

8/22/2024

HP Inc.
1501 Page Mill Road
Palo Alto, CA, 943041126
USA

Dear Tony Griffiths,

Enclosed is the EMC Wireless test report for compliance testing of the HP Inc. Model PATX-STX-72R as tested to the requirements of FCC Part 15.407 and RSS-247 Issue 3 for Intentional Radiators.

Thank you for using the services of Eurofins MET Labs. 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,
EUROFINS MET LABS



Nancy LaBrecque
Documentation Department

Reference: WIRA131254-FCC 407 RSS247 5GHz WiFi_R3

Certificates and reports shall not be reproduced except in full, without the written permission of Eurofins MET Labs, Inc.

5GHz UNII Band WiFi Test Report
for the

HP Inc.
PATX-STX-72R

Tested under
FCC Part 15.407 and RSS-247 Issue 3
For Intentional Radiators



Bryan Taylor, Wireless Team Lead
Electromagnetic Compatibility Lab



Nancy LaBrecque
Documentation Department

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules Part 15.247 under normal use and maintenance.



Matthew Hinojosa
EMC Manager, Austin Electromagnetic Compatibility Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
∅	6/14/2024	Initial Issue.
1	7/11/2024	Changes requested by client
2	8/19/2024	Changes requested by reviewer
3	8/22/2024	Changes requested by reviewer

Table of Contents

I.	Executive Summary	1
	A. Purpose of Test	2
	B. Executive Summary	2
II.	Equipment Configuration	3
	A. Overview	4
	B. References	5
	C. Test Site	6
	D. Measurement Uncertainty	6
	E. Description of Test Sample	6
	F. Equipment Configuration	7
	G. Support Equipment	7
	H. Ports and Cabling Information	7
	I. Mode of Operation	8
	J. Method of Monitoring EUT Operation	9
	K. Modifications	9
	a) Modifications to EUT	9
	b) Modifications to Test Standard	9
	L. Disposition of EUT	9
III.	Electromagnetic Compatibility Criteria for Intentional Radiators	10
	§ 15.203 Antenna Requirement	11
	§ 15.407(b)(6) Conducted Emissions	12
	§ 15.403(i) 26dB Bandwidth	15
	§ 15.407(a)(1) Maximum Conducted Output Power	19
	§ 15.407(a)(1) Maximum Conducted Output Power	23
	§ 15.407(a)(1) Maximum Power Spectral Density	27
	§ 15.407(a)(1) Maximum Conducted Output Power	31
	§ 15.407(b) & (6 - 7) Undesirable Emissions	35
	§ 15.407(g) Frequency Stability	43
IV.	Test Equipment	44

List of Tables

Table 1. Executive Summary of FCC Part 15.407 Compliance Testing	2
Table 2. Executive Summary of ISED Compliance Testing	2
Table 3. References	5
Table 4. Uncertainty Calculations Summary	6
Table 5. Support Equipment	7
Table 6. Ports and Cabling Information	7
Table 7. Test Channels Utilized	8
Table 8. Conducted Limits for Intentional Radiators from FCC Part 15 § 15.207(a)	12
Table 9. Occupied Bandwidth, Test Results (UNII-1 and UNII 2A)	16
Table 10. Occupied Bandwidth, Test Results (UNII-2C)	17
Table 11. Occupied Bandwidth, Test Results (UNII-3)	18
Table 12. Conducted Output Power, Test Results (UNII-1 and 2A)	20
Table 13. Conducted Output Power, Test Results (UNII-2C)	21
Table 14. Conducted Output Power, Test Results (UNII-3)	22
Table 15. EIRP, Test Results (UNII-1 and 2A)	24
Table 16. EIRP, Test Results (UNII-2C)	25
Table 17. EIRP, Test Results (UNII-3)	26
Table 18. Power Spectral Density, Test Results (UNII-1 and 2A)	28
Table 19. Power Spectral Density, Test Results (UNII-2C)	29
Table 20. Power Spectral Density, Test Results (UNII-3)	30
Table 21. EIRP Spectral Density, Test Results (UNII-1 and 2A)	32
Table 22. EIRP Spectral Density, Test Results (UNII-2C)	33
Table 23. EIRP Spectral Density, Test Results (UNII-3)	34
Table 24. UNII-1 Worst Case Restricted Band Edge Emissions	36
Table 25. UNII-1 Worst Case -27dBm/MHz EIRP Emissions	36
Table 26. UNII-2A Worst Case Restricted Band Edge Emissions	37
Table 27. UNII-2A Worst Case -27dBm/MHz EIRP Emissions	37
Table 28. UNII-2C Worst Case Restricted Band Edge Emissions	38
Table 29. UNII-2C Worst Case -27dBm/MHz EIRP Emissions	38
Table 30. Test Equipment List	45

List of Terms and Abbreviations

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

I. Executive Summary

A. Purpose of Test

An EMC evaluation was performed to determine compliance of the HP Inc. Model PATX-STX-72R, with the requirements of FCC Part 15.407 and RSS-247 Issue 3. HP Inc. should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the Model PATX-STX-72R, 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 FCC Part 15.407 and RSS-247 Issue 3, in accordance with HP Inc. purchase order number 3700139236. All tests were conducted using measurement procedures ANSI C63.4-2014 and ANSI C63.10-2013.

FCC Reference	Description	Results
§15.203	Antenna Requirement	Compliant
§15.407(b)(9)	Conducted Emission Limits	Compliant
§15.403(i)	26dB Occupied Bandwidth	Compliant
§15.407 (a)	Maximum Conducted Output Power	Compliant
§15.407 (a)	Maximum Power Spectral Density	Compliant
§15.407 (b)	Undesirable Emissions	Compliant
§15.407(g)	Frequency Stability	Compliant

Table 1. Executive Summary of FCC Part 15.407 Compliance Testing

ISED Reference	Description	Results
RSS-Gen (8.7)	Conducted Emission Limits	Compliant
RSS-Gen (6.7)	99% Occupied Bandwidth	Compliant
RSS-247 (6.2)	26dB Occupied Bandwidth	Compliant
RSS-247 (6.2)	Maximum Conducted Output Power	Compliant
RSS-247 (6.2)	Effective Isotropic Radiated Power	Compliant
RSS-247 (6.2)	Maximum Power Spectral Density	Compliant
RSS-247 (6.2)	EIRP Spectral Density	Compliant
RSS-247 (6.2)	Undesirable Emissions	Compliant
RSS-247 (6.2)	Transmissions in the 5600 – 5650MHz Band	Compliant
RSS-247 (6.2)	Frequency Stability	Compliant

Table 2. Executive Summary of ISED Compliance Testing

II. Equipment Configuration

A. Overview

Eurofins MET Labs was contracted by HP Inc. to perform testing on the Model PATX-STX-72R, under HP Inc.'s purchase order number 3700139236.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the HP Inc. Model PATX-STX-72R.

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

Product Marketing Name Tested:	Poly Studio X72		
Product Marketing Name Included by Similarity:	Poly Studio V72 (Note: this is a software depopulated version of the Poly Studio X72)		
Model(s) Number:	PATX-STX-72R		
FCCID:	M72-STX72R		
ICID:	1849C-STX72R		
EUT Specifications:	Primary Power: 100 – 230VAC		
	Frequency Range: 50Hz / 60Hz		
	Type of Modulations:	OFDM	
	Equipment Code:	NII	
	Antenna Gain ¹ :	3.3dBi (Antenna Path 1) 3.3dBi (Antenna Path 2) Directional Gain = $3.3 + 10\log(2) = 6.31\text{dBi}$ Note: the array gain was calculated per KDB 662911 D01 Section F.2.a.(i) for correlated signals with equal antenna gains.	
	EUT Frequency Ranges:	U-NII-1:	5150 – 5250 MHz
		U-NII-2A:	5250 – 5350 MHz
		U-NII-2C:	5470 – 5725 MHz
		U-NII-3:	5725 – 5850 MHz
	Maximum Conducted Output Power:	U-NII-1:	12.87dBm
U-NII-2A:		13.10dBm	
U-NII-2C:		14.27dBm	
U-NII-3:		14.17dBm	
Analysis:	The results obtained relate only to the item(s) tested.		
Environmental Test Conditions:	Temperature: 15-35° C		
	Relative Humidity: 30-60%		
	Barometric Pressure: 860-1060 mbar		
Type of Filing:	Original		
Evaluated by:	Bryan Taylor		
Report Date(s):	8/22/2024		

Figure 1. EUT Summary Table

¹ The antenna gain information was provided by HP Inc. at the time of testing.

Description	Model Number	Part Number	Serial Number	Rev #
Poly Studio X72 (Conducted Radio System)	PATX-STX-72R	2215-88502-001	8G241085CDA0FZ	HWv3
Poly Studio X72 (Radiated Radio System)	PATX-STX-72R	2215-88502-001	8G24098E9084FZ	HWv3
Mass Power AC/DC PSU	S065 1A1205 00B3	N/A	N/A	N/A

Figure 2. EUT List

B. References

CFR 47, Part 15, Subpart E	Unlicensed National Information Infrastructure Devices (UNII)
RSS-247: Issue 3	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
RSS-Gen: Issue 5	General Requirements for Compliance of Radio Apparatus
ANSI C63.4:2014	Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical And Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
ISO/IEC 17025:2005	General Requirements for the Competence of Testing and Calibration Laboratories
ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
789033 D02 General UNII Test Procedures New Rules v02	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E

Table 3. References

C. Test Site

All testing was performed at Eurofins MET Labs, Inc., 13501 McCallen Pass, Austin TX 78753. 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 10 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 Eurofins MET Labs.

ISED Lab Info:

CAB Identifier: US0004
Company Number: 2043D

FCC Lab Info:

Designation Number: US1127

D. Measurement Uncertainty

E. Test Method	F. Typical Expanded Uncertainty	G. K	H. Confidence Level
Occupied Bandwidth Measurements	±4.52 Hz	2	95%
Conducted Power Measurements	±2.74 dB	2	95%
Power Spectral Density Measurements	±2.74 dB	2	95%
Conducted Spurious Emissions	±2.80 dB	2	95%
Conducted Emissions (Mains)	±2.97 dB	2	95%
Radiated Spurious Emissions (9kHz – 1GHz)	±2.95 dB	2	95%
Radiated Spurious Emissions (1GHz - 40GHz)	±3.54 dB	2	95%

Table 4. Uncertainty Calculations Summary

I. Description of Test Sample

The HP Inc. model PATX-STX-72R (marketed as Poly Studio X72 or Poly Studio V72), is a video conferencing bar designed to act as a video endpoint over LAN networks. The device is powered by an external AC/DC power supply and the top-level version of the PATX-STX-72R contains 2.4GHz / 5GHz Wi-Fi (6) and Bluetooth radio interfaces.

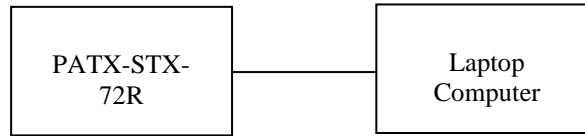


Figure 3. Block Diagram of Test Configuration

J. Equipment Configuration

The EUT was set up as outlined in Figure 3. The laptop computer was used to send test commands to force the transmitters to operate in the appropriate test mode.

K. Support Equipment

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

Name/Description	Manufacturer	Model Number	Customer Supplied Calibration Data
3mm Audio Headset and Mic	N/A	N/A	N/A
Poly External RJ11 Mic	Poly	2201-87610-001	N/A
HP USB Keyboard	HP	KU-0316	N/A
Dell Inspiron Laptop	Dell	P107F	N/A
Bluetooth remote Controller	Poly/Remotec	P010	N/A
Poly External IP Mic (RJ45)	Poly	P013	N/A
Delta Midspan POE Injector	Delta	ADH-45AR-F	N/A
HP 4K Monitor	HP	1B9T0AA	N/A
HP 4K Monitor	HP	1B9T0AA	N/A
CISCO AIR Wi-Fi Router	CISCO	AIR-LAP1142N-A-K9	N/A
CISCO WAN Wired Router	CISCO	RV042G	N/A
Poly Studio X30	Poly	P018	N/A
LG Monitor	LG	24UD58-B	N/A

Table 5. Support Equipment

L. Ports and Cabling Information

Port Name on EUT	Cable Description or reason for no cable	Qty	Length as tested (m)	Max Length (m)	Shielded? (Y/N)	Termination Box ID & Port Name
Stereo Line IN	Wired 3mm		1m	1m	No	Headset
Stereo Line OUT	Wired 3mm		1m	1m	No	Mic
Mic Port	RJ11 Cable		5m	5m	Yes	Poly External Microphone
RJ45 Corporate	Cat 5e		4.5	4.5	Yes	Cloud/Router
RJ45 LLN	Cat 5e		4.5	4.5	Yes	IP Mic via POE Injector
HDMI Aux Out	HDMI		2m	2m	Yes	4K Monitor
HDMI Primary Out	HDMI		2m	2m	Yes	4K Monitor
HDMI Content Input	HDMI		2m	2m	Yes	Dell Laptop
USB 3.0	USB		2m	2m	Yes	USB Mouse
USB 3.0	USB		2m	2m	Yes	USB Keyboard
USB 3.1 Type C					No	Service port only

Table 6. Ports and Cabling Information

M. Mode of Operation

The support laptop provided a direct means of controlling transmitter parameters. Unless otherwise stated or shown, all tests were performed at worst-case modulation and data rates on the following channels.

Transmit Band	Operating Mode	Worst Case Transmission Bandwidth	Channel Numbers Tested	Channel Frequencies Tested	Test Tool Power Setting
U-NII-1	802.11a	20MHz	36 / 40 / 48	5180MHz / 5200MHz / 5240MHz	10.5dBm
	802.11n	20MHz	36 / 40 / 48	5180MHz / 5200MHz / 5240MHz	10.5dBm
	802.11n (40)	40MHz	38 / 46	5190MHz / 5230MHz	10.5dBm
	802.11ac	80MHz	42	5210MHz	10.5dBm
	802.11ax	80MHz	42	5210MHz	10.5dBm
U-NII-2A	802.11a	20MHz	52 / 56 / 64	5260MHz / 5280MHz / 5320MHz	10.5dBm
	802.11n	20MHz	52 / 56 / 64	5260MHz / 5280MHz / 5320MHz	10.5dBm
	802.11n (40)	40MHz	54 / 62	5270MHz / 5310MHz	10.5dBm
	802.11ac	80MHz	58	5290MHz	10.5dBm
	802.11ax	80MHz	58	5290MHz	10.5dBm
U-NII-2A	802.11a	20MHz	100 / 120 / 144	5500MHz / 5600MHz / 5720MHz	10.5dBm
	802.11n	20MHz	100 / 120 / 144	5500MHz / 5600MHz / 5720MHz	10.5dBm
	802.11n (40)	40MHz	102 / 118 / 142	5510MHz / 5590MHz / 5710MHz	10.5dBm
	802.11ac	80MHz	106 / 122 / 138	5230MHz / 5610MHz / 5690MHz	10.5dBm
	802.11ax	80MHz	106 / 122 / 138	5230MHz / 5610MHz / 5690MHz	10.5dBm
U-NII-3	802.11a	20MHz	149 / 157 / 165	5745MHz / 5785MHz / 5825MHz	10.5dBm
	802.11n	20MHz	149 / 157 / 165	5745MHz / 5785MHz / 5825MHz	10.5dBm
	802.11n (40)	40MHz	151 / 159	5755MHz / 5780MHz	10.5dBm
	802.11ac	80MHz	155	5775MHz	10.5dBm
	802.11ax	80MHz	155	5775MHz	10.5dBm

Table 7. Test Channels Utilized

N. Method of Monitoring EUT Operation

A spectrum analyzer was used to confirm proper transmitter operation.

O. 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.

P. Disposition of EUT

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

III. Electromagnetic Compatibility Criteria for Intentional Radiators

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.203 Antenna Requirement

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

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

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

Results: The EUT as tested is compliant the criteria of §15.203. The antenna is not accessible by the end user.

Test Engineer(s): Bryan Taylor

Test Date(s): 4/17/2024

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(b)(6) Conducted Emissions

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

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

Frequency range (MHz)	§ 15.207(a), Conducted Limit (dB μ V)	
	Quasi-Peak	Average
0.15- 0.5	66 – 56	56 - 46
0.5 - 5	56	46
5 - 30	60	50

Table 8. Conducted Limits for Intentional Radiators from FCC Part 15 § 15.207(a)

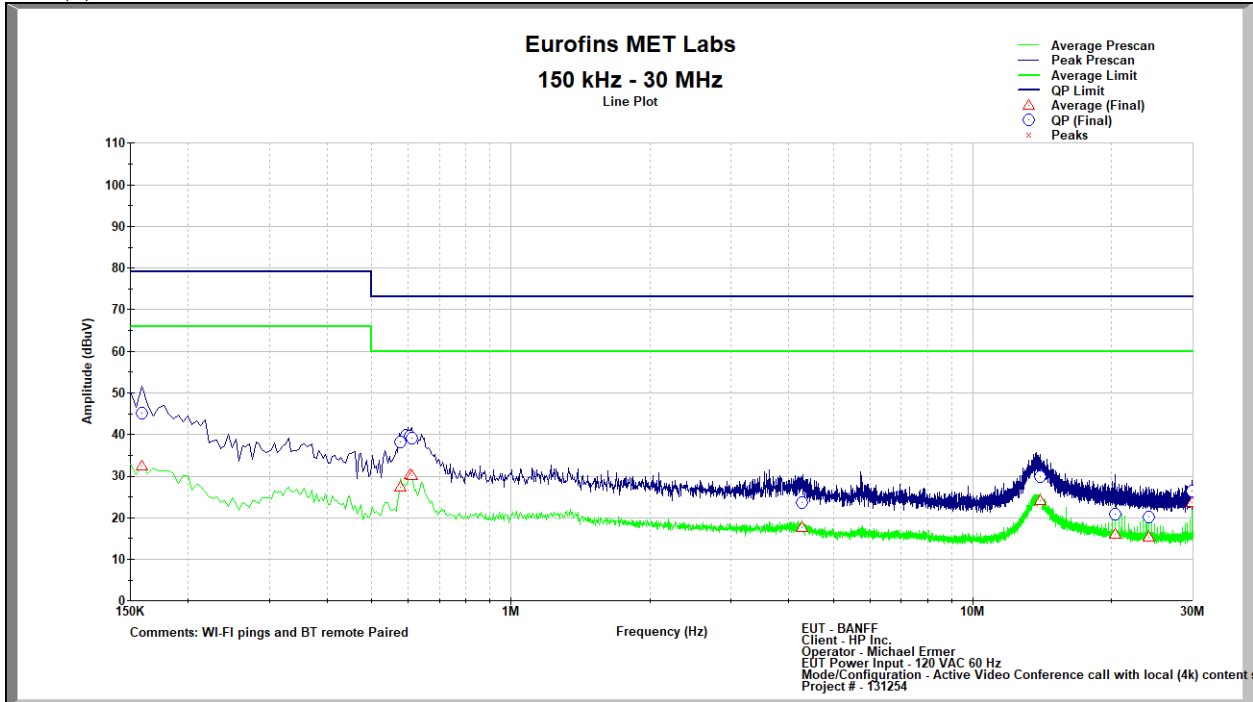
Test Procedure: The EUT was placed on a non-metallic table above a ground plane. The EUT was situated such that the back of the EUT was 0.4 m from one wall of the vertical ground plane, and the remaining sides of the EUT were no closer than 0.8 m from any other conductive surface. The EUT was powered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

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

Test Engineer(s): Michael Ermer

Test Date(s): 4/15/2024

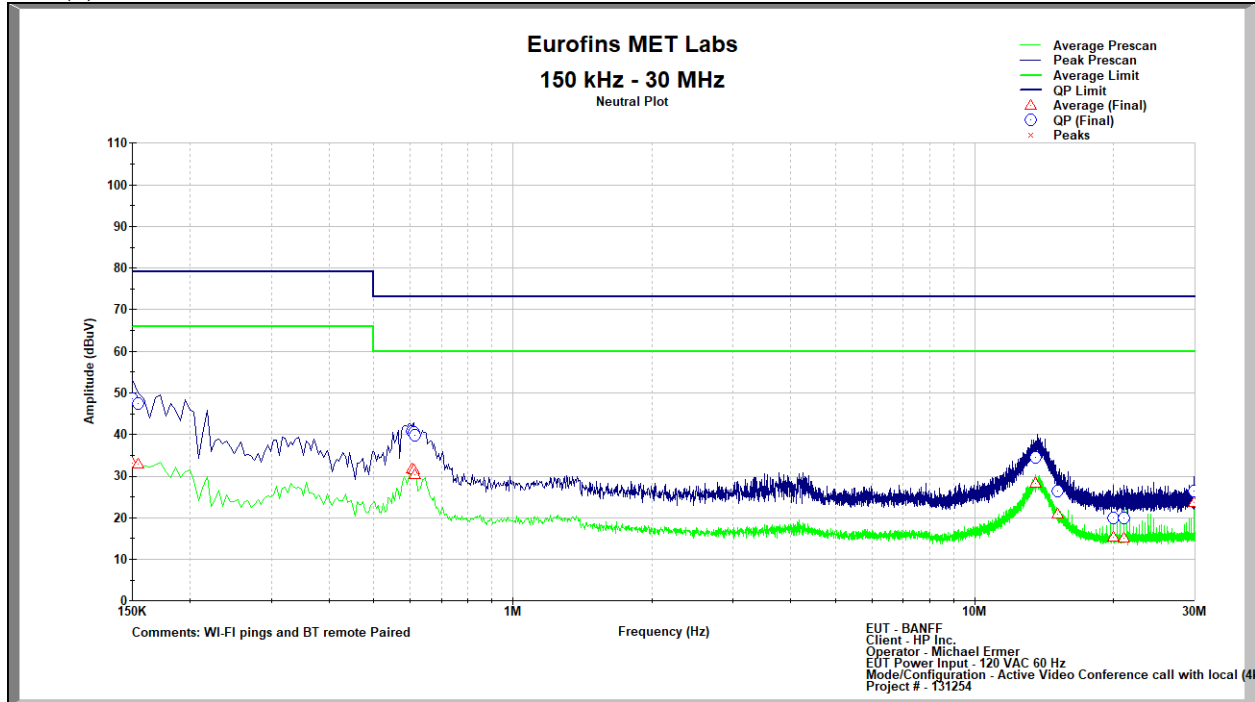
15.207(a) Conducted Emissions Test Results



Frequency (MHz)	Quasi-Peak (dBµV/m)	Quasi-Peak Limit (dBµV/m)	Quasi-Peak Margin (dB)	Average (dBµV/m)	Average Limit (dBµV/m)	Average Margin (dB)
0.159	45.101	79.000	33.899	32.382	66.000	33.618
0.578	38.186	73.000	34.814	27.347	60.000	32.653
0.605	39.510	73.000	33.490	30.445	60.000	29.555
0.609	39.216	73.000	33.784	30.170	60.000	29.830
4.264	23.631	73.000	49.369	17.609	60.000	42.391
14.034	29.815	73.000	43.185	24.198	60.000	35.802
20.378	20.756	73.000	52.244	16.011	60.000	43.989
24.111	20.113	73.000	52.887	15.369	60.000	44.631
29.828	26.338	73.000	46.662	23.569	60.000	36.431

Figure 4. Conducted Emissions, 15.207(a), Phase, Test Results

15.207(a) Conducted Emissions Test Results



Frequency (MHz)	Quasi-Peak (dBµV/m)	Quasi-Peak Limit (dBµV/m)	Quasi-Peak Margin (dB)	Average (dBµV/m)	Average Limit (dBµV/m)	Average Margin (dB)
0.150	48.532	79.000	30.468	33.043	66.000	32.957
0.154	47.515	79.000	31.485	32.825	66.000	33.175
0.605	40.702	73.000	32.298	31.615	60.000	28.385
0.609	40.488	73.000	32.512	31.533	60.000	28.467
0.614	39.855	73.000	33.145	30.279	60.000	29.721
13.543	34.453	73.000	38.547	28.332	60.000	31.668
15.120	26.472	73.000	46.528	20.810	60.000	39.190
20.000	19.879	73.000	53.121	15.234	60.000	44.766
21.017	19.832	73.000	53.168	15.092	60.000	44.908
29.828	26.316	73.000	46.684	23.562	60.000	36.438

Figure 5. Conducted Emissions, 15.207(a), Neutral, Test Results

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15. 407 26dB Bandwidth

Test Requirements: 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. The worst-case tabular data for each UNII band is shown below. Due to the large number of individual plots for each measurement, they are contained in a separate appendix.

Test Engineer(s): Bryan Taylor

Test Date(s): 5/20/2024 – 5/22/2024

U-NII SubBand 1 and 2A OBW	Port 1 (-26dB) (MHz)	Port 1 (99%) (MHz)	Port 2 (-26dB) (MHz)	Port 2 (99%) (MHz)
U-NII-1_5180MHz_Low Ch_36_20MHz BW_a-mode	19.376	16.562	19.354	16.674
U-NII-1_5200MHz_mid Ch_40_20MHz BW_a-mode	19.663	16.615	19.702	16.628
U-NII-1_5240MHz_high Ch_48_20MHz BW_a-mode	19.387	16.529	19.500	16.532
U-NII-1_5180MHz_Low Ch_36_20MHz BW_n-mode	20.361	17.699	20.348	17.738
U-NII-1_5200MHz_mid Ch_40_20MHz BW_n-mode	20.142	17.636	20.389	17.777
U-NII-1_5240MHz_high Ch_48_20MHz BW_n-mode	20.353	17.717	20.314	17.720
U-NII-1_5190MHz_Low Ch_38_40MHz BW_n-mode	40.315	36.197	40.146	36.235
U-NII-1_5230MHz_high Ch_46_40MHz BW_n-mode	40.055	36.139	40.200	36.198
U-NII-1_5210MHz_mid Ch_42_80MHz BW_ac-mode	83.328	76.085	83.252	75.508
U-NII-1_5210MHz_mid Ch_42_80MHz BW_ax-mode	84.014	77.377	84.101	77.412
U-NII-2A_5260MHz_low Ch_52_20MHz BW_a-mode	19.355	16.582	19.670	16.571
U-NII-2A_5280MHz_mid Ch_56_20MHz BW_a-mode	19.600	16.640	19.604	16.618
U-NII-2A_5320MHz_High Ch_64_20MHz BW_a-mode	19.377	16.587	19.133	16.681
U-NII-2A_5260MHz_low Ch_52_20MHz BW_n-mode	20.118	17.730	20.112	17.712
U-NII-2A_5280MHz_mid Ch_56_20MHz BW_n-mode	20.310	17.706	20.448	17.682
U-NII-2A_5320MHz_High Ch_64_20MHz BW_n-mode	20.435	17.673	20.216	17.726
U-NII-2A_5270MHz_low Ch_54_40MHz BW_n-mode	40.045	36.329	40.144	36.379
U-NII-2A_5310MHz_High Ch_62_40MHz BW_n-mode	40.117	36.027	40.011	36.290
U-NII-2A_5290MHz_Mid Ch_58_80MHz BW_ac-mode	82.556	76.162	83.695	75.786
U-NII-2A_5290MHz_Mid Ch_58_80MHz BW_ax-mode	83.155	77.257	84.707	77.371

Table 9. Occupied Bandwidth, Test Results (UNII-1 and UNII 2A)

U-NII SubBand 2C OBW	Port 1 (-26dB) (MHz)	Port 1 (99%) (MHz)	Port 2 (-26dB) (MHz)	Port 2 (99%) (MHz)
U-NII-2C_5500MHz_Low Ch_100_20MHz BW_a-mode	21.742	16.562	21.486	16.586
U-NII-2C_5600MHz_Mid Ch_120_20MHz BW_a-mode	21.528	16.606	21.743	16.626
U-NII-2C_5720MHz_High Ch_144_20MHz BW_a-mode	21.680	16.591	21.828	16.721
U-NII-2C_5500MHz_Low Ch_100_20MHz BW_n-mode	22.237	17.704	22.478	17.778
U-NII-2C_5600MHz_Mid Ch_120_20MHz BW_n-mode	22.276	18.158	22.434	17.741
U-NII-2C_5720MHz_High Ch_144_20MHz BW_n-mode	22.202	17.782	22.299	17.848
U-NII-2C_5510MHz_Low Ch_102_40MHz BW_n-mode	44.468	36.266	44.295	36.429
U-NII-2C_5590MHz_Mid Ch_118_40MHz BW_n-mode	44.335	36.325	44.410	36.448
U-NII-2C_5710MHz_High Ch_142_40MHz BW_n-mode	44.262	36.287	44.188	36.325
U-NII-2C_5530MHz_Low Ch_106_80MHz BW_ac-mode	89.921	76.269	89.941	76.021
U-NII-2C_5610MHz_Mid Ch_122_80MHz BW_ac-mode	90.289	76.285	89.818	76.197
U-NII-2C_5690MHz_High Ch_138_80MHz BW_ac-mode	90.165	76.131	89.496	76.323
U-NII-2C_5530MHz_Low Ch_106_80MHz BW_ax-mode	89.833	75.877	89.882	76.004
U-NII-2C_5610MHz_Mid Ch_122_80MHz BW_ax-mode	90.077	75.985	89.673	76.229
U-NII-2C_5690MHz_High Ch_138_80MHz BW_ax-mode	90.478	76.136	89.820	75.924

Table 10. Occupied Bandwidth, Test Results (UNII-2C)

U-NII SubBand 3 OBW	Port 1 (-6dB) (MHz)	Port 1 (99%) (MHz)	Port 1 (-26dB) (MHz)	Port 2 (-6dB) (MHz)	Port 2 (99%) (MHz)	Port 2 (-26dB) (MHz)
U-NII-3_5745MHz_Low Ch_149_20MHz BW_a-mode	16.478	16.512	18.94	16.250	16.448	18.92
U-NII-3_5785MHz_Mid Ch_157_20MHz BW_a-mode	16.408	16.532	19.01	16.306	16.484	19.09
U-NII-3_5825MHz_High Ch_165_20MHz BW_a-mode	15.571	16.475	19.07	16.487	16.460	18.96
U-NII-3_5745MHz_Low Ch_149_20MHz BW_n-mode	16.793	17.724	25.29	17.344	17.739	25.25
U-NII-3_5785MHz_Mid Ch_157_20MHz BW_n-mode	17.283	17.738	25.29	17.675	17.748	25.17
U-NII-3_5825MHz_High Ch_165_20MHz BW_n-mode	17.704	17.705	25.14	17.523	17.675	25.24
U-NII-3_5755MHz_Low Ch_151_40MHz BW_n-mode	48.422	36.261	50.73	47.940	36.261	49.96
U-NII-3_5795MHz_High Ch_159_40MHz BW_n-mode	47.877	36.152	50.03	48.183	36.281	50.09
U-NII-3_5775MHz_Mid Ch_155_80MHz BW_ac-mode	98.570	76.057	101.83	98.760	76.103	101.76
U-NII-3_5775MHz_Mid Ch_155_80MHz BW_ax-mode	99.178	77.706	102.49	99.323	77.560	102.55

Table 11. Occupied Bandwidth, Test Results (UNII-3)

Electromagnetic Compatibility Criteria for Intentional Radiators

§15.407(a) Maximum Conducted Output Power

Test Requirements:

§15.407(a)(1)(iv): For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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

§15.407(a)(3)(i): For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure:

The EUT was connected to a spectrum analyzer through a cable and attenuator. Measurements were taken with the EUT set to transmit continuously on its low, mid, and high channels. Its power was measured according to measurement method SA-1, as described in ANSI C63.10. the maximum conducted power across all ports was calculated via the following formula:

$$\text{Max Conducted Output Power, combined} = 10 * \log (10^{(\text{Port 1dBm}/10)} + 10^{(\text{Port2dBm})})$$

Test Results:

The EUT as tested is compliant with the requirements of this section. The worst-case tabular data for each UNII band is shown below. Due to the large number of individual plots for each measurement, they are contained in a separate appendix.

Straddle channels which have transmissions that extend from U-NII-2C into the U-NII-3 band are presented in the U-NII-3 data table.

Test Engineer(s):

Bryan Taylor

Test Date(s):

5/20/2024 – 5/22/2024

	Port 1 (dBm)	Port 2 (dBm)	Sum (dBm)	Limit (dBm)	Margin (dB)
U-NII SubBand 1 and 2A FCC PWR					
U-NII-1_5180MHz_Low Ch_36_20MHz BW_a-mode	9.67	9.69	12.69	24	11.31
U-NII-1_5200MHz_mid Ch_40_20MHz BW_a-mode	9.19	9.19	12.20	24	11.80
U-NII-1_5240MHz_high Ch_48_20MHz BW_a-mode	9.17	9.09	12.14	24	11.86
U-NII-1_5180MHz_Low Ch_36_20MHz BW_n-mode	9.66	9.72	12.70	24	11.30
U-NII-1_5200MHz_mid Ch_40_20MHz BW_n-mode	9.44	9.37	12.42	24	11.58
U-NII-1_5240MHz_high Ch_48_20MHz BW_n-mode	9.07	9.09	12.09	24	11.91
U-NII-1_5190MHz_Low Ch_38_40MHz BW_n-mode	9.83	9.88	12.87	24	11.13
U-NII-1_5230MHz_high Ch_46_40MHz BW_n-mode	9.58	9.53	12.57	24	11.43
U-NII-1_5210MHz_mid Ch_42_80MHz BW_ac-mode	9.69	9.63	12.67	24	11.33
U-NII-1_5210MHz_mid Ch_42_80MHz BW_ax-mode	9.69	9.69	12.70	24	11.30
U-NII-2A_5260MHz_low Ch_52_20MHz BW_a-mode	9.56	9.44	12.51	24	11.49
U-NII-2A_5280MHz_mid Ch_56_20MHz BW_a-mode	9.54	9.47	12.52	24	11.48
U-NII-2A_5320MHz_High Ch_64_20MHz BW_a-mode	10.14	10.04	13.10	24	10.90
U-NII-2A_5260MHz_low Ch_52_20MHz BW_n-mode	9.33	9.22	12.29	24	11.71
U-NII-2A_5280MHz_mid Ch_56_20MHz BW_n-mode	9.31	9.29	12.31	24	11.69
U-NII-2A_5320MHz_High Ch_64_20MHz BW_n-mode	9.93	9.86	12.91	24	11.09
U-NII-2A_5270MHz_low Ch_54_40MHz BW_n-mode	9.43	9.39	12.42	24	11.58
U-NII-2A_5310MHz_High Ch_62_40MHz BW_n-mode	9.79	9.83	12.82	24	11.18
U-NII-2A_5290MHz_Mid Ch_58_80MHz BW_ac-mode	9.41	9.38	12.41	24	11.59
U-NII-2A_5290MHz_Mid Ch_58_80MHz BW_ax-mode	9.43	9.40	12.43	24	11.57

Table 12. Conducted Output Power, Test Results (UNII-1 and 2A)

U-NII SubBand 2C FCC PWR	Port 1 (dBm)	Port 2 (dBm)	Sum (dBm)	Limit (dBm)	Margin (dB)
U-NII-2C_5500MHz_Low Ch_100_20MHz BW_a-mode	10.46	10.47	13.48	24	10.52
U-NII-2C_5600MHz_Mid Ch_120_20MHz BW_a-mode	10.99	11.08	14.05	24	9.95
U-NII-2C_5720MHz_High Ch_144_20MHz BW_a-mode	8.59	8.50	11.56	24	12.44
U-NII-2C_5500MHz_Low Ch_100_20MHz BW_n-mode	10.40	10.50	13.46	24	10.54
U-NII-2C_5600MHz_Mid Ch_120_20MHz BW_n-mode	10.88	10.87	13.89	24	10.11
U-NII-2C_5720MHz_High Ch_144_20MHz BW_n-mode	8.35	8.36	11.37	24	12.63
U-NII-2C_5510MHz_Low Ch_102_40MHz BW_n-mode	10.68	10.70	13.70	24	10.30
U-NII-2C_5590MHz_Mid Ch_118_40MHz BW_n-mode	11.23	11.28	14.27	24	9.73
U-NII-2C_5710MHz_High Ch_142_40MHz BW_n-mode	8.82	8.67	11.76	24	12.24
U-NII-2C_5530MHz_Low Ch_106_80MHz BW_ac-mode	10.82	10.81	13.83	24	10.17
U-NII-2C_5610MHz_Mid Ch_122_80MHz BW_ac-mode	11.10	11.15	14.14	24	9.86
U-NII-2C_5690MHz_High Ch_138_80MHz BW_ac-mode	8.98	9.15	12.08	24	11.92
U-NII-2C_5530MHz_Low Ch_106_80MHz BW_ax-mode	10.88	10.87	13.89	24	10.11
U-NII-2C_5610MHz_Mid Ch_122_80MHz BW_ax-mode	11.15	11.10	14.14	24	9.86
U-NII-2C_5690MHz_High Ch_138_80MHz BW_ax-mode	9.04	9.03	12.05	24	11.95

Table 13. Conducted Output Power, Test Results (UNII-2C)

U-NII SubBand 3 PWR	Port 1 (dBm)	Port 2 (dBm)	Sum (dBm)	Limit (dBm)	Margin (dB)
U-NII-3_5745MHz_Low Ch_149_20MHz BW_a-mode	8.86	8.79	11.84	30	18.16
U-NII-3_5785MHz_Mid Ch_157_20MHz BW_a-mode	9.51	9.57	12.55	30	17.45
U-NII-3_5825MHz_High Ch_165_20MHz BW_a-mode	11.13	11.18	14.17	30	15.83
U-NII-3_5745MHz_Low Ch_149_20MHz BW_n-mode	8.62	8.67	11.66	30	18.34
U-NII-3_5785MHz_Mid Ch_157_20MHz BW_n-mode	9.50	9.38	12.45	30	17.55
U-NII-3_5825MHz_High Ch_165_20MHz BW_n-mode	11.05	10.97	14.02	30	15.98
U-NII-3_5755MHz_Low Ch_151_40MHz BW_n-mode	9.41	9.39	12.41	30	17.59
U-NII-3_5795MHz_High Ch_159_40MHz BW_n-mode	10.12	10.17	13.16	30	16.84
U-NII-3_5775MHz_Mid Ch_155_80MHz BW_ac-mode	9.96	9.90	12.94	30	17.06
U-NII-3_5775MHz_Mid Ch_155_80MHz BW_ax-mode	9.85	9.85	12.86	30	17.14
Straddle Ch_ U-NII-2C_5720MHz_High Ch_144_20MHz BW_a-mode	1.20	1.26	4.24	30	25.76
Straddle Ch_ U-NII-2C_5720MHz_High Ch_144_20MHz BW_n-mode	1.36	1.34	4.36	30	25.64
Straddle Ch_ U-NII-2C_5710MHz_High Ch_142_40MHz BW_n-mode	-2.82	-1.24	1.05	30	28.95
Straddle Ch_ U-NII-2C_5690MHz_High Ch_138_80MHz BW_ac-mode	-6.28	-5.34	-2.77	30	32.77
Straddle Ch_ U-NII-2C_5690MHz_High Ch_138_80MHz BW_ax-mode	-6.26	-6.21	-3.22	30	33.22

Table 14. Conducted Output Power, Test Results (UNII-3)

Electromagnetic Compatibility Criteria for Intentional Radiators

RSS-247 (6) Effective Isotropic Radiated Power (EIRP)

Test Requirements: §6.2.1.1 (5150 – 5250MHz): For other devices, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

§6.2.2.1 (5250 – 5350MHz): Devices, other than devices installed in vehicles, shall comply with the following:

- The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10} B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

§6.2.3.1 (5470 – 5600MHz and 5650 – 5725MHz): The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10} B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Test Procedure: The maximum sum conducted output power (across all transmit ports) was added to the antenna gain to arrive at the EIRP. The antenna gain used was the worst case directional gain calculated per KDB 662911 D01 for two equal gain antennas with correlated signals; 6.64dBi in this case.

Test Results: The EUT as tested is compliant with the requirements of this section. The worst-case tabular data for each UNII band is shown below. Due to the large number of individual plots for each measurement, they are contained in a separate appendix.

Straddle channels which have transmissions that extend from U-NII-2C into the U-NII-3 band are presented in the U-NII-3 data table.

Test Engineer(s): Bryan Taylor

Test Date(s): 5/20/2024 – 5/22/2024

U-NII SubBand 1 and 2A FCC PWR	Conducted Power Sum (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
U-NII-1_5180MHz_Low Ch_36_20MHz BW_a-mode	12.69	6.31	19.00	23.00	4.00
U-NII-1_5200MHz_mid Ch_40_20MHz BW_a-mode	12.32	6.31	18.63	23.00	4.37
U-NII-1_5240MHz_high Ch_48_20MHz BW_a-mode	12.14	6.31	18.45	23.00	4.55
U-NII-1_5180MHz_Low Ch_36_20MHz BW_n-mode	12.70	6.31	19.01	23.00	3.99
U-NII-1_5200MHz_mid Ch_40_20MHz BW_n-mode	12.42	6.31	18.73	23.00	4.27
U-NII-1_5240MHz_high Ch_48_20MHz BW_n-mode	12.09	6.31	18.40	23.00	4.60
U-NII-1_5190MHz_Low Ch_38_40MHz BW_n-mode	12.87	6.31	19.18	23.00	3.82
U-NII-1_5230MHz_high Ch_46_40MHz BW_n-mode	12.57	6.31	18.88	23.00	4.12
U-NII-1_5210MHz_mid Ch_42_80MHz BW_ac-mode	12.67	6.31	18.98	23.00	4.02
U-NII-1_5210MHz_mid Ch_42_80MHz BW_ax-mode	12.70	6.31	19.01	23.00	3.99
U-NII-2A_5260MHz_low Ch_52_20MHz BW_a-mode	12.51	6.31	18.82	30.00	11.18
U-NII-2A_5280MHz_mid Ch_56_20MHz BW_a-mode	12.52	6.31	18.83	30.00	11.17
U-NII-2A_5320MHz_High Ch_64_20MHz BW_a-mode	13.10	6.31	19.41	30.00	10.59
U-NII-2A_5260MHz_low Ch_52_20MHz BW_n-mode	12.29	6.31	18.60	30.00	11.40
U-NII-2A_5280MHz_mid Ch_56_20MHz BW_n-mode	12.31	6.31	18.62	30.00	11.38
U-NII-2A_5320MHz_High Ch_64_20MHz BW_n-mode	12.91	7.31	20.22	30.00	9.78
U-NII-2A_5270MHz_low Ch_54_40MHz BW_n-mode	12.42	8.31	20.73	30.00	9.27
U-NII-2A_5310MHz_High Ch_62_40MHz BW_n-mode	12.82	9.31	22.13	30.00	7.87
U-NII-2A_5290MHz_Mid Ch_58_80MHz BW_ac-mode	12.41	10.31	22.72	30.00	7.28
U-NII-2A_5290MHz_Mid Ch_58_80MHz BW_ax-mode	12.43	11.31	23.74	30.00	6.26

Table 15. EIRP, Test Results (UNII-1 and 2A)

U-NII SubBand 2C FCC PWR	Conducted Power Sum (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
U-NII-2C_5500MHz_Low Ch_100_20MHz BW_a-mode	13.48	6.31	19.79	30.00	10.21
U-NII-2C_5600MHz_Mid Ch_120_20MHz BW_a-mode	14.05	6.31	20.36	30.00	9.64
U-NII-2C_5720MHz_High Ch_144_20MHz BW_a-mode	11.56	6.31	17.87	30.00	12.13
U-NII-2C_5500MHz_Low Ch_100_20MHz BW_n-mode	13.46	6.31	19.77	30.00	10.23
U-NII-2C_5600MHz_Mid Ch_120_20MHz BW_n-mode	13.89	6.31	20.20	30.00	9.80
U-NII-2C_5720MHz_High Ch_144_20MHz BW_n-mode	11.37	6.31	17.68	30.00	12.32
U-NII-2C_5510MHz_Low Ch_102_40MHz BW_n-mode	13.70	6.31	20.01	30.00	9.99
U-NII-2C_5590MHz_Mid Ch_118_40MHz BW_n-mode	14.27	6.31	20.58	30.00	9.42
U-NII-2C_5710MHz_High Ch_142_40MHz BW_n-mode	11.76	6.31	18.07	30.00	11.93
U-NII-2C_5530MHz_Low Ch_106_80MHz BW_ac-mode	13.83	6.31	20.14	30.00	9.86
U-NII-2C_5610MHz_Mid Ch_122_80MHz BW_ac-mode	14.14	6.31	20.45	30.00	9.55
U-NII-2C_5690MHz_High Ch_138_80MHz BW_ac-mode	12.08	6.31	18.39	30.00	11.61
U-NII-2C_5530MHz_Low Ch_106_80MHz BW_ax-mode	13.89	6.31	20.20	30.00	9.80
U-NII-2C_5610MHz_Mid Ch_122_80MHz BW_ax-mode	14.14	6.31	20.45	30.00	9.55
U-NII-2C_5690MHz_High Ch_138_80MHz BW_ax-mode	12.05	6.31	18.36	30.00	11.64

Table 16. EIRP, Test Results (UNII-2C)

U-NII SubBand 3 PWR	Conducted Power Sum (dBm)	Directional Array Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
U-NII-3_5745MHz_Low Ch_149_20MHz BW_a-mode	11.84	6.31	18.15	30.00	11.85
U-NII-3_5785MHz_Mid Ch_157_20MHz BW_a-mode	12.55	6.31	18.86	30.00	11.14
U-NII-3_5825MHz_High Ch_165_20MHz BW_a-mode	14.17	6.31	20.48	30.00	9.52
U-NII-3_5745MHz_Low Ch_149_20MHz BW_n-mode	11.66	6.31	17.97	30.00	12.03
U-NII-3_5785MHz_Mid Ch_157_20MHz BW_n-mode	12.45	6.31	18.76	30.00	11.24
U-NII-3_5825MHz_High Ch_165_20MHz BW_n-mode	14.02	6.31	20.33	30.00	9.67
U-NII-3_5755MHz_Low Ch_151_40MHz BW_n-mode	12.41	6.31	18.72	30.00	11.28
U-NII-3_5795MHz_High Ch_159_40MHz BW_n-mode	13.16	6.31	19.47	30.00	10.53
U-NII-3_5775MHz_Mid Ch_155_80MHz BW_ac-mode	12.94	6.31	19.25	30.00	10.75
U-NII-3_5775MHz_Mid Ch_155_80MHz BW_ax-mode	12.86	6.31	19.17	30.00	10.83
Straddle Ch_ U-NII-2C_5720MHz_High Ch_144_20MHz BW_a-mode	4.24	6.31	10.55	30.00	19.45
Straddle Ch_ U-NII-2C_5720MHz_High Ch_144_20MHz BW_n-mode	4.36	6.31	10.67	30.00	19.33
Straddle Ch_ U-NII-2C_5710MHz_High Ch_142_40MHz BW_n-mode	1.05	6.31	7.36	30.00	22.64
Straddle Ch_ U-NII-2C_5690MHz_High Ch_138_80MHz BW_ac-mode	-2.77	6.31	3.54	30.00	26.46
Straddle Ch_ U-NII-2C_5690MHz_High Ch_138_80MHz BW_ax-mode	-3.22	6.31	3.09	30.00	26.91

Table 17. EIRP, Test Results (UNII-3)

Electromagnetic Compatibility Criteria for Intentional Radiators

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

Test Requirements:

§15.407(a)(1)(iv): For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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

§15.407(a)(3)(i): For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure:

The EUT was connected to a spectrum analyzer through a cable and attenuator. Measurements were taken with the EUT set to transmit continuously on its low, mid, and high channels. Its power was measured according KDB 789033 D02 General UNII Test Procedures v02.

Test Results:

The EUT as tested is compliant with the requirements of this section. The worst-case tabular data for each UNII band is shown below. Due to the large number of individual plots for each measurement, they are contained in a separate appendix.

Straddle channels which have transmissions that extend from U-NII-2C into the U-NII-3 band are presented in the U-NII-3 data table.

Test Engineer(s):

Bryan Taylor

Test Date(s):

5/20/2024 – 5/22/2024

U-NII SubBand 1 and 2A FCC SD	Port 1 (dBm)	Port 2 (dBm)	Sum (dBm)	Limit (dBm)	Margin (dB)
U-NII-1_5180MHz_Low Ch_36_20MHz BW_a-mode	-1.08	-1.16	1.89	10.69	8.80
U-NII-1_5200MHz_mid Ch_40_20MHz BW_a-mode	-1.67	-1.49	1.43	10.69	9.26
U-NII-1_5240MHz_high Ch_48_20MHz BW_a-mode	-1.71	-1.69	1.31	10.69	9.38
U-NII-1_5180MHz_Low Ch_36_20MHz BW_n-mode	-1.61	-1.47	1.47	10.69	9.22
U-NII-1_5200MHz_mid Ch_40_20MHz BW_n-mode	-1.97	-1.83	1.11	10.69	9.58
U-NII-1_5240MHz_high Ch_48_20MHz BW_n-mode	-2.12	-2.27	0.82	10.69	9.87
U-NII-1_5190MHz_Low Ch_38_40MHz BW_n-mode	-4.55	-4.28	-1.40	10.69	12.09
U-NII-1_5230MHz_high Ch_46_40MHz BW_n-mode	-4.88	-4.76	-1.81	10.69	12.50
U-NII-1_5210MHz_mid Ch_42_80MHz BW_ac-mode	-7.65	-7.84	-4.73	10.69	15.42
U-NII-1_5210MHz_mid Ch_42_80MHz BW_ax-mode	-7.79	-7.83	-4.80	10.69	15.49
U-NII-2A_5260MHz_low Ch_52_20MHz BW_a-mode	-1.57	-1.36	1.55	10.69	9.14
U-NII-2A_5280MHz_mid Ch_56_20MHz BW_a-mode	-1.55	-1.61	1.43	10.69	9.26
U-NII-2A_5320MHz_High Ch_64_20MHz BW_a-mode	-0.94	-0.85	2.12	10.69	8.57
U-NII-2A_5260MHz_low Ch_52_20MHz BW_n-mode	-2.01	-1.99	1.01	10.69	9.68
U-NII-2A_5280MHz_mid Ch_56_20MHz BW_n-mode	-2.03	-2.09	0.95	10.69	9.74
U-NII-2A_5320MHz_High Ch_64_20MHz BW_n-mode	-1.31	-1.44	1.64	10.69	9.05
U-NII-2A_5270MHz_low Ch_54_40MHz BW_n-mode	-5.03	-4.97	-1.99	10.69	12.68
U-NII-2A_5310MHz_High Ch_62_40MHz BW_n-mode	-4.60	-4.55	-1.56	10.69	12.25
U-NII-2A_5290MHz_Mid Ch_58_80MHz BW_ac-mode	-8.06	-8.03	-5.03	10.69	15.72
U-NII-2A_5290MHz_Mid Ch_58_80MHz BW_ax-mode	-7.96	-8.02	-4.98	10.69	15.67

Table 18. Power Spectral Density, Test Results (UNII-1 and 2A)

U-NII SubBand 2C FCC SD	Port 1 (dBm)	Port 2 (dBm)	Sum (dBm)	Limit (dBm)	Margin (dB)
U-NII-2C_5500MHz_Low Ch_100_20MHz BW_a-mode	-0.32	-0.38	2.66	10.69	8.03
U-NII-2C_5600MHz_Mid Ch_120_20MHz BW_a-mode	-0.18	-0.09	2.88	10.69	7.81
U-NII-2C_5720MHz_High Ch_144_20MHz BW_a-mode	-2.54	-2.55	0.47	10.69	10.22
U-NII-2C_5500MHz_Low Ch_100_20MHz BW_n-mode	-1.00	-0.91	2.05	10.69	8.64
U-NII-2C_5600MHz_Mid Ch_120_20MHz BW_n-mode	-0.45	-0.48	2.55	10.69	8.14
U-NII-2C_5720MHz_High Ch_144_20MHz BW_n-mode	-2.86	-2.91	0.13	10.69	10.56
U-NII-2C_5510MHz_Low Ch_102_40MHz BW_n-mode	-3.47	-3.39	-0.42	10.69	11.11
U-NII-2C_5590MHz_Mid Ch_118_40MHz BW_n-mode	-3.14	-3.11	-0.11	10.69	10.80
U-NII-2C_5710MHz_High Ch_142_40MHz BW_n-mode	-5.72	-5.52	-2.61	10.69	13.30
U-NII-2C_5530MHz_Low Ch_106_80MHz BW_ac-mode	-6.74	-6.74	-3.73	10.69	14.42
U-NII-2C_5610MHz_Mid Ch_122_80MHz BW_ac-mode	-6.14	-6.25	-3.18	10.69	13.87
U-NII-2C_5690MHz_High Ch_138_80MHz BW_ac-mode	-8.51	-8.45	-5.47	10.69	16.16
U-NII-2C_5530MHz_Low Ch_106_80MHz BW_ax-mode	-6.81	-6.68	-3.73	10.69	14.42
U-NII-2C_5610MHz_Mid Ch_122_80MHz BW_ax-mode	-6.19	-6.28	-3.22	10.69	13.91
U-NII-2C_5690MHz_High Ch_138_80MHz BW_ax-mode	-8.68	-8.58	-5.62	10.69	16.31

Table 19. Power Spectral Density, Test Results (UNII-2C)

U-NII SubBand 3 SD	Port 1 (dBm)	Port 2 (dBm)	Sum (dBm)	Limit (dBm)	Margin dB
U-NII-3_5745MHz_Low Ch_149_20MHz BW_a-mode	-4.63	-4.55	-1.58	29.69	31.27
U-NII-3_5785MHz_Mid Ch_157_20MHz BW_a-mode	-4.16	-4.16	-1.15	29.69	30.84
U-NII-3_5825MHz_High Ch_165_20MHz BW_a-mode	-2.57	-2.52	0.47	29.69	29.22
U-NII-3_5745MHz_Low Ch_149_20MHz BW_n-mode	-5.14	-5.40	-2.26	29.69	31.95
U-NII-3_5785MHz_Mid Ch_157_20MHz BW_n-mode	-4.46	-4.44	-1.44	29.69	31.13
U-NII-3_5825MHz_High Ch_165_20MHz BW_n-mode	-2.89	-2.86	0.14	29.69	29.55
U-NII-3_5755MHz_Low Ch_151_40MHz BW_n-mode	-7.50	-7.69	-4.58	29.69	34.27
U-NII-3_5795MHz_High Ch_159_40MHz BW_n-mode	-6.81	-6.72	-3.75	29.69	33.44
U-NII-3_5775MHz_Mid Ch_155_80MHz BW_ac-mode	-10.59	-10.49	-7.53	29.69	37.22
U-NII-3_5775MHz_Mid Ch_155_80MHz BW_ax-mode	-10.59	-10.44	-7.50	29.69	37.19
Straddle Ch_ U-NII-2C_5720MHz_High Ch_144_20MHz BW_a-mode	-2.54	-2.55	0.47	29.69	29.22
Straddle Ch_ U-NII-2C_5720MHz_High Ch_144_20MHz BW_n-mode	-2.86	-2.91	0.13	29.69	29.56
Straddle Ch_ U-NII-2C_5710MHz_High Ch_142_40MHz BW_n-mode	-5.72	-5.52	-2.61	29.69	32.30
Straddle Ch_ U-NII-2C_5690MHz_High Ch_138_80MHz BW_ac-mode	-8.51	-8.45	-5.47	29.69	35.16
Straddle Ch_ U-NII-2C_5690MHz_High Ch_138_80MHz BW_ax-mode	-8.68	-8.58	-5.62	29.69	35.31

*The straddle channel results shown are the PSD measurements from the UNII-2C band which were measured with a 1MHz RBW. The actual PSD results for just the portion of the signal extending into the UNII-3 band would be lower (and pass with a higher margin) than the values shown in this table since they would be measured with a 500kHz RBW and compared to a higher limit (30dBm/500kHz for UNII-3 vs 11dBm/MHz for UNII-2C).

Table 20. Power Spectral Density, Test Results (UNII-3)

Electromagnetic Compatibility Criteria for Intentional Radiators

RSS-247 (6) EIRP Spectral Density

Test Requirements: §6.2.1.1 (5150 – 5250MHz): For other devices, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

Test Procedure: The maximum summed conducted power spectral density (across all transmit ports) was added to the antenna gain to arrive at the EIRP spectral density. The antenna gain used was the worst case directional gain calculated per KDB 662911 D01 for two equal gain antennas with correlated signals; 6.64dBi in this case.

Test Results: The EUT as tested is compliant with the requirements of this section. The worst-case tabular data for each UNII band is shown below. Due to the large number of individual plots for each measurement, they are contained in a separate appendix.

Straddle channels which have transmissions that extend from U-NII-2C into the U-NII-3 band are presented in the U-NII-3 data table.

