

FCC REPORT

Applicant: Wuhan Ipason Technology Co., Ltd

Address of Applicant: Room 1801, 18/F, Block D1, Hankou North E-Commerce Building, No. 88, Hankou North Avenue, Huangpi District, Wuhan, China

Manufacturer: Wuhan Ipason Technology Co., Ltd

Address of Manufacturer: Room 1801, 18/F, Block D1, Hankou North E-Commerce Building, No. 88, Hankou North Avenue, Huangpi District, Wuhan, China

Factory: Wuhan Ipason Technology Co., Ltd

Address of Factory: IPASON Science Park, Special #1, Qing Wu Road, Huangpi District, Wuhan City, Hubei Province.China

Equipment Under Test (EUT)

Product Name: Microcomputer

Model No.: OB18501, OB18101, OB15401, OB12201, OB12401, OB12001, OB***** (* represent 0-9, a-z, A-Z, or blank, only used to tell different market area and for client internal serial number, will not affect product Safety and EMC performance.)

Trade Mark: IPASON

FCC ID: 2ATY8-OB18501

Applicable standards: FCC CFR Title 47 Part 15 Subpart E Section 15.407

Date of sample receipt: July 04, 2019

Date of Test: July 04-12, 2019

Date of report issue: July 12, 2019

Test Result : PASS *

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

Authorized Signature:



Robinson Lo
Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	July 12, 2019	Original

Prepared By:

Bill. Yuan

Date:

July 12, 2019

Project Engineer

Check By:

Robinson

Date:

July 12, 2019

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	Subpart C 15.203	PASS
AC Power Line Conducted Emission	Subpart C 15.207 & Subpart E 15.407 b(6)	PASS
Maximum Conducted Output Power	Subpart E 15.407(a)	PASS
99% Bandwidth	Subpart E 15.407	PASS
26dB Emission bandwidth	Subpart E 15.407(a)	PASS
Power Spectral Density	Subpart E 15.407(a)	PASS
Undesirable Emission	Subpart E 15.407(b)(6), Subpart C 15.205/15.209	PASS
Radiated Emission	Subpart C 15.209 & Subpart E15.407(b)	PASS
Band Edge	Subpart C 15.205 & Subpart E 15.407(b)	PASS
Frequency Stability	Subpart E 15.407(g)	PASS

Remark: Test according to ANSI C63.10:2013.

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	$\pm 3.8039\text{dB}$	(1)
Radiated Emission	30MHz ~ 1000MHz	$\pm 3.9679\text{dB}$	(1)
Radiated Emission	1GHz ~ 40GHz	$\pm 4.29\text{dB}$	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	$\pm 3.44\text{dB}$	(1)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

5 General Information

5.1 General Description of EUT

Product Name:	Microcomputer			
Model No.:	OB18501, OB18101, OB15401, OB12201, OB12401, OB12001, OB*****（* represent 0-9, a-z, A-Z, or blank, only used to tell different market area and for client internal serial number, will not affect product Safety and EMC performance.）			
Test Model No:	OB18501, OB12201			
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The only difference is model name for commercial purpose.				
Serial No.:	PS00094219230089			
Test sample(s) ID:	GTS201907000062-1			
Sample(s) Status:	Engineer sample			
Operation Frequency:	Band	Mode	Frequency Range(MHz)	Number of channels
	U-NII Band I	IEEE 802.11a	5180-5240	4
		IEEE 802.11n/ac 20MHz	5180-5240	4
		IEEE 802.11n/ac 40MHz	5190-5230	2
		IEEE 802.11ac 80MHz	5210	1
	U-NII Band II-A	IEEE 802.11a	5260-5320	4
		IEEE 802.11n/ac 20MHz	5260-5320	4
		IEEE 802.11n/ac 40MHz	5270-5310	2
		IEEE 802.11ac 80MHz	5290	1
	U-NII Band II-C	IEEE 802.11a	5500-5700	11
		IEEE 802.11n/ac 20MHz	5500-5700	11
		IEEE 802.11n/ac 40MHz	5510-5670	5
IEEE 802.11ac 80MHz		5530-5610	2	
Modulation technology:	IEEE 802.11a: OFDM(BPSK/QPSK/16QAM/64QAM) IEEE 802.11n: OFDM(BPSK/QPSK/16QAM/64QAM) IEEE 802.11ac: OFDM (BPSK/QPSK/16QAM/64QAM/256QAM)			
Antenna Type:	Integral Antenna			
Antenna gain:	Main Antenna: 1.20dBi (Max) Aux Antenna: 1.20dBi(Max) Two antennas can not synchronous transmission.			
Power supply:	Adapter Model: ADP-90MD H Input: AC 100-240V, 50/60Hz Output: DC 19V, 4.74A			

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

Selected Test Channel for 802.11a/n(HT20)/ac(HT20)		
Band	Channel	Frequency
U-NII Band I	The lowest channel (CH36)	5180MHz
	The middle channel (CH40)	5200MHz
	The highest channel (CH48)	5240MHz
U-NII Band II-A	The lowest channel (CH52)	5260MHz
	The middle channel (CH60)	5300MHz
	The highest channel (CH64)	5320MHz
U-NII Band II-C	The lowest channel (CH100)	5500MHz
	The middle channel (CH116)	5580MHz
	The highest channel (CH140)	5700MHz

Selected Test Channel for 802.11n(HT40)/ac(HT40)		
Band	Channel	Frequency
U-NII Band I	The lowest channel (CH38)	5190MHz
	The highest channel (CH46)	5230MHz
U-NII Band II-A	The lowest channel (CH54)	5270MHz
	The highest channel (CH62)	5310MHz
U-NII Band II-C	The lowest channel (CH102)	5510MHz
	The middle channel (CH110)	5550MHz
	The highest channel (CH134)	5670MHz

Selected Test Channel for 802.11ac(HT80)		
Band	Channel	Frequency
U-NII Band I	One channel (CH42)	5210MHz
U-NII Band II-A	One channel(CH58)	5290MHz
U-NII Band II-C	The lowest channel (CH106)	5530MHz
	The highest channel (CH122)	5610MHz

5.2 Test mode

Transmitting mode	Keep the EUT in transmitting with modulation. EUT was test with 99% duty cycle at its maximum power control level.
<i>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.</i>	

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
802.11a	6 Mbps
802.11n(HT20)	6.5 Mbps
802.11n(HT40)	13.5 Mbps
802.11ac(HT20)	6.5 Mbps
802.11ac(HT40)	13.5 Mbps
802.11ac(HT80)	29.3 Mbps

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. ● Industry Canada (IC) —Registration No.: 9079A-2 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-2. ● 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
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5.4 Test Location

All tests were performed at:
Global United Technology Services Co., Ltd. Address: No. 301-309, 3/F., 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

None.

5.6 Deviation from Standards

None.

5.7 Abnormalities from Standard Conditions

None.

5.8 Other Information Requested by the Customer

None.

5.9 Additional Instructions

EUT Software Settings:

Mode	Special software is used. The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.		
Test Software Name	DRTU Version 1.7.7-02972		
Mode	Channel	Frequency (MHz)	Soft Set
OFDM	CH36	5180	TX level : default
	CH38	5190	
	CH40	5200	
	CH42	5210	
	CH46	5230	
	CH48	5240	
	CH52	5260	
	CH54	5270	
	CH58	5290	
	CH60	5300	
	CH62	5310	
	CH64	5320	
	CH100	5500	
	CH102	5510	
	CH106	5530	
	CH110	5550	
	CH116	5580	
	CH122	5610	
	CH134	5670	
	CH140	5700	

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

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:	47 CFR Part 15, Subpart C 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.	
E.U.T Antenna:	
The Main and Aux antenna is integral antenna, the best case gain of the antenna is 1.20dBi. Two antennas can not synchronous transmission, reference to the appendix II for details.	

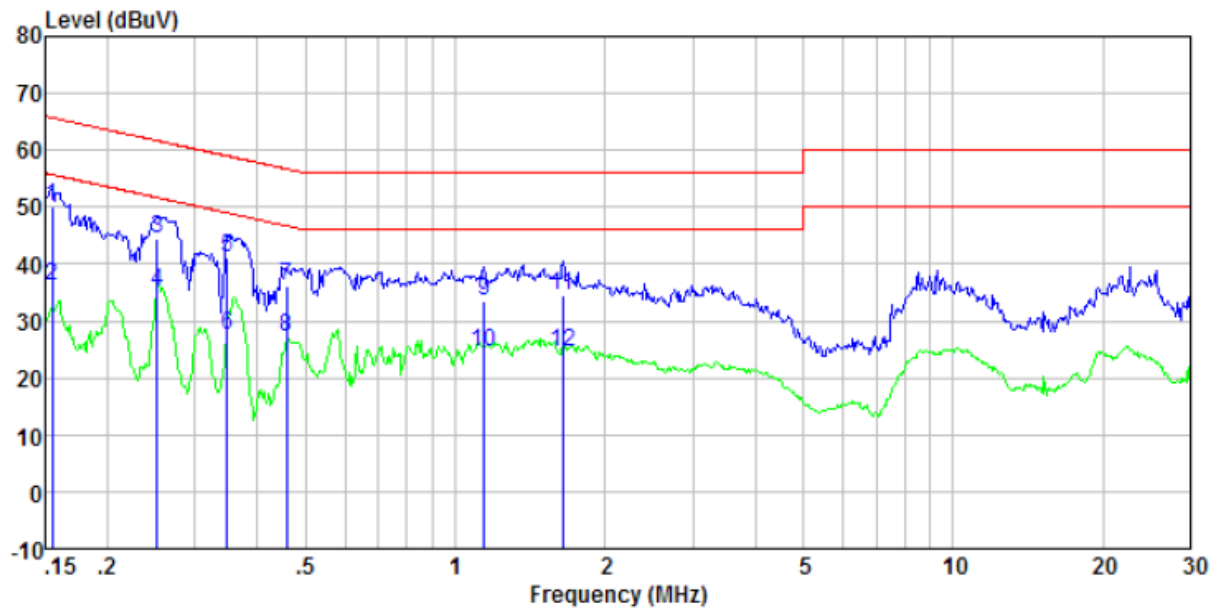
7.2 Conducted Emissions

Test Requirement:	47 CFR Part 15, Subpart C 15.207 & Subpart E 15.407 b(6)					
Test Method:	ANSI C63.10:2013					
Test Frequency Range:	150KHz to 30MHz					
Class / Severity:	Class B					
Receiver setup:	RBW=9KHz, VBW=30KHz					
Limit:	Frequency range (MHz)	Limit (dBuV)				
		Quasi-peak		Average		
	0.15-0.5	66 to 56*		56 to 46*		
	0.5-5	56		46		
	5-30	60		50		
* Decreases with the logarithm of the frequency.						
Test procedure	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.					
Test setup:	Reference Plane LISN 40cm AUX Equipment E.U.T LISN 80cm Filter AC power EMI Receiver Test table/Insulation plane Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m					
Test Instruments:	Refer to section 5.10 for details					
Test mode:	Refer to section 5.2 for details					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mb ar
Test voltage:	AC 120V, 60Hz					
Test results:	Pass					

Measurement Data

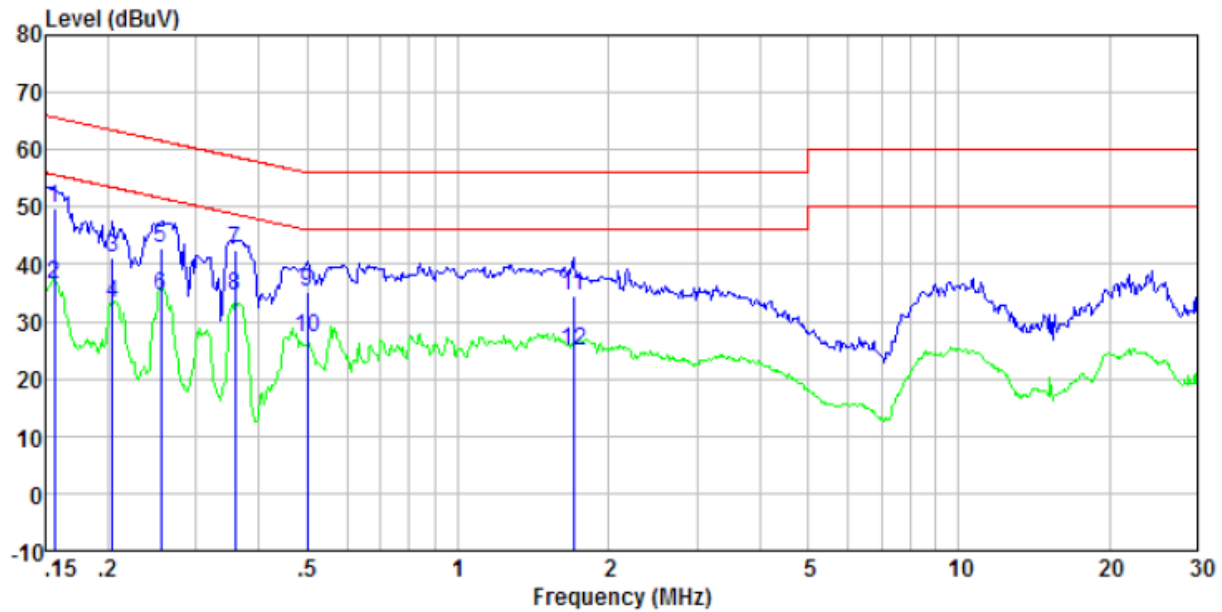
An initial pre-scan was performed on the line and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Line:



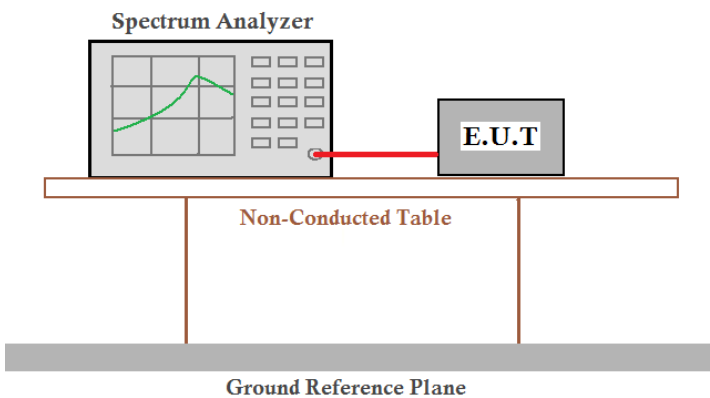
Freq MHz	Reading level dBuV	1ISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.155	49.59	0.40	0.07	50.06	65.74	-15.68	QP
0.155	35.79	0.40	0.07	36.26	55.74	-19.48	Average
0.252	44.00	0.40	0.10	44.50	61.69	-17.19	QP
0.252	34.67	0.40	0.10	35.17	51.69	-16.52	Average
0.348	40.65	0.37	0.10	41.12	59.00	-17.88	QP
0.348	27.06	0.37	0.10	27.53	49.00	-21.47	Average
0.459	35.61	0.33	0.11	36.05	56.71	-20.66	QP
0.459	26.61	0.33	0.11	27.05	46.71	-19.66	Average
1.141	33.10	0.20	0.15	33.45	56.00	-22.55	QP
1.141	24.34	0.20	0.15	24.69	46.00	-21.31	Average
1.645	34.00	0.20	0.17	34.37	56.00	-21.63	QP
1.645	24.28	0.20	0.17	24.65	46.00	-21.35	Average

Neutral:



Freq MHz	Reading level dBuV	1ISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.156	49.35	0.40	0.08	49.83	65.65	-15.82	QP
0.156	36.05	0.40	0.08	36.53	55.65	-19.12	Average
0.204	40.62	0.40	0.11	41.13	63.45	-22.32	QP
0.204	32.52	0.40	0.11	33.03	53.45	-20.42	Average
0.255	42.20	0.40	0.10	42.70	61.60	-18.90	QP
0.255	34.13	0.40	0.10	34.63	51.60	-16.97	Average
0.360	42.04	0.37	0.10	42.51	58.74	-16.23	QP
0.360	34.00	0.37	0.10	34.47	48.74	-14.27	Average
0.499	34.81	0.32	0.11	35.24	56.01	-20.77	QP
0.499	26.77	0.32	0.11	27.20	46.01	-18.81	Average
1.698	34.12	0.20	0.17	34.49	56.00	-21.51	QP
1.698	24.41	0.20	0.17	24.78	46.00	-21.22	Average

7.3 Emission Bandwidth and 99% Occupied Bandwidth

Test Requirement:	47 CFR Part 15, Subpart E 15.407
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Limit:	N/A
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer, shown with a grid and a green curve on its screen, is connected to an E.U.T. (Equipment Under Test) box by a red cable. Both the Spectrum Analyzer and the E.U.T. are positioned on a table labeled 'Non-Conducted Table'. This table is supported by two vertical legs. Below the table, a horizontal grey bar represents the 'Ground Reference Plane'.
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:
Main Antenna:

U-NII Band I							
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26dB Occupied Bandwidth (MHz)		
		802.11a	802.11n(HT 20)	802.11ac(H T20)	802.11a	802.11n(HT 20)	802.11ac(H T20)
36	5180.00	16.3518	16.4076	16.4463	19.584	21.684	21.941
40	5200.00	16.3439	16.3714	16.4401	19.886	22.198	22.357
48	5240.00	16.3527	16.4004	16.4437	19.525	21.785	21.579
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	5190.00	35.8591	35.8553	41.596	40.512		
46	5230.00	35.8453	35.8492	40.117	41.065		
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)		26dB Occupied Bandwidth (MHz)			
		802.11ac(HT80)		802.11ac(HT80)			
42	5210.00	75.1463		79.513			

U-NII Band II-A							
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26dB Occupied Bandwidth (MHz)		
		802.11a	802.11n(HT 20)	802.11ac(H T20)	802.11a	802.11n(HT 20)	802.11ac(H T20)
52	5260.00	16.3553	16.5425	16.4328	19.126	22.188	22.032
60	5300.00	16.3391	16.4394	16.4327	19.416	22.532	22.248
64	5320.00	16.3676	16.3969	16.4616	19.468	21.326	22.810
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)		26dB Occupied Bandwidth (MHz)			
		802.11n(HT40)	802.11ac(HT40)	802.11n(HT40)	802.11ac(HT40)		
54	5270.00	35.8783	35.8468	41.390	41.013		
62	5310.00	35.8929	35.8850	40.257	40.796		
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)		26dB Occupied Bandwidth (MHz)			
		802.11ac(HT80)		802.11ac(HT80)			
58	5290.00	75.1433		79.680			

U-NII Band II-C							
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26dB Occupied Bandwidth (MHz)		
		802.11a	802.11n(HT 20)	802.11ac(H T20)	802.11a	802.11n(HT 20)	802.11ac(H T20)
100	5500.00	16.3586	16.4353	16.4812	19.204	22.060	22.951
116	5580.00	16.3541	16.3755	16.4778	19.230	22.331	22.234
140	5700.00	16.3733	16.4474	16.4728	19.553	22.561	22.620
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)		26dB Occupied Bandwidth (MHz)			
		802.11n(HT40)	802.11ac(HT40)	802.11n(HT40)	802.11ac(HT40)		
102	5510.00	35.8804	35.8558	41.679	41.760		
110	5550.00	35.8787	35.9351	41.077	40.847		
134	5670.00	35.8561	35.8578	40.974	40.211		
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)		26dB Occupied Bandwidth (MHz)			
		802.11ac(HT80)		802.11ac(HT80)			
106	5530.00	75.1758		79.164			
122	5610.00	75.1633		79.224			

Aux Antenna:

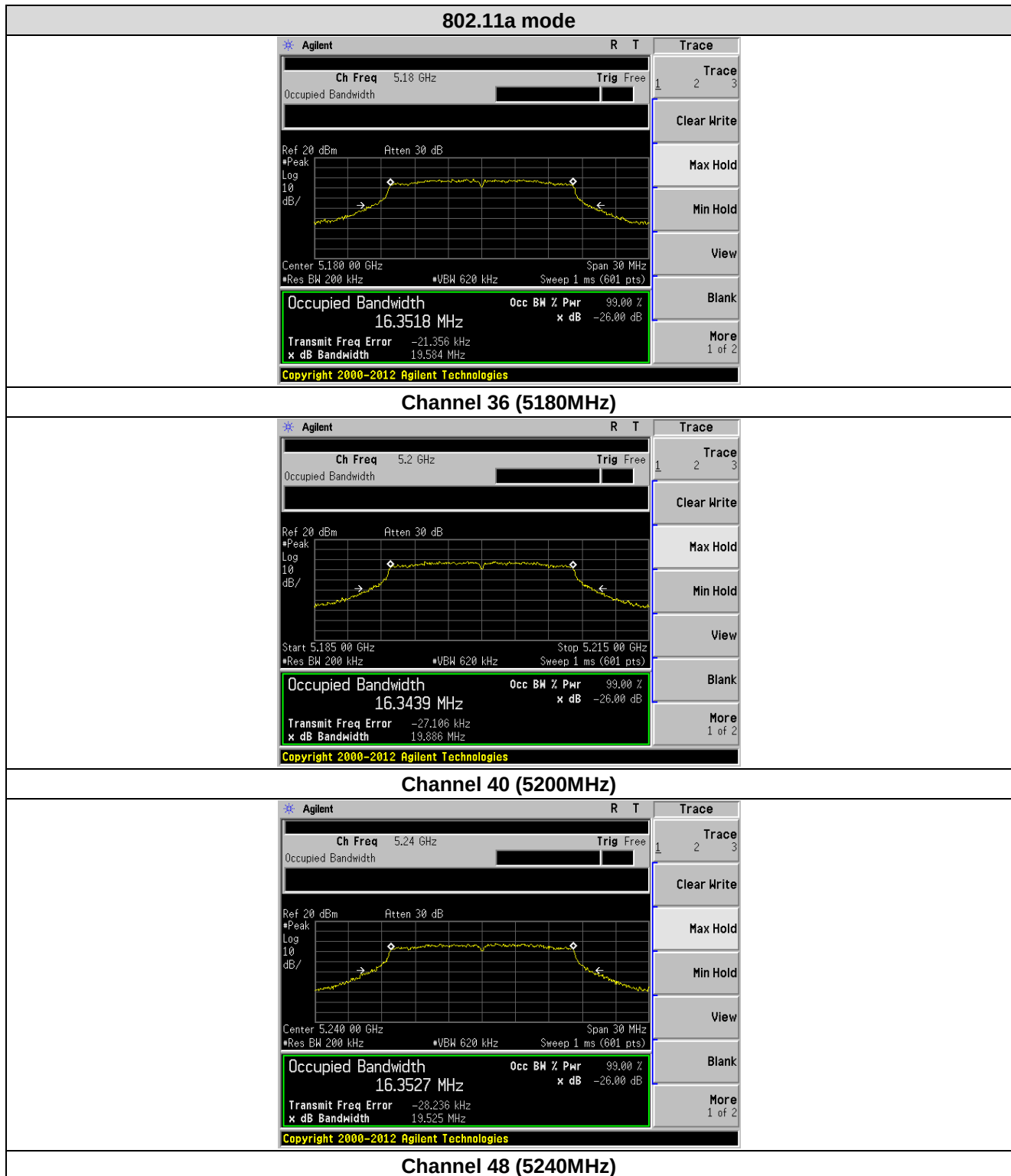
U-NII Band I							
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26dB Occupied Bandwidth (MHz)		
		802.11a	802.11n(HT 20)	802.11ac(H T20)	802.11a	802.11n(HT 20)	802.11ac(H T20)
36	5180.00	16.3599	16.4383	16.4382	19.297	22.431	22.255
40	5200.00	16.3462	16.4413	16.4421	19.948	21.836	22.542
48	5240.00	16.3552	16.4497	16.4006	19.410	22.115	21.475
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	5190.00	35.8717	35.8561	40.720	40.800		
46	5230.00	35.8290	35.8442	40.249	41.395		
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)		26dB Occupied Bandwidth (MHz)			
		802.11ac(HT80)		802.11ac(HT80)			
42	5210.00	75.1092		79.145			

U-NII Band II-A									
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26dB Occupied Bandwidth (MHz)				
		802.11a	802.11n(HT 20)	802.11ac(H T20)	802.11a	802.11n(HT 20)	802.11ac(H T20)		
52	5260.00	16.3765	16.4262	16.4327	19.631	22.637	22.233		
60	5300.00	16.3494	16.4069	16.4404	19.672	22.514	22.032		
64	5320.00	16.3244	16.4751	16.4275	19.369	22.764	22.375		
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)		26dB Occupied Bandwidth (MHz)					
		802.11n(HT40)		802.11ac(HT40)		802.11n(HT40)		802.11ac(HT40)	
54	5270.00	35.8712		35.8868		40.878		41.261	
62	5310.00	35.8880		35.9163		40.764		41.316	
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)		26dB Occupied Bandwidth (MHz)					
		802.11ac(HT80)		802.11ac(HT80)					
58	5290.00	75.1630		79.354					

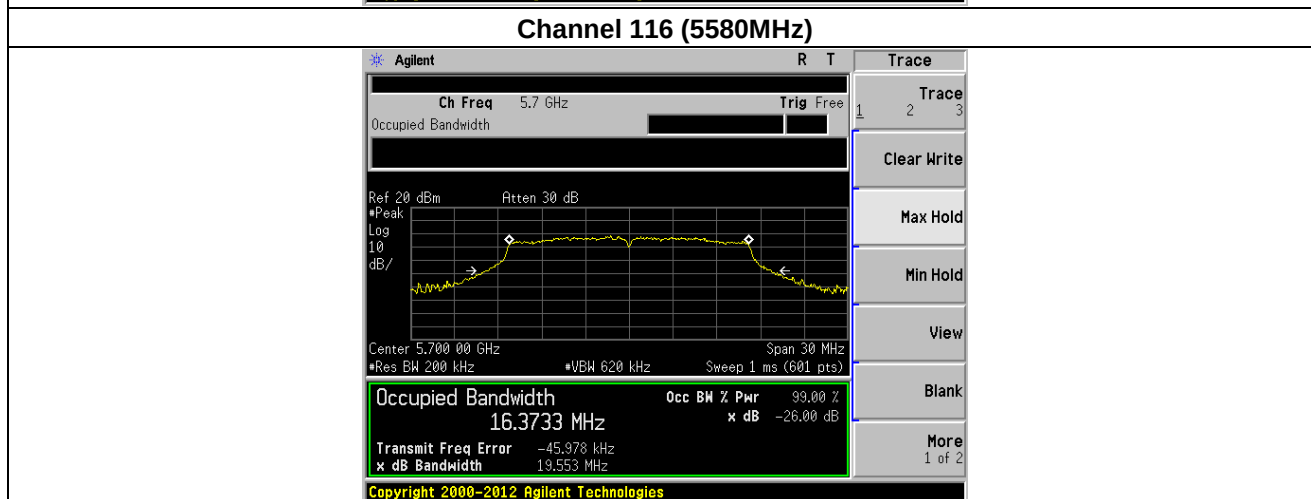
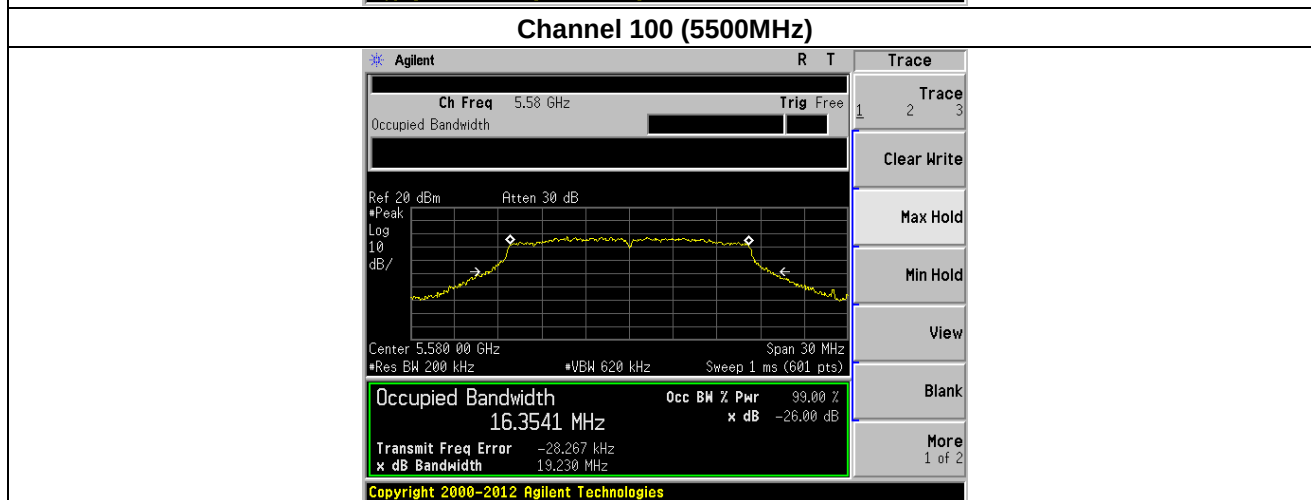
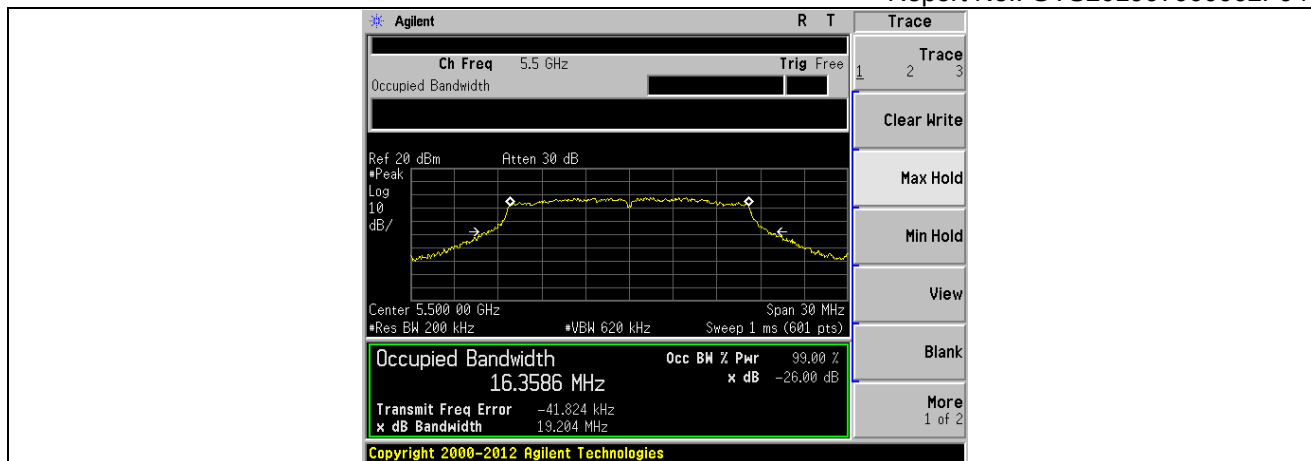
U-NII Band II-C									
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26dB Occupied Bandwidth (MHz)				
		802.11a	802.11n(HT 20)	802.11ac(H T20)	802.11a	802.11n(HT 20)	802.11ac(H T20)		
100	5500.00	16.3455	16.4873	16.4837	19.066	22.524	21.805		
116	5580.00	16.3873	16.4490	16.4857	19.051	23.234	22.726		
140	5700.00	16.3175	16.4445	16.4906	19.141	21.911	22.733		
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)		26dB Occupied Bandwidth (MHz)					
		802.11n(HT40)		802.11ac(HT40)		802.11n(HT40)		802.11ac(HT40)	
102	5510.00	35.8852		35.9028		41.437		40.634	
110	5550.00	35.9464		35.8897		41.229		40.637	
134	5670.00	35.8246		35.8845		41.741		40.842	
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)		26dB Occupied Bandwidth (MHz)					
		802.11ac(HT80)		802.11ac(HT80)					
106	5530.00	75.1479		79.365					
122	5610.00	75.1750		79.598					

Test plots as followed:

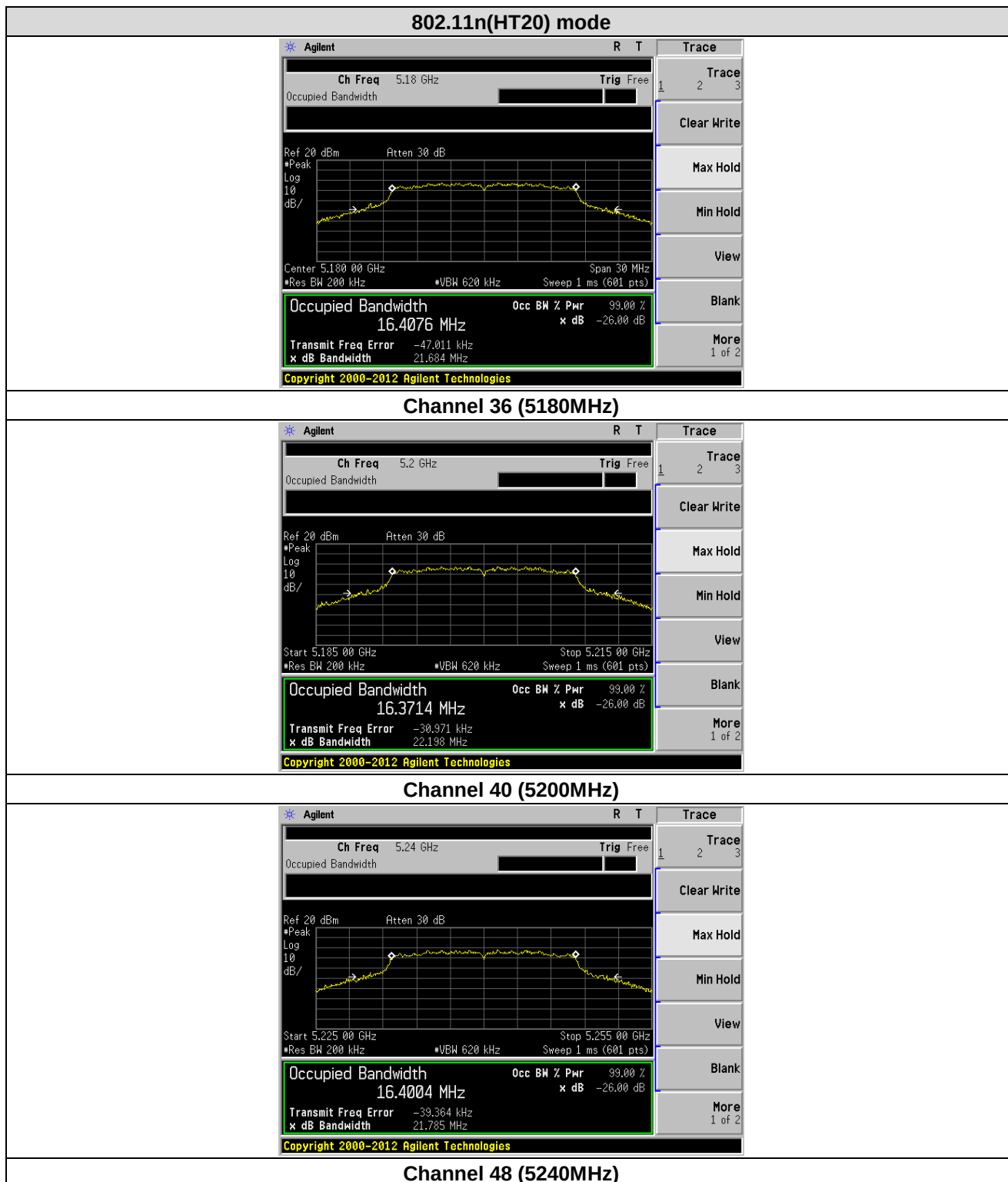
Main Antenna:

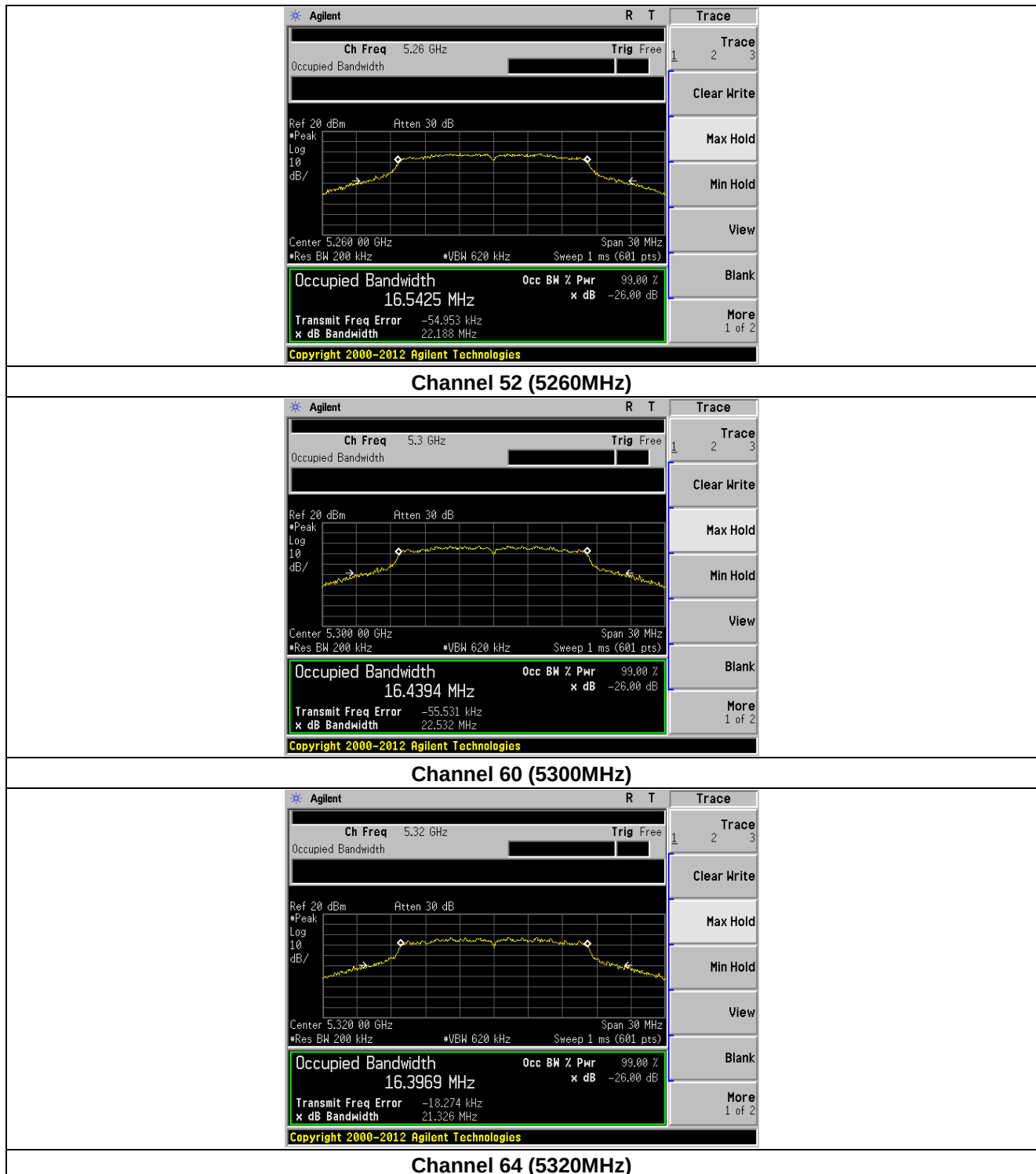


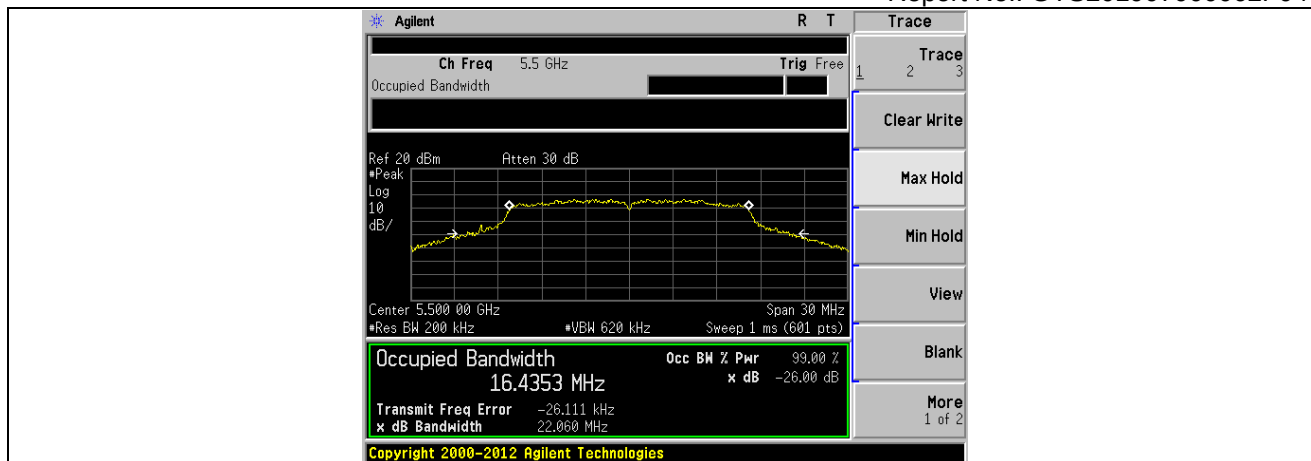




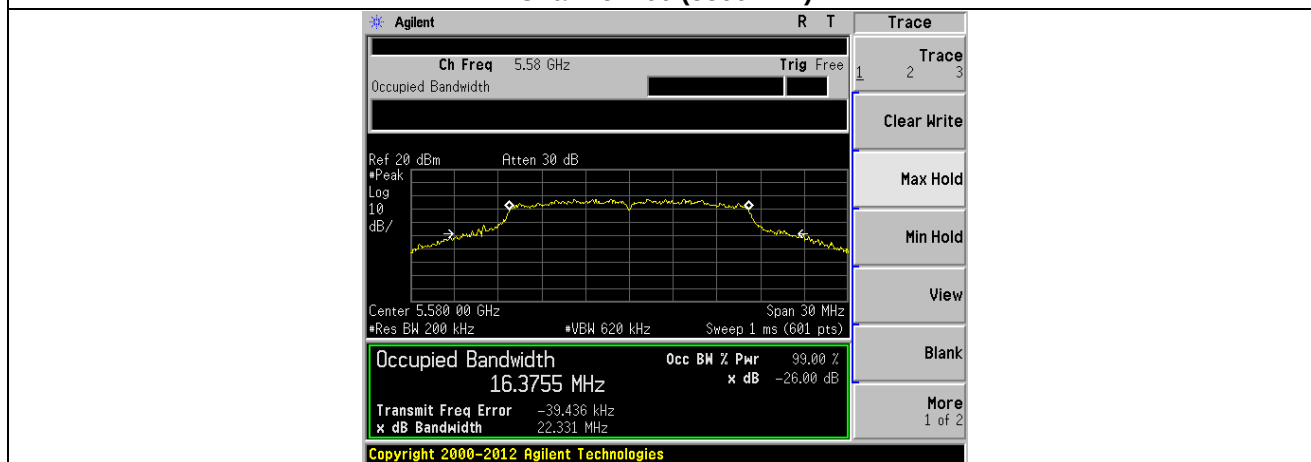
Channel 140 (5700MHz)



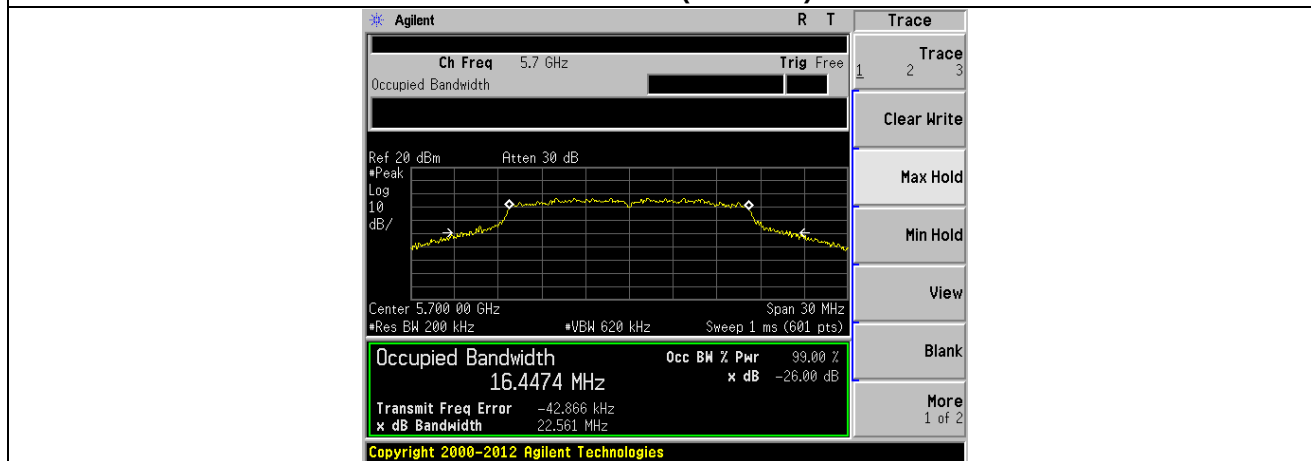




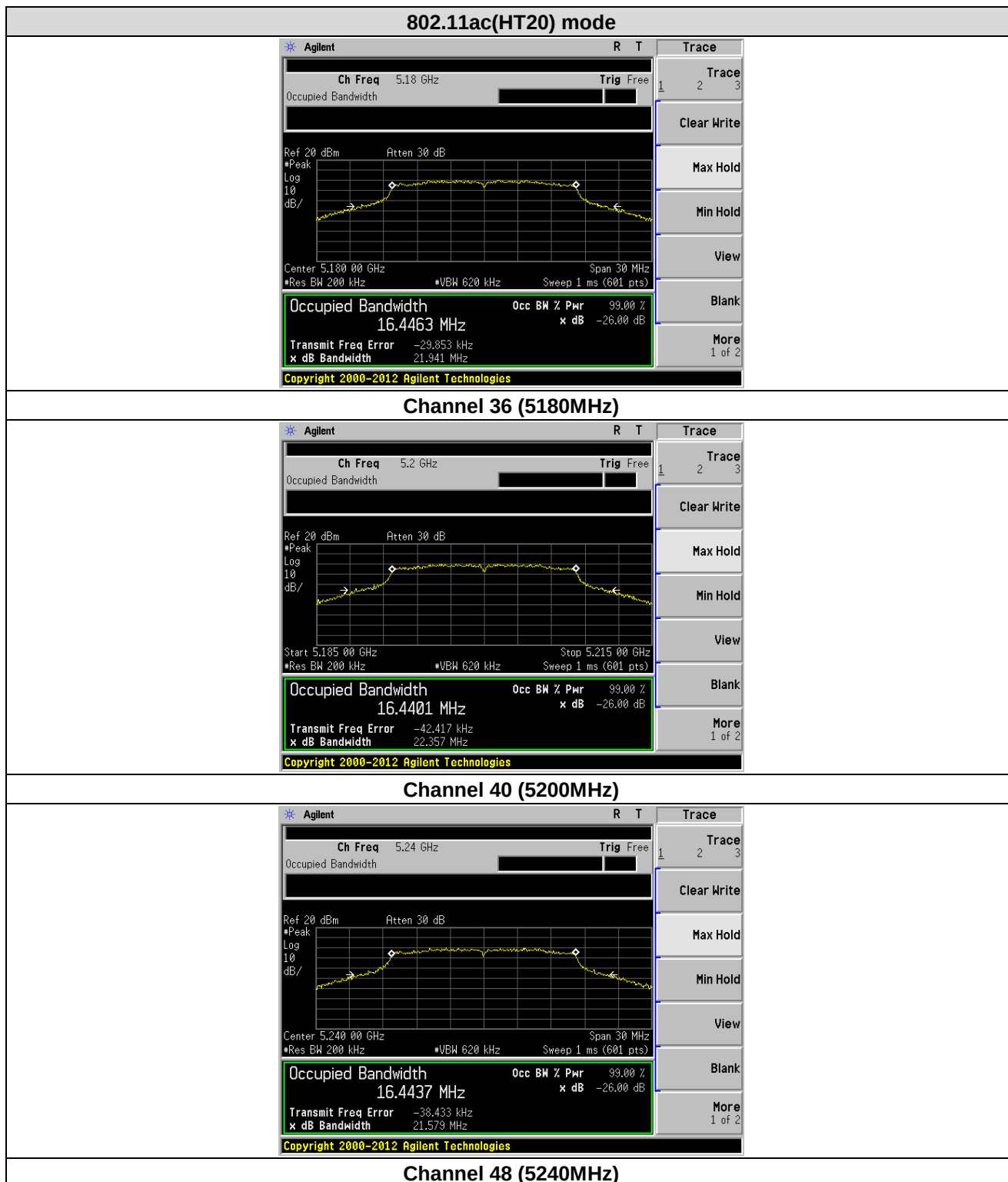
Channel 100 (5500MHz)

