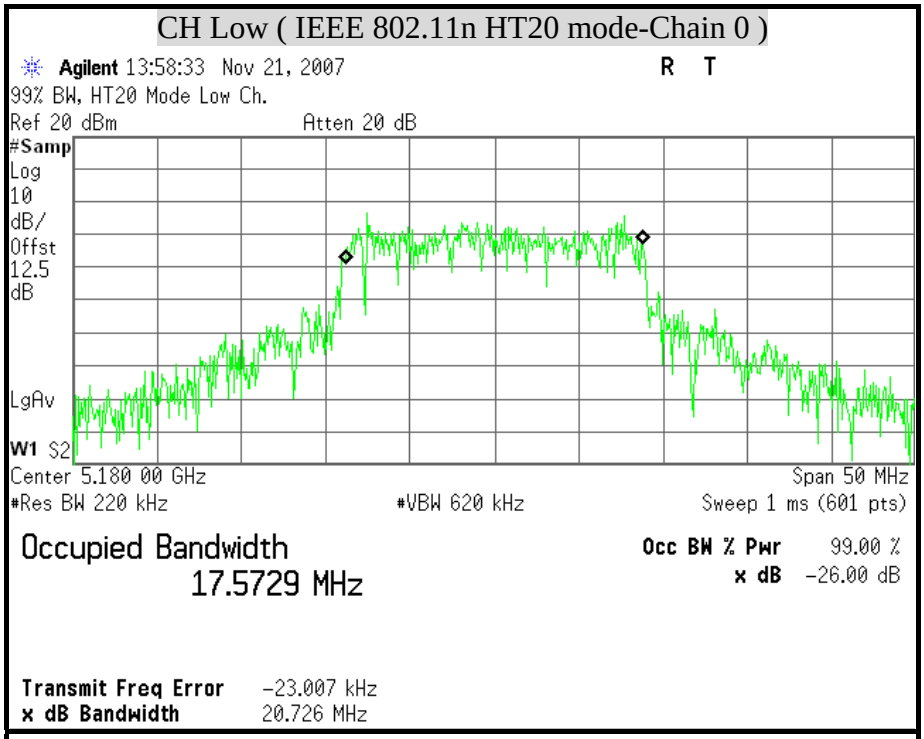


CH High (IEEE 802.11a mode-Chain 1)

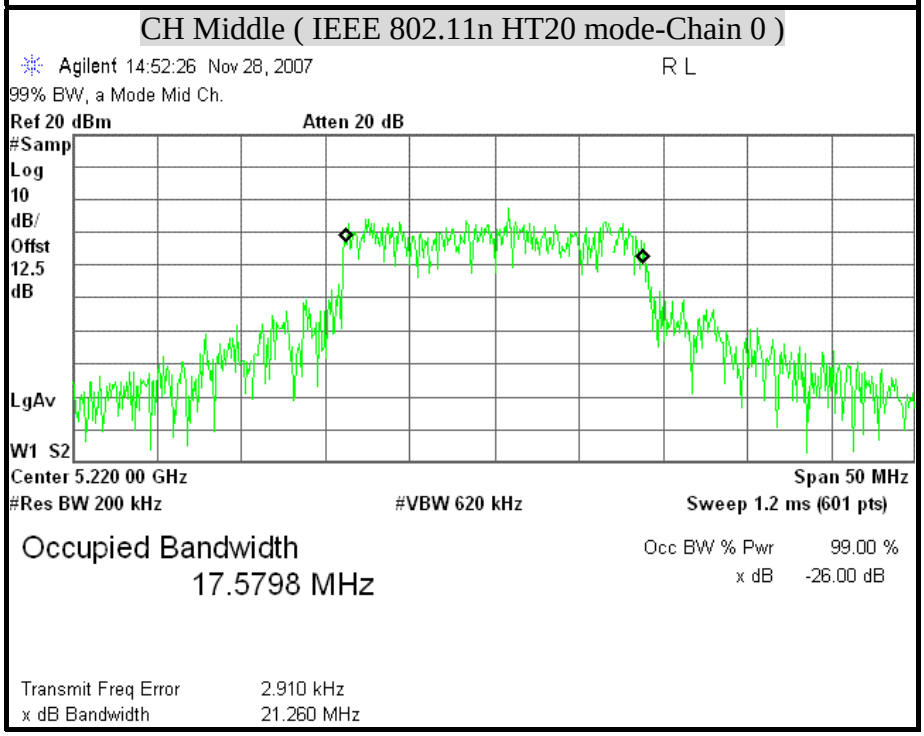


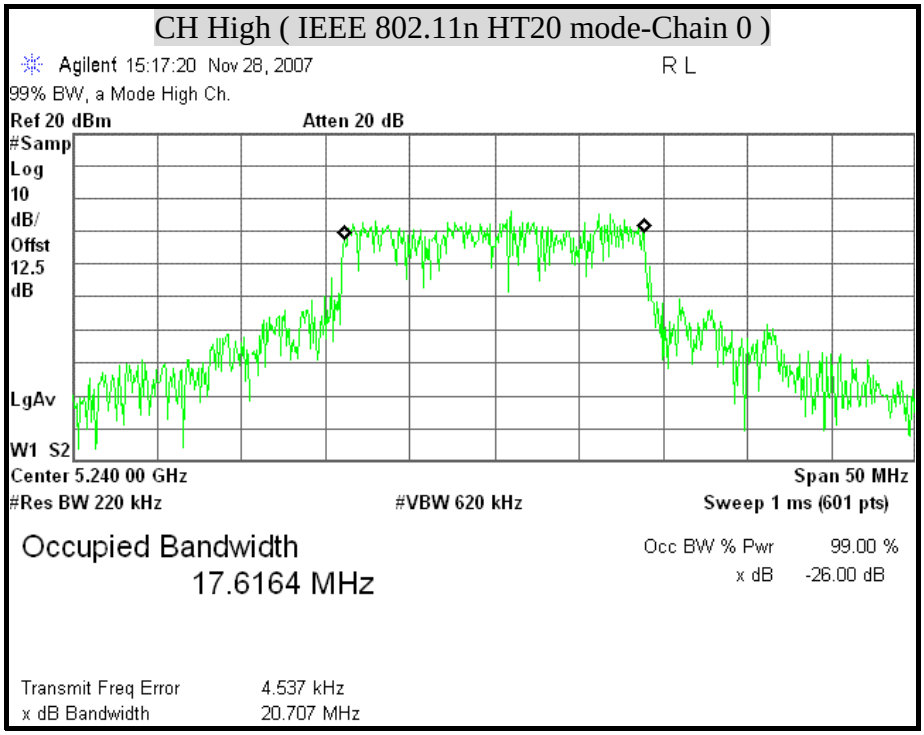
99% BANDWIDTH (IEEE 802.11n HT20 mode / 5150MHz ~ 5250MHz)

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

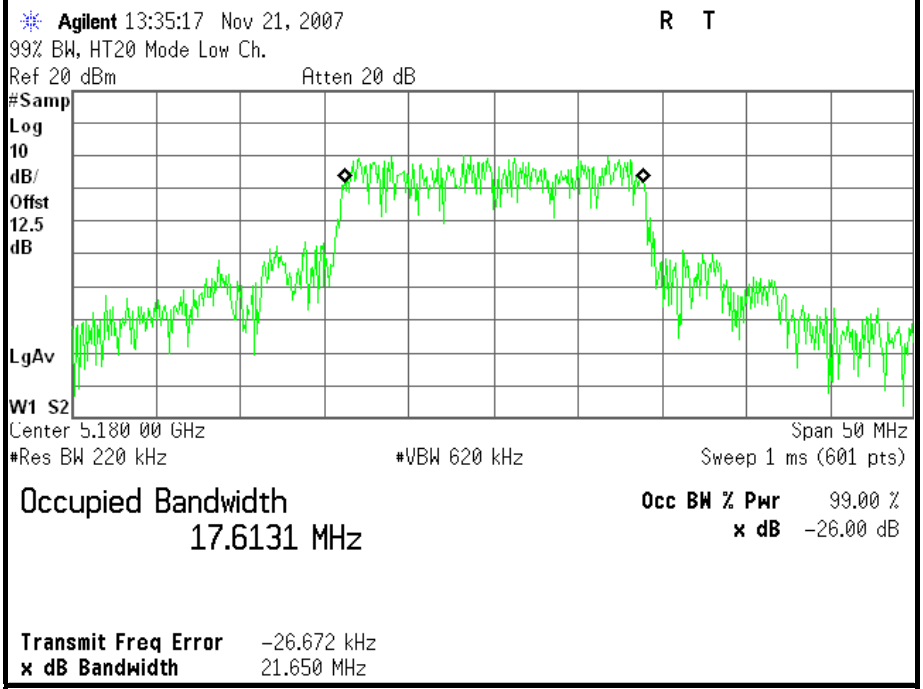


CH Middle (IEEE 802.11n HT20 mode-Chain 0)

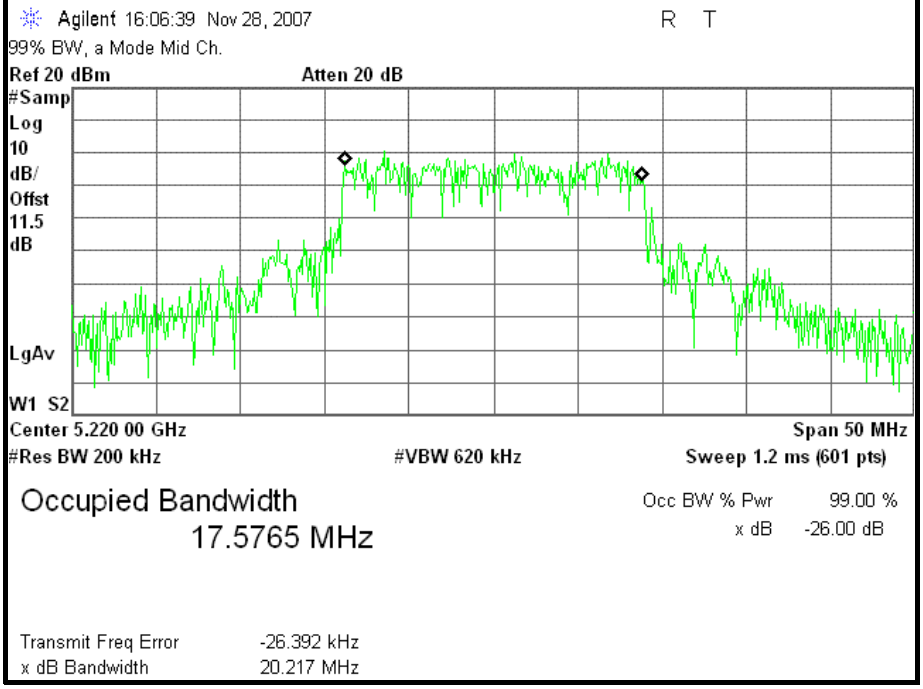



CH High (IEEE 802.11n HT20 mode-Chain 0)
Agilent 15:17:20 Nov 28, 2007
R L
99% BW, a Mode High Ch.
Ref 20 dBm
Atten 20 dB
#Samp
Log
10
dB/
Offst
12.5
dB
LgAv
W1 S2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 220 kHz
#VBW 620 kHz
Sweep 1 ms (601 pts)
Occupied Bandwidth
17.6164 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error 4.537 kHz
x dB Bandwidth 20.707 MHz

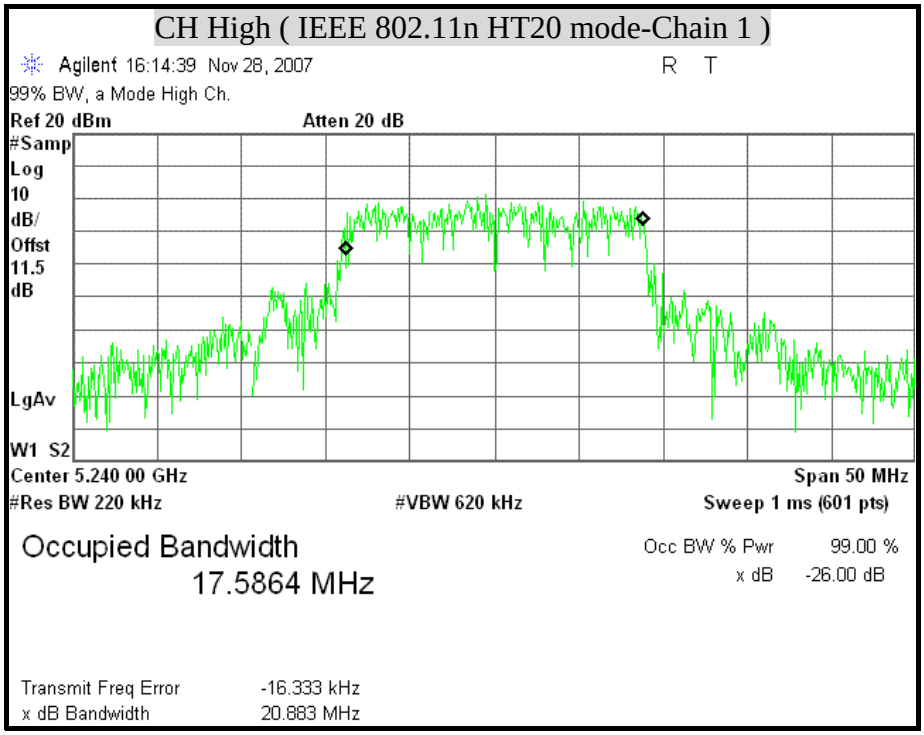
CH Low (IEEE 802.11n HT20 mode-Chain 1)



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

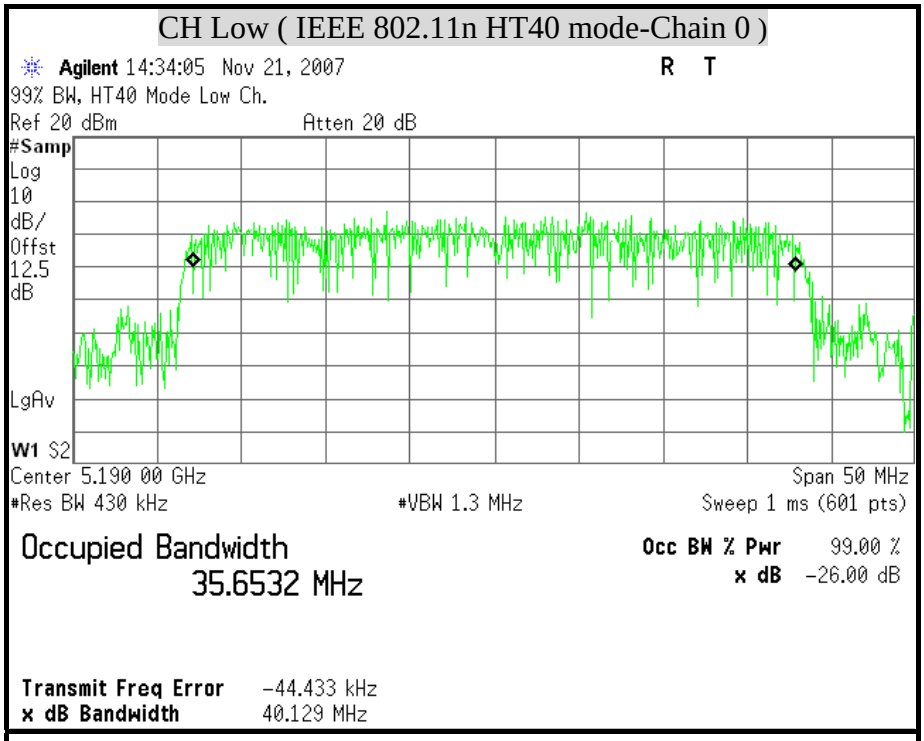


CH High (IEEE 802.11n HT20 mode-Chain 1)

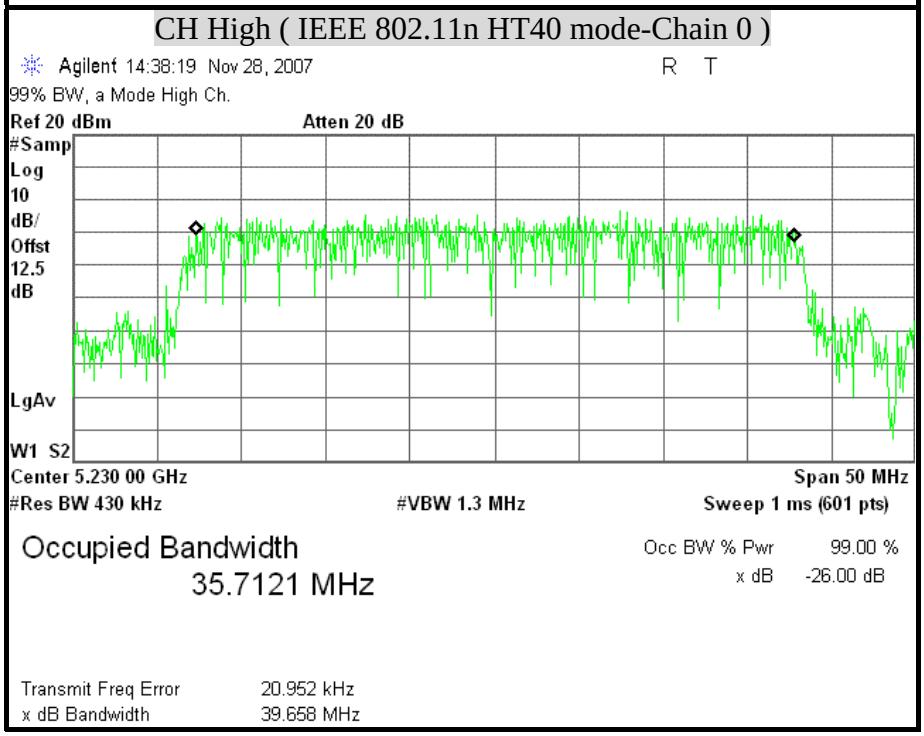


99% BANDWIDTH (IEEE 802.11n HT40 mode / 5150MHz ~ 5250MHz)

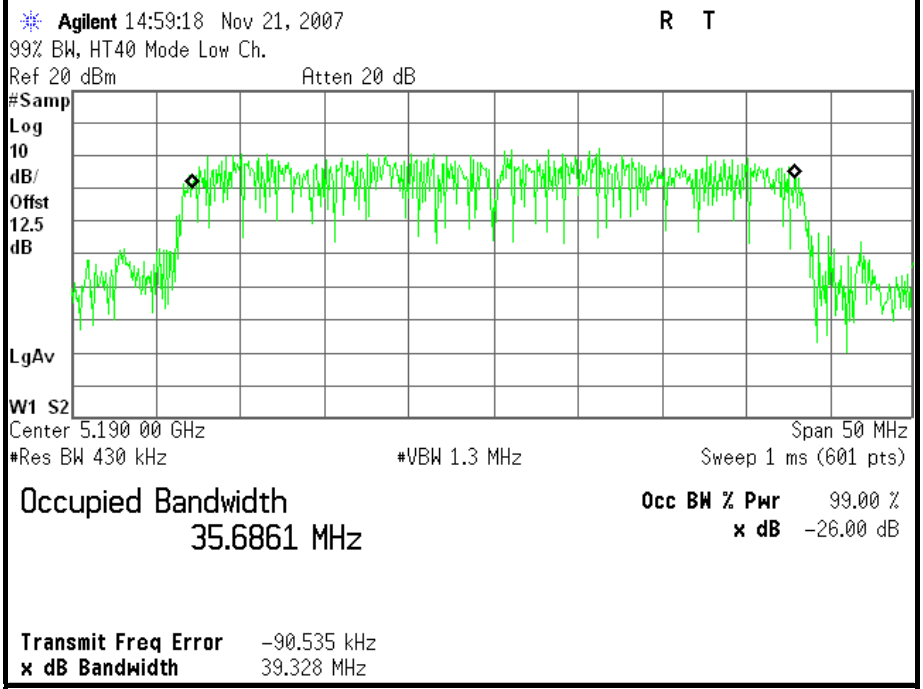
CH Low (IEEE 802.11n HT40 mode-Chain 0)



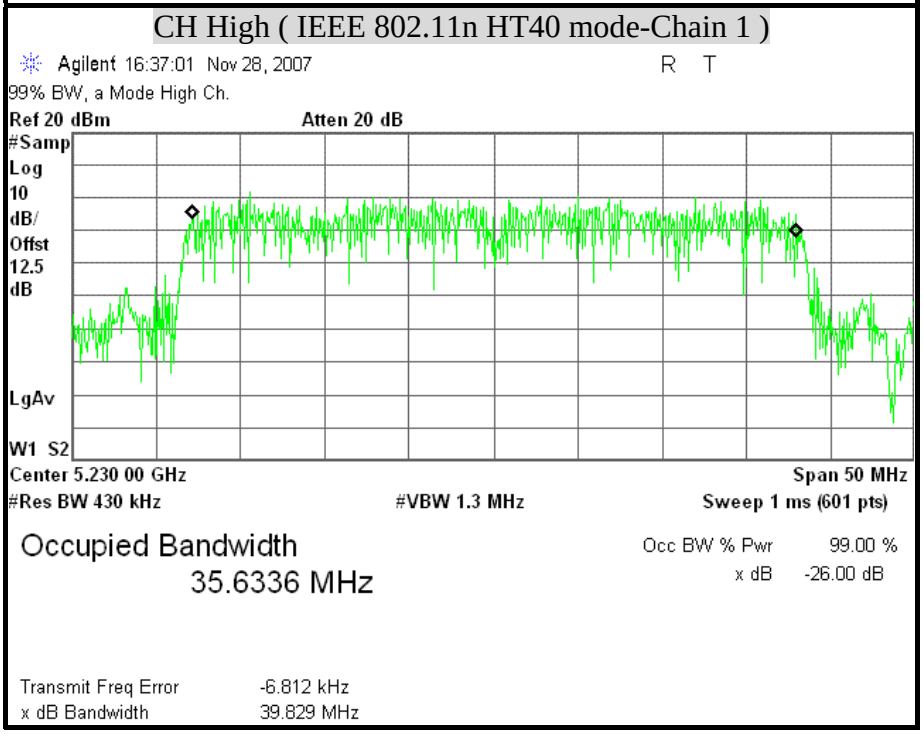
CH High (IEEE 802.11n HT40 mode-Chain 0)



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

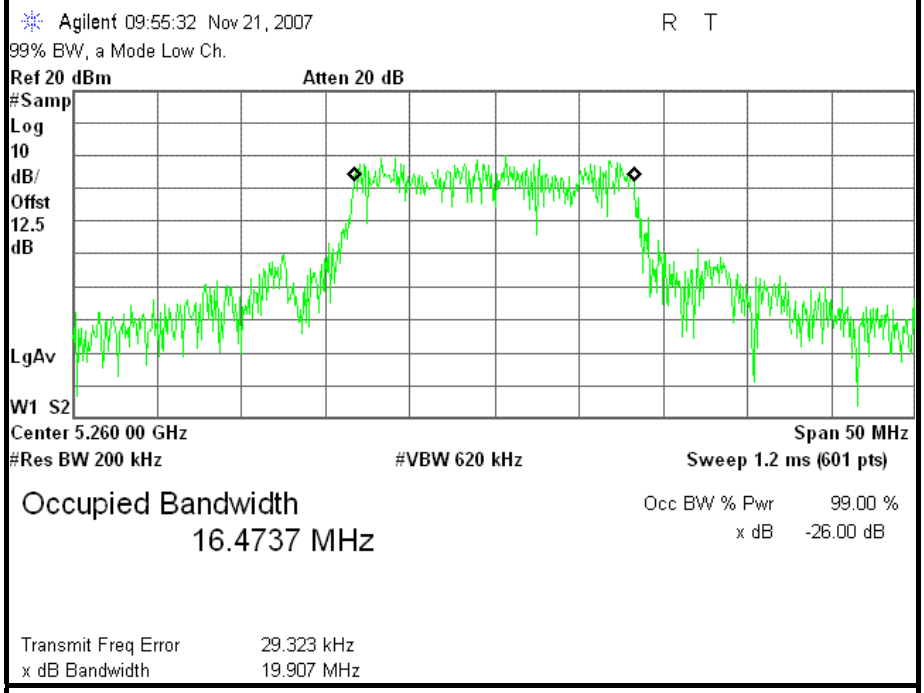


CH High (IEEE 802.11n HT40 mode-Chain 1)

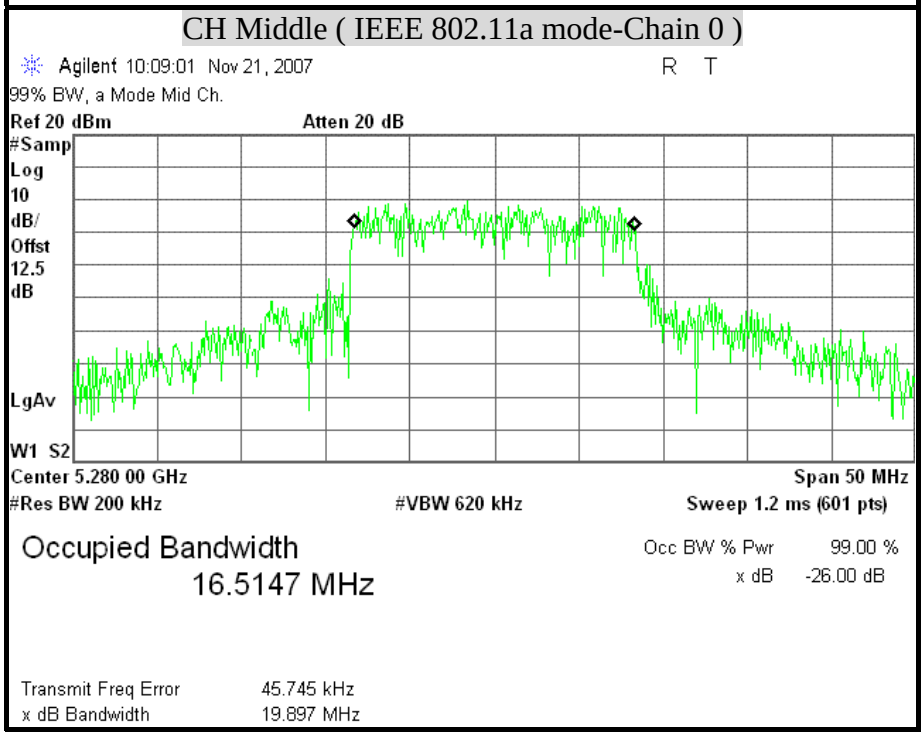


99% BANDWIDTH (IEEE 802.11a mode / 5250MHz ~ 5350MHz)

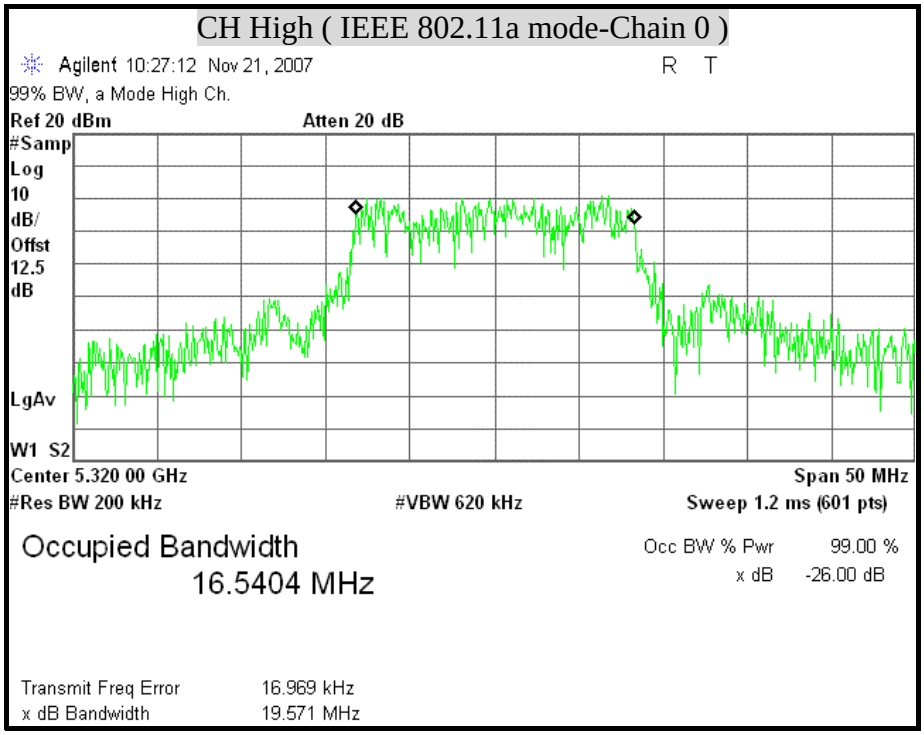
CH Low (IEEE 802.11a mode-Chain 0)



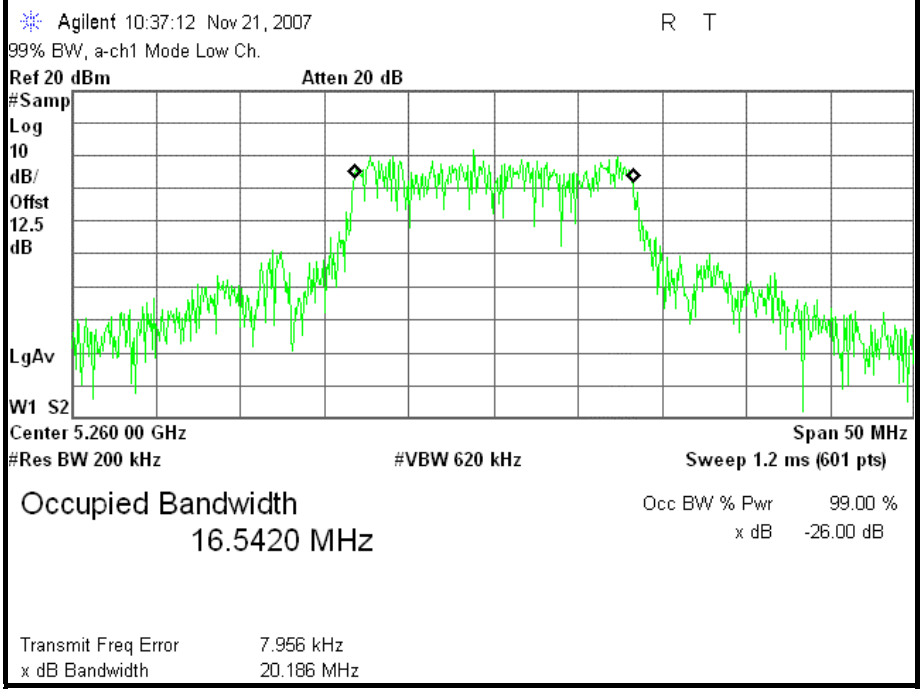
CH Middle (IEEE 802.11a mode-Chain 0)



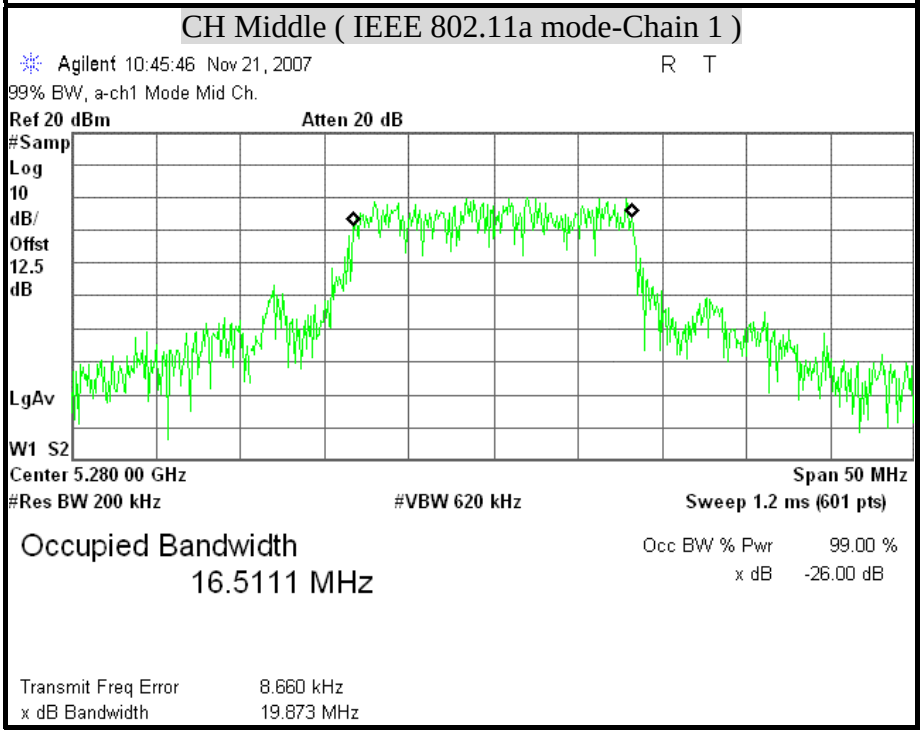
CH High (IEEE 802.11a mode-Chain 0)



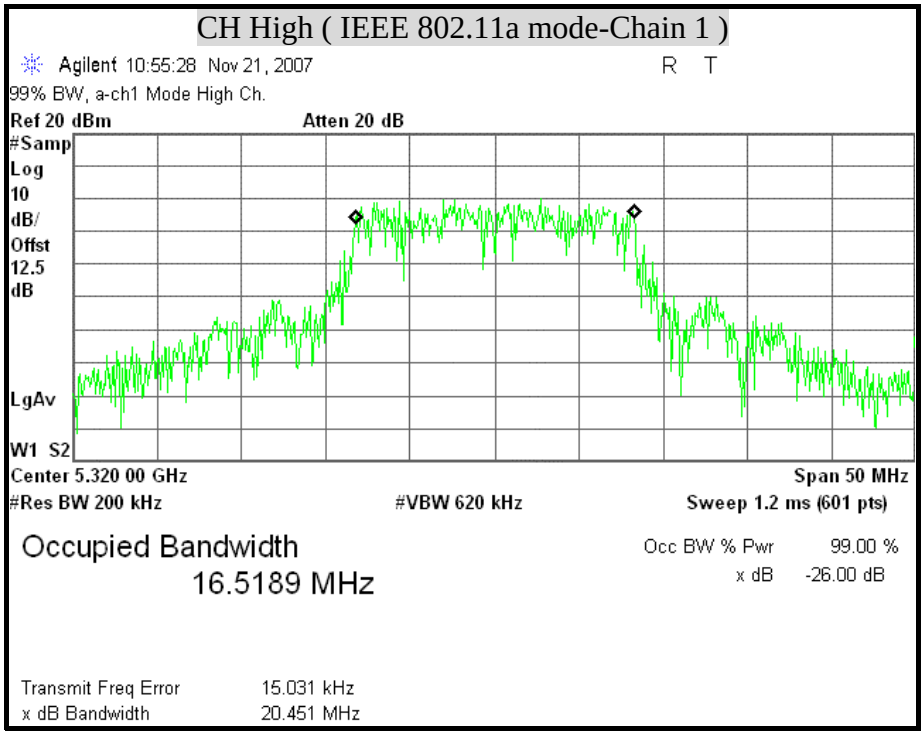
CH Low (IEEE 802.11a mode-Chain 1)



CH Middle (IEEE 802.11a mode-Chain 1)



CH High (IEEE 802.11a mode-Chain 1)



99% BANDWIDTH (IEEE 802.11n HT20 mode / 5250MHz ~ 5350MHz)

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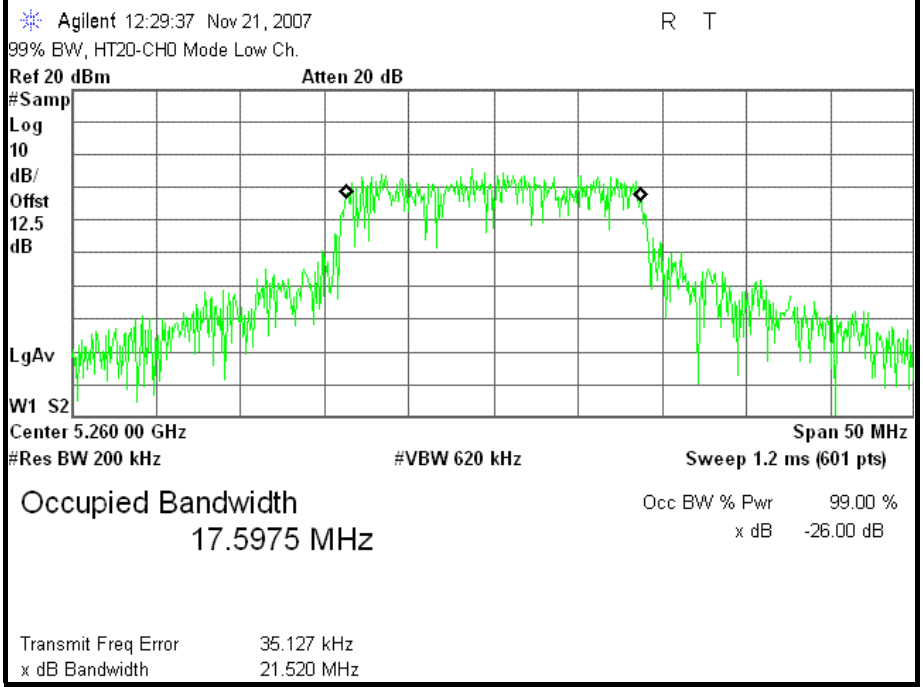

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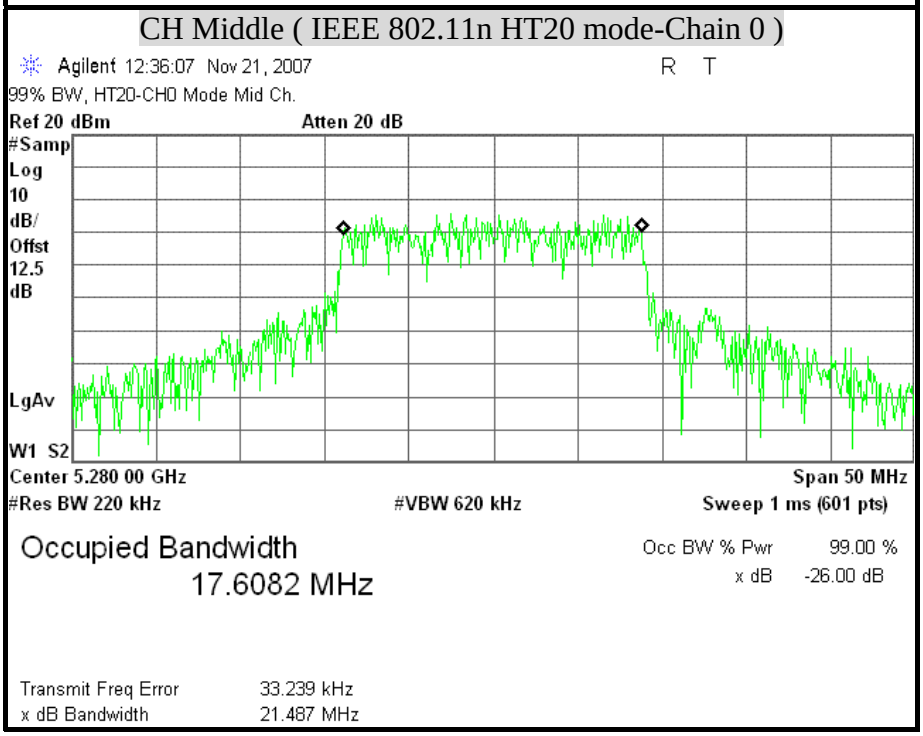

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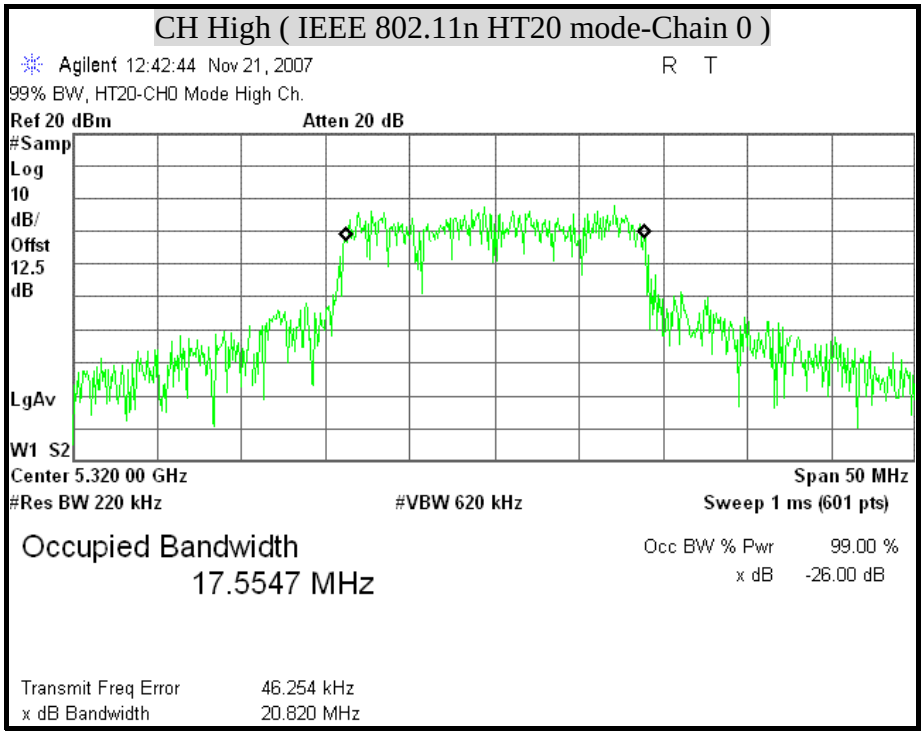
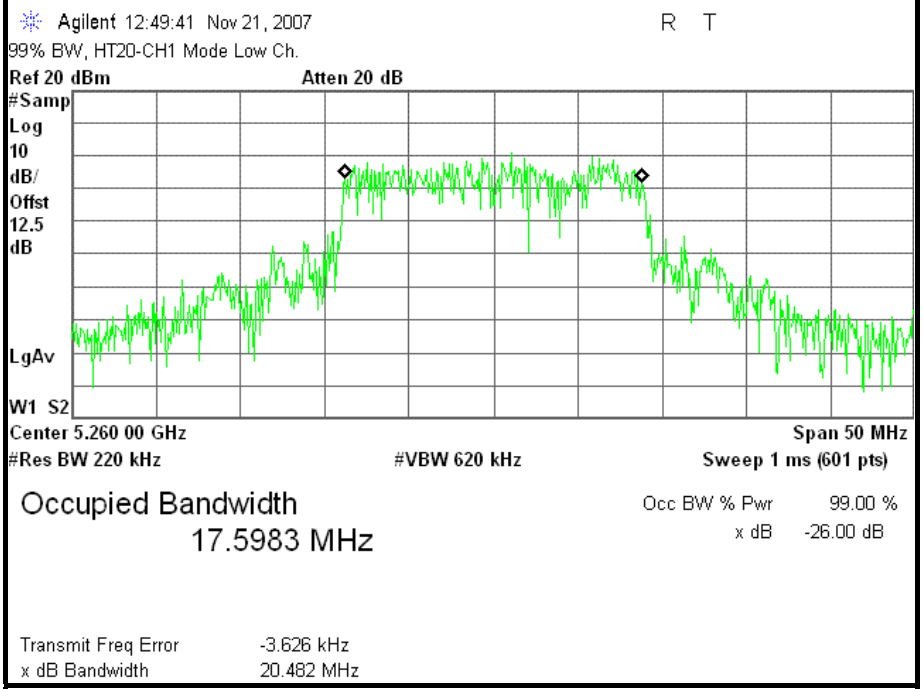


CH Low (IEEE 802.11n HT20 mode-Chain 1)



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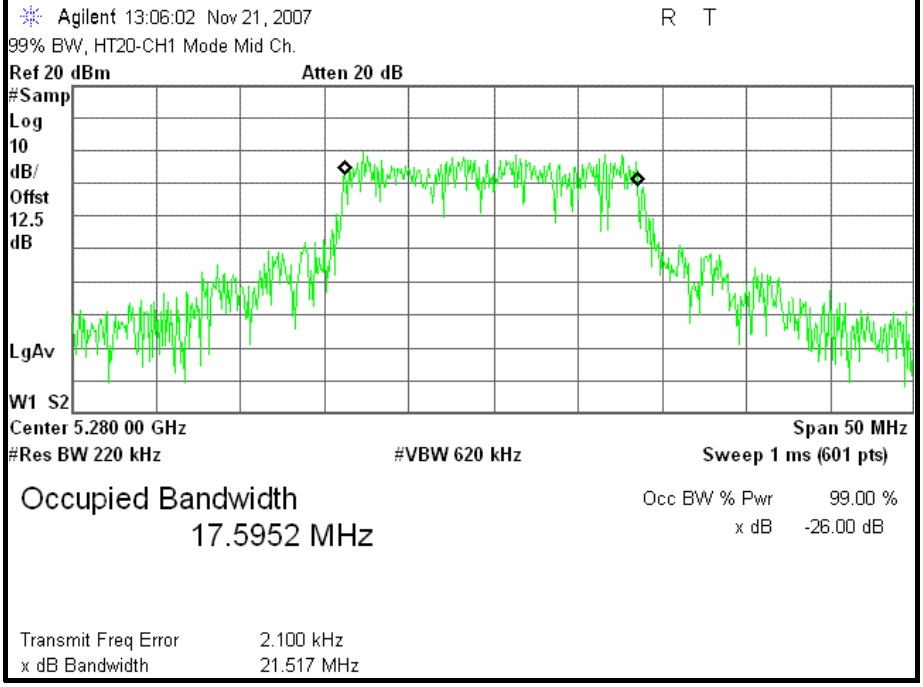
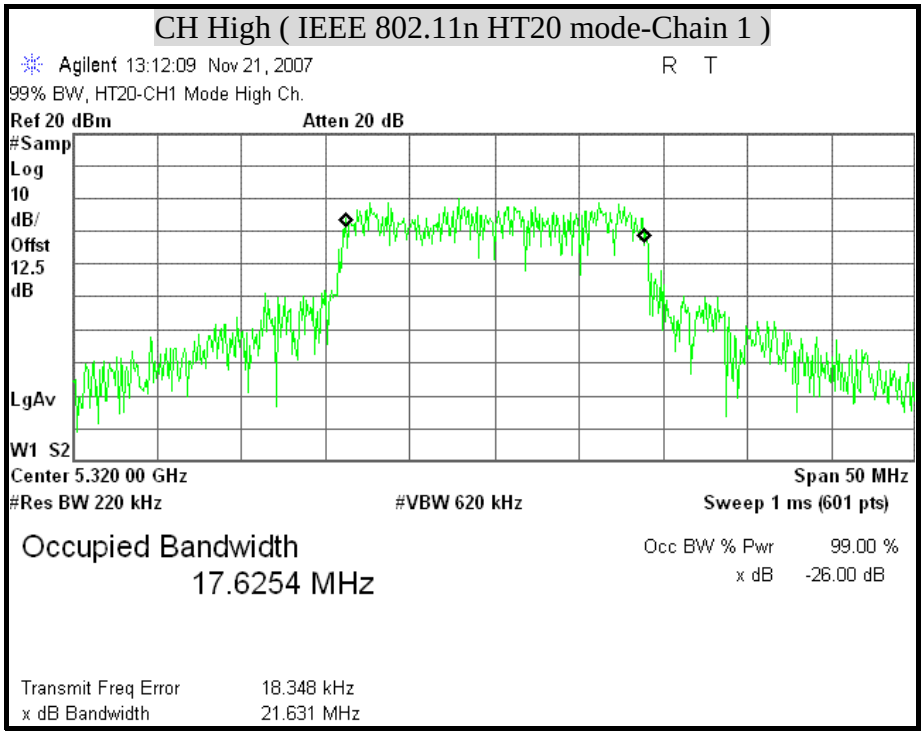
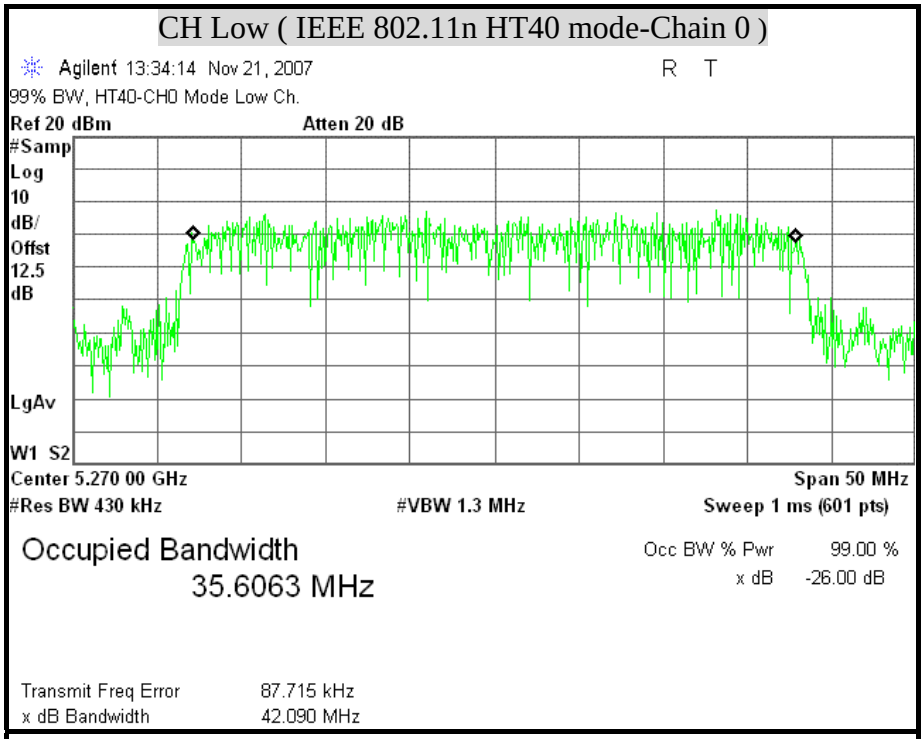


CH High (IEEE 802.11n HT20 mode-Chain 1)



99% BANDWIDTH (IEEE 802.11n HT40 mode / 5250MHz ~ 5350MHz)

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



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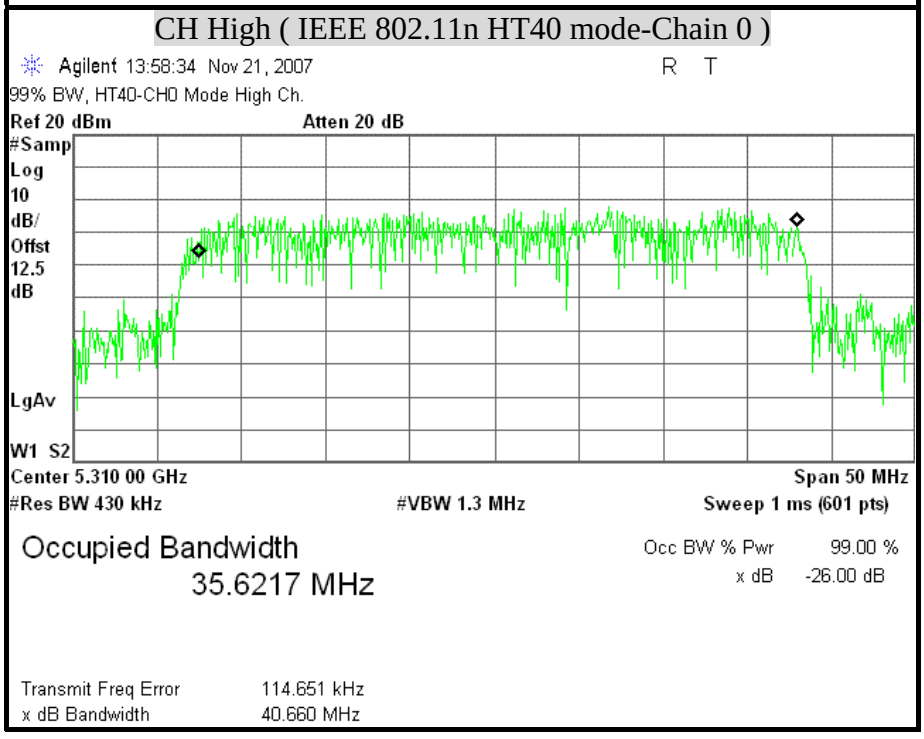

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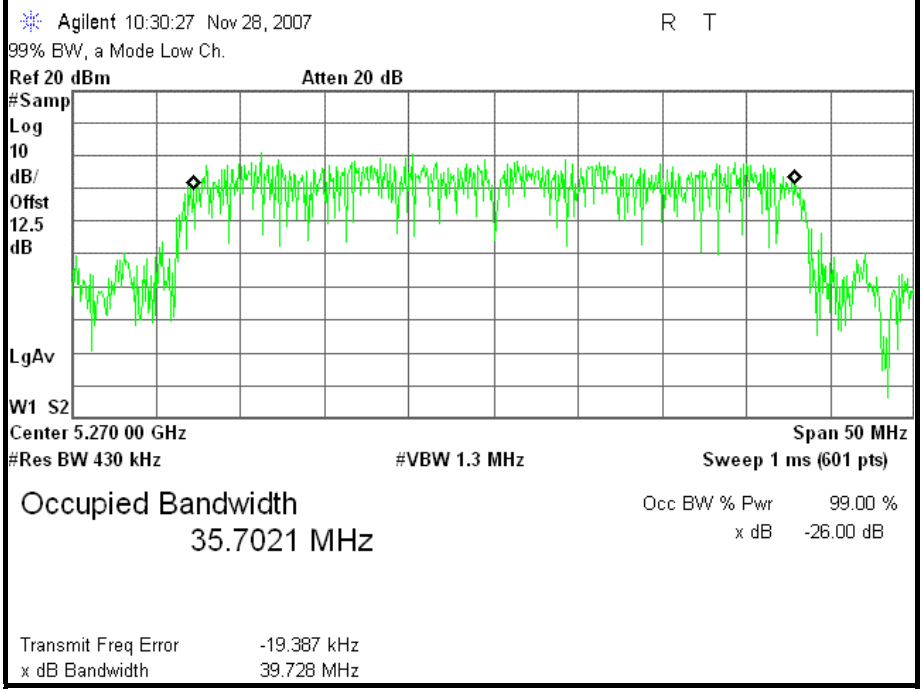

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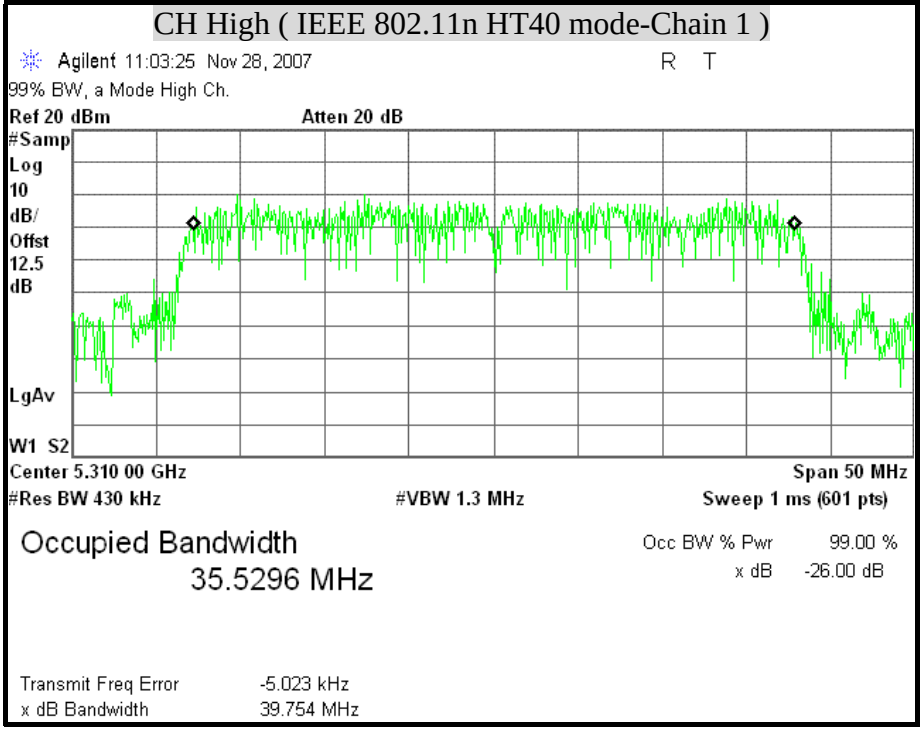
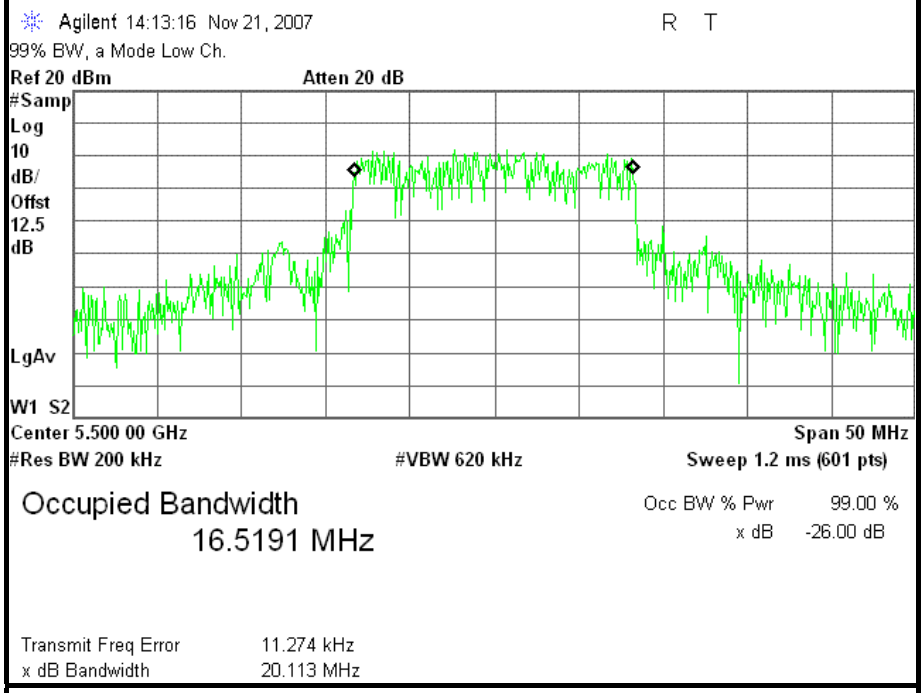
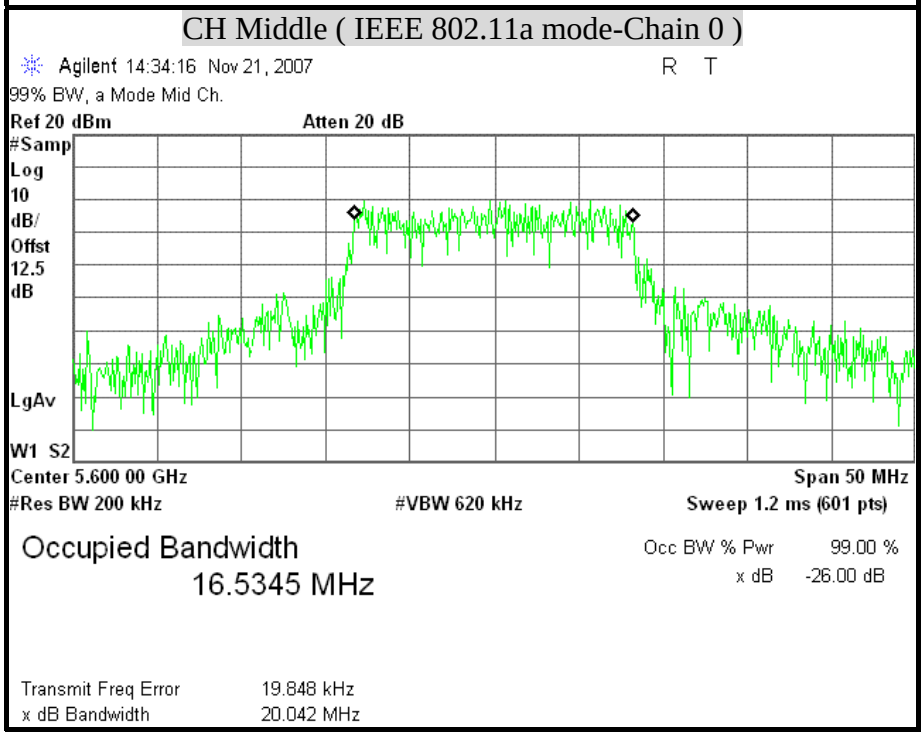


99% BANDWIDTH (IEEE 802.11a mode / 5470MHz ~ 5725MHz)

CH Low (IEEE 802.11a mode-Chain 0)



CH Middle (IEEE 802.11a mode-Chain 0)



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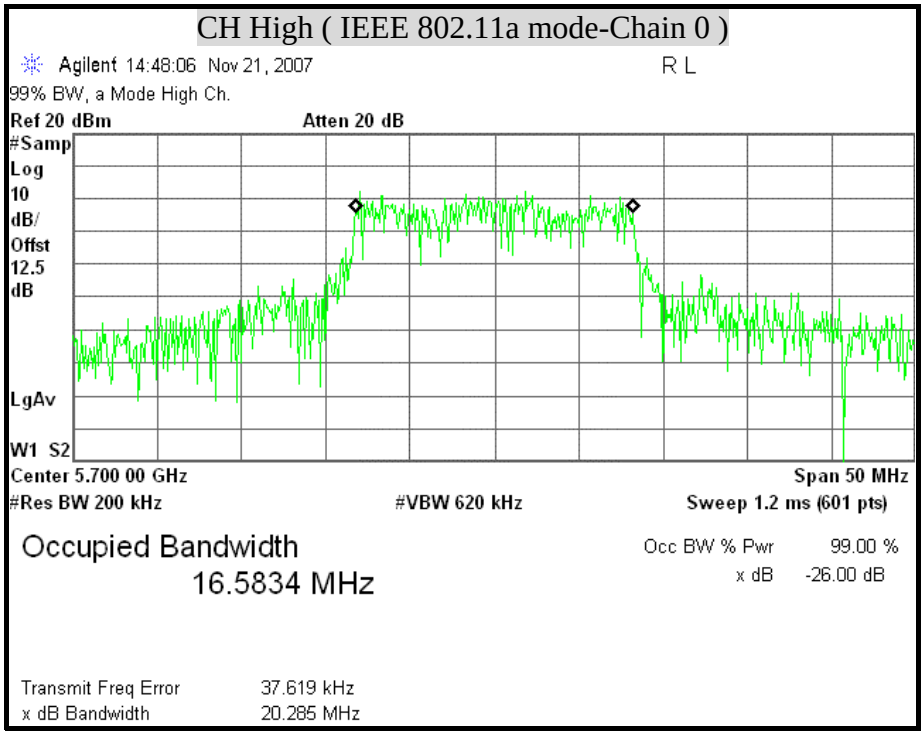
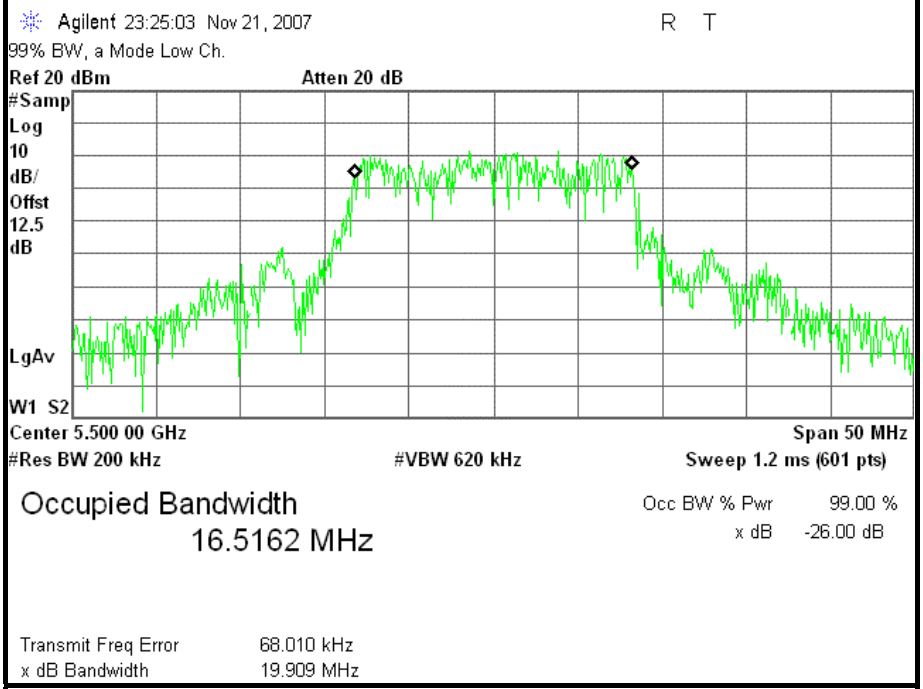


CH Low (IEEE 802.11a mode-Chain 1)



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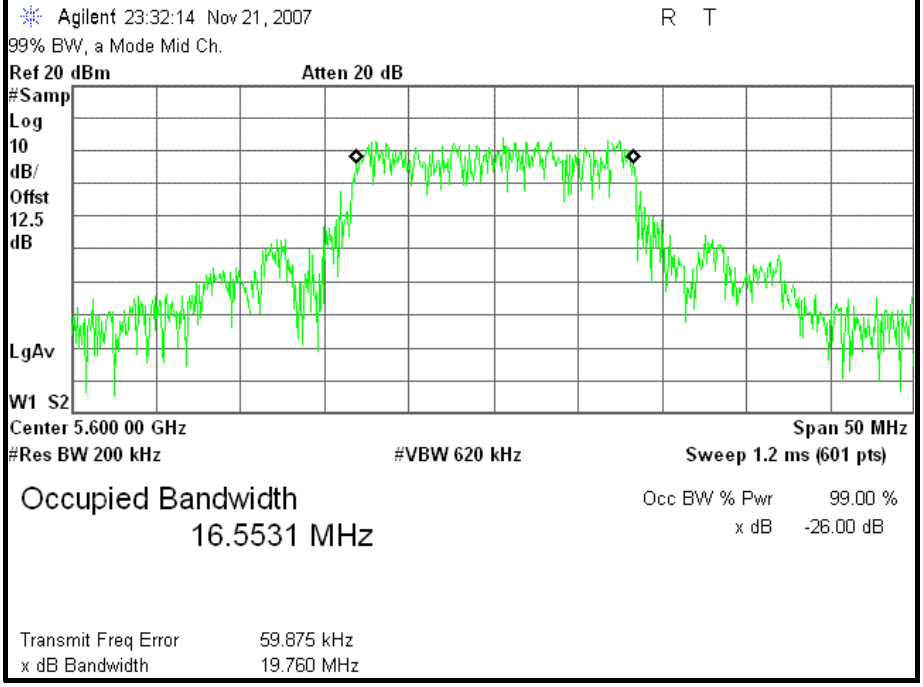

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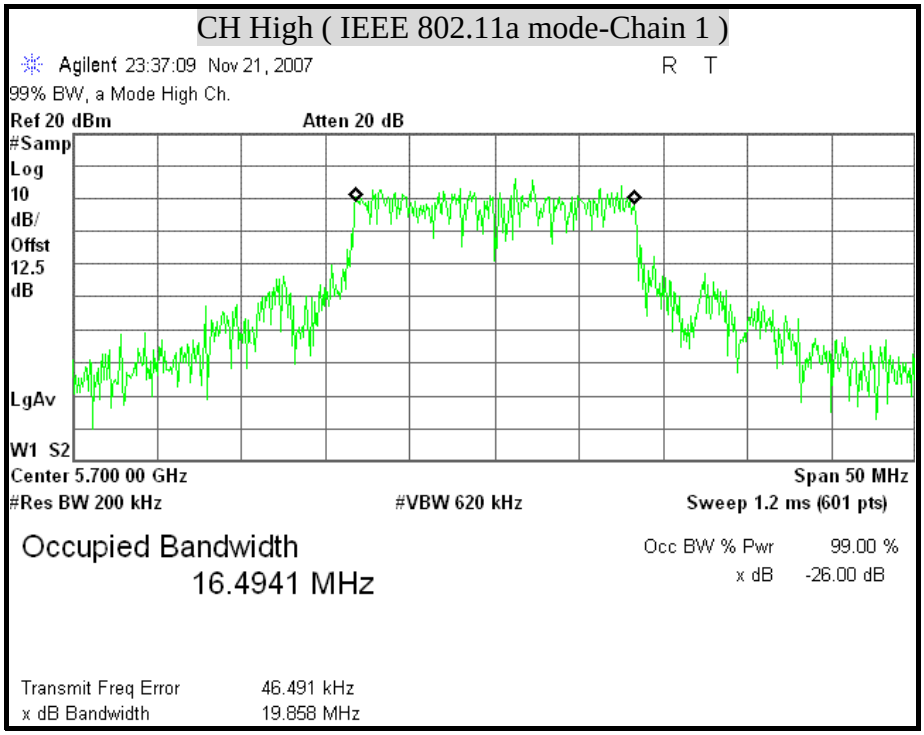
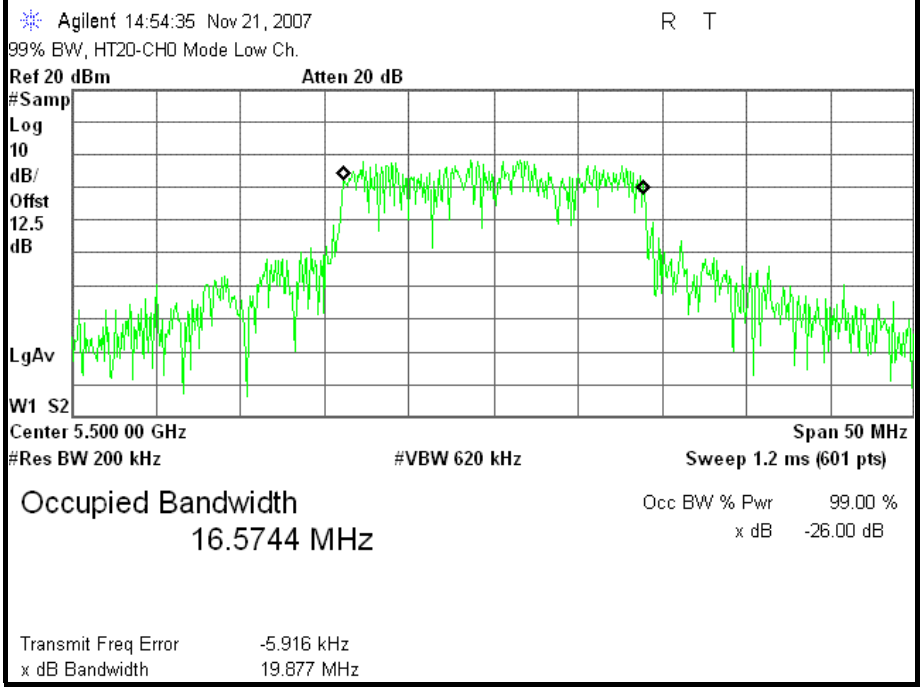
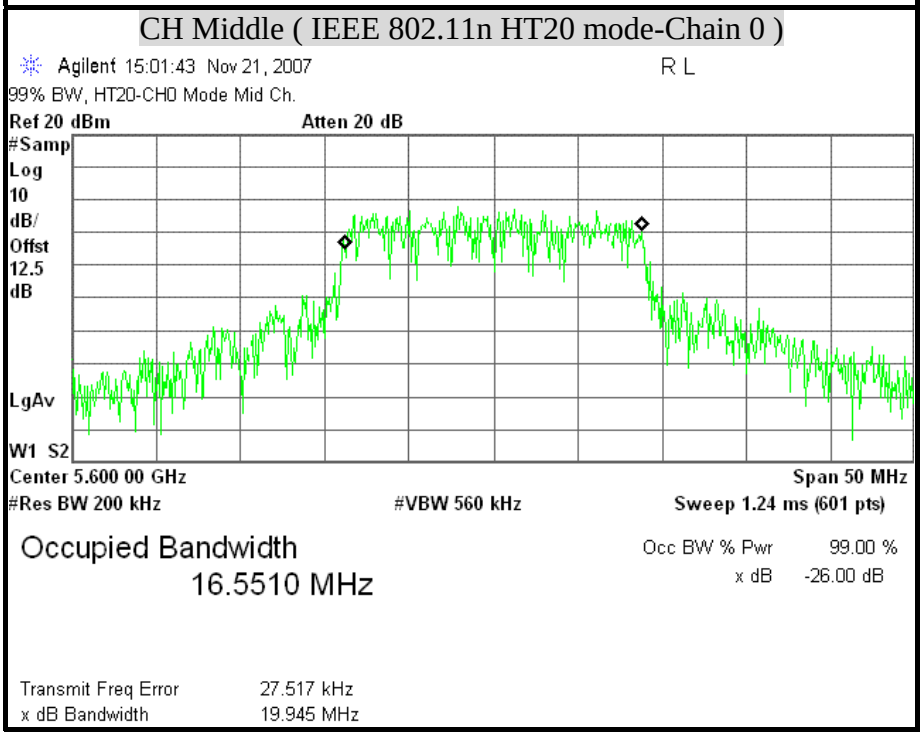


99% BANDWIDTH (IEEE 802.11n HT20 mode / 5470MHz ~ 5725MHz)

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



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



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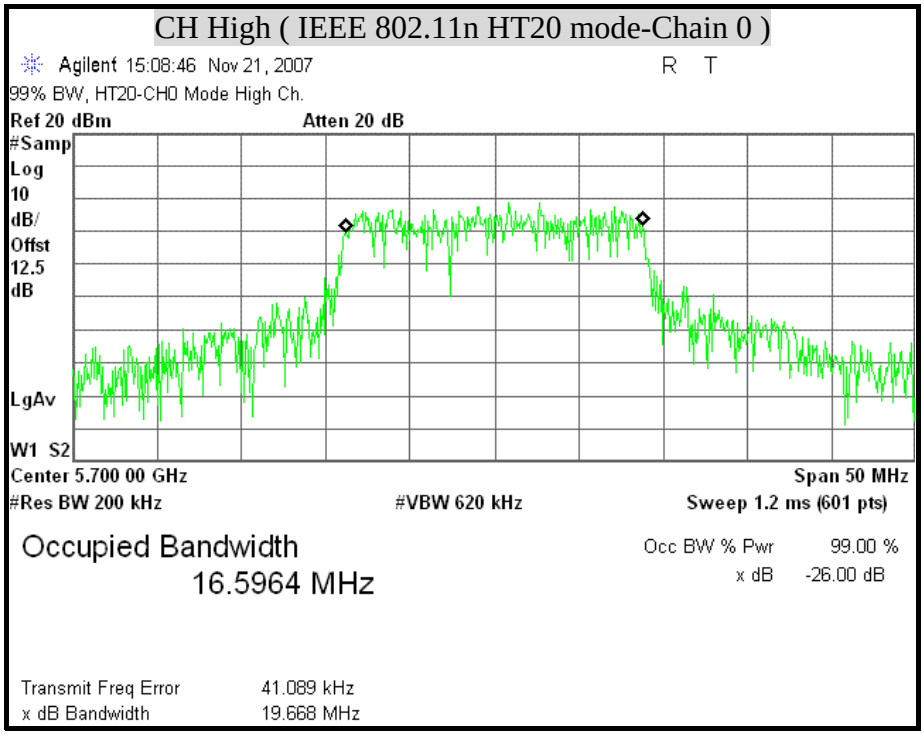
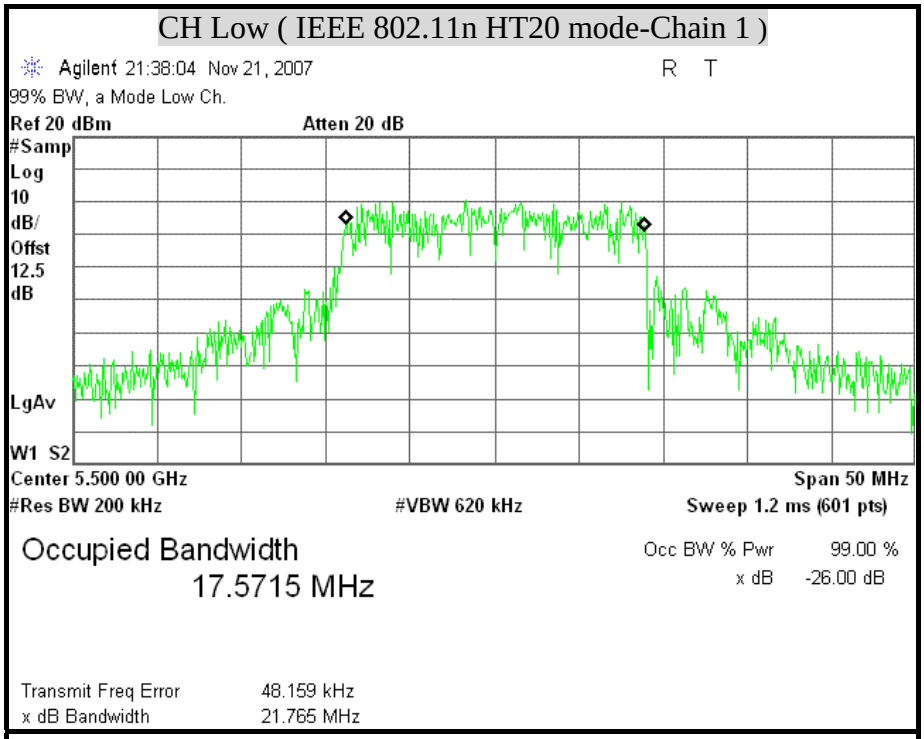
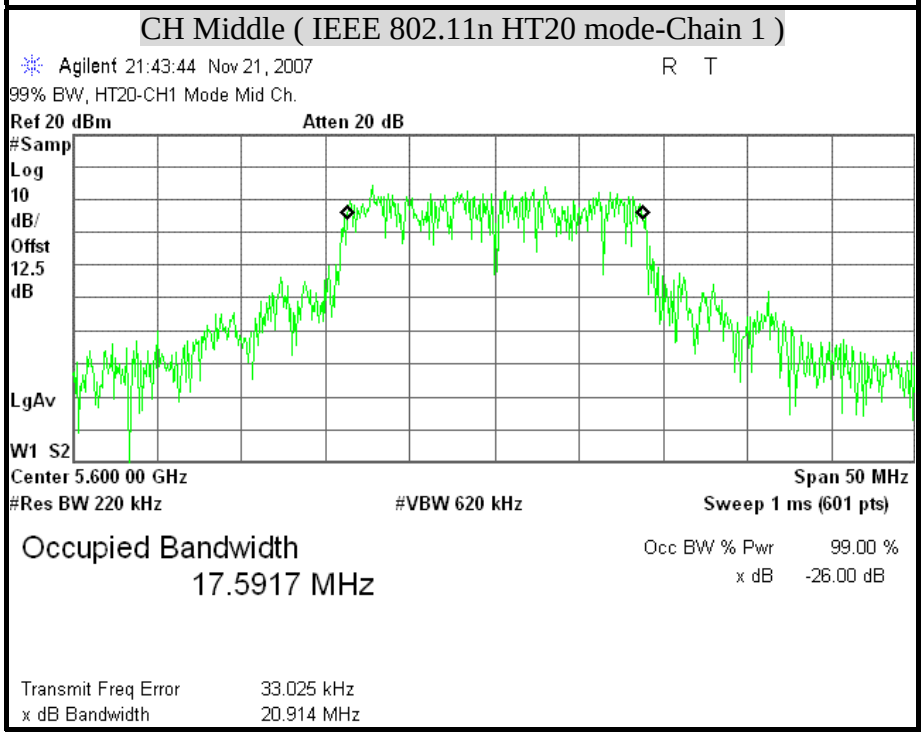