Test Engineer(s): Bryan Taylor

Test Date(s): 5/4/2022 – 8/31/2022

U-NII SubBand 1 and 2A FCC SD	Conducted Power Spectral Density Sum (dBm)	Antenna Gain (dBi)	EIRP Spectral Density (dBm)	Limit (dBm)	Margin dB
U-NII-1_5180MHz_Low Ch_36_20MHz BW_a-mode	1.89	6.31	8.20	23.00	14.80
U-NII-1_5200MHz_mid Ch_40_20MHz BW_a-mode	1.43	6.31	7.74	23.00	15.26
U-NII-1_5240MHz_high Ch_48_20MHz BW_a-mode	1.31	6.31	7.62	23.00	15.38
U-NII-1_5180MHz_Low Ch_36_20MHz BW_n-mode	1.47	6.31	7.78	23.00	15.22
U-NII-1_5200MHz_mid Ch_40_20MHz BW_n-mode	1.11	6.31	7.42	23.00	15.58
U-NII-1_5240MHz_high Ch_48_20MHz BW_n-mode	0.82	6.31	7.13	23.00	15.87
U-NII-1_5190MHz_Low Ch_38_40MHz BW_n-mode	-1.40	6.31	4.91	23.00	18.09
U-NII-1_5230MHz_high Ch_46_40MHz BW_n-mode	-1.81	6.31	4.50	23.00	18.50
U-NII-1_5210MHz_mid Ch_42_80MHz BW_ac-mode	-4.73	6.31	1.58	23.00	21.42
U-NII-1_5210MHz_mid Ch_42_80MHz BW_ax-mode	-4.80	6.31	1.51	23.00	21.49
U-NII-2A_5260MHz_low Ch_52_20MHz BW_a-mode	1.55	6.31	7.86	30.00	22.14
U-NII-2A_5280MHz_mid Ch_56_20MHz BW_a-mode	1.43	6.31	7.74	30.00	22.26
U-NII-2A_5320MHz_High Ch_64_20MHz BW_a-mode	2.12	6.31	8.43	30.00	21.57
U-NII-2A_5260MHz_low Ch_52_20MHz BW_n-mode	1.01	6.31	7.32	30.00	22.68
U-NII-2A_5280MHz_mid Ch_56_20MHz BW_n-mode	0.95	6.31	7.26	30.00	22.74
U-NII-2A_5320MHz_High Ch_64_20MHz BW_n-mode	1.64	7.31	8.95	30.00	21.05
U-NII-2A_5270MHz_low Ch_54_40MHz BW_n-mode	-1.99	8.31	6.32	30.00	23.68
U-NII-2A_5310MHz_High Ch_62_40MHz BW_n-mode	-1.56	9.31	7.75	30.00	22.25
U-NII-2A_5290MHz_Mid Ch_58_80MHz BW_ac-mode	-5.03	10.31	5.28	30.00	24.72
U-NII-2A_5290MHz_Mid Ch_58_80MHz BW_ax-mode	-4.98	11.31	6.33	30.00	23.67

Table 21. EIRP Spectral Density, Test Results (UNII-1 and 2A)

U-NII SubBand 2C FCC SD	Conducted Power Spectral Density Sum (dBm)	Antenna Gain (dBi)	EIRP Spectral Density (dBm)	Limit (dBm)	Margin dB
U-NII-2C_5500MHz_Low Ch_100_20MHz BW_a-mode	2.66	6.31	8.97	11.00	2.03
U-NII-2C_5600MHz_Mid Ch_120_20MHz BW_a-mode	2.88	6.31	9.19	11.00	1.81
U-NII-2C_5720MHz_High Ch_144_20MHz BW_a-mode	0.47	6.31	6.78	11.00	4.22
U-NII-2C_5500MHz_Low Ch_100_20MHz BW_n-mode	2.05	6.31	8.36	11.00	2.64
U-NII-2C_5600MHz_Mid Ch_120_20MHz BW_n-mode	2.55	6.31	8.86	11.00	2.14
U-NII-2C_5720MHz_High Ch_144_20MHz BW_n-mode	0.13	6.31	6.44	11.00	4.56
U-NII-2C_5510MHz_Low Ch_102_40MHz BW_n-mode	-0.42	6.31	5.89	11.00	5.11
U-NII-2C_5590MHz_Mid Ch_118_40MHz BW_n-mode	-0.11	6.31	6.20	11.00	4.80
U-NII-2C_5710MHz_High Ch_142_40MHz BW_n-mode	-2.61	6.31	3.70	11.00	7.30
U-NII-2C_5530MHz_Low Ch_106_80MHz BW_ac-mode	-3.73	6.31	2.58	11.00	8.42
U-NII-2C_5610MHz_Mid Ch_122_80MHz BW_ac-mode	-3.18	6.31	3.13	11.00	7.87
U-NII-2C_5690MHz_High Ch_138_80MHz BW_ac-mode	-5.47	6.31	0.84	11.00	10.16
U-NII-2C_5530MHz_Low Ch_106_80MHz BW_ax-mode	-3.73	6.31	2.58	11.00	8.42
U-NII-2C_5610MHz_Mid Ch_122_80MHz BW_ax-mode	-3.22	6.31	3.09	11.00	7.91
U-NII-2C_5690MHz_High Ch_138_80MHz BW_ax-mode	-5.62	6.31	0.69	11.00	10.31

Table 22. EIRP Spectral Density, Test Results (UNII-2C)

U-NII SubBand 3 SD	Conducted Power Spectral Density Sum (dBm)	Directional Array Antenna Gain (dBi)	EIRP Spectral Density (dBm)	Limit (dBm)	Margin dB
U-NII-3_5745MHz_Low Ch_149_20MHz BW_a-mode	-1.58	6.31	4.73	30.00	25.27
U-NII-3_5785MHz_Mid Ch_157_20MHz BW_a-mode	-1.15	6.31	5.16	30.00	24.84
U-NII-3_5825MHz_High Ch_165_20MHz BW_a-mode	0.47	6.31	6.78	30.00	23.22
U-NII-3_5745MHz_Low Ch_149_20MHz BW_n-mode	-2.26	6.31	4.05	30.00	25.95
U-NII-3_5785MHz_Mid Ch_157_20MHz BW_n-mode	-1.44	6.31	4.87	30.00	25.13
U-NII-3_5825MHz_High Ch_165_20MHz BW_n-mode	0.14	6.31	6.45	30.00	23.55
U-NII-3_5755MHz_Low Ch_151_40MHz BW_n-mode	-4.58	6.31	1.73	30.00	28.27
U-NII-3_5795MHz_High Ch_159_40MHz BW_n-mode	-3.75	6.31	2.56	30.00	27.44
U-NII-3_5775MHz_Mid Ch_155_80MHz BW_ac-mode	-7.53	6.31	-1.22	30.00	31.22
U-NII-3_5775MHz_Mid Ch_155_80MHz BW_ax-mode	-7.50	6.31	-1.19	30.00	31.19
Straddle Ch_ U-NII-2C_5720MHz_High Ch_144_20MHz BW_a-mode	0.47	6.31	6.78	30.00	23.22
Straddle Ch_ U-NII-2C_5720MHz_High Ch_144_20MHz BW_n-mode	0.13	6.31	6.44	30.00	23.56
Straddle Ch_ U-NII-2C_5710MHz_High Ch_142_40MHz BW_n-mode	-2.61	6.31	3.70	30.00	26.30
Straddle Ch_ U-NII-2C_5690MHz_High Ch_138_80MHz BW_ac-mode	-5.47	6.31	0.84	30.00	29.16
Straddle Ch_ U-NII-2C_5690MHz_High Ch_138_80MHz BW_ax-mode	-5.62	6.31	0.69	30.00	29.31

*The straddle channel results shown are the PSD measurements from the UNII-2C band which were measured with a 1MHz RBW. The actual PSD results for just the portion of the signal extending into the UNII-3 band would be lower (and pass with a higher margin) than the values shown in this table since they would be measured with a 500kHz RBW and compared to a higher limit (30dBm/500kHz for UNII-3 vs 11dBm/MHz for UNII-2C).

Table 23. EIRP Spectral Density, Test Results (UNII-3)

Electromagnetic Compatibility Criteria for Intentional Radiators

§15.407(b)(1 – 4, 9, 10) Undesirable Emissions

Test Requirements: § 15.407(b)(1): For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.

§ 15.407(b)(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)(4): For transmitters operating solely in the 5.725-5.850 GHz band:

All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge

§ 15.407(b)(9): Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in Section 15.207.

§ 15.407(b)(10): The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

Test Procedure: Unwanted emission measurements were performed per ANSI C63.10: 2013 Section 12.7. Measurements for unwanted emissions in the restricted bands were performed via a direct connection to the antenna ports per 12.7.2 using peak and average detection.

Additionally, the cabinet emissions measurements were performed in a 10m semi-anechoic chamber. The EUT was placed on a non-conducting table on a turntable in a chamber. 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. The -27dBm/MHz limit was converted to field strength using the formula shown in ANSI C63.27 Section 12.7.2

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 \text{ (for a measurement distance of 3m)}$$

Test Results: The EUT was compliant with the requirements of this section. The worst-case tabular data for each UNII band is shown below. Due to the large number of individual plots for each measurement, they are contained in a separate appendix.

Test Engineer(s): Bryan Taylor, Sergio Gutierrez

Test Date(s): 4/16/2024 – 5/22/2024

TX Port	TX Mode	Ch.	Freq. (GHz)	Avg Amplitude (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dBuV/m)	Peak Amplitude (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dBuV/m)	Result
1	802.11n	36	5.149	27.84	54	26.16	38.92	74	35.08	Pass
2	802.11n	36	5.149	27.89	54	26.11	39.64	74	34.36	Pass
1	802.11a	36	5.15	27.76	54	26.24	38.25	74	35.75	Pass
2	802.11a	36	5.15	26.81	54	27.19	38.84	74	35.16	Pass
1	802.11n(40)	38	5.149	33.29	54	20.71	47.07	74	26.93	Pass
2	802.11n(40)	38	5.149	32.78	54	21.22	46.73	74	27.27	Pass
1	802.11ac (80)	42	5.149	48.07	54	5.93	58.95	74	15.05	Pass
2	802.11ac (80)	42	5.149	42.58	54	11.42	57.06	74	16.94	Pass
1	802.11ax (80)	42	5.149	47.87	54	6.13	59.67	74	14.33	Pass
2	802.11ax (80)	42	5.149	42.68	54	11.32	54.76	74	19.24	Pass

Table 24. UNII-1 Worst Case Restricted Band Edge Emissions

TX Port	TX Mode	Channel	Frequency (GHz)	Peak Amplitude (dBm/MHz)	Limit (dBm/MHz)	Peak Margin (dB)	Result
1	802.11a	36	5.149	-56.33	-27	29.33	Pass
2	802.11a	36	5.149	-55.61	-27	28.61	Pass
1	802.11n	36	5.15	-57	-27	30	Pass
2	802.11n	36	5.15	-56.41	-27	29.41	Pass
1	802.11n (40)	38	5.149	-48.18	-27	21.18	Pass
2	802.11n (40)	38	5.149	-48.52	-27	21.52	Pass
1	802.11ac(80)	42	5.149	-36.3	-27	9.3	Pass
2	802.11ac(80)	42	5.149	-38.19	-27	11.19	Pass
1	802.11ax(80)	42	5.149	-35.58	-27	8.58	Pass
2	802.11ax(80)	42	5.149	-40.49	-27	13.49	Pass

Table 25. UNII-1 Worst Case -27dBm/MHz EIRP Emissions

TX Port	TX Mode	Ch.	Freq. (GHz)	Avg Amplitude (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dBuV/m)	Peak Amplitude (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dBuV/m)	Result
1	802.11ac (80)	58	5.35	49.57	54	4.43	62.09	74	11.91	Pass
2	802.11ac (80)	58	5.35	49.71	54	4.29	55.72	74	18.28	Pass
1	802.11ax (80)	58	5.35	49.51	54	4.49	61.06	74	12.94	Pass
2	802.11ax (80)	58	5.35	49.51	54	4.49	56.09	74	17.91	Pass
1	802.11n(40)	62	5.35	36.18	54	17.82	44.43	74	29.57	Pass
2	802.11n(40)	62	5.35	35.18	54	18.82	45.9	74	28.1	Pass
1	802.11a	64	5.35	26.88	54	27.12	37.41	74	36.59	Pass
2	802.11a	64	5.35	26.96	54	27.04	36.07	74	37.93	Pass
1	802.11n	64	5.35	26.82	54	27.18	37.85	74	36.15	Pass
2	802.11n	64	5.35	26.92	54	27.08	37.82	74	36.18	Pass

Table 26. UNII-2A Worst Case Restricted Band Edge Emissions

TX Port	TX Mode	Channel	Frequency (GHz)	Peak Amplitude (dBm/MHz)	Limit (dBm/MHz)	Peak Margin (dB)	Result
1	802.11ac(80)	58	5.35	-33.16	-27	6.16	Pass
2	802.11ac(80)	58	5.35	-39.53	-27	12.53	Pass
1	802.11ax(80)	58	5.35	-34.19	-27	7.19	Pass
2	802.11ax(80)	58	5.35	-39.16	-27	12.16	Pass
1	802.11n (40)	62	5.35	-50.82	-27	23.82	Pass
2	802.11n (40)	62	5.35	-49.35	-27	22.35	Pass
1	802.11n	64	5.35	-57.84	-27	30.84	Pass
2	802.11n	64	5.35	-59.18	-27	32.18	Pass
1	802.11a	64	5.35	-57.4	-27	30.4	Pass
2	802.11a	64	5.35	-57.43	-27	30.43	Pass

Table 27. UNII-2A Worst Case -27dBm/MHz EIRP Emissions

TX Port	TX Mode	Ch.	Freq. (GHz)	Avg Amplitude (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dBuV/m)	Peak Amplitude (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)	Result
1	802.11n	100	5.459	28.58	54	25.42	40.21	74	33.79	Pass
2	802.11n	100	5.352	27.94	54	26.06	39.97	74	34.03	Pass
1	802.11a	100	5.405	28.99	54	25.01	40.68	74	33.32	Pass
2	802.11a	100	5.405	28.4	54	25.6	40.27	74	33.73	Pass
1	802.11n (40)	102	5.457	30.78	54	23.22	41.51	74	32.49	Pass
2	802.11n (40)	102	5.459	28.87	54	25.13	40.93	74	33.07	Pass
1	802.11ac (80)	106	5.458	41.86	54	12.14	53.62	74	20.38	Pass
2	802.11ac (80)	106	5.459	43.59	54	10.41	55.05	74	18.95	Pass
1	802.11ax (80)	106	5.459	43.98	54	10.02	54.36	74	19.64	Pass
2	802.11ax (80)	106	5.459	43.05	54	10.95	53.55	74	20.45	Pass

Table 28. UNII-2C Worst Case Restricted Band Edge Emissions

TX Port	TX Mode	Channel	Frequency (GHz)	Peak Amplitude (dBm/MHz)	Limit (dBm/MHz)	Peak Margin (dB)	Result
1	802.11a	100	5.459	-55.04	-27	28.04	Pass
2	802.11a	100	5.352	-55.28	-27	28.28	Pass
1	802.11n	100	5.405	-54.57	-27	27.57	Pass
2	802.11n	100	5.405	-54.98	-27	27.98	Pass
1	802.11n (40)	102	5.457	-53.74	-27	26.74	Pass
2	802.11n (40)	102	5.459	-54.32	-27	27.32	Pass
1	802.11ac(80)	106	5.458	-41.63	-27	14.63	Pass
2	802.11ac(80)	106	5.459	-40.2	-27	13.2	Pass
1	802.11ax(80)	106	5.459	-40.89	-27	13.89	Pass
2	802.11ax(80)	106	5.459	-41.7	-27	14.7	Pass

Table 29. UNII-2C Worst Case -27dBm/MHz EIRP Emissions

Note: There are no restricted bands of operation adjacent to UNII-3 band.

Worst Case Cabinet Radiation

Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
0.100	41.97	107.64	65.67	11.28	H	359.4	1	0.200	Pass
0.103	41.45	107.32	65.87	11.30	V	317.9	1	0.200	Pass
0.506	46.30	73.62	27.31	11.31	V	339.7	1	9.000	Pass

Figure 6. Worst Case Cabinet Radiation, Below 30MHz (UNII-1)

Frequency [MHz]	QPK Level [dBµV/m]	QPK Limit [dBµV/m]	QPK Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
120.000	26.15	43.52	17.37	-6.37	H	36.3	3.92	120.000	Pass
120.000	29.58	43.52	13.94	-6.77	V	121.3	1.59	120.000	Pass
133.020	12.78	43.52	30.74	-6.62	H	251.2	3.82	120.000	Pass
240.060	23.34	46.02	22.68	-7.36	V	62	1.08	120.000	Pass
240.060	18.76	46.02	27.26	-7.56	H	33.8	3.81	120.000	Pass

Figure 7. Worst Case Cabinet Radiation, Below 1GHz (UNII-1)

Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB] <small>Error! Bookmark not defined.</small>	Polarization	Azimuth [deg]	Antenna Height [m]	Result
1,107.500	35.10	74.00	38.90	21.89	54.00	32.11	0.05	V	308.5	1.5	Pass
1,497.500	38.56	74.00	35.44	23.00	54.00	31.00	-1.20	H	335.7	2.16	Pass
1,497.500	35.16	74.00	38.84	21.98	54.00	32.02	-1.20	V	115.5	2.5	Pass
3,893.500	42.42	74.00	31.58	29.51	54.00	24.49	-1.64	V	138.1	1.65	Pass
10,697.000	45.73	74.00	28.27	33.15	54.00	20.85	-0.79	V	223.1	2.5	Pass
12,312.000	45.49	74.00	28.51	32.48	54.00	21.52	-2.22	H	177.7	1.91	Pass
19,532.500	50.16	74.00	23.84	36.78	54.00	17.22	12.33	H	292.4	1.5	Pass
19,981.500	49.63	74.00	24.37	36.32	54.00	17.68	12.34	H	242	1.18	Pass
22,980.000	49.58	74.00	24.42	36.61	54.00	17.39	13.97	V	323.4	2.29	Pass
31,508.500	53.18	74.00	20.82	39.92	54.00	14.08	16.77	V	58.2	3.87	Pass

Figure 8. Worst Case Cabinet Radiation, Above 1GHz (UNII-1)

Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
0.104	41.19	107.24	66.05	11.31	V	27.4	1	0.200	Pass
0.105	39.81	107.18	67.37	11.32	H	151.6	1	0.200	Pass
0.506	45.75	73.62	27.86	11.31	H	94.3	1	9.000	Pass

Figure 9. Worst Case Cabinet Radiation, Below 30MHz (UNII-2A)

Frequency [MHz]	QPK Level [dBµV/m]	QPK Limit [dBµV/m]	QPK Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
120.000	26.94	43.52	16.58	-6.37	H	39.7	4	120.000	Pass
120.000	30.05	43.52	13.47	-6.77	V	108.7	1.11	120.000	Pass
132.900	12.25	43.52	31.27	-6.61	H	247.7	3.6	120.000	Pass
137.220	16.75	43.52	26.77	-6.83	V	65.3	2.5	120.000	Pass
240.060	19.00	46.02	27.02	-7.36	V	64.8	1.04	120.000	Pass
258.540	15.21	46.02	30.81	-7.35	H	211.9	3.46	120.000	Pass

Figure 10. Worst Case Cabinet Radiation, Below 1GHz (UNII-2A)

Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB] <small>Error! Bookmark not defined.</small>	Polarization	Azimuth [deg]	Antenna Height [m]	Result
3,878.000	41.33	74.00	32.67	28.44	54.00	25.56	-1.73	H	19.1	2.5	Pass
3,878.500	41.49	74.00	32.51	28.97	54.00	25.03	-1.73	V	135	2.11	Pass
10,669.500	46.23	74.00	27.77	32.61	54.00	21.39	-0.92	H	33.1	2.5	Pass
10,672.000	45.83	74.00	28.17	33.14	54.00	20.86	-0.91	V	39.2	2.5	Pass
15,973.000	45.39	74.00	28.61	32.54	54.00	21.46	-0.99	H	203.1	2.5	Pass
15,973.000	46.20	74.00	27.80	33.45	54.00	20.55	-0.99	V	182.2	1.41	Pass
18,981.000	49.98	74.00	24.02	37.05	54.00	16.95	12.50	H	302.4	3.01	Pass
20,004.000	49.33	74.00	24.67	36.24	54.00	17.76	12.35	H	175.9	1.06	Pass
22,943.500	48.90	74.00	25.10	36.02	54.00	17.98	13.91	H	122.1	3.6	Pass
22,985.500	50.09	74.00	23.91	36.69	54.00	17.31	13.98	V	159.2	2.5	Pass
31,248.000	53.85	74.00	20.15	40.25	54.00	13.75	16.64	V	281.9	3.56	Pass
36,460.500	53.45	74.00	20.55	39.64	54.00	14.36	15.85	V	17.9	3.5	Pass

Figure 11. Worst Case Cabinet Radiation, Above 1GHz (UNII-2A)

Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
0.097	41.27	107.88	66.61	11.43	H	97	1	0.200	Pass
0.101	39.96	107.51	67.55	11.27	V	357.1	1	0.200	Pass

Figure 12. Worst Case Cabinet Radiation, Below 30MHz (UNII-2C)

Frequency [MHz]	QPK Level [dBµV/m]	QPK Limit [dBµV/m]	QPK Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
120.000	26.43	43.52	17.09	-6.37	H	48.9	3.99	120.000	Pass
120.000	29.57	43.52	13.95	-6.77	V	94	1.69	120.000	Pass
244.920	14.71	46.02	31.31	-7.37	V	58.8	1.17	120.000	Pass
264.360	15.63	46.02	30.39	-6.42	H	8.4	3.11	120.000	Pass

Figure 13. Worst Case Cabinet Radiation, Below 1GHz (UNII-2C)

Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB] <small>Error! Bookmark not defined.</small>	Polarization	Azimuth [deg]	Antenna Height [m]	Result
3,895.000	41.70	74.00	32.30	28.60	54.00	25.40	-1.65	H	136.5	2.5	Pass
4,875.000	41.69	74.00	32.31	29.30	54.00	24.70	-3.43	V	332.7	2.32	Pass
11,109.000	44.83	74.00	29.17	32.06	54.00	21.94	-2.01	H	111.7	1.5	Pass
11,109.000	46.47	74.00	27.53	32.72	54.00	21.28	-2.01	V	77.6	2.33	Pass
19,265.500	43.08	74.00	30.92	30.04	54.00	23.96	12.47	H	120.2	3.06	Pass
20,712.000	42.28	74.00	31.72	29.32	54.00	24.68	12.60	H	88.5	1.11	Pass
22,701.500	44.49	74.00	29.51	31.40	54.00	22.60	13.98	H	210.2	1.43	Pass
22,824.000	44.99	74.00	29.01	31.74	54.00	22.26	14.00	V	279.9	3.81	Pass
31,440.500	50.25	74.00	23.75	36.96	54.00	17.04	16.65	V	251.7	1.15	Pass
31,488.000	50.12	74.00	23.88	37.10	54.00	16.90	16.74	H	165.3	1.99	Pass

Figure 14. Worst Case Cabinet Radiation, Above 1GHz (UNII-2C)

Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
0.098	41.44	107.76	66.32	11.35	V	76	1	0.200	Pass
0.099	39.31	107.68	68.38	11.31	H	318.1	1	0.200	Pass
0.501	47.39	73.69	26.31	11.27	V	188.8	1	9.000	Pass

Figure 15. Worst Case Cabinet Radiation, Below 30MHz (UNII-3)

Frequency [MHz]	QPK Level [dBµV/m]	QPK Limit [dBµV/m]	QPK Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
120.000	26.59	43.52	16.93	-6.37	H	40.8	3.86	120.000	Pass
120.000	30.30	43.52	13.22	-6.77	V	124.1	1.1	120.000	Pass
134.040	17.27	43.52	26.25	-6.71	V	11.1	2.04	120.000	Pass
261.600	11.06	46.02	34.96	-6.60	V	323.5	1.45	120.000	Pass
270.360	16.83	46.02	29.19	-5.96	H	358.7	3.64	120.000	Pass

Figure 16. Worst Case Cabinet Radiation, Below 1GHz (UNII-3)

Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB] <small>Error! Bookmark not defined.</small>	Polarization	Azimuth [deg]	Antenna Height [m]	Result
3,881.000	41.73	74.00	32.27	28.69	54.00	25.31	-1.70	H	136.6	1	Pass
3,893.500	42.57	74.00	31.43	28.97	54.00	25.03	-1.64	V	99.7	2.5	Pass
11,651.000	46.31	74.00	27.69	32.67	54.00	21.33	-1.15	V	360.2	1.9	Pass
11,684.500	45.09	74.00	28.91	32.01	54.00	21.99	-1.01	H	333.4	2.35	Pass
19,975.000	42.31	74.00	31.69	29.39	54.00	24.61	12.34	H	346.9	2.26	Pass
22,837.500	44.96	74.00	29.04	31.75	54.00	22.25	13.97	V	107.9	2.11	Pass
23,074.500	45.71	74.00	28.29	31.76	54.00	22.24	14.17	H	172.9	2.76	Pass
23,759.500	45.79	74.00	28.21	32.01	54.00	21.99	14.53	V	278.9	2.37	Pass
31,490.000	50.55	74.00	23.45	37.10	54.00	16.90	16.74	V	229.9	1.97	Pass
36,474.500	50.73	74.00	23.27	37.48	54.00	16.52	15.82	V	75.4	3.54	Pass

Figure 17. Worst Case Cabinet Radiation, Above 1GHz (UNII-3)

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(g) Frequency Stability

Test Requirements: Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

Test Results: The EUT was compliant with the requirements of this section. TX emission is maintained within the band of operation under all conditions of normal operation.

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.

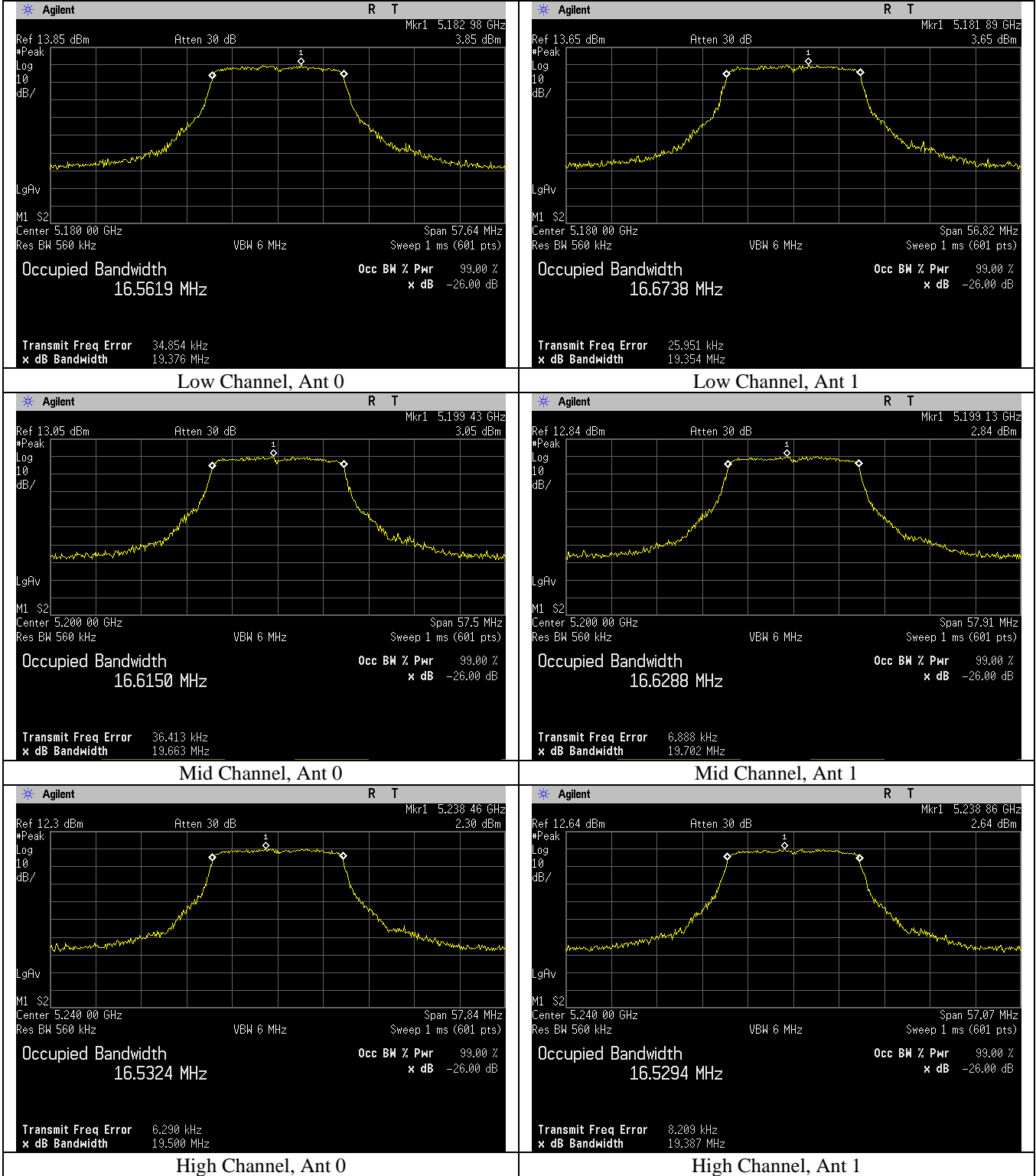
MET Asset #	Description	Manufacturer	Model	Last Cal Date	Cal Due Date
MY46180897	Spectrum Analyzer	Keysight	E4448A	7/27/2023	7/27/2024
1A1083	Receiver	Rohde & Schwarz	ESU40	11/20/2023	11/20/2024
1A1176	Active Loop Antenna (9KHz-30MHz)	ETS-Lindgren	6502	7/13/2023	7/13/2024
1A1147	Bilog Antenna	Sunol Sciences Corp	JB3	4/6/2023	4/6/2025
1A1047	Horn Antenna (1-18GHz)	ETS - Lindgren	3117	6/16/2022	6/16/2024
1A1161	Horn Antenna (18GHz – 40GHz)	ETS Lindgren	3116C	7/11/2023	7/11/2024
1A1065	EMI Receiver	Rohde & Schwarz	ESCI	8/4/2023	8/4/2024
1A1087	Pulse Limiter	Rohde & Schwarz	ESH3Z2	12/21/2023	12/21/2024
1A1122	LISN	Teseq	NNB 51	9/19/2023	9/19/2024
1A1123	LISN	Teseq	NNB 51	12/20/2023	12/20/2024
1A1149	DC Milliohm Meter	GW Instek	GOM-802	9/20/2023	9/20/2024
1A1099	Generator	Com-Power	CGO-51000	See Note	
1A1088	Preamplifier	Rohde & Schwarz	TS-PR1	See Note	
1A1044	Generator	Com-Power	CG-520	See Note	
1A1073	Multi Device Controller	ETS	2090	See Note	
1A1074	System Controller	Panasonic	WV-CU101	See Note	
1A1080	Multi-Device	ETS	2090	See Note	
1A1180	Preamplifier	Miteq	AMF-7D-01001800-22-10P	See Note	

Table 30. Test Equipment List

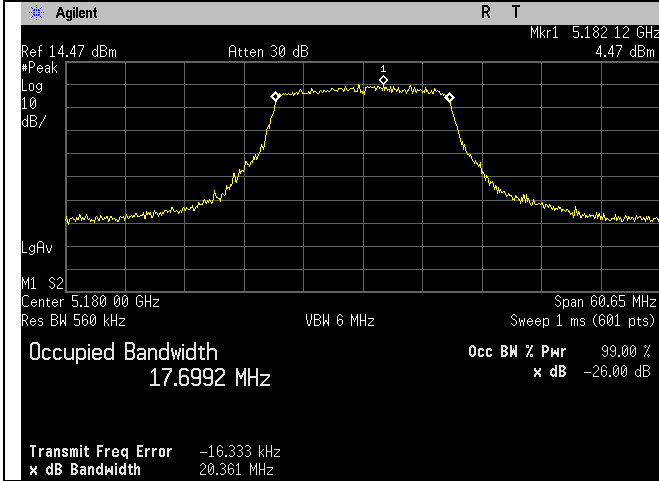
Note: Functionally tested equipment is verified using calibrated instrumentation at the time of testing.

I. Occupied Bandwidth Plots

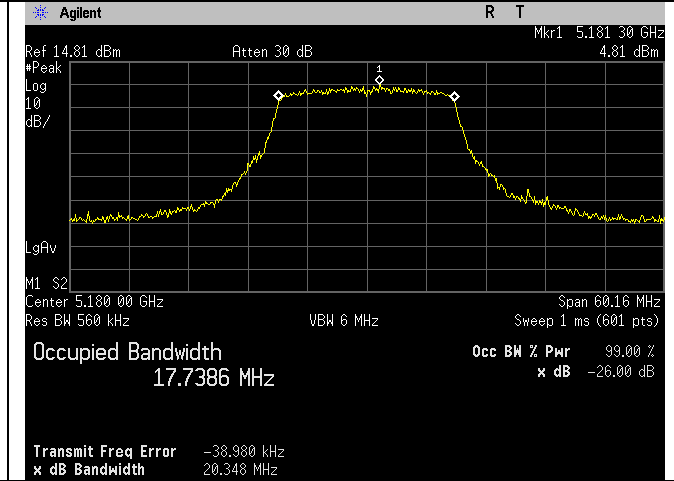
802.11a Occupied Bandwidth Plots, UNII-1



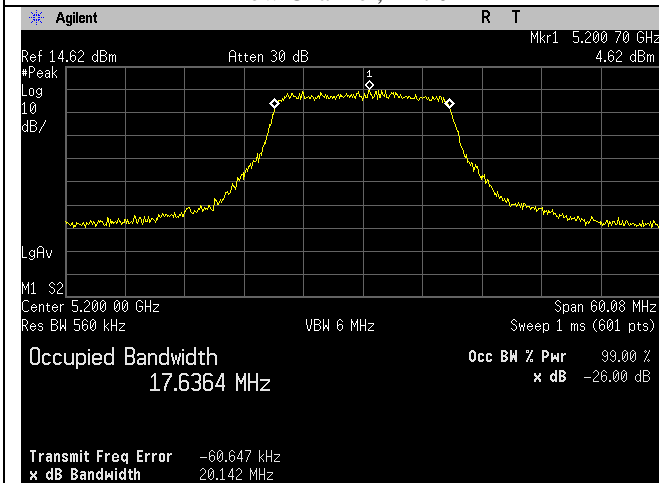
802.11n Occupied Bandwidth Plots, UNII-1



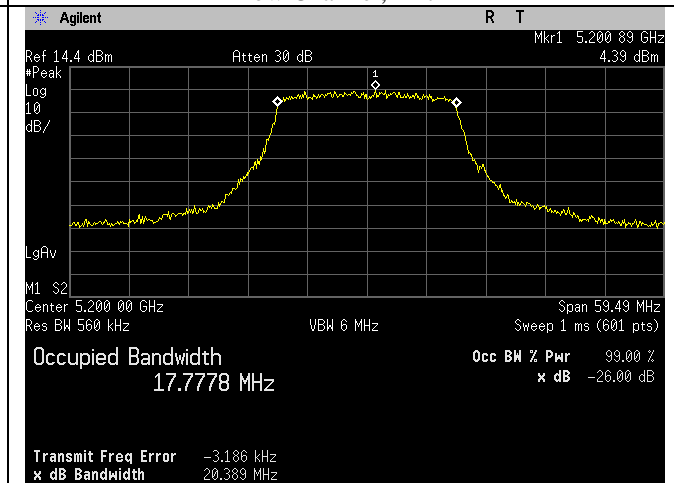
Low Channel, Ant 0



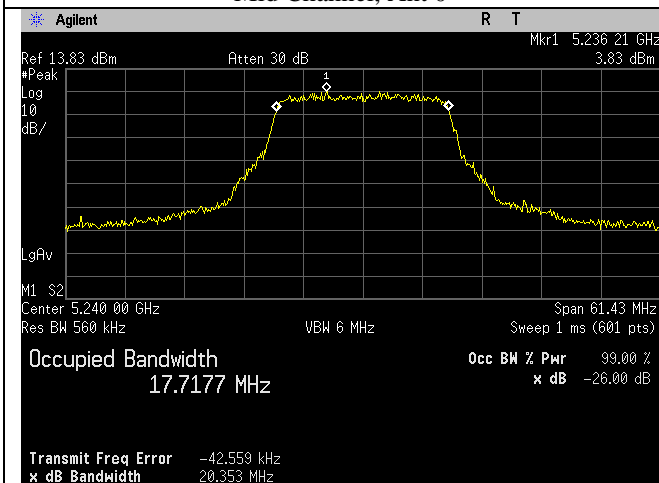
Low Channel, Ant 1



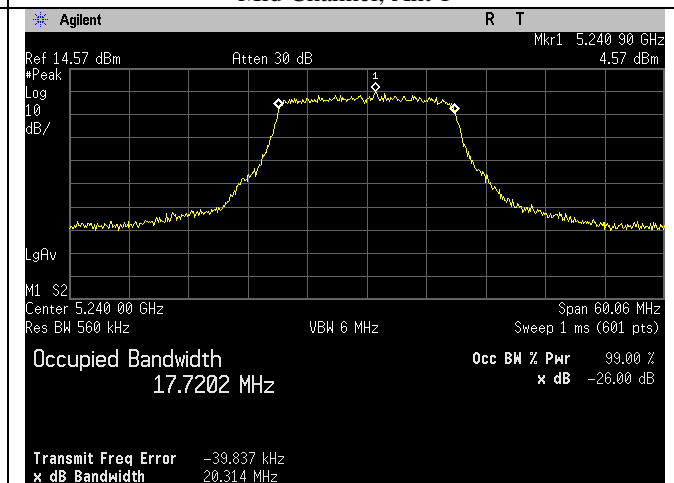
Mid Channel, Ant 0



Mid Channel, Ant 1

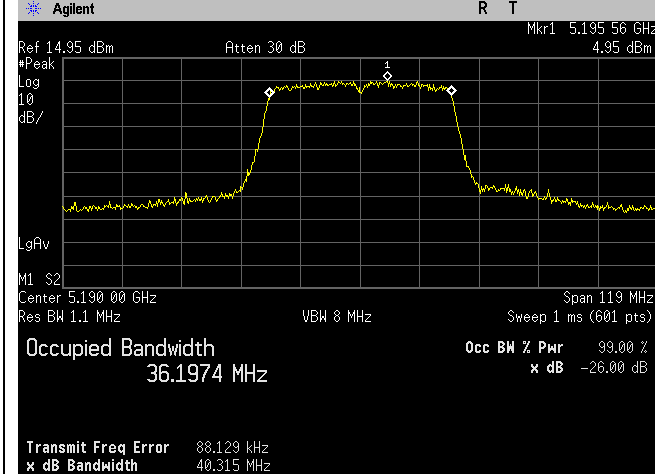


High Channel, Ant 0

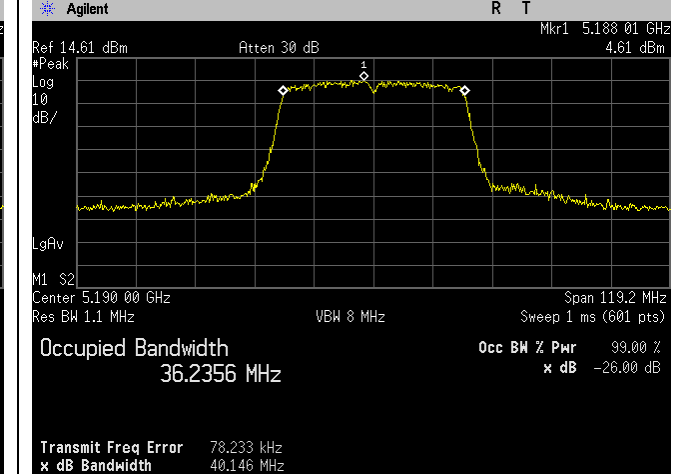


High Channel, Ant 1

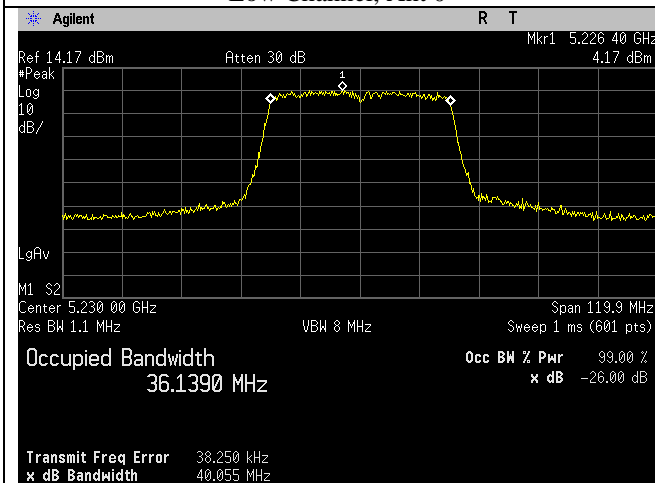
802.11n(40MHz) Occupied Bandwidth Plots, UNII-1



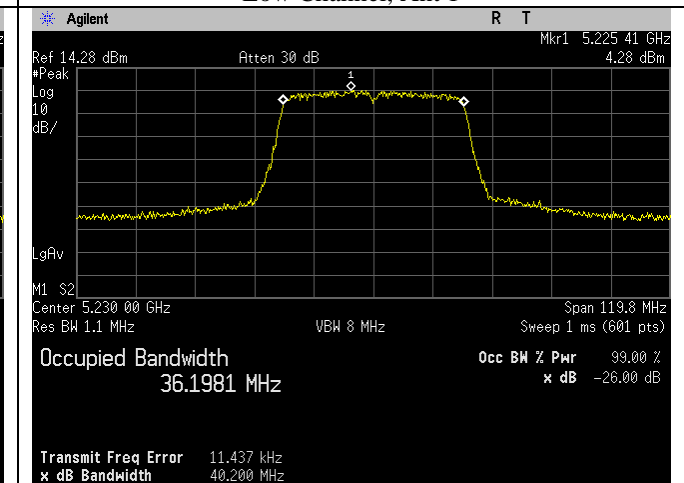
Low Channel, Ant 0



Low Channel, Ant 1

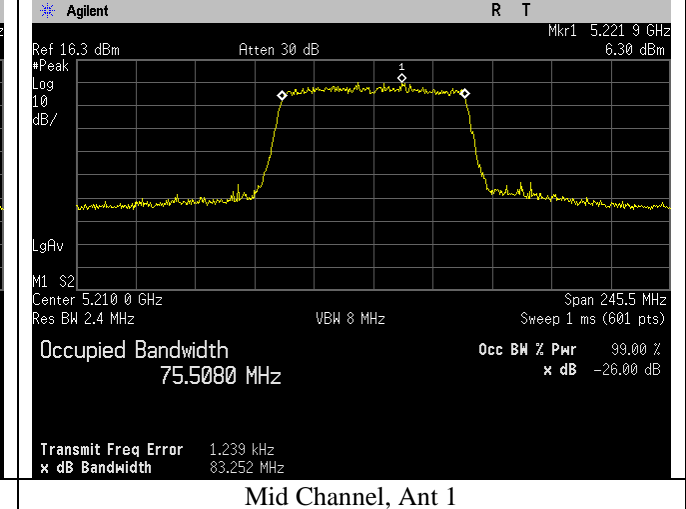
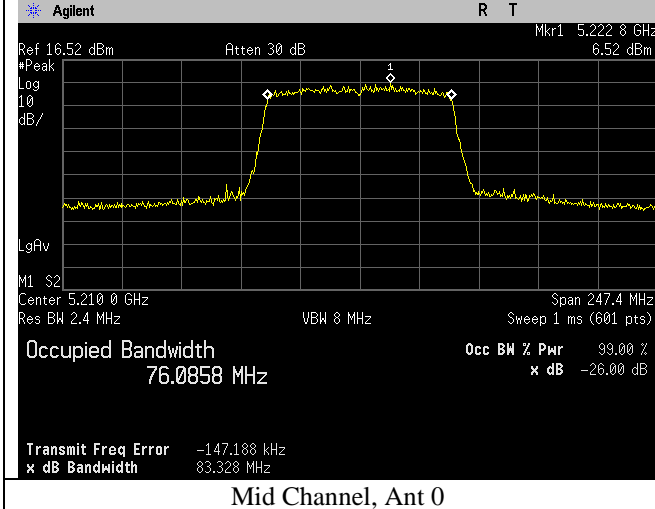


High Channel, Ant 0

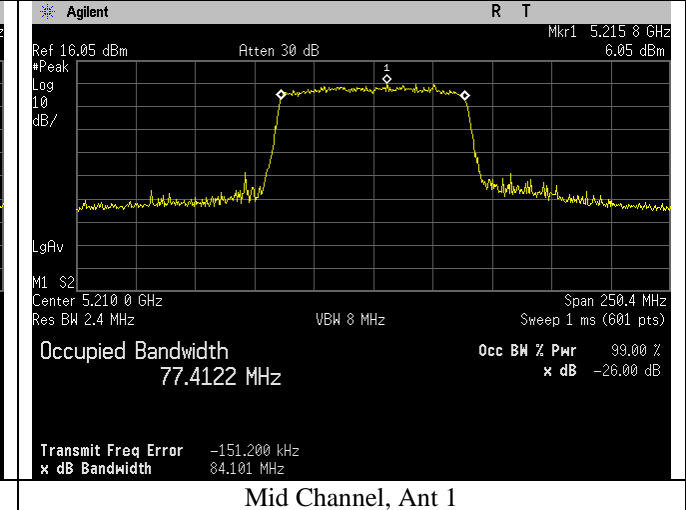
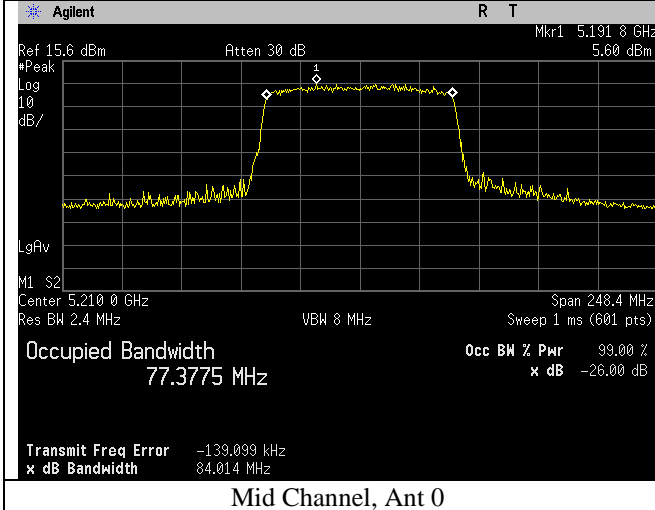


High Channel, Ant 1

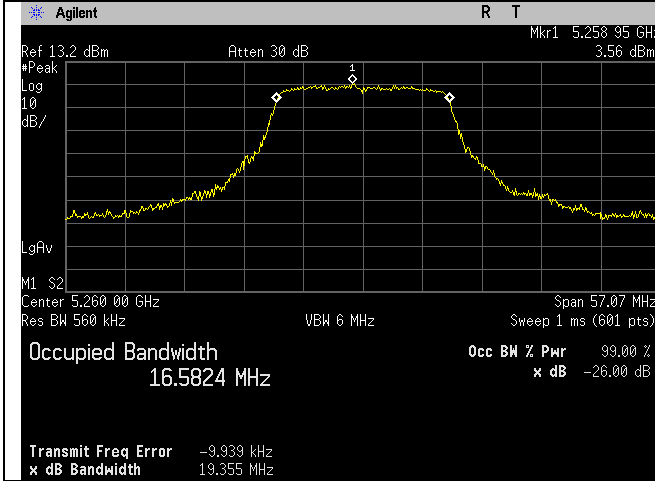
802.11ac Occupied Bandwidth Plots, UNII-1



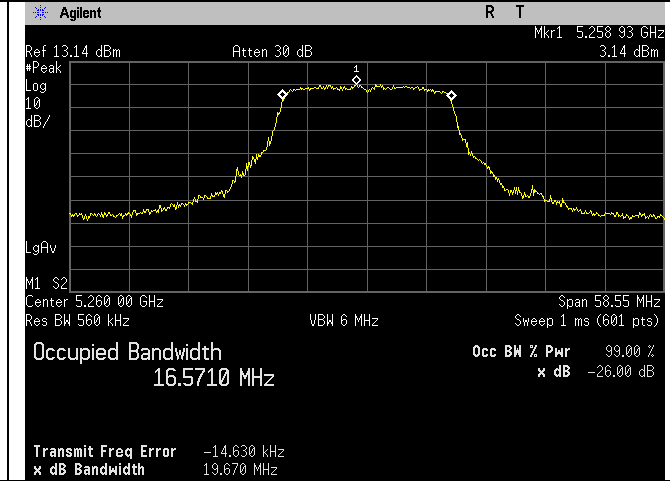
802.11ax Occupied Bandwidth Plots, UNII-1



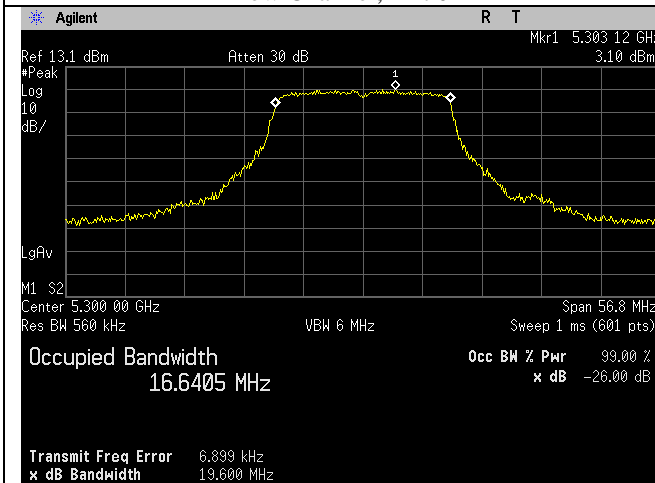
802.11a Occupied Bandwidth Plots, UNII-2C



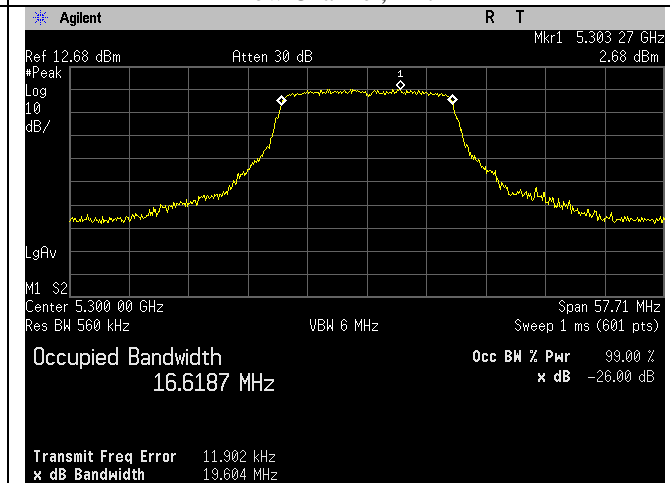
Low Channel, Ant 0



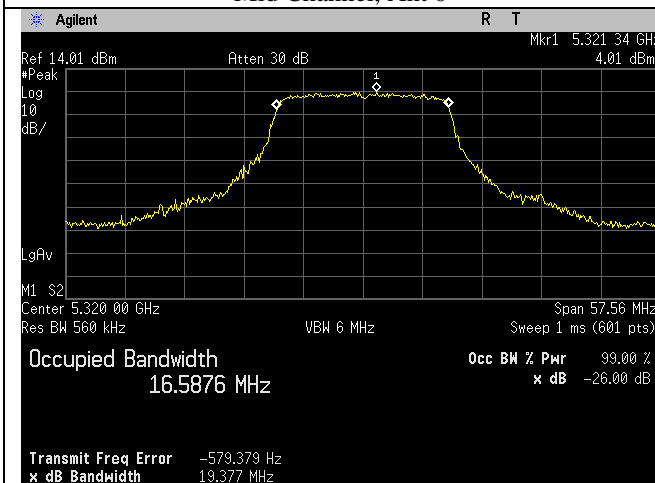
Low Channel, Ant 1



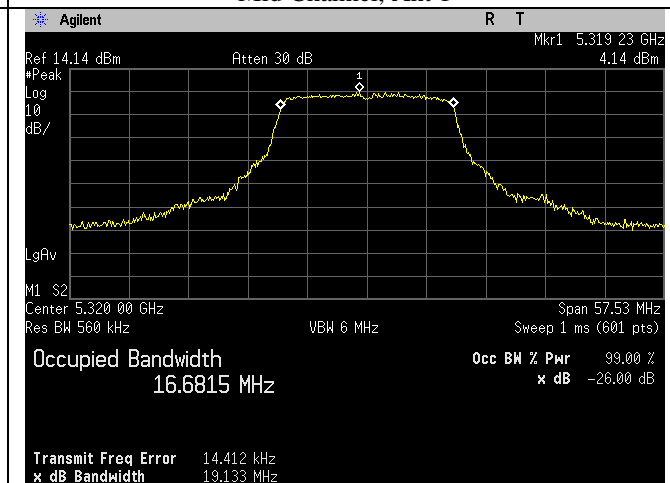
Mid Channel, Ant 0



Mid Channel, Ant 1

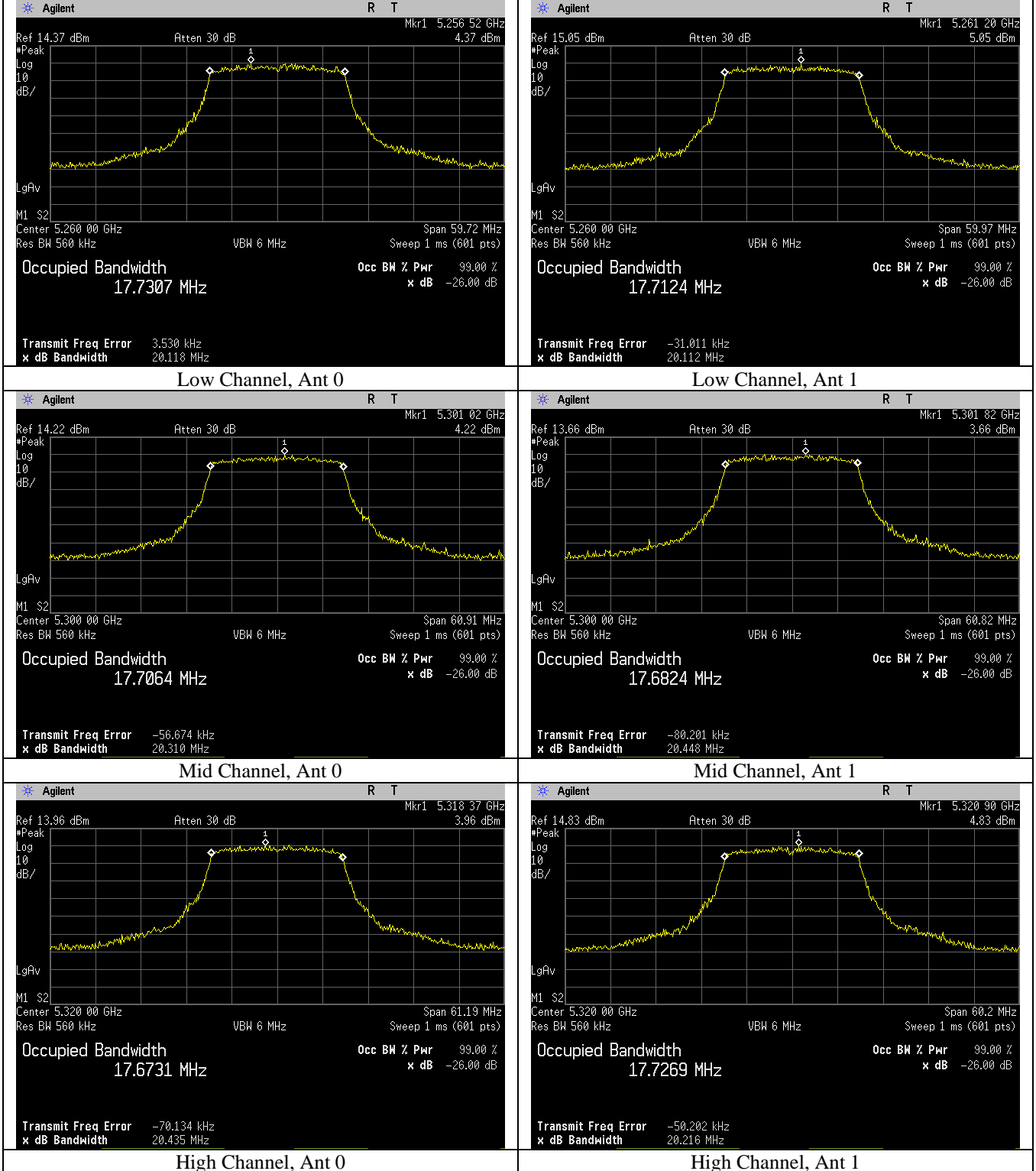


High Channel, Ant 0

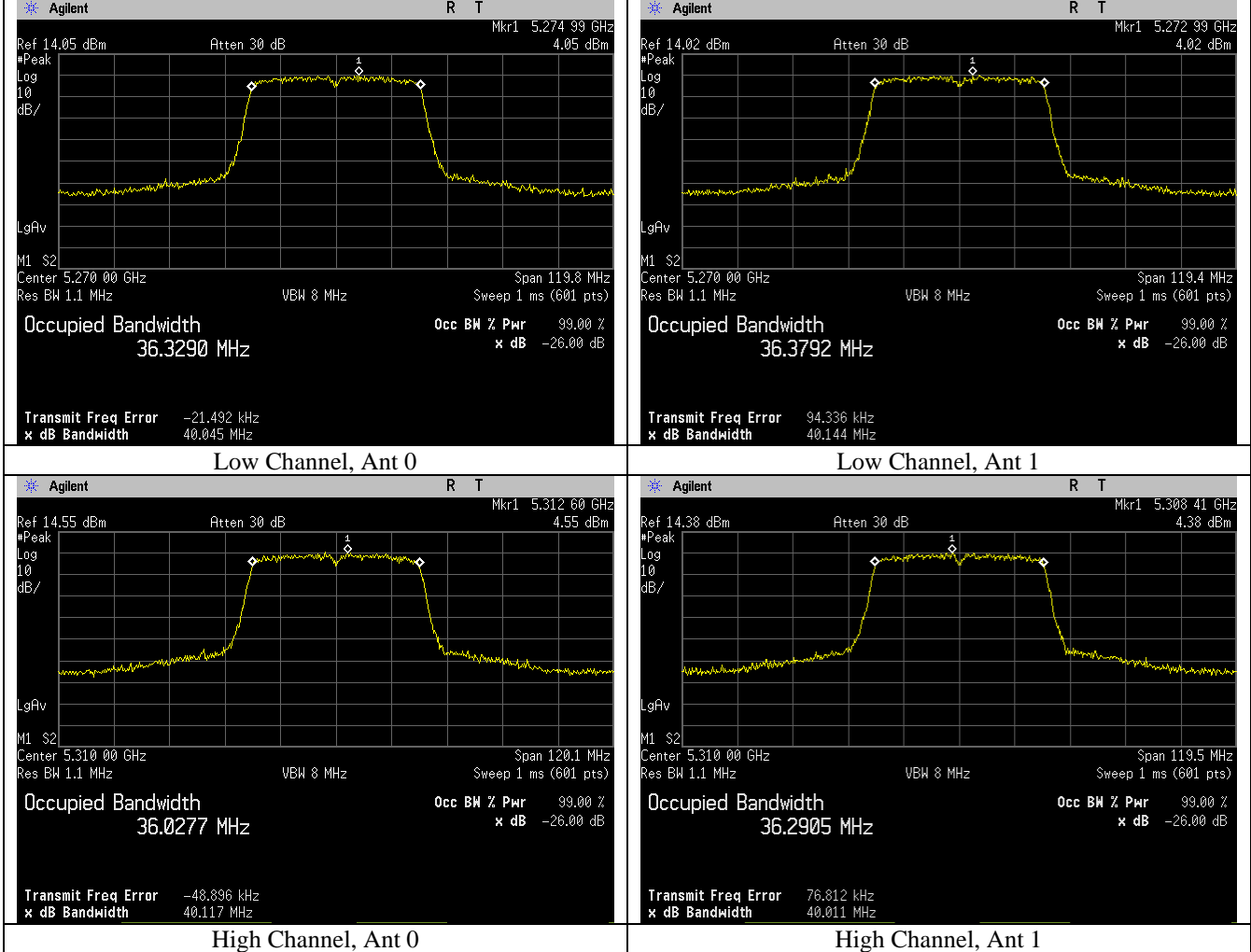


High Channel, Ant 1

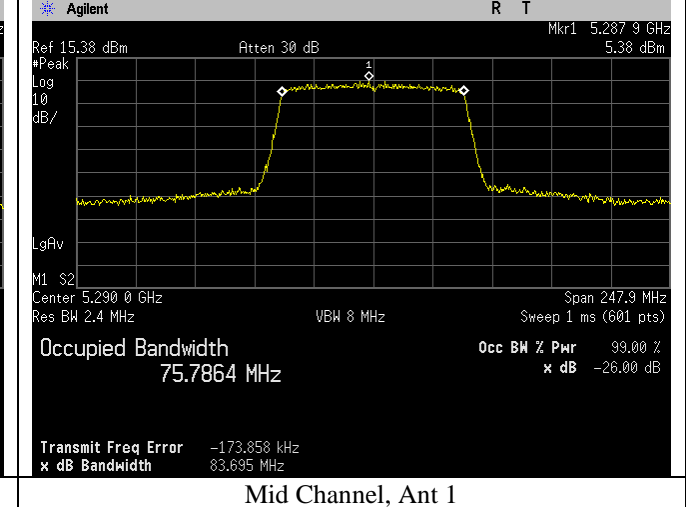
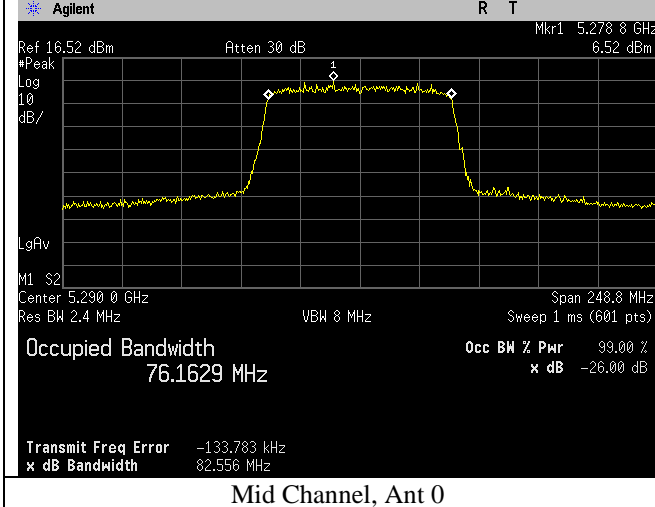
802.11n Occupied Bandwidth Plots, UNII-2C



