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

914 WEST PATAPSCO AVENUE ● BALTIMORE, MARYLAND 21230-3432 ● PHONE (410) 354-3300 ● FAX (410) 354-3313
33439 WESTERN AVENUE ● UNION CITY, CALIFORNIA 94587 ● PHONE (510) 489-6300 ● FAX (510) 489-6372
3162 BELICK STREET ● SANTA CLARA, CALIFORNIA 95054 ● PHONE (408 748-3585 ● FAX (510) 489-6372
13501 MCCALLEN PASS ● AUSTIN, TX 78753 ● PHONE (512) 287-2500 ● FAX (512) 287-2513

October 29, 2015

ARRIS
101 Tournament Drive
Horsham, PA 19044

Dear Mark Hageali,

Enclosed is the EMC Wireless test report for compliance testing of the ARRIS, DCX3635 as tested to the requirements of Title 47 of the CFR, Ch. 1 (10-1-06 ed.), Title 47 of the CFR, Part 15.407 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\EMC86201-FCC407 UNII 2 Rev. 3)

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Electromagnetic Compatibility Criteria Test Report

for the

ARRIS
DCX3635

Tested under
the Certification Rules
contained in
Title 47 of the CFR, Part 15, Subpart B
for Unintentional Radiators
and
Title 47 of the CFR, Part 15.407
for Intentional Radiators

MET Report: EMC86201-FCC407 UNII 2 Rev. 3

October 29, 2015

Prepared For:

ARRIS
101 Tournament Drive
Horsham, PA 19044

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

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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 Parts 15B, 15.407, of the FCC Rules under normal use and maintenance.

Asad Bajwa, Director
Electromagnetic Compatibility Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
∅	September 29, 2015	Initial Issue.
1	October 13, 2015	Corrected FCC ID.

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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
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 DCX3635, with the requirements of Part 15, §15.407. All references are to the most current version of Title 47 of the Code of Federal Regulations in effect. In accordance with §2.1033, the following data is presented in support of the Certification of the DCX3635. ARRIS should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the DCX3635, has been **permanently** discontinued.

B. Executive Summary

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, §15.407, in accordance with ARRIS, purchase order number AR1062669. All tests were conducted using measurement procedure ANSI C63.4-2003.

FCC Reference	Description	Results
15.203	Antenna Requirements	Compliant
15.207	AC Conducted Emissions 150KHz – 30MHz	Compliant
15.403 (i)	26dB Occupied Bandwidth	Compliant
15.407 (a)(2)	Conducted Transmitter Output Power	Compliant
15.407 (a)(2)	Power Spectral Density	Compliant
15.407 (b)(2), (3), (5), (6)	Undesirable Emissions (15.205/15.209 – General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Compliant
15.407(f)	RF Exposure	Compliant
15.407(h)(2)	DFS Channel Bandwidth	Compliant
15.407 (h)(2)(ii)	Initial Channel Availability Check Time (CACT)	Compliant
15.407 (h)(2)(ii)	Radar Burst at the Beginning of CACT	Compliant
15.407 (h)(2)(ii)	Radar Burst at the End of CACT	Compliant
15.407 (h)(2)(iii)	Channel Move and Closing Time	Compliant
15.407 (h)(2)(iv)	Non-Occupancy Period	Compliant
15.407 (h)(2)	Statistical Performance Check	Compliant

Table 1. Executive Summary of EMC Part 15.407 ComplianceTesting

II. Equipment Configuration

A. Overview

MET Laboratories, Inc. was contracted by ARRIS to perform testing on the DCX3635, under ARRIS's purchase order number AR1062669.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the ARRIS DCX3635.

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

Model(s) Tested:	DCX3635	
Model(s) Variants:	DCX3635/6K00/0522/0500 DCX3635/6K80/0522/0500 DCX3635/6K00/0522/1000 DCX3635/6K80/0522/1000	
EUT Specifications:	Primary Power: 120 VAC, 60 Hz	
	FCC ID: ACQ-DCX3635M	
	Type of Modulations:	OFDM, MCS, MNSS
	Equipment Code:	NII
	Peak RF Output Power:	22.16dBm 23.93dBm
	EUT Frequency Ranges:	5260-5320MHz 5500-5720MHz
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):	October 23, 2015	

Table 2. EUT Summary

B. References

CFR 47, Part 15, Subpart E	Unlicensed National Information Infrastructure Devices (UNII)
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
KDB 789033 D02	D02 General UNII Test Procedures New Rules v01

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 DCX3635, Equipment Under Test (EUT), is a media gateway with an embedded multi-channel full-band capture QAM and DOCSIS 3.0 front-end receiver that bridges to a video back-end processor supporting video presentation and transcoding as well as other embedded functions. It also functions as an Access Point (AP) through dual concurrent WiFi, specifically IEEE802.11n and IEEE802.11ac supporting 3x3 MIMO, with IP data routing capability through dual Gigabit Ethernet ports. It is capable of presenting encrypted SD and HD video content through HDMI™ and Analog Composite (SD content only), digital audio is presented through HDMI™ and Optical SPDIF, and analog audio is presented through baseband left and right connectors. The DCX3635W is home networking capable through WiFi, MoCA®, and Gigabit Ethernet. This model has removable CableCard for content security. User interface is through IR or RF4CE remote control.

E. Mode of Operation

Normal operation will not be simulated. This device will be configured to perform the required functions for FCC part 15 intentional radiators.

F. Method of Monitoring EUT Operation

Spectrum Analyzer.

G. 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.

H. Disposition of EUT

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

III. Electromagnetic Compatibility Criteria for Intentional Radiators

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.203 Antenna Requirement

Test Requirement: **§ 15.203:** An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

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

a.) Antenna must be permanently attached to the unit.

b.) Antenna must use a unique type of connector to attach to the EUT.

c.) Unit must be professionally installed. Installer shall be responsible for verifying that the correct antenna is employed with the unit.

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

Test Engineer(s): Surinder Singh

Test Date(s): 07/08/15

	A2 (dBi)	A4 (dBi)	A5 (dBi)	3Tx Correlated (dBi)
5.2G	5.1	5.8	3.25	9.6
5.3G	5.1	5.3	3.5	9.4
5.5G	5.8	5.6	3.8	9.9
5.8G	4.7	5.6	4.7	9.8

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(b)(6) Conducted Emissions Limits

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

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

Test Procedure: The EUT was placed on a non-metallic table inside a screen room. The EUT was situated such that the back of the EUT was 0.4 m from one wall of the vertical ground plane, and the remaining sides of the EUT were no closer than 0.8 m from any other conductive surface. The EUT was powered from a 50 Ω/50 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 C63.4-2014 "Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40 GHz"*. Scans were performed with the transmitter on.

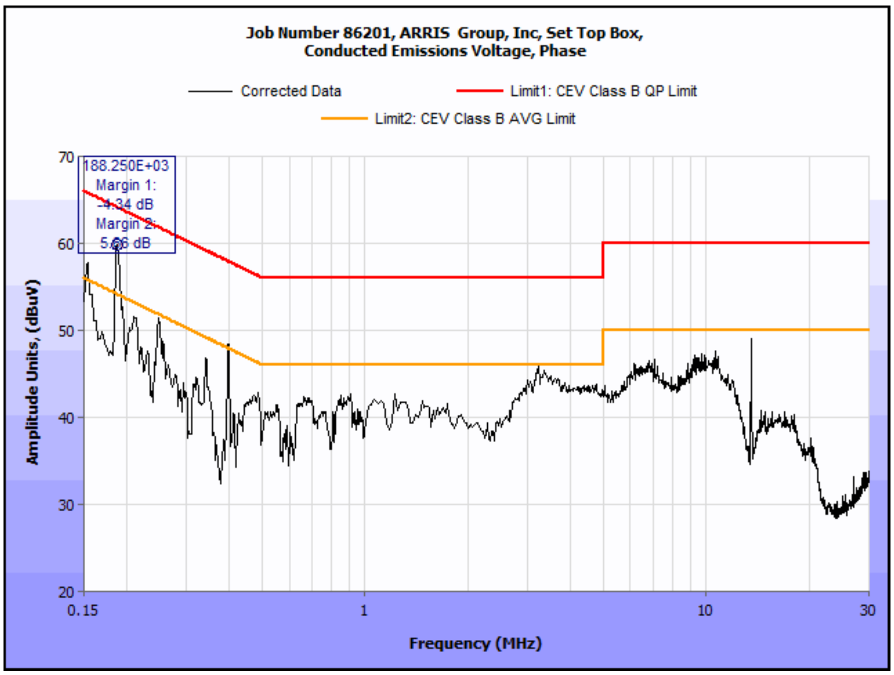
Test Results: The EUT was compliant with requirements of this section.

Test Engineer(s): Surinder Singh

Test Date(s): 08/20/15

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
0.16	54.63	0	54.63	65.46	-10.83	21.28	0	21.28	55.46	-34.18
0.395	48.23	0	48.23	57.96	-9.73	14.79	0	14.79	47.96	-33.17
1.78	37.16	0	37.16	56	-18.84	12.49	0	12.49	46	-33.51
3.27	38.16	0	38.16	56	-17.84	14.59	0	14.59	46	-31.41
8.64	25.14	0.17	25.31	60	-34.69	16.49	0.17	16.66	50	-33.34
26.46	19.64	0.17	19.81	60	-40.19	8.16	0.17	8.33	50	-41.67

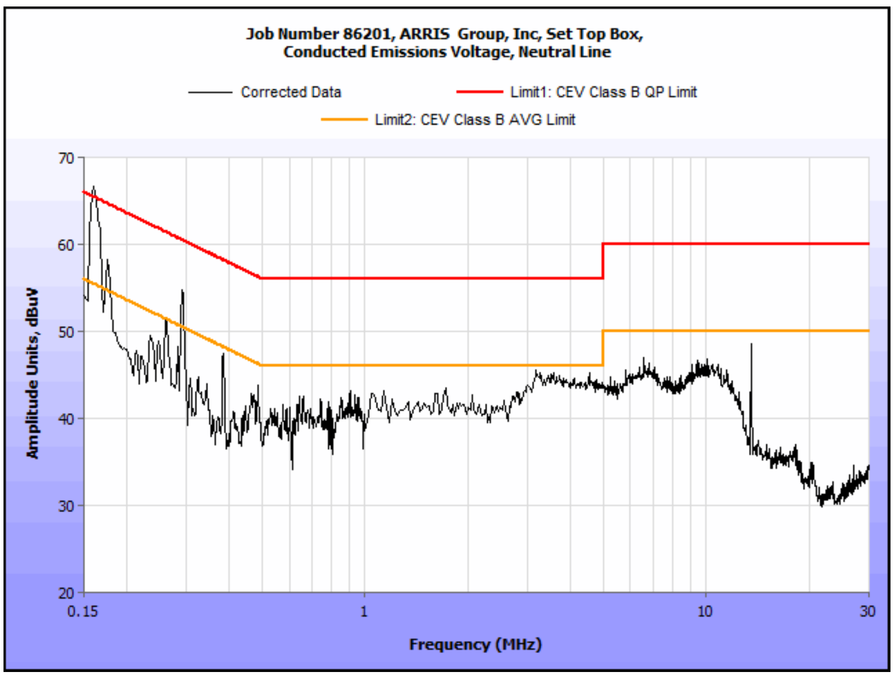
Table 5. Conducted Emissions, Phase Line, Test Results



Plot 1. Conducted Emissions, Phase Line

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
0.17	52.14	0	52.14	64.96	-12.82	20.19	0	20.19	54.96	-34.77
0.3	43.46	0	43.46	60.24	-16.78	19.84	0	19.84	50.24	-30.4
0.38	38.13	0	38.13	58.28	-20.15	16.34	0	16.34	48.28	-31.94
1.67	32.16	0	32.16	56	-23.84	12.54	0	12.54	46	-33.46
3.15	36.43	0	36.43	56	-19.57	23.64	0	23.64	46	-22.36
16.73	33.16	0	33.16	60	-26.84	12.56	0	12.56	50	-37.44

Table 6. Conducted Emissions, Neutral Line, Test Results



Plot 2. Conducted Emissions, Neutral Line

Photograph 1. Conducted Emissions, Test Setup

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15. 403(i) 26dB Bandwidth

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

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

Test Results The 26 dB Bandwidth was compliant with the requirements of this section and was determined from the plots on the following pages.

Test Engineer(s): Surinder Singh

Test Date(s): 08/20/15

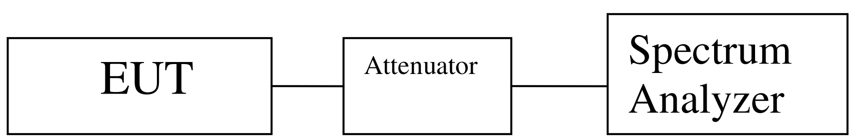
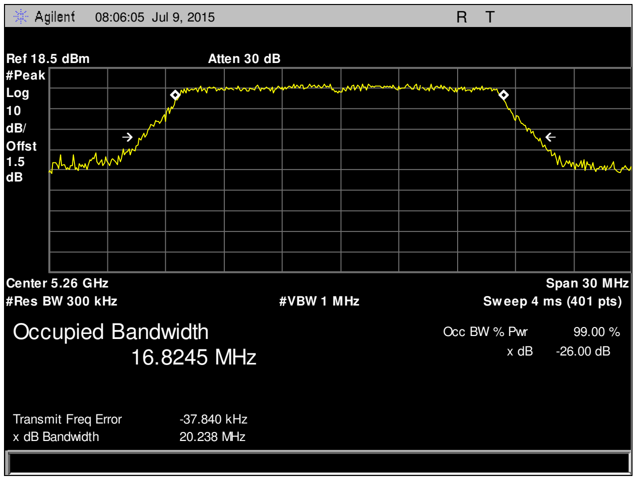


Figure 1. Occupied Bandwidth, Test Setup

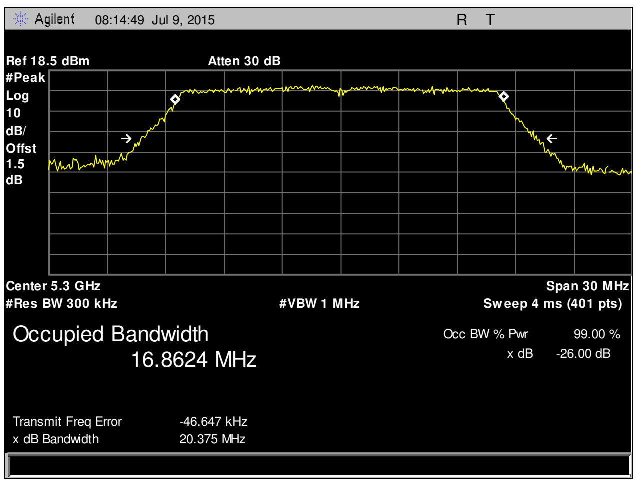
Occupied Bandwidth		
Carrier Channel Mode	Frequency (MHz)	Measured 26 dB Bandwidth (MHz)
802.11a	5260	20.238
	5300	20.375
	5320	20.543
	5500	20.336
	5600	20.402
	5700	20.098
	5720	20.451
802.11ac 20MHz	5260	20.452
	5300	20.449
	5320	20.431
	5500	20.357
	5600	20.276
	5700	20.625
	5720	20.567
802.11ac 40MHz	5270	39.457
	5310	39.483
	5510	39.584
	5670	39.387
	5710	39.705
802.11ac 80MHz	5290	81.088
	5530	80.041
	5610	80.855
	5690	80.519
802.11n 20 MHz	5260	20.742
	5300	20.796
	5320	20.750
	5500	20.667
	5600	20.221
	5700	20.466
	5720	20.627
802.11n 40MHz	5270	39.590
	5310	39.173
	5510	39.495
	5670	39.057
	5710	39.173

Table 7. Occupied Bandwidth, Test Results

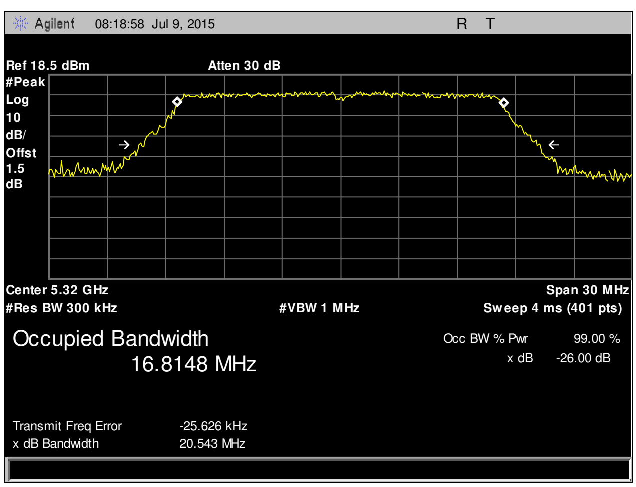
Occupied Bandwidth Test Results, 802.11a



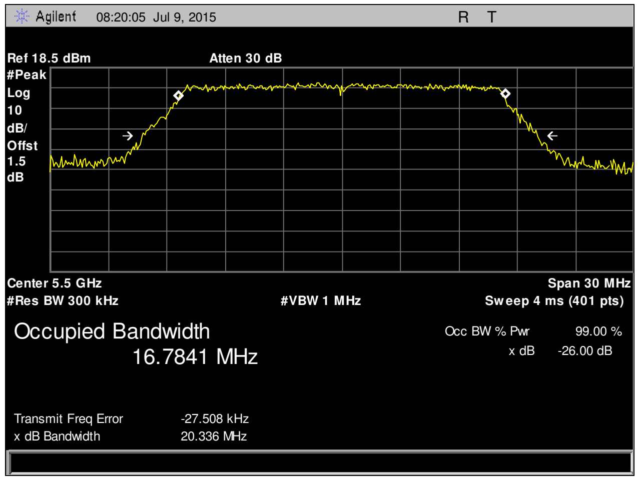
Plot 3. Occupied Bandwidth, 802.11a, 5260 MHz



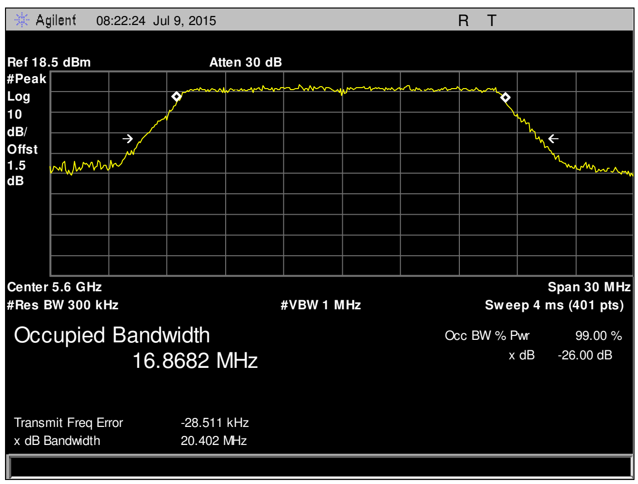
Plot 4. Occupied Bandwidth, 802.11a, 5300 MHz



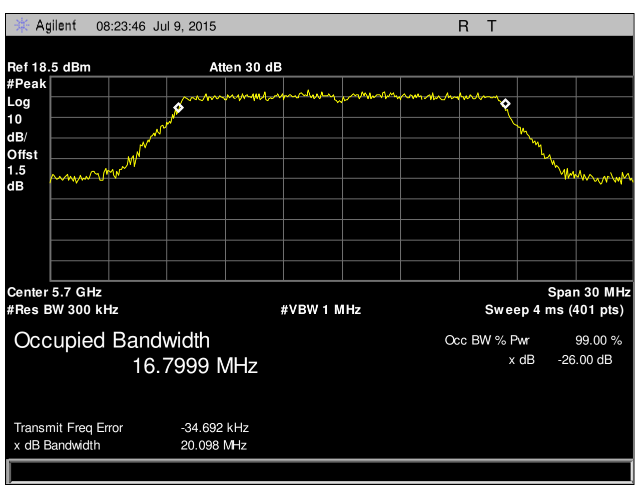
Plot 5. Occupied Bandwidth, 802.11a, 5320 MHz



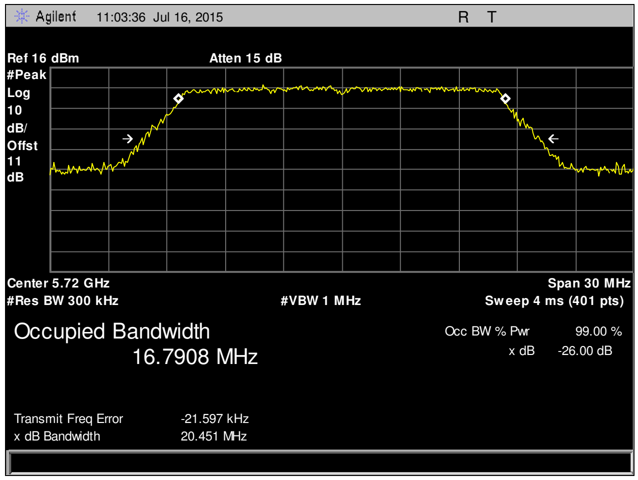
Plot 6. Occupied Bandwidth, 802.11a, 5500 MHz



Plot 7. Occupied Bandwidth, 802.11a, 5600 MHz

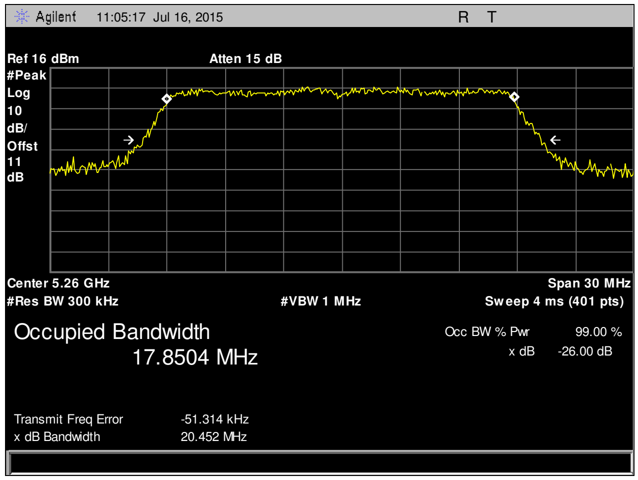


Plot 8. Occupied Bandwidth, 802.11a, 5700 MHz

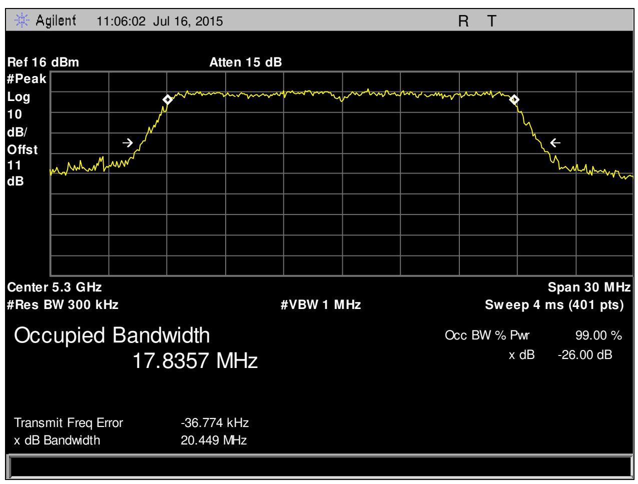


Plot 9. Occupied Bandwidth, 802.11a, 5720 MHz

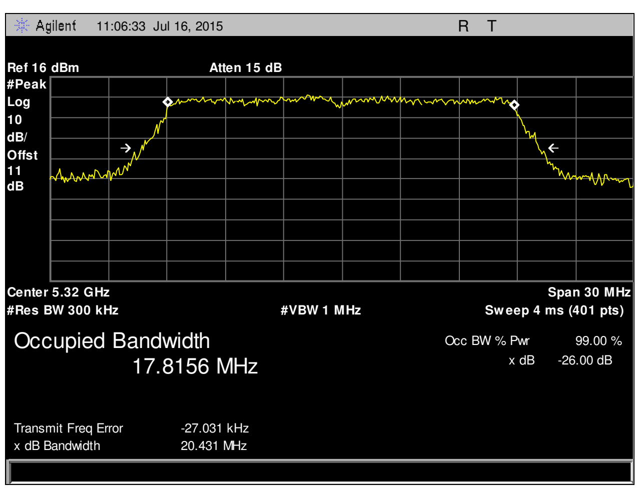
Occupied Bandwidth Test Results, 802.11ac 20 MHz



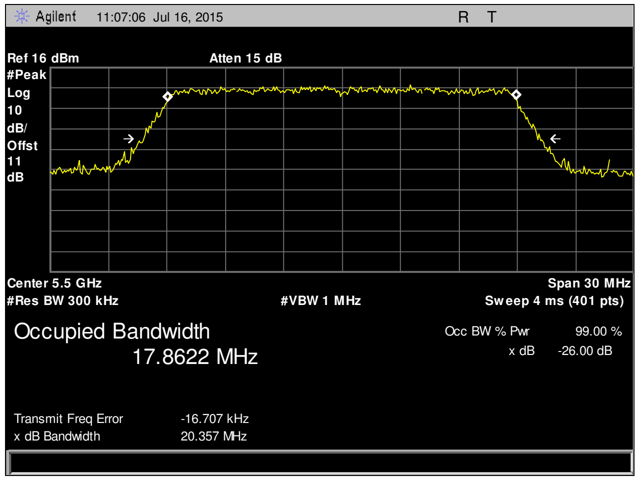
Plot 10. Occupied Bandwidth, 802.11ac 20 MHz, 5260 MHz, Port 1



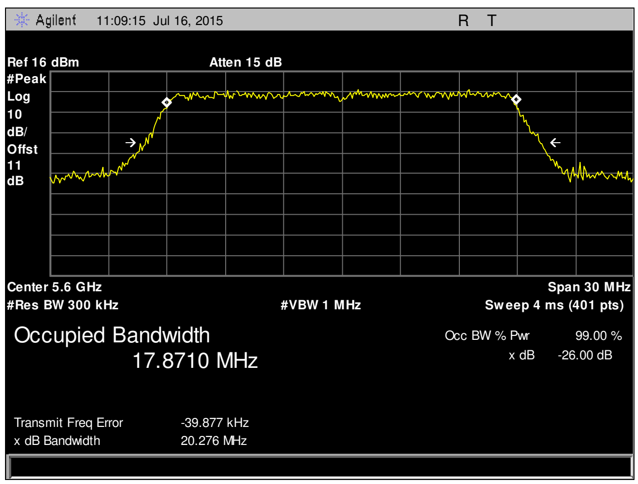
Plot 11. Occupied Bandwidth, 802.11ac 20 MHz, 5300 MHz, Port 1



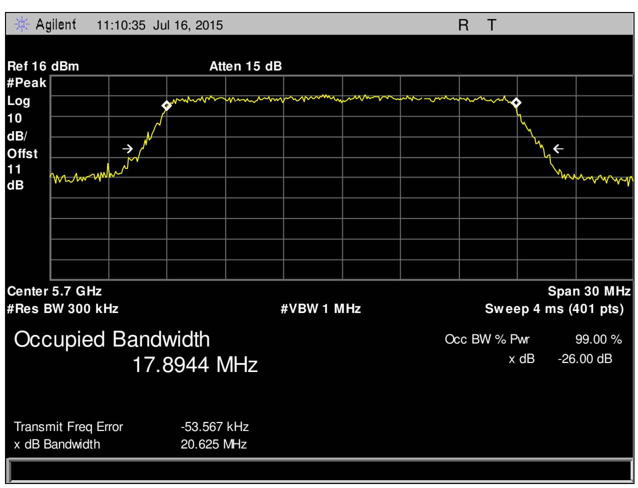
Plot 12. Occupied Bandwidth, 802.11ac 20 MHz, 5320 MHz, Port 1



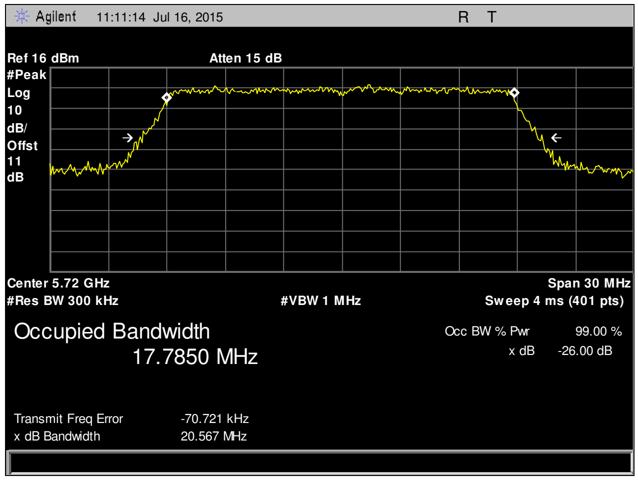
Plot 13. Occupied Bandwidth, 802.11ac 20 MHz, 5500 MHz, Port 1



Plot 14. Occupied Bandwidth, 802.11ac 20 MHz, 5600 MHz, Port 1

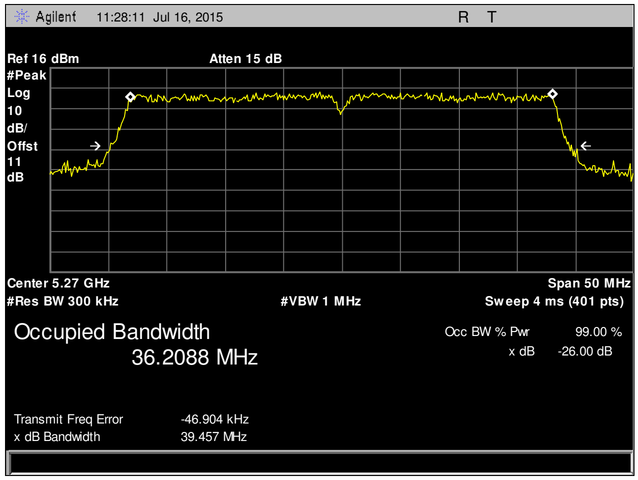


Plot 15. Occupied Bandwidth, 802.11ac 20 MHz, 5700 MHz, Port 1

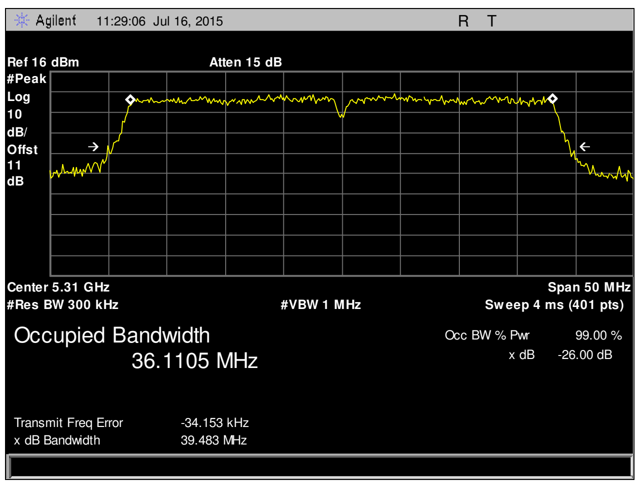


Plot 16. Occupied Bandwidth, 802.11ac 20 MHz, 5720 MHz, Port 1

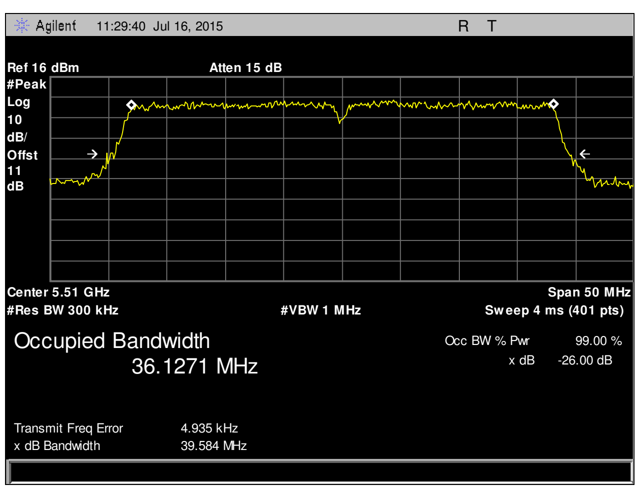
Occupied Bandwidth Test Results, 802.11ac 40 MHz



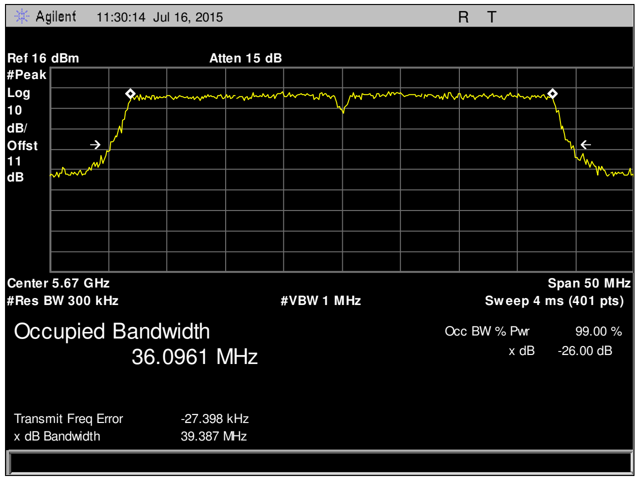
Plot 17. Occupied Bandwidth, 802.11n 40 MHz, 5270 MHz



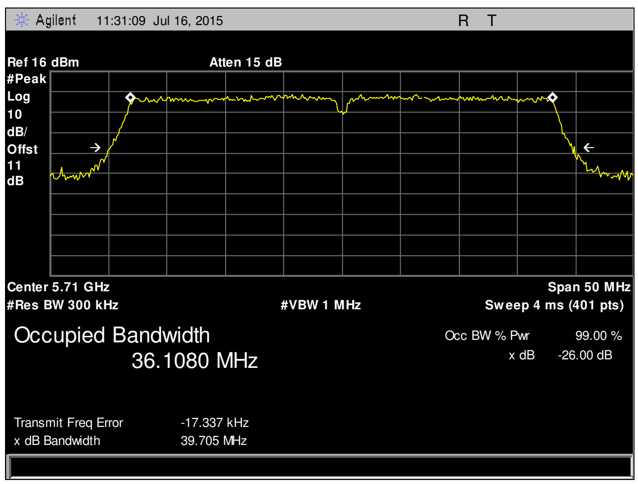
Plot 18. Occupied Bandwidth, 802.11n 40 MHz, 5310 MHz



Plot 19. Occupied Bandwidth, 802.11n 40 MHz, 5510 MHz

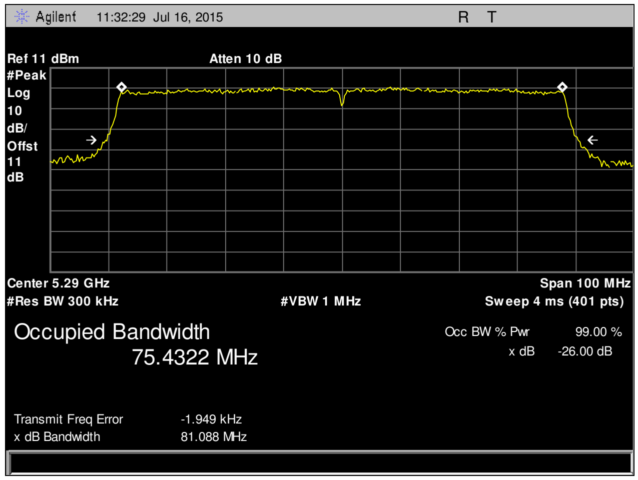


Plot 20. Occupied Bandwidth, 802.11ac 40 MHz, 5670 MHz

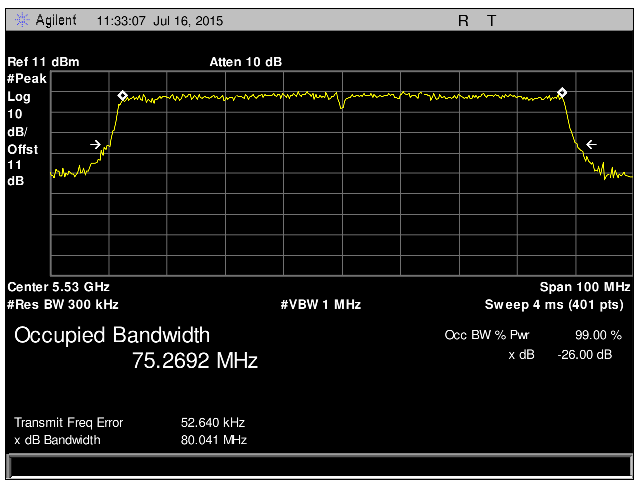


Plot 21. Occupied Bandwidth, 802.11ac 40 MHz, 5710 MHz

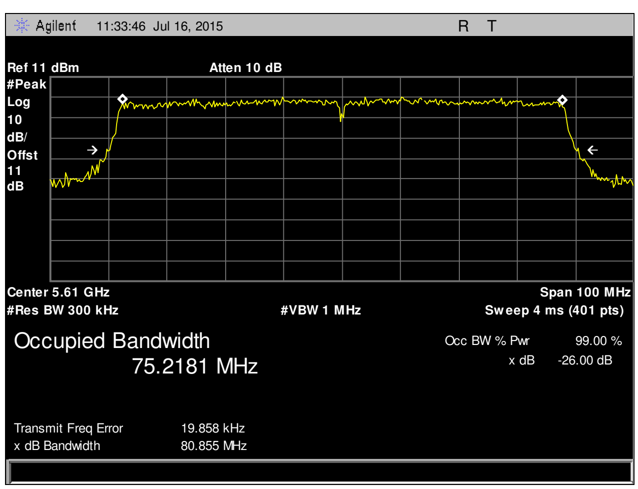
Occupied Bandwidth Test Results, 802.11ac 80 MHz



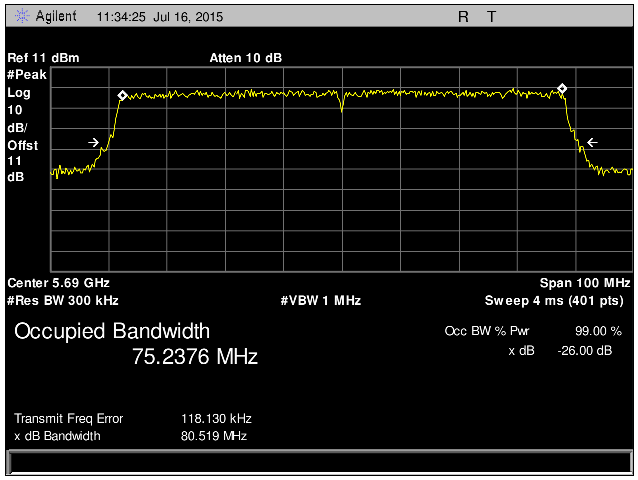
Plot 22. Occupied Bandwidth, 802.11ac 80 MHz, 5290 MHz



Plot 23. Occupied Bandwidth, 802.11ac 80 MHz, 5530 MHz

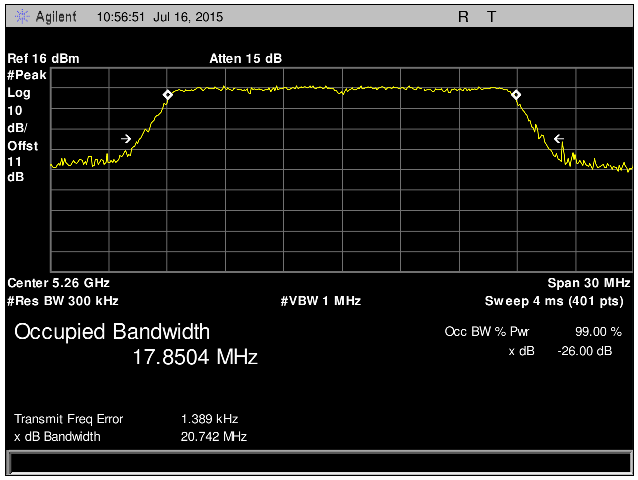


Plot 24. Occupied Bandwidth, 802.11ac 80 MHz, 5610 MHz

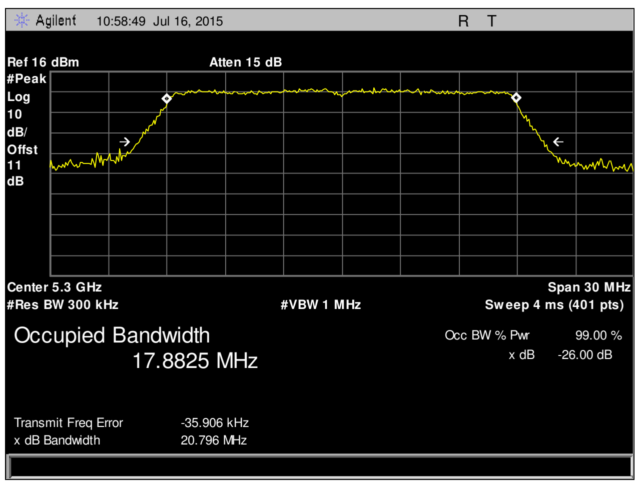


Plot 25. Occupied Bandwidth, 802.11ac 80 MHz, 5690 MHz

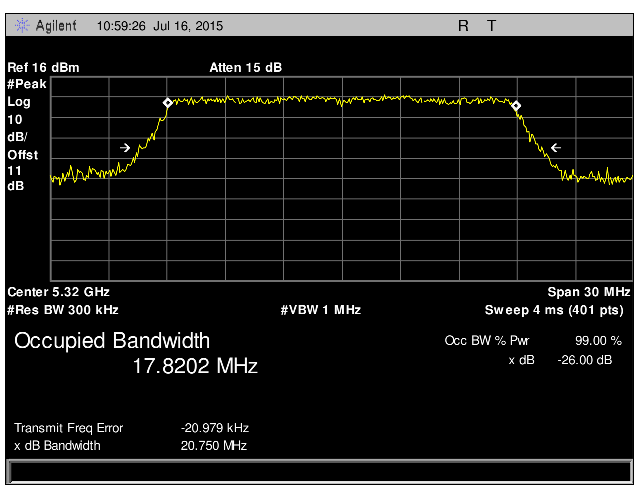
Occupied Bandwidth Test Results, 802.11n 20 MHz



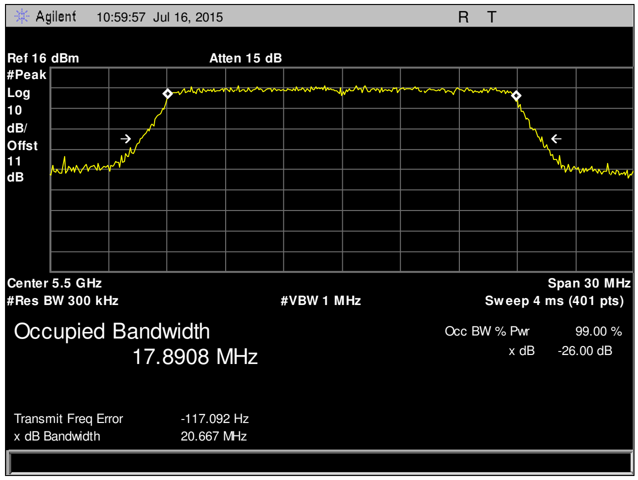
Plot 26. Occupied Bandwidth, 802.11n 20 MHz, 5260 MHz, Port 1



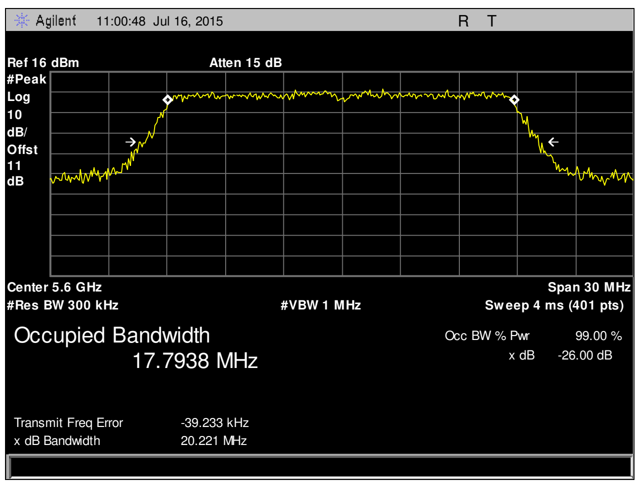
Plot 27. Occupied Bandwidth, 802.11n 20 MHz, 5300 MHz, Port 1



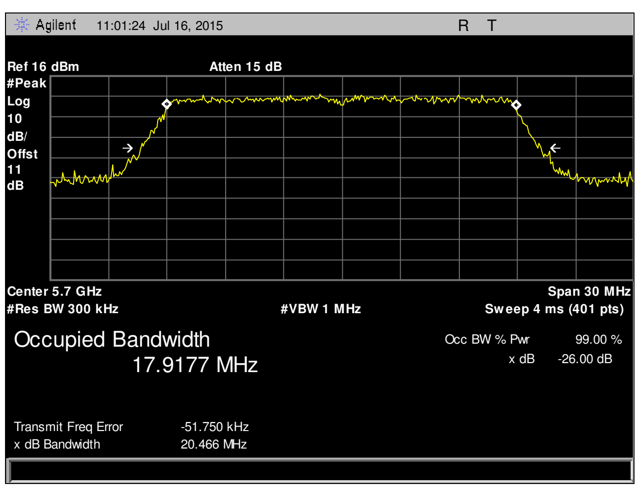
Plot 28. Occupied Bandwidth, 802.11n 20 MHz, 5320 MHz, Port 1



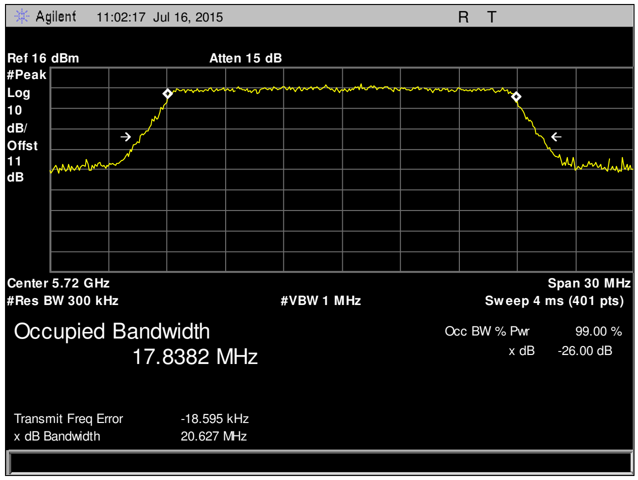
Plot 29. Occupied Bandwidth, 802.11n 20 MHz, 5500 MHz, Port 1



Plot 30. Occupied Bandwidth, 802.11n 20 MHz, 5600 MHz, Port 1

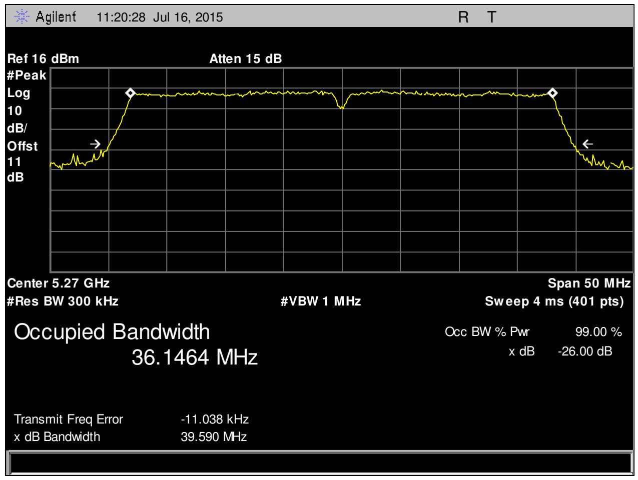


Plot 31. Occupied Bandwidth, 802.11n 20 MHz, 5700 MHz, Port 1

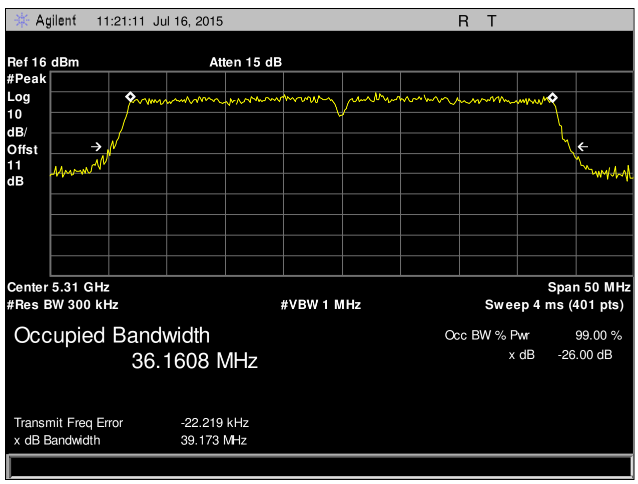


Plot 32. Occupied Bandwidth, 802.11n 20 MHz, 5720 MHz, Port 1

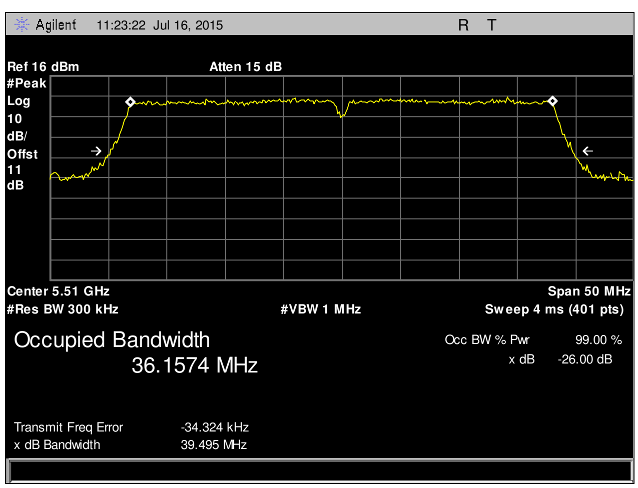
Occupied Bandwidth Test Results, 802.11n 40 MHz



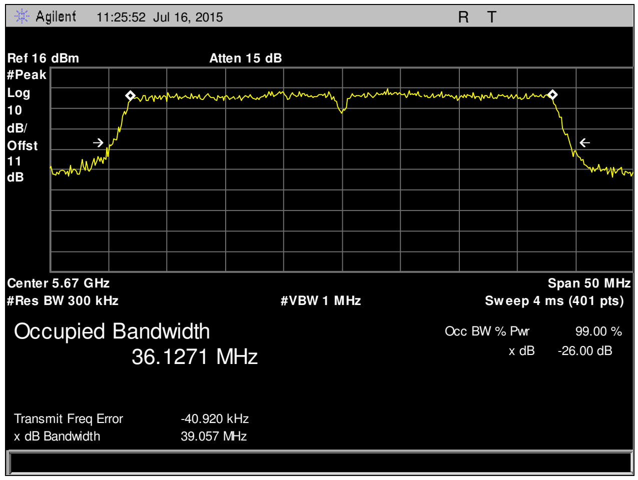
Plot 33. Occupied Bandwidth, 802.11n 40 MHz, 5270 MHz



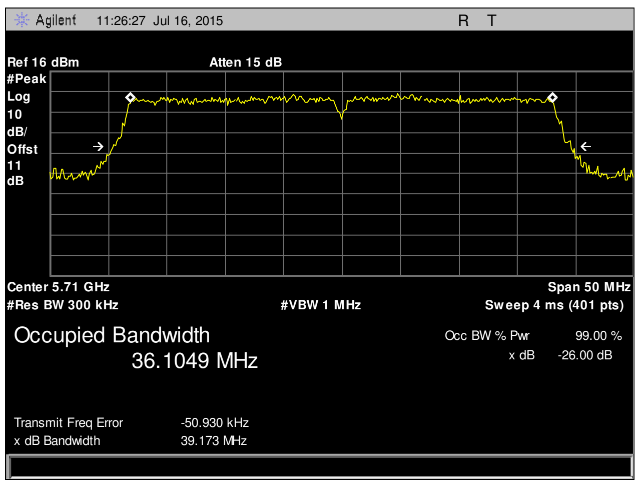
Plot 34. Occupied Bandwidth, 802.11n 40 MHz, 5310 MHz



Plot 35. Occupied Bandwidth, 802.11n 40 MHz, 5510 MHz



Plot 36. Occupied Bandwidth, 802.11n 40 MHz, 5670 MHz



Plot 37. Occupied Bandwidth, 802.11n 40 MHz, 5710 MHz

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15. 407(a)(2) RF Power Output

Test Requirements: **§15.407(a)(2)**: For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz.

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

Test Engineer(s): Surinder Singh

Test Date(s): 05/01/15

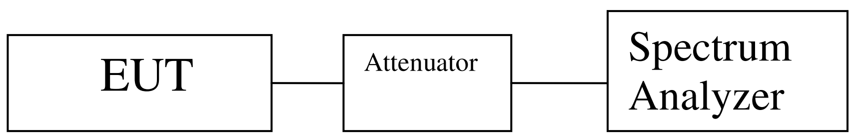


Figure 2. Power Output Test Setup

Maximum Conducted Output Power 20MHz Band 802.11a/ac/n						
Channel	**Frequency GHz**	**Measured Peak Output Power (dBm)/20MHz Ant 1**	**Mode**	**Power Limit (dBm)**	**Antenna Gain (dB)**	**Margin (dB)**
52	5260	20.97	a	24	5.3	-3.03
56	5280	12.47	a	24	5.3	-11.53
60	5300	13.8	a	24	5.3	-10.2
64	5320	18.31	a	24	5.3	-5.69
100	5500	19.58	a	24	5.6	-4.42
104	5520	17.45	a	24	5.6	-6.55
108	5540	18.13	a	24	5.6	-5.87
112	5560	23.64	a	24	5.6	-0.36
116	5580	23.56	a	24	5.6	-0.44
120	5600	23.54	a	24	5.6	-0.46
124	5620	23.19	a	24	5.6	-0.81
128	5640	23.49	a	24	5.6	-0.51
132	5660	19.48	a	24	5.6	-4.52
136	5680	19.11	a	24	5.6	-4.89
140	5700	19.72	a	24	5.6	-4.28
144	5720	23.93	a	24	5.3	-0.07
52	5260	22.16	n	24	5.3	-1.84
56	5280	13.42	n	24	5.3	-10.58
60	5300	13.12	n	24	5.3	-10.88
64	5320	18.60	n	24	5.3	-5.32
100	5500	19.84	n	24	5.6	-4.16
104	5520	17.89	n	24	5.6	-6.11
108	5540	18.26	n	24	5.6	-5.74
112	5560	23.41	n	24	5.6	-0.59
116	5580	23.56	n	24	5.6	-0.44
120	5600	23.58	n	24	5.6	-0.42
124	5620	23.29	n	24	5.6	-0.71
128	5640	23.74	n	24	5.6	-0.26
132	5660	19.56	n	24	5.6	-4.44
136	5680	19.31	n	24	5.6	-4.69
140	5700	19.48	n	24	5.6	-4.52
144	5720	23.8	n	24	5.6	-0.2
52	5260	22.13	ac	24	5.3	-1.87
56	5280	13.25	ac	24	5.3	-10.75
60	5300	13.66	ac	24	5.3	-10.34
64	5320	18.60	ac	24	5.3	-5.40
100	5500	19.73	ac	24	5.6	-4.27
104	5520	17.88	ac	24	5.6	-6.12
108	5540	17.46	ac	24	5.6	-6.54
112	5560	23.18	ac	24	5.6	-0.82
116	5580	23.36	ac	24	5.6	-0.64
120	5600	23.82	ac	24	5.6	-0.18
124	5620	23.56	ac	24	5.6	-0.44
128	5640	23.64	ac	24	5.6	-0.36
132	5660	19.67	ac	24	5.6	-4.33
136	5680	18.93	ac	24	5.6	-5.07
140	5700	19.37	ac	24	5.6	-4.63
144	5720	23.23	ac	24	5.6	-0.77

Table 8. RF Power Output, Test Results, 20 MHz

Maximum Conducted Output Power 20MHz Band 802.11a/n/ac Mode MIMO (3*3) (dBm)									
Chanel Carrier	Frequency MHz	Measured Peak Output Power (dBm)/20MHz Ant 0	Output Power (dBm)/20MHz Ant 1	Output Power (dBm)/20MHz Ant 2	Mode	Total Output Power (dBm)	Antenna Gain (dB)	Power Limit (dBm)	Margin (dB)
52	5260	14.49	15.01	15.21	a	19.69	9.4	20.6	-0.91
56	5280	6.33	6.59	6.49	a	11.24	9.4	20.6	-9.36
60	5300	6.48	6.69	6.89	a	11.46	9.4	20.6	-9.14
64	5320	10.44	10.68	10.94	a	15.46	9.4	20.6	-5.14
100	5500	11.05	11.17	11.34	a	15.96	9.9	20.1	-4.14
104	5520	7.15	7.59	7.34	a	12.13	9.9	20.1	-7.97
108	5540	14.46	15.02	14.64	a	19.48	9.9	20.1	-0.62
112	5560	14.86	15.66	15.34	a	20.07	9.9	20.1	-0.03
116	5580	14.67	15.34	15.02	a	19.79	9.9	20.1	-0.31
120	5600	15.42	15.27	15.06	a	20.02	9.9	20.1	-0.08
124	5620	14.48	15.03	14.95	a	19.60	9.9	20.1	-0.50
128	5640	14.53	15.02	14.55	a	19.48	9.9	20.1	-0.62
132	5660	8.59	9.03	8.94	a	13.63	9.9	20.1	-6.47
136	5680	8.67	9.21	9.05	a	13.75	9.9	20.1	-6.35
140	5700	10.23	10.68	10.34	a	15.19	9.9	20.1	-4.91
144	5720	15.08	15.45	15.21	a	20.02	9.9	20.1	-0.07
52	5260	15.22	15.79	15.64	n	20.33	9.4	20.6	-0.27
56	5280	6.49	6.84	6.88	n	11.51	9.4	20.6	-9.09
60	5300	7.05	7.27	7.19	n	11.94	9.4	20.6	-8.66
64	5320	10.84	11.04	11.24	n	15.81	9.4	20.6	-4.79
100	5500	11.08	11.42	11.54	n	16.12	9.9	20.1	-3.98
104	5520	7.49	7.84	7.66	n	12.44	9.9	20.1	-7.66
108	5540	14.55	15.26	14.66	n	19.61	9.9	20.1	-0.49
112	5560	15.34	15.43	15.05	n	20.05	9.9	20.1	-0.05
116	5580	14.92	15.22	15.34	n	19.93	9.9	20.1	-0.17
120	5600	15.07	15.44	15.28	n	20.04	9.9	20.1	-0.06
124	5620	15.03	15.46	15.27	n	20.03	9.9	20.1	-0.07
128	5640	14.87	15.19	15.22	n	19.87	9.9	20.1	-0.23
132	5660	8.68	8.89	8.34	n	13.41	9.9	20.1	-6.69
136	5680	8.89	9.34	9.15	n	13.90	9.9	20.1	-6.20
140	5700	10.34	10.77	10.92	n	15.45	9.9	20.1	-4.65
144	5720	15.01	15.67	15.27	n	20.09	9.9	20.1	-0.12
52	5260	15.12	15.37	15.48	ac	20.10	9.4	20.6	-0.50
56	5280	7.04	7.33	7.24	ac	11.98	9.4	20.6	-8.62
60	5300	6.84	7.01	7.19	ac	11.79	9.4	20.6	-8.81
64	5320	10.65	10.78	10.86	ac	15.54	9.4	20.6	-5.06
100	5500	11.54	11.87	12.05	ac	16.60	9.9	20.1	-3.50
104	5520	6.99	7.49	7.16	ac	11.99	9.9	20.1	-8.11
108	5540	15.22	15.34	14.94	ac	19.94	9.9	20.1	-0.16
112	5560	14.94	15.37	15.28	ac	19.97	9.9	20.1	-0.13
116	5580	15.02	15.64	15.24	ac	20.08	9.9	20.1	-0.02
120	5600	15.03	15.73	15.1	ac	20.06	9.9	20.1	-0.04
124	5620	15.09	15.46	15.38	ac	20.08	9.9	20.1	-0.02
128	5640	14.48	16.37	14.45	ac	19.97	9.9	20.1	-0.13
132	5660	8.44	8.94	8.64	ac	13.45	9.9	20.1	-6.65
136	5680	9.11	9.49	9.36	ac	14.09	9.9	20.1	-6.01
140	5700	10.22	10.63	10.84	ac	15.34	9.9	20.1	-4.76
144	5720	14.55	15.67	14.84	ac	19.81	9.9	20.1	-0.28

Table 9. RF Power Output, Test Results, 20 MHz, MIMO

Maximum Conducted Output Power 40MHz Band 802.11a/ac/n Mode (dBm)						
Channel	Frequency GHz	Output Power (dBm)/40MHz Ant 1	Mode	Power Limit (dBm)	Antenna Gain (dB)	Margin (dB)
52	5270	16.46	n	24	5.3	-7.54
52	5270	16.85	ac	24	5.3	-7.15
60	5310	16.06	n	24	5.3	-7.94
60	5310	15.73	ac	24	5.3	-8.27
100	5510	18.52	n	24	5.6	-5.48
100	5510	18.65	ac	24	5.6	-5.35
108	5550	22.7	n	24	5.6	-1.3
108	5550	22.67	ac	24	5.6	-1.33
116	5590	22.68	n	24	5.6	-1.32
116	5590	22.6	ac	24	5.6	-1.4
124	5630	22.56	n	24	5.6	-1.44
124	5630	22.49	ac	24	5.6	-1.51
132	5670	22.37	n	24	5.6	-1.63
132	5670	22.45	ac	24	5.6	-1.55
140	5710	22.37	n	24	5.6	-1.63
140	5710	22.66	ac	24	5.6	-1.34

Table 10. RF Power Output, Test Results, 40 MHz

Maximum Conducted Output Power 40MHz Band 11n/ac mode MIMO (3*3) (dBm)									
Chanel Carrier	Frequency MHz	Output Power (dBm)/40MHz Ant 0	Output Power (dBm)/40MHz Ant 1	Output Power (dBm)/40MHz Ant 2	Mode	Total Output Power (dBm)	Antenna Gain (dB)	Power Limit (dBm)	Margin (dB)
52	5270	8.43	8.97	8.49	n	13.41	9.4	20.6	-7.19
52	5270	9.02	9.28	9.11	ac	13.91	9.4	20.6	-6.69
60	5310	10.84	11.11	10.96	n	15.74	9.4	20.6	-4.86
60	5310	10.94	11.2	11.3	ac	15.92	9.4	20.6	-4.68
100	5510	12.54	12.84	12.94	n	17.55	9.9	20.1	-2.55
100	5510	12.45	12.43	12.34	ac	17.18	9.9	20.1	-2.92
108	5550	11.05	11.33	11.64	n	16.12	9.9	20.1	-3.98
108	5550	10.05	10.44	10.64	ac	15.15	9.9	20.1	-4.95
116	5590	15.24	15.37	15.06	n	20.00	9.9	20.1	-0.10
116	5590	14.35	15.44	14.94	ac	19.70	9.9	20.1	-0.40
124	5630	14.38	15.01	14.37	n	19.37	9.9	20.1	-0.73
124	5630	14.41	15.06	14.67	ac	19.49	9.9	20.1	-0.61
132	5670	14.08	15.06	14.64	n	19.38	9.9	20.1	-0.72
132	5670	14.37	15.13	14.88	ac	19.58	9.9	20.1	-0.52
140	5710	14.44	14.96	14.84	n	19.52	9.9	20.1	-0.58
140	5710	14.95	14.65	14.34	ac	19.43	9.9	20.1	-0.67

Table 11. RF Power Output, Test Results, 40 MHz, MIMO

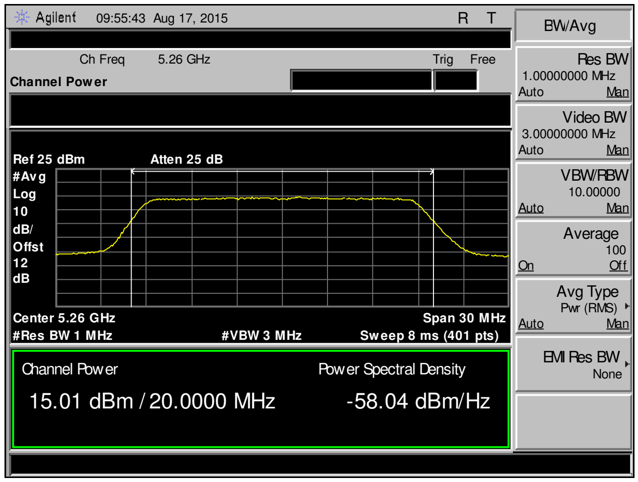
Maximum Conducted Output Power 80MHz Band 802.11ac mode SISO (dBm)						
Channel	**Frequency MHz**	**Measured Peak Output Power (dBm)/80MHz Ant 0**	**Mode**	**Power Limit (dBm)**	**Antenna Gain (dB)**	**Margin (dB)**
52	5290	13.92	ac	24	5.3	-10.08
100	5530	14.84	ac	24	5.8	-9.16
116	5610	22.63	ac	24	5.8	-1.37
124	5650	22.49	ac	24	5.8	-1.51
132	5690	22.15	ac	24	5.8	-1.85

Table 12. RF Power Output, Test Results, 80 MHz, SISO

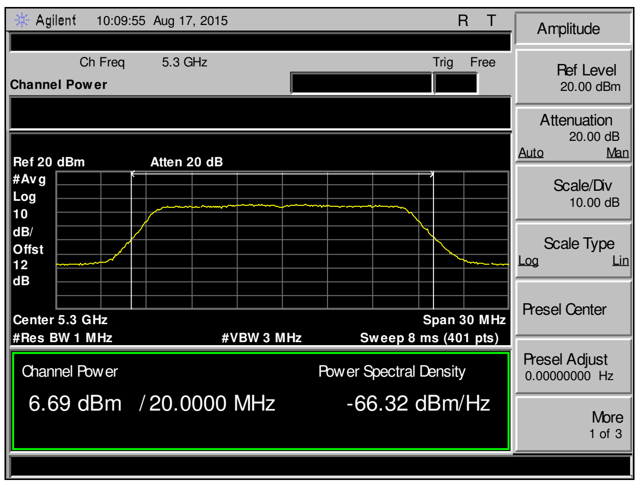
Maximum Conducted Output Power 80MHz Band 802.11ac mode MIMO (3*3) (dBm)								
Chanel Carrier	**Frequency MHz**	**Output Power (dBm)/80MHz Ant 0**	**Output Power (dBm)/80MHz Ant 1**	**Output Power (dBm)/80MHz Ant 2**	**Total Output Power (dBm)**	**Antenna Gain (dB)**	**Power Limit (dBm)**	**Margin (dB)**
52	5290	8.06	8.22	8.11	12.90	9.4	20.6	-7.70
100	5530	8.26	8.59	8.37	13.18	9.9	20.1	-6.92
116	5610	14.64	15.65	14.44	19.71	9.9	20.1	-0.39
124	5650	14.34	15.84	14.08	19.60	9.9	20.1	-0.50
132	5690	14.08	15.96	14.67	19.75	9.9	20.1	-0.35

Table 13. RF Power Output, Test Results, 80 MHz, MIMO

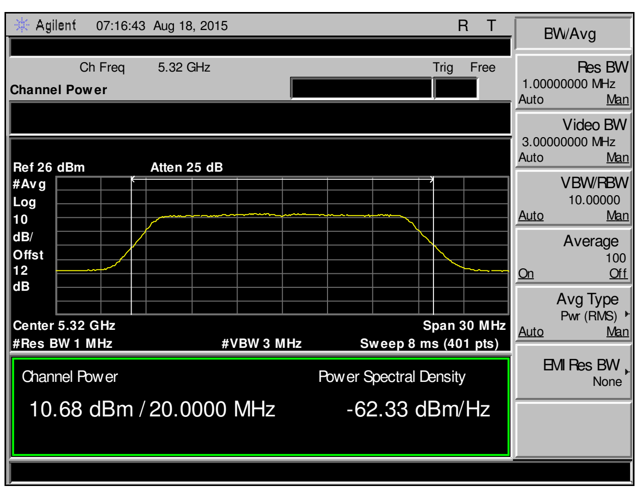
RF Output Power, 802.11a, MIMO



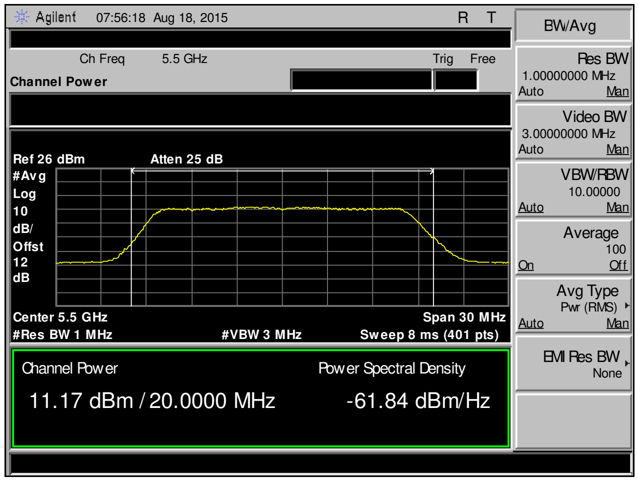
Plot 38. RF Output Power, 802.11a, Channel 52, MIMO



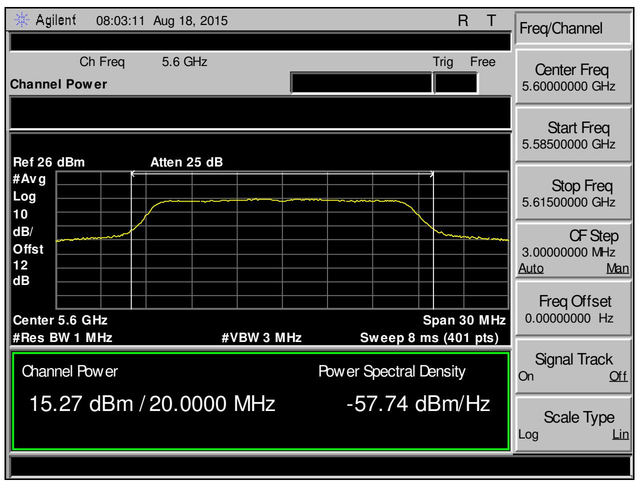
Plot 39. RF Output Power, 802.11a, Channel 60, MIMO