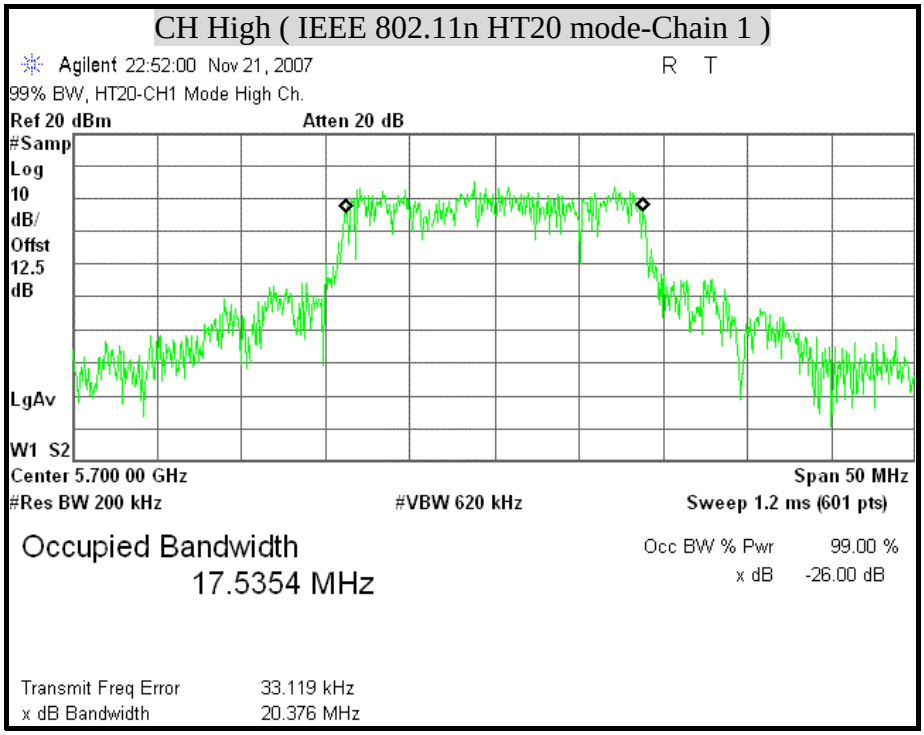
CH Low (IEEE 802.11n HT20 mode-Chain 1)



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

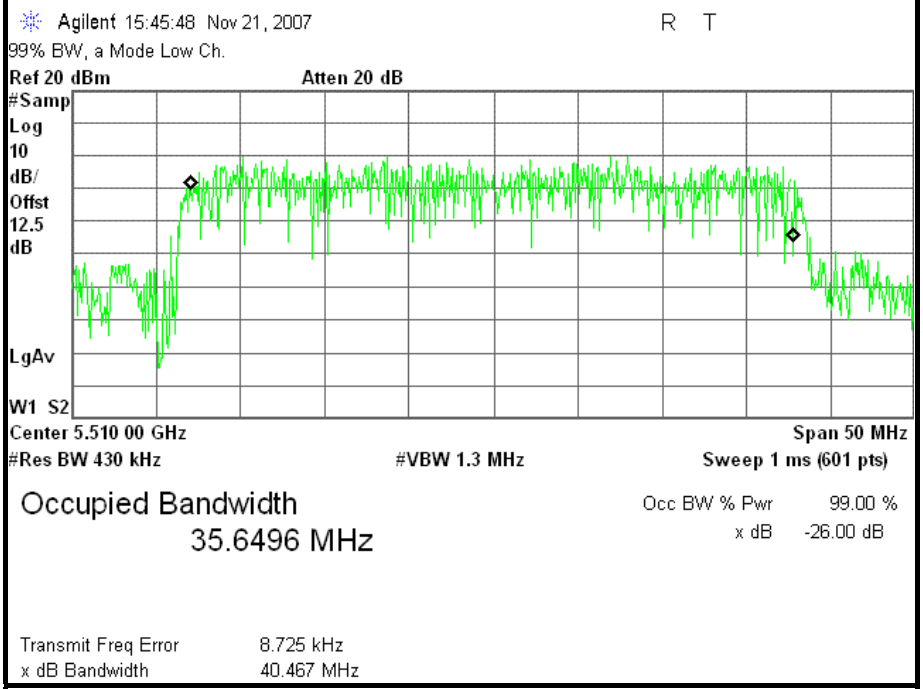


CH High (IEEE 802.11n HT20 mode-Chain 1)

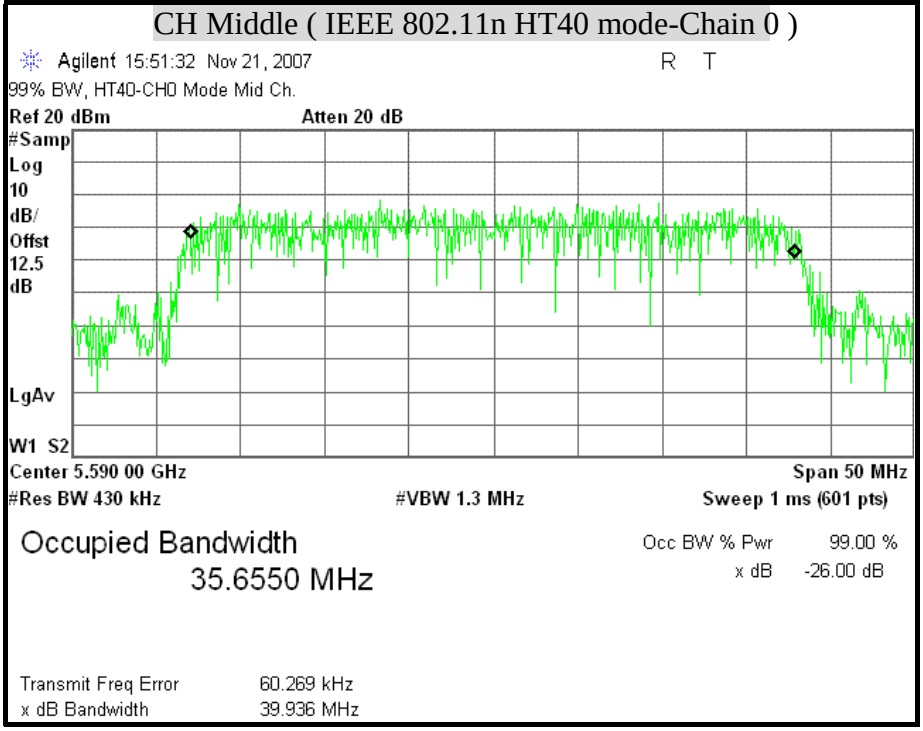


99% BANDWIDTH (IEEE 802.11n HT40 mode / 5470MHz ~ 5725MHz)

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



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



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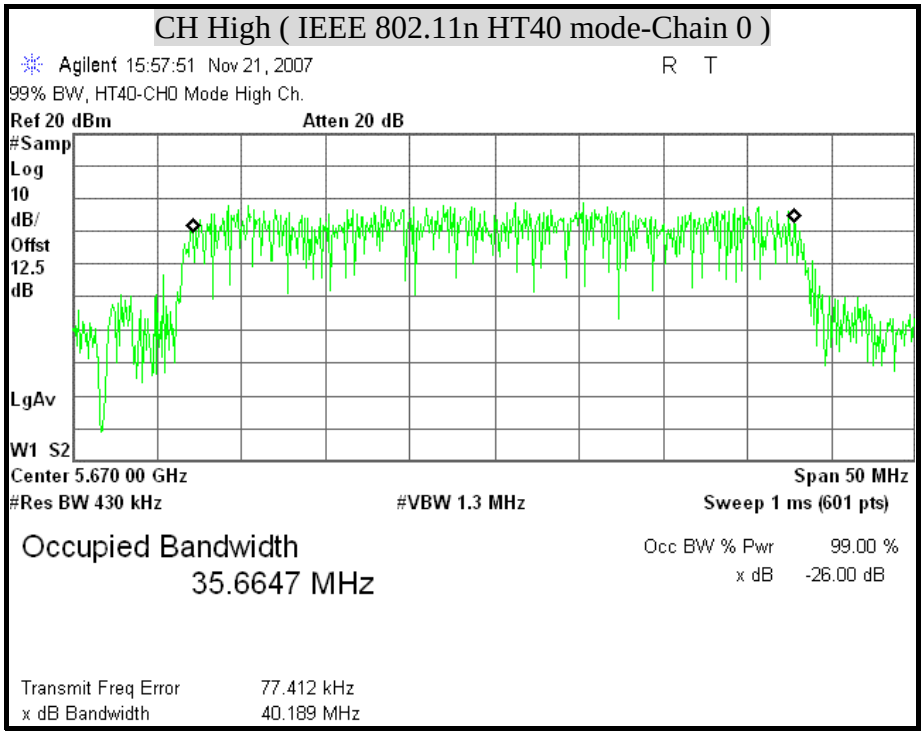

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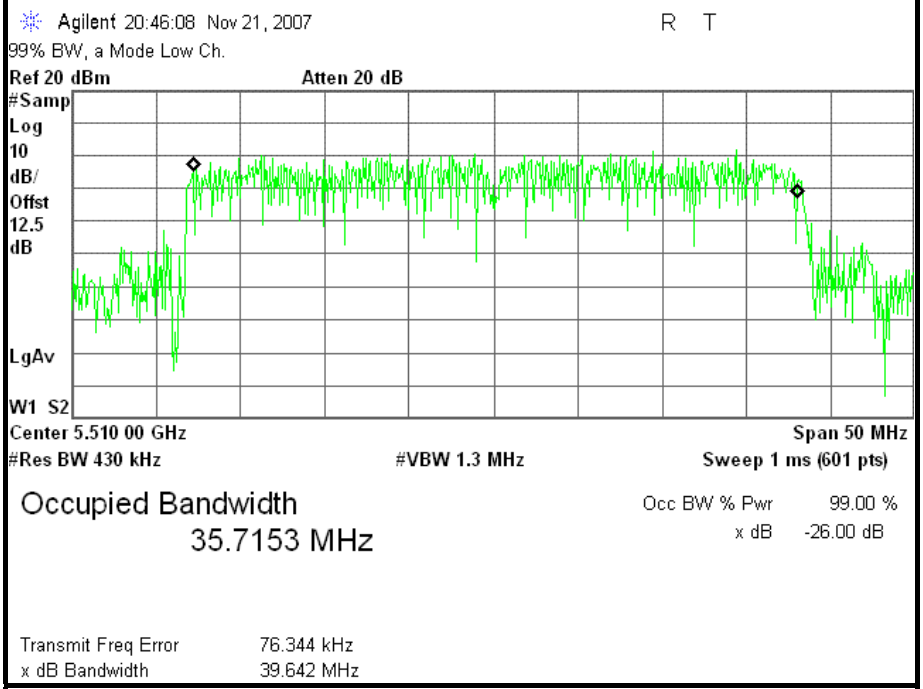
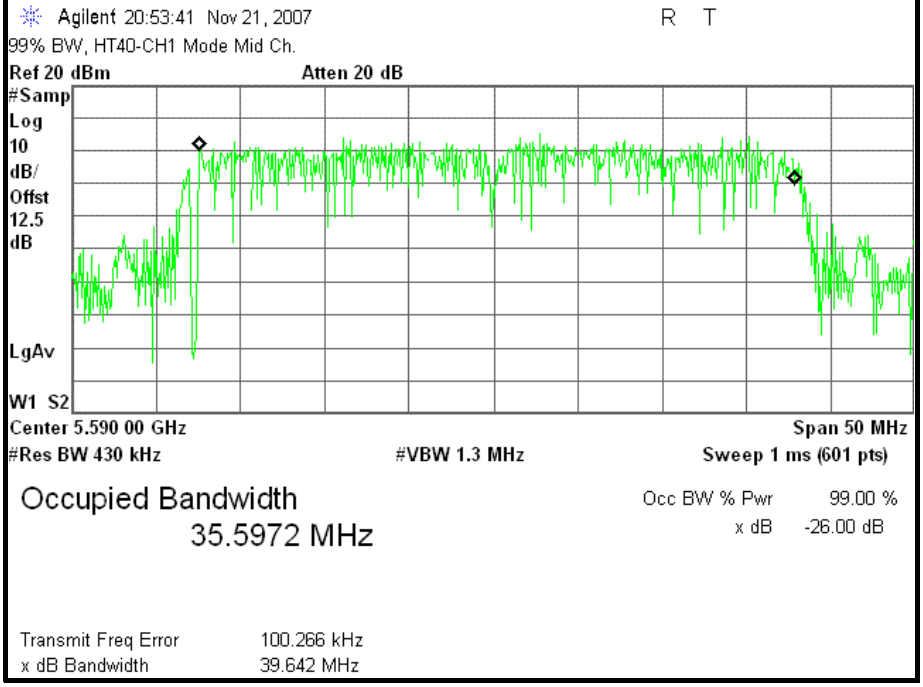
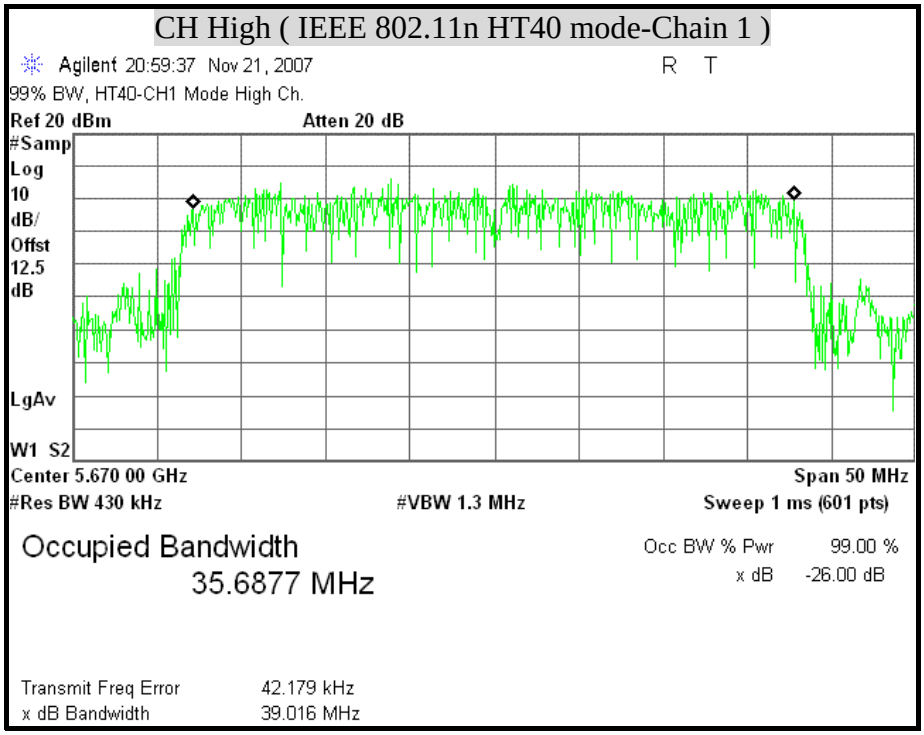


CH Middle (IEEE 802.11n HT40 mode-Chain 1)



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



8.3 PEAK CONDUCTED TRANSMIT POWER

LIMIT

§ 15.407(a)

(1) For the band 5.15-5.25 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 50mW (17dBm) or 4dBm + 10log B, where B is the 26dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4dBm in any 1 MHz band.

(2) For the band 5.25-5.35 GHz and 5.47-5.725 GHz bands, the peak transmit power over the frequency band of operation shall not exceed the lesser of 250mW (24dBm) or 11dBm + 10logB, where B is the 26dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 11dBm in any 1 MHz band.

If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi. The peak power shall not exceeded the limit as follows:

Specified Limit of the Peak Power

IEEE 802.11a mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	26 dB Bandwidth (B) (MHz)		Total 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B (dBm)	50 mW (dBm)
		Chain 0	Chain 1				
Low	5180	20.26	20.06	23.17	13.65	17.65	17
Middle	5220	19.82	20.71	23.30	13.67	17.67	17
High	5240	19.98	21.41	23.76	13.76	17.76	17

IEEE 802.11n HT20 mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	26 dB Bandwidth (B) (MHz)		Total 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B (dBm)	50 mW (dBm)
		Chain 0	Chain 1				
Low	5180	21.54	21.59	24.58	13.91	17.9050	17
Middle	5220	21.16	20.51	23.86	13.78	17.7762	17
High	5240	20.69	21.67	24.22	13.84	17.8414	17

IEEE 802.11n HT40 mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	26 dB Bandwidth (B) (MHz)		Total 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B (dBm)	50 mW (dBm)
		Chain 0	Chain 1				
Low	5190	40.08	40.42	43.26	16.36	20.3612	17
High	5230	41.03	39.84	43.49	16.38	20.3835	17

IEEE 802.11a mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	26 dB Bandwidth (B) (MHz)		Total 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	11 + 10 Log B (dBm)	250 mW (dBm)
		Chain 0	Chain 1				
Low	5260	20.08	20.13	23.12	13.64	24.6390	24
Middle	5280	19.84	19.81	22.84	13.59	24.5861	24
High	5320	19.92	20.12	23.03	13.62	24.6232	24

IEEE 802.11n HT20 mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	26 dB Bandwidth (B) (MHz)		Total 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	11 + 10 Log B (dBm)	250 mW (dBm)
		Chain 0	Chain 1				
Low	5260	21.15	22.53	24.25	13.85	24.8473	24
Middle	5280	21.66	20.57	24.16	13.83	24.8309	24
High	5320	20.67	21.76	24.26	13.85	24.8488	24

IEEE 802.11n HT40 mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	26 dB Bandwidth (B) (MHz)		Total 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	11 + 10 Log B (dBm)	250 mW (dBm)
		Chain 0	Chain 1				
Low	5270	40.04	36.68	41.69	16.20	27.2001	24
High	5310	40.31	39.53	42.95	16.33	27.3294	24

IEEE 802.11a mode (5470MHz ~ 5725MHz)

Channel	Channel Frequency (MHz)	26 dB Bandwidth (B) (MHz)		Total 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	11 + 10 Log B (dBm)	250 mW (dBm)
		Chain 0	Chain 1				
Low	5500	20.17	19.63	22.92	13.60	24.6019	24
Middle	5600	20.17	19.94	23.07	13.63	24.6299	24
High	5700	20.07	19.97	23.03	13.62	24.6231	24

IEEE 802.11n HT20 mode (5470MHz ~ 5725MHz)

Channel	Channel Frequency (MHz)	26 dB Bandwidth (B) (MHz)		Total 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	11 + 10 Log B (dBm)	250 mW (dBm)
		Chain 0	Chain 1				
Low	5500	20.02	20.78	23.43	13.70	24.6971	24
Middle	5600	19.81	21.77	23.91	13.79	24.7858	24
High	5700	19.69	20.61	23.18	13.65	24.6520	24

IEEE 802.11n HT40 mode (5470MHz ~ 5725MHz)

Channel	Channel Frequency (MHz)	26 dB Bandwidth (B) (MHz)		Total 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	11 + 10 Log B (dBm)	250 mW (dBm)
		Chain 0	Chain 1				
Low	5510	40.44	39.58	43.04	16.34	27.3389	24
Middle	5590	40.34	40.27	43.32	16.37	27.3664	24
High	5670	40.58	39.90	43.26	16.36	27.3612	24

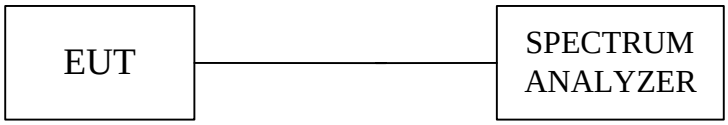
Remark:

1. ***5150~5350MHz :*** *Maximum antenna gain = 0.47dBi, therefore there is no reduction due to antenna gain.*
2. ***5470~5725MHz :*** *Maximum antenna gain = 0.475dBi, therefore there is no reduction due to antenna gain*
3. Total 26dB Bandwidth (MHz) = 10*LOG(10^(Chain 0 (26dB Bandwidth) / 10)+10^(Chain 1 (26dB Bandwidth) /10))

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	MY433602.52	June 06, 2007

TEST SETUP



TEST PROCEDURE

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

TEST RESULTS

No non-compliance noted

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

For 5.15~5.35GHz , the maximum antenna gain is 0.47 dBi for other than fixed, point-to-point operations, therefore the limit is 30 dBm. In the legacy mode, the effective antenna gain is 0.47 + 10 x Log (2) = 3.48 dBi.

For 5.47~5.725GHz , the maximum antenna gain is 1.85 dBi for other than fixed, point-to-point operations, therefore the limit is 30 dBm. In the legacy mode, the effective antenna gain is 1.85 + 10 x Log (2) = 4.86 dBi.

IEEE 802.11a mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	Output Power (dBm)		Power Total (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
Low	5180	11.20	11.09	14.16	17	PASS
Middle	5220	11.04	11.16	14.11	17	PASS
High	5240	11.23	11.14	14.20	17	PASS

Remark: *1. At finial test to get the worst-case emission at 6 Mbps.*
2. The cable assembly insertion loss of 12.5 dB (including 10 dB pad and 2.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT20 mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power Total (dBm)	Peak Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
Low	5180	11.25	11.12	14.20	17	PASS
Middle	5220	11.29	11.17	14.24	17	PASS
High	5240	12.52	11.16	14.25	17	PASS

Remark: *1. At finial test to get the worst-case emission at 6.5 Mbps.*
2. The cable assembly insertion loss of 12.5 dB (including 10 dB pad and 2.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power Total (dBm)	Peak Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
Low	5190	12.64	12.66	15.66	17	PASS
High	5230	12.65	12.62	15.65	17	PASS

Remark: *1. At finial test to get the worst-case emission at 13.5 Mbps.*
2. The cable assembly insertion loss of 12.5 dB (including 10 dB pad and 2.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11a mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	Output Power (dBm)		Power Total (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
Low	5260	12.78	12.82	15.81	24	PASS
Middle	5280	12.45	12.80	15.64	24	PASS
High	5320	12.57	12.40	15.50	24	PASS

Remark:

1. At finial test to get the worst-case emission at 6 Mbps.
2. The cable assembly insertion loss of 12.5 dB (including 10 dB pad and 2.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT20 mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power Total (dBm)	Peak Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
Low	5260	12.68	12.40	15.55	24	PASS
Middle	5280	12.23	12.74	15.50	24	PASS
High	5320	12.56	12.62	15.60	24	PASS

Remark:

1. At finial test to get the worst-case emission at 6.5 Mbps.
2. The cable assembly insertion loss of 12.5 dB (including 10 dB pad and 2.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power Total (dBm)	Peak Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
Low	5270	12.62	12.56	15.60	24	PASS
High	5310	12.89	12.60	15.76	24	PASS

Remark:

1. At finial test to get the worst-case emission at 13.5 Mbps.
2. The cable assembly insertion loss of 12.5 dB (including 10 dB pad and 2.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11a mode (5470MHz ~ 5725MHz)

Channel	Channel Frequency (MHz)	Output Power (dBm)		Power Total (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
Low	5500	12.69	12.85	15.78	24	PASS
Middle	5600	12.84	12.84	15.85	24	PASS
High	5700	12.67	12.05	15.38	24	PASS

Remark:

1. At finial test to get the worst-case emission at 6 Mbps.
2. The cable assembly insertion loss of 12.5 dB (including 10 dB pad and 2.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT20 mode (5470MHz ~ 5725MHz)

Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power Total (dBm)	Peak Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
Low	5500	12.52	12.59	15.57	24	PASS
Middle	5600	12.68	12.81	15.76	24	PASS
High	5700	12.76	12.86	15.82	24	PASS

Remark:

1. At finial test to get the worst-case emission at 6.5 Mbps.
2. The cable assembly insertion loss of 12.5 dB (including 10 dB pad and 2.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 mode (5470MHz ~ 5725MHz)

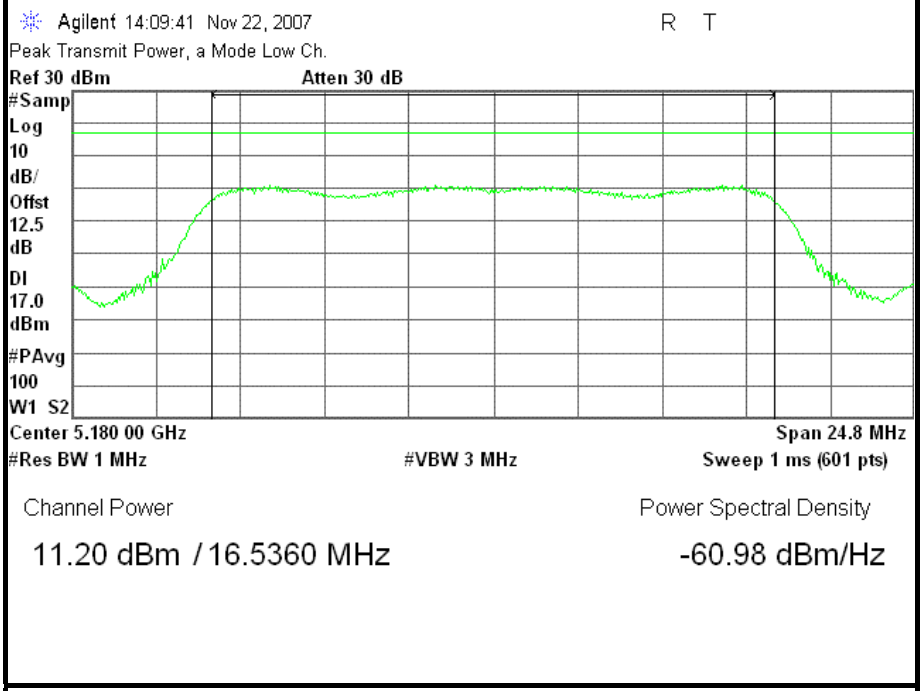
Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power Total (dBm)	Peak Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
Low	5510	12.43	12.72	15.59	24	PASS
Middle	5590	12.63	12.73	15.69	24	PASS
High	5670	12.67	12.41	15.55	24	PASS

Remark:

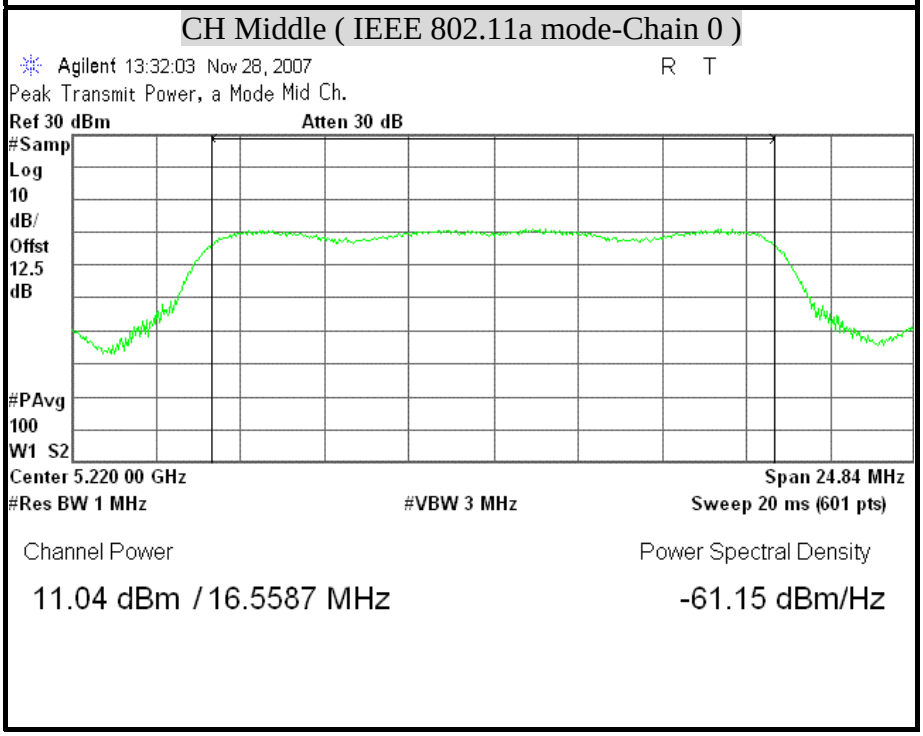
1. At finial test to get the worst-case emission at 13.5 Mbps.
2. The cable assembly insertion loss of 12.5 dB (including 10 dB pad and 2.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

PEAK CONDUCTED TRANSMIT POWER (IEEE 802.11a mode / 5150MHz ~ 5250MHz)

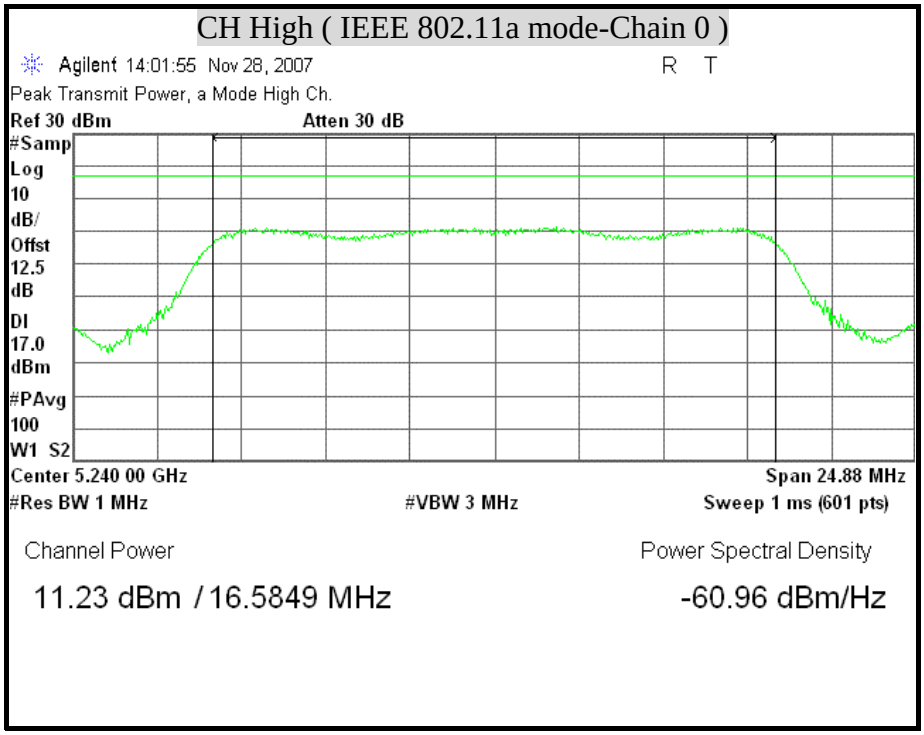
CH Low (IEEE 802.11a mode-Chain 0)



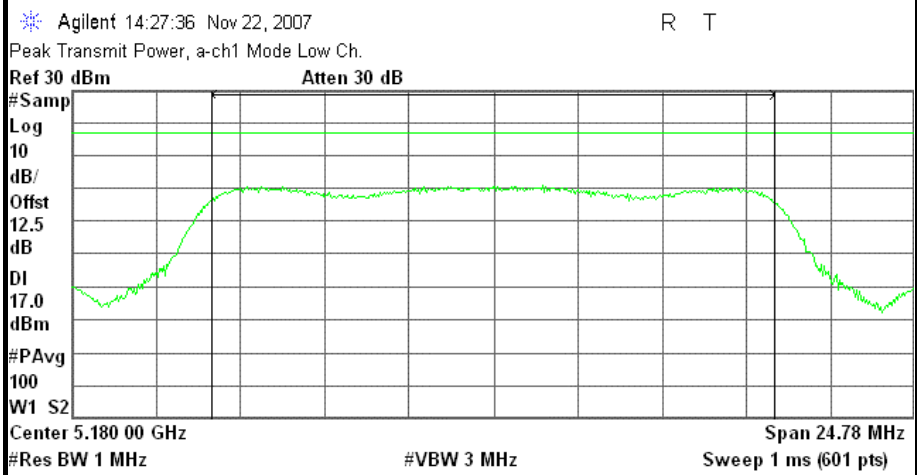
CH Middle (IEEE 802.11a mode-Chain 0)



CH High (IEEE 802.11a mode-Chain 0)



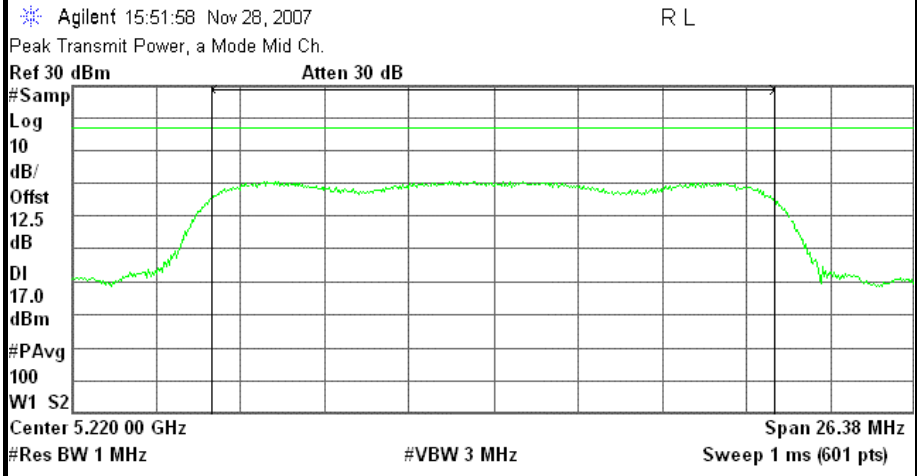
CH Low (IEEE 802.11a mode-Chain 1)



Channel Power
11.09 dBm / 16.5232 MHz

Power Spectral Density
-61.09 dBm/Hz

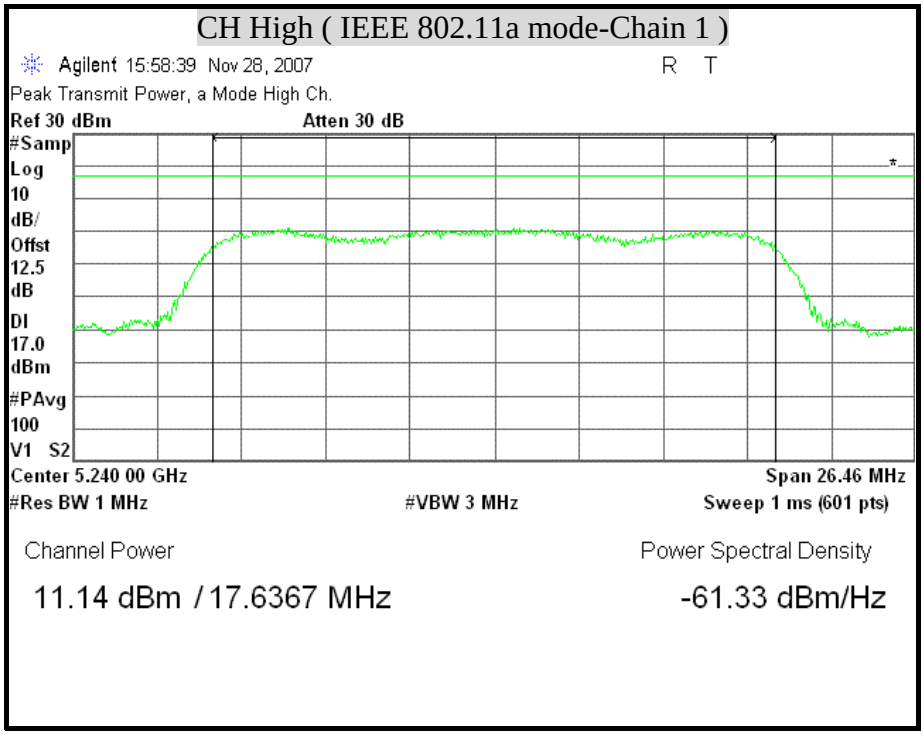
CH Middle (IEEE 802.11a mode-Chain 1)



Channel Power
11.16 dBm / 17.5878 MHz

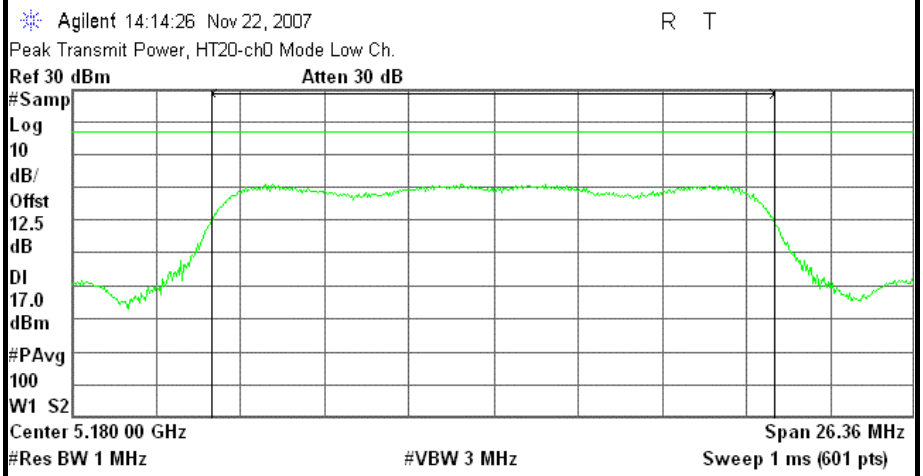
Power Spectral Density
-61.29 dBm/Hz

CH High (IEEE 802.11a mode-Chain 1)



PEAK CONDUCTED TRANSMIT POWER (IEEE 802.11n HT20 mode / 5150MHz ~ 5250MHz)

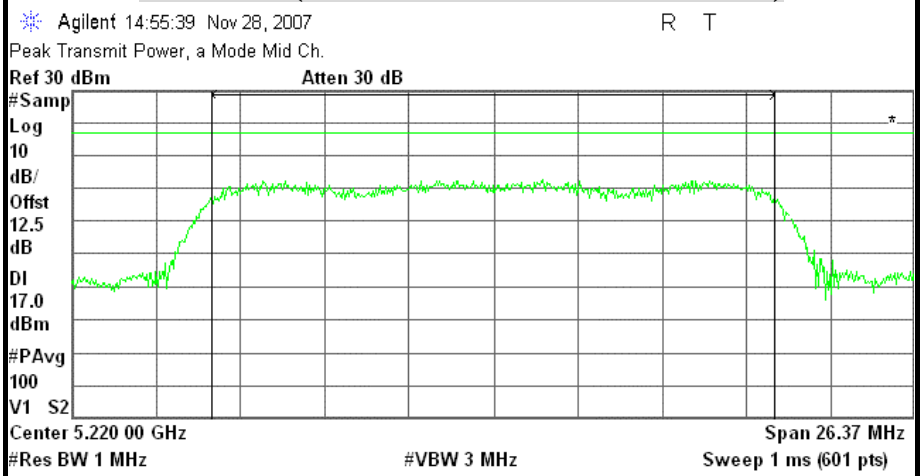
CH Low (IEEE 802.11n HT20 mode-Chain 0)



Channel Power: 11.25 dBm / 17.5729 MHz

Power Spectral Density: -61.20 dBm/Hz

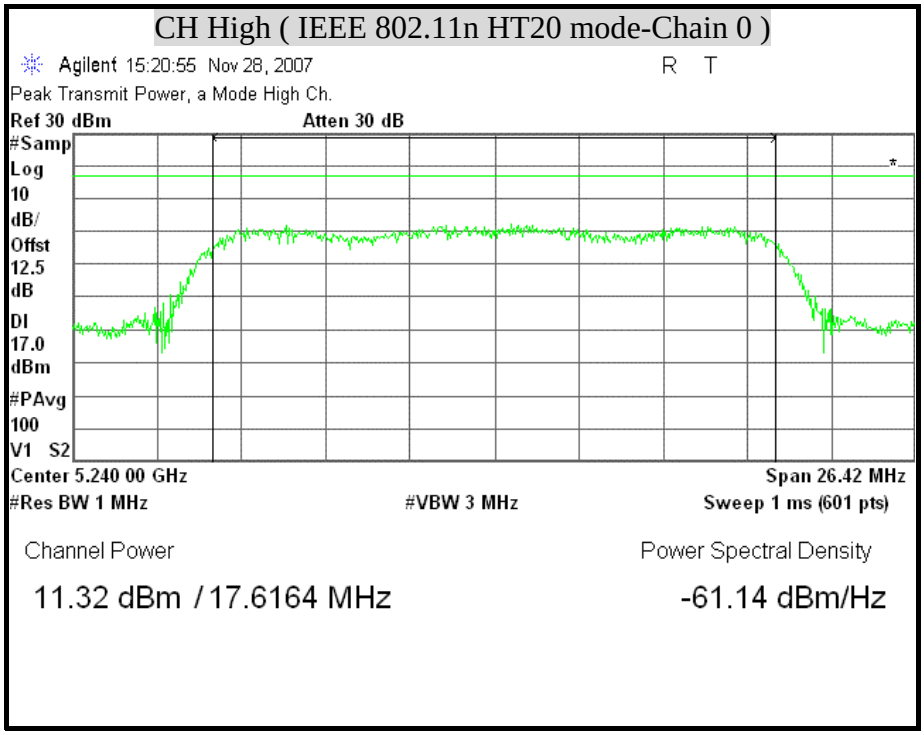
CH Middle (IEEE 802.11n HT20 mode-Chain 0)



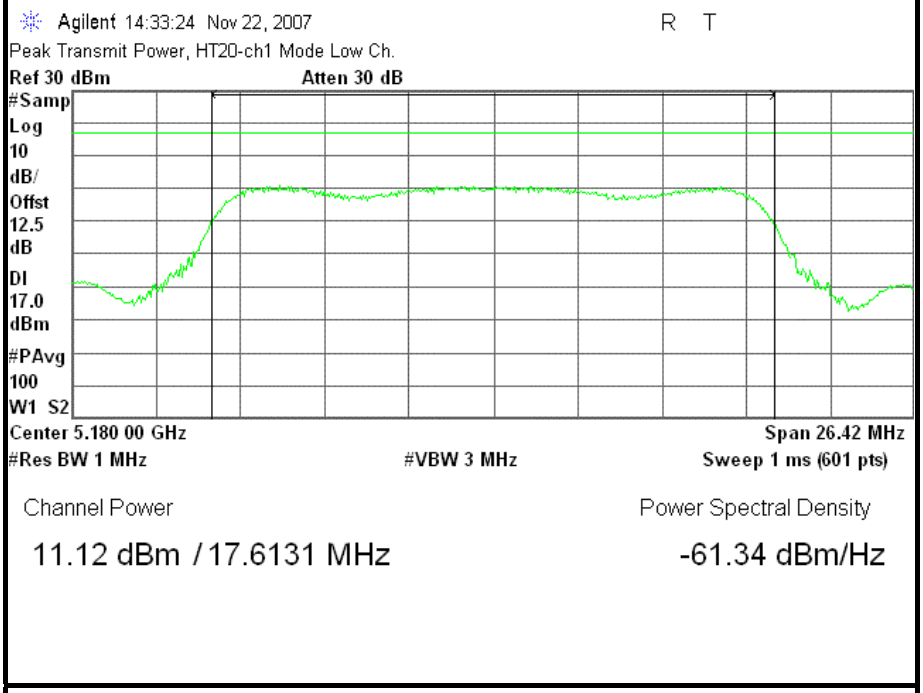
Channel Power: 11.29 dBm / 17.5798 MHz

Power Spectral Density: -61.16 dBm/Hz

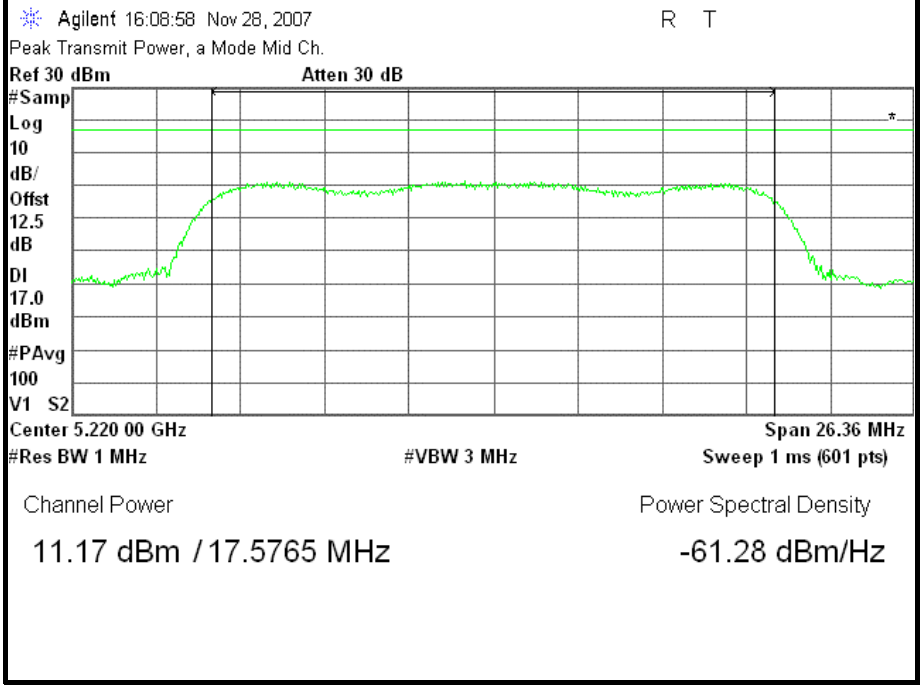
CH High (IEEE 802.11n HT20 mode-Chain 0)



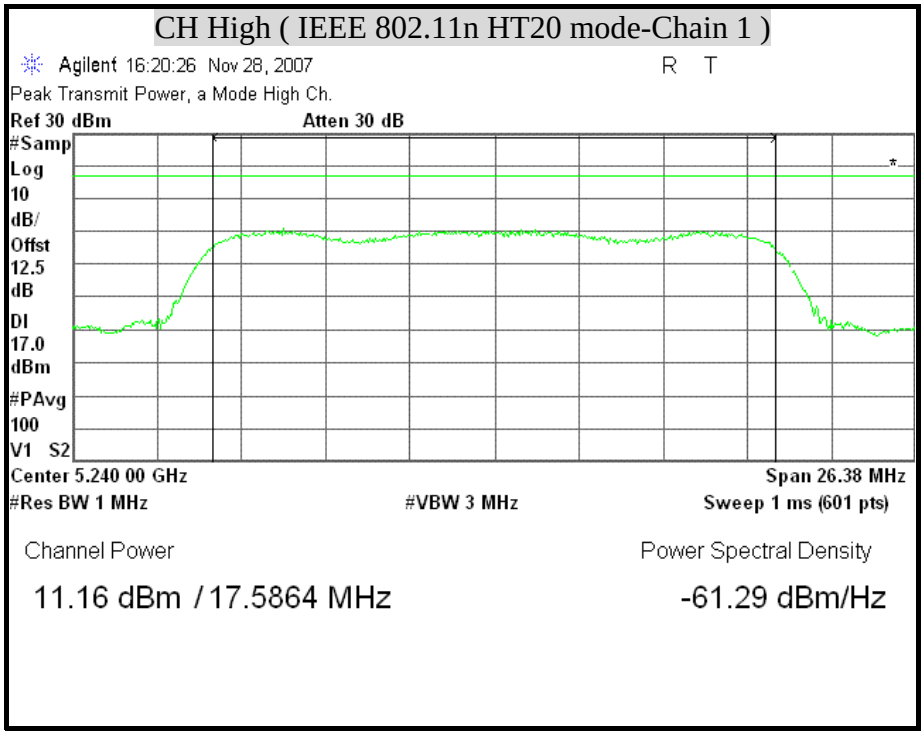
CH Low (IEEE 802.11n HT20 mode-Chain 1)



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

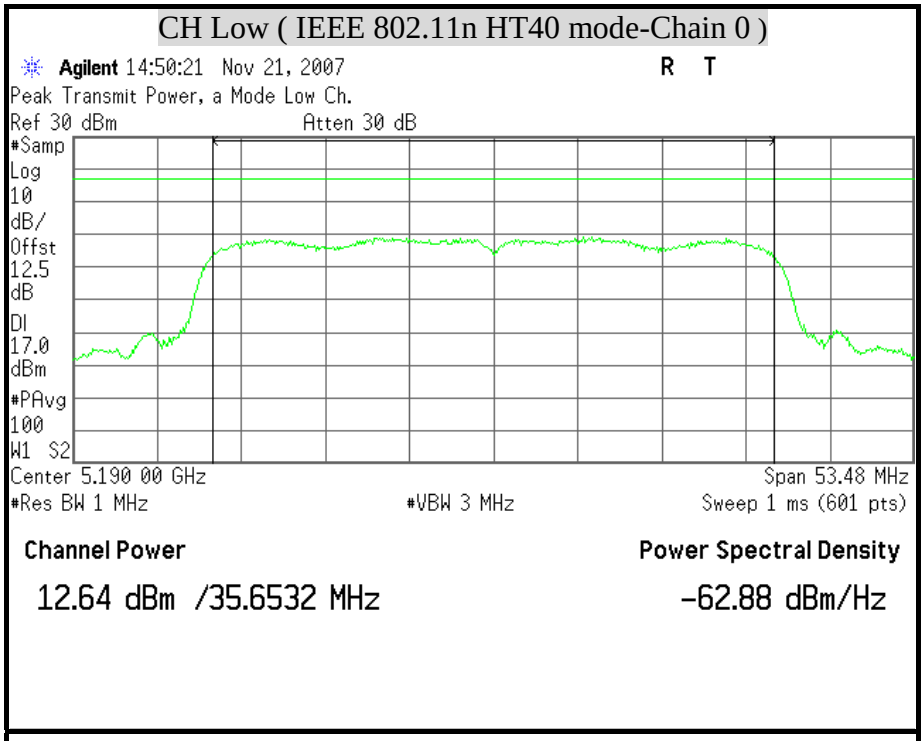


CH High (IEEE 802.11n HT20 mode-Chain 1)

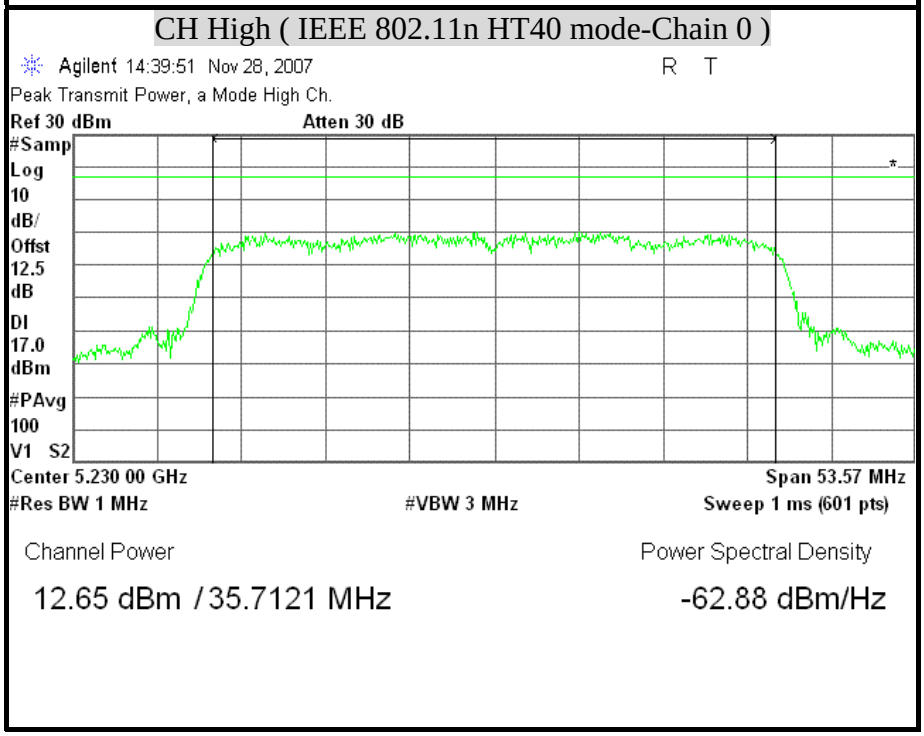


PEAK CONDUCTED TRANSMIT POWER (IEEE 802.11n HT40 mode / 5150MHz ~ 5250MHz)

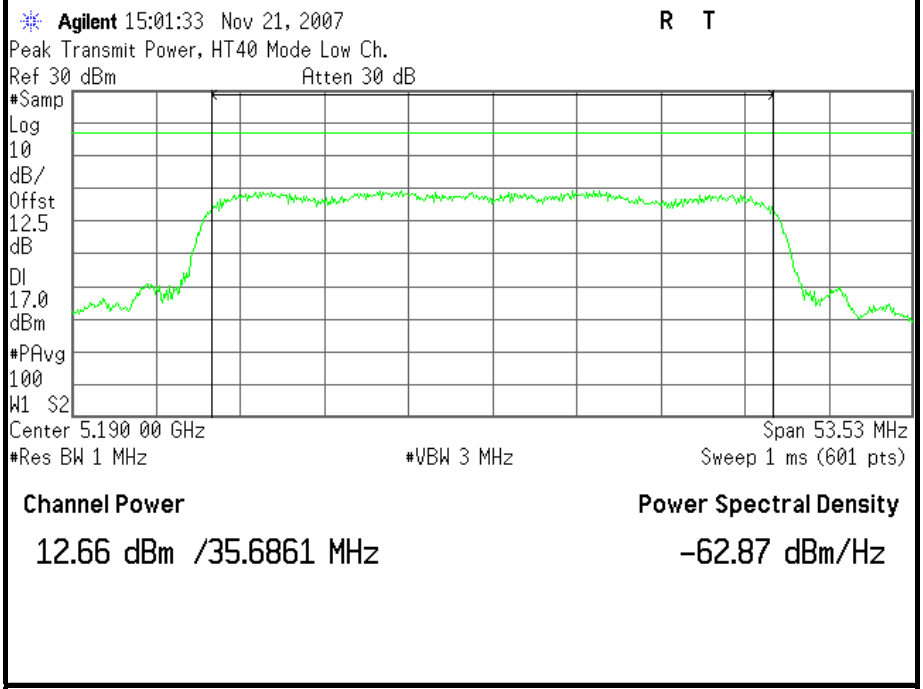
CH Low (IEEE 802.11n HT40 mode-Chain 0)



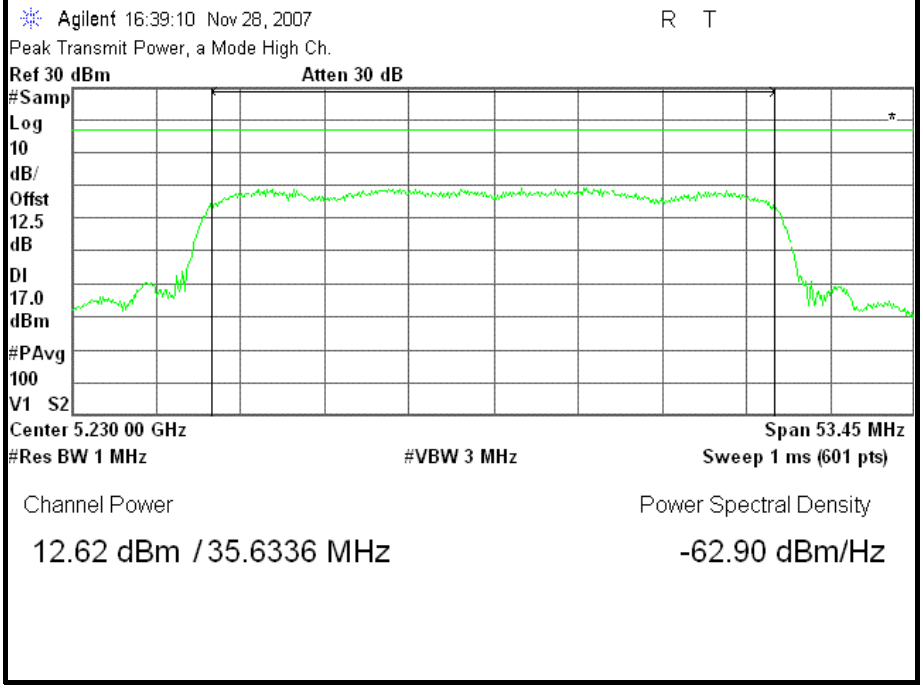
CH High (IEEE 802.11n HT40 mode-Chain 0)



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

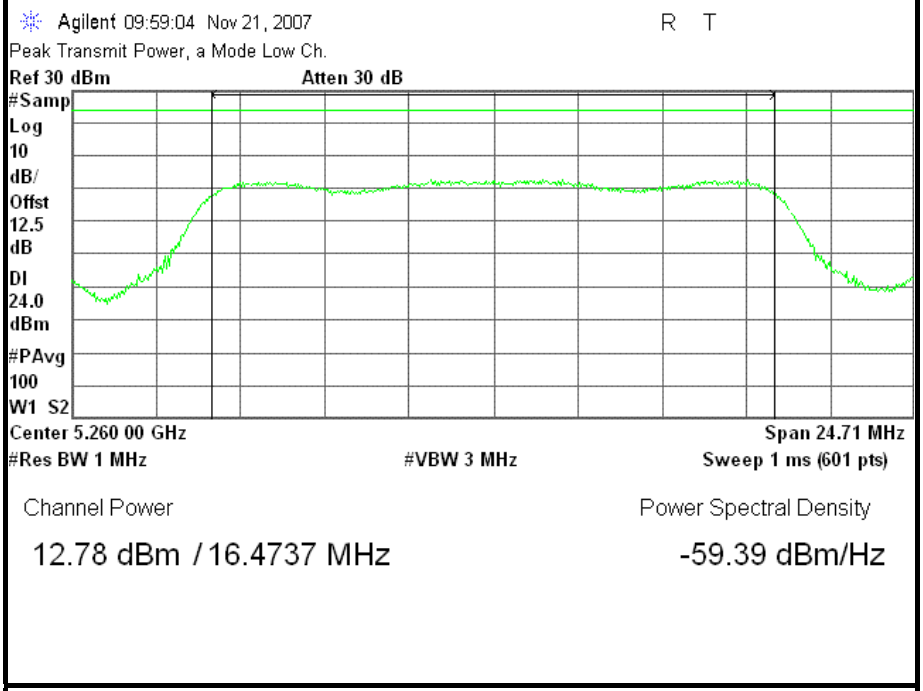


CH High (IEEE 802.11n HT40 mode-Chain 1)

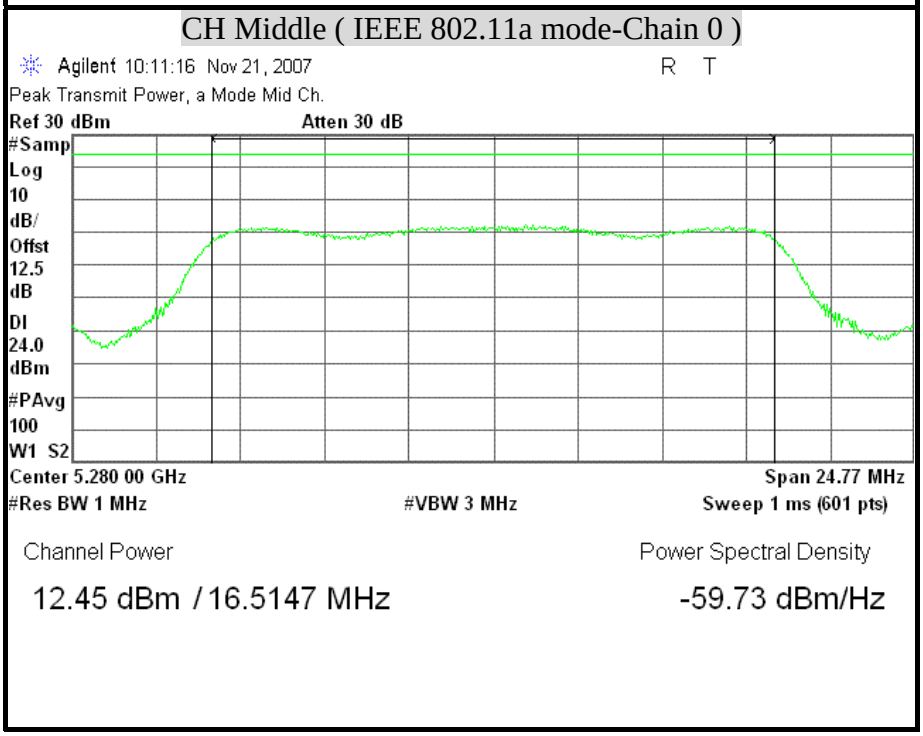


PEAK CONDUCTED TRANSMIT POWER (IEEE 802.11a mode / 5250MHz ~ 5350MHz)

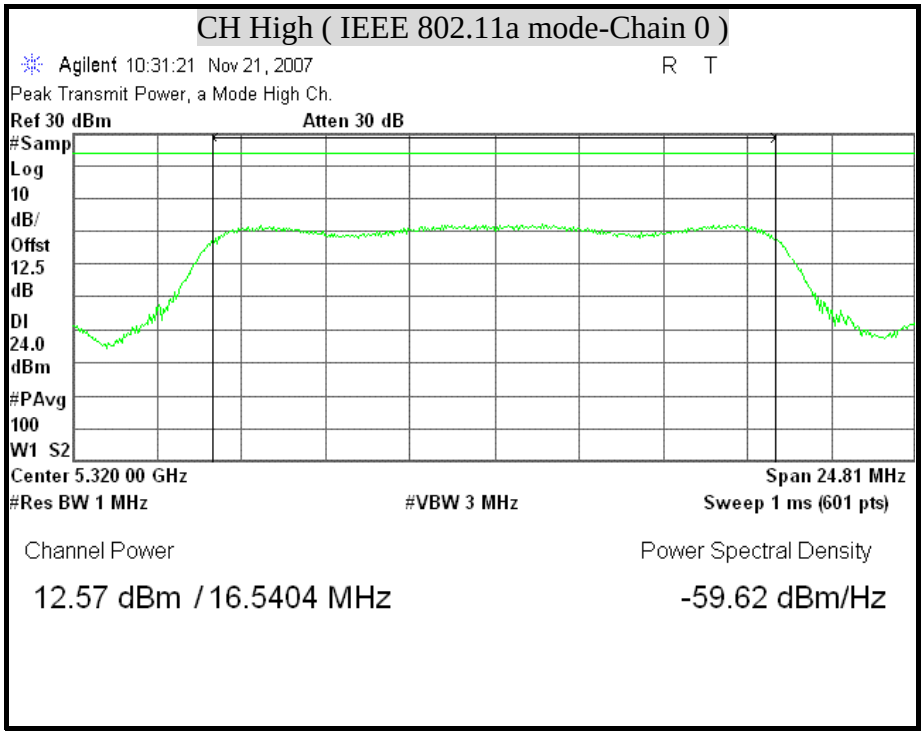
CH Low (IEEE 802.11a mode-Chain 0)



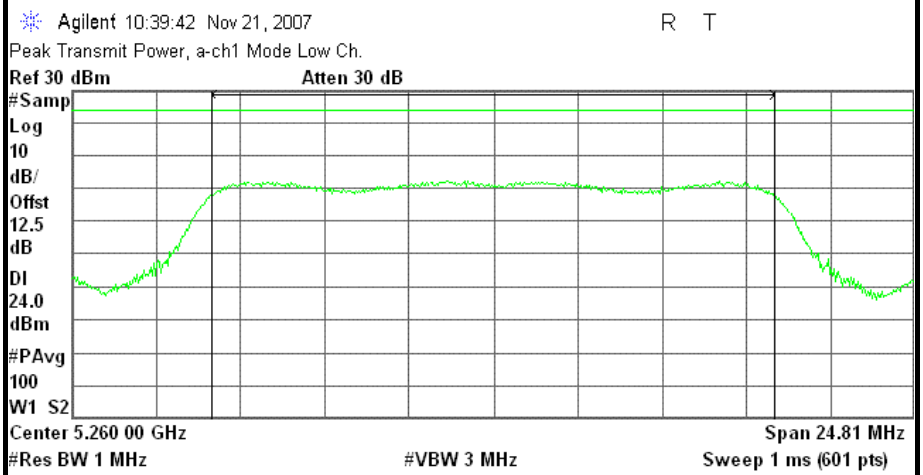
CH Middle (IEEE 802.11a mode-Chain 0)



CH High (IEEE 802.11a mode-Chain 0)



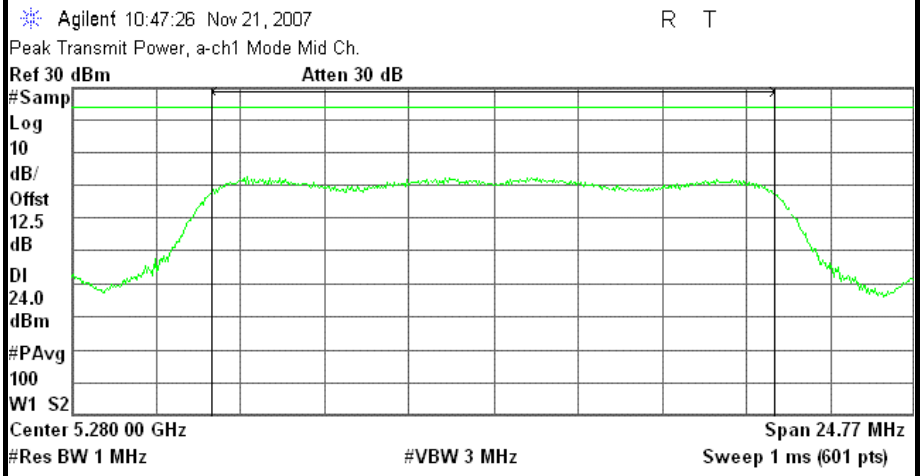
CH Low (IEEE 802.11a mode-Chain 1)



Channel Power
12.82 dBm / 16.5420 MHz

Power Spectral Density
-59.36 dBm/Hz

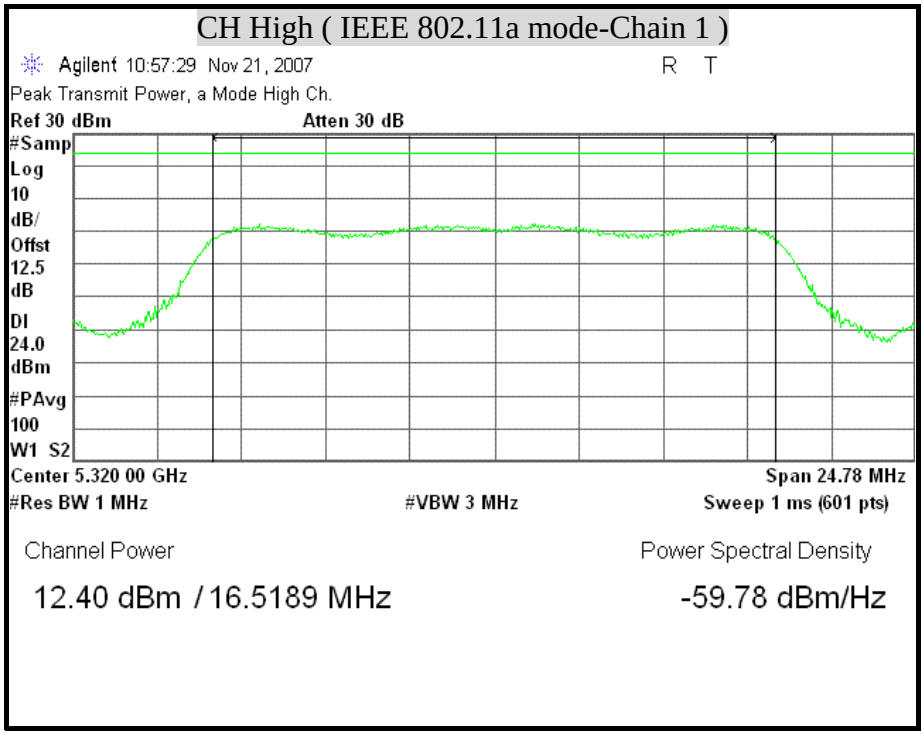
CH Middle (IEEE 802.11a mode-Chain 1)



Channel Power
12.80 dBm / 16.5111 MHz

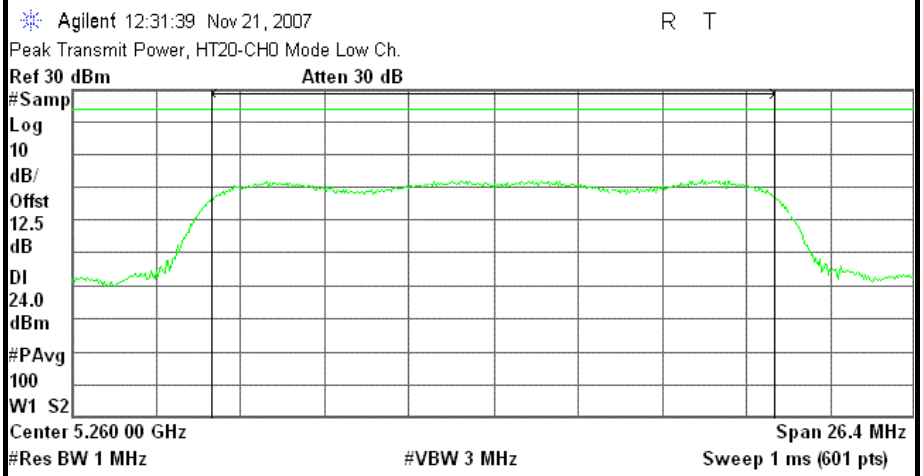
Power Spectral Density
-59.38 dBm/Hz

CH High (IEEE 802.11a mode-Chain 1)



PEAK CONDUCTED TRANSMIT POWER (IEEE 802.11n HT20 mode / 5250MHz ~ 5350MHz)

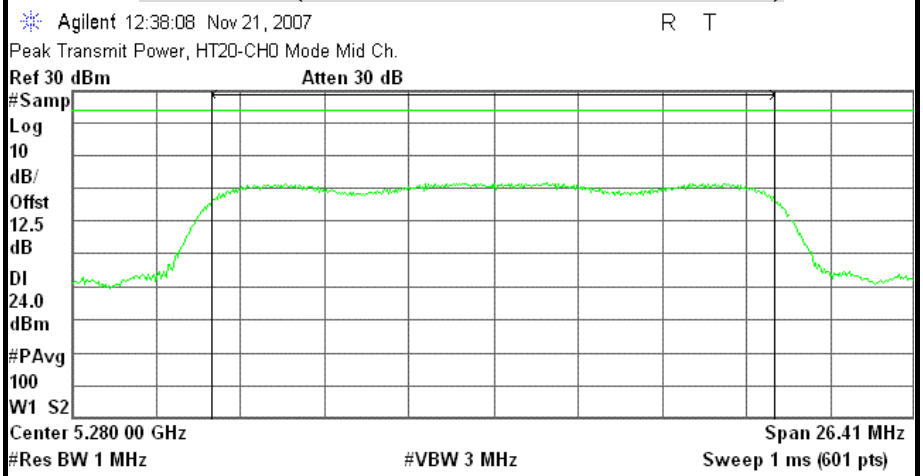
CH Low (IEEE 802.11n HT20 mode-Chain 0)



Channel Power: 12.68 dBm / 17.5975 MHz

Power Spectral Density: -59.78 dBm/Hz

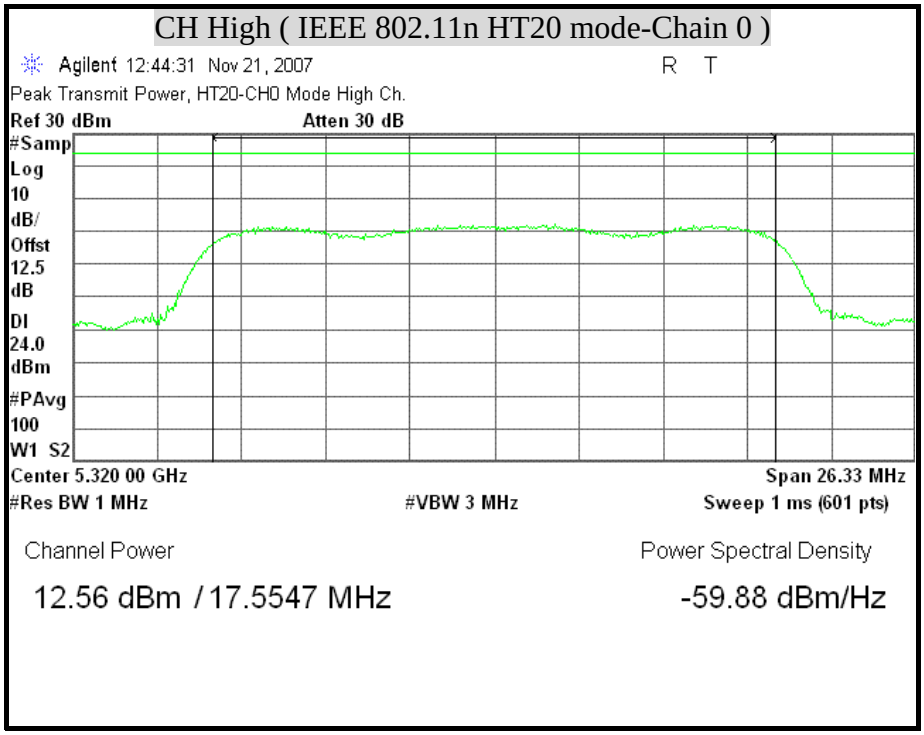
CH Middle (IEEE 802.11n HT20 mode-Chain 0)