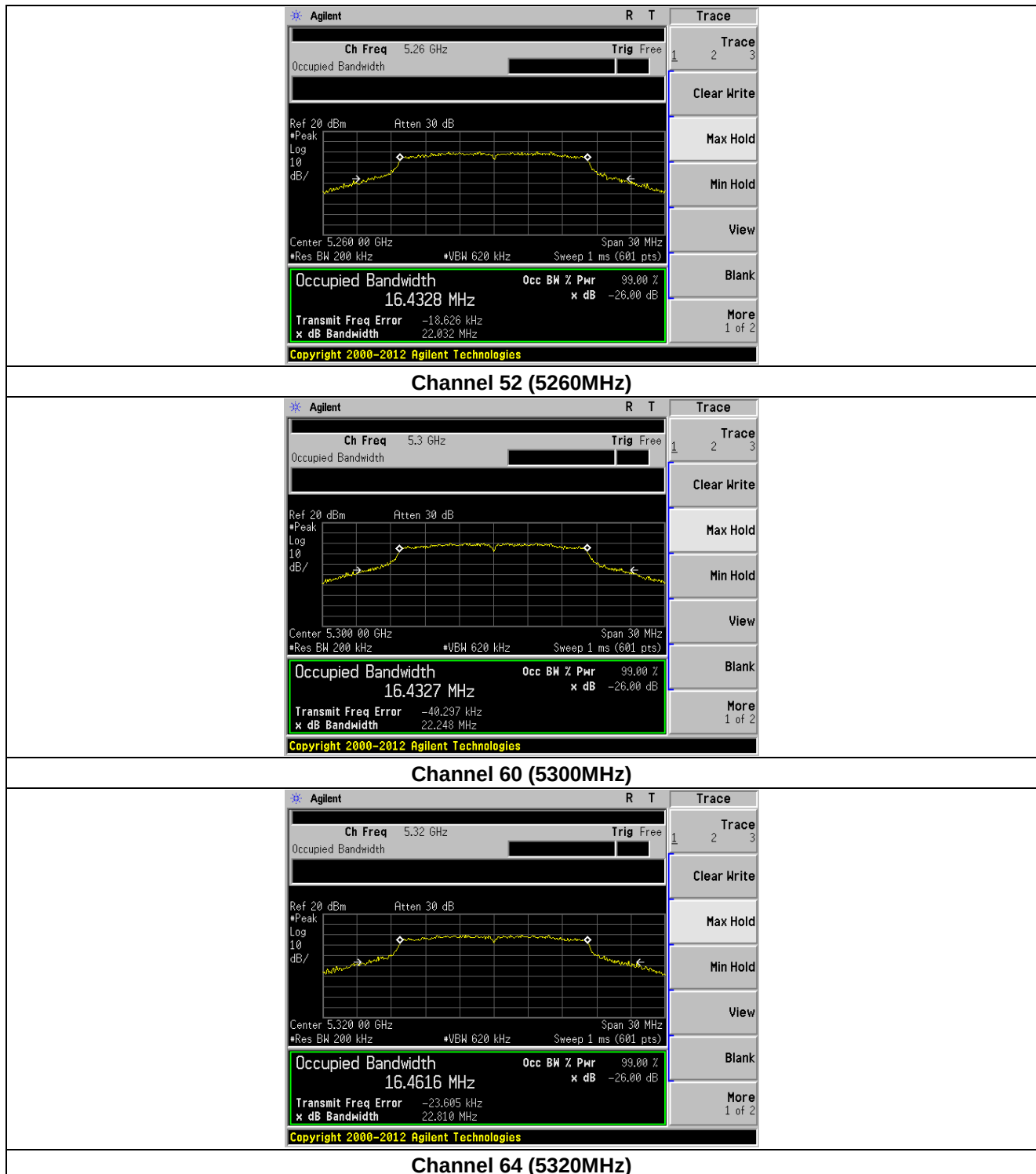


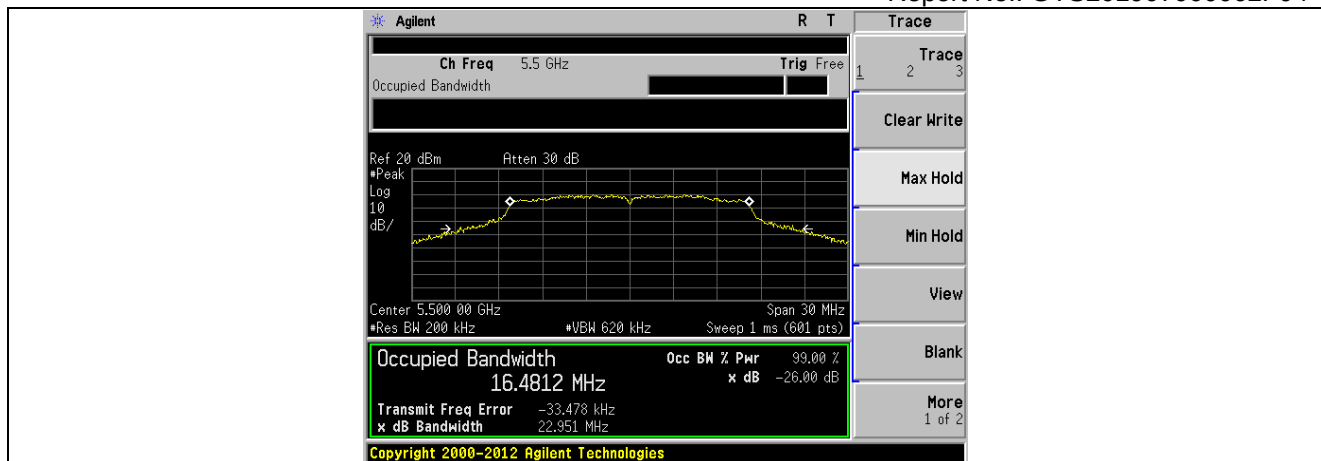
Channel 116 (5580MHz)



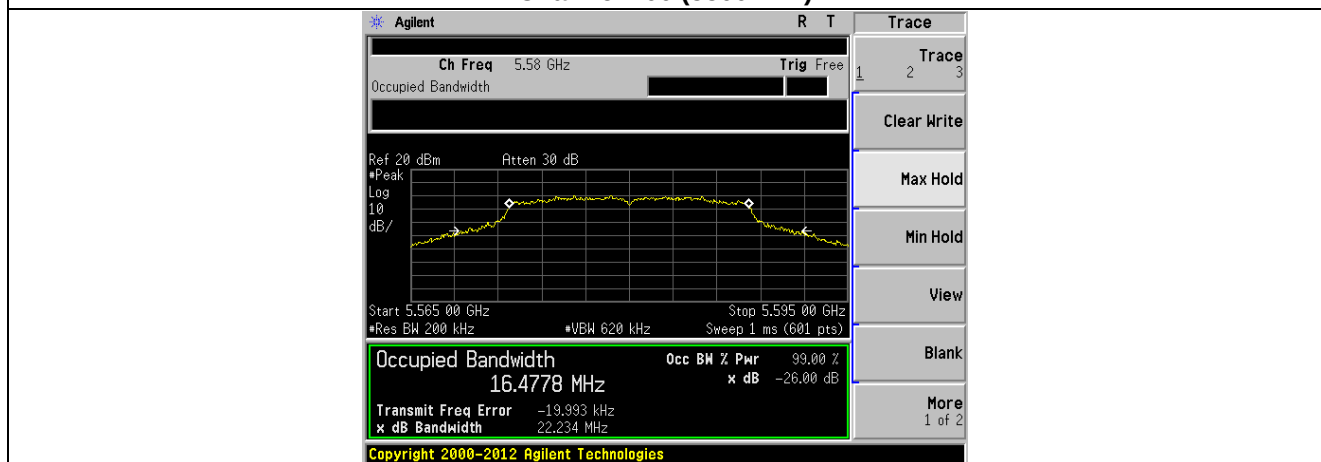
Channel 140 (5700MHz)



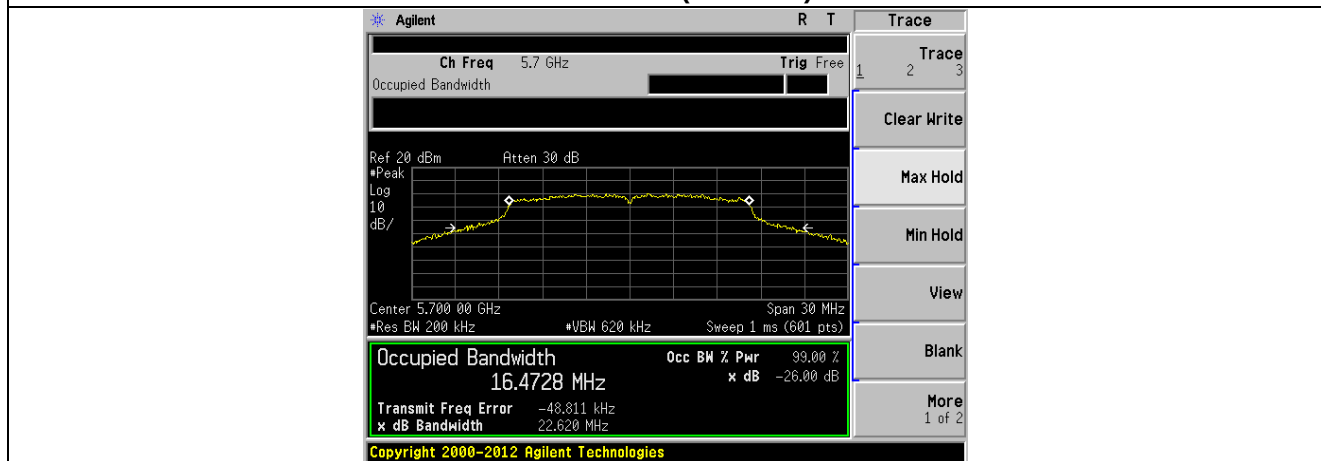




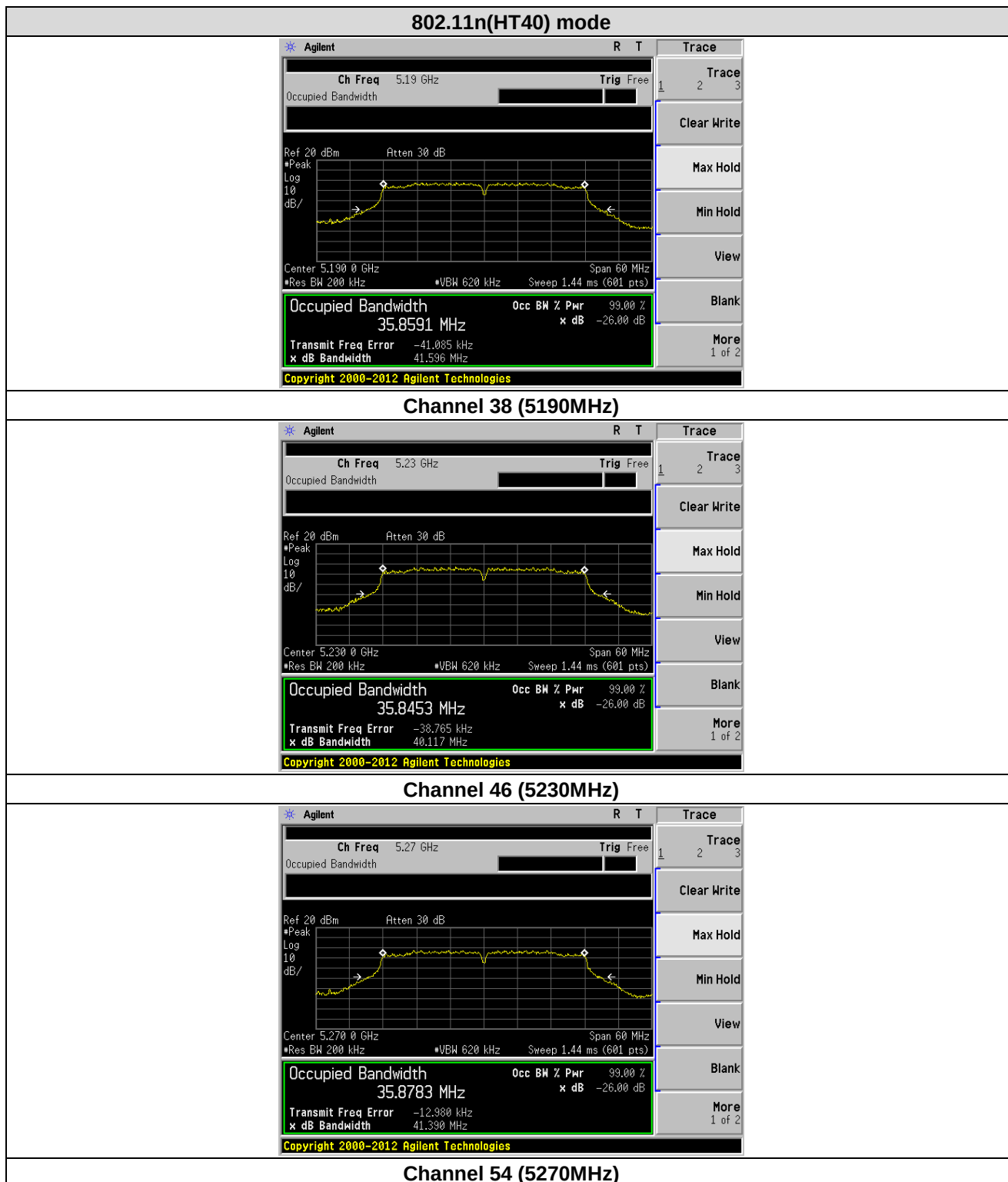
Channel 100 (5500MHz)

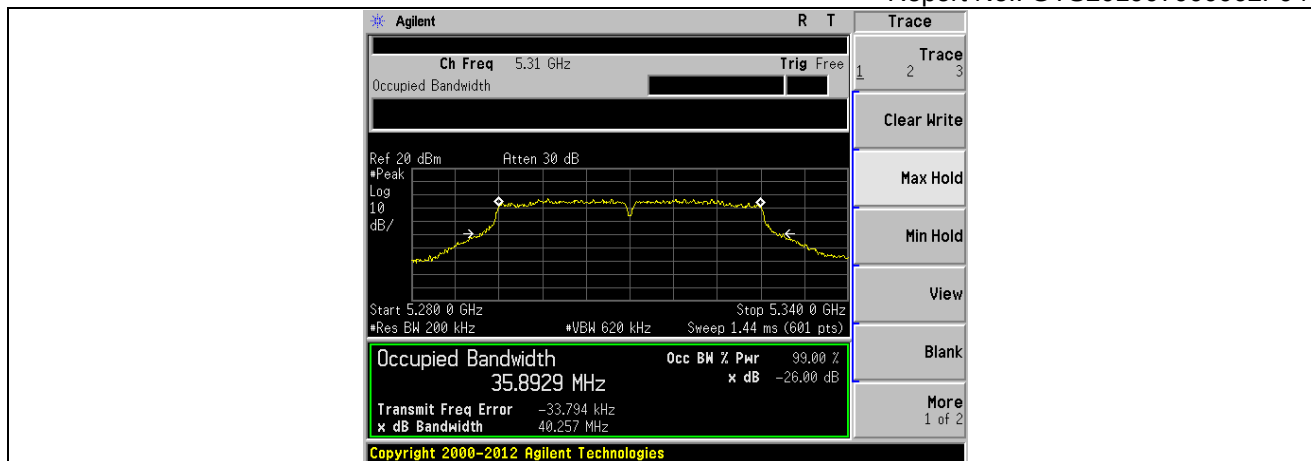


Channel 116 (5580MHz)

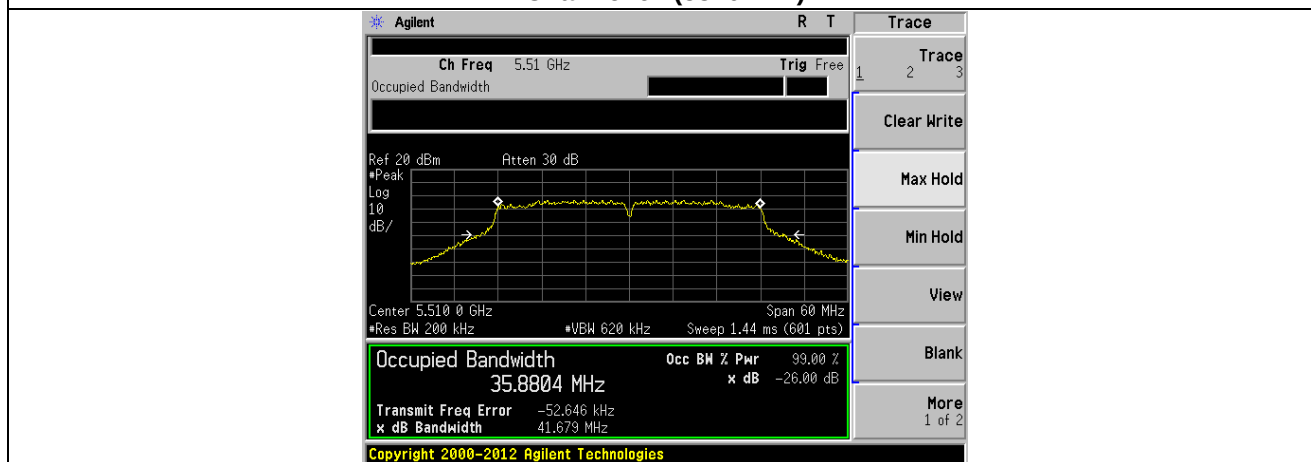


Channel 140 (5700MHz)

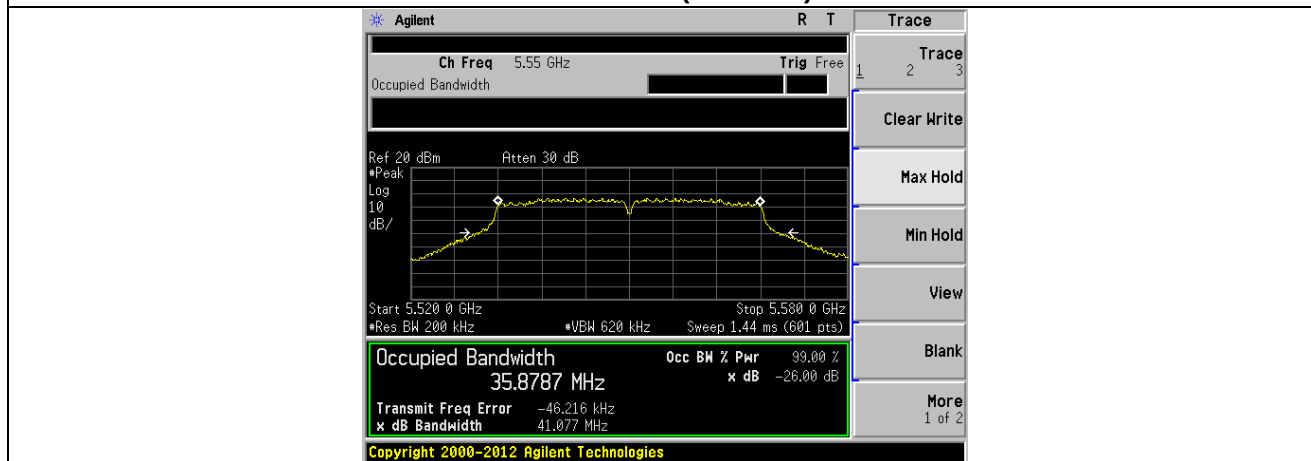




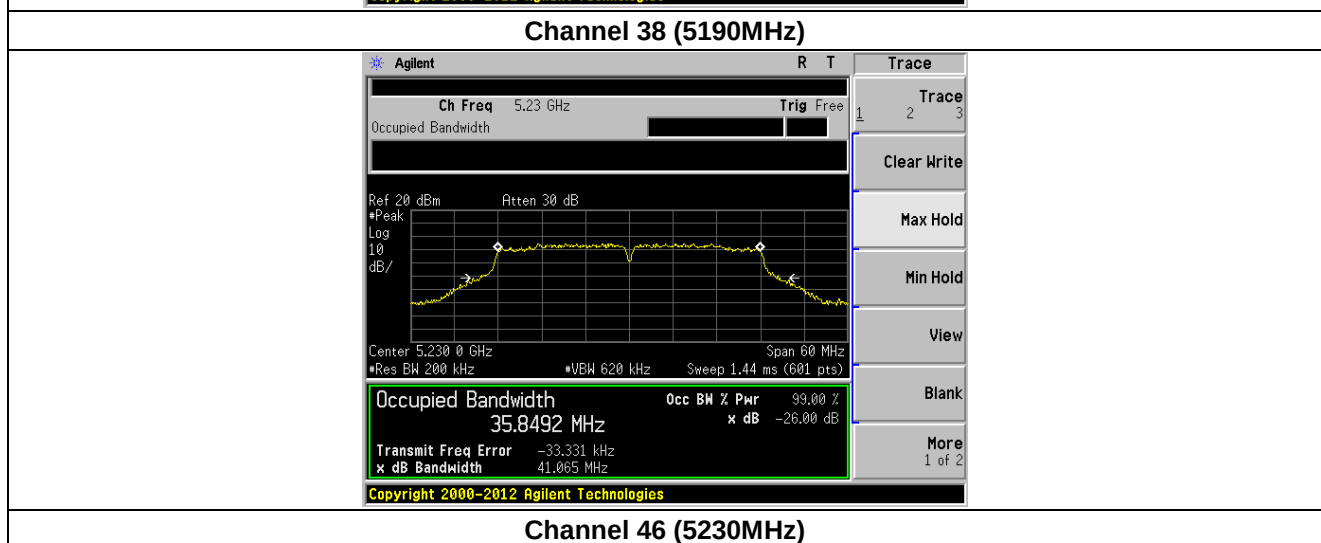
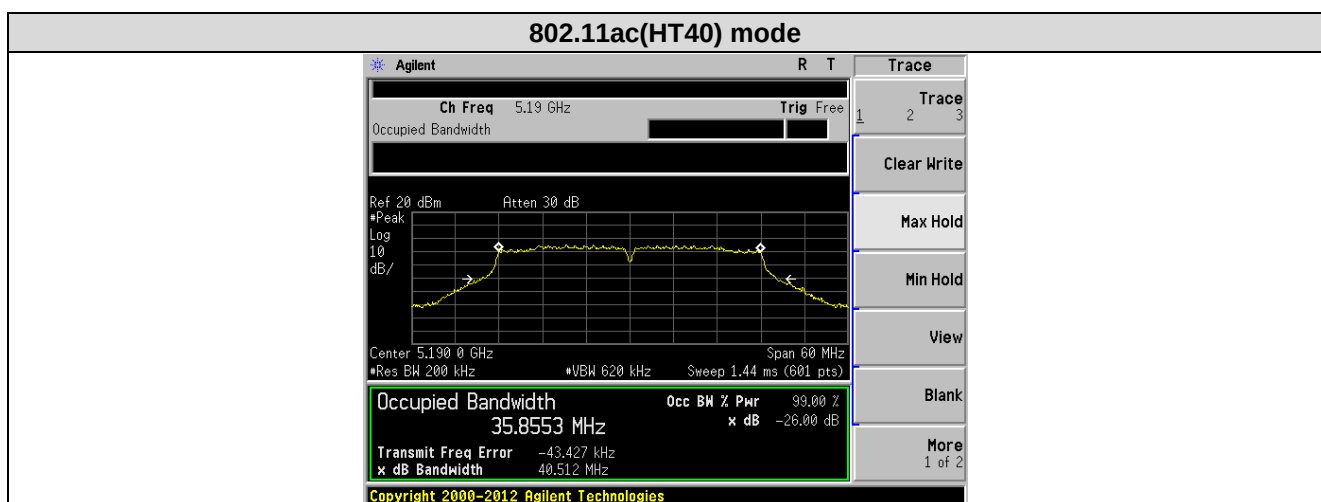
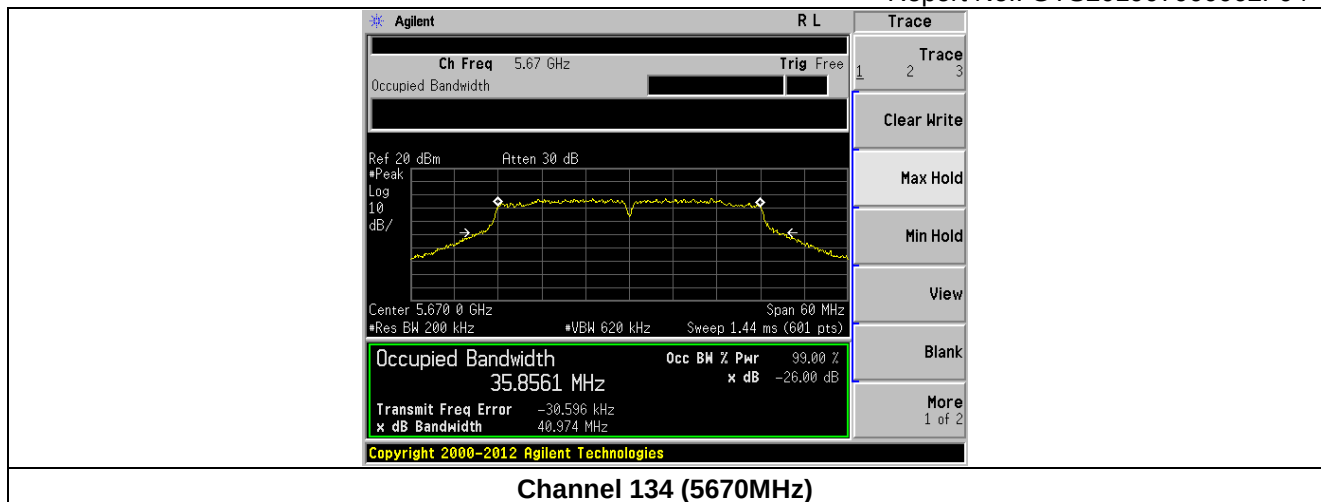
Channel 62 (5310MHz)

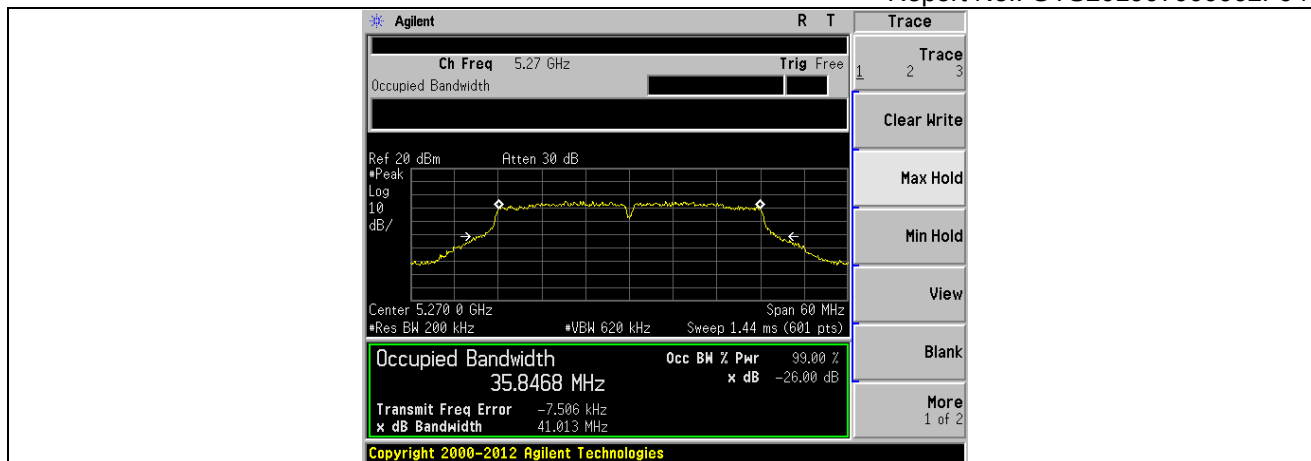


Channel 102 (5510MHz)

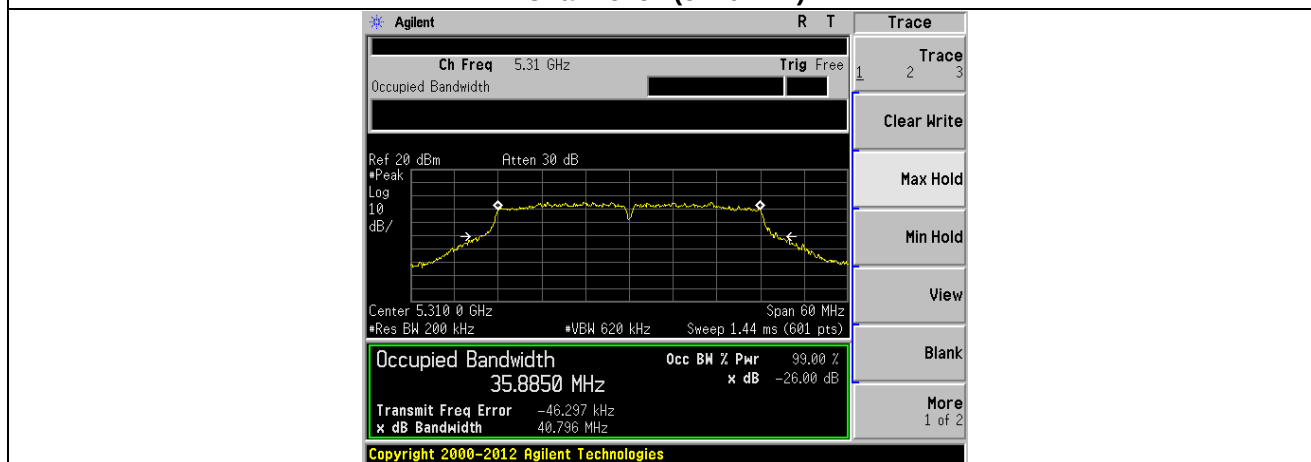


Channel 110 (5550MHz)

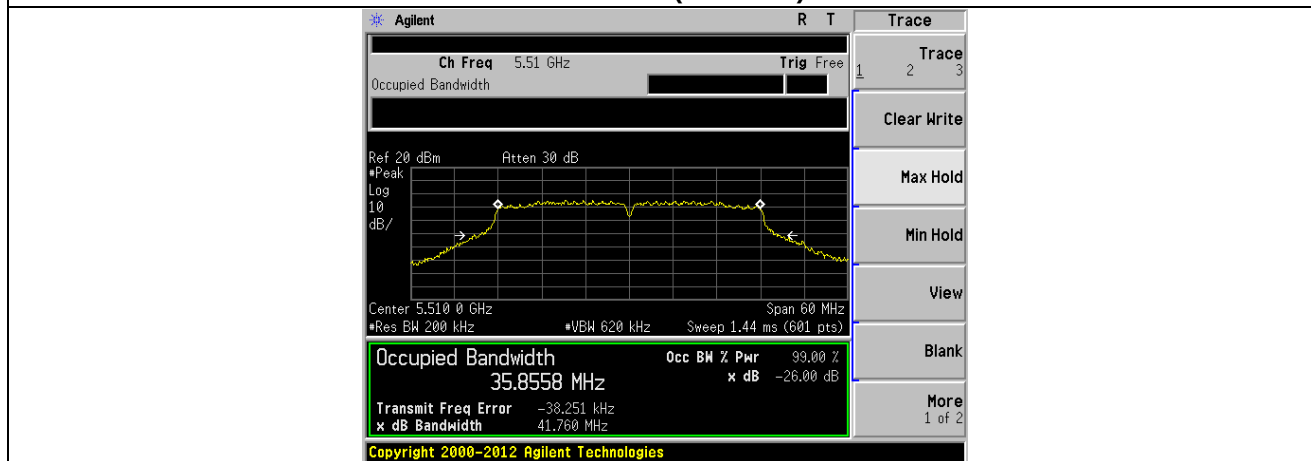




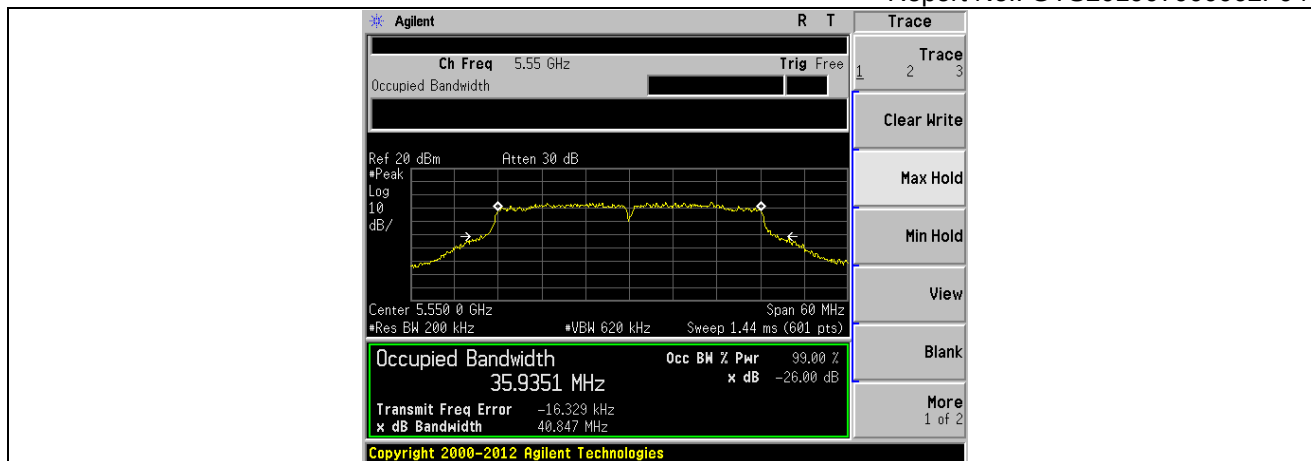
Channel 54 (5270MHz)



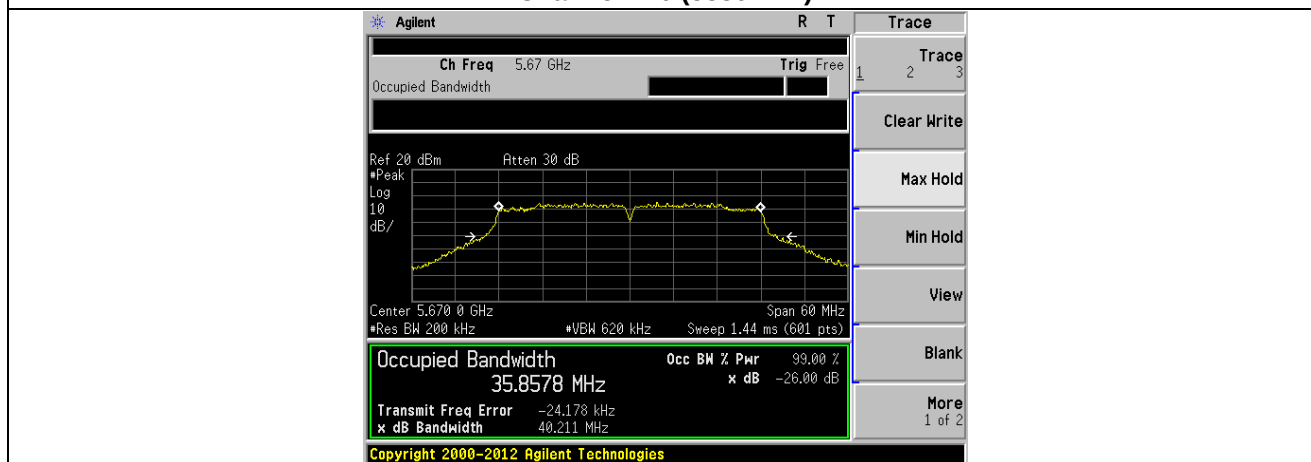
Channel 62 (5310MHz)



Channel 102 (5510MHz)

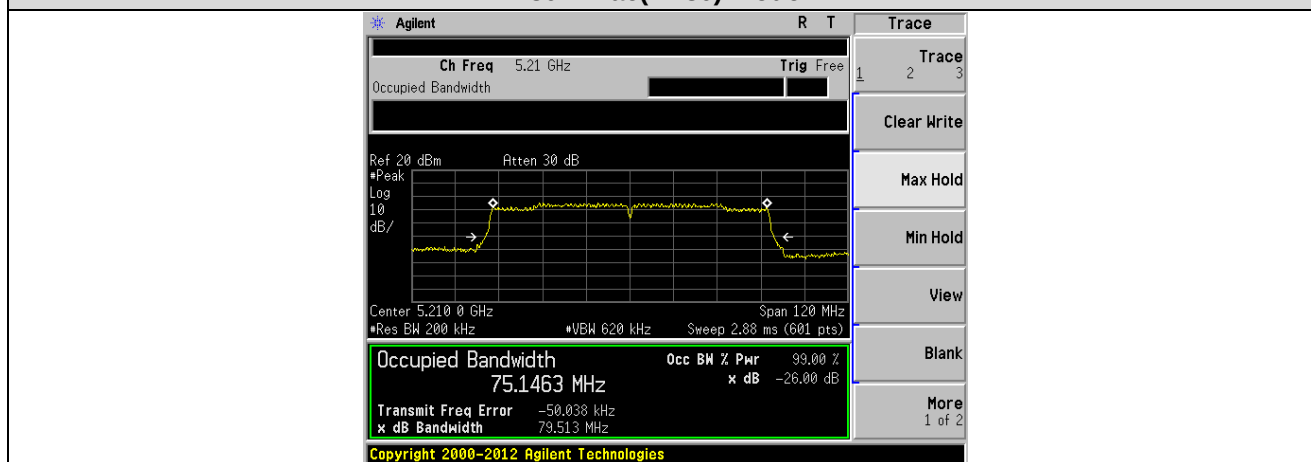


Channel 110 (5550MHz)

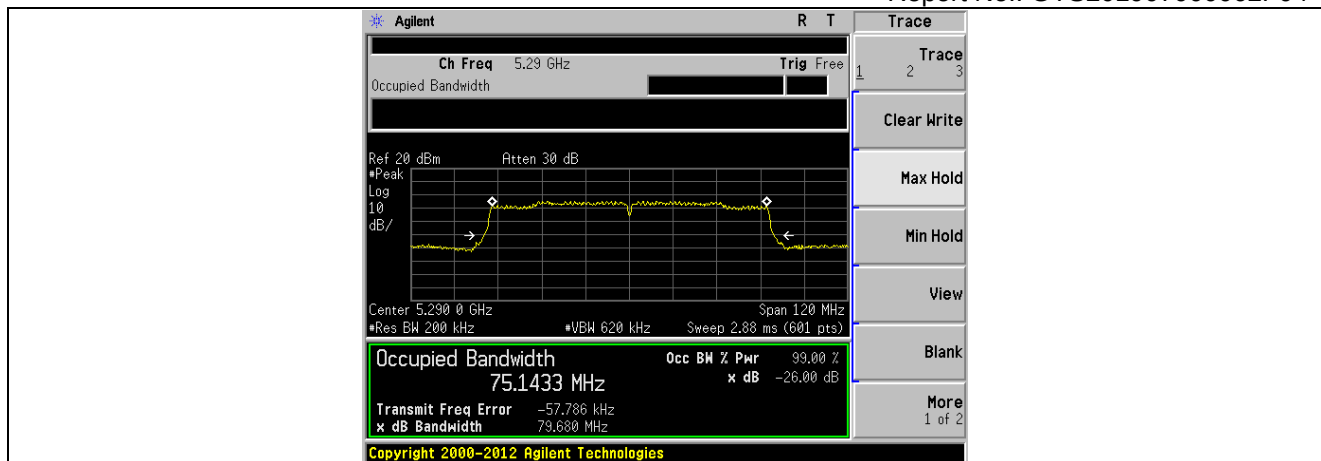


Channel 134 (5670MHz)

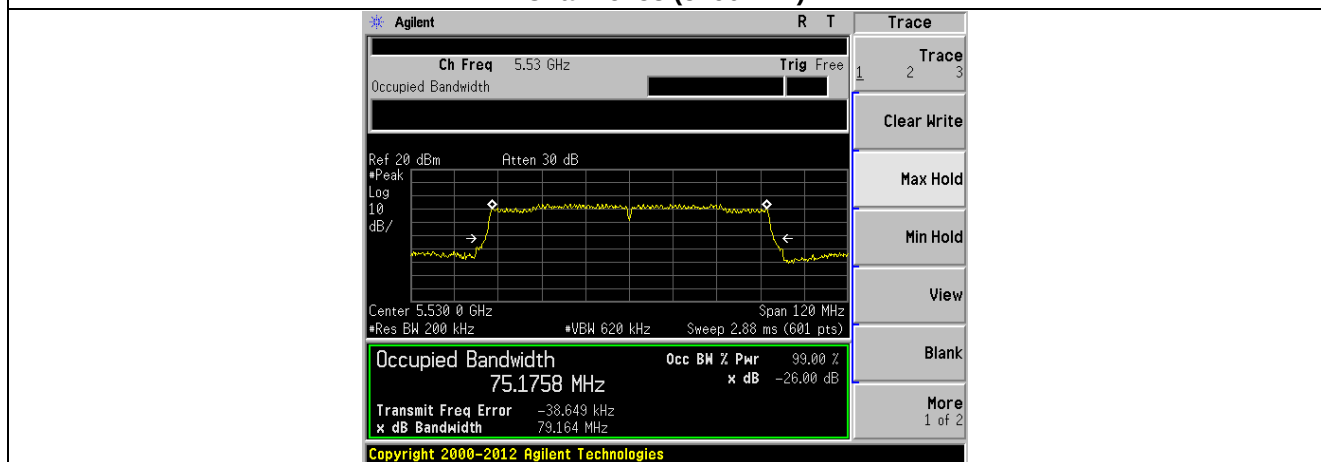
802.11ac(HT80) mode



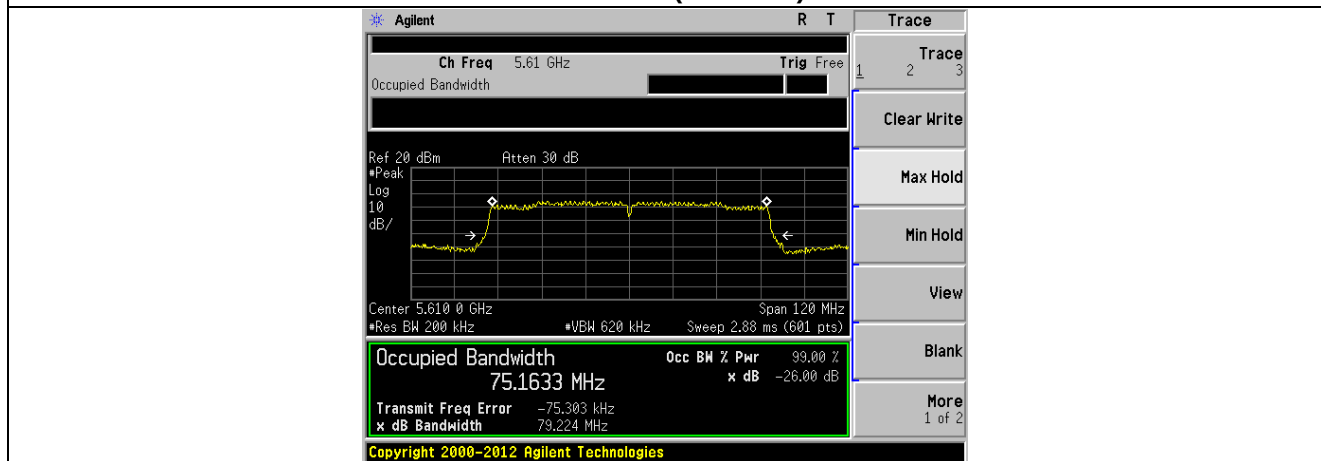
Channel 40 (5210MHz)



Channel 58 (5290MHz)

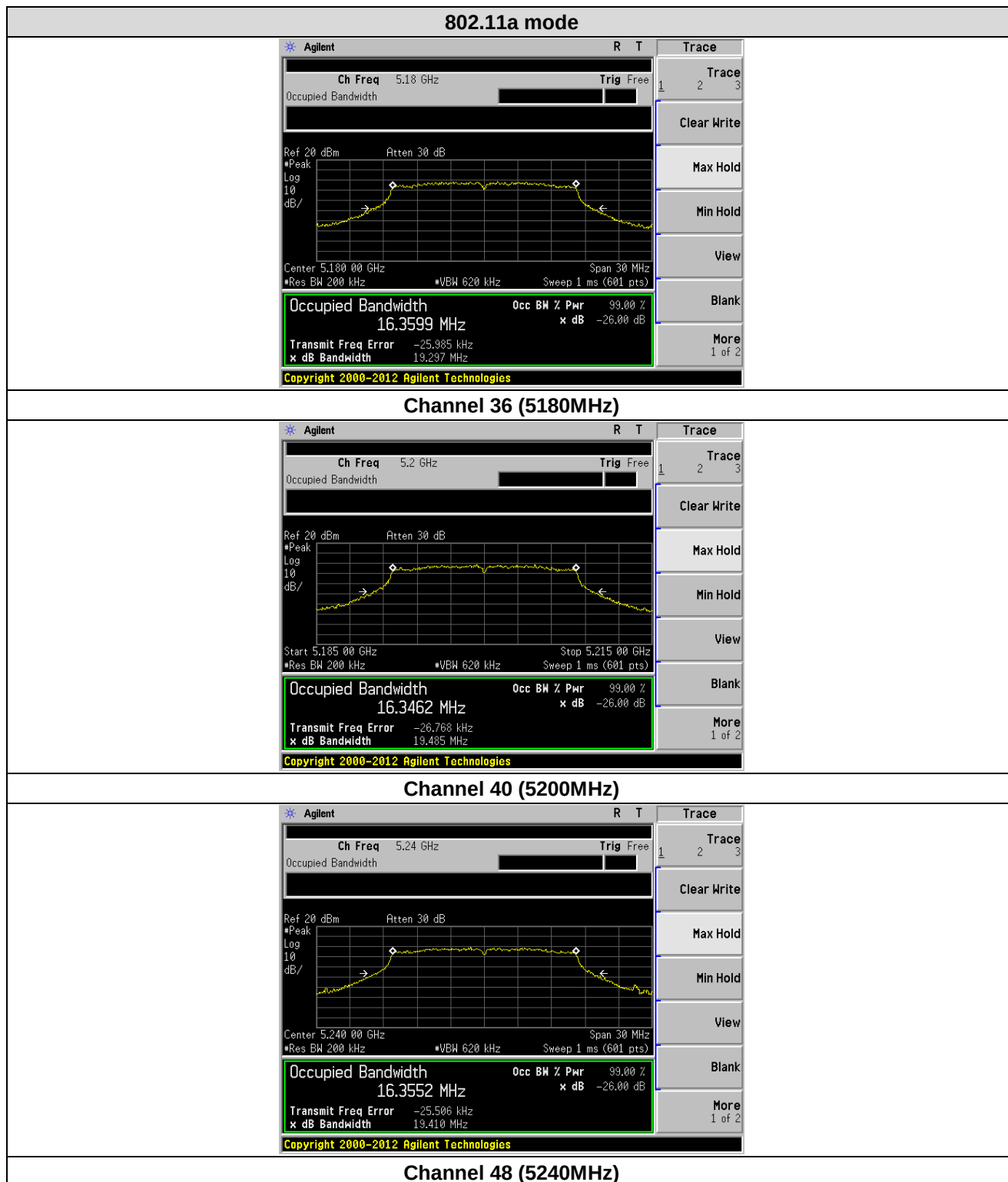


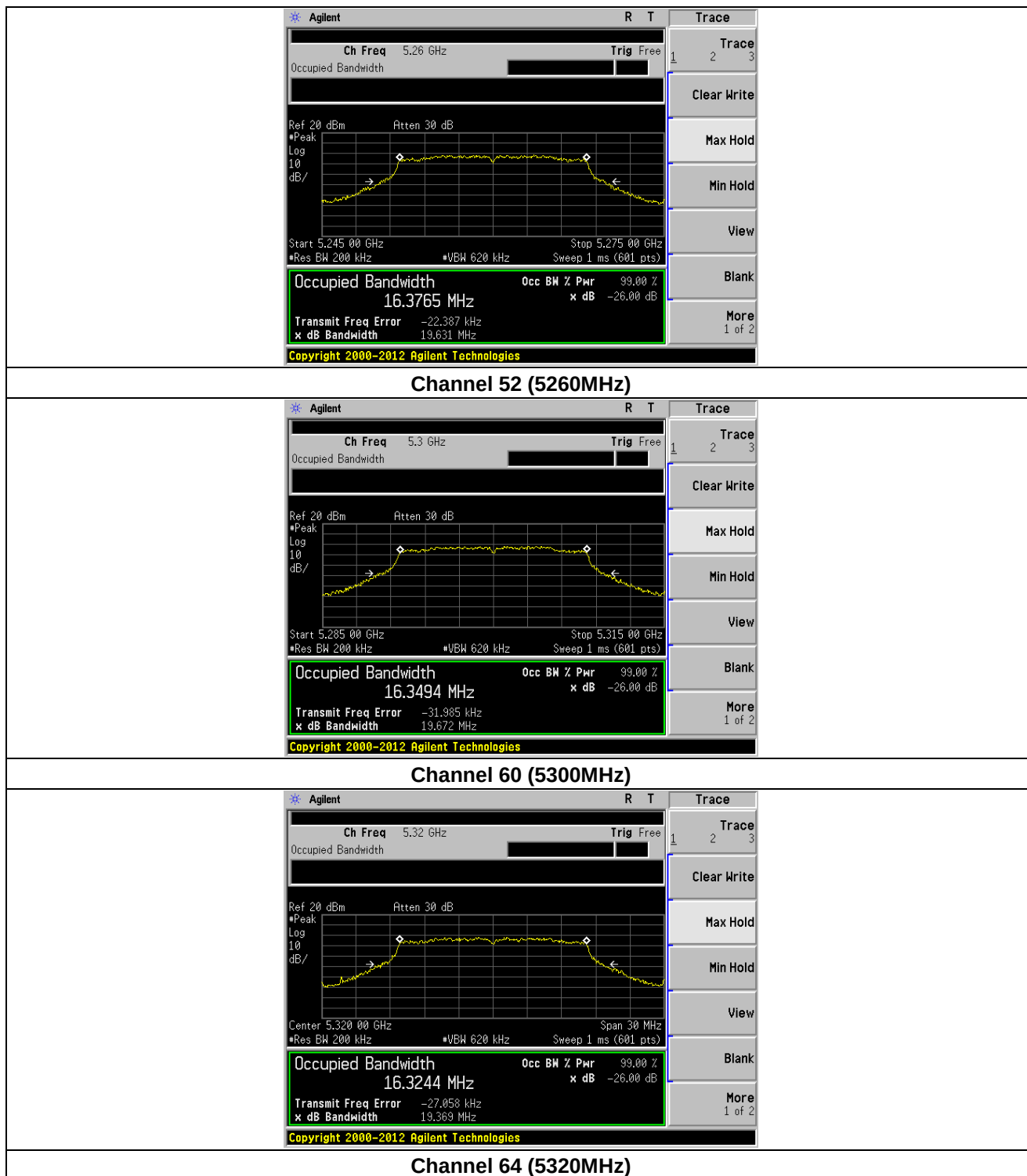
Channel 58 (5530MHz)

