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914 WEST PATAPSCO AVENUE • BALTIMORE, MARYLAND 21230-3432 • PHONE (410) 354-3300 • FAX (410) 354-3313

33439 WESTERN AVENUE • UNION CITY, CALIFORNIA 94587 • PHONE (510) 489-6300 • FAX (510) 489-6372

3162 BELICK STREET • SANTA CLARA, CALIFORNIA 95054 • PHONE (408) 748-3585 • FAX (510) 489-6372

13501 MCCALLEN PASS • AUSTIN, TX 78753 • PHONE (512) 287-2500 • FAX (512) 287-2513

November 21, 2016

ARRIS Group, Inc.
3871 Lakefield Drive Suite 300
Suwanee, GA 30024

Dear Tony Figueiredo,

Enclosed is the EMC Wireless test report for compliance testing of the ARRIS Group, Inc., TG3482 as tested to the requirements of Title 47 of the CFR, Ch. 1 (10-1-06 ed.), Title 47 of the CFR, Part 15.407, Subpart E (UNII 1).

Thank you for using the services of MET Laboratories, Inc. If you have any questions regarding these results or if MET can be of further service to you, please feel free to contact me.

Sincerely yours,
MET LABORATORIES, INC.

Jennifer Warnell
Documentation Department

Reference: (\ARRIS Group, Inc.\EMC89082A-FCC407 UNII 1 Rev. 1)

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Electromagnetic Compatibility Criteria Test Report

for the

**ARRIS Group, Inc.
Model TG3482**

Tested under
The FCC Certification Rules
contained in
Title 47 of the CFR
15.407 Subpart E

MET Report: EMC89082A-FCC407 UNII 1 Rev. 1

November 21, 2016

Prepared For:

**ARRIS Group, Inc.
3871 Lakefield Drive Suite 300
Suwanee, GA 30024**

Prepared By:
MET Laboratories, Inc.
914 W. Patapsco Ave.
Baltimore, MD 21230

Electromagnetic Compatibility Criteria Test Report

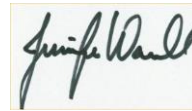
for the

ARRIS Group, Inc.
Model TG3482

Tested under
The FCC Certification Rules
contained in
Title 47 of the CFR
15.407 Subpart E



Hadid Jones, Project Engineer
Electromagnetic Compatibility Lab



Jennifer Warnell
Documentation Department

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of Parts 15B, 15.407, of the FCC Rules under normal use and maintenance.



Asad Bajwa,
Director, Electromagnetic Compatibility Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
Ø	September 20, 2016	Initial Issue.
1	November 21, 2016	Engineer provided revisions.

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List of Terms and Abbreviations

AC	Alternating Current
ACF	Antenna Correction Factor
Cal	Calibration
<i>d</i>	Measurement Distance
dB	Decibels
dBμA	Decibels above one microamp
dBμV	Decibels above one microvolt
dBμA/m	Decibels above one microamp per meter
dBμV/m	Decibels above one microvolt per meter
DC	Direct Current
E	Electric Field
DSL	Digital Subscriber Line
ESD	Electrostatic Discharge
EUT	Equipment Under Test
<i>f</i>	Frequency
FCC	Federal Communications Commission
GRP	Ground Reference Plane
H	Magnetic Field
HCP	Horizontal Coupling Plane
Hz	Hertz
IEC	International Electrotechnical Commission
kHz	Kilohertz
kPa	Kilopascal
kV	Kilovolt
LISN	Line Impedance Stabilization Network
MHz	Megahertz
μH	Microhenry
μ	Microfarad
μs	Microseconds
PRF	Pulse Repetition Frequency
RF	Radio Frequency
RMS	Root-Mean-Square
TWT	Traveling Wave Tube
V/m	Volts per meter
VCP	Vertical Coupling Plane

I. Executive Summary

A. Purpose of Test

An EMC evaluation was performed to determine compliance of the ARRIS Group, Inc. TG3482, with the requirements of Part 15, §15.407. All references are to the most current version of Title 47 of the Code of Federal Regulations in effect. In accordance with §2.1033, the following data is presented in support of the Certification of the TG3482. ARRIS Group, Inc. should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the TG3482, has been **permanently** discontinued.

B. Executive Summary

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, §15.407, in accordance with ARRIS Group, Inc., purchase order number AR1079104. All tests were conducted using measurement procedure ANSI C63.4-2014.

FCC Reference	Description	Results
§15.203	Antenna Requirement	Compliant
§15.403(i)	26dB Occupied Bandwidth	Compliant
§15.407 (a)(1)	Maximum Conducted Output Power	Compliant
§15.407 (a)(1)	Maximum Power Spectral Density	Compliant
§15.407 (b)(1)& (6 - 7)	Undesirable Emissions	Compliant
§15.407(b)(6)	Conducted Emission Limits	Compliant
§15.407(f)	RF Exposure	Compliant

Table 1. Executive Summary of EMC Part 15.407 Compliance Testing

II. Equipment Configuration

A. Overview

MET Laboratories, Inc. was contracted by ARRIS Group, Inc. to perform testing on the TG3482, under ARRIS Group, Inc.'s purchase order number AR1079104.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the ARRIS Group, Inc. TG3482.

The results obtained relate only to the item(s) tested.

Model(s) Tested:	TG3482		
Model(s) Covered:	TG3482		
EUT Specifications:	Primary Power: 115 VAC, 60 Hz		
	FCC ID: UIDTG3482ER		
	Type of Modulations:	QAM, QPSK	
	Equipment Code:	NII	
	Max. RF Output Power:	26.74dBm @ 5240MHz	
	EUT Frequency Ranges:	5180 – 5240 MHz	
Analysis:	The results obtained relate only to the item(s) tested.		
Environmental Test Conditions:	Temperature: 15-35° C		
	Relative Humidity: 30-60%		
	Barometric Pressure: 860-1060 mbar		
Type of Filing:	Original		
Evaluated by:	Hadid Jones		
Report Date(s):	November 21, 2016		

Table 2. EUT Summary

B. References

CFR 47, Part 15, Subpart E	Unlicensed National Information Infrastructure Devices (UNII)
ANSI C63.4:2014	Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical And Electronic Equipment in the Range of 9 kHz to 40 GHz
ISO/IEC 17025:2005	General Requirements for the Competence of Testing and Calibration Laboratories
ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
789033 D02 General UNII Test Procedures New Rules v01	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E

Table 3. References

C. Test Site

All testing was performed at MET Laboratories, Inc., 914 W. Patapsco Ave., Baltimore, MD 21230. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

Radiated Emissions measurements were performed in a 3 meter semi-anechoic chamber (equivalent to an Open Area Test Site). In accordance with §2.948(a)(3), a complete site description is contained at MET Laboratories.

D. Description of Test Sample

The ARRIS Group, Inc. TG3482 Telephony Wireless Gateway supporting DOCSIS 3.1, Equipment Under Test (EUT), along with its 8x8 802.11ac Dual Band Wireless radios. The IoT subsystem is capable of supporting personal area networks based on ZigBee, Thread and BTLE.

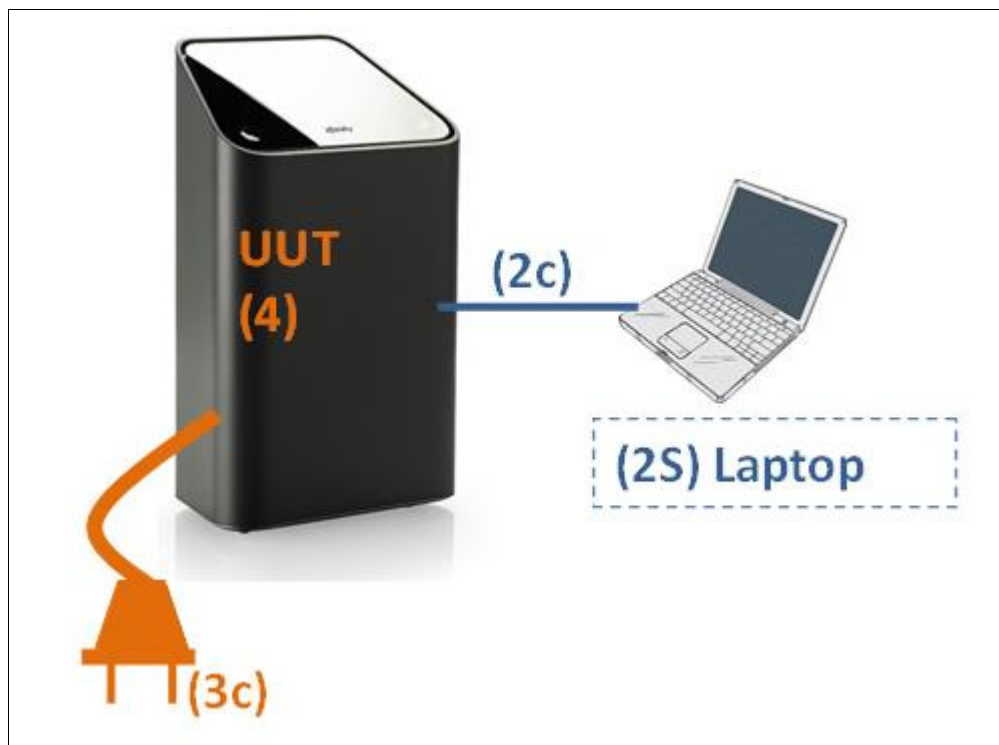


Figure 1. Block Diagram of Test Configuration

E. Equipment Configuration

The EUT was set up as outlined in Figure 1, Block Diagram of Test Setup. All cards, racks, etc., incorporated as part of the EUT is included in the following list.

Ref. ID	Name / Description	Model Number	Part Number	Serial Number	Revision
--	TG3482	TG3482	--	--	--

Table 4. Equipment Configuration

F. Support Equipment

Support equipment necessary for the operation and testing of the EUT is included in the following list.

Ref. ID	Name / Description	Manufacturer	Model Number
2s	Laptop	Assorted	N/A

Table 5. Support Equipment

G. Ports and Cabling Information

Ref. ID	Port Name on EUT	Cable Description	Qty.	Length (m)	Shielded (Y/N)	Termination Point
2C	USB	USB-to-Serial	1	1	No	--
3C	AC Input	2 conductor, 18 AWG	1	2	No	(115v/60hz)

Table 6. Ports and Cabling Information

H. Mode of Operation

The provided instructions and software will configure the TG3482 for operation at each required test mode.

I. Method of Monitoring EUT Operation

The measured emission value is over the specified FCC limits.

J. Modifications

a) Modifications to EUT

No modifications were made to the EUT.

b) Modifications to Test Standard

No modifications were made to the test standard.

K. Disposition of EUT

The test sample including all support equipment submitted to the Electro-Magnetic Compatibility Lab for testing was returned to ARRIS Group, Inc. upon completion of testing.

III. Electromagnetic Compatibility Criteria for Intentional Radiators

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.203 Antenna Requirement

Test Requirement: § 15.203: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. 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.

The structure and application of the EUT were analyzed to determine compliance with Section 15.203 of the Rules. Section 15.203 states that the subject device must meet at least one of the following criteria:

- a.) Antenna must be permanently attached to the unit.
- b.) Antenna must use a unique type of connector to attach to the EUT.
- c.) Unit must be professionally installed. Installer shall be responsible for verifying that the correct antenna is employed with the unit.

Results: The EUT as tested is compliant the criteria of §15.203. The EUT has an integral antenna.

Note: a modified sample was used for conducted testing where applicable.

Test Engineer(s): Hadid Jones

Test Date(s): 08/12/16

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.403(i) 26dB Bandwidth

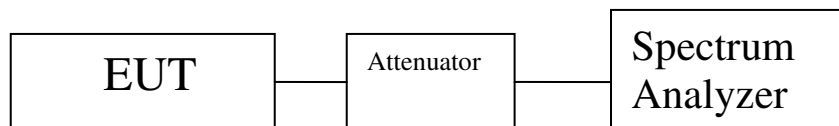
Test Requirements: § 15.403(i): For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Determination of the emissions bandwidth is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

Test Procedure: The transmitter was set to low, mid, and high operating frequencies at the highest output power and connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using a RBW approximately equal to 1% of the total emission bandwidth, VBW > RBW. The 26 dB Bandwidth was measured and recorded.

Test Results The 26 dB Bandwidth was compliant with the requirements of this section.

Test Engineer(s): Hadid Jones

Test Date(s): 08/12/16



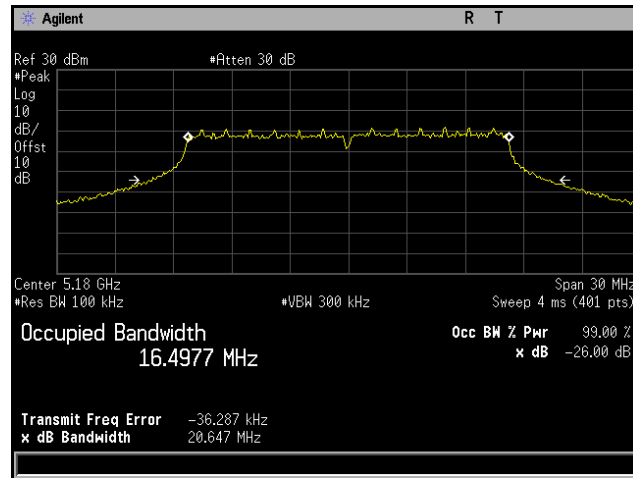
4x8				
Center Frequency	Bandwidth	Mode	26dB BW	99% BW
Ch 5180M	BW 20M	a mode	20.64	16.49
Ch 5200M	BW 20M	a mode	21.09	16.51
Ch 5240M	BW 20M	a mode	20.69	16.5
Ch 5210M	BW 80M	ac mode	80.2	76.01
Ch 5190M	BW 40M	ac mode	60	37.07
Ch 5230M	BW 40M	ac mode	40.45	36.14
Ch 5180M	BW 20M	ac mode	21.38	17.71
Ch 5200M	BW 20M	ac mode	21.42	17.71
Ch 5240M	BW 20M	ac mode	21.58	17.7
Ch 5190M	BW 40M	n mode	40.08	36.1
Ch 5230M	BW 40M	n mode	39.8	36.1
Ch 5180M	BW 20M	n mode	22.01	17.7
Ch 5200M	BW 20M	n mode	21.87	17.71
Ch 5240M	BW 20M	n mode	22.78	17.72

Table 77. Occupied Bandwidth, Test Results, 4x8

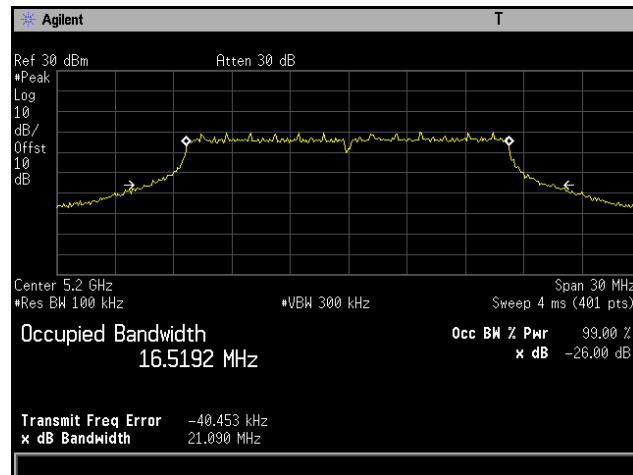
6x8				
Center Frequency	Bandwidth	Mode	26dB BW	99% BW
Ch 5180M	BW 20M	a mode	20.69	16.49
Ch 5200M	BW 20M	a mode	20.67	16.48
Ch 5240M	BW 20M	a mode	20.75	16.47
Ch 5210M	BW 80M	ac mode	80.15	75.58
Ch 5190M	BW 40M	ac mode	39.77	36.11
Ch 5230M	BW 40M	ac mode	40.36	36.26
Ch 5180M	BW 20M	ac mode	20.9	17.59
Ch 5200M	BW 20M	ac mode	22.13	17.57
Ch 5240M	BW 20M	ac mode	20.89	17.56
Ch 5190M	BW 40M	n mode	40.15	36.08
Ch 5230M	BW 40M	n mode	40.36	36.12
Ch 5180M	BW 20M	n mode	22.13	17.72
Ch 5200M	BW 20M	n mode	21.86	17.71
Ch 5240M	BW 20M	n mode	22.99	17.7

Table 8. Occupied Bandwidth, Test Results, 6x8

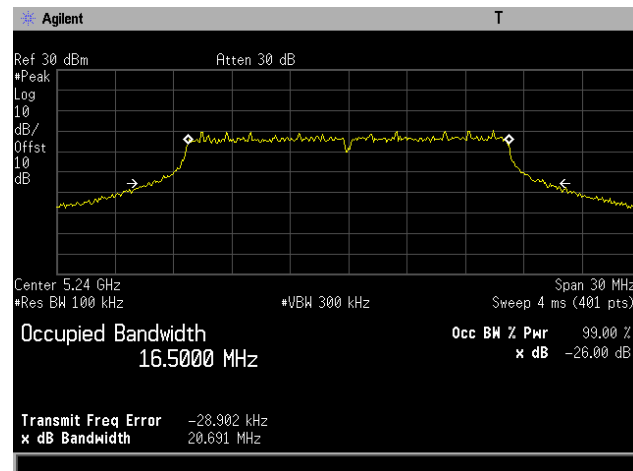
Occupied Bandwidth, 802.11a, 4x8



Plot 1. Occupied Bandwidth, 802.11a, 5180 MHz, 4x8, 6M

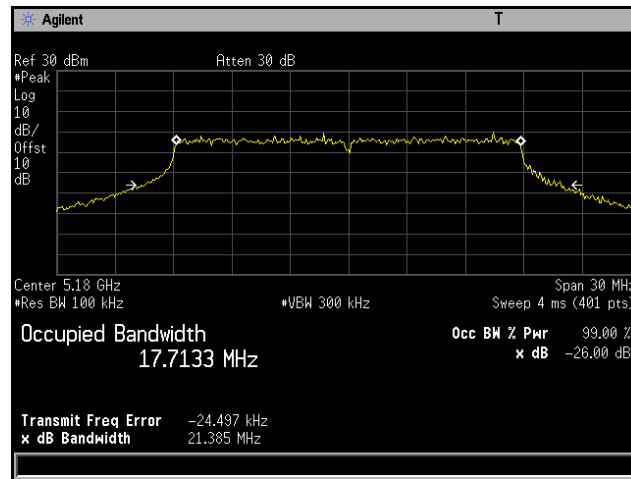


Plot 2. Occupied Bandwidth, 802.11a, 5200 MHz, 4x8, 6M

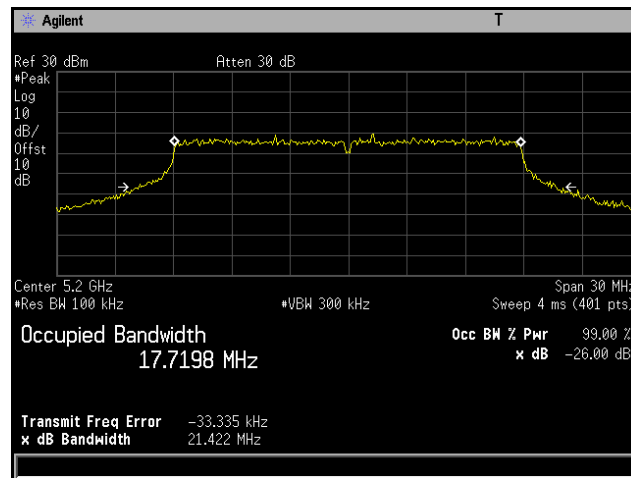


Plot 3. Occupied Bandwidth, 802.11a, 5240 MHz, 4x8, 6M

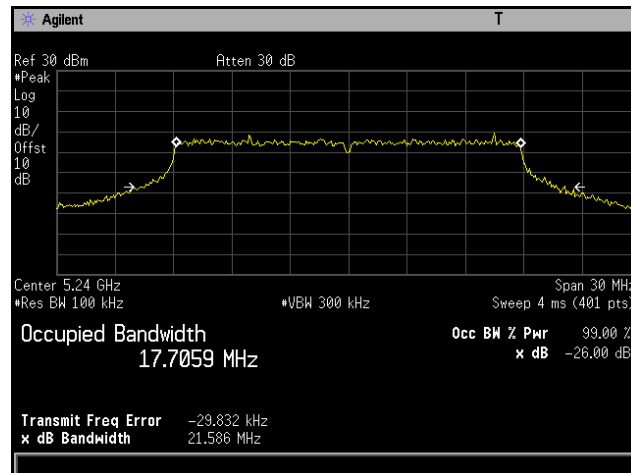
Occupied Bandwidth, 802.11ac 20 MHz, 4x8



Plot 4. Occupied Bandwidth, 802.11ac 20 MHz, Channel 5180 MHz, 4x8, MCS0 NSS1

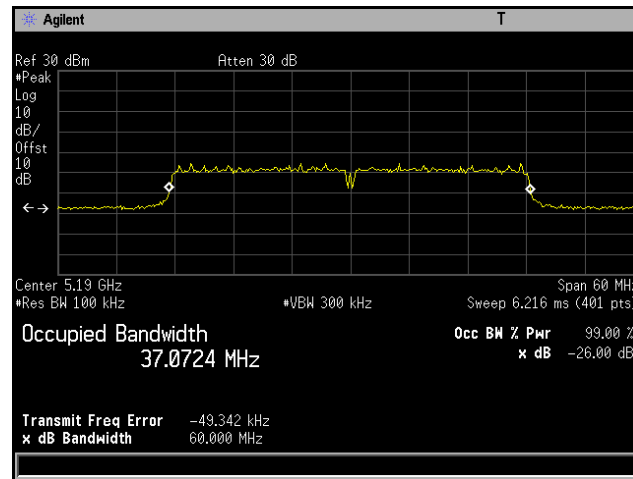


Plot 5. Occupied Bandwidth, 802.11ac 20 MHz, Channel 5200 MHz, 4x8, MCS0 NSS1

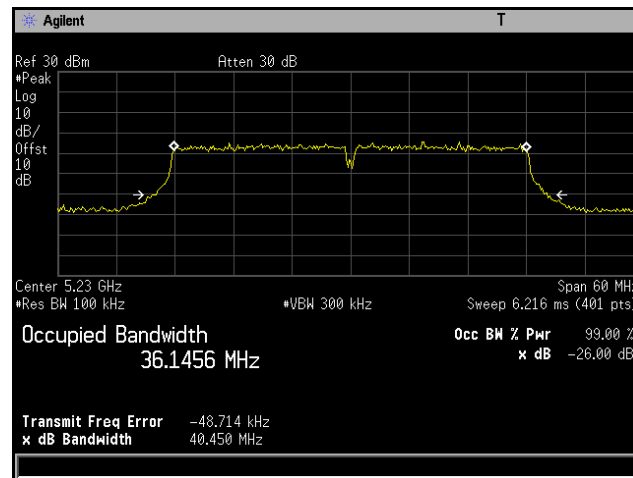


Plot 6. Occupied Bandwidth, 802.11ac 20 MHz, Channel 5240 MHz, 4x8, MCS0 NSS1

Occupied Bandwidth, 802.11ac 40 MHz, 4x8

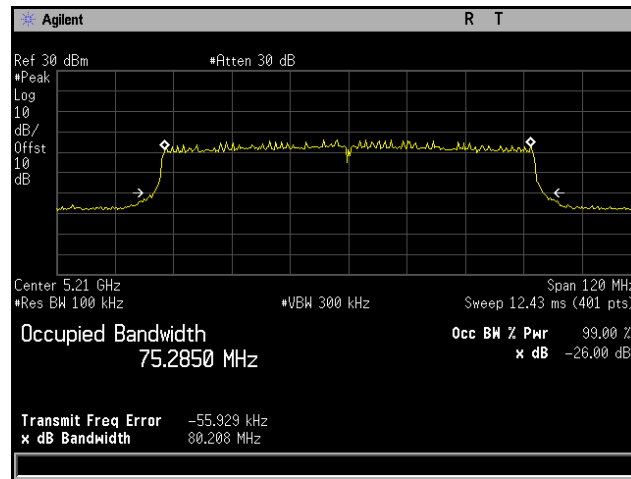


Plot 7. Occupied Bandwidth, 802.11ac 40 MHz, Channel 5190 MHz, 4x8, MCS0 NSS1



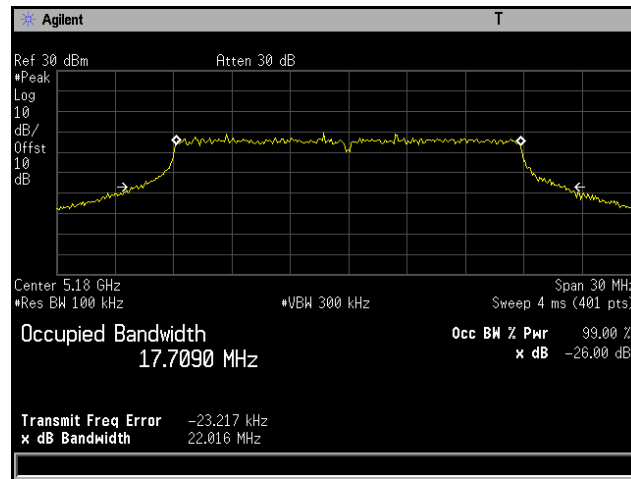
Plot 8. Occupied Bandwidth, 802.11ac 40 MHz, Channel 5230 MHz, 4x8, MCS0 NSS1

Occupied Bandwidth, 802.11ac 80 MHz, 4x8

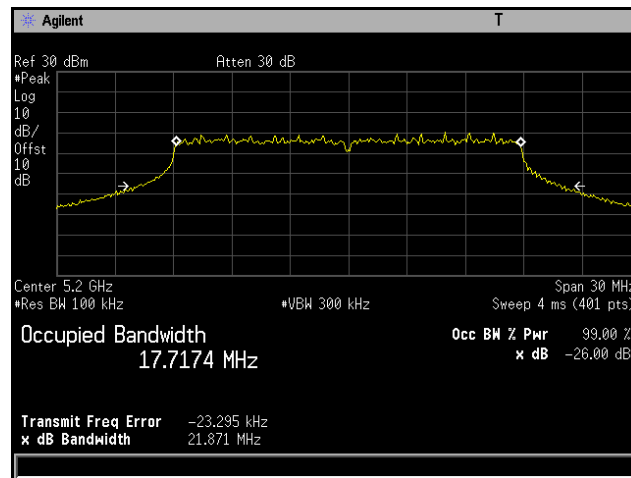


Plot 9. Occupied Bandwidth, 802.11ac 80 MHz, Channel 5190 MHz, 4x8, MCS0 NSS1

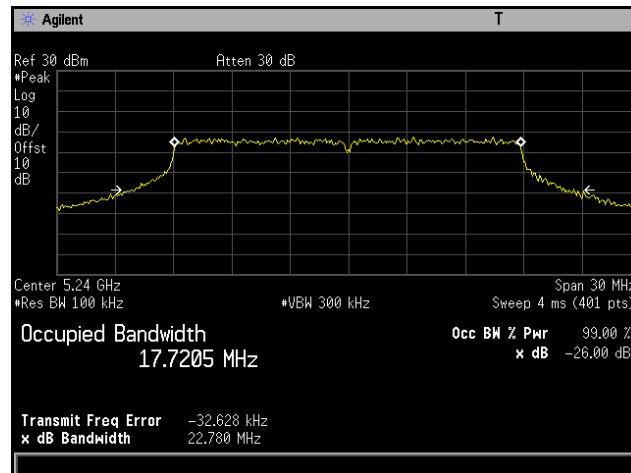
Occupied Bandwidth, 802.11n 20 MHz, 4x8



Plot 10. Occupied Bandwidth, 802.11n 20 MHz, Channel 5180 MHz, 4x8, MCS0

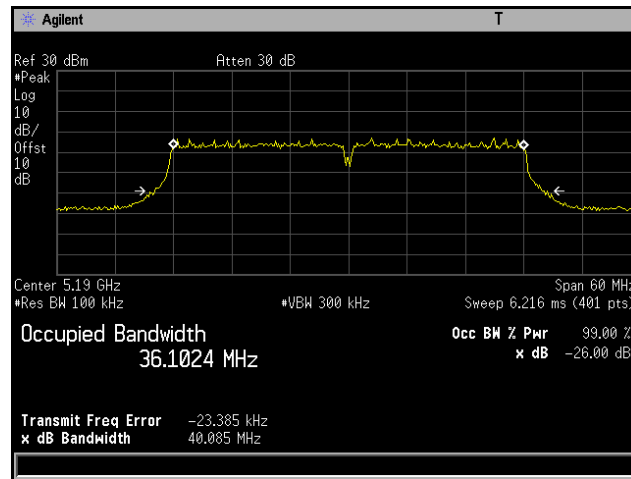


Plot 11. Occupied Bandwidth, 802.11n 20 MHz, Channel 5200 MHz, 4x8, MCS0

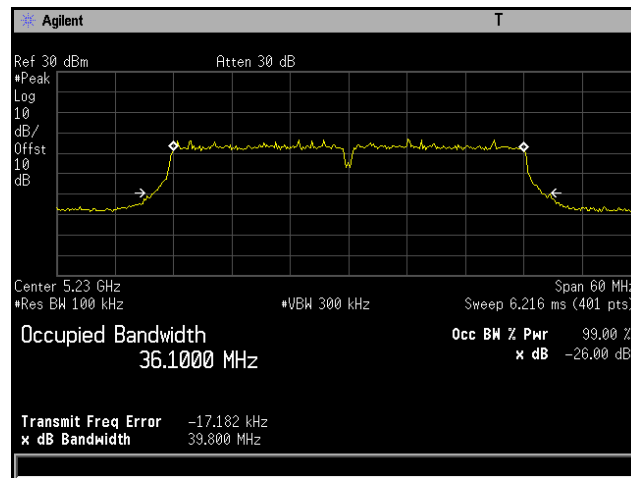


Plot 12. Occupied Bandwidth, 802.11n 20 MHz, Channel 5240 MHz, 4x8, MCS0

Occupied Bandwidth, 802.11n 40 MHz, 4x8

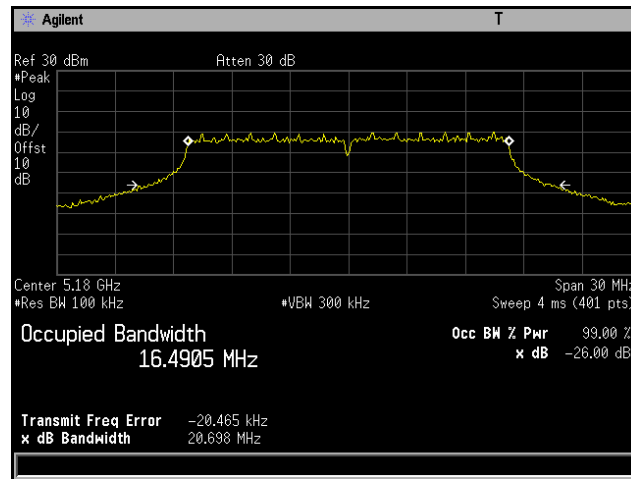


Plot 13. Occupied Bandwidth, 802.11n 40 MHz, Channel 5190 MHz, 4x8, MCS0

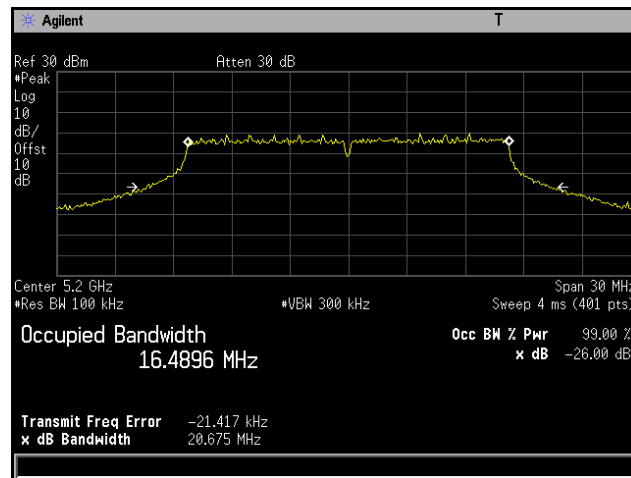


Plot 14. Occupied Bandwidth, 802.11n 40 MHz, Channel 5230 MHz, 4x8, MCS0

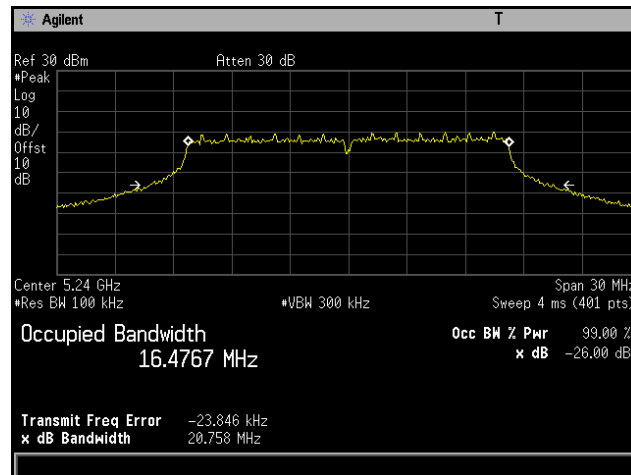
Occupied Bandwidth, 802.11a, 6x8



Plot 15. Occupied Bandwidth, 802.11a, 5180 MHz, 6x8, 6M

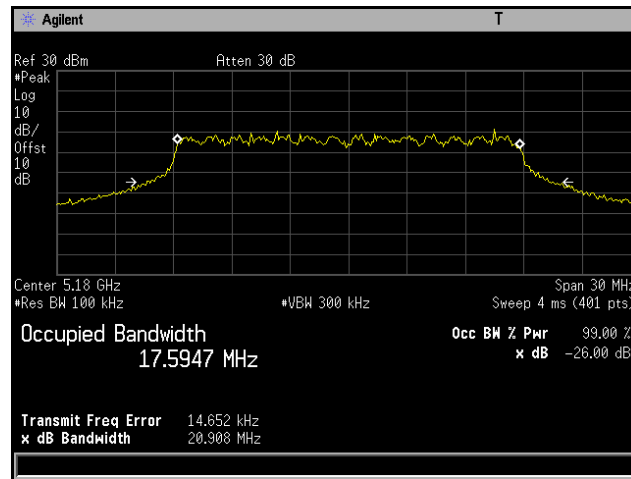


Plot 16. Occupied Bandwidth, 802.11a, 5200 MHz, 6x8, 6M

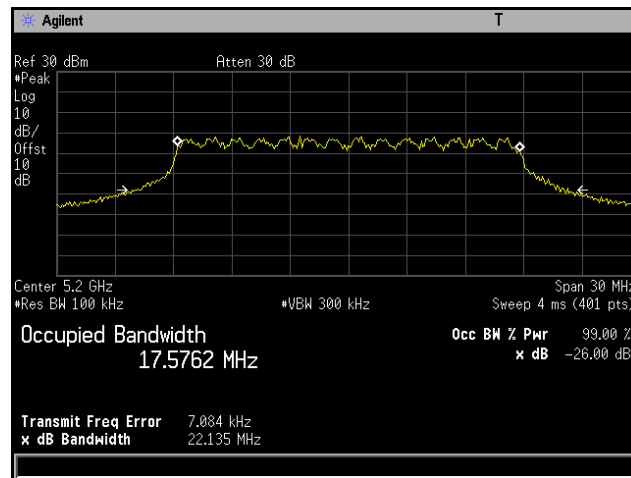


Plot 17. Occupied Bandwidth, 802.11a, 5240 MHz, 6x8, 6M

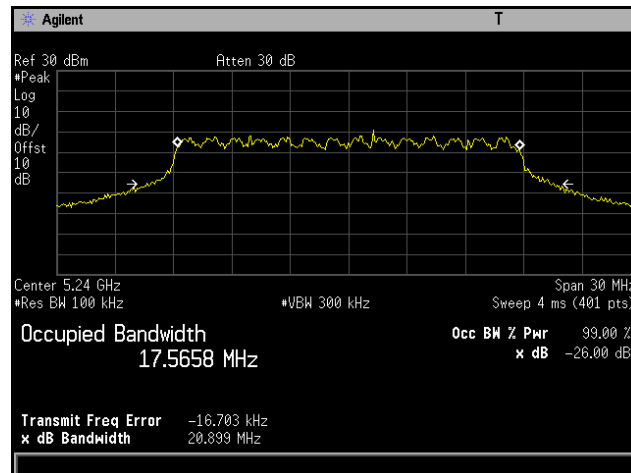
Occupied Bandwidth, 802.11ac 20 MHz, 6x8



Plot 18. Occupied Bandwidth, 802.11ac 20 MHz, Channel 5180 MHz, 6x8, MCS0 NSS1 CH2

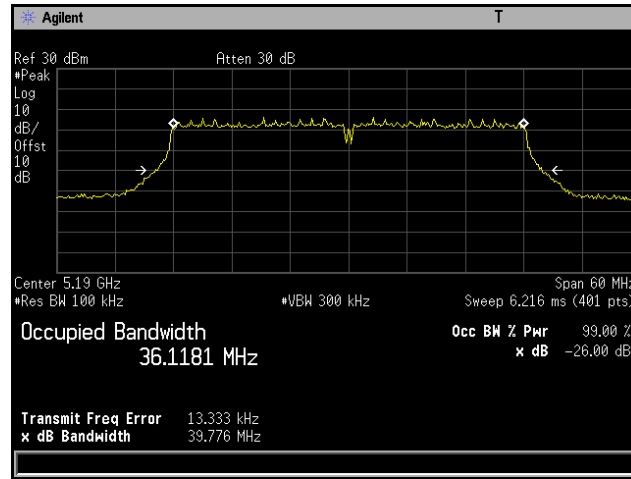


Plot 19. Occupied Bandwidth, 802.11ac 20 MHz, Channel 5200 MHz, 6x8, MCS0 NSS1 CH2

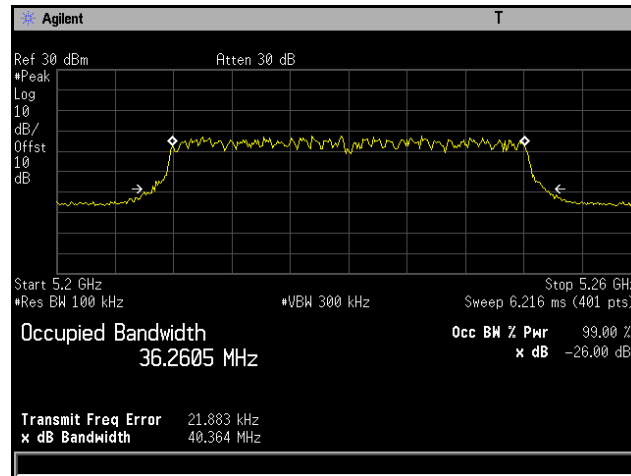


Plot 20. Occupied Bandwidth, 802.11ac 20 MHz, Channel 5240 MHz, 6x8, MCS0 NSS1 CH2

Occupied Bandwidth, 802.11ac 40 MHz, 6x8

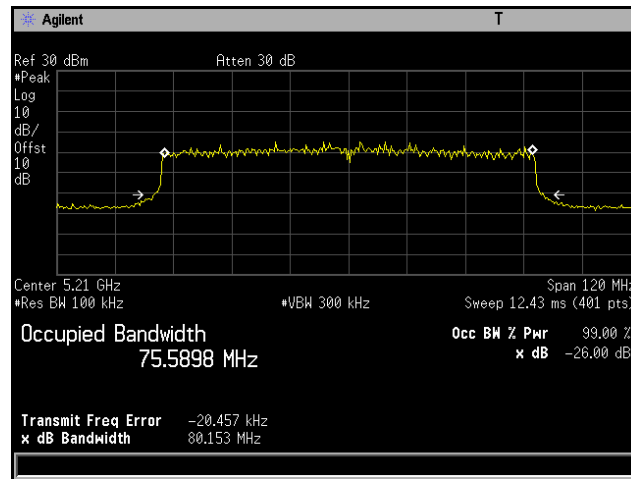


Plot 21. Occupied Bandwidth, 802.11ac 40 MHz, Channel 5190 MHz, 6x8, MCS0 NSS1 CH2



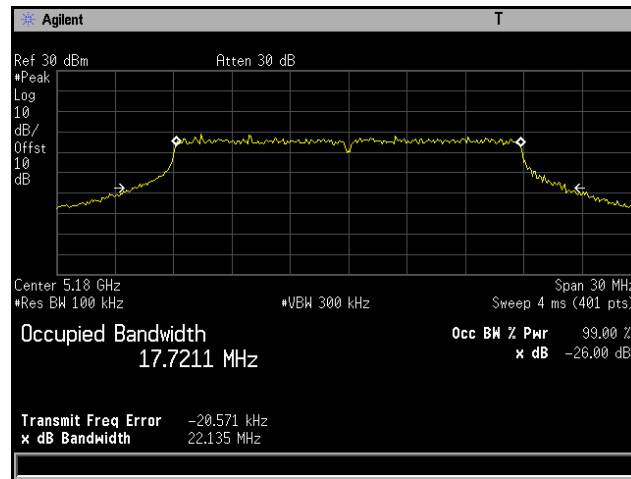
Plot 22. Occupied Bandwidth, 802.11ac 40 MHz, Channel 5230 MHz, 6x8, MCS0 NSS1 CH2

Occupied Bandwidth, 802.11ac 80 MHz, 6x8

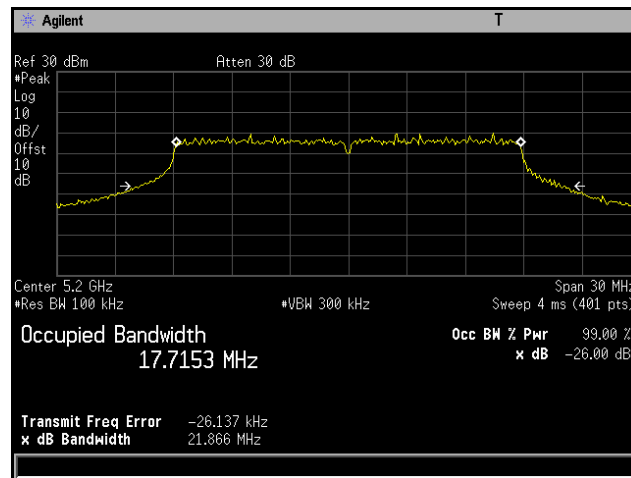


Plot 23. Occupied Bandwidth, 802.11ac 80 MHz, Channel 5190 MHz, 6x8, MCS0 NSS1 CH2

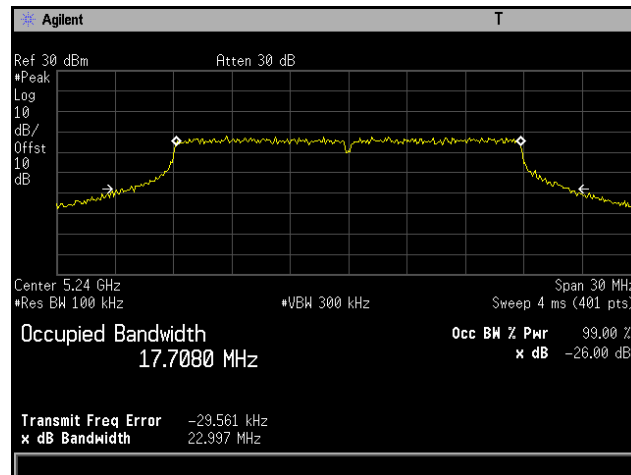
Occupied Bandwidth, 802.11n 20 MHz, 6x8



Plot 24. Occupied Bandwidth, 802.11n 20 MHz, Channel 5180 MHz, 6x8, MCS0

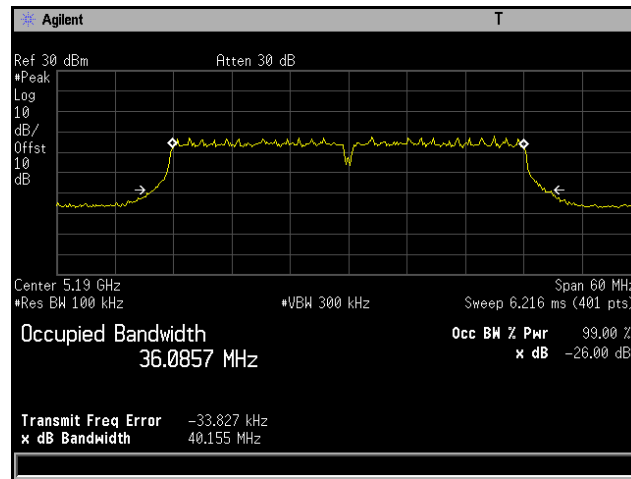


Plot 25. Occupied Bandwidth, 802.11n 20 MHz, Channel 5200 MHz, 6x8, MCS0

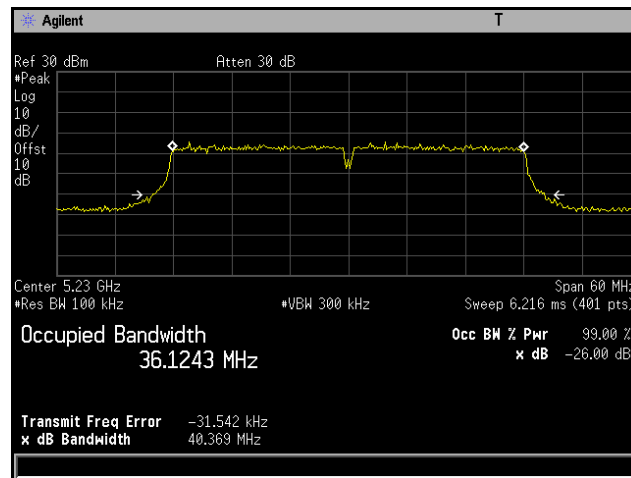


Plot 26. Occupied Bandwidth, 802.11n 20 MHz, Channel 5240 MHz, 6x8, MCS0

Occupied Bandwidth, 802.11n 40 MHz, 6x8



Plot 27. Occupied Bandwidth, 802.11n 40 MHz, Channel 5190 MHz, 6x8, MCS0



Plot 28. Occupied Bandwidth, 802.11n 40 MHz, Channel 5230 MHz, 6x8, MCS0

Electromagnetic Compatibility Criteria for Intentional Radiators

§15.407(a)(1) Maximum Conducted Output Power

Test Requirements:

§15.407(a)(1)(i): For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi.

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

§15.407(a)(1)(ii): For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi.

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

§15.407(a)(1)(iii): For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.

§15.407(a)(1)(iv): For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.

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

Test Procedure: The EUT was connected to a spectrum analyzer through a cable and attenuator. Measurements were taken with the EUT set to transmit continuously on its low, mid, and high channels. Its power was measured according to measurement method SA-1, as described in 789033 D02 General UNII Test Procedures v01.

A modified sample was used for conducted testing.

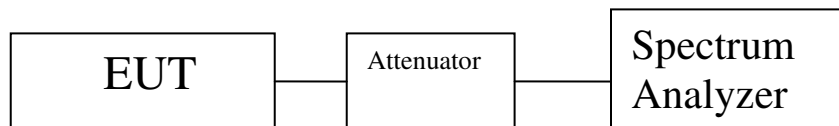
The unit was in the MIMO configuration

The directional gain presented is the measured composite antenna gain.

Test Results: The EUT as tested is compliant with the requirements of this section.

Test Engineer(s): Hadid Jones

Test Date(s): 08/12/16



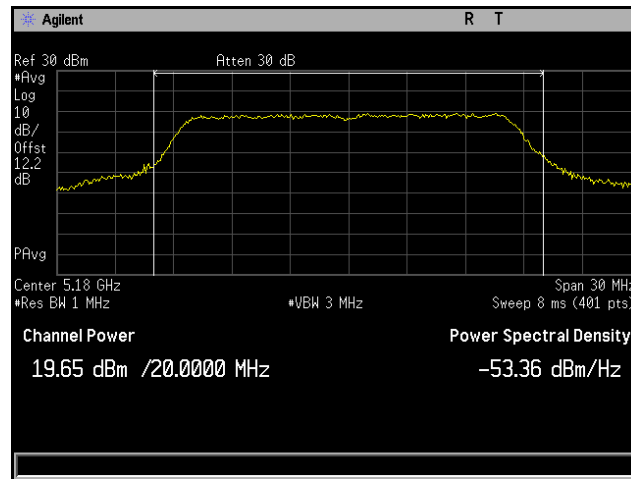
4x8 A											
Center Frequency	Bandwidth	Mode	Port 3 Data (dBm)	Port 4 Data (dBm)	Port 5 Data (dBm)	Port 6 Data (dBm)	Sum of All Ports	Limit	Antenna Gain	Final limit (dBm)	Margin dB
Ch 5180M	BW 20M	a mode	19.65	19.18	14.32	15.68	23.79	30	6.1	29.9	-6.11
Ch 5200M	BW 20M	a mode	19.17	19.7	17.11	17.82	24.6	30	6.1	29.9	-5.3
Ch 5240M	BW 20M	a mode	20.06	19.51	18.81	20.5	25.79	30	6.1	29.9	-4.11
Ch 5190M	BW 40M	n mode	14.48	13.94	14.67	16.56	21.06	30	6.1	29.9	-8.84
Ch 5230M	BW 40M	n mode	18.33	19.6	18.75	19.78	25.18	30	6.1	29.9	-4.72
Ch 5180M	BW 20M	n mode	20.05	19.5	16.41	16.71	24.49	30	6.1	29.9	-5.41
Ch 5200M	BW 20M	n mode	18.16	18.08	15.98	17.43	23.52	30	6.1	29.9	-6.38
Ch 5240M	BW 20M	n mode	19.52	19.14	19.43	20.89	25.83	30	6.1	29.9	-4.07
Ch 5210M	BW 80M	ac mode	13.89	13.33	12.98	15.11	19.93	30	6.1	29.9	-9.97
Ch 5190M	BW 40M	ac mode	16.02	15.59	16.4	14.85	21.78	30	6.1	29.9	-8.12
Ch 5230M	BW 40M	ac mode	19.6	19.09	19.5	20.86	25.84	30	6.1	29.9	-4.06
Ch 5180M	BW 20M	ac mode	20.23	19.47	15.51	18.52	24.79	30	6.1	29.9	-5.11
Ch 5200M	BW 20M	ac mode	19.41	19.13	19.44	21.3	25.94	30	6.1	29.9	-3.96
Ch 5240M	BW 20M	ac mode	18.32	17.9	19.21	20.92	25.28	30	6.1	29.9	-4.62

Table 9. Output Power, Test Results, 4x8

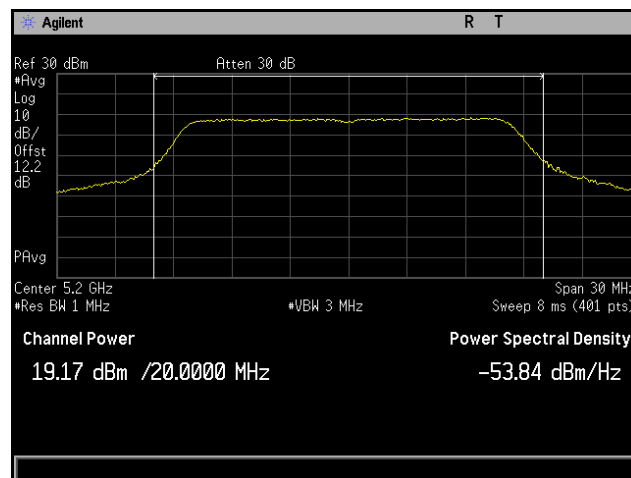
6x8 A											
Center Frequency	Bandwidth	Mode	Port 2 Data	Port 3 Data	Port 4 Data	Port 5 Data	Port 6 Data	Port 7 Data	Sum of Three Ports	Limit	Antenna Gain
Ch 5180M	BW 20M	a mode	16.86	18.19	18.01	15.82	17.77	16.03	25	29.2	6.8
Ch 5200M	BW 20M	a mode	18.61	18.19	16.42	17.91	17.75	15.57	25.32	29.2	6.8
Ch 5240M	BW 20M	a mode	18.07	19.15	19.23	17.68	19.41	17.2	26.32	29.2	6.8
Ch 5210M	BW 80M	ac mode	15.41	14.55	14.37	11.28	12.87	11.92	21.43	29.2	6.8
Ch 5190M	BW 40M	ac mode	14.17	14.18	14.74	12.25	13.74	12.03	21.42	29.2	6.8
Ch 5230M	BW 40M	ac mode	19.32	19.01	18.32	17.76	19.59	18.13	26.53	29.2	6.8
Ch 5180M	BW 20M	ac mode	18.48	17.94	17.9	14.78	17.78	14.85	24.99	29.2	6.8
Ch 5200M	BW 20M	ac mode	17.02	18.1	18.5	16.25	16.31	14.78	24.79	29.2	6.8
Ch 5240M	BW 20M	ac mode	19.96	18.89	18.13	18.19	20.4	17.32	26.74	29.2	6.8
Ch 5190M	BW 40M	n mode	13.33	13.98	13.89	11.34	15.05	12.62	21.31	29.2	6.8
Ch 5230M	BW 40M	n mode	17.91	18.71	16.21	16.26	17.53	16.51	25.08	29.2	6.8
Ch 5180M	BW 20M	n mode	18	18.34	16.04	16.11	17.6	14.1	24.71	29.2	6.8
Ch 5200M	BW 20M	n mode	18.21	18.01	17.98	16.4	17.69	14.32	25.08	29.2	6.8
Ch 5240M	BW 20M	n mode	17.36	19.03	16.36	17.9	19.17	14.79	25.47	29.2	6.8

Table 10. Output Power, Test Results, 6x8

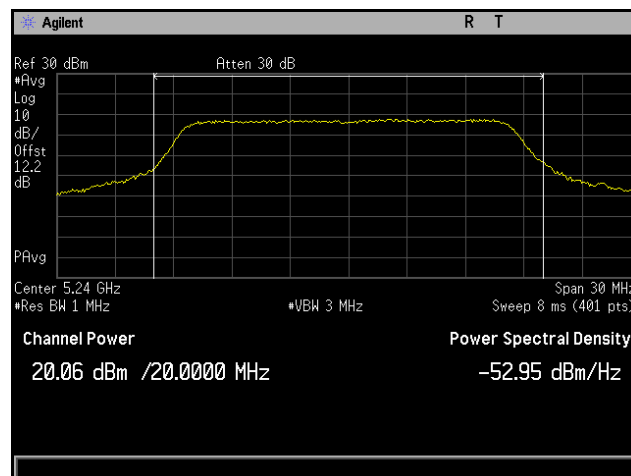
Output Power, 802.11a, 4x8, CH3



Plot 29. Output Power, 802.11a, Channel 5180 MHz, 4x8 MCS0 CH3

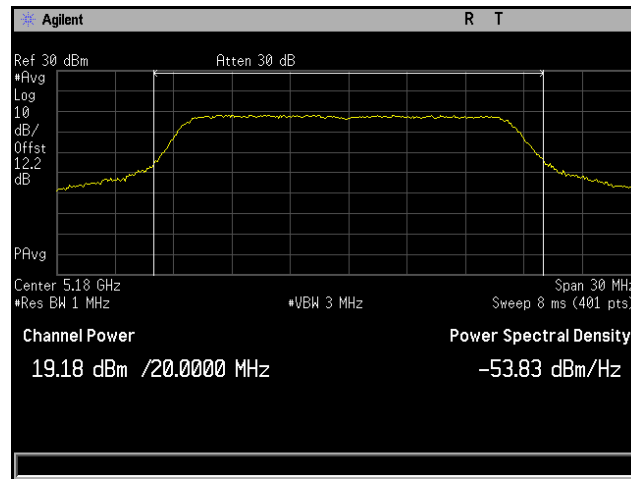


Plot 30. Output Power, 802.11a, Channel 5200 MHz, 4x8 MCS0 CH3

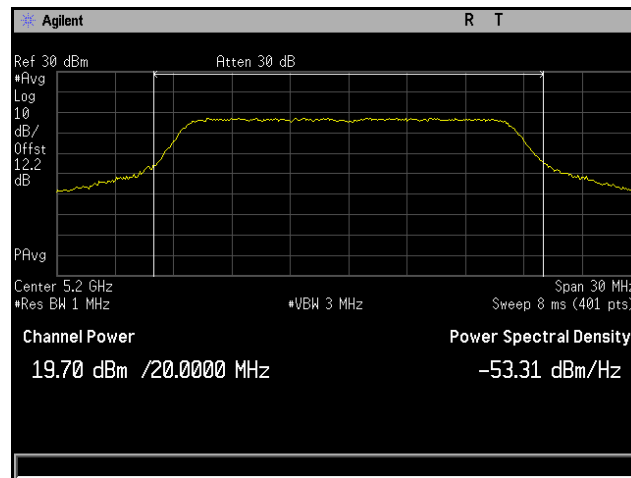


Plot 31. Output Power, 802.11a, Channel 5240 MHz, 4x8 MCS0 CH3

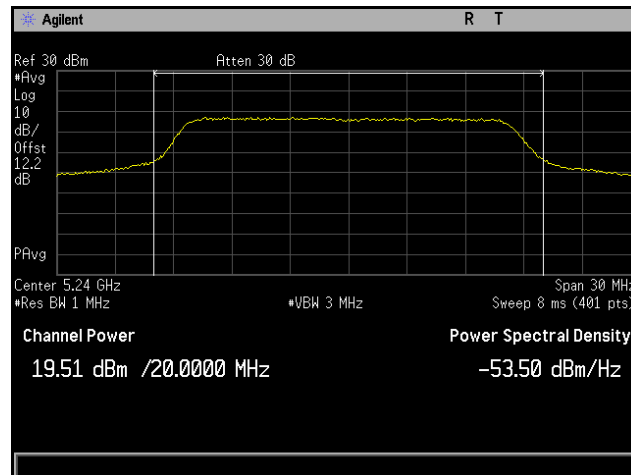
Output Power, 802.11a, 4x8, CH4



Plot 32. Output Power, 802.11a, Channel 5180 MHz, 4x8 MCS0 CH4

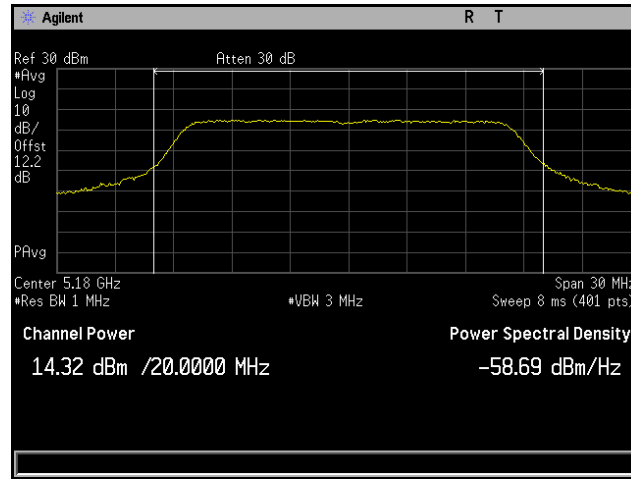


Plot 33. Output Power, 802.11a, Channel 5200 MHz, 4x8 MCS0 CH4

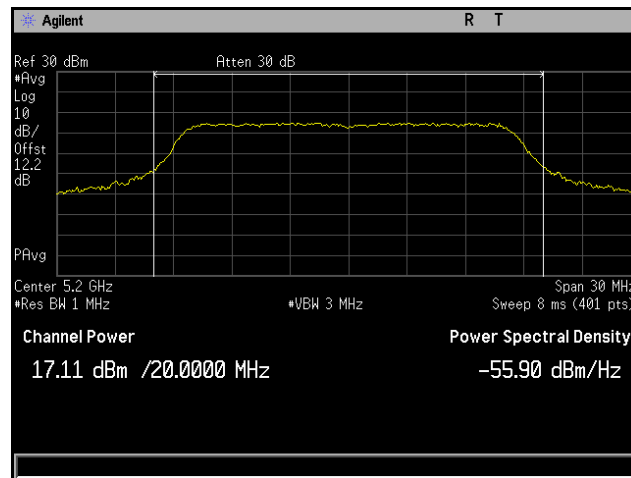


Plot 34. Output Power, 802.11a, Channel 5240 MHz, 4x8 MCS0 CH4

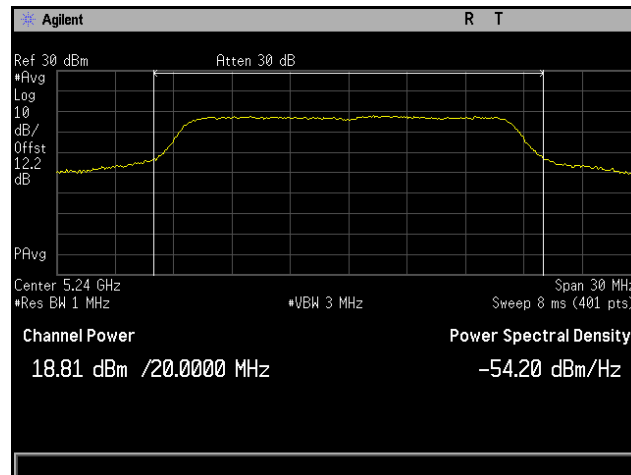
Output Power, 802.11a, 4x8, CH5



Plot 35. Output Power, 802.11a, Channel 5180 MHz, 4x8 MCS0 CH5

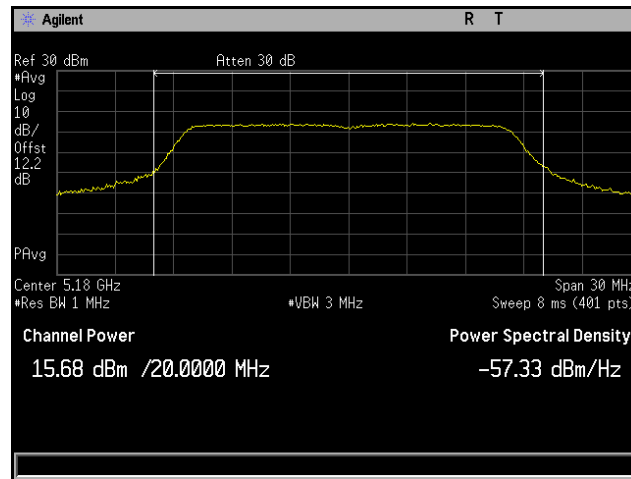


Plot 36. Output Power, 802.11a, Channel 5200 MHz, 4x8 MCS0 CH5

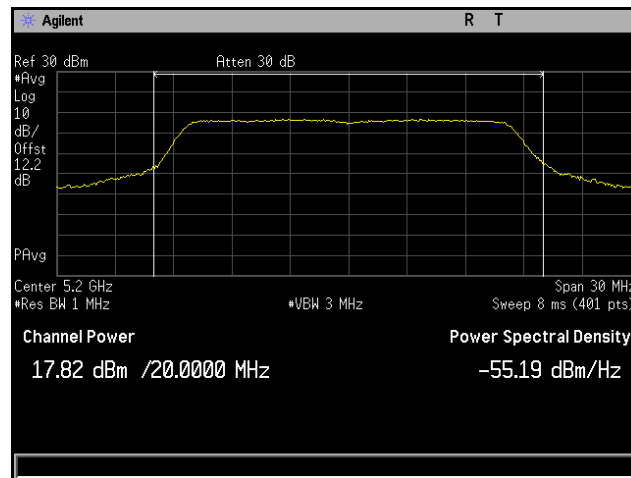


Plot 37. Output Power, 802.11a, Channel 5240 MHz, 4x8 MCS0 CH5

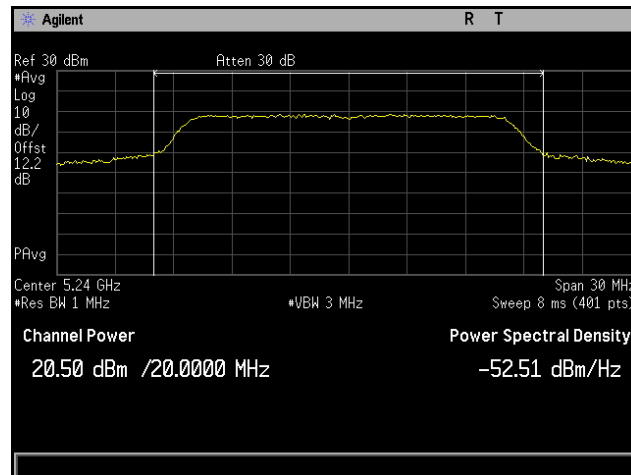
Output Power, 802.11a, 4x8, CH6



Plot 38. Output Power, 802.11a, Channel 5180 MHz, 4x8 MCS0 CH6

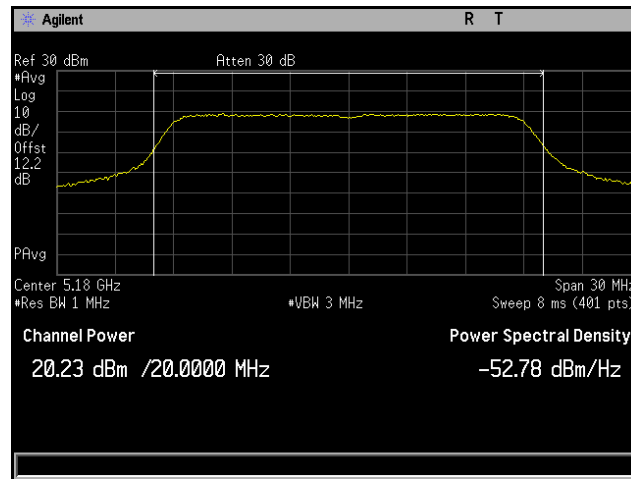


Plot 39. Output Power, 802.11a, Channel 5200 MHz, 4x8 MCS0 CH6

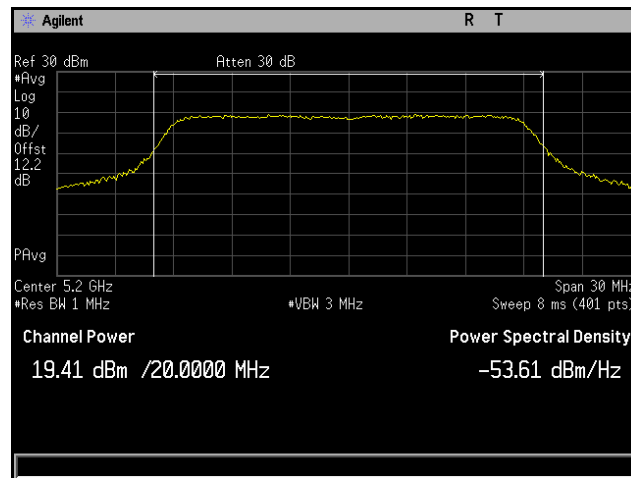


Plot 40. Output Power, 802.11a, Channel 5240 MHz, 4x8 MCS0 CH6

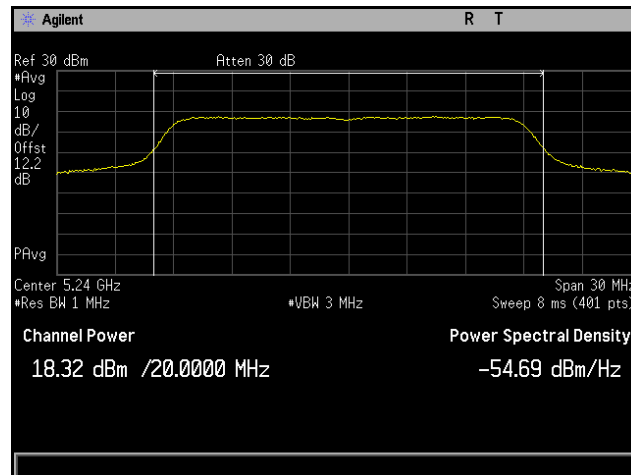
Output Power, 802.11ac 20 MHz, 4x8, CH3



Plot 41. Output Power, 802.11ac 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH3

