MET Laboratories, Inc. *Safety Certification - EMI - Telecom Environmental Simulation*
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March 27, 2014

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

Dear Ed Champion,

Enclosed is the EMC Wireless test report for compliance testing of the ARRIS Group, Inc., SGB6700 AC as tested to the requirements of Title 47 of the CFR, Ch. 1 (10-1-06 ed.), Part 15, Subpart B and ICES-003, Issue 5 August 2012 for a Class B Digital Device, and FCC Part 15 Subpart C and RSS-210, Issue 8, Dec. 2010 for Intentional Radiators.

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.\EMC41043B-FCC247 Rev. 5)

Electromagnetic Compatibility Criteria
Test Report

for the

ARRIS Group, Inc.
SGB6700 AC

Tested under
the FCC Certification Rules
contained in
Title 47 of the CFR, Parts 15 Subpart B & ICES-003
for Class B Digital Devices
&
15.247 Subpart C & RSS-210, Issue 8, Dec. 2010
for Intentional Radiators

MET Report: EMC41043B-FCC247 Rev. 5

March 27, 2014

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
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&
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for Intentional Radiators

Surinder Singh, 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 the FCC Rules Parts 15B, 15.247 and Industry Canada standards ICES-003, Issue 5 August 2012, RSS-210, Issue 8, Dec. 2010 under normal use and maintenance.

Asad Bajwa,
Director, Electromagnetic Compatibility Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
∅	March 7, 2014	Initial Issue.
1	March 18, 2014	Editorial correction.
2	March 21, 2014	Revised to reflect engineer corrections.
3	March 25, 2014	Editorial correction.
4	March 26, 2014	Editorial correction.
5	March 27, 2014	Editorial correction.

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List of Terms and Abbreviations

AC	**A**lternating **C**urrent
ACF	**A**ntenna **C**orrection **F**actor
Cal	**Cal**ibration
d	**M**easurement **D**istance
dB	**D**eci**b**els
dBµA	**D**eci**b**els above one **micro**amp
dBµV	**D**eci**b**els above one **micro**volt
dBµA/m	**D**eci**b**els above one **micro**amp **per m**eter
dBµV/m	**D**eci**b**els above one **micro**volt **per m**eter
DC	**D**irect **C**urrent
E	**E**lectric Field
DSL	**D**igital **S**ubscriber **L**ine
ESD	**E**lectro**s**tatic **D**ischarge
EUT	**E**quipment **U**nder **T**est
f	**F**requency
FCC	**F**ederal **C**ommunications **C**ommission
GRP	**G**round **R**eference **P**lane
H	Magnetic Field
HCP	**H**orizontal **C**oupling **P**lane
Hz	**H**ert**z**
IEC	**I**nternational **E**lectrotechnical **C**ommission
kHz	**k**ilo**h**ert**z**
kPa	**k**ilo**pa**scal
kV	**k**ilo**v**olt
LISN	**L**ine **I**mpedance **S**tabilization **N**etwork
MHz	**M**ega**h**ertz
µH	**microh**enry
µ	**microf**arad
µs	**micros**econds
NEBS	**N**etwork **E**quipment-**B**uilding **S**ystem
PRF	**P**ulse **R**epetition **F**requency
RF	**R**adio **F**requency
RMS	**R**oot-**M**ean-**S**quare
TWT	**T**raveling **W**ave **T**ube
V/m	**V**olts **per m**eter
VCP	**V**ertical **C**oupling **P**lane

I. Executive Summary

A. Purpose of Test

An EMC evaluation was performed to determine compliance of the ARRIS Group, Inc. SGB6700 AC, with the requirements of Part 15, §15.247. 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 SGB6700 AC. 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 SGB6700 AC, 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, §15.247, in accordance with ARRIS Group, Inc., purchase order number 0008075143. All tests were conducted using measurement procedure ANSI C63.4-2003.

FCC Reference 47 CFR Part 15.247:2005	IC Reference RSS-210 Issue 8: 2010; RSS-GEN Issue 3: 2010	Description	Compliance
47 CFR Part 15.107 (a)	ICES-003 Issue 5 August 2012	Conducted Emission Limits for a Class B Digital Device	Compliant
47 CFR Part 15.109 (a)	ICES-003 Issue 5 August 2012	Radiated Emission Limits for a Class B Digital Device	Compliant
Title 47 of the CFR, Part 15 §15.203	N/A	Antenna Requirement	Compliant
Title 47 of the CFR, Part 15 §15.207(a)	RSS-GEN (7.2.4)	Conducted Emission Limits	Compliant
Title 47 of the CFR, Part 15 §15.247(a)(2)	RSS-Gen(4.6)	6dB Occupied Bandwidth	Compliant
		99% Occupied Bandwidth	Compliant
Title 47 of the CFR, Part 15 §15.247(b)	RSS-210(A8.4)	Peak Power Output	Compliant
Title 47 of the CFR, Part 15 §15.247(d); §15.209; §15.205	RSS-210(A8.5)	Radiated Spurious Emissions Requirements	Compliant
Title 47 of the CFR, Part 15 §15.247(d)	RSS-210(A8.5)	RF Conducted Spurious Emissions Requirements	Compliant
Title 47 of the CFR, Part 15 §15.247(d)	RSS-210(A8.5)	RF Conducted Band Edge	Compliant
Title 47 of the CFR, Part 15; §15.247(e)	RSS-210(A8.2)	Peak Power Spectral Density	Compliant
Title 47 of the CFR, Part 15 §15.247(i)	RSS-Gen(5.6)	Maximum Permissible Exposure (MPE)	Compliant

Table 1. Executive Summary of EMC Part 15.247 ComplianceTesting

II. Equipment Configuration

A. Overview

MET Laboratories, Inc. was contracted by ARRIS Group, Inc. to perform testing on the SGB6700 AC, under ARRIS Group, Inc.'s purchase order number 0008075143.

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., SGB6700 AC.

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

Model(s) Tested:	SGB6700 AC	
Model(s) Covered:	SGB6700 AC	
EUT Specifications:	Primary Power: 120 VAC, 60 Hz	
	FCC ID: UIDSBG6700 IC: 6670A-SbG6700	
	Type of Modulations:	CCK, OFDM, MCS
	Equipment Code:	DTS
	Peak RF Output Power:	27.89 dBm
	EUT Frequency Ranges:	5745 – 5825 MHz
Analysis:	The results obtained relate only to the item(s) tested.	
Environmental Test Conditions:	Temperature: 15-35º C	
	Relative Humidity: 30-60%	
	Barometric Pressure: 860-1060 mbar	
Evaluated by:	Surinder Singh	
Report Date(s):	March 27, 2014	

Table 2. EUT Summary Table

B. References

CFR 47, Part 15, Subpart C	Federal Communication Commission, Code of Federal Regulations, Title 47, Part 15: General Rules and Regulations, Allocation, Assignment, and Use of Radio Frequencies
CFR 47, Part 15, Subpart B	Electromagnetic Compatibility: Criteria for Radio Frequency Devices
RSS-210, Issue 8, Dec. 2010	Low-power Licence-exempt Radiocommunications Devices (All Frequency Bands): Category I Equipment
RSS-GEN, Issue 3, Dec. 2010	General Requirements and Information for the Certification of Radio Apparatus
ICES-003, Issue 5 August 2012	Information Technology Equipment (ITE) — Limits and methods of measurement
ANSI C63.4:2003	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 C63.10-2009	American National Standard for Testing Unlicensed Wireless Devices

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. SGB6700 AC, Equipment Under Test (EUT), is an indoor2.4/5GHz indoor data gateway.

E. Equipment Configuration

Ref. ID	Name / Description	Model Number	Part Number	Serial Number	Revision
--	SBG6700-ac	SBG6700-ac	--	--	--

Table 4. Equipment Configuration

F. Support Equipment

Ref. ID	Name / Description	Manufacturer	Model Number
--	Laptop	Dell	Vostro
--	Laptop Mouse	Logitech	--
--	RF Cable	--	--
--	Ethernet	--	--
--	12 Vdc PS	--	--

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
1	Data	RG6 Coax	1	8	Yes	B. TX
2	12 Vdc	DC Connector	1	2	No	(230v/50hz)
	Ethernet	Ethernet	1	2	No	--

Table 6. Ports and Cabling Information

H. Mode of Operation

The provided test tool will configure the SBG6700 for operation at each required test mode. Test modes have been previously supplied for quote.

I. Method of Monitoring EUT Operation

The measured emission value is over the specified FCC/IC 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 Unintentional Radiators

Electromagnetic Compatibility Criteria

§ 15.107 Conducted Emissions Limits

Test Requirement(s):

15.107 (a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in Table 7. Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

15.107 (b) For a Class A digital device that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in Table 7. Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals. The lower limit applies at the band edges.

Frequency range (MHz)	Class A Conducted Limits (dBµV)		*Class B Conducted Limits (dBµV)	
	Quasi-Peak	Average	Quasi-Peak	Average
* 0.15- 0.45	79	66	66 - 56	56 - 46
0.45 - 0.5	79	66	56	46
0.5 - 30	73	60	60	50
Note 1 — The lower limit shall apply at the transition frequencies. Note 2 — The limit decreases linearly with the logarithm if the frequency in the range 0.15 MHz to 0.5 MHz.				

Table 7. Conducted Limits for Radio Frequency Devices calculated from FCC Part 15 Subsections 15.107(a) (b)

Test Procedures: The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. The method of testing, test conditions, and test procedures of ANSI C63.4 were used. The EUT was powered through a 50Ω/50µH LISN. An EMI receiver, connected to the measurement port of the LISN, scanned the frequency range from 150 kHz to 30 MHz in order to find the peak conducted emissions. All peak emissions within 6 dB of the limit were re-measured using a quasi-peak and/or average detector as appropriate.

Test Results: The EUT was compliant with the Class B requirement(s) of this section. Measured emissions were below applicable limits.

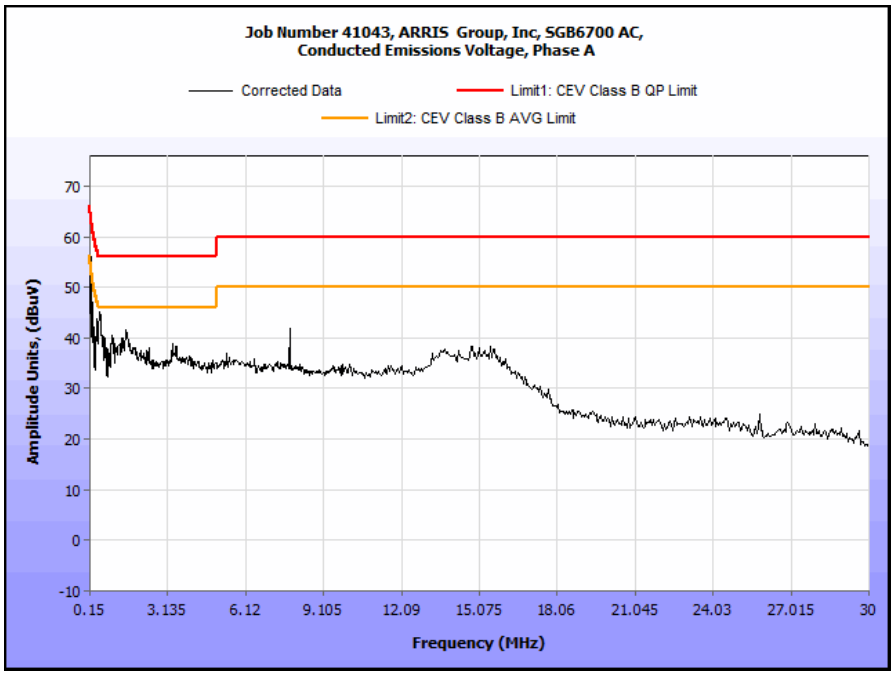
Test Engineer(s): Djed Mouada

Test Date(s): 01/31/14

Conducted Emissions - Voltage, AC Power, Phase Line (120 VAC, 60 Hz)

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
0.187	50.89	0	50.89	64.17	-13.28	35.74	0	35.74	54.17	-18.43
0.494	40.22	0	40.22	56.1	-15.88	26.89	0	26.89	46.1	-19.21
0.792	31.71	0	31.71	56	-24.29	19.35	0	19.35	46	-26.65
1.518	37.59	0	37.59	56	-18.41	24.69	0	24.69	46	-21.31
13.8	31.8	0	31.8	60	-28.2	25.79	0	25.79	50	-24.21
22.48	18.34	0	18.34	60	-41.66	12.35	0	12.35	50	-37.65

Table 8. Conducted Emissions - Voltage, AC Power, Phase Line (120 VAC, 60 Hz)

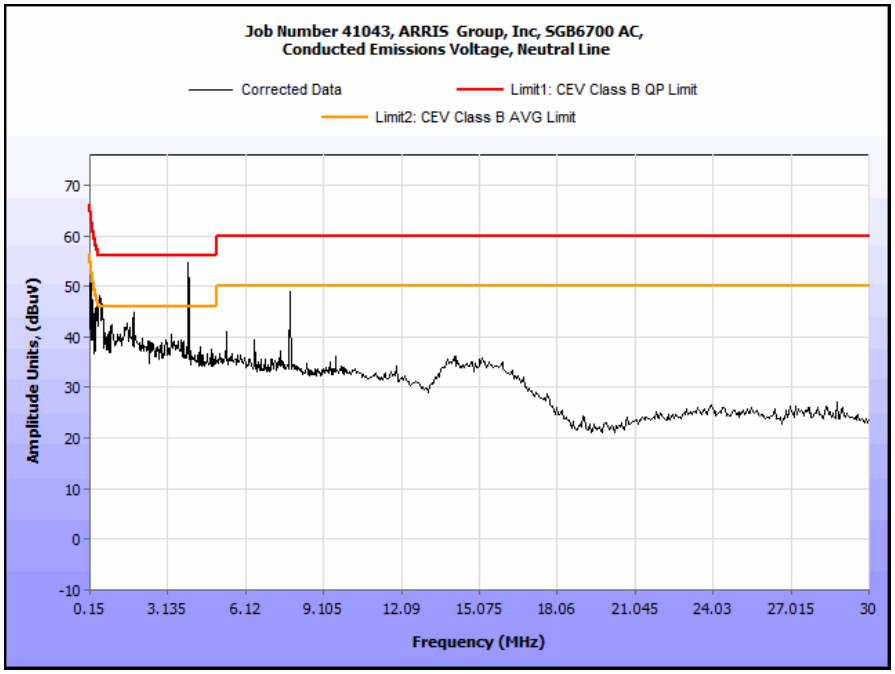


Plot 1. Conducted Emissions, Phase Line Plot

Conducted Emissions - Voltage, AC Power, Neutral Line (120 VAC, 60 Hz)

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
0.151	44.1	0	44.1	65.95	-21.85	28.82	0	28.82	55.95	-27.13
0.419	46.5	0	46.5	57.47	-10.97	31.35	0	31.35	47.47	-16.12
0.545	45.82	0	45.82	56	-10.18	34.74	0	34.74	46	-11.26
1.455	35.7	0	35.7	56	-20.3	25.08	0	25.08	46	-20.92
11.3	27.84	0	27.84	60	-32.16	21.47	0	21.47	50	-28.53
29.69	1.877	0	1.877	60	-58.123	13.44	0	13.44	50	-36.56

Table 9. Conducted Emissions - Voltage, AC Power, Neutral Line (120 VAC, 60 Hz)



Plot 2. Conducted Emissions, Neutral Line Plot

Radiated Emission Limits

§ 15.109 Radiated Emissions Limits

Test Requirement(s): **15.109 (a)** Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the Class B limits expressed in Table 10.

15.109 (b) The field strength of radiated emissions from a Class A digital device, as determined at a distance of 10 meters, shall not exceed the Class A limits expressed in Table 10.

Frequency (MHz)	Field Strength (dBµV/m)	
	§15.109 (b), Class A Limit (dBµV) @ 10m	§15.109 (a),Class B Limit (dBµV) @ 3m
30 - 88	39.00	40.00
88 - 216	43.50	43.50
216 - 960	46.40	46.00
Above 960	49.50	54.00

Table 10. Radiated Emissions Limits calculated from FCC Part 15, §15.109 (a) (b)

Test Procedures: The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. The method of testing and test conditions of ANSI C63.4 were used. An antenna was located 3 m from the EUT on an adjustable mast. A pre-scan was first performed in order to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1 m and 4 m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. Unless otherwise specified, measurements were made using a quasi-peak detector with a 120 kHz bandwidth.

Test Results: The EUT was compliant with the Class B requirement(s) of this section. Measured emissions were below applicable limits.

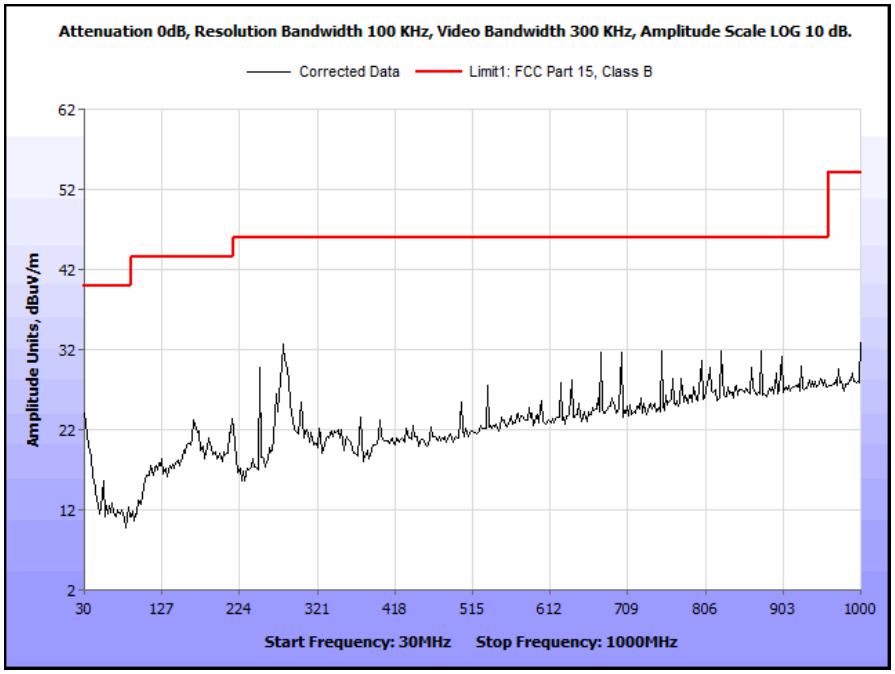
Test Engineer(s): Djed Mouada

Test Date(s): 02/08/14

Radiated Emissions Limits Test Results, Class B

Frequency (MHz)	EUT Azimuth (Degrees)	Antenna Polarity (H/V)	Antenna HEIGHT (m)	Uncorrected Amplitude (dBµV)	Antenna Correction Factor (dB) (+)	Cable Loss (dB) (+)	Distance Correction Factor (dB) (-)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
166.34	34	H	1.05	14.89	12.37	0.94	0.00	28.20	43.50	-15.30
166.34	83	V	1.09	16.93	12.37	0.94	0.00	30.24	43.50	-13.26
278.47	129	H	1.18	12.04	13.80	1.42	0.00	27.26	46.00	-18.74
278.47	16	V	1.12	13.25	13.80	1.42	0.00	28.47	46.00	-17.53
503.27	19	H	1.05	11.95	18.10	1.88	0.00	31.93	46.00	-14.07
503.27	289	V	1.12	11.99	18.10	1.88	0.00	31.97	46.00	-14.03
675.39	229	H	1.19	10.30	20.60	2.15	0.00	33.05	46.00	-12.95
675.39	12	V	1.09	10.40	20.60	2.15	0.00	33.15	46.00	-12.85
751.39	198	H	1.03	8.37	21.23	2.41	0.00	32.01	46.00	-13.99
751.39	210	V	1.08	8.49	21.23	2.41	0.00	32.13	46.00	-13.87
926.38	118	H	1.12	7.21	23.13	2.85	0.00	33.19	46.00	-12.81
926.38	293	V	1.11	7.22	23.13	2.85	0.00	33.20	46.00	-12.80

Table 11. Radiated Emissions Limits, Test Results, 30 MHz – 1 GHz



Plot 3. Radiated Emissions, 30 MHz - 1 GHz

IV. 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.

Test Engineer(s): Surinder Singh

Test Date(s): 02/12/14

Antennas	Peak Gain (dBi) (over 5725-5850MHz)
Chain A0	3.99
Chain A1	4.64
Chain A2	3.09
3Tx Composite	8.71

The 3Tx Composite gain was calculated based upon the formula given in KDB 662911 D01 Multiple Transmitter Output v02r01 for antenna gains that are not equal and each transmit antenna is driven by only one spatial stream.

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.207(a) Conducted Emissions Limits

Test Requirement(s): **§ 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 μH/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 (dBμV)	
	Quasi-Peak	Average
* 0.15- 0.45	66 - 56	56 - 46
0.45 - 0.5	56	46
0.5 - 30	60	50

Table 12. Conducted Limits for Intentional Radiators from FCC Part 15 § 15.207(a)

Test Procedure: The EUT was placed on a 0.8 m-high wooden 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 μH 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 C63.4-2003 "Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40 GHz"*. The measurements were performed over the frequency range of 0.15 MHz to 30 MHz using a 50 Ω/50 μH LISN as the input transducer to an EMC/field intensity meter. For the purpose of this testing, the transmitter was turned on. Scans were performed with the transmitter on.

Test Results: The EUT was compliant with this requirement.

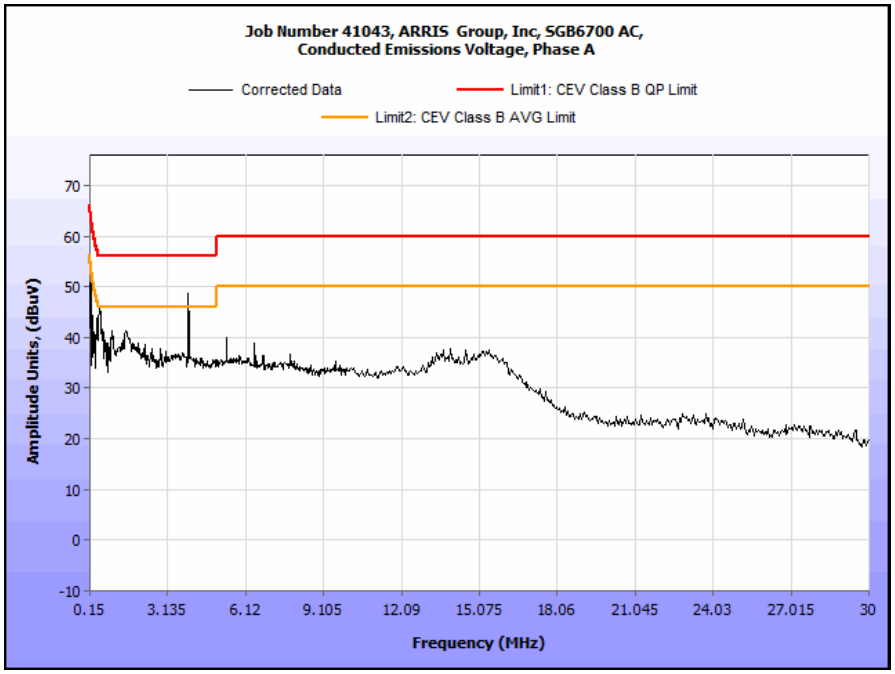
Test Engineer(s): Surinder Singh

Test Date(s): 01/31/14

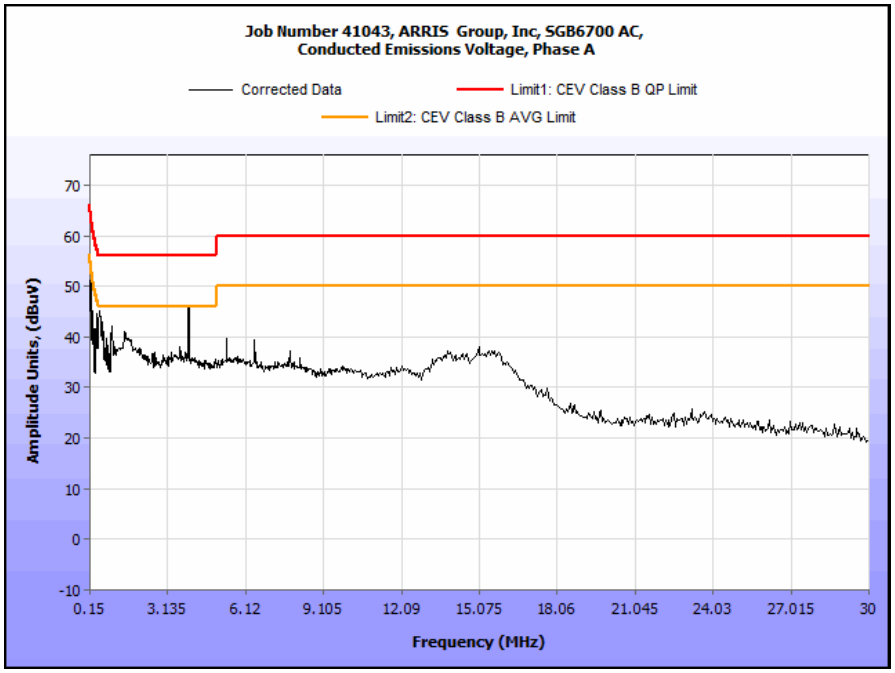
15.207(a) Conducted Emissions Test Results

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
0.186	47.76	0	47.76	64.21	-16.45	34.2	0	34.2	54.21	-20.01
0.512	40.09	0	40.09	56	-15.91	29.03	0	29.03	46	-16.97
1.492	35.82	0	35.82	56	-20.18	23.46	0	23.46	46	-22.54
3.926	35.5	0.11	35.61	56	-20.39	20.27	0.11	20.38	46	-25.62
7.775	30.49	0.17	30.66	60	-29.34	22.76	0.17	22.93	50	-27.07
24.892	27.38	0.17	27.55	60	-32.45	19.03	0.17	19.2	50	-30.8

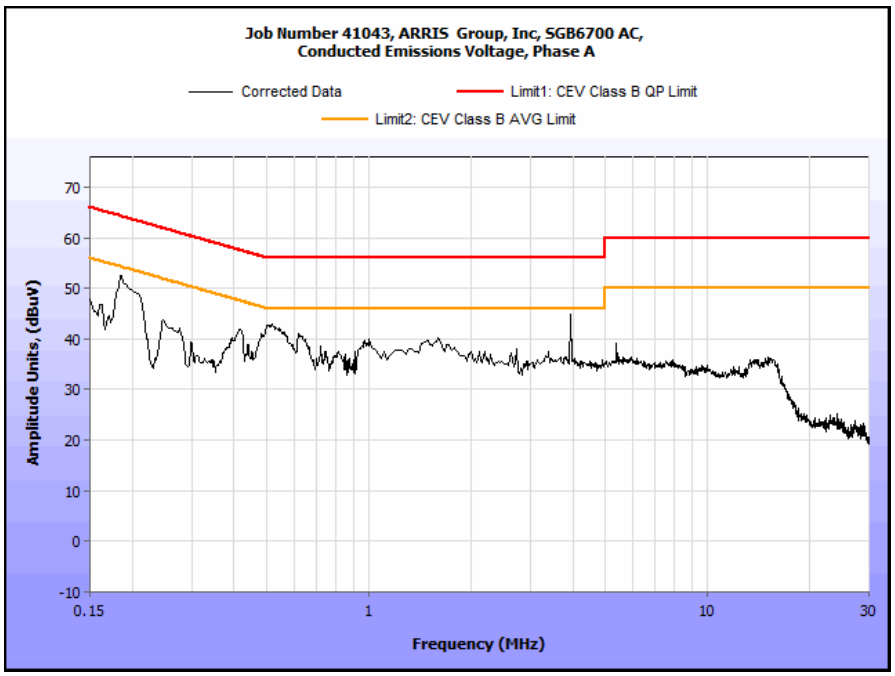
Table 13. Conducted Emissions, 15.207(a), Phase Line, Test Results



Plot 4. Conducted Emissions, 15.207(a), Phase Line, Low Channel



Plot 5. Conducted Emissions, 15.207(a), Phase Line, Mid Channel

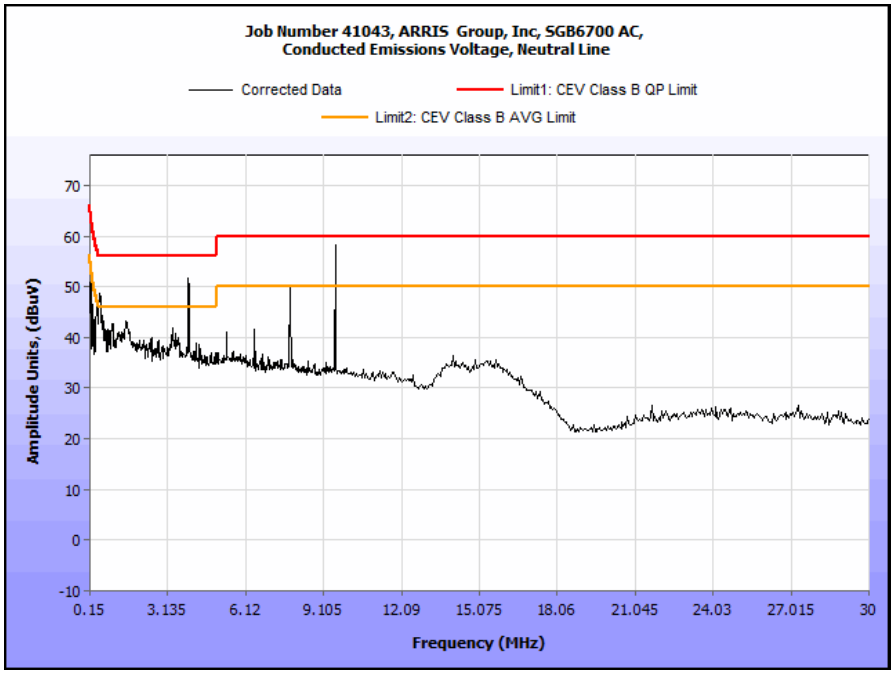


Plot 6. Conducted Emissions, 15.207(a), Phase Line, High Channel

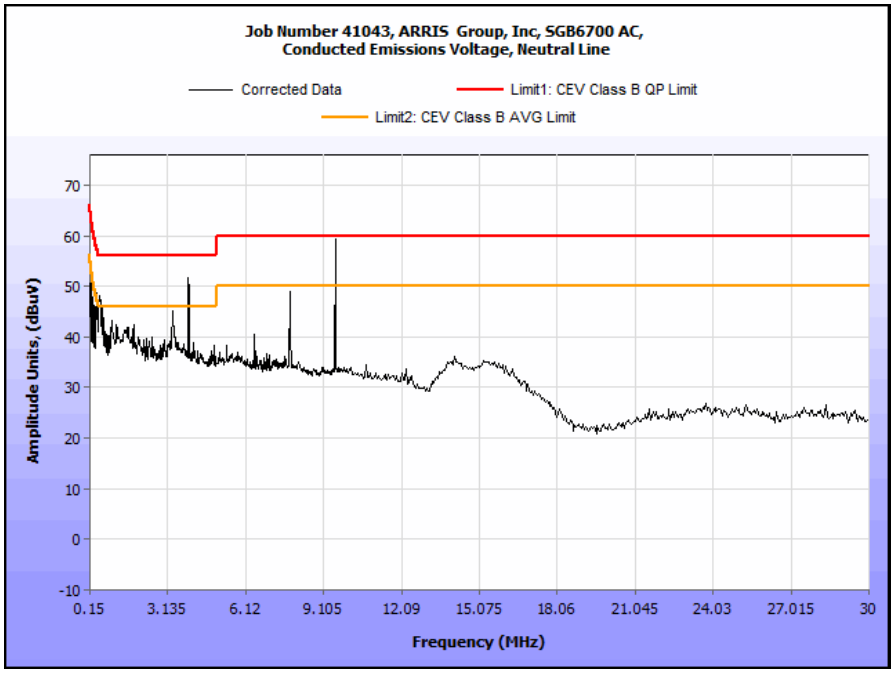
15.207(a) Conducted Emissions Test Results

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
0.154	50.69	0	50.69	65.78	-15.09	41.14	0	41.14	55.78	-14.64
0.418	45.64	0	45.64	57.49	-11.85	32.65	0	32.65	47.49	-14.84
1.232	35.57	0	35.57	56	-20.43	24.42	0	24.42	46	-21.58
3.927	49.41	0.11	49.52	56	-6.48	24.9	0.11	25.01	46	-20.99
7.818	48.48	0.17	48.65	60	-11.35	26	0.17	26.17	50	-23.83
25.16	20.29	0.17	20.46	60	-39.54	15.57	0.17	15.74	50	-34.26

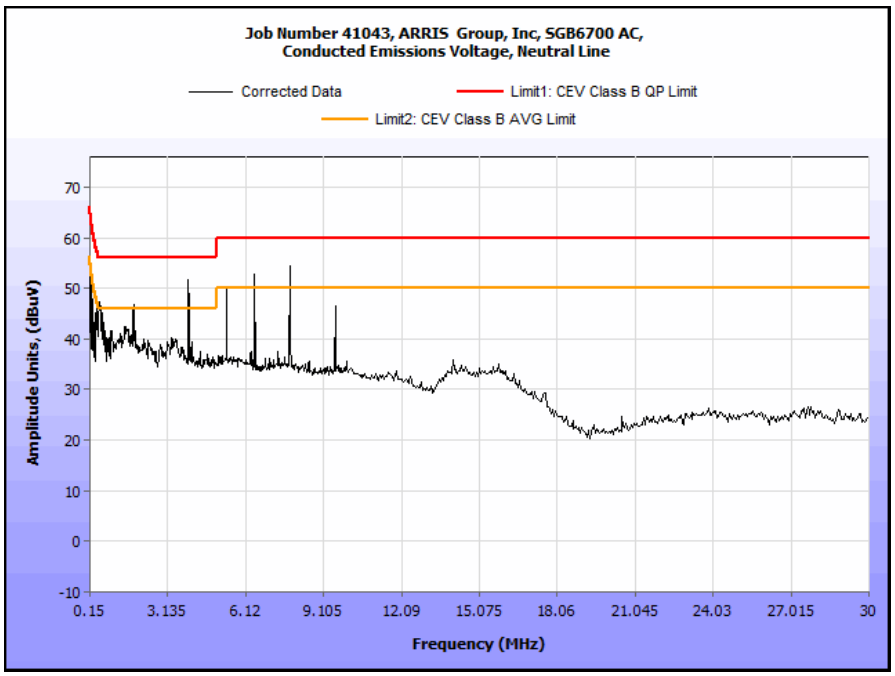
Table 14. Conducted Emissions, 15.207(a), Neutral Line, Test Results



Plot 7. Conducted Emissions, 15.207(a), Neutral Line, Low Channel



Plot 8. Conducted Emissions, 15.207(a), Neutral Line, Mid Channel



Plot 9. Conducted Emissions, 15.207(a), Neutral Line, High Channel

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.247(a)(2) 6 dB and 99% Bandwidth

Test Requirements: **§ 15.247(a)(2):** Operation under the provisions of this section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

For systems using digital modulation techniques, the EUT may operate in the 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz bands. The minimum 6dB bandwidth shall be at least 500 kHz.

Test Procedure: The transmitter was on and transmitting at the highest output power. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using a RBW approximately 1% of the total emission bandwidth, VBW > RBW. The 6 dB Bandwidth was measured and recorded. The measurements were performed on the low, mid and high channels.

Test Results The EUT was compliant with § 15.247 (a)(2).

The 6 dB and 99% Bandwidth was determined from the plots on the following pages.