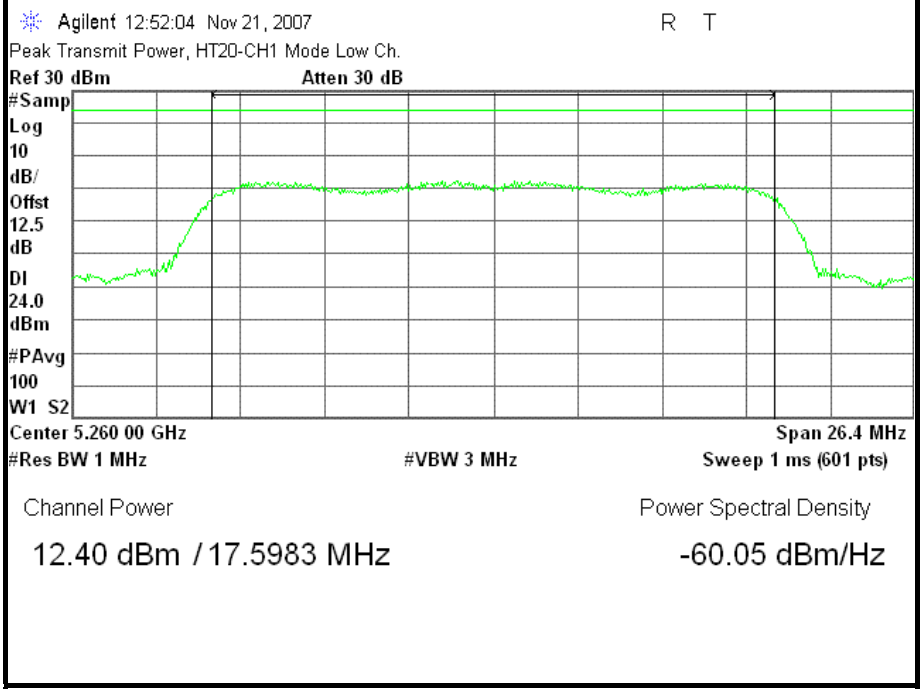
Channel Power: 12.23 dBm / 17.6082 MHz

Power Spectral Density: -60.22 dBm/Hz

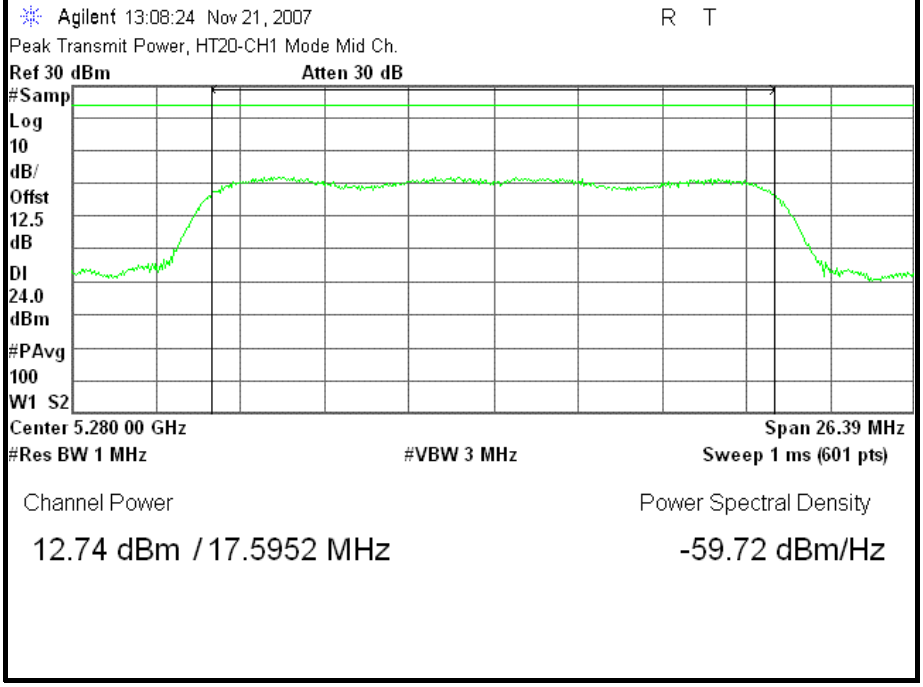
CH High (IEEE 802.11n HT20 mode-Chain 0)



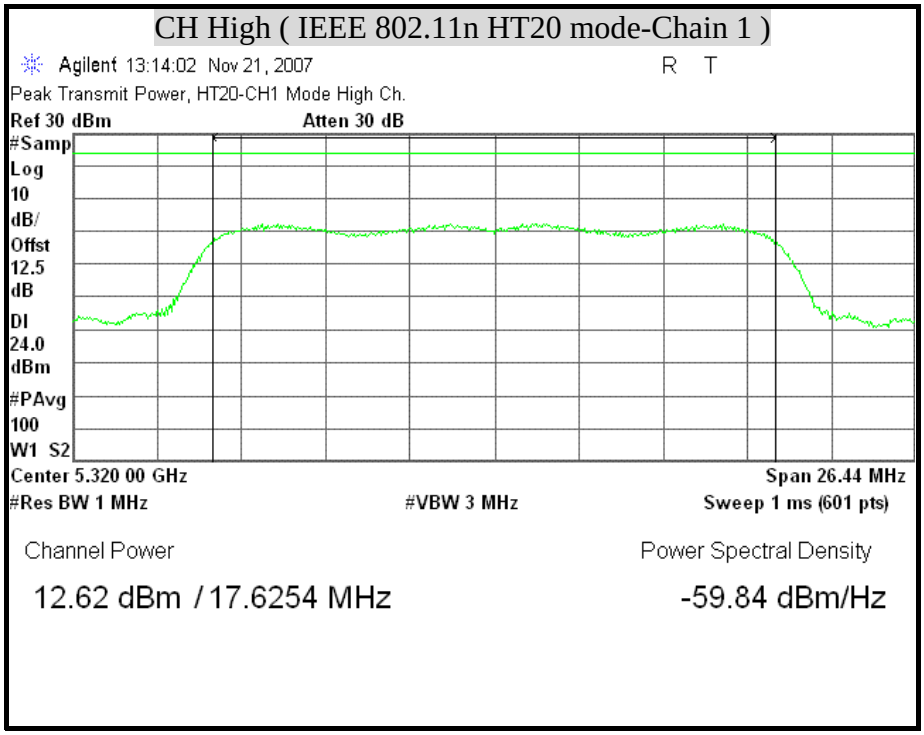
CH Low (IEEE 802.11n HT20 mode-Chain 1)



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

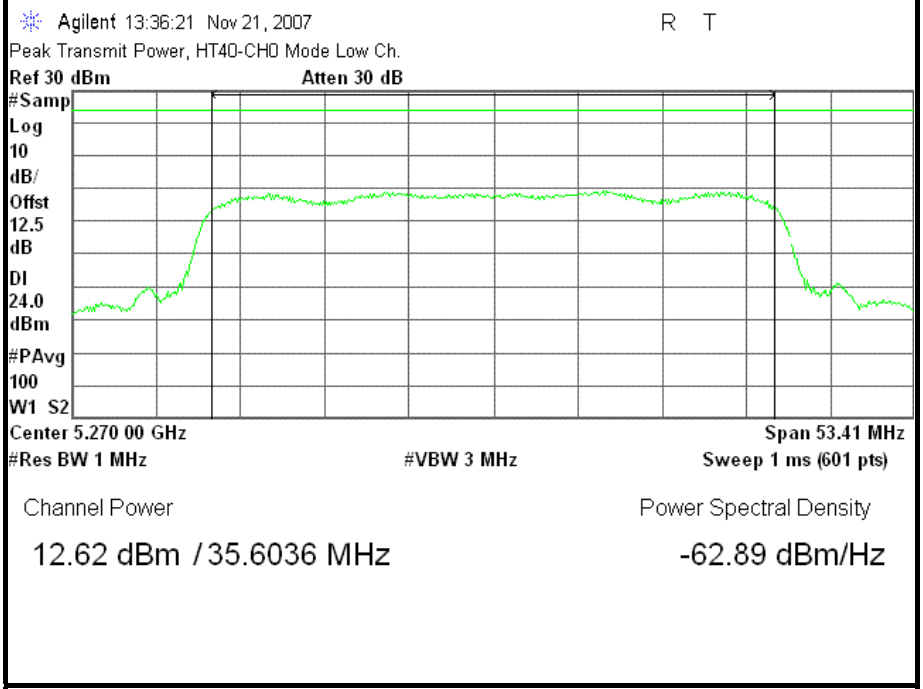


CH High (IEEE 802.11n HT20 mode-Chain 1)

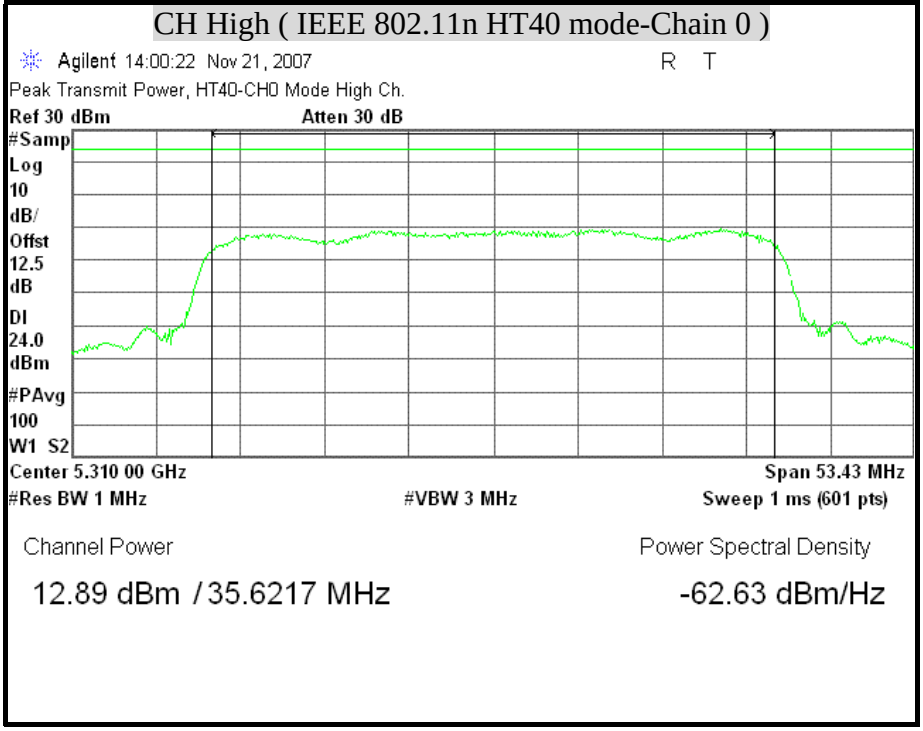


PEAK CONDUCTED TRANSMIT POWER (IEEE 802.11n HT40 mode / 5250MHz ~ 5350MHz)

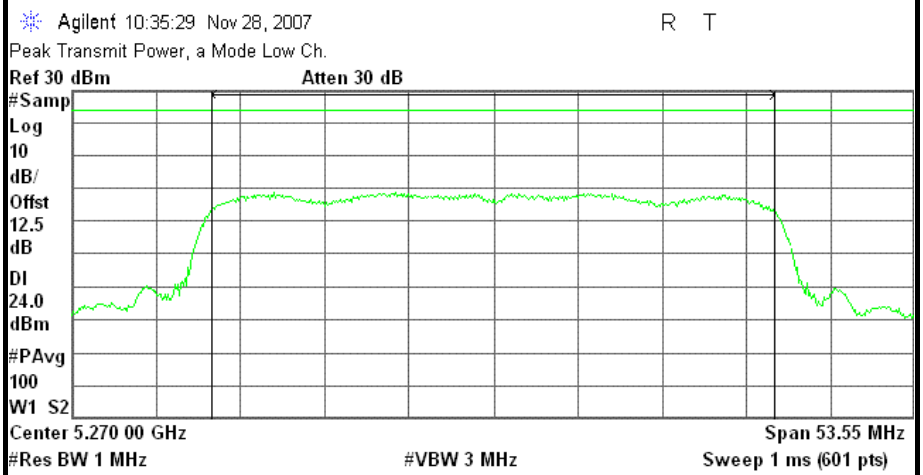
CH Low (IEEE 802.11n HT40 mode-Chain 0)



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



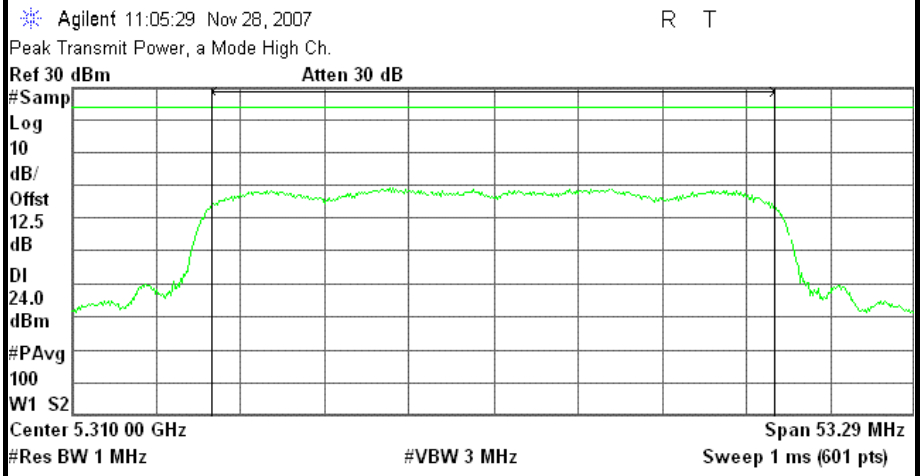
CH Low (IEEE 802.11n HT40 mode-Chain 1)



Channel Power
12.56 dBm /35.7021 MHz

Power Spectral Density
-62.97 dBm/Hz

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

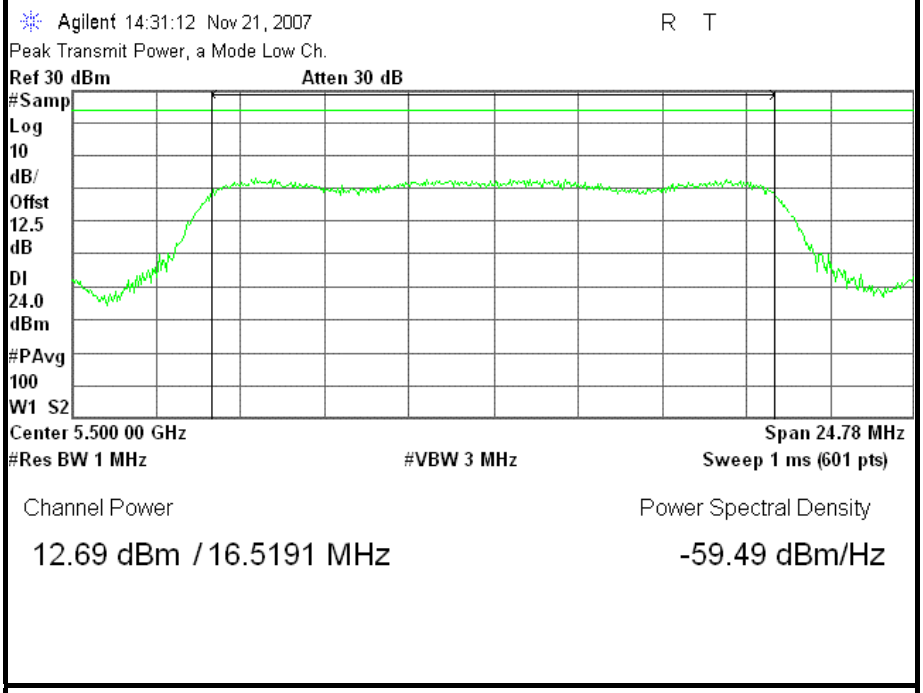


Channel Power
12.60 dBm /35.5296 MHz

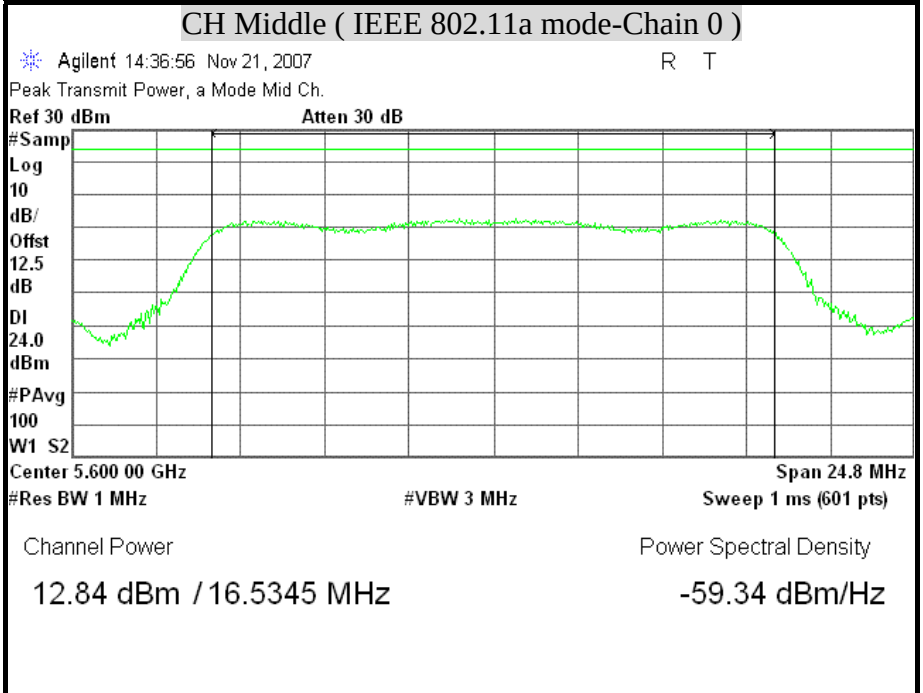
Power Spectral Density
-62.90 dBm/Hz

PEAK CONDUCTED TRANSMIT POWER (IEEE 802.11a mode / 5470MHz ~ 5725MHz)

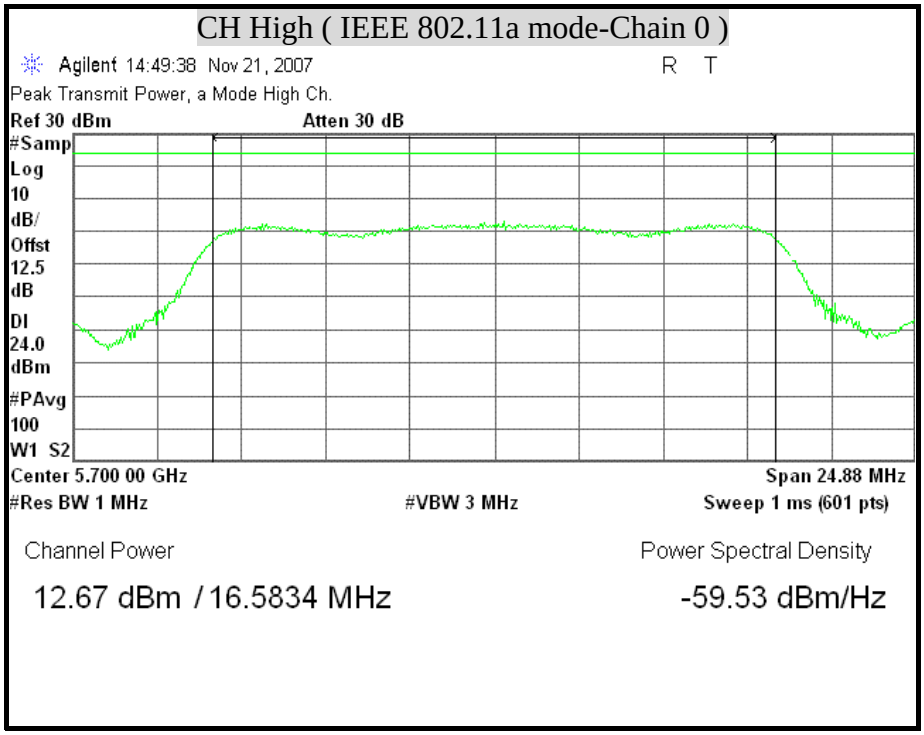
CH Low (IEEE 802.11a mode-Chain 0)



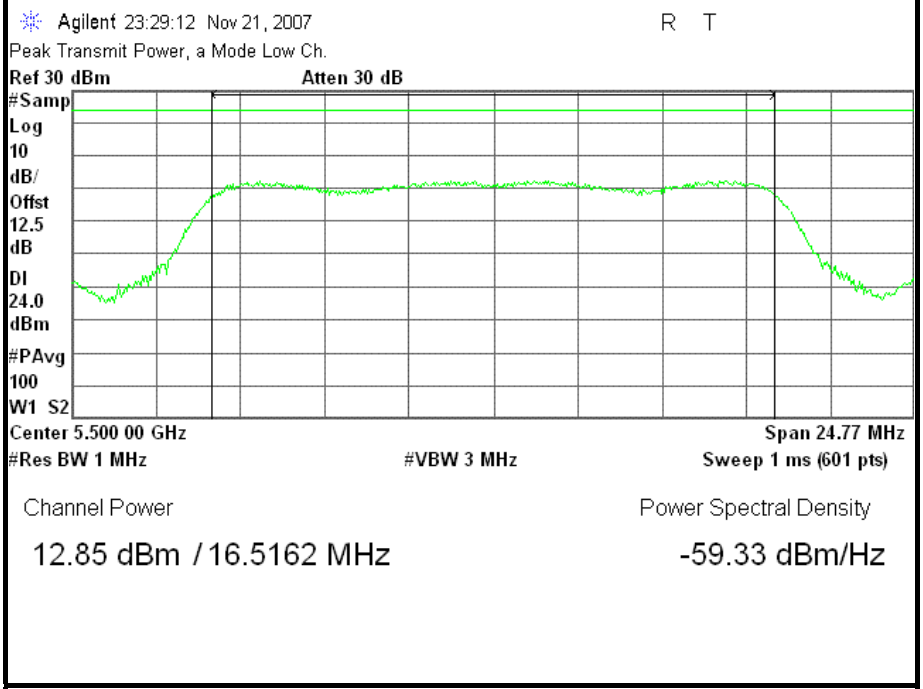
CH Middle (IEEE 802.11a mode-Chain 0)



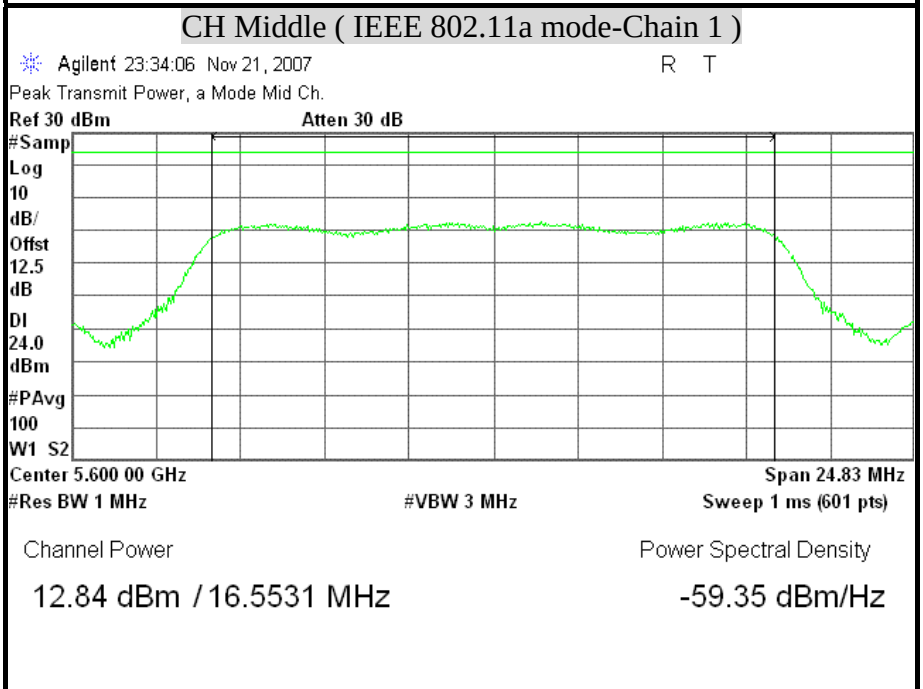
CH High (IEEE 802.11a mode-Chain 0)



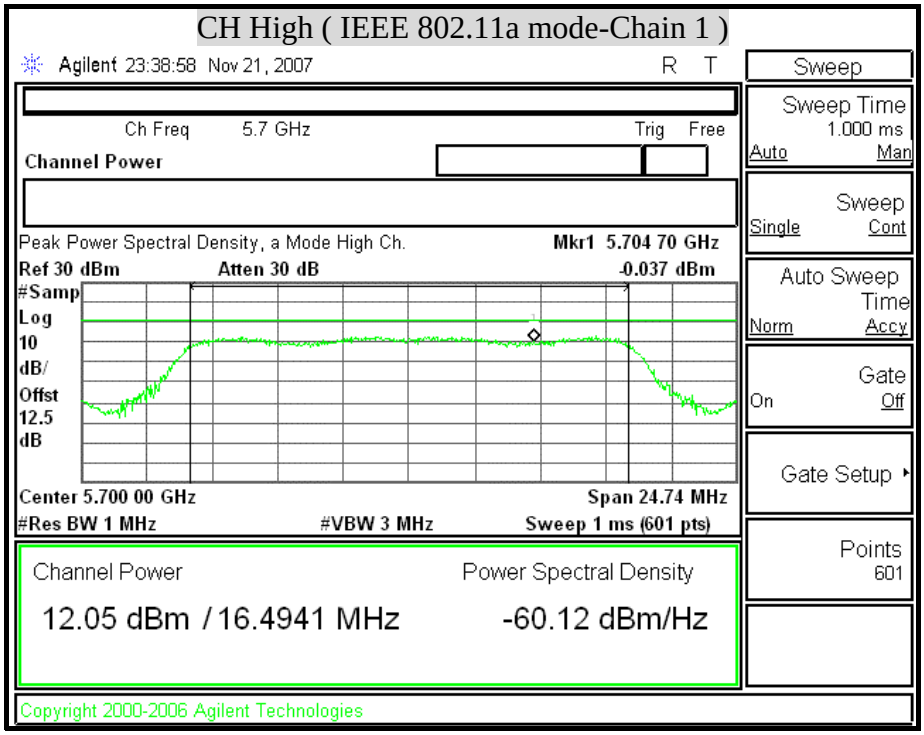
CH Low (IEEE 802.11a mode-Chain 1)



CH Middle (IEEE 802.11a mode-Chain 1)

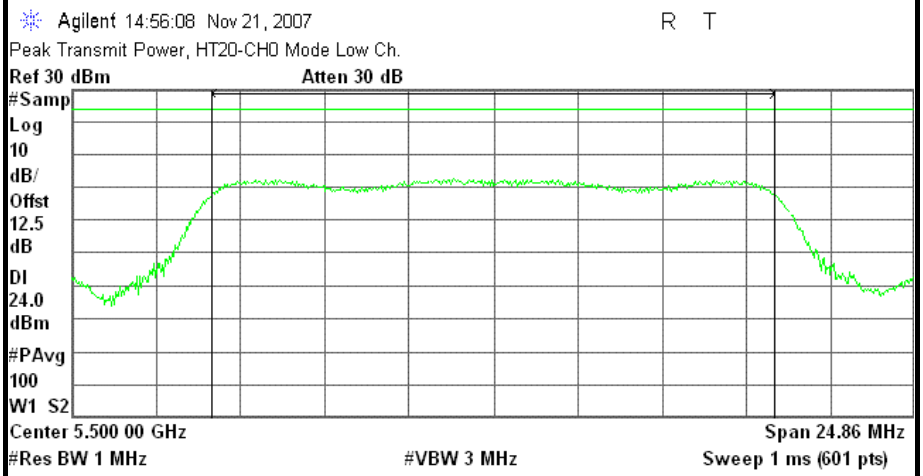


CH High (IEEE 802.11a mode-Chain 1)



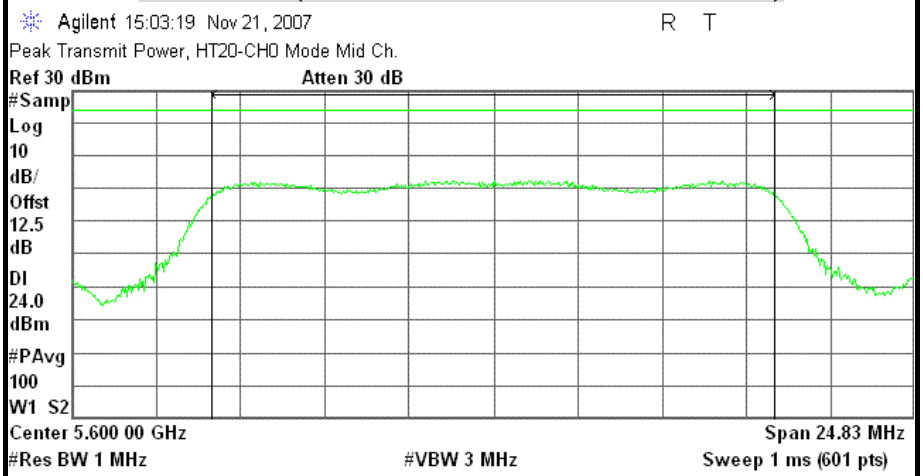
PEAK CONDUCTED TRANSMIT POWER (IEEE 802.11n HT20 mode / 5470MHz ~ 5725MHz)

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



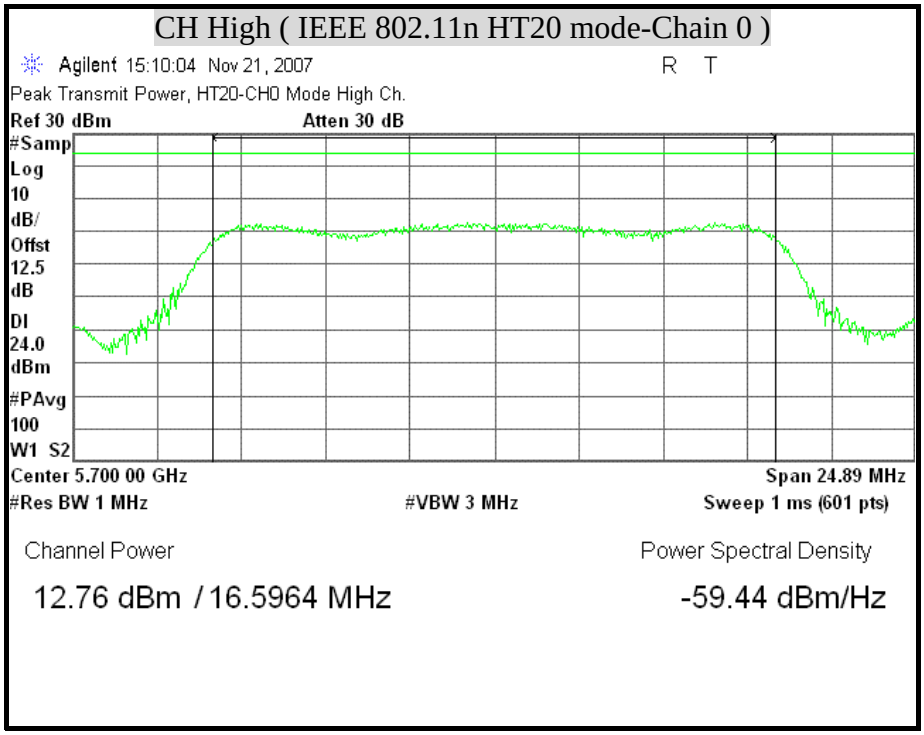
Channel Power	Power Spectral Density
12.52 dBm / 16.5744 MHz	-59.68 dBm/Hz

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

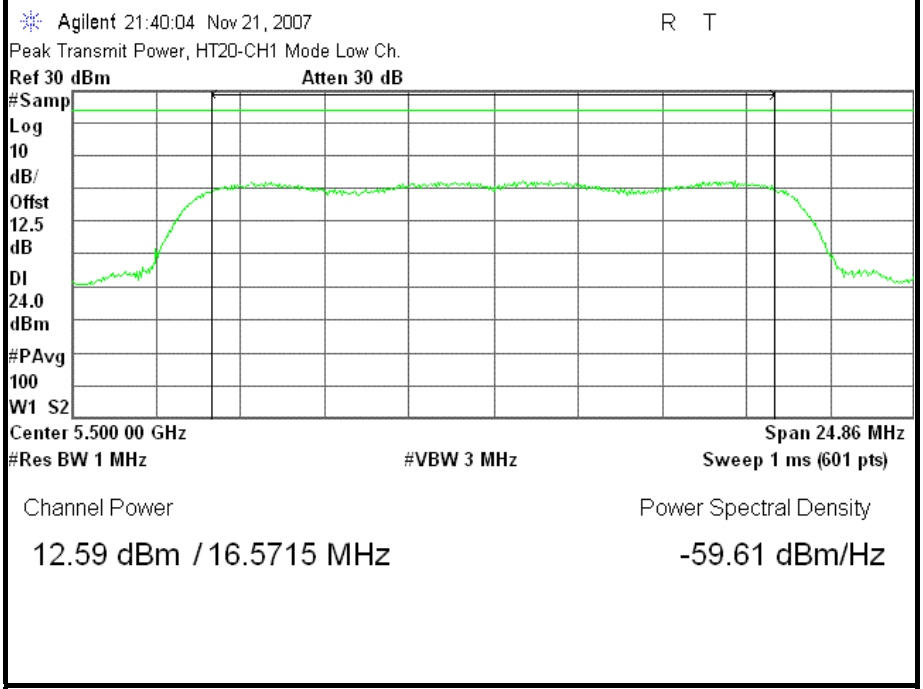


Channel Power	Power Spectral Density
12.68 dBm / 16.5510 MHz	-59.51 dBm/Hz

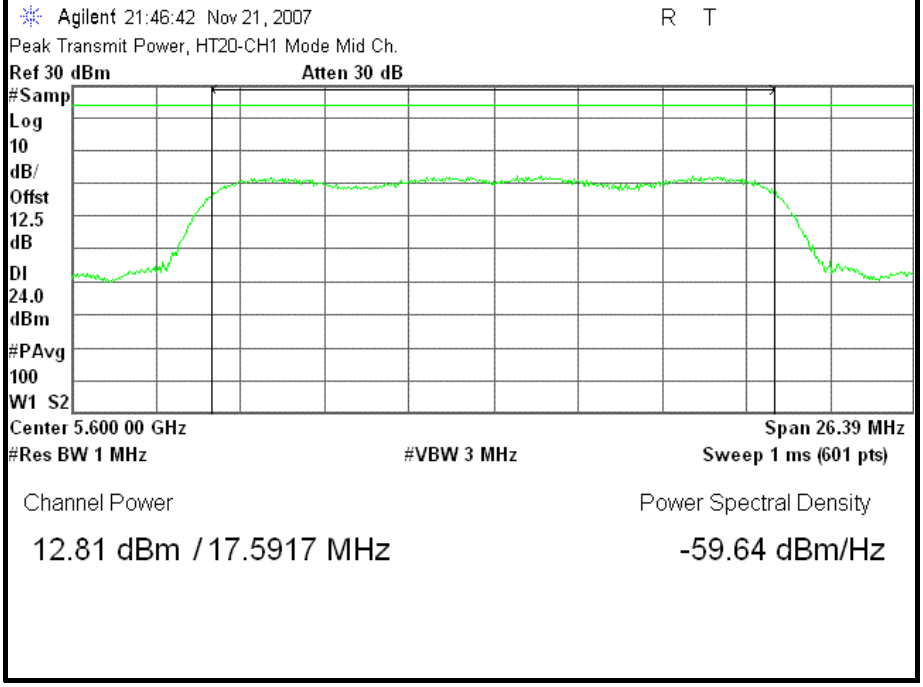
CH High (IEEE 802.11n HT20 mode-Chain 0)



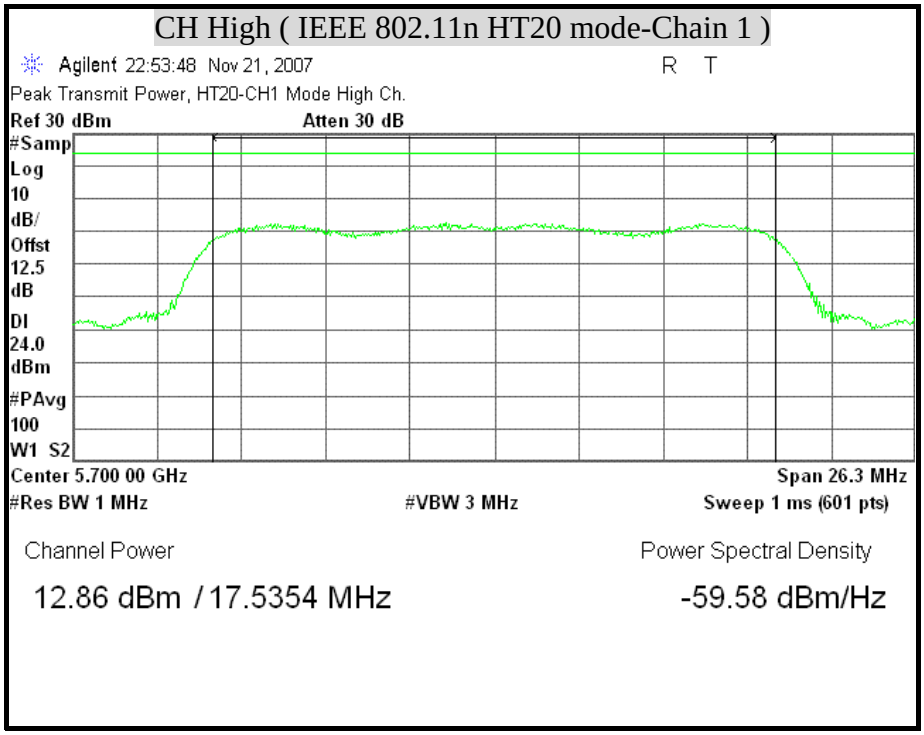
CH Low (IEEE 802.11n HT20 mode-Chain 1)



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

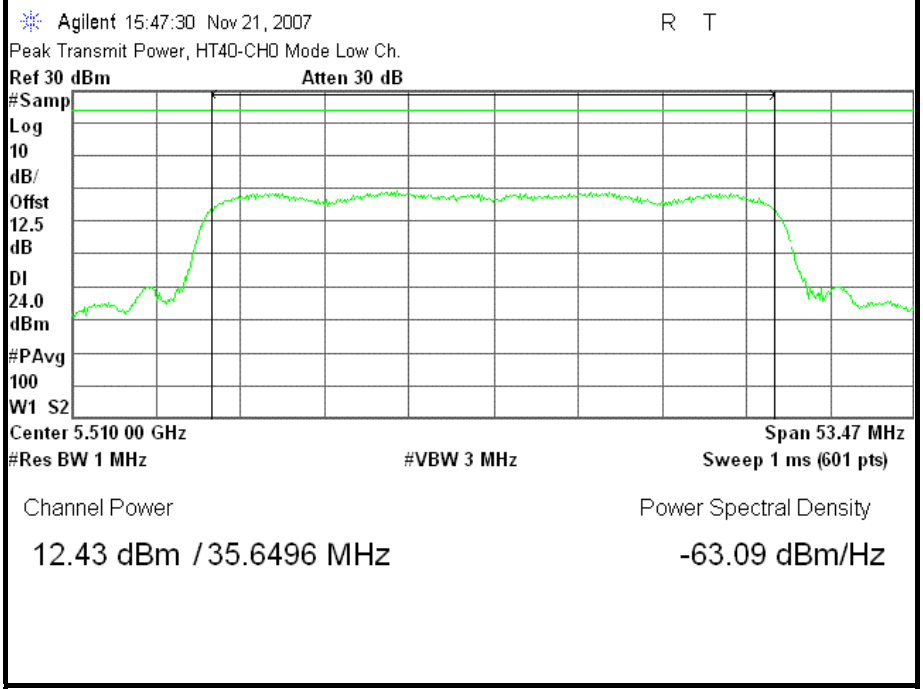


CH High (IEEE 802.11n HT20 mode-Chain 1)

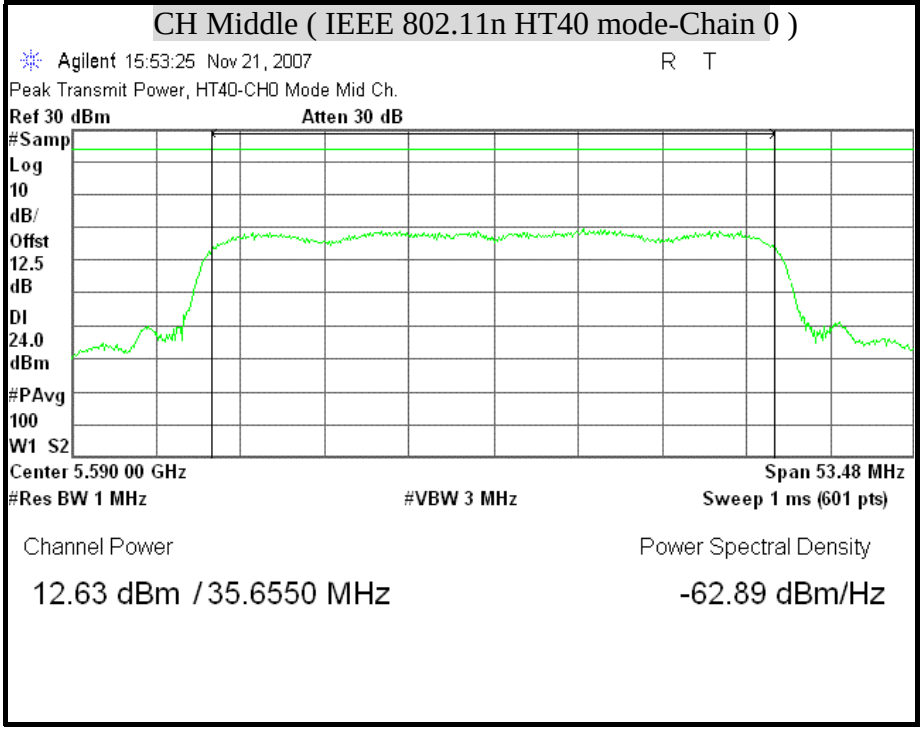


PEAK CONDUCTED TRANSMIT POWER (IEEE 802.11n HT40 mode / 5470MHz ~ 5725MHz)

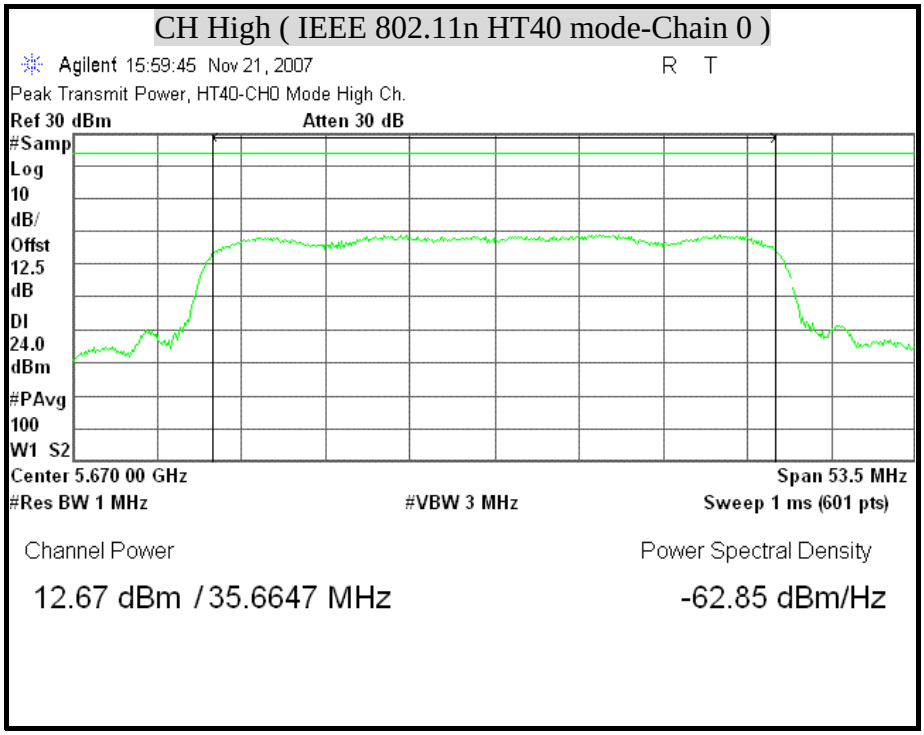
CH Low (IEEE 802.11n HT40 mode-Chain 0)



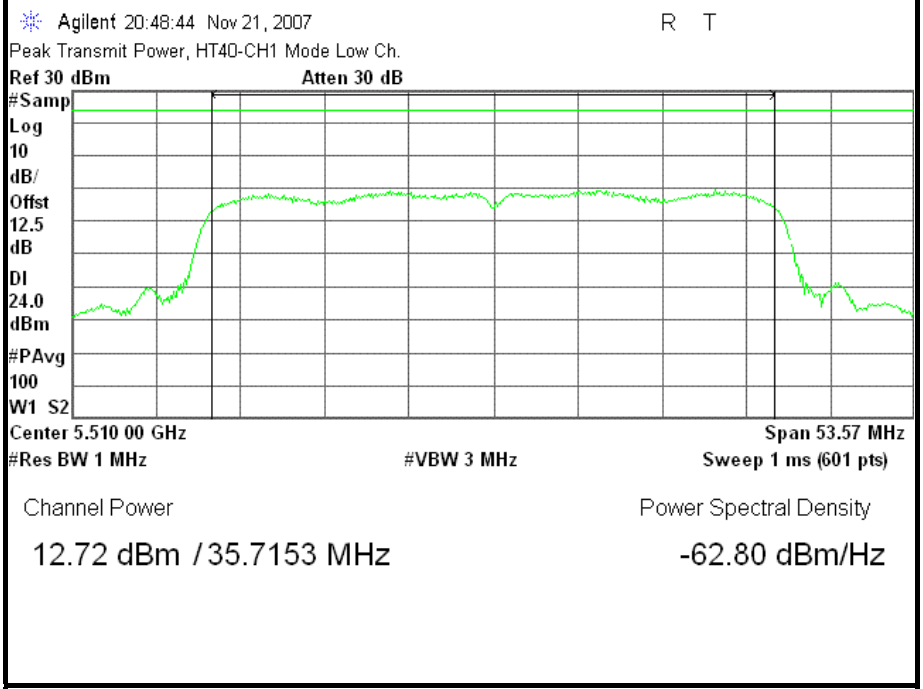
CH Middle (IEEE 802.11n HT40 mode-Chain 0)



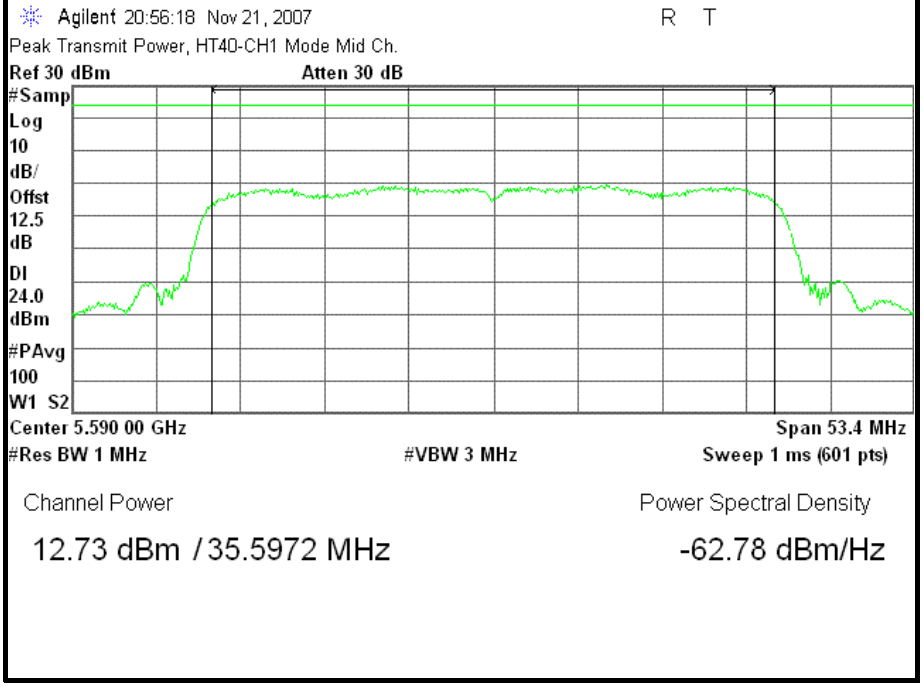
CH High (IEEE 802.11n HT40 mode-Chain 0)



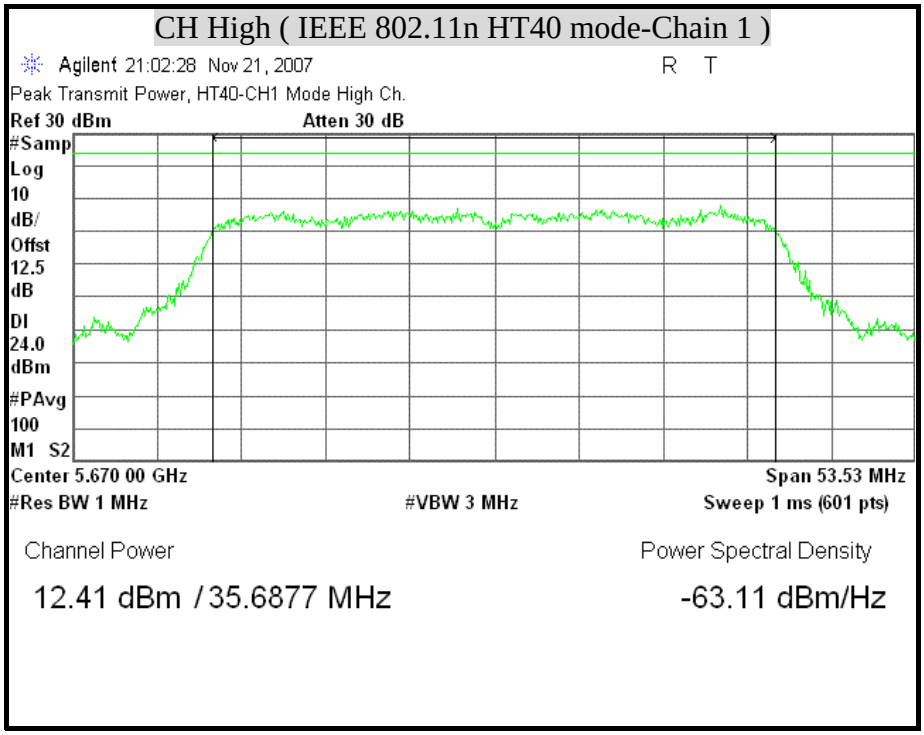
CH Low (IEEE 802.11n HT40 mode-Chain 1)



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



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



8.4 PEAK POWER SPECTRAL DENSITY

LIMIT

§ 15.407 (a)

(1) For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4dBm in any 1MHz band.

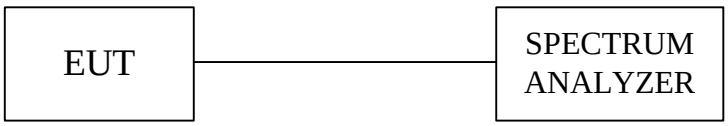
(2) For the band 5.25-5.35 GHz and 5.47-5.725 GHz bands, the peak power spectral density shall not exceed 11dBm in any 1MHz band.

If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

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	MY433602.52	June 06, 2007

TEST SETUP



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
   Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set the spectrum analyzer as RBW = 1MHz, VBW = 3MHz，Span = Sweep= AUTO
   Set span encompass the entire emission bandwidth (EBW) of the signal.
3. Record the max. reading.
4. Repeat the above procedure until the measurements for all frequencies are completed.

TEST RESULTS

No non-compliance noted

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

IEEE 802.11a mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	PPSD (dBm)		PPSD Total (dBm)	Maxmum Limit (dBm)	Margin (dB)	Pass / Fail
		Chain 0	Chain 1				
Low	5180	0.99	0.87	3.94	4	-0.06	PASS
Middle	5220	0.91	0.90	3.91	4	-0.09	PASS
High	5240	0.97	0.88	3.93	4	-0.07	PASS

Remark:

1. At finial test to get the worst-case emission at 6 Mbps.
2. Maximum antenna gain =0.47dBi, therefore there is no reduction due to antenna gain.

IEEE 802.11n HT20 mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	PPSD (dBm)		PPSD Total (dBm)	Maxmum Limit (dBm)	Margin (dB)	Pass / Fail
		Chain 0	Chain 1				
Low	5180	0.88	0.78	3.84	4	-0.16	PASS
Middle	5220	0.96	0.96	3.97	4	-0.03	PASS
High	5240	0.78	0.87	3.84	4	-0.16	PASS

Remark:

1. At finial test to get the worst-case emission at 6.5 Mbps.
2. Maximum antenna gain =0.47dBi, therefore there is no reduction due to antenna gain.

IEEE 802.11n HT40 mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	PPSD (dBm)		PPSD Total (dBm)	Maxmum Limit (dBm)	Margin (dB)	Pass / Fail
		Chain 0	Chain 1				
Low	5190	-0.85	-1.20	1.99	4	-2.01	PASS
High	5230	0.23	-0.61	2.84	4	-1.16	PASS

Remark:

1. At finial test to get the worst-case emission at 13.5 Mbps.
2. Maximum antenna gain =0.47dBi, therefore there is no reduction due to antenna gain.

IEEE 802.11a mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	PPSD (dBm)		PPSD Total (dBm)	Maxmum Limit (dBm)	Margin (dB)	Pass / Fail
		Chain 0	Chain 1				
Low	5260	2.04	0.22	4.24	11	-6.76	PASS
Middle	5280	1.30	0.57	3.96	11	-7.04	PASS
High	5320	1.34	1.76	4.57	11	-6.43	PASS

Remark:

1. At finial test to get the worst-case emission at 6 Mbps.
2. Maximum antenna gain =0.47dBi, therefore there is no reduction due to antenna gain.

IEEE 802.11n HT20 mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	PPSD (dBm)		PPSD Total (dBm)	Maxmum Limit (dBm)	Margin (dB)	Pass / Fail
		Chain 0	Chain 1				
Low	5260	1.38	0.73	4.08	11	-6.92	PASS
Middle	5280	0.60	2.23	4.50	11	-6.50	PASS
High	5320	0.81	0.476	4.37	11	-6.63	PASS

Remark:

1. At finial test to get the worst-case emission at 6.5 Mbps.
2. Maximum antenna gain =0.47dBi, therefore there is no reduction due to antenna gain.

IEEE 802.11n HT40 mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	PPSD (dBm)		PPSD Total (dBm)	Maxmum Limit (dBm)	Margin (dB)	Pass / Fail
		Chain 0	Chain 1				
Low	5270	-1.63	-0.91	1.76	11	-9.24	PASS
High	5310	-1.10	-1.38	1.77	11	-9.23	PASS

Remark:

1. At finial test to get the worst-case emission at 13.5 Mbps.
2. Maximum antenna gain =0.47dBi, therefore there is no reduction due to antenna gain.

IEEE 802.11a mode (5470MHz ~ 5725MHz)

Channel	Channel Frequency (MHz)	PPSD (dBm)		PPSD Total (dBm)	Maxmum Limit (dBm)	Margin (dB)	Pass / Fail
		Chain 0	Chain 1				
Low	5500	0.08	1.63	3.94	11	-7.06	PASS
Middle	5600	1.50	2.01	4.77	11	-6.23	PASS
High	5700	1.95	-0.44	3.93	11	-7.07	PASS

Remark:

1. At finial test to get the worst-case emission at 6 Mbps.
2. Maximum antenna gain =1.85dBi, therefore there is no reduction due to antenna gain.

IEEE 802.11n HT20 mode (5470MHz ~ 5725MHz)

Channel	Channel Frequency (MHz)	PPSD (dBm)		PPSD Total (dBm)	Maxmum Limit (dBm)	Margin (dB)	Pass / Fail
		Chain 0	Chain 1				
Low	5500	1.65	1.19	4.44	11	-6.56	PASS
Middle	5600	1.46	1.91	4.70	11	-6.30	PASS
High	5700	0.80	1.98	4.44	11	-6.56	PASS

Remark:

1. At finial test to get the worst-case emission at 6.5 Mbps.
2. Maximum antenna gain =1.85dBi, therefore there is no reduction due to antenna gain.

IEEE 802.11n HT40 mode (5470MHz ~ 5725MHz)

Channel	Channel Frequency (MHz)	PPSD (dBm)		PPSD Total (dBm)	Maxmum Limit (dBm)	Margin (dB)	Pass / Fail
		Chain 0	Chain 1				
Low	5510	-2.29	-2.77	0.49	11	-10.51	PASS
Middle	5590	-0.67	-1.79	0.471	11	-9.19	PASS
High	5670	-1.66	-2.52	0.94	11	-10.06	PASS

Remark:

1. At finial test to get the worst-case emission at 13.5 Mbps.
2. Maximum antenna gain =1.85dBi, therefore there is no reduction due to antenna gain.

IEEE 802.11a Combined mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	5180	3.55	4	PASS
Middle	5220	3.46	4	PASS
High	5240	3.66	4	PASS

Remark:

1. At finial test to get the worst-case emission at 6 Mbps.
2. The cable assembly insertion loss of 16.1 dB (including 10 dB pad and 6.1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT20 Combined mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	5180	3.49	4	PASS
Middle	5220	2.79	4	PASS
High	5240	3.51	4	PASS

Remark:

1. At finial test to get the worst-case emission at 6.5 bps.
2. The cable assembly insertion loss of 16.1 dB (including 10 dB pad and 6.1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 Combined mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	5190	1.48	4	PASS
High	5230	2.19	4	PASS

Remark:

1. At finial test to get the worst-case emission at 13.5 Mbps.
2. The cable assembly insertion loss of 16.1 dB (including 10 dB pad and 6.1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11a Combined mode (5250MHz ~ 3250MHz)

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	5260	5.75	11	PASS
Middle	5280	5.84	11	PASS
High	5320	6.41	11	PASS

Remark:

1. At finial test to get the worst-case emission at 6 Mbps.
2. The cable assembly insertion loss of 16.1 dB (including 10 dB pad and 6.1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT20 Combined mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	5260	6.07	11	PASS
Middle	5280	5.48	11	PASS
High	5320	5.98	11	PASS

Remark:

1. At finial test to get the worst-case emission at 6.5 Mbps.
2. The cable assembly insertion loss of 16.1 dB (including 10 dB pad and 6.1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 Combined mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	5270	2.92	11	PASS
High	5310	4.05	11	PASS

Remark:

1. At finial test to get the worst-case emission at 13.5 Mbps.
2. The cable assembly insertion loss of 16.1 dB (including 10 dB pad and 6.1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11a Combined mode (5470MHz ~ 5725MHz)

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	5500	5.84	11	PASS
Middle	5600	5.60	11	PASS
High	5700	7.13	11	PASS

Remark:

1. At finial test to get the worst-case emission at 6 Mbps.
2. The cable assembly insertion loss of 16.1 dB (including 10 dB pad and 6.1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT20 Combined mode(5470MHz ~ 5725MHz)

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	5500	5.39	11	PASS
Middle	5600	5.26	11	PASS
High	5700	7.05	11	PASS

Remark:

1. At finial test to get the worst-case emission at 6.5 Mbps.
2. The cable assembly insertion loss of 16.1 dB (including 10 dB pad and 6.1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 Combined mode (5470MHz ~ 5725MHz)

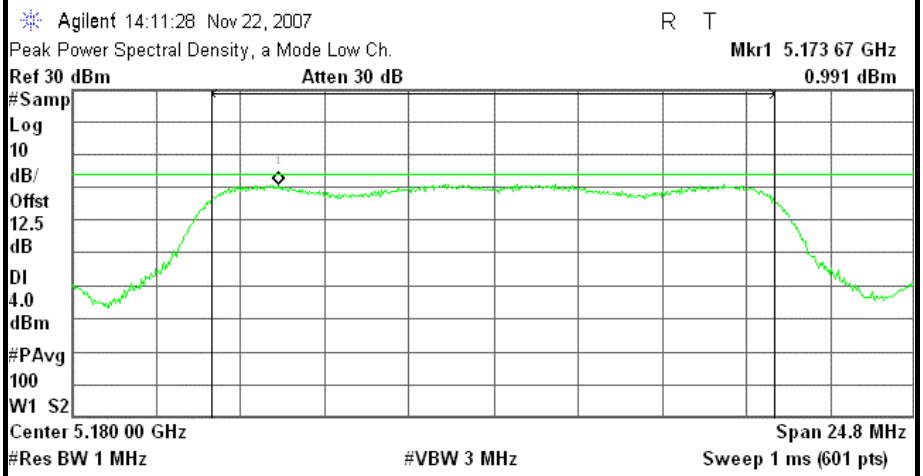
Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Maxmum Limit (dBm)	Pass / Fail
Low	5510	2.28	11	PASS
Middle	5590	2.84	11	PASS
High	5670	3.47	11	PASS

Remark:

1. At finial test to get the worst-case emission at 13.5 Mbps.
2. The cable assembly insertion loss of 16.1 dB (including 10 dB pad and 6.1 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 / 5150MHz ~ 5250MHz)

CH Low (IEEE 802.11a mode-Chain 0)



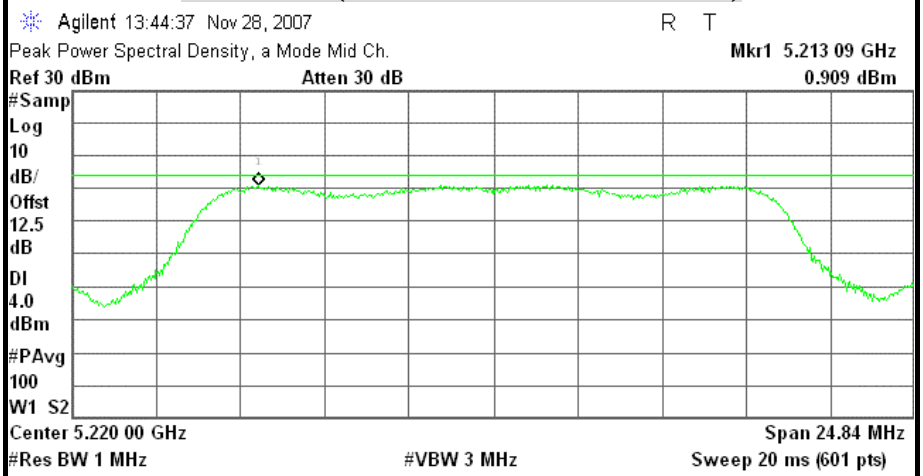
Channel Power

11.20 dBm / 16.5360 MHz

Power Spectral Density

-61.02 dBm/Hz

CH Middle (IEEE 802.11a mode-Chain 0)



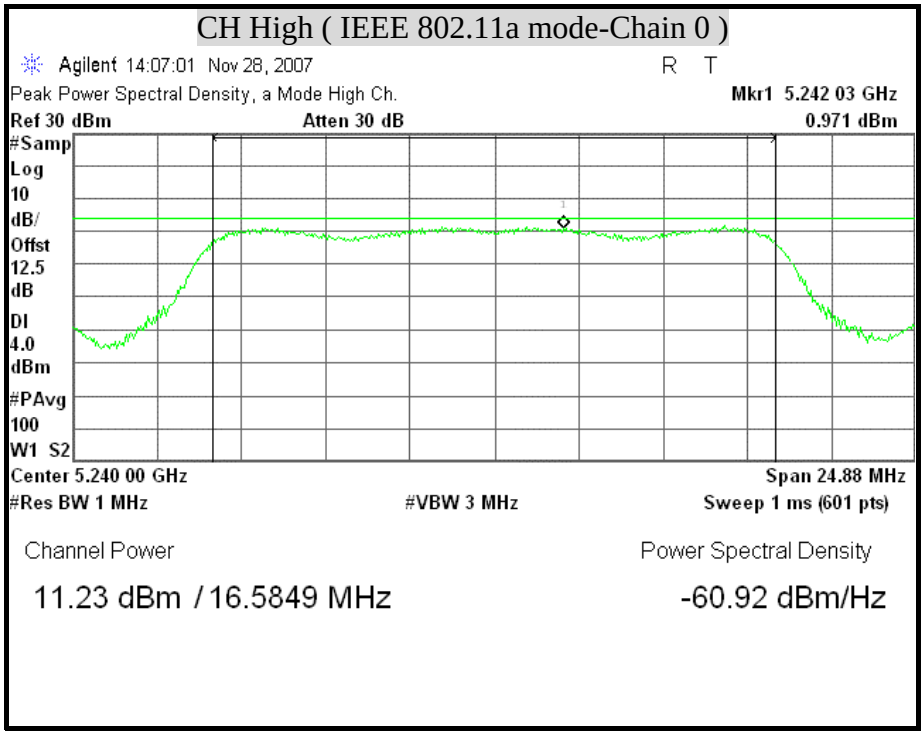
Channel Power

11.04 dBm / 16.5587 MHz

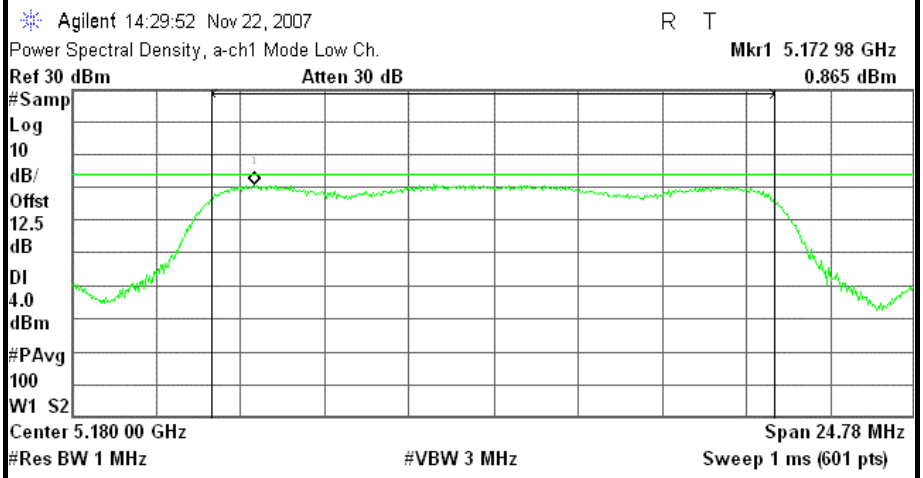
Power Spectral Density

-61.15 dBm/Hz

CH High (IEEE 802.11a mode-Chain 0)



CH Low (IEEE 802.11a mode-Chain 1)



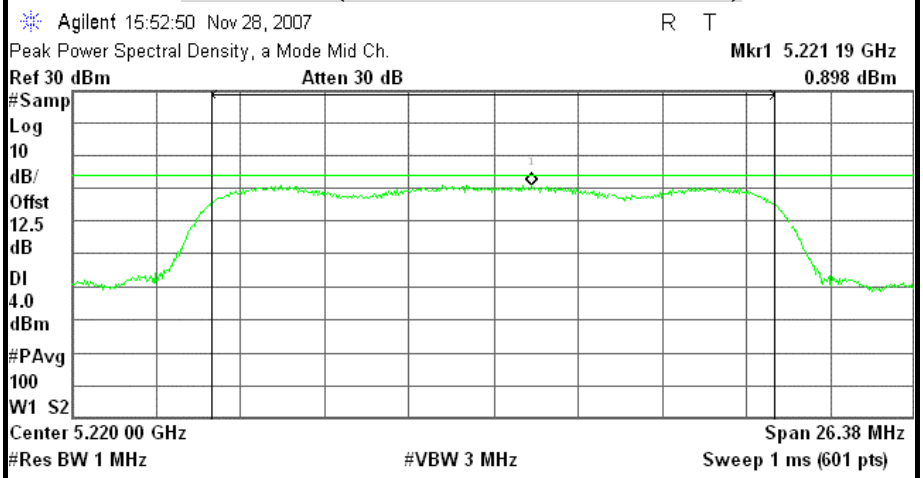
Channel Power

11.09 dBm / 16.5232 MHz

Power Spectral Density

-61.10 dBm/Hz

CH Middle (IEEE 802.11a mode-Chain 1)



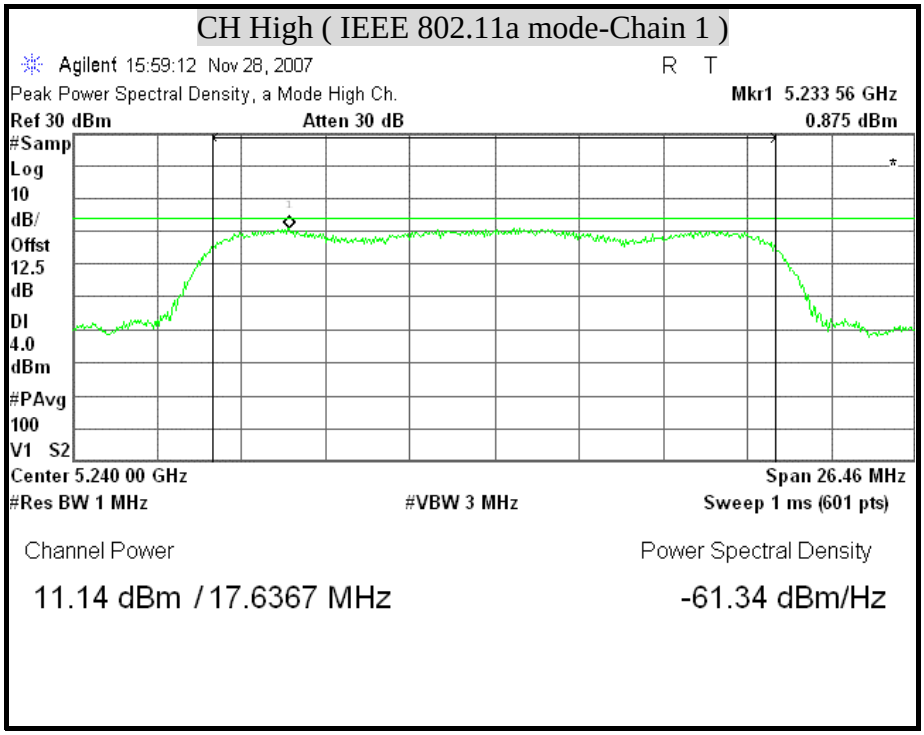
Channel Power

11.16 dBm / 17.5878 MHz

Power Spectral Density

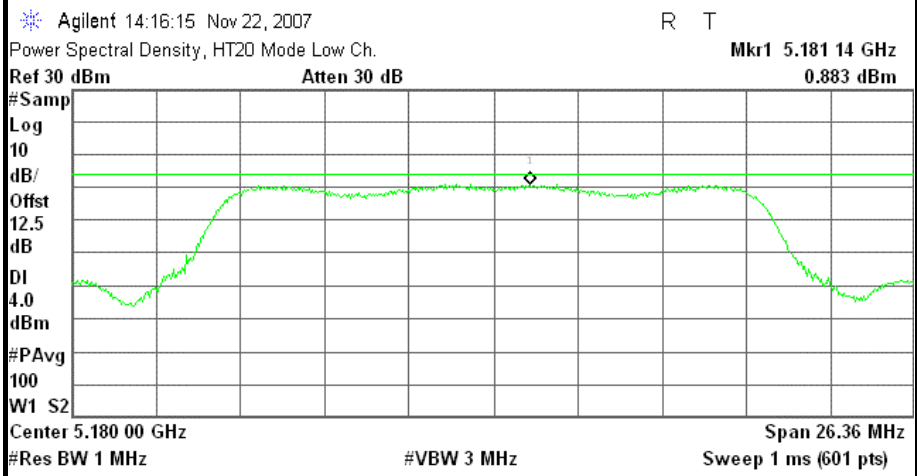
-61.39 dBm/Hz

CH High (IEEE 802.11a mode-Chain 1)



POWER SPECTRAL DENSITY (IEEE 802.11n HT20 mode / 5150MHz ~ 5250MHz)

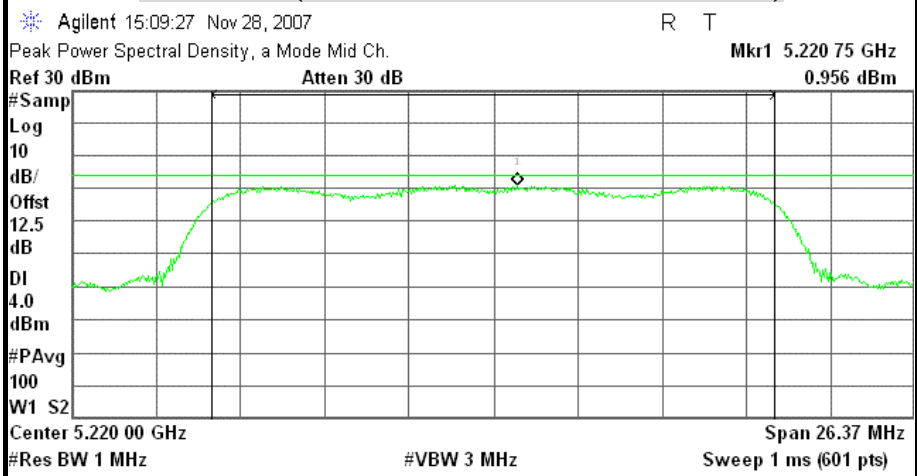
CH Low (IEEE 802.11n HT20 mode-Chain 0)



Channel Power
11.25 dBm / 17.5729 MHz

Power Spectral Density
-61.20 dBm/Hz

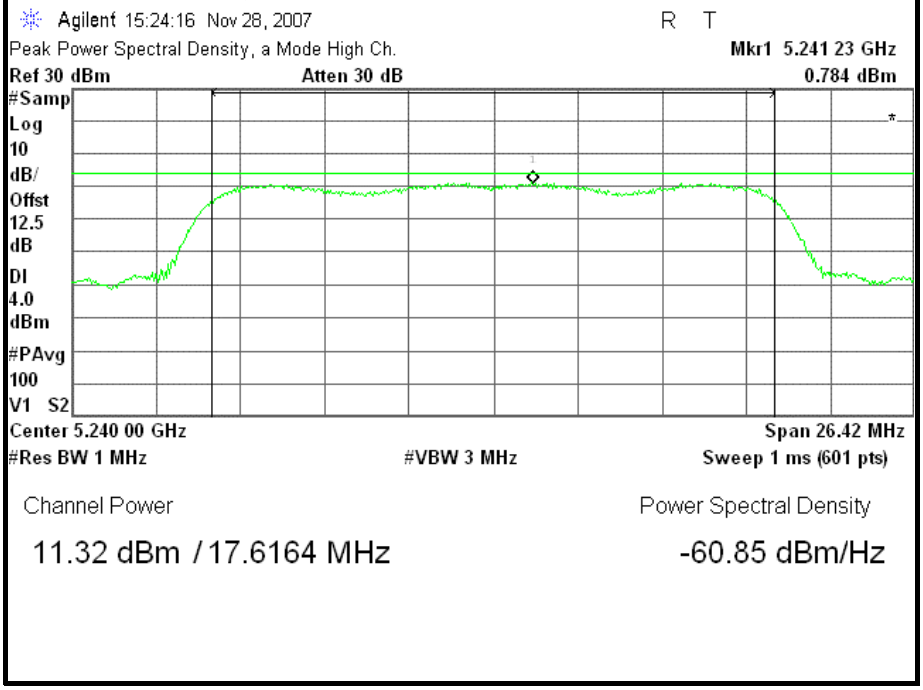
CH Middle (IEEE 802.11n HT20 mode-Chain 0)