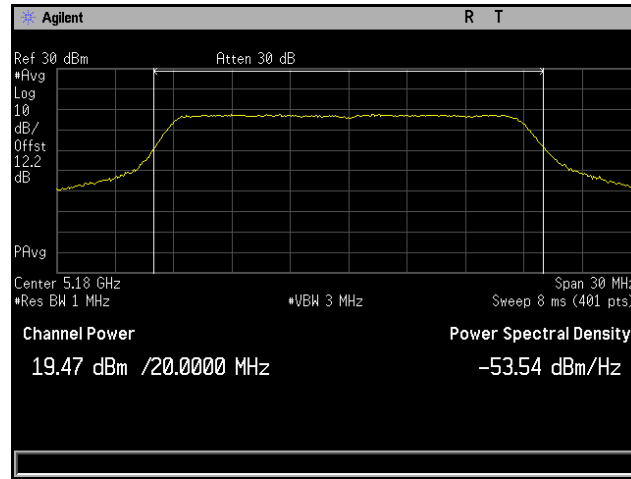


Plot 42. Output Power, 802.11ac 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH3

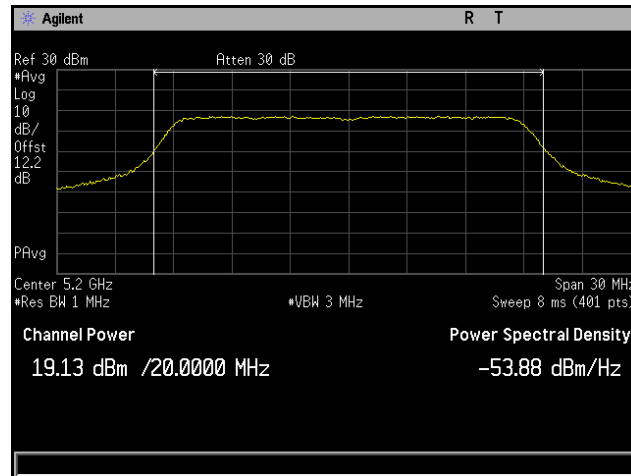


Plot 43. Output Power, 802.11ac 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH3

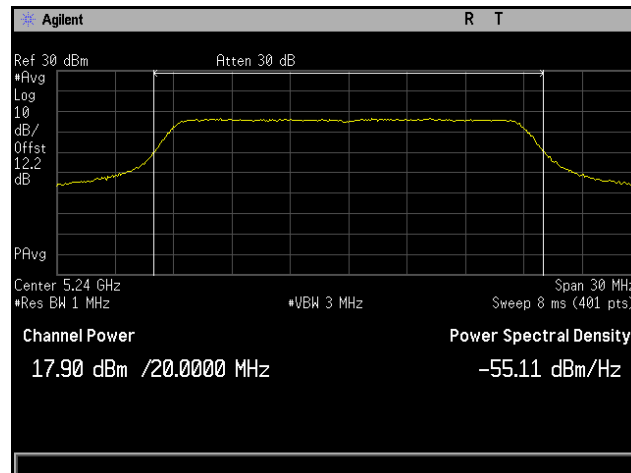
Output Power, 802.11ac 20 MHz, 4x8, CH4



Plot 44. Output Power, 802.11ac 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH4

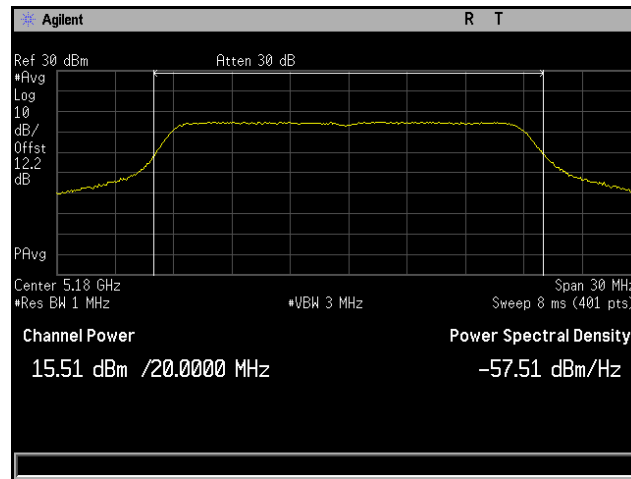


Plot 45. Output Power, 802.11ac 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH4

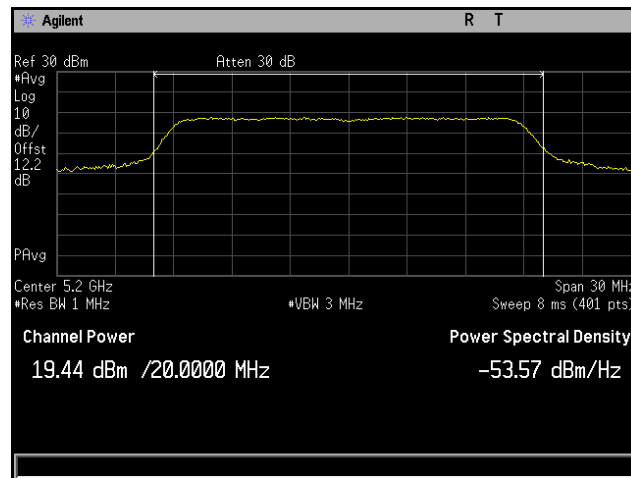


Plot 46. Output Power, 802.11ac 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH4

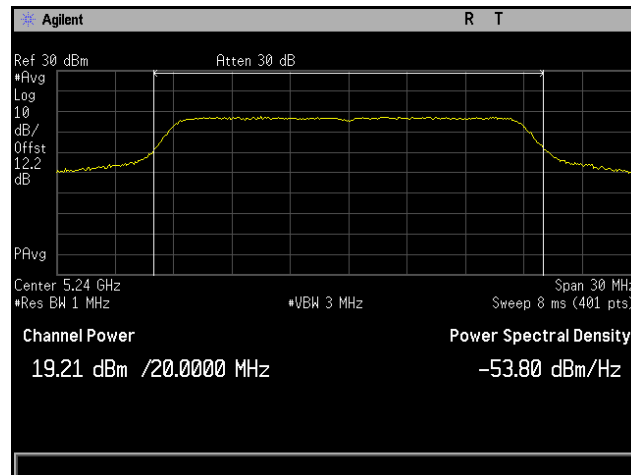
Output Power, 802.11ac 20 MHz, 4x8, CH5



Plot 47. Output Power, 802.11ac 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH5

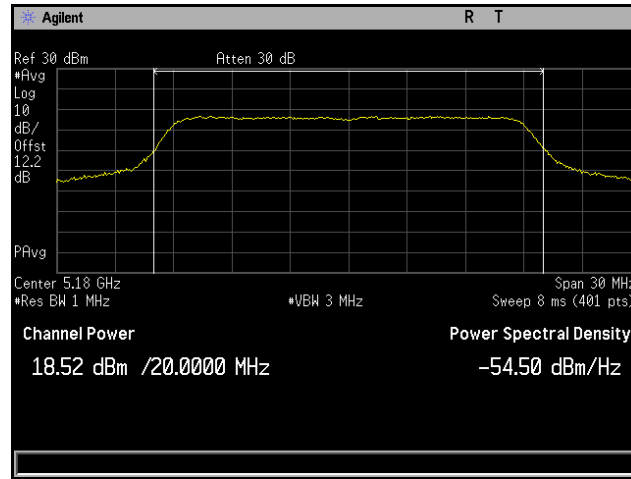


Plot 48. Output Power, 802.11ac 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH5

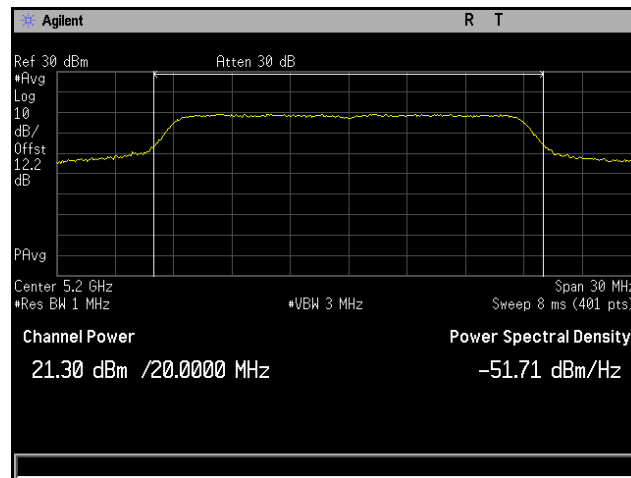


Plot 49. Output Power, 802.11ac 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH5

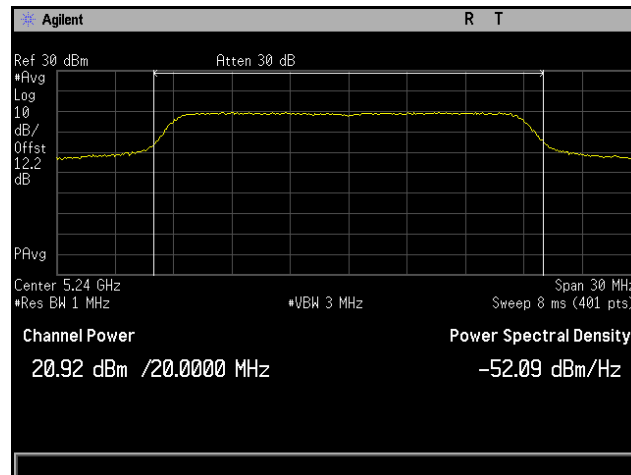
Output Power, 802.11ac 20 MHz, 4x8, CH6



Plot 50. Output Power, 802.11ac 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH6

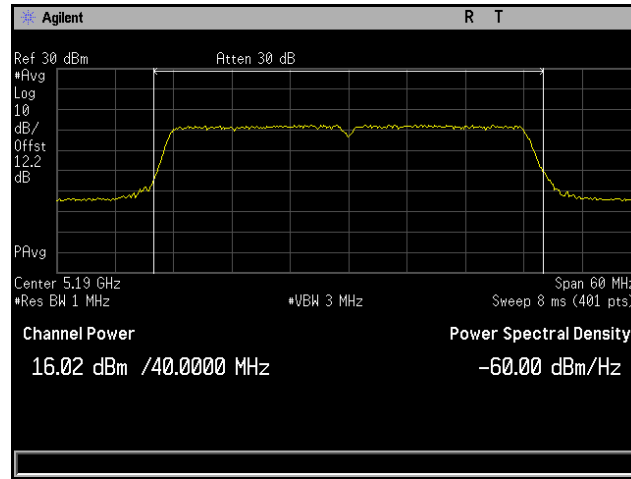


Plot 51. Output Power, 802.11ac 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH6

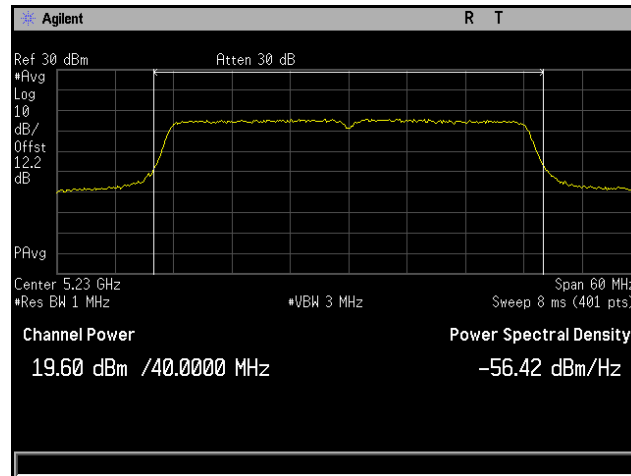


Plot 52. Output Power, 802.11ac 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH6

Output Power, 802.11ac 40 MHz, 4x8, CH3

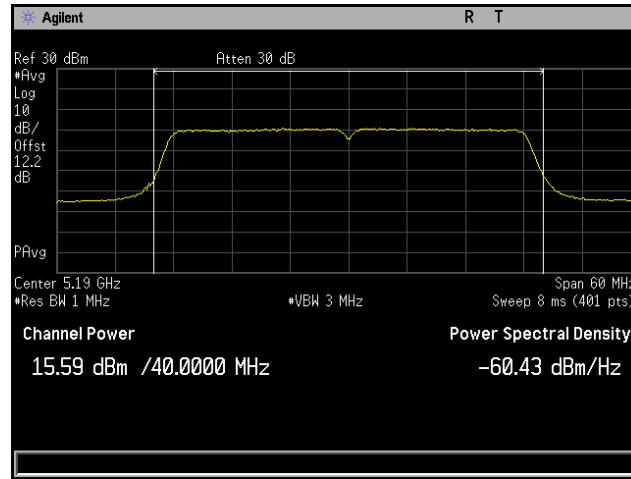


Plot 53. Output Power, 802.11ac 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH3

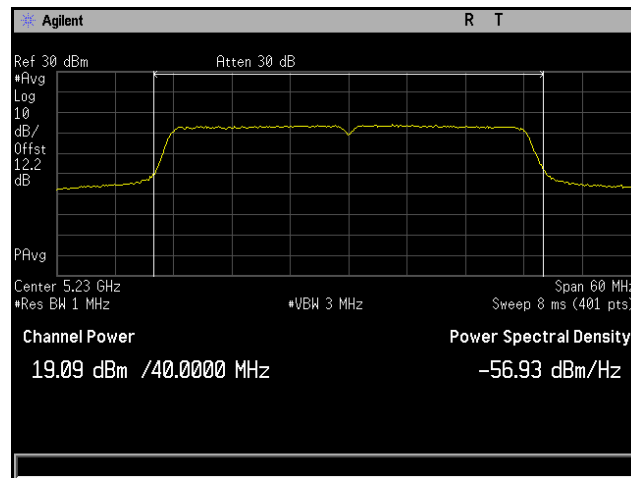


Plot 54. Output Power, 802.11ac 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH3

Output Power, 802.11ac 40 MHz, 4x8, CH4

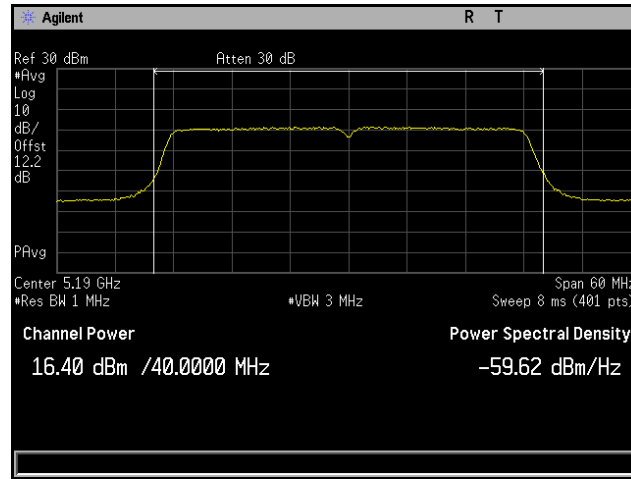


Plot 55. Output Power, 802.11ac 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH4

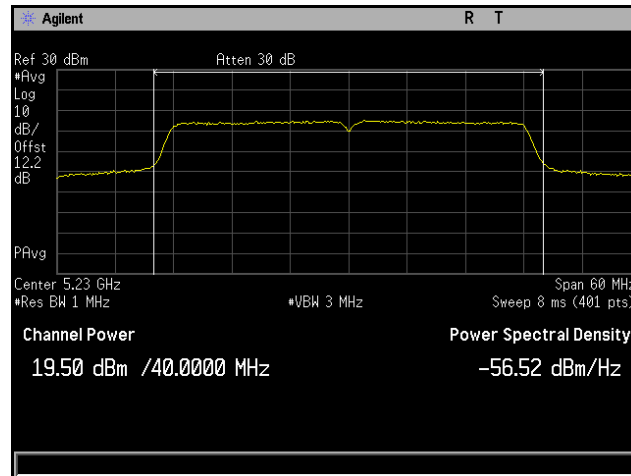


Plot 56. Output Power, 802.11ac 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH4

Output Power, 802.11ac 40 MHz, 4x8, CH5

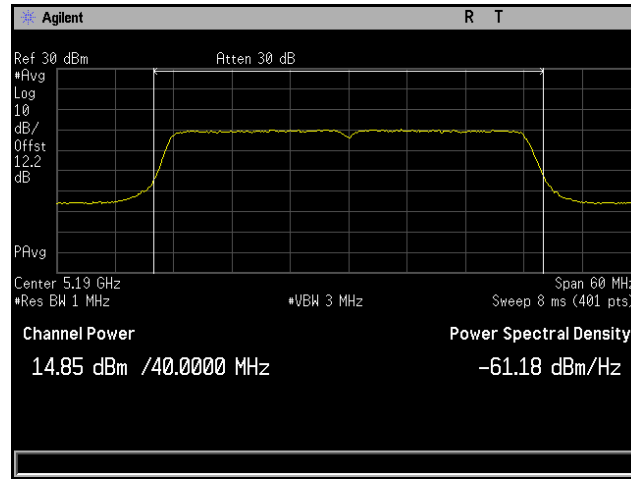


Plot 57. Output Power, 802.11ac 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH5

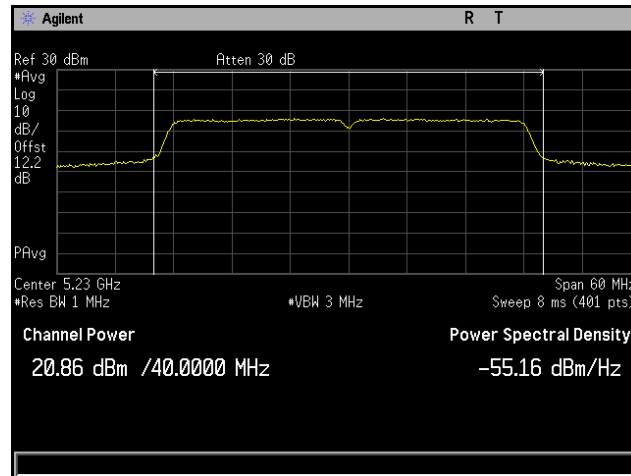


Plot 58. Output Power, 802.11ac 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH5

Output Power, 802.11ac 40 MHz, 4x8, CH6

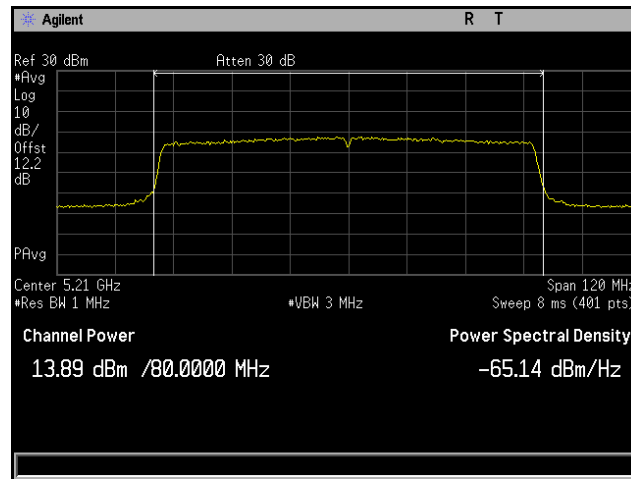


Plot 59. Output Power, 802.11ac 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH6

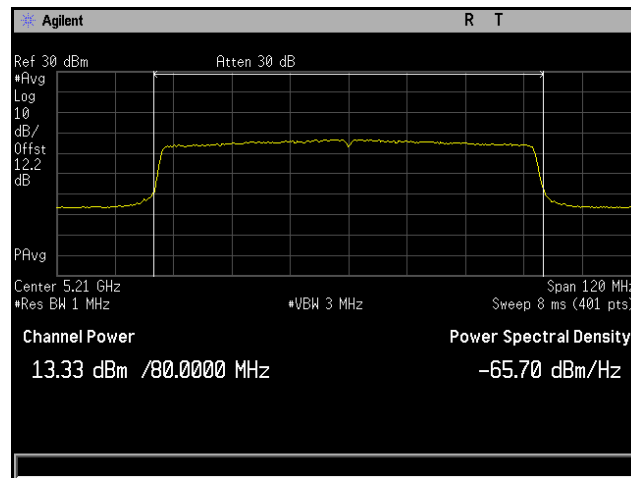


Plot 60. Output Power, 802.11ac 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH6

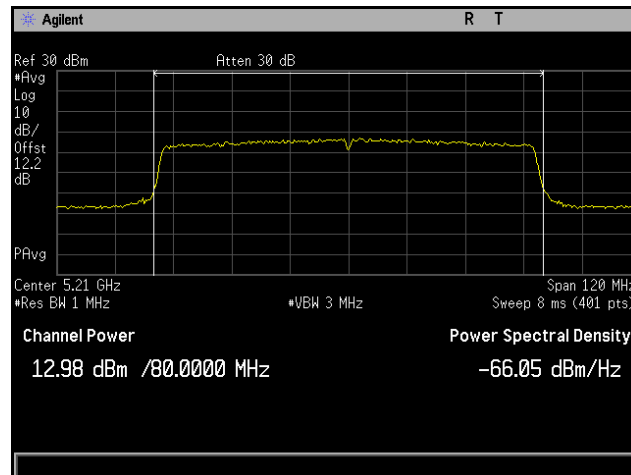
Output Power, 802.11ac 80 MHz, 4x8



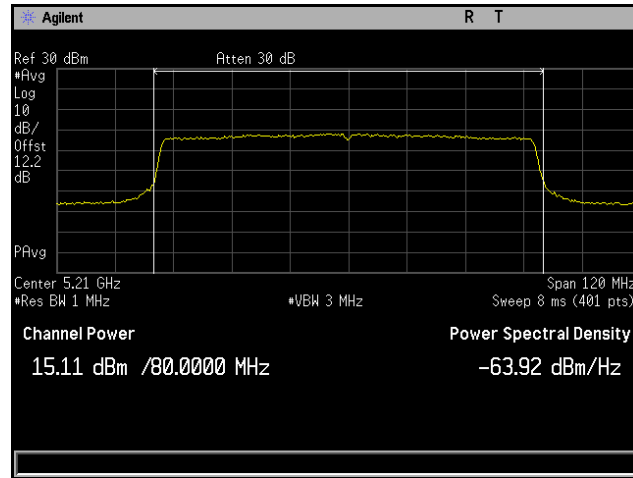
Plot 61. Output Power, 802.11ac 80 MHz, Channel 5210 MHz, 4x8 MCS0 CH3



Plot 62. Output Power, 802.11ac 80 MHz, Channel 5210 MHz, 4x8 MCS0 CH4

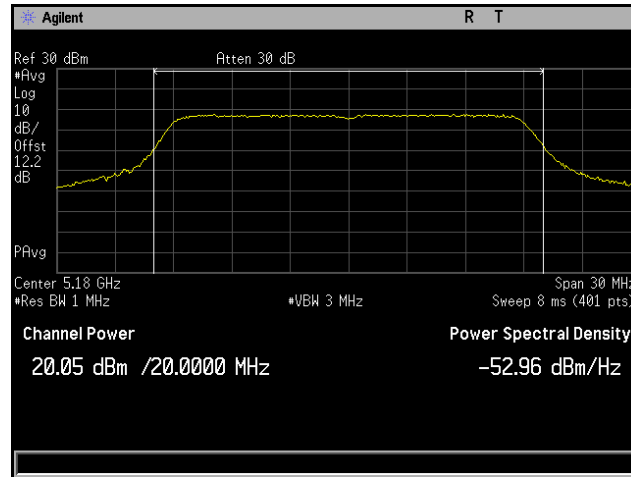


Plot 63. Output Power, 802.11ac 80 MHz, Channel 5210 MHz, 4x8 MCS0 CH5

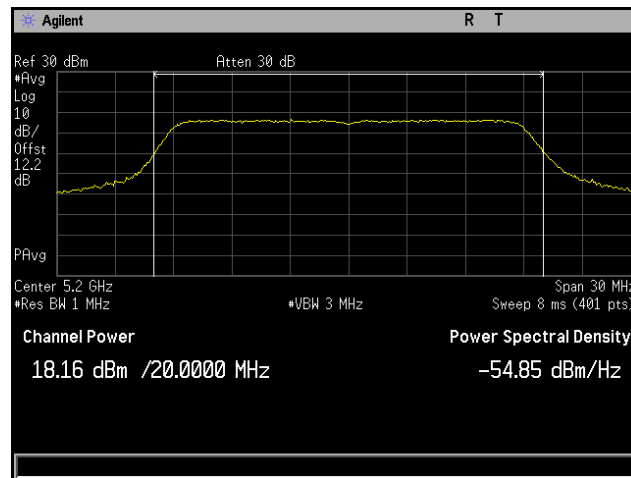


Plot 64. Output Power, 802.11ac 80 MHz, Channel 5210 MHz, 4x8 MCS0 CH6

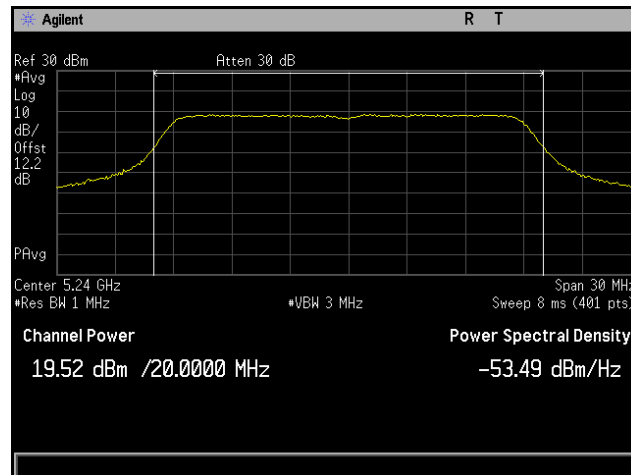
Output Power, 802.11n 20 MHz, 4x8, CH3



Plot 65. Output Power, 802.11n 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH3

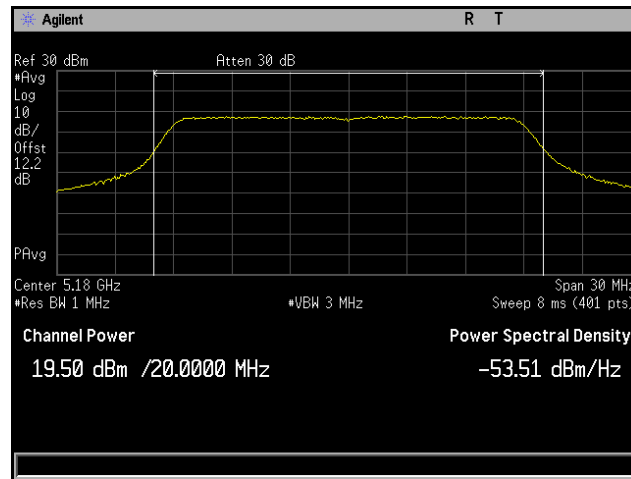


Plot 66. Output Power, 802.11n 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH3

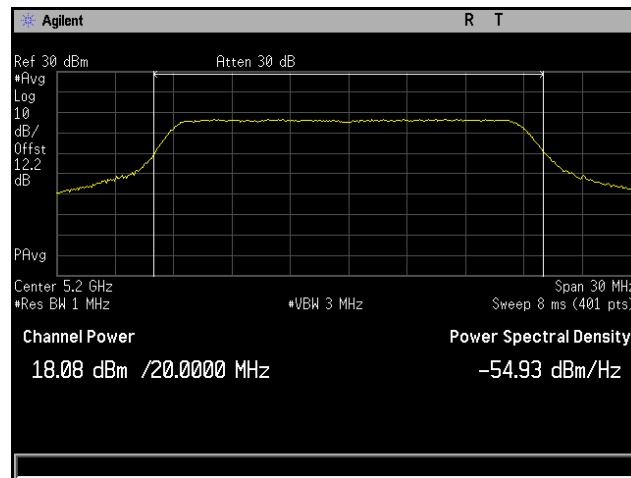


Plot 67. Output Power, 802.11n 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH3

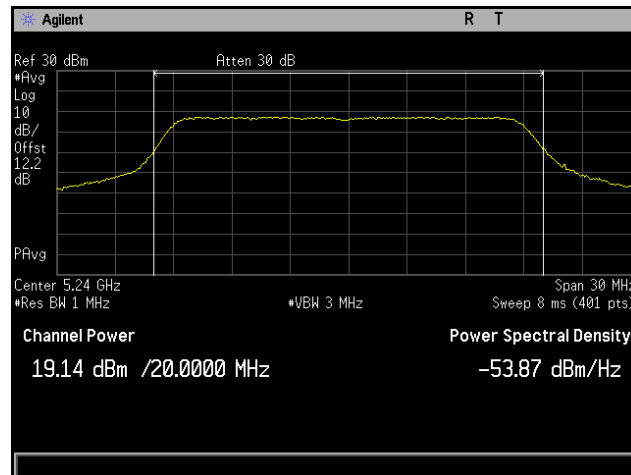
Output Power, 802.11n 20 MHz, 4x8, CH4



Plot 68. Output Power, 802.11n 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH4

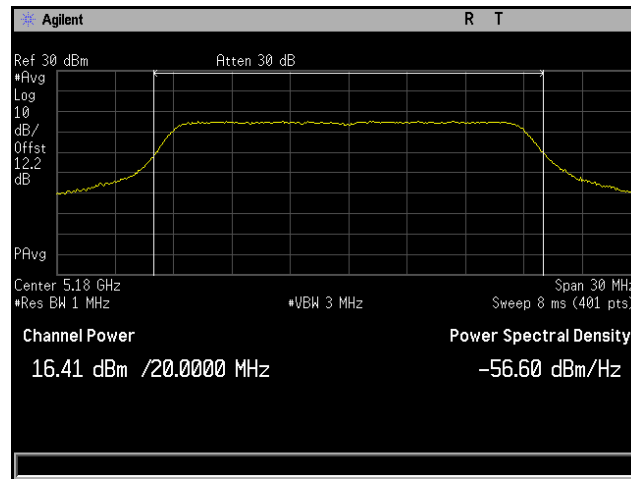


Plot 69. Output Power, 802.11n 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH4

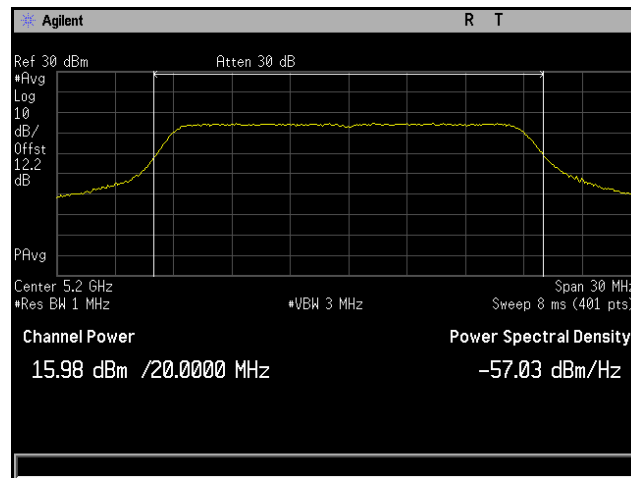


Plot 70. Output Power, 802.11n 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH4

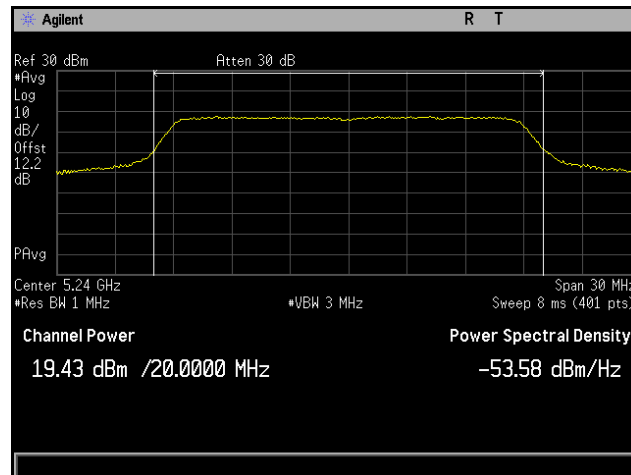
Output Power, 802.11n 20 MHz, 4x8, CH5



Plot 71. Output Power, 802.11n 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH5

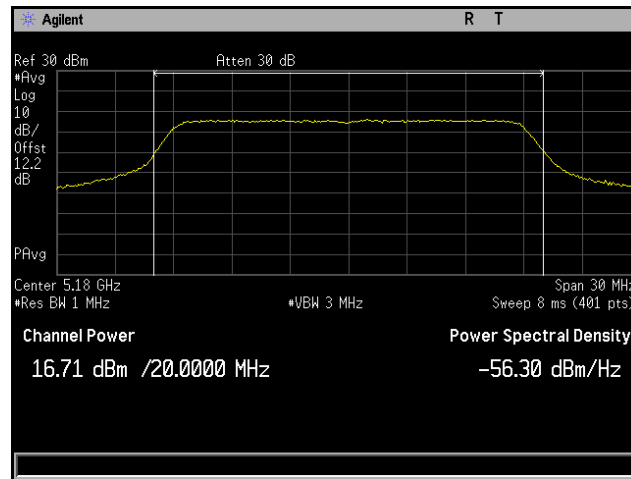


Plot 72. Output Power, 802.11n 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH5

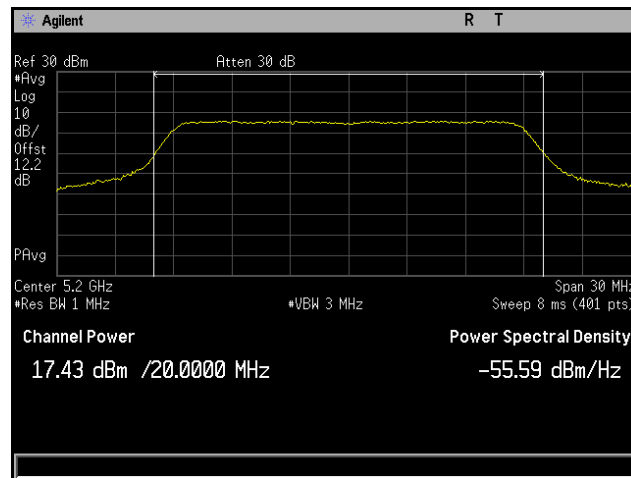


Plot 73. Output Power, 802.11n 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH5

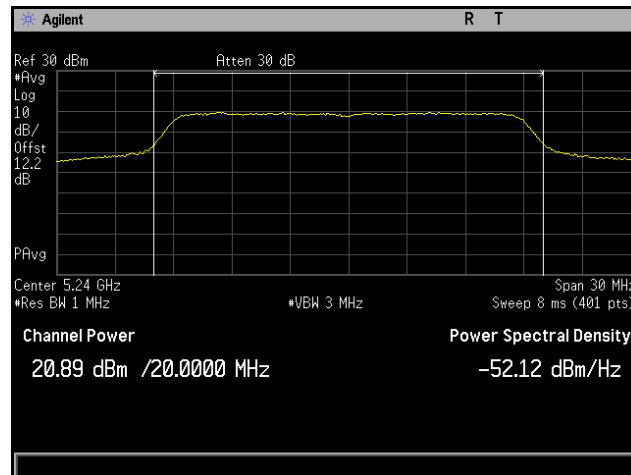
Output Power, 802.11n 20 MHz, 4x8, CH6



Plot 74. Output Power, 802.11n 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH6

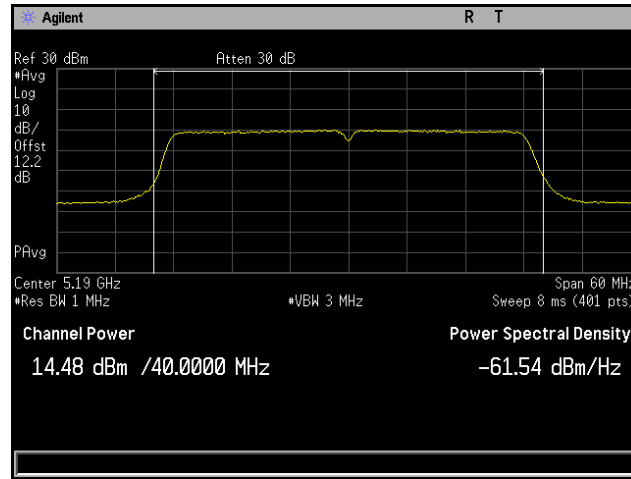


Plot 75. Output Power, 802.11n 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH6

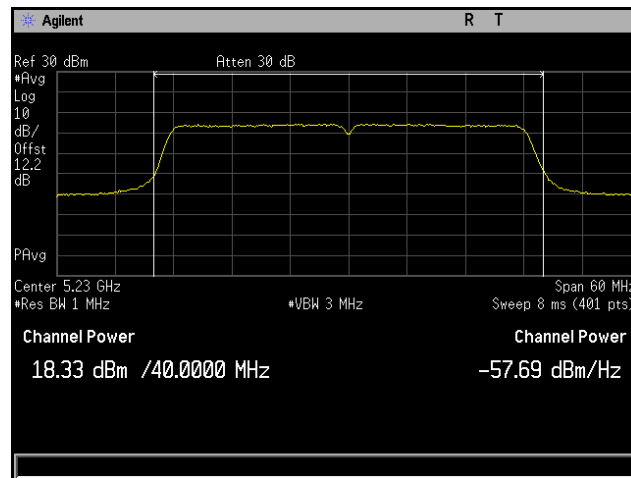


Plot 76. Output Power, 802.11n 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH6

Output Power, 802.11n 40 MHz, 4x8, CH3

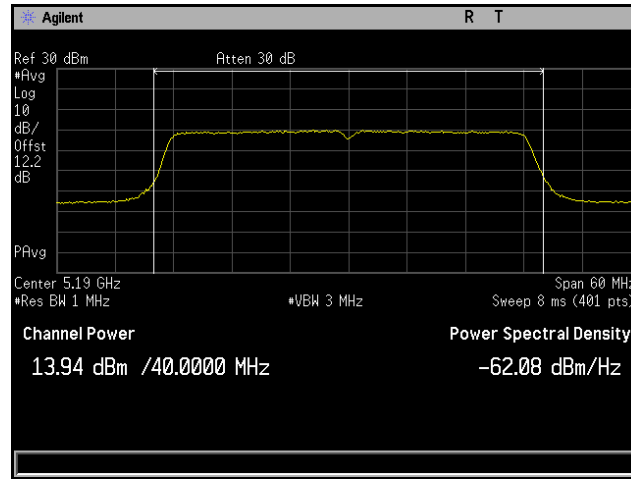


Plot 77. Output Power, 802.11n 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH3

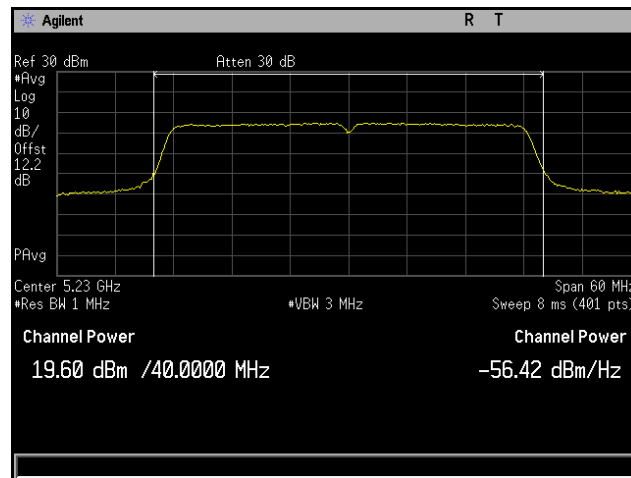


Plot 78. Output Power, 802.11n 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH3

Output Power, 802.11n 40 MHz, 4x8, CH4

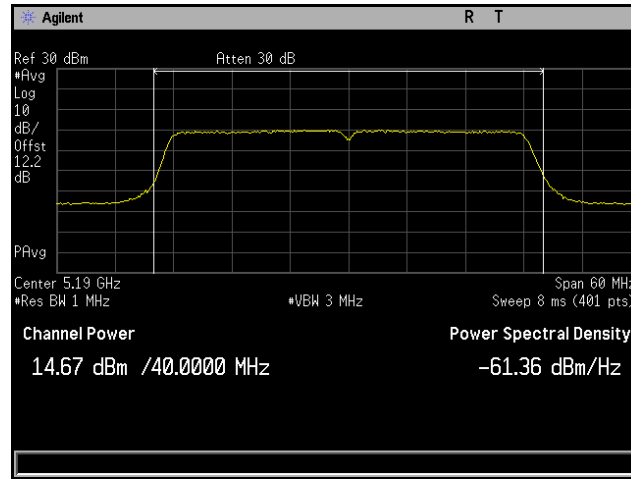


Plot 79. Output Power, 802.11n 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH4

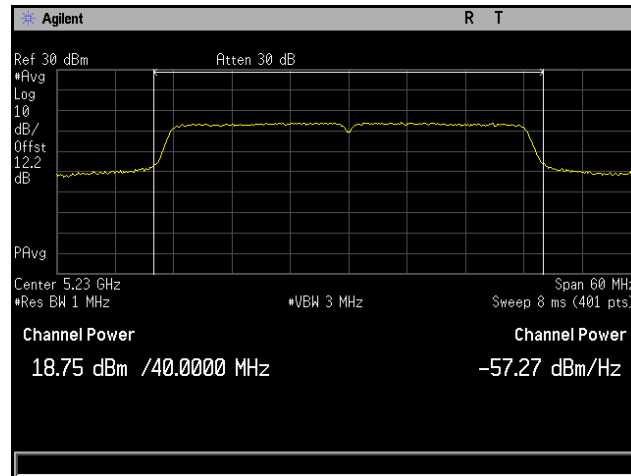


Plot 80. Output Power, 802.11n 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH4

Output Power, 802.11n 40 MHz, 4x8, CH5

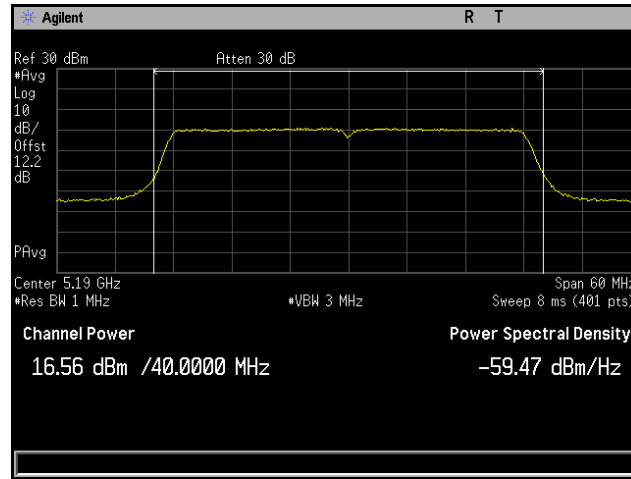


Plot 81. Output Power, 802.11n 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH5

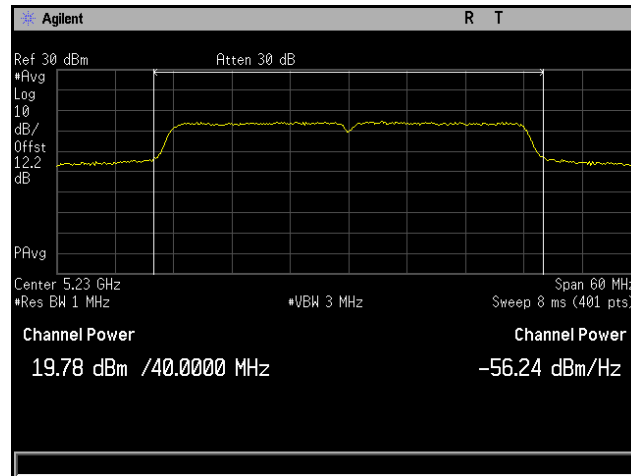


Plot 82. Output Power, 802.11n 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH5

Output Power, 802.11n 40 MHz, 4x8, CH6

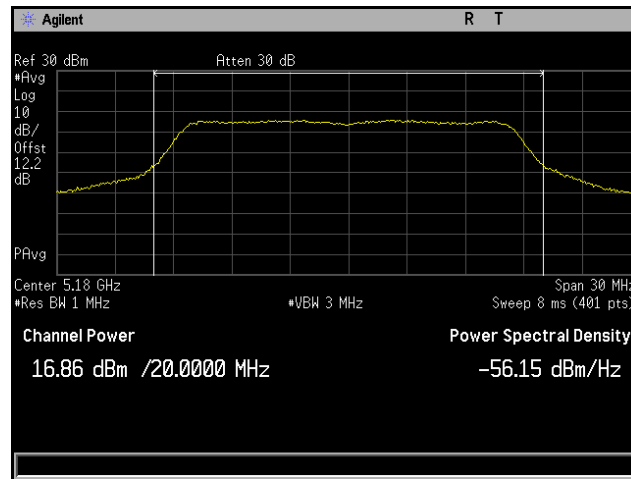


Plot 83. Output Power, 802.11n 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH6

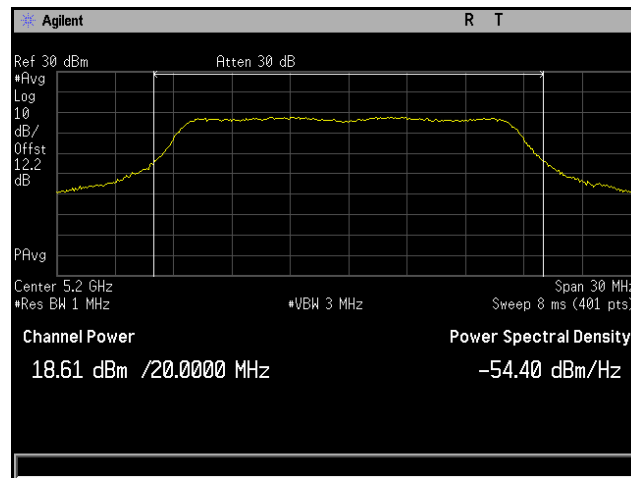


Plot 84. Output Power, 802.11n 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH6

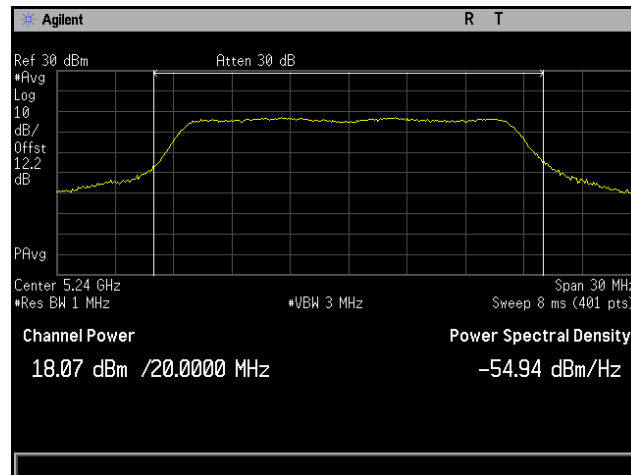
Output Power, 802.11a, 6x8, CH2



Plot 85. Output Power, 802.11a, Channel 5180 MHz, 6x8 MCS0 CH2

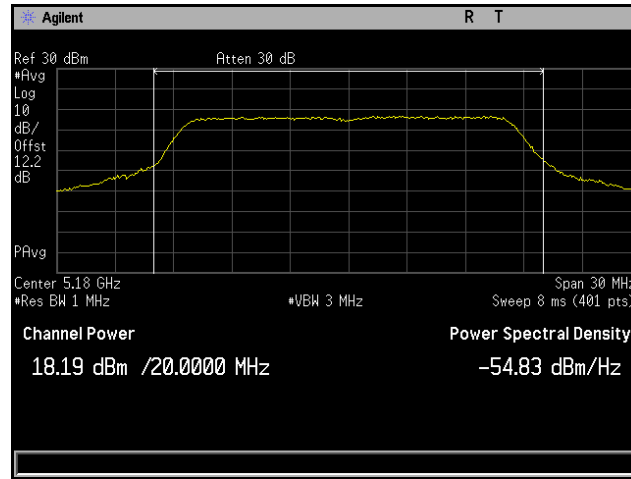


Plot 86. Output Power, 802.11a, Channel 5200 MHz, 6x8 MCS0 CH2

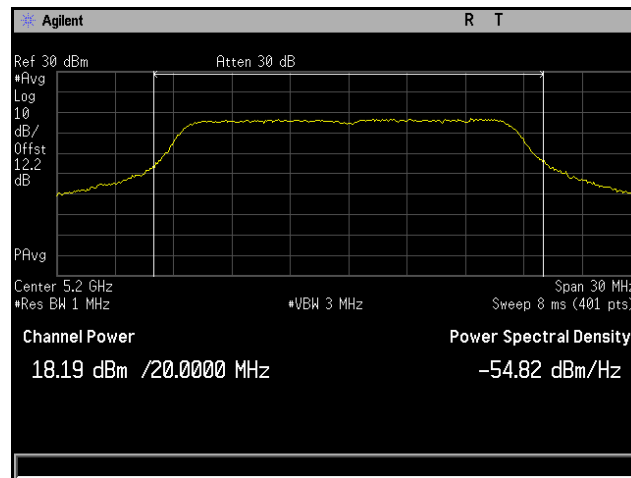


Plot 87. Output Power, 802.11a, Channel 5240 MHz, 6x8 MCS0 CH2

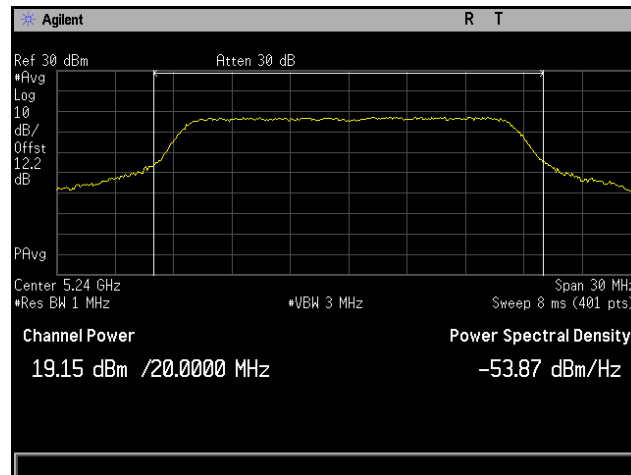
Output Power, 802.11a, 6x8, CH3



Plot 88. Output Power, 802.11a, Channel 5180 MHz, 6x8 MCS0 CH3

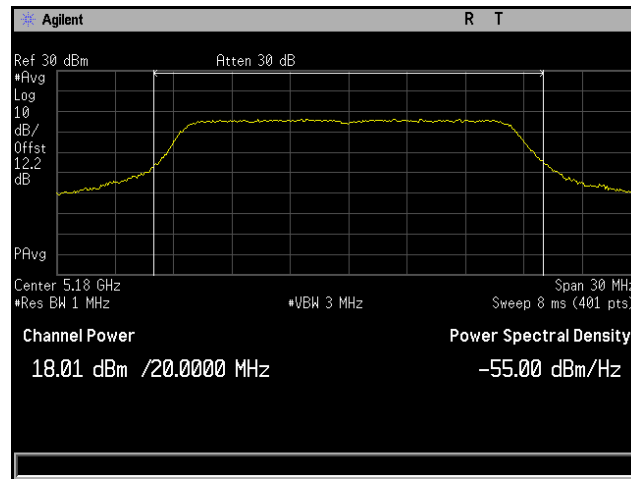


Plot 89. Output Power, 802.11a, Channel 5200 MHz, 6x8 MCS0 CH3

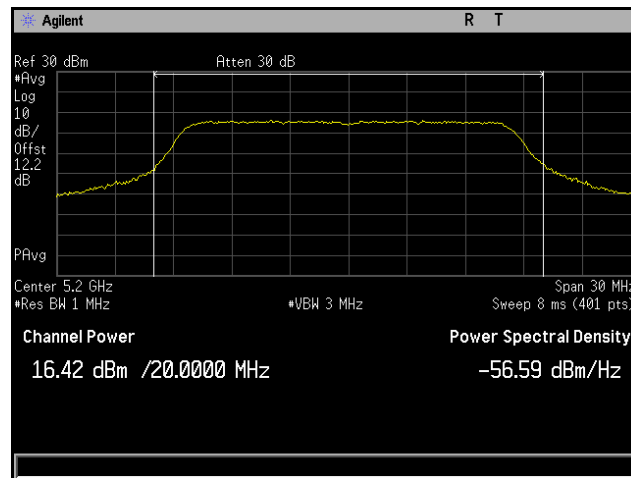


Plot 90. Output Power, 802.11a, Channel 5240 MHz, 6x8 MCS0 CH3

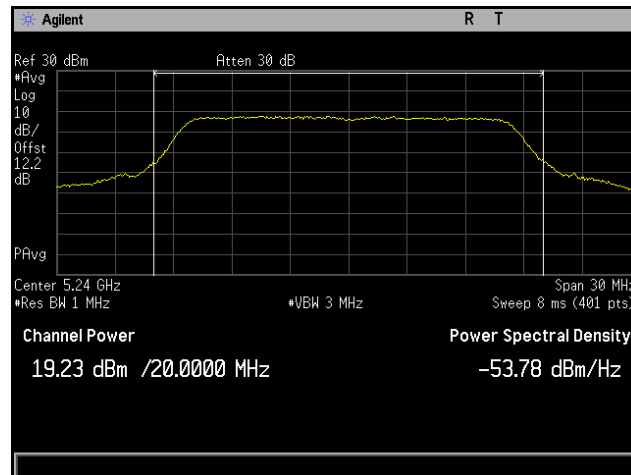
Output Power, 802.11a, 6x8, CH4



Plot 91. Output Power, 802.11a, Channel 5180 MHz, 6x8 MCS0 CH4

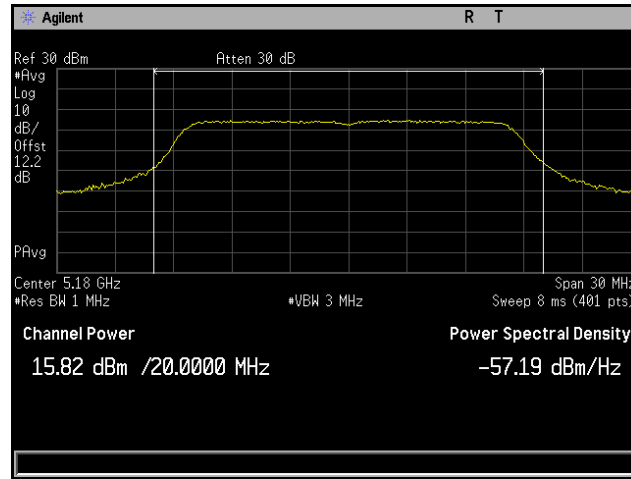


Plot 92. Output Power, 802.11a, Channel 5200 MHz, 6x8 MCS0 CH4

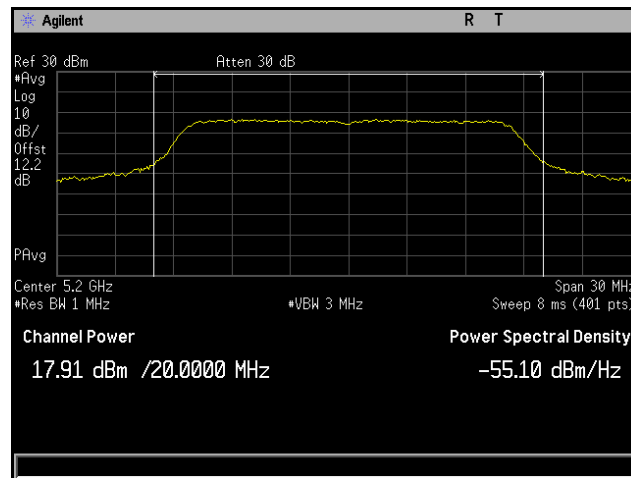


Plot 93. Output Power, 802.11a, Channel 5240 MHz, 6x8 MCS0 CH4

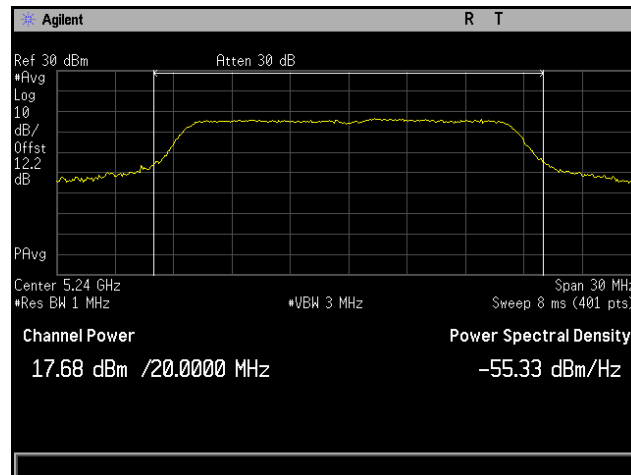
Output Power, 802.11a, 6x8, CH5



Plot 94. Output Power, 802.11a, Channel 5180 MHz, 6x8 MCS0 CH5

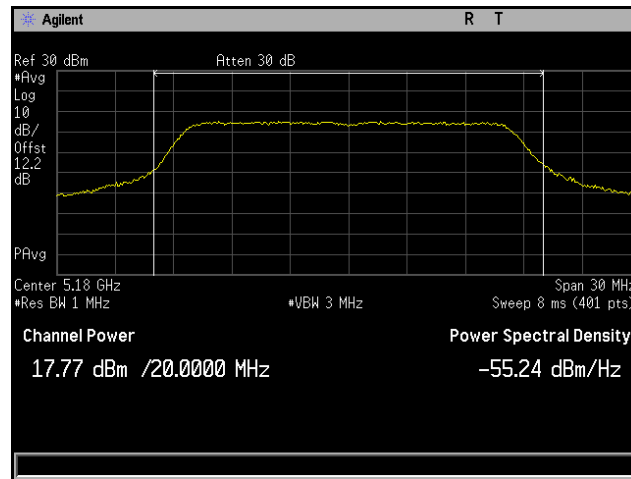


Plot 95. Output Power, 802.11a, Channel 5200 MHz, 6x8 MCS0 CH5

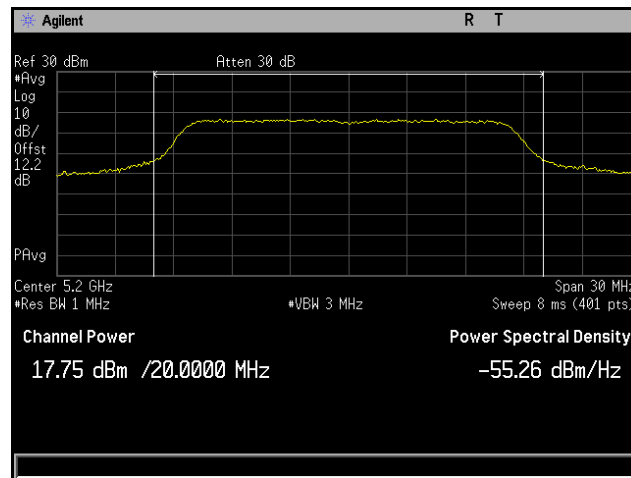


Plot 96. Output Power, 802.11a, Channel 5240 MHz, 6x8 MCS0 CH5

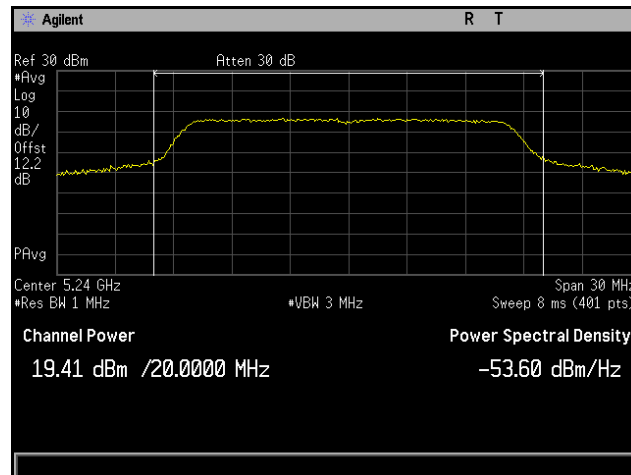
Output Power, 802.11a, 6x8, CH6



Plot 97. Output Power, 802.11a, Channel 5180 MHz, 6x8 MCS0 CH6

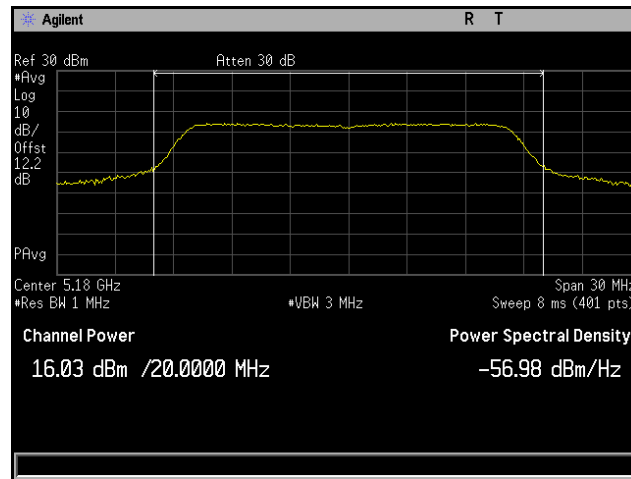


Plot 98. Output Power, 802.11a, Channel 5200 MHz, 6x8 MCS0 CH6

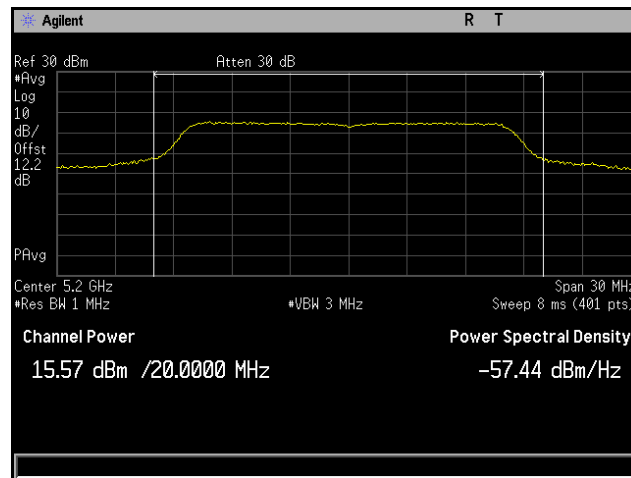


Plot 99. Output Power, 802.11a, Channel 5240 MHz, 6x8 MCS0 CH6

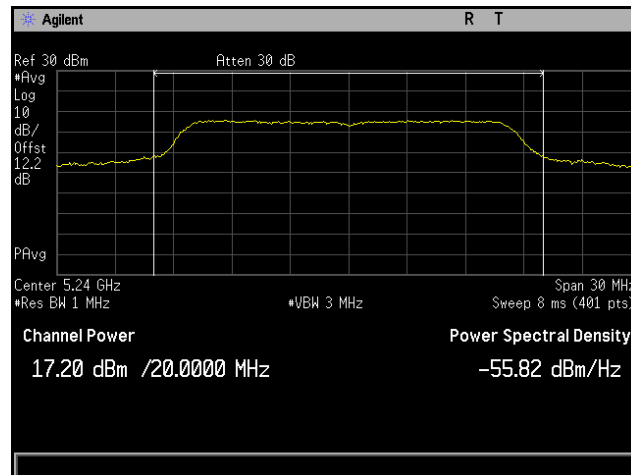
Output Power, 802.11a, 6x8, CH7



Plot 100. Output Power, 802.11a, Channel 5180 MHz, 6x8 MCS0 CH7

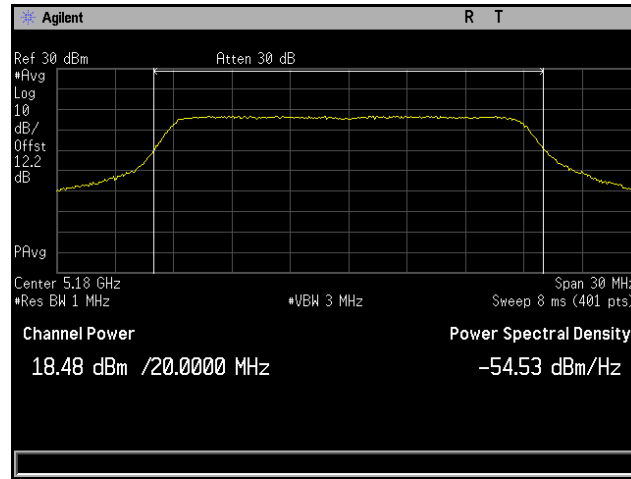


Plot 101. Output Power, 802.11a, Channel 5200 MHz, 6x8 MCS0 CH7

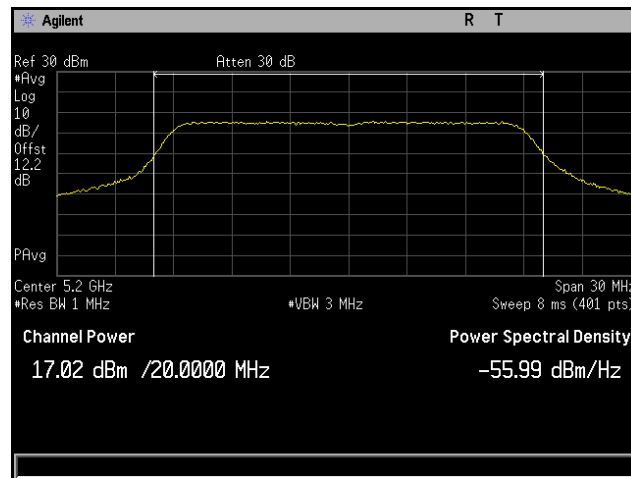


Plot 102. Output Power, 802.11a, Channel 5240 MHz, 6x8 MCS0 CH7

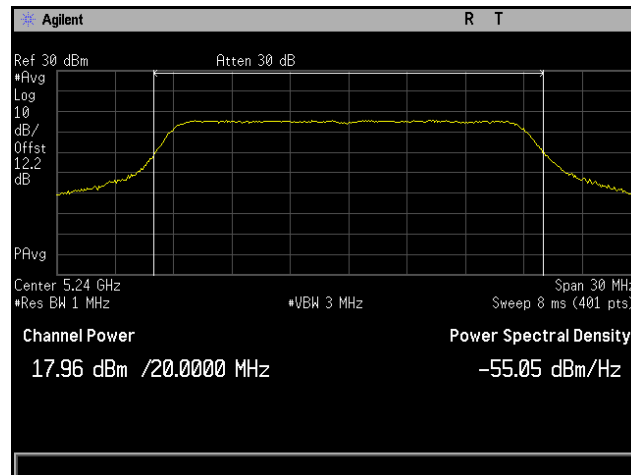
Output Power, 802.11ac 20 MHz, 6x8, CH2



Plot 103. Output Power, 802.11ac 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH2