Test Engineer(s): Surinder Singh

Test Date(s): 02/20/14

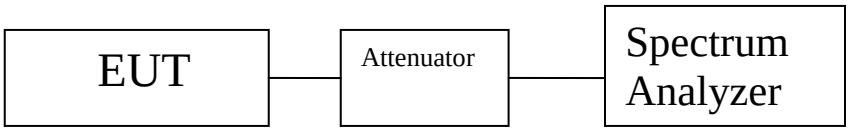


Figure 1. Block Diagram, Occupied Bandwidth Test Setup

6 dB Occupied Bandwidth Test Results

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5745	16.451
Mid	5785	16.389
High	5825	16.385

Table 15. 6 dB Occupied Bandwidth, Test Results, 802.11a 20 MHz, Ant. 0

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5745	16.096
Mid	5785	16.111
High	5825	16.388

Table 16. 6 dB Occupied Bandwidth, Test Results, 802.11a 20 MHz, Ant. 1

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5745	16.536
Mid	5785	16.330
High	5825	16.320

Table 17. 6 dB Occupied Bandwidth, Test Results, 802.11a 20 MHz, Ant. 2

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5745	17.560
Mid	5785	17.304
High	5825	17.305

Table 18. 6 dB Occupied Bandwidth, Test Results, 802.11ac 20 MHz, Ant. 0

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5745	17.535
Mid	5785	17.304
High	5825	17.571

Table 19. 6 dB Occupied Bandwidth, Test Results, 802.11ac 20 MHz, Ant. 1

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5745	17.618
Mid	5785	17.336
High	5825	17.571

Table 20. 6 dB Occupied Bandwidth, Test Results, 802.11ac 20 MHz, Ant. 2

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5745	17.627
Mid	5785	17.634
High	5825	16.470

Table 21. 6 dB Occupied Bandwidth, Test Results, 802.11n 20 MHz, Ant. 0

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5745	17.609
Mid	5785	17.602
High	5825	17.328

Table 22. 6 dB Occupied Bandwidth, Test Results, 802.11n 20 MHz, Ant. 1

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5745	17.599
Mid	5785	17.577
High	5825	17.328

Table 23. 6 dB Occupied Bandwidth, Test Results, 802.11n 20 MHz, Ant. 2

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5755	36.510
High	5795	36.401

Table 24. 6 dB Occupied Bandwidth, Test Results, 802.11a 40 MHz, Ant. 0

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5755	36.397
High	5795	36.384

Table 25. 6 dB Occupied Bandwidth, Test Results, 802.11a 40 MHz, Ant. 1

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5755	36.397
High	5795	36.401

Table 26. 6 dB Occupied Bandwidth, Test Results, 802.11a 40 MHz, Ant. 2

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5755	36.441
High	5795	36.043

Table 27. 6 dB Occupied Bandwidth, Test Results, 802.11ac 40 MHz, Ant. 0

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5755	36.398
High	5795	36.086

Table 28. 6 dB Occupied Bandwidth, Test Results, 802.11ac 40 MHz, Ant. 1

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5755	36.402
High	5795	35.945

Table 29. 6 dB Occupied Bandwidth, Test Results, 802.11ac 40 MHz, Ant. 2

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5755	36.372
High	5795	35.814

Table 30. 6 dB Occupied Bandwidth, Test Results, 802.11n 40 MHz, Ant. 0

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5755	36.351
High	5795	36.010

Table 31. 6 dB Occupied Bandwidth, Test Results, 802.11n 40 MHz, Ant. 1

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
Low	5755	36.156
High	5795	36.027

Table 32. 6 dB Occupied Bandwidth, Test Results, 802.11n 40 MHz, Ant. 2

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
161	5775	75.546

Table 33. 6 dB Occupied Bandwidth, Test Results, 802.11a 80 MHz, Ant. 0

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
161	5775	75.734

Table 34. 6 dB Occupied Bandwidth, Test Results, 802.11a 80 MHz, Ant. 1

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
161	5775	75.642

Table 35. 6 dB Occupied Bandwidth, Test Results, 802.11a 80 MHz, Ant. 2

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
161	5775	75.408

Table 36. 6 dB Occupied Bandwidth, Test Results, 802.11ac 80 MHz, Ant. 0

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
161	5775	75.435

Table 37. 6 dB Occupied Bandwidth, Test Results, 802.11ac 80 MHz, Ant. 1

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 6 dB Bandwidth (MHz)**
161	5775	75.338

Table 38. 6 dB Occupied Bandwidth, Test Results, 802.11ac 80 MHz, Ant. 2

99% Occupied Bandwidth Test Results

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5745	16.6868
Mid	5785	16.7553
High	5825	16.7434

Table 39. 99% Occupied Bandwidth, Test Results, 802.11a 20 MHz, Ant. 0

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5745	16.7918
Mid	5785	16.7071
High	5825	16.6664

Table 40. 99% Occupied Bandwidth, Test Results, 802.11a 20 MHz, Ant. 1

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5745	16.7849
Mid	5785	16.8174
High	5825	16.9430

Table 41. 99% Occupied Bandwidth, Test Results, 802.11a 20 MHz, Ant. 2

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5745	17.9499
Mid	5785	17.9598
High	5825	18.0298

Table 42. 99% Occupied Bandwidth, Test Results, 802.11ac 20 MHz, Ant. 0

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5745	17.9860
Mid	5785	17.9415
High	5825	18.0011

Table 43. 99% Occupied Bandwidth, Test Results, 802.11ac 20 MHz, Ant. 1

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5745	17.9097
Mid	5785	17.8698
High	5825	17.9755

Table 44. 99% Occupied Bandwidth, Test Results, 802.11ac 20 MHz, Ant. 2

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5745	17.9980
Mid	5785	18.0538
High	5825	18.1637

Table 45. 99% Occupied Bandwidth, Test Results, 802.11n 20 MHz, Ant. 0

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5745	17.9001
Mid	5785	17.9390
High	5825	17.8263

Table 46. 99% Occupied Bandwidth, Test Results, 802.11n 20 MHz, Ant. 1

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5745	18.0283
Mid	5785	17.8396
High	5825	18.0648

Table 47. 99% Occupied Bandwidth, Test Results, 802.11n 20 MHz, Ant. 2

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5755	37.1290
High	5795	37.0825

Table 48. 99% Occupied Bandwidth, Test Results, 802.11a 40 MHz, Ant. 0

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5755	37.0385
High	5795	36.9450

Table 49. 99% Occupied Bandwidth, Test Results, 802.11a 40 MHz, Ant. 1

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5755	37.0138
High	5795	36.9173

Table 50. 99% Occupied Bandwidth, Test Results, 802.11a 40 MHz, Ant. 2

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5755	37.0250
High	5795	36.7960

Table 51. 99% Occupied Bandwidth, Test Results, 802.11ac 40 MHz, Ant. 0

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5755	36.9025
High	5795	36.8015

Table 52. 99% Occupied Bandwidth, Test Results, 802.11ac 40 MHz, Ant. 1

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5755	36.8584
High	5795	36.7455

Table 53. 99% Occupied Bandwidth, Test Results, 802.11ac 40 MHz, Ant. 2

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5755	36.9330
High	5795	36.9855

Table 54. 99% Occupied Bandwidth, Test Results, 802.11n 40 MHz, Ant. 0

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5755	39.9996
High	5795	36.8997

Table 55. 99% Occupied Bandwidth, Test Results, 802.11n 40 MHz, Ant. 1

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5755	36.6381
High	5795	37.0318

Table 56. 99% Occupied Bandwidth, Test Results, 802.11n 40 MHz, Ant. 2

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
161	5775	76.0649

Table 57. 99% Occupied Bandwidth, Test Results, 802.11a 80 MHz, Ant. 0

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
161	5775	75.9799

Table 58. 99% Occupied Bandwidth, Test Results, 802.11a 80 MHz, Ant. 1

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
161	5775	75..3674

Table 59. 99% Occupied Bandwidth, Test Results, 802.11a 80 MHz, Ant. 2

Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
161	5775	76.1624

Table 60. 99% Occupied Bandwidth, Test Results, 802.11ac 80 MHz, Ant. 0

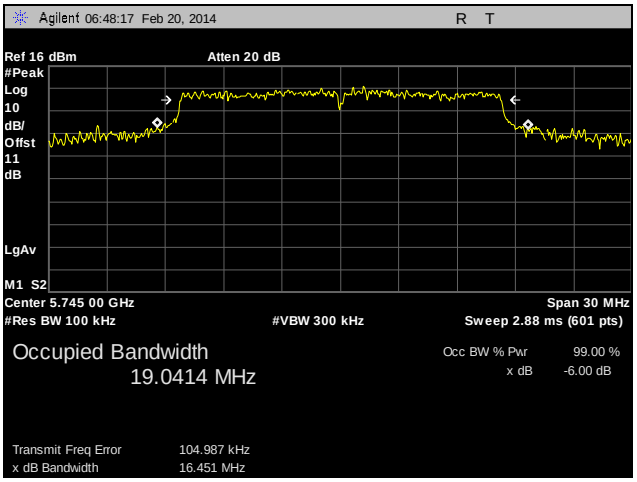
Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
161	5775	76.3665

Table 61. 99% Occupied Bandwidth, Test Results, 802.11ac 80 MHz, Ant. 1

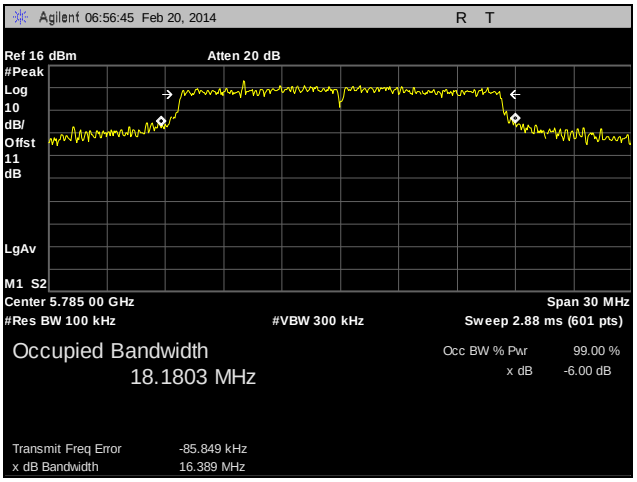
Occupied Bandwidth		
Carrier Channel	**Frequency (MHz)**	**Measured 99% Bandwidth (MHz)**
161	5775	76.3559

Table 62. 99% Occupied Bandwidth, Test Results, 802.11ac 80 MHz, Ant. 2

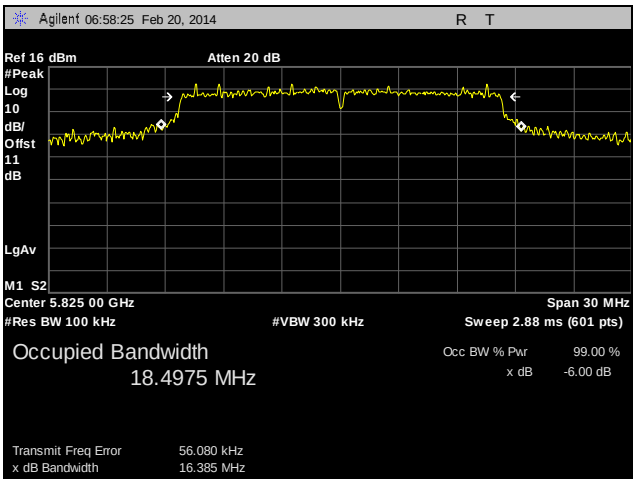
6 dB Occupied Bandwidth Test Results, 802.11a 20 MHz



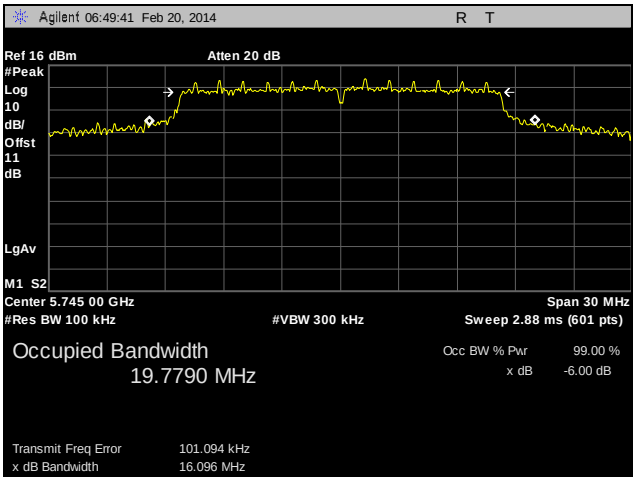
Plot 10. 6 dB Occupied Bandwidth, Low Channel, 802.11a 20 MHz, Ant. 0



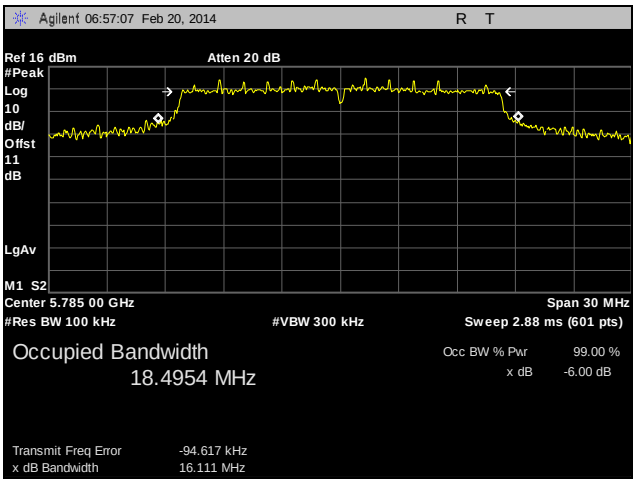
Plot 11. 6 dB Occupied Bandwidth, Mid Channel, 802.11a 20 MHz, Ant. 0



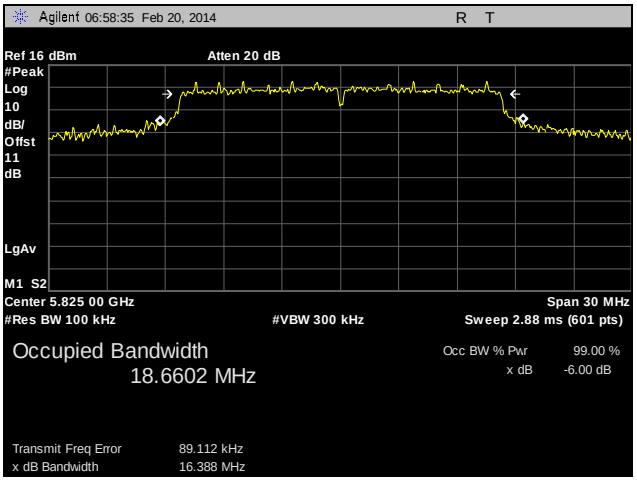
Plot 12. 6 dB Occupied Bandwidth, High Channel, 802.11a 20 MHz, Ant. 0



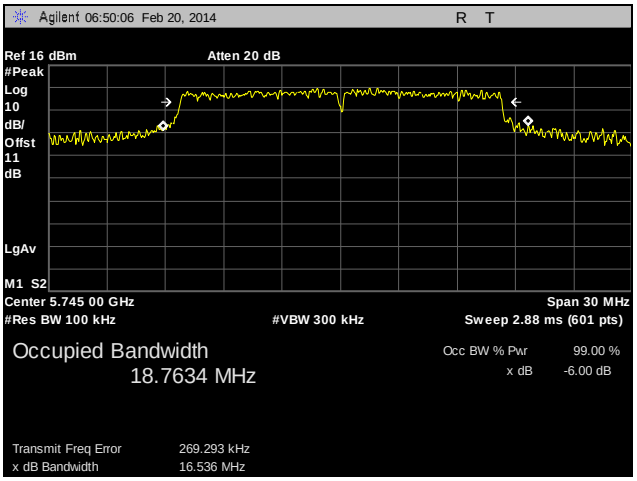
Plot 13. 6 dB Occupied Bandwidth, Low Channel, 802.11a 20 MHz, Ant. 1



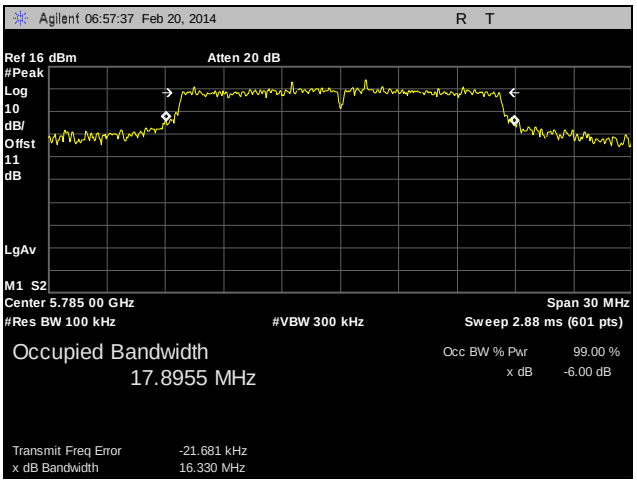
Plot 14. 6 dB Occupied Bandwidth, Mid Channel, 802.11a 20 MHz, Ant. 1



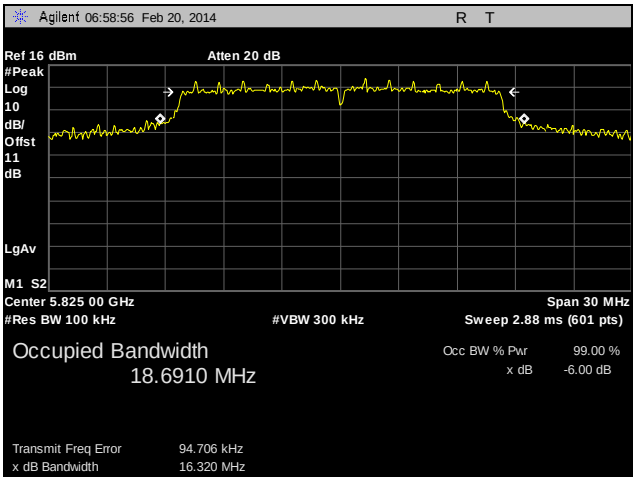
Plot 15. 6 dB Occupied Bandwidth, High Channel, 802.11a 20 MHz, Ant. 1



Plot 16. 6 dB Occupied Bandwidth, Low Channel, 802.11a 20 MHz, Ant. 2

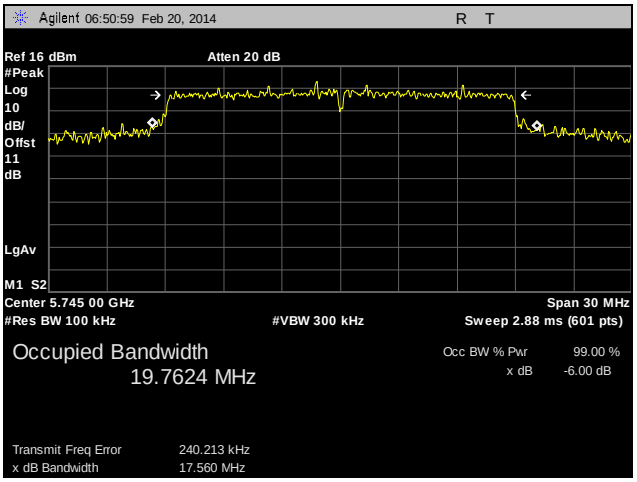


Plot 17. 6 dB Occupied Bandwidth, Mid Channel, 802.11a 20 MHz, Ant. 2

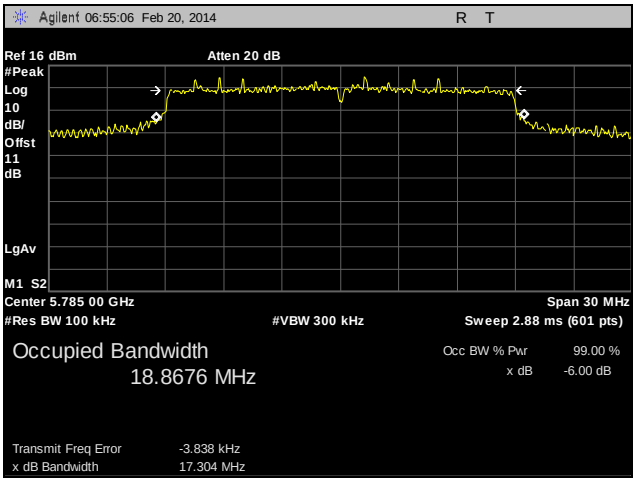


Plot 18. 6 dB Occupied Bandwidth, High Channel, 802.11a 20 MHz, Ant. 2

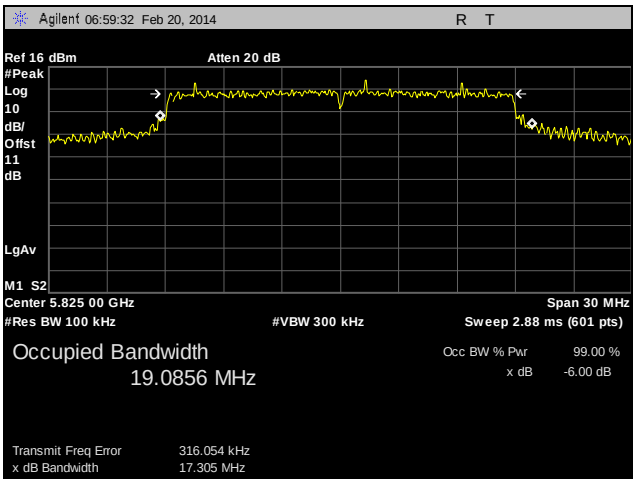
6 dB Occupied Bandwidth Test Results, 802.11ac 20 MHz



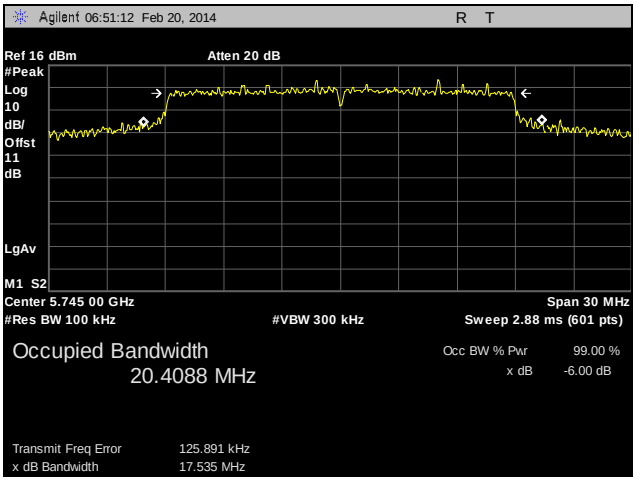
Plot 19. 6 dB Occupied Bandwidth, Low Channel, 802.11ac 20 MHz, Ant. 0



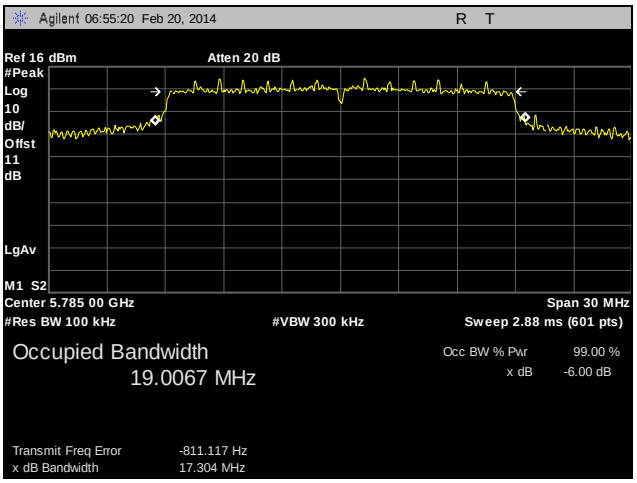
Plot 20. 6 dB Occupied Bandwidth, Mid Channel, 802.11ac 20 MHz, Ant. 0



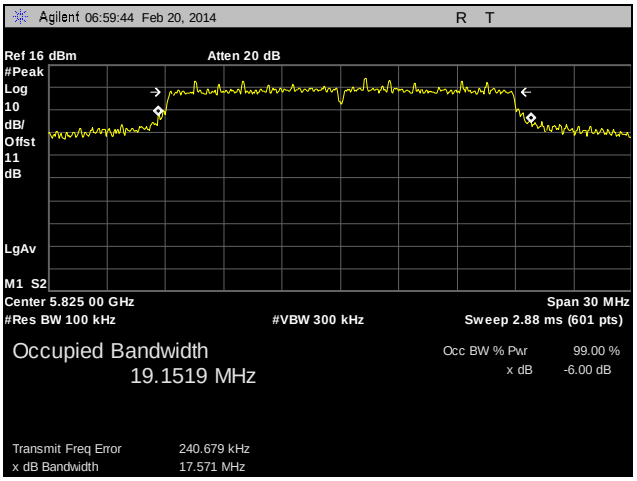
Plot 21. 6 dB Occupied Bandwidth, High Channel, 802.11ac 20 MHz, Ant. 0



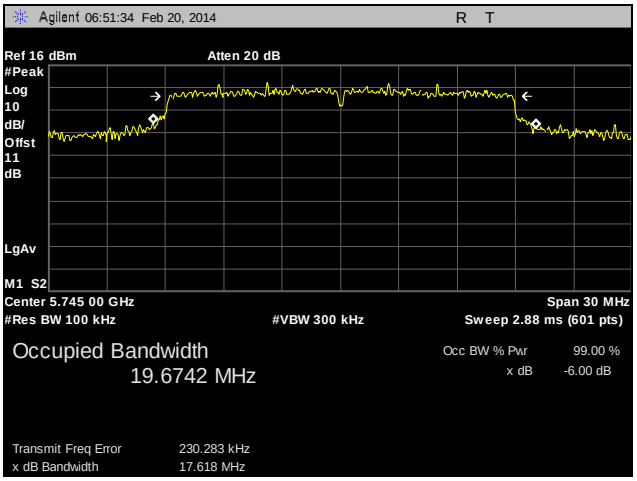
Plot 22. 6 dB Occupied Bandwidth, Low Channel, 802.11ac 20 MHz, Ant. 1



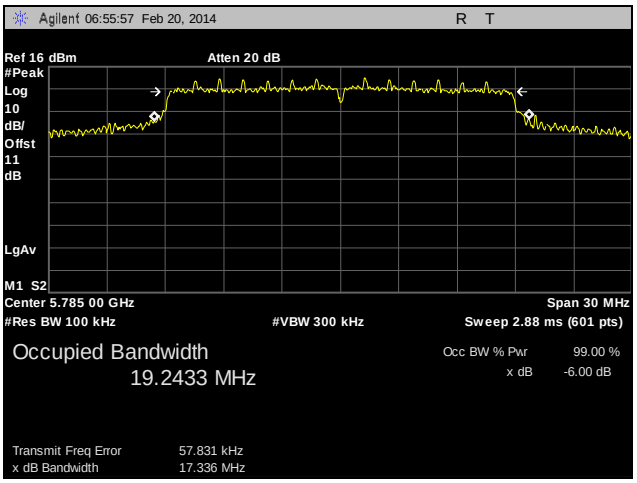
Plot 23. 6 dB Occupied Bandwidth, Mid Channel, 802.11ac 20 MHz, Ant. 1



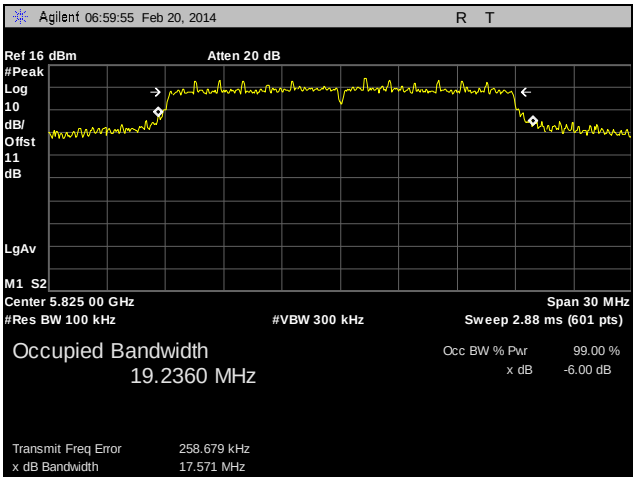
Plot 24. 6 dB Occupied Bandwidth, High Channel, 802.11ac MHz, Ant. 1



Plot 25. 6 dB Occupied Bandwidth, Low Channel, 802.11ac 20 MHz, Ant. 2

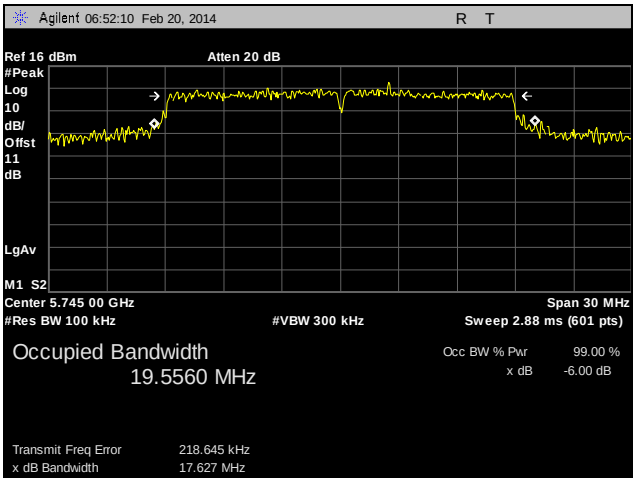


Plot 26. 6 dB Occupied Bandwidth, Mid Channel, 802.11ac 20 MHz, Ant. 2

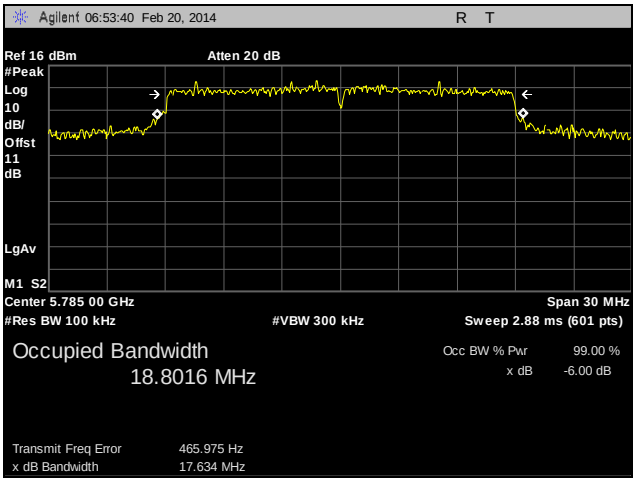


Plot 27. 6 dB Occupied Bandwidth, High Channel, 802.11ac 20 MHz, Ant. 2

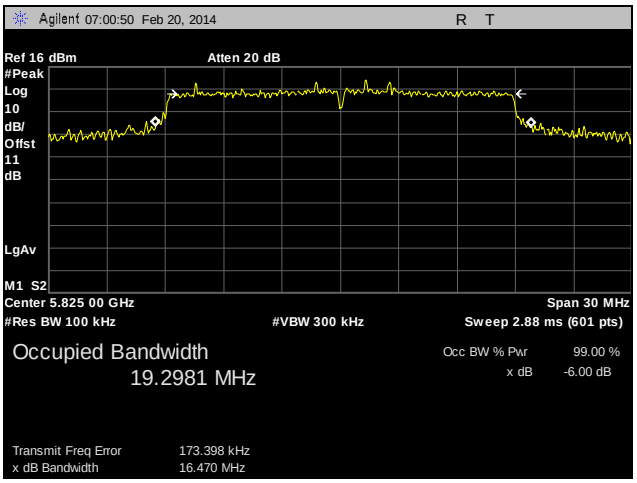
6 dB Occupied Bandwidth Test Results, 802.11n 20 MHz



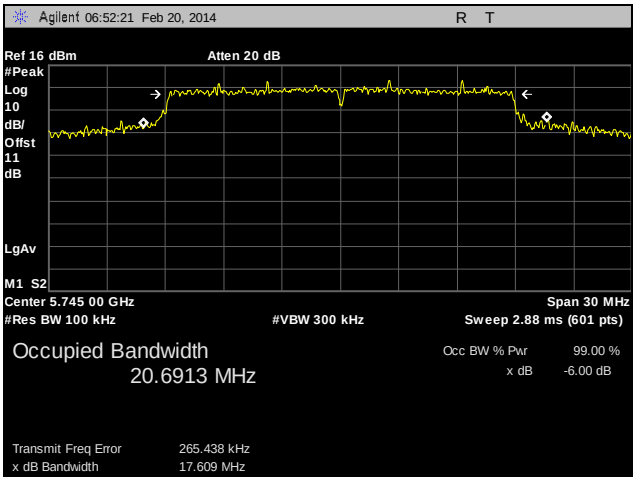
Plot 28. 6 dB Occupied Bandwidth, Low Channel, 802.11n 20 MHz, Ant. 0



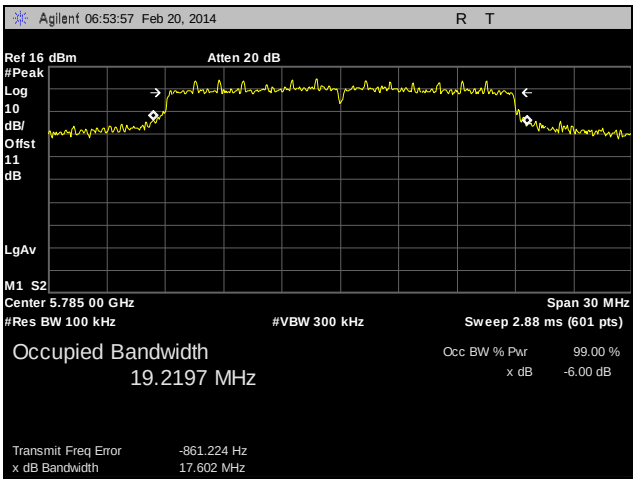
Plot 29. 6 dB Occupied Bandwidth, Mid Channel, 802.11n 20 MHz, Ant. 0



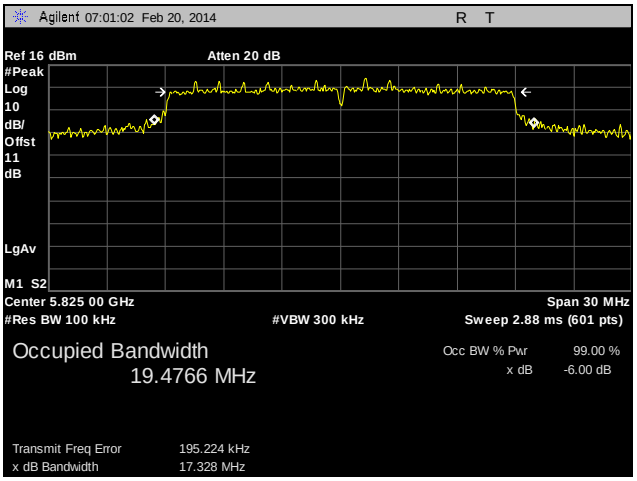
Plot 30. 6 dB Occupied Bandwidth, High Channel, 802.11n 20 MHz, Ant. 0



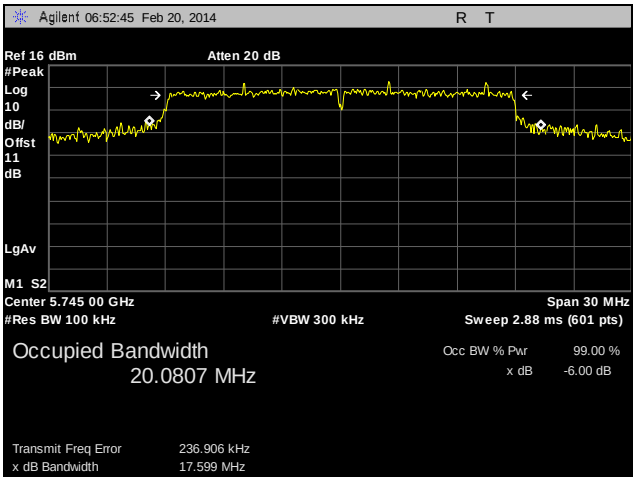
Plot 31. 6 dB Occupied Bandwidth, Low Channel, 802.11n 20 MHz, Ant. 1



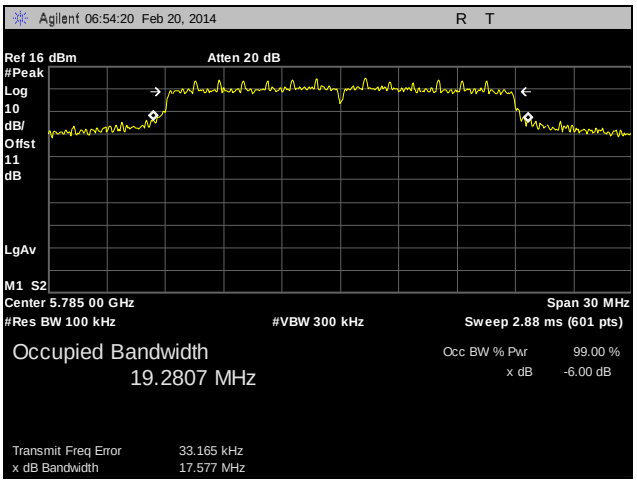
Plot 32. 6 dB Occupied Bandwidth, Mid Channel, 802.11n 20 MHz, Ant. 1



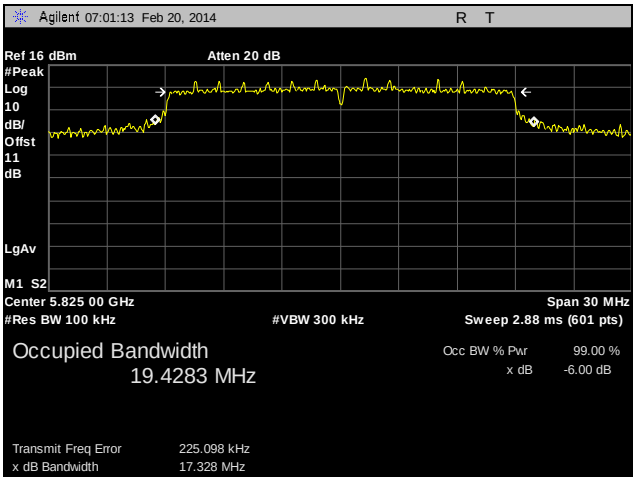
Plot 33. 6 dB Occupied Bandwidth, High Channel, 802.11n 20 MHz, Ant. 1



Plot 34. 6 dB Occupied Bandwidth, Low Channel, 802.11n 20 MHz, Ant. 2

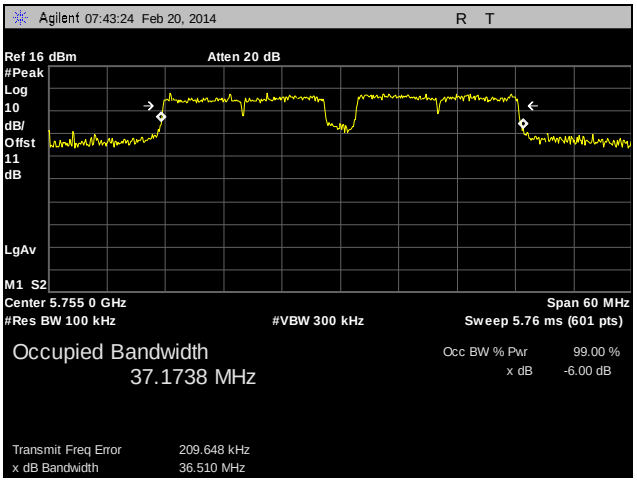


Plot 35. 6 dB Occupied Bandwidth, Mid Channel, 802.11n 20 MHz, Ant. 2

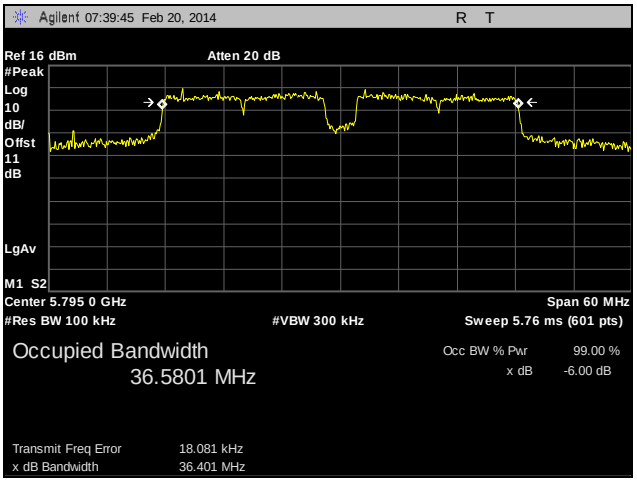


Plot 36. 6 dB Occupied Bandwidth, High Channel, 802.11n 20 MHz, Ant. 2

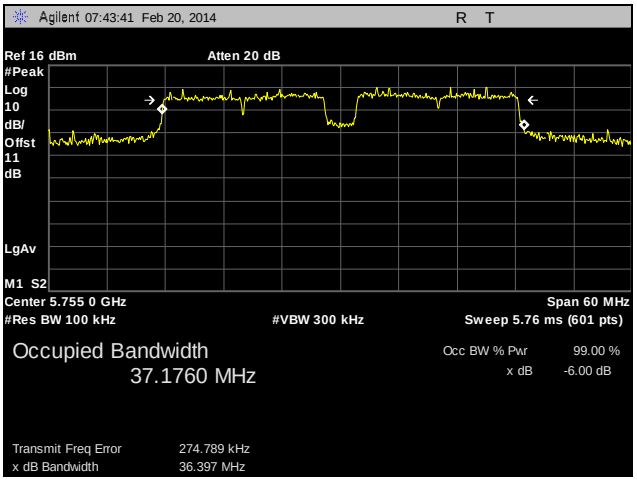
6 dB Occupied Bandwidth Test Results, 802.11a 40 MHz



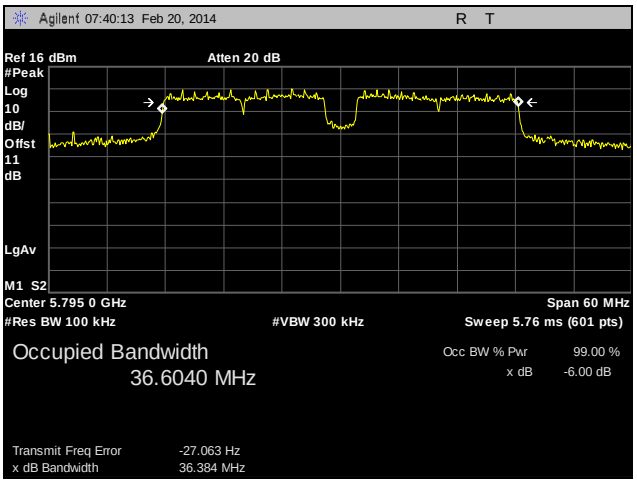
Plot 37. 6 dB Occupied Bandwidth, Low Channel, 802.11a 40 MHz, Ant. 0