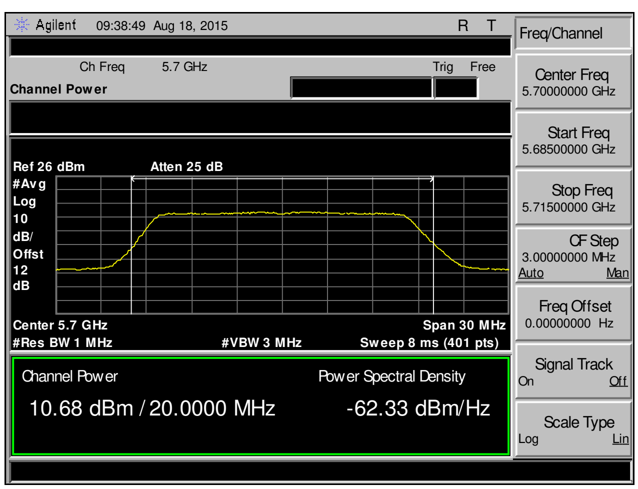
Plot 40. RF Output Power, 802.11a, Channel 64, MIMO



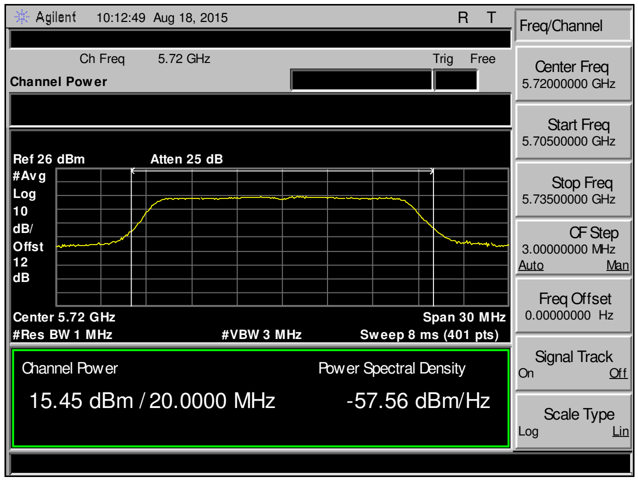
Plot 41. RF Output Power, 802.11a, Channel 100, MIMO



Plot 42. RF Output Power, 802.11a, Channel 120, MIMO

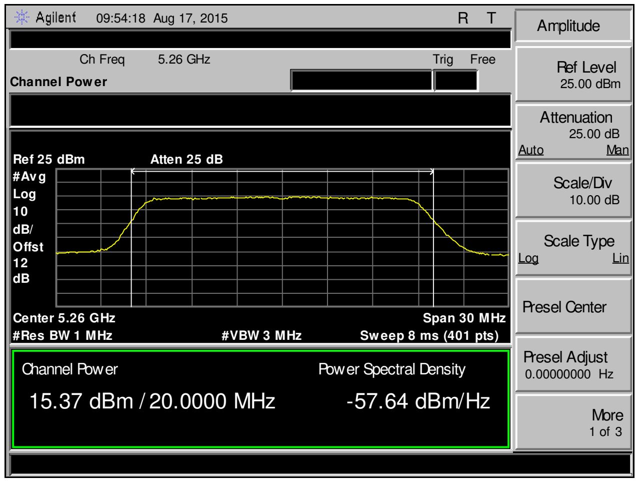


Plot 43. RF Output Power, 802.11a, Channel 140, MIMO

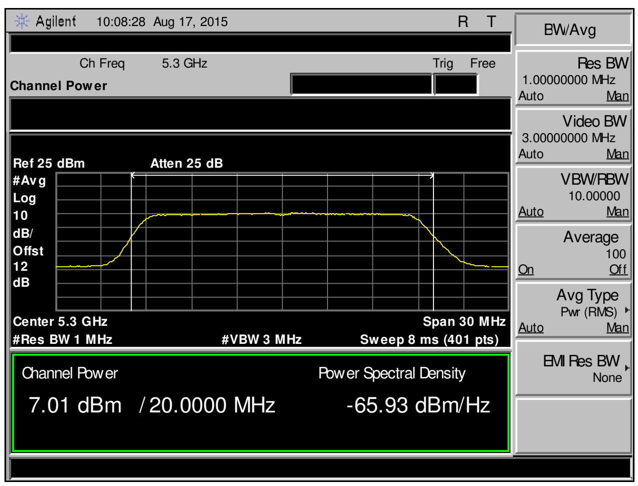


Plot 44. RF Output Power, 802.11a, Channel 144, MIMO

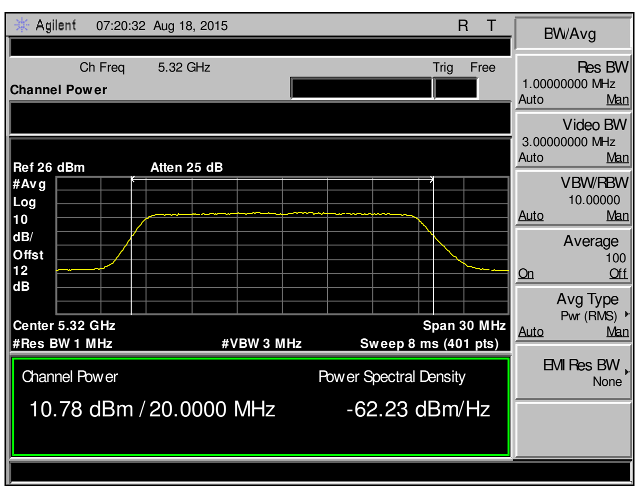
RF Output Power, 802.11ac 20 MHz, MIMO



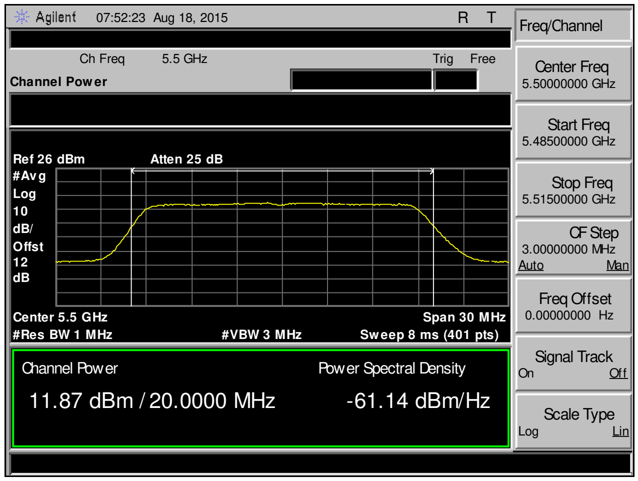
Plot 45. RF Output Power, 802.11ac 20 MHz, Channel 52, MIMO



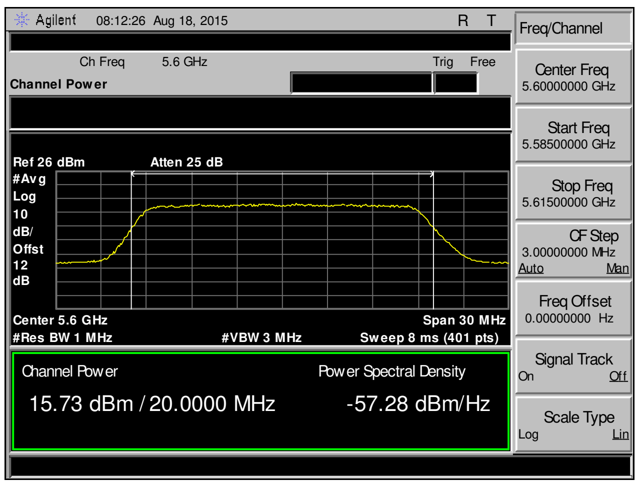
Plot 46. RF Output Power, 802.11ac 20 MHz, Channel 60, MIMO



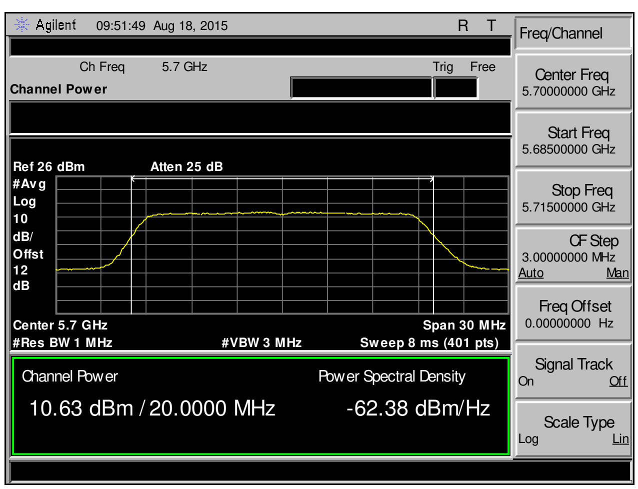
Plot 47. RF Output Power, 802.11ac 20 MHz, Channel 64, MIMO



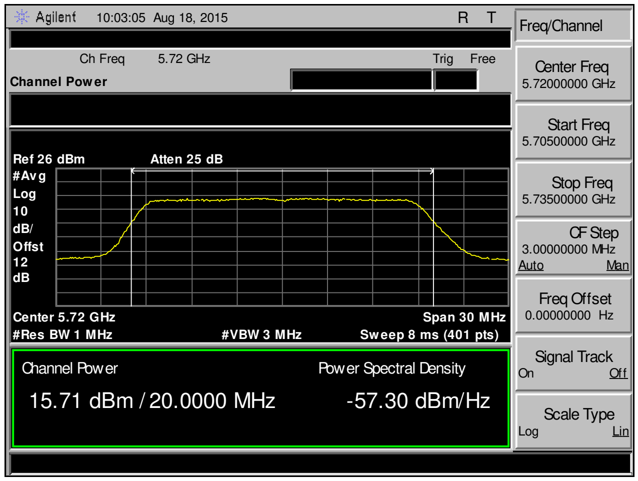
Plot 48. RF Output Power, 802.11ac 20 MHz, Channel 100, MIMO



Plot 49. RF Output Power, 802.11ac 20 MHz, Channel 120, MIMO

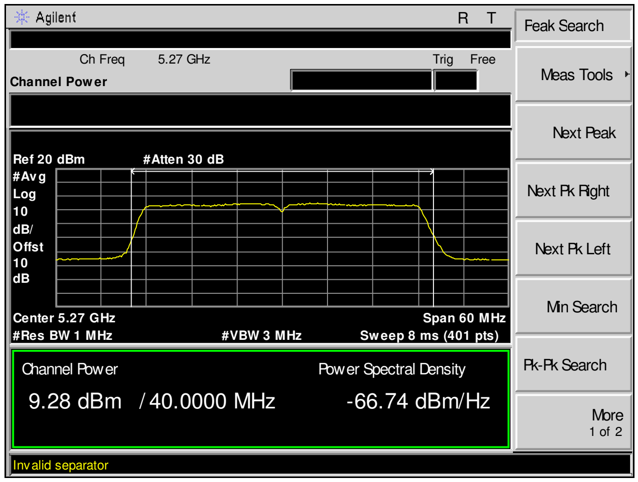


Plot 50. RF Output Power, 802.11ac 20 MHz, Channel 140, MIMO

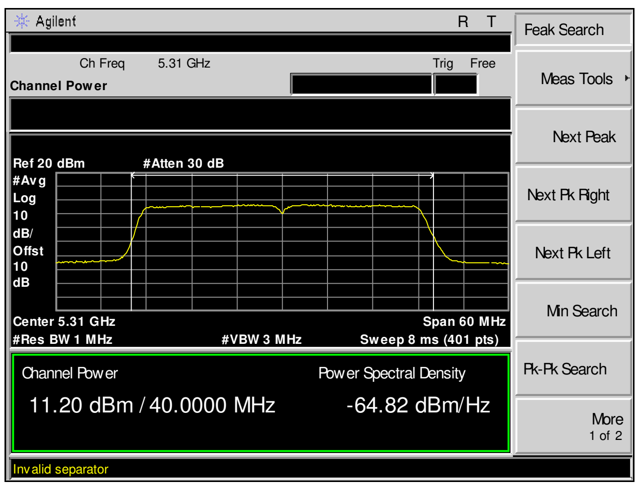


Plot 51. RF Output Power, 802.11ac 20 MHz, Channel 144, MIMO

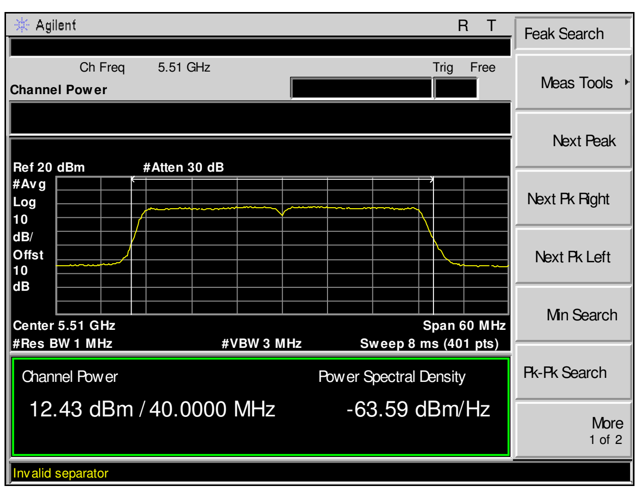
RF Output Power, 802.11ac 40 MHz, MIMO



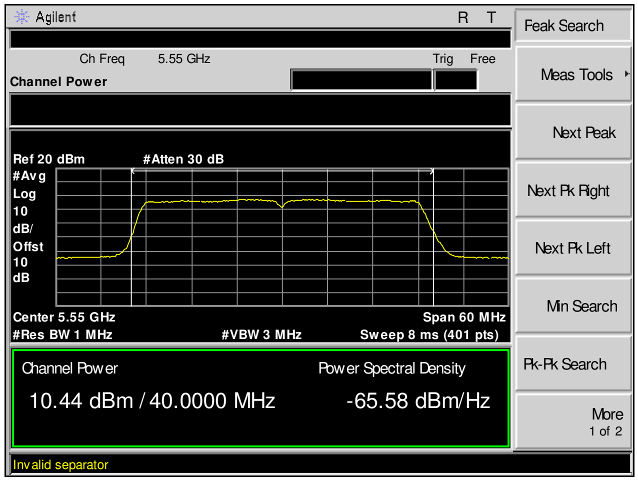
Plot 52. RF Output Power, 802.11ac 40 MHz, Channel 52, MIMO



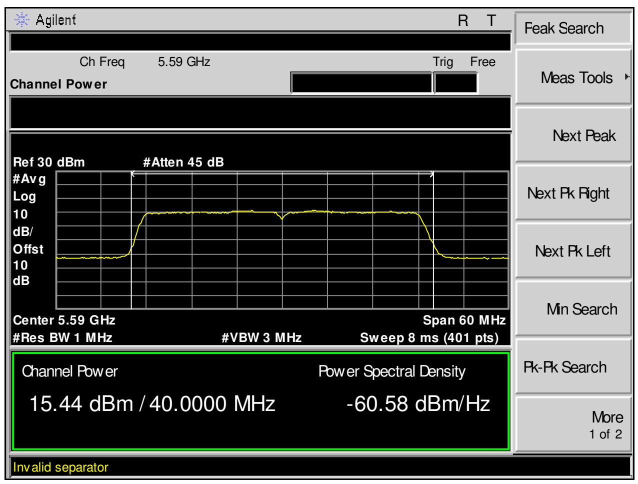
Plot 53. RF Output Power, 802.11ac 40 MHz, Channel 60, MIMO



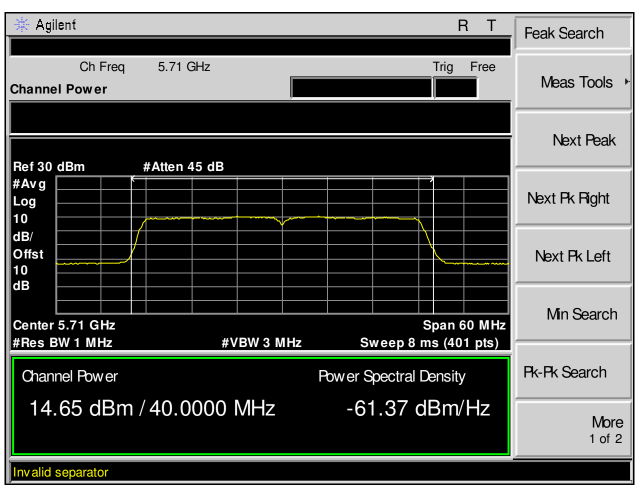
Plot 54. RF Output Power, 802.11ac 40 MHz, Channel 100, MIMO



Plot 55. RF Output Power, 802.11ac 40 MHz, Channel 108, MIMO

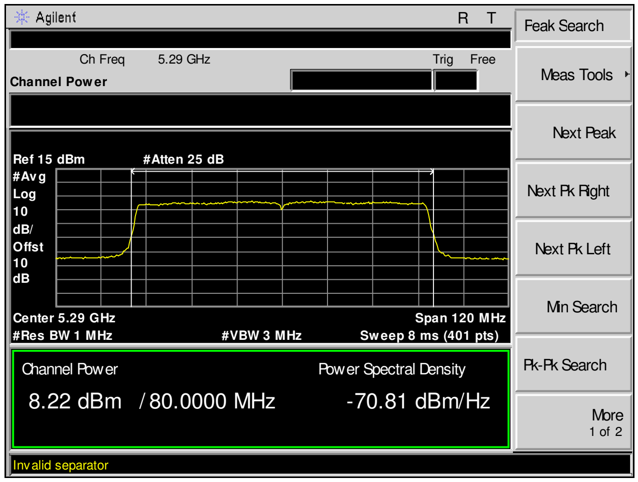


Plot 56. RF Output Power, 802.11ac 40 MHz, Channel 116, MIMO

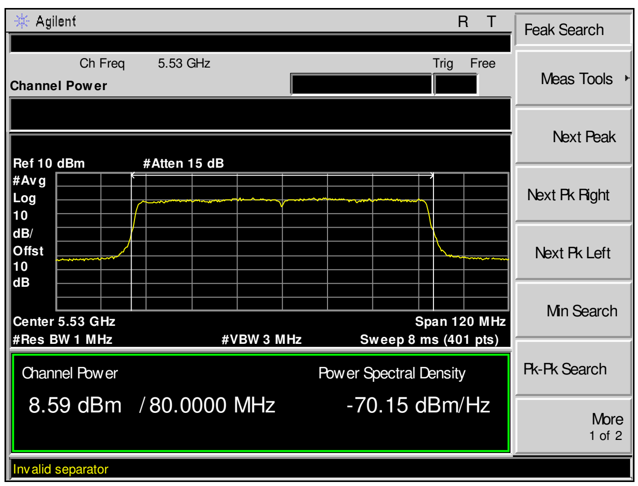


Plot 57. RF Output Power, 802.11ac 40 MHz, Channel 140, MIMO

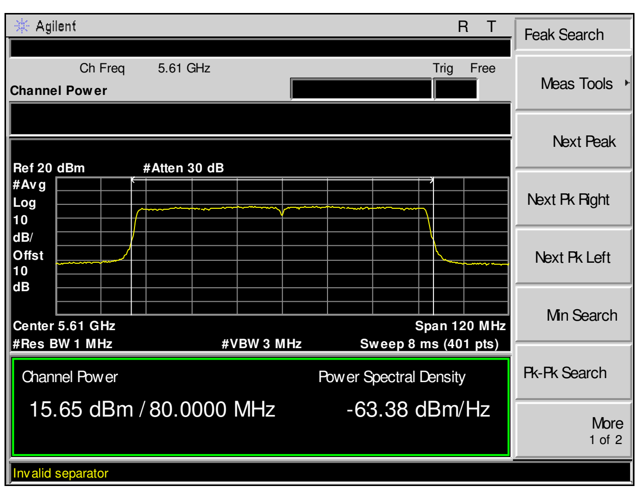
RF Output Power, 802.11ac 80 MHz, MIMO



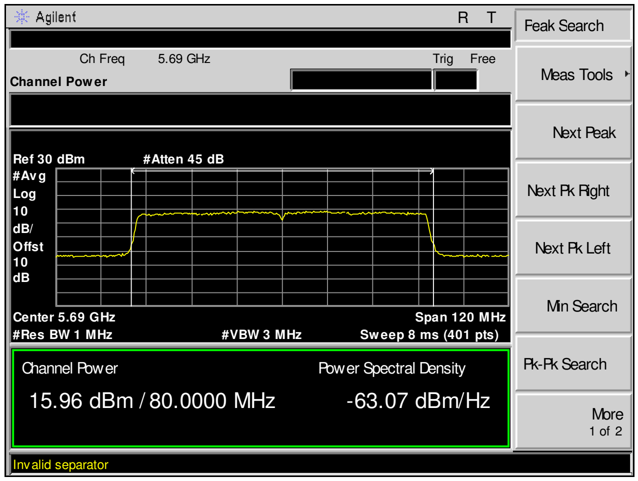
Plot 58. RF Output Power, 802.11ac 80 MHz, Channel 52, MIMO



Plot 59. RF Output Power, 802.11ac 80 MHz, Channel 100, MIMO



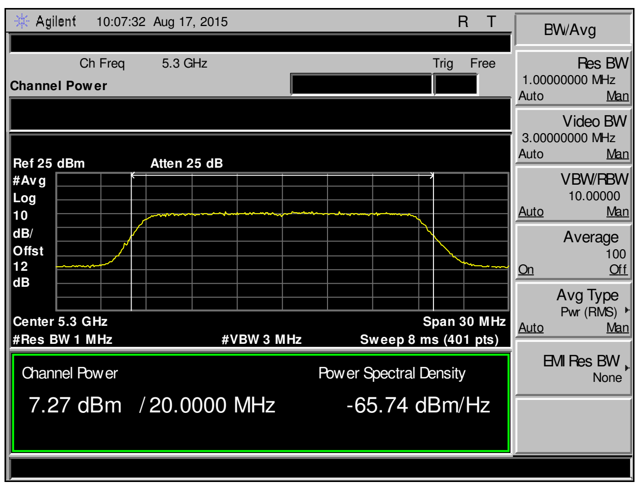
Plot 60. RF Output Power, 802.11ac 80 MHz, Channel 116, MIMO



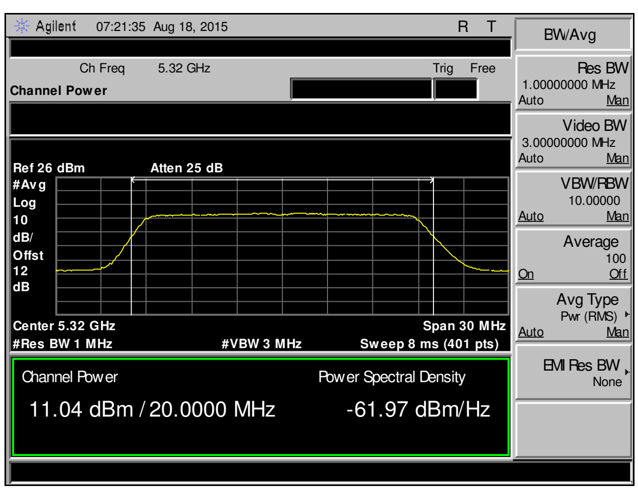
Plot 61. RF Output Power, 802.11ac 80 MHz, Channel 132, MIMO

RF Output Power, 802.11n 20 MHz, MIMO

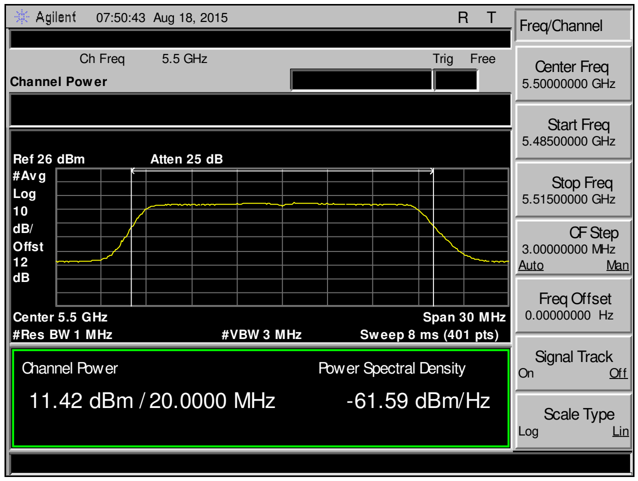
Plot 62. RF Output Power, 802.11n 20 MHz, Channel 52, MIMO



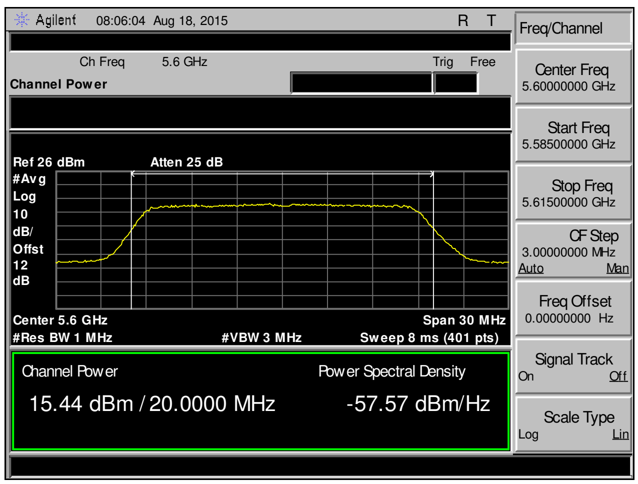
Plot 63. RF Output Power, 802.11n 20 MHz, Channel 60, MIMO



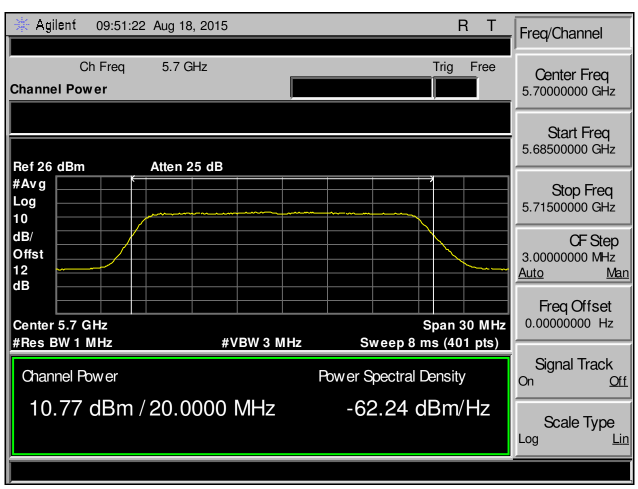
Plot 64. RF Output Power, 802.11n 20 MHz, Channel 64, MIMO



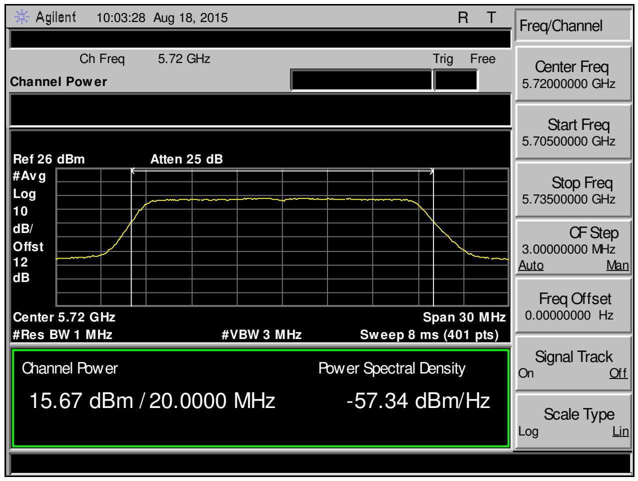
Plot 65. RF Output Power, 802.11n 20 MHz, Channel 100, MIMO



Plot 66. RF Output Power, 802.11n 20 MHz, Channel 120, MIMO

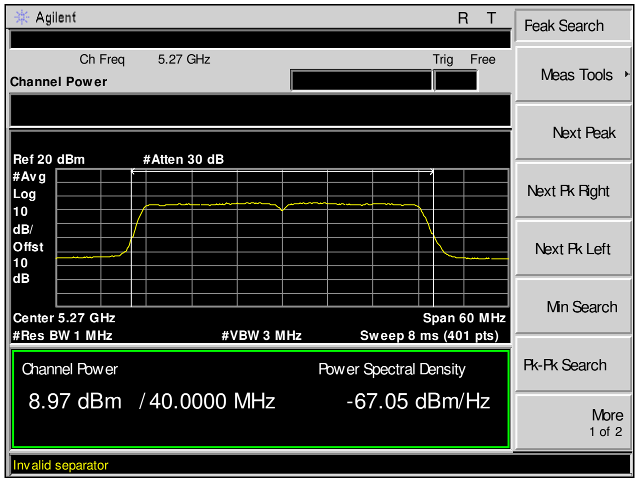


Plot 67. RF Output Power, 802.11n 20 MHz, Channel 140, MIMO

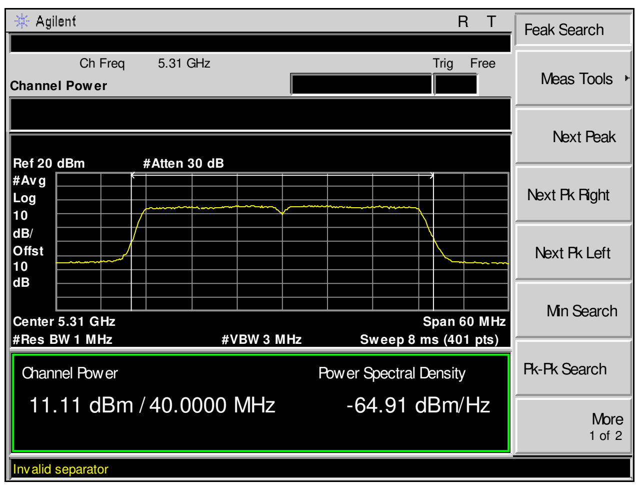


Plot 68. RF Output Power, 802.11n 20 MHz, Channel 144, MIMO

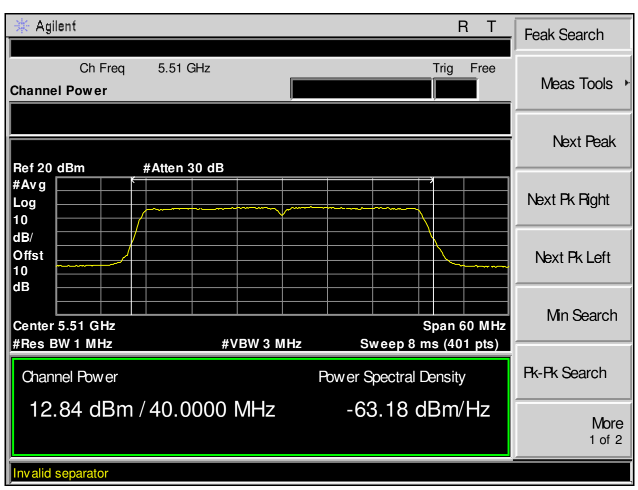
RF Output Power, 802.11n 40 MHz, MIMO



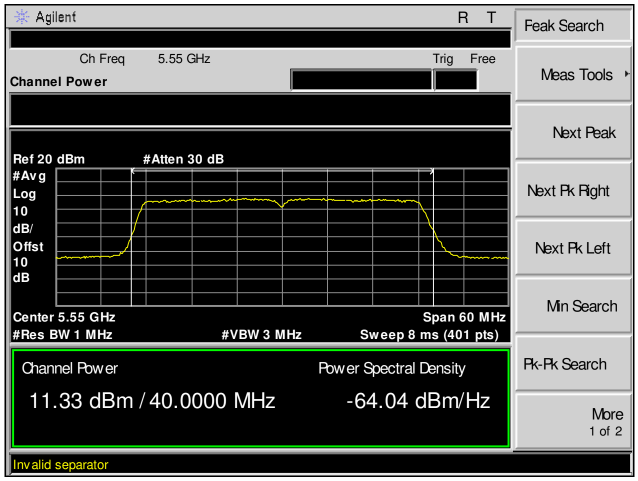
Plot 69. RF Output Power, 802.11n 40 MHz, Channel 52, MIMO



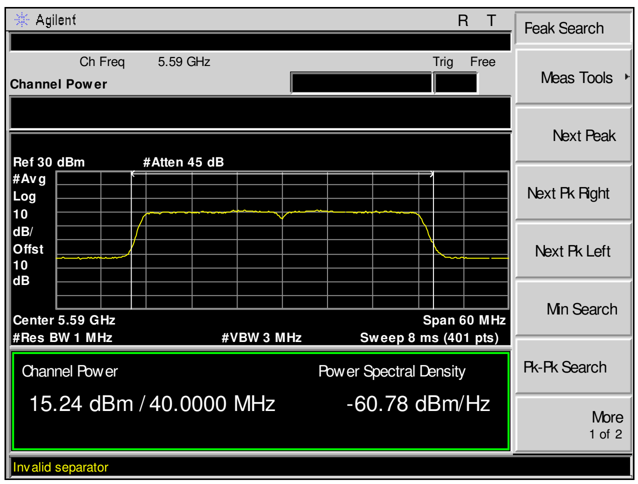
Plot 70. RF Output Power, 802.11n 40 MHz, Channel 60, MIMO



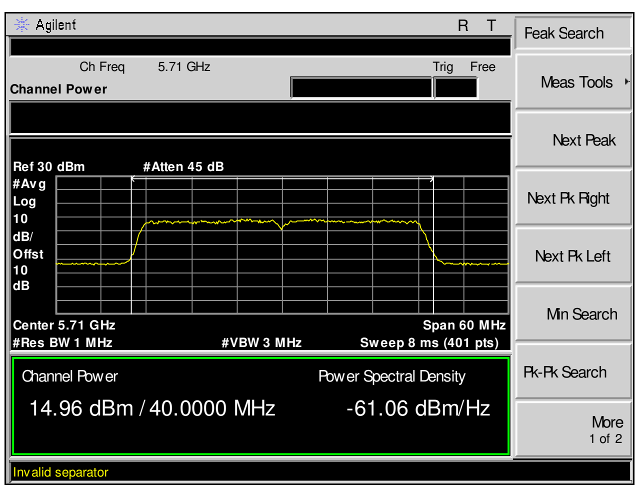
Plot 71. RF Output Power, 802.11n 40 MHz, Channel 100, MIMO



Plot 72. RF Output Power, 802.11n 40 MHz, Channel 108, MIMO

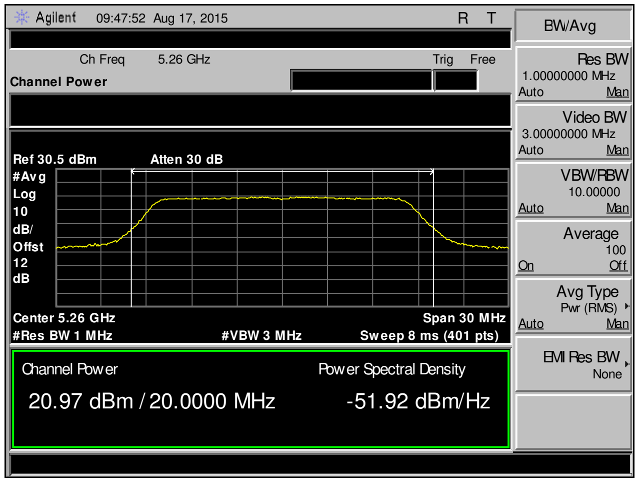


Plot 73. RF Output Power, 802.11n 40 MHz, Channel 116, MIMO

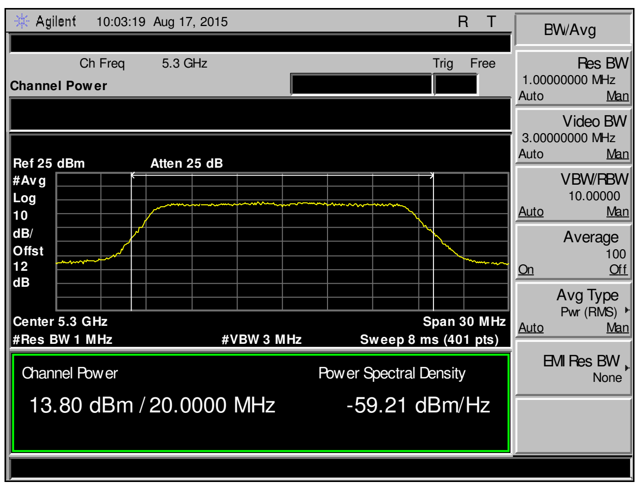


Plot 74. RF Output Power, 802.11n 40 MHz, Channel 140, MIMO

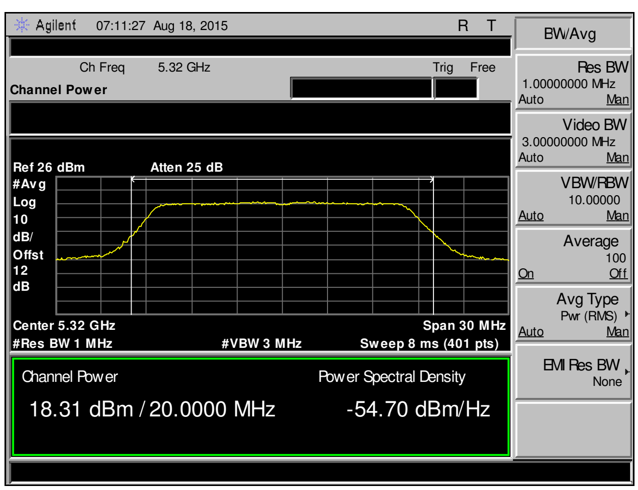
RF Output Power, 802.11a, SISO



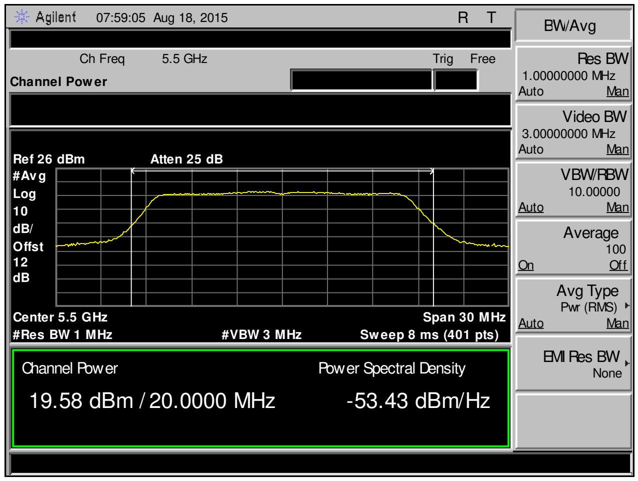
Plot 75. RF Output Power, 802.11a, Channel 52, SISO



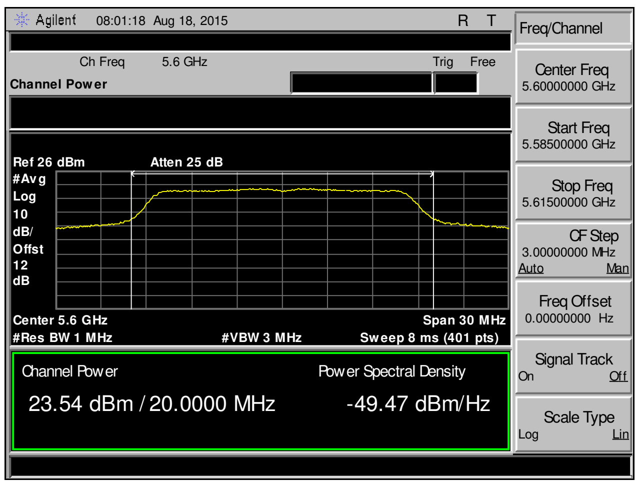
Plot 76. RF Output Power, 802.11a, Channel 60, SISO



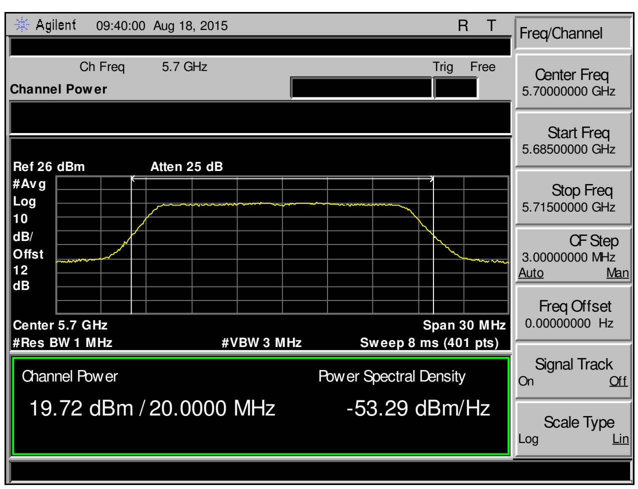
Plot 77. RF Output Power, 802.11a, Channel 64, SISO



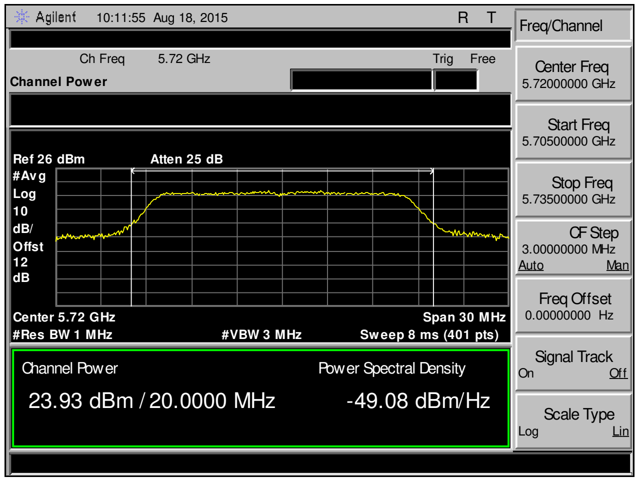
Plot 78. RF Output Power, 802.11a, Channel 100, SISO



Plot 79. RF Output Power, 802.11a, Channel 120, SISO

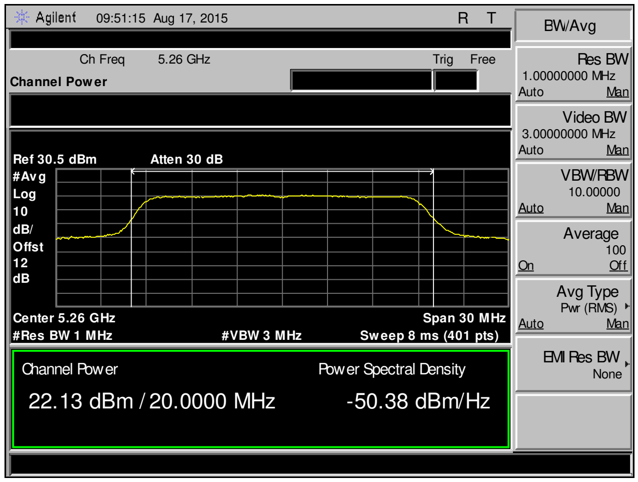


Plot 80. RF Output Power, 802.11a, Channel 140, SISO

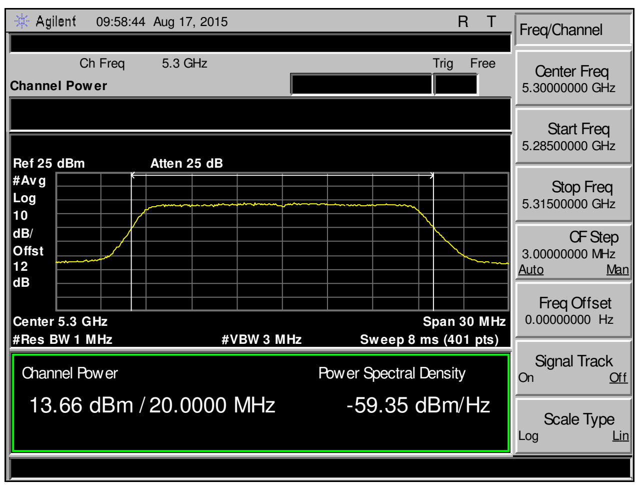


Plot 81. RF Output Power, 802.11a, Channel 144, SISO

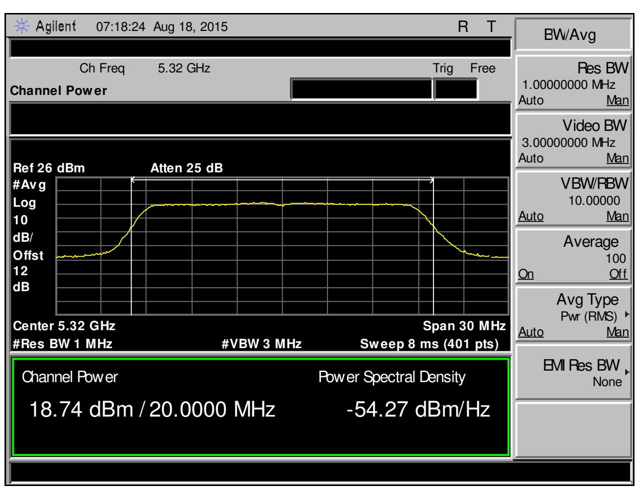
RF Output Power, 802.11ac 20 MHz, SISO



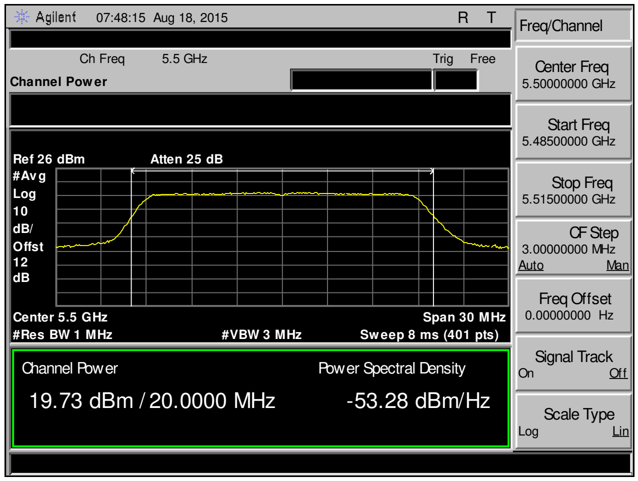
Plot 82. RF Output Power, 802.11ac 20 MHz, Channel 52, SISO



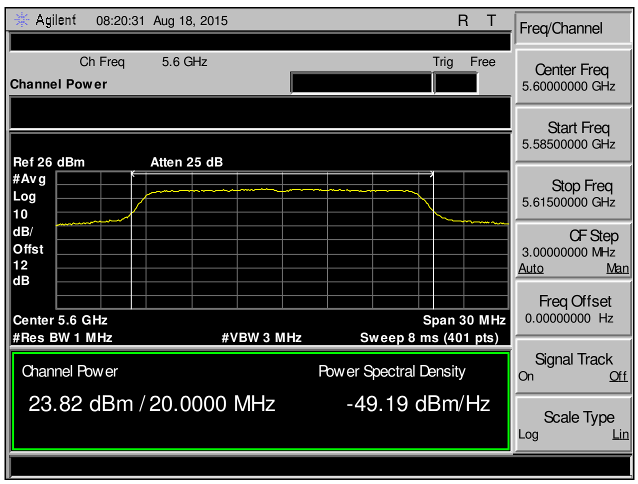
Plot 83. RF Output Power, 802.11ac 20 MHz, Channel 60, SISO



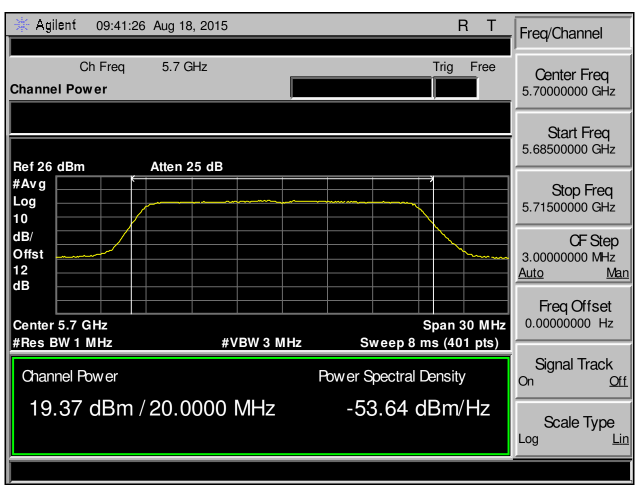
Plot 84. RF Output Power, 802.11ac 20 MHz, Channel 64, SISO



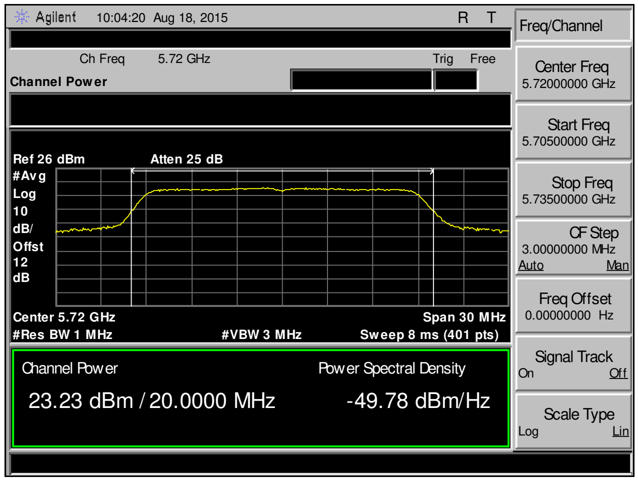
Plot 85. RF Output Power, 802.11ac 20 MHz, Channel 100, SISO



Plot 86. RF Output Power, 802.11ac 20 MHz, Channel 120, SISO

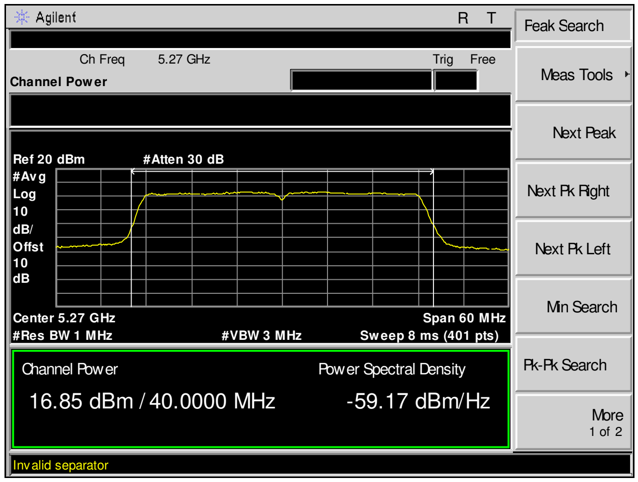


Plot 87. RF Output Power, 802.11ac 20 MHz, Channel 140, SISO

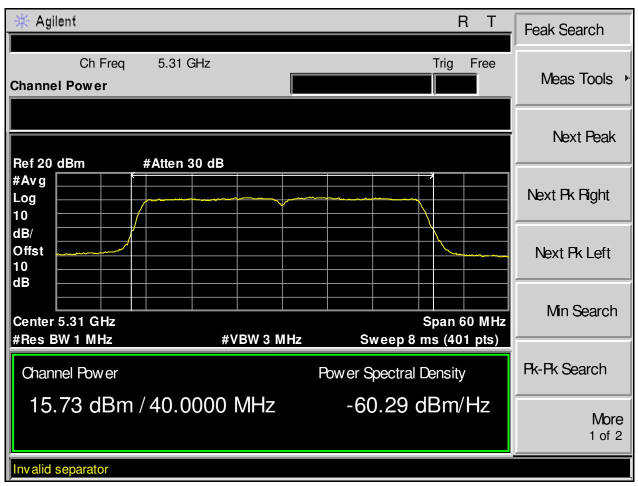


Plot 88. RF Output Power, 802.11ac 20 MHz, Channel 144, SISO

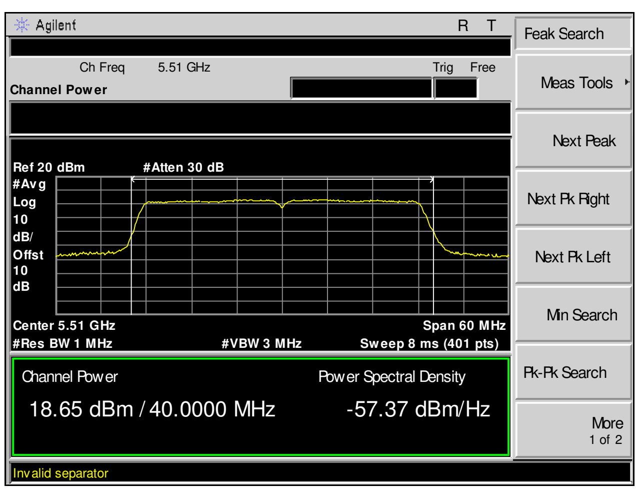
RF Output Power, 802.11ac 40 MHz, SISO



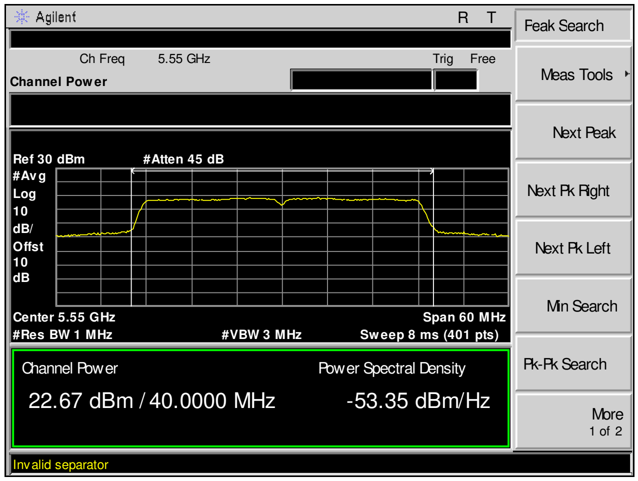
Plot 89. RF Output Power, 802.11ac 40 MHz, Channel 52, SISO



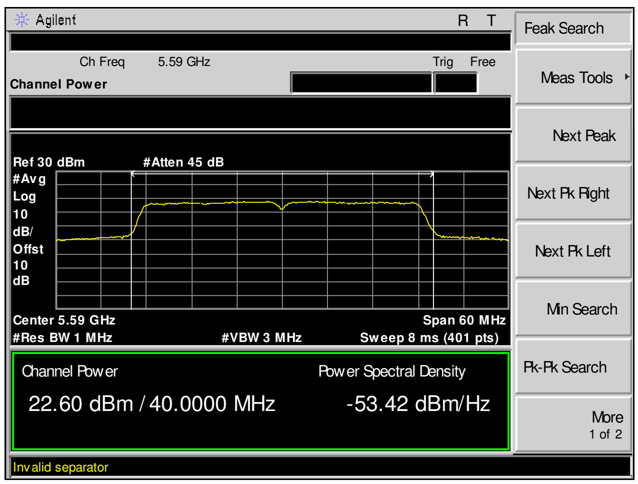
Plot 90. RF Output Power, 802.11ac 40 MHz, Channel 60, SISO



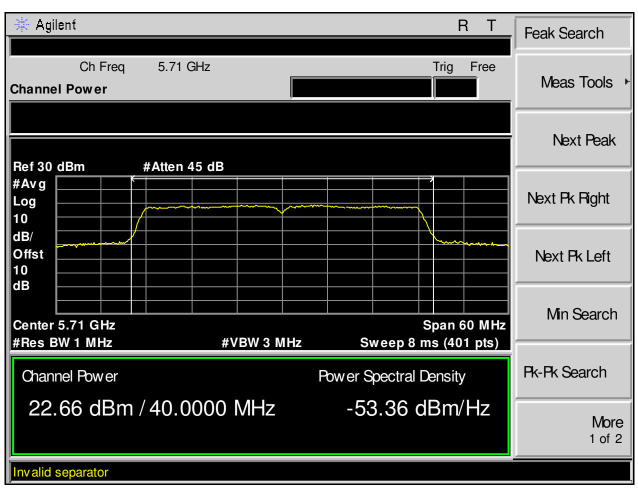
Plot 91. RF Output Power, 802.11ac 40 MHz, Channel 100, SISO



Plot 92. RF Output Power, 802.11ac 40 MHz, Channel 108, SISO

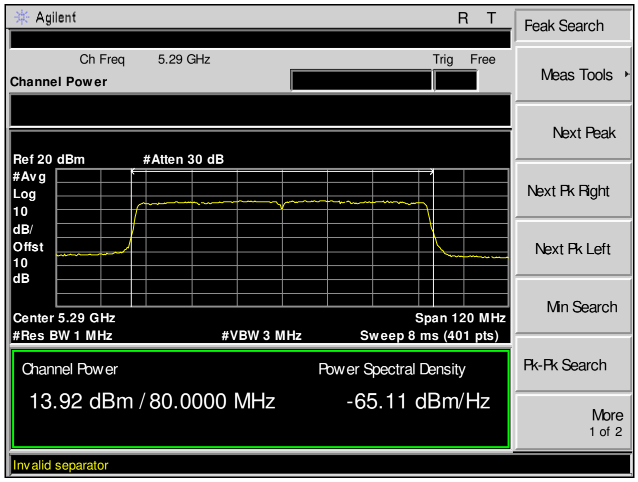


Plot 93. RF Output Power, 802.11ac 40 MHz, Channel 116, SISO

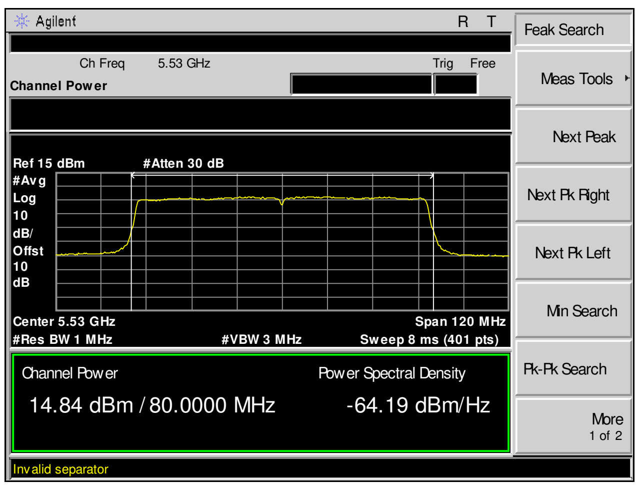


Plot 94. RF Output Power, 802.11ac 40 MHz, Channel 140, SISO

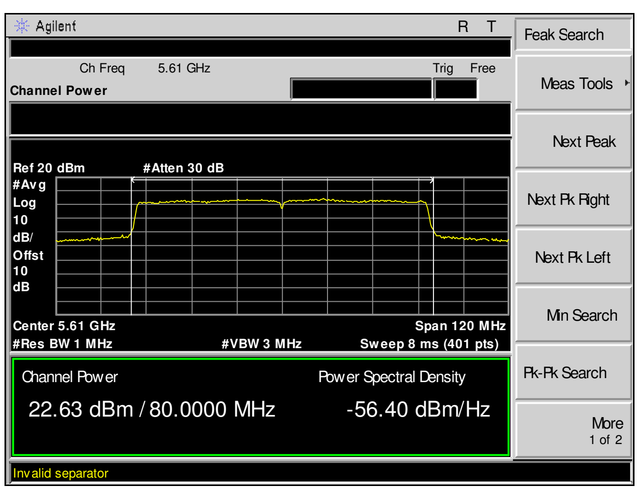
RF Output Power, 802.11ac 80 MHz, SISO



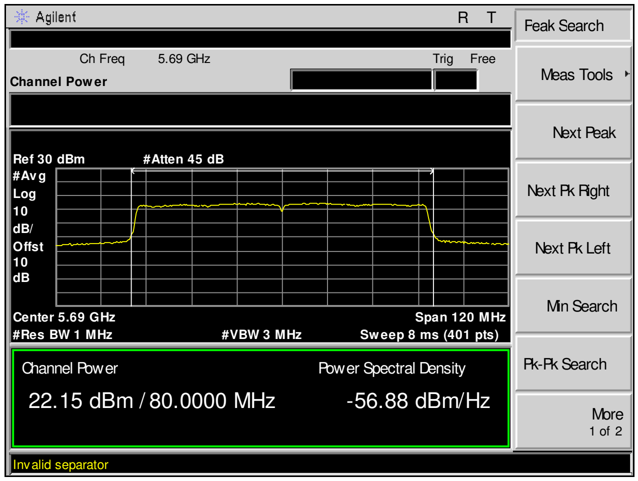
Plot 95. RF Output Power, 802.11ac 80 MHz, Channel 52, SISO



Plot 96. RF Output Power, 802.11ac 80 MHz, Channel 100, SISO

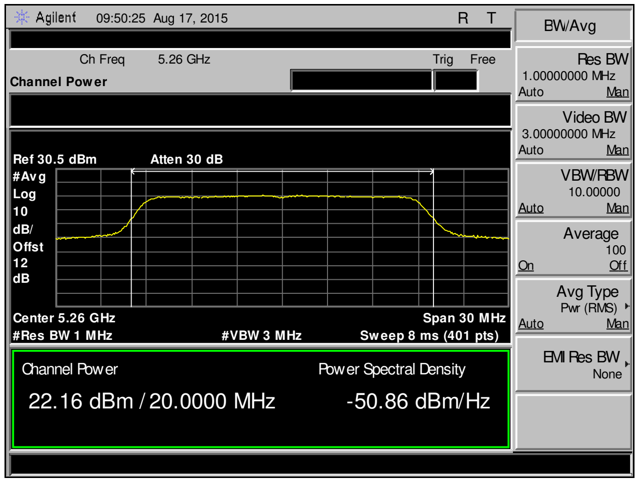


Plot 97. RF Output Power, 802.11ac 80 MHz, Channel 116, SISO

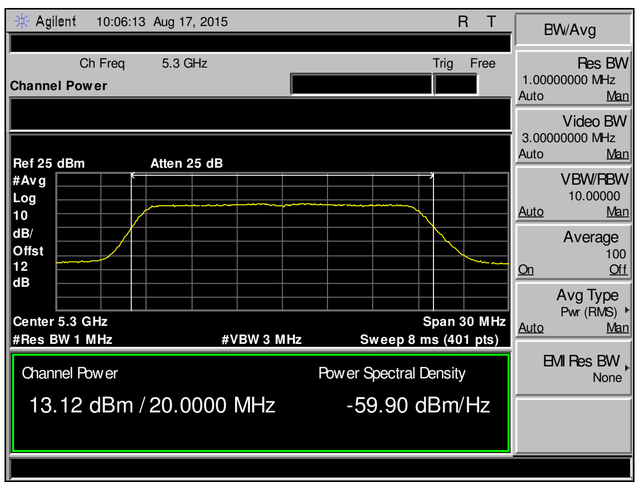


Plot 98. RF Output Power, 802.11ac 80 MHz, Channel 132, SISO

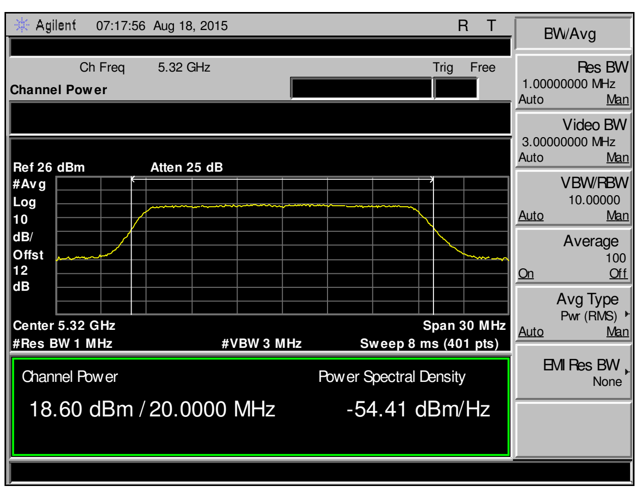
RF Output Power, 802.11n 20 MHz, SISO



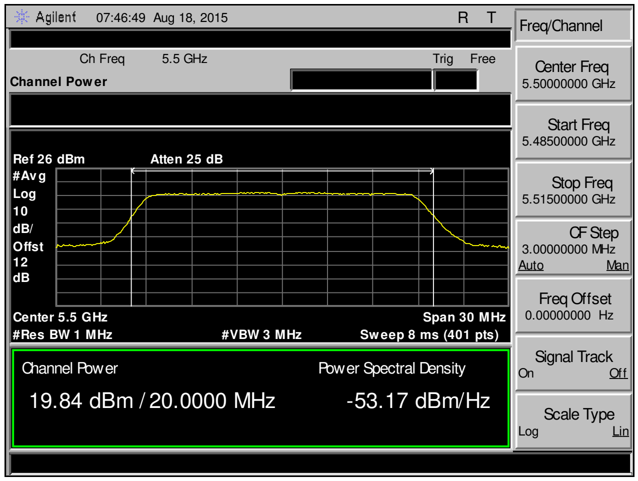
Plot 99. RF Output Power, 802.11n 20 MHz, Channel 52, SISO



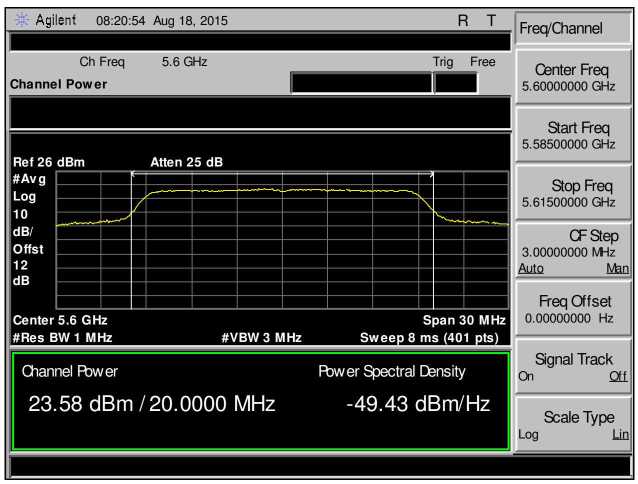
Plot 100. RF Output Power, 802.11n 20 MHz, Channel 60, SISO



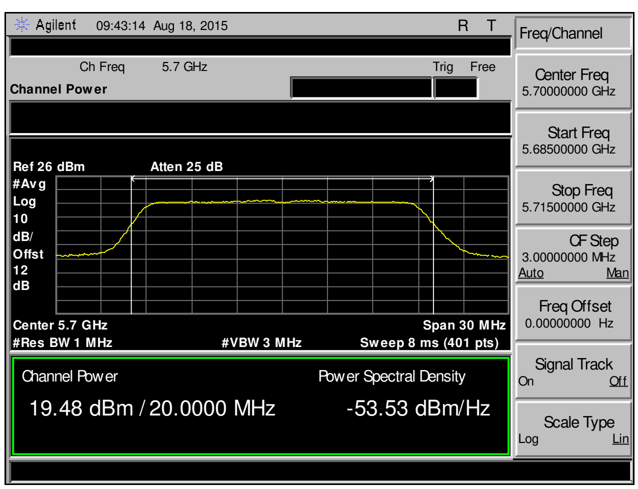
Plot 101. RF Output Power, 802.11n 20 MHz, Channel 64, SISO



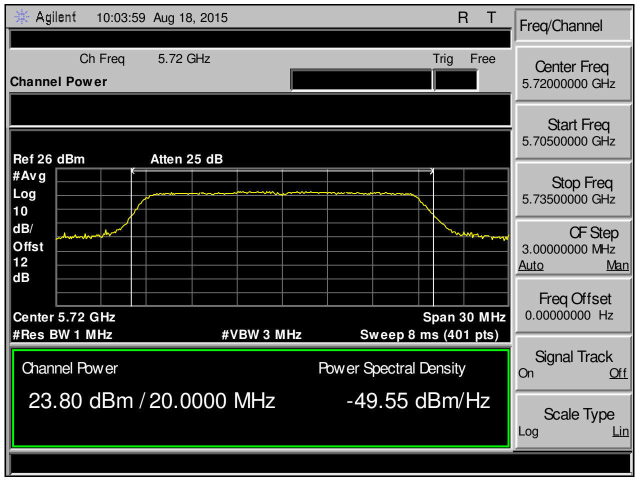
Plot 102. RF Output Power, 802.11n 20 MHz, Channel 100, SISO



Plot 103. RF Output Power, 802.11n 20 MHz, Channel 120, SISO

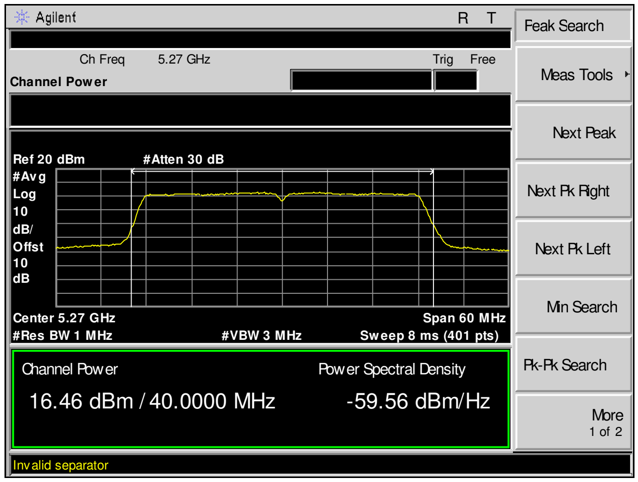


Plot 104. RF Output Power, 802.11n 20 MHz, Channel 140, SISO

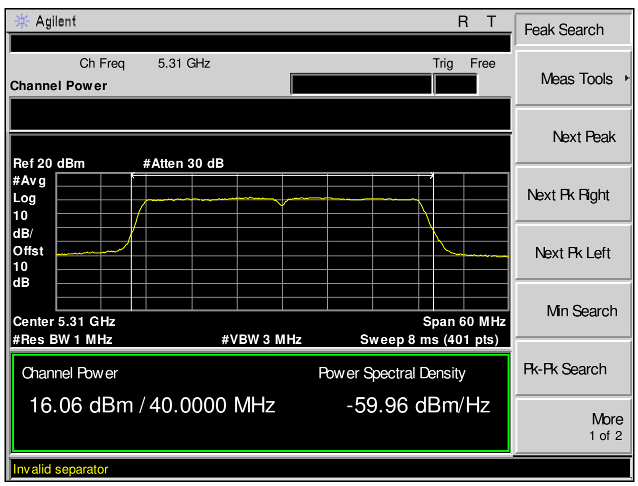


Plot 105. RF Output Power, 802.11n 20 MHz, Channel 144, SISO

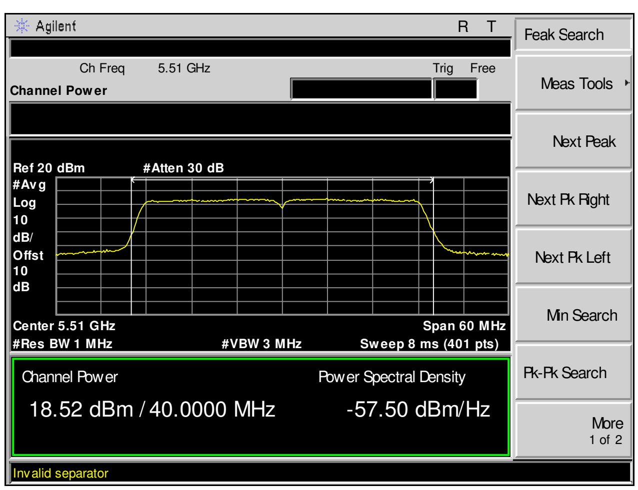
RF Output Power, 802.11n 40 MHz, SISO



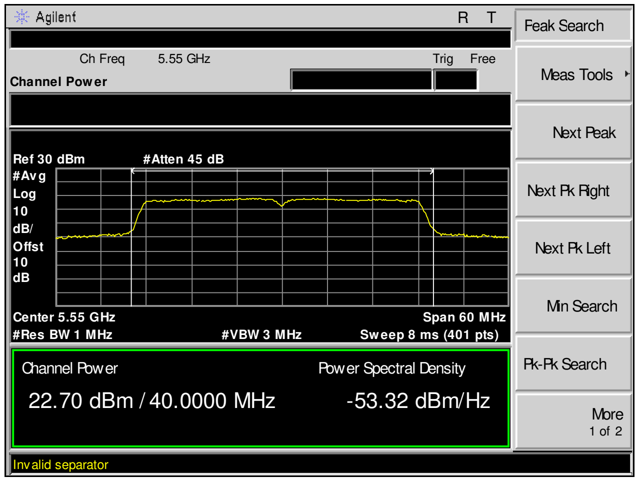
Plot 106. RF Output Power, 802.11n 40 MHz, Channel 52, SISO



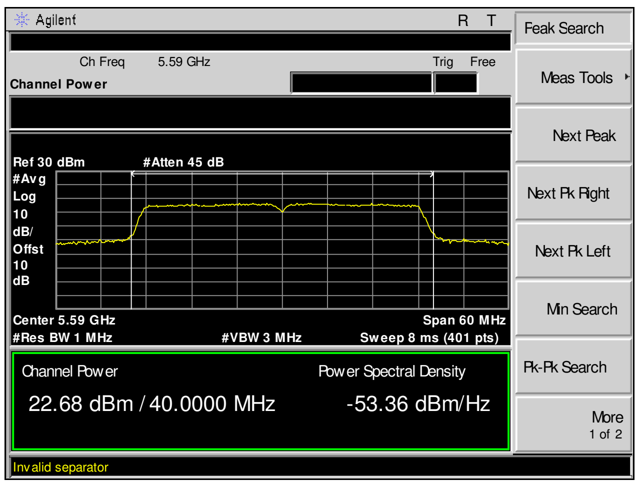
Plot 107. RF Output Power, 802.11n 40 MHz, Channel 60, SISO



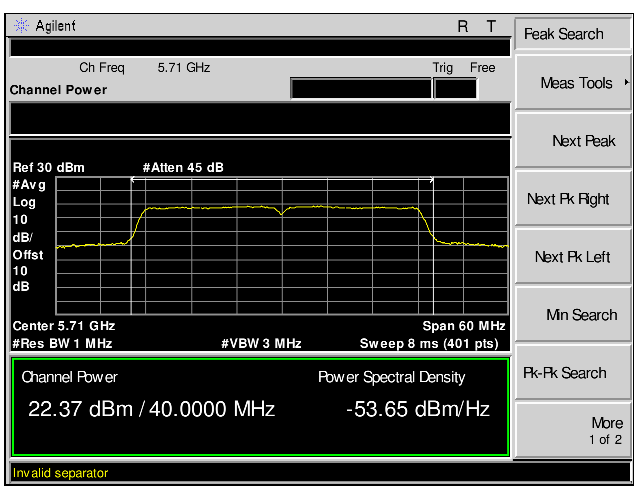
Plot 108. RF Output Power, 802.11n 40 MHz, Channel 100, SISO



Plot 109. RF Output Power, 802.11n 40 MHz, Channel 108, SISO



Plot 110. RF Output Power, 802.11n 40 MHz, Channel 116, SISO



Plot 111. RF Output Power, 802.11n 40 MHz, Channel 140, SISO

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(a)(2) Peak Power Spectral Density

Test Requirements: **§ 15.407(a)(2):** In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band.