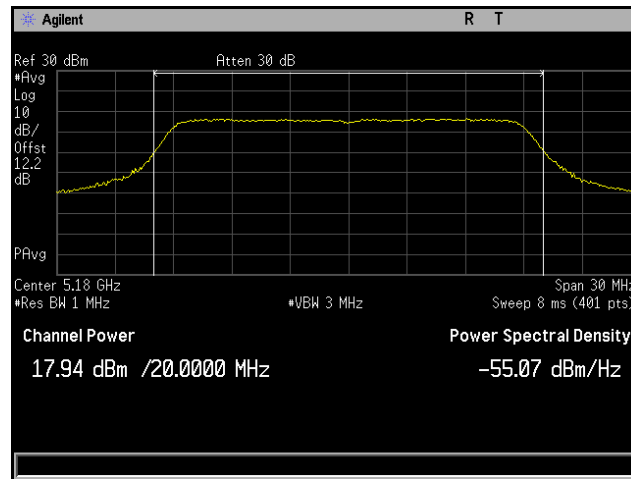


Plot 104. Output Power, 802.11ac 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH2

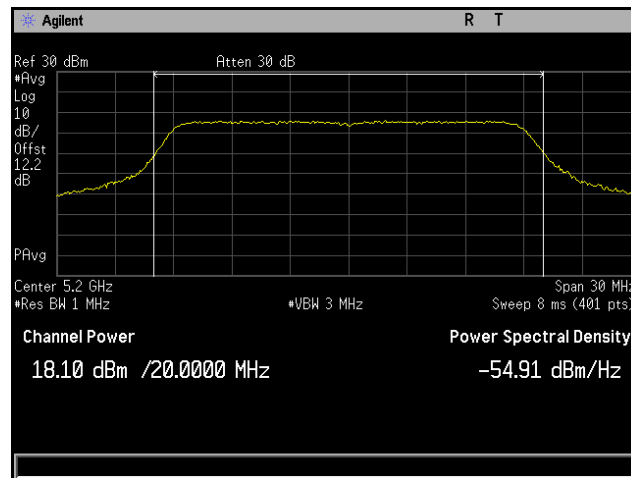


Plot 105. Output Power, 802.11ac 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH2

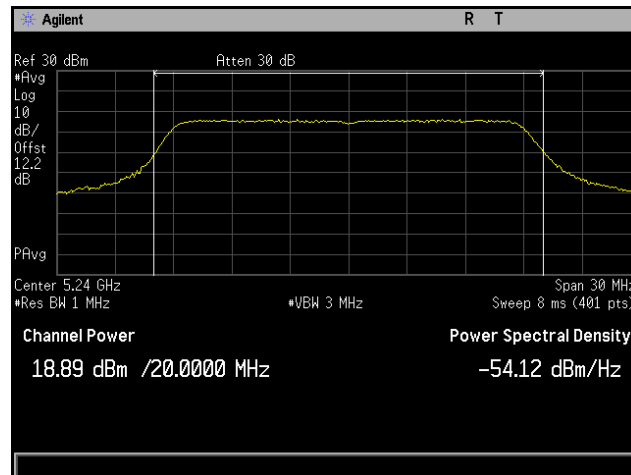
Output Power, 802.11ac 20 MHz, 6x8, CH3



Plot 106. Output Power, 802.11ac 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH3

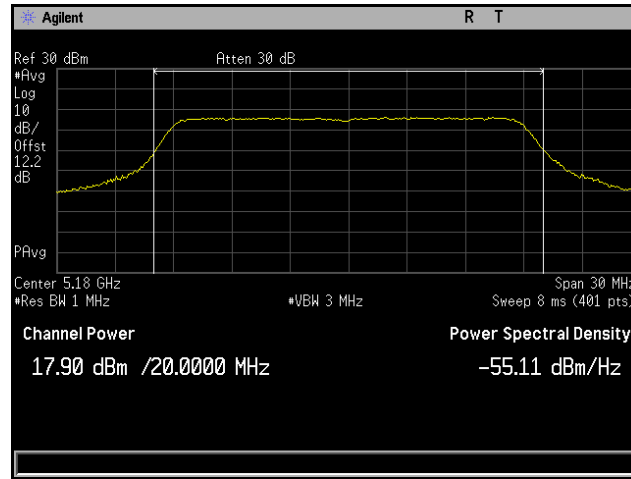


Plot 107. Output Power, 802.11ac 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH3

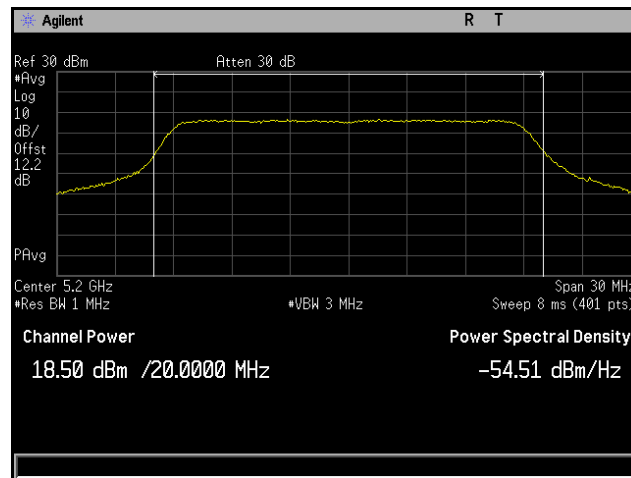


Plot 108. Output Power, 802.11ac 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH3

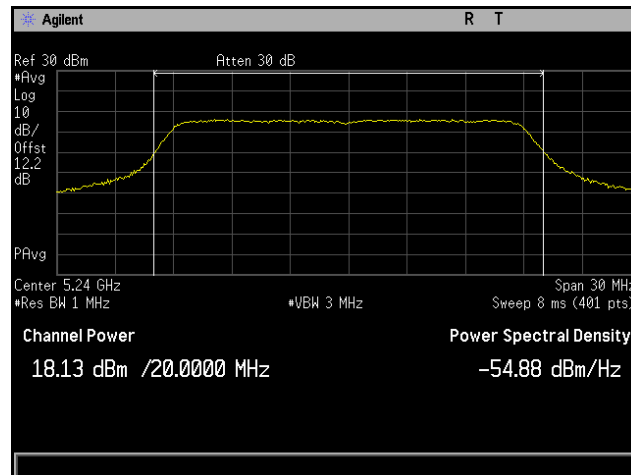
Output Power, 802.11ac 20 MHz, 6x8, CH4



Plot 109. Output Power, 802.11ac 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH4

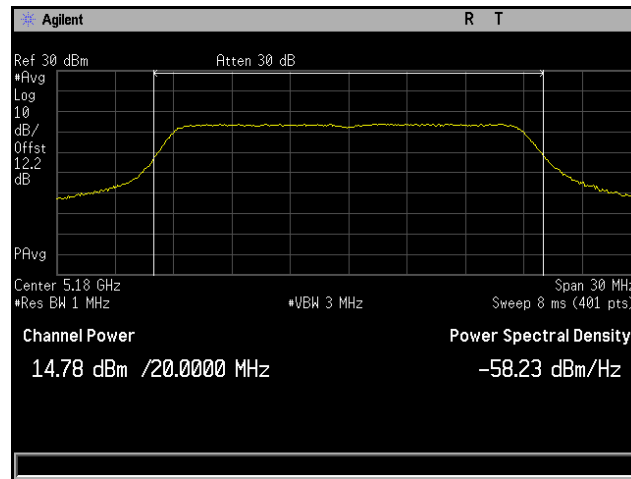


Plot 110. Output Power, 802.11ac 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH4

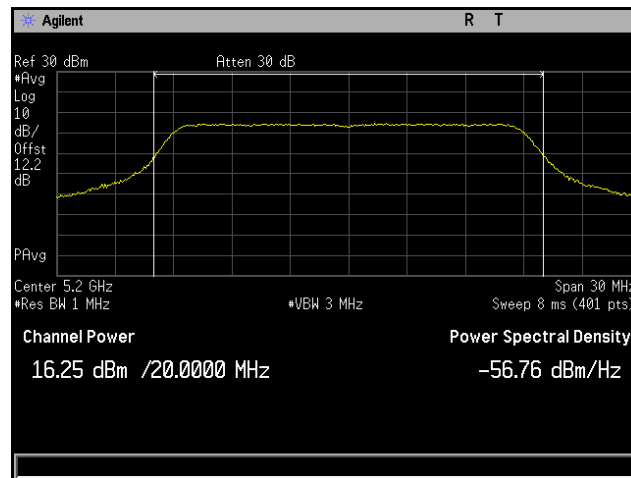


Plot 111. Output Power, 802.11ac 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH4

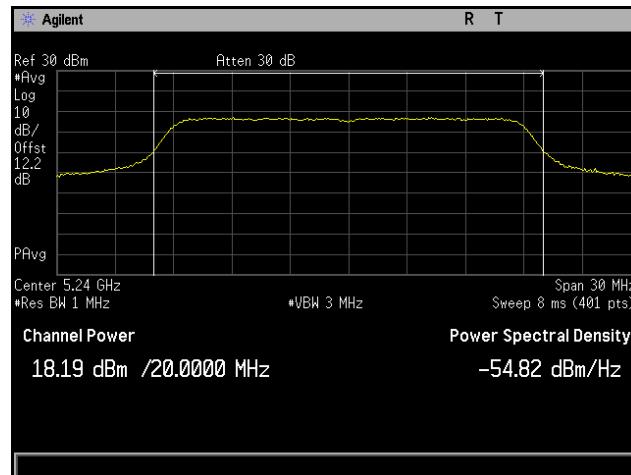
Output Power, 802.11ac 20 MHz, 6x8, CH5



Plot 112. Output Power, 802.11ac 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH5

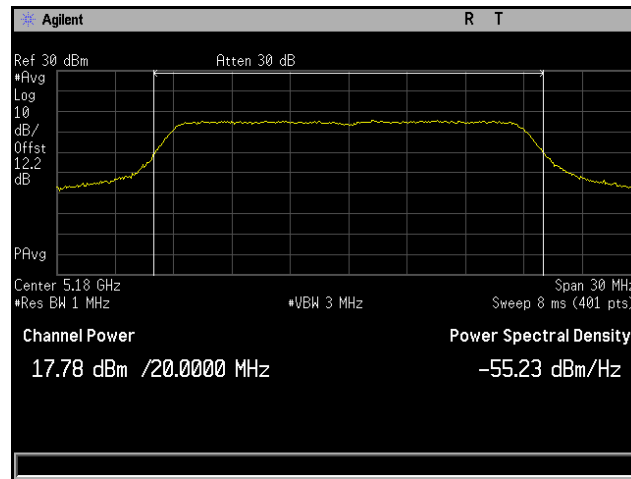


Plot 113. Output Power, 802.11ac 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH5

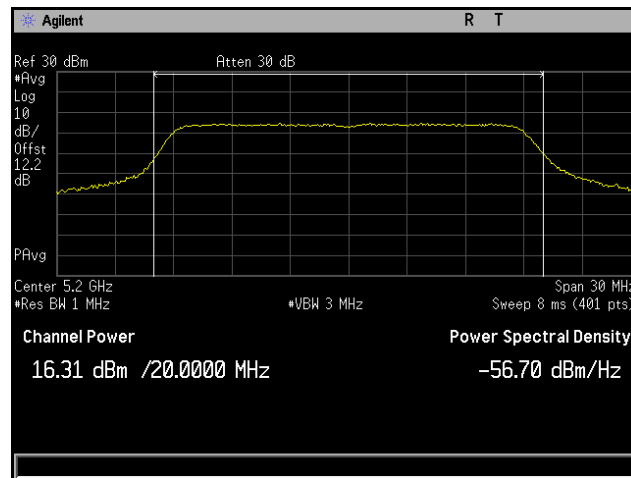


Plot 114. Output Power, 802.11ac 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH5

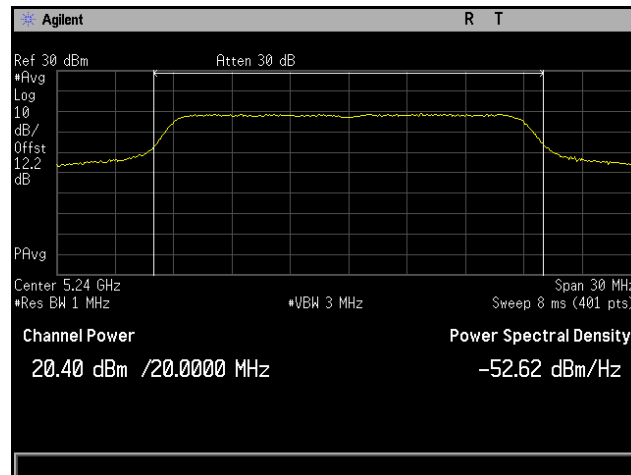
Output Power, 802.11ac 20 MHz, 6x8, CH6



Plot 115. Output Power, 802.11ac 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH6

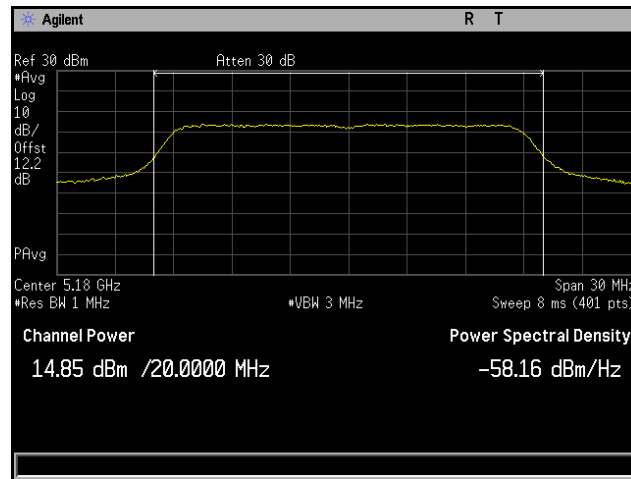


Plot 116. Output Power, 802.11ac 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH6

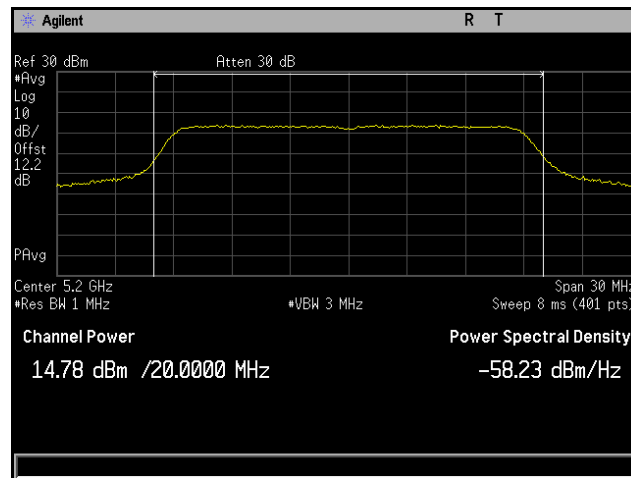


Plot 117. Output Power, 802.11ac 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH6

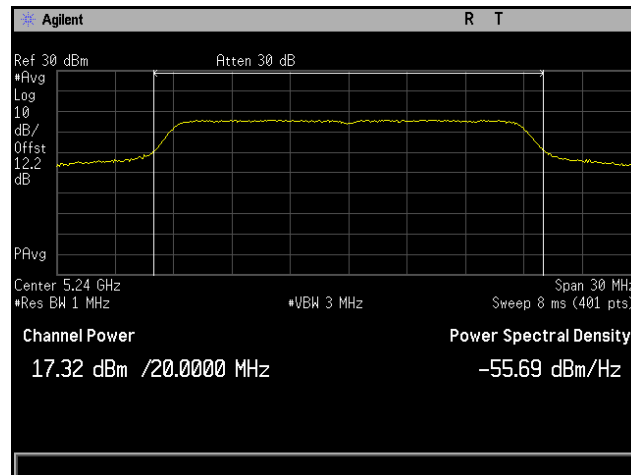
Output Power, 802.11ac 20 MHz, 6x8, CH7



Plot 118. Output Power, 802.11ac 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH7

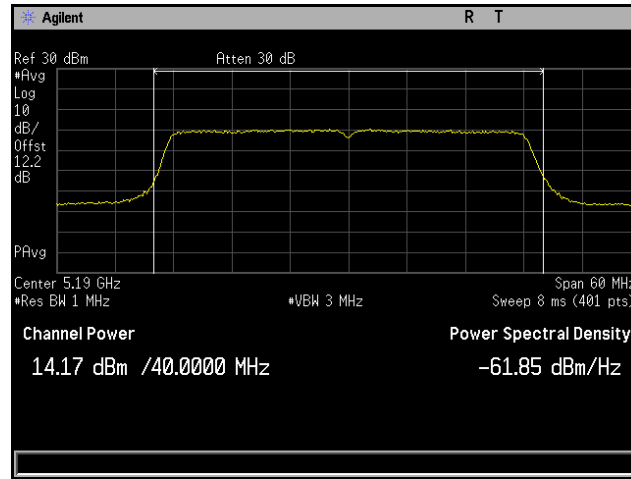


Plot 119. Output Power, 802.11ac 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH7

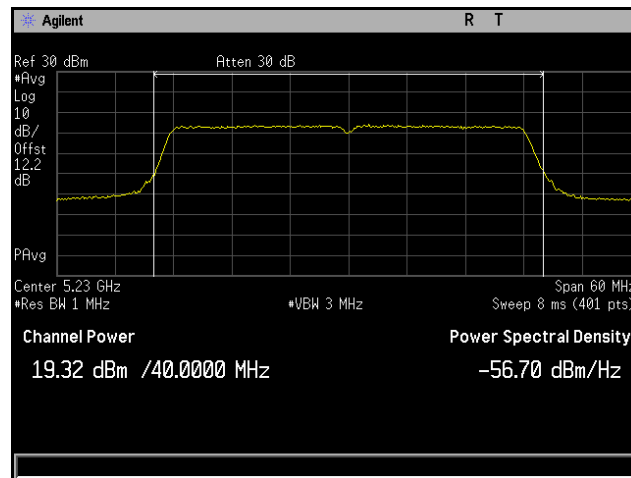


Plot 120. Output Power, 802.11ac 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH7

Output Power, 802.11ac 40 MHz, 6x8, CH2

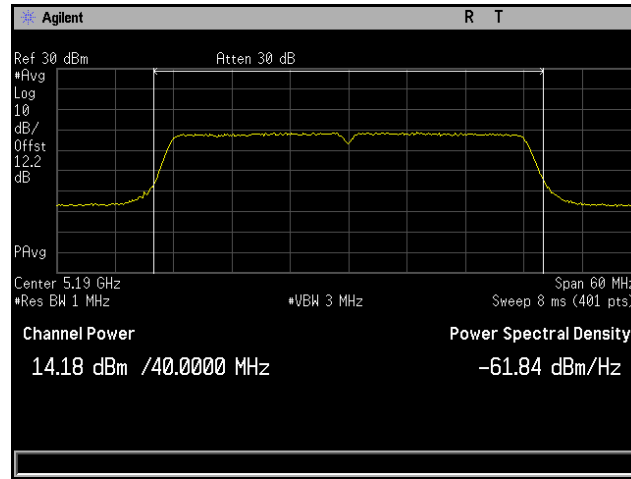


Plot 121. Output Power, 802.11ac 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH2

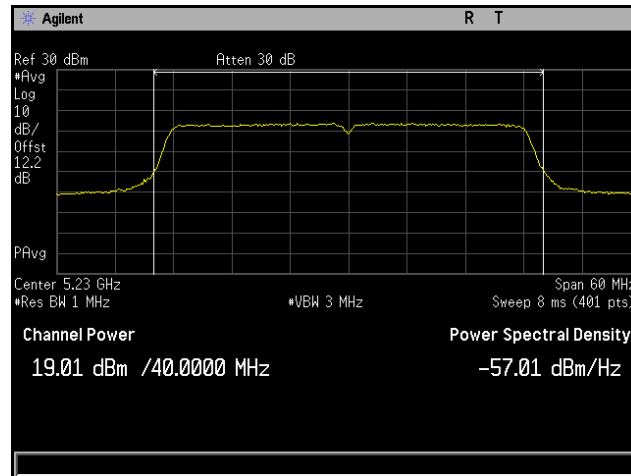


Plot 122. Output Power, 802.11ac 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH2

Output Power, 802.11ac 40 MHz, 6x8, CH3

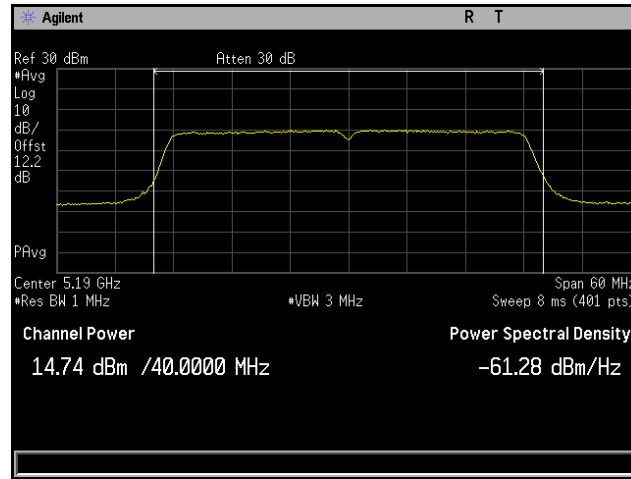


Plot 123. Output Power, 802.11ac 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH3

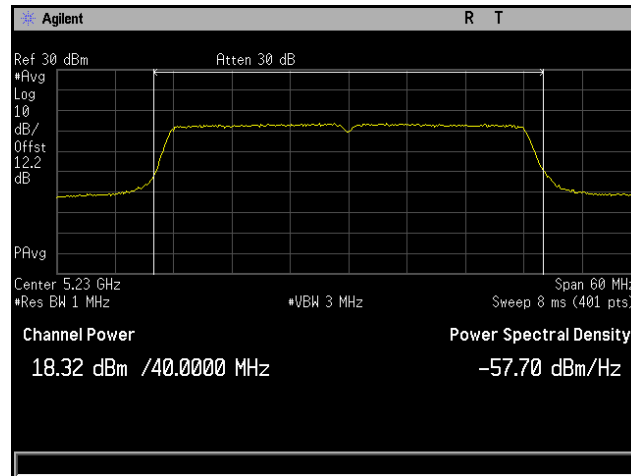


Plot 124. Output Power, 802.11ac 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH3

Output Power, 802.11ac 40 MHz, 6x8, CH4

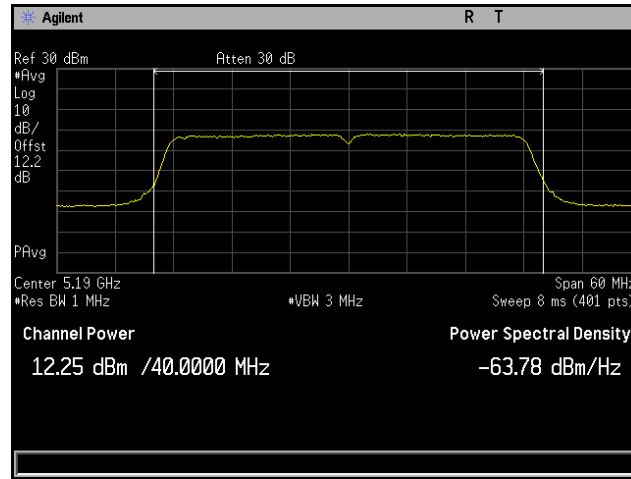


Plot 125. Output Power, 802.11ac 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH4

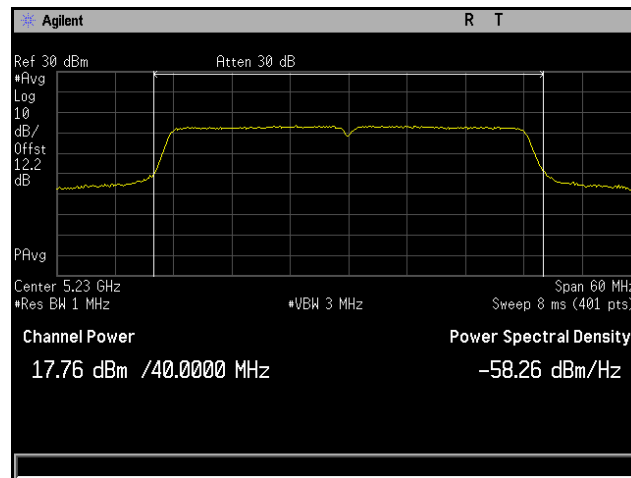


Plot 126. Output Power, 802.11ac 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH4

Output Power, 802.11ac 40 MHz, 6x8, CH5

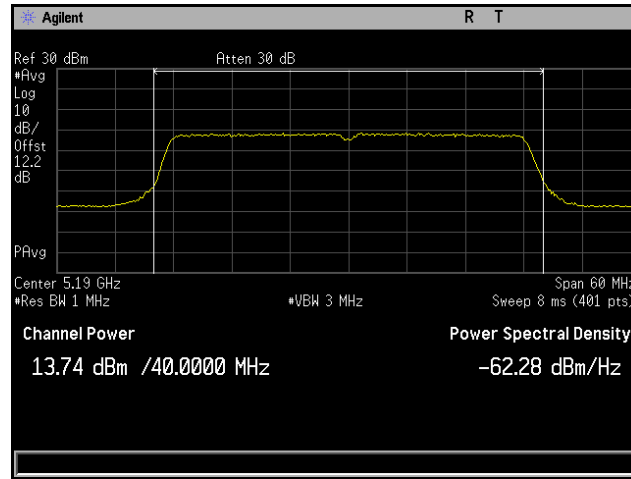


Plot 127. Output Power, 802.11ac 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH5

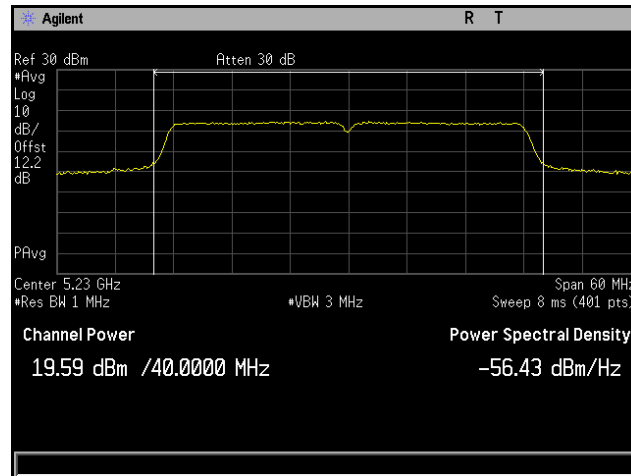


Plot 128. Output Power, 802.11ac 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH5

Output Power, 802.11ac 40 MHz, 6x8, CH6

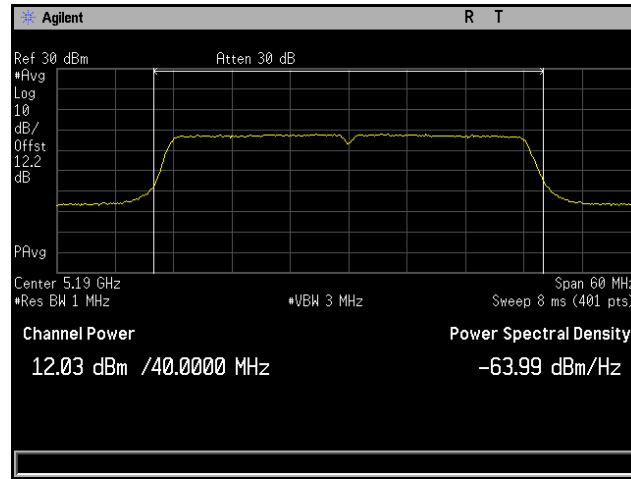


Plot 129. Output Power, 802.11ac 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH6

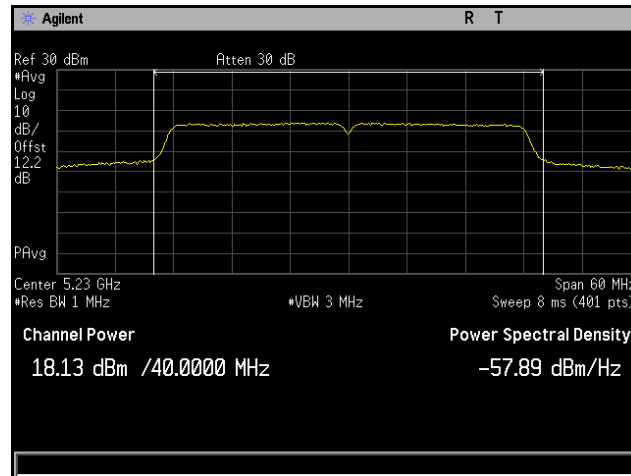


Plot 130. Output Power, 802.11ac 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH6

Output Power, 802.11ac 40 MHz, 6x8, CH7

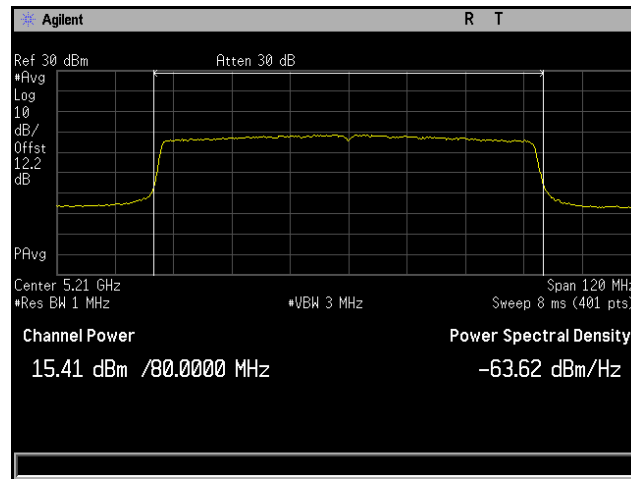


Plot 131. Output Power, 802.11ac 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH7

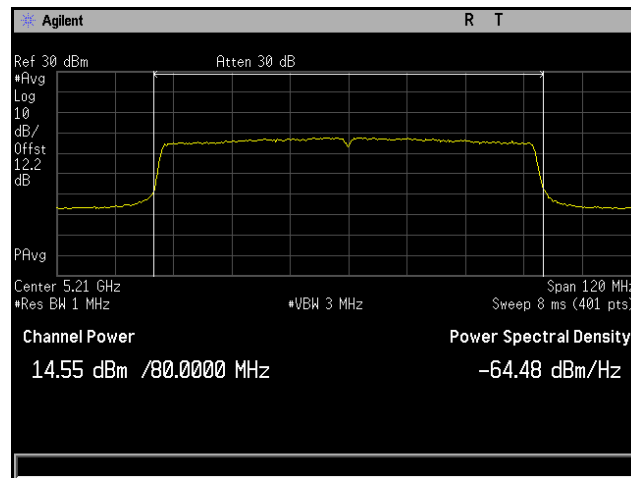


Plot 132. Output Power, 802.11ac 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH7

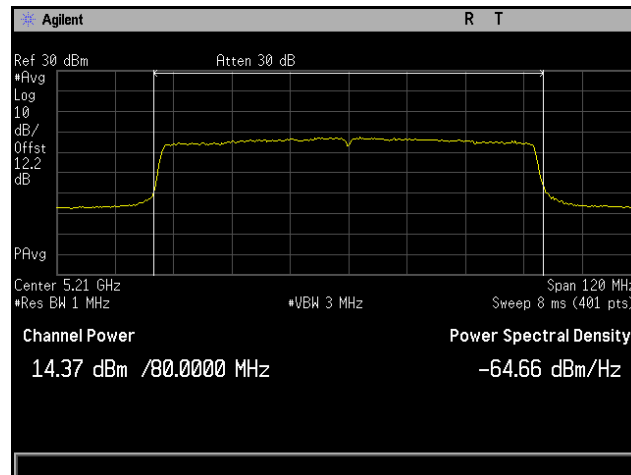
Output Power, 802.11ac 80 MHz, 6x8



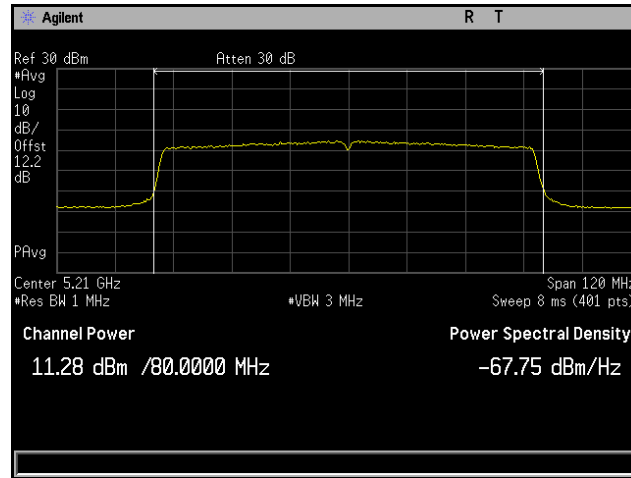
Plot 133. Output Power, 802.11ac 80 MHz, Channel 5210 MHz, 6x8 MCS0 NSS1 CH2



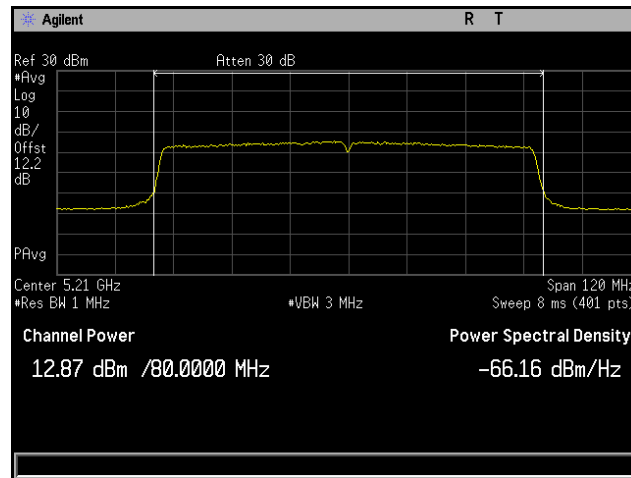
Plot 134. Output Power, 802.11ac 80 MHz, Channel 5210 MHz, 6x8 MCS0 NSS1 CH3



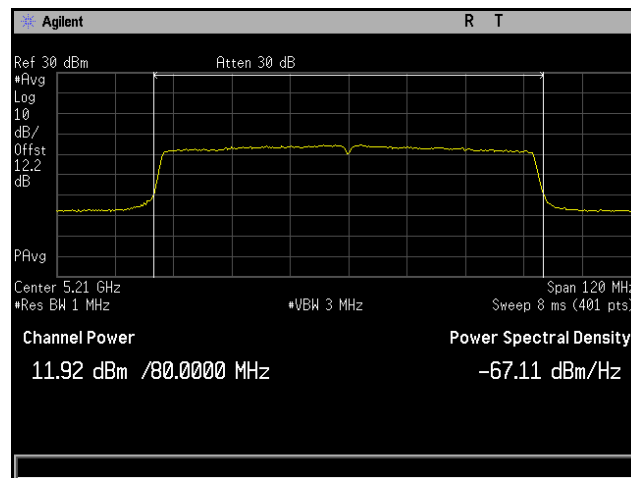
Plot 135. Output Power, 802.11ac 80 MHz, Channel 5210 MHz, 6x8 MCS0 NSS1 CH4