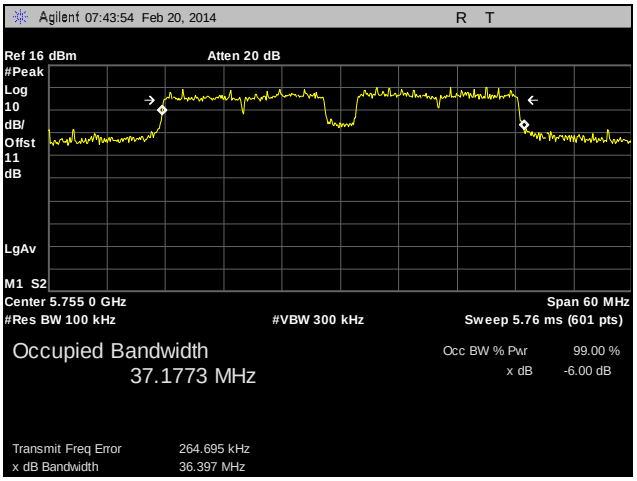
Plot 38. 6 dB Occupied Bandwidth, High Channel, 802.11a 40 MHz, Ant. 0



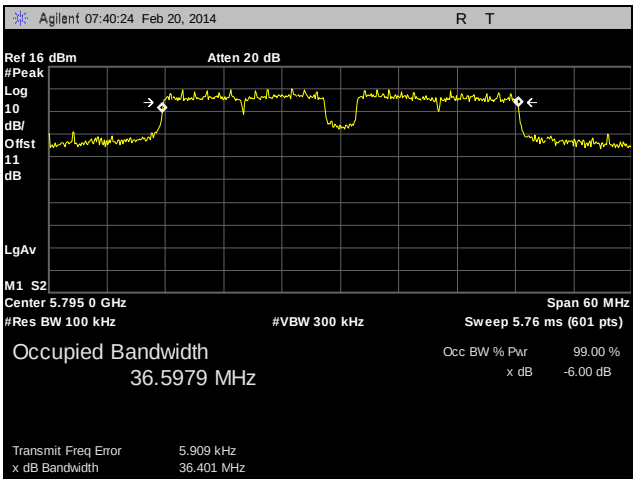
Plot 39. 6 dB Occupied Bandwidth, Low Channel, 802.11a 40 MHz, Ant. 1



Plot 40. 6 dB Occupied Bandwidth, High Channel, 802.11a 40 MHz, Ant. 1

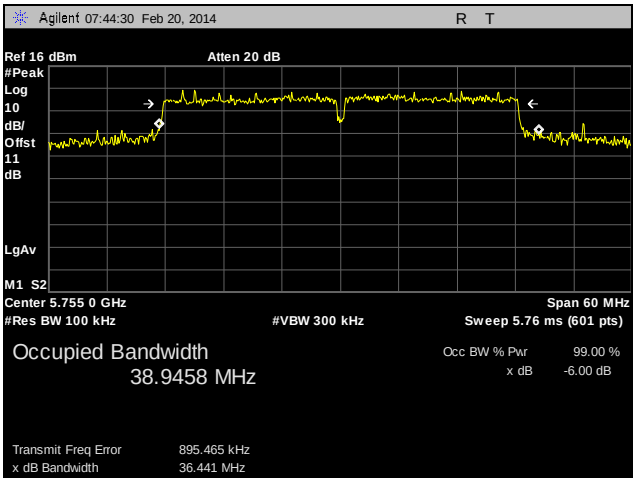


Plot 41. 6 dB Occupied Bandwidth, Low Channel, 802.11a 40 MHz, Ant. 2

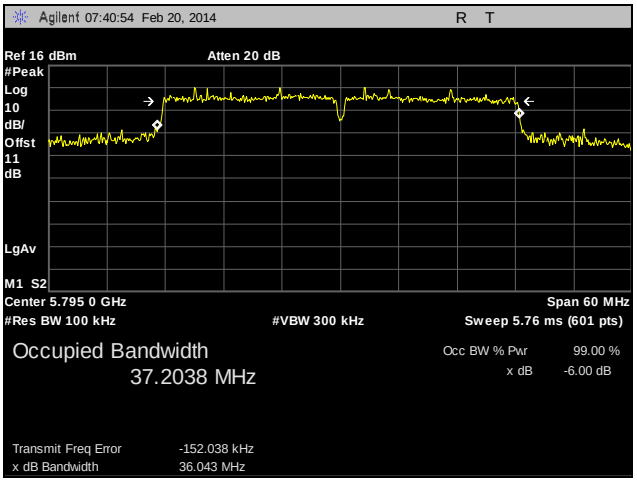


Plot 42. 6 dB Occupied Bandwidth, High Channel, 802.11a 40 MHz, Ant. 2

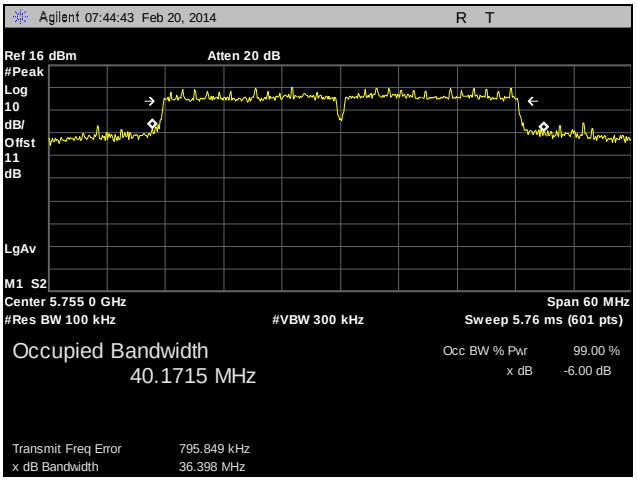
6 dB Occupied Bandwidth Test Results, 802.11ac 40 MHz



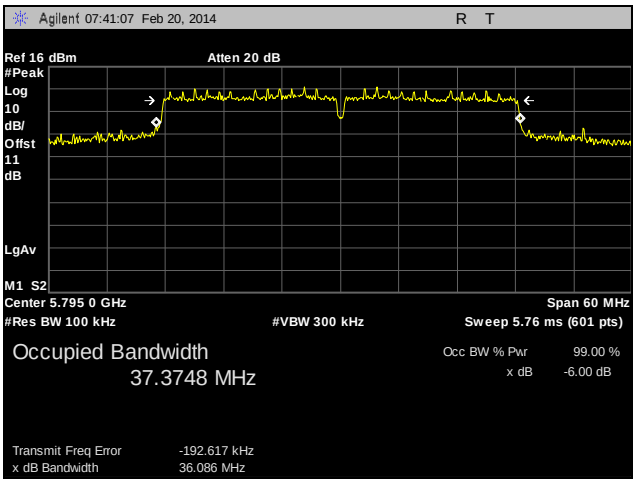
Plot 43. 6 dB Occupied Bandwidth, Low Channel, 802.11ac 40 MHz, Ant. 0



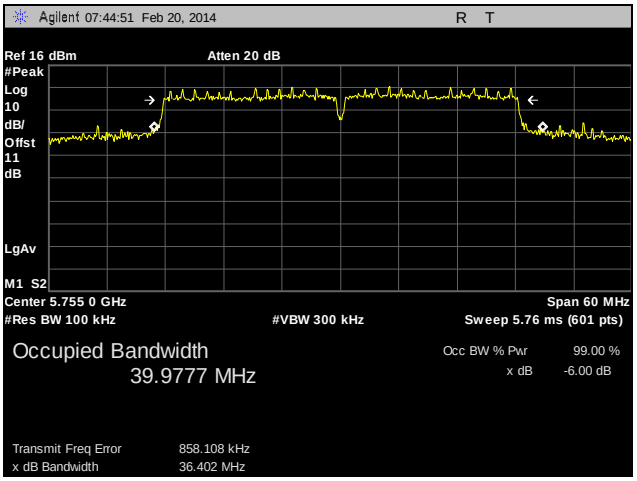
Plot 44. 6 dB Occupied Bandwidth, High Channel, 802.11ac 40 MHz, Ant. 0



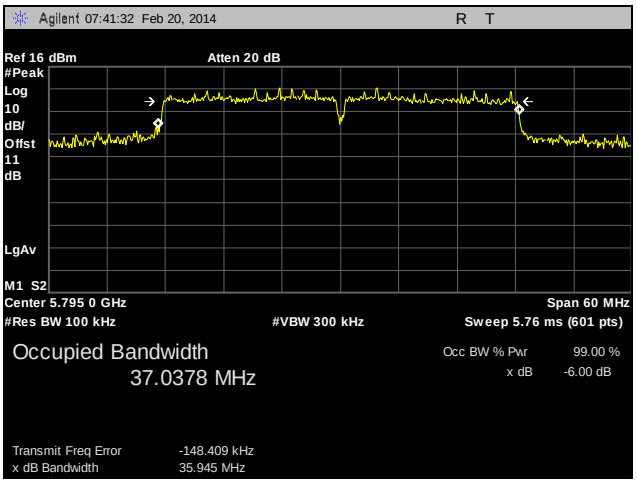
Plot 45. 6 dB Occupied Bandwidth, Low Channel, 802.11ac 40 MHz, Ant. 1



Plot 46. 6 dB Occupied Bandwidth, High Channel, 802.11ac 40 MHz, Ant. 1

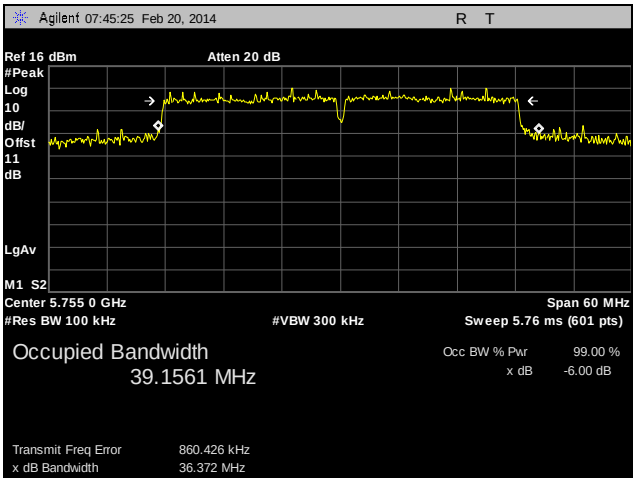


Plot 47. 6 dB Occupied Bandwidth, Low Channel, 802.11ac 40 MHz, Ant. 2

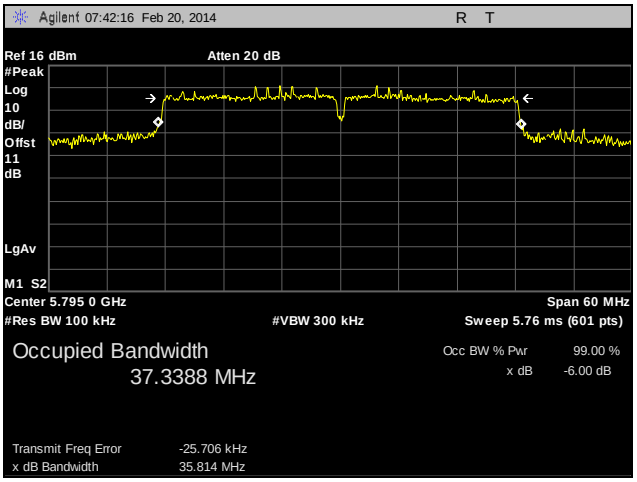


Plot 48. 6 dB Occupied Bandwidth, High Channel, 802.11ac 40 MHz, Ant. 2

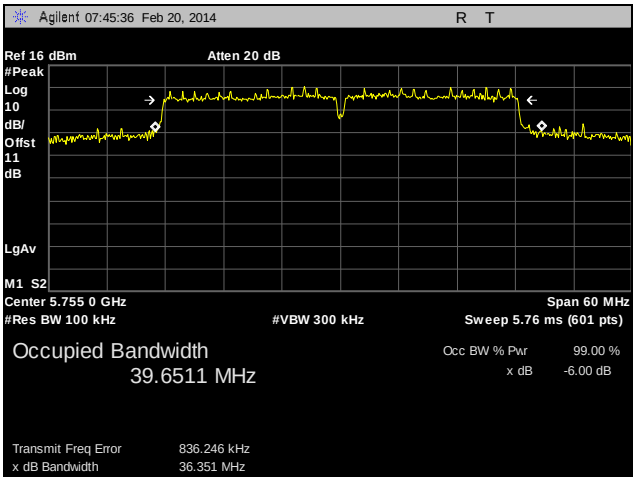
6 dB Occupied Bandwidth Test Results, 802.11n 40 MHz



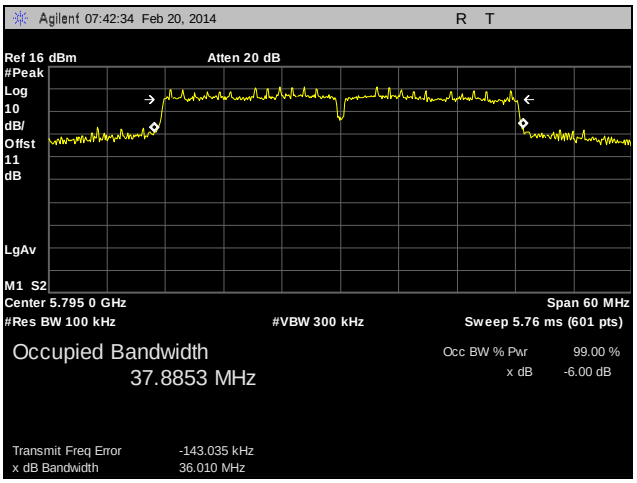
Plot 49. 6 dB Occupied Bandwidth, Low Channel, 802.11n 40 MHz, Ant. 0



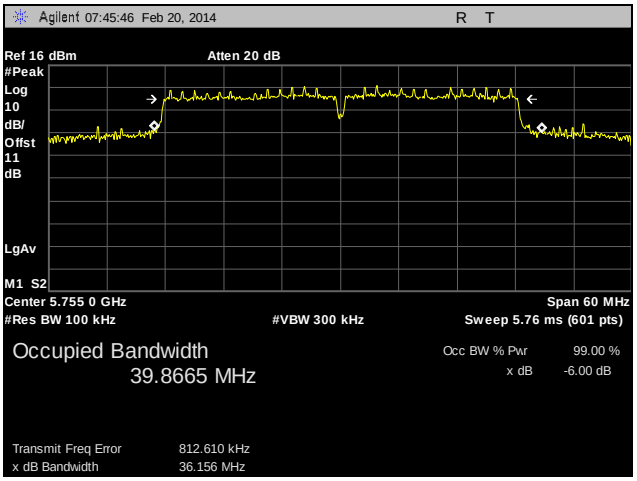
Plot 50. 6 dB Occupied Bandwidth, High Channel, 802.11n 40 MHz, Ant. 0



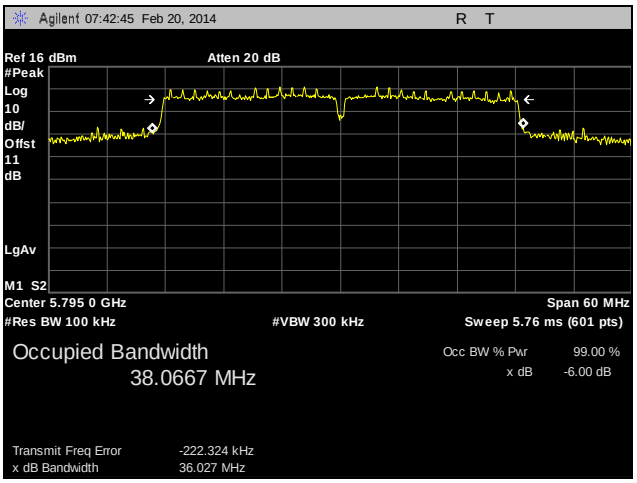
Plot 51. 6 dB Occupied Bandwidth, Low Channel, 802.11n 40 MHz, Ant. 1



Plot 52. 6 dB Occupied Bandwidth, High Channel, 802.11n 40 MHz, Ant. 1

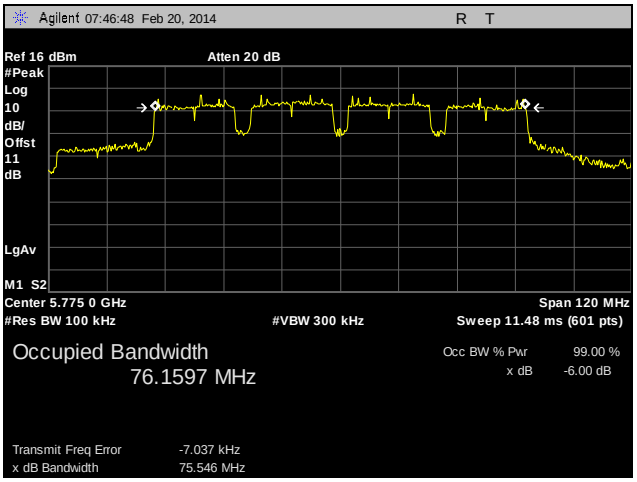


Plot 53. 6 dB Occupied Bandwidth, Low Channel, 802.11n 40 MHz, Ant. 2

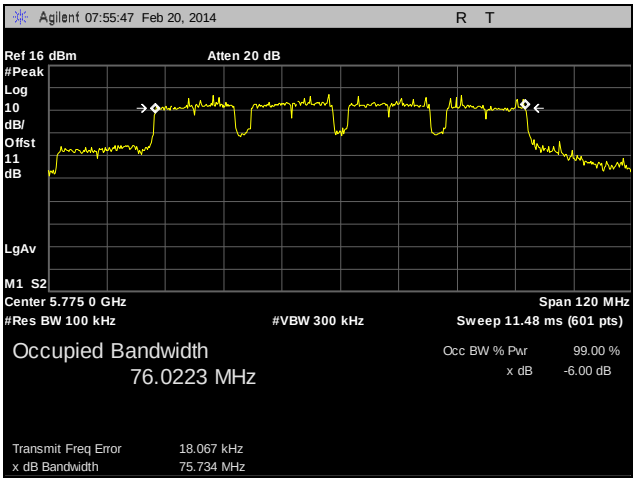


Plot 54. 6 dB Occupied Bandwidth, High Channel, 802.11n 40 MHz, Ant. 2

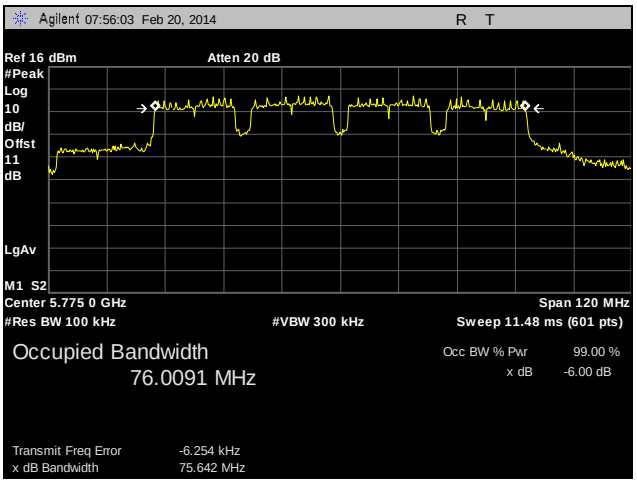
6 dB Occupied Bandwidth Test Results, 802.11a 80 MHz



Plot 55. 6 dB Occupied Bandwidth, 802.11a 80 MHz, Ant. 0

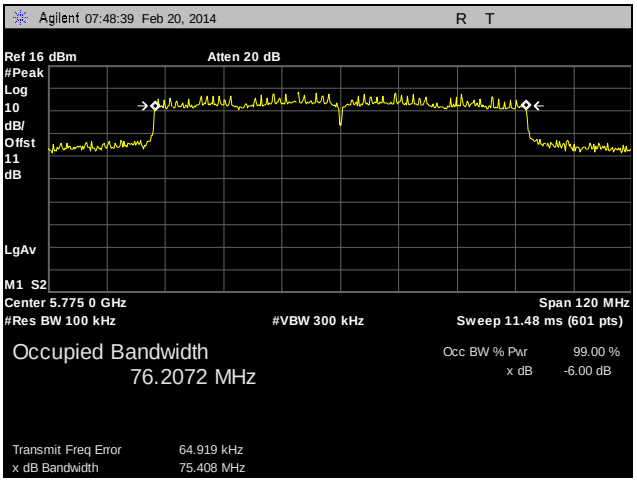


Plot 56. 6 dB Occupied Bandwidth, 802.11a 80 MHz, Ant. 1

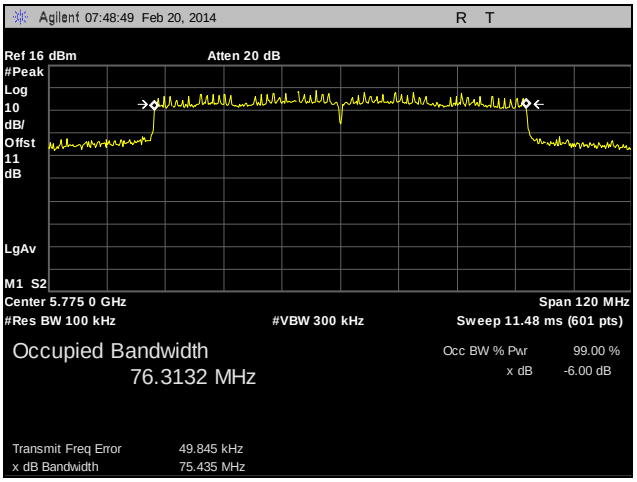


Plot 57. 6 dB Occupied Bandwidth, 802.11a 80 MHz, Ant. 2

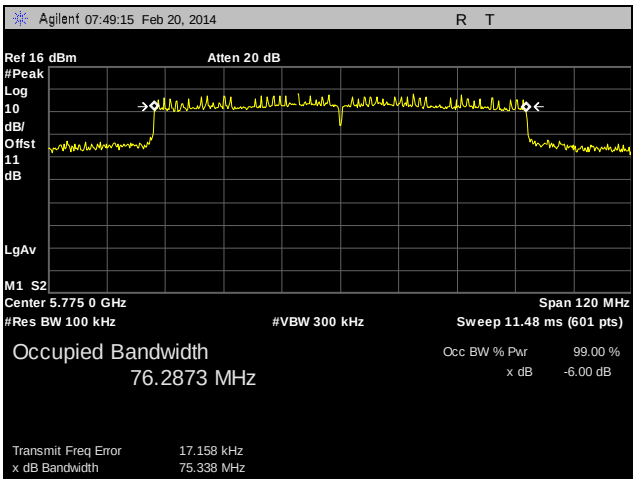
6 dB Occupied Bandwidth Test Results, 802.11ac 80 MHz



Plot 58. 6 dB Occupied Bandwidth, 802.11ac 80 MHz, Ant. 0

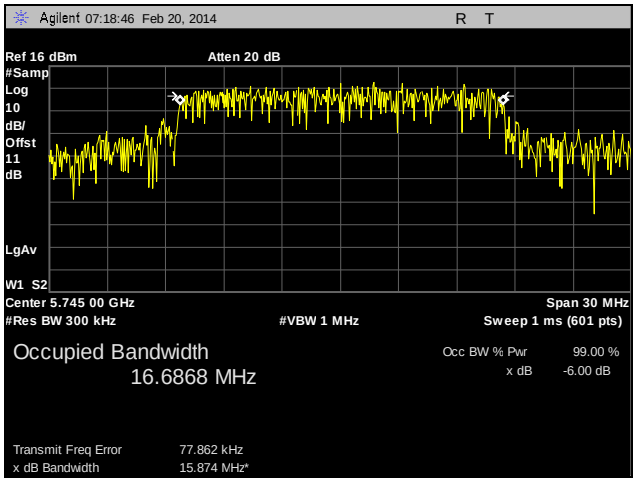


Plot 59. 6 dB Occupied Bandwidth, 802.11ac 80 MHz, Ant. 1

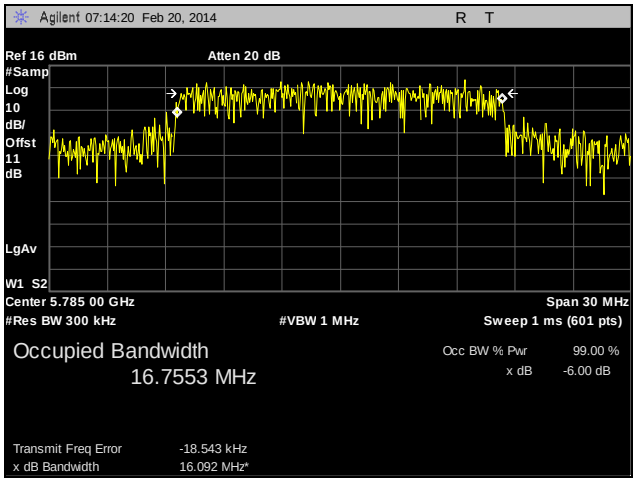


Plot 60. 6 dB Occupied Bandwidth, 802.11ac 80 MHz, Ant. 2

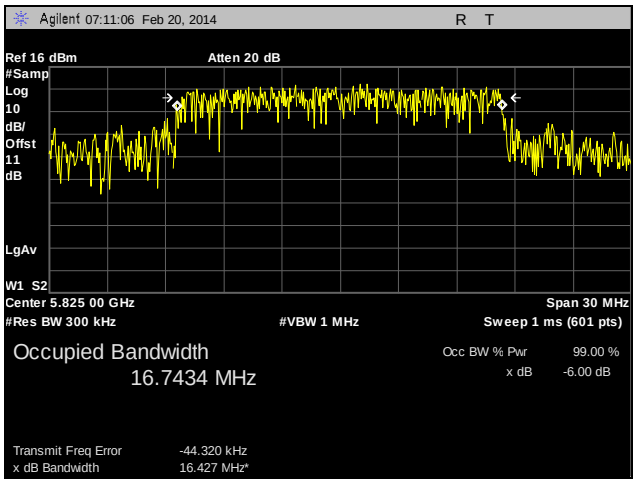
99% Occupied Bandwidth Test Results, 802.11a 20 MHz



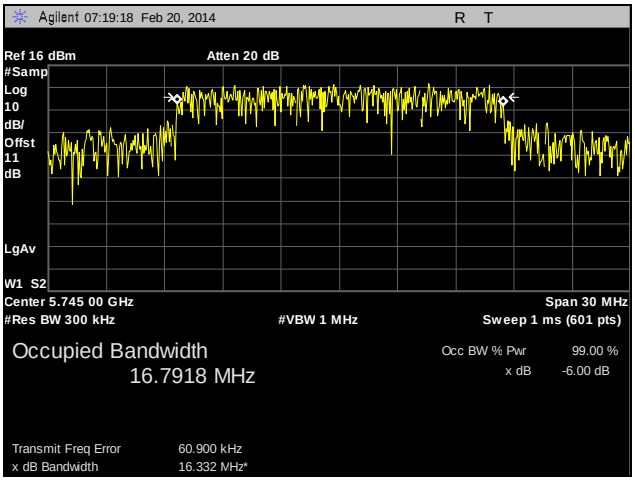
Plot 61. 99% Occupied Bandwidth, Low Channel, 802.11a 20 MHz, Ant. 0



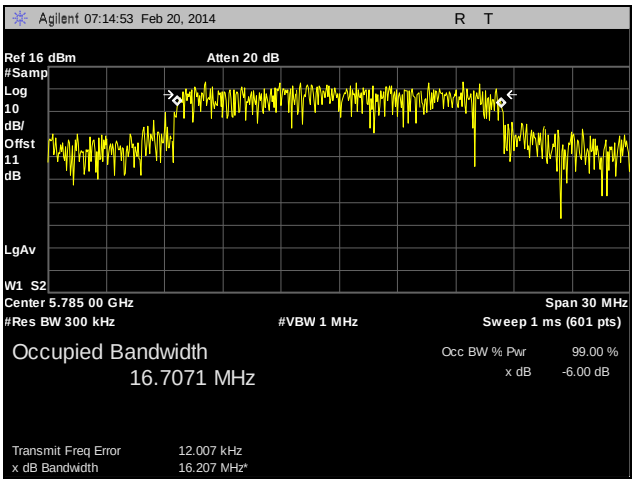
Plot 62. 99% Occupied Bandwidth, Mid Channel, 802.11a 20 MHz, Ant. 0



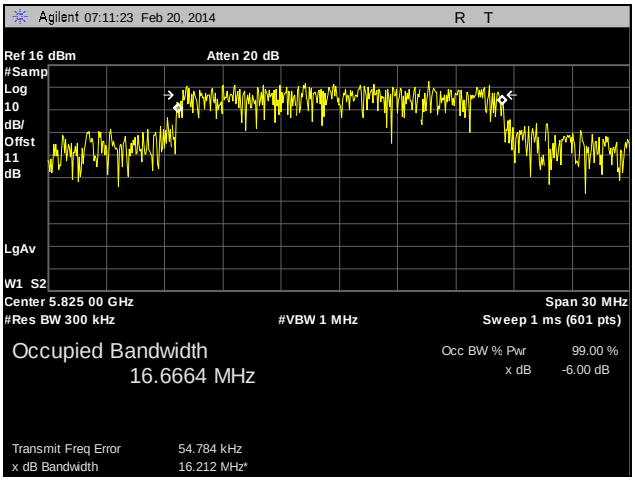
Plot 63. 99% Occupied Bandwidth, High Channel, 802.11a 20 MHz, Ant. 0



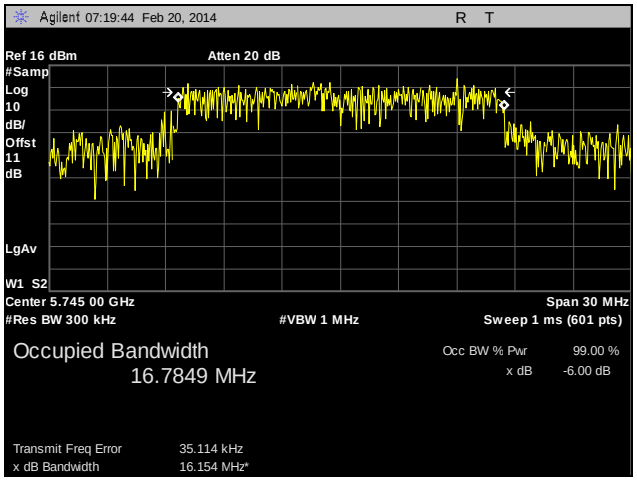
Plot 64. 99% Occupied Bandwidth, Low Channel, 802.11a 20 MHz, Ant. 1



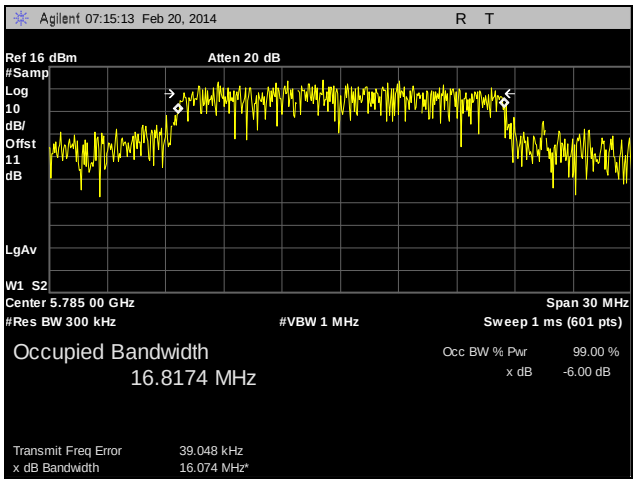
Plot 65. 99% Occupied Bandwidth, Mid Channel, 802.11a 20 MHz, Ant. 1



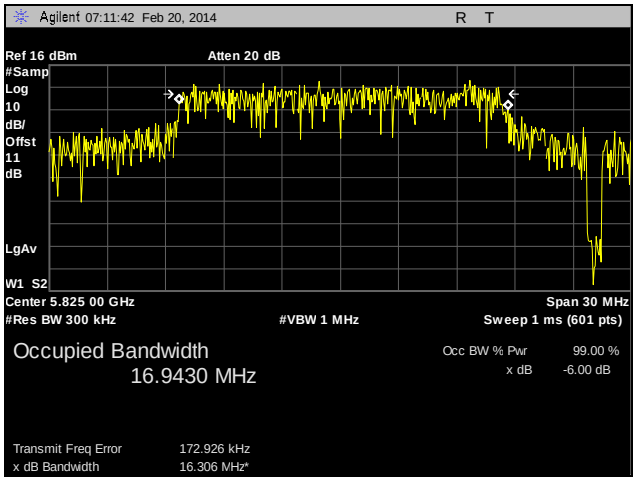
Plot 66. 99% Occupied Bandwidth, High Channel, 802.11a 20 MHz, Ant. 1



Plot 67. 99% Occupied Bandwidth, Low Channel, 802.11a 20 MHz, Ant. 2

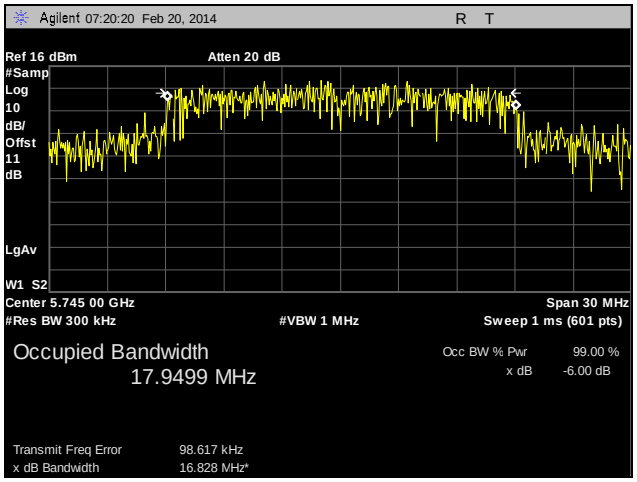


Plot 68. 99% Occupied Bandwidth, Mid Channel, 802.11a 20 MHz, Ant. 2

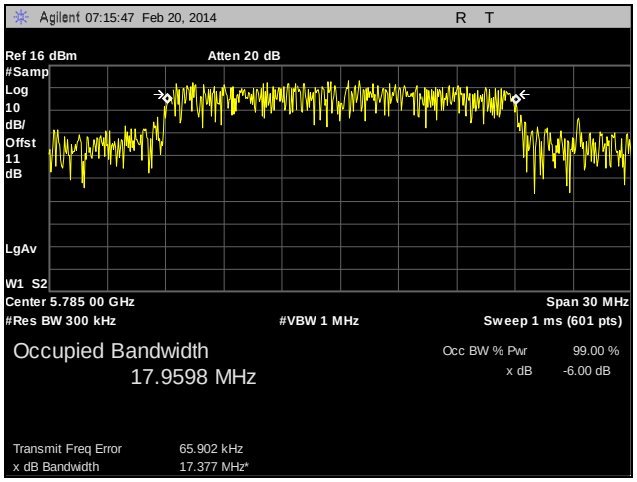


Plot 69. 99% Occupied Bandwidth, High Channel, 802.11a 20 MHz, Ant. 2

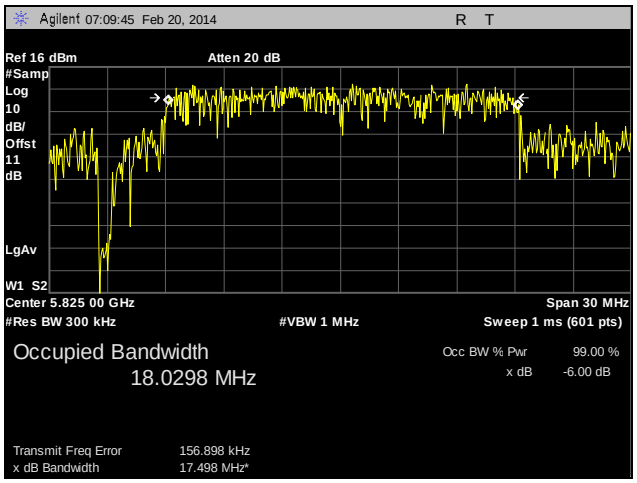
99% Occupied Bandwidth Test Results, 802.11ac 20 MHz



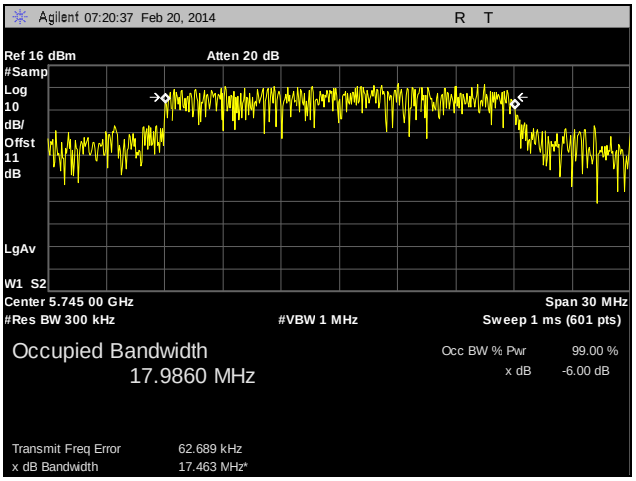
Plot 70. 99% Occupied Bandwidth, Low Channel, 802.11ac 20 MHz, Ant. 0



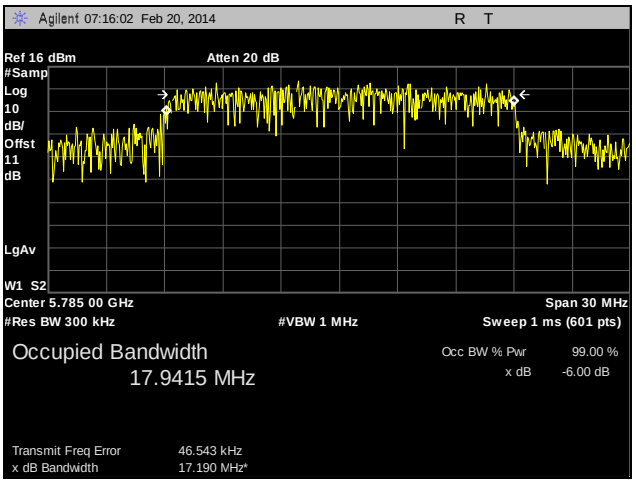
Plot 71. 99% Occupied Bandwidth, Mid Channel, 802.11ac 20 MHz, Ant. 0



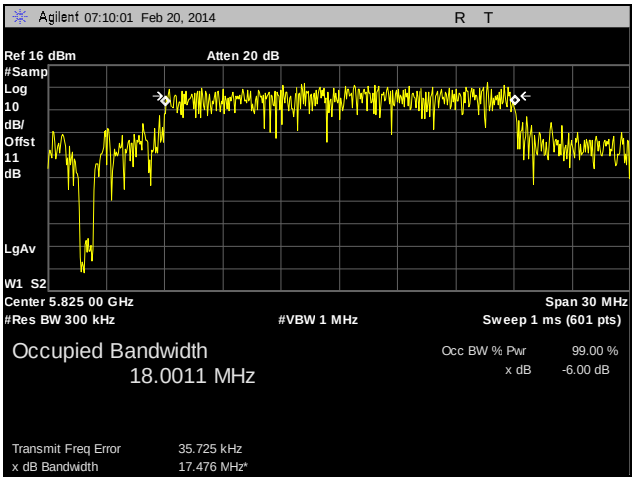
Plot 72. 99% Occupied Bandwidth, High Channel, 802.11ac 20 MHz, Ant. 0