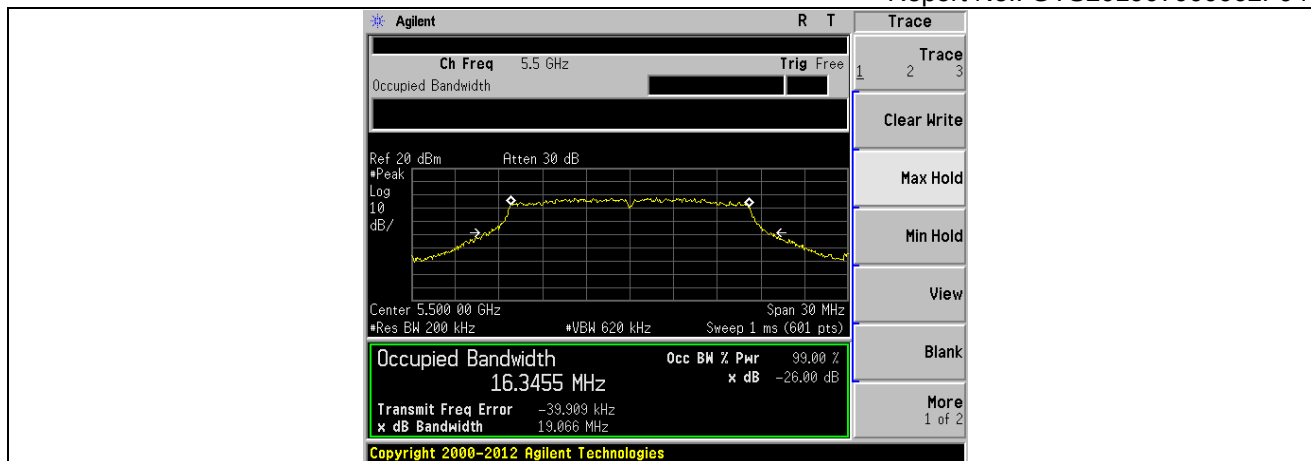


Channel 58 (5610MHz)

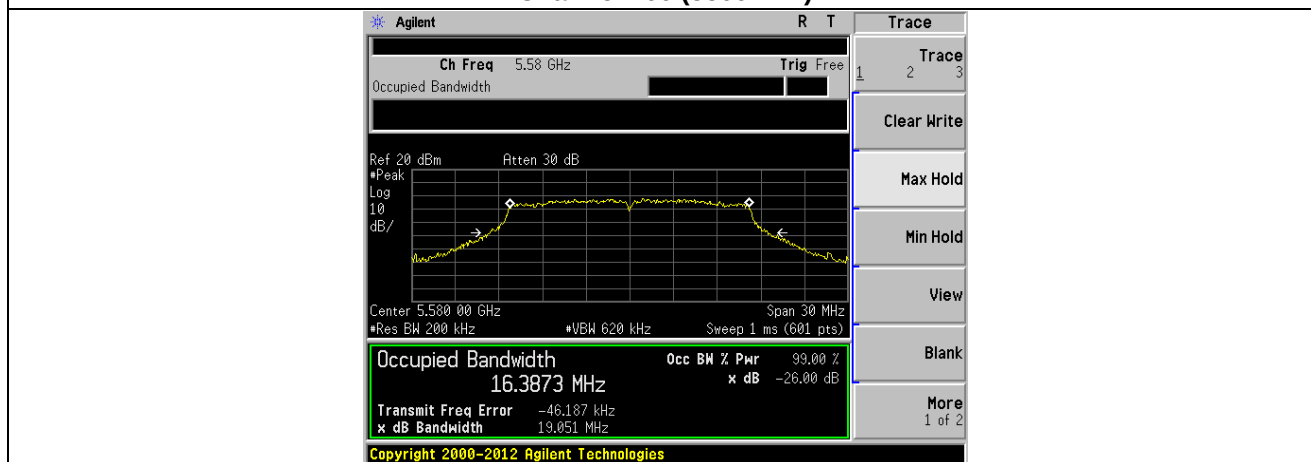
Aux Antenna:



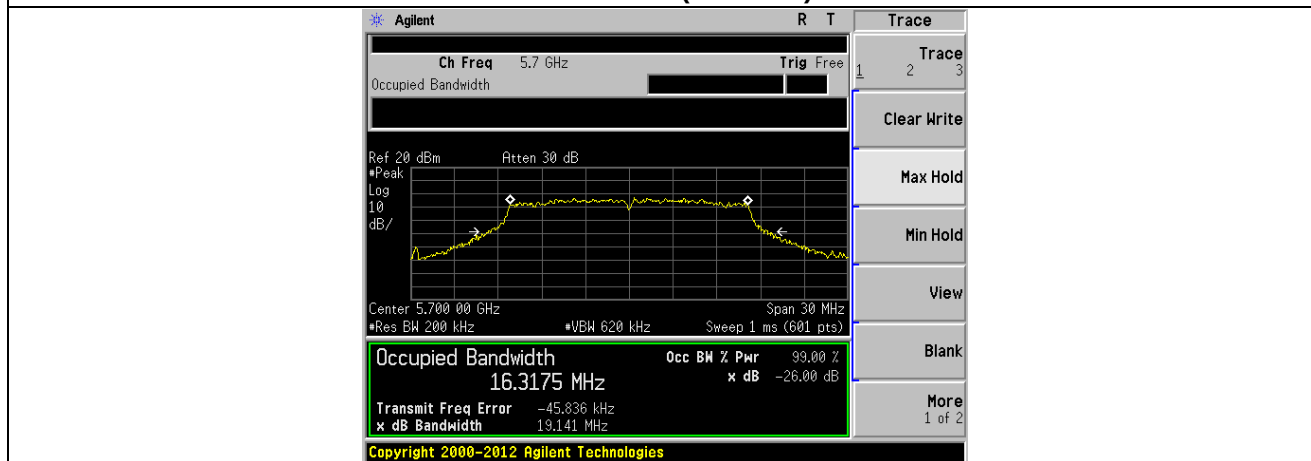




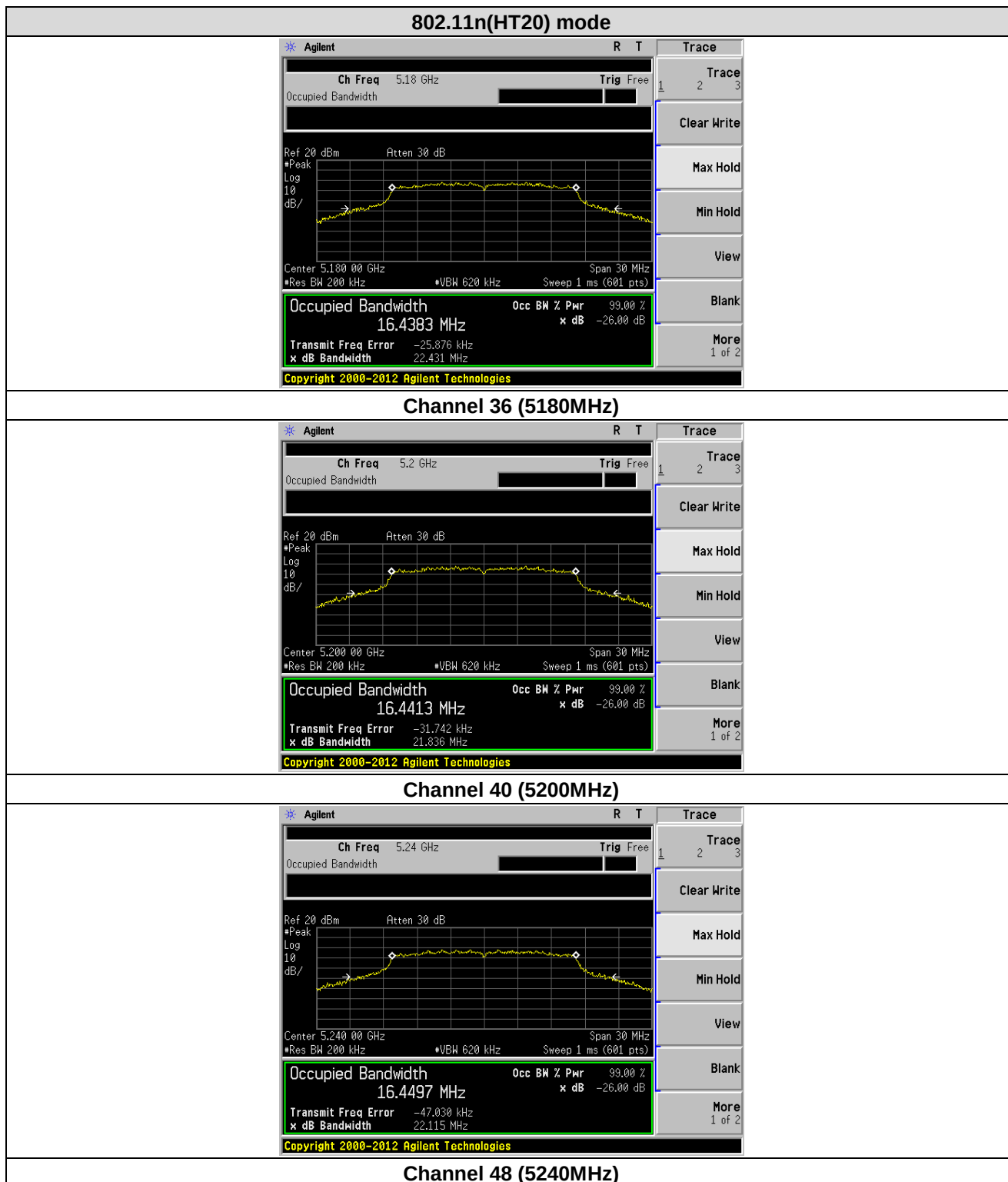
Channel 100 (5500MHz)

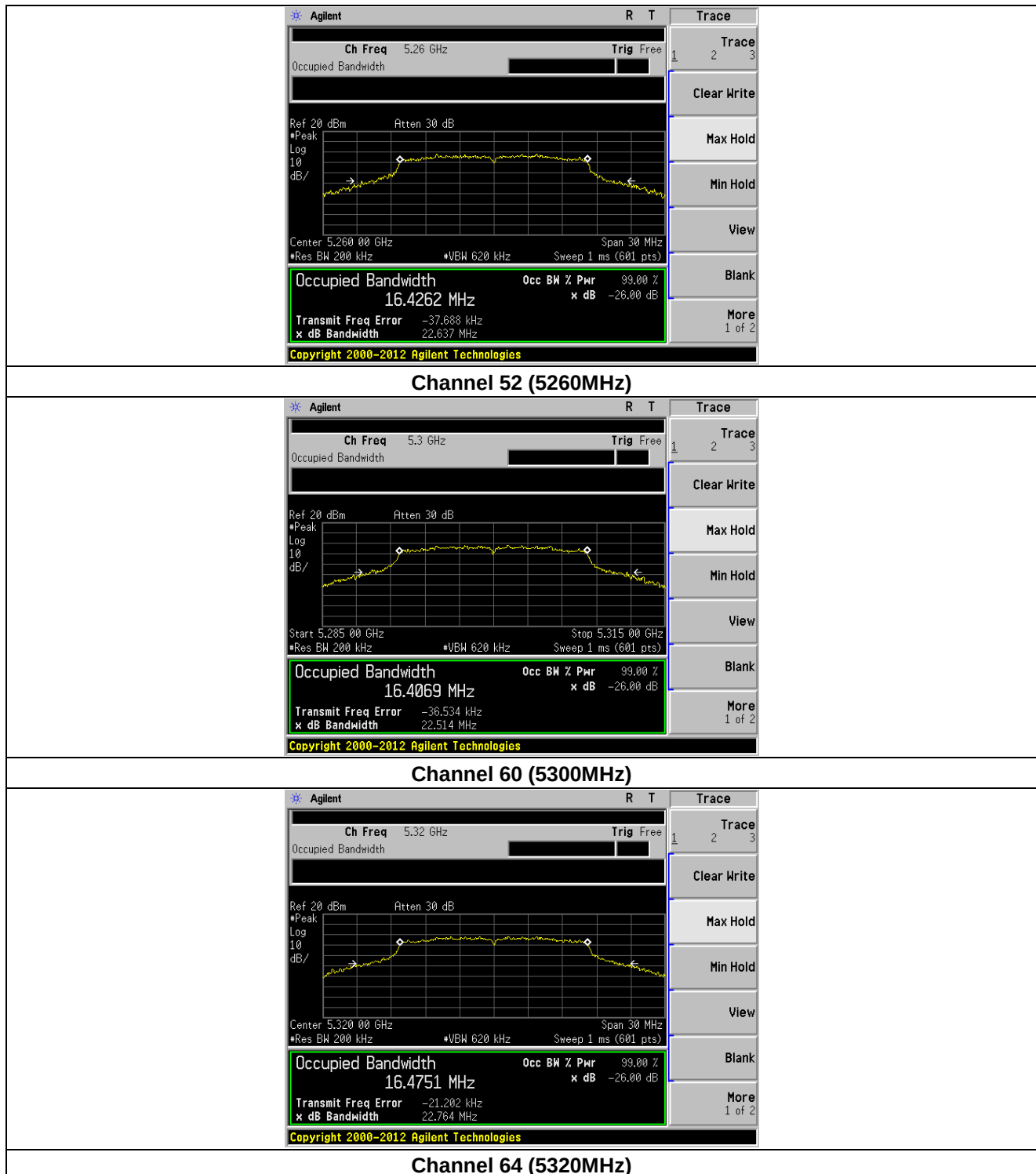


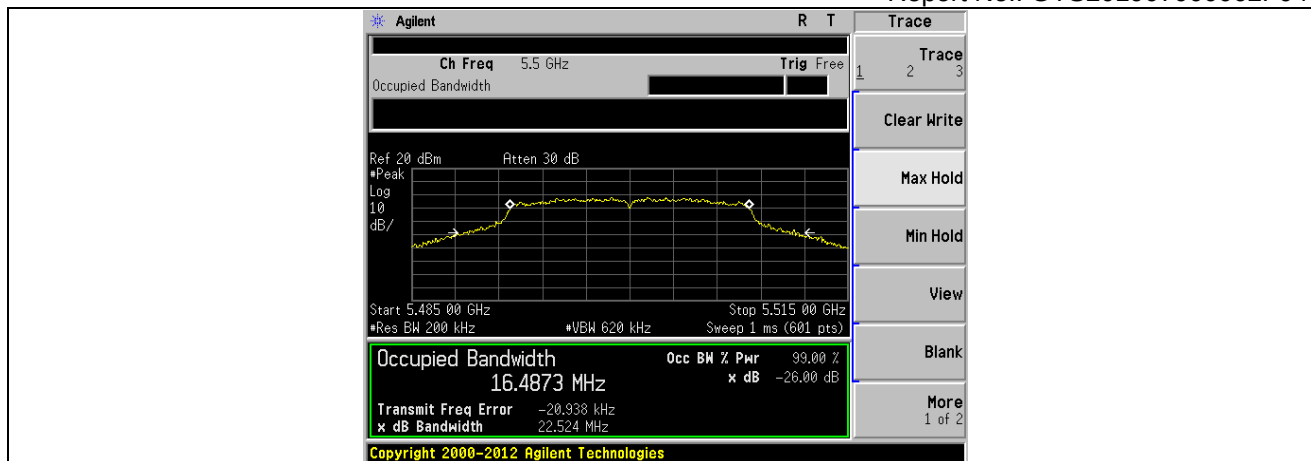
Channel 116 (5580MHz)



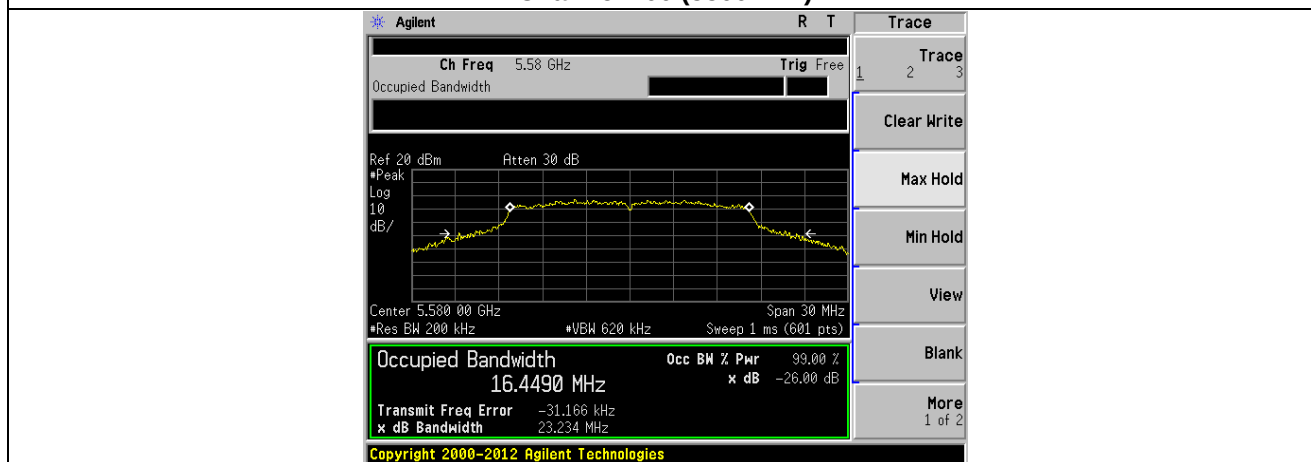
Channel 140 (5700MHz)



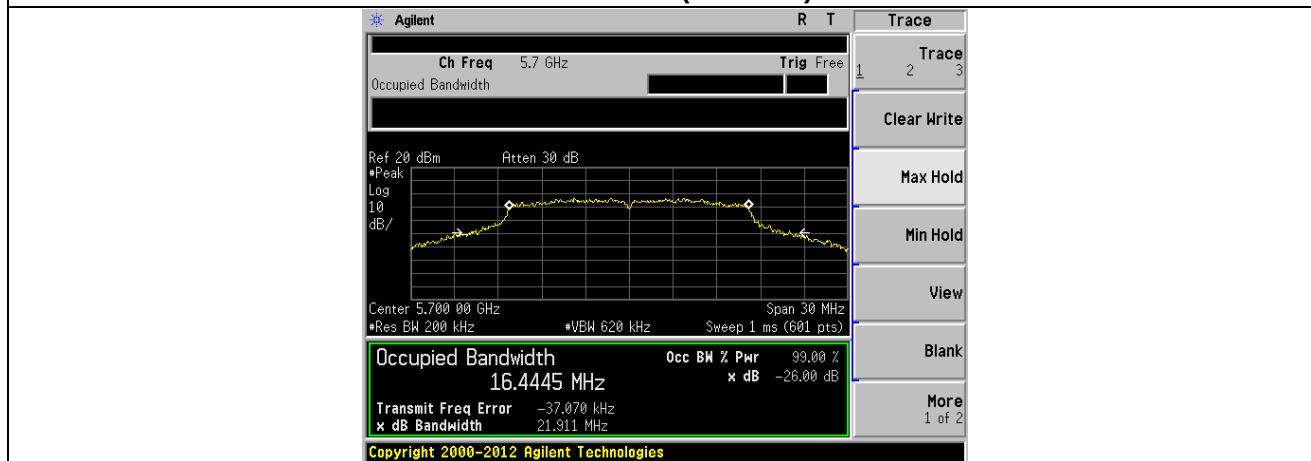




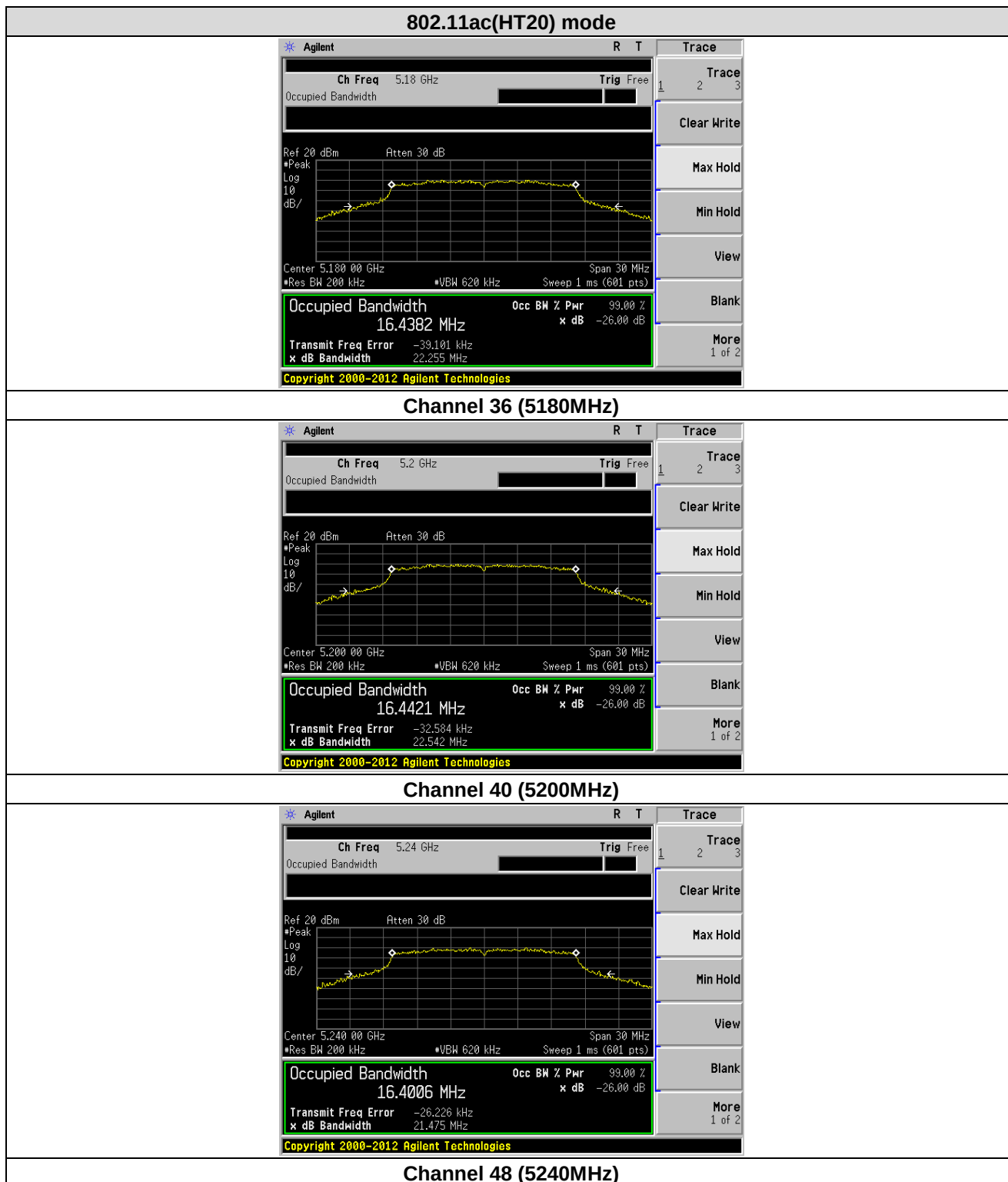
Channel 100 (5500MHz)

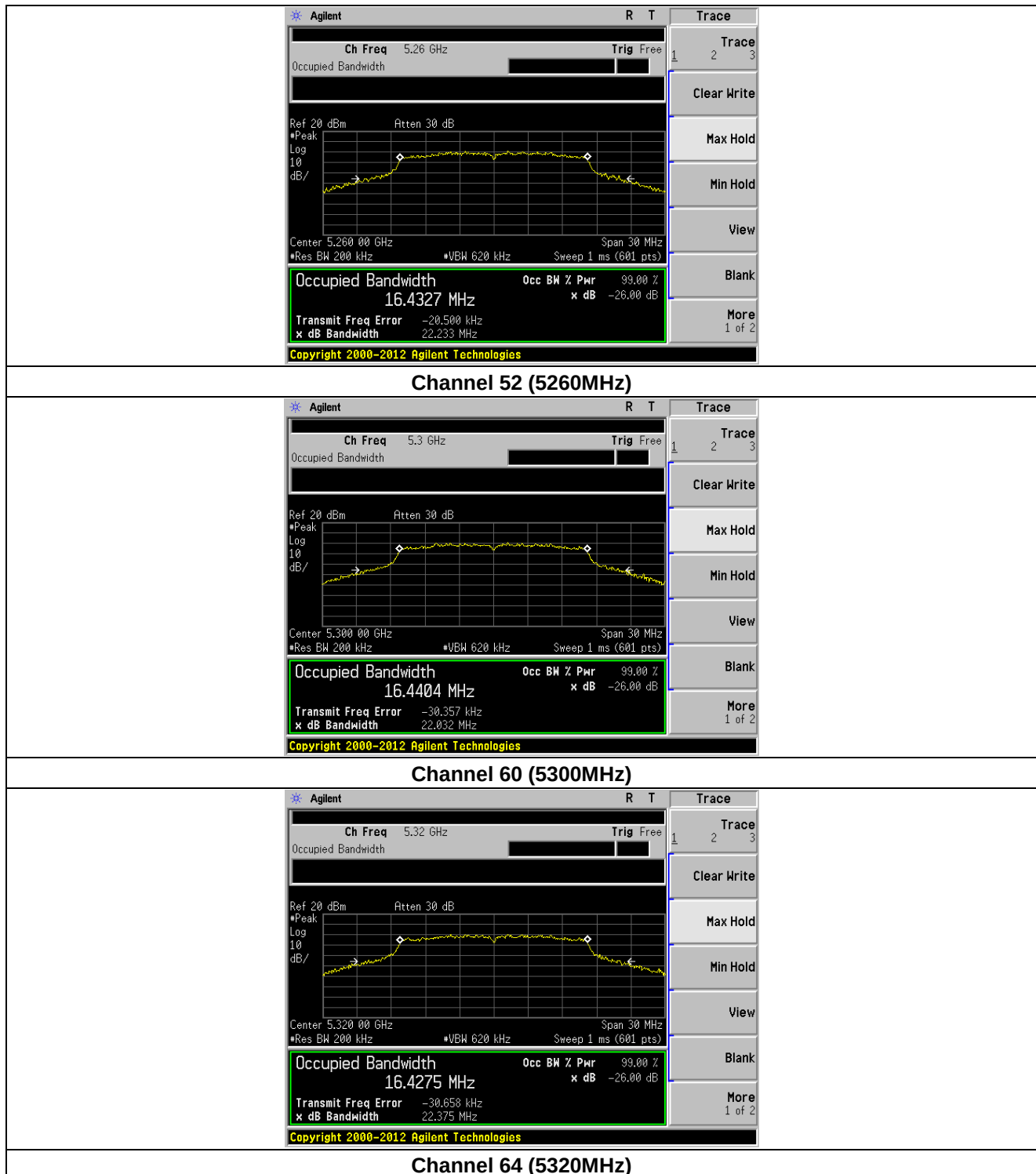


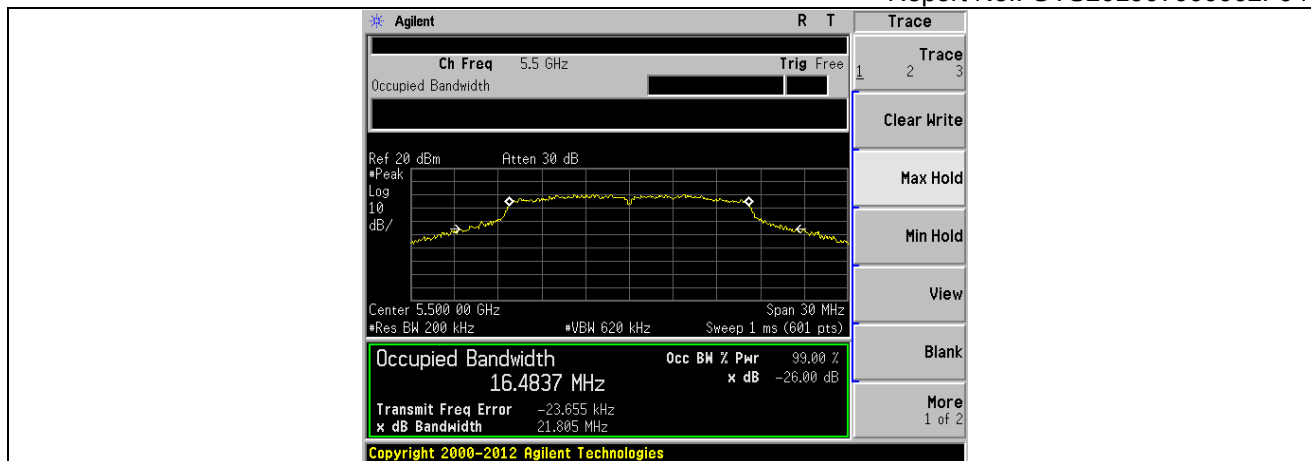
Channel 116 (5580MHz)



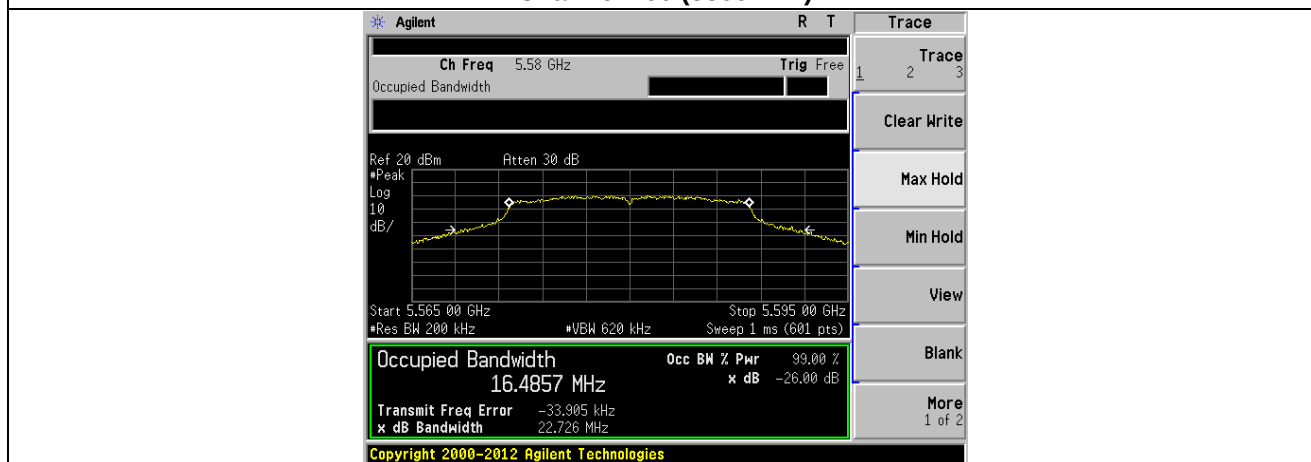
Channel 140 (5700MHz)



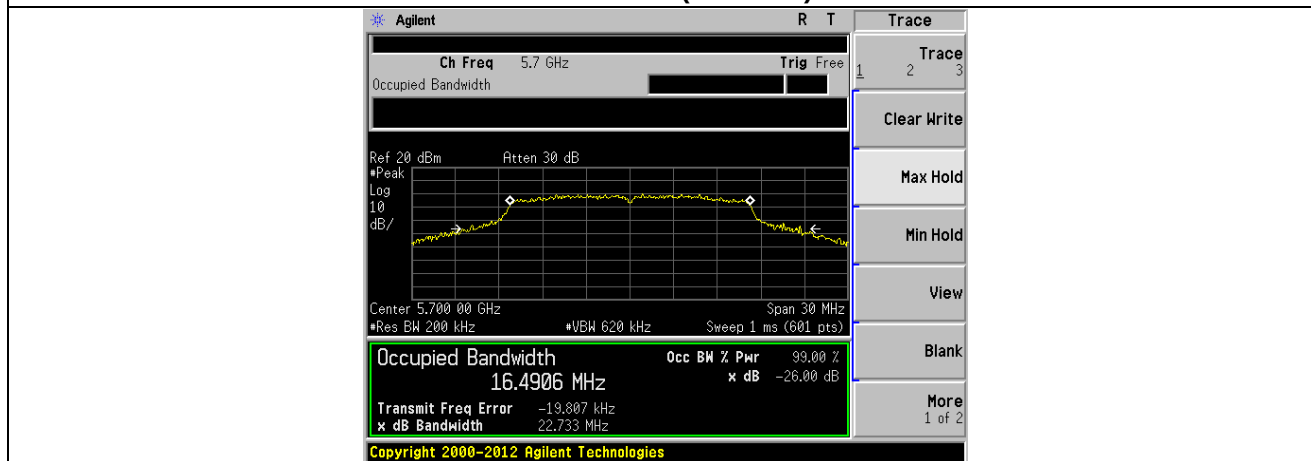




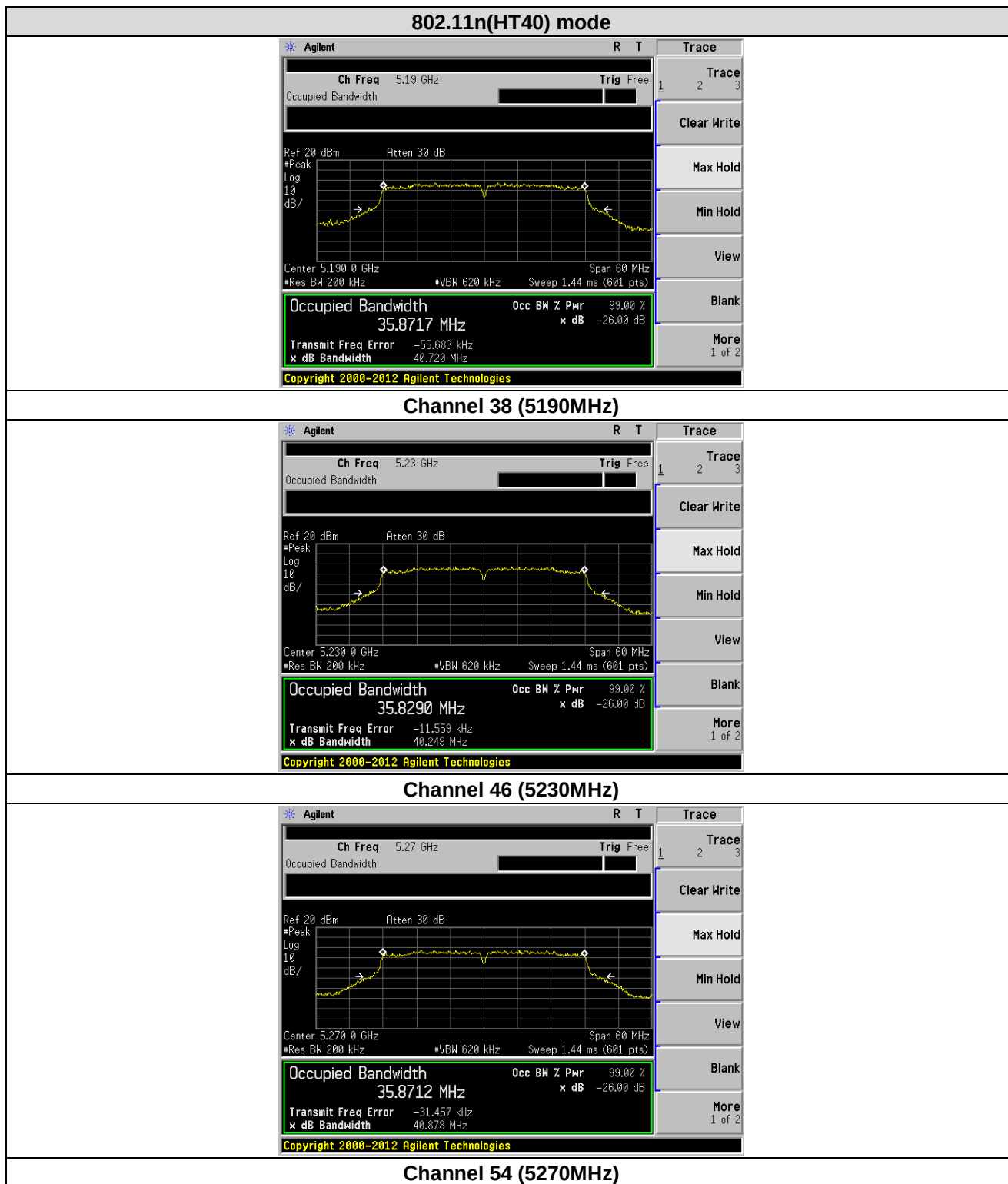
Channel 100 (5500MHz)

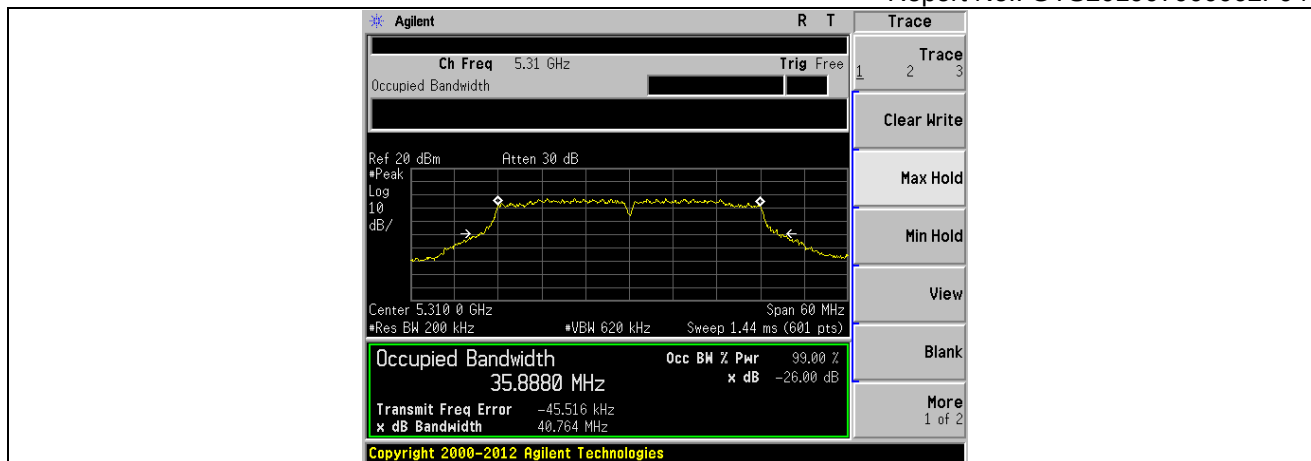


Channel 116 (5580MHz)

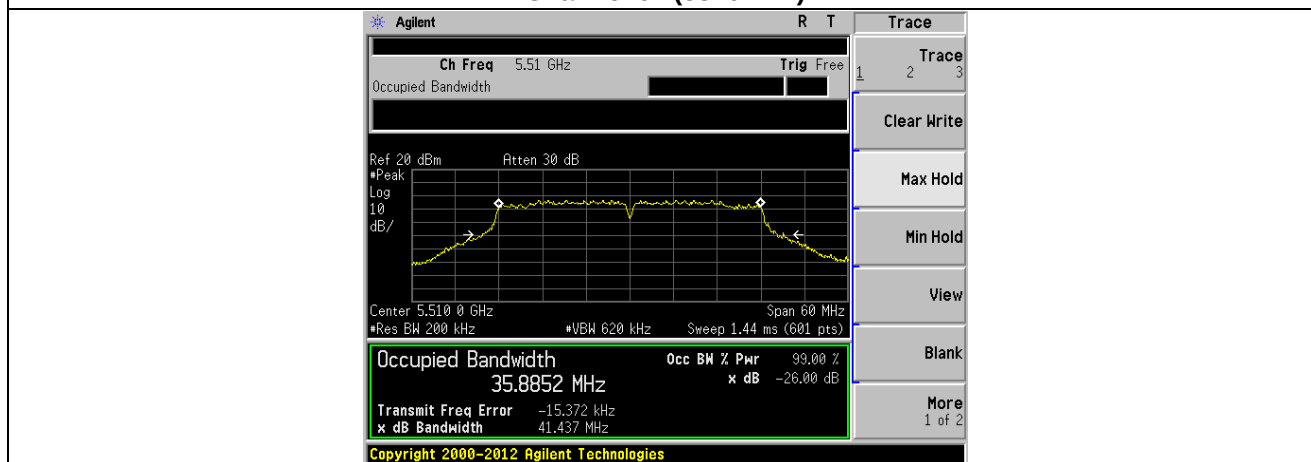


Channel 140 (5700MHz)

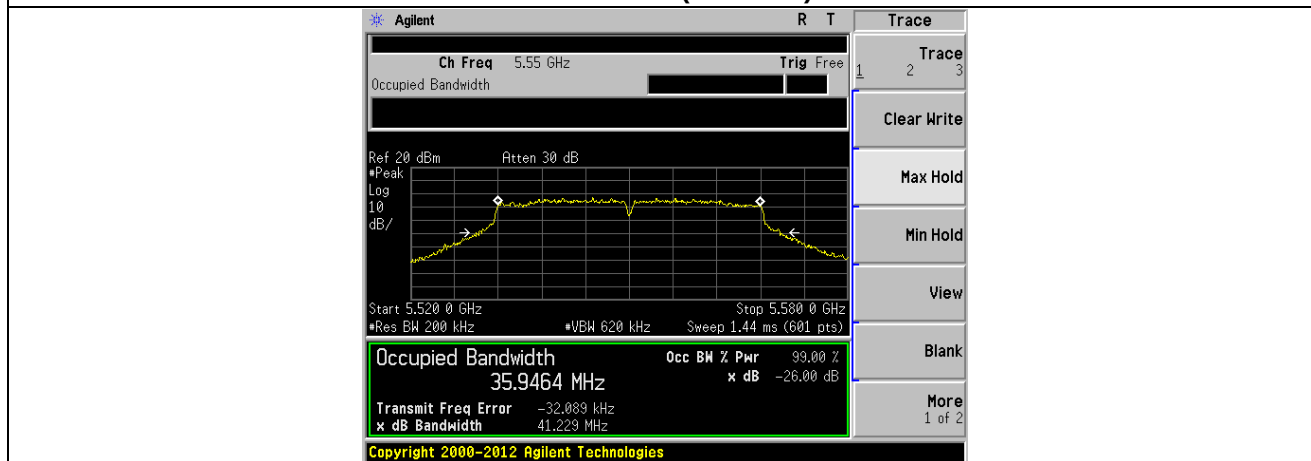




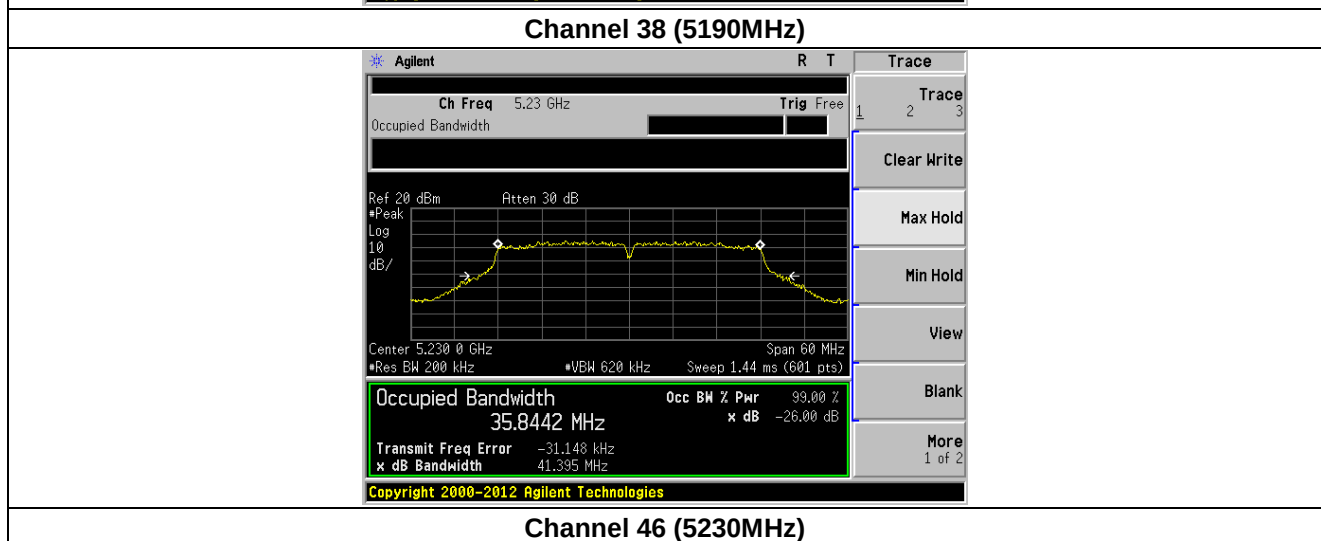
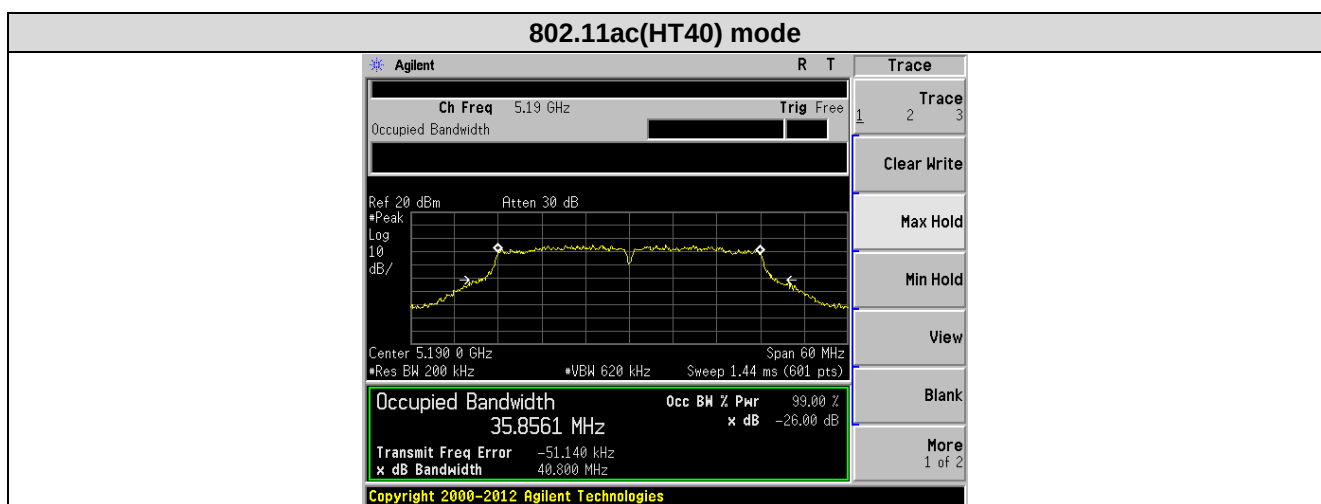
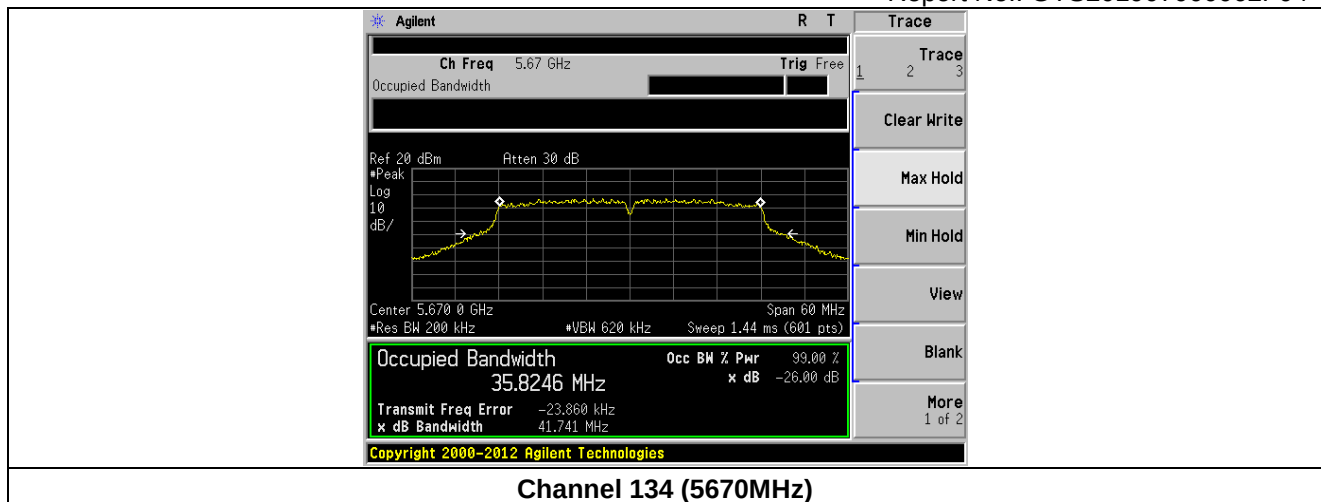
Channel 62 (5310MHz)