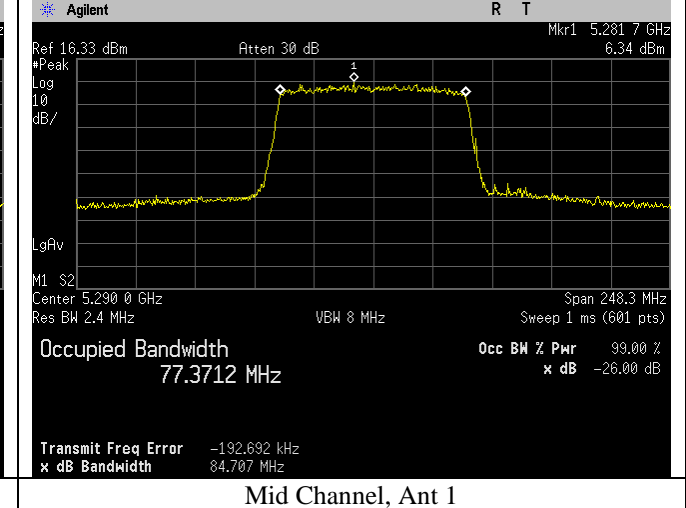
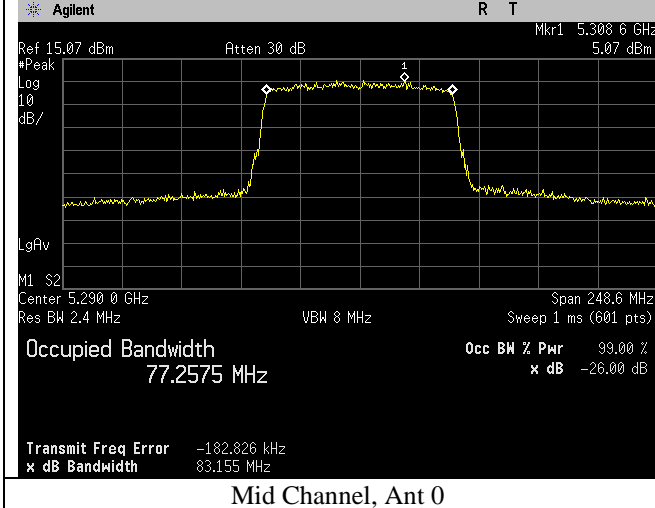
802.11n(40MHz) Occupied Bandwidth Plots, UNII-2C



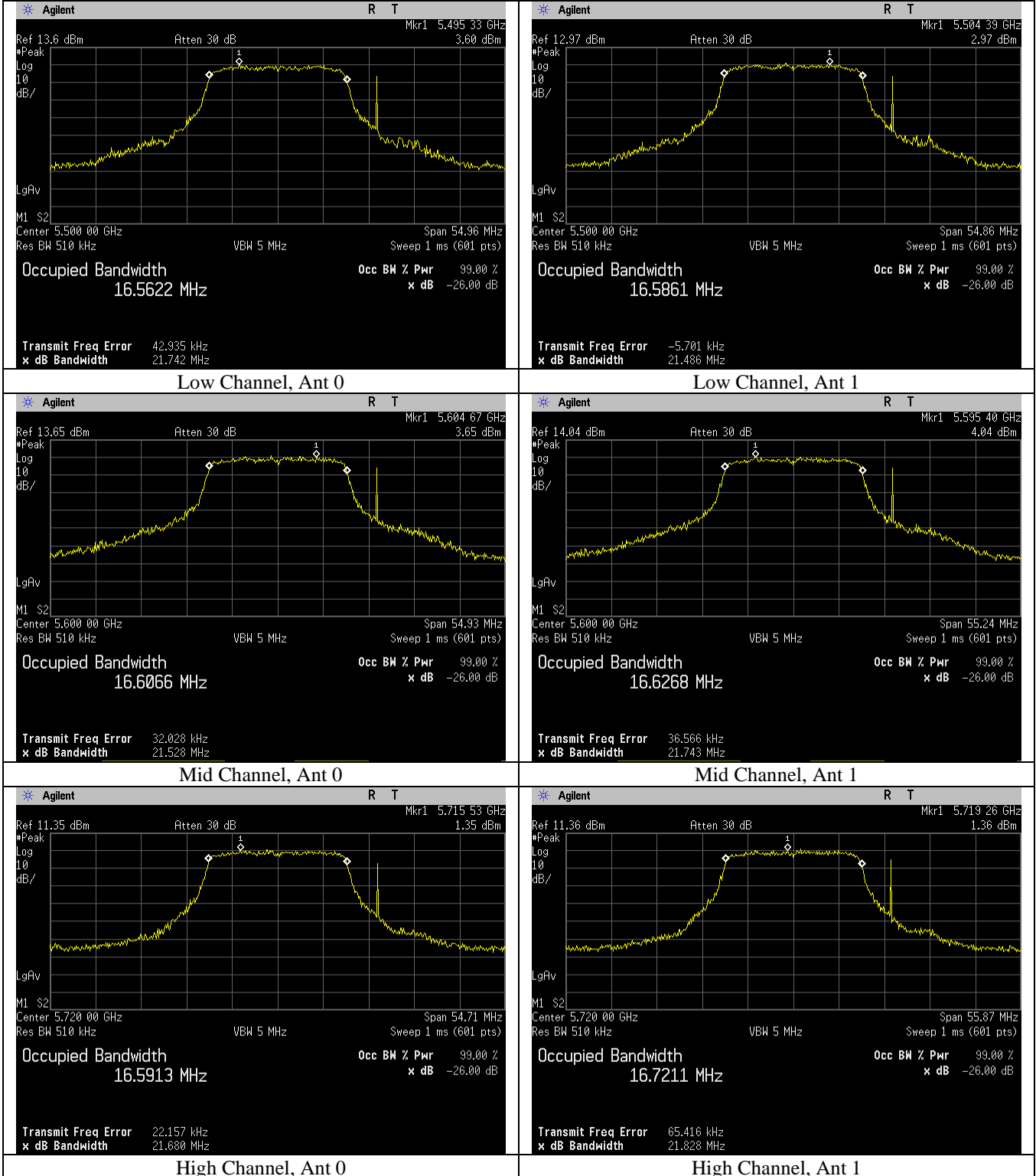
802.11ac Occupied Bandwidth Plots, UNII-2C



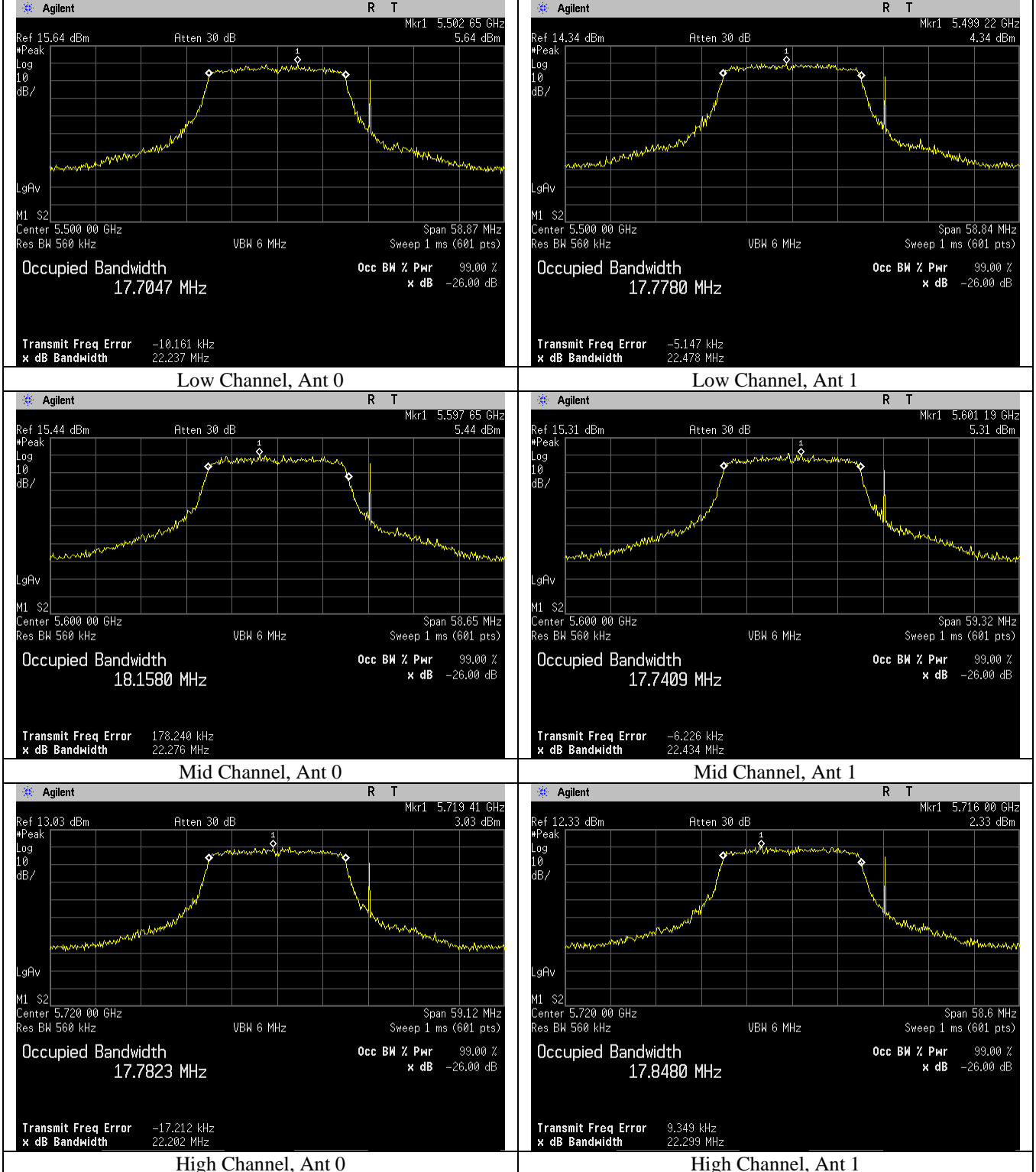
802.11ax Occupied Bandwidth Plots, UNII-2C



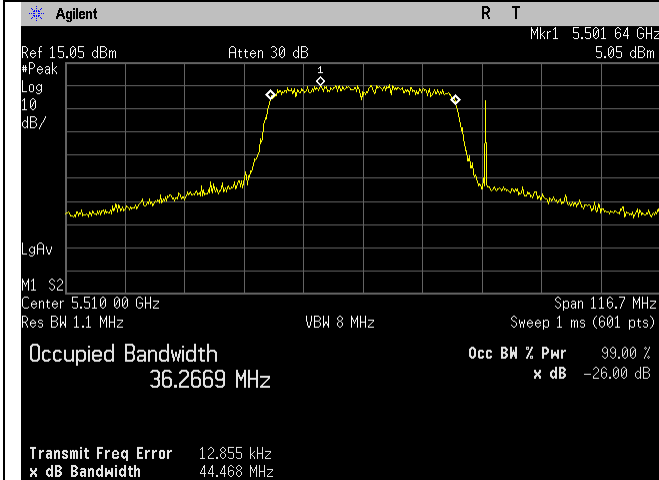
802.11a Occupied Bandwidth Plots, UNII-2C



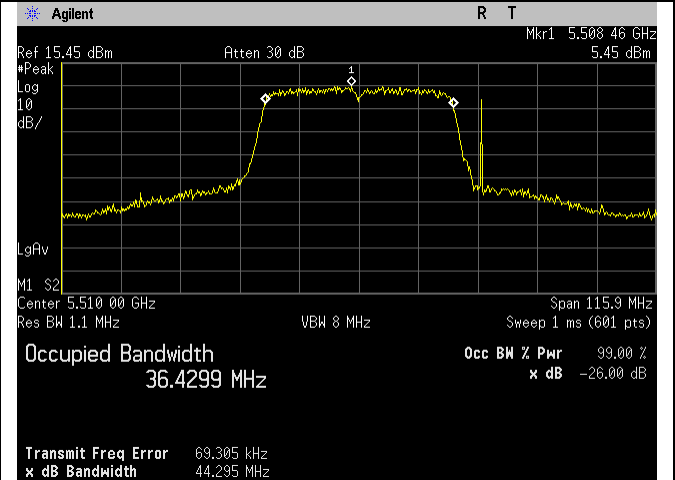
802.11n Occupied Bandwidth Plots, UNII-2C



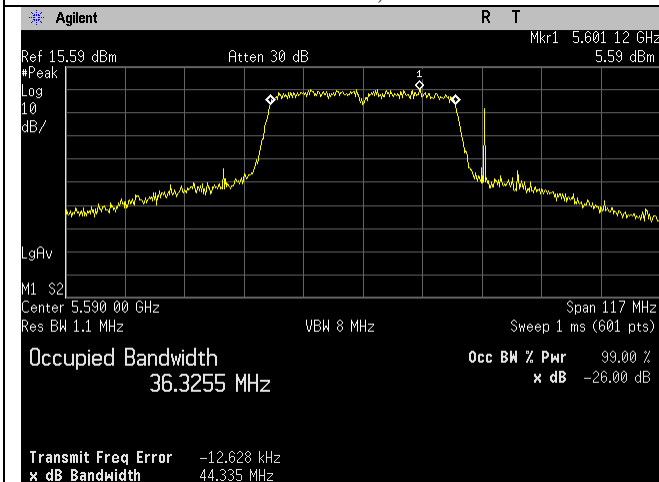
802.11n(40MHz) Occupied Bandwidth Plots, UNII-2C



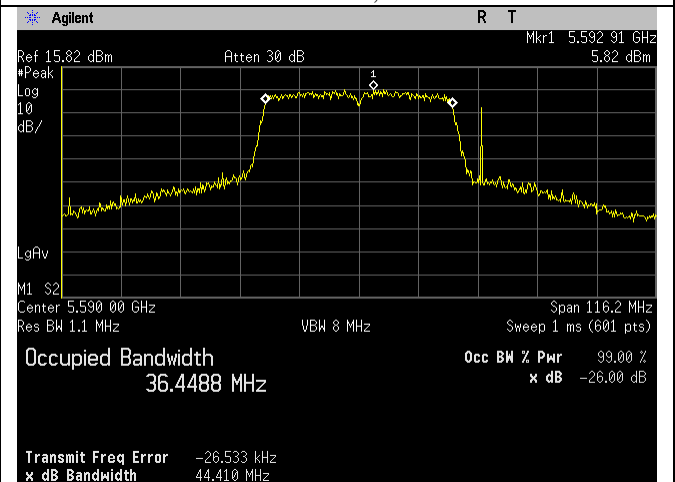
Low Channel, Ant 0



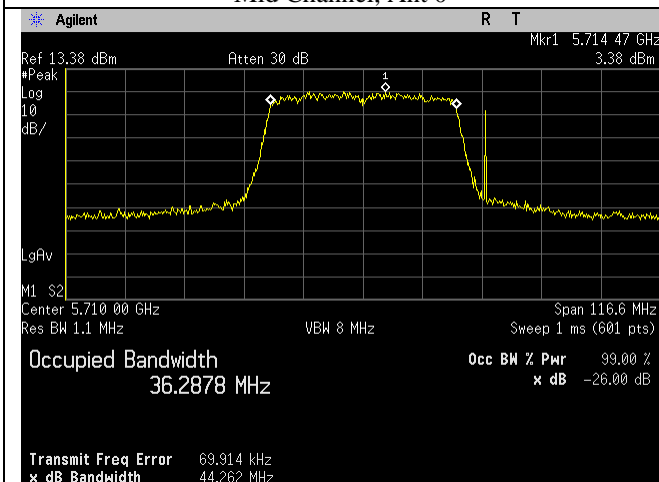
Low Channel, Ant 1



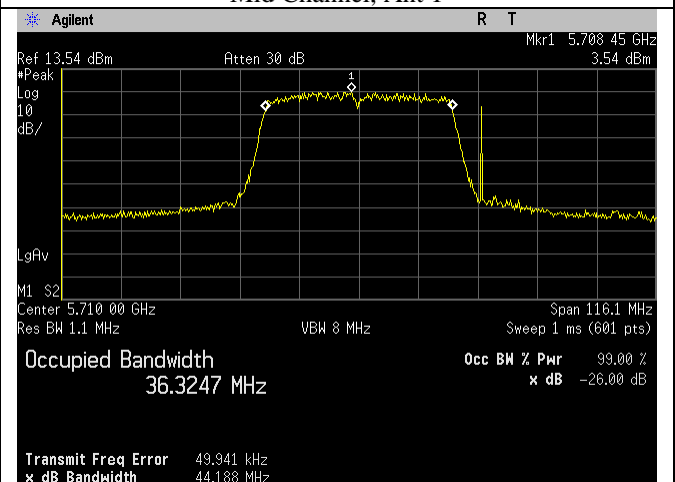
Mid Channel, Ant 0



Mid Channel, Ant 1

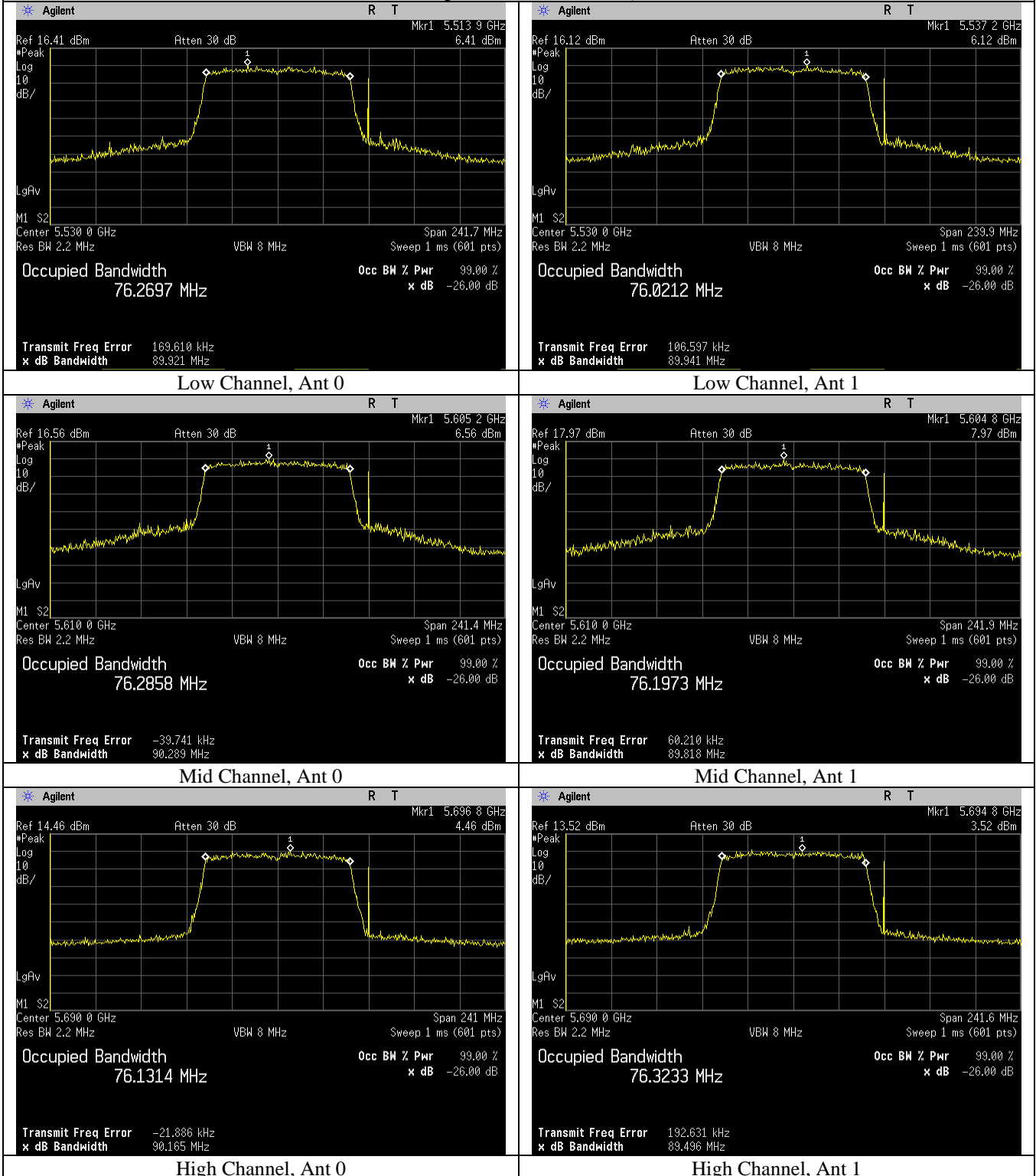


High Channel, Ant 0

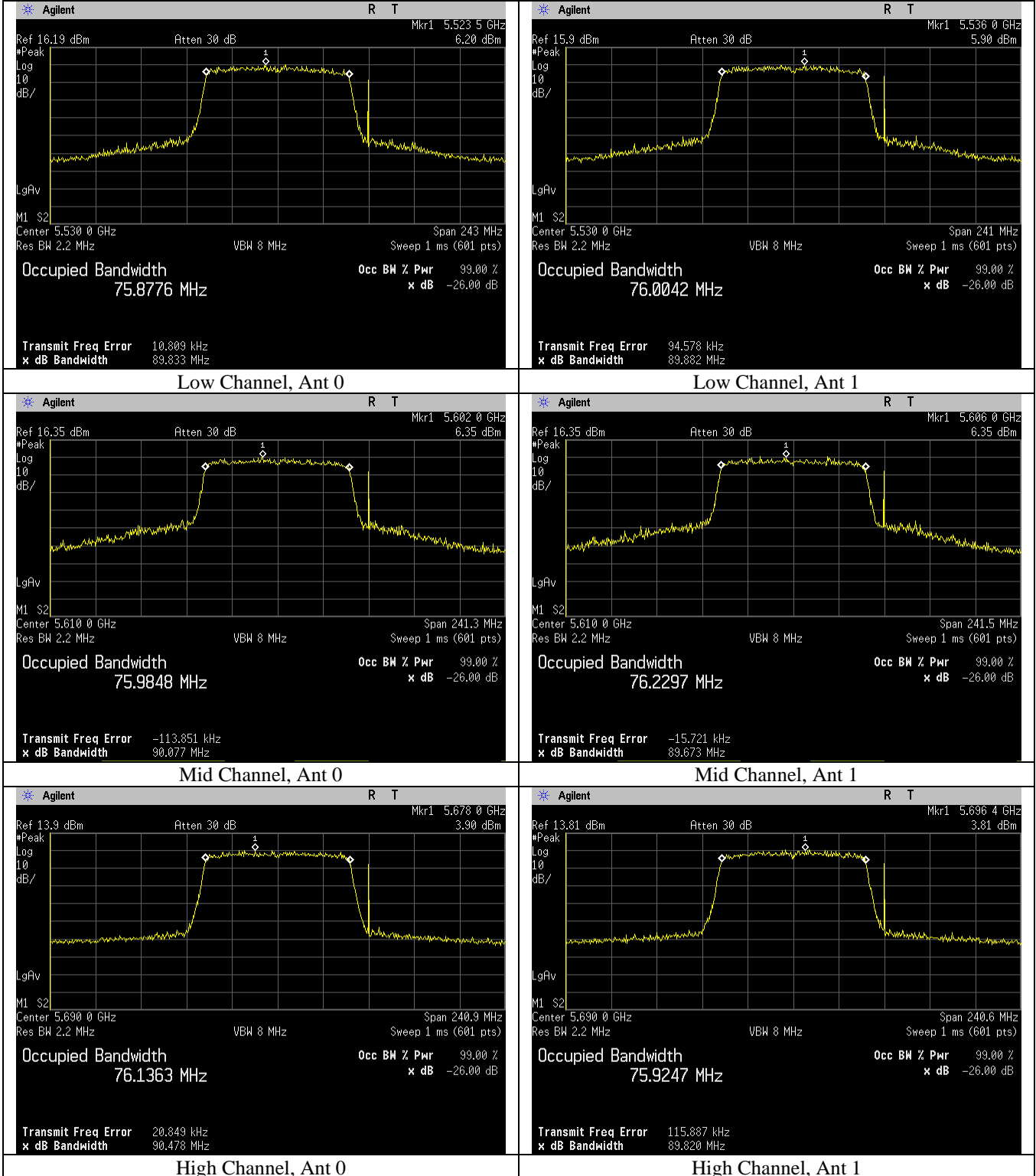


High Channel, Ant 1

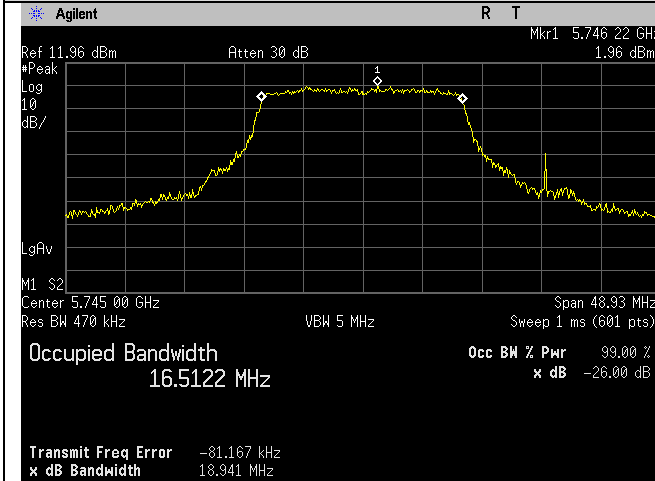
802.11ac Occupied Bandwidth Plots, UNII-2C



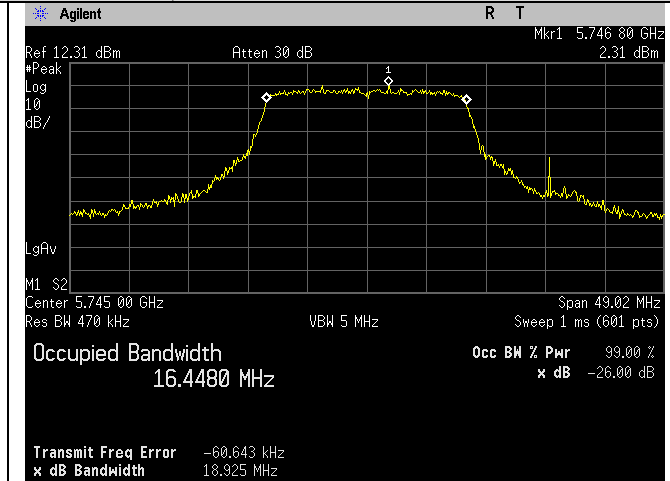
802.11ax Occupied Bandwidth Plots, UNII-2C



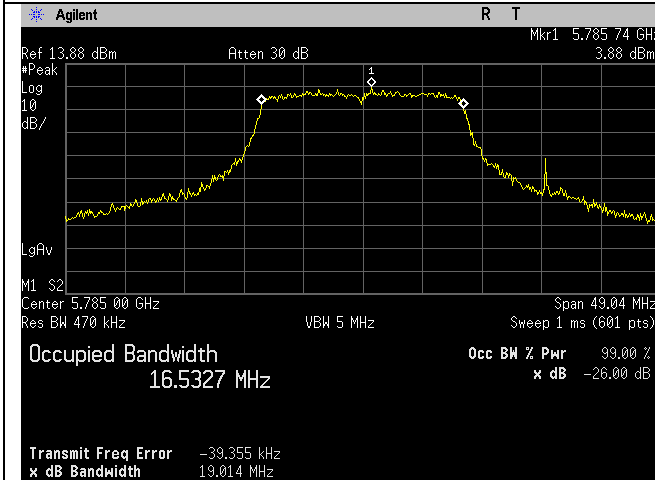
802.11a 99% / 26dB Bandwidth Plots, UNII-3



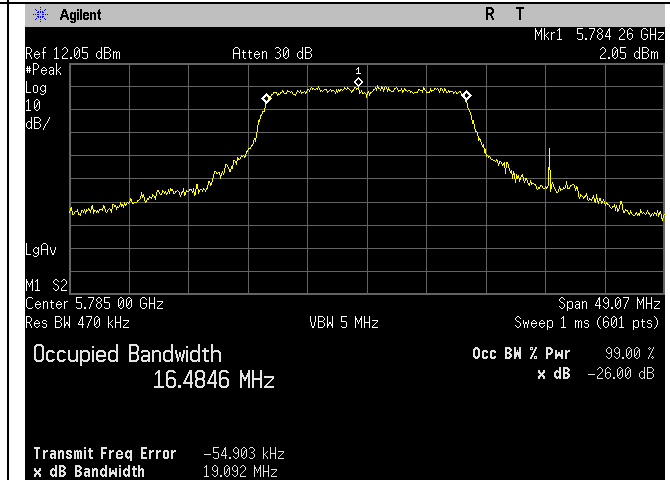
Low Channel, Ant 0



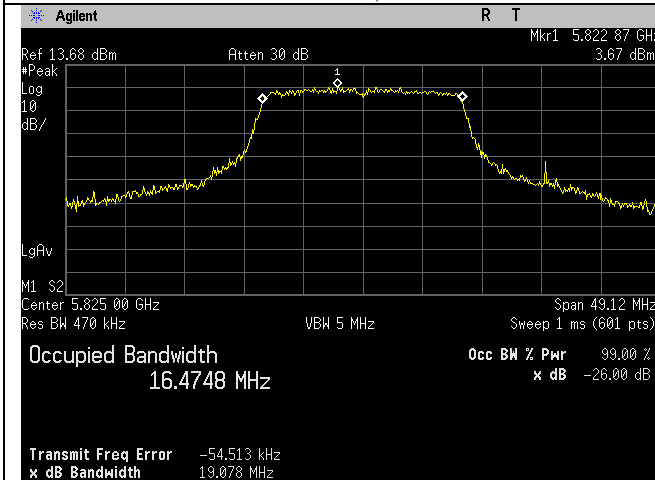
Low Channel, Ant 1



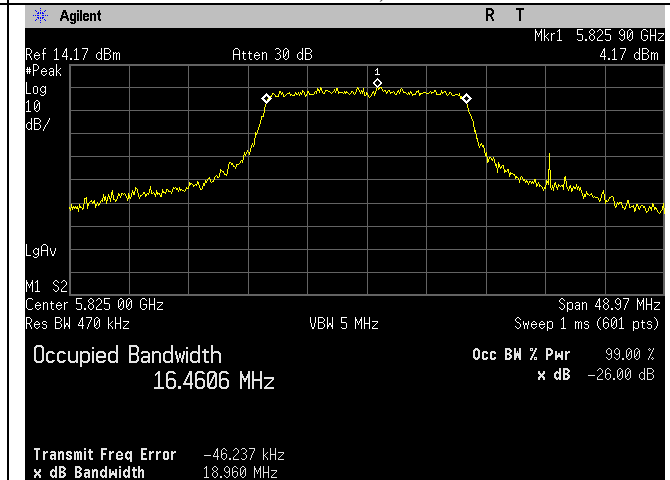
Mid Channel, Ant 0



Mid Channel, Ant 1

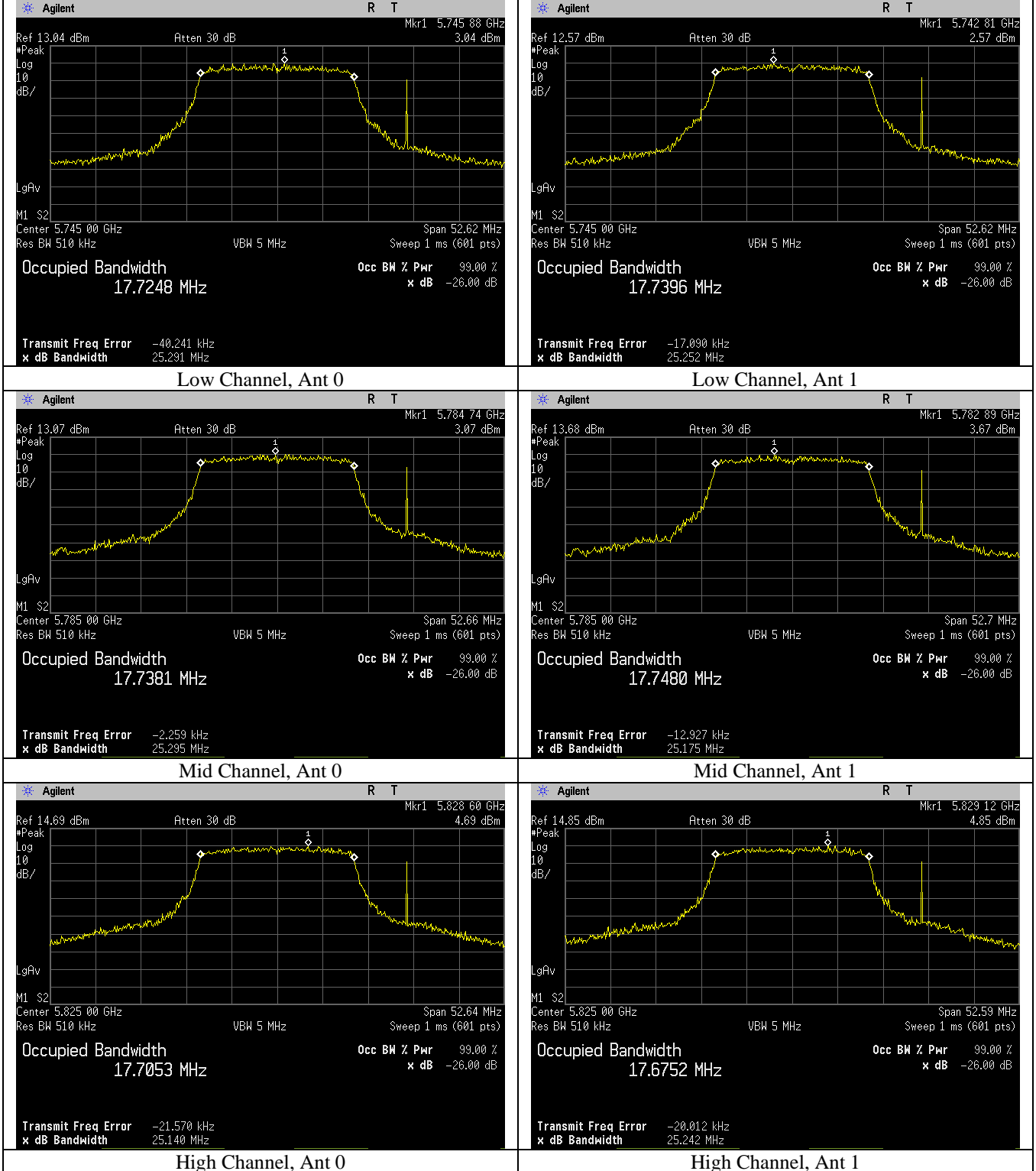


High Channel, Ant 0

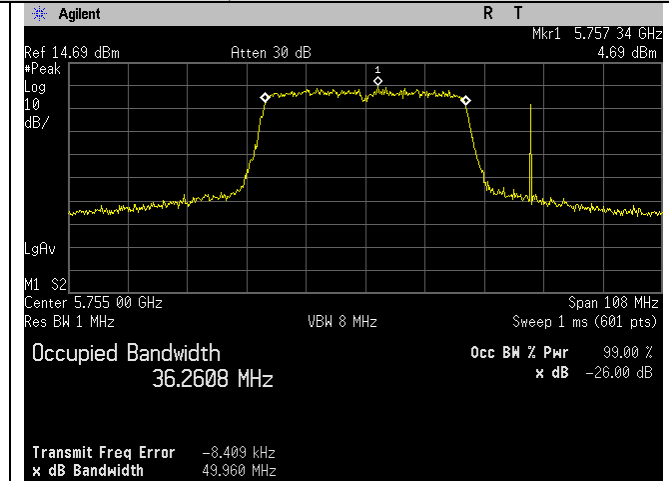
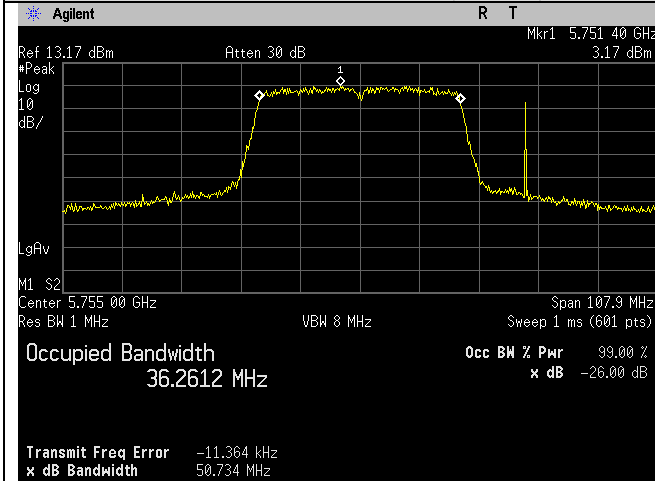


High Channel, Ant 1

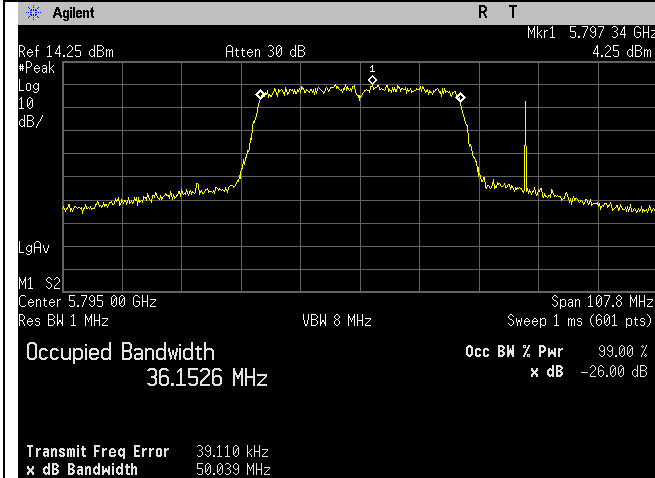
802.11n 99% / 26dB Bandwidth Plots, UNII-3



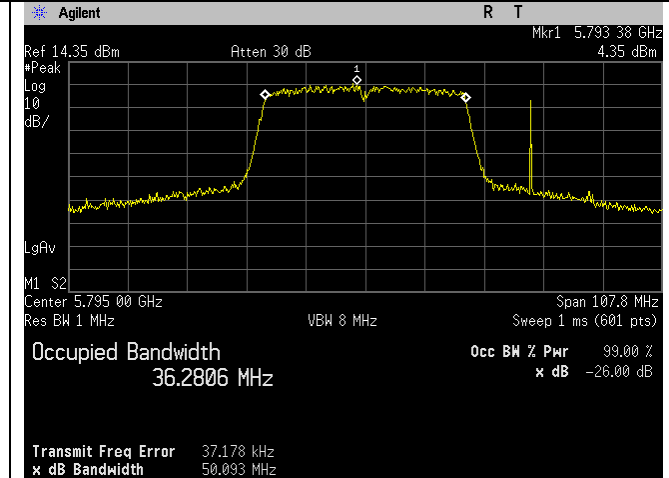
802.11n(40MHz) 99% / 26dB Bandwidth Plots, UNII-3



Low Channel, Ant 0



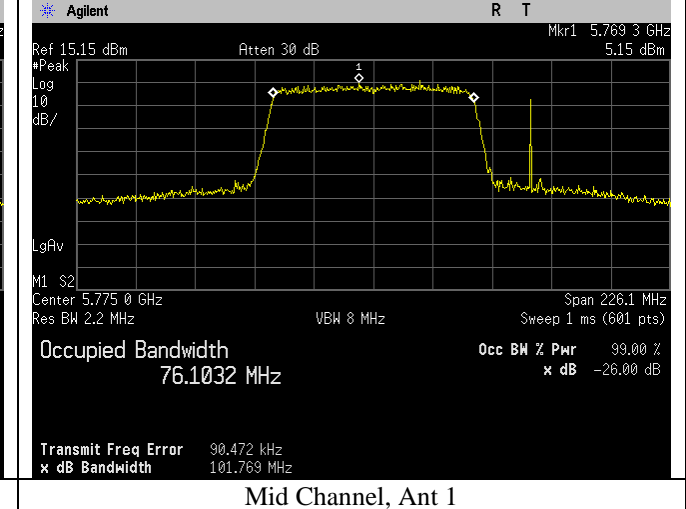
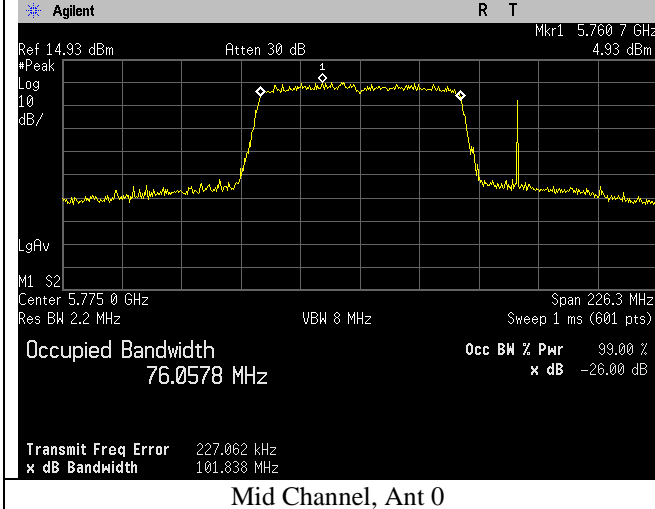
Low Channel, Ant 1



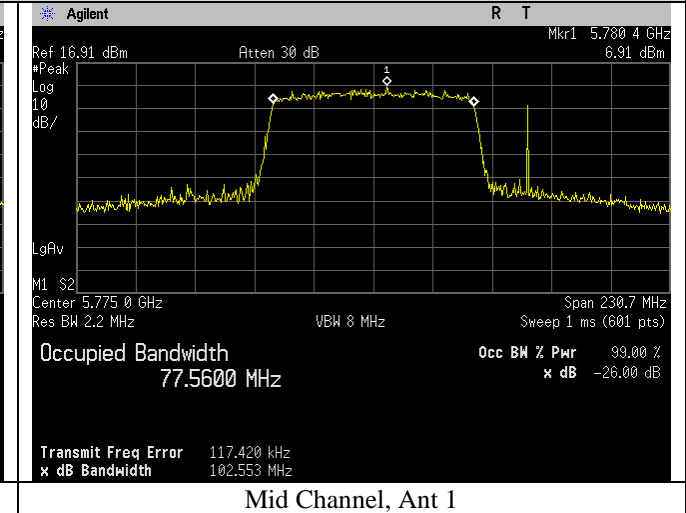
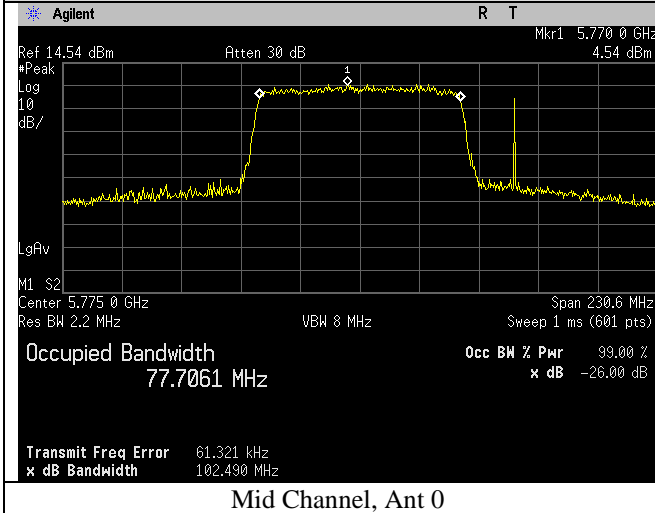
High Channel, Ant 0

High Channel, Ant 1

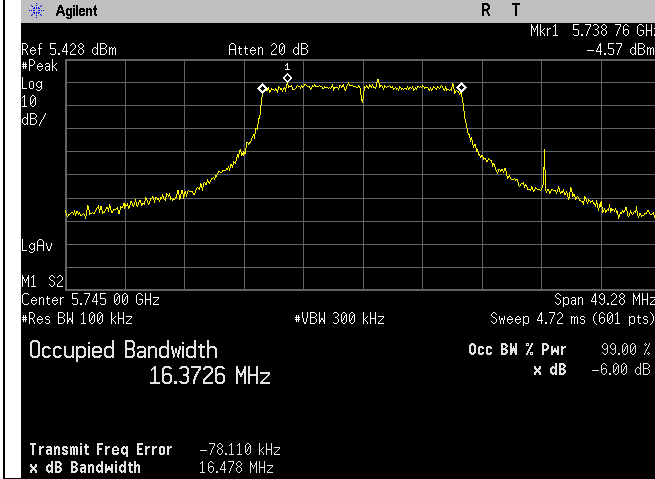
802.11ac 99% / 26dB Bandwidth Plots, UNII-3



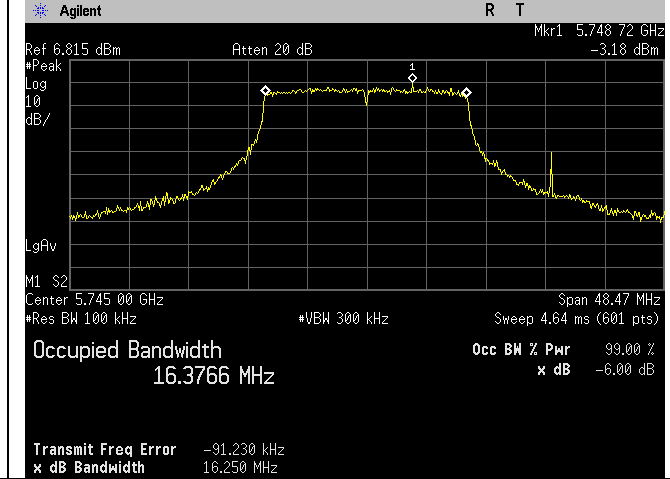
802.11ax 99% / 26dB Bandwidth Plots, UNII-3



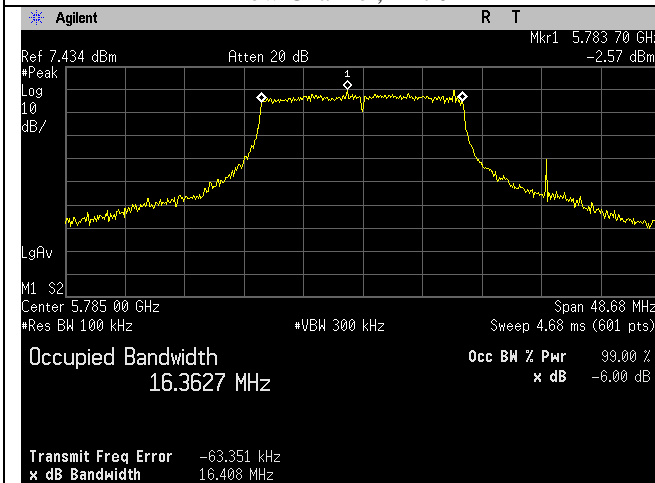
802.11a -6dB Bandwidth Plots, UNII-3



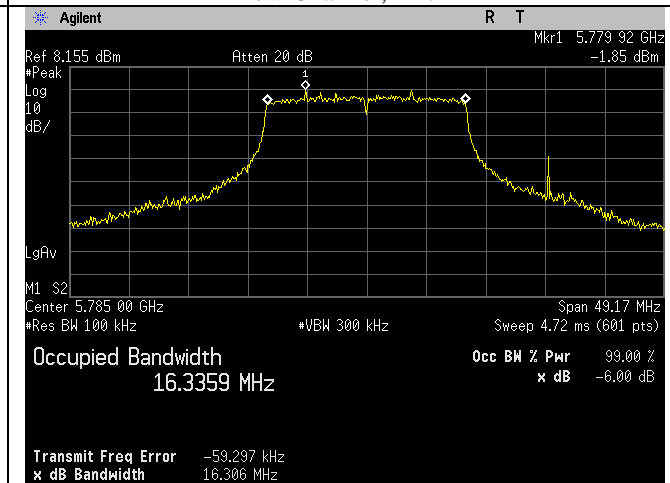
Low Channel, Ant 0



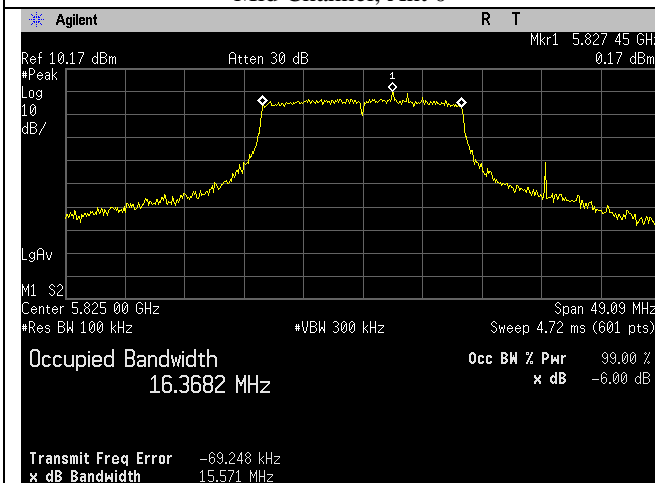
Low Channel, Ant 1



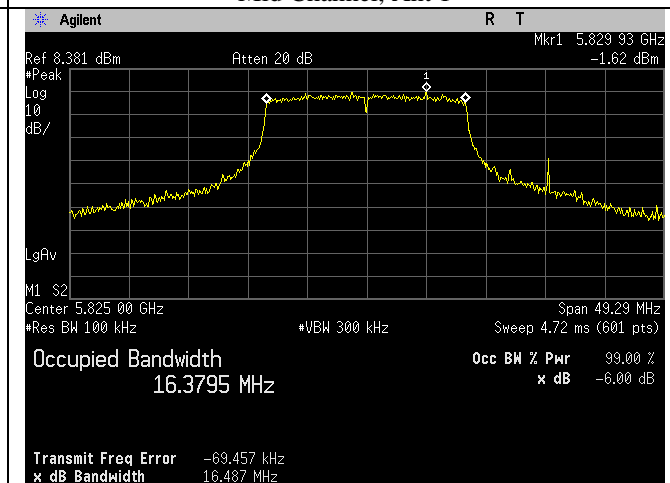
Mid Channel, Ant 0



Mid Channel, Ant 1

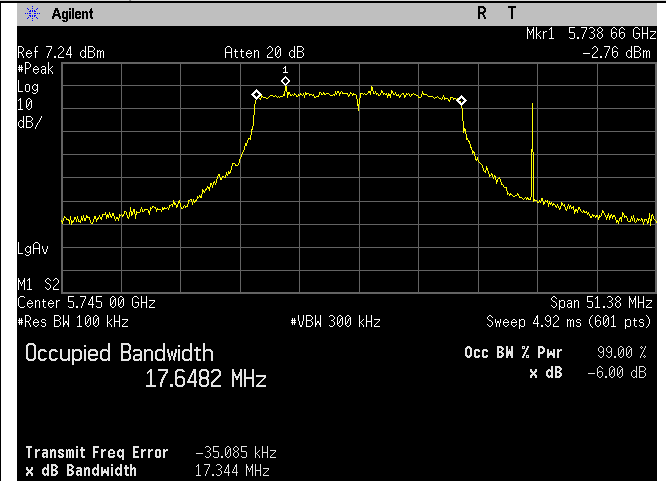
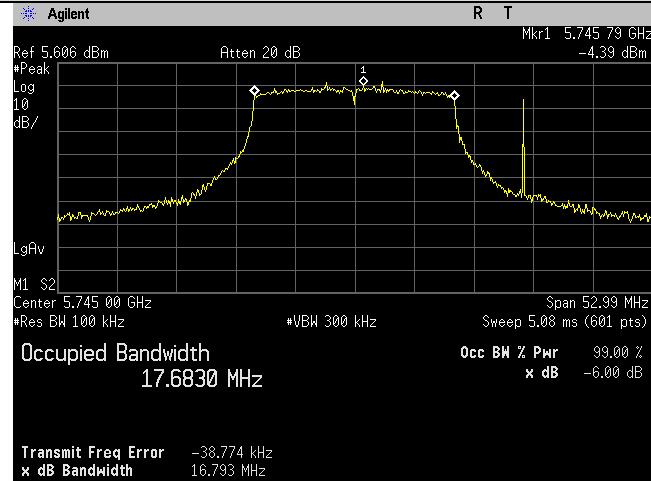