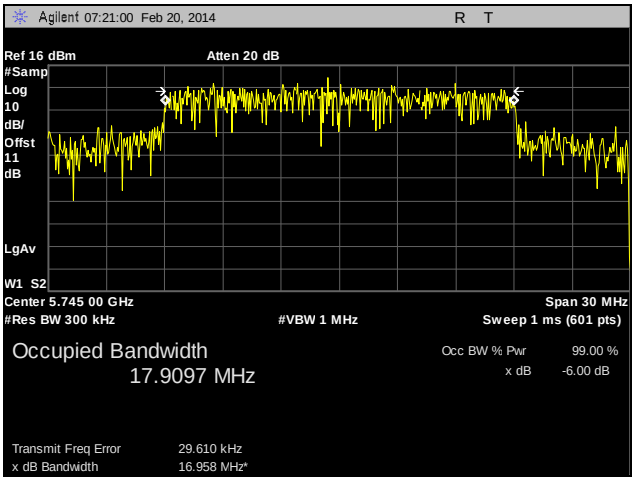
Plot 73. 99% Occupied Bandwidth, Low Channel, 802.11ac 20 MHz, Ant. 1



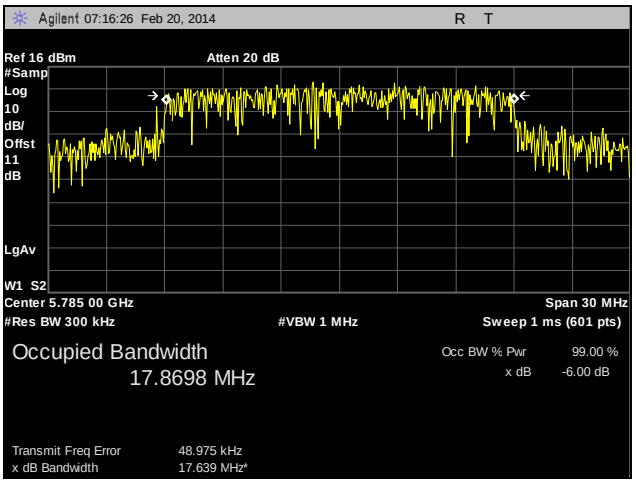
Plot 74. 99% Occupied Bandwidth, Mid Channel, 802.11ac 20 MHz, Ant. 1



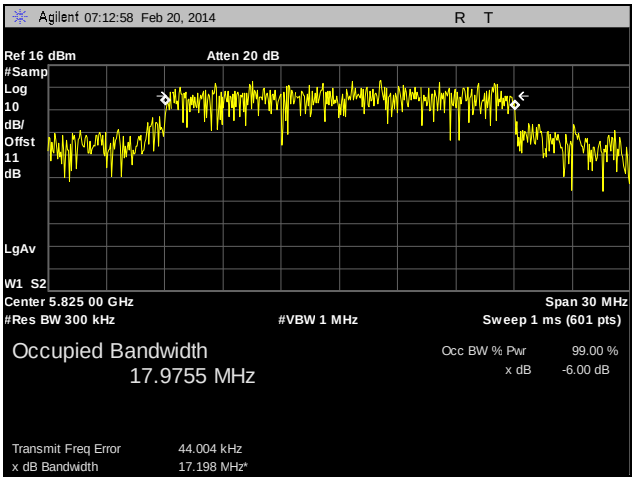
Plot 75. 99% Occupied Bandwidth, High Channel, 802.11ac 20 MHz, Ant. 1



Plot 76. 99% Occupied Bandwidth, Low Channel, 802.11ac 20 MHz, Ant. 2

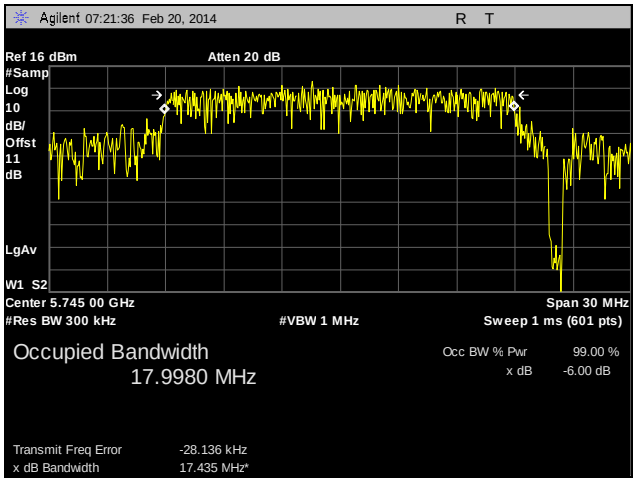


Plot 77. 99% Occupied Bandwidth, Mid Channel, 802.11ac 20 MHz, Ant. 2

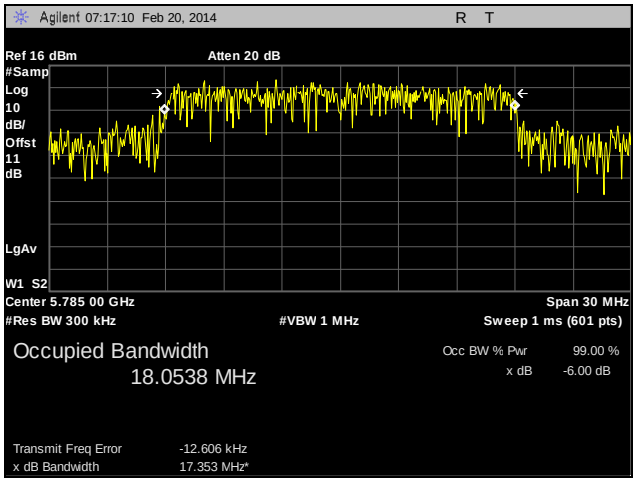


Plot 78. 99% Occupied Bandwidth, High Channel, 802.11ac 20 MHz, Ant. 2

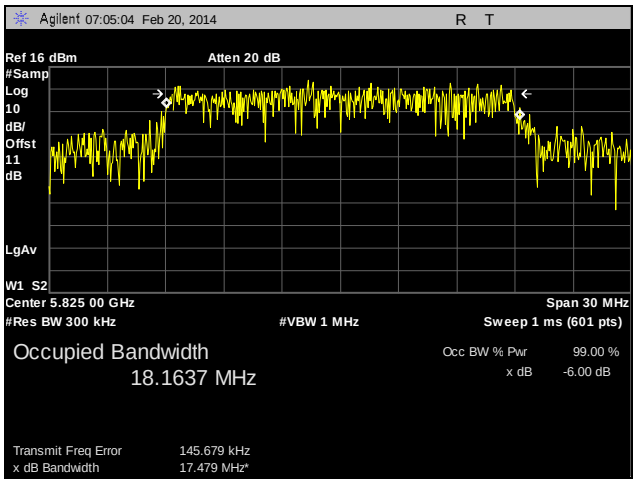
99% Occupied Bandwidth Test Results, 802.11n 20 MHz



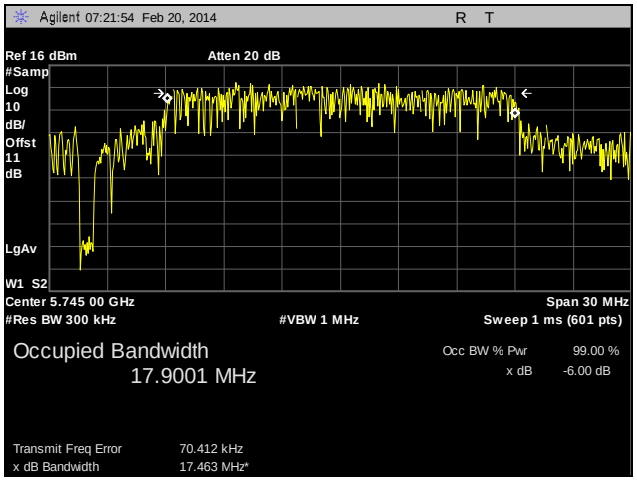
Plot 79. 99% Occupied Bandwidth, Low Channel, 802.11n 20 MHz, Ant. 0



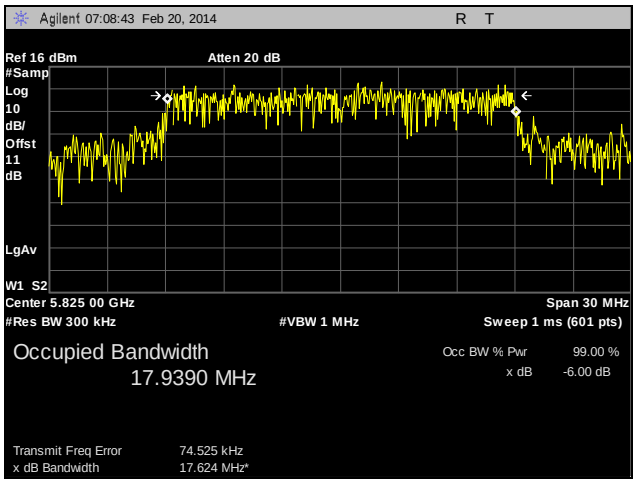
Plot 80. 99% Occupied Bandwidth, Mid Channel, 802.11n 20 MHz, Ant. 0



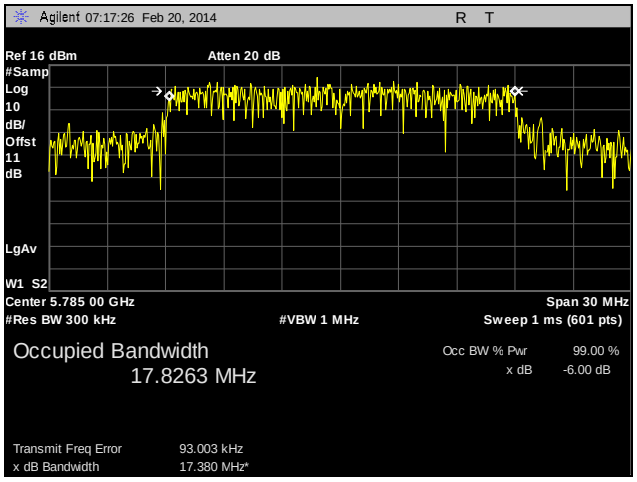
Plot 81. 99% Occupied Bandwidth, High Channel, 802.11n 20 MHz, Ant. 0



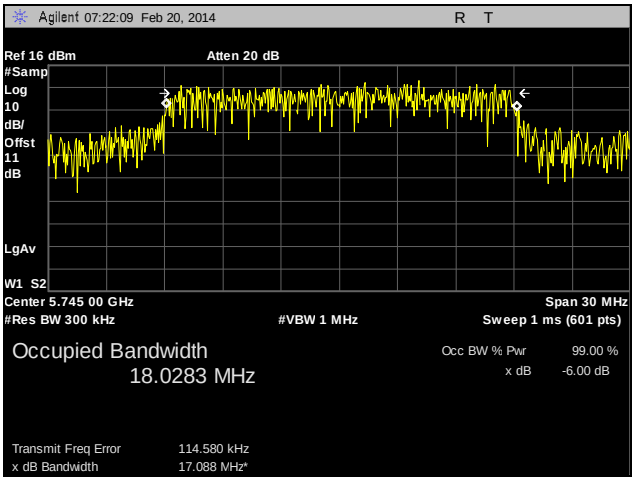
Plot 82. 99% Occupied Bandwidth, Low Channel, 802.11n 20 MHz, Ant. 1



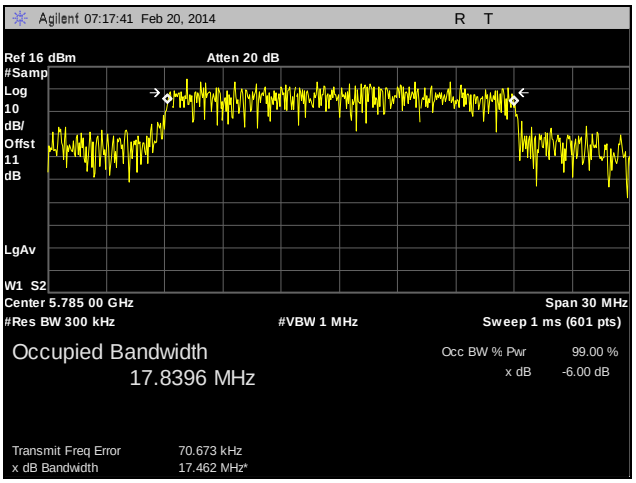
Plot 83. 99% Occupied Bandwidth, Mid Channel, 802.11n 20 MHz, Ant. 1



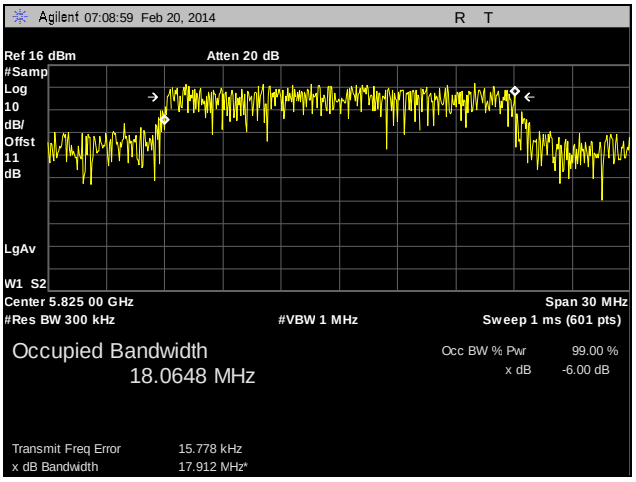
Plot 84. 99% Occupied Bandwidth, High Channel, 802.11n 20 MHz, Ant. 1



Plot 85. 99% Occupied Bandwidth, Low Channel, 802.11n 20 MHz, Ant. 2

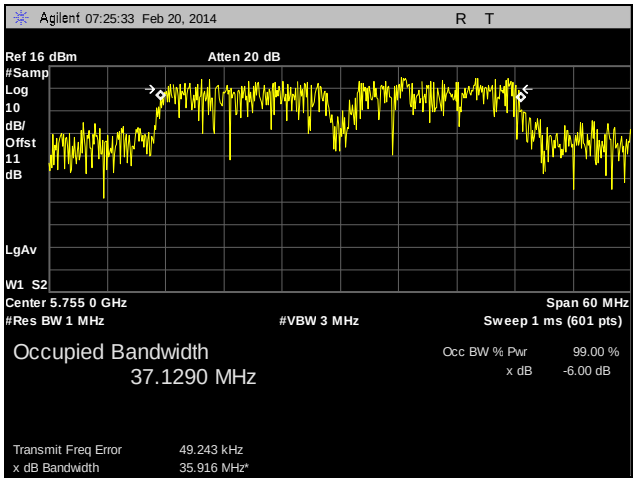


Plot 86. 99% Occupied Bandwidth, Mid Channel, 802.11n 20 MHz, Ant. 2

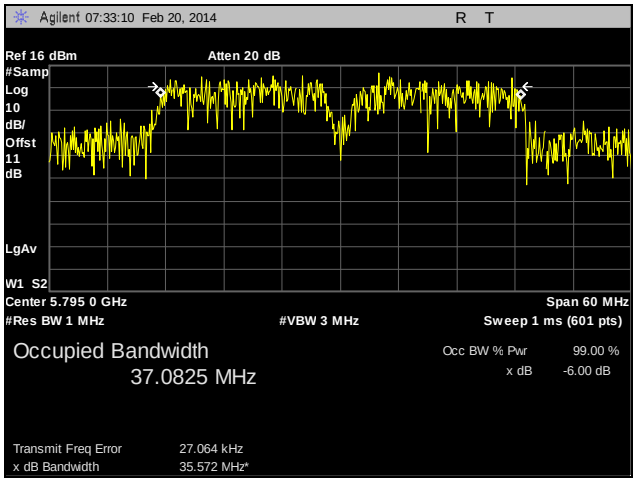


Plot 87. 99% Occupied Bandwidth, High Channel, 802.11n 20 MHz, Ant. 2

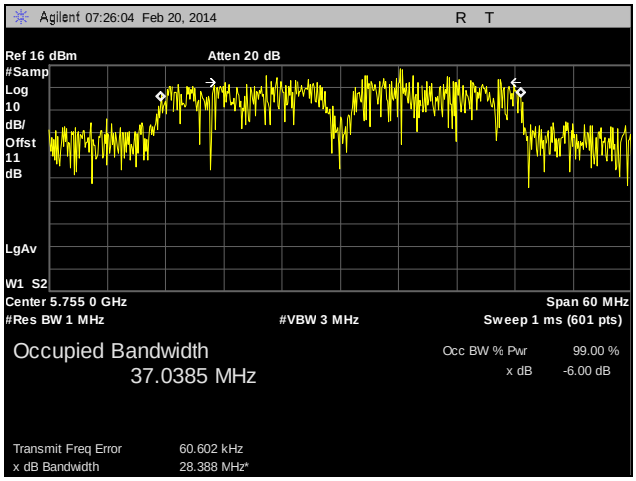
99% Occupied Bandwidth Test Results, 802.11a 40 MHz



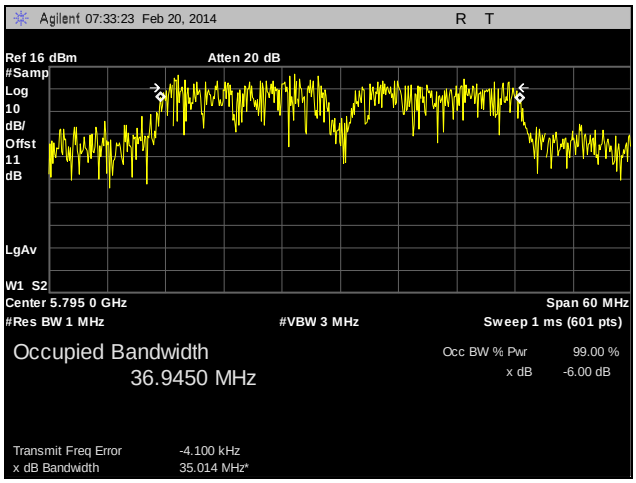
Plot 88. 99% Occupied Bandwidth, Low Channel, 802.11a 40 MHz, Ant. 0



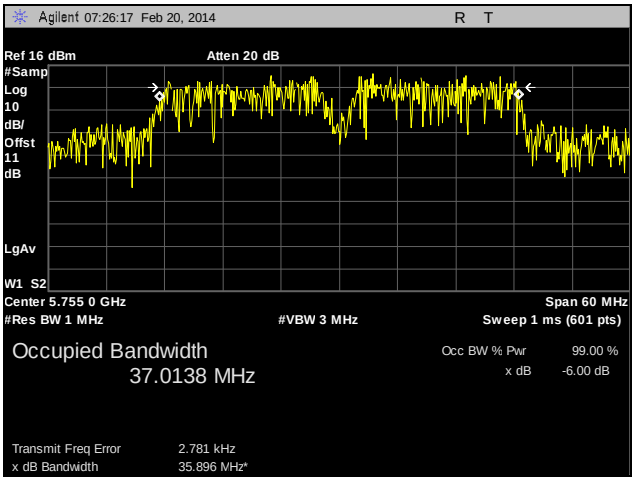
Plot 89. 99% Occupied Bandwidth, High Channel, 802.11a 40 MHz, Ant. 0



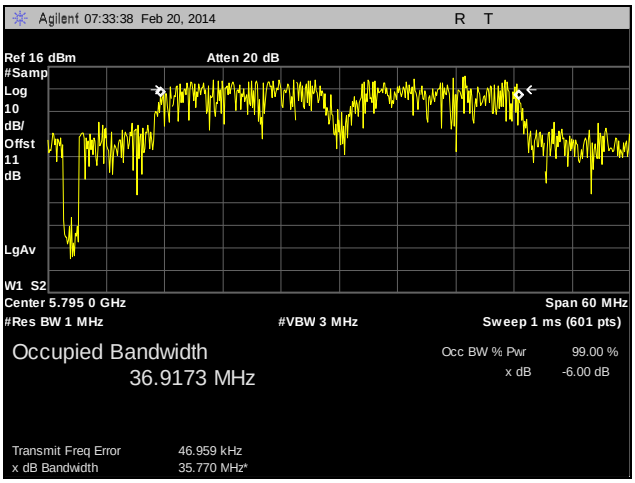
Plot 90. 99% Occupied Bandwidth, Low Channel, 802.11a 40 MHz, Ant. 1



Plot 91. 99% Occupied Bandwidth, High Channel, 802.11a 40 MHz, Ant. 1

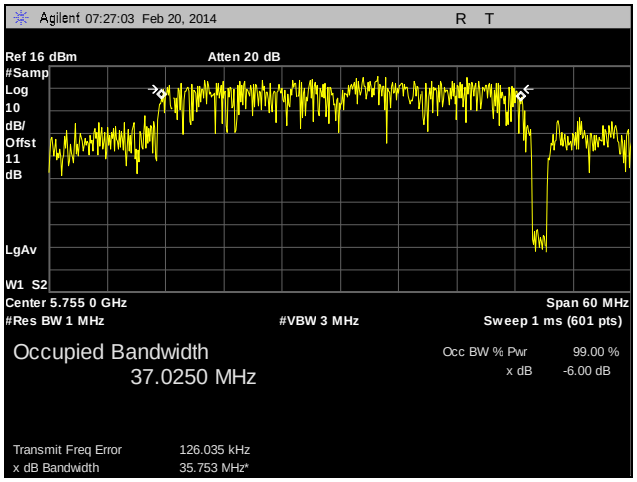


Plot 92. 99% Occupied Bandwidth, Low Channel, 802.11a 40 MHz, Ant. 2

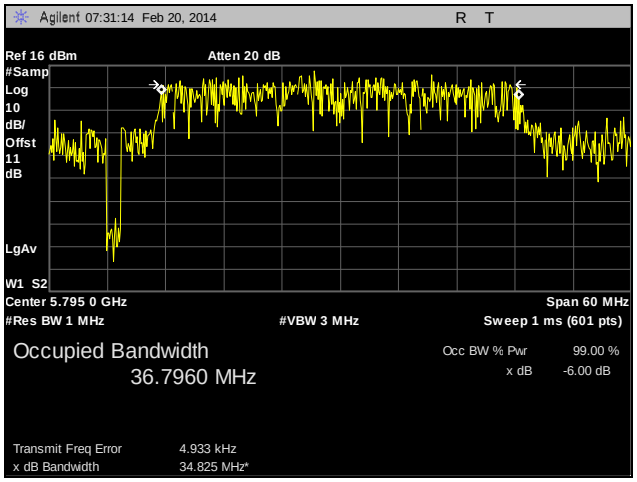


Plot 93. 99% Occupied Bandwidth, High Channel, 802.11a 40 MHz, Ant. 2

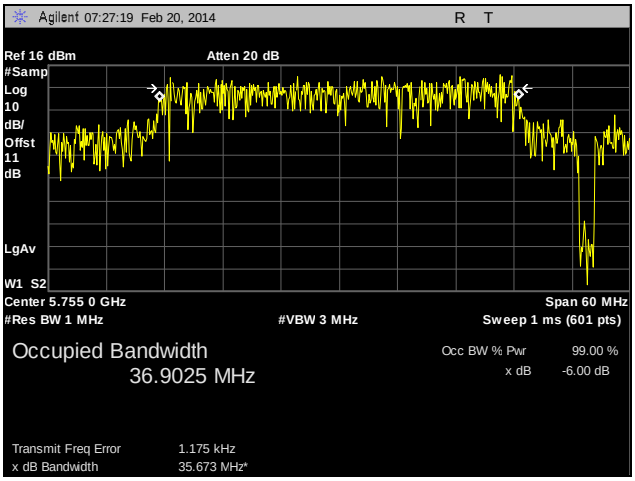
99% Occupied Bandwidth Test Results, 802.11ac 40 MHz



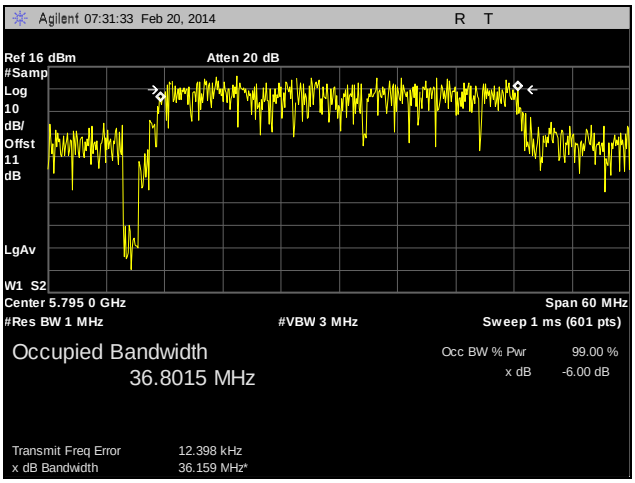
Plot 94. 99% Occupied Bandwidth, Low Channel, 802.11ac 40 MHz, Ant. 0



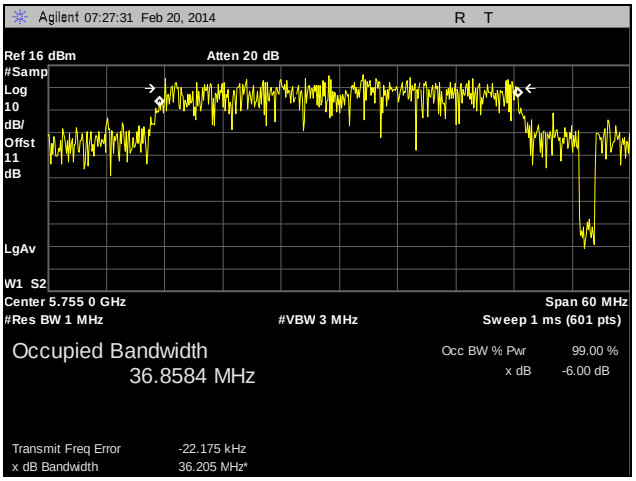
Plot 95. 99% Occupied Bandwidth, High Channel, 802.11ac 40 MHz, Ant. 0



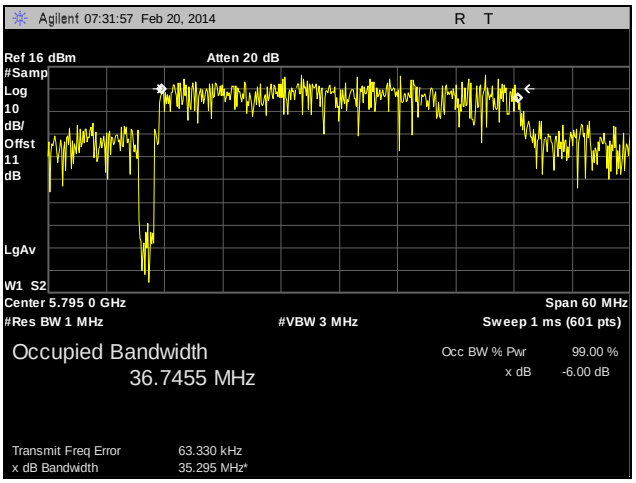
Plot 96. 99% Occupied Bandwidth, Low Channel, 802.11ac 40 MHz, Ant. 1



Plot 97. 99% Occupied Bandwidth, High Channel, 802.11ac 40 MHz, Ant. 1

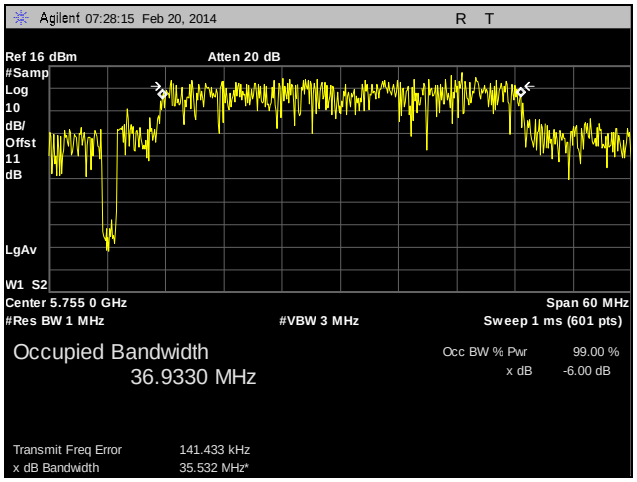


Plot 98. 99% Occupied Bandwidth, Low Channel, 802.11ac 40 MHz, Ant. 2

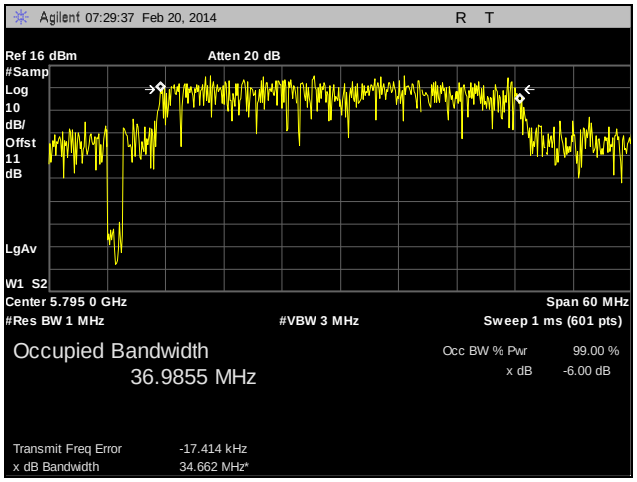


Plot 99. 99% Occupied Bandwidth, High Channel, 802.11ac 40 MHz, Ant. 2

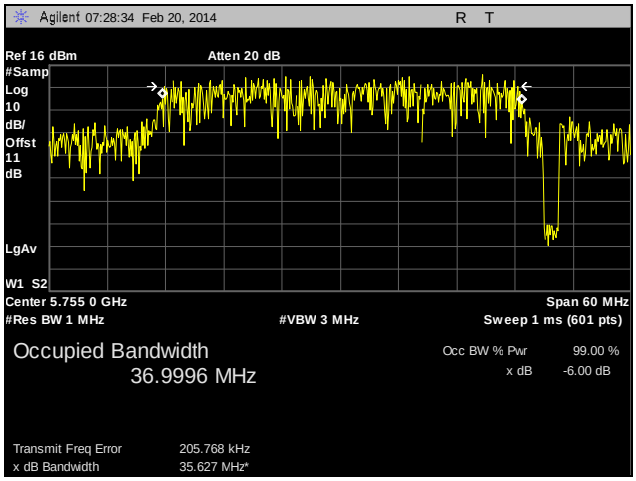
99% Occupied Bandwidth Test Results, 802.11n 40 MHz



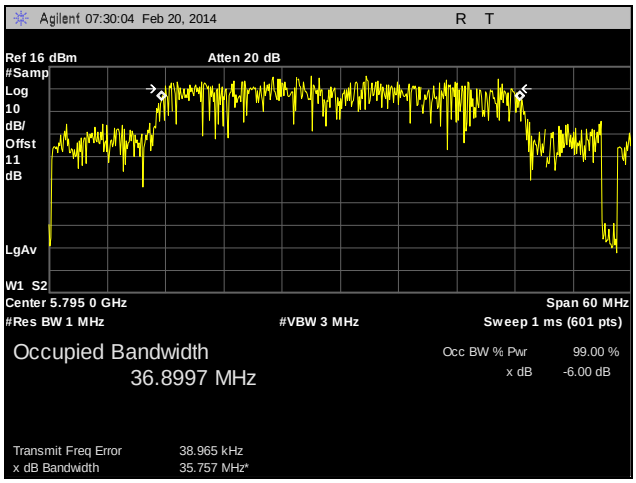
Plot 100. 99% Occupied Bandwidth, Low Channel, 802.11n 40 MHz, Ant. 0



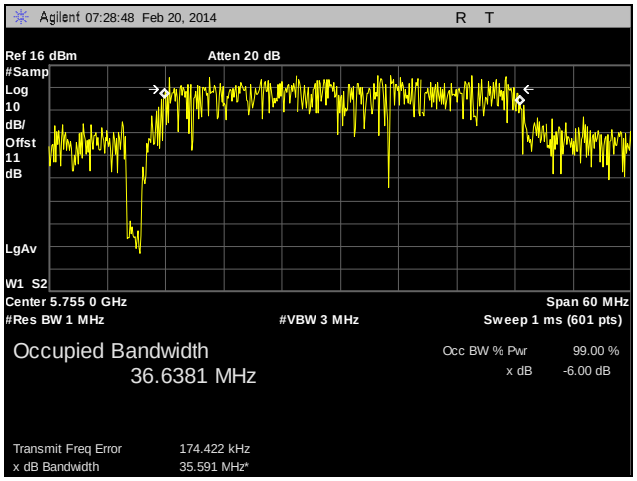
Plot 101. 99% Occupied Bandwidth, High Channel, 802.11n 40 MHz, Ant. 0



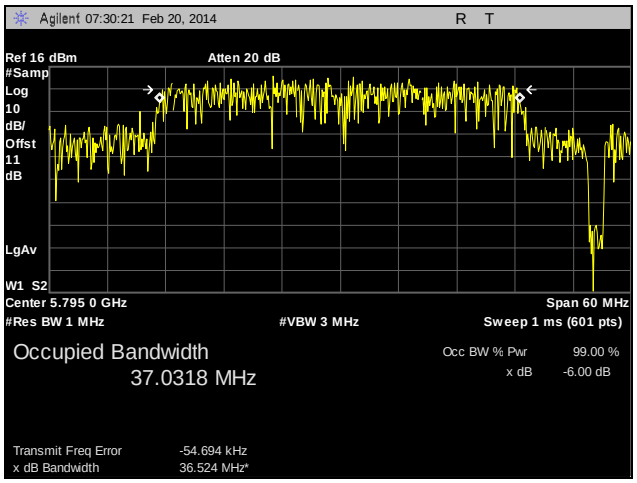
Plot 102. 99% Occupied Bandwidth, Low Channel, 802.11n 40 MHz, Ant. 1



Plot 103. 99% Occupied Bandwidth, High Channel, 802.11n 40 MHz, Ant. 1

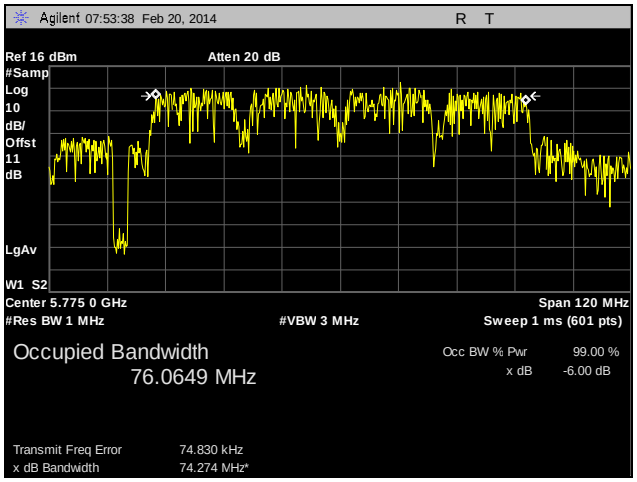


Plot 104. 99% Occupied Bandwidth, Low Channel, 802.11n 40 MHz, Ant. 2

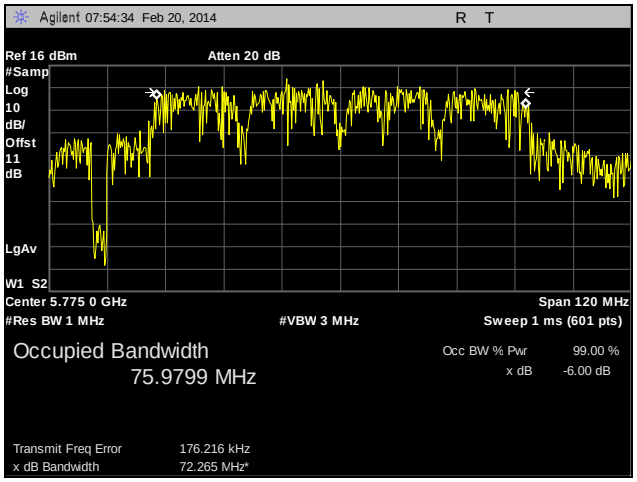


Plot 105. 99% Occupied Bandwidth, High Channel, 802.11n 40 MHz, Ant. 2

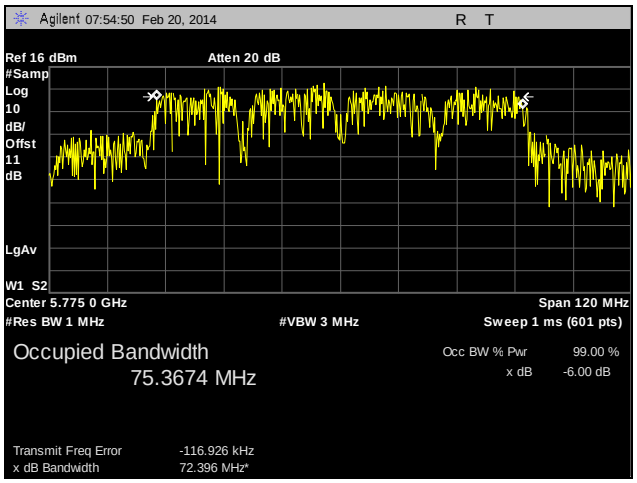
99% Occupied Bandwidth Test Results, 802.11a 80 MHz



Plot 106. 99% Occupied Bandwidth, 802.11a 80 MHz, Ant. 0

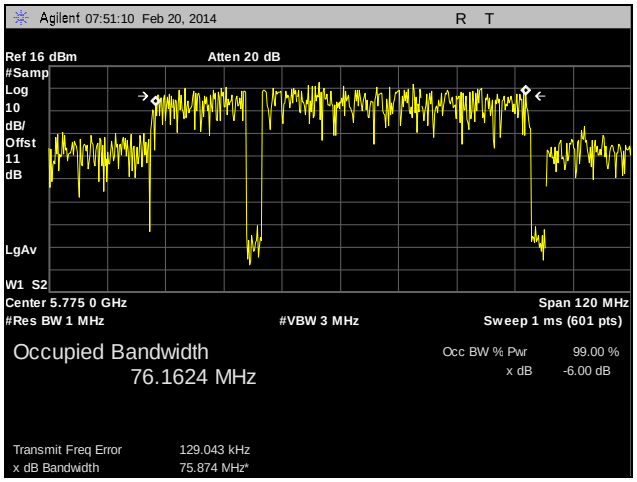


Plot 107. 99% Occupied Bandwidth, 802.11a 80 MHz, Ant. 1

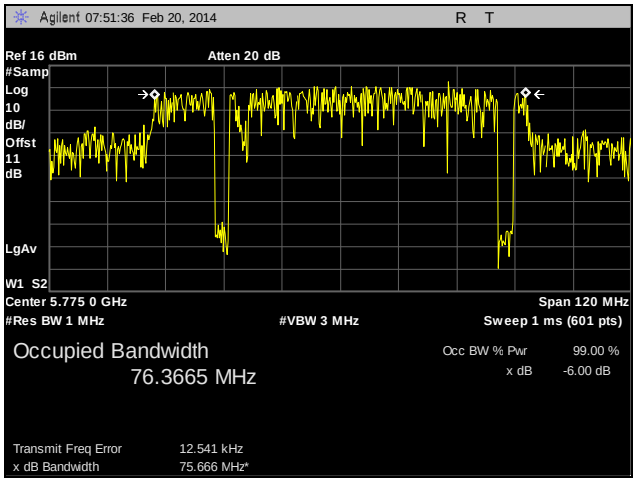


Plot 108. 99% Occupied Bandwidth, 802.11a 80 MHz, Ant. 2

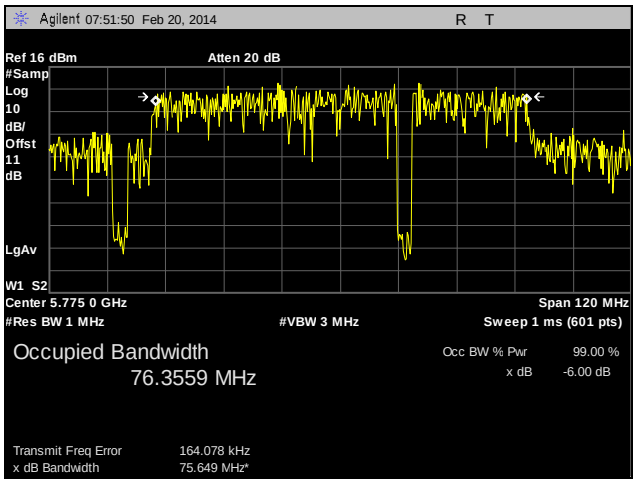
99% Occupied Bandwidth Test Results, 802.11ac 80 MHz



Plot 109. 99% Occupied Bandwidth, 802.11ac 80 MHz, Ant. 0



Plot 110. 99% Occupied Bandwidth, 802.11ac 80 MHz, Ant. 1



Plot 111. 99% Occupied Bandwidth, 802.11ac 80 MHz, Ant. 2

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.247(b) Peak Power Output

Test Requirements: **§15.247(b):** The maximum peak output power of the intentional radiator shall not exceed the following:

Digital Transmission Systems (MHz)	Output Limit (Watts)
902-928	1.000
2400–2483.5	1.000
5725– 5850	1.000

Table 63. Output Power Requirements from §15.247(b)

§15.247(b)(4): The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Procedure: The transmitter was connected to a calibrated spectrum analyzer. The EUT was measured at the low, mid and high channels of each band at the maximum power level.