Test Procedure: The transmitter was connected directly to a Spectrum Analyzer through an attenuator. The power level was set to the maximum level on the EUT. The RBW was set to 1MHz and the VBW was set to 3MHz. The method of measurement used was from 789033 D01 General UNII Test Procedures New Rules v01.

Test Results: Equipment was compliant with the peak power spectral density limits of **§ 15.407 (a)(2).** The peak power spectral density was determined from plots on the following page(s).

The following table presents the 99% bandwidth measurements and their average peak spectral density per MHz.

Test Engineer(s): Surinder Singh

Test Date(s): 05/20/15

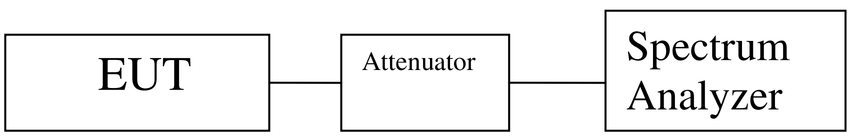


Figure 3. Power Spectral Density Test Setup

Maximum Conducted PSD 20MHz Band 802.11a/ac/n						
Channel	Frequency GHz	Power spectral density (dBm)/1MHz Ant 1	Mode	Power Limit (dBm)	Antenna Gain (dB)	Margin (dB)
52	5260	10.35	a	11	5.3	-0.65
60	5300	5.8	a	11	5.3	-5.2
64	5320	7.08	a	11	5.3	-3.92
116	5580	10.29	a	11	5.6	-0.71
140	5700	6.7	a	11	5.6	-4.3
144	5720	9.84	a	11	5.3	-1.16
52	5260	9.24	n	11	5.3	-1.76
60	5300	3.7	n	11	5.3	-7.3
64	5320	7.24	n	11	5.3	-3.76
100	5500	8.5	n	11	5.6	-2.5
116	5580	10.14	n	11	5.6	-0.86
140	5700	5.2	n	11	5.6	-5.8
144	5720	9.65	n	11	5.6	-1.35
52	5260	10.89	ac	11	5.3	-0.11
60	5300	4.6	ac	11	5.3	-6.4
64	5320	7.4	ac	11	5.3	-3.6
100	5500	8.71	ac	11	5.6	-2.29
116	5580	10.73	ac	11	5.6	-0.27
140	5700	4.4	ac	11	5.6	-6.6
144	5720	9.68	ac	11	5.6	-1.32

Table 14. Peak Power Spectral Density, Test Results, 20 MHz

Maximum Conducted Output PSD 20MHz Band 802.11a/n/ac Mode MIMO (3*3) (dBm)									
Chanel Carrier	Frequency MHz	Power spectral density (dBm)/1MHz Ant 0	Power spectral density (dBm)/1MHz Ant 1	Power spectral density (dBm)/1MHz Ant 2	Mode	Total Output Power (dBm)	Antenna Gain (dB)	Power Limit (dBm)	Margin (dB)
52	5260	2.77	2.82	2.64	a	7.52	9.4	7.6	-0.08
60	5300	-3.84	-3.4	-3.64	a	1.15	9.4	7.6	-6.45
64	5320	-0.84	-0.7	-0.64	a	4.05	9.4	7.6	-3.55
100	5500	-0.44	-0.5	-0.21	a	4.39	9.9	7.1	-2.71
116	5580	0.15	3.065	2.34	a	6.79	9.9	7.1	-0.31
140	5700	-1.62	-1.6	-1.85	a	3.08	9.9	7.1	-4.02
144	5720	1.56	1.4	1.84	a	6.38	9.9	7.1	-0.72
52	5260	1.08	1.87	2.11	n	6.48	9.4	7.6	-1.12
60	5300	-4.2	-4.3	-4.87	n	0.32	9.4	7.6	-7.28
64	5320	0.23	0.07	-0.25	n	4.79	9.4	7.6	-2.81
100	5500	0.33	0.52	0.94	n	5.38	9.9	7.1	-1.72
116	5580	5	3.69	5	n	9.38	9.9	7.1	2.28
140	5700	-1.49	-1.09	-1.56	n	3.40	9.9	7.1	-3.70
144	5720	1.54	3.018	1.94	n	6.98	9.9	7.1	-0.12
52	5260	2.2	2.511	2.49	ac	7.17	9.4	7.6	-0.43
60	5300	-4.6	-4.5	-4.8	ac	0.14	9.4	7.6	-7.46
64	5320	-0.23	-0.44	-0.55	ac	4.37	9.4	7.6	-3.23
100	5500	0.26	0.64	0.94	ac	5.39	9.9	7.1	-1.71
116	5580	1.64	3.88	1.49	ac	7.25	9.9	7.1	0.15
140	5700	-1.49	-1.4	-1.67	ac	3.25	9.9	7.1	-3.85
144	5720	1.82	2.644	2.33	ac	7.05	9.9	7.1	-0.05

Table 15. Peak Power Spectral Density, Test Results, 20 MHz, MIMO

Maximum Conducted Output PSD 40MHz Band 802.11ac/n Mode (dBm)						
Channel	Frequency GHz	Power spectral density (dBm)/1MHz Ant 1	Mode	Power Limit (dBm)	Antenna Gain (dB)	Margin (dB)
52	5270	3.02	n	11	5.3	-7.98
52	5270	2.5	ac	11	5.3	-8.5
60	5310	1.497	n	11	5.3	-9.503
60	5310	1.71	ac	11	5.3	-9.29
100	5510	4.73	n	11	5.6	-6.27
100	5510	4.8	ac	11	5.6	-6.2
116	5590	8.7	n	11	5.6	-2.3
116	5590	8.6	ac	11	5.6	-2.4
132	5670	8.53	n	11	5.6	-2.47
132	5670	8.1	ac	11	5.6	-2.9
140	5710	8.4	n	11	5.6	-2.6
140	5710	8.5	ac	11	5.6	-2.5

Table 16. Peak Power Spectral Density, Test Results, 40 MHz

Maximum Conducted Output PSD 40MHz Band 11n/ac mode MIMO (3*3) (dBm)									
Chanel Carrier	Frequency MHz	Power spectral density (dBm)/1MHz Ant 0	Power spectral density (dBm)/1MHz Ant 1	Power spectral density (dBm)/1MHz Ant 2	Mode	Total Output Power (dBm)	Antenna Gain (dB)	Power Limit (dBm)	Margin (dB)
52	5270	-4.1	-4.4	-4.25	n	0.52	9.4	7.6	-7.08
52	5270	-4.27	-4.4	-4.88	ac	0.26	9.4	7.6	-7.34
60	5310	-2.3	-2.8	-2.15	n	2.36	9.4	7.6	-5.24
60	5310	-2.99	-3.04	-2.56	ac	1.91	9.4	7.6	-5.69
100	5510	-0.8	-0.9	-1.06	n	3.85	9.9	7.1	-3.25
100	5510	-1.56	-1.29	-1.88	ac	3.20	9.9	7.1	-3.90
116	5590	0.16	2.7	0.84	n	6.14	9.9	7.1	-0.96
116	5590	0.24	3.2	0.19	ac	6.22	9.9	7.1	-0.88
132	5670	0.84	2.56	0.64	n	6.21	9.9	7.1	-0.89
132	5670	0.19	2.5	0.64	ac	6.00	9.9	7.1	-1.10
140	5710	1.75	1.12	1.69	n	6.30	9.9	7.1	-0.80
140	5710	0.15	0.7	0.94	ac	5.38	9.9	7.1	-1.72

Table 17. Peak Power Spectral Density, Test Results, 40 MHz, MIMO

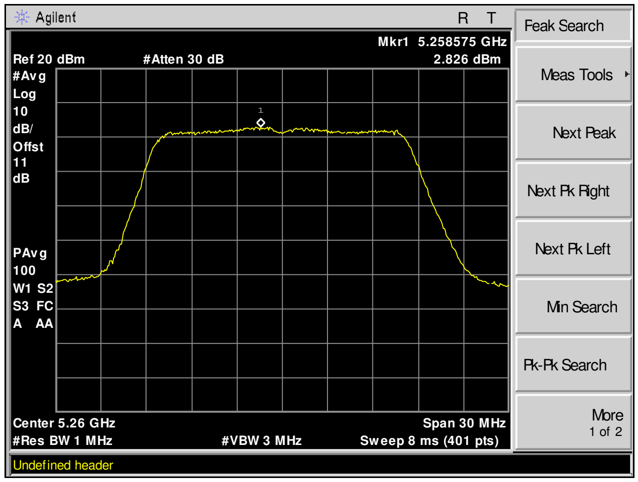
Maximum Conducted PSD 80MHz Band 802.11ac mode SISO (dBm)						
Channel	**Frequency MHz**	**Power spectral density (dBm)/1MHz Ant 1**	**Mode**	**Power Limit (dBm)**	**Antenna Gain (dB)**	**Margin (dB)**
52	5290	-3.02	ac	11	5.3	-14.02
100	5530	-2.1	ac	11	5.8	-13.1
116	5610	5	ac	11	5.8	-6
132	5690	5	ac	11	5.8	-6

Table 18. Peak Power Spectral Density, Test Results, 80 MHz, SISO

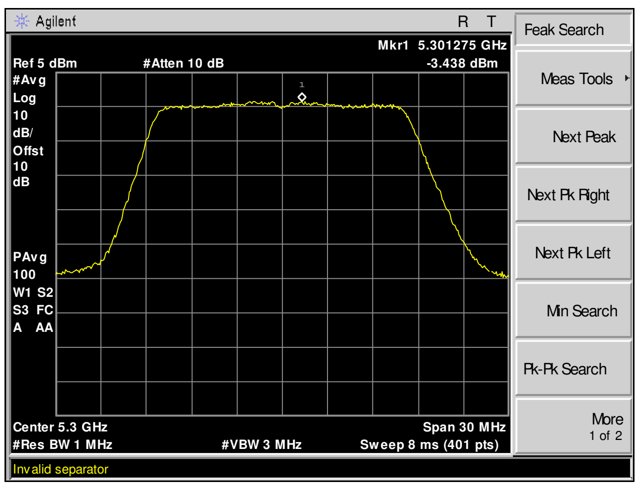
Maximum Conducted PSD 80MHz Band 802.11ac mode MIMO (3*3) (dBm)								
Chanel Carrier	**Frequency MHz**	**Power spectral density (dBm)/1MHz Ant 0**	**Power spectral density (dBm)/1MHz Ant 1**	**Power spectral density (dBm)/1MHz Ant 2**	**Total Output Power (dBm)**	**Antenna Gain (dB)**	**Power Limit (dBm)**	**Margin (dB)**
52	5290	-9.84	-9.2	-10.23	-4.96	9.4	7.6	-12.56
100	5530	-8.66	-8.5	-844	-5.57	9.9	7.1	-12.67
116	5610	-0.31	-1.01	-1.26	3.93	9.9	7.1	-3.17
132	5690	-1.1	-1.2	-1.51	3.50	9.9	7.1	-3.60

Table 19. Peak Power Spectral Density, Test Results, 80 MHz, MIMO

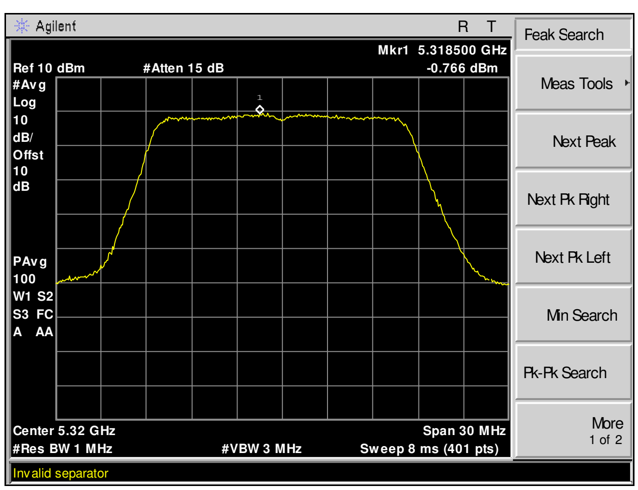
Peak Power Spectral Density, 802.11a, MIMO



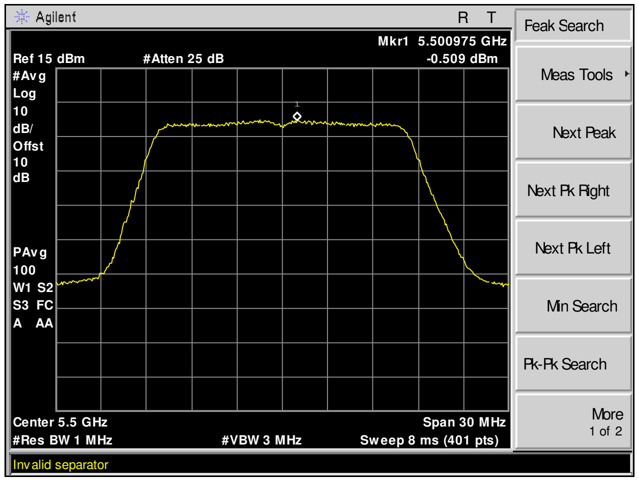
Plot 112. Peak Power Spectral Density, 802.11a, Channel 52, MIMO



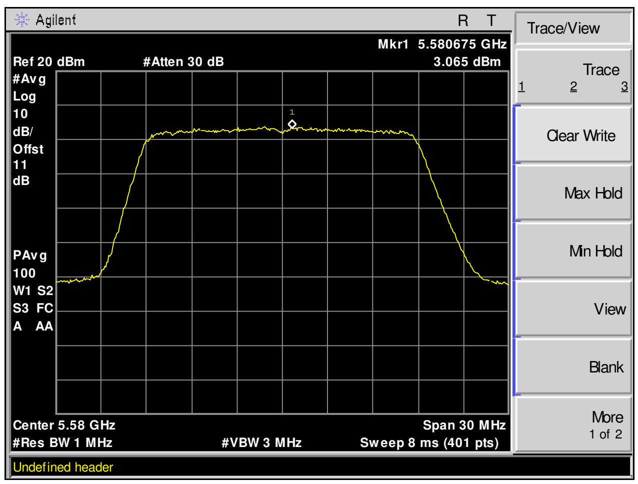
Plot 113. Peak Power Spectral Density, 802.11a, Channel 60, MIMO



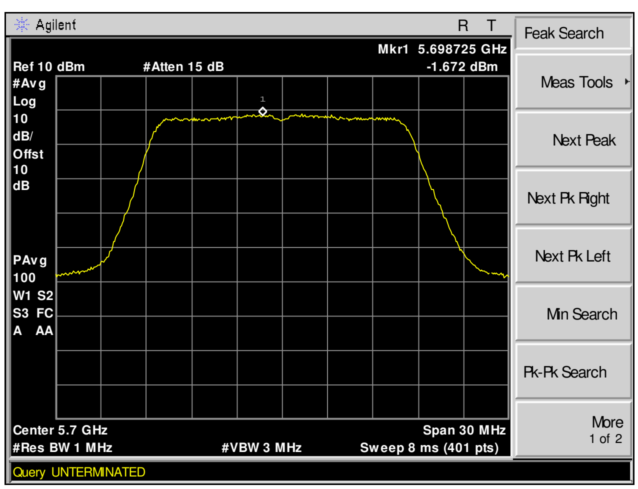
Plot 114. Peak Power Spectral Density, 802.11a, Channel 64, MIMO



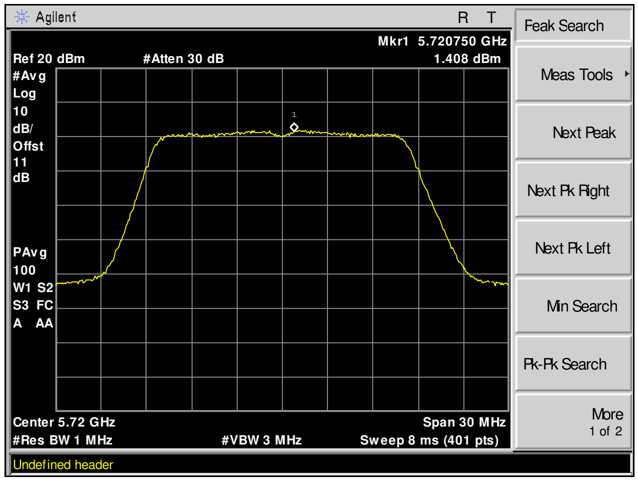
Plot 115. Peak Power Spectral Density, 802.11a, Channel 100, MIMO



Plot 116. Peak Power Spectral Density, 802.11a, Channel 116, MIMO

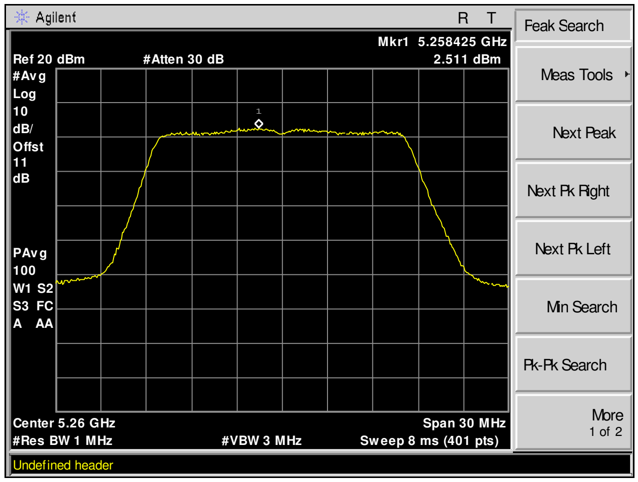


Plot 117. Peak Power Spectral Density, 802.11a, Channel 140, MIMO

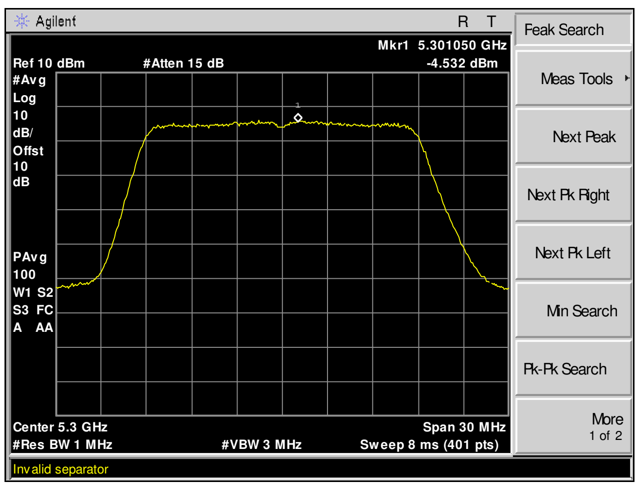


Plot 118. Peak Power Spectral Density, 802.11a, Channel 144, MIMO

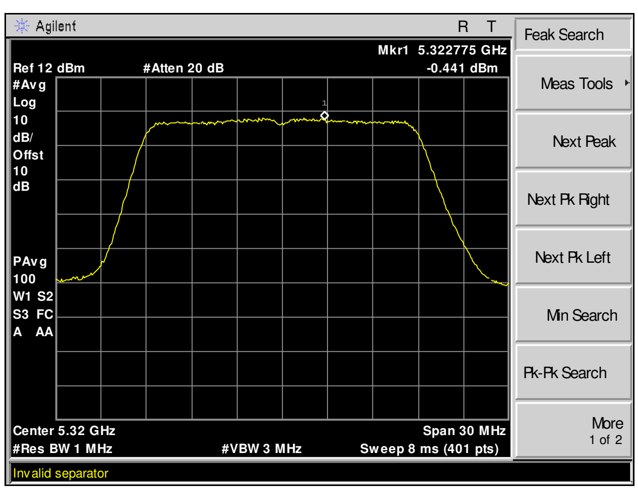
Peak Power Spectral Density, 802.11ac 20 MHz, MIMO



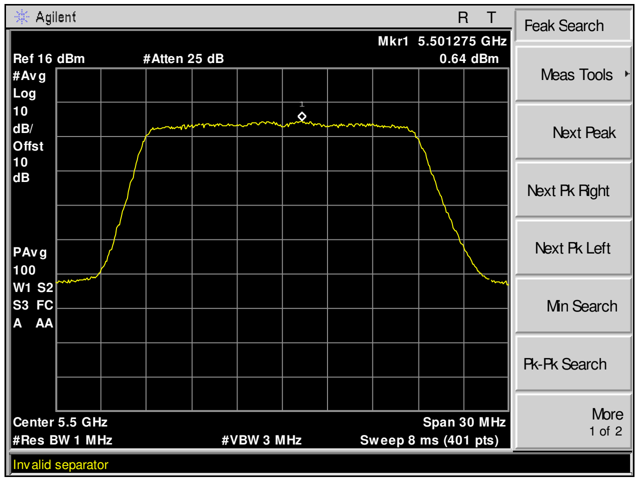
Plot 119. Peak Power Spectral Density, 802.11ac 20 MHz, Channel 52, MIMO



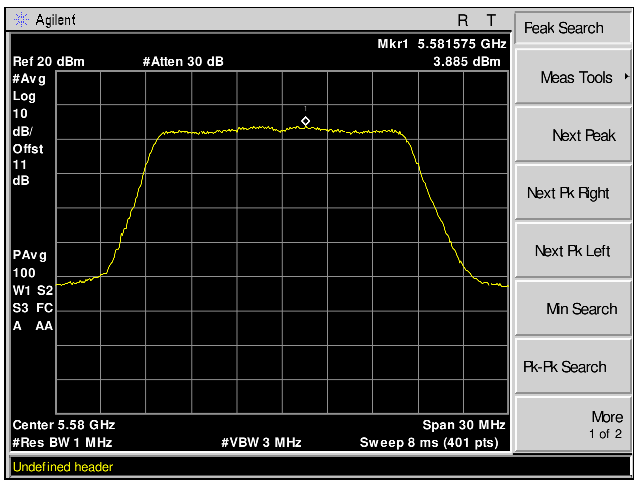
Plot 120. Peak Power Spectral Density, 802.11ac 20 MHz, Channel 60, MIMO



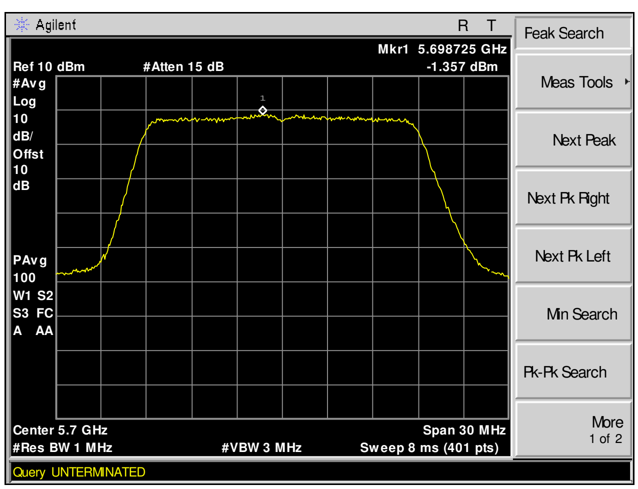
Plot 121. Peak Power Spectral Density, 802.11ac 20 MHz, Channel 64, MIMO



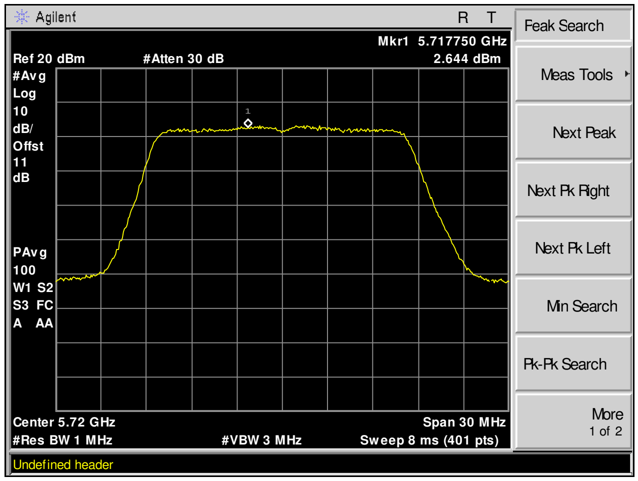
Plot 122. Peak Power Spectral Density, 802.11ac 20 MHz, Channel 100, MIMO



Plot 123. Peak Power Spectral Density, 802.11ac 20 MHz, Channel 116, MIMO

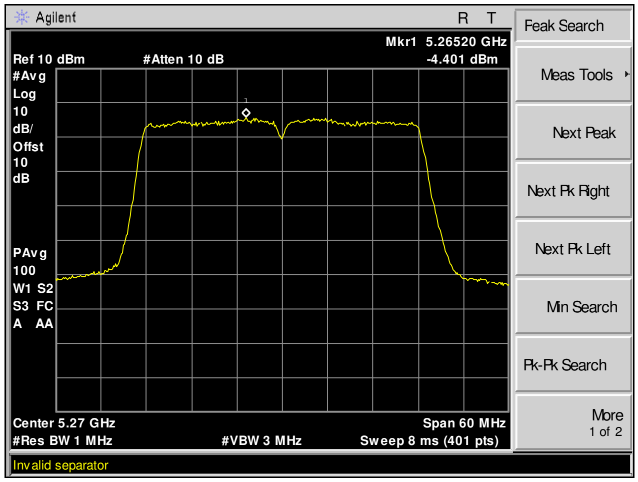


Plot 124. Peak Power Spectral Density, 802.11ac 20 MHz, Channel 140, MIMO

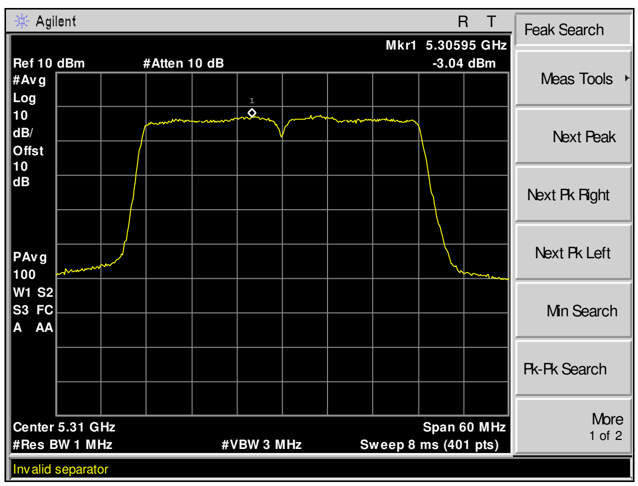


Plot 125. Peak Power Spectral Density, 802.11ac 20 MHz, Channel 144, MIMO

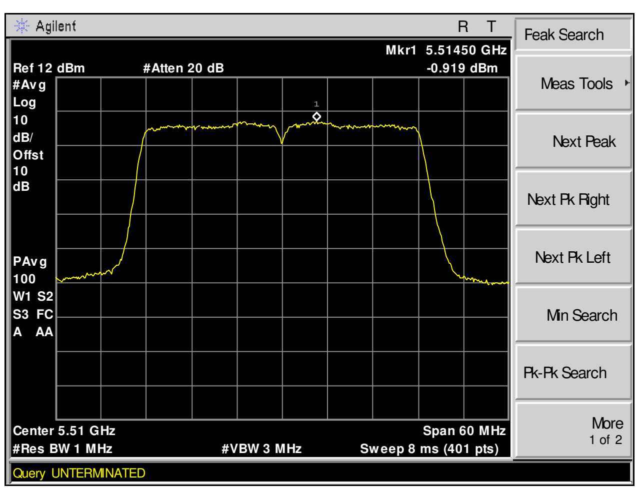
Peak Power Spectral Density, 802.11ac 40 MHz, MIMO



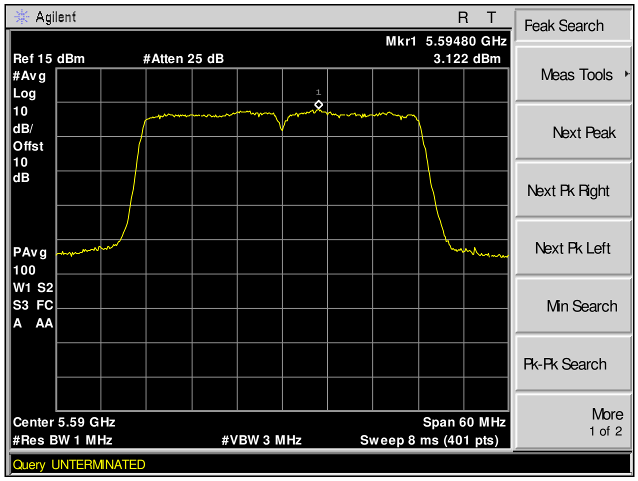
Plot 126. Peak Power Spectral Density, 802.11ac 40 MHz, Channel 52, MIMO



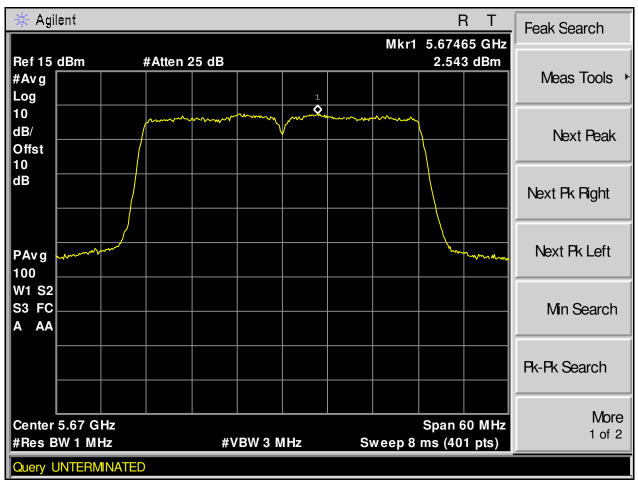
Plot 127. Peak Power Spectral Density, 802.11ac 40 MHz, Channel 60, MIMO



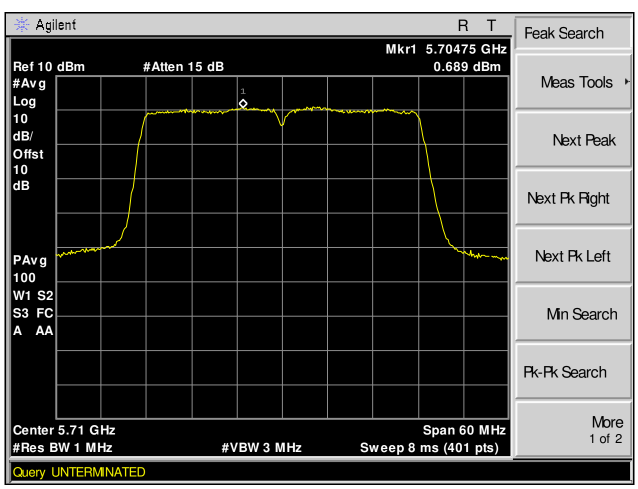
Plot 128. Peak Power Spectral Density, 802.11ac 40 MHz, Channel 100, MIMO



Plot 129. Peak Power Spectral Density, 802.11ac 40 MHz, Channel 116, MIMO

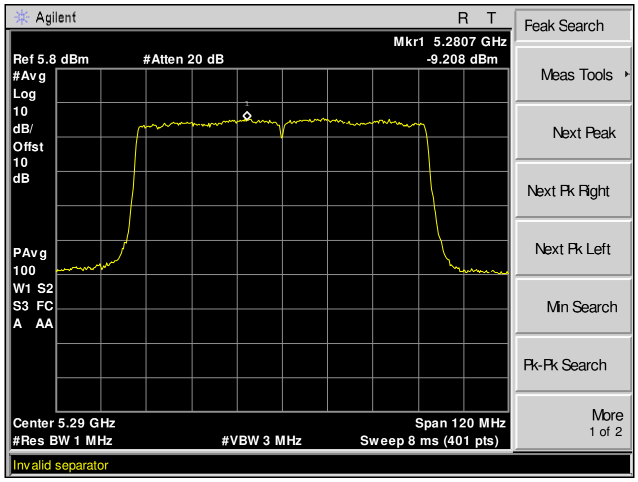


Plot 130. Peak Power Spectral Density, 802.11ac 40 MHz, Channel 132, MIMO

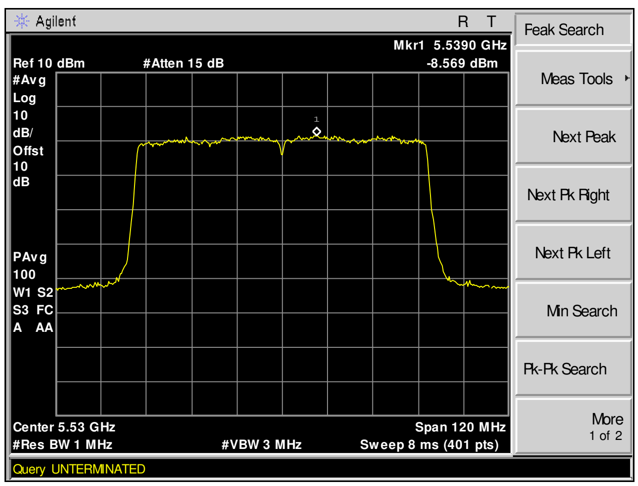


Plot 131. Peak Power Spectral Density, 802.11ac 40 MHz, Channel 140, MIMO

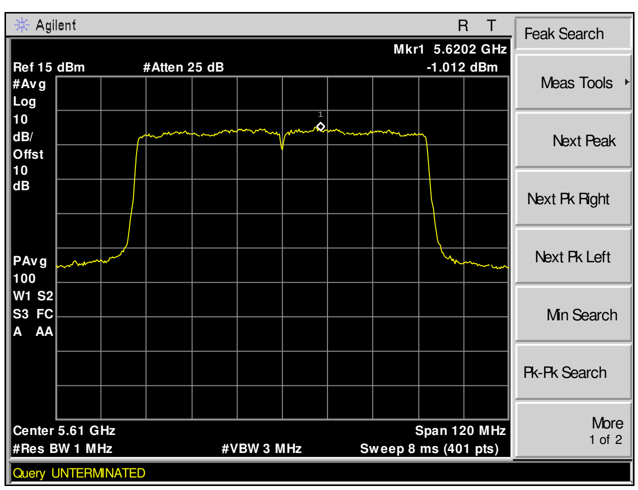
Peak Power Spectral Density, 802.11ac 80 MHz, MIMO



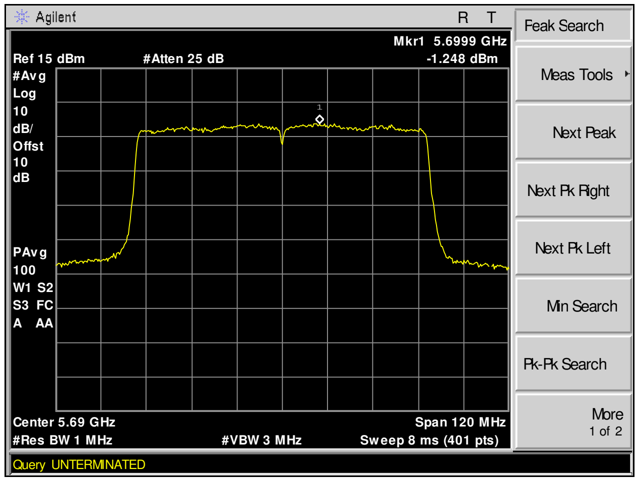
Plot 132. Peak Power Spectral Density, 802.11ac 80 MHz, Channel 52, MIMO



Plot 133. Peak Power Spectral Density, 802.11ac 80 MHz, Channel 100, MIMO

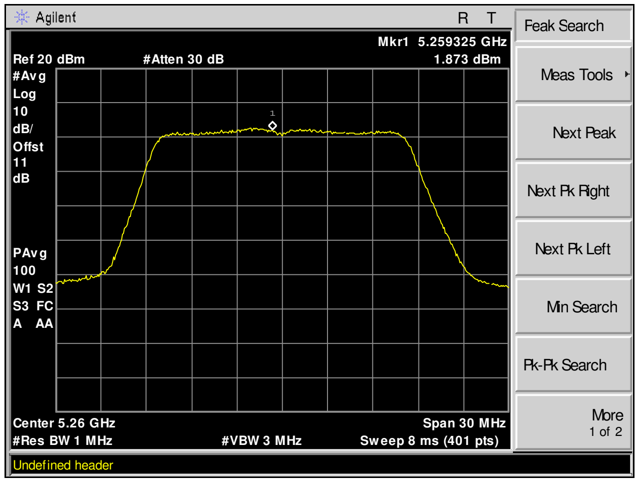


Plot 134. Peak Power Spectral Density, 802.11ac 80 MHz, Channel 116, MIMO

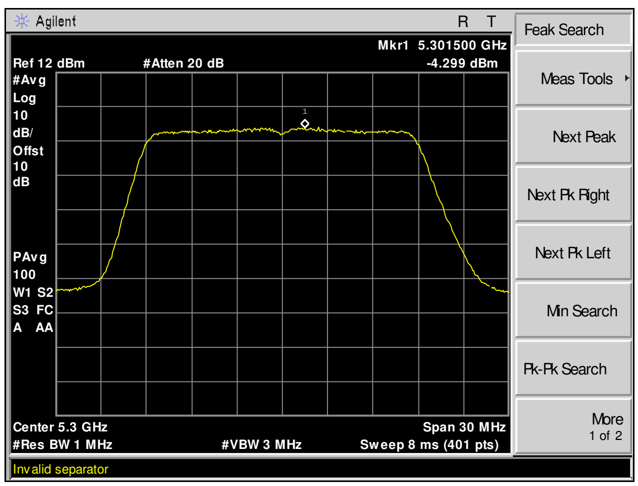


Plot 135. Peak Power Spectral Density, 802.11ac 80 MHz, Channel 132, MIMO

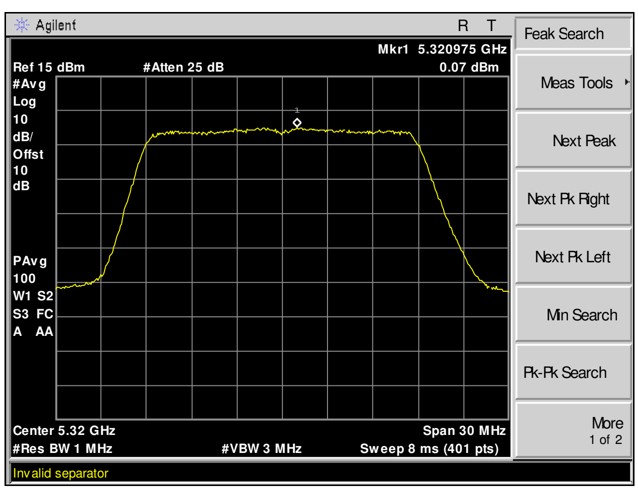
Peak Power Spectral Density, 802.11n 20 MHz, MIMO



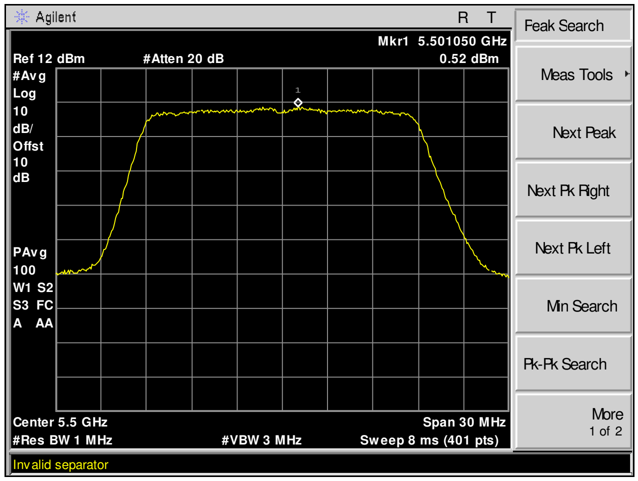
Plot 136. Peak Power Spectral Density, 802.11n 20 MHz, Channel 52, MIMO



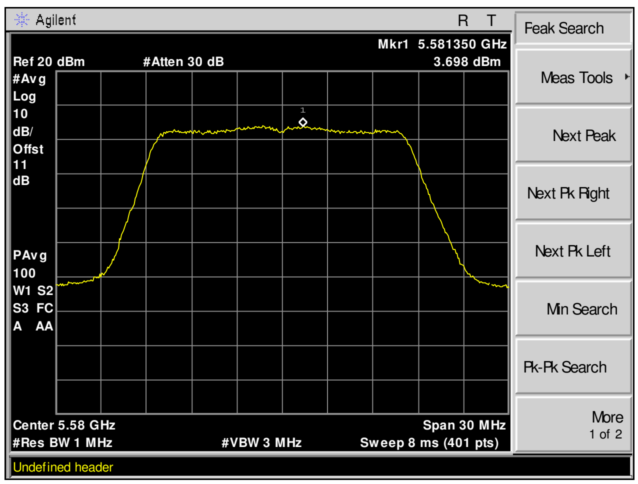
Plot 137. Peak Power Spectral Density, 802.11n 20 MHz, Channel 60, MIMO



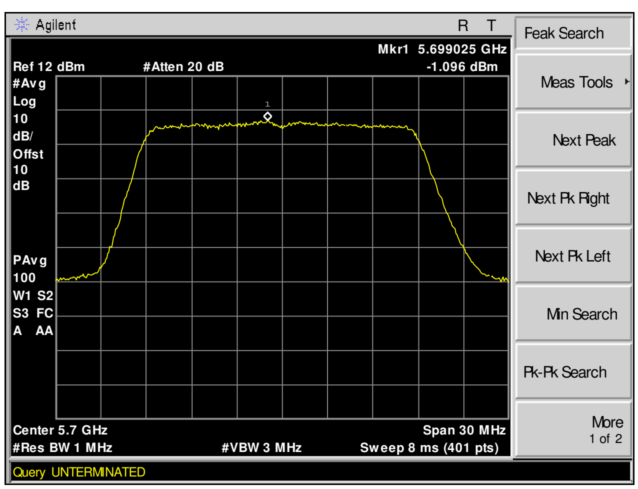
Plot 138. Peak Power Spectral Density, 802.11n 20 MHz, Channel 64, MIMO



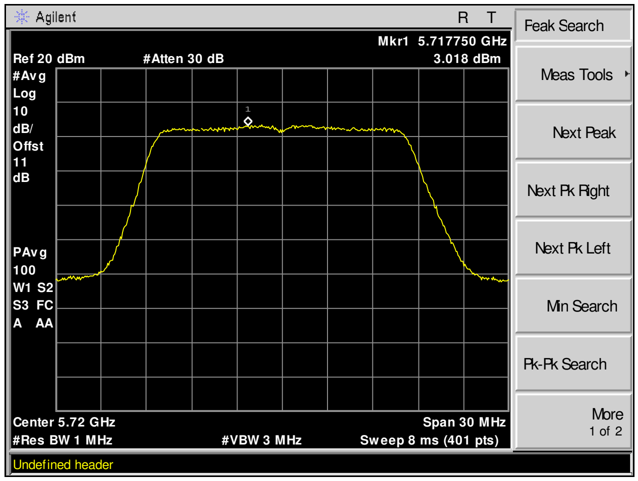
Plot 139. Peak Power Spectral Density, 802.11n 20 MHz, Channel 100, MIMO



Plot 140. Peak Power Spectral Density, 802.11n 20 MHz, Channel 116, MIMO

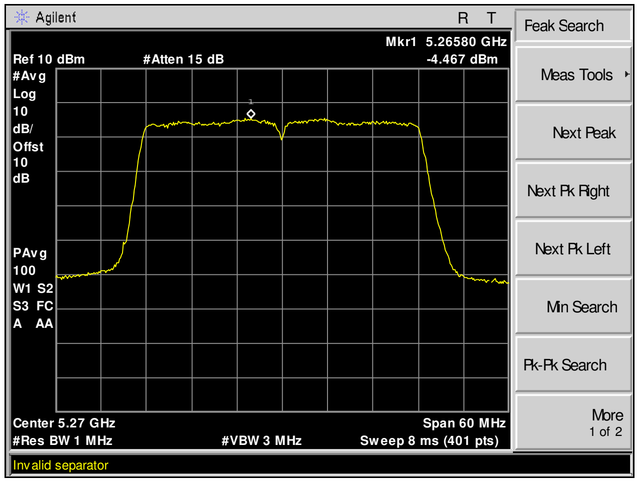


Plot 141. Peak Power Spectral Density, 802.11n 20 MHz, Channel 140, MIMO

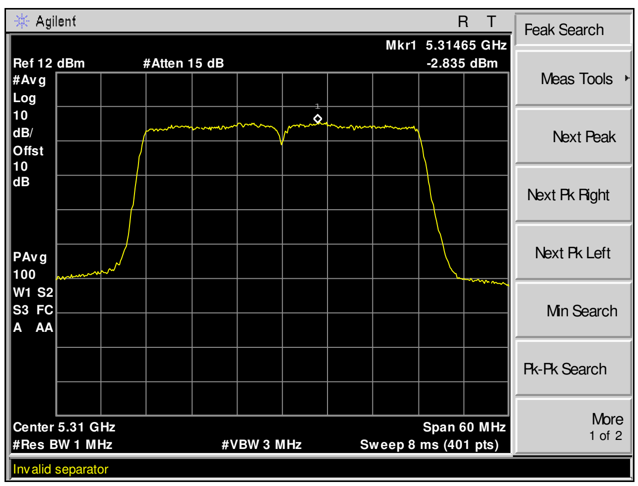


Plot 142. Peak Power Spectral Density, 802.11n 20 MHz, Channel 144, MIMO

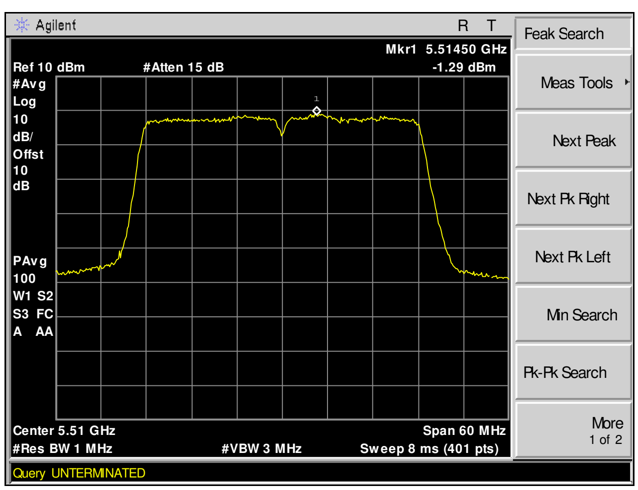
Peak Power Spectral Density, 802.11n 40 MHz, MIMO



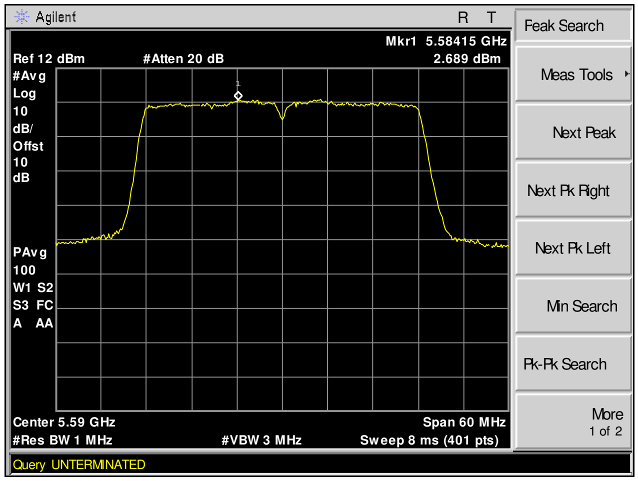
Plot 143. Peak Power Spectral Density, 802.11n 40 MHz, Channel 52, MIMO



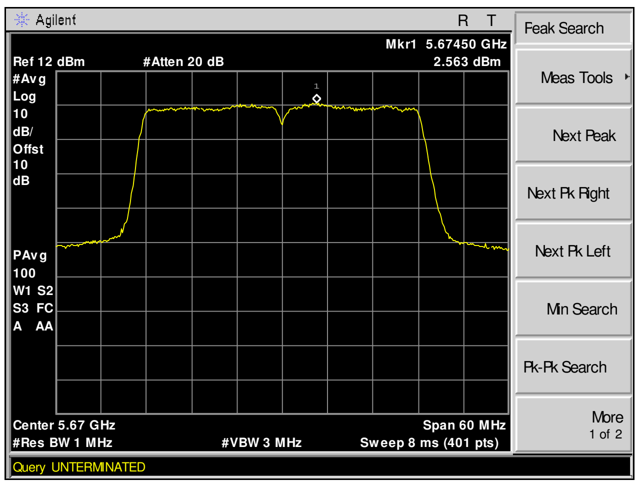
Plot 144. Peak Power Spectral Density, 802.11n 40 MHz, Channel 60, MIMO



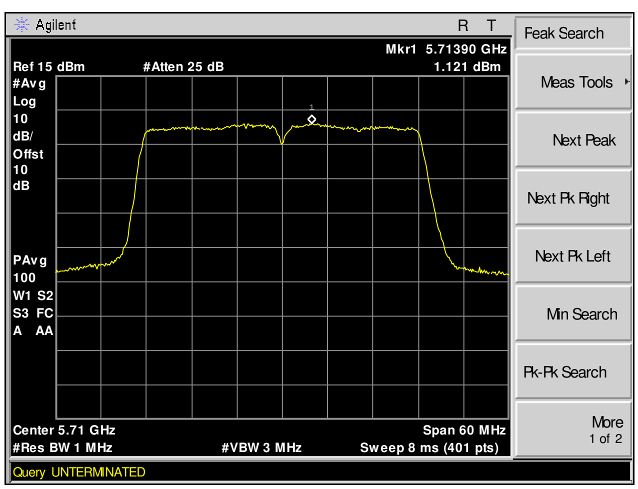
Plot 145. Peak Power Spectral Density, 802.11n 40 MHz, Channel 100, MIMO



Plot 146. Peak Power Spectral Density, 802.11n 40 MHz, Channel 116, MIMO

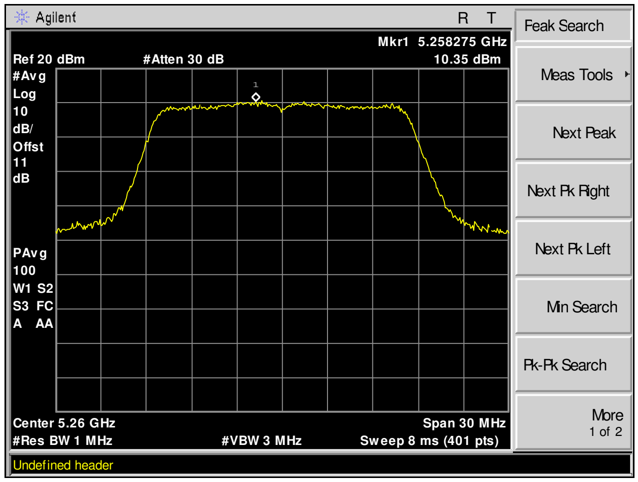


Plot 147. Peak Power Spectral Density, 802.11n 40 MHz, Channel 132, MIMO

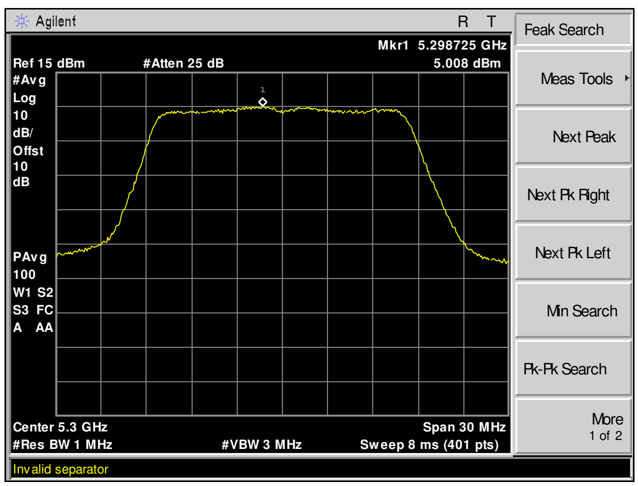


Plot 148. Peak Power Spectral Density, 802.11n 40 MHz, Channel 140, MIMO

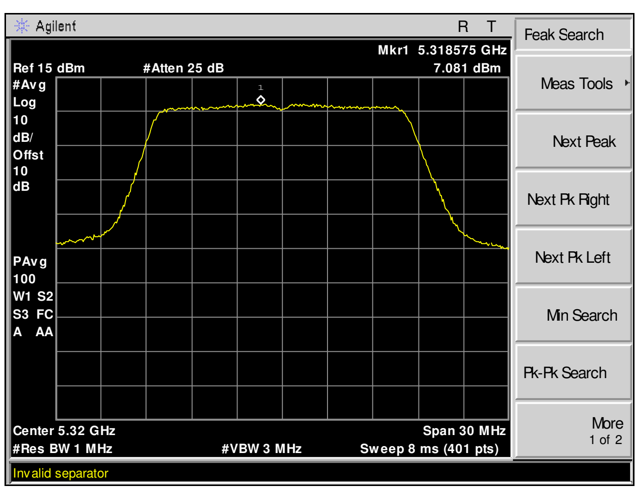
Peak Power Spectral Density, 802.11a, SISO



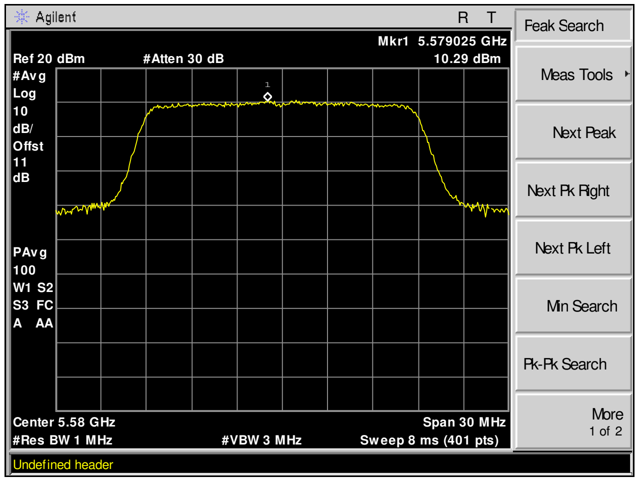
Plot 149. Peak Power Spectral Density, 802.11a, Channel 52, SISO



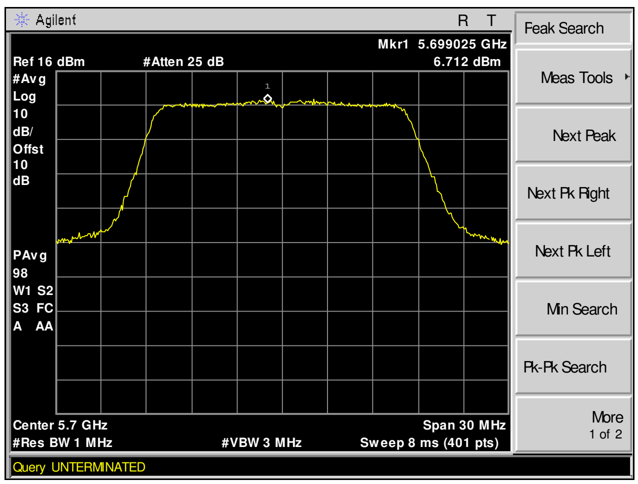
Plot 150. Peak Power Spectral Density, 802.11a, Channel 60, SISO



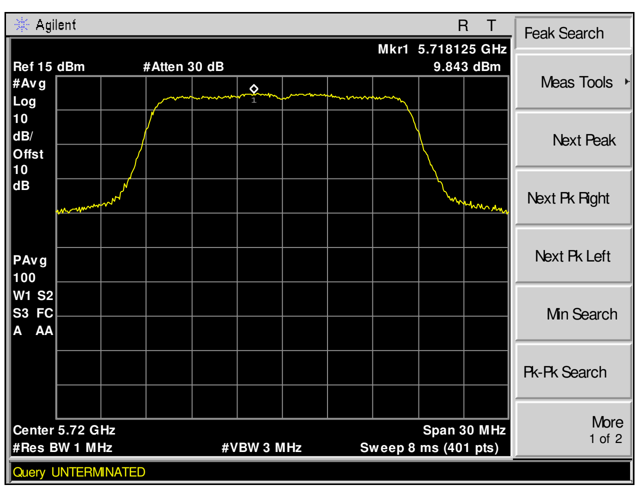
Plot 151. Peak Power Spectral Density, 802.11a, Channel 64, SISO



Plot 152. Peak Power Spectral Density, 802.11a, Channel 116, SISO

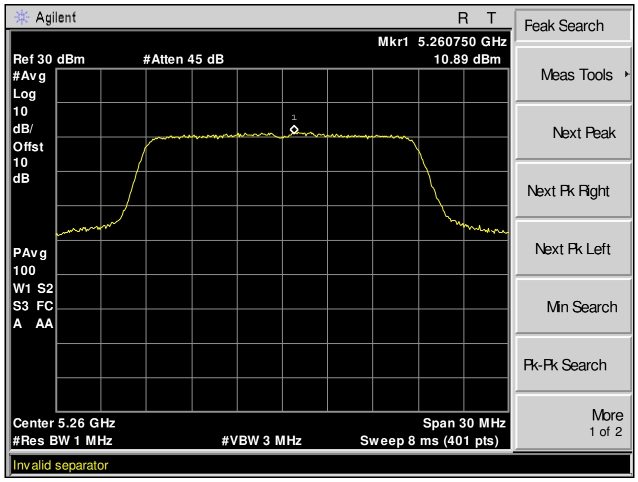


Plot 153. Peak Power Spectral Density, 802.11a, Channel 140, SISO

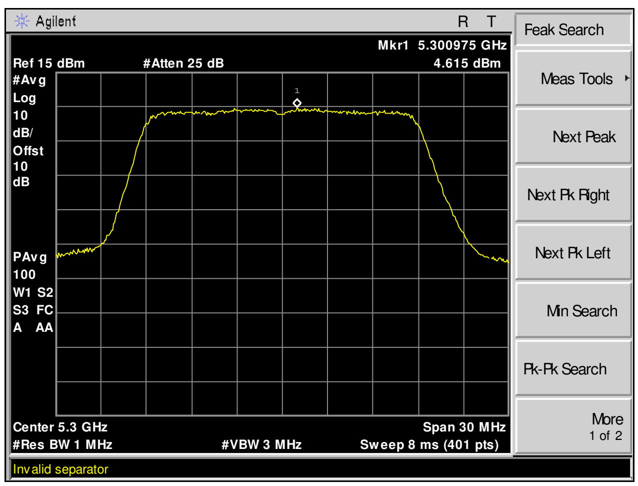


Plot 154. Peak Power Spectral Density, 802.11a, Channel 144, SISO

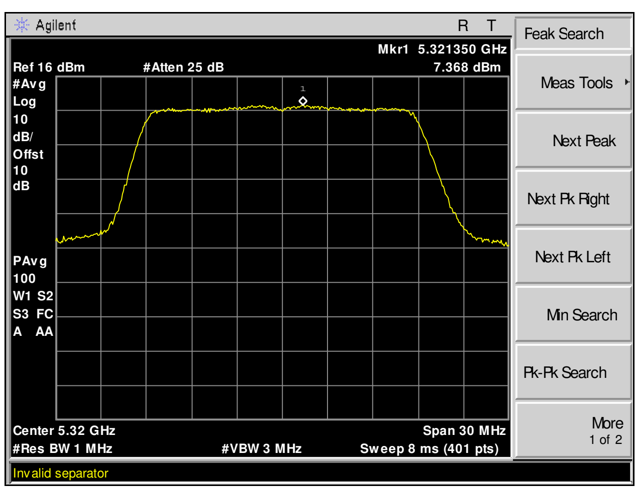
Peak Power Spectral Density, 802.11ac 20 MHz, SISO



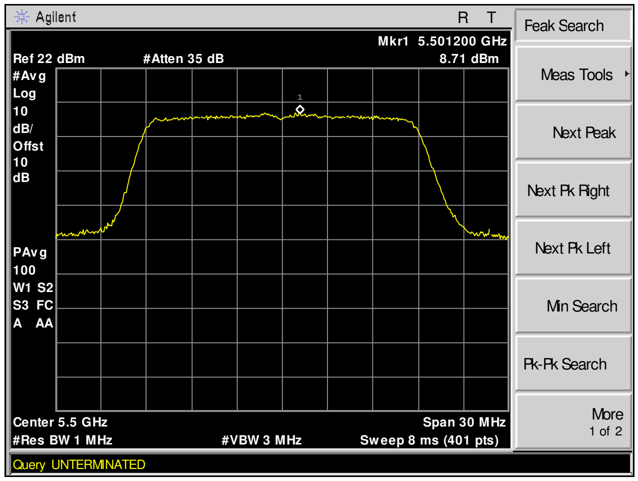
Plot 155. Peak Power Spectral Density, 802.11ac 20 MHz, Channel 52, SISO



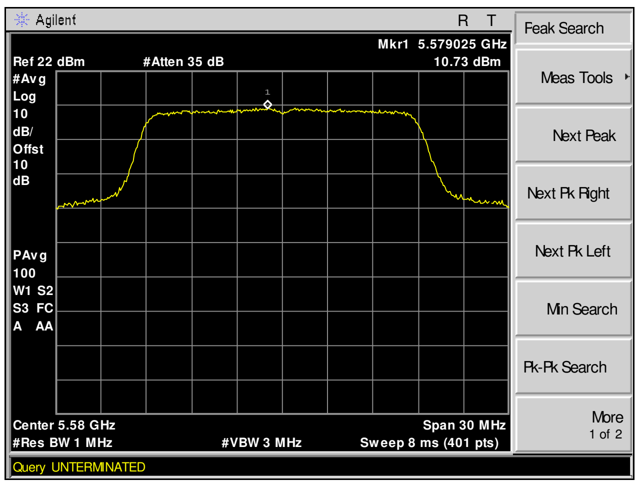
Plot 156. Peak Power Spectral Density, 802.11ac 20 MHz, Channel 60, SISO



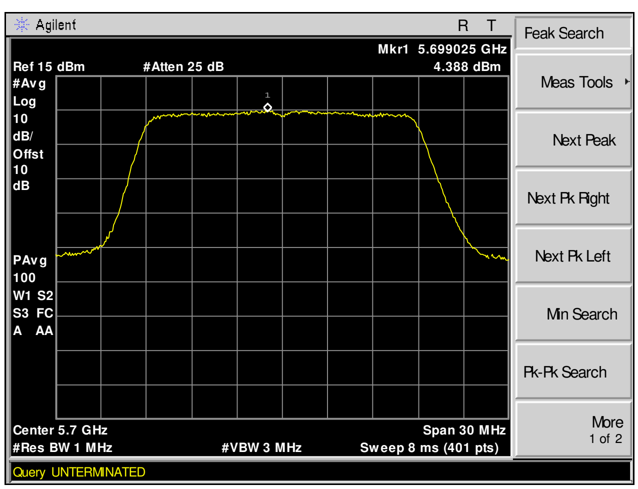
Plot 157. Peak Power Spectral Density, 802.11ac 20 MHz, Channel 64, SISO



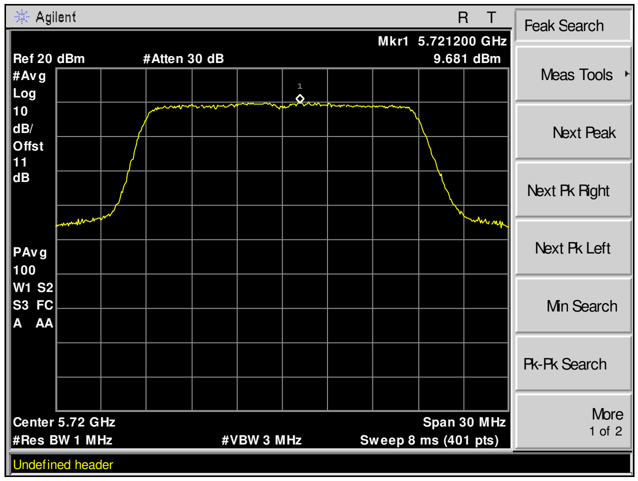
Plot 158. Peak Power Spectral Density, 802.11ac 20 MHz, Channel 100, SISO



Plot 159. Peak Power Spectral Density, 802.11ac 20 MHz, Channel 116, SISO

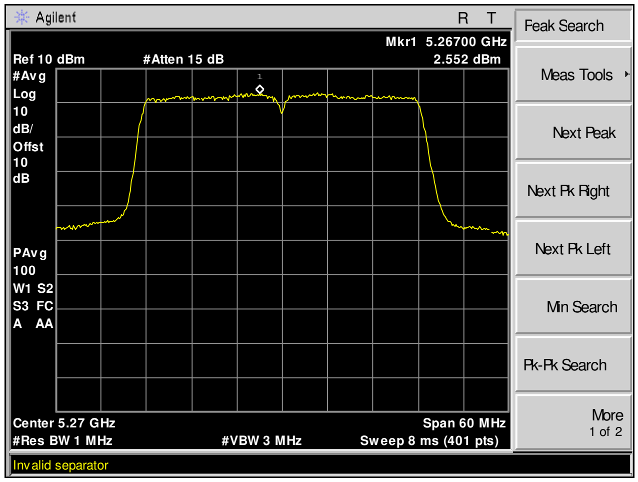


Plot 160. Peak Power Spectral Density, 802.11ac 20 MHz, Channel 140, SISO

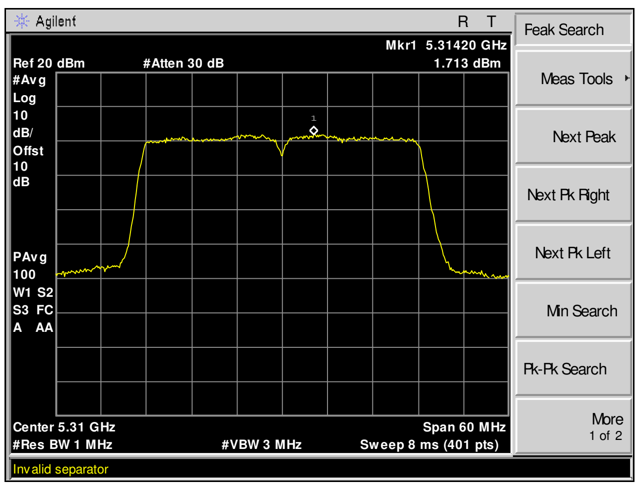


Plot 161. Peak Power Spectral Density, 802.11ac 20 MHz, Channel 144, SISO

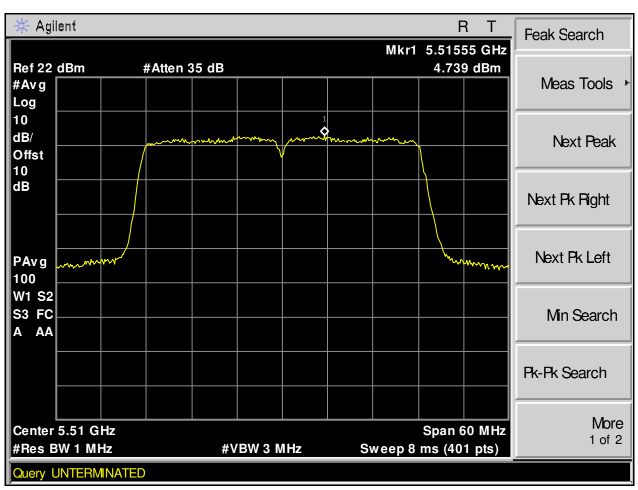
Peak Power Spectral Density, 802.11ac 40 MHz, SISO



