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

For

NOTEBOOK COMPUTER

Model : X500

Trade Name : Getac

Issued for

Getac Technology Corp.

No.1, R&D Road 2, Hsinchu Science Based Industrial Park, Hsinchu , Taiwan

Issued by

Compliance Certification Services Inc.
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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	07/19/2011	Initial Issue	All Page 185	Winnie Chen
01	09/16/2011	Modified 26dB Bandwidth. Add Restricted Band Edges.	Page 1, 3, 4, 13 ~ 32, 36, 56, 76, 96, 147, 148, 153, 154, 159, 160, 166 All Page 191	Winnie Chen
02	09/28/2011	Modified Maximum Conducted Output Power.	Page 1, 4, 5, 13, 33 ~ 35, 37 ~ 38, 40 ~ 51	Winnie Chen
03	10/03/2011	Modified Radiated Emission and Conducted Emission Test Mode.	Page 1, 3, 7, 11, 117, 163, 164, 188 All Page 188	Winnie Chen

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1. TEST REPORT CERTIFICATION

Applicant	：	Getac Technology Corp.
Address	：	No.1, R&D Road 2, Hsinchu Science Based Industrial Park, Hsinchu, Taiwan
Equipment Under Test	：	NOTEBOOK COMPUTER
Model	：	X500
Trade Name	：	Getac
Tested Date	：	June 02 ~ July 14, 2011 ; September 13 ~ 16, 2011 ; September 27 ~ 28, 2011

APPLICABLE STANDARD	
Standard	**Test Result**
FCC Part 15 Subpart E AND ANSI C63.4:2003	PASS

WE HEREBY CERTIFY THAT: The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by:

Sb Lu
Sr. Engineer

Reviewed by:

Gundam Lin
Sr. Engineer

2. EUT DESCRIPTION

Product Name	NOTEBOOK COMPUTER
Model Number	X500
Identify Number	T110602301
Received Date	June 02, 2011
Frequency Range	IEEE 802.11a, 802.11n HT20 : 5180MHz ~ 5240MHz, 5260MHz ~ 5320MHz, 5500MHz ~ 5700MHz IEEE 802.11n HT40 : 5190MHz ~ 5230MHz, 5270MHz ~ 5310MHz, 5510MHz ~ 5670MHz
Transmit Power	IEEE 802.11a : 5180MHz ~ 5240MHz : 14.34dBm (0.0272W) 5260MHz ~ 5320MHz : 16.56dBm (0.0453W) 5500MHz ~ 5700MHz : 17.09dBm (0.0512W) IEEE 802.11n HT20 : 5180MHz ~ 5240MHz : 10.79dBm (0.0120W) 5260MHz ~ 5320MHz : 15.22dBm (0.0333W) 5500MHz ~ 5700MHz : 16.26dBm (0.0423W) IEEE 802.11n HT40 : 5190MHz ~ 5230MHz : 12.38dBm (0.0173W) 5270MHz ~ 5310MHz : 15.56dBm (0.0360W) 5510MHz ~ 5670MHz : 17.22dBm (0.0527W)
Channel Spacing	IEEE 802.11a, 802.11n HT20 : 20MHz IEEE 802.11n HT40 : 40MHz
Channel Number	IEEE 802.11a, 802.11n HT20 : 5180MHz ~ 5240MHz : 4 Channels 5260MHz ~ 5320MHz : 4 Channels 5500MHz ~ 5700MHz : 11 Channels IEEE 802.11n HT40 : 5190MHz ~ 5230MHz : 2 Channels 5270MHz ~ 5310MHz : 2 Channels 5510MHz ~ 5670MHz : 5 Channels
Transmit Data Rate	IEEE 802.11a : 54, 48, 36, 24, 18, 12, 9, 6 Mbps IEEE 802.11n HT20 : 144.444, 130, 117, 115.556, 104, 86.667, 78, 72.2, 65, 58.5, 57.778, 52, 43.333, 39, 28.889, 26, 21.7, 19.5, 14.444, 13, 7.2, 6.5 Mbps IEEE 802.11n HT40 : 300, 270, 243, 240, 216, 180, 162, 150, 135, 121.5, 120, 108, 90, 81, 60, 54, 45, 40.5, 30, 27, 15, 13.5 Mbps
Type of Modulation	IEEE 802.11a : OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20/40 : OFDM (64QAM, 16QAM, QPSK, BPSK)
Antenna Type	PIFA Antenna, Antenna Gain : 1.66 dBi

Power Rating	10.8Vdc (From Battery Powered) 19Vdc (From Power Adapter)
Test Voltage	120Vac, 60Hz
AC Power Cord Type	Unshielded cable, 1.8m (detachable)
DC Power Cord Type	Unshielded cable, 1.5m (no detachable) with two core
I/O Port	RS232 port × 2, VGA port × 1, USB port × 4, RJ-45 × 2, Smart card port × 1, PCMCIA card port × 2, ExpressCard port × 1, Audio In port × 1, Audio Out port × 1, HDMI port × 1, Power port × 1

Operation Frequency:

UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII)			
CHANNEL	**MHz**	**CHANNEL**	**MHz**
36	5180	108	5540
38	5190	110	5550
40	5200	112	5560
44	5220	116	5580
46	5230	118	5590
48	5240	120	5600
52	5260	124	5620
54	5270	126	5630
56	5280	128	5640
60	5300	132	5660
62	5310	134	5670
64	5320	136	5680
100	5500	140	5700
102	5510	149	5745
104	5520		

Power Adapter :

No.	Manufacturer	Model No.	Power Input	Power Output
1	FSP	FSP090-DMBB1	100-240Vac, 1.5A, 50-60Hz	19Vdc, 4.7A MAX (90W MAX)

Remark :

1. *The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*
2. *For more details, please refer to the User's manual of the EUT.*
3. *This submittal(s) (test report) is intended for FCC ID: MAU045 filing to comply with Section 15.407, of the FCC Part 15, Subpart E Rules.*

3. DESCRIPTION OF TEST MODES

Conducted Emission / Radiated Emission Test (Below 1 GHz)

1. The following test modes were scanned during the preliminary test:

No.	Pre-Test Mode
1	TX Mode

2. After the preliminary scan, the following test mode was found to produce the highest emission level.

Final Test Mode		
Emission	Radiated Emission	TX Mode
	Conducted Emission	TX Mode

Remark : *Then, the above highest emission mode of the configuration of the EUT and cable was chosen for all final test items.*

Conducted / Radiated Emission Test (Above 1 GHz)

IEEE 802.11a, 802.11n HT20 mode / 5180MHz ~ 5240MHz

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 802.11a, 802.11n HT20 mode / 5260MHz ~ 5320MHz

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 802.11a, 802.11n HT20 mode / 5500MHz ~ 5700MHz

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 / 5190 ~ 5230MHz

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	5190
High	5230

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

IEEE 802.11n HT40 mode / 5270 ~ 5310MHz

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	5270
High	5310

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

IEEE 802.11n HT40 mode / 5510 ~ 5670MHz

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 : 13.5Mbps data rate (worst case) were chosen for full testing.

4. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4: 2003 and FCC CFR 47, 15.207, 15.209 and 15.407.

5. FACILITIES AND ACCREDITATION

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

NO. 989-1 Wen Shan Rd., Shang Shan Village,
Qionglin Shiang Hsinchu County 30741, Taiwan, R.O.C

The sites are constructed in conformance with the requirements of ANSI C63.4:2003 and CISPR 22. All receiving equipment conforms to CISPR 16-1-1, CISPR 16-1-2, CISPR 16-1-3, CISPR 16-1-4, CISPR 16-1-5.

5.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

Taiwan	TAF

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	INDUSTRY CANADA
Japan	VCCI
Taiwan	BSMI
USA	FCC MRA

Copies of granted accreditation certificates are available for downloading from our web site, http:///www.ccsrf.com

5.3 MEASUREMENT UNCERTAINTY

The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4-2.

PARAMETER	UNCERTAINTY
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 30 to 1000 MHz	+/- 3.5189
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 1 to 18GHz	+/- 2.5164
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 18 to 26 GHz	+/- 2.4967
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 26 to 40 GHz	+/- 2.7655
Conducted Emission (Mains Terminals), 9kHz to 30MHz	+/- 1.5923

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Consistent with industry standard (e.g. CISPR 22: 2006, clause 11, Measurement Uncertainty) determining compliance with the limits shall be base on the results of the compliance measurement. Consequently the measure emissions being less than the maximum allowed emission result in this be a compliant test or passing test.

The acceptable measurement uncertainty value without requiring revision of the compliance statement is base on conducted and radiated emissions being less than U_{CISPR} which is 3.6dB and 5.2dB respectively. CCS values (called U_{Lab} in CISPR 16-4-2) is less than U_{CISPR} as shown in the table above. Therefore, MU need not be considered for compliance.

6. SETUP OF EQUIPMENT UNDER TEST

SUPPORT EQUIPMENT

N/A

SETUP DIAGRAM FOR TESTS

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

EUT OPERATING CONDITION

1. Run “RFPWRL” function, control RF power level
2. Run “CRTU”, click continuous TX, choice 11a、HT20、HT40
3. Click “start TX”

7. FCC PART 15.407 REQUIREMENTS

7.1 26dB BANDWIDTH

LIMITS

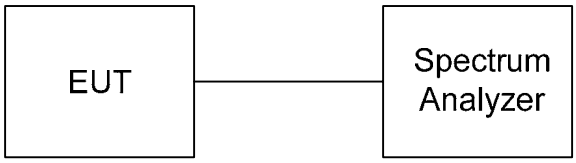
§ 15.303 (c) (2), For purposes of this subpart, the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Determination of the emissions bandwidth is based on the use of measurement instrumentation employing a peak detector function with an instrument resolutions bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4407B	US41443108	08/12/2011

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

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.
4. Mark the –26dBc (upper and lower) frequency of the peak value.
5. Repeat until all the rest channels were investigated.

TEST RESULTS

IEEE 802.11a Mode / 5180MHz ~ 5240MHz

Channel	Channel Frequency (MHz)	26dB Bandwidth (MHz)	Pass / Fail
Low	5180	20.08	PASS
Middle	5220	21.08	PASS
High	5240	20.17	PASS

IEEE 802.11a Mode / 5260MHz ~ 5320MHz

Channel	Channel Frequency (MHz)	26dB Bandwidth (MHz)	Pass / Fail
Low	5260	20.58	PASS
Middle	5280	21.50	PASS
High	5320	20.17	PASS

IEEE 802.11a Mode / 5500MHz ~ 5700MHz

Channel	Channel Frequency (MHz)	26dB Bandwidth (MHz)	Pass / Fail
Low	5500	20.58	PASS
Middle	5600	20.92	PASS
High	5700	20.25	PASS

IEEE 802.11 n HT20 Mode / 5180MHz ~ 5240MHz

Channel	Channel Frequency (MHz)	26dB Bandwidth (MHz)	Pass / Fail
Low	5180	20.25	PASS
Middle	5220	20.67	PASS
High	5240	20.33	PASS

IEEE 802.11 n HT20 Mode / 5260MHz ~ 5320MHz

Channel	Channel Frequency (MHz)	26dB Bandwidth (MHz)	Pass / Fail
Low	5260	20.25	PASS
Middle	5280	21.08	PASS
High	5320	21.17	PASS

IEEE 802.11 n HT20 Mode / 5500MHz ~ 5700MHz

Channel	Channel Frequency (MHz)	26dB Bandwidth (MHz)	Pass / Fail
Low	5500	21.17	PASS
Middle	5600	20.67	PASS
High	5700	21.00	PASS

IEEE 802.11 n HT40 Mode / 5190MHz ~ 5230MHz

Channel	Channel Frequency (MHz)	26dB Bandwidth (MHz)	Pass / Fail
Low	5190	37.20	PASS
High	5230	38.10	PASS

IEEE 802.11 n HT40 Mode / 5270MHz ~ 5310MHz

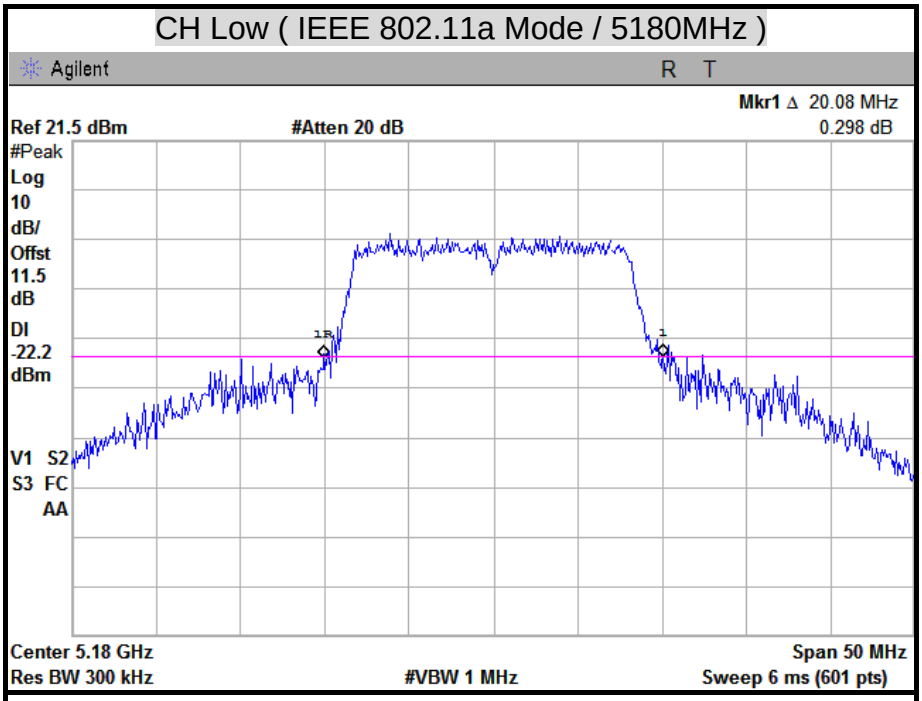
Channel	Channel Frequency (MHz)	26dB Bandwidth (MHz)	Pass / Fail
Low	5270	38.00	PASS
High	5310	37.90	PASS

IEEE 802.11 n HT40 Mode / 5510MHz ~ 5670MHz

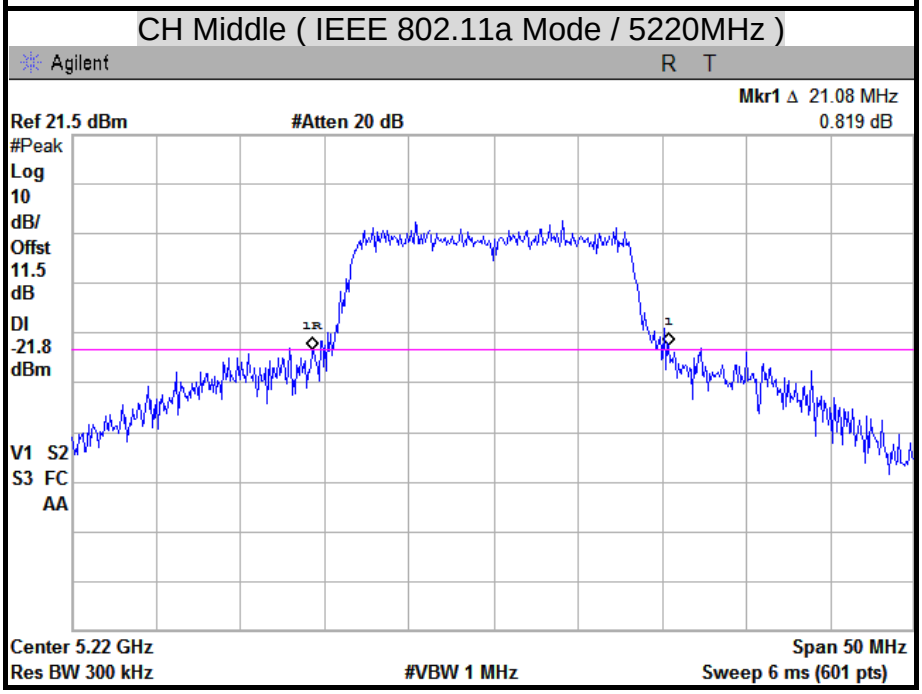
Channel	Channel Frequency (MHz)	26dB Bandwidth (MHz)	Pass / Fail
Low	5510	37.90	PASS
Middle	5590	38.30	PASS
High	5670	38.10	PASS

26dB BANDWIDTH

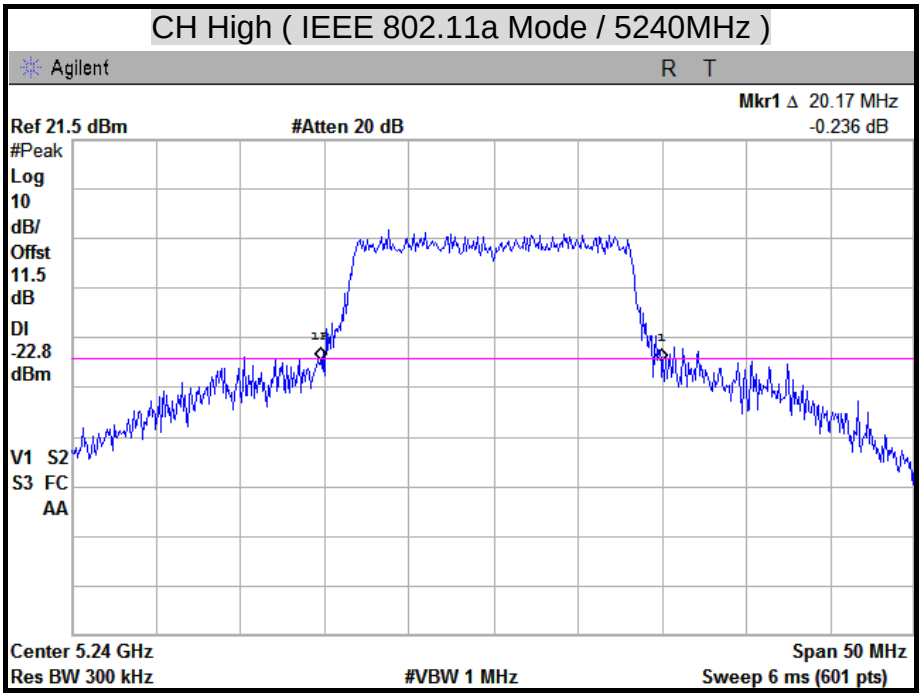
CH Low (IEEE 802.11a Mode / 5180MHz)



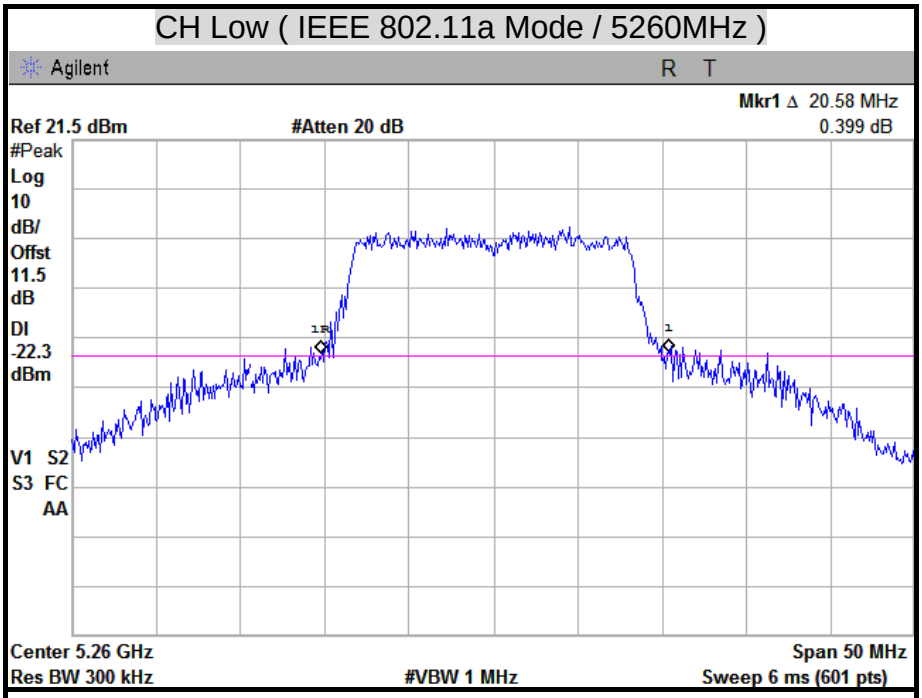
CH Middle (IEEE 802.11a Mode / 5220MHz)



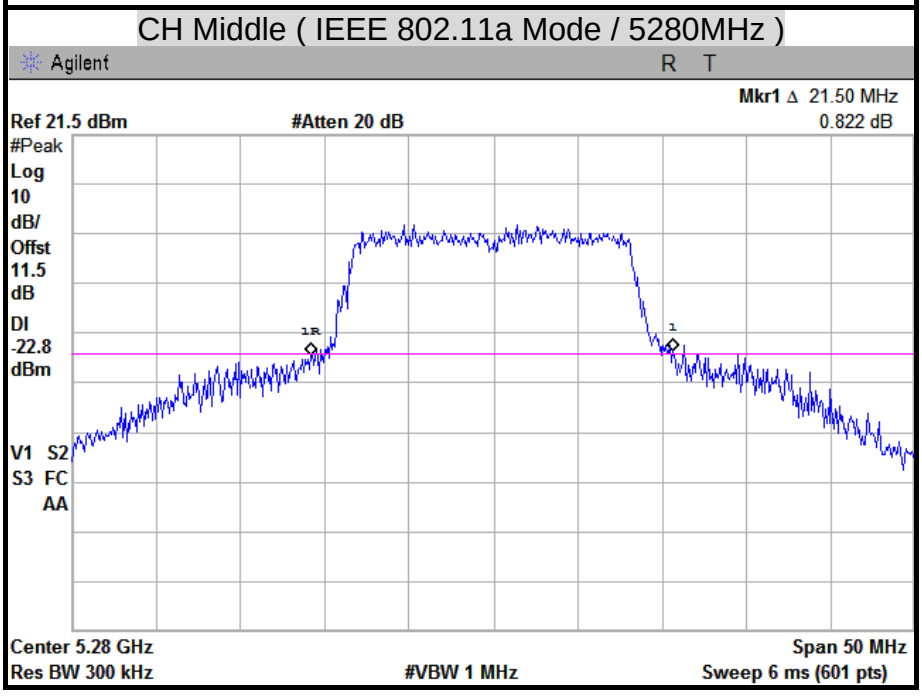
CH High (IEEE 802.11a Mode / 5240MHz)



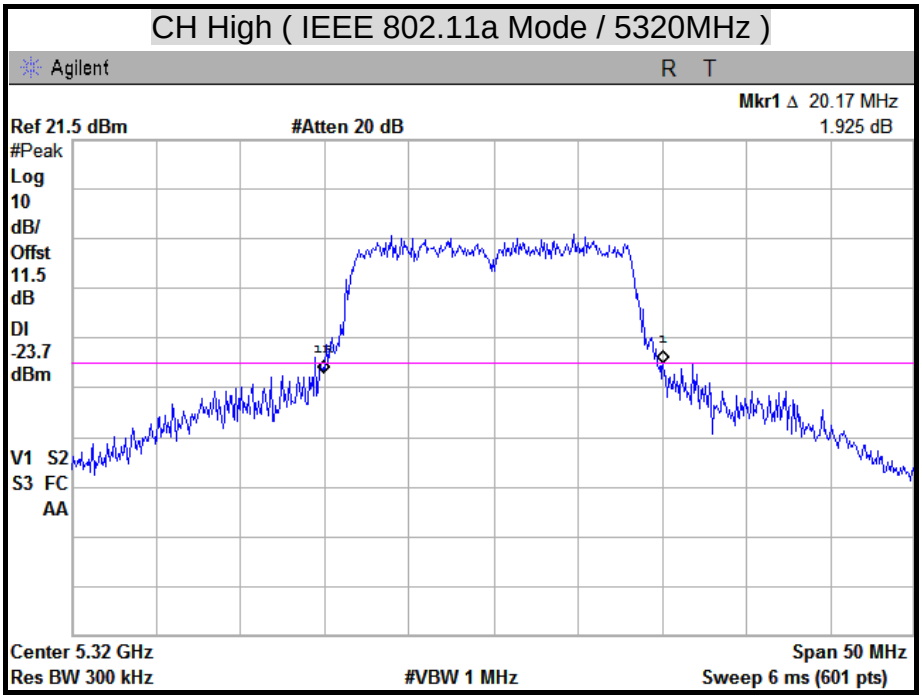
CH Low (IEEE 802.11a Mode / 5260MHz)



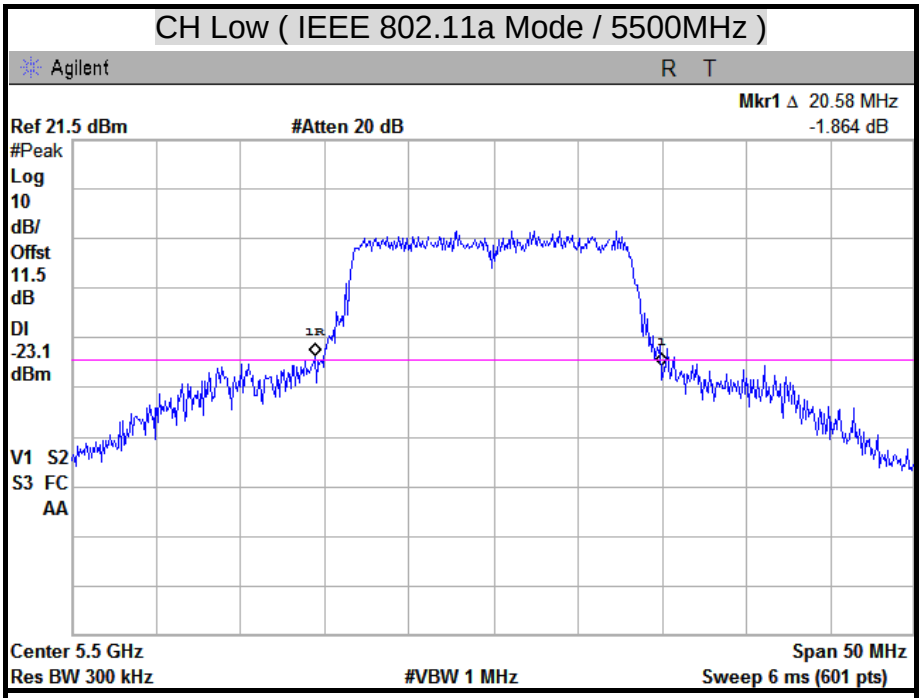
CH Middle (IEEE 802.11a Mode / 5280MHz)



CH High (IEEE 802.11a Mode / 5320MHz)



CH Low (IEEE 802.11a Mode / 5500MHz)



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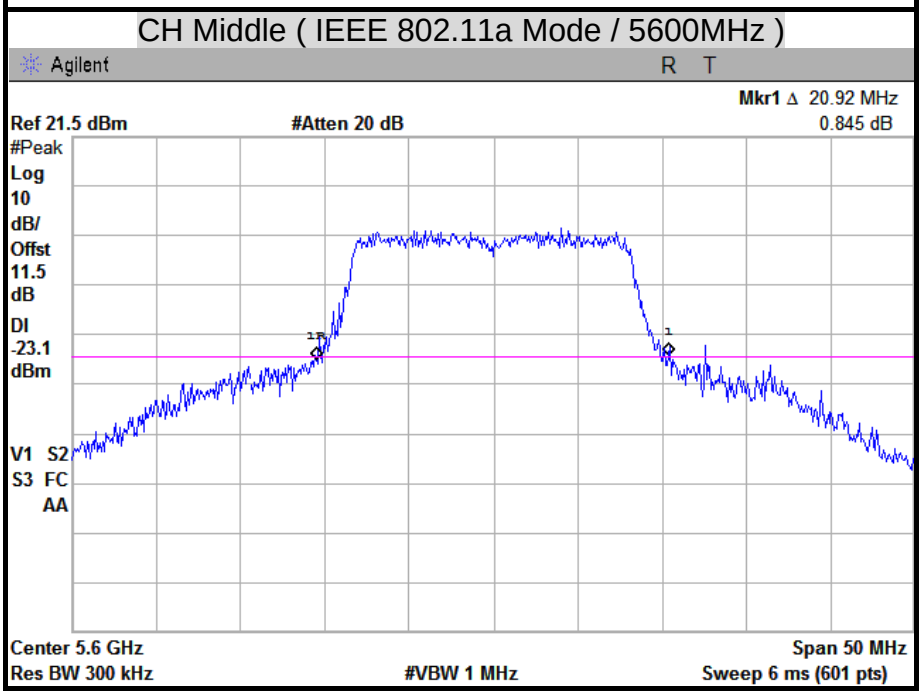
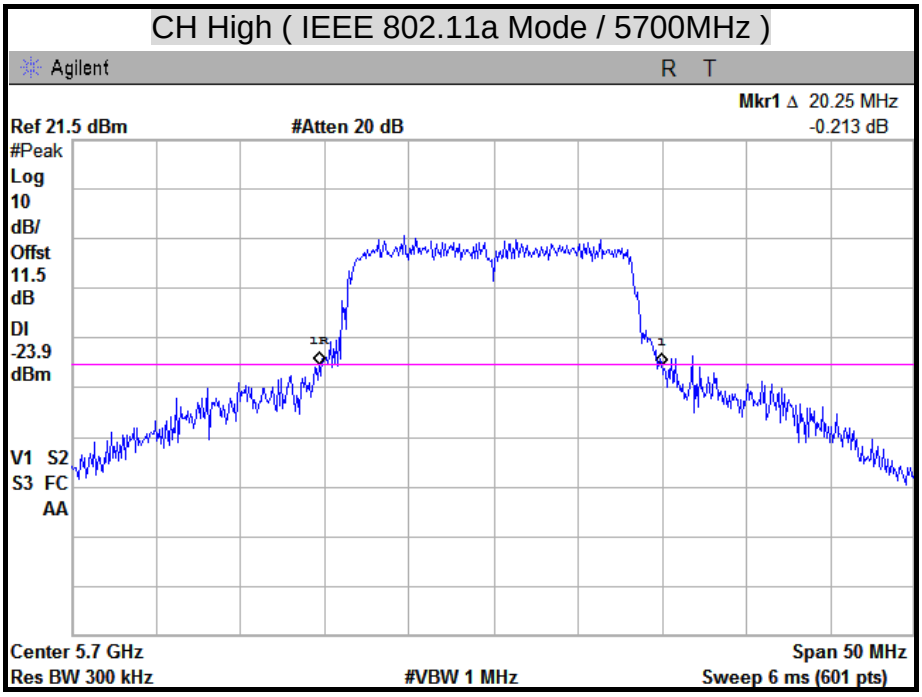
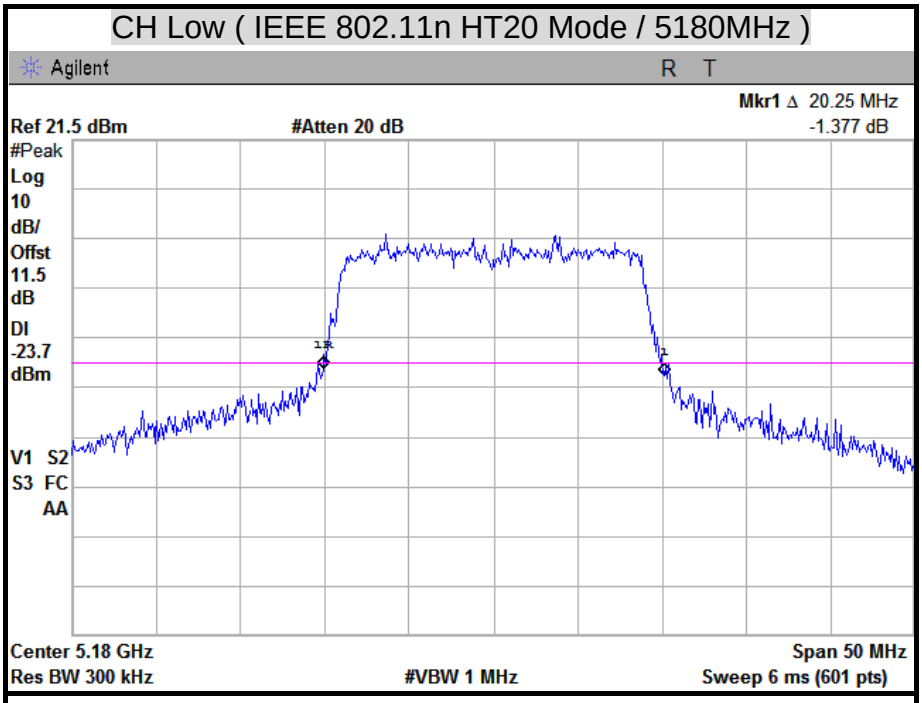


CH High (IEEE 802.11a Mode / 5700MHz)



CH Low (IEEE 802.11n HT20 Mode / 5180MHz)



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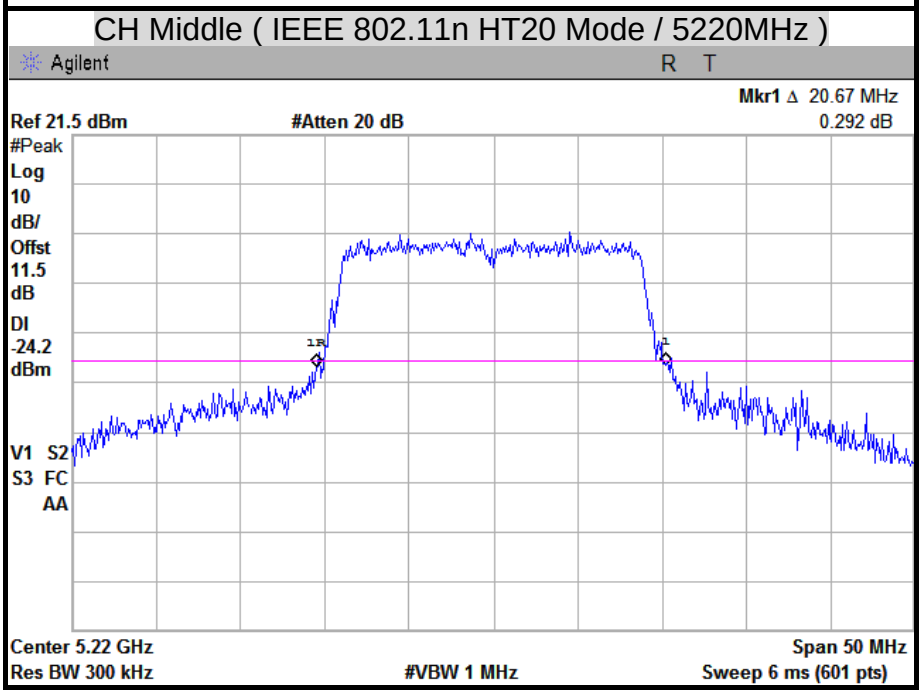

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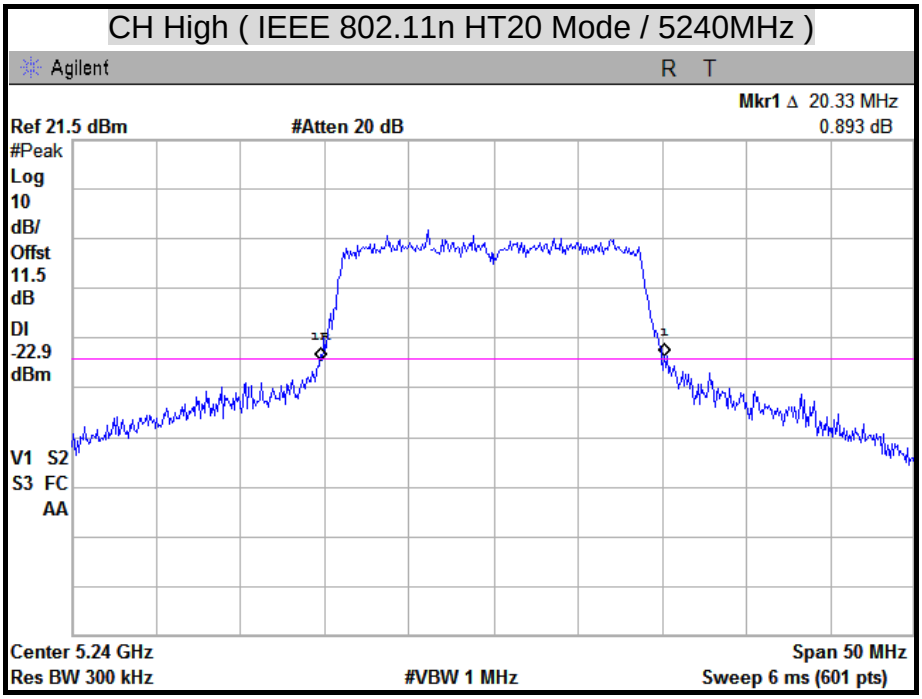
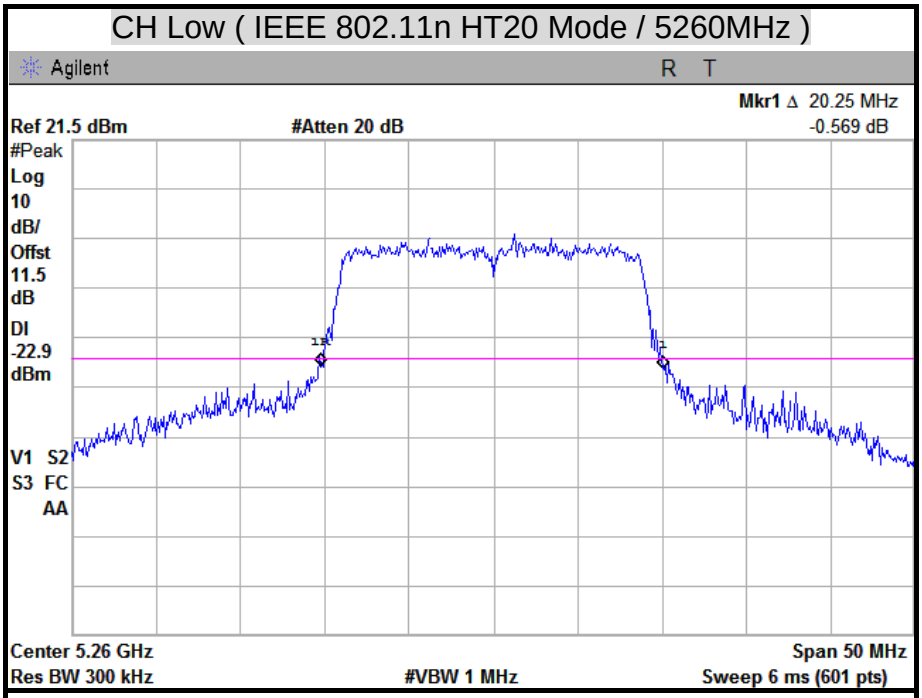


CH Low (IEEE 802.11n HT20 Mode / 5260MHz)



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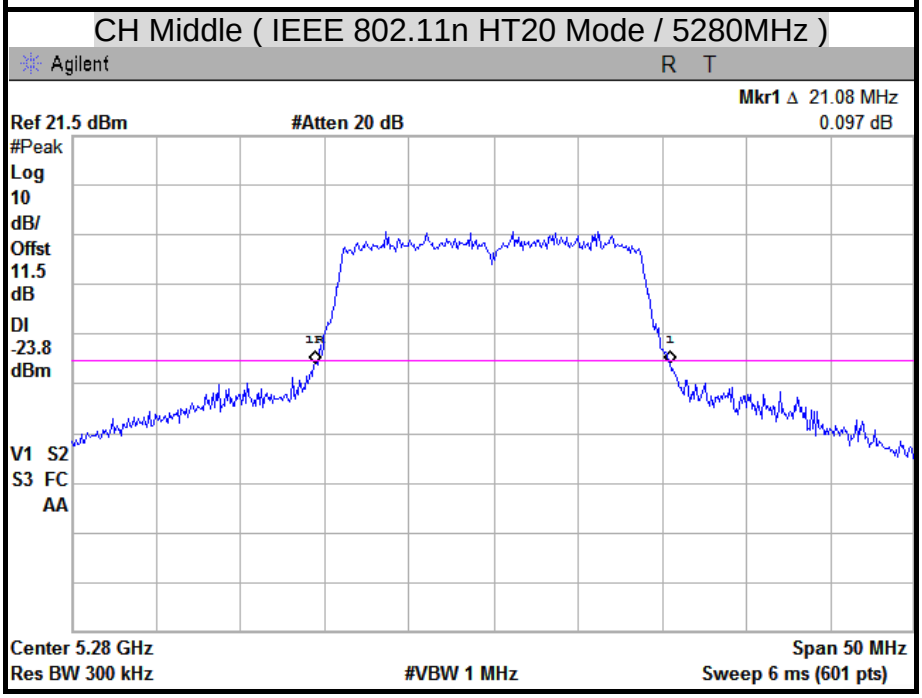
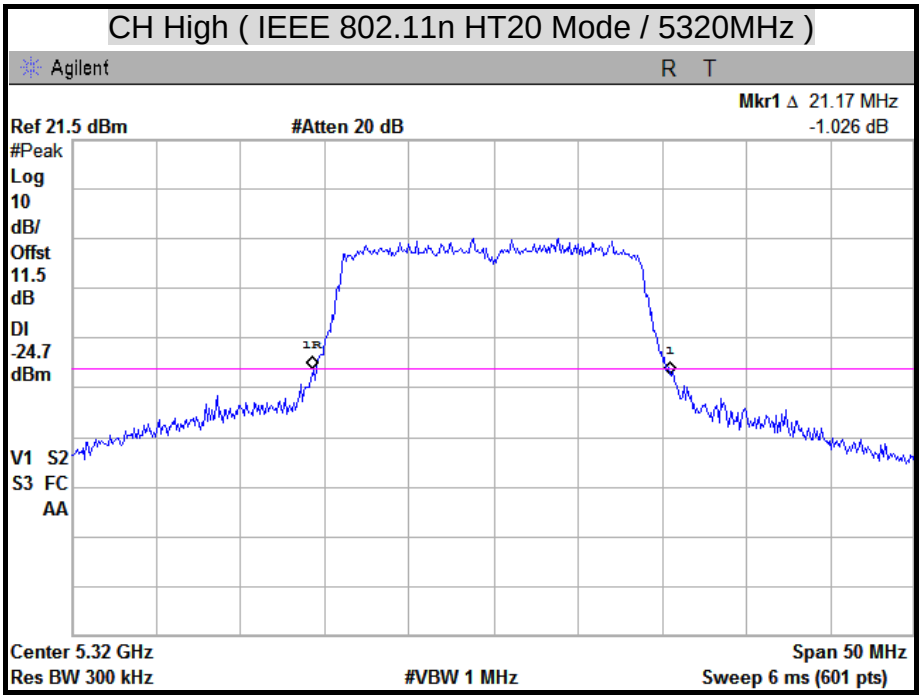
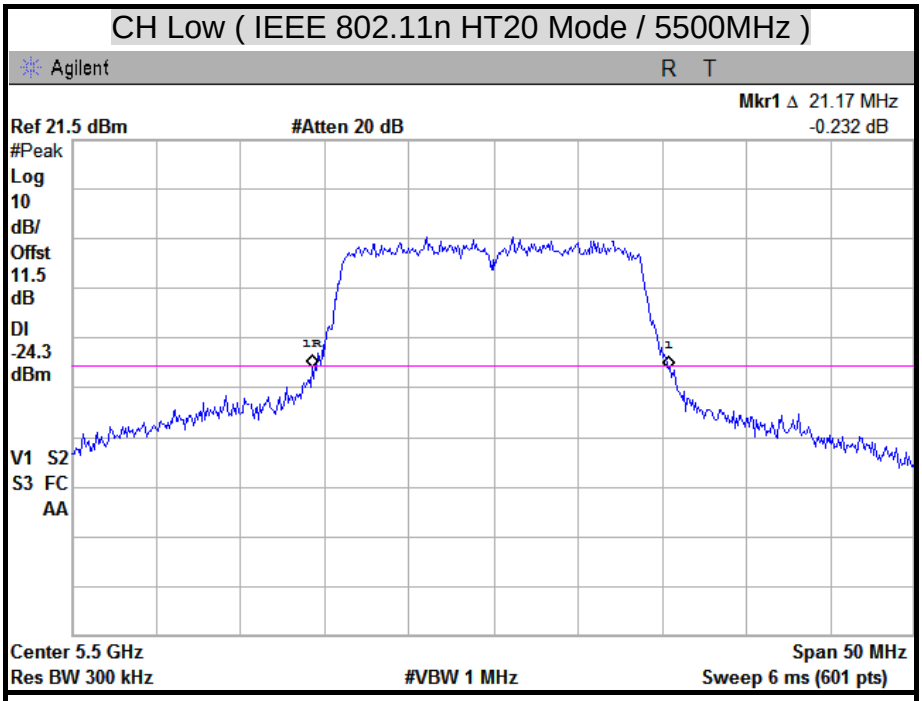


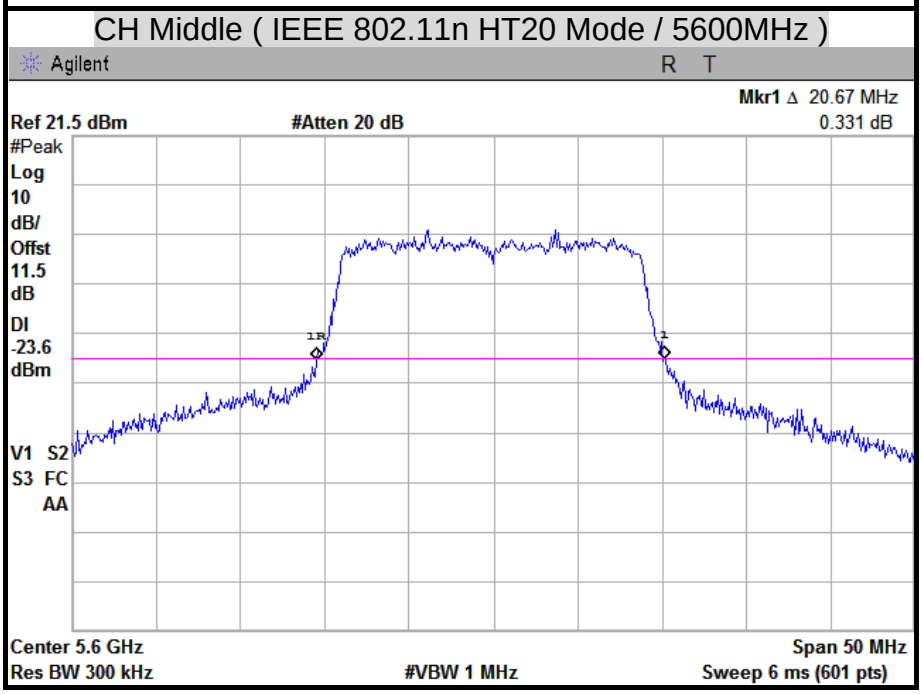
CH High (IEEE 802.11n HT20 Mode / 5320MHz)



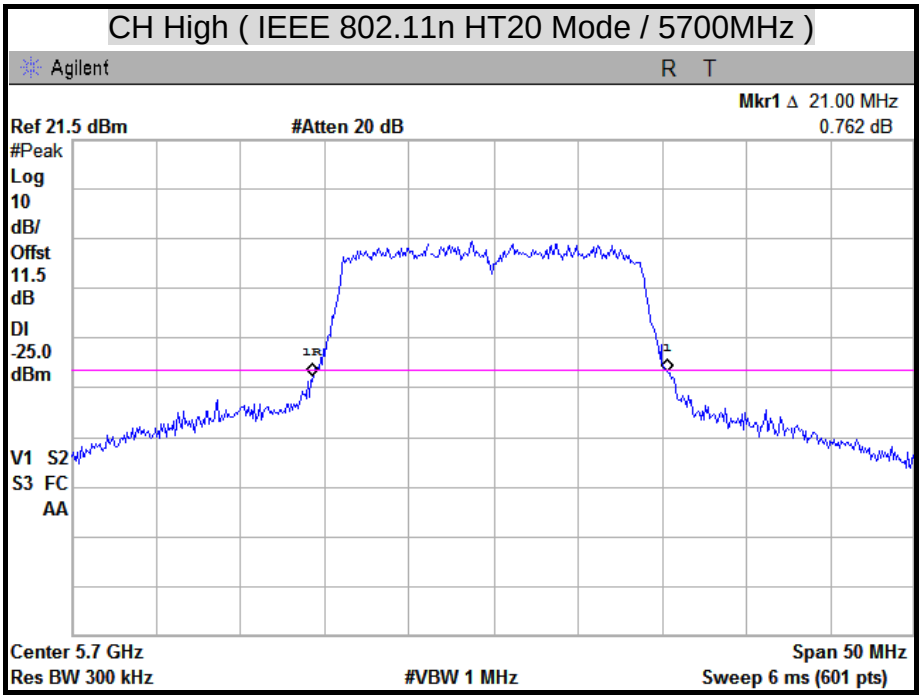
CH Low (IEEE 802.11n HT20 Mode / 5500MHz)



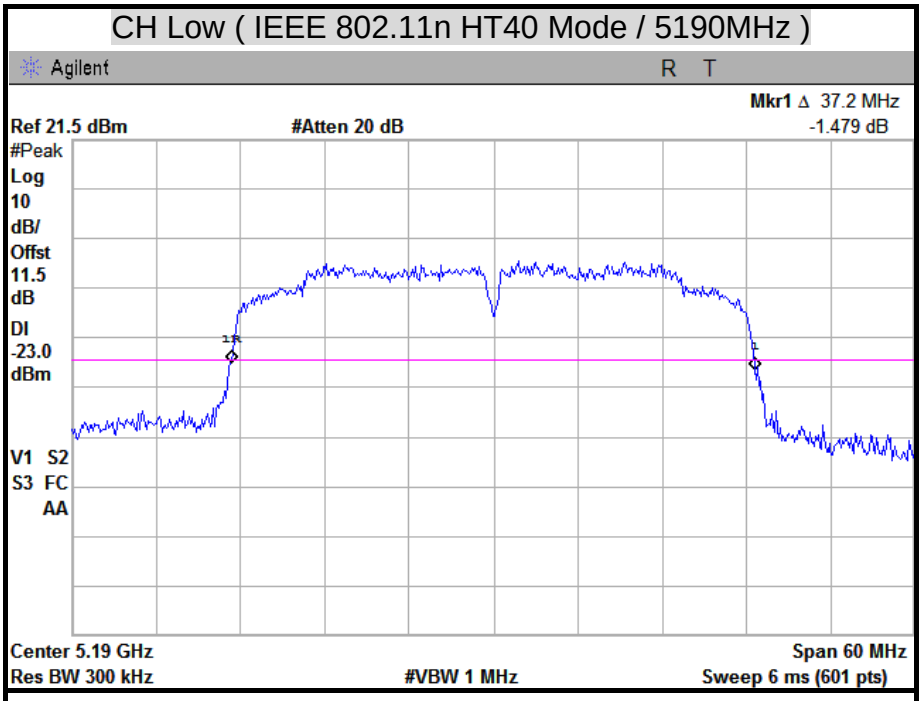
CH Middle (IEEE 802.11n HT20 Mode / 5600MHz)