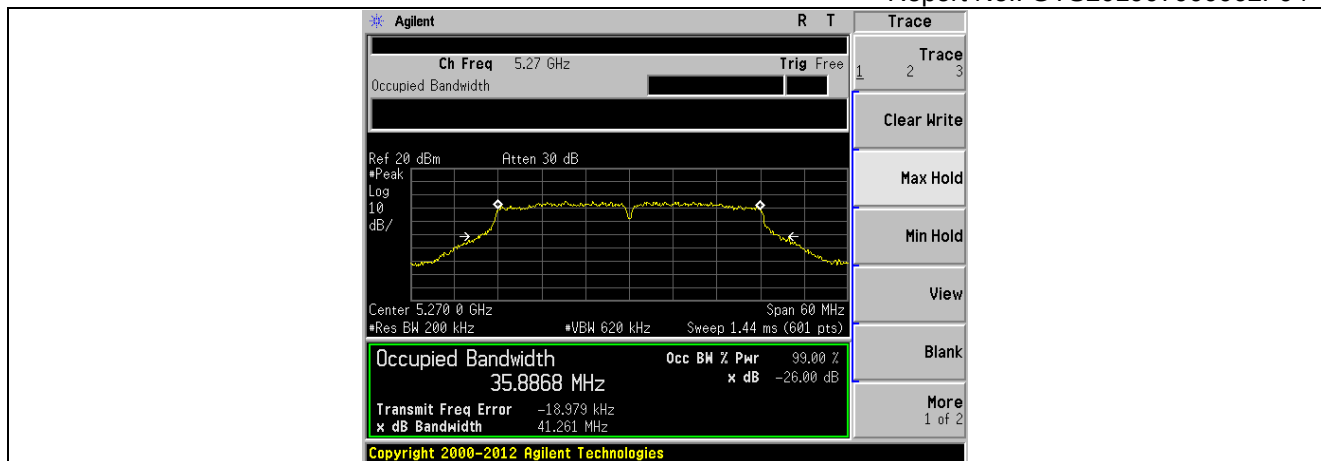


Channel 102 (5510MHz)

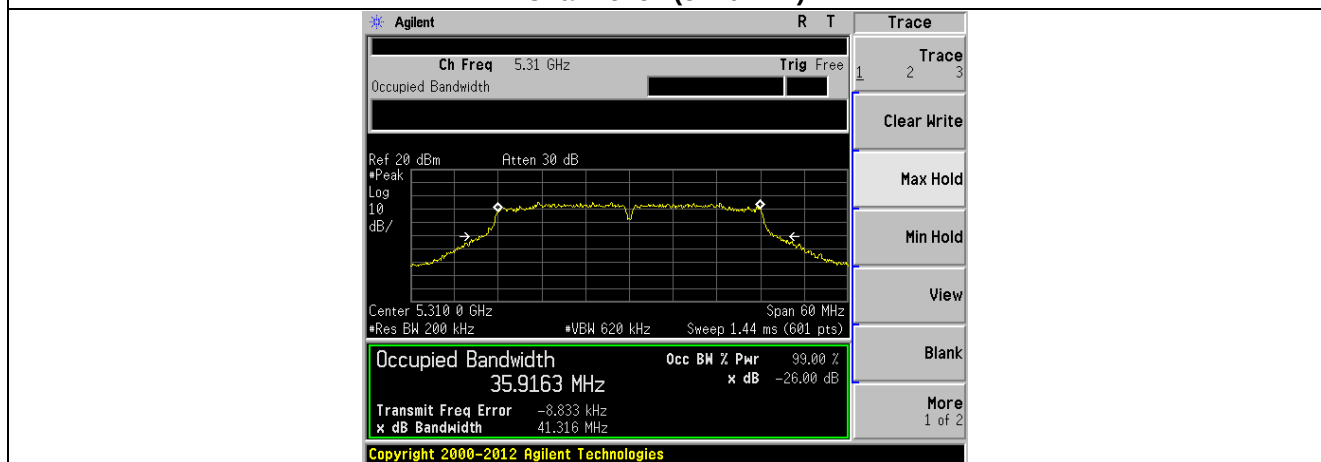


Channel 110 (5550MHz)

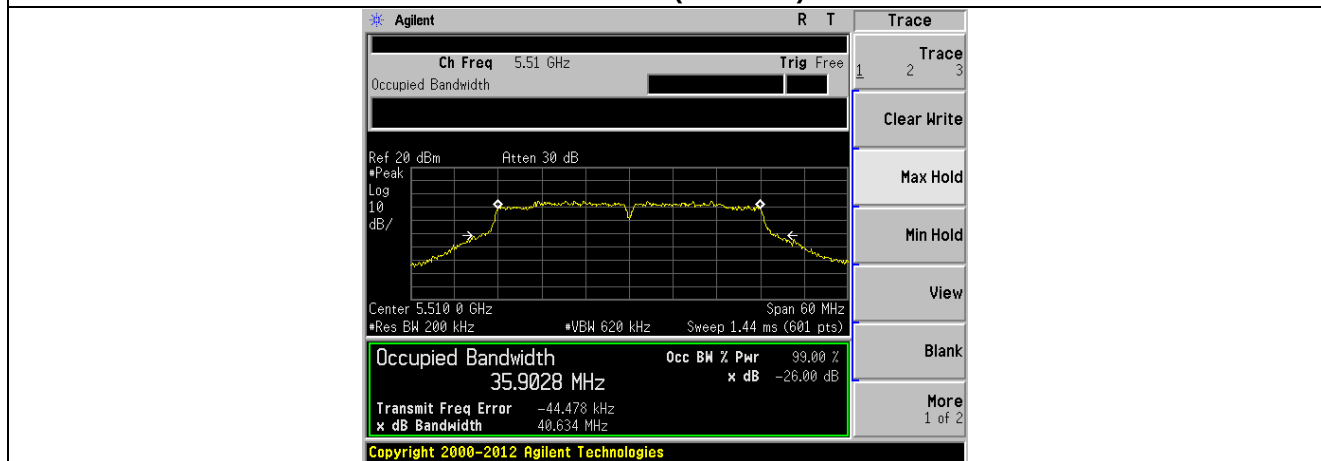




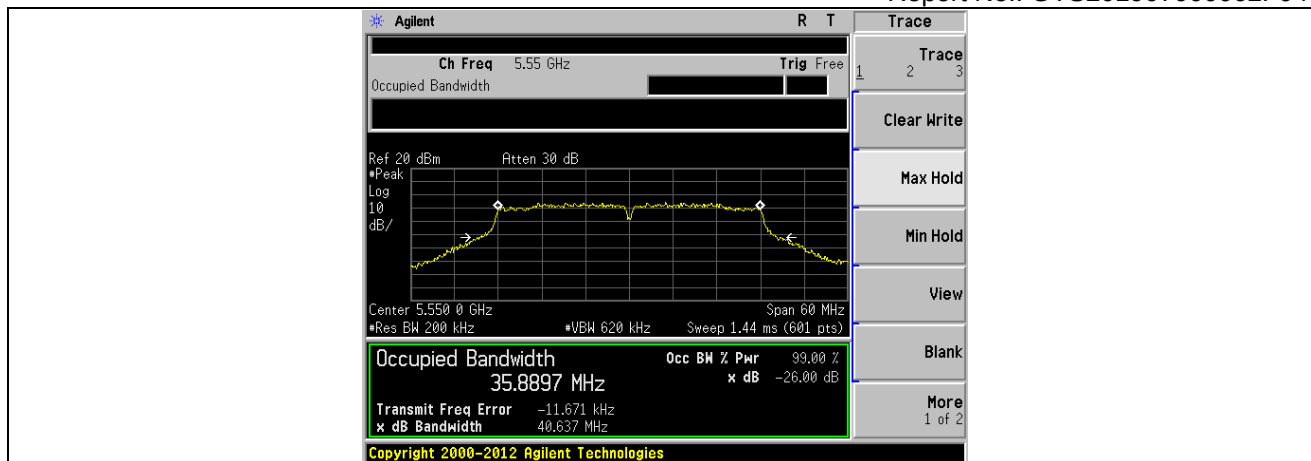
Channel 54 (5270MHz)



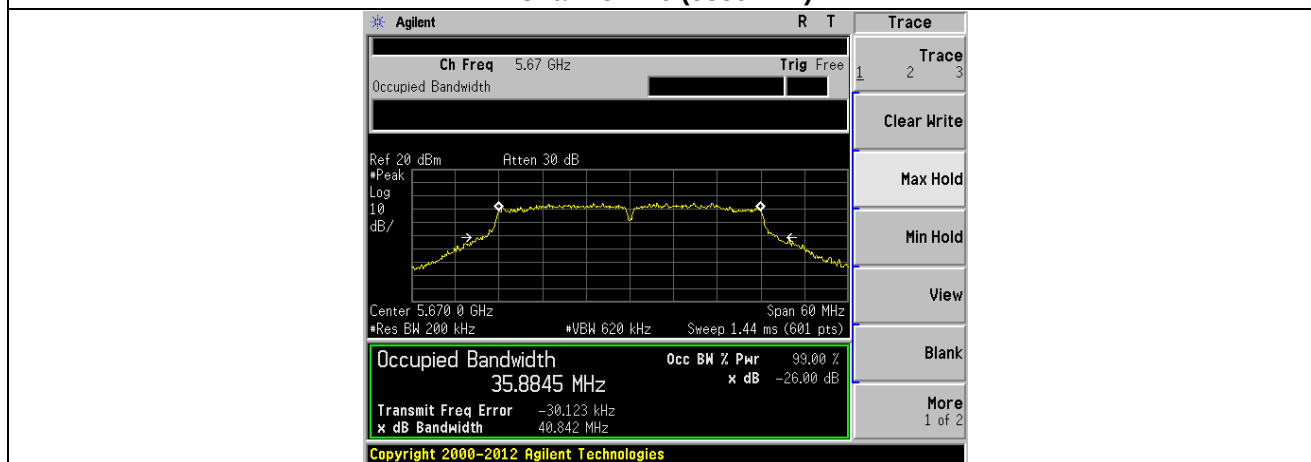
Channel 62 (5310MHz)



Channel 102 (5510MHz)

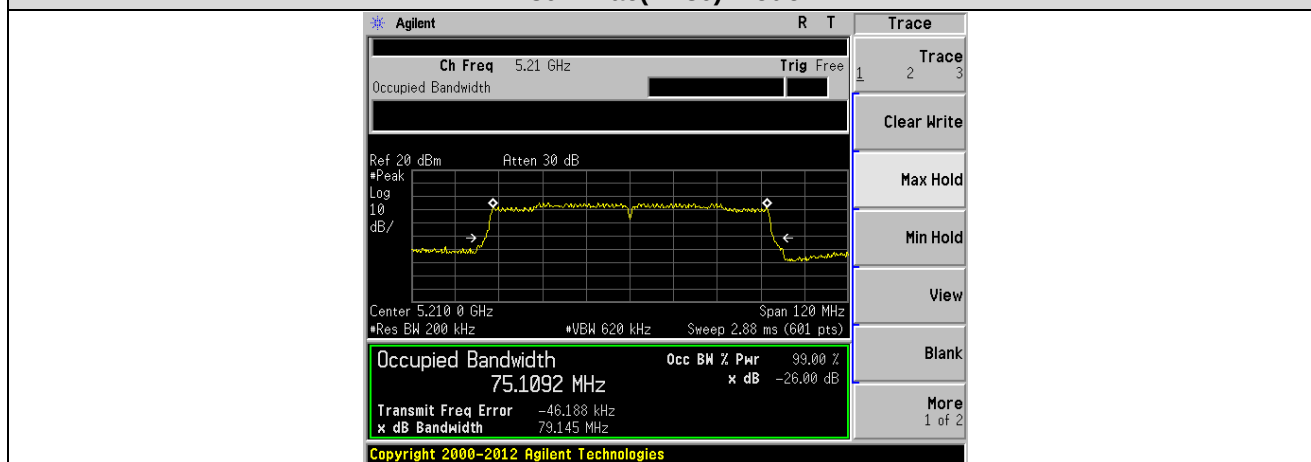


Channel 110 (5550MHz)

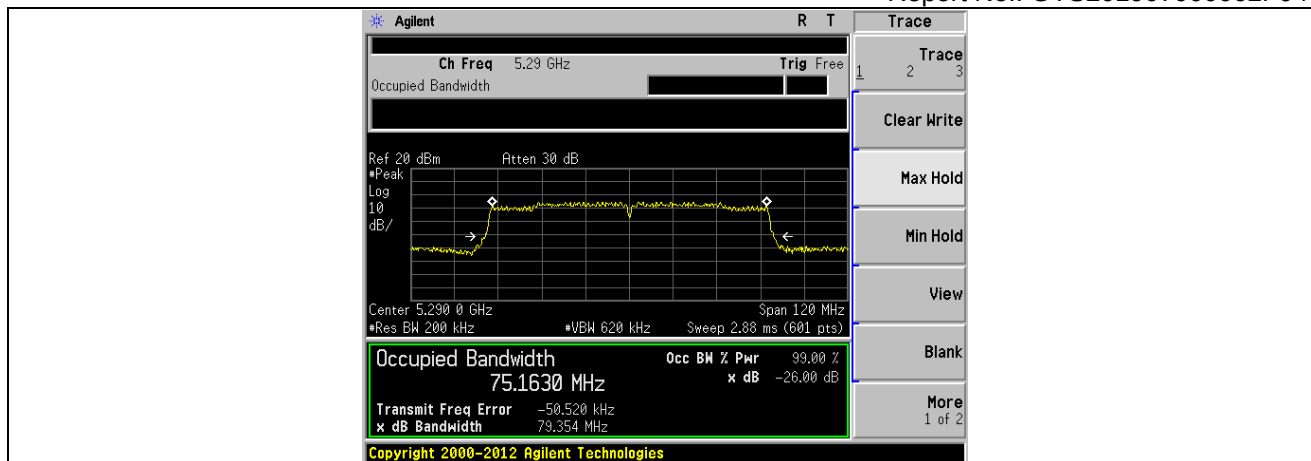


Channel 134 (5670MHz)

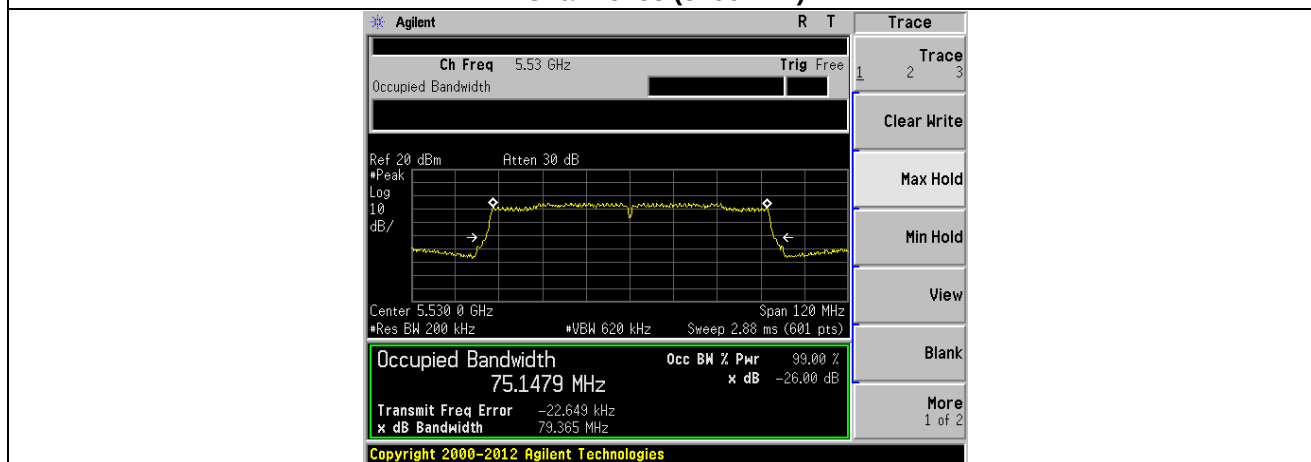
802.11ac(HT80) mode



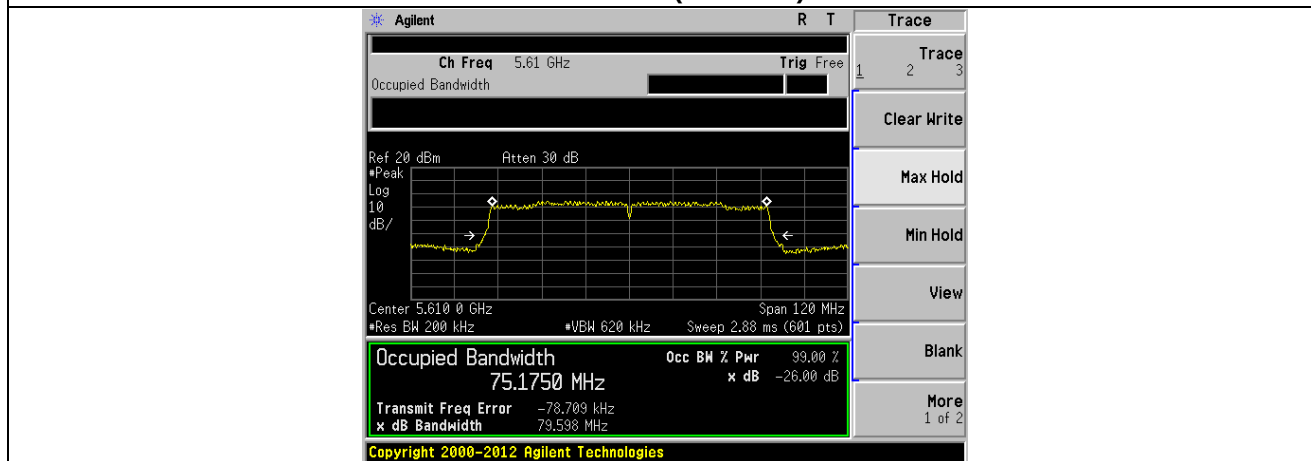
Channel 40 (5210MHz)



Channel 58 (5290MHz)

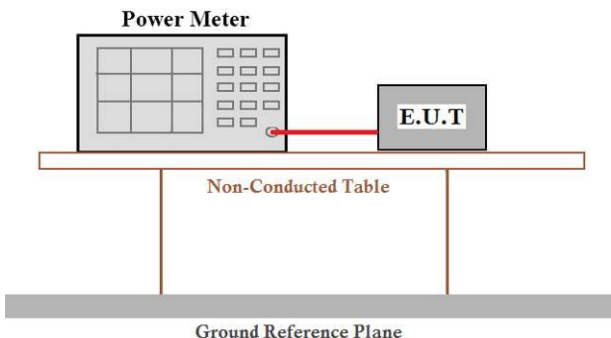


Channel 58 (5530MHz)



Channel 58 (5610MHz)

7.4 Output Power

Test Requirement:	47 CFR Part 15, Subpart E 15.407 (a)	
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01	
Limit:	Frequency band (MHz)	Limit
	5150-5250	$\leq 1\text{W}(30\text{dBm})$ for master device
		$\leq 250\text{mW}(23.98\text{dBm})$ for client device
	5250-5350	$\leq 250\text{mW}(23.98\text{dBm})$ for client device or $11\text{dBm}+10\log B^*$
	5470-5725	$\leq 250\text{mW}(23.98\text{dBm})$ for client device or $11\text{dBm}+10\log B^*$
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.		
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., $10\log(1/0.25)$ 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	

Measurement Data

Main Antenna:

U-NII Band I

802.11a mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180.00	17.69	0.04	17.73	23.98	Pass
40	5200.00	17.59	0.04	17.63	23.98	Pass
48	5240.00	17.07	0.04	17.11	23.98	Pass
802.11n(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180.00	17.77	0.04	17.81	23.98	Pass
40	5200.00	17.61	0.04	17.65	23.98	Pass
48	5240.00	17.17	0.04	17.21	23.98	Pass
802.11ac(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180.00	17.44	0.04	17.48	23.98	Pass
40	5200.00	17.72	0.04	17.76	23.98	Pass
48	5240.00	17.16	0.04	17.20	23.98	Pass
802.11n(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
38	5190.00	17.19	0.04	17.23	23.98	Pass
46	5230.00	17.28	0.04	17.32	23.98	Pass
802.11 ac(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
38	5190.00	17.34	0.04	17.38	23.98	Pass
46	5230.00	17.79	0.04	17.83	23.98	Pass
802.11 ac(HT80)						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
42	5210.00	17.96	0.04	18.00	23.98	Pass

Note: Output Power = Measured Power + Duty Factor

Duty Factor = 10 log (1/Duty Cycle)

U-NII Band II-A

802.11a mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
52	5260.00	17.22	0.04	17.26	23.98	Pass
60	5300.00	17.06	0.04	17.10	23.98	Pass
64	5320.00	16.97	0.04	17.01	23.98	Pass
802.11n(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
52	5260.00	17.43	0.04	17.47	23.98	Pass
60	5300.00	17.47	0.04	17.51	23.98	Pass
64	5320.00	17.11	0.04	17.15	23.98	Pass
802.11ac(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
52	5260.00	17.17	0.04	17.21	23.98	Pass
60	5300.00	17.07	0.04	17.11	23.98	Pass
64	5320.00	17.00	0.04	17.04	23.98	Pass
802.11n(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
54	5270.00	17.51	0.04	17.55	23.98	Pass
62	5310.00	17.39	0.04	17.43	23.98	Pass
802.11 ac(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
54	5270.00	17.51	0.04	17.55	23.98	Pass
62	5310.00	17.32	0.04	17.36	23.98	Pass
802.11 ac(HT80) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
58	5290.00	17.81	0.04	17.85	23.98	Pass

Note: Output Power = Measured Power + Duty Factor

Duty Factor = $10 \log (1/\text{Duty Cycle})$

U-NII Band II-C

802.11a mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
100	5500.00	17.03	0.04	17.07	23.98	Pass
116	5580.00	17.08	0.04	17.12	23.98	Pass
140	5700.00	17.26	0.04	17.30	23.98	Pass
802.11n(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
100	5500.00	17.09	0.04	17.13	23.98	Pass
116	5580.00	17.11	0.04	17.15	23.98	Pass
140	5700.00	17.27	0.04	17.31	23.98	Pass
802.11ac(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
100	5500.00	16.90	0.04	16.94	23.98	Pass
116	5580.00	17.07	0.04	17.11	23.98	Pass
140	5700.00	17.15	0.04	17.19	23.98	Pass
802.11n(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
102	5510.00	17.14	0.04	17.18	23.98	Pass
110	5550.00	16.96	0.04	17.00	23.98	Pass
134	5670.00	16.89	0.04	16.93	23.98	Pass
802.11 ac(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
102	5510.00	16.98	0.04	17.02	23.98	Pass
110	5550.00	16.99	0.04	17.03	23.98	Pass
134	5670.00	17.16	0.04	17.20	23.98	Pass
802.11 ac(HT80) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
106	5530.00	17.63	0.04	17.67	23.98	Pass
122	5610.00	17.21	0.04	17.25	23.98	Pass

Note: Output Power = Measured Power + Duty Factor

Duty Factor = $10 \log (1/\text{Duty Cycle})$

Aux Antenna:
U-NII Band I

802.11a mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180.00	17.42	0.04	17.46	23.98	Pass
40	5200.00	17.41	0.04	17.45	23.98	Pass
48	5240.00	17.38	0.04	17.42	23.98	Pass
802.11n(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180.00	17.57	0.04	17.61	23.98	Pass
40	5200.00	17.35	0.04	17.39	23.98	Pass
48	5240.00	17.16	0.04	17.20	23.98	Pass
802.11ac(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180.00	17.49	0.04	17.53	23.98	Pass
40	5200.00	17.38	0.04	17.42	23.98	Pass
48	5240.00	17.27	0.04	17.31	23.98	Pass
802.11n(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
38	5190.00	17.55	0.04	17.59	23.98	Pass
46	5230.00	17.10	0.04	17.14	23.98	Pass
802.11 ac(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
38	5190.00	17.26	0.04	17.30	23.98	Pass
46	5230.00	17.21	0.04	17.25	23.98	Pass
802.11 ac(HT80)						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
42	5210.00	17.87	0.04	17.91	23.98	Pass

Note: Output Power = Measured Power + Duty Factor

Duty Factor = 10 log (1/Duty Cycle)

U-NII Band II-A

802.11a mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
52	5260.00	17.17	0.04	17.21	23.98	Pass
60	5300.00	17.38	0.04	17.42	23.98	Pass
64	5320.00	16.97	0.04	17.01	23.98	Pass
802.11n(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
52	5260.00	17.73	0.04	17.77	23.98	Pass
60	5300.00	17.64	0.04	17.68	23.98	Pass
64	5320.00	17.20	0.04	17.24	23.98	Pass
802.11ac(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
52	5260.00	17.14	0.04	17.18	23.98	Pass
60	5300.00	16.99	0.04	17.03	23.98	Pass
64	5320.00	17.01	0.04	17.05	23.98	Pass
802.11n(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
54	5270.00	17.21	0.04	17.25	23.98	Pass
62	5310.00	17.26	0.04	17.30	23.98	Pass
802.11 ac(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
54	5270.00	17.11	0.04	17.15	23.98	Pass
62	5310.00	17.28	0.04	17.32	23.98	Pass
802.11 ac(HT80) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
58	5290.00	17.35	0.04	17.39	23.98	Pass

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

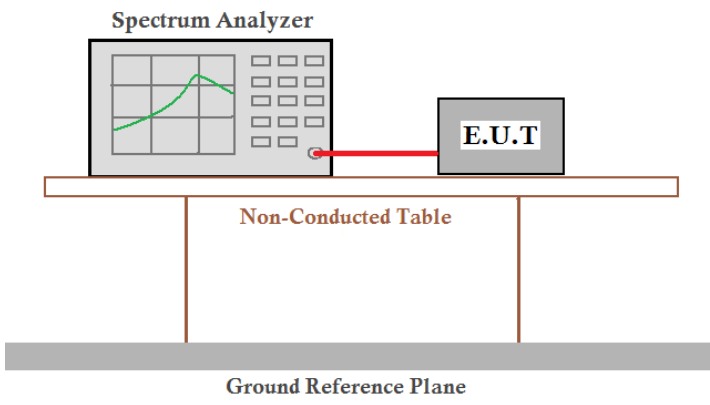
U-NII Band II-C

802.11a mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
100	5500.00	17.01	0.04	17.05	23.98	Pass
116	5580.00	17.52	0.04	17.56	23.98	Pass
140	5700.00	17.31	0.04	17.35	23.98	Pass
802.11n(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
100	5500.00	17.19	0.04	17.23	23.98	Pass
116	5580.00	17.40	0.04	17.44	23.98	Pass
140	5700.00	17.82	0.04	17.86	23.98	Pass
802.11ac(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
100	5500.00	17.01	0.04	17.05	23.98	Pass
116	5580.00	16.99	0.04	17.03	23.98	Pass
140	5700.00	17.61	0.04	17.65	23.98	Pass
802.11n(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
102	5510.00	16.97	0.04	17.01	23.98	Pass
110	5550.00	17.15	0.04	17.19	23.98	Pass
134	5670.00	17.06	0.04	17.10	23.98	Pass
802.11 ac(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
102	5510.00	17.18	0.04	17.22	23.98	Pass
110	5550.00	17.49	0.04	17.53	23.98	Pass
134	5670.00	17.28	0.04	17.32	23.98	Pass
802.11 ac(HT80) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
106	5530.00	17.62	0.04	17.66	23.98	Pass
122	5610.00	18.33	0.04	18.37	23.98	Pass

Note: Output Power = Measured Power + Duty Factor

Duty Factor = $10 \log (1/\text{Duty Cycle})$

7.5 Power Spectral Density

Test Requirement:	47 CFR Part 15, Subpart E 15.407 (a)	
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01	
Limit:	Frequency band (MHz)	Limit
	5150-5250	≤17dBm in 1MHz for master device
		≤11dBm in 1MHz for client device
	5250-5350	≤11dBm in 1MHz for client device
	5470-5725	≤11dBm in 1MHz for client device
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.		
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.	
Test procedure:	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.	
Test Instruments:	Refer to section 5.10 for details	
Test mode:	Refer to section 5.2 for details	
Test results:	Pass	

Measurement Data

Main Antenna:

U-NII Band I

802.11a mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
36	5180.00	7.88	0.04	7.92	11.00	Pass
40	5200.00	7.28	0.04	7.32	11.00	Pass
48	5240.00	7.30	0.04	7.34	11.00	Pass
802.11n(HT20) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
36	5180.00	8.00	0.04	8.04	11.00	Pass
40	5200.00	8.07	0.04	8.11	11.00	Pass
48	5240.00	8.08	0.04	8.12	11.00	Pass
802.11ac(HT20) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
36	5180.00	7.73	0.04	7.77	11.00	Pass
40	5200.00	7.45	0.04	7.49	11.00	Pass
48	5240.00	7.74	0.04	7.78	11.00	Pass
802.11n(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
38	5190.00	4.55	0.04	4.59	11.00	Pass
46	5230.00	4.72	0.04	4.76	11.00	Pass
802.11ac(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
38	5190.00	4.87	0.04	4.91	11.00	Pass
46	5230.00	4.51	0.04	4.55	11.00	Pass
802.11ac(HT80) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
38	5210.00	2.44	0.04	2.48	11.00	Pass

Note: Total PSD = Measured PSD + Duty Factor

Duty Factor = $10 \log (1/\text{Duty Cycle})$

U-NII Band II-A

802.11a mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
52	5260.00	6.86	0.04	6.90	11.00	Pass
60	5300.00	7.15	0.04	7.19	11.00	Pass
64	5320.00	7.26	0.04	7.30	11.00	Pass
802.11n(HT20) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
52	5260.00	7.43	0.04	7.47	11.00	Pass
60	5300.00	7.10	0.04	7.14	11.00	Pass
64	5320.00	7.13	0.04	7.17	11.00	Pass
802.11ac(HT20) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
52	5260.00	7.69	0.04	7.73	11.00	Pass
60	5300.00	7.53	0.04	7.57	11.00	Pass
64	5320.00	7.67	0.04	7.71	11.00	Pass
802.11n(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
54	5270.00	4.48	0.04	4.52	11.00	Pass
62	5310.00	4.46	0.04	4.50	11.00	Pass
802.11ac(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
54	5270.00	4.51	0.04	4.55	11.00	Pass
62	5310.00	4.28	0.04	4.32	11.00	Pass
802.11ac(HT80) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
58	5290.00	1.60	0.04	1.64	11.00	Pass

Note: Total PSD = Measured PSD + Duty Factor

Duty Factor = 10 log (1/Duty Cycle)

U-NII Band II-C

802.11a mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
100	5500.00	6.83	0.04	6.87	11.00	Pass
116	5580.00	7.22	0.04	7.26	11.00	Pass
140	5700.00	7.02	0.04	7.06	11.00	Pass
802.11n(HT20) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
100	5500.00	6.99	0.04	7.03	11.00	Pass
116	5580.00	6.97	0.04	7.01	11.00	Pass
140	5700.00	7.47	0.04	7.51	11.00	Pass
802.11ac(HT20) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
100	5500.00	7.39	0.04	7.43	11.00	Pass
116	5580.00	7.02	0.04	7.06	11.00	Pass
140	5700.00	7.51	0.04	7.55	11.00	Pass
802.11n(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
102	5510.00	4.53	0.04	4.57	11.00	Pass
110	5550.00	4.11	0.04	4.15	11.00	Pass
134	5670.00	4.56	0.04	4.60	11.00	Pass
802.11ac(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
102	5510.00	4.04	0.04	4.08	11.00	Pass
110	5550.00	4.20	0.04	4.24	11.00	Pass
134	5670.00	4.50	0.04	4.54	11.00	Pass
802.11ac(HT80) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
106	5530.00	2.16	0.04	2.20	11.00	Pass
122	5610.00	1.45	0.04	1.49	11.00	Pass

Note: Total PSD = Measured PSD + Duty Factor

Duty Factor = $10 \log (1/\text{Duty Cycle})$

Aux Antenna:

U-NII Band I

802.11a mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
36	5180.00	7.61	0.04	7.65	11.00	Pass
40	5200.00	7.55	0.04	7.59	11.00	Pass
48	5240.00	7.31	0.04	7.35	11.00	Pass
802.11n(HT20) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
36	5180.00	7.38	0.04	7.42	11.00	Pass
40	5200.00	7.59	0.04	7.63	11.00	Pass
48	5240.00	7.32	0.04	7.36	11.00	Pass
802.11ac(HT20) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
36	5180.00	7.34	0.04	7.38	11.00	Pass
40	5200.00	7.34	0.04	7.38	11.00	Pass
48	5240.00	7.62	0.04	7.66	11.00	Pass
802.11n(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
38	5190.00	4.87	0.04	4.91	11.00	Pass
46	5230.00	4.34	0.04	4.38	11.00	Pass
802.11ac(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
38	5190.00	4.60	0.04	4.64	11.00	Pass
46	5230.00	4.73	0.04	4.77	11.00	Pass
802.11ac(HT80) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
38	5210.00	1.87	0.04	1.91	11.00	Pass

Note: Total PSD = Measured PSD + Duty Factor

Duty Factor = $10 \log (1/\text{Duty Cycle})$

U-NII Band II-A

802.11a mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
52	5260.00	7.52	0.04	7.56	11.00	Pass
60	5300.00	7.81	0.04	7.85	11.00	Pass
64	5320.00	7.39	0.04	7.43	11.00	Pass
802.11n(HT20) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
52	5260.00	7.55	0.04	7.59	11.00	Pass
60	5300.00	7.58	0.04	7.62	11.00	Pass
64	5320.00	7.74	0.04	7.78	11.00	Pass
802.11ac(HT20) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
52	5260.00	7.29	0.04	7.33	11.00	Pass
60	5300.00	7.28	0.04	7.32	11.00	Pass
64	5320.00	7.10	0.04	7.14	11.00	Pass
802.11n(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
54	5270.00	4.91	0.04	4.95	11.00	Pass
62	5310.00	4.59	0.04	4.63	11.00	Pass
802.11ac(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
54	5270.00	4.34	0.04	4.38	11.00	Pass
62	5310.00	4.35	0.04	4.39	11.00	Pass
802.11ac(HT80) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
58	5290.00	1.50	0.04	1.54	11.00	Pass

Note: Total PSD = Measured PSD + Duty Factor

Duty Factor = $10 \log (1/\text{Duty Cycle})$

U-NII Band II-C

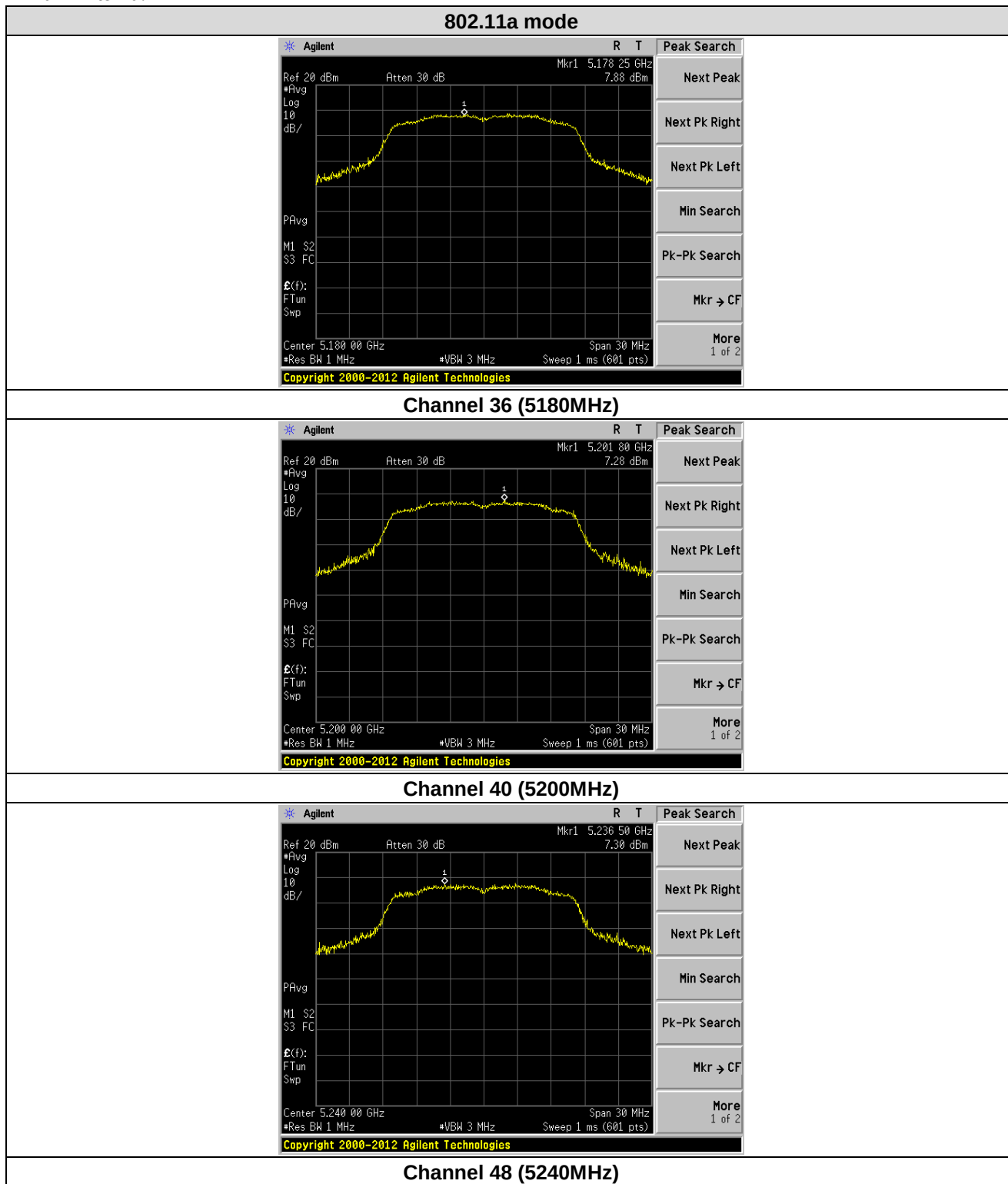
802.11a mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
100	5500.00	7.51	0.04	7.55	11.00	Pass
116	5580.00	7.72	0.04	7.76	11.00	Pass
140	5700.00	7.81	0.04	7.85	11.00	Pass
802.11n(HT20) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
100	5500.00	6.85	0.04	6.89	11.00	Pass
116	5580.00	7.55	0.04	7.59	11.00	Pass
140	5700.00	7.80	0.04	7.84	11.00	Pass
802.11ac(HT20) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
100	5500.00	7.59	0.04	7.63	11.00	Pass
116	5580.00	7.73	0.04	7.77	11.00	Pass
140	5700.00	7.75	0.04	7.79	11.00	Pass
802.11n(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
102	5510.00	4.09	0.04	4.13	11.00	Pass
110	5550.00	4.41	0.04	4.45	11.00	Pass
134	5670.00	4.29	0.04	4.33	11.00	Pass
802.11ac(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
102	5510.00	4.52	0.04	4.56	11.00	Pass
110	5550.00	4.98	0.04	5.02	11.00	Pass
134	5670.00	4.09	0.04	4.13	11.00	Pass
802.11ac(HT80) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
106	5530.00	1.59	0.04	1.63	11.00	Pass
122	5610.00	1.65	0.04	1.69	11.00	Pass

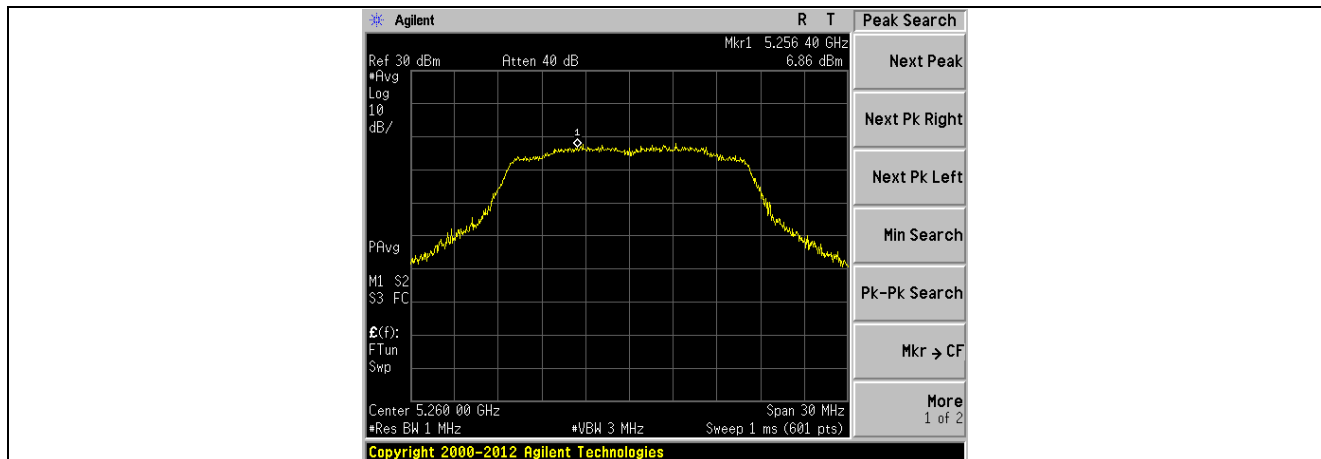
Note: Total PSD = Measured PSD + Duty Factor

Duty Factor = $10 \log (1/\text{Duty Cycle})$

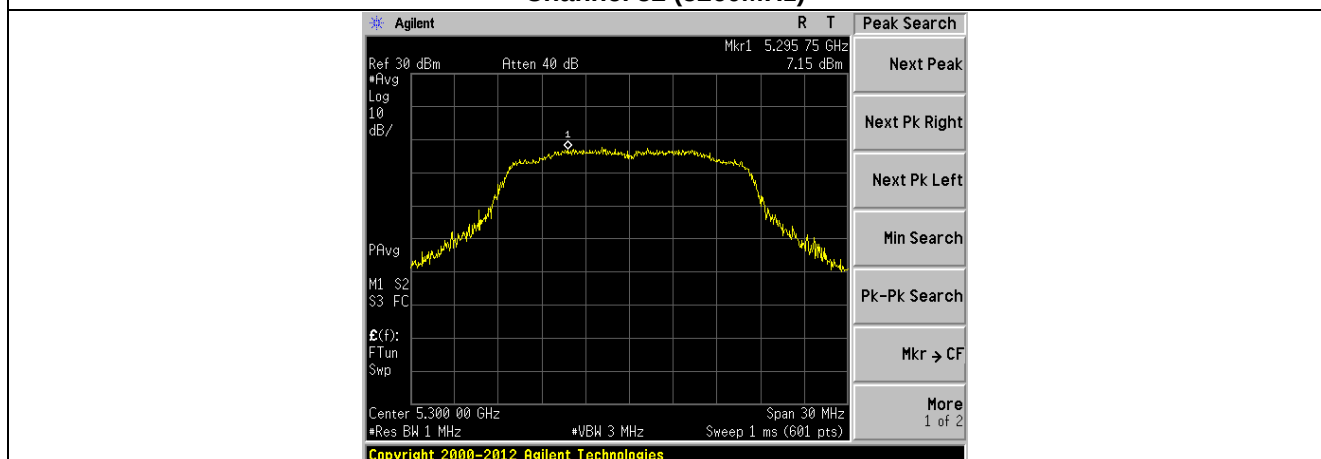
Test plots as followed:

Main Antenna:

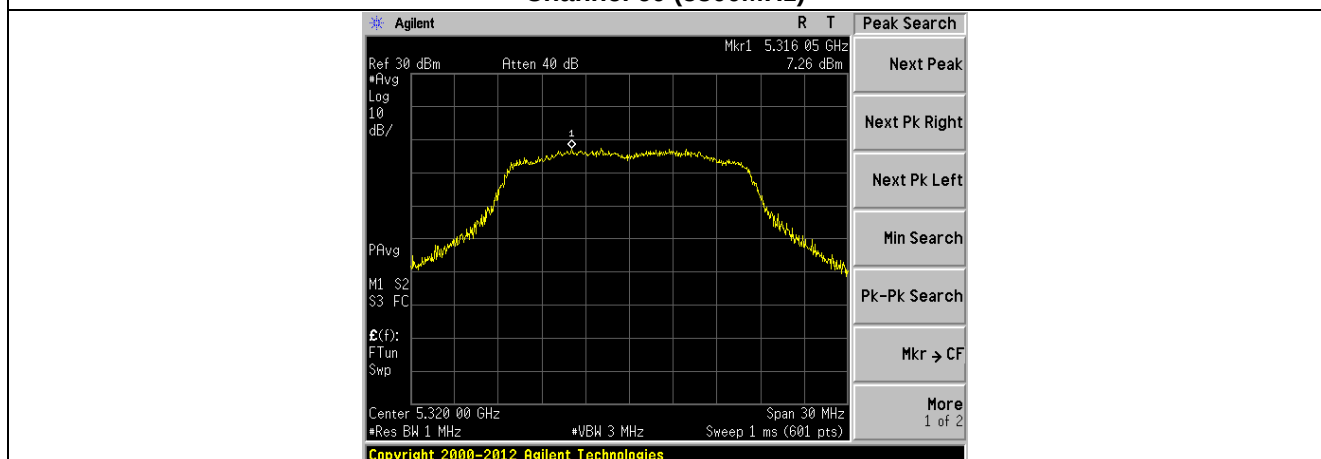




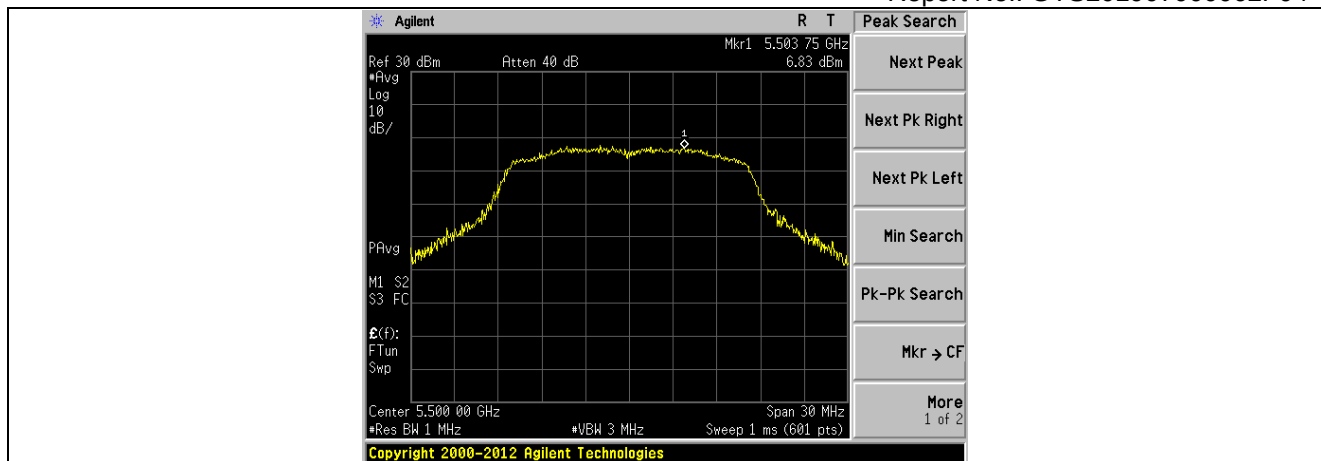
Channel 52 (5260MHz)



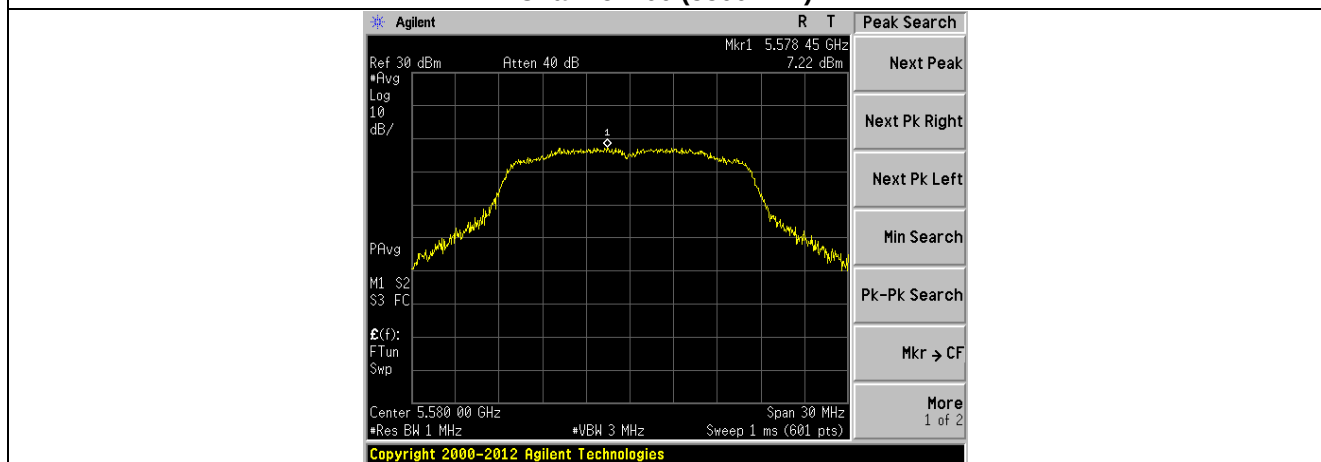
Channel 60 (5300MHz)