High Channel, Ant 0

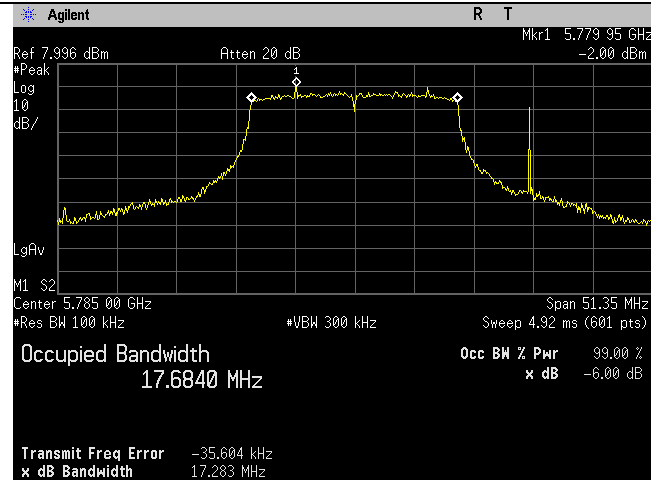


High Channel, Ant 1

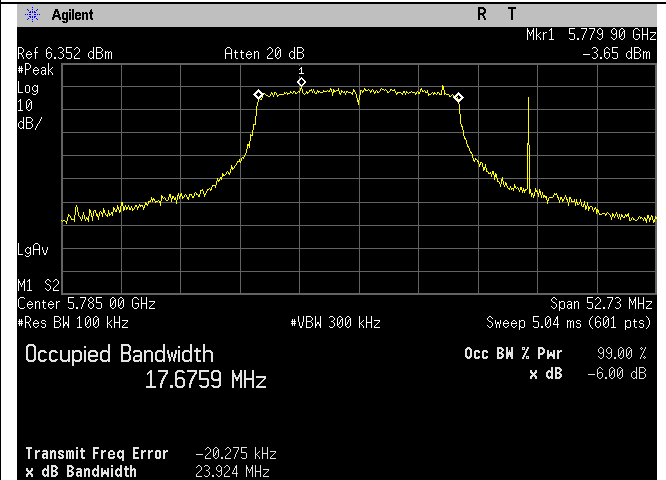
802.11n -6dB Bandwidth Plots, UNII-3



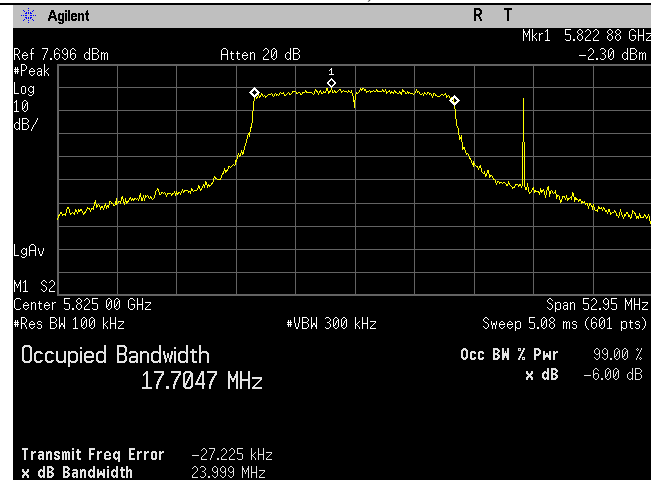
Low Channel, Ant 0



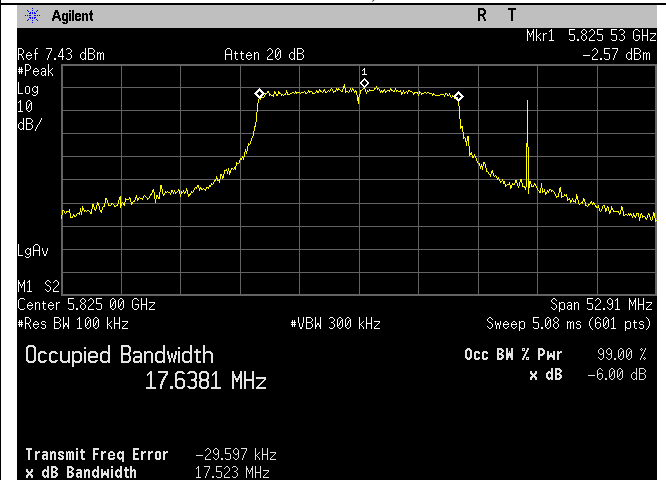
Low Channel, Ant 1



Mid Channel, Ant 0



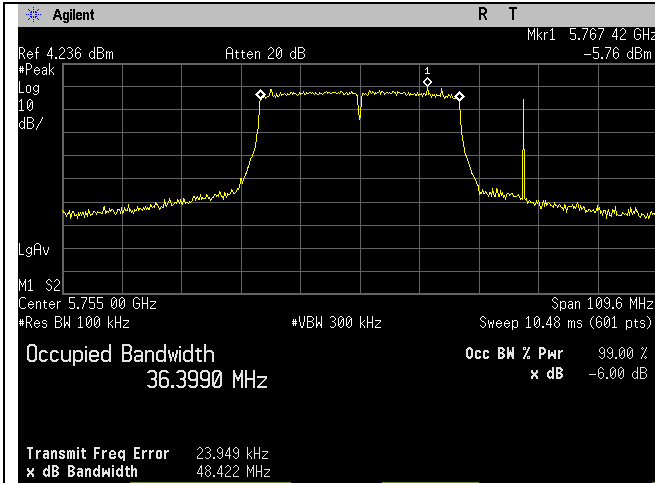
Mid Channel, Ant 1



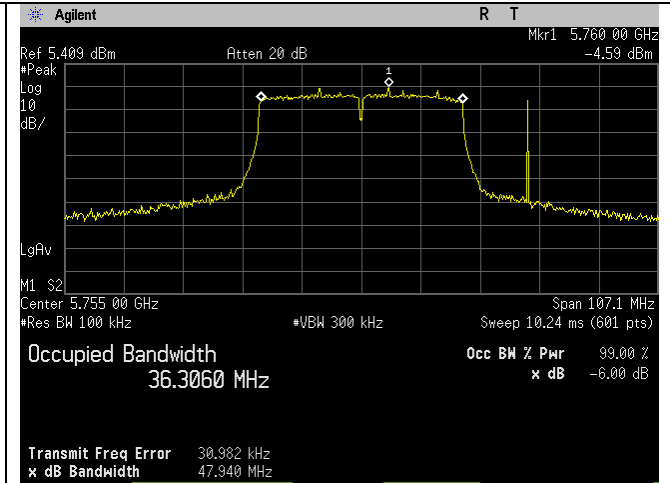
High Channel, Ant 0

High Channel, Ant 1

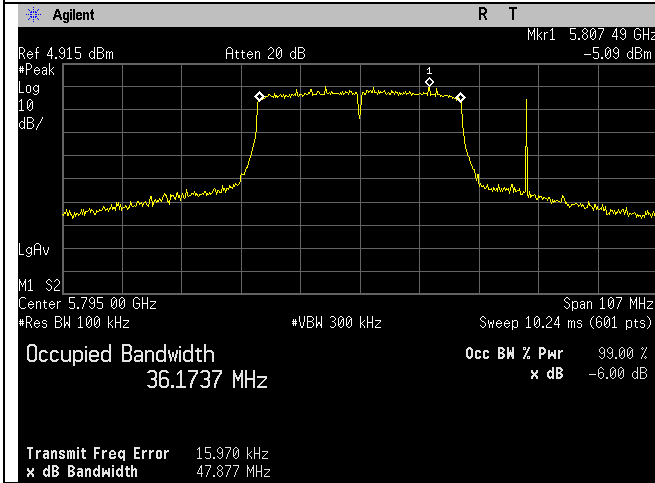
802.11n(40MHz) -6dB Bandwidth Plots, UNII-3



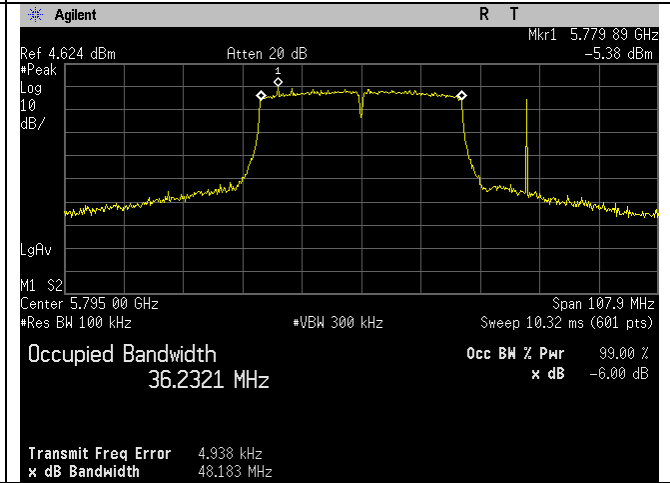
Low Channel, Ant 0



Low Channel, Ant 1

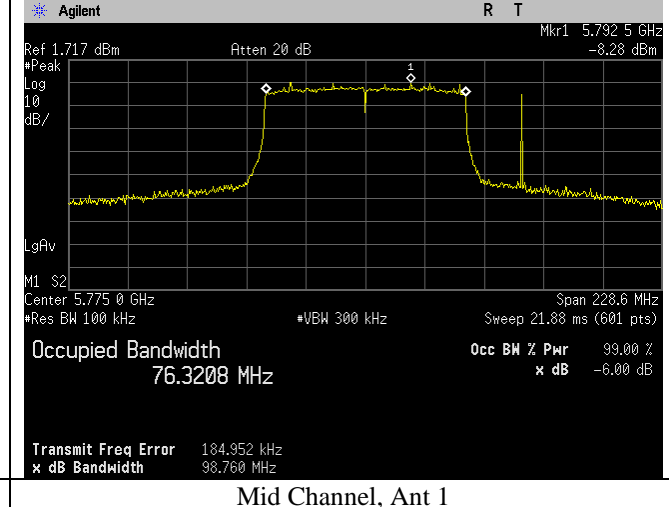
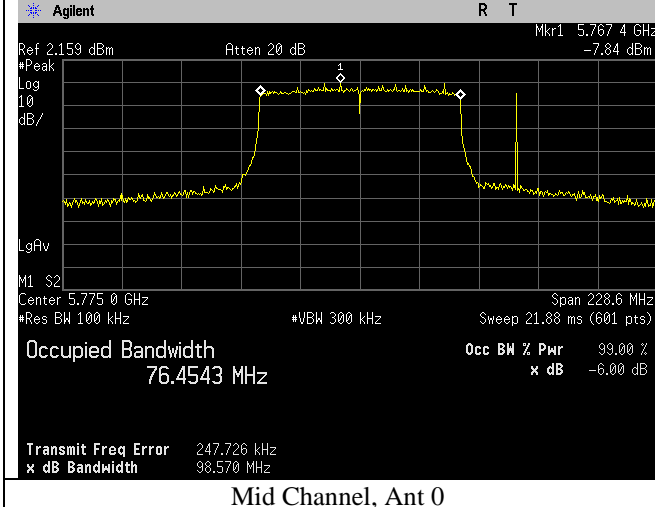


High Channel, Ant 0

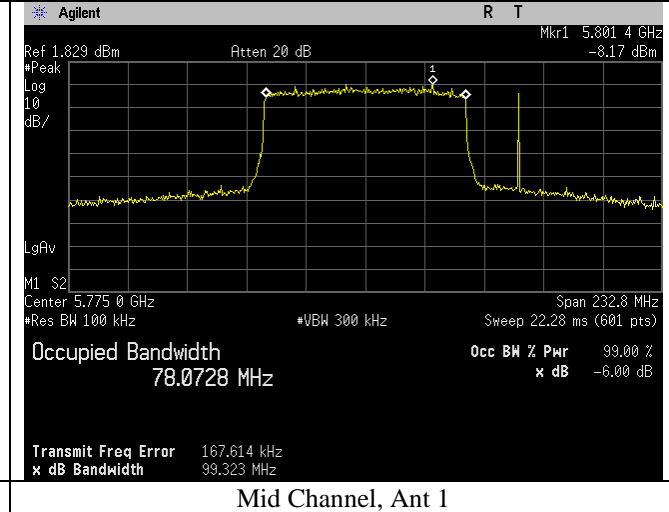
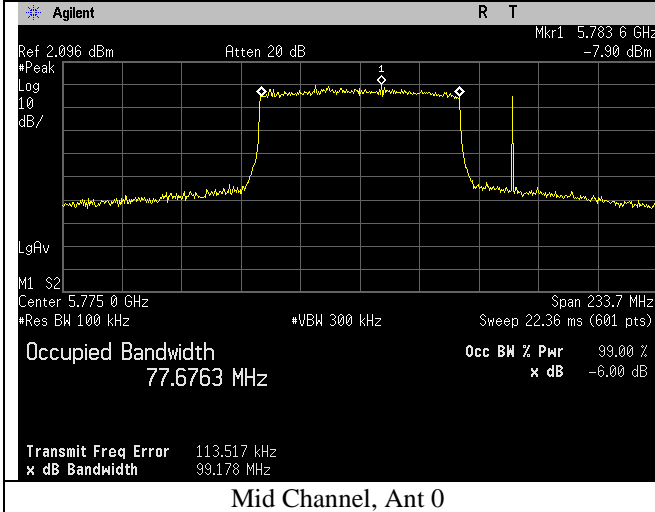