Test Results: The EUT was compliant with the Peak Power Output limits of **§15.247(b)**.

Test Engineer(s): Surinder Singh

Test Date(s): 02/20/14

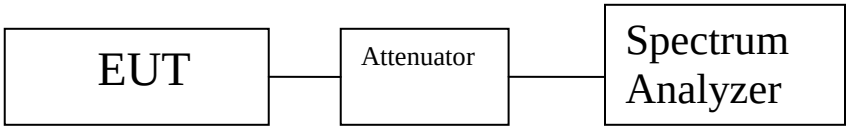


Figure 2. Peak Power Output Test Setup

Peak Power Output Test Results

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
Low	5745	27.09
Mid	5785	27.17
High	5825	26.65

Table 64. Peak Power Output, Test Results, 802.11a 20 MHz, Ant. 0

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
Low	5745	23.14
Mid	5785	24.66
High	5825	24.41

Table 65. Peak Power Output, Test Results, 802.11a 20 MHz, Ant. 1

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
Low	5745	25.46
Mid	5785	25.74
High	5825	25.18

Table 66. Peak Power Output, Test Results, 802.11a 20 MHz, Ant. 2

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
Low	5745	27.05
Mid	5785	27.38
High	5825	27.19

Table 67. Peak Power Output, Test Results, 802.11ac 20 MHz, Ant. 0

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
Low	5745	23.05
Mid	5785	24.95
High	5825	24.29

Table 68. Peak Power Output, Test Results, 802.11ac 20 MHz, Ant. 1

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
Low	5745	25.33
Mid	5785	26.01
High	5825	25.22

Table 69. Peak Power Output, Test Results, 802.11ac 20 MHz, Ant. 2

Peak Conducted Output Power								
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm) Ant0**	**Measured Peak Output Power (dBm) Ant1**	**Measured Peak Output Power (dBm) Ant2**	**Total Peak Output Power (dBm)**	**Antenna gain (dBi)**	**Conducted Power Limit (dBm)**	**Margin (dB)**
Low	5745	22.5	22.58	22.11	27.17	8.71	27.29	-0.11
Mid	5785	22.12	21.78	22.35	26.86	8.71	27.29	-0.42
High	5825	22.06	21.99	22.32	26.89	8.71	27.29	-0.39

Table 70. Peak Power Output, Test Results, 802.11ac 20 MHz, MIMO

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
Low	5745	27.15
Mid	5785	27.10
High	5825	27.42

Table 71. Peak Power Output, Test Results, 802.11n 20 MHz, Ant. 0

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
Low	5745	23.14
Mid	5785	25.03
High	5825	24.67

Table 72. Peak Power Output, Test Results, 802.11n 20 MHz, Ant. 1

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
Low	5745	25.59
Mid	5785	25.93
High	5825	25.45

Table 73. Peak Power Output, Test Results, 802.11n 20 MHz, Ant. 2

Peak Conducted Output Power								
Carrier Channel	Frequency (MHz)	Measured Peak Output Power (dBm) Ant0	Measured Peak Output Power (dBm) Ant1	Measured Peak Output Power (dBm) Ant2	Total Peak Output Power (dBm)	Antenna gain (dBi)	Conducted Power Limit (dBm)	Margin (dB)
Low	5745	22.45	22.88	22.12	27.26	8.71	27.29	-0.02
Mid	5785	22.09	21.7	22.08	26.73	8.71	27.29	-0.55
High	5825	22.37	22.41	22.14	27.07	8.71	27.29	-0.21

Table 74. Peak Power Output, Test Results, 802.11n 20 MHz, MIMO

Peak Conducted Output Power		
Carrier Channel	Frequency (MHz)	Measured Peak Output Power (dBm)
Low	5755	27.12
High	5795	26.74

Table 75. Peak Power Output, Test Results, 802.11a 40 MHz, Ant. 0

Peak Conducted Output Power		
Carrier Channel	Frequency (MHz)	Measured Peak Output Power (dBm)
Low	Low	24.75
High	5795	24.27

Table 76. Peak Power Output, Test Results, 802.11a 40 MHz, Ant. 1

Peak Conducted Output Power		
Carrier Channel	Frequency (MHz)	Measured Peak Output Power (dBm)
Low	5755	25.32
High	5795	25.22

Table 77. Peak Power Output, Test Results, 802.11a 40 MHz, Ant. 2

Peak Conducted Output Power								
Carrier Channel	Frequency (MHz)	Measured Peak Output Power (dBm) Ant0	Measured Peak Output Power (dBm) Ant1	Measured Peak Output Power (dBm) Ant2	Total Peak Output Power (dBm)	Antenna gain (dBi)	Conducted Power Limit (dBm)	Margin (dB)
Low	5745	21.96	22.43	22.2	26.97	8.71	27.29	-0.31
High	5825	22.2	22.29	22.28	27.02	8.71	27.29	-0.26

Table 78. Peak Power Output, Test Results, 802.11ac 40 MHz, MIMO

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
Low	5755	26.72
High	5795	26.97

Table 79. Peak Power Output, Test Results, 802.11n 40 MHz, Ant. 0

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
Low	5755	24.70
High	5795	24.82

Table 80. Peak Power Output, Test Results, 802.11n 40 MHz, Ant. 1

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
Low	5755	25.31
High	5795	24.86

Table 81. Peak Power Output, Test Results, 802.11n 40 MHz, Ant. 2

Peak Conducted Output Power								
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm) Ant0**	**Measured Peak Output Power (dBm) Ant1**	**Measured Peak Output Power (dBm) Ant2**	**Total Peak Output Power (dBm)**	**Antenna gain (dBi)**	**Conducted Power Limit (dBm)**	**Margin (dB)**
Low	5745	22.16	21.94	22	26.80	8.71	27.29	-0.48
High	5825	22.01	21.93	22.1	26.78	8.71	27.29	-0.50

Table 82. Peak Power Output, Test Results, 802.11n 40 MHz, MIMO

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
161	5775	27.81

Table 83. Peak Power Output, Test Results, 802.11a 80 MHz, Ant. 0

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
161	5775	24.08

Table 84. Peak Power Output, Test Results, 802.11a 80 MHz, Ant. 1

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
161	5775	25.39

Table 85. Peak Power Output, Test Results, 802.11a 80 MHz, Ant. 2

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
161	5775	27.89

Table 86. Peak Power Output, Test Results, 802.11ac 80 MHz, Ant. 0

Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
161	5775	24.31

Table 87. Peak Power Output, Test Results, 802.11ac 80 MHz, Ant. 1

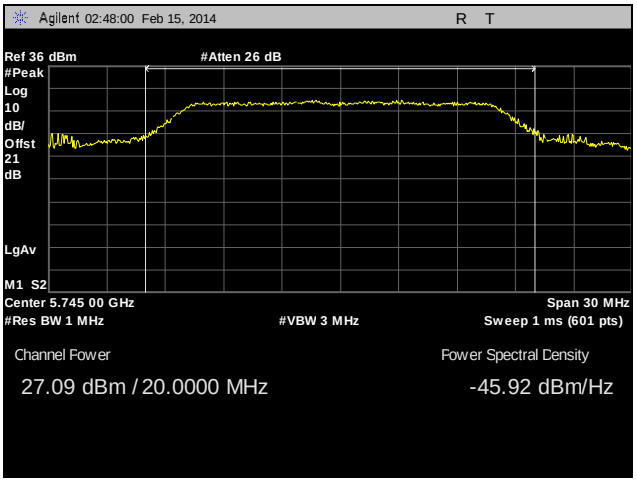
Peak Conducted Output Power		
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm)**
161	5775	25.50

Table 88. Peak Power Output, Test Results, 802.11ac 80 MHz, Ant. 2

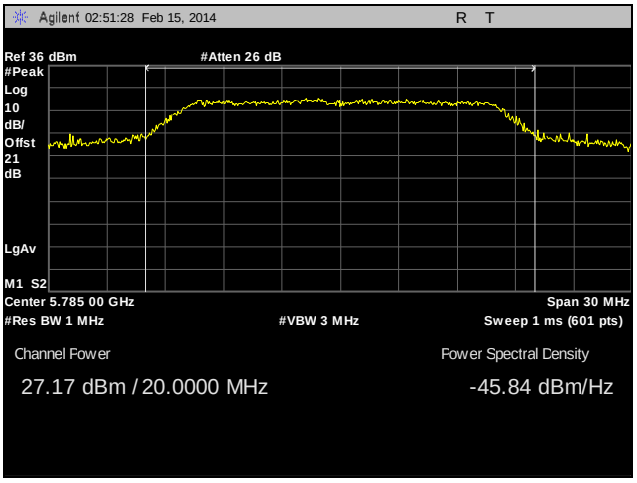
Peak Conducted Output Power								
Carrier Channel	**Frequency (MHz)**	**Measured Peak Output Power (dBm) Ant0**	**Measured Peak Output Power (dBm) Ant1**	**Measured Peak Output Power (dBm) Ant2**	**Total Peak Output Power (dBm)**	**Antenna gain (dBi)**	**Conducted Power Limit (dBm)**	**Margin (dB)**
161	5775	21.88	21.31	22.13	26.55	8.71	27.29	-0.73

Table 89. Peak Power Output, Test Results, 802.11ac 80 MHz, MIMO

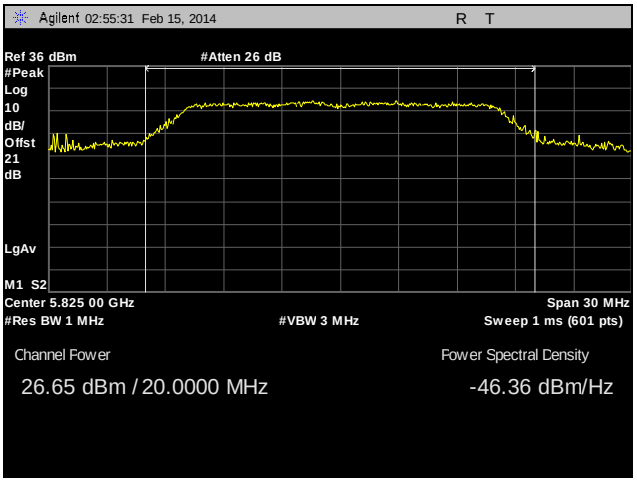
Peak Power Output Test Results, 802.11a 20 MHz



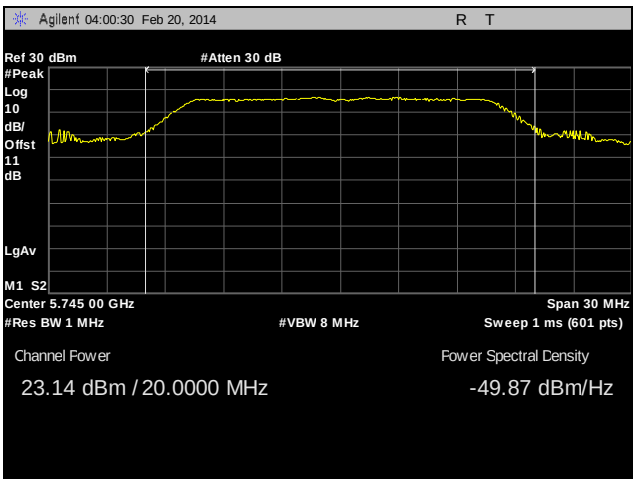
Plot 112. Peak Power Output, Low Channel, 802.11a 20 MHz, Ant. 0



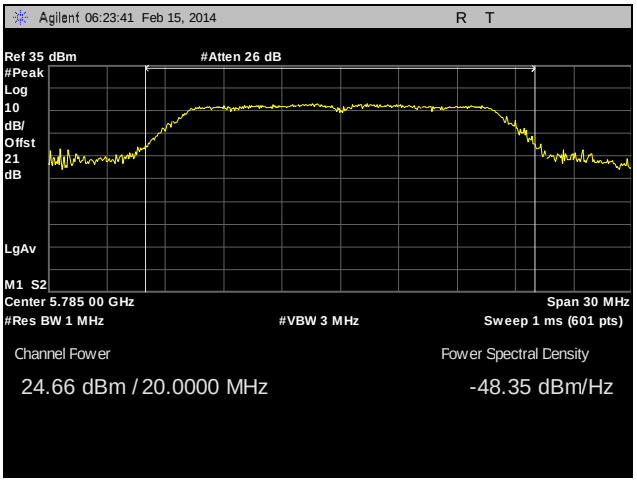
Plot 113. Peak Power Output, Mid Channel, 802.11a 20 MHz, Ant. 0



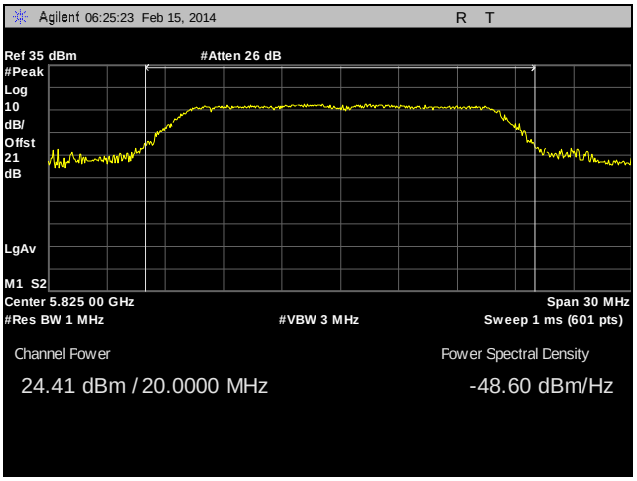
Plot 114. Peak Power Output, High Channel, 802.11a 20 MHz, Ant. 0



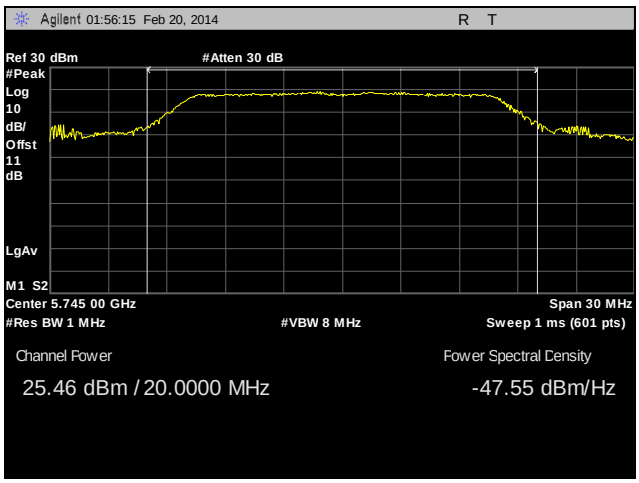
Plot 115. Peak Power Output, Low Channel, 802.11a 20 MHz, Ant. 1



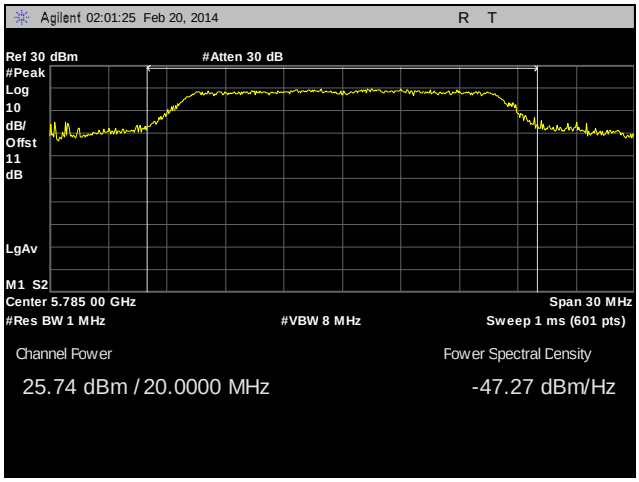
Plot 116. Peak Power Output, Mid Channel, 802.11a 20 MHz, Ant. 1



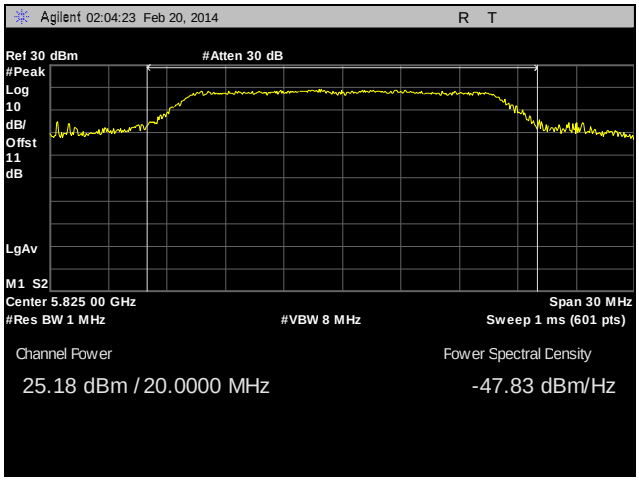
Plot 117. Peak Power Output, High Channel, 802.11a 20 MHz, Ant. 1



Plot 118. Peak Power Output, Low Channel, 802.11a 20 MHz, Ant. 2

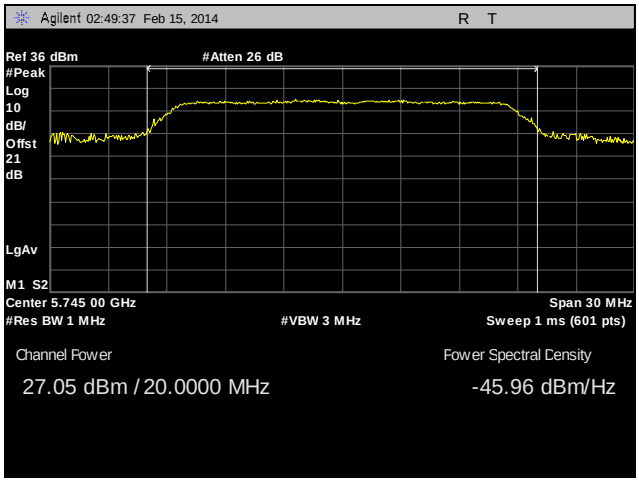


Plot 119. Peak Power Output, Mid Channel, 802.11a 20 MHz, Ant. 2

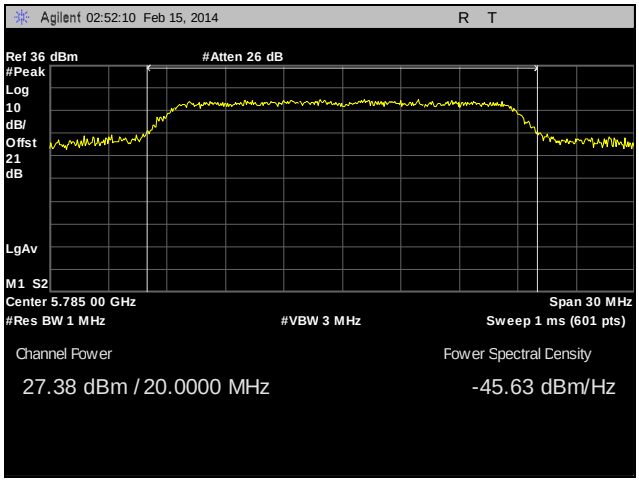


Plot 120. Peak Power Output, High Channel, 802.11a 20 MHz, Ant. 2

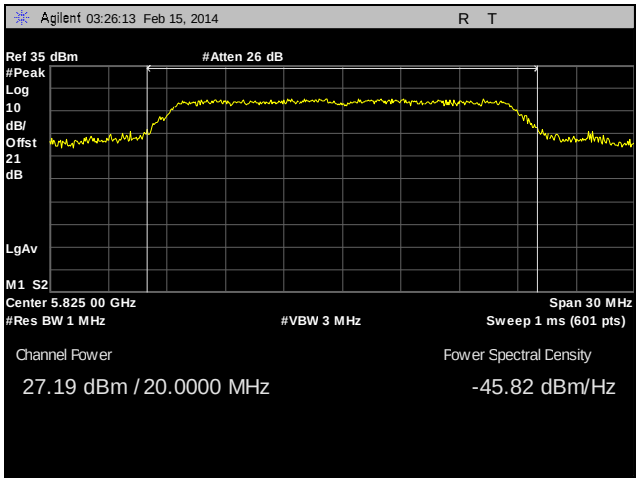
Peak Power Output Test Results, 802.11ac 20 MHz



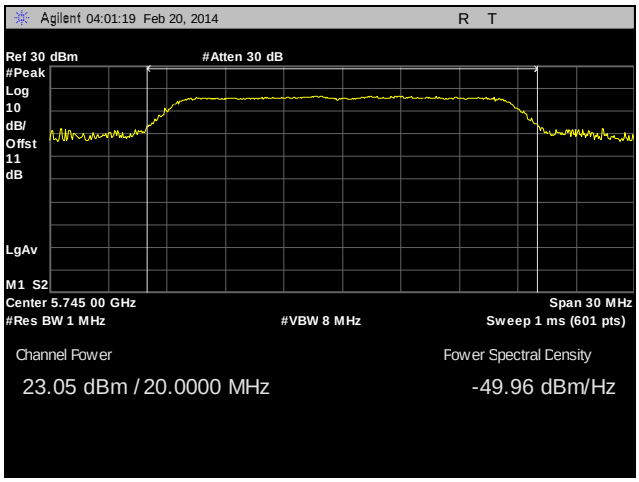
Plot 121. Peak Power Output, Low Channel, 802.11ac 20 MHz, Ant. 0



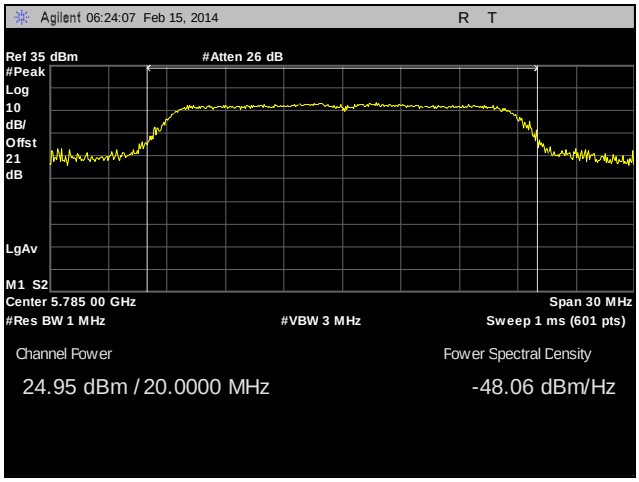
Plot 122. Peak Power Output, Mid Channel, 802.11ac 20 MHz, Ant. 0



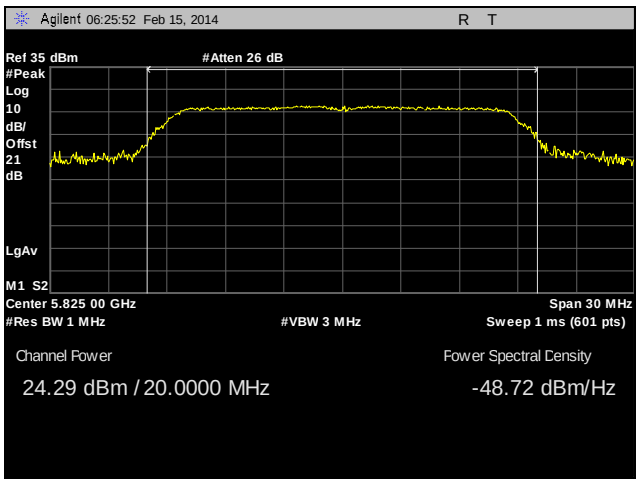
Plot 123. Peak Power Output, High Channel, 802.11ac 20 MHz, Ant. 0



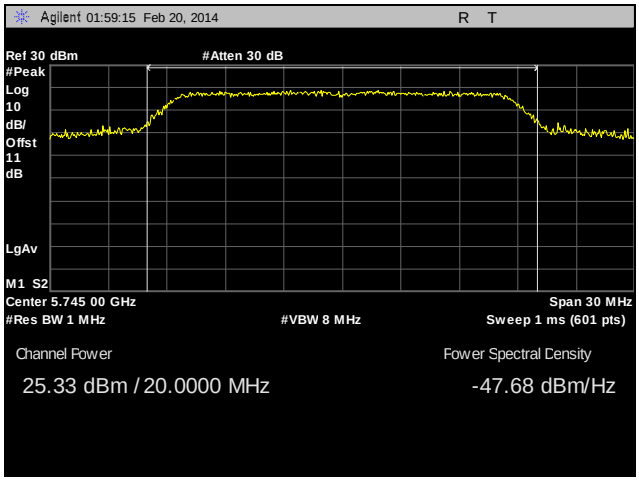
Plot 124. Peak Power Output, Low Channel, 802.11ac 20 MHz, Ant. 1



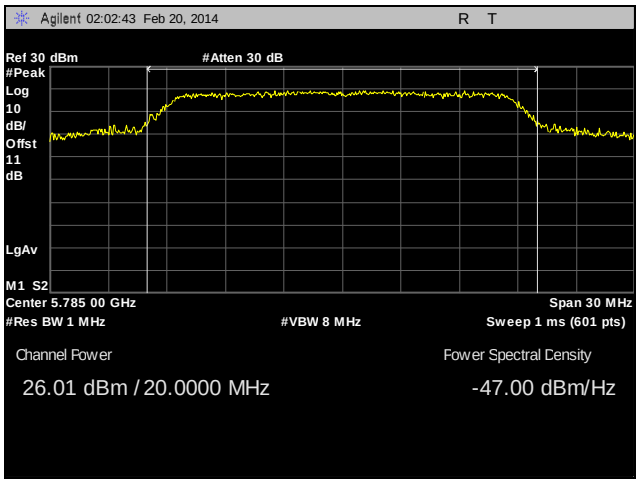
Plot 125. Peak Power Output, Mid Channel, 802.11ac 20 MHz, Ant. 1



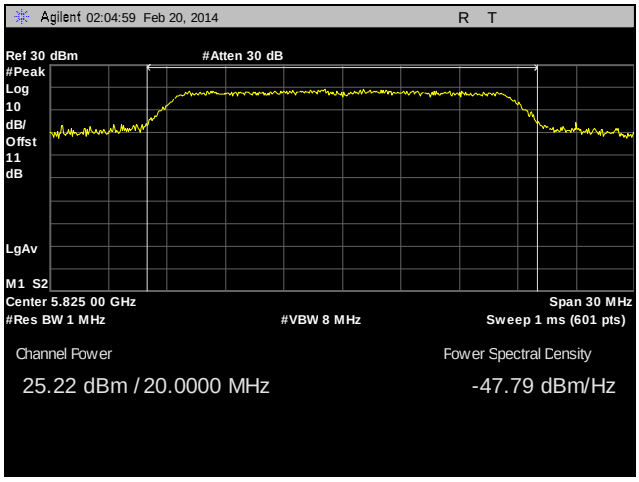
Plot 126. Peak Power Output, High Channel, 802.11ac 20 MHz, Ant. 1



Plot 127. Peak Power Output, Low Channel, 802.11ac 20 MHz, Ant. 2

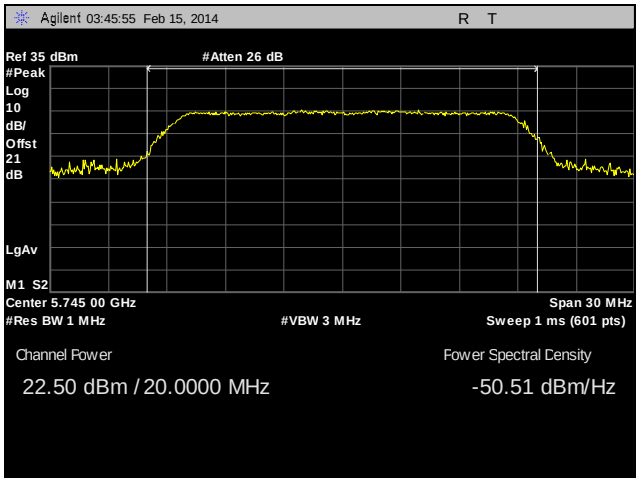


Plot 128. Peak Power Output, Mid Channel, 802.11ac 20 MHz, Ant. 2

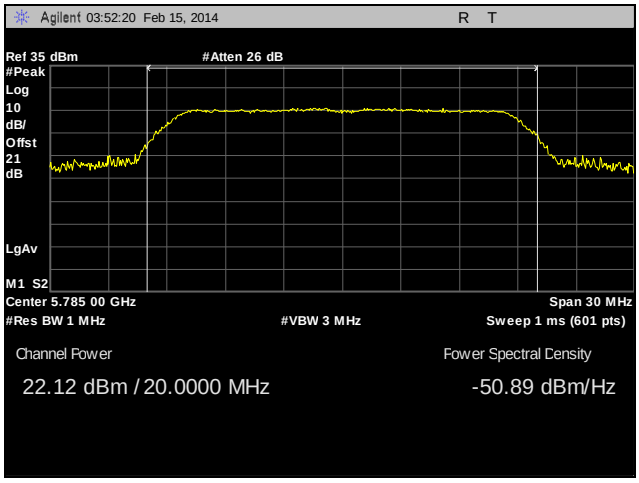


Plot 129. Peak Power Output, High Channel, 802.11ac 20 MHz, Ant. 2

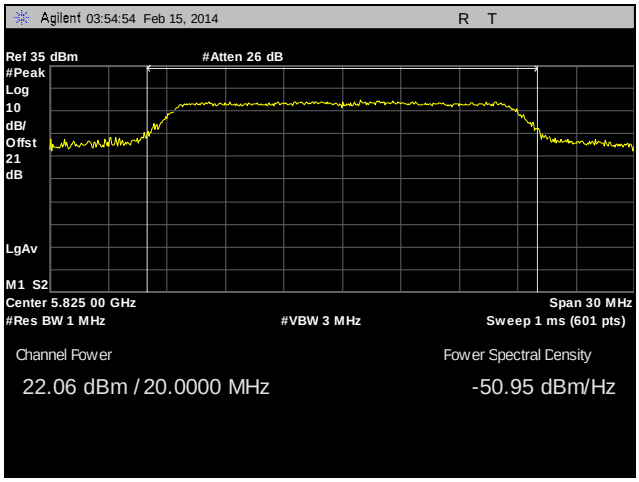
Peak Power Output Test Results, 802.11ac 20 MHz, MIMO



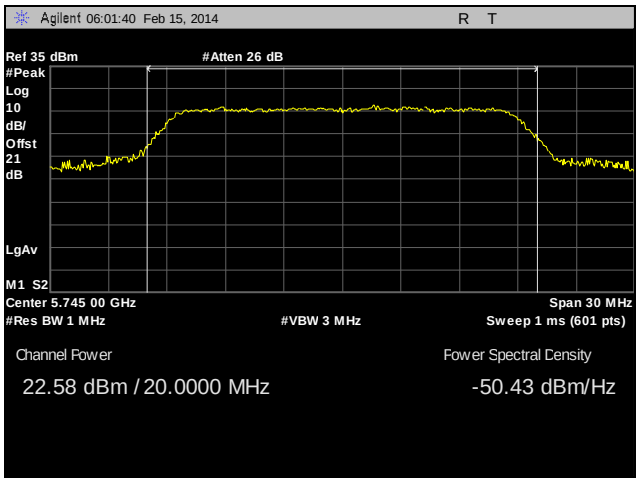
Plot 130. Peak Power Output, Low Channel, 802.11ac 20 MHz, Ant. 0, MIMO



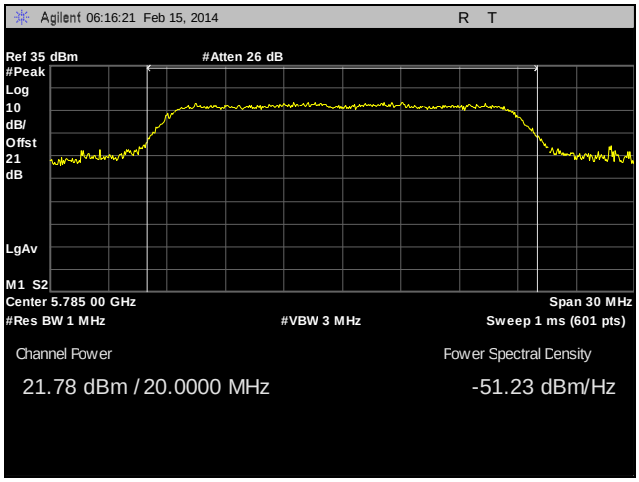
Plot 131. Peak Power Output, Mid Channel, 802.11ac 20 MHz, Ant. 0, MIMO



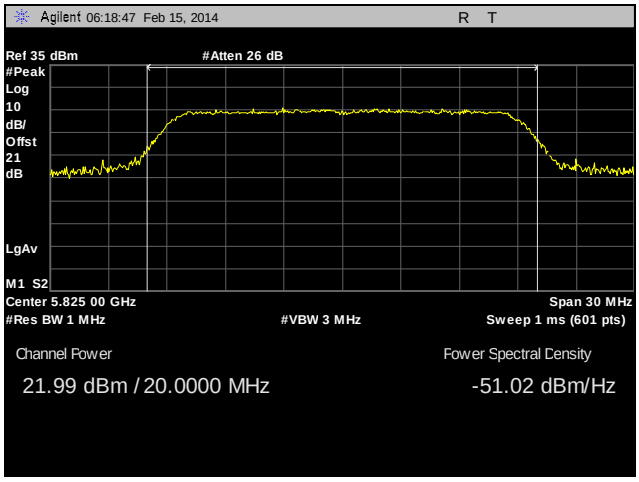
Plot 132. Peak Power Output, High Channel, 802.11ac 20 MHz, Ant. 0, MIMO



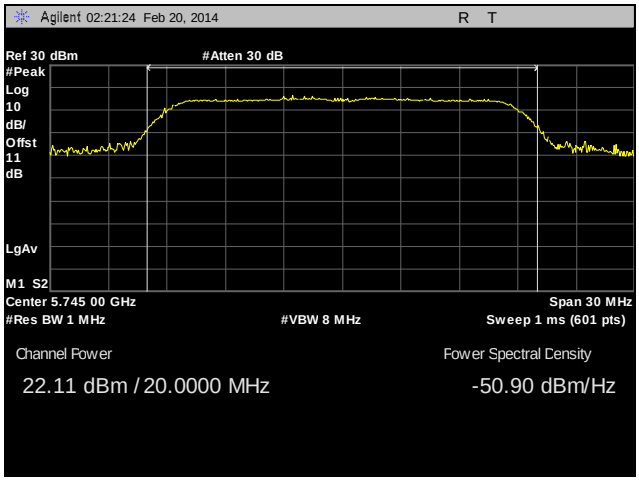
Plot 133. Peak Power Output, Low Channel, 802.11ac 20 MHz, Ant. 1, MIMO



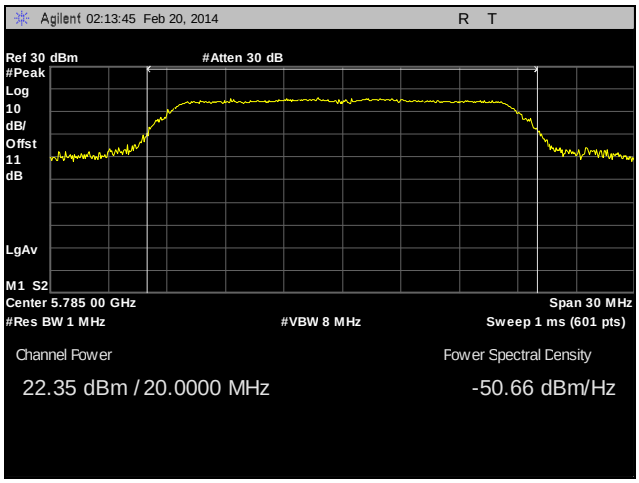
Plot 134. Peak Power Output, Mid Channel, 802.11ac 20 MHz, Ant. 1, MIMO



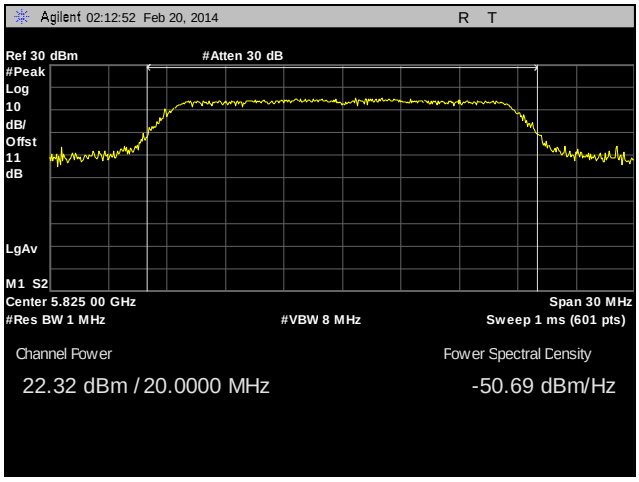
Plot 135. Peak Power Output, High Channel, 802.11ac 20 MHz, Ant. 1, MIMO