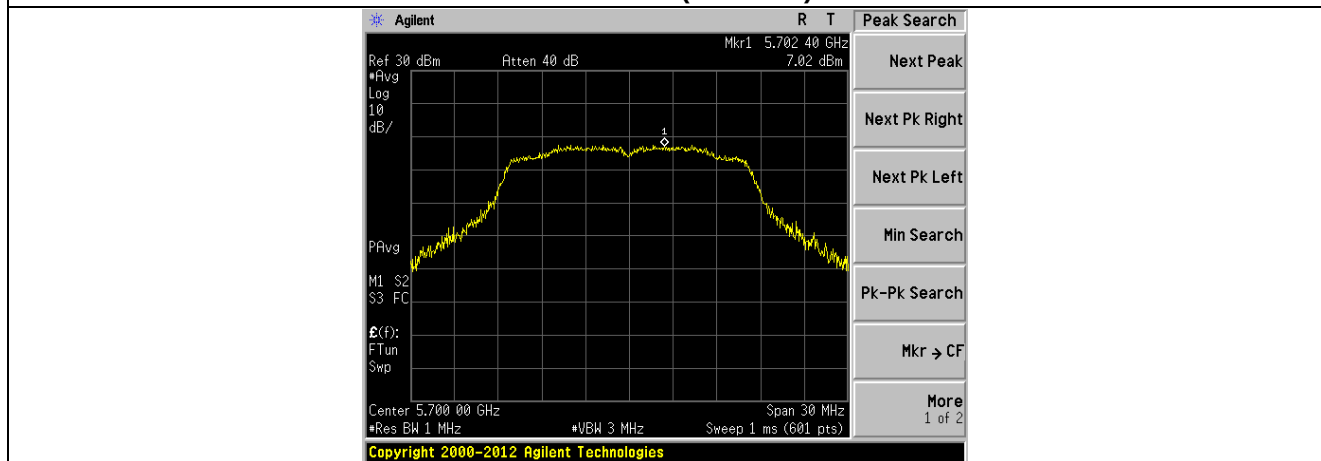
Channel 64 (5320MHz)



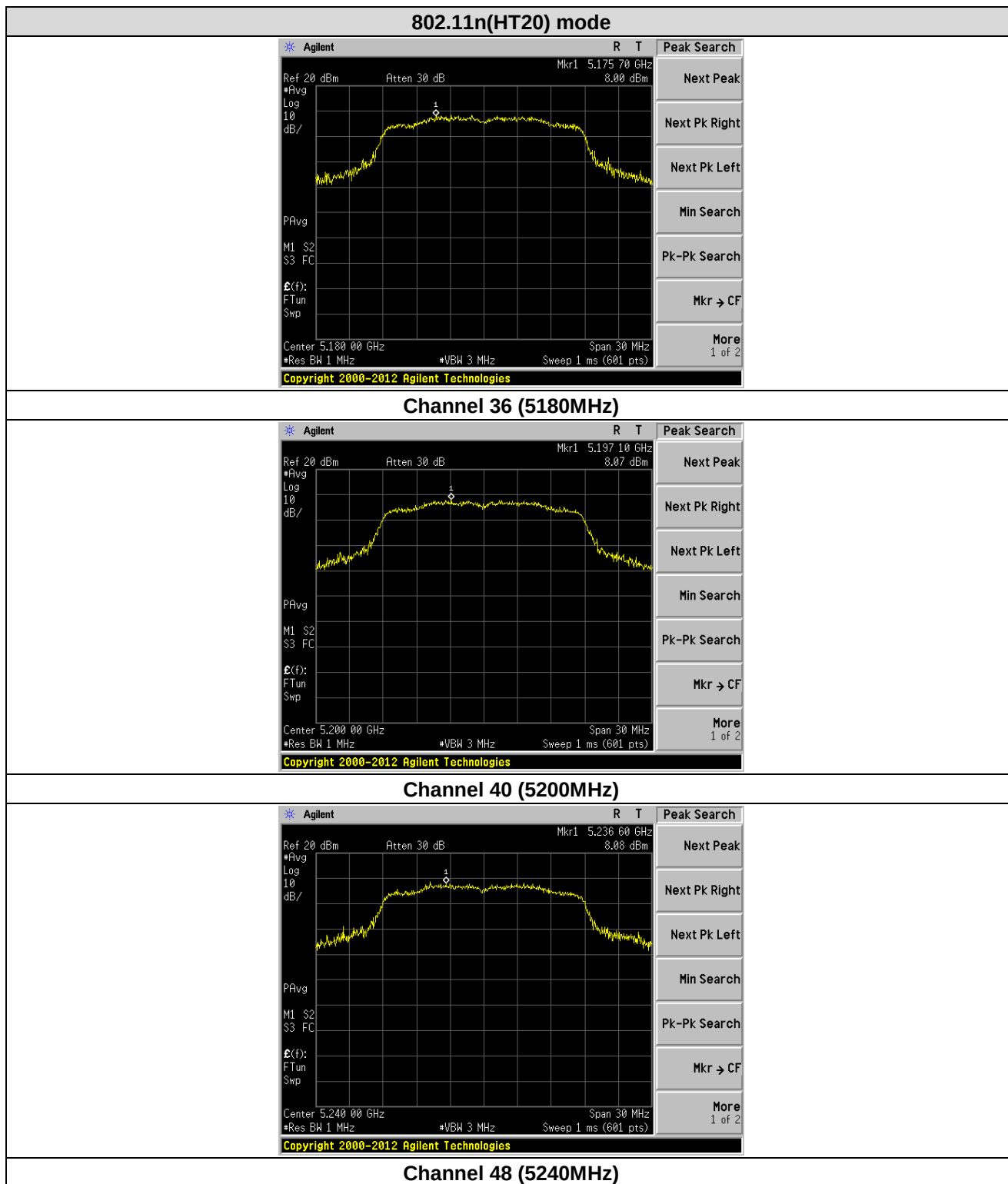
Channel 100 (5500MHz)

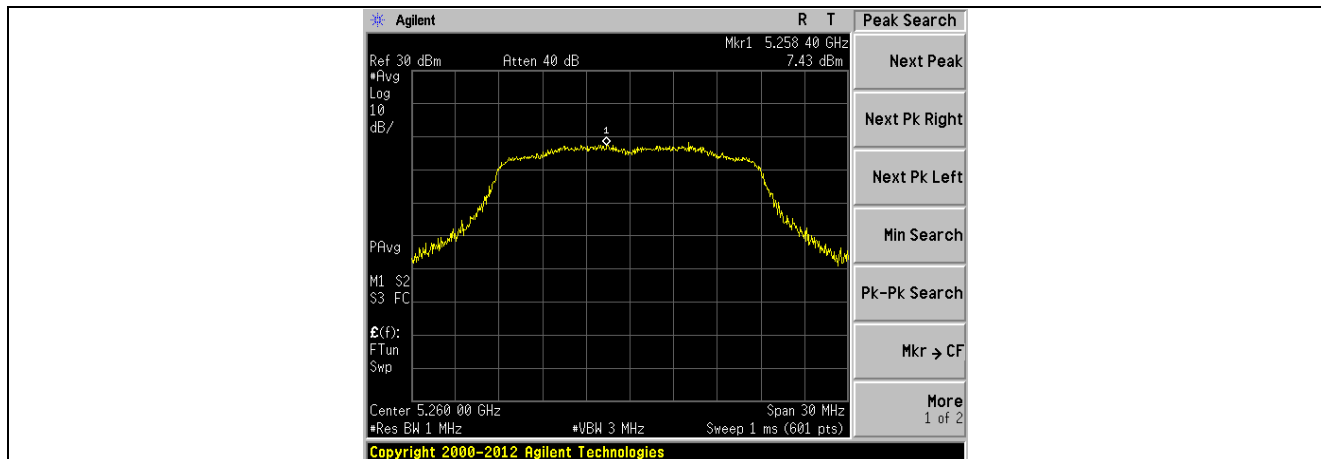


Channel 116 (5580MHz)

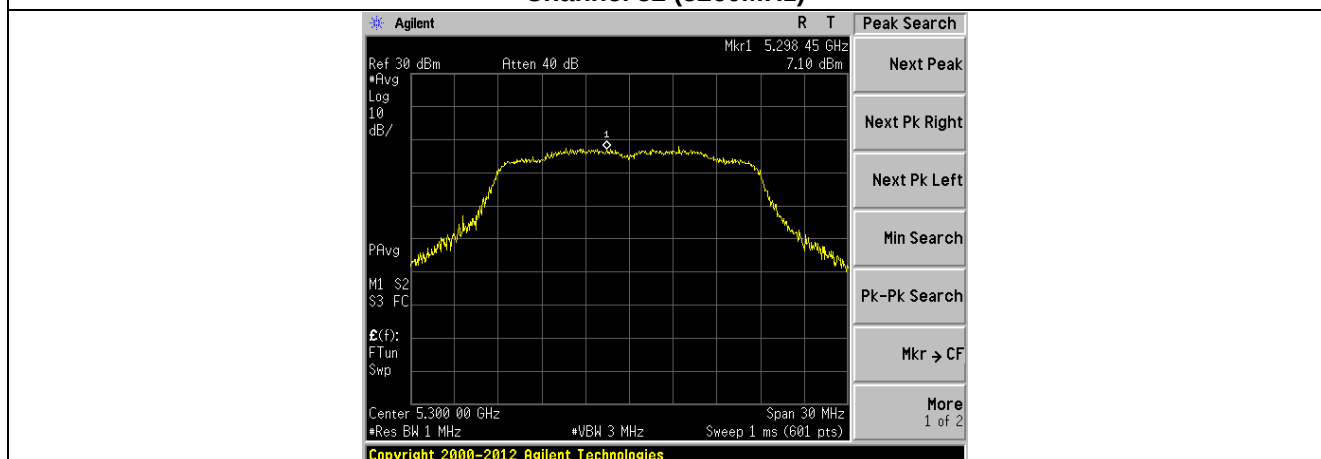


Channel 140 (5700MHz)

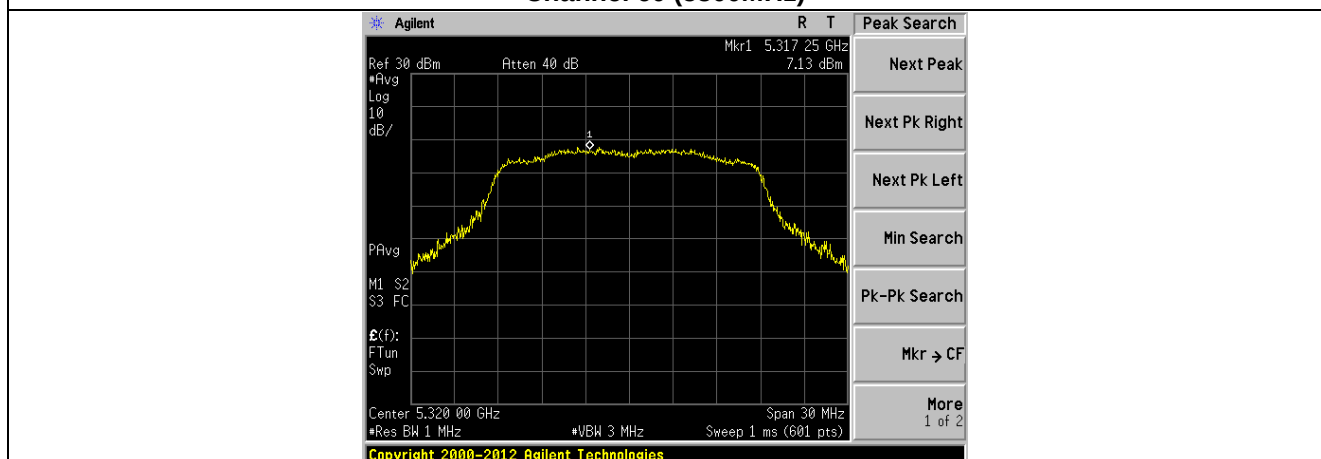




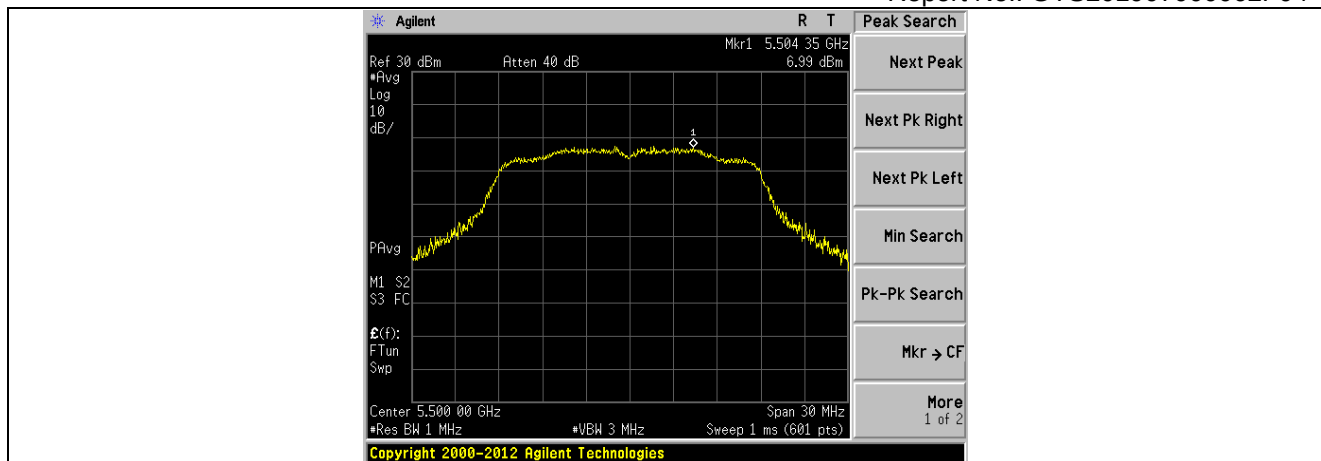
Channel 52 (5260MHz)



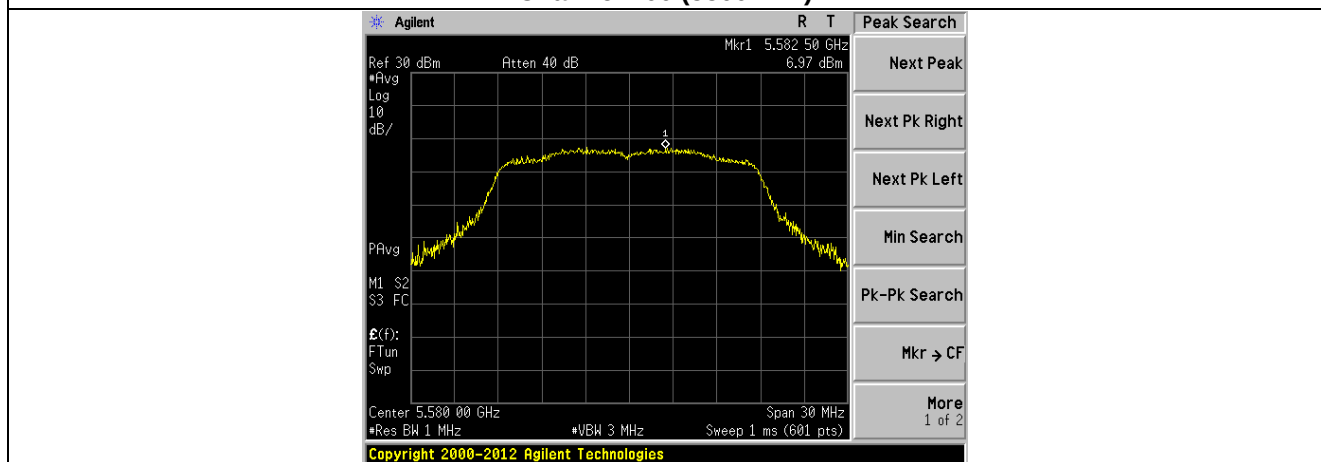
Channel 60 (5300MHz)



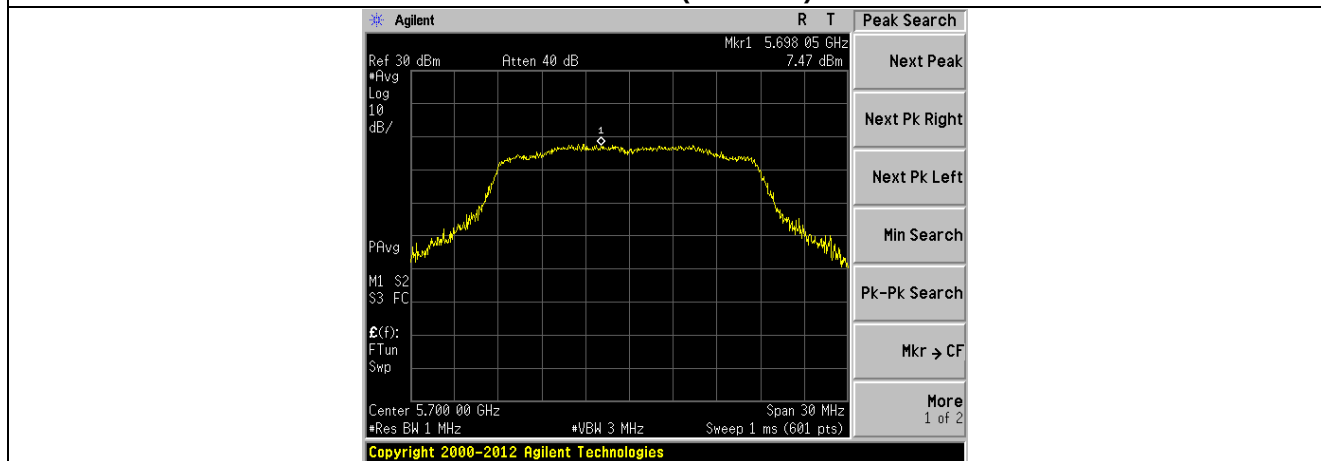
Channel 64 (5320MHz)



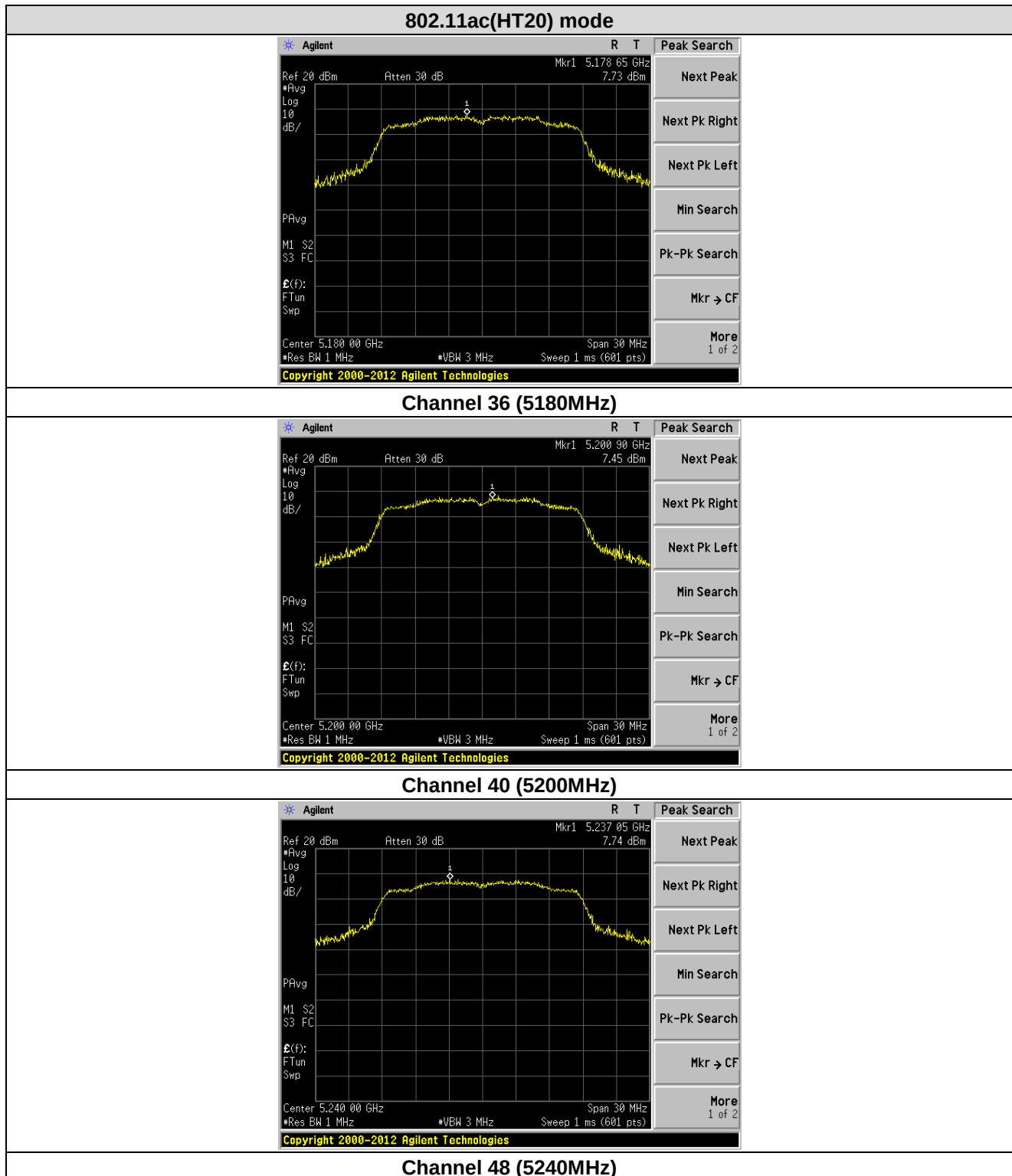
Channel 100 (5500MHz)

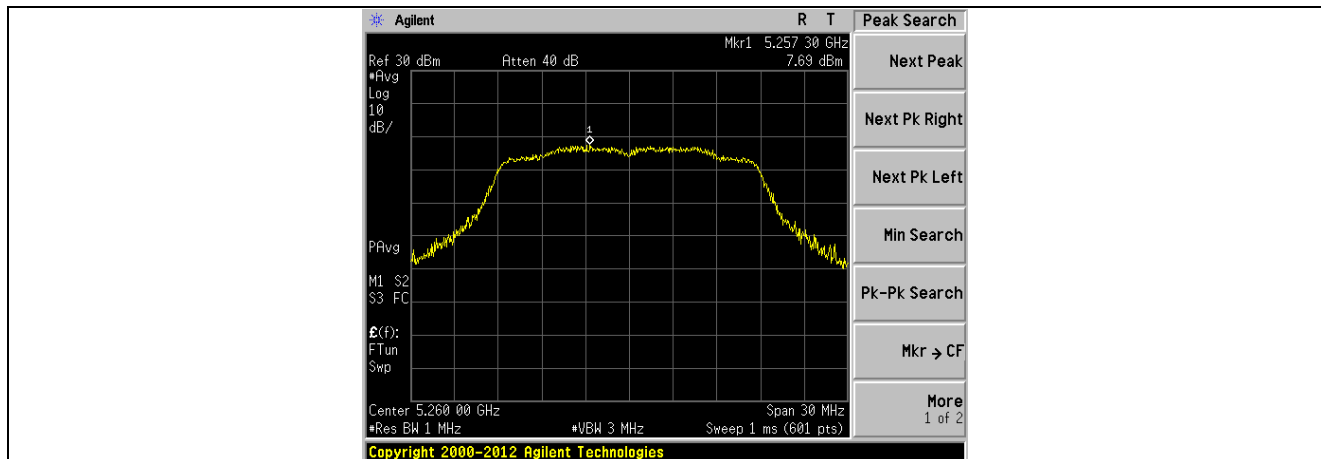


Channel 116 (5580MHz)

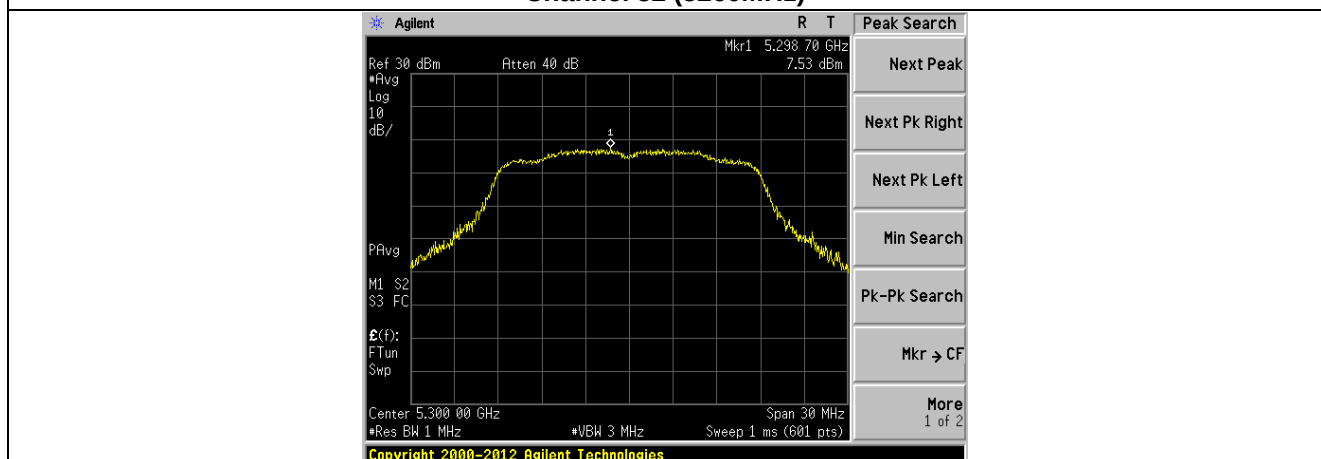


Channel 140 (5700MHz)

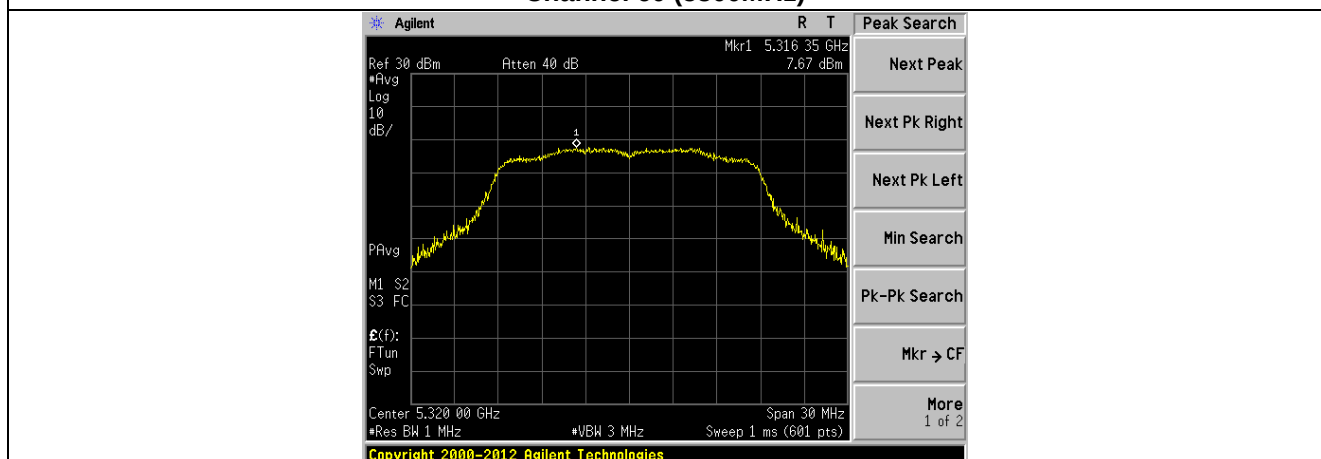




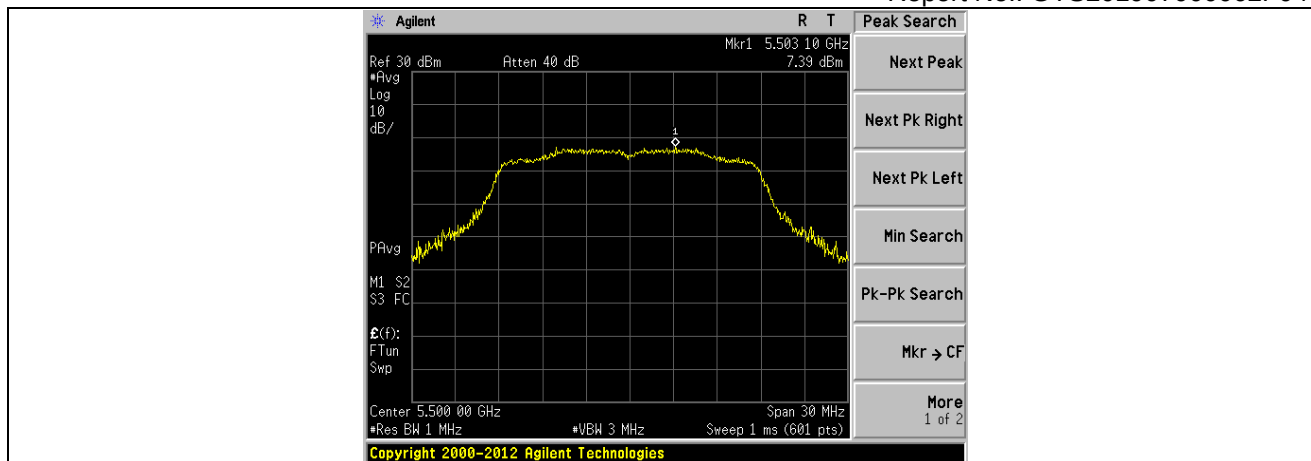
Channel 52 (5260MHz)



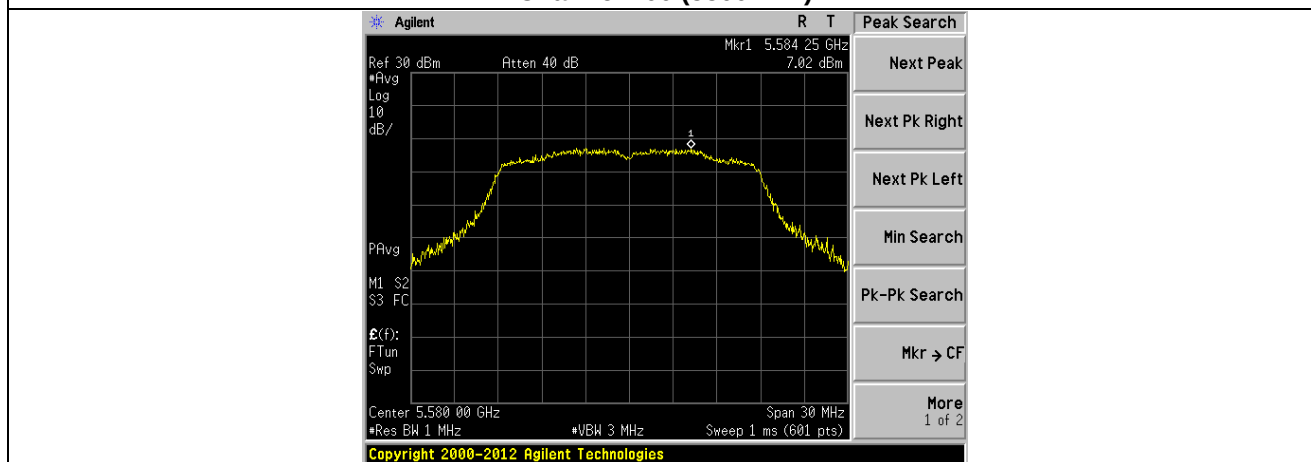
Channel 60 (5300MHz)



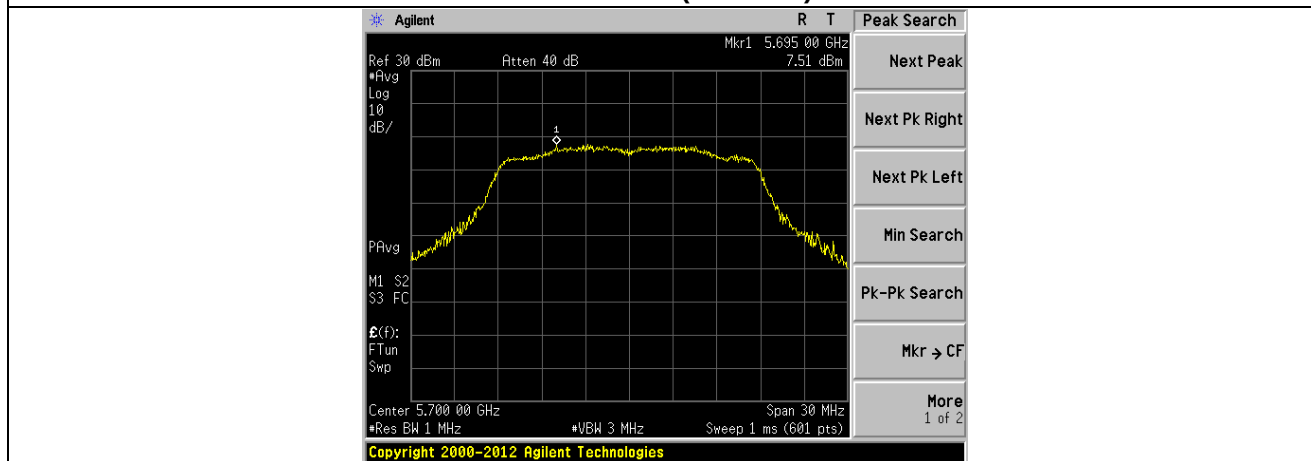
Channel 64 (5320MHz)



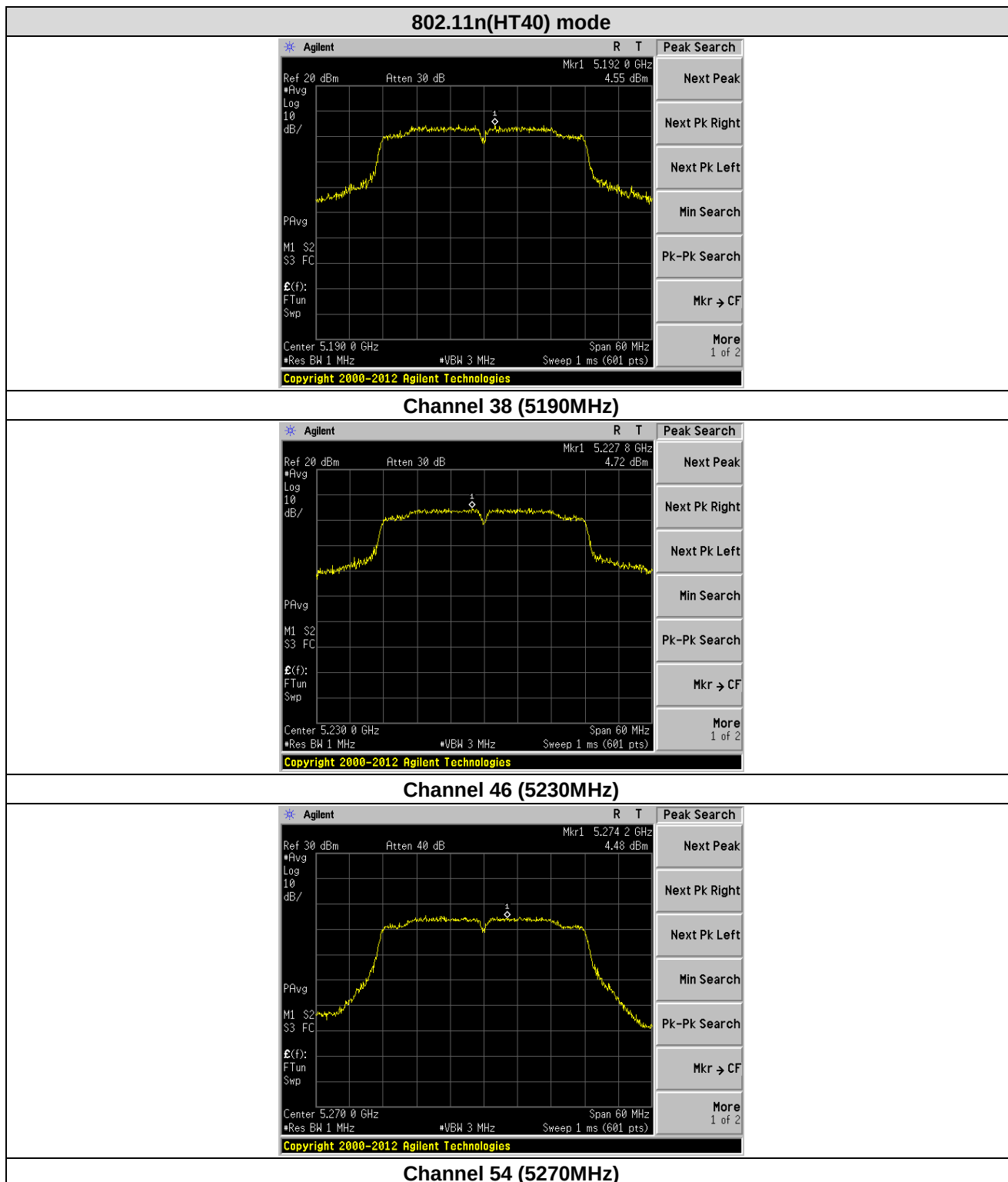
Channel 100 (5500MHz)

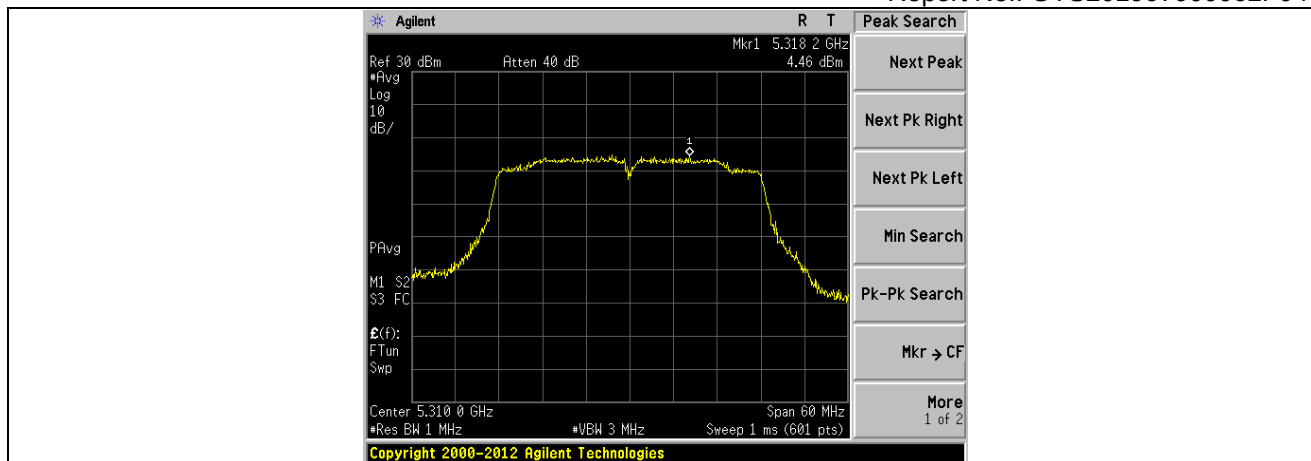


Channel 116 (5580MHz)

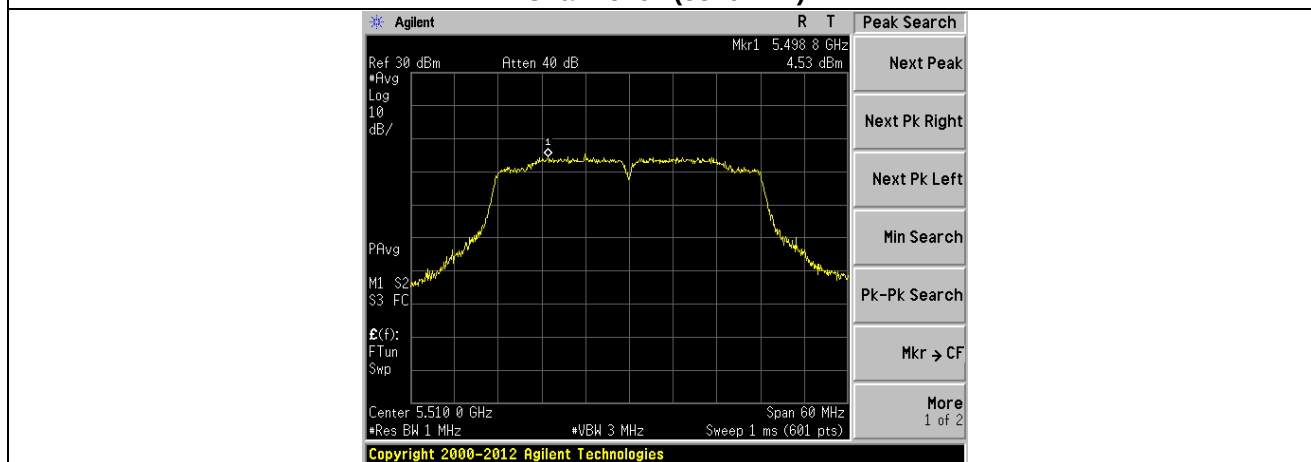


Channel 140 (5700MHz)

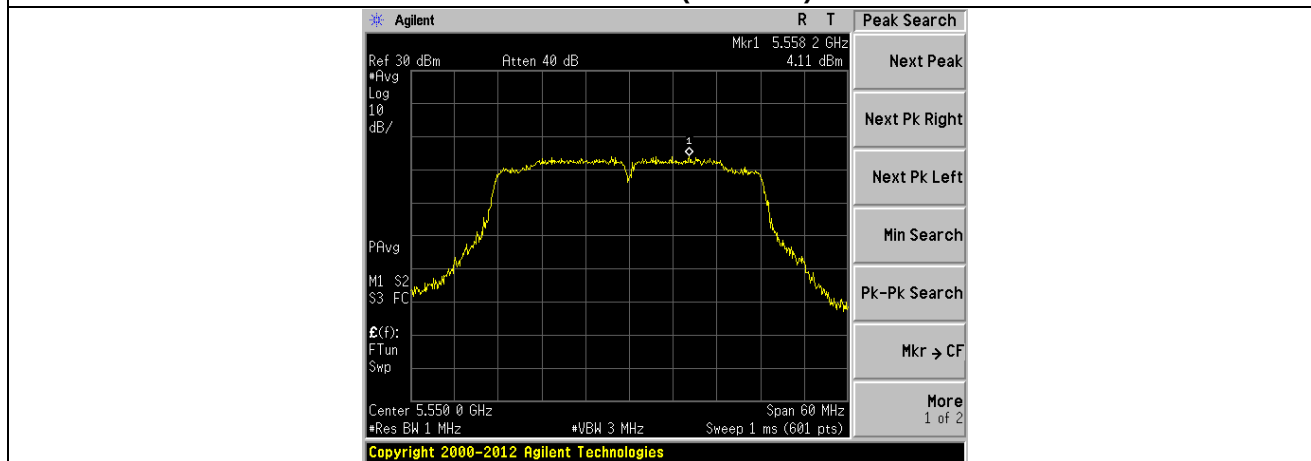




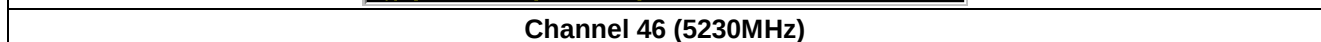
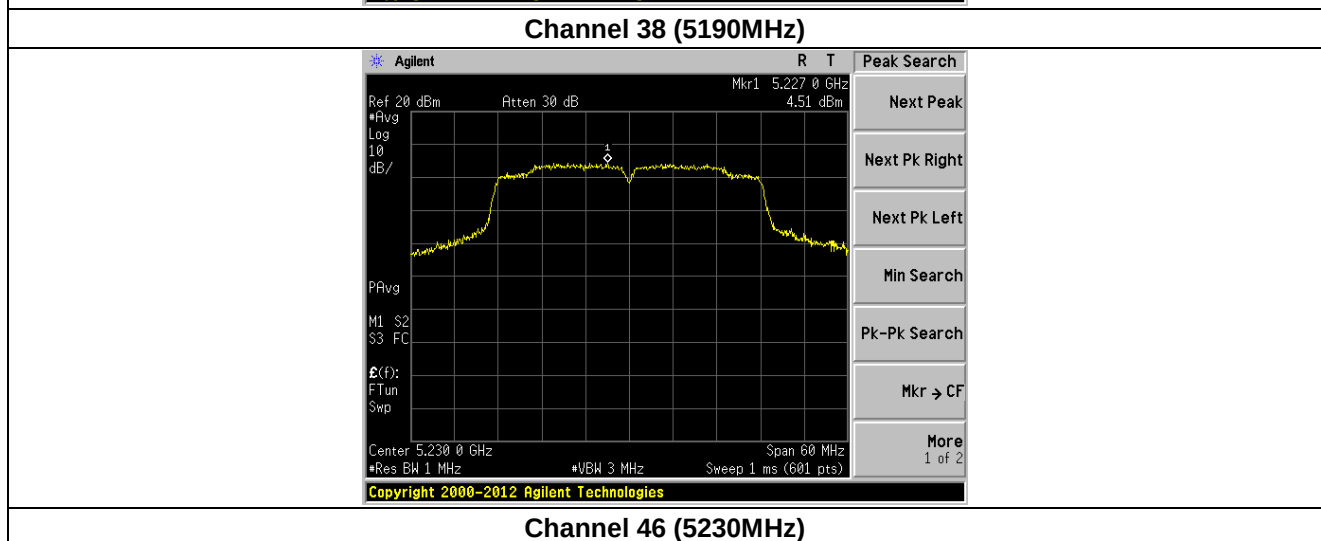
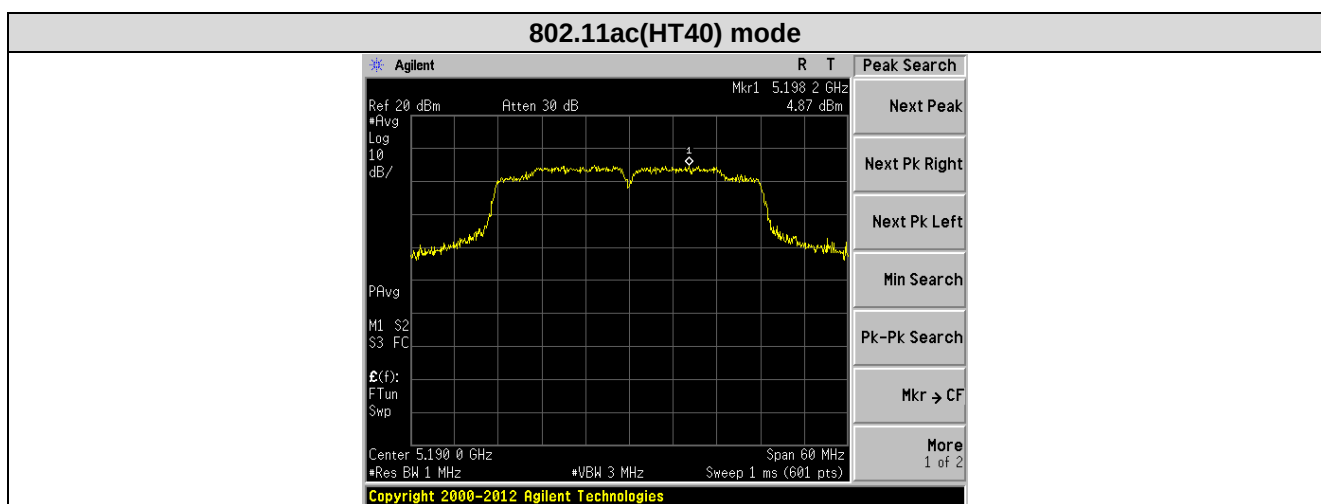
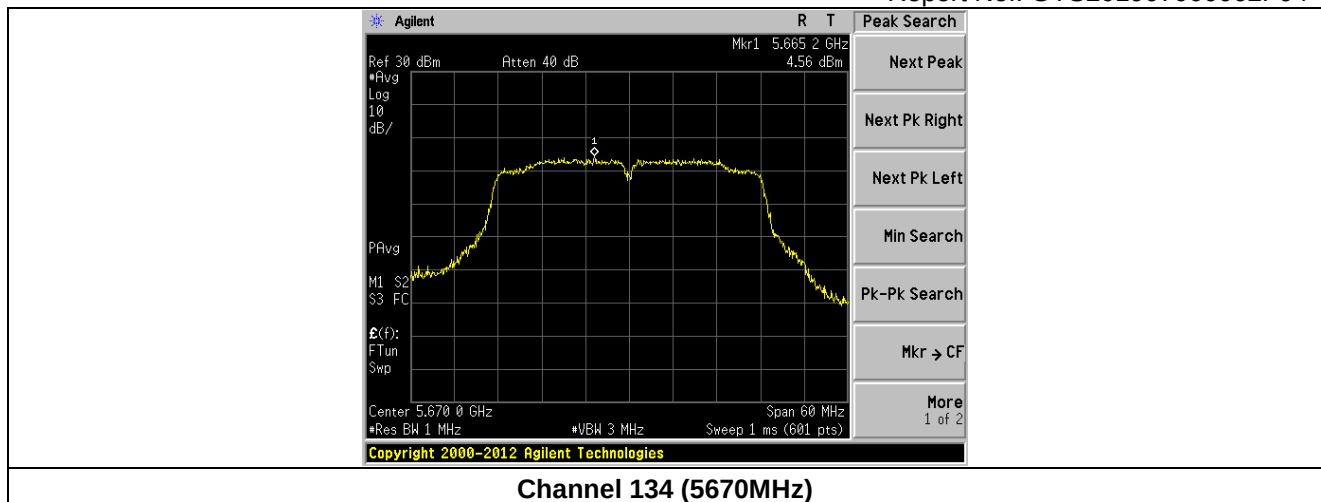
Channel 62 (5310MHz)

