Test Report

FCC Applicant:	Amino Communications Ltd
FCC Address of Applicant:	1010 Cambourne Business Park Cambourne, Cambridge CB23 6DP, United Kingdom
IC Applicant:	AMINO COMMUNICATIONS LTD.
IC Address of Applicant:	1010 Cambourne Business Park Cambourne, Cambridge CB23 6DP United Kingdom Of Great Britain And Northern Ireland
Manufacturer:	Shenzhen SDMC Technology Co., Ltd
Address of Manufacturer:	7/F, W2-A Bld., Gaoxin S. Av. 4, Hi-tech. Industrial Park, Nanshan District, Shenzhen,China, 518027

Equipment Under Test (EUT)

Product Name:	IPTV Receiver
Model No.:	See Section 5.1
Trade Mark:	AMINO
FCC ID:	XVG50-0100-AP-BT
IC:	6800A-500100APBT
Applicable standards:	FCC CFR Title 47 Part 15 Subpart E Section 15.407 RSS-Gen Issue 5: April 2018 RSS-247 Issue 2: February 2017
Date of sample receipt:	September 12, 2019
Date of Test:	September 13-26, 2019
Date of report issue:	September 26, 2019
Test Result :	PASS *

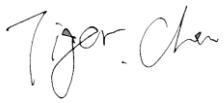
* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

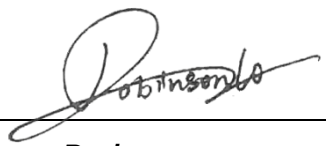
Robinson Lo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*September 26, 2019*	*Original*

Prepared By:  ***Date:*** *September 26, 2019*

Project Engineer

Check By:  ***Date:*** *September 26, 2019*

Reviewer

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4 Test Summary

Test Item	Section	Result
Antenna requirement	FCC part 15.203 & RSS-Gen 6.8	PASS
AC Power Line Conducted Emission	FCC part 15.207& RSS-Gen 8.8	PASS
Peak Transmit Power	FCC part 15.407(a)(1) RSS-247 6.2	PASS
Channel Bandwidth	FCC part 15.247 (a)(2) RSS-247 Section 5.2(a) & RSS-Gen 6.7	Pass
Power Spectral Density	FCC part 15.407(a)(1) RSS-247 6.2	PASS
Undesirable Emission	FCC part 15.407(b)(6), 15.205/15.209 RSS-247 6.2	PASS
Radiated Emission	FCC part 15.205/15.209 RSS-Gen 8.9 & 8.10	PASS
Band Edge	FCC part 15.407(b)(1) RSS-247 6.2	PASS
Frequency Stability	FCC part 15.407(g) RSS-Gen 8.11	PASS

Remark:

Pass: The EUT complies with the essential requirements in the standard.

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 40GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%. Remark: Test according to ANSI C63.10:2013 and ANSI C63.4:2014			

5 General Information

5.1 General Description of EUT

<table>
<tr><td>Product Name:</td><td>IPTV Receiver</td></tr>
<tr><td>FCC Model No.:</td><td>Amigo 7X V2, Amigo 7Xzzzzzzzz (zzzzzzzz can be combination of A~Z, a~z, 0~9, "-", "/", "blank" for marketing purpose)</td></tr>
<tr><td>IC Model No.:</td><td>Amigo 7X V2</td></tr>
<tr><td>Test Model No:</td><td>Amigo 7X V2</td></tr>
<tr><td colspan="2">Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are color and model name for commercial purpose.</td></tr>
<tr><td>Serial No.:</td><td>190700250117</td></tr>
<tr><td>Hardware Version:</td><td>V2</td></tr>
<tr><td>Software Version:</td><td>Android 9</td></tr>
<tr><td>Test sample(s) ID:</td><td>GTS201909000082-1</td></tr>
<tr><td>Sample(s) Status:</td><td>Engineer sample</td></tr>
<tr><td>Operation Frequency:</td><td>
<table>
<tr><th>Band</th><th>Mode</th><th>Frequency Range(MHz)</th><th>Number of channels</th></tr>
<tr><td rowspan="4">U-NII Band I</td><td>IEEE 802.11a</td><td>5180-5240</td><td>4</td></tr>
<tr><td>IEEE 802.11n/ac 20MHz</td><td>5180-5240</td><td>4</td></tr>
<tr><td>IEEE 802.11n/ac 40MHz</td><td>5190-5230</td><td>2</td></tr>
<tr><td>IEEE 802.11ac 80MHz</td><td>5210</td><td>1</td></tr>
<tr><td rowspan="4">U-NII Band II-A</td><td>IEEE 802.11a</td><td>5260-5320</td><td>4</td></tr>
<tr><td>IEEE 802.11n/ac 20MHz</td><td>5260-5320</td><td>4</td></tr>
<tr><td>IEEE 802.11n/ac 40MHz</td><td>5270-5310</td><td>2</td></tr>
<tr><td>IEEE 802.11ac 80MHz</td><td>5290</td><td>1</td></tr>
<tr><td rowspan="4">U-NII Band II-C</td><td>IEEE 802.11a</td><td>5500-5700</td><td>11</td></tr>
<tr><td>IEEE 802.11n/ac 20MHz</td><td>5500-5700</td><td>11</td></tr>
<tr><td>IEEE 802.11n/ac 40MHz</td><td>5510-5670</td><td>5</td></tr>
<tr><td>IEEE 802.11ac 80MHz</td><td>5530-5610</td><td>2</td></tr>
</table>
</td></tr>
<tr><td>Modulation technology:</td><td>OFDM
MIMO: 802.11n/ac
SISO: 802.11a</td></tr>
<tr><td>Antenna Type:</td><td>PIFA Antenna</td></tr>
<tr><td>Antenna gain:</td><td>ANT 1: 3.64dBi(declare by applicant)
ANT 2: 3.14dBi(declare by applicant)</td></tr>
<tr><td>Power supply:</td><td>Adapter
MODEL:SA12V-050200U
INPUT: AC 100-240V, 50/60Hz,0.4A
OUTPUT: DC 5V, 2 A</td></tr>
</table>

Channel list for 802.11a/n(HT20)/ac(HT20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180MHz	40	5200MHz	44	5220MHz	48	5240MHz
52	5260MHz	56	5280MHz	60	5300MHz	64	5320MHz
100	5500MHz	104	5520MHz	108	5540MHz	112	5560MHz
116	5580MHz	120	5600MHz	124	5620MHz	128	5640MHz
132	5660MHz	136	5680MHz	140	5700MHz		

Channel list for 802.11n(HT40)/ac(HT40)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190MHz	46	5230MHz	54	5270MHz	62	5310MHz
102	5510MHz	110	5550MHz	118	5590MHz	126	5630MHz
134	5670MHz						

Channel list for 802.11ac(HT80)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
42	5210MHz	58	5290MHz	106	5530MHz	122	5610MHz

5.2 Test mode

Transmitting mode	Keep the EUT in transmitting with modulation..

Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	Data rate	Mode	Data rate
802.11a	6Mbps	802.11n/ac(HT40)	13Mbps
802.11n/ac(HT20)	6.5Mbps	802.11ac(HT80)	29.3Mbps

5.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383.

● **IC —Registration No.: 9079A**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A.

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0

5.4 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, sBaoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

5.5 Description of Support Units

Manufacturer	Description	Model	Serial Number
PHILIPS	LCD monitor	19PFL3120/T3	AU1A1212002906

5.6 Deviation from Standards

None.

5.7 Additional Instructions

Test Software	RFTestTool
Software name	Ampark
Software version	V5.2
Power level setup	Default

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 03 2015	July. 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 26 2019	June. 25 2020
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 26 2019	June. 25 2020
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 26 2019	June. 25 2020
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 26 2019	June. 25 2020
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 26 2019	June. 25 2020
9	Coaxial Cable	GTS	N/A	GTS211	June. 26 2019	June. 25 2020
10	Coaxial cable	GTS	N/A	GTS210	June. 26 2019	June. 25 2020
11	Coaxial Cable	GTS	N/A	GTS212	June. 26 2019	June. 25 2020
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 26 2019	June. 25 2020
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 26 2019	June. 25 2020
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 26 2019	June. 25 2020
15	Band filter	Amindeon	82346	GTS219	June. 26 2019	June. 25 2020
16	Power Meter	Anritsu	ML2495A	GTS540	June. 26 2019	June. 25 2020
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 26 2019	June. 25 2020
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 26 2019	June. 25 2020
19	Splitter	Agilent	11636B	GTS237	June. 26 2019	June. 25 2020
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 26 2019	June. 25 2020
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 20 2018	Oct. 19 2019
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 20 2018	Oct. 19 2019
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 20 2018	Oct. 19 2019
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 26 2019	June. 25 2020

Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 26 2019	June. 25 2020
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 26 2019	June. 25 2020
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 26 2019	June. 25 2020
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 26 2019	June. 25 2020
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 26 2019	June. 25 2020
9	ISN	SCHWARZBECK	NTFM 8158	GTD565	June. 26 2019	June. 25 2020

RF Conducted Test:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 26 2019	June. 25 2020
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 26 2019	June. 25 2020
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 26 2019	June. 25 2020
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 26 2019	June. 25 2020
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 26 2019	June. 25 2020
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 26 2019	June. 25 2020
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 26 2019	June. 25 2020
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 26 2019	June. 25 2020

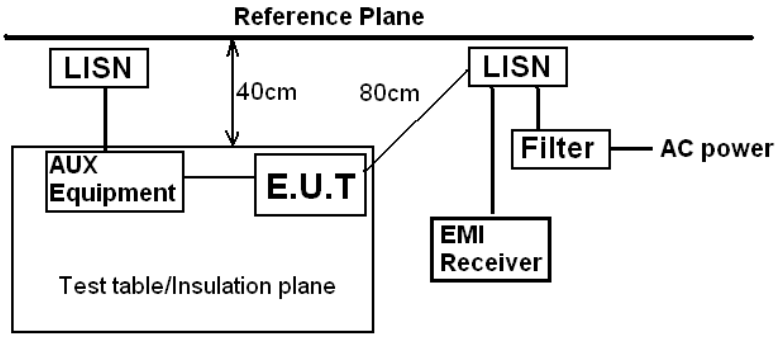
General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 26 2019	June. 25 2020
2	Barometer	ChangChun	DYM3	GTS255	June. 26 2019	June. 25 2020

7 Test results and Measurement Data

7.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
Standard requirement:	RSS-Gen 6.8
A transmitter can only be sold or operated with antennas with which it was approved. When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer. For transmitters of RF output power of 10 milliwatts or less, only the portion of the antenna gain that is in excess of 6 dBi (6 dB above isotropic gain) shall be added to the measured RF output power to demonstrate compliance with the radiated power limits specified in the applicable standard. For transmitters of output power greater than 10 milliwatts, the total antenna gain shall be added to the measured RF output power to demonstrate compliance to the specified radiated power	
E.U.T Antenna:	
The antenna is PIFA antenna, the best case gain of the ANT refer to section 5.1, reference to the appendix II for details	

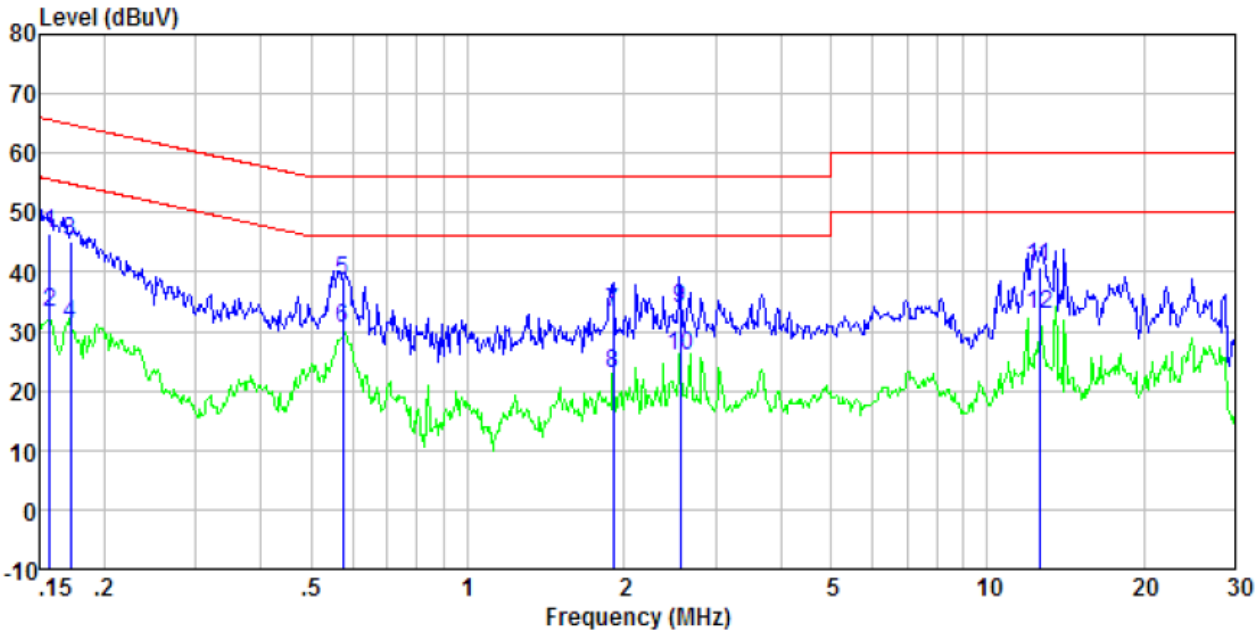
7.2 Conducted Emissions

<table>
<tr><td>Test Requirement:</td><td colspan="5">FCC Part15 C Section 15.207
RSS-Gen Section 8.8</td></tr>
<tr><td>Test Method:</td><td colspan="5">ANSI C63.10:2013 & RSS-Gen</td></tr>
<tr><td>Test Frequency Range:</td><td colspan="5">150KHz to 30MHz</td></tr>
<tr><td>Class / Severity:</td><td colspan="5">Class B</td></tr>
<tr><td>Receiver setup:</td><td colspan="5">RBW=9KHz, VBW=30KHz</td></tr>
<tr><td>Limit:</td><td colspan="5"><table><tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr><tr><td>Quasi-peak</td><td>Average</td></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>5-30</td><td>60</td><td>50</td></tr></table>* Decreases with the logarithm of the frequency.</td></tr>
<tr><td>Test procedure</td><td colspan="5">The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.</td></tr>
<tr><td>Test setup:</td><td colspan="5"> 

Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test Instruments:</td><td colspan="5">Refer to section 5.10 for details</td></tr>
<tr><td>Test mode:</td><td colspan="5">Refer to section 5.2 for details</td></tr>
<tr><td>Test environment:</td><td>Temp.:</td><td>25 °C</td><td>Humid.:</td><td>52%</td><td>Press.:</td><td>1012mbar</td></tr>
<tr><td>Test results:</td><td colspan="5">Pass</td></tr>
</table>

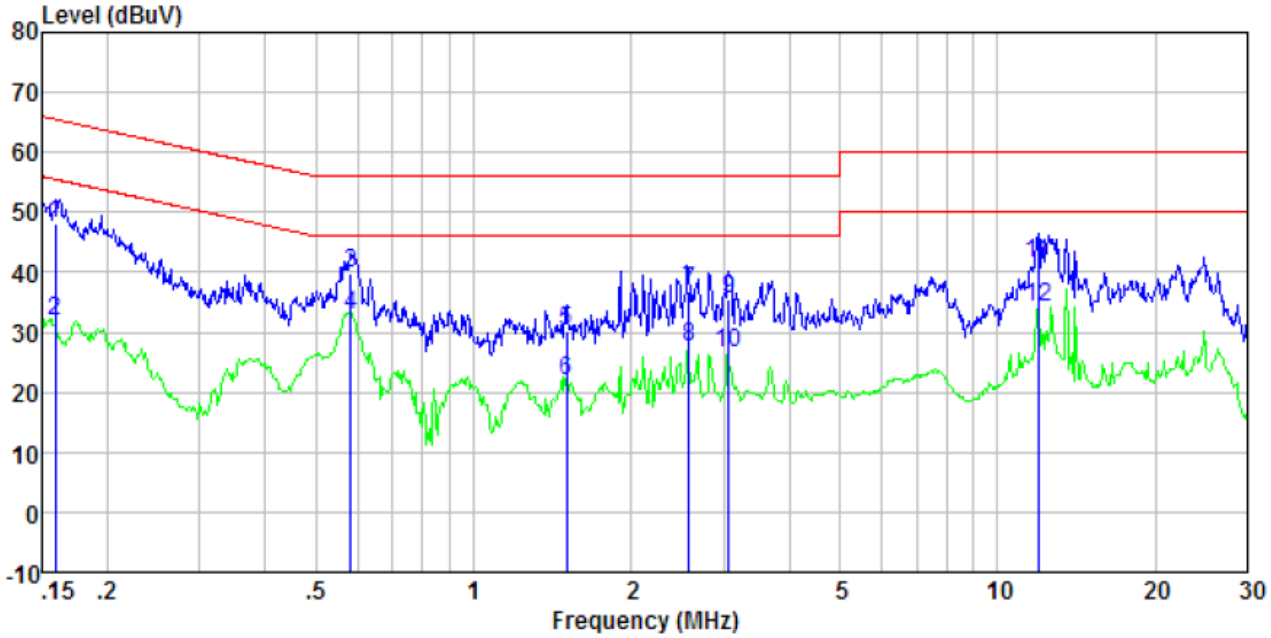
Measurement data:

Line:



Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.16	45.94	0.40	0.08	46.42	65.60	-19.18	QP
0.16	32.67	0.40	0.08	33.15	55.60	-22.45	Average
0.17	44.54	0.40	0.09	45.03	64.86	-19.83	QP
0.17	30.63	0.40	0.09	31.12	54.86	-23.74	Average
0.58	38.16	0.29	0.12	38.57	56.00	-17.43	QP
0.58	29.96	0.29	0.12	30.37	46.00	-15.63	Average
1.91	32.76	0.20	0.17	33.13	56.00	-22.87	QP
1.91	22.55	0.20	0.17	22.92	46.00	-23.08	Average
2.57	33.56	0.20	0.18	33.94	56.00	-22.06	QP
2.57	25.60	0.20	0.18	25.98	46.00	-20.02	Average
12.58	40.32	0.20	0.21	40.73	60.00	-19.27	QP
12.58	32.49	0.20	0.21	32.90	50.00	-17.10	Average

Neutral:

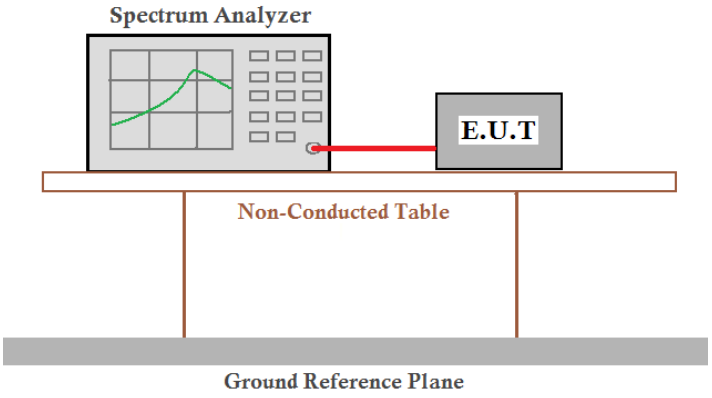


Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.16	47.80	0.40	0.08	48.28	65.52	-17.24	QP
0.16	31.24	0.40	0.08	31.72	55.52	-23.80	Average
0.58	39.44	0.29	0.12	39.85	56.00	-16.15	QP
0.58	32.54	0.29	0.12	32.95	46.00	-13.05	Average
1.50	29.69	0.20	0.16	30.05	56.00	-25.95	QP
1.50	21.68	0.20	0.16	22.04	46.00	-23.96	Average
2.58	36.46	0.20	0.18	36.84	56.00	-19.16	QP
2.58	27.06	0.20	0.18	27.44	46.00	-18.56	Average
3.07	35.23	0.20	0.19	35.62	56.00	-20.38	QP
3.07	26.06	0.20	0.19	26.45	46.00	-19.55	Average
11.93	41.12	0.20	0.20	41.52	60.00	-18.48	QP
11.93	33.91	0.20	0.20	34.31	50.00	-15.69	Average

Notes:

1. *An initial pre-scan was performed on the line and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Cable Loss*

7.3 Emission Bandwidth and 99% Occupied Bandwidth

Test Requirement :	FCC Part15 E Section 15.407 RSS-247 5.2 & RSS-Gen 6.7
Test Method :	ANSI C63.10:2013 and RSS-Gen & KDB 789033 D02 v02r01
Limit:	N/A
Test setup:	
Test procedure:	According to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data:

ANT 1:

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26dB Occupied Bandwidth (MHz)		
		802.11a	802.11n(HT20)	802.11ac(HT20)	802.11a	802.11n(HT20)	802.11ac(HT20)
36	5180	16.7350	17.8391	17.8685	20.986	21.222	21.354
44	5220	16.6978	17.8818	17.8670	21.228	21.609	21.871
48	5240	16.7321	17.8557	17.8501	21.139	21.666	21.297
52	5260	16.7292	17.8794	17.8266	21.314	21.668	21.573
60	5300	16.7224	17.8499	17.8569	21.432	21.325	21.481
64	5320	16.7310	17.8958	17.8393	21.120	21.574	21.643
100	5500	16.7418	17.8757	17.8791	21.720	21.776	21.644
120	5600	16.7019	17.8492	17.8428	21.399	21.573	21.410
140	5700	16.7239	17.8362	17.8990	21.210	21.504	21.549

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)		26dB Occupied Bandwidth (MHz)	
		802.11n(HT40)	802.11ac(HT40)	802.11n(HT40)	802.11ac(HT40)
38	5190	36.2888	36.3250	39.896	40.132
46	5230	36.2898	36.3150	40.045	39.961
54	5270	36.2687	36.2794	39.849	40.038
62	5310	36.3011	36.2827	40.047	39.916
102	5510	36.2637	36.2557	39.922	40.190
118	5590	36.2591	36.2519	40.011	39.796
134	5670	36.3104	36.3055	40.457	39.770

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
		802.11ac(HT80)	802.11ac(HT80)
42	5210	75.7539	81.570
58	5290	75.6475	81.355
106	5530	75.5405	81.659
122	5610	75.5083	81.257

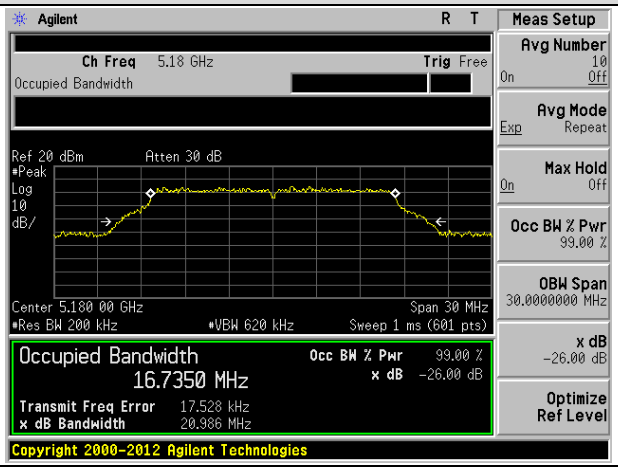
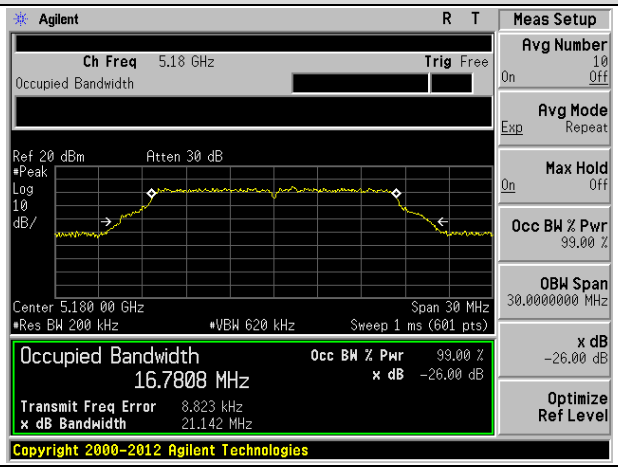
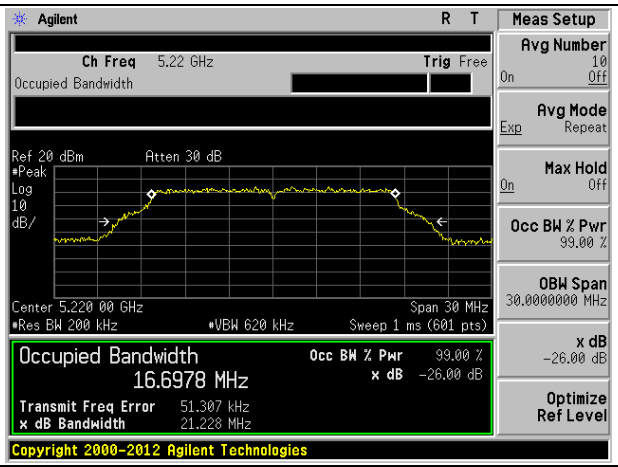
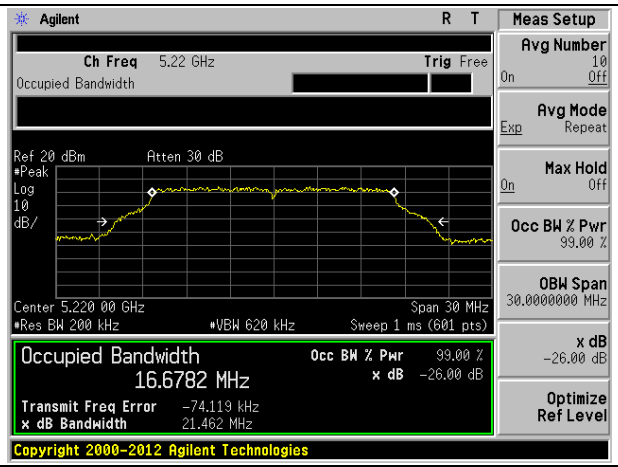
ANT 2:

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26dB Occupied Bandwidth (MHz)		
		802.11a	802.11n(HT20)	802.11ac(HT20)	802.11a	802.11n(HT20)	802.11ac(HT20)
36	5180	16.7808	17.8772	17.8185	21.142	21.492	21.612
44	5220	16.6782	17.8536	17.8175	21.462	21.353	21.313
48	5240	16.7276	17.8519	17.8747	21.372	21.732	21.445
52	5260	16.6895	17.8843	17.8820	21.369	21.606	21.347
60	5300	16.7062	17.7967	17.8563	21.475	21.711	21.550
64	5320	16.7457	17.8585	17.8581	21.550	21.462	21.518
100	5500	16.7452	17.8643	17.8980	21.341	21.524	21.677
120	5600	16.7135	17.8435	17.8688	21.466	21.464	21.460
140	5700	16.7234	17.8708	17.9069	21.341	21.634	21.554

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)		26dB Occupied Bandwidth (MHz)	
		802.11n(HT40)	802.11ac(HT40)	802.11n(HT40)	802.11ac(HT40)
38	5190	36.2573	36.2781	39.953	40.132
46	5230	36.2172	36.1501	39.959	39.703
54	5270	36.2946	36.2484	30.246	39.921
62	5310	36.2891	36.3276	40.197	39.966
102	5510	36.2656	36.2204	40.346	39.786
118	5590	36.2702	36.2207	40.141	39.889
134	5670	36.2922	36.3050	40.002	40.011

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
		802.11ac(HT80)	802.11ac(HT80)
42	5210	75.6943	82.404
58	5290	75.5732	81.937
106	5530	75.5178	81.313
122	5610	75.5321	81.530

Test plots as followed:

802.11a mode	
ANT 1	**ANT 2**
	
5180	**5180**
	
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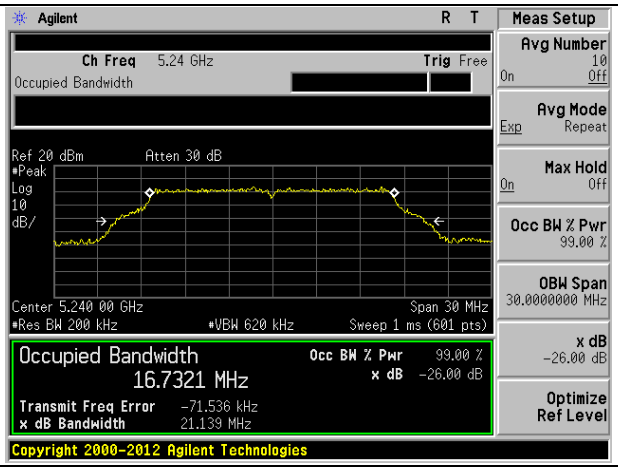
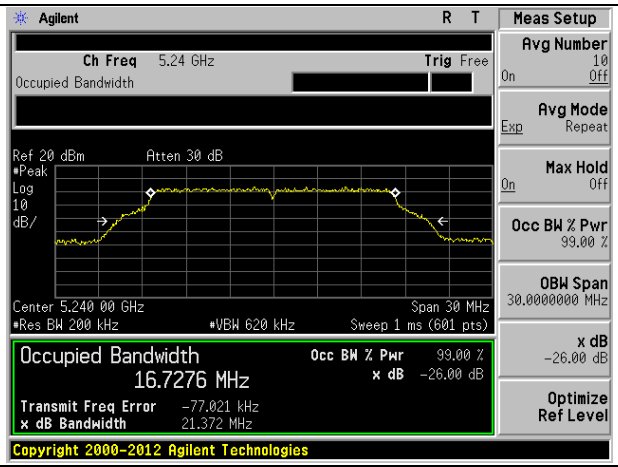
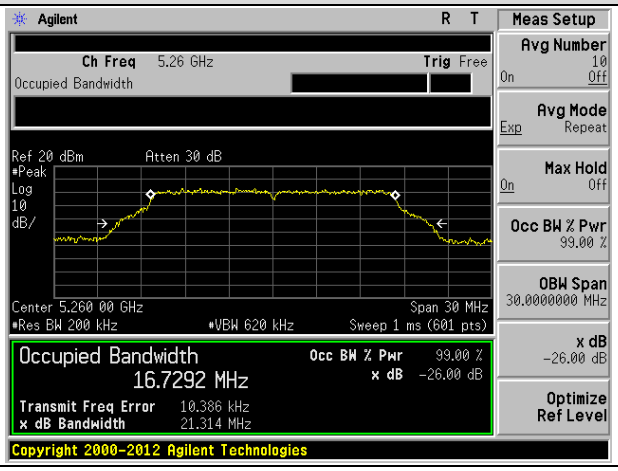
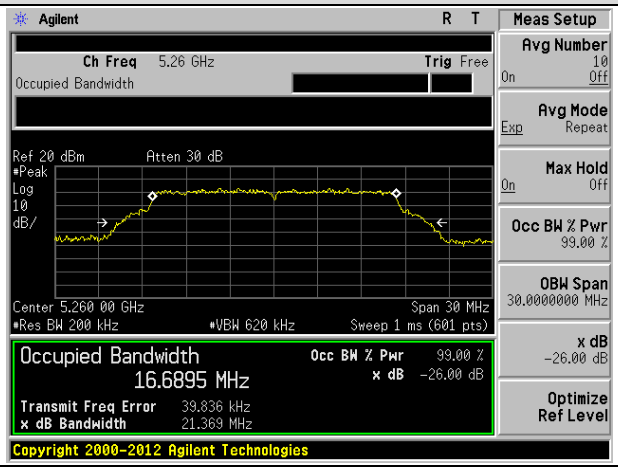
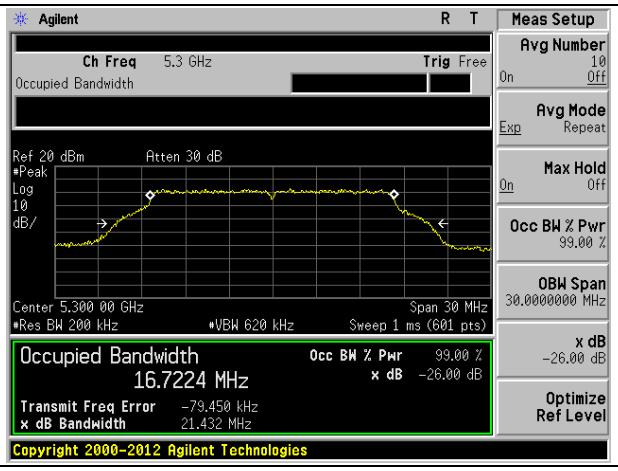
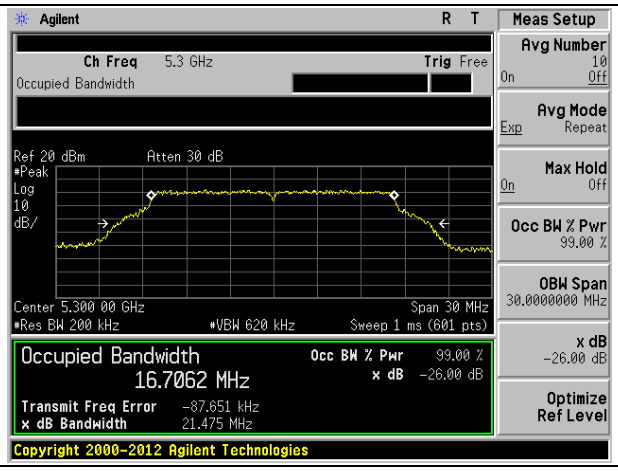
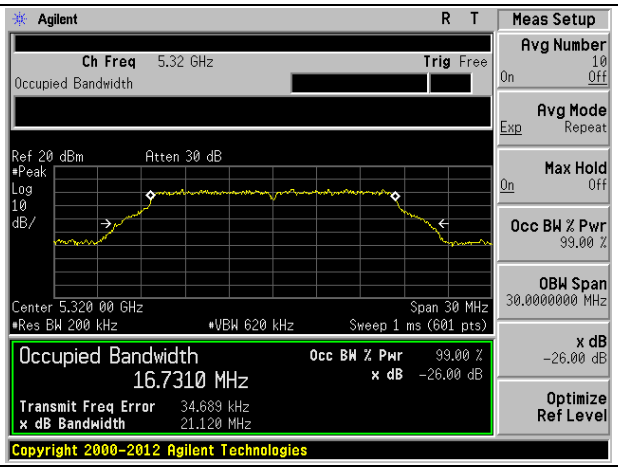
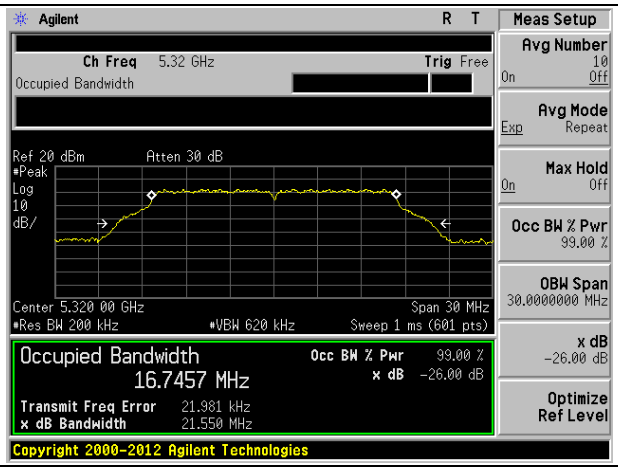
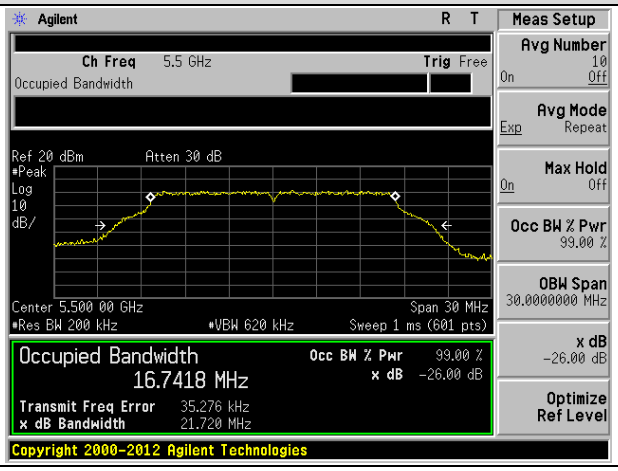
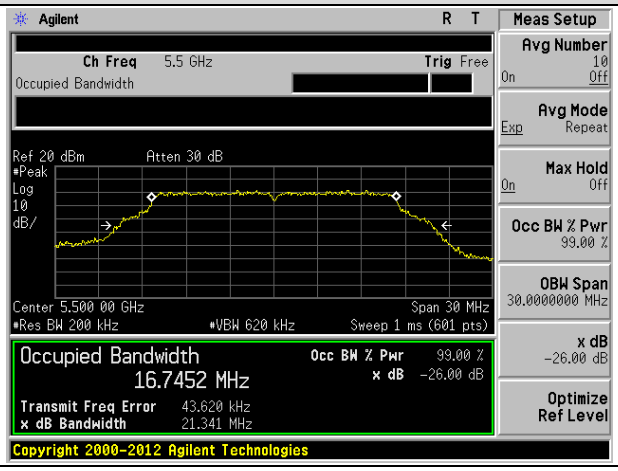
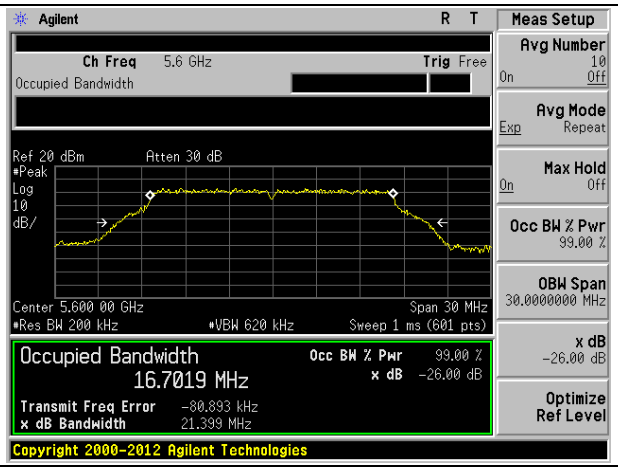
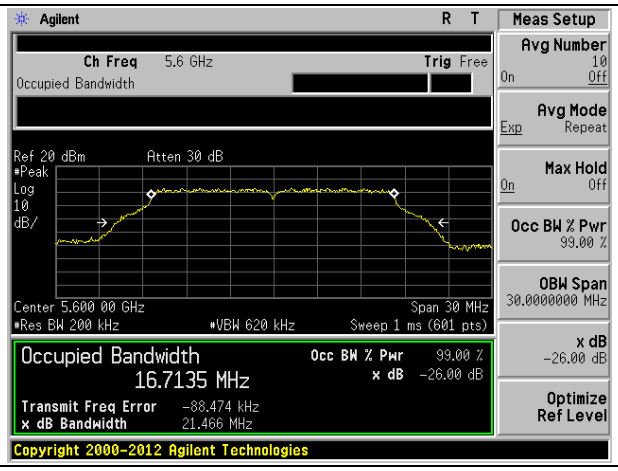
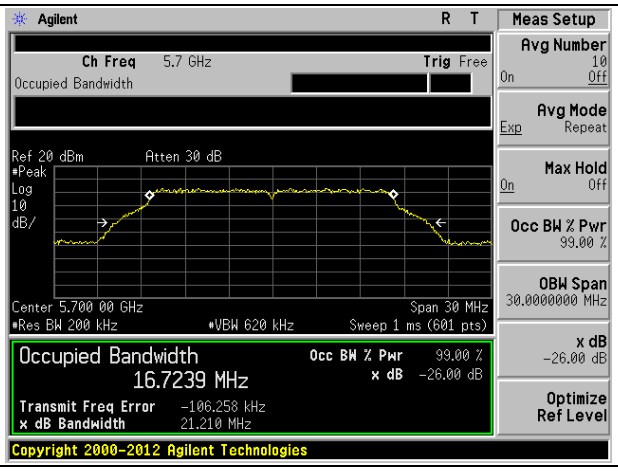
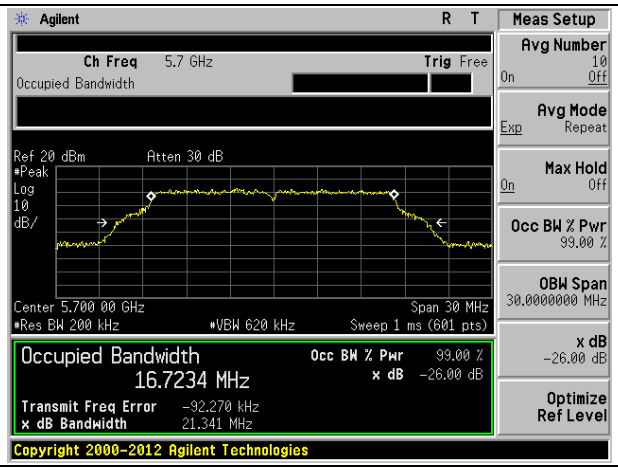
	
5240	**5240**

802.11a mode	
ANT 1	**ANT 2**
	
5260	**5260**
	
5300	**5300**
	
5320	**5320**

802.11a mode	
ANT 1	**ANT 2**
	
5500	**5500**
	
5600	**5600**
	
5700	**5700**

802.11n(HT20) mode	
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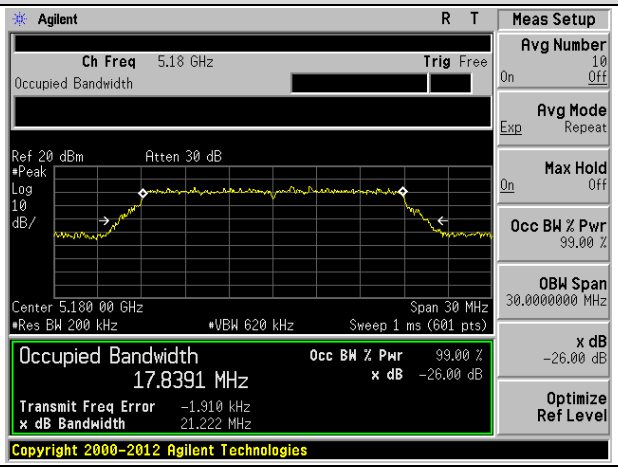
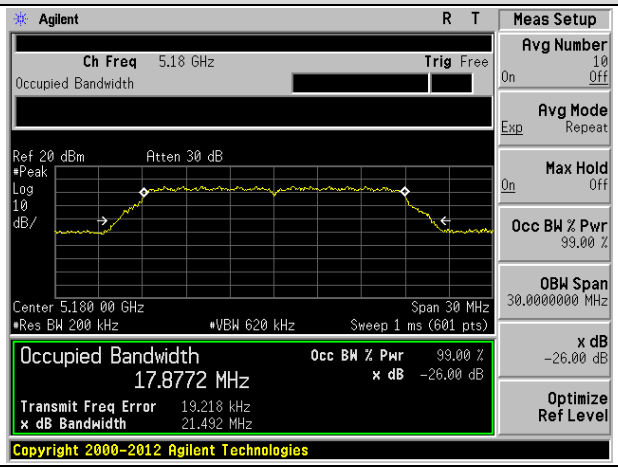
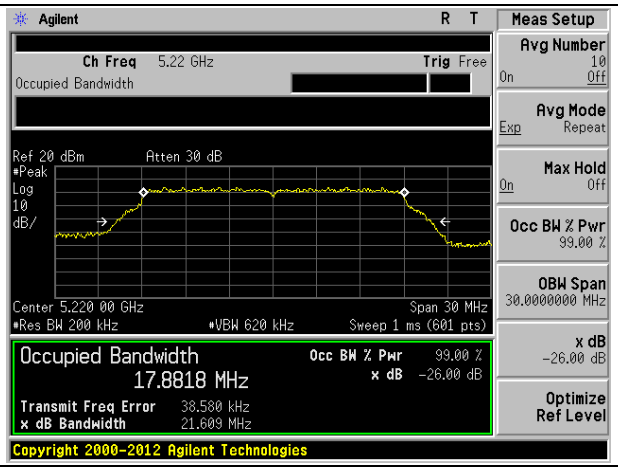
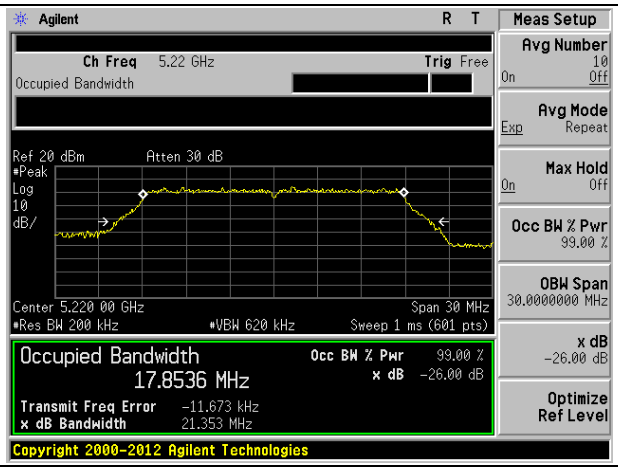
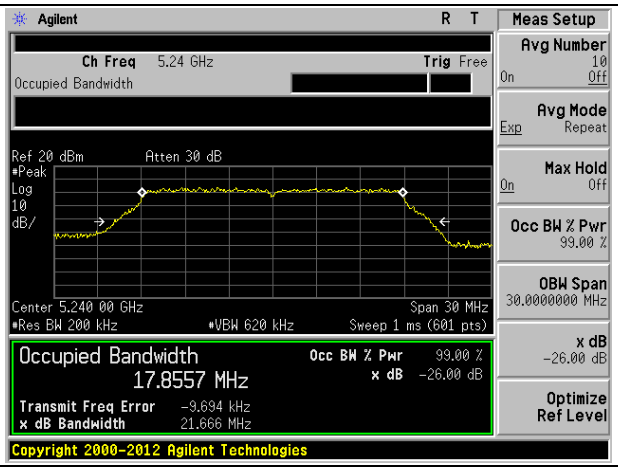
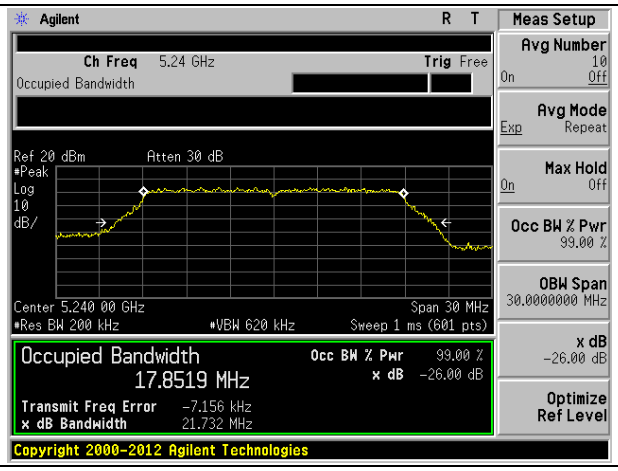
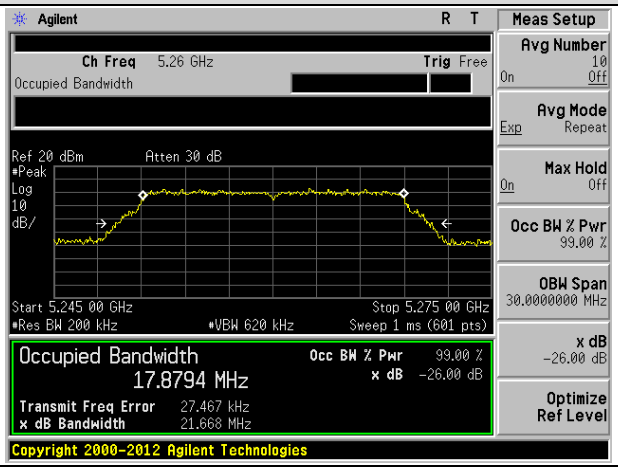
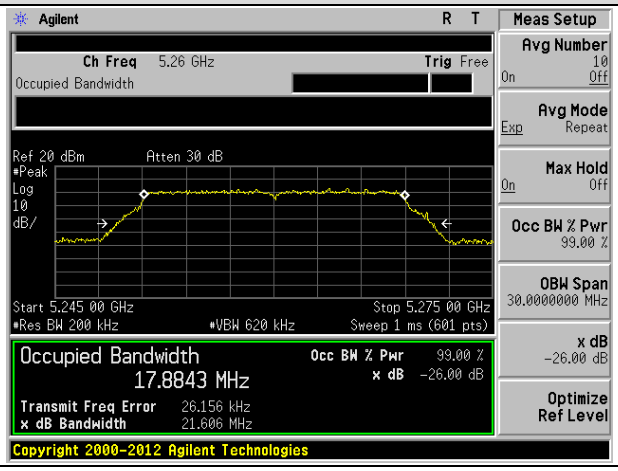
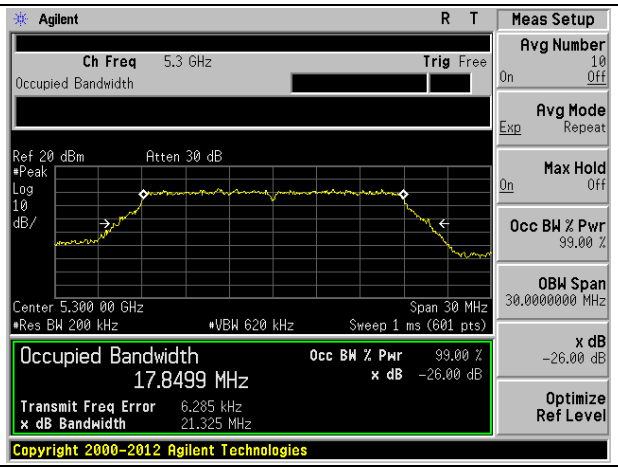
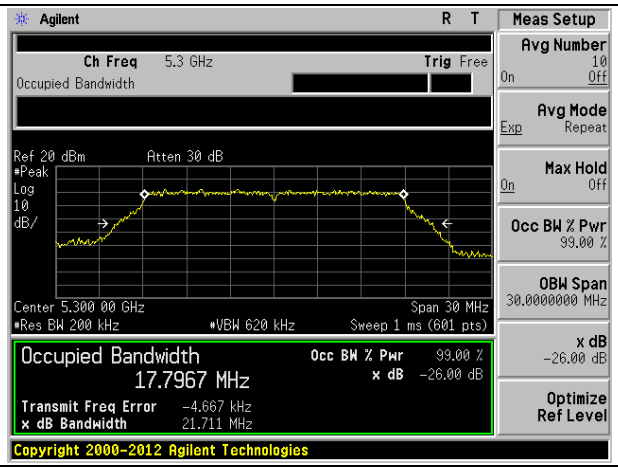
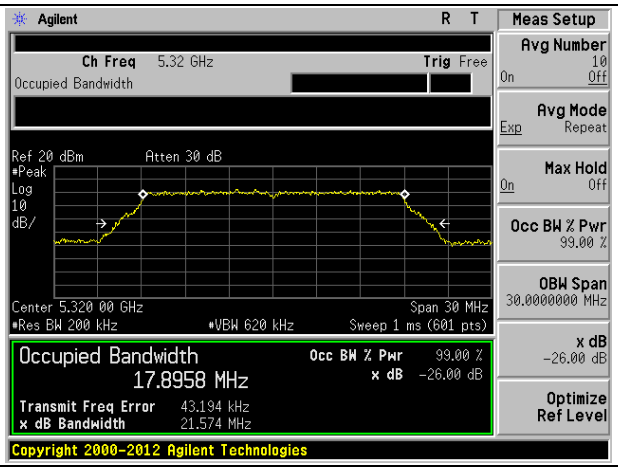
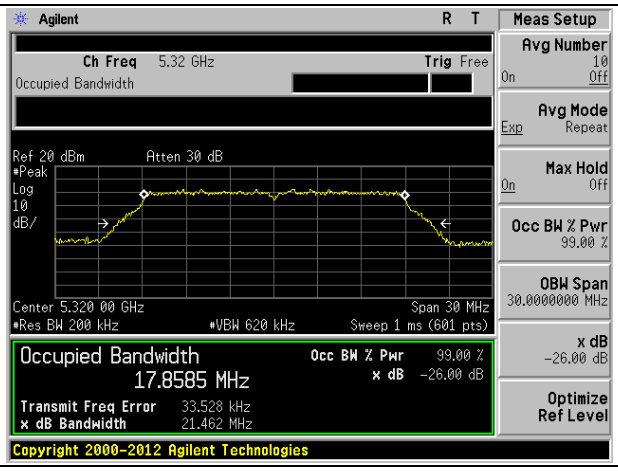
	
5180	**5180**
	
5220	**5220**
	
5240	**5240**

802.11n(HT20) mode	
ANT 1	**ANT 2**
	
5260	**5260**
	
5300	**5300**
	
5320	**5320**

802.11n(HT20) mode	
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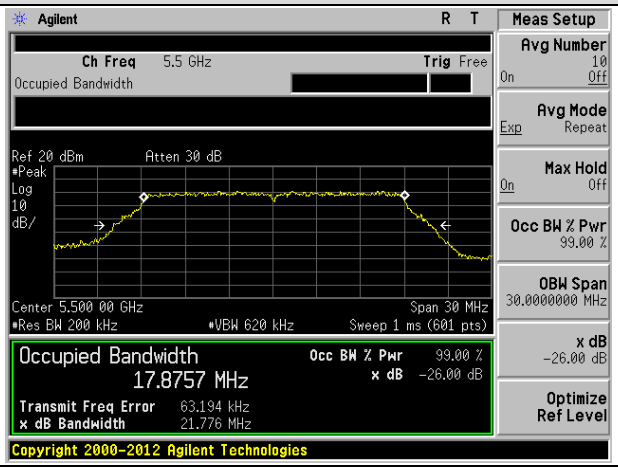
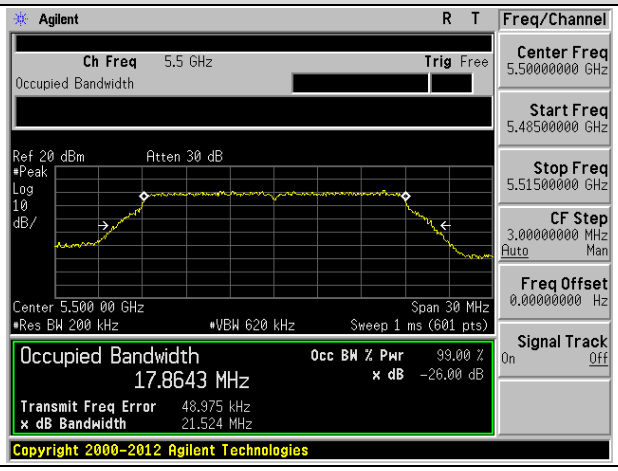
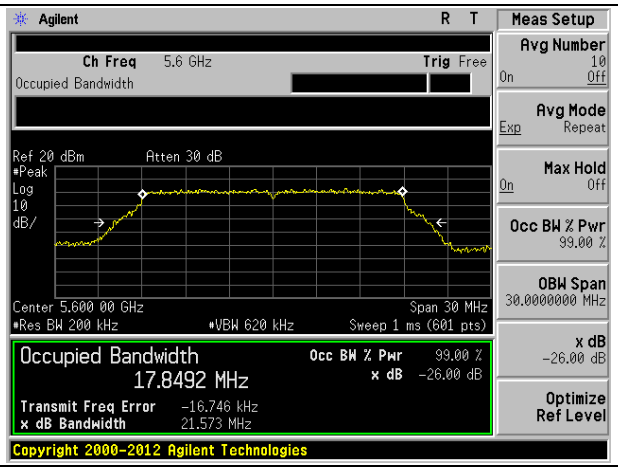
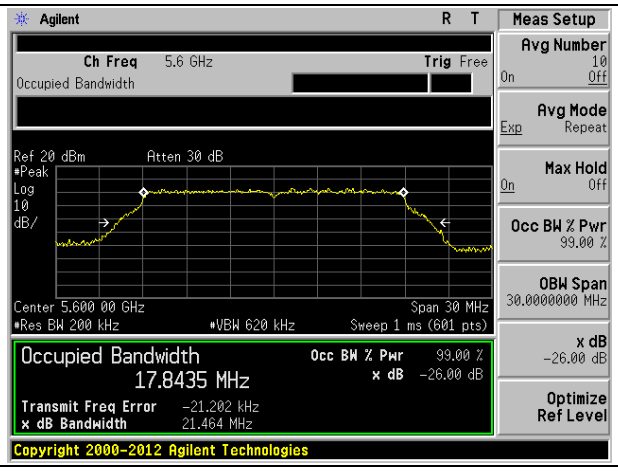
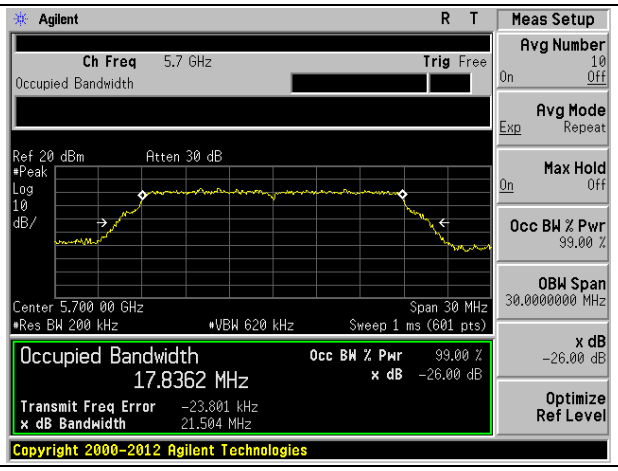
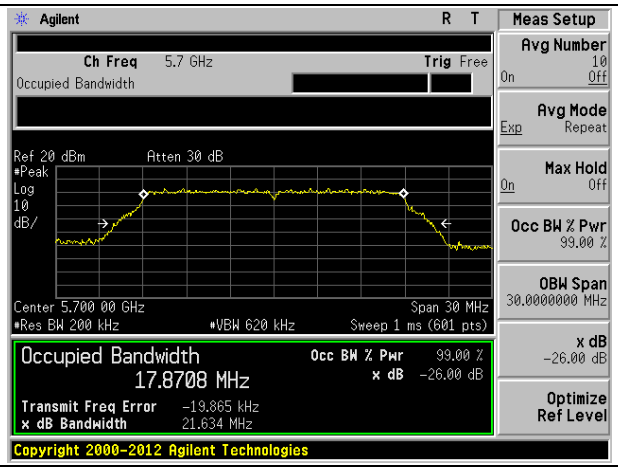
	
5500	**5500**
	
5600	**5600**
	
5700	**5700**

802.11ac(HT20) mode	
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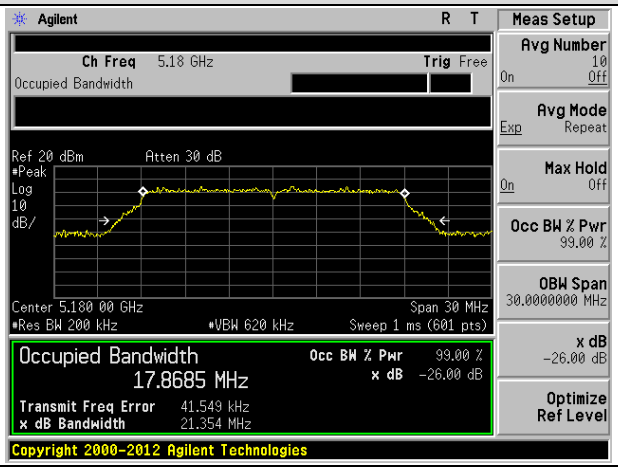	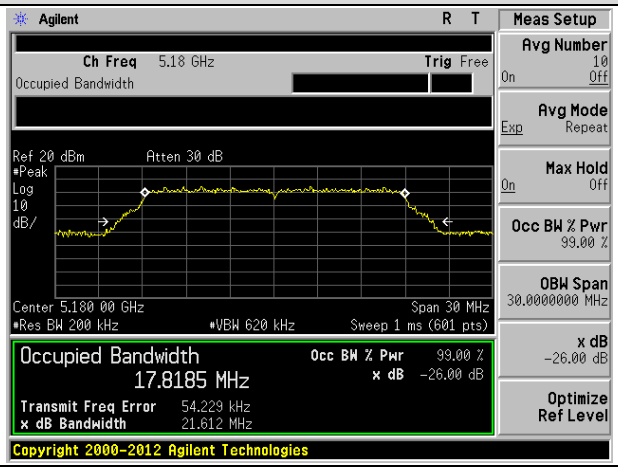
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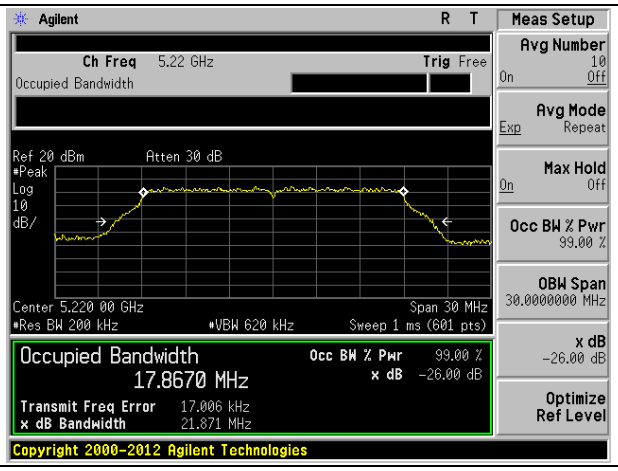
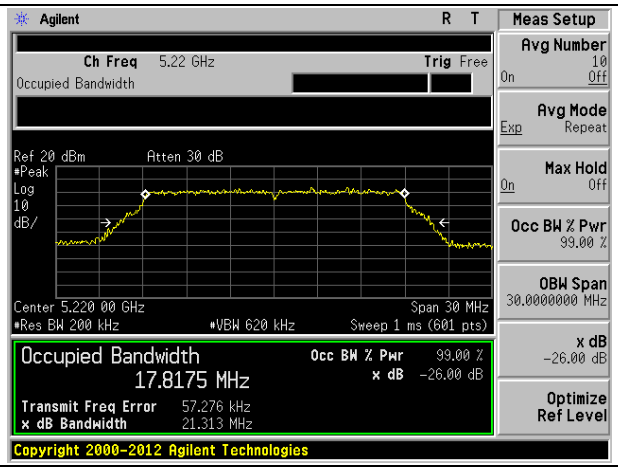
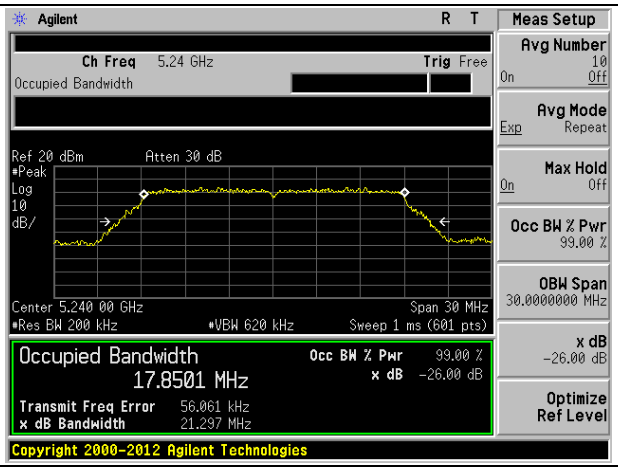
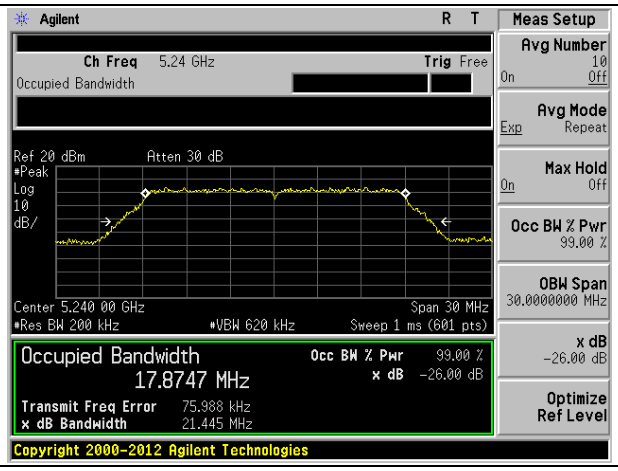
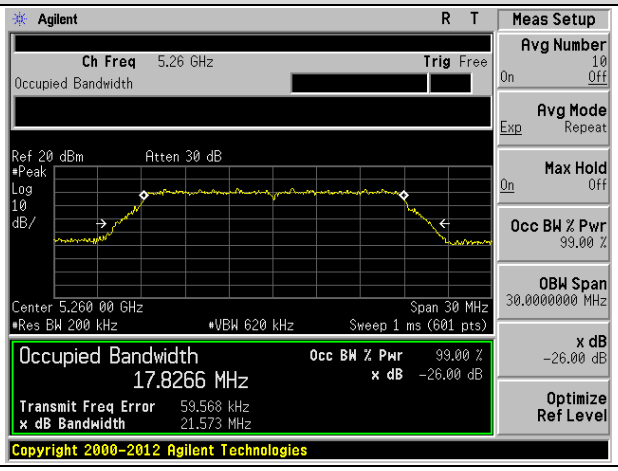
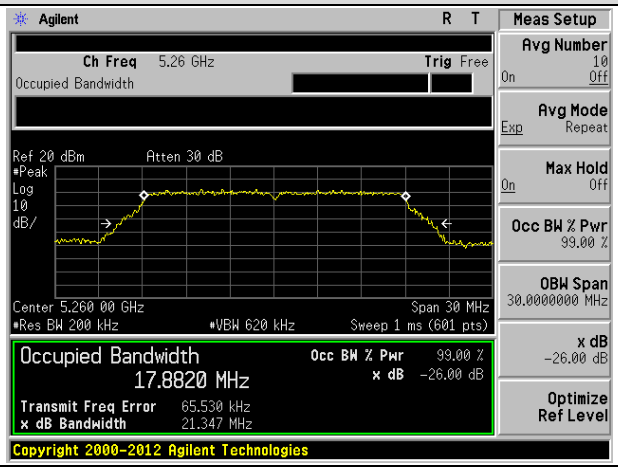
	