Plot 136. Peak Power Output, Low Channel, 802.11ac 20 MHz, Ant. 2, MIMO

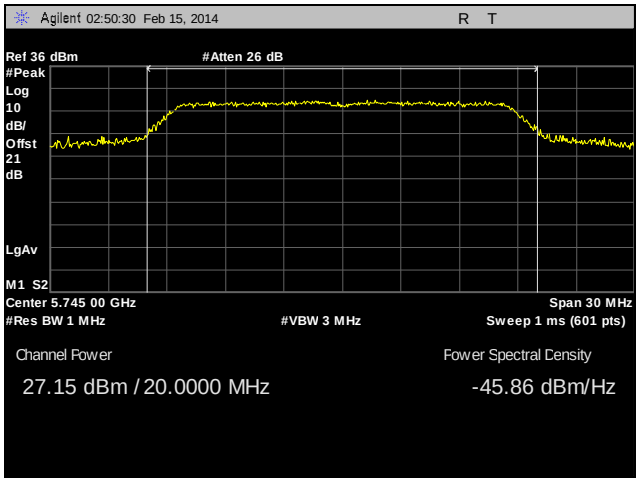


Plot 137. Peak Power Output, Mid Channel, 802.11ac 20 MHz, Ant. 2, MIMO

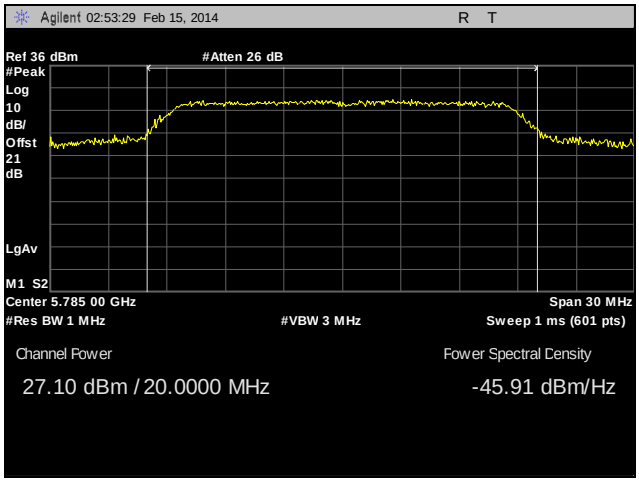


Plot 138. Peak Power Output, High Channel, 802.11ac 20 MHz, Ant. 2, MIMO

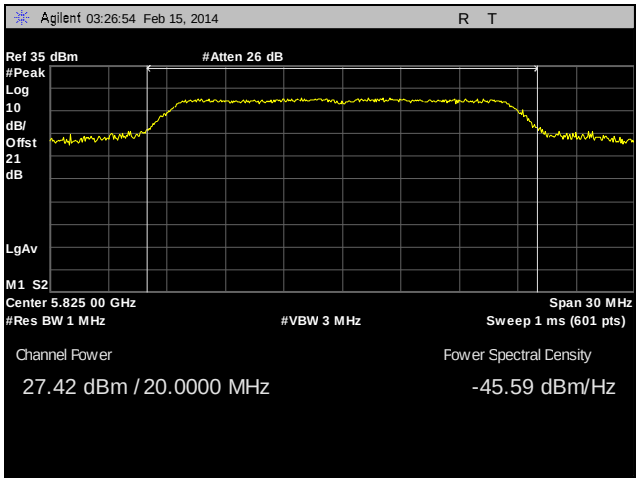
Peak Power Output Test Results, 802.11n 20 MHz



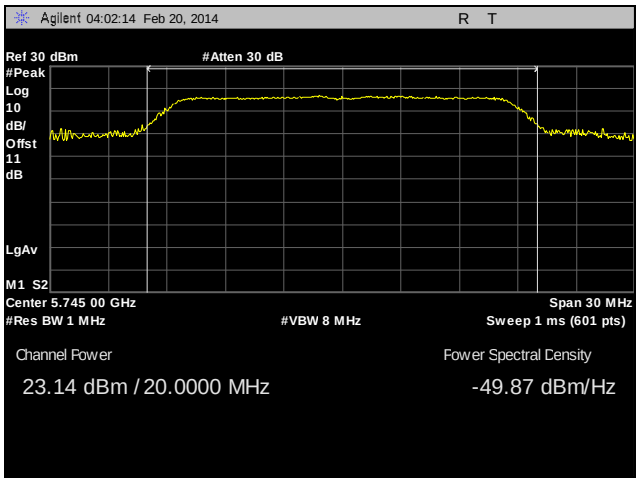
Plot 139. Peak Power Output, Low Channel, 802.11n 20 MHz, Ant. 0



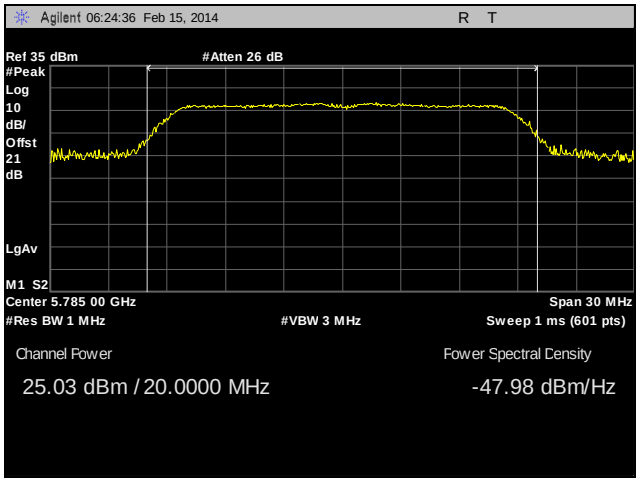
Plot 140. Peak Power Output, Mid Channel, 802.11n 20 MHz, Ant. 0



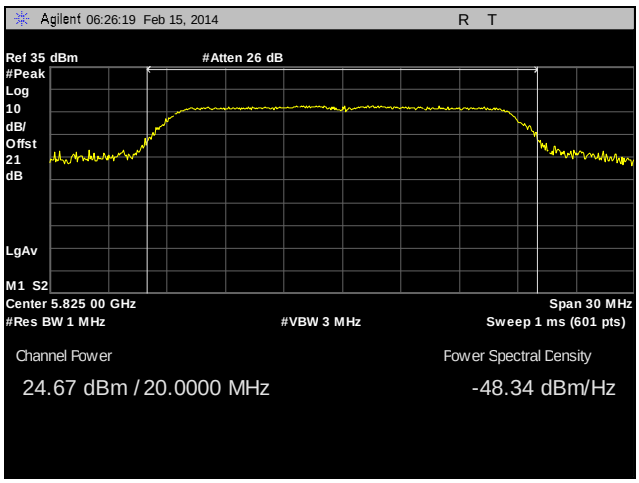
Plot 141. Peak Power Output, High Channel, 802.11n 20 MHz, Ant. 0



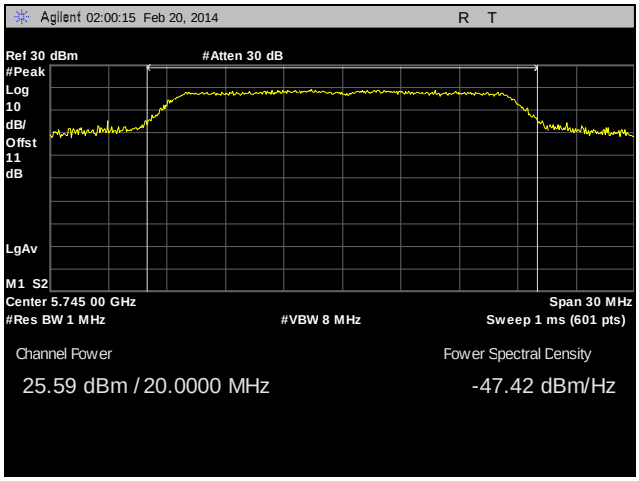
Plot 142. Peak Power Output, Low Channel, 802.11n 20 MHz, Ant. 1



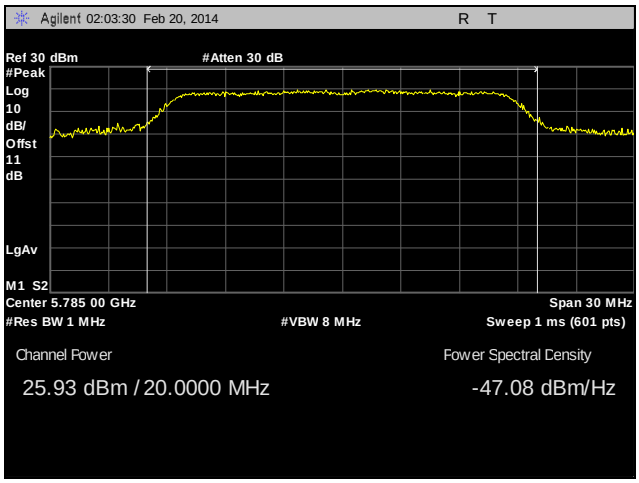
Plot 143. Peak Power Output, Mid Channel, 802.11n 20 MHz, Ant. 1



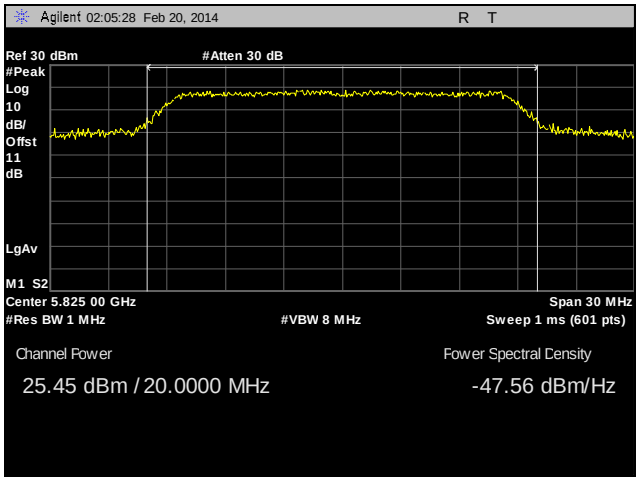
Plot 144. Peak Power Output, High Channel, 802.11n 20 MHz, Ant. 1



Plot 145. Peak Power Output, Low Channel, 802.11n 20 MHz, Ant. 2

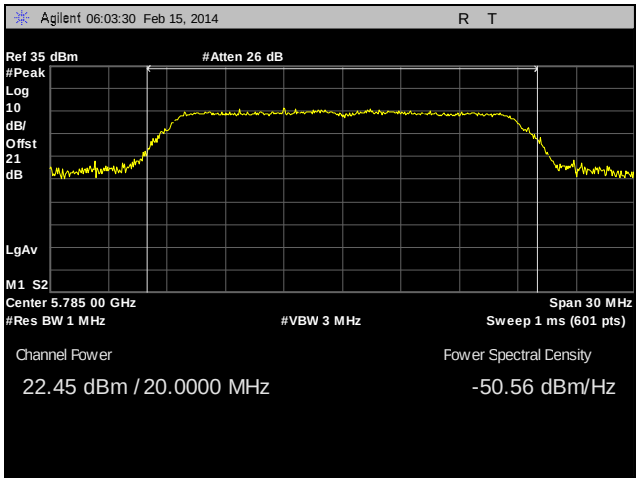


Plot 146. Peak Power Output, Mid Channel, 802.11n 20 MHz, Ant. 2

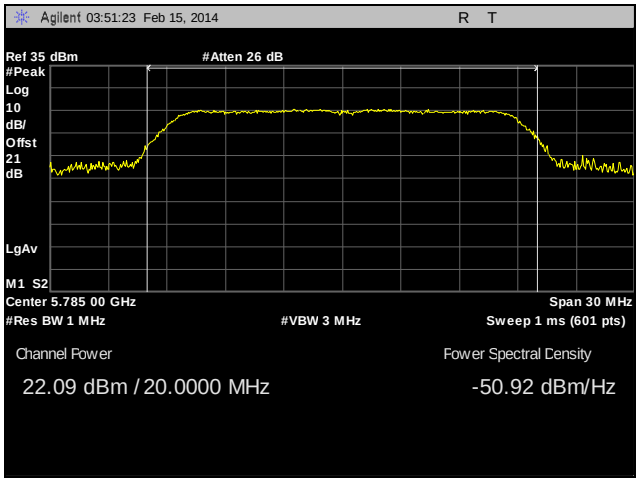


Plot 147. Peak Power Output, High Channel, 802.11n 20 MHz, Ant. 2

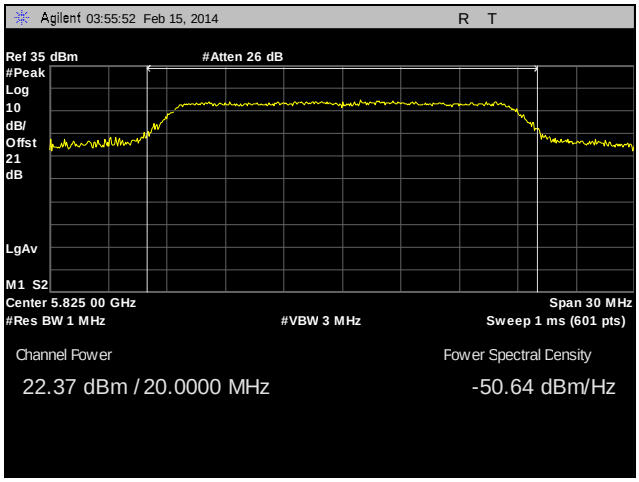
Peak Power Output Test Results, 802.11n 20 MHz, MIMO



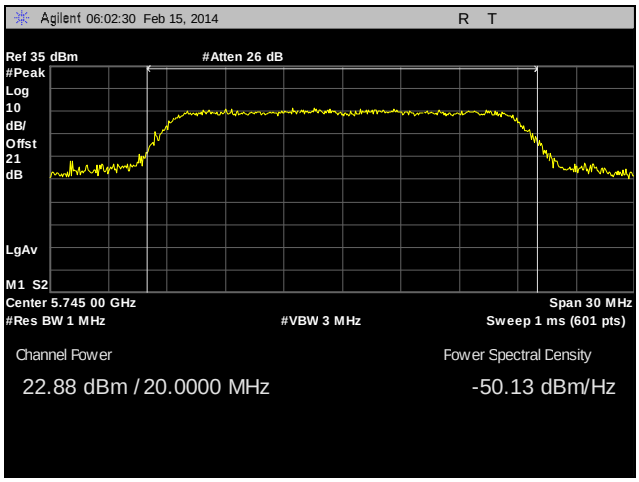
Plot 148. Peak Power Output, Low Channel, 802.11n 20 MHz, Ant. 0, MIMO



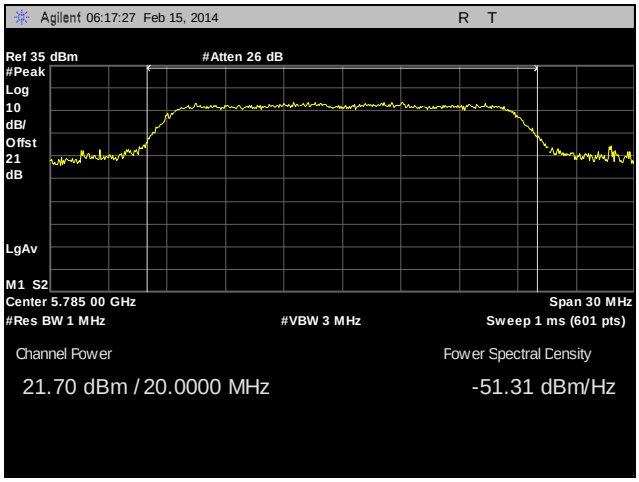
Plot 149. Peak Power Output, Mid Channel, 802.11n 20 MHz, Ant. 0, MIMO



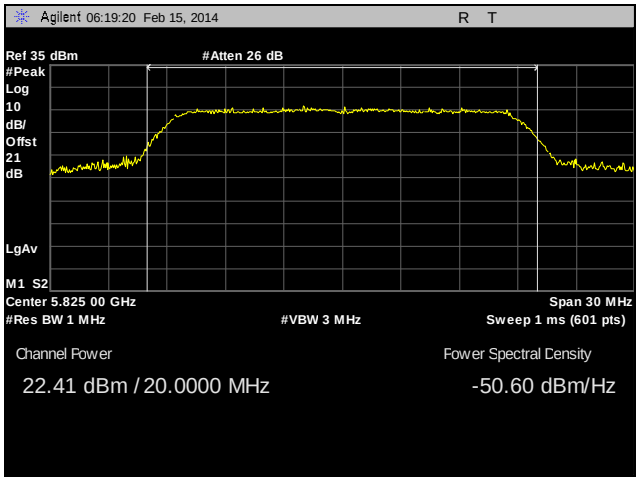
Plot 150. Peak Power Output, High Channel, 802.11n 20 MHz, Ant. 0, MIMO



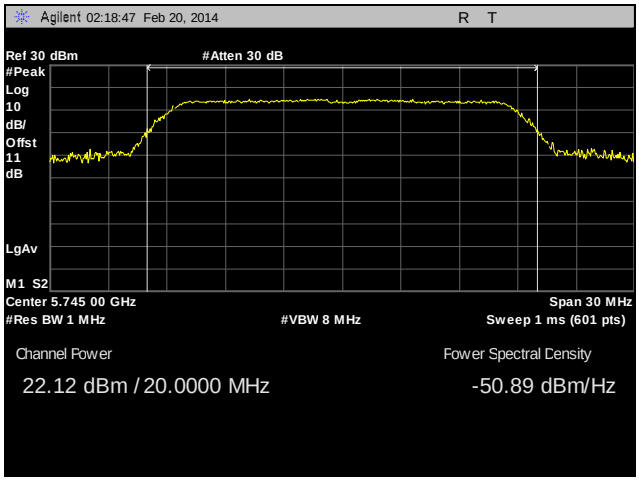
Plot 151. Peak Power Output, Low Channel, 802.11n 20 MHz, Ant. 1, MIMO



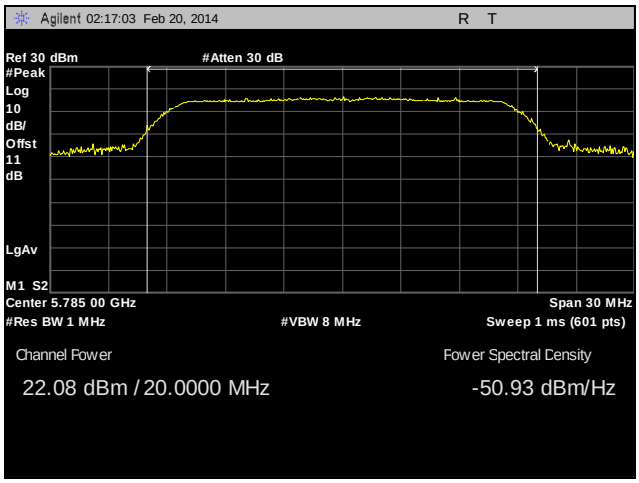
Plot 152. Peak Power Output, Mid Channel, 802.11n 20 MHz, Ant. 1, MIMO



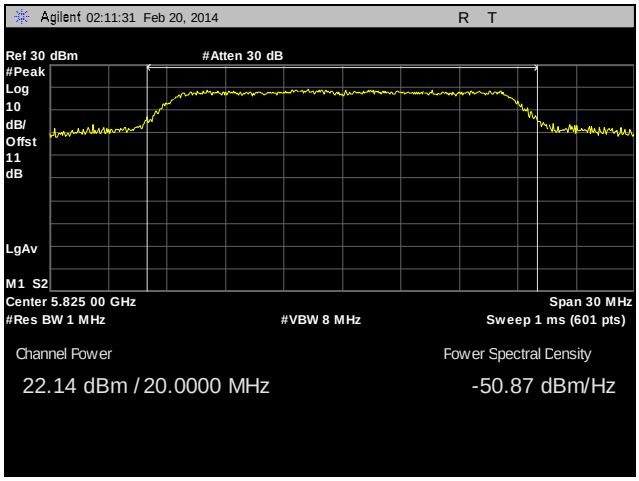
Plot 153. Peak Power Output, High Channel, 802.11n 20 MHz, Ant. 1, MIMO



Plot 154. Peak Power Output, Low Channel, 802.11n 20 MHz, Ant. 2, MIMO

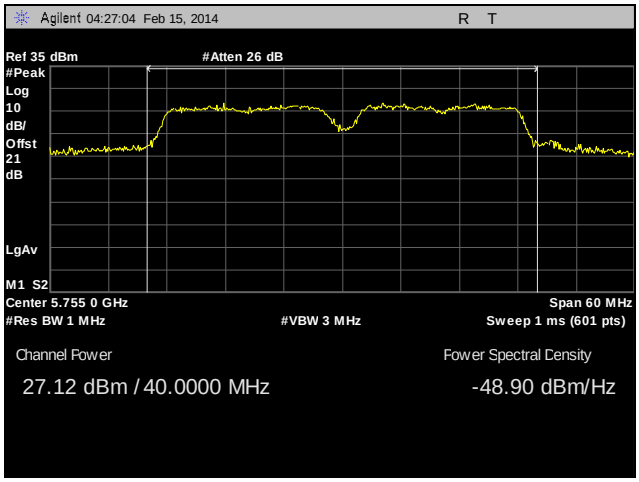


Plot 155. Peak Power Output, Mid Channel, 802.11n 20 MHz, Ant. 2, MIMO

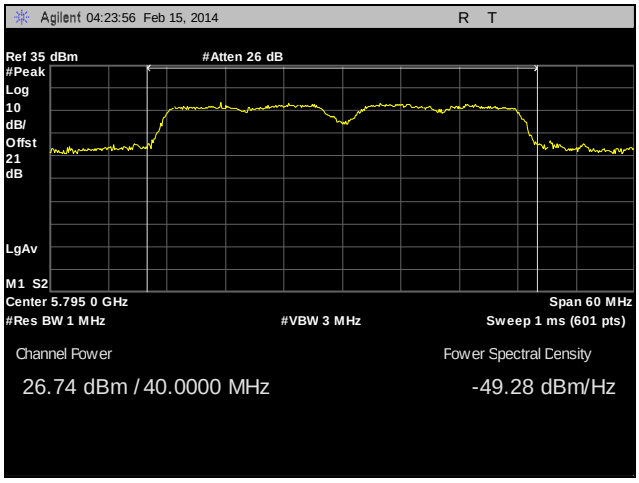


Plot 156. Peak Power Output, High Channel, 802.11n 20 MHz, Ant. 2, MIMO

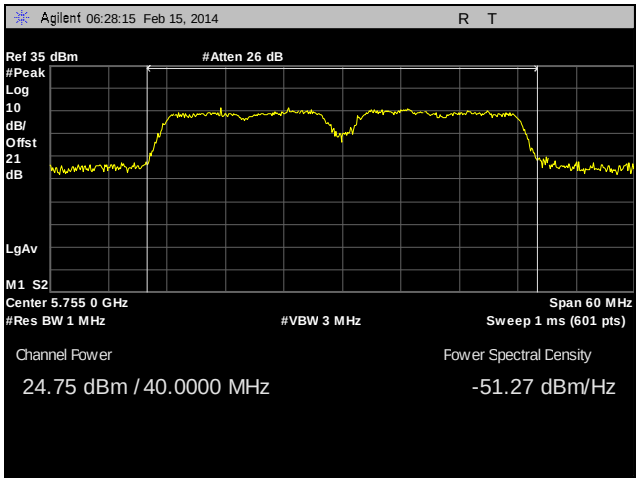
Peak Power Output Test Results, 802.11a 40 MHz



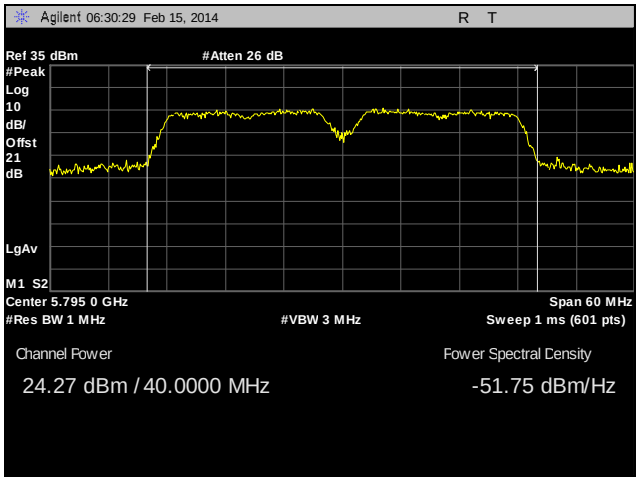
Plot 157. Peak Power Output, Low Channel, 802.11a 40 MHz, Ant. 0



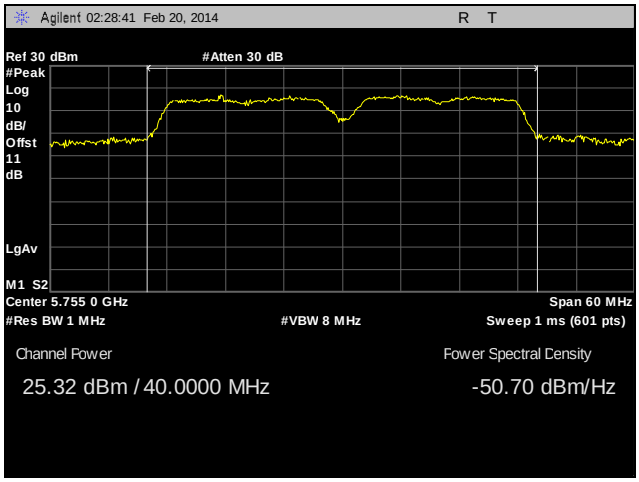
Plot 158. Peak Power Output, High Channel, 802.11a 40 MHz, Ant. 0



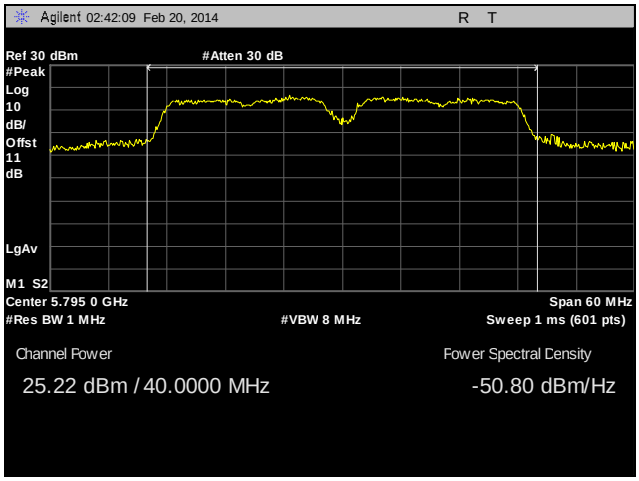
Plot 159. Peak Power Output, Low Channel, 802.11a 40 MHz, Ant. 1



Plot 160. Peak Power Output, High Channel, 802.11a 40 MHz, Ant. 1

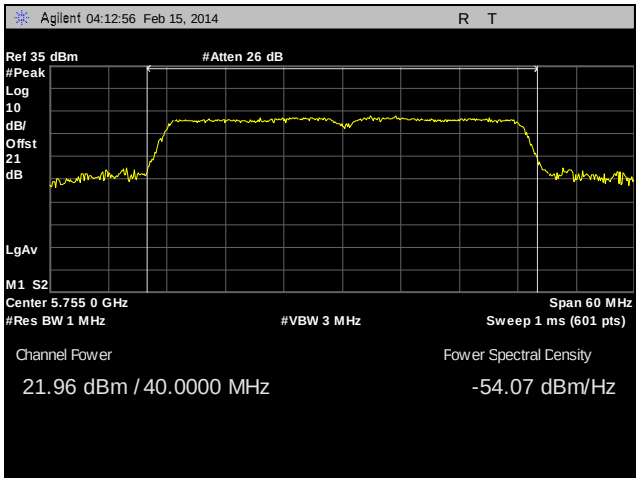


Plot 161. Peak Power Output, Low Channel, 802.11a 40 MHz, Ant. 2

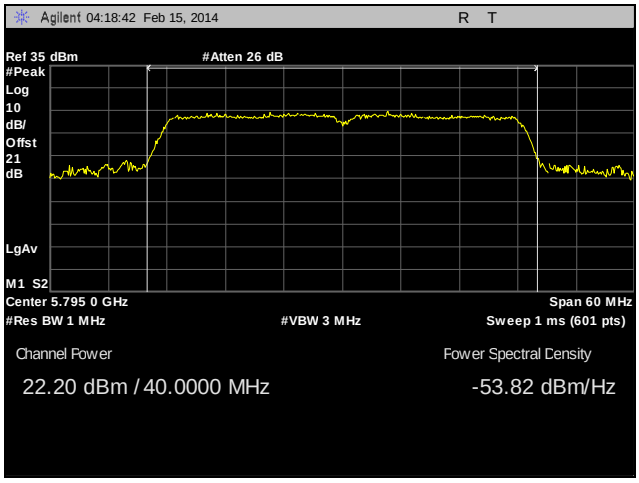


Plot 162. Peak Power Output, High Channel, 802.11a 40 MHz, Ant. 2

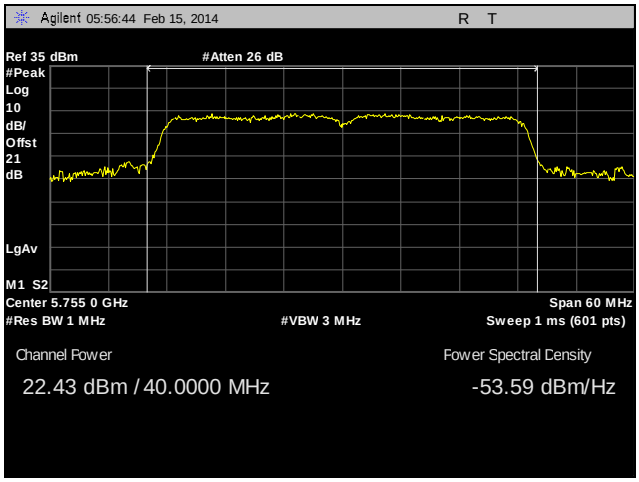
Peak Power Output Test Results, 802.11ac 40 MHz, MIMO



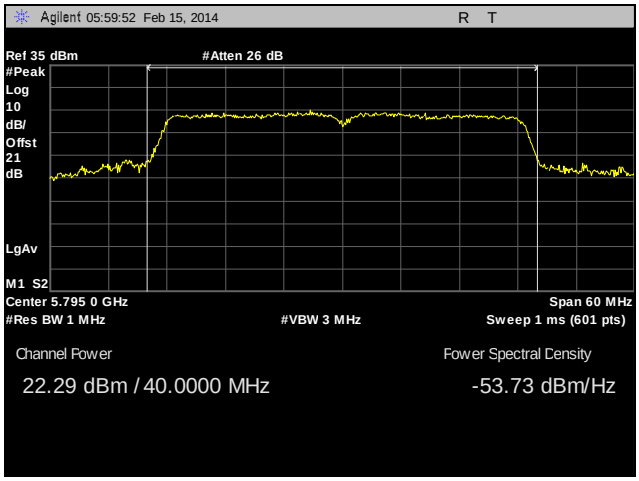
Plot 163. Peak Power Output, Low Channel, 802.11ac 40 MHz, Ant. 0, MIMO



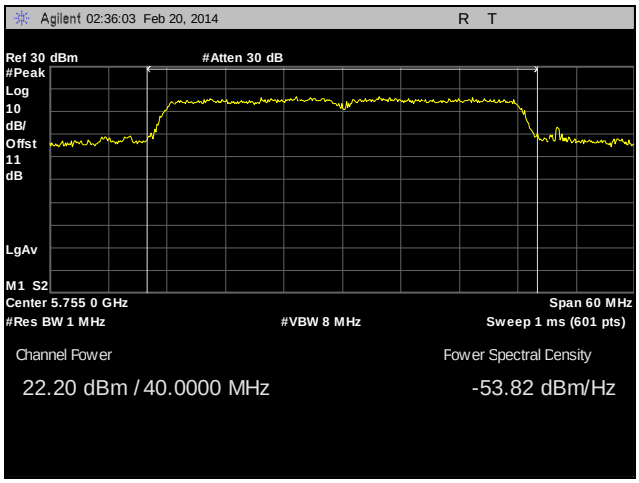
Plot 164. Peak Power Output, High Channel, 802.11ac 40 MHz, Ant. 0, MIMO



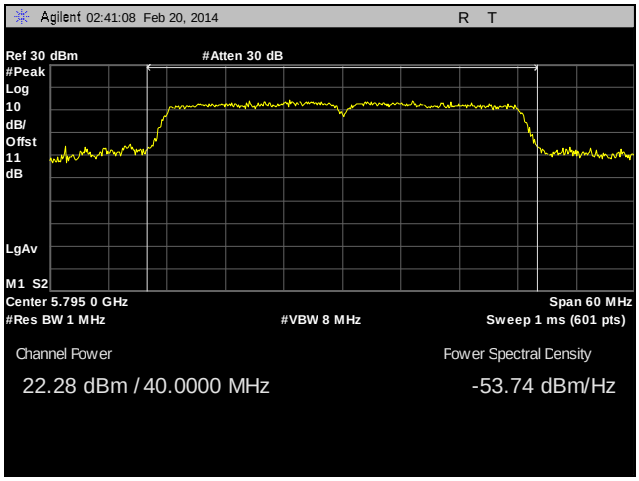
Plot 165. Peak Power Output, Low Channel, 802.11ac 40 MHz, Ant. 1, MIMO



Plot 166. Peak Power Output, High Channel, 802.11ac 40 MHz, Ant. 1, MIMO

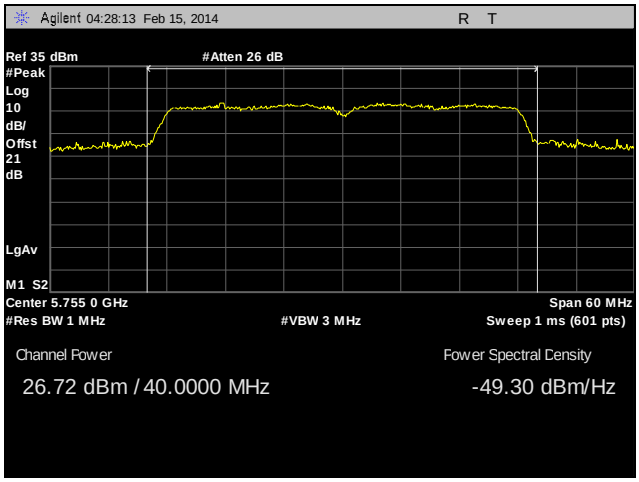


Plot 167. Peak Power Output, Low Channel, 802.11ac 40 MHz, Ant. 2, MIMO

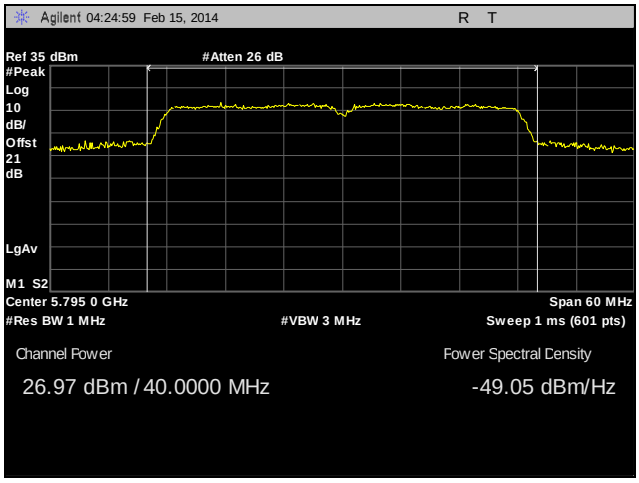


Plot 168. Peak Power Output, High Channel, 802.11ac 40 MHz, Ant. 2, MIMO

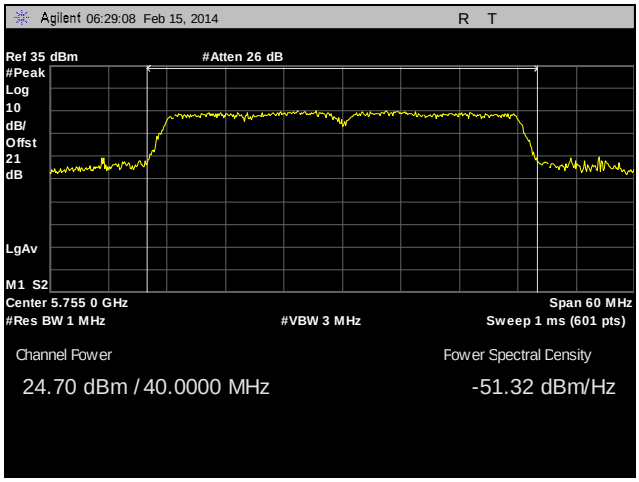
Peak Power Output Test Results, 802.11n 40 MHz



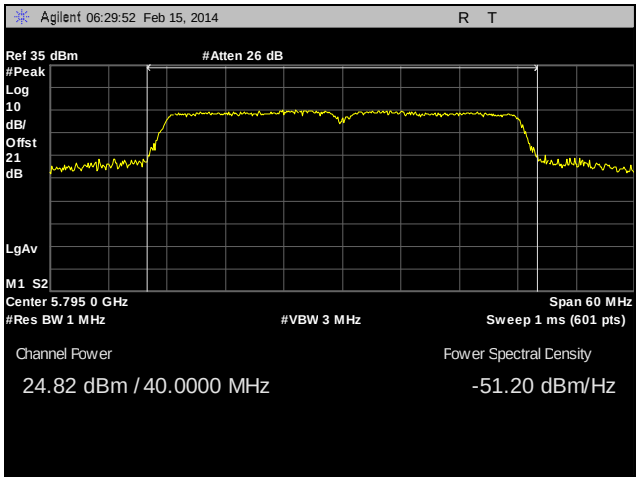
Plot 169. Peak Power Output, Low Channel, 802.11n 40 MHz, Ant. 0



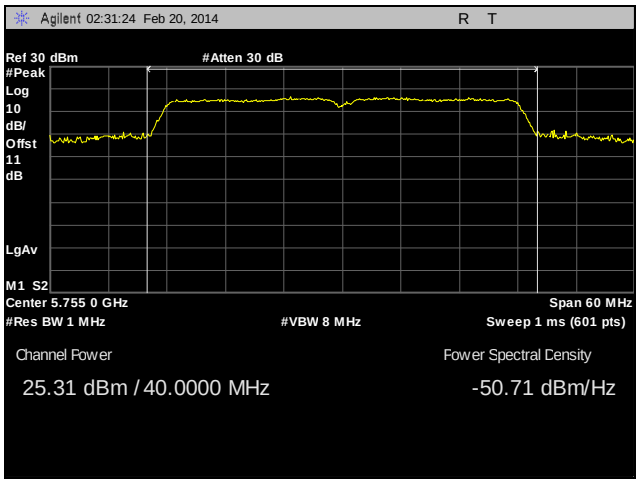
Plot 170. Peak Power Output, High Channel, 802.11n 40 MHz, Ant. 0