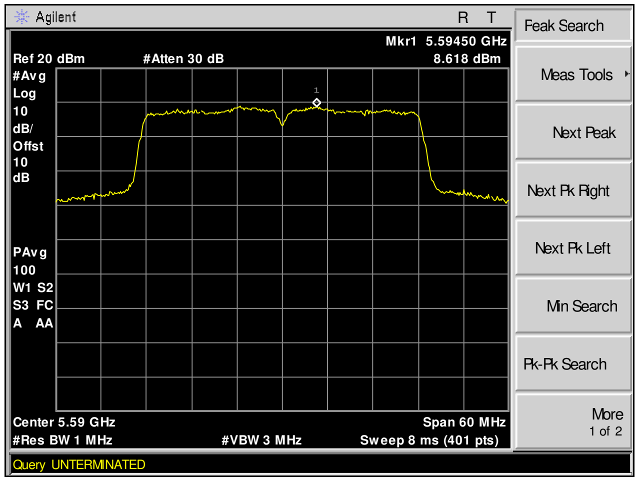
Plot 162. Peak Power Spectral Density, 802.11ac 40 MHz, Channel 52, SISO



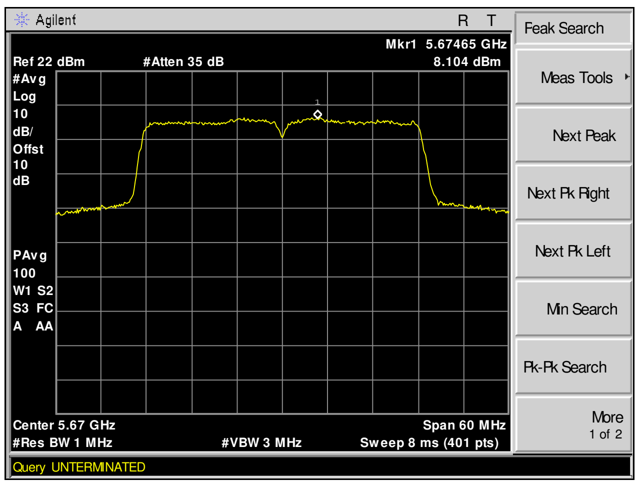
Plot 163. Peak Power Spectral Density, 802.11ac 40 MHz, Channel 60, SISO



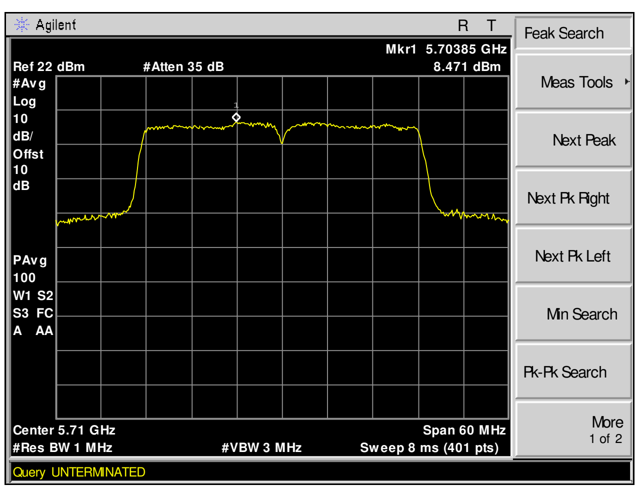
Plot 164. Peak Power Spectral Density, 802.11ac 40 MHz, Channel 100, SISO



Plot 165. Peak Power Spectral Density, 802.11ac 40 MHz, Channel 116, SISO

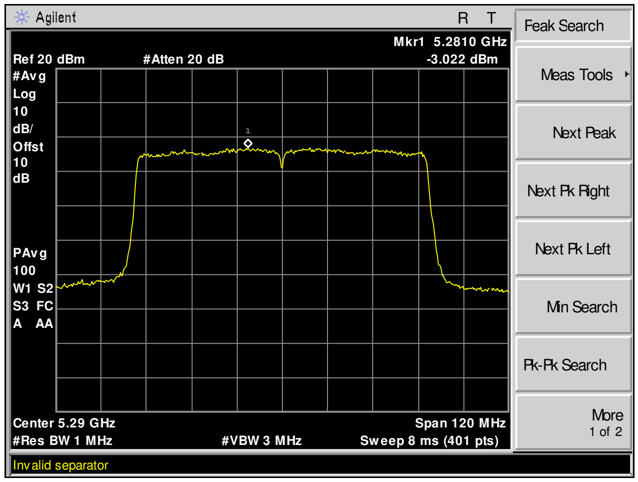


Plot 166. Peak Power Spectral Density, 802.11ac 40 MHz, Channel 132, SISO

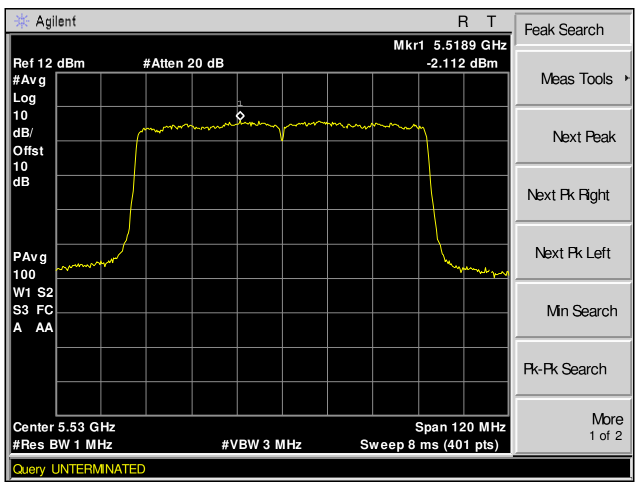


Plot 167. Peak Power Spectral Density, 802.11ac 40 MHz, Channel 140, SISO

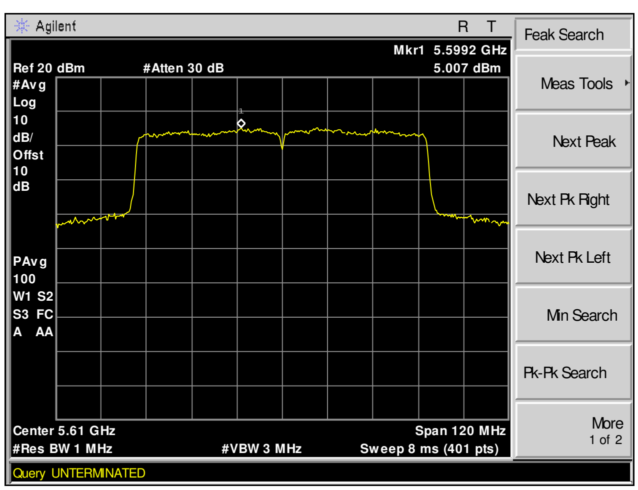
Peak Power Spectral Density, 802.11ac 80 MHz, SISO



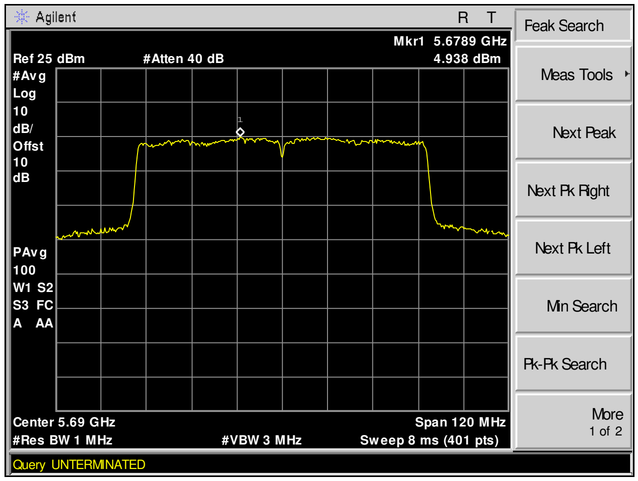
Plot 168. Peak Power Spectral Density, 802.11ac 80 MHz, Channel 52, SISO



Plot 169. Peak Power Spectral Density, 802.11ac 80 MHz, Channel 100, SISO

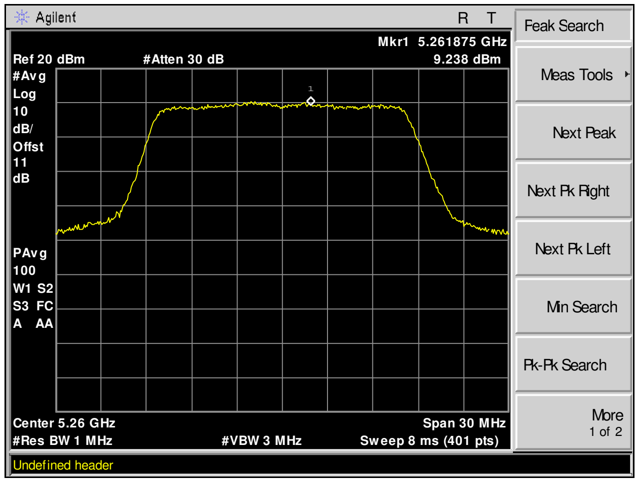


Plot 170. Peak Power Spectral Density, 802.11ac 80 MHz, Channel 116, SISO

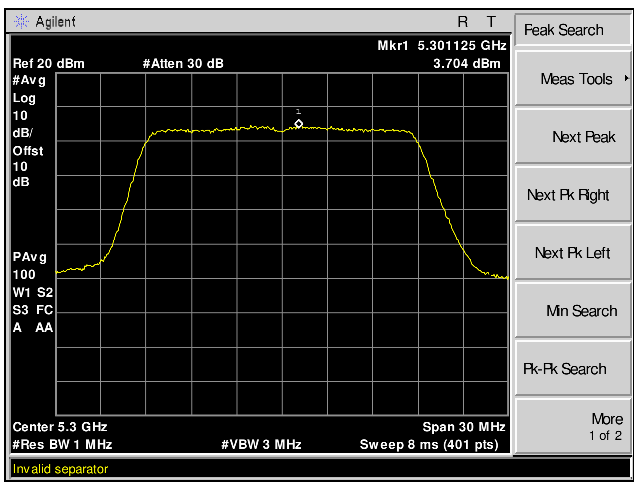


Plot 171. Peak Power Spectral Density, 802.11ac 80 MHz, Channel 132, SISO

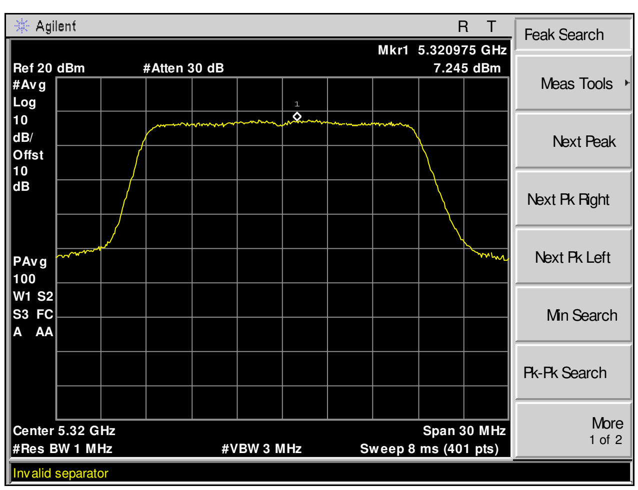
Peak Power Spectral Density, 802.11n 20 MHz, SISO



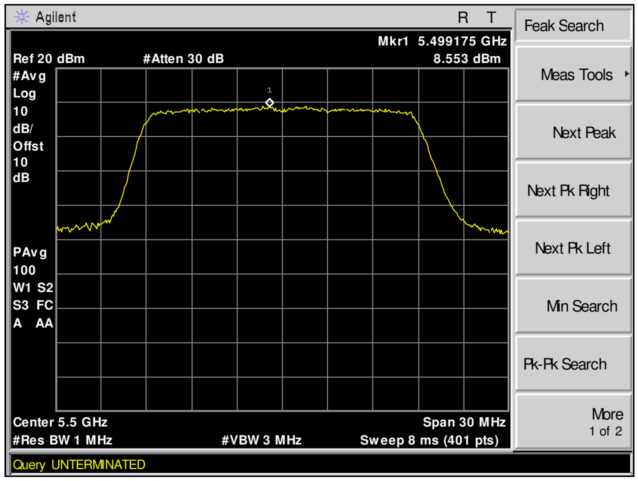
Plot 172. Peak Power Spectral Density, 802.11n 20 MHz, Channel 52, SISO



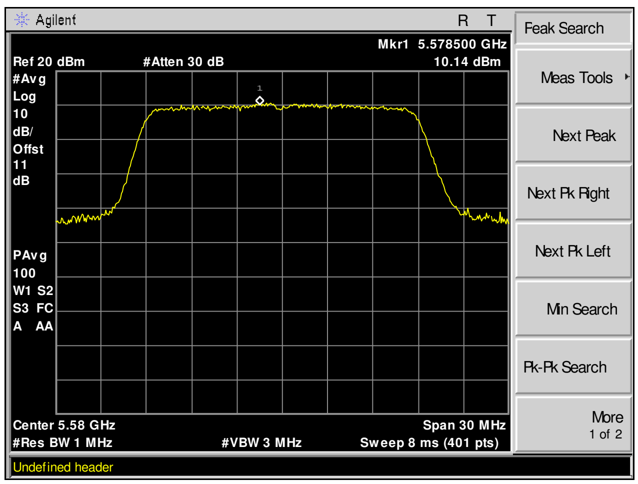
Plot 173. Peak Power Spectral Density, 802.11n 20 MHz, Channel 60, SISO



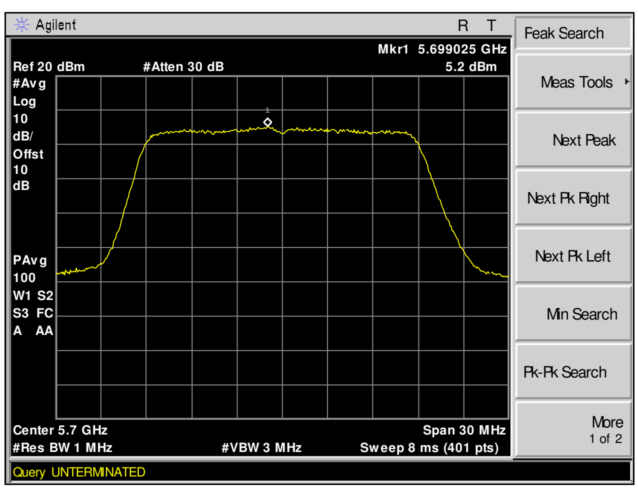
Plot 174. Peak Power Spectral Density, 802.11n 20 MHz, Channel 64, SISO



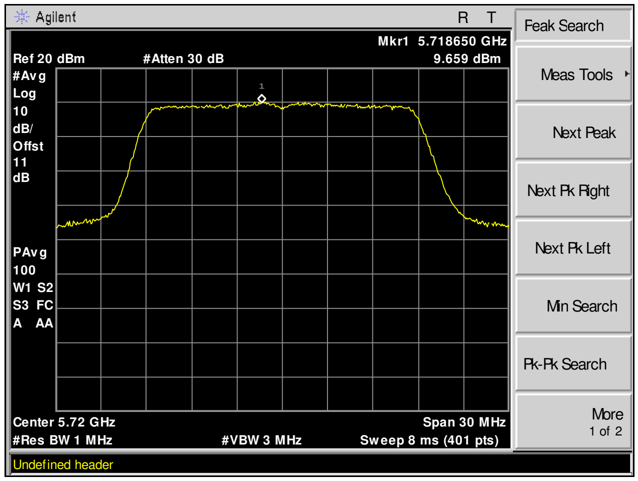
Plot 175. Peak Power Spectral Density, 802.11n 20 MHz, Channel 100, SISO



Plot 176. Peak Power Spectral Density, 802.11n 20 MHz, Channel 116, SISO

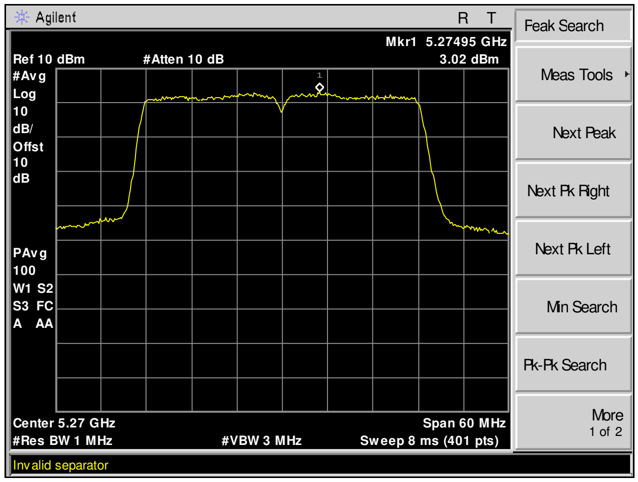


Plot 177. Peak Power Spectral Density, 802.11n 20 MHz, Channel 140, SISO

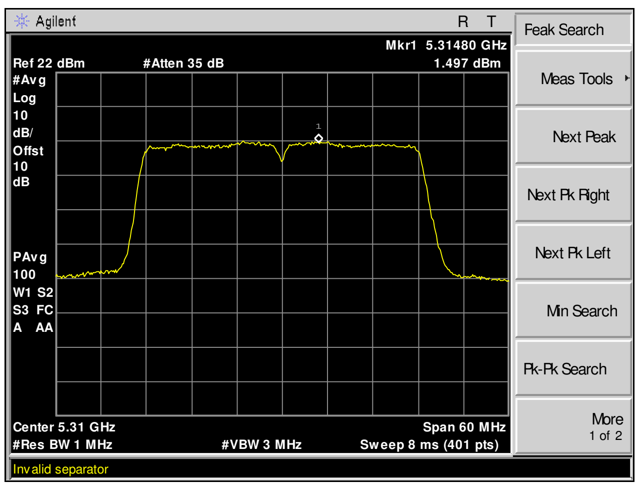


Plot 178. Peak Power Spectral Density, 802.11n 20 MHz, Channel 144, SISO

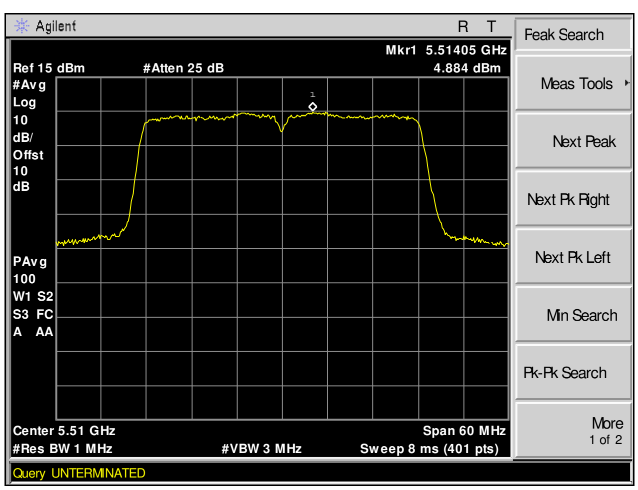
Peak Power Spectral Density, 802.11n 40 MHz, SISO



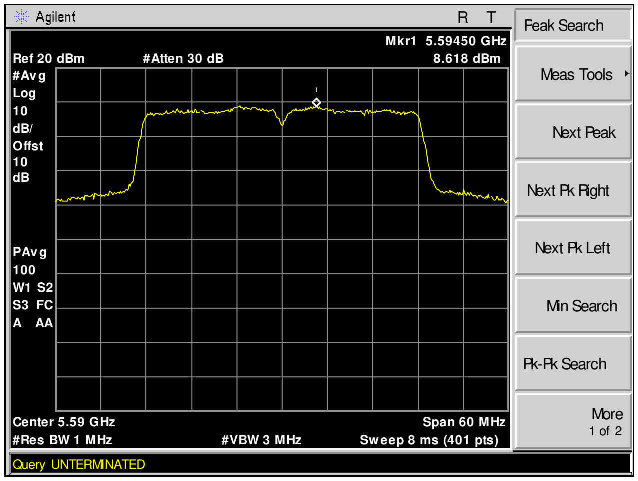
Plot 179. Peak Power Spectral Density, 802.11n 40 MHz, Channel 52, SISO



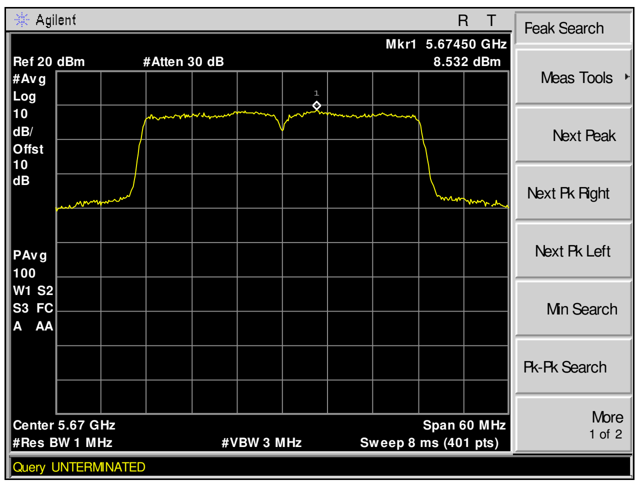
Plot 180. Peak Power Spectral Density, 802.11n 40 MHz, Channel 60, SISO



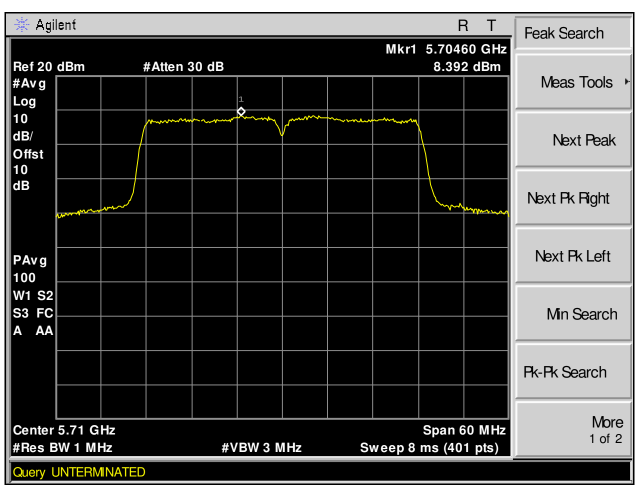
Plot 181. Peak Power Spectral Density, 802.11n 40 MHz, Channel 100, SISO



Plot 182. Peak Power Spectral Density, 802.11n 40 MHz, Channel 116, SISO



Plot 183. Peak Power Spectral Density, 802.11n 40 MHz, Channel 132, SISO



Plot 184. Peak Power Spectral Density, 802.11n 40 MHz, Channel 140, SISO

Electromagnetic Compatibility Criteria for Intentional Radiators
§ 15.407(b)(2), (3), (7) Undesirable Emissions

Test Requirements: **§ 15.407(b)(2), (3), (7)**; **§15.205:** Emissions outside the frequency band.

§ 15.407(b)(2): For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

§ 15.407(b)(3): For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

§ 15.407(b)(7): The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

Test Procedure: Antenna-port conducted measurements in conjunction with cabinet emissions tests were performed to demonstrate compliance with the requirement of unwanted emission in the spurious domain. The following tests and methods were used as per KDB 789033 D02 General UNII Test Procedures New Rules v01

1. Cabinet emissions measurements. A radiated test shall be performed to ensure that cabinet emissions are below the emission limits. For the cabinet-emission measurements the antenna may be replaced by a termination matching the nominal impedance of the antenna.

2. EIRP calculation. A value representative of an upper bound on out-of-band antenna gain (in dBi) shall be added to the measured antenna-port conducted emission power to compute EIRP within the specified measurement bandwidth. (For emissions in the restricted bands, additional calculations are required to convert EIRP to field strength at the specified distance.)

   EIRP = E (Restricted band field strength limit) + 20*log(d) - 104.77 (1)
   Where d=3 meter is measurement distance specified in FCC 15.209 requirement.
   E= 54dBuV/m is the limit for spurious emission in restricted band.
   Plugging these values to equation (1) above
   EIRP= 54+9.54-104.77 = -41.22dBm. This was the limit used for restricted band spurious emission measurement.

3. The upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands or 2 dBi, whichever is greater.3 However, for devices that operate in multiple bands using the same transmit antenna, the highest gain of the antenna within the operating band nearest to the out-of-band frequency being measured may be used in lieu of the overall highest gain when measuring emissions at frequencies within 20 percent of the absolute frequency at the nearest edge of that band, but in no case shall a value less than 2 dBi be selected.

4. EIRP adjustments for multiple outputs. For devices with multiple outputs occupying the same or overlapping frequency ranges in the same band (e.g., MIMO or beamforming devices), the total EIRP was calculated as follows:

a. Computed EIRP on one of the antenna port since output power remain uniform across all antenna port for this DUT when operated under MIMO mode.

b. Adjusted emission levels measured on individual output by 10 log(NANT), where NANT is the number of outputs (For this DUT NANT is 3). Therefore 10log(3)= 4.77dB was used on spectrum analyzer as reference offset to account for MIMO summation.

c. Added the array gain term specified in KDB Publication 662911 for out-of-band and spurious signals.

The total reference level offset used on spectrum analyzer
Offset= 10dB (external attenuator) + 4.77dB (MIMO Summation factor) + Array Gain (dBi)

For Cabinet measurement: The EUT was placed on a non-conducting stand on a turntable in a chamber. To find the maximum emission the EUT was set to transmit on low, mid, and high channels. Additionally, the turntable was rotated 360 degrees, the EUT was oriented through its three orthogonal axes, and the receive antenna height was varied in order to maximize emissions.

Test Results: For below 1 GHz, the EUT was compliant with the requirements of this section. Only worse case plot was included in the test report.

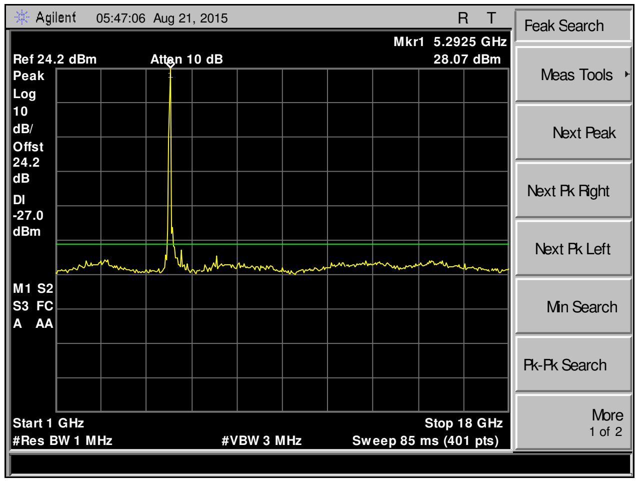
For above 1 GHz, the EUT was compliant with the requirements of this section.

Only noise floor was observed 18GHz.

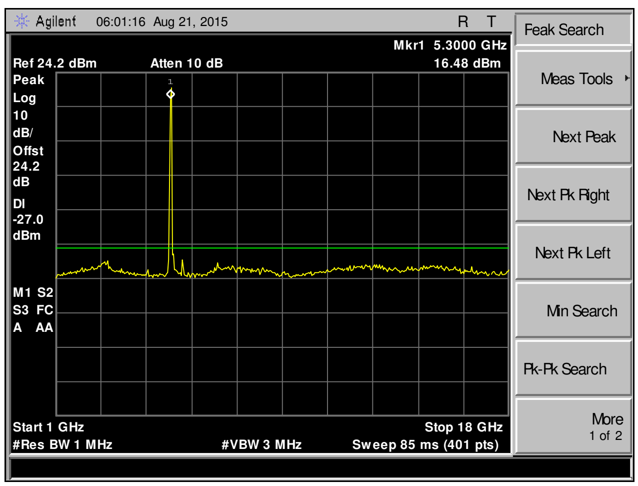
Test Engineer(s): Surinder Singh

Test Date(s): 09/02/15

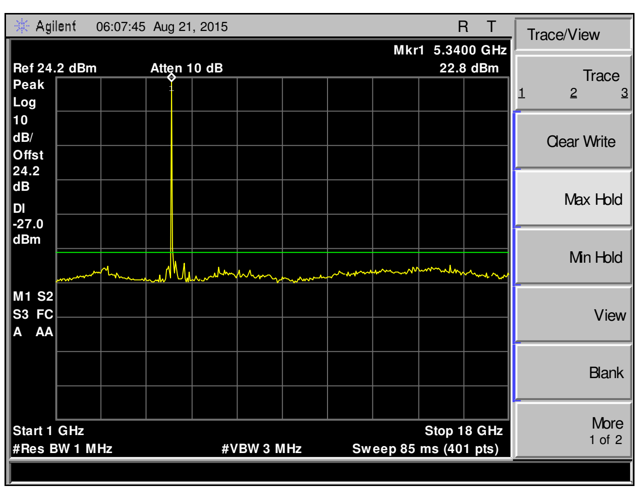
Spurious Emissions, 802.11a, MIMO



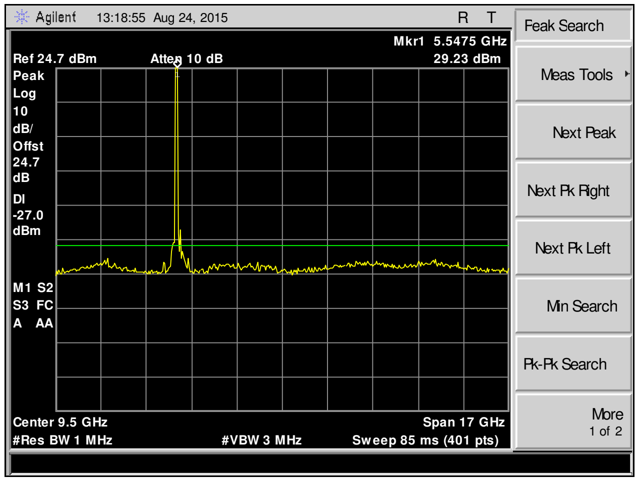
Plot 185. Spurious Emissions, 802.11a, Channel 52, MIMO



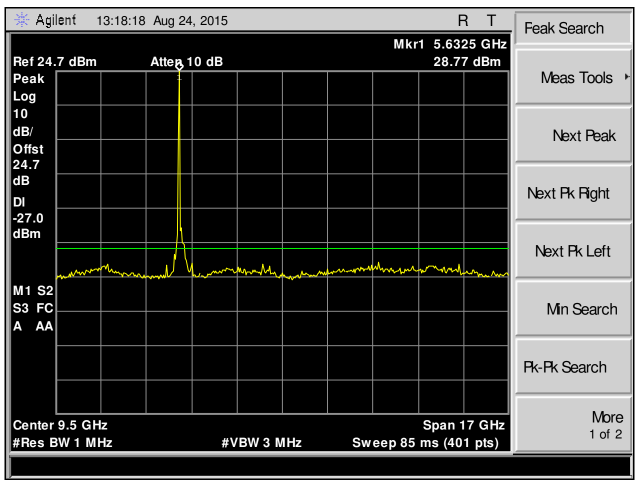
Plot 186. Spurious Emissions, 802.11a, Channel 60, MIMO



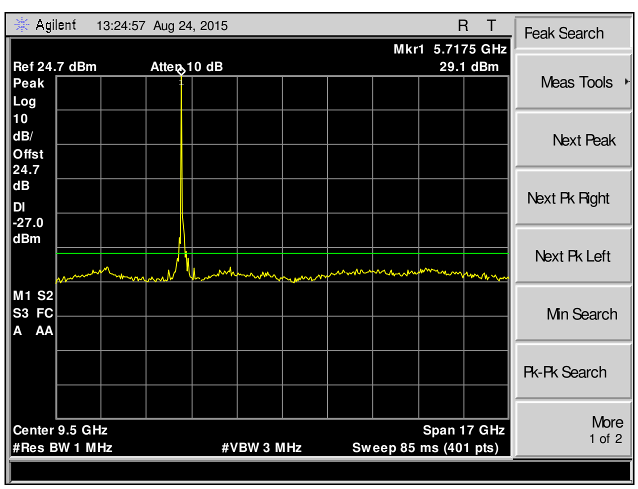
Plot 187. Spurious Emissions, 802.11a, Channel 64, MIMO



Plot 188. Spurious Emissions, 802.11a, Channel 100, MIMO

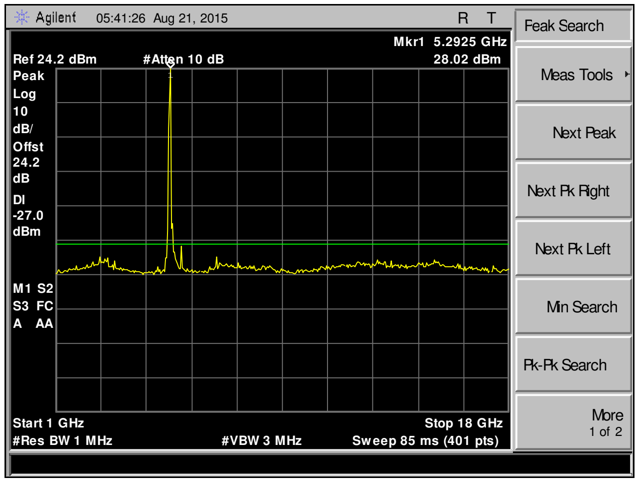


Plot 189. Spurious Emissions, 802.11a, Channel 120, MIMO

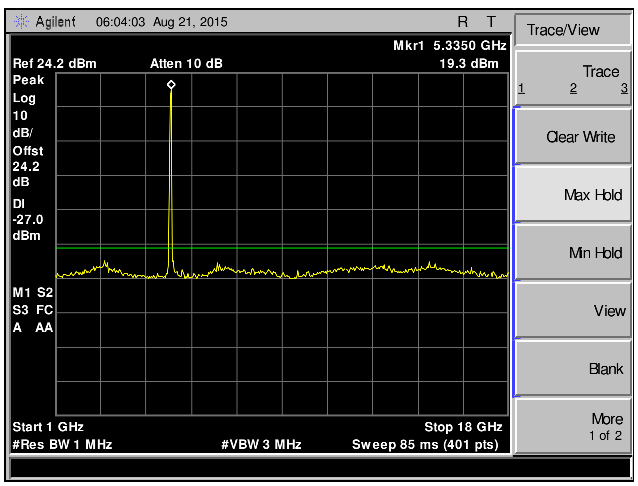


Plot 190. Spurious Emissions, 802.11a, Channel 140, MIMO

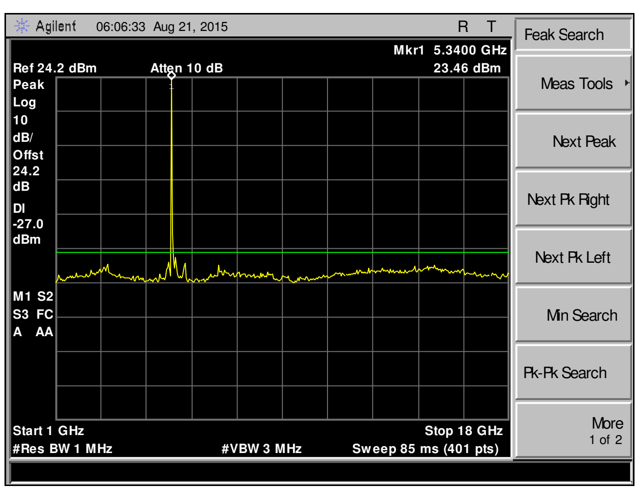
Spurious Emissions, 802.11ac 20 MHz, MIMO



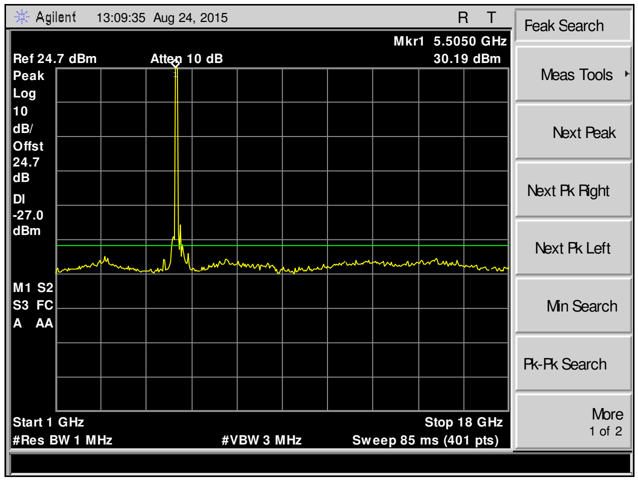
Plot 191. Spurious Emissions, 802.11ac 20 MHz, Channel 52, MIMO



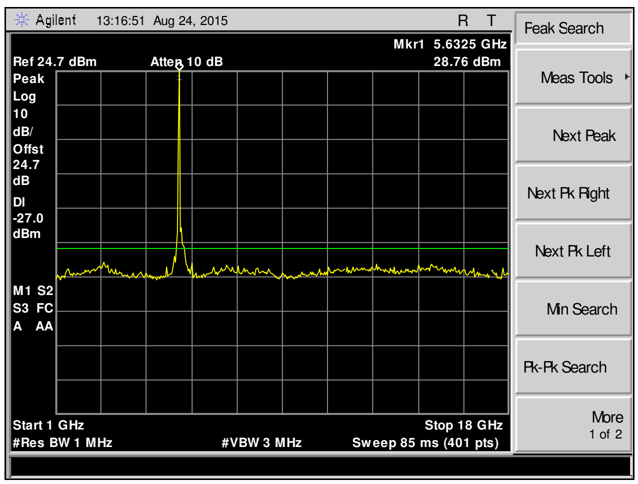
Plot 192. Spurious Emissions, 802.11ac 20 MHz, Channel 60, MIMO



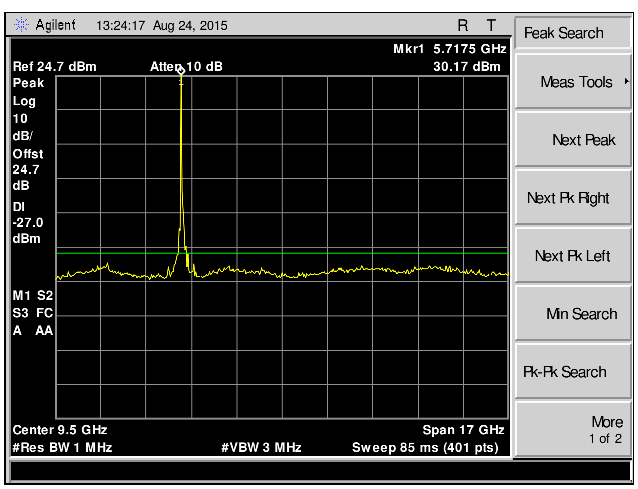
Plot 193. Spurious Emissions, 802.11ac 20 MHz, Channel 64, MIMO



Plot 194. Spurious Emissions, 802.11ac 20 MHz, Channel 100, MIMO

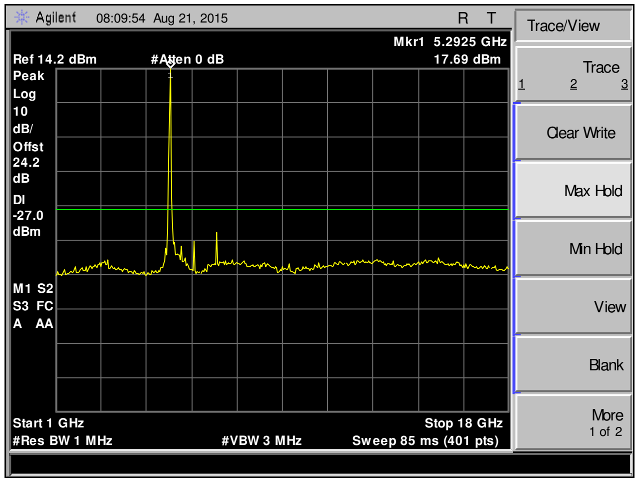


Plot 195. Spurious Emissions, 802.11ac 20 MHz, Channel 120, MIMO

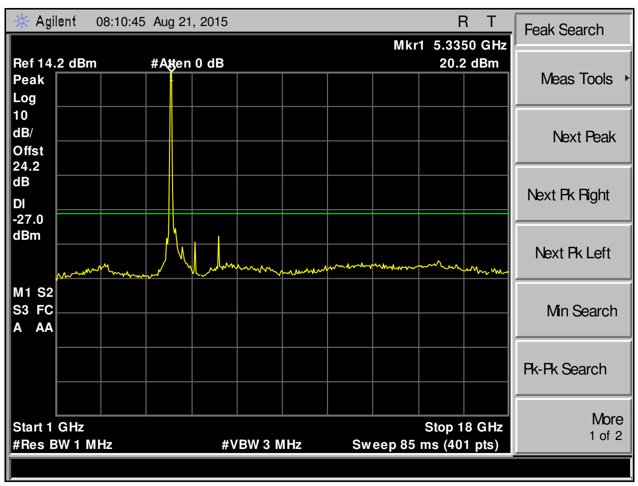


Plot 196. Spurious Emissions, 802.11ac 20 MHz, Channel 140, MIMO

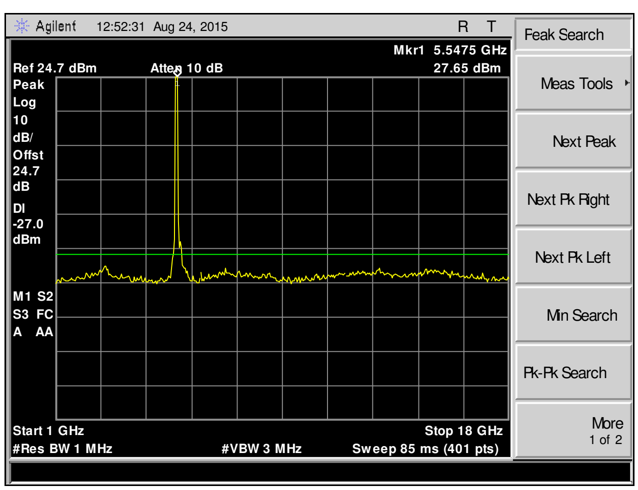
Spurious Emissions, 802.11ac 40 MHz, MIMO



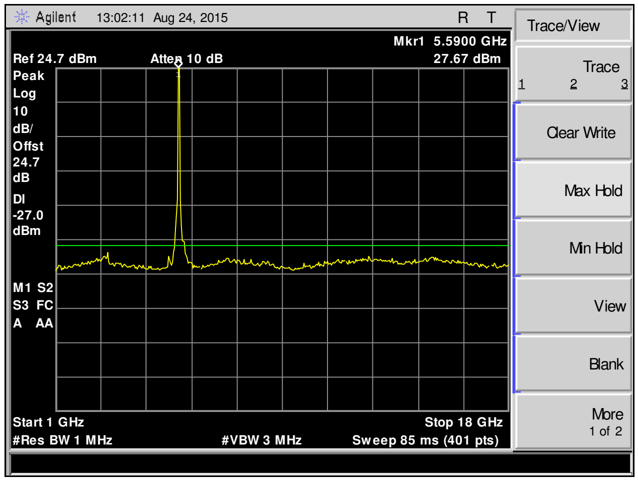
Plot 197. Spurious Emissions, 802.11ac 40 MHz, Channel 52, MIMO



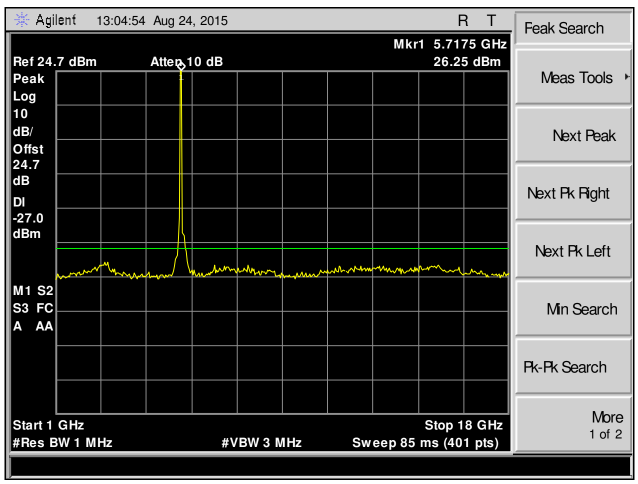
Plot 198. Spurious Emissions, 802.11ac 40 MHz, Channel 60, MIMO



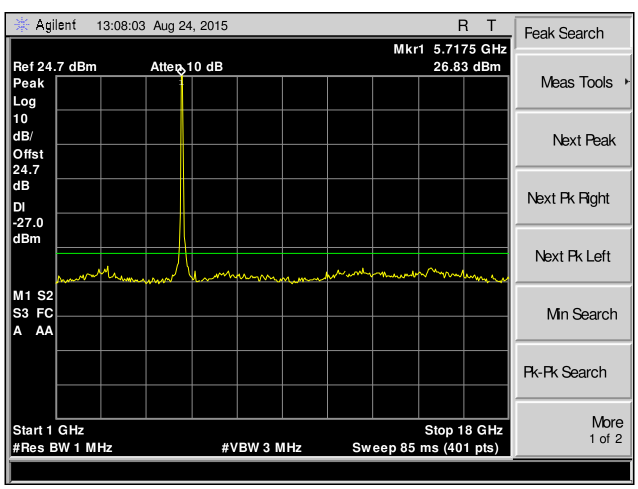
Plot 199. Spurious Emissions, 802.11ac 40 MHz, Channel 100, MIMO



Plot 200. Spurious Emissions, 802.11ac 40 MHz, Channel 116, MIMO

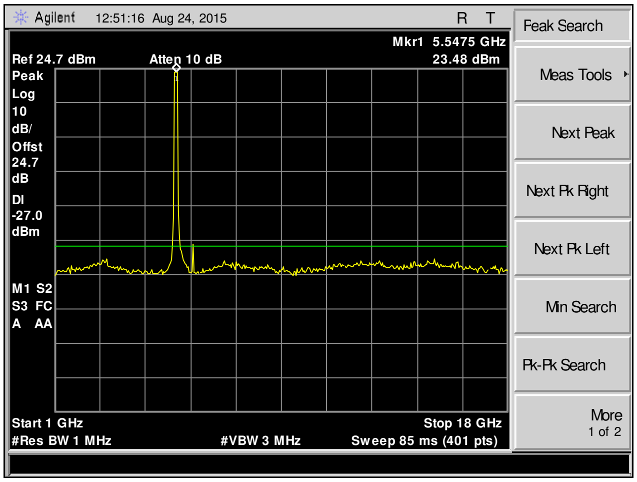


Plot 201. Spurious Emissions, 802.11ac 40 MHz, Channel 132, MIMO

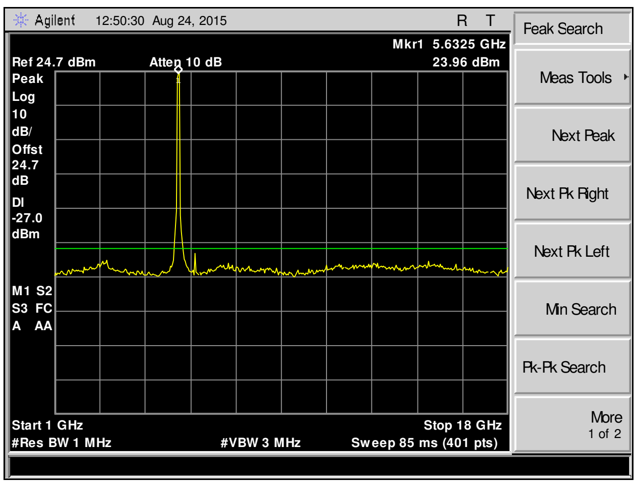


Plot 202. Spurious Emissions, 802.11ac 40 MHz, Channel 140, MIMO

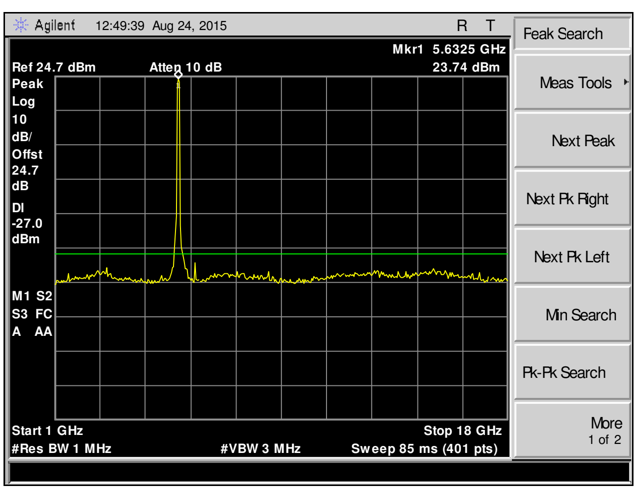
Spurious Emissions, 802.11ac 80 MHz, MIMO



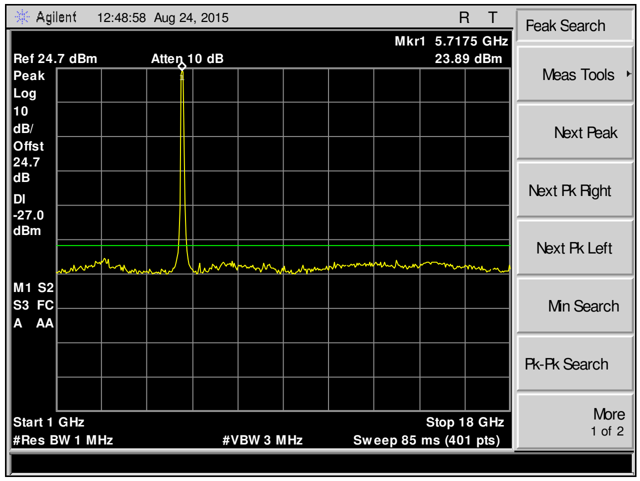
Plot 203. Spurious Emissions, 802.11ac 80 MHz, Channel 100, MIMO



Plot 204. Spurious Emissions, 802.11ac 80 MHz, Channel 116, MIMO

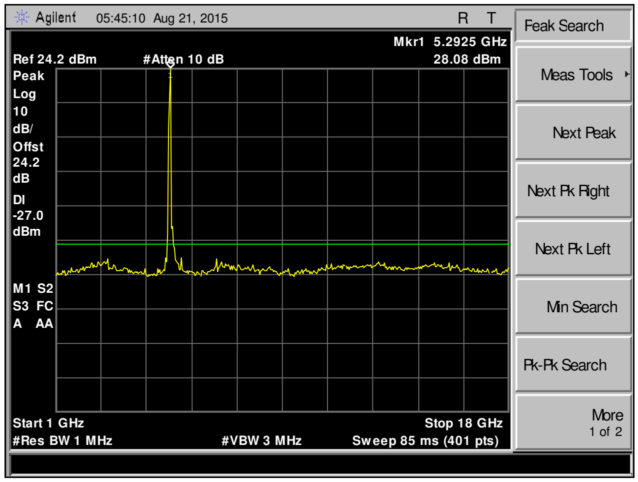


Plot 205. Spurious Emissions, 802.11ac 80 MHz, Channel 124, MIMO

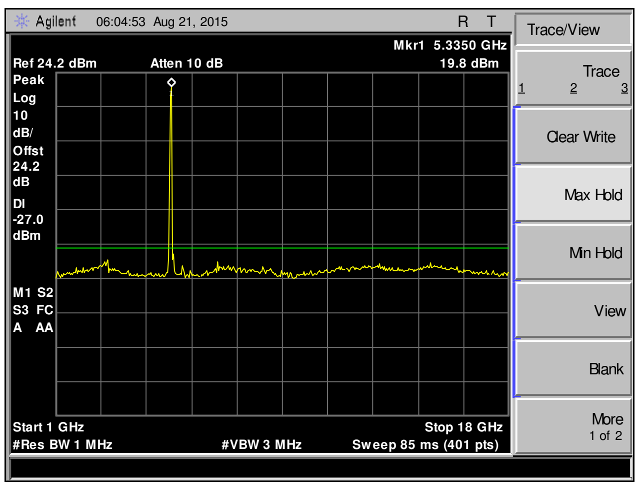


Plot 206. Spurious Emissions, 802.11ac 80 MHz, Channel 132, MIMO

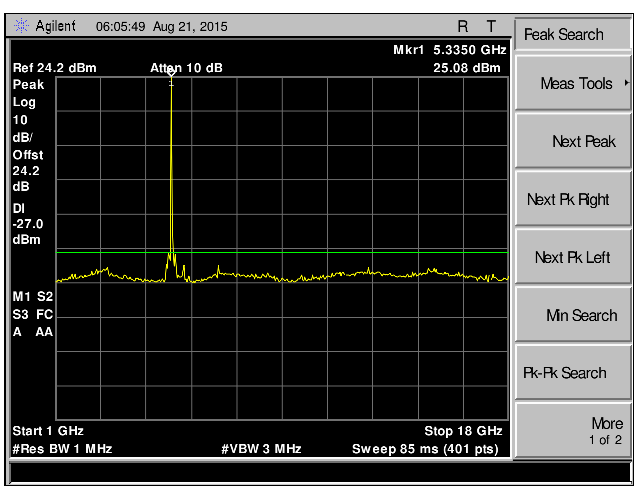
Spurious Emissions, 802.11n 20 MHz, MIMO



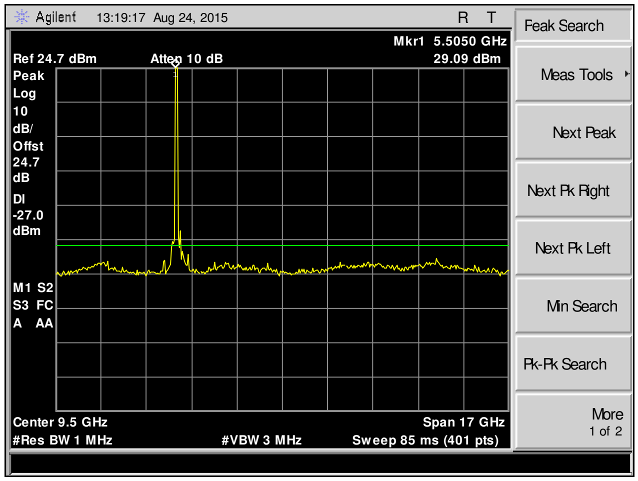
Plot 207. Spurious Emissions, 802.11n 20 MHz, Channel 52, MIMO



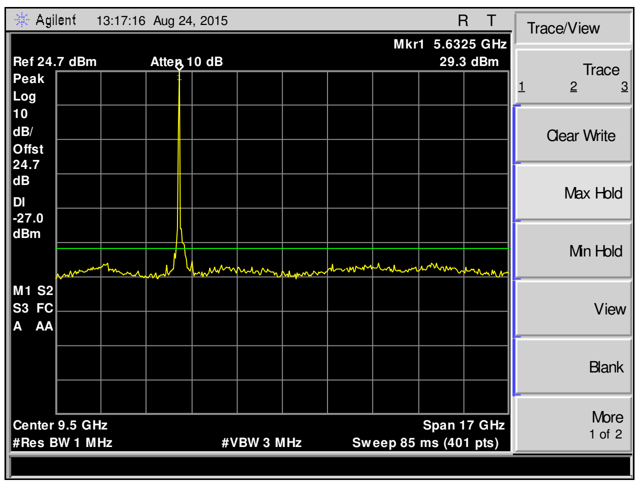
Plot 208. Spurious Emissions, 802.11n 20 MHz, Channel 60, MIMO



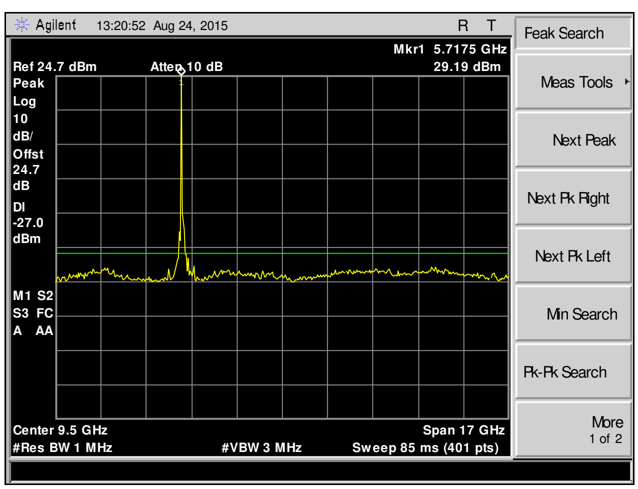
Plot 209. Spurious Emissions, 802.11n 20 MHz, Channel 64, MIMO



Plot 210. Spurious Emissions, 802.11n 20 MHz, Channel 100, MIMO

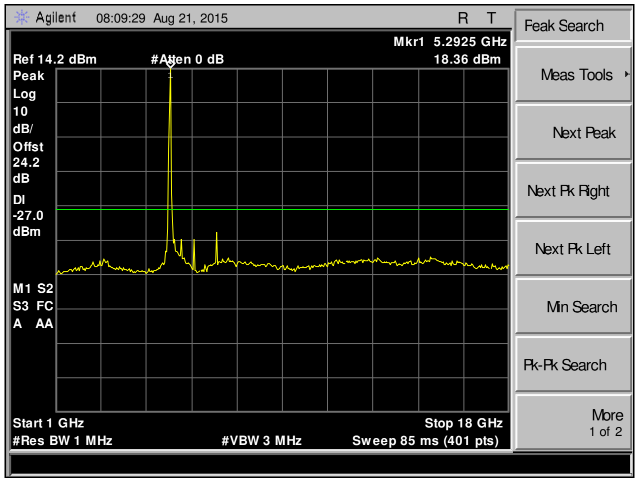


Plot 211. Spurious Emissions, 802.11n 20 MHz, Channel 120, MIMO

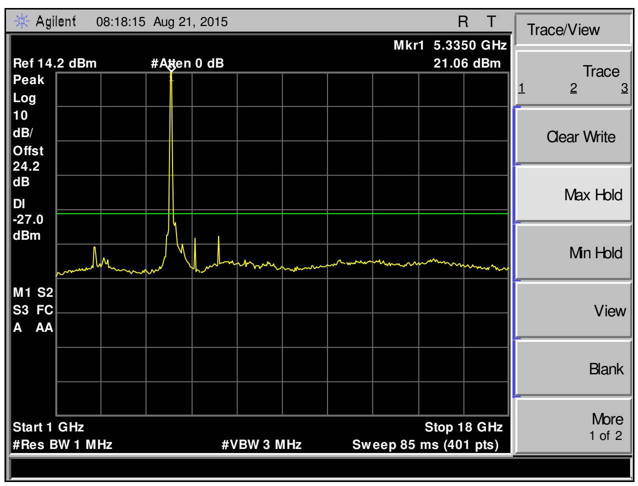


Plot 212. Spurious Emissions, 802.11n 20 MHz, Channel 140, MIMO

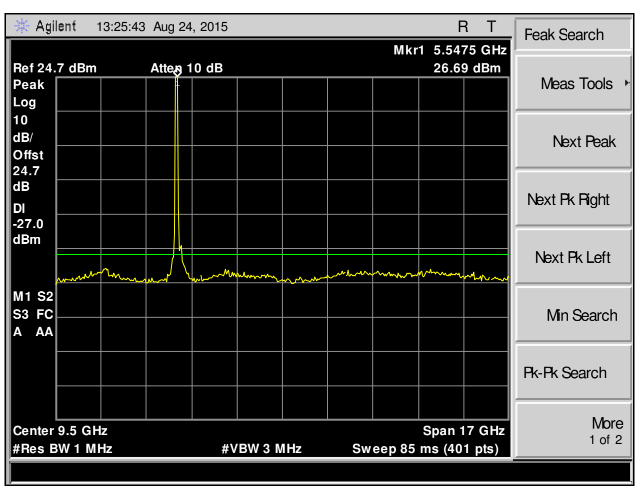
Spurious Emissions, 802.11n 40 MHz, MIMO



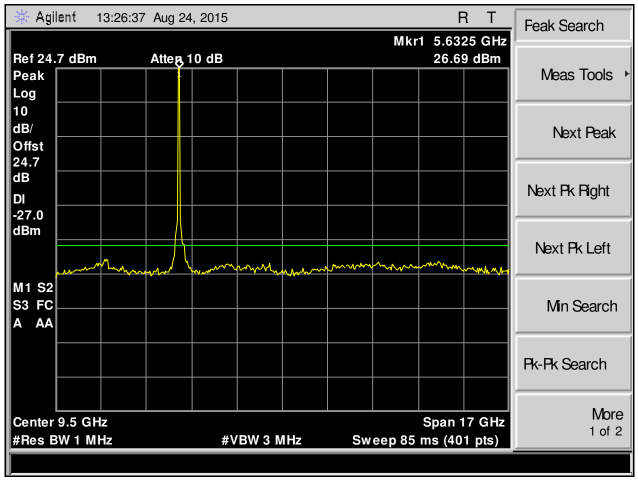
Plot 213. Spurious Emissions, 802.11n 40 MHz, Channel 52, MIMO



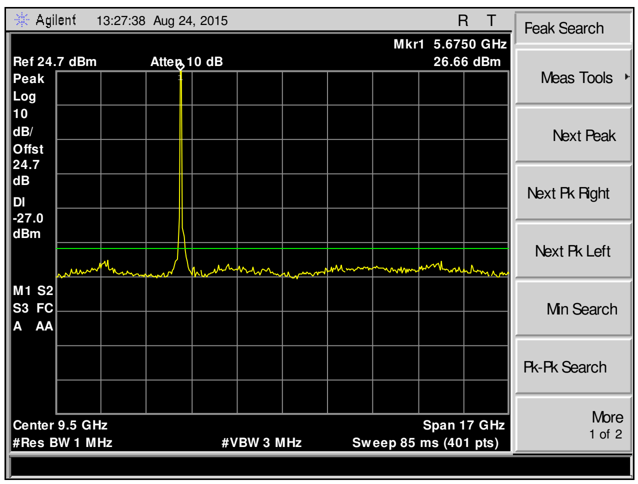
Plot 214. Spurious Emissions, 802.11n 40 MHz, Channel 60, MIMO



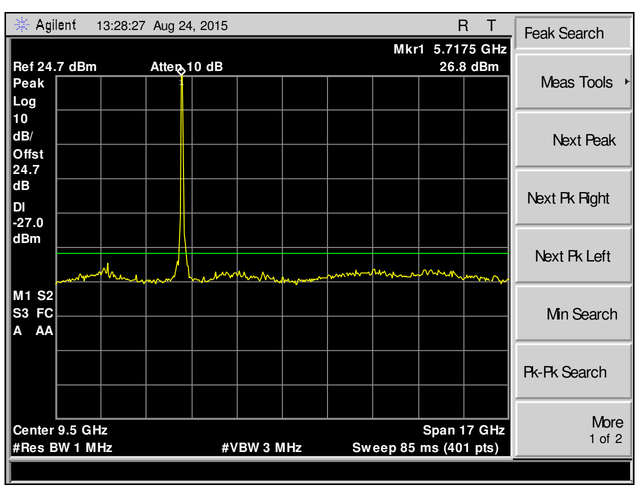
Plot 215. Spurious Emissions, 802.11n 40 MHz, Channel 100, MIMO



Plot 216. Spurious Emissions, 802.11n 40 MHz, Channel 116, MIMO

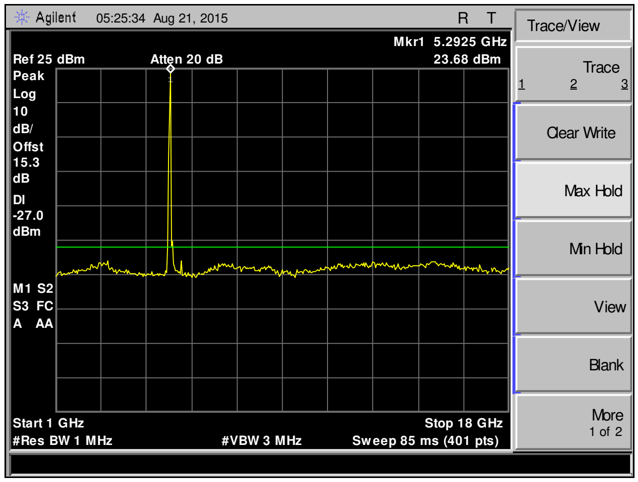


Plot 217. Spurious Emissions, 802.11n 40 MHz, Channel 132, MIMO

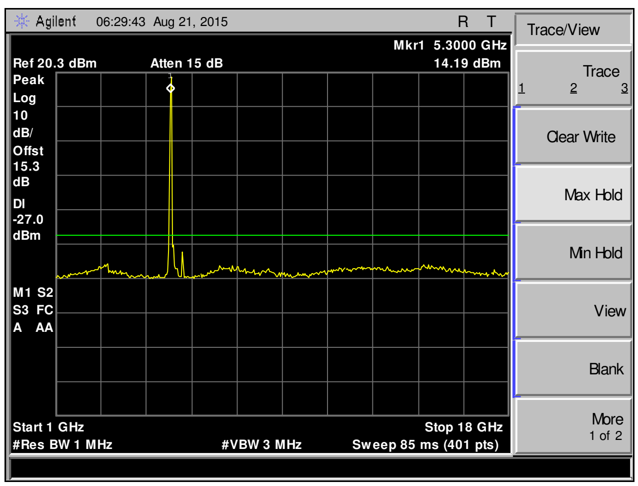


Plot 218. Spurious Emissions, 802.11n 40 MHz, Channel 140, MIMO

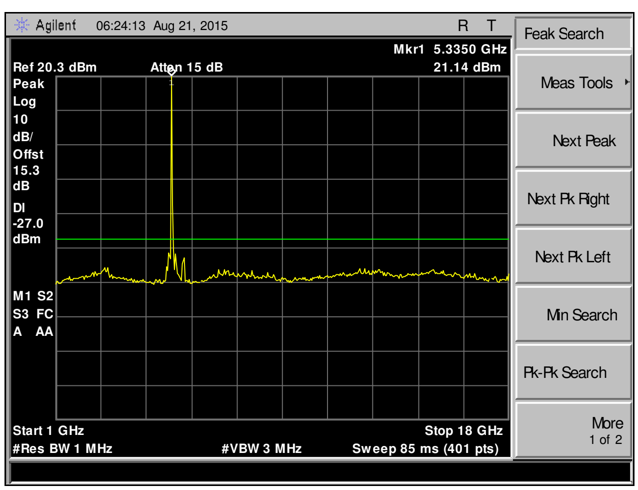
Spurious Emissions, 802.11a, SISO



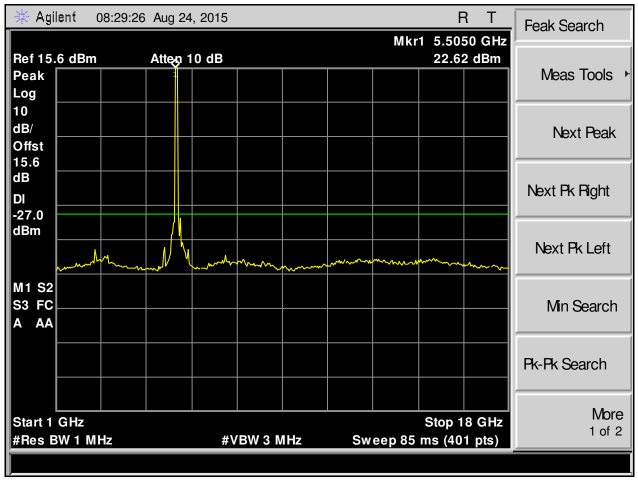
Plot 219. Spurious Emissions, 802.11a, Channel 52, SISO



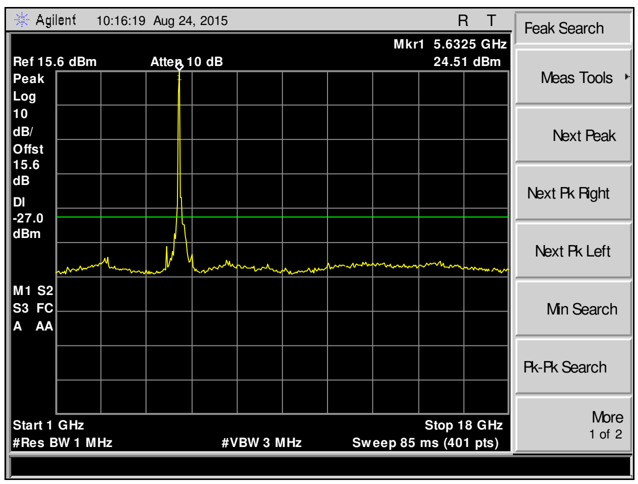
Plot 220. Spurious Emissions, 802.11a, Channel 60, SISO



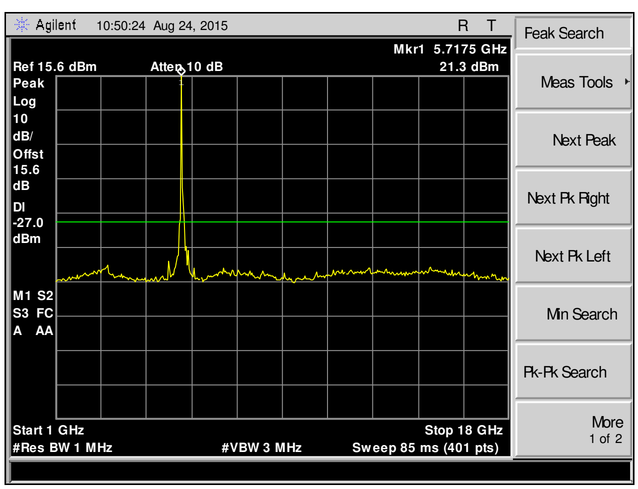
Plot 221. Spurious Emissions, 802.11a, Channel 64, SISO