Plot 136. Output Power, 802.11ac 80 MHz, Channel 5210 MHz, 6x8 MCS0 NSS1 CH5

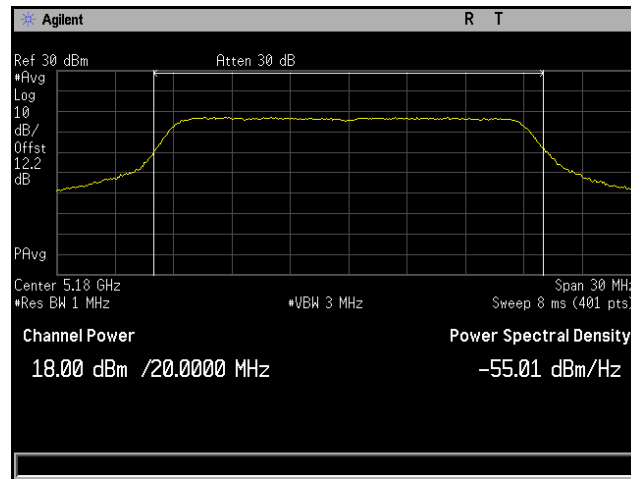


Plot 137. Output Power, 802.11ac 80 MHz, Channel 5210 MHz, 6x8 MCS0 NSS1 CH6

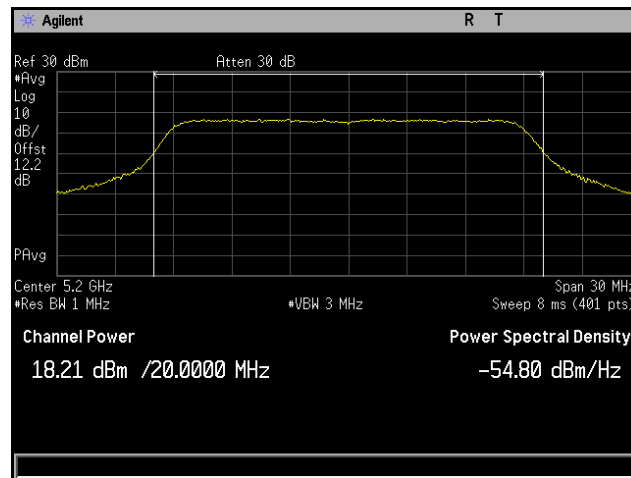


Plot 138. Output Power, 802.11ac 80 MHz, Channel 5210 MHz, 6x8 MCS0 NSS1 CH7

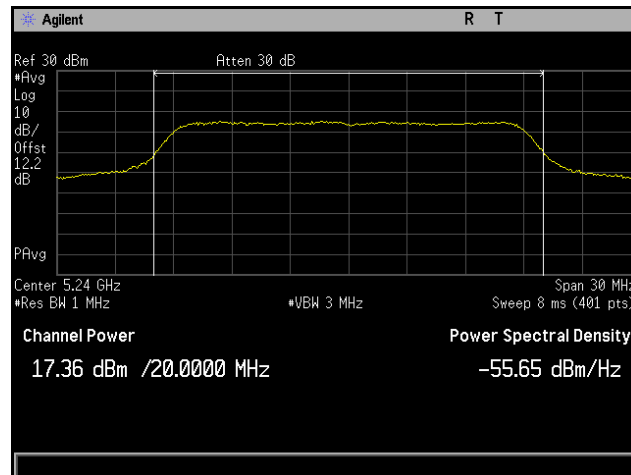
Output Power, 802.11n 20 MHz, 6x8, CH2



Plot 139. Output Power, 802.11n 20 MHz, Channel 5180 MHz, 6x8 MCS0 CH2

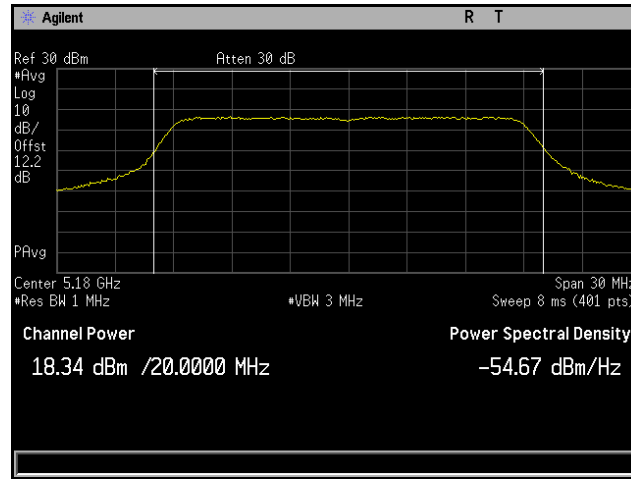


Plot 140. Output Power, 802.11n 20 MHz, Channel 5200 MHz, 6x8 MCS0 CH2

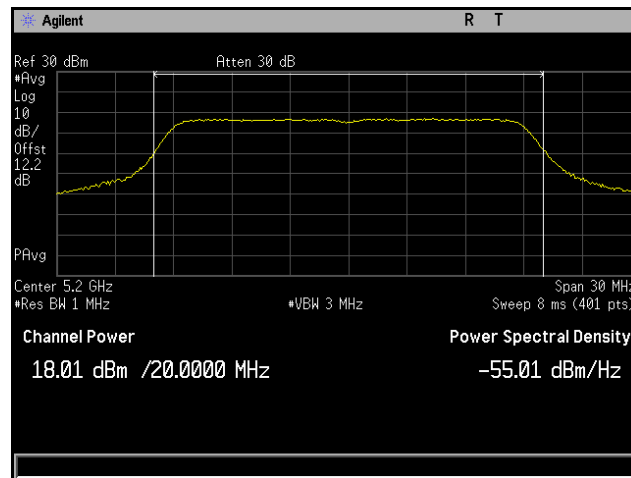


Plot 141. Output Power, 802.11n 20 MHz, Channel 5240 MHz, 6x8 MCS0 CH2

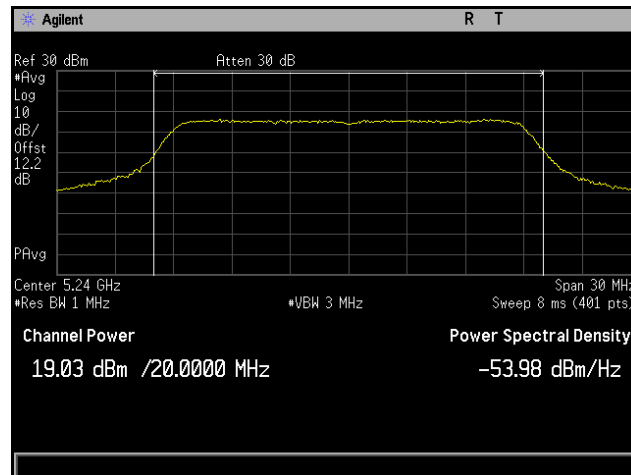
Output Power, 802.11n 20 MHz, 6x8, CH3



Plot 142. Output Power, 802.11n 20 MHz, Channel 5180 MHz, 6x8 MCS0 CH3

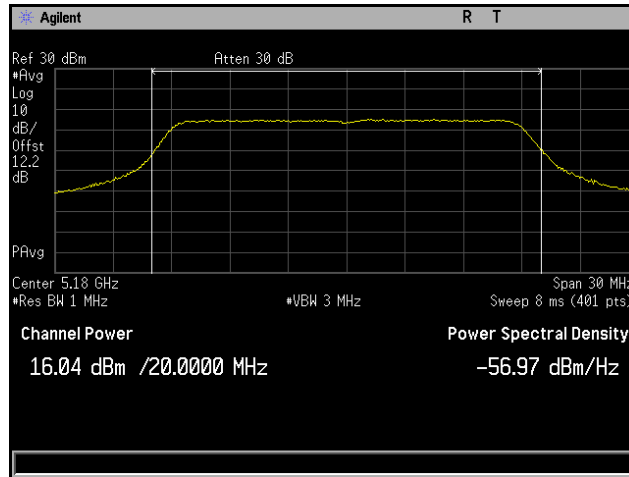


Plot 143. Output Power, 802.11n 20 MHz, Channel 5200 MHz, 6x8 MCS0 CH3

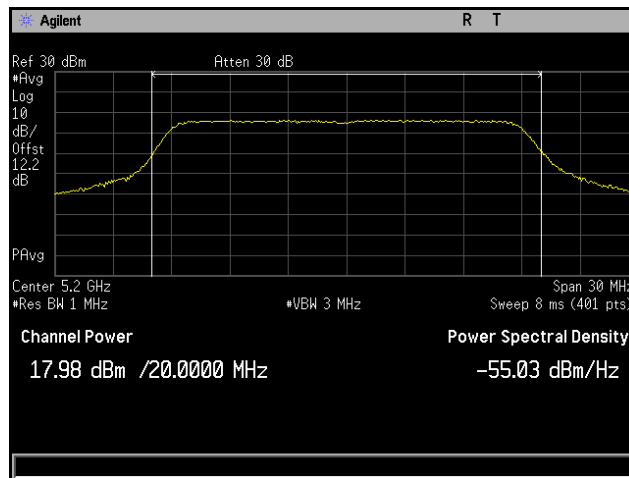


Plot 144. Output Power, 802.11n 20 MHz, Channel 5240 MHz, 6x8 MCS0 CH3

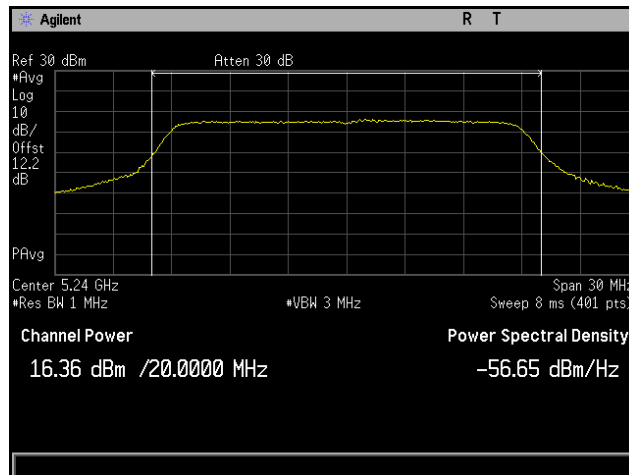
Output Power, 802.11n 20 MHz, 6x8, CH4



Plot 145. Output Power, 802.11n 20 MHz, Channel 5180 MHz, 6x8 MCS0 CH4

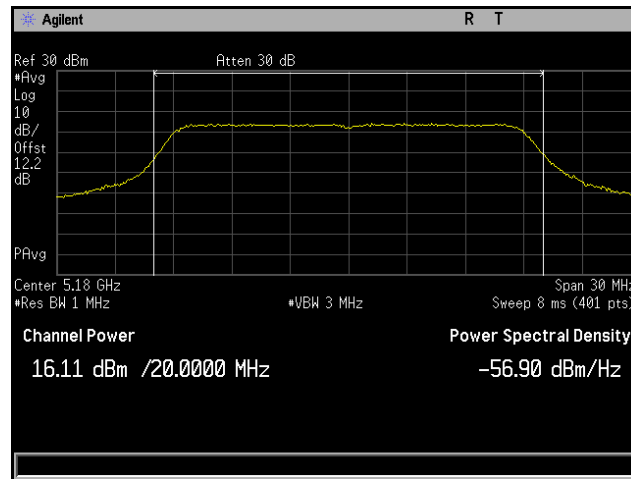


Plot 146. Output Power, 802.11n 20 MHz, Channel 5200 MHz, 6x8 MCS0 CH4

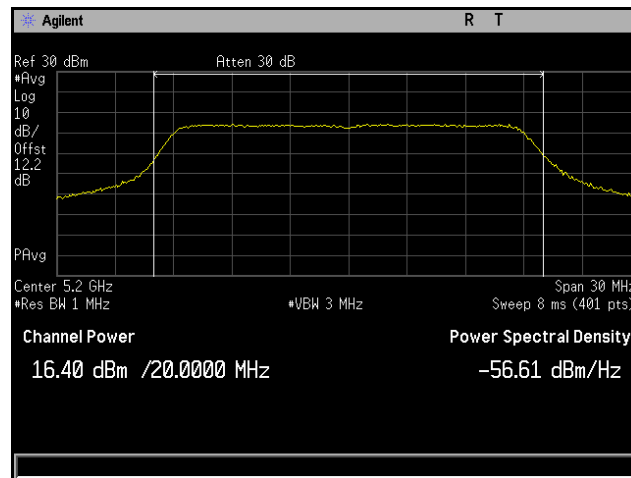


Plot 147. Output Power, 802.11n 20 MHz, Channel 5240 MHz, 6x8 MCS0 CH4

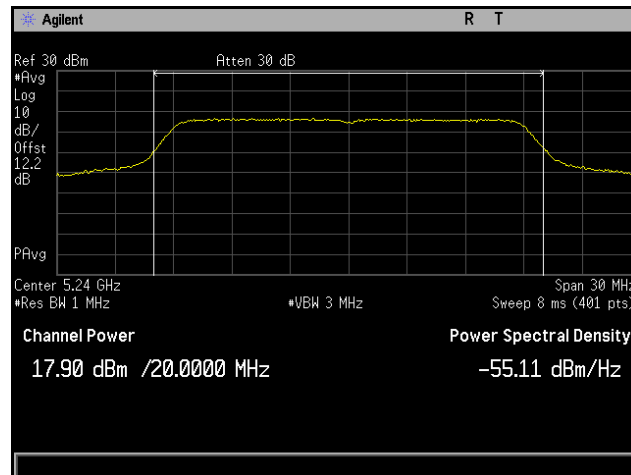
Output Power, 802.11n 20 MHz, 6x8, CH5



Plot 148. Output Power, 802.11n 20 MHz, Channel 5180 MHz, 6x8 MCS0 CH5

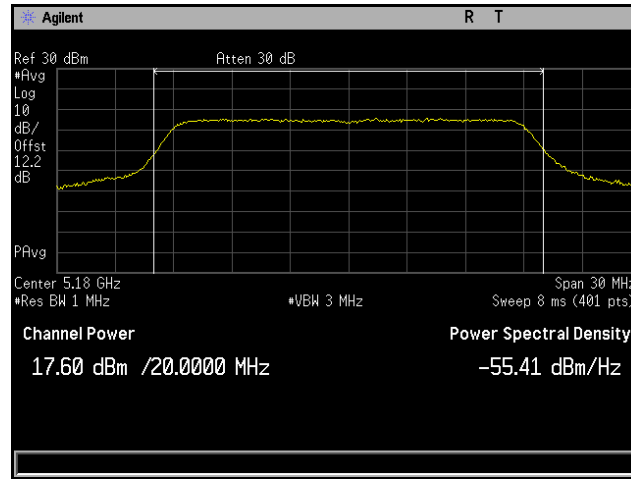


Plot 149. Output Power, 802.11n 20 MHz, Channel 5200 MHz, 6x8 MCS0 CH5

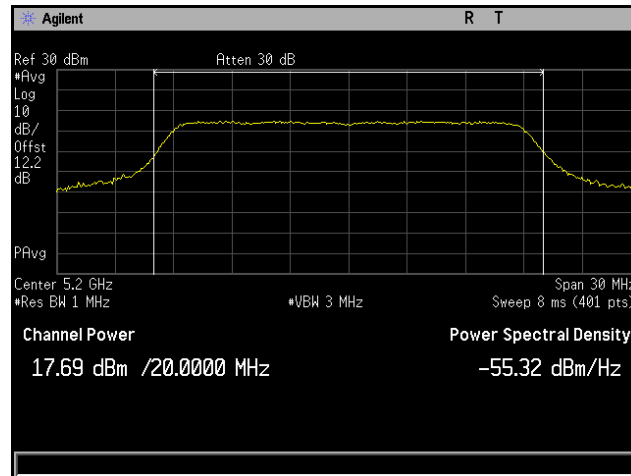


Plot 150. Output Power, 802.11n 20 MHz, Channel 5240 MHz, 6x8 MCS0 CH5

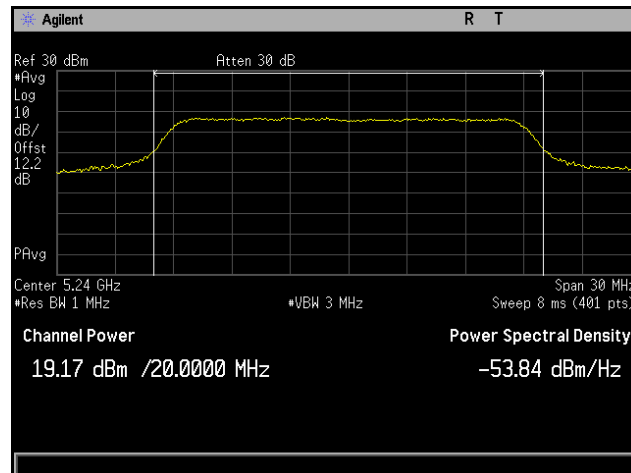
Output Power, 802.11n 20 MHz, 6x8, CH6



Plot 151. Output Power, 802.11n 20 MHz, Channel 5180 MHz, 6x8 MCS0 CH6

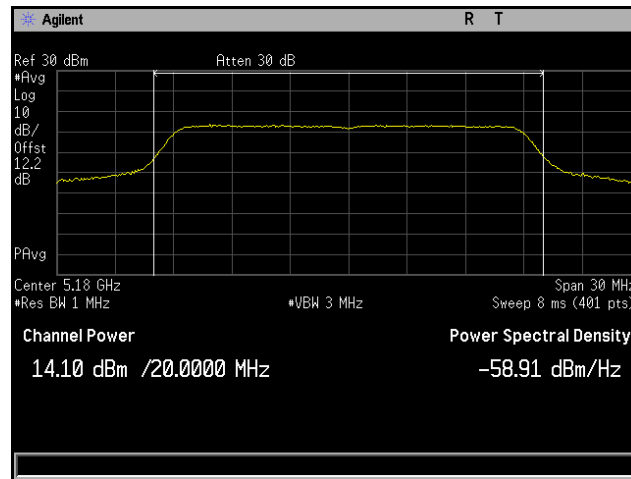


Plot 152. Output Power, 802.11n 20 MHz, Channel 5200 MHz, 6x8 MCS0 CH6

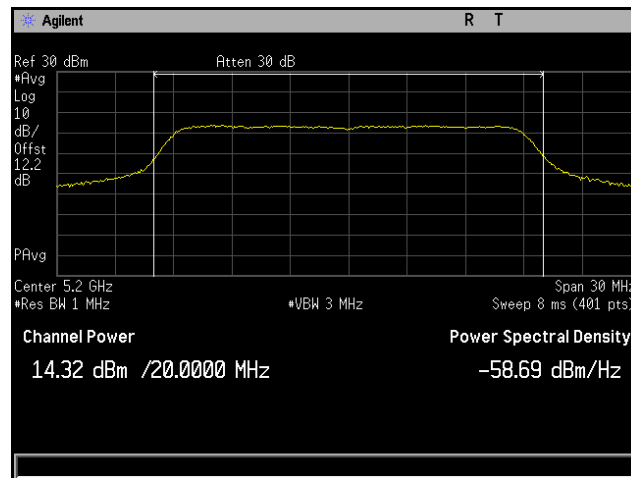


Plot 153. Output Power, 802.11n 20 MHz, Channel 5240 MHz, 6x8 MCS0 CH6

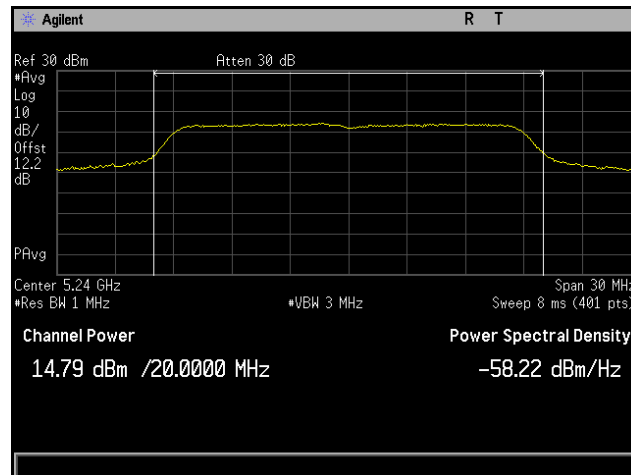
Output Power, 802.11n 20 MHz, 6x8, CH7



Plot 154. Output Power, 802.11n 20 MHz, Channel 5180 MHz, 6x8 MCS0 CH7

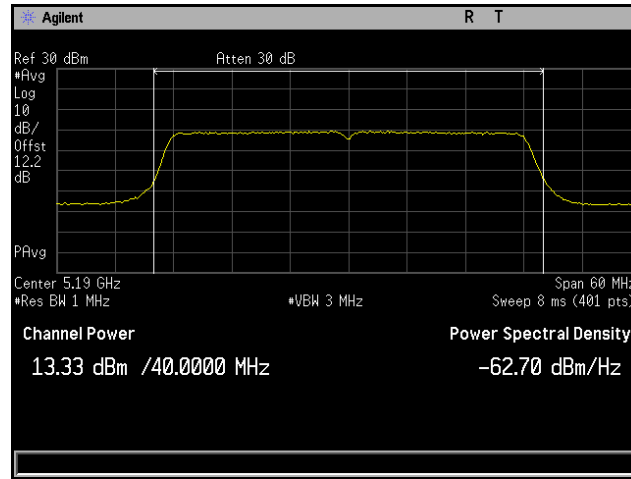


Plot 155. Output Power, 802.11n 20 MHz, Channel 5200 MHz, 6x8 MCS0 CH7

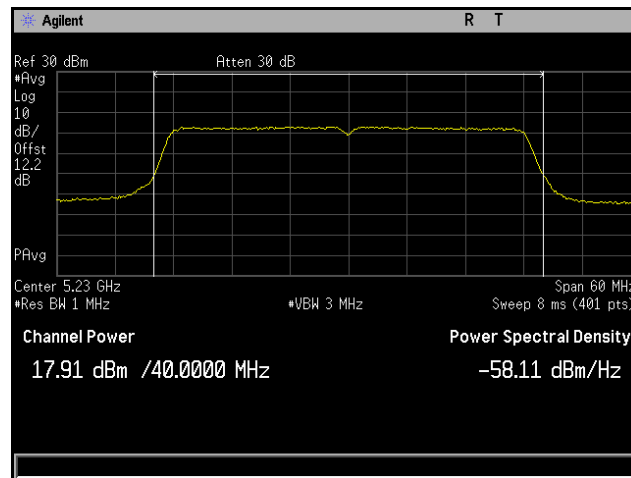


Plot 156. Output Power, 802.11n 20 MHz, Channel 5240 MHz, 6x8 MCS0 CH7

Output Power, 802.11n 40 MHz, 6x8, CH2

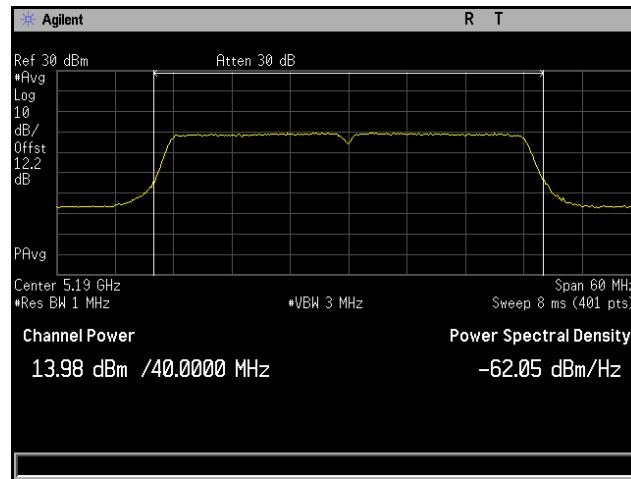


Plot 157. Output Power, 802.11n 40 MHz, Channel 5190 MHz, 6x8 MCS0 CH2

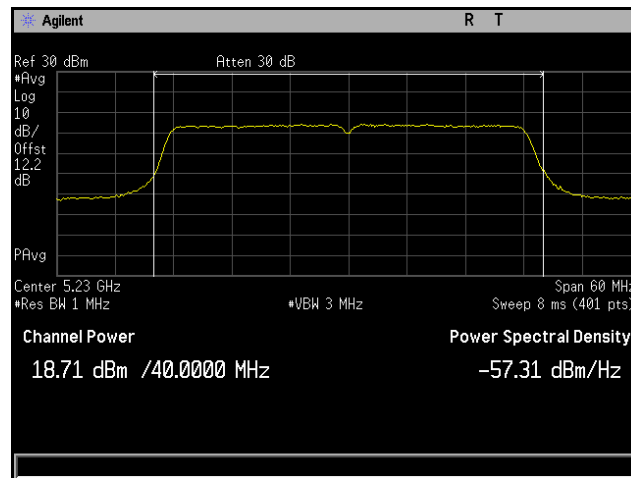


Plot 158. Output Power, 802.11n 40 MHz, Channel 5230 MHz, 6x8 MCS0 CH2

Output Power, 802.11n 40 MHz, 6x8, CH3

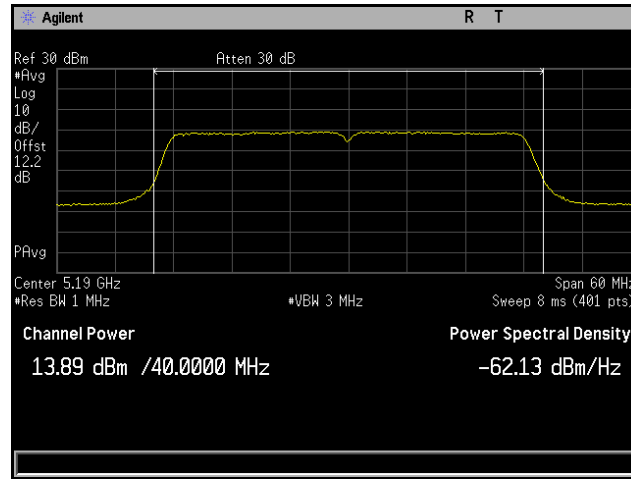


Plot 159. Output Power, 802.11n 40 MHz, Channel 5190 MHz, 6x8 MCS0 CH3

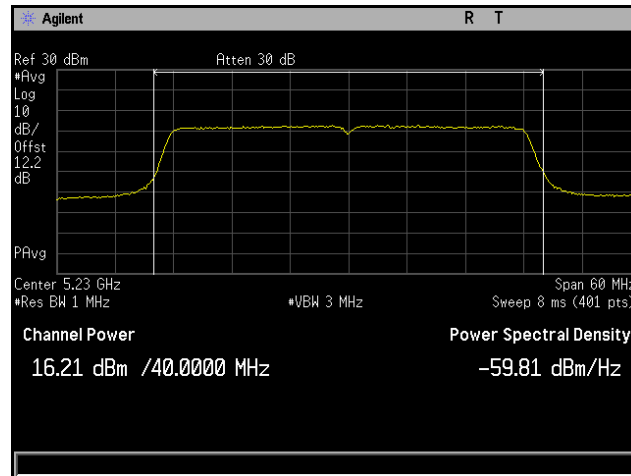


Plot 160. Output Power, 802.11n 40 MHz, Channel 5230 MHz, 6x8 MCS0 CH3

Output Power, 802.11n 40 MHz, 6x8, CH4

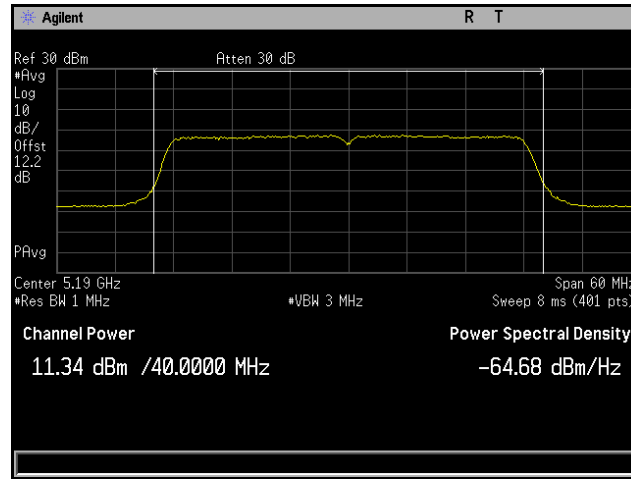


Plot 161. Output Power, 802.11n 40 MHz, Channel 5190 MHz, 6x8 MCS0 CH4

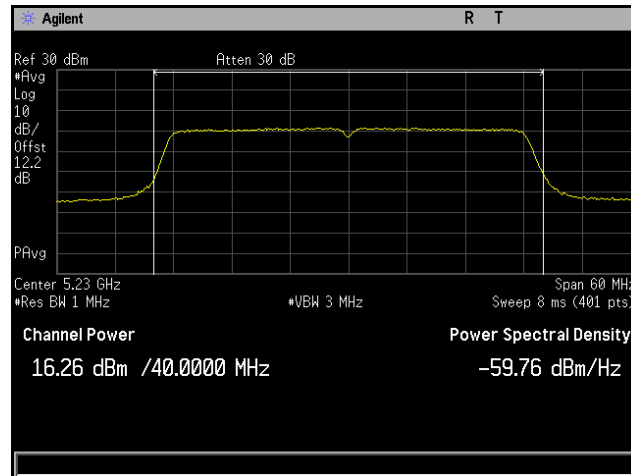


Plot 162. Output Power, 802.11n 40 MHz, Channel 5230 MHz, 6x8 MCS0 CH4

Output Power, 802.11n 40 MHz, 6x8, CH5

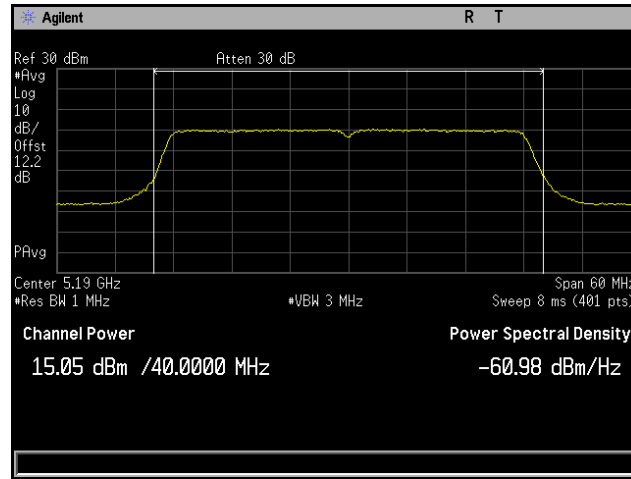


Plot 163. Output Power, 802.11n 40 MHz, Channel 5190 MHz, 6x8 MCS0 CH5

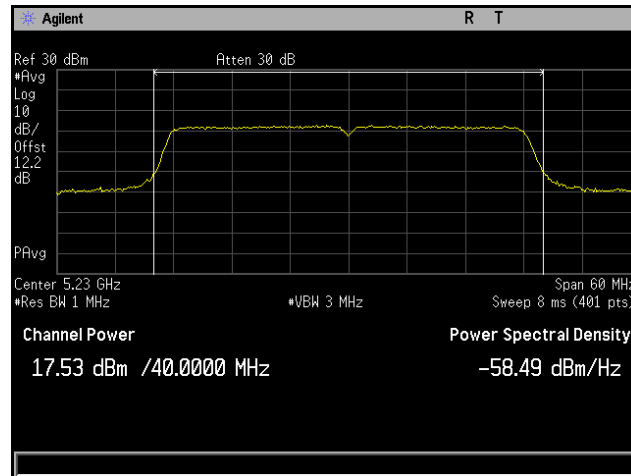


Plot 164. Output Power, 802.11n 40 MHz, Channel 5230 MHz, 6x8 MCS0 CH5

Output Power, 802.11n 40 MHz, 6x8, CH6

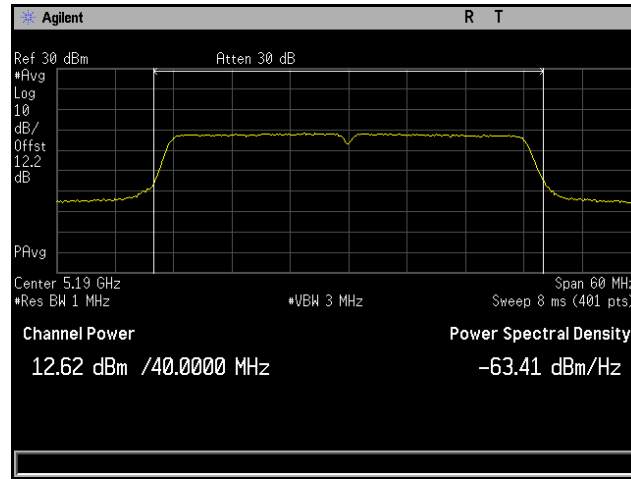


Plot 165. Output Power, 802.11n 40 MHz, Channel 5190 MHz, 6x8 MCS0 CH6

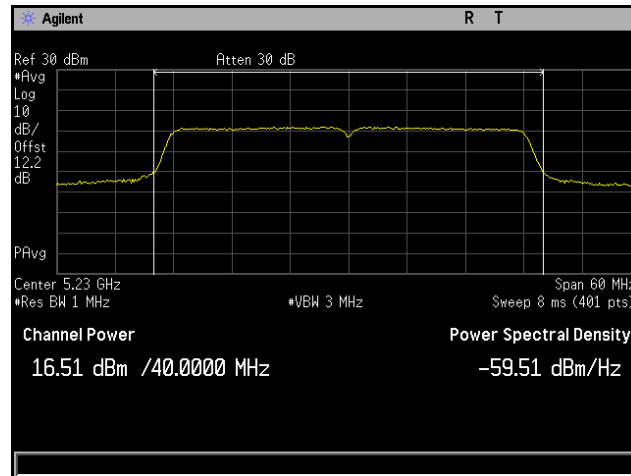


Plot 166. Output Power, 802.11n 40 MHz, Channel 5230 MHz, 6x8 MCS0 CH6

Output Power, 802.11n 40 MHz, 6x8, CH7



Plot 167. Output Power, 802.11n 40 MHz, Channel 5190 MHz, 6x8 MCS0 CH7



Plot 168. Output Power, 802.11n 40 MHz, Channel 5230 MHz, 6x8 MCS0 CH7

Electromagnetic Compatibility Criteria for Intentional Radiators

§15.407(a)(1) Maximum Power Spectral Density

Test Requirements:

§15.407(a)(1)(i): In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

§15.407(a)(1)(ii): In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi..

§15.407(a)(1)(iii): In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.

§15.407(a)(1)(iv): In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Procedure:

The EUT was connected to a spectrum analyzer through a cable and attenuator. Measurements were taken with the EUT set to transmit continuously on its low, mid, and high channels. Its power was measured according KDB 789033 D02 General UNII Test Procedures v01.

A modified sample was used for conducted testing.

The unit was in the MIMO configuration

The directional gain presented is the measured composite antenna gain.

Test Results:

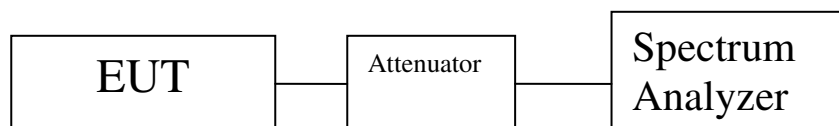
The EUT as tested is compliant with the requirements of this section.

Test Engineer(s):

Hadid Jones

Test Date(s):

08/12/16



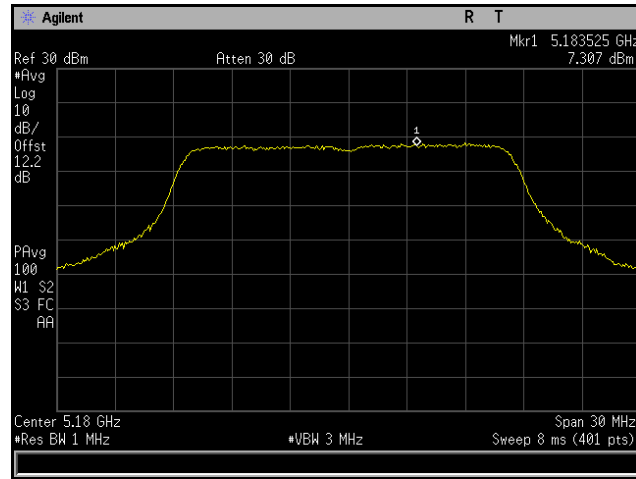
4x8 A											
Center Frequency	Bandwidth	Mode	Port 3 Data (dBm)	Port 4 Data (dBm)	Port 5 Data (dBm)	Port 6 Data (dBm)	Sum of Ports	Limit (dBm)	Antenna Gain	Final limit	Margin dB
Ch 5180M	BW 20M	a mode	7.3	6.35	3.8	6.17	12.11	17	6.1	16.9	-4.79
Ch 5200M	BW 20M	a mode	6.55	6.88	4.65	3.47	11.63	17	6.1	16.9	-5.27
Ch 5240M	BW 20M	a mode	8.84	6.38	6.24	7.5	13.37	17	6.1	16.9	-3.53
Ch 5210M	BW 80M	ac mode	-3.08	-3.26	-4.68	-4.7	2.16	17	6.1	16.9	-14.74
Ch 5190M	BW 40M	ac mode	1.14	1.98	-1.02	-0.95	6.51	17	6.1	16.9	-10.39
Ch 5230M	BW 40M	ac mode	3.49	2.91	4.11	4.1	9.71	17	6.1	16.9	-7.19
Ch 5180M	BW 20M	ac mode	6.1	8.07	5.14	6.38	12.58	17	6.1	16.9	-4.32
Ch 5200M	BW 20M	ac mode	7.35	6.15	7.26	8.25	13.34	17	6.1	16.9	-3.56
Ch 5190M	BW 40M	n mode	-1.34	-1.14	-1.72	-0.3	4.93	17	6.1	16.9	-11.97
Ch 5230M	BW 40M	n mode	3.28	4.79	4.53	5.78	10.71	17	6.1	16.9	-6.19
Ch 5180M	BW 20M	n mode	7.05	6.95	3.97	6.37	12.27	17	6.1	16.9	-4.63
Ch 5200M	BW 20M	n mode	7.13	6	3.93	4.53	11.61	17	6.1	16.9	-5.29
Ch 5240M	BW 20M	n mode	7.03	6.64	6.73	8.74	13.4	17	6.1	16.9	-3.5

Table 11. Power Spectral Density, Test Results, 4x8

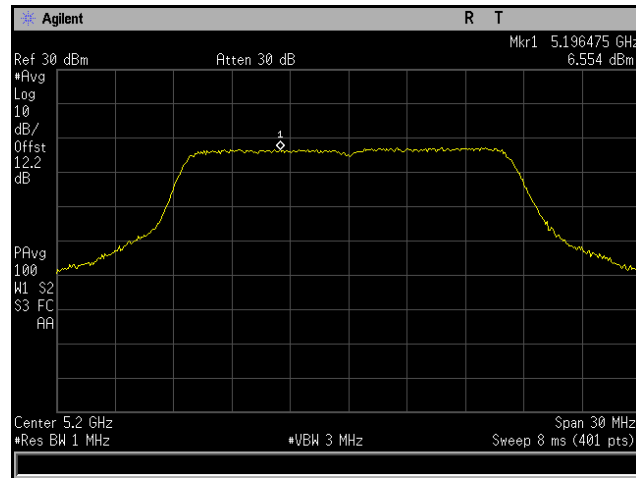
6x8 A													
Center Frequency	BW	Mode	Port 2 Data dBm	Port 3 Data dBm	Port 4 Data dBm	Port 5 Data dBm	Port 6 Data dBm	Port 7 Data dBm	Sum of Ports	Limit dBm	Antenna Gain	Final limit	Margin dB
Ch 5180M	BW 20M	a mode	6.65	6.06	5.59	4.16	3.2	2.69	12.75	17	6.8	16.2	-3.45
Ch 5200M	BW 20M	a mode	5.29	7.16	6.34	6.72	5.36	7.39	14.24	17	6.8	16.2	-1.96
Ch 5240M	BW 20M	a mode	7.05	6.97	5.69	7.06	6.07	3.82	14.03	17	6.8	16.2	-2.17
Ch 5210M	BW 80M	ac mode	-2.7	-1.39	-1.78	-6.16	-6.56	-6.83	4.15	17	6.8	16.2	-12.05
Ch 5190M	BW 40M	ac mode	1.64	0.517	0.172	-3.37	-2.54	-3.75	7.05	17	6.8	16.2	-9.15
Ch 5230M	BW 40M	ac mode	2.19	4.1	3.04	3.09	4.83	3.27	11.29	17	6.8	16.2	-4.91
Ch 5180M	BW 20M	ac mode	6.39	5.68	6.6	4.42	6.4	3.86	13.47	17	6.8	16.2	-2.73
Ch 5200M	BW 20M	ac mode	6.63	5.64	5.04	6.54	6.84	4.25	13.71	17	6.8	16.2	-2.49
Ch 5240M	BW 20M	ac mode	4.37	6.52	6.28	6.2	7.42	3.73	13.72	17	6.8	16.2	-2.48
Ch 5190M	BW 40M	n mode	-2.17	-3.39	-1.71	-1.97	-1.72	-0.76	5.9	17	6.8	16.2	-10.3
Ch 5230M	BW 40M	n mode	3.99	2.86	3.61	2.34	5.08	2.32	11.27	17	6.8	16.2	-4.93
Ch 5180M	BW 20M	n mode	6.65	6.71	5.7	6.34	5.67	4.34	13.51	17	6.8	16.2	-2.69
Ch 5200M	BW 20M	n mode	6.99	6.74	5.78	6.38	7.59	4.14	14.19	17	6.8	16.2	-2.01
Ch 5240M	BW 20M	n mode	6.57	5.38	6.08	4.66	6.39	3.65	13.36	17	6.8	16.2	-2.84

Table 12. Power Spectral Density, Test Results, 6x8

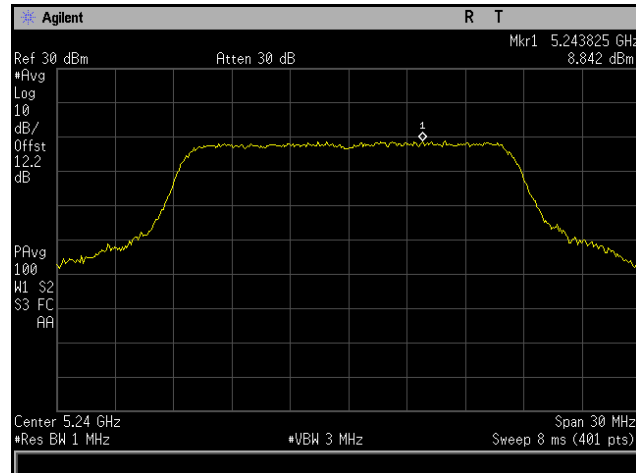
Power Spectral Density, 802.11a, 4x8, CH3



Plot 169. Power Spectral Density, 802.11a, Channel 5180 MHz, 4x8 MCS0 CH3

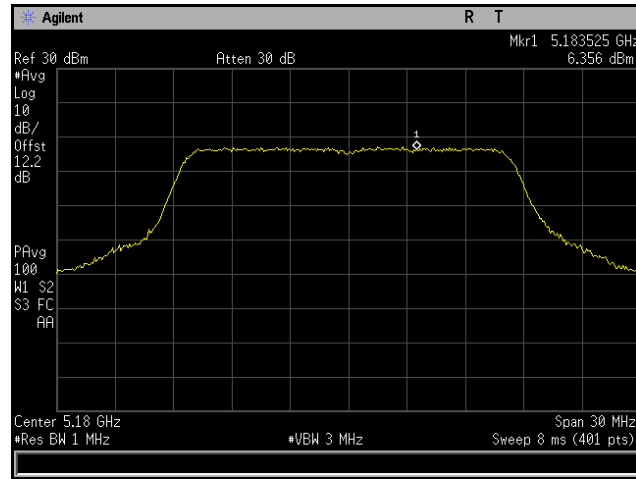


Plot 170. Power Spectral Density, 802.11a, Channel 5200 MHz, 4x8 MCS0 CH3

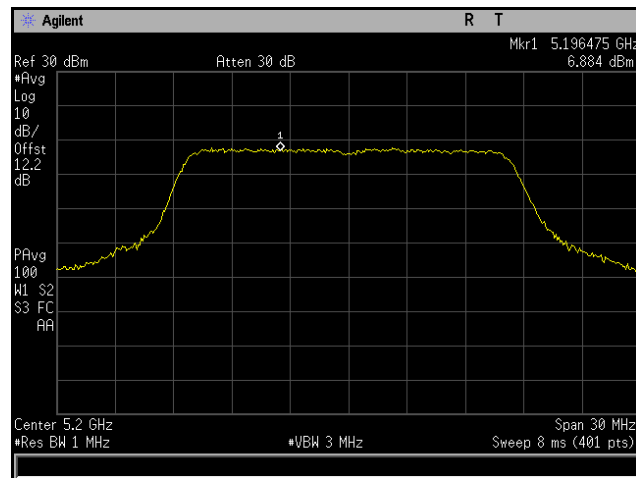


Plot 171. Power Spectral Density, 802.11a, Channel 5240 MHz, 4x8 MCS0 CH3

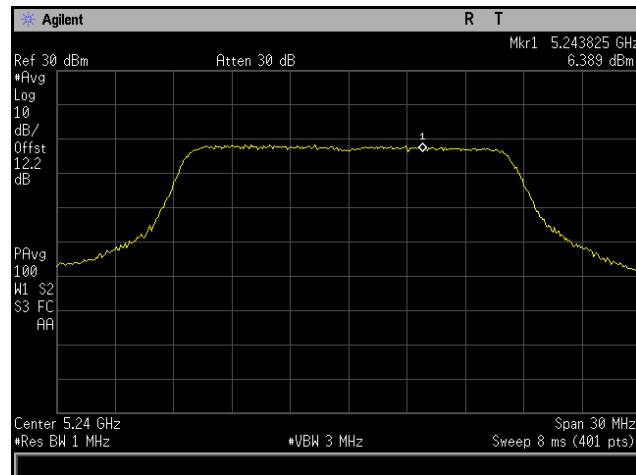
Power Spectral Density, 802.11a, 4x8, CH4



Plot 172. Power Spectral Density, 802.11a, Channel 5180 MHz, 4x8 MCS0 CH4

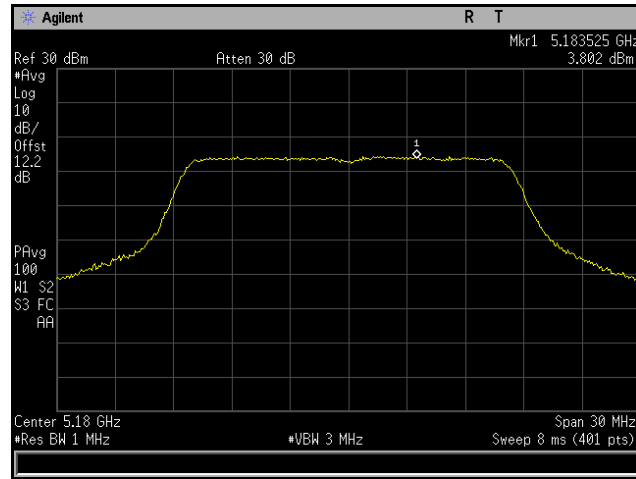


Plot 173. Power Spectral Density, 802.11a, Channel 5200 MHz, 4x8 MCS0 CH4

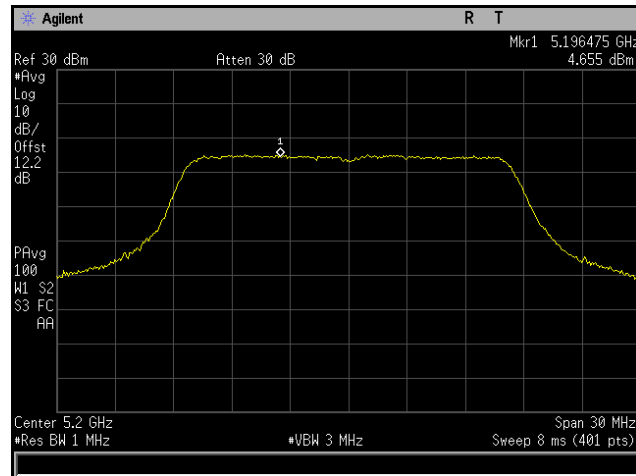


Plot 174. Power Spectral Density, 802.11a, Channel 5240 MHz, 4x8 MCS0 CH4

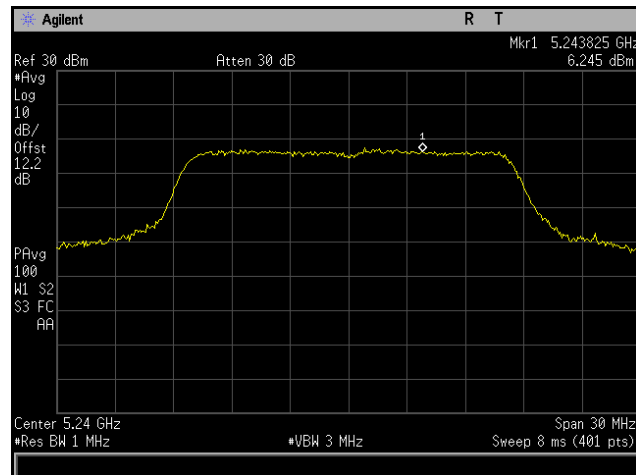
Power Spectral Density, 802.11a, 4x8, CH5



Plot 175. Power Spectral Density, 802.11a, Channel 5180 MHz, 4x8 MCS0 CH5

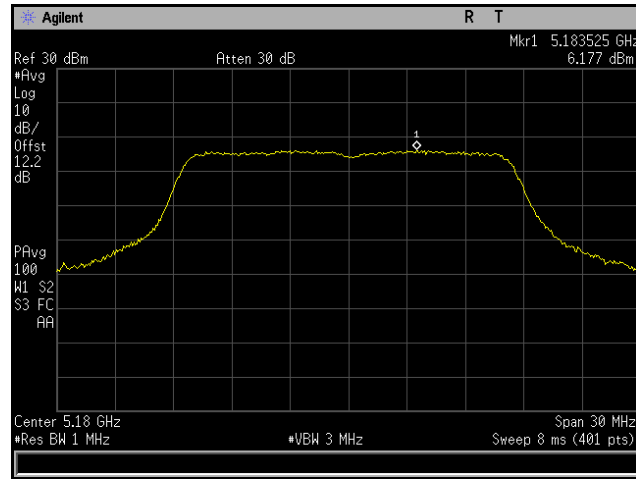


Plot 176. Power Spectral Density, 802.11a, Channel 5200 MHz, 4x8 MCS0 CH5

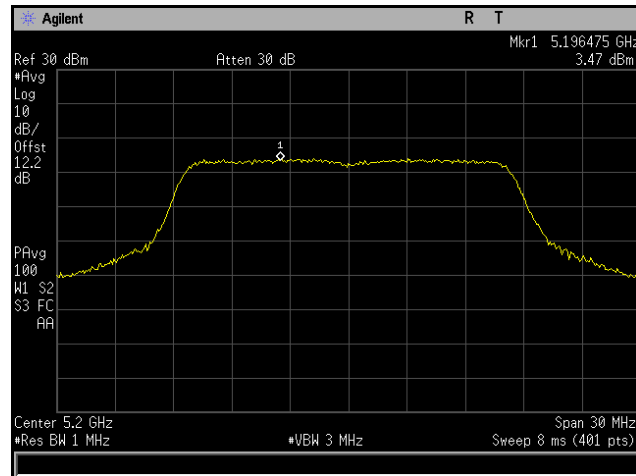


Plot 177. Power Spectral Density, 802.11a, Channel 5240 MHz, 4x8 MCS0 CH5

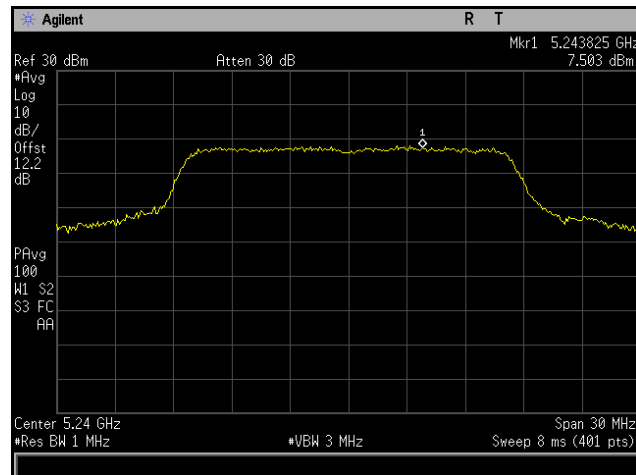
Power Spectral Density, 802.11a, 4x8, CH6



Plot 178. Power Spectral Density, 802.11a, Channel 5180 MHz, 4x8 MCS0 CH6

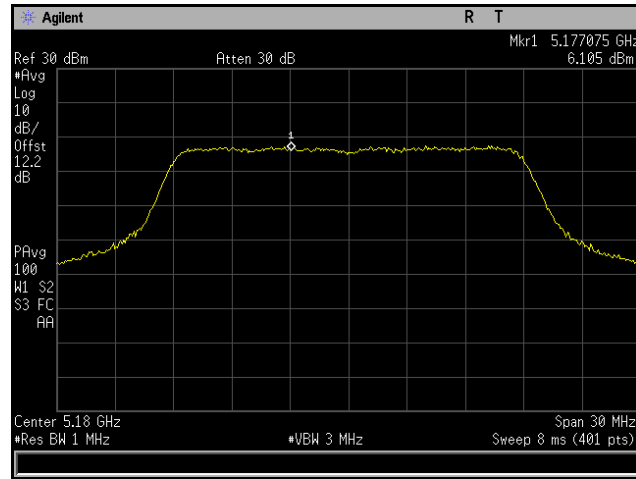


Plot 179. Power Spectral Density, 802.11a, Channel 5200 MHz, 4x8 MCS0 CH6

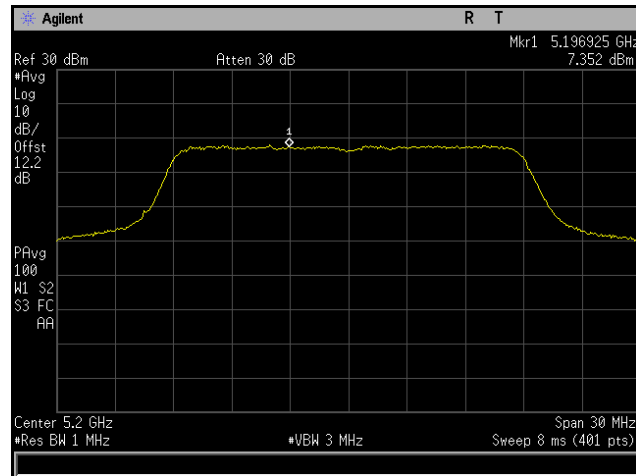


Plot 180. Power Spectral Density, 802.11a, Channel 5240 MHz, 4x8 MCS0 CH6

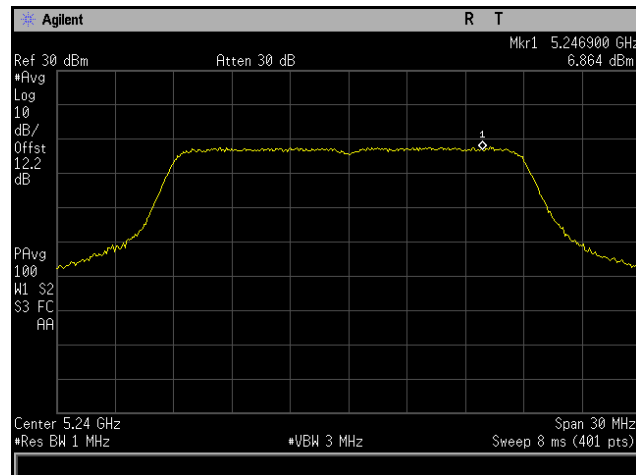
Power Spectral Density, 802.11ac 20 MHz, 4x8, CH3



Plot 181. Power Spectral Density, 802.11ac 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH3

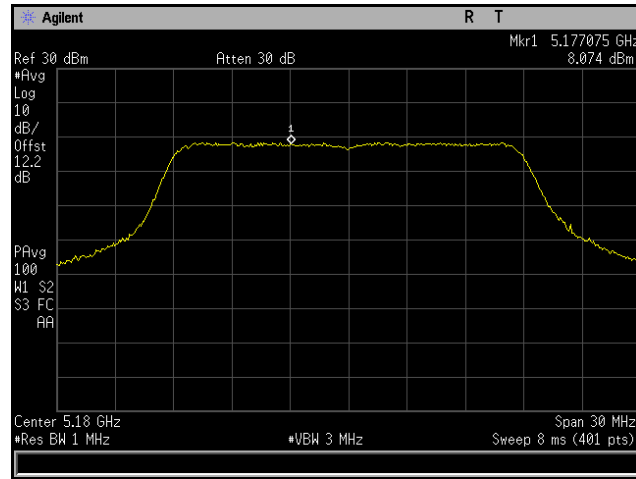


Plot 182. Power Spectral Density, 802.11ac 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH3

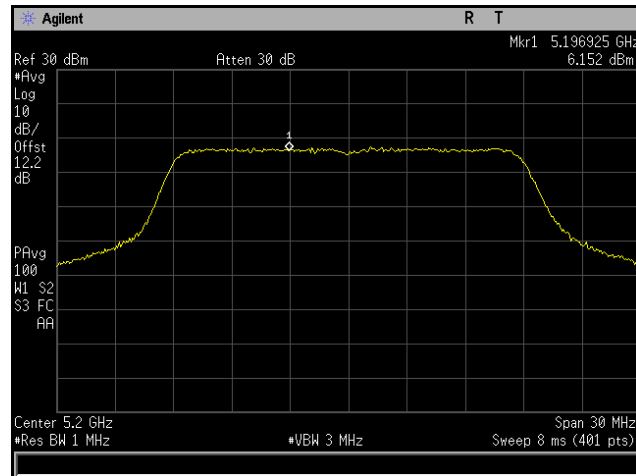


Plot 183. Power Spectral Density, 802.11ac 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH3

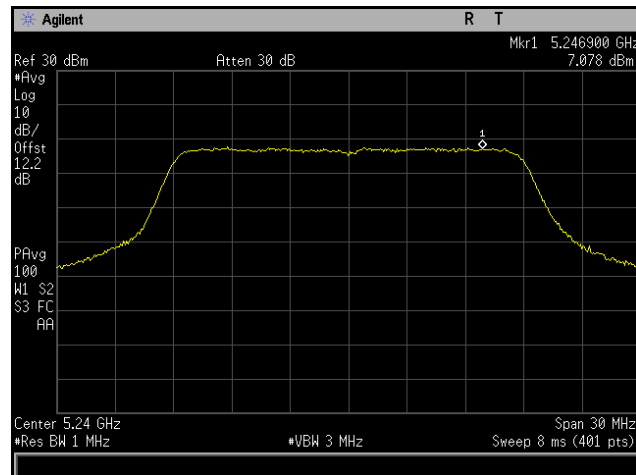
Power Spectral Density, 802.11ac 20 MHz, 4x8, CH4



Plot 184. Power Spectral Density, 802.11ac 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH4

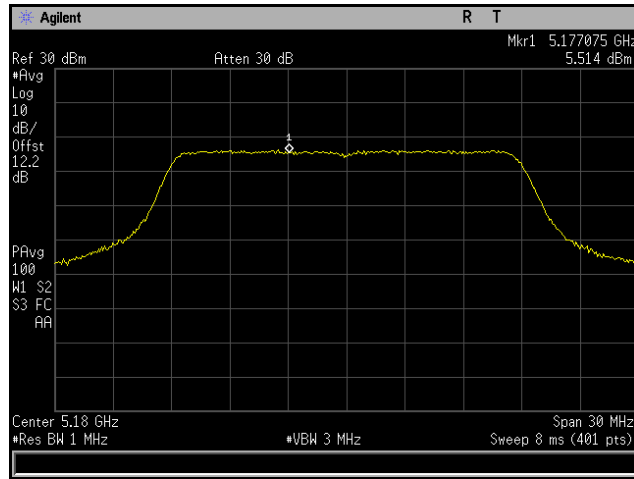


Plot 185. Power Spectral Density, 802.11ac 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH4

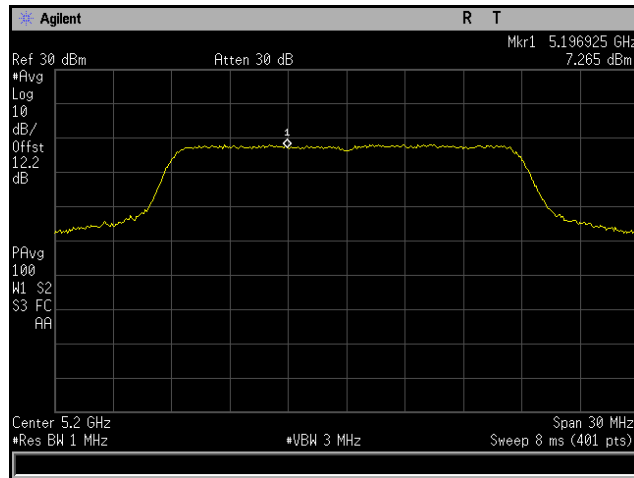


Plot 186. Power Spectral Density, 802.11ac 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH4

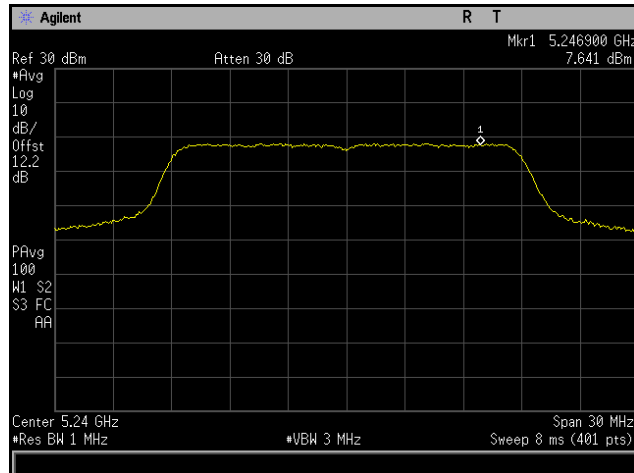
Power Spectral Density, 802.11ac 20 MHz, 4x8, CH5



Plot 187. Power Spectral Density, 802.11ac 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH5

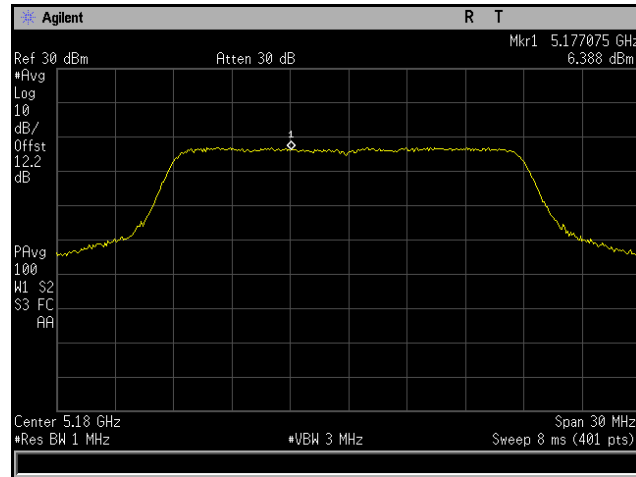


Plot 188. Power Spectral Density, 802.11ac 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH5

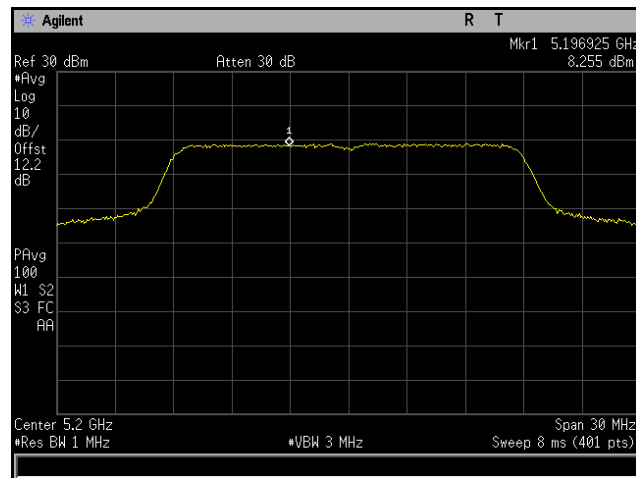


Plot 189. Power Spectral Density, 802.11ac 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH5

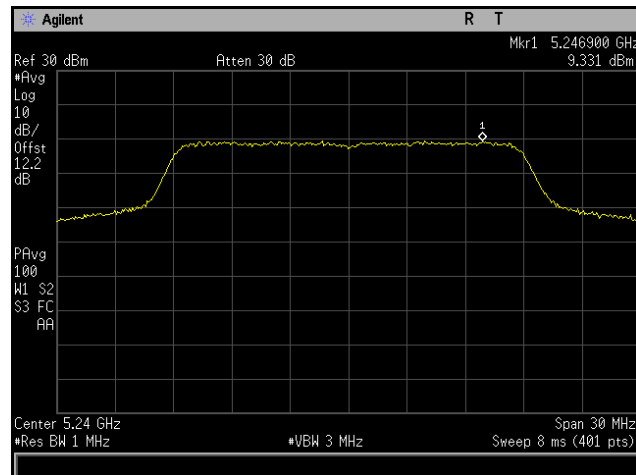
Power Spectral Density, 802.11ac 20 MHz, 4x8, CH6



Plot 190. Power Spectral Density, 802.11ac 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH6

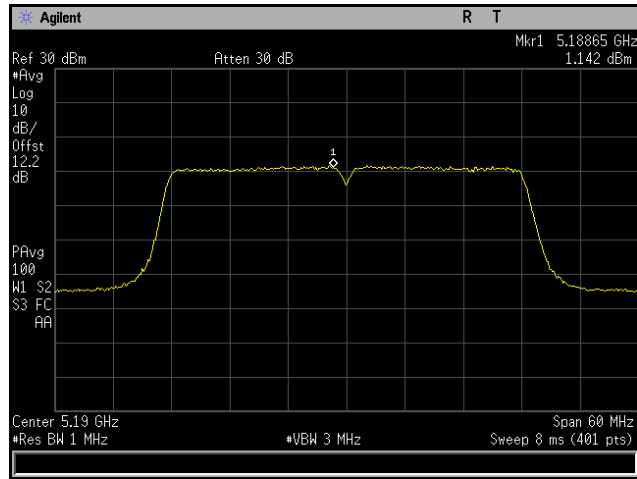


Plot 191. Power Spectral Density, 802.11ac 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH6

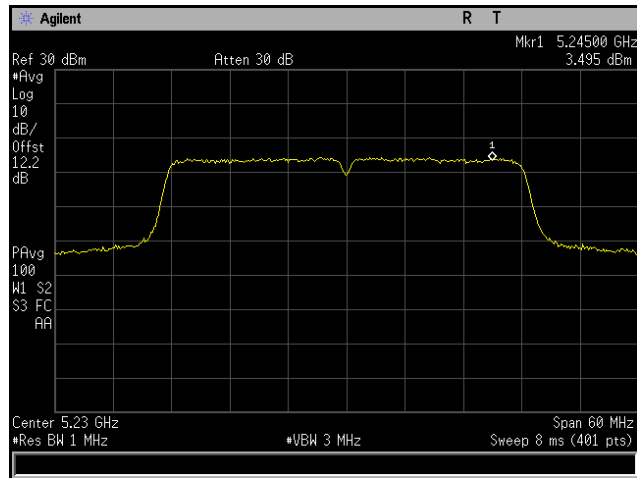


Plot 192. Power Spectral Density, 802.11ac 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH6

Power Spectral Density, 802.11ac 40 MHz, 4x8, CH3

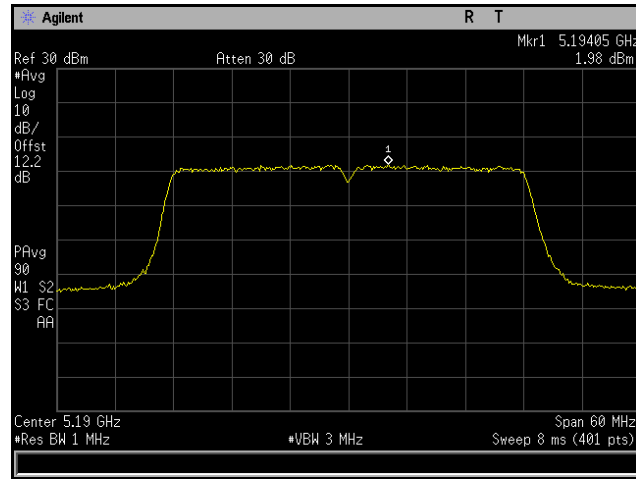


Plot 193. Power Spectral Density, 802.11ac 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH3

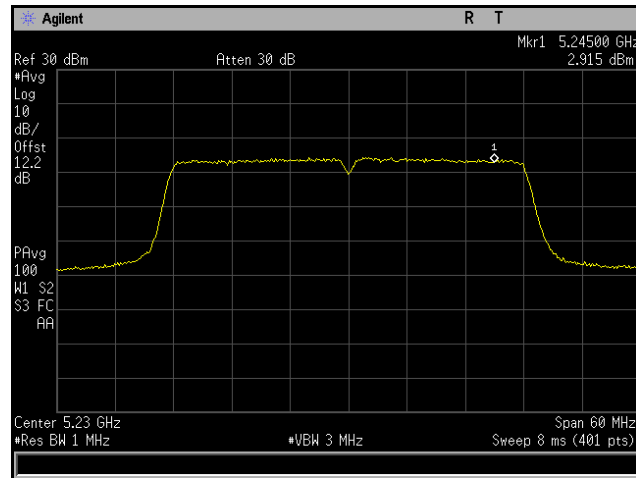


Plot 194. Power Spectral Density, 802.11ac 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH3

Power Spectral Density, 802.11ac 40 MHz, 4x8, CH4

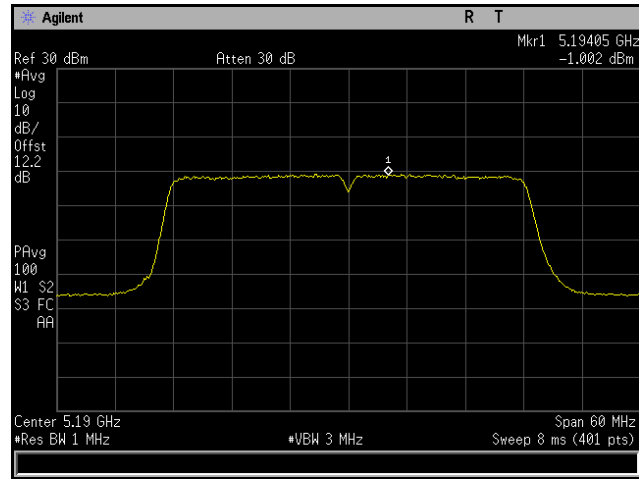


Plot 195. Power Spectral Density, 802.11ac 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH4

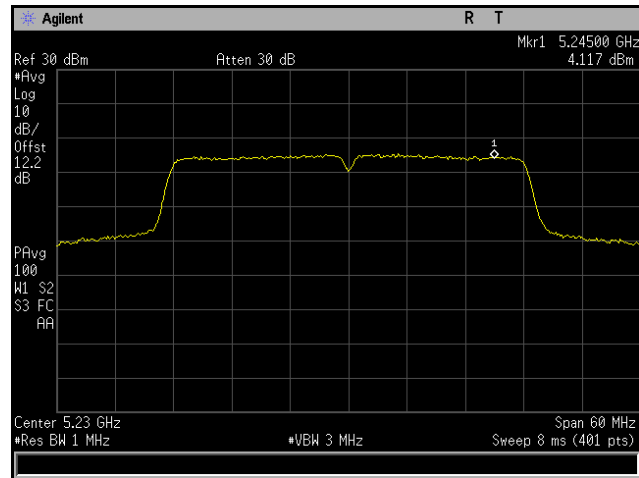


Plot 196. Power Spectral Density, 802.11ac 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH4

Power Spectral Density, 802.11ac 40 MHz, 4x8, CH5

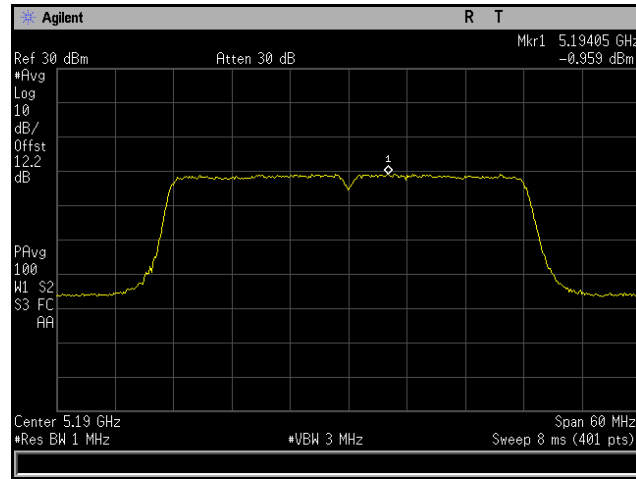


Plot 197. Power Spectral Density, 802.11ac 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH5

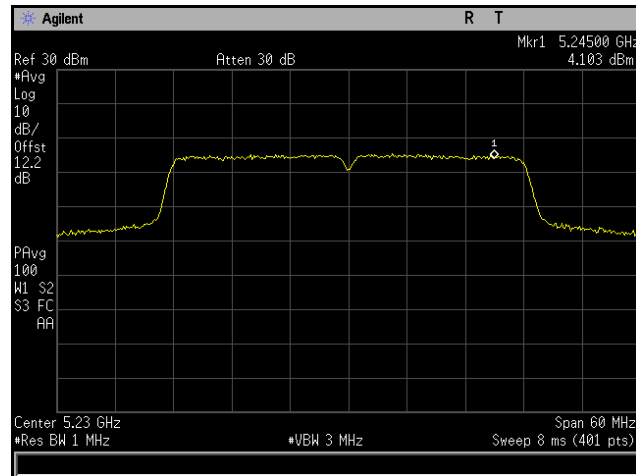


Plot 198. Power Spectral Density, 802.11ac 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH5

Power Spectral Density, 802.11ac 40 MHz, 4x8, CH6

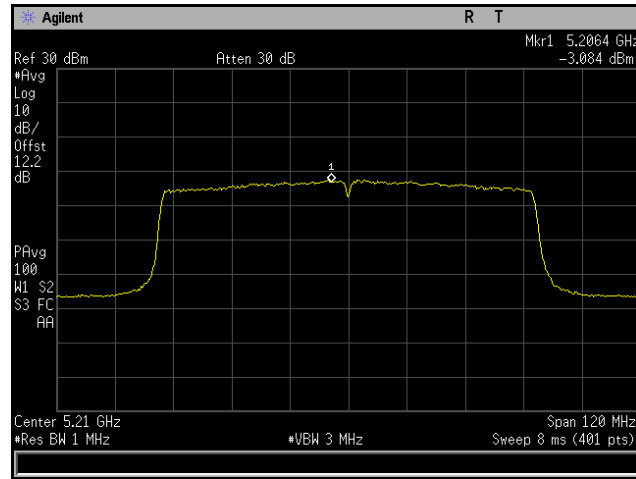


Plot 199. Power Spectral Density, 802.11ac 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH6

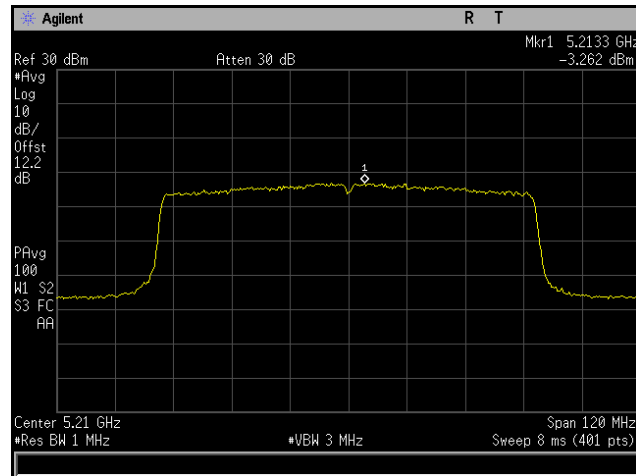


Plot 200. Power Spectral Density, 802.11ac 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH6

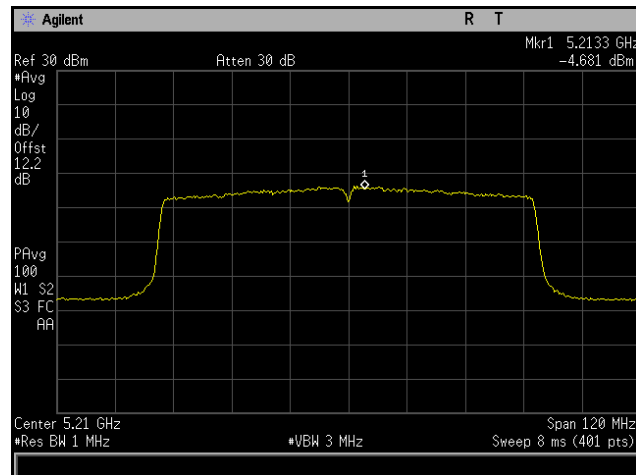
Power Spectral Density, 802.11ac 80 MHz, 4x8



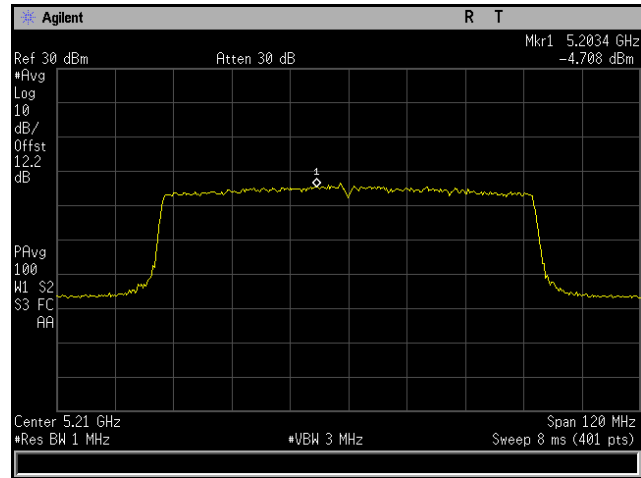
Plot 201. Power Spectral Density, 802.11ac 80 MHz, Channel 5210 MHz, 4x8 MCS0 CH3



Plot 202. Power Spectral Density, 802.11ac 80 MHz, Channel 5210 MHz, 4x8 MCS0 CH4

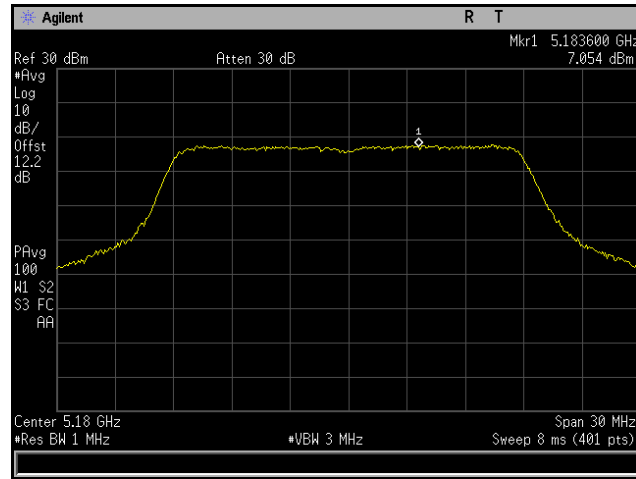


Plot 203. Power Spectral Density, 802.11ac 80 MHz, Channel 5210 MHz, 4x8 MCS0 CH5

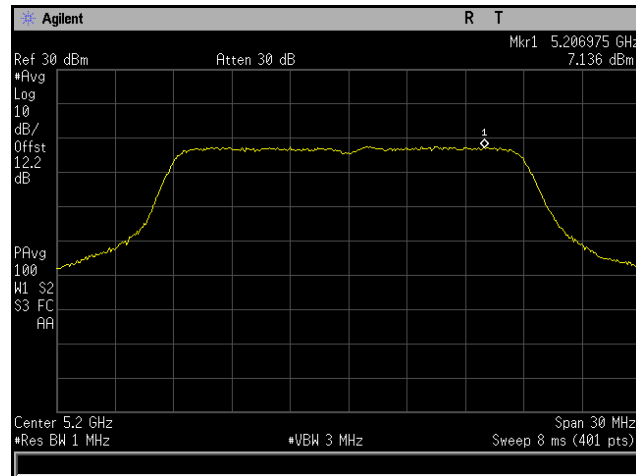


Plot 204. Power Spectral Density, 802.11ac 80 MHz, Channel 5210 MHz, 4x8 MCS0 CH6

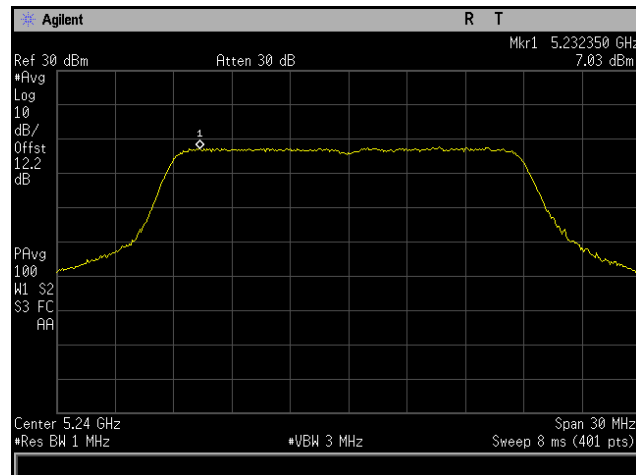
Power Spectral Density, 802.11n 20 MHz, 4x8, CH3



Plot 205. Power Spectral Density, 802.11n 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH3

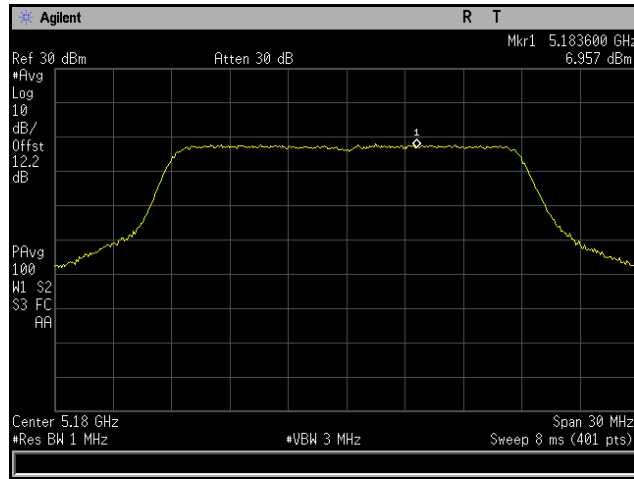


Plot 206. Power Spectral Density, 802.11n 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH3

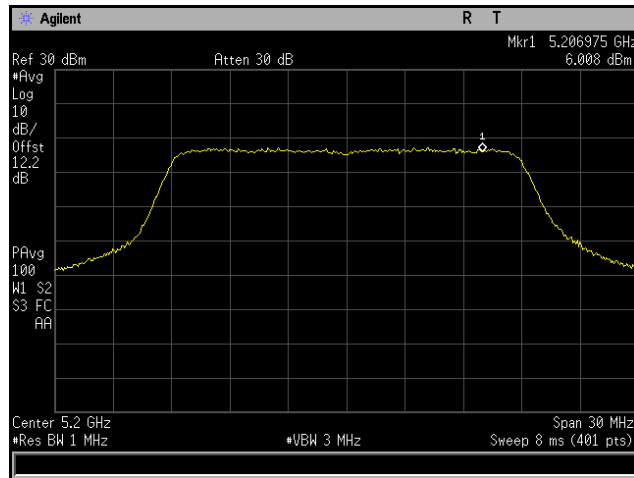


Plot 207. Power Spectral Density, 802.11n 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH3

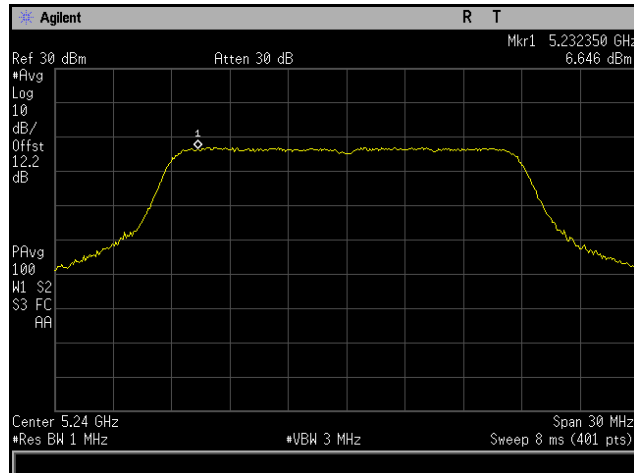
Power Spectral Density, 802.11n 20 MHz, 4x8, CH4