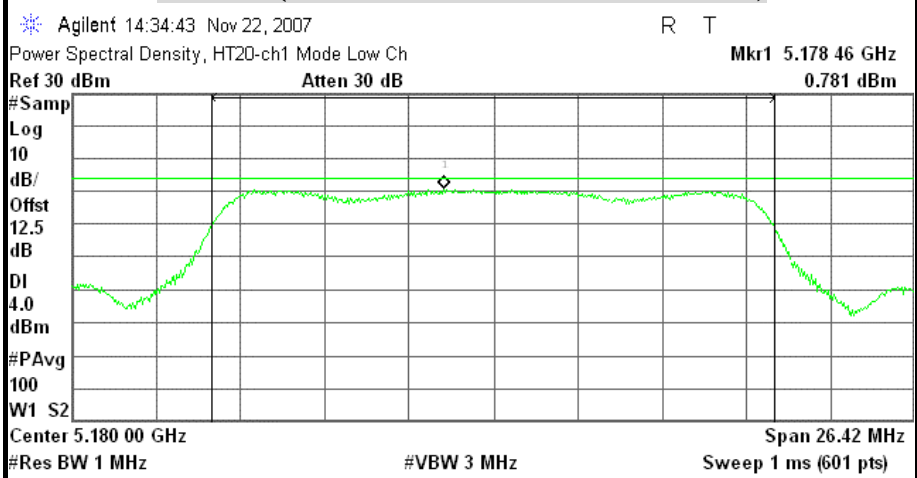
Channel Power
11.29 dBm / 17.5798 MHz

Power Spectral Density
-61.21 dBm/Hz

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



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



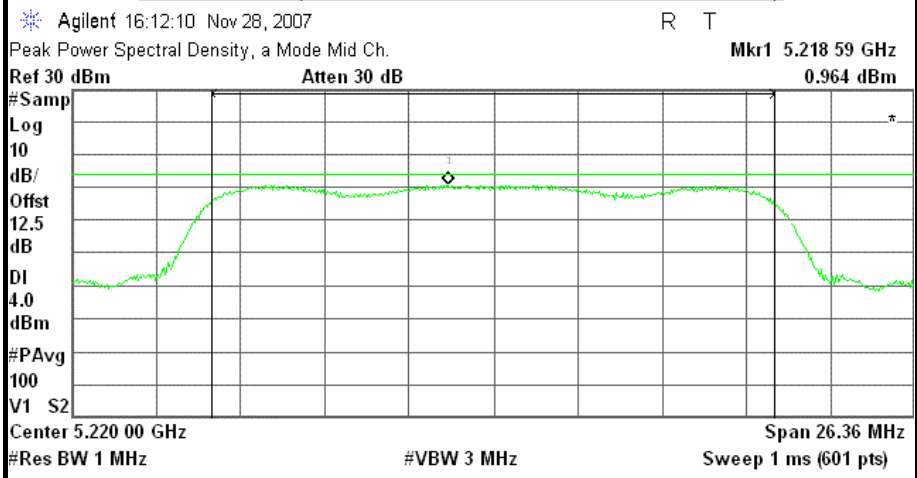
Channel Power

11.12 dBm / 17.6131 MHz

Power Spectral Density

-61.26 dBm/Hz

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



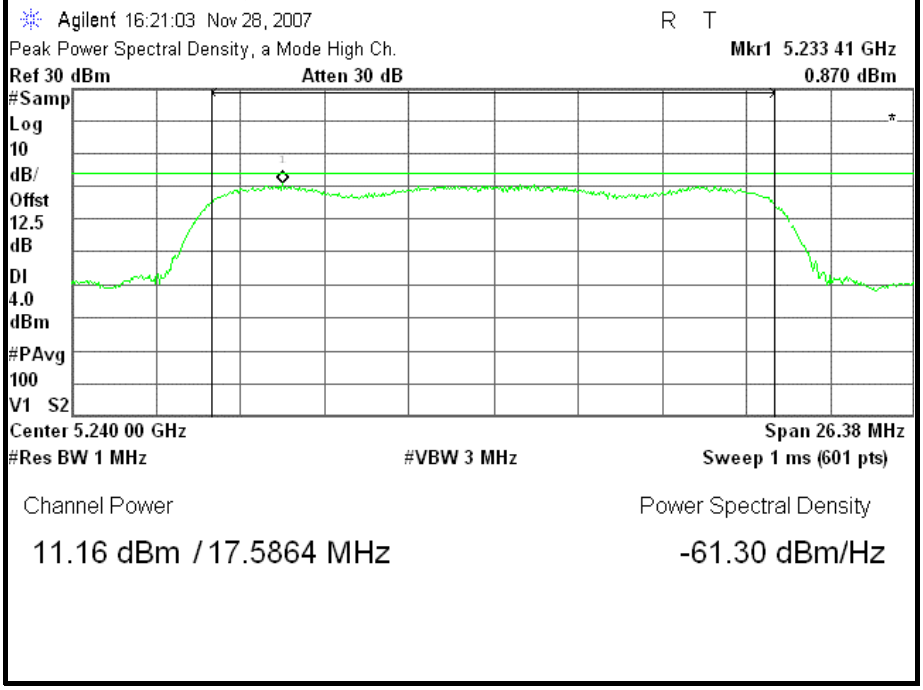
Channel Power

11.17 dBm / 17.5765 MHz

Power Spectral Density

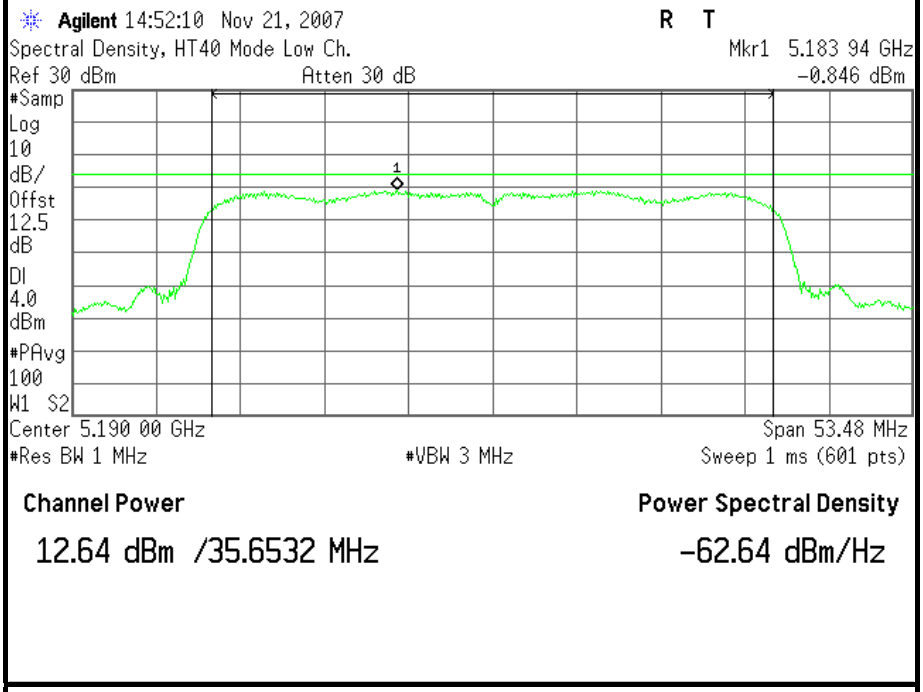
-61.17 dBm/Hz

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

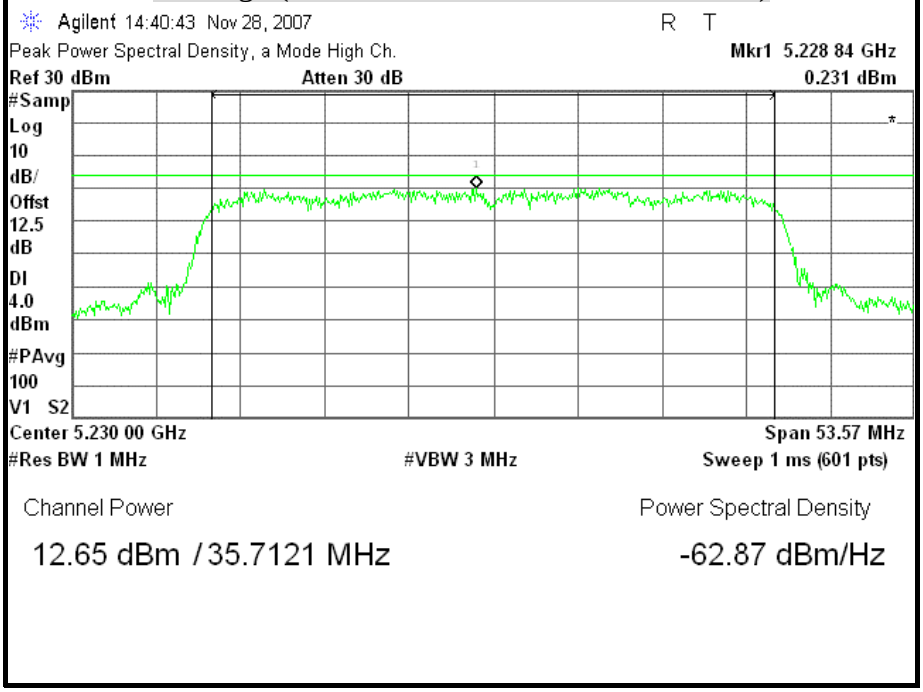


POWER SPECTRAL DENSITY (IEEE 802.11n HT40 mode / 5150MHz ~ 5250MHz)

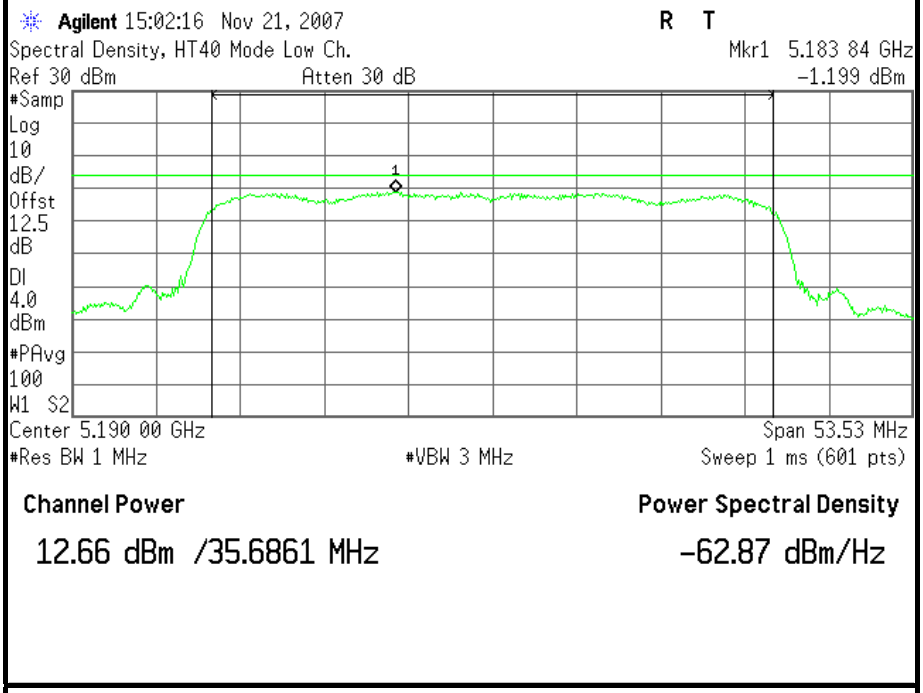
CH Low (IEEE 802.11n HT40 mode-Chain 0)



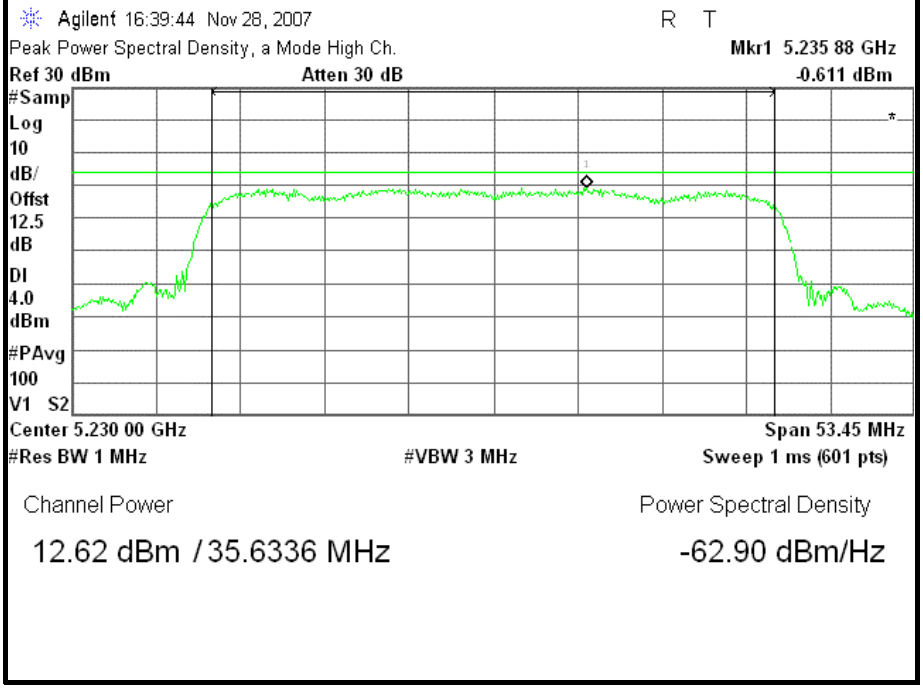
CH High (IEEE 802.11n HT40 mode-Chain 0)



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

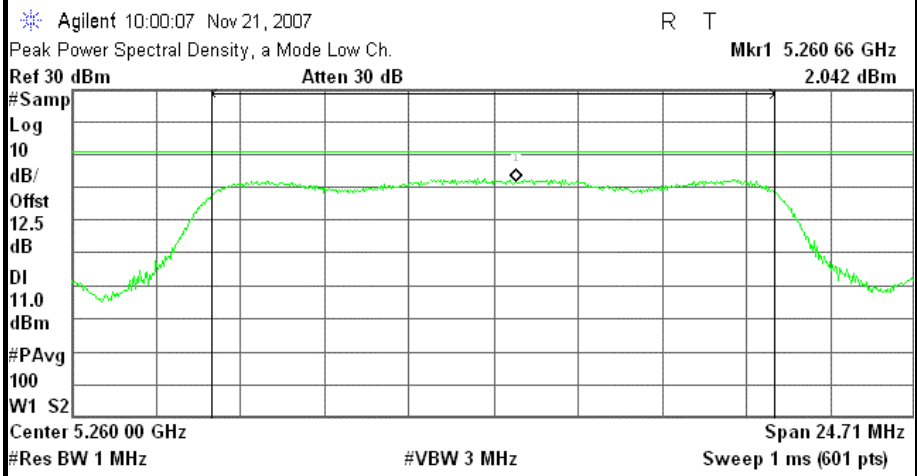


CH High (IEEE 802.11n HT40 mode-Chain 1)



POWER SPECTRAL DENSITY (IEEE 802.11a mode / 5250MHz ~ 5350MHz)

CH Low (IEEE 802.11a mode-Chain 0)



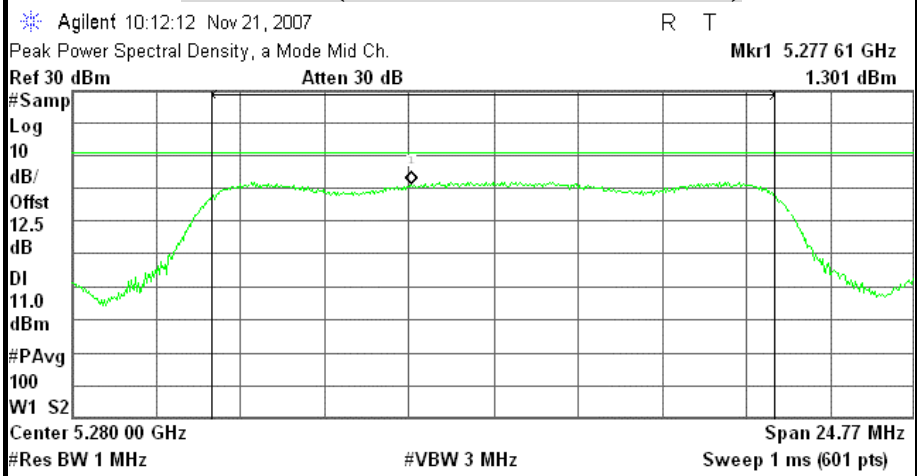
Channel Power

12.78 dBm / 16.4737 MHz

Power Spectral Density

-59.39 dBm/Hz

CH Middle (IEEE 802.11a mode-Chain 0)



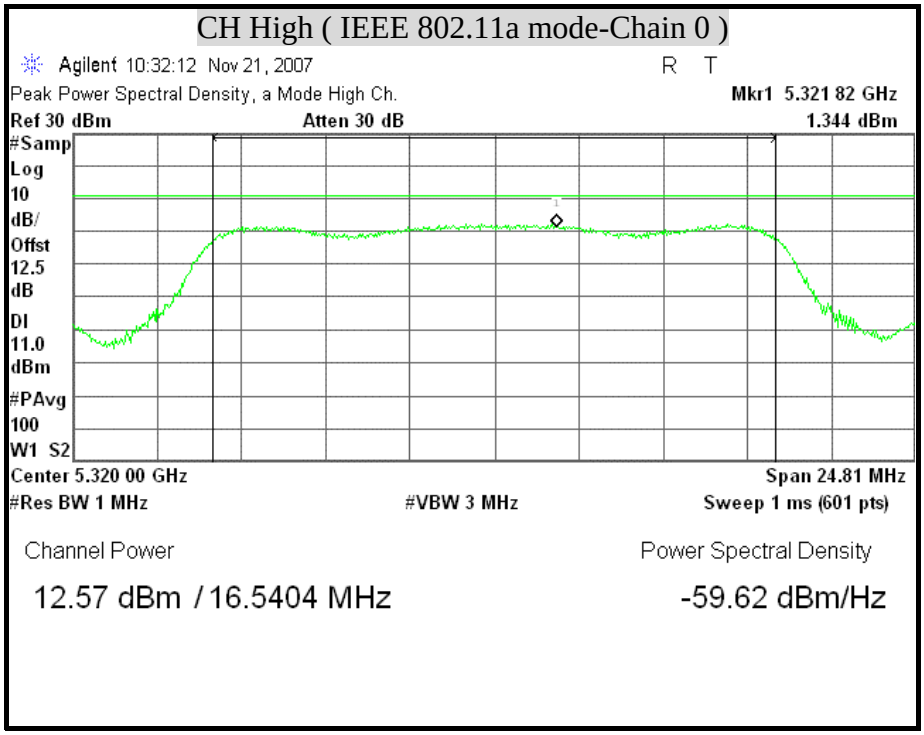
Channel Power

12.45 dBm / 16.5147 MHz

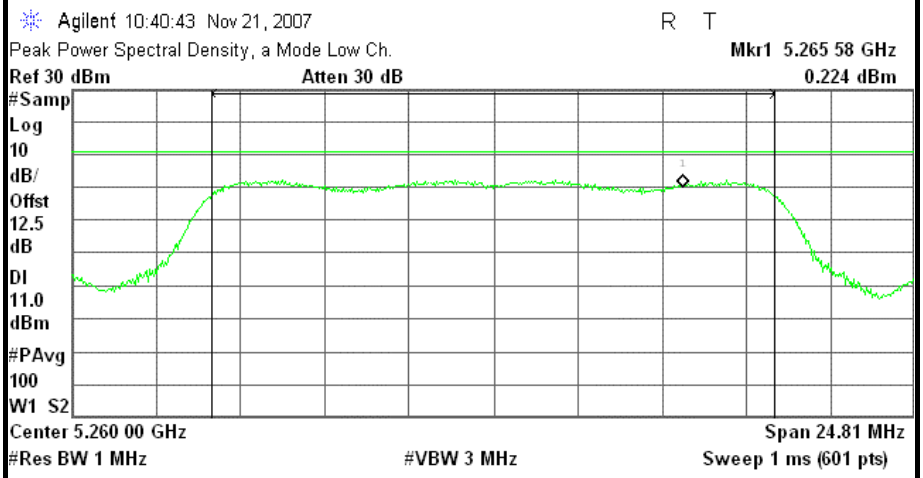
Power Spectral Density

-59.73 dBm/Hz

CH High (IEEE 802.11a mode-Chain 0)



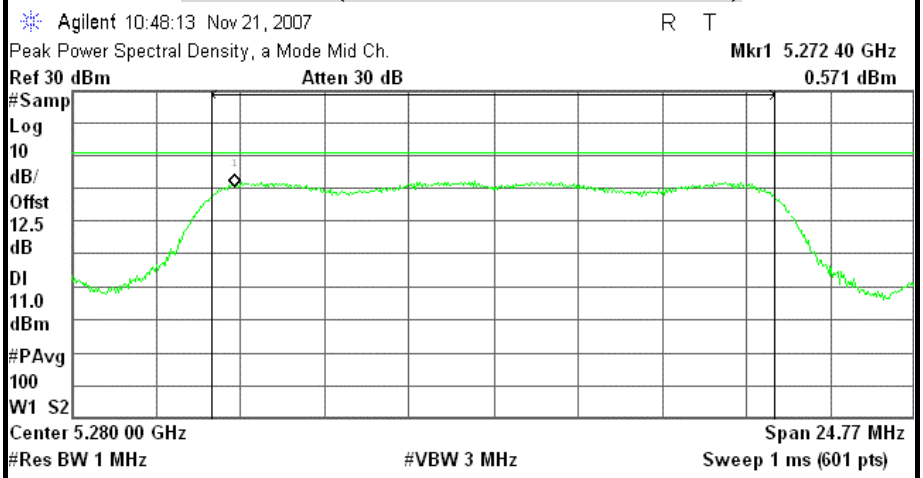
CH Low (IEEE 802.11a mode-Chain 1)



Channel Power
12.82 dBm / 16.5420 MHz

Power Spectral Density
-59.36 dBm/Hz

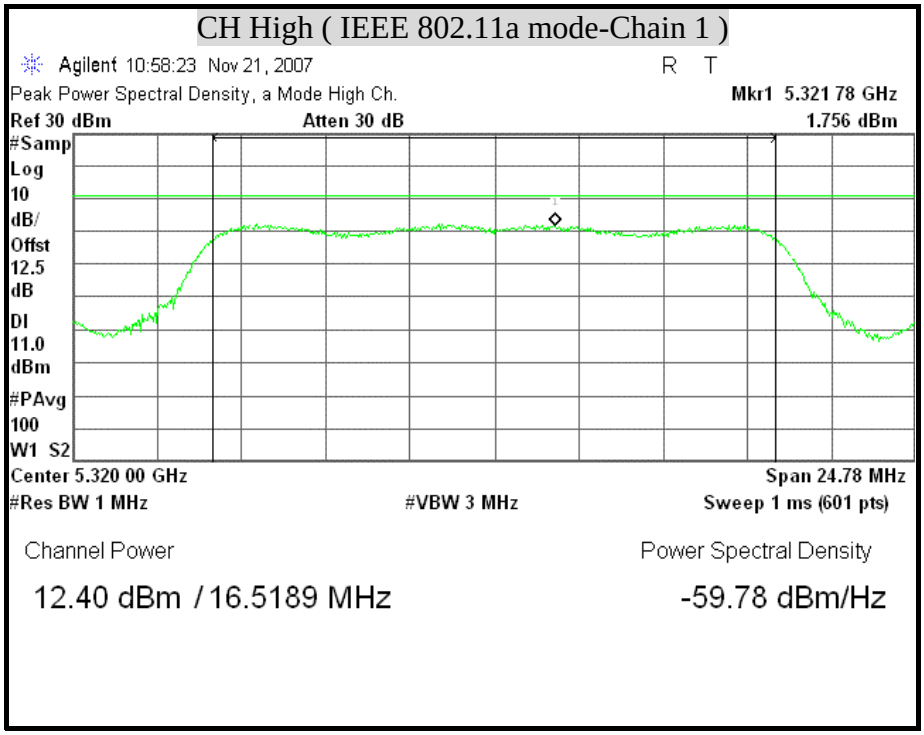
CH Middle (IEEE 802.11a mode-Chain 1)



Channel Power
12.80 dBm / 16.5111 MHz

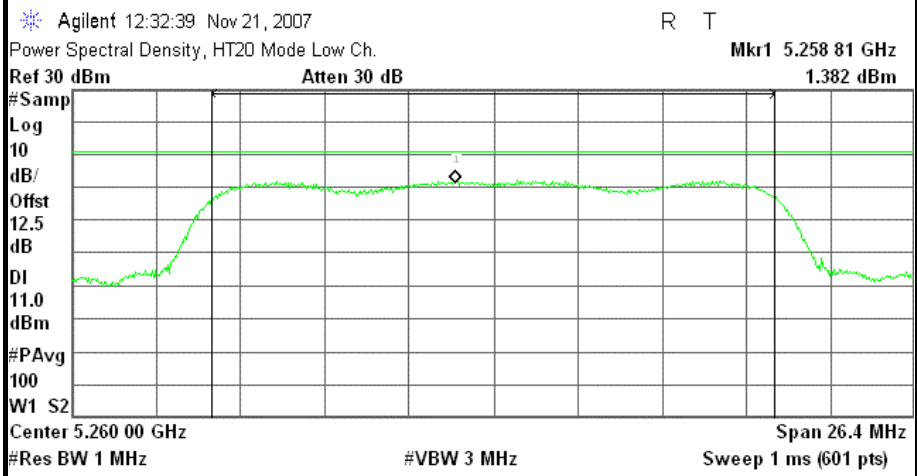
Power Spectral Density
-59.38 dBm/Hz

CH High (IEEE 802.11a mode-Chain 1)



POWER SPECTRAL DENSITY (IEEE 802.11n HT20 mode / 5250MHz ~ 5350MHz)

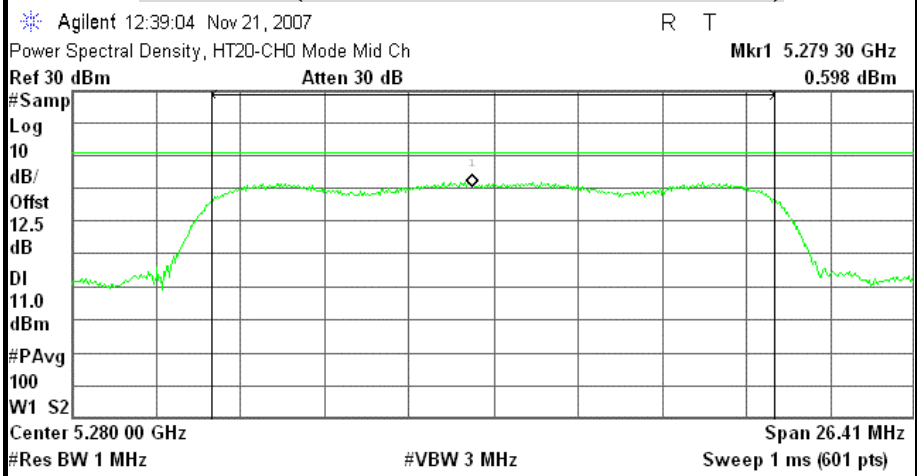
CH Low (IEEE 802.11n HT20 mode-Chain 0)



Channel Power
12.68 dBm / 17.5975 MHz

Power Spectral Density
-59.78 dBm/Hz

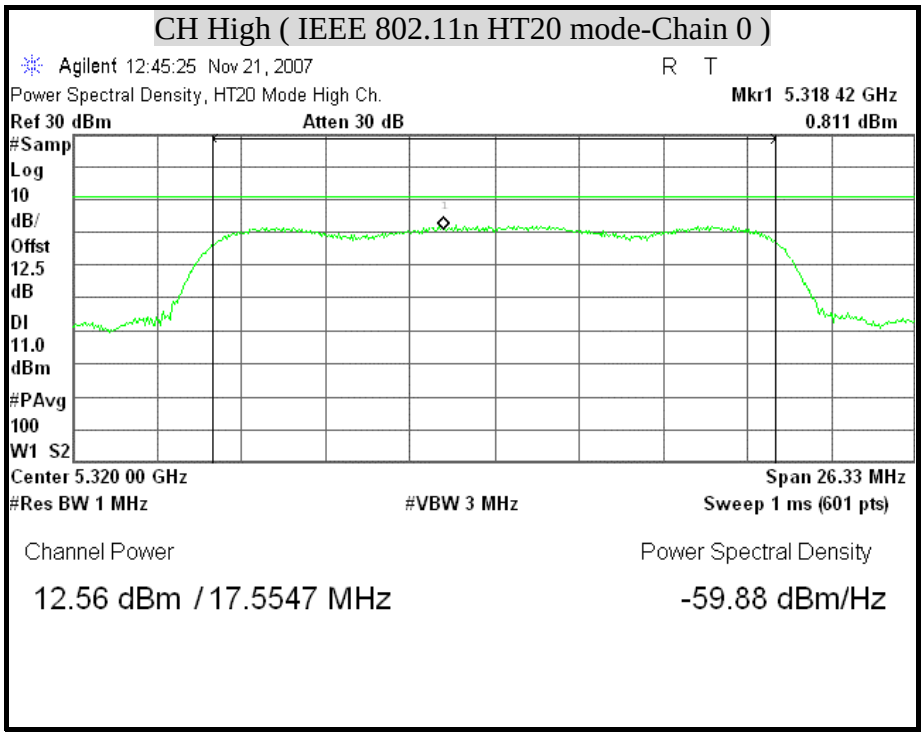
CH Middle (IEEE 802.11n HT20 mode-Chain 0)



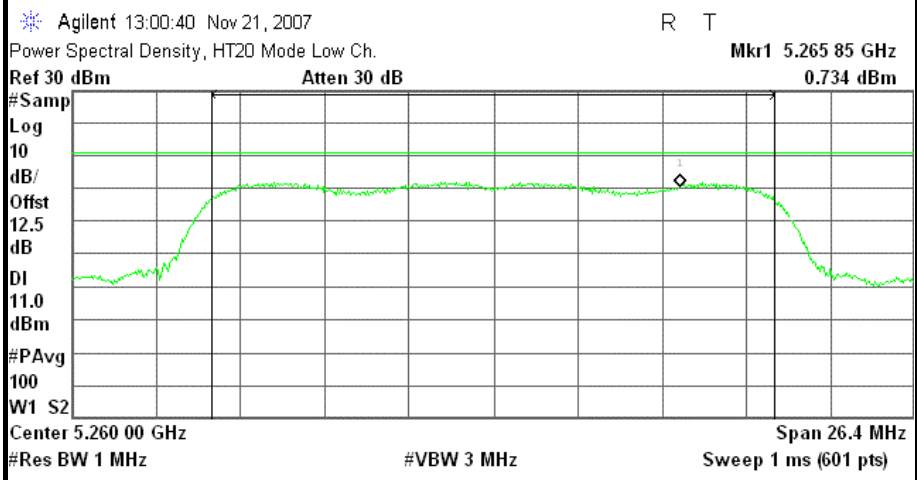
Channel Power
12.23 dBm / 17.6082 MHz

Power Spectral Density
-60.22 dBm/Hz

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



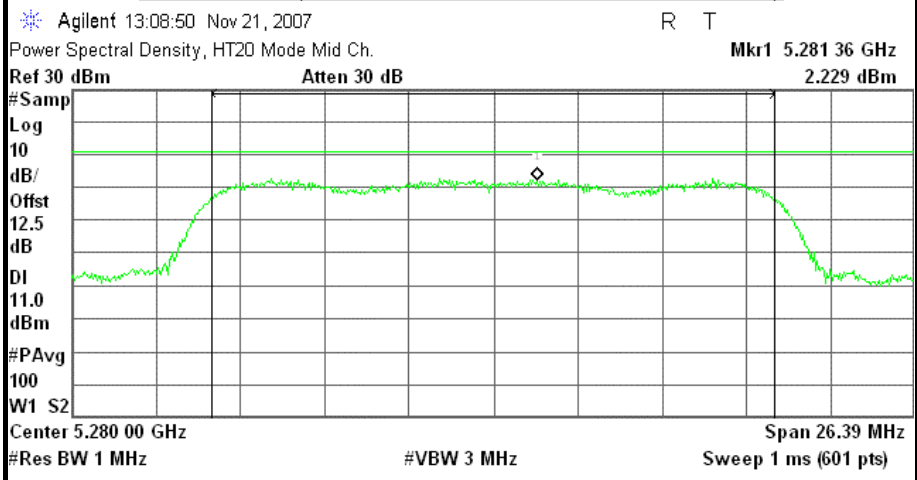
CH Low (IEEE 802.11n HT20 mode-Chain 1)



Channel Power
12.40 dBm / 17.5983 MHz

Power Spectral Density
-60.05 dBm/Hz

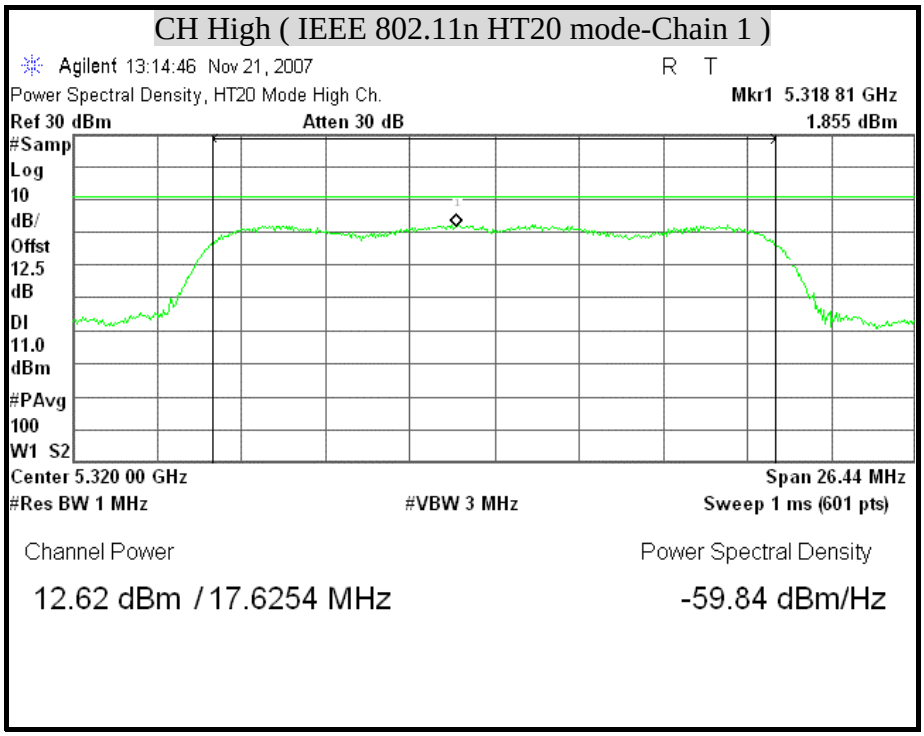
CH Middle (IEEE 802.11n HT20 mode-Chain 1)



Channel Power
12.74 dBm / 17.5952 MHz

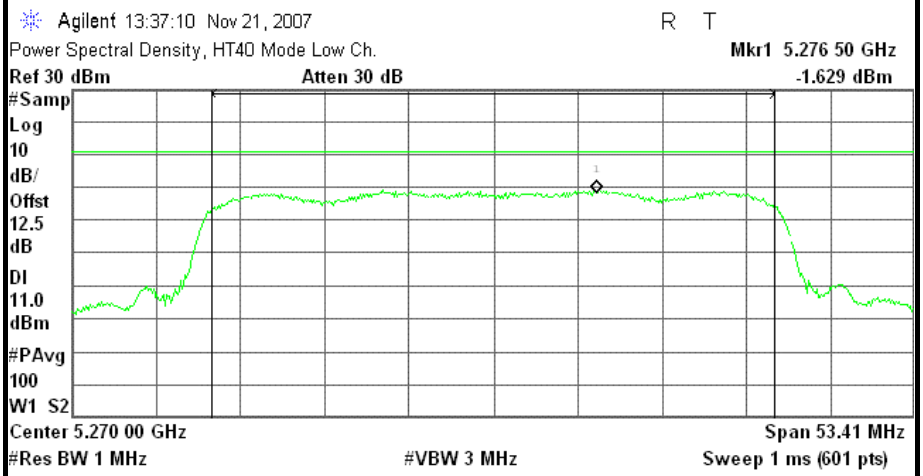
Power Spectral Density
-59.72 dBm/Hz

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



POWER SPECTRAL DENSITY (IEEE 802.11n HT40 mode / 5250MHz ~ 5350MHz)

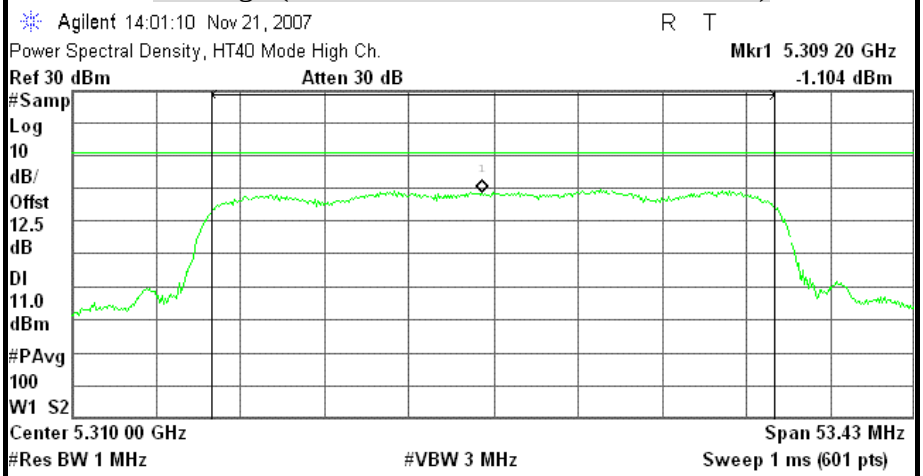
CH Low (IEEE 802.11n HT40 mode-Chain 0)



Channel Power: 12.62 dBm / 35.6036 MHz

Power Spectral Density: -62.89 dBm/Hz

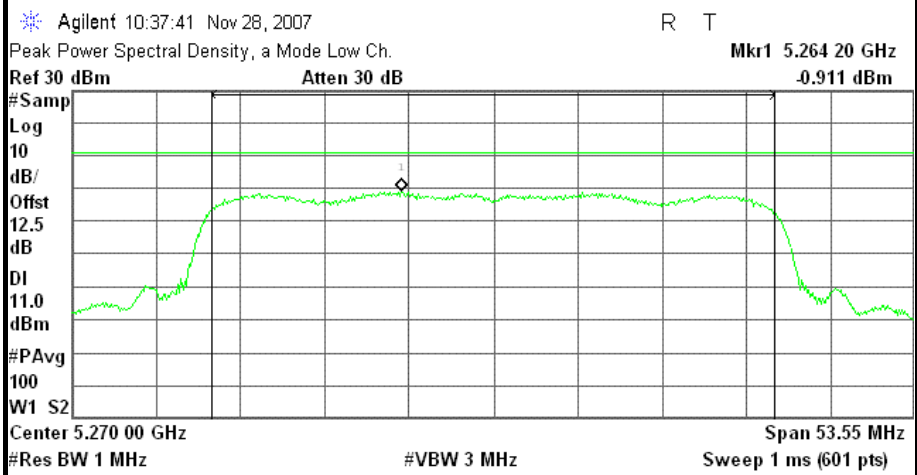
CH High (IEEE 802.11n HT40 mode-Chain 0)



Channel Power: 12.89 dBm / 35.6217 MHz

Power Spectral Density: -62.63 dBm/Hz

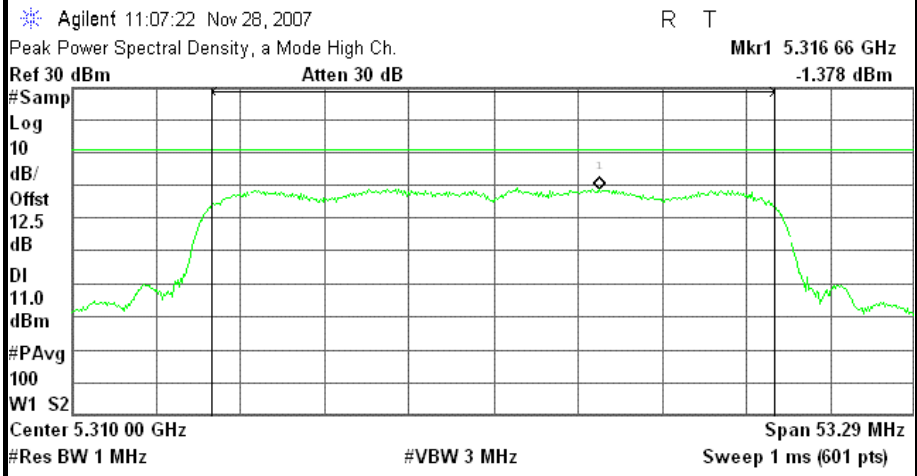
CH Low (IEEE 802.11n HT40 mode-Chain 1)



Channel Power
12.56 dBm /35.7021 MHz

Power Spectral Density
-62.97 dBm/Hz

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

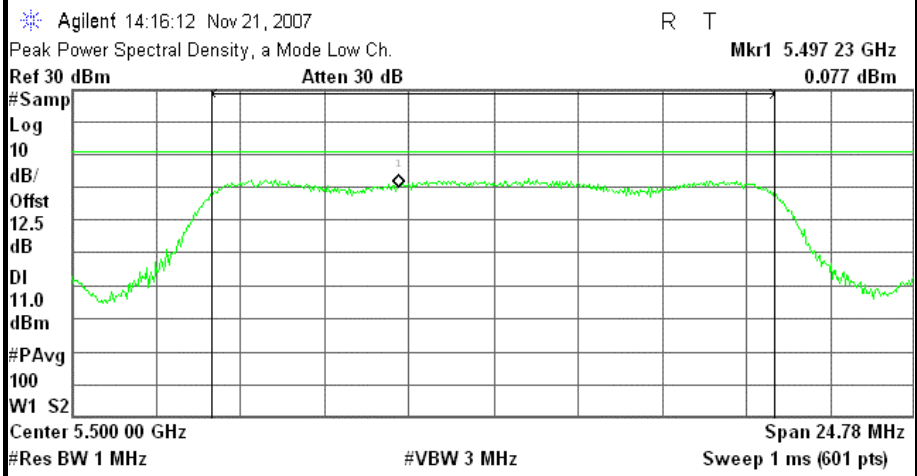


Channel Power
12.60 dBm /35.5296 MHz

Power Spectral Density
-62.91 dBm/Hz

POWER SPECTRAL DENSITY (IEEE 802.11a mode / 5470MHz ~ 5725MHz)

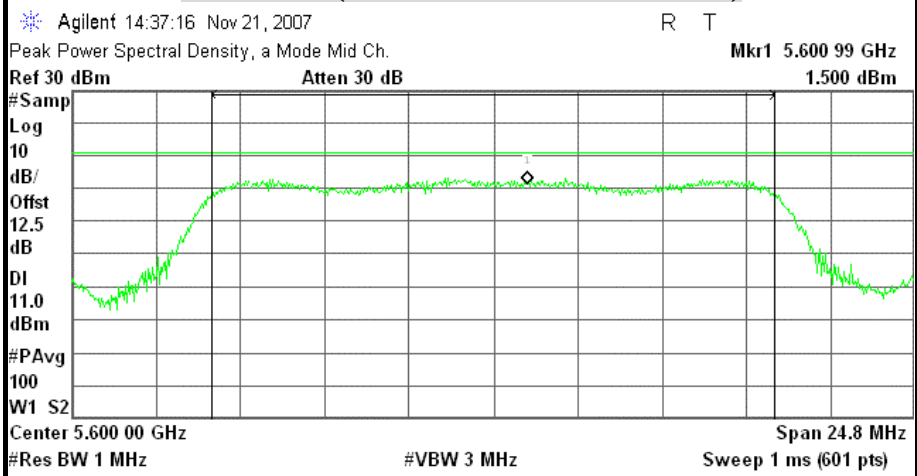
CH Low (IEEE 802.11a mode-Chain 0)



Channel Power
12.69 dBm / 16.5191 MHz

Power Spectral Density
-59.49 dBm/Hz

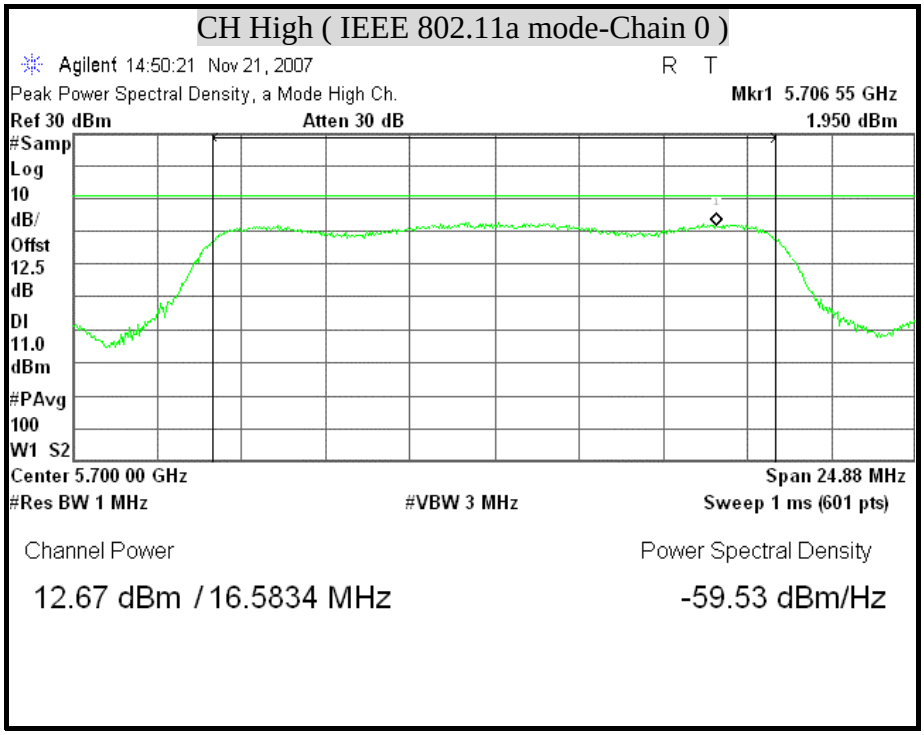
CH Middle (IEEE 802.11a mode-Chain 0)



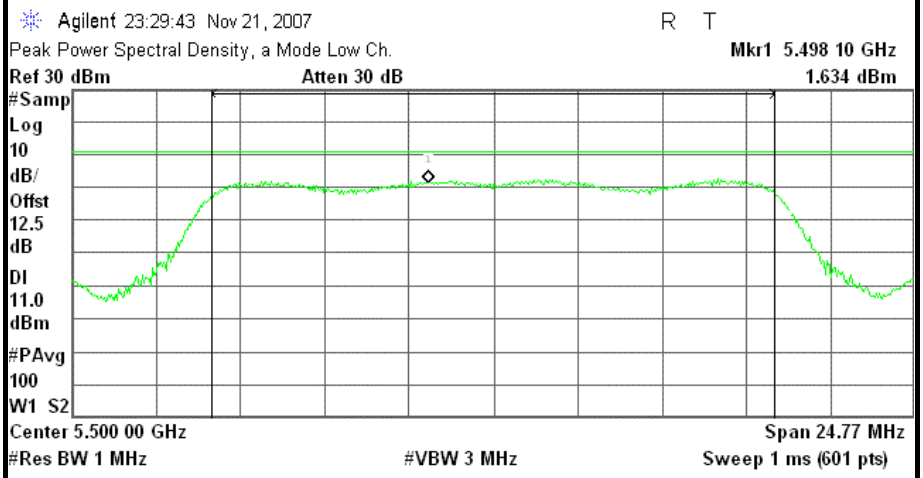
Channel Power
12.84 dBm / 16.5345 MHz

Power Spectral Density
-59.34 dBm/Hz

CH High (IEEE 802.11a mode-Chain 0)



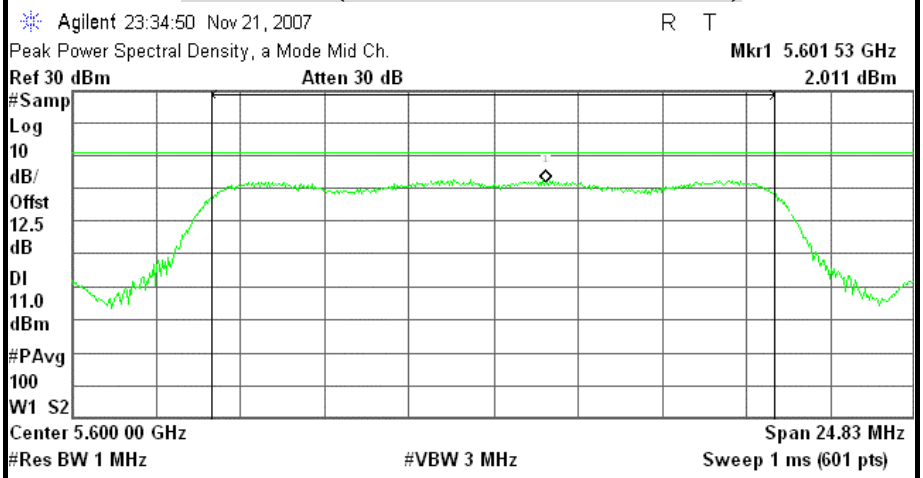
CH Low (IEEE 802.11a mode-Chain 1)



Channel Power
12.85 dBm / 16.5162 MHz

Power Spectral Density
-59.33 dBm/Hz

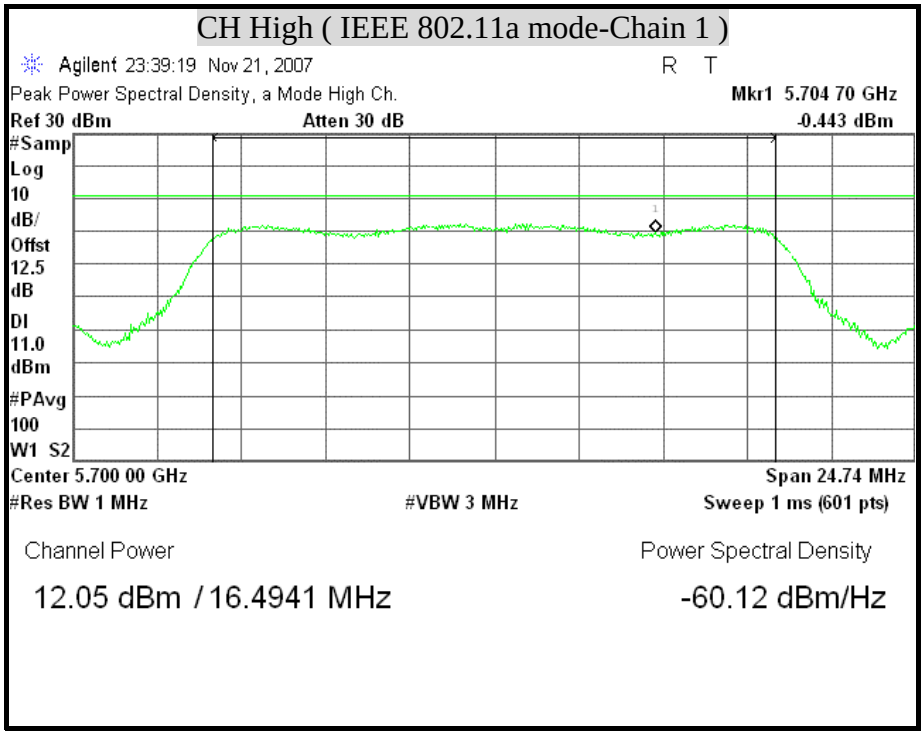
CH Middle (IEEE 802.11a mode-Chain 1)



Channel Power
12.84 dBm / 16.5531 MHz

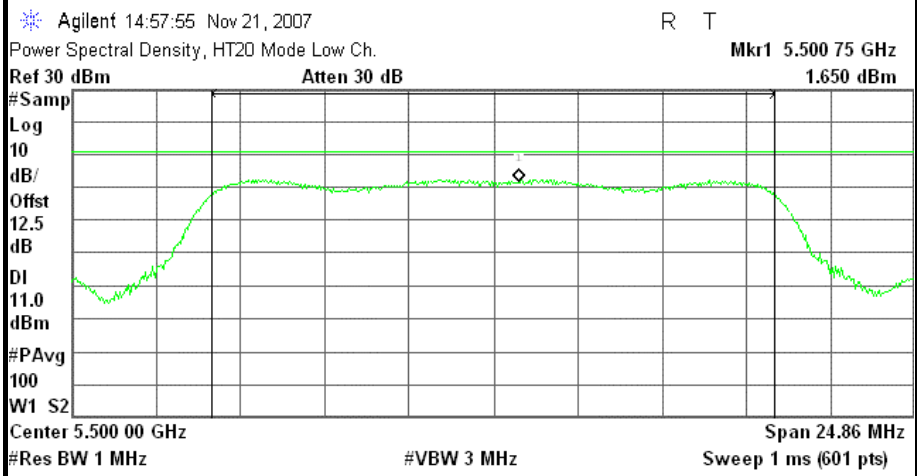
Power Spectral Density
-59.35 dBm/Hz

CH High (IEEE 802.11a mode-Chain 1)



POWER SPECTRAL DENSITY (IEEE 802.11n HT20 mode / 5470MHz ~ 5725MHz)

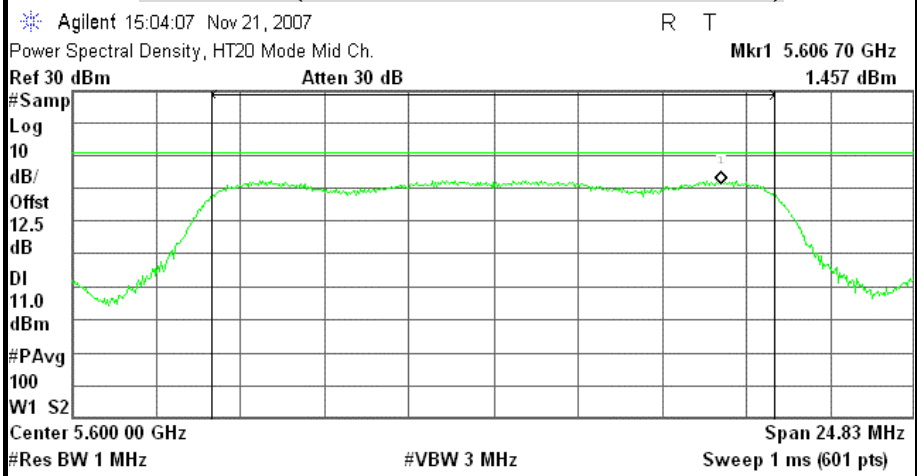
CH Low (IEEE 802.11n HT20 mode-Chain 0)



Channel Power: 12.52 dBm / 16.5744 MHz

Power Spectral Density: -59.68 dBm/Hz

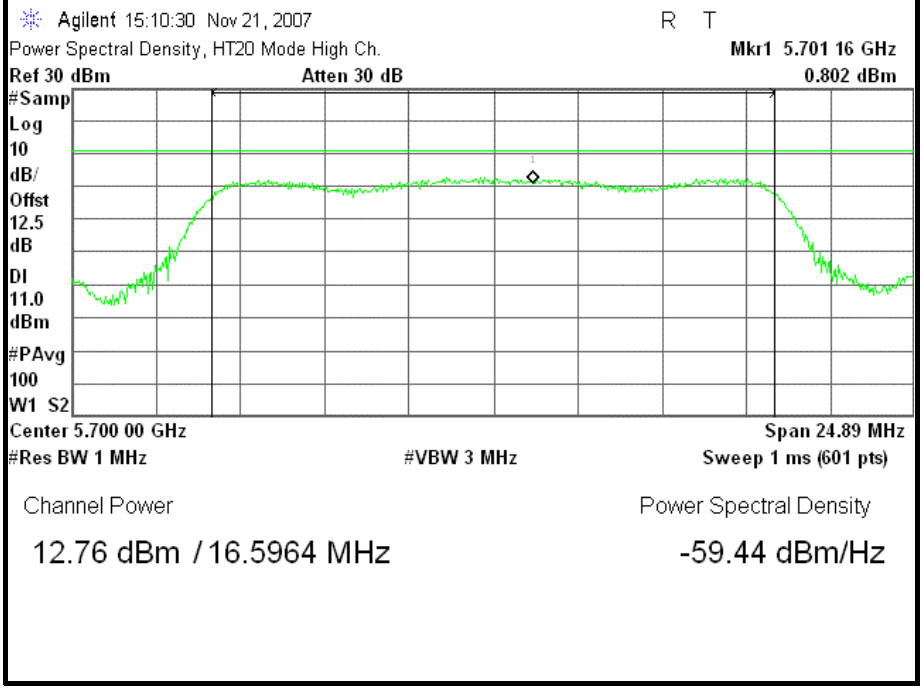
CH Middle (IEEE 802.11n HT20 mode-Chain 0)



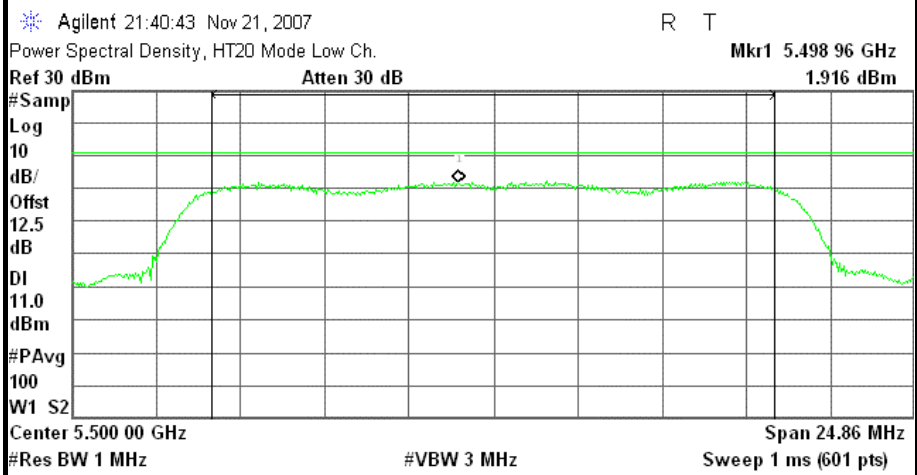
Channel Power: 12.68 dBm / 16.5510 MHz

Power Spectral Density: -59.51 dBm/Hz

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



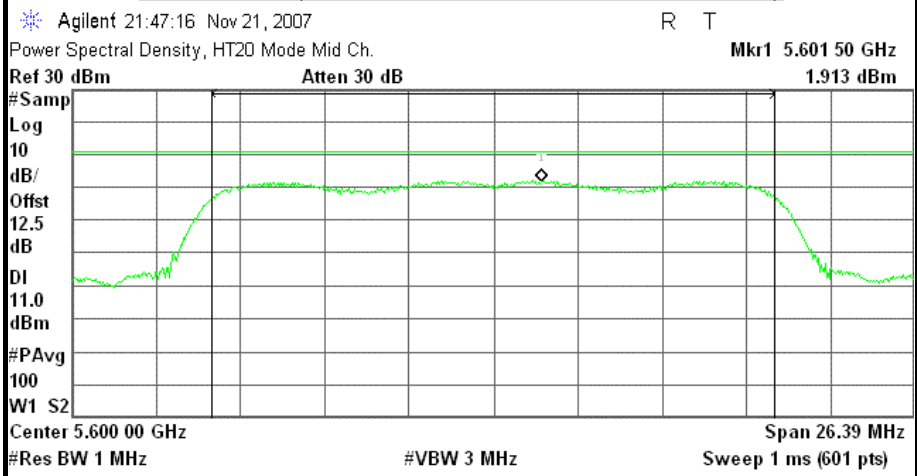
CH Low (IEEE 802.11n HT20 mode-Chain 1)



Channel Power
12.59 dBm / 16.5715 MHz

Power Spectral Density
-59.61 dBm/Hz

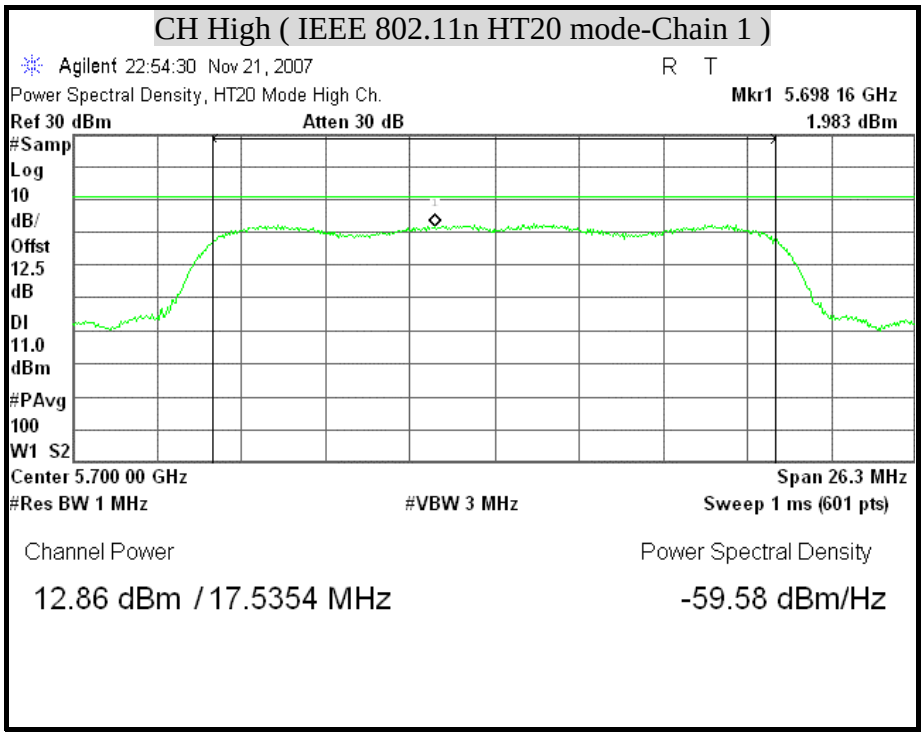
CH Middle (IEEE 802.11n HT20 mode-Chain 1)



Channel Power
12.81 dBm / 17.5917 MHz

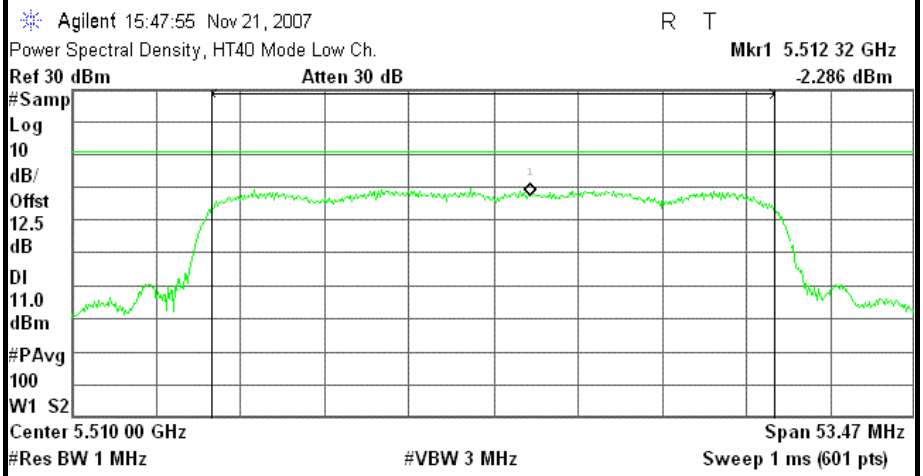
Power Spectral Density
-59.64 dBm/Hz

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



POWER SPECTRAL DENSITY (IEEE 802.11n HT40 mode / 5470MHz ~ 5725MHz)

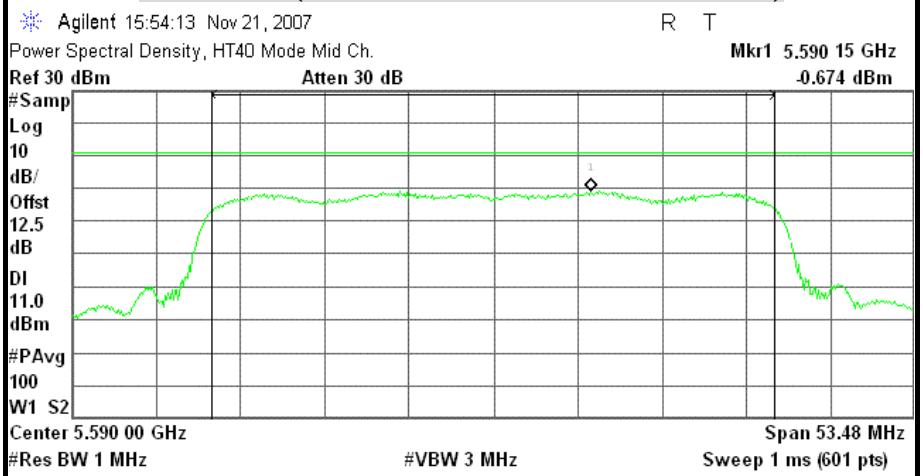
CH Low (IEEE 802.11n HT40 mode-Chain 0)



Channel Power
12.43 dBm / 35.6496 MHz

Power Spectral Density
-63.09 dBm/Hz

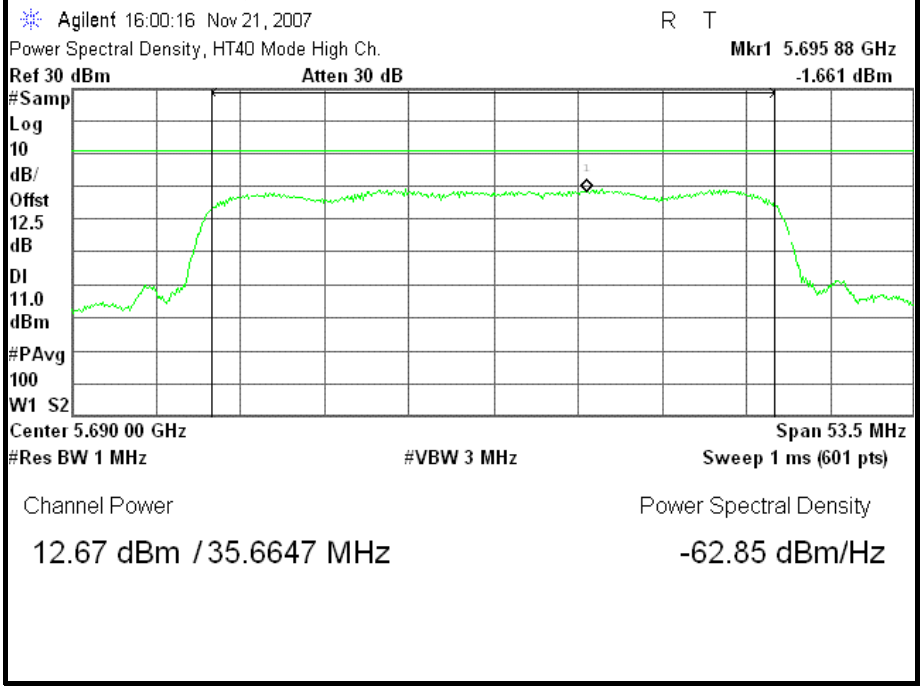
CH Middle (IEEE 802.11n HT40 mode-Chain 0)



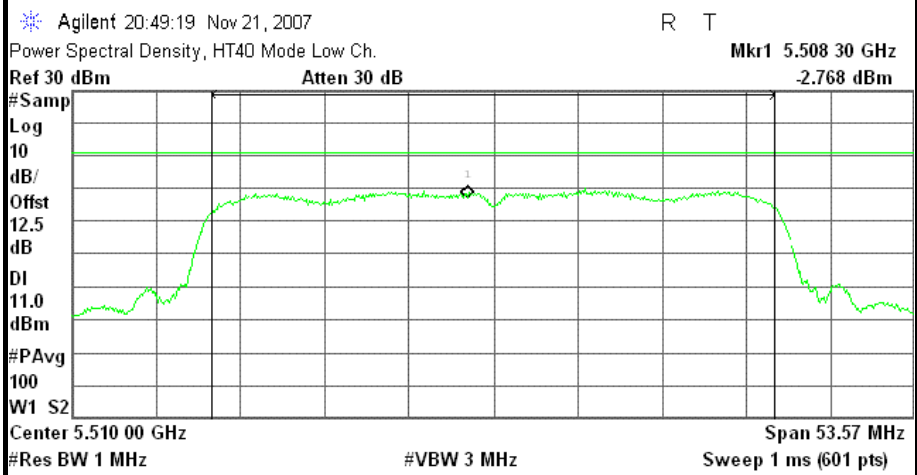
Channel Power
12.63 dBm / 35.6550 MHz

Power Spectral Density
-62.89 dBm/Hz

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



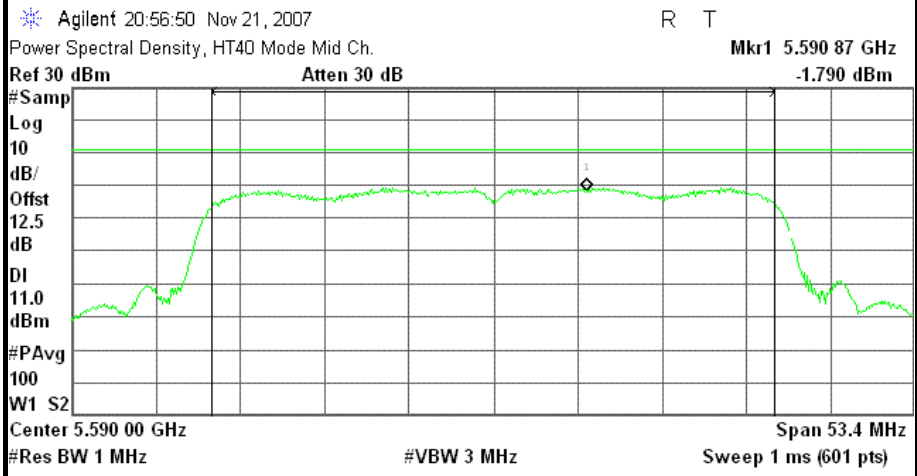
CH Low (IEEE 802.11n HT40 mode-Chain 1)



Channel Power
12.72 dBm /35.7153 MHz

Power Spectral Density
-62.80 dBm/Hz

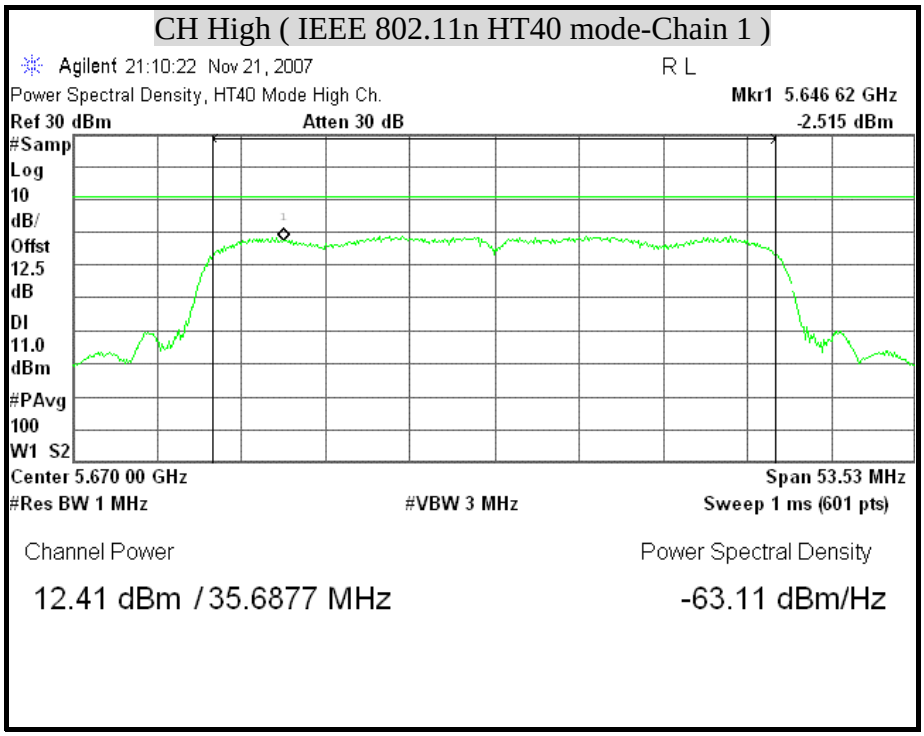
CH Middle (IEEE 802.11n HT40 mode-Chain 1)



Channel Power
12.73 dBm /35.5972 MHz

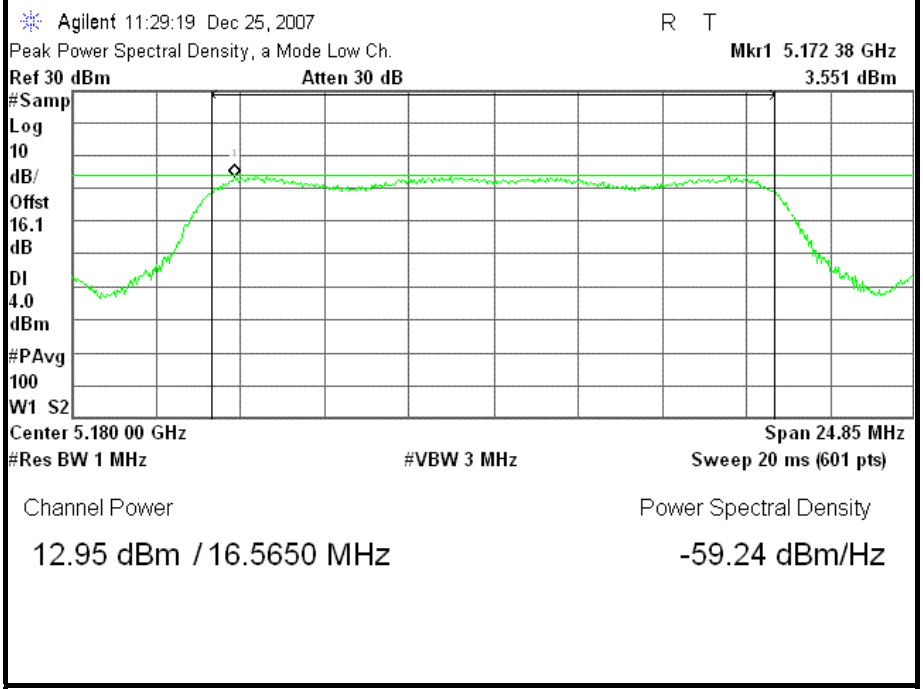
Power Spectral Density
-62.78 dBm/Hz

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

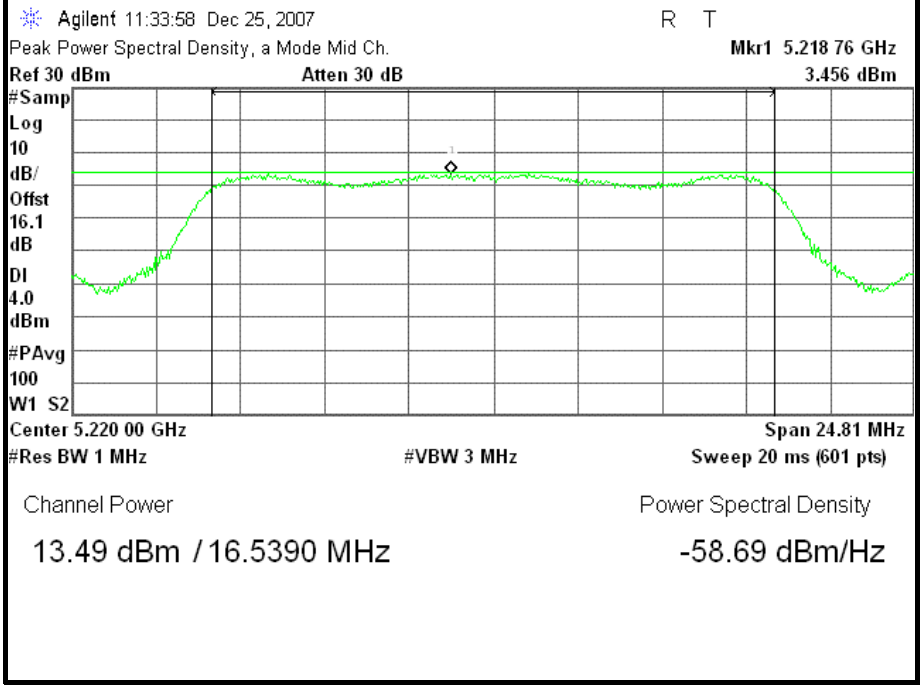


POWER SPECTRAL DENSITY (IEEE 802.11a Combine mode / 5150MHz ~ 5250MHz)

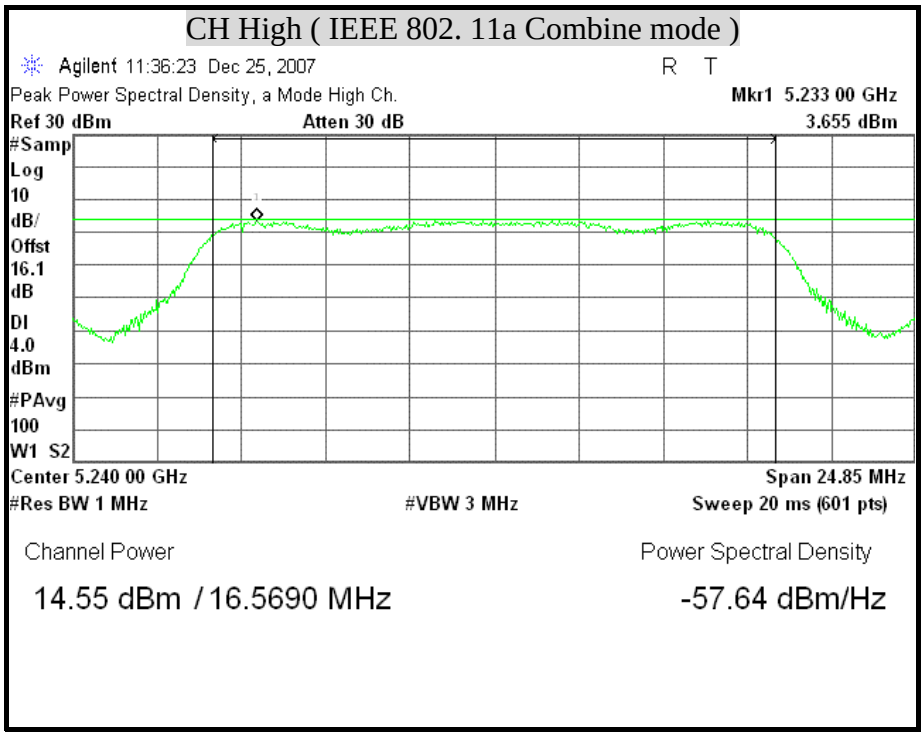
CH Low (IEEE 802.11a Combine mode)



CH Middle (IEEE 802. 11a Combine mode)

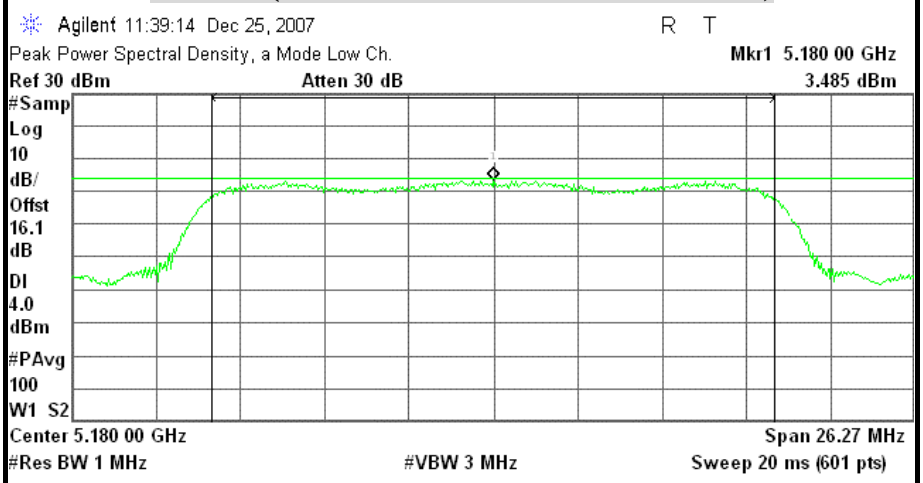


CH High (IEEE 802. 11a Combine mode)



POWER SPECTRAL DENSITY (IEEE 802.11n HT20 Combine mode / 5150MHz ~ 5250MHz)