5220	**5220**
	
5240	**5240**

802.11ac(HT20) mode	
ANT 1	**ANT 2**
	
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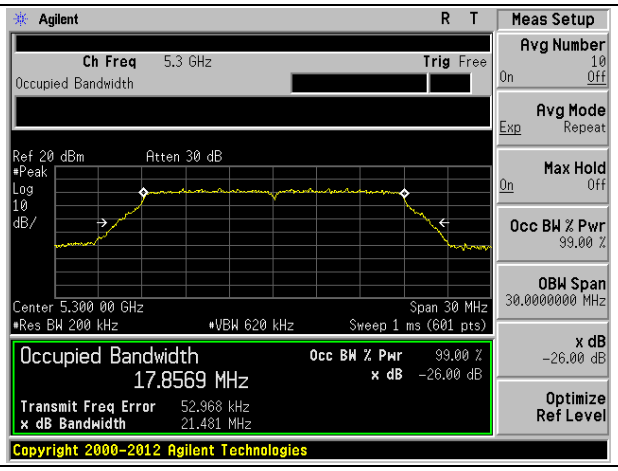
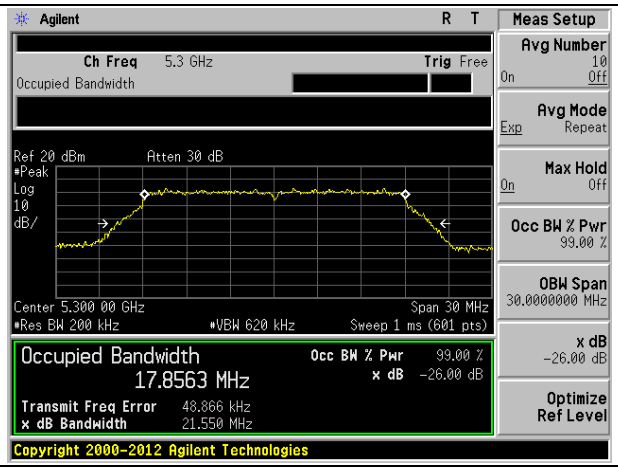
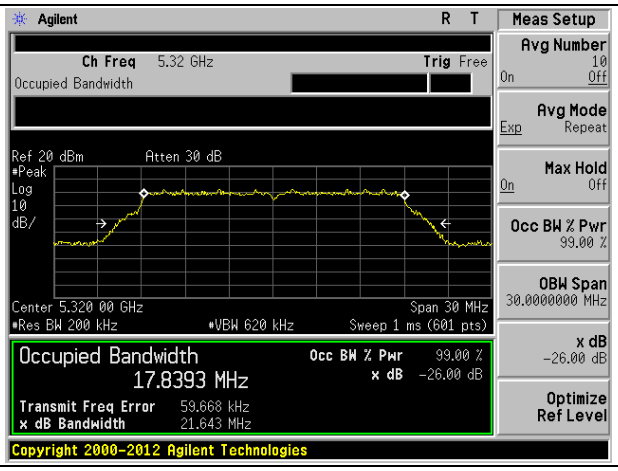
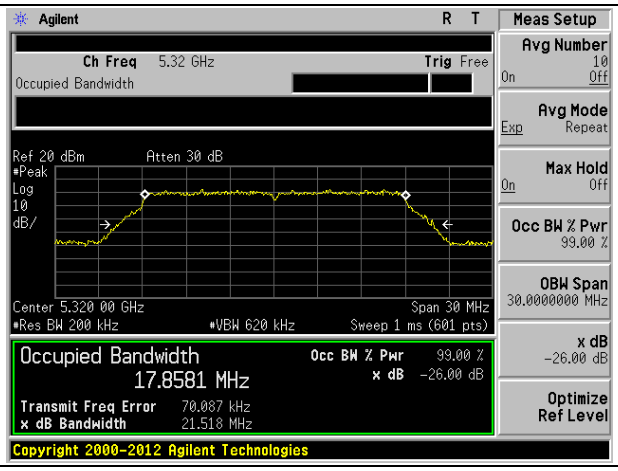
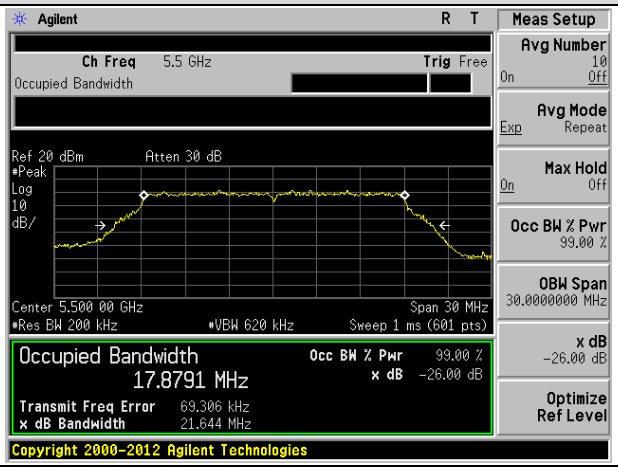
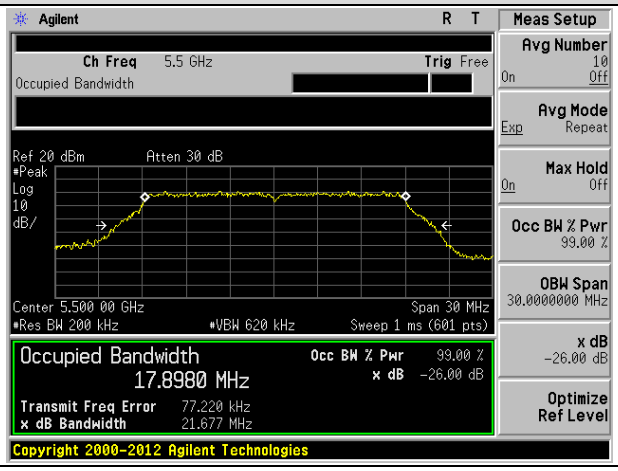
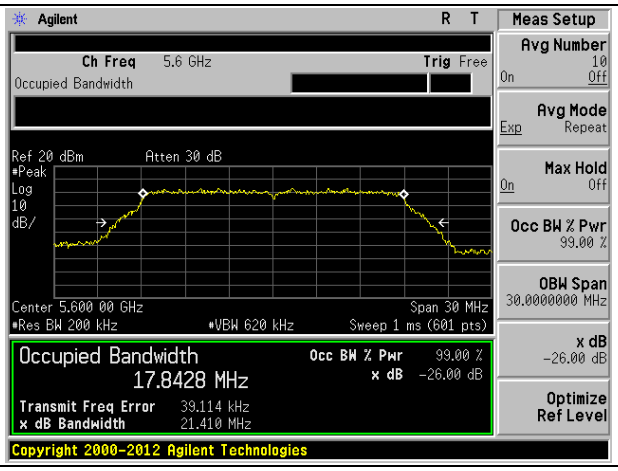
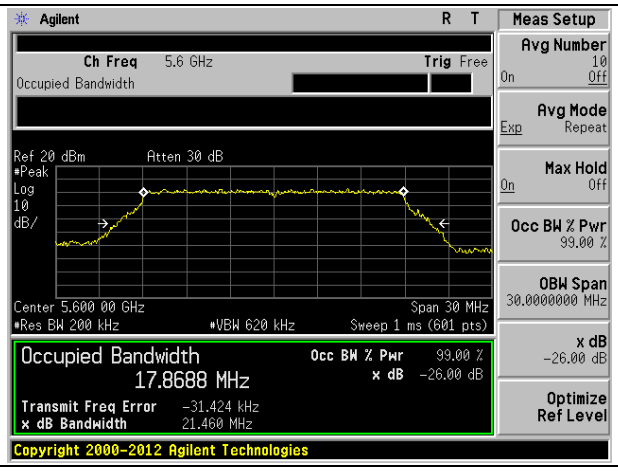
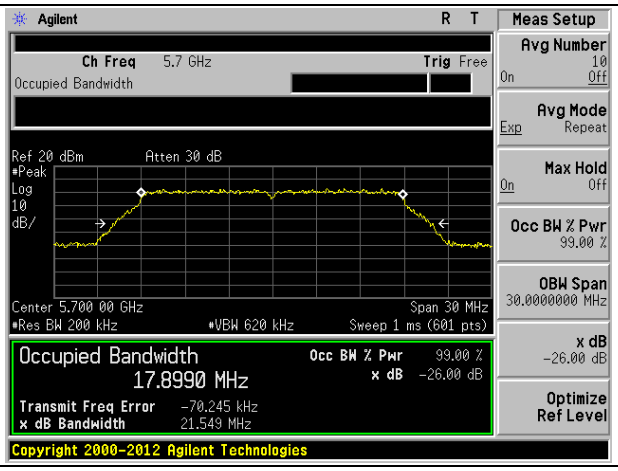
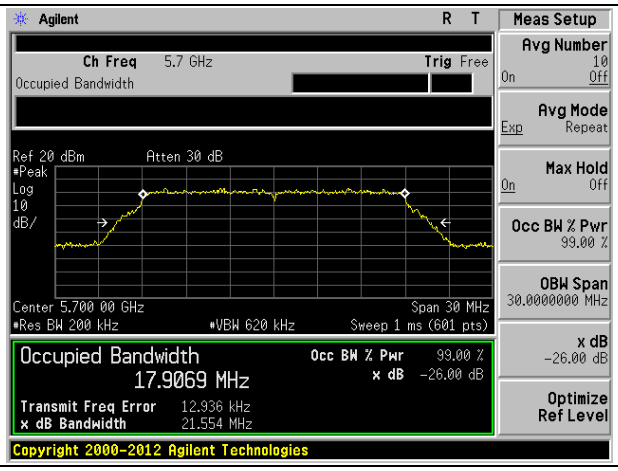
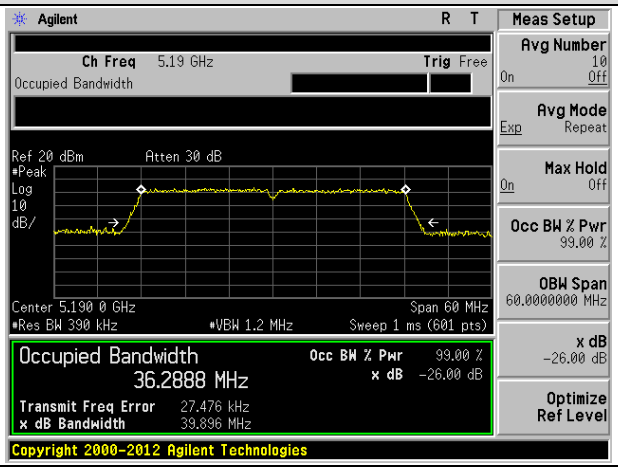
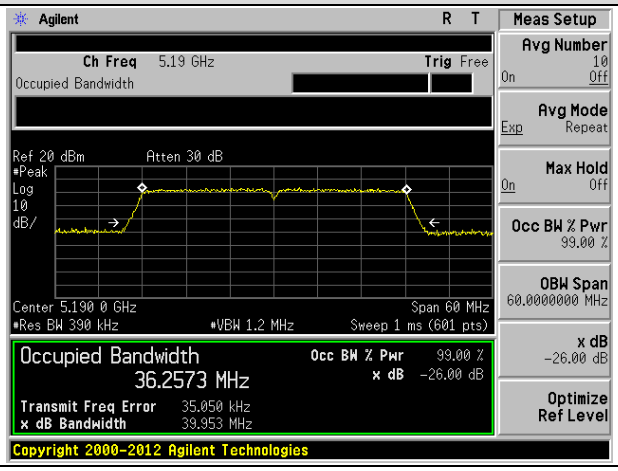
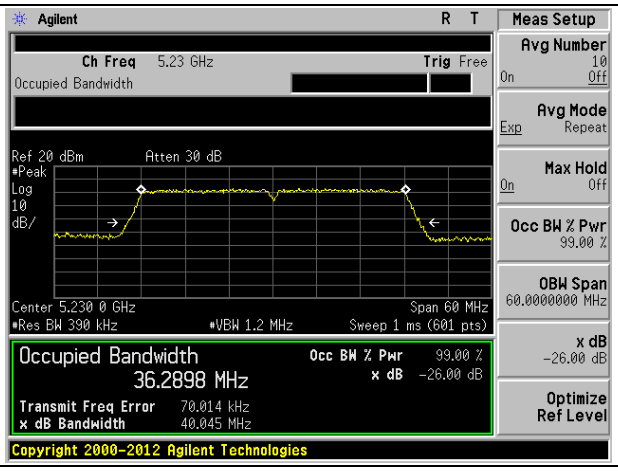
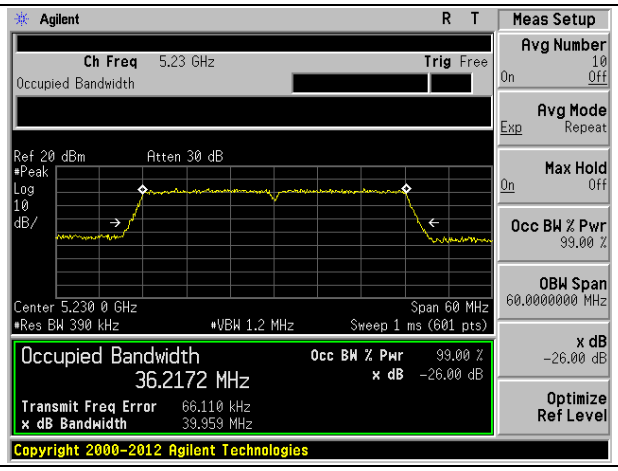
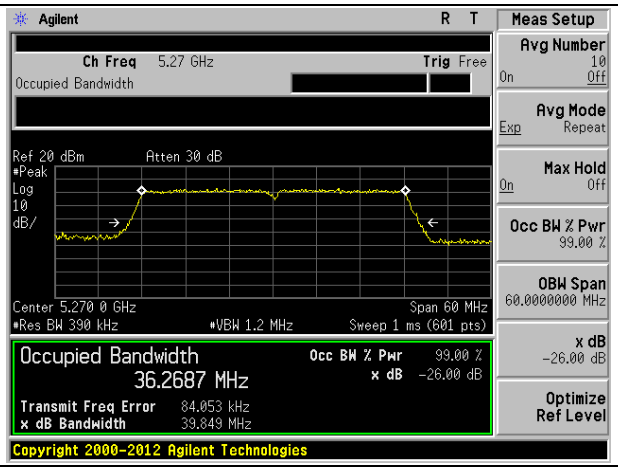
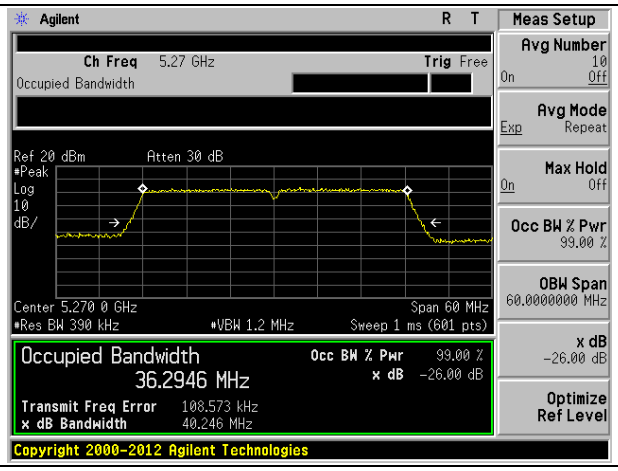
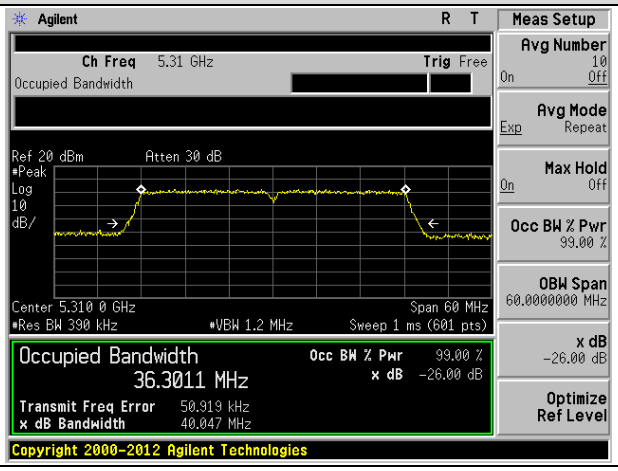
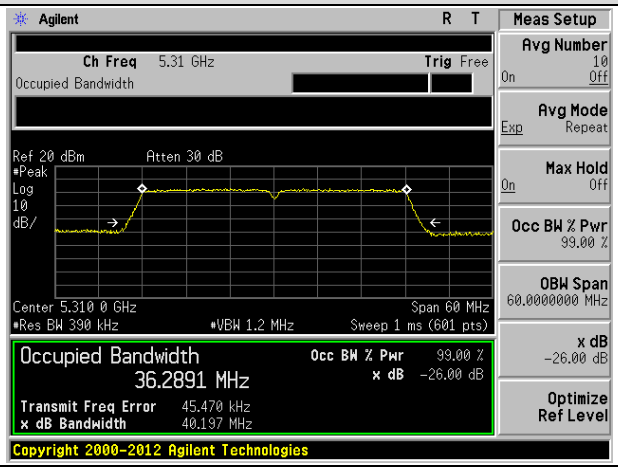
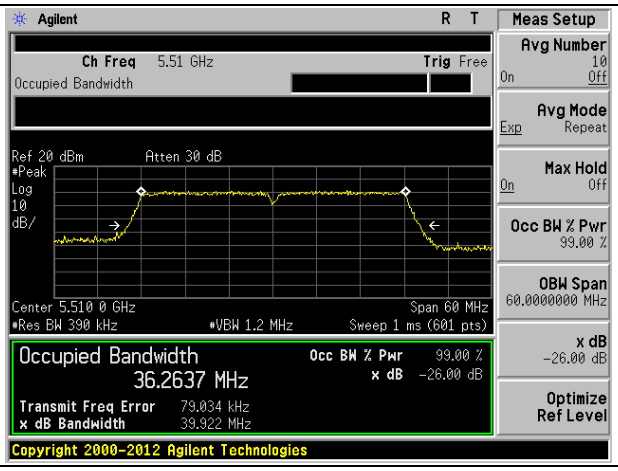
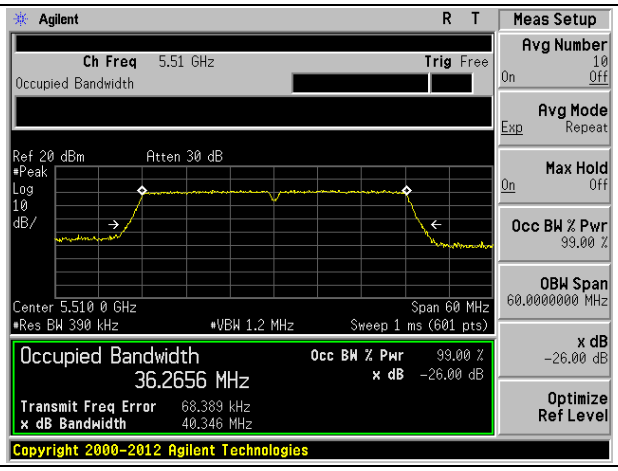
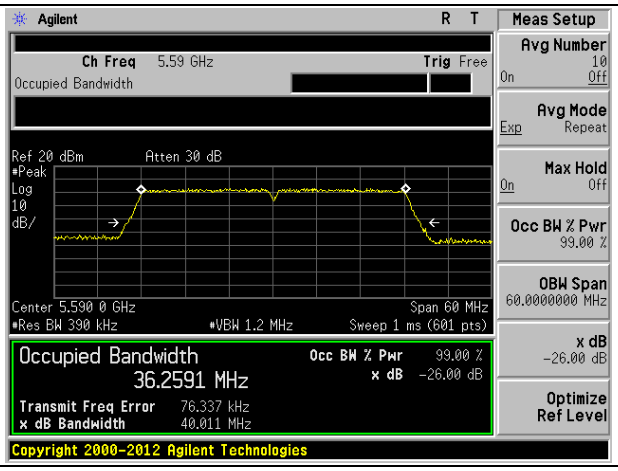
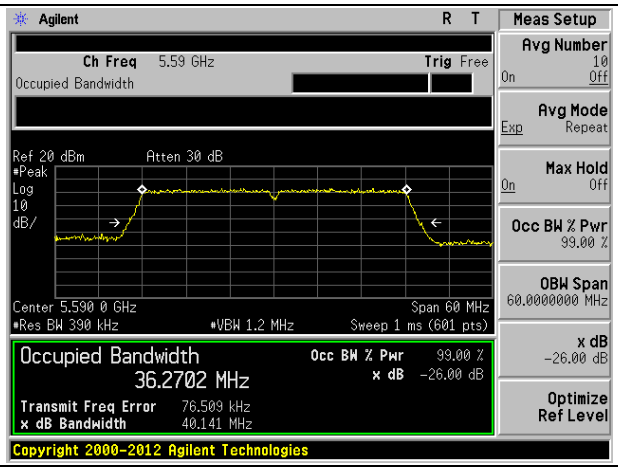
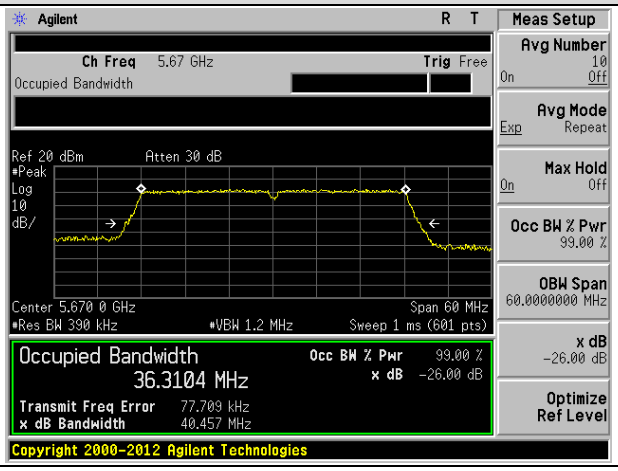
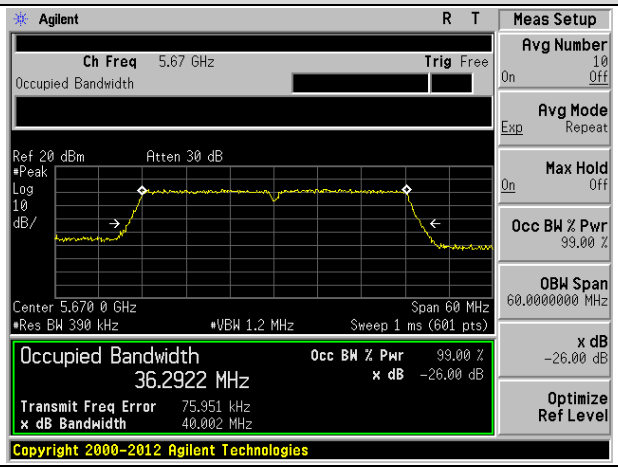
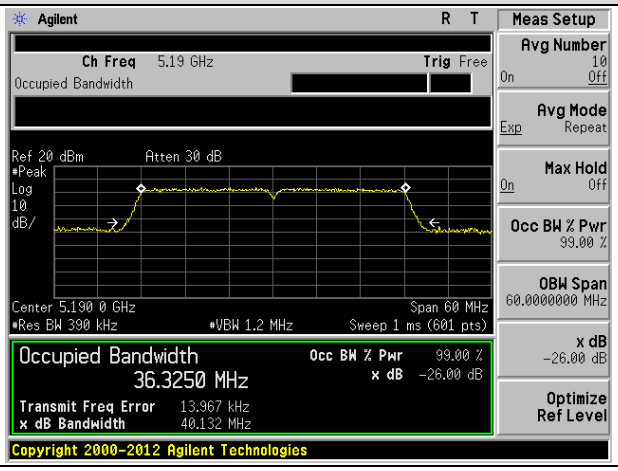
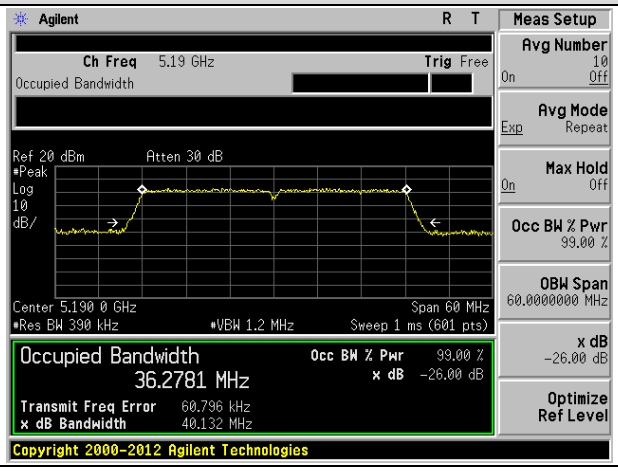
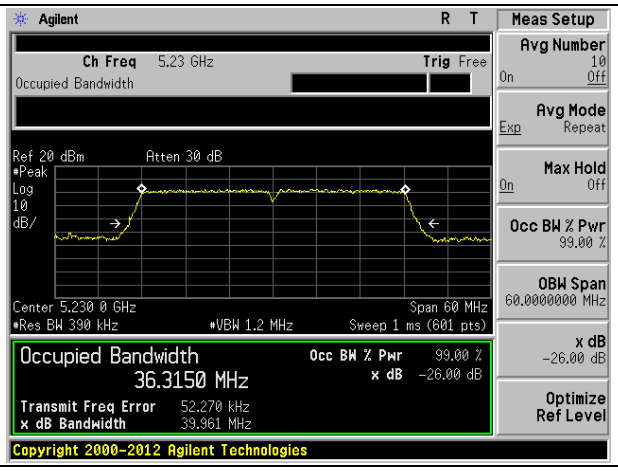
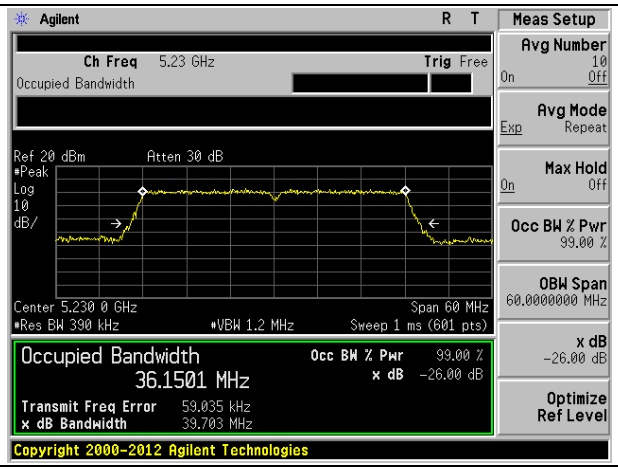
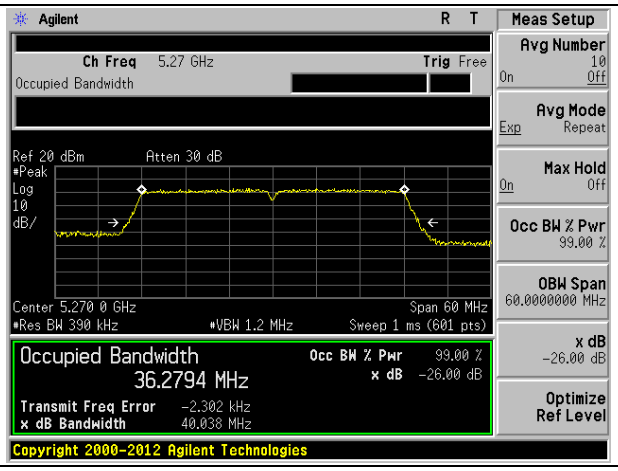
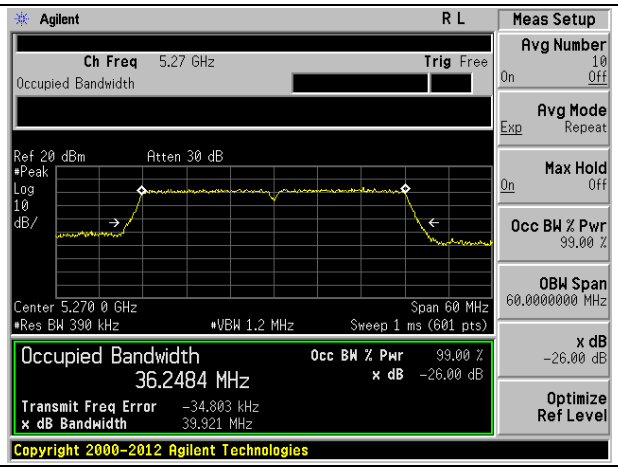
	
5300	**5300**
	
5320	**5320**

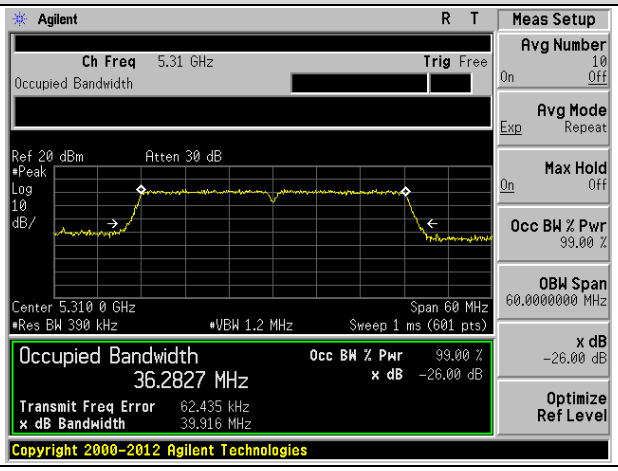
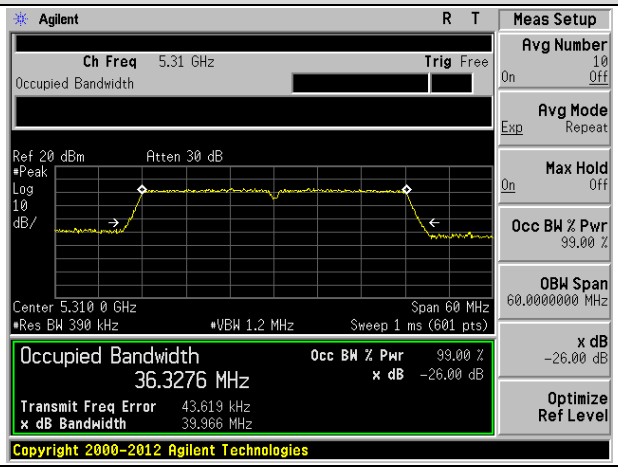
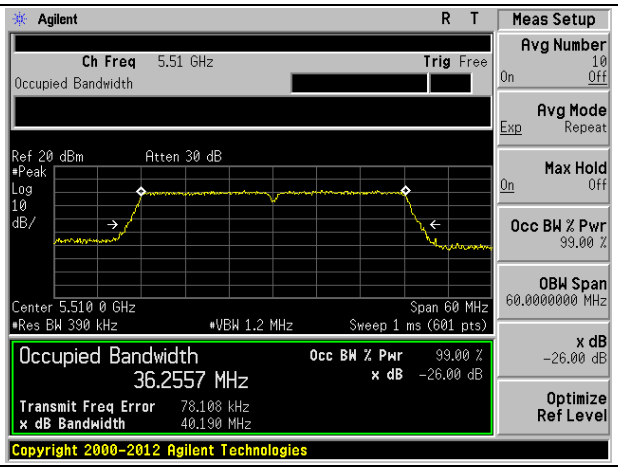
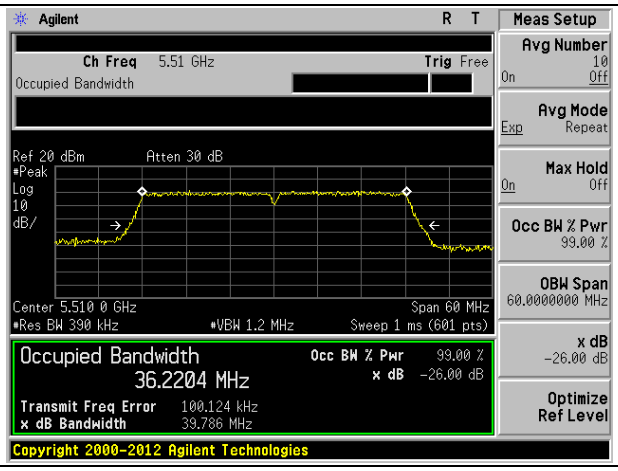
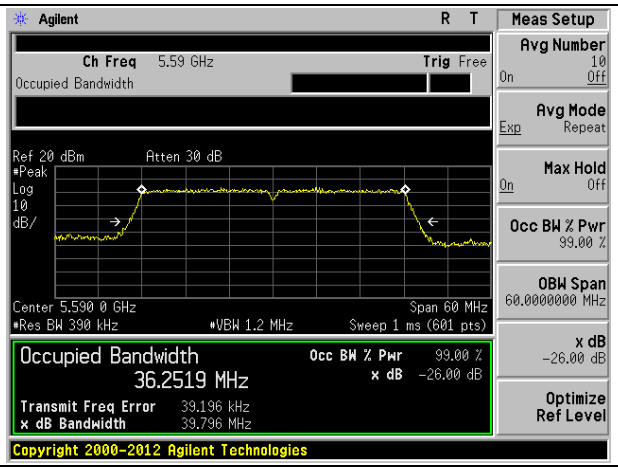
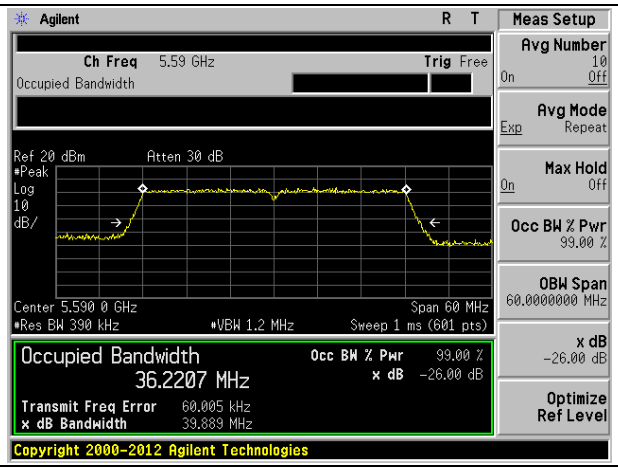
802.11ac(HT20) mode	
ANT 1	**ANT 2**
	