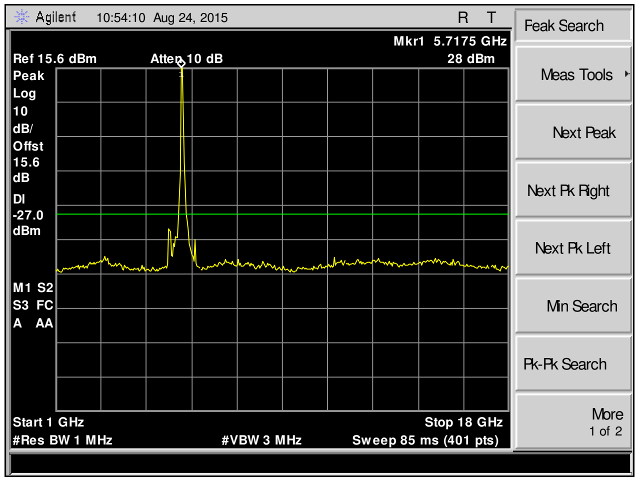
Plot 222. Spurious Emissions, 802.11a, Channel 100, SISO



Plot 223. Spurious Emissions, 802.11a, Channel 120, SISO

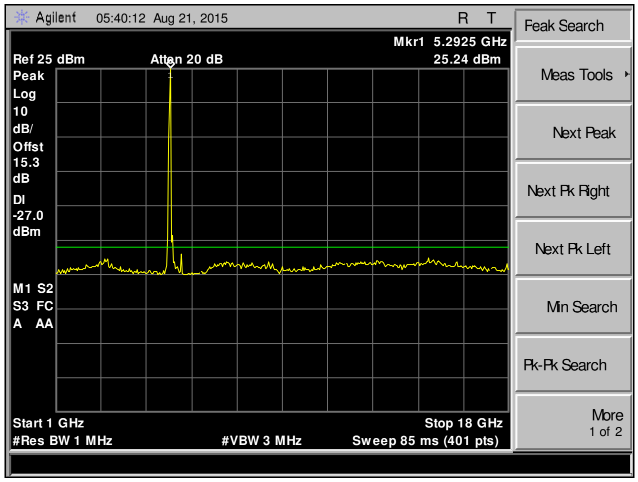


Plot 224. Spurious Emissions, 802.11a, Channel 140, SISO

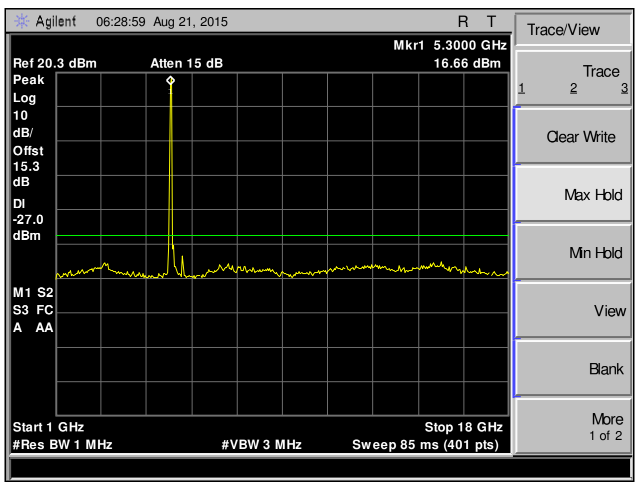


Plot 225. Spurious Emissions, 802.11a, Channel 144, SISO

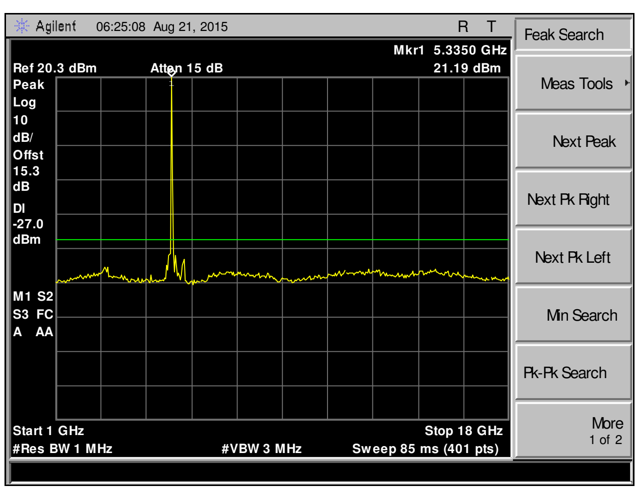
Spurious Emissions, 802.11ac 20 MHz, SISO



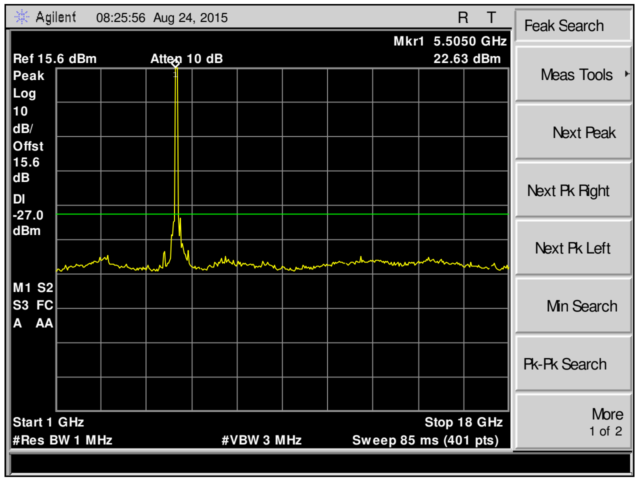
Plot 226. Spurious Emissions, 802.11ac 20 MHz, Channel 52, SISO



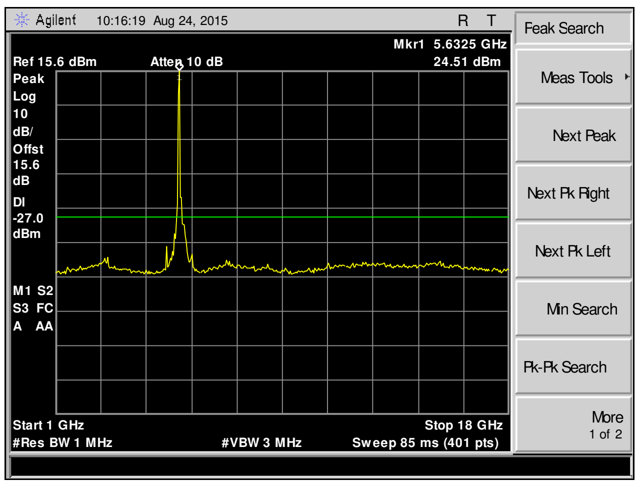
Plot 227. Spurious Emissions, 802.11ac 20 MHz, Channel 60, SISO



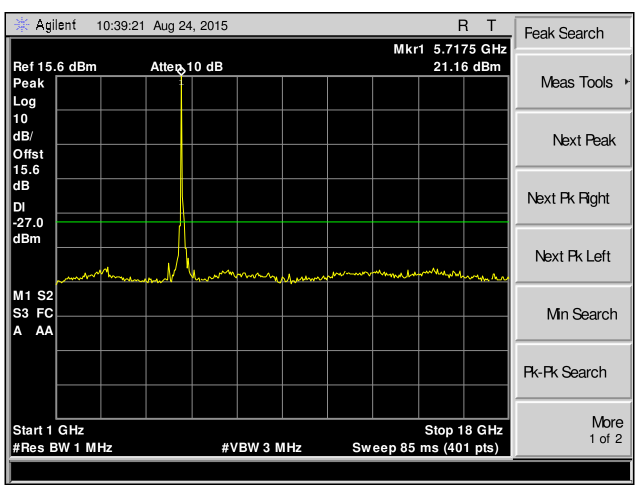
Plot 228. Spurious Emissions, 802.11ac 20 MHz, Channel 64, SISO



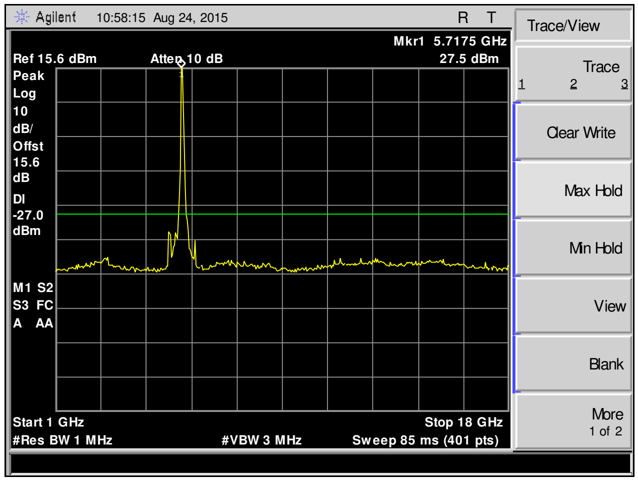
Plot 229. Spurious Emissions, 802.11ac 20 MHz, Channel 100, SISO



Plot 230. Spurious Emissions, 802.11ac 20 MHz, Channel 120, SISO

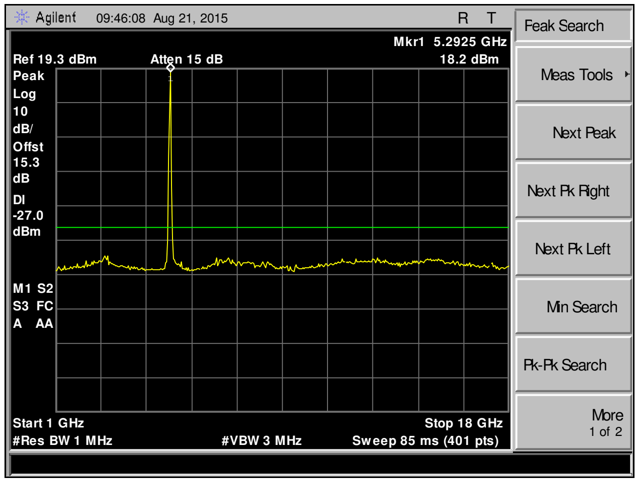


Plot 231. Spurious Emissions, 802.11ac 20 MHz, Channel 140, SISO

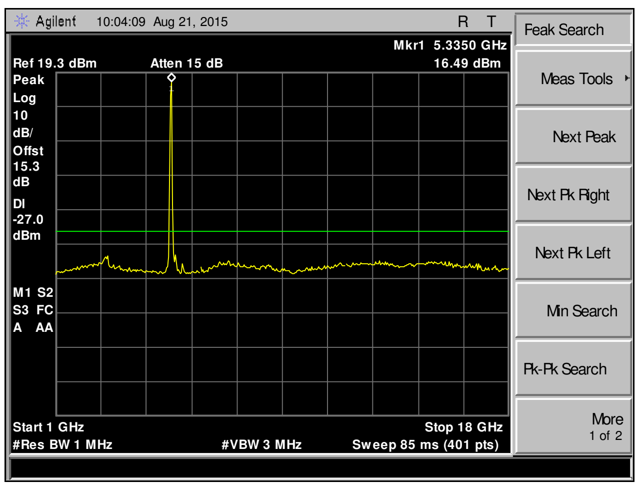


Plot 232. Spurious Emissions, 802.11ac 20 MHz, Channel 144, SISO

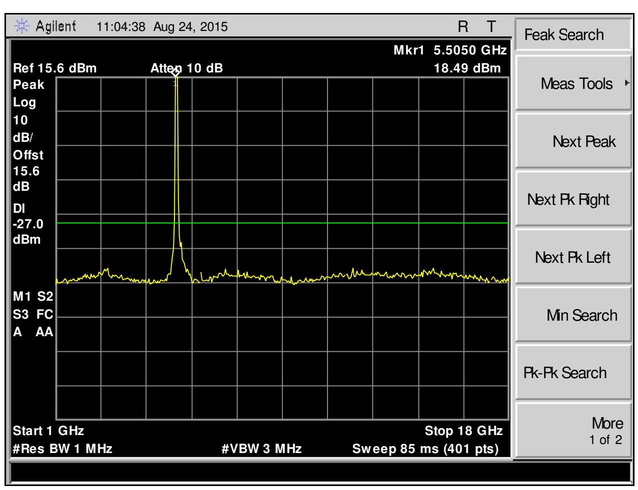
Spurious Emissions, 802.11ac 40 MHz, SISO



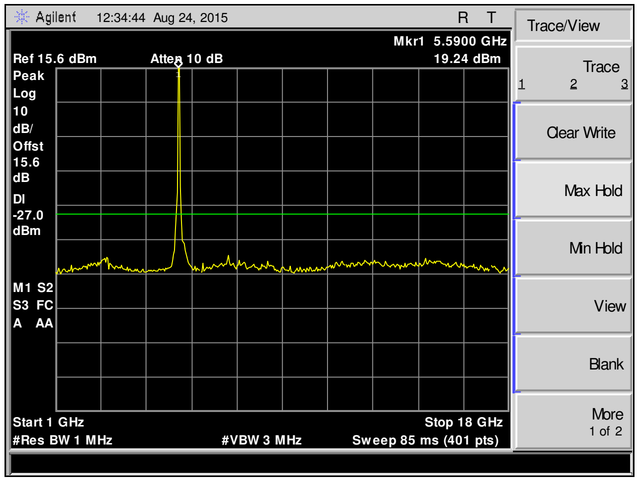
Plot 233. Spurious Emissions, 802.11ac 40 MHz, Channel 52, SISO



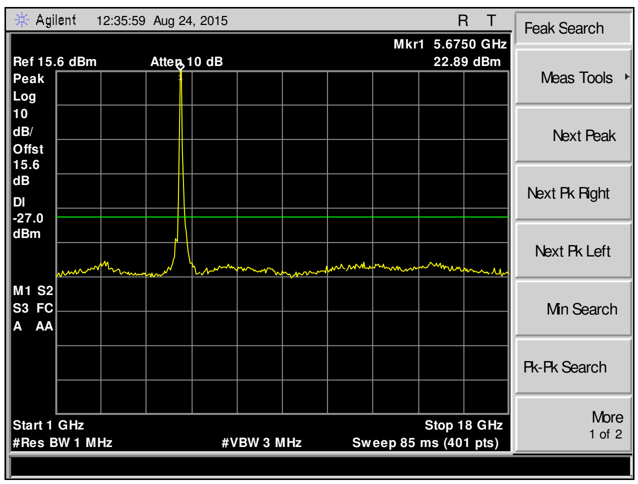
Plot 234. Spurious Emissions, 802.11ac 40 MHz, Channel 60, SISO



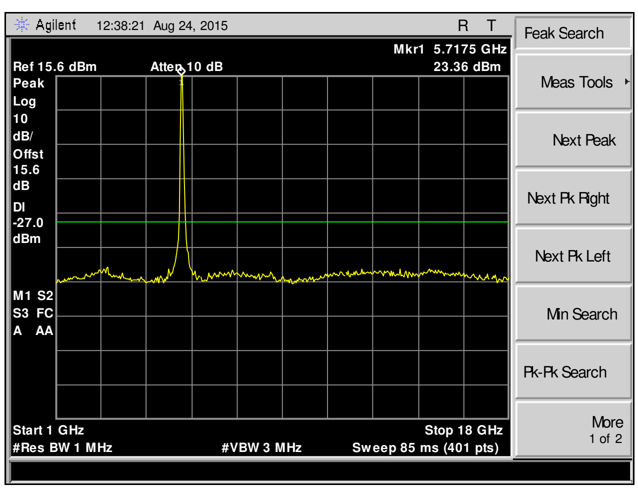
Plot 235. Spurious Emissions, 802.11ac 40 MHz, Channel 100, SISO



Plot 236. Spurious Emissions, 802.11ac 40 MHz, Channel 116, SISO

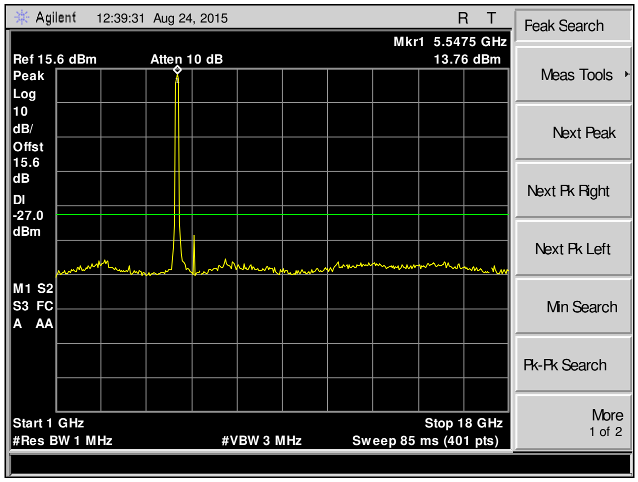


Plot 237. Spurious Emissions, 802.11ac 40 MHz, Channel 132, SISO

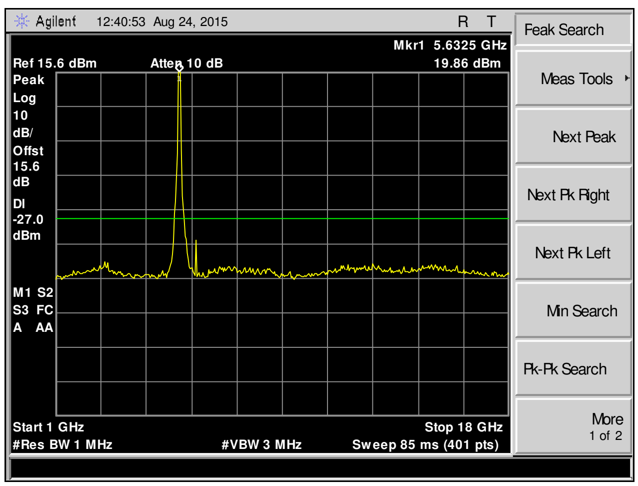


Plot 238. Spurious Emissions, 802.11ac 40 MHz, Channel 140, SISO

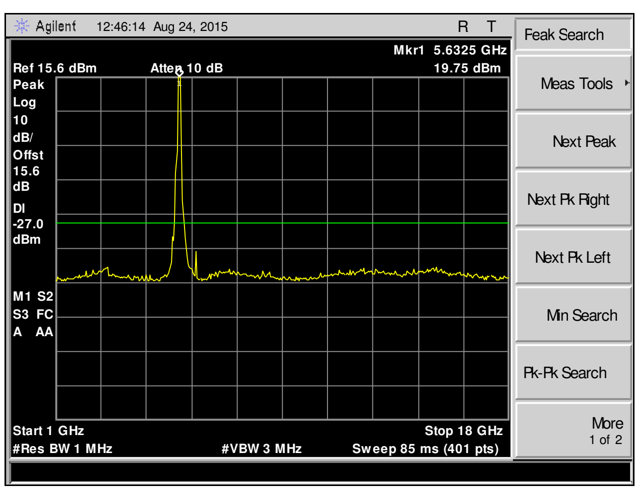
Spurious Emissions, 802.11ac 80 MHz, SISO



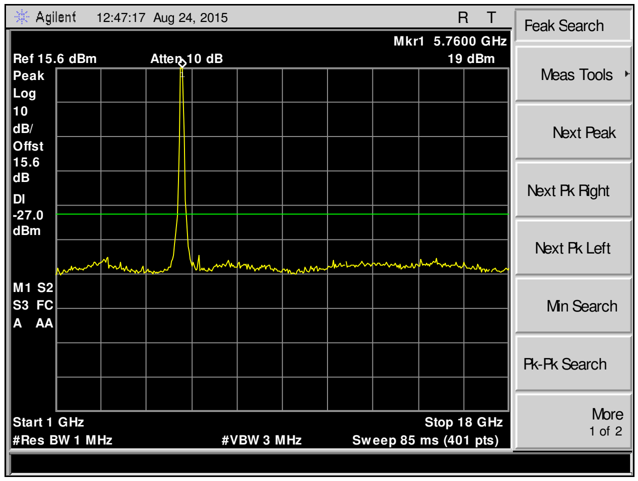
Plot 239. Spurious Emissions, 802.11ac 80 MHz, Channel 100, SISO



Plot 240. Spurious Emissions, 802.11ac 80 MHz, Channel 116, SISO

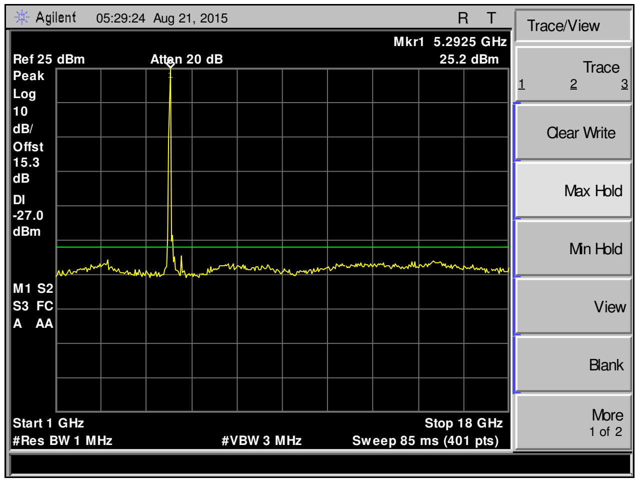


Plot 241. Spurious Emissions, 802.11ac 80 MHz, Channel 124, SISO

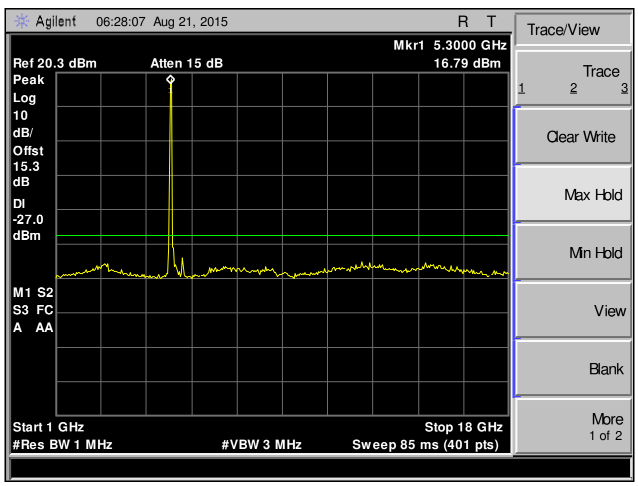


Plot 242. Spurious Emissions, 802.11ac 80 MHz, Channel 132, SISO

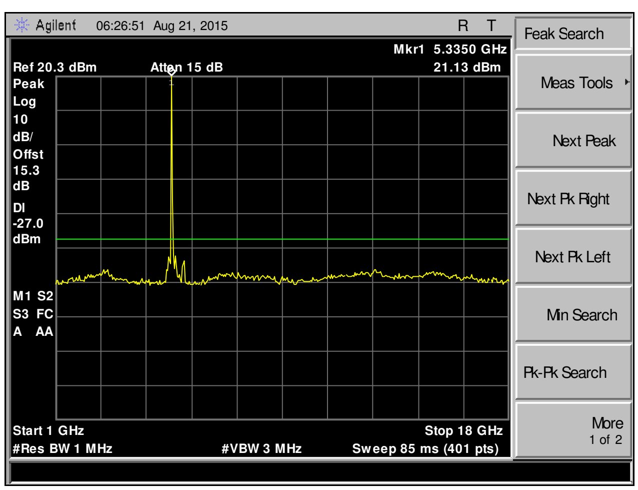
Spurious Emissions, 802.11n 20 MHz, SISO



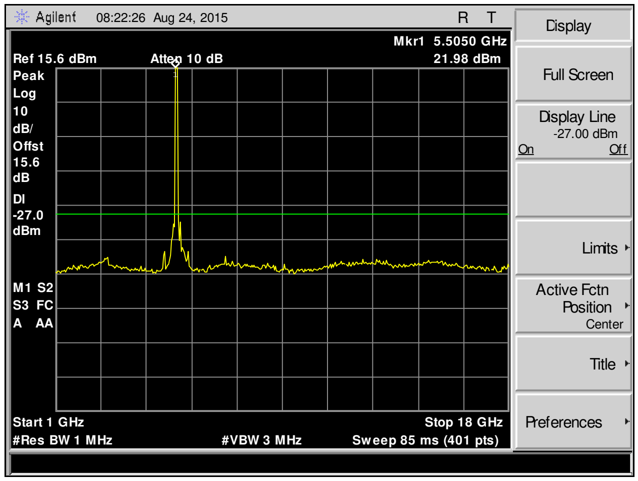
Plot 243. Spurious Emissions, 802.11n 20 MHz, Channel 52, SISO



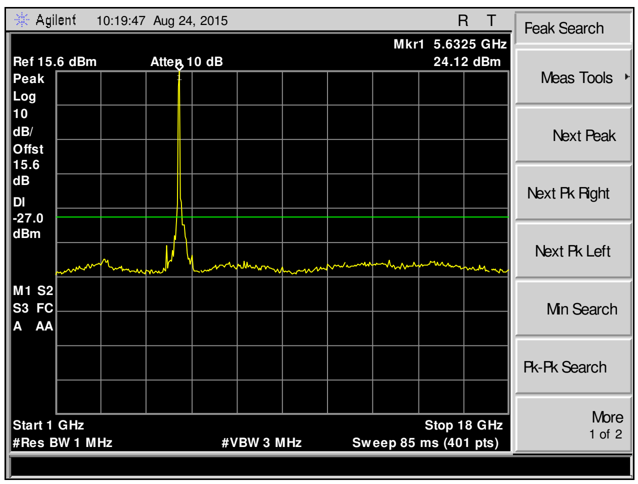
Plot 244. Spurious Emissions, 802.11n 20 MHz, Channel 60, SISO



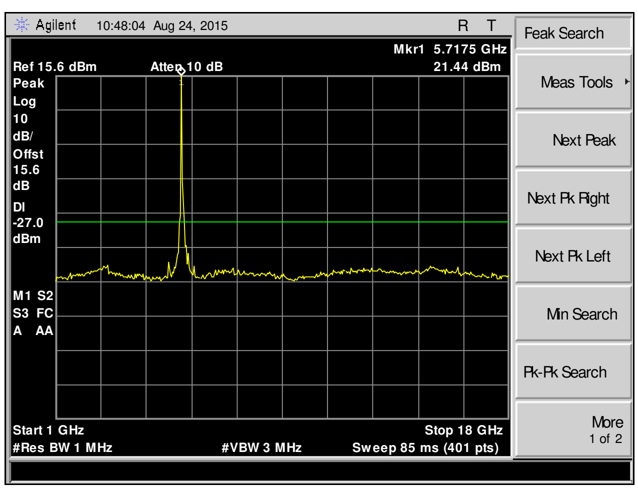
Plot 245. Spurious Emissions, 802.11n 20 MHz, Channel 64, SISO



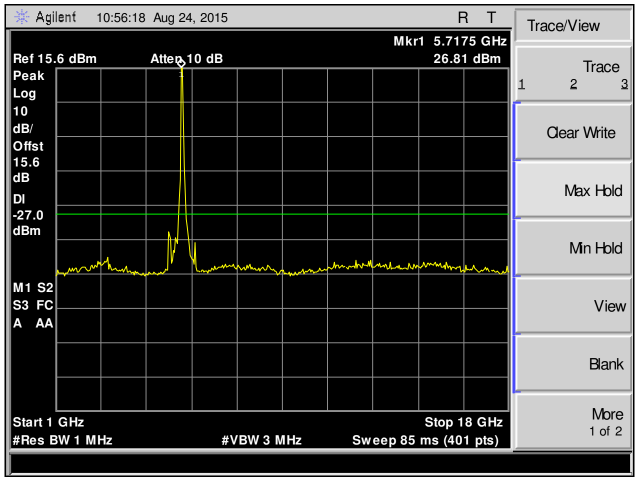
Plot 246. Spurious Emissions, 802.11n 20 MHz, Channel 100, SISO



Plot 247. Spurious Emissions, 802.11n 20 MHz, Channel 120, SISO

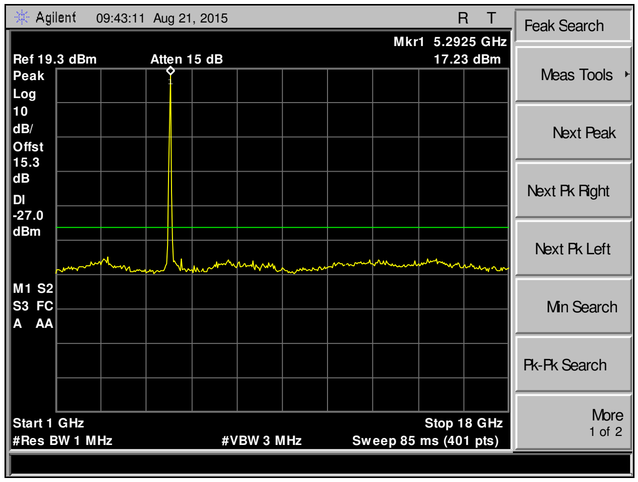


Plot 248. Spurious Emissions, 802.11n 20 MHz, Channel 140, SISO

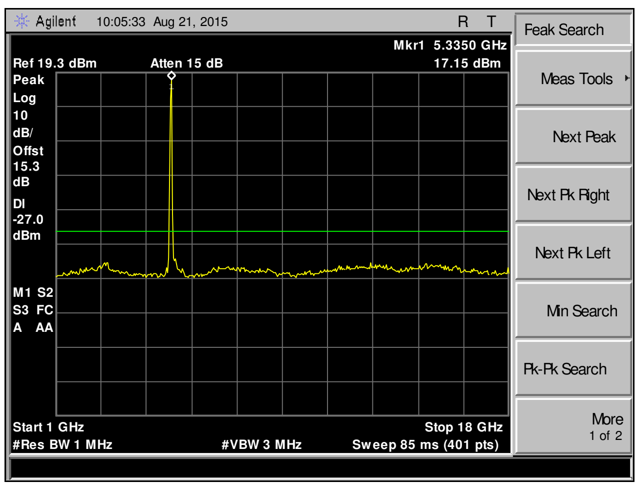


Plot 249. Spurious Emissions, 802.11n 20 MHz, Channel 144, SISO

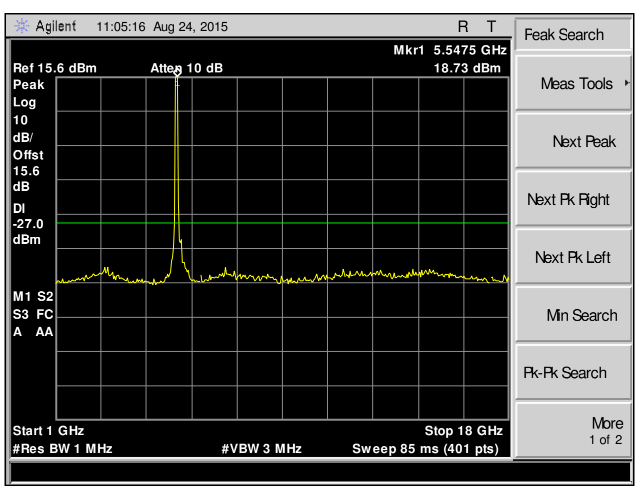
Spurious Emissions, 802.11n 40 MHz, SISO



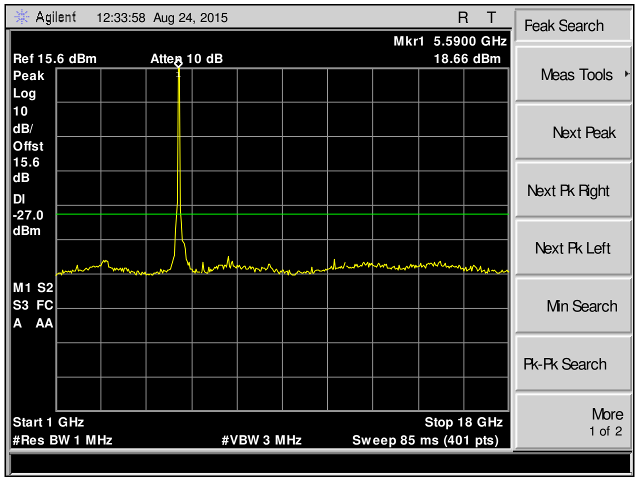
Plot 250. Spurious Emissions, 802.11n 40 MHz, Channel 52, SISO



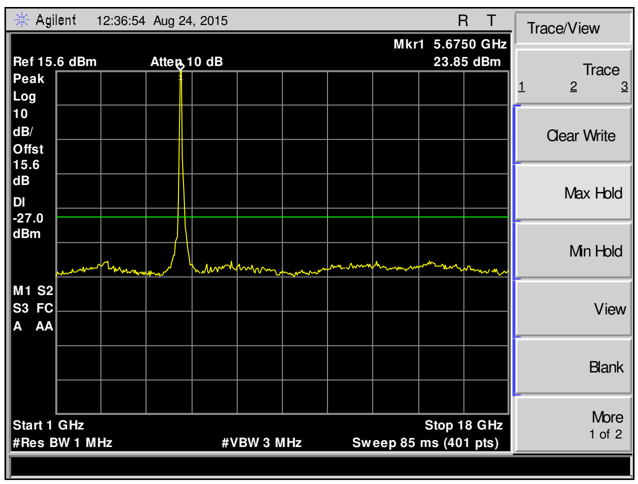
Plot 251. Spurious Emissions, 802.11n 40 MHz, Channel 60, SISO



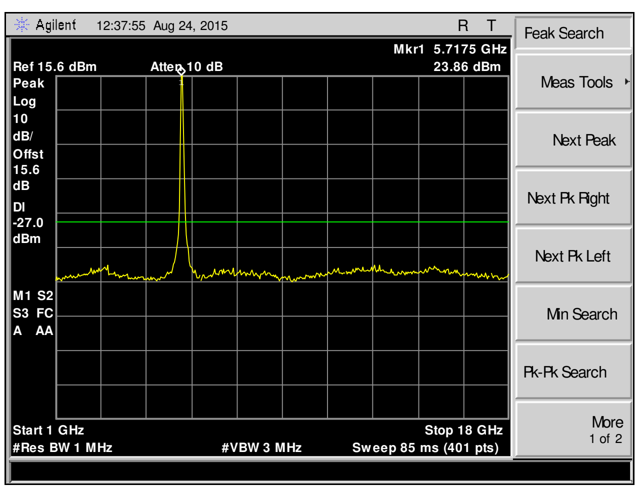
Plot 252. Spurious Emissions, 802.11n 40 MHz, Channel 100, SISO



Plot 253. Spurious Emissions, 802.11n 40 MHz, Channel 116, SISO

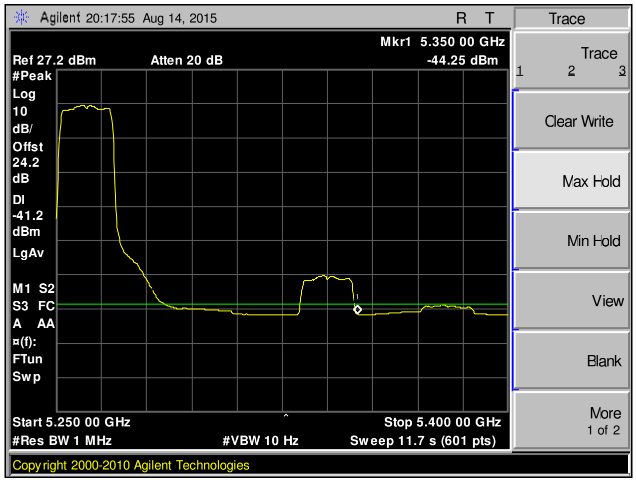


Plot 254. Spurious Emissions, 802.11n 40 MHz, Channel 132, SISO

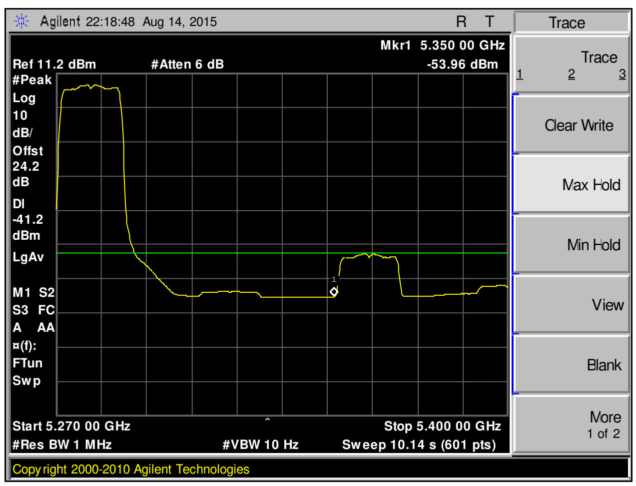


Plot 255. Spurious Emissions, 802.11n 40 MHz, Channel 140, SISO

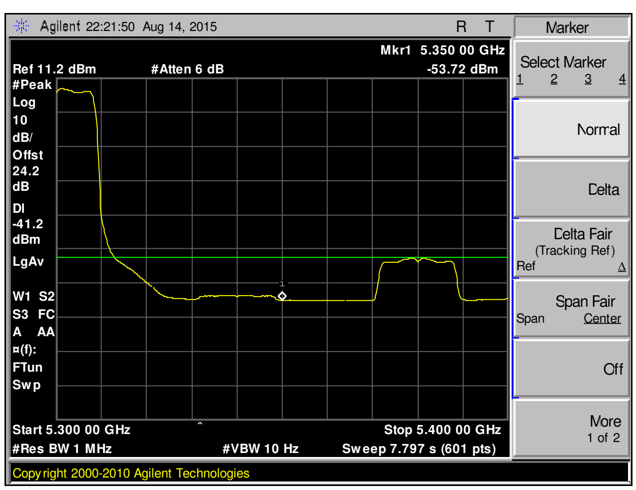
Band Edge, 802.11a, MIMO



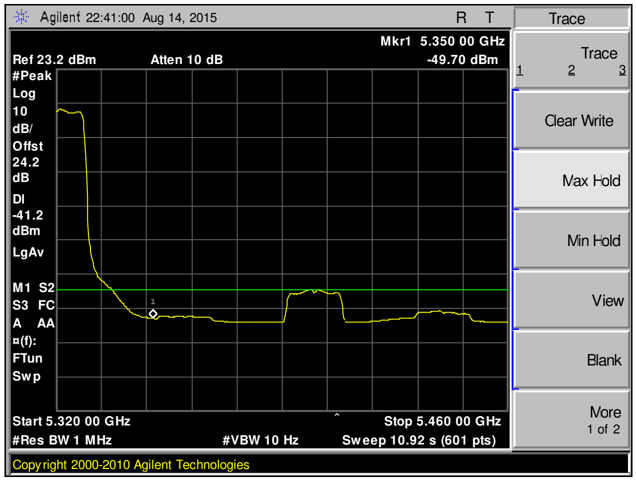
Plot 256. Band Edge, 802.11a, Channel 52, MIMO



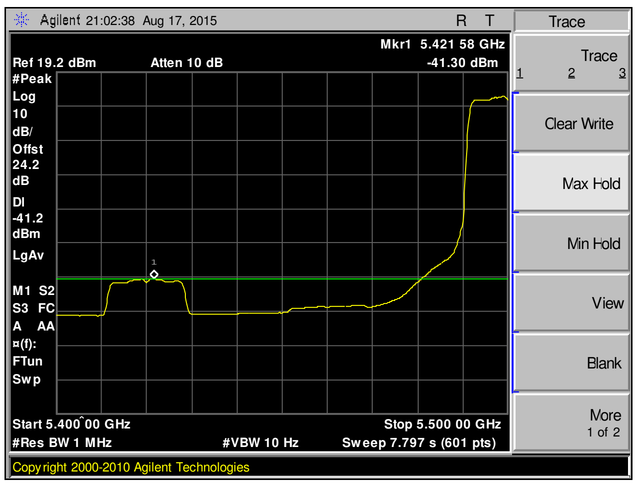
Plot 257. Band Edge, 802.11a, Channel 56, MIMO



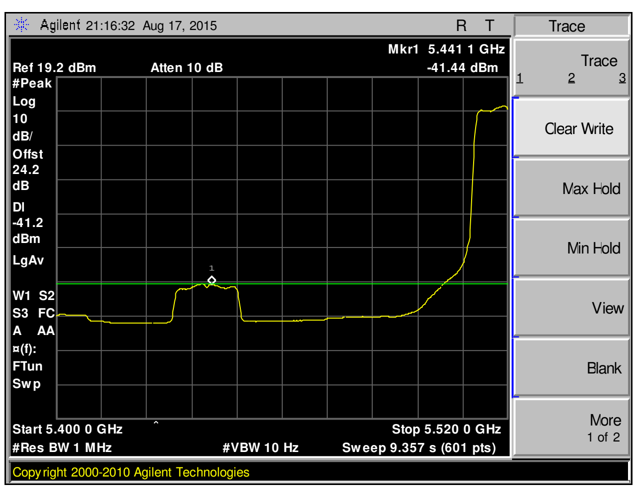
Plot 258. Band Edge, 802.11a, Channel 60, MIMO



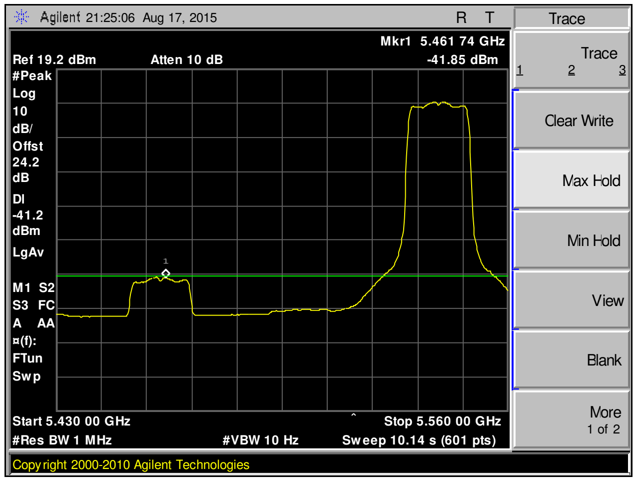
Plot 259. Band Edge, 802.11a, Channel 64, MIMO



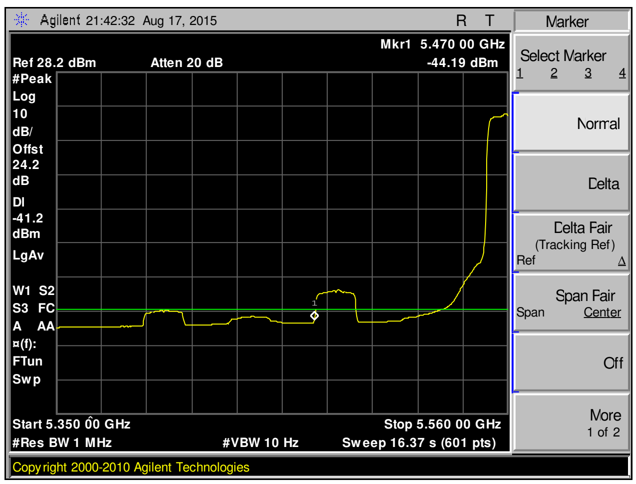
Plot 260. Band Edge, 802.11a, Channel 100, MIMO



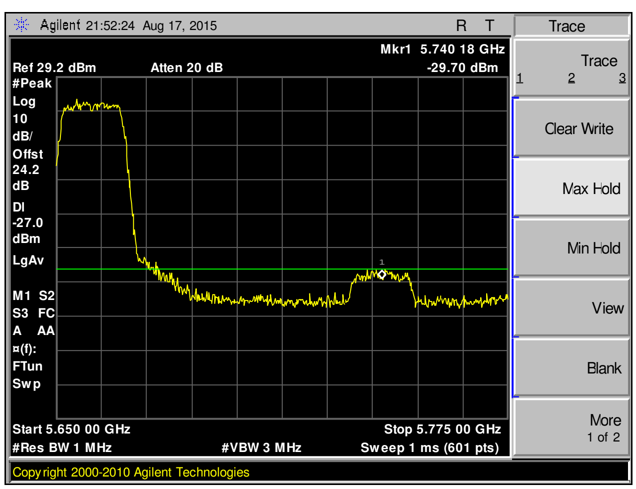
Plot 261. Band Edge, 802.11a, Channel 104, MIMO



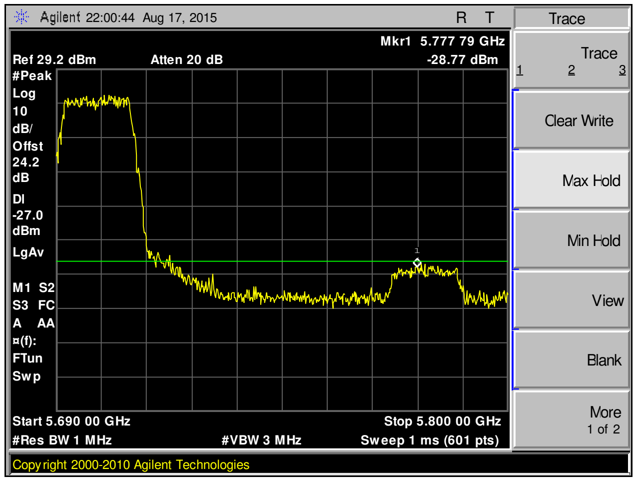
Plot 262. Band Edge, 802.11a, Channel 108, MIMO



Plot 263. Band Edge, 802.11a, Channel 112, MIMO

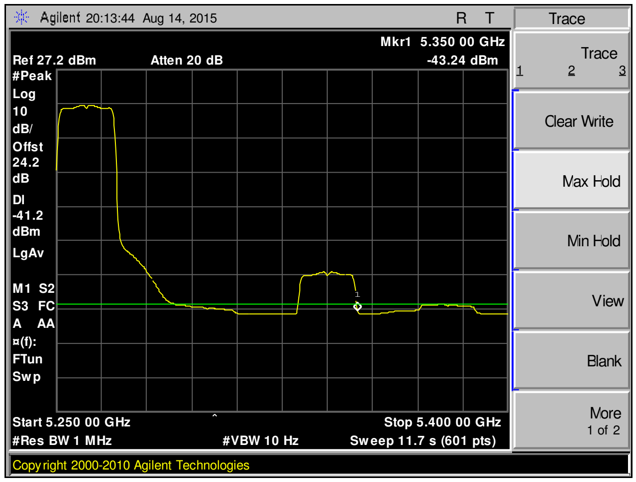


Plot 264. Band Edge, 802.11a, Channel 132, MIMO

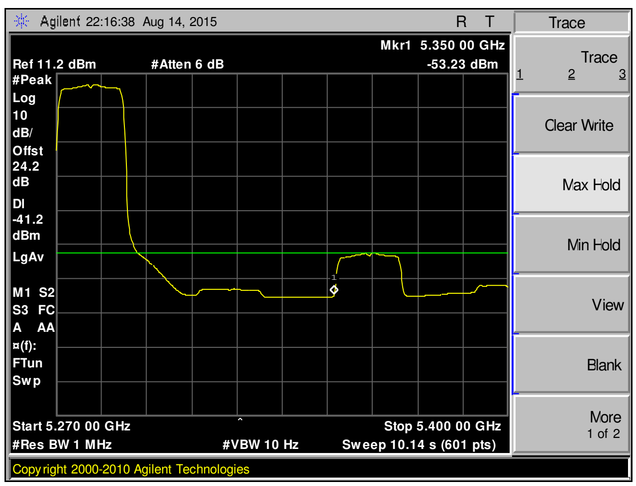


Plot 265. Band Edge, 802.11a, Channel 140, MIMO

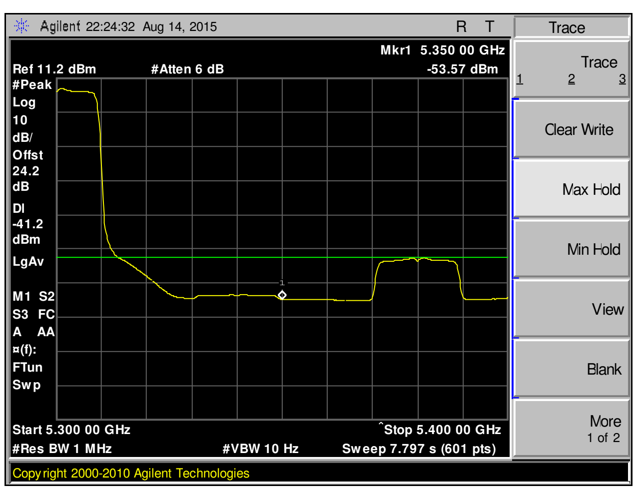
Band Edge, 802.11ac 20 MHz, MIMO



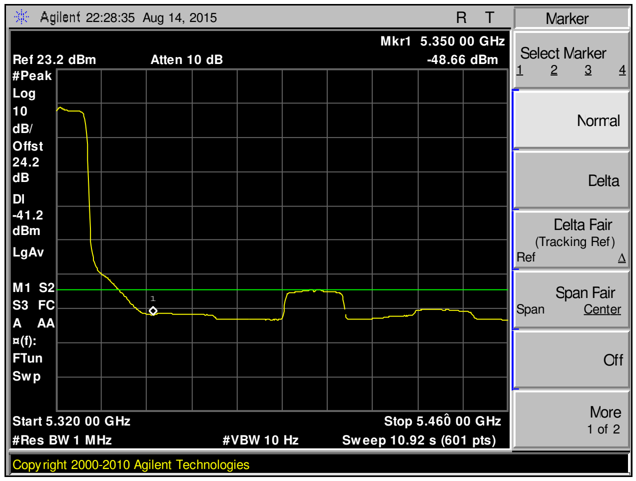
Plot 266. Band Edge, 802.11ac 20 MHz, Channel 52, MIMO



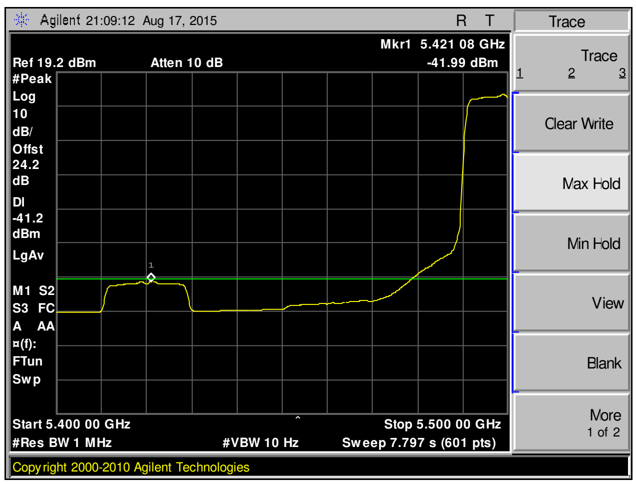
Plot 267. Band Edge, 802.11ac 20 MHz, Channel 56, MIMO



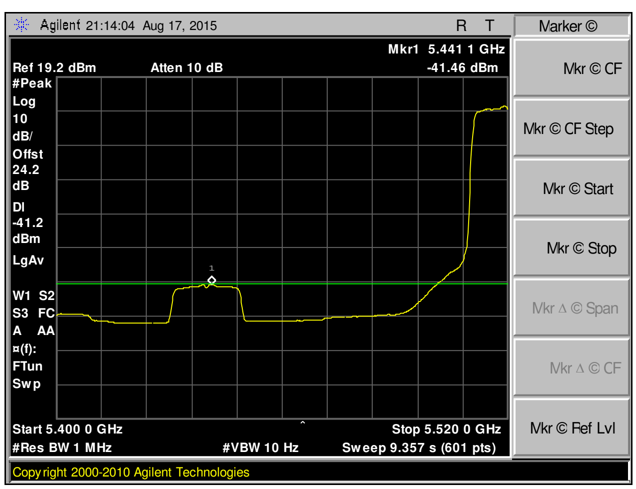
Plot 268. Band Edge, 802.11ac 20 MHz, Channel 60, MIMO



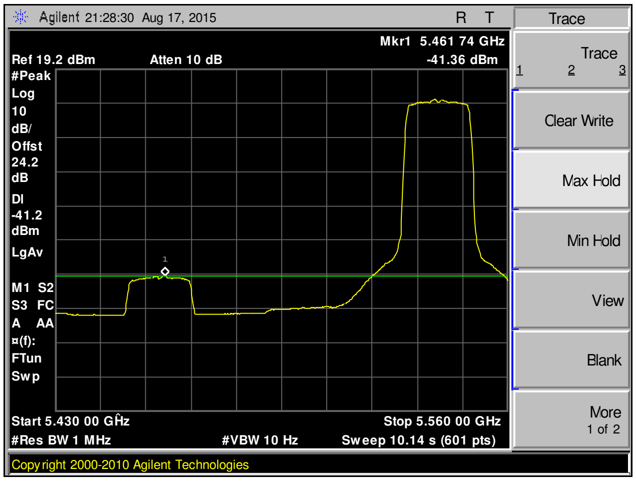
Plot 269. Band Edge, 802.11ac 20 MHz, Channel 64, MIMO



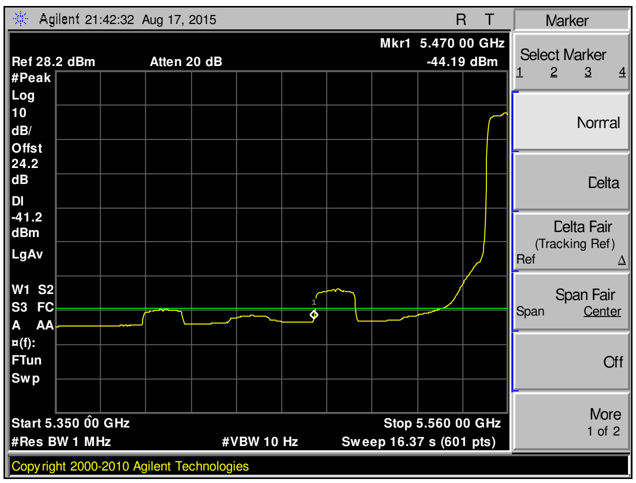
Plot 270. Band Edge, 802.11ac 20 MHz, Channel 100, MIMO



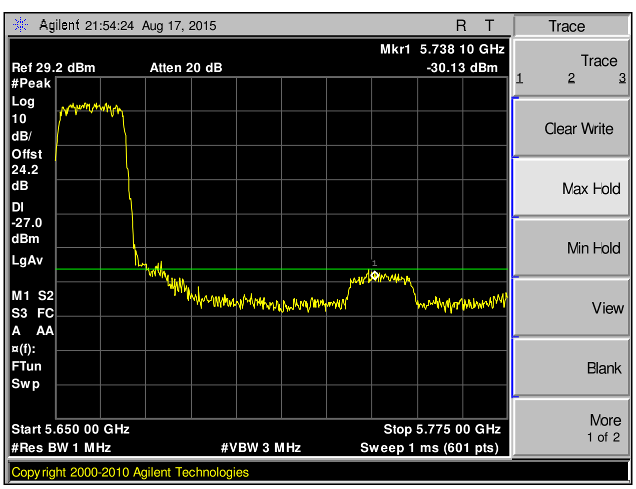
Plot 271. Band Edge, 802.11ac 20 MHz, Channel 104, MIMO



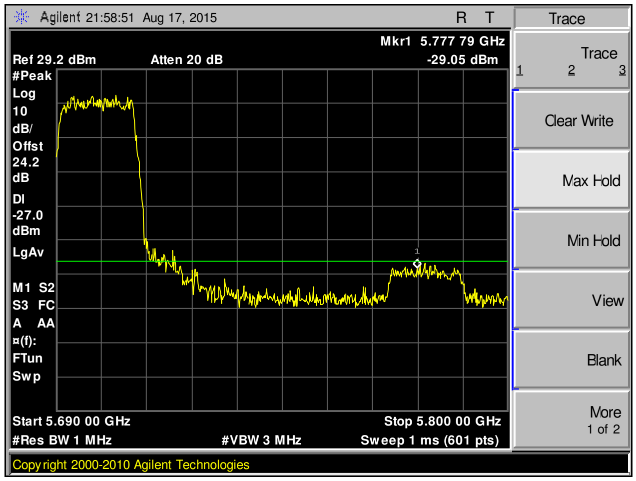
Plot 272. Band Edge, 802.11ac 20 MHz, Channel 108, MIMO



Plot 273. Band Edge, 802.11ac 20 MHz, Channel 112, MIMO

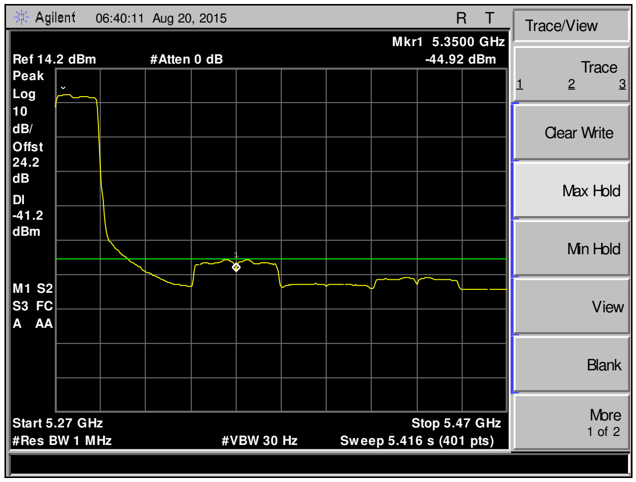


Plot 274. Band Edge, 802.11ac 20 MHz, Channel 132, MIMO

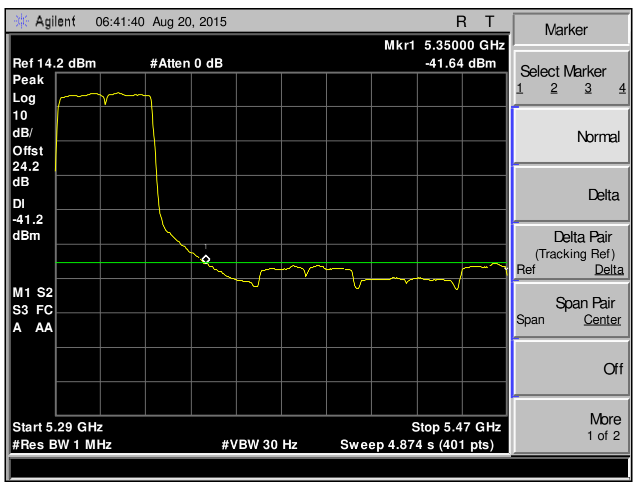


Plot 275. Band Edge, 802.11ac 20 MHz, Channel 140, MIMO

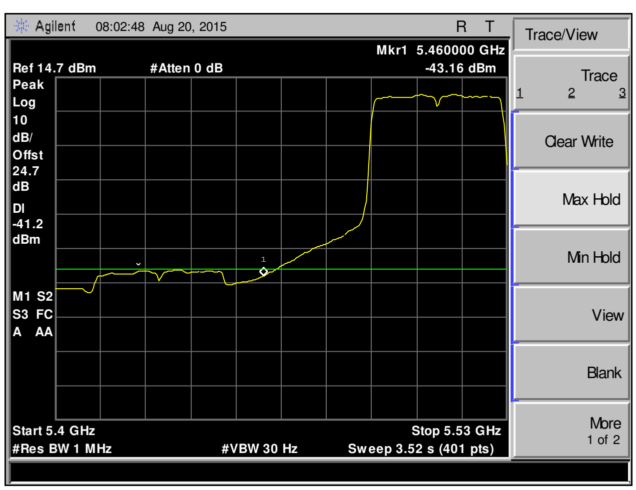
Band Edge, 802.11ac 40 MHz, MIMO



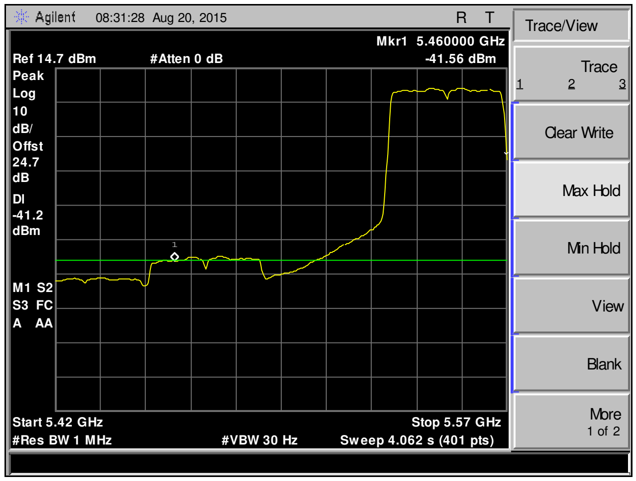
Plot 276. Band Edge, 802.11ac 40 MHz, Channel 52, MIMO



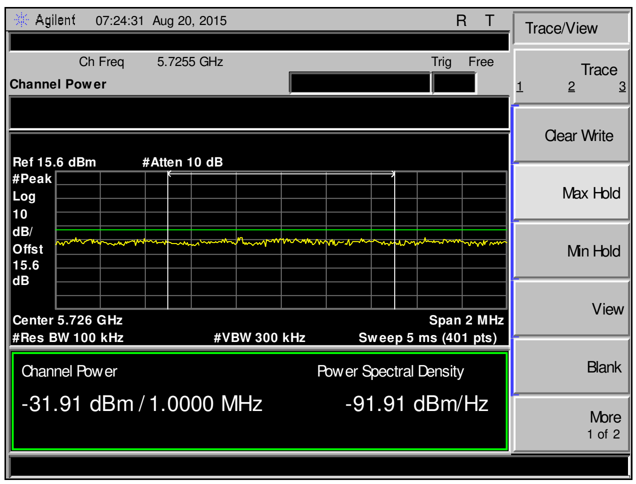
Plot 277. Band Edge, 802.11ac 40 MHz, Channel 60, MIMO



Plot 278. Band Edge, 802.11ac 40 MHz, Channel 100, MIMO

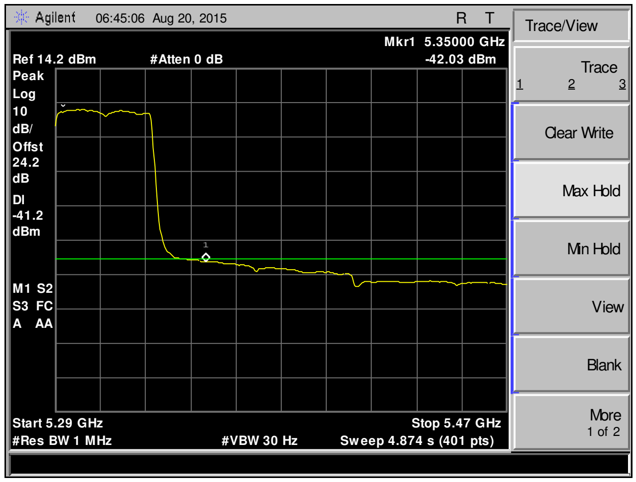


Plot 279. Band Edge, 802.11ac 40 MHz, Channel 108, MIMO

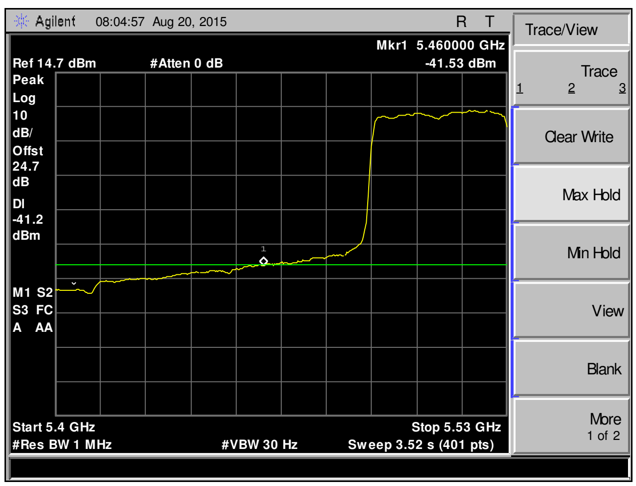


Plot 280. Band Edge, 802.11ac 40 MHz, Channel 132, MIMO

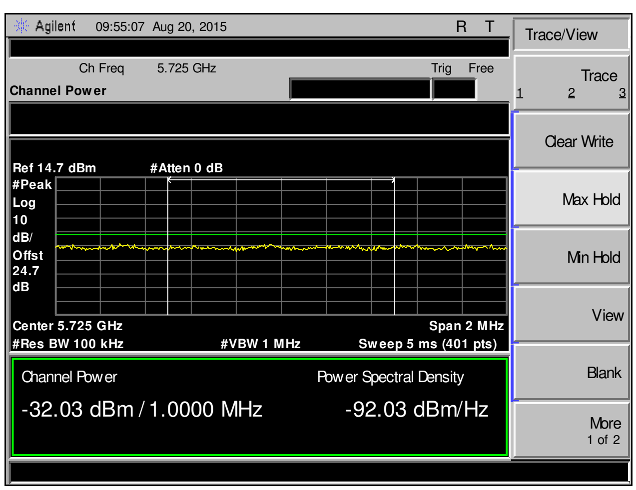
Band Edge, 802.11ac 80 MHz, MIMO



Plot 281. Band Edge, 802.11ac 80 MHz, Channel 52, MIMO

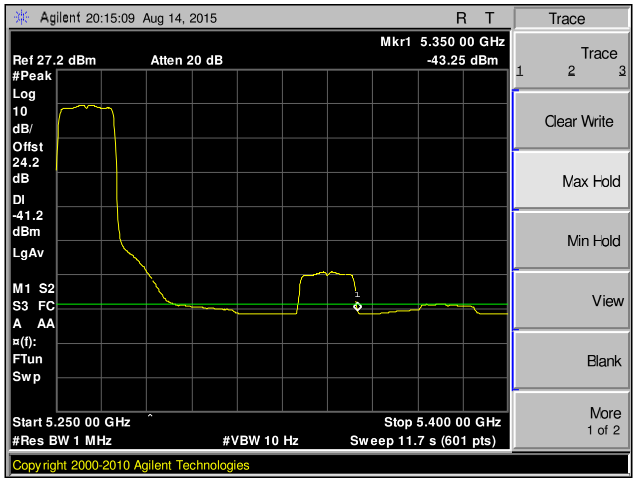


Plot 282. Band Edge, 802.11ac 80 MHz, Channel 100, MIMO

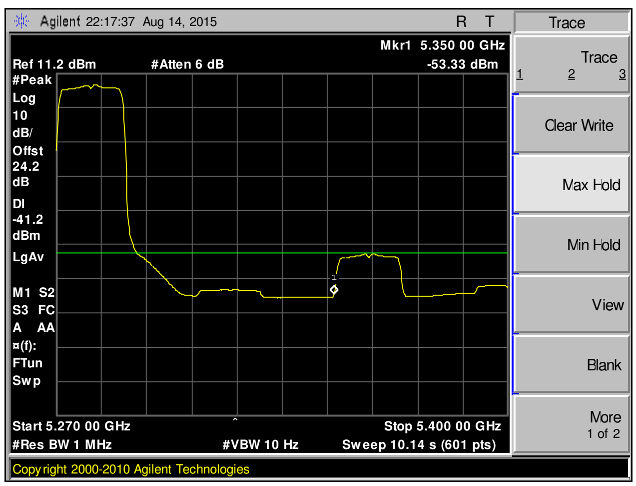


Plot 283. Band Edge, 802.11ac 80 MHz, Channel 124, MIMO

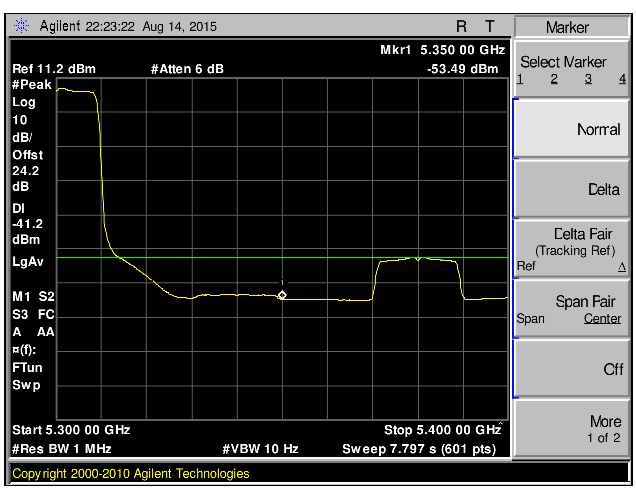
Band Edge, 802.11n 20 MHz, MIMO



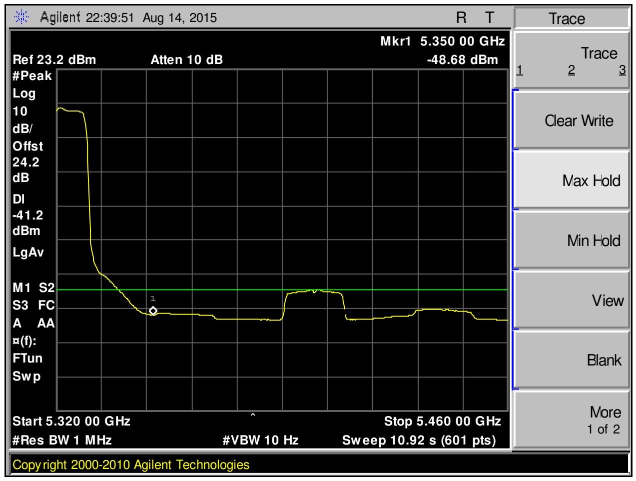
Plot 284. Band Edge, 802.11n 20 MHz, Channel 52, MIMO



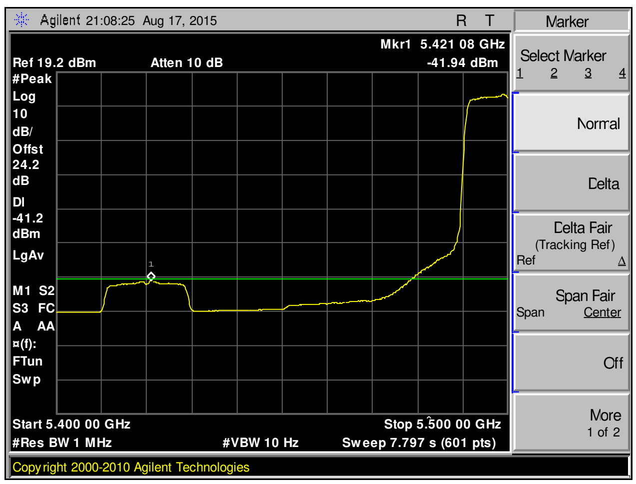
Plot 285. Band Edge, 802.11n 20 MHz, Channel 56, MIMO