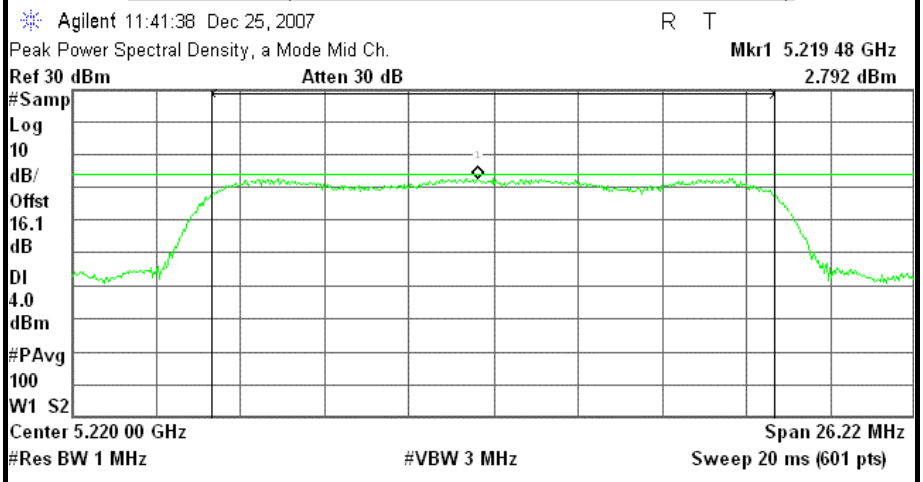
CH Low (IEEE 802.11n HT20 Combine mode)



Channel Power
14.82 dBm / 17.5100 MHz

Power Spectral Density
-57.61 dBm/Hz

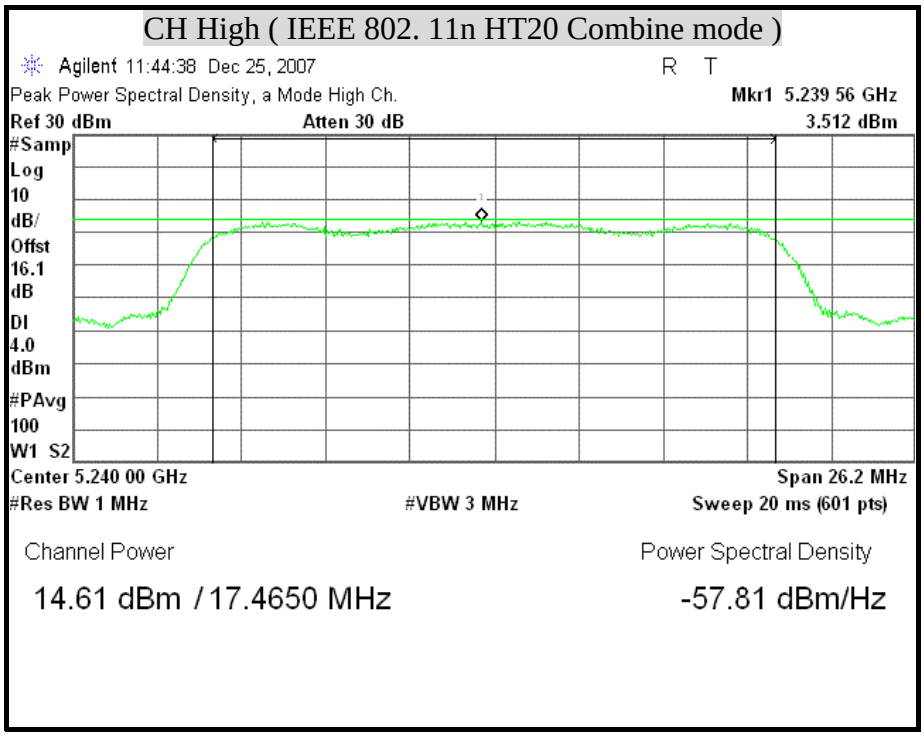
CH Middle (IEEE 802. 11n HT20 Combine mode)



Channel Power
14.42 dBm / 17.4780 MHz

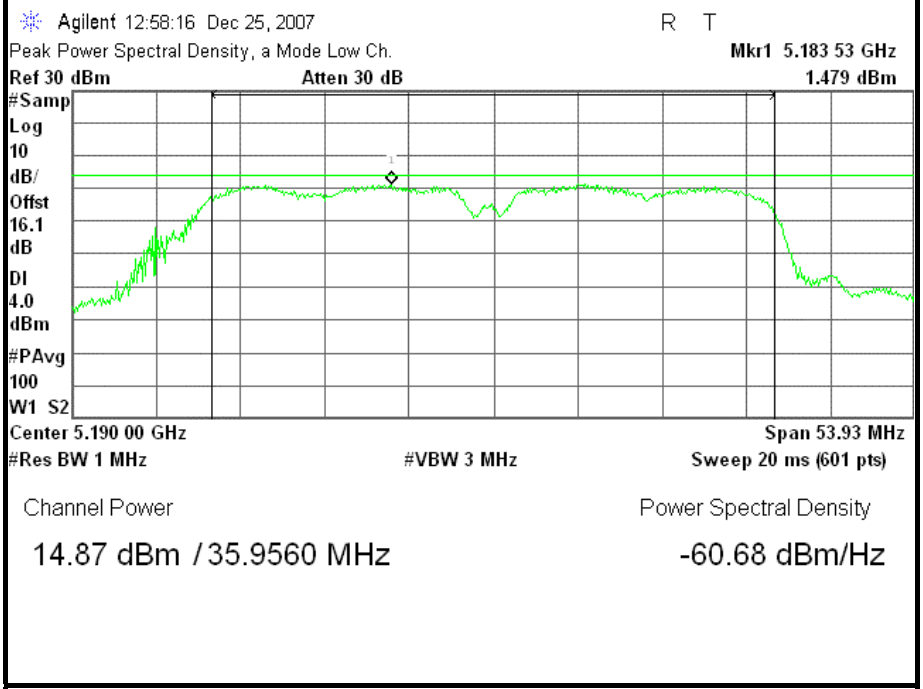
Power Spectral Density
-58.00 dBm/Hz

CH High (IEEE 802. 11n HT20 Combine mode)



POWER SPECTRAL DENSITY (IEEE 802.11n HT40 Combine mode / 5150MHz ~ 5250MHz)

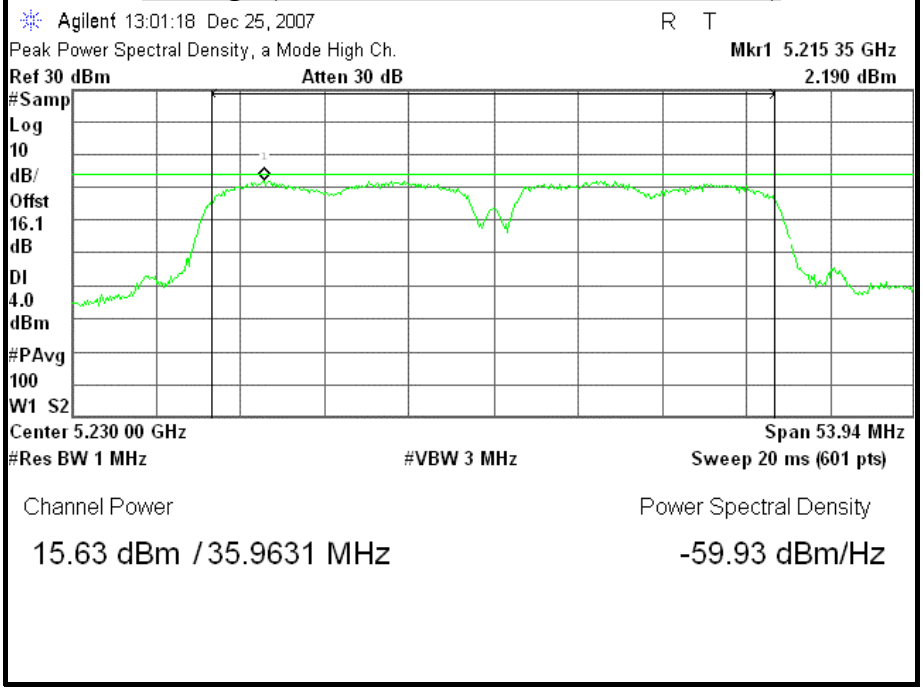
CH Low (IEEE 802.11n HT40 Combine mode)



Channel Power: 14.87 dBm / 35.9560 MHz

Power Spectral Density: -60.68 dBm/Hz

CH High (IEEE 802. 11n HT40 Combine mode)

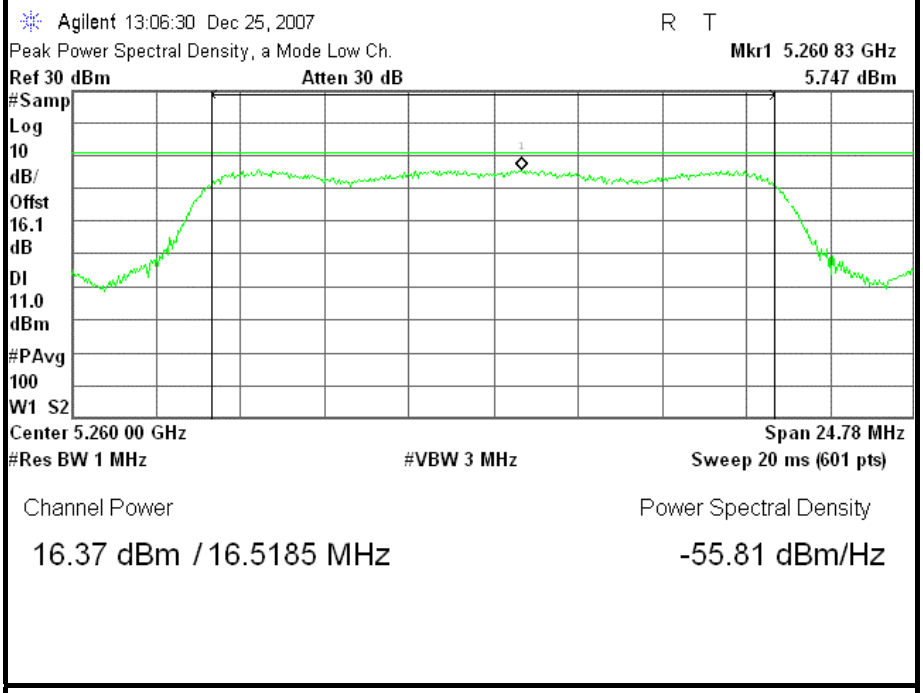


Channel Power: 15.63 dBm / 35.9631 MHz

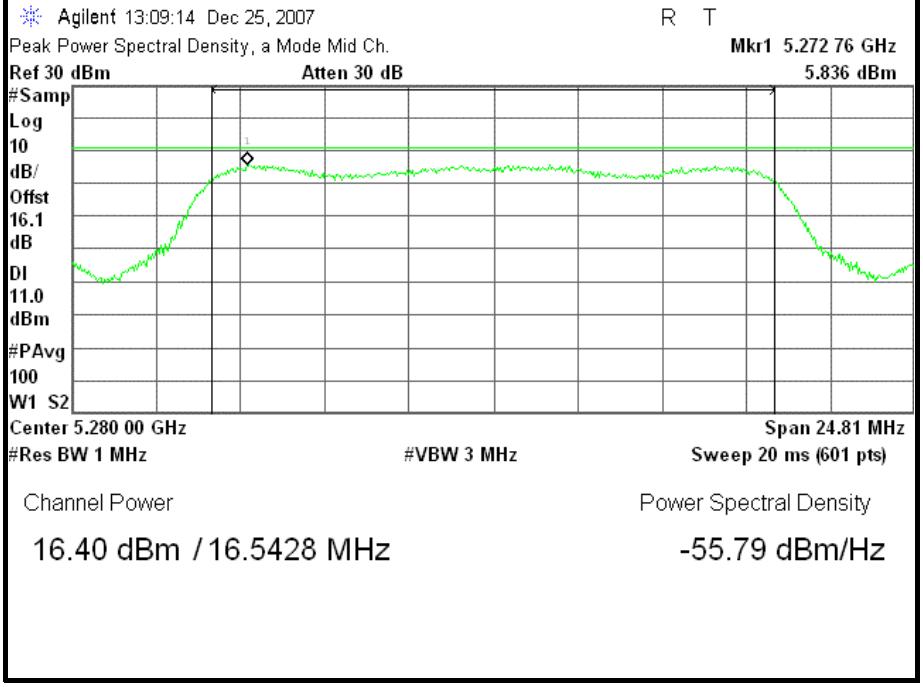
Power Spectral Density: -59.93 dBm/Hz

POWER SPECTRAL DENSITY (IEEE 802.11a Combine mode / 5250MHz ~ 5350MHz)

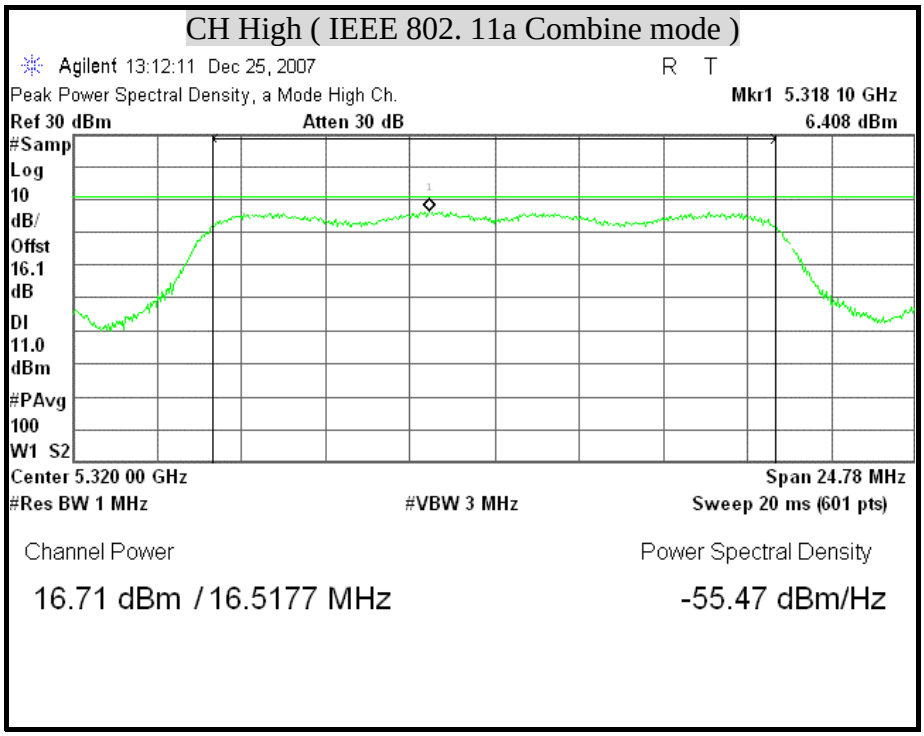
CH Low (IEEE 802.11a Combine mode)



CH Middle (IEEE 802. 11a Combine mode)

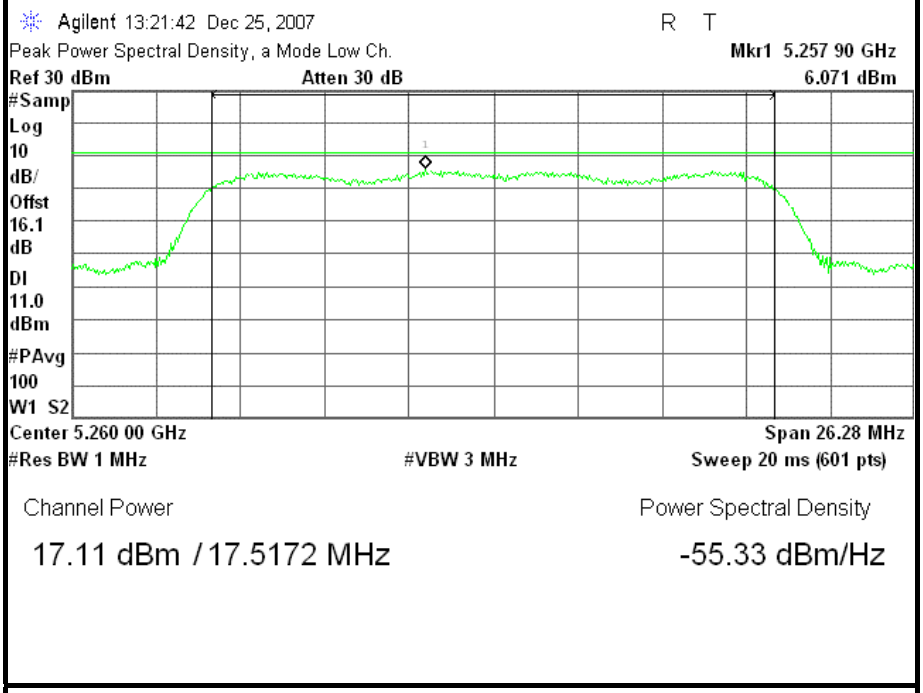


CH High (IEEE 802. 11a Combine mode)



POWER SPECTRAL DENSITY (IEEE 802.11n HT20 Combine mode / 5250MHz ~ 5350MHz)

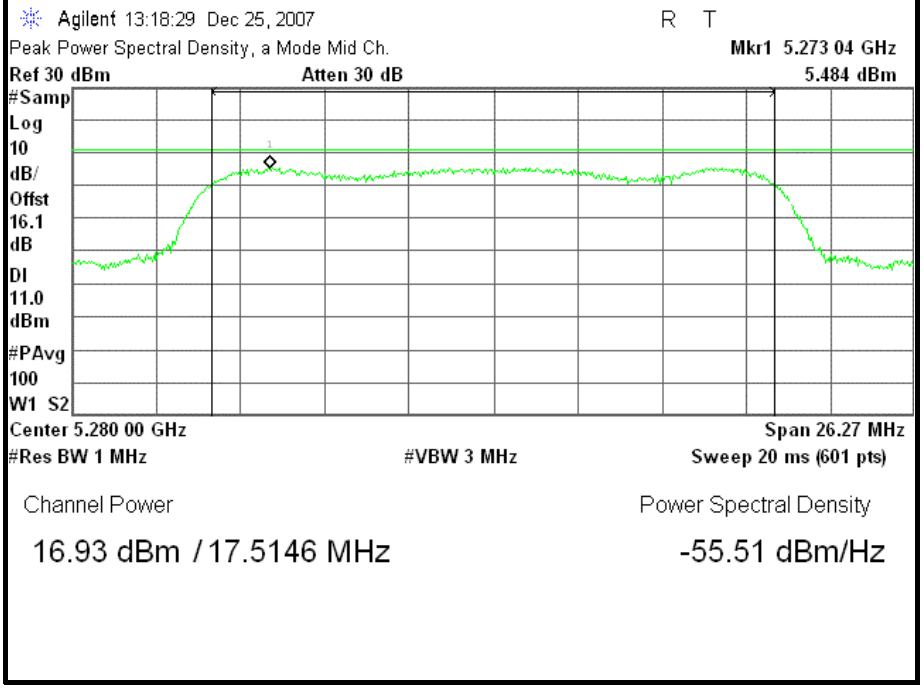
CH Low (IEEE 802.11n HT20 Combine mode)



Channel Power
17.11 dBm / 17.5172 MHz

Power Spectral Density
-55.33 dBm/Hz

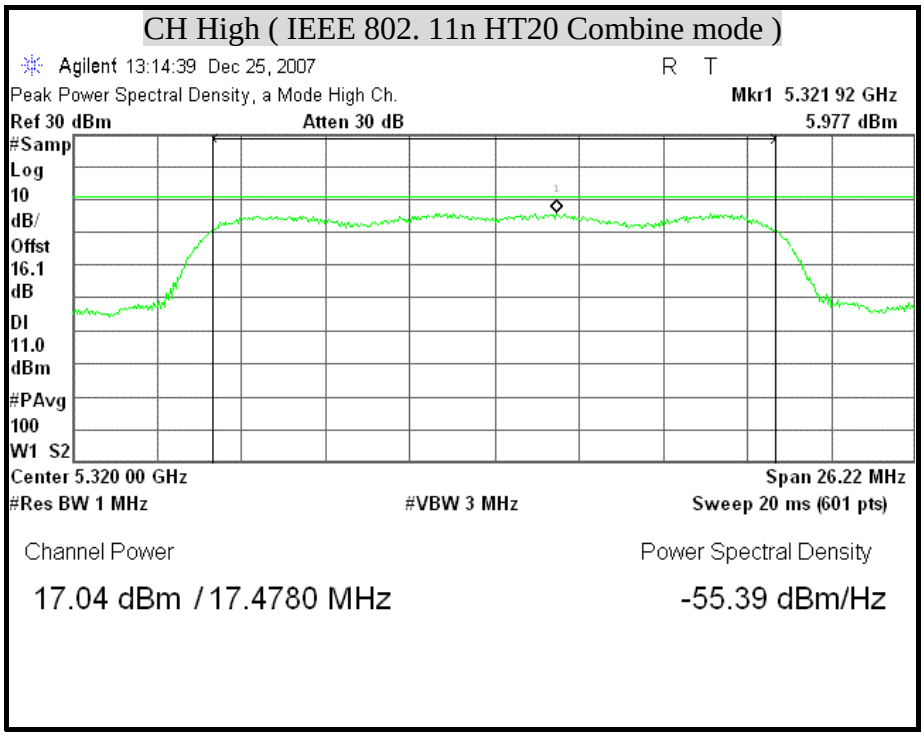
CH Middle (IEEE 802. 11n HT20 Combine mode)



Channel Power
16.93 dBm / 17.5146 MHz

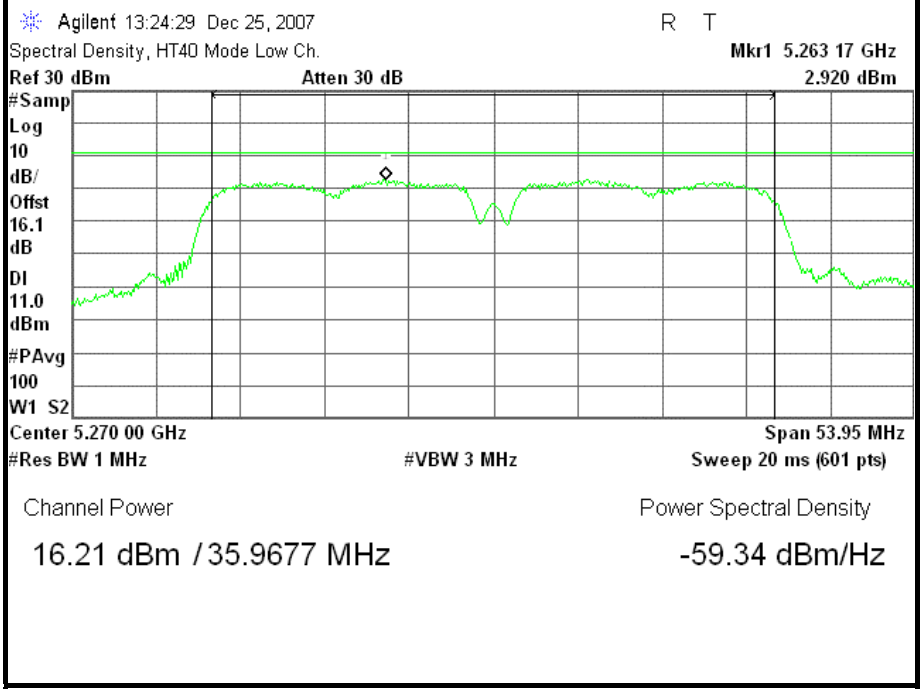
Power Spectral Density
-55.51 dBm/Hz

CH High (IEEE 802. 11n HT20 Combine mode)

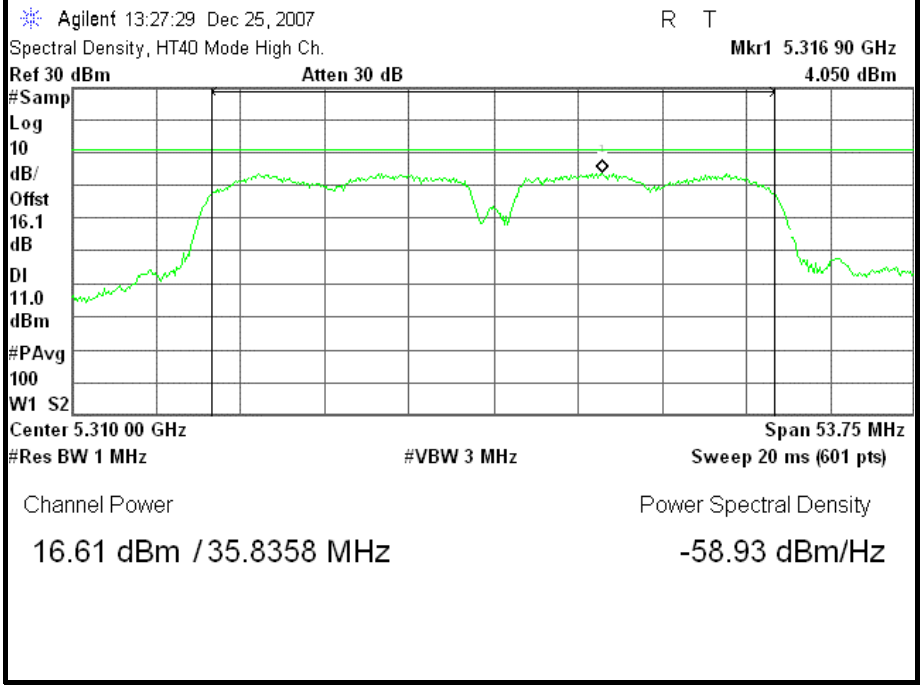


POWER SPECTRAL DENSITY (IEEE 802.11n HT40 Combine mode / 5250MHz ~ 5350MHz)

CH Low (IEEE 802.11n HT40 Combine mode)

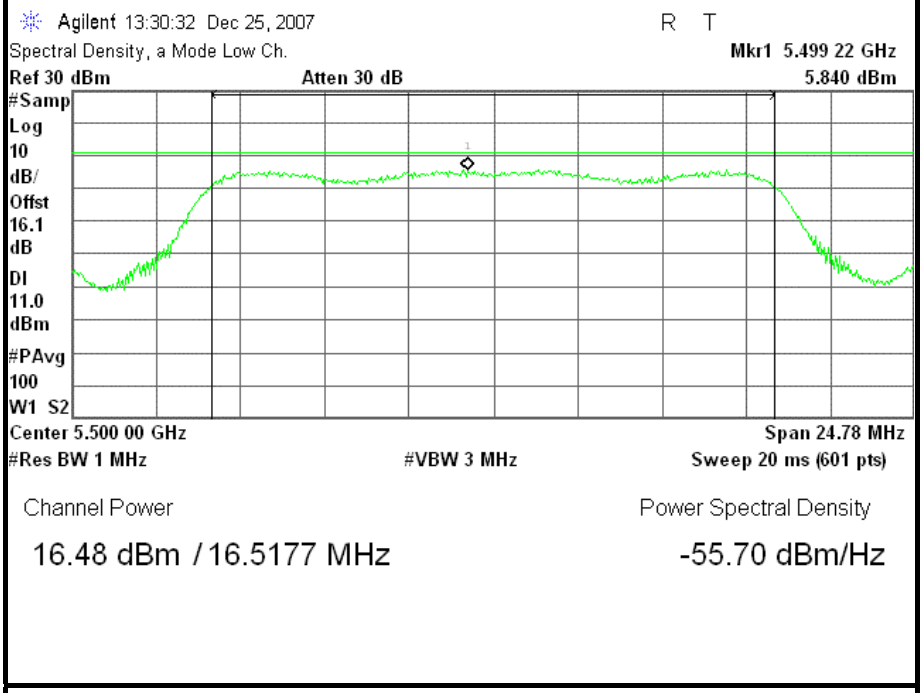


CH High (IEEE 802. 11n HT40 Combine mode)



POWER SPECTRAL DENSITY (IEEE 802.11a Combine mode / 5470MHz ~ 5725MHz)

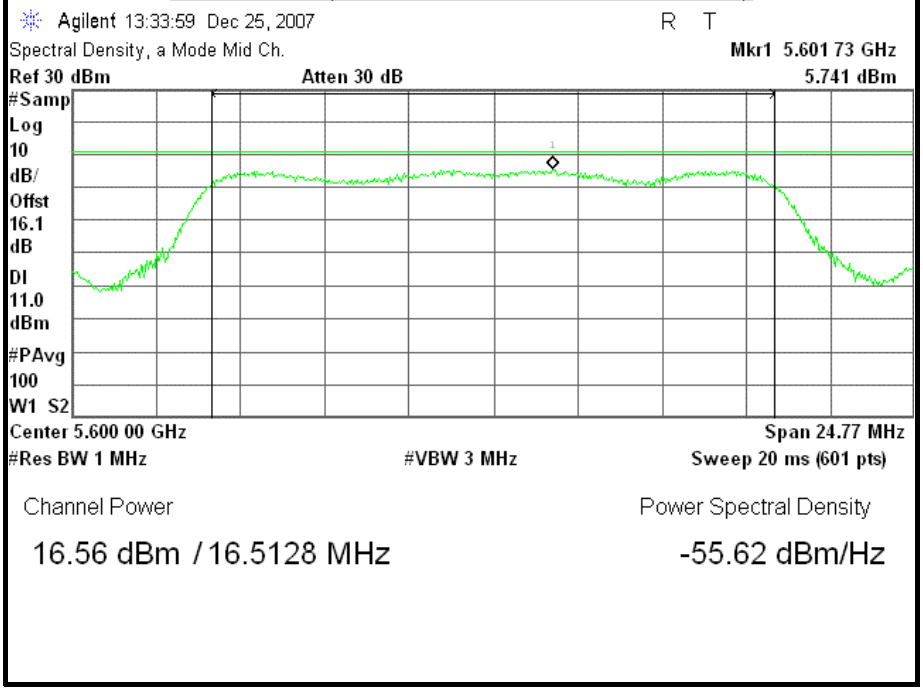
CH Low (IEEE 802.11a Combine mode)



Channel Power: 16.48 dBm / 16.5177 MHz

Power Spectral Density: -55.70 dBm/Hz

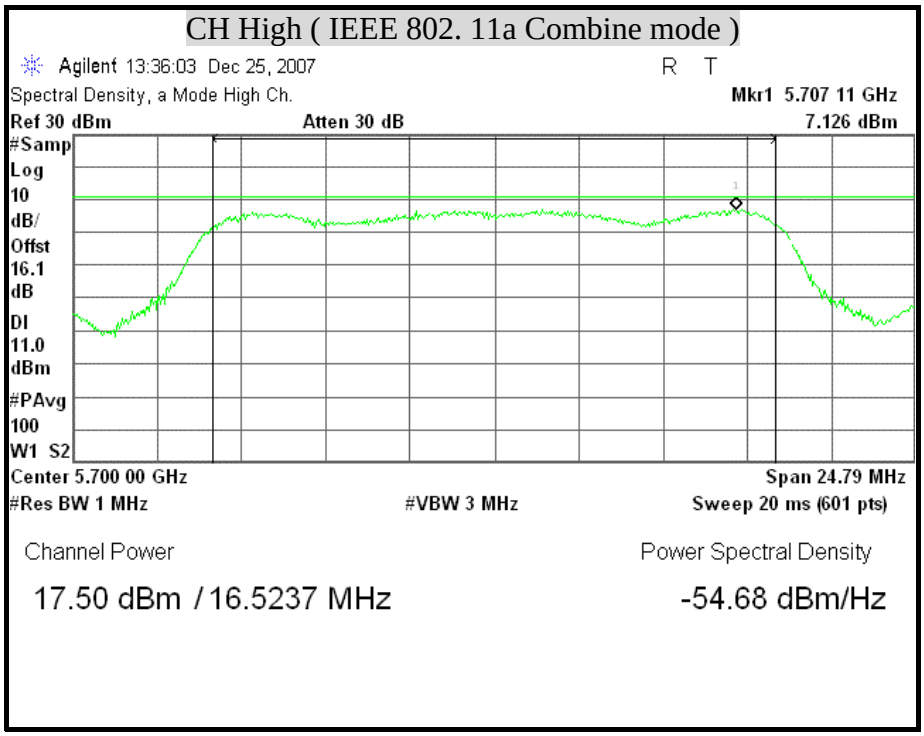
CH Middle (IEEE 802. 11a Combine mode)



Channel Power: 16.56 dBm / 16.5128 MHz

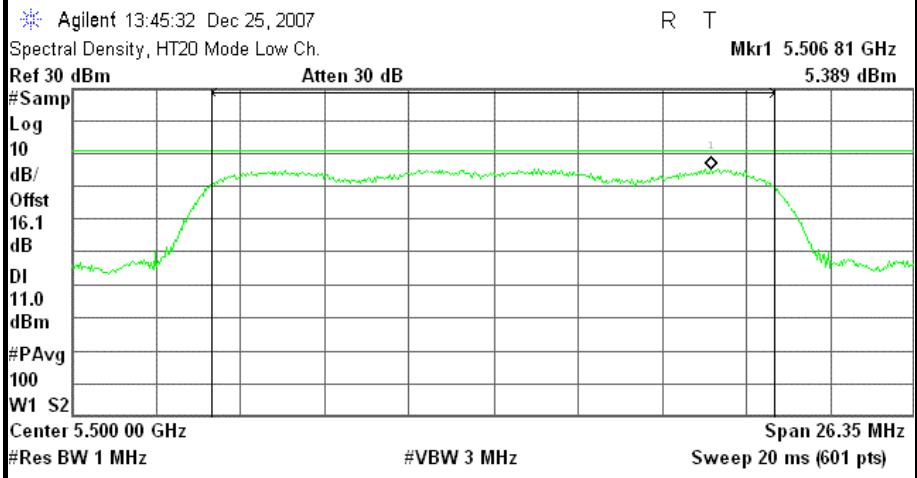
Power Spectral Density: -55.62 dBm/Hz

CH High (IEEE 802. 11a Combine mode)



POWER SPECTRAL DENSITY (IEEE 802.11n HT20 Combine mode / 5470MHz ~ 5725MHz)

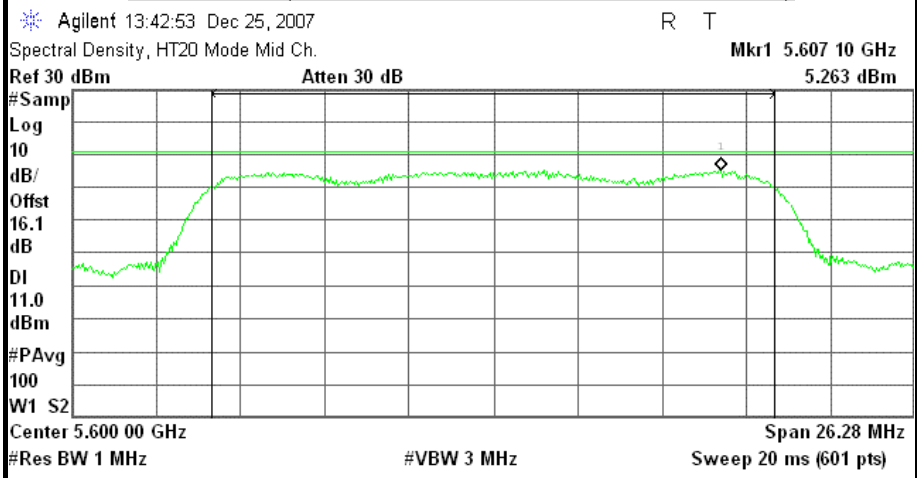
CH Low (IEEE 802.11n HT20 Combine mode)



Channel Power
16.52 dBm / 17.5648 MHz

Power Spectral Density
-55.92 dBm/Hz

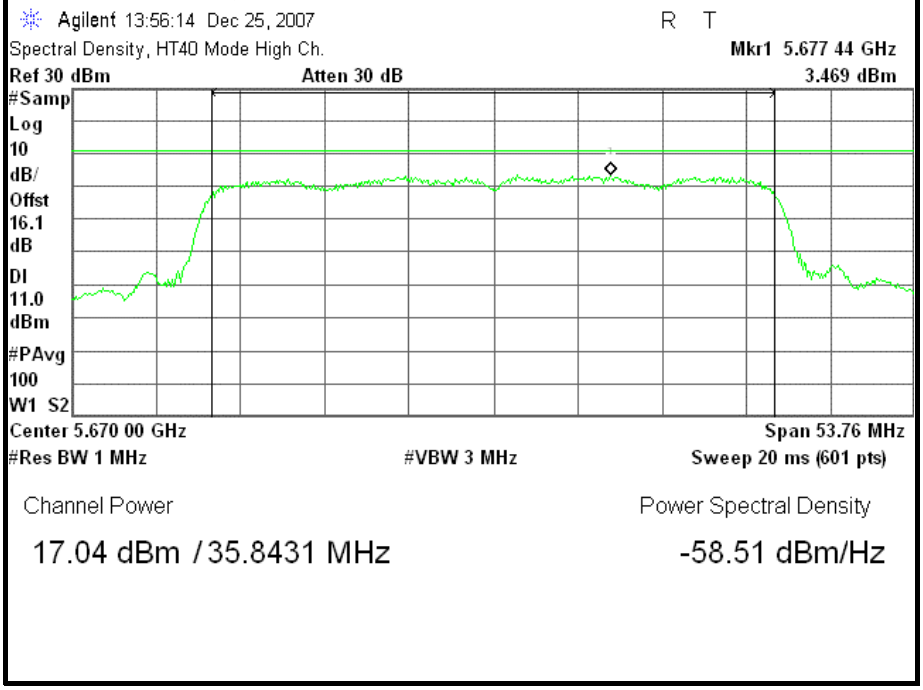
CH Middle (IEEE 802. 11n HT20 Combine mode)



Channel Power
16.24 dBm / 17.5232 MHz

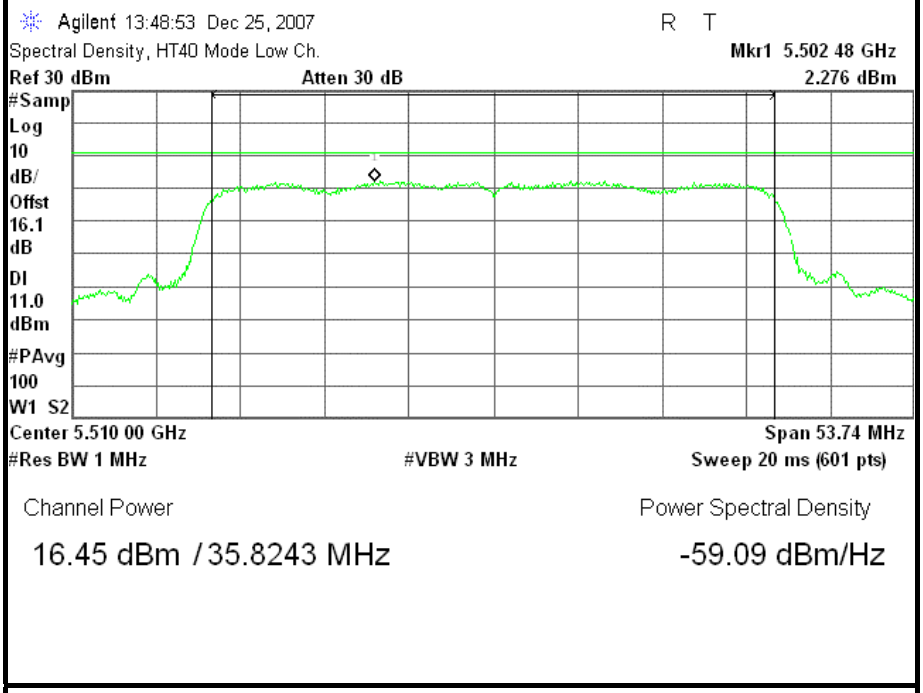
Power Spectral Density
-56.20 dBm/Hz

CH High (IEEE 802. 11n HT20 Combine mode)

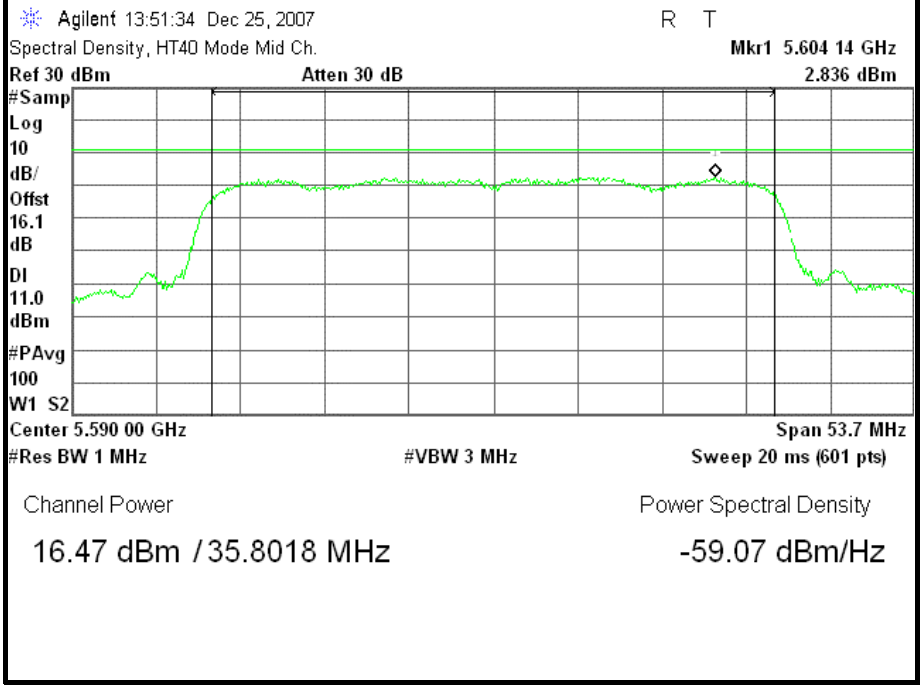


POWER SPECTRAL DENSITY (IEEE 802.11n HT40 Combine mode / 5470MHz ~ 5725MHz)

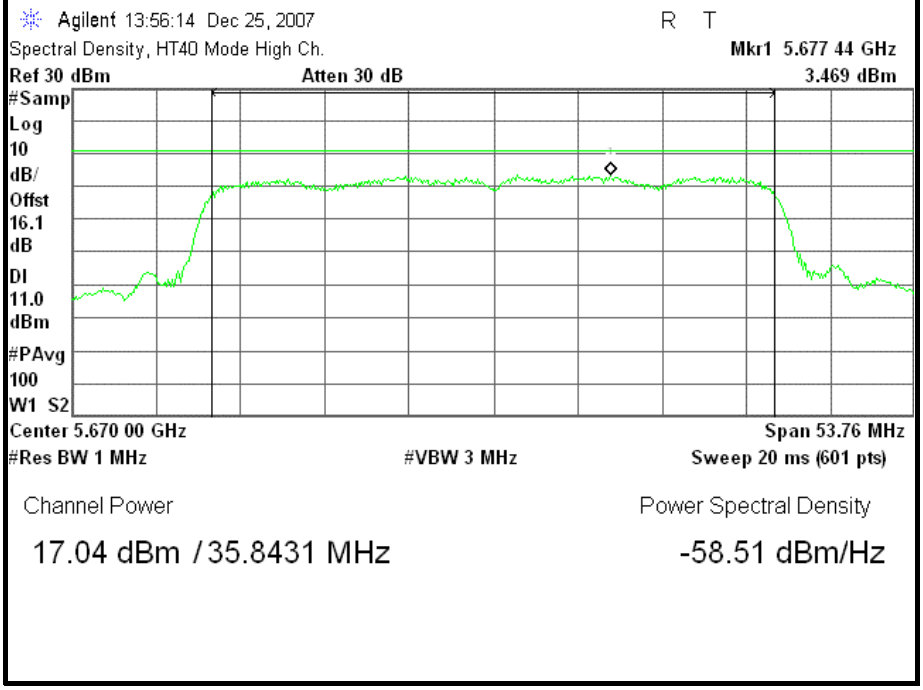
CH Low (IEEE 802.11n HT40 Combine mode)



CH Middle (IEEE 802. 11n HT40 Combine mode)



CH High (IEEE 802. 11n HT40 Combine mode)



8.5 PEAK EXCURSION

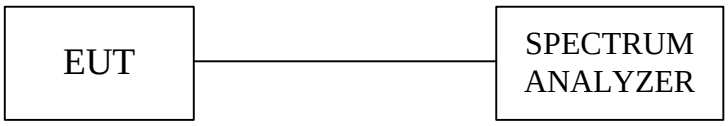
LIMIT

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

TEST EQUIPMENTS

Description & Manufacturer	Model No.	Serial No.	Date of Calibration
ROHDE & SCHWARZ SPECTRUM ANALYZER	FSEK30	835253/002	October 25, 2007
AGILENT SPECTRUM ANALYZER	E4446A	MY433602.52	June 06, 2007

TEST SETUP



TEST PROCEDURE

The test is performed in accordance with <FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices> – Part 15, Subpart E, August 2002.

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to spectrum.
3. Trace A, Set RBW =1MHz, VBW ≧ 3MHz, with peak detector and Max. hold, Span > 26dB Bandwidth (Base Mode).
4. Delta Mark trace A Maximum frequency and trace B same frequency.
5. Repeat the above procedure until measurements for all frequencies were complete.

TEST RESULTS

No non-compliance noted

IEEE 802.11a mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	Peak Excursion (dBm)		Maxmum Limit (dBm)	Margin (dB)		Pass / Fail
		Chain 0	Chain 1		Chain 0	Chain 1	
Low	5180	8.59	9.98	13	-4.41	-3.02	PASS
Middle	5220	9.37	7.42	13	-3.63	-5.58	PASS
High	5240	8.60	10.77	13	-4.40	-2.23	PASS

IEEE 802.11n HT20 mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	Peak Excursion (dBm)		Maxmum Limit (dBm)	Margin (dB)		Pass / Fail
		Chain 0	Chain 1		Chain 0	Chain 1	
Low	5180	8.53	9.75	13	-4.47	-3.25	PASS
Middle	5220	11.46	11.71	13	-1.54	-1.29	PASS
High	5240	9.58	10.32	13	-3.42	-2.68	PASS

IEEE 802.11n HT40 mode (5150MHz ~ 5250MHz)

Channel	Channel Frequency (MHz)	Peak Excursion (dBm)		Maxmum Limit (dBm)	Margin (dB)		Pass / Fail
		Chain 0	Chain 1		Chain 0	Chain 1	
Low	5190	9.90	9.99	13	-3.10	-3.01	PASS
High	5230	8.38	11.74	13	-4.62	-1.26	PASS

IEEE 802.11a mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	Peak Excursion (dBm)		Maxmum Limit (dBm)	Margin (dB)		Pass / Fail
		Chain 0	Chain 1		Chain 0	Chain 1	
Low	5260	9.90	10.22	13	-3.10	-2.78	PASS
Middle	5280	9.47	10.47	13	-3.53	-2.53	PASS
High	5320	9.37	9.99	13	-3.63	-3.01	PASS

IEEE 802.11n HT20 mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	Peak Excursion (dBm)		Maxmum Limit (dBm)	Margin (dB)		Pass / Fail
		Chain 0	Chain 1		Chain 0	Chain 1	
Low	5260	8.68	10.56	13	-4.32	-2.44	PASS
Middle	5280	8.77	9.68	13	-4.23	-3.32	PASS
High	5320	9.54	10.14	13	-3.46	-2.86	PASS

IEEE 802.11n HT40 mode (5250MHz ~ 5350MHz)

Channel	Channel Frequency (MHz)	Peak Excursion (dBm)		Maxmum Limit (dBm)	Margin (dB)		Pass / Fail
		Chain 0	Chain 1		Chain 0	Chain 1	
Low	5270	10.36	9.87	13	-2.64	-3.13	PASS
High	5310	9.34	10.76	13	-3.66	-2.24	PASS

IEEE 802.11a mode (5470MHz ~ 5725MHz)

Channel	Channel Frequency (MHz)	Peak Excursion (dBm)		Maxmum Limit (dBm)	Margin (dB)		Pass / Fail
		Chain 0	Chain 1		Chain 0	Chain 1	
Low	5500	10.06	9.58	13	-2.94	-3.42	PASS
Middle	5600	8.97	9.50	13	-4.03	-3.50	PASS
High	5700	9.09	9.39	13	-3.91	-3.61	PASS

IEEE 802.11n HT20 mode (5470MHz ~ 5725MHz)

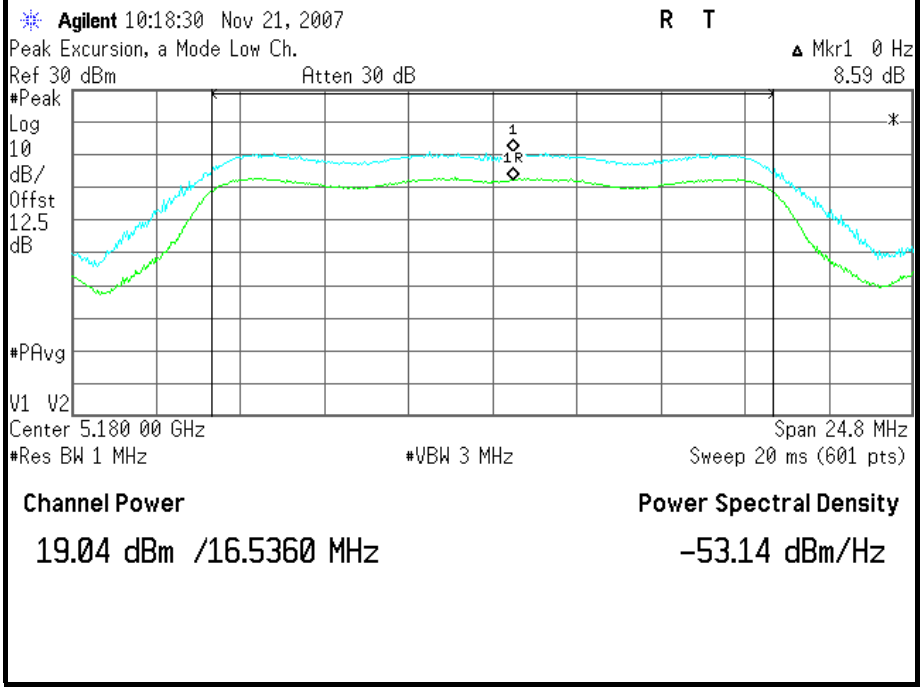
Channel	Channel Frequency (MHz)	Peak Excursion (dBm)		Maxmum Limit (dBm)	Margin (dB)		Pass / Fail
		Chain 0	Chain 1		Chain 0	Chain 1	
Low	5500	9.39	9.89	13	-3.61	-3.11	PASS
Middle	5600	10.51	10.08	13	-2.49	-2.92	PASS
High	5700	8.77	10.11	13	-4.23	-2.89	PASS

IEEE 802.11n HT40 mode (5470MHz ~ 5725MHz)

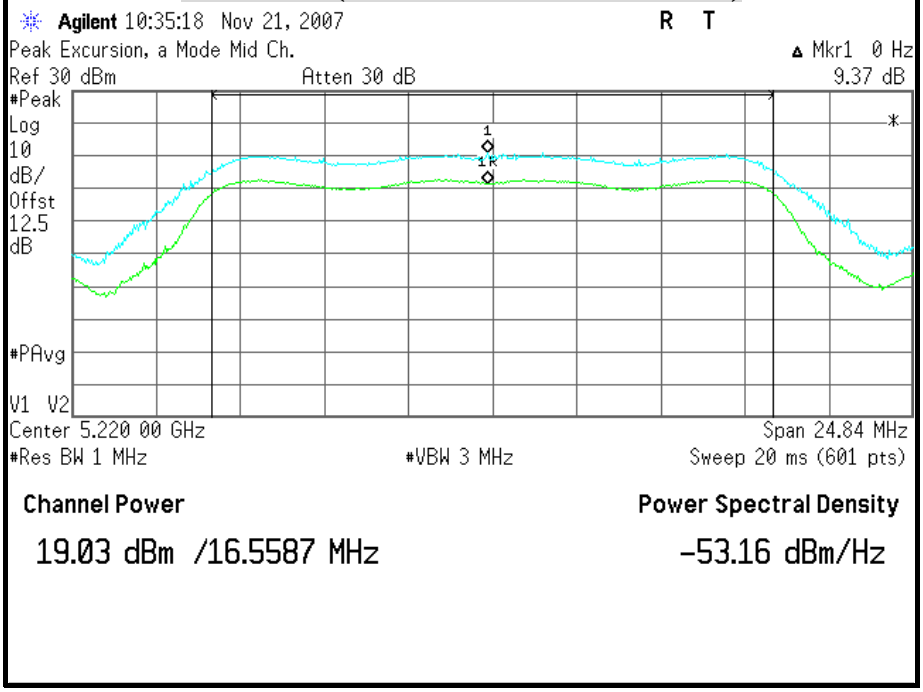
Channel	Channel Frequency (MHz)	Peak Excursion (dBm)		Maxmum Limit (dBm)	Margin (dB)		Pass / Fail
		Chain 0	Chain 1		Chain 0	Chain 1	
Low	5510	9.43	9.61	13	-3.57	-3.39	PASS
Middle	5590	8.95	9.61	13	-4.05	-3.39	PASS
High	5670	8.51	9.69	13	-4.49	-3.31	PASS

PEAK EXCURSION (IEEE 802.11a mode / 5150MHz ~ 5250MHz)

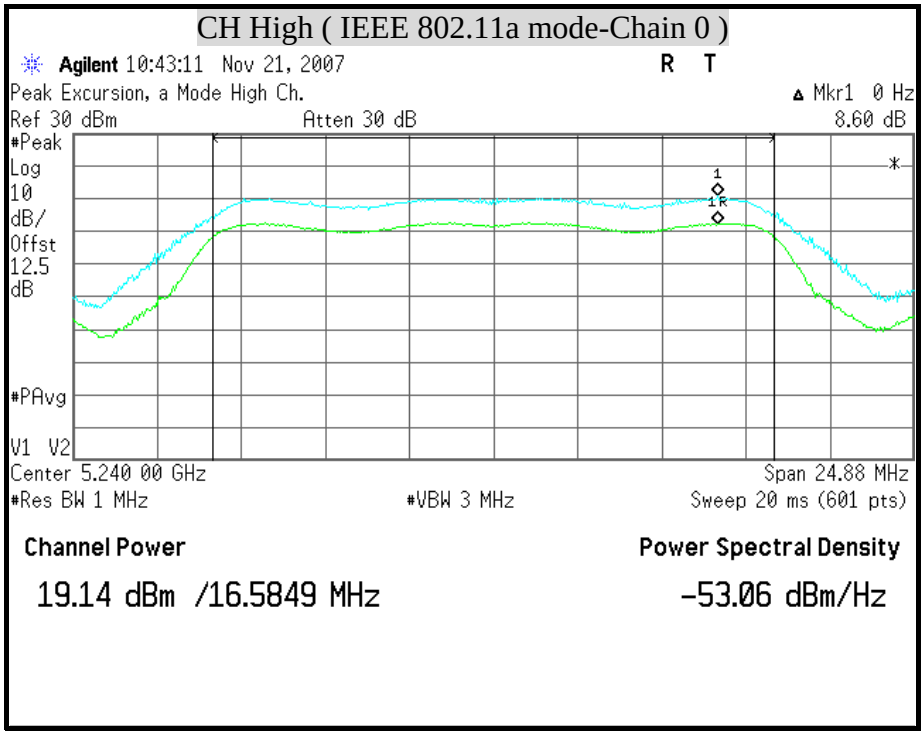
CH Low (IEEE 802.11a mode-Chain 0)



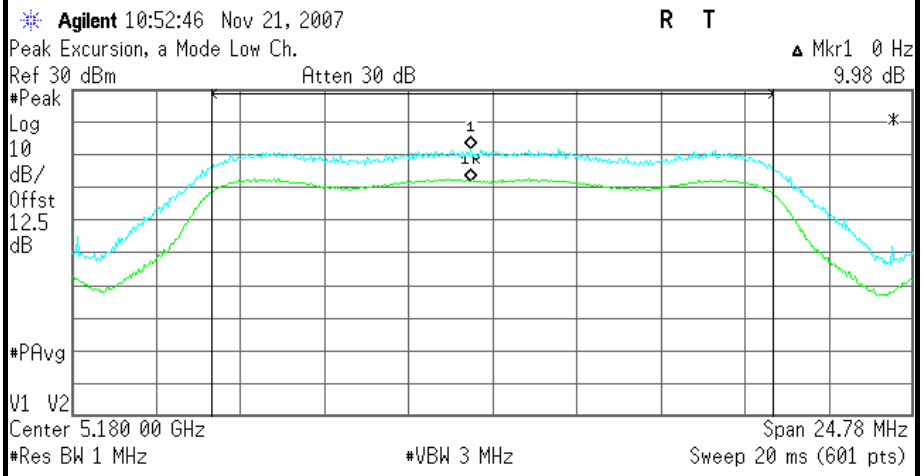
CH Middle (IEEE 802.11a mode-Chain 0)



CH High (IEEE 802.11a mode-Chain 0)



CH Low (IEEE 802.11a mode-Chain 1)



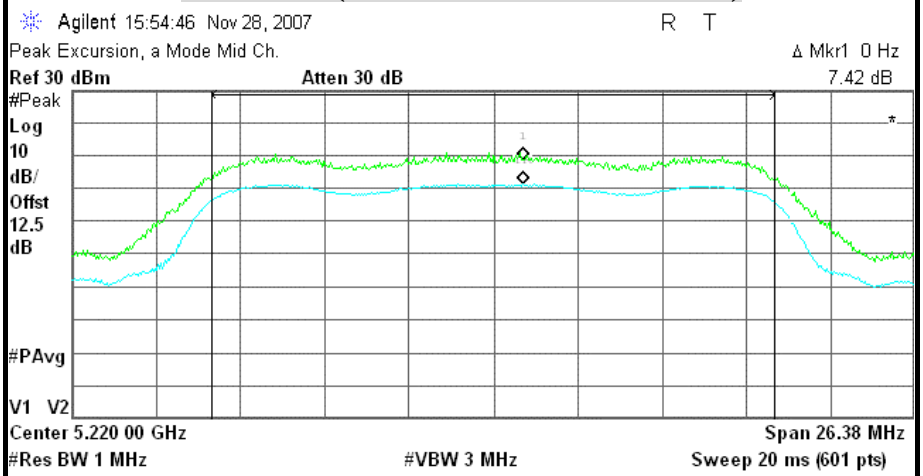
Channel Power

18.77 dBm /16.5232 MHz

Power Spectral Density

-53.41 dBm/Hz

CH Middle (IEEE 802.11a mode-Chain 1)



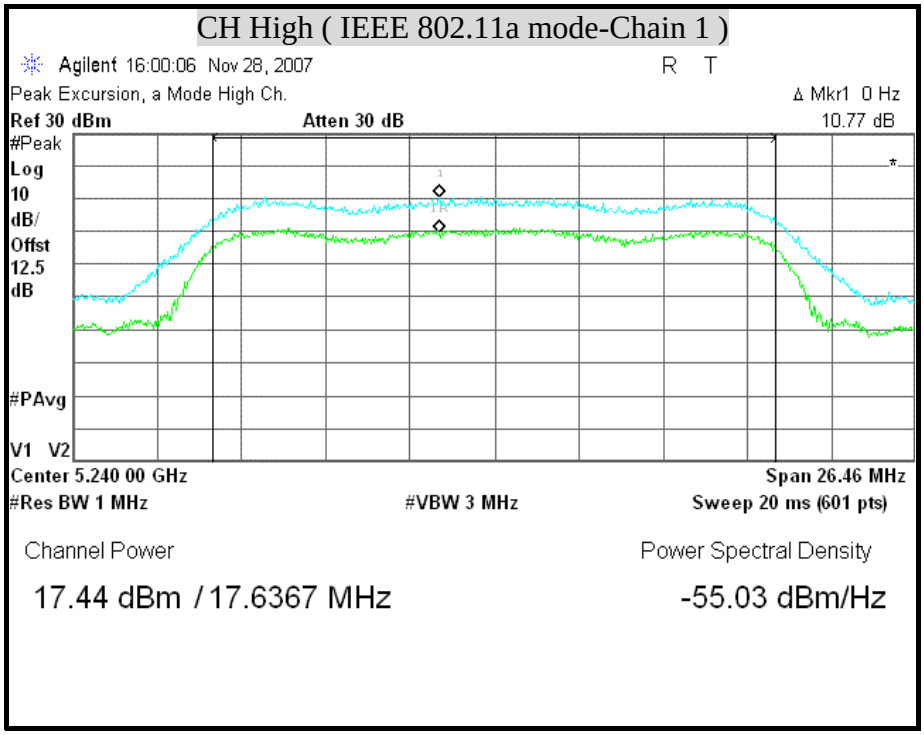
Channel Power

17.82 dBm / 17.5878 MHz

Power Spectral Density

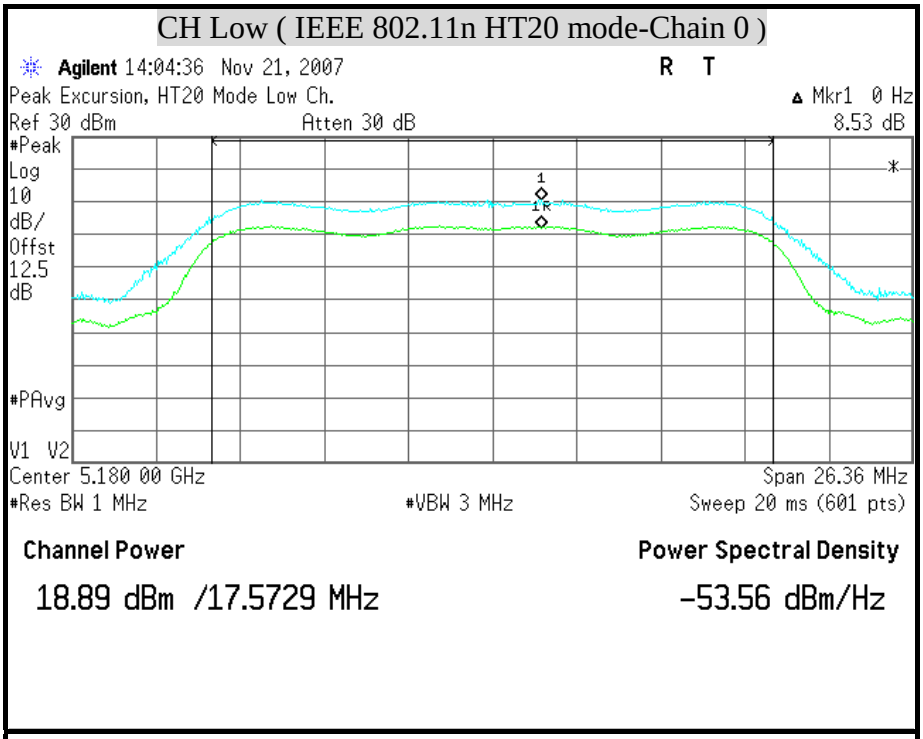
-54.63 dBm/Hz

CH High (IEEE 802.11a mode-Chain 1)

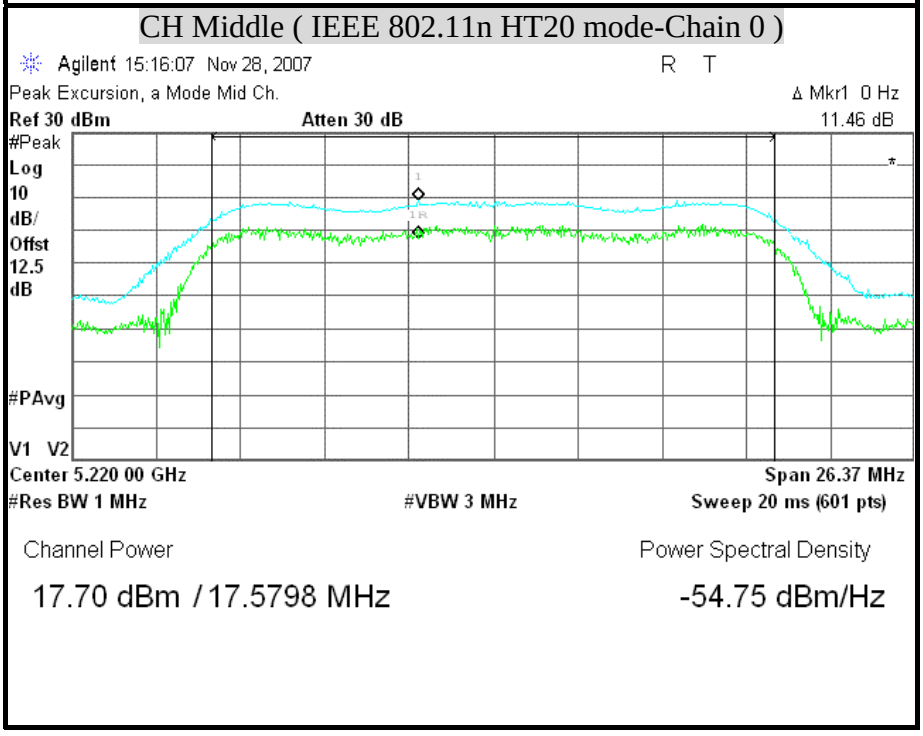


PEAK EXCURSION (IEEE 802.11n HT20 mode / 5150MHz ~ 5250MHz)

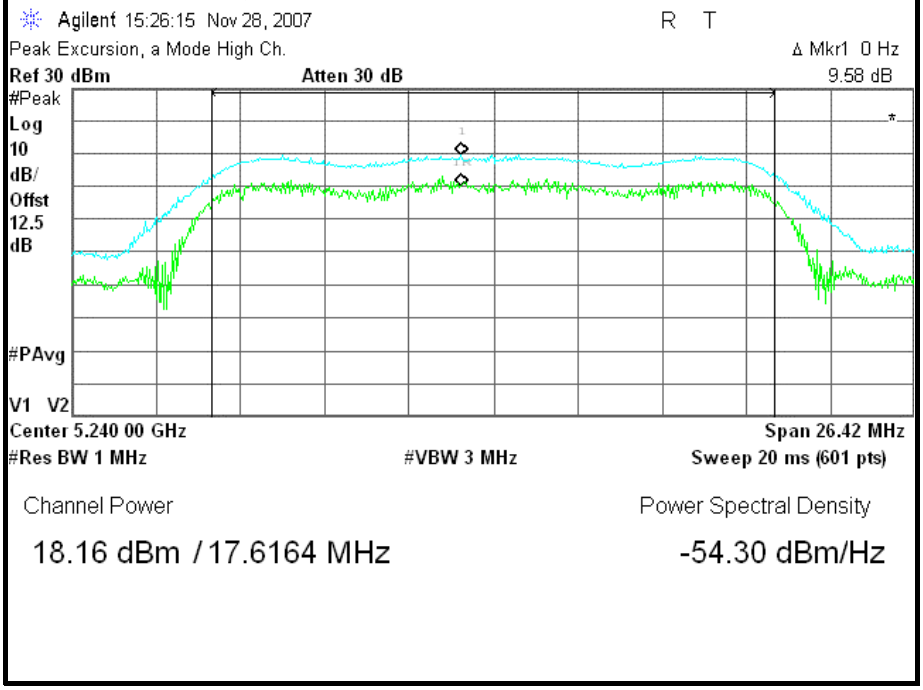
CH Low (IEEE 802.11n HT20 mode-Chain 0)



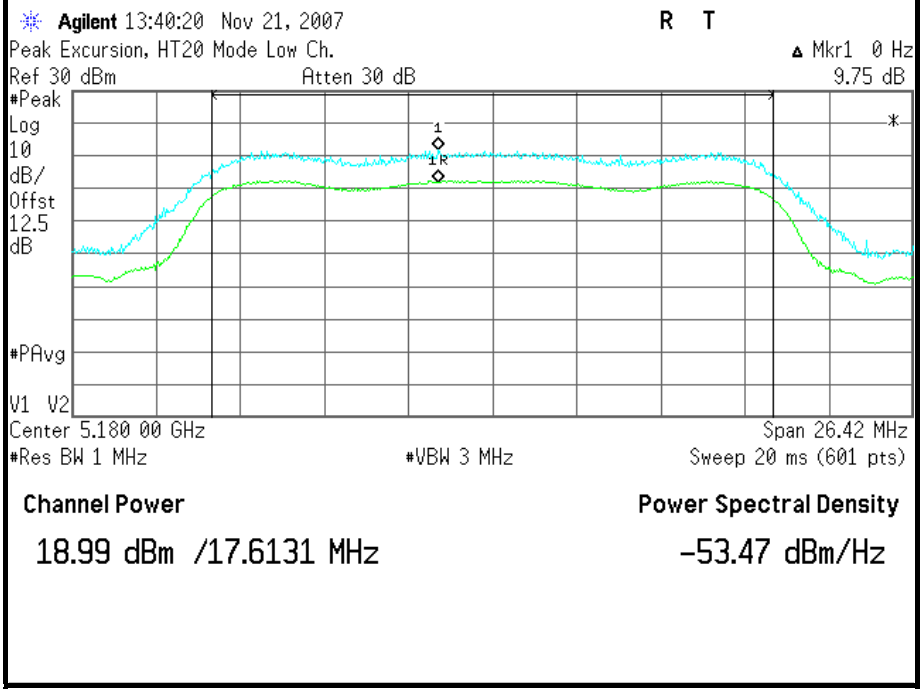
CH Middle (IEEE 802.11n HT20 mode-Chain 0)



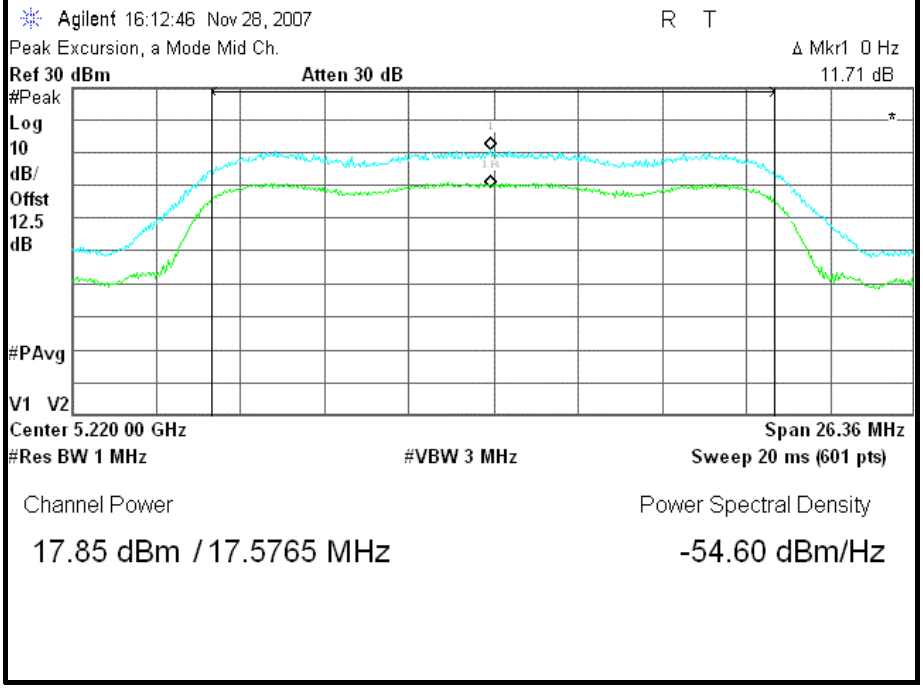
CH High (IEEE 802.11n HT20 mode-Chain 0)



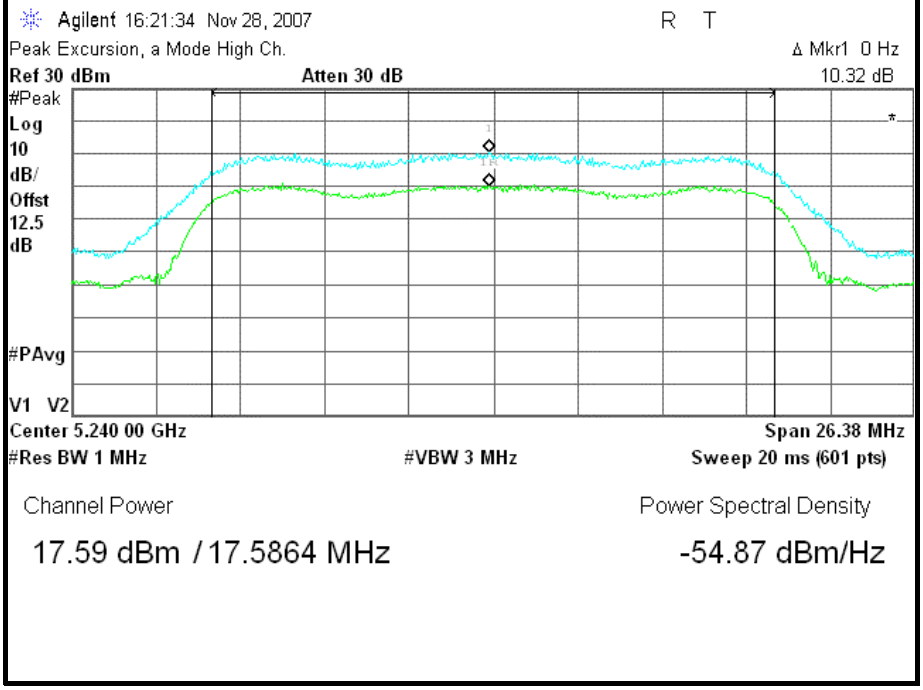
CH Low (IEEE 802.11n HT20 mode-Chain 1)



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

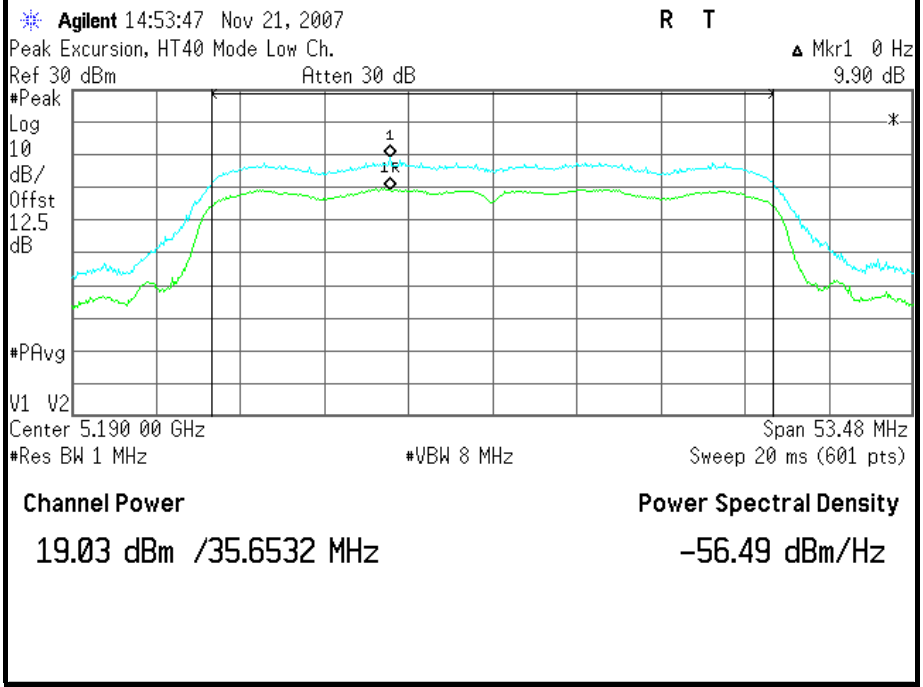


CH High (IEEE 802.11n HT20 mode-Chain 1)

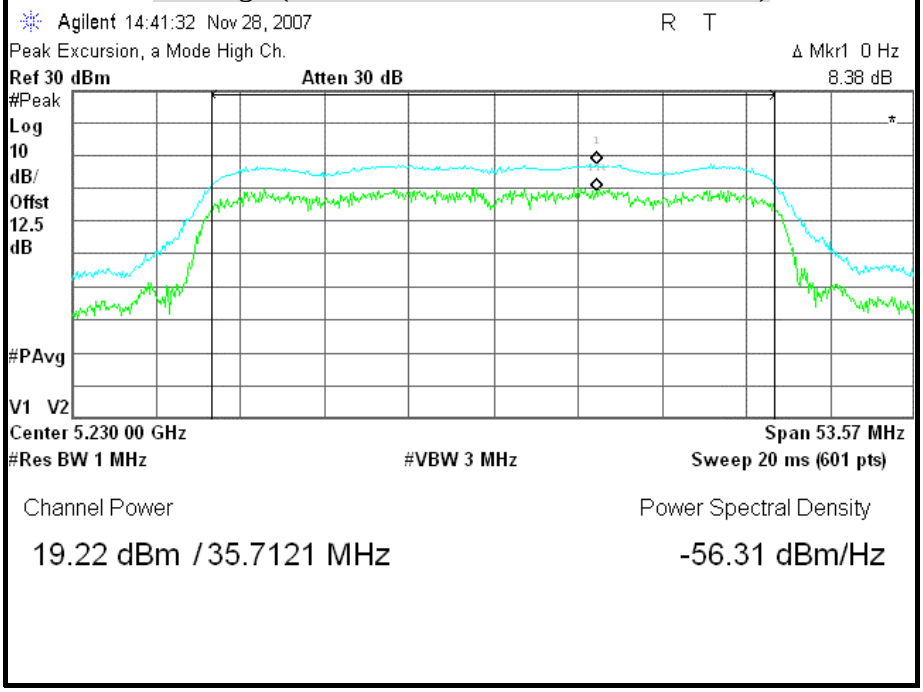


PEAK EXCURSION (IEEE 802.11n HT40 mode / 5150MHz ~ 5250MHz)