Plot 208. Power Spectral Density, 802.11n 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH4

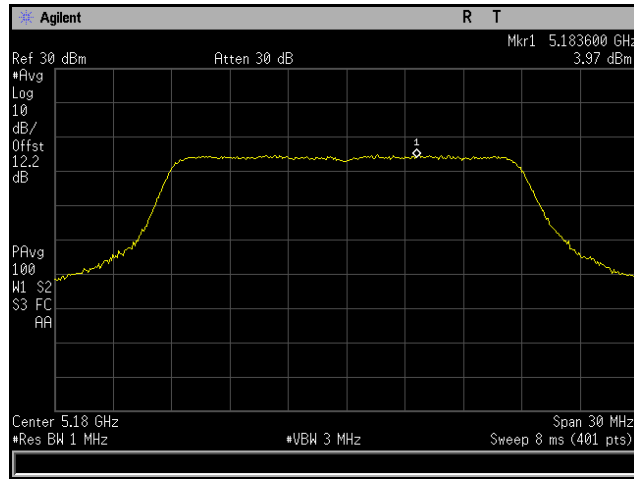


Plot 209. Power Spectral Density, 802.11n 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH4

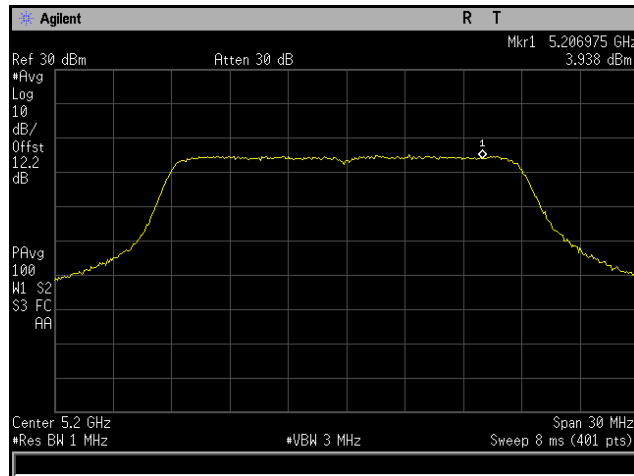


Plot 210. Power Spectral Density, 802.11n 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH4

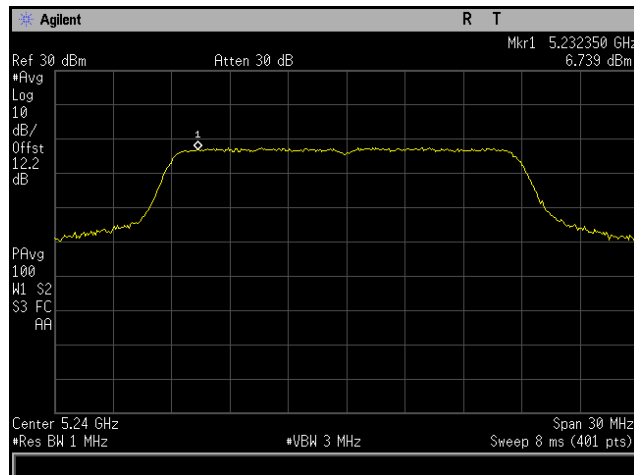
Power Spectral Density, 802.11n 20 MHz, 4x8, CH5



Plot 211. Power Spectral Density, 802.11n 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH5

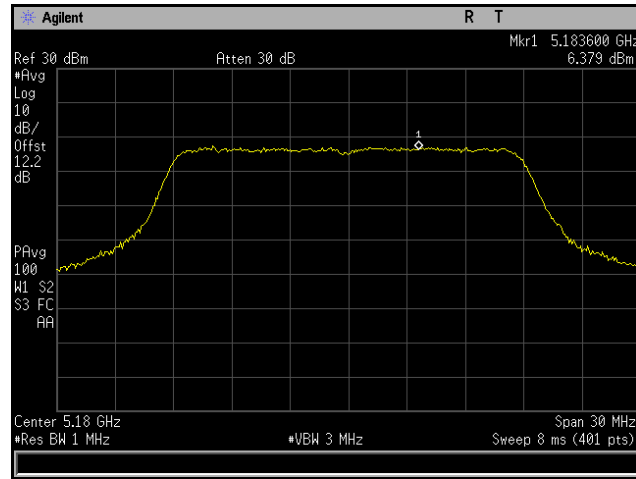


Plot 212. Power Spectral Density, 802.11n 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH5

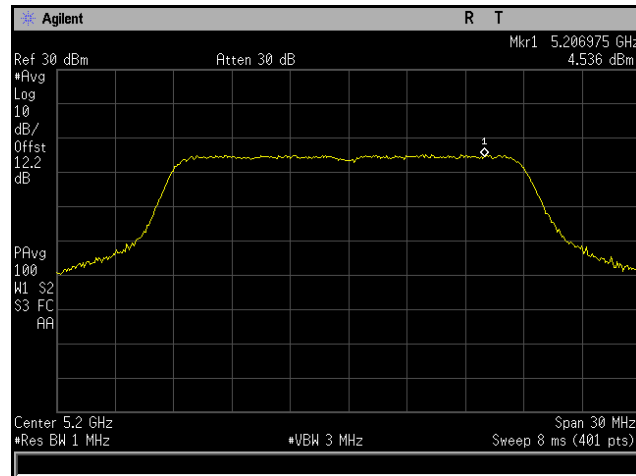


Plot 213. Power Spectral Density, 802.11n 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH5

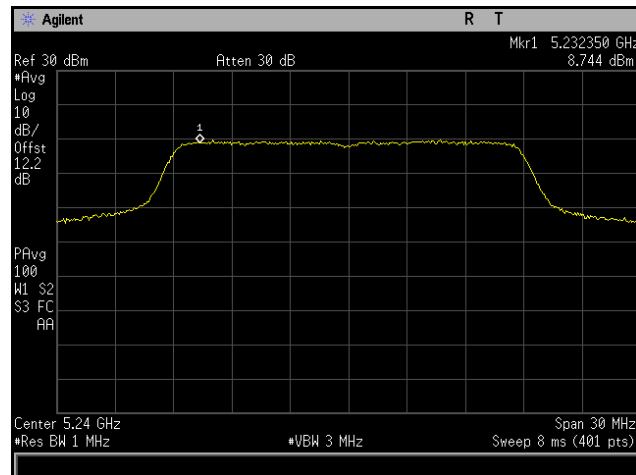
Power Spectral Density, 802.11n 20 MHz, 4x8, CH6



Plot 214. Power Spectral Density, 802.11n 20 MHz, Channel 5180 MHz, 4x8 MCS0 CH6

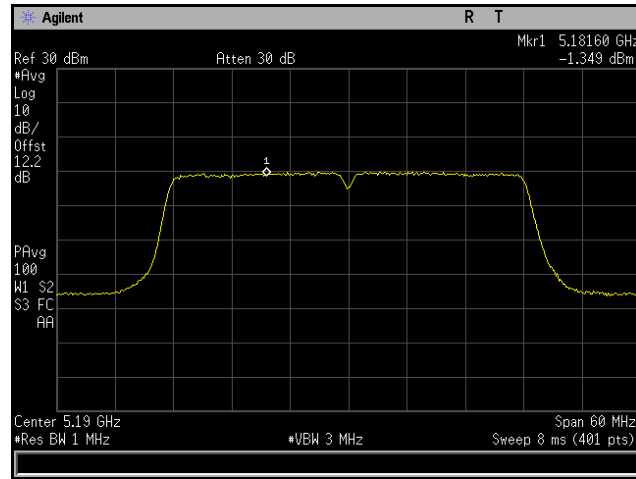


Plot 215. Power Spectral Density, 802.11n 20 MHz, Channel 5200 MHz, 4x8 MCS0 CH6

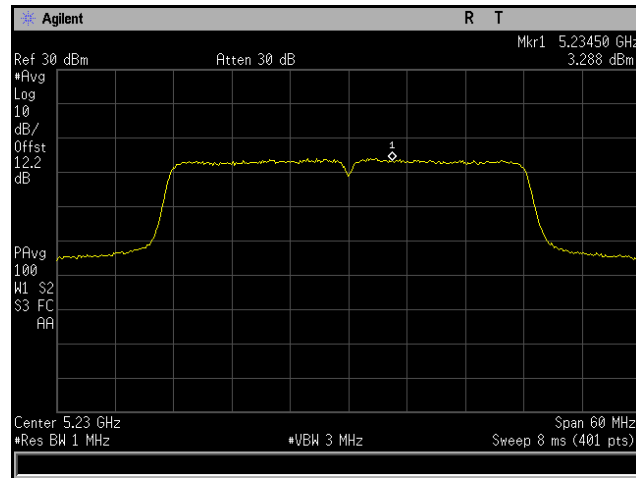


Plot 216. Power Spectral Density, 802.11n 20 MHz, Channel 5240 MHz, 4x8 MCS0 CH6

Power Spectral Density, 802.11n 40 MHz, 4x8, CH3

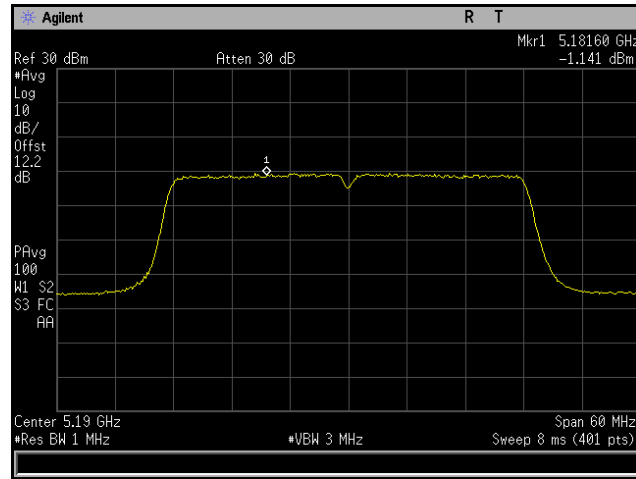


Plot 217. Power Spectral Density, 802.11n 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH3

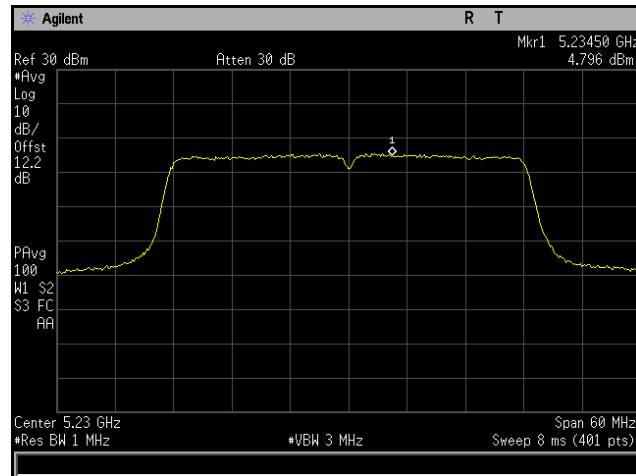


Plot 218. Power Spectral Density, 802.11n 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH3

Power Spectral Density, 802.11n 40 MHz, 4x8, CH4

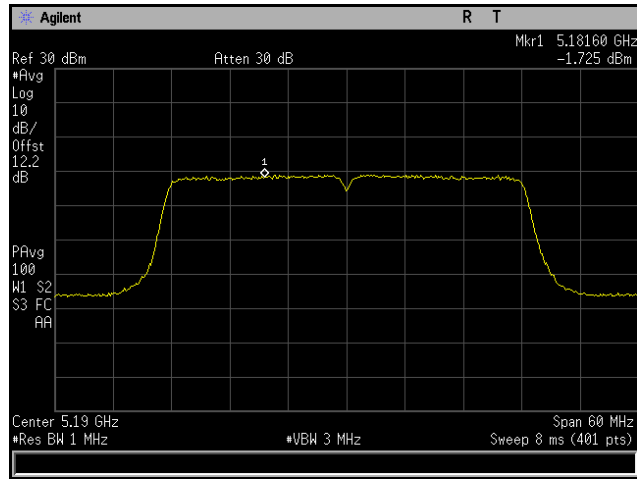


Plot 219. Power Spectral Density, 802.11n 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH4

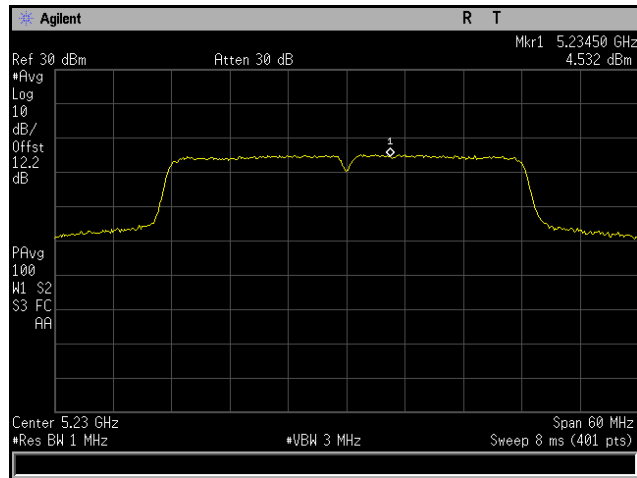


Plot 220. Power Spectral Density, 802.11n 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH4

Power Spectral Density, 802.11n 40 MHz, 4x8, CH5

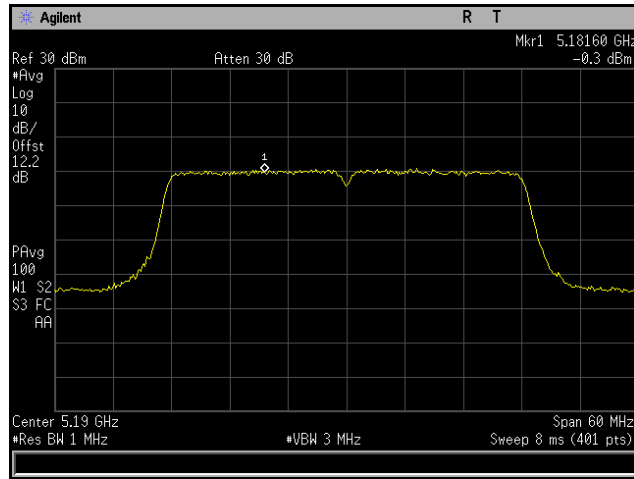


Plot 221. Power Spectral Density, 802.11n 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH5

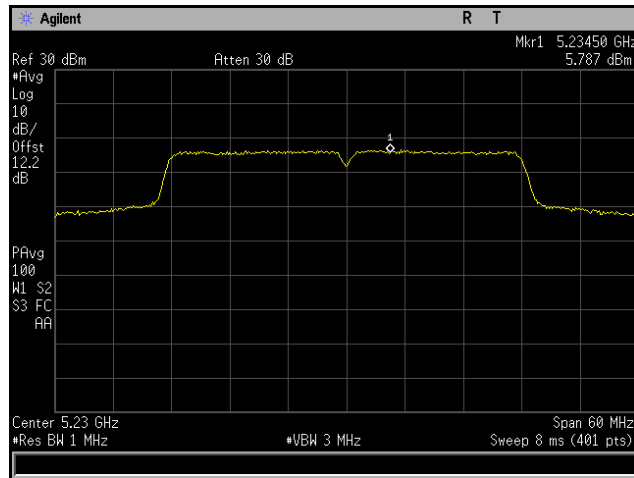


Plot 222. Power Spectral Density, 802.11n 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH5

Power Spectral Density, 802.11n 40 MHz, 4x8, CH6

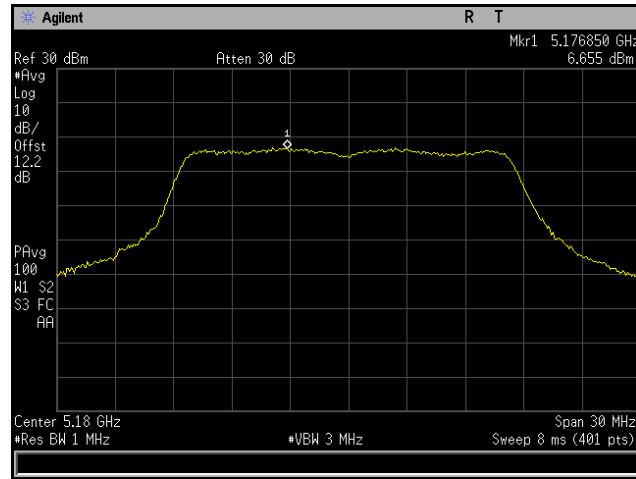


Plot 223. Power Spectral Density, 802.11n 40 MHz, Channel 5190 MHz, 4x8 MCS0 CH6

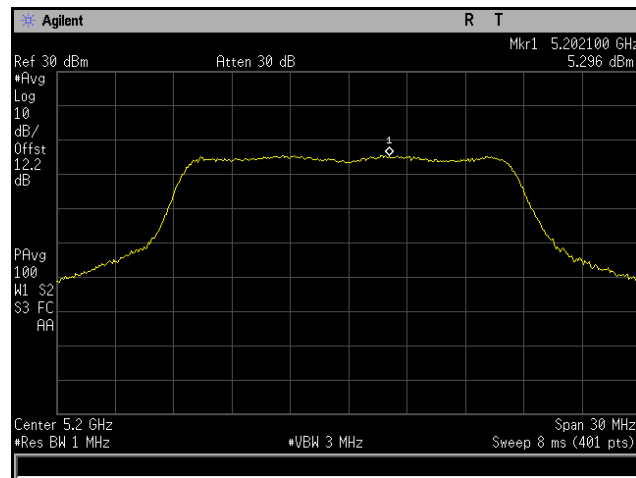


Plot 224. Power Spectral Density, 802.11n 40 MHz, Channel 5230 MHz, 4x8 MCS0 CH6

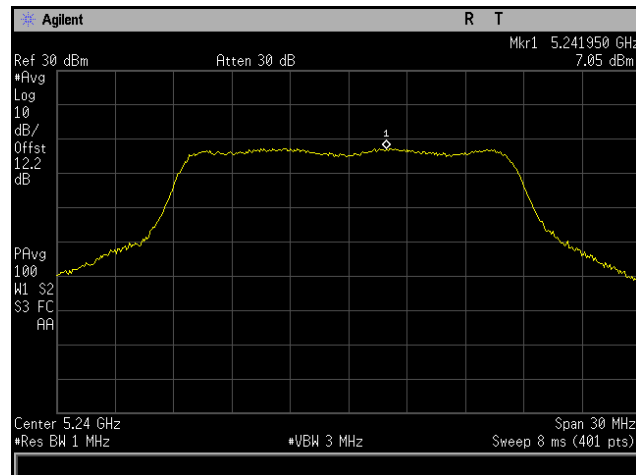
Power Spectral Density, 802.11a, 6x8, CH2



Plot 225. Power Spectral Density, 802.11a, Channel 5180 MHz, 6x8 MCS0 NSS1 CH2

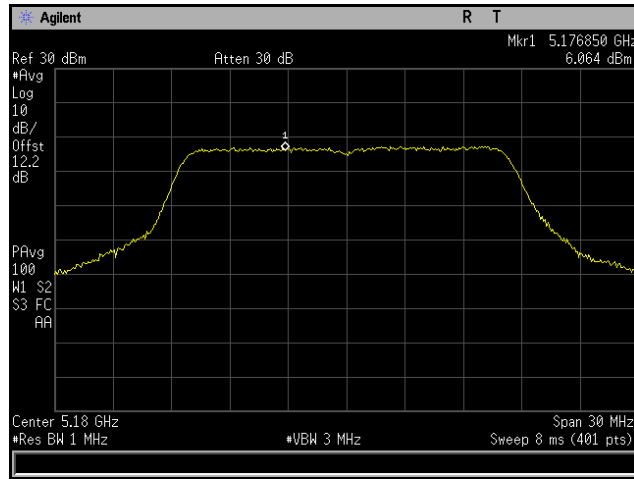


Plot 226. Power Spectral Density, 802.11a, Channel 5200 MHz, 6x8 MCS0 NSS1 CH2

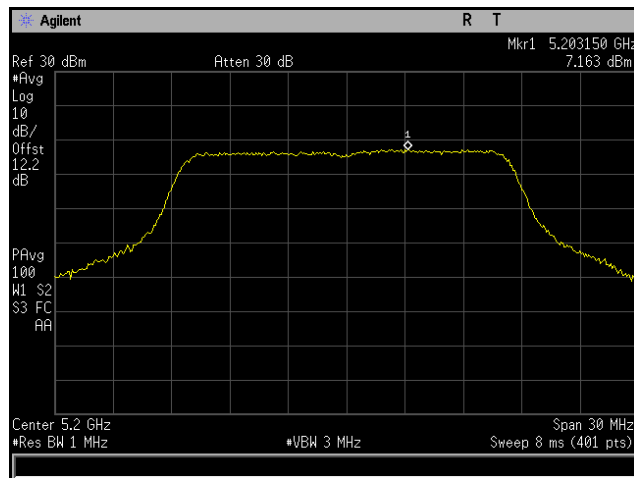


Plot 227. Power Spectral Density, 802.11a, Channel 5240 MHz, 6x8 MCS0 NSS1 CH2

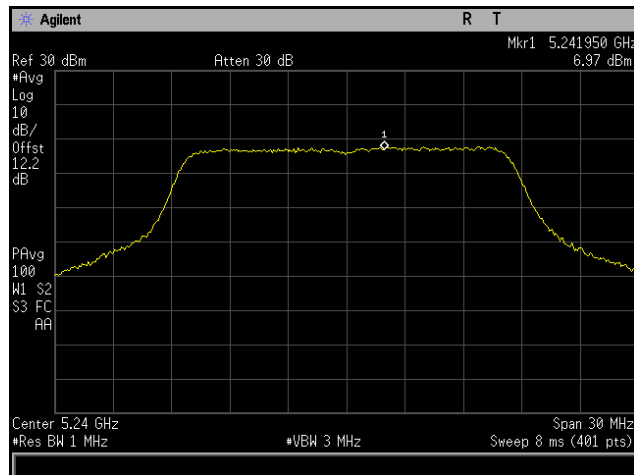
Power Spectral Density, 802.11a, 6x8, CH3



Plot 228. Power Spectral Density, 802.11a, Channel 5180 MHz, 6x8 MCS0 NSS1 CH3

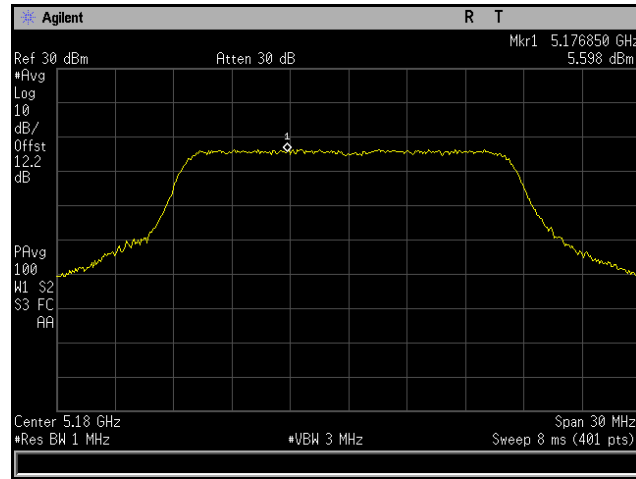


Plot 229. Power Spectral Density, 802.11a, Channel 5200 MHz, 6x8 MCS0 NSS1 CH3

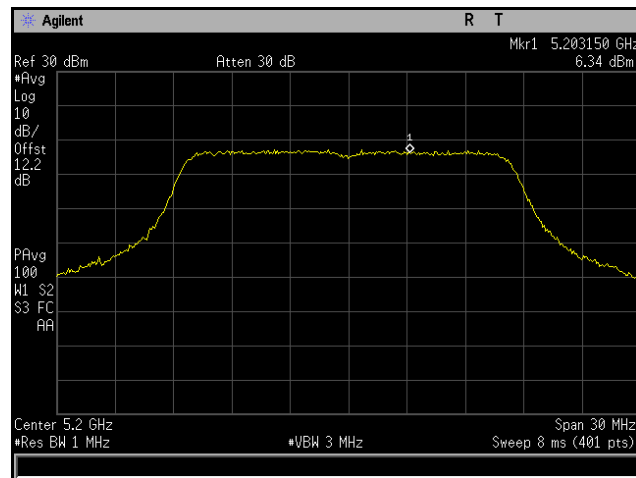


Plot 230. Power Spectral Density, 802.11a, Channel 5240 MHz, 6x8 MCS0 NSS1 CH3

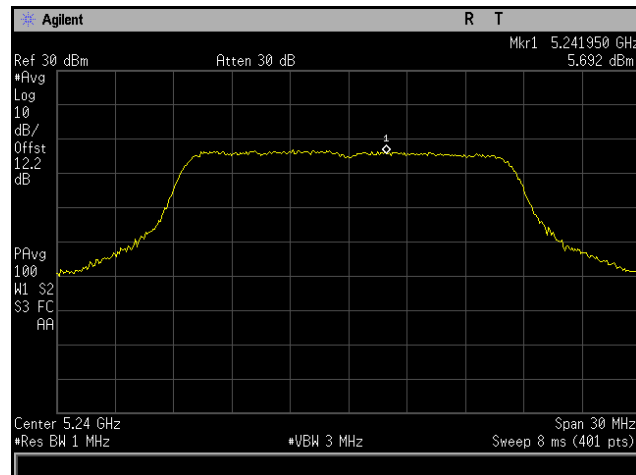
Power Spectral Density, 802.11a, 6x8, CH4



Plot 231. Power Spectral Density, 802.11a, Channel 5180 MHz, 6x8 MCS0 NSS1 CH4

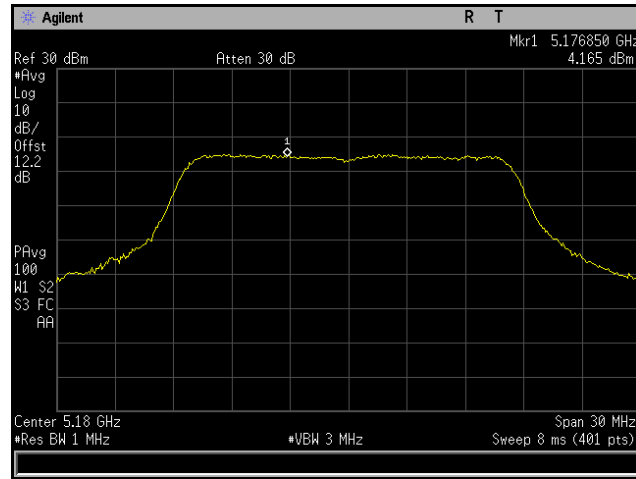


Plot 232. Power Spectral Density, 802.11a, Channel 5200 MHz, 6x8 MCS0 NSS1 CH4

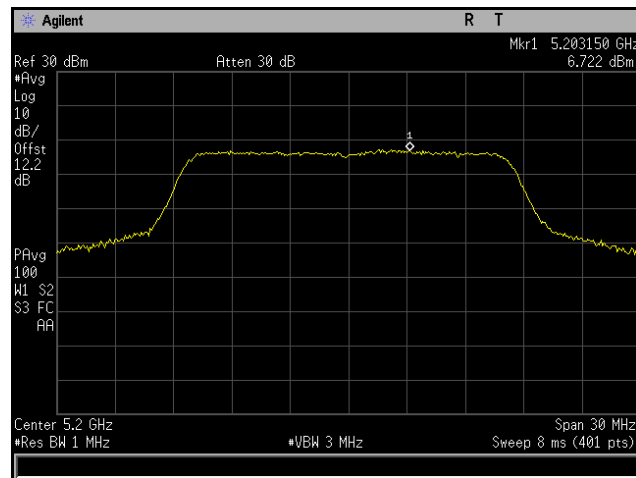


Plot 233. Power Spectral Density, 802.11a, Channel 5240 MHz, 6x8 MCS0 NSS1 CH4

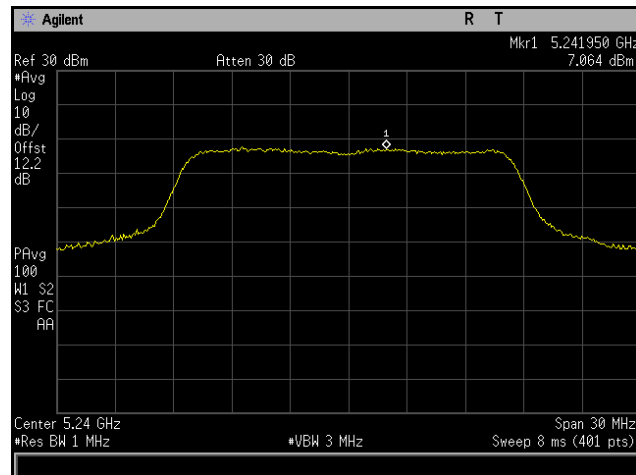
Power Spectral Density, 802.11a, 6x8, CH5



Plot 234. Power Spectral Density, 802.11a, Channel 5180 MHz, 6x8 MCS0 NSS1 CH5

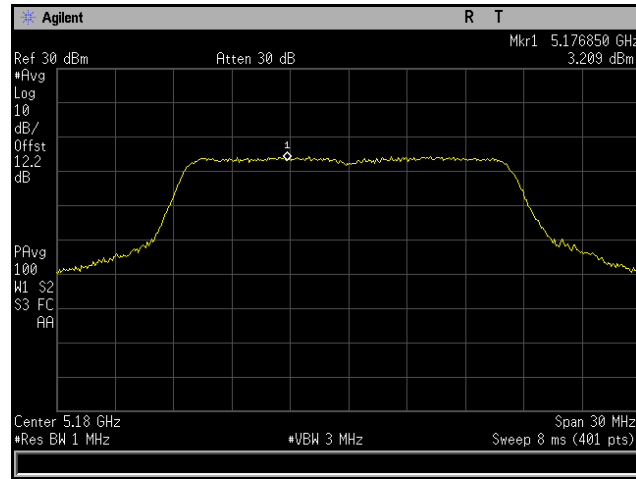


Plot 235. Power Spectral Density, 802.11a, Channel 5200 MHz, 6x8 MCS0 NSS1 CH5

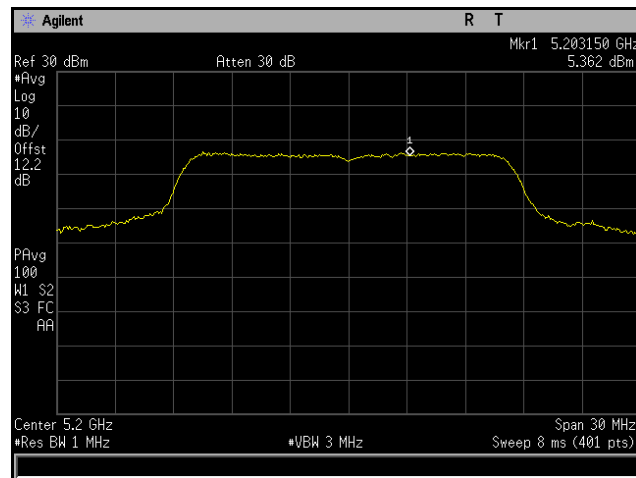


Plot 236. Power Spectral Density, 802.11a, Channel 5240 MHz, 6x8 MCS0 NSS1 CH5

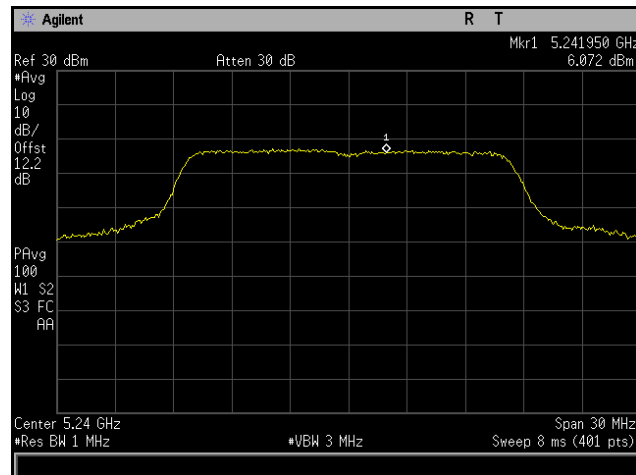
Power Spectral Density, 802.11a, 6x8, CH6



Plot 237. Power Spectral Density, 802.11a, Channel 5180 MHz, 6x8 MCS0 NSS1 CH6

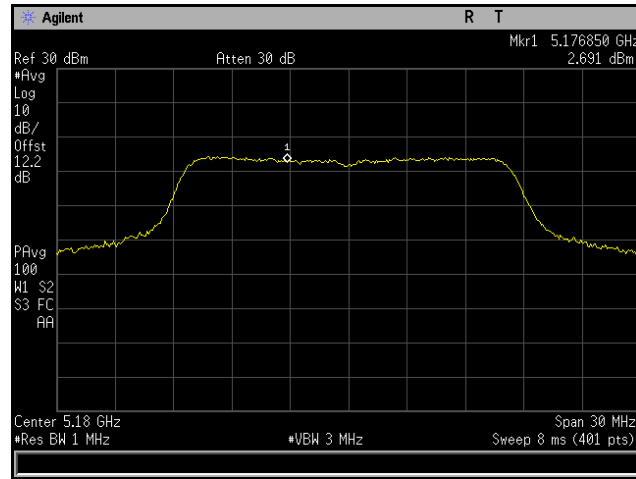


Plot 238. Power Spectral Density, 802.11a, Channel 5200 MHz, 6x8 MCS0 NSS1 CH6

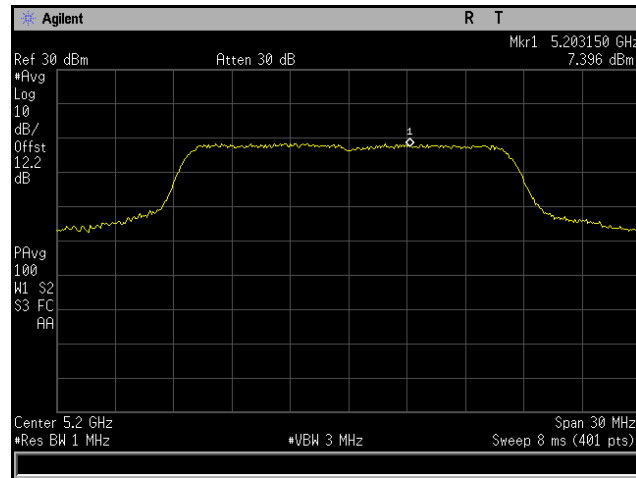


Plot 239. Power Spectral Density, 802.11a, Channel 5240 MHz, 6x8 MCS0 NSS1 CH6

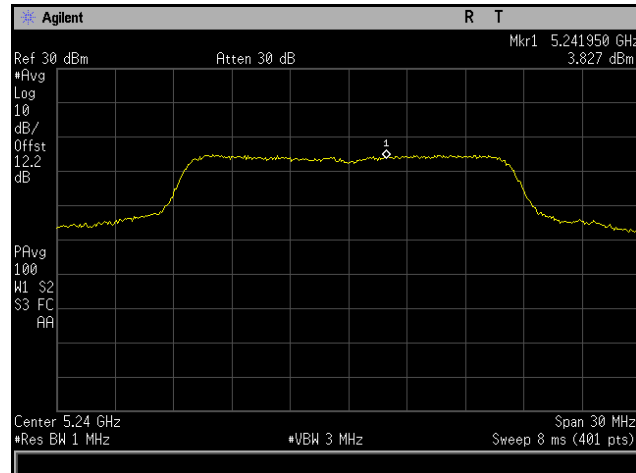
Power Spectral Density, 802.11a, 6x8, CH7



Plot 240. Power Spectral Density, 802.11a, Channel 5180 MHz, 6x8 MCS0 NSS1 CH7

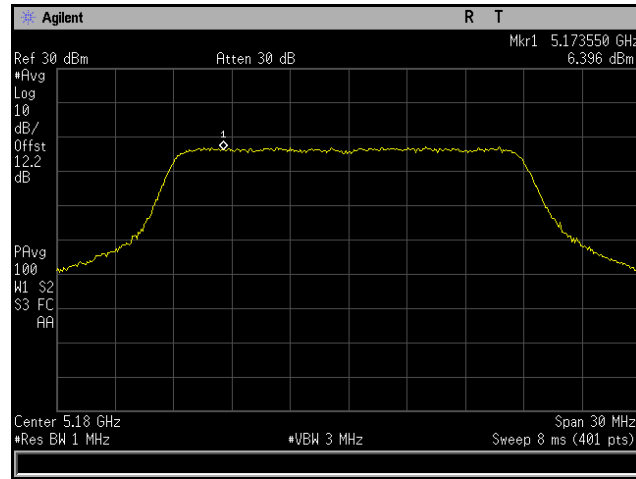


Plot 241. Power Spectral Density, 802.11a, Channel 5200 MHz, 6x8 MCS0 NSS1 CH7

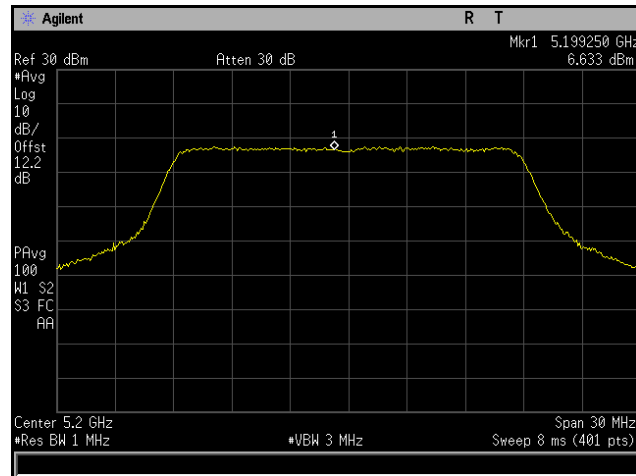


Plot 242. Power Spectral Density, 802.11a, Channel 5240 MHz, 6x8 MCS0 NSS1 CH7

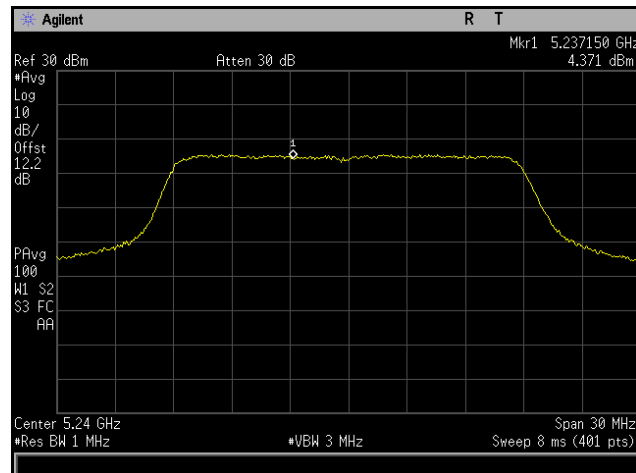
Power Spectral Density, 802.11ac 20 MHz, 6x8, CH2



Plot 243. Power Spectral Density, 802.11ac 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH2

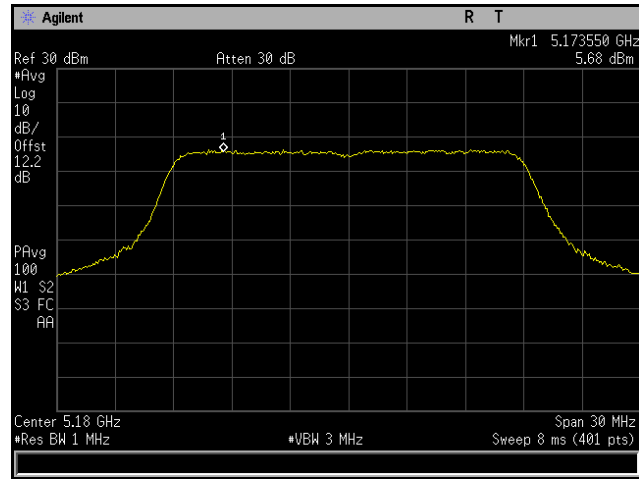


Plot 244. Power Spectral Density, 802.11ac 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH2

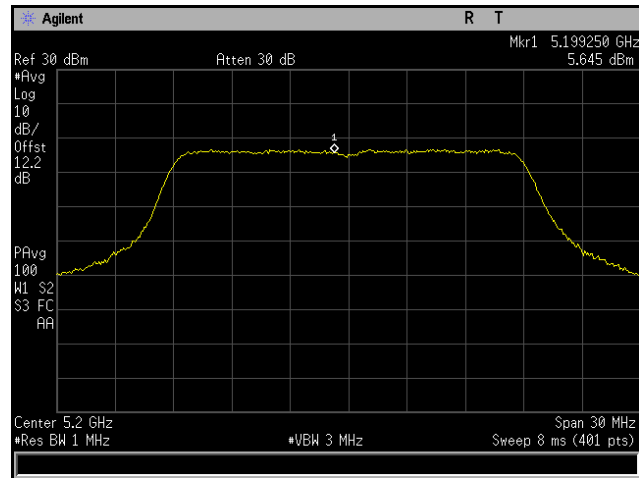


Plot 245. Power Spectral Density, 802.11ac 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH2

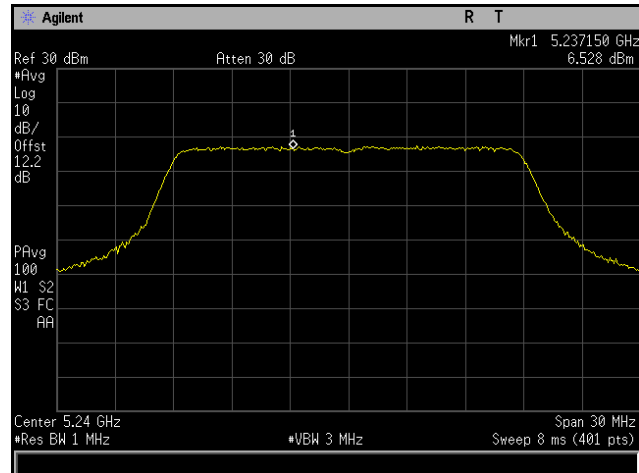
Power Spectral Density, 802.11ac 20 MHz, 6x8, CH3



Plot 246. Power Spectral Density, 802.11ac 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH3

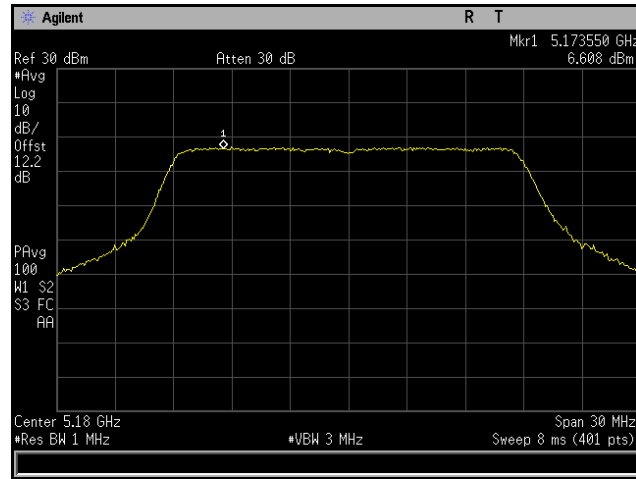


Plot 247. Power Spectral Density, 802.11ac 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH3

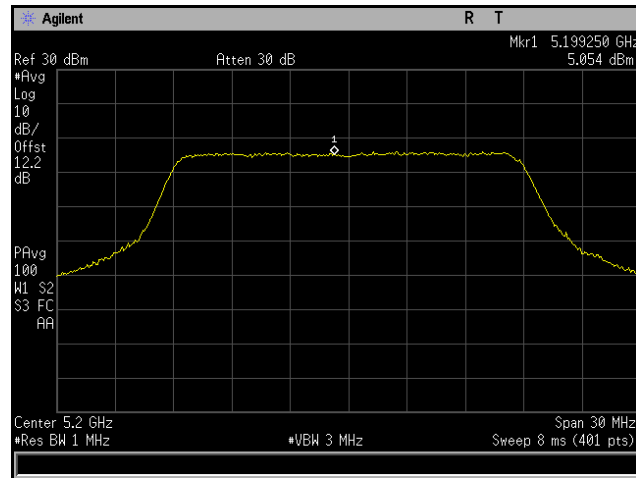


Plot 248. Power Spectral Density, 802.11ac 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH3

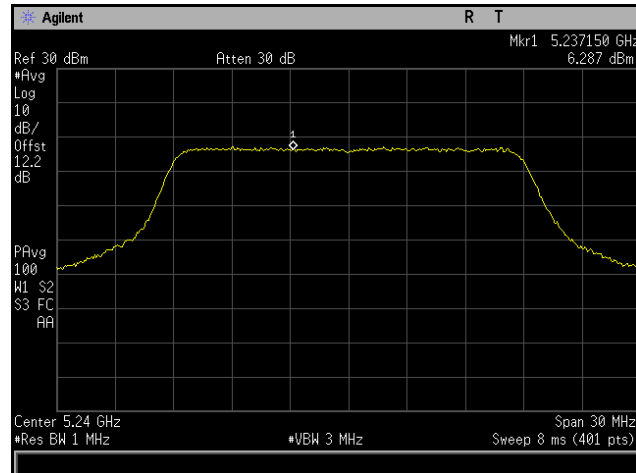
Power Spectral Density, 802.11ac 20 MHz, 6x8, CH4



Plot 249. Power Spectral Density, 802.11ac 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH4

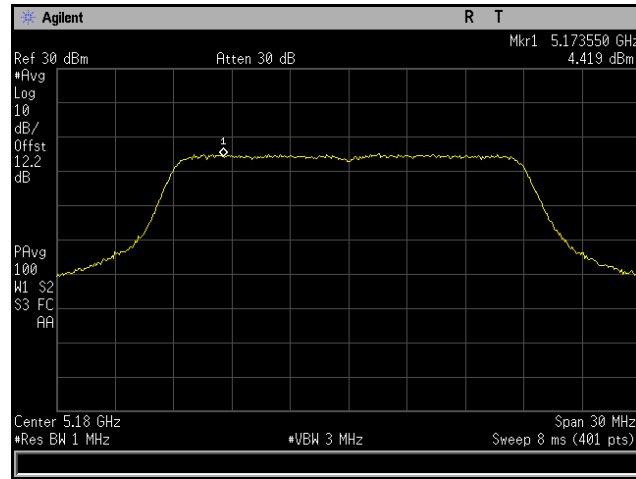


Plot 250. Power Spectral Density, 802.11ac 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH4

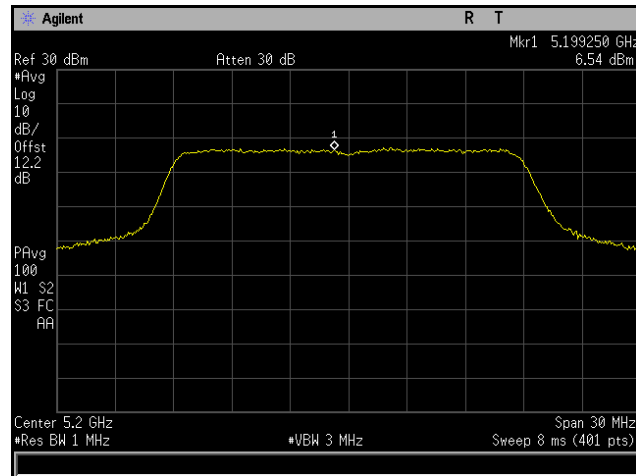


Plot 251. Power Spectral Density, 802.11ac 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH4

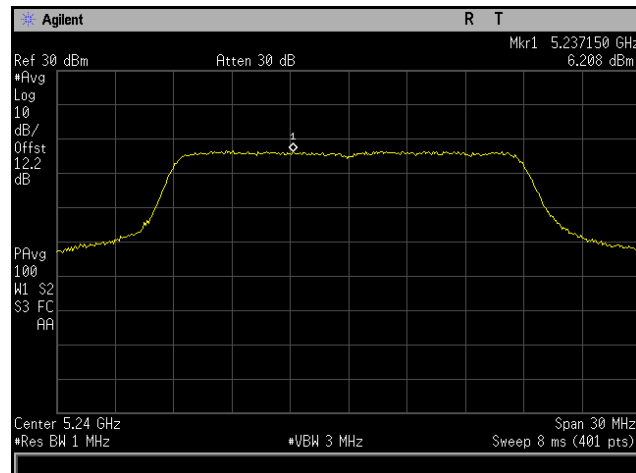
Power Spectral Density, 802.11ac 20 MHz, 6x8, CH5



Plot 252. Power Spectral Density, 802.11ac 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH5

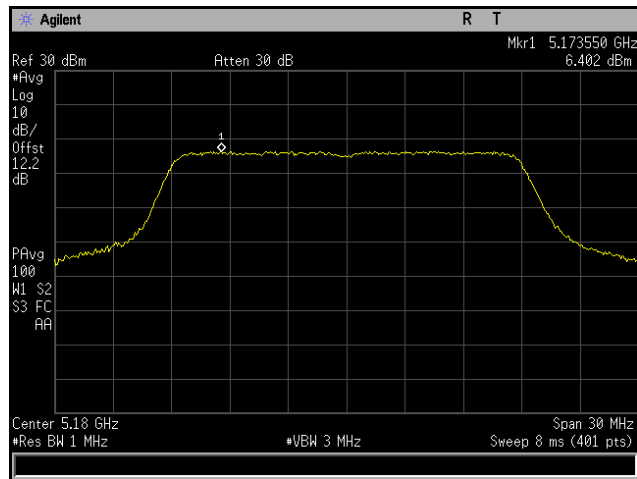


Plot 253. Power Spectral Density, 802.11ac 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH5

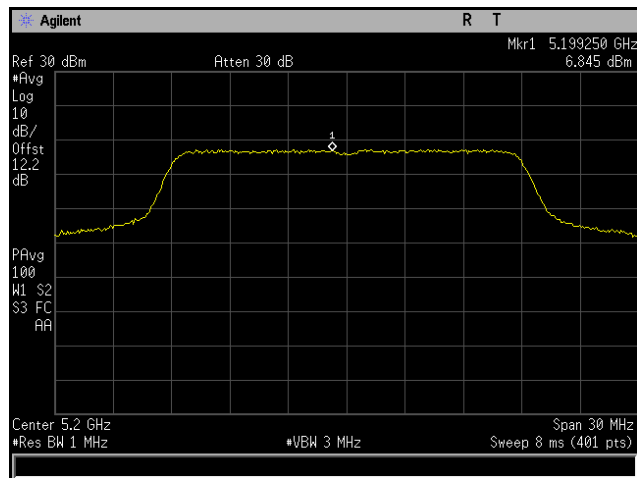


Plot 254. Power Spectral Density, 802.11ac 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH5

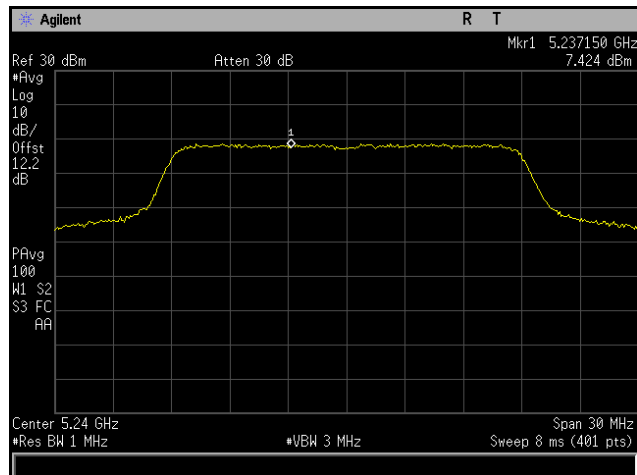
Power Spectral Density, 802.11ac 20 MHz, 6x8, CH6



Plot 255. Power Spectral Density, 802.11ac 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH6

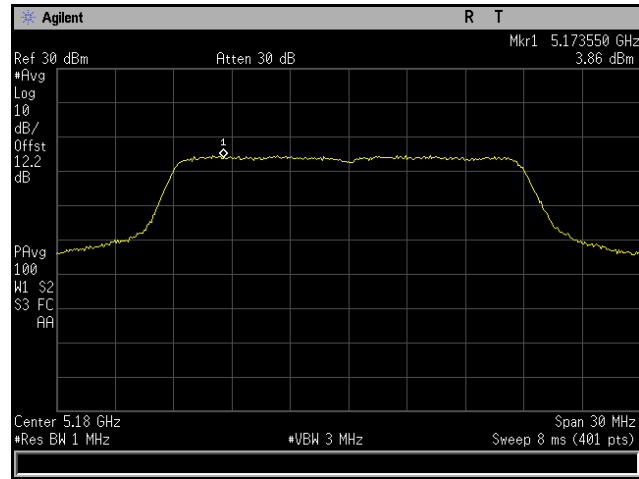


Plot 256. Power Spectral Density, 802.11ac 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH6

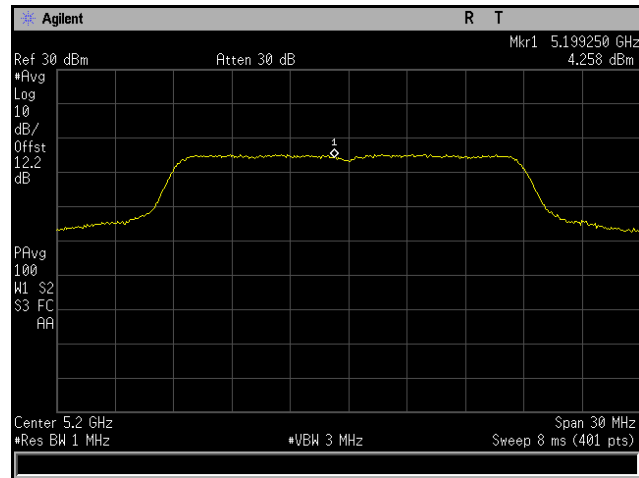


Plot 257. Power Spectral Density, 802.11ac 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH6

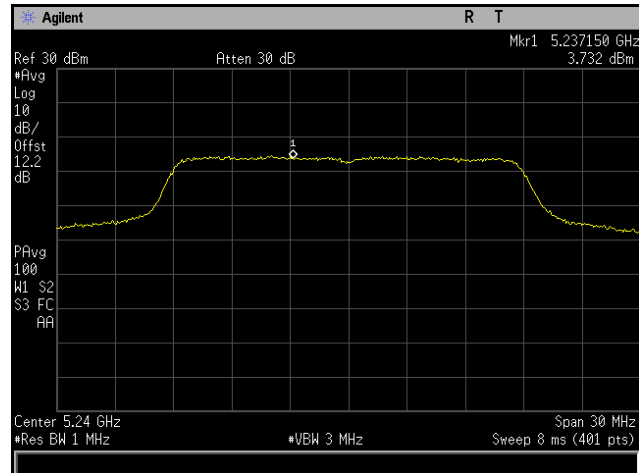
Power Spectral Density, 802.11ac 20 MHz, 6x8, CH7



Plot 258. Power Spectral Density, 802.11ac 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH7

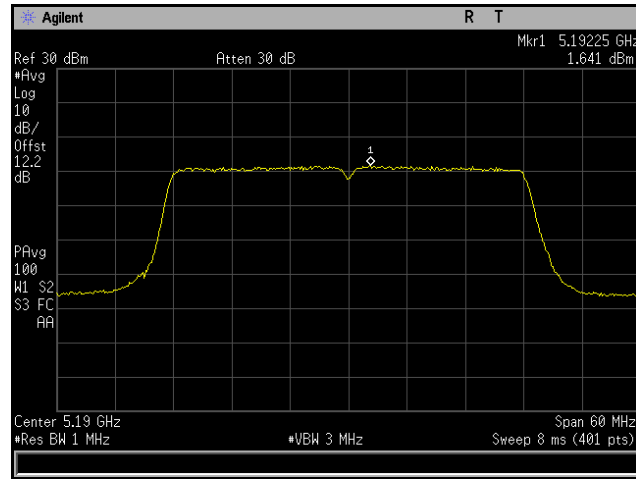


Plot 259. Power Spectral Density, 802.11ac 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH7

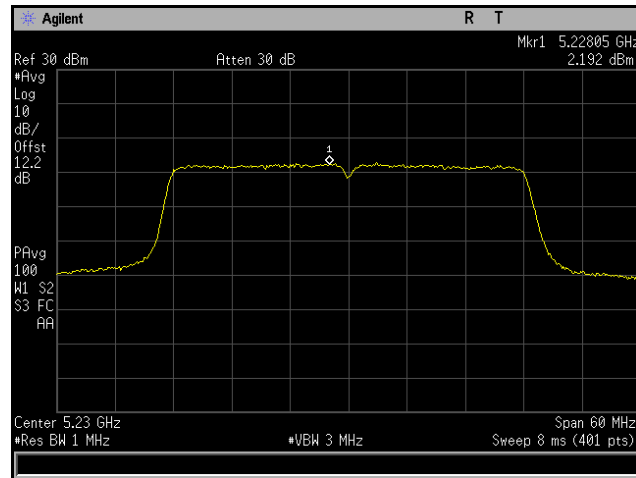


Plot 260. Power Spectral Density, 802.11ac 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH7

Power Spectral Density, 802.11ac 40 MHz, 6x8, CH2

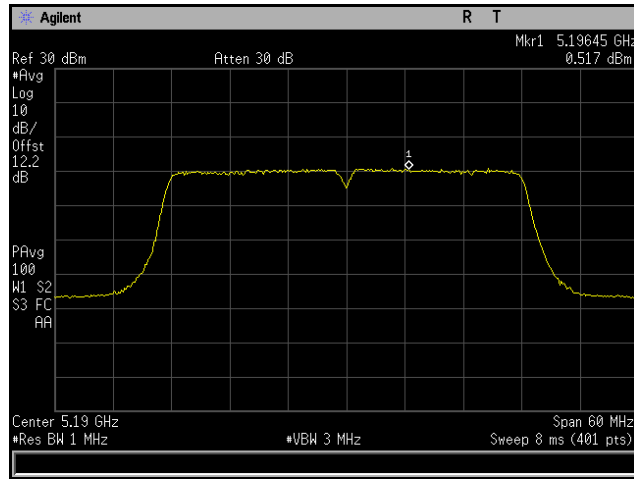


Plot 261. Power Spectral Density, 802.11ac 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH2

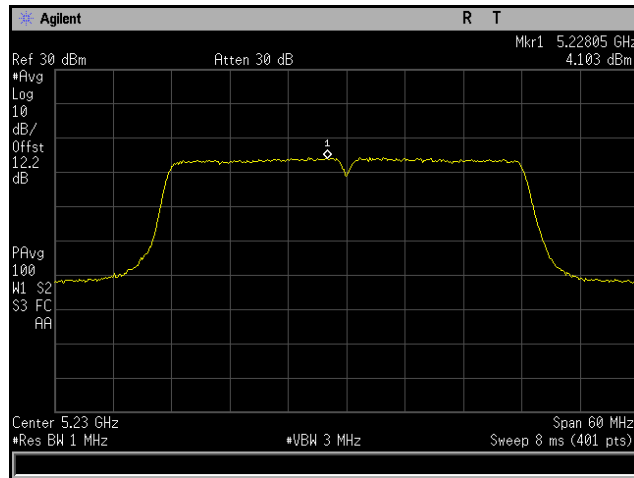


Plot 262. Power Spectral Density, 802.11ac 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH2

Power Spectral Density, 802.11ac 40 MHz, 6x8, CH3

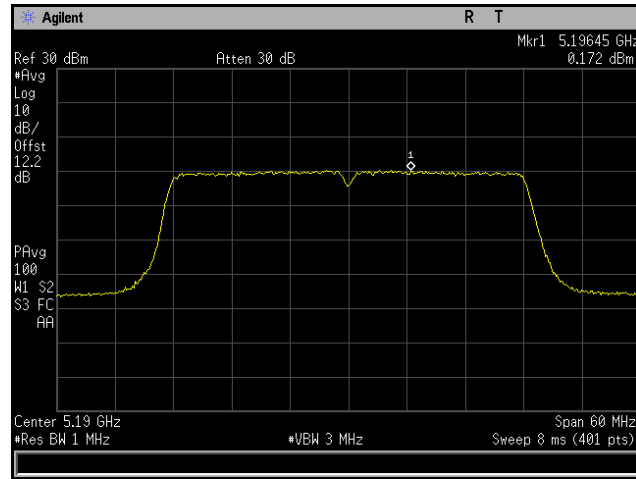


Plot 263. Power Spectral Density, 802.11ac 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH3

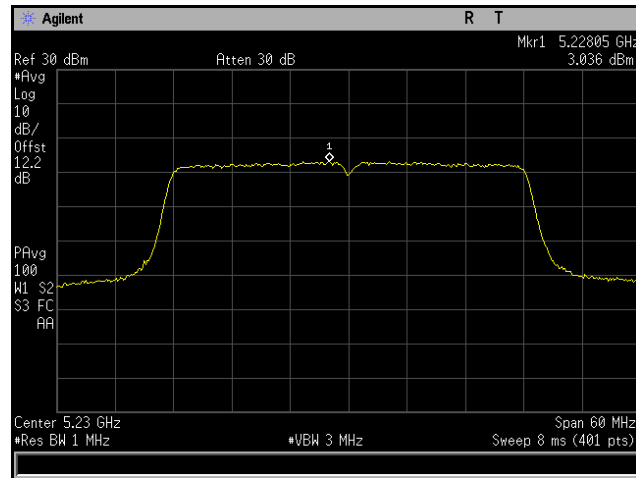


Plot 264. Power Spectral Density, 802.11ac 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH3

Power Spectral Density, 802.11ac 40 MHz, 6x8, CH4

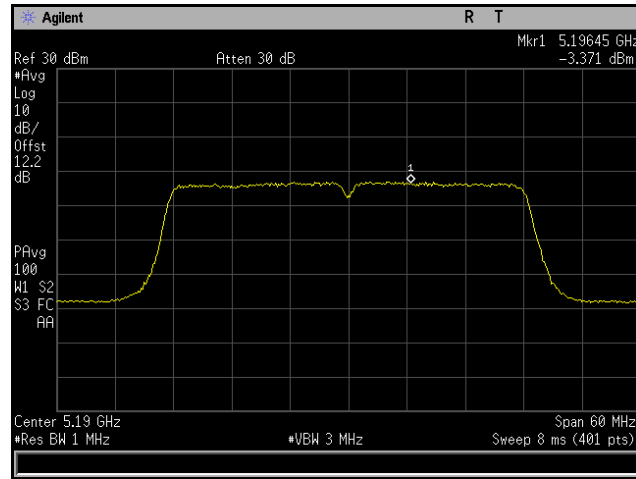


Plot 265. Power Spectral Density, 802.11ac 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH4

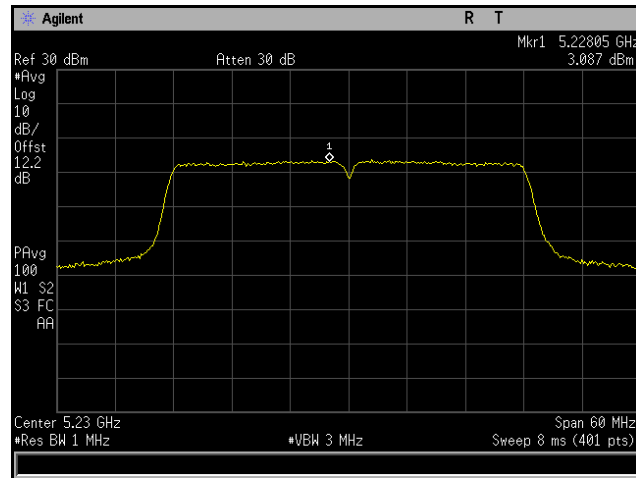


Plot 266. Power Spectral Density, 802.11ac 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH4