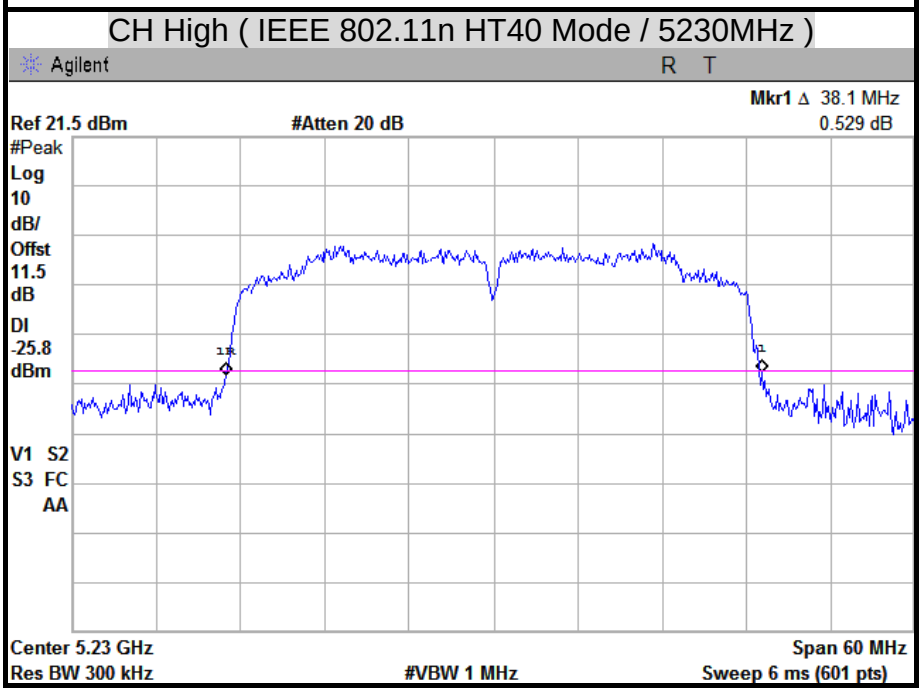
CH High (IEEE 802.11n HT20 Mode / 5700MHz)



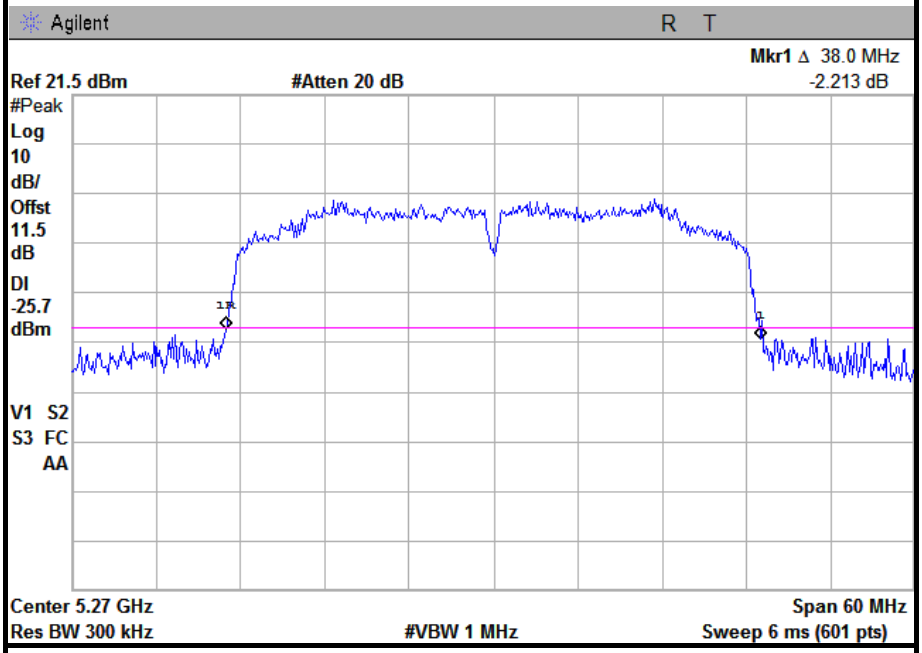
CH Low (IEEE 802.11n HT40 Mode / 5190MHz)



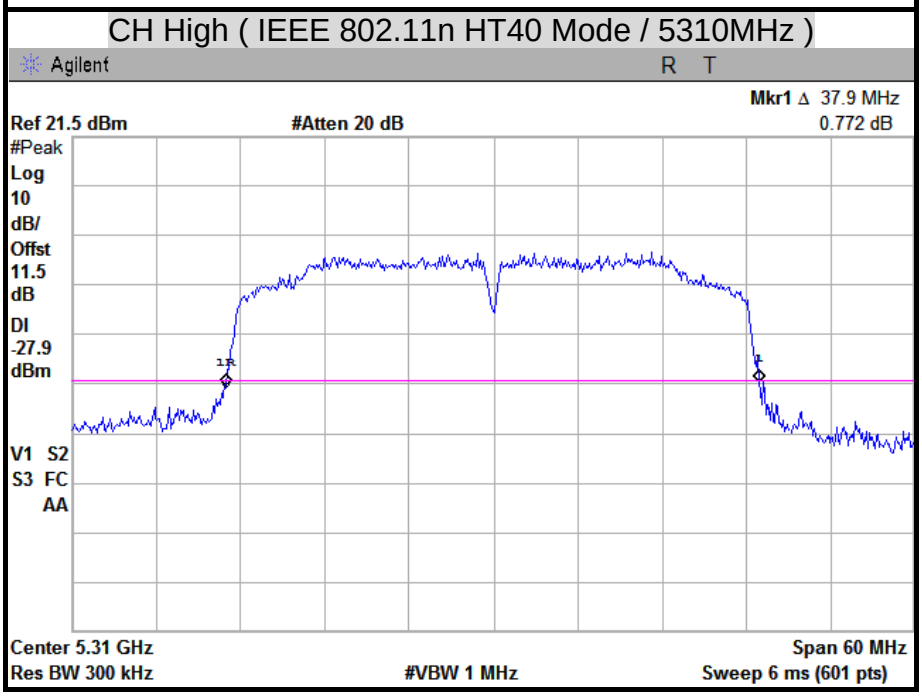
CH High (IEEE 802.11n HT40 Mode / 5230MHz)



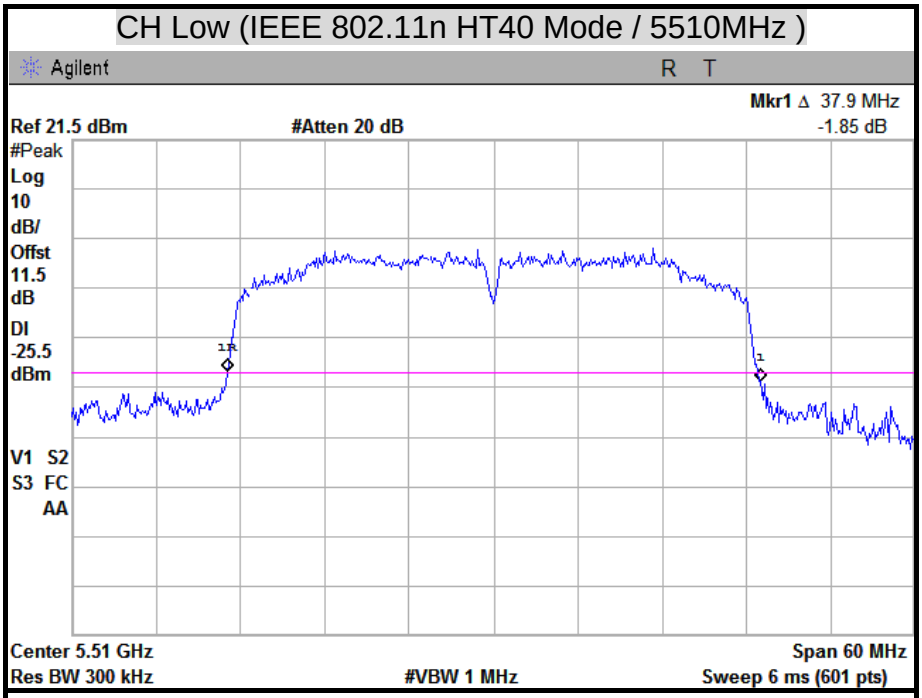
CH Low (IEEE 802.11n HT40 Mode / 5270MHz)



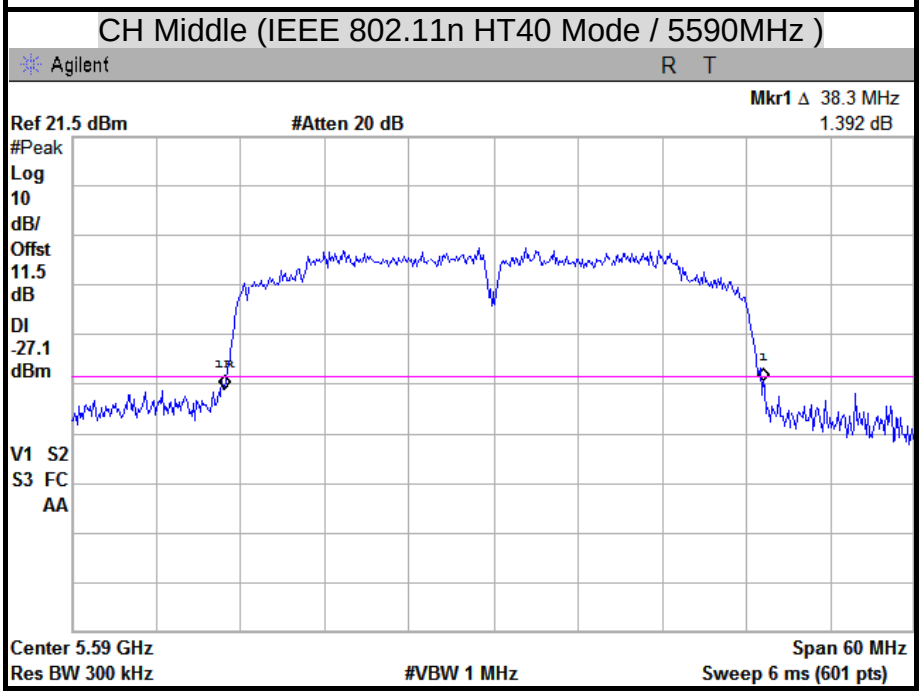
CH High (IEEE 802.11n HT40 Mode / 5310MHz)



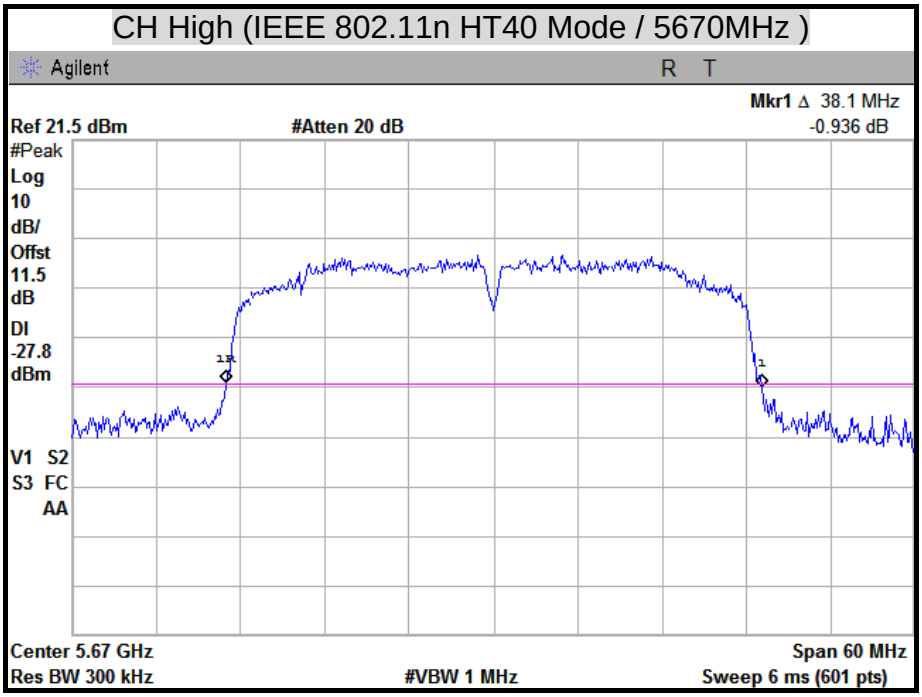
CH Low (IEEE 802.11n HT40 Mode / 5510MHz)



CH Middle (IEEE 802.11n HT40 Mode / 5590MHz)



CH High (IEEE 802.11n HT40 Mode / 5670MHz)



7.2 MAXIMUM CONDUCTED OUTPUT POWER

LIMITS

§ 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 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10log B, where B is the 26 dB emission bandwidth in MHz.

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:

IEEE 802.11a mode / 5180MHz ~ 5240MHz

Channel	Channel Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log B (dB)	4dBm + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5180	20.08	13.02764	17.02764	17
Middle	5220	21.08	13.23871	17.23871	17
High	5240	20.17	13.04706	17.04706	17

IEEE 802.11a mode / 5260MHz ~ 5320MHz

Channel	Channel Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log B (dB)	4dBm + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5260	20.58	13.13445	17.13445	24
Middle	5280	21.50	13.32438	17.32438	24
High	5320	20.17	13.04706	17.04706	24

IEEE 802.11a mode / 5500MHz ~ 5700MHz

Channel	Channel Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log B (dB)	4dBm + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5500	20.58	13.13445	17.13445	24
Middle	5600	20.92	13.20562	17.20562	24
High	5700	20.25	13.06425	17.06425	24

IEEE 802.11n HT20 mode / 5180MHz ~ 5240MHz

Channel	Channel Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log B (dB)	4dBm + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5180	20.25	13.06425	17.06425	17
Middle	5220	20.67	13.15340	17.15340	17
High	5240	20.33	13.08137	17.08137	17

IEEE 802.11n HT20 mode / 5260MHz ~ 5320MHz

Channel	Channel Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log B (dB)	4dBm + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5260	20.25	13.06425	17.06425	24
Middle	5280	21.08	13.23871	17.23871	24
High	5320	21.17	13.25721	17.25721	24

IEEE 802.11n HT20 mode / 5500MHz ~ 5700MHz

Channel	Channel Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log B (dB)	4dBm + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5500	21.17	13.25721	17.25721	24
Middle	5600	20.67	13.15340	17.15340	24
High	5700	21.00	13.22219	17.22219	24

IEEE 802.11n HT40 mode / 5190MHz ~ 5230MHz

Channel	Channel Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log B (dB)	4dBm + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5190	37.20	15.70543	19.70543	17
High	5230	38.10	15.80925	19.80925	17

IEEE 802.11n HT40 mode / 5260MHz ~ 5320MHz

Channel	Channel Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log B (dB)	4dBm + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5270	38.00	15.79784	19.79784	24
High	5310	37.90	15.78639	19.78639	24

IEEE 802.11n HT40 mode / 5500MHz ~ 5700MHz

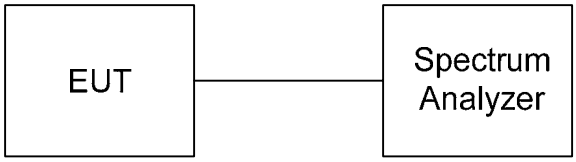
Channel	Channel Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log B (dB)	4dBm + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5510	37.90	15.78639	19.78639	24
Middle	5590	38.30	15.83199	19.83199	24
High	5670	38.10	15.80925	19.80925	24

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4407B	US41443108	08/12/2011

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

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

IEEE 802.11a Mode / 5180MHz ~ 5240MHz

Channel	Channel Frequency (MHz)	Peak Power		Peak Power Limit		Pass / Fail
		(dBm)	(W)	(dBm)	(W)	
Low	5180	13.24	0.0211	17	0.05	PASS
Middle	5220	14.12	0.0258	17	0.05	PASS
High	5240	14.34	0.0272	17	0.05	PASS

Remark:

1. *At finial test to get the worst-case emission at 6Mbps.*
2. *The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11a Mode / 5260MHz ~ 5320MHz

Channel	Channel Frequency (MHz)	Peak Power		Peak Power Limit		Pass / Fail
		(dBm)	(W)	(dBm)	(W)	
Low	5260	15.52	0.0356	24	0.25	PASS
Middle	5280	16.56	0.0453	24	0.25	PASS
High	5320	16.19	0.0416	24	0.25	PASS

Remark:

1. *At finial test to get the worst-case emission at 6Mbps.*
2. *The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11a Mode / 5500MHz ~ 5700MHz

Channel	Channel Frequency (MHz)	Peak Power		Peak Power Limit		Pass / Fail
		(dBm)	(W)	(dBm)	(W)	
Low	5500	16.54	0.0451	24	0.25	PASS
Middle	5600	16.61	0.0458	24	0.25	PASS
High	5700	17.09	0.0512	24	0.25	PASS

Remark:

1. *At finial test to get the worst-case emission at 6Mbps.*
2. *The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT20 Mode / 5180MHz ~ 5240MHz

Channel	Channel Frequency (MHz)	Peak Power		Peak Power Limit		Pass / Fail
		(dBm)	(W)	(dBm)	(W)	
Low	5180	10.04	0.0101	17	0.05	PASS
Middle	5220	10.26	0.0106	17	0.05	PASS
High	5240	10.79	0.0120	17	0.05	PASS

Remark:

1. At finial test to get the worst-case emission at 6.5Mbps.

2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT20 Mode / 5260MHz ~ 5320MHz

Channel	Channel Frequency (MHz)	Peak Power		Peak Power Limit		Pass / Fail
		(dBm)	(W)	(dBm)	(W)	
Low	5260	14.88	0.0308	24	0.25	PASS
Middle	5280	15.22	0.0333	24	0.25	PASS
High	5320	15.20	0.0331	24	0.25	PASS

Remark:

1. At finial test to get the worst-case emission at 6.5Mbps.

2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT20 Mode / 5500MHz ~ 5700MHz

Channel	Channel Frequency (MHz)	Peak Power		Peak Power Limit		Pass / Fail
		(dBm)	(W)	(dBm)	(W)	
Low	5500	16.03	0.0401	24	0.25	PASS
Middle	5600	16.26	0.0423	24	0.25	PASS
High	5700	16.05	0.0403	24	0.25	PASS

Remark:

1. At finial test to get the worst-case emission at 6.5Mbps.

2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 Mode / 5190MHz ~ 5230MHz

Channel	Channel Frequency (MHz)	Peak Power		Peak Power Limit		Pass / Fail
		(dBm)	(W)	(dBm)	(W)	
Low	5190	12.38	0.0173	17	0.05	PASS
High	5230	12.13	0.0163	17	0.05	PASS

Remark:

1. At finial test to get the worst-case emission at 13.5Mbps.
2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 Mode / 5270MHz ~ 5310MHz

Channel	Channel Frequency (MHz)	Peak Power		Peak Power Limit		Pass / Fail
		(dBm)	(W)	(dBm)	(W)	
Low	5270	15.56	0.0360	24	0.25	PASS
High	5310	12.76	0.0189	24	0.25	PASS

Remark:

1. At finial test to get the worst-case emission at 13.5Mbps.
2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 Mode / 5510MHz ~ 5670MHz

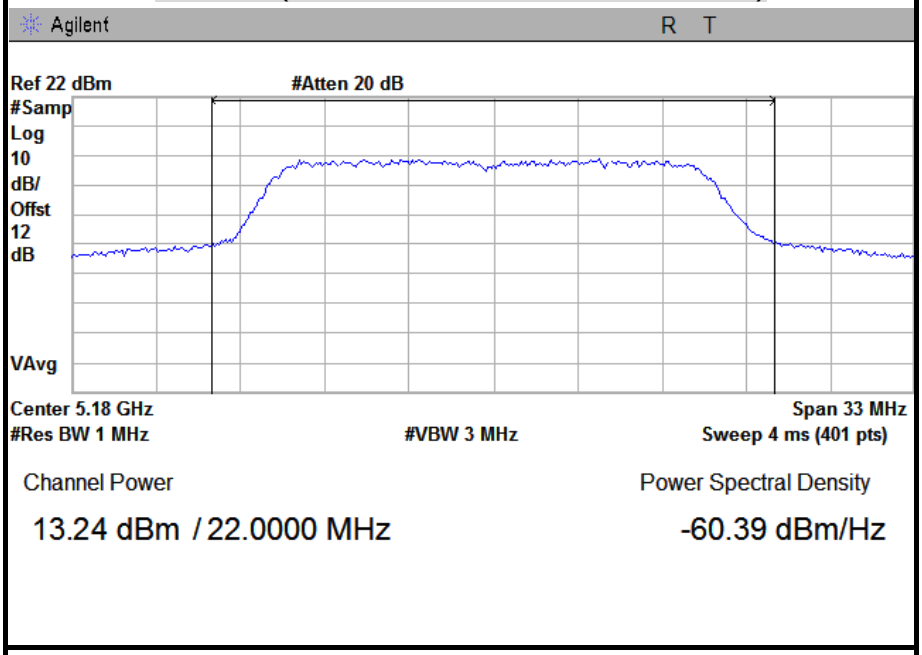
Channel	Channel Frequency (MHz)	Peak Power		Peak Power Limit		Pass / Fail
		(dBm)	(W)	(dBm)	(W)	
Low	5510	16.69	0.0467	24	0.25	PASS
Middle	5590	17.22	0.0527	24	0.25	PASS
High	5670	17.21	0.0526	24	0.25	PASS

Remark:

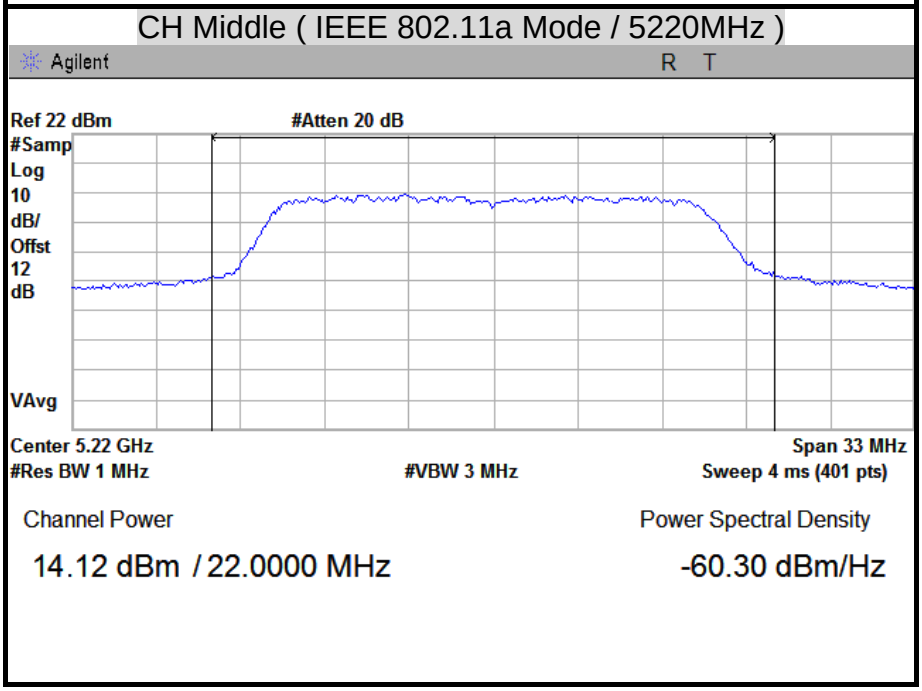
1. At finial test to get the worst-case emission at 13.5Mbps.
2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

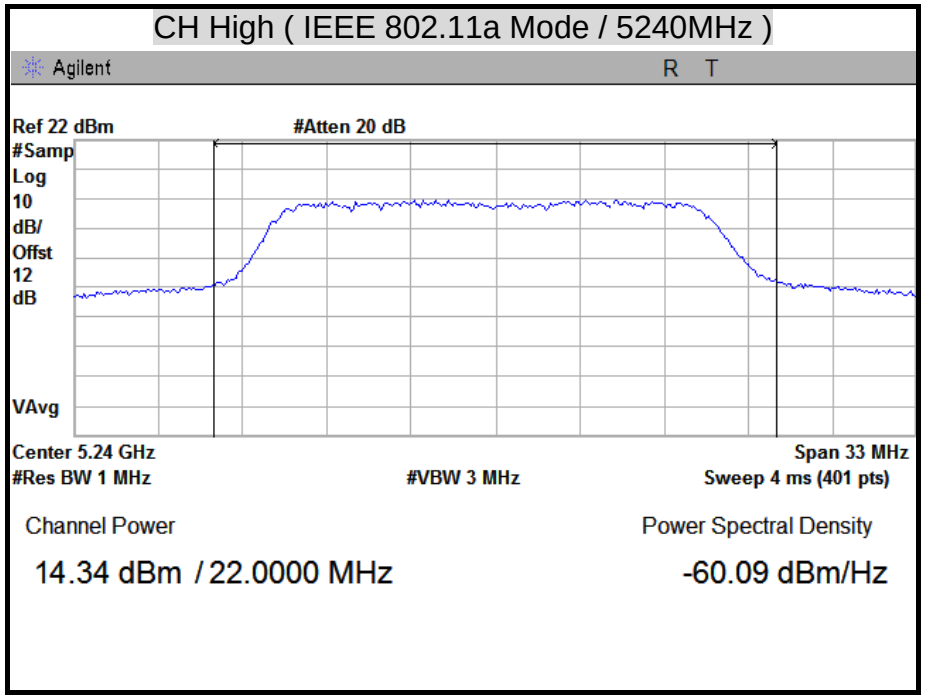
MAXIMUM CONDUCTED OUTPUT POWER

CH Low (IEEE 802.11a Mode / 5180MHz)

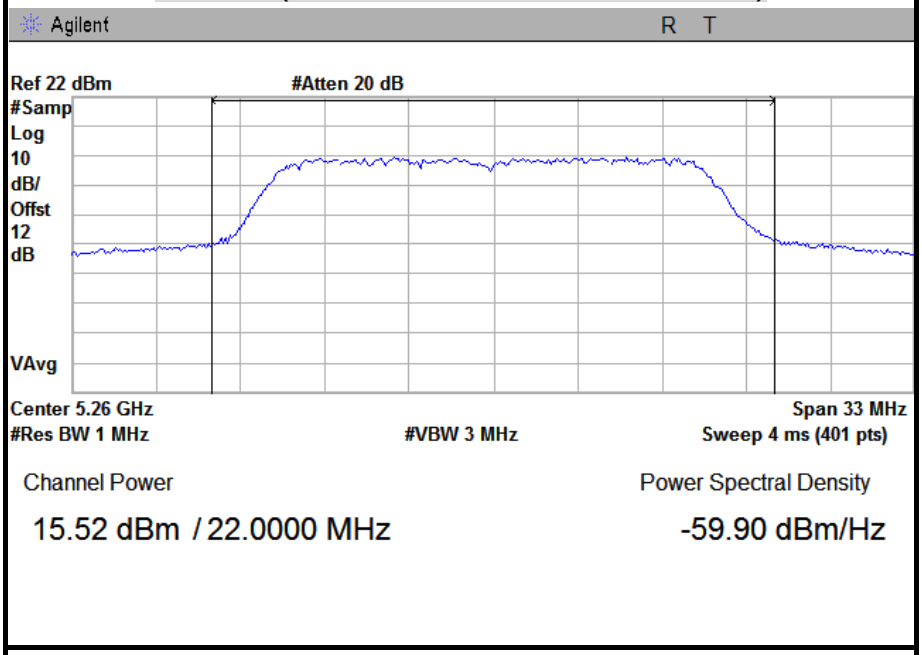


CH Middle (IEEE 802.11a Mode / 5220MHz)





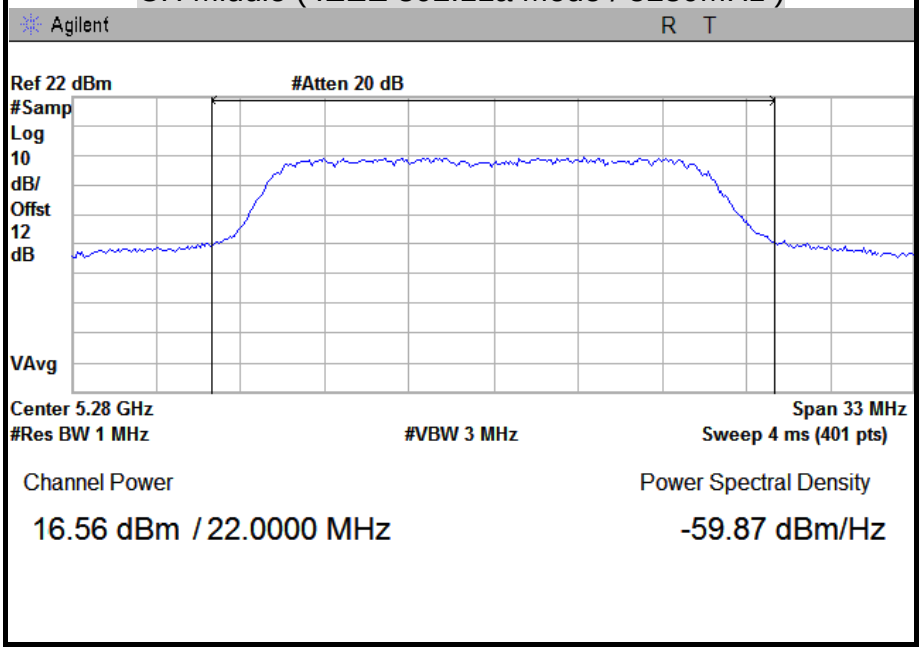
CH Low (IEEE 802.11a Mode / 5260MHz)



Channel Power
15.52 dBm / 22.0000 MHz

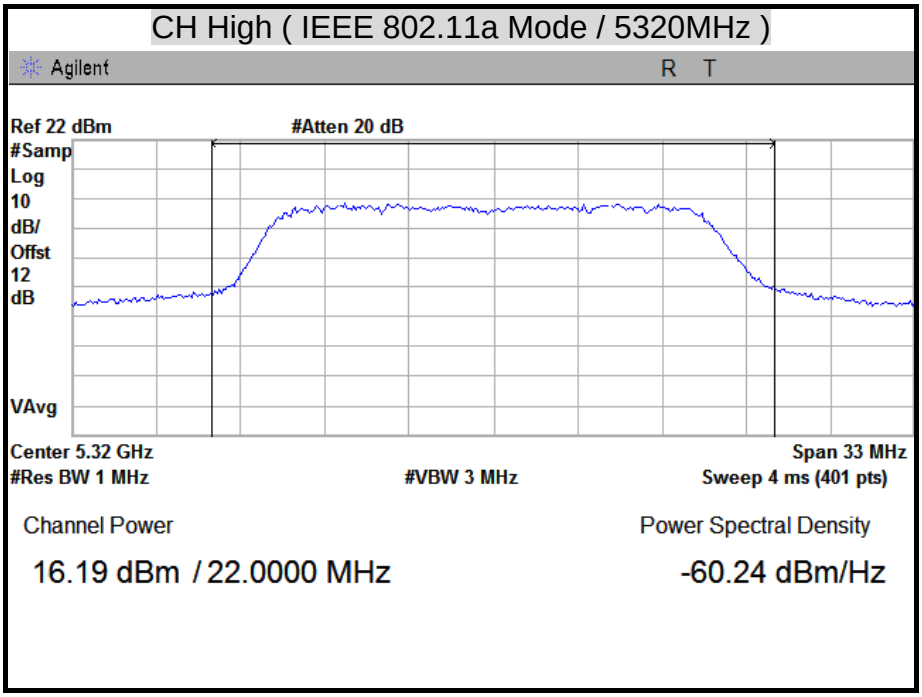
Power Spectral Density
-59.90 dBm/Hz

CH Middle (IEEE 802.11a Mode / 5280MHz)

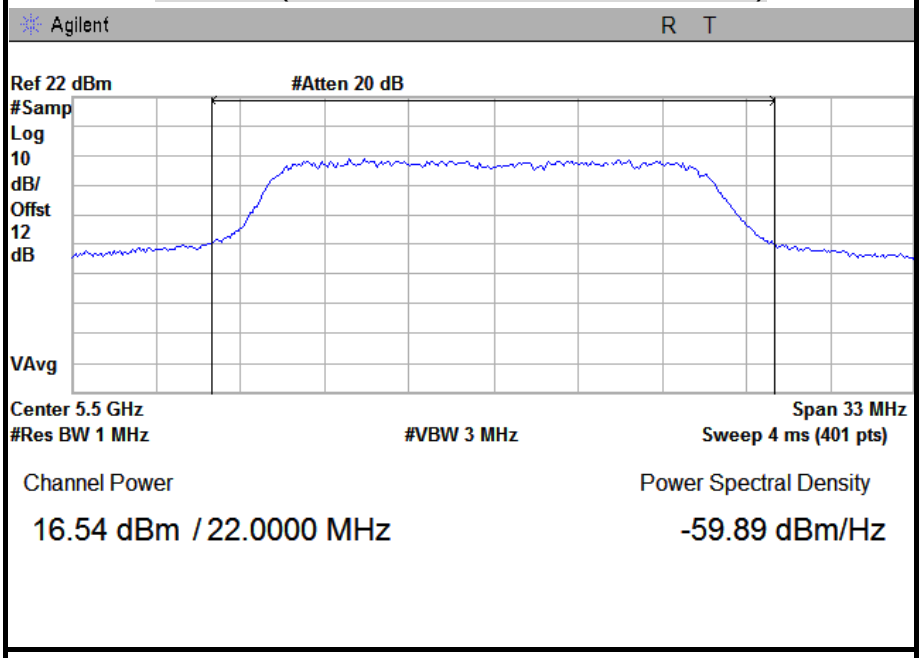


Channel Power
16.56 dBm / 22.0000 MHz

Power Spectral Density
-59.87 dBm/Hz



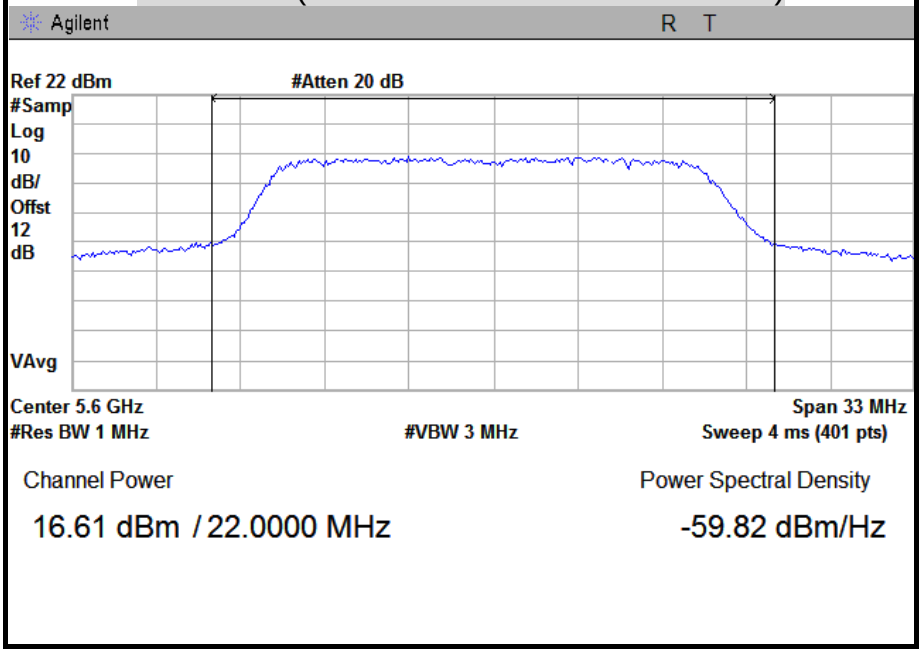
CH Low (IEEE 802.11a Mode / 5500MHz)



Channel Power
16.54 dBm / 22.0000 MHz

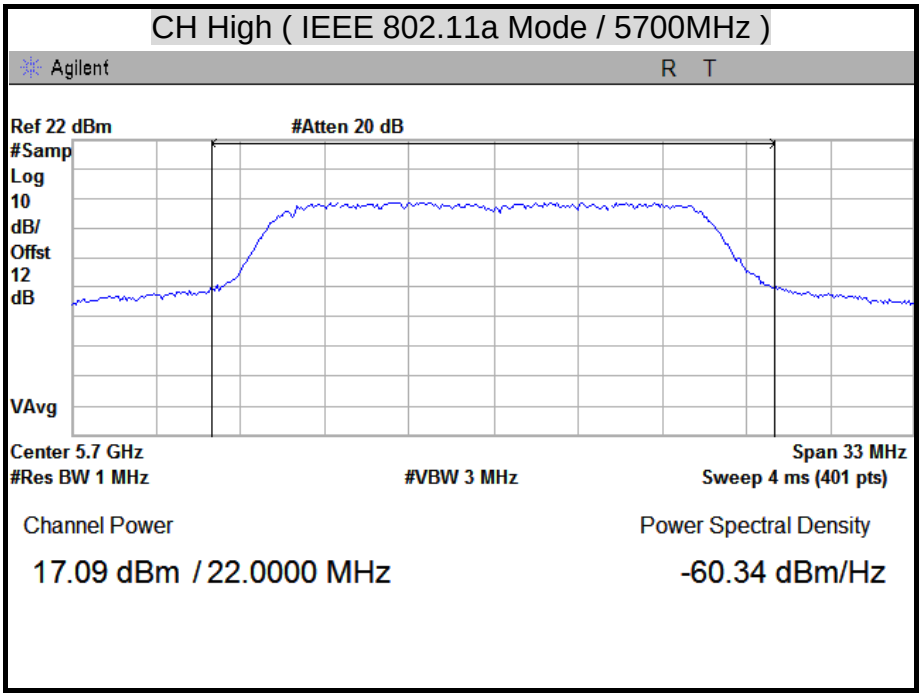
Power Spectral Density
-59.89 dBm/Hz

CH Middle (IEEE 802.11a Mode / 5600MHz)

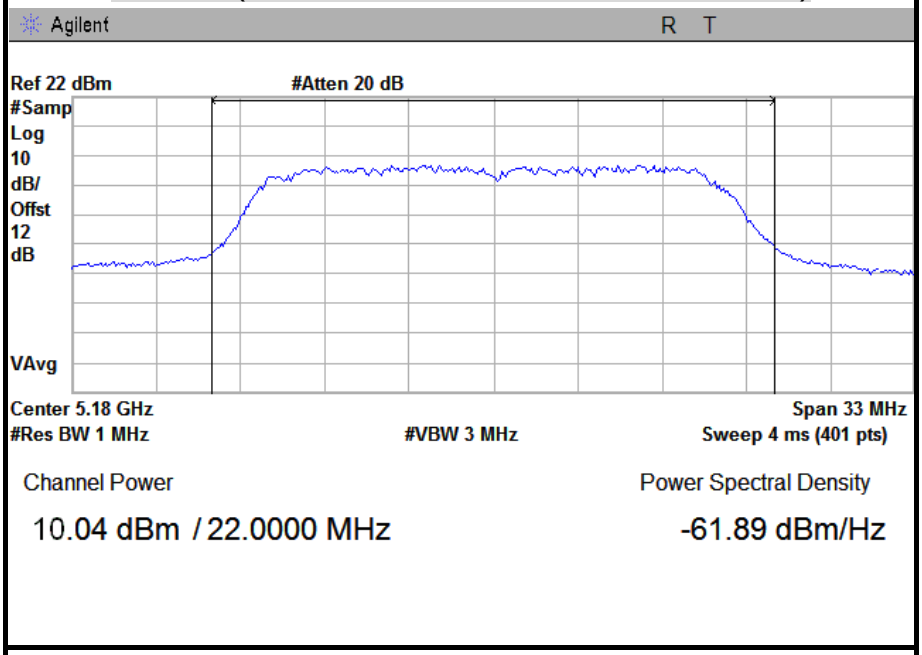


Channel Power
16.61 dBm / 22.0000 MHz

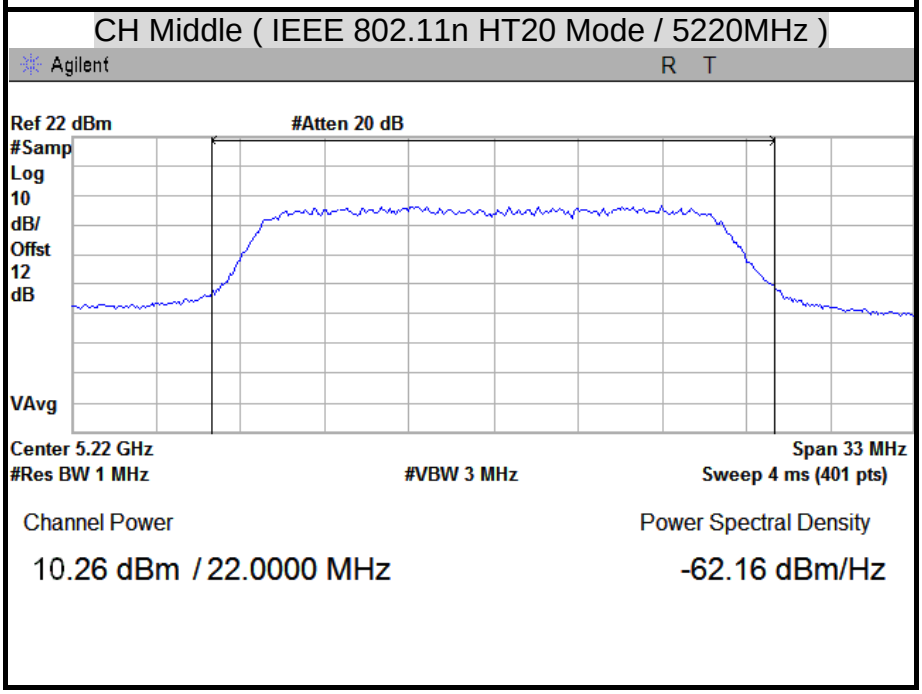
Power Spectral Density
-59.82 dBm/Hz

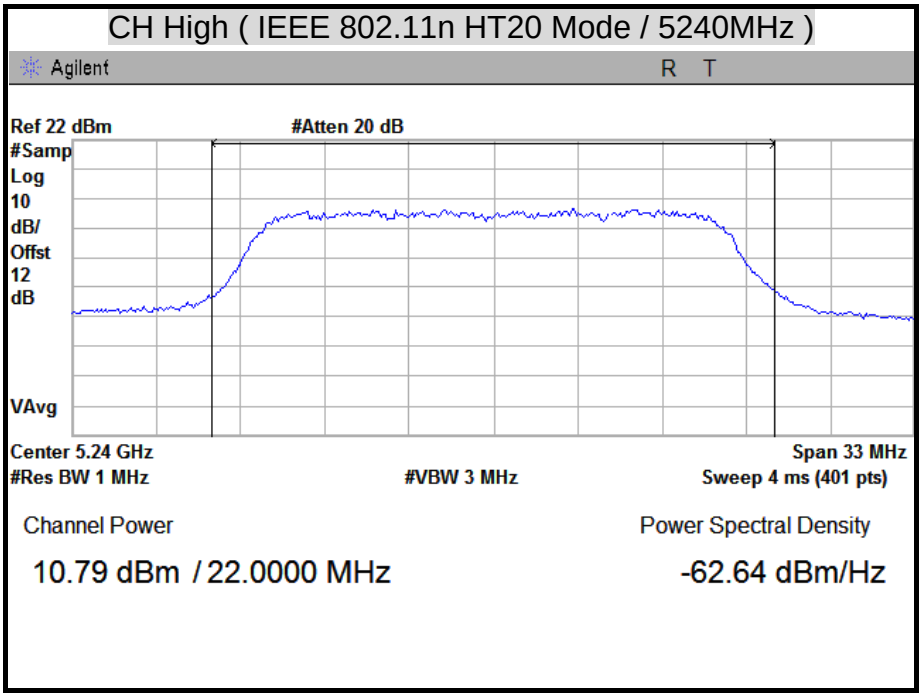


CH Low (IEEE 802.11n HT20 Mode / 5180MHz)

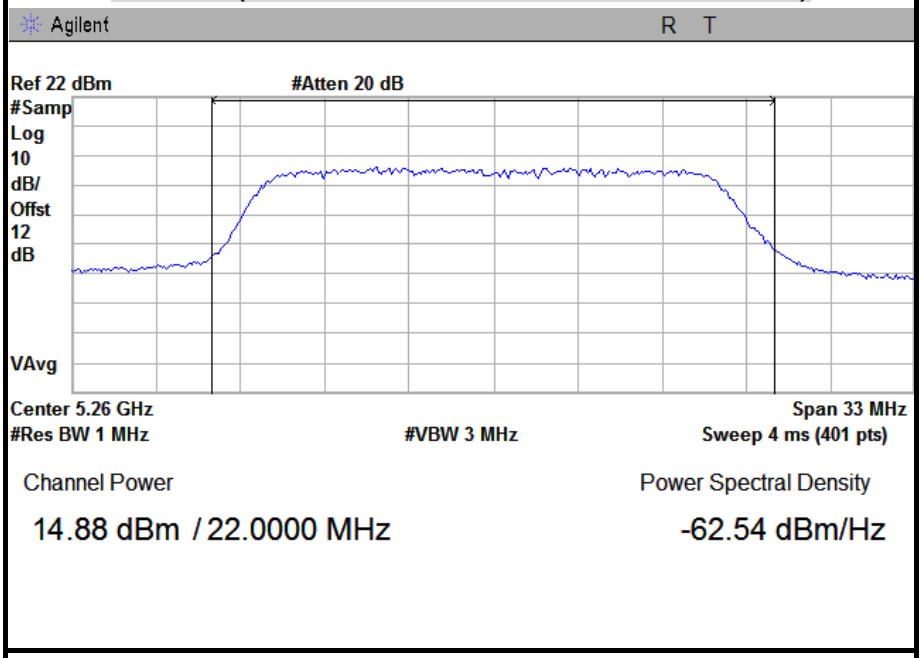


CH Middle (IEEE 802.11n HT20 Mode / 5220MHz)





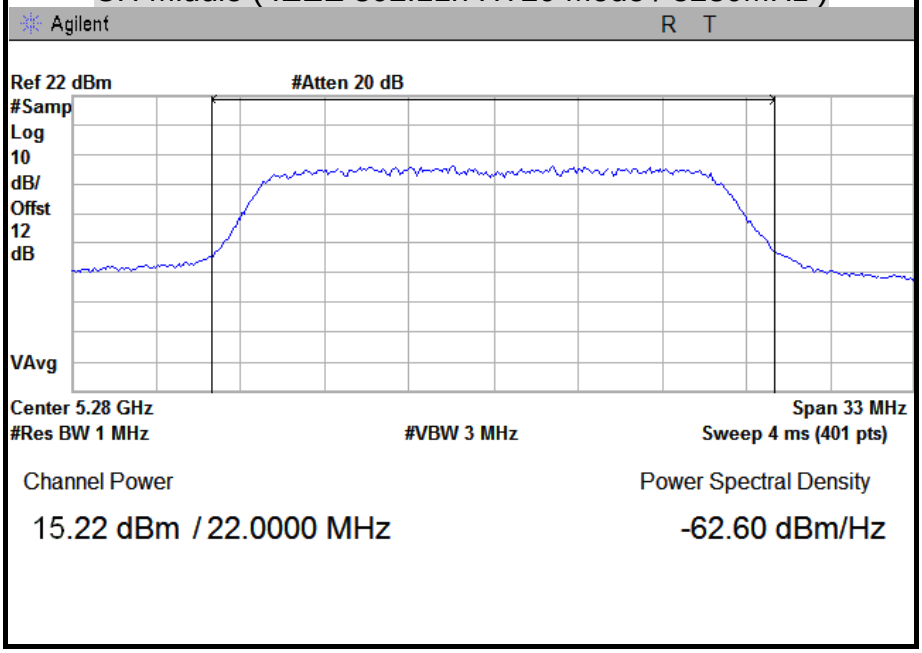
CH Low (IEEE 802.11n HT20 Mode / 5260MHz)



Channel Power
14.88 dBm / 22.0000 MHz

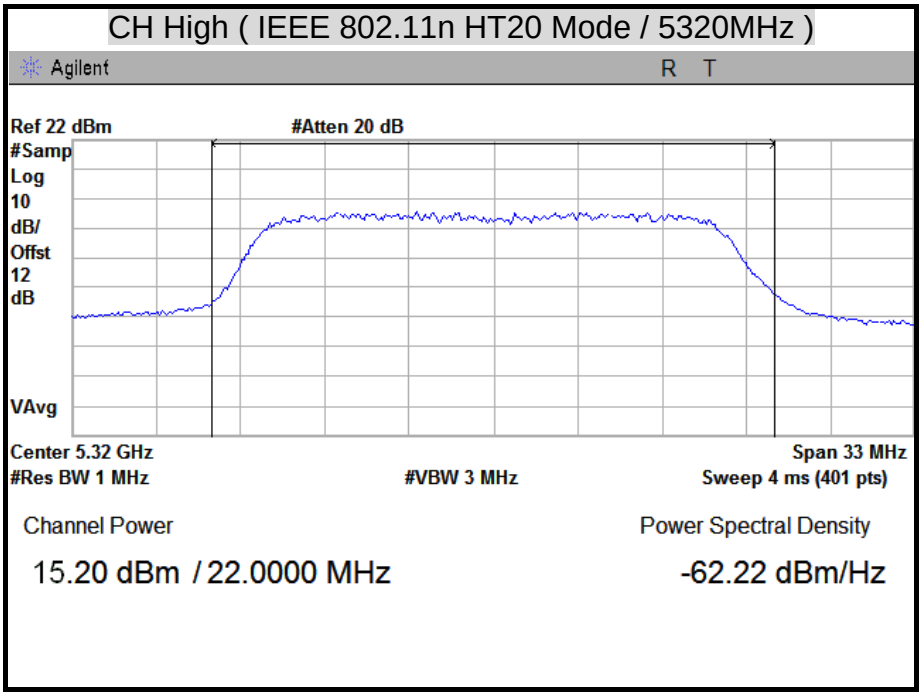
Power Spectral Density
-62.54 dBm/Hz

CH Middle (IEEE 802.11n HT20 Mode / 5280MHz)