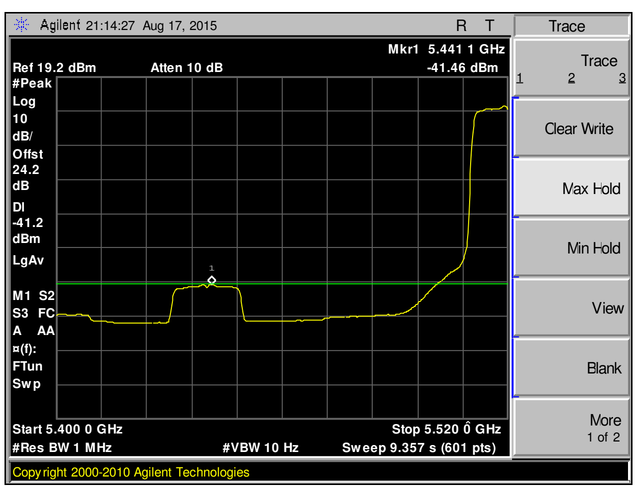
Plot 286. Band Edge, 802.11n 20 MHz, Channel 60, MIMO



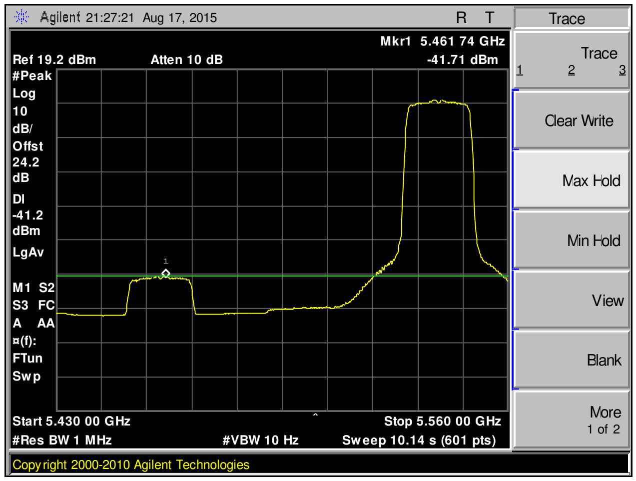
Plot 287. Band Edge, 802.11n 20 MHz, Channel 64, MIMO



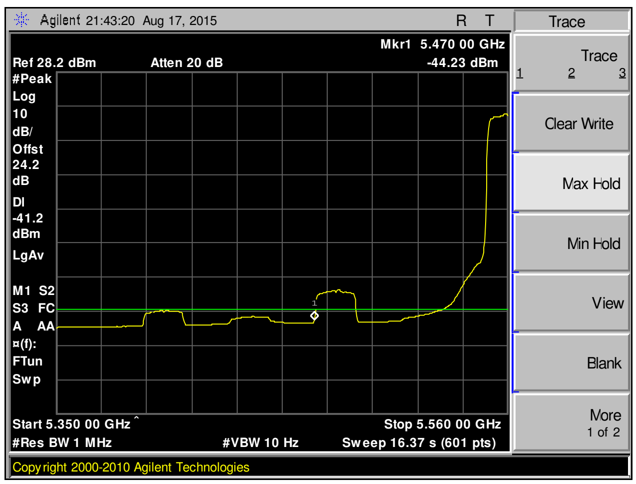
Plot 288. Band Edge, 802.11n 20 MHz, Channel 100, MIMO



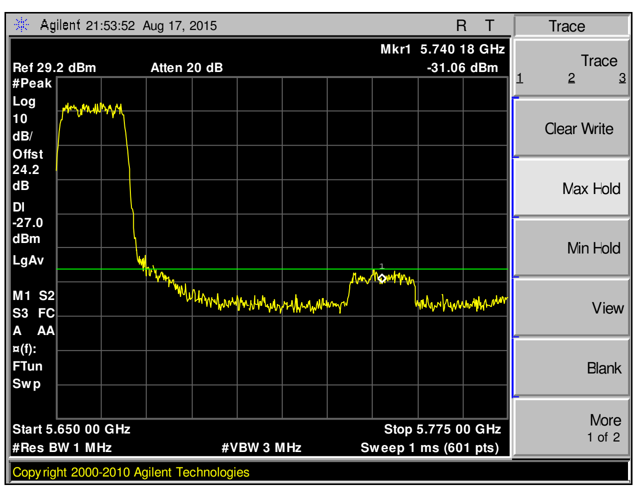
Plot 289. Band Edge, 802.11n 20 MHz, Channel 104, MIMO



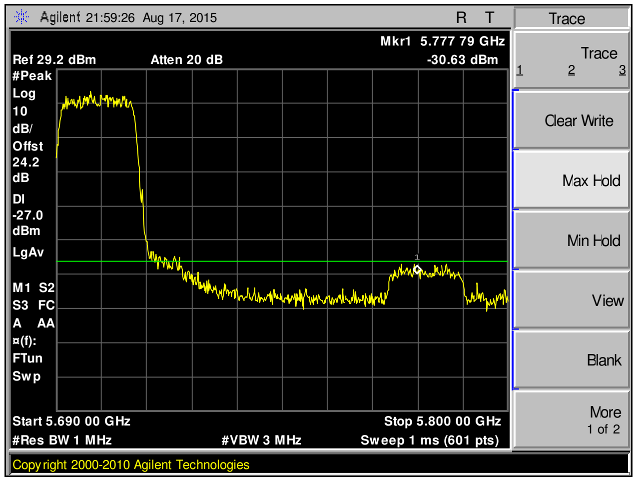
Plot 290. Band Edge, 802.11n 20 MHz, Channel 108, MIMO



Plot 291. Band Edge, 802.11n 20 MHz, Channel 112, MIMO

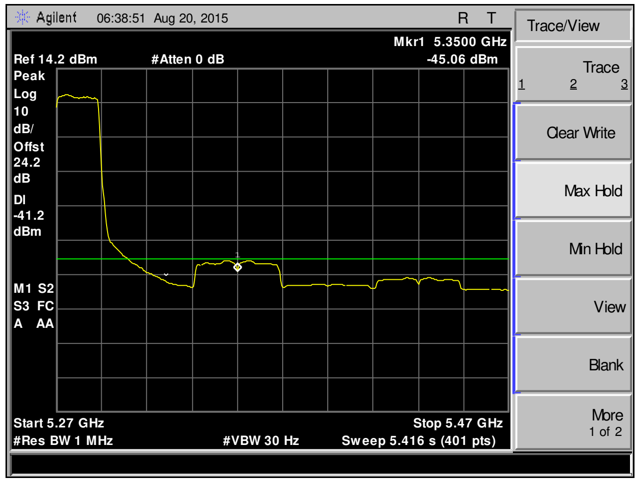


Plot 292. Band Edge, 802.11n 20 MHz, Channel 132, MIMO

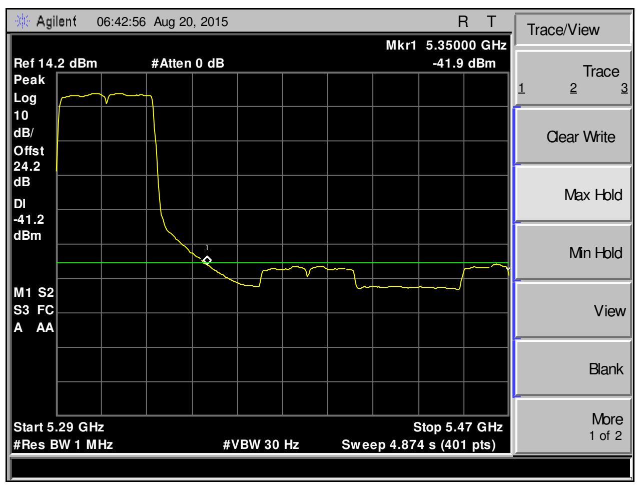


Plot 293. Band Edge, 802.11n 20 MHz, Channel 140, MIMO

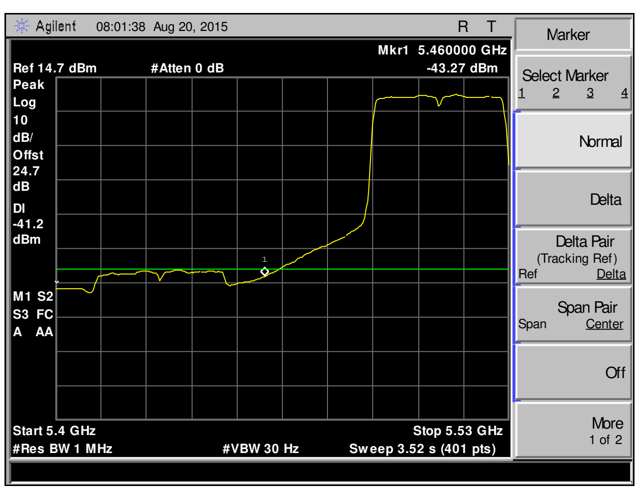
Band Edge, 802.11n 40 MHz, MIMO



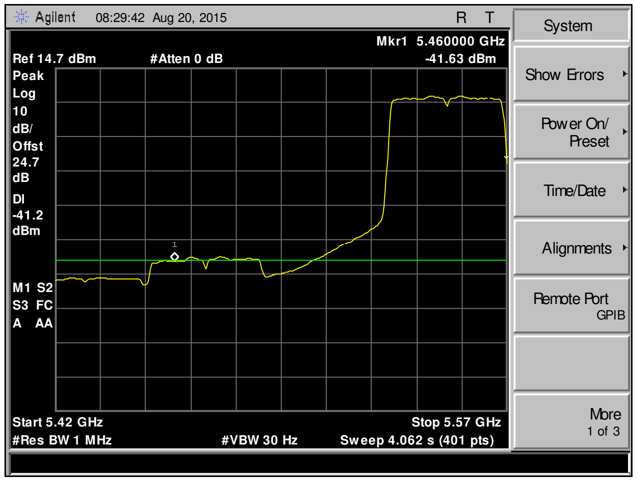
Plot 294. Band Edge, 802.11n 40 MHz, Channel 52, MIMO



Plot 295. Band Edge, 802.11n 40 MHz, Channel 60, MIMO

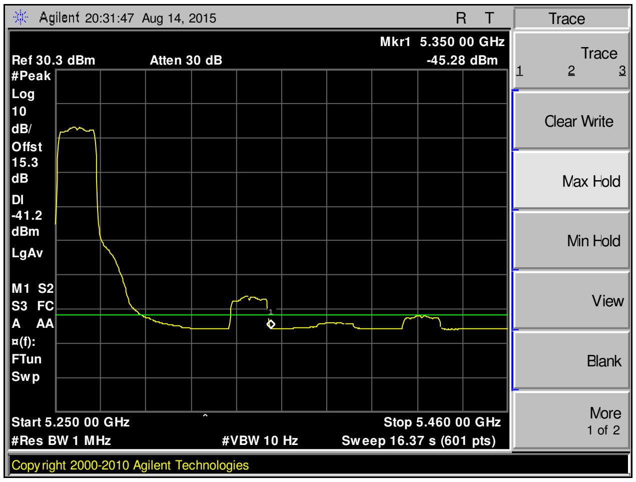


Plot 296. Band Edge, 802.11n 40 MHz, Channel 100, MIMO

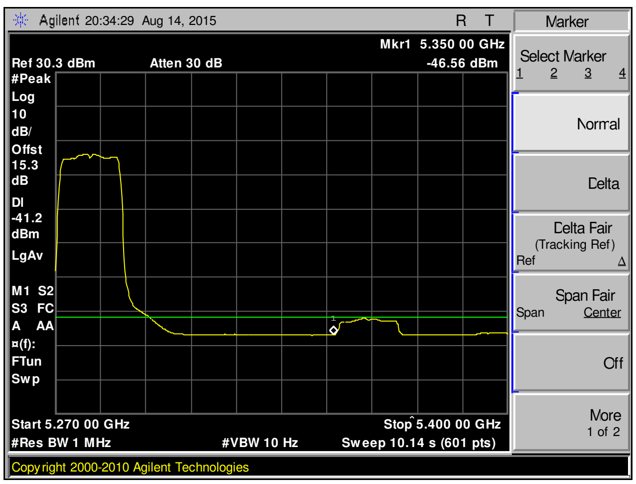


Plot 297. Band Edge, 802.11n 40 MHz, Channel 108, MIMO

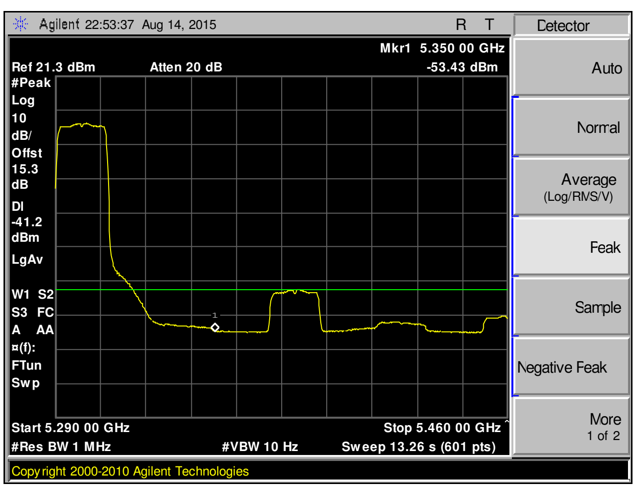
Band Edge, 802.11a, SISO



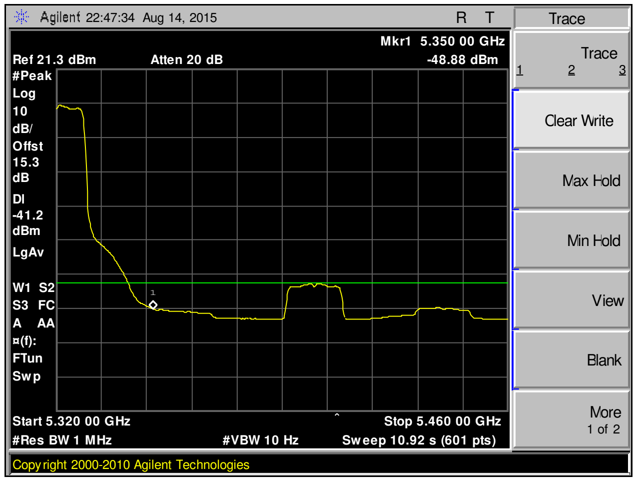
Plot 298. Band Edge, 802.11a, Channel 52, SISO



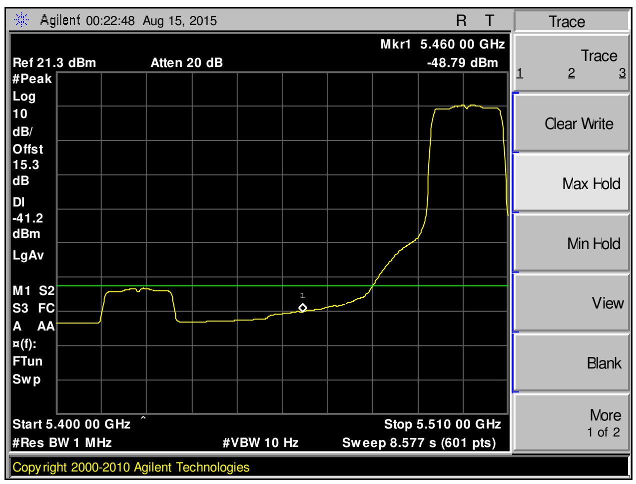
Plot 299. Band Edge, 802.11a, Channel 56, SISO



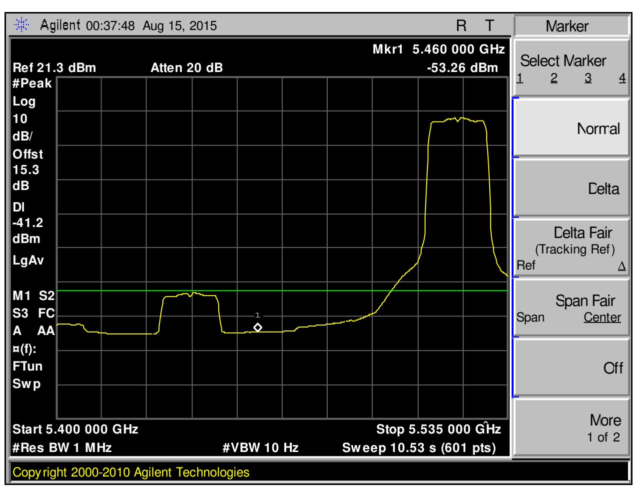
Plot 300. Band Edge, 802.11a, Channel 60, SISO



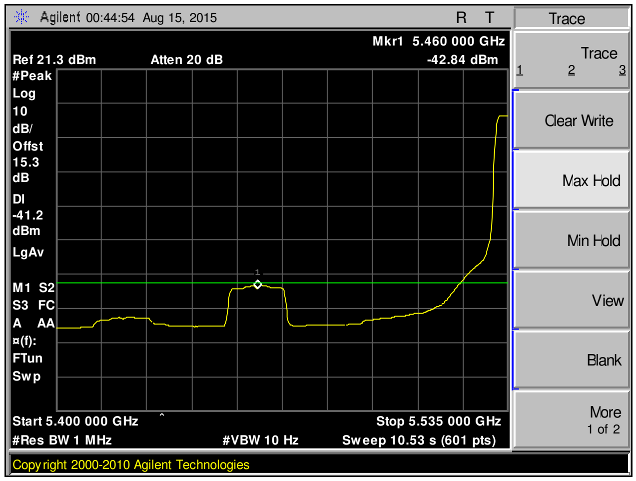
Plot 301. Band Edge, 802.11a, Channel 64, SISO



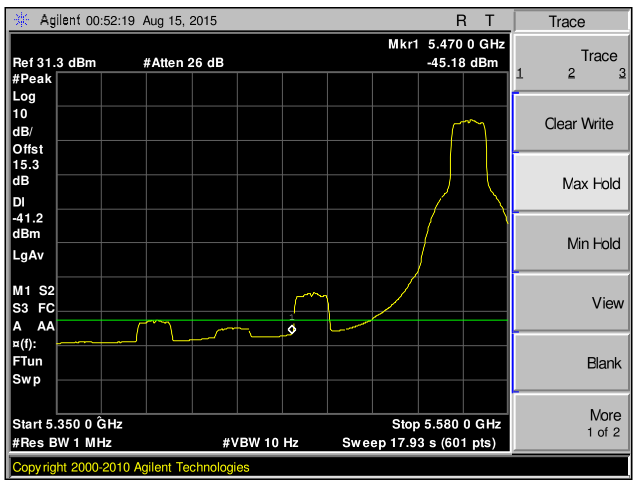
Plot 302. Band Edge, 802.11a, Channel 100, SISO



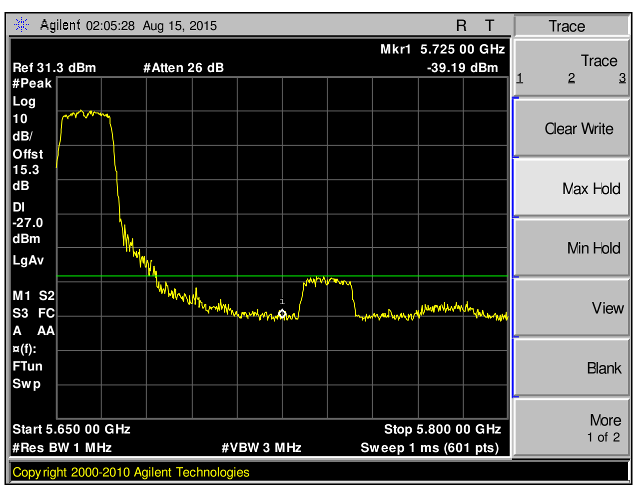
Plot 303. Band Edge, 802.11a, Channel 104, SISO



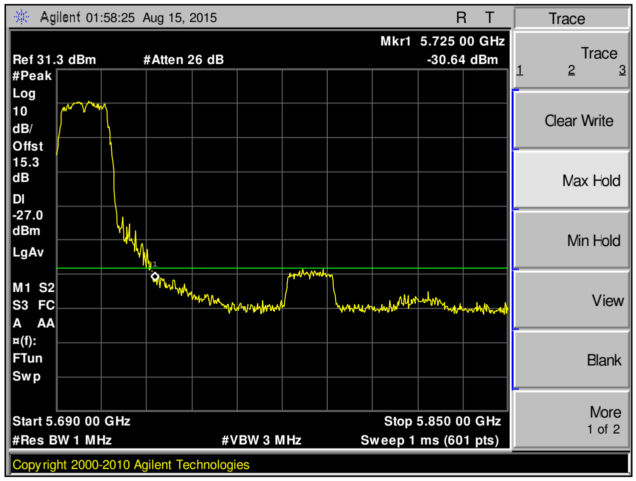
Plot 304. Band Edge, 802.11a, Channel 108, SISO



Plot 305. Band Edge, 802.11a, Channel 112, SISO

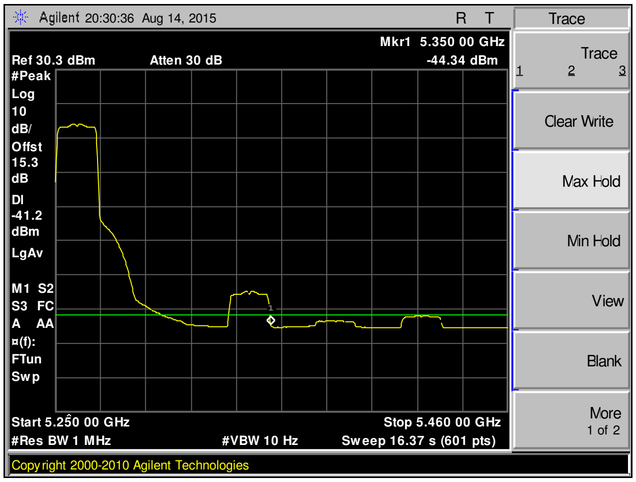


Plot 306. Band Edge, 802.11a, Channel 132, SISO

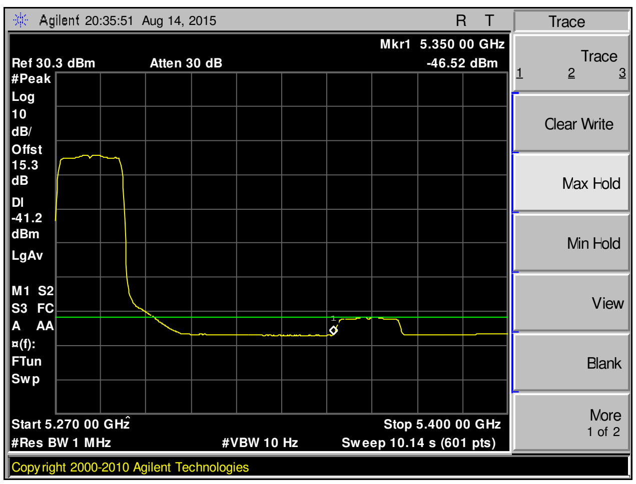


Plot 307. Band Edge, 802.11a, Channel 140, SISO

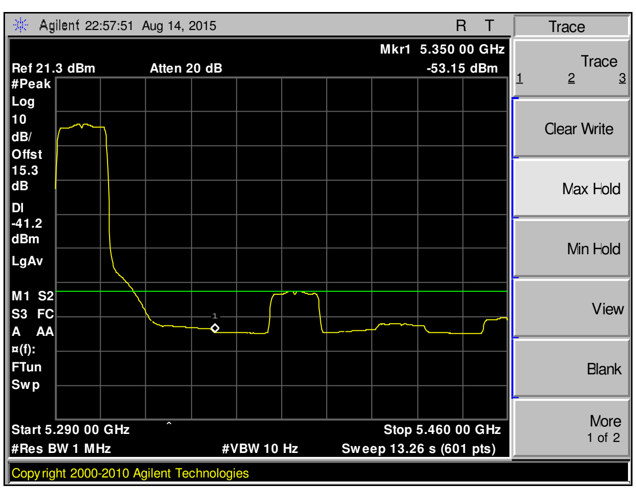
Band Edge, 802.11ac 20 MHz, SISO



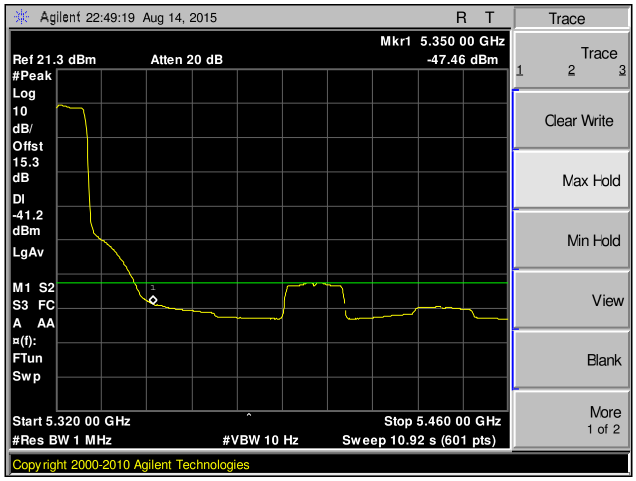
Plot 308. Band Edge, 802.11ac 20 MHz, Channel 52, SISO



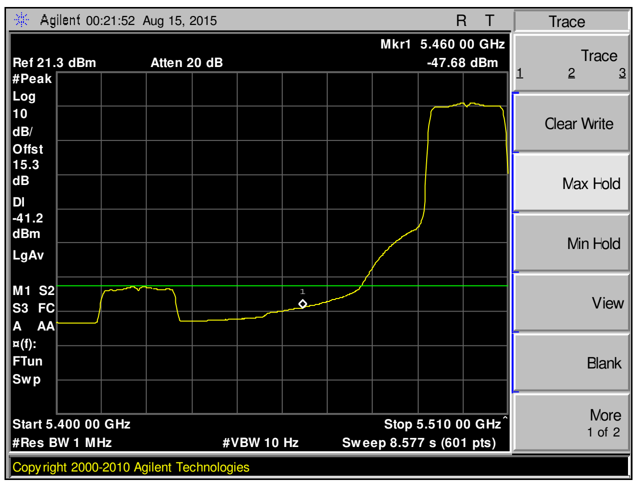
Plot 309. Band Edge, 802.11ac 20 MHz, Channel 56, SISO



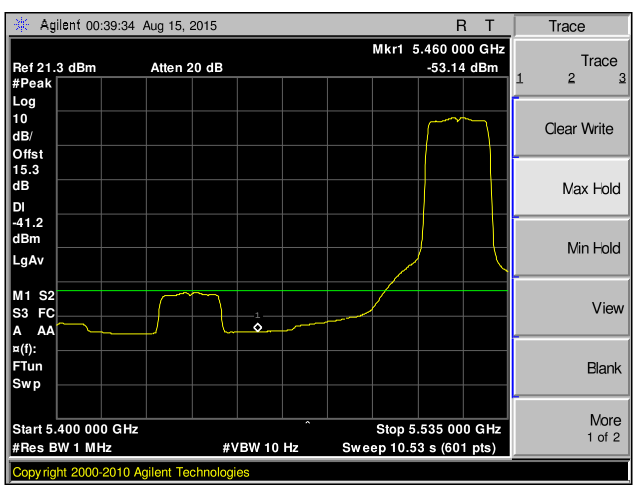
Plot 310. Band Edge, 802.11ac 20 MHz, Channel 60, SISO



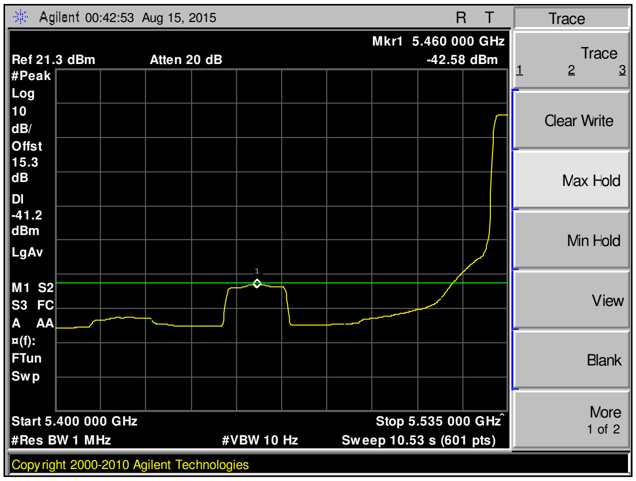
Plot 311. Band Edge, 802.11ac 20 MHz, Channel 64, SISO



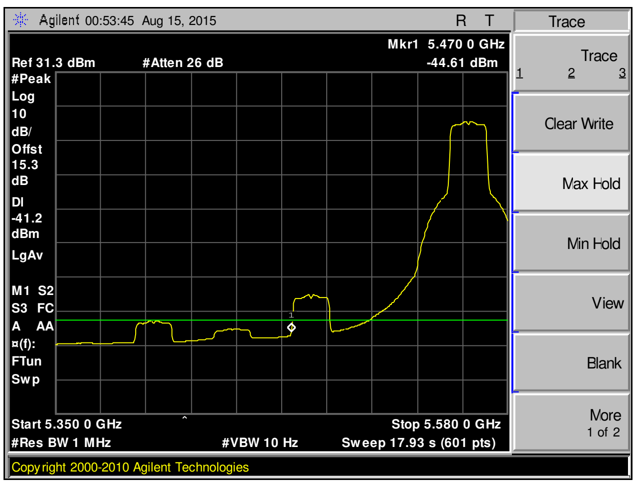
Plot 312. Band Edge, 802.11ac 20 MHz, Channel 100, SISO



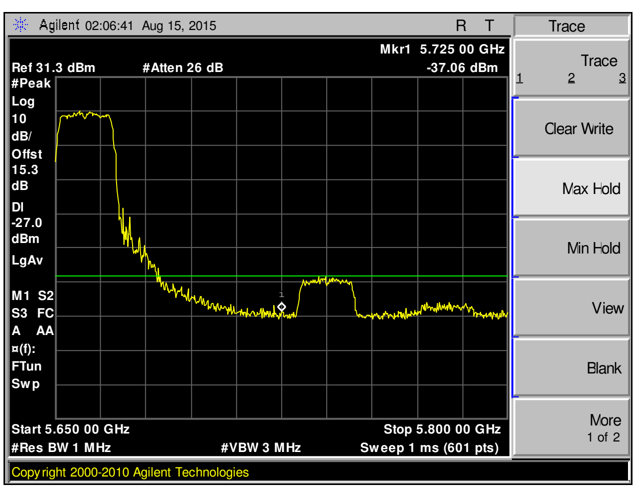
Plot 313. Band Edge, 802.11ac 20 MHz, Channel 104, SISO



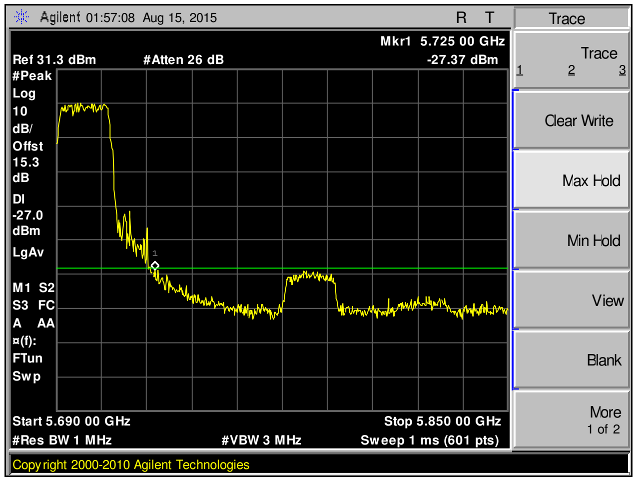
Plot 314. Band Edge, 802.11ac 20 MHz, Channel 108, SISO



Plot 315. Band Edge, 802.11ac 20 MHz, Channel 112, SISO

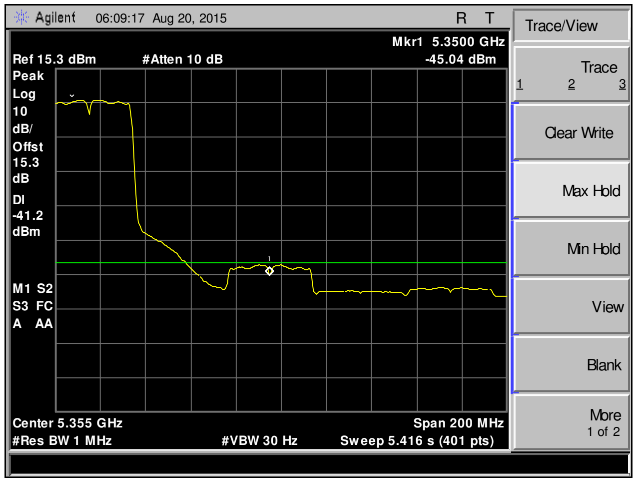


Plot 316. Band Edge, 802.11ac 20 MHz, Channel 132, SISO

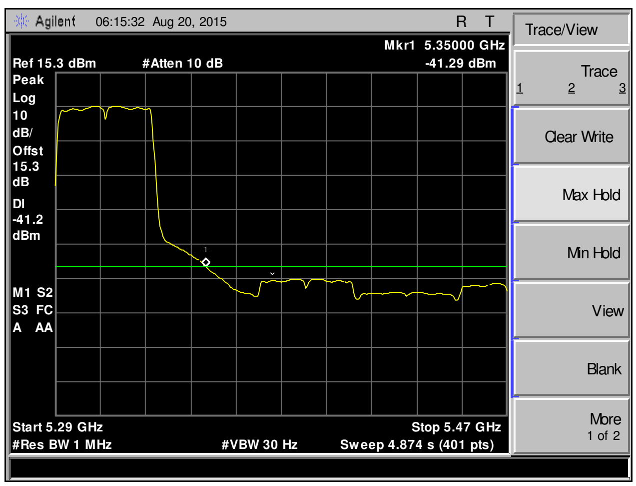


Plot 317. Band Edge, 802.11ac 20 MHz, Channel 140, SISO

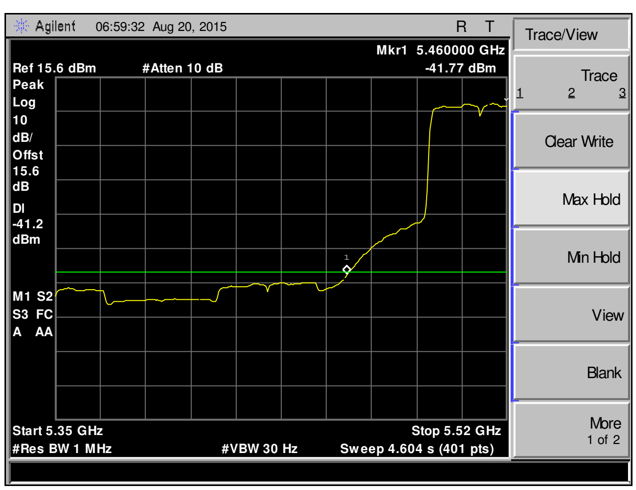
Band Edge, 802.11ac 40 MHz, SISO



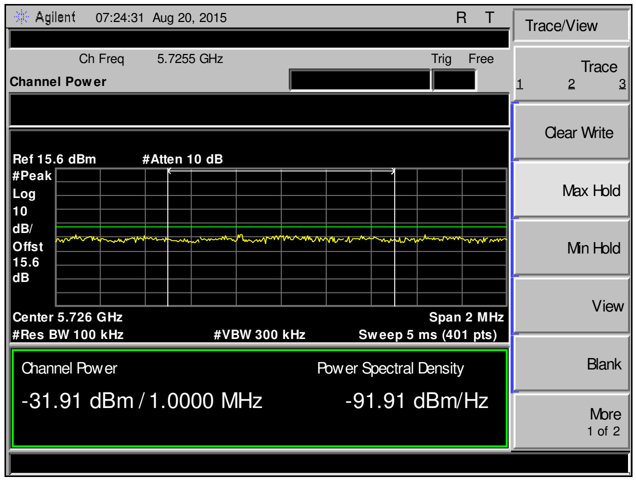
Plot 318. Band Edge, 802.11ac 40 MHz, Channel 52, SISO



Plot 319. Band Edge, 802.11ac 40 MHz, Channel 60, SISO

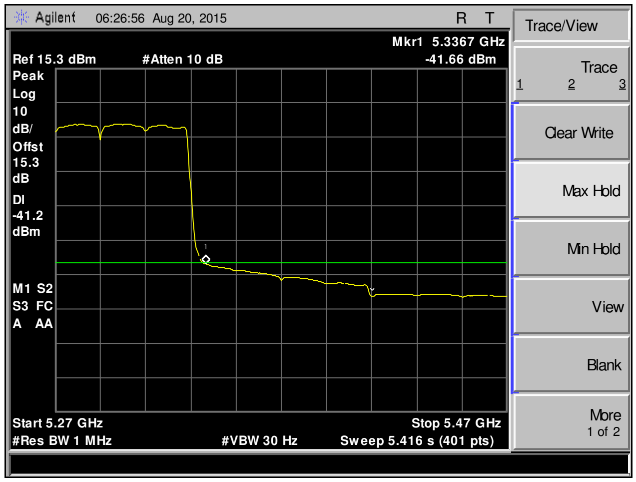


Plot 320. Band Edge, 802.11ac 40 MHz, Channel 100, SISO

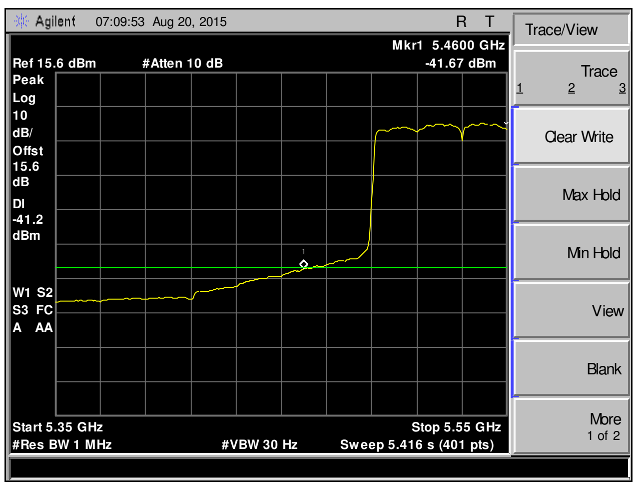


Plot 321. Band Edge, 802.11ac 40 MHz, Channel 132, SISO

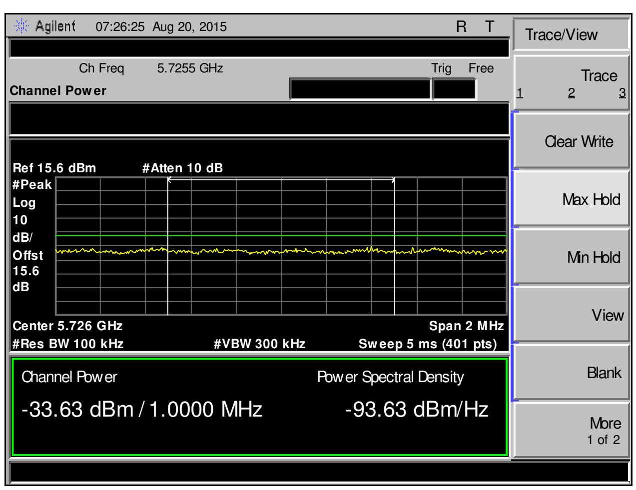
Band Edge, 802.11ac 80 MHz, SISO



Plot 322. Band Edge, 802.11ac 80 MHz, Channel 52, SISO

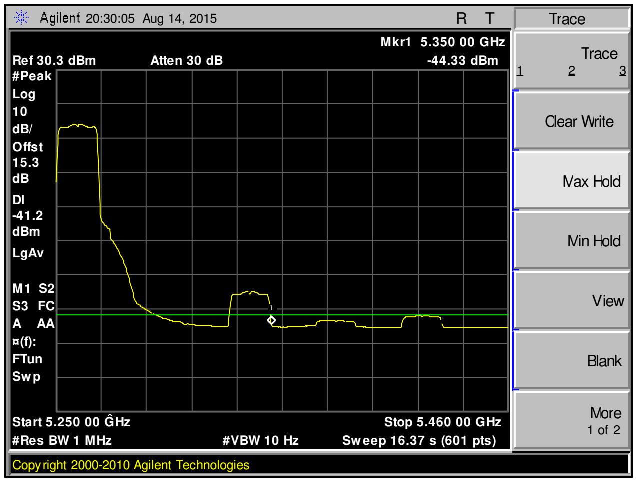


Plot 323. Band Edge, 802.11ac 80 MHz, Channel 100, SISO

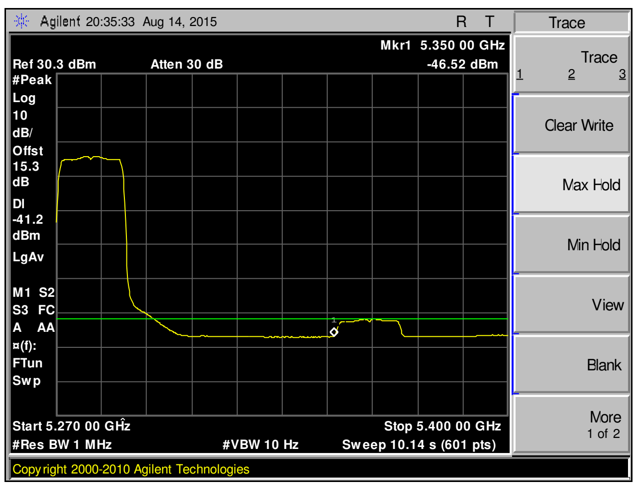


Plot 324. Band Edge, 802.11ac 80 MHz, Channel 124, SISO

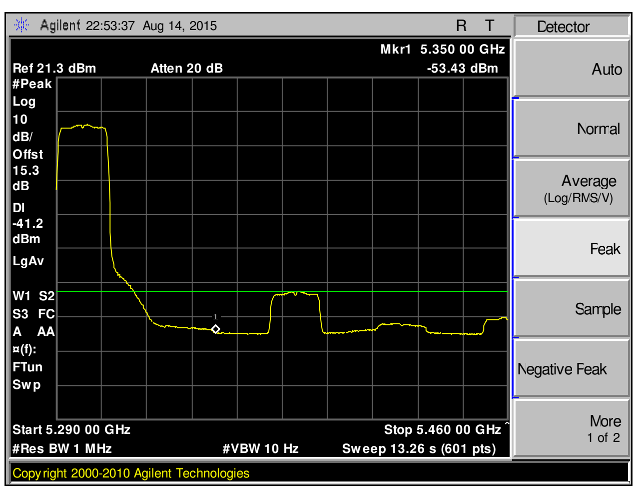
Band Edge, 802.11n 20 MHz, SISO



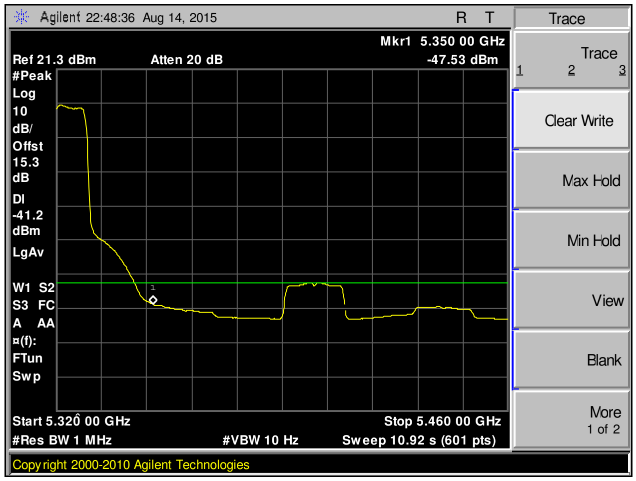
Plot 325. Band Edge, 802.11n 20 MHz, Channel 52, SISO



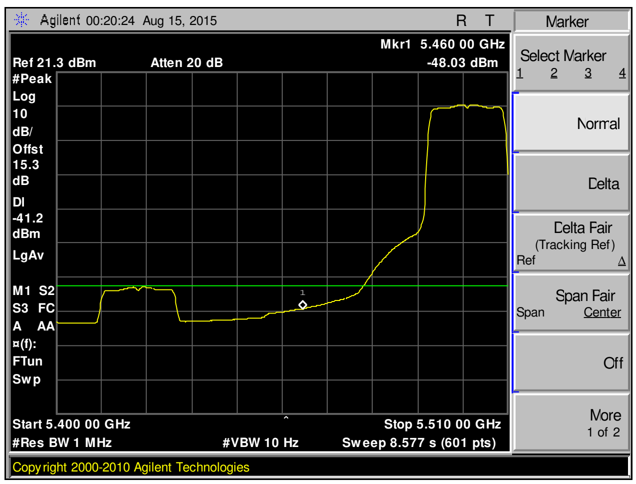
Plot 326. Band Edge, 802.11n 20 MHz, Channel 56, SISO



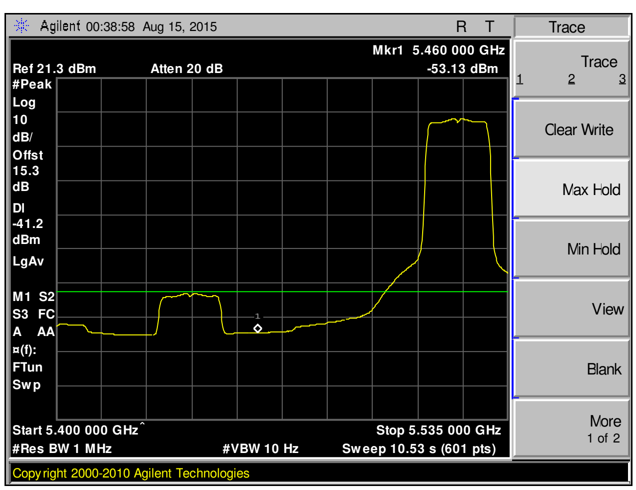
Plot 327. Band Edge, 802.11n 20 MHz, Channel 60, SISO



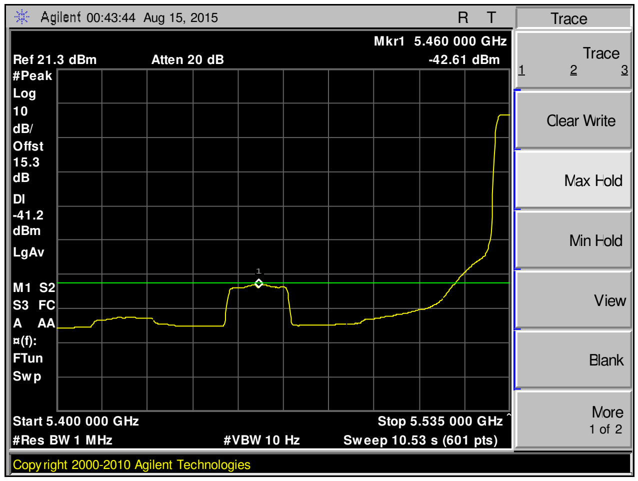
Plot 328. Band Edge, 802.11n 20 MHz, Channel 64, SISO



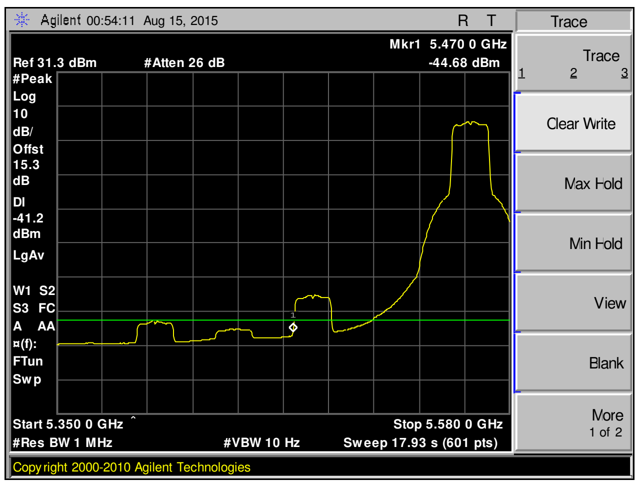
Plot 329. Band Edge, 802.11n 20 MHz, Channel 100, SISO



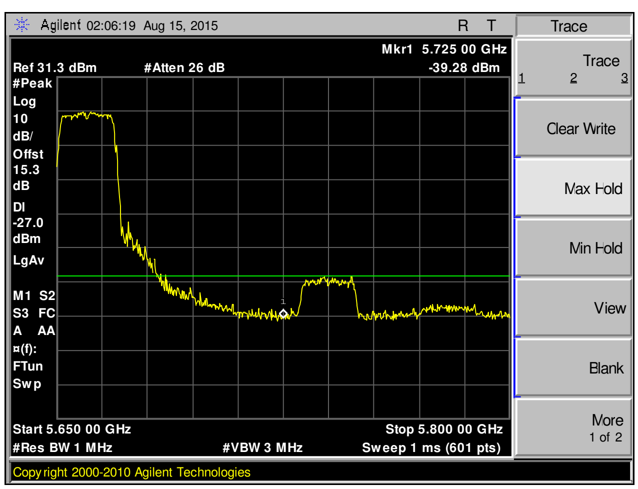
Plot 330. Band Edge, 802.11n 20 MHz, Channel 104, SISO



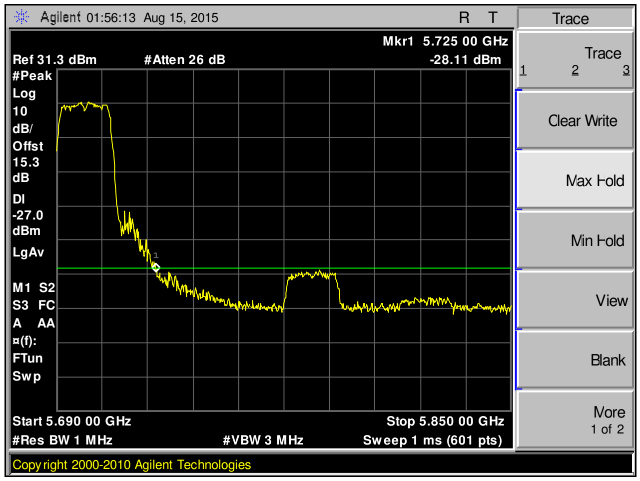
Plot 331. Band Edge, 802.11n 20 MHz, Channel 108, SISO



Plot 332. Band Edge, 802.11n 20 MHz, Channel 112, SISO

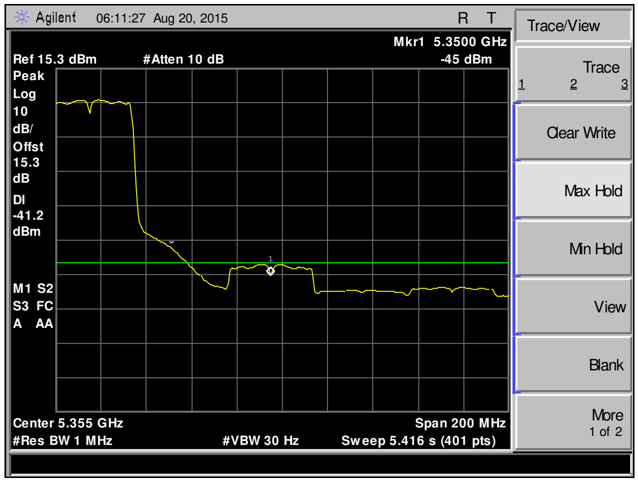


Plot 333. Band Edge, 802.11n 20 MHz, Channel 132, SISO

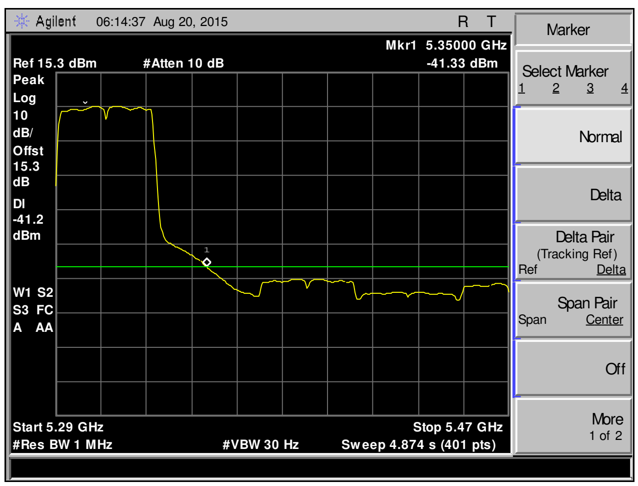


Plot 334. Band Edge, 802.11n 20 MHz, Channel 140, SISO

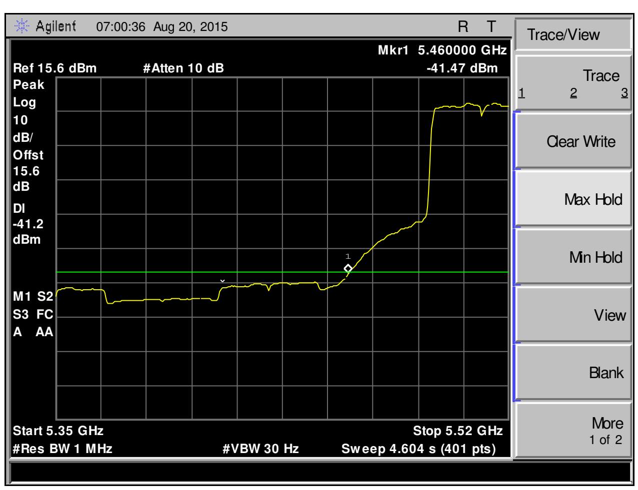
Band Edge, 802.11n 40 MHz, SISO



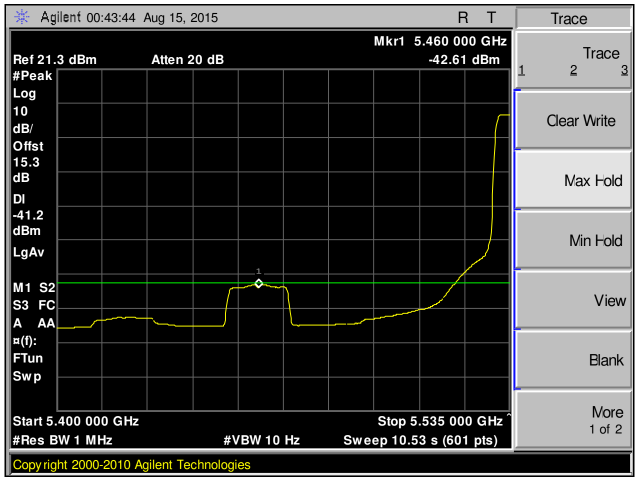
Plot 335. Band Edge, 802.11n 40 MHz, Channel 52, SISO



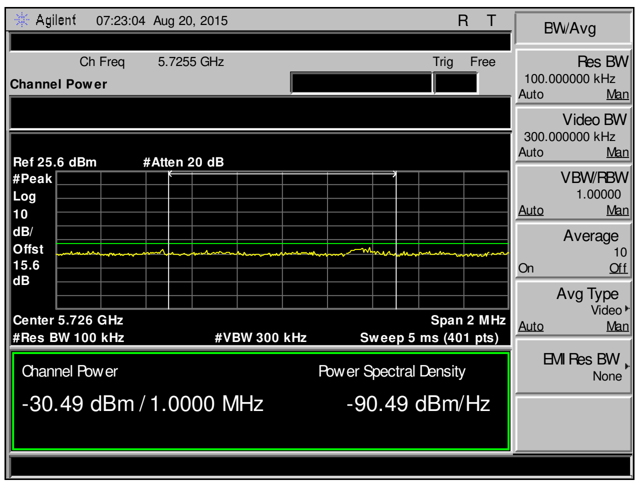
Plot 336. Band Edge, 802.11n 40 MHz, Channel 60, SISO



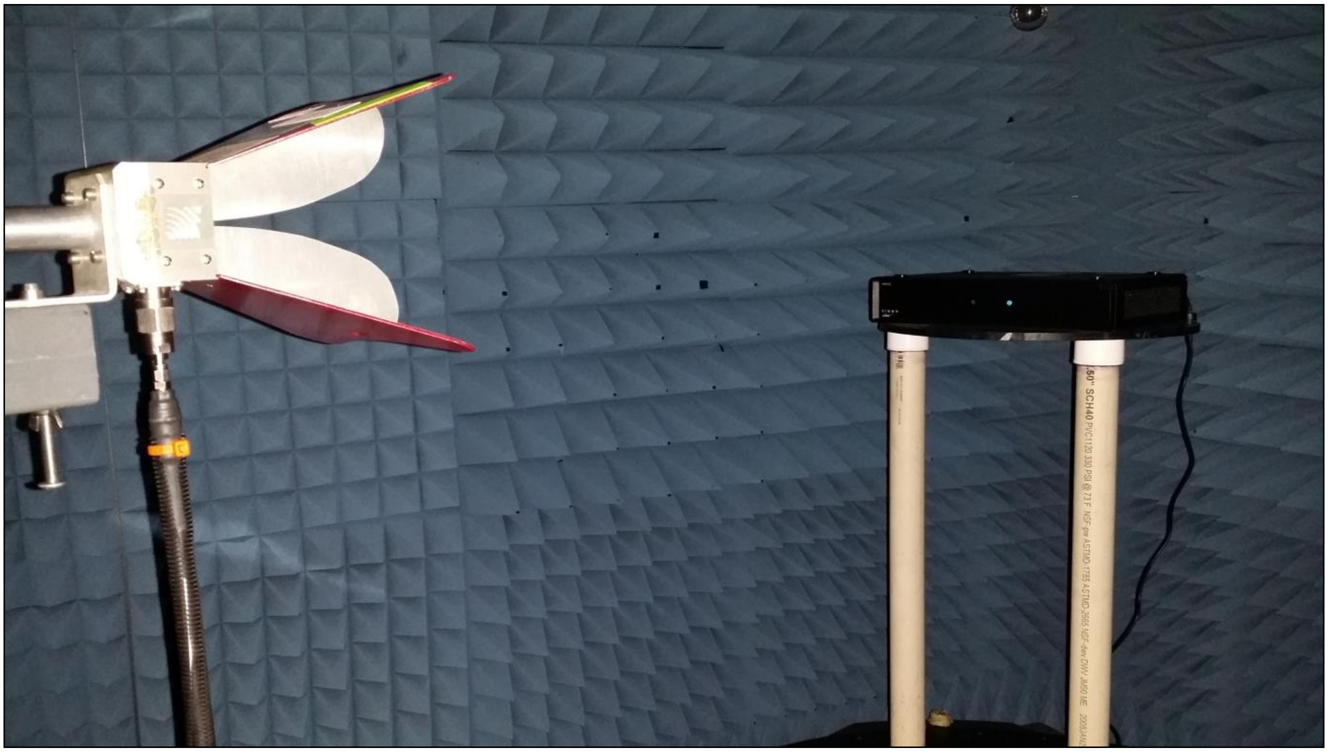
Plot 337. Band Edge, 802.11n 40 MHz, Channel 100, SISO



Plot 338. Band Edge, 802.11n 40 MHz, Channel 108, SISO



Plot 339. Band Edge, 802.11n 40 MHz, Channel 132, SISO



Photograph 2. Spurious Emissions, Test Setup

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(f) RF Exposure

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

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

The limit for maximum RF exposure for 5GHz device is 1mW/cm^2

The formula for calculating RF exposure is given as $S = \frac{PG}{4\pi R^2}$

Output Power = 23.93 dBm

Antenna Gain = 9.9 dBi

Power density is equal to 0.481mW/cm^2.

At a distance of 20 cm.

IV. DFS Requirements and Radar Waveform Description & Calibration

A. DFS Requirements

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
Uniform Spreading	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 20. Applicability of DFS Requirements Prior to Use of a Channel

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 21. Applicability of DFS Requirements During Normal Operation

Maximum Transmit Power	Value
≥ 200 milliwatt	-64 dBm
< 200 milliwatt	-62 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna **Note 2:** Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.	

Table 22. DFS Detection Thresholds for Master or Client Devices Incorporating DFS

<table>
<tr><th>Parameter</th><th>Value</th></tr>
<tr><td>Non-occupancy period</td><td>Minimum 30 minutes</td></tr>
<tr><td>Channel Availability Check Time</td><td>60 seconds</td></tr>
<tr><td>Channel Move Time</td><td>10 seconds See Note 1</td></tr>
<tr><td>Channel Closing Transmission Time</td><td>200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2</td></tr>
<tr><td>U-NII Detection Bandwidth</td><td>Minimum 80% of the 99% power bandwidth. See Note 3.</td></tr>
<tr><td colspan="2">Note 1: The instant that the Channel Move Time and the Channel Closing Transmission Time begins is as follows:
• For the Short pulse radar Test Signals this instant is the end of the Burst.
• For the Frequency Hopping radar Test Signal, this instant is the end of the last radar Burst generated.
• For the Long Pulse radar Test Signal this instant is the end of the 12 second period defining the radar transmission.
Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required facilitating Channel changes (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.
Note 3: During the U-NII Detection Bandwidth detection test, radar type 1 is used and for each frequency step the minimum percentage of detection is 90%. Measurements are performed with no data traffic.</td></tr>
</table>

Table 23. DFS Response Requirement Values

B. Radar Test Waveforms

This section provides the parameters for required test waveforms, minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (µsec)	PRI (µsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Trials
1	1	1428	18	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

A minimum of 30 unique waveforms are required for each of the short pulse radar types 2 through 4. For short pulse radar type 1, the same waveform is used a minimum of 30 times. If more than 30 waveforms are used for short pulse radar types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. The aggregate is the average of the percentage of successful detections of short pulse radar types 1-4.

Long Pulse Radar Test Waveform

Radar Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Number of Pulses per Bursts	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the Long Pulse radar test signal. If more than 30 waveforms are used for the Long Pulse radar test signal, then each additional waveform must also be unique and not repeated from the previous waveforms.

Each waveform is defined as follows:

1) The transmission period for the Long Pulse Radar test signal is 12 seconds.
2) There are a total of 8 to 20 Bursts in the 12 second period, with the number of Bursts being randomly chosen. This number is Burst_Count.
3) Each Burst consists of 1 to 3 pulses, with the number of pulses being randomly chosen. Each Burst within the 12 second sequence may have a different number of pulses.
4) The pulse width is between 50 and 100 microseconds, with the pulse width being randomly chosen. Each pulse within a Burst will have the same pulse width. Pulses in different Bursts may have different pulse widths.
5) Each pulse has a linear FM chirp between 5 and 20 MHz, with the chirp width being randomly chosen. Each pulse within a Burst will have the same chirp width. Pulses in different Bursts may have different chirp widths. The chirp is centered on the pulse. For example, with radar frequency of 5300 MHz and a 20 MHz chirped signal, the chirp starts at 5290 MHz and ends at 5310 MHz.
6) If more than one pulse is present in a Burst, the time between the pulses will be between 1000 and 2000 microseconds, with the time being randomly chosen. If three pulses are present in a Burst, the time between the first and second pulses is chosen independently of the time between the second and third pulses.
7) The 12 second transmission period is divided into even intervals. The number of intervals is equal to Burst_Count. Each interval is of length (12,000,000 / Burst_Count) microseconds. Each interval contains one Burst. The start time for the Burst, relative to the beginning of the interval, is between 1 and [(12,000,000 / Burst_Count) – (Total Burst Length) + (One Random PRI Interval)] microseconds, with the start time being randomly chosen. The step interval for the start time is 1 microsecond. The start time for each Burst is chosen independently.

A representative example of a Long Pulse radar test waveform:

1) The total test signal length is 12 seconds.
2) 8 Bursts are randomly generated for the Burst_Count.
3) Burst 1 has 2 randomly generated pulses.
4) The pulse width (for both pulses) is randomly selected to be 75 microseconds.
5) The PRI is randomly selected to be at 1213 microseconds.
6) Bursts 2 through 8 are generated using steps 3 – 5.
7) Each Burst is contained in even intervals of 1,500,000 microseconds. The starting location for Pulse 1, Burst 1 is randomly generated (1 to 1,500,000 minus the total Burst 1 length + 1 random PRI interval) at the 325,001 microsecond step. Bursts 2 through 8 randomly fall in successive 1,500,000 microsecond intervals (i.e. Burst 2 falls in the 1,500,001 – 3,000,000 microsecond range).

Graphical Representation of a Long Pulse radar Test Waveform

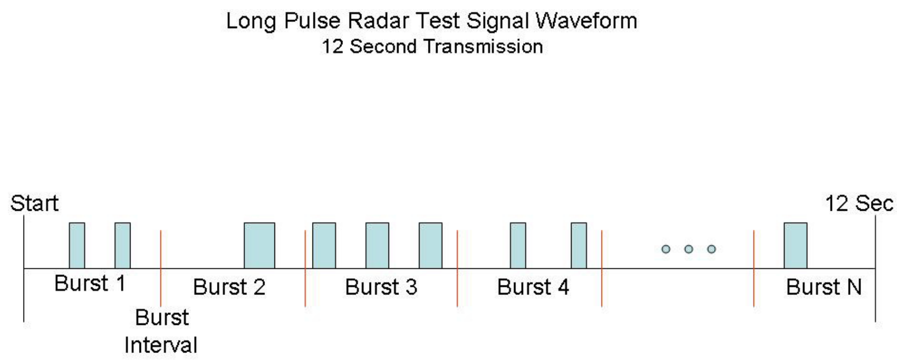


Figure 4. Long Pulse Radar Test Signal Waveform

Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (μsec)	PRI (μsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	.333	300	70%	30

For the Frequency Hopping Radar Type, the same *Burst* parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected1 from the hopping sequence defined by the following algorithm:

The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250 – 5724 MHz. Next, the frequency that was just chosen is removed from the group and a frequency is randomly selected from the remaining 474 frequencies in the group. This process continues until all 475 frequencies are chosen for the set. For selection of a random frequency, the frequencies remaining within the group are always treated as equally likely.

C. Radar Waveform Calibration

The following equipment setup was used to calibrate the radiated Radar Waveform. A spectrum analyzer was used to establish the test signal level for each radar type. During this process there were no transmissions by either the Master or Client Device. The spectrum analyzer was switched to the zero span (Time Domain) mode at the frequency of the Radar Waveform generator. Peak detection was utilized. The spectrum analyzer's resolution bandwidth (RBW) was set to 3 MHz and the video bandwidth (VBW) was set to 3 MHz. The calibration setup is diagrammed in Figure 5, and the radar test signal generator is shown in Photograph 3.