High Channel, Ant 1

802.11ac -6dB Bandwidth Plots, UNII-3

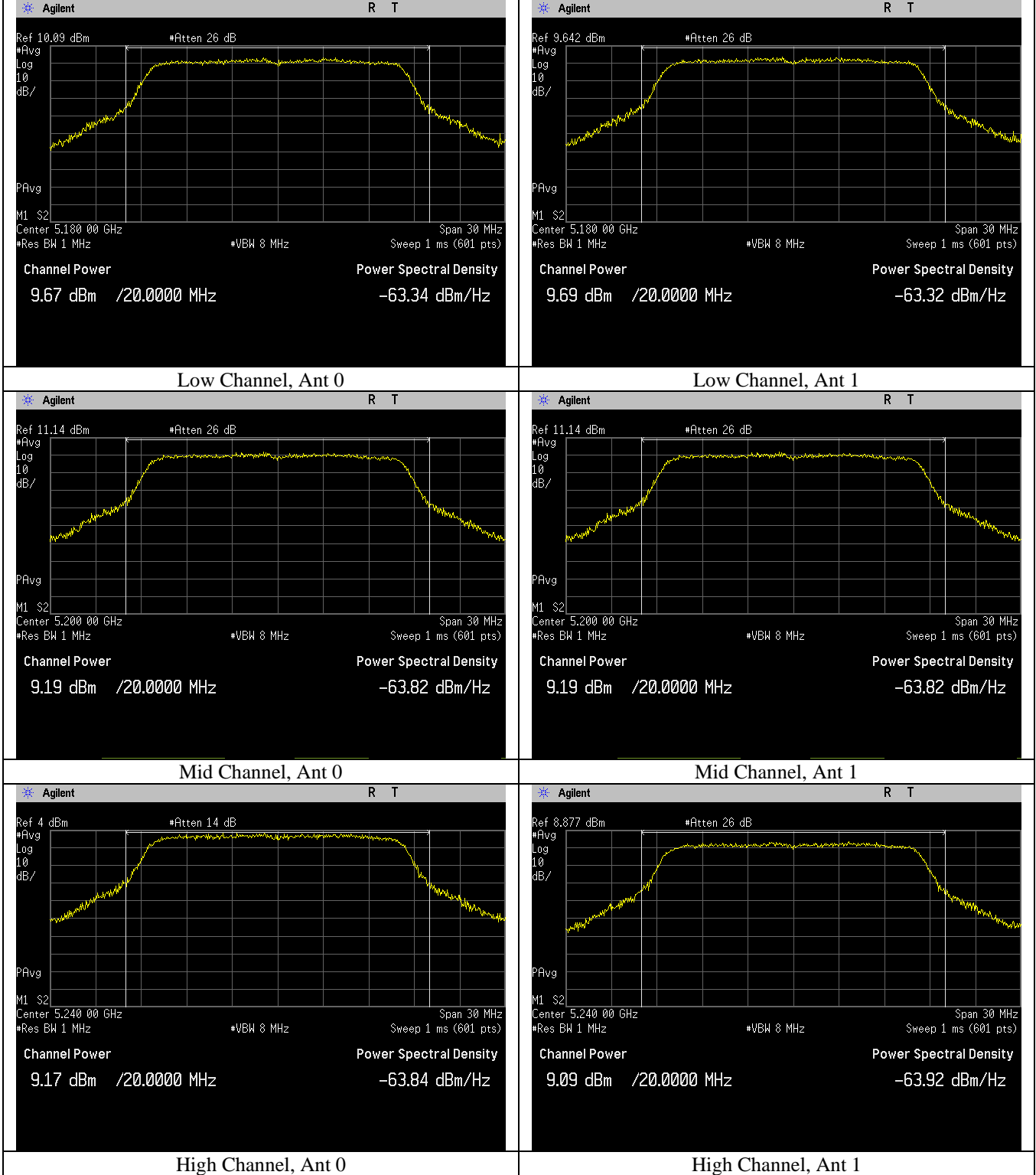


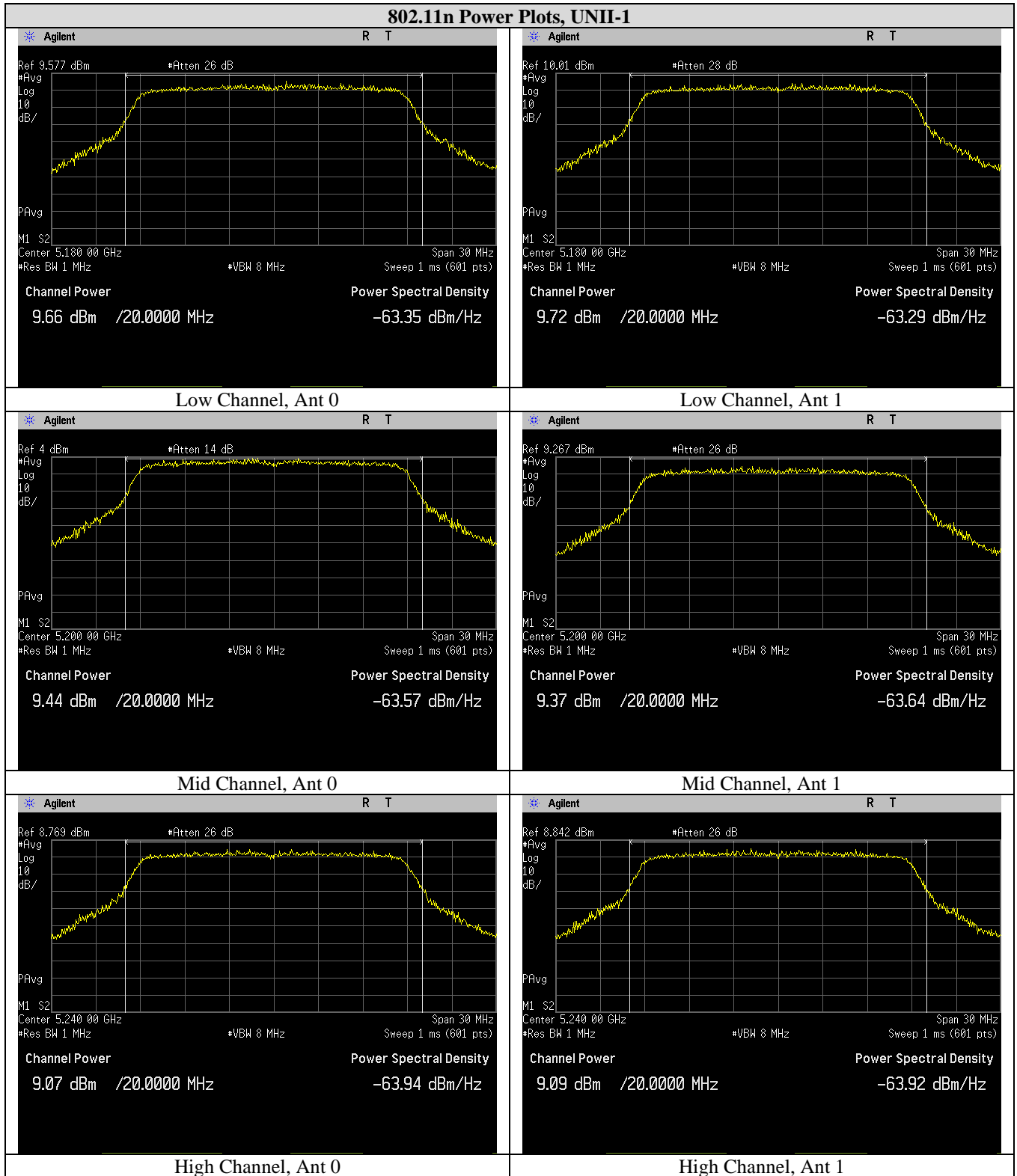
802.11ax -6dB Bandwidth Plots, UNII-3



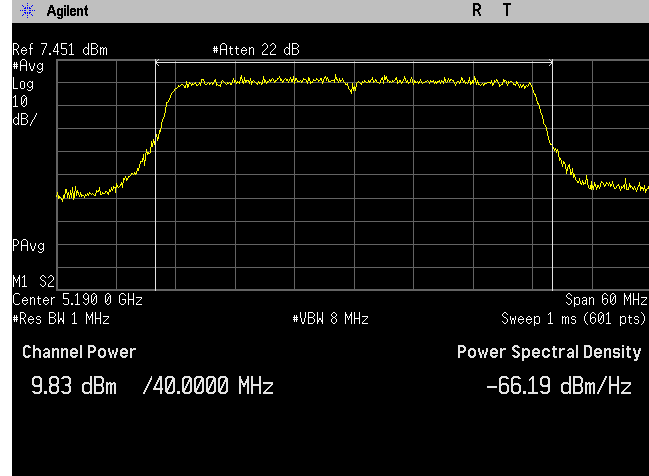
II. Output Power Plots

802.11a Power Plots, UNII-1

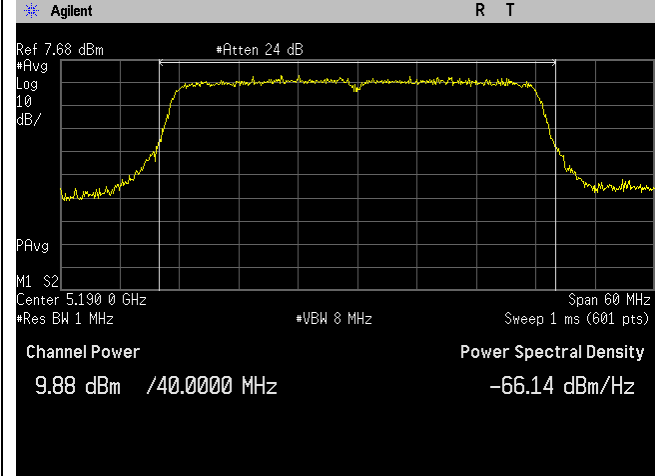




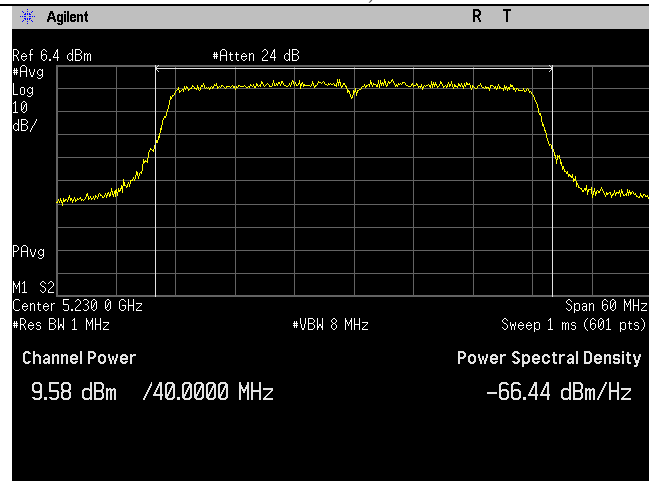
802.11n(40MHz) Power Plots, UNII-1



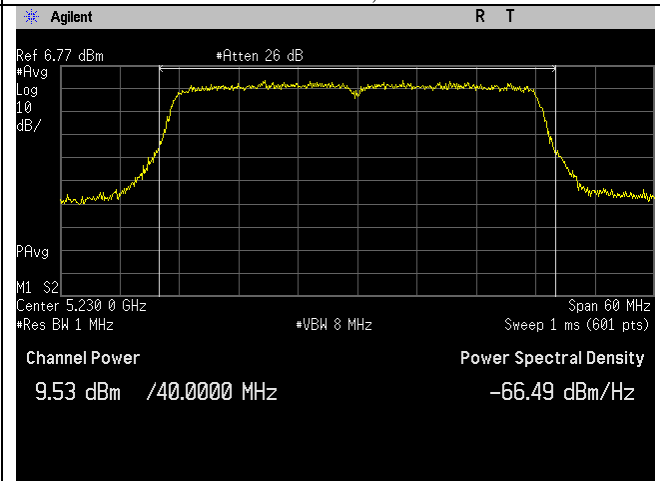
Low Channel, Ant 0



Low Channel, Ant 1

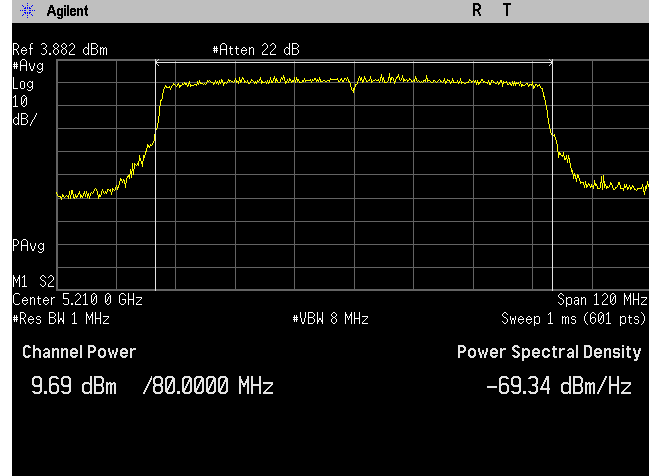


High Channel, Ant 0

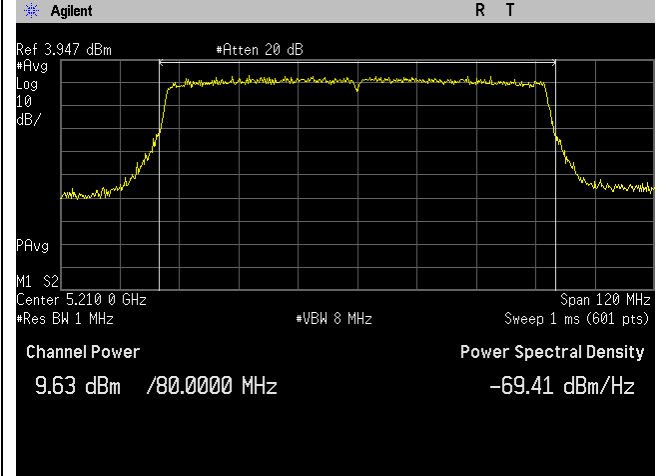


High Channel, Ant 1

802.11ac Power Plots, UNII-1

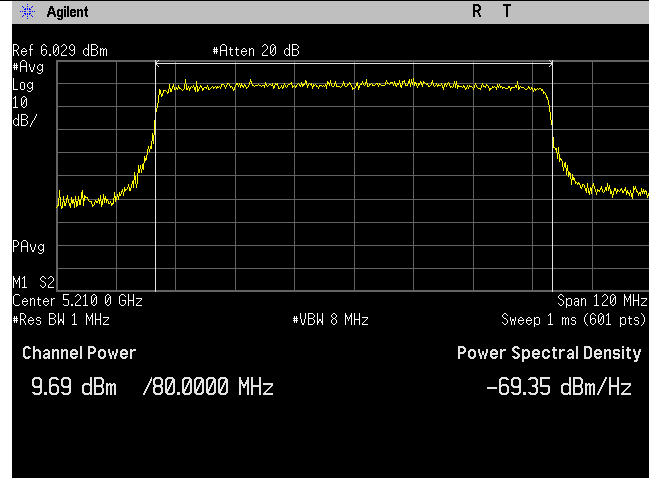


Mid Channel, Ant 0

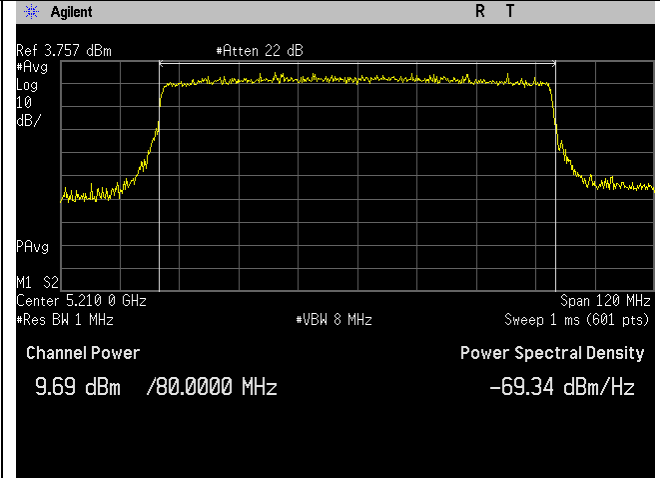


Mid Channel, Ant 1

802.11ax Power Plots, UNII-1

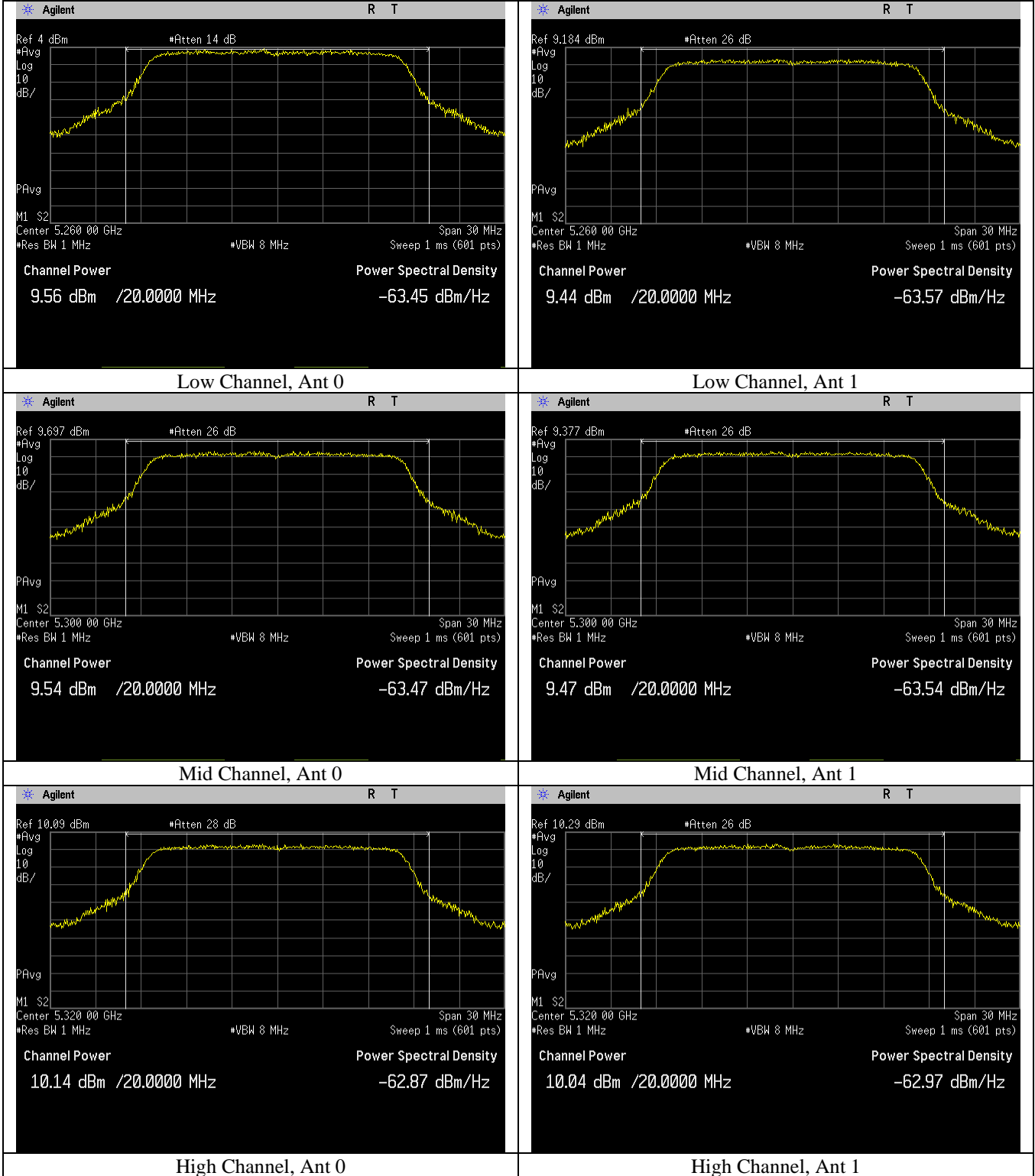


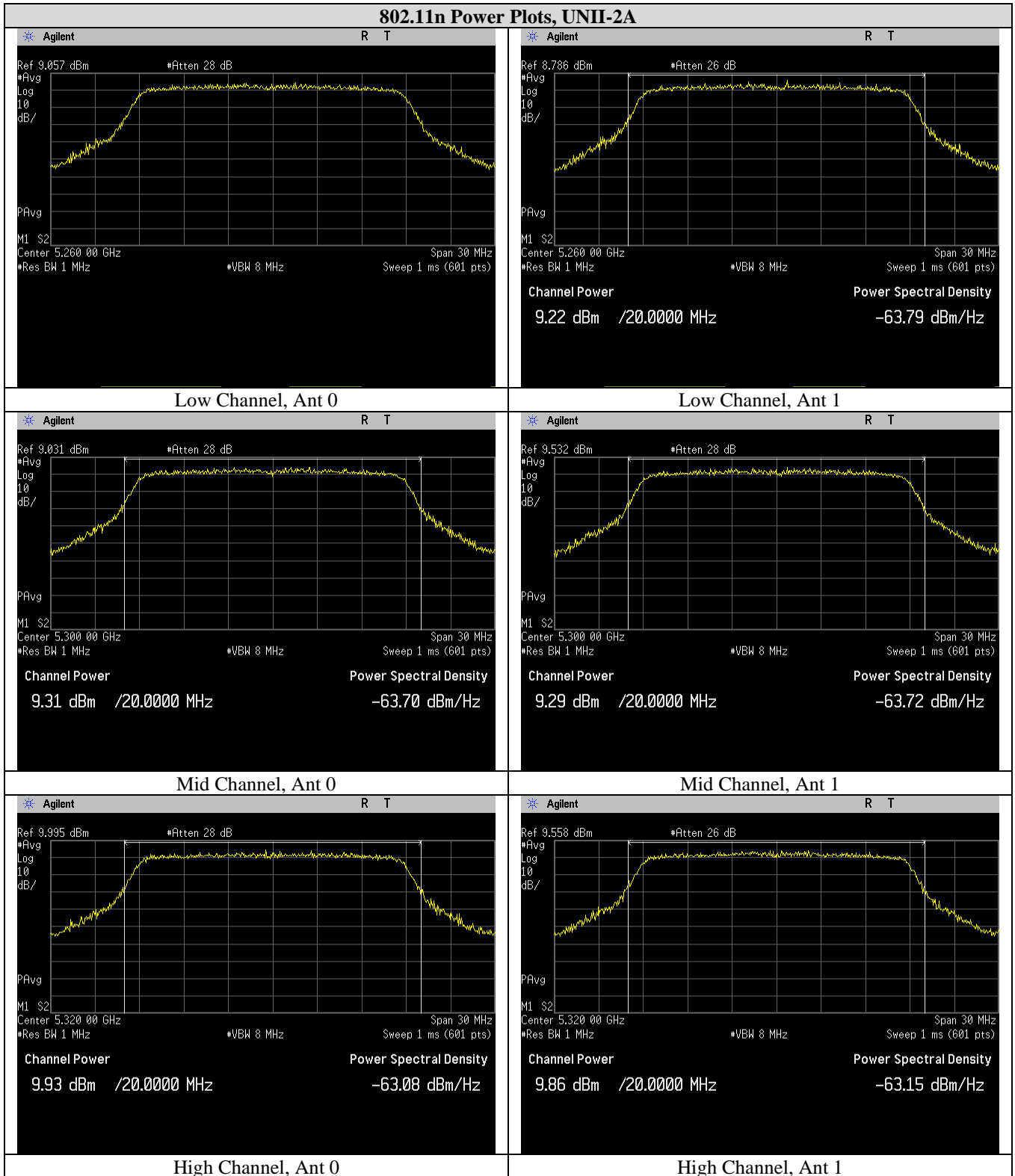
Mid Channel, Ant 0



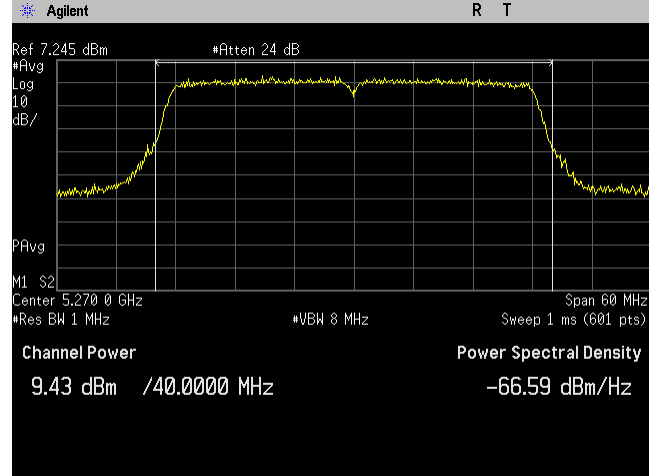
Mid Channel, Ant 1

802.11a Power Plots, UNII-2A

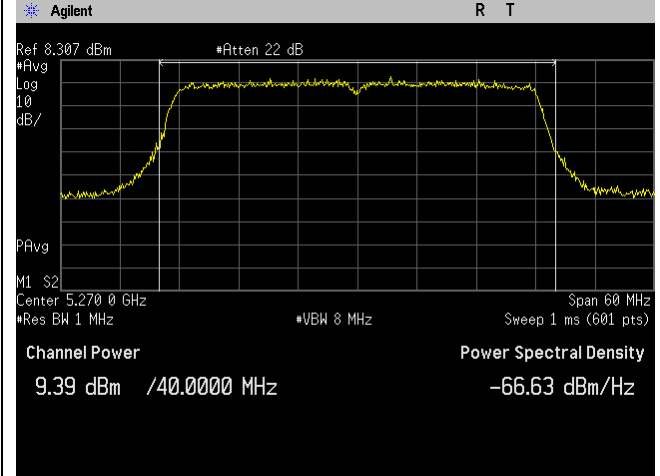




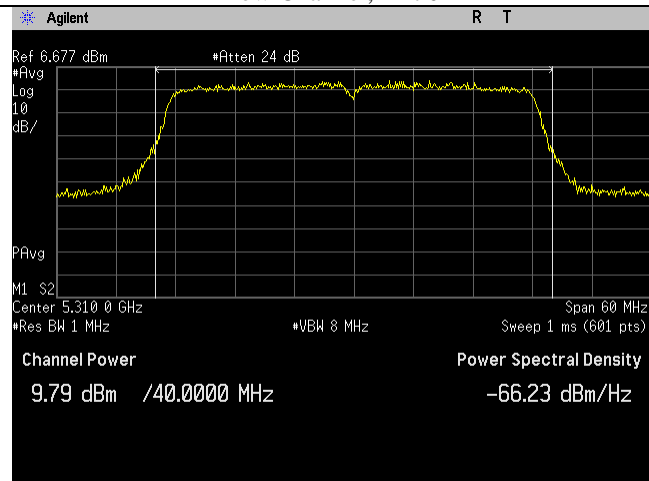
802.11n(40MHz) Power Plots, UNII-2A



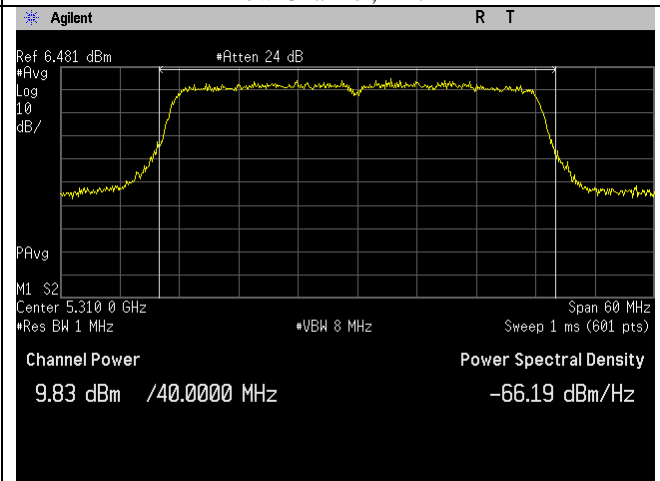
Low Channel, Ant 0



Low Channel, Ant 1

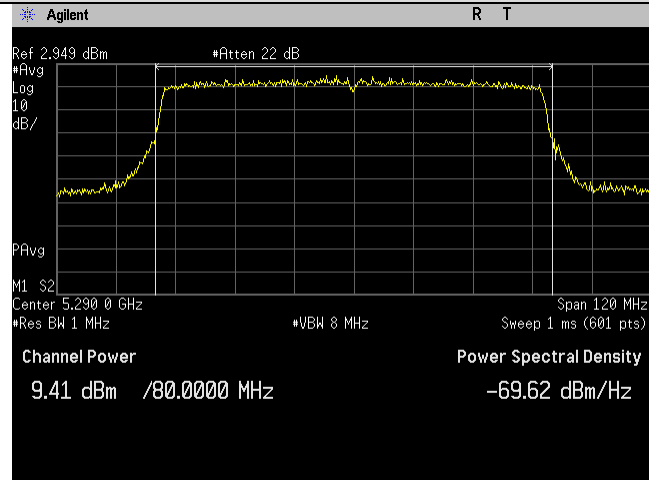


High Channel, Ant 0

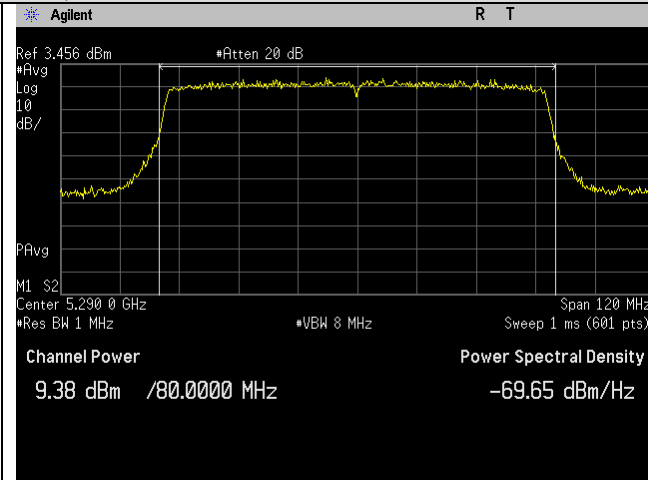


High Channel, Ant 1

802.11ac Power Plots, UNII-2A

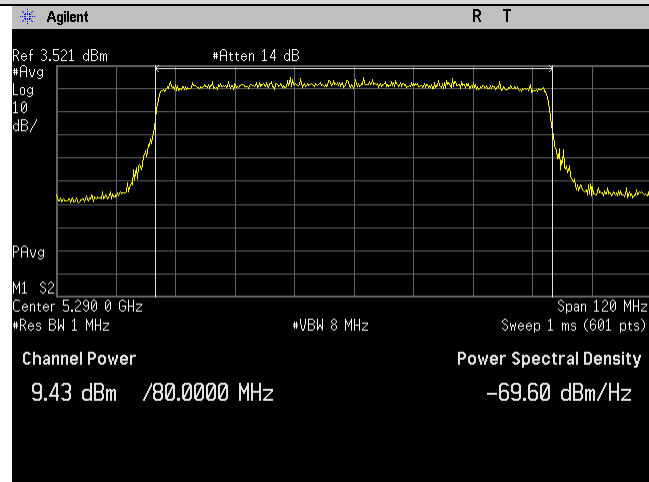


Mid Channel, Ant 0

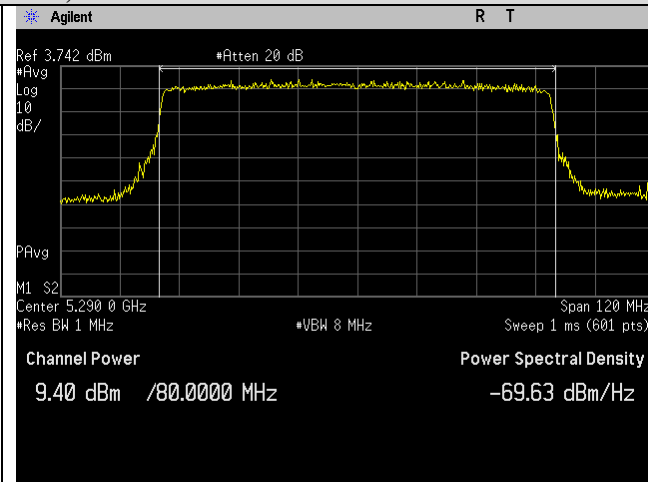


Mid Channel, Ant 1

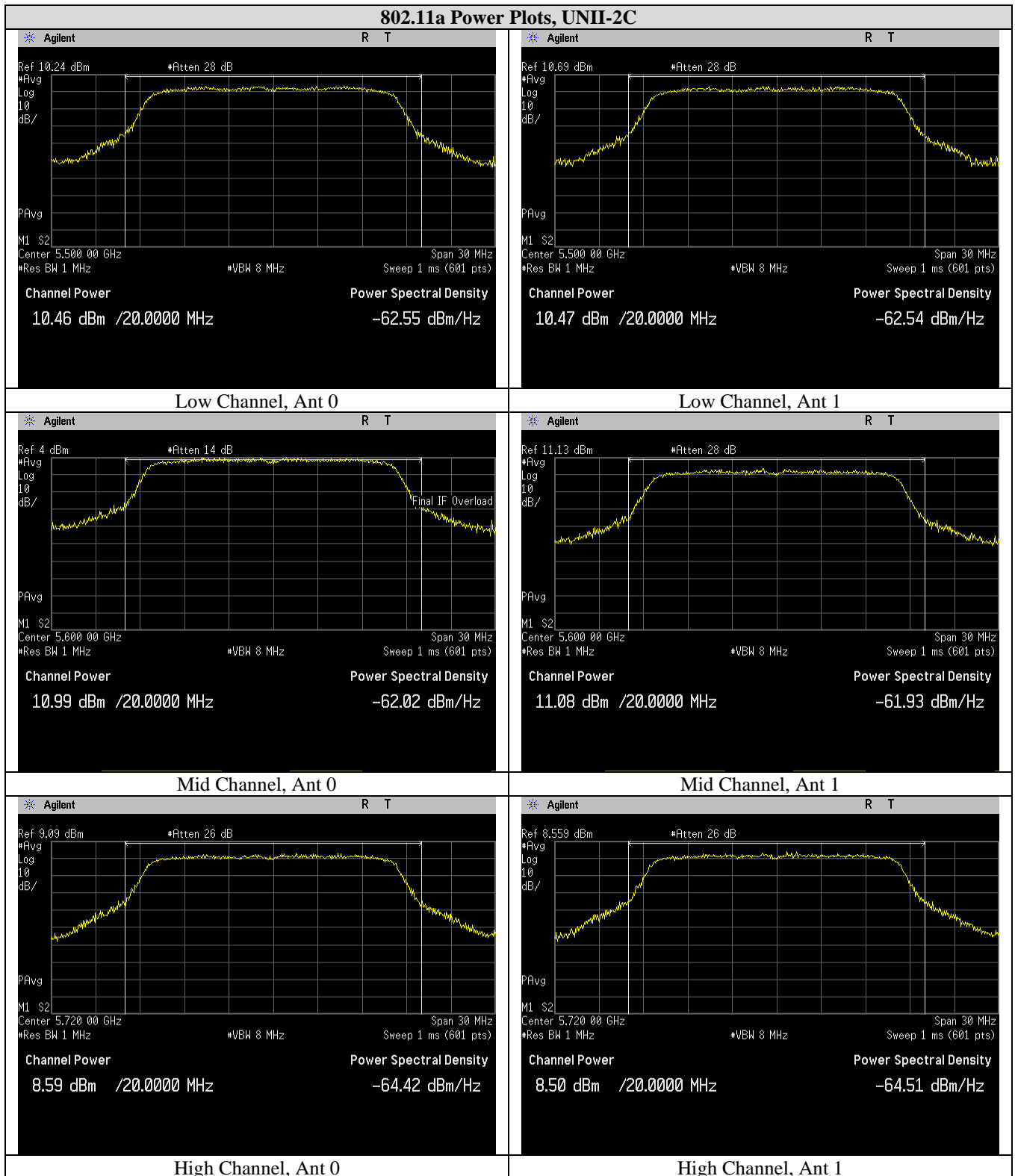
802.11ax Power Plots, UNII-2A

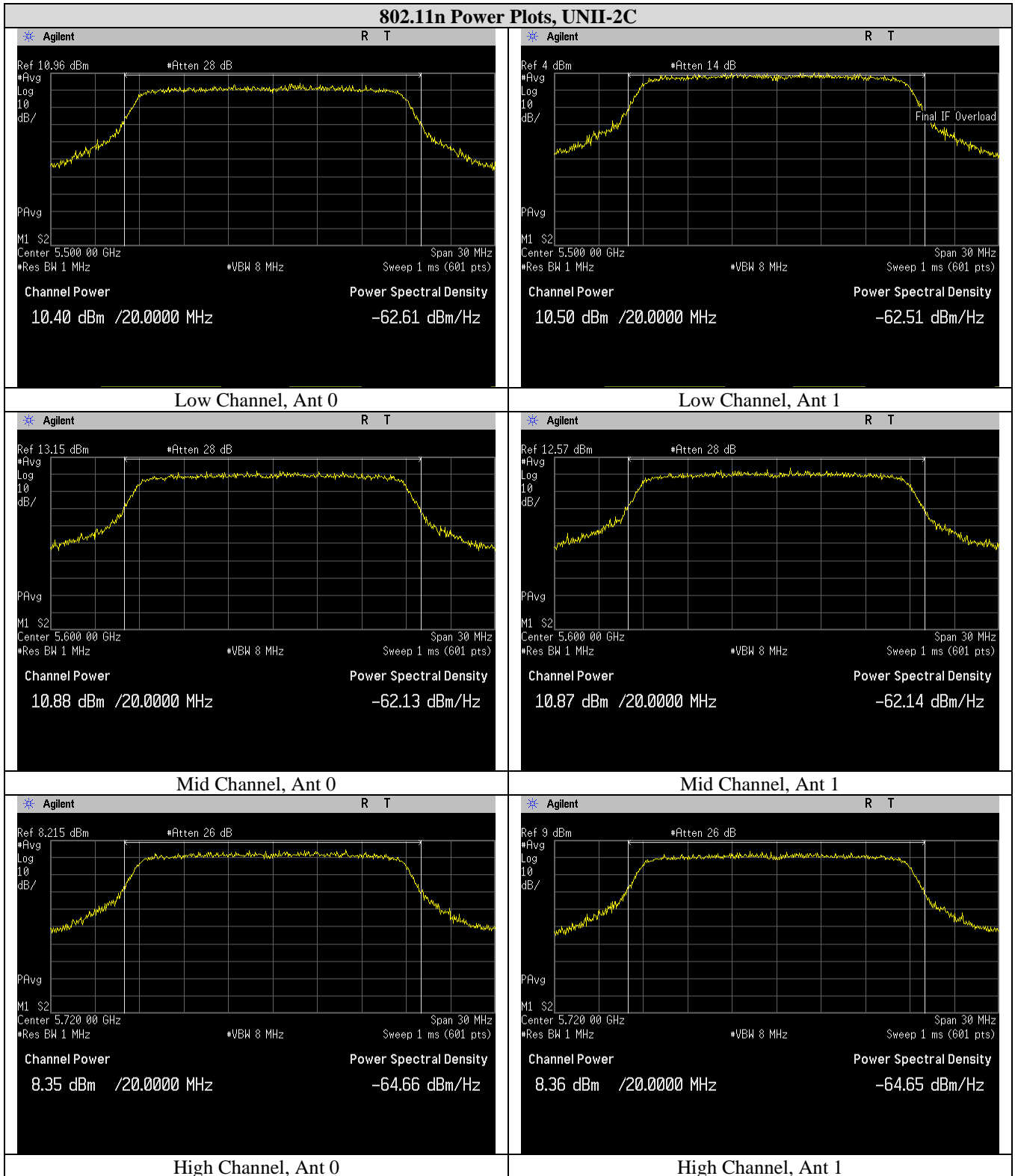


Mid Channel, Ant 0

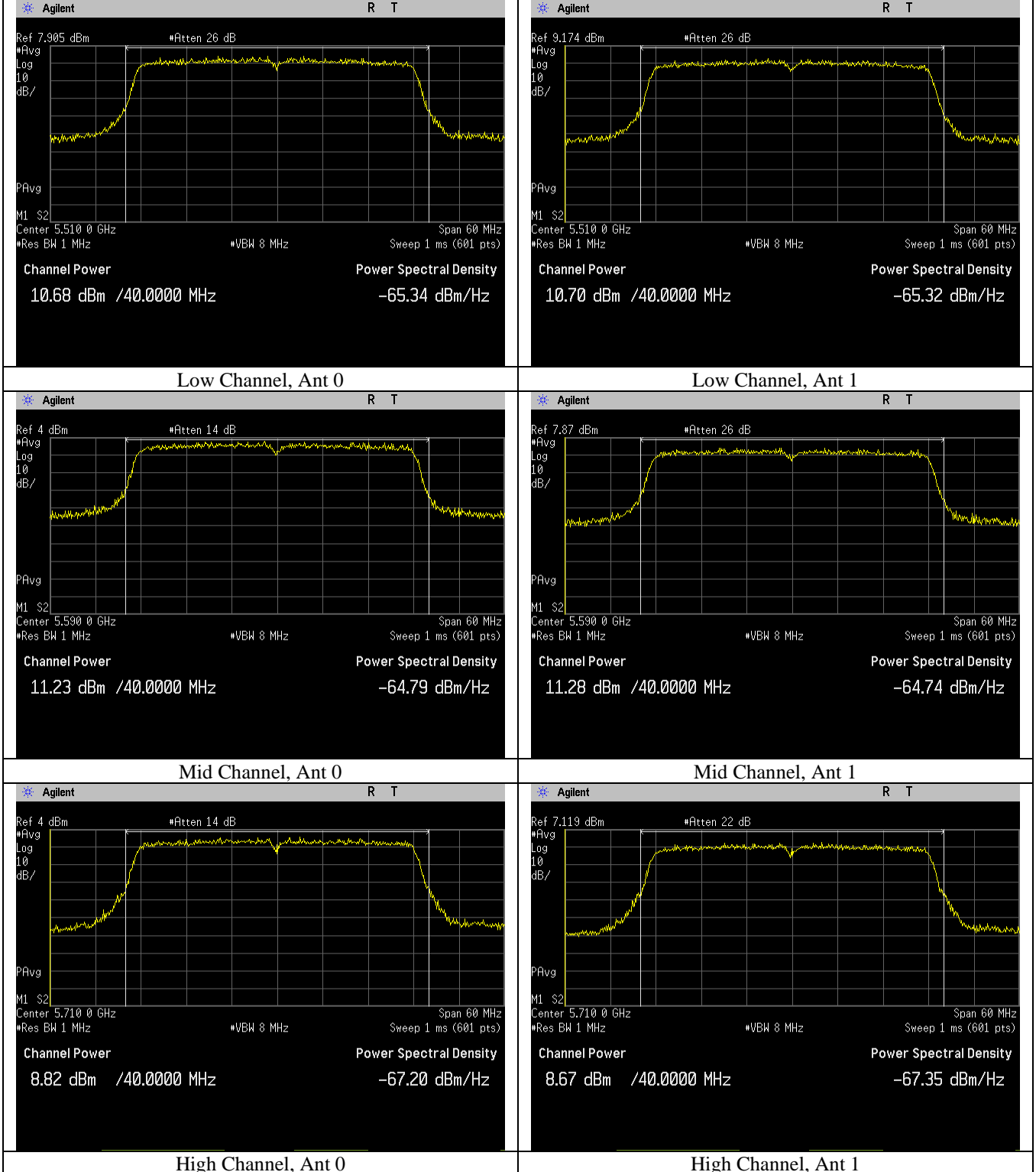


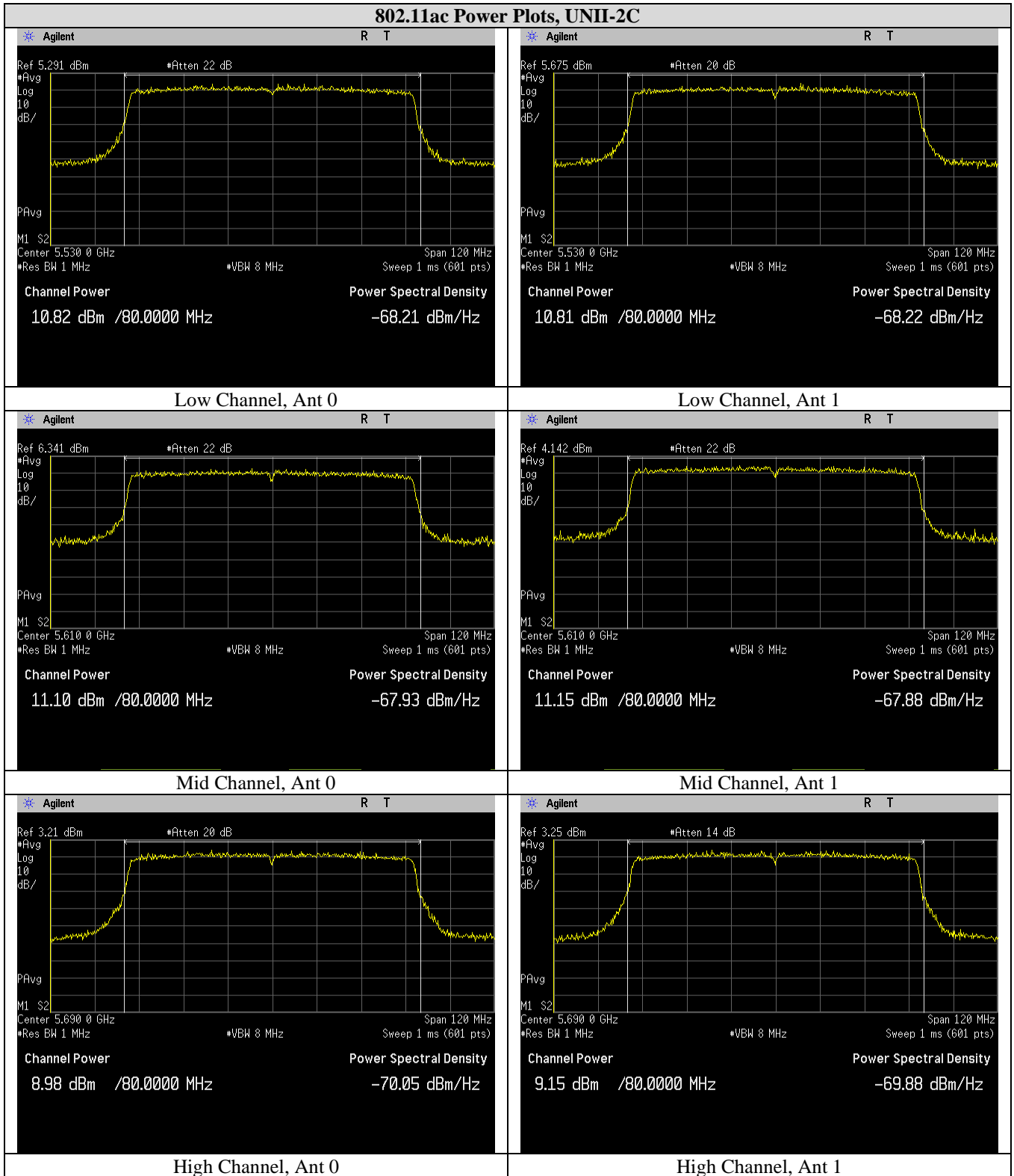
Mid Channel, Ant 1

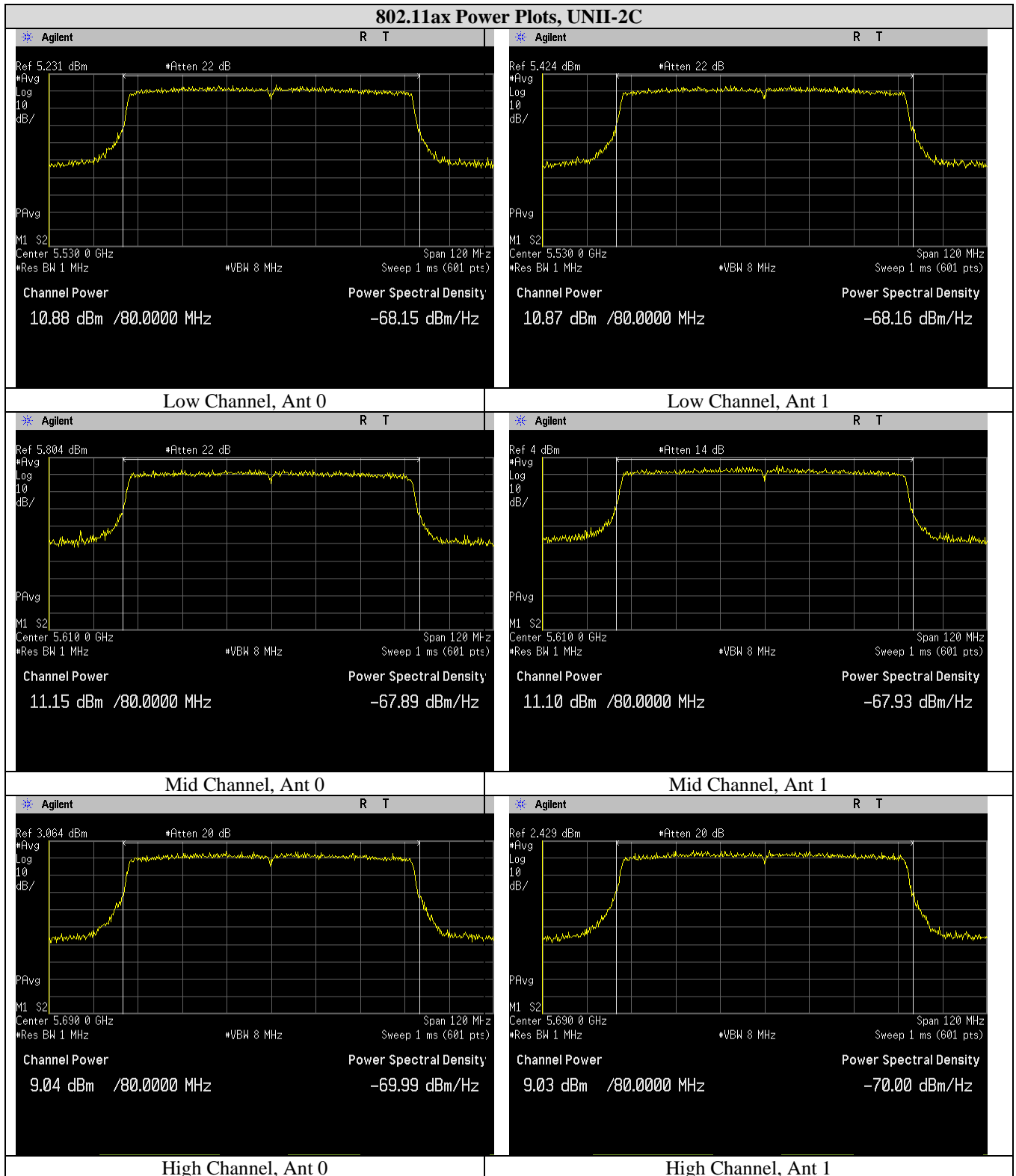


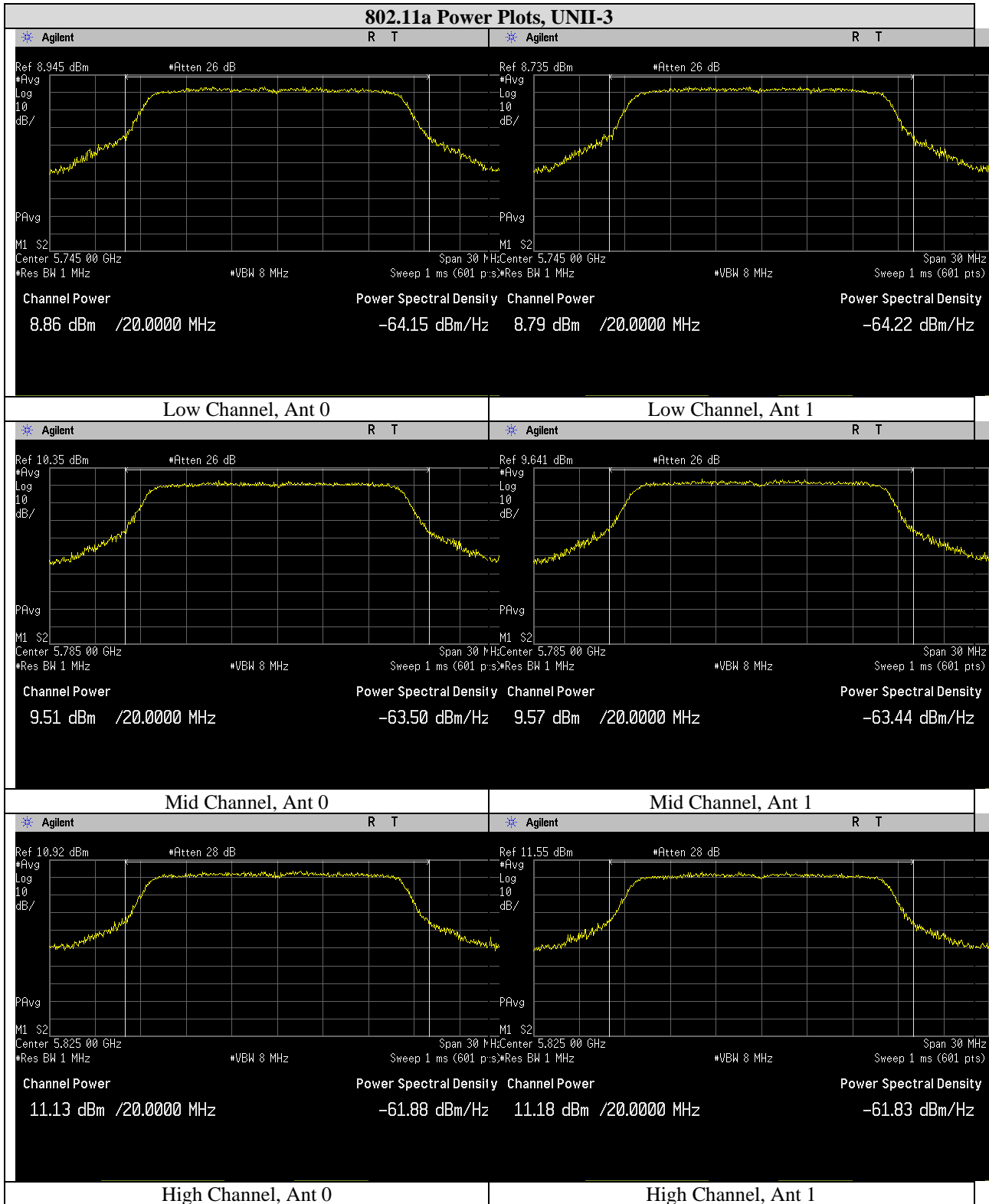


802.11n(40MHz) Power Plots, UNII-2C

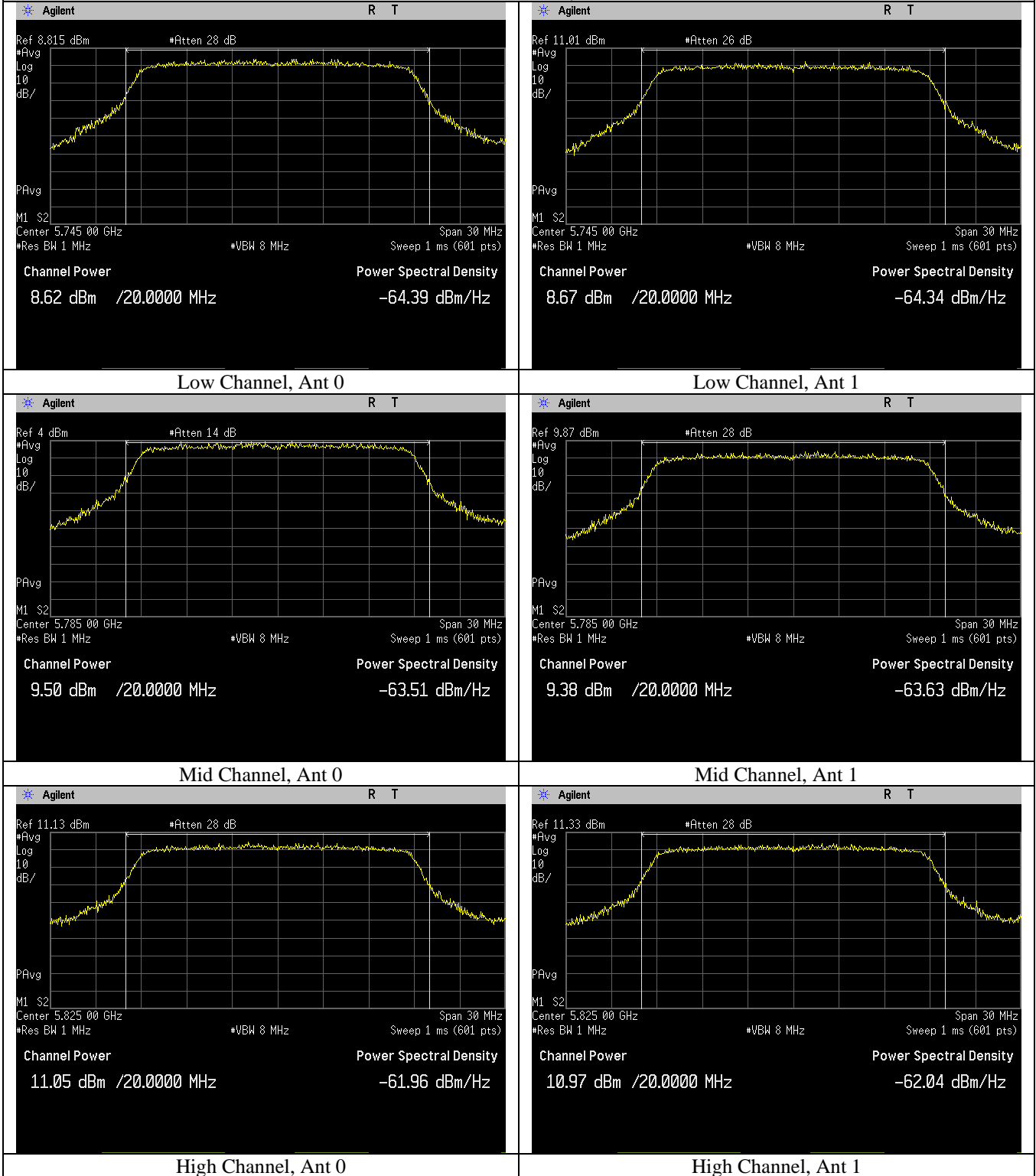




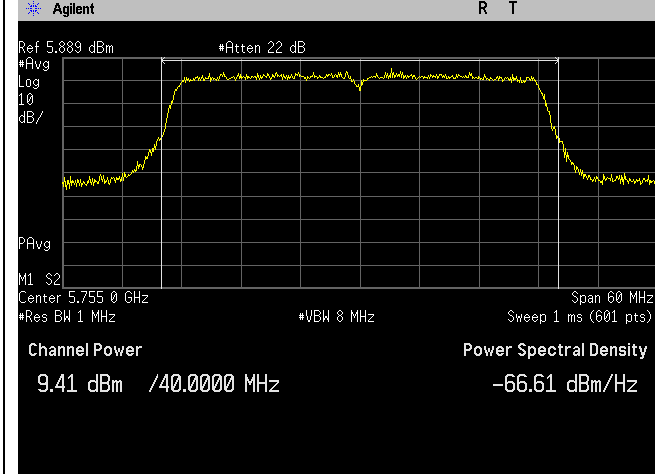




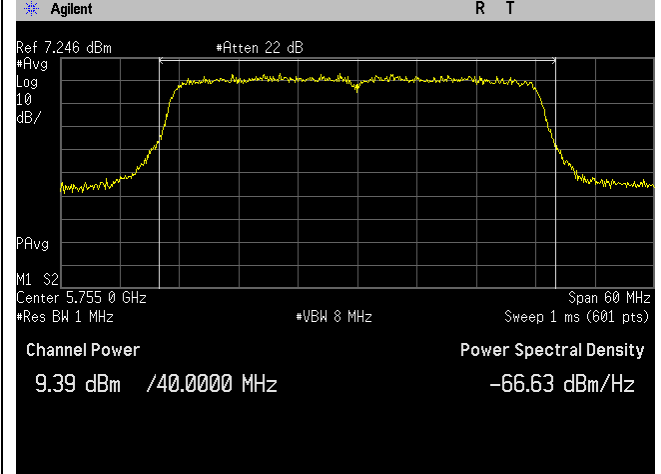
802.11n Power Plots, UNII-3



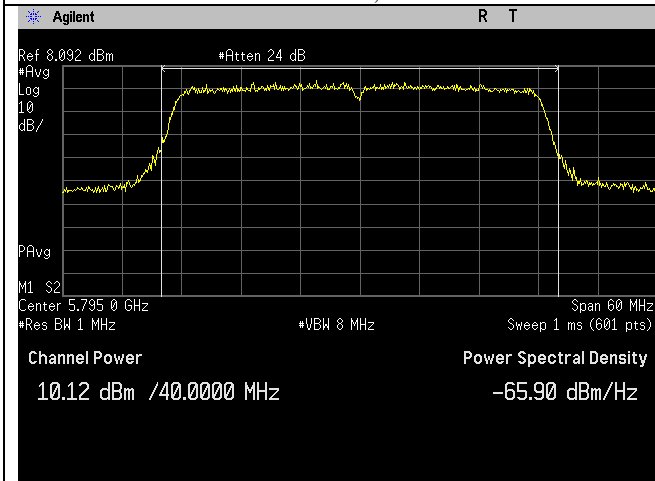
802.11n(40MHz) Power Plots, UNII-3



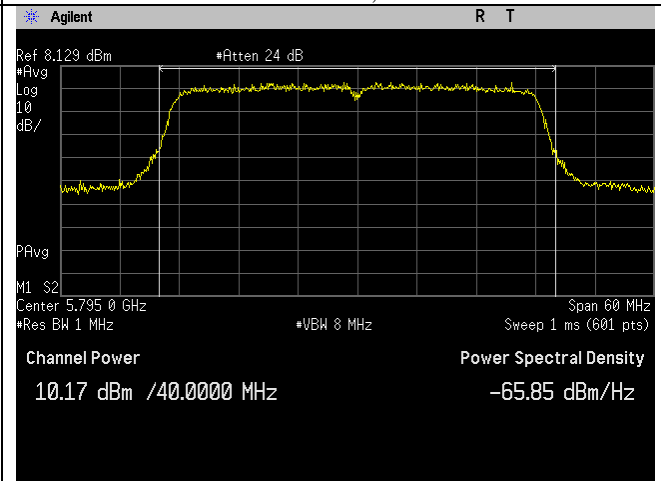
Low Channel, Ant 0



Low Channel, Ant 1

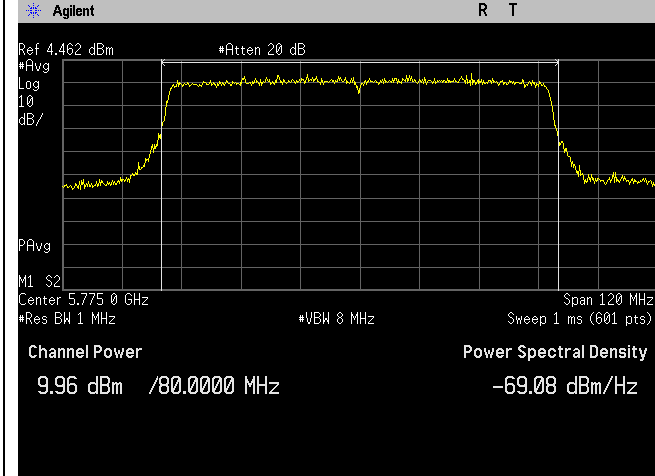


High Channel, Ant 0

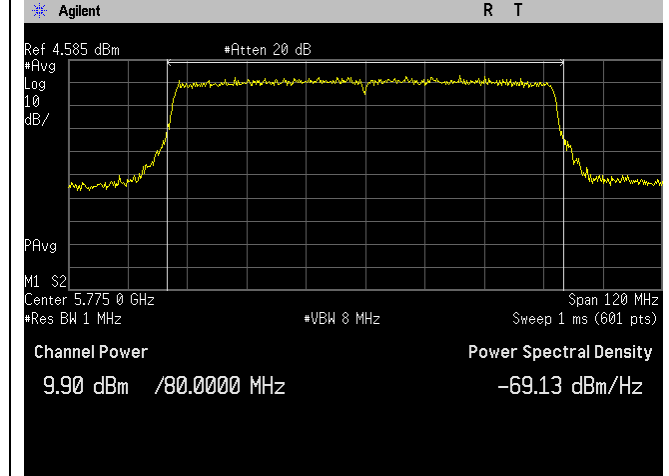


High Channel, Ant 1

802.11ac Power Plots, UNII-3

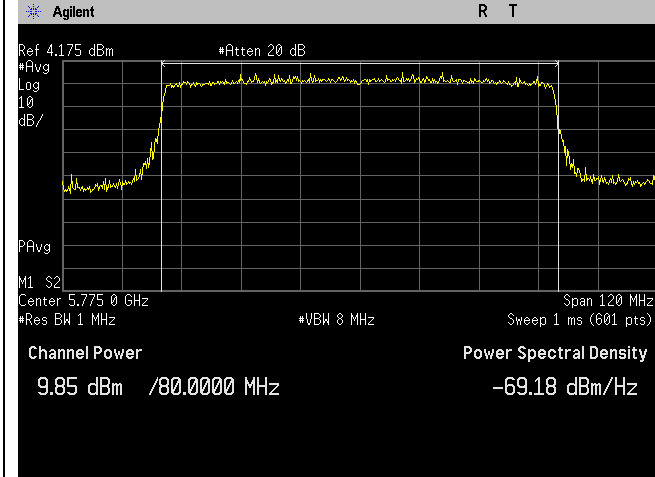


Mid Channel, Ant 0

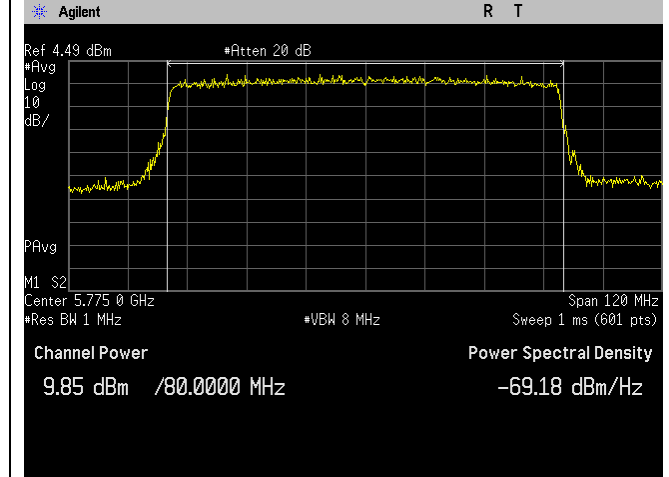


Mid Channel, Ant 1

802.11ax Power Plots, UNII-3



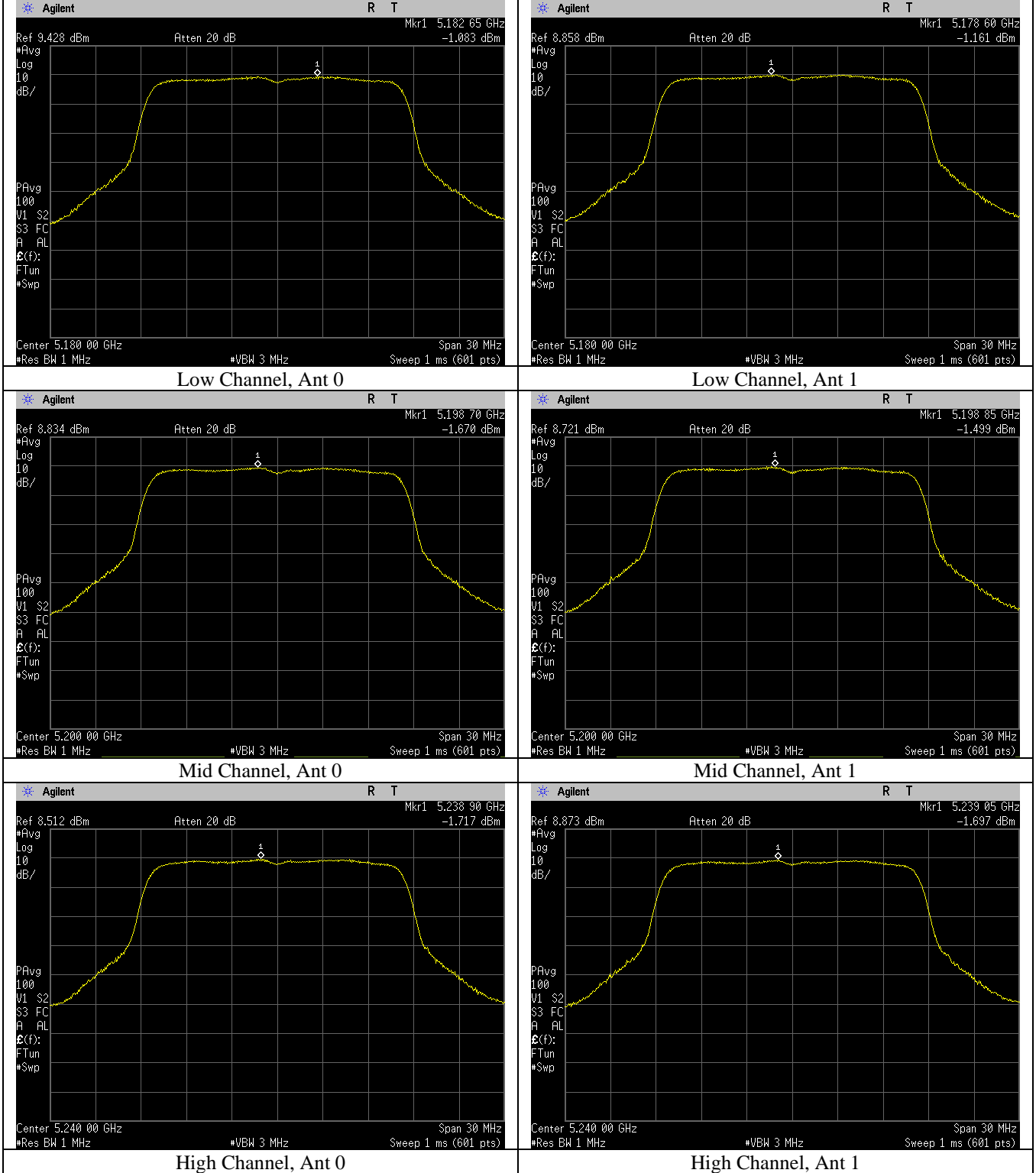
Mid Channel, Ant 0



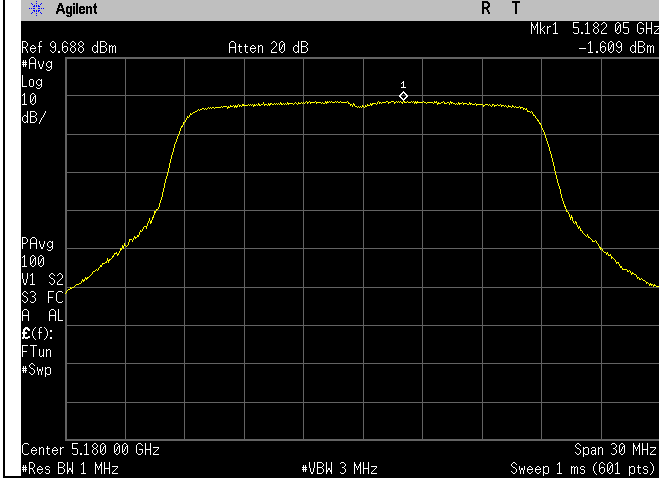
Mid Channel, Ant 1

III. Power Spectral Density Plots

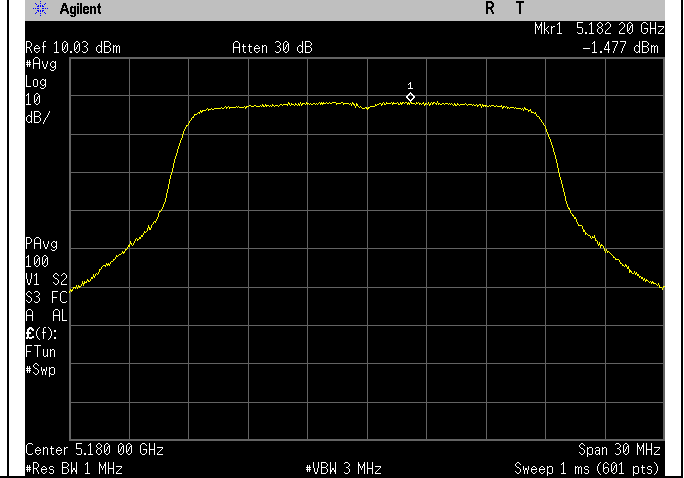
802.11a Power Spectral Density Plots, UNII-1



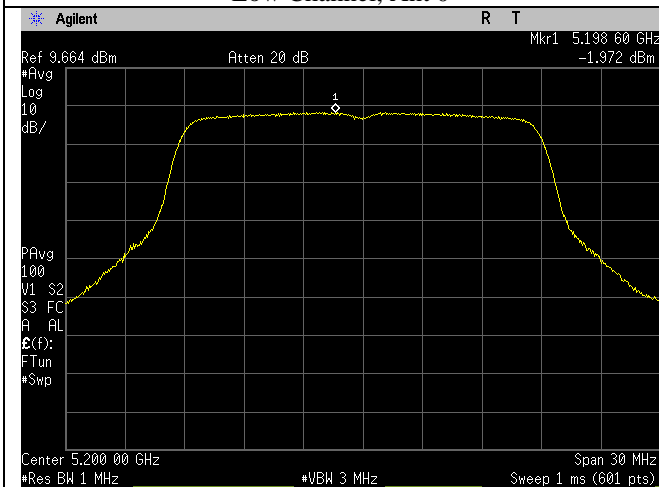
802.11n Power Spectral Density Plots, UNII-1



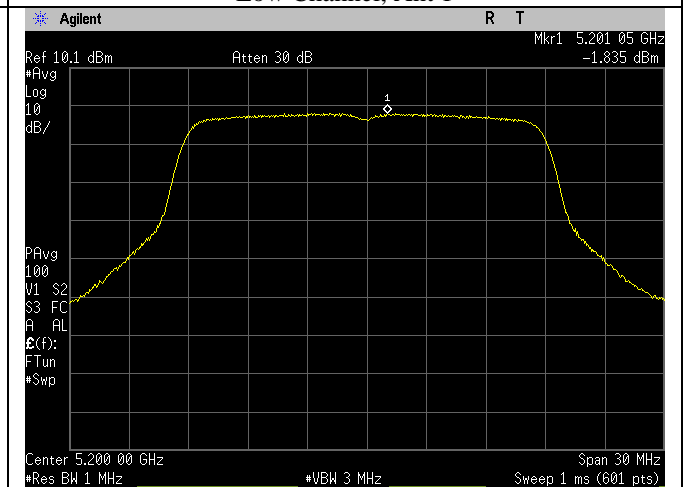
Low Channel, Ant 0



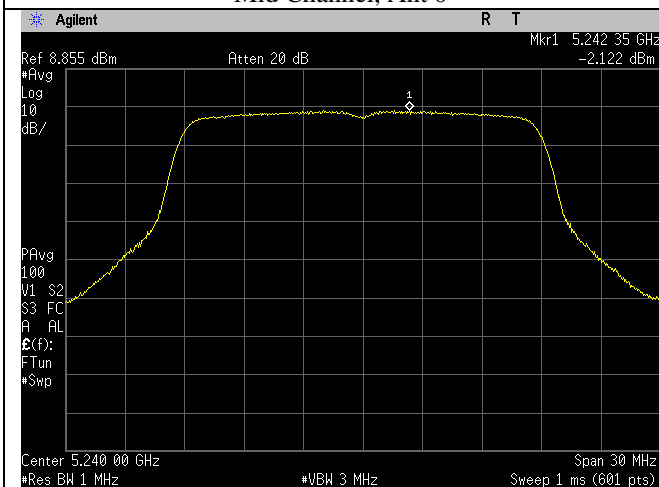
Low Channel, Ant 1



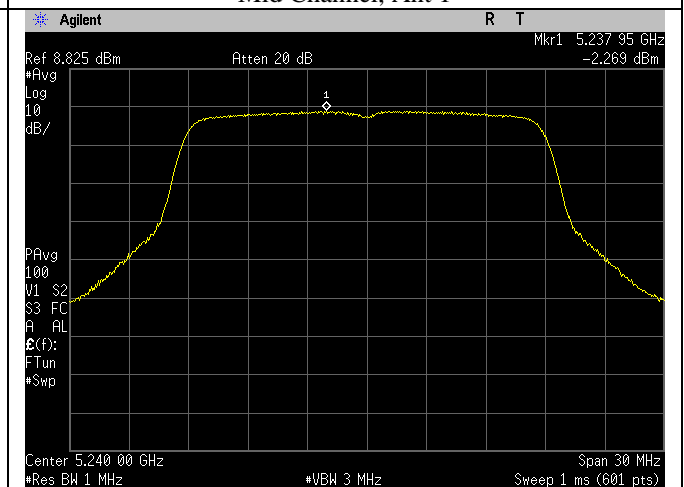
Mid Channel, Ant 0



Mid Channel, Ant 1

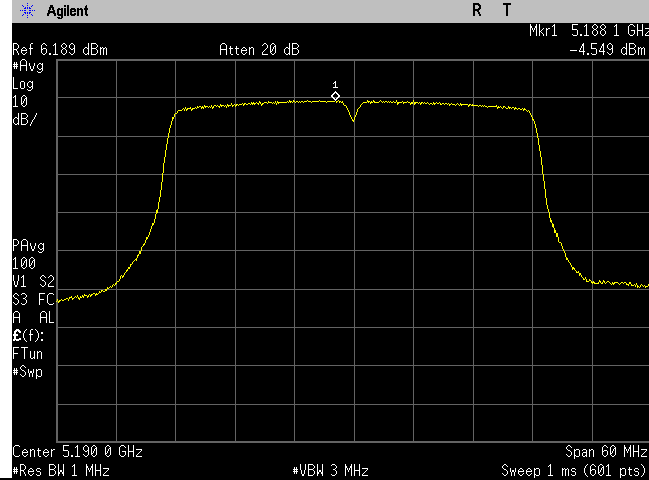


High Channel, Ant 0

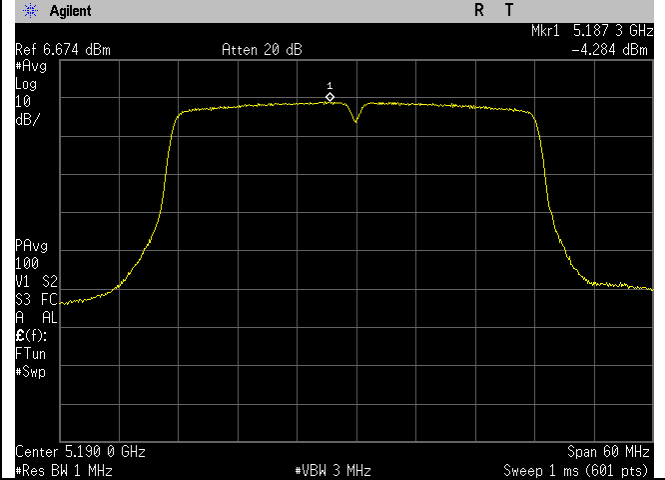


High Channel, Ant 1

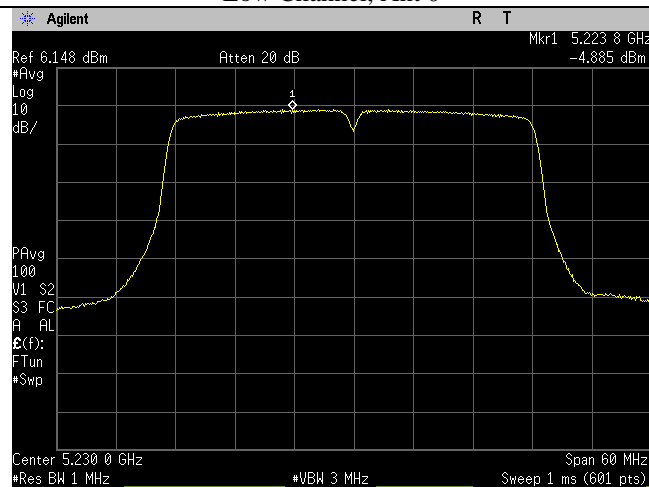
802.11n(40MHz) Power Spectral Density Plots, UNII-1



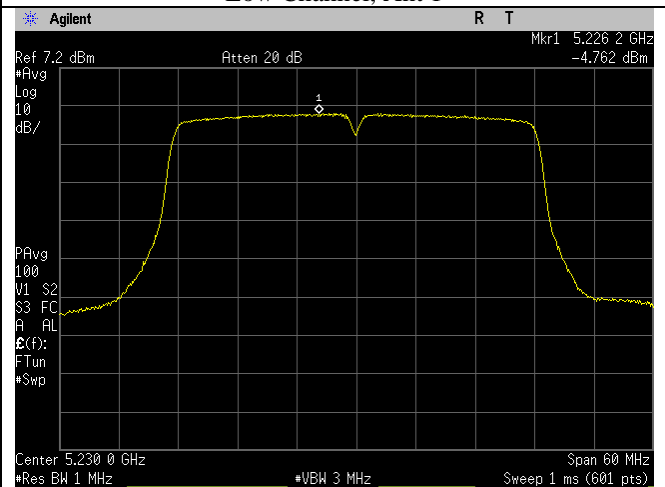
Low Channel, Ant 0



Low Channel, Ant 1

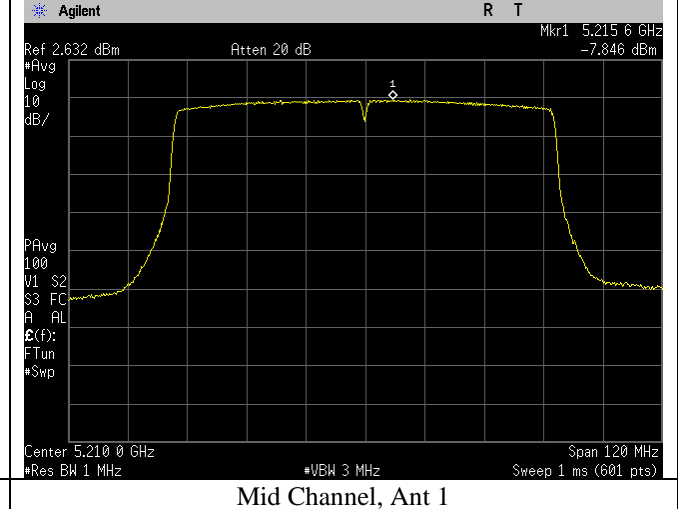
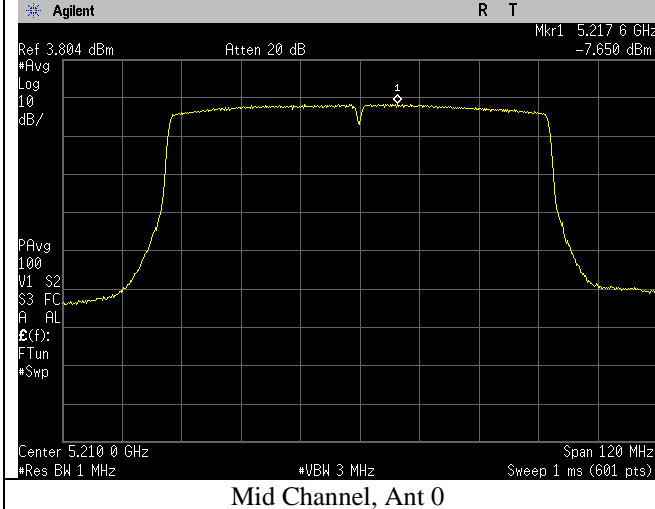


High Channel, Ant 0

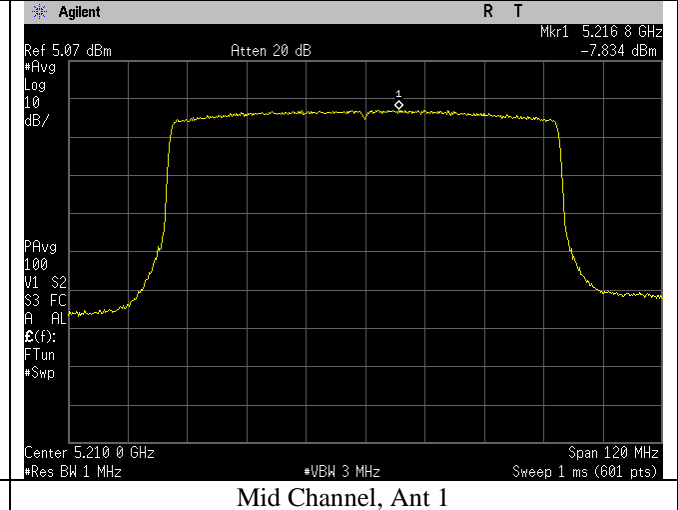
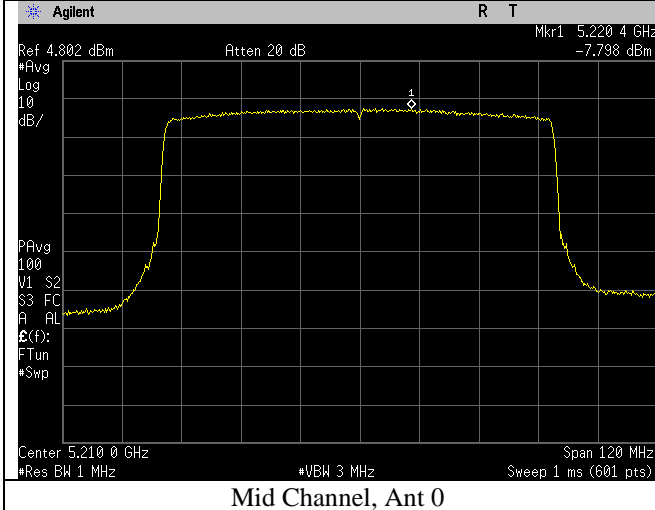


High Channel, Ant 1

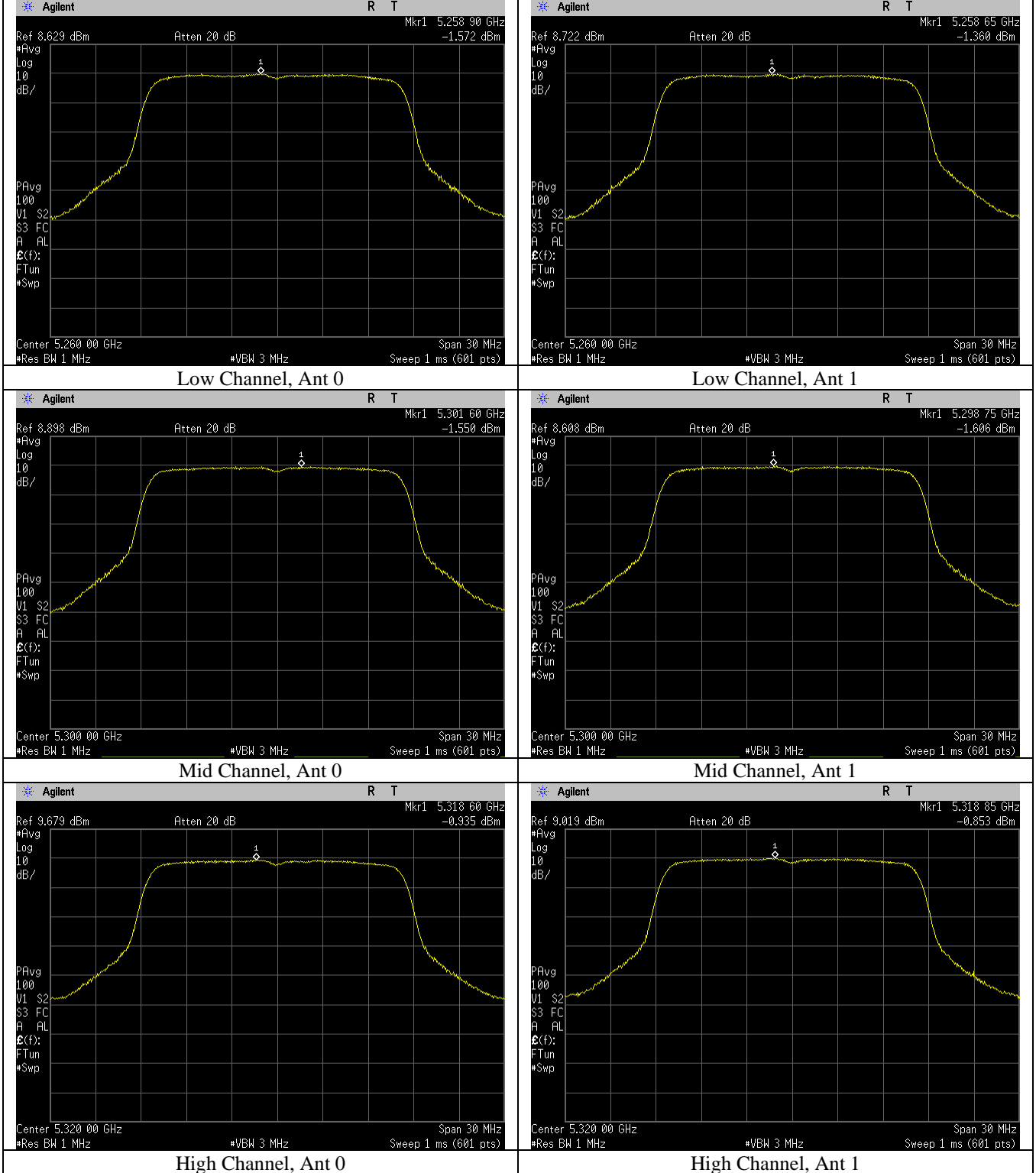
802.11ac Power Spectral Density Plots, UNII-1



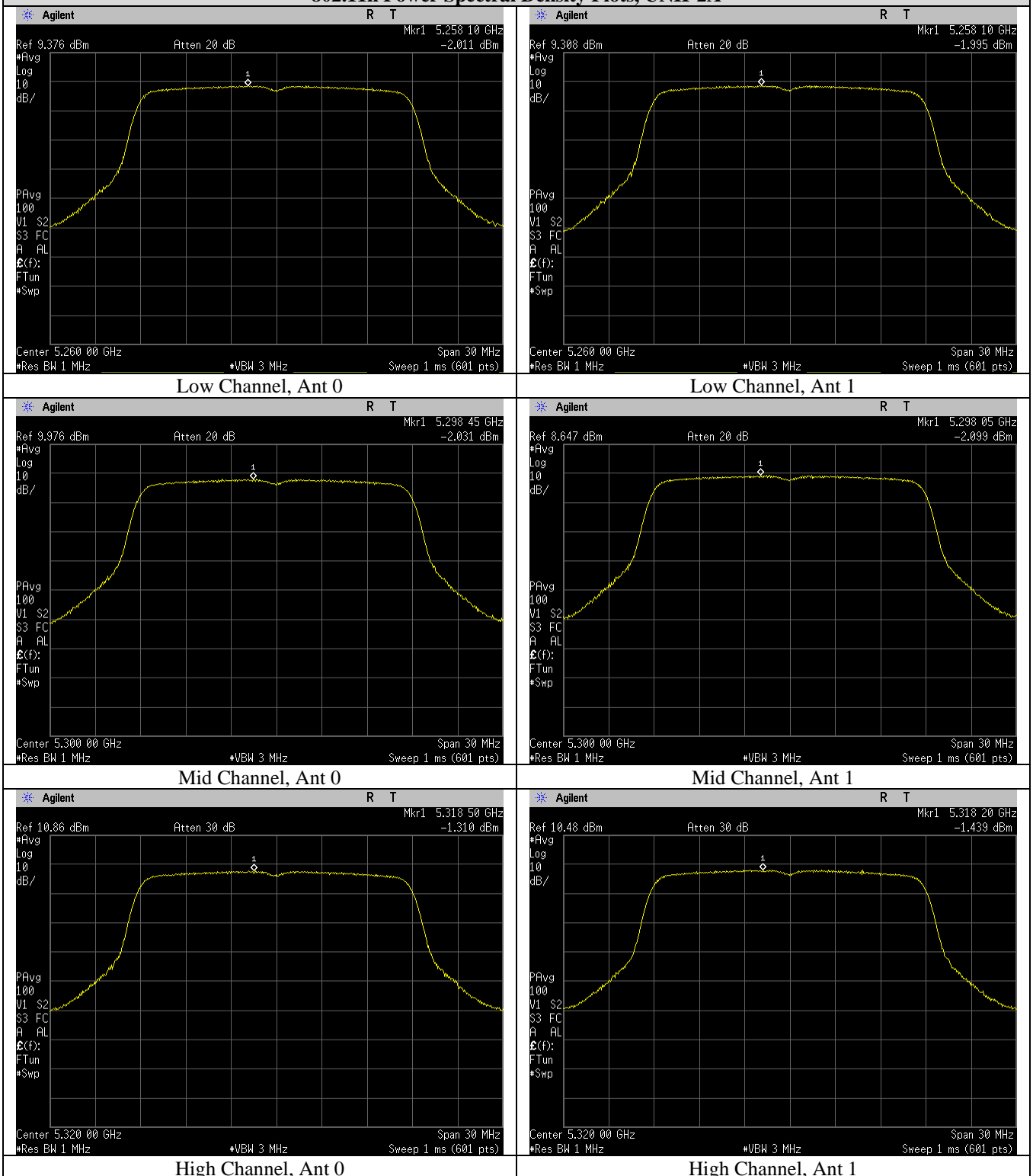
802.11ax Power Spectral Density Plots, UNII-1



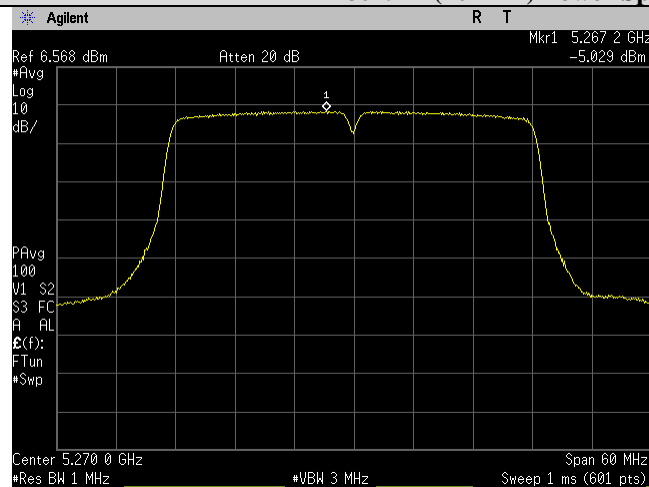
802.11a Power Spectral Density Plots, UNII-2A



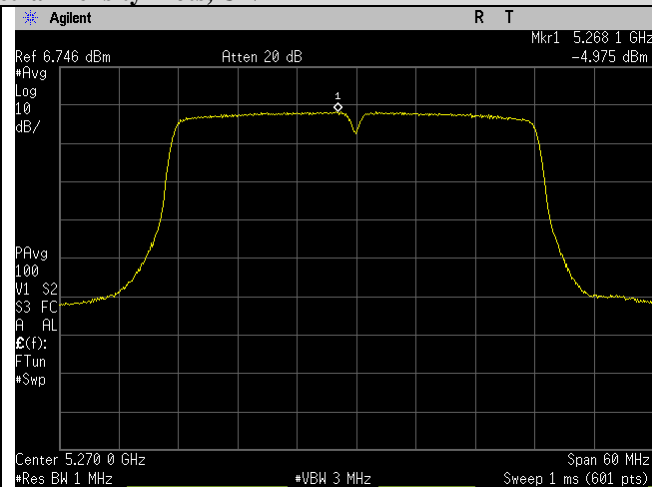
802.11n Power Spectral Density Plots, UNII-2A



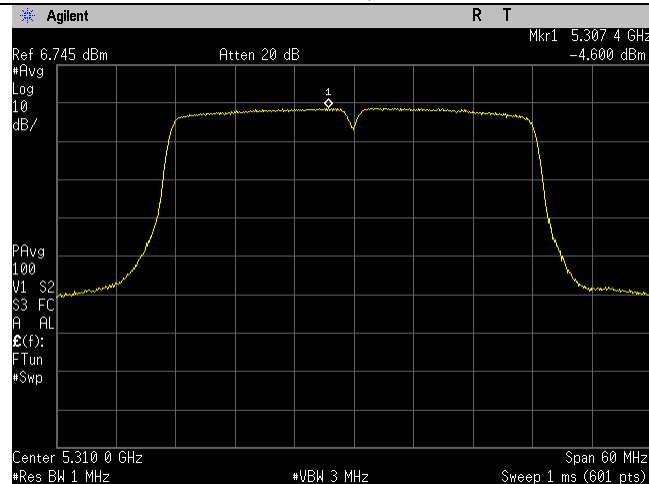
802.11n(40MHz) Power Spectral Density Plots, UNII-2A



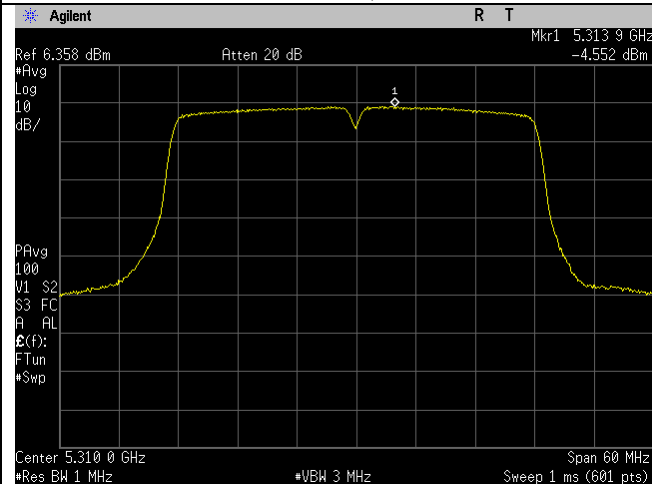
Low Channel, Ant 0



Low Channel, Ant 1

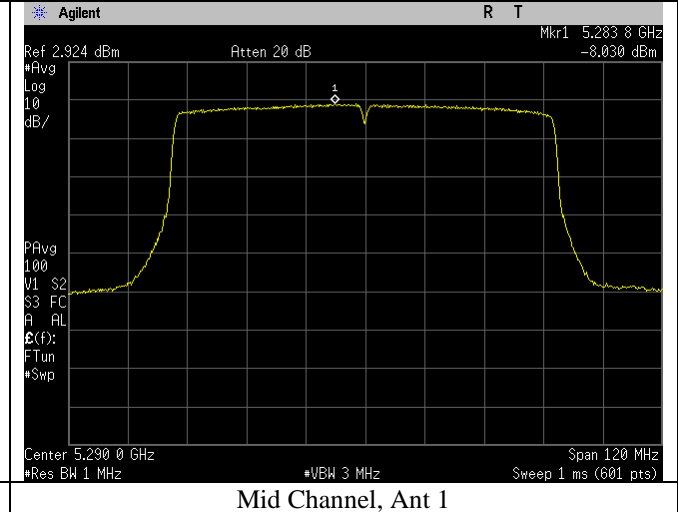
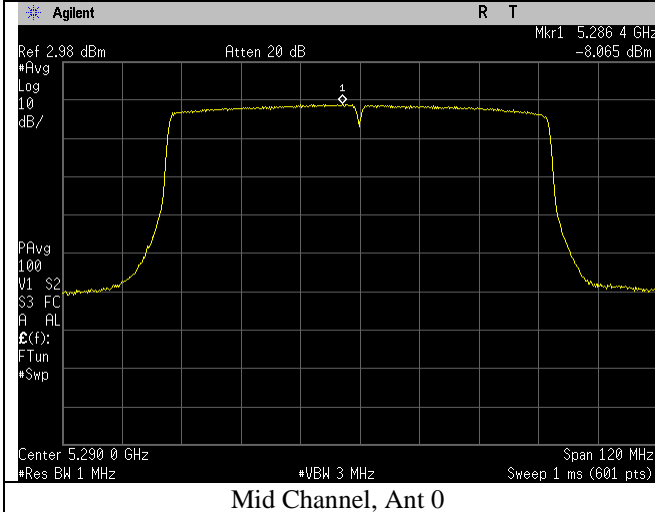


High Channel, Ant 0

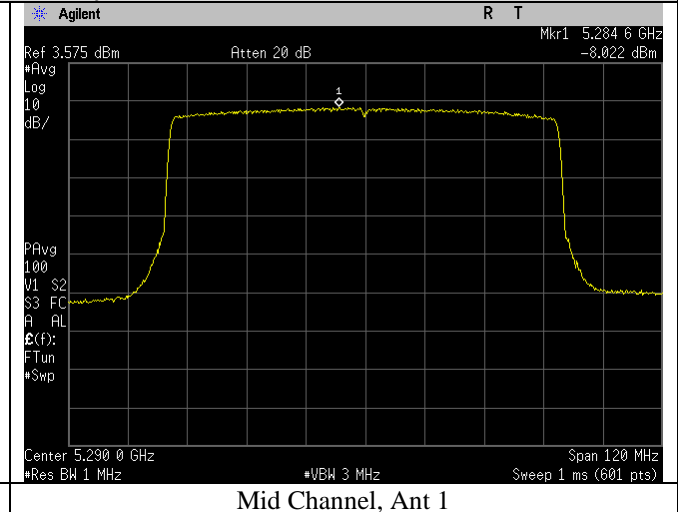
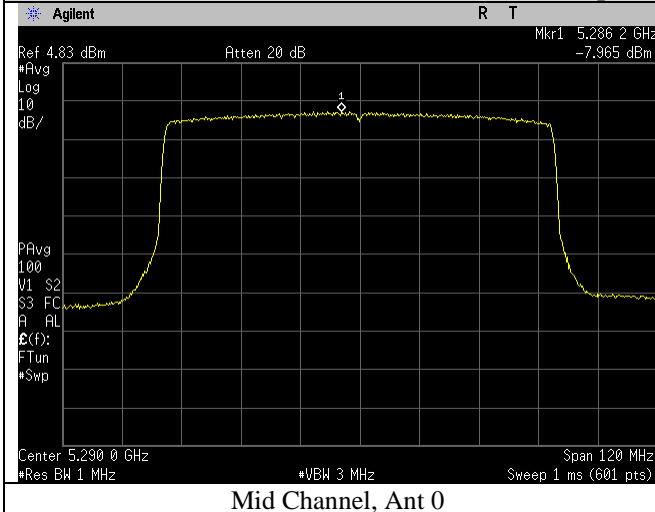


High Channel, Ant 1

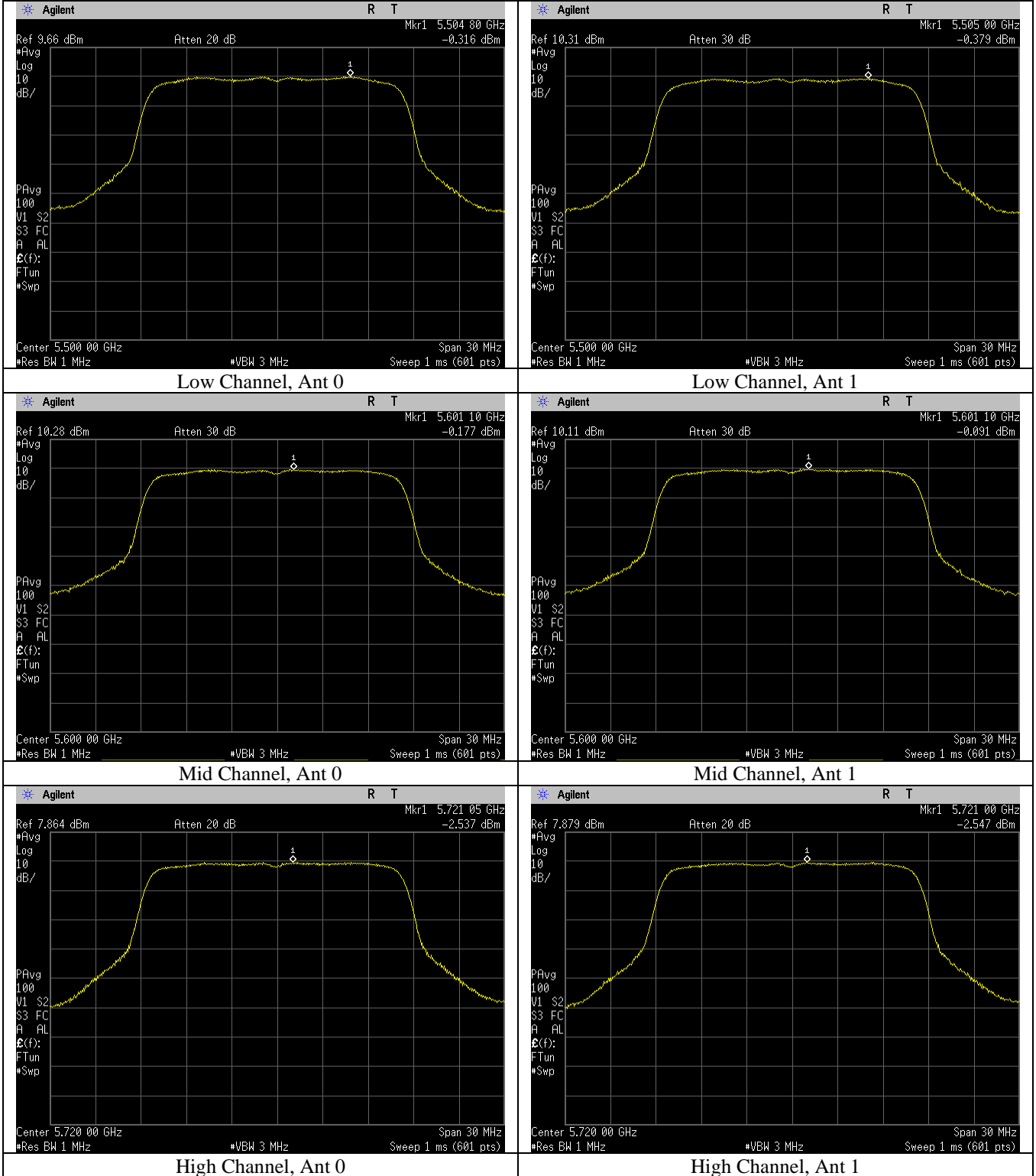
802.11ac Power Spectral Density Plots, UNII-2A