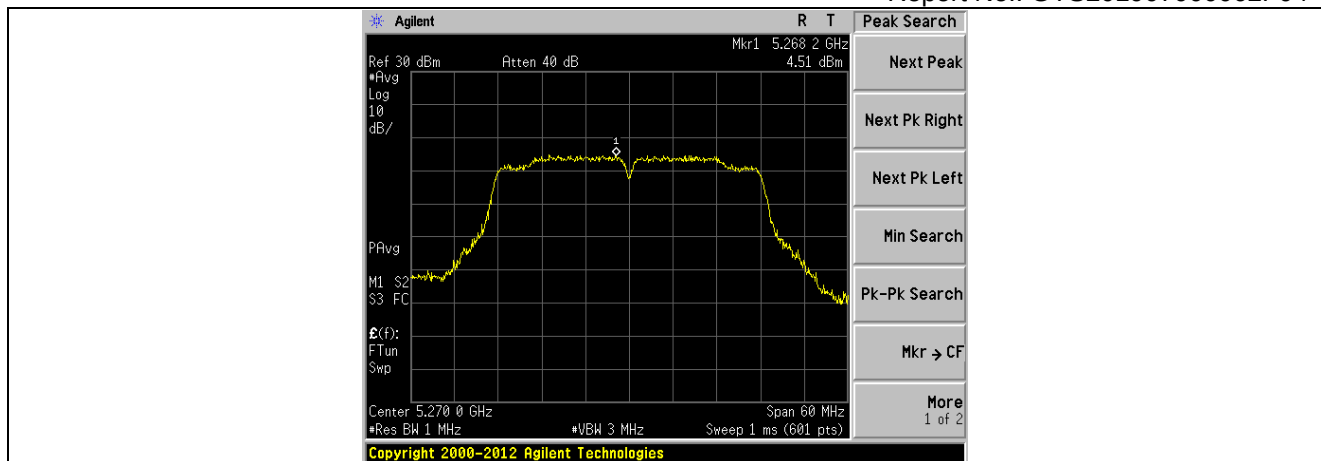


Channel 102 (5510MHz)

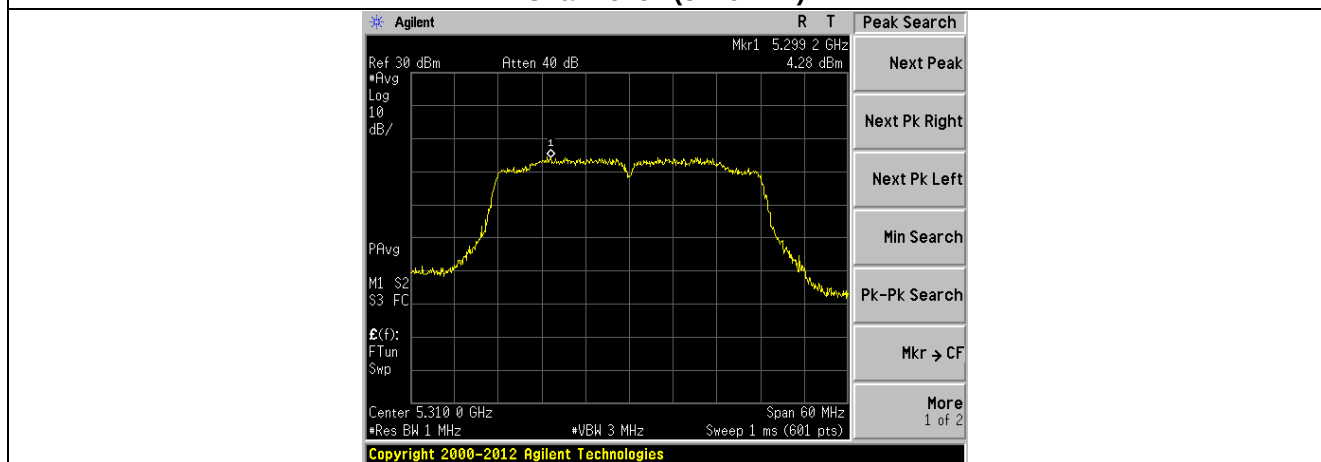


Channel 110 (5550MHz)

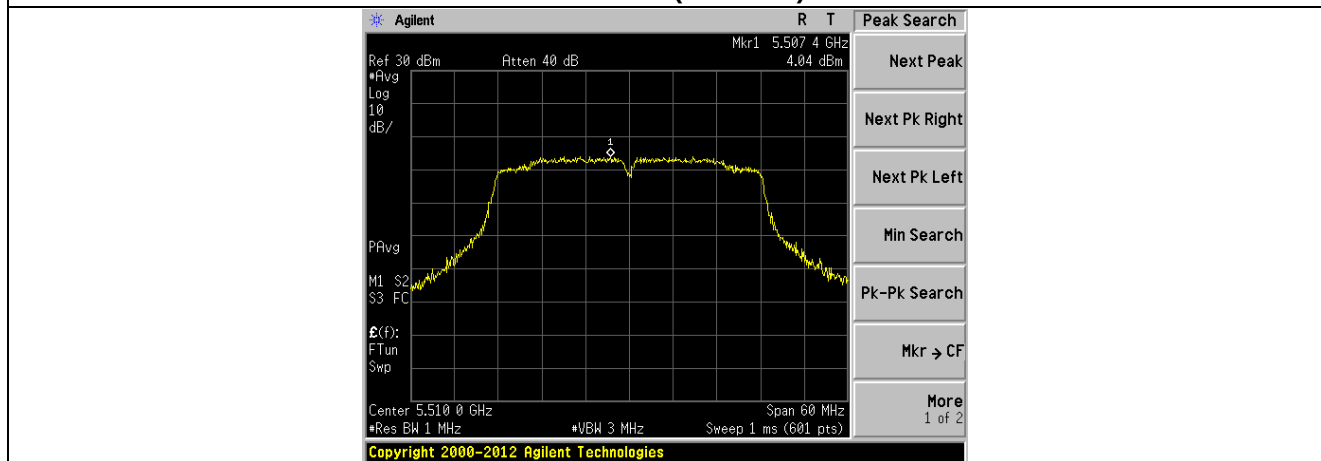




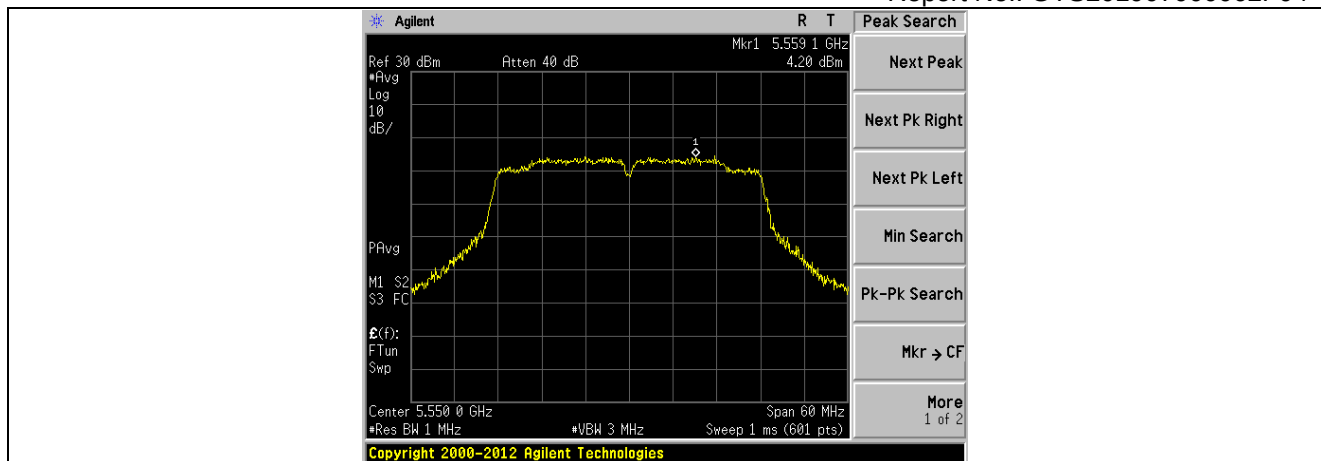
Channel 54 (5270MHz)



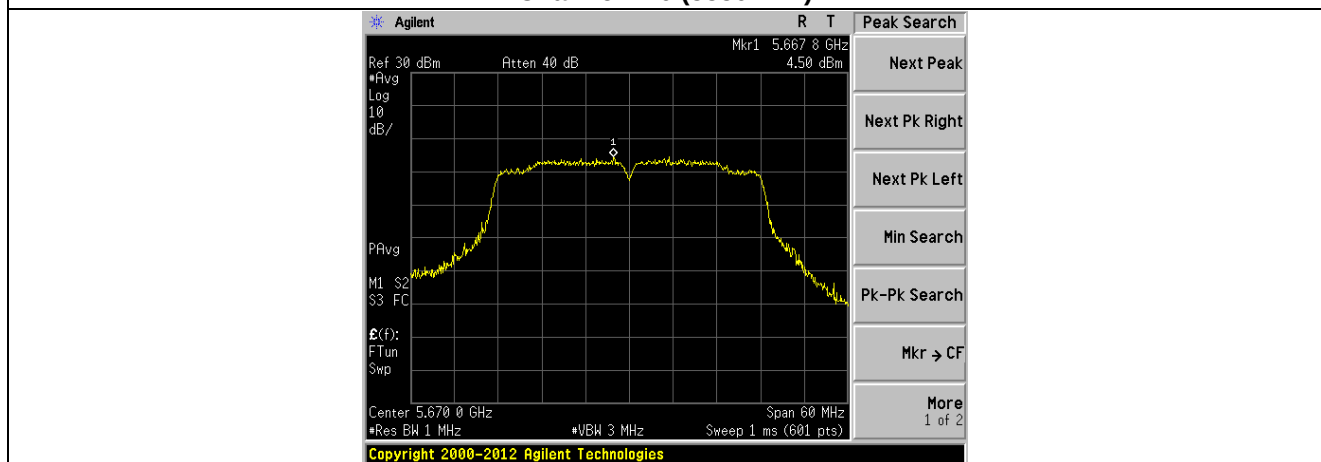
Channel 62 (5310MHz)



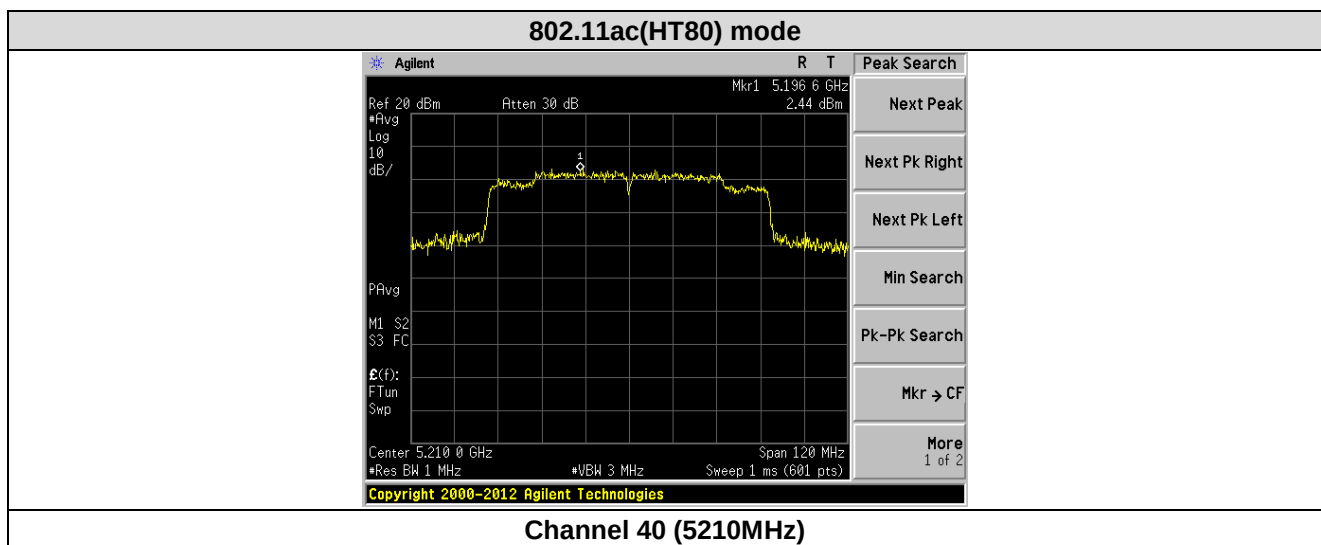
Channel 102 (5510MHz)



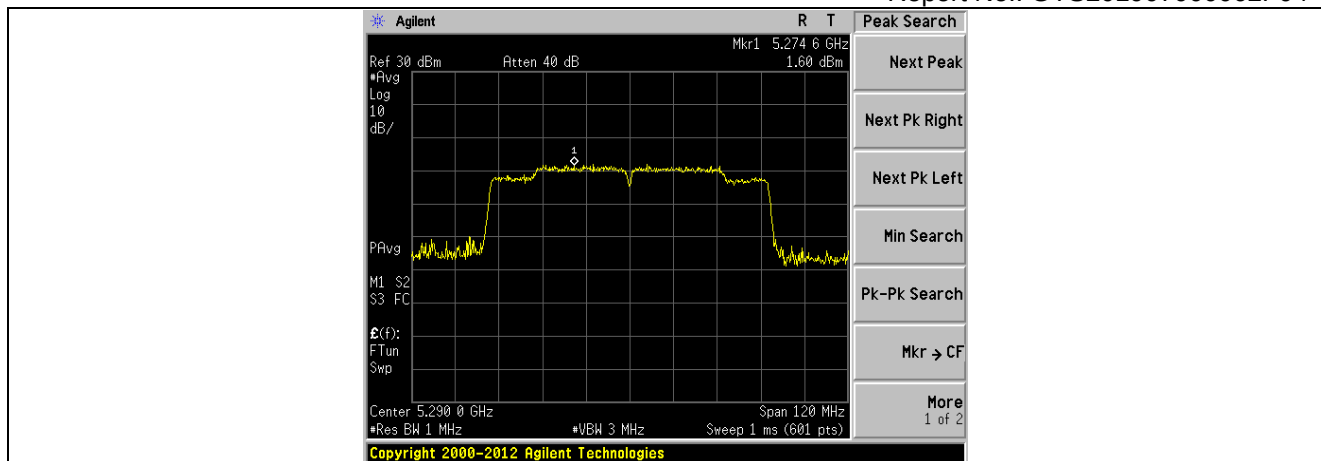
Channel 110 (5550MHz)



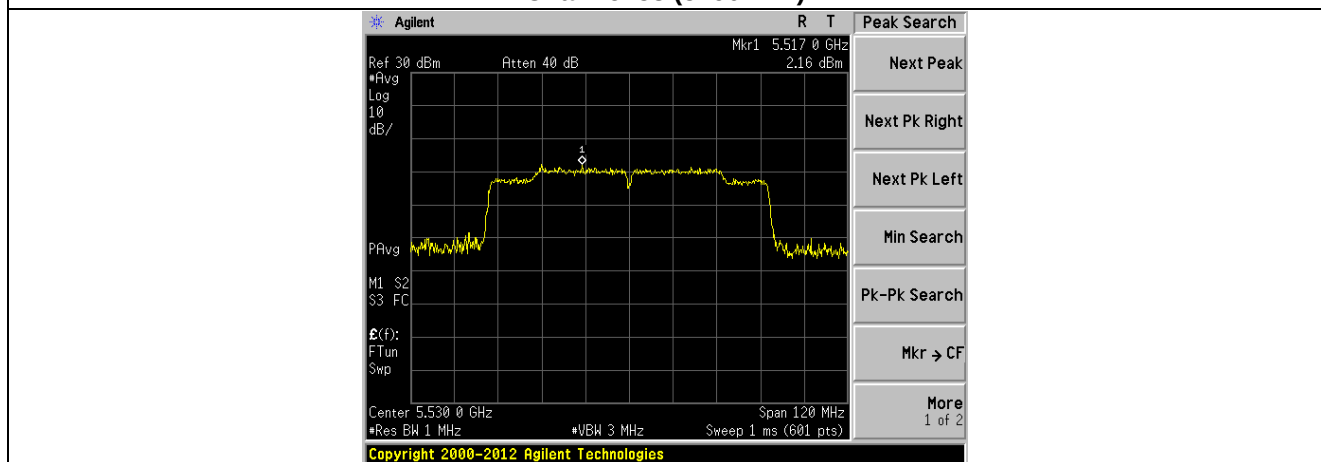
Channel 134 (5670MHz)



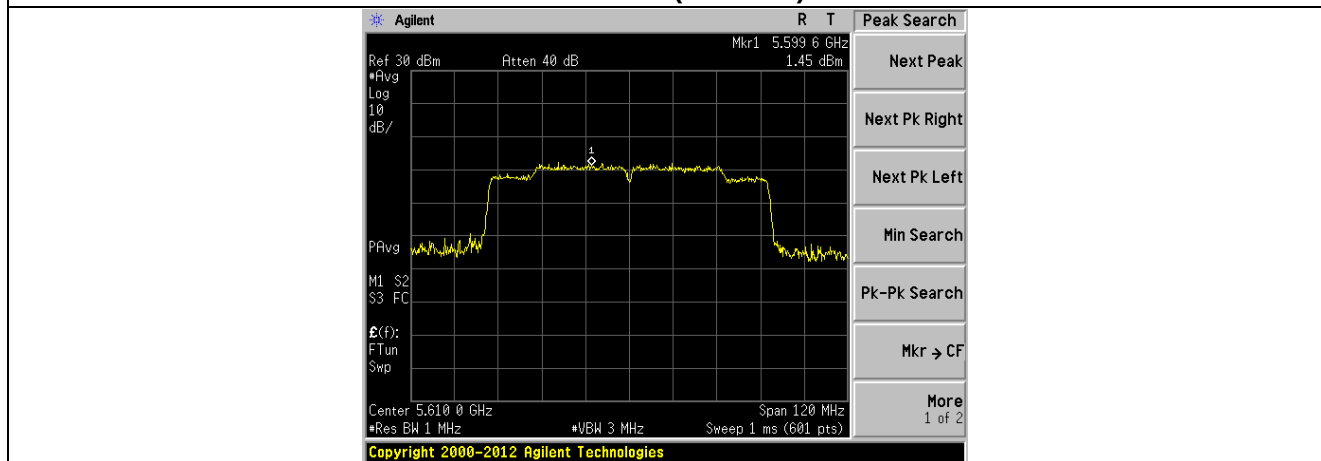
Channel 40 (5210MHz)



Channel 58 (5290MHz)

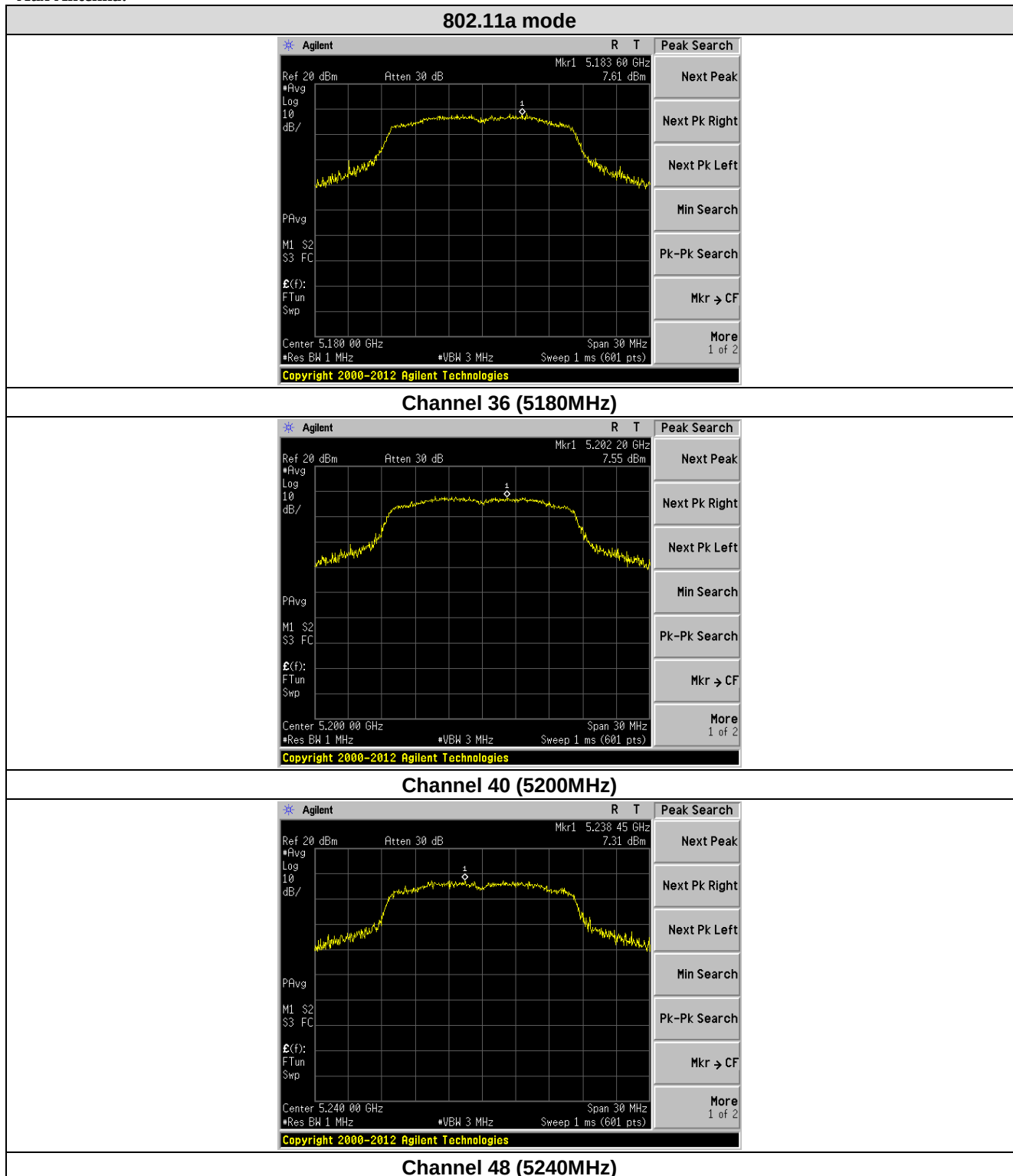


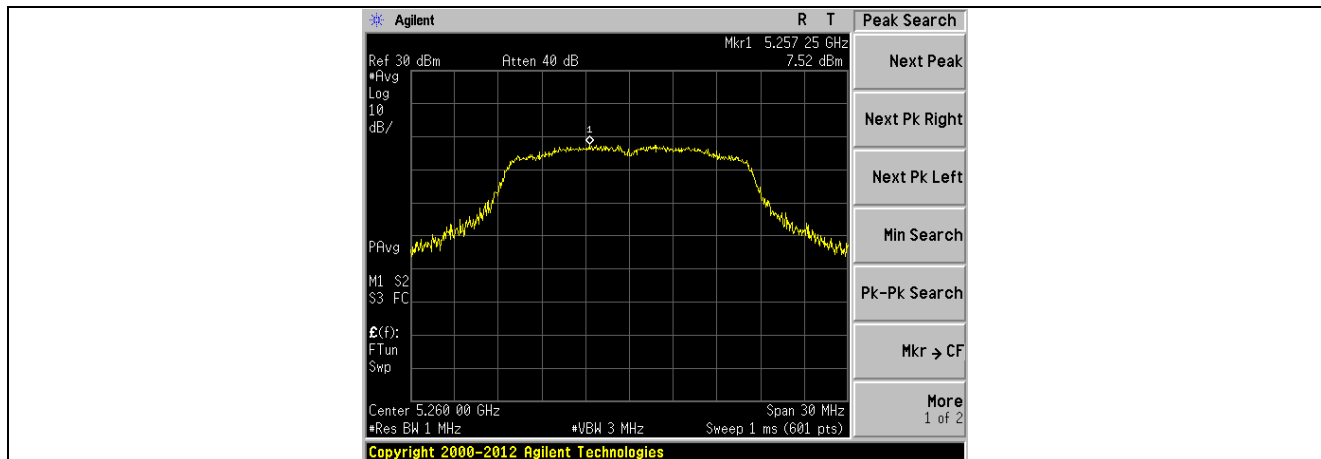
Channel 58 (5530MHz)



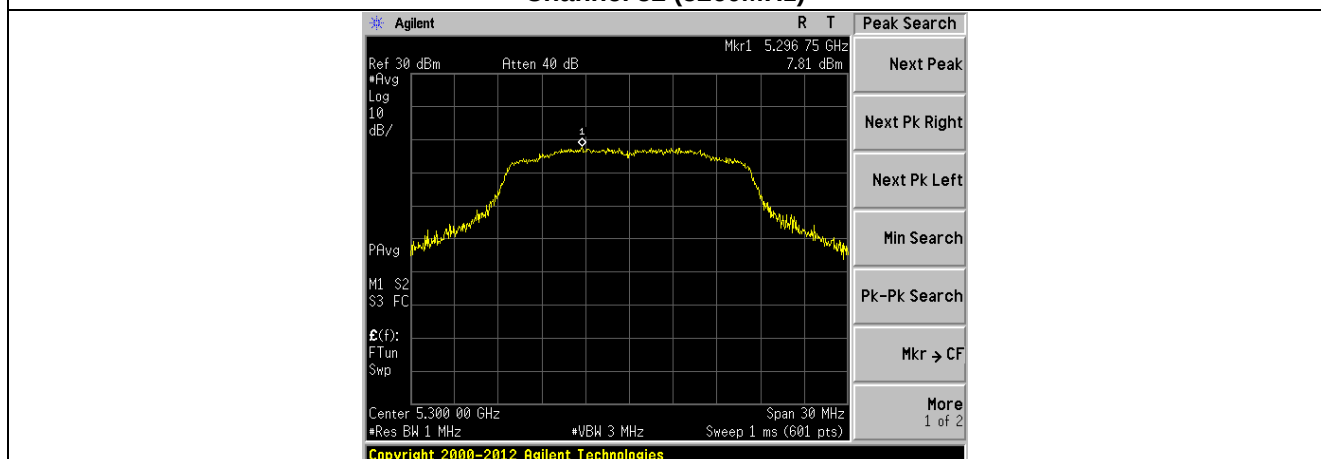
Channel 58 (5610MHz)

Aux Antenna:

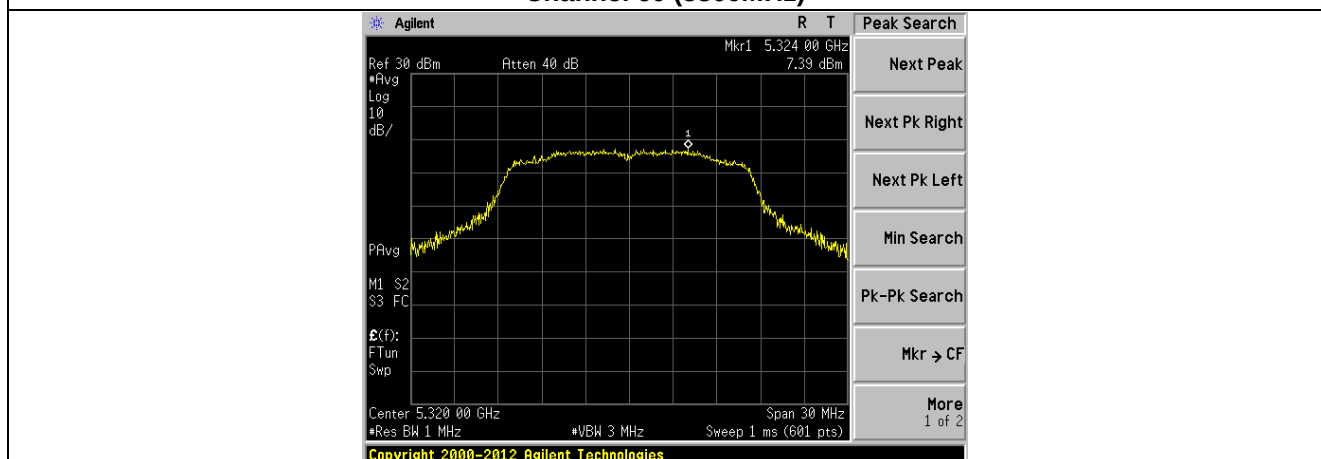




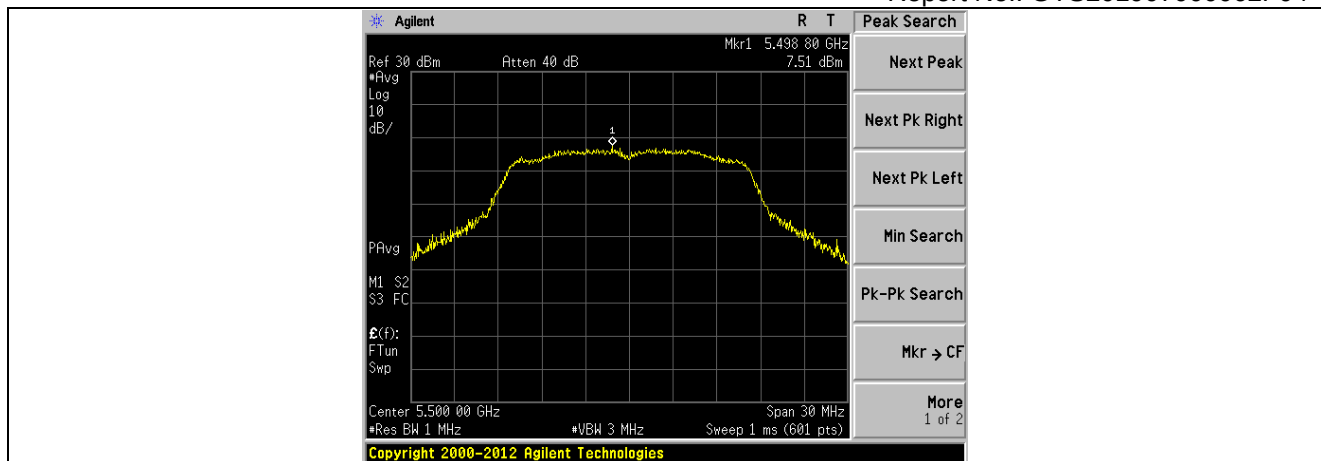
Channel 52 (5260MHz)



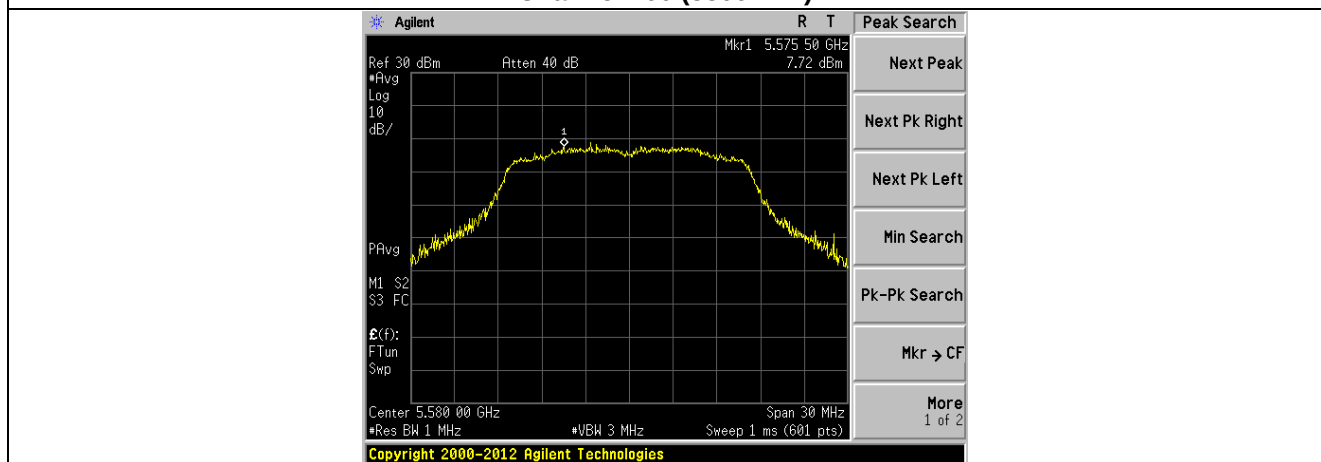
Channel 60 (5300MHz)



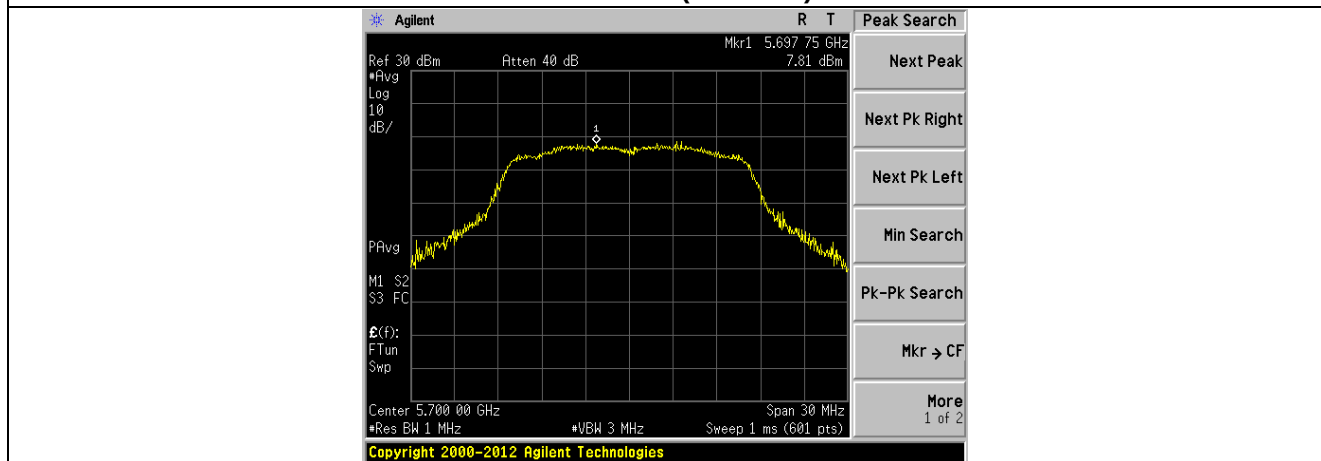
Channel 64 (5320MHz)



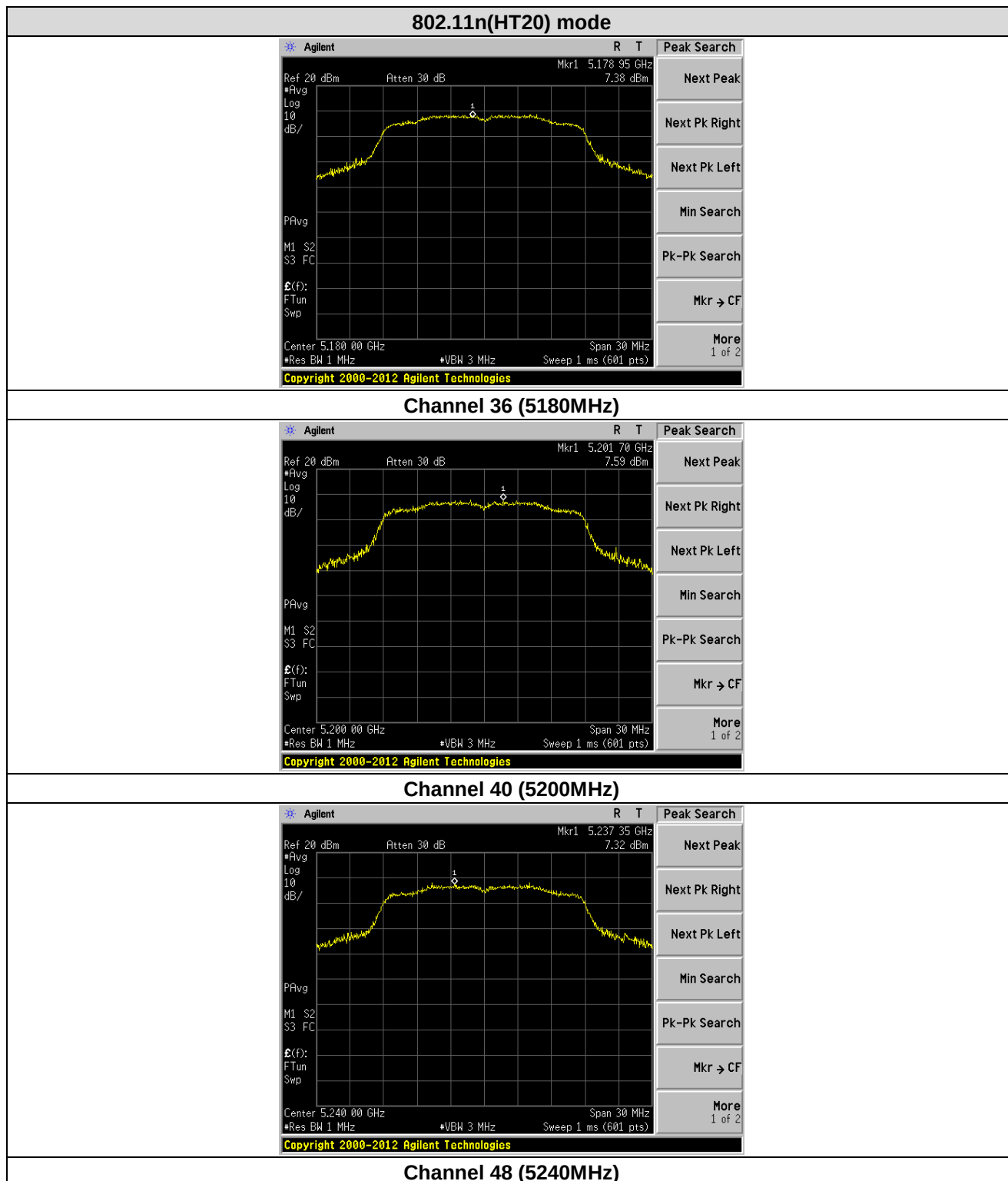
Channel 100 (5500MHz)

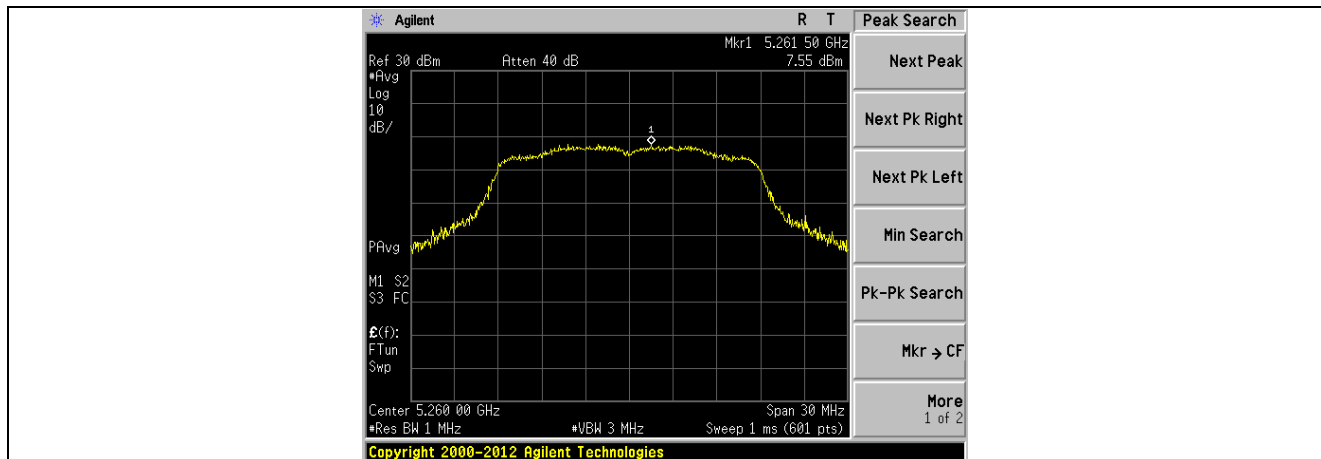


Channel 116 (5580MHz)

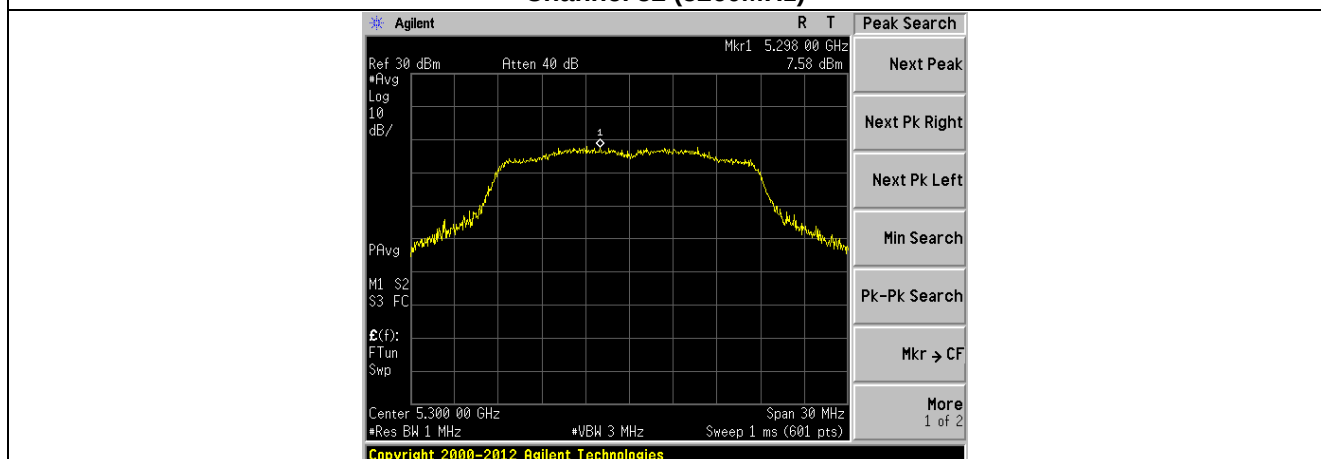


Channel 140 (5700MHz)

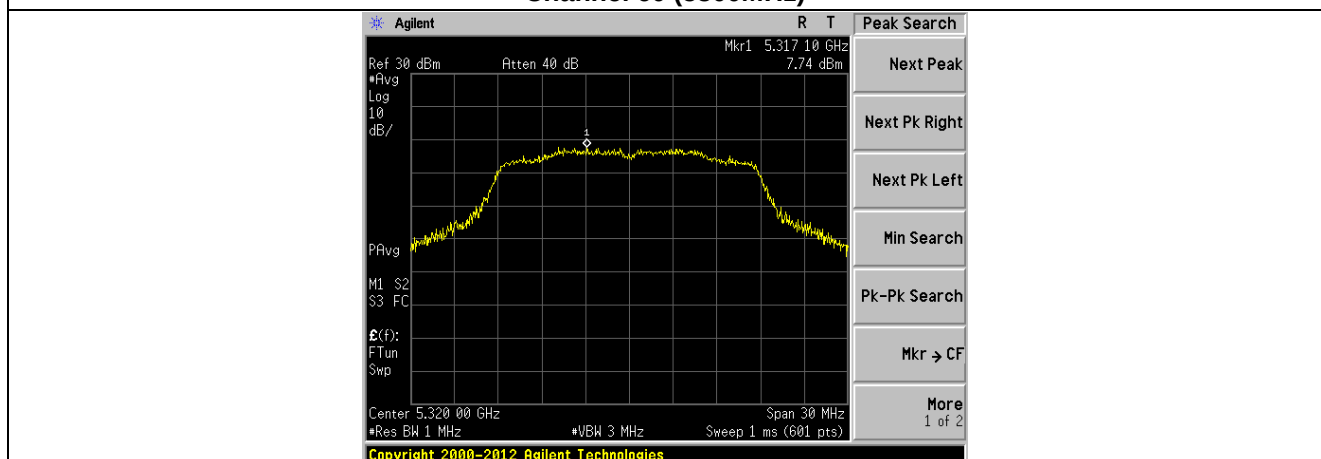




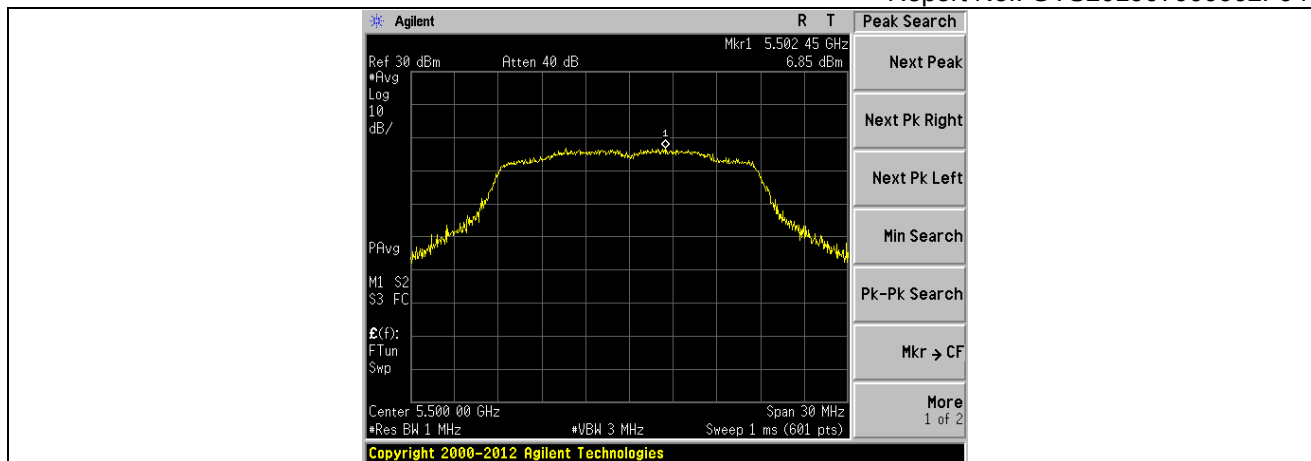
Channel 52 (5260MHz)



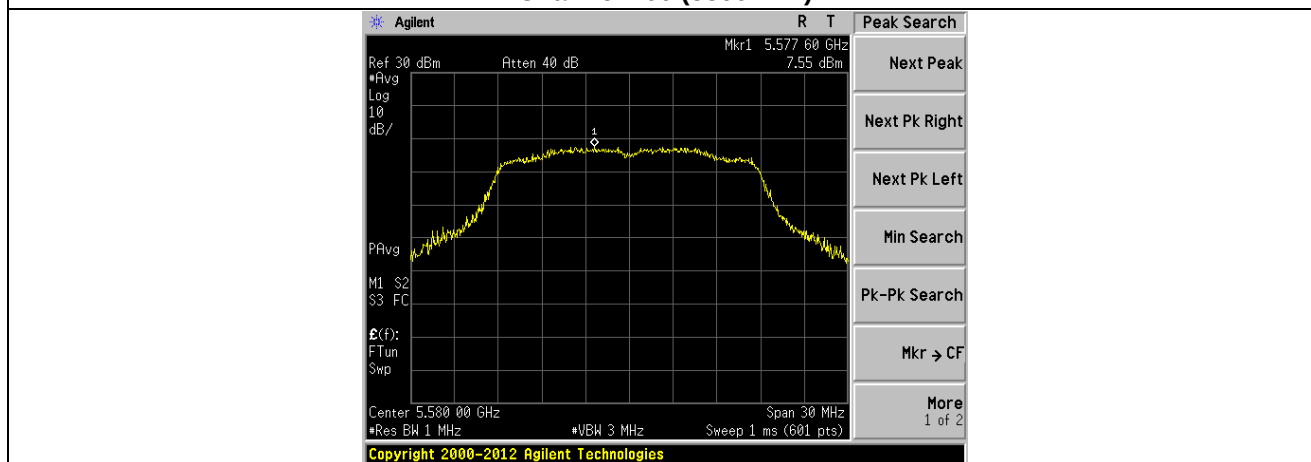
Channel 60 (5300MHz)



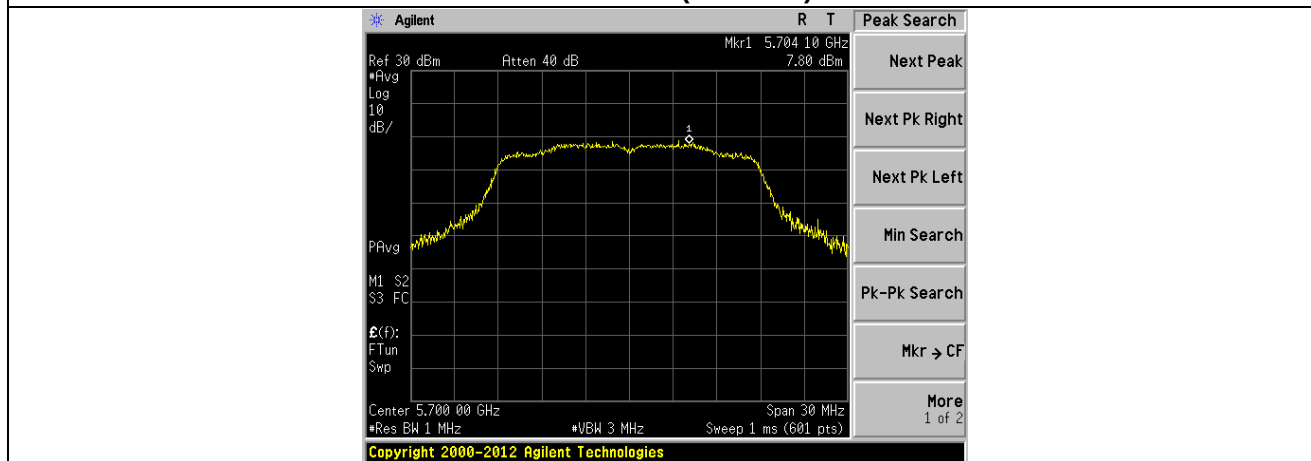
Channel 64 (5320MHz)