Power Spectral Density, 802.11ac 40 MHz, 6x8, CH5

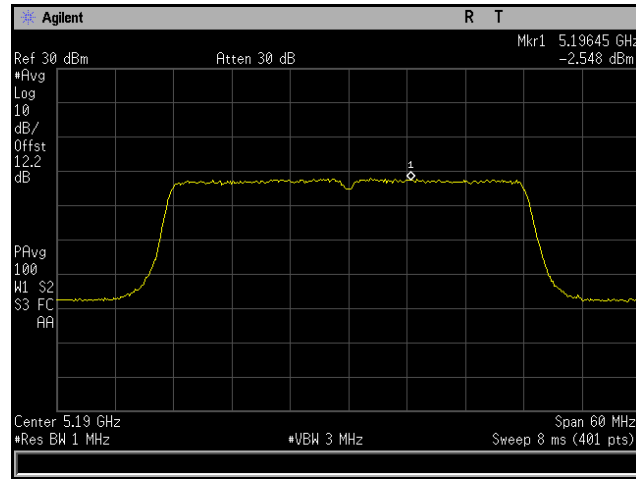


Plot 267. Power Spectral Density, 802.11ac 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH5

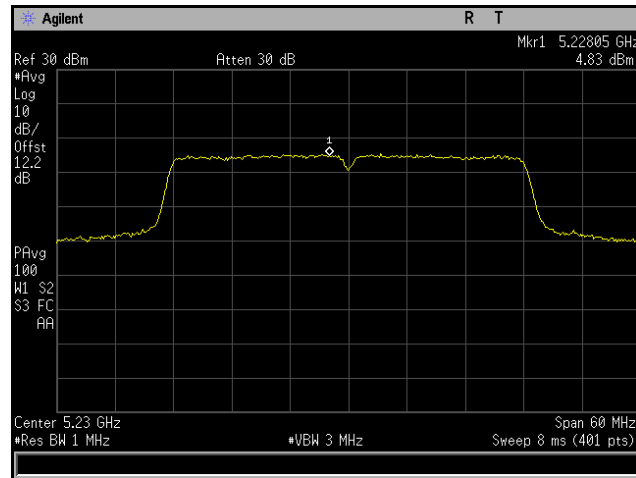


Plot 268. Power Spectral Density, 802.11ac 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH5

Power Spectral Density, 802.11ac 40 MHz, 6x8, CH6

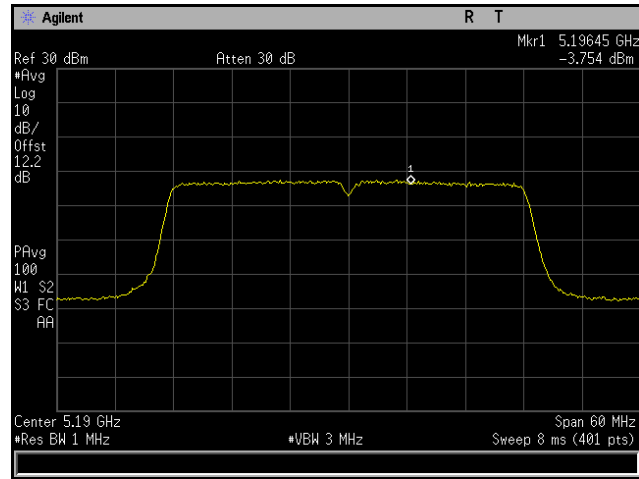


Plot 269. Power Spectral Density, 802.11ac 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH6

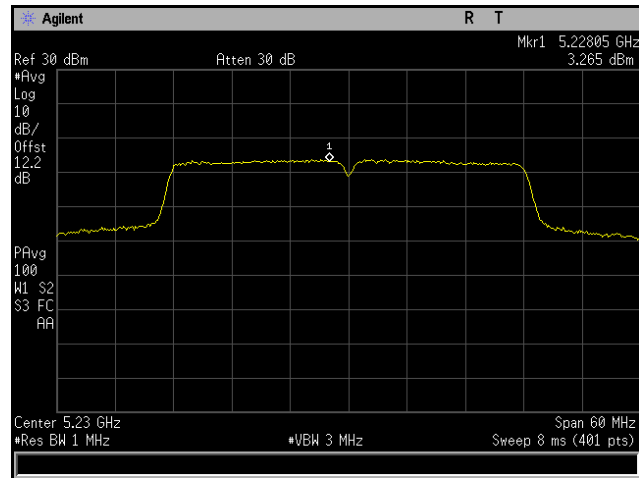


Plot 270. Power Spectral Density, 802.11ac 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH6

Power Spectral Density, 802.11ac 40 MHz, 6x8, CH7

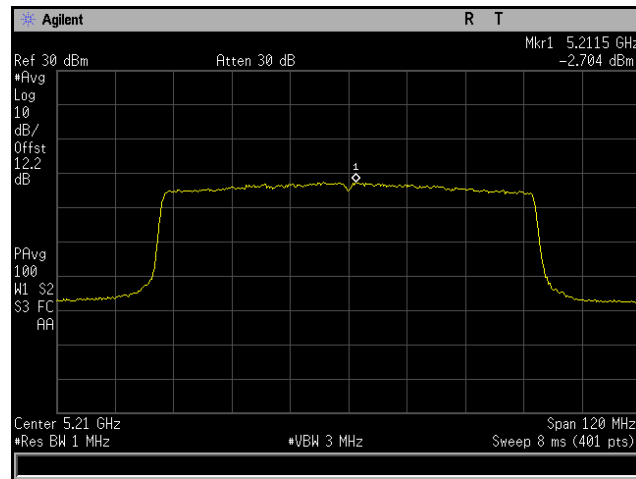


Plot 271. Power Spectral Density, 802.11ac 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH7

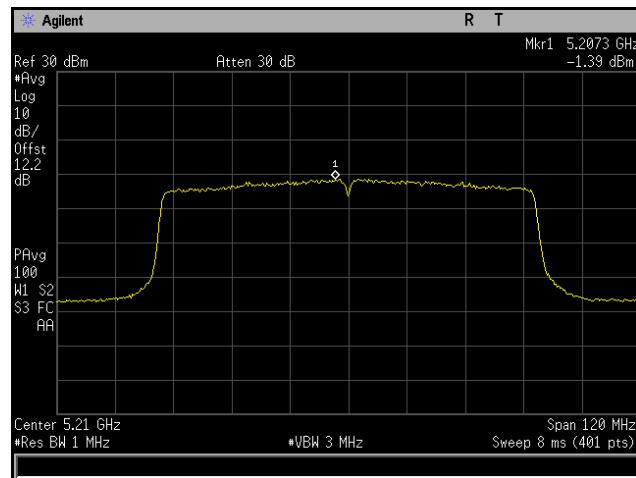


Plot 272. Power Spectral Density, 802.11ac 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH7

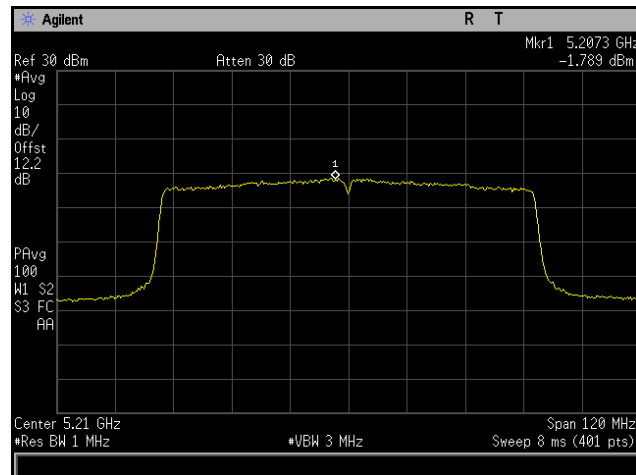
Power Spectral Density, 802.11ac 80 MHz, 6x8



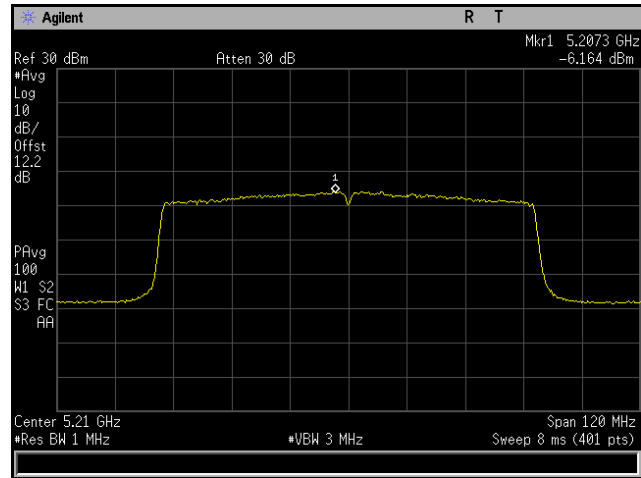
Plot 273. Power Spectral Density, 802.11ac 80 MHz, Channel 5210 MHz, 6x8 MCS0 NSS1 CH2



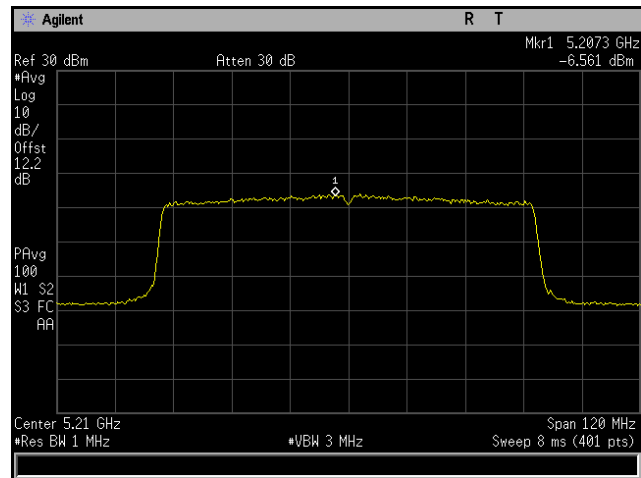
Plot 274. Power Spectral Density, 802.11ac 80 MHz, Channel 5210 MHz, 6x8 MCS0 NSS1 CH3



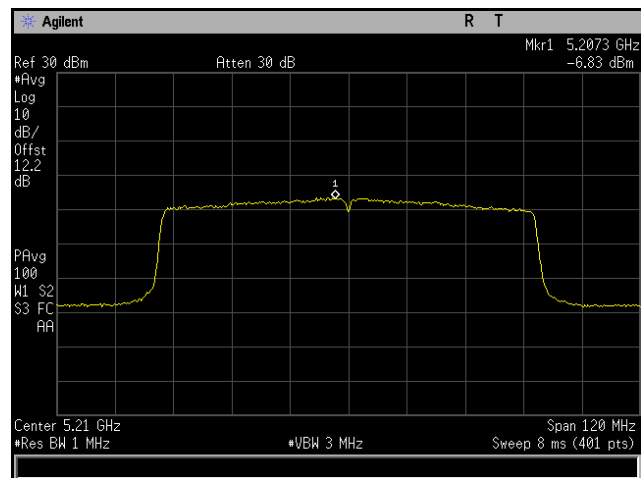
Plot 275. Power Spectral Density, 802.11ac 80 MHz, Channel 5210 MHz, 6x8 MCS0 NSS1 CH4



Plot 276. Power Spectral Density, 802.11ac 80 MHz, Channel 5210 MHz, 6x8 MCS0 NSS1 CH5

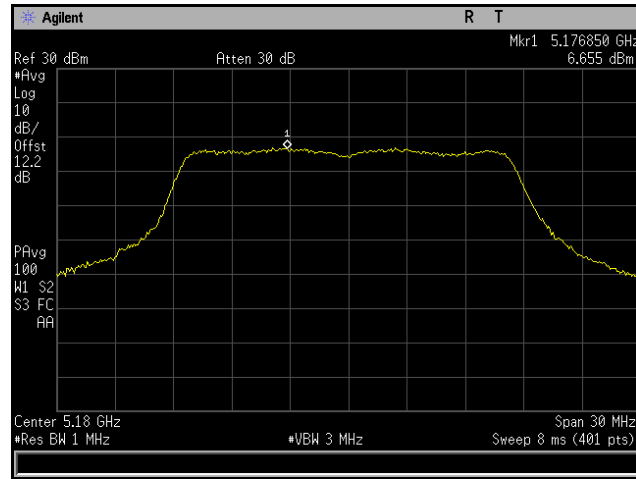


Plot 277. Power Spectral Density, 802.11ac 80 MHz, Channel 5210 MHz, 6x8 MCS0 NSS1 CH6

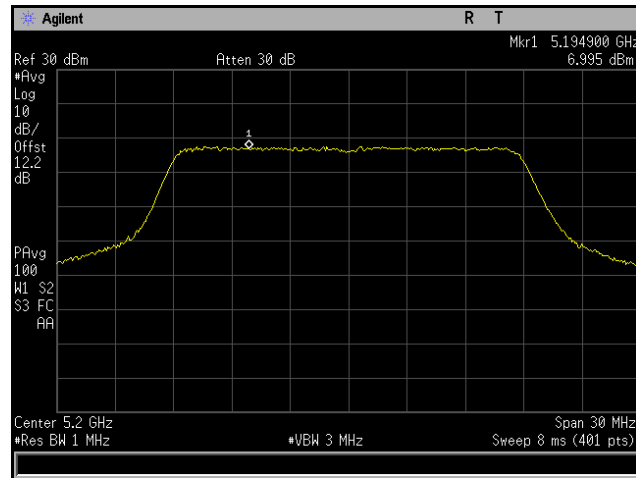


Plot 278. Power Spectral Density, 802.11ac 80 MHz, Channel 5210 MHz, 6x8 MCS0 NSS1 CH7

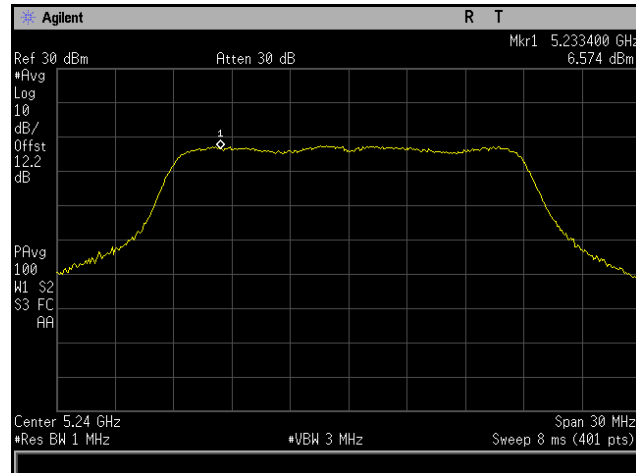
Power Spectral Density, 802.11n 20 MHz, 6x8, CH2



Plot 279. Power Spectral Density, 802.11n 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH2

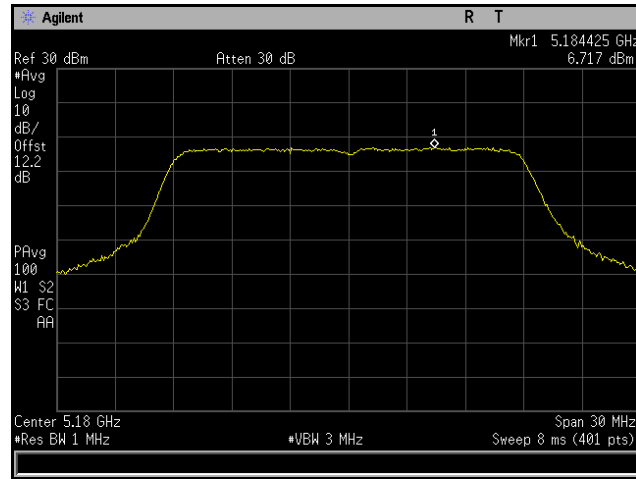


Plot 280. Power Spectral Density, 802.11n 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH2

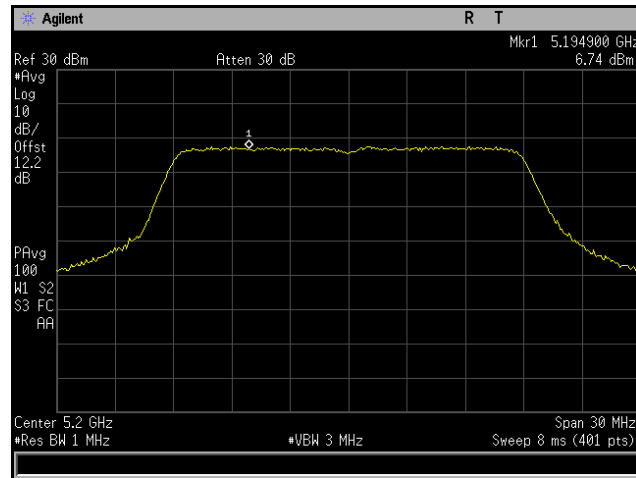


Plot 281. Power Spectral Density, 802.11n 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH2

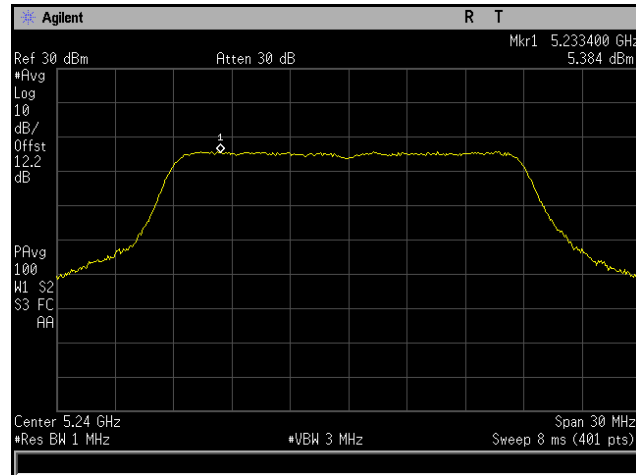
Power Spectral Density, 802.11n 20 MHz, 6x8, CH3



Plot 282. Power Spectral Density, 802.11n 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH3

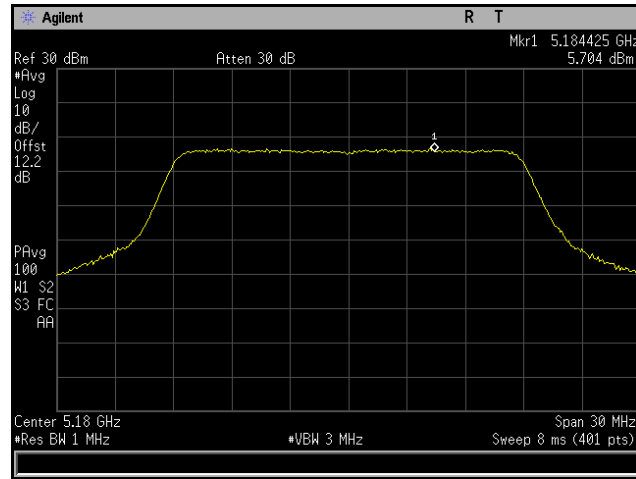


Plot 283. Power Spectral Density, 802.11n 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH3

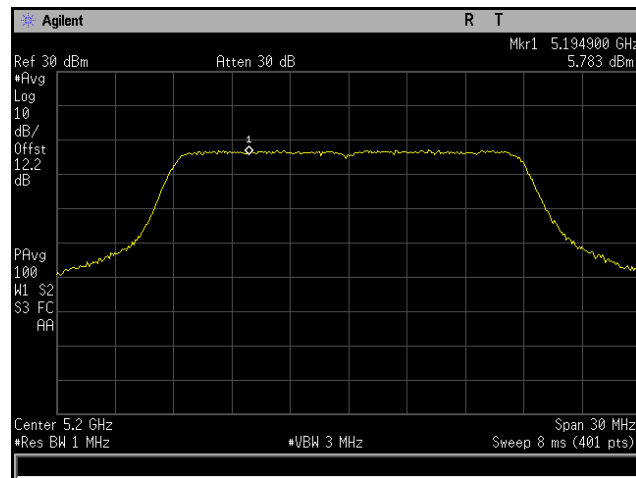


Plot 284. Power Spectral Density, 802.11n 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH3

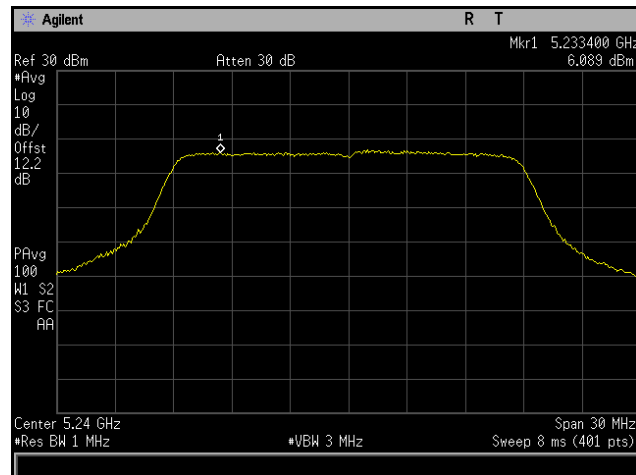
Power Spectral Density, 802.11n 20 MHz, 6x8, CH4



Plot 285. Power Spectral Density, 802.11n 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH4

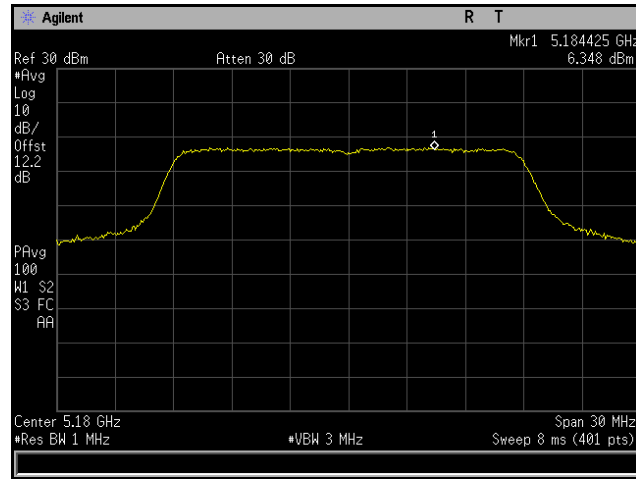


Plot 286. Power Spectral Density, 802.11n 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH4

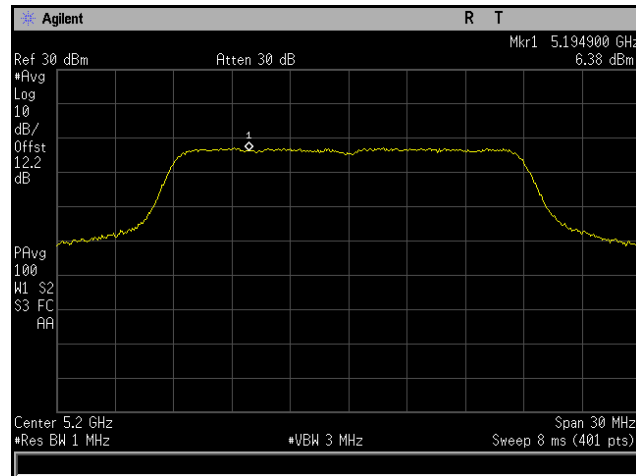


Plot 287. Power Spectral Density, 802.11n 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH4

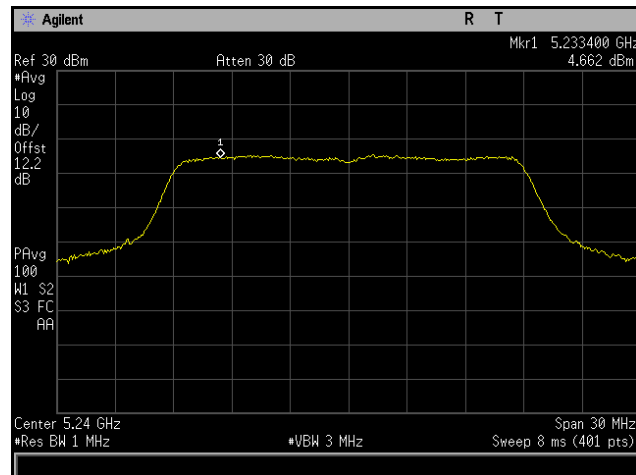
Power Spectral Density, 802.11n 20 MHz, 6x8, CH5



Plot 288. Power Spectral Density, 802.11n 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH5

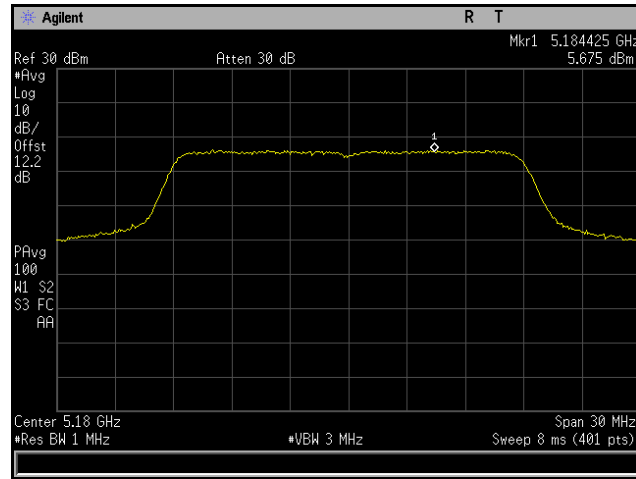


Plot 289. Power Spectral Density, 802.11n 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH5

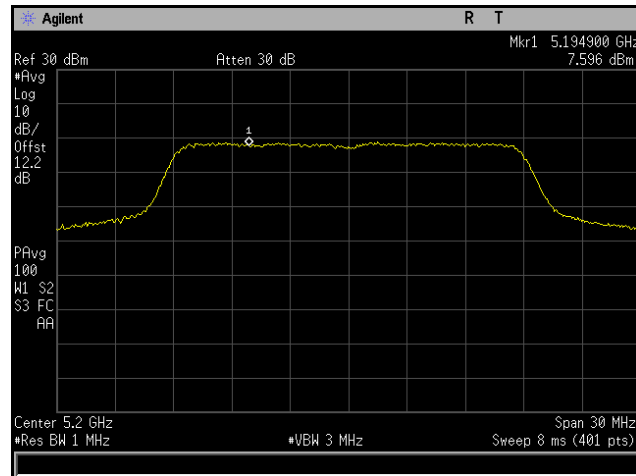


Plot 290. Power Spectral Density, 802.11n 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH5

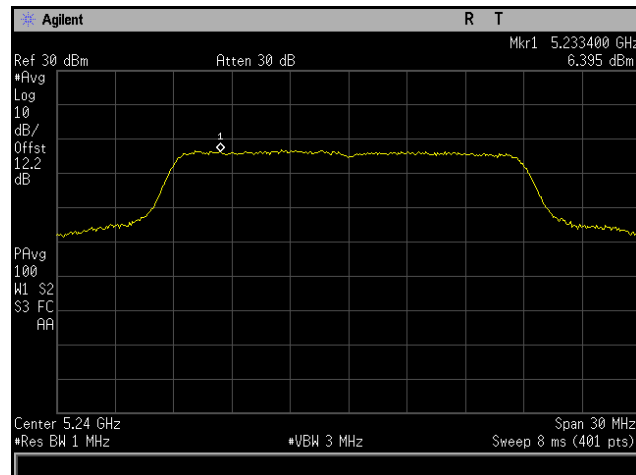
Power Spectral Density, 802.11n 20 MHz, 6x8, CH6



Plot 291. Power Spectral Density, 802.11n 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH6

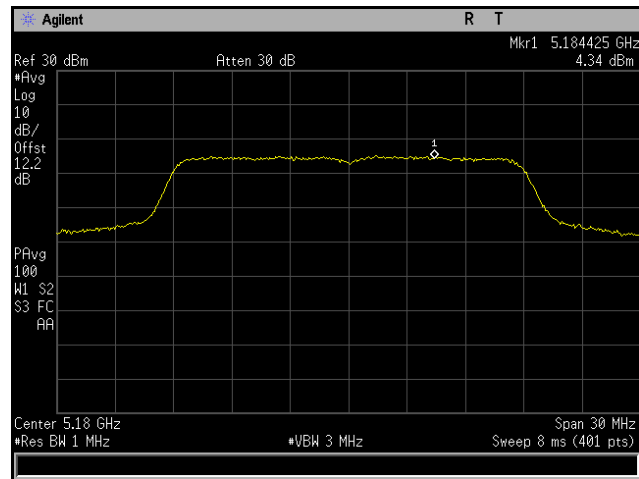


Plot 292. Power Spectral Density, 802.11n 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH6

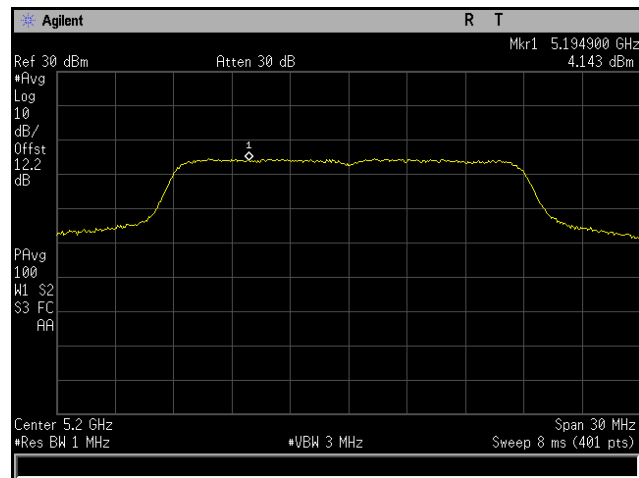


Plot 293. Power Spectral Density, 802.11n 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH6

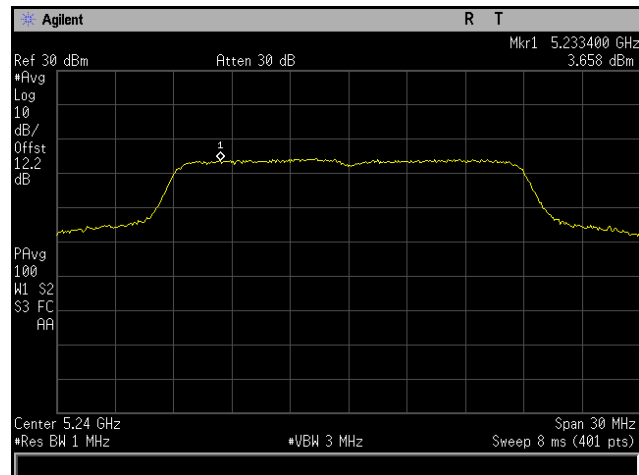
Power Spectral Density, 802.11n 20 MHz, 6x8, CH7



Plot 294. Power Spectral Density, 802.11n 20 MHz, Channel 5180 MHz, 6x8 MCS0 NSS1 CH7

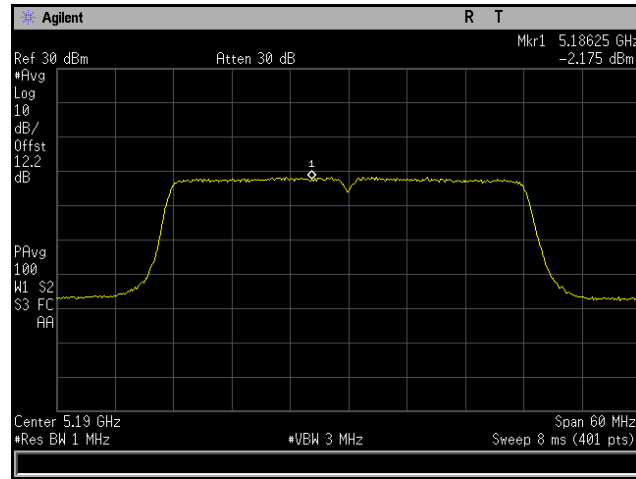


Plot 295. Power Spectral Density, 802.11n 20 MHz, Channel 5200 MHz, 6x8 MCS0 NSS1 CH7

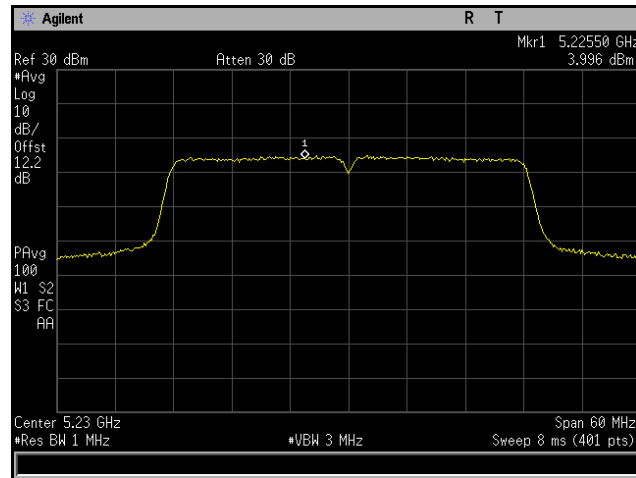


Plot 296. Power Spectral Density, 802.11n 20 MHz, Channel 5240 MHz, 6x8 MCS0 NSS1 CH7

Power Spectral Density, 802.11n 40 MHz, 6x8, CH2

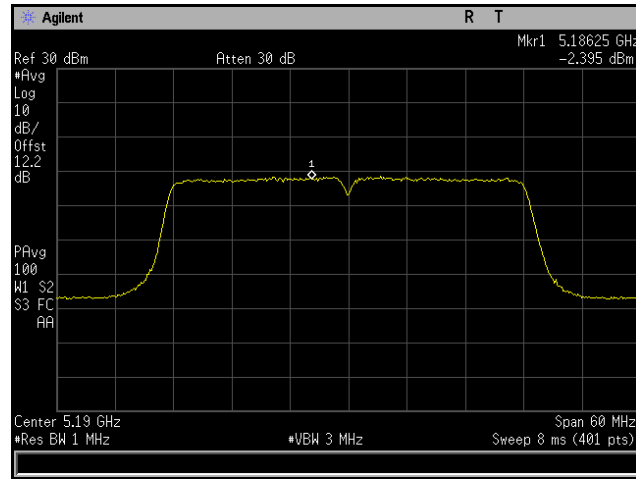


Plot 297. Power Spectral Density, 802.11n 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH2

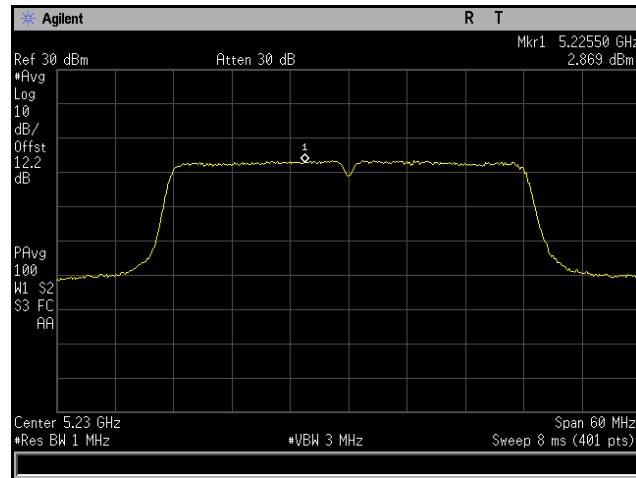


Plot 298. Power Spectral Density, 802.11n 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH2

Power Spectral Density, 802.11n 40 MHz, 6x8, CH3

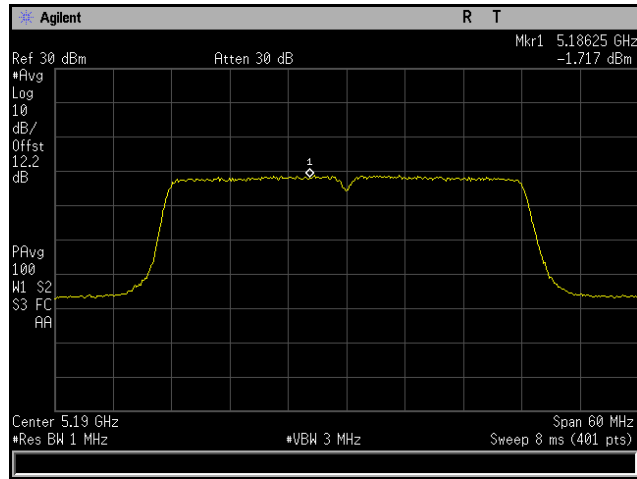


Plot 299. Power Spectral Density, 802.11n 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH3

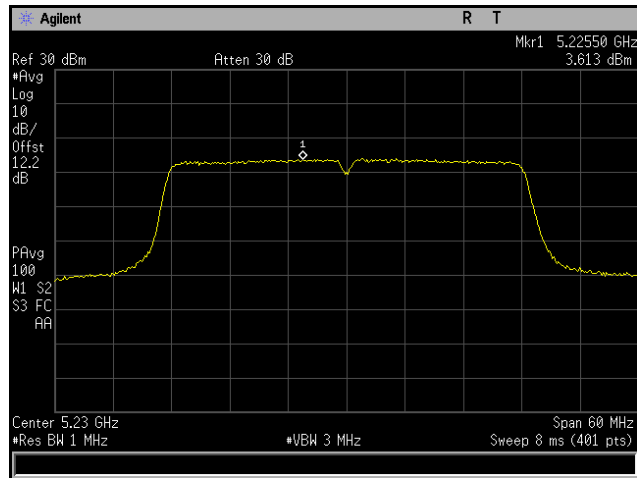


Plot 300. Power Spectral Density, 802.11n 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH3

Power Spectral Density, 802.11n 40 MHz, 6x8, CH4

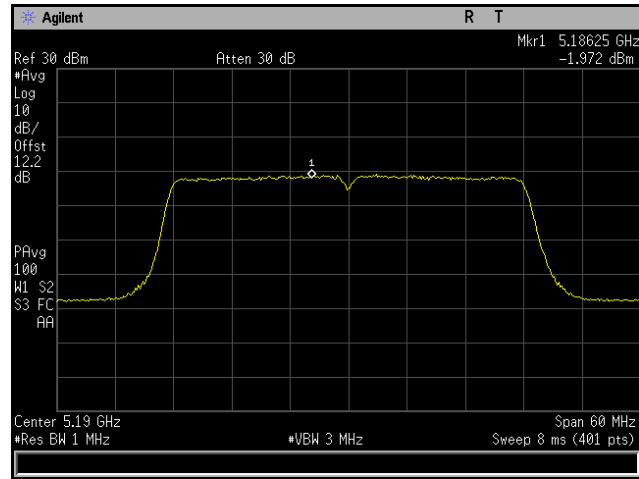


Plot 301. Power Spectral Density, 802.11n 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH4

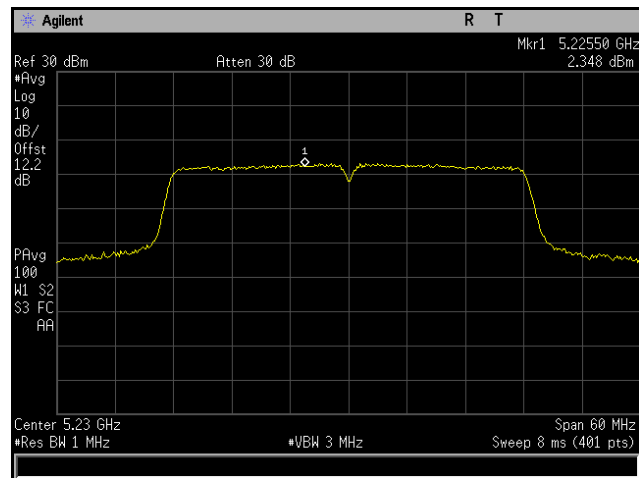


Plot 302. Power Spectral Density, 802.11n 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH4

Power Spectral Density, 802.11n 40 MHz, 6x8, CH5

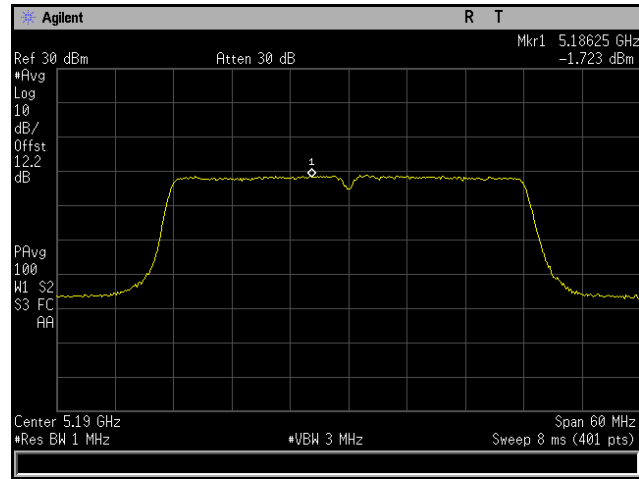


Plot 303. Power Spectral Density, 802.11n 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH5

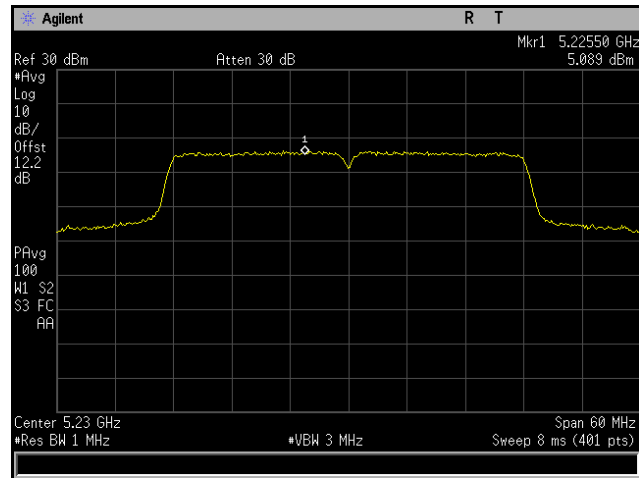


Plot 304. Power Spectral Density, 802.11n 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH5

Power Spectral Density, 802.11n 40 MHz, 6x8, CH6

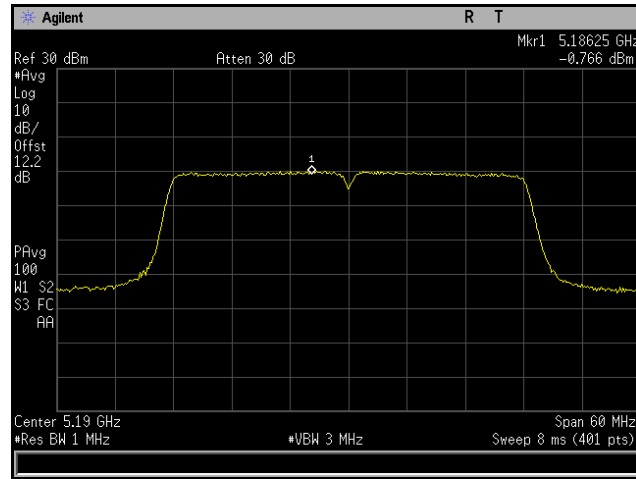


Plot 305. Power Spectral Density, 802.11n 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH6

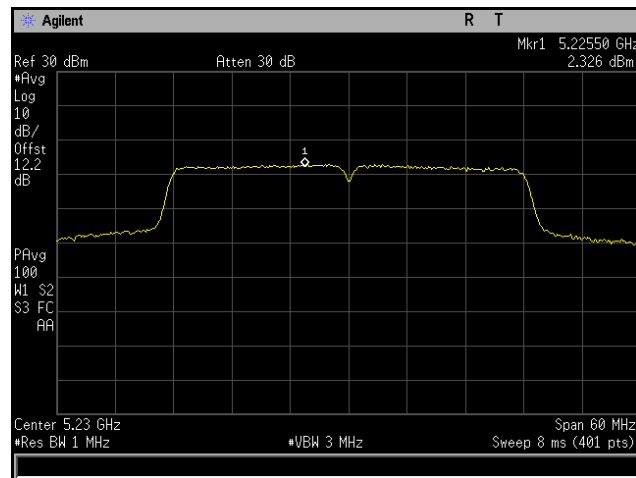


Plot 306. Power Spectral Density, 802.11n 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH6

Power Spectral Density, 802.11n 40 MHz, 6x8, CH7



Plot 307. Power Spectral Density, 802.11n 40 MHz, Channel 5190 MHz, 6x8 MCS0 NSS1 CH7



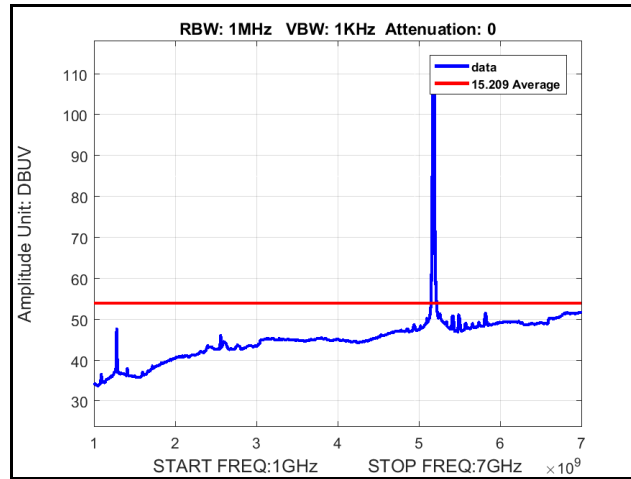
Plot 308. Power Spectral Density, 802.11n 40 MHz, Channel 5230 MHz, 6x8 MCS0 NSS1 CH7

Electromagnetic Compatibility Criteria for Intentional Radiators

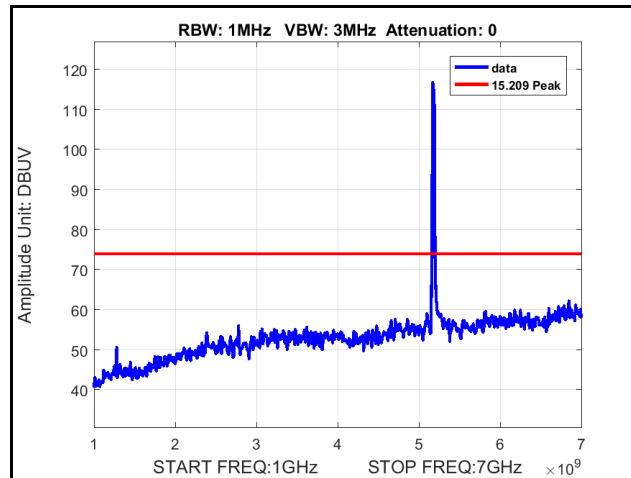
§15.407(b)(1) & (6 – 7) Undesirable Emissions

Test Requirements:	§ 15.407(b)(1): For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. § 15.407(b)(6): Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in Section 15.207. § 15.407(b)(7): The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.
Test Procedure:	The EUT was placed on a non-conducting stand on a turntable in a chamber. To find the maximum emission the EUT was set to transmit on low, mid, and high channels. Additionally, the turntable was rotated 360 degrees, the EUT was oriented through its three orthogonal axes, and the receive antenna height was varied in order to maximize emissions. For frequencies from 30 MHz to 1 GHz, measurements were first made using a peak detector with a 100 kHz resolution bandwidth. Emissions which exceeded the limits were re-measured using a quasi-peak detector with a 120 kHz resolution bandwidth. Above 1 GHz, measurements were made pursuant the method described in FCC KDB 789033 D02 General UNII Test Procedure New Rules v01. The equation, $EIRP = E + 20 \log D - 104.8$ was used to convert field strength to EIRP (E = field strength (dBμV/m) and D = Reference measurement distance). For emissions above 1 GHz and in restricted bands, measurements of the field strength were made with a peak detector and an average detector and compared with the limits of 15.209. As an alternative, according to FCC KDB 789033 D02 General UNII Test Procedure New Rules v01, all emissions above 1 GHz that comply with the peak and average limits of 15.209 satisfy the requirements of unwanted emissions in 15.407.
Test Results:	For below 1 GHz, the EUT was compliant with the requirements of this section. For above 1 GHz, the EUT was compliant with the requirements of this section.
Test Engineer(s):	Hadid Jones
Test Date(s):	08/12/16

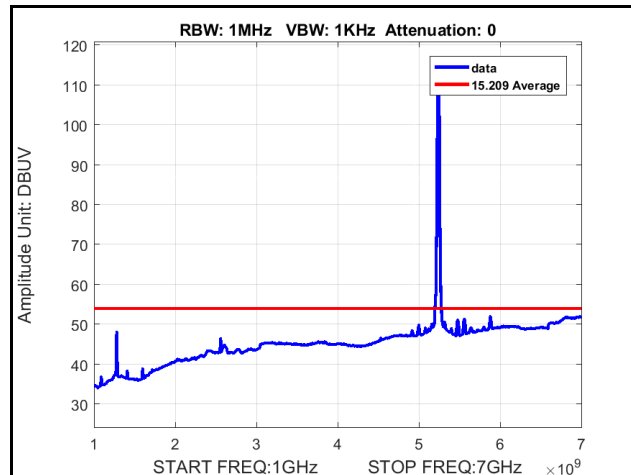
Radiated Spurious Emissions, 802.11a, 4x8



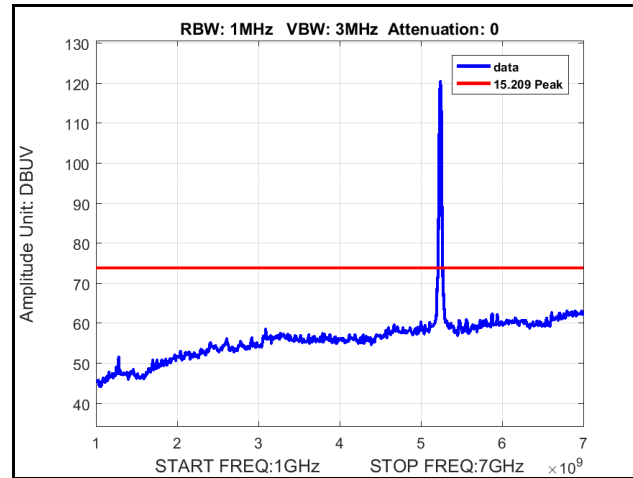
Plot 309. Radiated Spurious Emissions, 802.11a, 5180 MHz, 4x8, 6M, 1 GHz – 7 GHz, Average



Plot 310. Radiated Spurious Emissions, 802.11a, 5180 MHz, 4x8, 6M, 1 GHz – 7 GHz, Peak

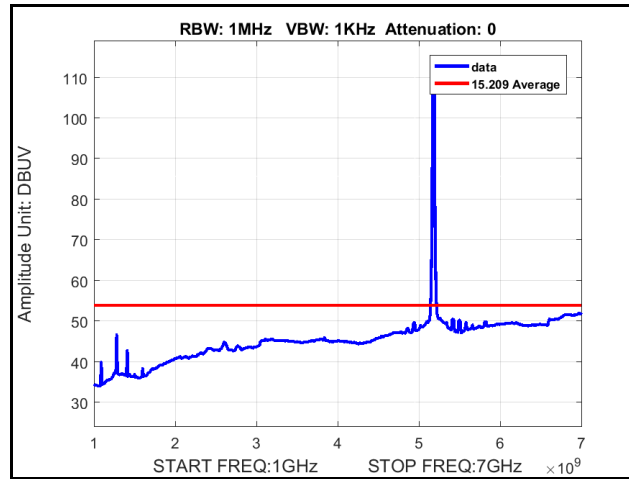


Plot 311. Radiated Spurious Emissions, 802.11a, 5240 MHz, 4x8, 6M, 1 GHz – 7 GHz, Average

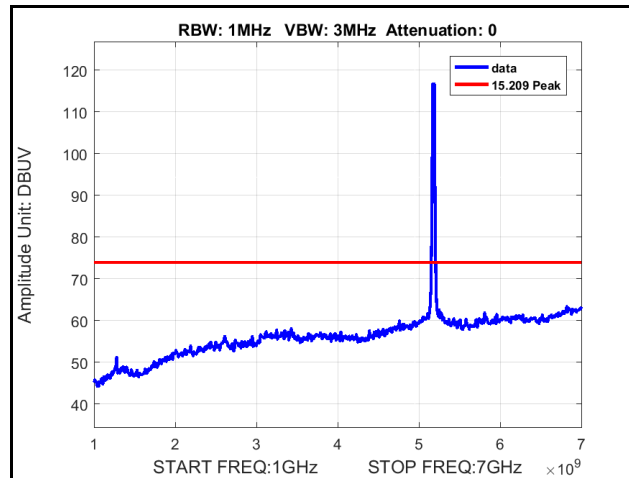


Plot 312. Radiated Spurious Emissions, 802.11a, 5240 MHz, 4x8, 6M, 1 GHz – 7 GHz, Peak

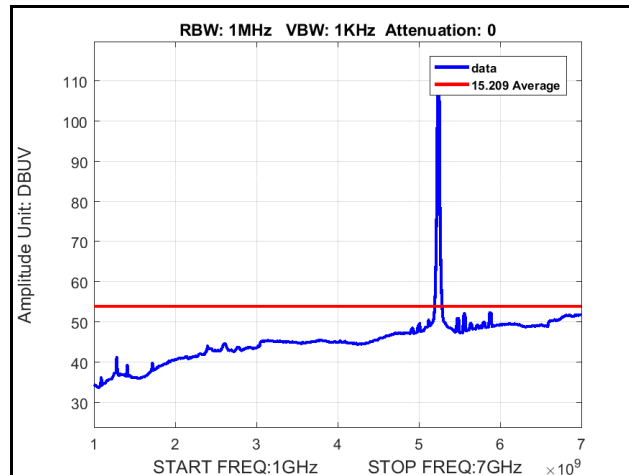
Radiated Spurious Emissions, 802.11ac 20 MHz, 4x8



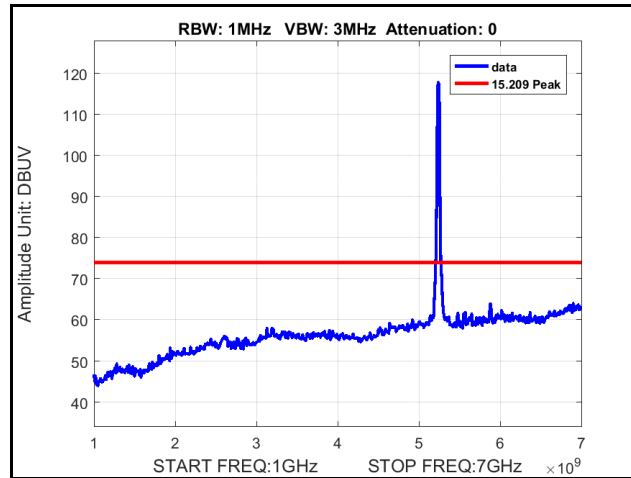
Plot 313. Radiated Spurious Emissions, 802.11ac 20 MHz, 5180 MHz, 4x8, MCS0 NSS1, 1 GHz – 7 GHz, Average



Plot 314. Radiated Spurious Emissions, 802.11ac 20 MHz, 5180 MHz, 4x8, MCS0 NSS1, 1 GHz – 7 GHz, Peak

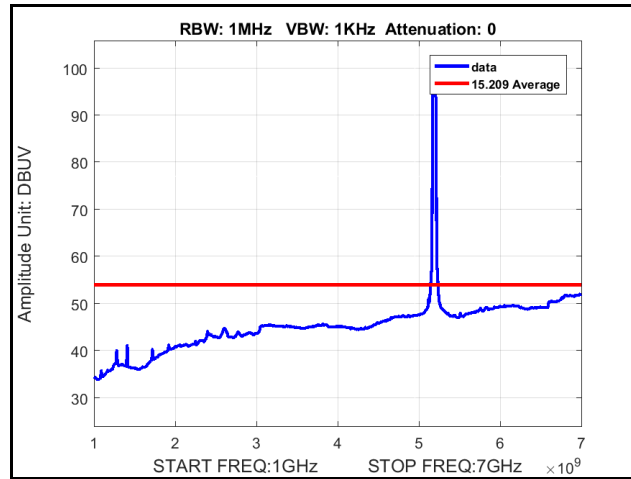


Plot 315. Radiated Spurious Emissions, 802.11ac 20 MHz, 5240 MHz, 4x8, MCS0 NSS1, 1 GHz – 7 GHz, Average

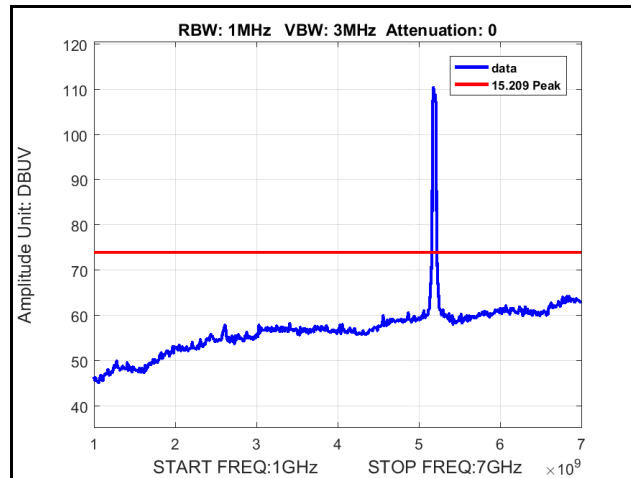


Plot 316. Radiated Spurious Emissions, 802.11ac 20 MHz, 5240 MHz, 4x8, MCS0 NSS1, 1 GHz – 7 GHz, Peak

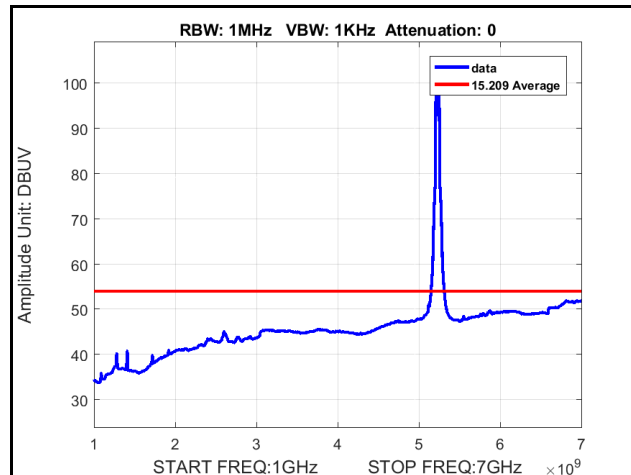
Radiated Spurious Emissions, 802.11ac 40 MHz, 4x8



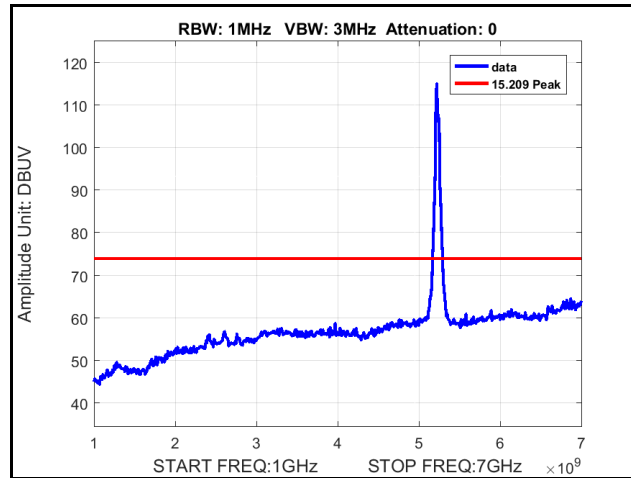
Plot 317. Radiated Spurious Emissions, 802.11ac 40 MHz, 5190 MHz, 4x8, MCS0 NSS1, 1 GHz – 7 GHz, Average



Plot 318. Radiated Spurious Emissions, 802.11ac 40 MHz, 5190 MHz, 4x8, MCS0 NSS1, 1 GHz – 7 GHz, Peak

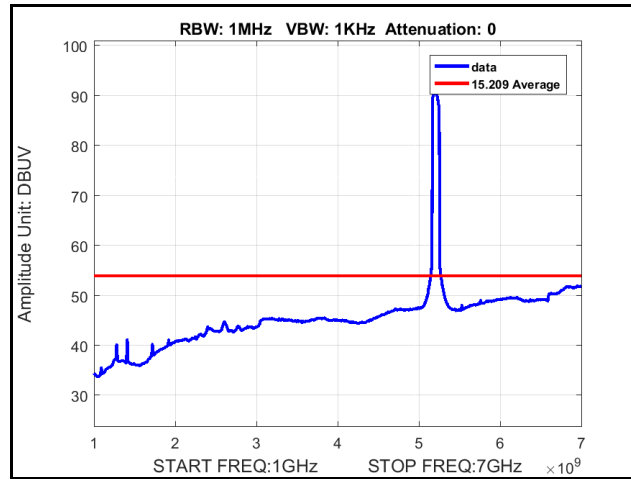


Plot 319. Radiated Spurious Emissions, 802.11ac 40 MHz, 5230 MHz, 4x8, MCS0 NSS1, 1 GHz – 7 GHz, Average

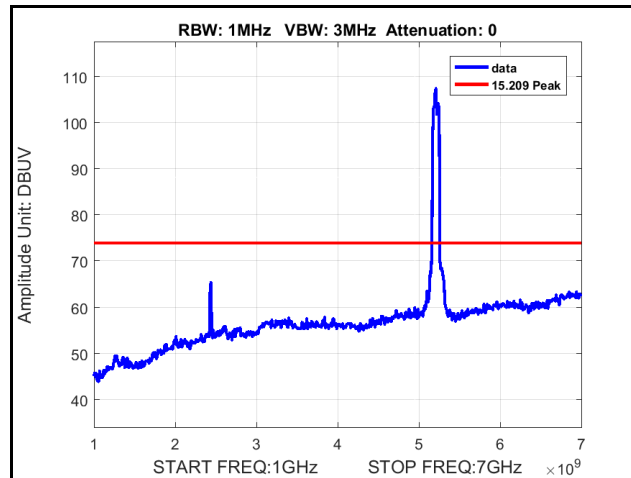


Plot 320. Radiated Spurious Emissions, 802.11ac 40 MHz, 5230 MHz, 4x8, MCS0 NSS1, 1 GHz – 7 GHz, Peak

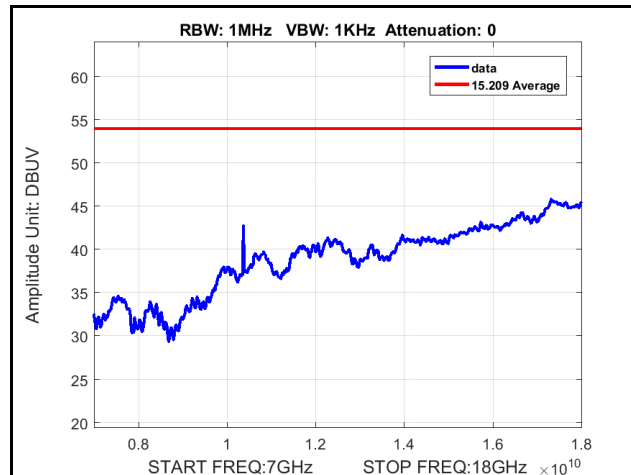
Radiated Spurious Emissions, 802.11ac 80 MHz, 4x8