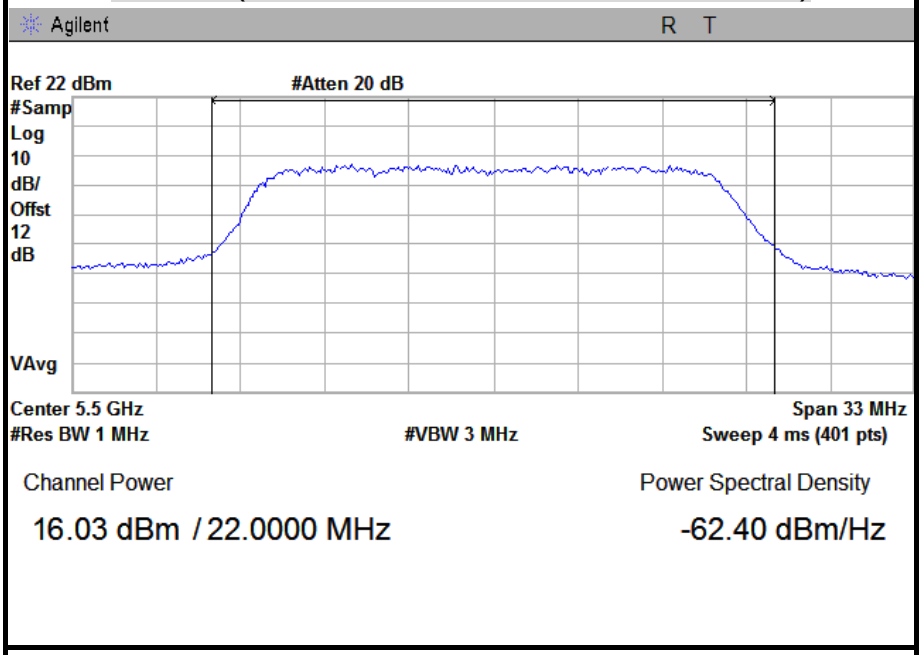


Channel Power
15.22 dBm / 22.0000 MHz

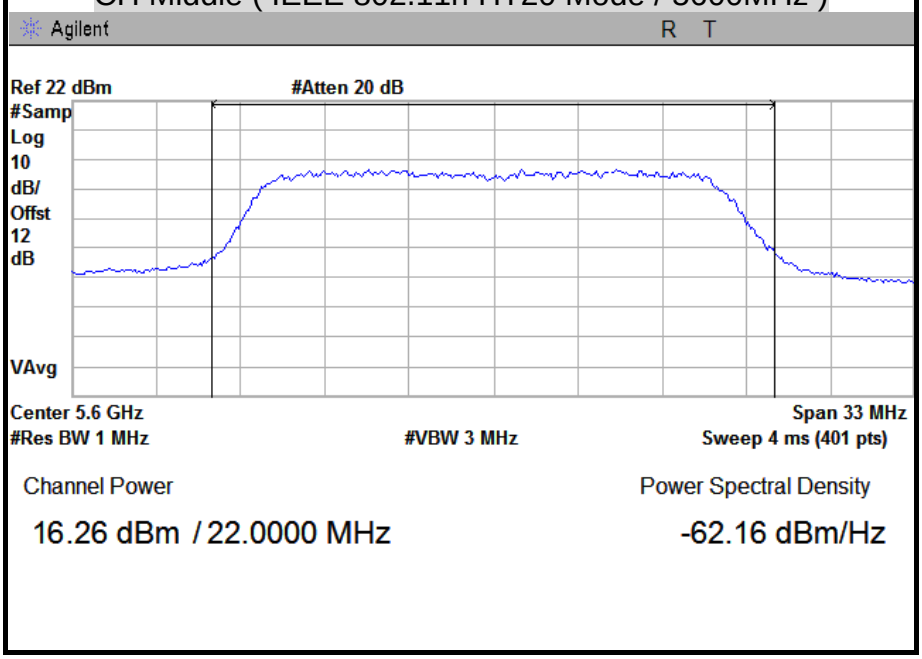
Power Spectral Density
-62.60 dBm/Hz

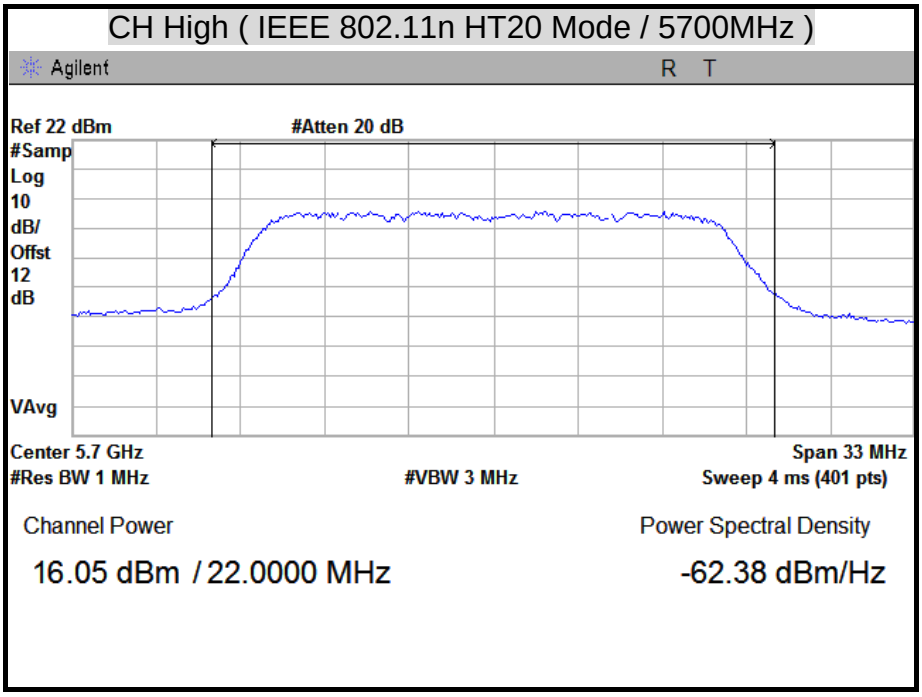


CH Low (IEEE 802.11n HT20 Mode / 5500MHz)

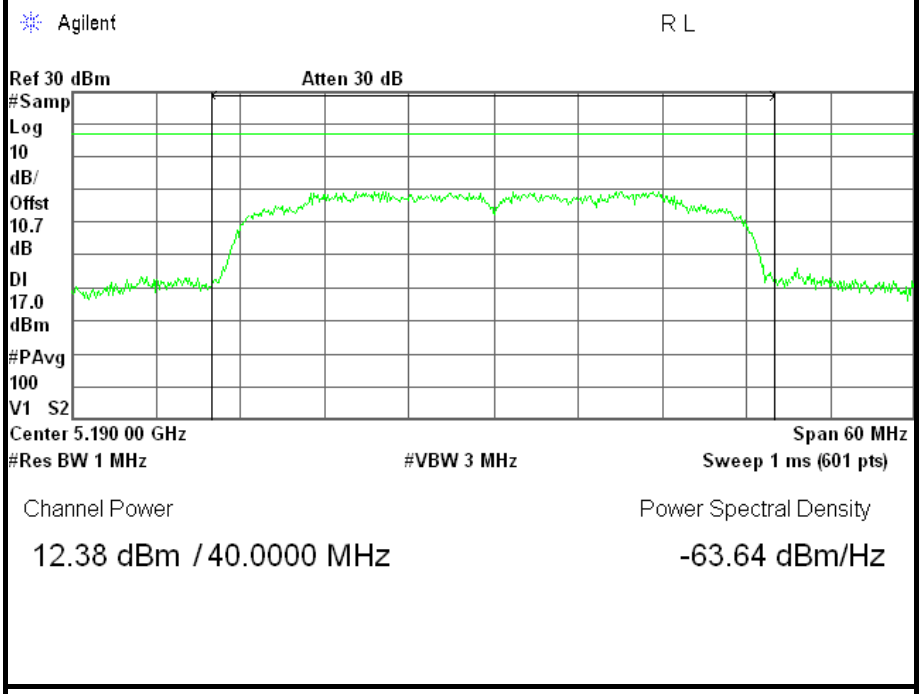


CH Middle (IEEE 802.11n HT20 Mode / 5600MHz)

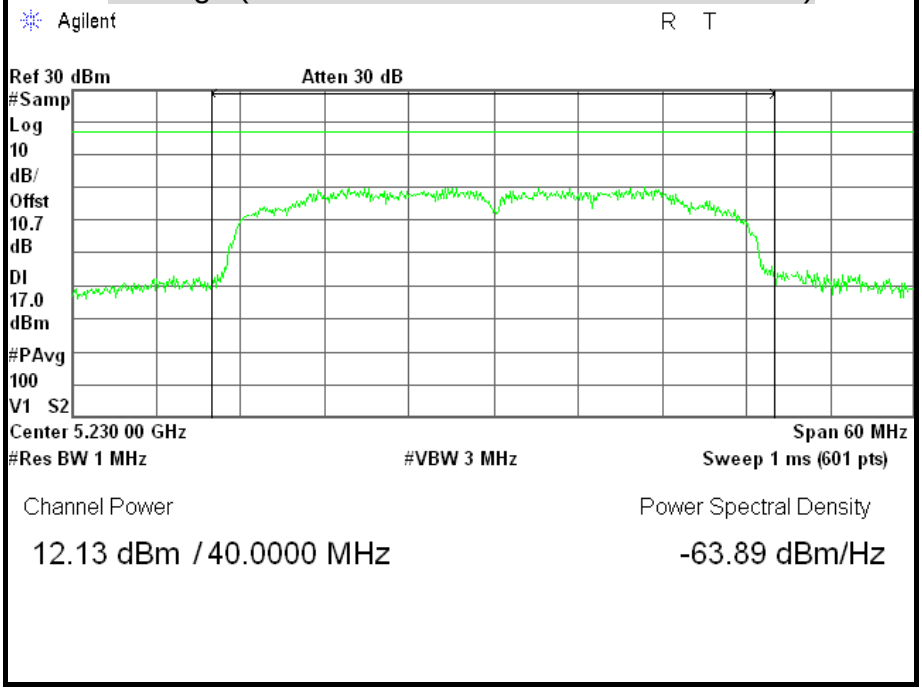




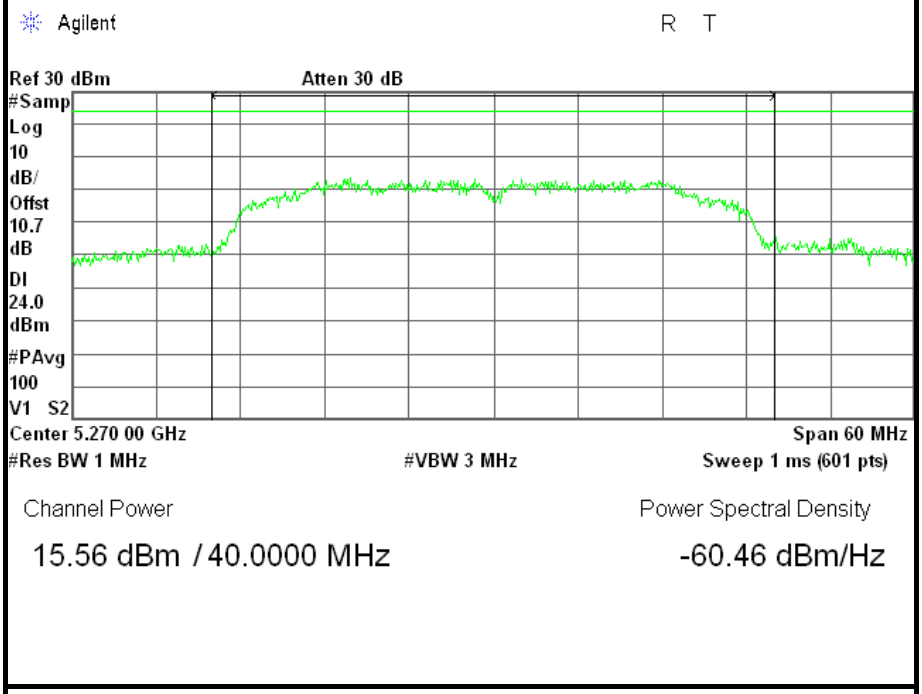
CH Low (IEEE 802.11n HT40 Mode / 5190MHz)



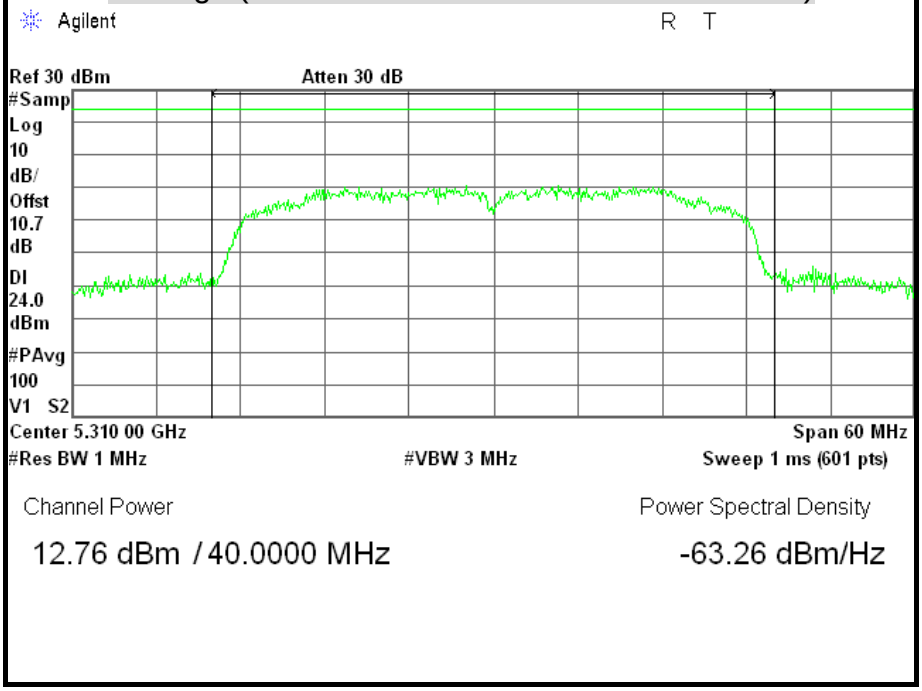
CH High (IEEE 802.11n HT40 Mode / 5230MHz)



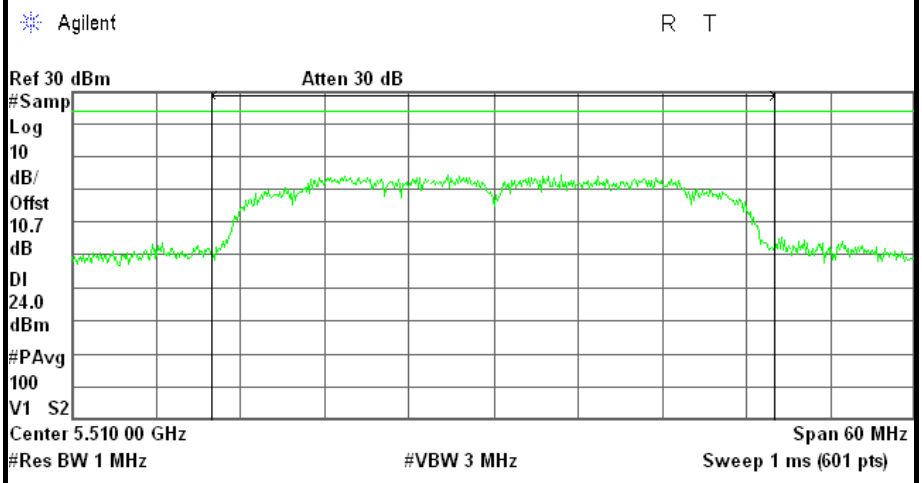
CH Low (IEEE 802.11n HT40 Mode / 5270MHz)



CH High (IEEE 802.11n HT40 Mode / 5310MHz)



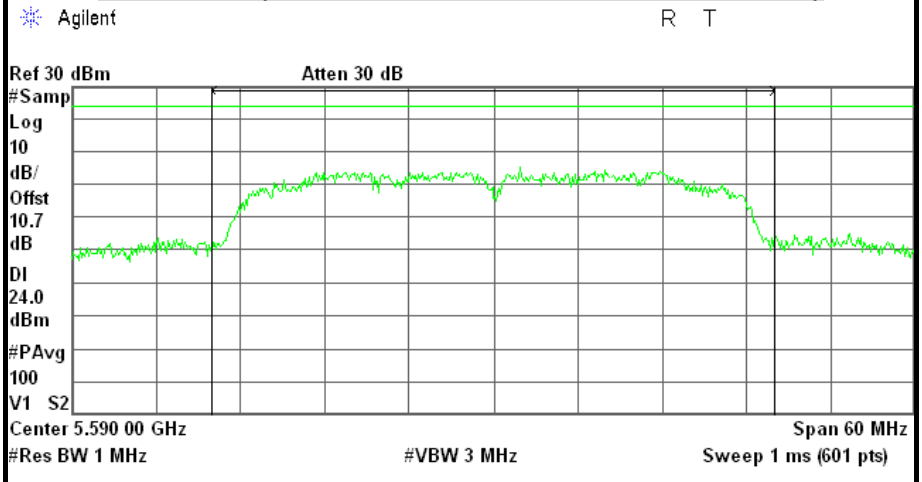
CH Low (IEEE 802.11n HT40 Mode / 5510MHz)



Channel Power
16.96 dBm / 40.0000 MHz

Power Spectral Density
-59.06 dBm/Hz

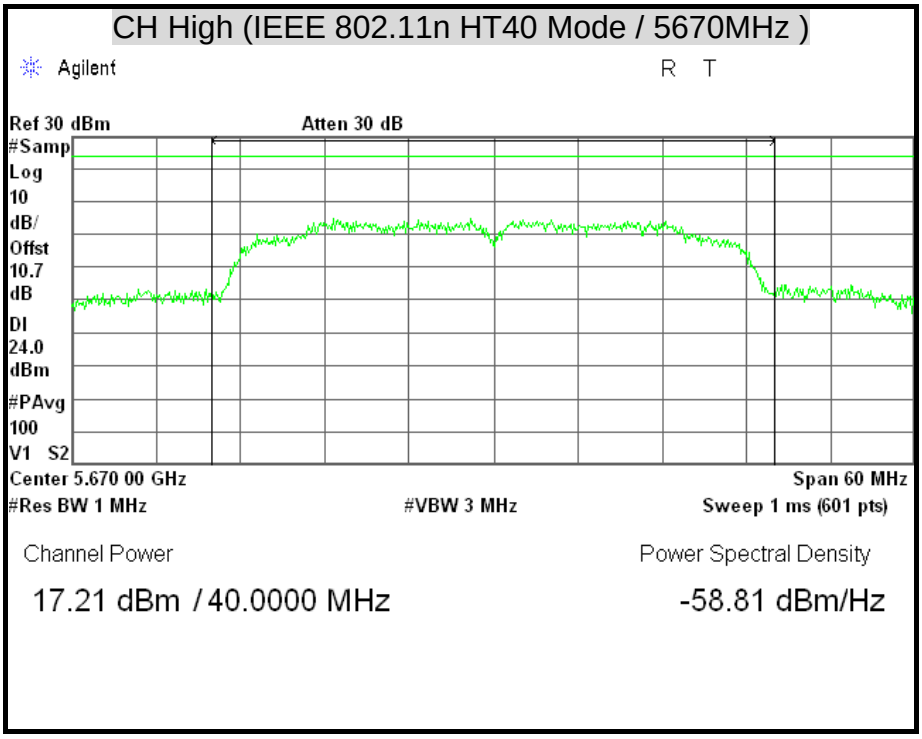
CH Middle (IEEE 802.11n HT40 Mode / 5590MHz)



Channel Power
17.22 dBm / 40.0000 MHz

Power Spectral Density
-58.80 dBm/Hz

CH High (IEEE 802.11n HT40 Mode / 5670MHz)



7.3 PEAK POWER SPECTRAL DENSITY

LIMITS

§ 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 5.47-5725 GHz, the peak power spectral density shall not exceed 11dBm in any 1MHz band.

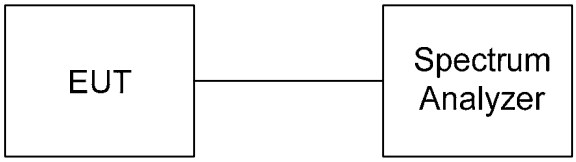
If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4407B	US41443108	08/12/2011

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

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
3. Record the max. reading.
4. Repeat the above procedure until the measurements for all frequencies are completed.

TEST RESULTS

IEEE 802.11a Mode / 5180MHz ~ 5240MHz

Channel	Channel Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5180	3.411	4	-0.589	PASS
Middle	5220	2.701	4	-1.299	PASS
High	5240	3.074	4	-0.926	PASS

Remark:

1. At finial test to get the worst-case emission at 6Mbps.

2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11a Mode / 5260MHz ~ 5320MHz

Channel	Channel Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5260	6.552	11	-4.448	PASS
Middle	5280	6.897	11	-4.103	PASS
High	5320	7.075	11	-3.925	PASS

Remark:

1. At finial test to get the worst-case emission at 6Mbps

2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11a Mode / 5500MHz ~ 5700MHz

Channel	Channel Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5500	7.703	11	-3.297	PASS
Middle	5600	7.821	11	-3.179	PASS
High	5700	7.680	11	-3.320	PASS

Remark:

1. At finial test to get the worst-case emission at 6Mbps

2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT20 Mode / 5180MHz ~ 5240MHz

Channel	Channel Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5180	0.112	4	-3.888	PASS
Middle	5220	-0.213	4	-4.213	PASS
High	5240	0.292	4	-3.708	PASS

Remark:

1. *At finial test to get the worst-case emission at 6.5Mbps*
2. *The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT20 Mode / 5260MHz ~ 5320MHz

Channel	Channel Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5260	5.518	11	-5.482	PASS
Middle	5280	6.338	11	-4.662	PASS
High	5320	5.858	11	-5.142	PASS

Remark:

1. *At finial test to get the worst-case emission at 6.5Mbps*
2. *The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT20 Mode / 5500MHz ~ 5700MHz

Channel	Channel Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5500	6.726	11	-4.274	PASS
Middle	5600	6.597	11	-4.403	PASS
High	5700	6.888	11	-4.112	PASS

Remark:

1. *At finial test to get the worst-case emission at 6.5Mbps.*
2. *The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT40 Mode / 5190MHz ~ 5230MHz

Channel	Channel Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5190	-0.540	4	-4.540	PASS
High	5230	0.320	4	-3.680	PASS

Remark:

1. At finial test to get the worst-case emission at 13.5Mbps.

2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 Mode / 5270MHz ~ 5310MHz

Channel	Channel Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5270	3.565	11	-7.435	PASS
High	5310	0.750	11	-10.250	PASS

Remark:

1. At finial test to get the worst-case emission at 13.5Mbps.

2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 Mode / 5510MHz ~ 5670MHz

Channel	Channel Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5510	4.383	11	-6.617	PASS
Middle	5590	5.366	11	-5.634	PASS
High	5670	5.049	11	-5.951	PASS

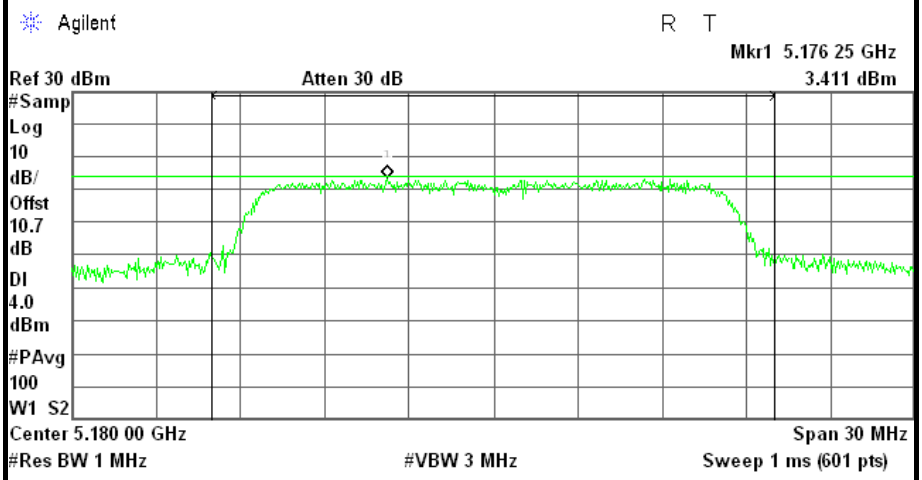
Remark:

1. At finial test to get the worst-case emission at 13.5Mbps.

2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

PEAK POWER SPECTRAL DENSITY

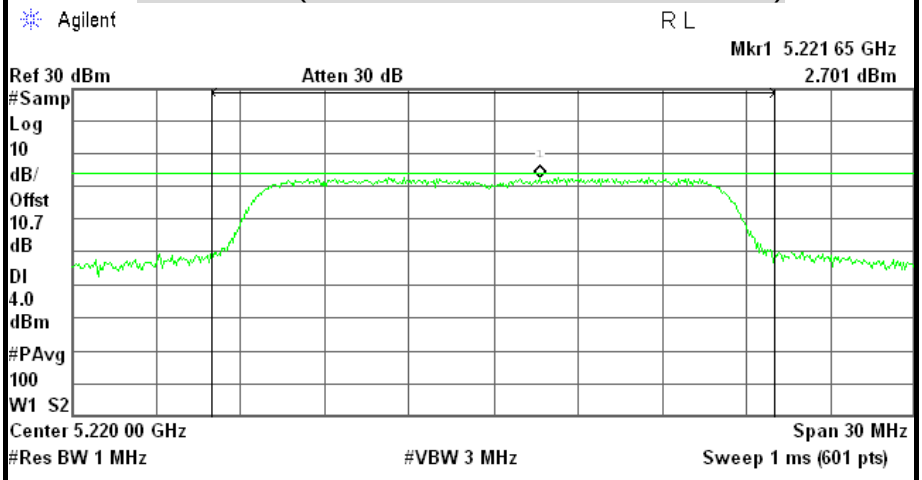
CH Low (IEEE 802.11a Mode / 5180MHz)



Channel Power: 13.19 dBm / 20.0000 MHz

Power Spectral Density: -59.82 dBm/Hz

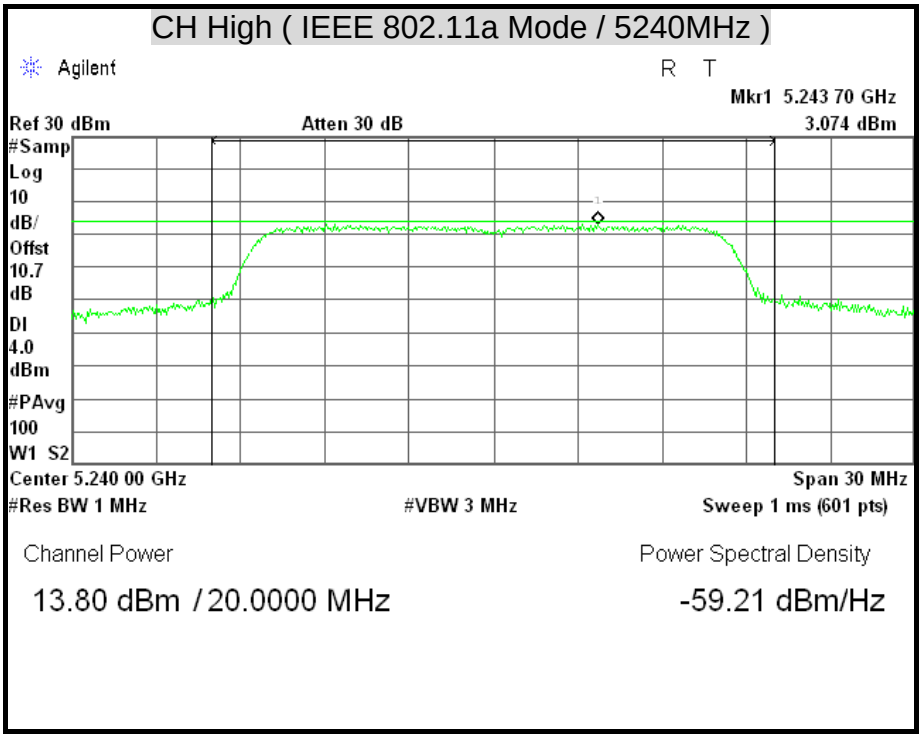
CH Middle (IEEE 802.11a Mode / 5220MHz)



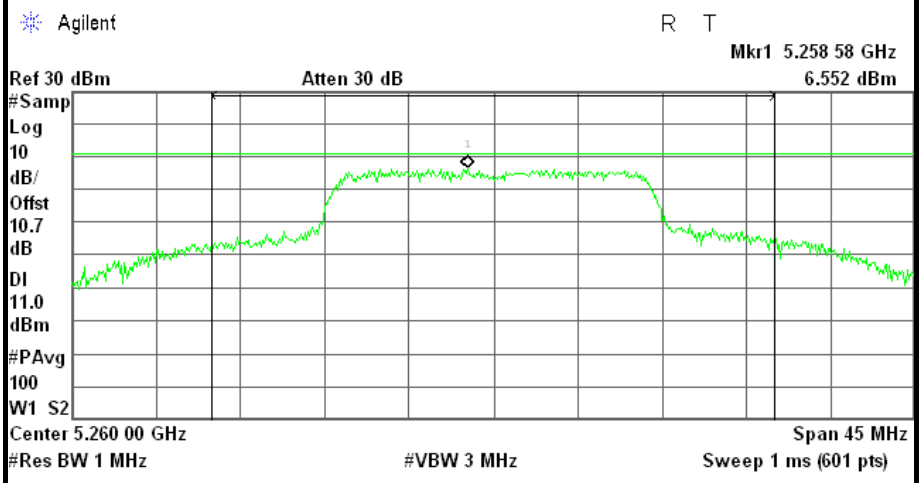
Channel Power: 13.17 dBm / 20.0000 MHz

Power Spectral Density: -59.84 dBm/Hz

CH High (IEEE 802.11a Mode / 5240MHz)



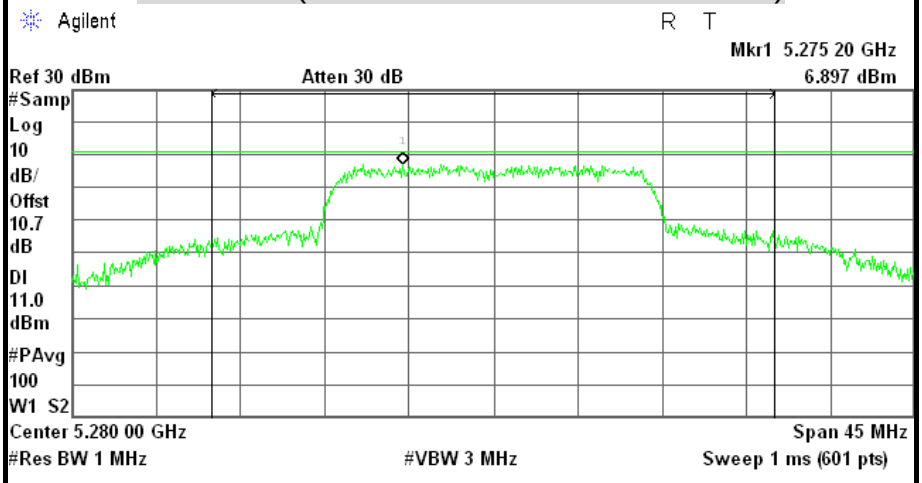
CH Low (IEEE 802.11a Mode / 5260MHz)



Channel Power
16.46 dBm / 30.0000 MHz

Power Spectral Density
-58.31 dBm/Hz

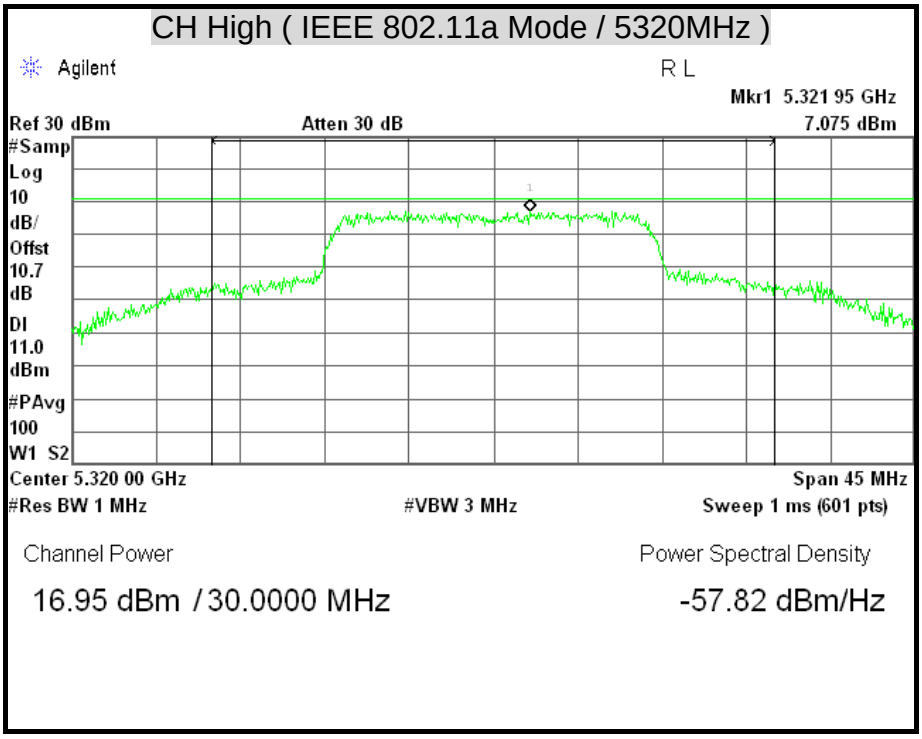
CH Middle (IEEE 802.11a Mode / 5280MHz)



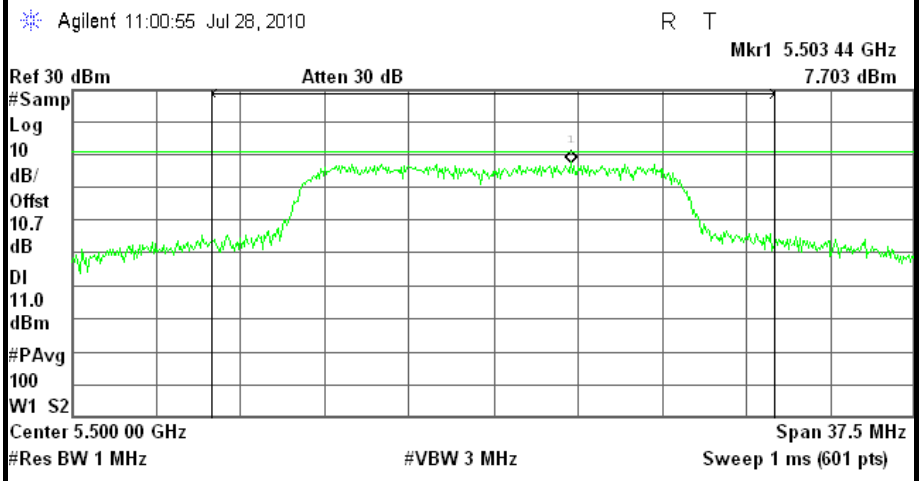
Channel Power
16.68 dBm / 30.0000 MHz

Power Spectral Density
-58.09 dBm/Hz

CH High (IEEE 802.11a Mode / 5320MHz)



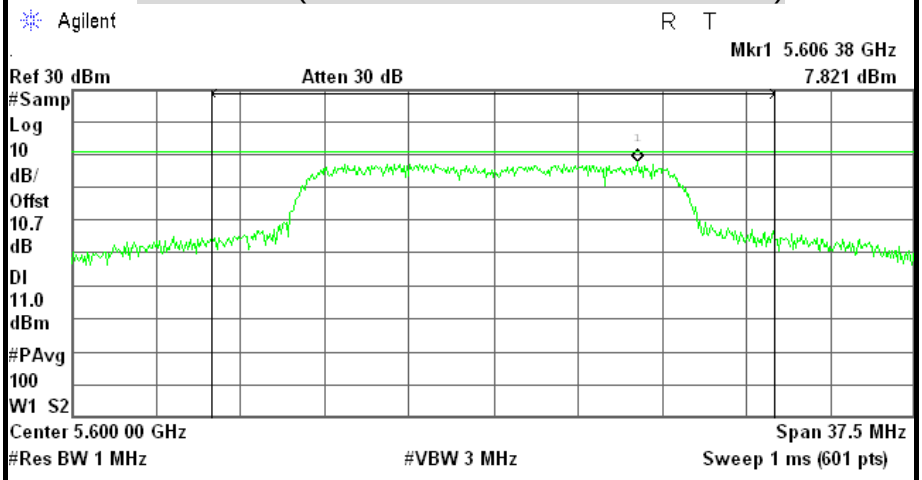
CH Low (IEEE 802.11a Mode / 5500MHz)



Channel Power
17.29 dBm / 25.0000 MHz

Power Spectral Density
-56.69 dBm/Hz

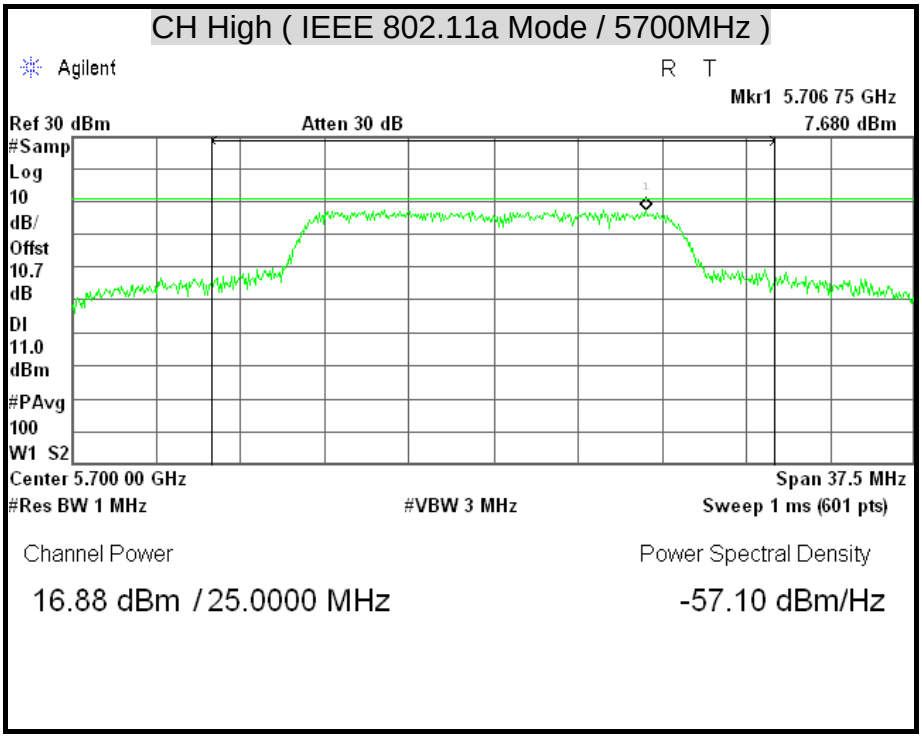
CH Middle (IEEE 802.11a Mode / 5600MHz)



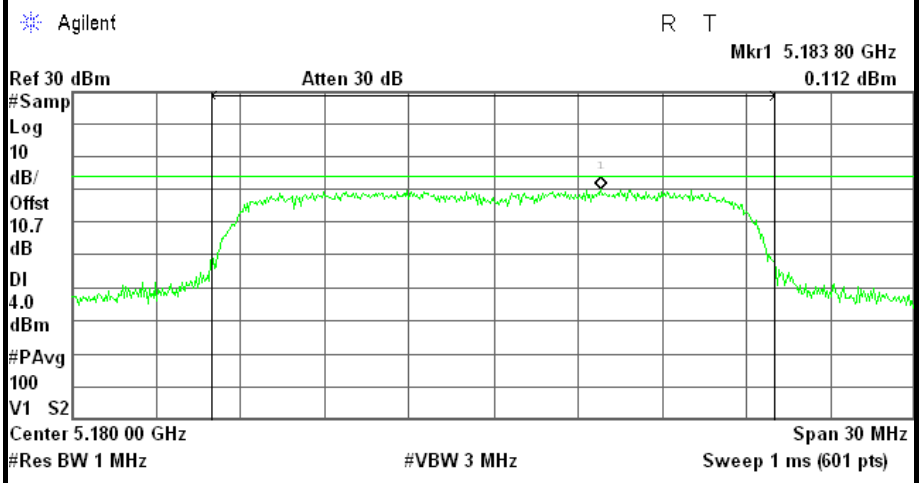
Channel Power
17.09 dBm / 25.0000 MHz

Power Spectral Density
-56.89 dBm/Hz

CH High (IEEE 802.11a Mode / 5700MHz)



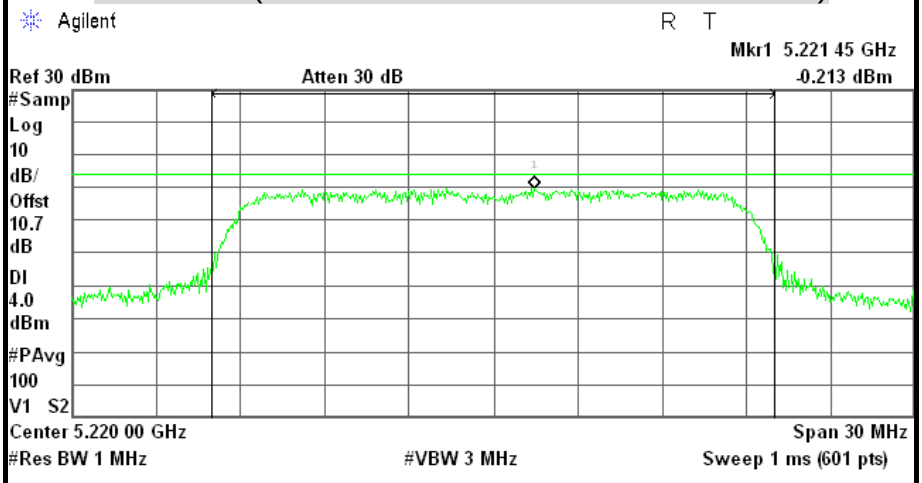
CH Low (IEEE 802.11n HT20 Mode / 5180MHz)



Channel Power
10.14 dBm / 20.0000 MHz

Power Spectral Density
-62.87 dBm/Hz

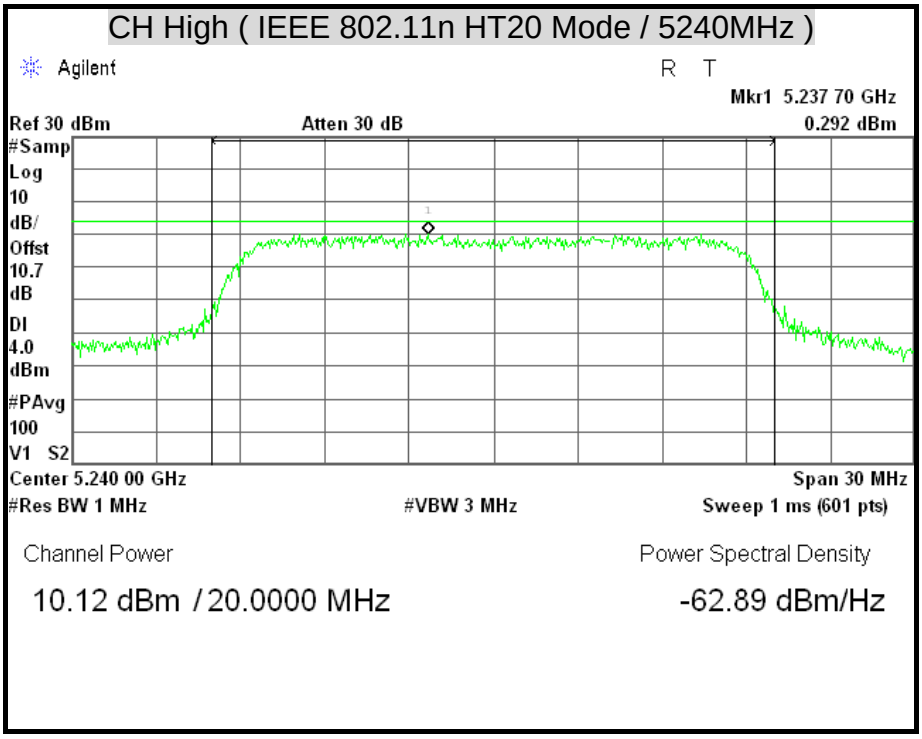
CH Middle (IEEE 802.11n HT20 Mode / 5220MHz)



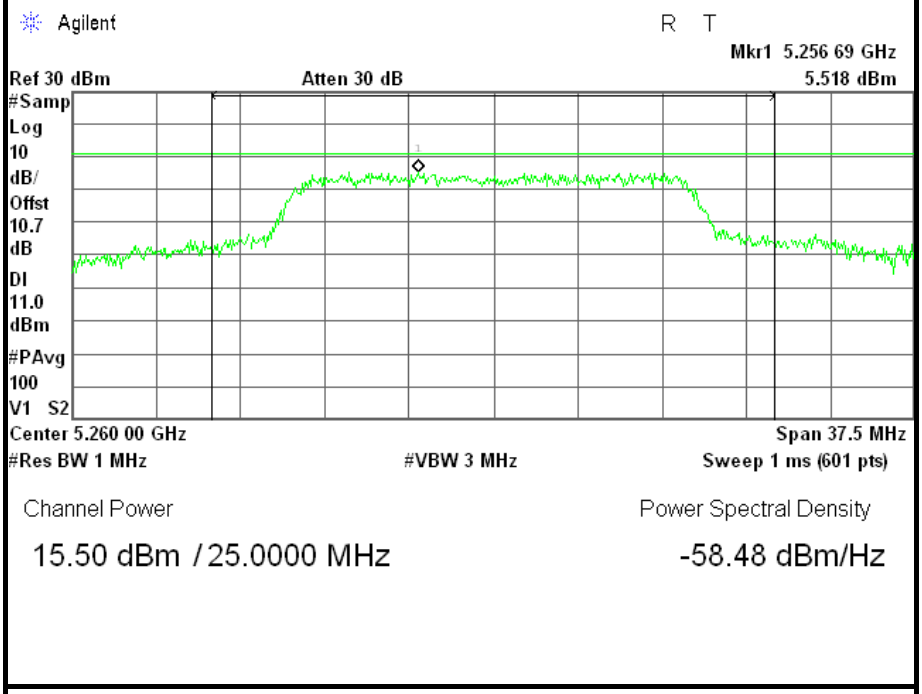
Channel Power
9.55 dBm / 20.0000 MHz

Power Spectral Density
-63.46 dBm/Hz

CH High (IEEE 802.11n HT20 Mode / 5240MHz)



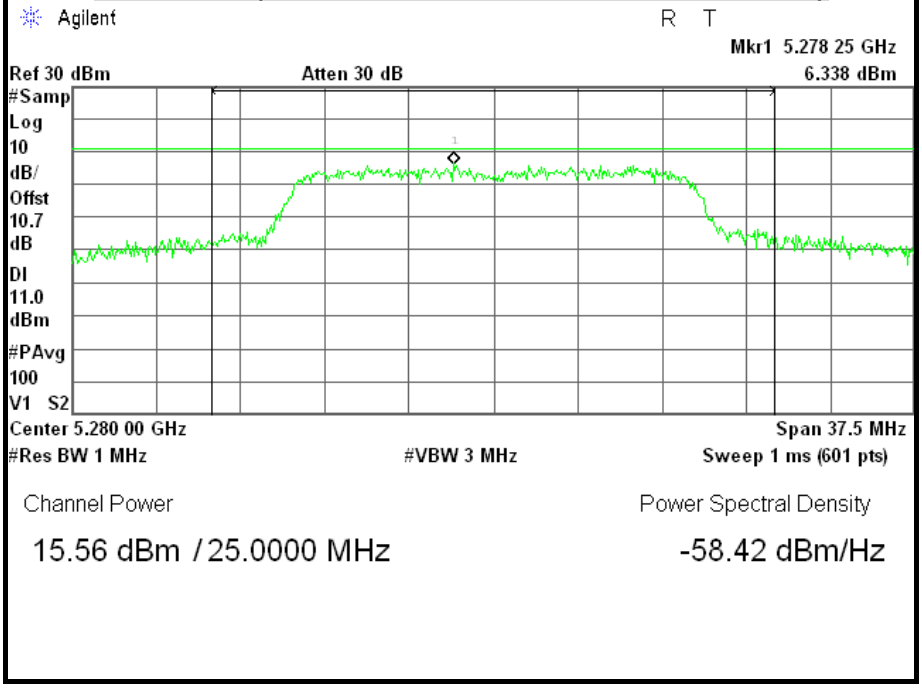
CH Low (IEEE 802.11n HT20 Mode / 5260MHz)



Channel Power
15.50 dBm / 25.0000 MHz

Power Spectral Density
-58.48 dBm/Hz

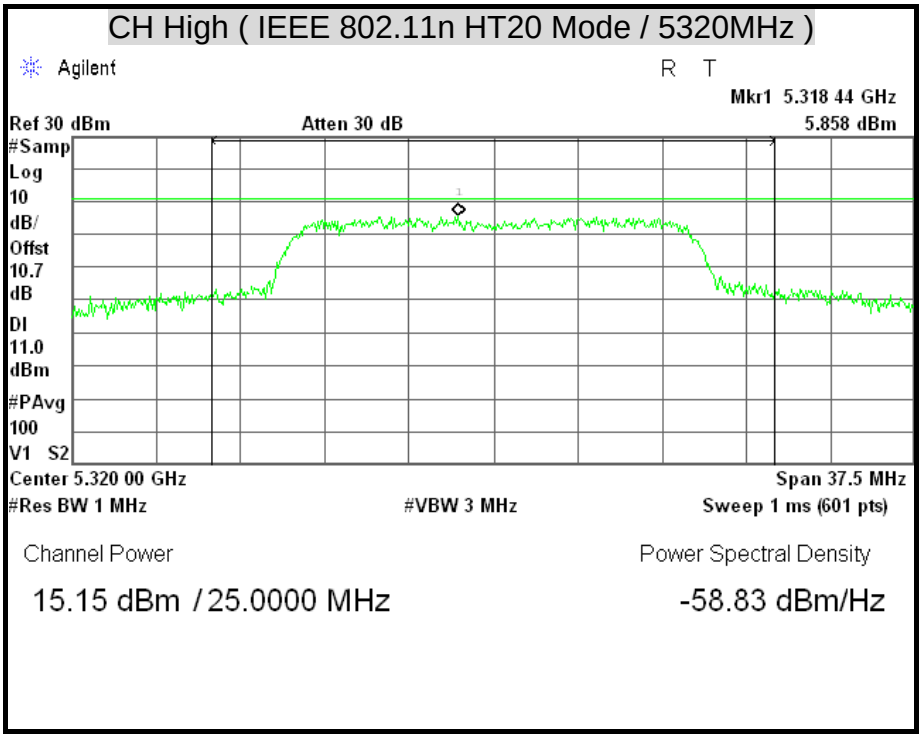
CH Middle (IEEE 802.11n HT20 Mode / 5280MHz)



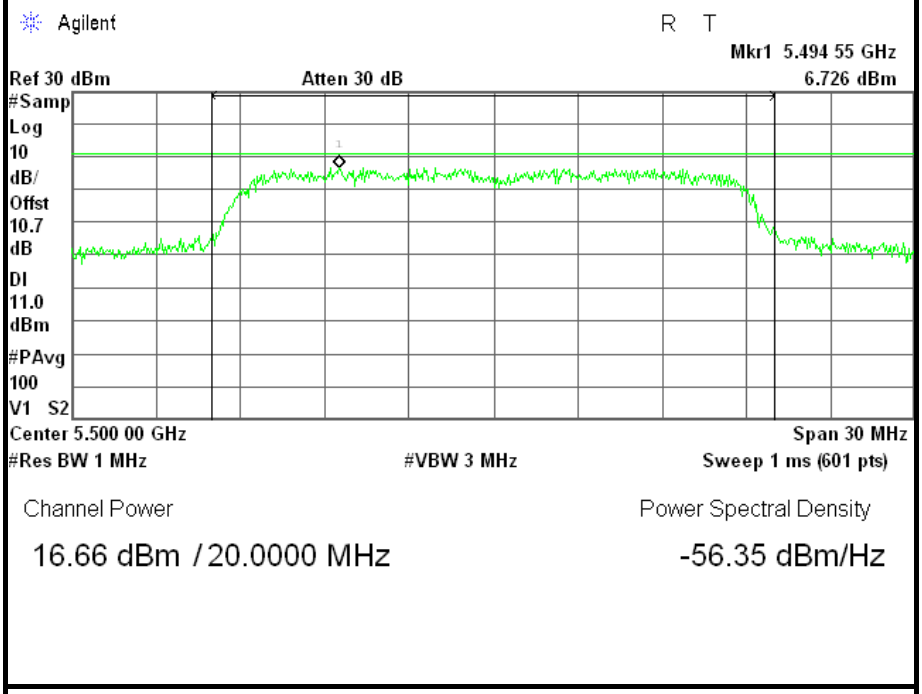
Channel Power
15.56 dBm / 25.0000 MHz

Power Spectral Density
-58.42 dBm/Hz

CH High (IEEE 802.11n HT20 Mode / 5320MHz)



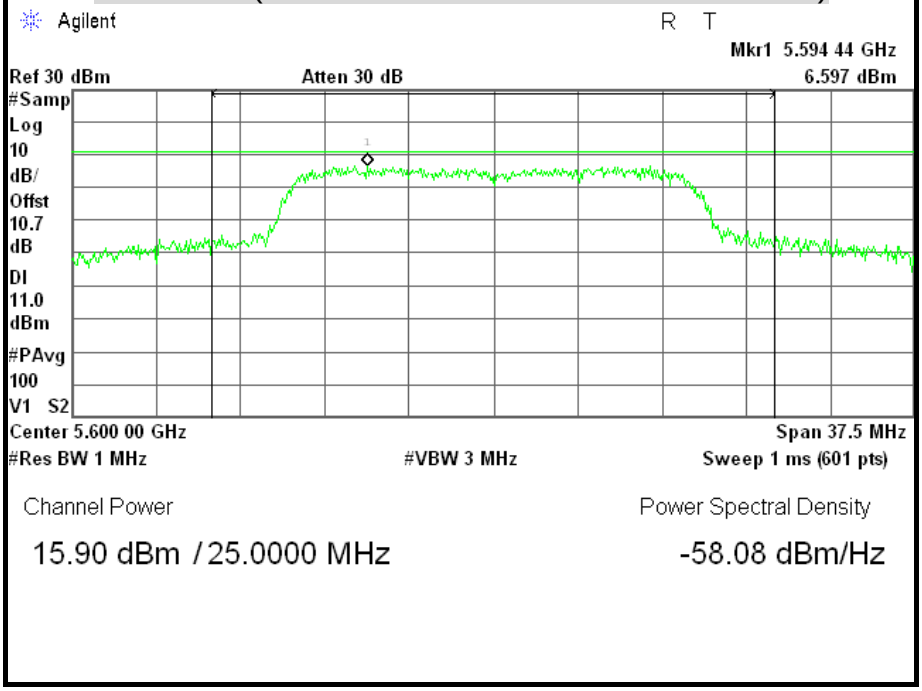
CH Low (IEEE 802.11n HT20 Mode / 5500MHz)