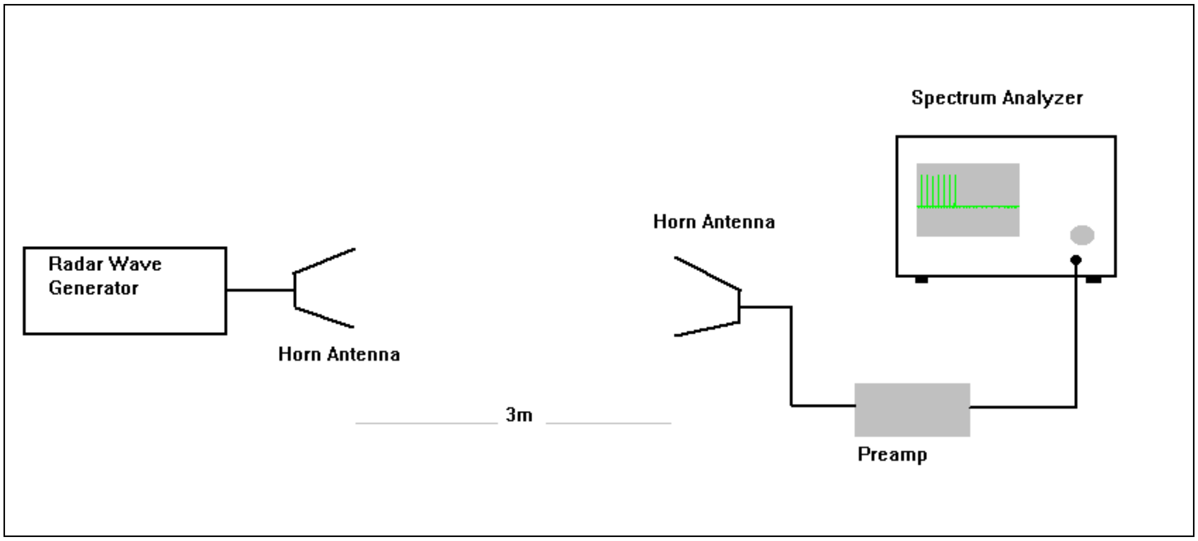
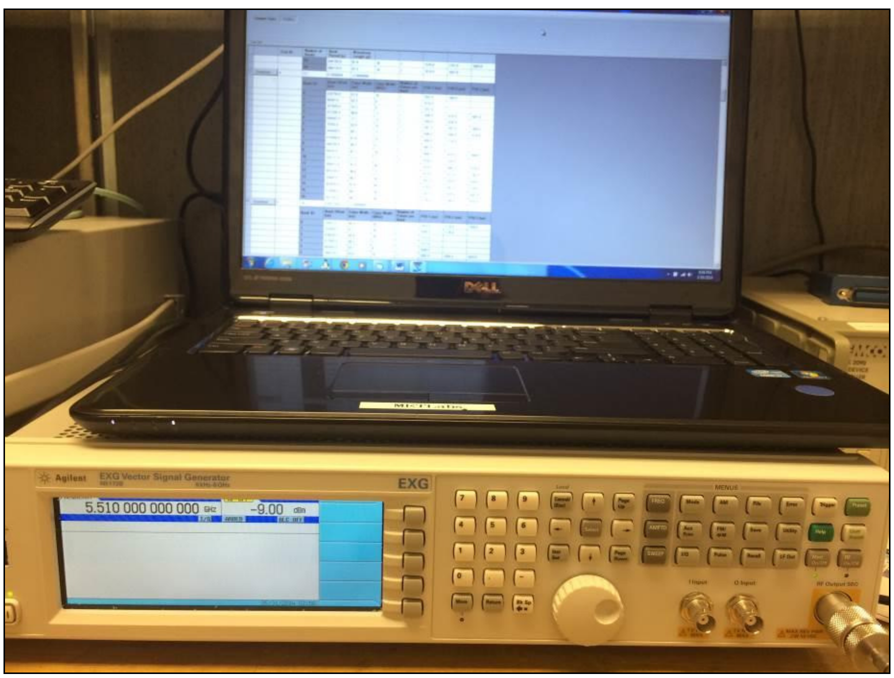
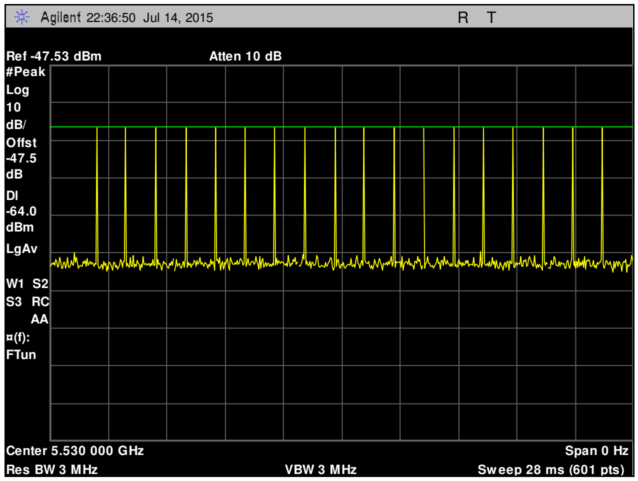


Figure 5. Calibration Test setup

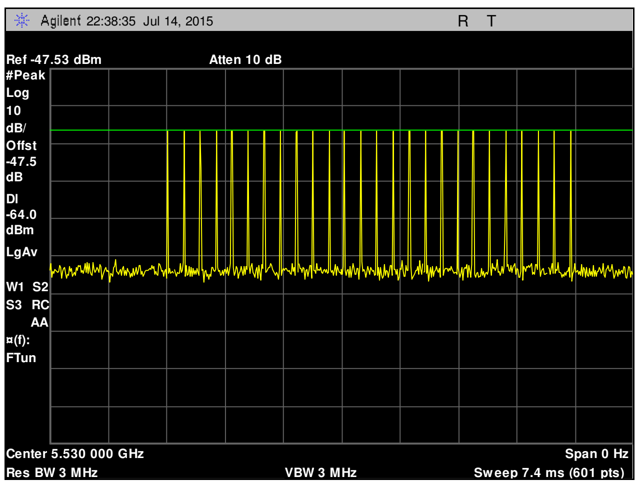


Photograph 3. DFS Radar Test Signal Generator

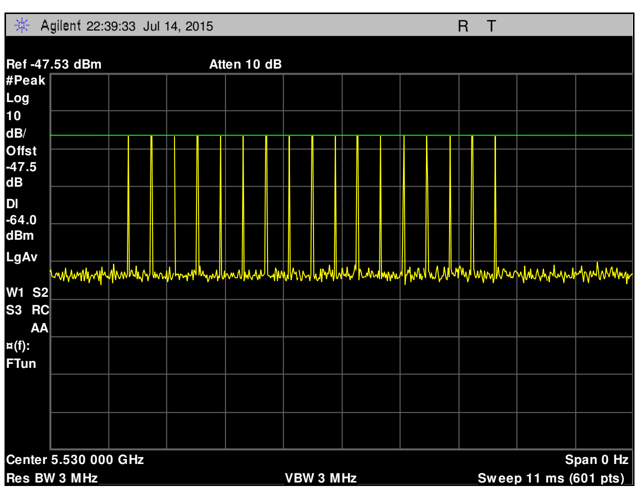
Radar Waveform Calibration



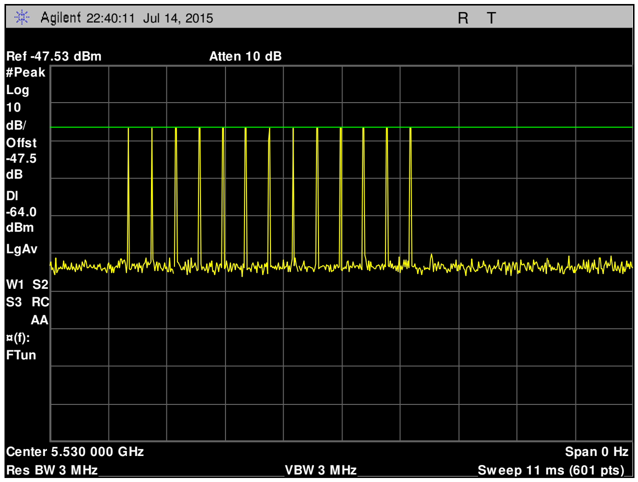
Plot 340. Calibration, Type 0



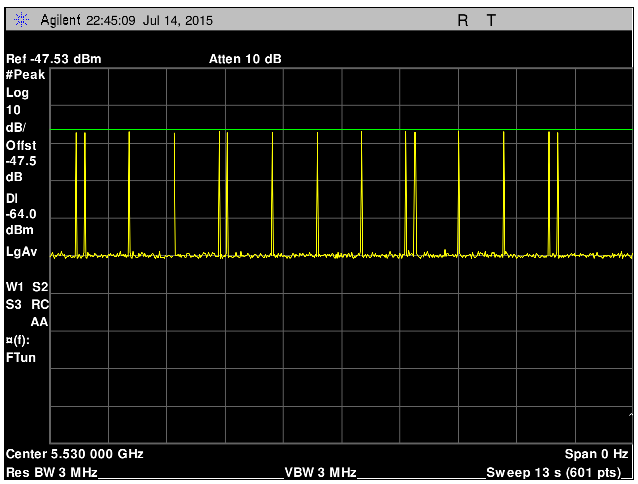
Plot 341. Calibration, Type 2



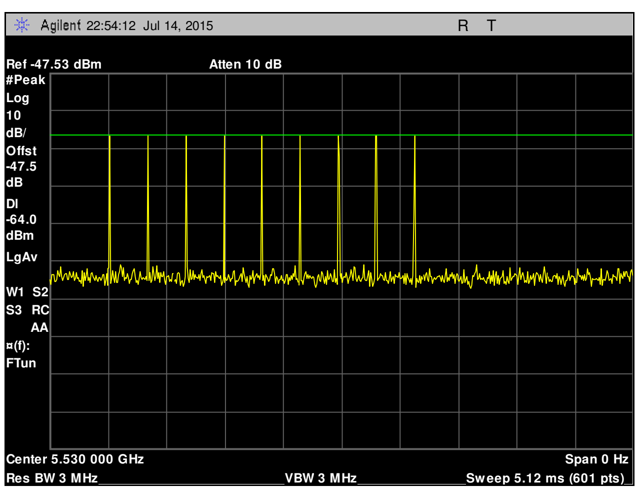
Plot 342. Calibration, Type 3



Plot 343. Calibration, Type 4



Plot 344. Calibration, Type 5



Plot 345. Calibration, Type 6

V. DFS Test Procedure and Test Results

A. DFS Test Setup

1. A spectrum analyzer is used as a monitor to verify that the Unit Under Test (UUT) has vacated the Channel within the Channel Closing Transmission Time and Channel Move Time, and does not transmit on a Channel during the Non-Occupancy Period after the detection and subsequent Channel move. It is also used to monitor UUT transmissions during the Channel Availability Check Time.
2. The test setup, which consists of test equipment and equipment under test (EUT), is diagrammed in Figure 6 and pictured in Photograph 4.

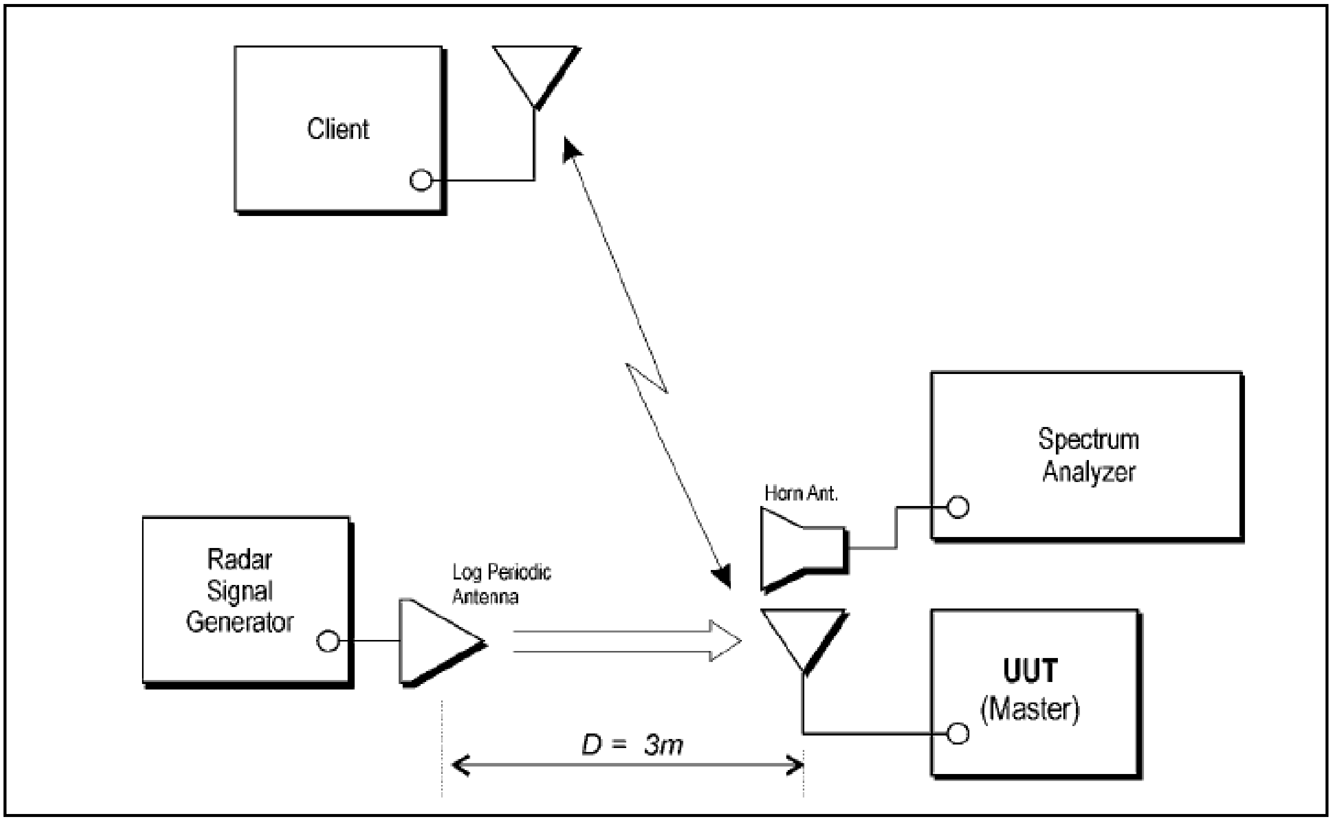
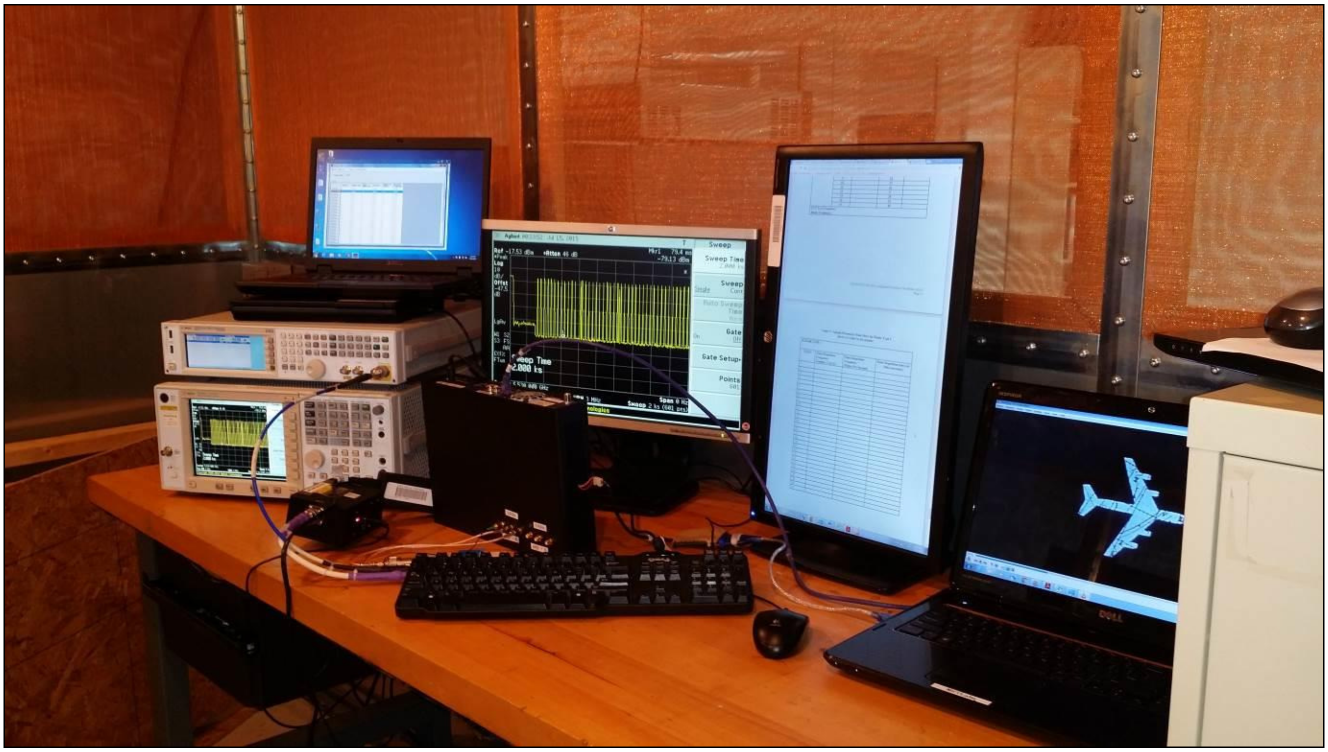


Figure 6. Test Setup Diagram



Photograph 4. DFS, Test Setup

B. EUT Information

1. Operating Frequency Range: 5260 MHz – 5320 MHz 5500 MHz – 5700 MHz
2. Modes of Operation: Master Device
3. List all antennas and associated gains: See Antenna Datasheet
4. List output power ranges: 13.68 / 24.39 dBm
5. List antenna impedance: 50 Ohms
6. Antenna gain verification: See Antenna Datasheet
7. State test file that is transmitted: 6.5half magical hours
8. TCP description: Radios when receiving signal is greater than -30dBm and the highest modulation is unable to be maintained will cause the transmitter of the radio to back the power down by 1dB increments as much as 6dB total to maintain the TPC requirement.
9. Time for master to complete its power-on-cycle:See dataSheet
10. Describe EUT's uniform channel spreading: The manufacturer provided special software that over-rode the non-occupancy mechanism (allowing return to the same channel) for the purposes of determining the probability of detection. The streamed file was the "FCC" test file as required by FCC Part 15 Subpart E. During the in-service monitoring detection probability and channel moving tests the system was configured with a streaming video file. The radio also provided sudo random data to simulate uniform traffic loading along with the "FCC" test file.

C. UNII Detection Bandwidth

Test Requirement(s): **§ 15.407** A minimum 100% detection rate is required across an EUT's 99% bandwidth.

Test Procedure: All UNII channels for this device have identical channel bandwidths.

A single burst of the short pulse radar type 1 is produced at 5530 MHz, 5550MHz, and 5580MHz. at the -63dBm test level. The UUT is set up as a standalone device (no associated client, and no data traffic).

A single radar burst is generated for a minimum of 10 trials, and the response of the UUT is recorded. The UUT must detect the radar waveform 90% or more of the time.

The radar frequency is increased in 1 MHz steps, repeating the above test sequence, until the detection rate falls below 90%. The highest frequency at which detection is greater than or equal to 90% is denoted F_H.

The radar frequency is decreased in 1 MHz steps, repeating the above test sequence, until the detection rate falls below 90%. The lowest frequency at which detection is greater than or equal to 90% is denoted F_L.

The U-NII Detection Bandwidth is calculated as follows:

U-NII Detection Bandwidth = $F_H – F_L$

Test Engineer: Surinder Singh

Test Date: 08/13/15

UNII Detection Bandwidth – Test Results

EUT Frequency- 5500MHz											
	DFS Detection Trials (1=Detection, 0= No Detection)										
Radar Frequency (MHz)	1	2	3	4	5	6	7	8	9	10	Detection Rate (%)
5491.2	1	1	1	1	1	1	1	1	1	1	100
5595	1	1	1	1	1	1	1	1	1	1	100
5500	1	1	1	1	1	1	1	1	1	1	100
5505	1	1	1	1	1	1	1	1	1	1	100
5508.8	1	1	1	1	1	1	1	1	1	1	100
Detection Bandwidth = f_h - f_l = 5510 – 5490.5 = 17.6MHz											
OBW* 100% = 17.15 MHz											
Type 0											

Table 24. UNII Detection Bandwidth, Test Results, 20 MHz

EUT Frequency- 5510MHz											
	DFS Detection Trials (1=Detection, 0= No Detection)										
Radar Frequency (MHz)	1	2	3	4	5	6	7	8	9	10	Detection Rate (%)
5528.5	1	1	1	1	1	1	1	1	1	1	100
5528	1	1	1	1	1	1	1	1	1	1	100
5527	1	1	1	1	1	1	1	1	1	1	100
5526	1	1	1	1	1	1	1	1	1	1	100
5525	1	1	1	1	1	1	1	1	1	1	100
5520	1	1	1	1	1	1	1	1	1	1	100
5515	1	1	1	1	1	1	1	1	1	1	100
5510	1	1	1	1	1	1	1	1	1	1	100
5505	1	1	1	1	1	1	1	1	1	1	100
5500	1	1	1	1	1	1	1	1	1	1	100
5495	1	1	1	1	1	1	1	1	1	1	100
5494	1	1	1	1	1	1	1	1	1	1	100
5493	1	1	1	1	1	1	1	1	1	1	100
5492	1	1	1	1	1	1	1	1	1	1	100
5491.5	1	1	1	1	1	1	1	1	1	1	100
Detection Bandwidth = f_h - f_l = 5528.5 – 5491.5 = 37MHz											
OBW* 100% = 36.27 MHz											
Type 0											

Table 25. UNII Detection Bandwidth, Test Results, 40 MHz

EUT Frequency- 5530MHz											
	DFS Detection Trials (1=Detection, 0= No Detection)										
Radar Frequency (MHz)	1	2	3	4	5	6	7	8	9	10	Detection Rate (%)
5569	1	1	1	1	1	1	1	1	1	1	100
5565	1	1	1	1	1	1	1	1	1	1	100
5560	1	1	1	1	1	1	1	1	1	1	100
5555	1	1	1	1	1	1	1	1	1	1	100
5550	1	1	1	1	1	1	1	1	1	1	100
5545	1	1	1	1	1	1	1	1	1	1	100
5540	1	1	1	1	1	1	1	1	1	1	100
5535	1	1	1	1	1	1	1	1	1	1	100
5530	1	1	1	1	1	1	1	1	1	1	100
5525	1	1	1	1	1	1	1	1	1	1	100
5520	1	1	1	1	1	1	1	1	1	1	100
5515	1	1	1	1	1	1	1	1	1	1	100
5510	1	1	1	1	1	1	1	1	1	1	100
5505	1	1	1	1	1	1	1	1	1	1	100
5500	1	1	1	1	1	1	1	1	1	1	100
5495	1	1	1	1	1	1	1	1	1	1	100
5492	1	1	1	1	1	1	1	1	1	1	100
Detection Bandwidth = f_h - f_l = 5569 – 5492= 77 MHz											
OBW* 100% = 75.56 MHz											
Type 0											

Table 26. UNII Detection Bandwidth, Test Results, 80 MHz

D. Initial Channel Availability Check Time

Test Requirements: **§ 15.407** The Initial Channel Availability Check Time tests that the UUT does not emit beacon, control, or data signals on the test channel until the power-up sequence has been completed and the U-NII device has checked for radar waveforms, for one minute, on the test channel. This test does not use any of the radar waveforms and only needs to be performed once.

The UUT should not make any transmissions over the test channel, for at least 1 minute after completion of its power-on cycle.

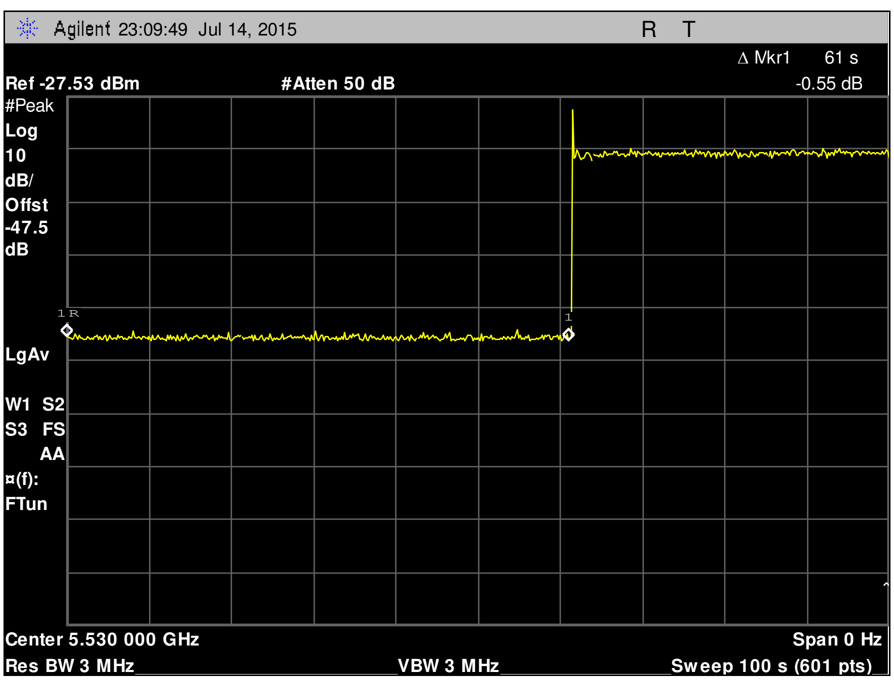
Test Procedure: The U-NII device is powered on and instructed to operate at 5530 MHz. At the same time the UUT is powered on, the spectrum analyzer is set to 5530MHz with a zero span and a 100 seconds sweep time. The analyzer is triggered at the same time power is applied to the U-NII device.

Test Results: Marker 1R on Plot 346 indicate the start of the channel availability check time. Initial beacon/data transmission is indicated by marker 1.

The Equipment was compliant with § 15.407 Initial Channel Availability Check Time.

Test Engineer: Surinder Singh

Test Date: 04/23/15



Plot 346. Initial Channel Availability Check Time

E. Radar Burst at the Beginning of Channel Availability Check Time

Test Requirements: **§ 15.407** A Radar Burst at the Beginning of the Channel Availability Check Time tests that the UUT does not emit beacon, control, or data signals on the test Channel if it has detected a radar burst during that time period until the power-up sequence has been completed and the U-NII device checks for Radar Waveforms for one minute on the test Channel. The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB (-63dBm) occurs at the beginning of the Channel Availability Check Time.

Test Procedure: The UUT is powered on at T0. T1 denotes the instant when the UUT has completed its power-up sequence. The Channel Availability Check Time commences at instant T1 and will end no sooner than T1 + 60 seconds.

A single Burst of short pulse radar type 1, at -63 dBm, will commence within a 6 second window starting at T1.

Visual indication of the UUT of successful detection of the radar Burst will be recorded and reported. Observation of transmission at 5530MHz will continue for 100 seconds after the radar Burst has been generated.

Verify that during the 2.5 minute measurement window, no UUT transmissions occur at 5530MHz.

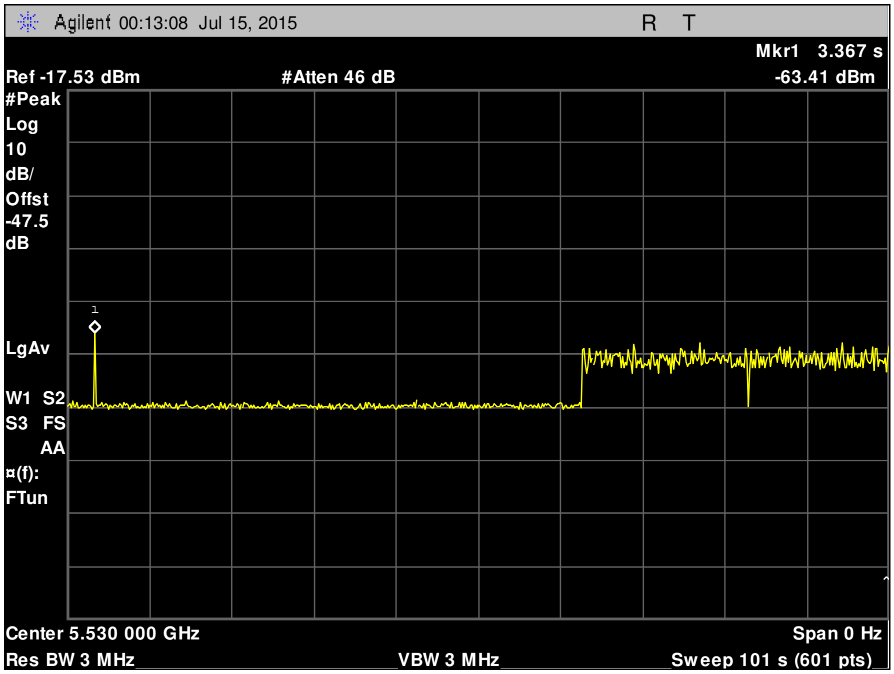
Test Results Plot 347 below indicates that there were no UUT transmissions during the 100 seconds measurement window when a radar burst was injected 6 seconds into the CACT. Therefore, the UUT detected the presence of a radar during the CACT and moved away from that channel.

The equipment was compliant with § 15.407 Radar Burst at the Beginning of the Channel Availability Check Time.

Test Engineer: Surinder Singh

Test Date: 08/13/15

Radar Burst at the Beginning of Channel Availability Check Time – Plot



Plot 347. Radar Burst at the Beginning of CACT

F. Radar Burst at the End of Channel Availability Check Time

Test Requirements: **§ 15.407** A Radar Burst at the End of the Channel Availability Check Time tests that the UUT does not emit beacon, control, or data signals on the test Channel if it has detected a radar burst during that time period until the power-up sequence has been completed and the U-NII device checks for Radar Waveforms for one minute on the test Channel. The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB (-63dBm) occurs at the end of the Channel Availability Check Time.

Test Procedure: The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB (-63dBm) occurs at the end of the Channel Availability Check Time.

The UUT is powered on at T0. T1 denotes the instant when the UUT has completed its power-up sequence. The Channel Availability Check Time commences at instant T1 and will end no sooner than T1 + 60 seconds.

A single Burst of short pulse of radar type 1 at -63 dBm will commence within a 6 second window starting at T1+ 54 seconds.

Visual indication on the UUT of successful detection of the radar Burst will be recorded and reported. Observation of emissions at 5530MHz will continue for 100 seconds after the radar Burst has been generated.

Verify that during the 2.5 minute measurement window no UUT transmissions occurred at 5530MHz.

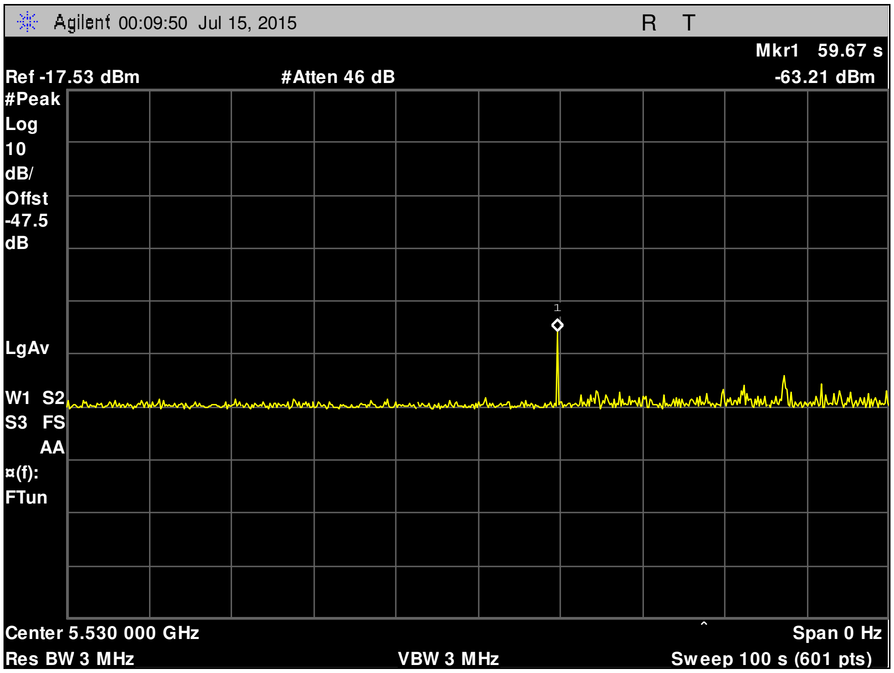
Test Results: Plot 348 indicates that no UUT transmissions occurred during the 100 seconds measurement window when a radar burst was injected 6 seconds before the end of the CACT. Therefore, the UUT detected the presence of a radar and moved away from that channel.

The equipment was compliant with § 15.407 Radar Burst at the End of the Channel Availability Check Time.

Test Engineer: Surinder Singh

Test Date: 08/13/15

Radar Burst at the End of Channel Availability Check Time – Plot



Plot 348. Radar Burst at the End of CACT

G. In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time, and Non-Occupancy Period

Test Requirements: **§ 15.407** (Refer to DFS Response Requirement Values table in section III-A of this report.) The UUT shall continuously monitor for radar transmissions in the operating test channel. When a radar burst occurs in the test channel, it has 10 seconds to move to another channel. This 10 second window is termed Channel Move Time (CMT).

When a radar burst occurs, the UUT has 200 milliseconds, plus an aggregate of 60 milliseconds over remaining 10 second period, to cease transmission in the operating test channel. This 200 ms + 60 ms over remaining 10 second period requirement is termed Channel Closing Transmission Time (CCT).

After radar burst and subsequent move to another channel, the UUT shall not resume transmission, on the channel it moved from, for a period of 30 minutes. This requirement is termed Non-Occupancy Period (NOP).

Test Procedure: These tests define how the following DFS parameters are verified during In-Service Monitoring: Channel Closing Transmission Time, Channel Move Time, and Non-Occupancy Period.

The steps below define the procedure to determine the above mentioned parameters when a radar Burst with a level equal to the DFS Detection Threshold + 1dB (-63dBm) is generated on the Operating Channel of the U-NII device.

A U-NII device operating as a Client Device will associate with the UUT (Master) at 5530 MHz. Stream the MPEG test file from the Master Device to the Client Device on the selected Channel for the entire period of the test.

At time T0 the Radar Waveform generator sends a Burst of pulses for each of the radar types at -63dBm.

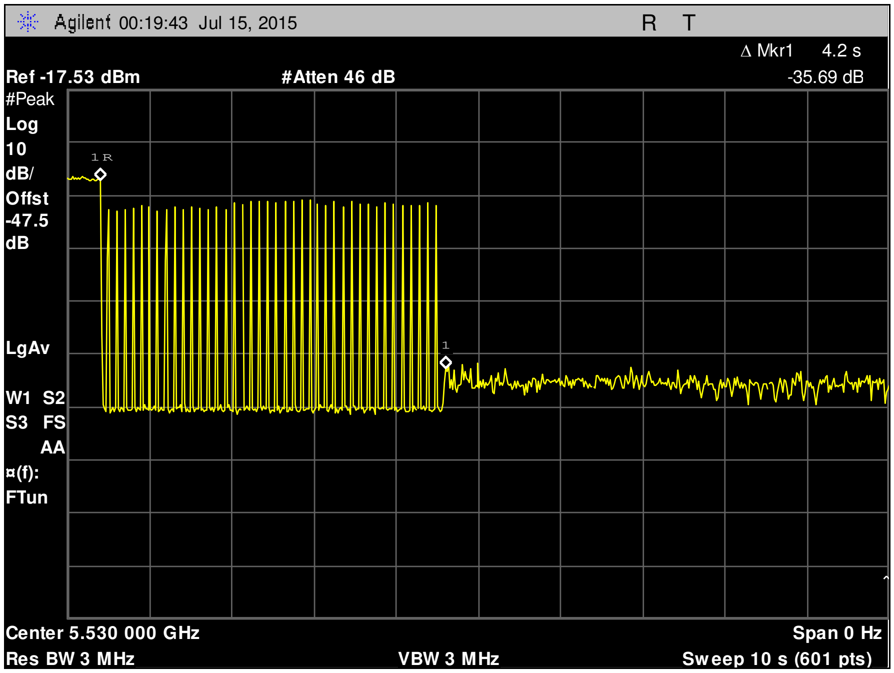
Observe the transmissions of the UUT at the end of the radar Burst on the Operating Channel for duration greater than 10 seconds. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). Compare the Channel Move Time and Channel Closing Transmission Time results to the limits defined in the *DFS Response Requirement Values table*.

Test Results: The EUT was compliant with § 15.407 In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time, and Non-Occupancy Period.

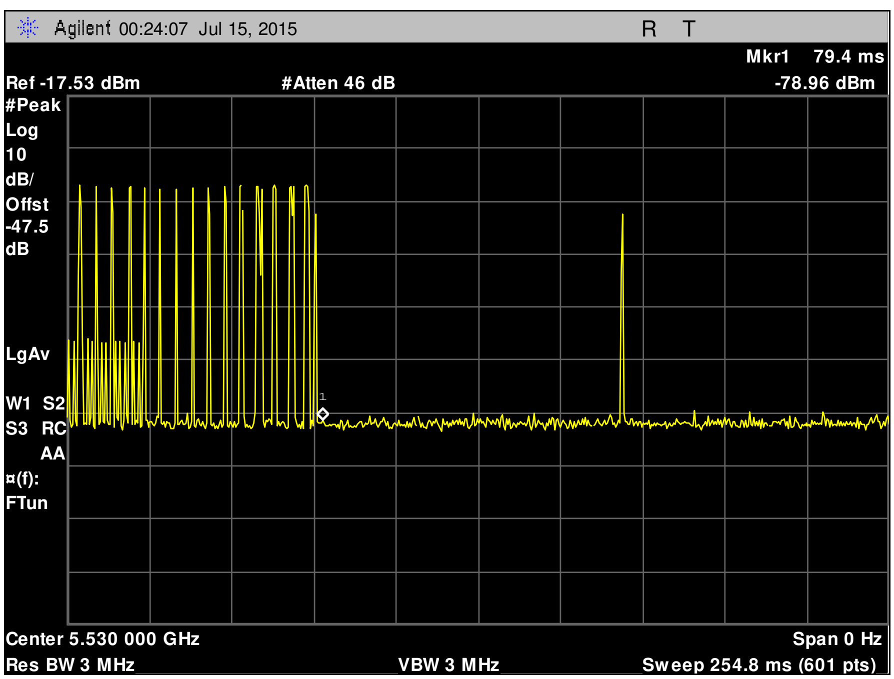
Test Engineer: Surinder Singh

Test Date: 07/16/15

Channel Move Time – Plots

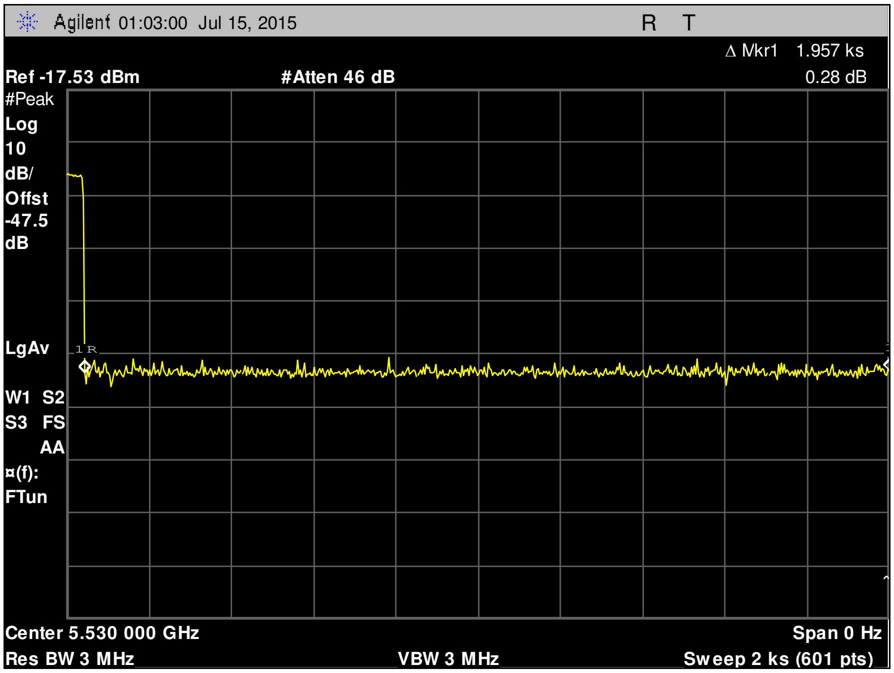


Plot 349. Channel Move Time



Plot 350. Channel Closing Transmission Time

Non-Occupancy Period – Plot



Plot 351. Non-Occupancy Period

H. Statistical Performance Check

Test Requirements: **§ 15.407** During In-Service Monitoring, the EUT requires a minimum percentage of successful radar detections from all required radar waveforms at a level equal to the DFS Detection Threshold + 1dB.

Test Procedure: Stream the MPEG test file from the Master Device to the Client Device on the selected Channel for the entire period of the test. The Radar Waveform generator sends the individual waveform for each of the radar types 1-6 at -63dbm. Statistical data is gathered to determine the ability of the device to detect the radar test waveforms. The device can utilize a test mode to demonstrate when detection occurs to prevent the need to reset the device between trial runs. The percentage of successful detection is calculated by:

$$\frac{TotalWaveformDetections}{TotalWaveformTrials} \times 100$$

The Minimum number of trails, minimum percentage of successful detection and the average minimum percentage of successful detection are found in the Radar Test Waveforms section.

Test Results: The equipment was compliant with § 15.407 Statistical Performance Check.

Test Engineer: Surinder Singh

Test Date: 08/21/15

Statistical Performance Check – Radar Type 0, 20 MHz

Radar Type	Trial #	Pulses per Burst	Pulse Width (µsec)	PRI (µsec)	Detection 1 = Yes, 0 = No
0	0	18	1	1428	1
	1	18	1	1428	1
	2	18	1	1428	1
	3	18	1	1428	1
	4	18	1	1428	1
	5	18	1	1428	1
	6	18	1	1428	1
	7	18	1	1428	1
	8	18	1	1428	1
	9	18	1	1428	1
	10	18	1	1428	1
	11	18	1	1428	1
	12	18	1	1428	1
	13	18	1	1428	1
	14	18	1	1428	1
	15	18	1	1428	1
	16	18	1	1428	1
	17	18	1	1428	1
	18	18	1	1428	1
	19	18	1	1428	1
	20	18	1	1428	1
	21	18	1	1428	1
	22	18	1	1428	1
	23	18	1	1428	1
	24	18	1	1428	1
	25	18	1	1428	1
	26	18	1	1428	1
	27	18	1	1428	1
	28	18	1	1428	1
	29	18	1	1428	1
	Detection Percentage				**100% (> 60%)**

Table 27. Statistical Performance Check – Radar Type 0, 20 MHz

Statistical Performance Check – Radar Type 1, 20 MHz

Radar Type	Trial #	Pulses per Burst	Pulse Width (µsec)	PRI (µsec)	Detection
					1 = Yes, 0 = No
1	0	76	1	698	1
	1	70	1	758	1
	2	57	1	938	1
	3	61	1	878	1
	4	59	1	898	1
	5	83	1	638	1
	6	86	1	618	1
	7	92	1	578	1
	8	65	1	818	1
	9	99	1	538	1
	10	95	1	558	1
	11	81	1	658	1
	12	67	1	798	1
	13	74	1	718	1
	14	72	1	738	1
	15	53	1	1002	1
	16	34	1	1587	1
	17	25	1	2161	1
	18	18	1	2996	1
	19	29	1	1850	1
	20	73	1	733	1
	21	33	1	1608	1
	22	23	1	2309	1
	23	27	1	1980	1
	24	28	1	1952	1
	25	33	1	1645	1
	26	23	1	2324	1
	27	84	1	630	1
	28	42	1	1269	1
	29	41	1	1298	1
	Detection Percentage				100% (> 60%)

Table 28. Statistical Performance Check – Radar Type 1, 20 MHz

Statistical Performance Check – Radar Type 2, 20 MHz

Radar Type	Trial #	Pulse Width 1 to 5 µsec	PRI 150 to 230 µsec	Pulses per Burst 23 to 29	Detection 1 = Yes, 0 = No
2	0	3.2	179	26	1
	1	1.1	207	23	1
	2	2.1	230	24	1
	3	4.8	200	29	1
	4	3.9	214	28	1
	5	2.9	222	26	1
	6	3.2	204	26	1
	7	2.5	192	25	1
	8	3.1	164	26	1
	9	1.2	156	23	1
	10	3.9	210	27	1
	11	4.6	201	29	1
	12	3.2	162	26	1
	13	2.2	197	25	1
	14	4.5	163	29	1
	15	3	203	26	1
	16	5	168	29	1
	17	2.4	217	25	1
	18	2.9	191	26	1
	19	2.3	166	25	1
	20	3.7	150	27	1
	21	2.2	176	25	1
	22	4.9	195	29	1
	23	2.9	202	26	1
	24	2.5	178	25	1
	25	1.1	206	23	1
	26	3.8	155	27	1
	27	4.7	157	29	1
	28	2.4	224	25	1
	29	4.2	159	28	1
	Detection Percentage				**100% (> 60%)**

Table 29. Statistical Performance Check – Radar Type 2, 20 MHz

Statistical Performance Check – Radar Type 3, 20 MHz

Radar Type	Trial #	Pulses per Burst	Pulse Width 6 to 10 µsec	PRI (µsec) PRI 200 to 500 µsec	Detection 1 = Yes, 0 = No
3	17	17	8.2	355	1
	16	16	6.1	487	1
	16	16	7.1	344	1
	18	18	9.8	288	1
	18	18	8.9	230	1
	17	17	7.9	432	1
	17	17	8.2	207	1
	17	17	7.5	443	1
	17	17	8.1	439	1
	16	16	6.2	223	1
	18	18	8.9	208	1
	18	18	9.6	463	1
	17	17	8.2	441	1
	16	16	7.2	323	1
	18	18	9.5	297	1
	17	17	8	412	1
	18	18	10	324	1
	17	17	7.4	271	1
	17	17	7.9	349	1
	16	16	7.3	409	1
	18	18	8.7	373	1
	16	16	7.2	254	1
	18	18	9.9	274	1
	17	17	7.9	278	1
	17	17	7.5	317	1
	16	16	6.1	260	1
	18	18	8.8	211	1
	18	18	9.7	272	1
	17	17	7.4	264	1
	18	18	9.2	284	1
	Detection Percentage				100% (> 60%)

Table 30. Statistical Performance Check – Radar Type 3, 20 MHz

Statistical Performance Check – Radar Type 4, 20 MHz

Radar Type	Trial #	Pulses per Burst	Pulse Width 11 to 20 µsec	PRI (µsec) PRI 200 to 500 µsec	Detection 1 = Yes, 0 = No
4	0	14	16	355	1
	1	12	11.3	487	1
	2	13	13.5	344	1
	3	16	19.4	288	1
	4	15	17.5	230	1
	5	14	15.3	432	1
	6	14	15.9	207	1
	7	13	14.3	443	1
	8	14	15.8	439	1
	9	12	11.5	223	1
	10	15	17.4	208	1
	11	16	19	463	1
	12	14	16	441	1
	13	13	13.8	323	1
	14	16	18.9	297	1
	15	14	15.5	412	1
	16	16	19.9	324	1
	17	13	14.1	271	1
	18	14	15.2	349	1
	19	13	13.8	409	1
	20	15	17.1	373	1
	21	13	13.8	254	1
	22	16	19.8	274	1
	23	14	15.3	278	1
	24	13	14.5	317	1
	25	12	11.3	260	1
	26	15	17.3	211	1
	27	16	19.2	272	1
	28	13	14.2	264	1
	29	15	18.2	284	1
	Detection Percentage				100% (> 60%)

Table 31. Statistical Performance Check – Radar Type 4, 20 MHz

Statistical Performance Check – Radar Type 5, 20 MHz

Radar Type	Trial #	Pulses per Burst 8 to20	Pulse Width 50 to 100 µsec	PRI (µsec) PRI 1000 to 2000 µsec	Detection 1 = Yes, 0 = No
5	0	See table 1	See table 1	See table 1	1
	1	See table 2	See table 2	See table 2	1
	2	See table 3	See table 3	See table 3	1
	3	See table 4	See table 4	See table 4	1
	4	See table 5	See table 5	See table 5	1
	5	See table 6	See table 6	See table 6	1
	6	See table 7	See table 7	See table 7	1
	7	See table 8	See table 8	See table 8	1
	8	See table 9	See table 9	See table 9	1
	9	See table 10	See table 10	See table 10	1
	10	See table 11	See table 11	See table 11	1
	11	See table 12	See table 12	See table 12	1
	12	See table 13	See table 13	See table 13	1
	13	See table 14	See table 14	See table 14	1
	14	See table 15	See table 15	See table 15	1
	15	See table 16	See table 16	See table 16	1
	16	See table 17	See table 17	See table 17	1
	17	See table 18	See table 18	See table 18	1
	18	See table 19	See table 19	See table 19	1
	19	See table 20	See table 20	See table 20	1
	20	See table 21	See table 21	See table 21	1
	21	See table 22	See table 22	See table 22	1
	22	See table 23	See table 23	See table 23	1
	23	See table 24	See table 24	See table 24	1
	24	See table 25	See table 25	See table 25	1
	25	See table 26	See table 26	See table 26	1
	26	See table 27	See table 27	See table 27	1
	27	See table 28	See table 28	See table 28	1
	28	See table 29	See table 29	See table 29	1
	29	See table 30	See table 30	See table 30	1
	Detection Percentage				100% (> 60%)

Table 32. Statistical Performance Check – Radar Type 5, 20 MHz

See Appendix.

Statistical Performance Check – Radar Type 6, 20 MHz

Radar Type	Trial #	Frequency (MHz)	Pulses/Hop	Pulse Width (µsec)	PRI (µsec)	Detection 1 = Yes, 0 = No
6	0	5500	9	1	333	1
	1	5500	9	1	333	1
	2	5500	9	1	333	1
	3	5500	9	1	333	1
	4	5500	9	1	333	1
	5	5500	9	1	333	1
	6	5500	9	1	333	1
	7	5500	9	1	333	1
	8	5500	9	1	333	1
	9	5500	9	1	333	1
	10	5500	9	1	333	1
	11	5500	9	1	333	1
	12	5500	9	1	333	1
	13	5500	9	1	333	1
	14	5500	9	1	333	1
	15	5500	9	1	333	1
	16	5500	9	1	333	1
	17	5500	9	1	333	1
	18	5500	9	1	333	1
	19	5500	9	1	333	1
	20	5500	9	1	333	1
	21	5500	9	1	333	1
	22	5500	9	1	333	1
	23	5500	9	1	333	1
	24	5500	9	1	333	1
	25	5500	9	1	333	1
	26	5500	9	1	333	1
	27	5500	9	1	333	1
	28	5500	9	1	333	1
	29	5500	9	1	333	1
	Detection Percentage					100% (> 70%)

Table 33. Statistical Performance Check – Radar Type 6, 20 MHz

Statistical Performance Check – Radar Type 0, 40 MHz

Radar Type	Trial #	Pulses per Burst	Pulse Width (µsec)	PRI (µsec)	Detection 1 = Yes, 0 = No
0	0	18	1	1428	1
	1	18	1	1428	1
	2	18	1	1428	1
	3	18	1	1428	1
	4	18	1	1428	1
	5	18	1	1428	1
	6	18	1	1428	1
	7	18	1	1428	1
	8	18	1	1428	1
	9	18	1	1428	1
	10	18	1	1428	1
	11	18	1	1428	1
	12	18	1	1428	1
	13	18	1	1428	1
	14	18	1	1428	1
	15	18	1	1428	1
	16	18	1	1428	1
	17	18	1	1428	1
	18	18	1	1428	1
	19	18	1	1428	1
	20	18	1	1428	1
	21	18	1	1428	1
	22	18	1	1428	1
	23	18	1	1428	1
	24	18	1	1428	1
	25	18	1	1428	1
	26	18	1	1428	1
	27	18	1	1428	1
	28	18	1	1428	1
	29	18	1	1428	1
	Detection Percentage				100% (> 60%)

Table 34. Statistical Performance Check – Radar Type 0, 40 MHz

Statistical Performance Check – Radar Type 1, 40 MHz

Radar Type	Trial #	Pulses per Burst	Pulse Width (µsec)	PRI (µsec)	Detection 1 = Yes, 0 = No
1	0	1	1	678	0
	1	1	1	638	1
	2	1	1	3066	1
	3	1	1	938	1
	4	1	1	758	1
	5	1	1	798	1
	6	1	1	658	1
	7	1	1	858	1
	8	1	1	718	1
	9	1	1	918	1
	10	1	1	618	1
	11	1	1	778	1
	12	1	1	538	1
	13	1	1	598	1
	14	1	1	518	1
	15	1	1	1595	1
	16	1	1	894	1
	17	1	1	1651	1
	18	1	1	645	1
	19	1	1	2470	1
	20	1	1	1404	1
	21	1	1	2880	1
	22	1	1	1804	1
	23	1	1	2223	1
	24	1	1	2859	1
	25	1	1	580	1
	26	1	1	934	1
	27	1	1	2576	1
	28	1	1	1556	1
	29	1	1	833	1
	Detection Percentage				**100% (> 60%)**

Table 35. Statistical Performance Check – Radar Type 1, 40 MHz

Statistical Performance Check – Radar Type 2, 40 MHz

Radar Type	Trial #	Pulse Width 1 to 5 µsec	PRI 150 to 230 µsec	Pulses per Burst 23 to 29	Detection 1 = Yes, 0 = No
2	0	3.2	179	26	1
	1	1.1	207	23	1
	2	2.1	230	24	1
	3	4.8	200	29	1
	4	3.9	214	28	1
	5	2.9	222	26	1
	6	3.2	204	26	1
	7	2.5	192	25	1
	8	3.1	164	26	1
	9	3.2	179	23	1
	10	1.1	207	27	1
	11	2.1	230	29	1
	12	4.8	200	26	1
	13	3.9	214	25	1
	14	2.9	222	29	1
	15	3.2	204	26	1
	16	2.5	192	29	1
	17	3.1	164	25	1
	18	1.2	156	26	1
	19	3.9	210	25	1
	20	4.6	201	27	1
	21	3.2	162	25	1
	22	2.2	197	29	1
	23	4.5	163	26	1
	24	3	203	25	1
	25	5	168	23	1
	26	2.4	217	27	1
	27	2.9	191	29	1
	28	2.3	166	25	1
	29	3.7	150	28	1
	Detection Percentage				100% (> 60%)

Table 36. Statistical Performance Check – Radar Type 2, 40 MHz

Statistical Performance Check – Radar Type 3, 40 MHz

Radar Type	Trial #	Pulses per Burst	Pulse Width 6 to 10 µsec	PRI (µsec) PRI 200 to 500 µsec	Detection 1 = Yes, 0 = No
3	0	17	8.2	355	1
	1	16	6.1	487	1
	2	16	7.1	344	1
	3	18	9.8	288	1
	4	18	8.9	230	1
	5	17	7.9	432	1
	6	17	8.2	207	1
	7	17	7.5	443	1
	8	17	8.1	439	1
	9	16	6.2	223	1
	10	18	8.9	208	1
	11	18	9.6	463	1
	12	17	8.2	441	1
	13	16	7.2	323	1
	14	18	9.5	297	1
	15	17	8	412	1
	16	18	10	324	1
	17	17	7.4	271	1
	18	17	7.9	349	1
	19	16	7.3	409	1
	20	18	8.7	373	1
	21	16	7.2	254	1
	22	18	9.9	274	1
	23	17	7.9	278	1
	24	17	7.5	317	1
	25	16	6.1	260	1
	26	18	8.8	211	1
	27	18	9.7	272	1
	28	17	7.4	264	1
	29	18	9.2	284	1
	Detection Percentage				100% (> 60%)

Table 37. Statistical Performance Check – Radar Type 3, 40 MHz

Statistical Performance Check – Radar Type 4, 40 MHz

Radar Type	Trial #	Pulses per Burst	Pulse Width 11 to 20 µsec	PRI (µsec) PRI 200 to 500 µsec	Detection 1 = Yes, 0 = No
4	0	14	16	355	1
	1	12	11.3	487	1
	2	13	13.5	344	1
	3	16	19.4	288	1
	4	15	17.5	230	1
	5	14	15.3	432	1
	6	14	15.9	207	1
	7	13	14.3	443	1
	8	14	15.8	439	1
	9	12	11.5	223	1
	10	15	17.4	208	1
	11	16	19	463	1
	12	14	16	441	1
	13	13	13.8	323	1
	14	16	18.9	297	1
	15	14	15.5	412	1
	16	16	19.9	324	1
	17	13	14.1	271	1
	18	14	15.2	349	1
	19	13	13.8	409	1
	20	15	17.1	373	1
	21	13	13.8	254	1
	22	16	19.8	274	1
	23	14	15.3	278	1
	24	13	14.5	317	1
	25	12	11.3	260	1
	26	15	17.3	211	1
	27	16	19.2	272	1
	28	13	14.2	264	1
	29	15	18.2	284	1
	Detection Percentage				**100% (> 60%)**

Table 38. Statistical Performance Check – Radar Type 4, 40 MHz

Statistical Performance Check – Radar Type 5, 40 MHz

Radar Type	Trial #	Pulses per Burst 8 to20	Pulse Width 50 to 100 µsec	PRI (µsec) PRI 1000 to 2000 µsec	Detection 1 = Yes, 0 = No
5	0	15	See table 1	See table 1	1
	1	8	See table 2	See table 2	1
	2	11	See table 3	See table 3	1
	3	20	See table 4	See table 4	1
	4	17	See table 5	See table 5	1
	5	14	See table 6	See table 6	1
	6	15	See table 7	See table 7	1
	7	12	See table 8	See table 8	1
	8	14	See table 9	See table 9	1
	9	8	See table 10	See table 10	1
	10	17	See table 11	See table 11	1
	11	19	See table 12	See table 12	1
	12	15	See table 13	See table 13	1
	13	12	See table 14	See table 14	1
	14	19	See table 15	See table 15	1
	15	14	See table 16	See table 16	1
	16	20	See table 17	See table 17	1
	17	12	See table 18	See table 18	1
	18	14	See table 19	See table 19	1
	19	12	See table 20	See table 20	1
	20	16	See table 21	See table 21	1
	21	12	See table 22	See table 22	1
	22	20	See table 23	See table 23	1
	23	14	See table 24	See table 24	1
	24	13	See table 25	See table 25	1
	25	8	See table 26	See table 26	1
	26	17	See table 27	See table 27	1
	27	19	See table 28	See table 28	1
	28	12	See table 29	See table 29	1
	29	18	See table 30	See table 30	1
	Detection Percentage				100% (> 60%)

Table 39. Statistical Performance Check – Radar Type 5, 40 MHz

See Appendix.

Statistical Performance Check – Radar Type 6, 40 MHz

Radar Type	Trial #	Frequency (MHz)	Pulses/Hop	Pulse Width (µsec)	PRI (µsec)	Detection 1 = Yes, 0 = No
6	0	5550	9	1	333	1
	1	5550	9	1	333	1
	2	5550	9	1	333	1
	3	5550	9	1	333	1
	4	5550	9	1	333	1
	5	5550	9	1	333	1
	6	5550	9	1	333	1
	7	5550	9	1	333	1
	8	5550	9	1	333	1
	9	5550	9	1	333	1
	10	5550	9	1	333	1
	11	5550	9	1	333	1
	12	5550	9	1	333	1
	13	5550	9	1	333	1
	14	5550	9	1	333	1
	15	5550	9	1	333	1
	16	5550	9	1	333	1
	17	5550	9	1	333	1
	18	5550	9	1	333	1
	19	5550	9	1	333	1
	20	5550	9	1	333	1
	21	5550	9	1	333	1
	22	5550	9	1	333	1
	23	5550	9	1	333	1
	24	5550	9	1	333	1
	25	5550	9	1	333	1
	26	5550	9	1	333	1
	27	5550	9	1	333	1
	28	5550	9	1	333	1
	29	5550	9	1	333	1
	Detection Percentage					100% (> 70%)

Table 40. Statistical Performance Check – Radar Type 6, 40 MHz

Statistical Performance Check – Radar Type 0, 80 MHz

Radar Type	Trial #	Pulses per Burst	Pulse Width (µsec)	PRI (µsec)	Detection 1 = Yes, 0 = No
0	0	18	1	1428	1
	1	18	1	1428	1
	2	18	1	1428	1
	3	18	1	1428	1
	4	18	1	1428	1
	5	18	1	1428	1
	6	18	1	1428	1
	7	18	1	1428	1
	8	18	1	1428	1
	9	18	1	1428	1
	10	18	1	1428	1
	11	18	1	1428	1
	12	18	1	1428	1
	13	18	1	1428	1
	14	18	1	1428	1
	15	18	1	1428	1
	16	18	1	1428	1
	17	18	1	1428	1
	18	18	1	1428	1
	19	18	1	1428	1
	20	18	1	1428	1
	21	18	1	1428	1
	22	18	1	1428	1
	23	18	1	1428	1
	24	18	1	1428	1
	25	18	1	1428	1
	26	18	1	1428	1
	27	18	1	1428	1
	28	18	1	1428	1
	29	18	1	1428	1
	Detection Percentage				**100% (> 60%)**

Table 41. Statistical Performance Check – Radar Type 0, 80 MHz

Statistical Performance Check – Radar Type 1, 80 MHz

Radar Type	Trial #	Pulses per Burst	Pulse Width (µsec)	PRI (µsec)	Detection 1 = Yes, 0 = No
1	0	74	1	718	1
	1	102	1	518	1
	2	99	1	538	1
	3	78	1	678	1
	4	95	1	558	1
	5	65	1	818	1
	6	83	1	638	1
	7	67	1	798	1
	8	18	1	3066	1
	9	72	1	738	1
	10	63	1	838	1
	11	76	1	698	1
	12	57	1	938	1
	13	70	1	758	1
	14	58	1	918	1
	15	19	1	2881	1
	16	61	1	877	1
	17	46	1	1168	1
	18	19	1	2779	1
	19	37	1	1459	1
	20	45	1	1189	1
	21	30	1	1786	1
	22	32	1	1650	1
	23	24	1	2207	1
	24	26	1	2085	1
	25	79	1	671	1
	26	27	1	1991	1
	27	67	1	788	1
	28	18	1	3061	1
	29	24	1	2226	1
	Detection Percentage				**100% (> 60%)**

Table 42. Statistical Performance Check – Radar Type 1, 80 MHz

Statistical Performance Check – Radar Type 2, 80 MHz

Radar Type	Trial #	Pulse Width 1 to 5 µsec	PRI 150 to 230 µsec	Pulses per Burst 23 to 29	Detection
					1 = Yes, 0 = No
2	0	3.2	179	26	1
	1	1.1	207	23	1
	2	2.1	230	24	1
	3	4.8	200	29	1
	4	3.9	214	28	1
	5	2.9	222	26	1
	6	3.2	204	26	1
	7	2.5	192	25	1
	8	3.1	164	26	1
	9	1.2	156	23	1
	10	3.9	210	27	1
	11	4.6	201	29	1
	12	3.2	162	26	1
	13	2.2	197	25	1
	14	4.5	163	29	1
	15	3	203	26	1
	16	5	168	29	1
	17	2.4	217	25	1
	18	2.9	191	26	1
	19	2.3	166	25	1
	20	3.7	150	27	1
	21	2.2	176	25	1
	22	4.9	195	29	1
	23	2.9	202	26	1
	24	2.5	178	25	1
	25	1.1	206	23	1
	26	3.8	155	27	1
	27	4.7	157	29	1
	28	2.4	224	25	1
	29	4.2	159	28	1
	Detection Percentage				**100% (> 60%)**

Table 43. Statistical Performance Check – Radar Type 2, 80 MHz

Statistical Performance Check – Radar Type 3, 80 MHz

Radar Type	Trial #	Pulses per Burst	Pulse Width 6 to 10 µsec	PRI (µsec) PRI 200 to 500 µsec	Detection 1 = Yes, 0 = No
3	0	8.2	355	17	1
	1	6.1	487	16	1
	2	7.1	344	16	1
	3	9.8	288	18	1
	4	8.9	230	18	1
	5	7.9	432	17	1
	6	8.2	207	17	1
	7	7.5	443	17	1
	8	8.1	439	17	1
	9	6.2	223	16	1
	10	8.9	208	18	1
	11	9.6	463	18	1
	12	8.2	441	17	1
	13	7.2	323	16	1
	14	9.5	297	18	1
	15	8	412	17	1
	16	10	324	18	1
	17	7.4	271	17	1
	18	7.9	349	17	1
	19	7.3	409	16	1
	20	8.7	373	18	1
	21	7.2	254	16	1
	22	9.9	274	18	1
	23	7.9	278	17	1
	24	7.5	317	17	1
	25	6.1	260	16	1
	26	8.8	211	18	1
	27	9.7	272	18	1
	28	7.4	264	17	1
	29	9.2	284	18	1
	Detection Percentage				93% (> 60%)

Table 44. Statistical Performance Check – Radar Type 3, 80 MHz

Statistical Performance Check – Radar Type 4, 80 MHz

Radar Type	Trial #	Pulses per Burst	Pulse Width 11 to 20 µsec	PRI (µsec) PRI 200 to 500 µsec	Detection 1 = Yes, 0 = No
4	0	14	16	355	1
	1	12	11.3	487	1
	2	13	13.5	344	1
	3	16	19.4	288	1
	4	15	17.5	230	1
	5	14	15.3	432	1
	6	14	15.9	207	1
	7	13	14.3	443	1
	8	14	15.8	439	1
	9	12	11.5	223	1
	10	15	17.4	208	1
	11	16	19	463	1
	12	14	16	441	1
	13	13	13.8	323	1
	14	16	18.9	297	1
	15	14	15.5	412	1
	16	16	19.9	324	1
	17	13	14.1	271	1
	18	14	15.2	349	1
	19	13	13.8	409	1
	20	15	17.1	373	1
	21	13	13.8	254	1
	22	16	19.8	274	1
	23	14	15.3	278	1
	24	13	14.5	317	1
	25	12	11.3	260	1
	26	15	17.3	211	1
	27	16	19.2	272	1
	28	13	14.2	264	1
	29	15	18.2	284	1
	Detection Percentage				90% (> 60%)

Table 45. Statistical Performance Check – Radar Type 4, 80 MHz

Statistical Performance Check – Radar Type 5, 80 MHz

Radar Type	Trial #	Pulses per Burst 8 to20	Pulse Width 50 to 100 µsec	PRI (µsec) PRI 1000 to 2000 µsec	Detection 1 = Yes, 0 = No
5	0	See table 1	See table 1	See table 1	1
	1	See table 2	See table 2	See table 2	1
	2	See table 3	See table 3	See table 3	1
	3	See table 4	See table 4	See table 4	1
	4	See table 5	See table 5	See table 5	1
	5	See table 6	See table 6	See table 6	1
	6	See table 7	See table 7	See table 7	1
	7	See table 8	See table 8	See table 8	1
	8	See table 9	See table 9	See table 9	1
	9	See table 10	See table 10	See table 10	1
	10	See table 11	See table 11	See table 11	1
	11	See table 12	See table 12	See table 12	1
	12	See table 13	See table 13	See table 13	1
	13	See table 14	See table 14	See table 14	1
	14	See table 15	See table 15	See table 15	1
	15	See table 16	See table 16	See table 16	1
	16	See table 17	See table 17	See table 17	1
	17	See table 18	See table 18	See table 18	1
	18	See table 19	See table 19	See table 19	1
	19	See table 20	See table 20	See table 20	1
	20	See table 21	See table 21	See table 21	1
	21	See table 22	See table 22	See table 22	1
	22	See table 23	See table 23	See table 23	1
	23	See table 24	See table 24	See table 24	1
	24	See table 25	See table 25	See table 25	1
	25	See table 26	See table 26	See table 26	1
	26	See table 27	See table 27	See table 27	1
	27	See table 28	See table 28	See table 28	1
	28	See table 29	See table 29	See table 29	1
	29	See table 30	See table 30	See table 30	1
	Detection Percentage				**100% (> 60%)**

Table 46. Statistical Performance Check – Radar Type 5, 80 MHz

See Appendix.

Statistical Performance Check – Radar Type 6, 80 MHz

Radar Type	Trial #	Frequency (MHz)	Pulses/Hop	Pulse Width (µsec)	PRI (µsec)	Detection 1 = Yes, 0 = No
6	0	5530	9	1	333	1
	1	5530	9	1	333	1
	2	5530	9	1	333	1
	3	5530	9	1	333	1
	4	5530	9	1	333	1
	5	5530	9	1	333	1
	6	5530	9	1	333	1
	7	5530	9	1	333	1
	8	5530	9	1	333	1
	9	5530	9	1	333	1
	10	5530	9	1	333	1
	11	5530	9	1	333	1
	12	5530	9	1	333	1
	13	5530	9	1	333	1
	14	5530	9	1	333	1
	15	5530	9	1	333	1
	16	5530	9	1	333	1
	17	5530	9	1	333	1
	18	5530	9	1	333	1
	19	5530	9	1	333	1
	20	5530	9	1	333	1
	21	5530	9	1	333	1
	22	5530	9	1	333	1
	23	5530	9	1	333	1
	24	5530	9	1	333	1
	25	5530	9	1	333	1
	26	5530	9	1	333	1
	27	5530	9	1	333	1
	28	5530	9	1	333	1
	29	5530	9	1	333	1
	Detection Percentage					100% (> 70%)

Table 47. Statistical Performance Check – Radar Type 6, 80 MHz

IV. Test Equipment

Test Equipment

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

MET Asset #	Equipment	Manufacturer	Model	Last Cal Date	Cal Due Date
1T4870	THERM./CLOCK/HUMIDITY MONITOR	CONTROL COMPANY	06-662-4, FB70258	3/14/2014	3/14/2016
1T4829	SPECTRUM ANALYZER	AGILENT	E4407B	9/30/2014	3/30/2016
1T4818	COMB GENERATOR	COM-POWER	CGO-520	SEE NOTE	
1T4751	ANTENNA - BILOG	SUNOL SCIENCES	JB6	7/29/2014	1/29/2016
1T4505	TEMPERATURE CHAMBER	TEST EQUITY	115	2/11/2015	2/11/2016
1T4442	PRE-AMPLIFIER, MICROWAVE	MITEQ	AFS42-01001800-30-10P	SEE NOTE	
1T4418	LISN	SOLAR ELECTRONICS	9233-50-TS-50-N	10/24/2014	4/24/2016
1T4409	EMI RECEIVER	ROHDE & SCHWARZ	ESIB7	7/18/2014	7/18/2016
1T4300	SEMI-ANECHOIC CHAMBER # 1 (NSA)	EMC TEST SYSTEMS	NONE	7/24/2015	7/24/2016
1T4149	HIGH-FREQUENCY ANECHOIC CHAMBER	RAY-PROOF	81	NOT REQUIRED	
1T2665	ANTENNA; HORN	EMCO	3115	4/3/2014	10/3/2015
1T4870	THERM./CLOCK/HUMIDITY MONITOR	CONTROL COMPANY	06-662-4, FB70258	3/14/2014	3/14/2016

Table 48. Test Equipment List

MET ASSET #	EQUIPMENT	MANUFACTURER	MODEL	LAST CAL DATE	CAL DUE DATE
1T4504	SHIELDED ROOM	UNIVERSAL SHIELDING CORP	N/A	SEE NOTE	
1T4752	PRE-AMPLIFIER	MITEQ	JS44-18004000-35-8P	SEE NOTE	
1S2602	DFS SIGNAL GENERATOR	NATIONAL INSTRUMENTS	NIPXI-1042	SEE NOTE	
1T4568	RADIATING NOISE SOURCE	MET LABORATORIES	N/A	SEE NOTE	
1T4814	COMB GENERATOR	COM-POWER	CGO-5100	SEE NOTE	

Table 49. DFS Test Equipment List

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

V. Certification & User’s Manual Information

Certification & User's Manual Information

A. Certification Information

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

§ 2.801 Radio-frequency device defined.

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

(a) The various types of radio communication transmitting devices described throughout this chapter.

(b) The incidental, unintentional and intentional radiators defined in Part 15 of this chapter.

(c) The industrial, scientific, and medical equipment described in Part 18 of this chapter.

(d) Any part or component thereof which in use emits radio-frequency energy by radiation, conduction, or other means.

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

(a) Except as provided elsewhere in this chapter, no person shall sell or lease, or offer for sale or lease (including advertising for sale or lease), or import, ship or distribute for the purpose of selling or leasing or offering for sale or lease, any radio frequency device unless:

(1) In the case of a device subject to certification, such device has been authorized by the Commission in accordance with the rules in this chapter and is properly identified and labeled as required by §2.925 and other relevant sections in this chapter; or

(2) In the case of a device that is not required to have a grant of equipment authorization issued by the Commission, but which must comply with the specified technical standards prior to use, such device also complies with all applicable administrative (including verification of the equipment or authorization under a Declaration of Conformity, where required), technical, labeling and identification requirements specified in this chapter.

(d) Notwithstanding the provisions of paragraph (a) of this section, the offer for sale solely to business, commercial, industrial, scientific or medical users (but not an offer for sale to other parties or to end users located in a residential environment) of a radio frequency device that is in the conceptual, developmental, design or pre-production stage is permitted prior to equipment authorization or, for devices not subject to the equipment authorization requirements, prior to a determination of compliance with the applicable technical requirements *provided* that the prospective buyer is advised in writing at the time of the offer for sale that the equipment is subject to the FCC rules and that the equipment will comply with the appropriate rules before delivery to the buyer or to centers of distribution.

(e)(1) Notwithstanding the provisions of paragraph (a) of this section, prior to equipment authorization or determination of compliance with the applicable technical requirements any radio frequency device may be operated, but not marketed, for the following purposes and under the following conditions:

(i) Compliance testing;

(ii) Demonstrations at a trade show provided the notice contained in paragraph (c) of this section is displayed in a conspicuous location on, or immediately adjacent to, the device;

(iii) Demonstrations at an exhibition conducted at a business, commercial, industrial, scientific or medical location, but excluding locations in a residential environment, provided the notice contained in paragraphs (c) or (d) of this section, as appropriate, is displayed in a conspicuous location on, or immediately adjacent to, the device;

(iv) Evaluation of product performance and determination of customer acceptability, provided such operation takes place at the manufacturer's facilities during developmental, design or pre-production states; or

(v) Evaluation of product performance and determination of customer acceptability where customer acceptability of a radio frequency device cannot be determined at the manufacturer's facilities because of size or unique capability of the device, provided the device is operated at a business, commercial, industrial, scientific or medical user's site, but not at a residential site, during the development, design or pre-production stages.