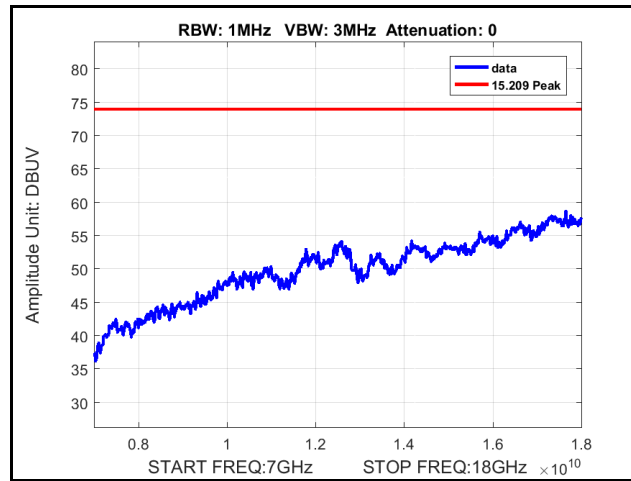
Plot 321. Radiated Spurious Emissions, 802.11ac 80 MHz, 5210 MHz, 4x8, MCS0 NSS1, 1 GHz – 7 GHz, Average



Plot 322. Radiated Spurious Emissions, 802.11ac 80 MHz, 5210 MHz, 4x8, MCS0 NSS1, 1 GHz – 7 GHz, Peak

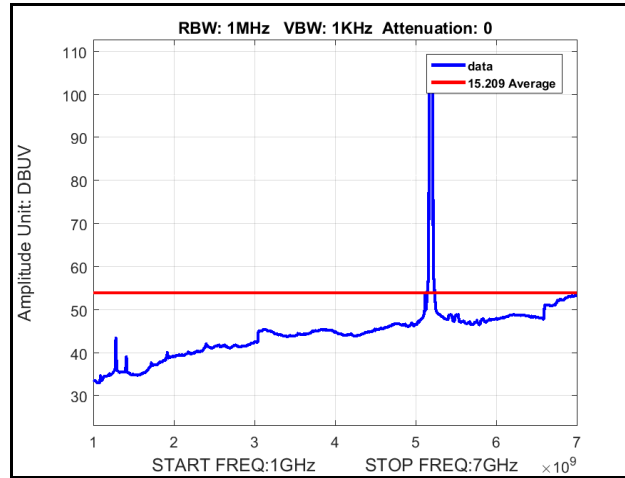


Plot 323. Radiated Spurious Emissions, 802.11ac 80 MHz, 5210 MHz, 4x8, MCS0 NSS1, 7 GHz – 18 GHz, Average

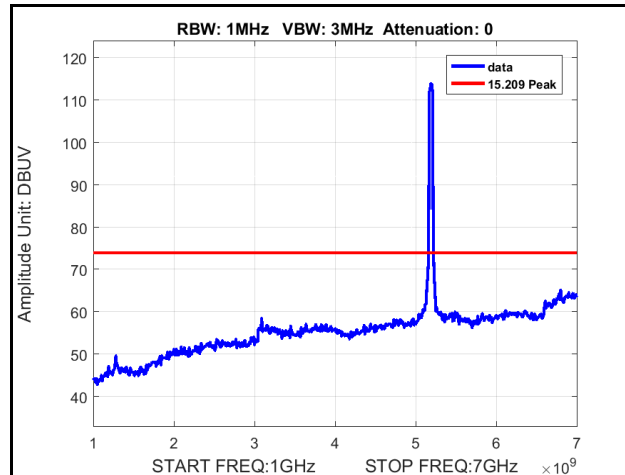


Plot 324. Radiated Spurious Emissions, 802.11ac 80 MHz, 5210 MHz, 4x8, MCS0 NSS1, 7 GHz - 18, Peak

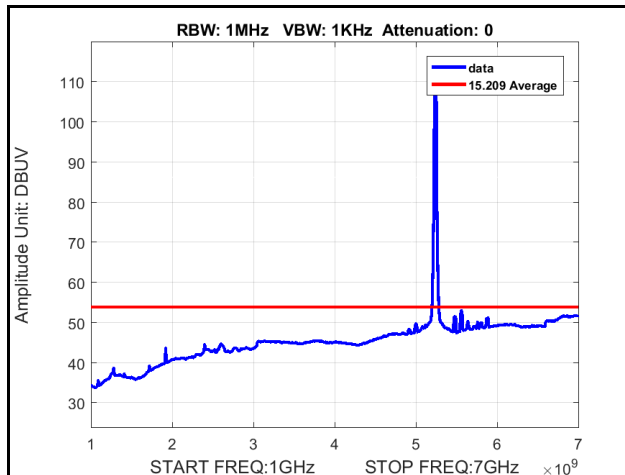
Radiated Spurious Emissions, 802.11n 20 MHz, 4x8



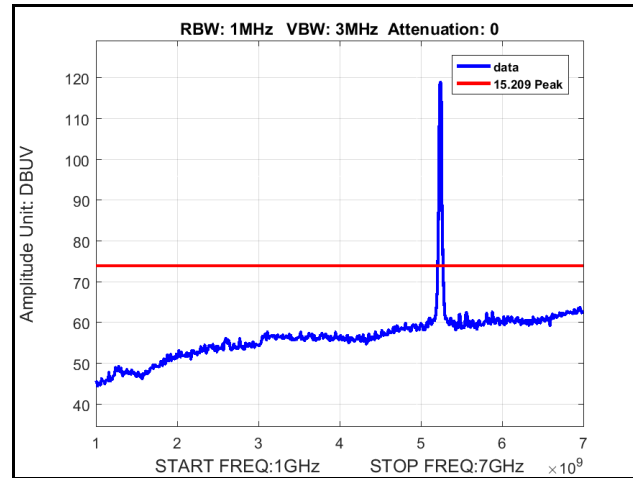
Plot 325. Radiated Spurious Emissions, 802.11n 20 MHz, 5180 MHz, 4x8, MCS0, 1 GHz – 7 GHz, Average



Plot 326. Radiated Spurious Emissions, 802.11n 20 MHz, 5180 MHz, 4x8, MCS0, 1 GHz – 7 GHz, Peak

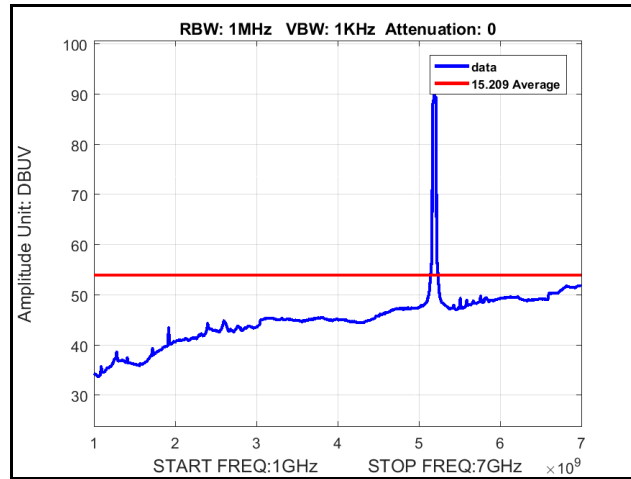


Plot 327. Radiated Spurious Emissions, 802.11n 20 MHz, 5240 MHz, 4x8, MCS0, 1 GHz – 7 GHz, Average

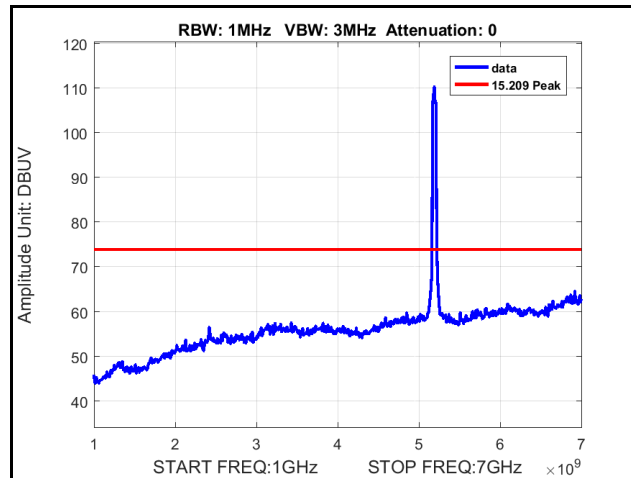


Plot 328. Radiated Spurious Emissions, 802.11n 20 MHz, 5240 MHz, 4x8, MCS0, 1 GHz – 7 GHz, Peak

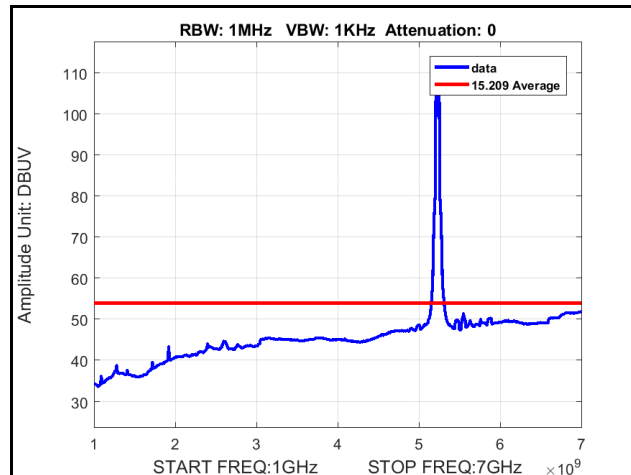
Radiated Spurious Emissions, 802.11n 40 MHz, 4x8



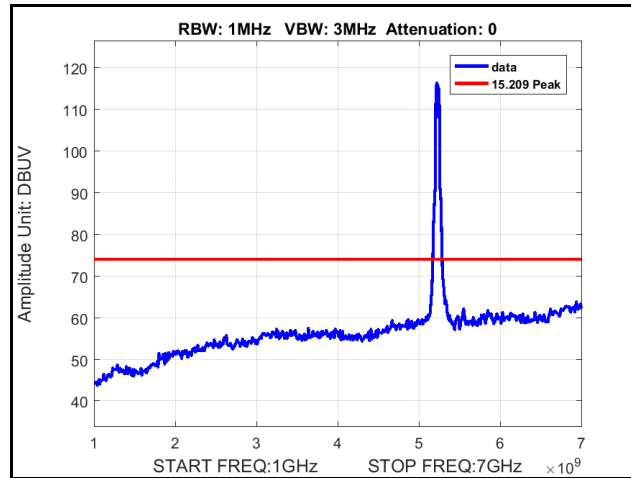
Plot 329. Radiated Spurious Emissions, 802.11n 40 MHz, 5190 MHz, 4x8, MCS0, 1 GHz – 7 GHz, Average



Plot 330. Radiated Spurious Emissions, 802.11n 40 MHz, 5190 MHz, 4x8, MCS0, 1 GHz – 7 GHz, Peak

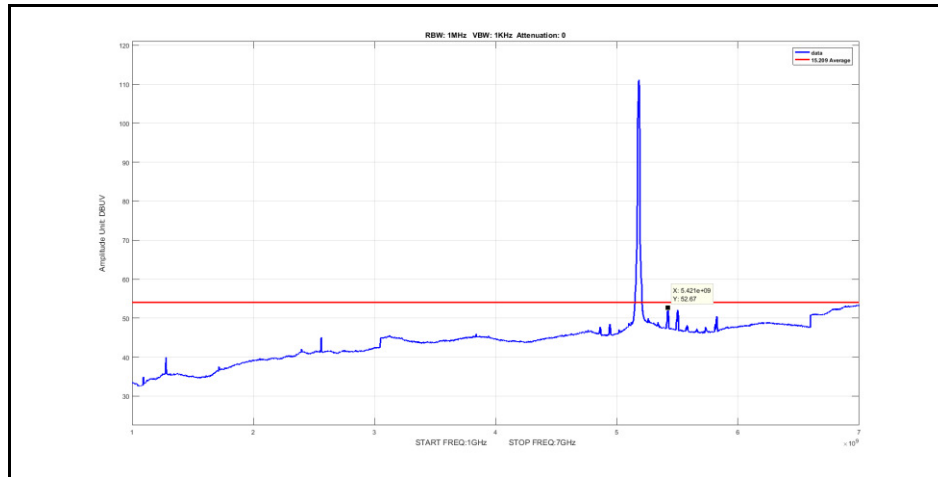


Plot 331. Radiated Spurious Emissions, 802.11n 40 MHz, 5230 MHz, 4x8, MCS0 NSS1, 1 GHz – 7 GHz, Average

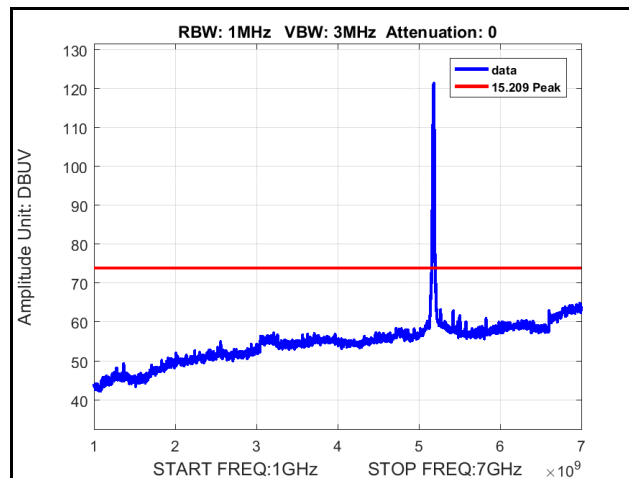


Plot 332. Radiated Spurious Emissions, 802.11n 40 MHz, 5230 MHz, 4x8, MCS0 NSS1, 1 GHz – 7 GHz, Peak

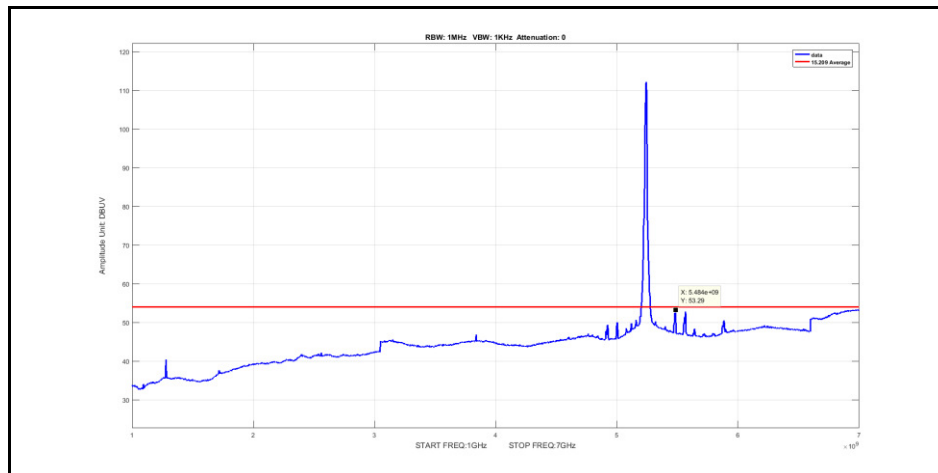
Radiated Spurious Emissions, 802.11a, 6x8



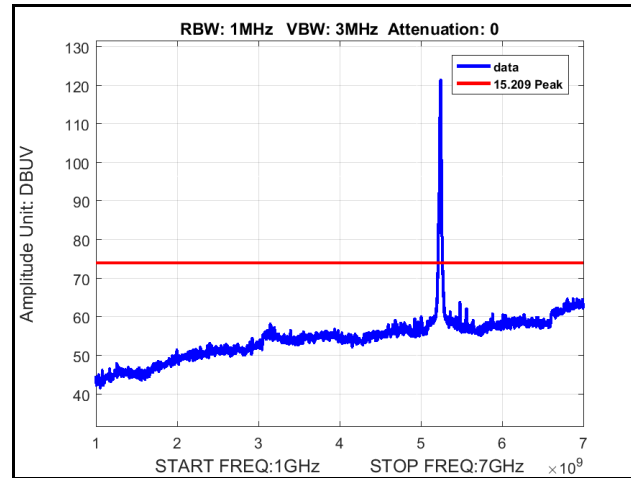
Plot 333. Radiated Spurious Emissions, 802.11a, 5180 MHz, 6x8, MCS0 NSS1, 1 GHz – 7 GHz, Average



Plot 334. Radiated Spurious Emissions, 802.11a, 5180 MHz, 6x8, MCS0 NSS1, 1 GHz – 7 GHz, Peak

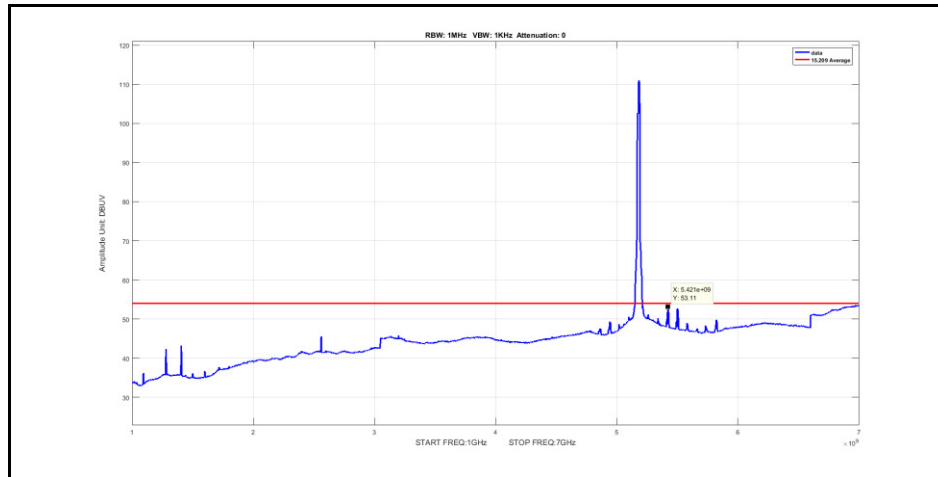


Plot 335. Radiated Spurious Emissions, 802.11a, 5240 MHz, 6x8, MCS0 NSS1, 1 GHz – 7 GHz, Average

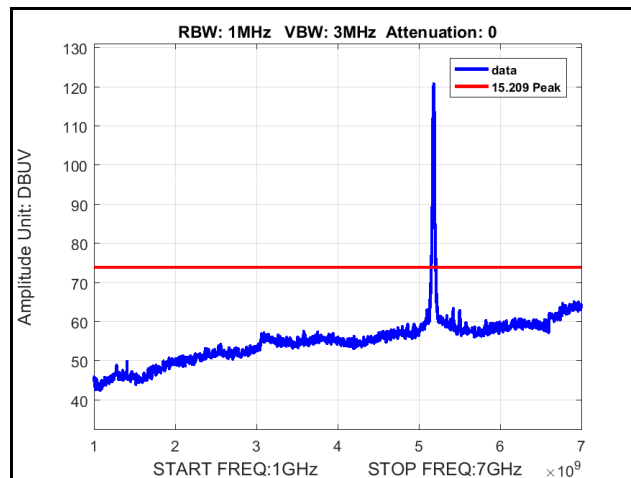


Plot 336. Radiated Spurious Emissions, 802.11a, 5240 MHz, 6x8, MCS0 NSS1, 1 GHz – 7 GHz, Peak

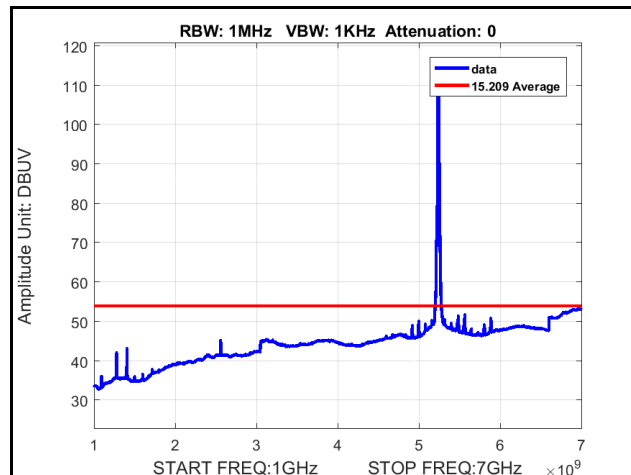
Radiated Spurious Emissions, 802.11ac 20 MHz, 6x8



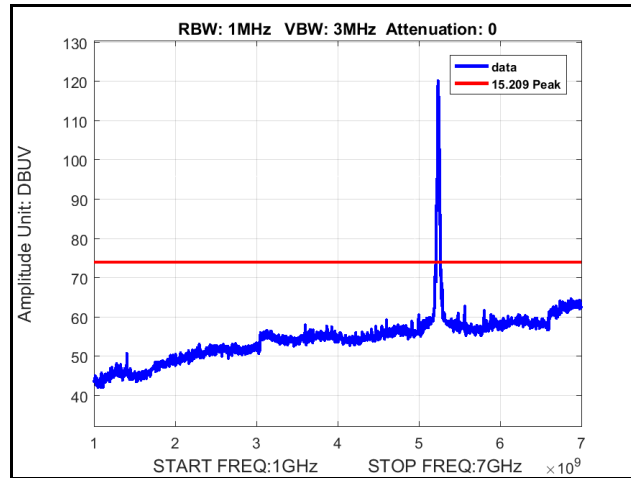
Plot 337. Radiated Spurious Emissions, 802.11ac 20 MHz, 5180 MHz, 6x8, MCS0 NSS1, 1 GHz – 7 GHz, Average



Plot 338. Radiated Spurious Emissions, 802.11ac 20 MHz, 5180 MHz, 6x8, MCS0 NSS1, 1 GHz – 7 GHz, Peak

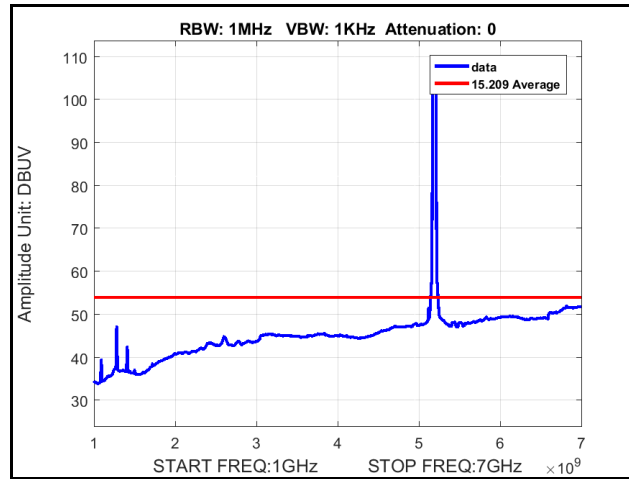


Plot 339. Radiated Spurious Emissions, 802.11ac 20 MHz, 5240 MHz, 6x8, MCS0 NSS1, 1 GHz – 7 GHz, Average

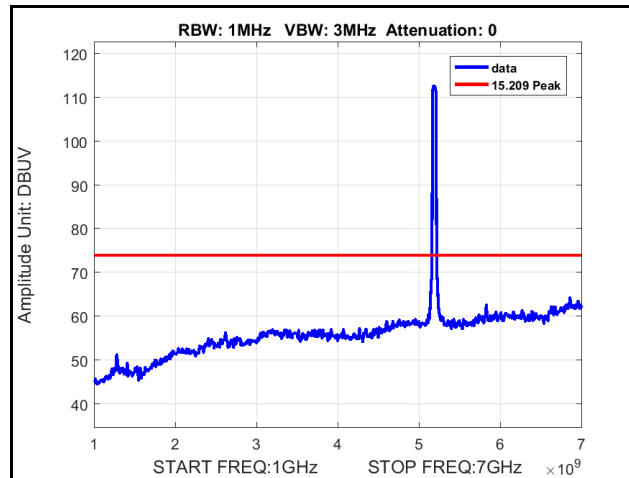


Plot 340. Radiated Spurious Emissions, 802.11ac 20 MHz, 5240 MHz, 6x8, MCS0 NSS1, 1 GHz – 7 GHz, Peak

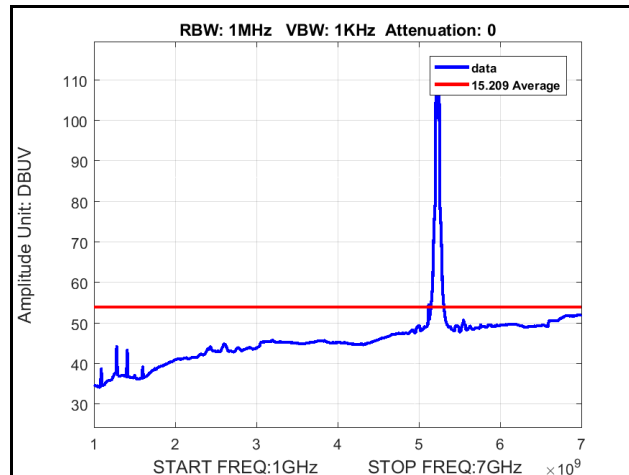
Radiated Spurious Emissions, 802.11ac 40 MHz, 6x8



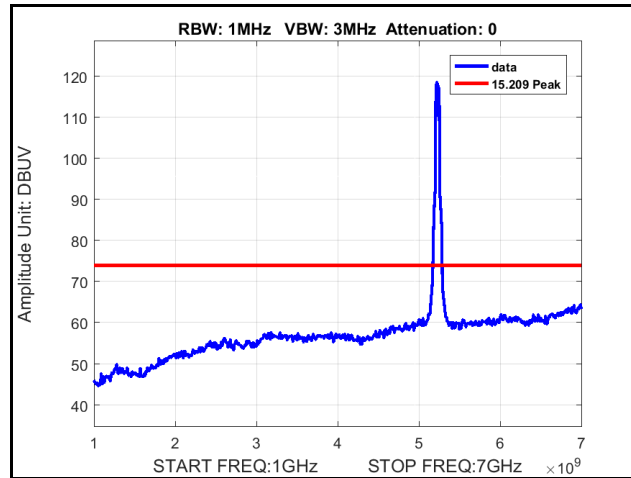
Plot 341. Radiated Spurious Emissions, 802.11ac 40 MHz, 5190 MHz, 6x8, MCS0 NSS1, 1 GHz – 7 GHz, Average



Plot 342. Radiated Spurious Emissions, 802.11ac 40 MHz, 5190 MHz, 6x8, MCS0 NSS1, 1 GHz – 7 GHz, Peak

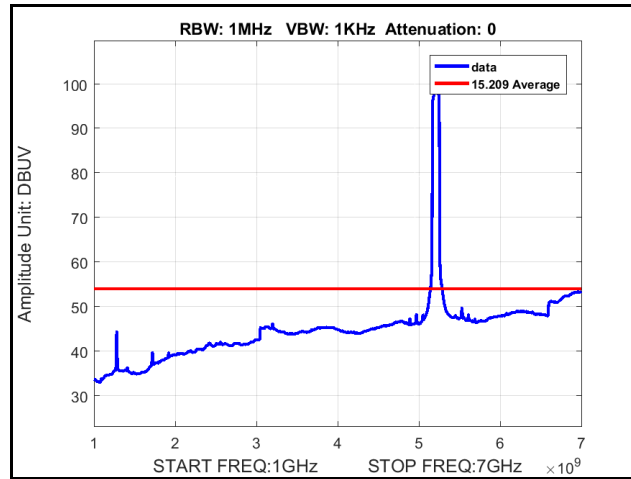


Plot 343. Radiated Spurious Emissions, 802.11ac 40 MHz, 5230 MHz, 6x8, MCS0 NSS1, 1 GHz – 7 GHz, Average

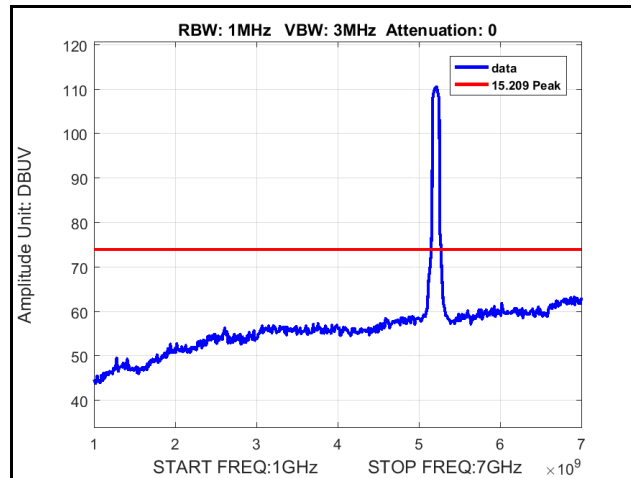


Plot 344. Radiated Spurious Emissions, 802.11ac 40 MHz, 5230 MHz, 6x8, MCS0 NSS1, 1 GHz – 7 GHz, Peak

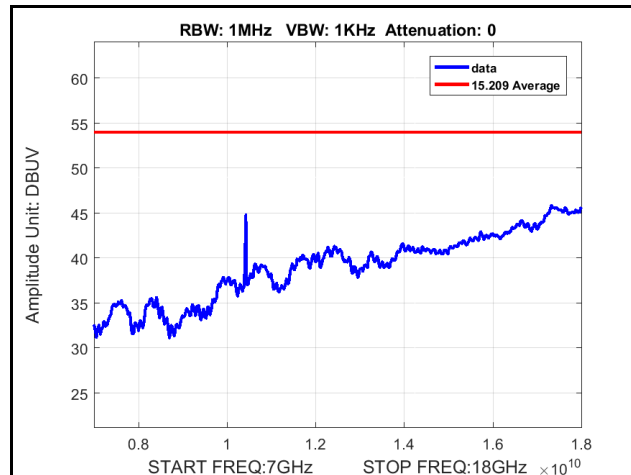
Radiated Spurious Emissions, 802.11ac 80 MHz, 6x8



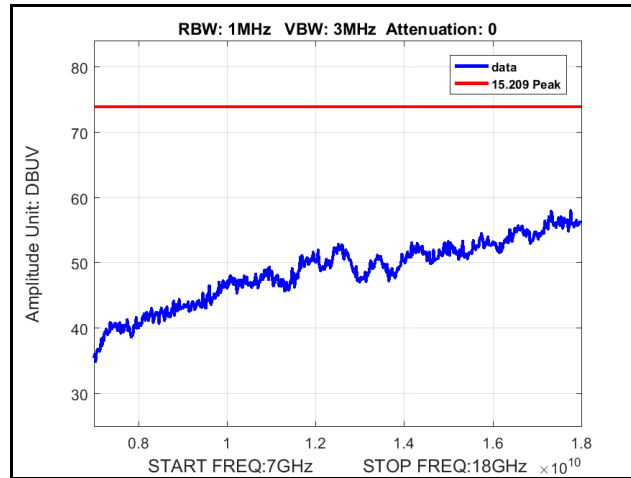
Plot 345. Radiated Spurious Emissions, 802.11ac 80 MHz, 5210 MHz, 6x8, MCS0 NSS1, 1 GHz – 7 GHz, Average



Plot 346. Radiated Spurious Emissions, 802.11ac 80 MHz, 5210 MHz, 6x8, MCS0 NSS1, 1 GHz – 7 GHz, Peak

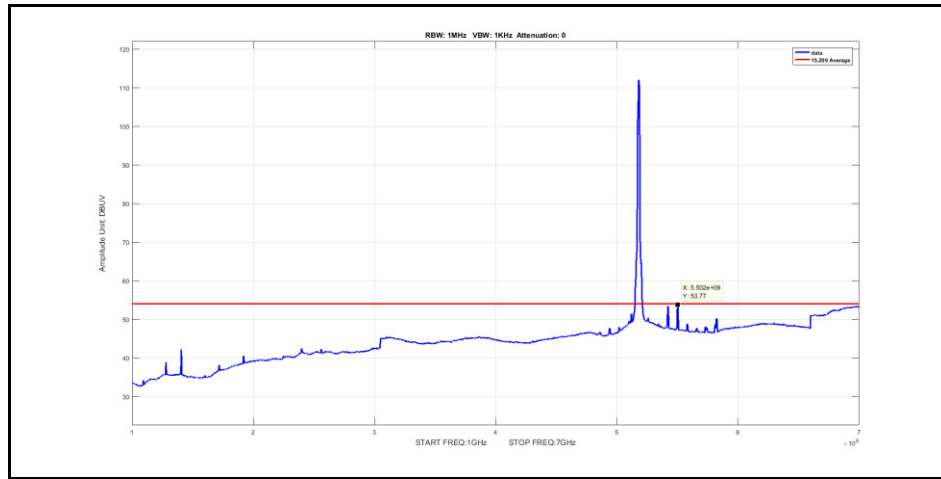


Plot 347. Radiated Spurious Emissions, 802.11ac 80 MHz, 5210 MHz, 6x8, MCS0 NSS1, 7 GHz – 18 GHz, Average

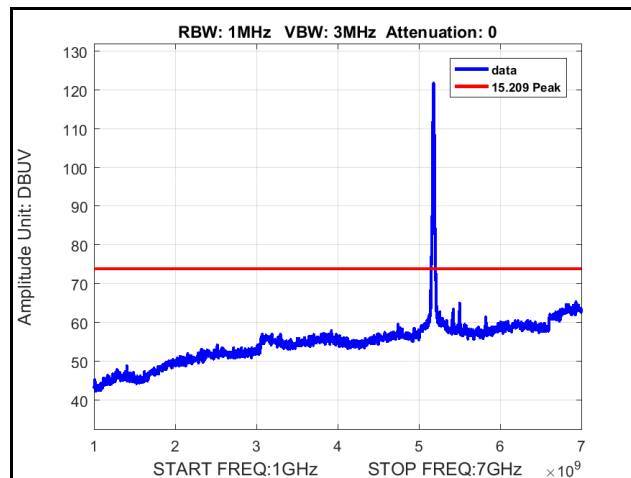


Plot 348. Radiated Spurious Emissions, 802.11ac 80 MHz, 5210 MHz, 6x8, MCS0 NSS1, 7 GHz – 18 GHz, Peak

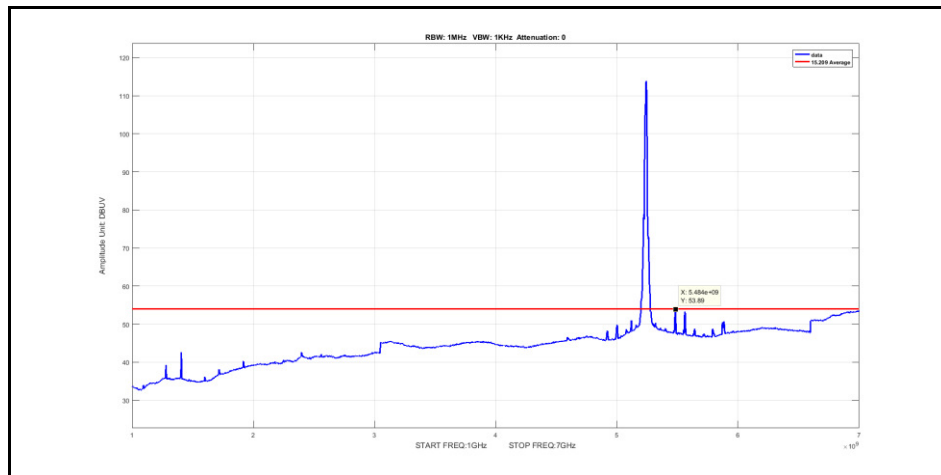
Radiated Spurious Emissions, 802.11n 20 MHz, 6x8



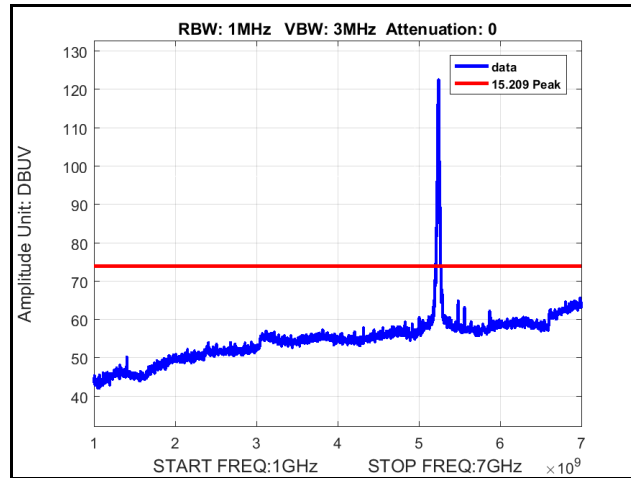
Plot 349. Radiated Spurious Emissions, 802.11n 20 MHz, 5180 MHz, 6x8, MCS0, 1 GHz – 7 GHz, Average



Plot 350. Radiated Spurious Emissions, 802.11n 20 MHz, 5180 MHz, 6x8, MCS0, 1 GHz – 7 GHz, Peak

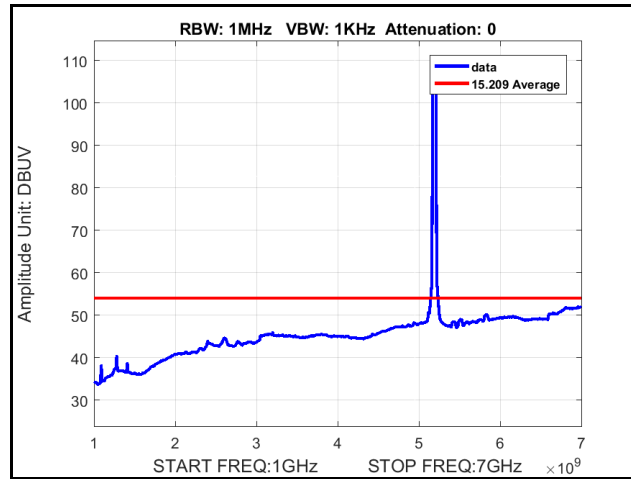


Plot 351. Radiated Spurious Emissions, 802.11n 20 MHz, 5240 MHz, 6x8, MCS0, 1 GHz – 7 GHz, Average

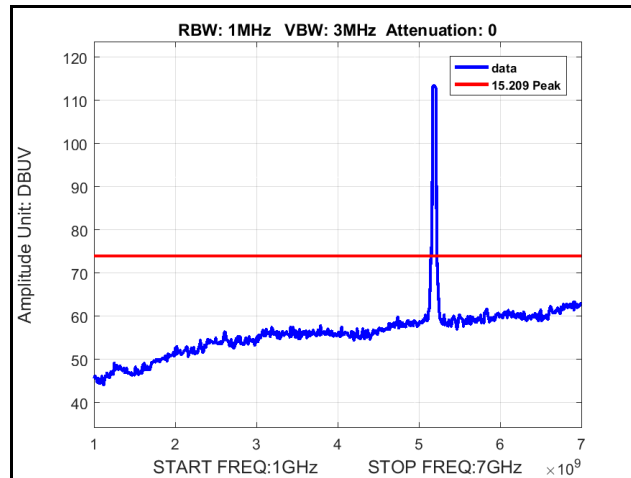


Plot 352. Radiated Spurious Emissions, 802.11n 20 MHz, 5240 MHz, 6x8, MCS0, 1 GHz – 7 GHz, Peak

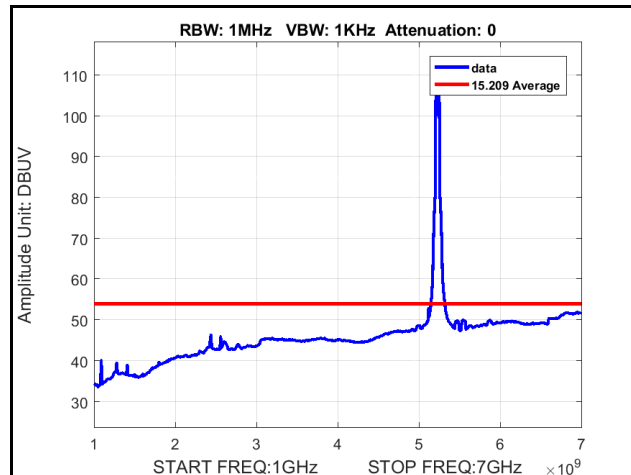
Radiated Spurious Emissions, 802.11n 40 MHz, 6x8



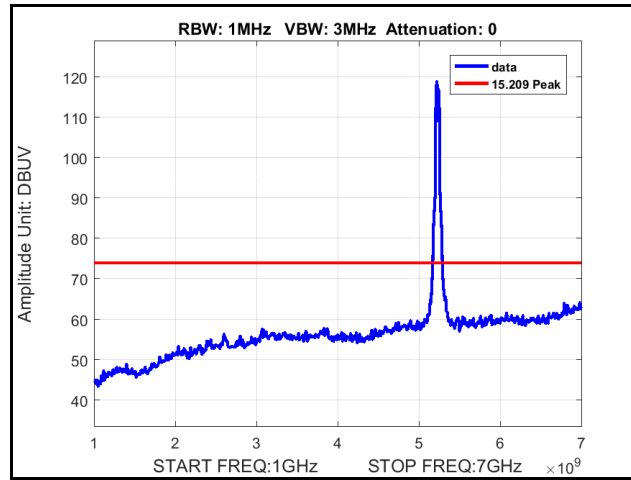
Plot 353. Radiated Spurious Emissions, 802.11n 40 MHz, 5190 MHz, 6x8, MCS0, 1 GHz – 7 GHz, Average



Plot 354. Radiated Spurious Emissions, 802.11n 40 MHz, 5190 MHz, 6x8, MCS0, 1 GHz – 7 GHz, Peak

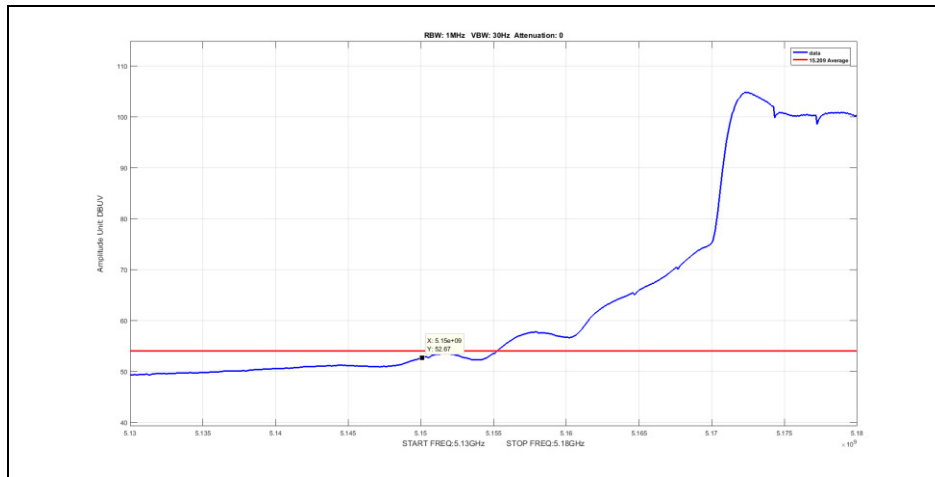


Plot 355. Radiated Spurious Emissions, 802.11n 40 MHz, 5230 MHz, 6x8, MCS0, 1 GHz – 7 GHz, Average

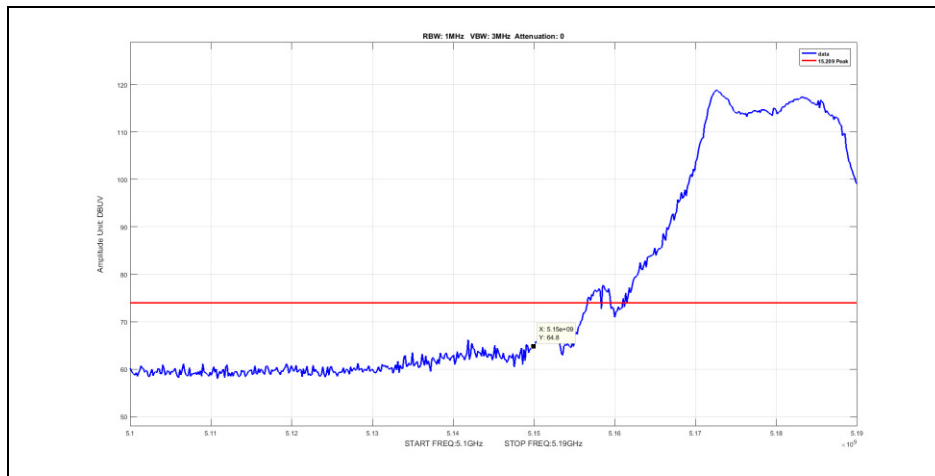


Plot 356. Radiated Spurious Emissions, 802.11n 40 MHz, 5230 MHz, 6x8, MCS0, 1 GHz – 7 GHz, Peak

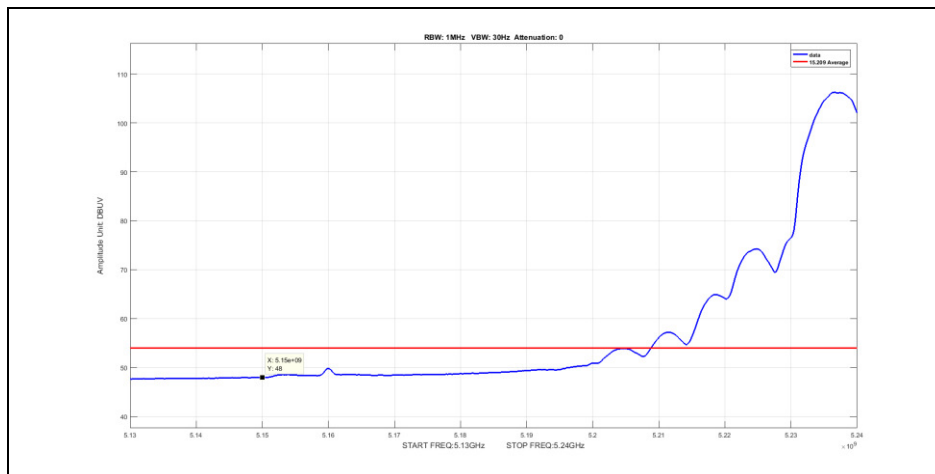
Radiated Band Edge, 802.11a, 4x8



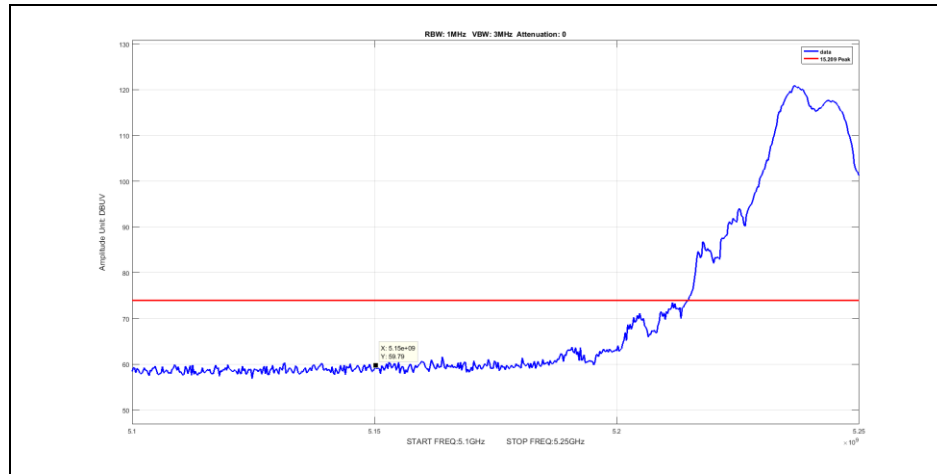
Plot 357. Radiated Band Edge, 802.11a, Channel 5180 MHz, 4x8, Average, 6M, P21-17



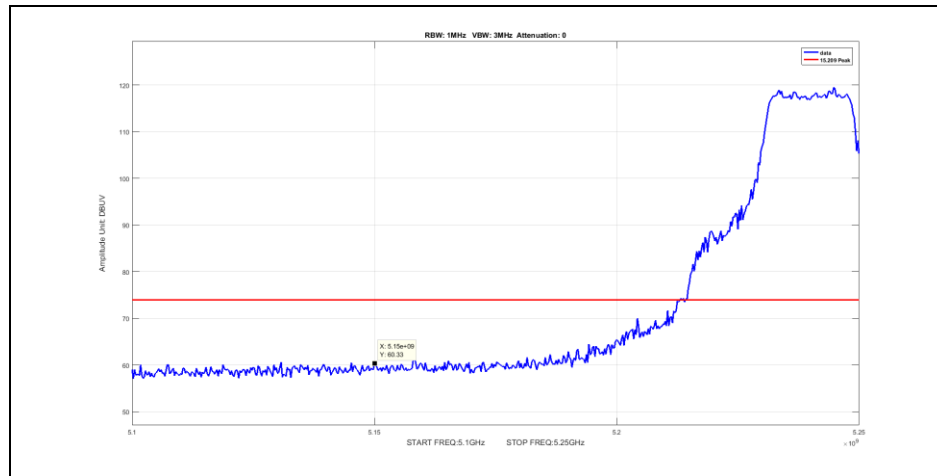
Plot 358. Radiated Band Edge, 802.11a, Channel 5180 MHz, 4x8, Peak, 6M, P21-17



Plot 359. Radiated Band Edge, 802.11a, Channel 5240 MHz, 4x8, Average, 6M, P21-21

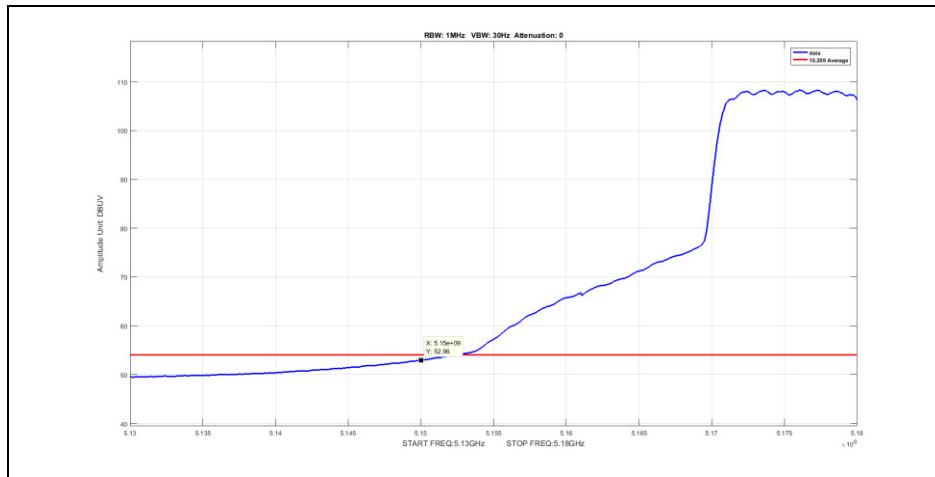


Plot 360. Radiated Band Edge, 802.11a, Channel 5240 MHz, 4x8, Peak, 6M, P21-21

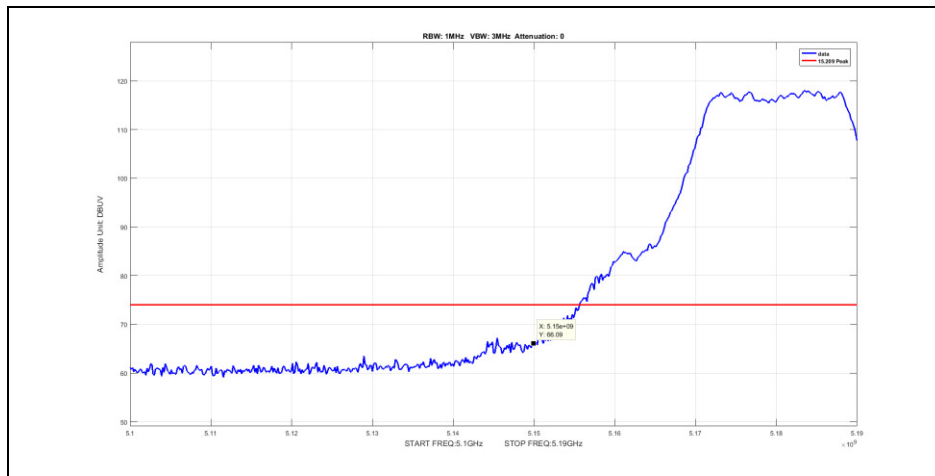


Plot 361. Radiated Band Edge, 802.11a, Channel 5240 MHz, 4x8, Peak, MCS0, P21-21

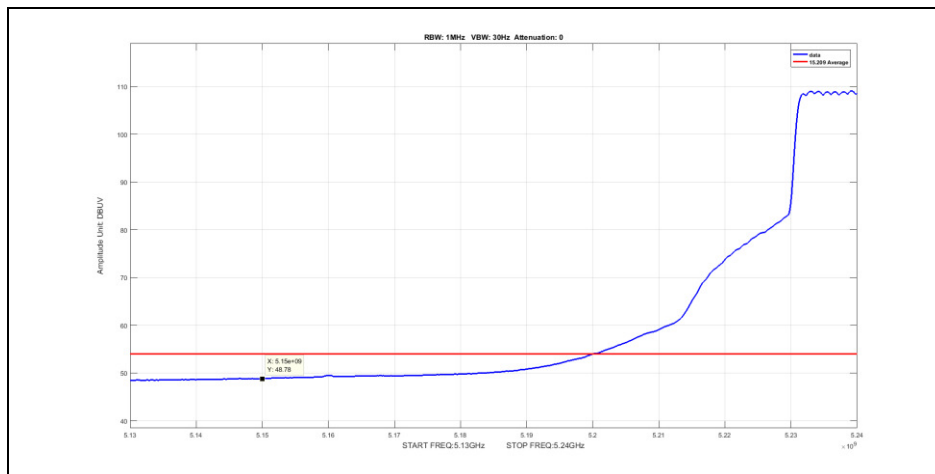
Radiated Band Edge, 802.11ac 20 MHz, 4x8



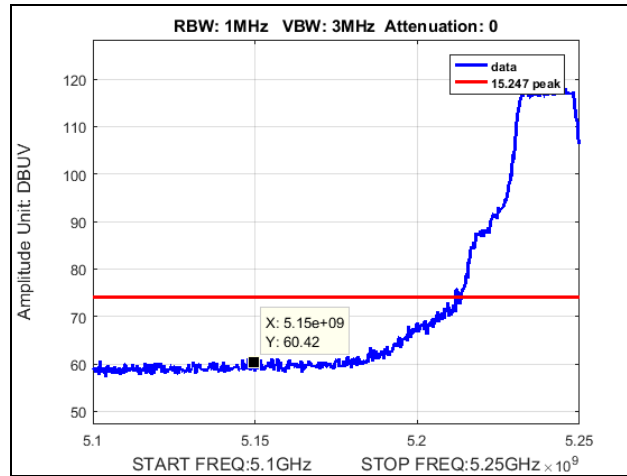
Plot 362. Radiated Band Edge, 802.11ac 20 MHz, Channel 5180 MHz, 4x8, Average, MCS0 NSS1, P21-18



Plot 363. Radiated Band Edge, 802.11ac 20 MHz, Channel 5180 MHz, 4x8, Peak, MCS0 NSS1, P21-18

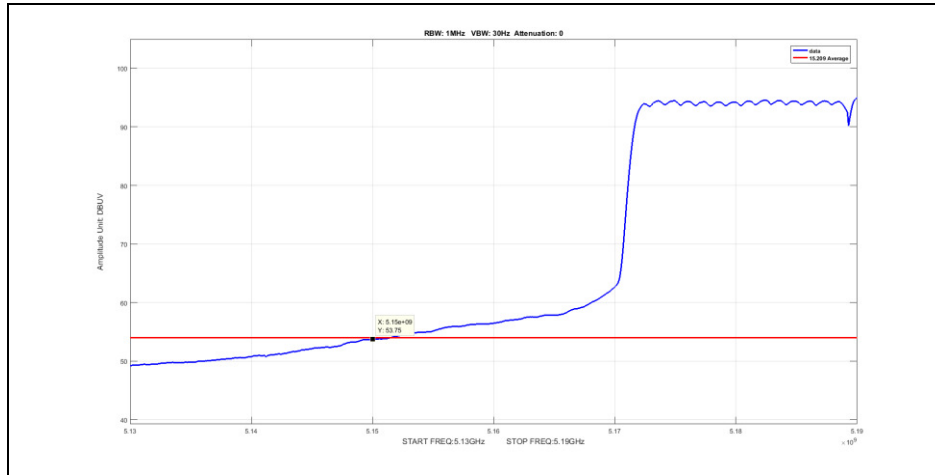


Plot 364. Radiated Band Edge, 802.11ac 20 MHz, Channel 5240 MHz, 4x8, Average, MCS0 NSS1, P21-21

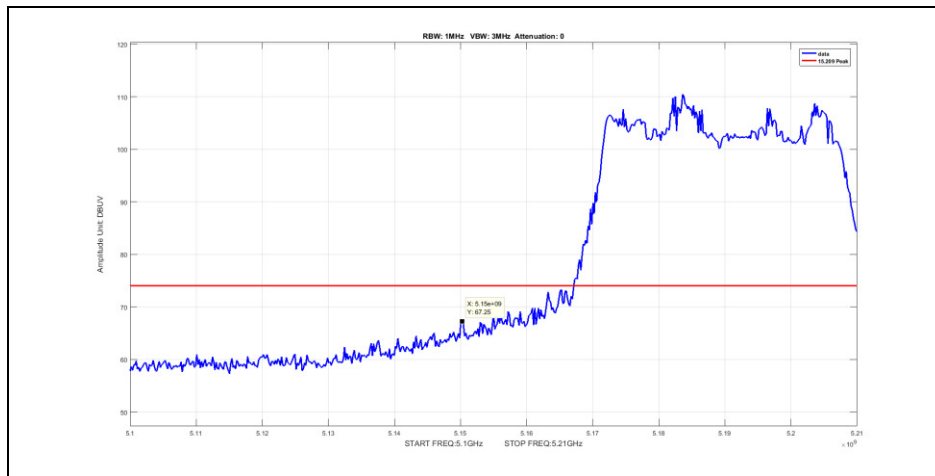


Plot 365. Radiated Band Edge, 802.11ac 20 MHz, Channel 5240 MHz, 4x8, Peak, MCS0 NSS1, P21-21

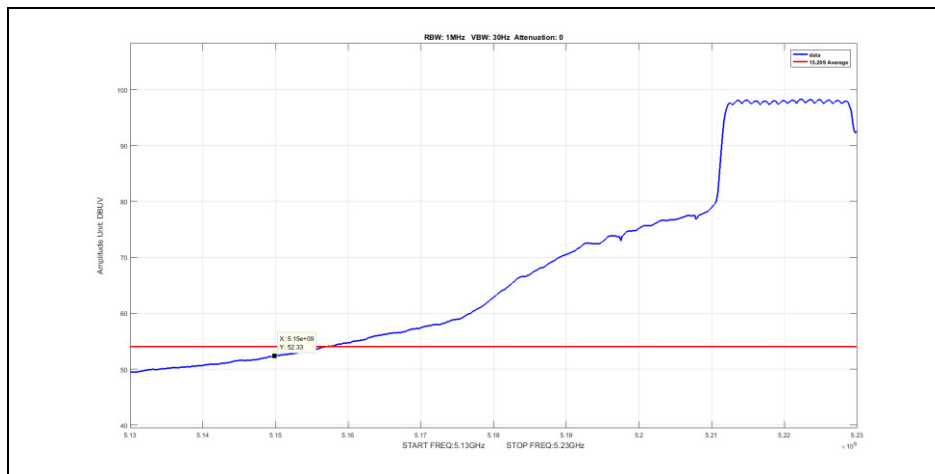
Radiated Band Edge, 802.11ac 40 MHz, 4x8



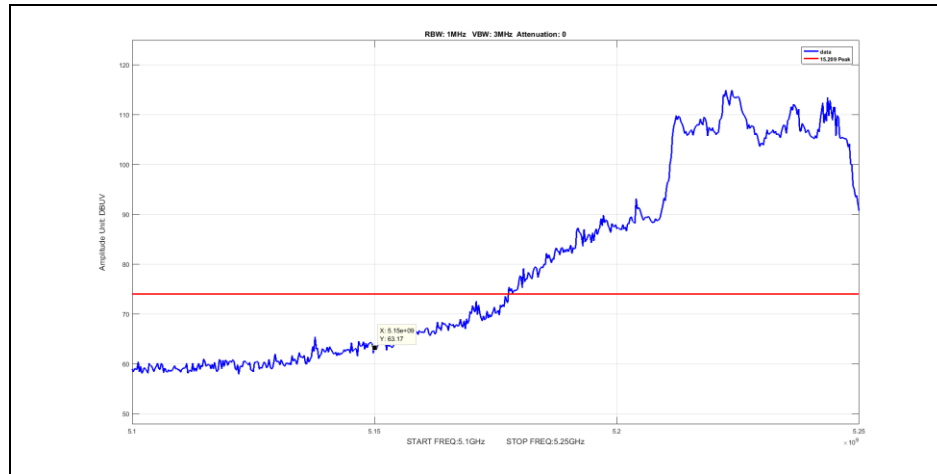
Plot 366. Radiated Band Edge, 802.11ac 40 MHz, Channel 5190 MHz, 4x8, Average, MCS0 NSS1, P17-14



Plot 367. Radiated Band Edge, 802.11ac 40 MHz, Channel 5190 MHz, 4x8, Peak, MCS0 NSS1, P17-14

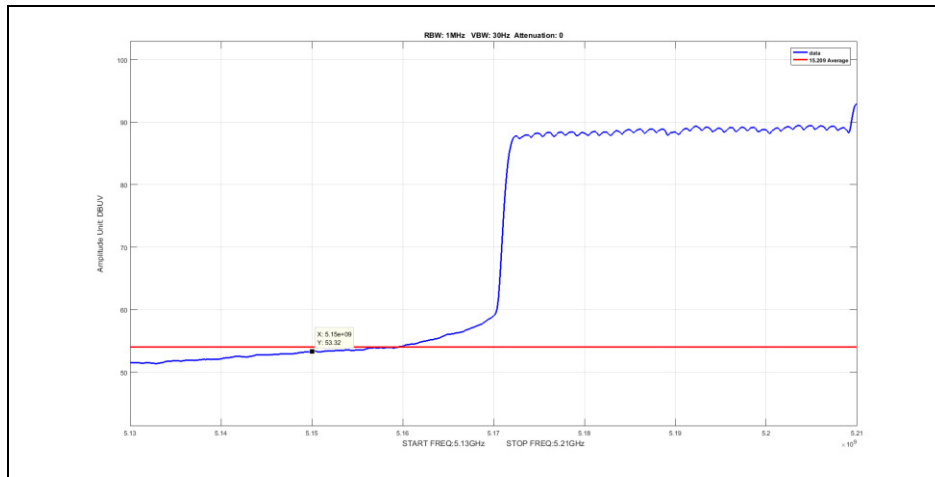


Plot 368. Radiated Band Edge, 802.11ac 40 MHz, Channel 5230 MHz, 4x8, Average, MCS0 NSS1, P21-20

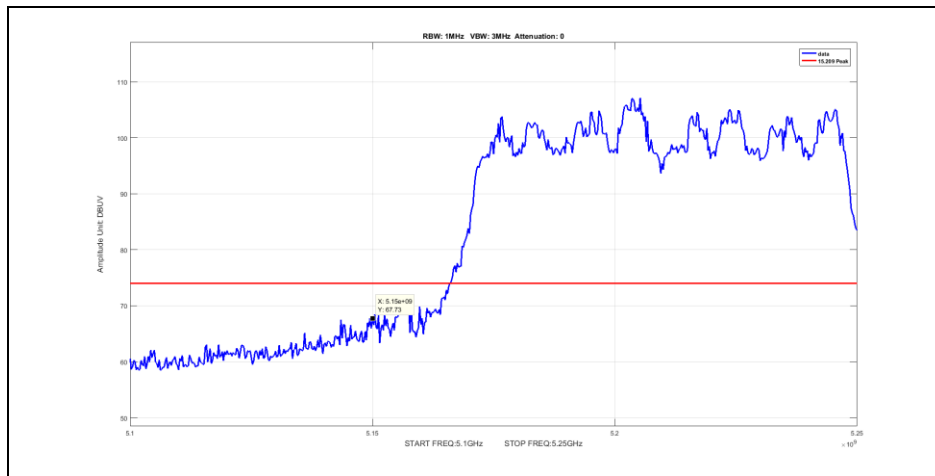


Plot 369. Radiated Band Edge, 802.11ac 40 MHz, Channel 5230 MHz, 4x8, Peak, MCS0 NSS1, P21-20