Channel Power
16.66 dBm / 20.0000 MHz

Power Spectral Density
-56.35 dBm/Hz

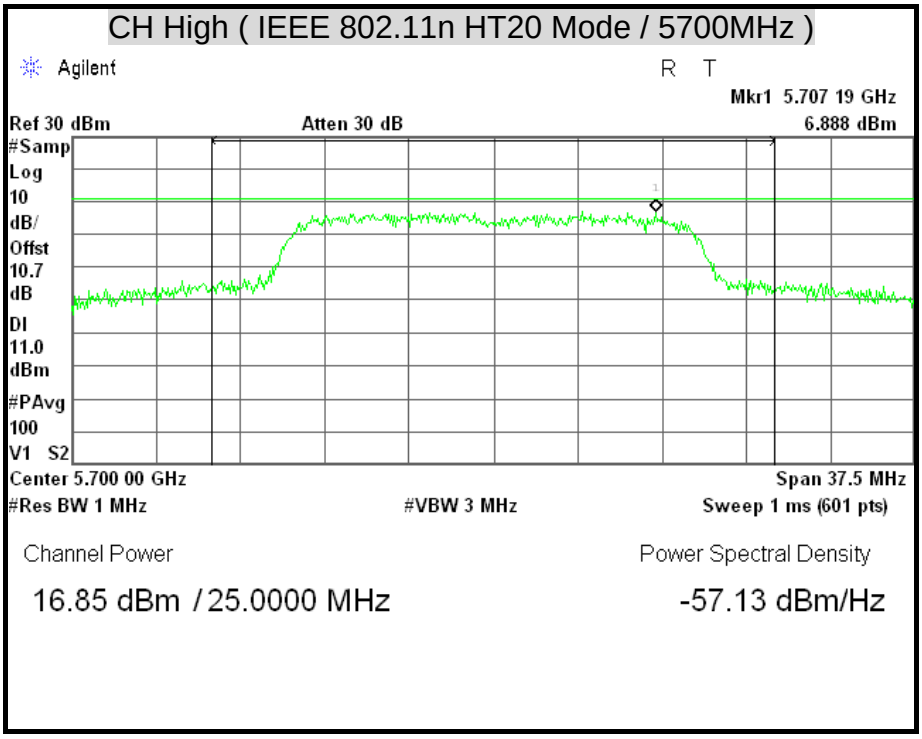
CH Middle (IEEE 802.11n HT20 Mode / 5600MHz)



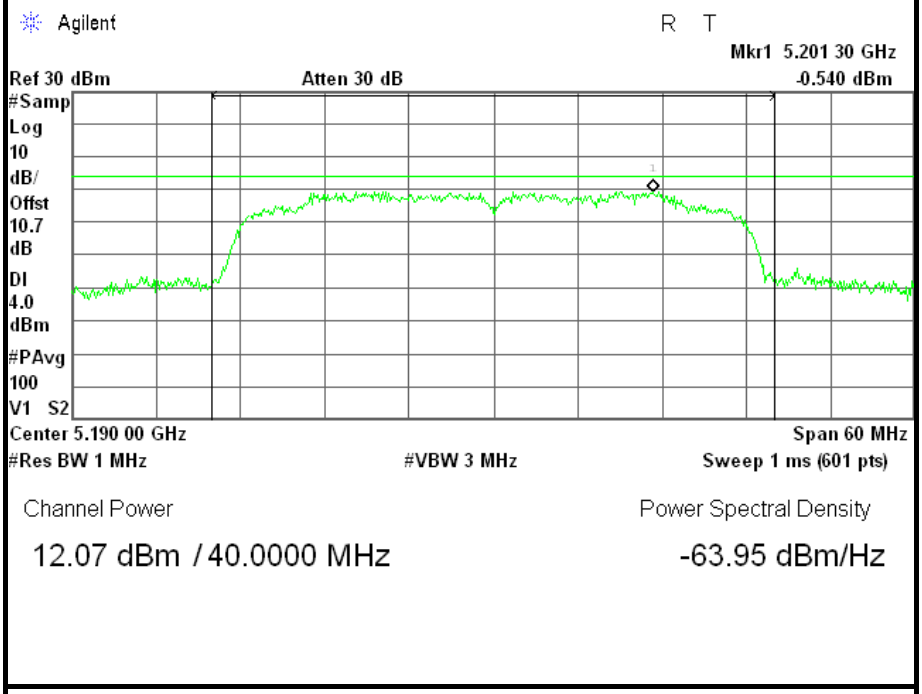
Channel Power
15.90 dBm / 25.0000 MHz

Power Spectral Density
-58.08 dBm/Hz

CH High (IEEE 802.11n HT20 Mode / 5700MHz)



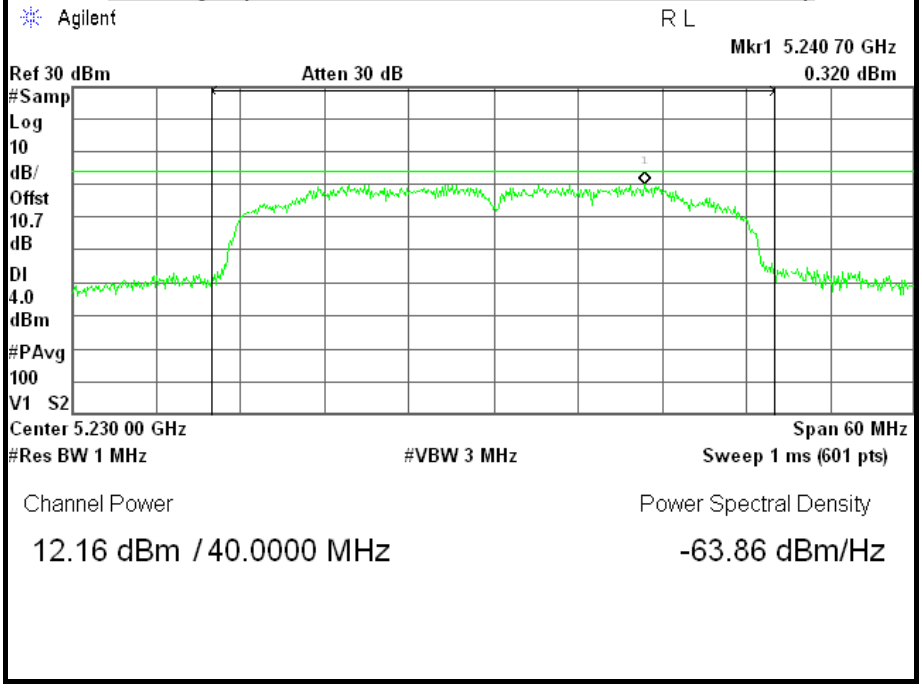
CH Low (IEEE 802.11n HT40 Mode / 5190MHz)



Channel Power
12.07 dBm / 40.0000 MHz

Power Spectral Density
-63.95 dBm/Hz

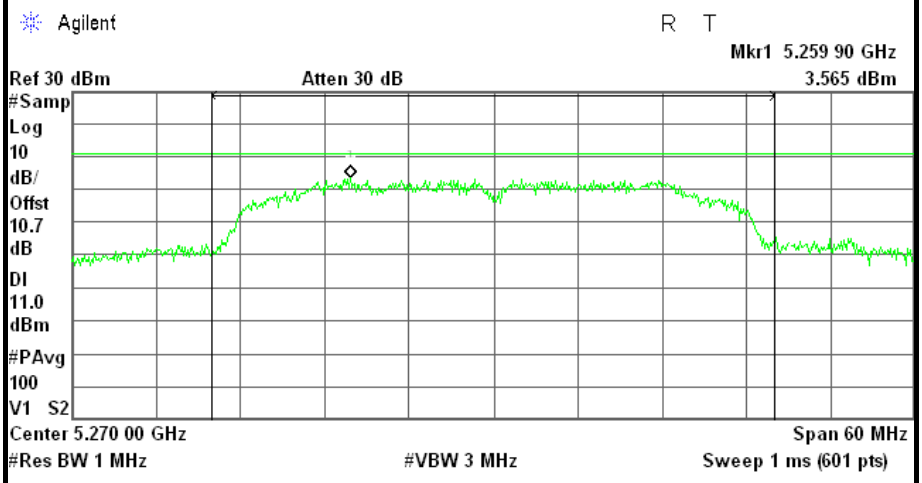
CH High (IEEE 802.11n HT40 Mode / 5230MHz)



Channel Power
12.16 dBm / 40.0000 MHz

Power Spectral Density
-63.86 dBm/Hz

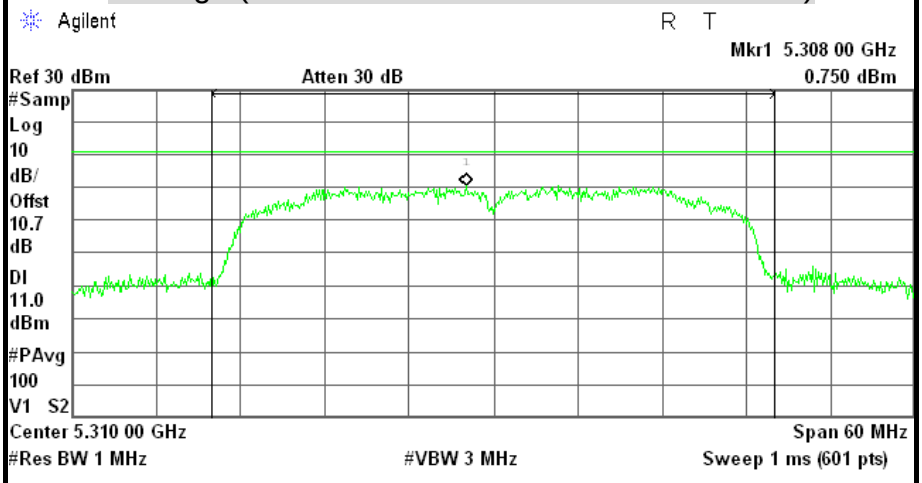
CH Low (IEEE 802.11n HT40 Mode / 5270MHz)



Channel Power
15.67 dBm / 40.0000 MHz

Power Spectral Density
-60.35 dBm/Hz

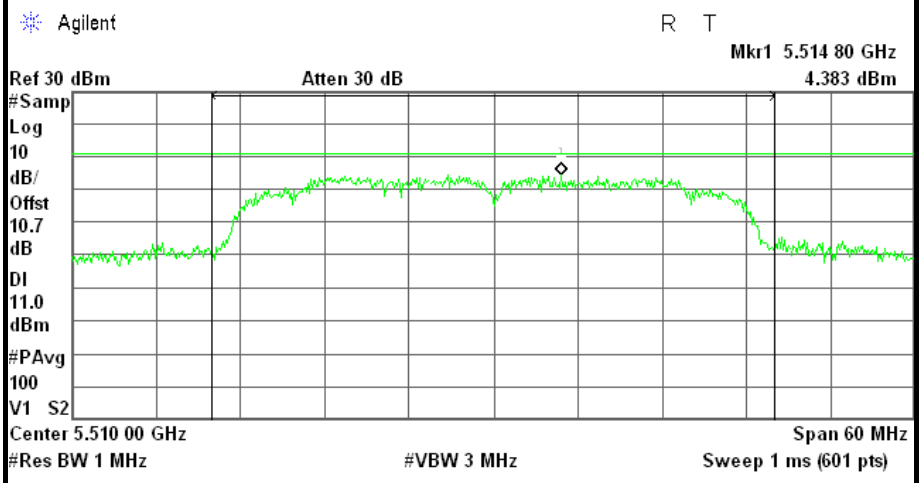
CH High (IEEE 802.11n HT40 Mode / 5310MHz)



Channel Power
13.39 dBm / 40.0000 MHz

Power Spectral Density
-62.63 dBm/Hz

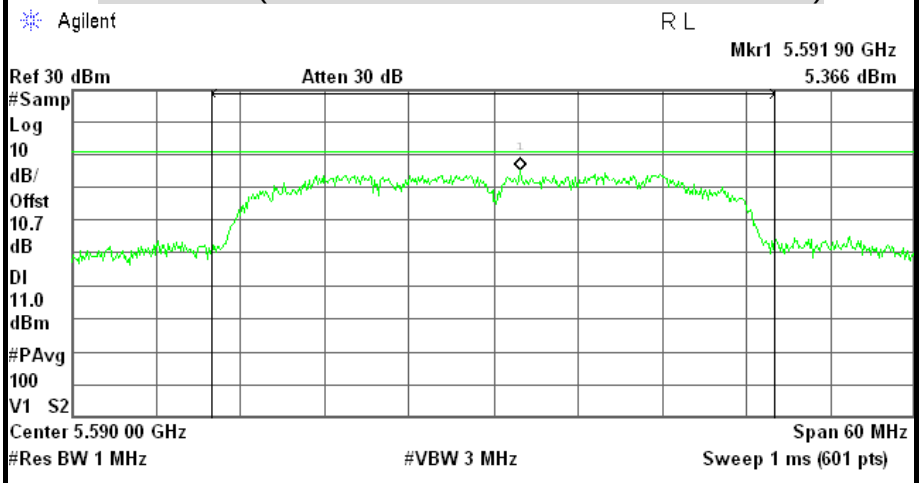
CH Low (IEEE 802.11n HT40 Mode / 5510MHz)



Channel Power
16.69 dBm / 40.0000 MHz

Power Spectral Density
-59.33 dBm/Hz

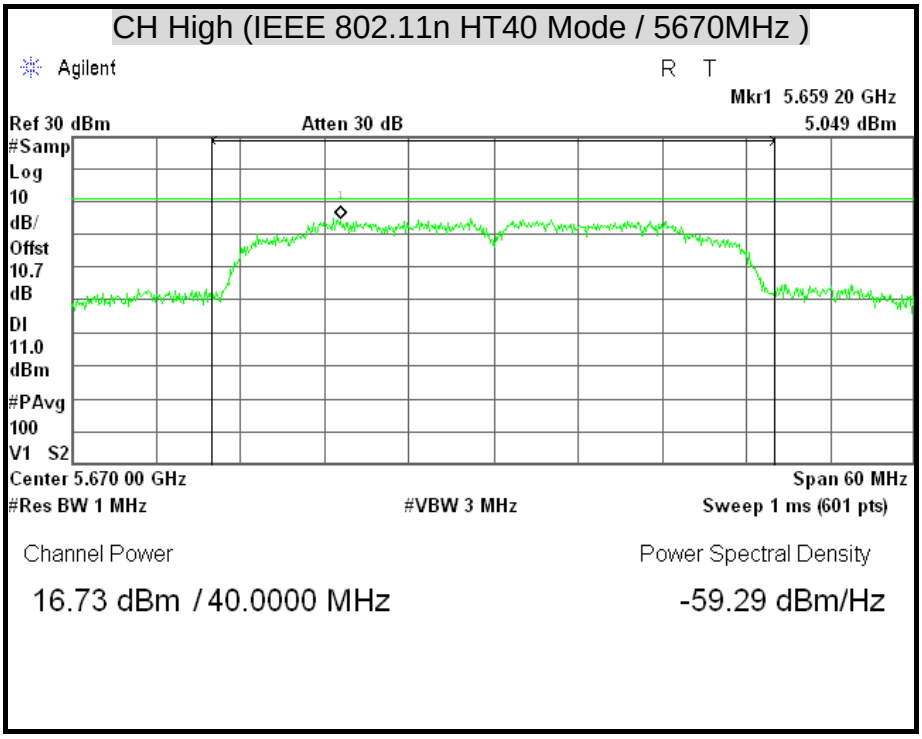
CH Middle (IEEE 802.11n HT40 Mode / 5590MHz)



Channel Power
16.37 dBm / 40.0000 MHz

Power Spectral Density
-59.65 dBm/Hz

CH High (IEEE 802.11n HT40 Mode / 5670MHz)



7.4 PEAK EXCURSION

LIMITS

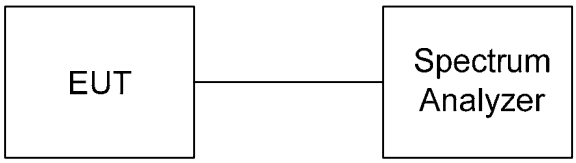
§ 15.407 (a) (6), the ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4407B	US41443108	08/12/2011

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

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, Span > 26dB Bandwidth, Max. hold.
   Trace B, Set RBW =1MHz, VBW = 3MHz, Span > 26dB Bandwidth, Setup sample detector and power average mode, to scan 100 times with average.
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

IEEE 802.11a Mode / 5180MHz ~ 5240MHz

Channel	Channel Frequency (MHz)	Peak Excursion (dB)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5180	7.57	13	-5.43	PASS
Middle	5220	8.10	13	-4.90	PASS
High	5240	8.15	13	-4.85	PASS

Remark:

1. At finial test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11a Mode / 5260MHz ~ 5320MHz

Channel	Channel Frequency (MHz)	Peak Excursion (dB)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5260	9.74	13	-3.26	PASS
Middle	5280	9.65	13	-3.35	PASS
High	5320	7.38	13	-5.62	PASS

Remark:

1. At finial test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11a Mode / 5500MHz ~ 5700MHz

Channel	Channel Frequency (MHz)	Peak Excursion (dB)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5500	8.76	13	-4.24	PASS
Middle	5600	9.01	13	-3.99	PASS
High	5700	9.99	13	-3.01	PASS

Remark:

1. At finial test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT20 Mode / 5180MHz ~ 5240MHz

Channel	Channel Frequency (MHz)	Peak Excursion (dB)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5180	9.86	13	-3.14	PASS
Middle	5220	9.93	13	-3.07	PASS
High	5240	10.77	13	-2.23	PASS

Remark:

1. *At finial test to get the worst-case emission at 6.5Mbps.*
2. *The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT20 Mode / 5260MHz ~ 5320MHz

Channel	Channel Frequency (MHz)	Peak Excursion (dB)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5260	11.32	13	-1.68	PASS
Middle	5280	10.18	13	-2.82	PASS
High	5320	11.78	13	-1.22	PASS

Remark:

1. *At finial test to get the worst-case emission at 6.5Mbps.*
2. *The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT20 Mode / 5500MHz ~ 5700MHz

Channel	Channel Frequency (MHz)	Peak Excursion (dB)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5500	10.93	13	-2.07	PASS
Middle	5600	10.68	13	-2.32	PASS
High	5700	8.95	13	-4.05	PASS

Remark:

1. *At finial test to get the worst-case emission at 6.5Mbps.*
2. *The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11n HT40 Mode / 5190MHz ~ 5230MHz

Channel	Channel Frequency (MHz)	Peak Excursion (dB)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5190	11.72	13	-1.28	PASS
High	5230	7.57	13	-5.43	PASS

Remark:

1. At finial test to get the worst-case emission at 13.5Mbps.

2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 Mode / 5270MHz ~ 5310MHz

Channel	Channel Frequency (MHz)	Peak Excursion (dB)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5270	10.63	13	-2.37	PASS
High	5310	10.43	13	-2.57	PASS

Remark:

1. At finial test to get the worst-case emission at 13.5Mbps.

2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 Mode / 5510MHz ~ 5670MHz

Channel	Channel Frequency (MHz)	Peak Excursion (dB)	Limit (dBm)	Margin (dB)	Pass / Fail
Low	5510	9.40	13	-3.60	PASS
Middle	5590	10.63	13	-2.37	PASS
High	5670	9.18	13	-3.82	PASS

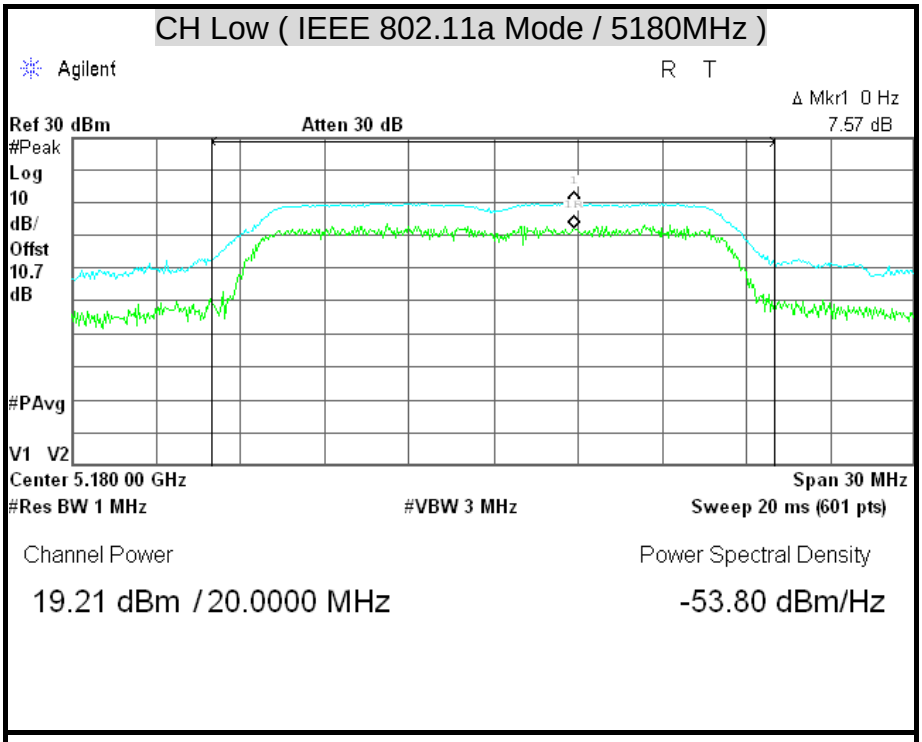
Remark:

1. At finial test to get the worst-case emission at 13.5Mbps

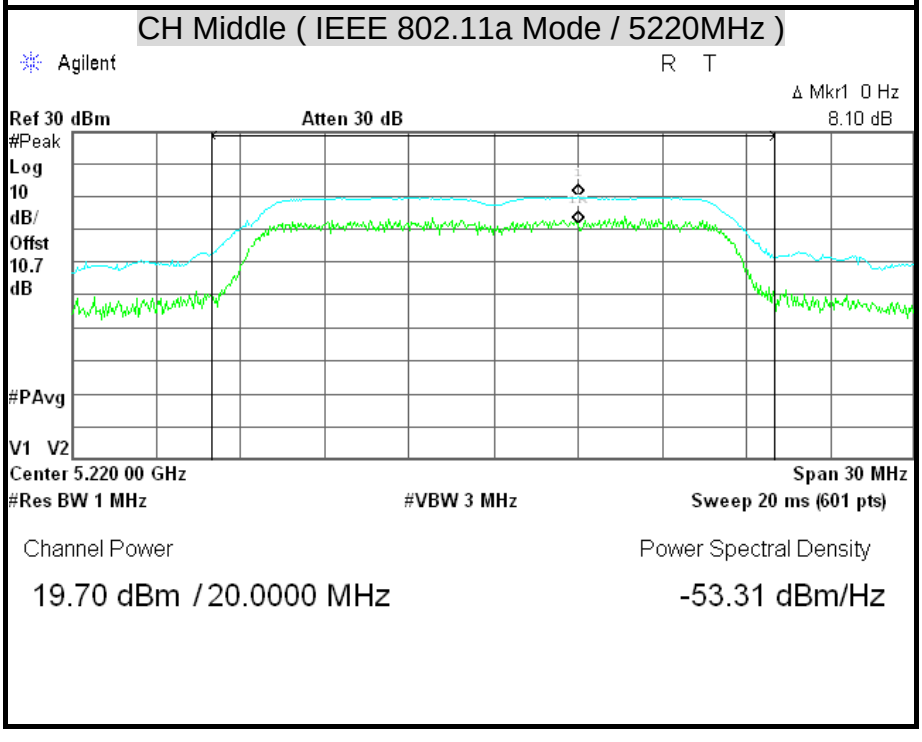
2. The cable assembly insertion loss of 10.7dB (including 10 dB pad and 0.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

PEAK EXCURSION

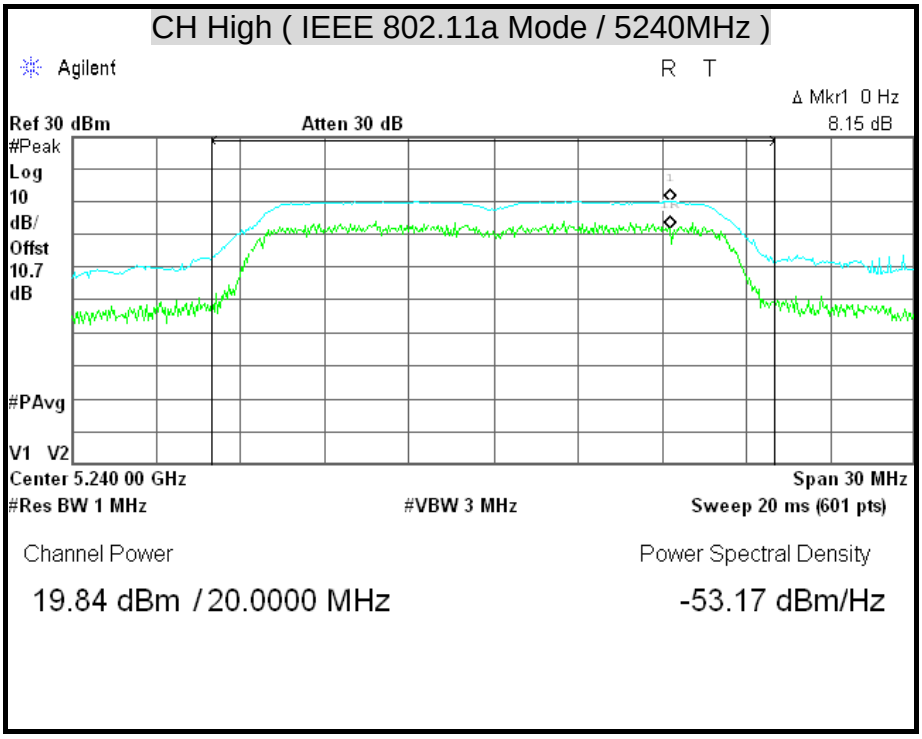
CH Low (IEEE 802.11a Mode / 5180MHz)



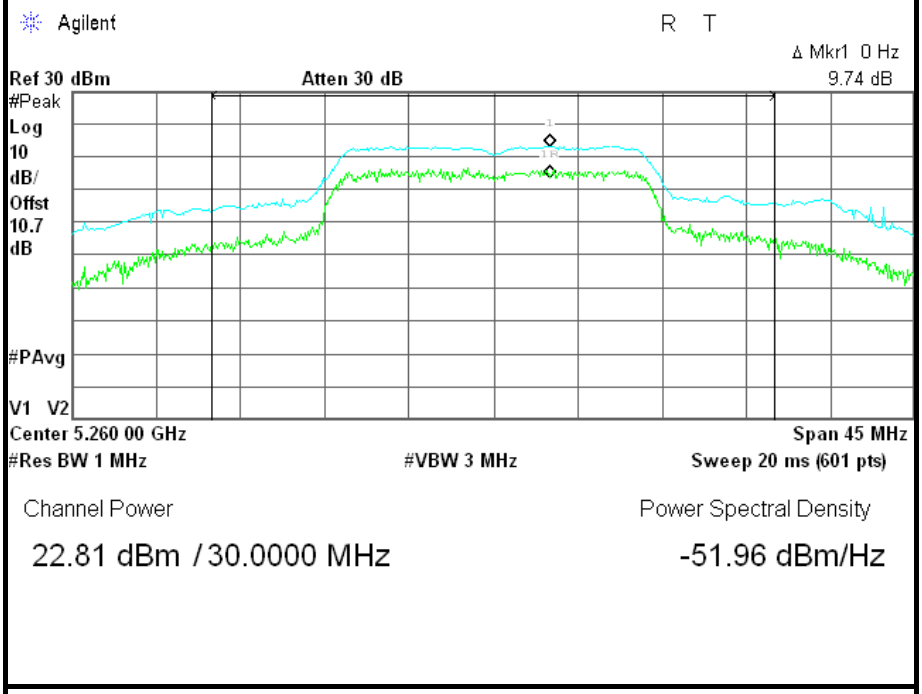
CH Middle (IEEE 802.11a Mode / 5220MHz)



CH High (IEEE 802.11a Mode / 5240MHz)



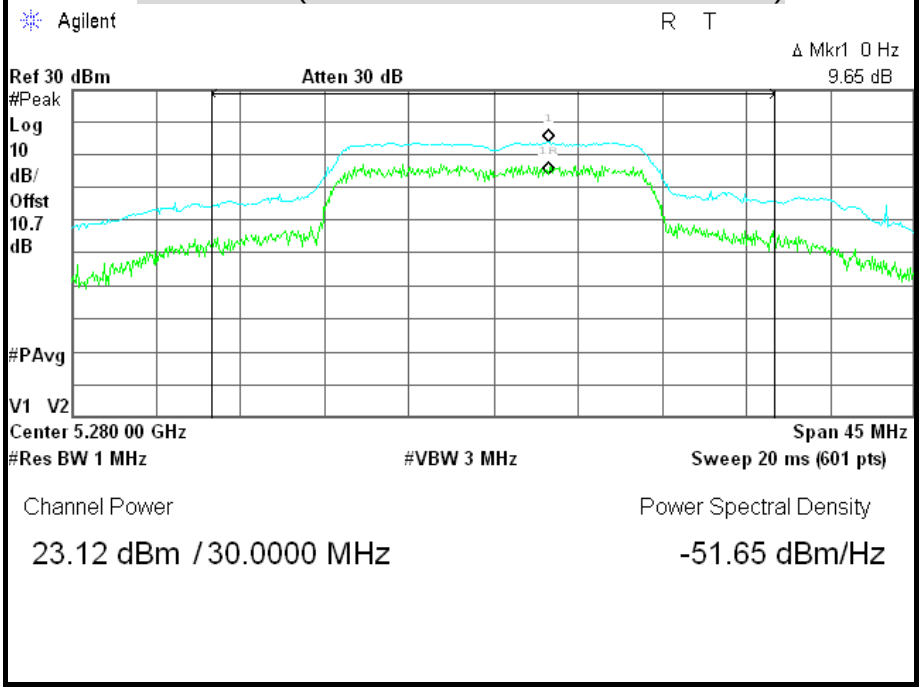
CH Low (IEEE 802.11a Mode / 5260MHz)



Channel Power
22.81 dBm / 30.0000 MHz

Power Spectral Density
-51.96 dBm/Hz

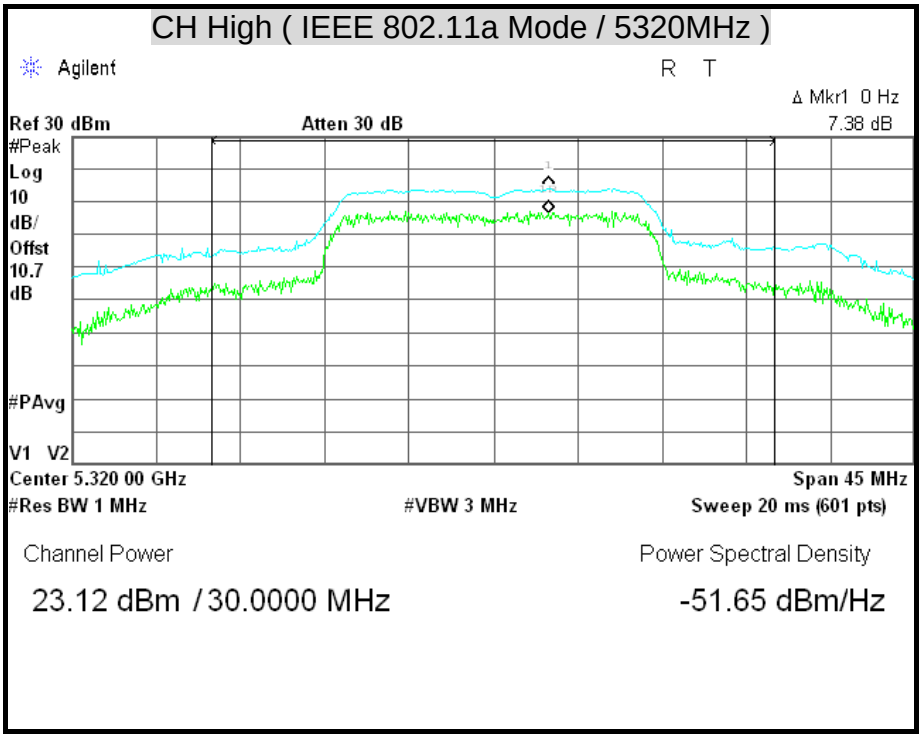
CH Middle (IEEE 802.11a Mode / 5280MHz)



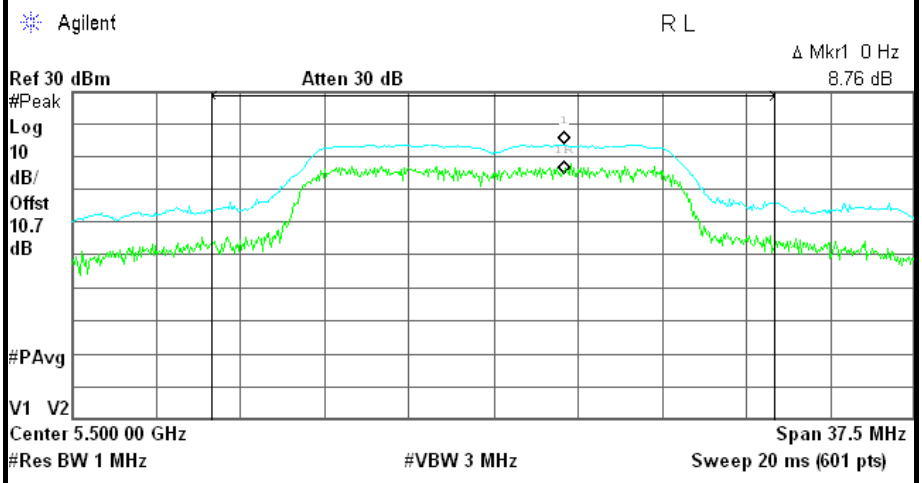
Channel Power
23.12 dBm / 30.0000 MHz

Power Spectral Density
-51.65 dBm/Hz

CH High (IEEE 802.11a Mode / 5320MHz)



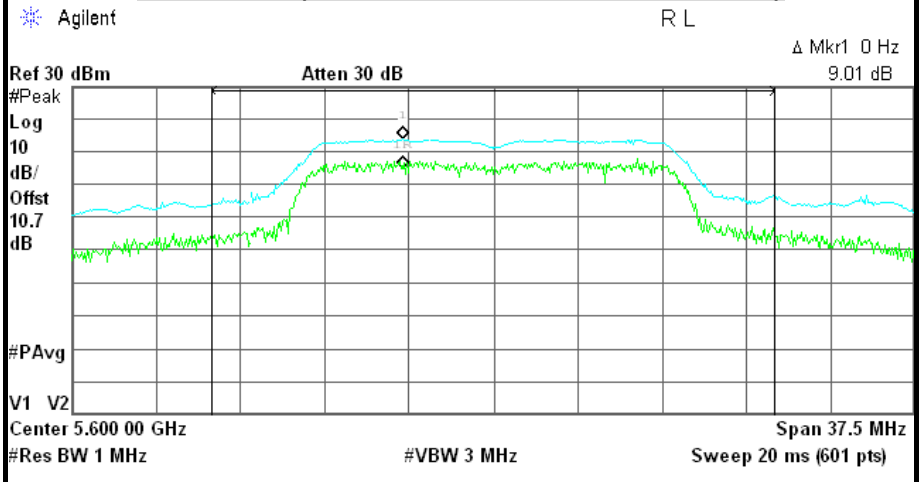
CH Low (IEEE 802.11a Mode / 5500MHz)



Channel Power
23.36 dBm / 25.0000 MHz

Power Spectral Density
-50.62 dBm/Hz

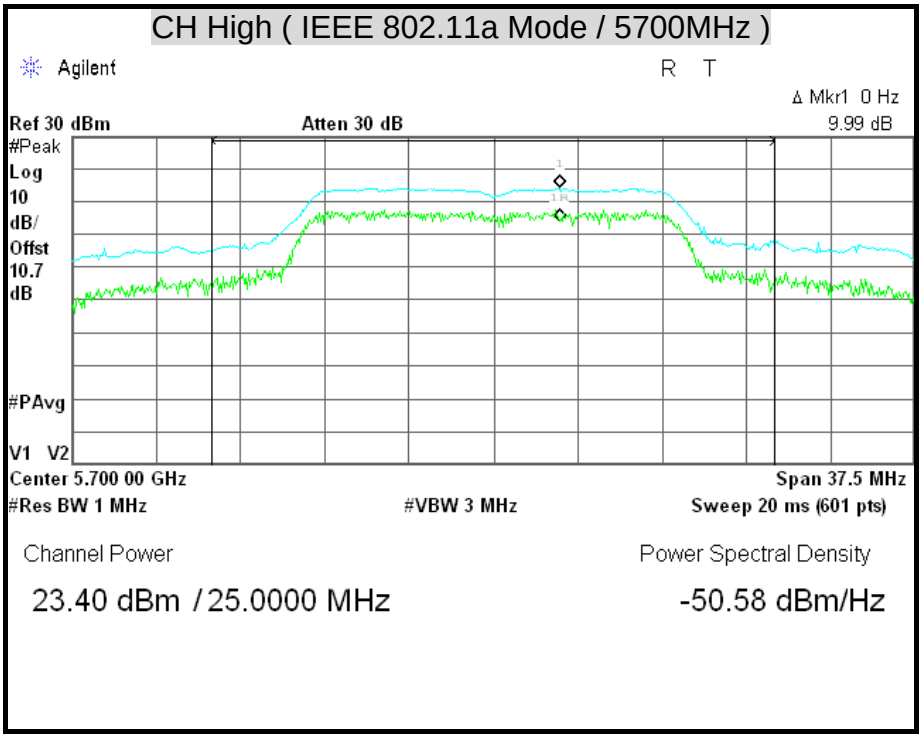
CH Middle (IEEE 802.11a Mode / 5600MHz)



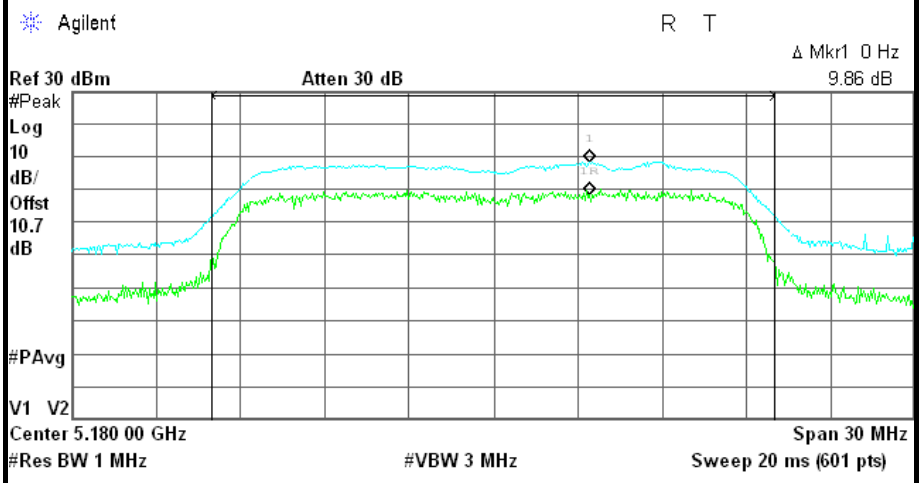
Channel Power
23.42 dBm / 25.0000 MHz

Power Spectral Density
-50.56 dBm/Hz

CH High (IEEE 802.11a Mode / 5700MHz)



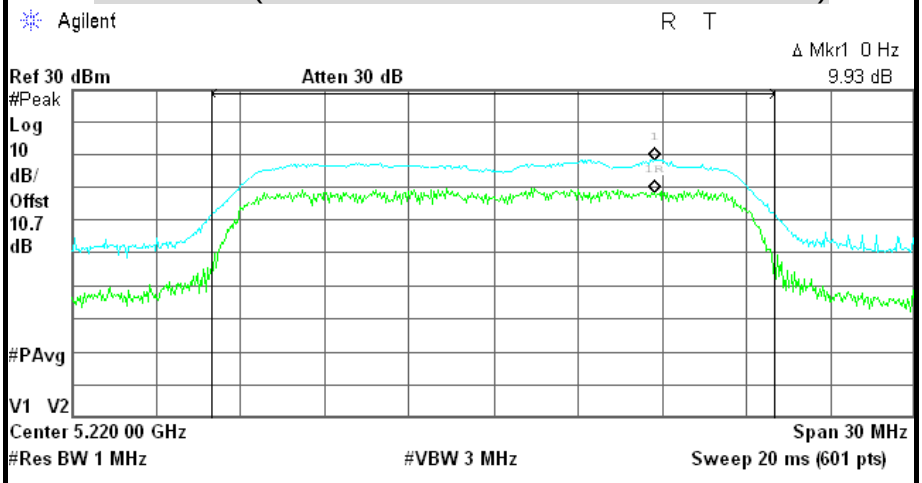
CH Low (IEEE 802.11n HT20 Mode / 5180MHz)



Channel Power
16.82 dBm / 20.0000 MHz

Power Spectral Density
-56.19 dBm/Hz

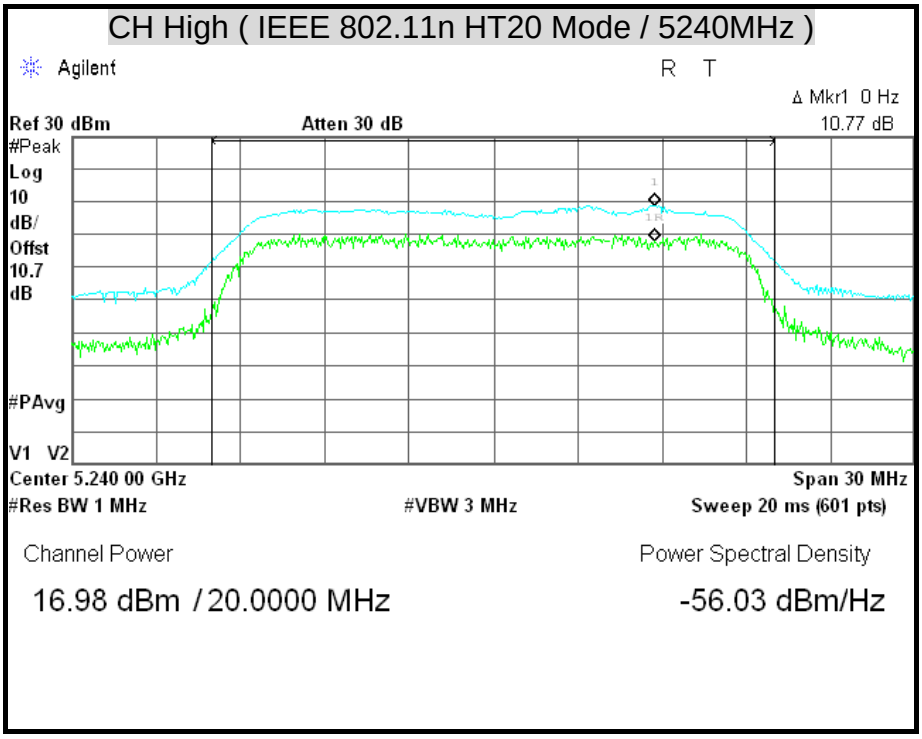
CH Middle (IEEE 802.11n HT20 Mode / 5220MHz)



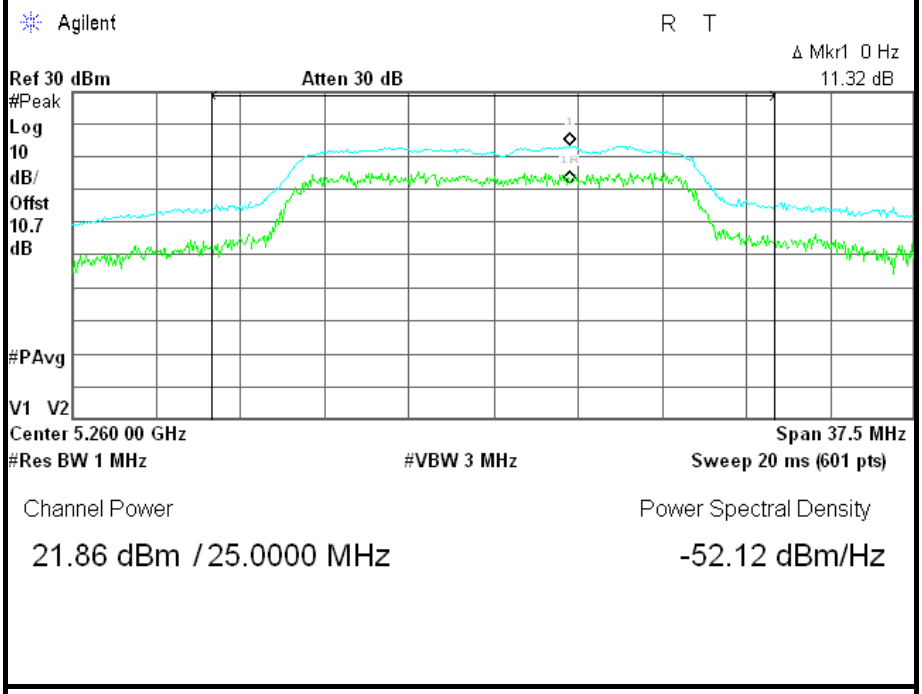
Channel Power
16.73 dBm / 20.0000 MHz

Power Spectral Density
-56.28 dBm/Hz

CH High (IEEE 802.11n HT20 Mode / 5240MHz)



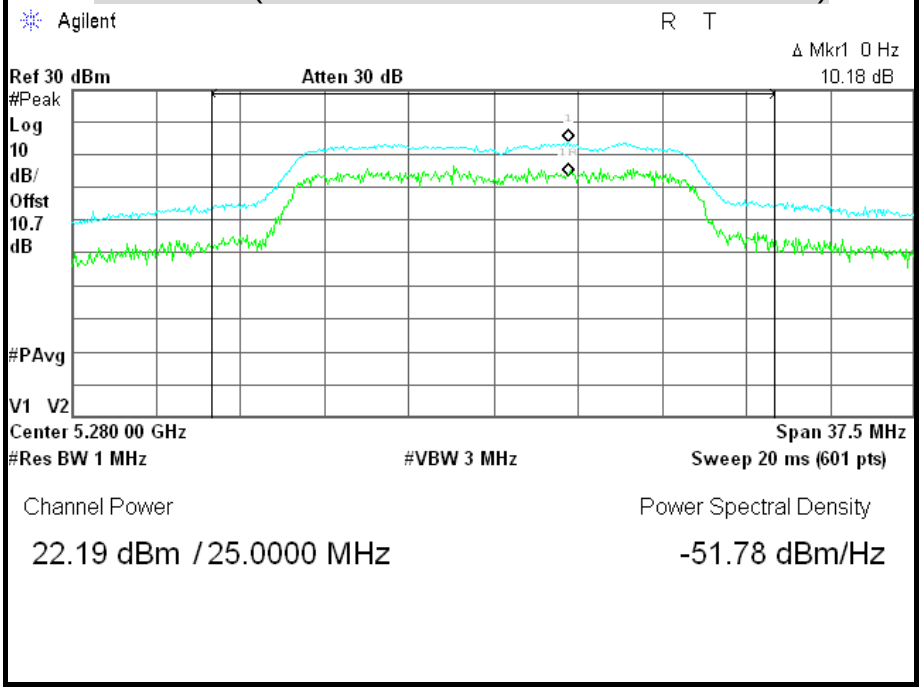
CH Low (IEEE 802.11n HT20 Mode / 5260MHz)



Channel Power
21.86 dBm / 25.0000 MHz

Power Spectral Density
-52.12 dBm/Hz

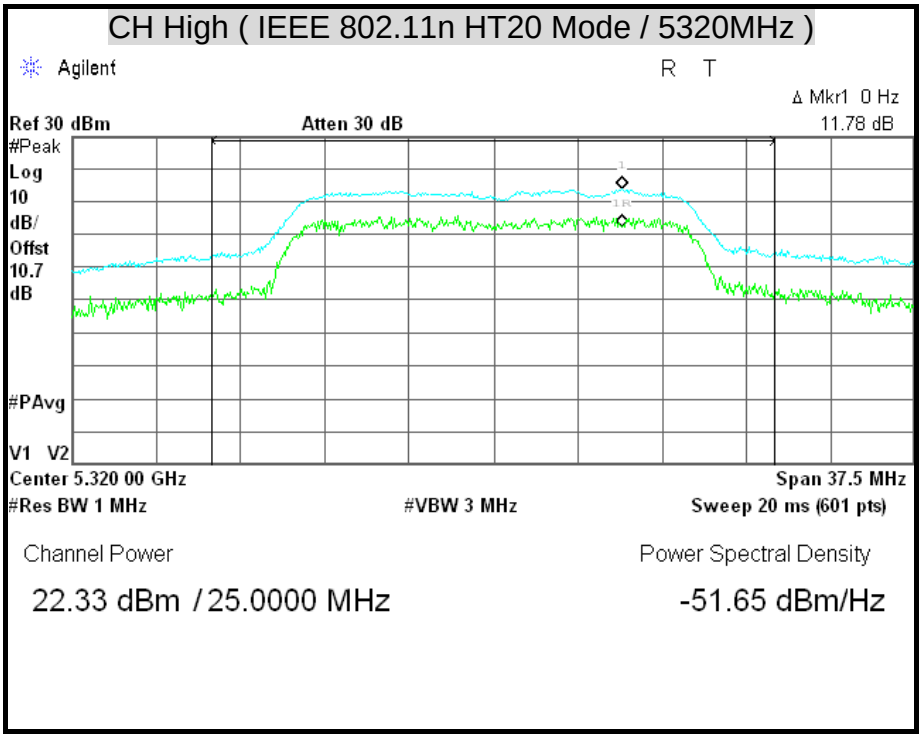
CH Middle (IEEE 802.11n HT20 Mode / 5280MHz)



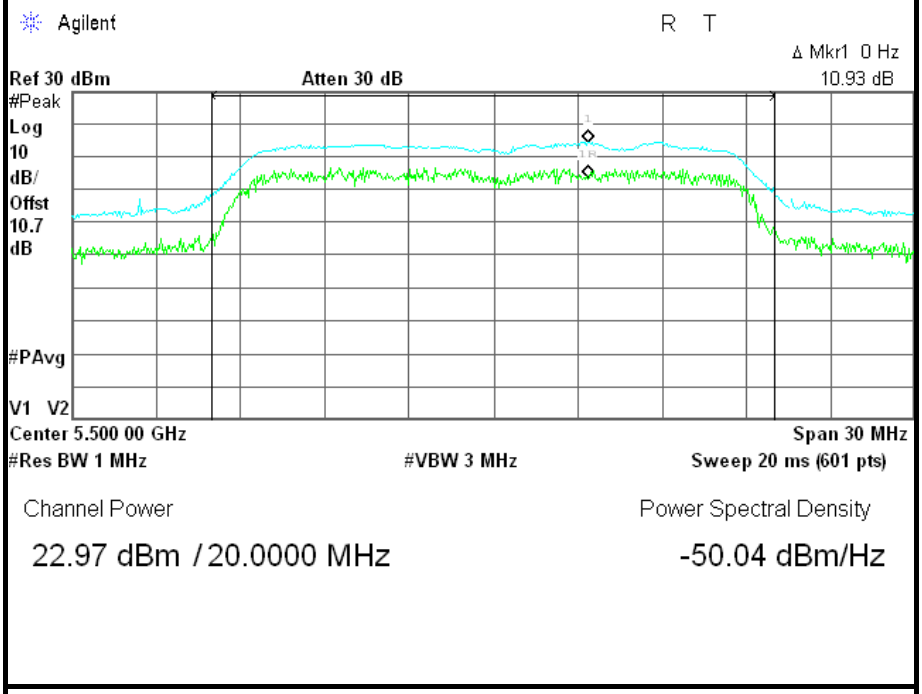
Channel Power
22.19 dBm / 25.0000 MHz

Power Spectral Density
-51.78 dBm/Hz

CH High (IEEE 802.11n HT20 Mode / 5320MHz)