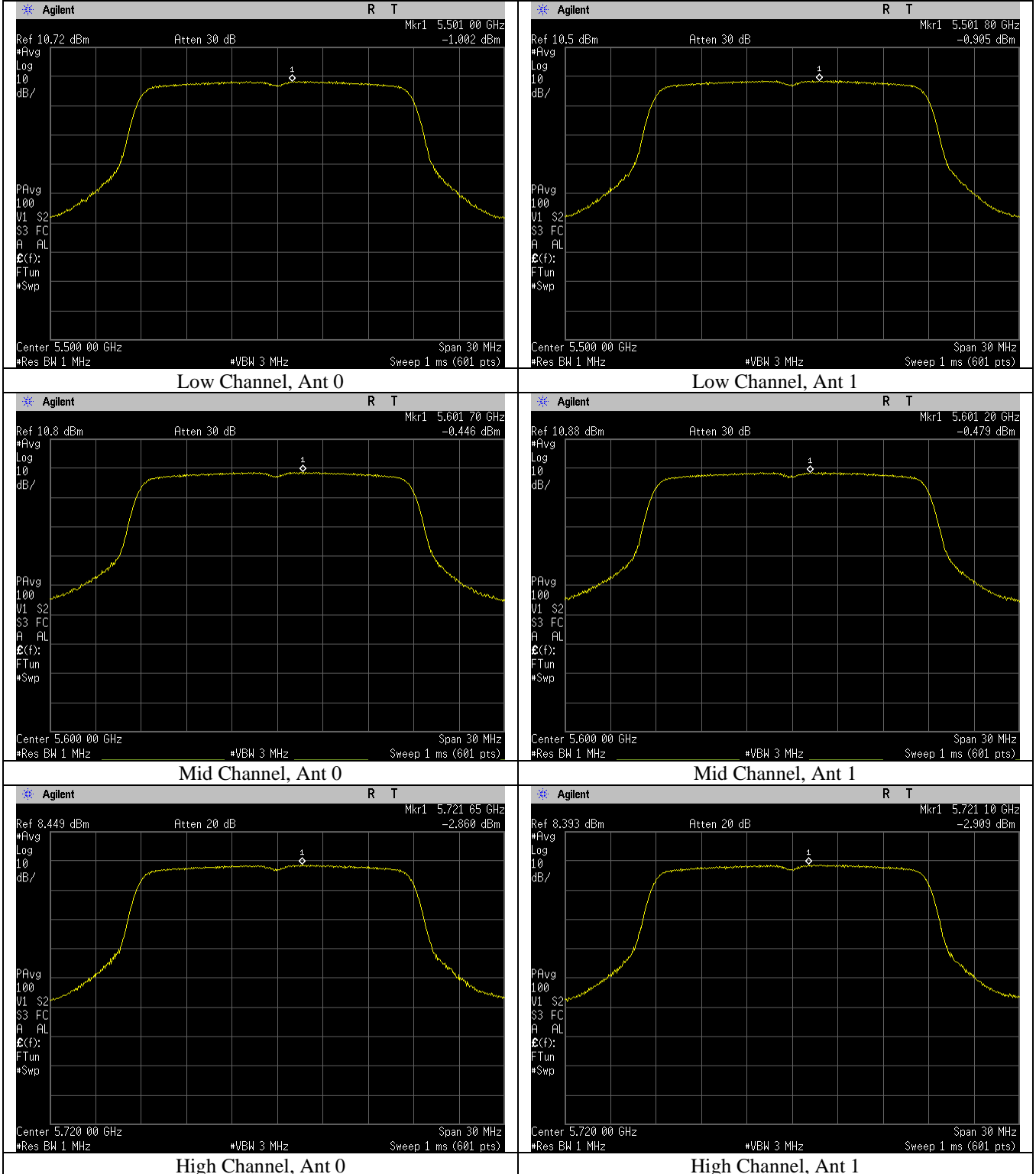
802.11ax Power Spectral Density Plots, UNII-2A



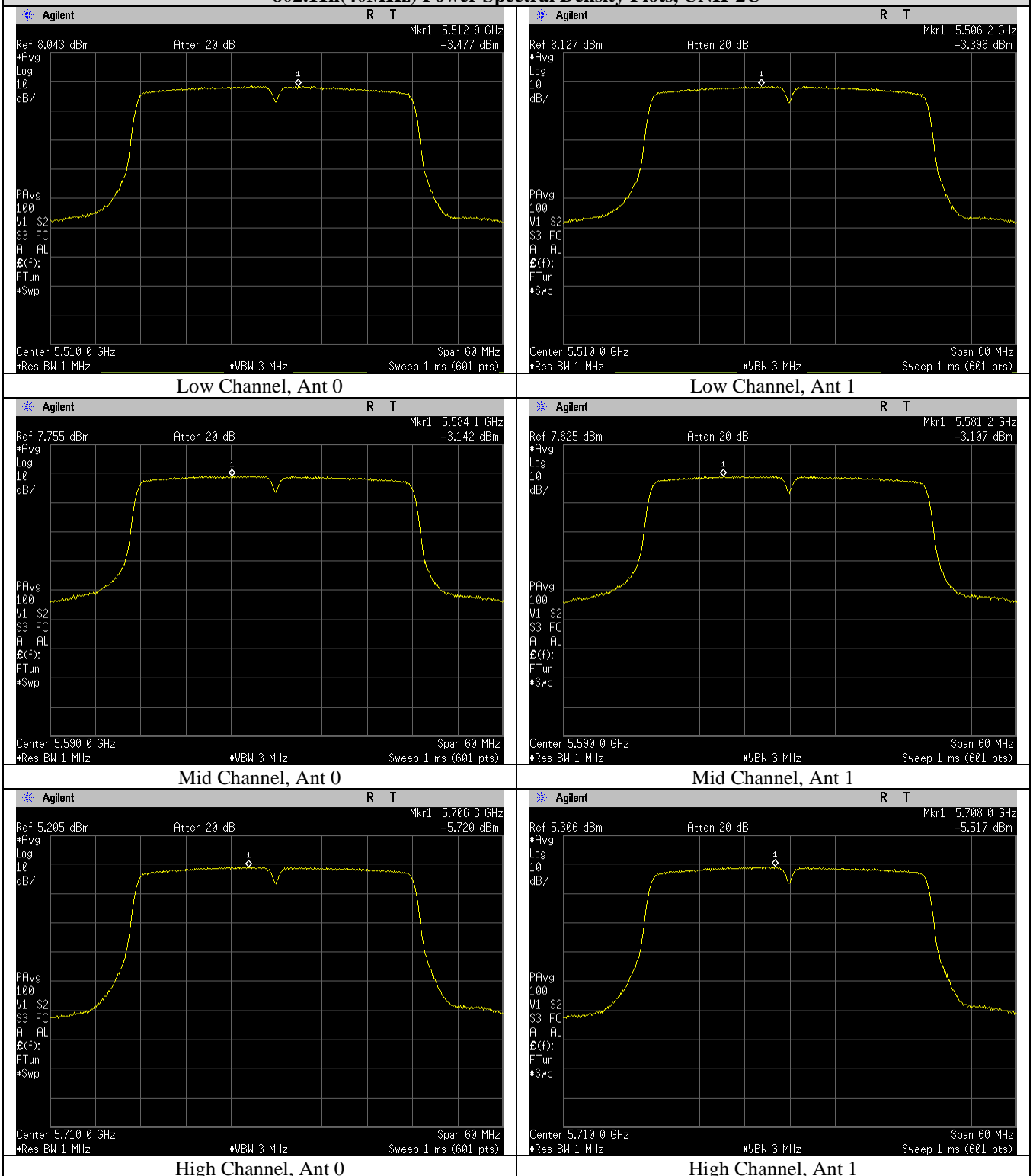
802.11a Power Spectral Density Plots, UNII-2C



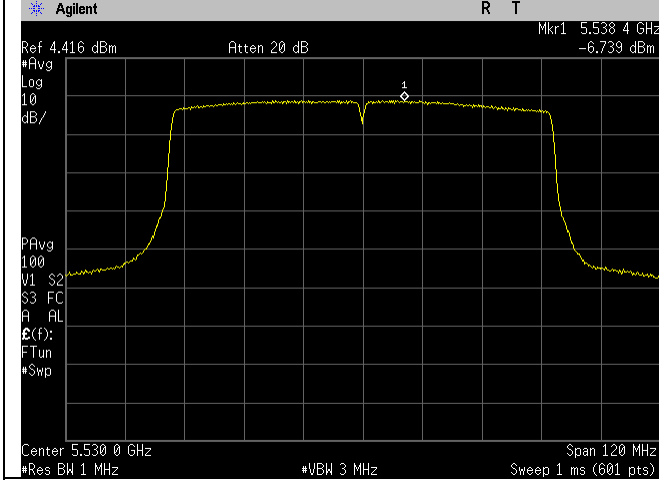
802.11n Power Spectral Density Plots, UNII-2C



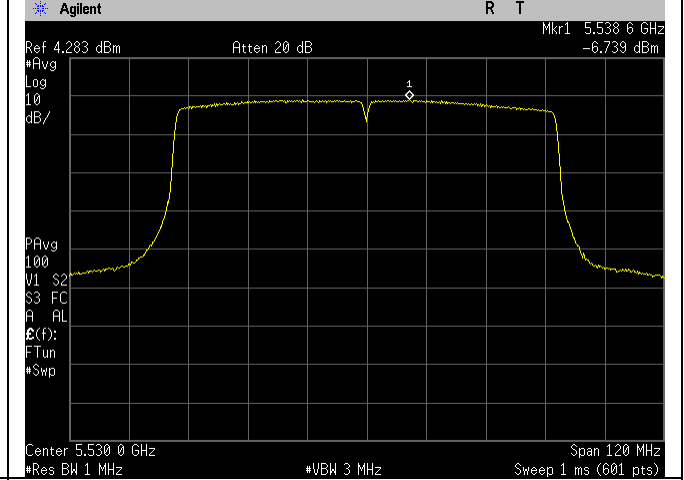
802.11n(40MHz) Power Spectral Density Plots, UNII-2C



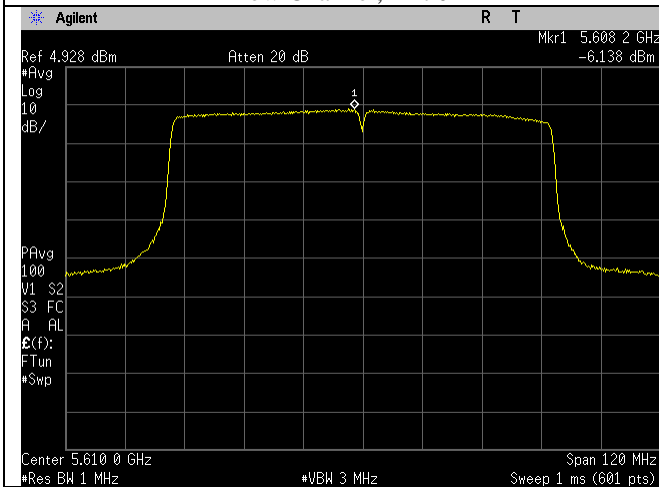
802.11ac Power Spectral Density Plots, UNII-2C



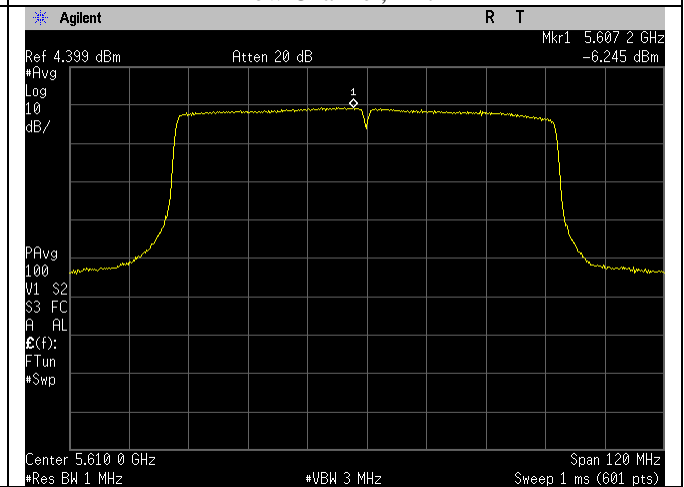
Low Channel, Ant 0



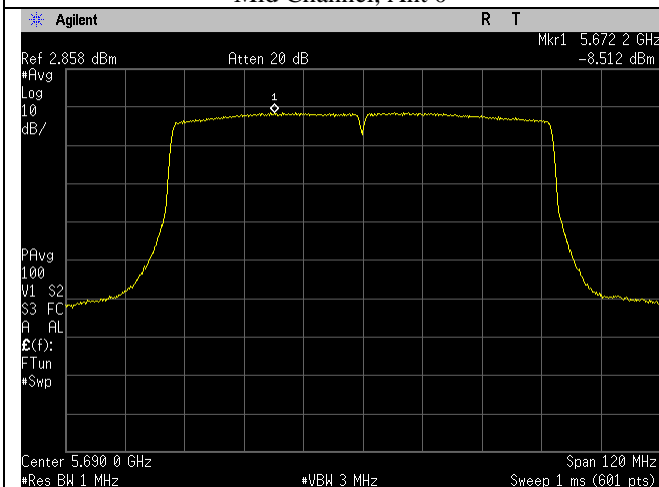
Low Channel, Ant 1



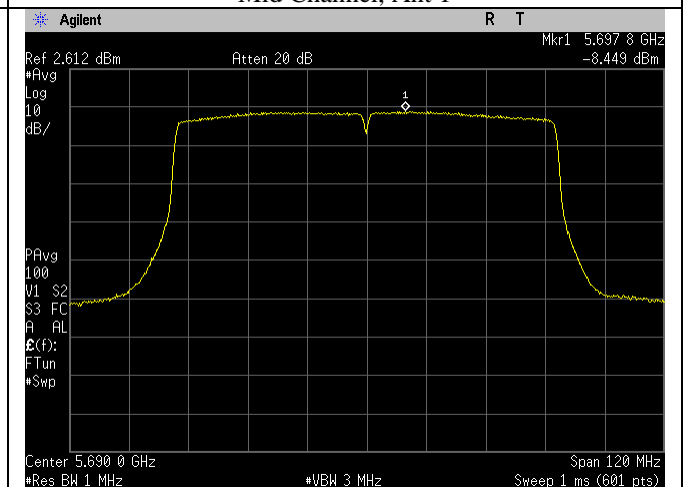
Mid Channel, Ant 0



Mid Channel, Ant 1

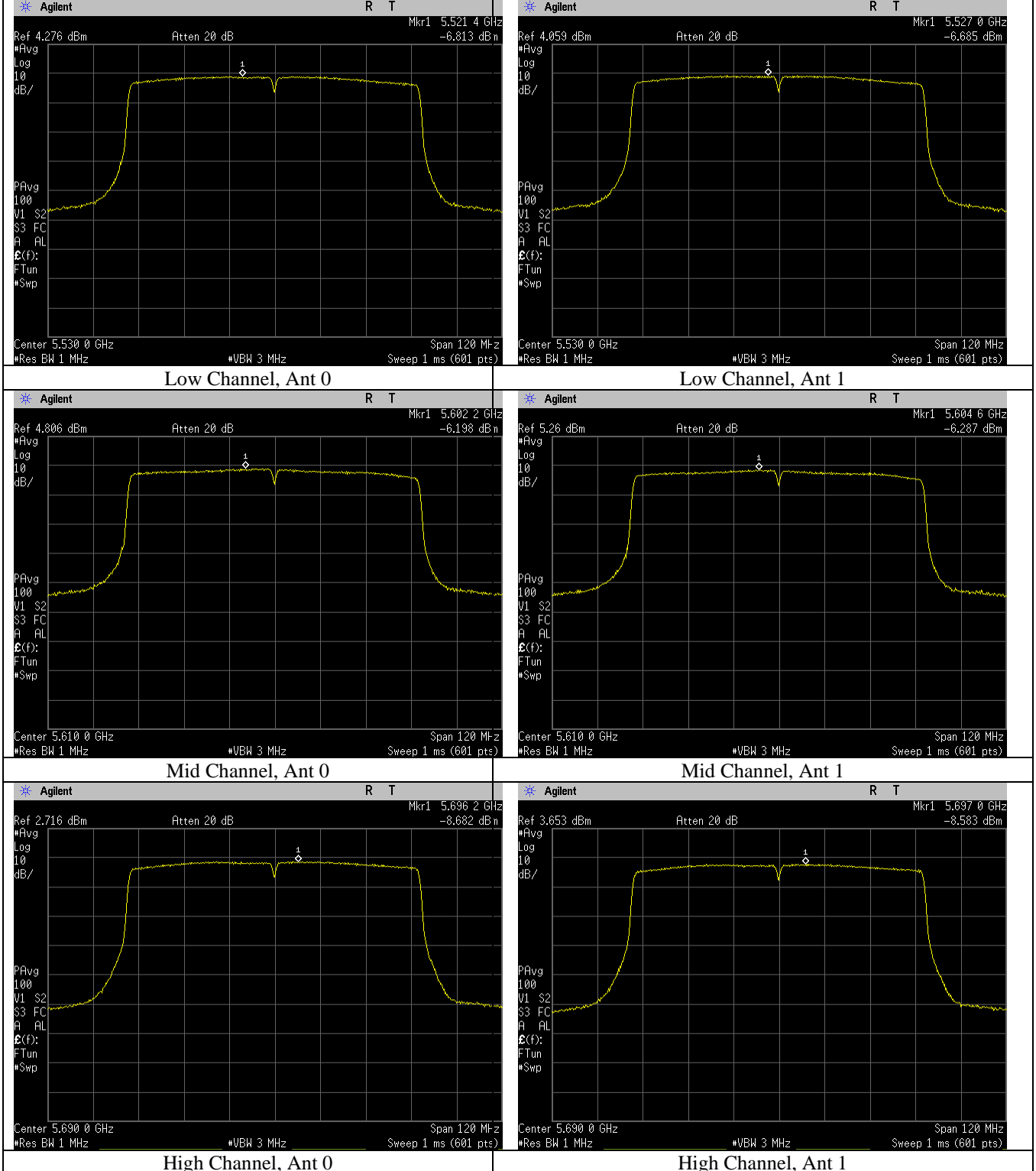


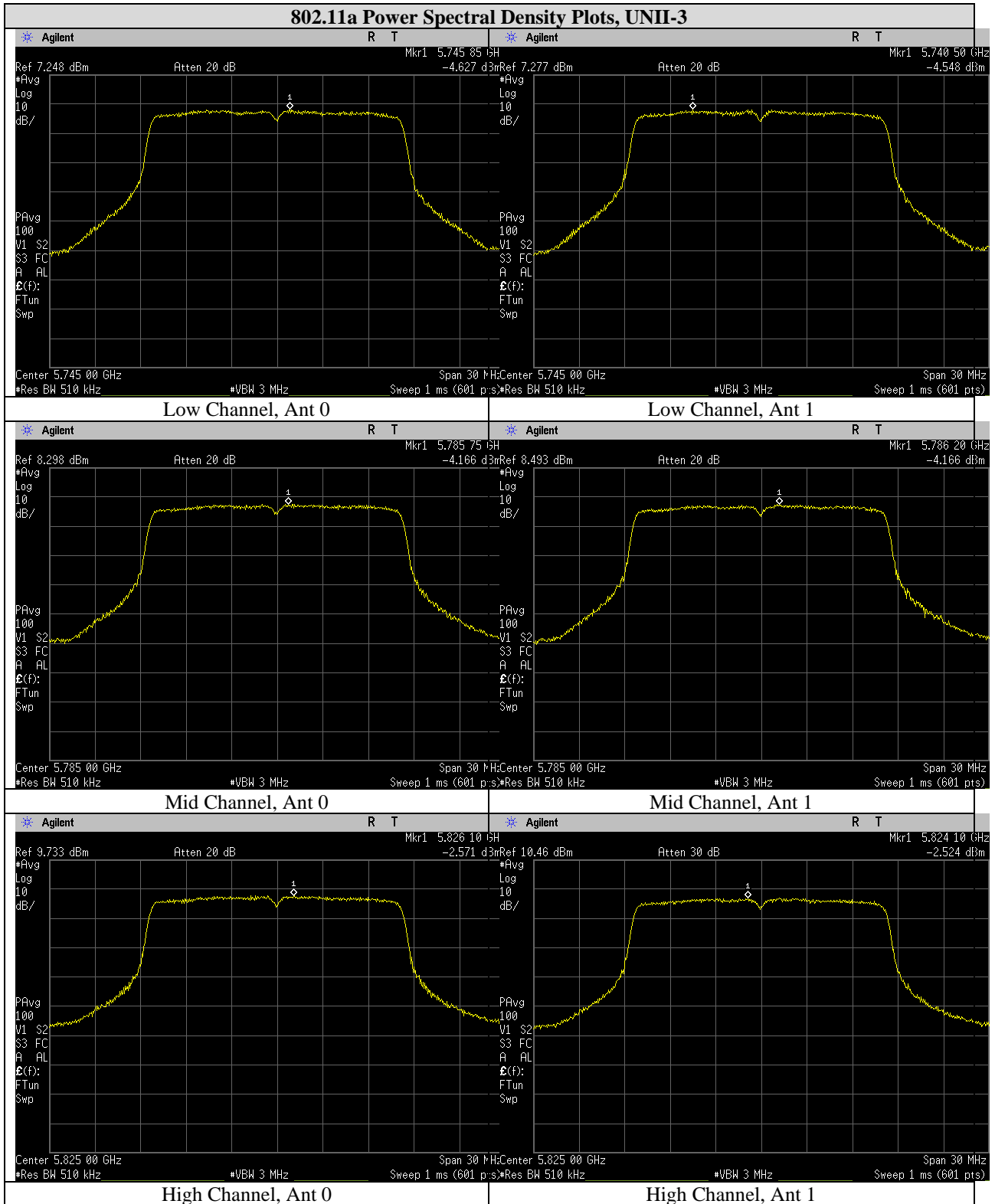
High Channel, Ant 0



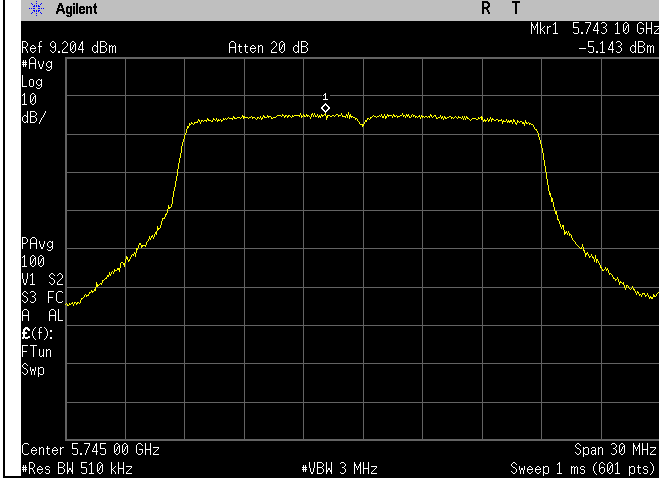
High Channel, Ant 1

802.11ax Power Spectral Density Plots, UNII-2C

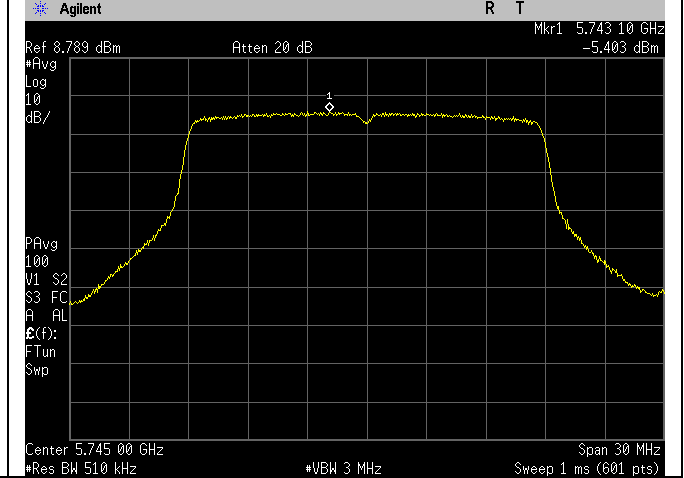




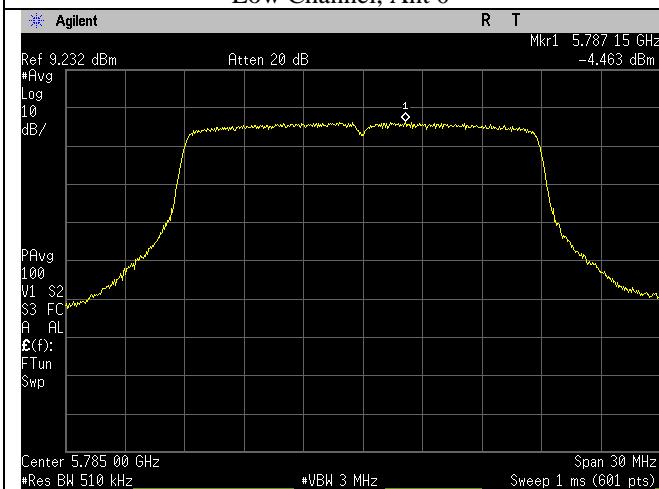
802.11n Power Spectral Density Plots, UNII-3



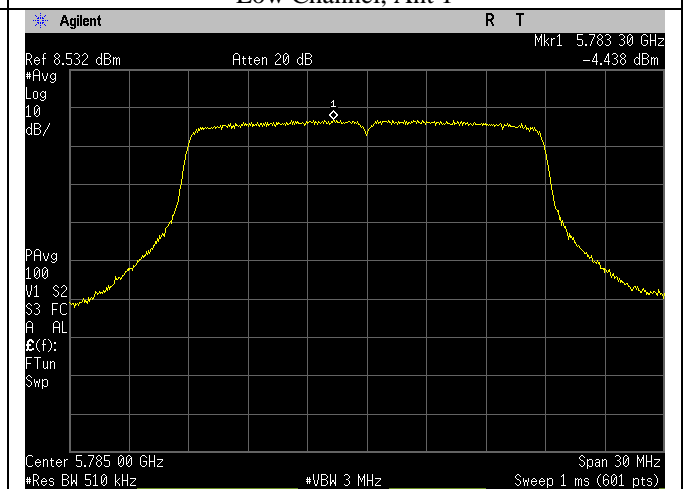
Low Channel, Ant 0



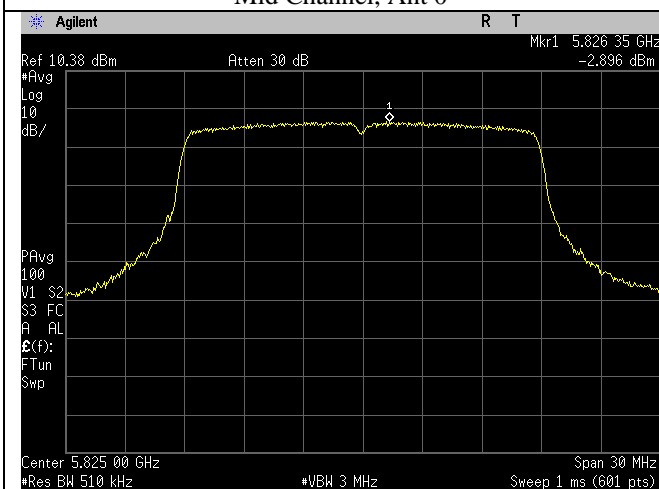
Low Channel, Ant 1



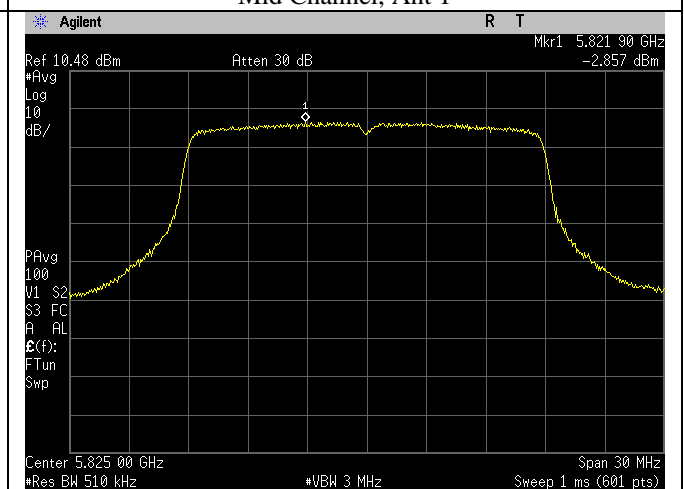
Mid Channel, Ant 0



Mid Channel, Ant 1

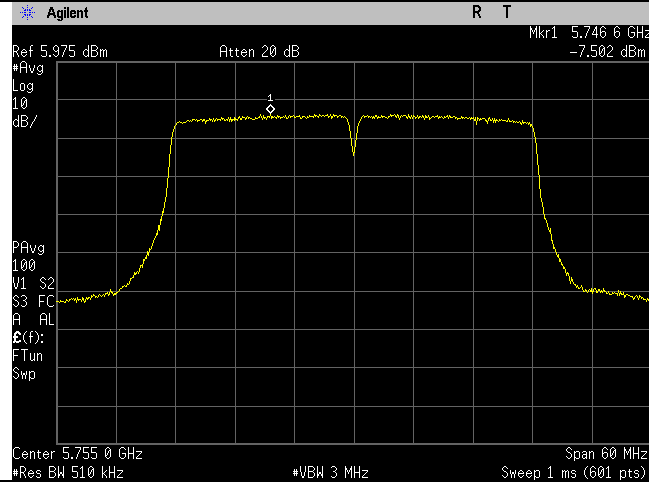


High Channel, Ant 0

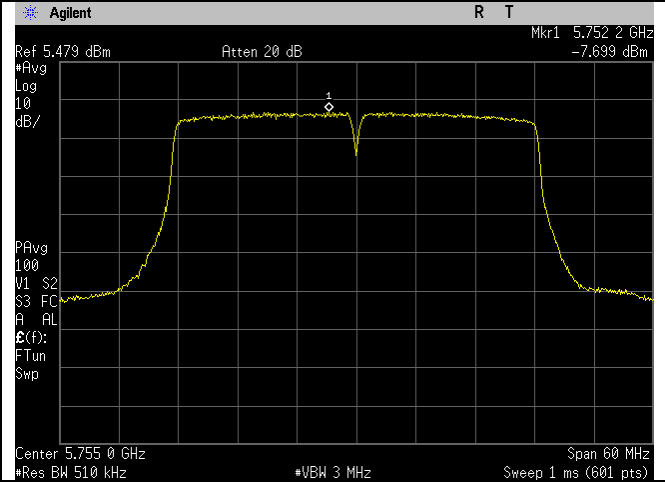


High Channel, Ant 1

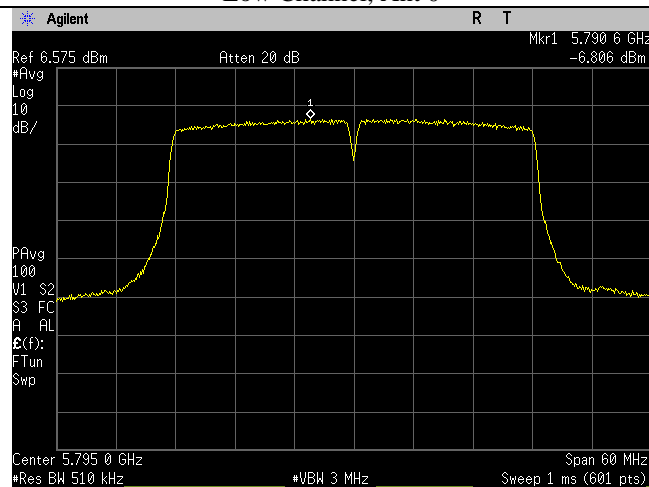
802.11n(40MHz) Power Spectral Density Plots, UNII-3



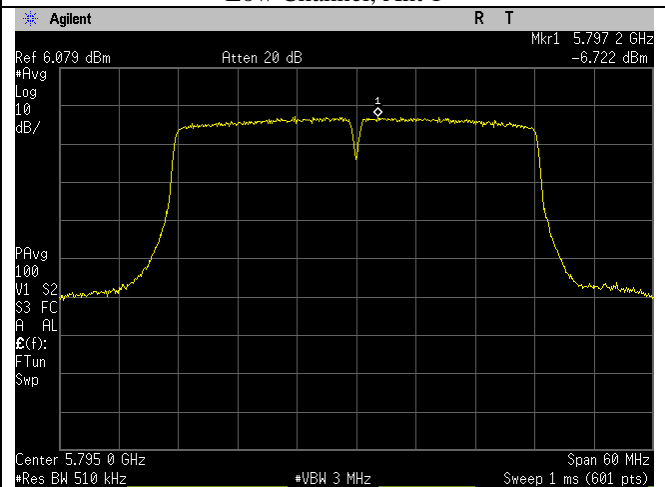
Low Channel, Ant 0



Low Channel, Ant 1

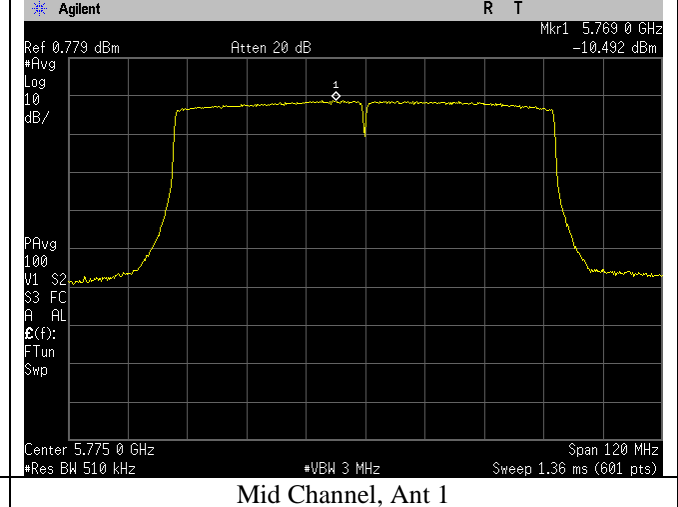
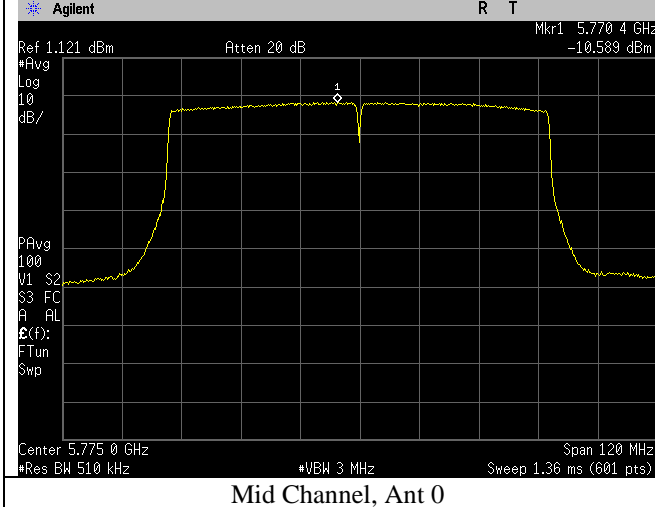


High Channel, Ant 0

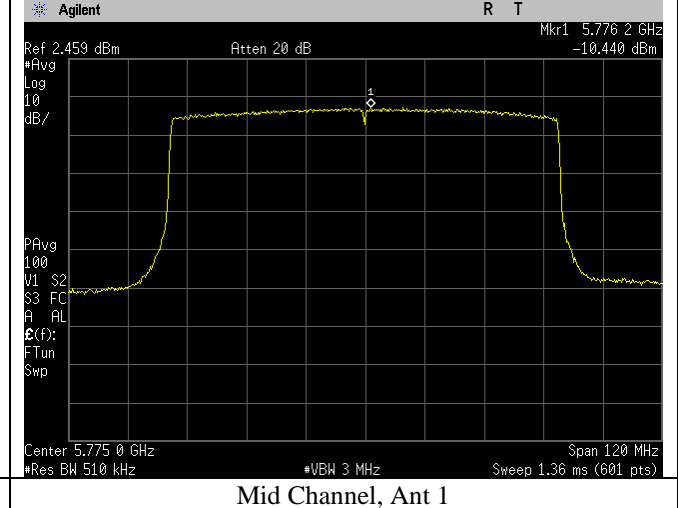
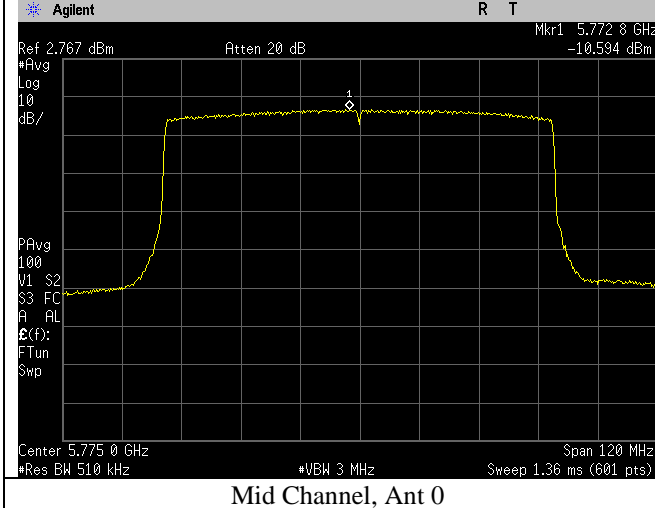


High Channel, Ant 1

802.11ac Power Spectral Density Plots, UNII-3

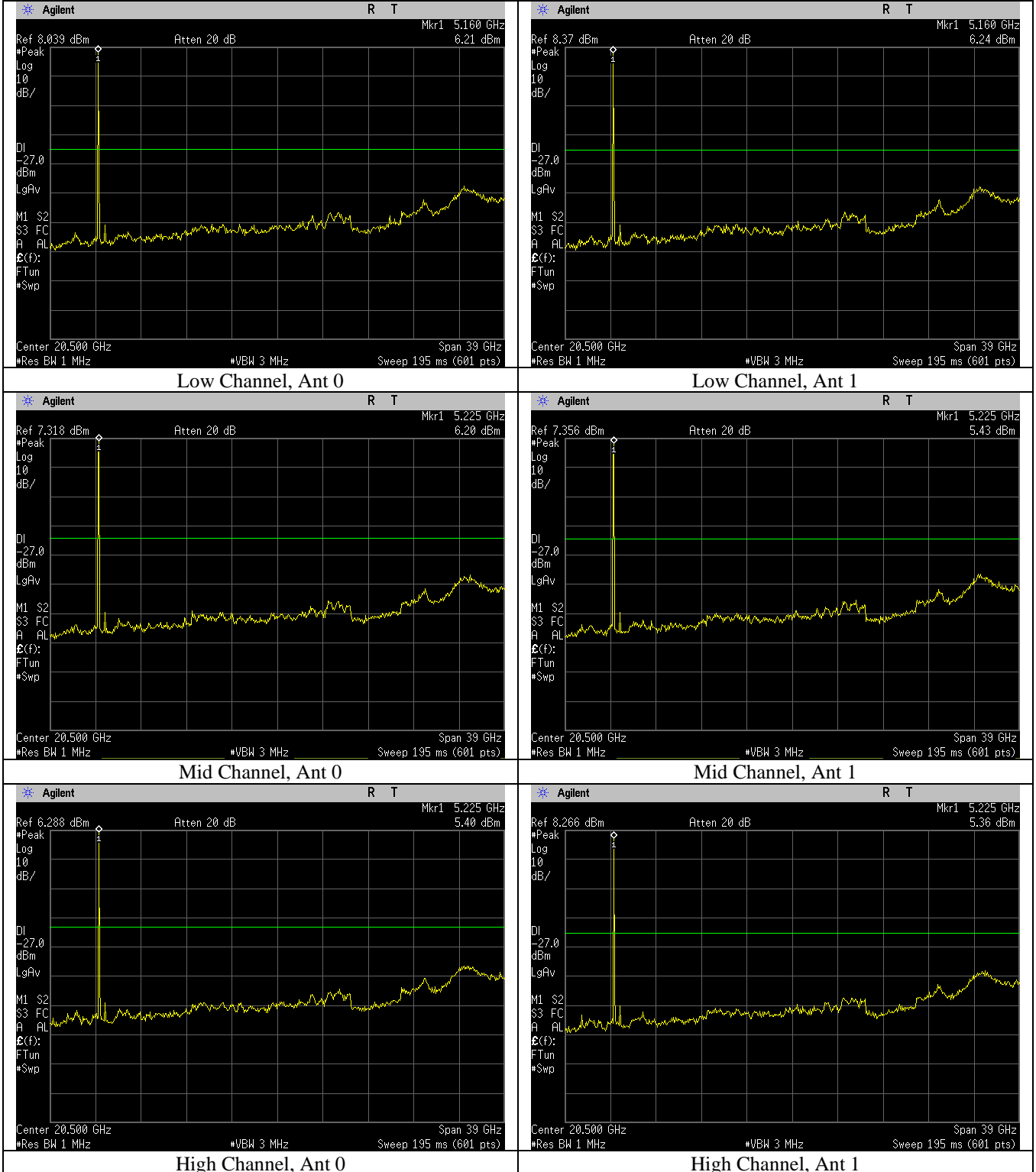


802.11ax Power Spectral Density Plots, UNII-3

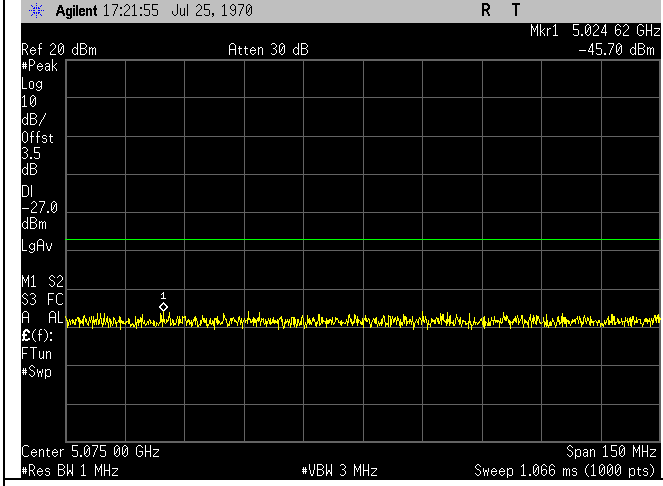


IV. Conducted Spurious Emissions Plots

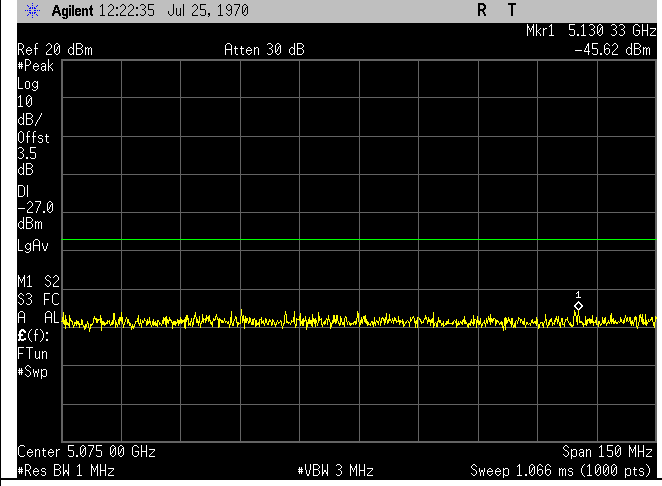
802.11a -27dB Down Conducted Emissions Plots, UNII-1



802.11a -27dB Down Conducted Emissions Plots, UNII-1

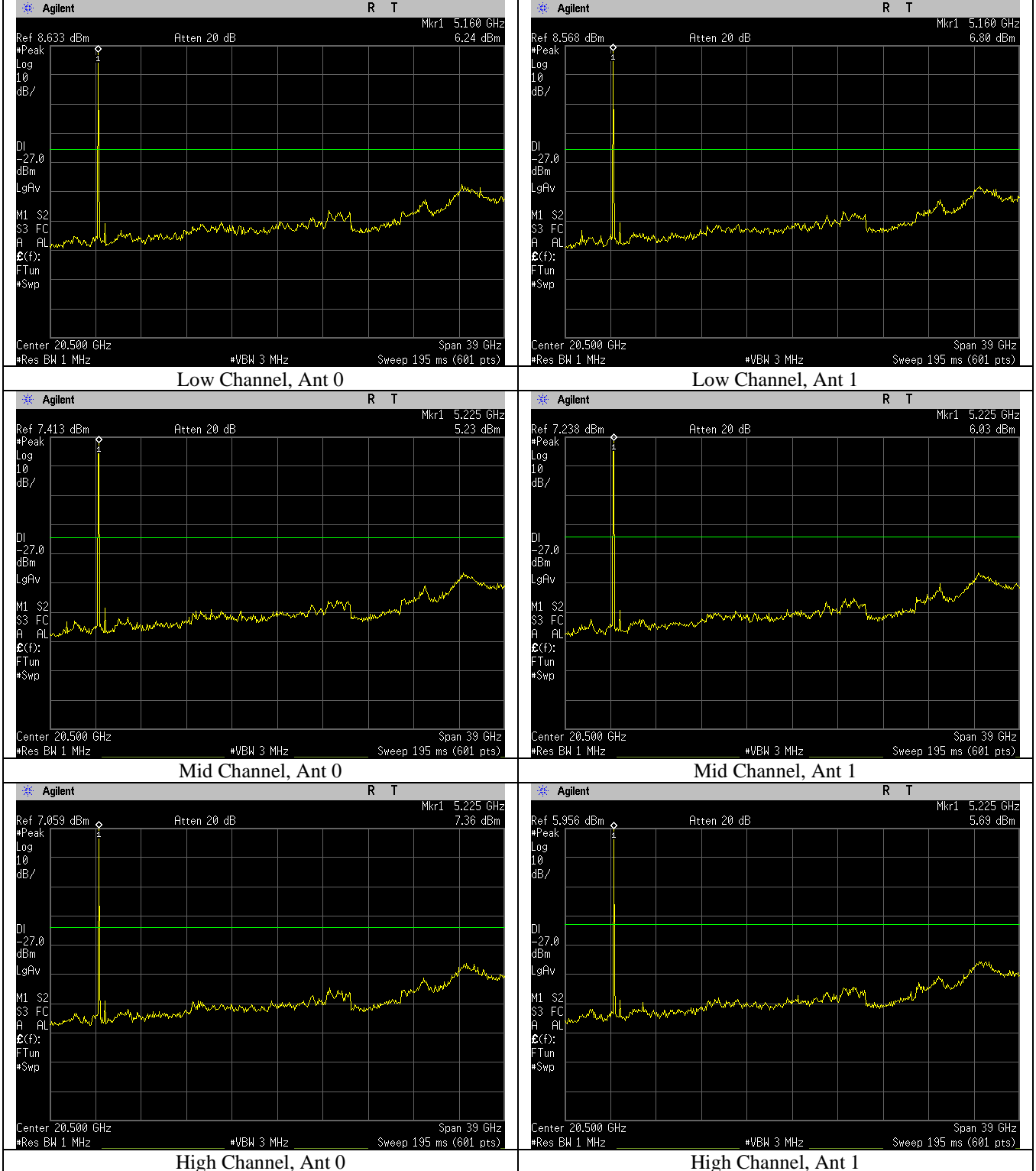


Low Channel Band Edge, Ant 0

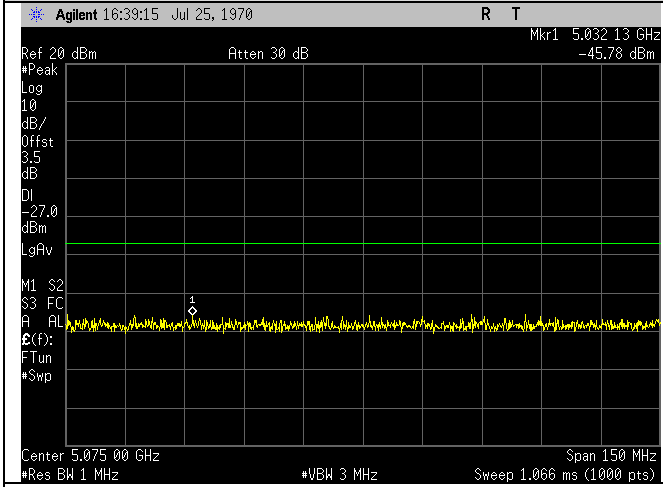


Low Channel Band Edge, Ant 1

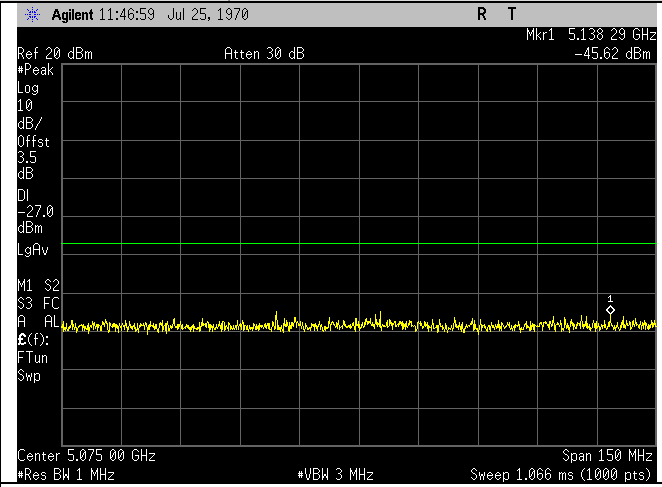
802.11n -27dB Down Conducted Emissions Plots, UNII-1



802.11n -27dB Down Conducted Emissions Plots, UNII-1

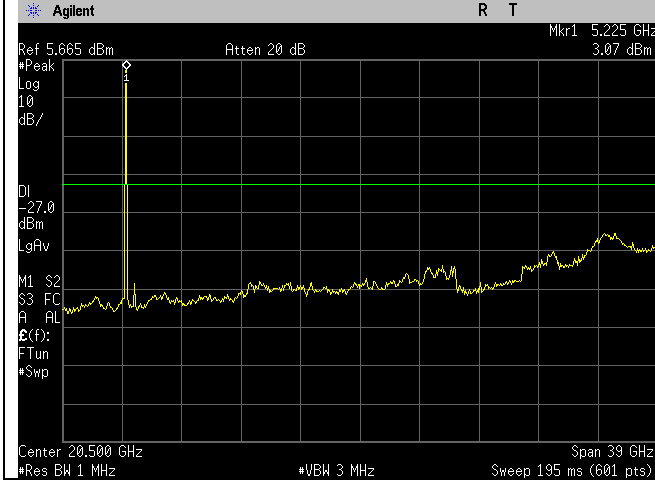


Low Channel Band Edge, Ant 0

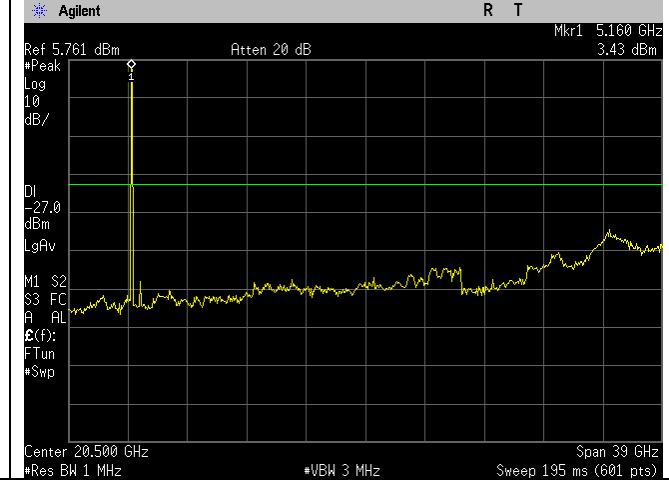


Low Channel Band Edge, Ant 1

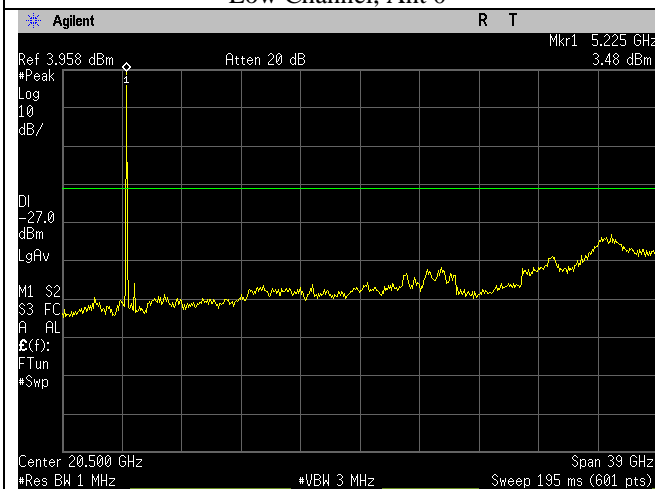
802.11n(40MHz) -27dB Down Conducted Emissions Plots, UNII-1