5500	**5500**
	
5600	**5600**
	
5700	**5700**

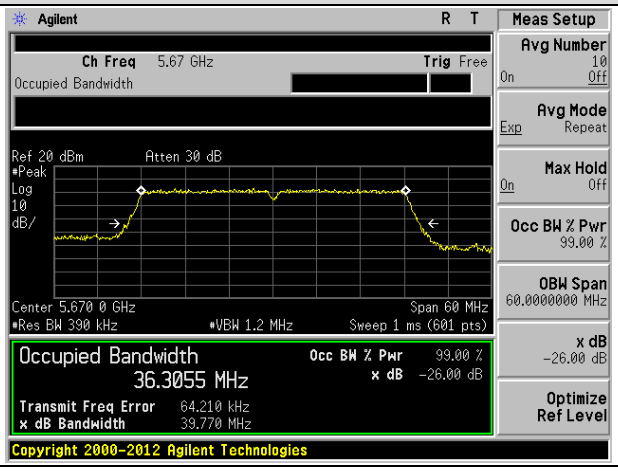
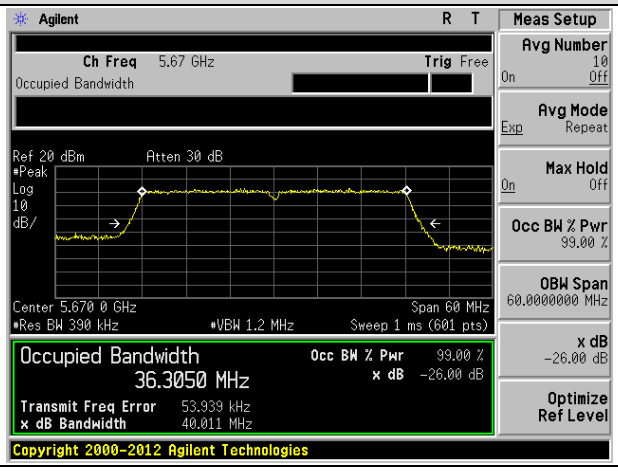
802.11n(HT40) mode	
ANT 1	**ANT 2**
	
5190	**5190**
	
5230	**5230**
	
5270	**5270**

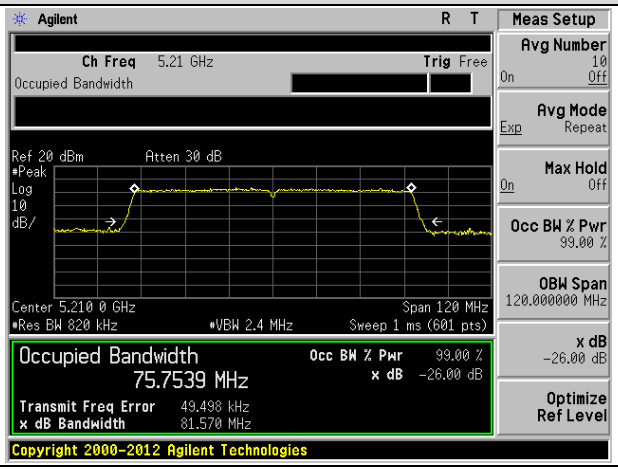
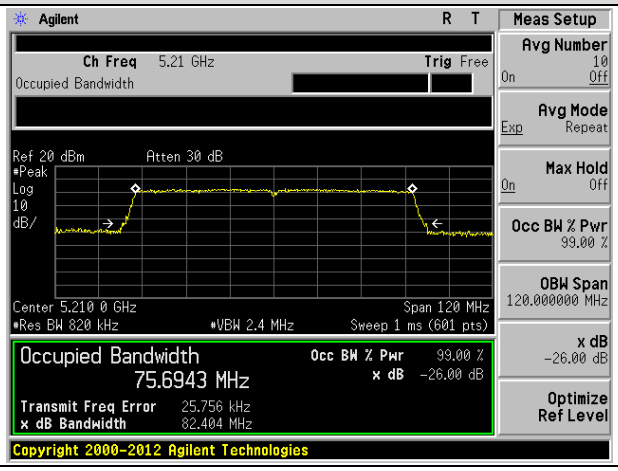
802.11n(HT40) mode	
ANT 1	**ANT 2**
	
5310	**5310**
	
5510	**5510**
	
5590	**5590**

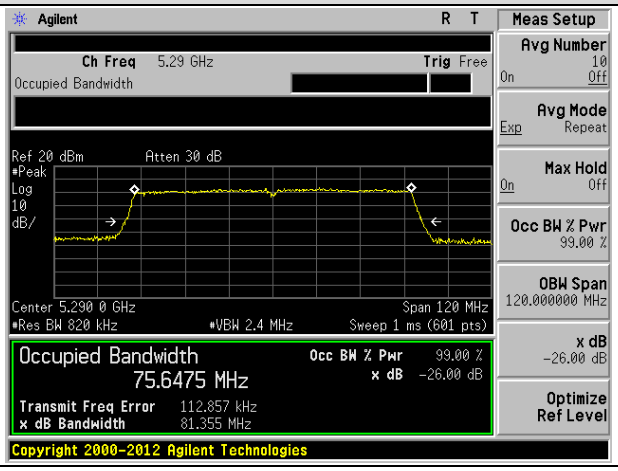
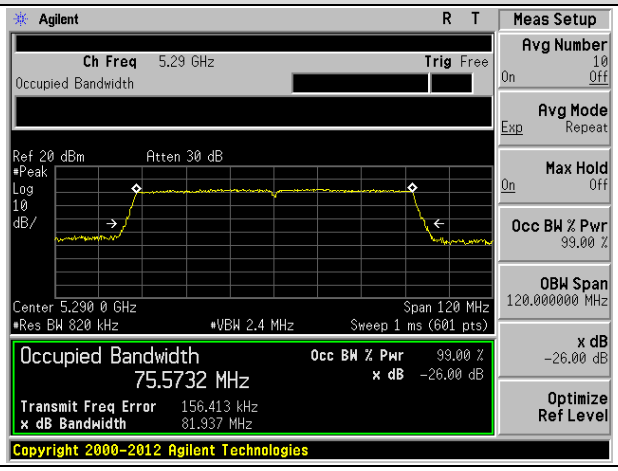
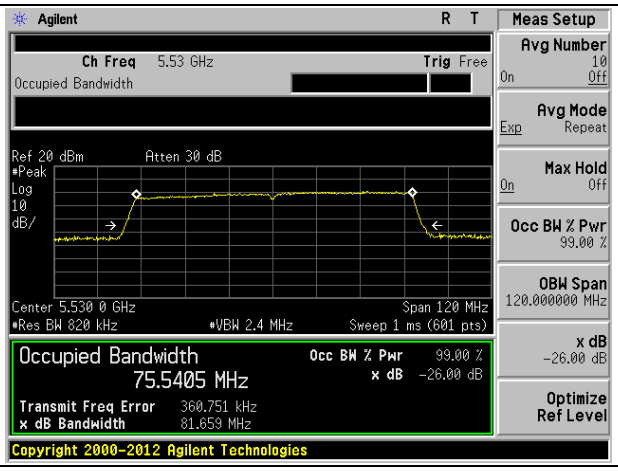
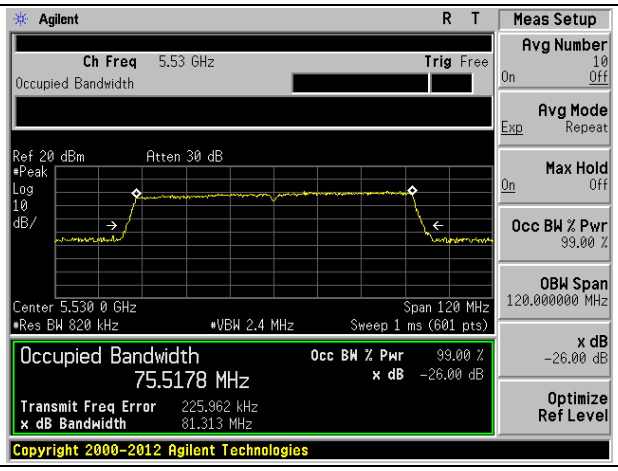
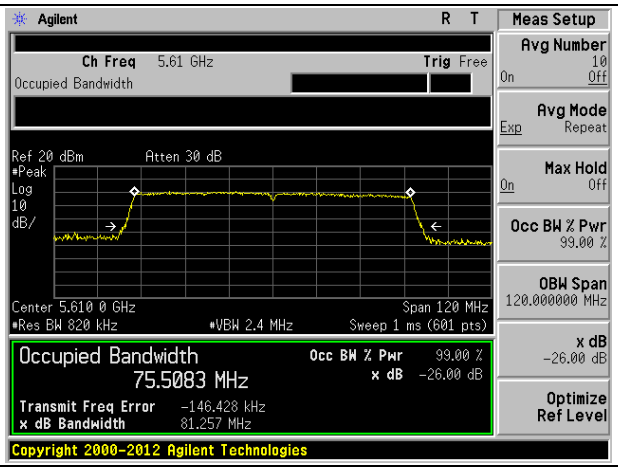
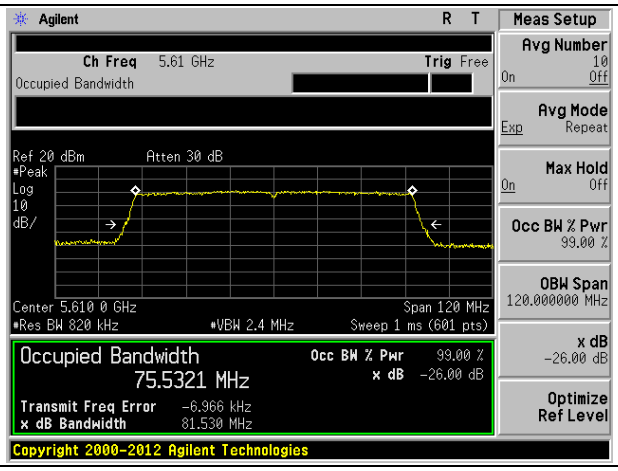
802.11n(HT40) mode	
ANT 1	**ANT 2**
	
5670	**5670**

802.11ac(HT40) mode	
ANT 1	**ANT 2**
	
5190	**5190**
	
5230	**5230**
	
5270	**5270**

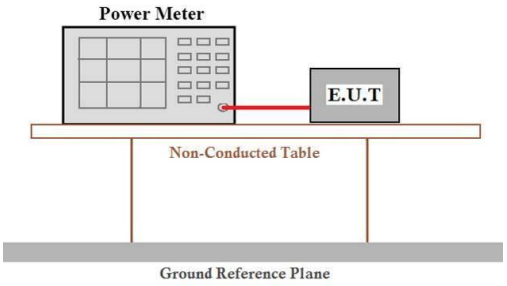
802.11ac(HT40) mode	
ANT 1	**ANT 2**
	
5310	**5310**
	
5510	**5510**
	
5590	**5590**

802.11ac(HT40) mode	
ANT 1	**ANT 2**
	
5670	**5670**

802.11ac(HT80) mode	
ANT 1	**ANT 2**
	
5210	**5210**

802.11ac(HT80) mode	
ANT 1	**ANT 2**
	
5290	**5290**
	
5530	**5530**
	
5610	**5610**

7.4 Peak Transmit Power

Test Requirement	FCC Part15 E Section 15.407 RSS-247 6.2.1.1&6.2.2.1&6.2.3.1
Test Method :	ANSI C63.10:2013 and RSS-Gen & KDB 789033 D02 v02r01
Limit:	See table below
Test setup:	
Test procedure:	**Measurement using an RF average power meter** (i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied a) The EUT is configured to transmit continuously or to transmit with a constant duty cycle. b) At all times when the EUT is transmitting, it must be transmitting at its maximum power control level. c) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five. (ii) If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in section B). (iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter. (iv) Adjust the measurement in dBm by adding 10 log(1/x) where x is the duty cycle (e.g., 10log(1/0.25) if the duty cycle is 25 percent).
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Frequency band (MHz)	Limit
5150-5250	≤1W(30dBm) for master device
	≤250mW(23.98dBm) for client device
5250-5350	≤250mW(23.98dBm) for client device or 11dBm+10logB*
5470-5725	≤250mW(23.98dBm) for client device or 11dBm+10logB*
Remark: *Where B is the 26dB emission bandwidth in MHz. The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.	

Measurement Data

Modulation	802.11a	802.11n(HT20)	802.11n(HT40)	802.11ac(HT20)	802.11ac(HT40)	802.11ac(HT80)
Duty cycle	98.8%	98.8%	97.5%	98.9%	97.4%	95.2%
Duty Factor	0.05	0.05	0.11	0.05	0.11	0.21

ANT 1:

802.11a mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180	14.08	0.05	14.13	23.98	Pass
44	5220	14.20	0.05	14.25	23.98	Pass
48	5240	14.17	0.05	14.22	23.98	Pass
52	5260	14.18	0.05	14.23	23.98	Pass
60	5300	13.68	0.05	13.73	23.98	Pass
64	5320	14.42	0.05	14.47	23.98	Pass
100	5500	15.05	0.05	15.10	23.98	Pass
120	5600	14.84	0.05	14.89	23.98	Pass
140	5700	14.69	0.05	14.74	23.98	Pass

802.11n(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180	13.96	0.05	14.01	23.98	Pass
44	5220	13.86	0.05	13.91	23.98	Pass
48	5240	14.29	0.05	14.34	23.98	Pass
52	5260	14.83	0.05	14.88	23.98	Pass
60	5300	14.17	0.05	14.22	23.98	Pass
64	5320	15.44	0.05	15.49	23.98	Pass
100	5500	15.57	0.05	15.62	23.98	Pass
120	5600	14.63	0.05	14.68	23.98	Pass
140	5700	14.18	0.05	14.23	23.98	Pass

802.11ac(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180	13.52	0.05	13.57	23.98	Pass
44	5220	14.46	0.05	14.51	23.98	Pass
48	5240	14.52	0.05	14.57	23.98	Pass
52	5260	15.93	0.05	15.98	23.98	Pass
60	5300	14.64	0.05	14.69	23.98	Pass
64	5320	15.10	0.05	15.15	23.98	Pass
100	5500	14.96	0.05	15.01	23.98	Pass
120	5600	14.05	0.05	14.10	23.98	Pass
140	5700	14.67	0.05	14.72	23.98	Pass

802.11n(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
38	5190	13.17	0.11	13.28	23.98	Pass
46	5230	14.08	0.11	14.19	23.98	Pass
54	5270	13.52	0.11	13.63	23.98	Pass
62	5310	14.59	0.11	14.70	23.98	Pass
102	5510	15.69	0.11	15.80	23.98	Pass
118	5590	14.65	0.11	14.76	23.98	Pass
134	5670	14.41	0.11	14.52	23.98	Pass

802.11 ac(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
38	5190	14.55	0.11	14.66	23.98	Pass
46	5230	13.92	0.11	14.03	23.98	Pass
54	5270	13.94	0.11	14.05	23.98	Pass
62	5310	14.18	0.11	14.29	23.98	Pass
102	5510	14.30	0.11	14.41	23.98	Pass
118	5590	14.17	0.11	14.28	23.98	Pass
134	5670	14.18	0.11	14.29	23.98	Pass

802.11 ac(HT80)						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
42	5210	14.64	0.21	14.85	23.98	Pass
58	5290	13.74	0.21	13.95	23.98	Pass
106	5530	13.62	0.21	13.83	23.98	Pass
122	5610	14.47	0.21	14.68	23.98	Pass

ANT 2:

802.11a mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180	13.59	0.05	13.64	23.98	Pass
44	5220	13.43	0.05	13.48	23.98	Pass
48	5240	14.42	0.05	14.47	23.98	Pass
52	5260	14.63	0.05	14.68	23.98	Pass
60	5300	14.51	0.05	14.56	23.98	Pass
64	5320	13.14	0.05	13.19	23.98	Pass
100	5500	13.19	0.05	13.24	23.98	Pass
120	5600	13.62	0.05	13.67	23.98	Pass
140	5700	13.30	0.05	13.35	23.98	Pass

802.11n(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180	14.29	0.05	14.34	23.98	Pass
44	5220	14.25	0.05	14.30	23.98	Pass
48	5240	13.26	0.05	13.31	23.98	Pass
52	5260	14.91	0.05	14.96	23.98	Pass
60	5300	13.65	0.05	13.70	23.98	Pass
64	5320	13.74	0.05	13.79	23.98	Pass
100	5500	13.84	0.05	13.89	23.98	Pass
120	5600	14.84	0.05	14.89	23.98	Pass
140	5700	14.53	0.05	14.58	23.98	Pass

802.11ac(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180	14.43	0.05	14.48	23.98	Pass
44	5220	13.18	0.05	13.23	23.98	Pass
48	5240	14.25	0.05	14.30	23.98	Pass
52	5260	15.11	0.05	15.16	23.98	Pass
60	5300	15.11	0.05	15.16	23.98	Pass
64	5320	15.56	0.05	15.61	23.98	Pass
100	5500	14.00	0.05	14.05	23.98	Pass
120	5600	14.11	0.05	14.16	23.98	Pass
140	5700	13.35	0.05	13.40	23.98	Pass

802.11n(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
38	5190	14.93	0.11	15.04	23.98	Pass
46	5230	13.63	0.11	13.74	23.98	Pass
54	5270	13.12	0.11	13.23	23.98	Pass
62	5310	13.38	0.11	13.49	23.98	Pass
102	5510	13.84	0.11	13.95	23.98	Pass
118	5590	14.74	0.11	14.85	23.98	Pass
134	5670	14.22	0.11	14.33	23.98	Pass

802.11 ac(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
38	5190	13.58	0.11	13.69	23.98	Pass
46	5230	13.42	0.11	13.53	23.98	Pass
54	5270	13.67	0.11	13.78	23.98	Pass
62	5310	14.65	0.11	14.76	23.98	Pass
102	5510	15.55	0.11	15.66	23.98	Pass
118	5590	14.21	0.11	14.32	23.98	Pass
134	5670	14.03	0.11	14.14	23.98	Pass

802.11 ac(HT80)						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
42	5210	15.08	0.21	15.29	23.98	Pass
58	5290	14.83	0.21	15.04	23.98	Pass
106	5530	15.29	0.21	15.5	23.98	Pass
122	5610	15.22	0.21	15.43	23.98	Pass

MIMO without beam forming:

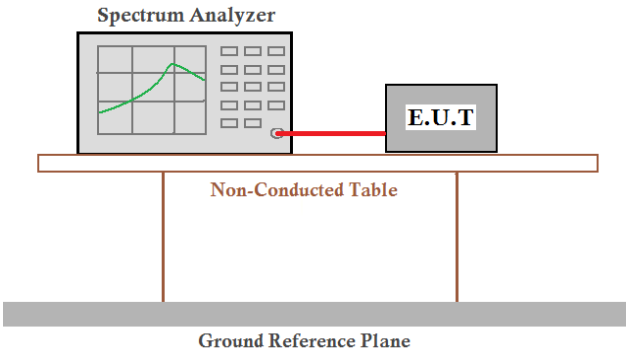
Test mode	Frequency (MHz)	ANT 1 Power (dBm)	ANT 2 Power (dBm)	MIMO Power (dBm)	Limit (dBm)	Result
802.11n (HT20)	5180	14.01	14.34	17.19	23.98	Pass
	5220	13.91	14.30	17.12		
	5240	14.34	13.31	16.87		
	5260	14.88	14.96	17.93		
	5300	14.22	13.70	16.98		
	5320	15.49	13.79	17.73		
	5500	15.62	13.89	17.85		
	5600	14.68	14.89	17.80		
	5700	14.23	14.58	17.42		
802.11ac(HT20)	5180	13.57	14.48	17.06		
	5220	14.51	13.23	16.93		
	5240	14.57	14.30	17.45		
	5260	15.98	15.16	18.60		
	5300	14.69	15.16	17.94		
	5320	15.15	15.61	18.40		
	5500	15.01	14.05	17.57		
	5600	14.10	14.16	17.14		
	5700	14.72	13.40	17.12		
802.11n (HT40)	5190	13.28	15.04	17.26		
	5230	14.19	13.74	16.98		
	5270	13.63	13.23	16.44		
	5310	14.70	13.49	17.15		
	5510	15.80	13.95	17.98		
	5590	14.76	14.85	17.82		
	5670	14.52	14.33	17.44		
802.11ac(HT40)	5190	14.66	13.69	17.21		
	5230	14.03	13.53	16.80		
	5270	14.05	13.78	16.93		
	5310	14.29	14.76	17.54		
	5510	14.41	15.66	18.09		
	5590	14.28	14.32	17.31		
	5670	14.29	14.14	17.23		

802.11ac(HT80)	5210	14.85	15.29	18.09		
	5290	13.95	15.04	17.54		
	5530	13.83	15.5	17.76		
	5610	14.68	15.43	18.08		

Note: transmit signals are completely un*correlated*,

Directional gain=10 x log [($10^{3.64/10}$ + $10^{3.14/10}$)/2]=3.39dBi

7.5 Power Spectral Density

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 E Section 15.407
RSS-247 6.2.1.1&6.2.2.1&6.2.3.1</td></tr>
<tr><td>Test Method :</td><td>ANSI C63.10:2013 and RSS-Gen & KDB 789033 D02 v02r01</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Frequency band (MHz)</td><td>Limit</td></tr>
<tr><td rowspan="2">5150-5250</td><td>≤17dBm in 1MHz for master device</td></tr>
<tr><td>≤11dBm in 1MHz for client device</td></tr>
<tr><td>5250-5350</td><td>≤11dBm in 1MHz for client device</td></tr>
<tr><td>5470-5725</td><td>≤11dBm in 1MHz for client device</td></tr>
<tr><td colspan="2">Remark: The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test.</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td> 
</td></tr>
<tr><td>Test procedure:</td><td>1) Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E)2) for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, “Compute power…”.
2) Use the peak search function on the instrument to find the peak of the spectrum.
3) Make the following adjustments to the peak value of the spectrum, if applicable:
a) If Method SA-2 or SA-2 Alternative was used, add 10 log(1/x), where x is the duty cycle, to the peak of the spectrum.
b) If Method SA-3 Alternative was used and the linear mode was used in step E)2)g)(viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging.
4) The result is the PSD.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 5.10 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.2 for details</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

Measurement Data

Modulation	802.11a	802.11n(HT20)	802.11n(HT40)	802.11ac(HT20)	802.11ac(HT40)	802.11ac(HT80)
Duty cycle	98.8%	98.8%	97.5%	98.9%	97.4%	95.2%
Duty Factor	0.05	0.05	0.11	0.05	0.11	0.21

ANT 1:

802.11a mode						
CH No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD Power(dBm/MHz)	Limit (dBm/MHz)	Result
36	5180	7.70	0.05	7.75	11	Pass
44	5220	5.79	0.05	5.84	11	Pass
48	5240	5.97	0.05	6.02	11	Pass
52	5260	6.60	0.05	6.65	11	Pass
60	5300	5.74	0.05	5.79	11	Pass
64	5320	5.72	0.05	5.77	11	Pass
100	5500	4.70	0.05	4.75	11	Pass
120	5600	5.78	0.05	5.83	11	Pass
140	5700	6.03	0.05	6.08	11	Pass

802.11n(HT20) mode						
CH No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD Power(dBm/MHz)	Limit (dBm/MHz)	Result
36	5180	7.81	0.05	7.86	11	Pass
44	5220	6.16	0.05	6.21	11	Pass
48	5240	5.73	0.05	5.78	11	Pass
52	5260	5.14	0.05	5.19	11	Pass
60	5300	5.54	0.05	5.59	11	Pass
64	5320	5.64	0.05	5.69	11	Pass
100	5500	4.72	0.05	4.77	11	Pass
120	5600	6.14	0.05	6.19	11	Pass
140	5700	6.03	0.05	6.08	11	Pass

802.11ac(HT20) mode						
CH No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD Power(dBm/MHz)	Limit (dBm/MHz)	Result
36	5180	7.71	0.05	7.76	11	Pass
44	5220	5.76	0.05	5.81	11	Pass
48	5240	5.59	0.05	5.64	11	Pass
52	5260	6.03	0.05	6.08	11	Pass
60	5300	5.61	0.05	5.66	11	Pass
64	5320	6.20	0.05	6.25	11	Pass
100	5500	4.76	0.05	4.81	11	Pass
120	5600	5.97	0.05	6.02	11	Pass
140	5700	6.30	0.05	6.35	11	Pass

802.11n(HT40) mode						
CH No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD Power(dBm/MHz)	Limit (dBm/MHz)	Result
38	5190	4.67	0.11	4.78	11	Pass
46	5230	4.41	0.11	4.52	11	Pass
54	5270	4.01	0.11	4.12	11	Pass
62	5310	3.15	0.11	3.26	11	Pass
102	5510	2.53	0.11	2.64	11	Pass
118	5590	4.28	0.11	4.39	11	Pass
134	5670	3.98	0.11	4.09	11	Pass

802.11 ac(HT40) mode						
CH No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD Power(dBm/MHz)	Limit (dBm/MHz)	Result
38	5190	3.80	0.11	3.91	11	Pass
46	5230	4.13	0.11	4.24	11	Pass
54	5270	3.89	0.11	4	11	Pass
62	5310	3.45	0.11	3.56	11	Pass
102	5510	3.24	0.11	3.35	11	Pass
118	5590	4.85	0.11	4.96	11	Pass
134	5670	4.32	0.11	4.43	11	Pass

802.11 ac(HT80)						
CH No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD Power(dBm/MHz)	Limit (dBm/MHz)	Result
42	5210	0.29	0.21	0.5	11	Pass
58	5290	0.66	0.21	0.87	11	Pass
106	5530	-2.56	0.21	-2.35	11	Pass
122	5610	-1.78	0.21	-1.57	11	Pass

ANT 2:

802.11a mode						
CH No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD Power(dBm/MHz)	Limit (dBm/MHz)	Result
36	5180	7.75	0.05	7.8	11	Pass
44	5220	5.82	0.05	5.87	11	Pass
48	5240	5.64	0.05	5.69	11	Pass
52	5260	6.50	0.05	6.55	11	Pass
60	5300	5.76	0.05	5.81	11	Pass
64	5320	5.72	0.05	5.77	11	Pass
100	5500	4.78	0.05	4.83	11	Pass
120	5600	6.03	0.05	6.08	11	Pass
140	5700	5.99	0.05	6.04	11	Pass

802.11n(HT20) mode						
CH No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD Power(dBm/MHz)	Limit (dBm/MHz)	Result
36	5180	7.52	0.05	7.57	11	Pass
44	5220	6.21	0.05	6.26	11	Pass
48	5240	5.14	0.05	5.19	11	Pass
52	5260	6.52	0.05	6.57	11	Pass
60	5300	5.43	0.05	5.48	11	Pass
64	5320	4.80	0.05	4.85	11	Pass
100	5500	4.25	0.05	4.3	11	Pass
120	5600	5.95	0.05	6	11	Pass
140	5700	5.83	0.05	5.88	11	Pass

802.11ac(HT20) mode						
CH No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD Power(dBm/MHz)	Limit (dBm/MHz)	Result
36	5180	7.39	0.05	7.44	11	Pass
44	5220	6.00	0.05	6.05	11	Pass
48	5240	5.75	0.05	5.8	11	Pass
52	5260	6.11	0.05	6.16	11	Pass
60	5300	5.43	0.05	5.48	11	Pass
64	5320	6.13	0.05	6.18	11	Pass
100	5500	5.07	0.05	5.12	11	Pass
120	5600	5.76	0.05	5.81	11	Pass
140	5700	6.22	0.05	6.27	11	Pass

802.11n(HT40) mode						
CH No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD Power(dBm/MHz)	Limit (dBm/MHz)	Result
38	5190	4.32	0.11	4.43	11	Pass
46	5230	4.47	0.11	4.58	11	Pass
54	5270	4.03	0.11	4.14	11	Pass
62	5310	3.19	0.11	3.3	11	Pass
102	5510	2.49	0.11	2.6	11	Pass
118	5590	4.24	0.11	4.35	11	Pass
134	5670	3.93	0.11	4.04	11	Pass

802.11 ac(HT40) mode						
CH No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD Power(dBm/MHz)	Limit (dBm/MHz)	Result
38	5190	4.46	0.11	4.57	11	Pass
46	5230	4.13	0.11	4.24	11	Pass
54	5270	3.89	0.11	4	11	Pass
62	5310	3.98	0.11	4.09	11	Pass
102	5510	3.11	0.11	3.22	11	Pass
118	5590	3.83	0.11	3.94	11	Pass
134	5670	4.11	0.11	4.22	11	Pass

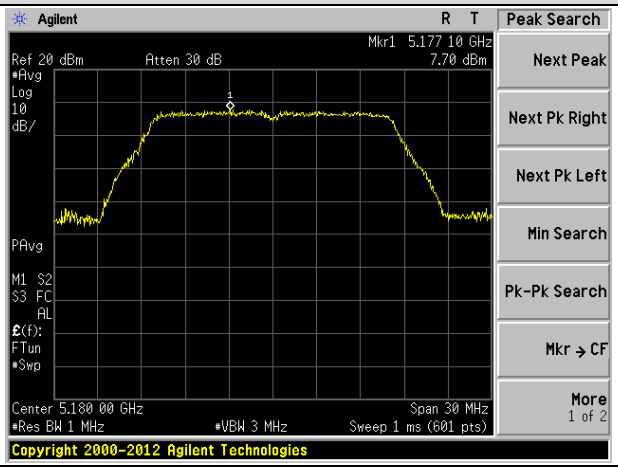
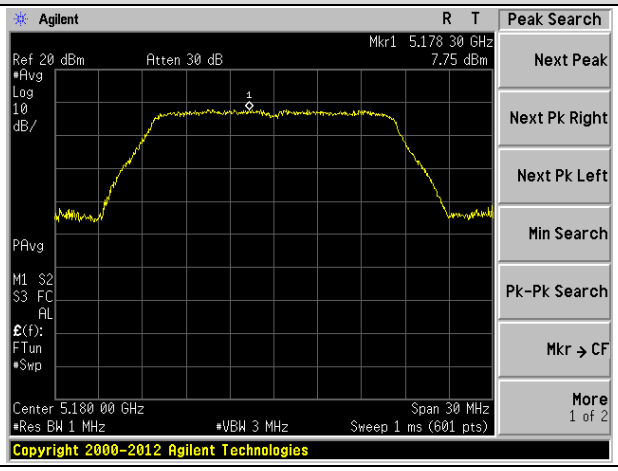
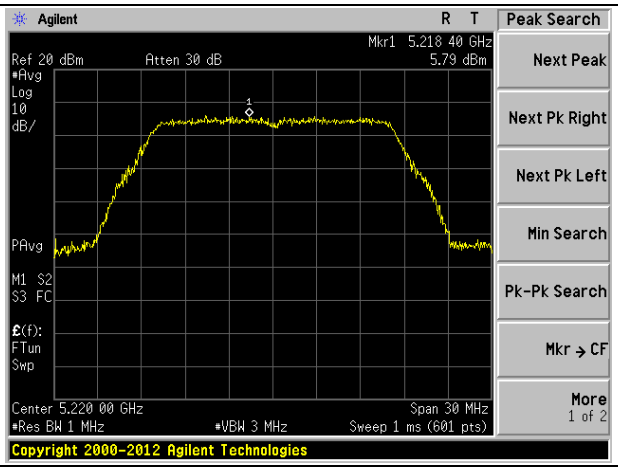
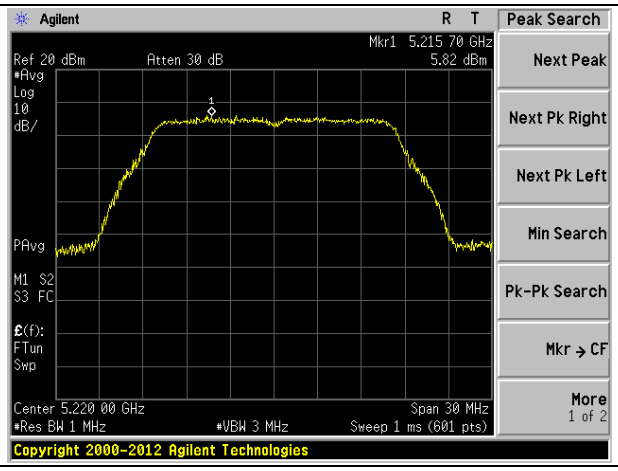
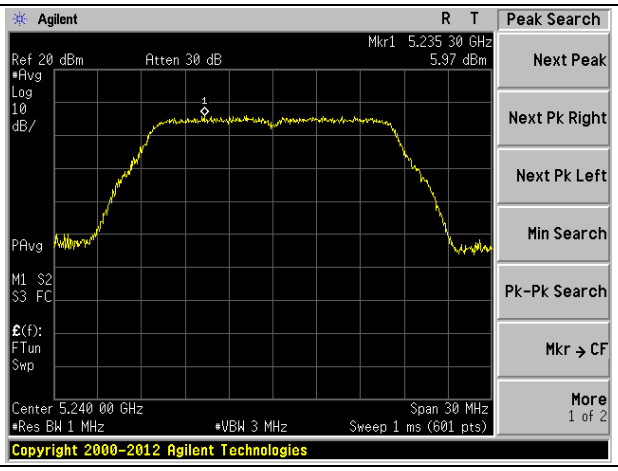
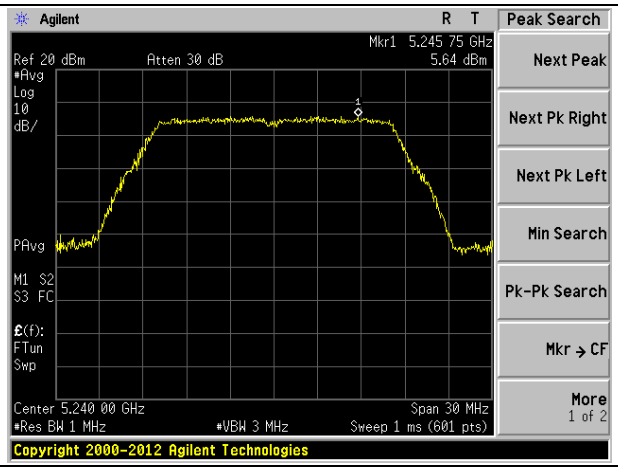
802.11 ac(HT80)						
CH No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD Power(dBm/MHz)	Limit (dBm/MHz)	Result
42	5210	0.91	0.21	1.12	11	Pass
58	5290	0.50	0.21	0.71	11	Pass
106	5530	-3.62	0.21	-3.41	11	Pass
122	5610	-1.11	0.21	-0.9	11	Pass