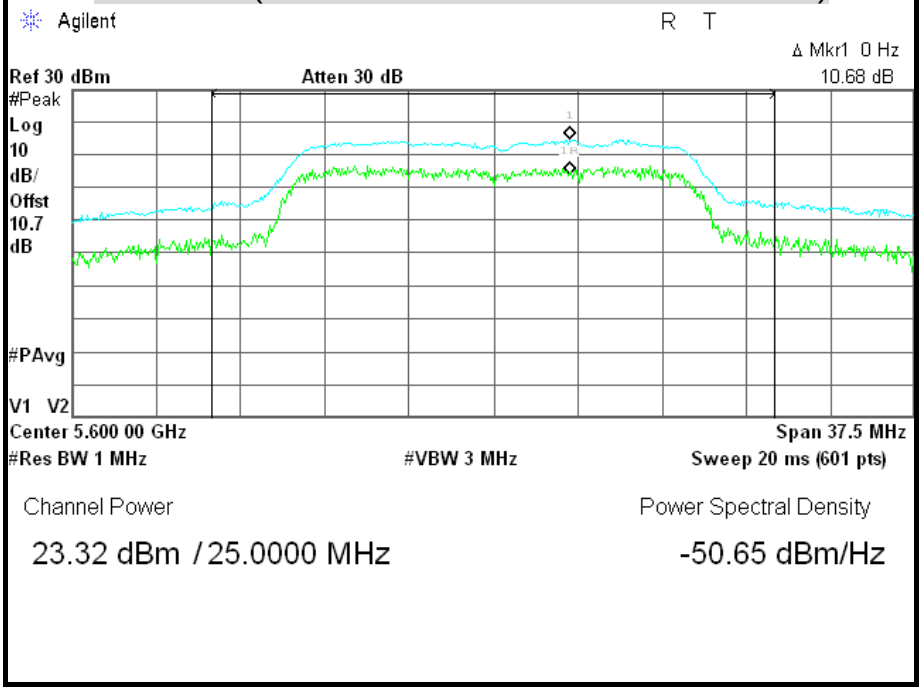
CH Low (IEEE 802.11n HT20 Mode / 5500MHz)



Channel Power
22.97 dBm / 20.0000 MHz

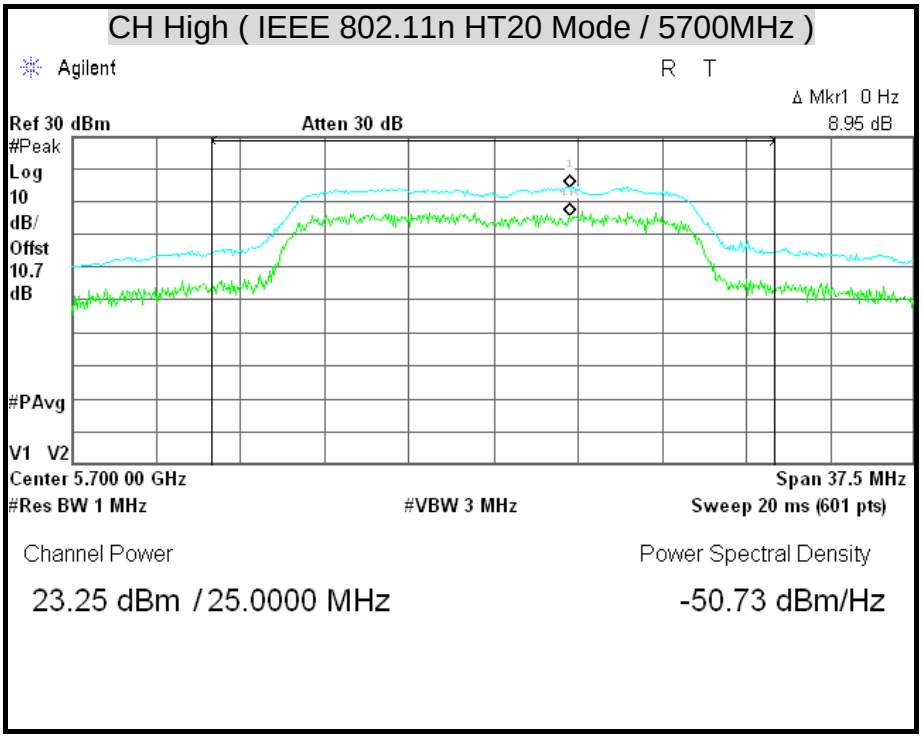
Power Spectral Density
-50.04 dBm/Hz

CH Middle (IEEE 802.11n HT20 Mode / 5600MHz)

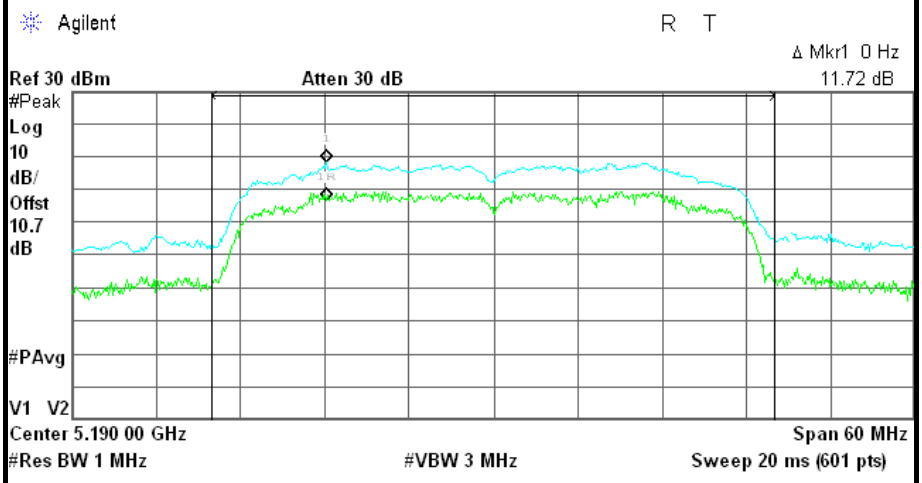


Channel Power
23.32 dBm / 25.0000 MHz

Power Spectral Density
-50.65 dBm/Hz



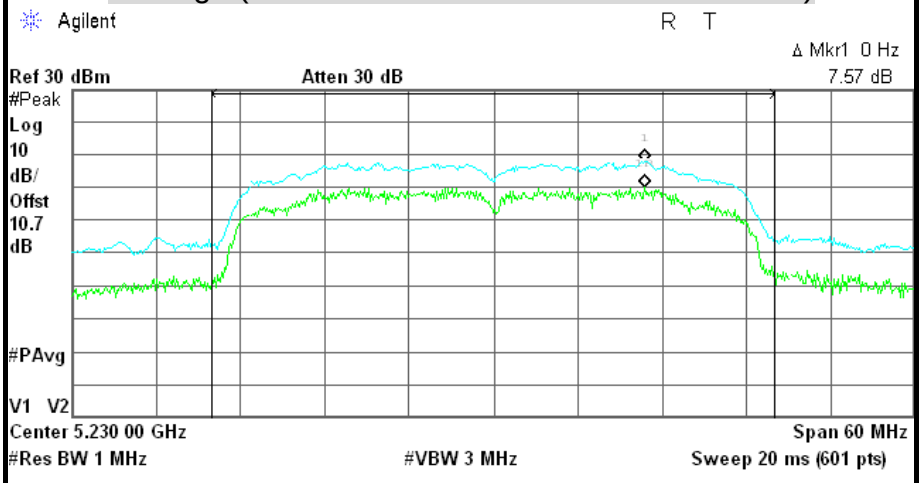
CH Low (IEEE 802.11n HT40 Mode / 5190MHz)



Channel Power
18.90 dBm / 40.0000 MHz

Power Spectral Density
-57.12 dBm/Hz

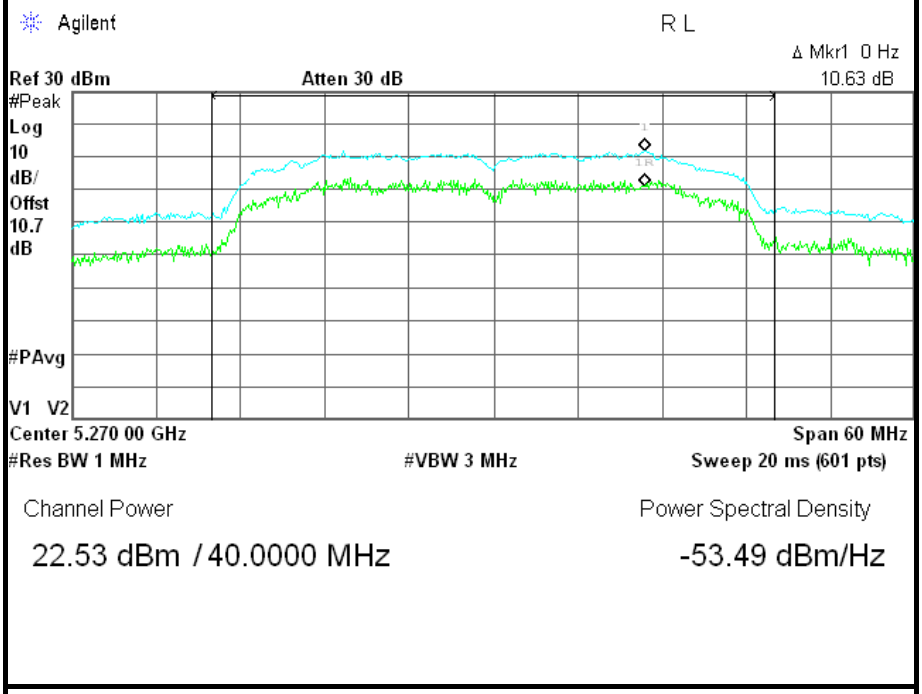
CH High (IEEE 802.11n HT40 Mode / 5230MHz)



Channel Power
18.73 dBm / 40.0000 MHz

Power Spectral Density
-57.29 dBm/Hz

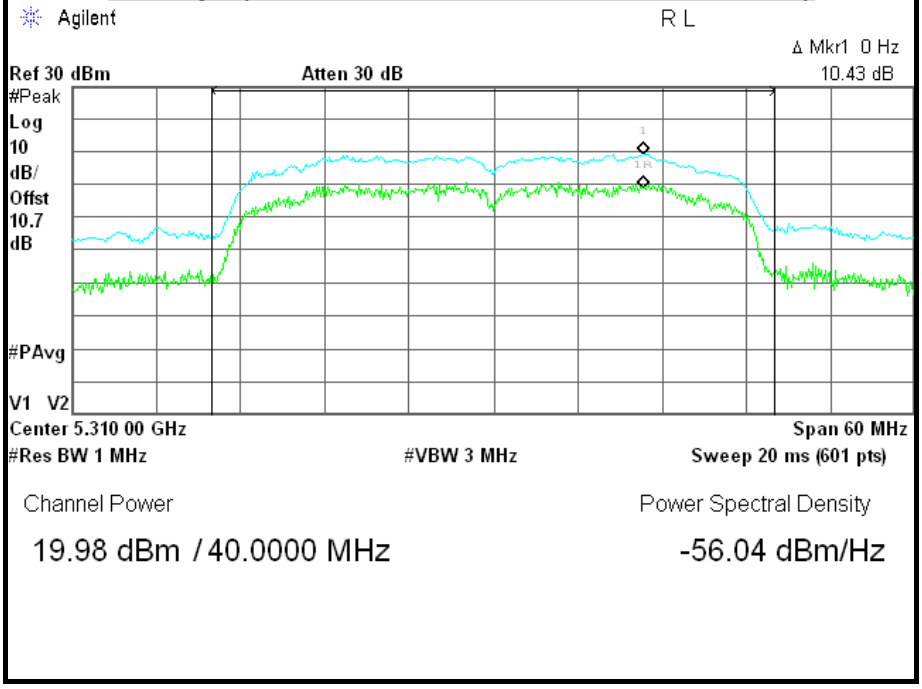
CH Low (IEEE 802.11n HT40 Mode / 5270MHz)



Channel Power
22.53 dBm / 40.0000 MHz

Power Spectral Density
-53.49 dBm/Hz

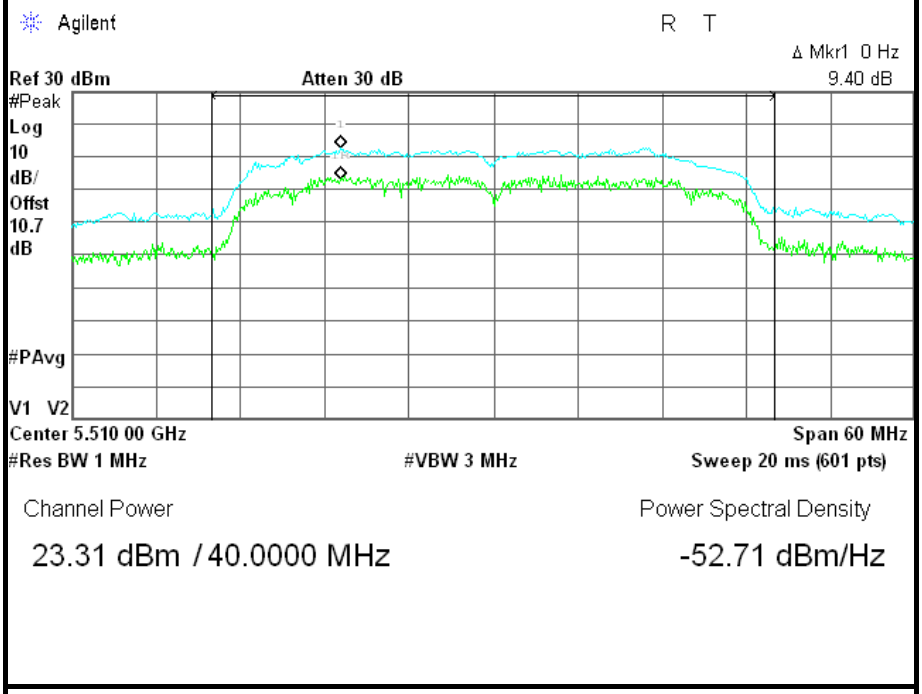
CH High (IEEE 802.11n HT40 Mode / 5310MHz)



Channel Power
19.98 dBm / 40.0000 MHz

Power Spectral Density
-56.04 dBm/Hz

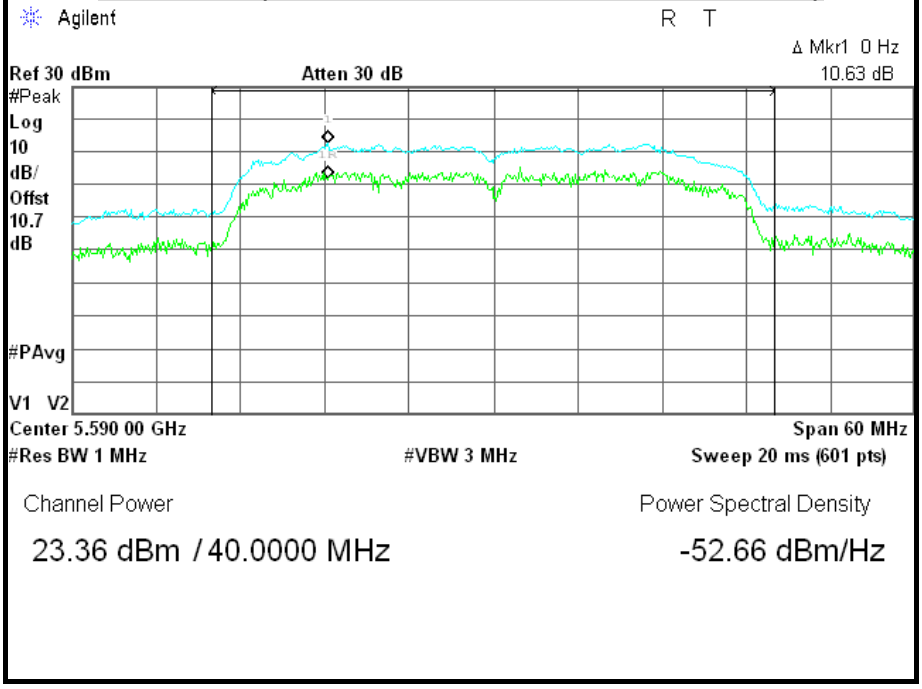
CH Low (IEEE 802.11n HT40 Mode / 5510MHz)



Channel Power
23.31 dBm / 40.0000 MHz

Power Spectral Density
-52.71 dBm/Hz

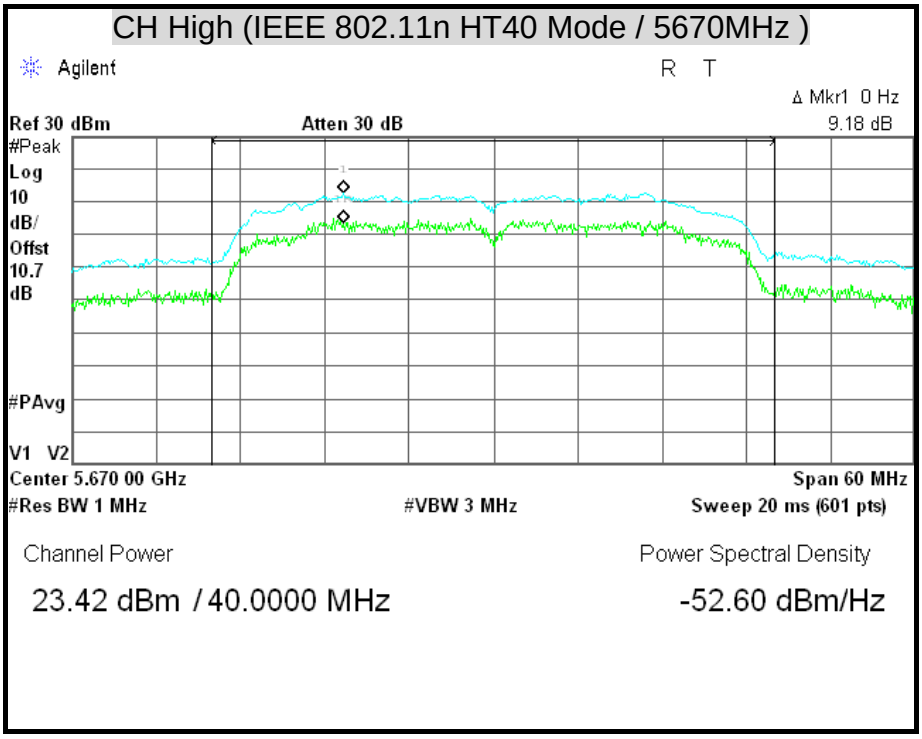
CH Middle (IEEE 802.11n HT40 Mode / 5590MHz)



Channel Power
23.36 dBm / 40.0000 MHz

Power Spectral Density
-52.66 dBm/Hz

CH High (IEEE 802.11n HT40 Mode / 5670MHz)



7.5 CONDUCTED SPURIOUS EMISSION

LIMITS

§ 15.407 (b),

(1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an 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 GHz band.

The provisions of § 15.205 apply to intentional radiators operating under this section.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4407B	US41443108	08/12/2011

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

TEST SETUP

TEST PROCEDURE

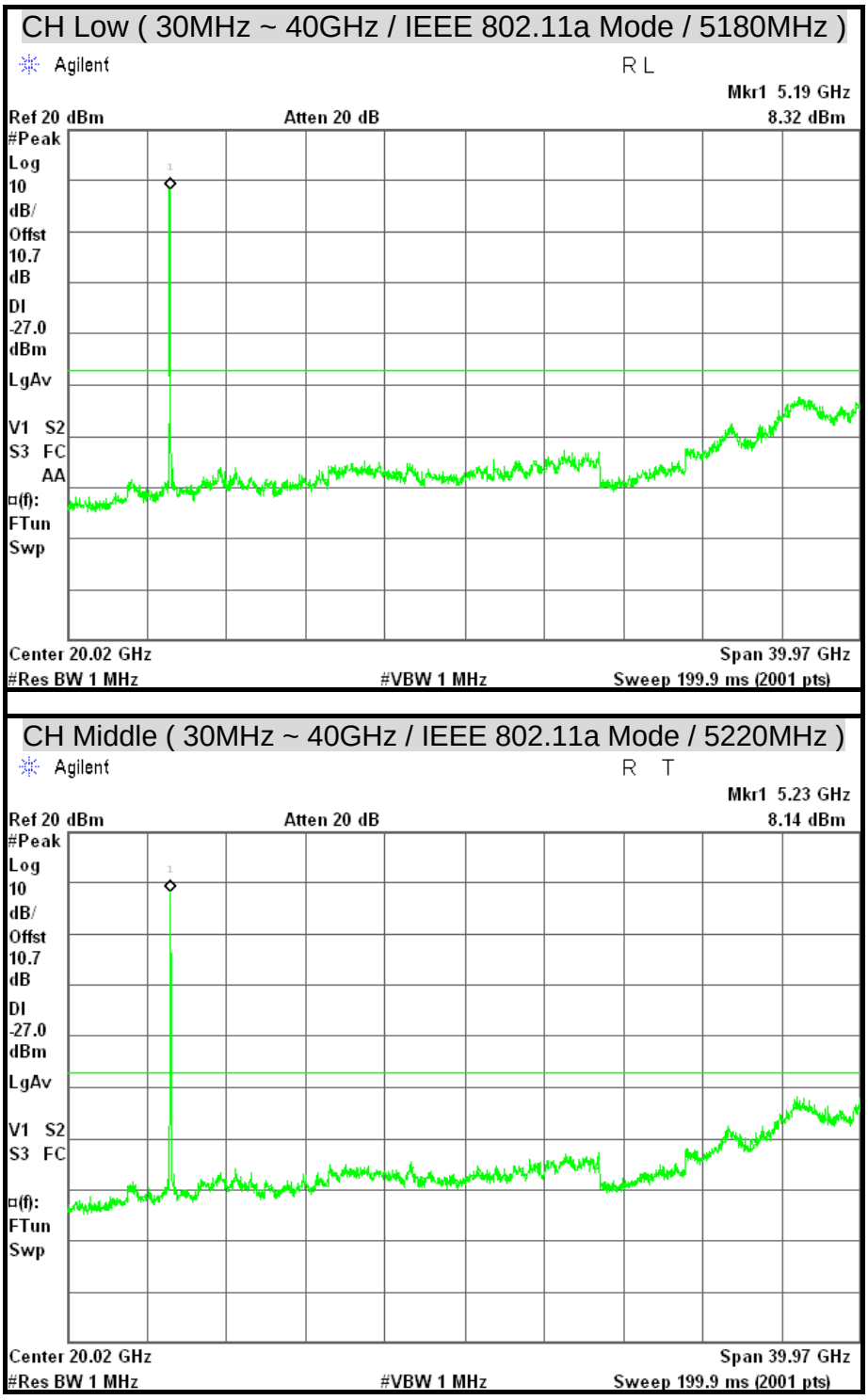
Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation of measurements on the radiated emissions site.

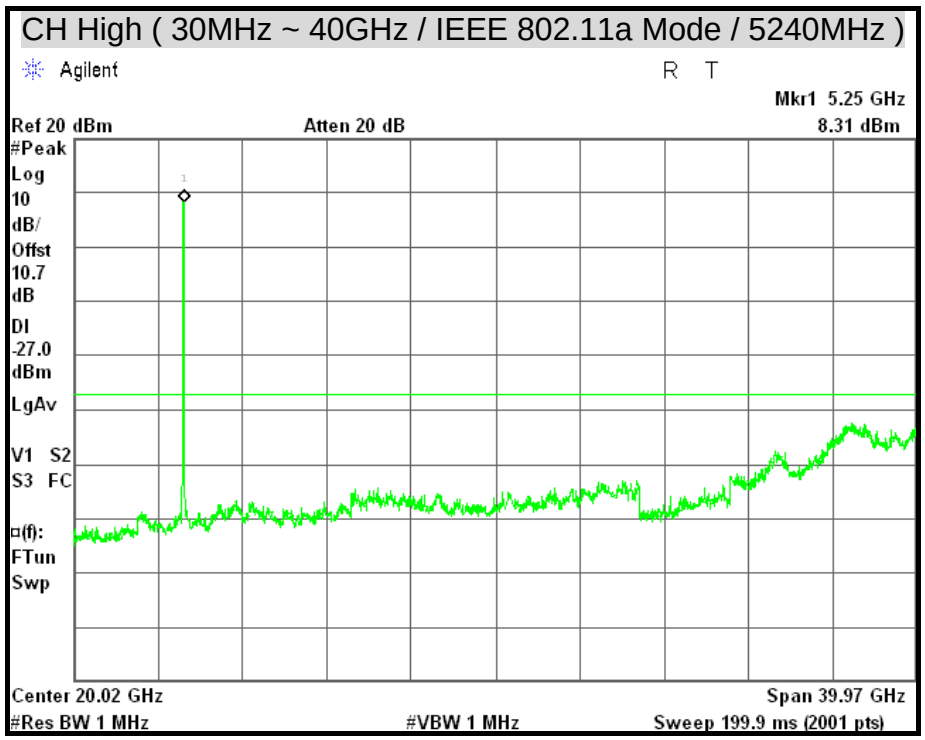
The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 1MHz. The video bandwidth is set to 1MHz. Peak detection measurements are compared to the average EIRP limit, adjusted for the maximum antenna gain. If necessary, additional average detection measurements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

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

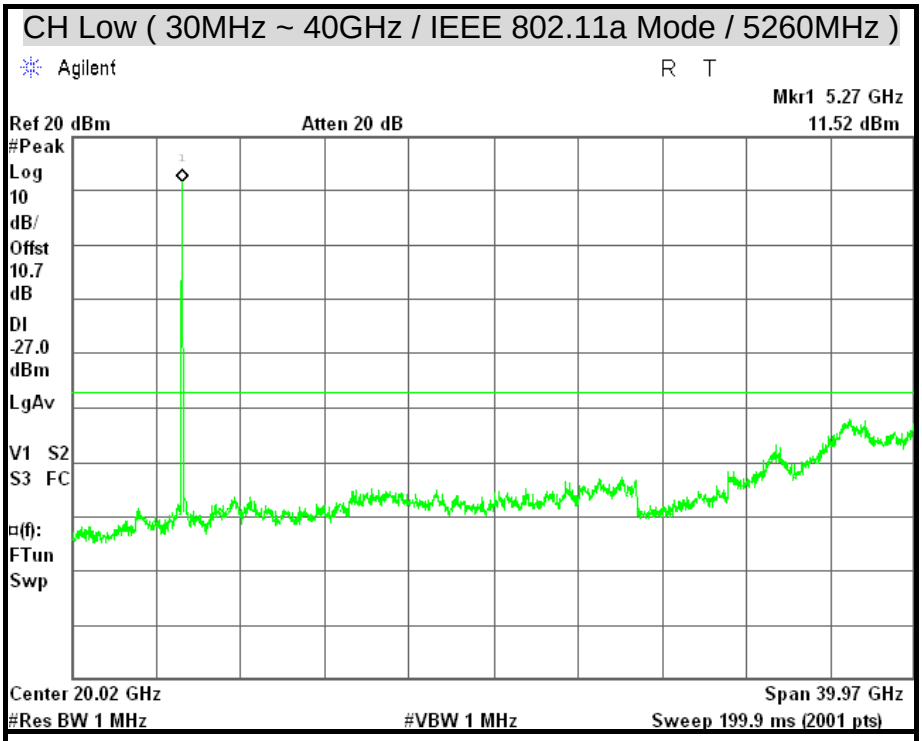
TEST RESULTS

OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

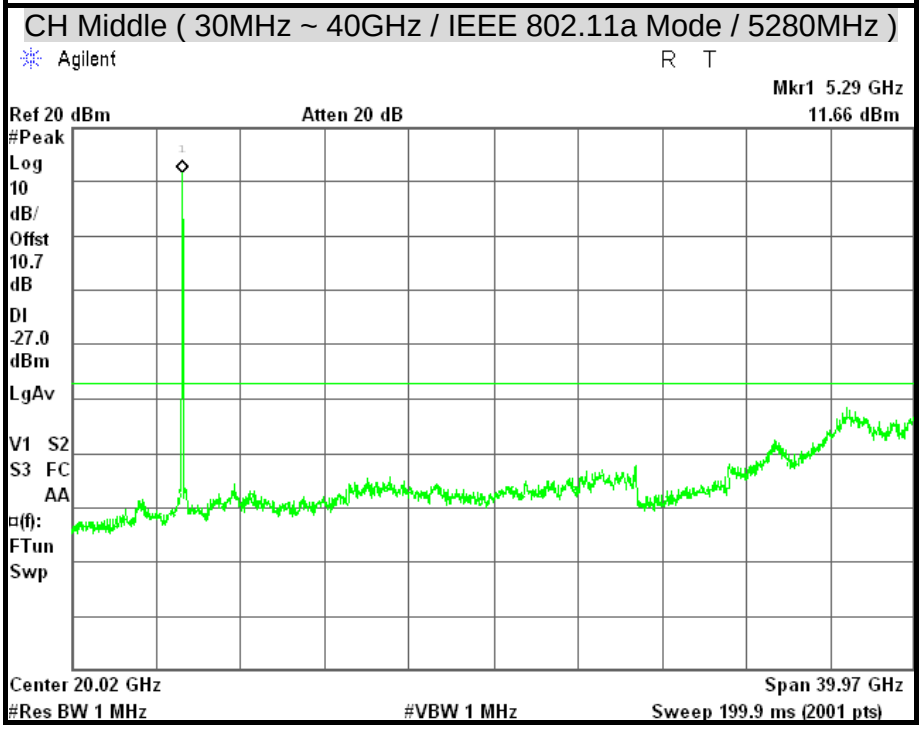


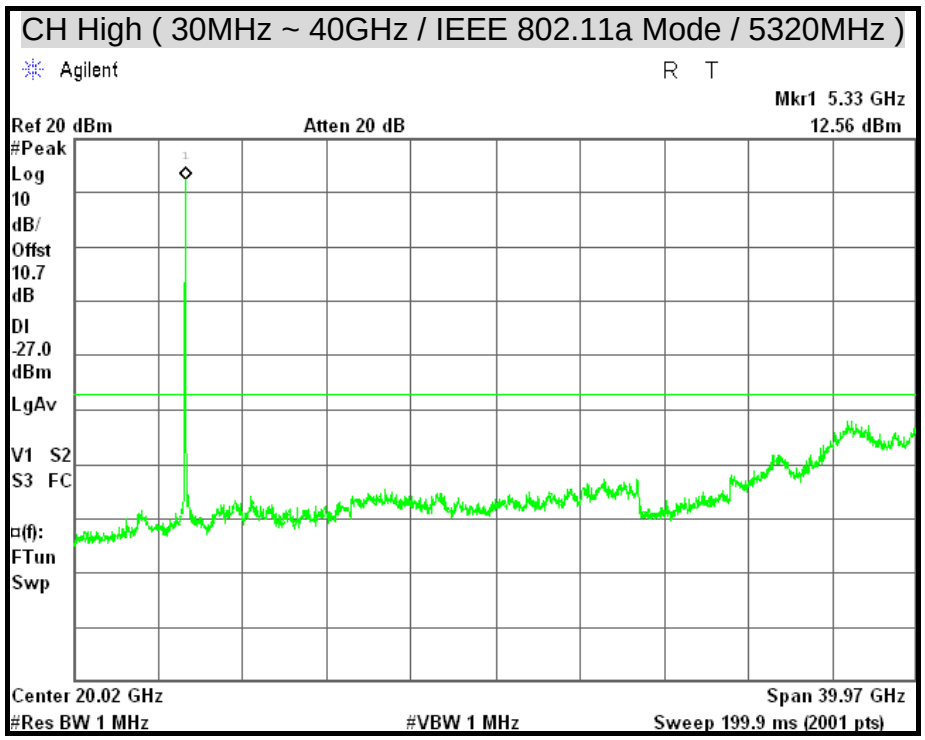


CH Low (30MHz ~ 40GHz / IEEE 802.11a Mode / 5260MHz)

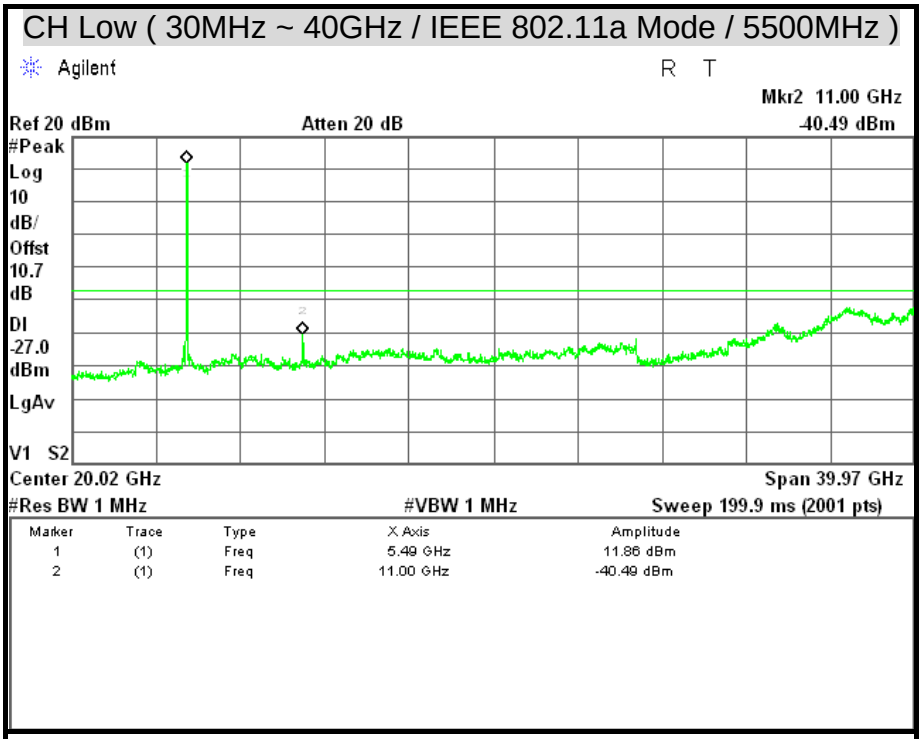


CH Middle (30MHz ~ 40GHz / IEEE 802.11a Mode / 5280MHz)

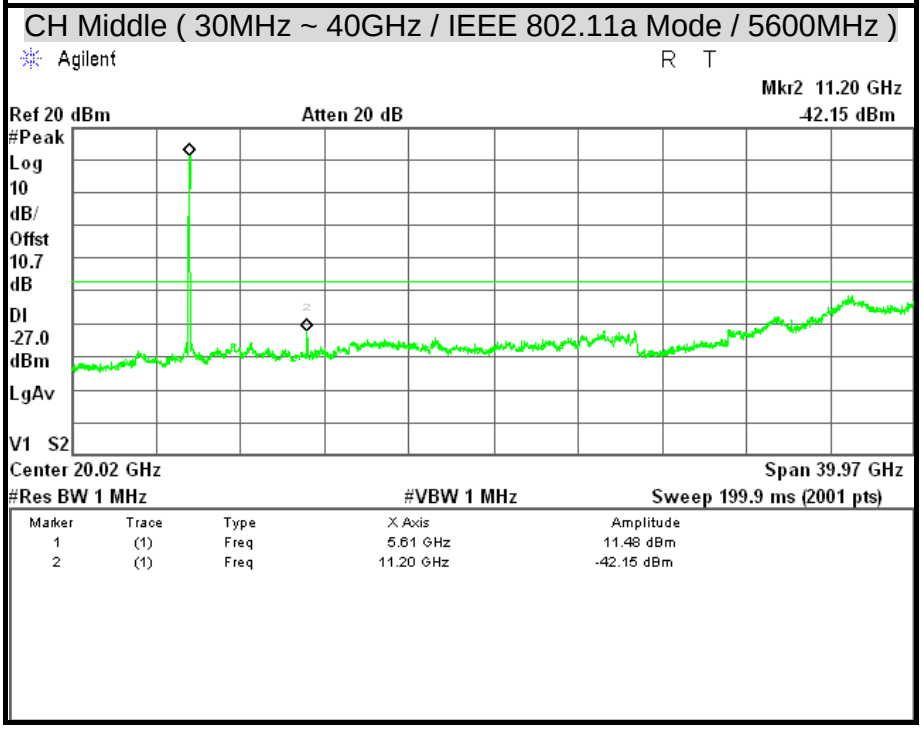


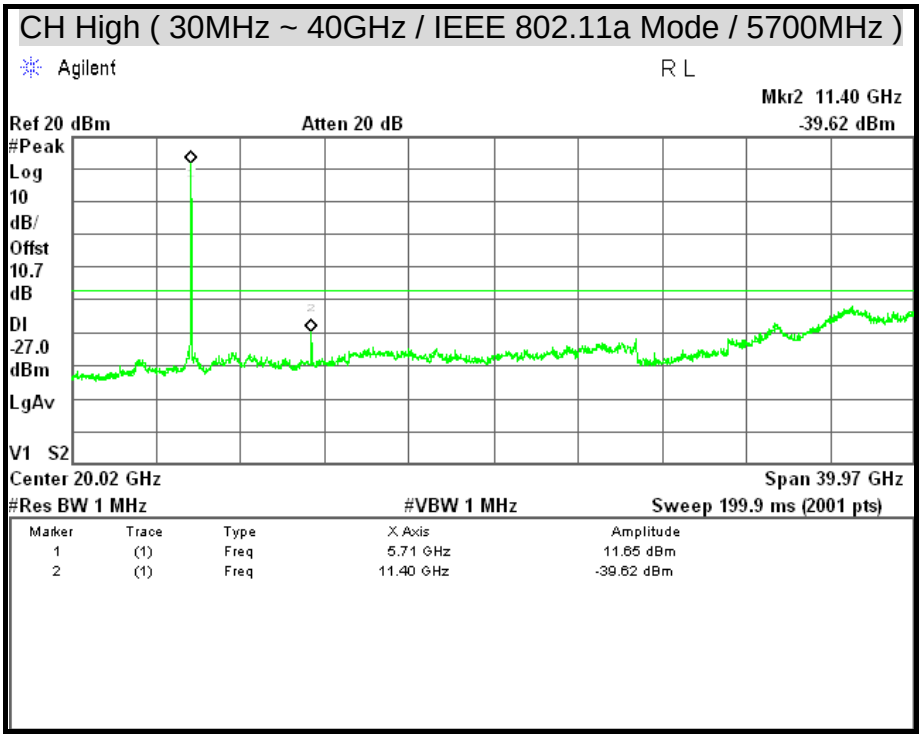


CH Low (30MHz ~ 40GHz / IEEE 802.11a Mode / 5500MHz)

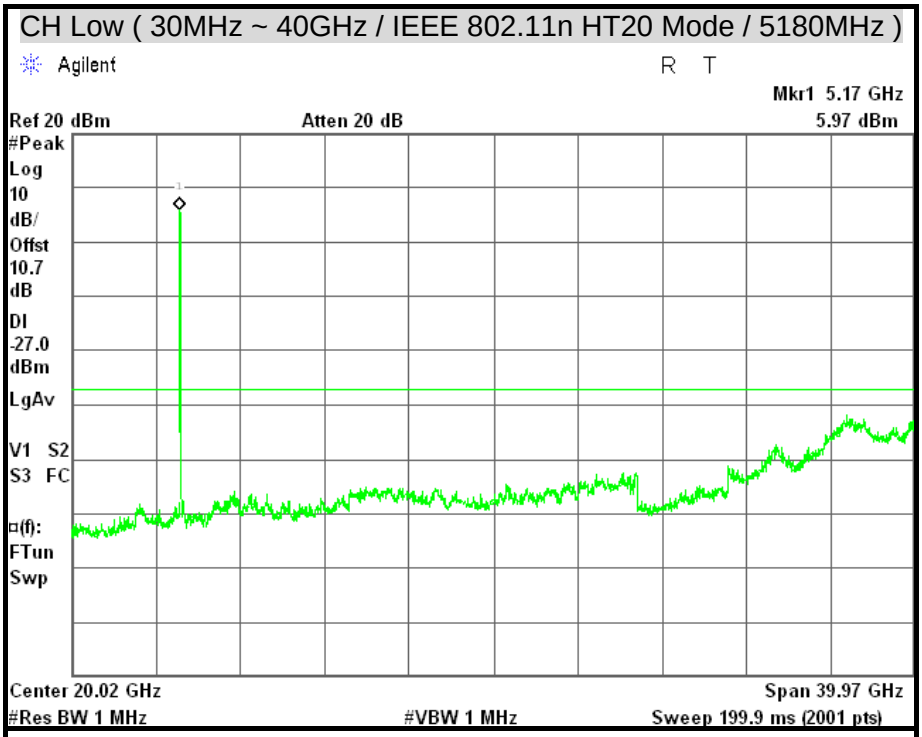


CH Middle (30MHz ~ 40GHz / IEEE 802.11a Mode / 5600MHz)

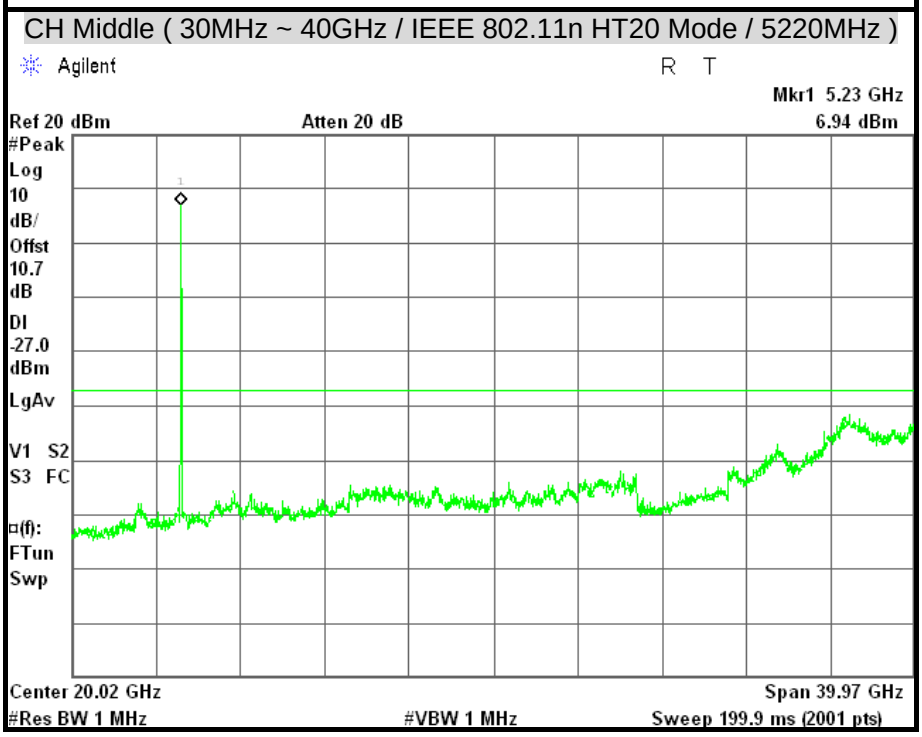




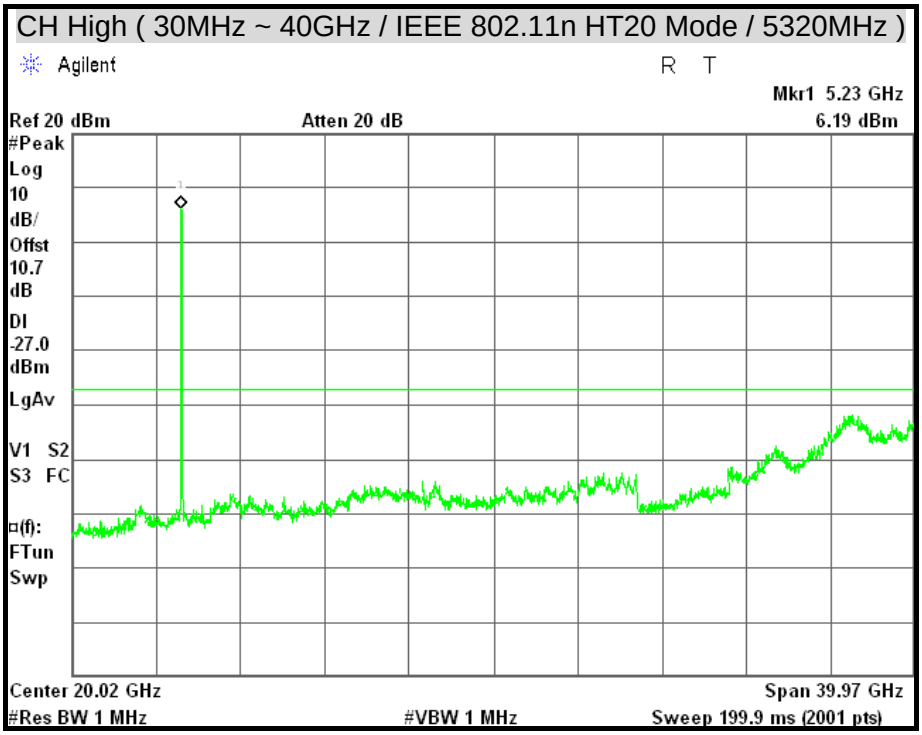
CH Low (30MHz ~ 40GHz / IEEE 802.11n HT20 Mode / 5180MHz)



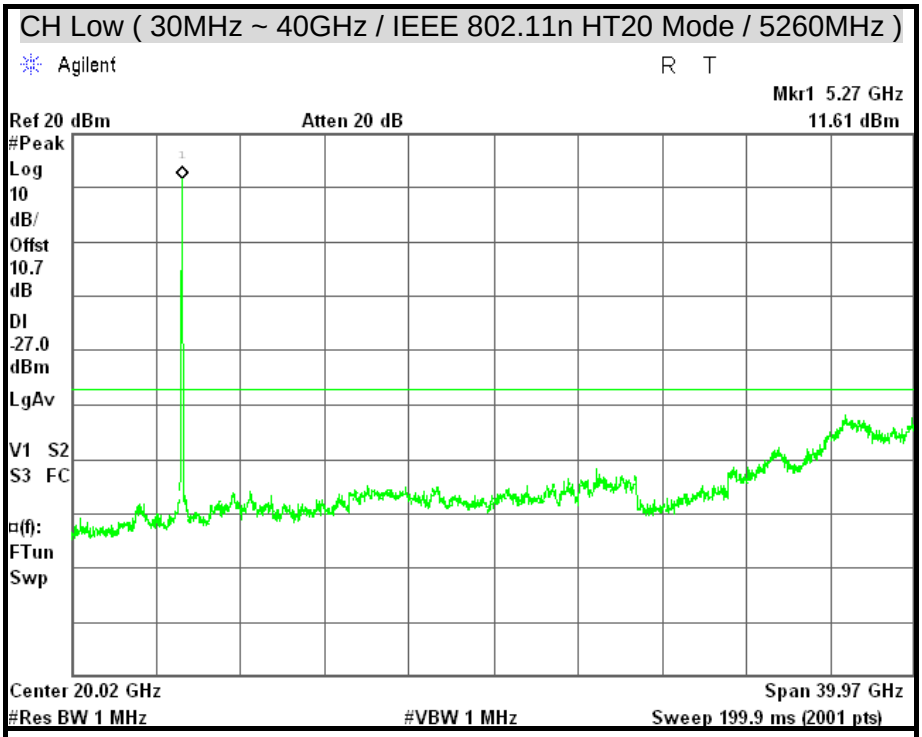
CH Middle (30MHz ~ 40GHz / IEEE 802.11n HT20 Mode / 5220MHz)



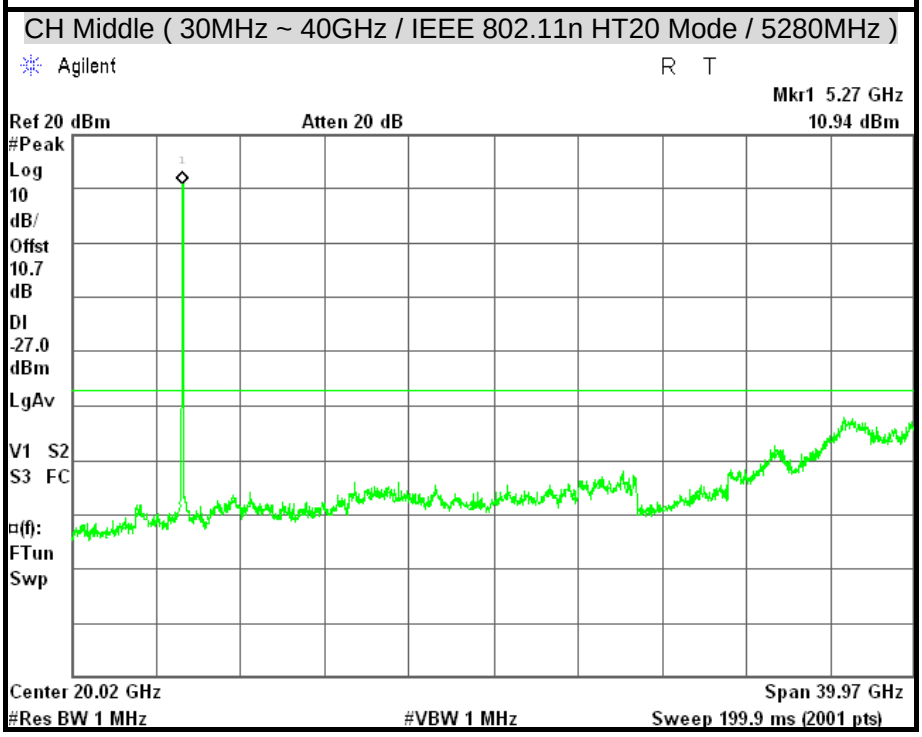
CH High (30MHz ~ 40GHz / IEEE 802.11n HT20 Mode / 5320MHz)



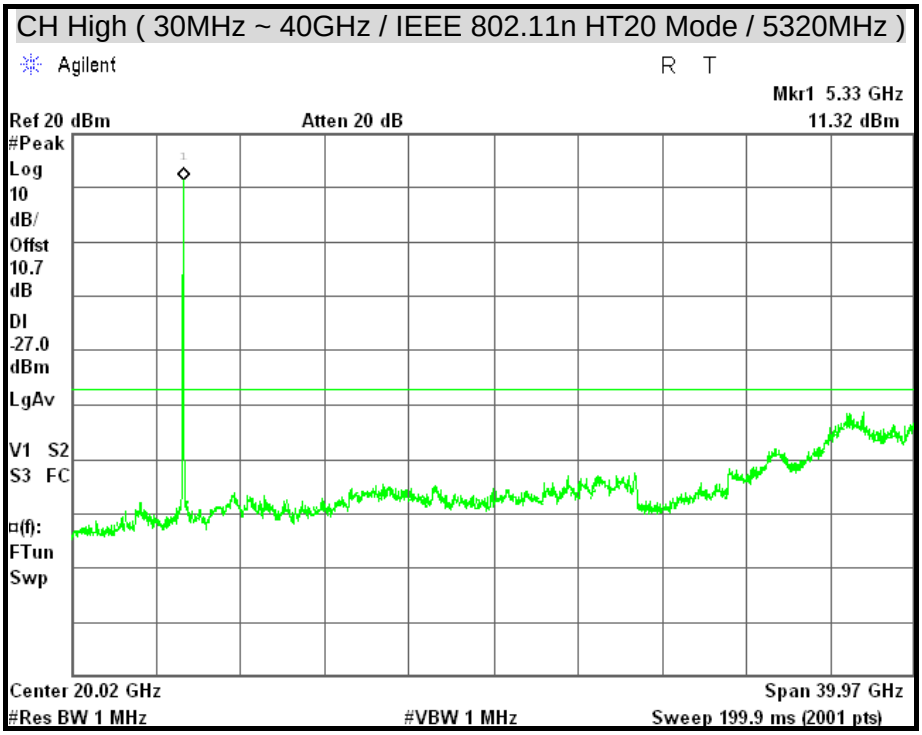
CH Low (30MHz ~ 40GHz / IEEE 802.11n HT20 Mode / 5260MHz)