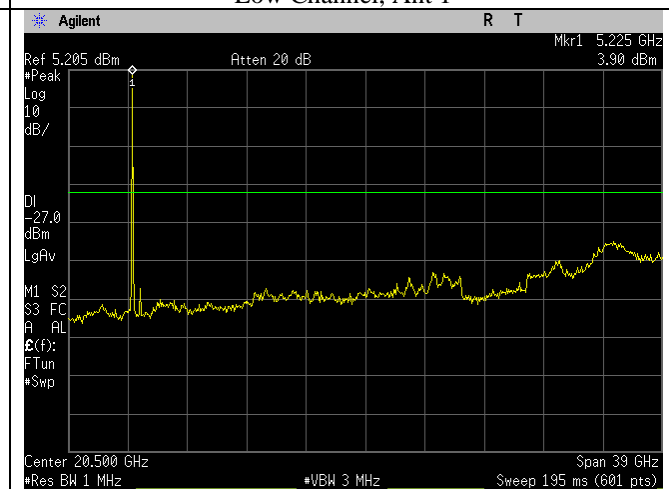
Low Channel, Ant 0



Low Channel, Ant 1

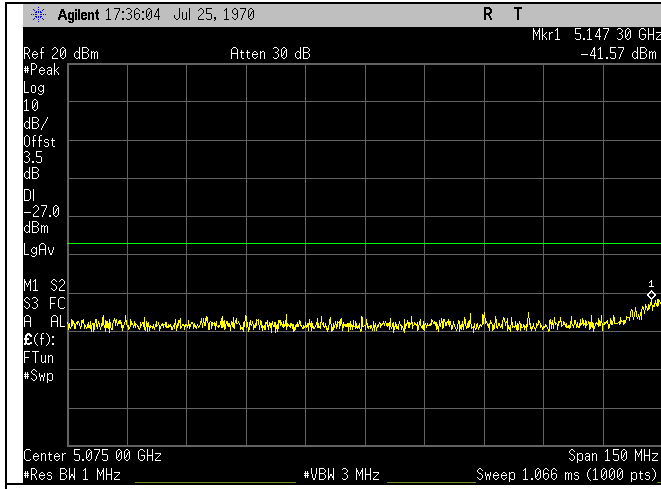


High Channel, Ant 0

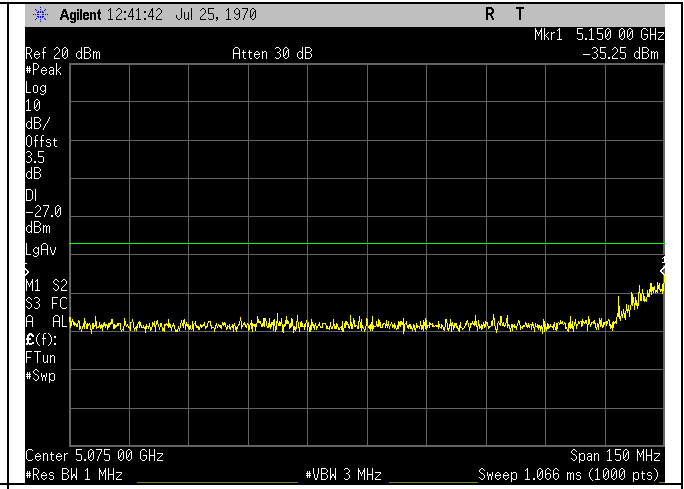


High Channel, Ant 1

802.11n (40MHz) -27dB Down Conducted Emissions Plots, UNII-1

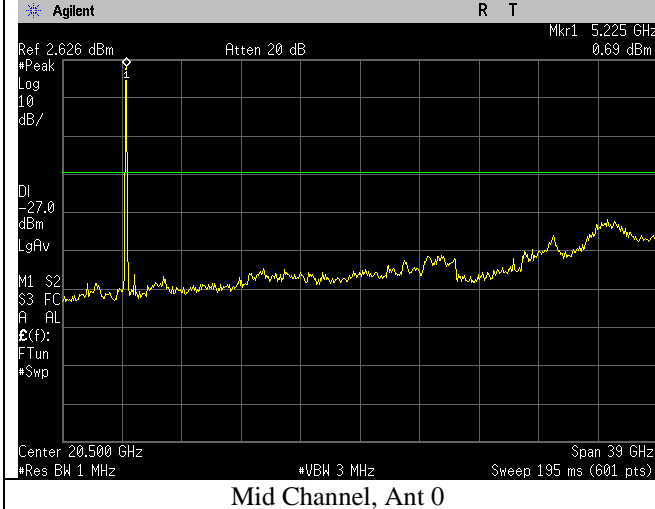


Low Channel Band Edge, Ant 0

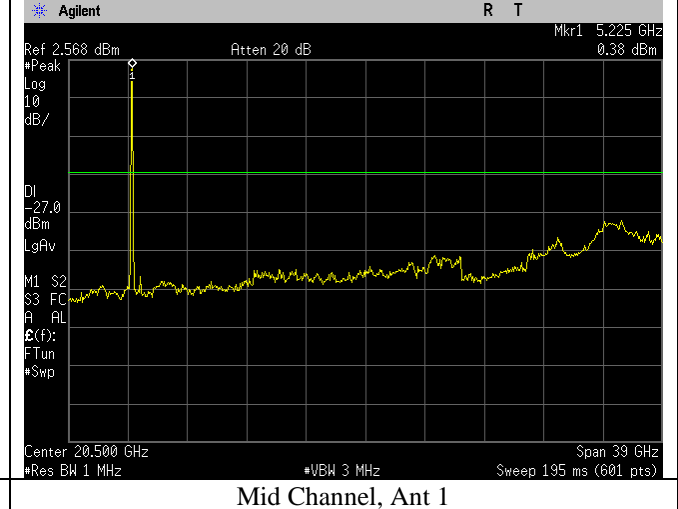


Low Channel Band Edge, Ant 1

802.11ac -27dB Down Conducted Emissions Plots, UNII-1

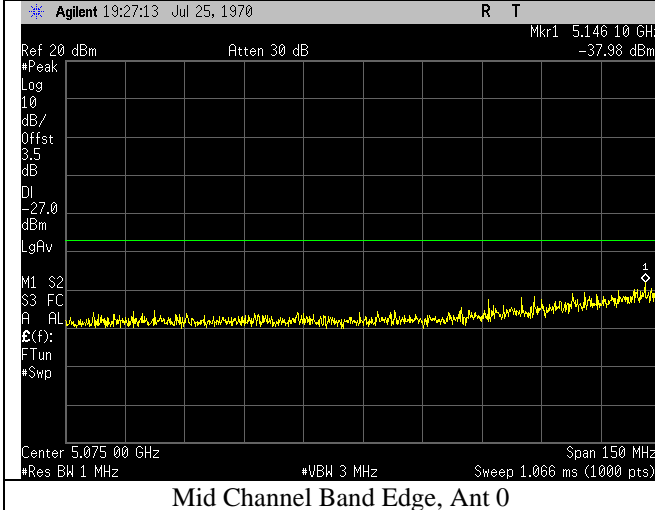


Mid Channel, Ant 0

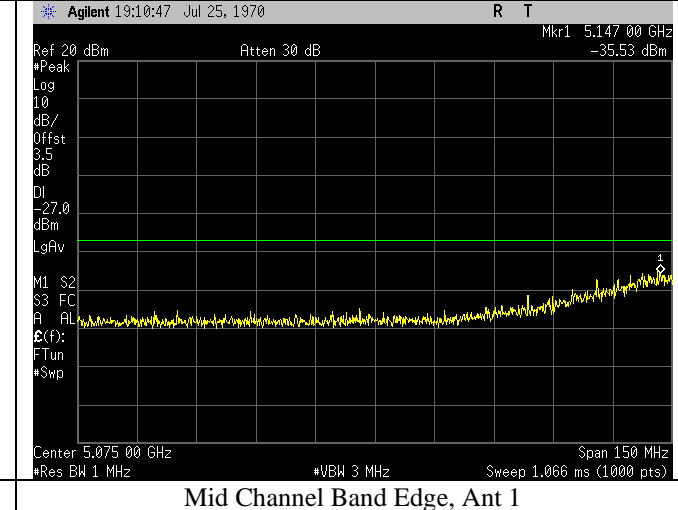


Mid Channel, Ant 1

802.11ac -27dB Down Conducted Emissions Plots, UNII-1

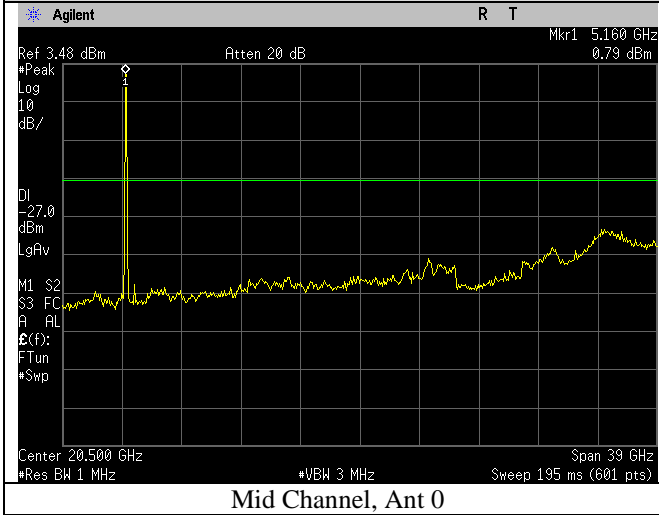


Mid Channel Band Edge, Ant 0

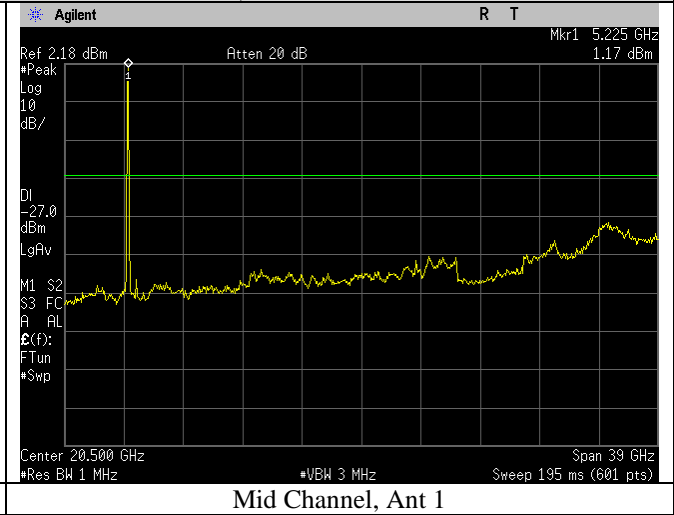


Mid Channel Band Edge, Ant 1

802.11ax -27dB Down Conducted Emissions Plots, UNII-1

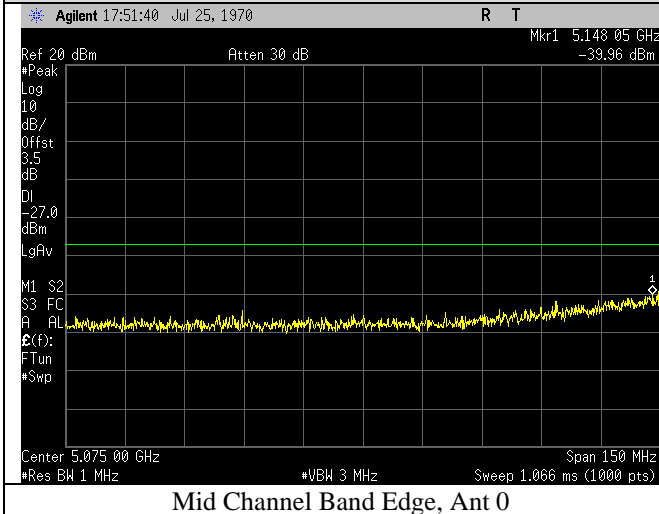


Mid Channel, Ant 0

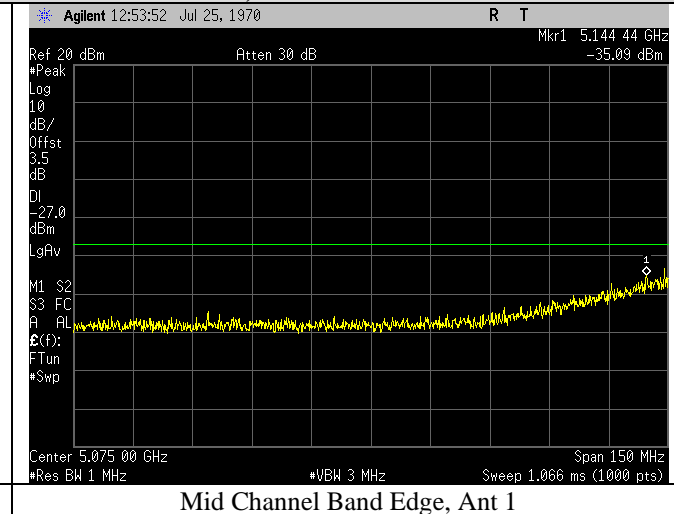


Mid Channel, Ant 1

802.11ax -27dB Down Conducted Emissions Plots, UNII-1

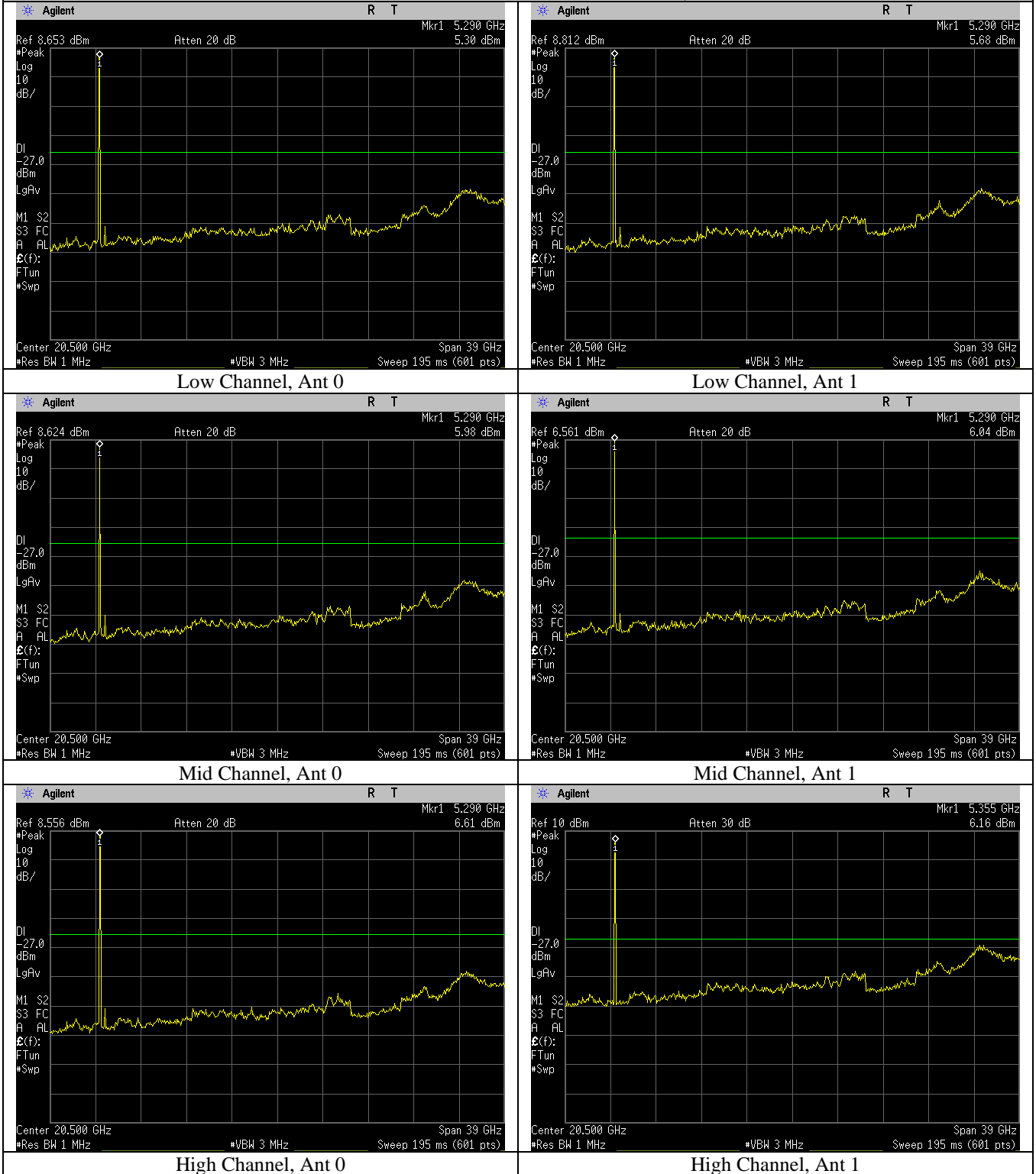


Mid Channel Band Edge, Ant 0

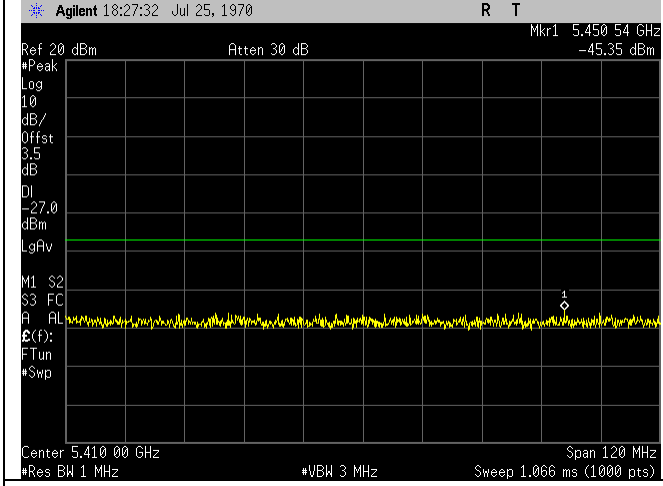


Mid Channel Band Edge, Ant 1

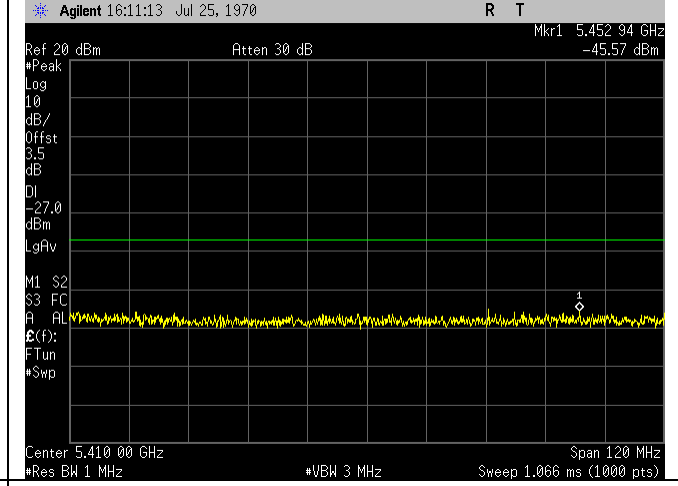
802.11a -27dB Down Conducted Emissions Plots, UNII-2A



802.11a -27dB Down Conducted Emissions Plots, UNII-2A

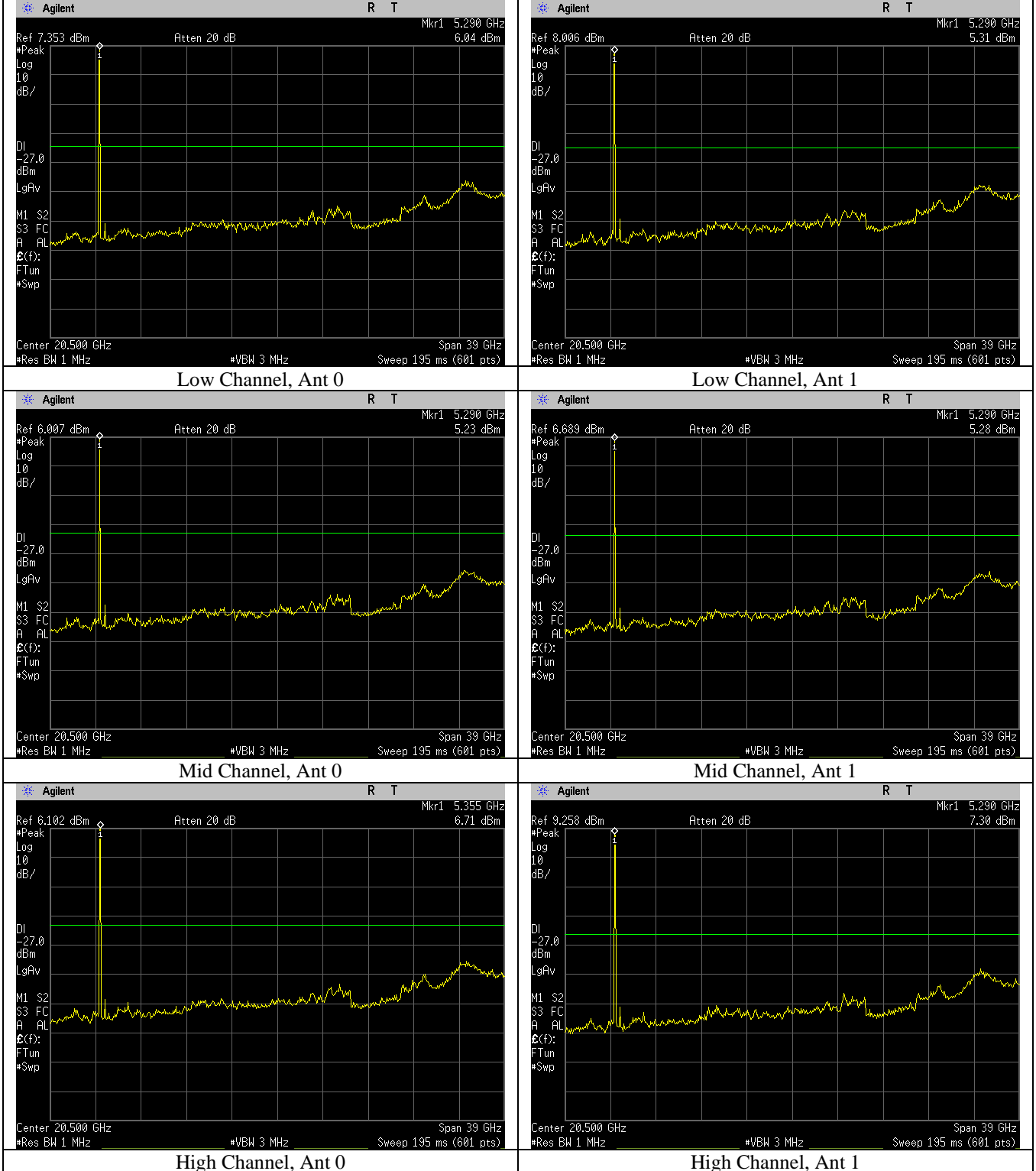


High Channel Band Edge, Ant 0

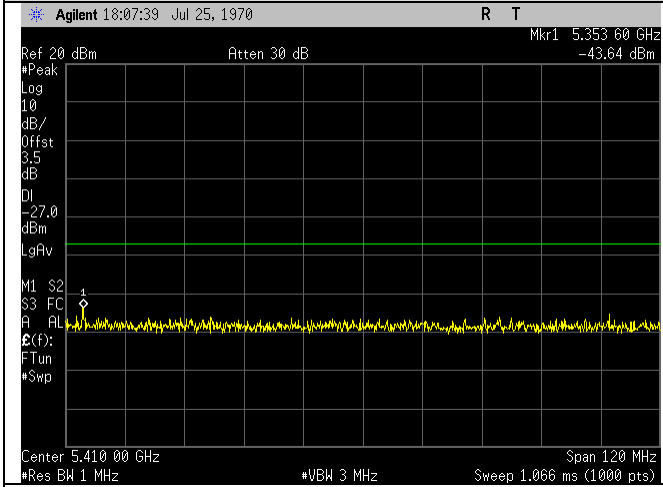


High Channel Band Edge, Ant 1

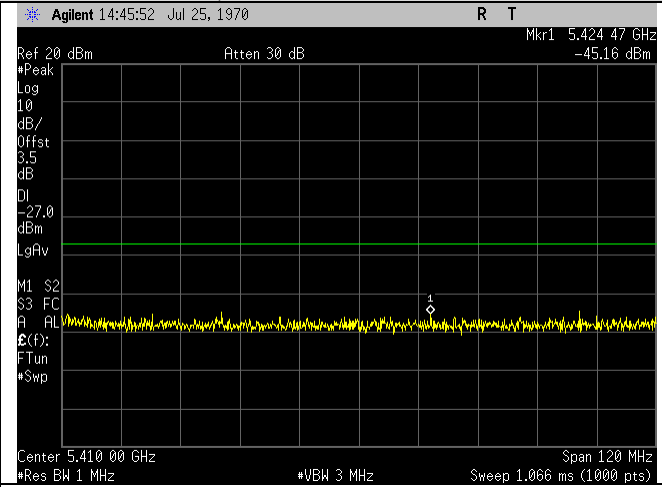
802.11n -27dB Down Conducted Emissions Plots, UNII-2A



802.11n -27dB Down Conducted Emissions Plots, UNII-2A

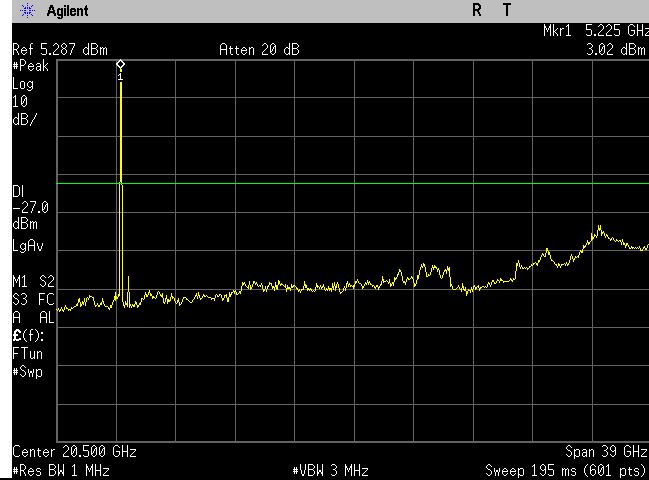


High Channel Band Edge, Ant 0

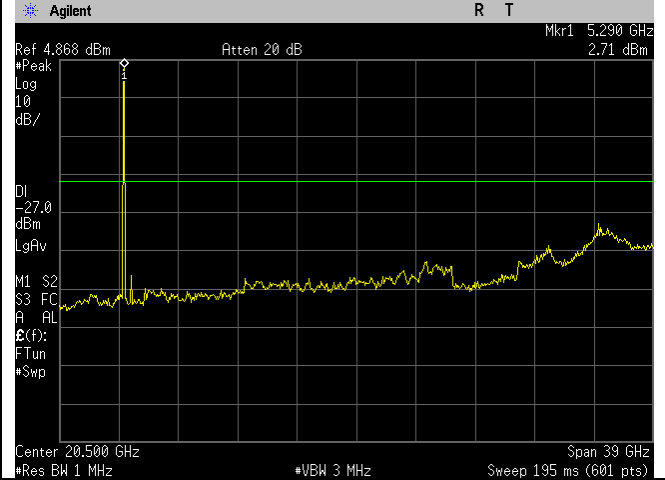


High Channel Band Edge, Ant 1

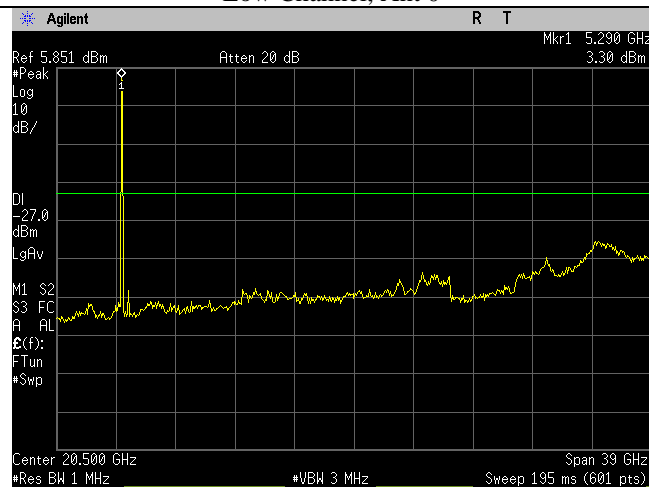
802.11n(40MHz) -27dB Down Conducted Emissions Plots, UNII-2A



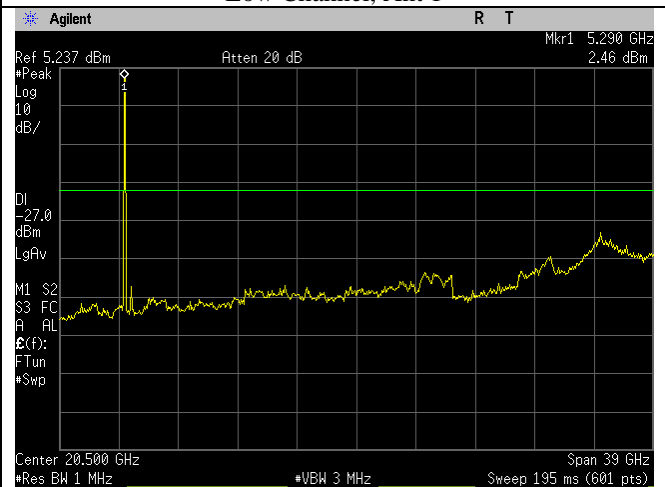
Low Channel, Ant 0



Low Channel, Ant 1

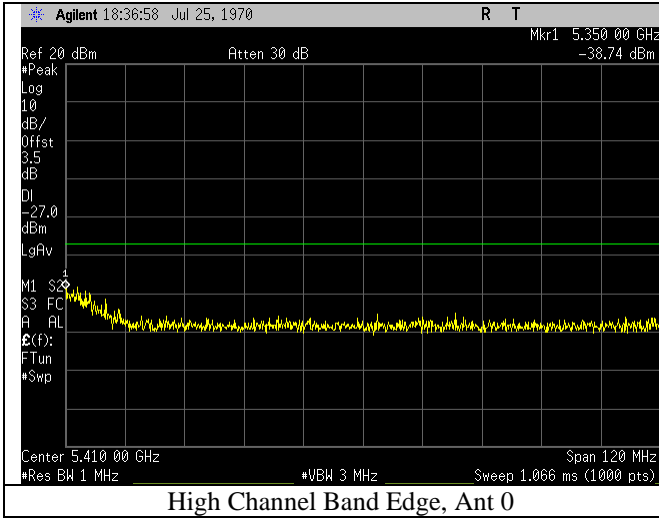


High Channel, Ant 0

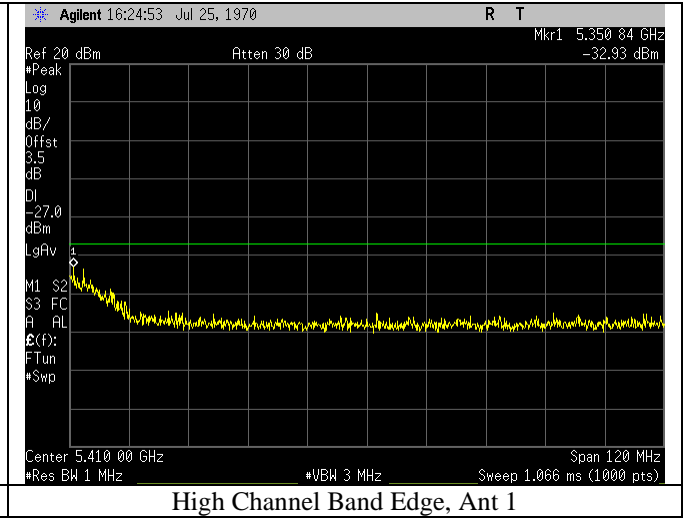


High Channel, Ant 1

802.11n (40MHz) -27dB Down Conducted Emissions Plots, UNII-2A

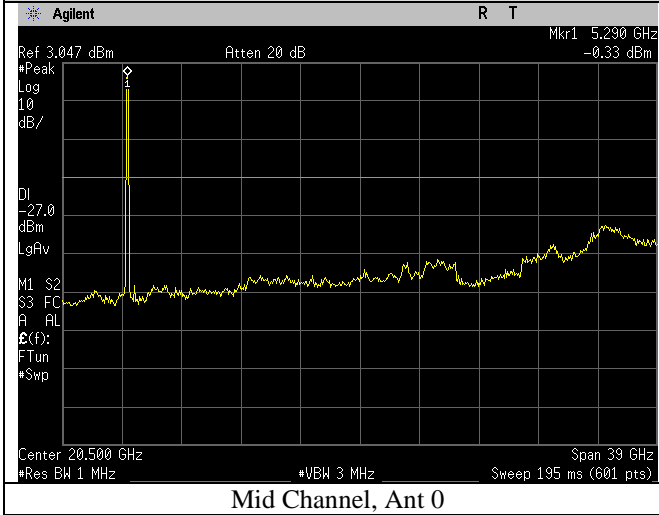


High Channel Band Edge, Ant 0

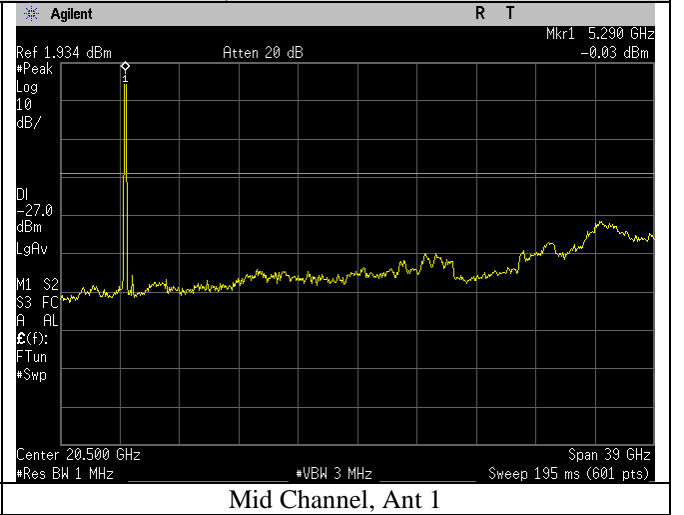


High Channel Band Edge, Ant 1

802.11ac -27dB Down Conducted Emissions Plots, UNII-2A

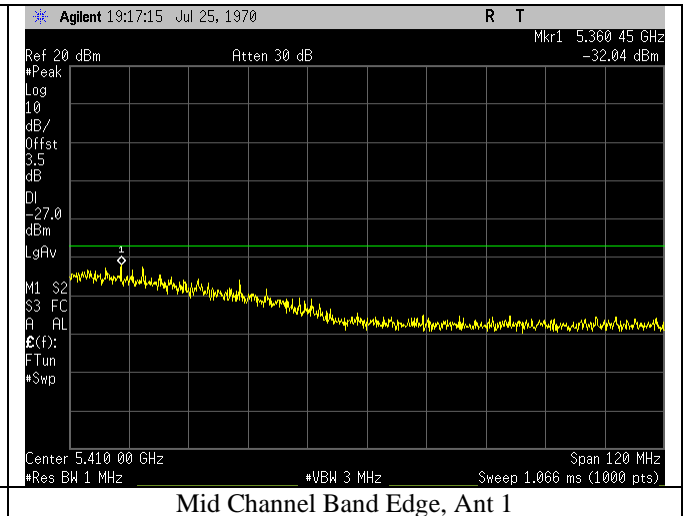
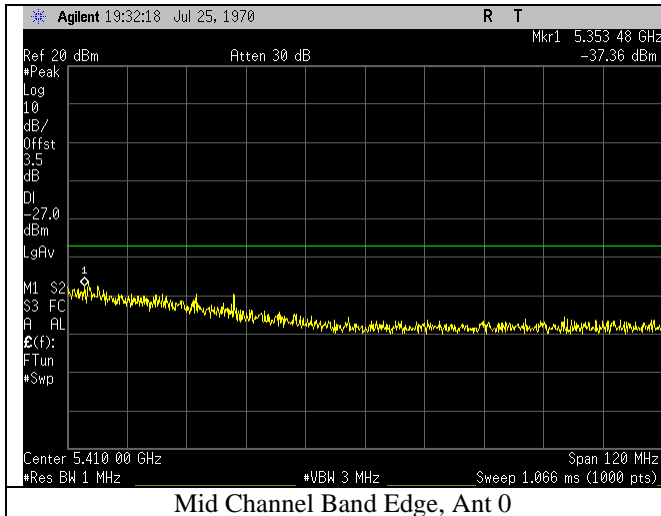


Mid Channel, Ant 0

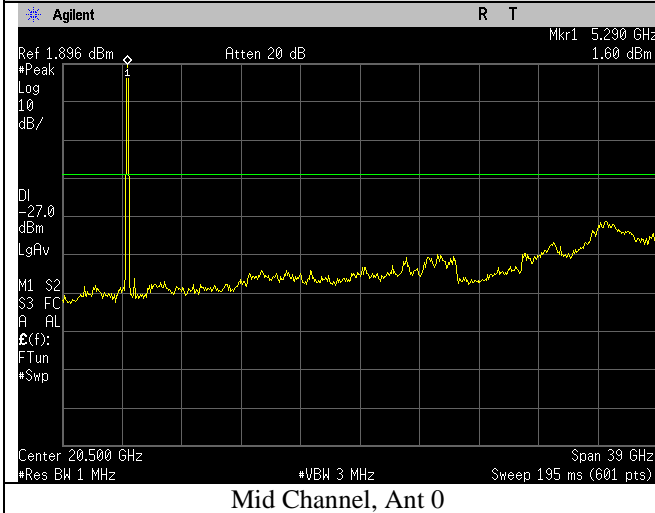


Mid Channel, Ant 1

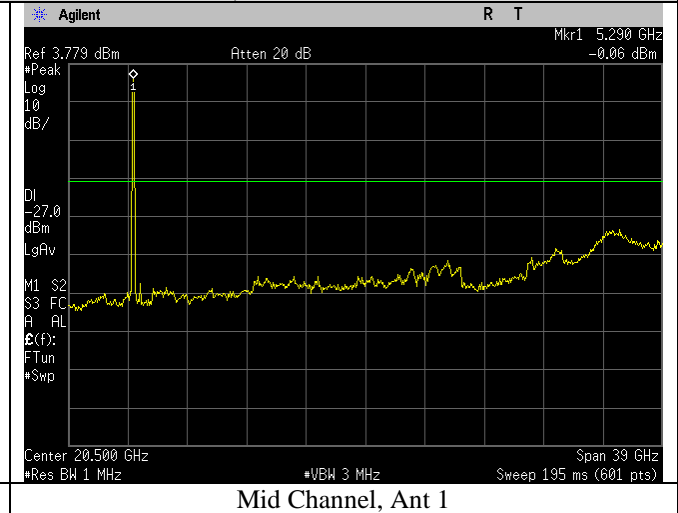
802.11ac -27dB Down Conducted Emissions Plots, UNII-2A



802.11ax -27dB Down Conducted Emissions Plots, UNII-2A

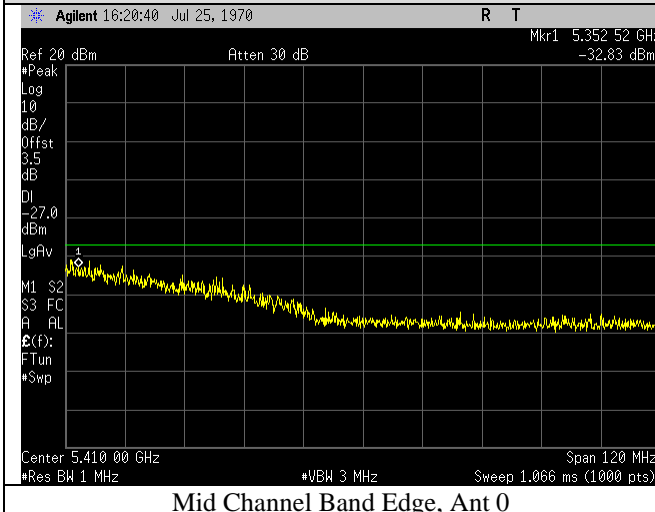


Mid Channel, Ant 0

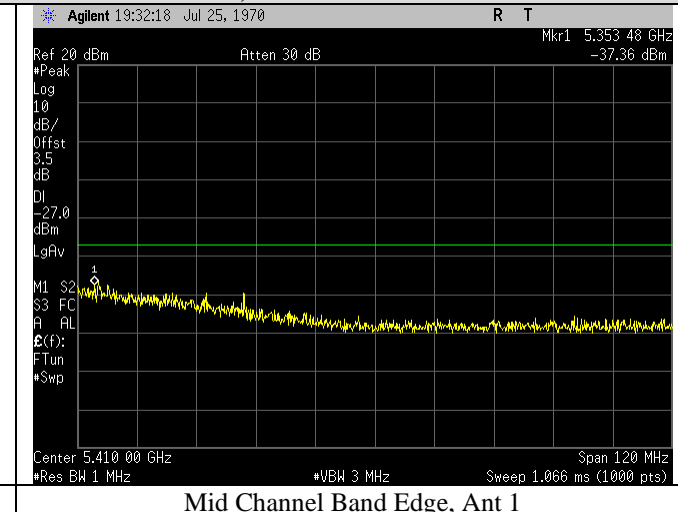


Mid Channel, Ant 1

802.11ax -27dB Down Conducted Emissions Plots, UNII-2A

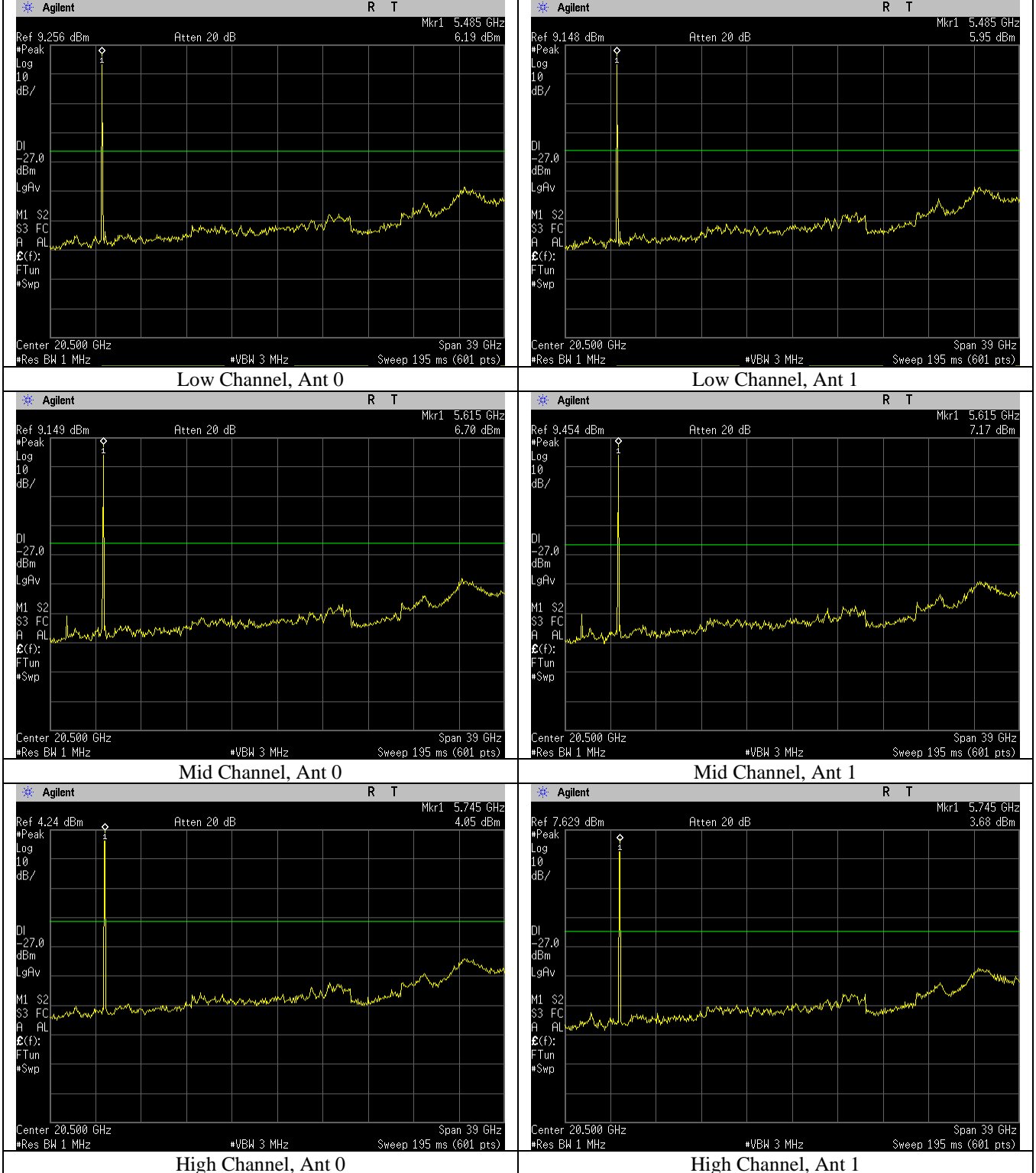


Mid Channel Band Edge, Ant 0

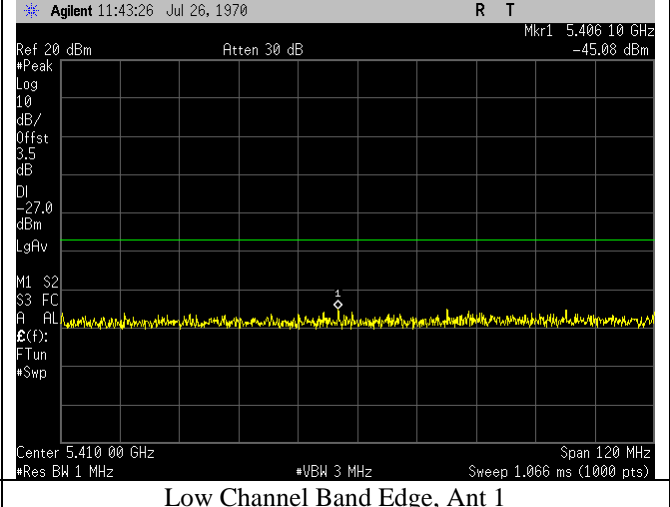
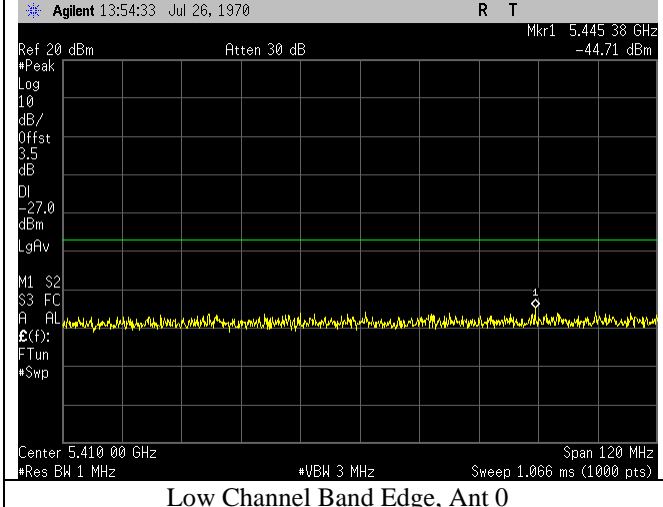


Mid Channel Band Edge, Ant 1

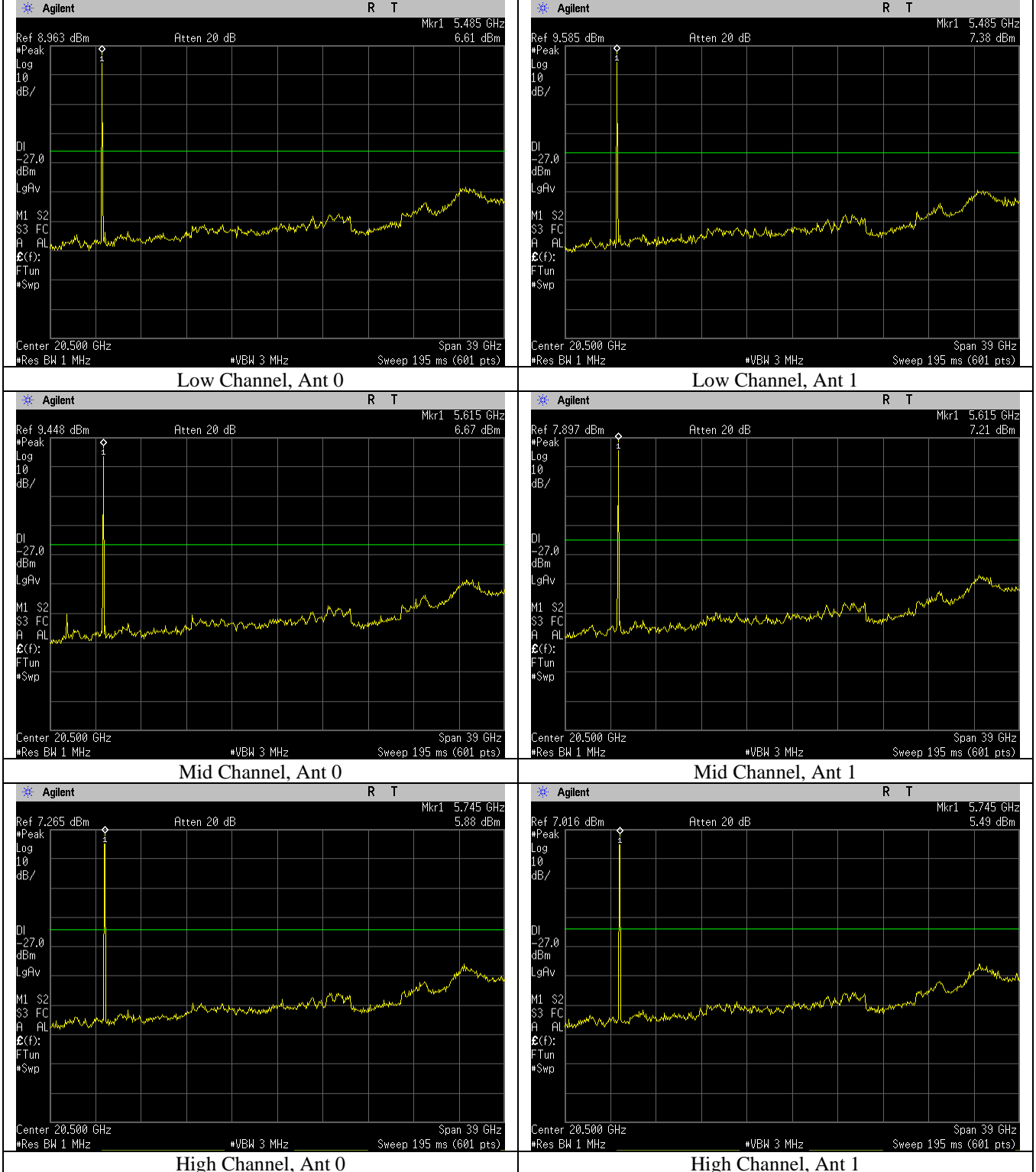
802.11a -27dB Down Conducted Emissions Plots, UNII-2C



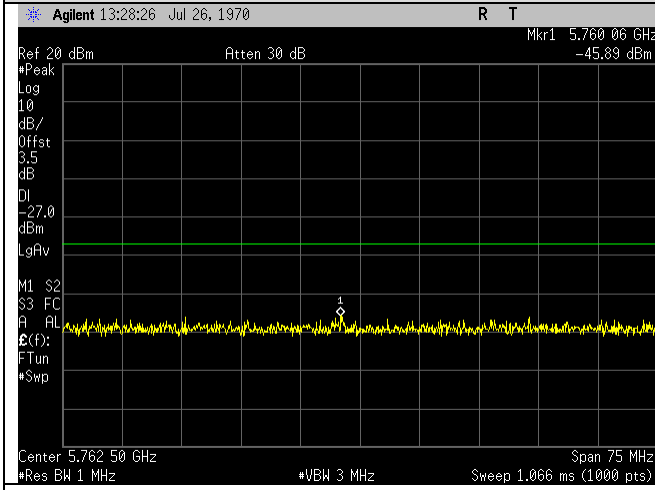
802.11a -27dB Down Conducted Emissions Plots, UNII-2C



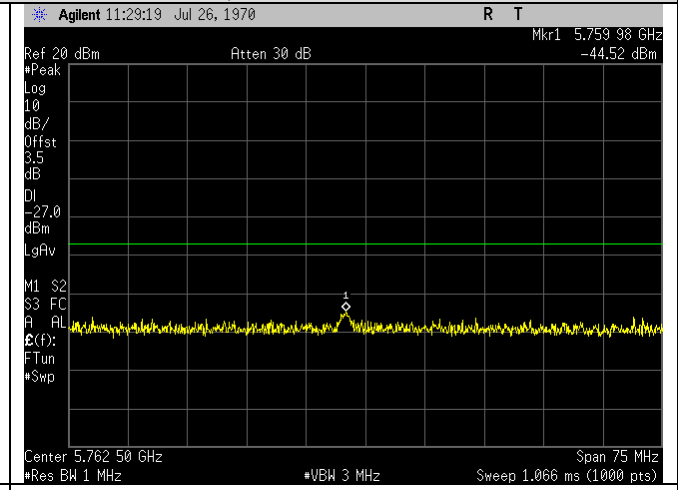
802.11n -27dB Down Conducted Emissions Plots, UNII-2C



802.11n -27dB Down Conducted Emissions Plots, UNII-2C

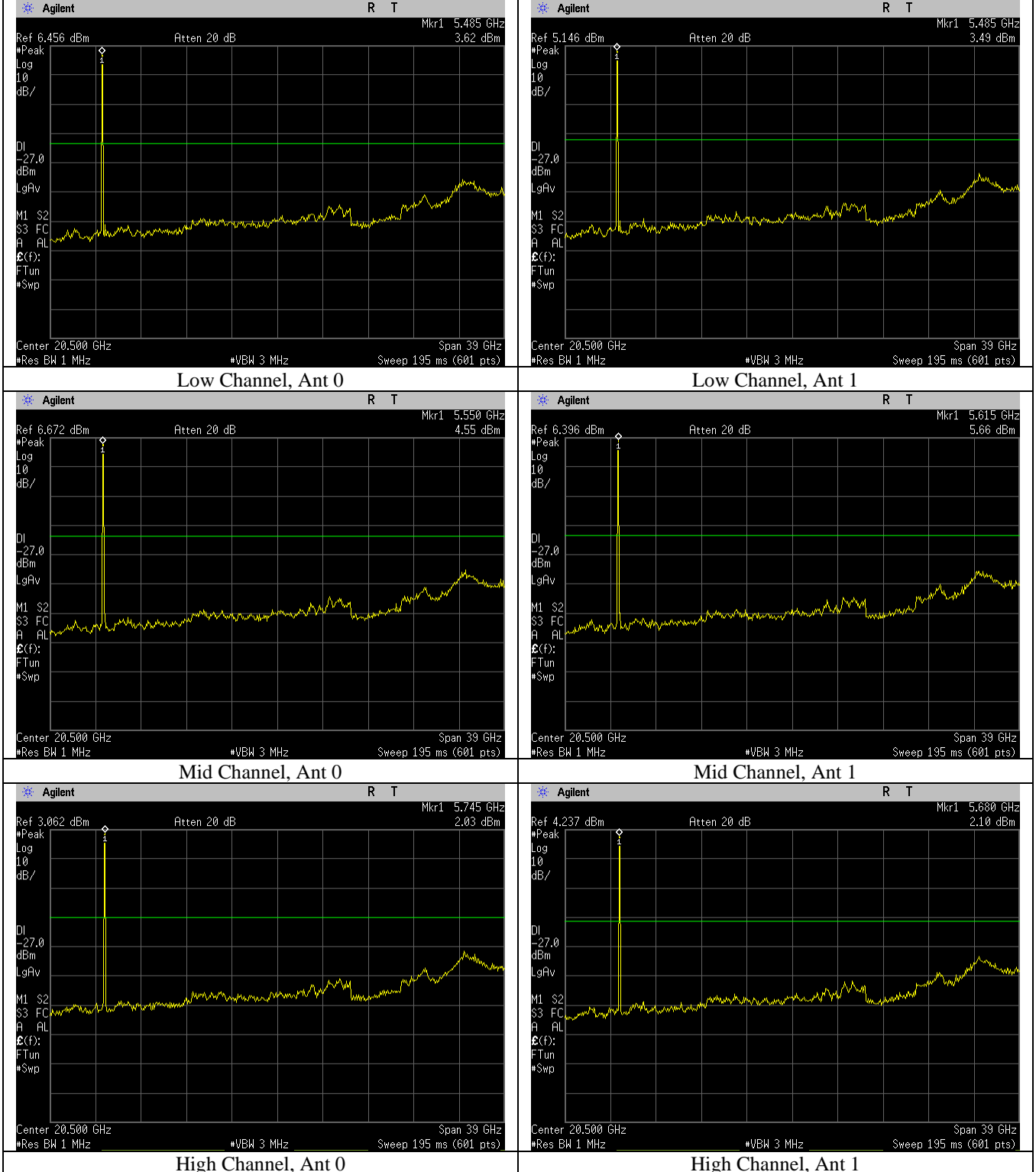


Low Channel Band Edge, Ant 0

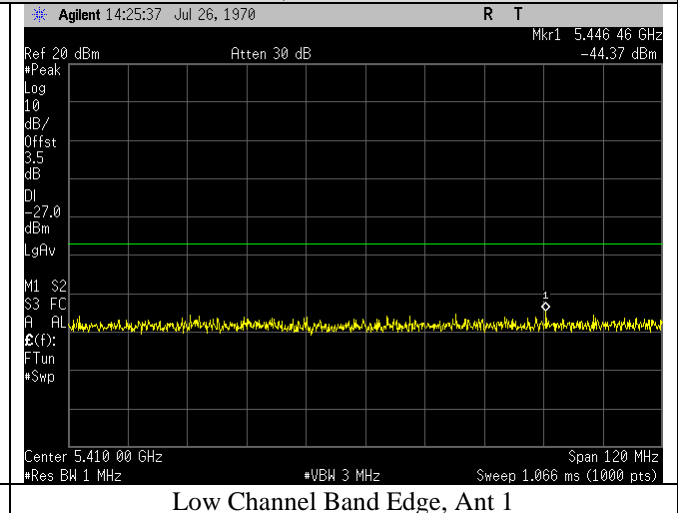
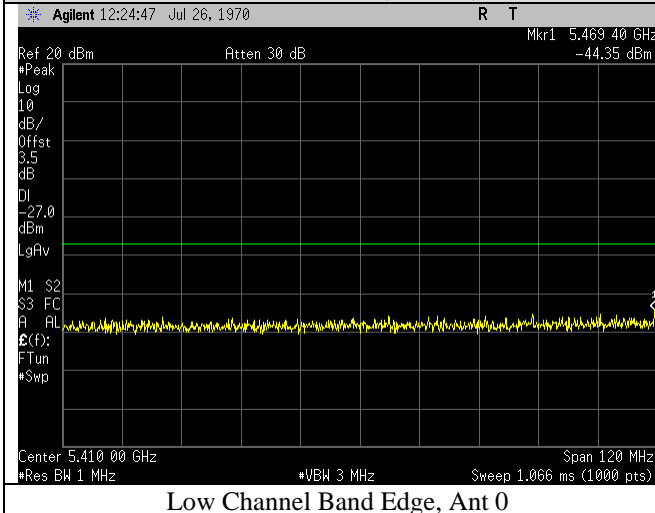


Low Channel Band Edge, Ant 1

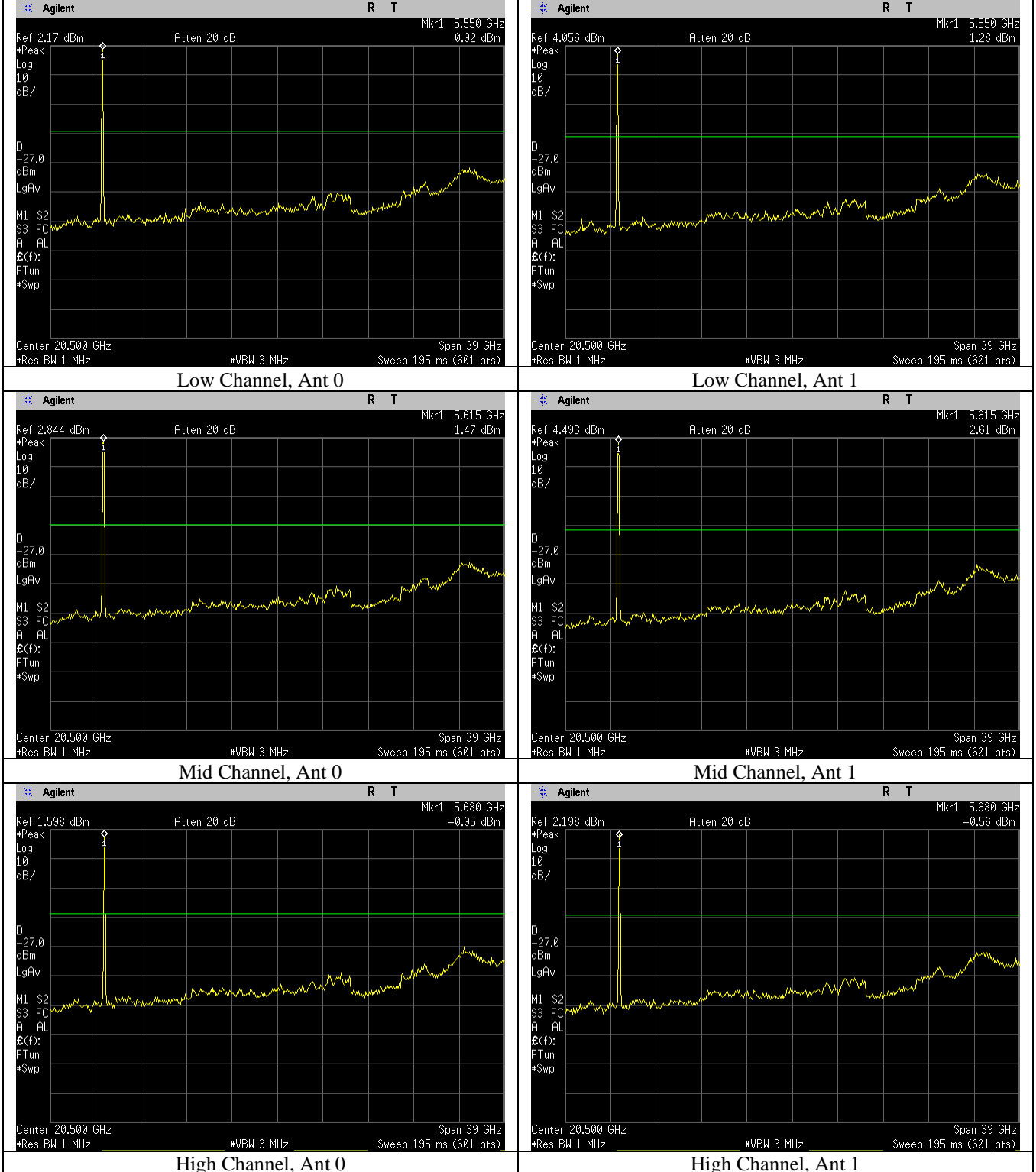
802.11n(40MHz) -27dB Down Conducted Emissions Plots, UNII-2C