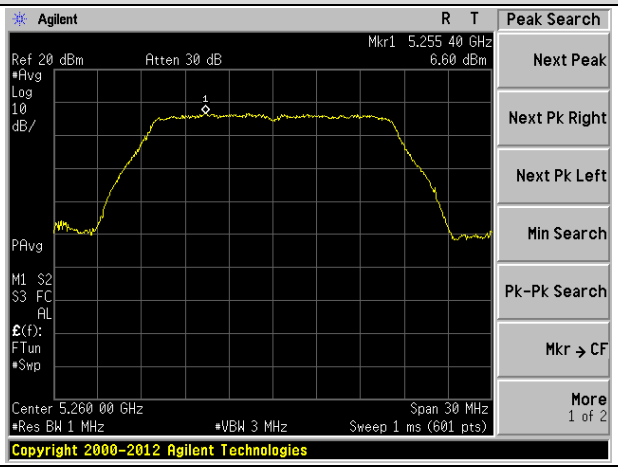
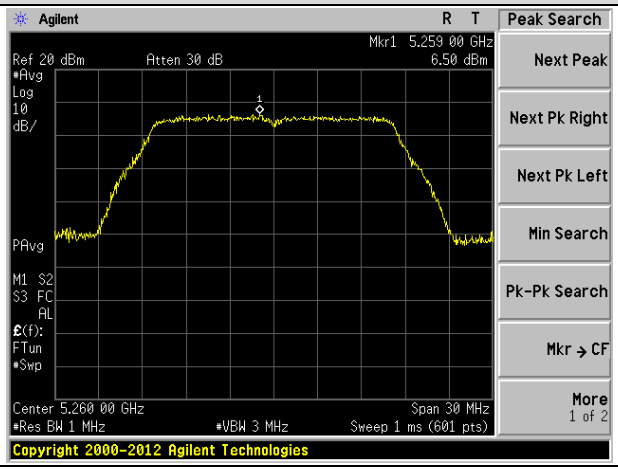
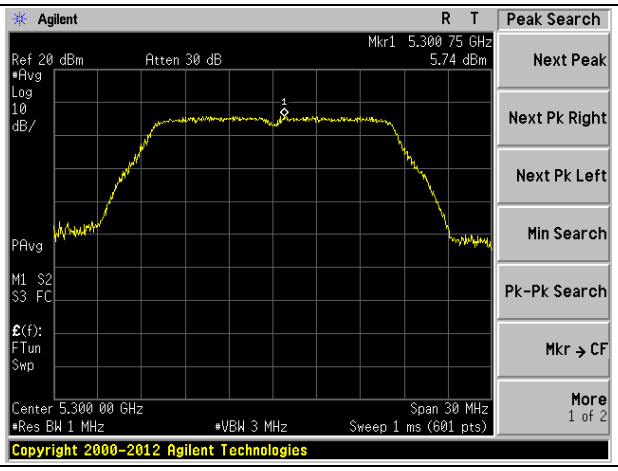
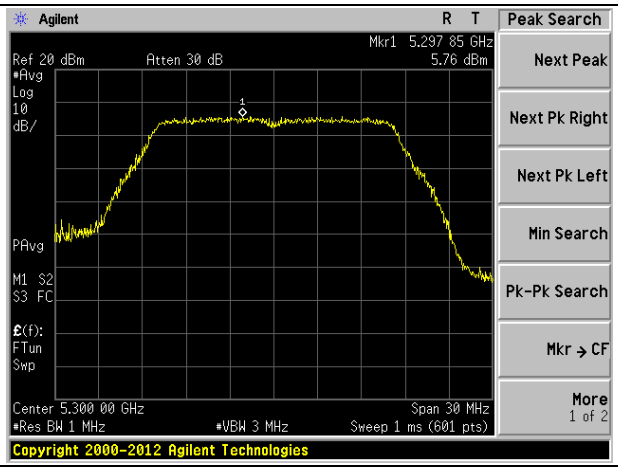
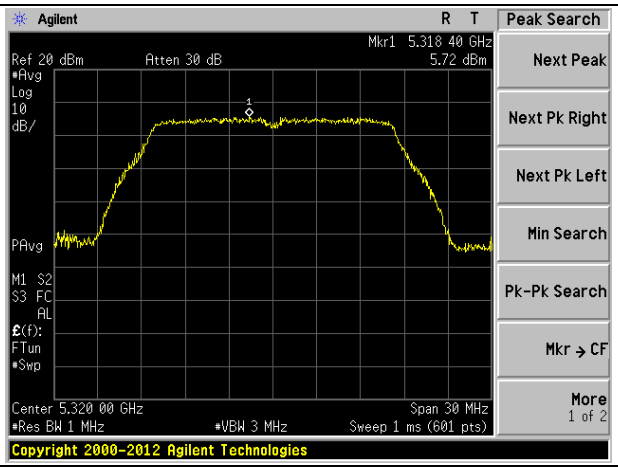
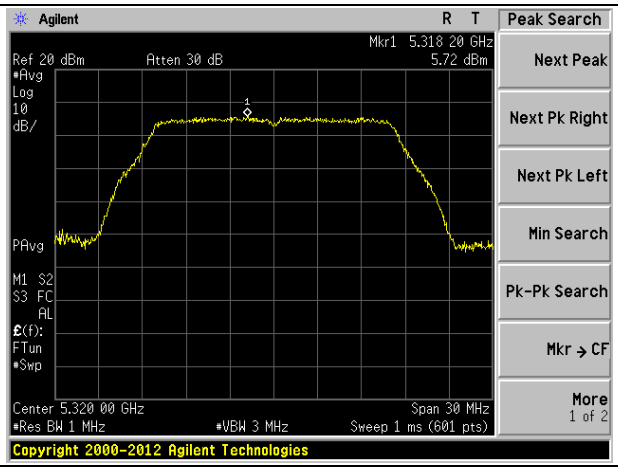
Note: Output Power = Measured Power + Duty Factor
Duty Factor = 10 log (1/Duty Cycle)

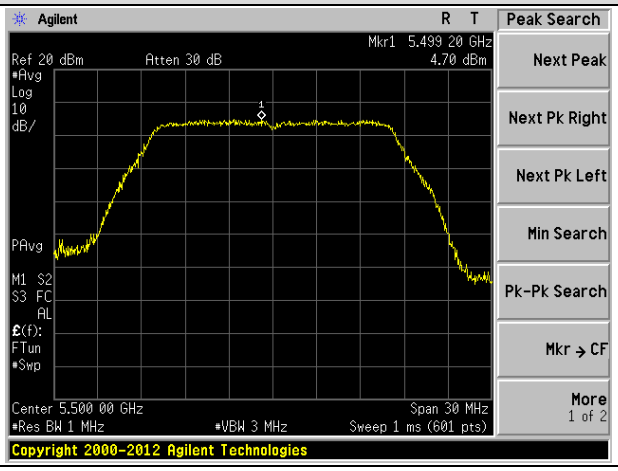
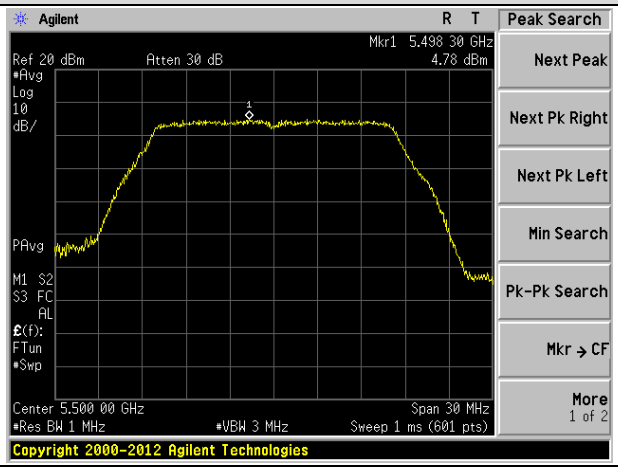
MIMO without beam forming:

Test mode	Frequency (MHz)	ANT 1 PSD (dBm/MHz)	ANT 2 PSD (dBm/MHz)	MIMO (dBm/MHz)	Limit	Result
802.11n(HT20)	5180	7.86	7.57	10.73	11 dBm/MHz	Pass
	5220	6.21	6.26	9.25		
	5240	5.78	5.19	8.51		
	5260	5.19	6.57	8.94		
	5300	5.59	5.48	8.55		
	5320	5.69	4.85	8.30		
	5500	4.77	4.3	7.55		
	5600	6.19	6	9.11		
	5700	6.08	5.88	8.99		
802.11ac(HT20)	5180	7.76	7.44	10.61		
	5220	5.81	6.05	8.94		
	5240	5.64	5.8	8.73		
	5260	6.08	6.16	9.13		
	5300	5.66	5.48	8.58		
	5320	6.25	6.18	9.23		
	5500	4.81	5.12	7.98		
	5600	6.02	5.81	8.93		
	5700	6.35	6.27	9.32		
802.11n(HT40)	5190	4.78	4.43	7.62		
	5230	4.52	4.58	7.56		
	5270	4.12	4.14	7.14		
	5310	3.26	3.3	6.29		
	5510	2.64	2.6	5.63		
	5590	4.39	4.35	7.38		
	5670	4.09	4.04	7.08		
802.11ac(HT40)	5190	3.91	4.57	7.26		
	5230	4.24	4.24	7.25		
	5270	4	4	7.01		
	5310	3.56	4.09	6.84		
	5510	3.35	3.22	6.30		
	5590	4.96	3.94	7.49		
	5670	4.43	4.22	7.34		
802.11ac(HT80)	5210	0.5	1.12	3.83		
	5290	0.87	0.71	3.80		
	5530	-2.35	-3.41	0.16		
	5610	-1.57	-0.9	1.79		

Test plots as followed:

802.11a mode	
ANT 1	**ANT 2**
	
5180	**5180**
	
5220	**5220**
	
5240	**5240**

802.11a mode	
ANT 1	**ANT 2**
	
5260	**5260**
	
5300	**5300**
	
5320	**5320**

802.11a mode	
ANT 1	**ANT 2**
	
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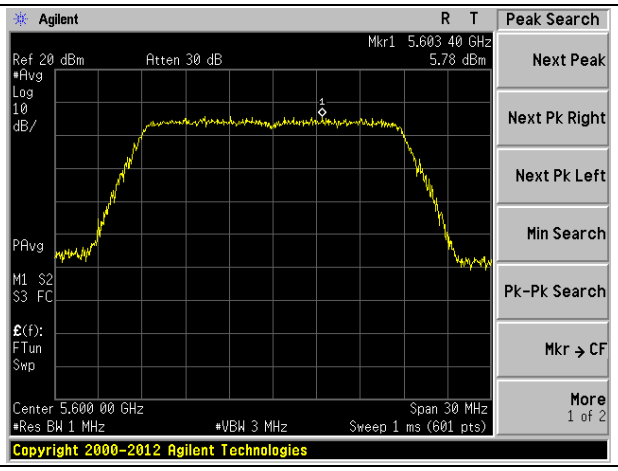	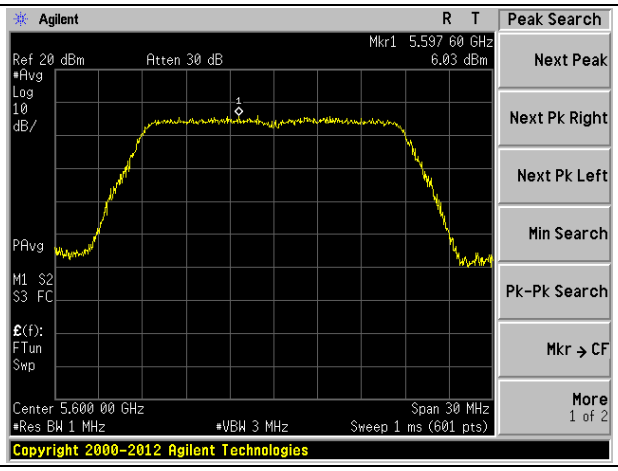
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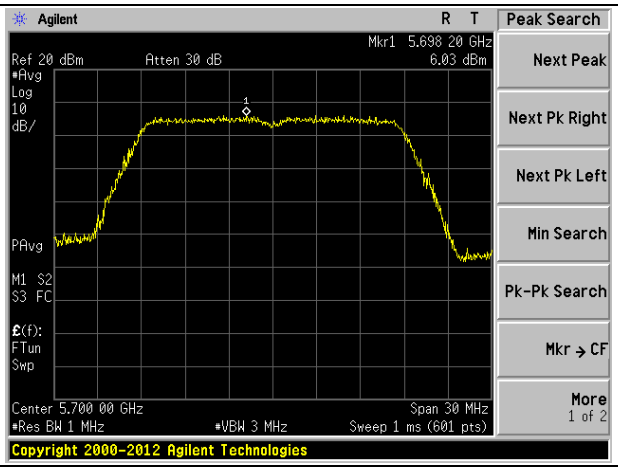	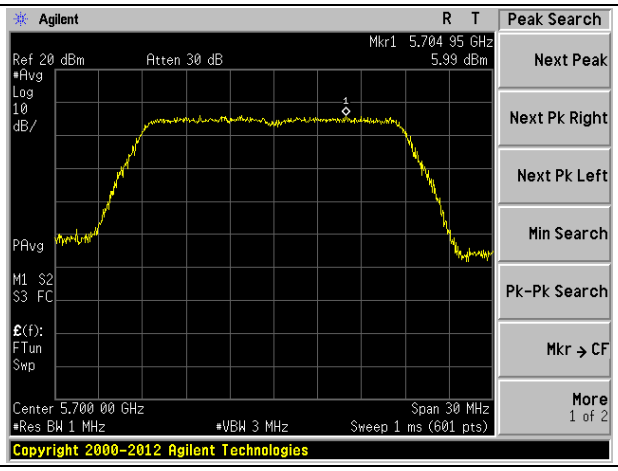
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802.11n(HT20) mode	
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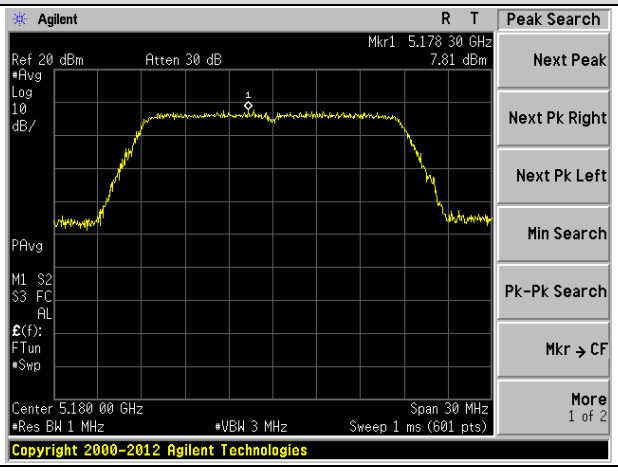	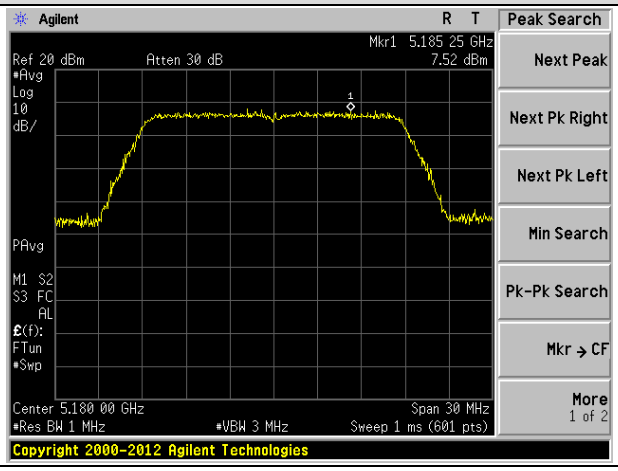
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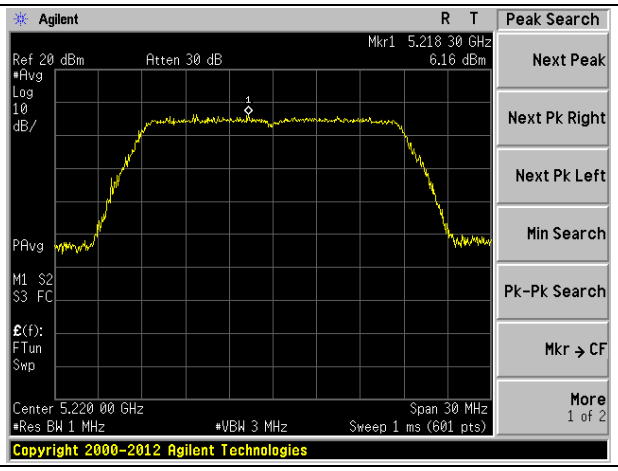	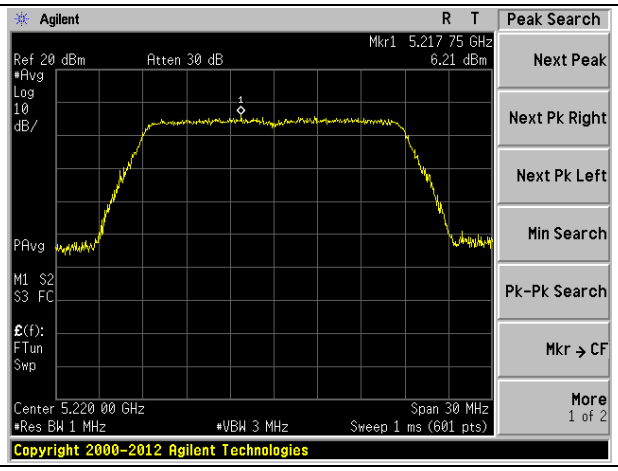
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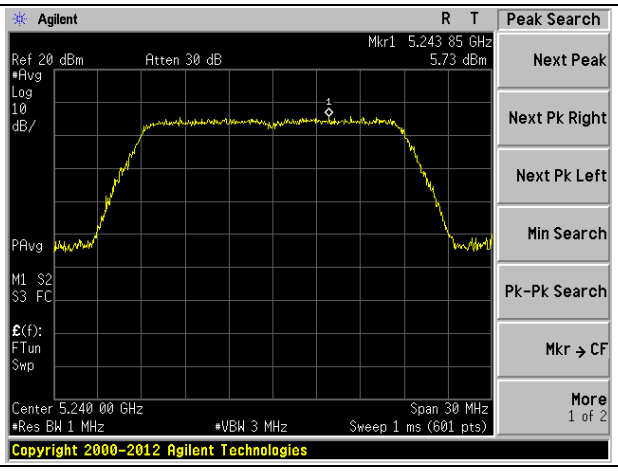	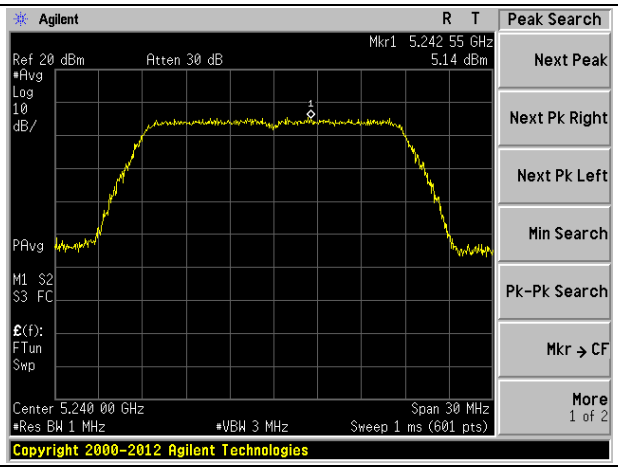
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802.11n(HT20) mode	
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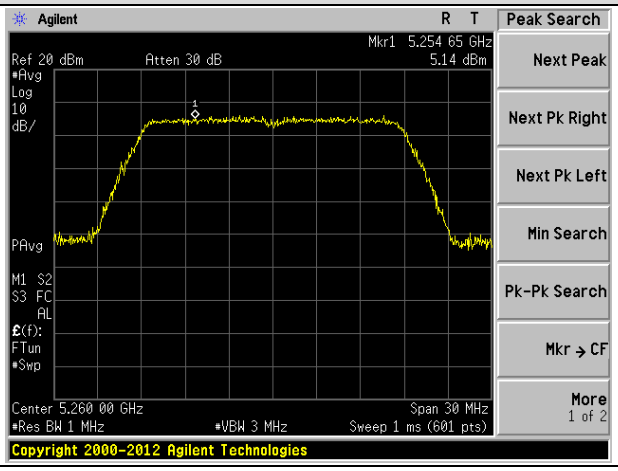	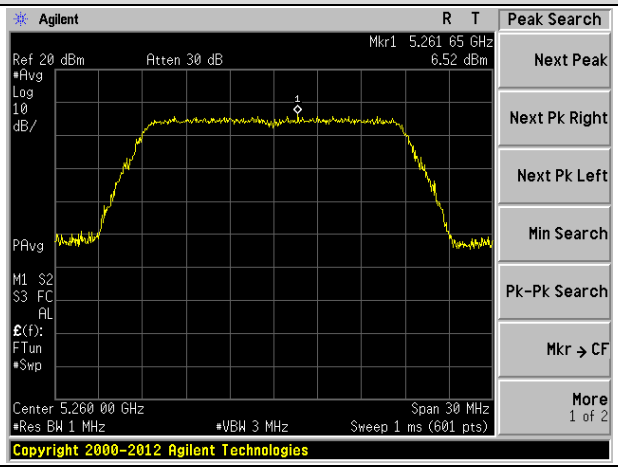
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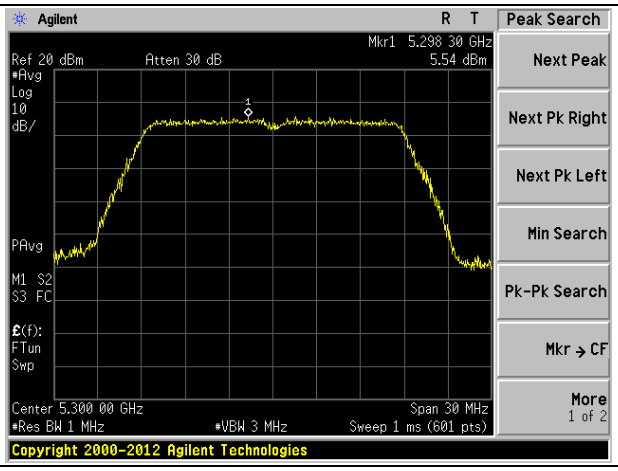	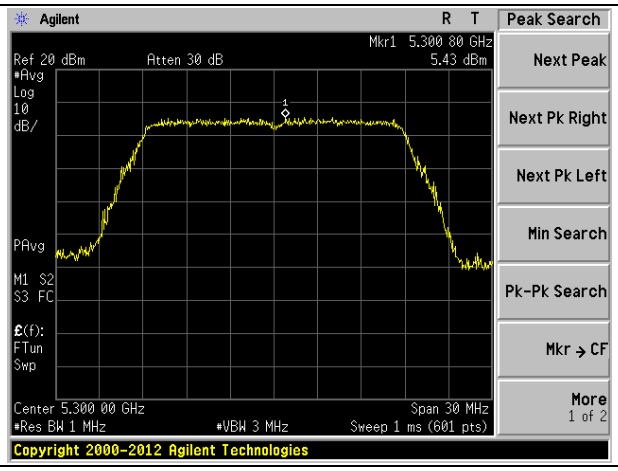
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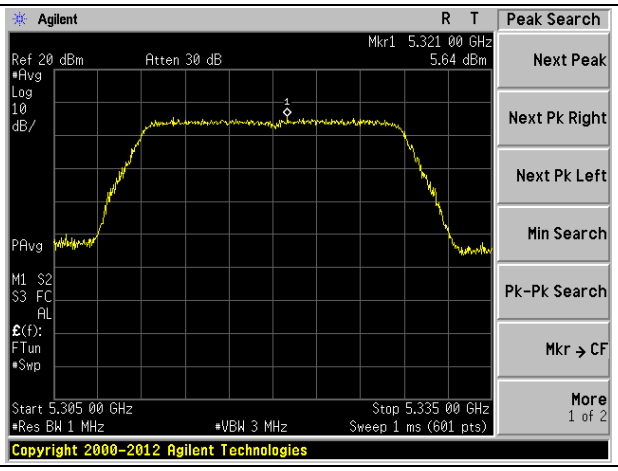	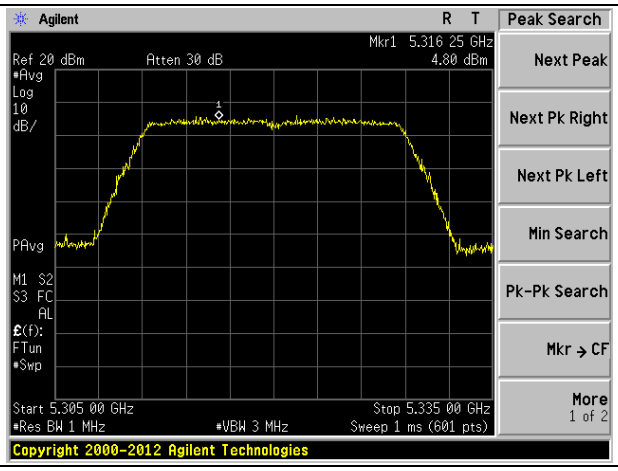
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802.11n(HT20) mode	
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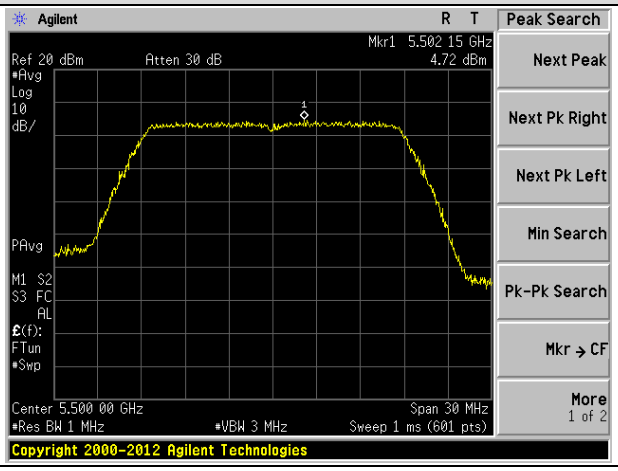	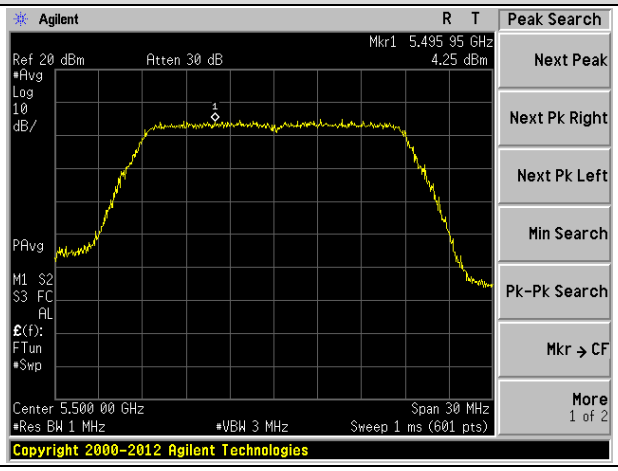
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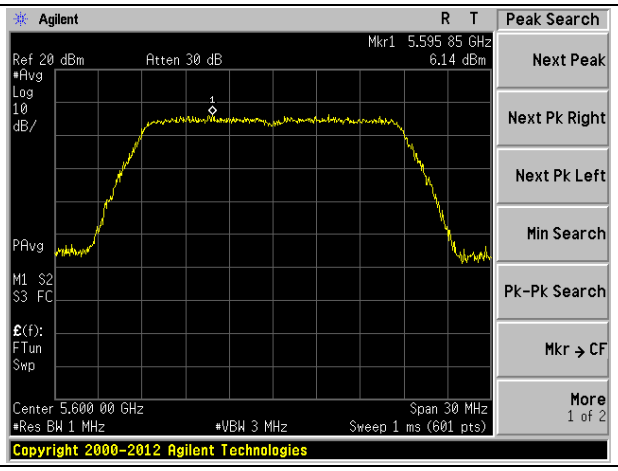	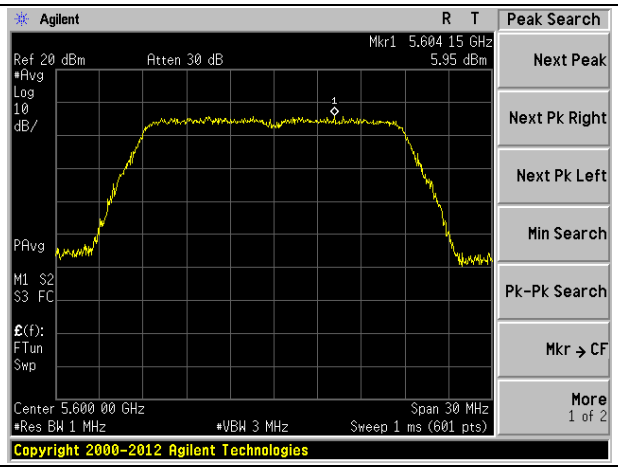
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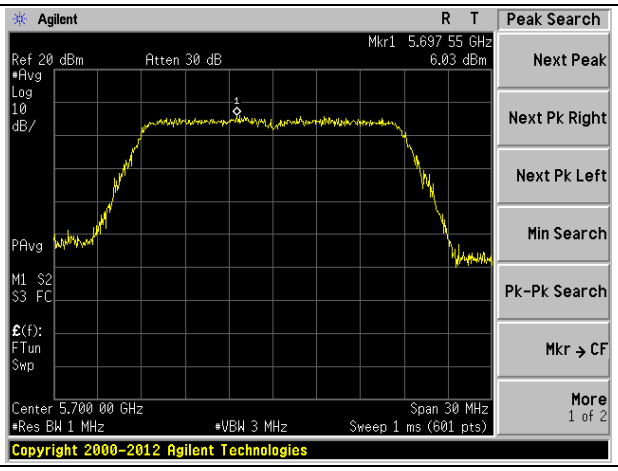	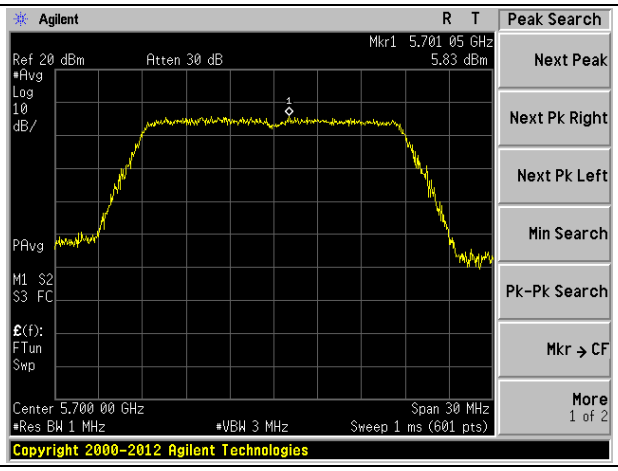
5700	**5700**