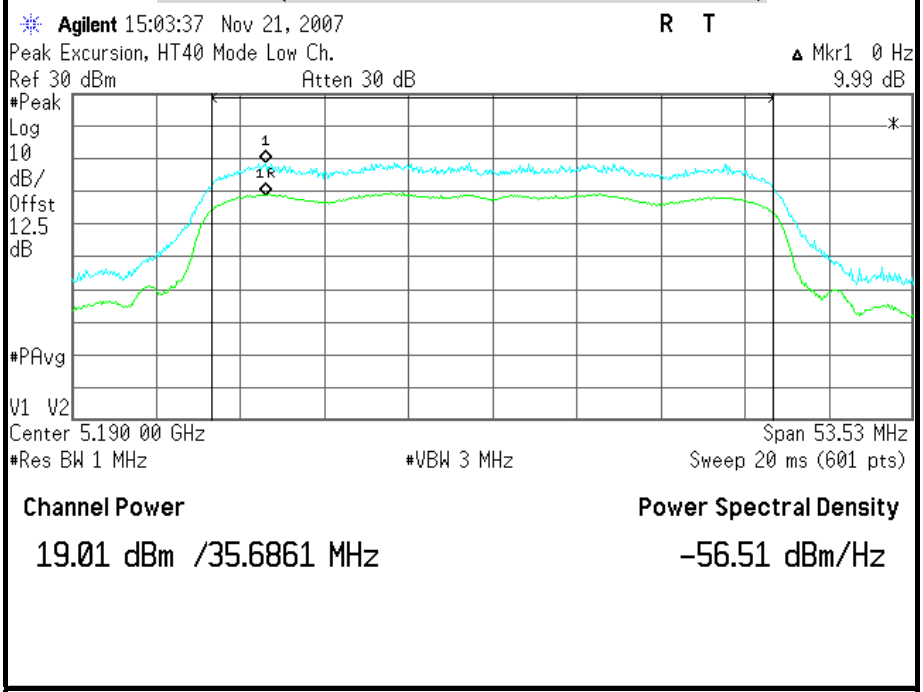
CH Low (IEEE 802.11n HT40 mode-Chain 0)



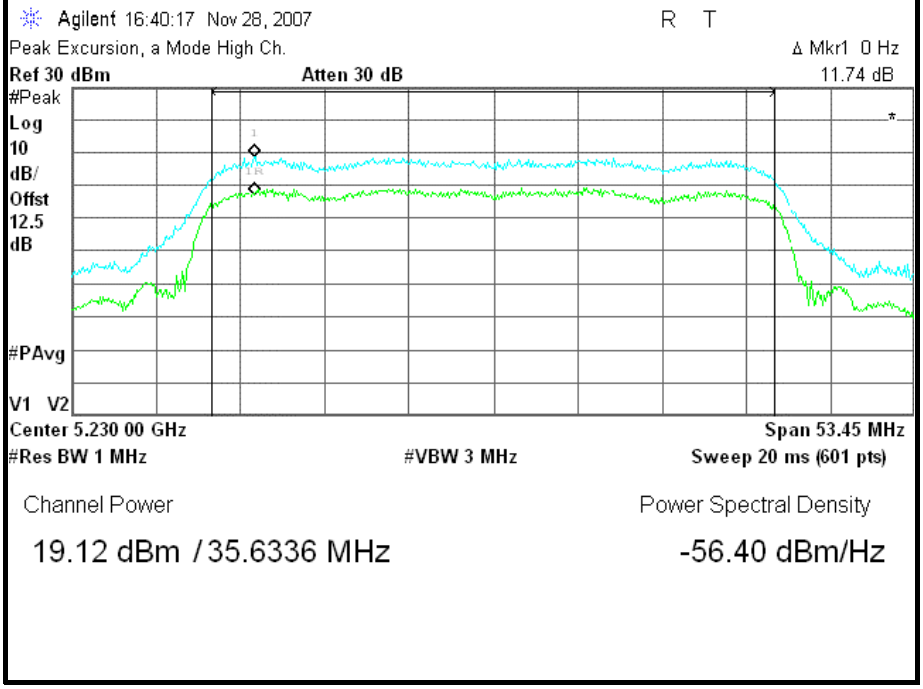
CH High (IEEE 802.11n HT40 mode-Chain 0)



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

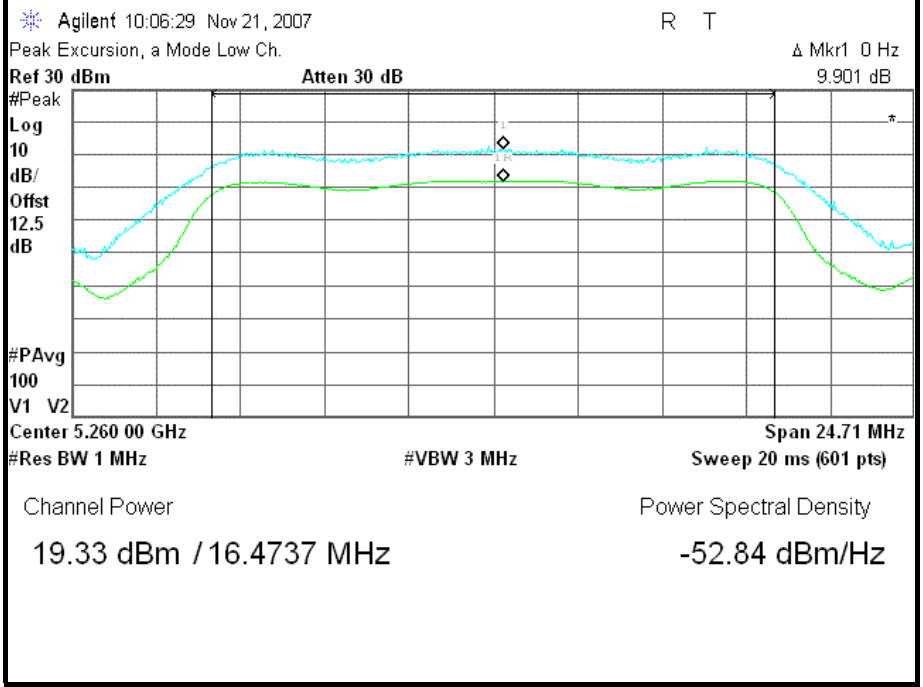


CH High (IEEE 802.11n HT40 mode-Chain 1)



PEAK EXCURSION (IEEE 802.11a mode / 5250MHz ~ 5350MHz)

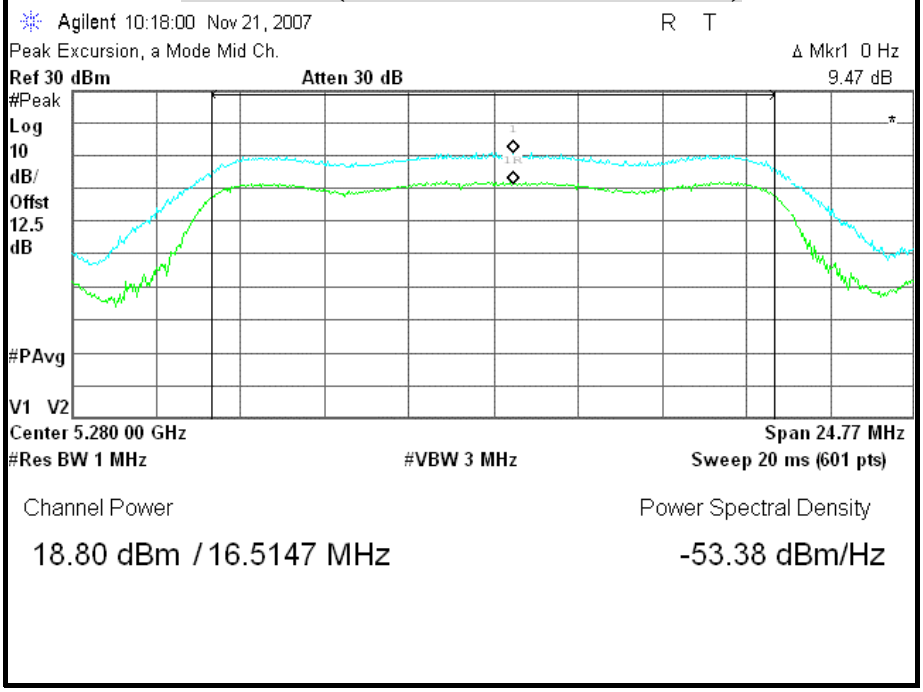
CH Low (IEEE 802.11a mode-Chain 0)



Channel Power
19.33 dBm / 16.4737 MHz

Power Spectral Density
-52.84 dBm/Hz

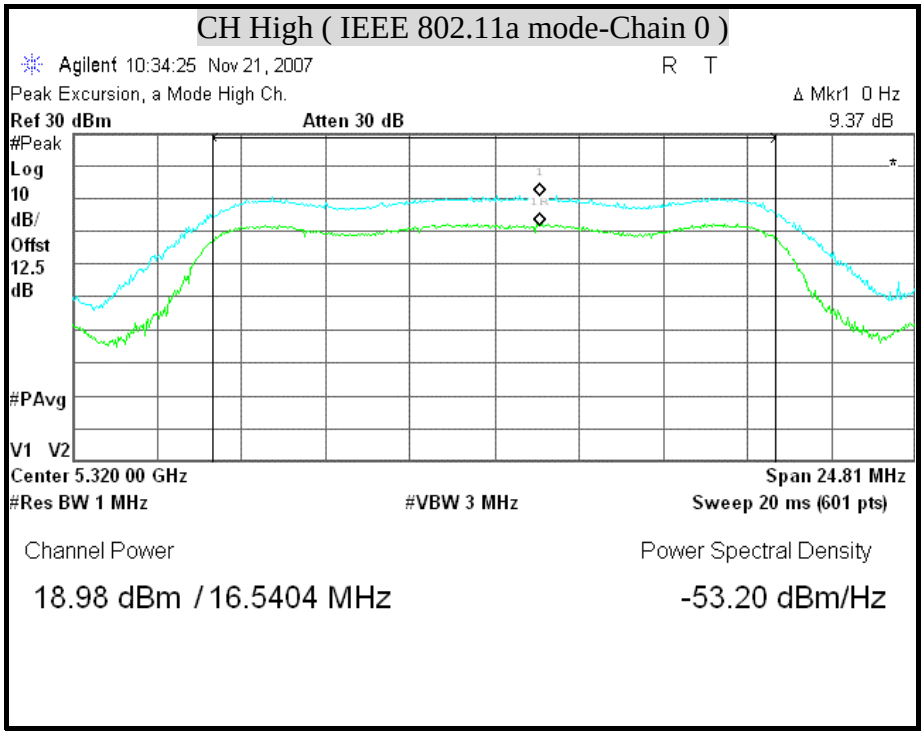
CH Middle (IEEE 802.11a mode-Chain 0)



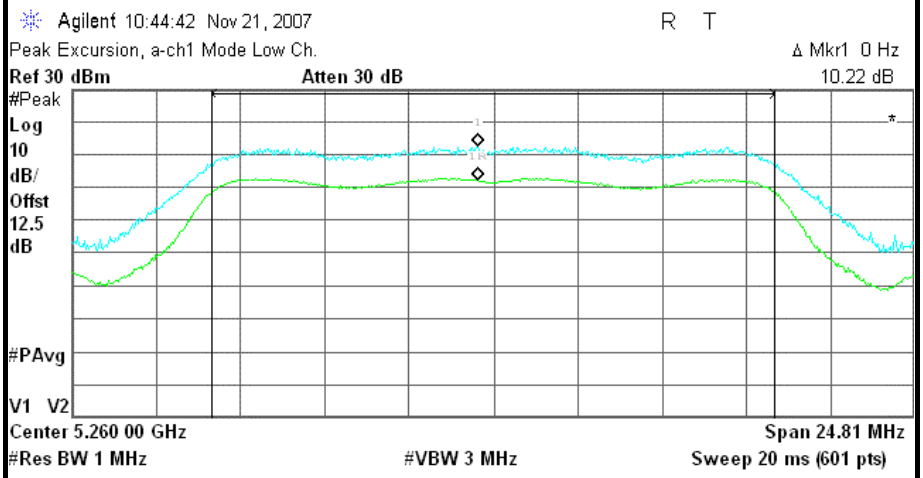
Channel Power
18.80 dBm / 16.5147 MHz

Power Spectral Density
-53.38 dBm/Hz

CH High (IEEE 802.11a mode-Chain 0)



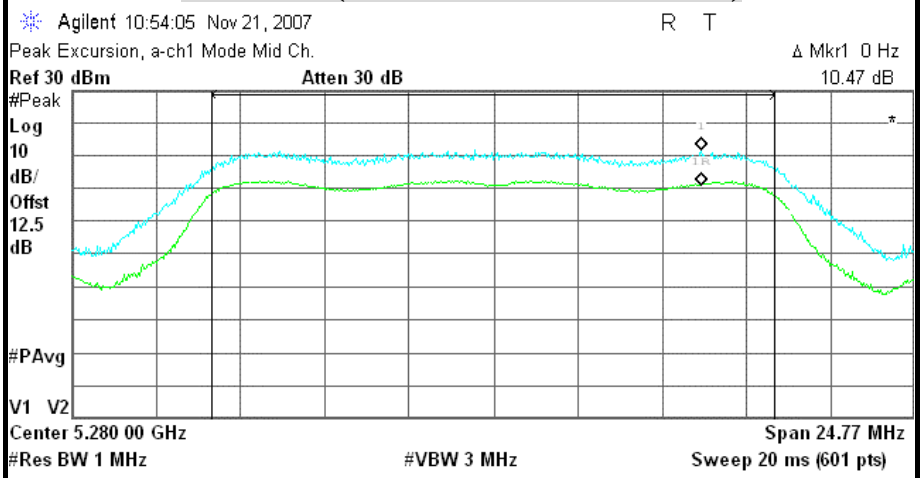
CH Low (IEEE 802.11a mode-Chain 1)



Channel Power
19.04 dBm / 16.5420 MHz

Power Spectral Density
-53.15 dBm/Hz

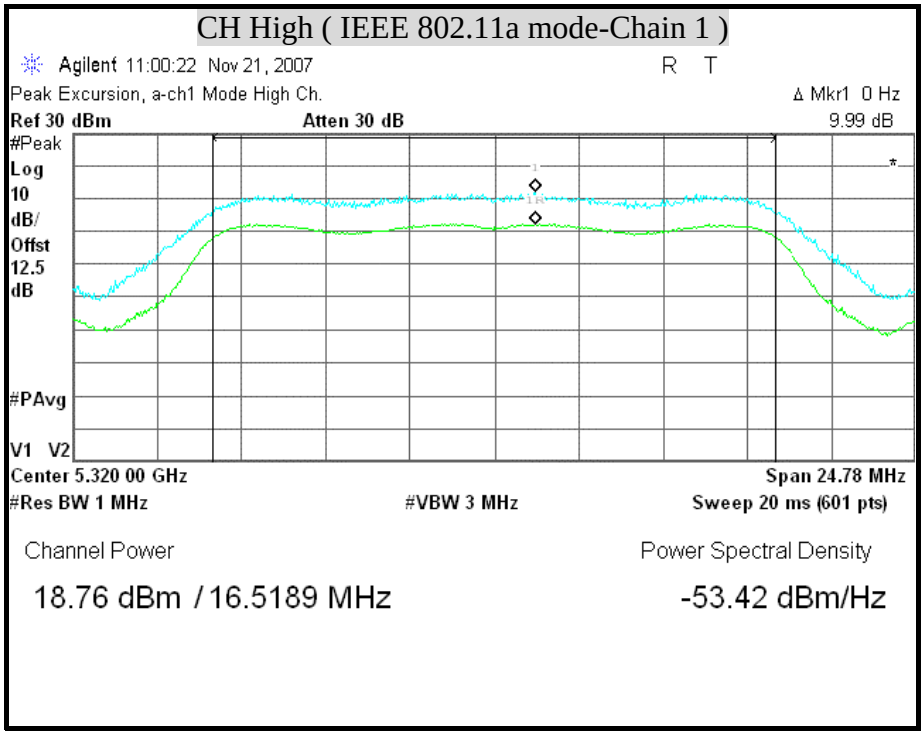
CH Middle (IEEE 802.11a mode-Chain 1)



Channel Power
18.99 dBm / 16.5111 MHz

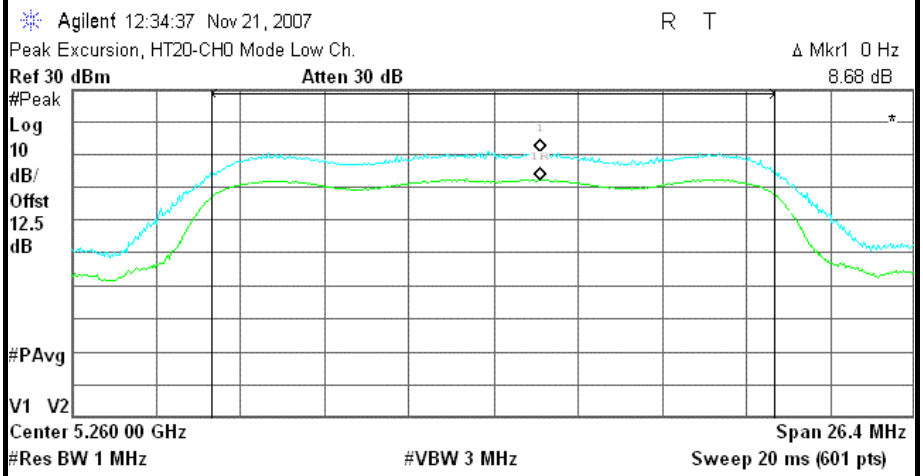
Power Spectral Density
-53.19 dBm/Hz

CH High (IEEE 802.11a mode-Chain 1)



PEAK EXCURSION (IEEE 802.11n HT20 mode / 5250MHz ~ 5350MHz)

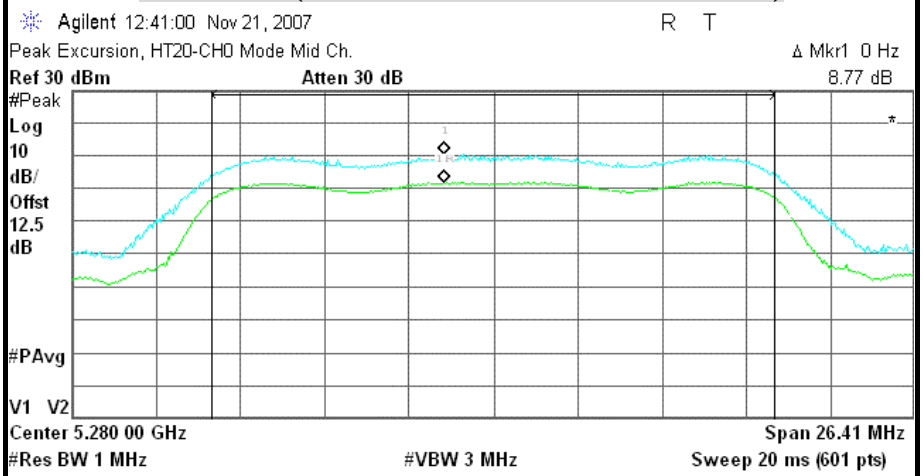
CH Low (IEEE 802.11n HT20 mode-Chain 0)



Channel Power
19.26 dBm / 17.5975 MHz

Power Spectral Density
-53.19 dBm/Hz

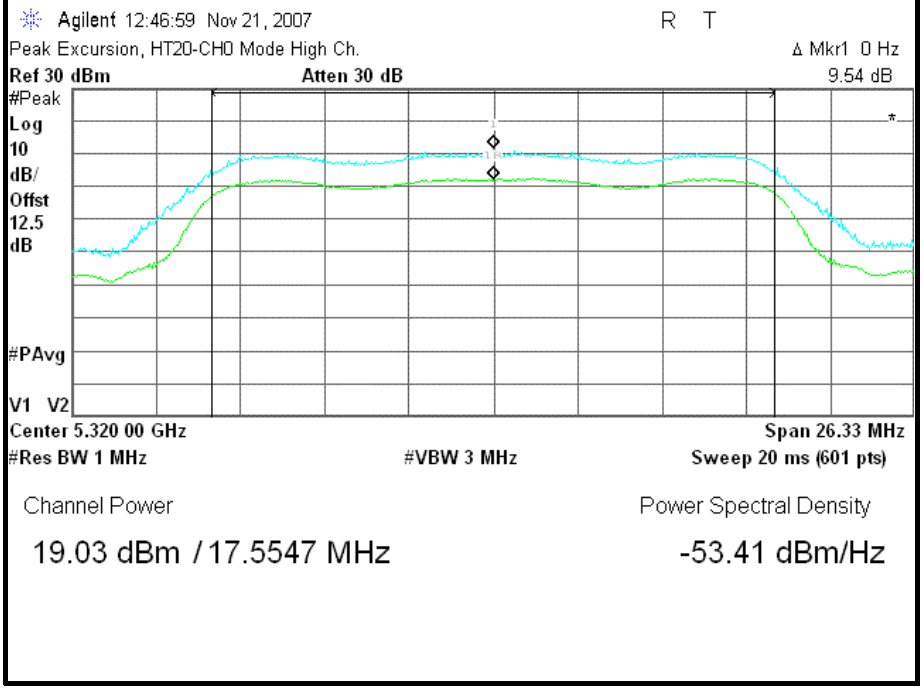
CH Middle (IEEE 802.11n HT20 mode-Chain 0)



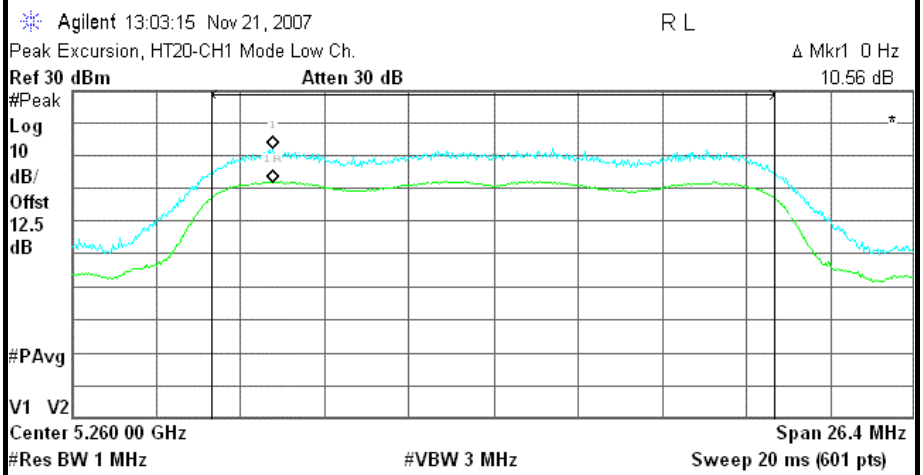
Channel Power
18.66 dBm / 17.6082 MHz

Power Spectral Density
-53.79 dBm/Hz

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



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



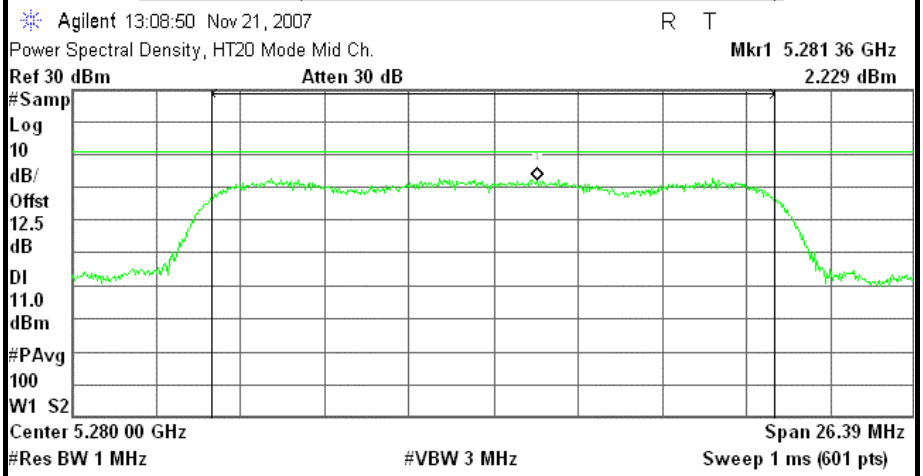
Channel Power

18.69 dBm / 17.5983 MHz

Power Spectral Density

-53.76 dBm/Hz

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



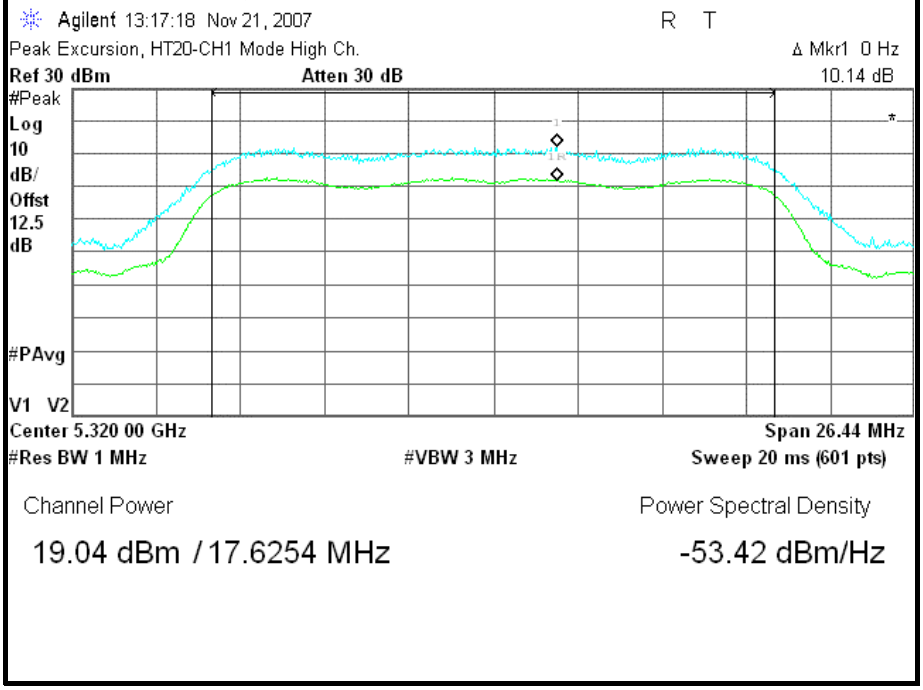
Channel Power

12.74 dBm / 17.5952 MHz

Power Spectral Density

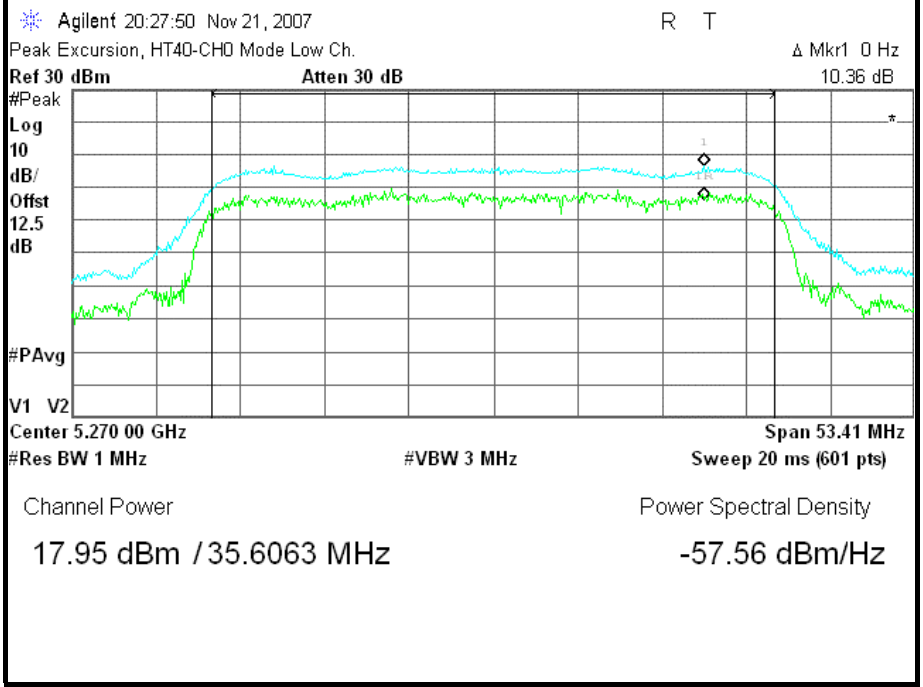
-59.72 dBm/Hz

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



PEAK EXCURSION (IEEE 802.11n HT40 mode / 5250MHz ~ 5350MHz)

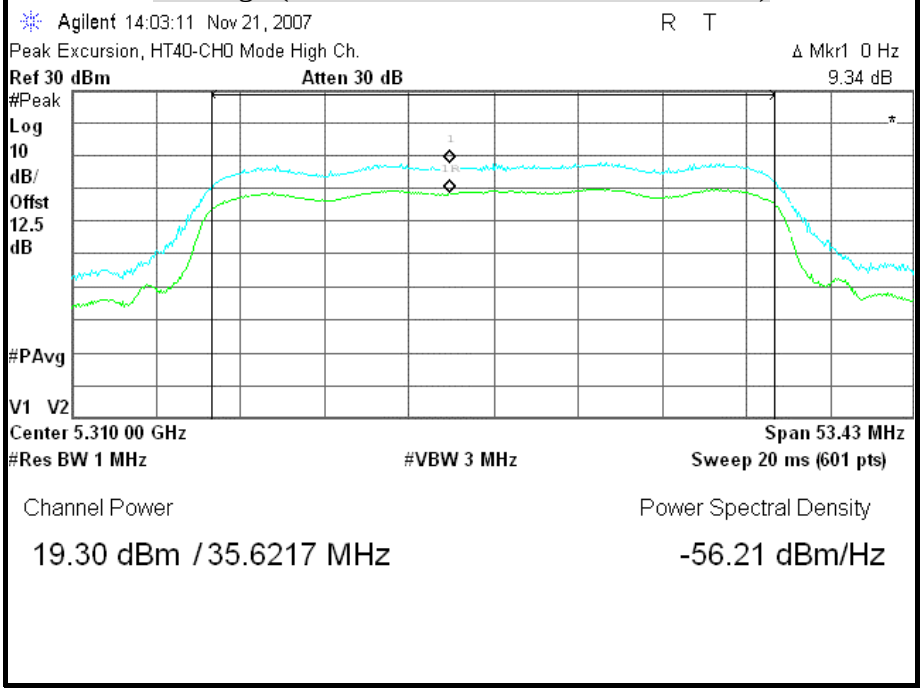
CH Low (IEEE 802.11n HT40 mode-Chain 0)



Channel Power
17.95 dBm / 35.6063 MHz

Power Spectral Density
-57.56 dBm/Hz

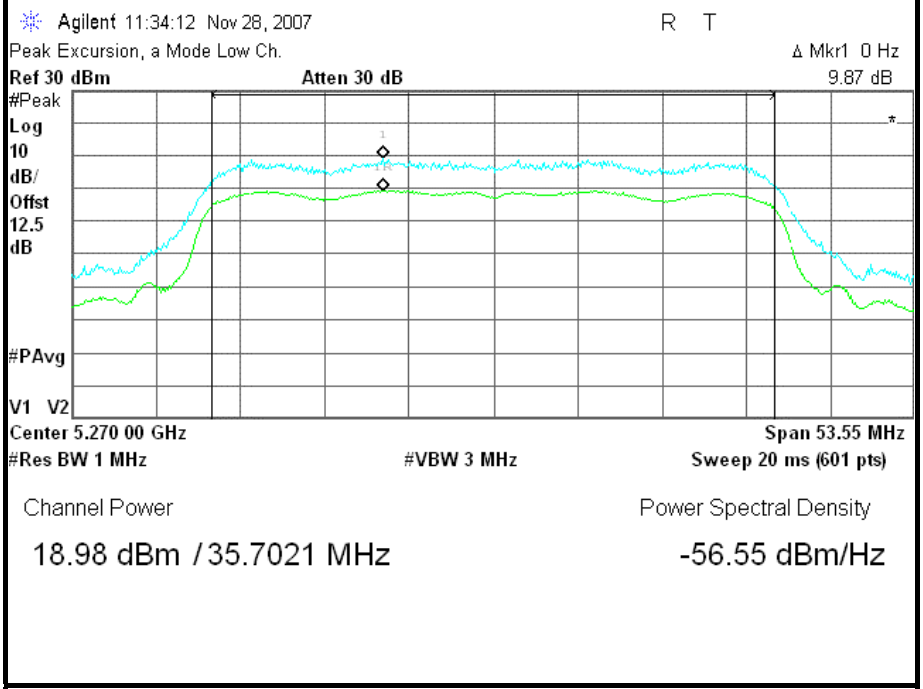
CH High (IEEE 802.11n HT40 mode-Chain 0)



Channel Power
19.30 dBm / 35.6217 MHz

Power Spectral Density
-56.21 dBm/Hz

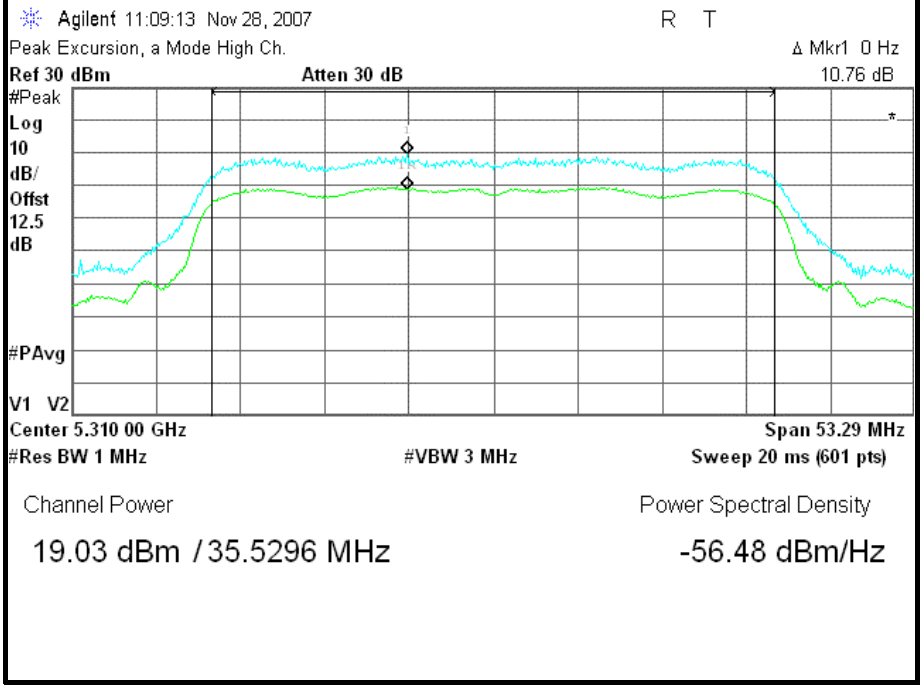
CH Low (IEEE 802.11n HT40 mode-Chain 1)



Channel Power
18.98 dBm / 35.7021 MHz

Power Spectral Density
-56.55 dBm/Hz

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

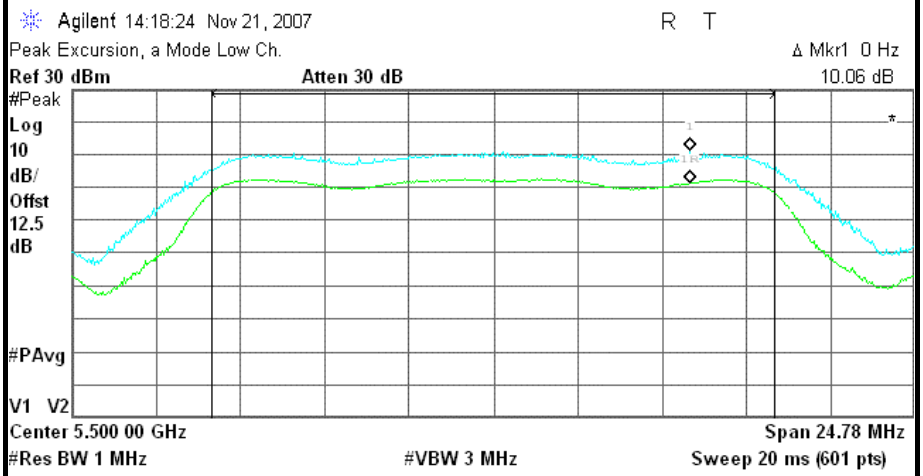


Channel Power
19.03 dBm / 35.5296 MHz

Power Spectral Density
-56.48 dBm/Hz

PEAK EXCURSION (IEEE 802.11a mode / 5470MHz ~ 5725MHz)

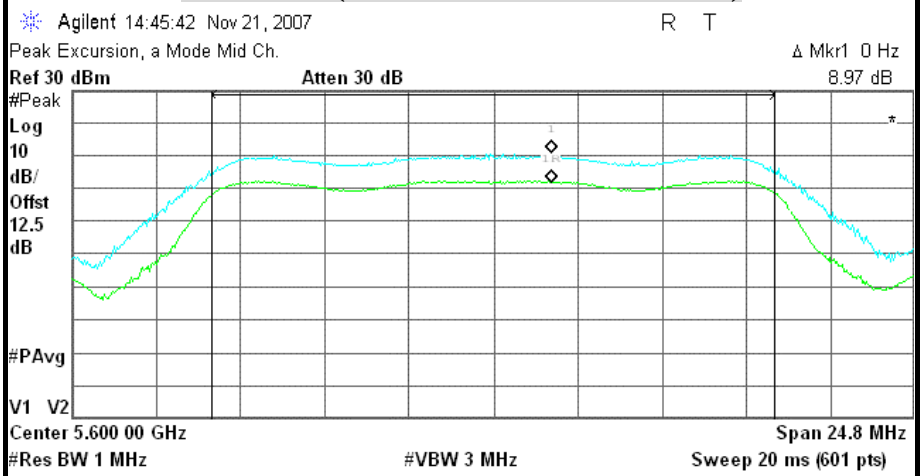
CH Low (IEEE 802.11a mode-Chain 0)



Channel Power
18.91 dBm / 16.5191 MHz

Power Spectral Density
-53.26 dBm/Hz

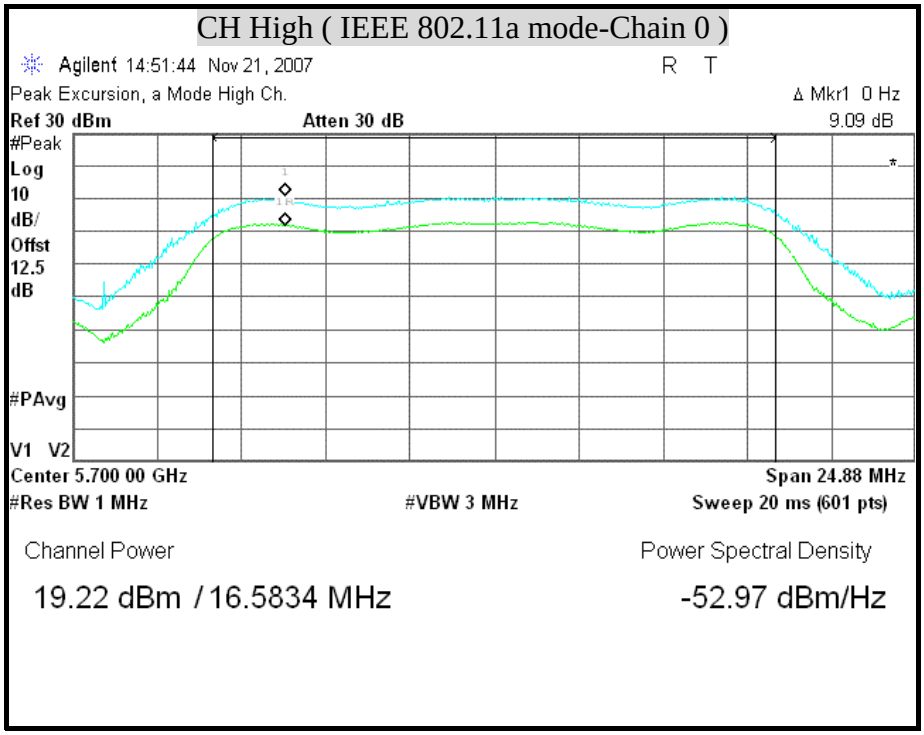
CH Middle (IEEE 802.11a mode-Chain 0)



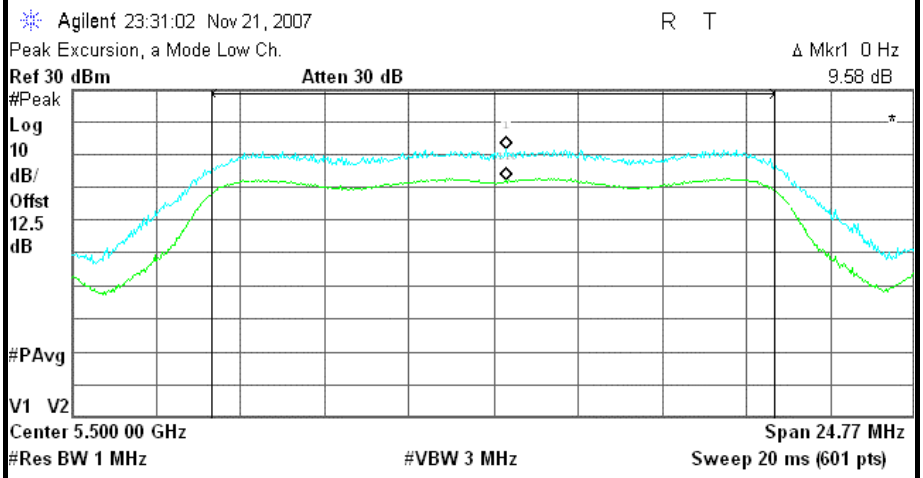
Channel Power
18.91 dBm / 16.5345 MHz

Power Spectral Density
-53.27 dBm/Hz

CH High (IEEE 802.11a mode-Chain 0)



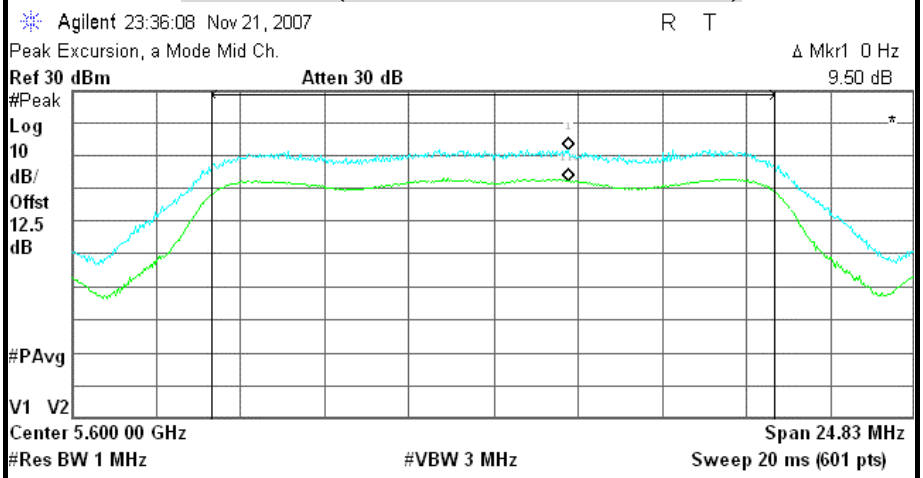
CH Low (IEEE 802.11a mode-Chain 1)



Channel Power
19.03 dBm / 16.5162 MHz

Power Spectral Density
-53.15 dBm/Hz

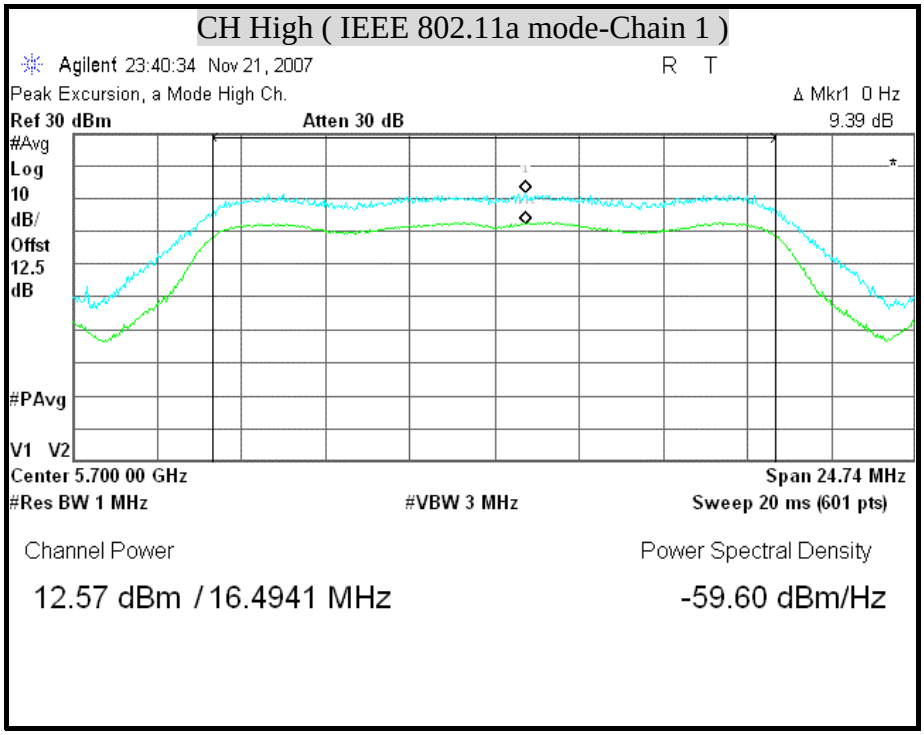
CH Middle (IEEE 802.11a mode-Chain 1)



Channel Power
19.07 dBm / 16.5531 MHz

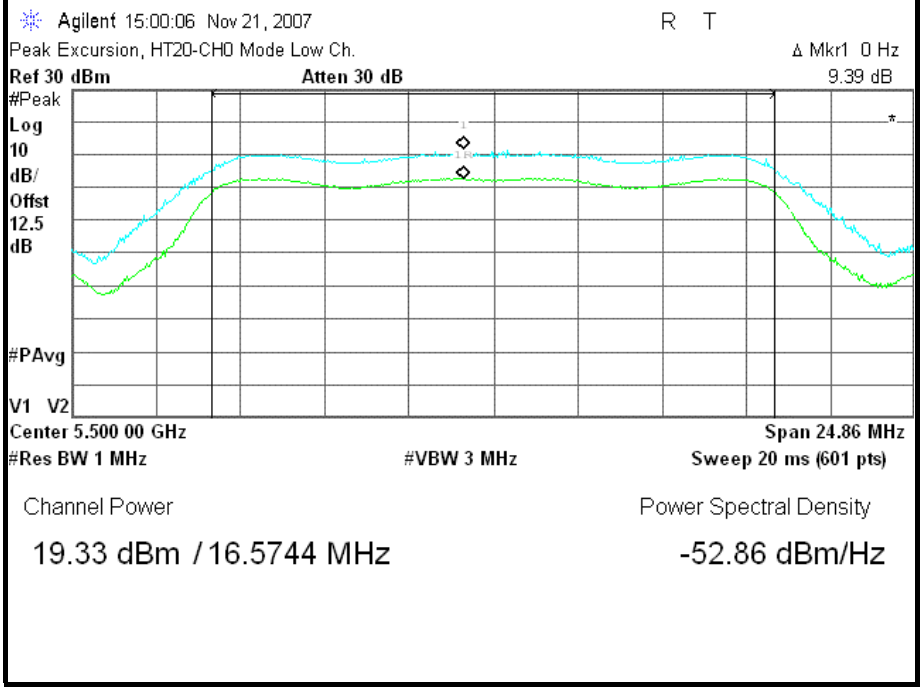
Power Spectral Density
-53.12 dBm/Hz

CH High (IEEE 802.11a mode-Chain 1)



PEAK EXCURSION (IEEE 802.11n HT20 mode / 5470MHz ~ 5725MHz)

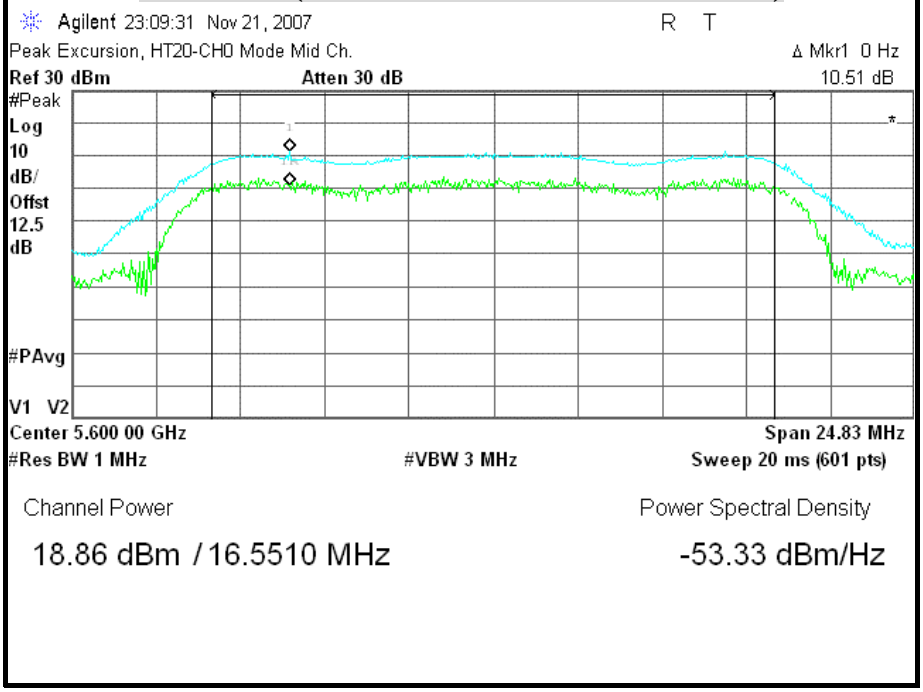
CH Low (IEEE 802.11n HT20 mode-Chain 0)



Channel Power: 19.33 dBm / 16.5744 MHz

Power Spectral Density: -52.86 dBm/Hz

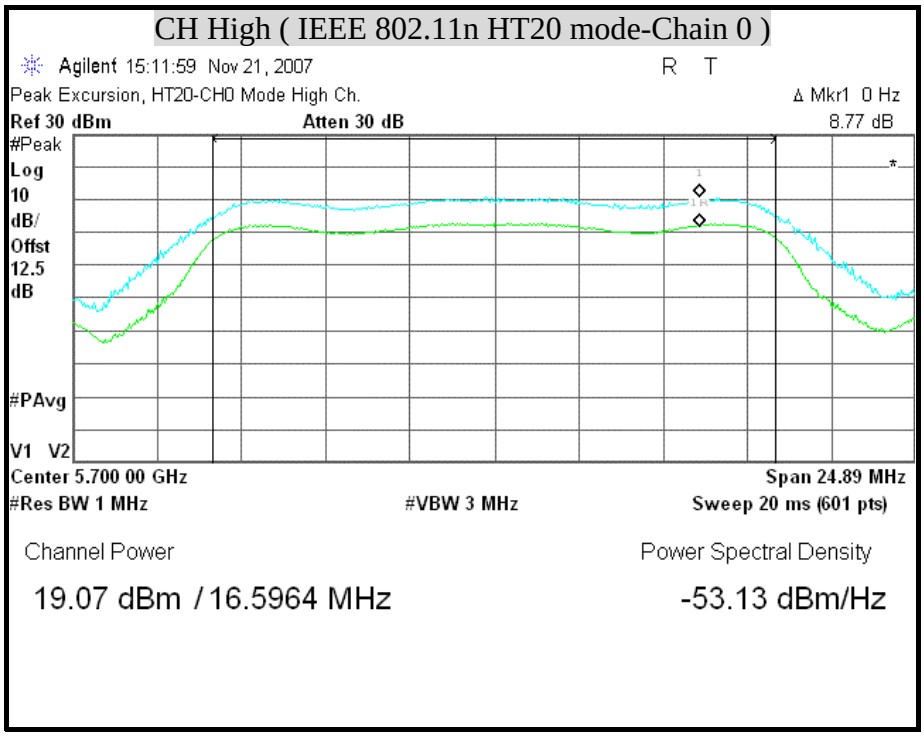
CH Middle (IEEE 802.11n HT20 mode-Chain 0)



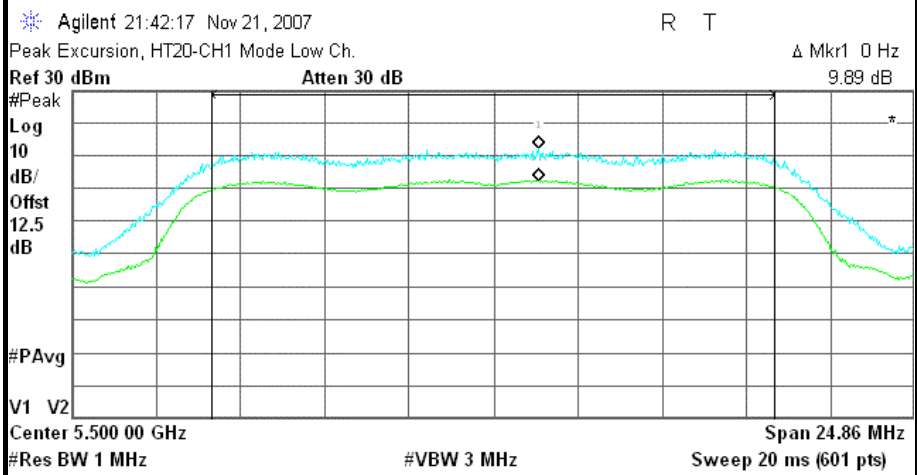
Channel Power: 18.86 dBm / 16.5510 MHz

Power Spectral Density: -53.33 dBm/Hz

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



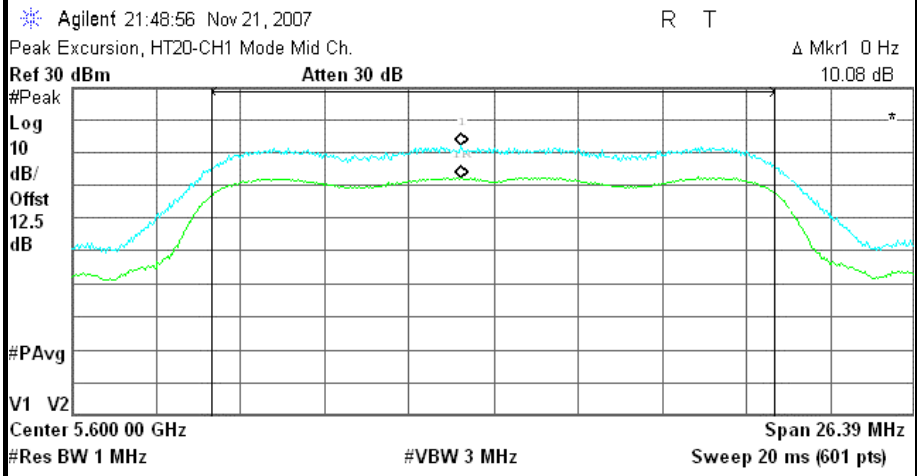
CH Low (IEEE 802.11n HT20 mode-Chain 1)



Channel Power
18.77 dBm / 16.5715 MHz

Power Spectral Density
-53.42 dBm/Hz

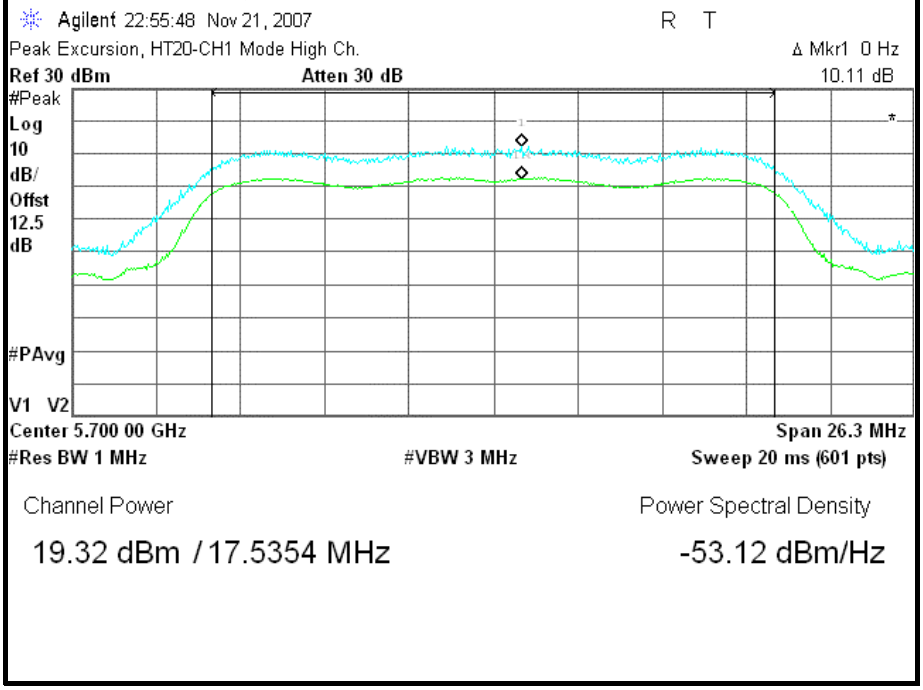
CH Middle (IEEE 802.11n HT20 mode-Chain 1)



Channel Power
18.93 dBm / 17.5917 MHz

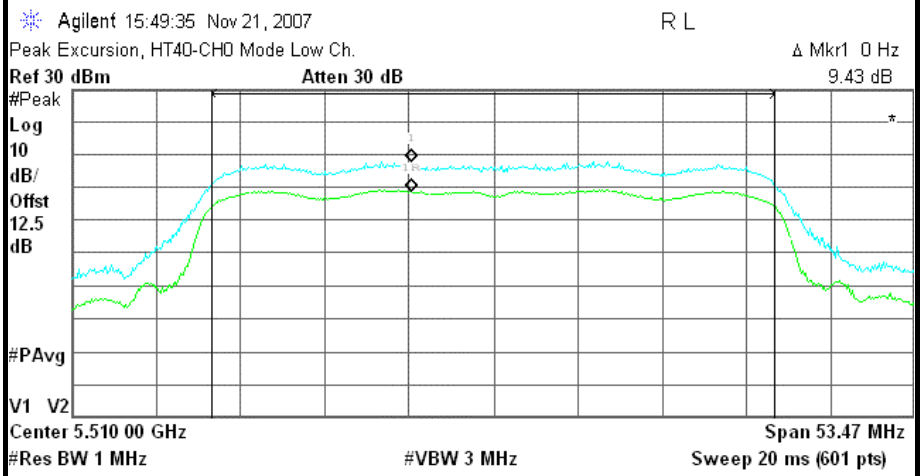
Power Spectral Density
-53.53 dBm/Hz

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



PEAK EXCURSION (IEEE 802.11n HT40 mode / 5470MHz ~ 5725MHz)

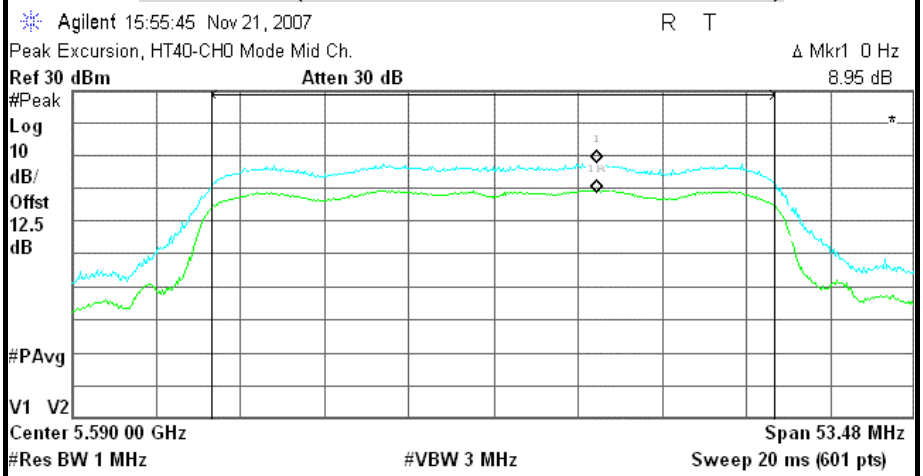
CH Low (IEEE 802.11n HT40 mode-Chain 0)



Channel Power
18.95 dBm / 35.6496 MHz

Power Spectral Density
-56.57 dBm/Hz

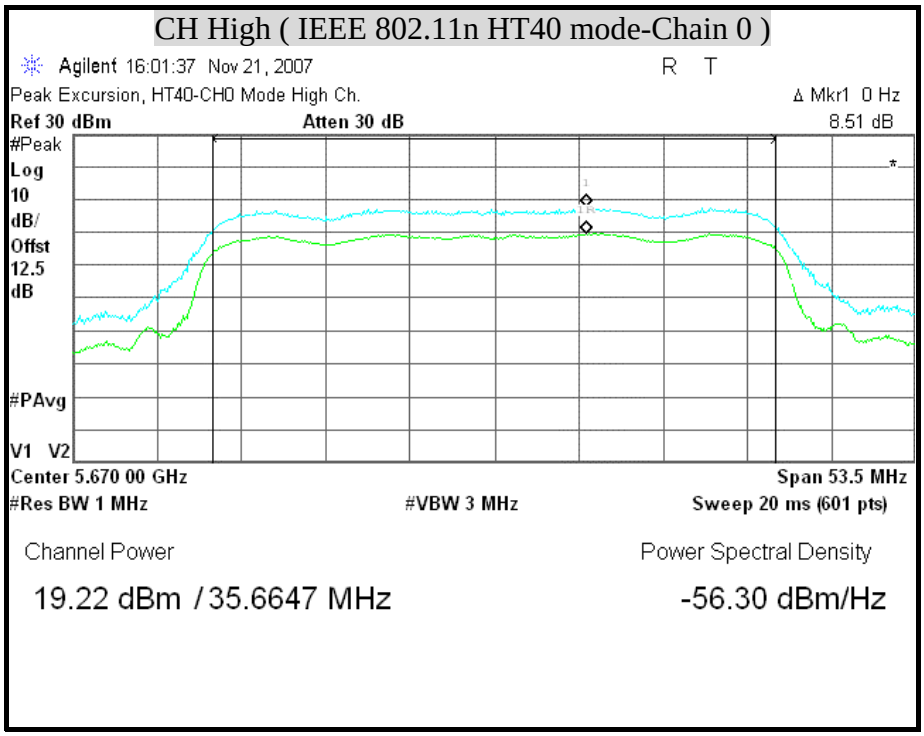
CH Middle (IEEE 802.11n HT40 mode-Chain 0)



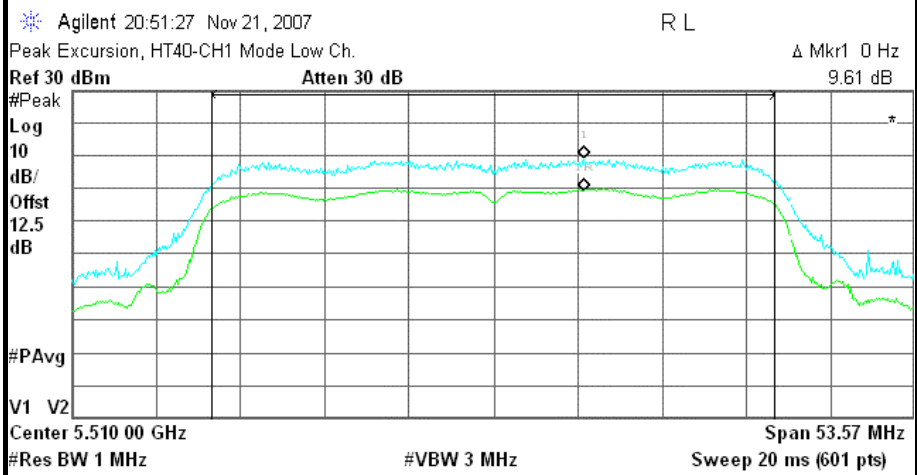
Channel Power
18.98 dBm / 35.6550 MHz

Power Spectral Density
-56.55 dBm/Hz

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



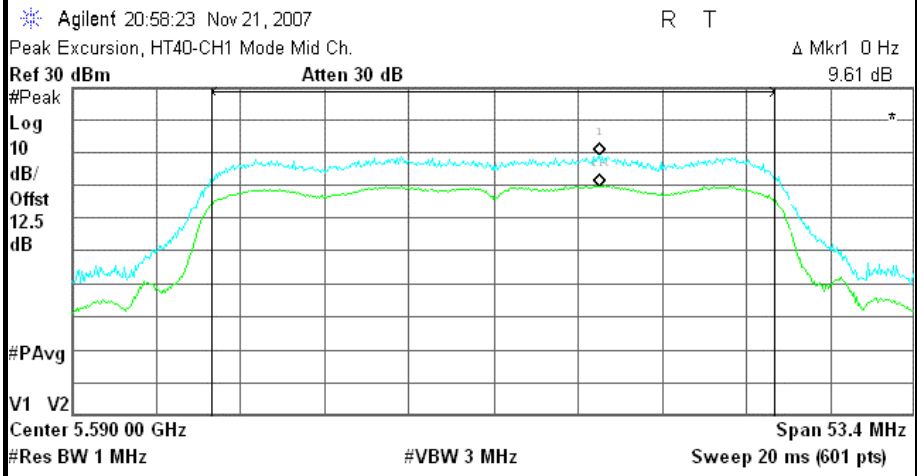
CH Low (IEEE 802.11n HT40 mode-Chain 1)



Channel Power
19.12 dBm / 35.7153 MHz

Power Spectral Density
-56.41 dBm/Hz

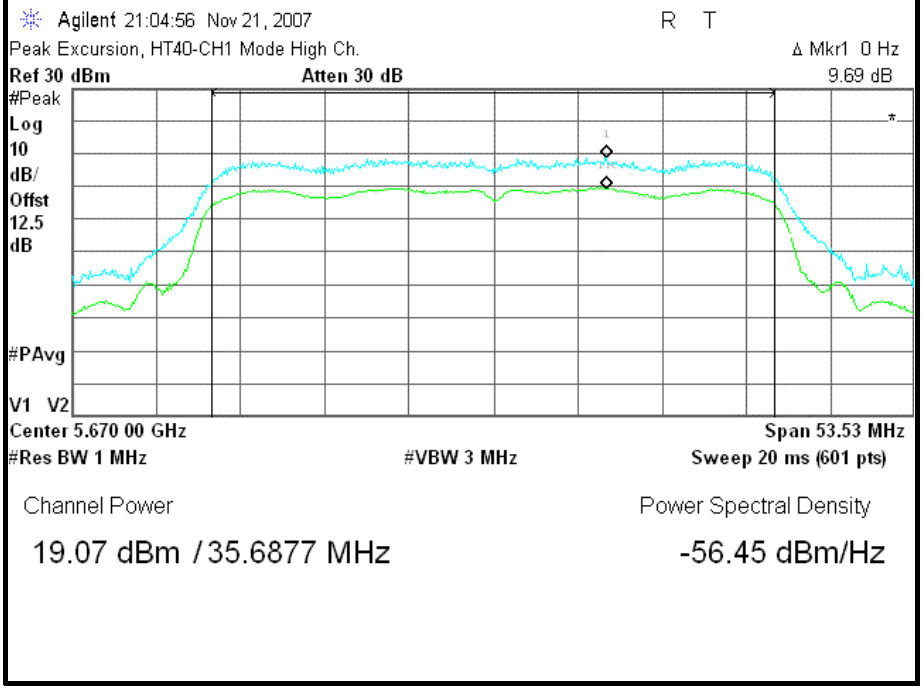
CH Middle (IEEE 802.11n HT40 mode-Chain 1)



Channel Power
19.35 dBm / 35.5972 MHz

Power Spectral Density
-56.16 dBm/Hz

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



8.6 CONDUCTED SPURIOUS EMISSION

LIMITS

15.407 (b) Undesirable Emission Limits: The peak emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz.
(2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of –27 dBm/MHz in the 5.15-5.25 band.
(3) For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of –27 dBm/MHz.

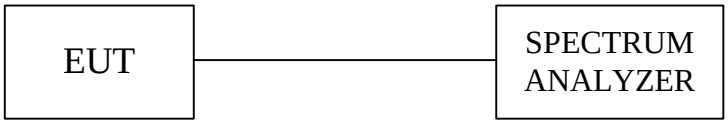
TEST PROCEDURE

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

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 1MHz. The video bandwidth is set to 1MHz. Peak detection measurements are compared to the average EIRP limit, adjusted for the maximum antenna gain. If necessary, additional average detection measurements are made.

Measurements are made over the 30 MHz to 40 GHz range with the transmitter set to the lowest, middle, and highest channels.