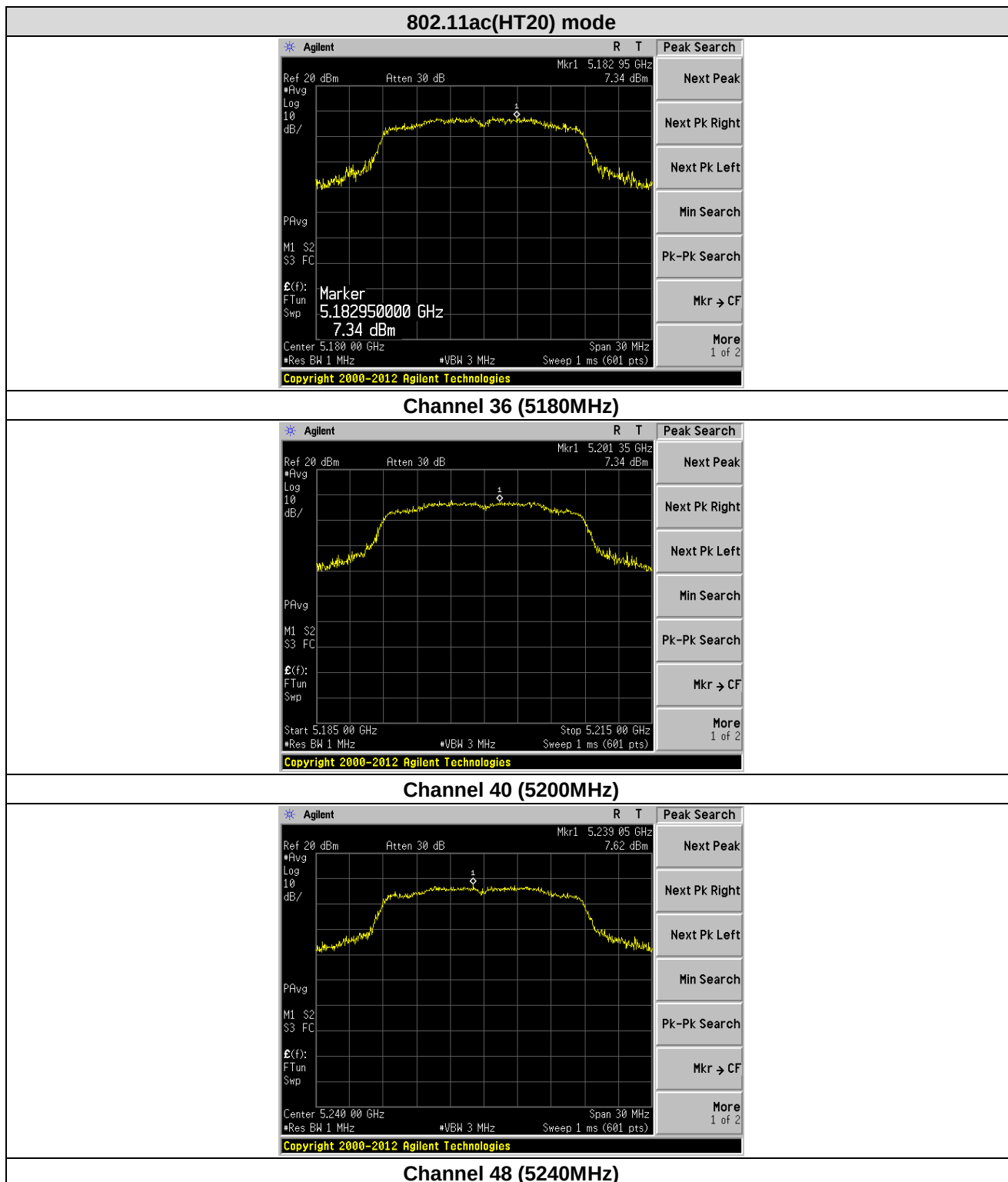
Channel 100 (5500MHz)

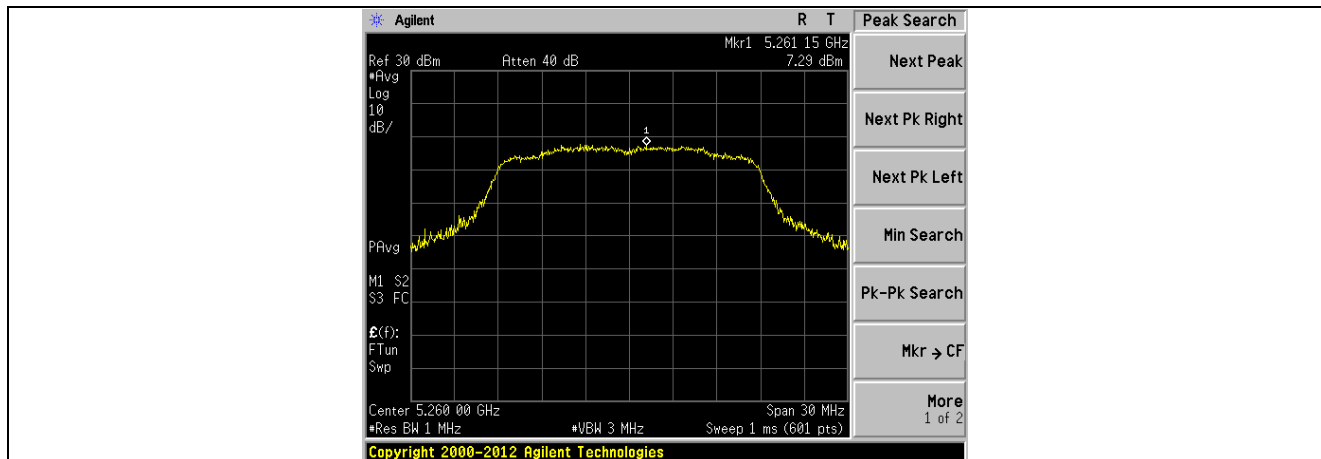


Channel 116 (5580MHz)

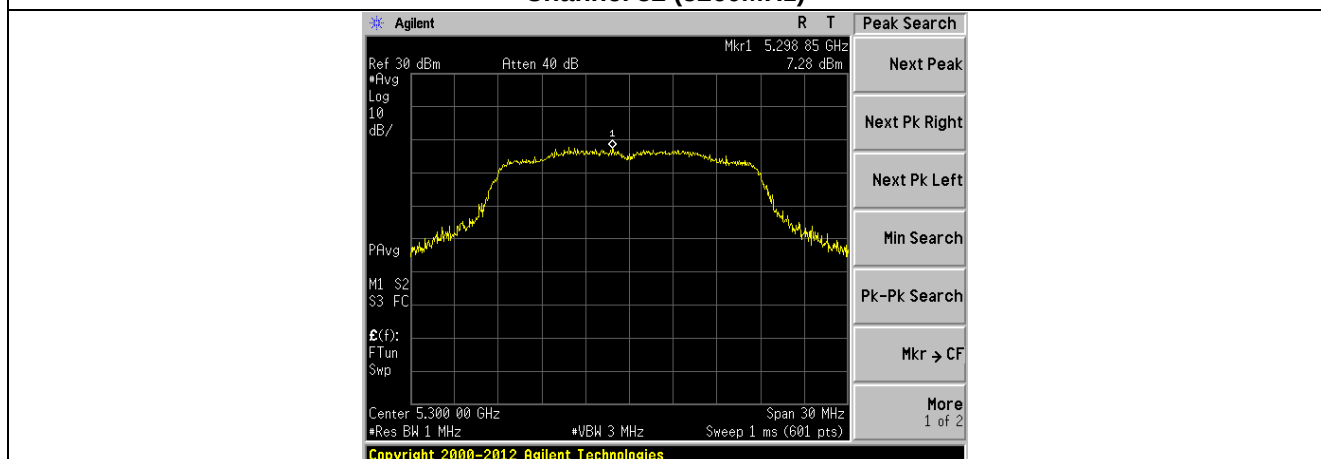


Channel 140 (5700MHz)

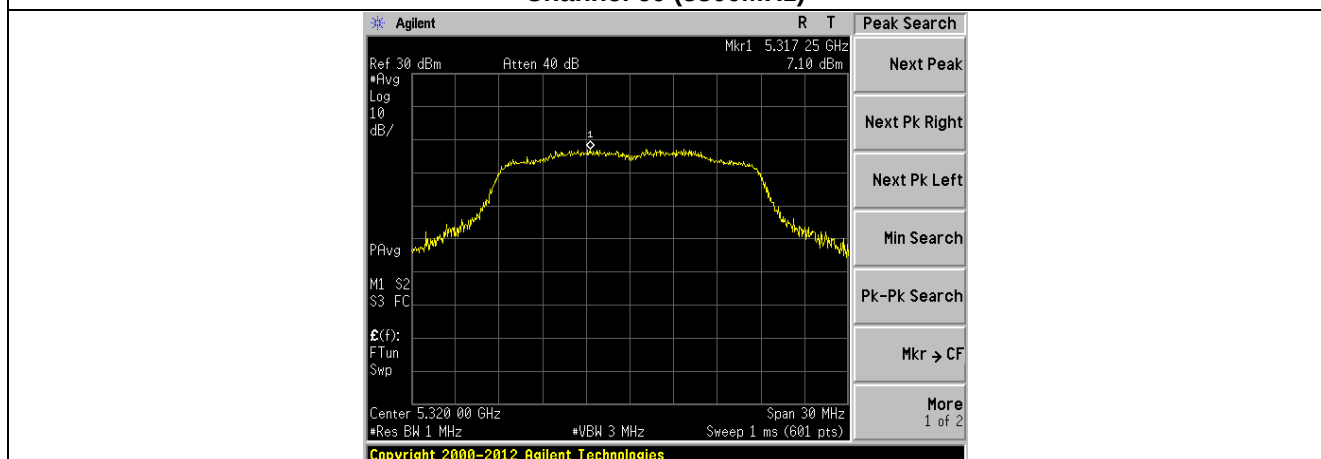




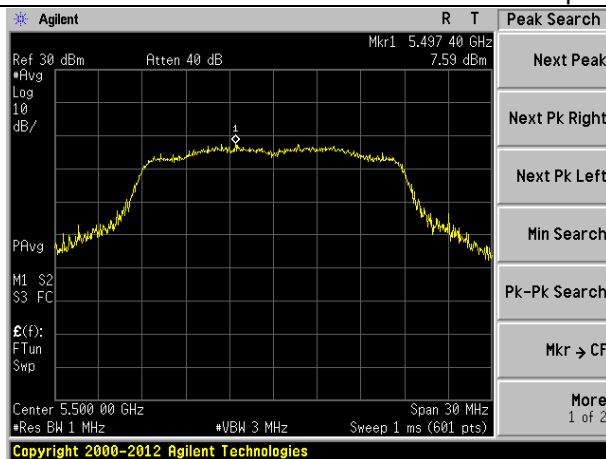
Channel 52 (5260MHz)



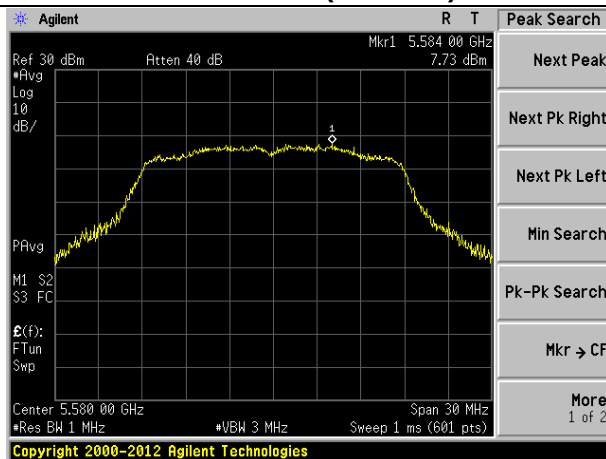
Channel 60 (5300MHz)



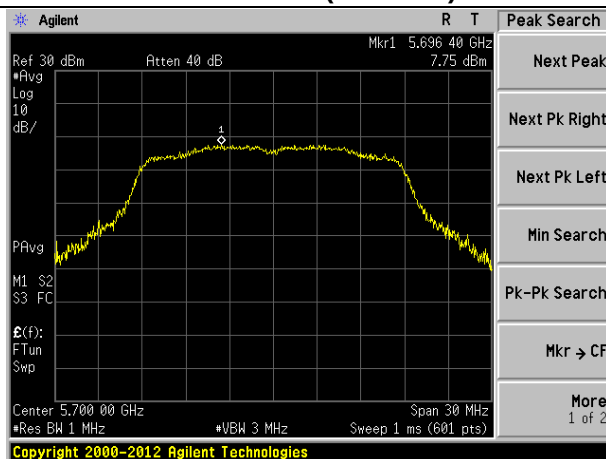
Channel 64 (5320MHz)



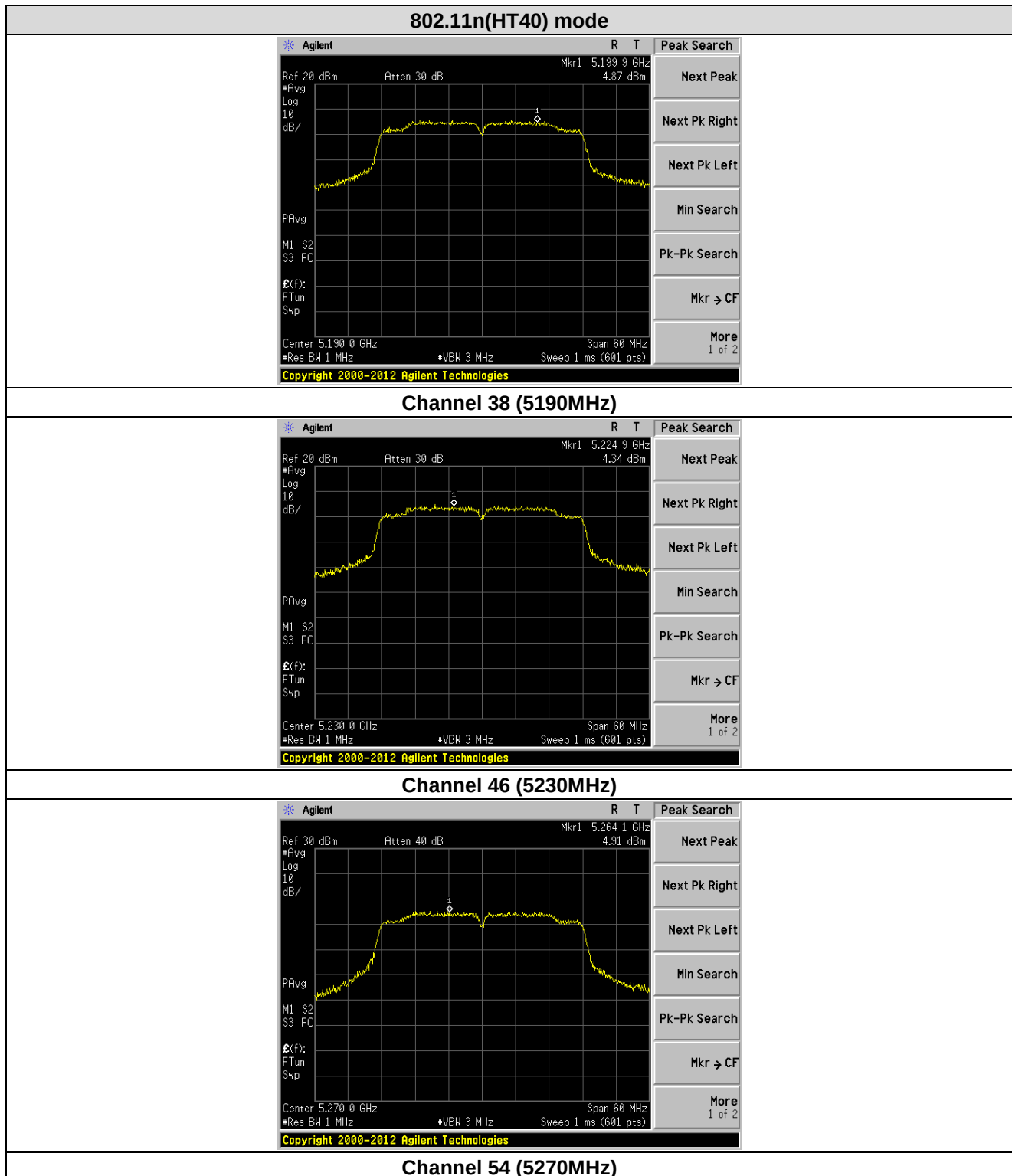
Channel 100 (5500MHz)

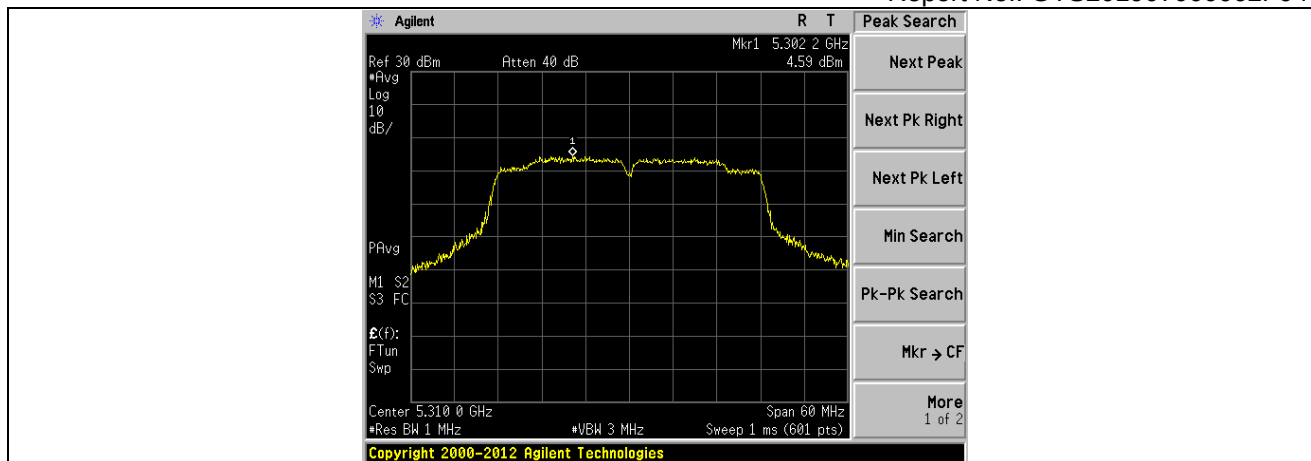


Channel 116 (5580MHz)

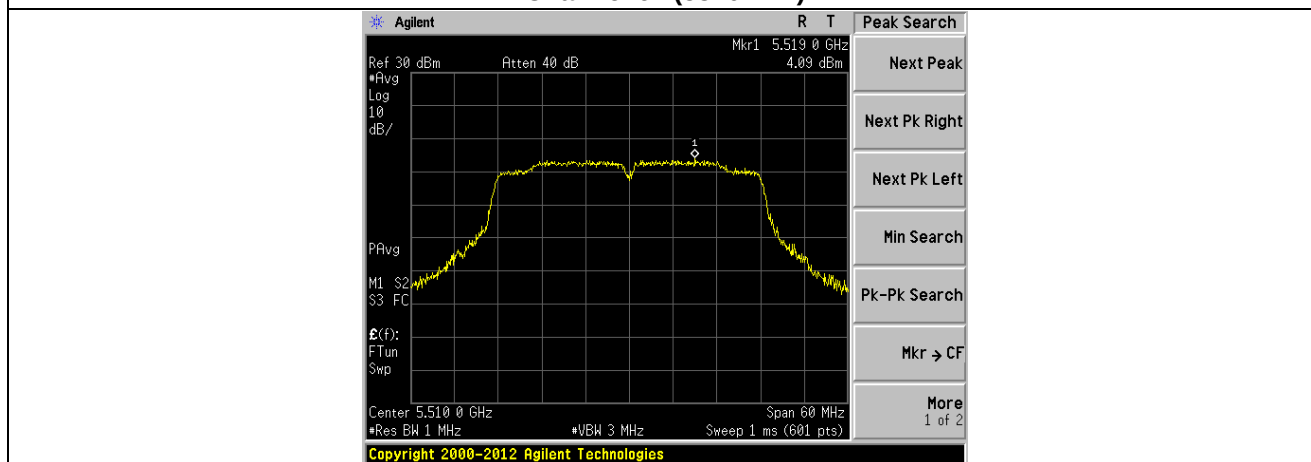


Channel 140 (5700MHz)

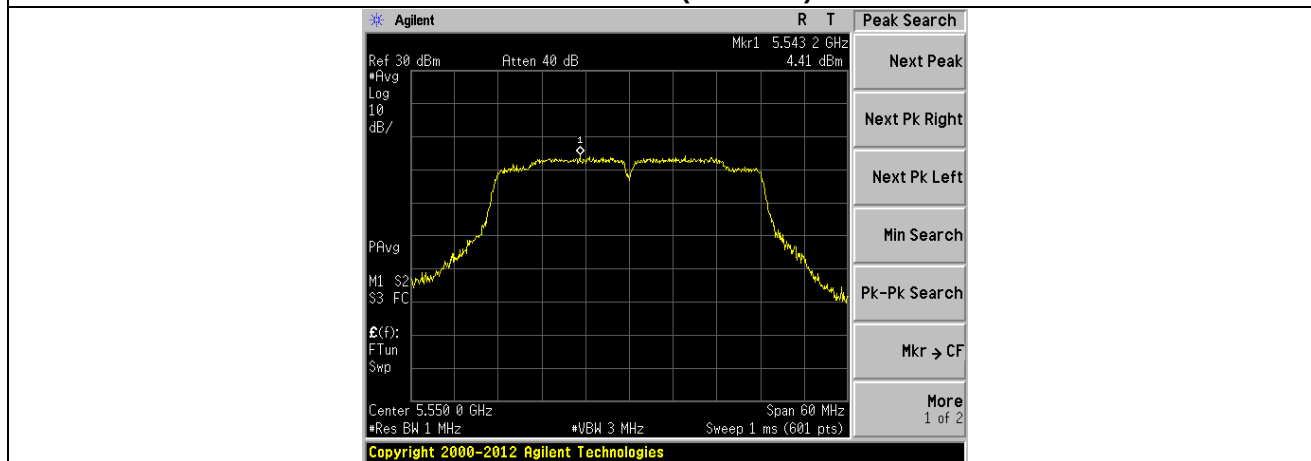




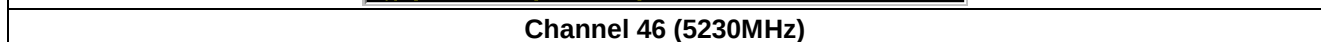
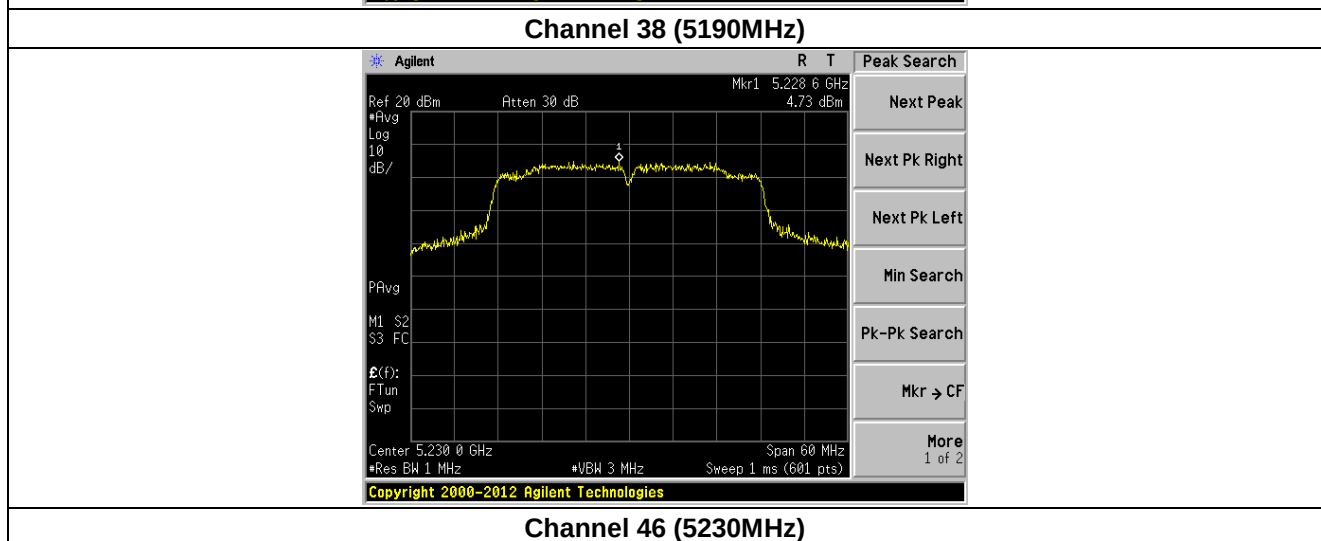
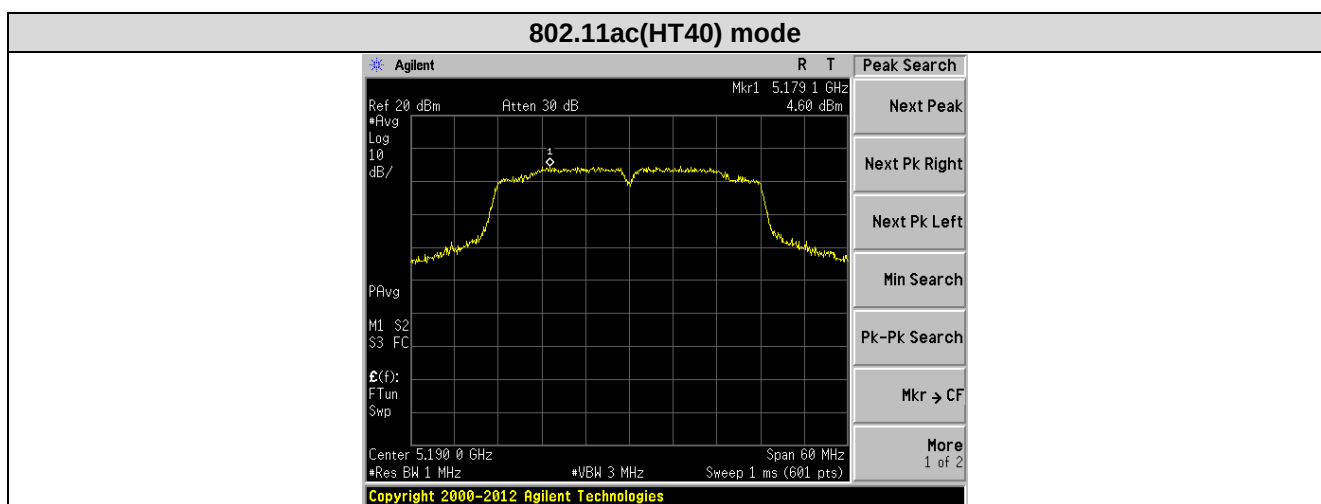
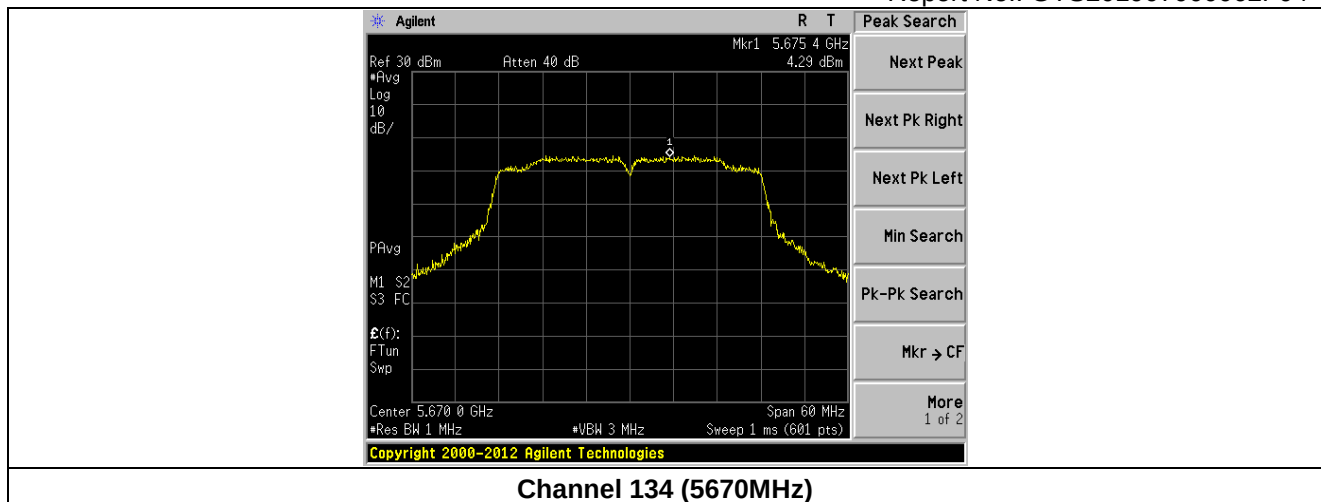
Channel 62 (5310MHz)

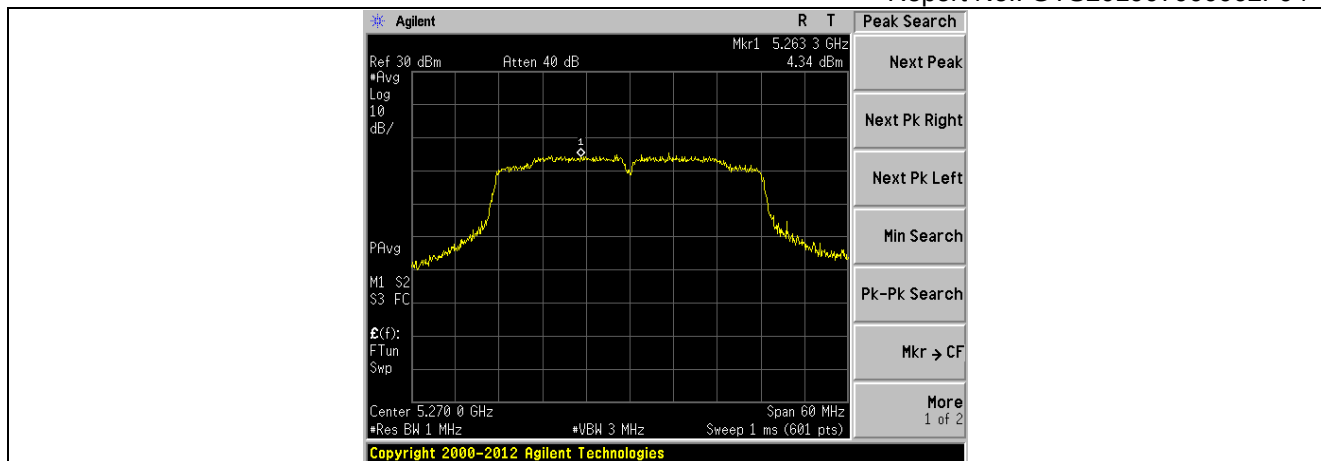


Channel 102 (5510MHz)

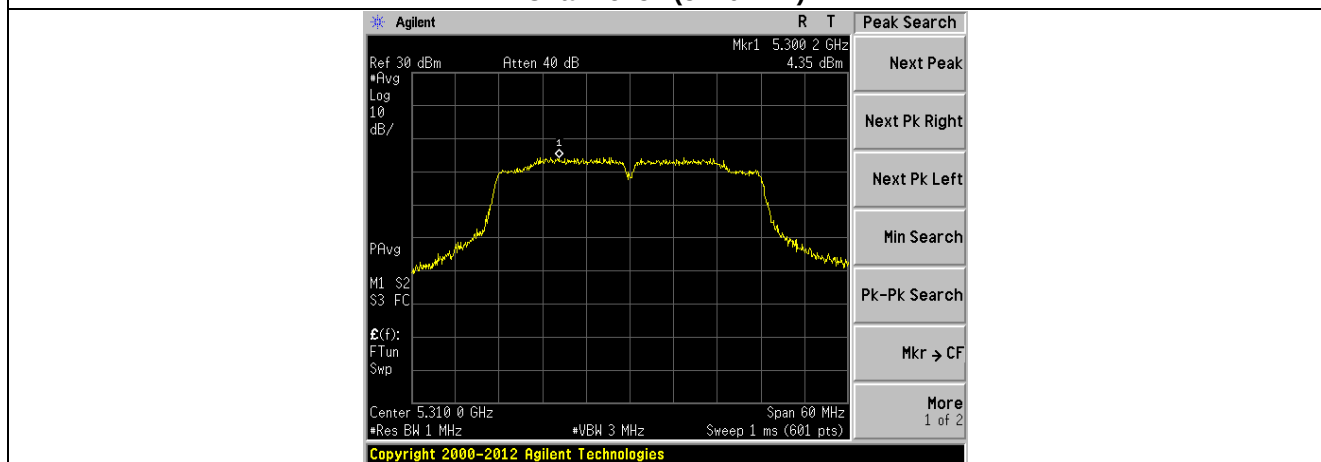


Channel 110 (5550MHz)

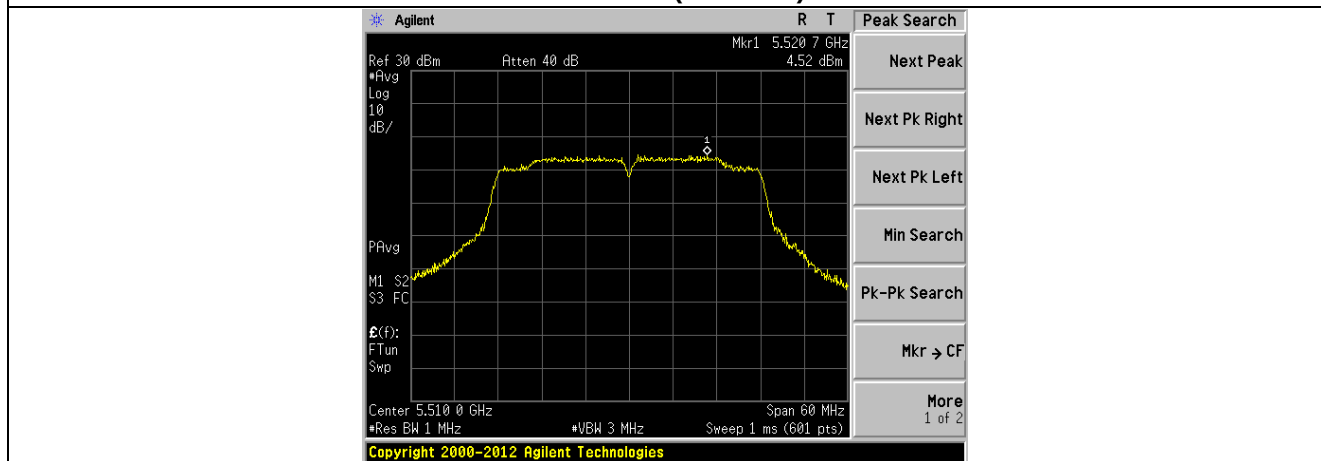




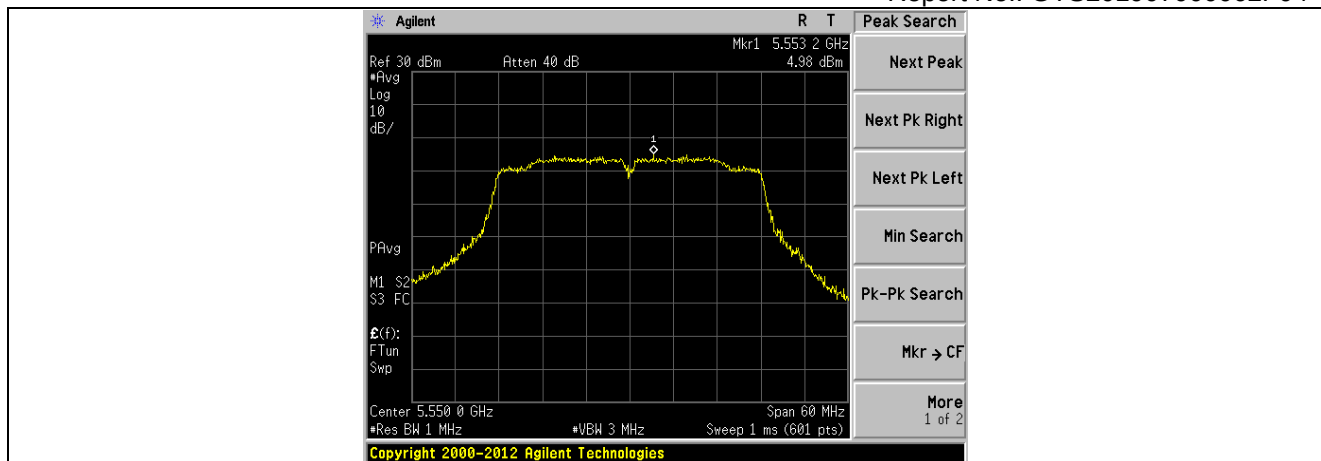
Channel 54 (5270MHz)



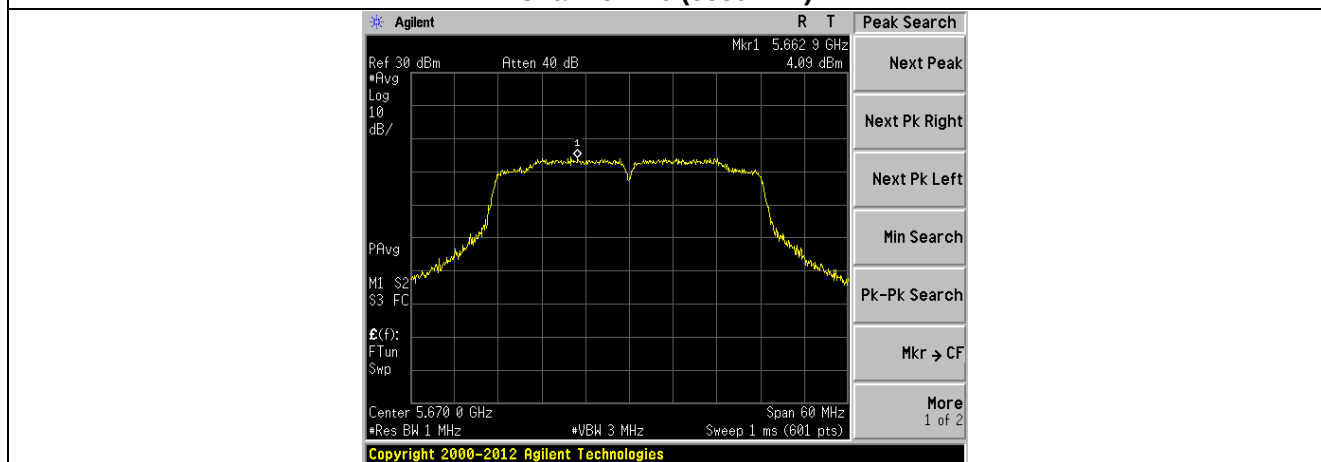
Channel 62 (5310MHz)



Channel 102 (5510MHz)

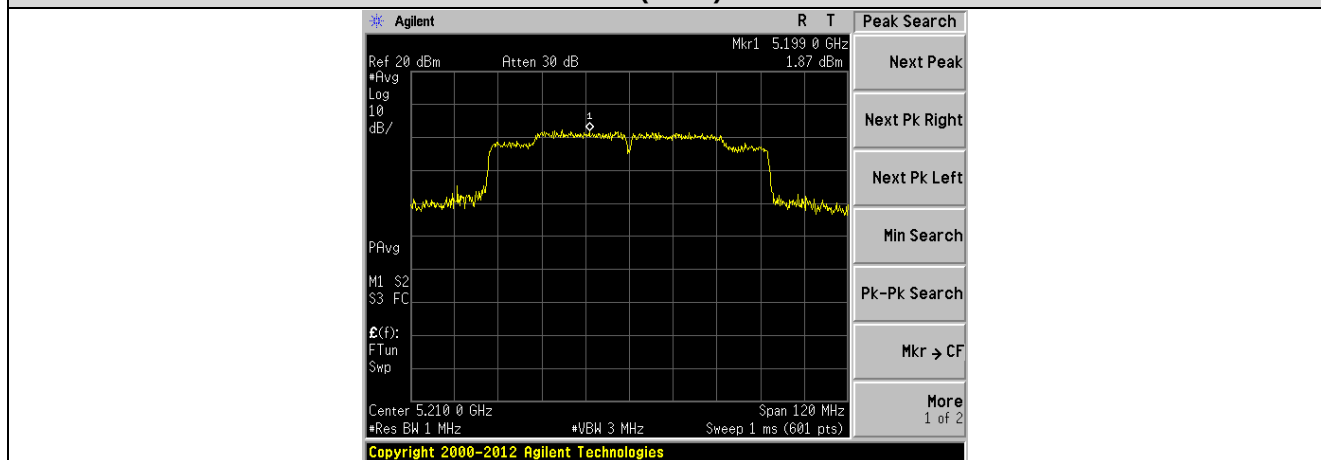


Channel 110 (5550MHz)

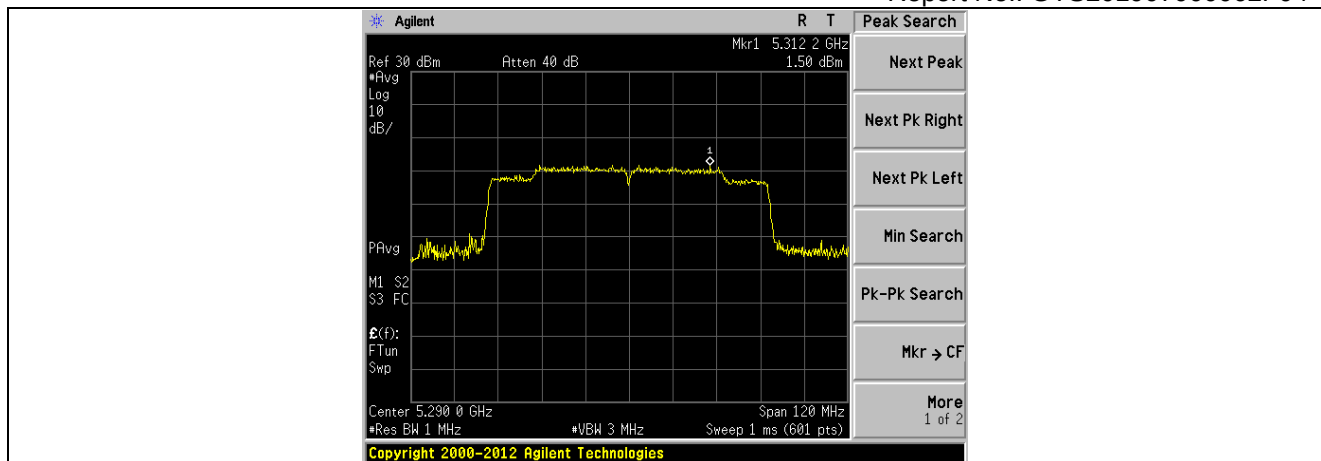


Channel 134 (5670MHz)

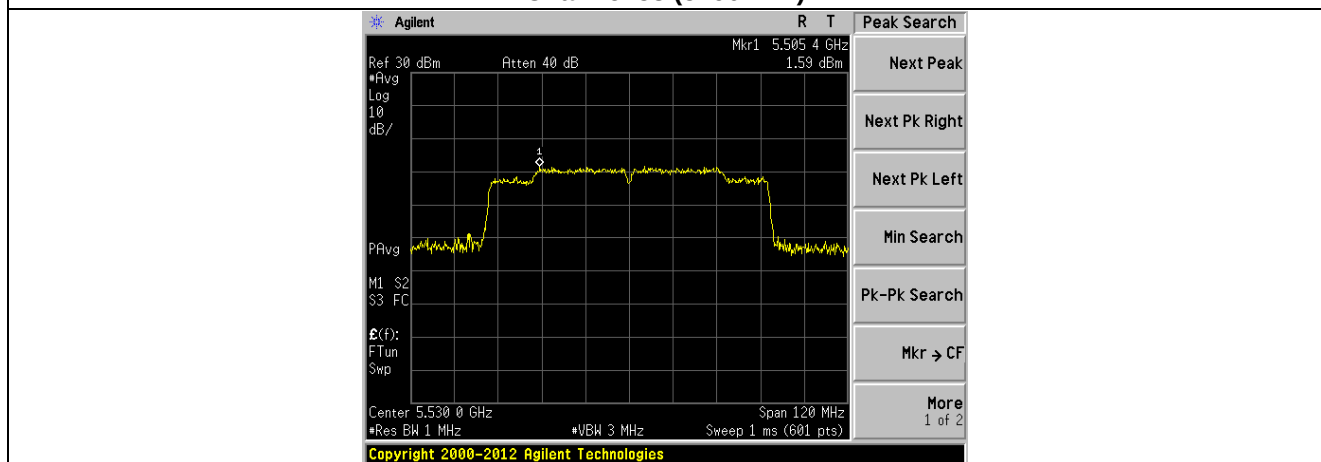
802.11ac(HT80) mode



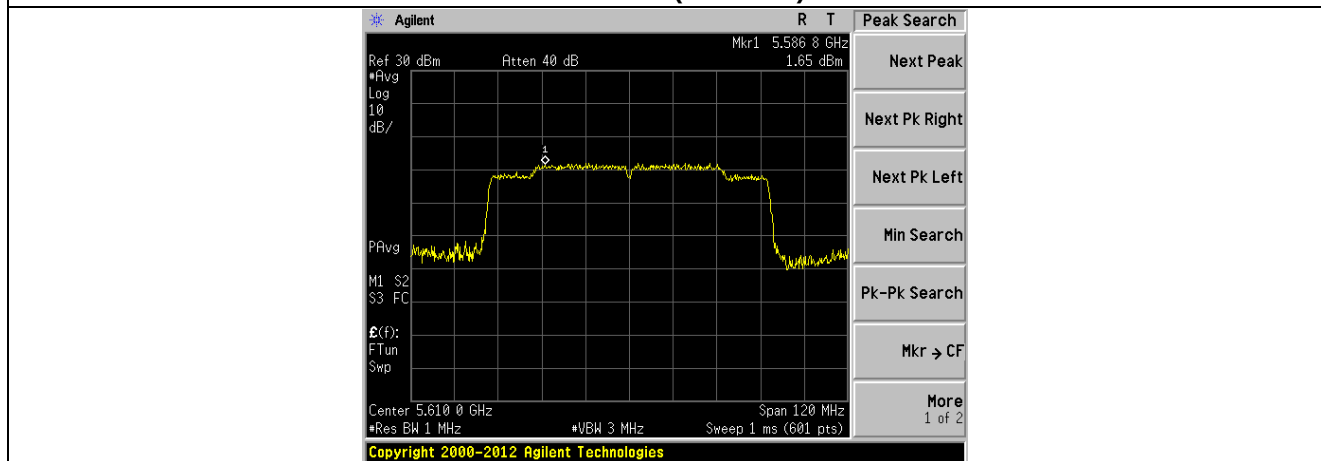
Channel 40 (5210MHz)



Channel 58 (5290MHz)



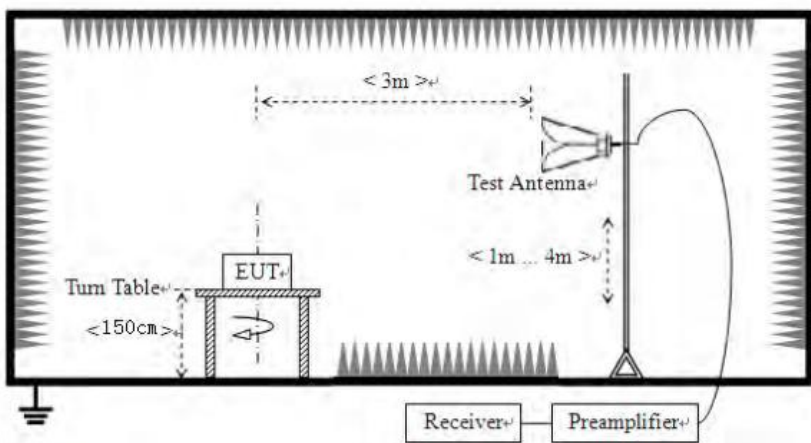
Channel 58 (5530MHz)



Channel 58 (5610MHz)

7.6 Band Edge

Test Requirement:	47 CFR Part 15, Subpart C 15.205 & Subpart E 15.407(b)																								
Test Method:	ANSI C63.10:2013																								
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)																								
Receiver setup:	<table><tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></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>					Frequency	Detector	RBW	VBW	Remark	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value	Above 1GHz	Peak	1MHz	3MHz	Peak Value	AV	1MHz	3MHz	Average Value	
Frequency	Detector	RBW	VBW	Remark																					
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value																					
Above 1GHz	Peak	1MHz	3MHz	Peak Value																					
	AV	1MHz	3MHz	Average Value																					
Limit:	<table><tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></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.					Frequency	Limit (dBuV/m @3m)	Remark	30MHz-88MHz	40.0	Quasi-peak Value	88MHz-216MHz	43.5	Quasi-peak Value	216MHz-960MHz	46.0	Quasi-peak Value	960MHz-1GHz	54.0	Quasi-peak Value	Above 1GHz	54.0	Average Value	68.2	Peak Value
Frequency	Limit (dBuV/m @3m)	Remark																							
30MHz-88MHz	40.0	Quasi-peak Value																							
88MHz-216MHz	43.5	Quasi-peak Value																							
216MHz-960MHz	46.0	Quasi-peak Value																							
960MHz-1GHz	54.0	Quasi-peak Value																							
Above 1GHz	54.0	Average Value																							
	68.2	Peak Value																							
Test Procedure:	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 rotatable 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																								

	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:	Above 1GHz 
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *Two antennas are tested, only the worst case's (Main Antenna) data was showed.*
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 D02v02r01 section G) 1) d), for measurements above 1000 MHz @3m distance, the limit of field strength is computed as follows:*