802.11ac(HT20) mode	
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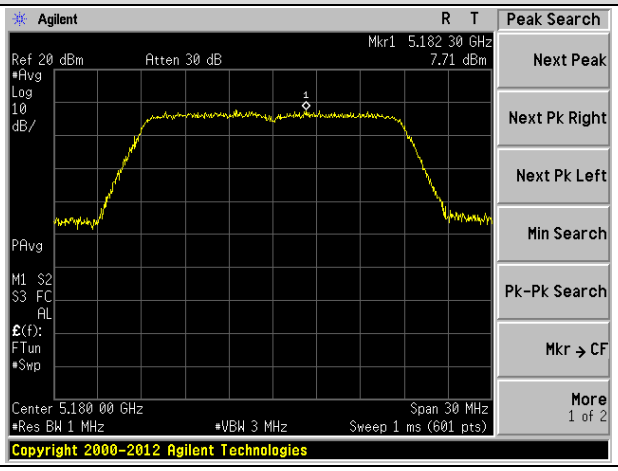	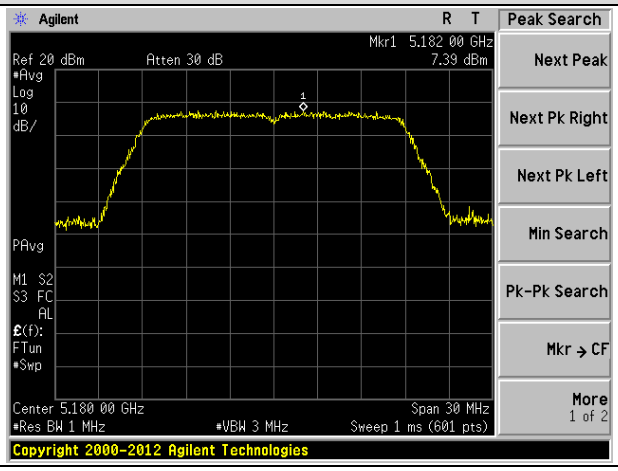
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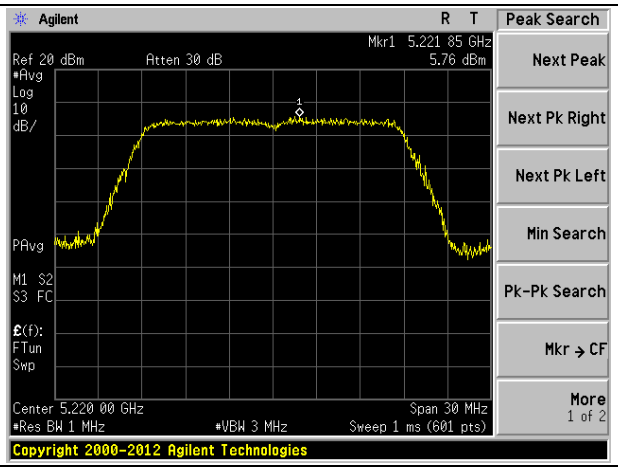	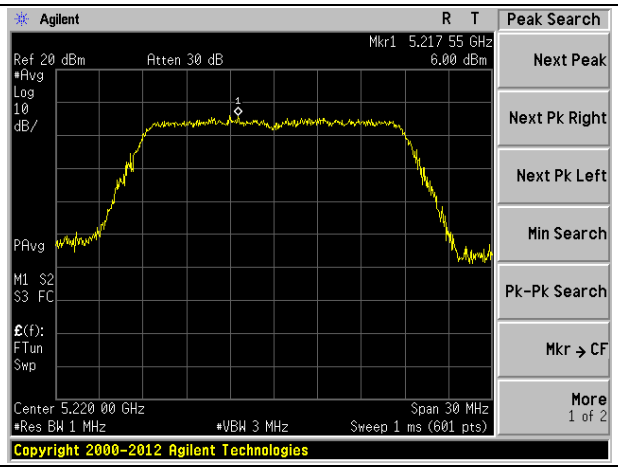
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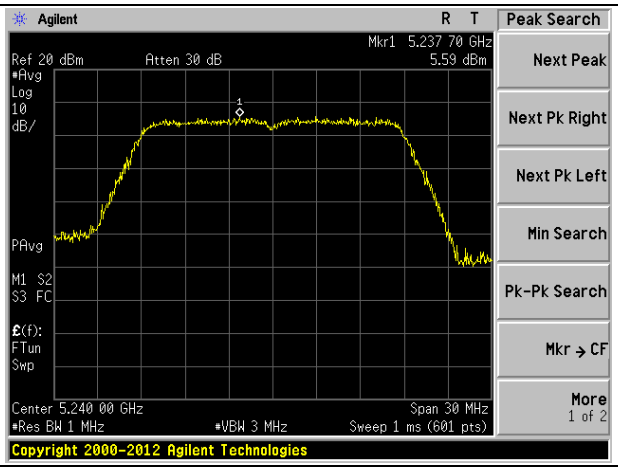	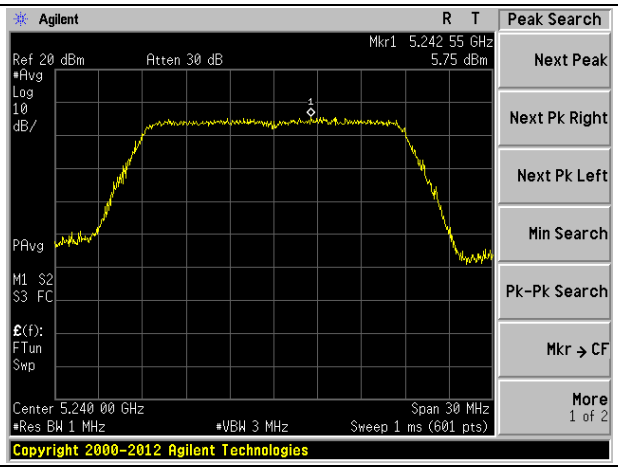
5240	**5240**

802.11ac(HT20) mode	
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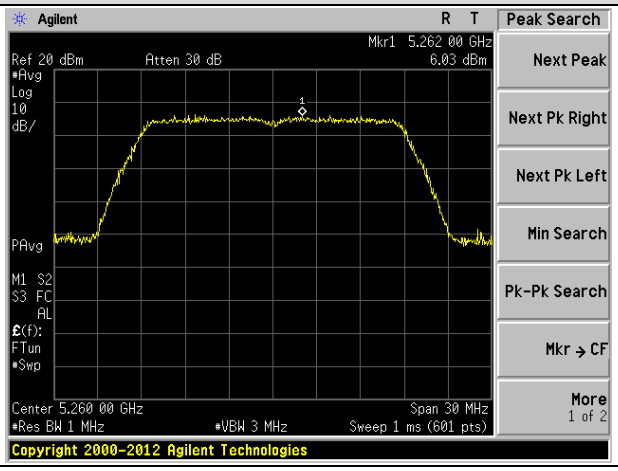	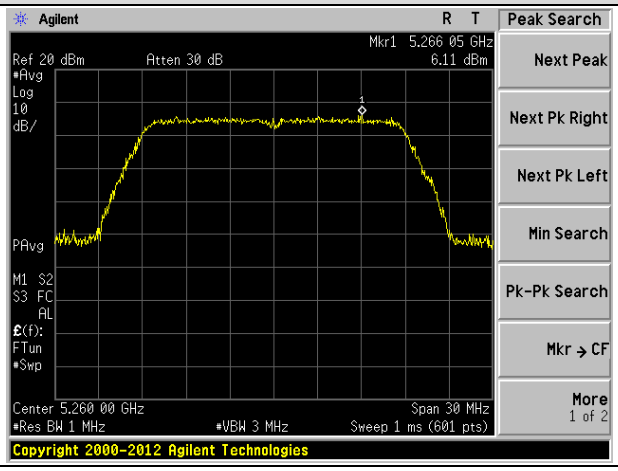
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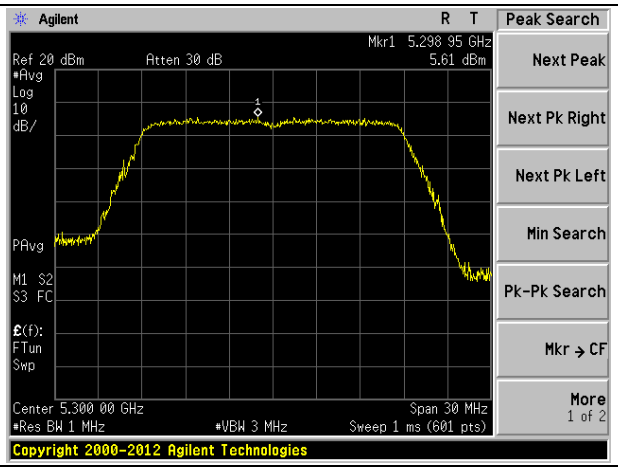	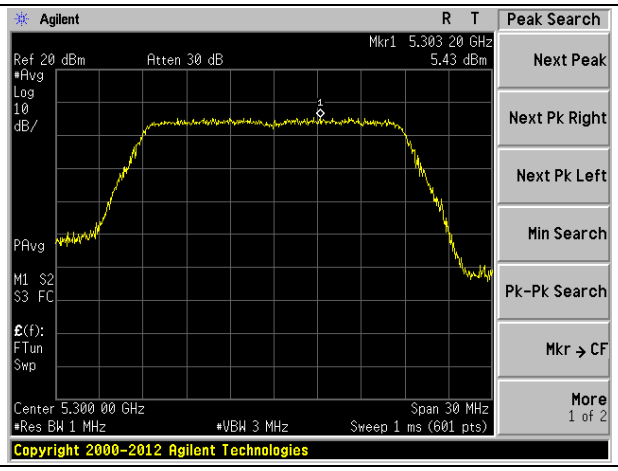
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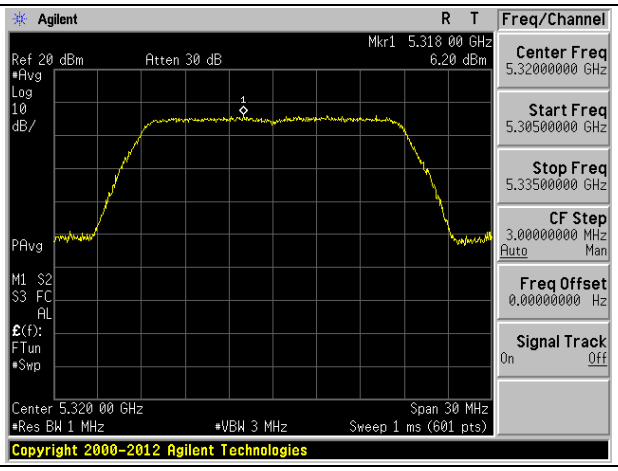	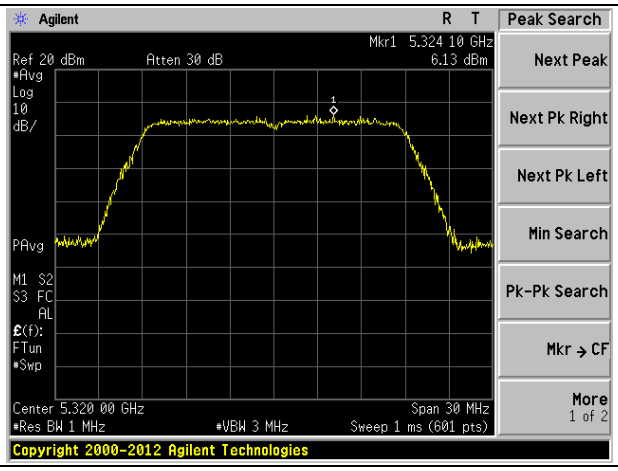
5320	**5320**

802.11ac(HT20) mode	
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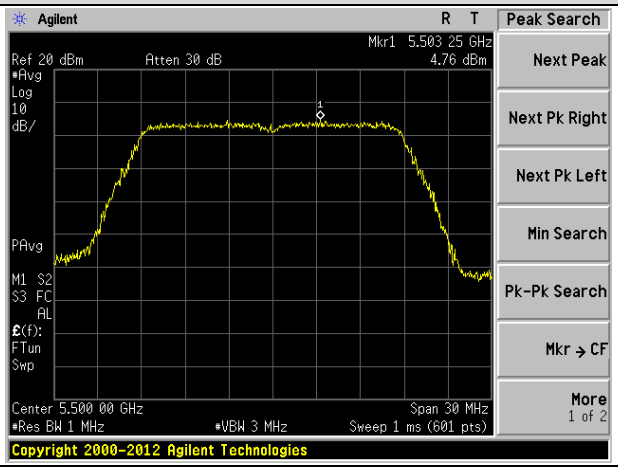	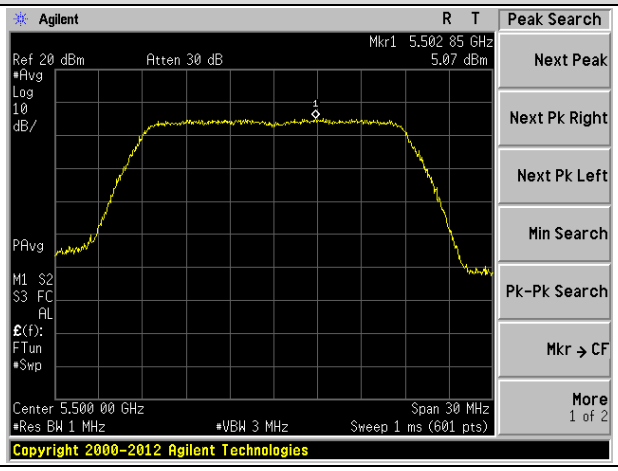
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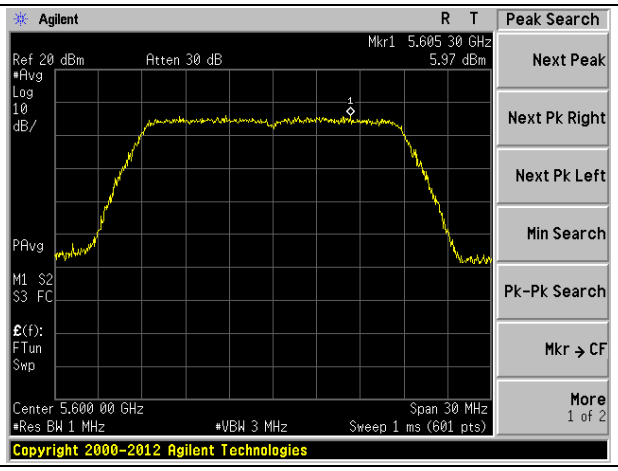	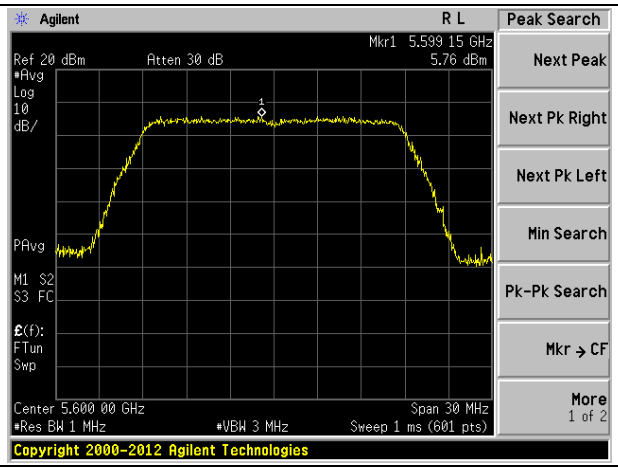
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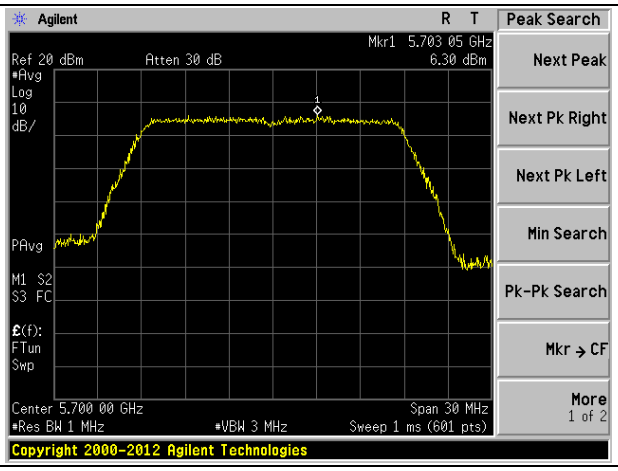	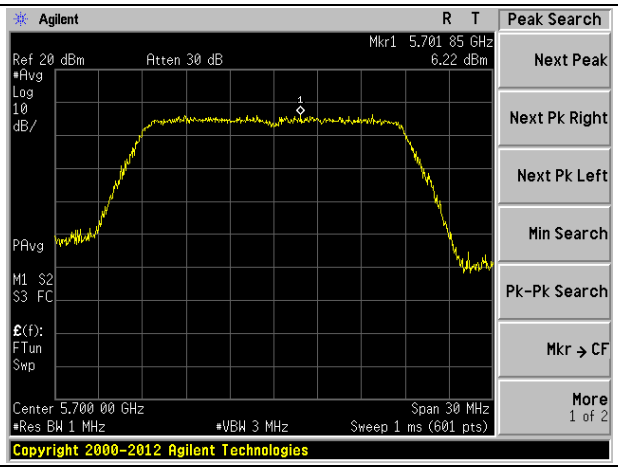
5700	**5700**

802.11n(HT40) mode	
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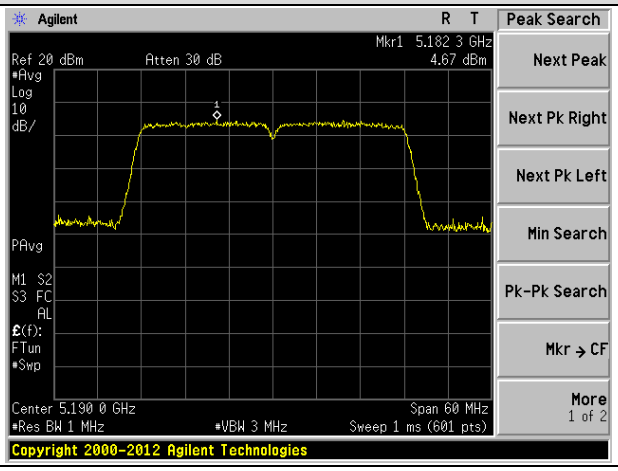	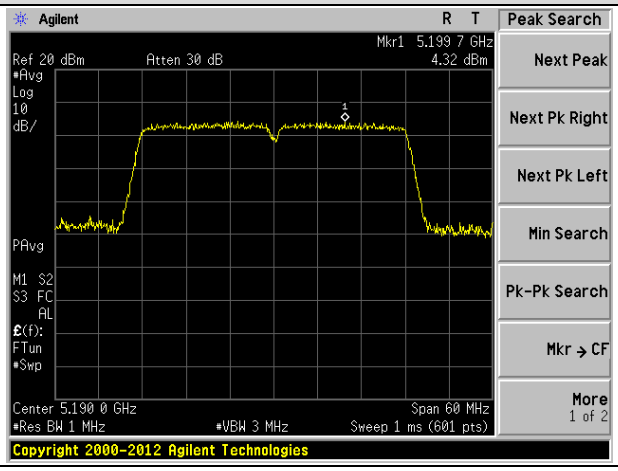
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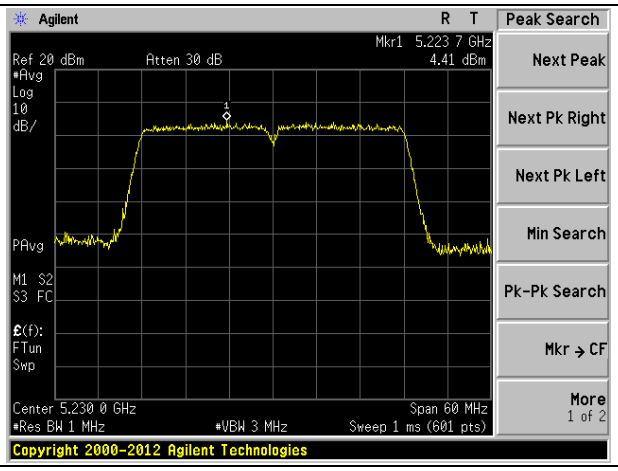	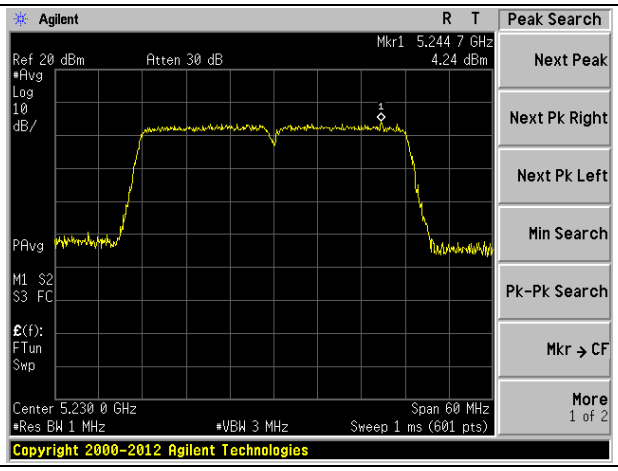
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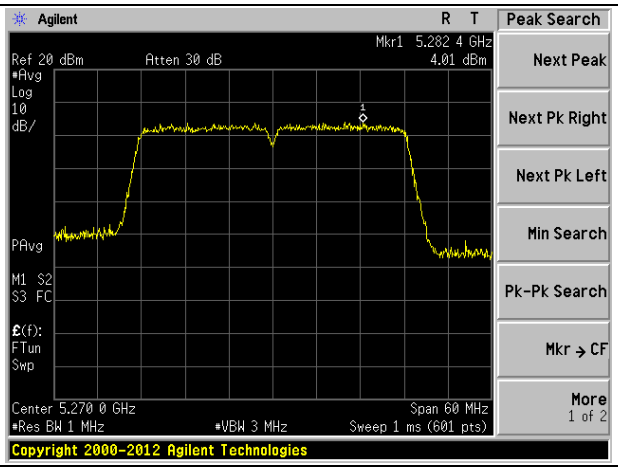	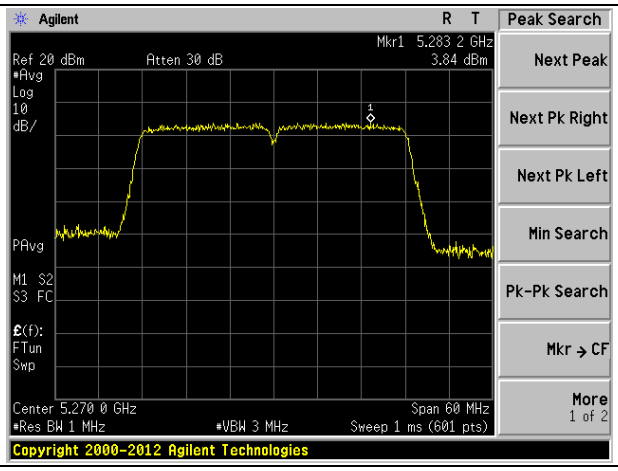
5270	**5270**

802.11n(HT40) mode	
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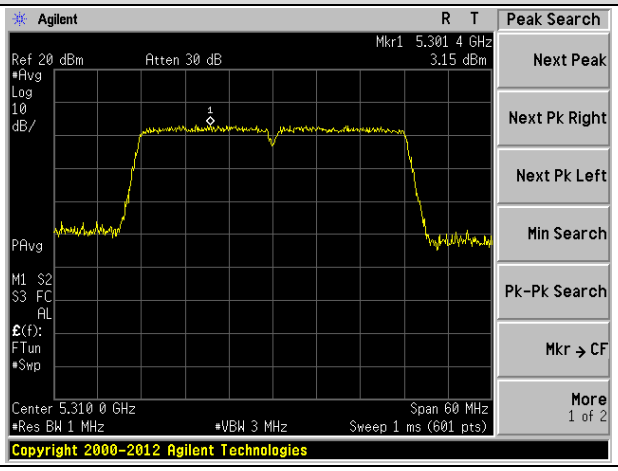	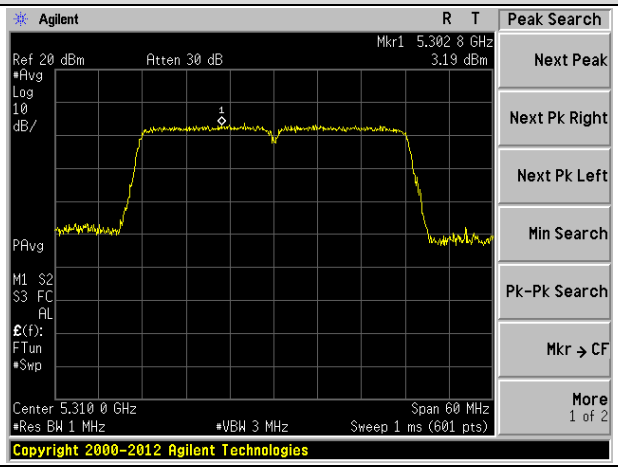
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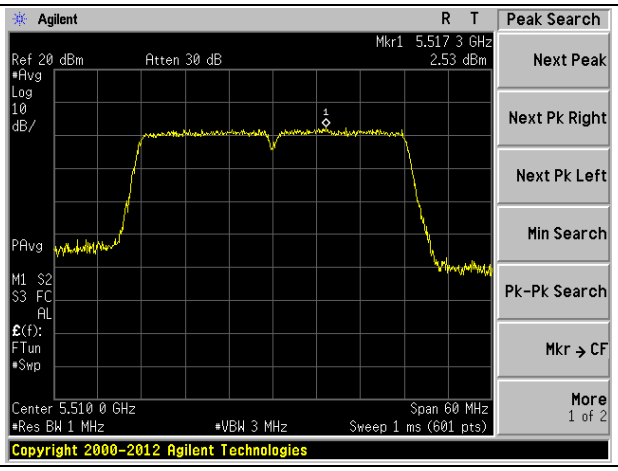	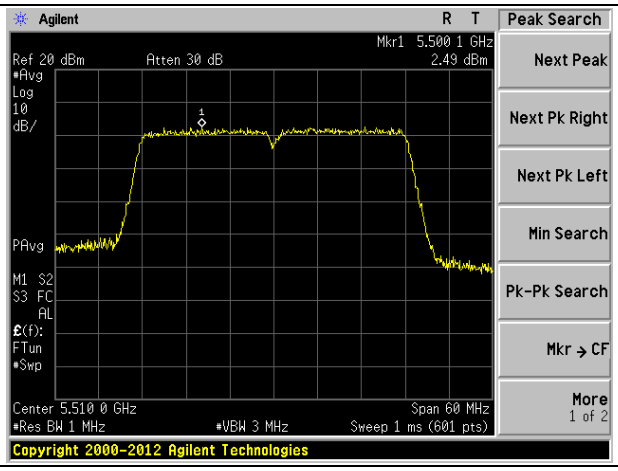
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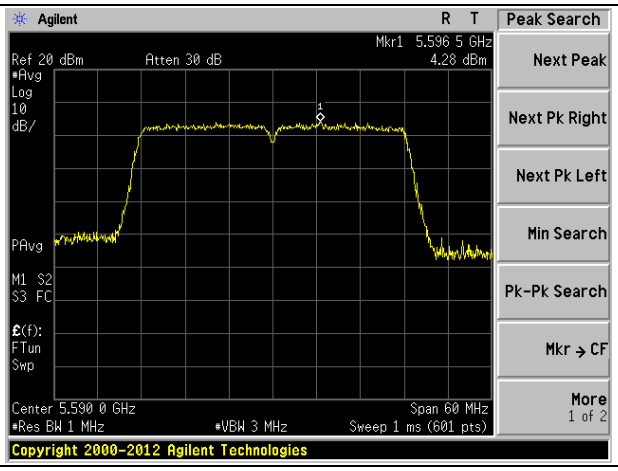	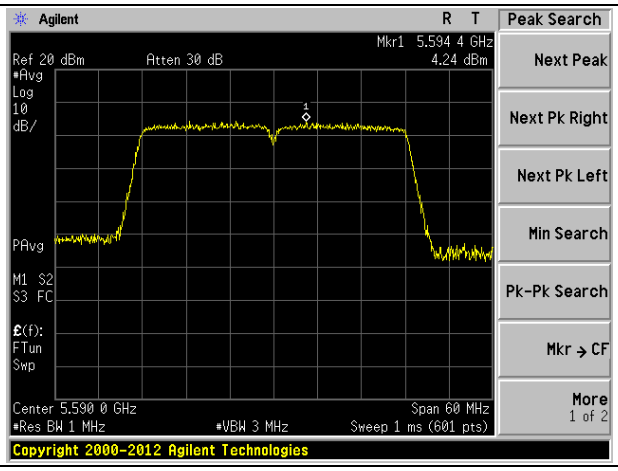
5590	**5590**

802.11n(HT40) mode	
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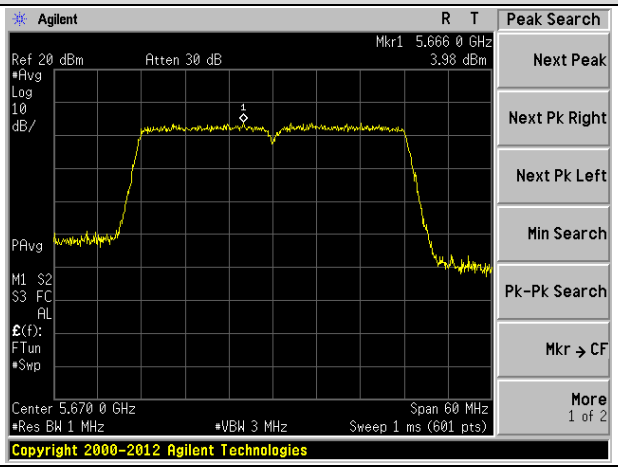	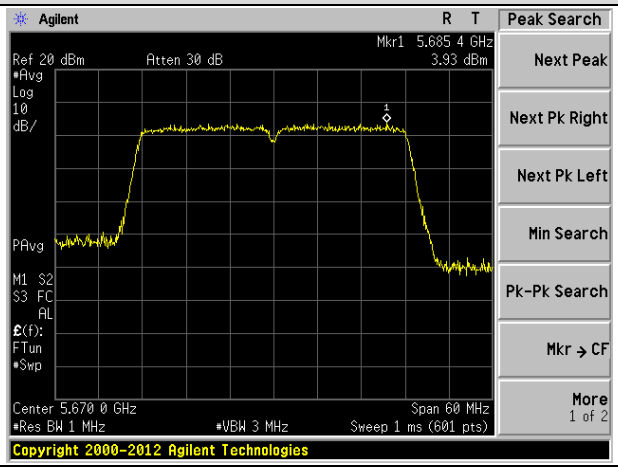
5670	**5670**