Radiated Band Edge, 802.11ac 80 MHz, 4x8

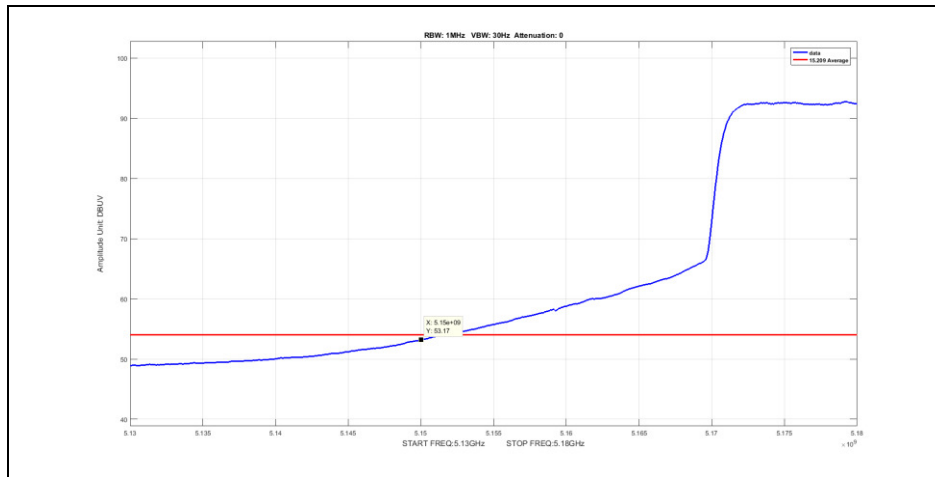


Plot 370. Radiated Band Edge, 802.11ac 80 MHz, Channel 5210 MHz, 4x8, Average, MCS0 NSS1, P15-14

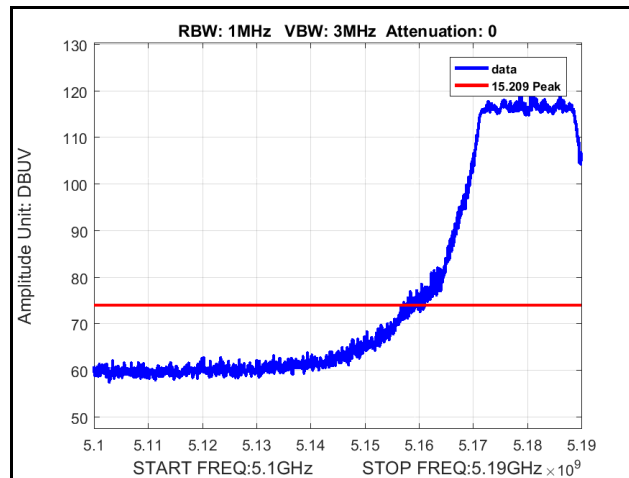


Plot 371. Radiated Band Edge, 802.11ac 80 MHz, Channel 5210 MHz, 4x8, Peak, MCS0 NSS1, P15-14

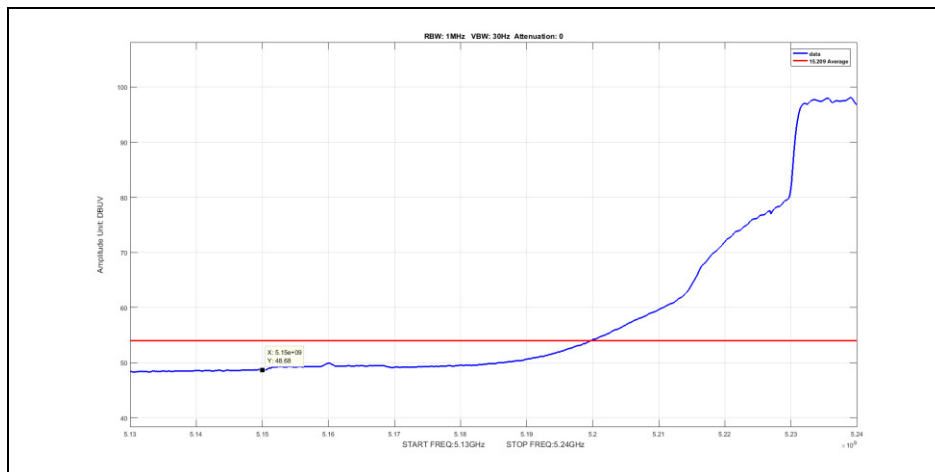
Radiated Band Edge, 802.11n 20 MHz, 4x8



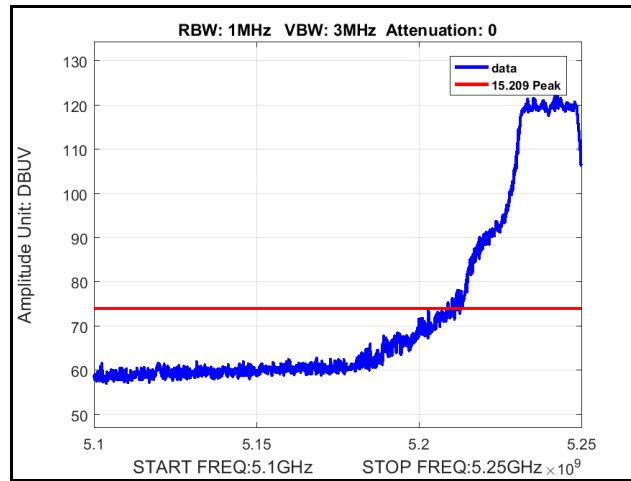
Plot 372. Radiated Band Edge, 802.11n 20 MHz, Channel 5180 MHz, 4x8, Average, MCS0, P21-17



Plot 373. Radiated Band Edge, 802.11n 20 MHz, Channel 5180 MHz, 4x8, Peak

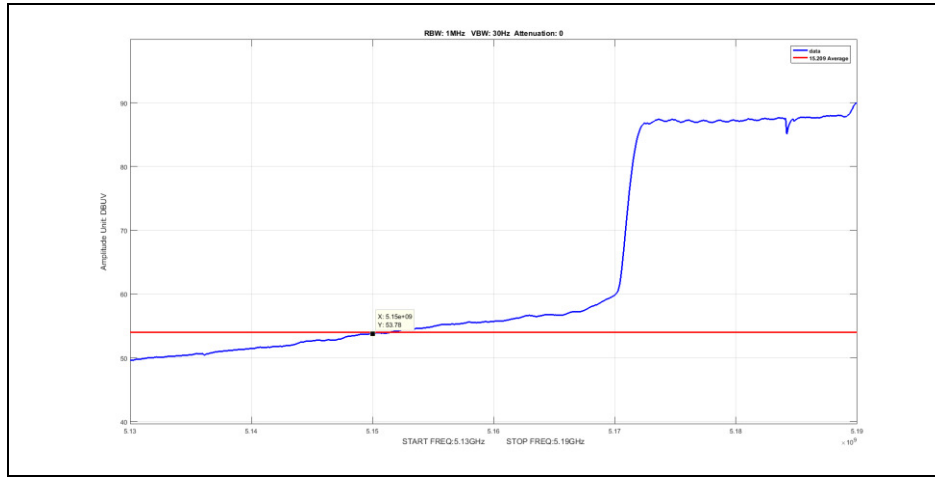


Plot 374. Radiated Band Edge, 802.11n 20 MHz, Channel 5240 MHz, 4x8, Average, MCS0, P21-21

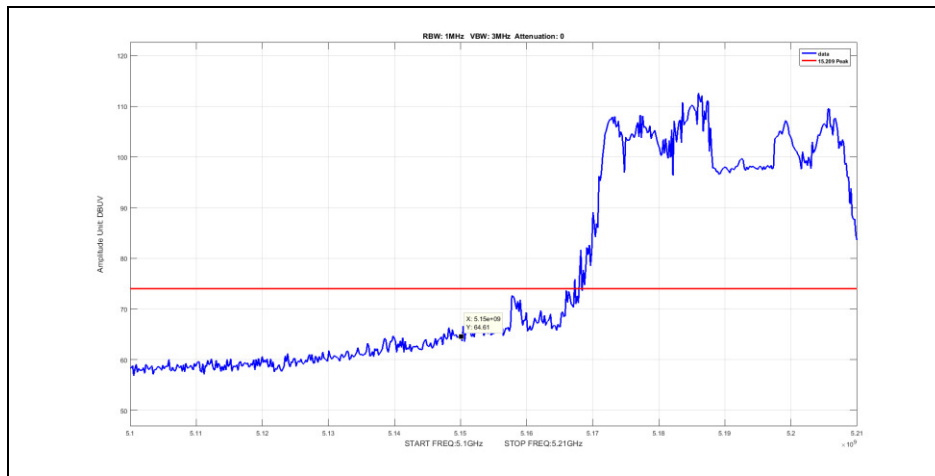


Plot 375. Radiated Band Edge, 802.11n 20 MHz, Channel 5240 MHz, 4x8, Peak

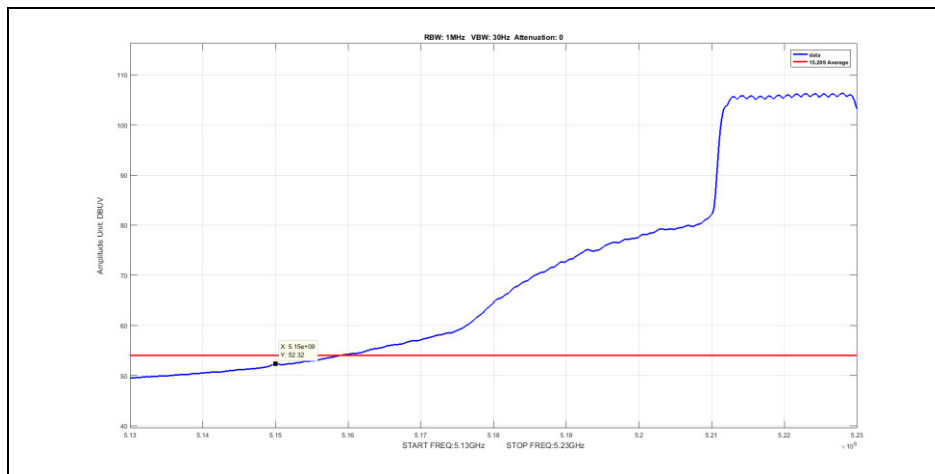
Radiated Band Edge, 802.11n 40 MHz, 4x8



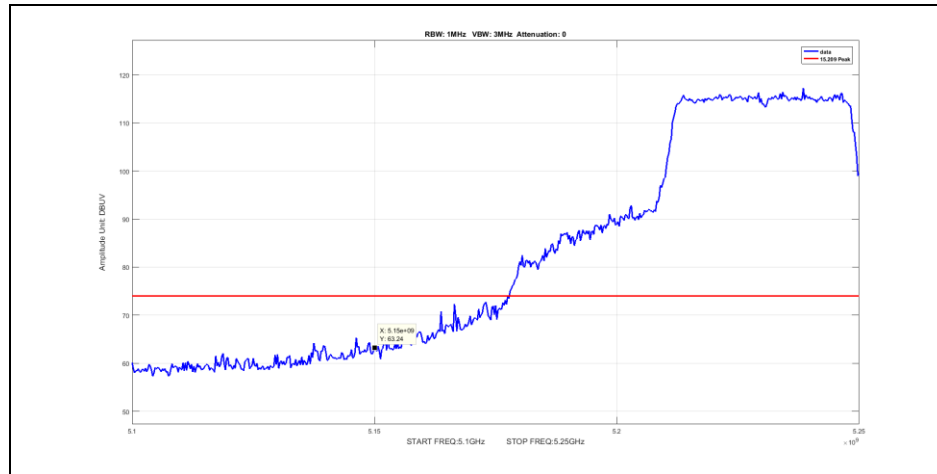
Plot 376. Radiated Band Edge, 802.11n 40 MHz, Channel 5190 MHz, 4x8, Average, MCS0, P17-15



Plot 377. Radiated Band Edge, 802.11n 40 MHz, Channel 5190 MHz, 4x8, Peak, MCS0, P17-15

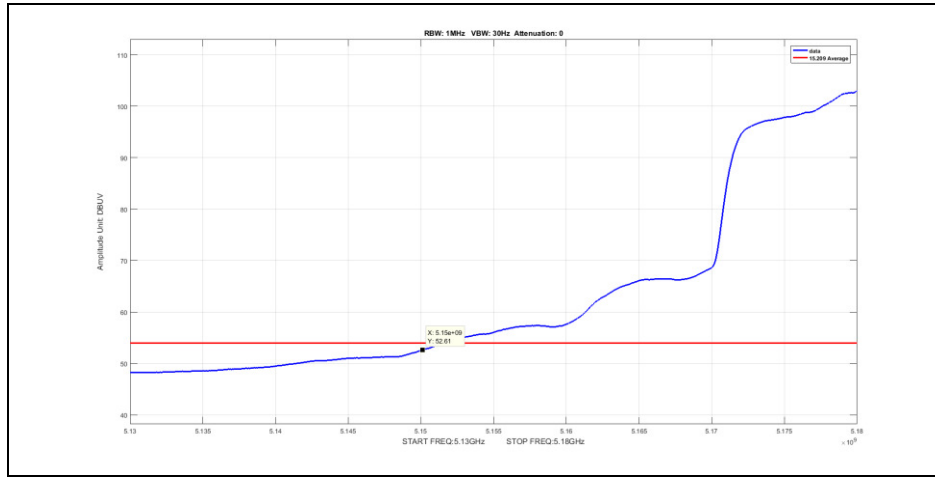


Plot 378. Radiated Band Edge, 802.11n 40 MHz, Channel 5230 MHz, 4x8, Average, MCS0, P21-21

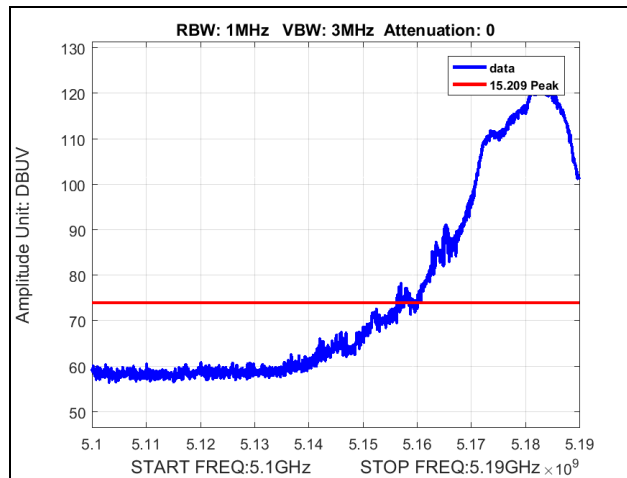


Plot 379. Radiated Band Edge, 802.11n 40 MHz, Channel 5230 MHz, 4x8, Peak, MCS0, P21-21

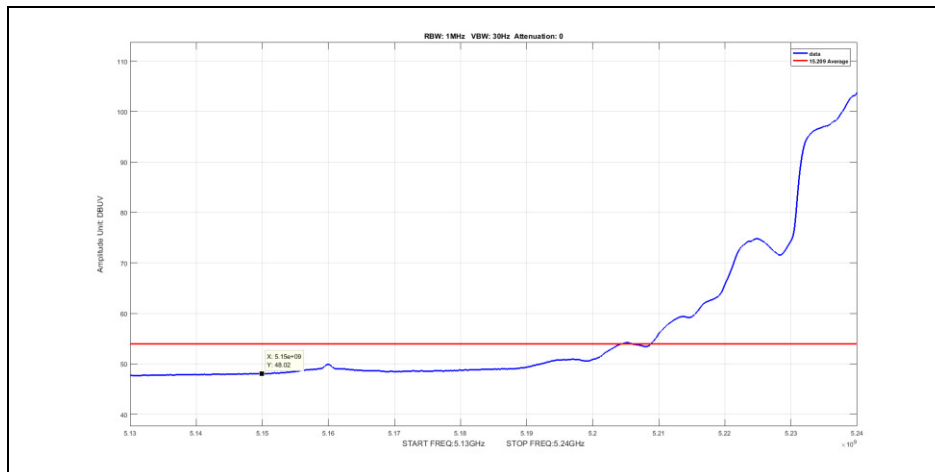
Radiated Band Edge, 802.11a, 6x8



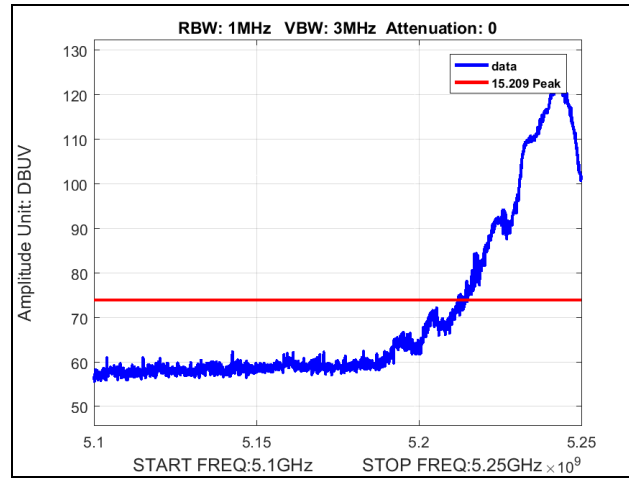
Plot 380. Radiated Band Edge, 802.11a, Channel 5180 MHz, 6x8, Average, P20-17



Plot 381. Radiated Band Edge, 802.11a, Channel 5180 MHz, 6x8, Peak, P20-17

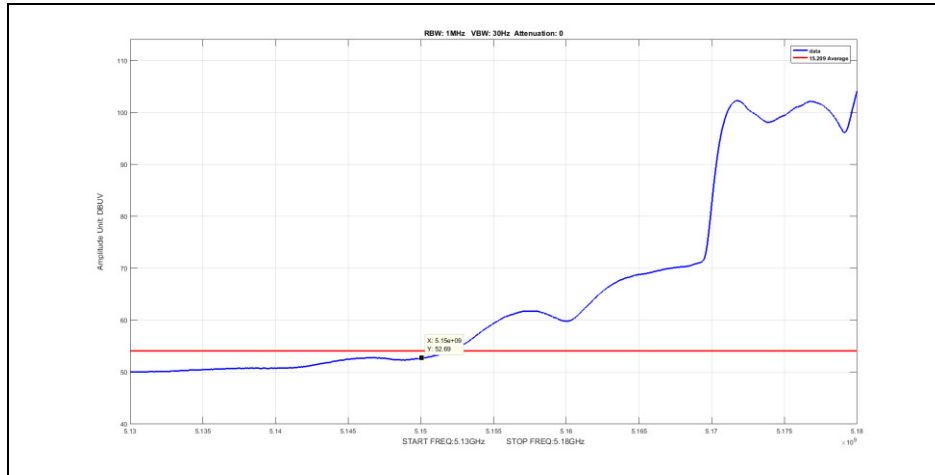


Plot 382. Radiated Band Edge, 802.11a, Channel 5240 MHz, 6x8, Average, P20-20

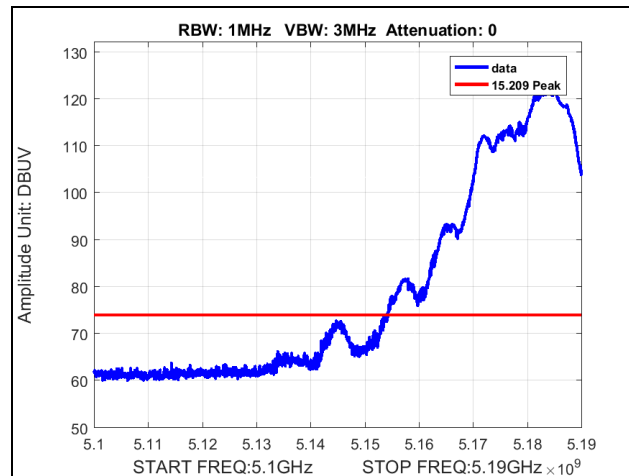


Plot 383. Radiated Band Edge, 802.11a, Channel 5240 MHz, 6x8, Peak, P20-20

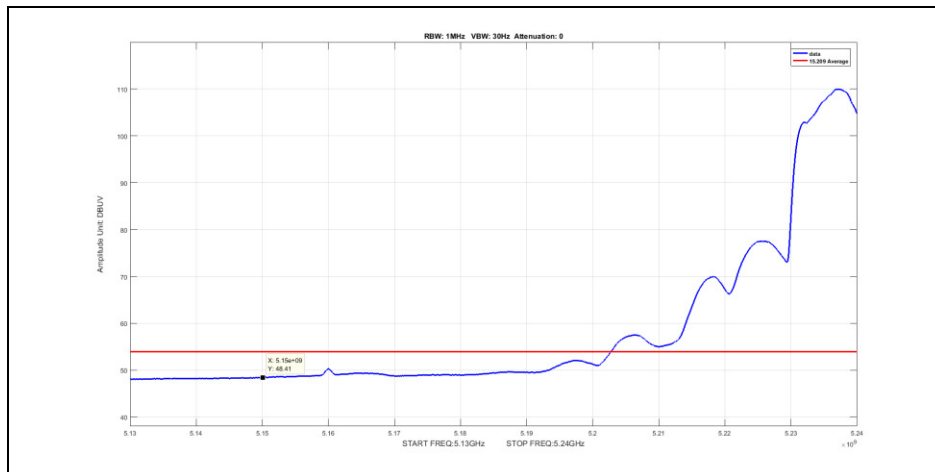
Radiated Band Edge, 802.11ac 20 MHz, 6x8



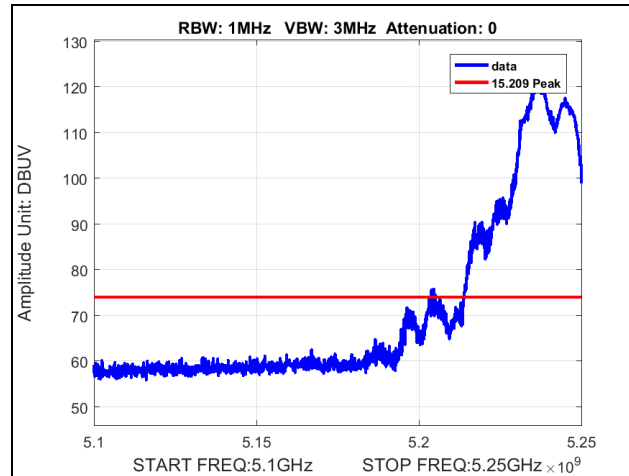
Plot 384. Radiated Band Edge, 802.11ac 20 MHz, Channel 5180 MHz, 6x8, Average, P20-17



Plot 385. Radiated Band Edge, 802.11ac 20 MHz, Channel 5180 MHz, 6x8, Peak, P20-17

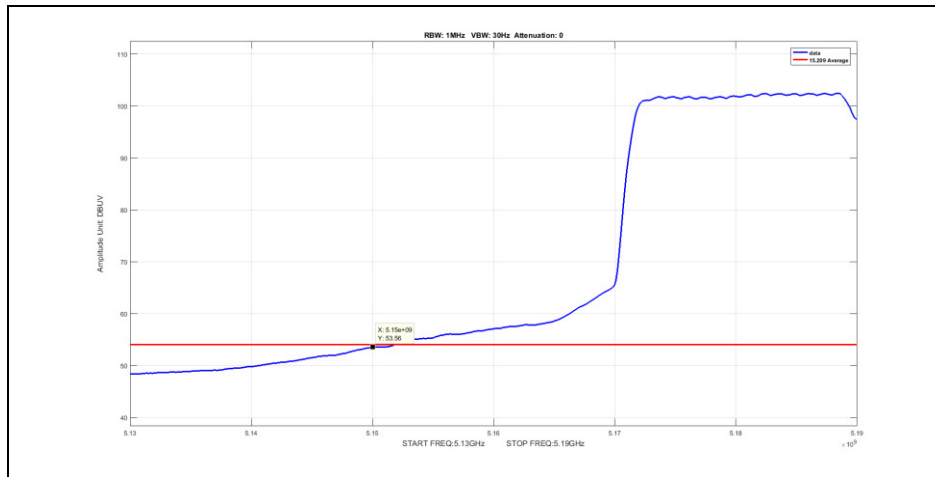


Plot 386. Radiated Band Edge, 802.11ac 20 MHz, Channel 5240 MHz, 6x8, Average, P20-20

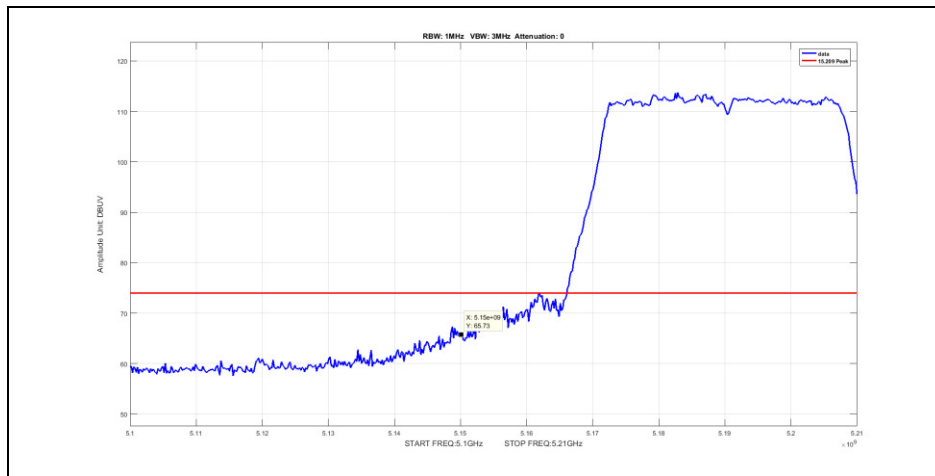


Plot 387. Radiated Band Edge, 802.11ac 20 MHz, Channel 5240 MHz, 6x8, Peak, P20-20

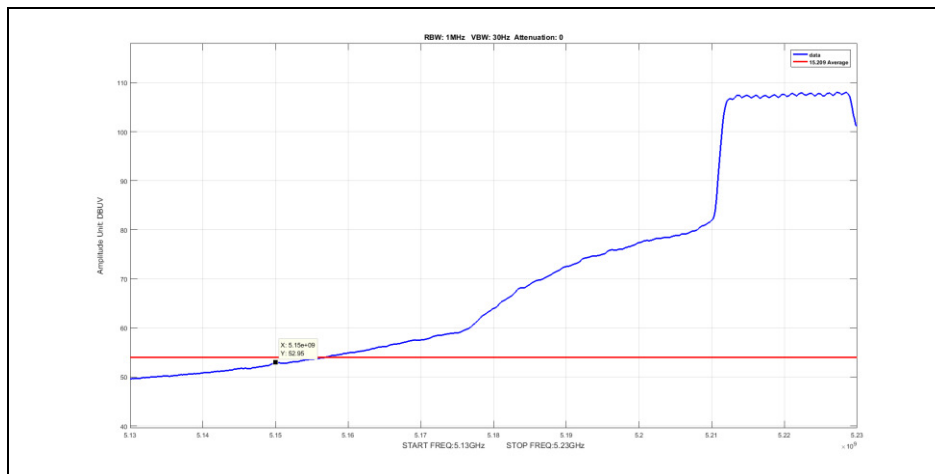
Radiated Band Edge, 802.11ac 40 MHz, 6x8



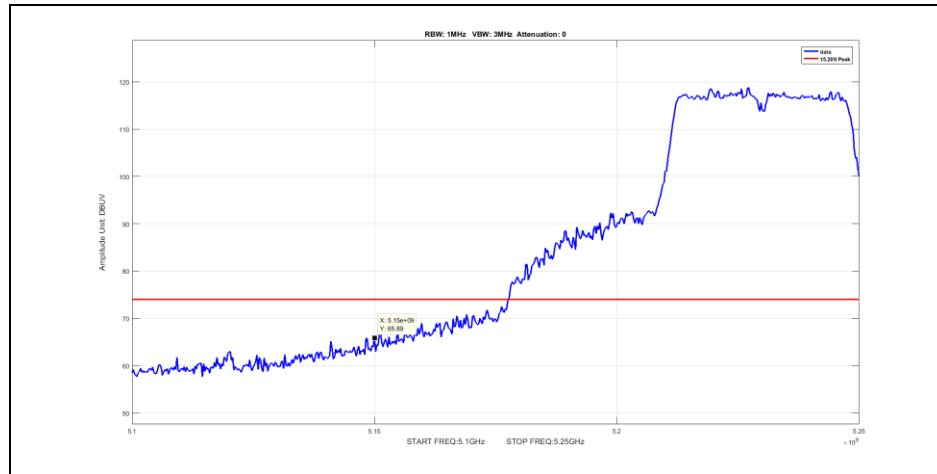
Plot 388. Radiated Band Edge, 802.11ac 40 MHz, Channel 5190 MHz, 6x8, Average, MCS0 NSS1, P16-13



Plot 389. Radiated Band Edge, 802.11ac 40 MHz, Channel 5190 MHz, 6x8, Peak, MCS0 NSS1, P16-13

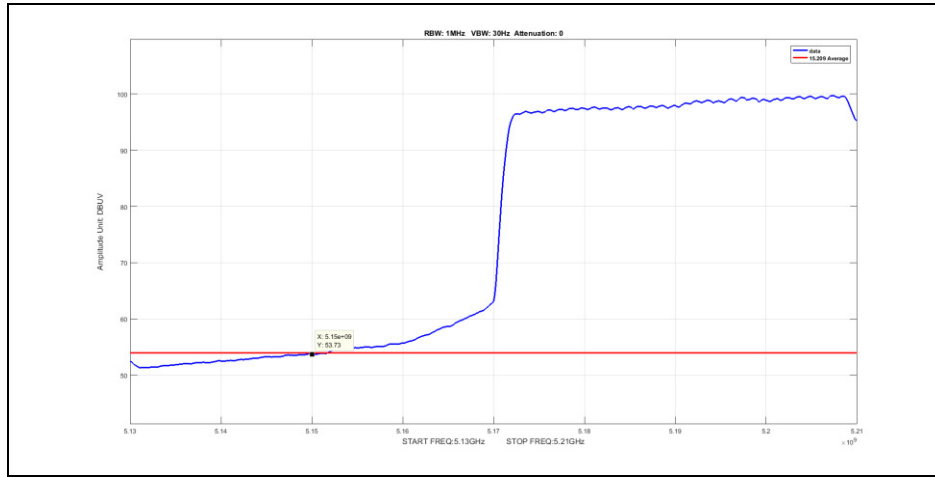


Plot 390. Radiated Band Edge, 802.11ac 40 MHz, Channel 5230 MHz, 6x8, Average, MCS0 NSS1, P20-19

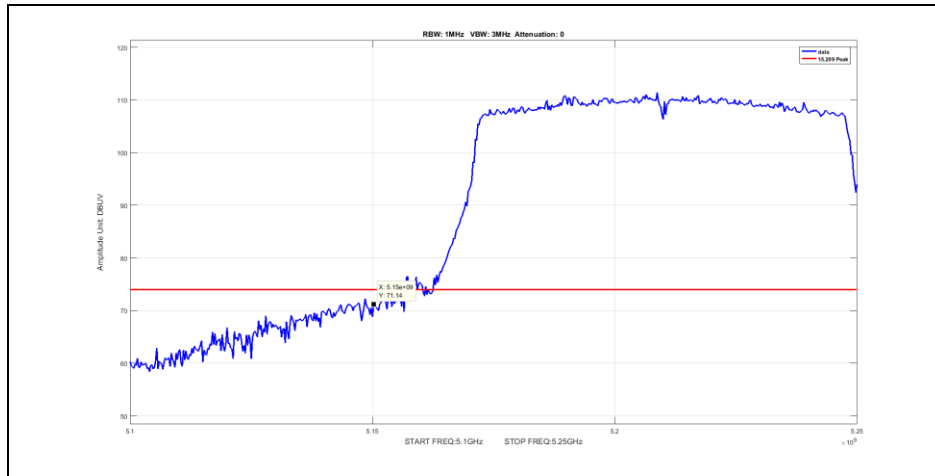


Plot 391. Radiated Band Edge, 802.11ac 40 MHz, Channel 5230 MHz, 6x8, Peak, MCS0 NSS1, P20-19

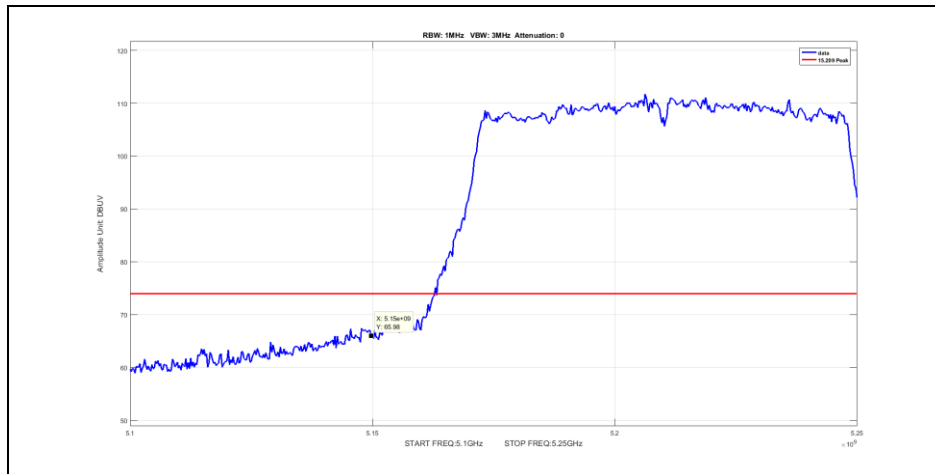
Radiated Band Edge, 802.11ac 80 MHz, 6x8



Plot 392. Radiated Band Edge, 802.11ac 80 MHz, Channel 5210 MHz, 6x8, Average, MCS0 NSS1, P17-12

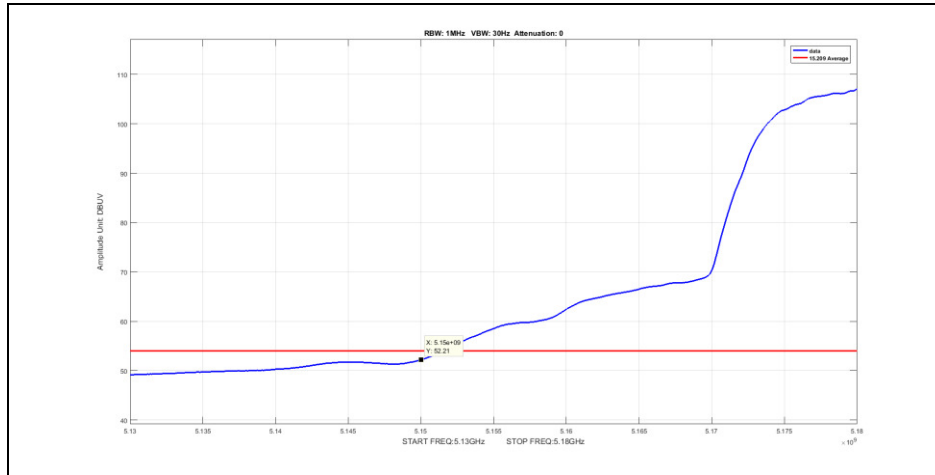


Plot 393. Radiated Band Edge, 802.11ac 80 MHz, Channel 5210 MHz, 6x8, Peak, MCS0 NSS1, P17-12

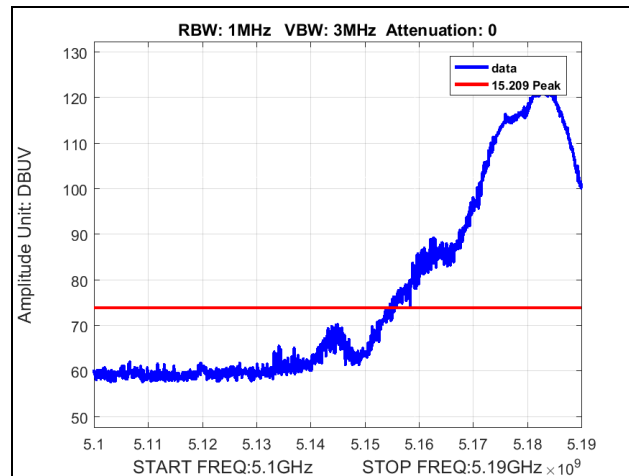


Plot 394. Radiated Band Edge, 802.11ac 80 MHz, Channel 5210 MHz, 6x8, Peak, MCS0 NSS1, P17-14

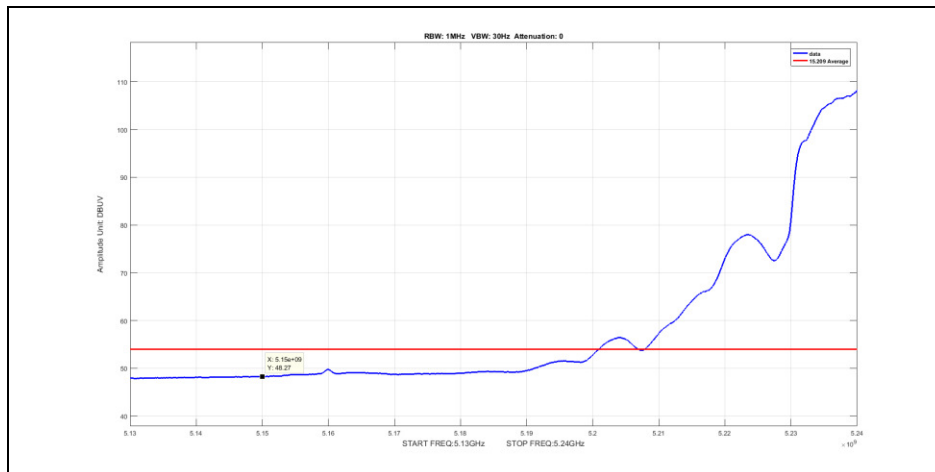
Radiated Band Edge, 802.11n 20 MHz, 6x8



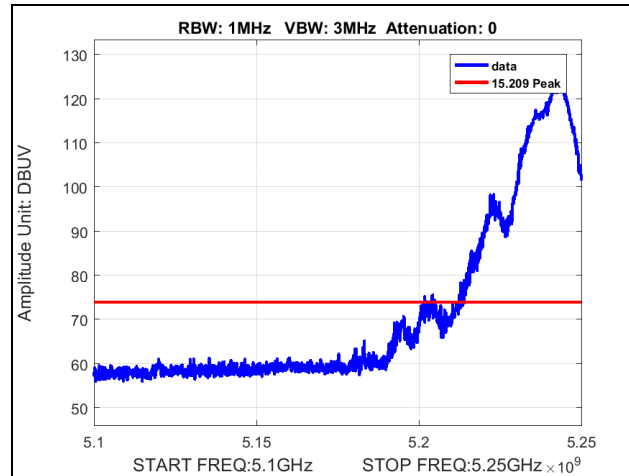
Plot 395. Radiated Band Edge, 802.11n 20 MHz, Channel 5180 MHz, 6x8, Average, NSS1, P20-17



Plot 396. Radiated Band Edge, 802.11n 20 MHz, Channel 5180 MHz, 6x8, Peak, NSS1, P20-17

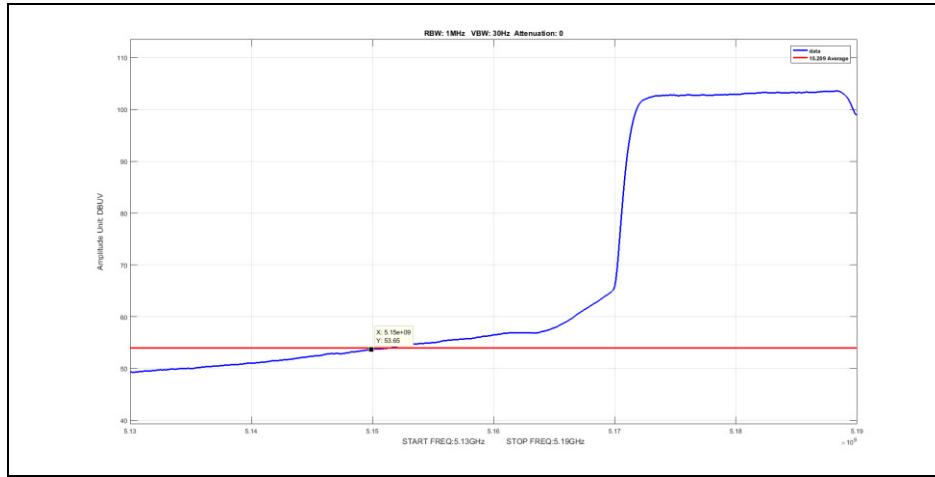


Plot 397. Radiated Band Edge, 802.11n 20 MHz, Channel 5240 MHz, 6x8, Average, NSS1, P20-20

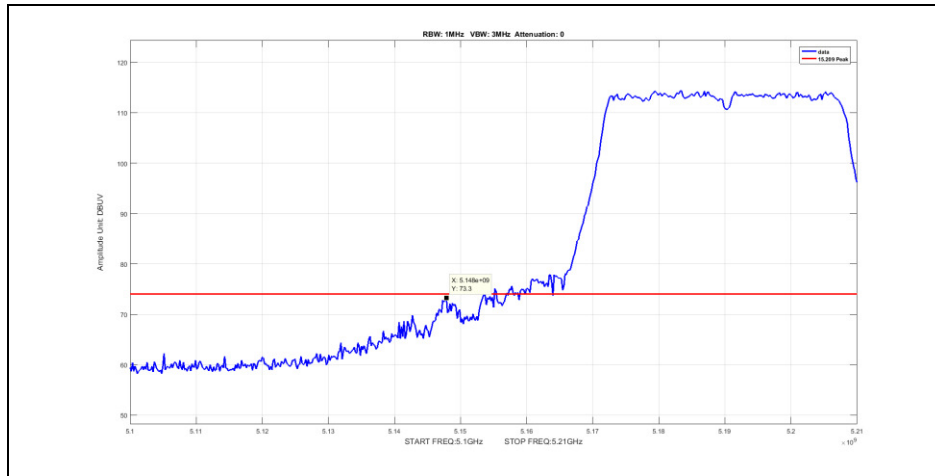


Plot 398. Radiated Band Edge, 802.11n 20 MHz, Channel 5240 MHz, 6x8, Peak, NSS1, P20-20

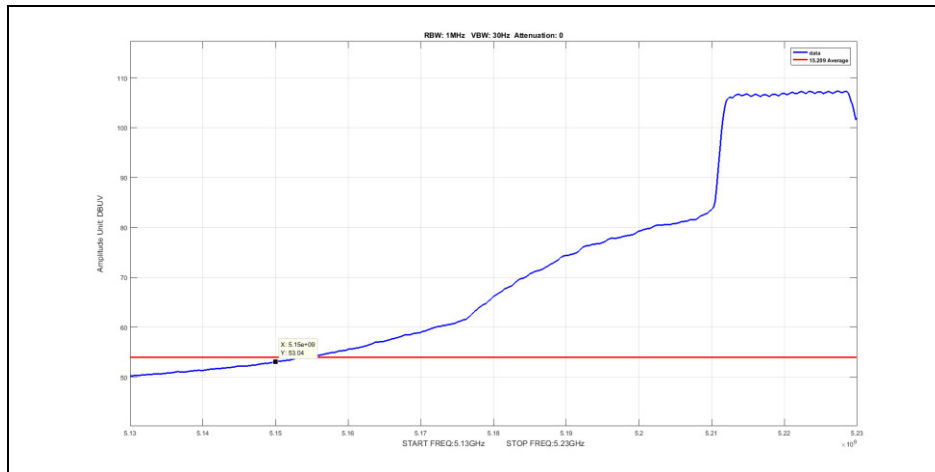
Radiated Band Edge, 802.11n 40 MHz, 6x8



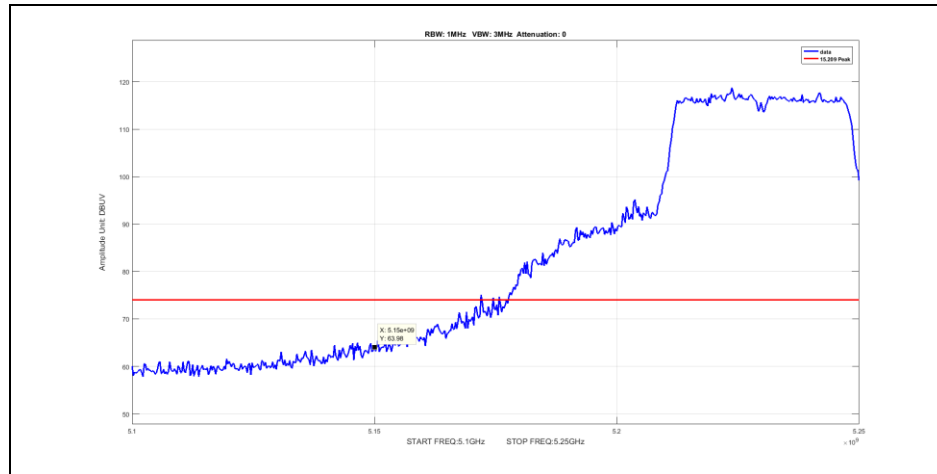
Plot 399. Radiated Band Edge, 802.11n 40 MHz, Channel 5190 MHz, 6x8, Average, MCS0 NSS1, P15-14



Plot 400. Radiated Band Edge, 802.11n 40 MHz, Channel 5190 MHz, 6x8, Peak, MCS0 NSS1, P15-14



Plot 401. Radiated Band Edge, 802.11n 40 MHz, Channel 5230 MHz, 6x8, Average, MCS0 NSS1, P21-20



Plot 402. Radiated Band Edge, 802.11n 40 MHz, Channel 5240 MHz, 6x8, Peak, MCS0 NSS1, P21-20

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(b)(6) Conducted Emissions

Test Requirement(s): § 15.407 (b)(6): Any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

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

Frequency range (MHz)	§ 15.207(a), Conducted Limit (dB μ V)	
	Quasi-Peak	Average
* 0.15- 0.45	66 – 56	56 - 46
0.45 - 0.5	56	46
0.5 - 30	60	50

Table 13. Conducted Limits for Intentional Radiators from FCC Part 15 § 15.207(a)

Test Procedure: The EUT was placed on a non-metallic table inside a screen room. The EUT was situated such that the back of the EUT was 0.4 m from one wall of the vertical ground plane, and the remaining sides of the EUT were no closer than 0.8 m from any other conductive surface. The EUT was powered from a 50 Ω /50 μ H Line Impedance Stabilization Network (LISN). The EMC receiver scanned the frequency range from 150 kHz to 30 MHz. Conducted Emissions measurements were made in accordance with ANSI C63.4-2014 "Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40 GHz". Scans were performed with the transmitter on.

Test Results: The EUT was compliant with requirements of this section.

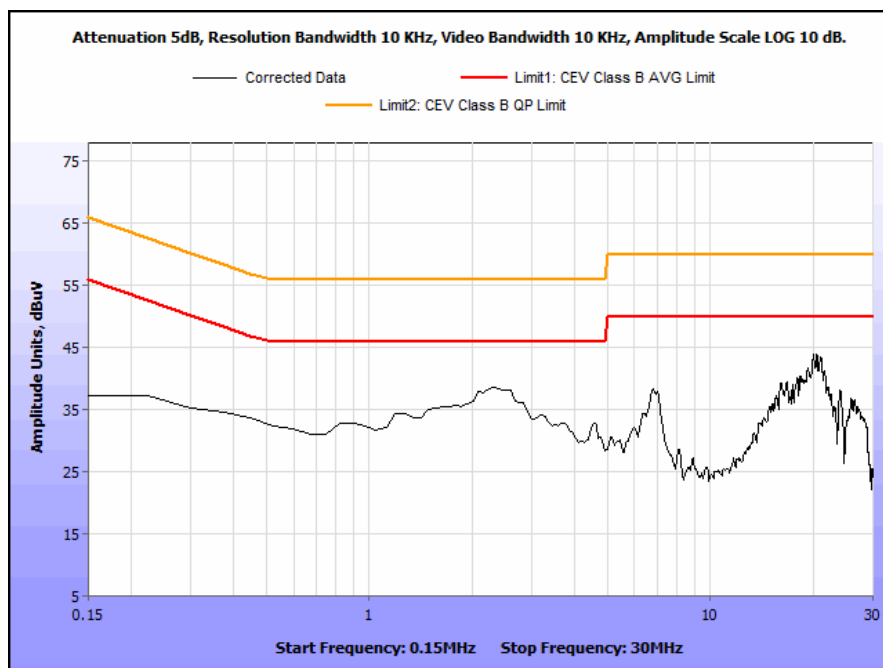
Test Engineer(s): Hadid Jones

Test Date(s): 08/21/16

15.207(a) Conducted Emissions Test Results

Frequency (MHz)	Uncorrected Meter Reading (dBμV) QP	Cable Loss (dB)	Corrected Measurement (dBμV) QP	Limit (dBμV) QP	Margin (dB) QP	Uncorrected Meter Reading (dBμV) Avg.	Cable Loss (dB)	Corrected Measurement (dBμV) AVG	Limit (dBμV) AVG	Margin (dB) AVG
0.155	58.48	0	58.48	65.73	-7.25	51.78	0	51.78	55.73	-3.95
2.53	49.96	0	49.96	56	-6.04	37.71	0	37.71	46	-8.29
6.79	48.6	0	48.6	60	-11.4	35.93	0	35.93	50	-14.07
20.18	51.66	0	51.66	60	-8.34	46.63	0	46.63	50	-3.37
24.5	40.2	0	40.2	60	-19.8	35.44	0	35.44	50	-14.56
26.88	40.32	0	40.32	60	-19.68	34.78	0	34.78	50	-15.22

Table 14. Conducted Emissions, 15.207(a), Phase Line, Test Results

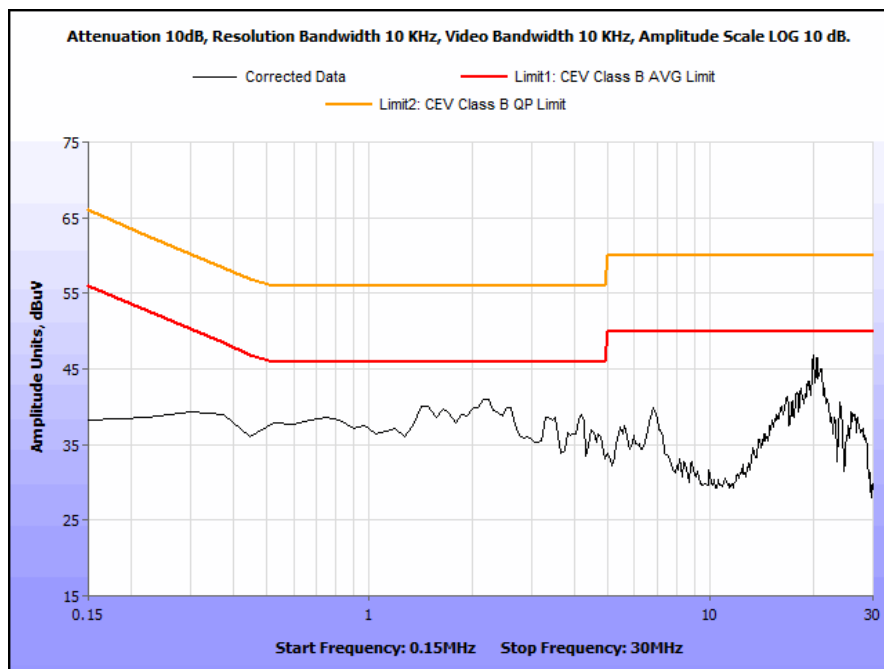


Plot 403. Conducted Emissions, 15.207(a), Phase Line

15.207(a) Conducted Emissions Test Results

Frequency (MHz)	Uncorrected Meter Reading (dBμV) QP	Cable Loss (dB)	Corrected Measurement (dBμV) QP	Limit (dBμV) QP	Margin (dB) QP	Uncorrected Meter Reading (dBμV) Avg.	Cable Loss (dB)	Corrected Measurement (dBμV) AVG	Limit (dBμV) AVG	Margin (dB) AVG
0.3	46.23	0	46.23	60.24	-14.01	29.56	0	29.56	50.24	-20.68
2.504	47.3	0	47.3	56	-8.7	35.11	0	35.11	46	-10.89
6.6	48.26	0	48.26	60	-11.74	37.59	0	37.59	50	-12.41
20.68	52.32	0	52.32	60	-7.68	46.24	0	46.24	50	-3.76
23.99	46.05	0	46.05	60	-13.95	39.54	0	39.54	50	-10.46
27.32	41.89	0	41.89	60	-18.11	36.44	0	36.44	50	-13.56

Table 15. Conducted Emissions, 15.207(a), Neutral Line, Test Results



Plot 404. Conducted Emissions, 15.207(a), Neutral Line

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(f) Maximum Permissible Exposure

Test Requirement(s): **§15.407(f):** U-NII devices are subject to the radio frequency radiation exposure requirements specified in §1.1307(b), §2.1091 and §2.1093 of this chapter, as appropriate. All equipment shall be considered to operate in a “general population/uncontrolled” environment.

RF Exposure Requirements: **§1.1307(b)(1) and §1.1307(b)(2):** Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission’s guidelines.

RF Radiation Exposure Limit: **§1.1310:** As specified in this section, the Maximum Permissible Exposure (MPE) Limit shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in Sec. 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of Sec. 2.1093 of this chapter.

MPE Limit: EUT’s operating frequencies @ 5150-5250 MHz; **Limit for Uncontrolled exposure: 1 mW/cm² or 10 W/m²**

Equation from page 18 of OET 65, Edition 97-01

$$S = PG / 4\pi R^2 \quad \text{or} \quad R = \sqrt{PG / 4\pi S}$$

where, S = Power Density (mW/cm²)
P = Power Input to antenna (mW)
G = Antenna Gain (numeric value)
R = Distance (cm)

Test Results:

FCC									
Frequency (MHz)	Con. Pwr. (dBm)	Con. Pwr. (mW)	Ant. Gain (dBi)	Ant. Gain numeric	Pwr. Density (mW/cm ²)	Limit (mW/cm ²)	Margin	Distance (cm)	Result
5240	26.74	472.063	6.8	4.786	0.4495	1	0.5505	20	Pass

The safe distance where Power Density is less than the MPE Limit listed above was found to be 20 cm.

IV. Test Equipment

Test Equipment

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2005.

MET Asset #	Equipment	Manufacturer	Model	Last Cal Date	Cal Due Date
1T4751	ANTENNA - BILOG	SUNOL SCIENCES	JB6	2/26/2016	8/26/2017
1T4409	EMI RECEIVER	ROHDE & SCHWARZ	ESIB7	10/29/2014	10/29/2016
1T4818	COMB GENERATOR	COM-POWER	CGO-520	SEE NOTE	
1T4483	ANTENNA; HORN	ETS-LINDGREN	3117	10/8/2015	4/8/2017
1T4442	PRE-AMPLIFIER, MICROWAVE	MITEQ	AFS42-01001800-30-10P	SEE NOTE	
1T6658	SPECTRUM ANALYZER	AGILENT TECHNOLOGIES	E4407B	12/9/2015	12/9/2016
1T4745	ANTENNA, HORN	ETS-LINDGREN	3116	6/27/2015	12/27/2016
1T4752	PRE-AMPLIFIER	MITEQ	JS44-18004000-35-8P	SEE NOTE	
1T4300A	SEMI-ANECHOIC CHAMBER # 1 (FCC)	EMC TEST SYSTEMS	NONE	1/31/2014	01/31/2017
1T4504	SHIELDED ROOM	UNIVERSAL SHIELDING CORP	N/A	NOT REQUIRED	
1T4563	LISN (10 AMP)	SOLAR ELECTRONICS COMPANY	9322-50-R-10-BNC	8/27/2015	2/27/2017

Table 16. Test Equipment List

Note: Functionally tested equipment is verified using calibrated instrumentation at the time of testing.

V. Certification & User's Manual Information

Certification & User's Manual Information

L. Certification Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 2, Subpart I — Marketing of Radio frequency devices:

§ 2.801 Radio-frequency device defined.

As used in this part, a radio-frequency device is any device which in its operation is capable of Emitting radio-frequency energy by radiation, conduction, or other means. Radio- frequency devices include, but are not limited to:

- (a) The various types of radio communication transmitting devices described throughout this chapter.
- (b) *The incidental, unintentional and intentional radiators defined in Part 15 of this chapter.*
- (c) The industrial, scientific, and medical equipment described in Part 18 of this chapter.
- (d) Any part or component thereof which in use emits radio-frequency energy by radiation, conduction, or other means.

§ 2.803 Marketing of radio frequency devices prior to equipment authorization.

- (a) Except as provided elsewhere in this chapter, no person shall sell or lease, or offer for sale or lease (including advertising for sale or lease), or import, ship or distribute for the purpose of selling or leasing or offering for sale or lease, any radio frequency device unless:
 - (1) In the case of a device subject to certification, such device has been authorized by the Commission in accordance with the rules in this chapter and is properly identified and labeled as required by §2.925 and other relevant sections in this chapter; or
 - (2) In the case of a device that is not required to have a grant of equipment authorization issued by the Commission, but which must comply with the specified technical standards prior to use, such device also complies with all applicable administrative (including verification of the equipment or authorization under a Declaration of Conformity, where required), technical, labeling and identification requirements specified in this chapter.
- (d) Notwithstanding the provisions of paragraph (a) of this section, the offer for sale solely to business, commercial, industrial, scientific or medical users (but not an offer for sale to other parties or to end users located in a residential environment) of a radio frequency device that is in the conceptual, developmental, design or pre-production stage is permitted prior to equipment authorization or, for devices not subject to the equipment authorization requirements, prior to a determination of compliance with the applicable technical requirements *provided* that the prospective buyer is advised in writing at the time of the offer for sale that the equipment is subject to the FCC rules and that the equipment will comply with the appropriate rules before delivery to the buyer or to centers of distribution.

- (e)(1) Notwithstanding the provisions of paragraph (a) of this section, prior to equipment authorization or determination of compliance with the applicable technical requirements any radio frequency device may be operated, but not marketed, for the following purposes and under the following conditions:
- (i) *Compliance testing;*
 - (ii) Demonstrations at a trade show provided the notice contained in paragraph (c) of this section is displayed in a conspicuous location on, or immediately adjacent to, the device;
 - (iii) Demonstrations at an exhibition conducted at a business, commercial, industrial, scientific or medical location, but excluding locations in a residential environment, provided the notice contained in paragraphs (c) or (d) of this section, as appropriate, is displayed in a conspicuous location on, or immediately adjacent to, the device;
 - (iv) Evaluation of product performance and determination of customer acceptability, provided such operation takes place at the manufacturer's facilities during developmental, design or pre-production states; or
 - (v) Evaluation of product performance and determination of customer acceptability where customer acceptability of a radio frequency device cannot be determined at the manufacturer's facilities because of size or unique capability of the device, provided the device is operated at a business, commercial, industrial, scientific or medical user's site, but not at a residential site, during the development, design or pre-production stages.
- (e)(2) For the purpose of paragraphs (e)(1)(iv) and (e)(1)(v) of this section, the term *manufacturer's facilities* includes the facilities of the party responsible for compliance with the regulations and the manufacturer's premises, as well as the facilities of other entities working under the authorization of the responsible party in connection with the development and manufacture, but not the marketing, of the equipment.
- (f) For radio frequency devices subject to verification and sold solely to business, commercial, industrial, scientific and medical users (excluding products sold to other parties or for operation in a residential environment), parties responsible for verification of the devices shall have the option of ensuring compliance with the applicable technical specifications of this chapter at each end user's location after installation, provided that the purchase or lease agreement includes a proviso that such a determination of compliance be made and is the responsibility of the party responsible for verification of the equipment.

Certification & User's Manual Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 2, Subpart J — Equipment Authorization Procedures:

§ 2.901 Basis and Purpose

- (a) In order to carry out its responsibilities under the Communications Act and the various treaties and international regulations, and in order to promote efficient use of the radio spectrum, the Commission has developed technical standards for radio frequency equipment and parts or components thereof. The technical standards applicable to individual types of equipment are found in that part of the rules governing the service wherein the equipment is to be operated.¹ *In addition to the technical standards provided, the rules governing the service may require that such equipment be verified by the manufacturer or importer, be authorized under a Declaration of Conformity, or receive an equipment authorization from the Commission by one of the following procedures: certification or registration.*
- (b) The following sections describe the verification procedure, the procedure for a Declaration of Conformity, and the procedures to be followed in obtaining certification from the Commission and the conditions attendant to such a grant.

§ 2.907 Certification.

- (a) Certification is an equipment authorization issued by the Commission, based on representation and test data submitted by the applicant.
- (b) Certification attaches to all units subsequently marketed by the grantee which are identical (see Section 2.908) to the sample tested except for permissive changes or other variations authorized by the Commission pursuant to Section 2.1043.

¹ In this case, the equipment is subject to the rules of Part 15. More specifically, the equipment falls under Subpart B (of Part 15), which deals with unintentional radiators.

Certification & User's Manual Information

§ 2.948 Description of measurement facilities.

- (a) Each party making measurements of equipment that is subject to an equipment authorization under Part 15 or Part 18 of this chapter, regardless of whether the measurements are filed with the Commission or kept on file by the party responsible for compliance of equipment marketed within the U.S. or its possessions, shall compile a description of the measurement facilities employed.
 - (1) If the measured equipment is subject to the verification procedure, the description of the measurement facilities shall be retained by the party responsible for verification of the equipment.
 - (i) *If the equipment is verified through measurements performed by an independent laboratory, it is acceptable for the party responsible for verification of the equipment to rely upon the description of the measurement facilities retained by or placed on file with the Commission by that laboratory. In this situation, the party responsible for the verification of the equipment is not required to retain a duplicate copy of the description of the measurement facilities.*
 - (ii) If the equipment is verified based on measurements performed at the installation site of the equipment, no specific site calibration data is required. It is acceptable to retain the description of the measurement facilities at the site at which the measurements were performed.
 - (2) If the equipment is to be authorized by the Commission under the certification procedure, the description of the measurement facilities shall be filed with the Commission's Laboratory in Columbia, Maryland. The data describing the measurement facilities need only be filed once but must be updated as changes are made to the measurement facilities or as otherwise described in this section. At least every three years, the organization responsible for filing the data with the Commission shall certify that the data on file is current.

Certification & User's Manual Information

Label and User's Manual Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 15, Subpart A — General:

§ 15.19 Labeling requirements.

(a) *In addition to the requirements in Part 2 of this chapter, a device subject to certification or verification shall be labeled as follows:*

- (1) Receivers associated with the operation of a licensed radio service, e.g., FM broadcast under Part 73 of this chapter, land mobile operation under Part 90, etc., shall bear the following statement in a conspicuous location on the device:

This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

- (2) A stand-alone cable input selector switch, shall bear the following statement in a conspicuous location on the device:

This device is verified to comply with Part 15 of the FCC Rules for use with cable television service.

- (3) All other devices shall bear the following statement in a conspicuous location on the device:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

- (4) Where a device is constructed in two or more sections connected by wires and marketed together, the statement specified under paragraph (a) of this section is required to be affixed only to the main control unit.

- (5) When the device is so small or for such use that it is not practicable to place the statement specified under paragraph (a) of this section on it, the information required by this paragraph shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed. However, the FCC identifier or the unique identifier, as appropriate, must be displayed on the device.

§ 15.21 Information to user.

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Verification & User's Manual Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 15, Subpart B — Unintentional Radiators:

§ 15.105 Information to the user.

- (a) For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at own expense.

- (b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.