TEST SETUP



Combined mode

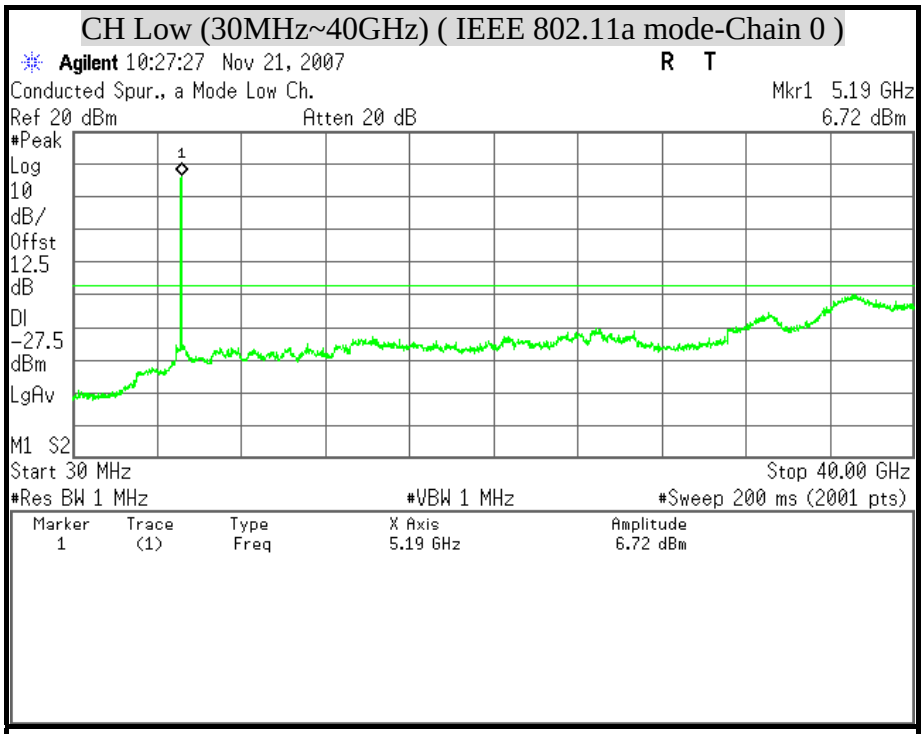
TEST RESULTS

No non-compliance noted

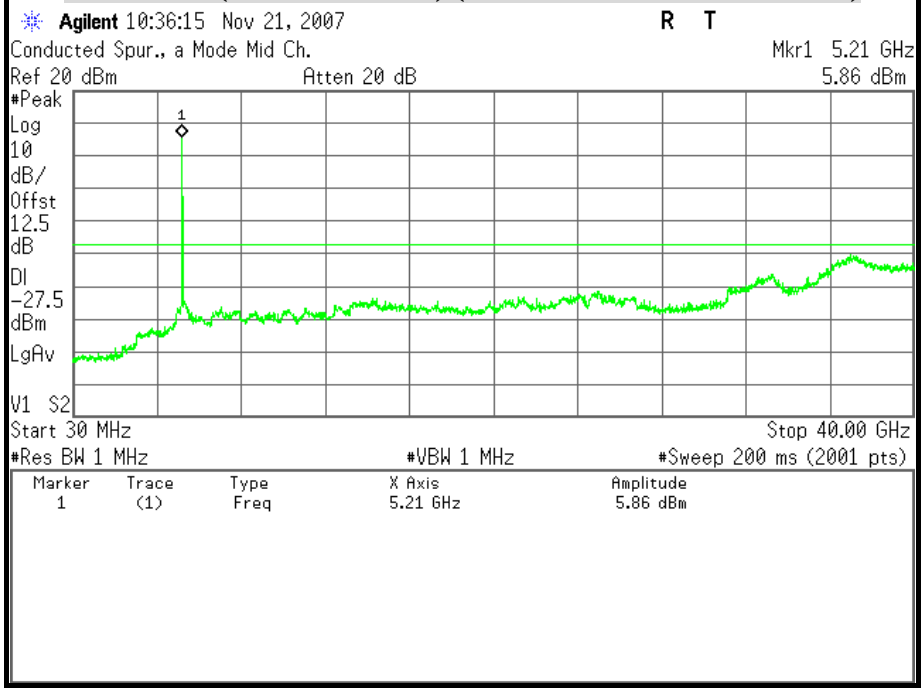
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11a mode / 5150MHz ~ 5250MHz)

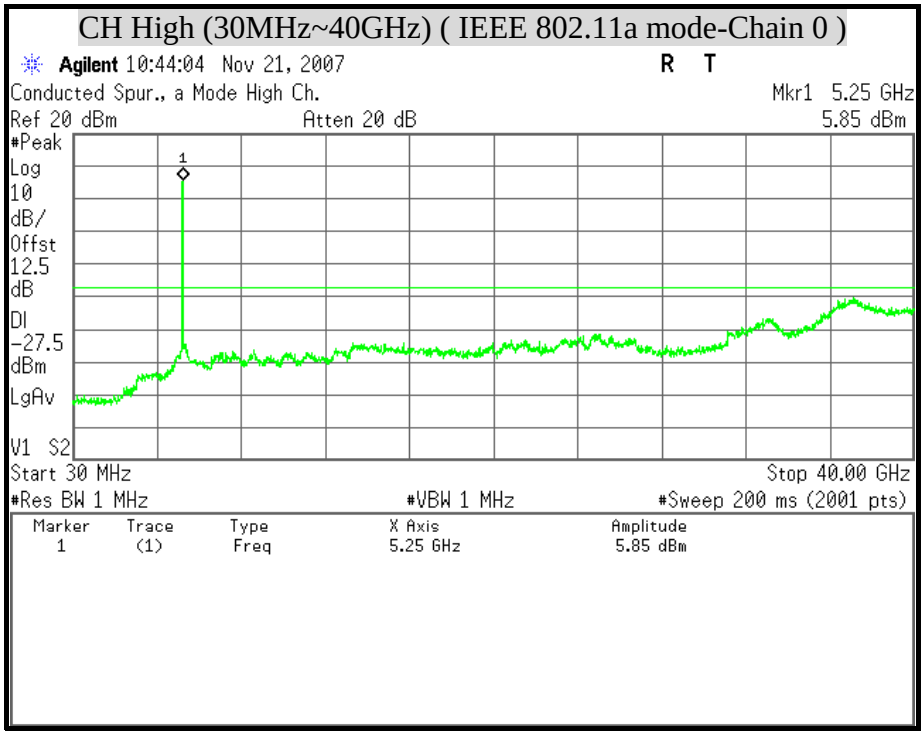
CH Low (30MHz~40GHz) (IEEE 802.11a mode-Chain 0)



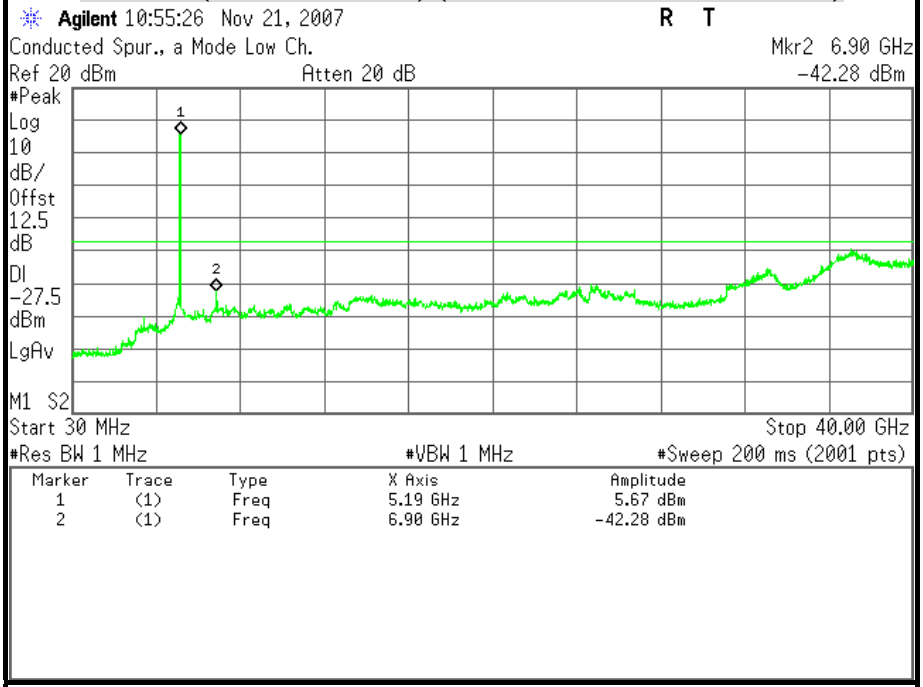
CH Middle (30MHz~40GHz) (IEEE 802.11a mode-Chain 0)



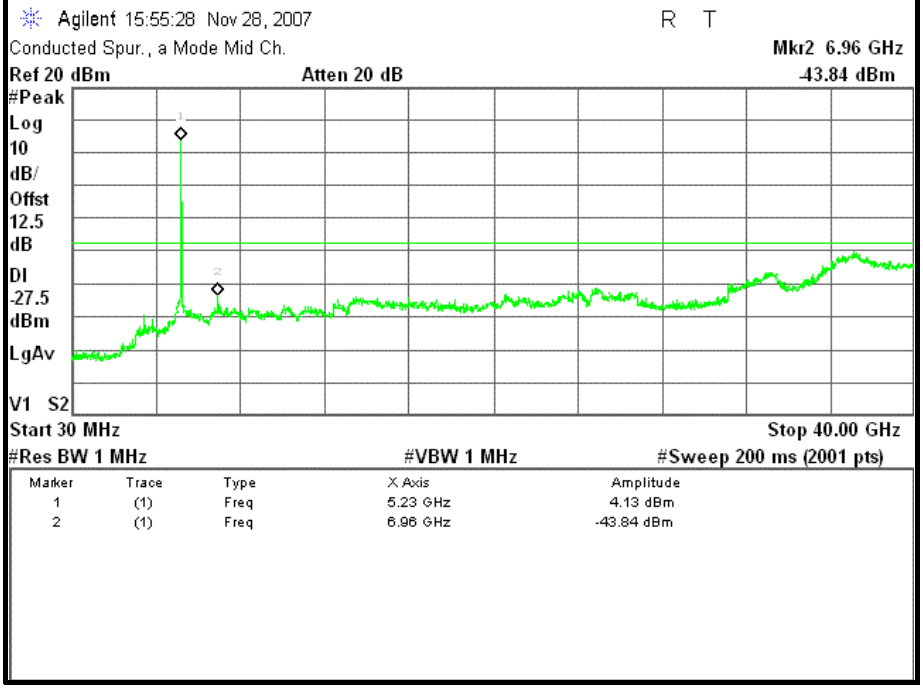
CH High (30MHz~40GHz) (IEEE 802.11a mode-Chain 0)



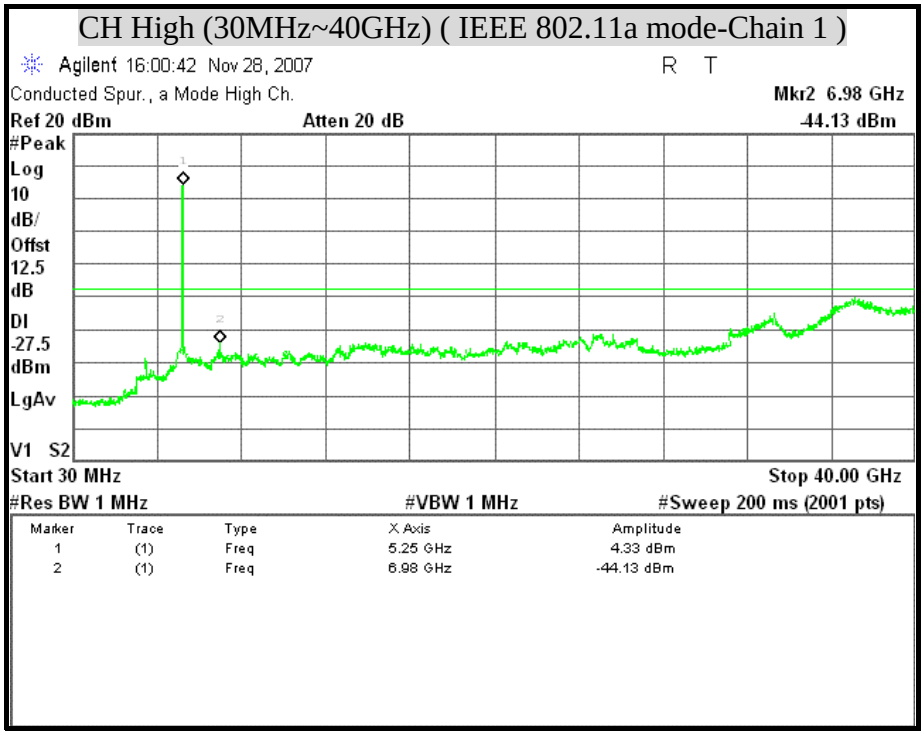
CH Low (30MHz~40GHz) (IEEE 802.11a mode-Chain 1)



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



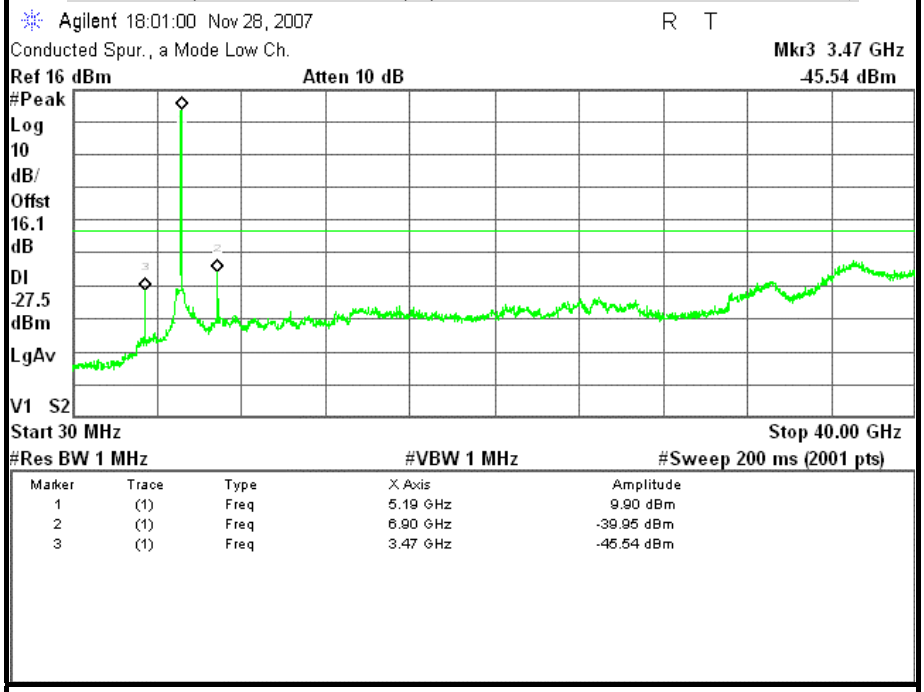
CH High (30MHz~40GHz) (IEEE 802.11a mode-Chain 1)



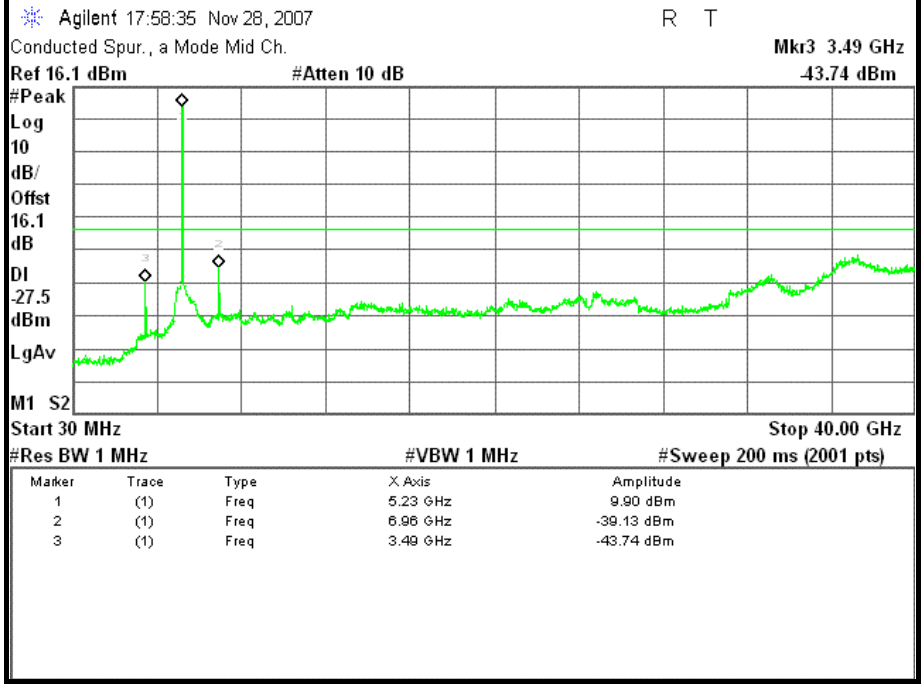
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11a Combined mode / 5150MHz ~ 5250MHz)

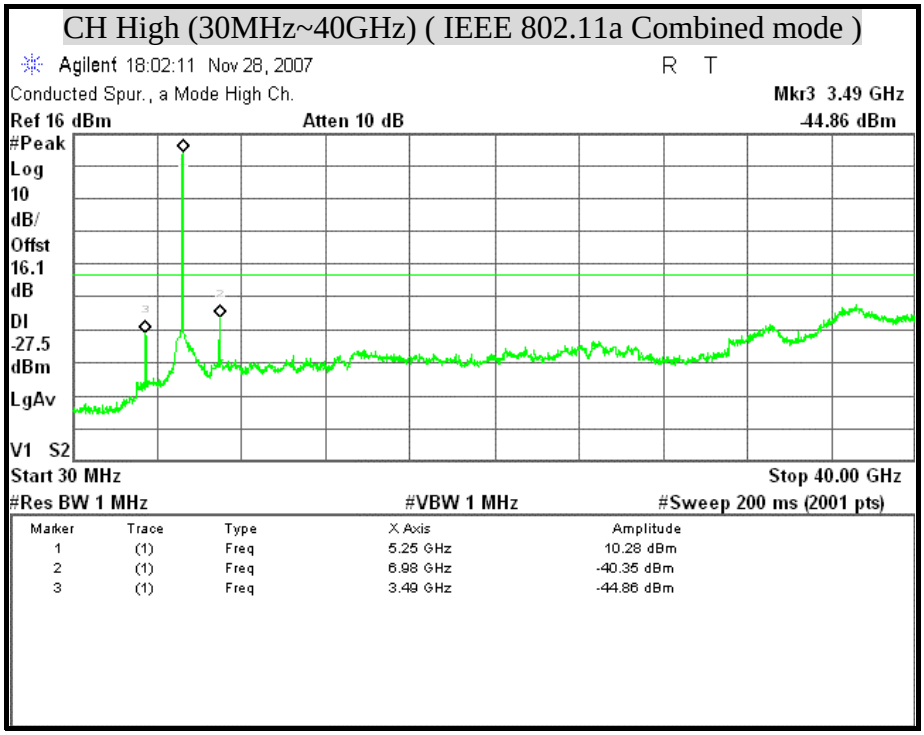
CH Low (30MHz~40GHz) (IEEE 802.11a Combined mode)



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



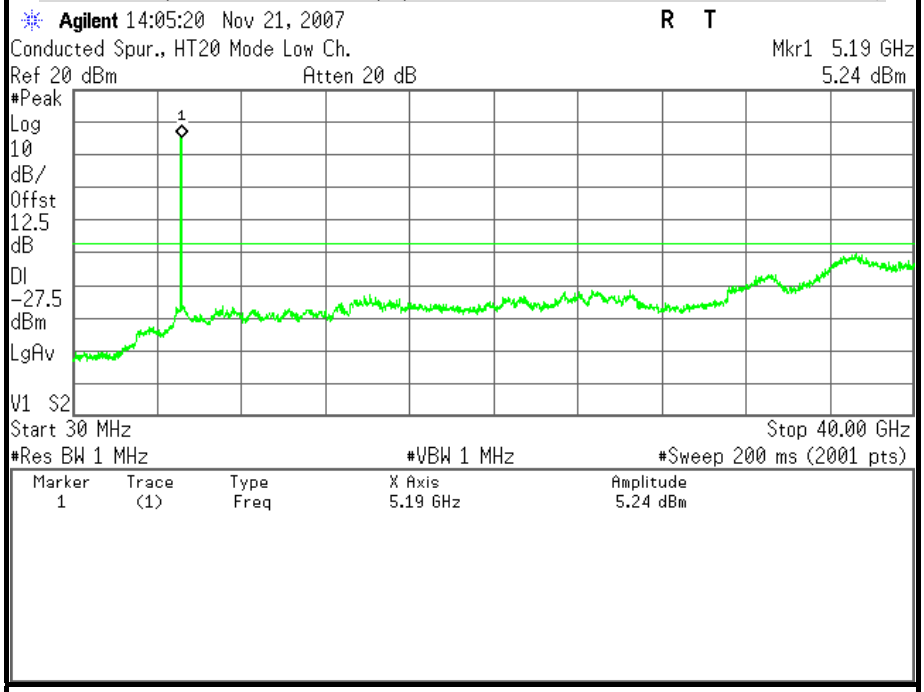
CH High (30MHz~40GHz) (IEEE 802.11a Combined mode)



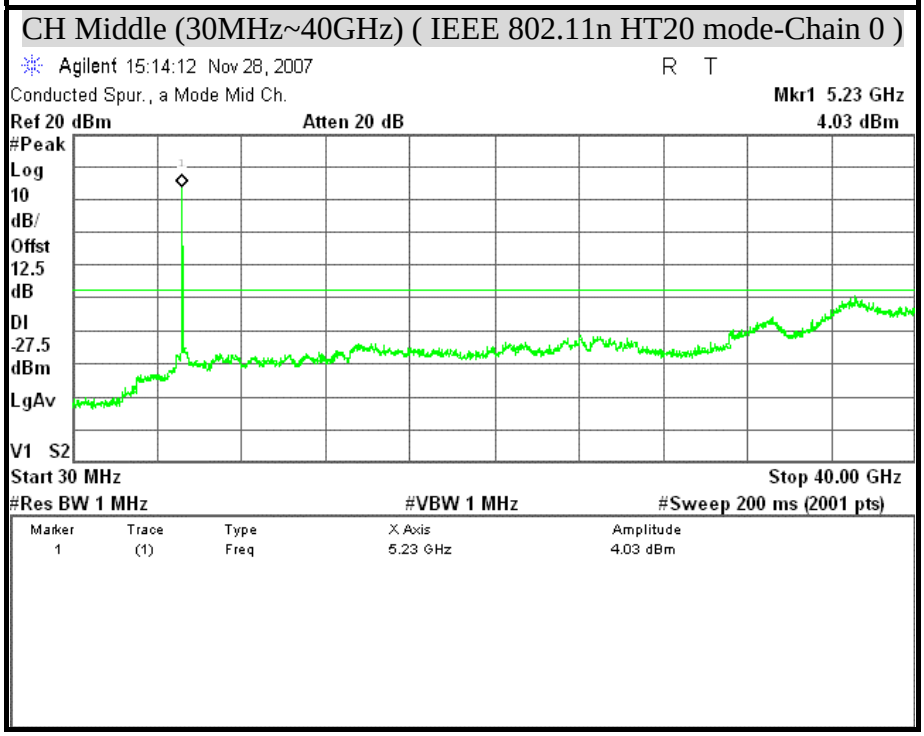
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11n HT20 mode / 5150MHz ~ 5250MHz)

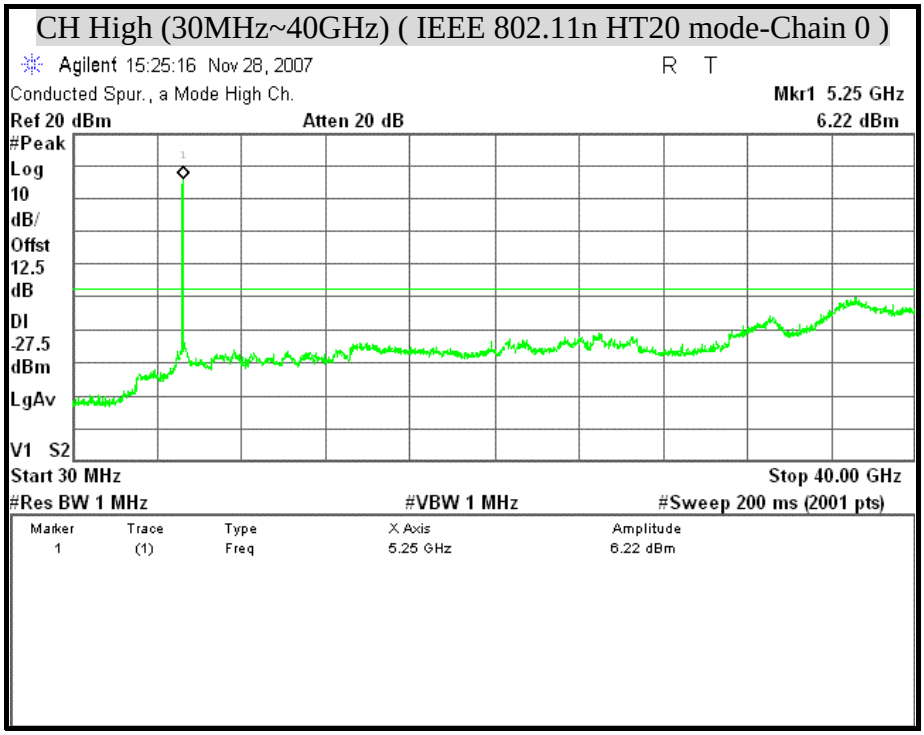
CH Low (30MHz~40GHz) (IEEE 802.11n HT20 mode-Chain 0)



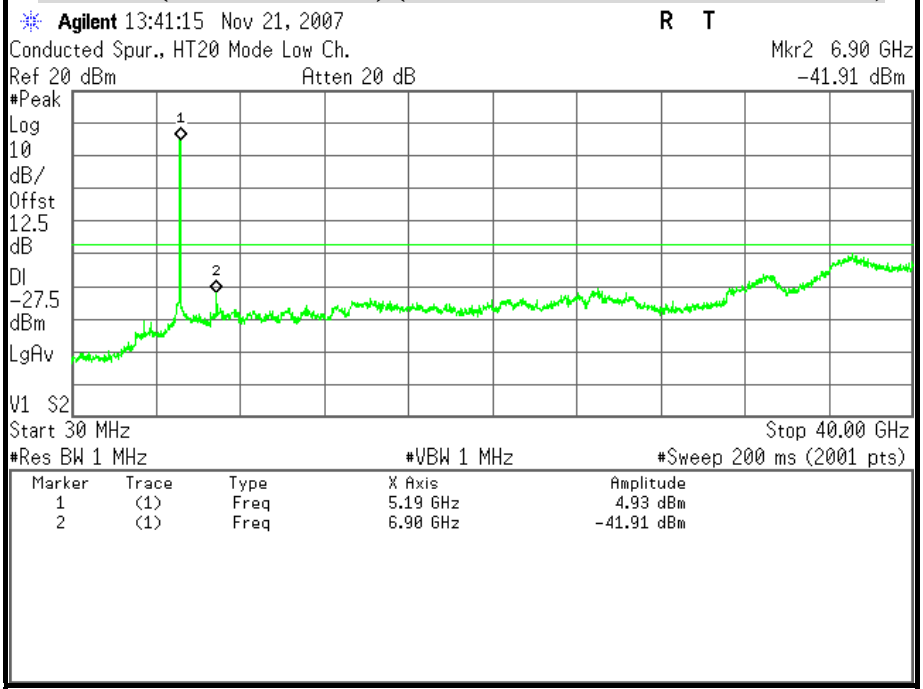
CH Middle (30MHz~40GHz) (IEEE 802.11n HT20 mode-Chain 0)



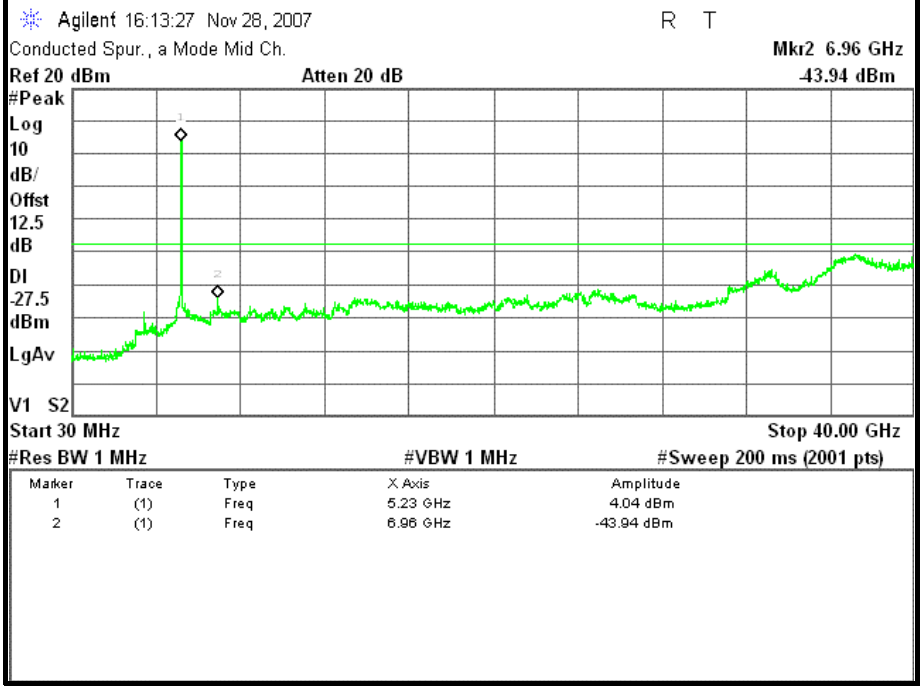
CH High (30MHz~40GHz) (IEEE 802.11n HT20 mode-Chain 0)



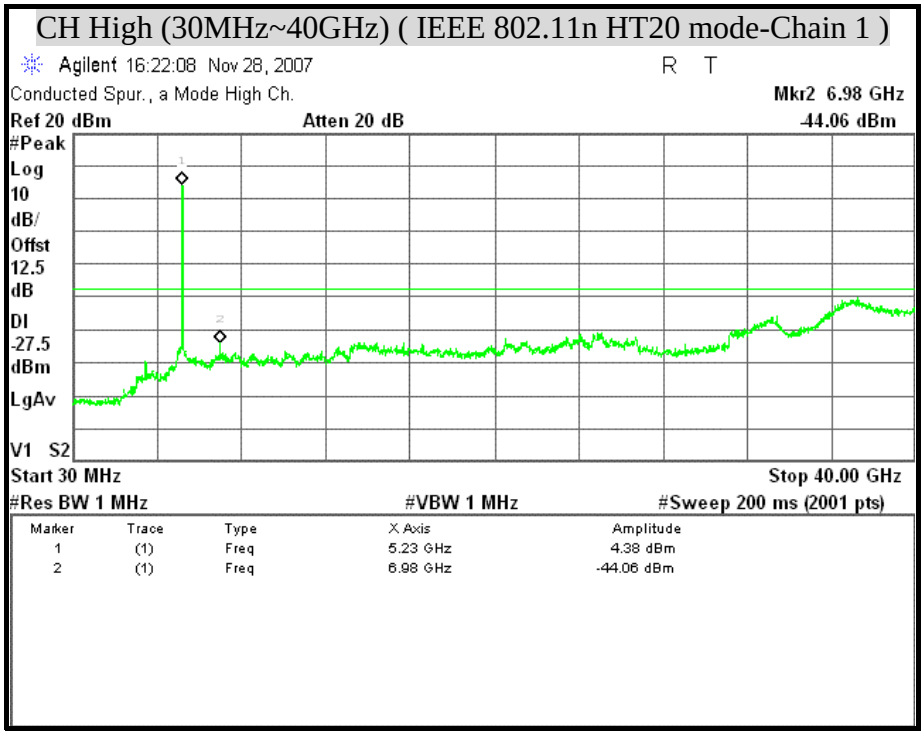
CH Low (30MHz~40GHz) (IEEE 802.11n HT20 mode-Chain 1)



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



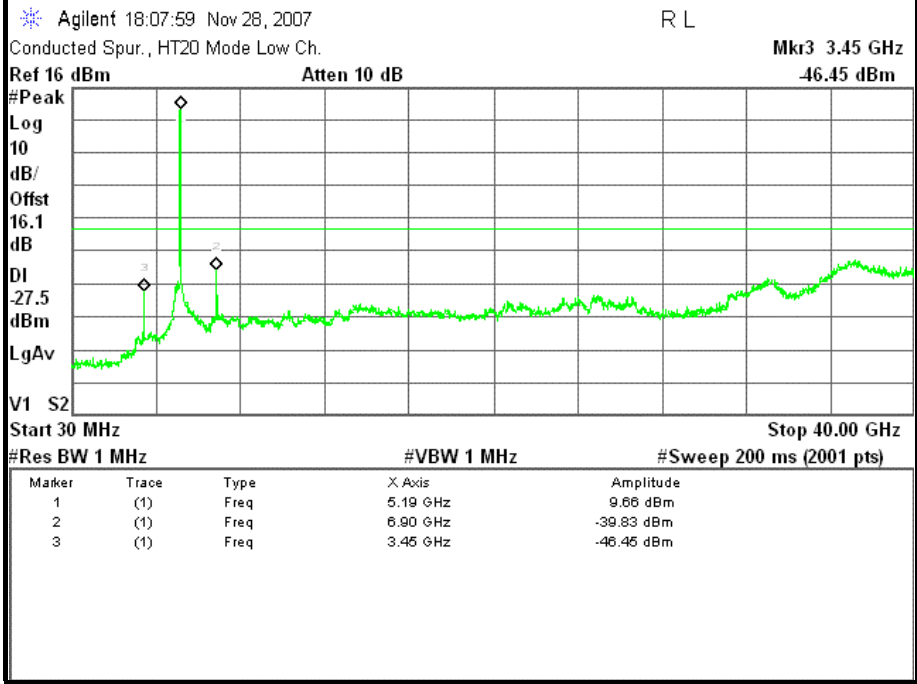
CH High (30MHz~40GHz) (IEEE 802.11n HT20 mode-Chain 1)



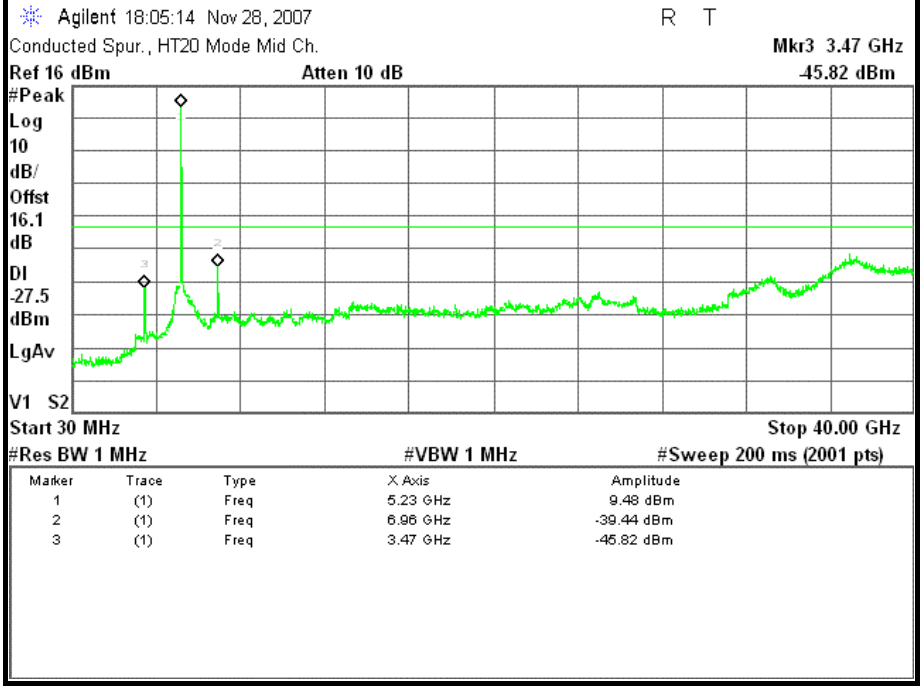
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11n HT20 Combined mode / 5150MHz ~ 5250MHz)

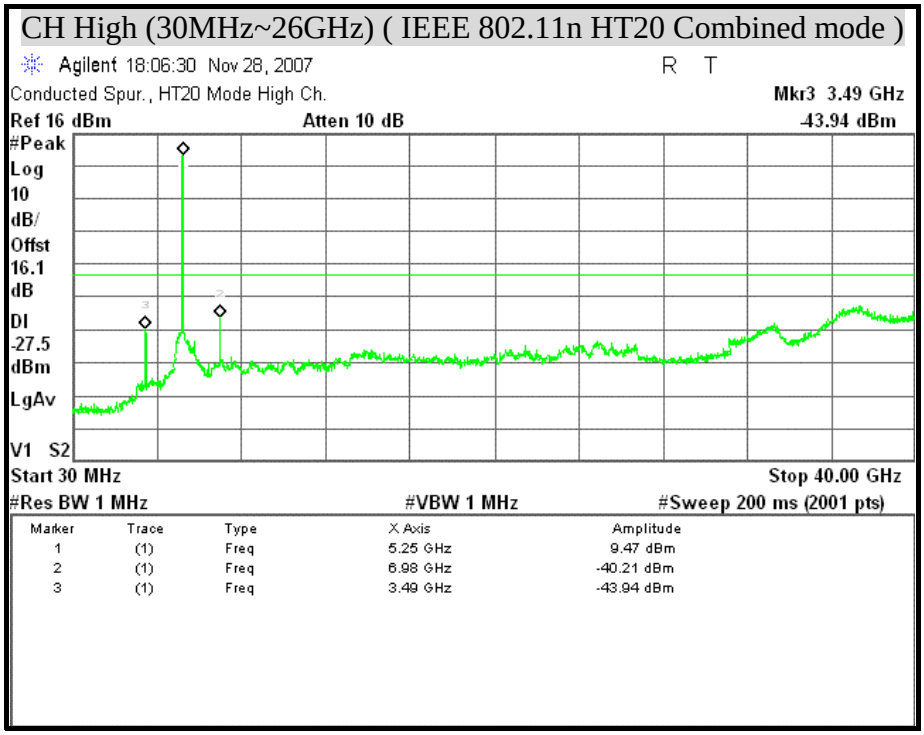
CH Low (30MHz~40GHz) (IEEE 802.11n HT20 Combined mode)



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



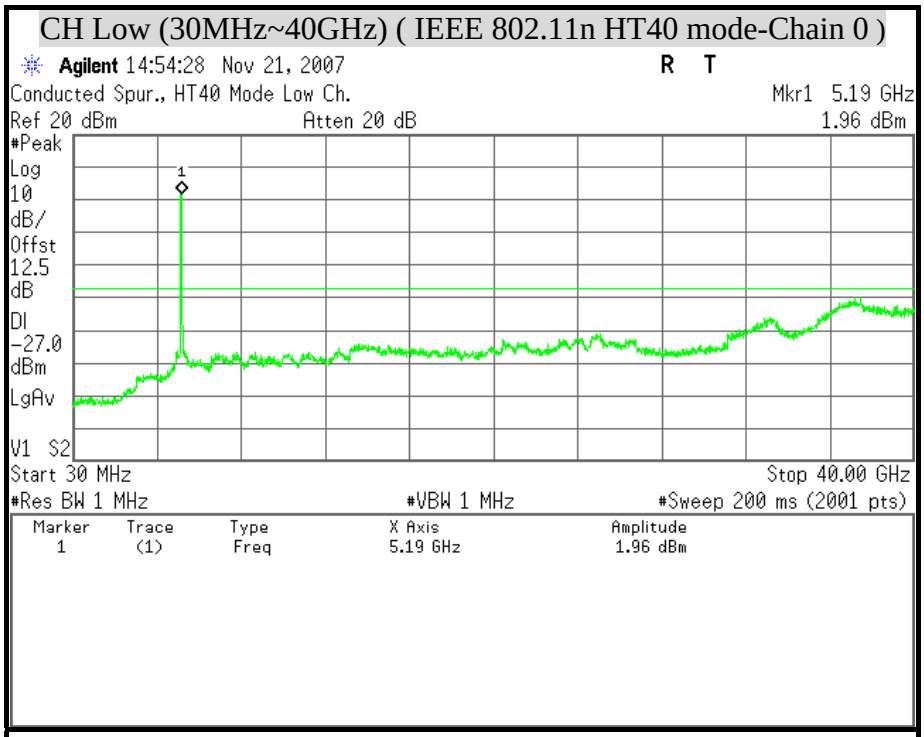
CH High (30MHz~26GHz) (IEEE 802.11n HT20 Combined mode)



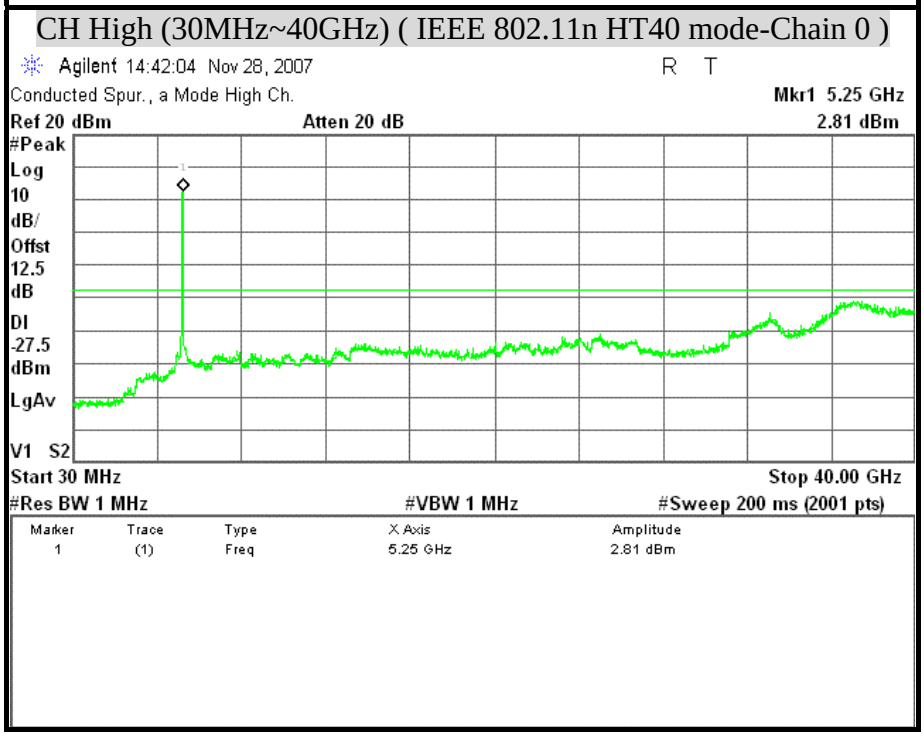
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11n HT40 mode / 5150MHz ~ 5250MHz)

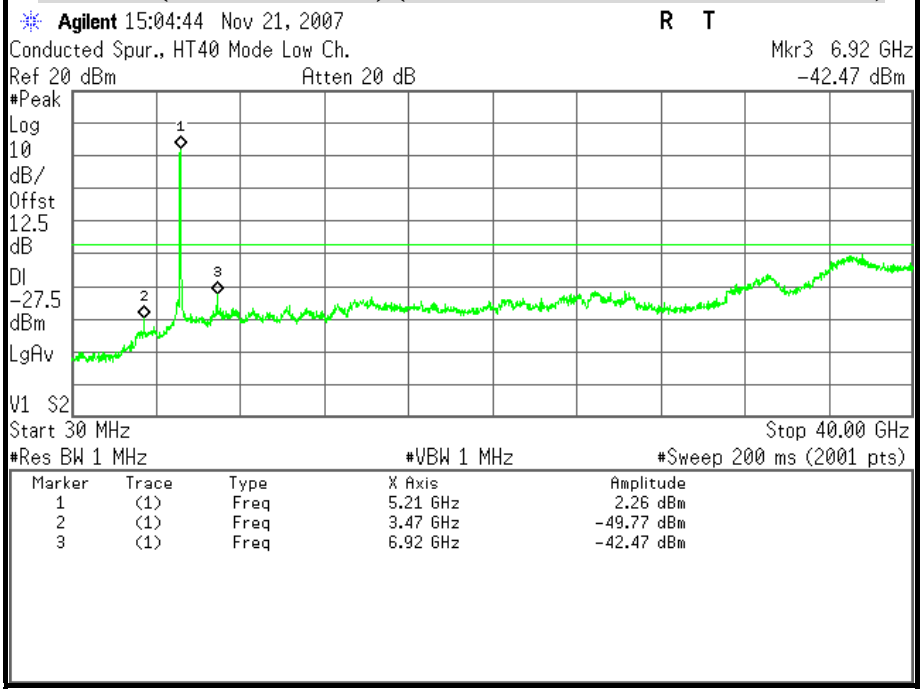
CH Low (30MHz~40GHz) (IEEE 802.11n HT40 mode-Chain 0)



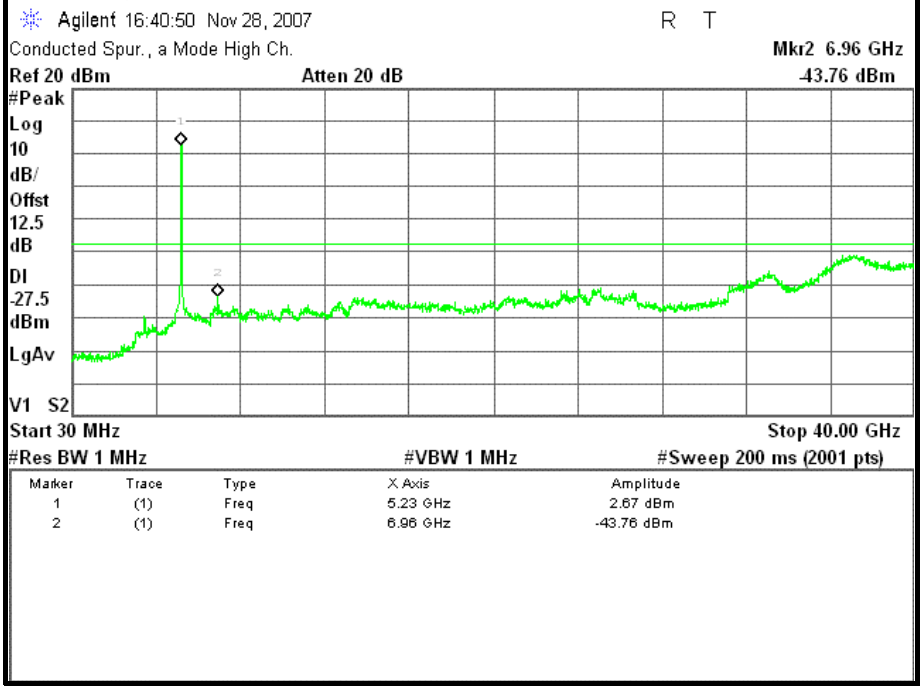
CH High (30MHz~40GHz) (IEEE 802.11n HT40 mode-Chain 0)



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



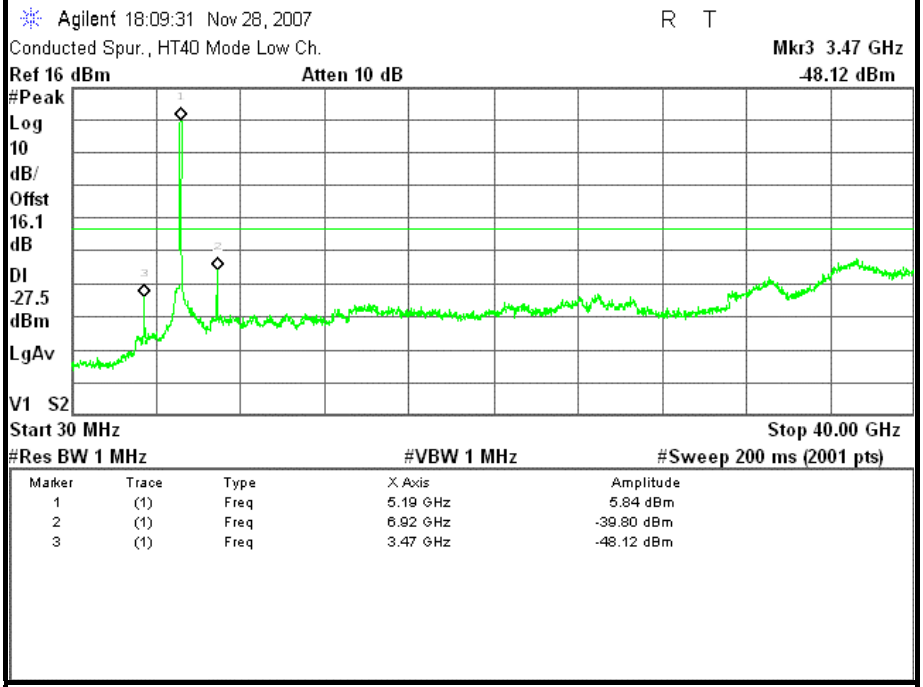
CH High (30MHz~40GHz) (IEEE 802.11n HT40 mode-Chain 1)



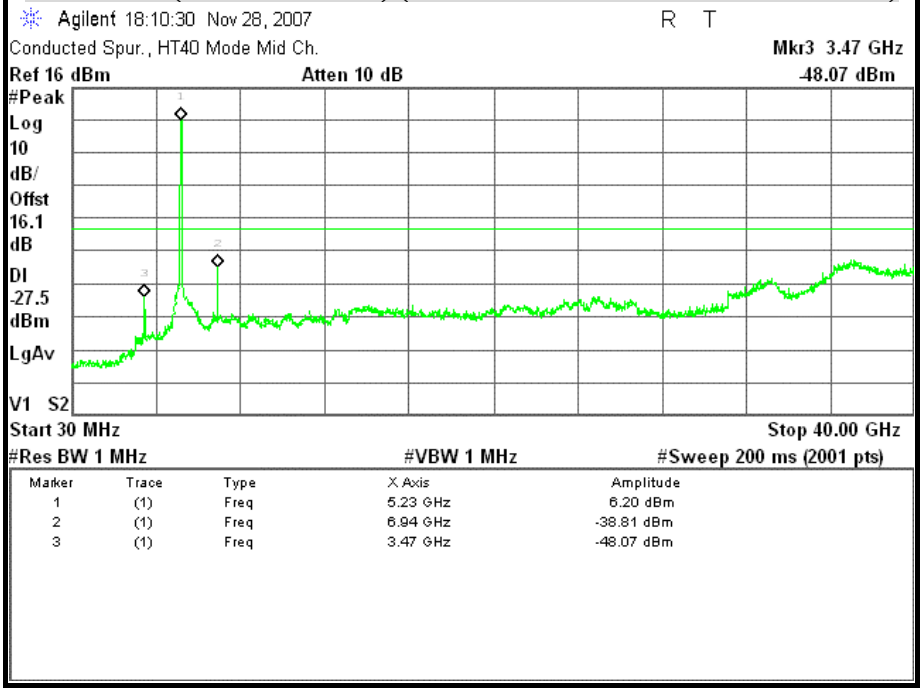
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11n HT40 Combined mode / 5150MHz ~ 5250MHz)

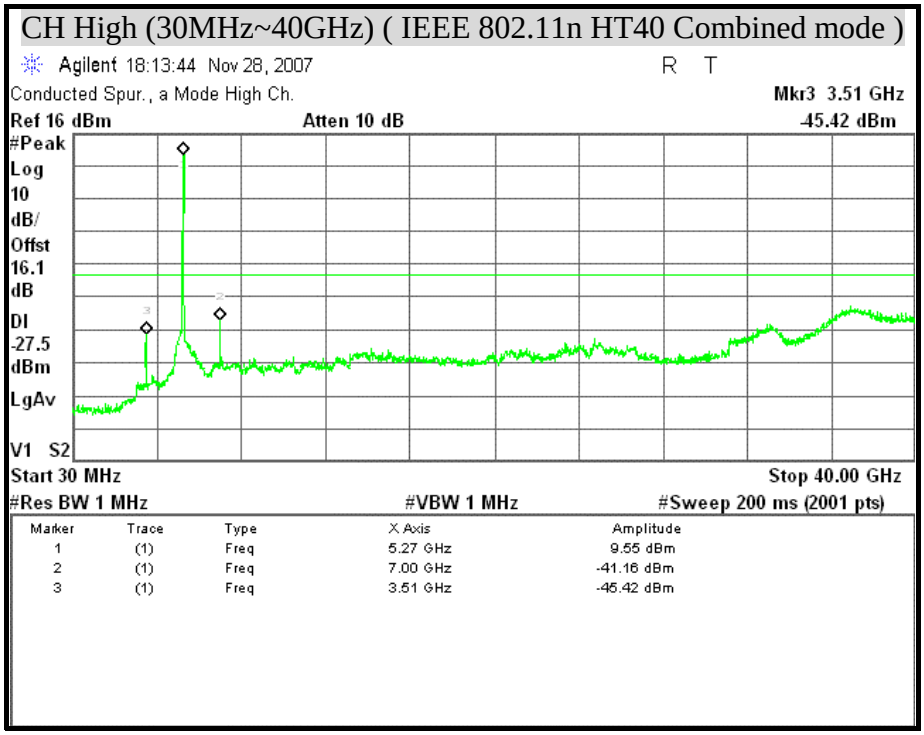
CH Low (30MHz~40GHz) (IEEE 802.11n HT40 Combined mode)



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



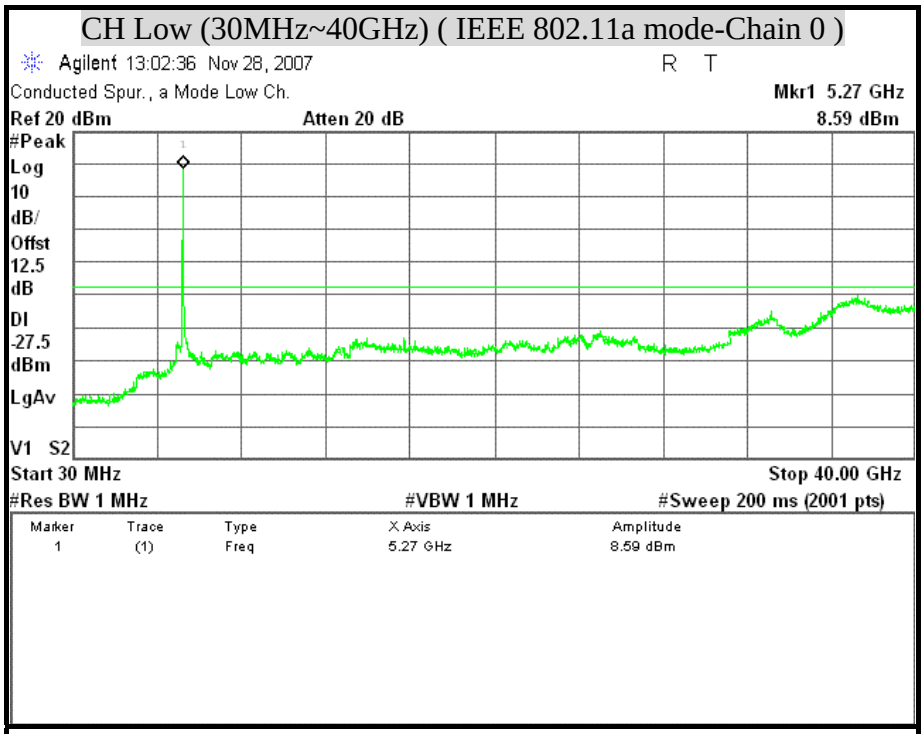
CH High (30MHz~40GHz) (IEEE 802.11n HT40 Combined mode)



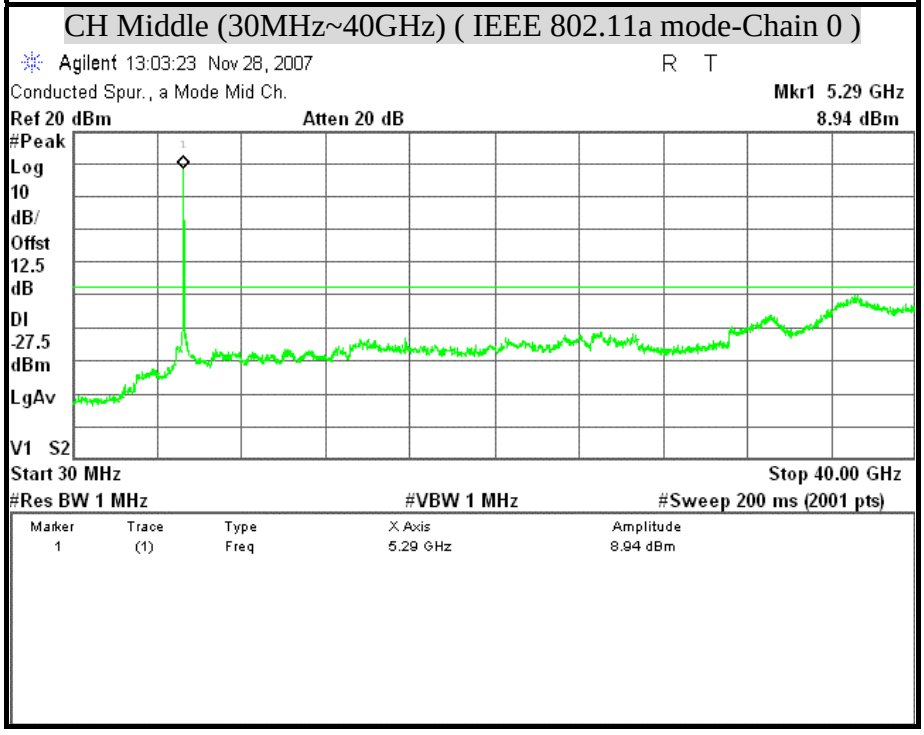
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11a mode / 5250MHz ~ 5350MHz)

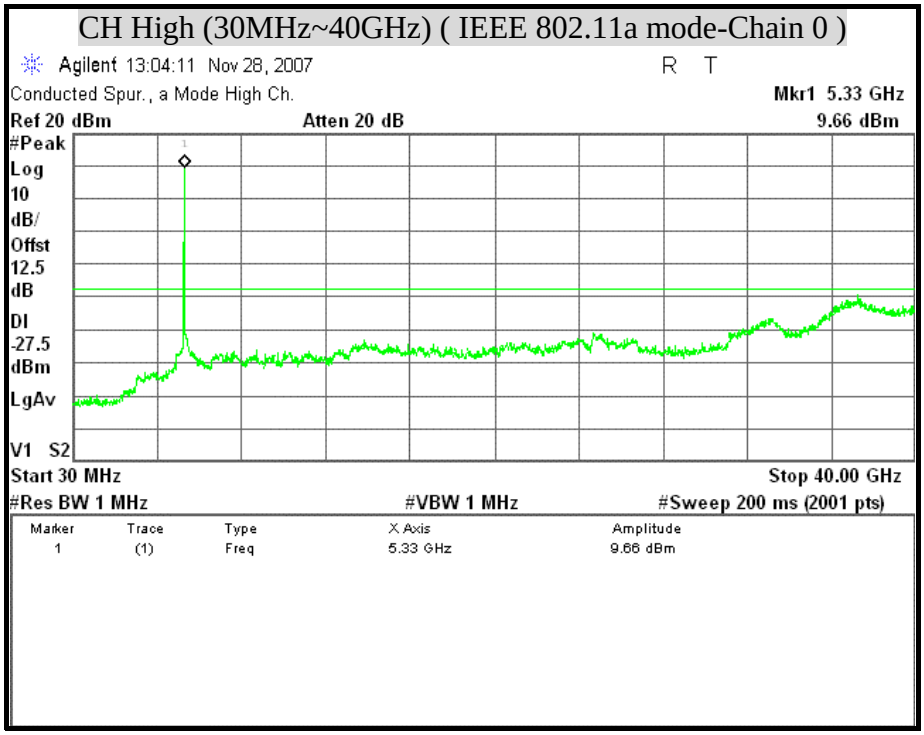
CH Low (30MHz~40GHz) (IEEE 802.11a mode-Chain 0)



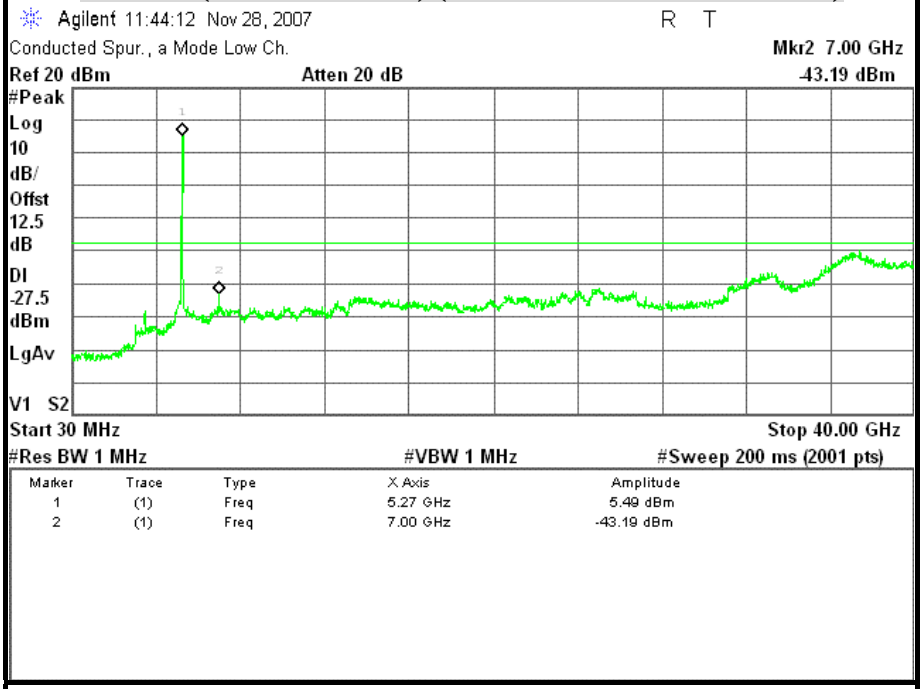
CH Middle (30MHz~40GHz) (IEEE 802.11a mode-Chain 0)



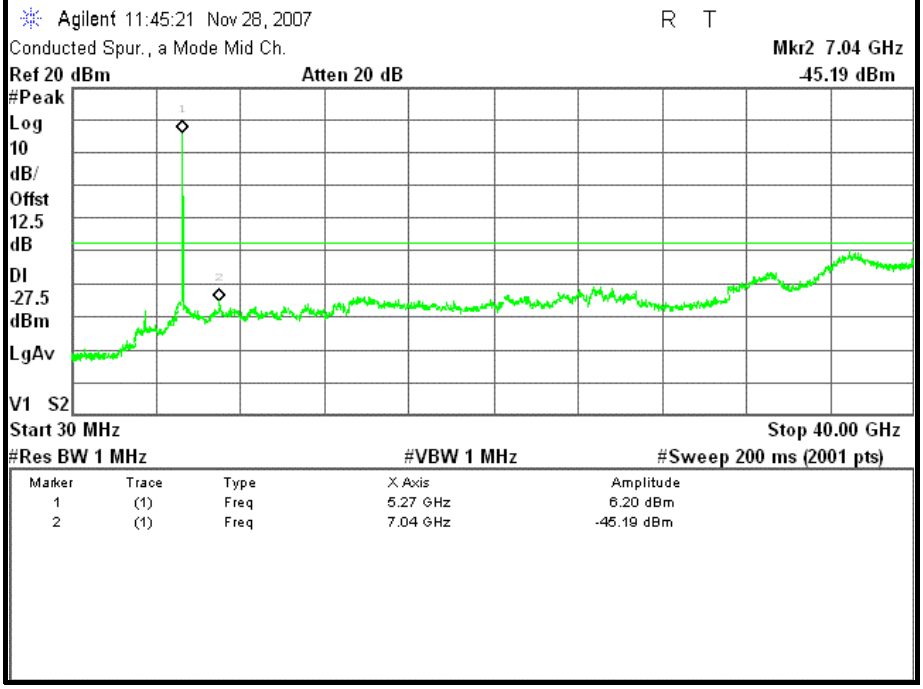
CH High (30MHz~40GHz) (IEEE 802.11a mode-Chain 0)



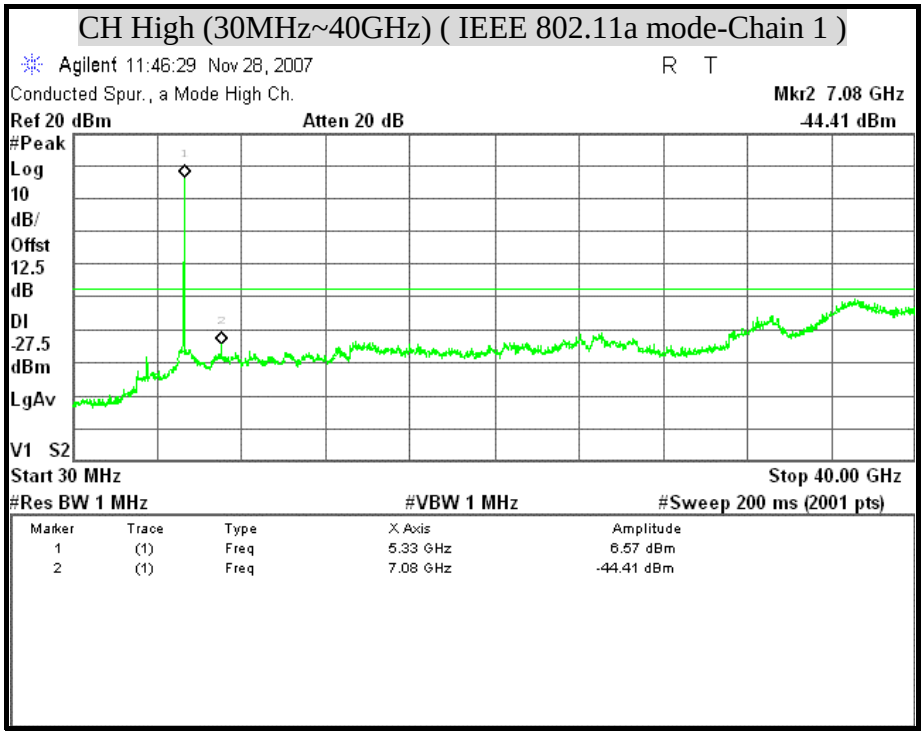
CH Low (30MHz~40GHz) (IEEE 802.11a mode-Chain 1)



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



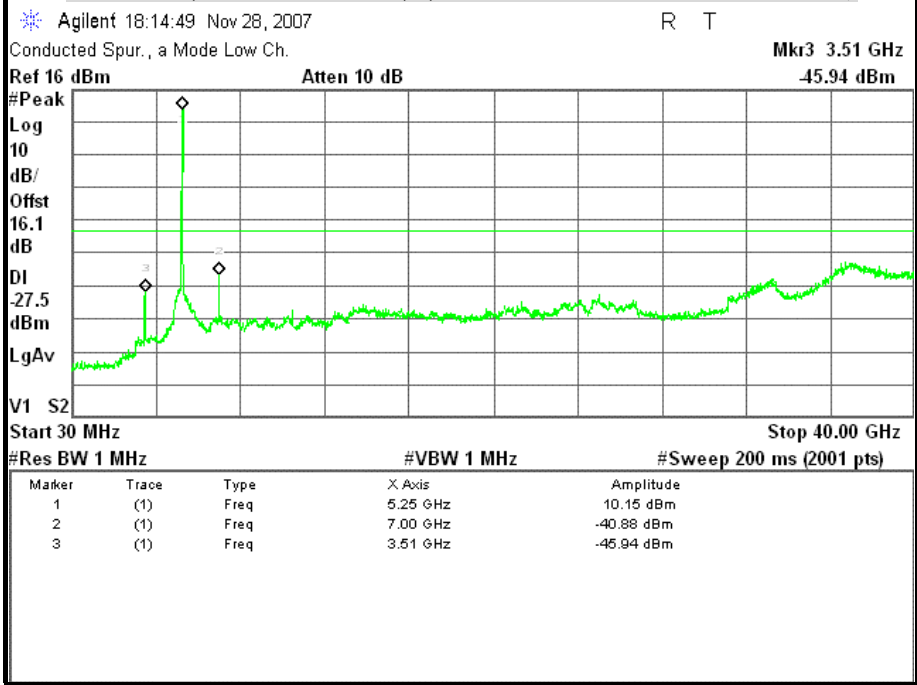
CH High (30MHz~40GHz) (IEEE 802.11a mode-Chain 1)



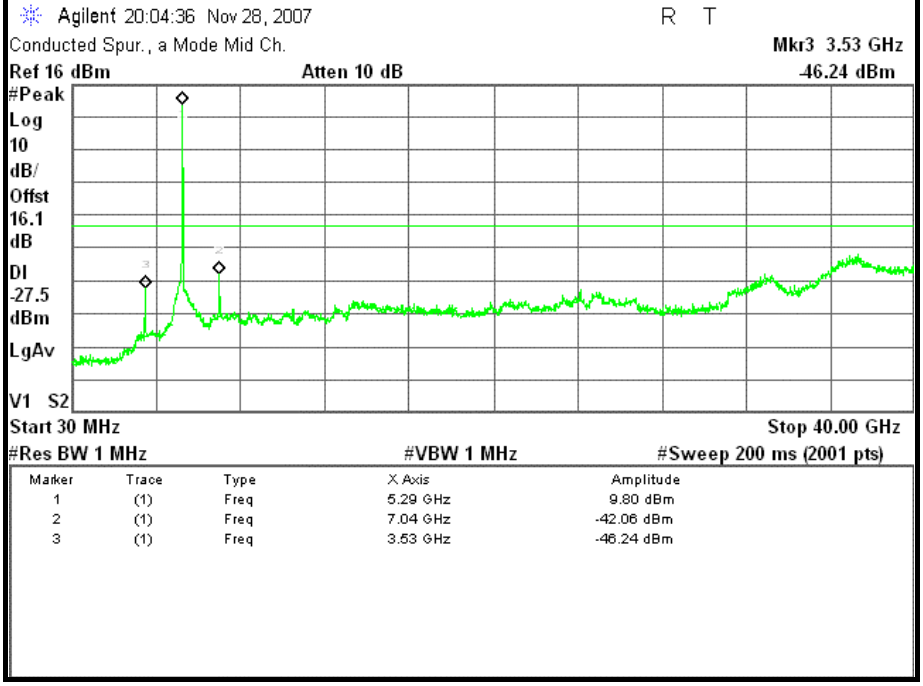
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11a Combined mode / 5250MHz ~ 5350MHz)

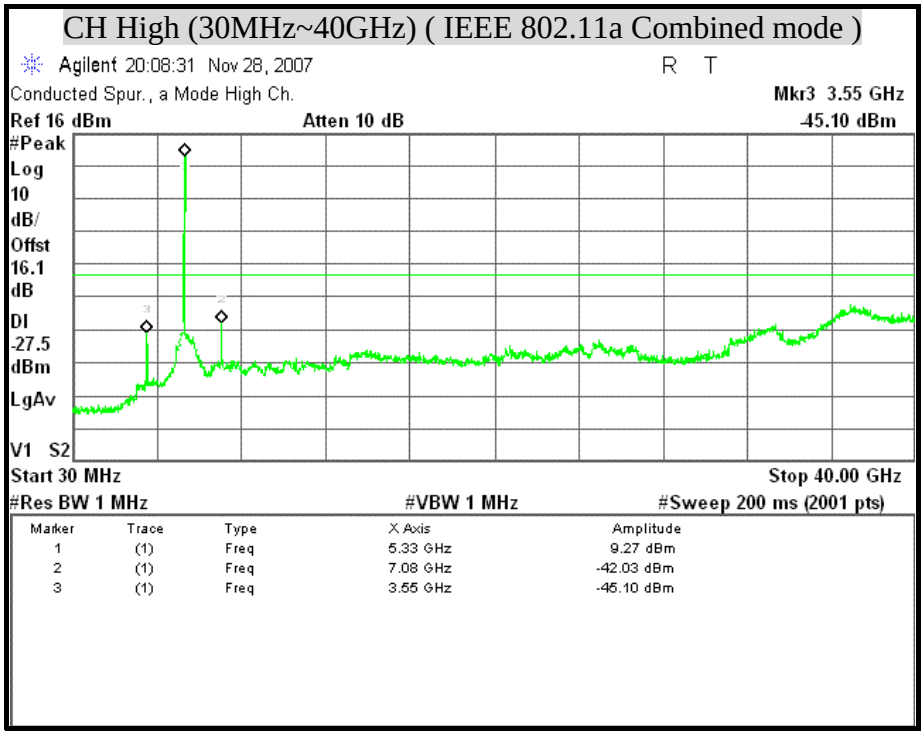
CH Low (30MHz~40GHz) (IEEE 802.11a Combined mode)



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



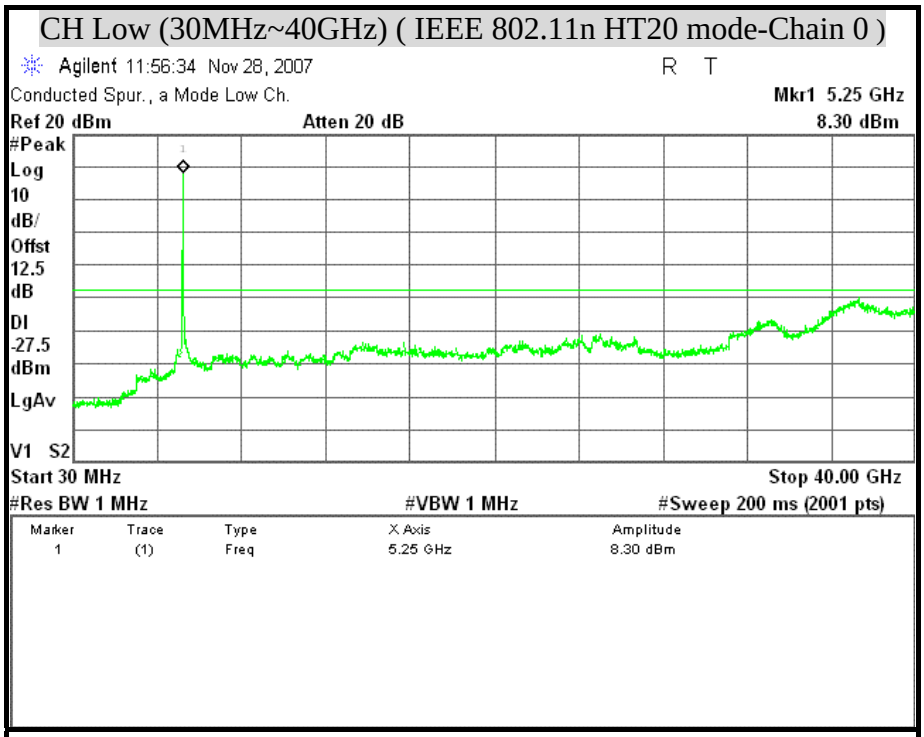
CH High (30MHz~40GHz) (IEEE 802.11a Combined mode)



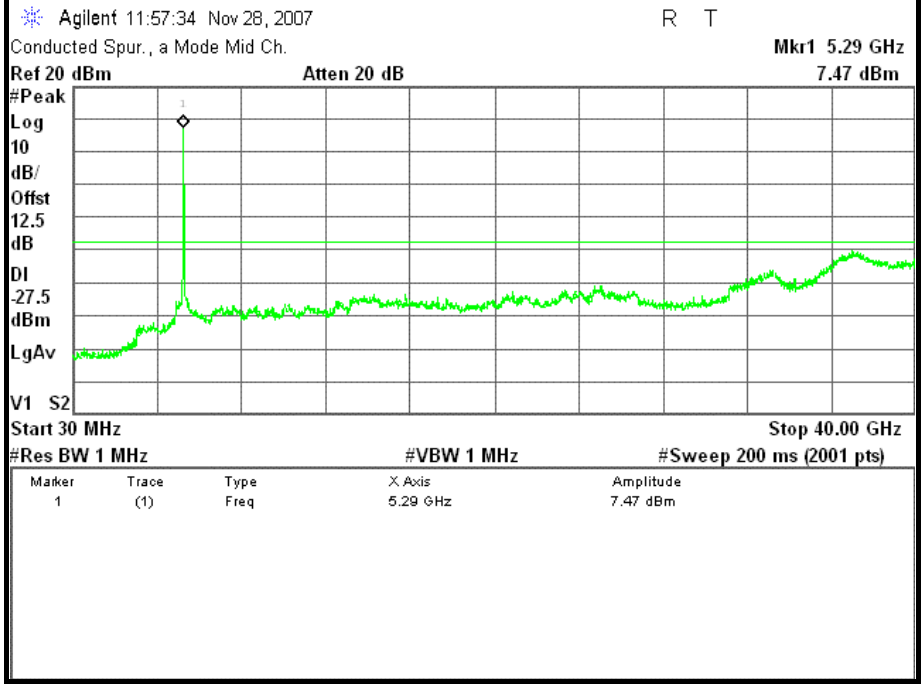
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11n HT20 mode / 5250MHz ~ 5350MHz)

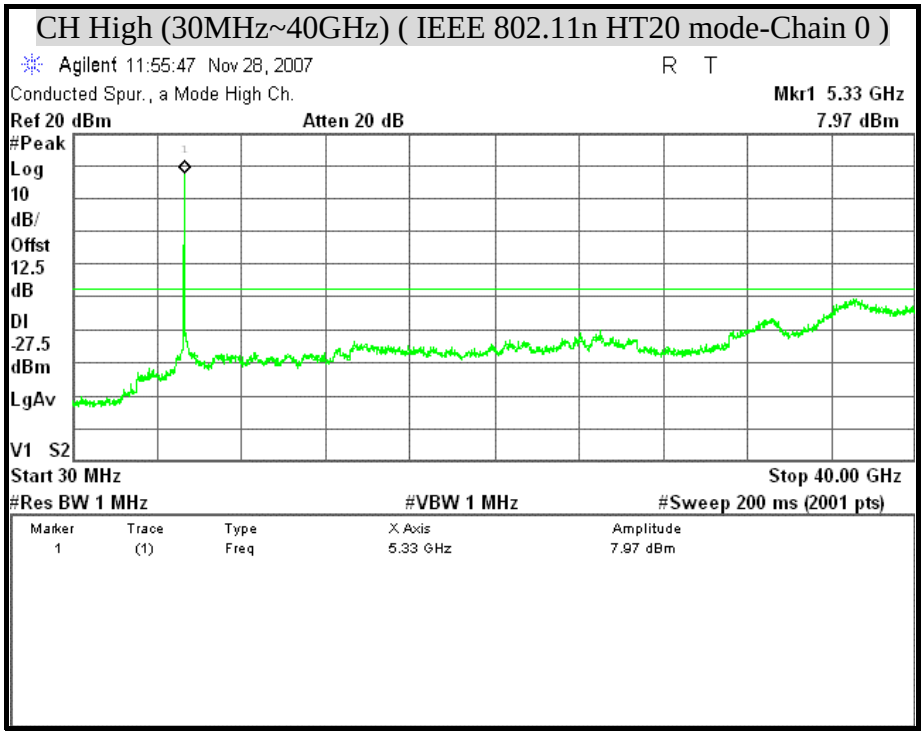
CH Low (30MHz~40GHz) (IEEE 802.11n HT20 mode-Chain 0)



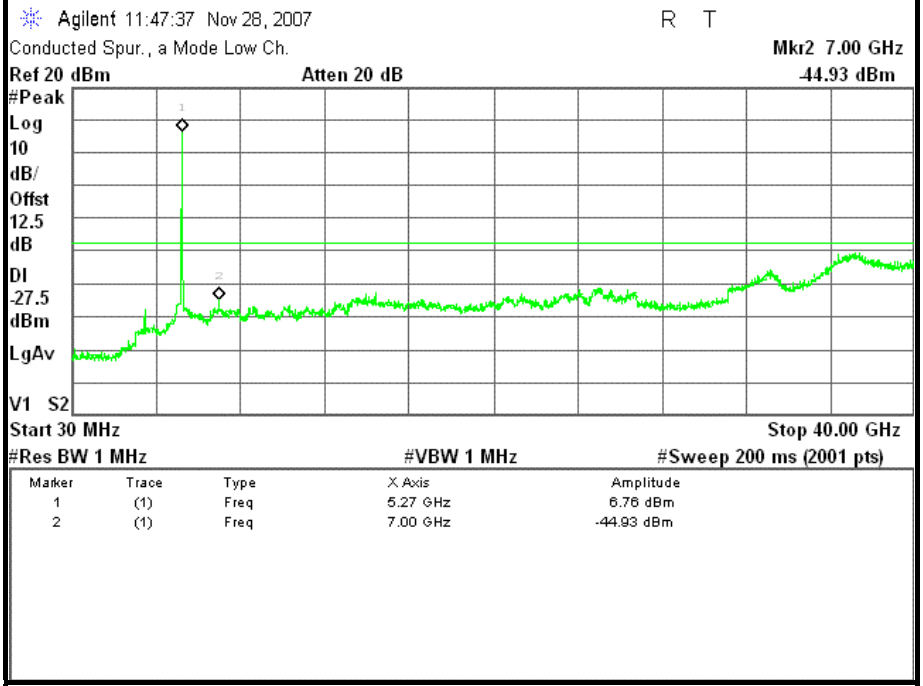
CH Middle (30MHz~40GHz) (IEEE 802.11n HT20 mode-Chain 0)



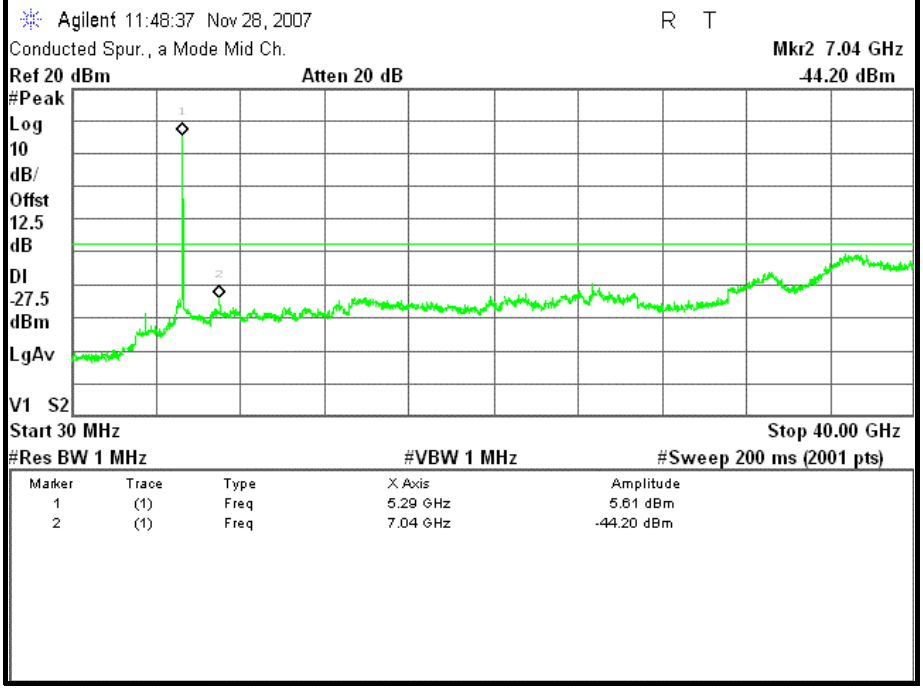
CH High (30MHz~40GHz) (IEEE 802.11n HT20 mode-Chain 0)



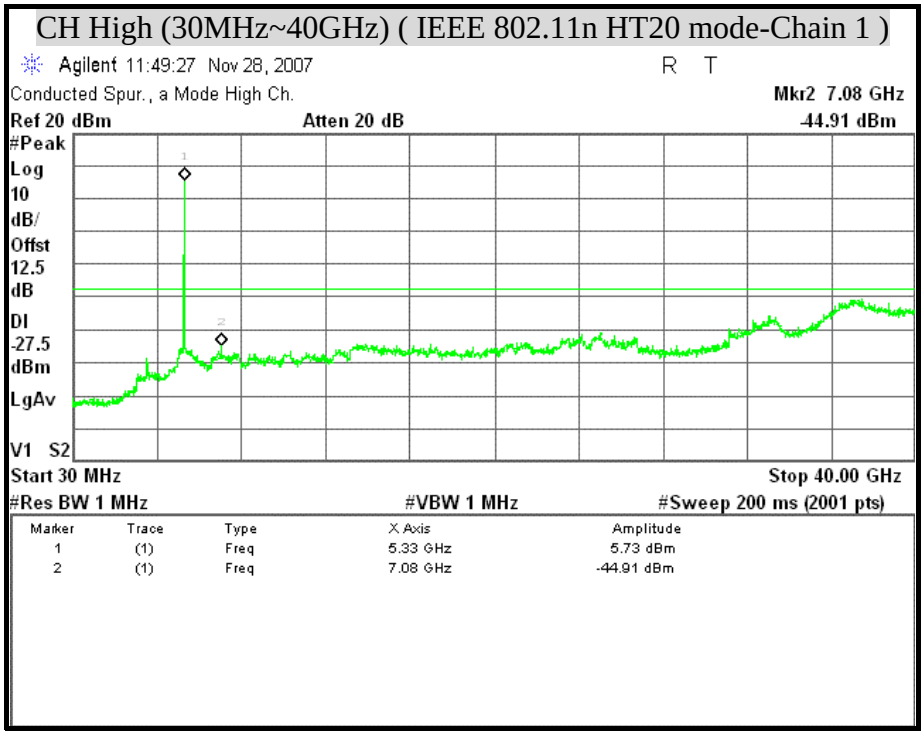
CH Low (30MHz~40GHz) (IEEE 802.11n HT20 mode-Chain 1)