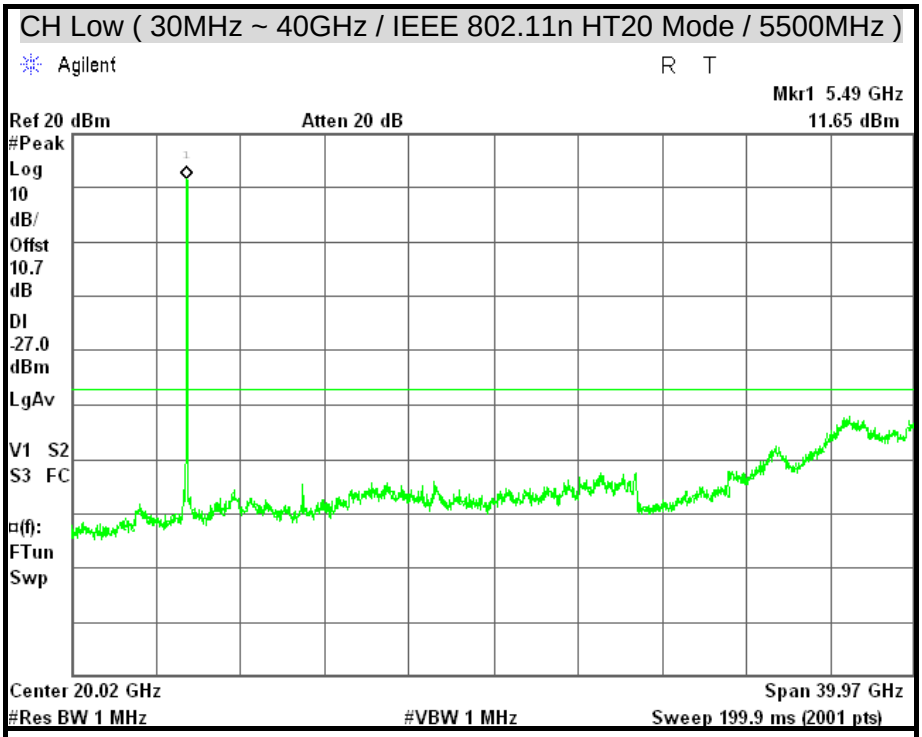
CH Middle (30MHz ~ 40GHz / IEEE 802.11n HT20 Mode / 5280MHz)



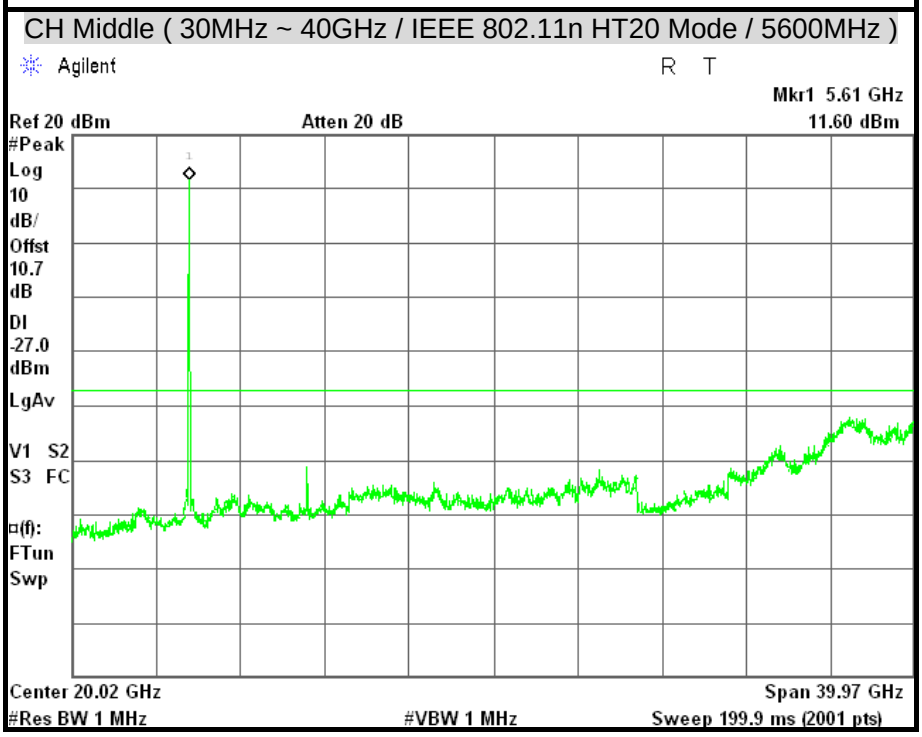
CH High (30MHz ~ 40GHz / IEEE 802.11n HT20 Mode / 5320MHz)



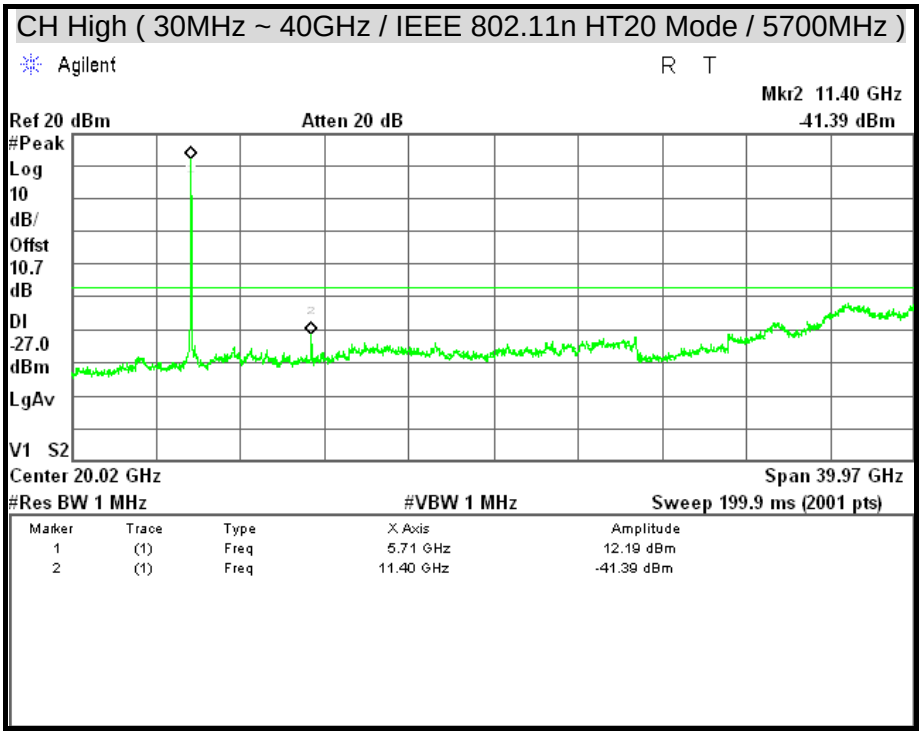
CH Low (30MHz ~ 40GHz / IEEE 802.11n HT20 Mode / 5500MHz)



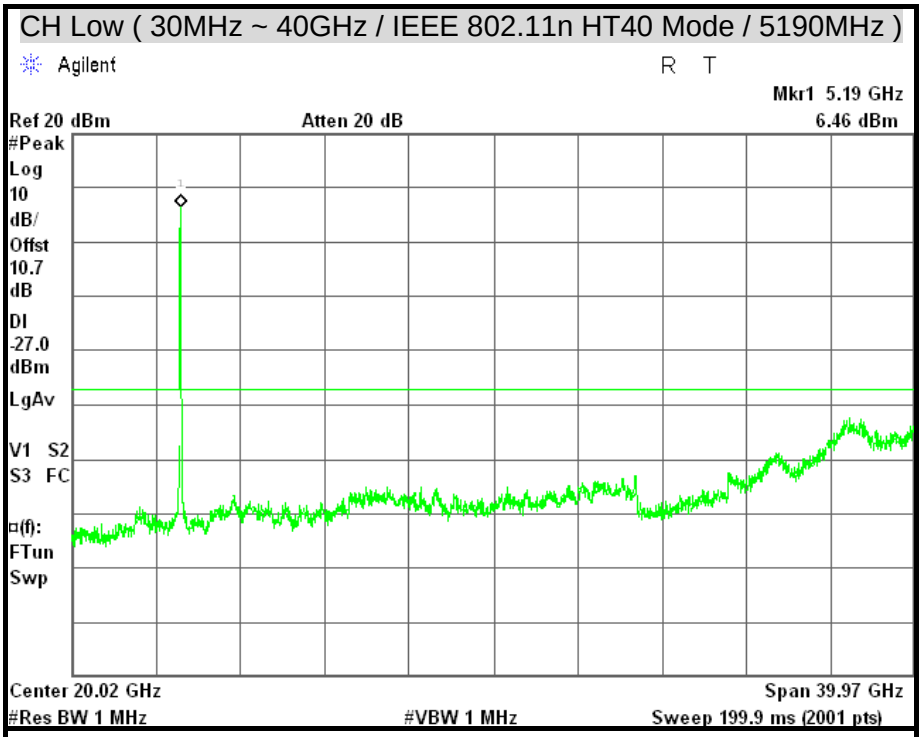
CH Middle (30MHz ~ 40GHz / IEEE 802.11n HT20 Mode / 5600MHz)



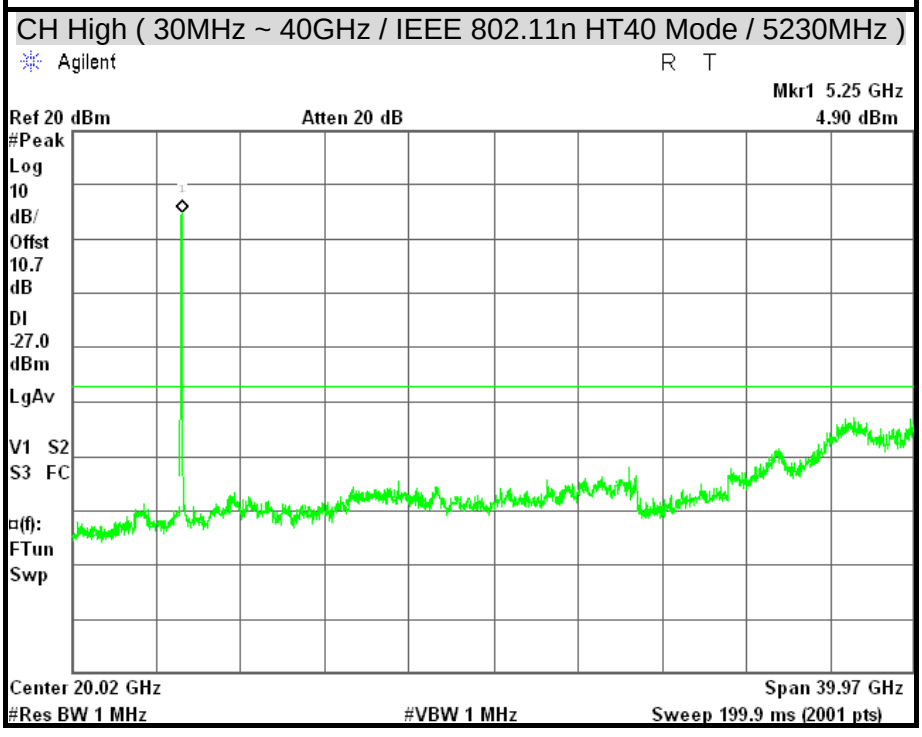
CH High (30MHz ~ 40GHz / IEEE 802.11n HT20 Mode / 5700MHz)



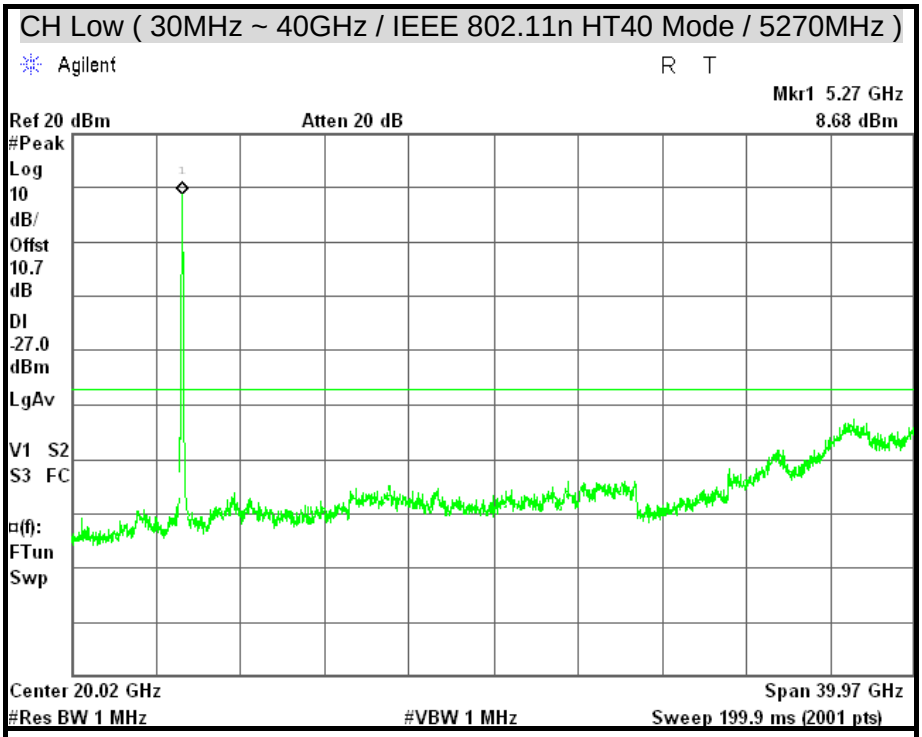
CH Low (30MHz ~ 40GHz / IEEE 802.11n HT40 Mode / 5190MHz)



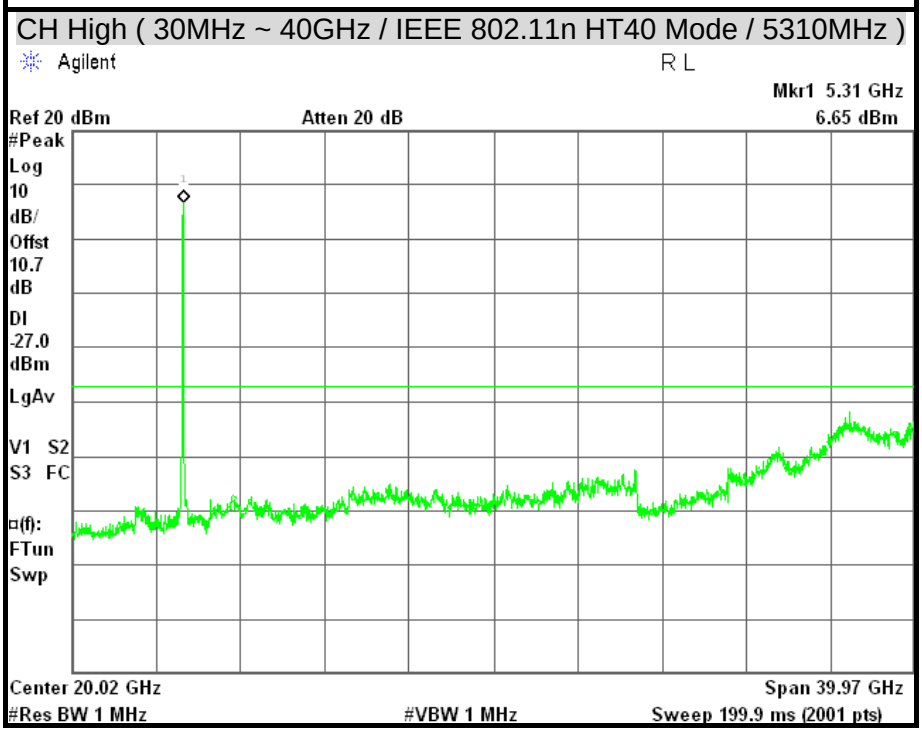
CH High (30MHz ~ 40GHz / IEEE 802.11n HT40 Mode / 5230MHz)



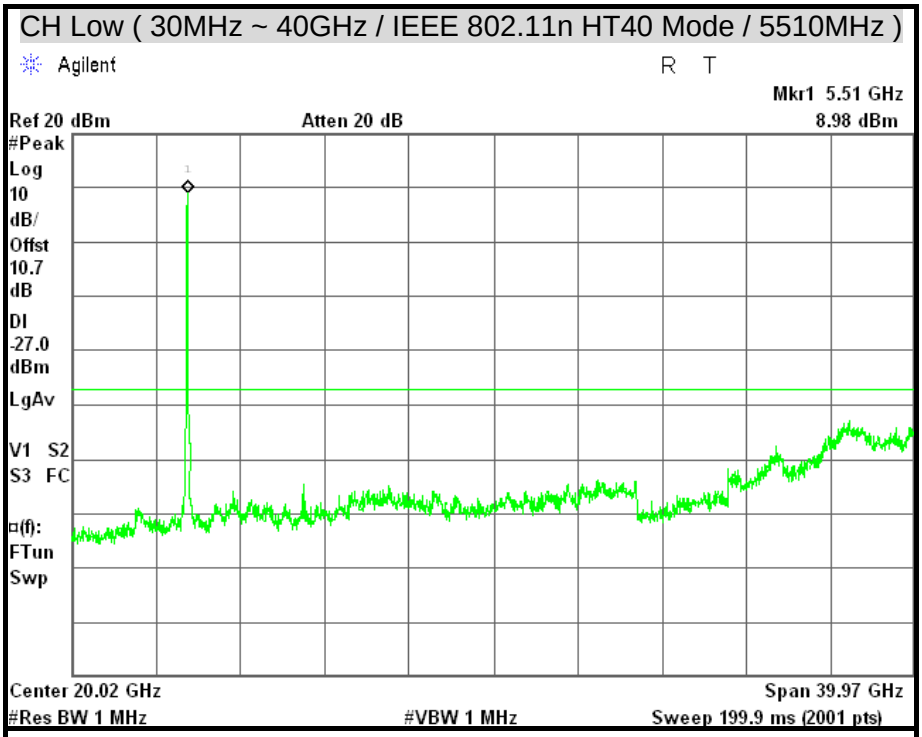
CH Low (30MHz ~ 40GHz / IEEE 802.11n HT40 Mode / 5270MHz)



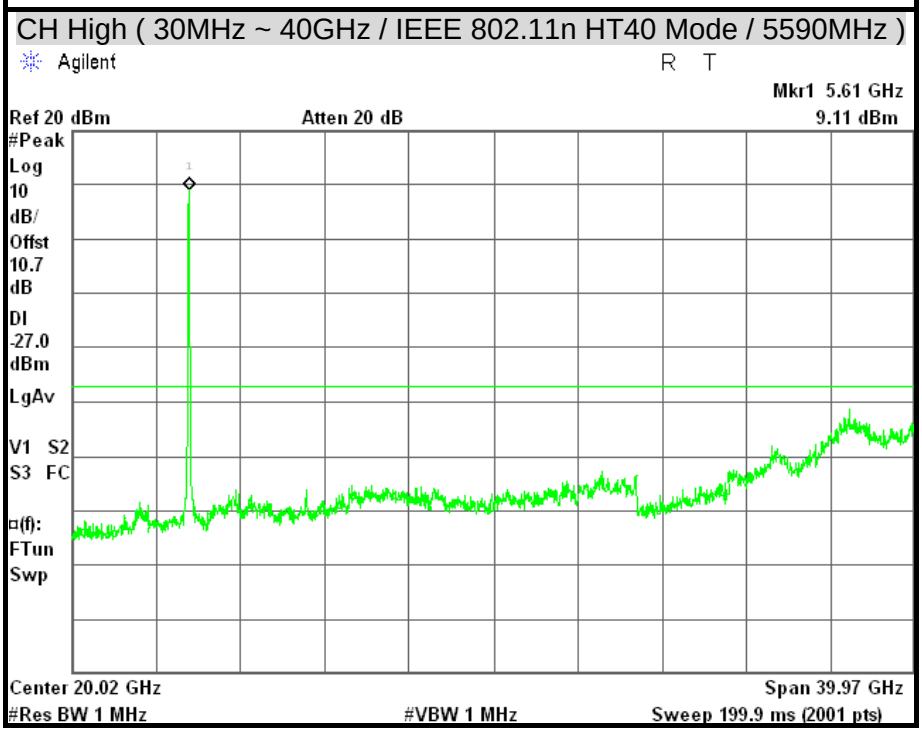
CH High (30MHz ~ 40GHz / IEEE 802.11n HT40 Mode / 5310MHz)

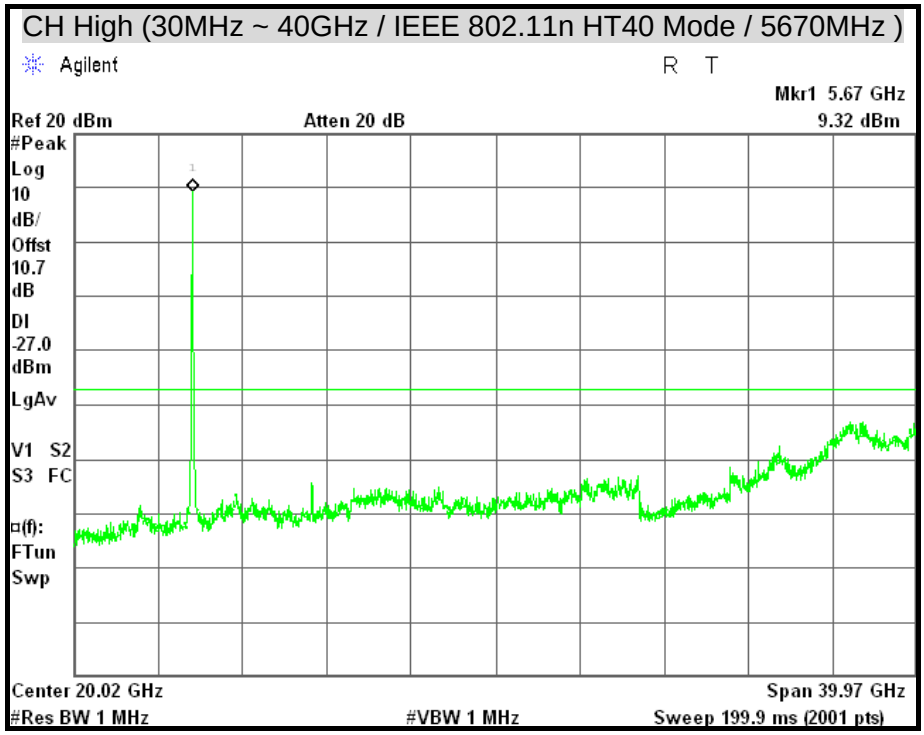


CH Low (30MHz ~ 40GHz / IEEE 802.11n HT40 Mode / 5510MHz)



CH High (30MHz ~ 40GHz / IEEE 802.11n HT40 Mode / 5590MHz)





7.6 RADIATED EMISSION

LIMITS

(1) According to § 15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 -1710	10.6 -12.7
6.26775 - 6.26825	108 -121.94	1718.8 - 1722.2	13.25 -13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 – 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 -16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3338	36.43 - 36.5
12.57675 - 12.57725	322 -335.4	3600 - 4400	([2])
13.36 - 13.41			

Remark:
1. [1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
2. [2] Above 38.6

(2) According to § 15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown is Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

(3) According to § 15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table :

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(KHz)	300
0.490 – 1.705	24000/F(KHz)	30
1.705 – 30.0	30	30
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

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

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

TEST EQUIPMENT

966Chamber_B

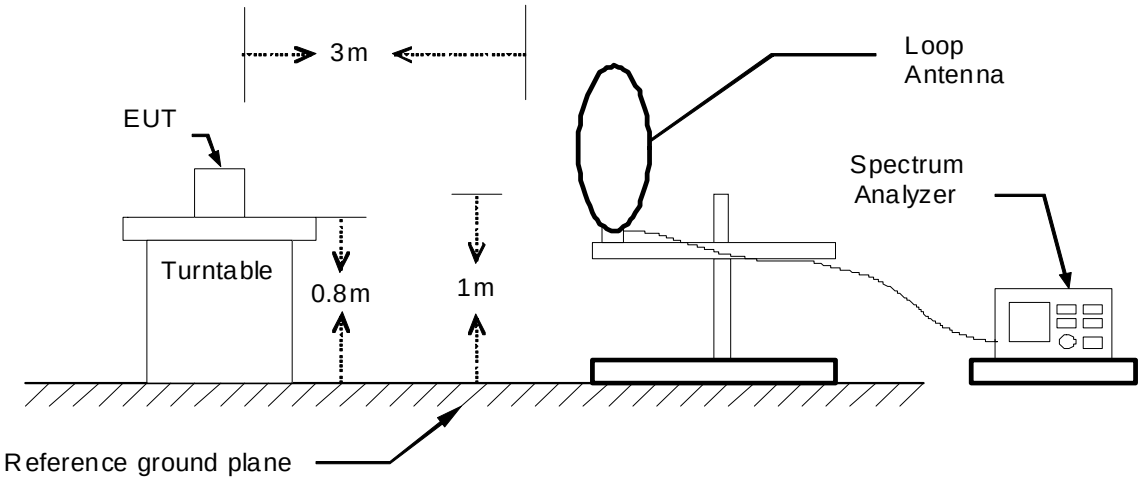
Name of Equipment	Manufacture	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY43360132	06/19/2012
EMI Receiver	ROHDE & SCHWARZ	ESCI	101131	01/13/2012
Broadband Hybrid Bi-Log Antenna	Sunol Sciences	JB1	A100209-4	10/07/2011
Double-Ridged Waveguide Horn	ETS-LINDGREN	3117	00078732	07/03/2012
Pre-Amplifier	Agilent	8447D	2944A10052	07/26/2011
Pre-Amplifier	Agilent	8449B	3008A01916	09/21/2011
LOOP Antenna	EMCO	6502	8905-2356	06/10/2012
Band Reject Filter	Micro-Tronics	BRC50703-01	004	N.C.R.
Band Reject Filter	Micro-Tronics	BRC50704-01	004	N.C.R.
Band Reject Filter	Micro-Tronics	BRC50705-01	007	N.C.R.

Remark: *1. Each piece of equipment is scheduled for calibration once a year.*
2. N.C.R = No Calibration Request.

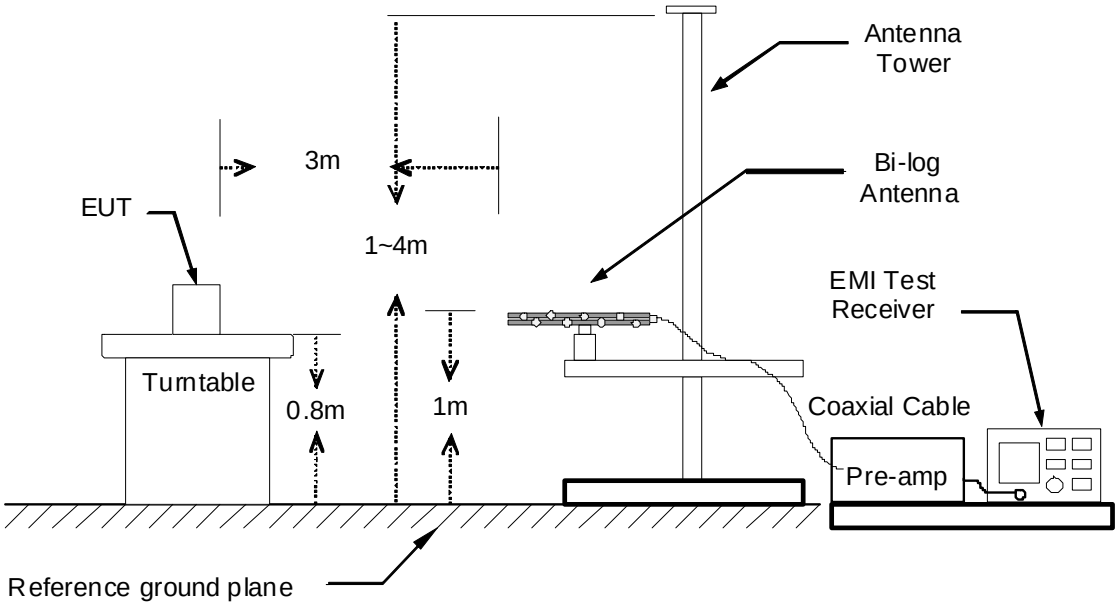
TEST SETUP

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

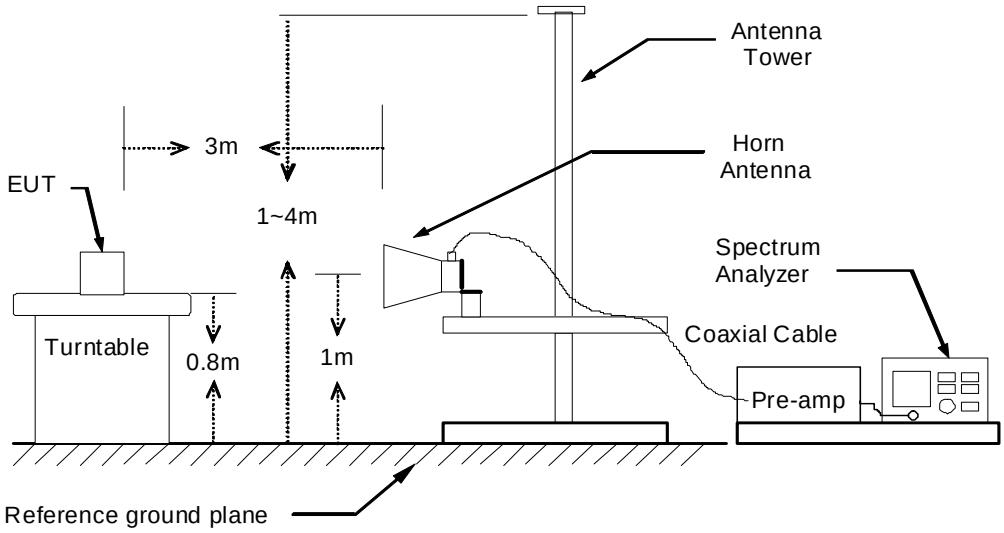
9kHz ~ 30MHz



30MHz ~ 1GHz



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



TEST PROCEDURE

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
2. While measuring the radiated emission below 1GHz, the EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. While measuring the radiated emission above 1GHz, the EUT was set 3 meters away from the interference-receiving antenna.
3. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarization of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Remark：

1. *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.*
2. *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection and frequency above 1GHz.*
3. *The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.*

TEST RESULTS

Below 1 GHz (9kHz ~ 30MHz)

No emission found between lowest internal used/generated frequency to 30MHz.

Below 1 GHz (30MHz ~ 1GHz)

Product Name	NOTEBOOK COMPUTER	Test By	Rueyyan Lin
Model	X500	Test Date	2011/06/17
Test Mode	TX Mode	TEMP & Humidity	25°C, 53%

966 Chamber_B at 3Meter / Horizontal						
Frequency (MHz)	Reading (dBμV)	Correction Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
141.55	54.35	-13.01	41.34	43.50	-2.16	Peak
299.66	51.77	-10.03	41.74	46.00	-4.26	Peak
425.76	49.16	-7.06	42.10	46.00	-3.90	Peak
532.46	48.01	-7.22	40.79	46.00	-5.21	Peak
709.97	48.36	-4.75	43.61	46.00	-2.39	Peak
745.86	45.40	-4.17	41.24	46.00	-4.76	Peak
799.21	45.38	-3.07	42.31	46.00	-3.69	Peak
851.59	45.39	-2.56	42.82	46.00	-3.18	Peak
899.12	43.91	-1.80	42.10	46.00	-3.90	Peak
958.29	45.78	-1.43	44.35	46.00	-1.65	Peak

966 Chamber_B at 3Meter / Vertical						
Frequency (MHz)	Reading (dBμV)	Correction Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
30.00	42.30	-6.58	35.72	40.00	-4.28	QP
143.49	52.60	-13.14	39.46	43.50	-4.04	QP
299.66	50.20	-10.03	40.17	46.00	-5.83	Peak
500.45	50.69	-7.51	43.18	46.00	-2.82	Peak
533.43	50.83	-7.22	43.62	46.00	-2.38	Peak
639.16	44.34	-6.15	38.19	46.00	-7.81	Peak
851.59	41.25	-2.56	38.68	46.00	-7.32	Peak
958.29	41.87	-1.43	40.45	46.00	-5.55	Peak
958.29	41.87	-1.43	40.45	46.00	-5.55	Peak

Remark:

1. *Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit.*
2. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
3. *Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) – PreAmp.Gain (dB)*
4. *Result (dBuV/m) = Reading (dBuV) + Correction Factor (dB/m)*
5. *Margin (dB) = Remark result (dBuV/m) - Quasi-peak limit (dBuV/m).*

Above 1 GHz

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11a TX / CH Low / 5180MHz	TEMP & Humidity	25°C, 53%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2120.00	66.79	45.63	1.41	68.20	47.04	74.00	54.00	-6.96	AVG
2275.00	68.51	39.43	1.77	70.28	41.20	74.00	54.00	-12.80	AVG
2925.00	66.27	39.88	4.26	70.53	44.14	74.00	54.00	-9.86	AVG
3105.00	56.28	41.26	4.56	60.84	45.82	74.00	54.00	-8.18	AVG
10320.00	50.29	---	-0.13	50.16	---	74.00	54.00	-3.84	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2105.00	64.01	39.86	1.38	65.38	41.24	74.00	54.00	-12.76	AVG
2280.00	64.52	42.56	1.79	66.30	44.35	74.00	54.00	-9.65	AVG
2920.00	61.03	38.78	4.24	65.27	43.02	74.00	54.00	-10.98	AVG
3085.00	53.08	42.17	4.57	57.65	46.74	74.00	54.00	-7.26	AVG
10368.00	52.24	---	-0.11	52.12	---	74.00	54.00	-1.88	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11a TX / CH Middle / 5220MHz	TEMP & Humidity	25°C, 53%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2115.00	67.02	38.64	1.40	68.42	40.04	74.00	54.00	-13.96	AVG
2310.00	67.45	39.18	1.86	69.31	41.04	74.00	54.00	-12.96	AVG
2930.00	64.01	41.85	4.29	68.29	46.14	74.00	54.00	-7.86	AVG
3130.00	56.42	43.69	4.55	60.98	48.24	74.00	54.00	-5.76	AVG
10440.00	56.20	40.80	-0.09	56.11	40.71	74.00	54.00	-13.29	AVG

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2100.00	64.84	43.62	1.36	66.21	44.98	74.00	54.00	-9.02	AVG
2300.00	66.86	43.46	1.83	68.69	45.29	74.00	54.00	-8.71	AVG
2915.00	62.75	42.55	4.22	66.97	46.77	74.00	54.00	-7.23	AVG
3115.00	54.98	39.67	4.56	59.54	44.23	74.00	54.00	-9.77	AVG
10440.00	57.82	43.66	-0.09	57.73	43.57	74.00	54.00	-10.43	AVG

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11a TX / CH High / 5240MHz	TEMP & Humidity	25°C, 53%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2120.00	69.65	46.87	1.41	71.06	48.28	74.00	54.00	-5.72	AVG
2315.00	65.18	44.69	1.87	67.05	46.56	74.00	54.00	-7.44	AVG
2915.00	62.74	41.58	4.22	66.96	45.80	74.00	54.00	-8.20	AVG
3135.00	58.47	43.69	4.55	63.02	48.24	74.00	54.00	-5.76	AVG
10488.00	51.44	---	-0.07	51.36	---	74.00	54.00	-2.64	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2115.00	65.85	42.58	1.40	67.25	43.98	74.00	54.00	-10.02	AVG
2315.00	65.09	39.63	1.87	66.96	41.50	74.00	54.00	-12.50	AVG
2920.00	60.97	41.77	4.24	65.21	46.01	74.00	54.00	-7.99	AVG
3135.00	57.91	42.18	4.55	62.47	46.73	74.00	54.00	-7.27	AVG
10476.00	56.85	42.56	-0.08	56.77	42.48	74.00	54.00	-11.52	AVG

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11a TX / CH Low / 5260MHz	TEMP & Humidity	25°C, 53%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2125.00	66.48	39.67	1.42	67.90	41.09	74.00	54.00	-12.91	AVG
2340.00	64.62	40.58	1.93	66.55	42.51	74.00	54.00	-11.49	AVG
2920.00	60.76	36.69	4.24	65.00	40.93	74.00	54.00	-13.07	AVG
3145.00	58.97	39.88	4.55	63.52	44.43	74.00	54.00	-9.57	AVG
10524.00	52.15	---	-0.06	52.09	---	74.00	54.00	-1.91	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2130.00	65.47	45.67	1.43	66.90	47.10	74.00	54.00	-6.90	AVG
2340.00	61.34	43.64	1.93	63.27	45.57	74.00	54.00	-8.43	AVG
2920.00	61.01	42.18	4.24	65.25	46.42	74.00	54.00	-7.58	AVG
3135.00	58.39	41.11	4.55	62.94	45.66	74.00	54.00	-8.34	AVG
10524.00	55.16	45.69	-0.06	55.11	45.63	74.00	54.00	-8.37	AVG

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11a TX / CH Middle / 5280MHz	TEMP & Humidity	25°C, 53%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2390.00	59.61	40.59	2.04	61.65	42.63	74.00	54.00	-11.37	AVG
2920.00	57.18	42.36	4.24	61.43	46.60	74.00	54.00	-7.40	AVG
10632.00	50.02	---	0.01	50.03	---	74.00	54.00	-3.97	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2375.00	59.48	42.69	2.01	61.49	44.70	74.00	54.00	-9.30	AVG
2920.00	58.24	44.67	4.24	62.48	48.91	74.00	54.00	-5.09	AVG
10596.00	51.65	---	-0.01	51.64	---	74.00	54.00	-2.36	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11a TX / CH High / 5320MHz	TEMP & Humidity	25°C, 53%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2395.00	57.07	41.62	2.05	59.13	43.67	74.00	54.00	-10.33	AVG
2930.00	57.04	42.59	4.29	61.32	46.88	74.00	54.00	-7.12	AVG
10632.00	50.50	---	0.01	50.51	---	74.00	54.00	-3.49	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2395.00	56.79	42.89	2.05	58.84	44.94	74.00	54.00	-9.06	AVG
2930.00	52.68	41.57	4.29	56.97	45.86	74.00	54.00	-8.14	AVG
10644.00	50.39	---	0.02	50.40	---	74.00	54.00	-3.60	AVG

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11a TX / CH Low / 5500MHz	TEMP & Humidity	25°C, 53%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2370.00	63.91	38.99	2.00	65.91	40.99	74.00	54.00	-13.01	AVG
2590.00	52.09	39.68	2.72	54.81	42.40	74.00	54.00	-11.60	AVG
2920.00	55.45	40.58	4.24	59.69	44.82	74.00	54.00	-9.18	AVG
3135.00	58.39	41.56	4.55	62.94	46.11	74.00	54.00	-7.89	AVG
11304.00	49.83	---	0.99	50.82	---	74.00	54.00	-3.18	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2380.00	62.26	41.68	2.02	64.28	43.70	74.00	54.00	-10.30	AVG
2595.00	51.63	35.69	2.74	54.37	38.43	74.00	54.00	-15.57	AVG
2920.00	53.04	37.59	4.24	57.29	41.83	74.00	54.00	-12.17	AVG
3130.00	53.45	40.18	4.55	58.01	44.73	74.00	54.00	-9.27	AVG
11268.00	50.42	---	0.90	51.32	---	74.00	54.00	-2.68	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11a TX / CH Middle / 5600MHz	TEMP & Humidity	25°C, 53%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2480.00	53.72	39.61	2.25	55.97	41.86	74.00	54.00	-12.14	AVG
2695.00	65.33	42.56	3.20	68.53	45.76	74.00	54.00	-8.24	AVG
2915.00	62.03	44.87	4.22	66.25	49.09	74.00	54.00	-4.91	AVG
3140.00	53.68	39.67	4.55	58.23	44.22	74.00	54.00	-9.78	AVG
11208.00	50.33	---	0.75	51.08	---	74.00	54.00	-2.92	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2480.00	51.80	42.59	2.25	54.05	44.84	74.00	54.00	-9.16	AVG
2695.00	60.04	40.57	3.20	63.24	43.77	74.00	54.00	-10.23	AVG
2920.00	63.30	43.44	4.24	67.54	47.68	74.00	54.00	-6.32	AVG
11316.00	50.16	---	1.02	51.18	---	74.00	54.00	-2.82	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11a TX / CH High / 5700MHz	TEMP & Humidity	25°C, 53%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2810.00	53.78	40.51	3.73	57.51	44.24	74.00	54.00	-9.76	AVG
2915.00	56.09	42.63	4.22	60.31	46.85	74.00	54.00	-7.15	AVG
11316.00	49.86	---	1.02	50.87	---	74.00	54.00	-3.13	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2805.00	54.92	41.58	3.71	58.63	45.29	74.00	54.00	-8.71	AVG
2900.00	54.78	40.59	4.15	58.92	44.74	74.00	54.00	-9.26	AVG
11448.00	50.24	---	1.34	51.59	---	74.00	54.00	-2.41	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT20 TX / CH Low / 5180MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2275.00	57.91	42.56	1.77	59.69	44.33	74.00	54.00	-9.67	AVG
2915.00	53.66	41.78	4.22	57.88	46.00	74.00	54.00	-8.00	AVG
10128.00	51.69	---	-0.20	51.49	---	74.00	54.00	-2.51	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2285.00	55.92	42.60	1.80	57.72	44.40	74.00	54.00	-9.60	AVG
2920.00	54.50	43.69	4.24	58.75	47.93	74.00	54.00	-6.07	AVG
10356.00	49.94	---	-0.12	49.82	---	74.00	54.00	-4.18	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT20 TX / CH Middle / 5220MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2315.00	60.07	41.59	1.87	61.93	43.46	74.00	54.00	-10.54	AVG
2925.00	54.90	42.50	4.26	59.16	46.76	74.00	54.00	-7.24	AVG
10440.00	50.82	---	-0.09	50.73	---	74.00	54.00	-3.27	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2310.00	58.92	42.63	1.86	60.78	44.49	74.00	54.00	-9.51	AVG
2920.00	54.30	41.56	4.24	58.54	45.80	74.00	54.00	-8.20	AVG
10368.00	50.87	---	-0.11	50.75	---	74.00	54.00	-3.25	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT20 TX / CH High / 5240MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2310.00	53.06	44.56	1.86	54.92	46.42	74.00	54.00	-7.58	AVG
2920.00	53.89	42.59	4.24	58.14	46.83	74.00	54.00	-7.17	AVG
10260.00	50.22	---	-0.15	50.07	---	74.00	54.00	-3.93	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2305.00	52.34	43.59	1.84	54.19	45.43	74.00	54.00	-8.57	AVG
2925.00	53.68	42.56	4.26	57.94	46.82	74.00	54.00	-7.18	AVG
10476.00	50.86	---	-0.08	50.78	---	74.00	54.00	-3.22	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT20 TX / CH Low / 5260MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2325.00	49.76	---	1.89	51.65	---	74.00	54.00	-2.35	Peak
10440.00	50.41	---	-0.09	50.32	---	74.00	54.00	-3.68	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2330.00	44.95	---	1.90	46.85	---	74.00	54.00	-7.15	Peak
2650.00	43.23	---	2.99	46.23	---	74.00	54.00	-7.77	Peak
10416.00	50.86	---	-0.10	50.76	---	74.00	54.00	-3.24	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT20 TX / CH Middle / 5280MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2475.00	44.10	---	2.24	46.34	---	74.00	54.00	-7.66	Peak
2770.00	42.61	---	3.55	46.16	---	74.00	54.00	-7.84	Peak
10584.00	50.46	---	-0.02	50.44	---	74.00	54.00	-3.56	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2780.00	42.00	---	3.59	45.60	---	74.00	54.00	-8.40	AVG
3460.00	43.01	---	4.41	47.41	---	74.00	54.00	-6.59	AVG
10620.00	50.34	---	0.00	50.35	---	74.00	54.00	-3.65	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT20 TX / CH High / 5320MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2465.00	43.87	---	2.22	46.09	---	74.00	54.00	-7.91	Peak
3110.00	43.01	---	4.56	47.58	---	74.00	54.00	-6.42	Peak
10536.00	49.60	---	-0.05	49.56	---	74.00	54.00	-4.44	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2795.00	41.87	---	3.66	45.53	---	74.00	54.00	-8.47	Peak
3130.00	42.77	---	4.55	47.33	---	74.00	54.00	-6.67	Peak
10644.00	50.62	---	0.02	50.64	---	74.00	54.00	-3.36	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT20 TX / CH Low / 5500MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2475.00	44.44	---	2.24	46.68	---	74.00	54.00	-7.32	Peak
3025.00	42.45	---	4.60	47.05	---	74.00	54.00	-6.95	Peak
11052.00	49.85	---	0.37	50.22	---	74.00	54.00	-3.78	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
3030.00	42.65	---	4.60	47.25	---	74.00	54.00	-6.75	Peak
3175.00	42.84	---	4.53	47.38	---	74.00	54.00	-6.62	Peak
11004.00	51.15	---	0.25	51.40	---	74.00	54.00	-2.60	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT20 TX / CH Middle / 5600MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2705.00	55.49	45.63	3.25	58.73	48.88	74.00	54.00	-5.12	AVG
2905.00	55.95	42.67	4.17	60.12	46.84	74.00	54.00	-7.16	AVG
10308.00	52.37	---	-0.14	52.24	---	74.00	54.00	-1.76	Peak
11400.00	50.05	---	1.22	51.27	---	74.00	54.00	-2.73	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2695.00	48.44	---	3.20	51.64	---	74.00	54.00	-2.36	Peak
2915.00	47.42	---	4.22	51.63	---	74.00	54.00	-2.37	Peak
11220.00	50.15	---	0.78	50.93	---	74.00	54.00	-3.07	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT20 TX / CH High / 5700MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2650.00	42.87	---	2.99	45.86	---	74.00	54.00	-8.14	Peak
3465.00	42.50	---	4.41	46.91	---	74.00	54.00	-7.09	Peak
11436.00	49.81	---	1.31	51.12	---	74.00	54.00	-2.88	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2455.00	43.87	---	2.19	46.06	---	74.00	54.00	-7.94	Peak
3245.00	43.98	---	4.50	48.48	---	74.00	54.00	-5.52	Peak
11460.00	49.91	---	1.37	51.29	---	74.00	54.00	-2.71	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT40 TX / CH Low / 5190MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
3000.00	42.18	---	4.61	46.79	---	74.00	54.00	-7.21	Peak
3335.00	42.47	---	4.46	46.93	---	74.00	54.00	-7.07	Peak
10524.00	50.80	---	-0.06	50.75	---	74.00	54.00	-3.25	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2465.00	44.34	---	2.22	46.55	---	74.00	54.00	-7.45	Peak
3075.00	43.64	---	4.58	48.22	---	74.00	54.00	-5.78	Peak
10296.00	50.85	---	-0.14	50.71	---	74.00	54.00	-3.29	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT40 TX / CH High / 5230MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2325.00	52.50	42.89	1.89	54.39	44.78	74.00	54.00	-9.22	AVG
10584.00	50.54	---	-0.02	50.52	---	74.00	54.00	-3.48	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2330.00	53.06	43.66	1.90	54.96	45.56	74.00	54.00	-8.44	AVG
10440.00	50.30	---	-0.09	50.21	---	74.00	54.00	-3.79	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT40 TX / CH Low / 5270MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2365.00	48.21	---	1.98	50.20	---	74.00	54.00	-3.80	Peak
2920.00	43.09	---	4.24	47.33	---	74.00	54.00	-6.67	Peak
10512.00	50.04	---	-0.06	49.98	---	74.00	54.00	-4.02	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2320.00	44.63	---	1.88	46.50	---	74.00	54.00	-7.50	Peak
3235.00	42.48	---	4.51	46.98	---	74.00	54.00	-7.02	Peak
10524.00	50.61	---	-0.06	50.56	---	74.00	54.00	-3.44	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT40 TX / CH High / 5310MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2885.00	42.47	---	4.08	46.55	---	74.00	54.00	-7.45	Peak
3700.00	42.34	---	4.84	47.18	---	74.00	54.00	-6.82	Peak
10512.00	50.12	---	-0.06	50.05	---	74.00	54.00	-3.95	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
3140.00	43.60	---	4.55	48.15	---	74.00	54.00	-5.85	Peak
3505.00	42.20	---	4.40	46.60	---	74.00	54.00	-7.40	Peak
10596.00	50.41	---	-0.01	50.40	---	74.00	54.00	-3.60	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT40 TX / CH Low / 5510MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2700.00	43.05	---	3.22	46.27	---	74.00	54.00	-7.73	Peak
3120.00	43.15	---	4.56	47.70	---	74.00	54.00	-6.30	Peak
11064.00	50.32	---	0.40	50.71	---	74.00	54.00	-3.29	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2745.00	42.92	---	3.43	46.35	---	74.00	54.00	-7.65	Peak
3125.00	43.22	---	4.56	47.78	---	74.00	54.00	-6.22	Peak
11016.00	50.38	---	0.28	50.66	---	74.00	54.00	-3.34	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT40 TX / CH Middle / 5590MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
3130.00	43.78	---	4.55	48.33	---	74.00	54.00	-5.67	Peak
3215.00	44.19	---	4.52	48.71	---	74.00	54.00	-5.29	Peak
11760.00	50.17	---	1.83	52.00	---	74.00	54.00	-2.00	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2900.00	43.67	---	4.15	47.82	---	74.00	54.00	-6.18	Peak
3115.00	43.98	---	4.56	48.54	---	74.00	54.00	-5.46	Peak
11796.00	50.40	---	1.88	52.28	---	74.00	54.00	-1.72	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	NOTEBOOK COMPUTER	Test By	Leon Cheng
Model	X500	Test Date	2011/06/22
Test Mode	IEEE 802.11n HT40 TX / CH High / 5670MHz	TEMP & Humidity	25°C, 62%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2995.00	43.00	---	4.59	47.59	---	74.00	54.00	-6.41	Peak
3195.00	42.47	---	4.52	46.99	---	74.00	54.00	-7.01	Peak
11832.00	50.30	---	1.93	52.24	---	74.00	54.00	-1.76	Peak

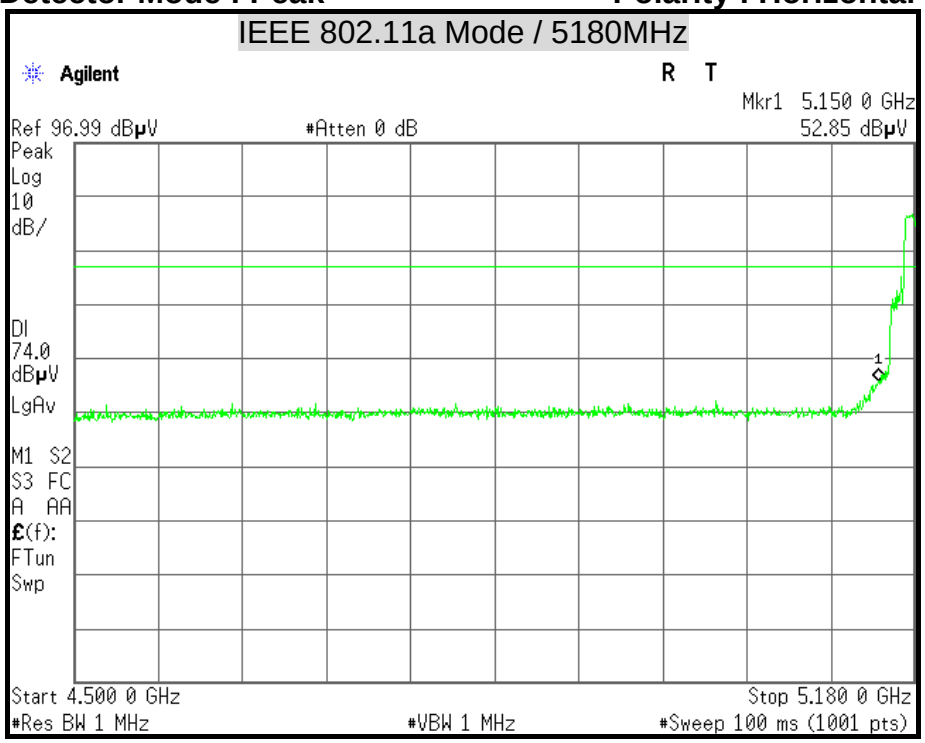
966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
3015.00	43.12	---	4.60	47.72	---	74.00	54.00	-6.28	Peak
4800.00	44.23	---	8.19	52.42	---	74.00	54.00	-1.58	Peak
11424.00	49.85	---	1.28	51.13	---	74.00	54.00	-2.87	Peak