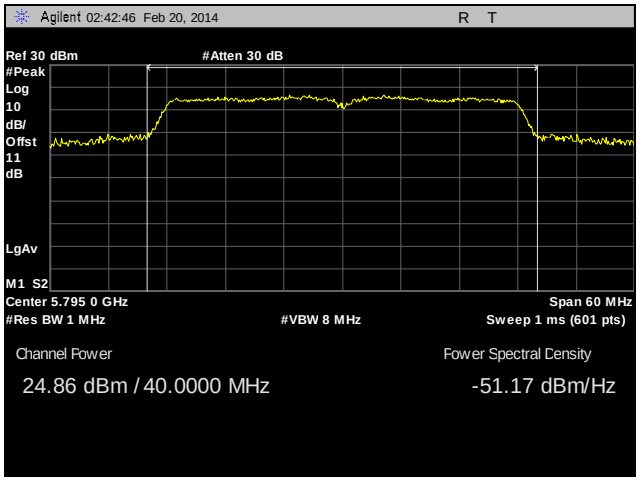
Plot 171. Peak Power Output, Low Channel, 802.11n 40 MHz, Ant. 1



Plot 172. Peak Power Output, High Channel, 802.11n 40 MHz, Ant. 1

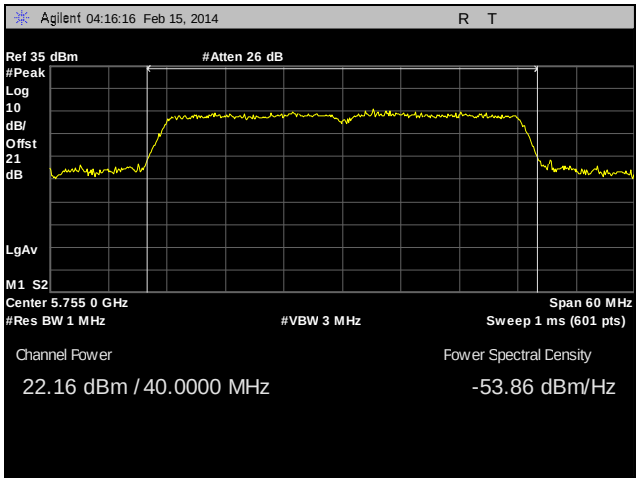


Plot 173. Peak Power Output, Low Channel, 802.11n 40 MHz, Ant. 2

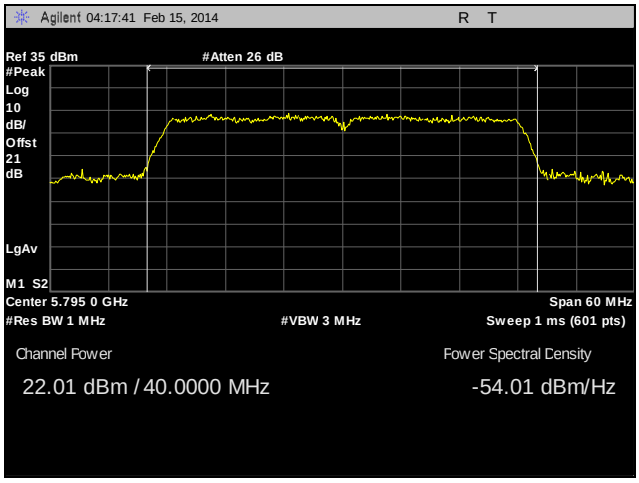


Plot 174. Peak Power Output, High Channel, 802.11n 40 MHz, Ant. 2

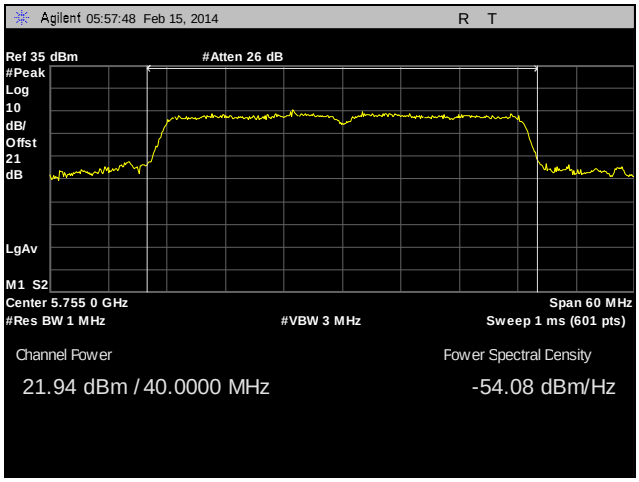
Peak Power Output Test Results, 802.11n 40 MHz, MIMO



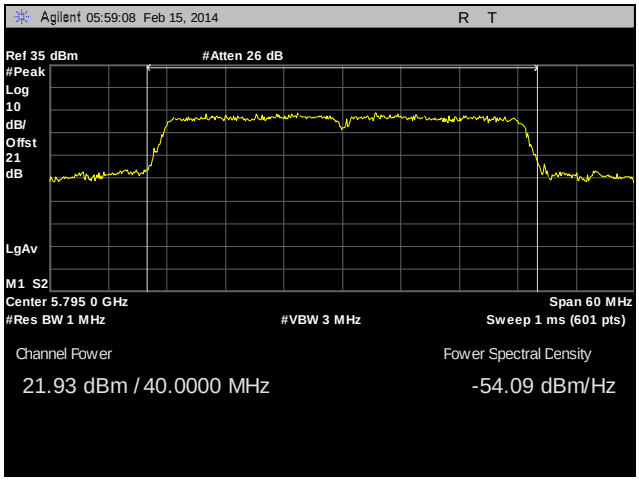
Plot 175. Peak Power Output, Low Channel, 802.11n 40 MHz, Ant. 0, MIMO



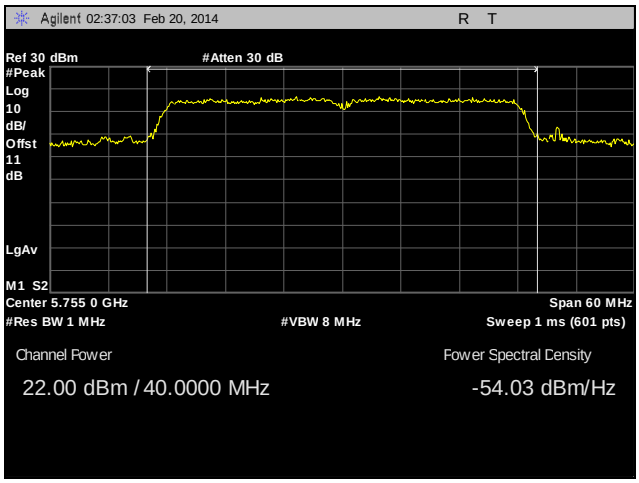
Plot 176. Peak Power Output, High Channel, 802.11n 40 MHz, Ant. 0, MIMO



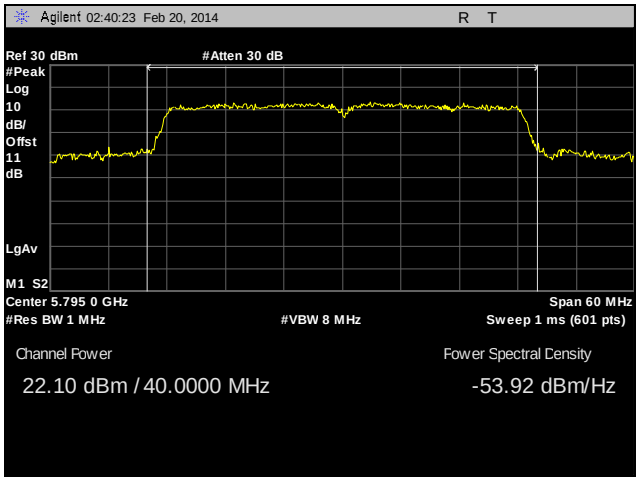
Plot 177. Peak Power Output, Low Channel, 802.11n 40 MHz, Ant. 1, MIMO



Plot 178. Peak Power Output, High Channel, 802.11n 40 MHz, Ant. 1, MIMO

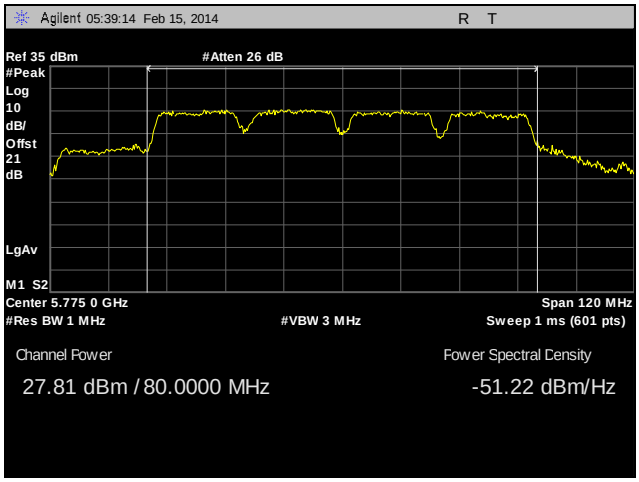


Plot 179. Peak Power Output, Low Channel, 802.11n 40 MHz, Ant. 2, MIMO

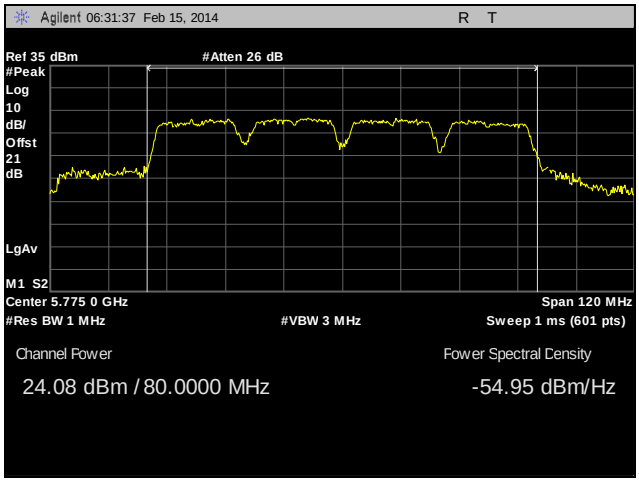


Plot 180. Peak Power Output, High Channel, 802.11n 40 MHz, Ant. 2, MIMO

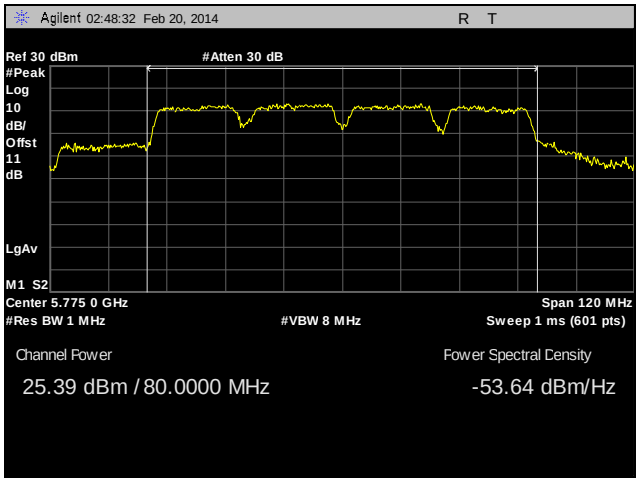
Peak Power Output Test Results, 802.11a 80 MHz



Plot 181. Peak Power Output, Low Channel, 802.11a 80 MHz, Ant. 0

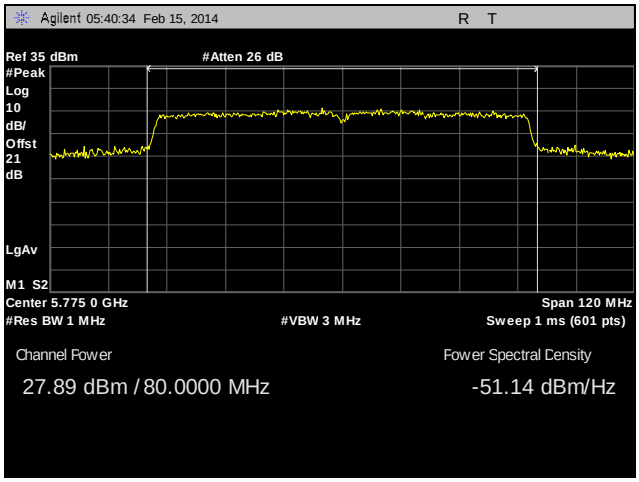


Plot 182. Peak Power Output, Mid Channel, 802.11a 80 MHz, Ant. 1

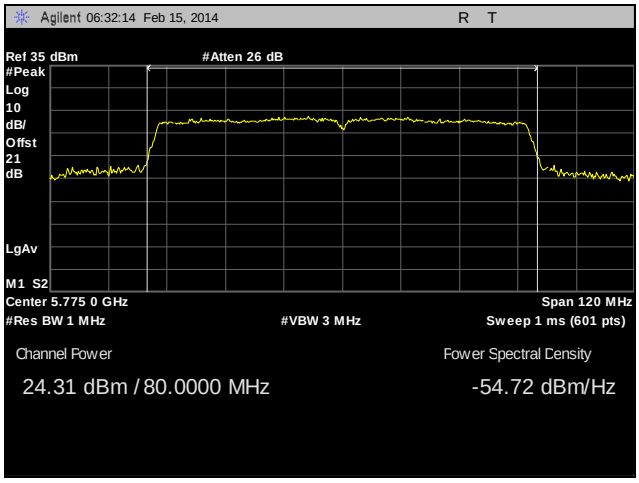


Plot 183. Peak Power Output, High Channel, 802.11a 80 MHz, Ant. 2

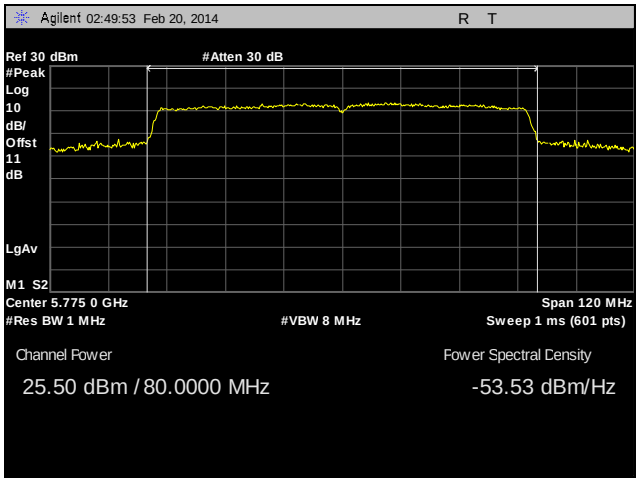
Peak Power Output Test Results, 802.11ac 80 MHz



Plot 184. Peak Power Output, Low Channel, 802.11ac 80 MHz, Ant. 0

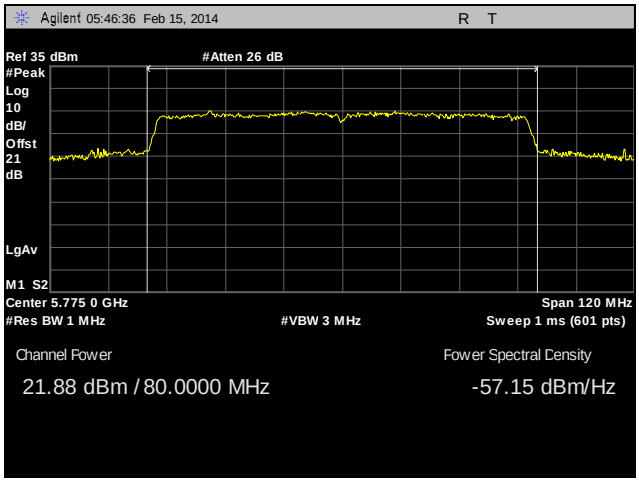


Plot 185. Peak Power Output, Mid Channel, 802.11ac 80 MHz, Ant. 1

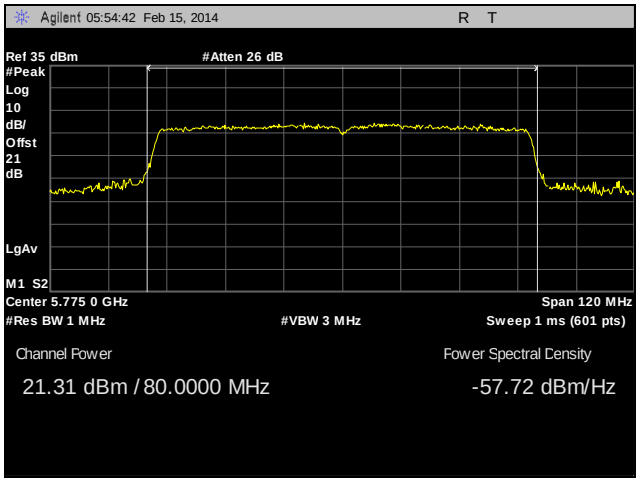


Plot 186. Peak Power Output, High Channel, 802.11ac 80 MHz, Ant. 2

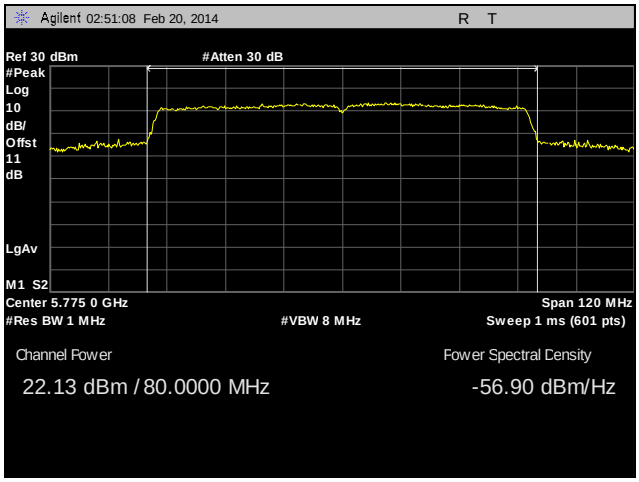
Peak Power Output Test Results, 802.11ac 80 MHz, MIMO



Plot 187. Peak Power Output, Low Channel, 802.11ac 80 MHz, Ant. 0, MIMO



Plot 188. Peak Power Output, Mid Channel, 802.11ac 80 MHz, Ant. 1, MIMO



Plot 189. Peak Power Output, High Channel, 802.11ac 80 MHz, Ant. 2, MIMO

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.247(d) Radiated Spurious Emissions Requirements and Band Edge

Test Requirements: **§15.247(d); §15.205:** Emissions outside the frequency band.

§15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a).

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

MHz	MHz	MHz	GHz
0.090–0.110----------	16.42–16.423	399.9–410	4.5–5.15
[1] 0.495–0.505----------	16.69475–16.69525	608–614	5.35–5.46
2.1735–2.1905----------	16.80425–16.80475	960–1240	7.25–7.75
4.125–4.128----------	25.5–25.67	1300–1427	8.025–8.5
4.17725–4.17775----------	37.5–38.25	1435–1626.5	9.0–9.2
4.20725–4.20775----------	73–74.6	1645.5–1646.5	9.3–9.5
6.215–6.218----------	74.8–75.2	1660–1710	10.6–12.7
6.26775–6.26825----------	108–121.94	1718.8–1722.2	13.25–13.4
6.31175–6.31225----------	123–138	2200–2300	14.47–14.5
8.291–8.294----------	149.9–150.05	2310–2390	15.35–16.2
8.362–8.366----------	156.52475–156.52525	2483.5–2500	17.7–21.4
8.37625–8.38675----------	156.7–156.9	2655–2900	22.01–23.12
8.41425–8.41475----------	162.0125–167.17	3260–3267	23.6–24.0
12.29–12.293----------	167.72–173.2	3332–3339	31.2–31.8
12.51975–12.52025----------	240–285	3345.8–3358 36.	43–36.5
12.57675–12.57725----------	322–335.4	3600–4400	([2])

Table 90. Restricted Bands of Operation

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

Test Requirement(s): **§ 15.209 (a):** Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in Table 91.

Frequency (MHz)	§ 15.209(a),Radiated Emission Limits (dBµV) @ 3m
30 - 88	40.00
88 - 216	43.50
216 - 960	46.00
Above 960	54.00

Table 91. Radiated Emissions Limits Calculated from FCC Part 15, § 15.209 (a)

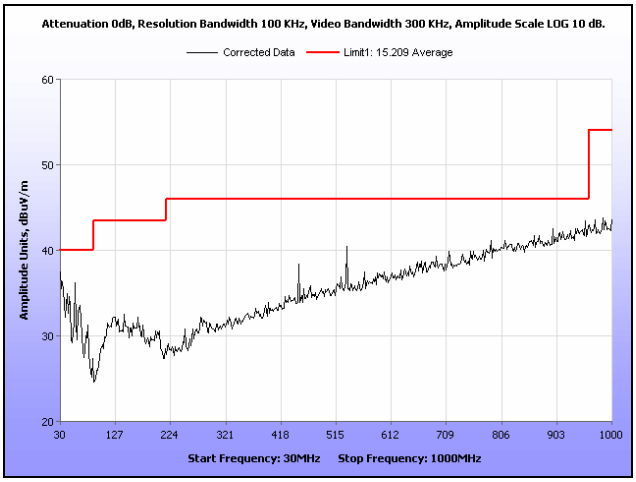
Test Procedures: The transmitter was turned on. Measurements were performed of the low, mid and high Channels. The EUT was rotated orthogonally through all three axes. Plots shown are corrected for both antenna correction factor and distance and compared to a 3 m limit line. Only noise floor was measured above 18 GHz.

Test Results: The EUT was compliant with the Radiated Spurious Emission limits of **§ 15.247(d)**. Only noise floor was observed above 18GHz. Also, due to dual radio in the EUT (2.4GHz and 5GHz radio), in some of the radiated emission plot 2.4GHz radio beacon was observed during radiated emission testing. Arris had no way of turning this off. This is not a spurious emission of the 5.8 GHz radio. In some of the plots, emissions right outside 5725-5850 MHz was observed which was over the average limit requirement of FCC 15.209. However, these emissions do not fall in restricted band of FCC 15.205 and only need to meet 20 dBc.

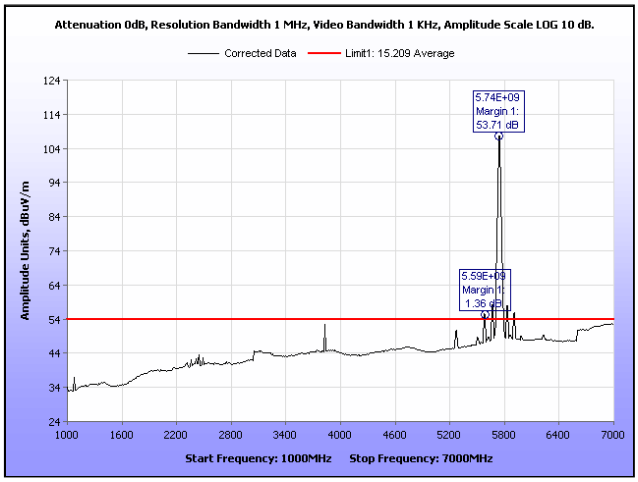
Test Engineer(s): Surinder Singh

Test Date(s): 02/21/14

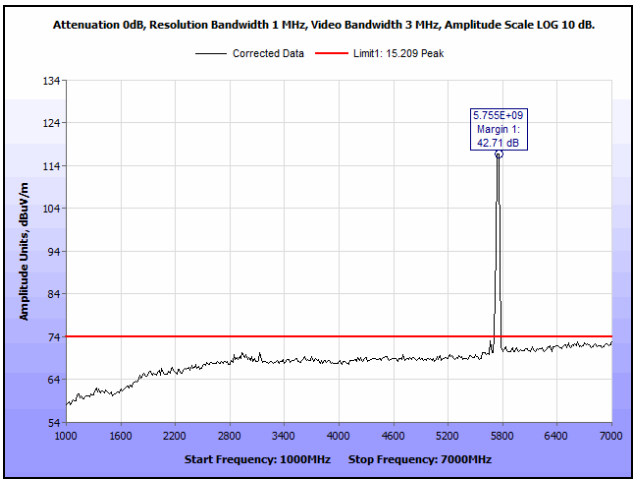
Radiated Spurious Emissions Test Results, 802.11a 20 MHz



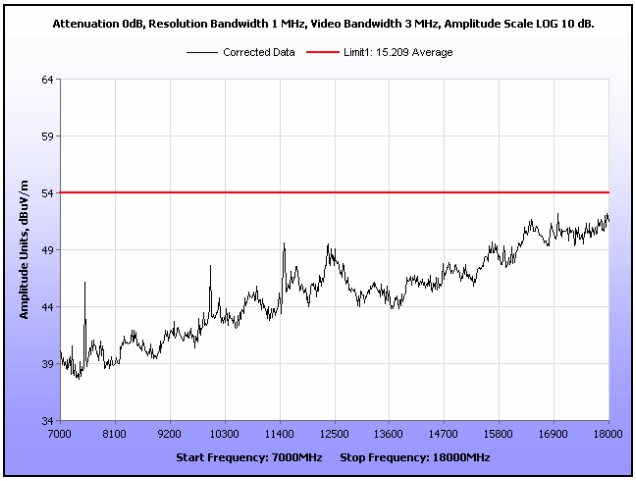
Plot 190. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 0, 30 MHz – 1 GHz



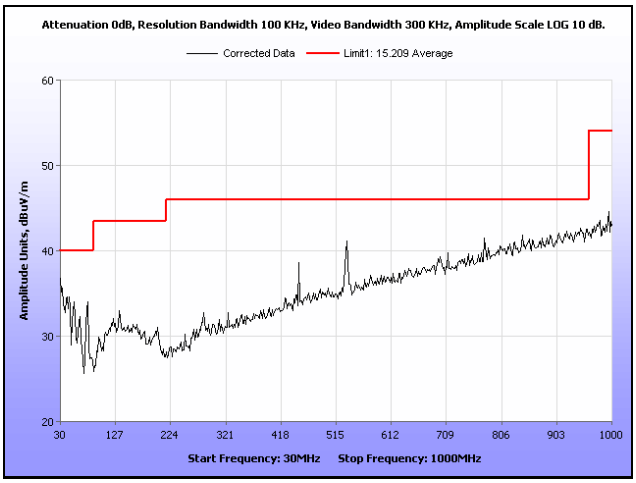
Plot 191. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 0, 1 GHz – 7 GHz, Average



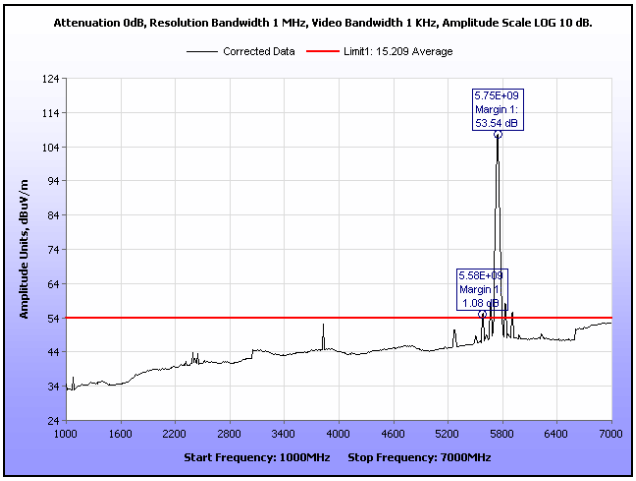
Plot 192. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



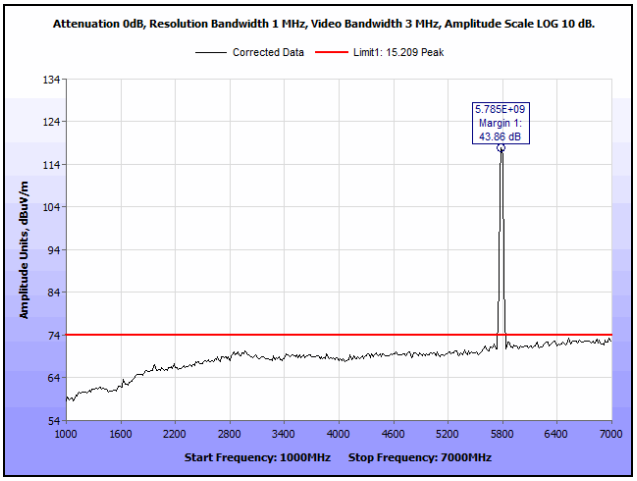
Plot 193. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 0, 7 GHz – 18 GHz



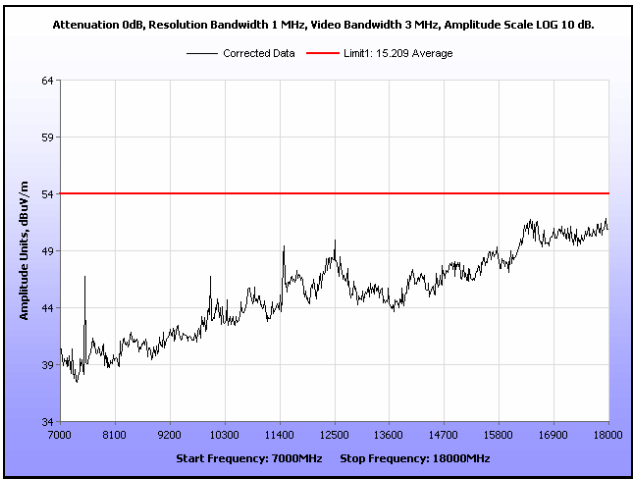
Plot 194. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 0, 30 MHz – 1 GHz



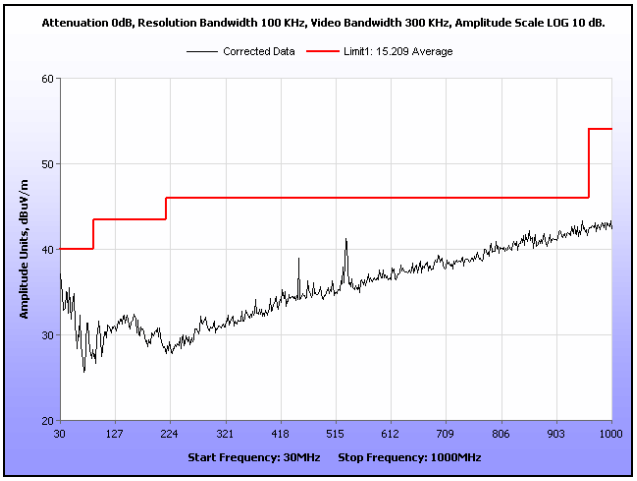
Plot 195. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 0, 1 GHz – 7 GHz, Average



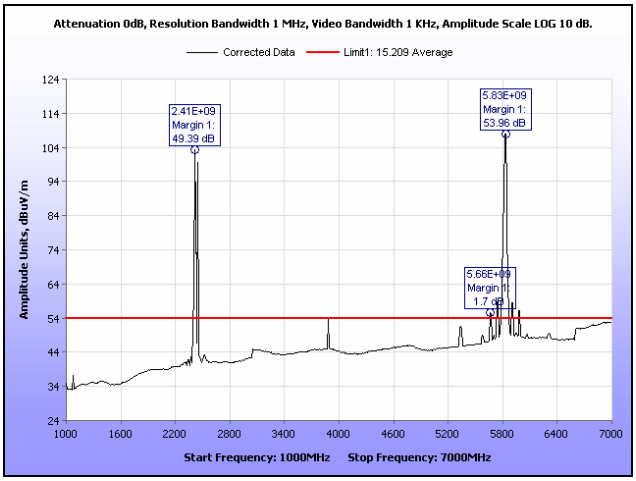
Plot 196. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



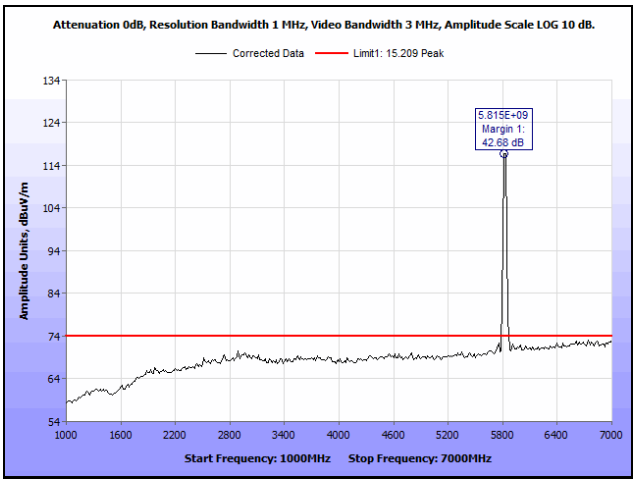
Plot 197. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 0, 7 GHz – 18 GHz



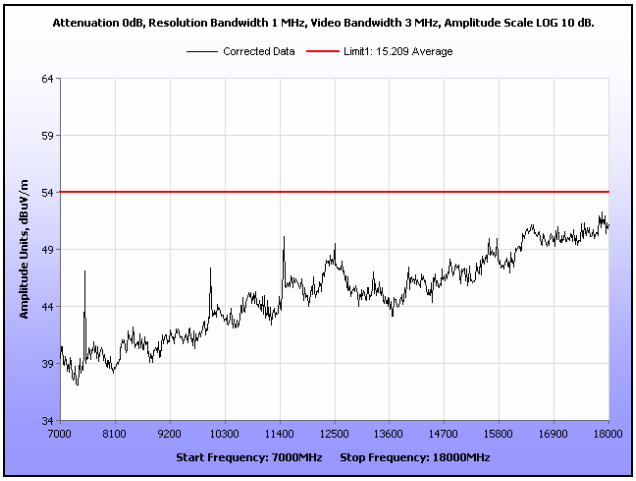
Plot 198. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 0, 30 MHz – 1 GHz



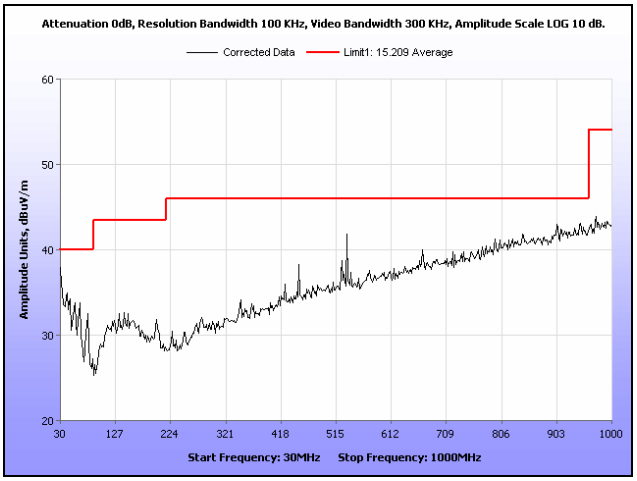
Plot 199. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 0, 1 GHz – 7 GHz, Average



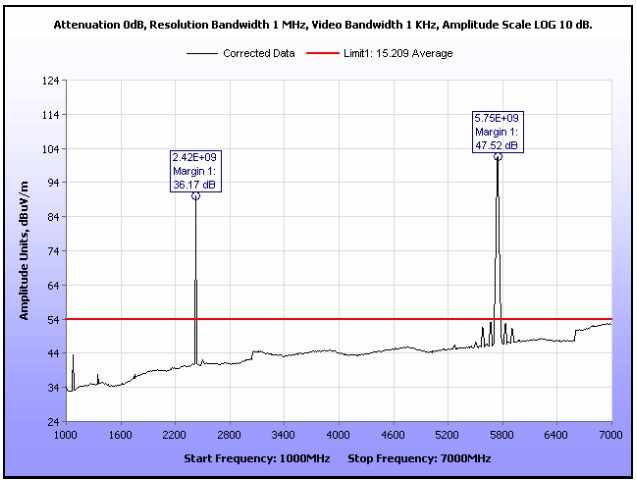
Plot 200. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



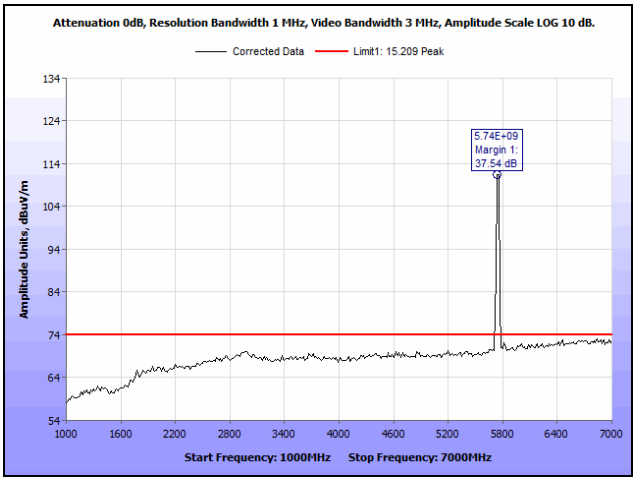
Plot 201. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 0, 7 GHz – 18 GHz



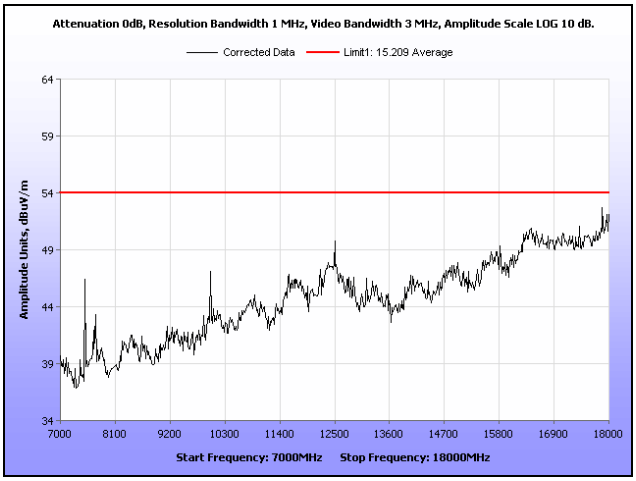
Plot 202. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 1, 30 MHz – 1 GHz



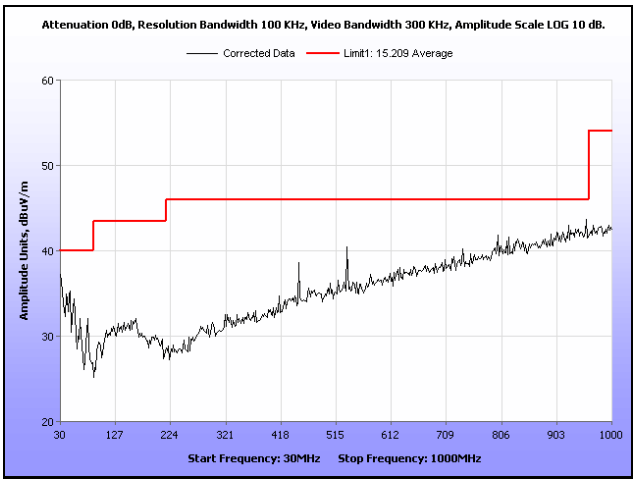
Plot 203. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 1, 1 GHz – 7 GHz, Average