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



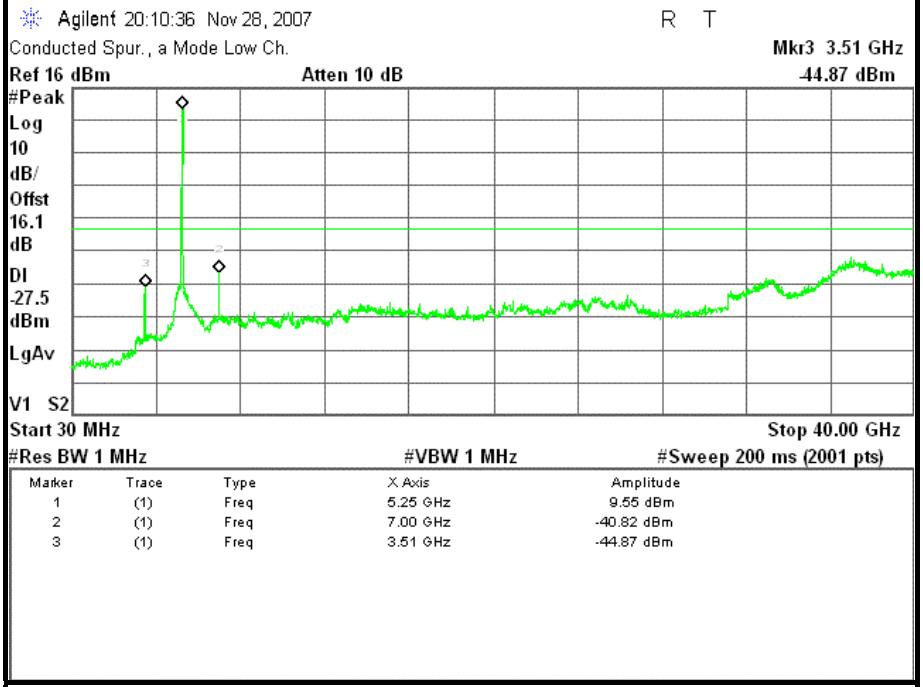
CH High (30MHz~40GHz) (IEEE 802.11n HT20 mode-Chain 1)



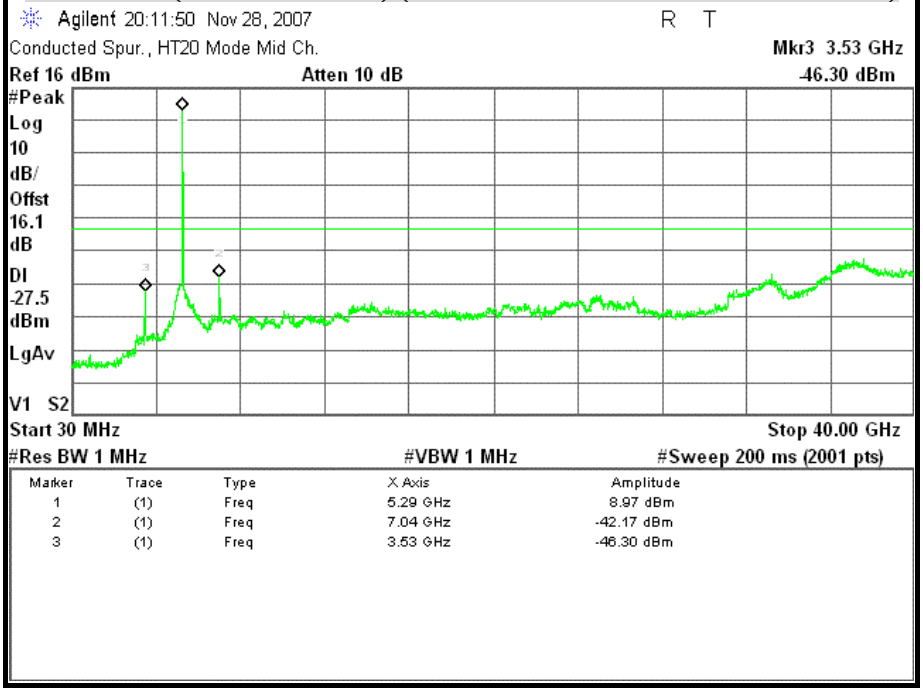
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11n HT20 Combined mode / 5250MHz ~ 5350MHz)

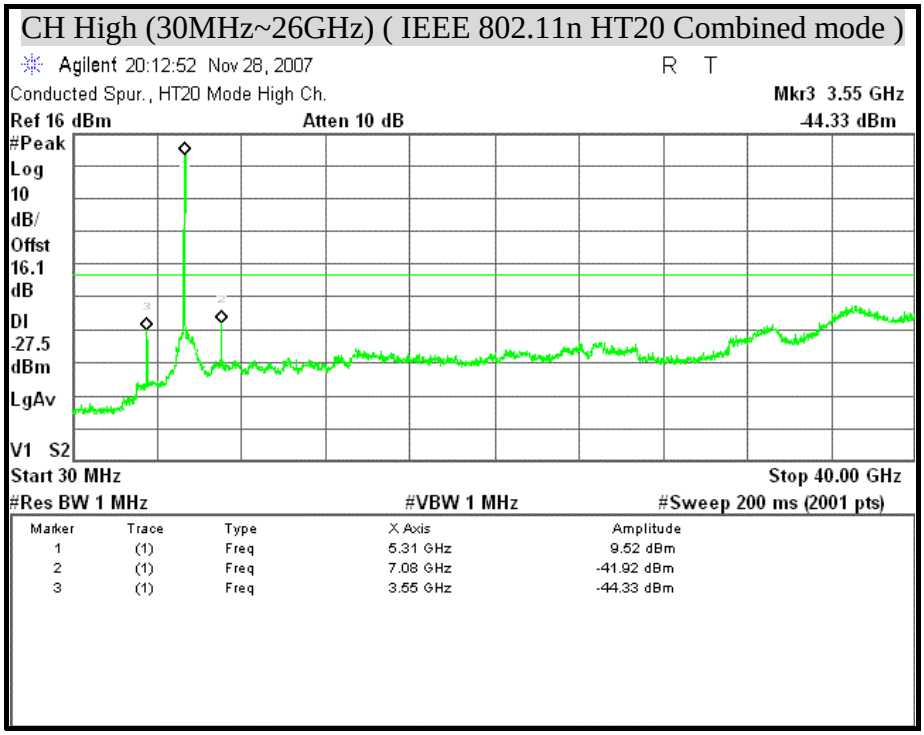
CH Low (30MHz~40GHz) (IEEE 802.11n HT20 Combined mode)



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



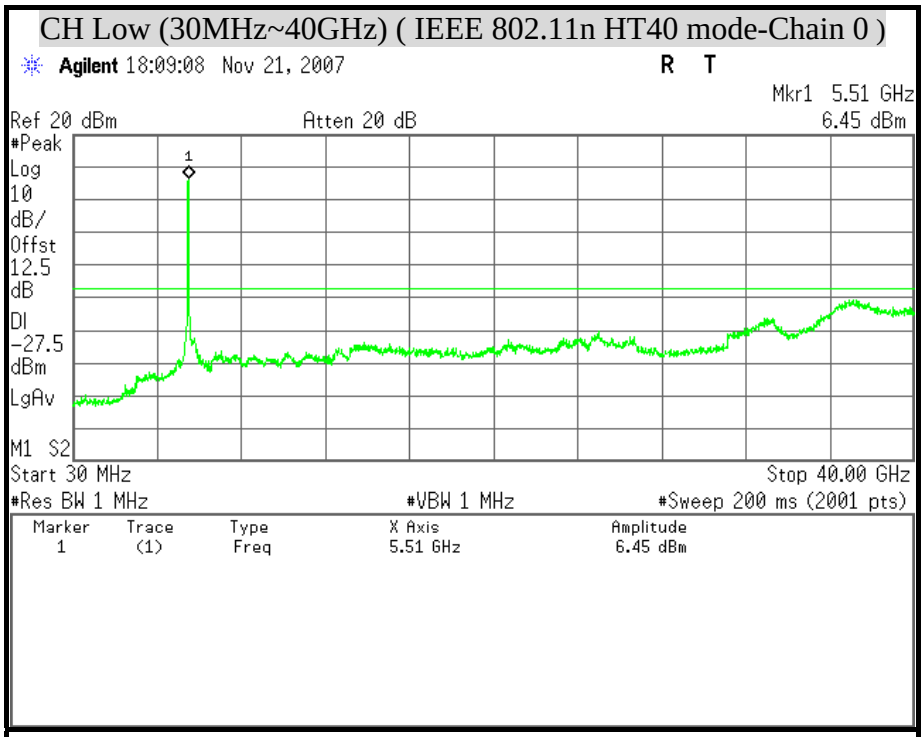
CH High (30MHz~26GHz) (IEEE 802.11n HT20 Combined mode)



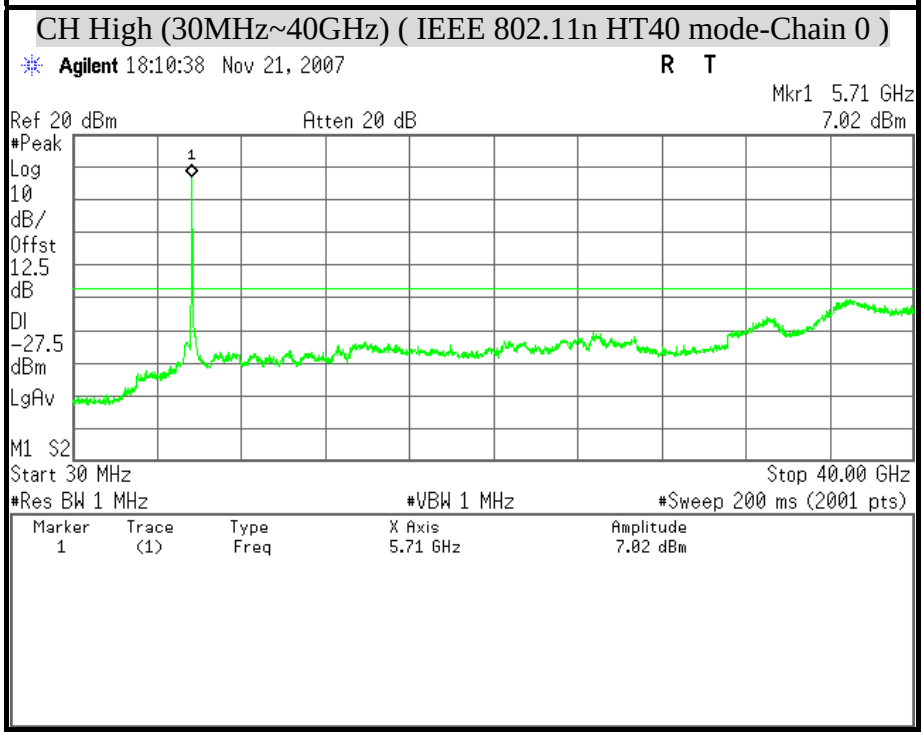
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11n HT40 mode / 5250MHz ~ 5350MHz)

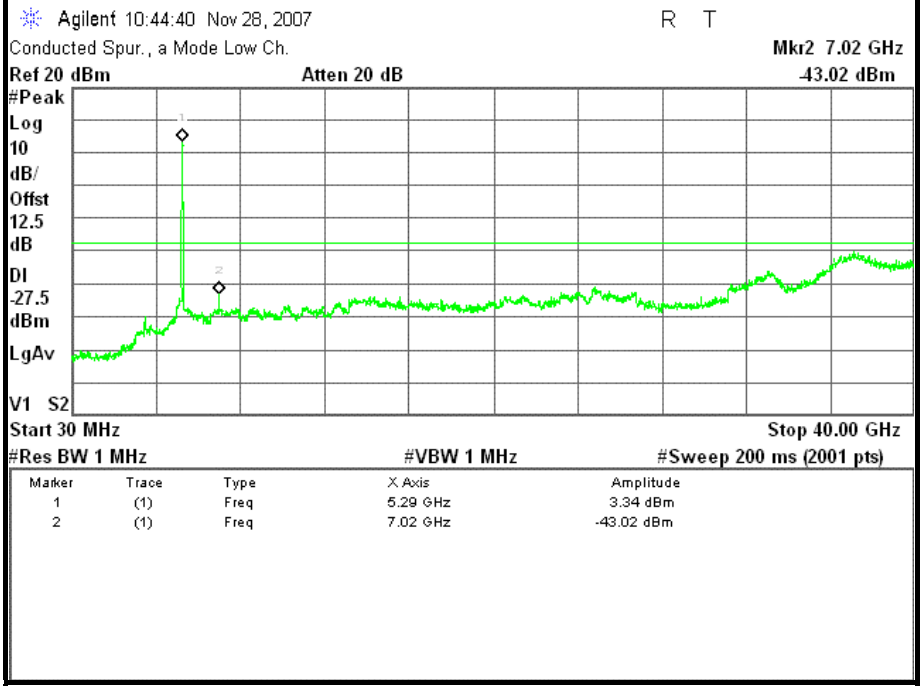
CH Low (30MHz~40GHz) (IEEE 802.11n HT40 mode-Chain 0)



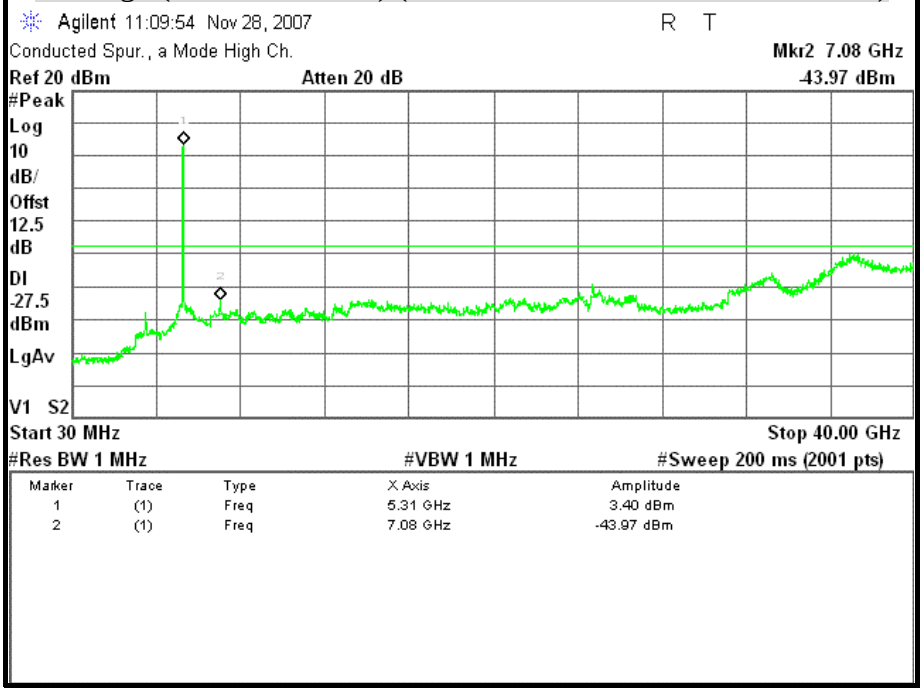
CH High (30MHz~40GHz) (IEEE 802.11n HT40 mode-Chain 0)



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



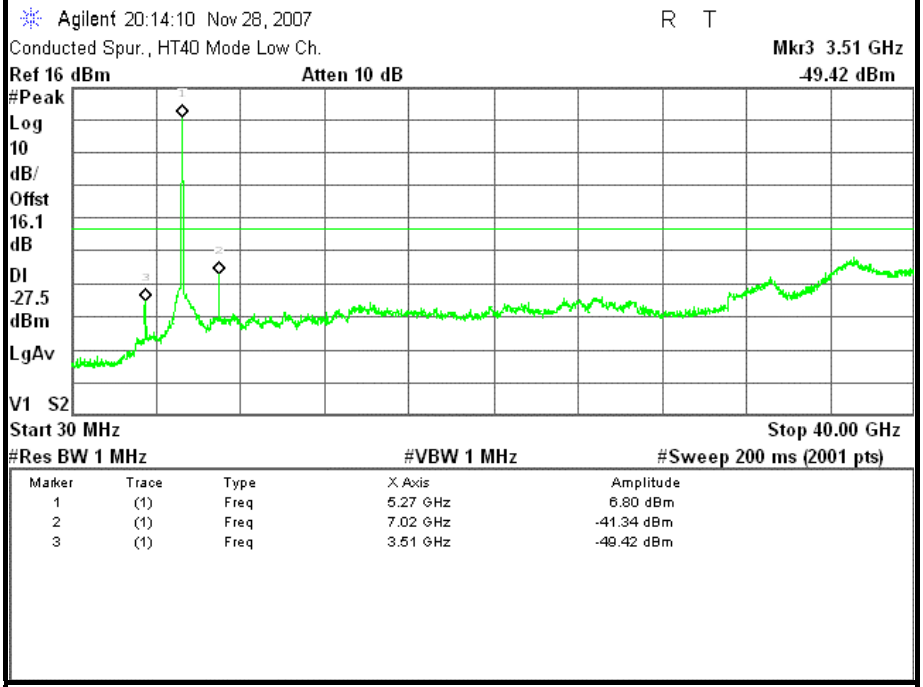
CH High (30MHz~40GHz) (IEEE 802.11n HT40 mode-Chain 1)



OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

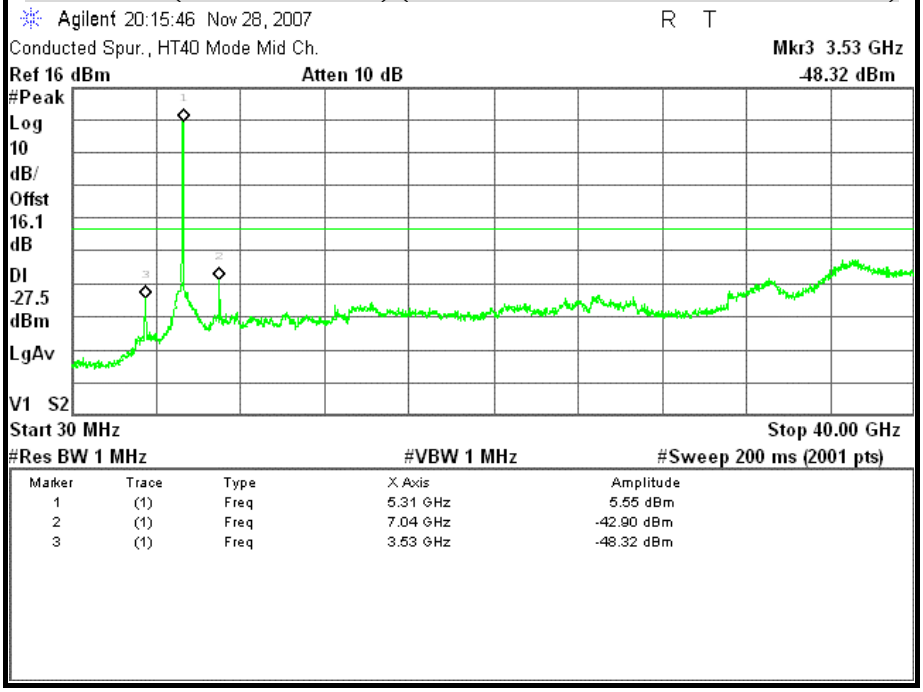
(IEEE 802.11n HT40 Combined mode / 5250MHz ~ 5350MHz)

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



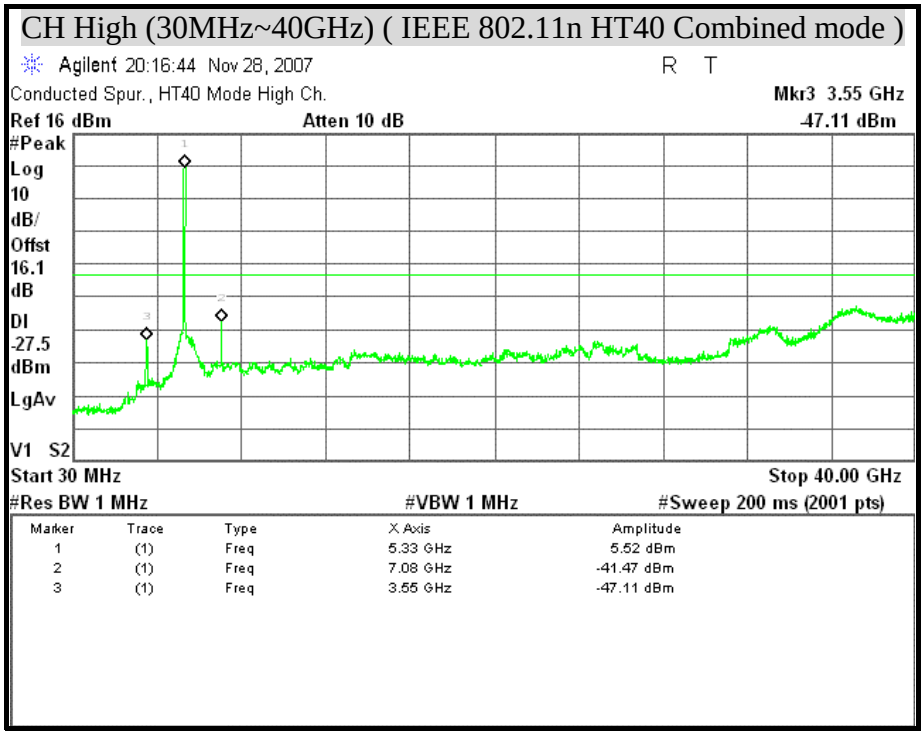
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.27 GHz	6.80 dBm
2	(1)	Freq	7.02 GHz	-41.34 dBm
3	(1)	Freq	3.51 GHz	-49.42 dBm

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



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.31 GHz	5.55 dBm
2	(1)	Freq	7.04 GHz	-42.90 dBm
3	(1)	Freq	3.53 GHz	-48.32 dBm

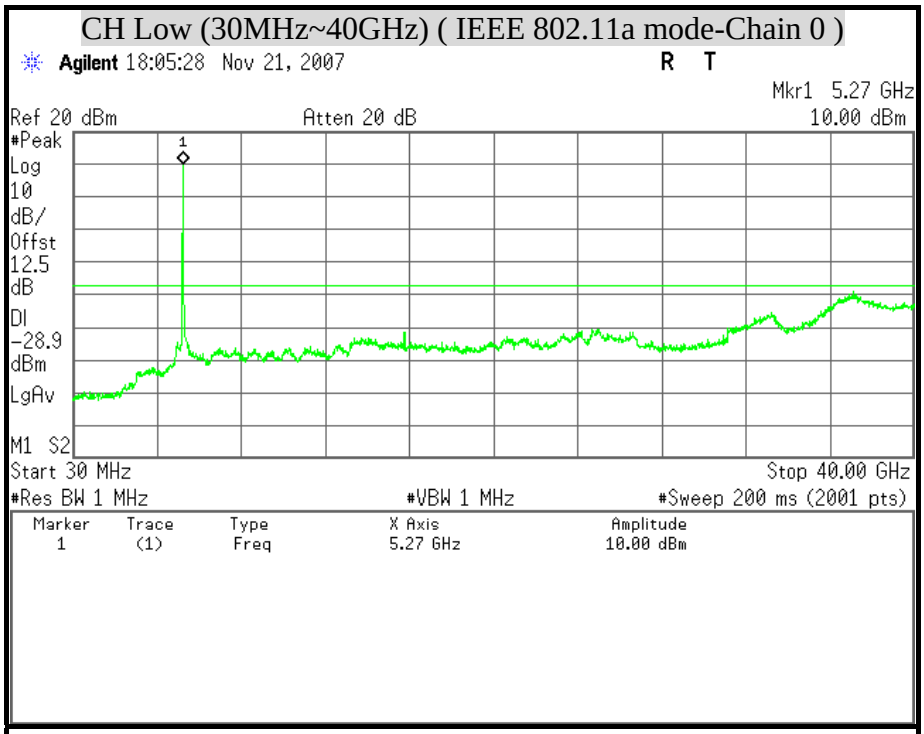
CH High (30MHz~40GHz) (IEEE 802.11n HT40 Combined mode)



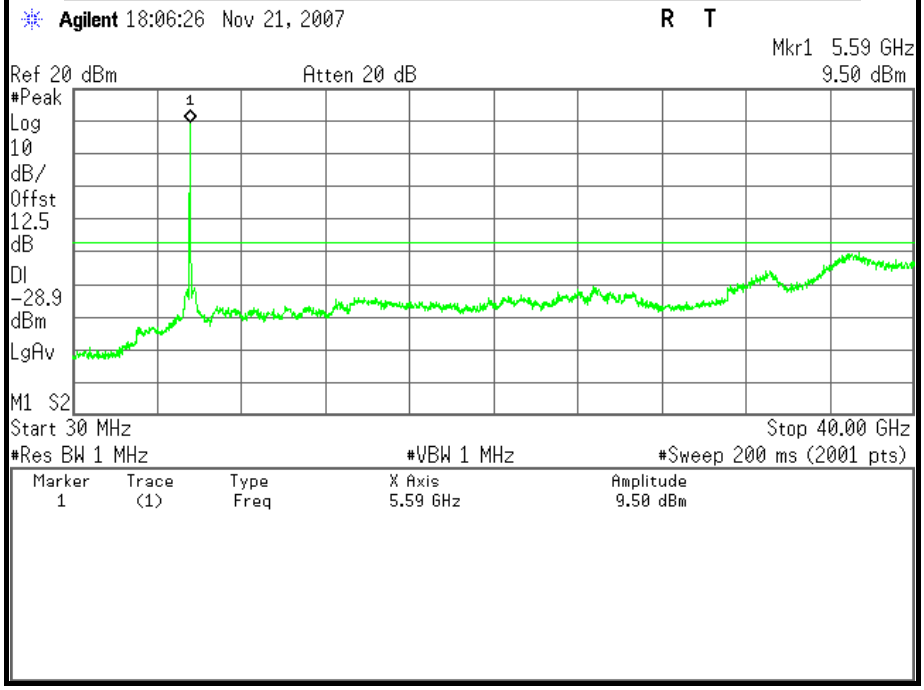
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11a mode / 5470MHz ~ 5725MHz)

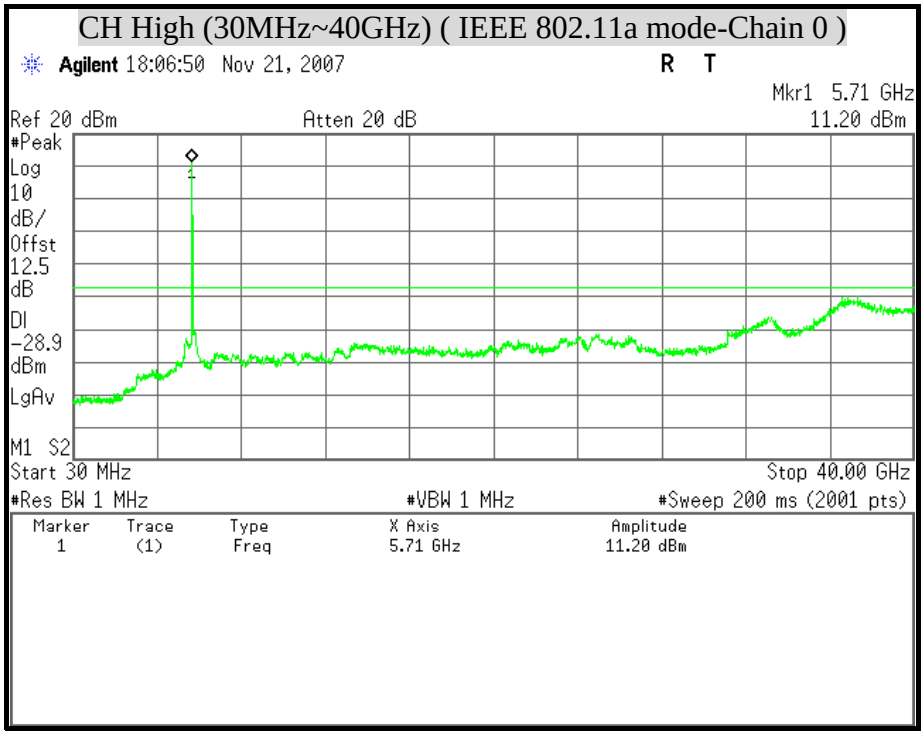
CH Low (30MHz~40GHz) (IEEE 802.11a mode-Chain 0)



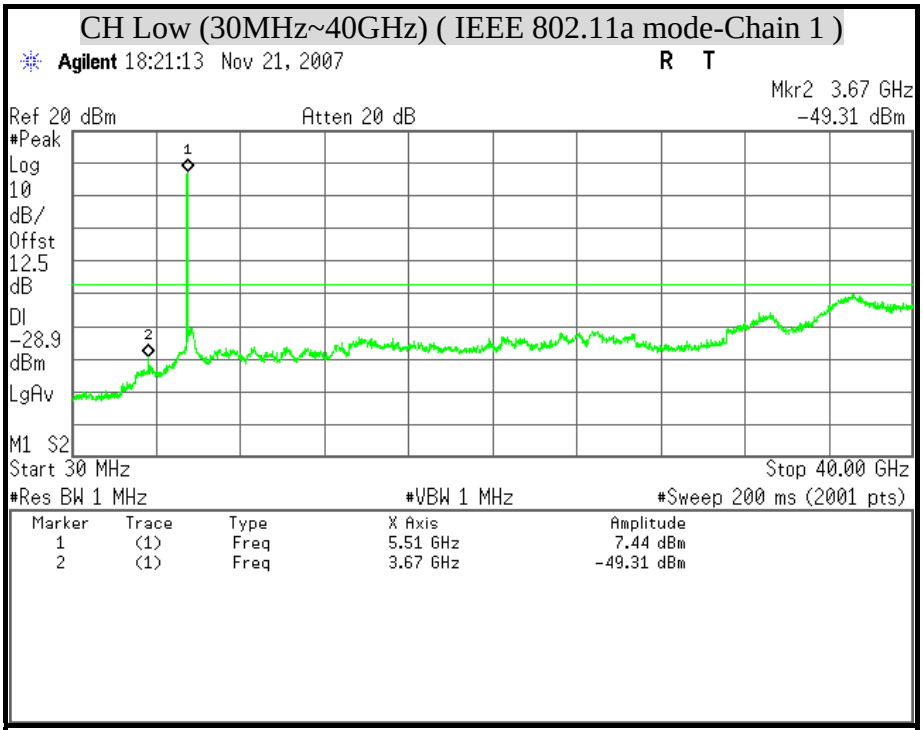
CH Middle (30MHz~40GHz) (IEEE 802.11a mode-Chain 0)



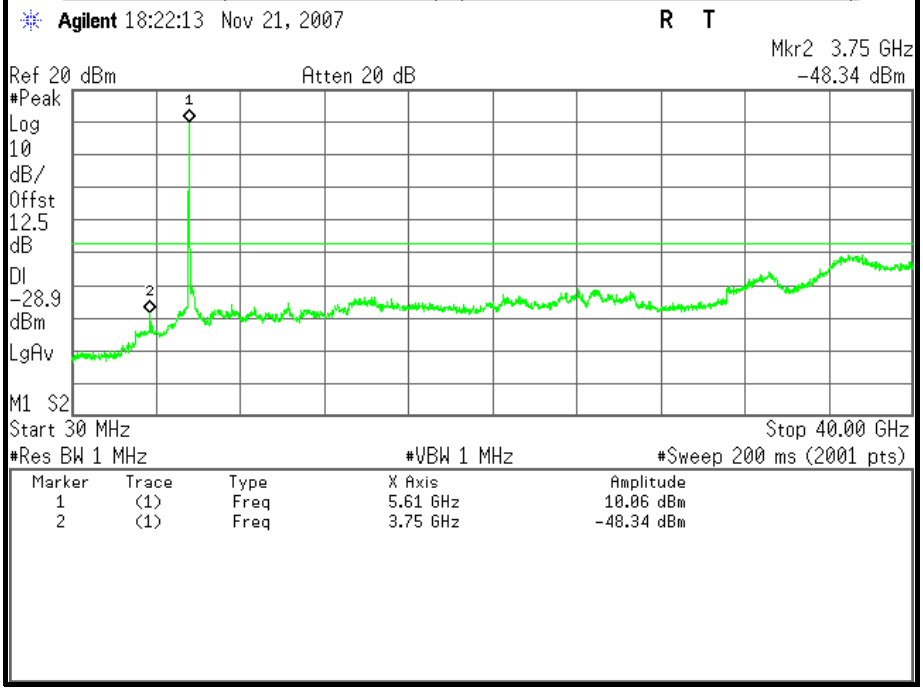
CH High (30MHz~40GHz) (IEEE 802.11a mode-Chain 0)



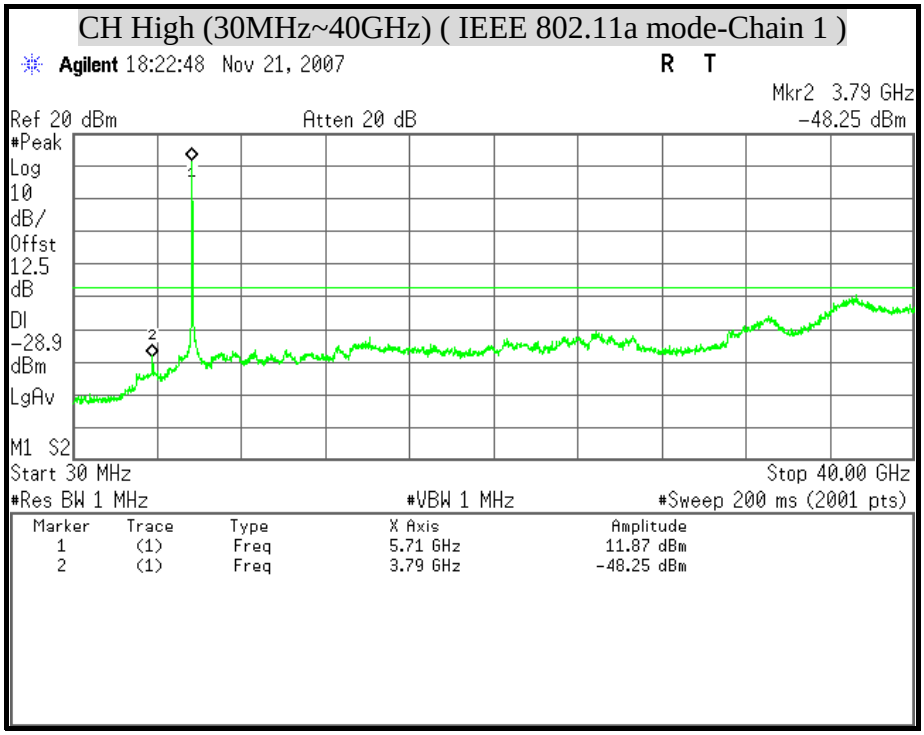
CH Low (30MHz~40GHz) (IEEE 802.11a mode-Chain 1)



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



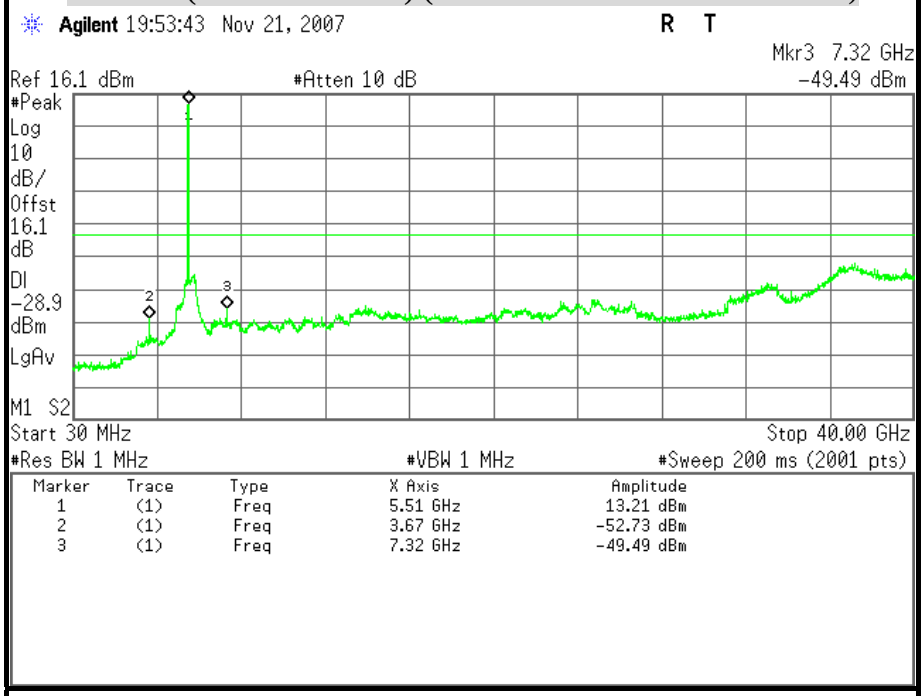
CH High (30MHz~40GHz) (IEEE 802.11a mode-Chain 1)



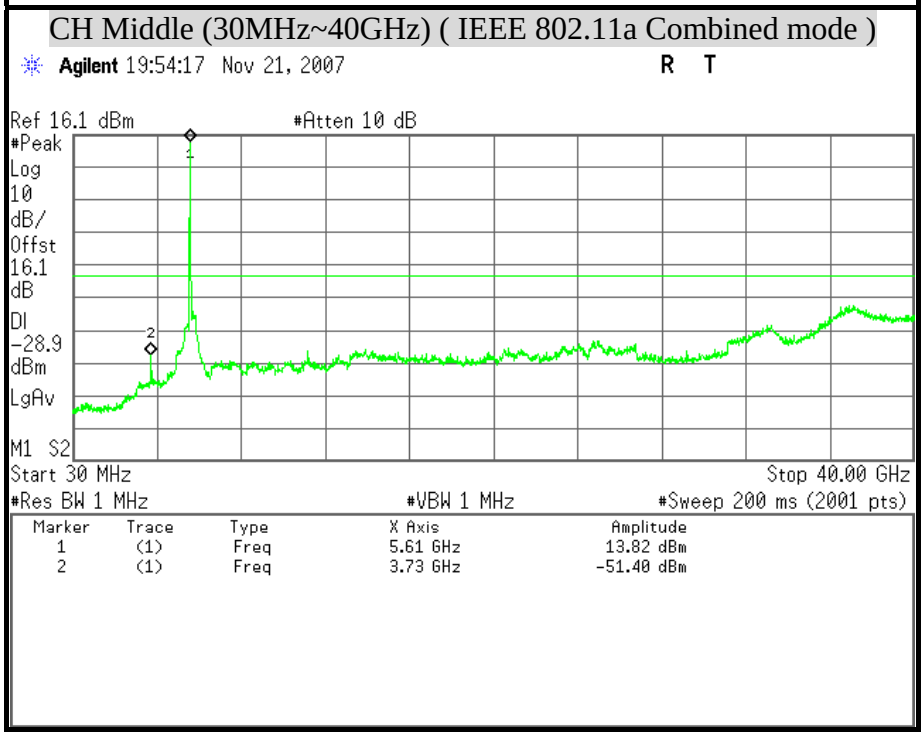
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11a Combined mode / 5470MHz ~ 5725MHz)

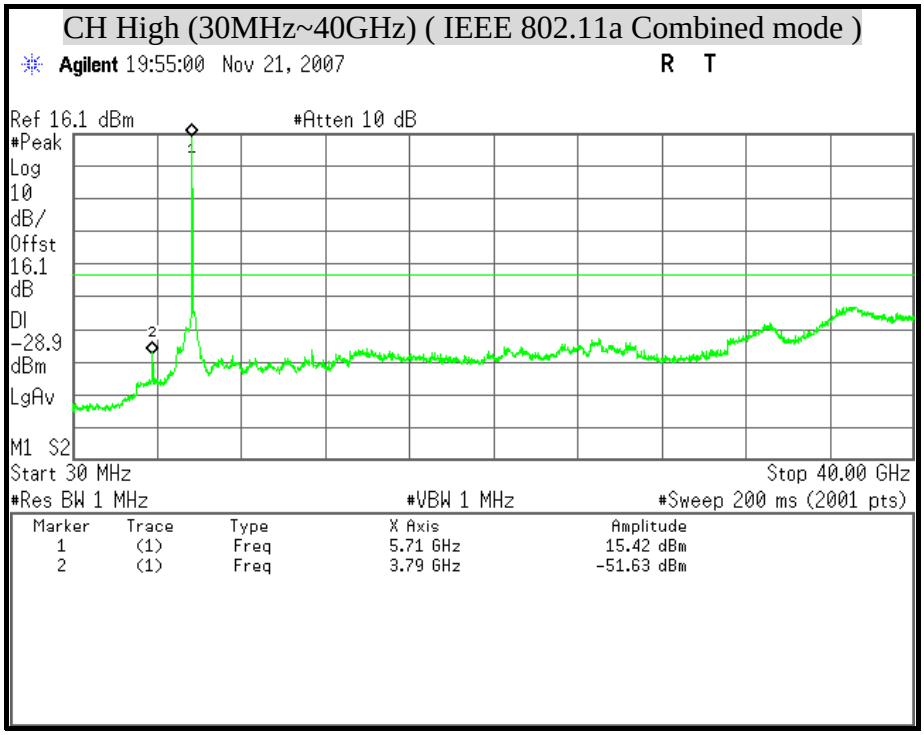
CH Low (30MHz~40GHz) (IEEE 802.11a Combined mode)



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



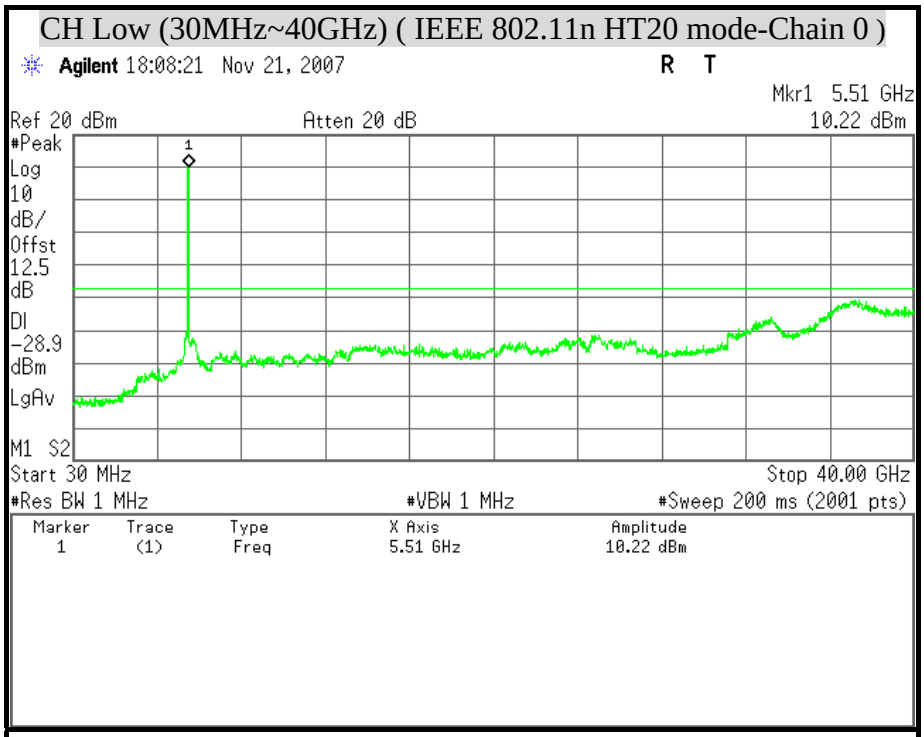
CH High (30MHz~40GHz) (IEEE 802.11a Combined mode)



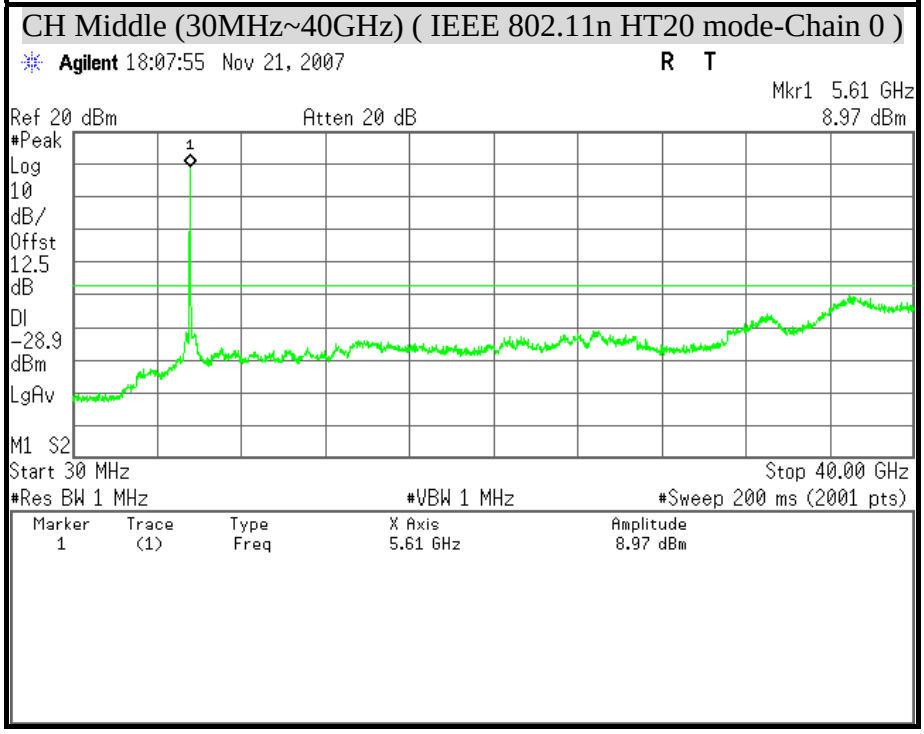
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11n HT20 mode / 5470MHz ~ 5725MHz)

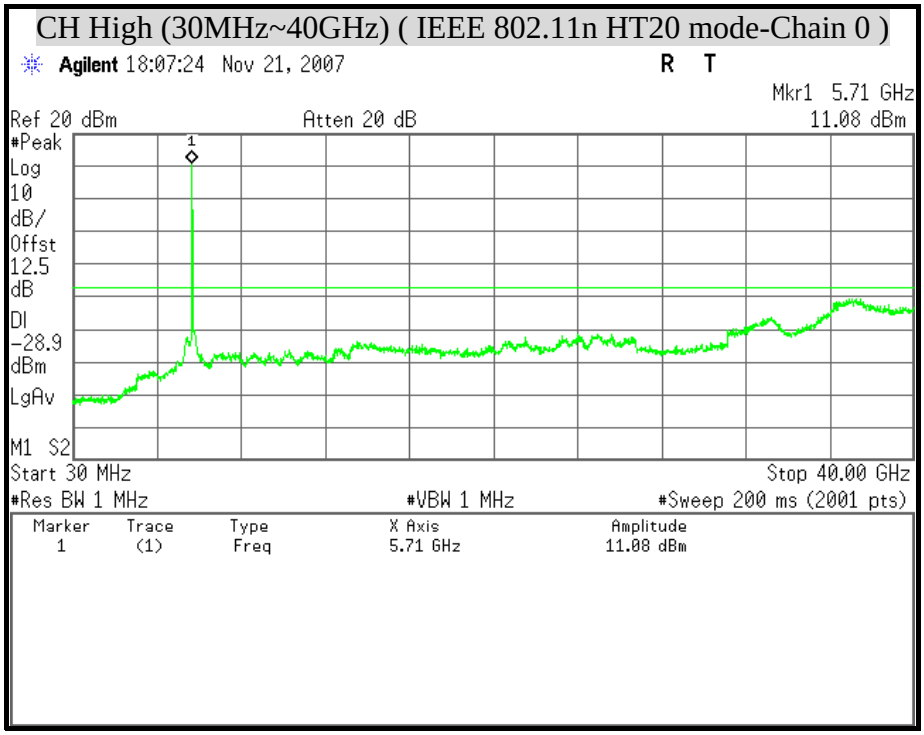
CH Low (30MHz~40GHz) (IEEE 802.11n HT20 mode-Chain 0)



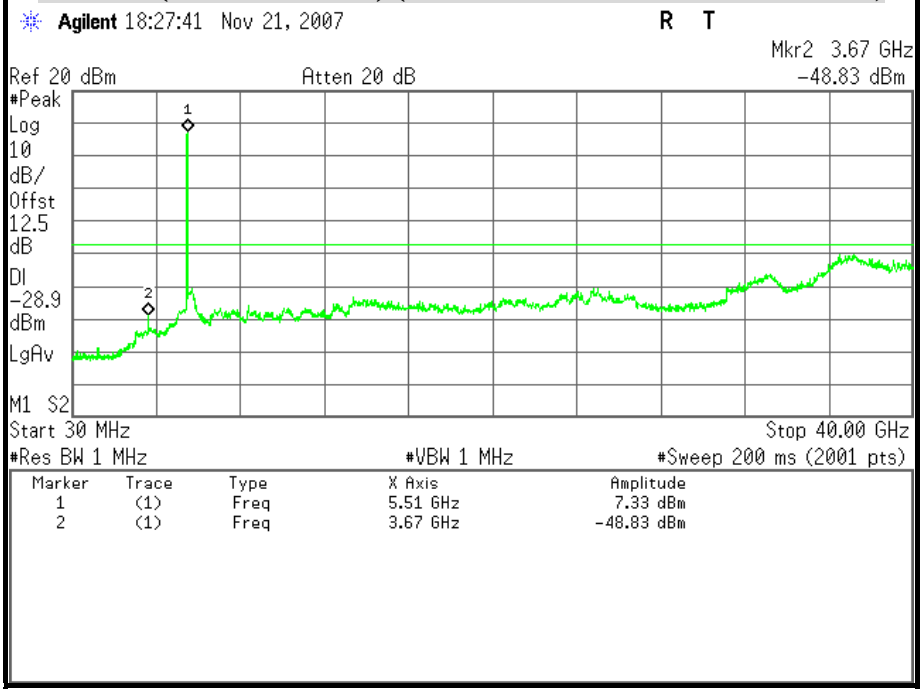
CH Middle (30MHz~40GHz) (IEEE 802.11n HT20 mode-Chain 0)



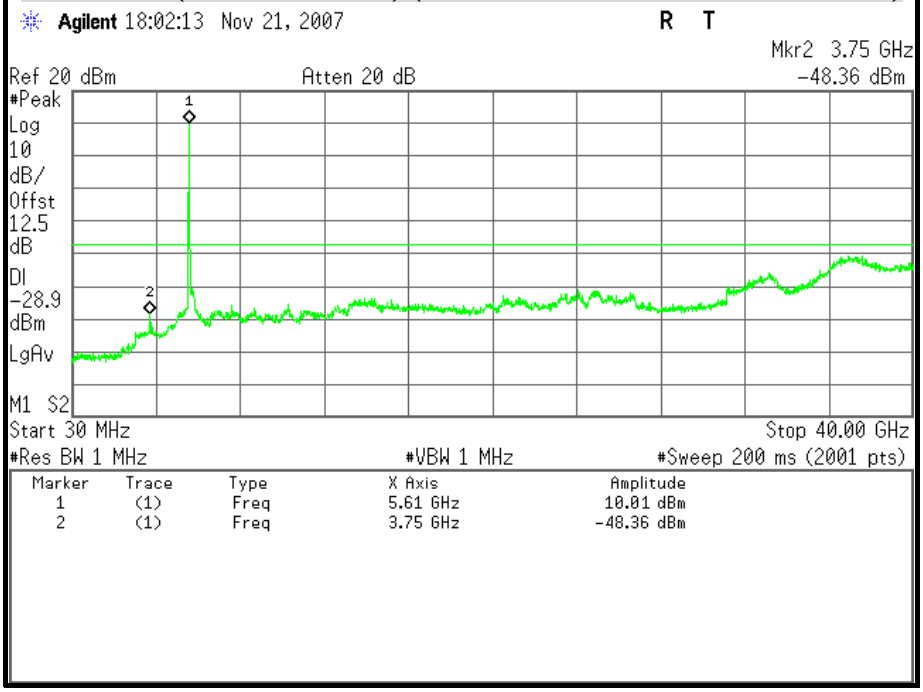
CH High (30MHz~40GHz) (IEEE 802.11n HT20 mode-Chain 0)



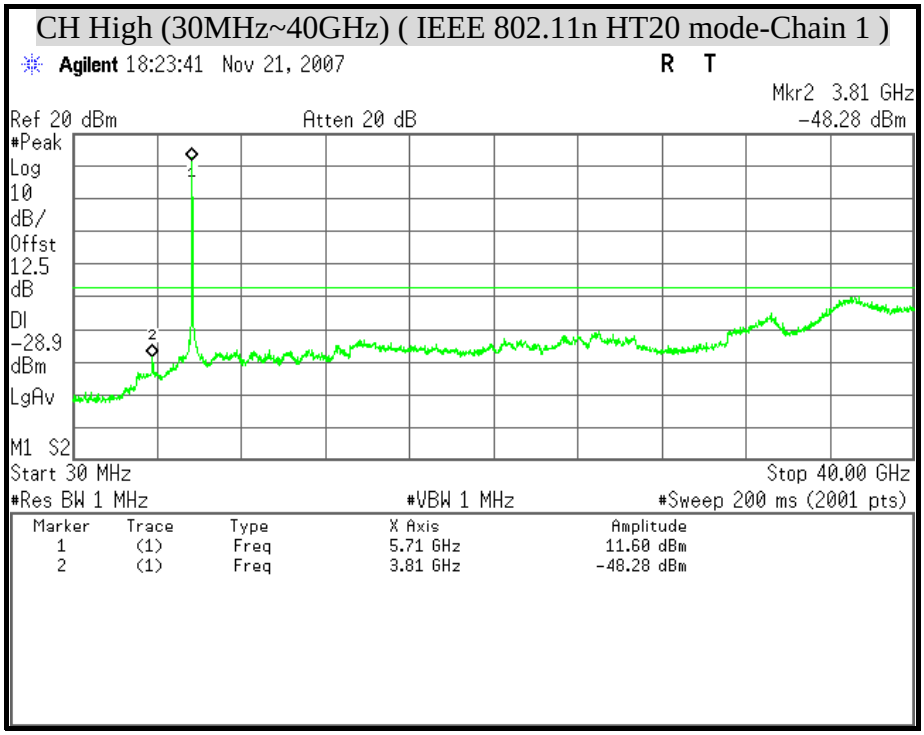
CH Low (30MHz~40GHz) (IEEE 802.11n HT20 mode-Chain 1)



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



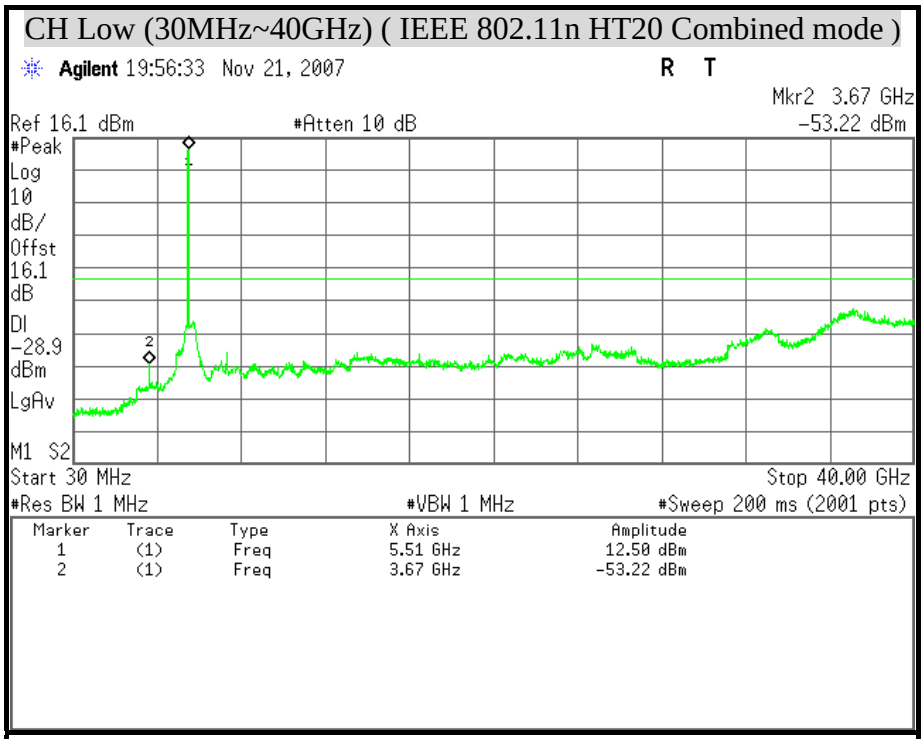
CH High (30MHz~40GHz) (IEEE 802.11n HT20 mode-Chain 1)



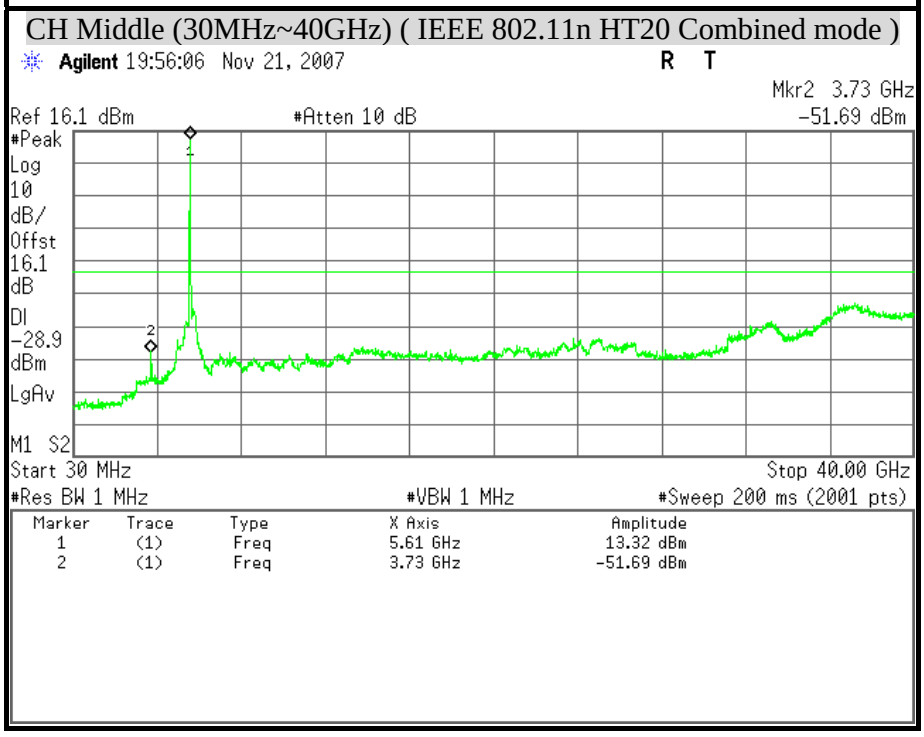
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11n HT20 Combined mode / 5470MHz ~ 5725MHz)

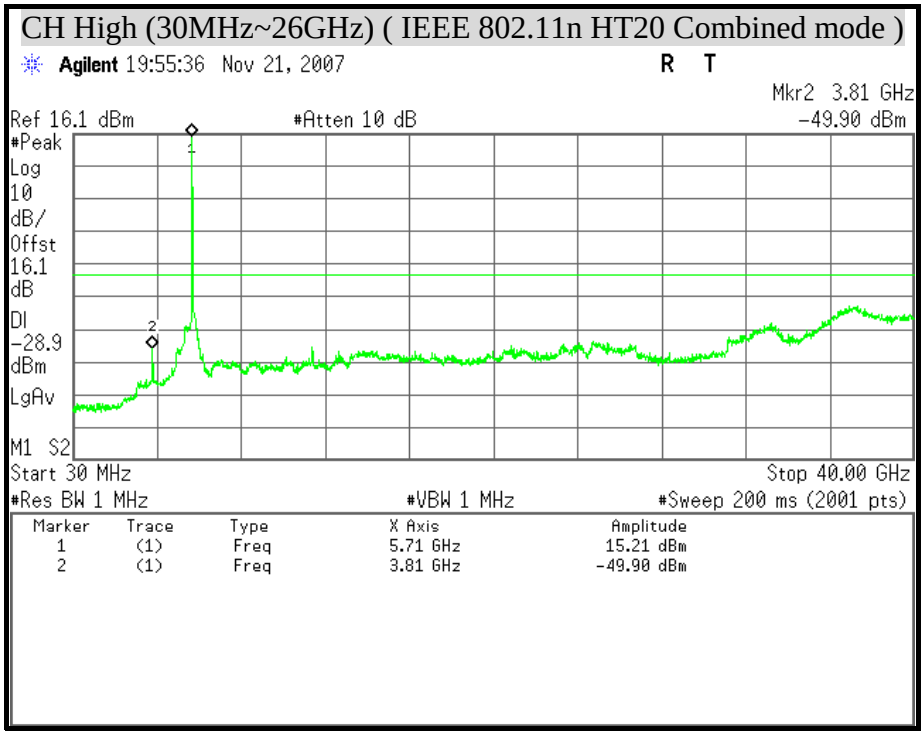
CH Low (30MHz~40GHz) (IEEE 802.11n HT20 Combined mode)



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



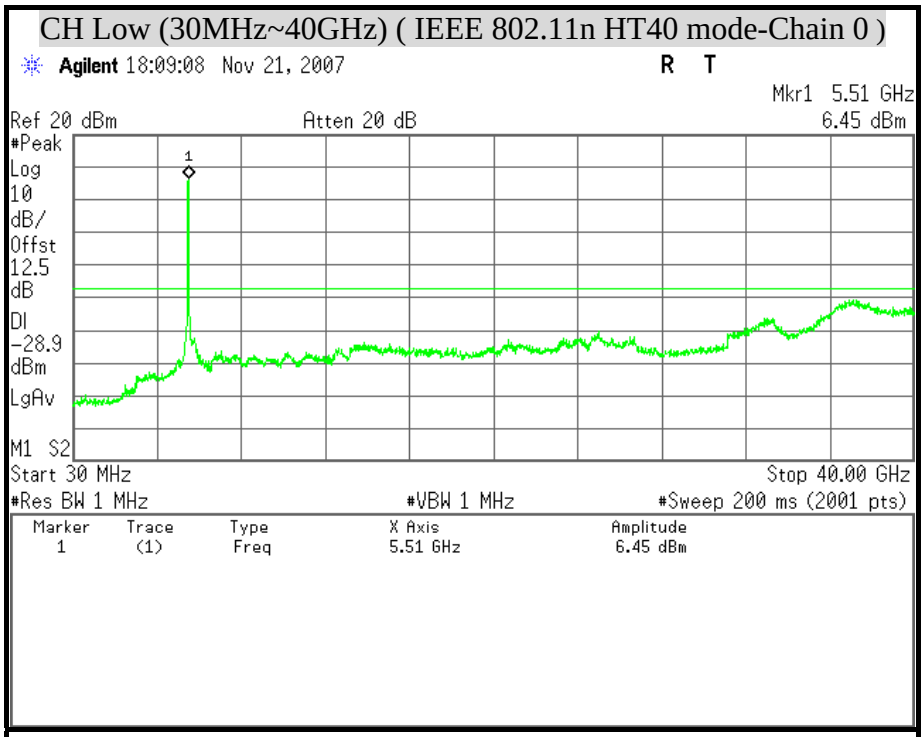
CH High (30MHz~26GHz) (IEEE 802.11n HT20 Combined mode)



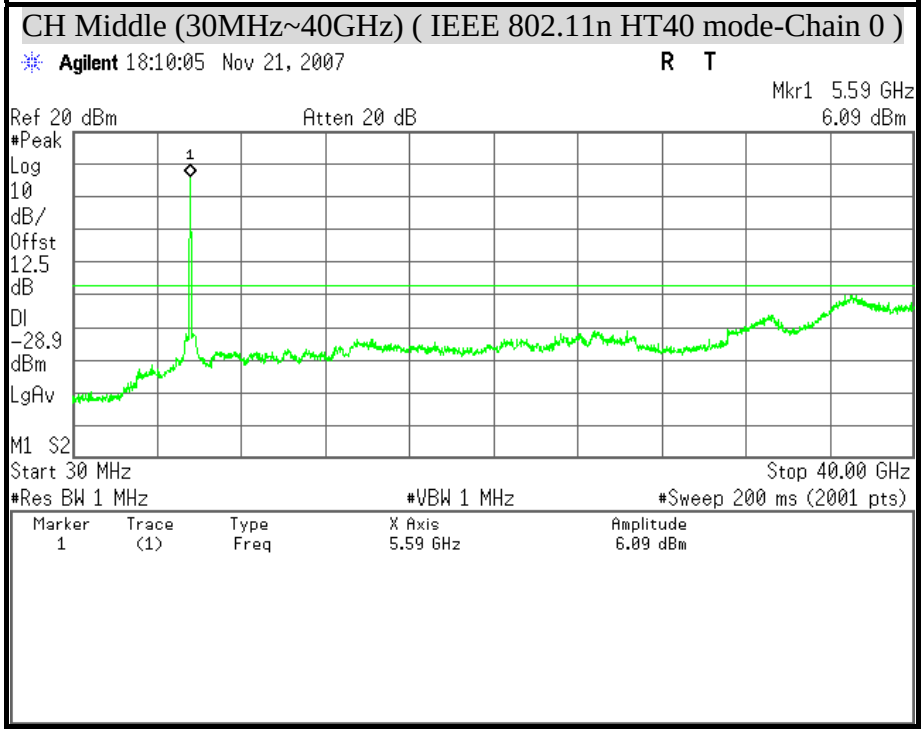
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11n HT40 mode / 5470MHz ~ 5725MHz)

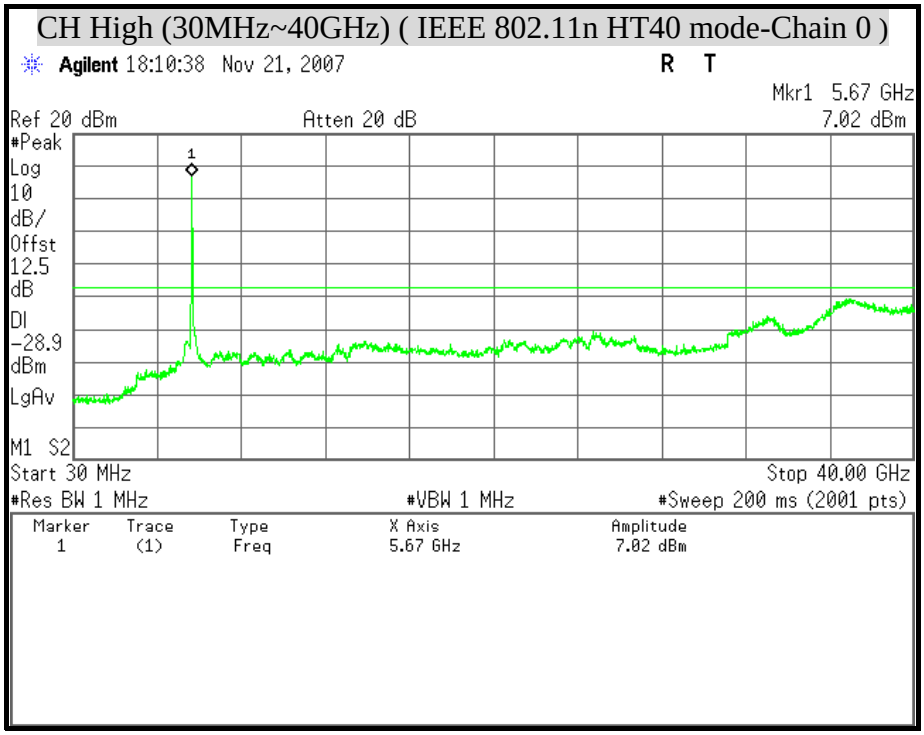
CH Low (30MHz~40GHz) (IEEE 802.11n HT40 mode-Chain 0)



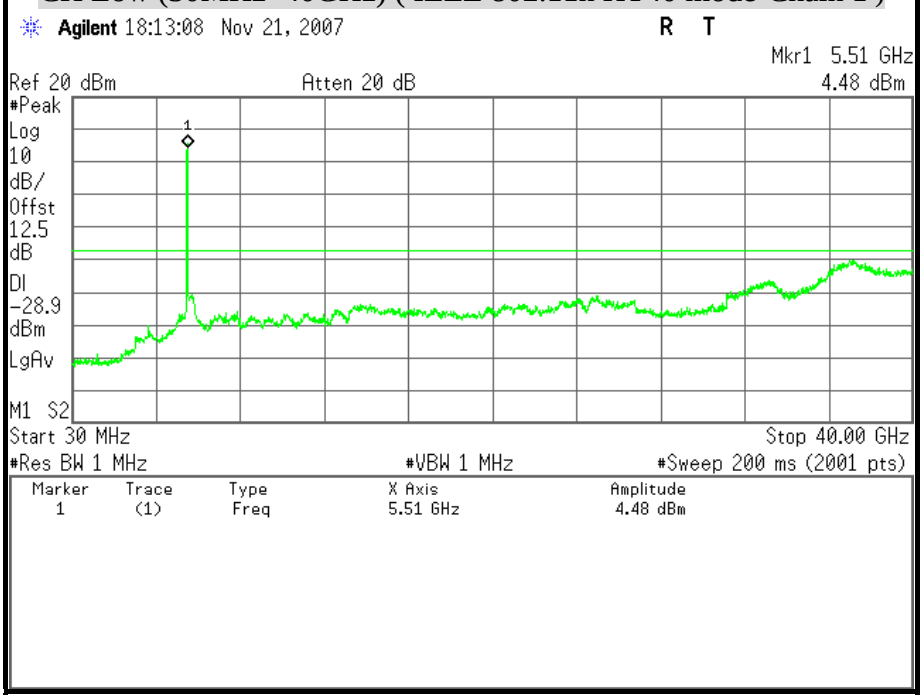
CH Middle (30MHz~40GHz) (IEEE 802.11n HT40 mode-Chain 0)



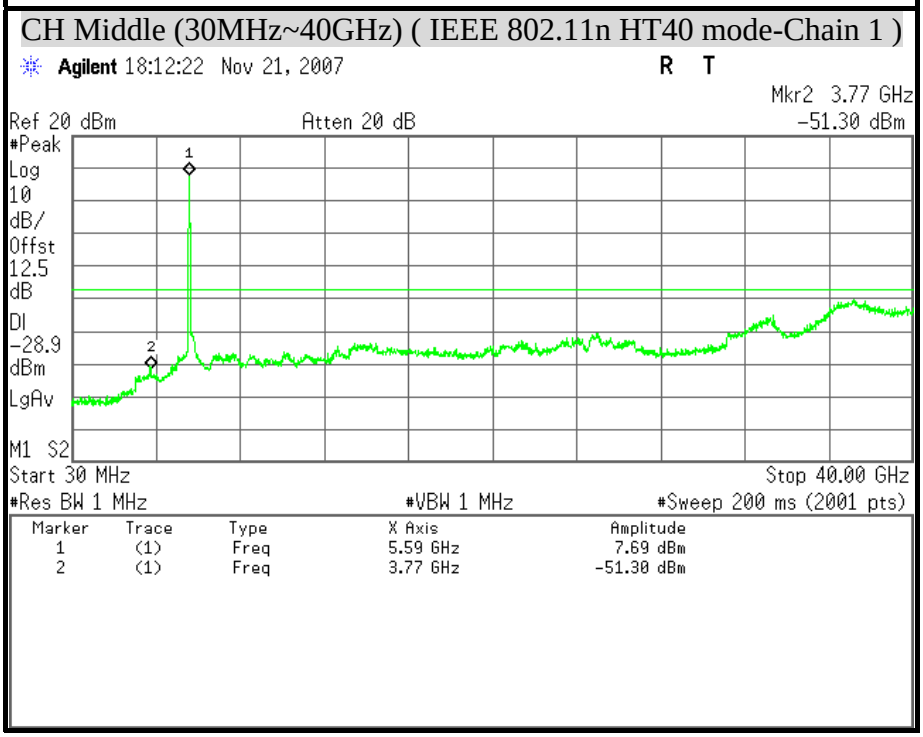
CH High (30MHz~40GHz) (IEEE 802.11n HT40 mode-Chain 0)



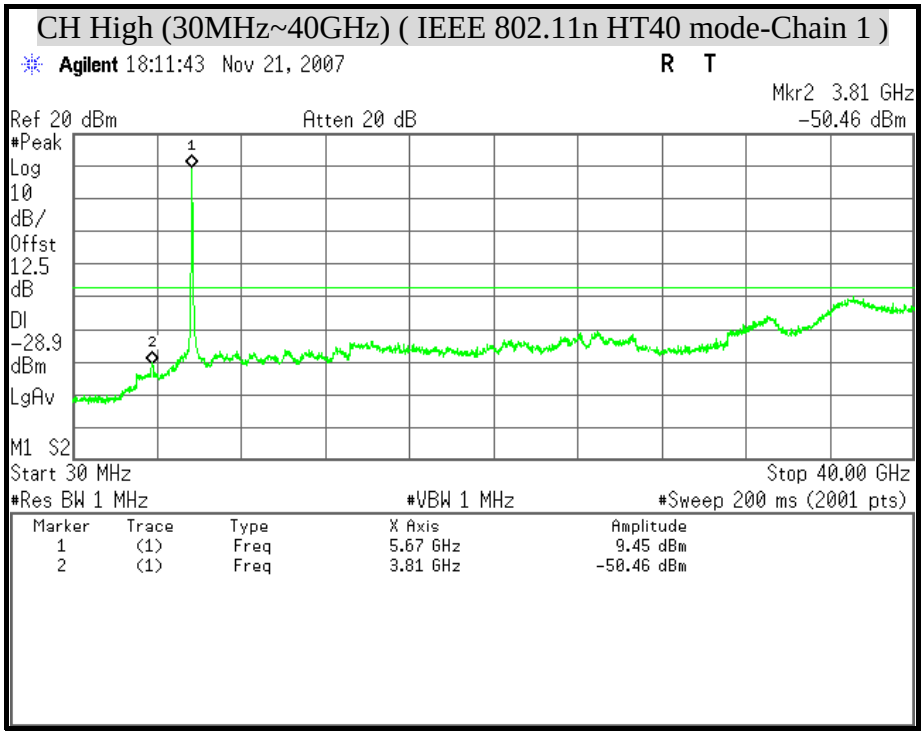
CH Low (30MHz~40GHz) (IEEE 802.11n HT40 mode-Chain 1)



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



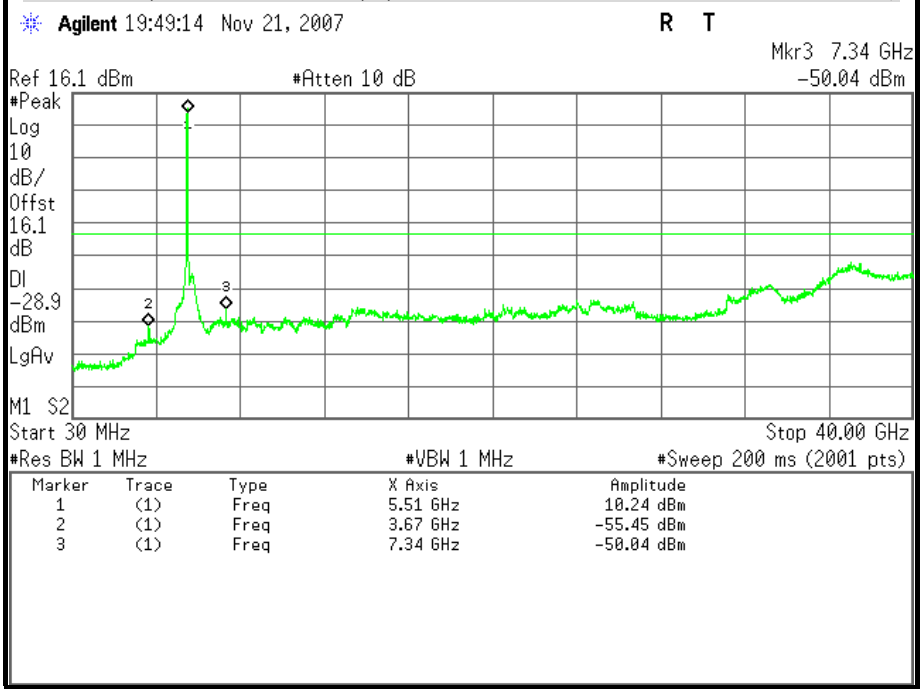
CH High (30MHz~40GHz) (IEEE 802.11n HT40 mode-Chain 1)



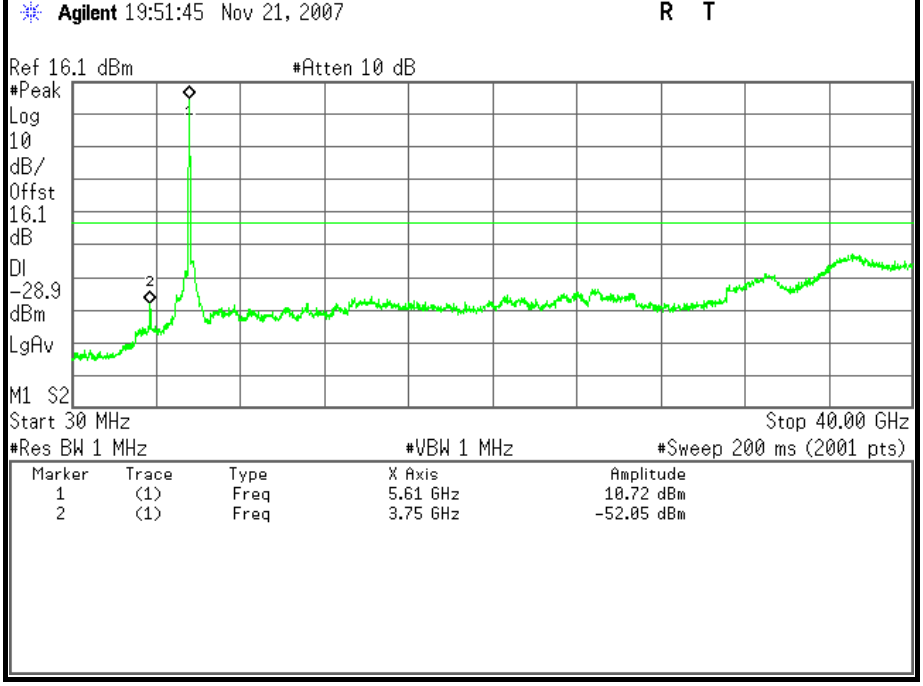
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11n HT40 Combined mode / 5470MHz ~ 5725MHz)

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



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



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