802.11ac(HT40) mode	
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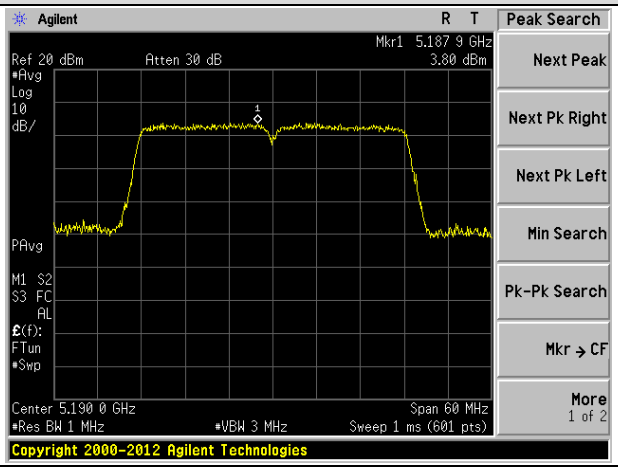
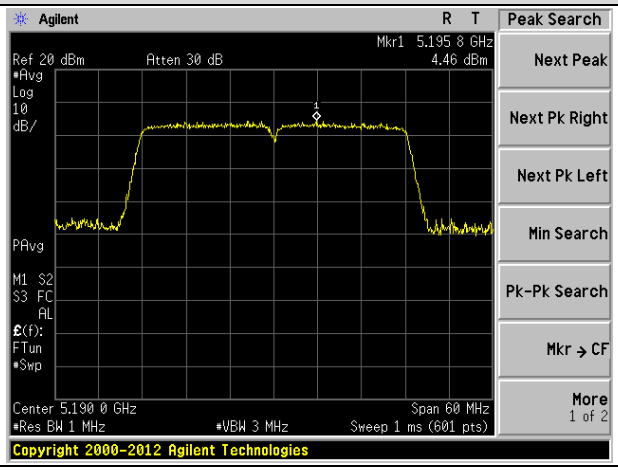
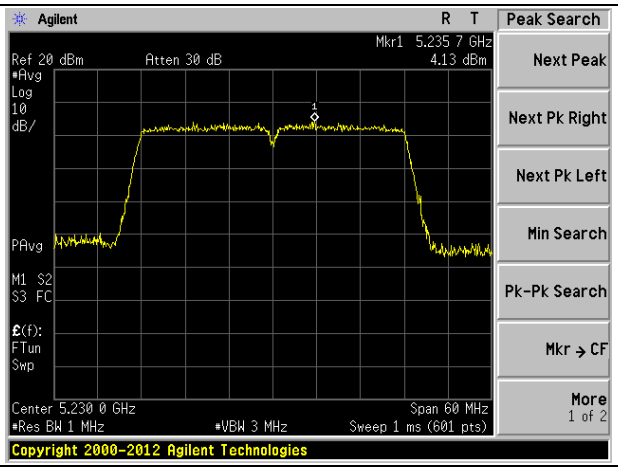
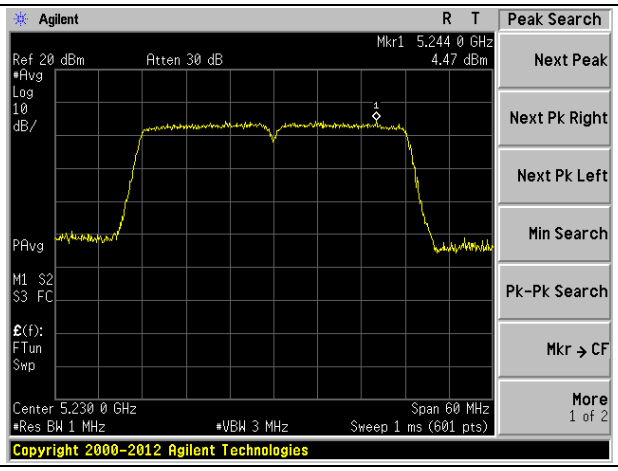
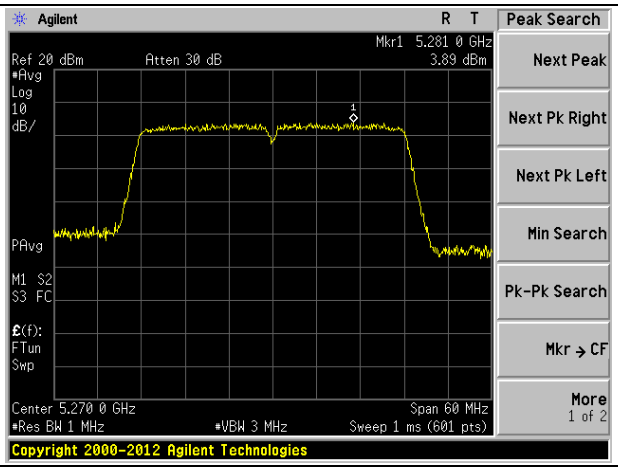
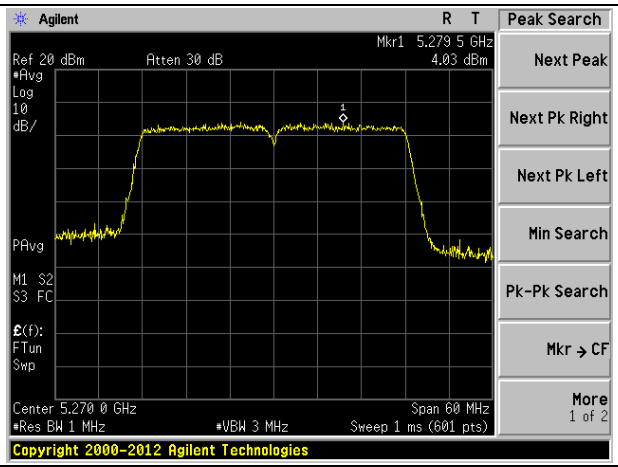
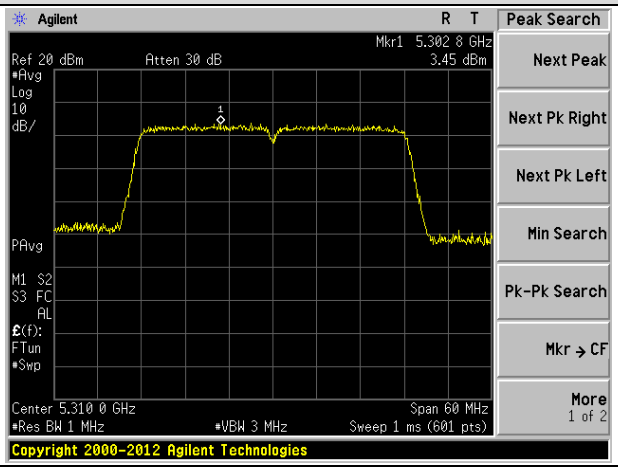
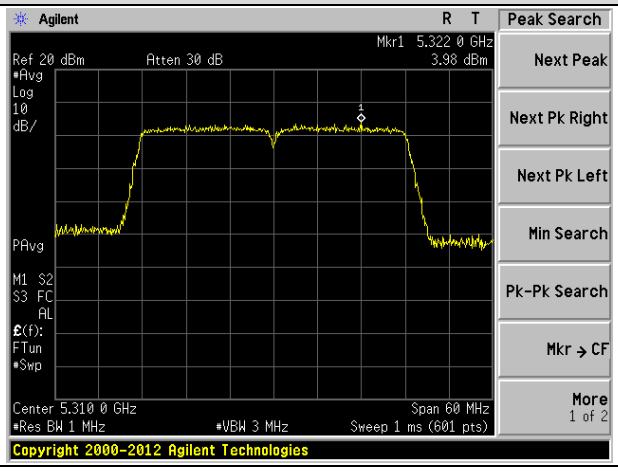
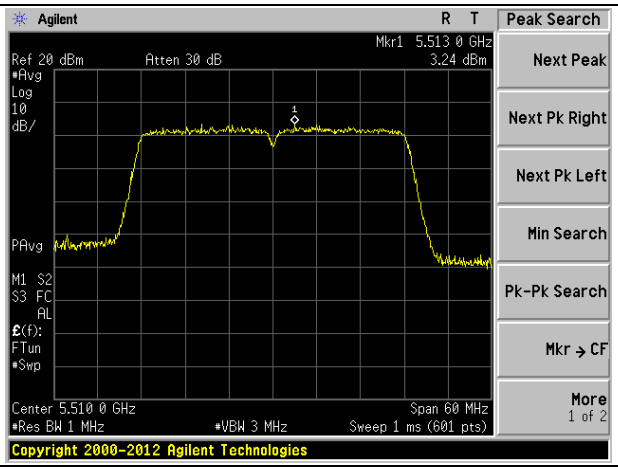
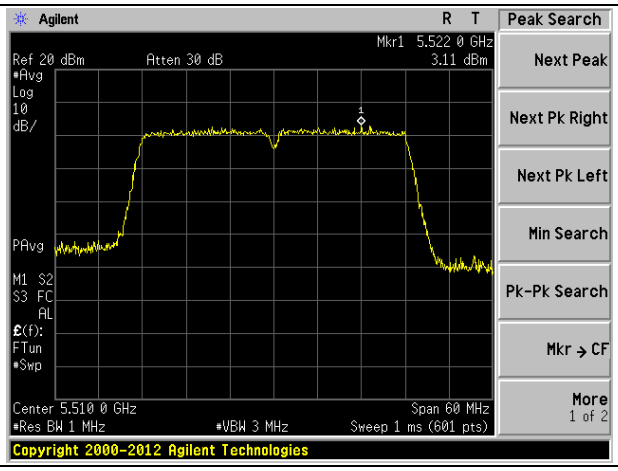
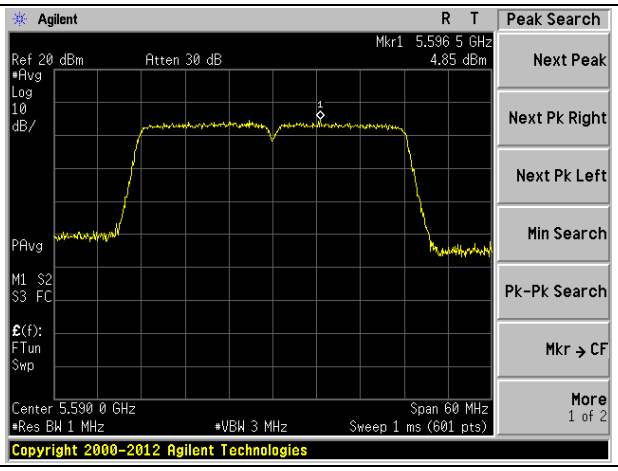
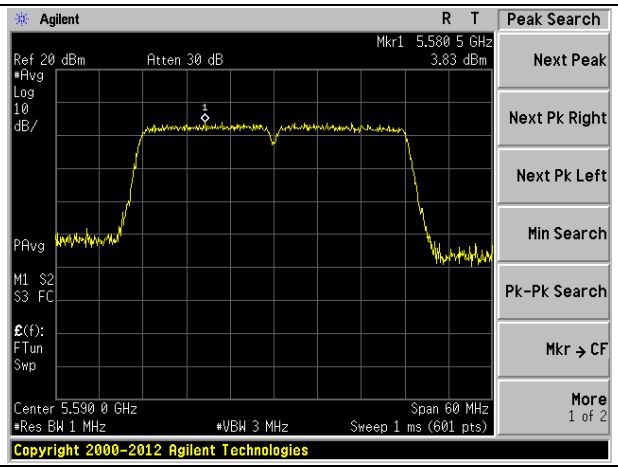
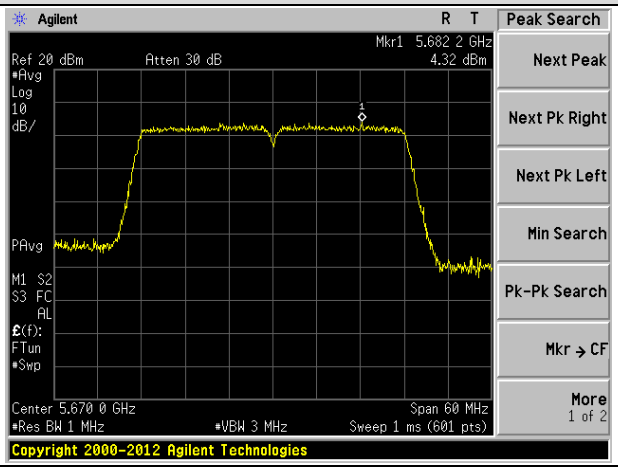
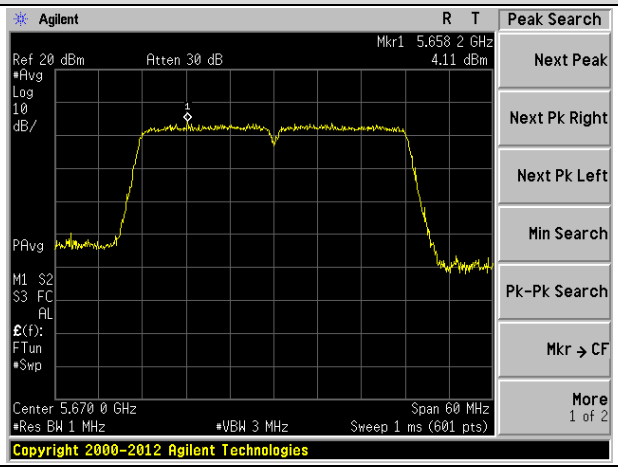
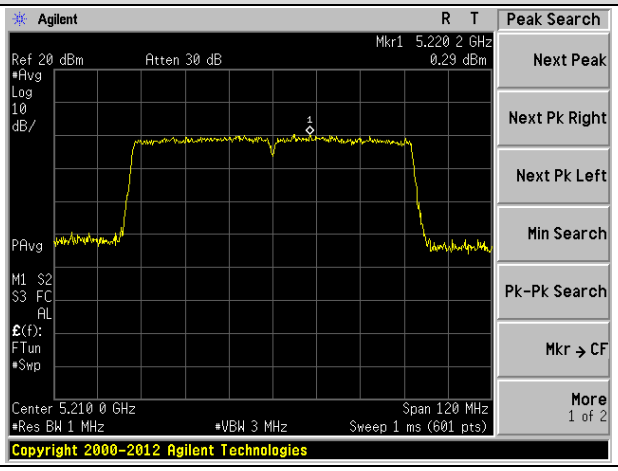
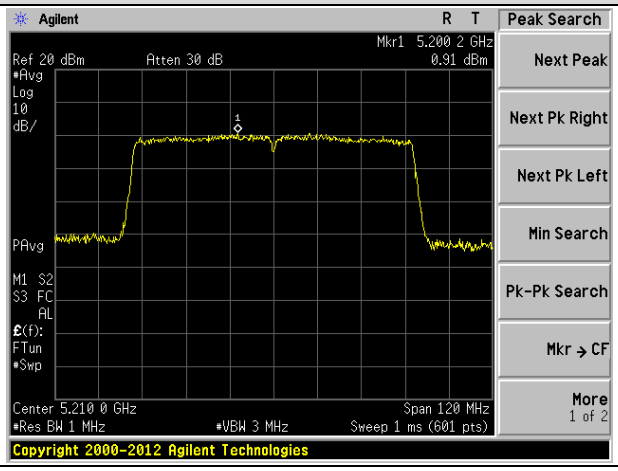
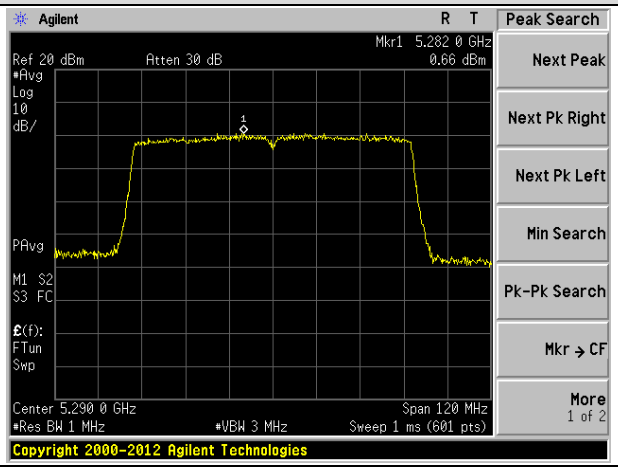
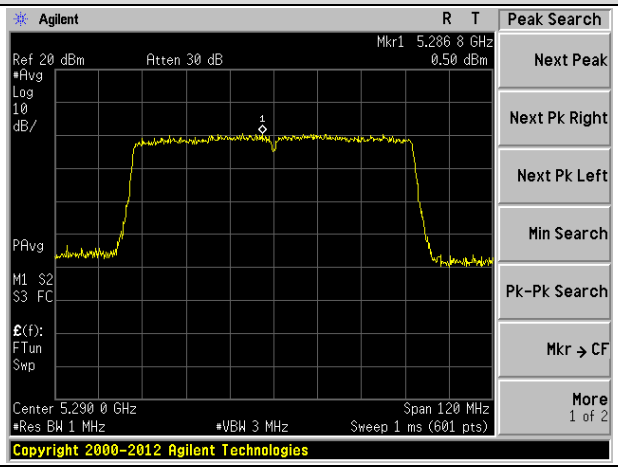
	
5190	**5190**
	
5230	**5230**
	
5270	**5270**

802.11ac(HT40) mode	
ANT 1	**ANT 2**
	
5310	**5310**
	
5510	**5510**
	
5590	**5590**

802.11ac(HT40) mode	
ANT 1	**ANT 2**
	
5670	**5670**

802.11ac(HT80) mode	
ANT 1	**ANT 2**
	
5210	**5210**

802.11ac(HT80) mode	
ANT 1	**ANT 2**
	
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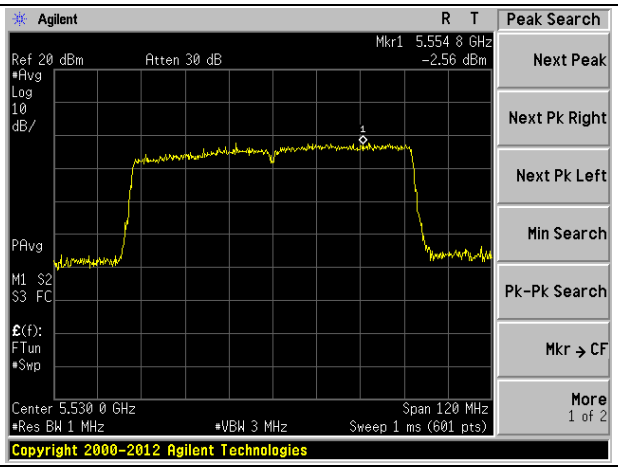
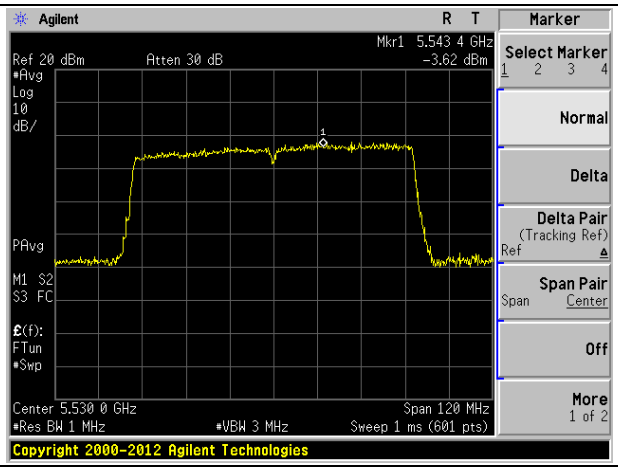
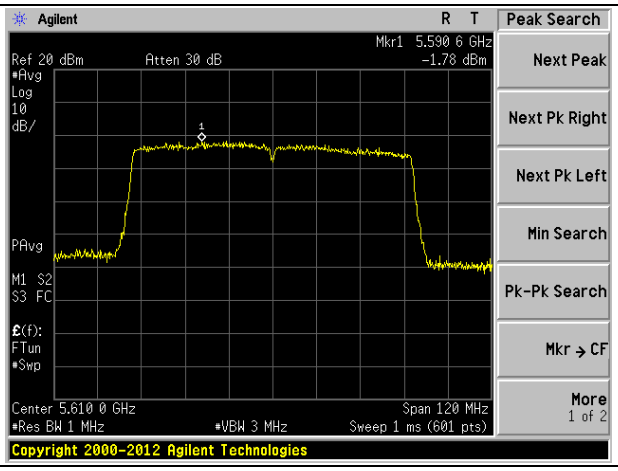
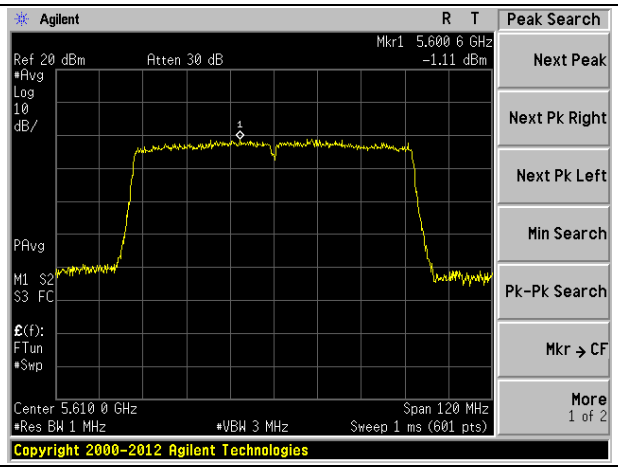
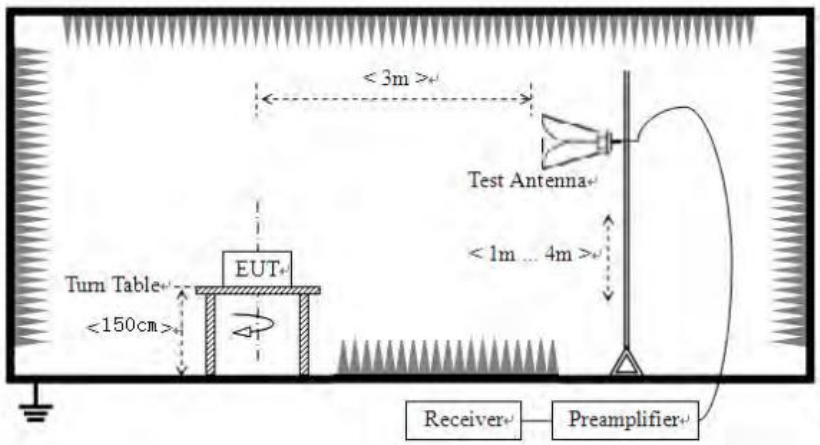
	
5530	**5530**
	
5610	**5610**

7.6 Band Edge

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 E Section 15.407 and 5.205
RSS-Gen 8.10</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013 & RSS-Gen</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>AV</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr>
<tr><td>68.2</td><td>Peak Value</td></tr>
</table>
Undesirable emission limits:
(1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
(2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.
(3) For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of −27 dBm/MHz.
</td></tr>
<tr><td>Test Procedure:</td><td>a. The EUT was placed on the top of a rotating table 1.5 m above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna 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 polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB 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</td></tr>
</table>

	have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test setup:	For radiated emissions above 1GHz 
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Remarks:

1. *Only the worst case Main Antenna test data.*
2. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.*
5. *According to KDB 789033 D02 v02r01 section G) 1) (d), for For measurements above 1000 MHz @ 3m distance, the limit of field strength is computed as follows:*
   E[dBuV/m] = EIRP[dBm] + 95.2;
   For example, if EIRP = -27dBm
   E[dBuV/m] = -27 + 95.2 = 68.2dBuV/m.

Measurement Data:

802.11a(HT20)				PK				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	42.74	32.07	8.99	37.49	46.31	74	-27.69	Horizontal
5350.00	45.55	31.75	9.29	37.2	49.39	74	-24.61	Horizontal
5460.00	45.89	31.61	9.86	37.08	50.28	74	-23.72	Horizontal
5470.00	44.33	31.95	9.56	36.95	48.89	68.2	-19.31	Horizontal
5725.00	40.29	32.53	9.83	35.86	46.79	68.2	-21.41	Horizontal
5150.00	44.76	32.07	8.99	37.49	48.33	74	-25.67	Vertical
5350.00	44.37	31.75	9.29	37.2	48.21	74	-25.79	Vertical
5460.00	42.97	31.61	9.86	37.08	47.36	74	-26.64	Vertical
5470.00	42.93	31.95	9.56	36.95	47.49	68.2	-20.71	Vertical
5725.00	43.62	32.53	9.83	35.86	50.12	68.2	-18.08	Vertical

802.11a(HT20)				AV				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	36.99	32.07	8.99	37.49	40.56	54	-13.44	Horizontal
5350.00	34.69	31.75	9.29	37.2	38.53	54	-15.47	Horizontal
5460.00	31.12	31.61	9.86	37.08	35.51	54	-18.49	Horizontal
5470.00	34.95	31.95	9.56	36.95	39.51	48.2	-8.69	Horizontal
5725.00	30.15	32.53	9.83	35.86	36.65	48.2	-11.55	Horizontal
5150.00	33.12	32.07	8.99	37.49	36.69	54	-17.31	Vertical
5350.00	33.39	31.75	9.29	37.2	37.23	54	-16.77	Vertical
5460.00	33.17	31.61	9.86	37.08	37.56	54	-16.44	Vertical
5470.00	32.00	31.95	9.56	36.95	36.56	48.2	-11.64	Vertical
5725.00	31.22	32.53	9.83	35.86	37.72	48.2	-10.48	Vertical

802.11n(HT20)					PK			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	42.05	32.07	8.99	37.49	45.62	74	-28.38	Horizontal
5350.00	42.18	31.75	9.29	37.2	46.02	74	-27.98	Horizontal
5460.00	40.78	31.61	9.86	37.08	45.17	74	-28.83	Horizontal
5470.00	45.18	31.95	9.56	36.95	49.74	68.2	-18.46	Horizontal
5725.00	44.29	32.53	9.83	35.86	50.79	68.2	-17.41	Horizontal
5150.00	44.35	32.07	8.99	37.49	47.92	74	-26.08	Vertical
5350.00	43.08	31.75	9.29	37.2	46.92	74	-27.08	Vertical
5460.00	44.09	31.61	9.86	37.08	48.48	74	-25.52	Vertical
5470.00	45.91	31.95	9.56	36.95	50.47	68.2	-17.73	Vertical
5725.00	40.42	32.53	9.83	35.86	46.92	68.2	-21.28	Vertical

802.11n(HT20)					AV			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	35.89	32.07	8.99	37.49	39.46	54	-14.54	Horizontal
5350.00	34.71	31.75	9.29	37.2	38.55	54	-15.45	Horizontal
5460.00	30.10	31.61	9.86	37.08	34.49	54	-19.51	Horizontal
5470.00	33.91	31.95	9.56	36.95	38.47	48.2	-9.73	Horizontal
5725.00	31.78	32.53	9.83	35.86	38.28	48.2	-9.92	Horizontal
5150.00	32.53	32.07	8.99	37.49	36.1	54	-17.9	Vertical
5350.00	31.18	31.75	9.29	37.2	35.02	54	-18.98	Vertical
5460.00	31.04	31.61	9.86	37.08	35.43	54	-18.57	Vertical
5470.00	33.23	31.95	9.56	36.95	37.79	48.2	-10.41	Vertical
5725.00	36.93	32.53	9.83	35.86	43.43	48.2	-4.77	Vertical

802.11ac(HT20)					PK			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	44.56	32.07	8.99	37.49	48.13	74	-25.87	Horizontal
5350.00	41.10	31.75	9.29	37.2	44.94	74	-29.06	Horizontal
5460.00	43.77	31.61	9.86	37.08	48.16	74	-25.84	Horizontal
5470.00	40.15	31.95	9.56	36.95	44.71	68.2	-23.49	Horizontal
5725.00	45.98	32.53	9.83	35.86	52.48	68.2	-15.72	Horizontal
5150.00	45.45	32.07	8.99	37.49	49.02	74	-24.98	Vertical
5350.00	45.31	31.75	9.29	37.2	49.15	74	-24.85	Vertical
5460.00	44.61	31.61	9.86	37.08	49	74	-25	Vertical
5470.00	40.79	31.95	9.56	36.95	45.35	68.2	-22.85	Vertical
5725.00	43.01	32.53	9.83	35.86	49.51	68.2	-18.69	Vertical

802.11ac(HT20)					AV			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	34.04	32.07	8.99	37.49	37.61	54	-16.39	Horizontal
5350.00	34.07	31.75	9.29	37.2	37.91	54	-16.09	Horizontal
5460.00	30.41	31.61	9.86	37.08	34.8	54	-19.2	Horizontal
5470.00	34.44	31.95	9.56	36.95	39	48.2	-9.2	Horizontal
5725.00	30.16	32.53	9.83	35.86	36.66	48.2	-11.54	Horizontal
5150.00	32.06	32.07	8.99	37.49	35.63	54	-18.37	Vertical
5350.00	30.81	31.75	9.29	37.2	34.65	54	-19.35	Vertical
5460.00	30.14	31.61	9.86	37.08	34.53	54	-19.47	Vertical
5470.00	30.44	31.95	9.56	36.95	35	48.2	-13.2	Vertical
5725.00	33.22	32.53	9.83	35.86	39.72	48.2	-8.48	Vertical

802.11n(HT40)				PK				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	42.72	32.07	8.99	37.49	46.29	74	-27.71	Horizontal
5350.00	45.86	31.75	9.29	37.2	49.7	74	-24.3	Horizontal
5460.00	44.73	31.61	9.86	37.08	49.12	74	-24.88	Horizontal
5470.00	44.85	31.95	9.56	36.95	49.41	68.2	-18.79	Horizontal
5725.00	43.26	32.53	9.83	35.86	49.76	68.2	-18.44	Horizontal
5150.00	43.30	32.07	8.99	37.49	46.87	74	-27.13	Vertical
5350.00	41.65	31.75	9.29	37.2	45.49	74	-28.51	Vertical
5460.00	41.73	31.61	9.86	37.08	46.12	74	-27.88	Vertical
5470.00	45.68	31.95	9.56	36.95	50.24	68.2	-17.96	Vertical
5725.00	45.36	32.53	9.83	35.86	51.86	68.2	-16.34	Vertical

802.11n(HT40)				AV				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	32.45	32.07	8.99	37.49	36.02	54	-17.98	Horizontal
5350.00	30.86	31.75	9.29	37.2	34.7	54	-19.3	Horizontal
5460.00	34.00	31.61	9.86	37.08	38.39	54	-15.61	Horizontal
5470.00	31.54	31.95	9.56	36.95	36.1	48.2	-12.1	Horizontal
5725.00	30.61	32.53	9.83	35.86	37.11	48.2	-11.09	Horizontal
5150.00	36.74	32.07	8.99	37.49	40.31	54	-13.69	Vertical
5350.00	33.15	31.75	9.29	37.2	36.99	54	-17.01	Vertical
5460.00	30.09	31.61	9.86	37.08	34.48	54	-19.52	Vertical
5470.00	35.06	31.95	9.56	36.95	39.62	48.2	-8.58	Vertical
5725.00	30.57	32.53	9.83	35.86	37.07	48.2	-11.13	Vertical

802.11ac(HT40)					PK			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	42.48	32.07	8.99	37.49	46.05	74	-27.95	Horizontal
5350.00	43.14	31.75	9.29	37.2	46.98	74	-27.02	Horizontal
5460.00	42.87	31.61	9.86	37.08	47.26	74	-26.74	Horizontal
5470.00	44.35	31.95	9.56	36.95	48.91	68.2	-19.29	Horizontal
5725.00	43.50	32.53	9.83	35.86	50	68.2	-18.2	Horizontal
5150.00	44.92	32.07	8.99	37.49	48.49	74	-25.51	Vertical
5350.00	45.24	31.75	9.29	37.2	49.08	74	-24.92	Vertical
5460.00	45.49	31.61	9.86	37.08	49.88	74	-24.12	Vertical
5470.00	44.43	31.95	9.56	36.95	48.99	68.2	-19.21	Vertical
5725.00	40.45	32.53	9.83	35.86	46.95	68.2	-21.25	Vertical

802.11ac(HT40)					AV			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	35.67	32.07	8.99	37.49	39.24	54	-14.76	Horizontal
5350.00	35.89	31.75	9.29	37.2	39.73	54	-14.27	Horizontal
5460.00	33.68	31.61	9.86	37.08	38.07	54	-15.93	Horizontal
5470.00	30.03	31.95	9.56	36.95	34.59	48.2	-13.61	Horizontal
5725.00	35.37	32.53	9.83	35.86	41.87	48.2	-6.33	Horizontal
5150.00	35.29	32.07	8.99	37.49	38.86	54	-15.14	Vertical
5350.00	31.01	31.75	9.29	37.2	34.85	54	-19.15	Vertical
5460.00	34.08	31.61	9.86	37.08	38.47	54	-15.53	Vertical
5470.00	33.53	31.95	9.56	36.95	38.09	48.2	-10.11	Vertical
5725.00	36.80	32.53	9.83	35.86	43.3	48.2	-4.9	Vertical

802.11ac(HT80)					PK			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	43.20	32.07	8.99	37.49	46.77	74	-27.23	Horizontal
5350.00	40.95	31.75	9.29	37.2	44.79	74	-29.21	Horizontal
5460.00	42.36	31.61	9.86	37.08	46.75	74	-27.25	Horizontal
5470.00	45.35	31.95	9.56	36.95	49.91	68.2	-18.29	Horizontal
5725.00	44.02	32.53	9.83	35.86	50.52	68.2	-17.68	Horizontal
5150.00	40.85	32.07	8.99	37.49	44.42	74	-29.58	Vertical
5350.00	43.36	31.75	9.29	37.2	47.2	74	-26.8	Vertical
5460.00	44.23	31.61	9.86	37.08	48.62	74	-25.38	Vertical
5470.00	43.00	31.95	9.56	36.95	47.56	68.2	-20.64	Vertical
5725.00	45.29	32.53	9.83	35.86	51.79	68.2	-16.41	Vertical

802.11ac(HT80)					AV			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	30.15	32.07	8.99	37.49	33.72	54	-20.28	Horizontal
5350.00	33.91	31.75	9.29	37.2	37.75	54	-16.25	Horizontal
5460.00	34.04	31.61	9.86	37.08	38.43	54	-15.57	Horizontal
5470.00	31.48	31.95	9.56	36.95	36.04	48.2	-12.16	Horizontal
5725.00	34.62	32.53	9.83	35.86	41.12	48.2	-7.08	Horizontal
5150.00	36.14	32.07	8.99	37.49	39.71	54	-14.29	Vertical
5350.00	30.09	31.75	9.29	37.2	33.93	54	-20.07	Vertical
5460.00	34.00	31.61	9.86	37.08	38.39	54	-15.61	Vertical
5470.00	36.23	31.95	9.56	36.95	40.79	48.2	-7.41	Vertical
5725.00	34.47	32.53	9.83	35.86	40.97	48.2	-7.23	Vertical

7.7 Radiated Emission

Test Requirement :	FCC Part15 C Section 15.209 and 15.205 RSS-Gen 8.9 & 8.10
Test Method :	ANSI C63.10: 2013 & RSS-Gen
Test Frequency Range:	9kHz to 40GHz
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)

Receiver setup:

Frequency	Detector	RBW	VBW	Value
9kHz-150KHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
150kHz-30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	AV	1MHz	3MHz	Average Value

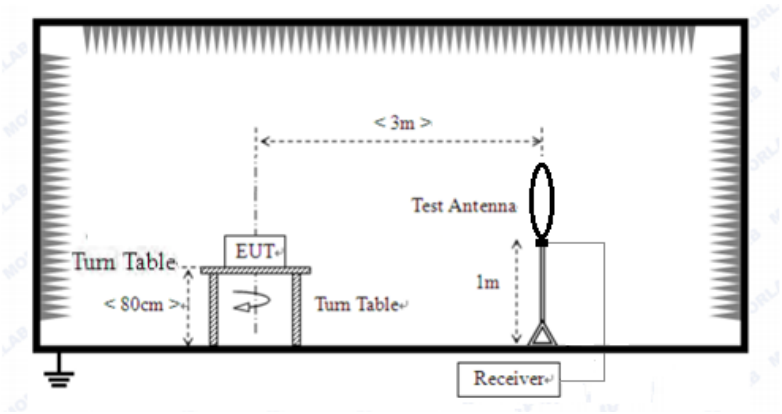
Limit:

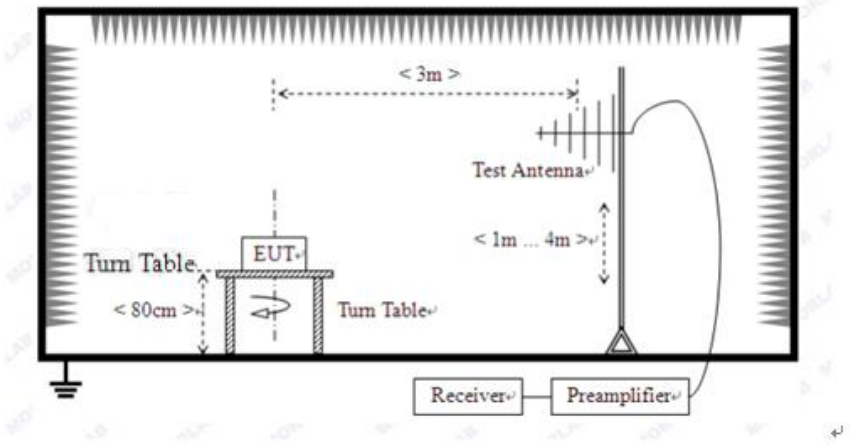
Frequency	Limit (uV/m)	Value	Measurement Distance
0.009MHz-0.490MHz	2400/F(KHz)	QP	300m
0.490MHz-1.705MHz	24000/F(KHz)	QP	300m
1.705MHz-30MHz	30	QP	30m
30MHz-88MHz	100	QP	3m
88MHz-216MHz	150	QP	
216MHz-960MHz	200	QP	
960MHz-1GHz	500	QP	
Above 1GHz	500	Average	
	5000	Peak	