(e)(2) For the purpose of paragraphs (e)(1)(iv) and (e)(1)(v) of this section, the term *manufacturer's facilities* includes the facilities of the party responsible for compliance with the regulations and the manufacturer's premises, as well as the facilities of other entities working under the authorization of the responsible party in connection with the development and manufacture, but not the marketing, of the equipment.

(f) For radio frequency devices subject to verification and sold solely to business, commercial, industrial, scientific and medical users (excluding products sold to other parties or for operation in a residential environment), parties responsible for verification of the devices shall have the option of ensuring compliance with the applicable technical specifications of this chapter at each end user's location after installation, provided that the purchase or lease agreement includes a proviso that such a determination of compliance be made and is the responsibility of the party responsible for verification of the equipment.

Certification & User's Manual Information

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

§ 2.901 Basis and Purpose

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

(b) The following sections describe the verification procedure, the procedure for a Declaration of Conformity, and the procedures to be followed in obtaining certification from the Commission and the conditions attendant to such a grant.

§ 2.907 Certification.

(a) Certification is an equipment authorization issued by the Commission, based on representation and test data submitted by the applicant.

(b) Certification attaches to all units subsequently marketed by the grantee which are identical (see Section 2.908) to the sample tested except for permissive changes or other variations authorized by the Commission pursuant to Section 2.1043.

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

Certification & User's Manual Information

§ 2.948 Description of measurement facilities.

(a) Each party making measurements of equipment that is subject to an equipment authorization under Part 15 or Part 18 of this chapter, regardless of whether the measurements are filed with the Commission or kept on file by the party responsible for compliance of equipment marketed within the U.S. or its possessions, shall compile a description of the measurement facilities employed.

(1) If the measured equipment is subject to the verification procedure, the description of the measurement facilities shall be retained by the party responsible for verification of the equipment.

(i) If the equipment is verified through measurements performed by an independent laboratory, it is acceptable for the party responsible for verification of the equipment to rely upon the description of the measurement facilities retained by or placed on file with the Commission by that laboratory. In this situation, the party responsible for the verification of the equipment is not required to retain a duplicate copy of the description of the measurement facilities.

(ii) If the equipment is verified based on measurements performed at the installation site of the equipment, no specific site calibration data is required. It is acceptable to retain the description of the measurement facilities at the site at which the measurements were performed.

(2) If the equipment is to be authorized by the Commission under the certification procedure, the description of the measurement facilities shall be filed with the Commission's Laboratory in Columbia, Maryland. The data describing the measurement facilities need only be filed once but must be updated as changes are made to the measurement facilities or as otherwise described in this section. At least every three years, the organization responsible for filing the data with the Commission shall certify that the data on file is current.

Certification & User's Manual Information

Label and User's Manual Information

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

§ 15.19 Labeling requirements.

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

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

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

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

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

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

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

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

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

§ 15.21 Information to user.

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

Verification & User's Manual Information

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

§ 15.105 Information to the user.

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

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

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

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

– Reorient or relocate the receiving antenna.

– Increase the separation between the equipment and receiver.

– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

– Consult the dealer or an experienced radio/TV technician for help.

VI. Appendix

20 MHz

Table 1							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	636185	77.8	13	2	1665	1477	-
1	32674	51.9	5	1	1074	-	-
2	226294	63.8	9	1	1584	-	-
3	417976	96.6	19	3	1682	1786	1843
4	611152	85.9	16	3	1795	1215	1729
5	8789	73.7	12	2	1198	1549	-
6	201917	77.2	13	2	1837	1819	-
7	395530	68.4	10	2	1587	1114	-
8	588564	76.7	13	2	2000	1155	-
9	783794	53.2	6	1	1147	-	-
10	177933	85.7	16	3	1433	1695	1394
11	370624	94.3	19	3	1670	1426	1935
12	564893	77.6	13	2	1294	1671	-
13	759583	65.7	10	1	1512	-	-
14	154262	93.5	18	3	1444	1130	1468
Table 2							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	653020	75	12	2	1880	1527	-
1	1015643	99.4	20	3	1401	1262	1257
2	1379398	67.4	10	2	1531	1403	-
3	245489	73.6	12	2	1449	1041	-
4	609113	65.9	10	1	1432	-	-
5	970852	83.8	15	3	1356	1292	1419
6	1335913	65.5	9	1	1543	-	-
7	200406	98.6	20	3	1548	1796	1728
Table 3							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	409565	73.8	12	2	1806	1538	-
1	673692	69.5	11	2	1117	1649	-
2	938562	51.9	5	1	1651	-	-
3	113209	84.6	16	3	1976	1032	1271

4	376726	95.4	19	3	1060	1903	1388
5	641212	68	10	2	1368	1351	-
6	903714	89.6	17	3	1338	1514	1573
7	80863	81.9	15	2	1022	1689	-
8	344067	88.3	17	3	1810	1330	1838
9	609331	53.7	6	1	1597	-	-
10	871542	91.3	18	3	1961	1106	1001

Table 4

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	26541	68.1	10	2	1339	1355	-
1	171821	58.7	7	1	1251	-	-
2	316229	75.3	13	2	1136	1640	-
3	461864	56.4	7	1	1753	-	-
4	8677	99.7	20	3	1196	1708	1159
5	153995	57.7	7	1	1013	-	-
6	299238	59.5	8	1	1072	-	-
7	443177	80	14	2	1482	1369	-
8	587671	82	15	2	1993	1197	-
9	135674	82.8	15	2	1883	1005	-
10	279928	88	17	3	1061	1928	1101
11	424279	93.2	18	3	1207	1907	1223
12	570132	70.4	11	2	1526	1360	-
13	117439	95.3	19	3	1171	1955	1775
14	262502	81.9	15	2	1690	1545	-
15	406573	98.5	20	3	1975	1169	1062
16	553328	65	9	1	1767	-	-
17	99799	85.4	16	3	1011	1637	1425
18	244095	91.6	18	3	1878	1445	1325
19	390012	67.3	10	2	1091	1218	-

Table 5

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	629614	67.9	10	2	1320	1133	-
1	96856	62.3	8	1	1957	-	-
2	267719	53.3	6	1	1592	-	-
3	436784	90	17	3	1900	1153	1346

4	608289	77.1	13	2	1166	1646	-
5	75610	83.9	15	3	1278	1232	1459
6	245638	89.1	17	3	1240	1384	1939
7	416355	81.8	15	2	1833	1676	-
8	588736	50.3	5	1	1075	-	-
9	54571	87.1	16	3	1116	1996	1756
10	225175	71.3	11	2	1225	1815	-
11	394825	97.5	20	3	1884	1465	1132
12	565361	90.6	17	3	1561	1040	1354
13	33643	86.3	16	3	1596	1183	1792
14	203957	97.6	20	3	1365	1073	1361
15	373812	84.7	16	3	1021	1718	1854
16	544060	99.7	20	3	1150	1244	1988

Table 6

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	15438	92.9	18	3	1085	1564	1407
1	222486	67.7	10	2	1744	1747	-
2	430731	65.8	10	1	1092	-	-
3	637784	56.3	7	1	1851	-	-
4	845342	53.7	6	1	1727	-	-
5	196720	83.5	15	3	1679	1930	1025
6	404955	65.8	10	1	1519	-	-
7	610711	85.9	16	3	1134	1034	1808
8	818057	76.3	13	2	1606	1926	-
9	171459	81.5	15	2	1891	1714	-
10	377969	89.4	17	3	1310	1594	1827
11	586875	63.4	9	1	1568	-	-
12	792834	69.6	11	2	1307	1925	-
13	146044	74.5	12	2	1264	1846	-

Table 7

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	329022	96.6	19	3	1182	1609	1581
1	521718	96.7	19	3	1829	1799	1154
2	714222	86.5	16	3	1923	1396	1865
3	112450	73.3	12	2	1908	1318	-

4	306283	55.8	6	1	1688	-	-
5	500239	55.4	6	1	1145	-	-
6	690932	85.3	16	3	1336	1504	1820
7	88645	79.4	14	2	1344	1893	-
8	282508	65.7	10	1	1476	-	-
9	475842	68.6	10	2	1008	1028	-
10	667887	77.7	13	2	1972	1835	-
11	64845	79.6	14	2	1882	1331	-
12	257755	94.9	19	3	1830	1070	1349
13	452335	61.4	8	1	1451	-	-
14	643395	90.6	17	3	1233	1562	1887

Table 8

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	51446	52.6	5	1	1210	-	-
1	292696	84.1	15	3	1314	1725	1529
2	533989	97.7	20	3	1139	1868	1805
3	775564	97.3	20	3	1341	1446	1755
4	21542	98.8	20	3	1544	1386	1302
5	263385	72.2	12	2	1771	1184	-
6	505581	67.6	10	2	1175	1027	-
7	747058	75.7	13	2	1026	1871	-
8	989976	60.9	8	1	1798	-	-
9	234024	64.2	9	1	1138	-	-
10	475207	78.8	14	2	1784	1604	-
11	715825	87.5	16	3	1511	1712	1683

Table 9

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	823112	54.1	6	1	1415	-	-
1	174965	50.7	5	1	1221	-	-
2	382216	52.3	5	1	1974	-	-
3	587395	99.8	20	3	1558	1696	1949
4	796897	68.4	10	2	1014	1099	-
5	149042	80.8	14	2	1736	1505	-
6	356750	62.5	9	1	1778	-	-
7	563824	74.8	12	2	1149	1204	-

8	772314	50.8	5	1	1049	-	-
9	123796	54	6	1	1417	-	-
10	331215	63	9	1	1730	-	-
11	537402	91.8	18	3	1143	1270	1347
12	744805	79.3	14	2	1274	1992	-
13	98172	64.3	9	1	1937	-	-

Table 10

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	535615	63.4	9	1	1043	-	-
1	898668	52	5	1	1863	-	-
2	1259235	97.2	20	3	1973	1605	1583
3	127106	78.7	14	2	1466	1743	-
4	490358	74.2	12	2	1280	1219	-
5	852409	88.7	17	3	1293	1934	1273
6	1217152	54.3	6	1	1991	-	-
7	82296	95.4	19	3	1580	1555	1791

Table 11

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	209249	73.7	12	2	1208	1497	-
1	378386	97.4	20	3	1942	1754	1613
2	548411	91.7	18	3	1999	1702	1462
3	17733	66.2	10	1	1393	-	-
4	187952	70.8	11	2	1968	1821	-
5	359277	52.3	5	1	1740	-	-
6	528886	78.9	14	2	1308	1984	-
7	700166	70.9	11	2	1050	1358	-
8	167197	75.6	13	2	1437	1430	-
9	338262	59.1	7	1	1697	-	-
10	508324	77	13	2	1397	1304	-
11	678689	67.9	10	2	1803	1083	-
12	146031	81.2	14	2	1720	1932	-
13	316923	78.7	14	2	1247	1121	-
14	488056	63.3	9	1	1634	-	-
15	657326	68.9	11	2	1849	1423	-
16	125509	59.3	7	1	1093	-	-

Table 12							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	263736	98.9	20	3	1381	1680	1488
1	416459	82.3	15	2	1716	1855	-
2	567902	86.7	16	3	1211	1400	1919
3	92979	89.7	17	3	1861	1068	1282
4	245155	98.6	20	3	1507	1194	1461
5	397609	71.1	11	2	1921	1789	-
6	551431	55.9	6	1	1947	-	-
7	74413	67.9	10	2	1350	1372	-
8	226559	84.4	16	3	1203	1107	1443
9	380056	58.8	7	1	1715	-	-
10	533408	65.6	9	1	1017	-	-
11	55547	78.5	14	2	1911	1704	-
12	207876	82.3	15	2	1845	1686	-
13	359771	90.1	17	3	1938	1071	1266
14	511297	90.2	17	3	1989	1089	1950
15	36803	83.1	15	2	1943	1406	-
16	189652	58.8	7	1	1742	-	-
17	341809	77	13	2	1187	1657	-
18	495737	55	6	1	1012	-	-

Table 13							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	22911	58.1	7	1	1929	-	-
1	216473	52.1	5	1	1910	-	-
2	410004	59.9	8	1	1971	-	-
3	603671	60.2	8	1	1812	-	-
4	794160	95.9	19	3	1399	1906	1608
5	192251	79.9	14	2	1626	1859	-
6	385590	78.5	14	2	1238	1917	-
7	579862	53.8	6	1	1763	-	-
8	773423	64.7	9	1	1800	-	-
9	168898	61.4	8	1	1390	-	-
10	361606	83.2	15	2	1692	1858	-
11	553866	84.7	16	3	1533	1677	1638

12	747241	88.7	17	3	1703	1528	1058
13	144710	78.3	14	2	1258	1951	-
14	337856	69.3	11	2	1731	1717	-

Table 14

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	664275	75.3	13	2	1994	1612	-
1	907886	56.3	7	1	1456	-	-
2	151316	67.7	10	2	1617	1185	-
3	393746	55.6	6	1	1337	-	-
4	635093	75.2	13	2	1421	1267	-
5	876993	76.3	13	2	1359	1305	-
6	121278	85.7	16	3	1547	1362	1924
7	362696	98.4	20	3	1873	1550	1249
8	604342	86.4	16	3	1779	1439	1046
9	846453	93.6	18	3	1059	1031	1452
10	91871	63.3	9	1	1328	-	-
11	333050	92.4	18	3	1412	1673	1322

Table 15

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	361323	93.3	18	3	1983	1912	1535
1	515261	69.1	11	2	1102	1794	-
2	39025	86.9	16	3	1044	1152	1148
3	190900	84.9	16	3	1894	1948	1118
4	343941	72.3	12	2	1094	1916	-
5	497624	51.7	5	1	1447	-	-
6	20319	58.3	7	1	1429	-	-
7	172999	60.8	8	1	1979	-	-
8	325872	57.1	7	1	1641	-	-
9	475841	88.9	17	3	1886	1964	1489
10	1489	72	12	2	1909	1297	-
11	153647	90.9	18	3	1261	1566	1370
12	307096	59.8	8	1	1552	-	-
13	458804	70	11	2	1759	1291	-
14	610798	67.2	10	2	1625	1881	-
15	134759	91.2	18	3	1382	1832	1661

16	288306	56.5	7	1	1483	-	-
17	441296	51.2	5	1	1237	-	-
18	592780	74.1	12	2	1471	1245	-

Table 16

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	158286	76.9	13	2	1110	1140	-
1	366024	50.2	5	1	1316	-	-
2	573452	62.9	9	1	1520	-	-
3	780619	64.7	9	1	1902	-	-
4	132455	83.8	15	3	1410	1097	1621
5	340207	65.4	9	1	1944	-	-
6	548208	53.2	6	1	1024	-	-
7	755333	51.7	5	1	1603	-	-
8	107117	78.7	14	2	1804	1168	-
9	314500	72.4	12	2	1030	1343	-
10	522447	53.8	6	1	1327	-	-
11	728517	73.6	12	2	1524	1553	-
12	81611	66.7	10	2	1722	1122	-
13	288948	82.5	15	2	1404	1019	-

Table 17

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	345766	87.6	17	3	1565	1055	1840
1	490019	85.2	16	3	1735	1541	1408
2	39073	84.8	16	3	1534	1889	1463
3	183923	77.9	13	2	1749	1460	-
4	328777	76.5	13	2	1518	1485	-
5	474728	60.9	8	1	1540	-	-
6	21394	83	15	2	1080	1010	-
7	165992	80.4	14	2	1824	1752	-
8	310973	67.5	10	2	1764	1181	-
9	456884	62.1	8	1	1495	-	-
10	3515	86.4	16	3	1773	1966	1263
11	147928	84.3	15	3	1593	1188	1788
12	293225	76.9	13	2	1226	1537	-
13	436922	95.8	19	3	1192	1298	1844

14	584015	55.2	6	1	1644	-	-
15	130832	59	7	1	1402	-	-
16	274684	94.5	19	3	1296	1700	1283
17	418579	91.9	18	3	1970	1978	1165
18	563464	85.2	16	3	1732	1551	1189
19	112787	69.5	11	2	1038	1224	-

Table 18

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	429224	86.4	16	3	1259	1918	1455
1	670241	92.2	18	3	1598	1719	1895
2	912880	80.4	14	2	1816	1899	-
3	158603	54.3	6	1	1335	-	-
4	400824	53.1	5	1	1303	-	-
5	641915	69.4	11	2	1503	1546	-
6	883823	69.1	11	2	1279	1639	-
7	128373	100	20	3	1375	1438	1595
8	370379	79.6	14	2	1239	1705	-
9	611194	88.4	17	3	1374	1579	1623
10	855665	53.3	6	1	1016	-	-
11	98897	65.3	9	1	1709	-	-

Table 19

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	292143	55.3	6	1	1920	-	-
1	499633	58.3	7	1	1797	-	-
2	706377	72.3	12	2	1610	1039	-
3	58989	84.8	16	3	1131	1761	1721
4	266161	82.5	15	2	1875	1431	-
5	474469	63.3	9	1	1095	-	-
6	680544	80	14	2	1119	1913	-
7	33519	90.3	17	3	1660	1853	1123
8	240319	91.1	18	3	1539	1783	1172
9	447400	96.6	19	3	1525	1036	1385
10	654516	82.7	15	2	1710	1990	-
11	8083	50.7	5	1	1234	-	-
12	215435	78.4	14	2	1047	1109	-

13	421325	99.5	20	3	1299	1965	1869

Table 20

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	733725	88.6	17	3	1501	1067	1927
1	977882	57.4	7	1	1723	-	-
2	221197	96.6	19	3	1086	1658	1324
3	462915	69.7	11	2	1751	1945	-
4	705071	77.9	13	2	1642	1317	-
5	947923	62	8	1	1866	-	-
6	191373	88.4	17	3	1997	1077	1366
7	432561	97.3	20	3	1790	1896	1367
8	674004	96.2	19	3	1391	1787	1672
9	915842	95.4	19	3	1020	1892	1414
10	162176	54.8	6	1	1084	-	-
11	403553	80.4	14	2	1850	1436	-

Table 21

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	483470	74.7	12	2	1619	1611	-
1	666072	57.1	7	1	1560	-	-
2	98810	91.9	18	3	1392	1475	1276
3	279914	83.1	15	2	1809	1772	-
4	462536	50.7	5	1	1003	-	-
5	642324	79.2	14	2	1574	1600	-
6	76831	58.7	7	1	1186	-	-
7	257785	71	11	2	1521	1567	-
8	438554	79	14	2	1777	1960	-
9	620397	68.5	10	2	1284	1428	-
10	54310	73.5	12	2	1904	1352	-
11	235506	70.5	11	2	1864	1115	-
12	417036	76.6	13	2	1045	1300	-
13	597974	81.2	14	2	1160	1675	-
14	32086	61.8	8	1	1277	-	-
15	212751	94.9	19	3	1450	1206	1860

Table 22

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	526149	78.5	14	2	1653	1698	-
1	767135	89.8	17	3	1174	1962	1167
2	12955	59.4	8	1	1982	-	-
3	254612	79.6	14	2	1633	1890	-
4	496588	76	13	2	1112	1811	-
5	739728	53.6	6	1	1144	-	-
6	980872	80.9	14	2	1220	1053	-
7	225249	61.6	8	1	1724	-	-
8	467279	53.4	6	1	1901	-	-
9	709720	59.9	8	1	1379	-	-
10	951847	60.4	8	1	1453	-	-
11	194839	91.4	18	3	1768	1726	1227

Table 23

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	261690	77	13	2	1730	1206	-
1	407496	58.1	7	1	1468	-	-
2	553039	62.1	8	1	1057	-	-
3	98971	76.9	13	2	1466	1926	-
4	243693	80	14	2	1841	1488	-
5	389821	52	5	1	1153	-	-
6	531723	88.6	17	3	2000	1481	1407
7	81080	72.9	12	2	1935	1952	-
8	225051	98.5	20	3	1689	1898	1899
9	371684	57.9	7	1	1550	-	-
10	513892	95.9	19	3	1339	1731	1878
11	63543	53.5	6	1	1336	-	-
12	207470	92	18	3	1916	1909	1146
13	353593	57.3	7	1	1910	-	-
14	497722	70.5	11	2	1889	1132	-
15	45525	70	11	2	1619	1464	-
16	189563	84	15	3	1968	1995	1419
17	334977	76.1	13	2	1488	1756	-
18	478188	93.2	18	3	1828	1610	1697
19	27659	96.8	19	3	1462	1116	1215

Table 24

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	247117	50.1	5	1	1841	-	-
1	453362	93.5	18	3	1590	1081	1413
2	660875	68.8	11	2	1707	1577	-
3	14140	56.3	7	1	1056	-	-
4	220734	86	16	3	1953	1108	1987
5	428367	75.2	13	2	1572	1536	-
6	636681	54.4	6	1	1517	-	-
7	843157	71.1	11	2	1329	1243	-
8	195585	76.2	13	2	1940	1770	-
9	403231	80.2	14	2	1098	1209	-
10	610202	79.7	14	2	1588	1214	-
11	815229	90.9	18	3	1615	1862	1601
12	170267	68.7	10	2	1377	1441	-
13	377306	67.4	10	2	1872	1313	-

Table 25

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	628071	94	19	3	1643	1748	1941
1	853391	70.8	11	2	1177	1201	-
2	156223	56.3	7	1	1006	-	-
3	378734	96.7	19	3	1230	1163	1332
4	601331	90.6	17	3	1217	1582	1498
5	825462	74.5	12	2	1569	1281	-
6	128265	92.6	18	3	1065	1669	1222
7	351161	89	17	3	1493	1135	1380
8	573425	96.5	19	3	1607	1822	1602
9	798431	70.5	11	2	1141	1178	-
10	100737	94	19	3	1009	1629	1956
11	324661	55.8	6	1	1290	-	-
12	546278	87.7	17	3	1435	1963	1164

Table 26

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	1253842	68.6	10	2	1306	1161	-
1	119486	83.1	15	2	1420	1315	-
2	482958	60.9	8	1	1687	-	-
3	845641	77.7	13	2	1776	1158	-
4	1208428	77.4	13	2	1793	1510	-
5	74748	66.8	10	2	1576	1323	-
6	438300	63.7	9	1	1333	-	-
7	800152	91.2	18	3	1409	1681	1275

Table 27

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	545865	83.6	15	3	1632	1195	1000
1	14067	89.4	17	3	1173	1627	1656
2	184953	55.8	6	1	1532	-	-
3	353759	90.9	18	3	1981	1554	1998
4	526388	54.7	6	1	1825	-	-
5	694806	97.7	20	3	1734	1202	1250
6	163568	67.5	10	2	1571	1434	-
7	333410	96.7	19	3	1589	1469	1268
8	504006	68.3	10	2	1750	1954	-
9	675297	78.3	14	2	1591	1082	-
10	142890	55	6	1	1427	-	-
11	312479	84.9	16	3	1129	1936	1199
12	482953	74.6	12	2	1959	1856	-
13	655022	63.3	9	1	1885	-	-
14	121457	99.8	20	3	1035	1515	1120
15	292606	63.6	9	1	1647	-	-
16	461322	87.3	16	3	1931	1051	1831

Table 28

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	545865	83.6	15	3	1632	1195	1000
1	14067	89.4	17	3	1173	1627	1656
2	184953	55.8	6	1	1532	-	-

3	353759	90.9	18	3	1981	1554	1998
4	526388	54.7	6	1	1825	-	-
5	694806	97.7	20	3	1734	1202	1250
6	163568	67.5	10	2	1571	1434	-
7	333410	96.7	19	3	1589	1469	1268
8	504006	68.3	10	2	1750	1954	-
9	675297	78.3	14	2	1591	1082	-
10	142890	55	6	1	1427	-	-
11	312479	84.9	16	3	1129	1936	1199
12	482953	74.6	12	2	1959	1856	-
13	655022	63.3	9	1	1885	-	-
14	121457	99.8	20	3	1035	1515	1120
15	292606	63.6	9	1	1647	-	-
16	461322	87.3	16	3	1931	1051	1831
17	14858	60.4	8	1	1758	-	-
18	167387	81.5	15	2	1491	1103	-

Table 29

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	507709	50.5	5	1	1857	-	-
1	750249	55.7	6	1	1246	-	-
2	989003	85.8	16	3	1774	1002	1967
3	235634	76.9	13	2	1125	1474	-
4	477675	75.1	13	2	1254	1052	-
5	718312	92.3	18	3	1180	1486	1492
6	960895	78.1	14	2	1301	1757	-
7	205370	92.2	18	3	1898	1252	1713
8	446940	89	17	3	1260	1706	1411
9	689225	70.9	11	2	1578	1620	-
10	932305	63.1	9	1	1782	-	-
11	176231	55.3	6	1	1522	-	-

Table 30

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	277485	83.4	15	3	1454	1205	1801
1	437880	97.3	20	3	1319	1826	1635
2	598445	90.4	17	3	1079	1986	1674

3	97088	91.8	18	3	1563	1151	1802
4	257251	98.2	20	3	1876	1977	1766
5	419893	59.5	8	1	1952	-	-
6	580724	80	14	2	1253	1137	-
7	77366	86.5	16	3	1054	1128	1828
8	238032	91.1	18	3	1105	1599	1442
9	398605	93.5	18	3	1867	1373	1087
10	562025	60.7	8	1	1033	-	-
11	57684	67.2	10	2	1288	1405	-
12	219083	61.8	8	1	1585	-	-
13	379234	79.4	14	2	1933	1667	-
14	540896	81.4	15	2	1096	1464	-
15	37916	65.7	10	1	1496	-	-
16	198794	76	13	2	1733	1255	-
17	359754	81	14	2	1326	1668	-

40 MHz

Table 1							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	636185	77.8	13	2	1665	1477	-
1	32674	51.9	5	1	1074	-	-
2	226294	63.8	9	1	1584	-	-
3	417976	96.6	19	3	1682	1786	1843
4	611152	85.9	16	3	1795	1215	1729
5	8789	73.7	12	2	1198	1549	-
6	201917	77.2	13	2	1837	1819	-
7	395530	68.4	10	2	1587	1114	-
8	588564	76.7	13	2	2000	1155	-
9	783794	53.2	6	1	1147	-	-
10	177933	85.7	16	3	1433	1695	1394
11	370624	94.3	19	3	1670	1426	1935
12	564893	77.6	13	2	1294	1671	-
13	759583	65.7	10	1	1512	-	-
14	154262	93.5	18	3	1444	1130	1468

Table 2							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	653020	75	12	2	1880	1527	-
1	1015643	99.4	20	3	1401	1262	1257
2	1379398	67.4	10	2	1531	1403	-
3	245489	73.6	12	2	1449	1041	-
4	609113	65.9	10	1	1432	-	-
5	970852	83.8	15	3	1356	1292	1419
6	1335913	65.5	9	1	1543	-	-
7	200406	98.6	20	3	1548	1796	1728

Table 3							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	409565	73.8	12	2	1806	1538	-
1	673692	69.5	11	2	1117	1649	-
2	938562	51.9	5	1	1651	-	-
3	113209	84.6	16	3	1976	1032	1271

4	376726	95.4	19	3	1060	1903	1388
5	641212	68	10	2	1368	1351	-
6	903714	89.6	17	3	1338	1514	1573
7	80863	81.9	15	2	1022	1689	-
8	344067	88.3	17	3	1810	1330	1838
9	609331	53.7	6	1	1597	-	-
10	871542	91.3	18	3	1961	1106	1001

Table 4

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	26541	68.1	10	2	1339	1355	-
1	171821	58.7	7	1	1251	-	-
2	316229	75.3	13	2	1136	1640	-
3	461864	56.4	7	1	1753	-	-
4	8677	99.7	20	3	1196	1708	1159
5	153995	57.7	7	1	1013	-	-
6	299238	59.5	8	1	1072	-	-
7	443177	80	14	2	1482	1369	-
8	587671	82	15	2	1993	1197	-
9	135674	82.8	15	2	1883	1005	-
10	279928	88	17	3	1061	1928	1101
11	424279	93.2	18	3	1207	1907	1223
12	570132	70.4	11	2	1526	1360	-
13	117439	95.3	19	3	1171	1955	1775
14	262502	81.9	15	2	1690	1545	-
15	406573	98.5	20	3	1975	1169	1062
16	553328	65	9	1	1767	-	-
17	99799	85.4	16	3	1011	1637	1425
18	244095	91.6	18	3	1878	1445	1325
19	390012	67.3	10	2	1091	1218	-

Table 5

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	629614	67.9	10	2	1320	1133	-
1	96856	62.3	8	1	1957	-	-
2	267719	53.3	6	1	1592	-	-
3	436784	90	17	3	1900	1153	1346

4	608289	77.1	13	2	1166	1646	-
5	75610	83.9	15	3	1278	1232	1459
6	245638	89.1	17	3	1240	1384	1939
7	416355	81.8	15	2	1833	1676	-
8	588736	50.3	5	1	1075	-	-
9	54571	87.1	16	3	1116	1996	1756
10	225175	71.3	11	2	1225	1815	-
11	394825	97.5	20	3	1884	1465	1132
12	565361	90.6	17	3	1561	1040	1354
13	33643	86.3	16	3	1596	1183	1792
14	203957	97.6	20	3	1365	1073	1361
15	373812	84.7	16	3	1021	1718	1854
16	544060	99.7	20	3	1150	1244	1988

Table 6

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	15438	92.9	18	3	1085	1564	1407
1	222486	67.7	10	2	1744	1747	-
2	430731	65.8	10	1	1092	-	-
3	637784	56.3	7	1	1851	-	-
4	845342	53.7	6	1	1727	-	-
5	196720	83.5	15	3	1679	1930	1025
6	404955	65.8	10	1	1519	-	-
7	610711	85.9	16	3	1134	1034	1808
8	818057	76.3	13	2	1606	1926	-
9	171459	81.5	15	2	1891	1714	-
10	377969	89.4	17	3	1310	1594	1827
11	586875	63.4	9	1	1568	-	-
12	792834	69.6	11	2	1307	1925	-
13	146044	74.5	12	2	1264	1846	-

Table 7

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	329022	96.6	19	3	1182	1609	1581
1	521718	96.7	19	3	1829	1799	1154
2	714222	86.5	16	3	1923	1396	1865
3	112450	73.3	12	2	1908	1318	-

4	306283	55.8	6	1	1688	-	-
5	500239	55.4	6	1	1145	-	-
6	690932	85.3	16	3	1336	1504	1820
7	88645	79.4	14	2	1344	1893	-
8	282508	65.7	10	1	1476	-	-
9	475842	68.6	10	2	1008	1028	-
10	667887	77.7	13	2	1972	1835	-
11	64845	79.6	14	2	1882	1331	-
12	257755	94.9	19	3	1830	1070	1349
13	452335	61.4	8	1	1451	-	-
14	643395	90.6	17	3	1233	1562	1887
Table 8							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	51446	52.6	5	1	1210	-	-
1	292696	84.1	15	3	1314	1725	1529
2	533989	97.7	20	3	1139	1868	1805
3	775564	97.3	20	3	1341	1446	1755
4	21542	98.8	20	3	1544	1386	1302
5	263385	72.2	12	2	1771	1184	-
6	505581	67.6	10	2	1175	1027	-
7	747058	75.7	13	2	1026	1871	-
8	989976	60.9	8	1	1798	-	-
9	234024	64.2	9	1	1138	-	-
10	475207	78.8	14	2	1784	1604	-
11	715825	87.5	16	3	1511	1712	1683
Table 9							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	823112	54.1	6	1	1415	-	-
1	174965	50.7	5	1	1221	-	-
2	382216	52.3	5	1	1974	-	-
3	587395	99.8	20	3	1558	1696	1949
4	796897	68.4	10	2	1014	1099	-
5	149042	80.8	14	2	1736	1505	-
6	356750	62.5	9	1	1778	-	-
7	563824	74.8	12	2	1149	1204	-

8	772314	50.8	5	1	1049	-	-
9	123796	54	6	1	1417	-	-
10	331215	63	9	1	1730	-	-
11	537402	91.8	18	3	1143	1270	1347
12	744805	79.3	14	2	1274	1992	-
13	98172	64.3	9	1	1937	-	-

Table 10

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	535615	63.4	9	1	1043	-	-
1	898668	52	5	1	1863	-	-
2	1259235	97.2	20	3	1973	1605	1583
3	127106	78.7	14	2	1466	1743	-
4	490358	74.2	12	2	1280	1219	-
5	852409	88.7	17	3	1293	1934	1273
6	1217152	54.3	6	1	1991	-	-
7	82296	95.4	19	3	1580	1555	1791

Table 11

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	209249	73.7	12	2	1208	1497	-
1	378386	97.4	20	3	1942	1754	1613
2	548411	91.7	18	3	1999	1702	1462
3	17733	66.2	10	1	1393	-	-
4	187952	70.8	11	2	1968	1821	-
5	359277	52.3	5	1	1740	-	-
6	528886	78.9	14	2	1308	1984	-
7	700166	70.9	11	2	1050	1358	-
8	167197	75.6	13	2	1437	1430	-
9	338262	59.1	7	1	1697	-	-
10	508324	77	13	2	1397	1304	-
11	678689	67.9	10	2	1803	1083	-
12	146031	81.2	14	2	1720	1932	-
13	316923	78.7	14	2	1247	1121	-
14	488056	63.3	9	1	1634	-	-
15	657326	68.9	11	2	1849	1423	-
16	125509	59.3	7	1	1093	-	-

Table 12

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	263736	98.9	20	3	1381	1680	1488
1	416459	82.3	15	2	1716	1855	-
2	567902	86.7	16	3	1211	1400	1919
3	92979	89.7	17	3	1861	1068	1282
4	245155	98.6	20	3	1507	1194	1461
5	397609	71.1	11	2	1921	1789	-
6	551431	55.9	6	1	1947	-	-
7	74413	67.9	10	2	1350	1372	-
8	226559	84.4	16	3	1203	1107	1443
9	380056	58.8	7	1	1715	-	-
10	533408	65.6	9	1	1017	-	-
11	55547	78.5	14	2	1911	1704	-
12	207876	82.3	15	2	1845	1686	-
13	359771	90.1	17	3	1938	1071	1266
14	511297	90.2	17	3	1989	1089	1950
15	36803	83.1	15	2	1943	1406	-
16	189652	58.8	7	1	1742	-	-
17	341809	77	13	2	1187	1657	-
18	495737	55	6	1	1012	-	-

Table 13

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	22911	58.1	7	1	1929	-	-
1	216473	52.1	5	1	1910	-	-
2	410004	59.9	8	1	1971	-	-
3	603671	60.2	8	1	1812	-	-
4	794160	95.9	19	3	1399	1906	1608
5	192251	79.9	14	2	1626	1859	-
6	385590	78.5	14	2	1238	1917	-
7	579862	53.8	6	1	1763	-	-
8	773423	64.7	9	1	1800	-	-
9	168898	61.4	8	1	1390	-	-
10	361606	83.2	15	2	1692	1858	-
11	553866	84.7	16	3	1533	1677	1638

12	747241	88.7	17	3	1703	1528	1058
13	144710	78.3	14	2	1258	1951	-
14	337856	69.3	11	2	1731	1717	-

Table 14

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	664275	75.3	13	2	1994	1612	-
1	907886	56.3	7	1	1456	-	-
2	151316	67.7	10	2	1617	1185	-
3	393746	55.6	6	1	1337	-	-
4	635093	75.2	13	2	1421	1267	-
5	876993	76.3	13	2	1359	1305	-
6	121278	85.7	16	3	1547	1362	1924
7	362696	98.4	20	3	1873	1550	1249
8	604342	86.4	16	3	1779	1439	1046
9	846453	93.6	18	3	1059	1031	1452
10	91871	63.3	9	1	1328	-	-
11	333050	92.4	18	3	1412	1673	1322

Table 15

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	361323	93.3	18	3	1983	1912	1535
1	515261	69.1	11	2	1102	1794	-
2	39025	86.9	16	3	1044	1152	1148
3	190900	84.9	16	3	1894	1948	1118
4	343941	72.3	12	2	1094	1916	-
5	497624	51.7	5	1	1447	-	-
6	20319	58.3	7	1	1429	-	-
7	172999	60.8	8	1	1979	-	-
8	325872	57.1	7	1	1641	-	-
9	475841	88.9	17	3	1886	1964	1489
10	1489	72	12	2	1909	1297	-
11	153647	90.9	18	3	1261	1566	1370
12	307096	59.8	8	1	1552	-	-
13	458804	70	11	2	1759	1291	-
14	610798	67.2	10	2	1625	1881	-
15	134759	91.2	18	3	1382	1832	1661

16	288306	56.5	7	1	1483	-	-
17	441296	51.2	5	1	1237	-	-
18	592780	74.1	12	2	1471	1245	-
Table 16							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	158286	76.9	13	2	1110	1140	-
1	366024	50.2	5	1	1316	-	-
2	573452	62.9	9	1	1520	-	-
3	780619	64.7	9	1	1902	-	-
4	132455	83.8	15	3	1410	1097	1621
5	340207	65.4	9	1	1944	-	-
6	548208	53.2	6	1	1024	-	-
7	755333	51.7	5	1	1603	-	-
8	107117	78.7	14	2	1804	1168	-
9	314500	72.4	12	2	1030	1343	-
10	522447	53.8	6	1	1327	-	-
11	728517	73.6	12	2	1524	1553	-
12	81611	66.7	10	2	1722	1122	-
13	288948	82.5	15	2	1404	1019	-
Table 17							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	345766	87.6	17	3	1565	1055	1840
1	490019	85.2	16	3	1735	1541	1408
2	39073	84.8	16	3	1534	1889	1463
3	183923	77.9	13	2	1749	1460	-
4	328777	76.5	13	2	1518	1485	-
5	474728	60.9	8	1	1540	-	-
6	21394	83	15	2	1080	1010	-
7	165992	80.4	14	2	1824	1752	-
8	310973	67.5	10	2	1764	1181	-
9	456884	62.1	8	1	1495	-	-
10	3515	86.4	16	3	1773	1966	1263
11	147928	84.3	15	3	1593	1188	1788
12	293225	76.9	13	2	1226	1537	-
13	436922	95.8	19	3	1192	1298	1844

14	584015	55.2	6	1	1644	-	-
15	130832	59	7	1	1402	-	-
16	274684	94.5	19	3	1296	1700	1283
17	418579	91.9	18	3	1970	1978	1165
18	563464	85.2	16	3	1732	1551	1189
19	112787	69.5	11	2	1038	1224	-

Table 18

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	429224	86.4	16	3	1259	1918	1455
1	670241	92.2	18	3	1598	1719	1895
2	912880	80.4	14	2	1816	1899	-
3	158603	54.3	6	1	1335	-	-
4	400824	53.1	5	1	1303	-	-
5	641915	69.4	11	2	1503	1546	-
6	883823	69.1	11	2	1279	1639	-
7	128373	100	20	3	1375	1438	1595
8	370379	79.6	14	2	1239	1705	-
9	611194	88.4	17	3	1374	1579	1623
10	855665	53.3	6	1	1016	-	-
11	98897	65.3	9	1	1709	-	-

Table 19

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	292143	55.3	6	1	1920	-	-
1	499633	58.3	7	1	1797	-	-
2	706377	72.3	12	2	1610	1039	-
3	58989	84.8	16	3	1131	1761	1721
4	266161	82.5	15	2	1875	1431	-
5	474469	63.3	9	1	1095	-	-
6	680544	80	14	2	1119	1913	-
7	33519	90.3	17	3	1660	1853	1123
8	240319	91.1	18	3	1539	1783	1172
9	447400	96.6	19	3	1525	1036	1385
10	654516	82.7	15	2	1710	1990	-
11	8083	50.7	5	1	1234	-	-
12	215435	78.4	14	2	1047	1109	-

13	421325	99.5	20	3	1299	1965	1869
Table 20							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	733725	88.6	17	3	1501	1067	1927
1	977882	57.4	7	1	1723	-	-
2	221197	96.6	19	3	1086	1658	1324
3	462915	69.7	11	2	1751	1945	-
4	705071	77.9	13	2	1642	1317	-
5	947923	62	8	1	1866	-	-
6	191373	88.4	17	3	1997	1077	1366
7	432561	97.3	20	3	1790	1896	1367
8	674004	96.2	19	3	1391	1787	1672
9	915842	95.4	19	3	1020	1892	1414
10	162176	54.8	6	1	1084	-	-
11	403553	80.4	14	2	1850	1436	-
Table 21							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	483470	74.7	12	2	1619	1611	-
1	666072	57.1	7	1	1560	-	-
2	98810	91.9	18	3	1392	1475	1276
3	279914	83.1	15	2	1809	1772	-
4	462536	50.7	5	1	1003	-	-
5	642324	79.2	14	2	1574	1600	-
6	76831	58.7	7	1	1186	-	-
7	257785	71	11	2	1521	1567	-
8	438554	79	14	2	1777	1960	-
9	620397	68.5	10	2	1284	1428	-
10	54310	73.5	12	2	1904	1352	-
11	235506	70.5	11	2	1864	1115	-
12	417036	76.6	13	2	1045	1300	-
13	597974	81.2	14	2	1160	1675	-
14	32086	61.8	8	1	1277	-	-
15	212751	94.9	19	3	1450	1206	1860
Table 22							

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	526149	78.5	14	2	1653	1698	-
1	767135	89.8	17	3	1174	1962	1167
2	12955	59.4	8	1	1982	-	-
3	254612	79.6	14	2	1633	1890	-
4	496588	76	13	2	1112	1811	-
5	739728	53.6	6	1	1144	-	-
6	980872	80.9	14	2	1220	1053	-
7	225249	61.6	8	1	1724	-	-
8	467279	53.4	6	1	1901	-	-
9	709720	59.9	8	1	1379	-	-
10	951847	60.4	8	1	1453	-	-
11	194839	91.4	18	3	1768	1726	1227

Table 23

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	261858	77	13	2	1191	1363	-
1	407646	58.1	7	1	1248	-	-
2	552319	62.1	8	1	1836	-	-
3	99107	76.9	13	2	1334	1236	-
4	243514	80	14	2	1914	1852	-
5	389464	52	5	1	1701	-	-
6	531093	88.6	17	3	1693	1995	1905
7	81159	72.9	12	2	1922	1387	-
8	225245	98.5	20	3	1839	1746	1389
9	371906	57.9	7	1	1193	-	-
10	514197	95.9	19	3	1659	1870	1066
11	63561	53.5	6	1	1162	-	-
12	207510	92	18	3	1745	1654	1458
13	353638	57.3	7	1	1834	-	-
14	497515	70.5	11	2	1684	1586	-
15	45553	70	11	2	1042	1664	-
16	189821	84	15	3	1765	1630	1176
17	335330	76.1	13	2	1557	1057	-
18	478825	93.2	18	3	1985	1018	1340
19	27594	96.8	19	3	1760	1614	1817

Table 24

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	247117	50.1	5	1	1841	-	-
1	453362	93.5	18	3	1590	1081	1413
2	660875	68.8	11	2	1707	1577	-
3	14140	56.3	7	1	1056	-	-
4	220734	86	16	3	1953	1108	1987
5	428367	75.2	13	2	1572	1536	-
6	636681	54.4	6	1	1517	-	-
7	843157	71.1	11	2	1329	1243	-
8	195585	76.2	13	2	1940	1770	-
9	403231	80.2	14	2	1098	1209	-
10	610202	79.7	14	2	1588	1214	-
11	815229	90.9	18	3	1615	1862	1601
12	170267	68.7	10	2	1377	1441	-
13	377306	67.4	10	2	1872	1313	-

Table 25

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	628071	94	19	3	1643	1748	1941
1	853391	70.8	11	2	1177	1201	-
2	156223	56.3	7	1	1006	-	-
3	378734	96.7	19	3	1230	1163	1332
4	601331	90.6	17	3	1217	1582	1498
5	825462	74.5	12	2	1569	1281	-
6	128265	92.6	18	3	1065	1669	1222
7	351161	89	17	3	1493	1135	1380
8	573425	96.5	19	3	1607	1822	1602
9	798431	70.5	11	2	1141	1178	-
10	100737	94	19	3	1009	1629	1956
11	324661	55.8	6	1	1290	-	-
12	546278	87.7	17	3	1435	1963	1164

Table 26

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	1253842	68.6	10	2	1306	1161	-
1	119486	83.1	15	2	1420	1315	-
2	482958	60.9	8	1	1687	-	-
3	845641	77.7	13	2	1776	1158	-
4	1208428	77.4	13	2	1793	1510	-
5	74748	66.8	10	2	1576	1323	-
6	438300	63.7	9	1	1333	-	-
7	800152	91.2	18	3	1409	1681	1275

Table 27

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	545865	83.6	15	3	1632	1195	1000
1	14067	89.4	17	3	1173	1627	1656
2	184953	55.8	6	1	1532	-	-
3	353759	90.9	18	3	1981	1554	1998
4	526388	54.7	6	1	1825	-	-
5	694806	97.7	20	3	1734	1202	1250
6	163568	67.5	10	2	1571	1434	-
7	333410	96.7	19	3	1589	1469	1268
8	504006	68.3	10	2	1750	1954	-
9	675297	78.3	14	2	1591	1082	-
10	142890	55	6	1	1427	-	-
11	312479	84.9	16	3	1129	1936	1199
12	482953	74.6	12	2	1959	1856	-
13	655022	63.3	9	1	1885	-	-
14	121457	99.8	20	3	1035	1515	1120
15	292606	63.6	9	1	1647	-	-
16	461322	87.3	16	3	1931	1051	1831

Table 28

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	565136	85.6	16	3	1946	1078	1015
1	89970	68.6	10	2	1029	1780	-
2	243121	54.2	6	1	1111	-	-

3	396034	61.2	8	1	1104	-	-
4	546225	97.1	20	3	1157	1969	1100
5	70998	98.3	20	3	1142	1699	1622
6	224093	62.4	8	1	1655	-	-
7	376127	80.2	14	2	1126	1769	-
8	527806	87.5	17	3	1216	1448	1179
9	52247	85.8	16	3	1847	1348	1472
10	204582	88.1	17	3	1023	1124	1631
11	357941	65.3	9	1	1848	-	-
12	510977	52.5	5	1	1470	-	-
13	33698	52.3	5	1	1312	-	-
14	186023	74.1	12	2	1915	1200	-
15	339327	54.9	6	1	1479	-	-
16	491053	76.2	13	2	1376	1502	-
17	14858	60.4	8	1	1758	-	-
18	167387	81.5	15	2	1491	1103	-

Table 29

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	507709	50.5	5	1	1857	-	-
1	750249	55.7	6	1	1246	-	-
2	989003	85.8	16	3	1774	1002	1967
3	235634	76.9	13	2	1125	1474	-
4	477675	75.1	13	2	1254	1052	-
5	718312	92.3	18	3	1180	1486	1492
6	960895	78.1	14	2	1301	1757	-
7	205370	92.2	18	3	1898	1252	1713
8	446940	89	17	3	1260	1706	1411
9	689225	70.9	11	2	1578	1620	-
10	932305	63.1	9	1	1782	-	-
11	176231	55.3	6	1	1522	-	-

Table 30

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	277485	83.4	15	3	1454	1205	1801
1	437880	97.3	20	3	1319	1826	1635
2	598445	90.4	17	3	1079	1986	1674

3	97088	91.8	18	3	1563	1151	1802
4	257251	98.2	20	3	1876	1977	1766
5	419893	59.5	8	1	1952	-	-
6	580724	80	14	2	1253	1137	-
7	77366	86.5	16	3	1054	1128	1828
8	238032	91.1	18	3	1105	1599	1442
9	398605	93.5	18	3	1867	1373	1087
10	562025	60.7	8	1	1033	-	-
11	57684	67.2	10	2	1288	1405	-
12	219083	61.8	8	1	1585	-	-
13	379234	79.4	14	2	1933	1667	-
14	540896	81.4	15	2	1096	1464	-
15	37916	65.7	10	1	1496	-	-
16	198794	76	13	2	1733	1255	-
17	359754	81	14	2	1326	1668	-

80 MHz

Table 1							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	636185	77.8	13	2	1665	1477	-
1	32674	51.9	5	1	1074	-	-
2	226294	63.8	9	1	1584	-	-
3	417976	96.6	19	3	1682	1786	1843
4	611152	85.9	16	3	1795	1215	1729
5	8789	73.7	12	2	1198	1549	-
6	201917	77.2	13	2	1837	1819	-
7	395530	68.4	10	2	1587	1114	-
8	588564	76.7	13	2	2000	1155	-
9	783794	53.2	6	1	1147	-	-
10	177933	85.7	16	3	1433	1695	1394
11	370624	94.3	19	3	1670	1426	1935
12	564893	77.6	13	2	1294	1671	-
13	759583	65.7	10	1	1512	-	-
14	154262	93.5	18	3	1444	1130	1468
Table 2							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	653020	75	12	2	1880	1527	-
1	1015643	99.4	20	3	1401	1262	1257
2	1379398	67.4	10	2	1531	1403	-
3	245489	73.6	12	2	1449	1041	-
4	609113	65.9	10	1	1432	-	-
5	970852	83.8	15	3	1356	1292	1419
6	1335913	65.5	9	1	1543	-	-
7	200406	98.6	20	3	1548	1796	1728
Table 3							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	409565	73.8	12	2	1806	1538	-
1	673692	69.5	11	2	1117	1649	-
2	938562	51.9	5	1	1651	-	-
3	113209	84.6	16	3	1976	1032	1271

4	376726	95.4	19	3	1060	1903	1388
5	641212	68	10	2	1368	1351	-
6	903714	89.6	17	3	1338	1514	1573
7	80863	81.9	15	2	1022	1689	-
8	344067	88.3	17	3	1810	1330	1838
9	609331	53.7	6	1	1597	-	-
10	871542	91.3	18	3	1961	1106	1001
Table 4							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	26541	68.1	10	2	1339	1355	-
1	171821	58.7	7	1	1251	-	-
2	316229	75.3	13	2	1136	1640	-
3	461864	56.4	7	1	1753	-	-
4	8677	99.7	20	3	1196	1708	1159
5	153995	57.7	7	1	1013	-	-
6	299238	59.5	8	1	1072	-	-
7	443177	80	14	2	1482	1369	-
8	587671	82	15	2	1993	1197	-
9	135674	82.8	15	2	1883	1005	-
10	279928	88	17	3	1061	1928	1101
11	424279	93.2	18	3	1207	1907	1223
12	570132	70.4	11	2	1526	1360	-
13	117439	95.3	19	3	1171	1955	1775
14	262502	81.9	15	2	1690	1545	-
15	406573	98.5	20	3	1975	1169	1062
16	553328	65	9	1	1767	-	-
17	99799	85.4	16	3	1011	1637	1425
18	244095	91.6	18	3	1878	1445	1325
19	390012	67.3	10	2	1091	1218	-
Table 5							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	629614	67.9	10	2	1320	1133	-
1	96856	62.3	8	1	1957	-	-
2	267719	53.3	6	1	1592	-	-
3	436784	90	17	3	1900	1153	1346

4	608289	77.1	13	2	1166	1646	-
5	75610	83.9	15	3	1278	1232	1459
6	245638	89.1	17	3	1240	1384	1939
7	416355	81.8	15	2	1833	1676	-
8	588736	50.3	5	1	1075	-	-
9	54571	87.1	16	3	1116	1996	1756
10	225175	71.3	11	2	1225	1815	-
11	394825	97.5	20	3	1884	1465	1132
12	565361	90.6	17	3	1561	1040	1354
13	33643	86.3	16	3	1596	1183	1792
14	203957	97.6	20	3	1365	1073	1361
15	373812	84.7	16	3	1021	1718	1854
16	544060	99.7	20	3	1150	1244	1988
Table 6							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	15438	92.9	18	3	1085	1564	1407
1	222486	67.7	10	2	1744	1747	-
2	430731	65.8	10	1	1092	-	-
3	637784	56.3	7	1	1851	-	-
4	845342	53.7	6	1	1727	-	-
5	196720	83.5	15	3	1679	1930	1025
6	404955	65.8	10	1	1519	-	-
7	610711	85.9	16	3	1134	1034	1808
8	818057	76.3	13	2	1606	1926	-
9	171459	81.5	15	2	1891	1714	-
10	377969	89.4	17	3	1310	1594	1827
11	586875	63.4	9	1	1568	-	-
12	792834	69.6	11	2	1307	1925	-
13	146044	74.5	12	2	1264	1846	-
Table 7							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	329022	96.6	19	3	1182	1609	1581
1	521718	96.7	19	3	1829	1799	1154
2	714222	86.5	16	3	1923	1396	1865
3	112450	73.3	12	2	1908	1318	-

4	306283	55.8	6	1	1688	-	-
5	500239	55.4	6	1	1145	-	-
6	690932	85.3	16	3	1336	1504	1820
7	88645	79.4	14	2	1344	1893	-
8	282508	65.7	10	1	1476	-	-
9	475842	68.6	10	2	1008	1028	-
10	667887	77.7	13	2	1972	1835	-
11	64845	79.6	14	2	1882	1331	-
12	257755	94.9	19	3	1830	1070	1349
13	452335	61.4	8	1	1451	-	-
14	643395	90.6	17	3	1233	1562	1887
Table 8							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	51446	52.6	5	1	1210	-	-
1	292696	84.1	15	3	1314	1725	1529
2	533989	97.7	20	3	1139	1868	1805
3	775564	97.3	20	3	1341	1446	1755
4	21542	98.8	20	3	1544	1386	1302
5	263385	72.2	12	2	1771	1184	-
6	505581	67.6	10	2	1175	1027	-
7	747058	75.7	13	2	1026	1871	-
8	989976	60.9	8	1	1798	-	-
9	234024	64.2	9	1	1138	-	-
10	475207	78.8	14	2	1784	1604	-
11	715825	87.5	16	3	1511	1712	1683
Table 9							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	823112	54.1	6	1	1415	-	-
1	174965	50.7	5	1	1221	-	-
2	382216	52.3	5	1	1974	-	-
3	587395	99.8	20	3	1558	1696	1949
4	796897	68.4	10	2	1014	1099	-
5	149042	80.8	14	2	1736	1505	-
6	356750	62.5	9	1	1778	-	-
7	563824	74.8	12	2	1149	1204	-

8	772314	50.8	5	1	1049	-	-
9	123796	54	6	1	1417	-	-
10	331215	63	9	1	1730	-	-
11	537402	91.8	18	3	1143	1270	1347
12	744805	79.3	14	2	1274	1992	-
13	98172	64.3	9	1	1937	-	-
Table 10							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	535615	63.4	9	1	1043	-	-
1	898668	52	5	1	1863	-	-
2	1259235	97.2	20	3	1973	1605	1583
3	127106	78.7	14	2	1466	1743	-
4	490358	74.2	12	2	1280	1219	-
5	852409	88.7	17	3	1293	1934	1273
6	1217152	54.3	6	1	1991	-	-
7	82296	95.4	19	3	1580	1555	1791
Table 11							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	209249	73.7	12	2	1208	1497	-
1	378386	97.4	20	3	1942	1754	1613
2	548411	91.7	18	3	1999	1702	1462
3	17733	66.2	10	1	1393	-	-
4	187952	70.8	11	2	1968	1821	-
5	359277	52.3	5	1	1740	-	-
6	528886	78.9	14	2	1308	1984	-
7	700166	70.9	11	2	1050	1358	-
8	167197	75.6	13	2	1437	1430	-
9	338262	59.1	7	1	1697	-	-
10	508324	77	13	2	1397	1304	-
11	678689	67.9	10	2	1803	1083	-
12	146031	81.2	14	2	1720	1932	-
13	316923	78.7	14	2	1247	1121	-
14	488056	63.3	9	1	1634	-	-
15	657326	68.9	11	2	1849	1423	-
16	125509	59.3	7	1	1093	-	-

Table 12

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	263736	98.9	20	3	1381	1680	1488
1	416459	82.3	15	2	1716	1855	-
2	567902	86.7	16	3	1211	1400	1919
3	92979	89.7	17	3	1861	1068	1282
4	245155	98.6	20	3	1507	1194	1461
5	397609	71.1	11	2	1921	1789	-
6	551431	55.9	6	1	1947	-	-
7	74413	67.9	10	2	1350	1372	-
8	226559	84.4	16	3	1203	1107	1443
9	380056	58.8	7	1	1715	-	-
10	533408	65.6	9	1	1017	-	-
11	55547	78.5	14	2	1911	1704	-
12	207876	82.3	15	2	1845	1686	-
13	359771	90.1	17	3	1938	1071	1266
14	511297	90.2	17	3	1989	1089	1950
15	36803	83.1	15	2	1943	1406	-
16	189652	58.8	7	1	1742	-	-
17	341809	77	13	2	1187	1657	-
18	495737	55	6	1	1012	-	-

Table 13

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	22911	58.1	7	1	1929	-	-
1	216473	52.1	5	1	1910	-	-
2	410004	59.9	8	1	1971	-	-
3	603671	60.2	8	1	1812	-	-
4	794160	95.9	19	3	1399	1906	1608
5	192251	79.9	14	2	1626	1859	-
6	385590	78.5	14	2	1238	1917	-
7	579862	53.8	6	1	1763	-	-
8	773423	64.7	9	1	1800	-	-
9	168898	61.4	8	1	1390	-	-
10	361606	83.2	15	2	1692	1858	-
11	553866	84.7	16	3	1533	1677	1638

12	747241	88.7	17	3	1703	1528	1058
13	144710	78.3	14	2	1258	1951	-
14	337856	69.3	11	2	1731	1717	-

Table 14

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	664275	75.3	13	2	1994	1612	-
1	907886	56.3	7	1	1456	-	-
2	151316	67.7	10	2	1617	1185	-
3	393746	55.6	6	1	1337	-	-
4	635093	75.2	13	2	1421	1267	-
5	876993	76.3	13	2	1359	1305	-
6	121278	85.7	16	3	1547	1362	1924
7	362696	98.4	20	3	1873	1550	1249
8	604342	86.4	16	3	1779	1439	1046
9	846453	93.6	18	3	1059	1031	1452
10	91871	63.3	9	1	1328	-	-
11	333050	92.4	18	3	1412	1673	1322

Table 15

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	361323	93.3	18	3	1983	1912	1535
1	515261	69.1	11	2	1102	1794	-
2	39025	86.9	16	3	1044	1152	1148
3	190900	84.9	16	3	1894	1948	1118
4	343941	72.3	12	2	1094	1916	-
5	497624	51.7	5	1	1447	-	-
6	20319	58.3	7	1	1429	-	-
7	172999	60.8	8	1	1979	-	-
8	325872	57.1	7	1	1641	-	-
9	475841	88.9	17	3	1886	1964	1489
10	1489	72	12	2	1909	1297	-
11	153647	90.9	18	3	1261	1566	1370
12	307096	59.8	8	1	1552	-	-
13	458804	70	11	2	1759	1291	-
14	610798	67.2	10	2	1625	1881	-
15	134759	91.2	18	3	1382	1832	1661

16	288306	56.5	7	1	1483	-	-
17	441296	51.2	5	1	1237	-	-
18	592780	74.1	12	2	1471	1245	-
Table 16							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	158286	76.9	13	2	1110	1140	-
1	366024	50.2	5	1	1316	-	-
2	573452	62.9	9	1	1520	-	-
3	780619	64.7	9	1	1902	-	-
4	132455	83.8	15	3	1410	1097	1621
5	340207	65.4	9	1	1944	-	-
6	548208	53.2	6	1	1024	-	-
7	755333	51.7	5	1	1603	-	-
8	107117	78.7	14	2	1804	1168	-
9	314500	72.4	12	2	1030	1343	-
10	522447	53.8	6	1	1327	-	-
11	728517	73.6	12	2	1524	1553	-
12	81611	66.7	10	2	1722	1122	-
13	288948	82.5	15	2	1404	1019	-
Table 17							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	345766	87.6	17	3	1565	1055	1840
1	490019	85.2	16	3	1735	1541	1408
2	39073	84.8	16	3	1534	1889	1463
3	183923	77.9	13	2	1749	1460	-
4	328777	76.5	13	2	1518	1485	-
5	474728	60.9	8	1	1540	-	-
6	21394	83	15	2	1080	1010	-
7	165992	80.4	14	2	1824	1752	-
8	310973	67.5	10	2	1764	1181	-
9	456884	62.1	8	1	1495	-	-
10	3515	86.4	16	3	1773	1966	1263
11	147928	84.3	15	3	1593	1188	1788
12	293225	76.9	13	2	1226	1537	-
13	436922	95.8	19	3	1192	1298	1844

14	584015	55.2	6	1	1644	-	-
15	130832	59	7	1	1402	-	-
16	274684	94.5	19	3	1296	1700	1283
17	418579	91.9	18	3	1970	1978	1165
18	563464	85.2	16	3	1732	1551	1189
19	112787	69.5	11	2	1038	1224	-

Table 18

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	429224	86.4	16	3	1259	1918	1455
1	670241	92.2	18	3	1598	1719	1895
2	912880	80.4	14	2	1816	1899	-
3	158603	54.3	6	1	1335	-	-
4	400824	53.1	5	1	1303	-	-
5	641915	69.4	11	2	1503	1546	-
6	883823	69.1	11	2	1279	1639	-
7	128373	100	20	3	1375	1438	1595
8	370379	79.6	14	2	1239	1705	-
9	611194	88.4	17	3	1374	1579	1623
10	855665	53.3	6	1	1016	-	-
11	98897	65.3	9	1	1709	-	-

Table 19

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	292143	55.3	6	1	1920	-	-
1	499633	58.3	7	1	1797	-	-
2	706377	72.3	12	2	1610	1039	-
3	58989	84.8	16	3	1131	1761	1721
4	266161	82.5	15	2	1875	1431	-
5	474469	63.3	9	1	1095	-	-
6	680544	80	14	2	1119	1913	-
7	33519	90.3	17	3	1660	1853	1123
8	240319	91.1	18	3	1539	1783	1172
9	447400	96.6	19	3	1525	1036	1385
10	654516	82.7	15	2	1710	1990	-
11	8083	50.7	5	1	1234	-	-
12	215435	78.4	14	2	1047	1109	-

13	421325	99.5	20	3	1299	1965	1869
Table 20							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	733725	88.6	17	3	1501	1067	1927
1	977882	57.4	7	1	1723	-	-
2	221197	96.6	19	3	1086	1658	1324
3	462915	69.7	11	2	1751	1945	-
4	705071	77.9	13	2	1642	1317	-
5	947923	62	8	1	1866	-	-
6	191373	88.4	17	3	1997	1077	1366
7	432561	97.3	20	3	1790	1896	1367
8	674004	96.2	19	3	1391	1787	1672
9	915842	95.4	19	3	1020	1892	1414
10	162176	54.8	6	1	1084	-	-
11	403553	80.4	14	2	1850	1436	-
Table 21							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	483470	74.7	12	2	1619	1611	-
1	666072	57.1	7	1	1560	-	-
2	98810	91.9	18	3	1392	1475	1276
3	279914	83.1	15	2	1809	1772	-
4	462536	50.7	5	1	1003	-	-
5	642324	79.2	14	2	1574	1600	-
6	76831	58.7	7	1	1186	-	-
7	257785	71	11	2	1521	1567	-
8	438554	79	14	2	1777	1960	-
9	620397	68.5	10	2	1284	1428	-
10	54310	73.5	12	2	1904	1352	-
11	235506	70.5	11	2	1864	1115	-
12	417036	76.6	13	2	1045	1300	-
13	597974	81.2	14	2	1160	1675	-
14	32086	61.8	8	1	1277	-	-
15	212751	94.9	19	3	1450	1206	1860
Table 22							

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	526149	78.5	14	2	1653	1698	-
1	767135	89.8	17	3	1174	1962	1167
2	12955	59.4	8	1	1982	-	-
3	254612	79.6	14	2	1633	1890	-
4	496588	76	13	2	1112	1811	-
5	739728	53.6	6	1	1144	-	-
6	980872	80.9	14	2	1220	1053	-
7	225249	61.6	8	1	1724	-	-
8	467279	53.4	6	1	1901	-	-
9	709720	59.9	8	1	1379	-	-
10	951847	60.4	8	1	1453	-	-
11	194839	91.4	18	3	1768	1726	1227

Table 23

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	261858	77	13	2	1191	1363	-
1	407646	58.1	7	1	1248	-	-
2	552319	62.1	8	1	1836	-	-
3	99107	76.9	13	2	1334	1236	-
4	243514	80	14	2	1914	1852	-
5	389464	52	5	1	1701	-	-
6	531093	88.6	17	3	1693	1995	1905
7	81159	72.9	12	2	1922	1387	-
8	225245	98.5	20	3	1839	1746	1389
9	371906	57.9	7	1	1193	-	-
10	514197	95.9	19	3	1659	1870	1066
11	63561	53.5	6	1	1162	-	-
12	207510	92	18	3	1745	1654	1458
13	353638	57.3	7	1	1834	-	-
14	497515	70.5	11	2	1684	1586	-
15	45553	70	11	2	1042	1664	-
16	189821	84	15	3	1765	1630	1176
17	335330	76.1	13	2	1557	1057	-
18	478825	93.2	18	3	1985	1018	1340
19	27594	96.8	19	3	1760	1614	1817

Table 24

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	247117	50.1	5	1	1841	-	-
1	453362	93.5	18	3	1590	1081	1413
2	660875	68.8	11	2	1707	1577	-
3	14140	56.3	7	1	1056	-	-
4	220734	86	16	3	1953	1108	1987
5	428367	75.2	13	2	1572	1536	-
6	636681	54.4	6	1	1517	-	-
7	843157	71.1	11	2	1329	1243	-
8	195585	76.2	13	2	1940	1770	-
9	403231	80.2	14	2	1098	1209	-
10	610202	79.7	14	2	1588	1214	-
11	815229	90.9	18	3	1615	1862	1601
12	170267	68.7	10	2	1377	1441	-
13	377306	67.4	10	2	1872	1313	-

Table 25

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	628071	94	19	3	1643	1748	1941
1	853391	70.8	11	2	1177	1201	-
2	156223	56.3	7	1	1006	-	-
3	378734	96.7	19	3	1230	1163	1332
4	601331	90.6	17	3	1217	1582	1498
5	825462	74.5	12	2	1569	1281	-
6	128265	92.6	18	3	1065	1669	1222
7	351161	89	17	3	1493	1135	1380
8	573425	96.5	19	3	1607	1822	1602
9	798431	70.5	11	2	1141	1178	-
10	100737	94	19	3	1009	1629	1956
11	324661	55.8	6	1	1290	-	-
12	546278	87.7	17	3	1435	1963	1164

Table 26

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	1253842	68.6	10	2	1306	1161	-
1	119486	83.1	15	2	1420	1315	-
2	482958	60.9	8	1	1687	-	-
3	845641	77.7	13	2	1776	1158	-
4	1208428	77.4	13	2	1793	1510	-
5	74748	66.8	10	2	1576	1323	-
6	438300	63.7	9	1	1333	-	-
7	800152	91.2	18	3	1409	1681	1275

Table 27

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	545865	83.6	15	3	1632	1195	1000
1	14067	89.4	17	3	1173	1627	1656
2	184953	55.8	6	1	1532	-	-
3	353759	90.9	18	3	1981	1554	1998
4	526388	54.7	6	1	1825	-	-
5	694806	97.7	20	3	1734	1202	1250
6	163568	67.5	10	2	1571	1434	-
7	333410	96.7	19	3	1589	1469	1268
8	504006	68.3	10	2	1750	1954	-
9	675297	78.3	14	2	1591	1082	-
10	142890	55	6	1	1427	-	-
11	312479	84.9	16	3	1129	1936	1199
12	482953	74.6	12	2	1959	1856	-
13	655022	63.3	9	1	1885	-	-
14	121457	99.8	20	3	1035	1515	1120
15	292606	63.6	9	1	1647	-	-
16	461322	87.3	16	3	1931	1051	1831

Table 28

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	565136	85.6	16	3	1946	1078	1015
1	89970	68.6	10	2	1029	1780	-
2	243121	54.2	6	1	1111	-	-

3	396034	61.2	8	1	1104	-	-
4	546225	97.1	20	3	1157	1969	1100
5	70998	98.3	20	3	1142	1699	1622
6	224093	62.4	8	1	1655	-	-
7	376127	80.2	14	2	1126	1769	-
8	527806	87.5	17	3	1216	1448	1179
9	52247	85.8	16	3	1847	1348	1472
10	204582	88.1	17	3	1023	1124	1631
11	357941	65.3	9	1	1848	-	-
12	510977	52.5	5	1	1470	-	-
13	33698	52.3	5	1	1312	-	-
14	186023	74.1	12	2	1915	1200	-
15	339327	54.9	6	1	1479	-	-
16	491053	76.2	13	2	1376	1502	-
17	14858	60.4	8	1	1758	-	-
18	167387	81.5	15	2	1491	1103	-

Table 29

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	507709	50.5	5	1	1857	-	-
1	750249	55.7	6	1	1246	-	-
2	989003	85.8	16	3	1774	1002	1967
3	235634	76.9	13	2	1125	1474	-
4	477675	75.1	13	2	1254	1052	-
5	718312	92.3	18	3	1180	1486	1492
6	960895	78.1	14	2	1301	1757	-
7	205370	92.2	18	3	1898	1252	1713
8	446940	89	17	3	1260	1706	1411
9	689225	70.9	11	2	1578	1620	-
10	932305	63.1	9	1	1782	-	-
11	176231	55.3	6	1	1522	-	-

Table 30

Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
0	277485	83.4	15	3	1454	1205	1801
1	437880	97.3	20	3	1319	1826	1635
2	598445	90.4	17	3	1079	1986	1674

3	97088	91.8	18	3	1563	1151	1802
4	257251	98.2	20	3	1876	1977	1766
5	419893	59.5	8	1	1952	-	-
6	580724	80	14	2	1253	1137	-
7	77366	86.5	16	3	1054	1128	1828
8	238032	91.1	18	3	1105	1599	1442
9	398605	93.5	18	3	1867	1373	1087
10	562025	60.7	8	1	1033	-	-
11	57684	67.2	10	2	1288	1405	-
12	219083	61.8	8	1	1585	-	-
13	379234	79.4	14	2	1933	1667	-
14	540896	81.4	15	2	1096	1464	-
15	37916	65.7	10	1	1496	-	-
16	198794	76	13	2	1733	1255	-
17	359754	81	14	2	1326	1668	-