Remark:

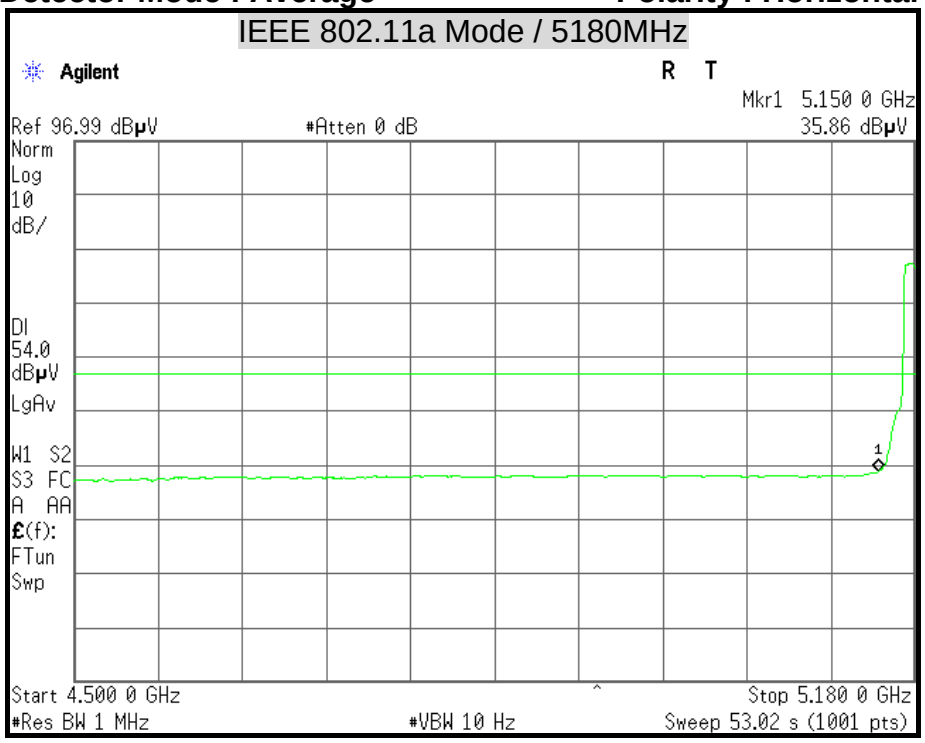
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Restricted Band Edges

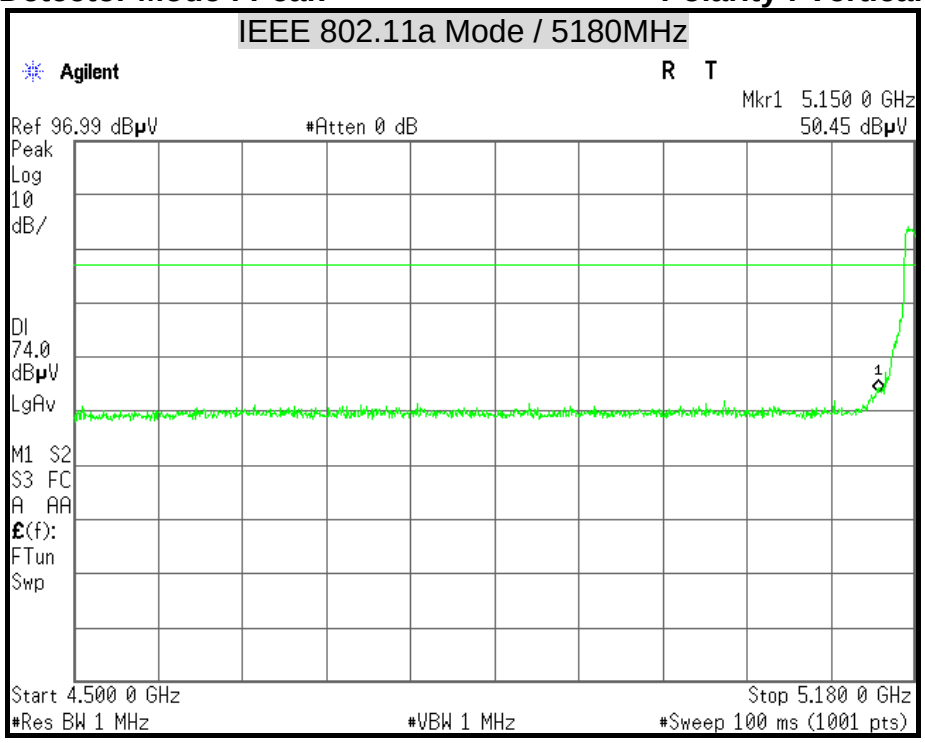
Detector Mode : Peak **Polarity : Horizontal**



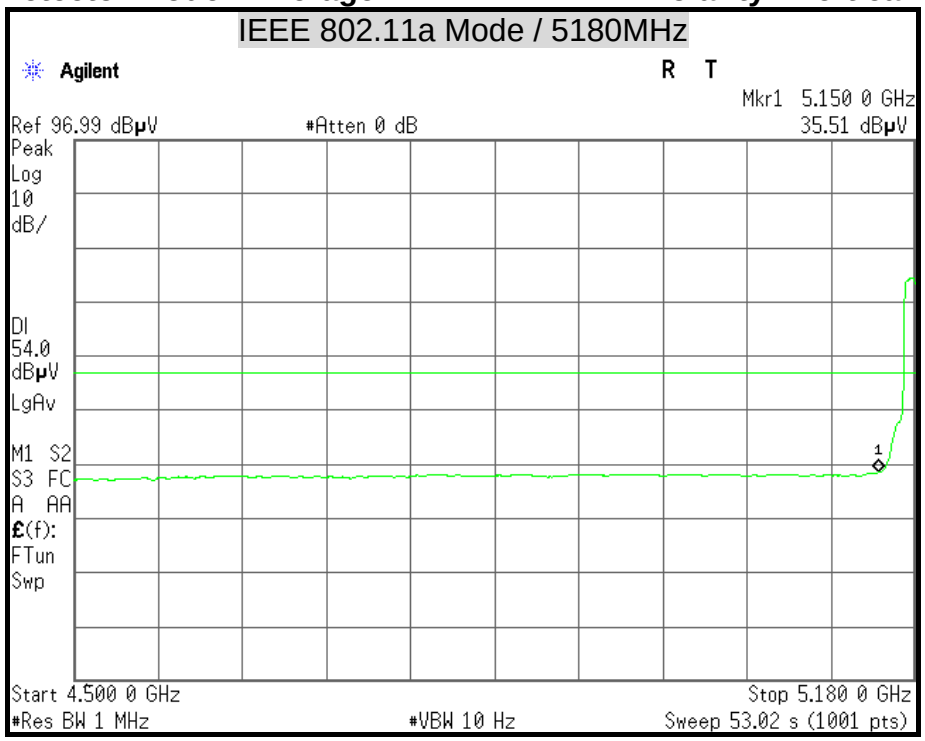
Detector Mode : Average **Polarity : Horizontal**



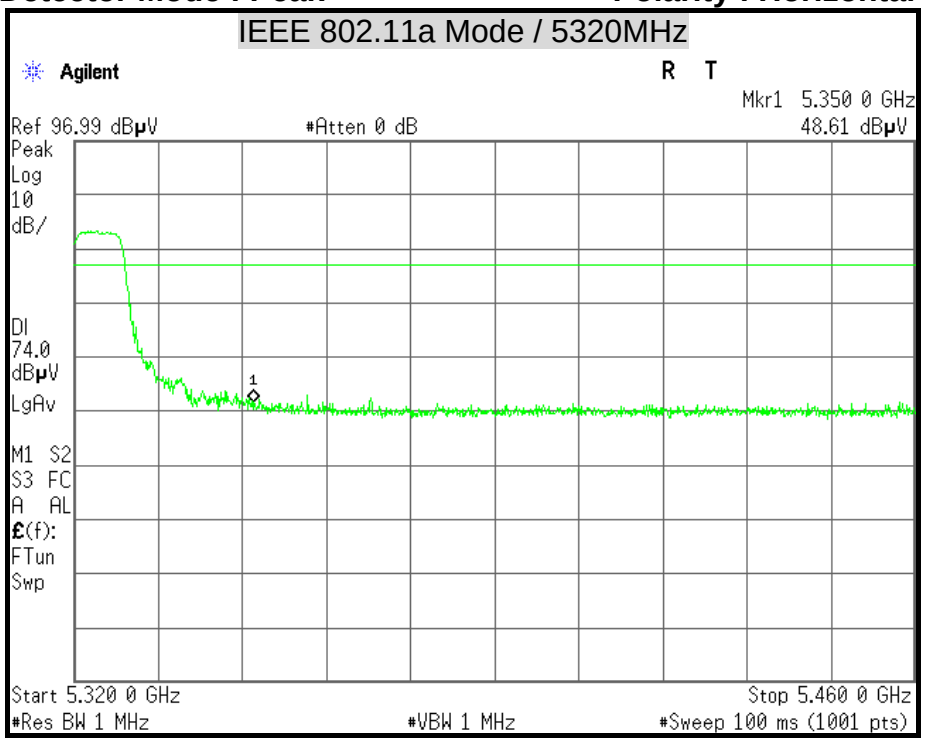
Detector Mode : Peak **Polarity : Vertical**



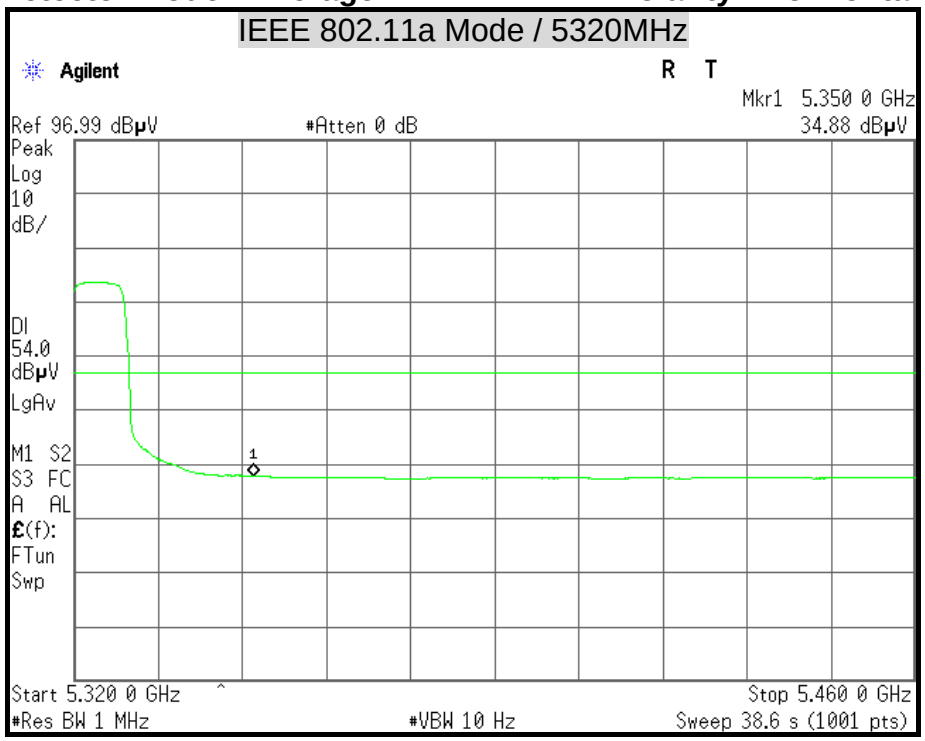
Detector Mode : Average **Polarity : Vertical**



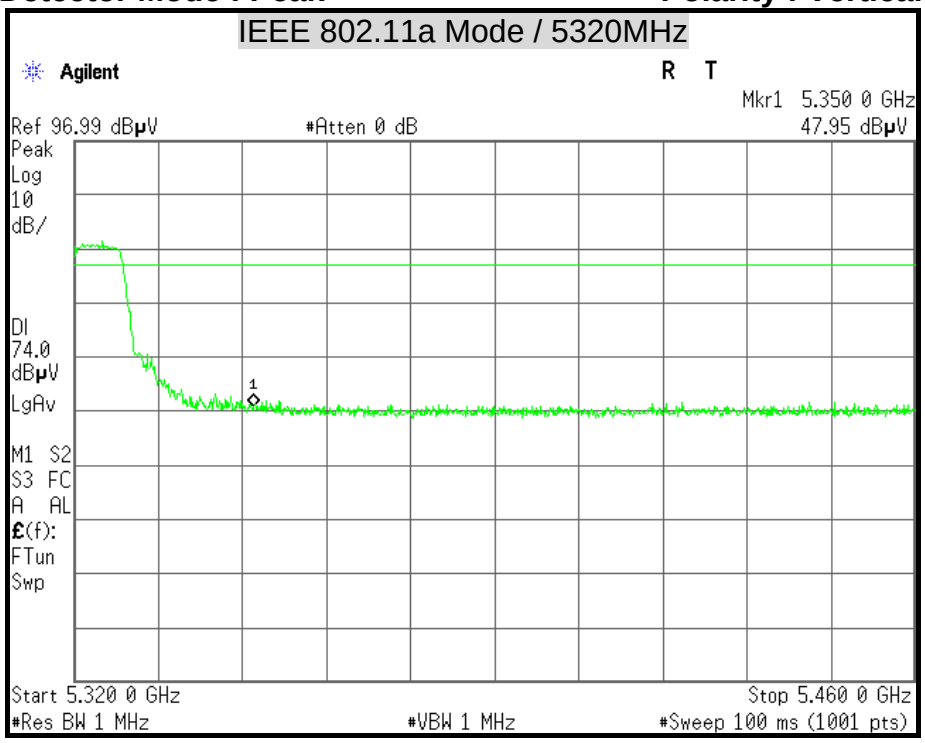
Detector Mode : Peak **Polarity : Horizontal**



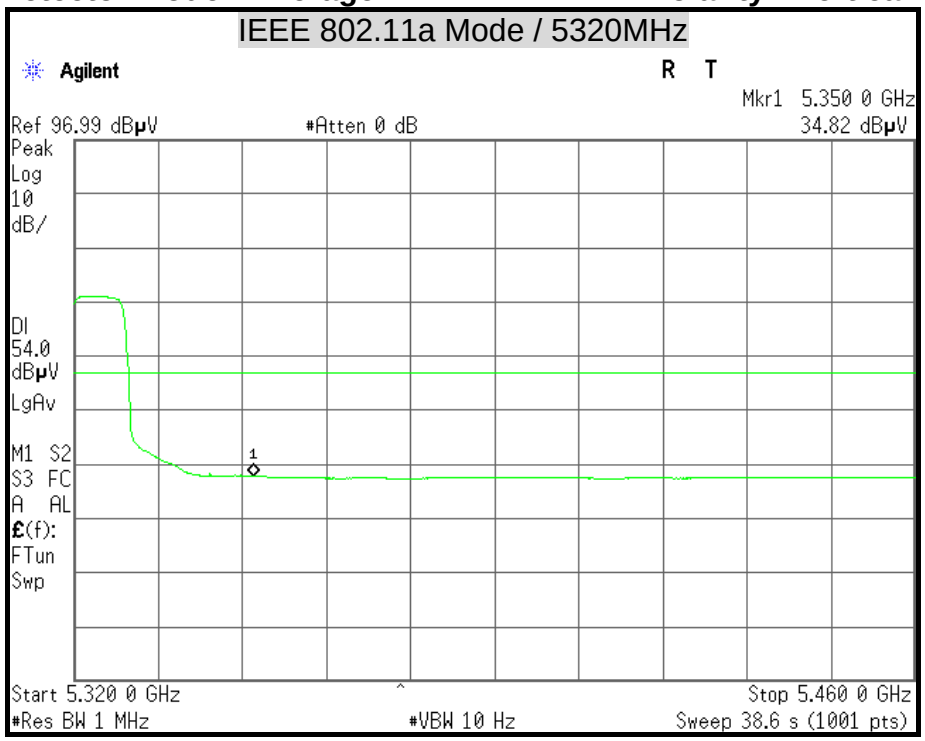
Detector Mode : Average **Polarity : Horizontal**



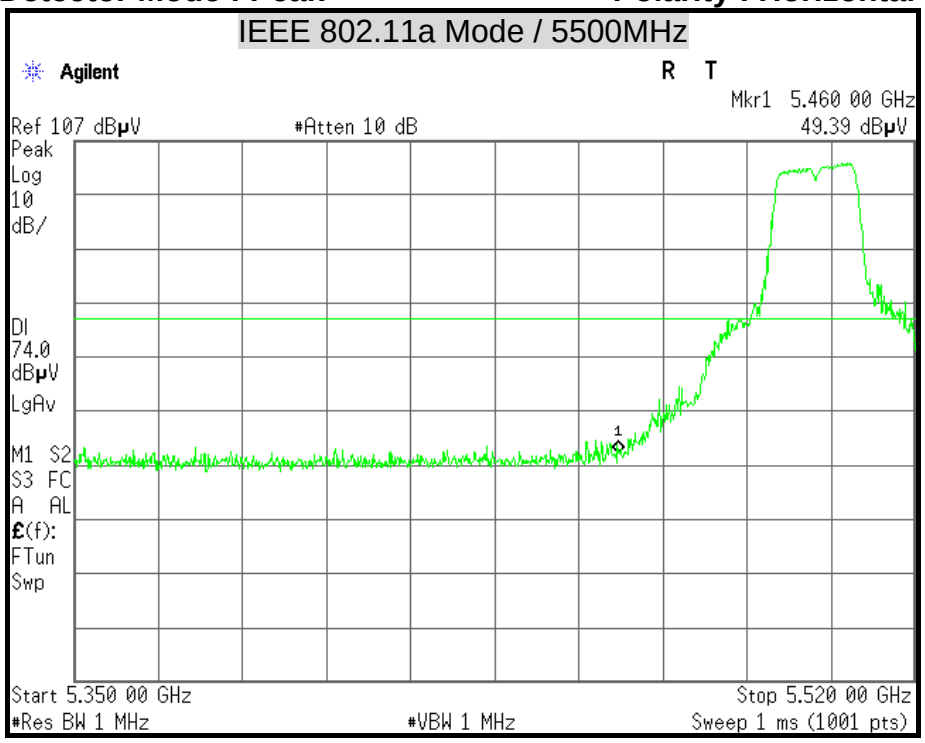
Detector Mode : Peak **Polarity : Vertical**



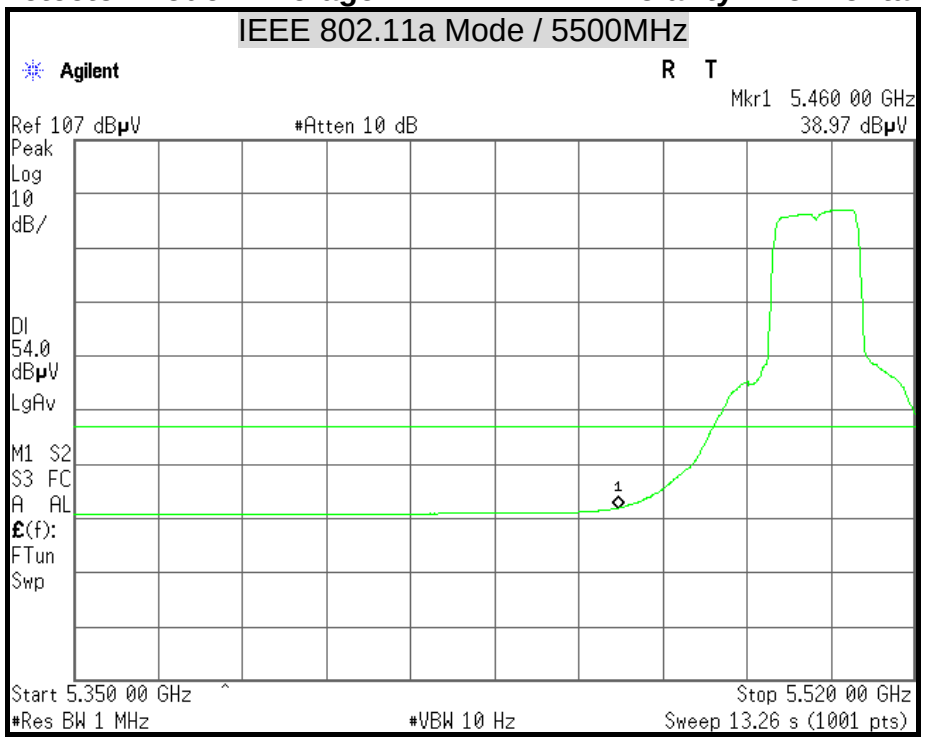
Detector Mode : Average **Polarity : Vertical**



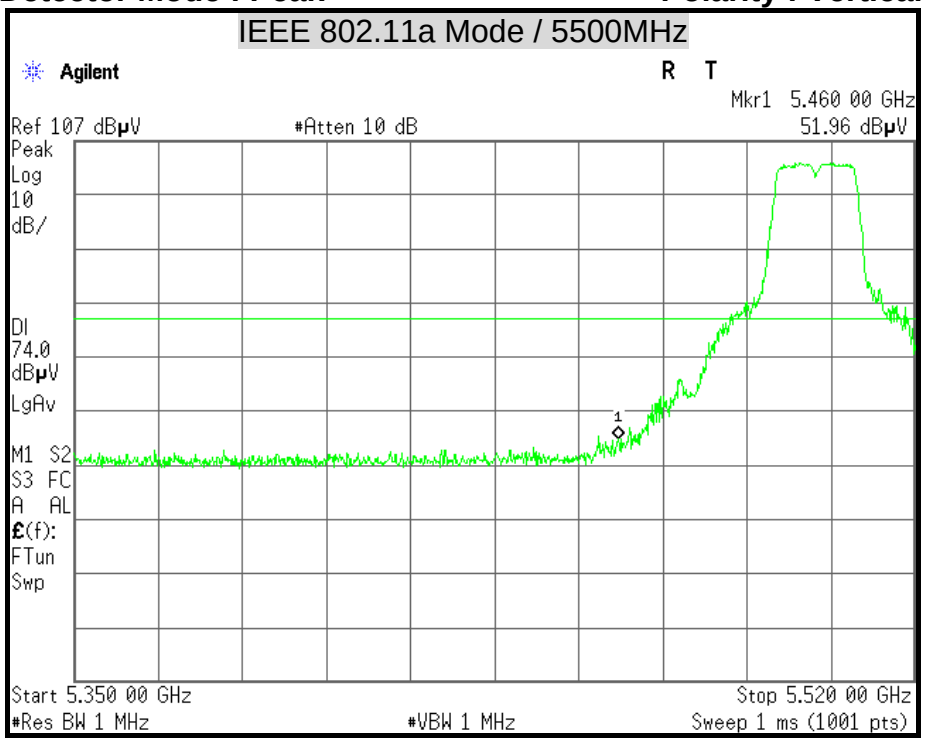
Detector Mode : Peak **Polarity : Horizontal**



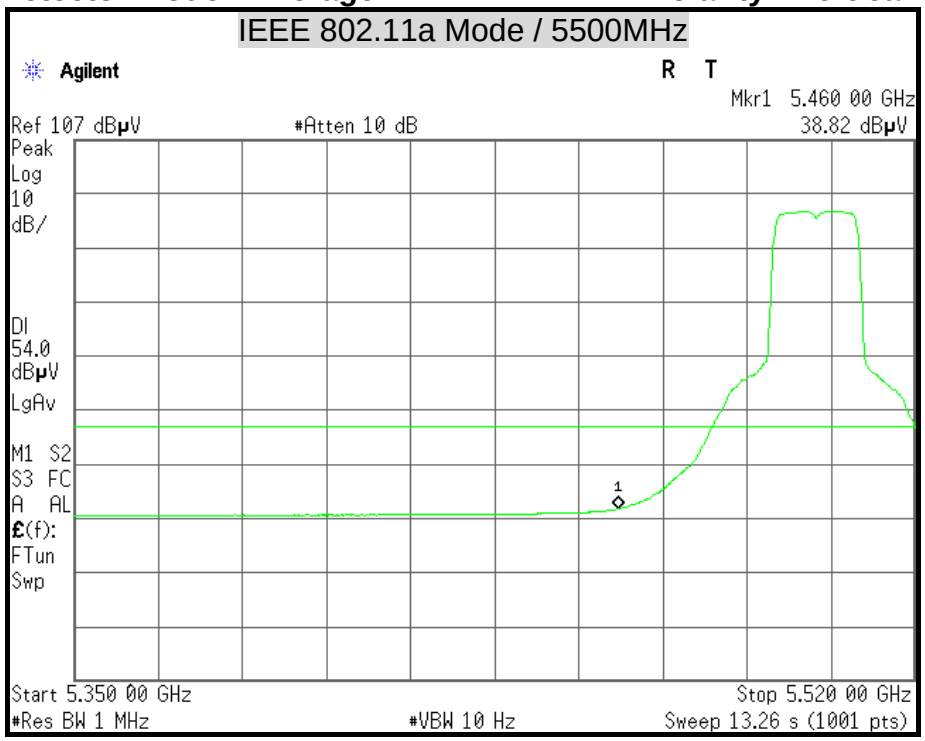
Detector Mode : Average **Polarity : Horizontal**



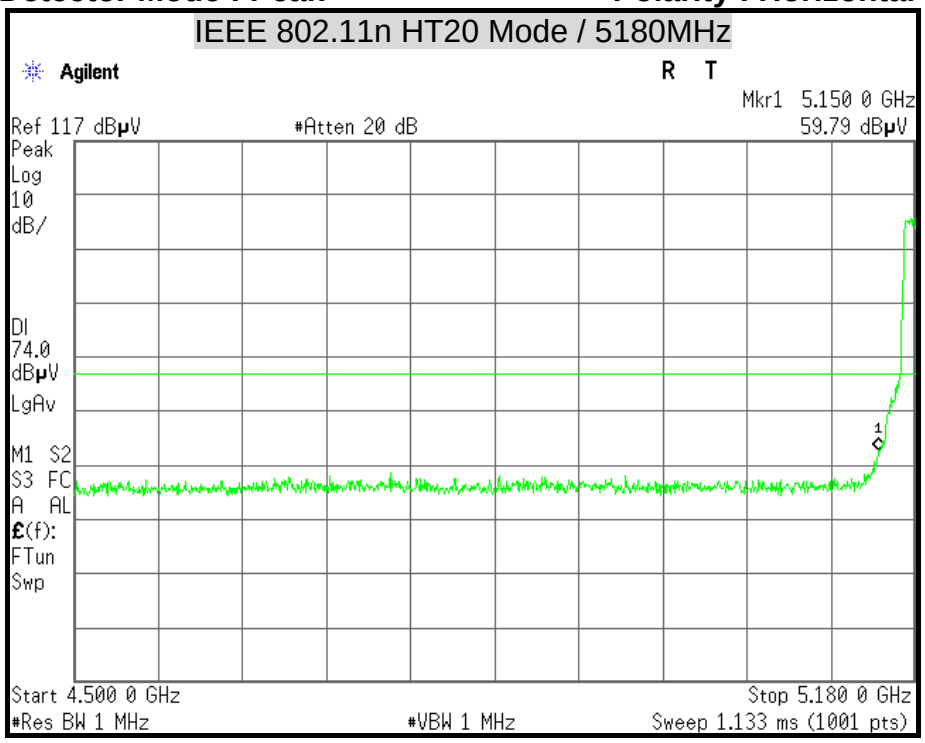
Detector Mode : Peak **Polarity : Vertical**



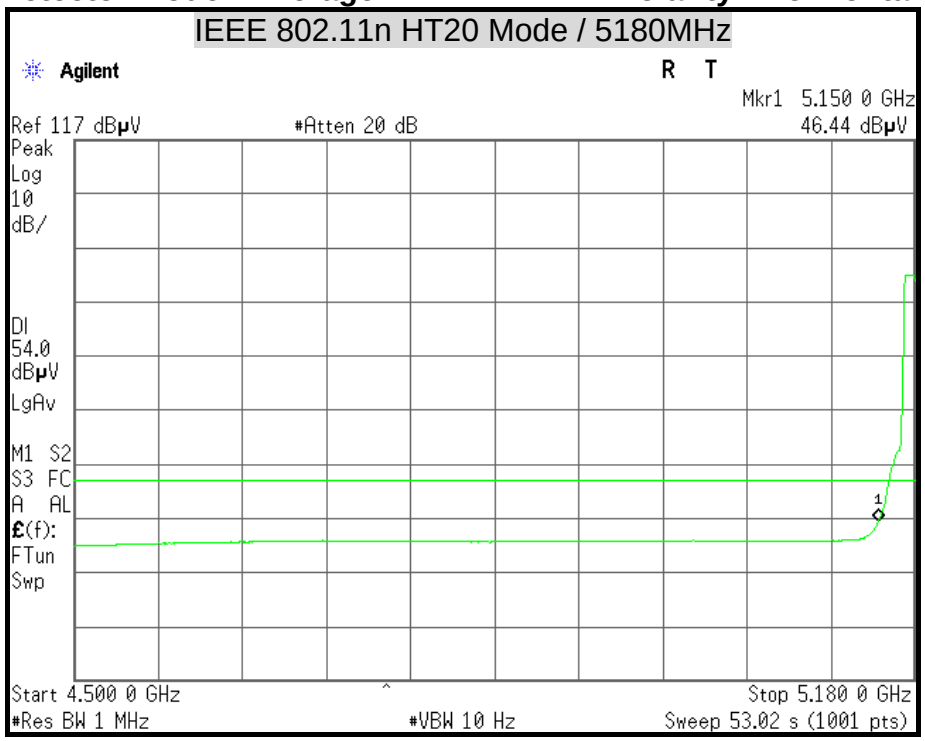
Detector Mode : Average **Polarity : Vertical**



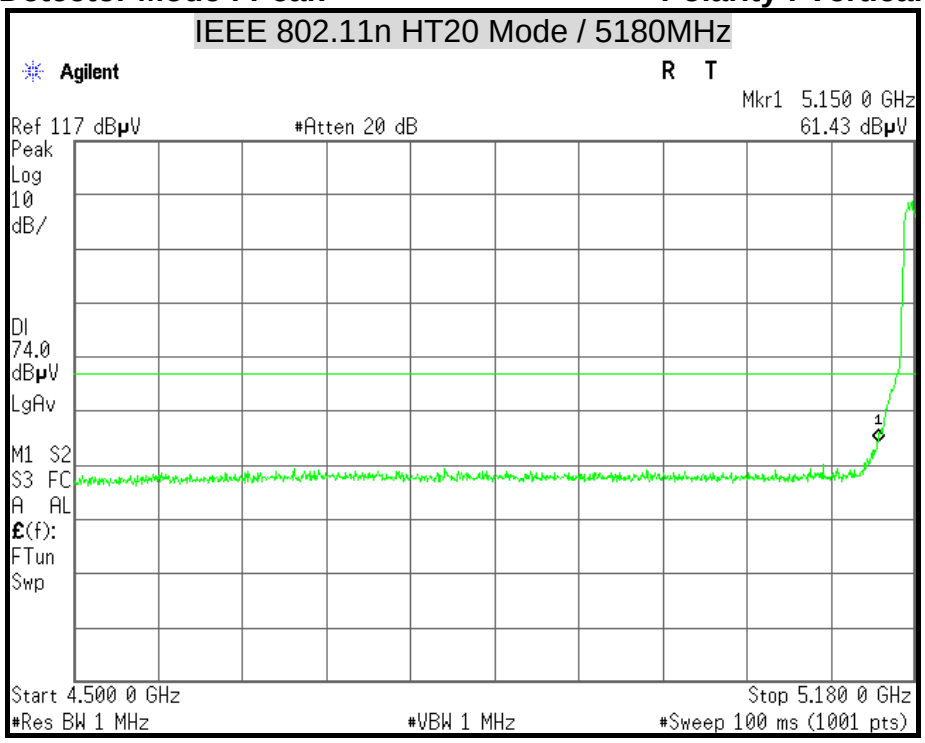
Detector Mode : Peak **Polarity : Horizontal**



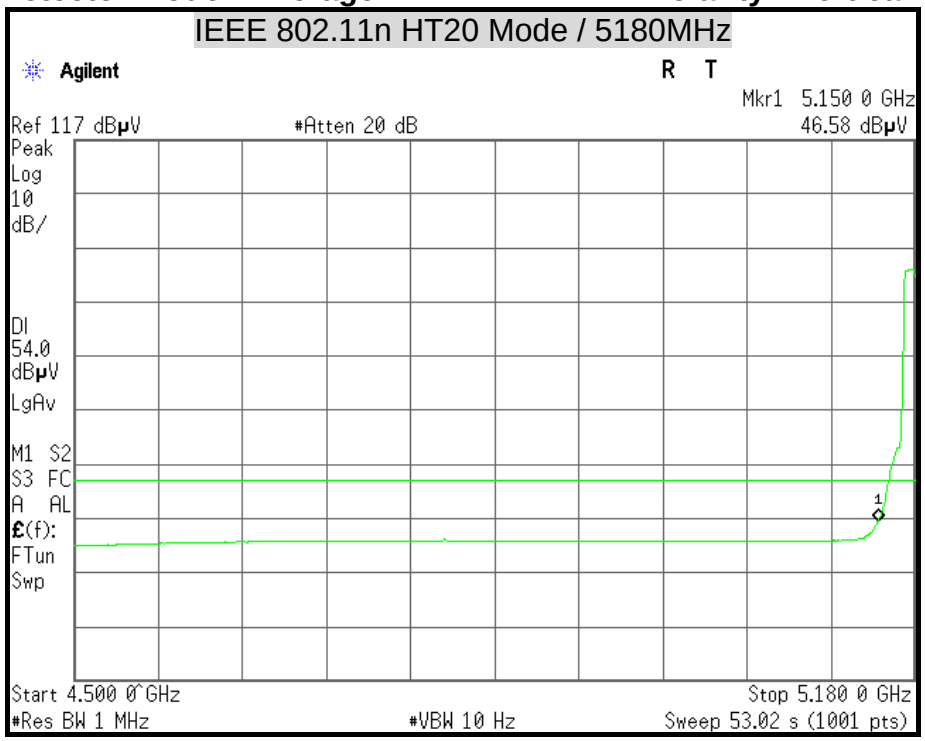
Detector Mode : Average **Polarity : Horizontal**



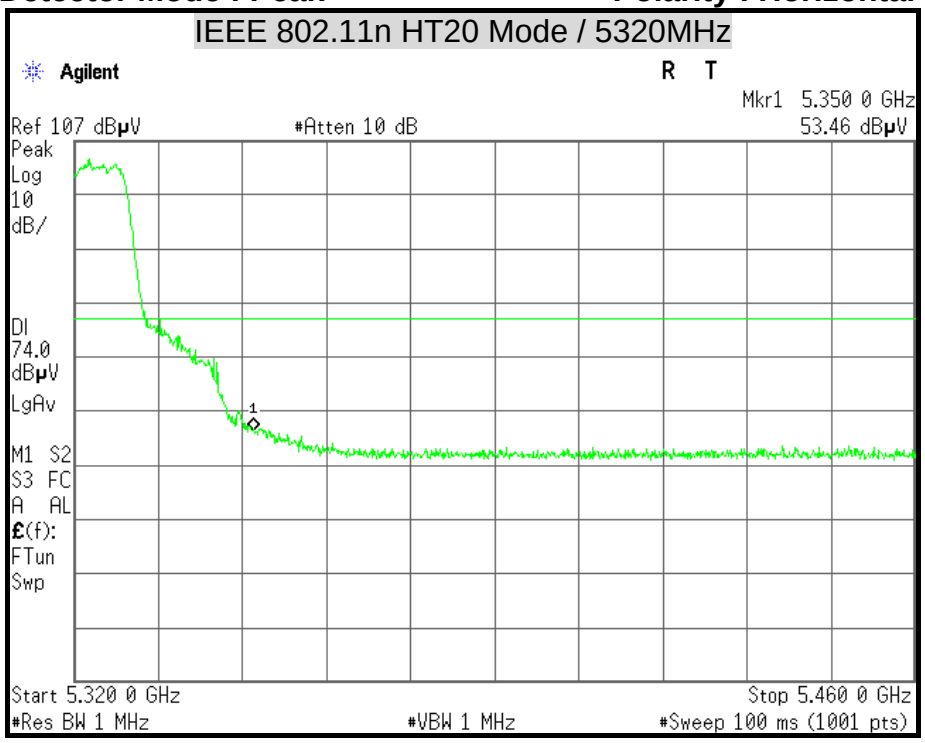
Detector Mode : Peak **Polarity : Vertical**



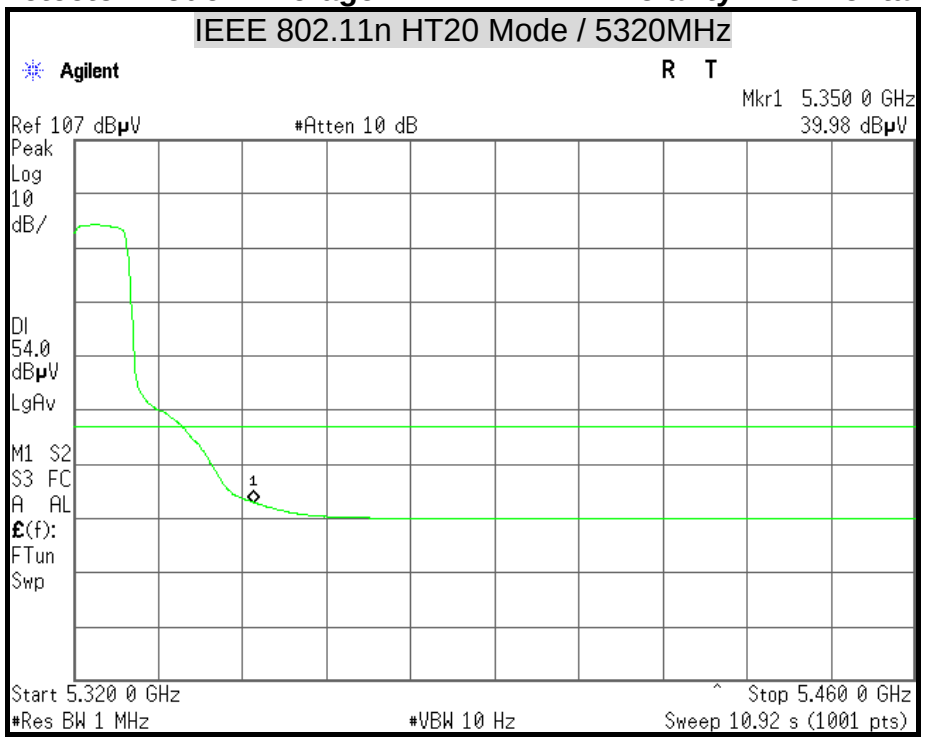
Detector Mode : Average **Polarity : Vertical**



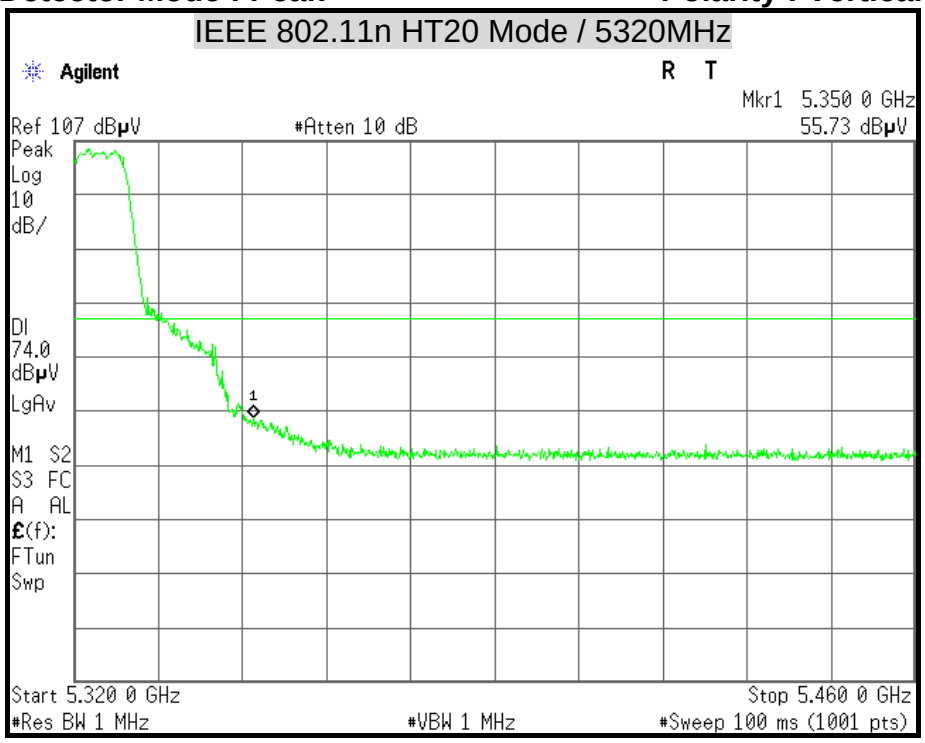
Detector Mode : Peak **Polarity : Horizontal**



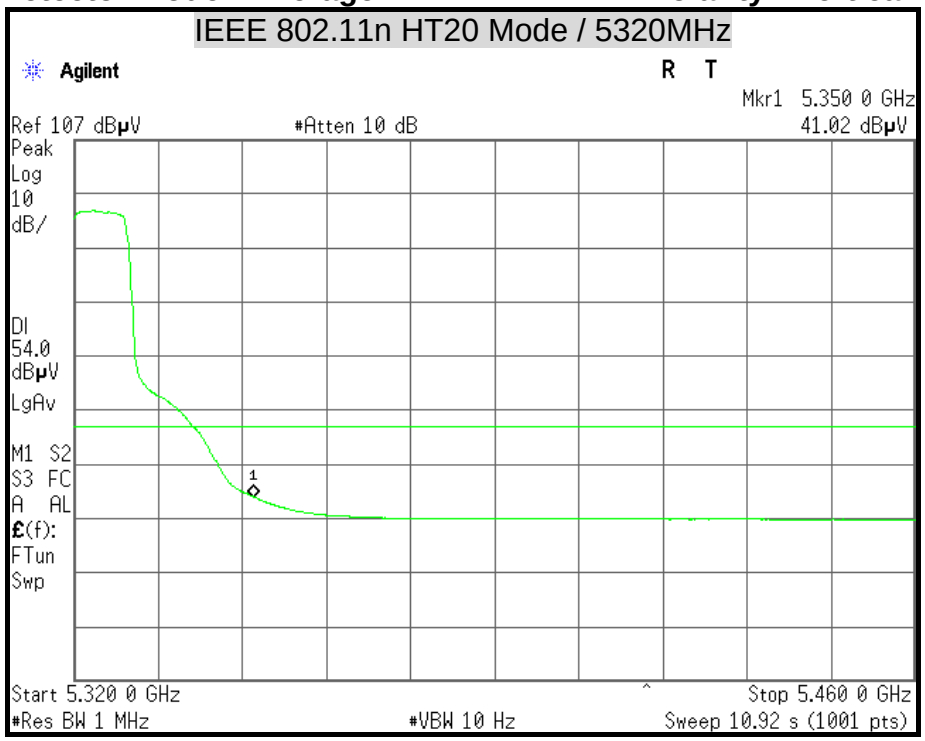
Detector Mode : Average **Polarity : Horizontal**



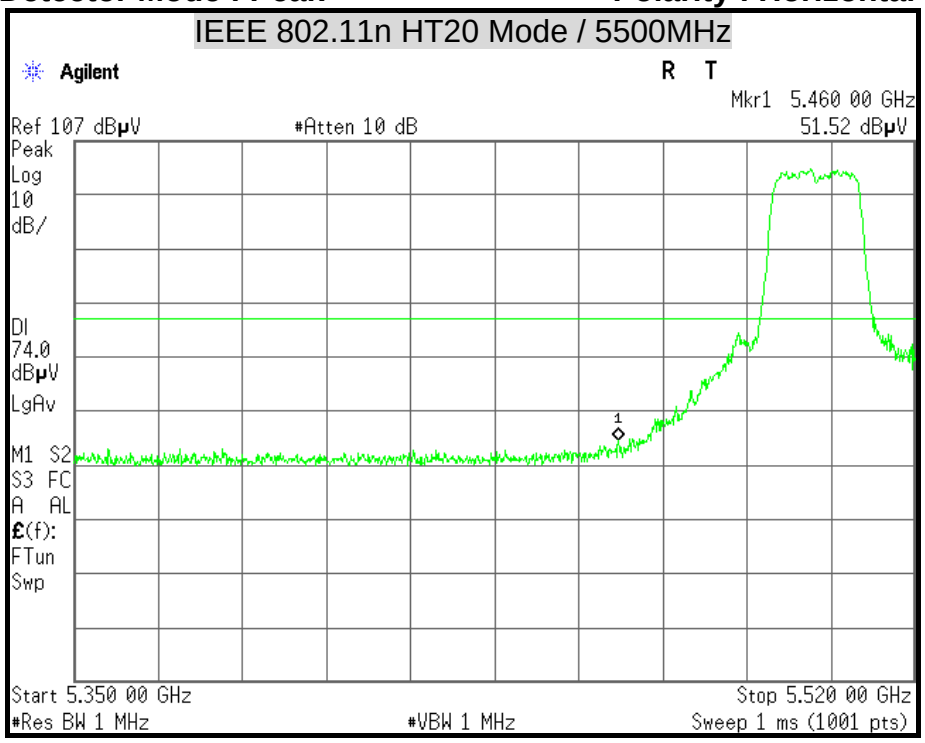
Detector Mode : Peak **Polarity : Vertical**



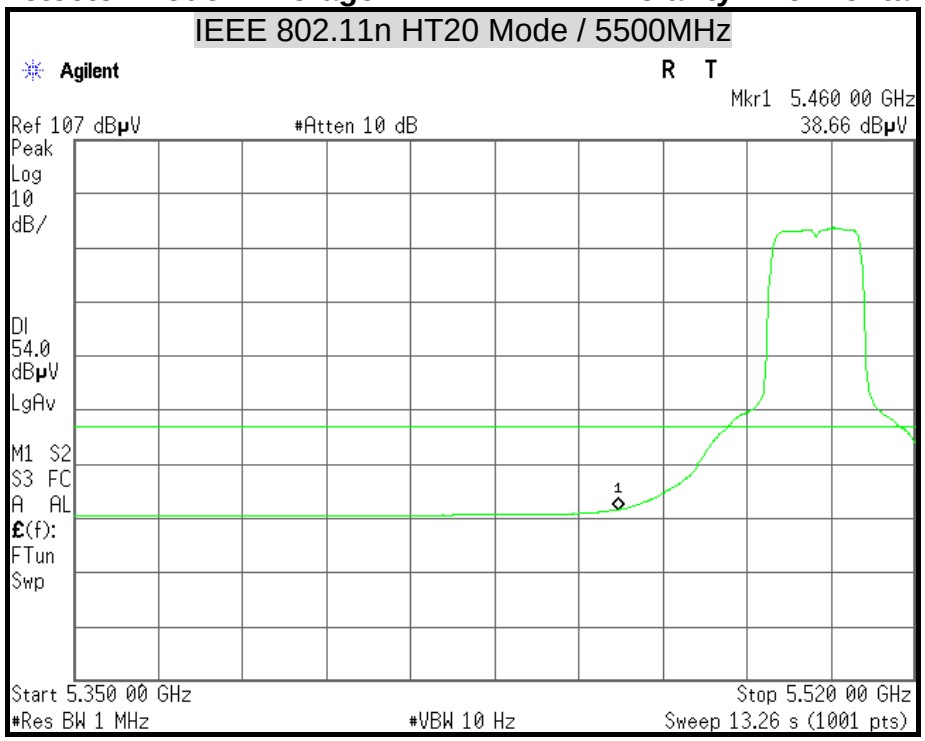
Detector Mode : Average **Polarity : Vertical**



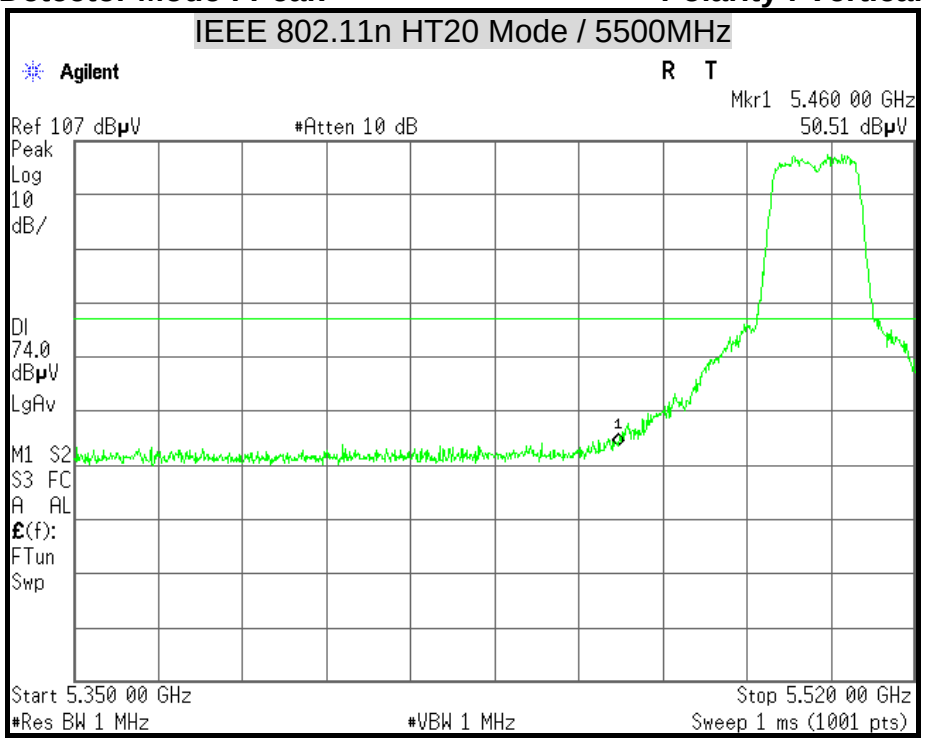
Detector Mode : Peak **Polarity : Horizontal**



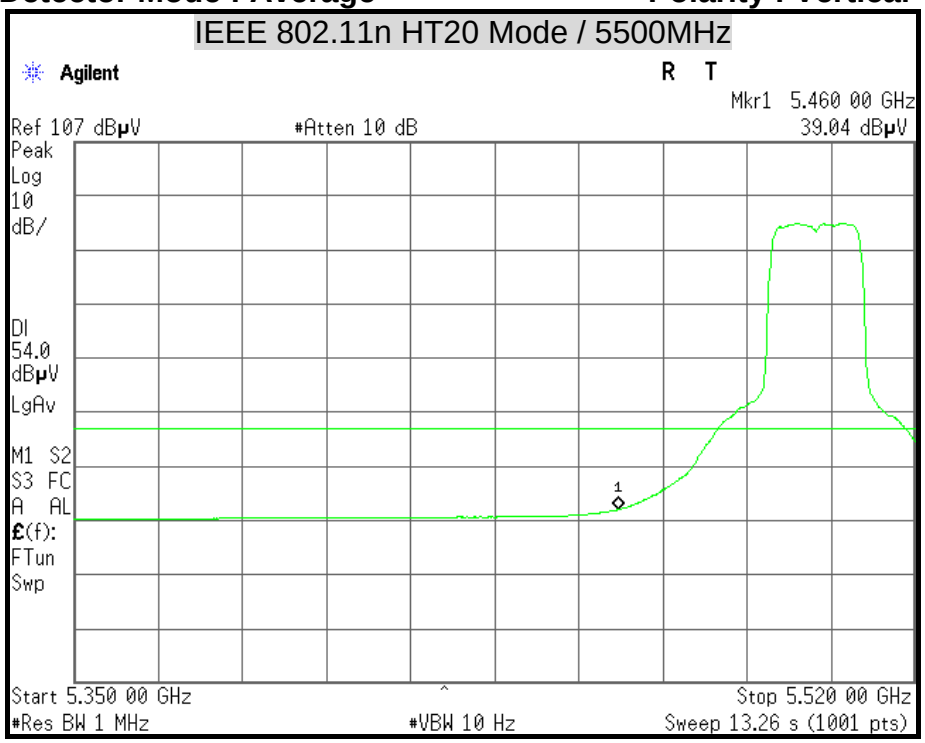
Detector Mode : Average **Polarity : Horizontal**