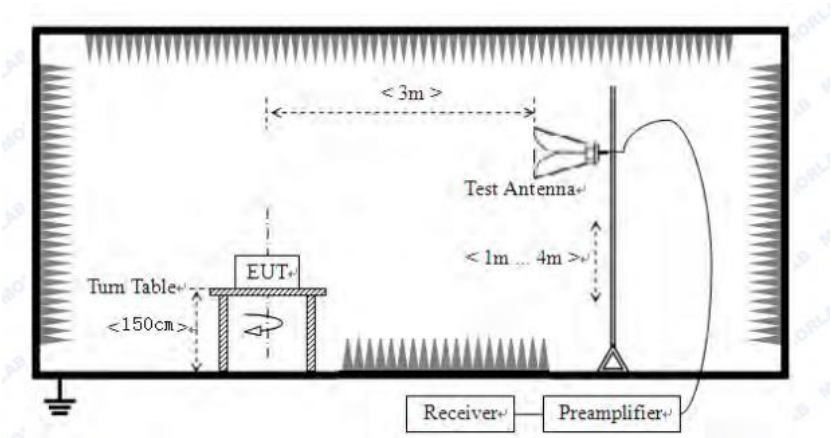
Test Procedure:

Substitution method was performed to determine the actual ERP emission levels of the EUT.
The following test procedure as below:
1>.Below 1GHz test procedure:

1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna 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 polarizations 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 rotable 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 10dB 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 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

	2>.Above 1GHz test procedure: 1. On the test site as test setup graph above,the EUT shall be placed at the 0.8m support on the turntable and in the position closest to normal use as declared by the provider. 2. The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter.The output of the test antenna shall be connected to the measuring receiver. 3. The transmitter shall be switched on, if possible, without modulation and the measuring receiver shall be tuned to the frequency of the transmitter under test. 4. The test antenna shall be raised and lowered from 1m to 4m until a maximum signal level is detected by the measuring receiver. Then the turntable should be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver. 5. Repeat step 4 for test frequency with the test antenna polarized horizontally. 6. Remove the transmitter and replace it with a substitution antenna 7. Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a nonradiating cable. With the antennas at both ends vertically polarized, and with the signal generator tuned to a particular test frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output. 8. Repeat step 7 with both antennas horizontally polarized for each test frequency. 9. Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps 7 and 8 by the power loss in the cable between the generator and the antenna, and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna by the following formula: EIRP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBi) where: Pg is the generator output power into the substitution antenna.
Test setup:	For radiated emissions from 9kHz to 30MHz  For radiated emissions from 30MHz to1GHz

<table>
<tr><td></td><td colspan="6"> 

For radiated emissions above 1GHz

</td></tr>
<tr><td>Test Instruments:</td><td colspan="6">Refer to section 5.10 for details</td></tr>
<tr><td>Test mode:</td><td colspan="6">Refer to section 5.2 for details</td></tr>
<tr><td>Test environment:</td><td>Temp.:</td><td>25 °C</td><td>Humid.:</td><td>52%</td><td>Press.:</td><td>1012mbar</td></tr>
<tr><td>Test results:</td><td colspan="6">Pass</td></tr>
</table>

Remarks:

1. *Only the worst case Main Antenna test data.*
2. *Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.*

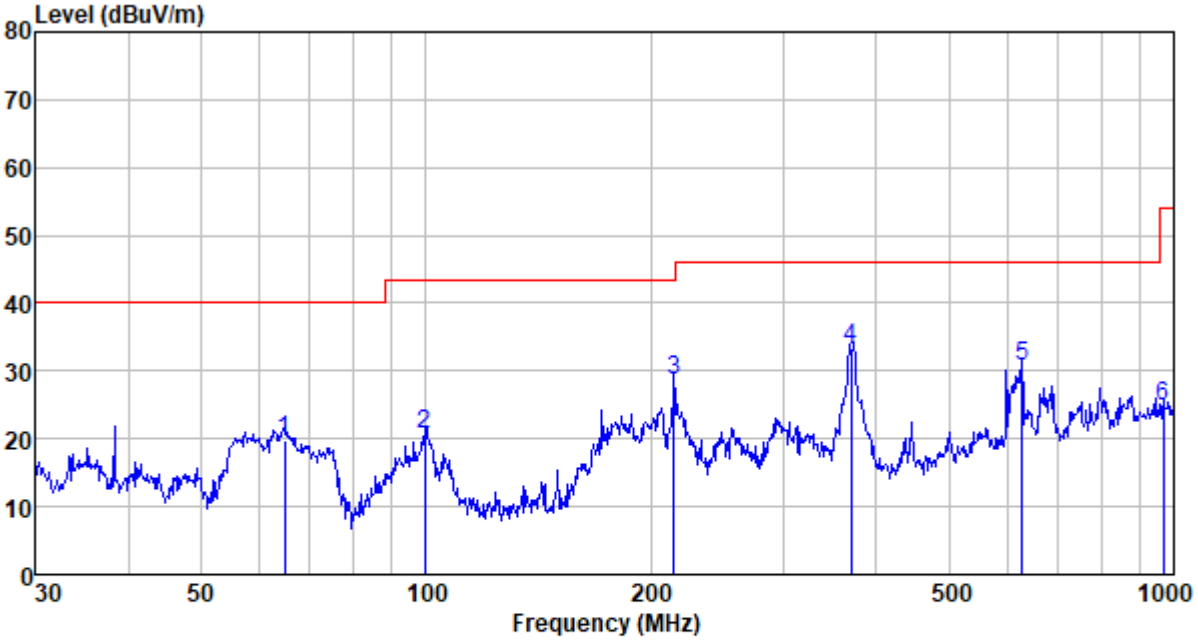
Measurement Data:

9 kHz ~ 30 MHz

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

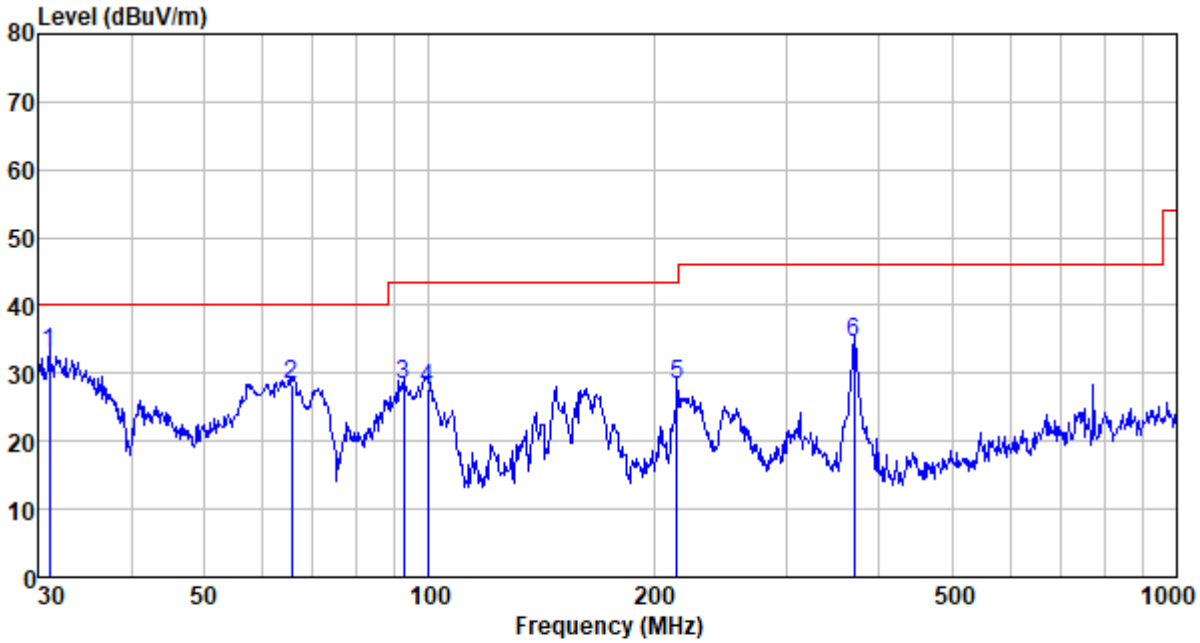
30MHz~ 1GHz

Horizontal:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
64.659	45.90	9.46	0.90	36.38	19.88	40.00	-20.12	QP
99.528	43.96	12.13	1.19	36.72	20.56	43.50	-22.94	QP
214.514	53.05	10.95	1.93	37.35	28.58	43.50	-14.92	QP
370.702	53.22	14.86	2.72	37.49	33.31	46.00	-12.69	QP
627.274	44.92	19.53	3.83	37.57	30.71	46.00	-15.29	QP
968.934	34.73	22.59	5.11	37.54	24.89	54.00	-29.11	QP

Vertical:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
31.071	56.40	11.22	0.56	35.08	33.10	40.00	-6.90	QP
65.573	54.63	9.11	0.90	36.39	28.25	40.00	-11.75	QP
92.462	52.84	11.04	1.13	36.66	28.35	43.50	-15.15	QP
99.528	51.09	12.13	1.19	36.72	27.69	43.50	-15.81	QP
214.514	52.77	10.95	1.93	37.35	28.30	43.50	-15.20	QP
370.702	54.43	14.86	2.72	37.49	34.52	46.00	-11.48	QP

Above 1GHz(worst case ANT 1 report):

802.11a(HT20) 5180MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	29.25	39.67	14.62	32.65	50.89	74	-23.11	Vertical
15540.00	26.98	38.6	17.66	34.46	48.78	74	-25.22	Vertical
10360.00	29.13	39.67	14.62	32.65	50.77	74	-23.23	Horizontal
15540.00	29.46	38.6	17.66	34.46	51.26	74	-22.74	Horizontal

802.11a(HT20) 5220MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10440.00	31.42	39.3	13.48	35.75	48.45	74	-25.55	Vertical
15660.00	30.10	38.42	16.84	35.37	49.99	74	-24.01	Vertical
10440.00	31.45	39.3	13.48	35.75	48.48	74	-25.52	Horizontal
15660.00	30.13	38.42	16.84	35.37	50.02	74	-23.98	Horizontal

802.11a(HT20) 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	30.52	39.37	13.51	35.78	47.62	74	-26.38	Vertical
15720.00	32.40	38.27	16.88	35.37	52.18	74	-21.82	Vertical
10480.00	29.32	39.37	13.51	35.78	46.42	74	-27.58	Horizontal
15720.00	28.81	38.27	16.88	35.37	48.59	74	-25.41	Horizontal

802.11a(HT20) 5260MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10520.00	29.15	39.41	14.69	35.82	47.43	74	-26.57	Vertical
15780.00	27.65	38.13	17.74	35.38	48.14	74	-25.86	Vertical
10520.00	28.62	39.41	14.69	35.82	46.9	74	-27.1	Horizontal
15780.00	29.81	38.13	17.74	35.38	50.3	74	-23.7	Horizontal

802.11a(HT20) 5300MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10600.00	29.11	39.44	13.59	35.93	46.21	74	-27.79	Vertical
15900.00	27.52	37.84	16.98	35.39	46.95	74	-27.05	Vertical
10600.00	29.29	39.44	13.59	35.93	46.39	74	-27.61	Horizontal
15900.00	27.89	37.84	16.98	35.39	47.32	74	-26.68	Horizontal

802.11a(HT20) 5320MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10640.00	27.29	39.46	14.75	35.96	45.54	74	-28.46	Vertical
15960.00	26.21	37.7	17.81	35.4	46.32	74	-27.68	Vertical
10640.00	30.99	39.46	14.75	35.96	49.24	74	-24.76	Horizontal
15960.00	29.21	37.7	17.81	35.4	49.32	74	-24.68	Horizontal

802.11a(HT20) 5500MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11000.00	29.44	39.6	14.93	36.4	47.57	74	-26.43	Vertical
16500.00	28.38	39.8	18.44	35.87	50.75	74	-23.25	Vertical
11000.00	30.07	39.6	14.93	36.4	48.2	74	-25.8	Horizontal
16500.00	30.96	39.8	18.44	35.87	53.33	74	-20.67	Horizontal

802.11a(HT20) 5600MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11200.00	27.97	39.68	13.99	36.36	45.28	74	-28.72	Vertical
16800.00	31.50	39.86	17.46	36.13	52.69	74	-21.31	Vertical
11200.00	30.37	39.68	13.99	36.36	47.68	74	-26.32	Horizontal
16800.00	27.90	39.86	17.46	36.13	49.09	74	-24.91	Horizontal

802.11a(HT20) 5700MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11400.00	32.71	39.76	14.13	36.32	50.28	74	-23.72	Vertical
17100.00	27.99	40.44	17.61	36.29	49.75	74	-24.25	Vertical
11400.00	30.08	39.76	14.13	36.32	47.65	74	-26.35	Horizontal
17100.00	32.18	40.44	17.61	36.29	53.94	74	-20.06	Horizontal

802.11n(HT20) 5180MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	29.43	39.67	14.62	32.65	51.07	74	-22.93	Vertical
15540.00	27.40	38.6	17.66	34.46	49.2	74	-24.8	Vertical
10360.00	29.00	39.67	14.62	32.65	50.64	74	-23.36	Horizontal
15540.00	26.09	38.6	17.66	34.46	47.89	74	-26.11	Horizontal

802.11n(HT20) 5220MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10440.00	31.22	39.3	13.48	35.75	48.25	74	-25.75	Vertical
15660.00	29.59	38.42	16.84	35.37	49.48	74	-24.52	Vertical
10440.00	27.99	39.3	13.48	35.75	45.02	74	-28.98	Horizontal
15660.00	27.47	38.42	16.84	35.37	47.36	74	-26.64	Horizontal

802.11n(HT20) 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	30.44	39.37	13.51	35.78	47.54	74	-26.46	Vertical
15720.00	28.11	38.27	16.88	35.37	47.89	74	-26.11	Vertical
10480.00	28.06	39.37	13.51	35.78	45.16	74	-28.84	Horizontal
15720.00	30.28	38.27	16.88	35.37	50.06	74	-23.94	Horizontal

802.11n(HT20) 5260MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10520.00	28.89	39.41	14.69	35.82	47.17	74	-26.83	Vertical
15780.00	26.31	38.13	17.74	35.38	46.8	74	-27.2	Vertical
10520.00	26.51	39.41	14.69	35.82	44.79	74	-29.21	Horizontal
15780.00	26.28	38.13	17.74	35.38	46.77	74	-27.23	Horizontal

802.11n(HT20) 5300MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10600.00	28.85	39.44	13.59	35.93	45.95	74	-28.05	Vertical
15900.00	30.38	37.84	16.98	35.39	49.81	74	-24.19	Vertical
10600.00	30.95	39.44	13.59	35.93	48.05	74	-25.95	Horizontal
15900.00	27.84	37.84	16.98	35.39	47.27	74	-26.73	Horizontal

802.11n(HT20) 5320MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10640.00	30.53	39.46	14.75	35.96	48.78	74	-25.22	Vertical
15960.00	29.16	37.7	17.81	35.4	49.27	74	-24.73	Vertical
10640.00	27.21	39.46	14.75	35.96	45.46	74	-28.54	Horizontal
15960.00	30.35	37.7	17.81	35.4	50.46	74	-23.54	Horizontal

802.11n(HT20) 5500MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11000.00	26.04	39.6	14.93	36.4	44.17	74	-29.83	Vertical
16500.00	28.67	39.8	18.44	35.87	51.04	74	-22.96	Vertical
11000.00	26.69	39.6	14.93	36.4	44.82	74	-29.18	Horizontal
16500.00	28.96	39.8	18.44	35.87	51.33	74	-22.67	Horizontal

802.11n(HT20) 5600MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11200.00	30.54	39.68	13.99	36.36	47.85	74	-26.15	Vertical
16800.00	31.56	39.86	17.46	36.13	52.75	74	-21.25	Vertical
11200.00	32.75	39.68	13.99	36.36	50.06	74	-23.94	Horizontal
16800.00	27.45	39.86	17.46	36.13	48.64	74	-25.36	Horizontal

802.11n(HT20) 5700MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11400.00	31.16	39.76	14.13	36.32	48.73	74	-25.27	Vertical
17100.00	27.80	40.44	17.61	36.29	49.56	74	-24.44	Vertical
11400.00	27.08	39.76	14.13	36.32	44.65	74	-29.35	Horizontal
17100.00	27.82	40.44	17.61	36.29	49.58	74	-24.42	Horizontal

802.11ac(HT20) 5180MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	29.93	39.67	14.62	32.65	51.57	74	-22.43	Vertical
15540.00	30.65	38.6	17.66	34.46	52.45	74	-21.55	Vertical
10360.00	29.62	39.67	14.62	32.65	51.26	74	-22.74	Horizontal
15540.00	28.83	38.6	17.66	34.46	50.63	74	-23.37	Horizontal

802.11ac(HT20) 5220MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10440.00	31.14	39.3	13.48	35.75	48.17	74	-25.83	Vertical
15660.00	31.42	38.42	16.84	35.37	51.31	74	-22.69	Vertical
10440.00	28.48	39.3	13.48	35.75	45.51	74	-28.49	Horizontal
15660.00	32.46	38.42	16.84	35.37	52.35	74	-21.65	Horizontal

802.11ac(HT20) 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	32.93	39.37	13.51	35.78	50.03	74	-23.97	Vertical
15720.00	29.25	38.27	16.88	35.37	49.03	74	-24.97	Vertical
10480.00	32.53	39.37	13.51	35.78	49.63	74	-24.37	Horizontal
15720.00	29.06	38.27	16.88	35.37	48.84	74	-25.16	Horizontal

802.11ac(HT20) 5260MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10520.00	26.31	39.41	14.69	35.82	44.59	74	-29.41	Vertical
15780.00	27.65	38.13	17.74	35.38	48.14	74	-25.86	Vertical
10520.00	28.23	39.41	14.69	35.82	46.51	74	-27.49	Horizontal
15780.00	27.45	38.13	17.74	35.38	47.94	74	-26.06	Horizontal

802.11ac(HT20) 5300MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10600.00	30.44	39.44	13.59	35.93	47.54	74	-26.46	Vertical
15900.00	28.50	37.84	16.98	35.39	47.93	74	-26.07	Vertical
10600.00	32.52	39.44	13.59	35.93	49.62	74	-24.38	Horizontal
15900.00	29.19	37.84	16.98	35.39	48.62	74	-25.38	Horizontal

802.11ac(HT20) 5320MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10640.00	30.69	39.46	14.75	35.96	48.94	74	-25.06	Vertical
15960.00	26.03	37.7	17.81	35.4	46.14	74	-27.86	Vertical
10640.00	28.82	39.46	14.75	35.96	47.07	74	-26.93	Horizontal
15960.00	27.50	37.7	17.81	35.4	47.61	74	-26.39	Horizontal

802.11ac(HT20) 5500MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11000.00	30.56	39.6	14.93	36.4	48.69	74	-25.31	Vertical
16500.00	26.78	39.8	18.44	35.87	49.15	74	-24.85	Vertical
11000.00	30.11	39.6	14.93	36.4	48.24	74	-25.76	Horizontal
16500.00	30.07	39.8	18.44	35.87	52.44	74	-21.56	Horizontal

802.11ac(HT20) 5600MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11200.00	31.57	39.68	13.99	36.36	48.88	74	-25.12	Vertical
16800.00	29.37	39.86	17.46	36.13	50.56	74	-23.44	Vertical
11200.00	28.83	39.68	13.99	36.36	46.14	74	-27.86	Horizontal
16800.00	27.61	39.86	17.46	36.13	48.8	74	-25.2	Horizontal

802.11ac(HT20) 5700MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11400.00	32.23	39.76	14.13	36.32	49.8	74	-24.2	Vertical
17100.00	30.36	40.44	17.61	36.29	52.12	74	-21.88	Vertical
11400.00	31.02	39.76	14.13	36.32	48.59	74	-25.41	Horizontal
17100.00	29.20	40.44	17.61	36.29	50.96	74	-23.04	Horizontal

802.11n(HT40) 5190MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10380.00	28.61	39.71	14.63	32.68	50.27	74	-23.73	Vertical
15570.00	28.74	38.46	17.67	34.32	50.55	74	-23.45	Vertical
10380.00	30.60	39.71	14.63	32.68	52.26	74	-21.74	Horizontal
15570.00	30.81	38.46	17.67	34.32	52.62	74	-21.38	Horizontal

802.11n(HT40) 5230MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10460.00	31.21	39.34	13.5	35.75	48.3	74	-25.7	Vertical
15690.00	30.28	38.34	16.86	35.37	50.11	74	-23.89	Vertical
10460.00	32.41	39.34	13.5	35.75	49.5	74	-24.5	Horizontal
15690.00	30.36	38.34	16.86	35.37	50.19	74	-23.81	Horizontal

802.11n(HT40) 5270MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10540.00	32.40	39.42	13.55	35.85	49.52	74	-24.48	Vertical
15810.00	32.85	38.06	16.93	35.38	52.46	74	-21.54	Vertical
10540.00	32.62	39.42	13.55	35.85	49.74	74	-24.26	Horizontal
15810.00	31.56	38.06	16.93	35.38	51.17	74	-22.83	Horizontal

802.11n(HT40) 5310MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10620.00	28.76	40.02	14.78	33.16	50.4	74	-23.6	Vertical
15930.00	26.10	37.99	17.83	33.36	48.56	74	-25.44	Vertical
10620.00	28.60	40.02	14.78	33.16	50.24	74	-23.76	Horizontal
15930.00	28.33	37.99	17.83	33.36	50.79	74	-23.21	Horizontal

802.11n(HT40) 5510MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11020.00	28.59	40.14	14.84	33.34	50.23	74	-23.77	Vertical
16530.00	30.23	37.93	17.89	33.18	52.87	74	-21.13	Vertical
11020.00	26.44	40.14	14.84	33.34	48.08	74	-25.92	Horizontal
16530.00	26.64	37.93	17.89	33.18	49.28	74	-24.72	Horizontal

802.11n(HT40) 5590MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11180.00	27.46	39.67	13.98	36.37	44.74	74	-29.26	Vertical
16770.00	27.99	39.85	17.44	36.13	49.15	74	-24.85	Vertical
11180.00	28.09	39.67	13.98	36.37	45.37	74	-28.63	Horizontal
16770.00	31.32	39.85	17.44	36.13	52.48	74	-21.52	Horizontal

802.11n(HT40) 5670MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11340.00	26.78	40.34	14.94	33.64	48.42	74	-25.58	Vertical
17010.00	28.43	37.83	17.99	32.88	51.37	74	-22.63	Vertical
11340.00	27.64	40.34	14.94	33.64	49.28	74	-24.72	Horizontal
17010.00	29.09	37.83	17.99	32.88	52.03	74	-21.97	Horizontal

802.11ac(HT40) 5190MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10380.00	27.00	39.71	14.63	32.68	48.66	74	-25.34	Vertical
15570.00	28.29	38.46	17.67	34.32	50.1	74	-23.9	Vertical
10380.00	29.21	39.71	14.63	32.68	50.87	74	-23.13	Horizontal
15570.00	28.08	38.46	17.67	34.32	49.89	74	-24.11	Horizontal

802.11ac(HT40) 5230MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10460.00	27.88	39.34	13.5	35.75	44.97	74	-29.03	Vertical
15690.00	31.89	38.34	16.86	35.37	51.72	74	-22.28	Vertical
10460.00	32.45	39.34	13.5	35.75	49.54	74	-24.46	Horizontal
15690.00	31.28	38.34	16.86	35.37	51.11	74	-22.89	Horizontal

802.11ac(HT40) 5270MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10540.00	32.34	39.42	13.55	35.85	49.46	74	-24.54	Vertical
15810.00	28.31	38.06	16.93	35.38	47.92	74	-26.08	Vertical
10540.00	31.20	39.42	13.55	35.85	48.32	74	-25.68	Horizontal
15810.00	28.83	38.06	16.93	35.38	48.44	74	-25.56	Horizontal

802.11ac(HT40) 5310MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10620.00	30.13	40.02	14.78	33.16	51.77	74	-22.23	Vertical
15930.00	28.62	37.99	17.83	33.36	51.08	74	-22.92	Vertical
10620.00	26.59	40.02	14.78	33.16	48.23	74	-25.77	Horizontal
15930.00	27.54	37.99	17.83	33.36	50	74	-24	Horizontal

802.11ac(HT40) 5510MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11020.00	28.19	40.14	14.84	33.34	49.83	74	-24.17	Vertical
16530.00	29.93	37.93	17.89	33.18	52.57	74	-21.43	Vertical
11020.00	29.78	40.14	14.84	33.34	51.42	74	-22.58	Horizontal
16530.00	29.62	37.93	17.89	33.18	52.26	74	-21.74	Horizontal

802.11ac(HT40) 5590MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11180.00	29.47	39.67	13.98	36.37	46.75	74	-27.25	Vertical
16770.00	30.15	39.85	17.44	36.13	51.31	74	-22.69	Vertical
11180.00	32.49	39.67	13.98	36.37	49.77	74	-24.23	Horizontal
16770.00	32.36	39.85	17.44	36.13	53.52	74	-20.48	Horizontal

802.11ac(HT40) 5670MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11340.00	28.14	40.34	14.94	33.64	49.78	74	-24.22	Vertical
17010.00	29.03	37.83	17.99	32.88	51.97	74	-22.03	Vertical
11340.00	30.46	40.34	14.94	33.64	52.1	74	-21.9	Horizontal
17010.00	30.81	37.83	17.99	32.88	53.75	74	-20.25	Horizontal

802.11ac(HT80) 5210MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10420.00	29.85	39.82	14.66	32.8	51.53	74	-22.47	Vertical
15630.00	29.37	38.09	17.71	33.81	51.36	74	-22.64	Vertical
10420.00	28.75	39.82	14.66	32.8	50.43	74	-23.57	Horizontal
15630.00	28.97	38.09	17.71	33.81	50.96	74	-23.04	Horizontal

802.11ac(HT80) 5290MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10580.00	27.79	39.43	13.58	35.89	44.91	74	-29.09	Vertical
15870.00	29.91	37.91	16.97	35.39	49.4	74	-24.6	Vertical
10580.00	31.98	39.43	13.58	35.89	49.1	74	-24.9	Horizontal
15870.00	30.16	37.91	16.97	35.39	49.65	74	-24.35	Horizontal

802.11ac(HT80) 5530MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11060.00	28.76	40.18	14.86	33.4	50.4	74	-23.6	Vertical
16590.00	28.61	37.91	17.91	33.12	51.31	74	-22.69	Vertical
11060.00	27.75	40.18	14.86	33.4	49.39	74	-24.61	Horizontal
16590.00	26.65	37.91	17.91	33.12	49.35	74	-24.65	Horizontal

802.11ac(HT80) 5610MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11220.00	30.09	40.3	14.92	33.58	51.73	74	-22.27	Vertical
16830.00	27.46	37.85	17.97	32.94	50.34	74	-23.66	Vertical
11220.00	28.03	40.3	14.92	33.58	49.67	74	-24.33	Horizontal
16830.00	28.94	37.85	17.97	32.94	51.82	74	-22.18	Horizontal

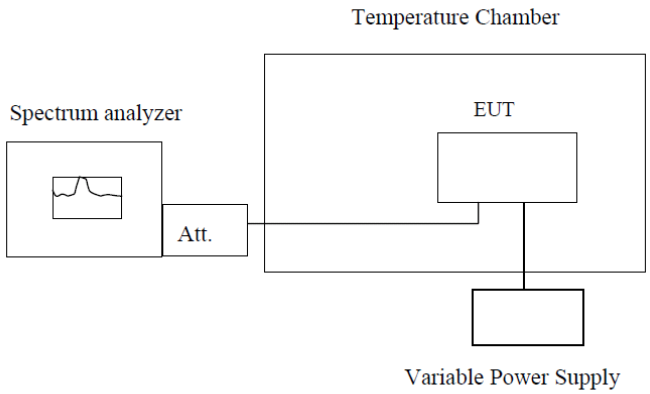
Notes:

1. Level = Read Level + Antenna Factor+ Cable loss- Preamp Factor.

2. The test trace is same as the ambient noise (the test frequency range: 18GHz~40GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

7.8 Frequency stability

Test Requirement:	FCC Part15 C Section 15.407(g) RSS-Gen 8.11
Test Method:	ANSI C63.10:2013, FCC Part 2.1055, RSS-Gen
Limit:	Manufactures 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
Test Procedure:	The EUT was setup to ANSI C63.4, 2003; tested to 2.1055 for compliance to FCC Part 15.407(g) requirements.
Test setup:	 **Note :** Measurement setup for testing on Antenna connector
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Remark: Set the EUT transmits at un-modulation mode to test frequency stability.

Measurement data:

Frequency stability versus Temp.									
Worse Case Operating Frequency：5180MHz									
Temp. (°C)	Power Supply (VAC)	0 minute		2 minute		5 minute		10 minute	
		Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail
-30	120	5180.227	Pass	5180.984	Pass	5180.94	Pass	5180.421	Pass
-20	120	5180.838	Pass	5180.029	Pass	5180.551	Pass	5180.98	Pass
-10	120	5180.102	Pass	5180.03	Pass	5180.586	Pass	5180.975	Pass
0	120	5180.48	Pass	5180.456	Pass	5180.375	Pass	5180.559	Pass
10	120	5180.859	Pass	5180.614	Pass	5180.968	Pass	5180.594	Pass
20	120	5180.058	Pass	5180.21	Pass	5180.512	Pass	5180.28	Pass
30	120	5180.861	Pass	5180.17	Pass	5180.074	Pass	5180.126	Pass
40	120	5180.245	Pass	5180.107	Pass	5180.838	Pass	5180.332	Pass
50	120	5180.802	Pass	5180.571	Pass	5180.703	Pass	5180.765	Pass
Frequency stability versus Temp.									
Worse Case Operating Frequency：5180MHz									
Temp. (°C)	Power Supply (VAC)	0 minute		2 minute		5 minute		10 minute	
		Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail
25	108	5180.235	Pass	5180.589	Pass	5180.181	Pass	5180.177	Pass
25	120	5180.368	Pass	5180.6	Pass	5180.557	Pass	5180.809	Pass
25	132	5180.892	Pass	5180.793	Pass	5180.522	Pass	5180.897	Pass

Frequency stability versus Temp.									
Worse Case Operating Frequency：5190MHz									
Temp. (°C)	Power Supply (VAC)	0 minute		2 minute		5 minute		10 minute	
		Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail
-30	120	5190.936	Pass	5190.425	Pass	5190.586	Pass	5190.572	Pass
-20	120	5190.49	Pass	5190.886	Pass	5190.284	Pass	5190.439	Pass
-10	120	5190.404	Pass	5190.18	Pass	5190.726	Pass	5190.745	Pass
0	120	5190.061	Pass	5190.456	Pass	5190.168	Pass	5190.878	Pass
10	120	5190.9	Pass	5190.482	Pass	5190.89	Pass	5190.063	Pass
20	120	5190.41	Pass	5190.709	Pass	5190.838	Pass	5190.199	Pass
30	120	5190.081	Pass	5190.421	Pass	5190.698	Pass	5190.565	Pass
40	120	5190.949	Pass	5190.76	Pass	5190.341	Pass	5190.887	Pass
50	120	5190.824	Pass	5190.645	Pass	5190.713	Pass	5190.21	Pass
Frequency stability versus Temp.									
Worse Case Operating Frequency：5190MHz									
Temp. (°C)	Power Supply (VAC)	0 minute		2 minute		5 minute		10 minute	
		Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail
25	108	5190.706	Pass	5190.891	Pass	5190.819	Pass	5190.233	Pass
25	120	5190.614	Pass	5190.701	Pass	5190.379	Pass	5190.204	Pass
25	132	5190.072	Pass	5190.457	Pass	5190.819	Pass	5190.104	Pass

Frequency stability versus Temp.									
Worse Case Operating Frequency：5210MHz									
Temp. (°C)	Power Supply (VAC)	0 minute		2 minute		5 minute		10 minute	
		Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail
-30	120	5210.895	Pass	5210.422	Pass	5210.084	Pass	5210.34	Pass
-20	120	5210.245	Pass	5210.688	Pass	5210.701	Pass	5210.46	Pass
-10	120	5210.502	Pass	5210.778	Pass	5210.36	Pass	5210.58	Pass
0	120	5210.68	Pass	5210.591	Pass	5210.793	Pass	5210.783	Pass
10	120	5210.81	Pass	5210.189	Pass	5210.595	Pass	5210.834	Pass
20	120	5210.791	Pass	5210.391	Pass	5210.498	Pass	5210.446	Pass
30	120	5210.764	Pass	5210.232	Pass	5210.029	Pass	5210.105	Pass
40	120	5210.822	Pass	5210.434	Pass	5210.143	Pass	5210.039	Pass
50	120	5210.546	Pass	5210.701	Pass	5210.437	Pass	5210.471	Pass
Frequency stability versus Temp.									
Worse Case Operating Frequency：5210MHz									
Temp. (°C)	Power Supply (VAC)	0 minute		2 minute		5 minute		10 minute	
		Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail	Measured Frequency (MHz)	Pass /Fail
25	108	5210.425	Pass	5210.722	Pass	5210.269	Pass	5210.069	Pass
25	120	5210.476	Pass	5210.923	Pass	5210.52	Pass	5210.176	Pass
25	132	5210.043	Pass	5210.152	Pass	5210.496	Pass	5210.121	Pass

8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details.

---END---