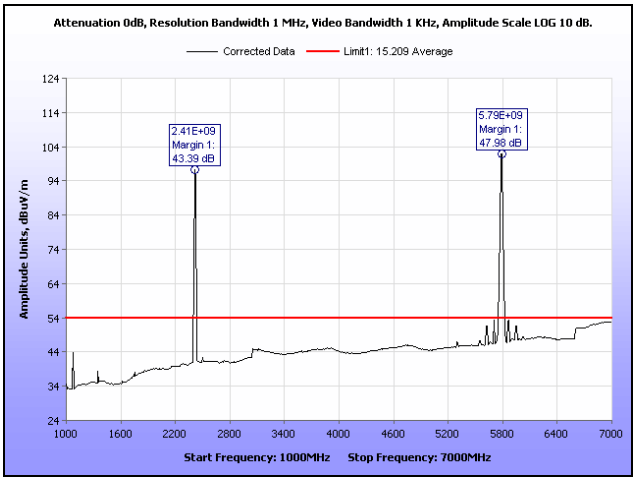
Plot 204. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



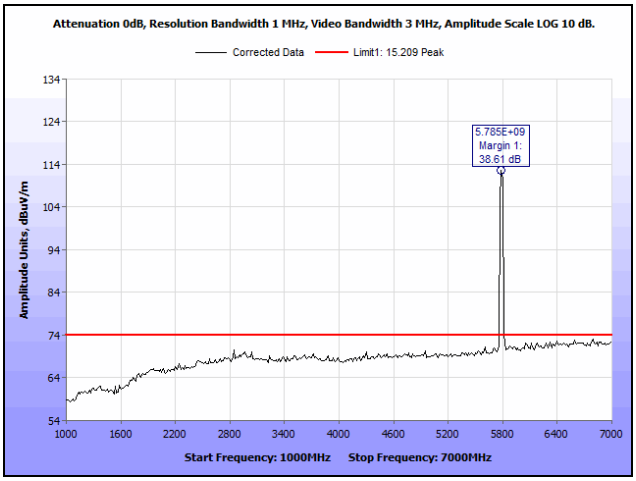
Plot 205. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 1, 7 GHz – 18 GHz



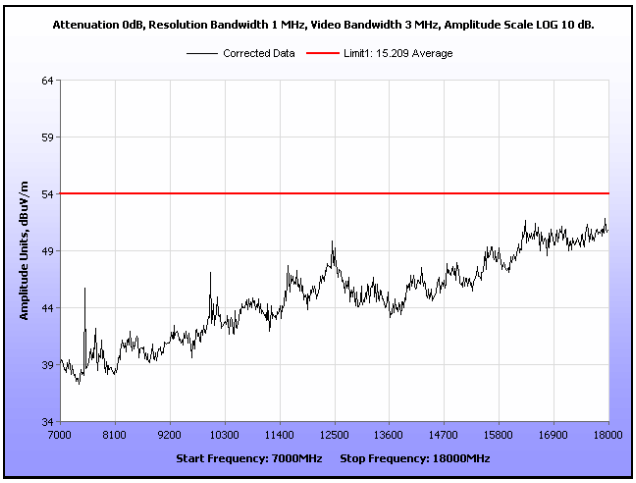
Plot 206. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 1, 30 MHz – 1 GHz



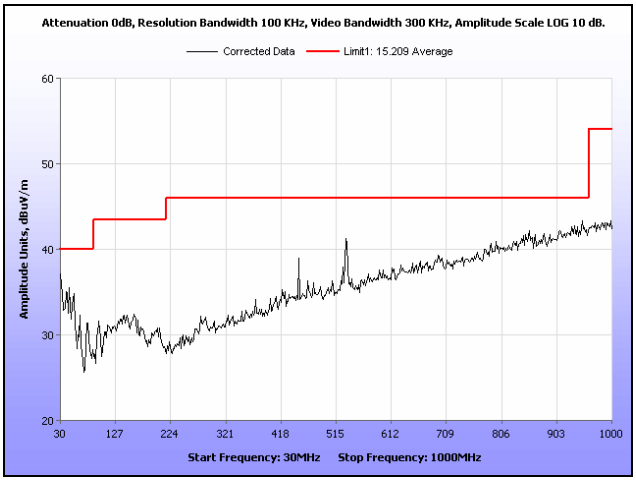
Plot 207. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 1, 1 GHz – 7 GHz, Average



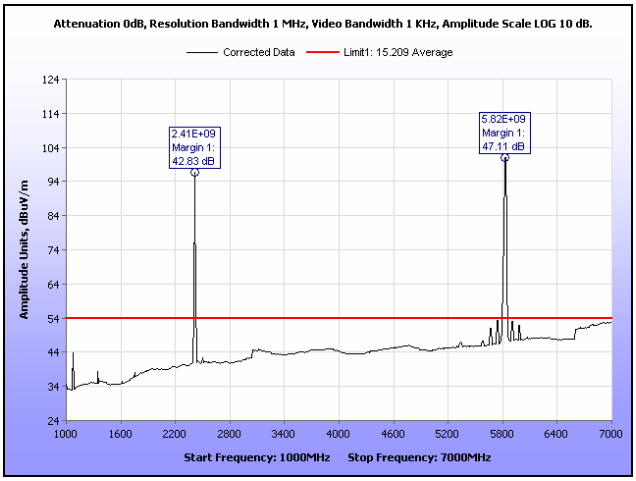
Plot 208. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



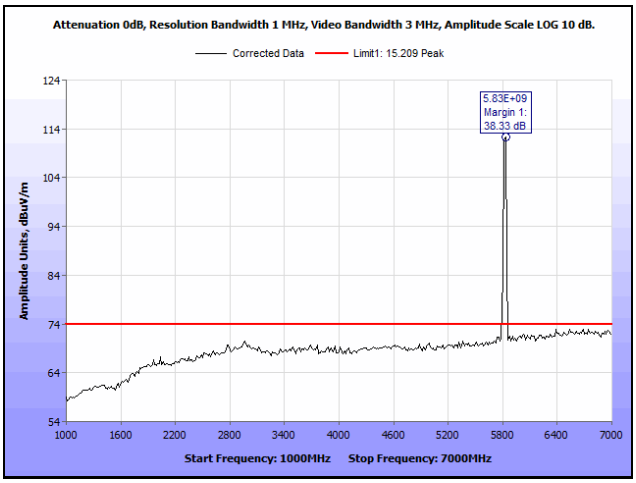
Plot 209. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 1, 7 GHz – 18 GHz



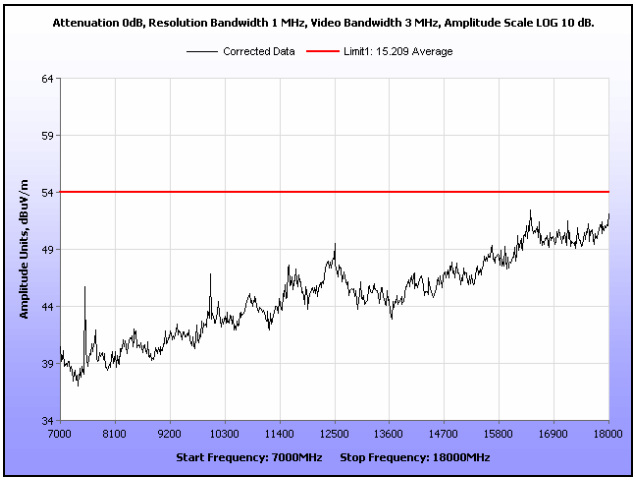
Plot 210. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 1, 30 MHz – 1 GHz



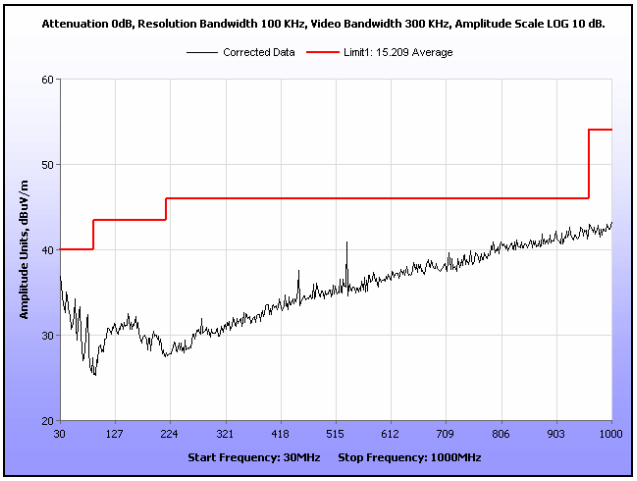
Plot 211. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 1, 1 GHz – 7 GHz, Average



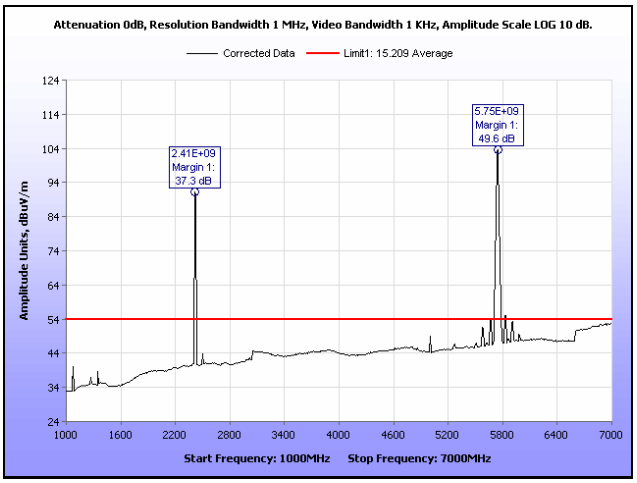
Plot 212. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



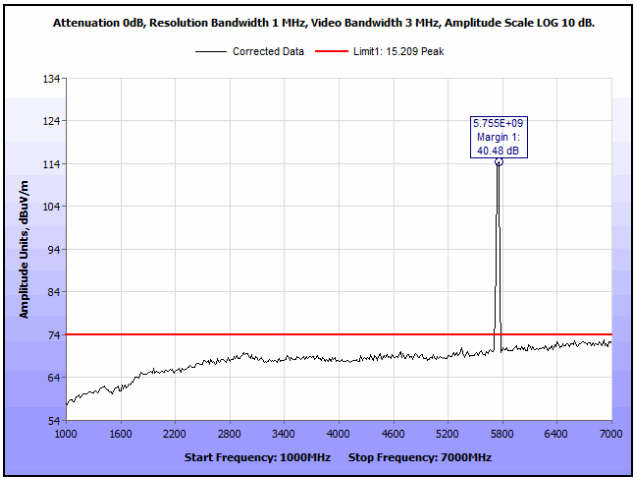
Plot 213. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 1, 7 GHz – 18 GHz



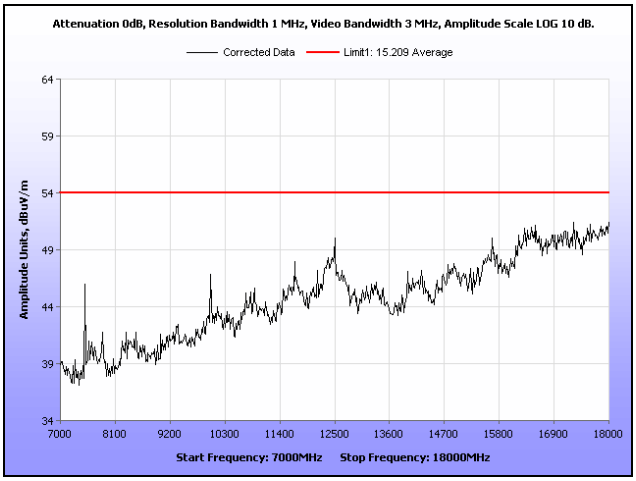
Plot 214. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 2, 30 MHz – 1 GHz



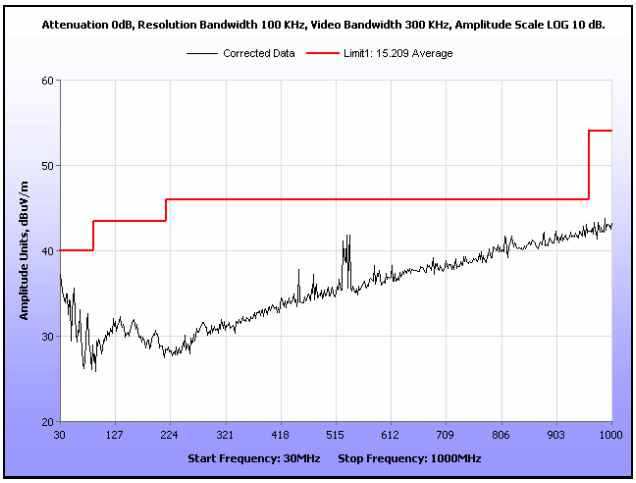
Plot 215. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 2, 1 GHz – 7 GHz, Average



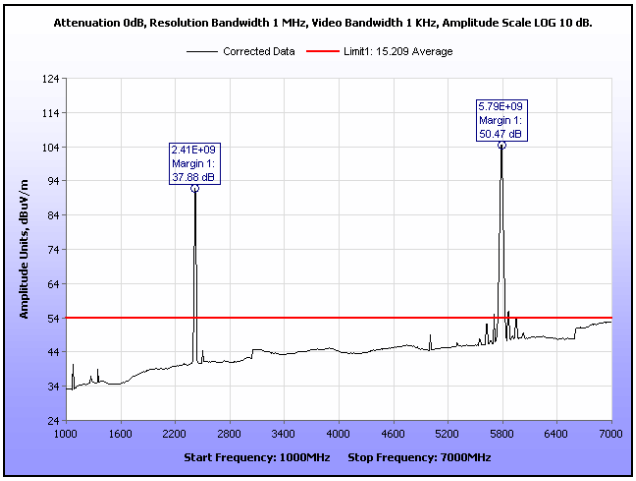
Plot 216. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 2, 1 GHz – 7 GHz, Peak



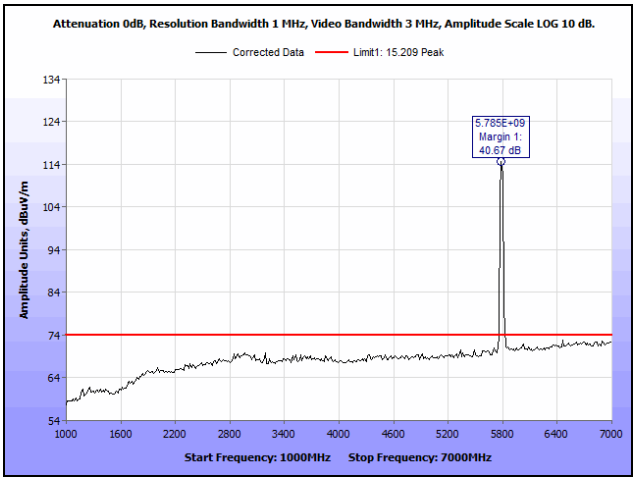
Plot 217. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 2, 7 GHz – 18 GHz



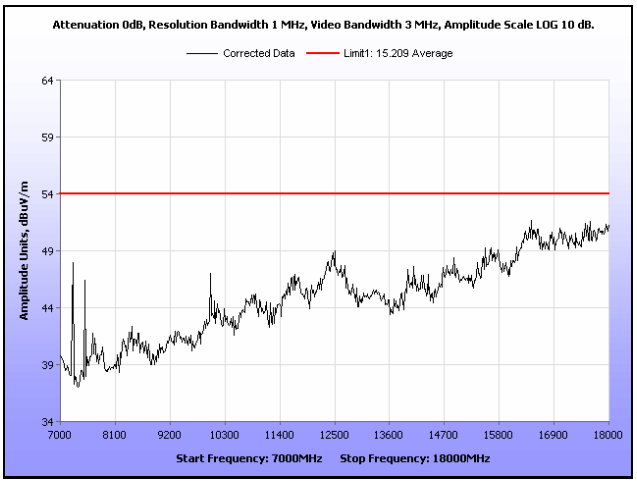
Plot 218. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 2, 30 MHz – 1 GHz



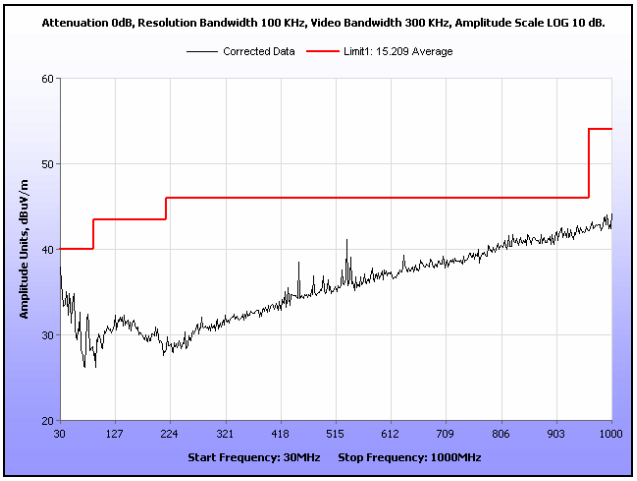
Plot 219. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 2, 1 GHz – 7 GHz, Average



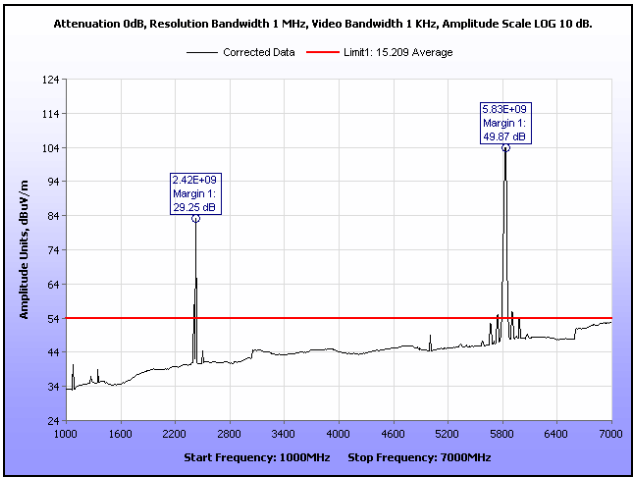
Plot 220. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 2, 1 GHz – 7 GHz, Peak



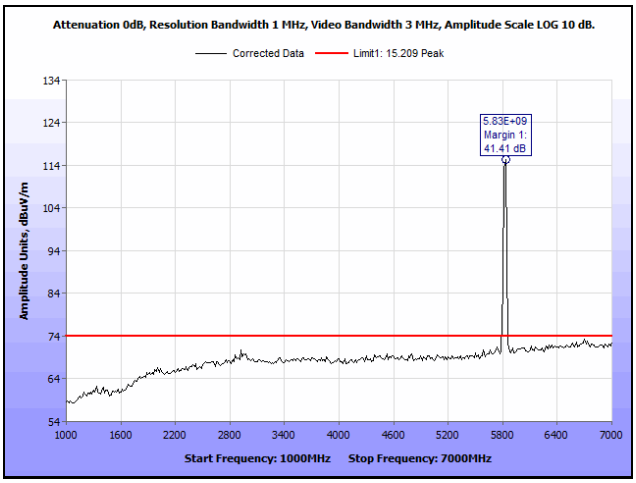
Plot 221. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 2, 7 GHz – 18 GHz



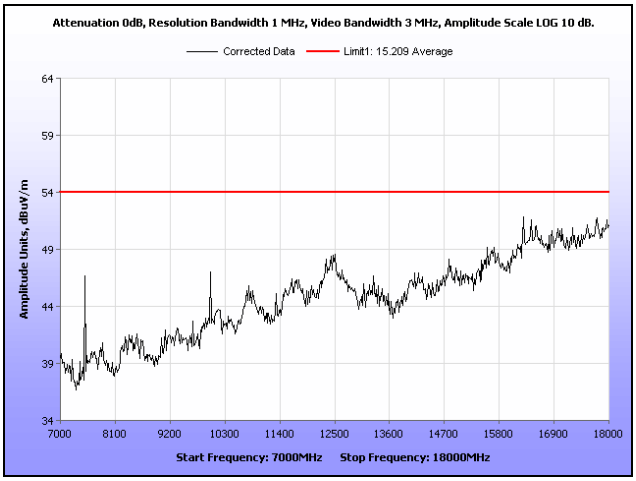
Plot 222. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 2, 30 MHz – 1 GHz



Plot 223. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 2, 1 GHz – 7 GHz, Average

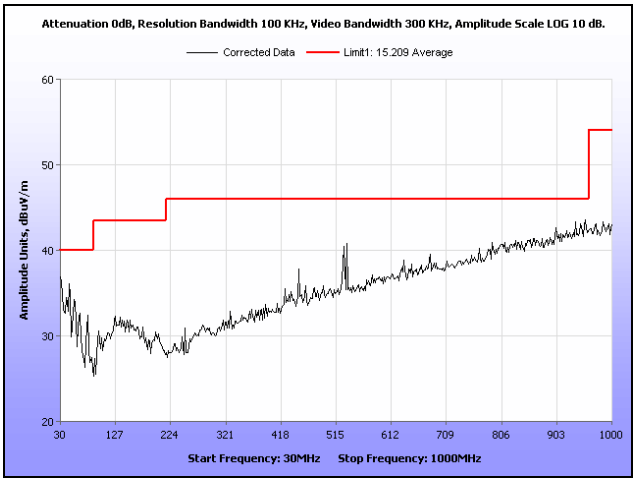


Plot 224. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 2, 1 GHz – 7 GHz, Peak

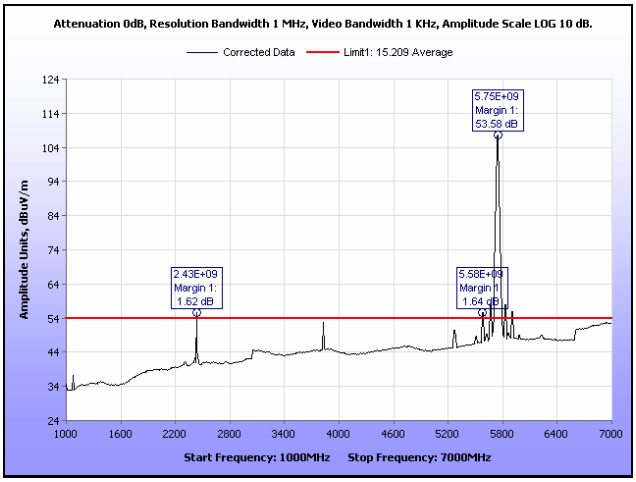


Plot 225. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 2, 7 GHz – 18 GHz

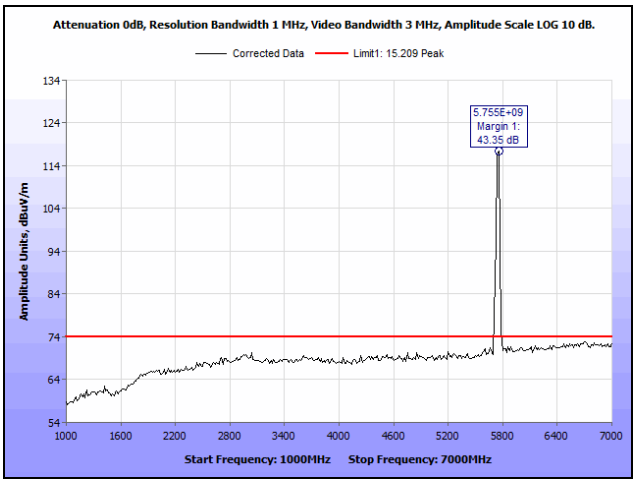
Radiated Spurious Emissions Test Results, 802.11ac 20 MHz



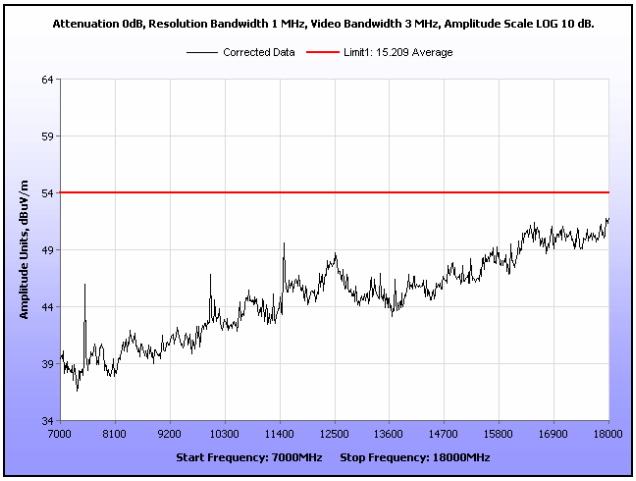
Plot 226. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, Ant. 0, 30 MHz – 1 GHz



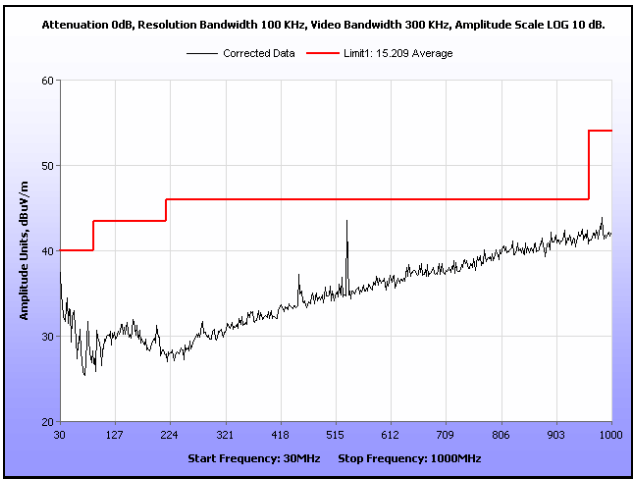
Plot 227. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, Ant. 0, 1 GHz – 7 GHz, Average



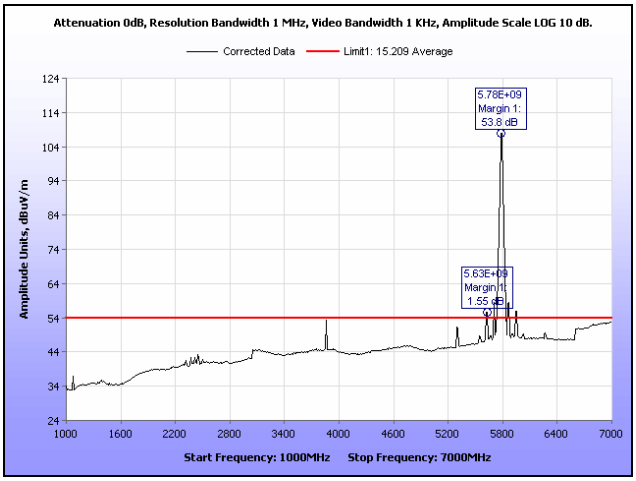
Plot 228. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



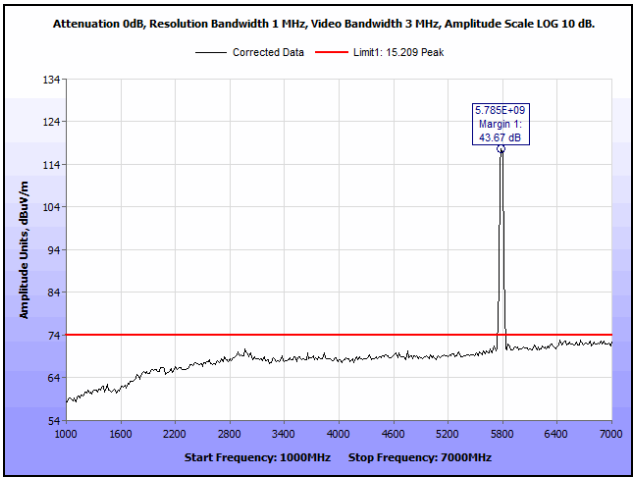
Plot 229. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, Ant. 0, 7 GHz – 18 GHz



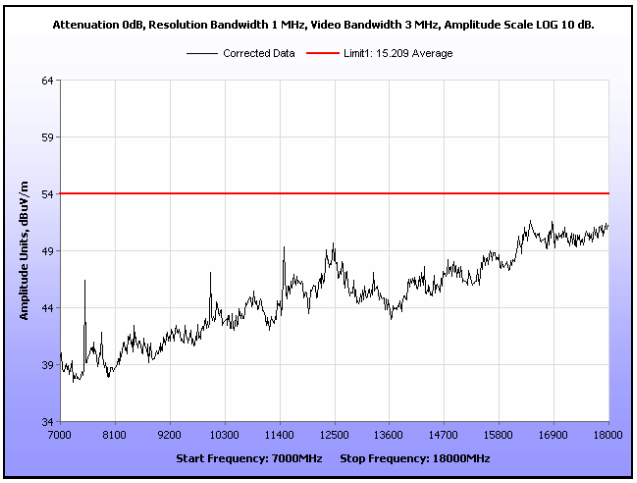
Plot 230. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, Ant. 0, 30 MHz – 1 GHz



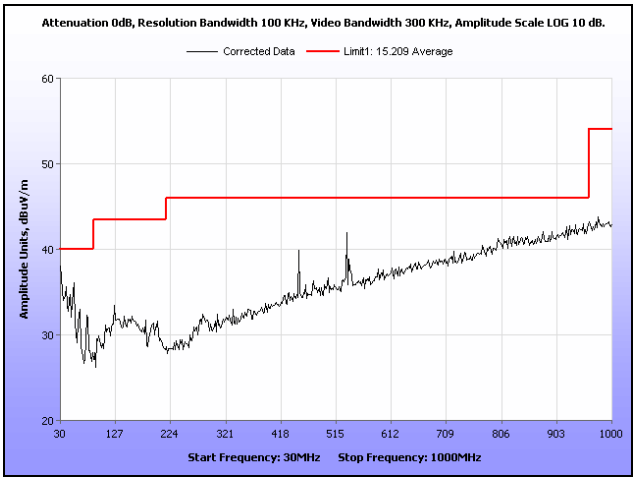
Plot 231. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, Ant. 0, 1 GHz – 7 GHz, Average



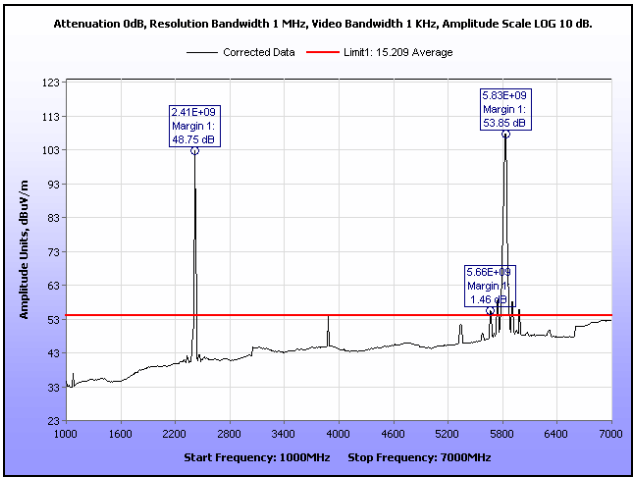
Plot 232. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



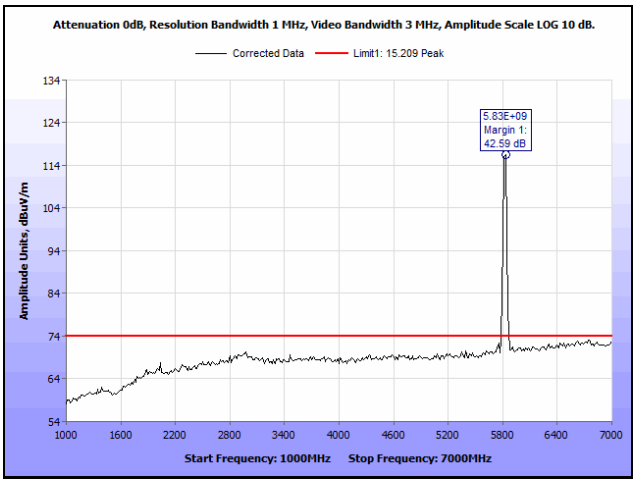
Plot 233. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, Ant. 0, 7 GHz – 18 GHz



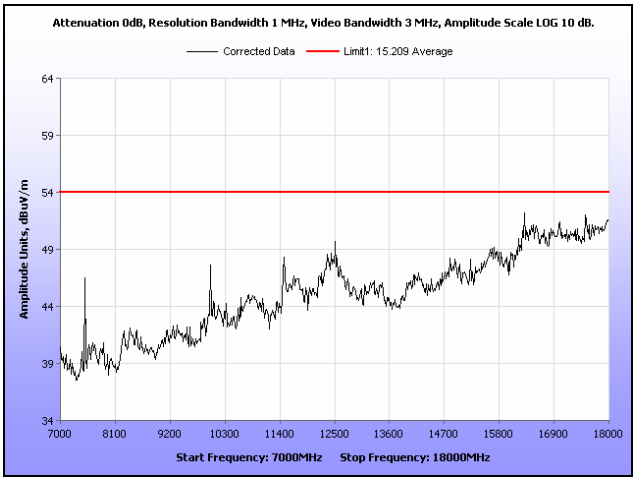
Plot 234. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, Ant. 0, 30 MHz – 1 GHz



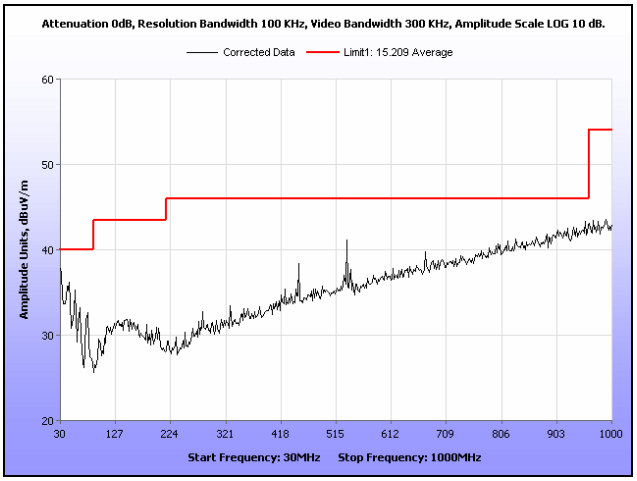
Plot 235. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, Ant. 0, 1 GHz – 7 GHz, Average



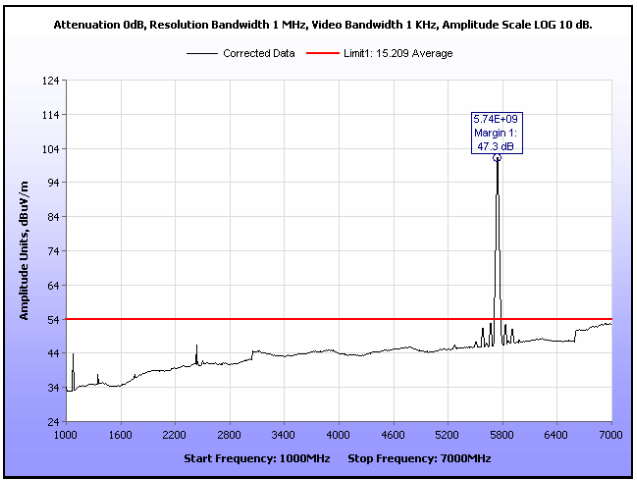
Plot 236. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



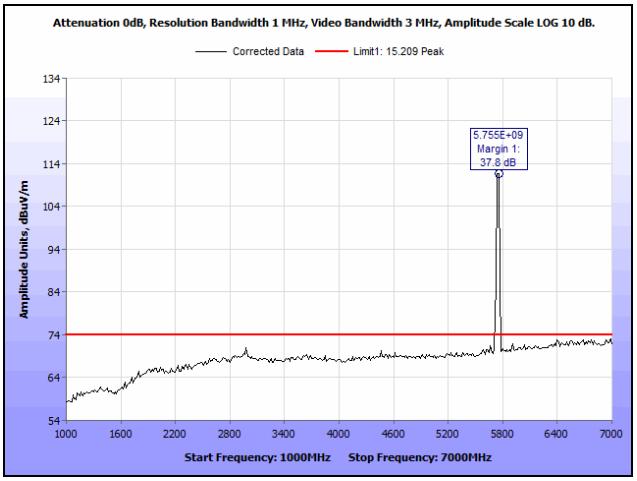
Plot 237. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, Ant. 0, 7 GHz – 18 GHz



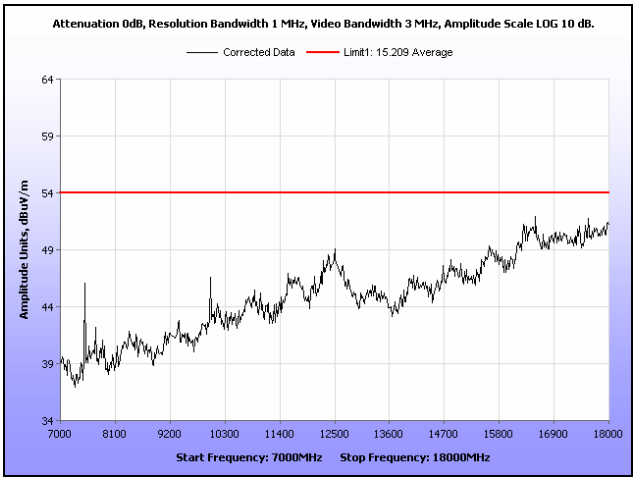
Plot 238. Radiated Spurious Emissions, Low Channel 802.11ac 20 MHz, Ant. 1, 30 MHz – 1 GHz



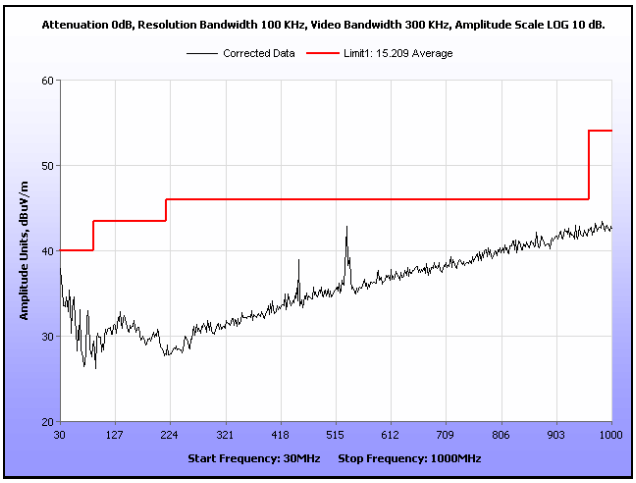
Plot 239. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, Ant. 1, 1 GHz – 7 GHz, Average



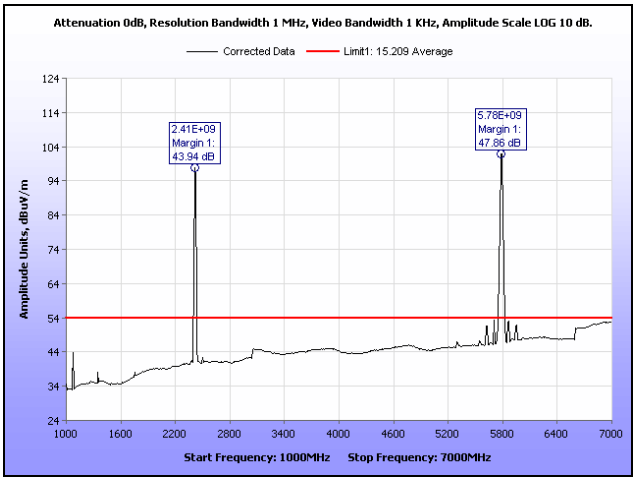
Plot 240. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



Plot 241. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, Ant. 1, 7 GHz – 18 GHz



Plot 242. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, Ant. 1, 30 MHz – 1 GHz



Plot 243. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, Ant. 1, 1 GHz – 7 GHz, Average