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2;$$
For example, if EIRP = -27dBm

$$E[\text{dBuV/m}] = -27 + 95.2 = 68.2\text{dBuV/m}.$$

Measurement Data:

Band I & Band II-A & Band II-C

<i>IEEE 802.11a</i>								
Peak value:								
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	46.77	32.07	8.99	37.49	50.34	68.20	-17.86	Horizontal
5350.00	47.42	31.75	9.29	37.20	51.26	68.20	-16.94	Horizontal
5470.00	47.83	31.95	9.56	36.95	52.39	68.20	-15.81	Horizontal
5725.00	46.95	32.53	9.83	35.86	53.45	68.20	-14.75	Horizontal
5150.00	45.93	32.07	8.99	37.49	49.50	68.20	-18.70	Vertical
5350.00	47.19	31.75	9.29	37.20	51.03	68.20	-17.17	Vertical
5470.00	47.35	31.95	9.56	36.95	51.91	68.20	-16.29	Vertical
5725.00	46.31	32.53	9.83	35.86	52.81	68.20	-15.39	Vertical

<i>IEEE 802.11a</i>								
Average value:								
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	42.69	32.07	8.99	37.49	46.26	54.00	-7.74	Horizontal
5350.00	38.22	31.75	9.29	37.20	42.06	54.00	-11.94	Horizontal
5470.00	40.52	31.95	9.56	36.95	45.08	54.00	-8.92	Horizontal
5725.00	41.23	32.53	9.83	35.86	47.73	54.00	-6.27	Horizontal
5150.00	38.33	32.07	8.99	37.49	41.90	54.00	-12.10	Vertical
5350.00	38.86	31.75	9.29	37.20	42.70	54.00	-11.30	Vertical
5470.00	39.86	31.95	9.56	36.95	44.42	54.00	-9.58	Vertical
5725.00	38.55	32.53	9.83	35.86	45.05	54.00	-8.95	Vertical

<i>IEEE 802.11n HT20</i>								
Peak value:								
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	45.36	32.07	8.99	37.49	48.93	68.20	-19.27	Horizontal
5350.00	46.83	31.75	9.29	37.20	50.67	68.20	-17.53	Horizontal
5470.00	46.98	31.95	9.56	36.95	51.54	68.20	-16.66	Horizontal
5725.00	45.08	32.53	9.83	35.86	51.58	68.20	-16.62	Horizontal
5150.00	47.61	32.07	8.99	37.49	51.18	68.20	-17.02	Vertical
5350.00	46.34	31.75	9.29	37.20	50.18	68.20	-18.02	Vertical
5470.00	48.15	31.95	9.56	36.95	52.71	68.20	-15.49	Vertical
5725.00	47.45	32.53	9.83	35.86	53.95	68.20	-14.25	Vertical

<i>IEEE 802.11n HT20</i>								
Average value:								
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	42.58	32.07	8.99	37.49	46.15	54.00	-7.85	Horizontal
5350.00	40.95	31.75	9.29	37.20	44.79	54.00	-9.21	Horizontal
5470.00	40.42	31.95	9.56	36.95	44.98	54.00	-9.02	Horizontal
5725.00	41.86	32.53	9.83	35.86	48.36	54.00	-5.64	Horizontal
5150.00	39.21	32.07	8.99	37.49	42.78	54.00	-11.22	Vertical
5350.00	40.36	31.75	9.29	37.20	44.20	54.00	-9.80	Vertical
5470.00	41.05	31.95	9.56	36.95	45.61	54.00	-8.39	Vertical
5725.00	40.11	32.53	9.83	35.86	46.61	54.00	-7.39	Vertical

<i>IEEE 802.11ac HT20</i>								
Peak value:								
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	47.06	32.07	8.99	37.49	50.63	68.20	-17.57	Horizontal
5350.00	47.24	31.75	9.29	37.20	51.08	68.20	-17.12	Horizontal
5470.00	45.39	31.95	9.56	36.95	49.95	68.20	-18.25	Horizontal
5725.00	47.88	32.53	9.83	35.86	54.38	68.20	-13.82	Horizontal
5150.00	46.37	32.07	8.99	37.49	49.94	68.20	-18.26	Vertical
5350.00	48.32	31.75	9.29	37.20	52.16	68.20	-16.04	Vertical
5470.00	47.10	31.95	9.56	36.95	51.66	68.20	-16.54	Vertical
5725.00	47.56	32.53	9.83	35.86	54.06	68.20	-14.14	Vertical

<i>IEEE 802.11ac HT20</i>								
Average value:								
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	44.44	32.07	8.99	37.49	44.44	54.00	-9.56	Horizontal
5350.00	43.96	31.75	9.29	37.20	43.96	54.00	-10.04	Horizontal
5470.00	45.61	31.95	9.56	36.95	45.61	54.00	-8.39	Horizontal
5725.00	46.89	32.53	9.83	35.86	46.89	54.00	-7.11	Horizontal
5150.00	44.28	32.07	8.99	37.49	44.28	54.00	-9.72	Vertical
5350.00	43.49	31.75	9.29	37.20	43.49	54.00	-10.51	Vertical
5470.00	44.64	31.95	9.56	36.95	44.64	54.00	-9.36	Vertical
5725.00	47.73	32.53	9.83	35.86	47.73	54.00	-6.27	Vertical

<i>IEEE 802.11n HT40</i>								
Peak value:								
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	47.49	32.07	8.99	37.49	51.06	68.20	-17.14	Horizontal
5350.00	47.70	31.75	9.29	37.20	51.54	68.20	-16.66	Horizontal
5470.00	47.36	31.95	9.56	36.95	51.92	68.20	-16.28	Horizontal
5725.00	46.56	32.53	9.83	35.86	53.06	68.20	-15.14	Horizontal
5150.00	46.90	32.07	8.99	37.49	50.47	68.20	-17.73	Vertical
5350.00	47.07	31.75	9.29	37.20	50.91	68.20	-17.29	Vertical
5470.00	47.33	31.95	9.56	36.95	51.89	68.20	-16.31	Vertical
5725.00	46.52	32.53	9.83	35.86	53.02	68.20	-15.18	Vertical

<i>IEEE 802.11n HT40</i>								
Average value:								
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	39.43	32.07	8.99	37.49	43.00	54.00	-11.00	Horizontal
5350.00	38.96	31.75	9.29	37.20	42.80	54.00	-11.20	Horizontal
5470.00	39.74	31.95	9.56	36.95	44.30	54.00	-9.70	Horizontal
5725.00	40.83	32.53	9.83	35.86	47.33	54.00	-6.67	Horizontal
5150.00	39.51	32.07	8.99	37.49	43.08	54.00	-10.92	Vertical
5350.00	38.87	31.75	9.29	37.20	42.71	54.00	-11.29	Vertical
5470.00	39.16	31.95	9.56	36.95	43.72	54.00	-10.28	Vertical
5725.00	39.42	32.53	9.83	35.86	45.92	54.00	-8.08	Vertical

<i>IEEE 802.11ac HT40</i>								
Peak value:								
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	47.12	32.07	8.99	37.49	50.69	68.20	-17.51	Horizontal
5350.00	47.08	31.75	9.29	37.20	50.92	68.20	-17.28	Horizontal
5470.00	46.85	31.95	9.56	36.95	51.41	68.20	-16.79	Horizontal
5725.00	47.09	32.53	9.83	35.86	53.59	68.20	-14.61	Horizontal
5150.00	46.89	32.07	8.99	37.49	50.46	68.20	-17.74	Vertical
5350.00	46.04	31.75	9.29	37.20	49.88	68.20	-18.32	Vertical
5470.00	47.37	31.95	9.56	36.95	51.93	68.20	-16.27	Vertical
5725.00	47.18	32.53	9.83	35.86	53.68	68.20	-14.52	Vertical

<i>IEEE 802.11ac HT40</i>								
Average value:								
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	40.63	32.07	8.99	37.49	44.20	54.00	-9.80	Horizontal
5350.00	40.51	31.75	9.29	37.20	44.35	54.00	-9.65	Horizontal
5470.00	39.74	31.95	9.56	36.95	44.30	54.00	-9.70	Horizontal
5725.00	38.25	32.53	9.83	35.86	44.75	54.00	-9.25	Horizontal
5150.00	40.11	32.07	8.99	37.49	43.68	54.00	-10.32	Vertical
5350.00	40.28	31.75	9.29	37.20	44.12	54.00	-9.88	Vertical
5470.00	41.07	31.95	9.56	36.95	45.63	54.00	-8.37	Vertical
5725.00	39.69	32.53	9.83	35.86	46.19	54.00	-7.81	Vertical

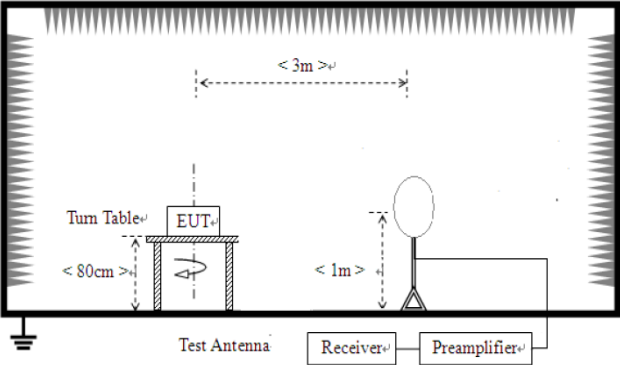
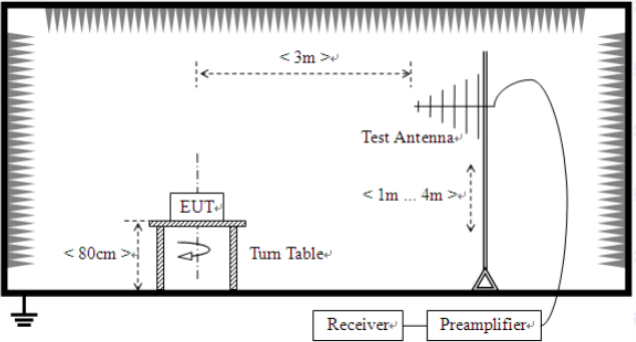
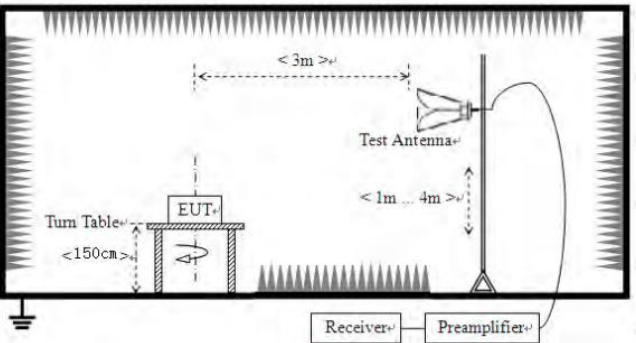
<i>IEEE 802.11ac HT80</i>								
Peak value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	47.13	32.07	8.99	37.49	50.70	68.20	-17.50	Horizontal
5350.00	45.89	31.75	9.29	37.20	49.73	68.20	-18.47	Horizontal
5470.00	46.73	31.95	9.56	36.95	51.29	68.20	-16.91	Horizontal
5725.00	47.15	32.53	9.83	35.86	53.65	68.20	-14.55	Horizontal
5150.00	46.85	32.07	8.99	37.49	50.42	68.20	-17.78	Vertical
5350.00	47.48	31.75	9.29	37.20	51.32	68.20	-16.88	Vertical
5470.00	47.36	31.95	9.56	36.95	51.92	68.20	-16.28	Vertical
5725.00	46.51	32.53	9.83	35.86	53.01	68.20	-15.19	Vertical

<i>IEEE 802.11ac HT80</i>								
Average value:								
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	39.83	32.07	8.99	37.49	43.40	54.00	-10.60	Horizontal
5350.00	38.55	31.75	9.29	37.20	42.39	54.00	-11.61	Horizontal
5470.00	39.57	31.95	9.56	36.95	44.13	54.00	-9.87	Horizontal
5725.00	40.13	32.53	9.83	35.86	46.63	54.00	-7.37	Horizontal
5150.00	39.72	32.07	8.99	37.49	43.29	54.00	-10.71	Vertical
5350.00	40.39	31.75	9.29	37.20	44.23	54.00	-9.77	Vertical
5470.00	40.17	31.95	9.56	36.95	44.73	54.00	-9.27	Vertical
5725.00	39.86	32.53	9.83	35.86	46.36	54.00	-7.64	Vertical

7.7 Radiated Emission

Test Requirement:	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)				
Test Method:	ANSI C63.10:2013				
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 rotatable 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: $EIRP(dBm) = P_g(dBm) - \text{cable loss (dB)} + \text{antenna gain (dBi)}$ where: P_g is the generator output power into the substitution antenna.
--	--

Test setup:	Below 30MHz  Below 1GHz  Above 1GHz 
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Remark:

Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

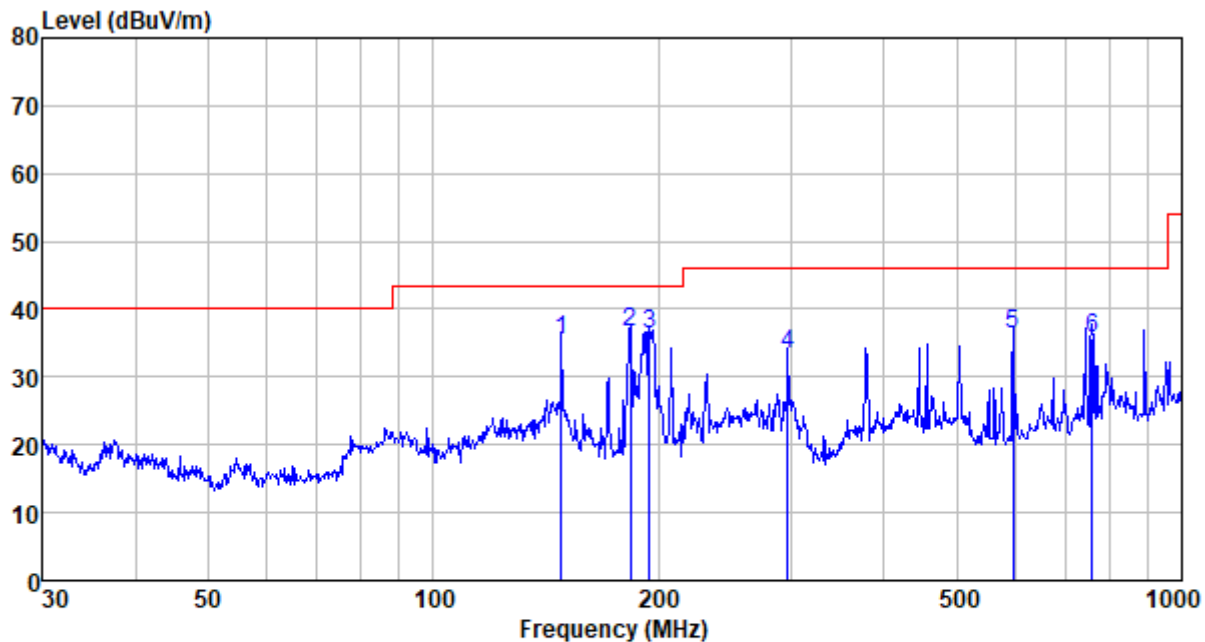
Measurement Data:

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.

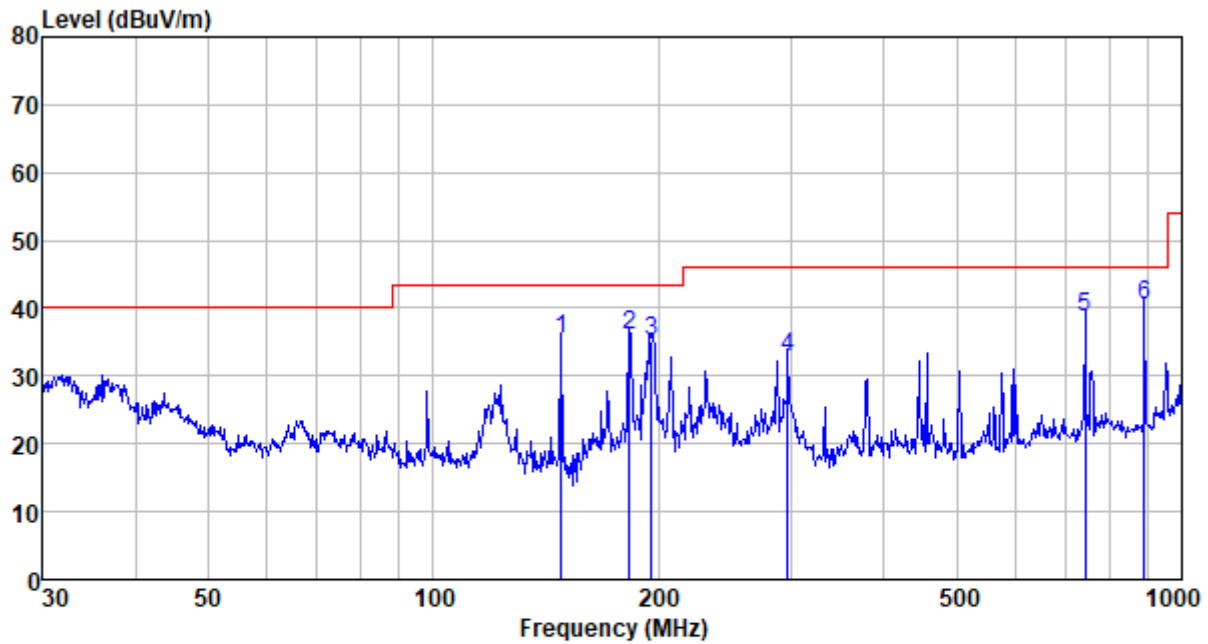
Below 1GHz

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
148.441	63.47	7.57	1.56	37.07	35.53	43.50	-7.97	QP
183.201	62.84	9.23	1.75	37.25	36.57	43.50	-6.93	QP
194.453	61.75	10.13	1.81	37.31	36.38	43.50	-7.12	QP
297.224	54.82	13.53	2.35	37.42	33.28	46.00	-12.72	QP
595.133	50.67	19.39	3.70	37.54	36.22	46.00	-9.78	QP
758.041	48.44	20.66	4.31	37.62	35.79	46.00	-10.21	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
148.441	63.32	7.57	1.56	37.07	35.38	43.50	-8.12	QP
182.559	62.25	9.15	1.75	37.25	35.90	43.50	-7.60	QP
195.822	60.50	10.17	1.82	37.31	35.18	43.50	-8.32	QP
297.224	54.42	13.53	2.35	37.42	32.88	46.00	-13.12	QP
742.259	51.68	20.41	4.24	37.63	38.70	46.00	-7.30	QP
890.728	50.88	22.20	4.82	37.60	40.30	46.00	-5.70	QP

Above 1GHz:

Worse case Main Antenna:

802.11a 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	28.95	39.67	14.62	32.65	50.59	74.00	-23.41	Vertical
15540.00	31.58	38.60	17.66	34.46	53.38	74.00	-20.62	Vertical
10360.00	30.01	39.67	14.62	32.65	51.65	74.00	-22.35	Horizontal
15540.00	30.12	38.60	17.66	34.46	51.92	74.00	-22.08	Horizontal

802.11a 5200MHz

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
10400.00	30.18	39.75	14.63	32.71	51.85	74.00	-22.15	Vertical
15600.00	31.90	38.33	17.67	34.17	53.73	74.00	-20.27	Vertical
10400.00	31.17	39.75	14.63	32.71	52.84	74.00	-21.16	Horizontal
15600.00	28.53	38.33	17.67	34.17	50.36	74.00	-23.64	Horizontal

802.11a 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	28.04	39.82	14.68	32.86	49.68	74.00	-24.32	Vertical
15720.00	29.61	38.09	17.73	33.66	51.77	74.00	-22.23	Vertical
10480.00	31.44	39.82	14.68	32.86	53.08	74.00	-20.92	Horizontal
15720.00	28.93	38.09	17.73	33.66	51.09	74.00	-22.91	Horizontal

802.11a 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	28.25	39.86	14.70	32.92	49.89	74.00	-24.11	Vertical
15780.00	30.06	38.07	17.75	33.60	52.28	74.00	-21.72	Vertical
10520.00	32.27	39.86	14.70	32.92	53.91	74.00	-20.09	Horizontal
15780.00	29.02	38.07	17.75	33.60	51.24	74.00	-22.76	Horizontal

802.11a 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	28.35	39.98	14.76	33.10	49.99	74.00	-24.01	Vertical
15900.00	30.20	38.01	17.81	33.42	52.60	74.00	-21.40	Vertical
10600.00	32.46	39.98	14.76	33.10	54.10	74.00	-19.90	Horizontal
10600.00	21.73	39.98	14.76	33.10	43.37	54.00	-10.63	Horizontal
15900.00	28.61	38.01	17.81	33.42	51.01	74.00	-22.99	Horizontal

802.11a 5320MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10640.00	31.45	40.06	14.80	33.22	53.09	74.00	-20.91	Vertical
15960.00	32.89	37.97	17.85	33.30	55.41	74.00	-22.43	Vertical
15960.00	22.14	37.97	17.85	33.30	44.66	54.00	-9.34	Vertical
10640.00	33.66	40.06	14.80	33.22	55.30	74.00	-22.83	Horizontal
10640.00	22.46	40.06	14.80	33.22	44.10	54.00	-9.90	Horizontal
15960.00	29.32	37.97	17.85	33.30	51.84	74.00	-21.64	Horizontal

802.11a 5500MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11000.00	29.25	40.10	14.82	33.28	50.89	74.00	-23.11	Vertical
16500.00	31.96	37.95	17.87	33.24	54.54	74.00	-19.46	Vertical
16500.00	21.96	37.95	17.87	33.24	44.54	54.00	-9.46	Vertical
11000.00	30.78	40.10	14.82	33.28	52.42	74.00	-21.58	Horizontal
16500.00	28.29	37.95	17.87	33.24	50.87	74.00	-23.13	Horizontal

802.11a 5580MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11160.00	31.91	40.26	14.90	33.52	53.55	74.00	-20.45	53.55
16740.00	30.05	37.87	17.95	33.00	52.87	74.00	-21.13	52.87
11160.00	31.95	40.26	14.90	33.52	53.59	74.00	-20.41	53.59
16740.00	29.00	37.87	17.95	33.00	51.82	74.00	-22.18	51.82

802.11a 5700MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11400.00	29.68	40.38	14.96	33.70	51.32	74.00	-22.68	Vertical
17100.00	31.05	37.81	18.01	32.82	54.05	74.00	-19.95	Vertical
17100.00	22.17	37.81	18.01	32.82	45.17	54.00	-8.83	Vertical
11400.00	29.37	40.38	14.96	33.70	51.01	74.00	-22.99	Horizontal
17100.00	30.36	37.81	18.01	32.82	53.36	74.00	-20.64	Horizontal

802.11n(HT20) 5180MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	30.76	39.67	14.62	32.65	52.40	74.00	-21.60	Vertical
15540.00	28.50	38.60	17.66	34.46	50.30	74.00	-23.70	Vertical
10360.00	29.22	39.67	14.62	32.65	50.86	74.00	-23.14	Horizontal
15540.00	30.76	38.60	17.66	34.46	52.56	74.00	-21.44	Horizontal

802.11n(HT20) 5200MHz

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
10400.00	30.37	39.75	14.63	32.71	52.04	74.00	-21.96	Vertical
15600.00	31.16	38.33	17.67	34.17	52.99	74.00	-21.01	Vertical
10400.00	31.56	39.75	14.63	32.71	53.23	74.00	-20.77	Horizontal
15600.00	28.49	38.33	17.67	34.17	50.32	74.00	-23.68	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	28.70	39.82	14.68	32.86	50.34	74.00	-23.66	Vertical
15720.00	29.09	38.09	17.73	33.66	51.25	74.00	-22.75	Vertical
10480.00	29.73	39.82	14.68	32.86	51.37	74.00	-22.63	Horizontal
15720.00	29.41	38.09	17.73	33.66	51.57	74.00	-22.43	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	28.45	39.86	14.70	32.92	50.09	74.00	-23.91	Vertical
15780.00	31.70	38.07	17.75	33.60	53.92	74.00	-20.08	Vertical
10520.00	30.30	39.86	14.70	32.92	51.94	74.00	-22.06	Horizontal
15780.00	29.17	38.07	17.75	33.60	51.39	74.00	-22.61	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	30.74	39.98	14.76	33.10	52.38	74.00	-21.62	Vertical
15900.00	30.49	38.01	17.81	33.42	52.89	74.00	-21.11	Vertical
10600.00	32.66	39.98	14.76	33.10	54.30	74.00	-19.70	Horizontal
10600.00	21.86	39.98	14.76	33.10	43.50	54.00	-10.50	Horizontal
15900.00	31.27	38.01	17.81	33.42	53.67	74.00	-20.33	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	28.31	40.06	14.80	33.22	49.95	74.00	-24.05	Vertical
15960.00	29.38	37.97	17.85	33.30	51.90	74.00	-22.10	Vertical
10640.00	32.82	40.06	14.80	33.22	54.46	74.00	-19.54	Horizontal
10640.00	21.53	40.06	14.80	33.22	43.17	54.00	-10.83	Horizontal
15960.00	32.77	37.97	17.85	33.30	55.29	74.00	-18.71	Horizontal
15960.00	22.34	37.97	17.85	33.3	44.86	54.00	-9.14	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	29.34	40.10	14.82	33.28	50.98	74.00	-23.02	Vertical
16500.00	32.68	37.95	17.87	33.24	55.26	74.00	-18.74	Vertical
16500.00	21.71	37.95	17.87	33.24	44.29	54.00	-9.71	Vertical
11000.00	30.97	40.10	14.82	33.28	52.61	74.00	-21.39	Horizontal
16500.00	29.55	37.95	17.87	33.24	52.13	74.00	-21.87	Horizontal

802.11n(HT20) 5580MHz

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
11160.00	32.04	40.26	14.90	33.52	53.68	74.00	-20.32	Vertical
16740.00	29.69	37.87	17.95	33.00	52.51	74.00	-21.49	Vertical
11160.00	32.83	40.26	14.90	33.52	54.47	74.00	-19.53	Horizontal
11160.00	21.39	40.26	14.9	33.52	43.03	54.00	-10.97	Horizontal
16740.00	28.53	37.87	17.95	33.00	51.35	74.00	-22.65	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	28.66	40.38	14.96	33.70	50.30	74.00	-23.70	Vertical
17100.00	29.99	37.81	18.01	32.82	52.99	74.00	-21.01	Vertical
11400.00	30.00	40.38	14.96	33.70	51.64	74.00	-22.36	Horizontal
17100.00	30.54	37.81	18.01	32.82	53.54	74.00	-20.46	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	31.07	39.71	14.63	32.68	52.73	74.00	-21.27	Vertical
15540.00	29.22	38.46	17.67	34.32	51.03	74.00	-22.97	Vertical
10360.00	29.67	39.71	14.63	32.68	51.33	74.00	-22.67	Horizontal
15540.00	30.78	38.46	17.67	34.32	52.59	74.00	-21.41	Horizontal

802.11ac(HT20) 5200MHz

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
10400.00	32.75	39.75	14.63	32.71	54.42	74.00	-19.58	Vertical
10400.00	21.71	39.75	14.63	32.71	43.38	54.00	-10.62	Vertical
15600.00	32.12	38.33	17.67	34.17	53.95	74.00	-20.05	Vertical
10400.00	29.69	39.75	14.63	32.71	51.36	74.00	-22.64	Horizontal
15600.00	31.19	38.33	17.67	34.17	53.02	74.00	-20.98	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	30.31	39.82	14.68	32.86	51.95	74.00	-22.05	Vertical
15720.00	30.49	38.09	17.73	33.66	52.65	74.00	-21.35	Vertical
10480.00	28.40	39.82	14.68	32.86	50.04	74.00	-23.96	Horizontal
15720.00	32.27	38.09	17.73	33.66	54.43	74.00	-19.57	Horizontal
15720.00	21.74	38.09	17.73	33.66	43.90	54.00	-10.10	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	32.54	39.86	14.70	32.92	54.18	74.00	-19.82	Vertical
10520.00	21.64	39.86	14.70	32.92	43.28	54.00	-10.72	Vertical
15780.00	28.98	38.07	17.75	33.60	51.20	74.00	-22.80	Vertical
10520.00	29.63	39.86	14.70	32.92	51.27	74.00	-22.73	Horizontal
15780.00	30.73	38.07	17.75	33.60	52.95	74.00	-21.05	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	28.64	39.98	14.76	33.10	50.28	74.00	-23.72	Vertical
15900.00	29.50	38.01	17.81	33.42	51.90	74.00	-22.10	Vertical
10600.00	30.72	39.98	14.76	33.10	52.36	74.00	-21.64	Horizontal
15900.00	31.07	38.01	17.81	33.42	53.47	74.00	-20.53	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	29.49	40.06	14.80	33.22	51.13	74.00	-22.87	Vertical
15960.00	31.97	37.97	17.85	33.30	54.49	74.00	-19.51	Vertical
15960.00	22.01	37.97	17.85	33.3	44.53	54.00	-9.47	Vertical
10640.00	33.54	40.06	14.80	33.22	55.18	74.00	-18.82	Horizontal
10640.00	21.62	40.06	14.8	33.22	43.26	54.00	-10.74	Horizontal
15960.00	29.21	37.97	17.85	33.30	51.73	74.00	-22.27	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	29.85	40.10	14.82	33.28	51.49	74.00	-22.51	Vertical
16500.00	30.33	37.95	17.87	33.24	52.91	74.00	-21.09	Vertical
11000.00	33.32	40.10	14.82	33.28	54.96	74.00	-19.04	Horizontal
11000.00	21.84	40.10	14.82	33.28	43.48	54.00	-10.52	Horizontal
16500.00	31.65	37.95	17.87	33.24	54.23	74.00	-19.77	Horizontal
16500.00	21.97	37.95	17.87	33.24	44.55	54.00	-9.45	Horizontal

802.11ac(HT20) 5580MHz

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
11160.00	30.62	40.26	14.90	33.52	52.26	74.00	-21.74	Vertical
16740.00	32.04	37.87	17.95	33.00	54.86	74.00	-19.14	Vertical
16740.00	21.45	37.87	17.95	33.00	44.27	54.00	-9.73	Vertical
11160.00	30.08	40.26	14.90	33.52	51.72	74.00	-22.28	Horizontal
16740.00	29.91	37.87	17.95	33.00	52.73	74.00	-21.27	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	28.76	40.38	14.96	33.70	50.40	74.00	-23.60	Vertical
17100.00	31.92	37.81	18.01	32.82	54.92	74.00	-19.08	Vertical
17100.00	21.76	37.81	18.01	32.82	44.76	54.00	-9.24	Vertical
11400.00	31.99	40.38	14.96	33.70	53.63	74.00	-20.37	Horizontal
17100.00	32.00	37.81	18.01	32.82	55.00	74.00	-19.00	Horizontal
17100.00	21.84	37.81	18.01	32.82	44.84	54.00	-9.16	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	30.06	39.71	14.63	32.68	51.72	74.00	-22.28	Vertical
15570.00	29.73	38.46	17.67	34.32	51.54	74.00	-22.46	Vertical
10380.00	30.20	39.71	14.63	32.68	51.86	74.00	-22.14	Horizontal
15570.00	32.28	38.46	17.67	34.32	54.09	74.00	-19.91	Horizontal
15570.00	21.46	38.46	17.67	34.32	43.27	54.00	-10.73	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	32.19	39.82	14.66	32.80	53.87	74.00	-20.13	Vertical
15690.00	29.28	38.09	17.71	33.81	51.27	74.00	-22.73	Vertical
10460.00	31.71	39.82	14.66	32.80	53.39	74.00	-20.61	Horizontal
15690.00	29.56	38.09	17.71	33.81	51.55	74.00	-22.45	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	31.58	39.90	14.72	32.98	53.22	74.00	-20.78	Vertical
15810.00	32.48	38.05	17.77	33.54	54.76	74.00	-19.24	Vertical
15810.00	21.59	38.05	17.77	33.54	43.87	54.00	-10.13	Vertical
10540.00	29.38	39.90	14.72	32.98	51.02	74.00	-22.98	Horizontal
15810.00	29.13	38.05	17.77	33.54	51.41	74.00	-22.59	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	32.08	40.02	14.78	33.16	53.72	74.00	-20.28	Vertical
15930.00	29.24	37.99	17.83	33.36	51.70	74.00	-22.30	Vertical
10620.00	29.85	40.02	14.78	33.16	51.49	74.00	-22.51	Horizontal
15930.00	31.62	37.99	17.83	33.36	54.08	74.00	-19.92	Horizontal
15930.00	21.75	37.99	17.83	33.36	44.21	54.00	-9.79	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	31.77	40.14	14.84	33.34	53.41	74.00	-20.59	Vertical
16530.00	30.15	37.93	17.89	33.18	52.79	74.00	-21.21	Vertical
11020.00	29.46	40.14	14.84	33.34	51.10	74.00	-22.90	Horizontal
16530.00	30.58	37.93	17.89	33.18	53.22	74.00	-20.78	Horizontal

802.11n(HT40) 5550MHz

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
11100.00	31.91	40.22	14.88	33.46	53.55	74.00	-20.45	Vertical
16650.00	30.38	37.89	17.93	33.06	53.14	74.00	-20.86	Vertical
11100.00	31.45	40.22	14.88	33.46	53.09	74.00	-20.91	Horizontal
16650.00	29.82	37.89	17.93	33.06	52.58	74.00	-21.42	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	28.66	40.34	14.94	33.64	50.30	74.00	-23.70	Vertical
17010.00	31.08	37.83	17.99	32.88	54.02	74.00	-19.98	Vertical
17010.00	21.84	37.83	17.99	32.88	44.78	54.00	-9.22	Vertical
11340.00	29.24	40.34	14.94	33.64	50.88	74.00	-23.12	Horizontal
17010.00	31.11	37.83	17.99	32.88	54.05	74.00	-19.95	Horizontal
17010.00	21.92	37.83	17.99	32.88	44.86	54.00	-9.14	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	31.91	39.71	14.63	32.68	53.57	74.00	-20.43	Vertical
15570.00	28.13	38.46	17.67	34.32	49.94	74.00	-24.06	Vertical
10380.00	29.06	39.71	14.63	32.68	50.72	74.00	-23.28	Horizontal
15570.00	31.59	38.46	17.67	34.32	53.40	74.00	-20.60	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	31.40	39.75	14.65	32.74	53.06	74.00	-20.94	Vertical
15690.00	32.22	38.33	17.69	34.03	54.21	74.00	-19.79	Vertical
15690.00	21.73	38.33	17.69	34.03	43.72	54.00	-10.28	Vertical
10460.00	32.22	39.75	14.65	32.74	53.88	74.00	-20.12	Horizontal
15690.00	31.82	38.33	17.69	34.03	53.81	74.00	-20.19	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	32.71	39.90	14.72	32.98	54.35	74.00	-19.65	Vertical
10540.00	21.49	39.9	14.72	32.98	43.13	54.00	-10.87	Vertical
15810.00	30.71	38.05	17.77	33.54	52.99	74.00	-21.01	Vertical
10540.00	32.74	39.90	14.72	32.98	54.38	74.00	-19.62	Horizontal
10540.00	21.33	39.9	14.72	32.98	42.97	54.00	-11.03	Horizontal
15810.00	29.73	38.05	17.77	33.54	52.01	74.00	-21.99	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	32.04	40.02	14.78	33.16	53.68	74.00	-20.32	Vertical
15930.00	31.61	37.99	17.83	33.36	54.07	74.00	-19.93	Vertical
15930.00	22.01	37.99	17.83	33.36	44.47	54.00	-9.53	Vertical
10620.00	31.17	40.02	14.78	33.16	52.81	74.00	-21.19	Horizontal
15930.00	29.93	37.99	17.83	33.36	52.39	74.00	-21.61	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	30.17	40.14	14.84	33.34	51.81	74.00	-22.19	Vertical
16530.00	32.65	37.93	17.89	33.18	55.29	74.00	-18.71	Vertical
16530.00	21.74	37.93	17.89	33.18	44.38	54.00	-9.62	Vertical
11020.00	32.26	40.14	14.84	33.34	53.90	74.00	-20.10	Horizontal
16530.00	29.12	37.93	17.89	33.18	51.76	74.00	-22.24	Horizontal

802.11ac(HT40) 5550MHz

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
11100.00	30.44	40.22	14.88	33.46	52.08	74.00	-21.92	Vertical
16650.00	32.73	37.89	17.93	33.06	55.49	74.00	-18.51	Vertical
16650.00	21.58	37.89	17.93	33.06	44.34	54.00	-9.66	Vertical
11100.00	31.05	40.22	14.88	33.46	52.69	74.00	-21.31	Horizontal
16650.00	32.28	37.89	17.93	33.06	55.04	74.00	-18.96	Horizontal
16650.00	21.66	37.89	17.93	33.06	44.42	54.00	-9.58	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	32.87	40.34	14.94	33.64	54.51	74.00	-19.49	Vertical
11340.00	21.81	40.34	14.94	33.64	43.45	54.00	-10.55	Vertical
17010.00	31.05	37.83	17.99	32.88	53.99	74.00	-20.01	Vertical
11340.00	29.44	40.34	14.94	33.64	51.08	74.00	-22.92	Horizontal
17010.00	28.67	37.83	17.99	32.88	51.61	74.00	-22.39	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	31.40	39.82	14.66	32.80	53.08	74.00	-20.92	Vertical
15630.00	29.15	38.09	17.71	33.81	51.14	74.00	-22.86	Vertical
10420.00	30.37	39.82	14.66	32.80	52.05	74.00	-21.95	Horizontal
15630.00	31.87	38.09	17.71	33.81	53.86	74.00	-20.14	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	28.90	39.94	14.74	33.04	50.54	74.00	-23.46	Vertical
15870.00	33.17	38.03	17.79	33.48	55.51	74.00	-18.49	Vertical
15870.00	22.07	38.03	17.79	33.48	44.41	54.00	-9.59	Vertical
10580.00	33.64	39.94	14.74	33.04	55.28	74.00	-18.72	Horizontal
10580.00	21.83	39.94	14.74	33.04	43.47	54.00	-10.53	Horizontal
15870.00	30.97	38.03	17.79	33.48	53.31	74.00	-20.69	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	32.18	40.18	14.86	33.40	53.82	74.00	-20.18	Vertical
16590.00	33.11	37.91	17.91	33.12	55.81	74.00	-18.19	Vertical
16590.00	22.04	37.91	17.91	33.12	44.74	54.00	-9.26	Vertical
11060.00	32.47	40.18	14.86	33.40	54.11	74.00	-19.89	Horizontal
11060.00	21.73	40.18	14.86	33.4	43.37	54.00	-10.63	Horizontal
16590.00	31.74	37.91	17.91	33.12	54.44	74.00	-19.56	Horizontal
16590.00	21.39	37.91	17.91	33.12	44.09	54.00	-9.91	Horizontal

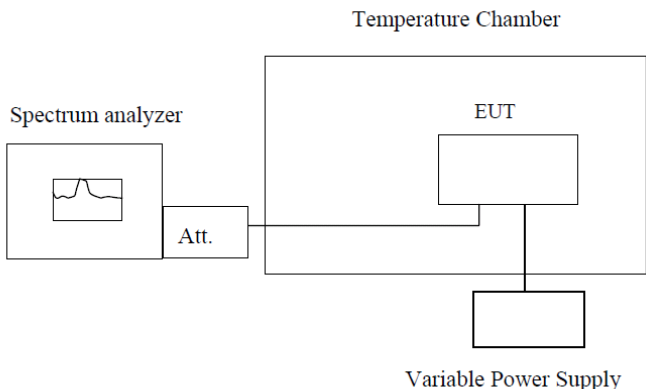
802.11ac(HT80) 5610MHz

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	30.43	40.30	14.92	33.58	52.07	74.00	-21.93	Vertical
16830.00	29.95	37.85	17.97	32.94	52.83	74.00	-21.17	Vertical
11220.00	31.59	40.30	14.92	33.58	53.23	74.00	-20.77	Horizontal
16830.00	31.90	37.85	17.97	32.94	54.78	74.00	-19.22	Horizontal
16830.00	21.79	37.85	17.97	32.94	44.67	54.00	-9.33	Horizontal

Note:

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:	47 CFR Part 15, Subpart C 15.407 (g)
Test Method:	ANSI C63.10:2013, FCC Part 2.1055
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:	a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage. b. Turn the EUT on and couple its output to a spectrum analyzer. c. Turn the EUT off and set the chamber to the highest temperature specified. d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes. e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature. f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minute s. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
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:

802.11a									
Frequency stability versus Temp.									
Worse Case Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (V _{AC})	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	5177.2624	Pass	5181.7337	Pass	5182.6571	Pass	5178.6597	Pass
-20	120	5178.1896	Pass	5181.9635	Pass	5181.2892	Pass	5178.8776	Pass
-10	120	5179.7773	Pass	5180.7277	Pass	5180.2818	Pass	5179.6094	Pass
0	120	5179.9078	Pass	5180.5941	Pass	5180.2035	Pass	5179.2768	Pass
10	120	5179.4014	Pass	5180.3521	Pass	5180.1131	Pass	5179.4888	Pass
20	120	5179.2562	Pass	5180.0651	Pass	5180.3504	Pass	5179.5885	Pass
30	120	5179.8035	Pass	5180.5646	Pass	5180.4368	Pass	5179.1744	Pass
40	120	5179.2832	Pass	5180.1581	Pass	5180.0080	Pass	5179.0139	Pass
50	120	5179.9227	Pass	5180.0405	Pass	5180.7510	Pass	5179.7457	Pass
Frequency stability versus Temp.									
Worse Case Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (V _{AC})	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	102	5182.8057	Pass	5181.2485	Pass	5179.6908	Pass	5177.2171	Pass
25	120	5181.0034	Pass	5180.4870	Pass	5179.6693	Pass	5178.8924	Pass
25	138	5180.0048	Pass	5180.1853	Pass	5179.8204	Pass	5178.2221	Pass

802.11n(HT20)									
Frequency stability versus Temp.									
Worse Case Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (V _{AC})	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	5177.0702	Pass	5181.7905	Pass	5182.5256	Pass	5179.5811	Pass
-20	120	5177.4787	Pass	5180.1092	Pass	5181.1534	Pass	5179.1094	Pass
-10	120	5178.3843	Pass	5180.7480	Pass	5181.9930	Pass	5177.9323	Pass
0	120	5178.5526	Pass	5180.5089	Pass	5181.2716	Pass	5179.5972	Pass
10	120	5178.9672	Pass	5180.7119	Pass	5181.8520	Pass	5178.0338	Pass
20	120	5179.2145	Pass	5180.2647	Pass	5180.4796	Pass	5179.2932	Pass
30	120	5179.9662	Pass	5180.6311	Pass	5180.5696	Pass	5179.7627	Pass
40	120	5179.1042	Pass	5180.4327	Pass	5180.0083	Pass	5179.7471	Pass
50	120	5179.4130	Pass	5180.9323	Pass	5180.8350	Pass	5179.8656	Pass
Frequency stability versus Temp.									
Worse Case Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (V _{AC})	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	102	5182.1504	Pass	5182.6495	Pass	5178.2011	Pass	5179.8428	Pass
25	120	5182.8003	Pass	5180.8875	Pass	5179.1032	Pass	5179.9326	Pass
25	138	5180.1446	Pass	5180.1233	Pass	5179.5264	Pass	5179.6679	Pass

802.11ac(HT20)									
Frequency stability versus Temp.									
Worse Case Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (V _{AC})	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	5179.1846	Pass	5180.7641	Pass	5180.3343	Pass	5179.0115	Pass
-20	120	5179.3533	Pass	5180.3834	Pass	5180.8691	Pass	5179.8049	Pass
-10	120	5179.5120	Pass	5180.3008	Pass	5180.1530	Pass	5179.2586	Pass
0	120	5179.0836	Pass	5180.5226	Pass	5180.3483	Pass	5179.5740	Pass
10	120	5179.9751	Pass	5180.4819	Pass	5180.5198	Pass	5179.0302	Pass
20	120	5179.3969	Pass	5180.1866	Pass	5180.3708	Pass	5179.8108	Pass
30	120	5179.5898	Pass	5180.5226	Pass	5180.1563	Pass	5179.8933	Pass
40	120	5179.1508	Pass	5180.4974	Pass	5180.4556	Pass	5179.4686	Pass
50	120	5179.2415	Pass	5180.3989	Pass	5180.7633	Pass	5179.0979	Pass
Frequency stability versus Temp.									
Worse Case Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (V _{AC})	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	102	5180.3078	Pass	5180.0195	Pass	5179.4915	Pass	5179.4406	Pass
25	120	5180.3800	Pass	5180.3075	Pass	5179.9456	Pass	5179.4292	Pass
25	138	5180.7801	Pass	5180.6728	Pass	5179.5110	Pass	5179.4406	Pass

802.11n(HT40)									
Frequency stability versus Temp.									
Worse Case Operating Frequency: 5190MHz									
Temp. (°C)	Power Supply (V _{AC})	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	5189.4897	Pass	5190.9289	Pass	5190.3838	Pass	5189.2464	Pass
-20	120	5189.8870	Pass	5190.8635	Pass	5190.8991	Pass	5189.1029	Pass
-10	120	5189.3040	Pass	5190.2250	Pass	5190.3955	Pass	5189.3779	Pass
0	120	5189.9062	Pass	5190.8886	Pass	5190.4832	Pass	5189.8411	Pass
10	120	5189.1867	Pass	5190.1353	Pass	5190.0876	Pass	5189.0913	Pass
20	120	5189.9649	Pass	5190.5869	Pass	5190.9118	Pass	5189.1224	Pass
30	120	5189.5887	Pass	5190.1400	Pass	5190.8694	Pass	5189.4971	Pass
40	120	5189.1450	Pass	5190.8194	Pass	5190.7600	Pass	5189.2481	Pass
50	120	5189.8597	Pass	5190.9321	Pass	5190.5989	Pass	5189.3904	Pass
Frequency stability versus Temp.									
Worse Case Operating Frequency: 5190MHz									
Temp. (°C)	Power Supply (V _{AC})	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	102	5190.8696	Pass	5190.6399	Pass	5189.7196	Pass	5189.5084	Pass
25	120	5190.2119	Pass	5190.5411	Pass	5189.6013	Pass	5189.2303	Pass
25	138	5190.2260	Pass	5190.9911	Pass	5189.8115	Pass	5189.7002	Pass

802.11ac(HT40)									
Frequency stability versus Temp.									
Worse Case Operating Frequency: 5190MHz									
Temp. (°C)	Power Supply (V _{AC})	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	5189.3802	Pass	5190.5377	Pass	5190.6016	Pass	5189.1498	Pass
-20	120	5189.1150	Pass	5190.3365	Pass	5190.0947	Pass	5189.2385	Pass
-10	120	5189.6422	Pass	5190.6129	Pass	5190.1793	Pass	5189.1079	Pass
0	120	5189.2844	Pass	5190.9952	Pass	5190.8369	Pass	5189.2970	Pass
10	120	5189.0223	Pass	5190.2730	Pass	5190.9571	Pass	5189.7296	Pass
20	120	5189.5099	Pass	5190.4547	Pass	5190.6878	Pass	5189.7287	Pass
30	120	5189.6244	Pass	5190.7772	Pass	5190.8076	Pass	5189.7377	Pass
40	120	5189.8297	Pass	5190.2570	Pass	5190.9490	Pass	5189.2010	Pass
50	120	5189.3351	Pass	5190.2281	Pass	5190.9172	Pass	5189.4834	Pass
Frequency stability versus Temp.									
Worse Case Operating Frequency: 5190MHz									
Temp. (°C)	Power Supply (V _{AC})	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	102	5190.8192	Pass	5190.2688	Pass	5189.1241	Pass	5189.9430	Pass
25	120	5190.1758	Pass	5190.9181	Pass	5189.6883	Pass	5189.9060	Pass
25	138	5190.7592	Pass	5190.6638	Pass	5189.4778	Pass	5189.1276	Pass

802.11ac(HT80)									
Frequency stability versus Temp.									
Worse Case Operating Frequency: 5210MHz									
Temp. (°C)	Power Supply (V _{AC})	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	5209.1894	Pass	5210.3455	Pass	5210.0461	Pass	5209.4394	Pass
-20	120	5209.6267	Pass	5210.1442	Pass	5210.6361	Pass	5209.0810	Pass
-10	120	5209.3494	Pass	5210.7355	Pass	5210.1601	Pass	5209.6162	Pass
0	120	5209.1392	Pass	5210.2400	Pass	5210.4011	Pass	5209.9763	Pass
10	120	5209.6313	Pass	5210.9435	Pass	5210.5837	Pass	5209.9975	Pass
20	120	5209.0483	Pass	5210.3387	Pass	5210.5670	Pass	5209.9156	Pass
30	120	5209.3101	Pass	5210.3388	Pass	5210.1964	Pass	5209.0671	Pass
40	120	5209.4310	Pass	5210.1467	Pass	5210.3390	Pass	5209.9863	Pass
50	120	5209.5430	Pass	5210.5797	Pass	5210.1888	Pass	5209.0176	Pass
Frequency stability versus Temp.									
Worse Case Operating Frequency: 5210MHz									
Temp. (°C)	Power Supply (V _{AC})	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	102	5210.5383	Pass	5210.3784	Pass	5209.8126	Pass	5209.8339	Pass
25	120	5210.1883	Pass	5210.9887	Pass	5209.5097	Pass	5209.7476	Pass
25	138	5210.2360	Pass	5210.5201	Pass	5209.5984	Pass	5209.5698	Pass

8 Test Setup Photo

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

9 EUT Constructional Details

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

---END---