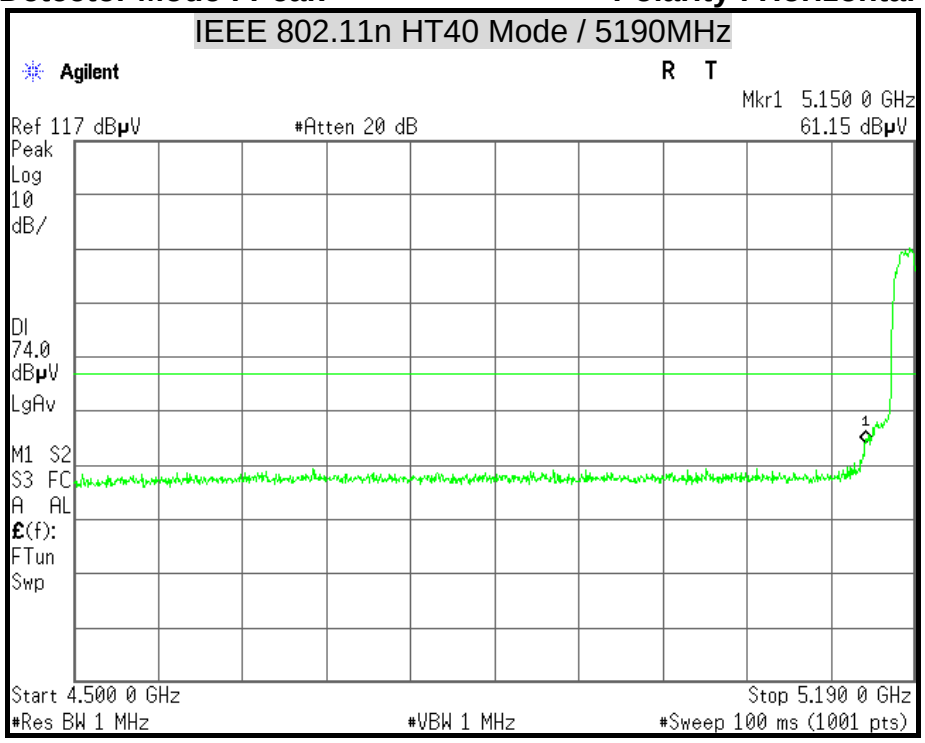
Detector Mode : Peak **Polarity : Vertical**



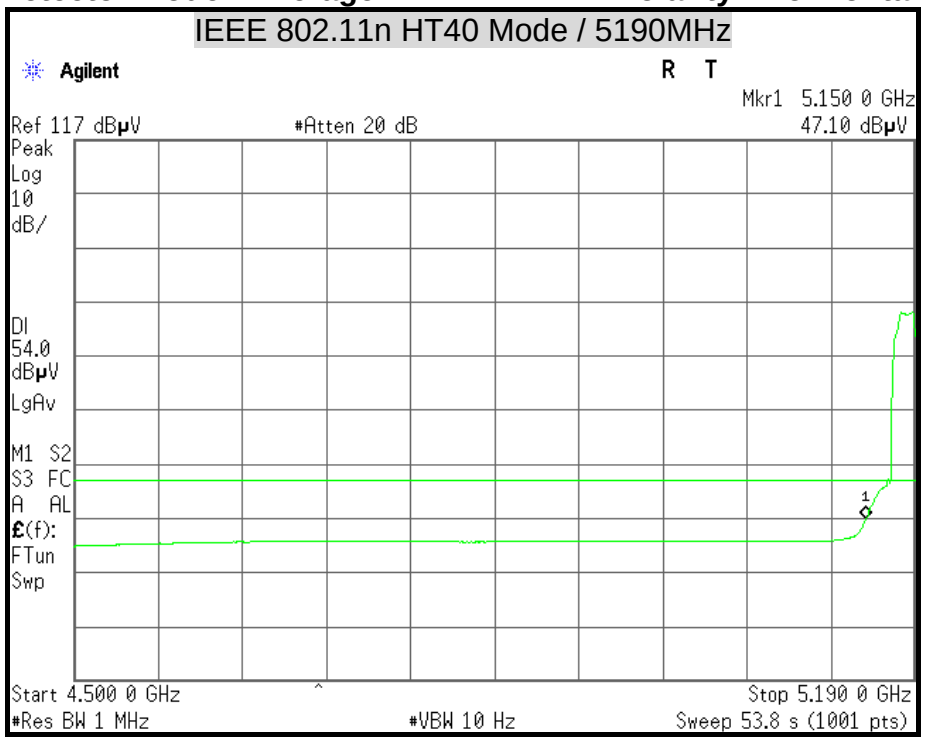
Detector Mode : Average **Polarity : Vertical**



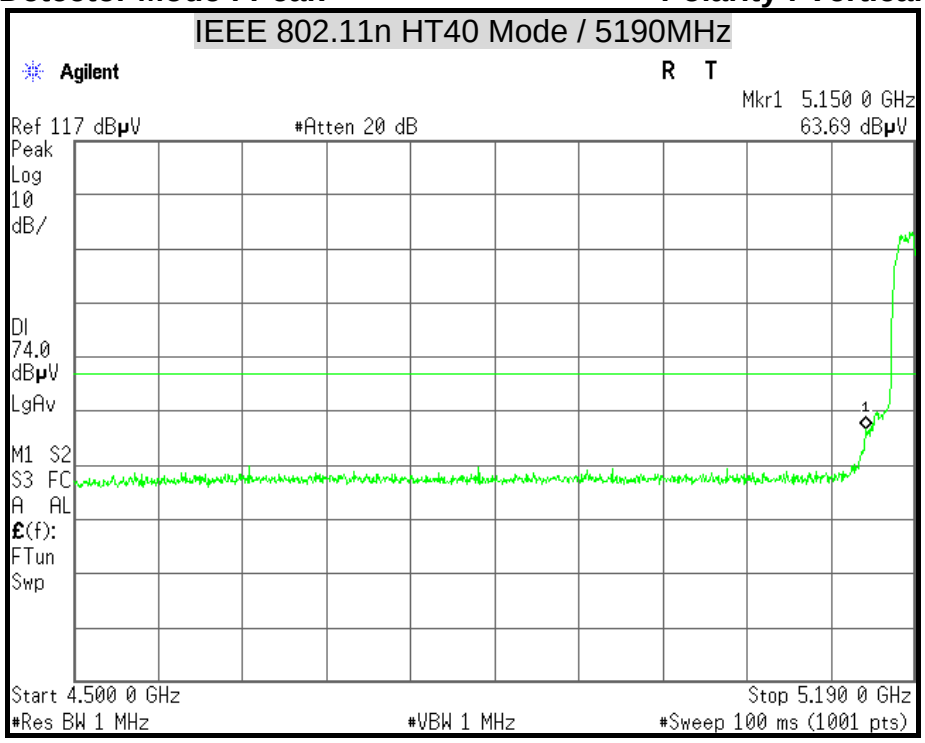
Detector Mode : Peak **Polarity : Horizontal**



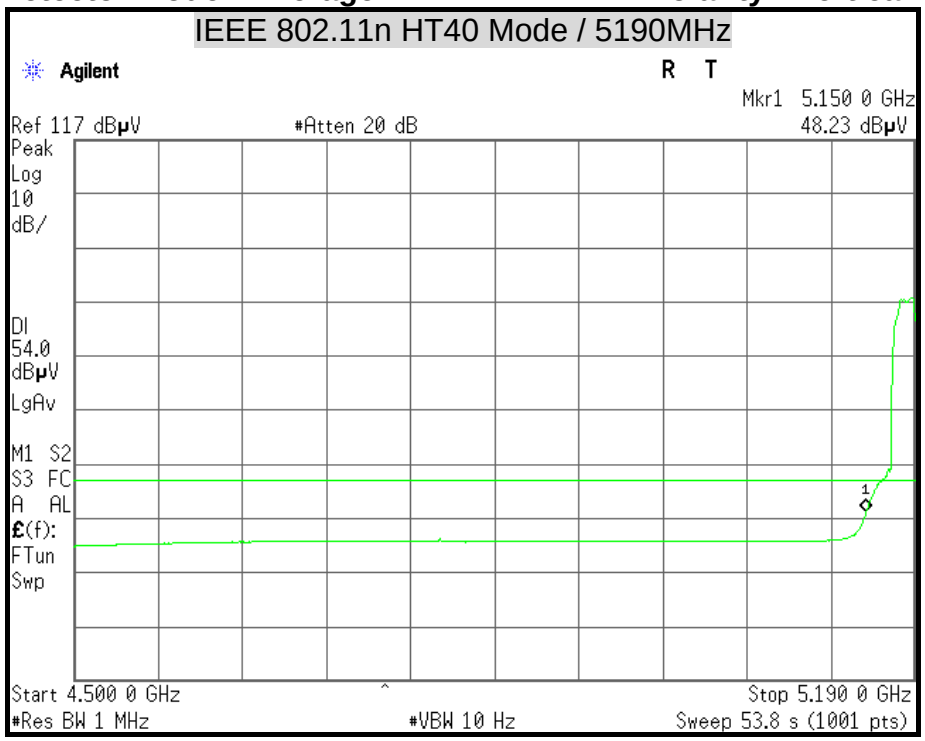
Detector Mode : Average **Polarity : Horizontal**



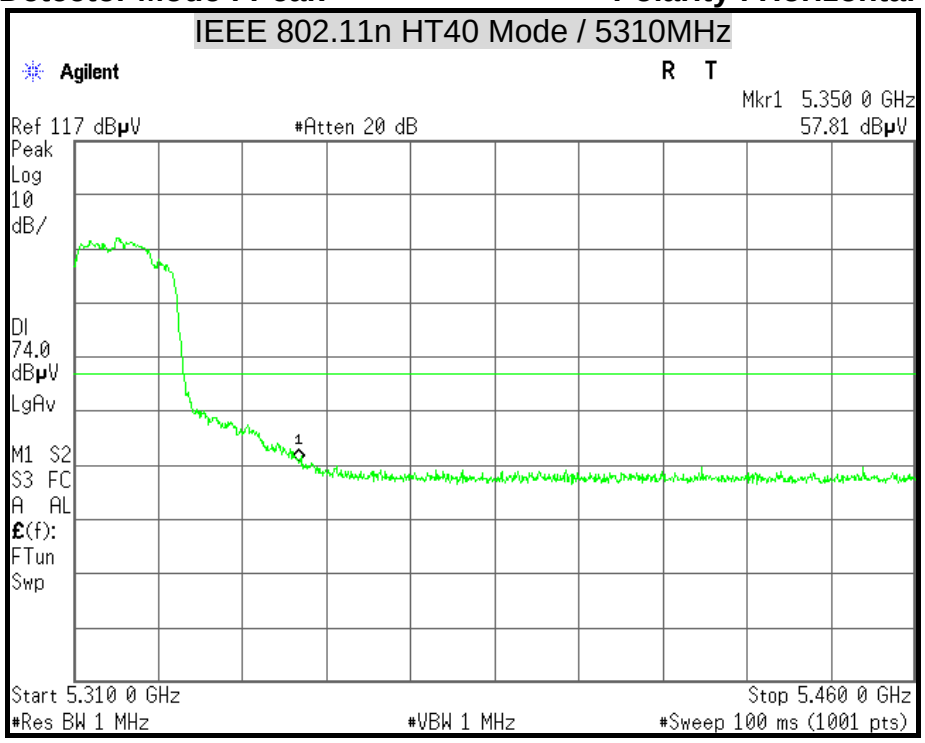
Detector Mode : Peak **Polarity : Vertical**



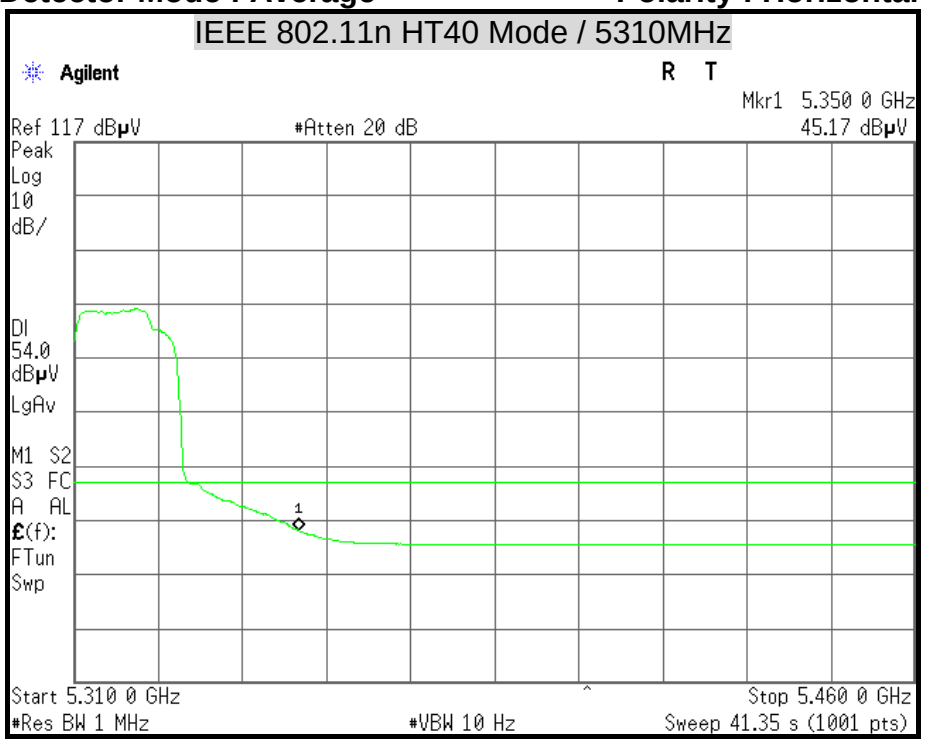
Detector Mode : Average **Polarity : Vertical**



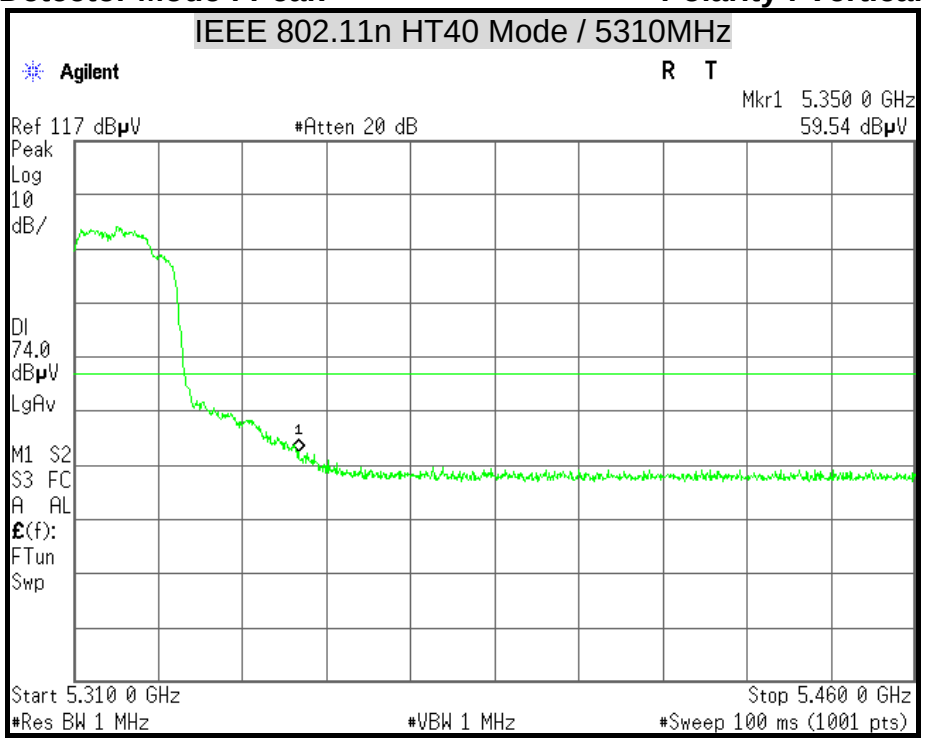
Detector Mode : Peak **Polarity : Horizontal**



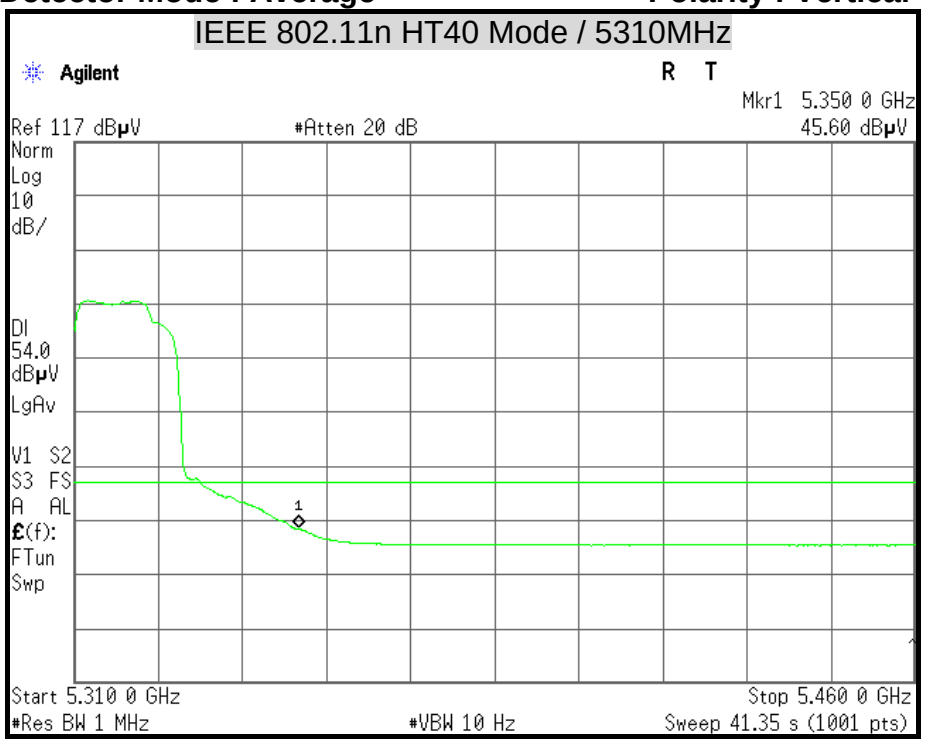
Detector Mode : Average **Polarity : Horizontal**



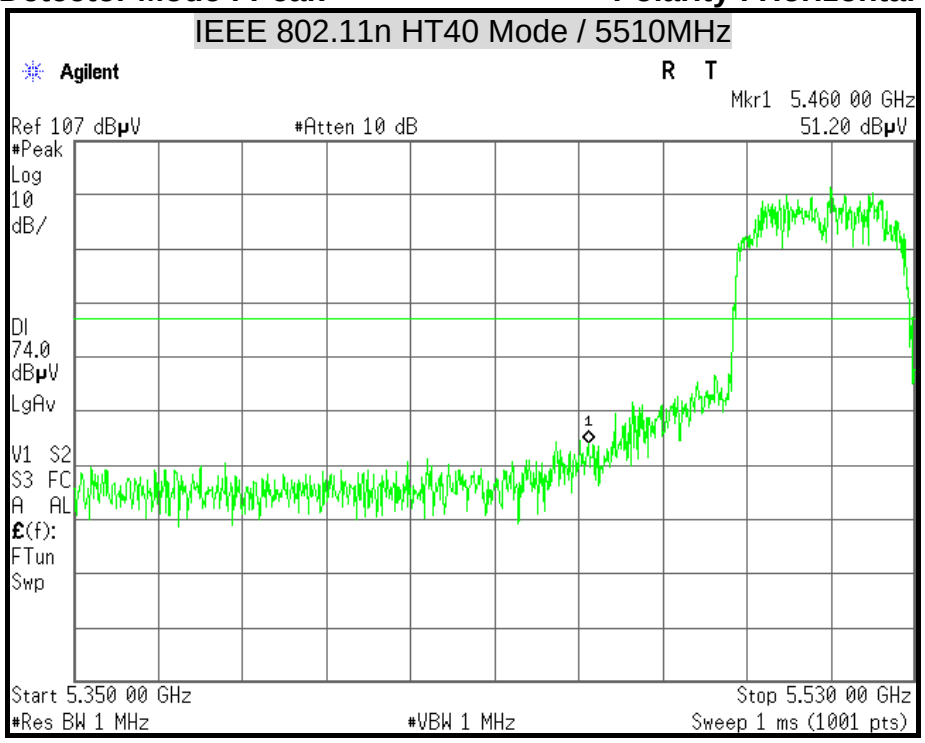
Detector Mode : Peak **Polarity : Vertical**



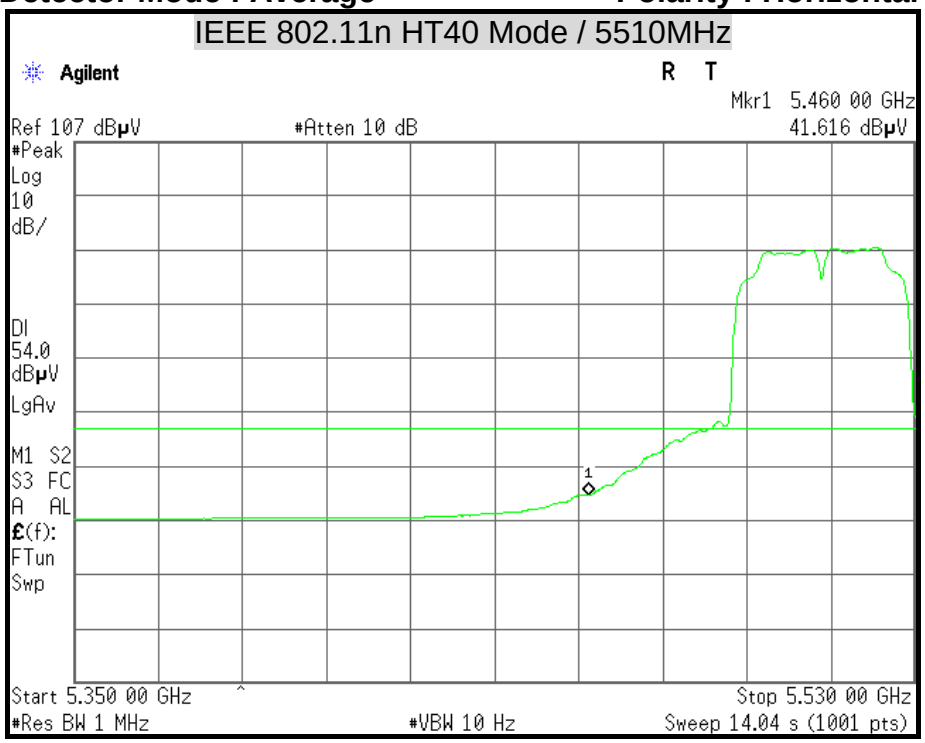
Detector Mode : Average **Polarity : Vertical**



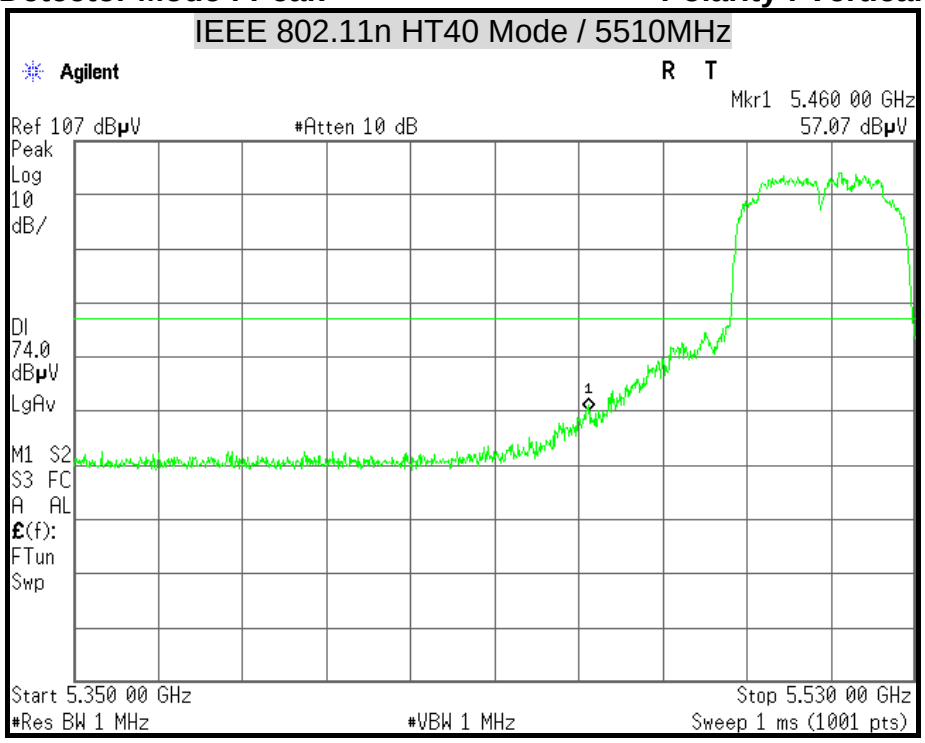
Detector Mode : Peak **Polarity : Horizontal**



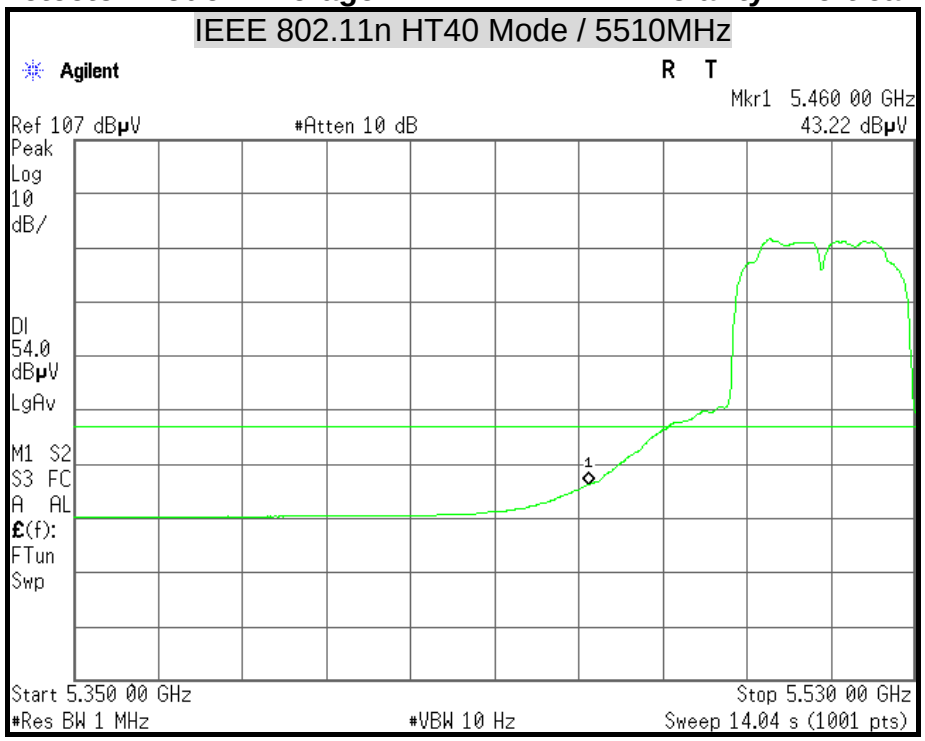
Detector Mode : Average **Polarity : Horizontal**



Detector Mode : Peak **Polarity : Vertical**



Detector Mode : Average **Polarity : Vertical**



7.7 CONDUCTED EMISSION

LIMITS

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

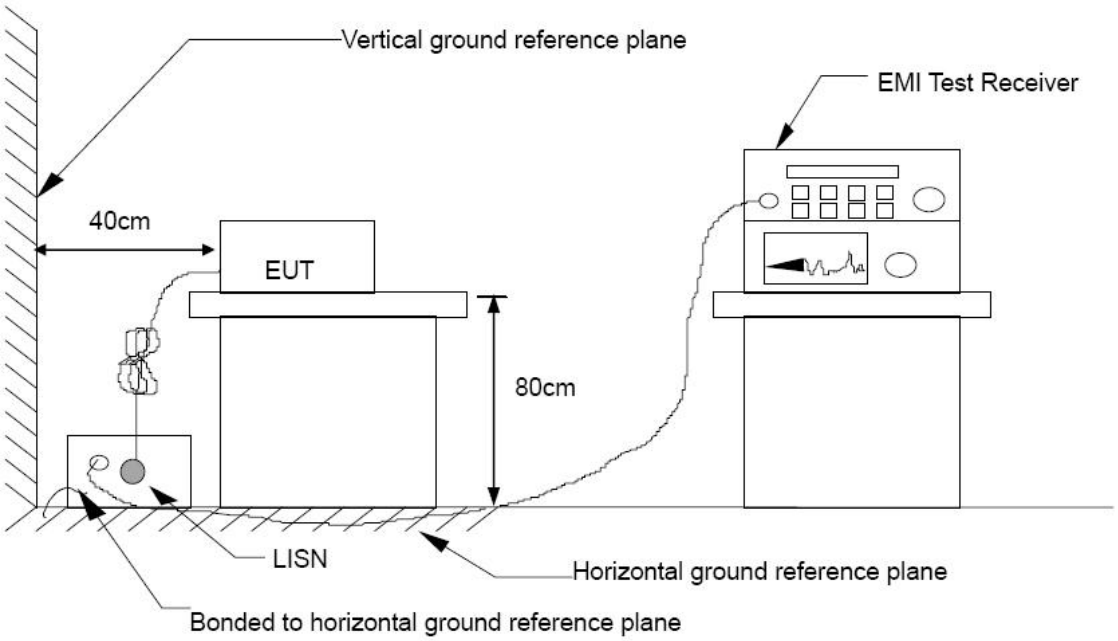
Frequency Range (MHz)	Conducted Limit (dBμv)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5.00	56	46
5.00 - 30.0	60	50

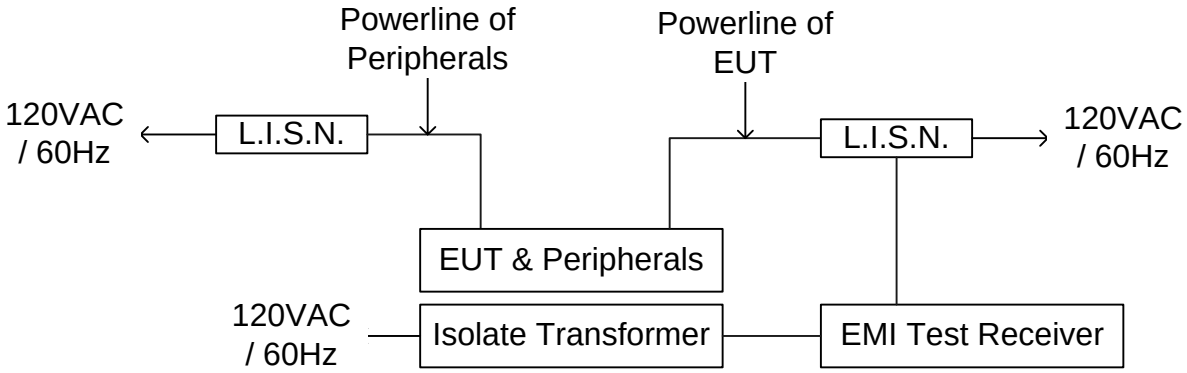
TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
L.I.S.N	SCHWARZBECK	NSLK 8127	8127-465	08/08/2011
L.I.S.N	SCHWARZBECK	NSLK 8127	8127-473	03/14/2012
EMI Receiver	ROHDE & SCHWARZ	ESCS 30	835418/008	10/24/2011
Pulse Limit	ROHDE & SCHWARZ	ESH3-Z2	100117	09/17/2011

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

TEST SETUP





TEST PROCEDURE

The basic test procedure was in accordance with ANSI C63.4:2003.

The test procedure is performed in a 4m × 3m × 2.4m (L×W×H) shielded room.

The EUT along with its peripherals were placed on a 1.0m (W) × 1.5m (L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.

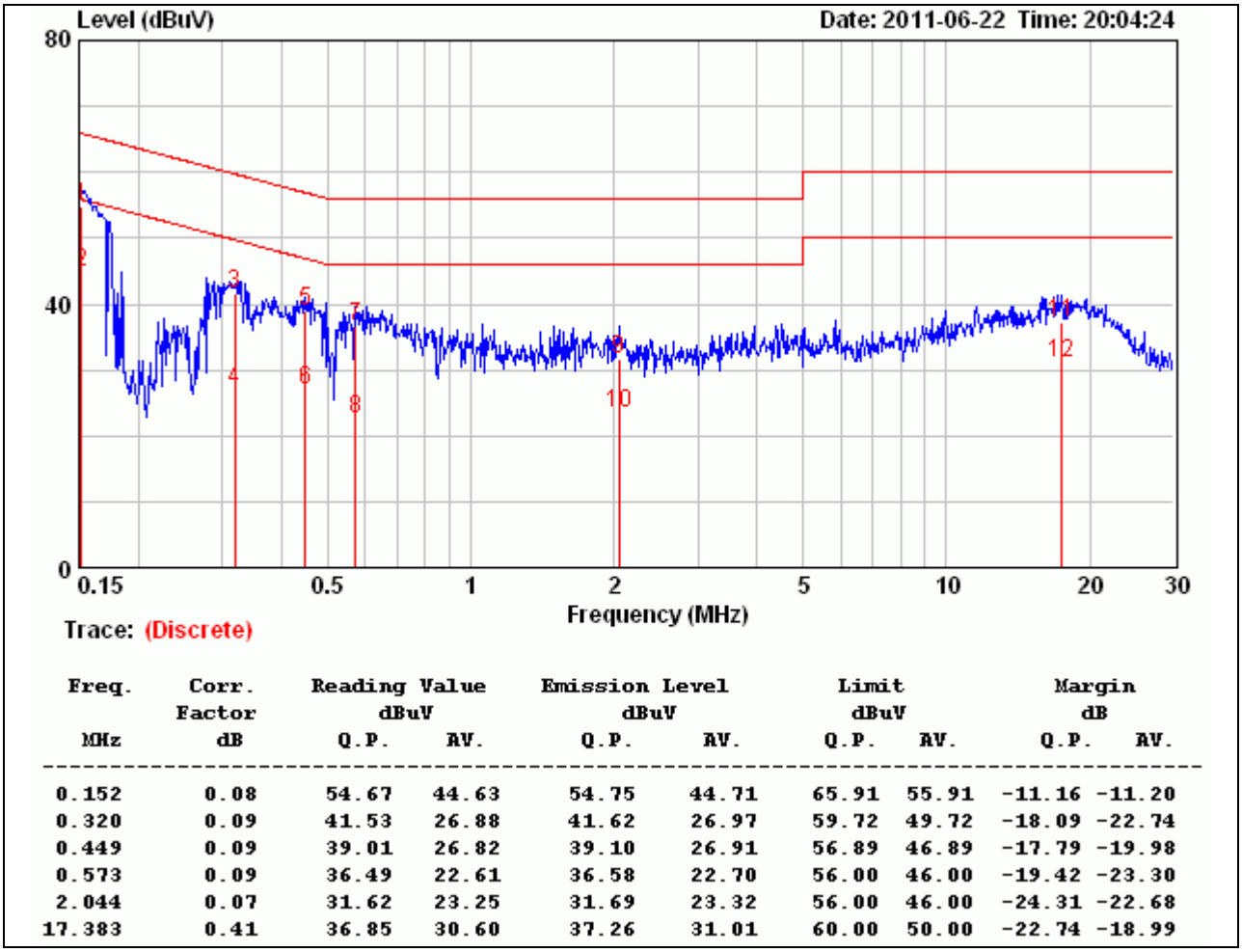
The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room.

The EUT was located so that the distance between the boundary of the EUT and the closest surface of the LISN is 0.8 m. Where a mains flexible cord was provided by the manufacturer shall be 1 m long, or if in excess of 1 m, the excess cable was folded back and forth as far as possible so as to form a bundle not exceeding 0.4 m in length.

TEST RESULTS

Product Name	NOTEBOOK COMPUTER	Test By	Rueyyan Lin
Model	X500	Test Date	2011/06/22
Test Mode	TX Mode	Temp. & Humidity	24.5°C, 56%

LINE



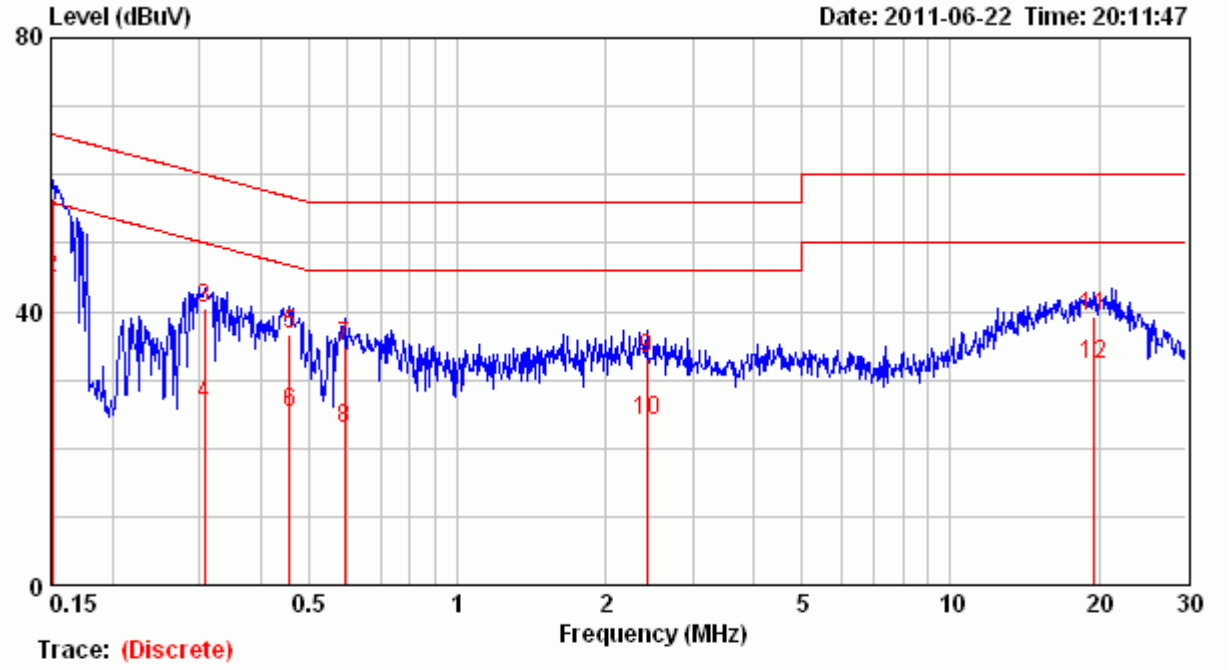
Freq. MHz	Corr. Factor dB	Reading Value dBuV Q.P.	Reading Value dBuV AV.	Emission Level dBuV Q.P.	Emission Level dBuV AV.	Limit dBuV Q.P.	Limit dBuV AV.	Margin dB Q.P.	Margin dB AV.
0.152	0.08	54.67	44.63	54.75	44.71	65.91	55.91	-11.16	-11.20
0.320	0.09	41.53	26.88	41.62	26.97	59.72	49.72	-18.09	-22.74
0.449	0.09	39.01	26.82	39.10	26.91	56.89	46.89	-17.79	-19.98
0.573	0.09	36.49	22.61	36.58	22.70	56.00	46.00	-19.42	-23.30
2.044	0.07	31.62	23.25	31.69	23.32	56.00	46.00	-24.31	-22.68
17.383	0.41	36.85	30.60	37.26	31.01	60.00	50.00	-22.74	-18.99

Remark:

1. *Correction Factor = Insertion loss + Cable loss*
2. *Emission level = Reading Value + Correction factor*
3. *Margin value = Emission level – Limit value*

Product Name	NOTEBOOK COMPUTER	Test By	Rueyyan Lin
Model	X500	Test Date	2011/06/22
Test Mode	TX Mode	Temp. & Humidity	24.5°C, 56%

NEUTRAL



Freq. MHz	Corr. Factor dB	Reading Value dBuV Q.P.	Reading Value dBuV AV.	Emission Level dBuV Q.P.	Emission Level dBuV AV.	Limit dBuV Q.P.	Limit dBuV AV.	Margin dB Q.P.	Margin dB AV.
0.151	0.14	56.42	44.76	56.56	44.90	65.96	55.96	-9.40	-11.06
0.307	0.14	40.27	26.18	40.41	26.32	60.06	50.06	-19.65	-23.74
0.456	0.14	36.52	24.95	36.66	25.09	56.76	46.76	-20.10	-21.67
0.592	0.15	34.65	22.66	34.80	22.81	56.00	46.00	-21.20	-23.19
2.422	0.15	33.02	23.79	33.17	23.94	56.00	46.00	-22.83	-22.06
19.428	0.32	39.02	31.88	39.34	32.20	60.00	50.00	-20.66	-17.80

Remark:

1. Correction Factor = Insertion loss + Cable loss
2. Emission level = Reading Value + Correction factor
3. Margin value = Emission level – Limit value

7.8 FREQUENCY STABILITY

LIMITS

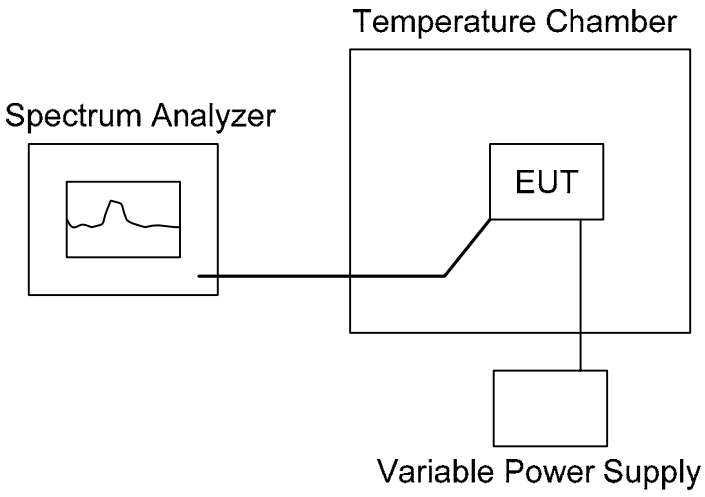
§ 15.407 (g) manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4407B	US41443108	08/12/2011
Temp. & Humid. Chamber	TERCHY	MHC-120L	960424	09/14/2011

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

TEST SETUP



TEST PROCEDURE

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20℃ operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -20℃. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10℃ increased per stage until the highest temperature of +50℃ reached.

TEST RESULTS

IEEE 802.11a mode

CH Low / 5180MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	120	5179.994280	5150~5250	PASS
40		5180.001009	5150~5250	
30		5179.998525	5150~5250	
20		5179.982668	5150~5250	
10		5180.008516	5150~5250	
0		5179.979187	5150~5250	
-10		5179.988953	5150~5250	
-20		5179.971851	5150~5250	

CH Low / 5180MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	108	5179.983826	5150~5250	PASS
	120	5180.004066	5150~5250	
	132	5180.002293	5150~5250	

IEEE 802.11a mode

CH High / 5240MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5240.011483	5150~5250	PASS
40		5239.989052	5150~5250	
30		5239.971710	5150~5250	
20		5239.999063	5150~5250	
10		5240.012907	5150~5250	
0		5240.007675	5150~5250	
-10		5239.981583	5150~5250	
-20		5240.006497	5150~5250	

CH High / 5240MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5239.974893	5150~5250	PASS
	120	5239.996009	5150~5250	
	132	5240.007005	5150~5250	

IEEE 802.11a mode

CH Low / 5260MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5260.007146	5250~5350	PASS
40		5259.974890	5250~5350	
30		5259.971883	5250~5350	
20		5260.015350	5250~5350	
10		5259.977986	5250~5350	
0		5259.976992	5250~5350	
-10		5260.009784	5250~5350	
-20		5259.985933	5250~5350	

CH Low / 5260MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5260.002865	5250~5350	PASS
	120	5259.971089	5250~5350	
	132	5259.970435	5250~5350	

IEEE 802.11a mode

CH High / 5320MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5319.993267	5250~5350	PASS
40		5319.980488	5250~5350	
30		5320.020199	5250~5350	
20		5320.011366	5250~5350	
10		5320.014059	5250~5350	
0		5320.000178	5250~5350	
-10		5319.998094	5250~5350	
-20		5319.982933	5250~5350	

CH High / 5320MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5320.012065	5250~5350	PASS
	120	5319.993859	5250~5350	
	132	5320.009046	5250~5350	

IEEE 802.11a mode

CH Low / 5500MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5499.995987	5470~5725	PASS
40		5499.996122	5470~5725	
30		5499.995374	5470~5725	
20		5499.991104	5470~5725	
10		5499.983538	5470~5725	
0		5499.987191	5470~5725	
-10		5500.009796	5470~5725	
-20		5500.005004	5470~5725	

CH Low / 5500MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5499.989054	5470~5725	PASS
	120	5499.995972	5470~5725	
	132	5500.002928	5470~5725	

IEEE 802.11a mode

CH High / 5700MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5700.011010	5470~5725	PASS
40		5699.976483	5470~5725	
30		5700.003691	5470~5725	
20		5699.974725	5470~5725	
10		5699.977013	5470~5725	
0		5700.006582	5470~5725	
-10		5700.005498	5470~5725	
-20		5700.019957	5470~5725	

CH High / 5700MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5700.011523	5470~5725	PASS
	120	5699.975469	5470~5725	
	132	5699.991407	5470~5725	

IEEE 802.11n HT20 mode

CH Low / 5180MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5180.012254	5150~5250	PASS
40		5179.980279	5150~5250	
30		5180.003689	5150~5250	
20		5179.997802	5150~5250	
10		5179.971316	5150~5250	
0		5180.006715	5150~5250	
-10		5179.983170	5150~5250	
-20		5179.992990	5150~5250	

CH Low / 5180MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5180.014738	5150~5250	PASS
	120	5179.986089	5150~5250	
	132	5179.993759	5150~5250	

IEEE 802.11n HT20 mode

CH High / 5240MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5239.998866	5150~5250	PASS
40		5240.008763	5150~5250	
30		5240.007590	5150~5250	
20		5240.014107	5150~5250	
10		5240.008261	5150~5250	
0		5239.973581	5150~5250	
-10		5240.013917	5150~5250	
-20		5239.979161	5150~5250	

CH High / 5240MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5239.991183	5150~5250	PASS
	120	5239.986526	5150~5250	
	132	5239.998332	5150~5250	

IEEE 802.11n HT20 mode

CH Low / 5260MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5259.982565	5250~5350	PASS
40		5260.019851	5250~5350	
30		5260.015170	5250~5350	
20		5259.996719	5250~5350	
10		5259.991243	5250~5350	
0		5260.017786	5250~5350	
-10		5259.980214	5250~5350	
-20		5259.977541	5250~5350	

CH Low / 5260MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5260.008211	5250~5350	PASS
	120	5259.986892	5250~5350	
	132	5259.980574	5250~5350	

IEEE 802.11n HT20 mode

CH High / 5320MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5320.004534	5250~5350	PASS
40		5319.974437	5250~5350	
30		5320.001835	5250~5350	
20		5320.002710	5250~5350	
10		5319.979586	5250~5350	
0		5319.980016	5250~5350	
-10		5319.974455	5250~5350	
-20		5319.975138	5250~5350	

CH High / 5320MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5319.985069	5250~5350	PASS
	120	5319.972448	5250~5350	
	132	5320.003644	5250~5350	

IEEE 802.11n HT20 mode

CH Low / 5500MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5500.018589	5470~5725	PASS
40		5499.970457	5470~5725	
30		5499.989247	5470~5725	
20		5500.002840	5470~5725	
10		5499.977444	5470~5725	
0		5500.010155	5470~5725	
-10		5500.012187	5470~5725	
-20		5499.970114	5470~5725	

CH Low / 5500MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5500.006526	5470~5725	PASS
	120	5499.970953	5470~5725	
	132	5500.010779	5470~5725	

IEEE 802.11n HT20 mode

CH High / 5700MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5699.978874	5470~5725	PASS
40		5700.000105	5470~5725	
30		5699.994718	5470~5725	
20		5699.974967	5470~5725	
10		5700.008961	5470~5725	
0		5700.013961	5470~5725	
-10		5699.999550	5470~5725	
-20		5699.998181	5470~5725	

CH High / 5700MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5700.019473	5470~5725	PASS
	120	5699.975437	5470~5725	
	132	5699.980422	5470~5725	

IEEE 802.11n HT40 mode

CH Low / 5190MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5190.012814	5150~5250	PASS
40		5190.019838	5150~5250	
30		5189.985185	5150~5250	
20		5189.986597	5150~5250	
10		5189.984501	5150~5250	
0		5190.005642	5150~5250	
-10		5190.006639	5150~5250	
-20		5190.001927	5150~5250	

CH Low / 5190MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5189.991643	5150~5250	PASS
	120	5190.020659	5150~5250	
	132	5189.994408	5150~5250	

IEEE 802.11n HT40 mode

CH High / 5230MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5230.014948	5150~5250	PASS
40		5229.976434	5150~5250	
30		5229.979094	5150~5250	
20		5229.993816	5150~5250	
10		5229.995199	5150~5250	
0		5230.009753	5150~5250	
-10		5229.989794	5150~5250	
-20		5230.016223	5150~5250	

CH High / 5230MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5229.998084	5150~5250	PASS
	120	5229.984963	5150~5250	
	132	5230.007881	5150~5250	

IEEE 802.11n HT40 mode

CH Low / 5270MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5269.992833	5250~5350	PASS
40		5269.980124	5250~5350	
30		5270.011228	5250~5350	
20		5269.993481	5250~5350	
10		5270.018087	5250~5350	
0		5269.976021	5250~5350	
-10		5270.011394	5250~5350	
-20		5269.989350	5250~5350	

CH Low / 5270MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5270.017791	5250~5350	PASS
	120	5269.978255	5250~5350	
	132	5270.020274	5250~5350	

IEEE 802.11n HT40 mode

CH High / 5310MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5310.002241	5250~5350	PASS
40		5310.006137	5250~5350	
30		5309.974259	5250~5350	
20		5309.996793	5250~5350	
10		5310.006624	5250~5350	
0		5310.009284	5250~5350	
-10		5309.973079	5250~5350	
-20		5309.980627	5250~5350	

CH High / 5310MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5309.996251	5250~5350	PASS
	120	5309.987300	5250~5350	
	132	5310.006258	5250~5350	

IEEE 802.11n HT40 mode

CH Low / 5510MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5509.982328	5470~5725	PASS
40		5510.002453	5470~5725	
30		5510.005246	5470~5725	
20		5509.995099	5470~5725	
10		5509.997864	5470~5725	
0		5510.013354	5470~5725	
-10		5510.010339	5470~5725	
-20		5509.980554	5470~5725	

CH Low / 5510MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5509.990530	5470~5725	PASS
	120	5510.005879	5470~5725	
	132	5509.986714	5470~5725	

IEEE 802.11n HT40 mode

CH High / 5670MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
50	120	5670.004381	5470~5725	PASS
40		5669.981857	5470~5725	
30		5670.002096	5470~5725	
20		5670.018484	5470~5725	
10		5669.997257	5470~5725	
0		5669.976783	5470~5725	
-10		5669.991171	5470~5725	
-20		5669.974813	5470~5725	

CH High / 5670MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit Range**	**Test Result**
20	108	5670.015453	5470~5725	PASS
	120	5670.017966	5470~5725	
	132	5670.019090	5470~5725	