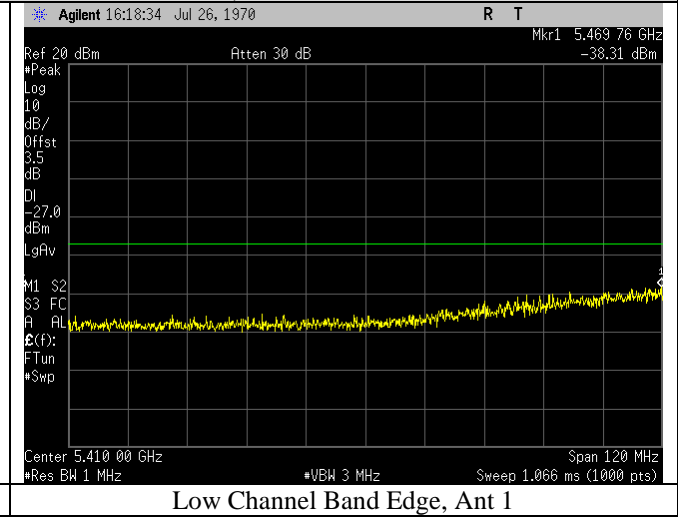
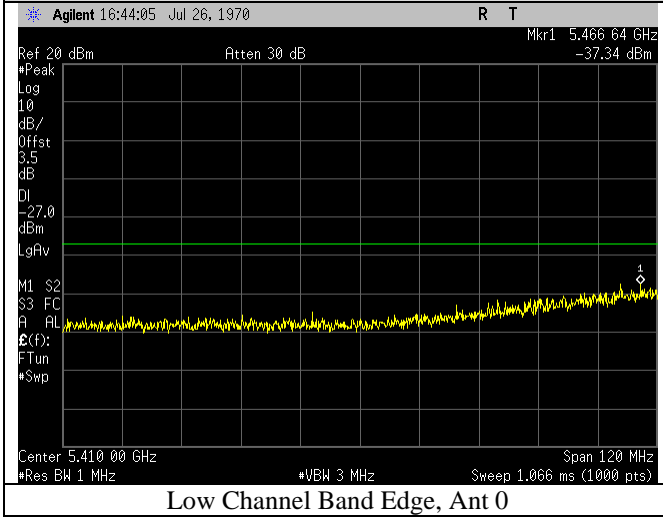
802.11n (40MHz) -27dB Down Conducted Emissions Plots, UNII-2C



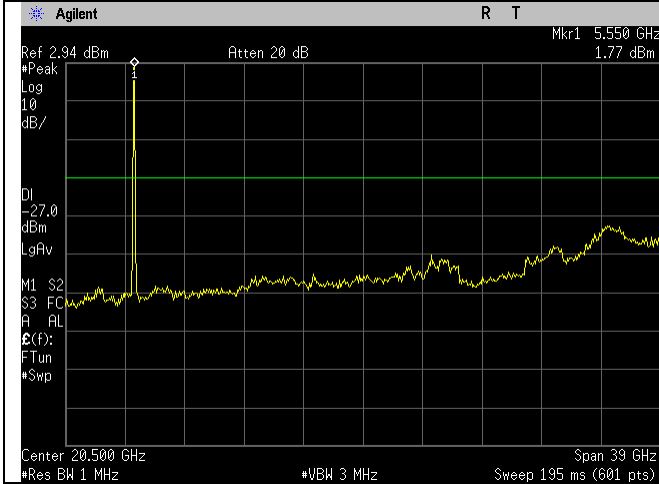
802.11ac -27dB Down Conducted Emissions Plots, UNII-2C



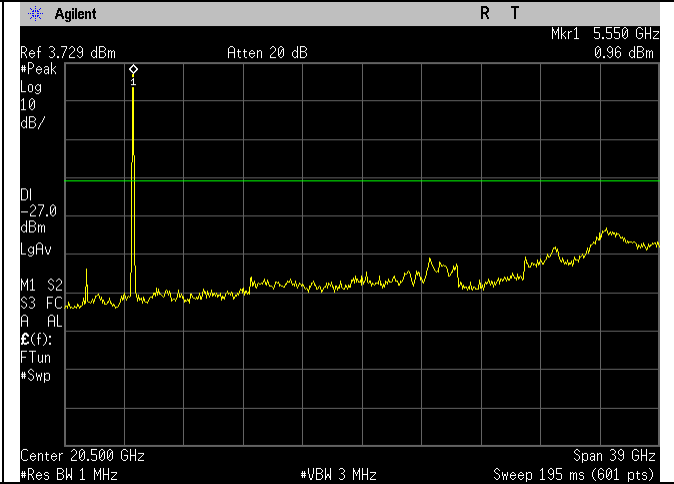
802.11ac -27dB Down Conducted Emissions Plots, UNII-2C



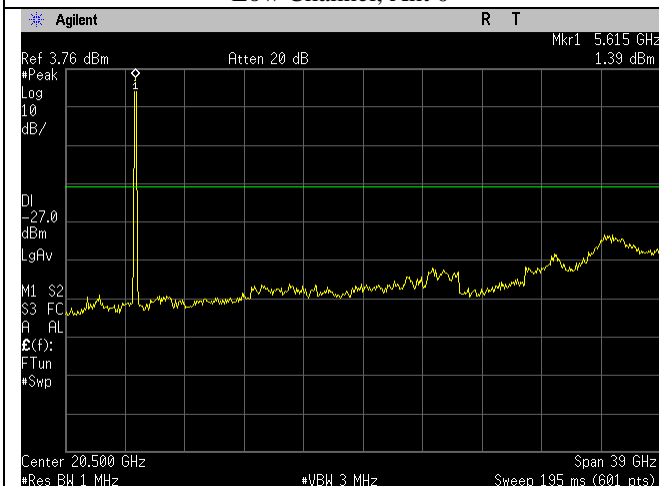
802.11ax -27dB Down Conducted Emissions Plots, UNII-2C



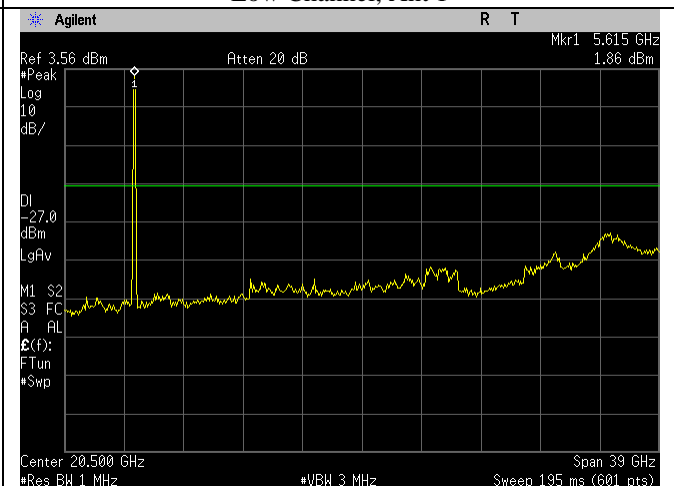
Low Channel, Ant 0



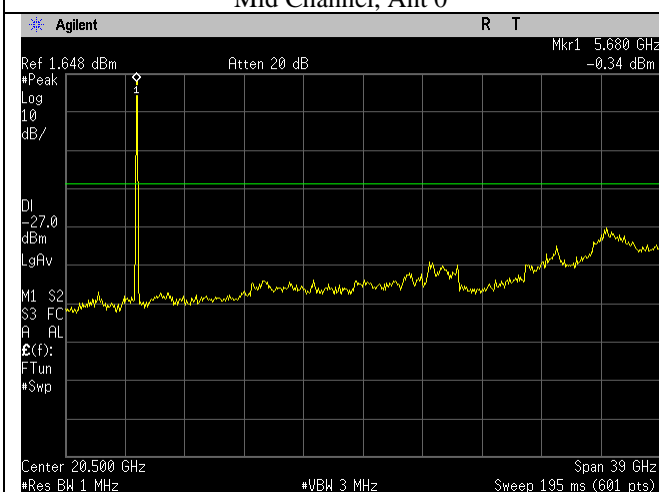
Low Channel, Ant 1



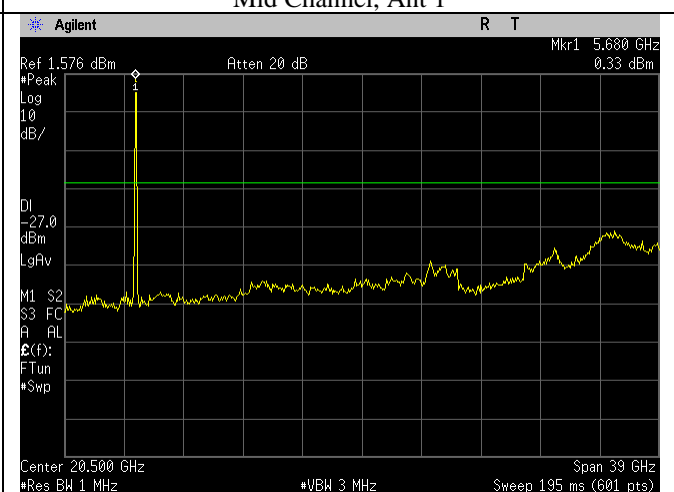
Mid Channel, Ant 0



Mid Channel, Ant 1

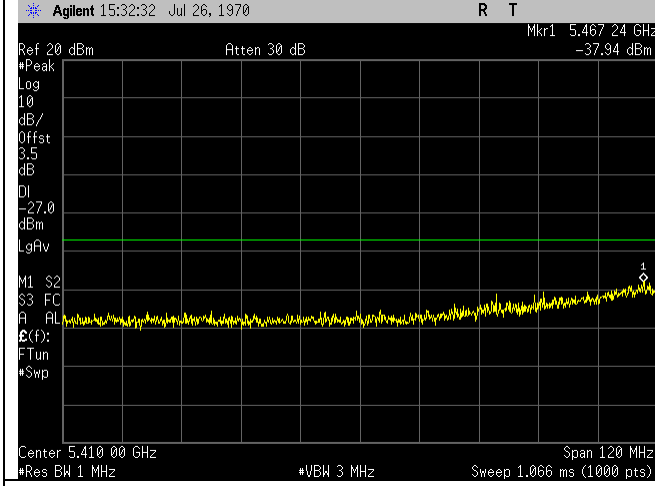


High Channel, Ant 0

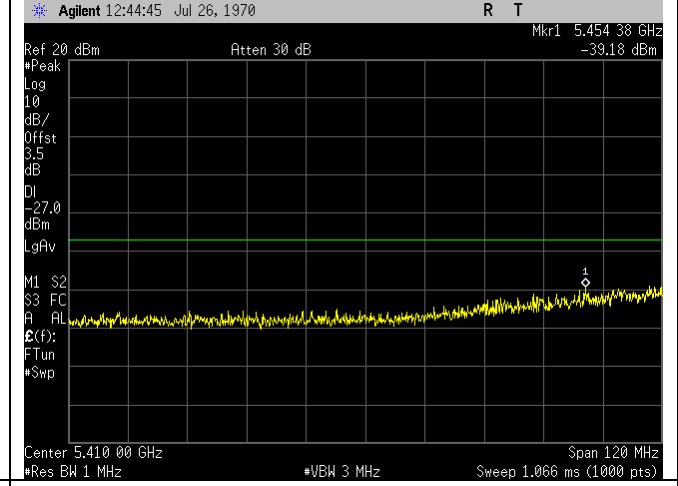


High Channel, Ant 1

802.11ax -27dB Down Conducted Emissions Plots, UNII-2C

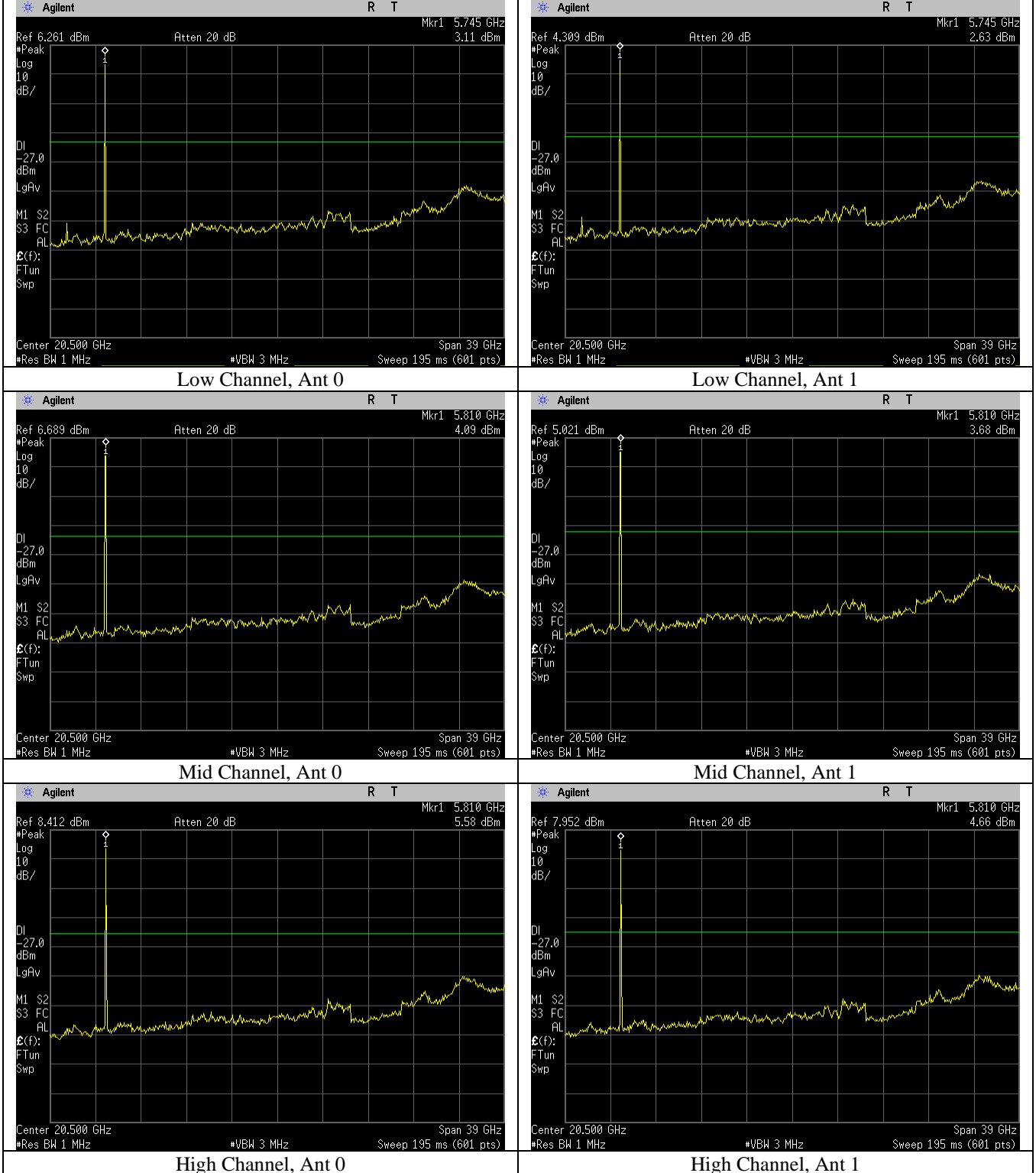


Low Channel Band Edge, Ant 0

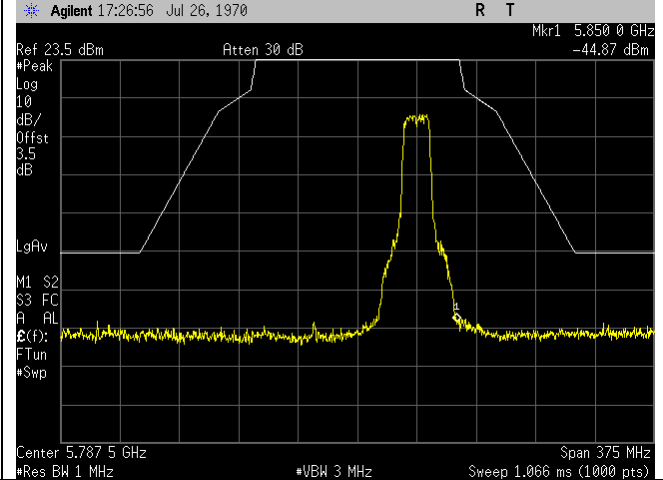
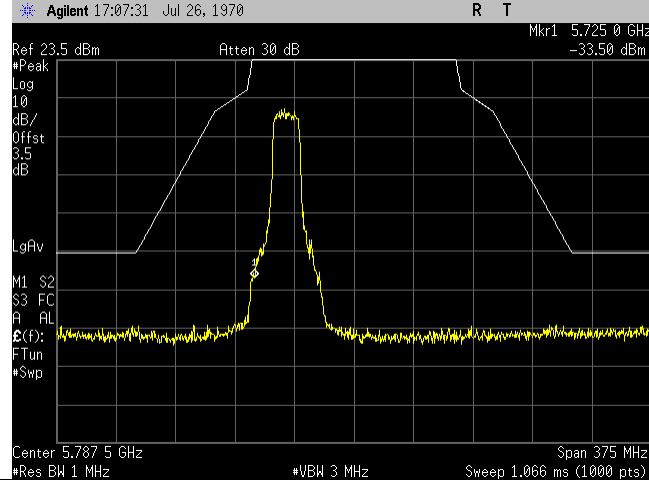


Low Channel Band Edge, Ant 1

802.11a -27dB Down Conducted Emissions Plots, UNII-3

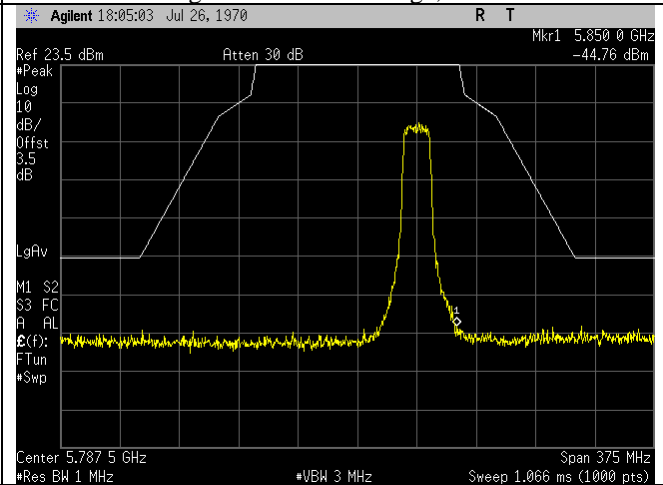
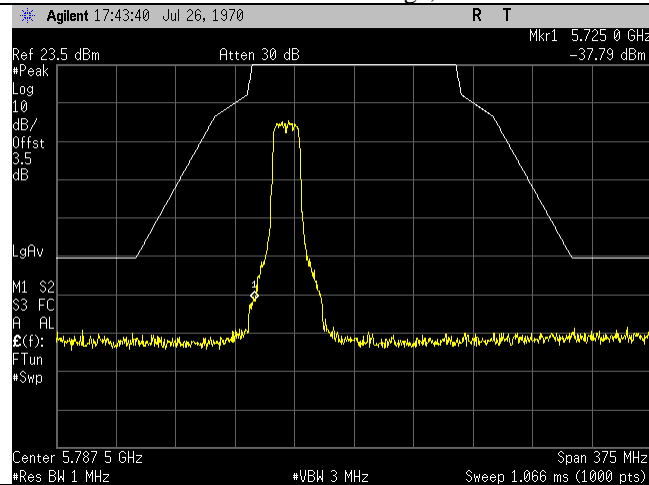


802.11a -27dB Down Conducted Emissions Plots, UNII-3



Low Channel Band Edge, Ant 0

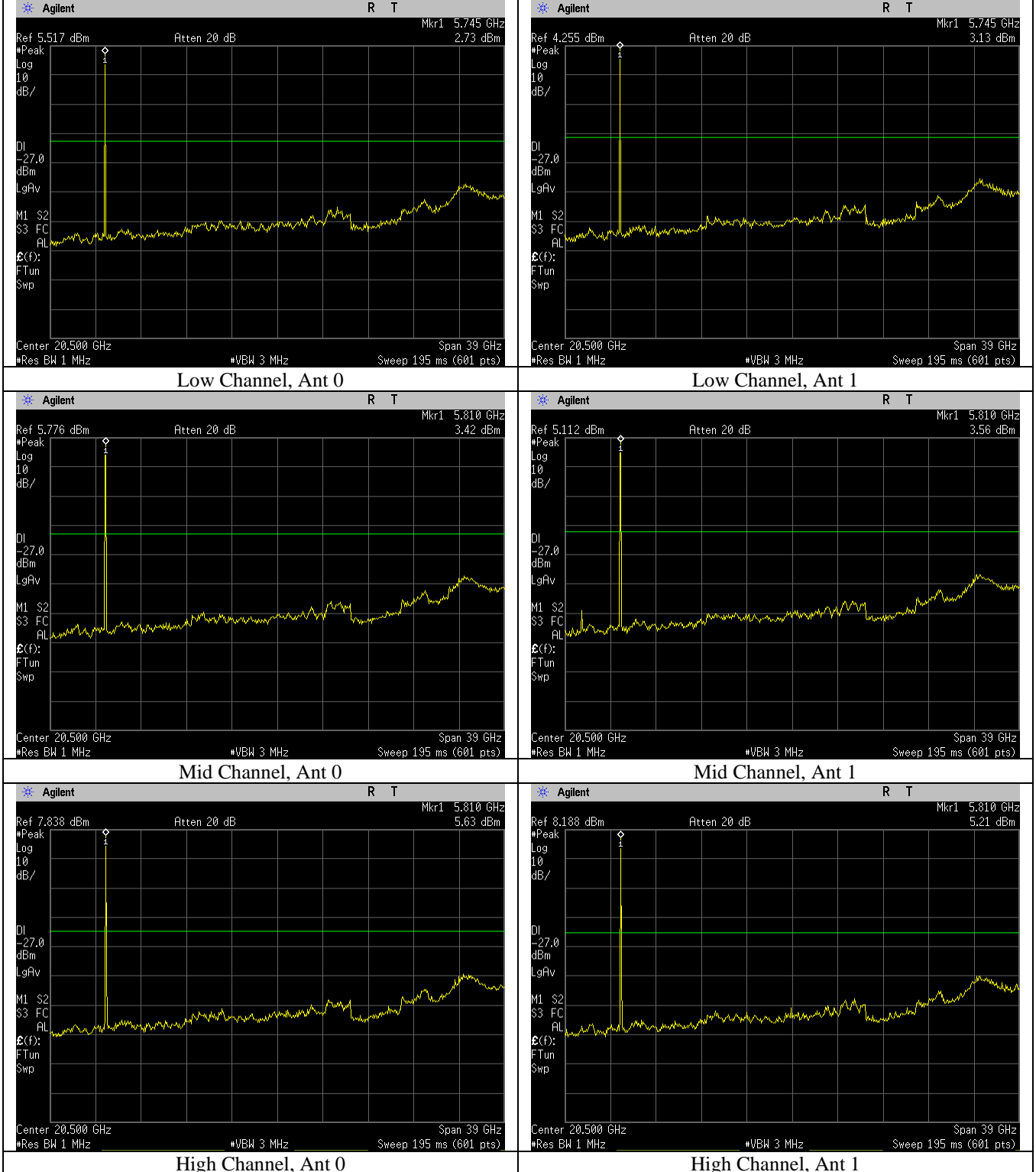
High Channel Band Edge, Ant 0



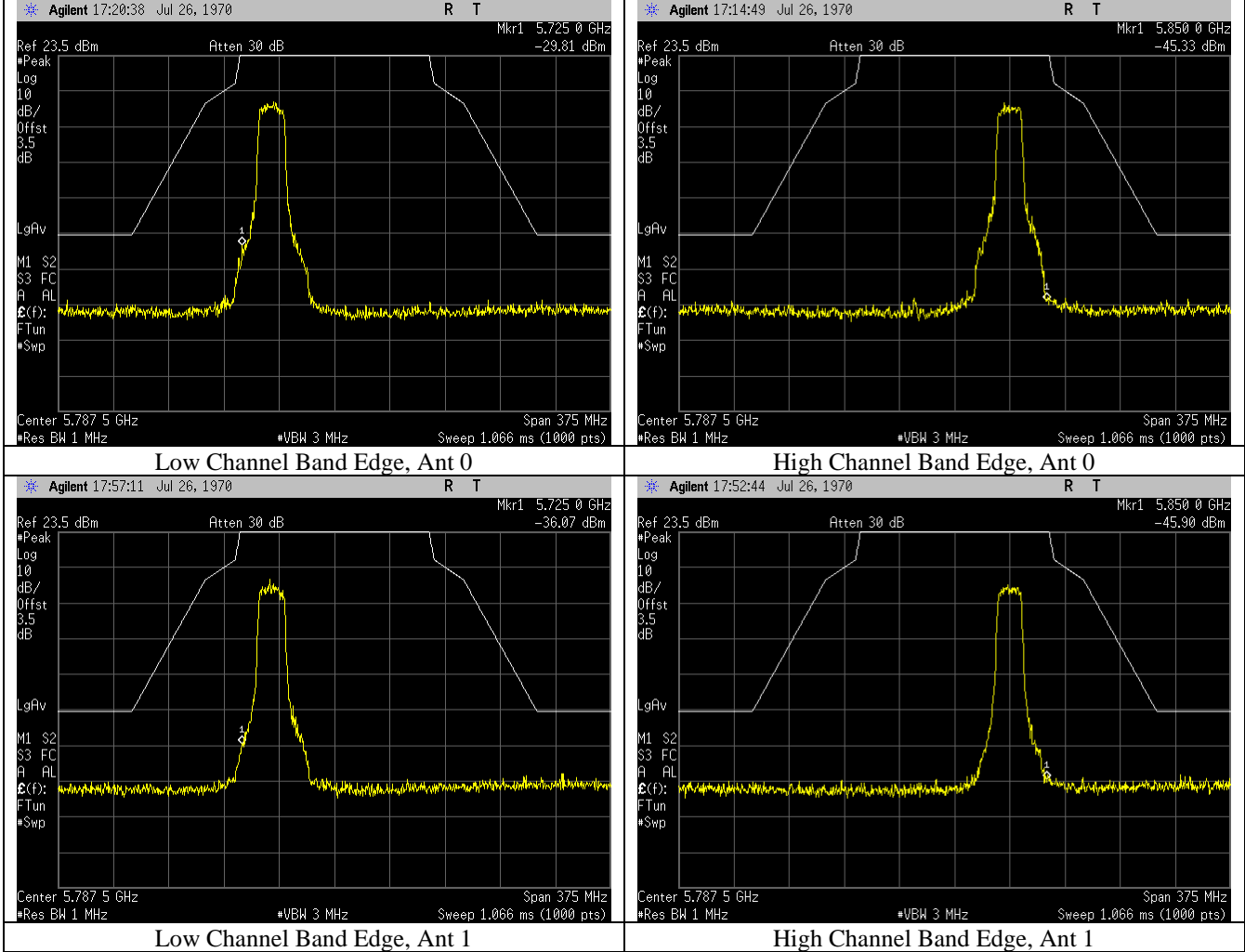
Low Channel Band Edge, Ant 1

High Channel Band Edge, Ant 1

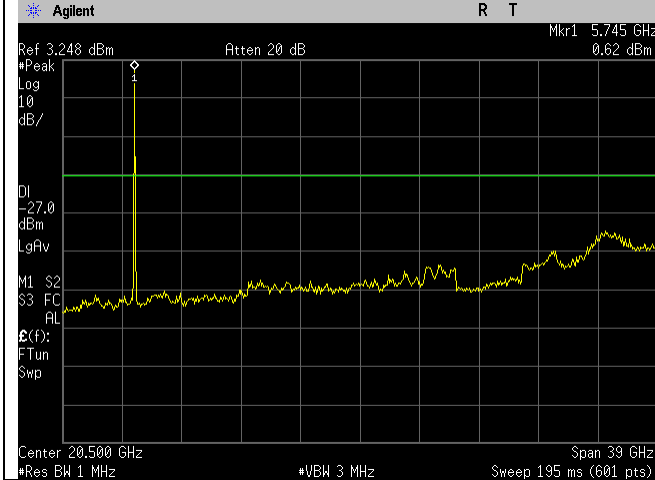
802.11n -27dB Down Conducted Emissions Plots, UNII-3



802.11n -27dB Down Conducted Emissions Plots, UNII-3



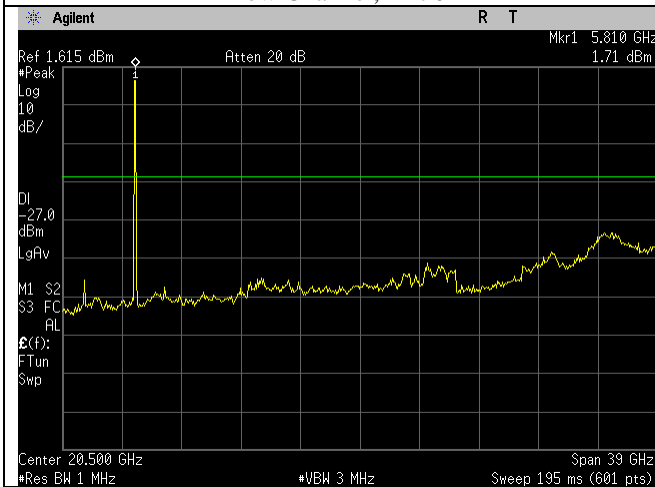
802.11n(40MHz) -27dB Down Conducted Emissions Plots, UNII-3



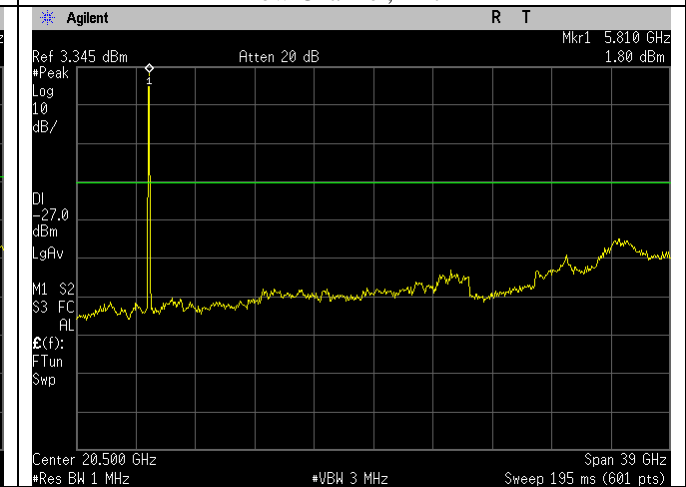
Low Channel, Ant 0



Low Channel, Ant 1

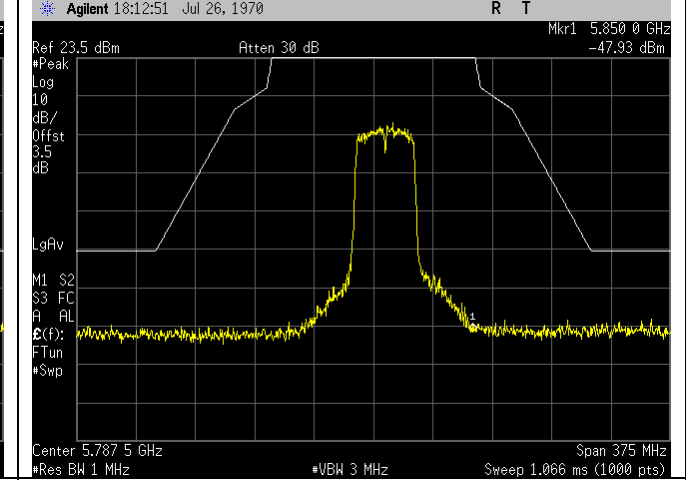
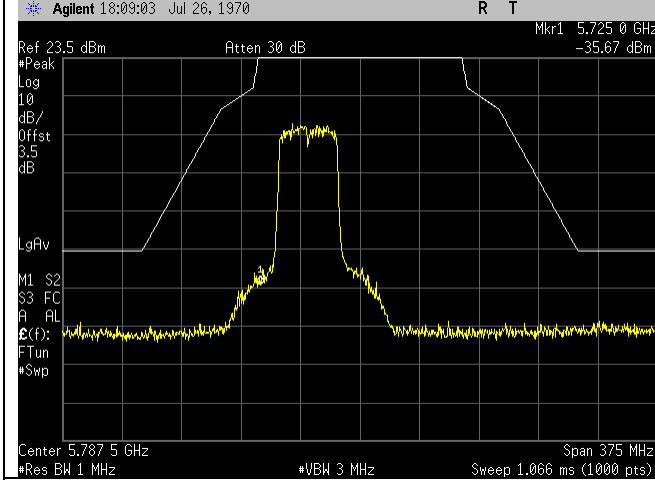


High Channel, Ant 0



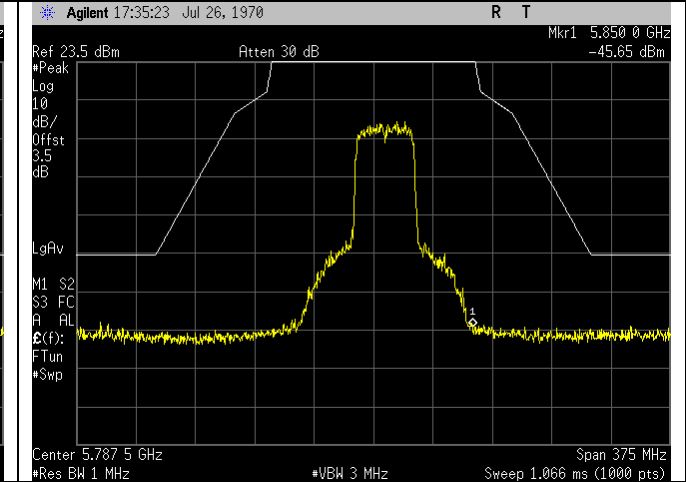
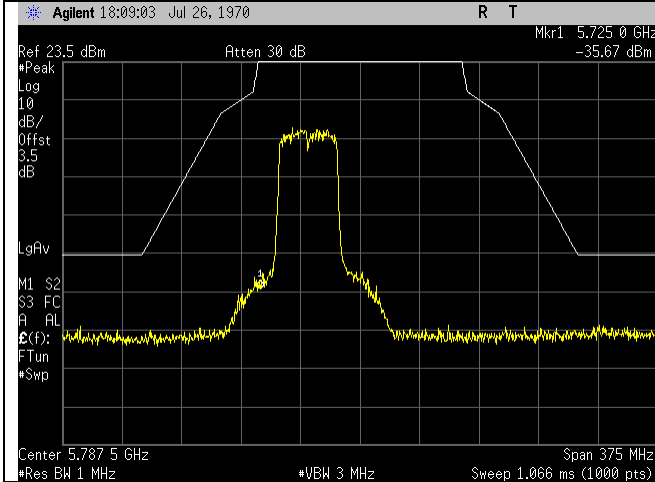
High Channel, Ant 1

802.11n (40MHz) -27dB Down Conducted Emissions Plots, UNII-3



Low Channel Band Edge, Ant 0

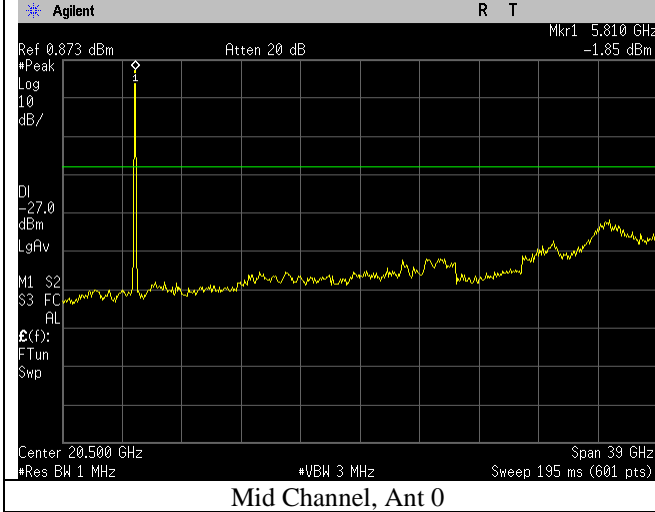
High Channel Band Edge, Ant 0



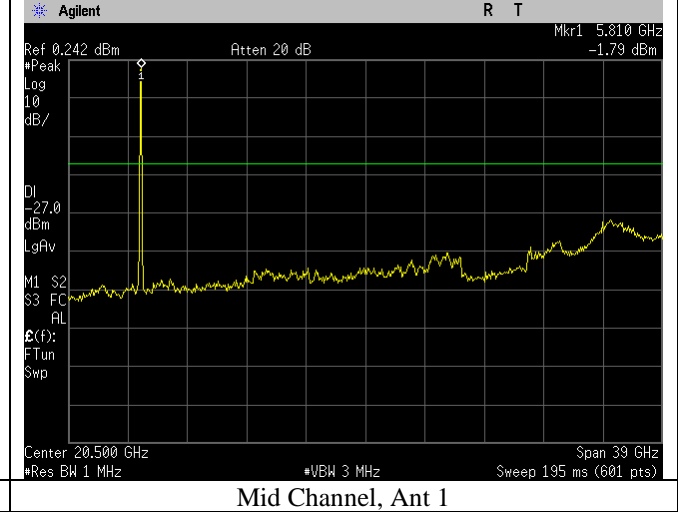
Low Channel Band Edge, Ant 1

High Channel Band Edge, Ant 1

802.11ac -27dB Down Conducted Emissions Plots, UNII-3

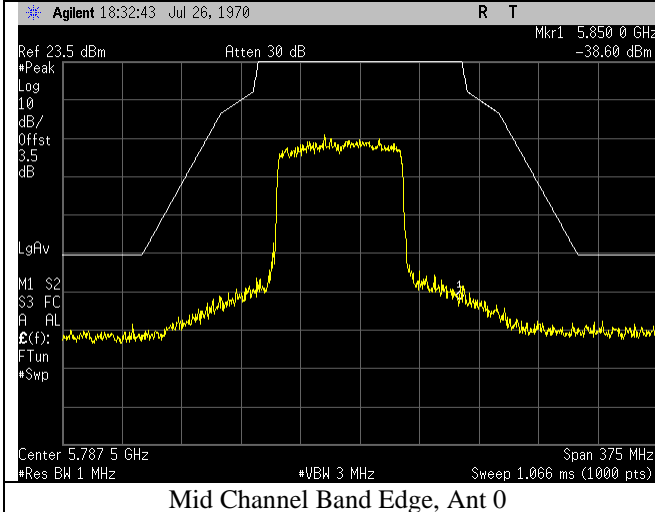


Mid Channel, Ant 0

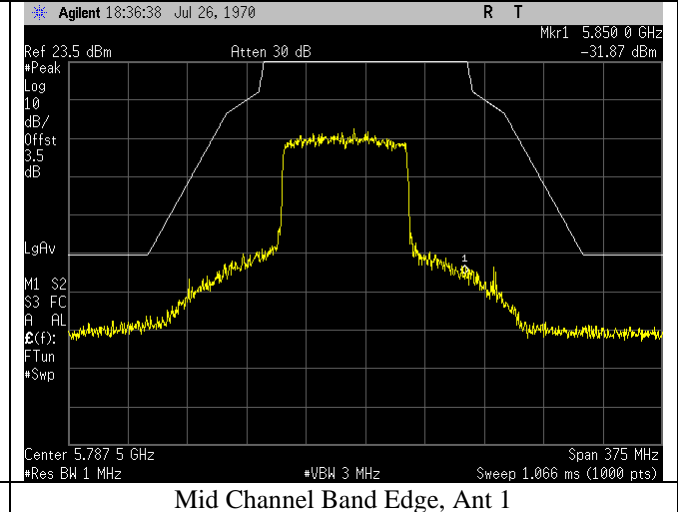


Mid Channel, Ant 1

802.11ac -27dB Down Conducted Emissions Plots, UNII-3

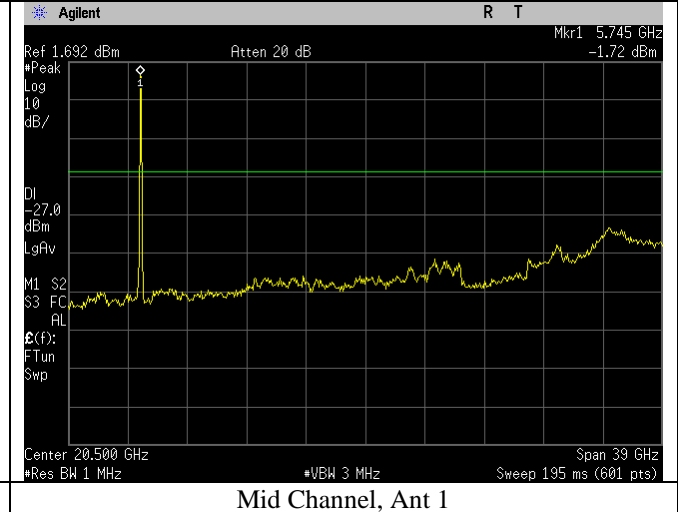
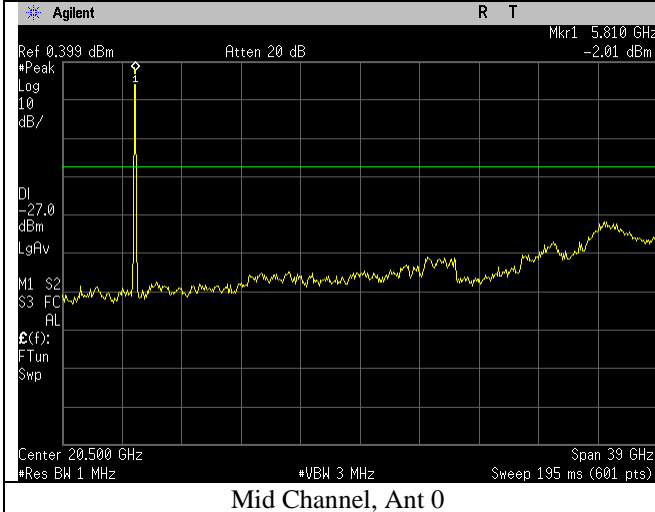


Mid Channel Band Edge, Ant 0

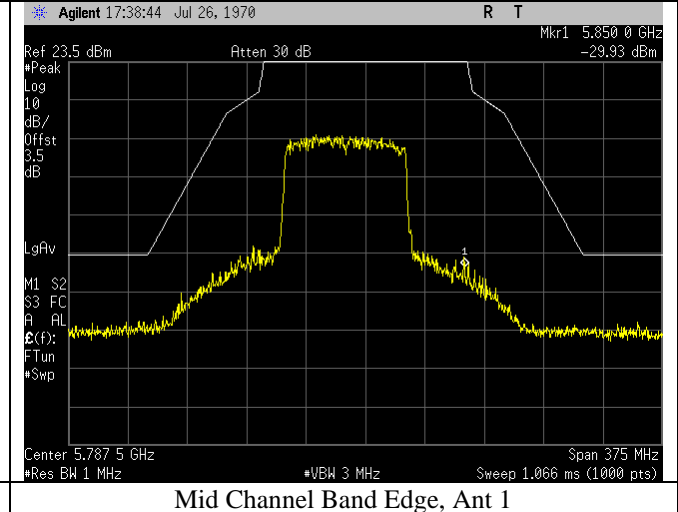
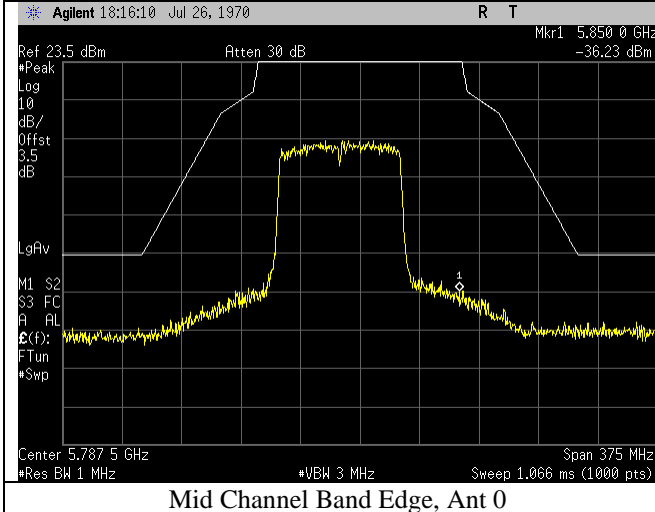


Mid Channel Band Edge, Ant 1

802.11ax -27dB Down Conducted Emissions Plots, UNII-3

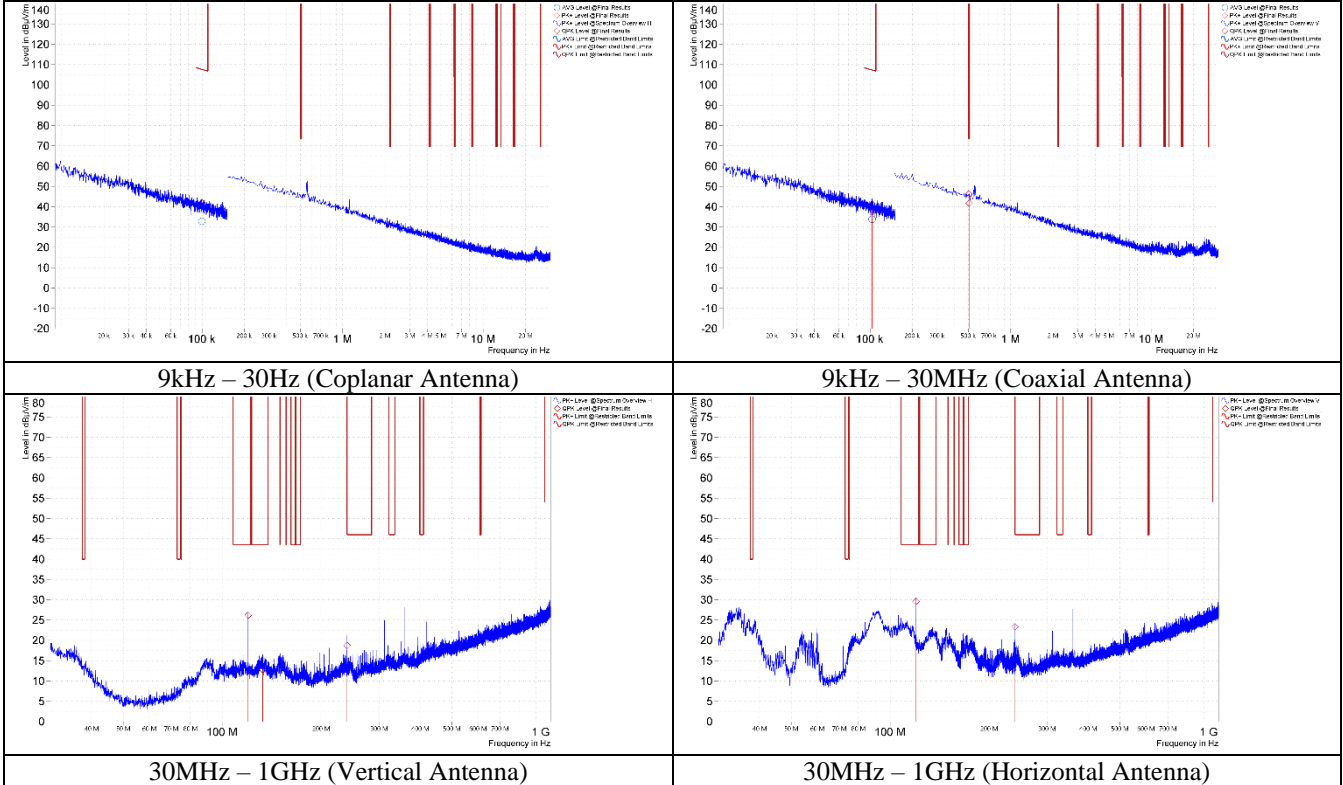


802.11ax -27dB Down Conducted Emissions Plots, UNII-3

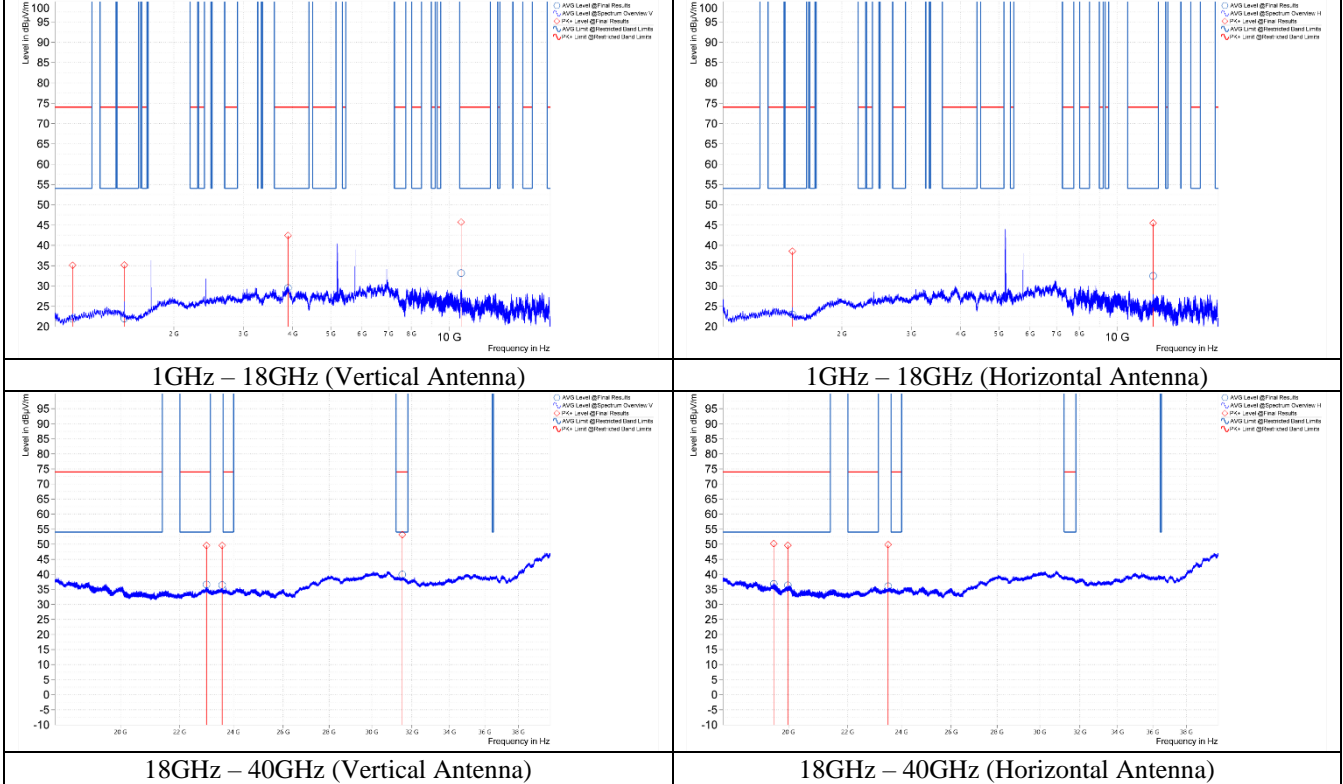


V. Restricted Band Emissions Plots

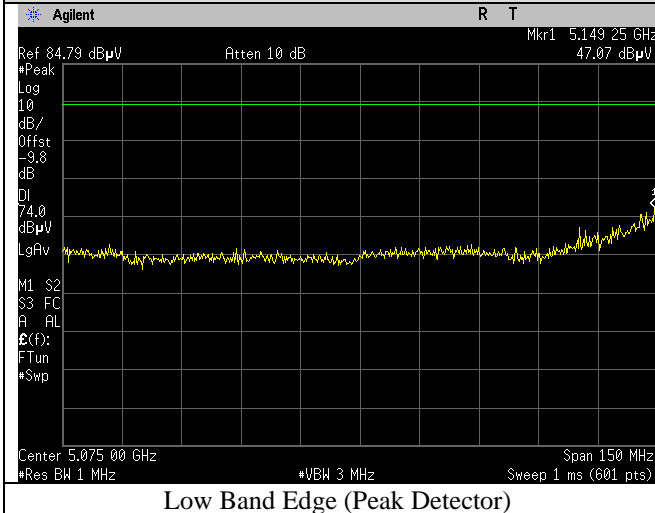
Worst Case Restricted Band Spurious Emission Plots, UNII-1



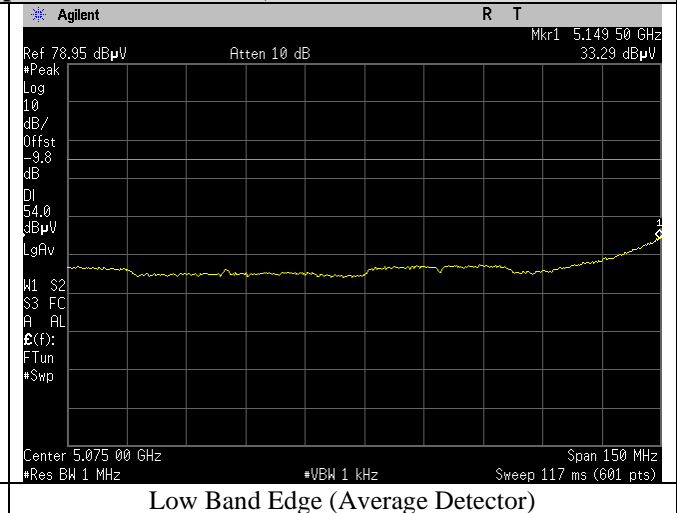
Worst Case Restricted Band Spurious Emission Plots, UNII-1



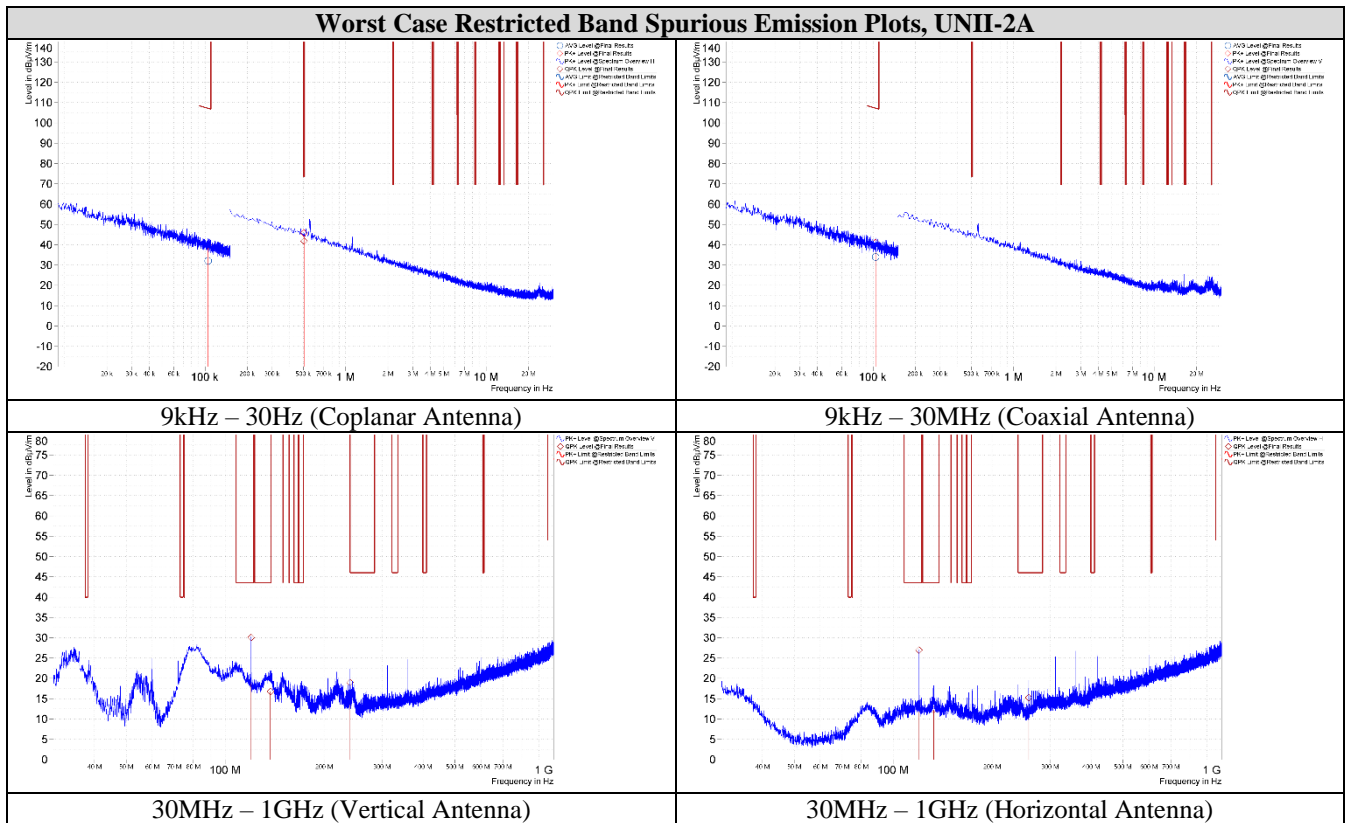
Worst Case Restricted Band Spurious Emission Plots, UNII-1



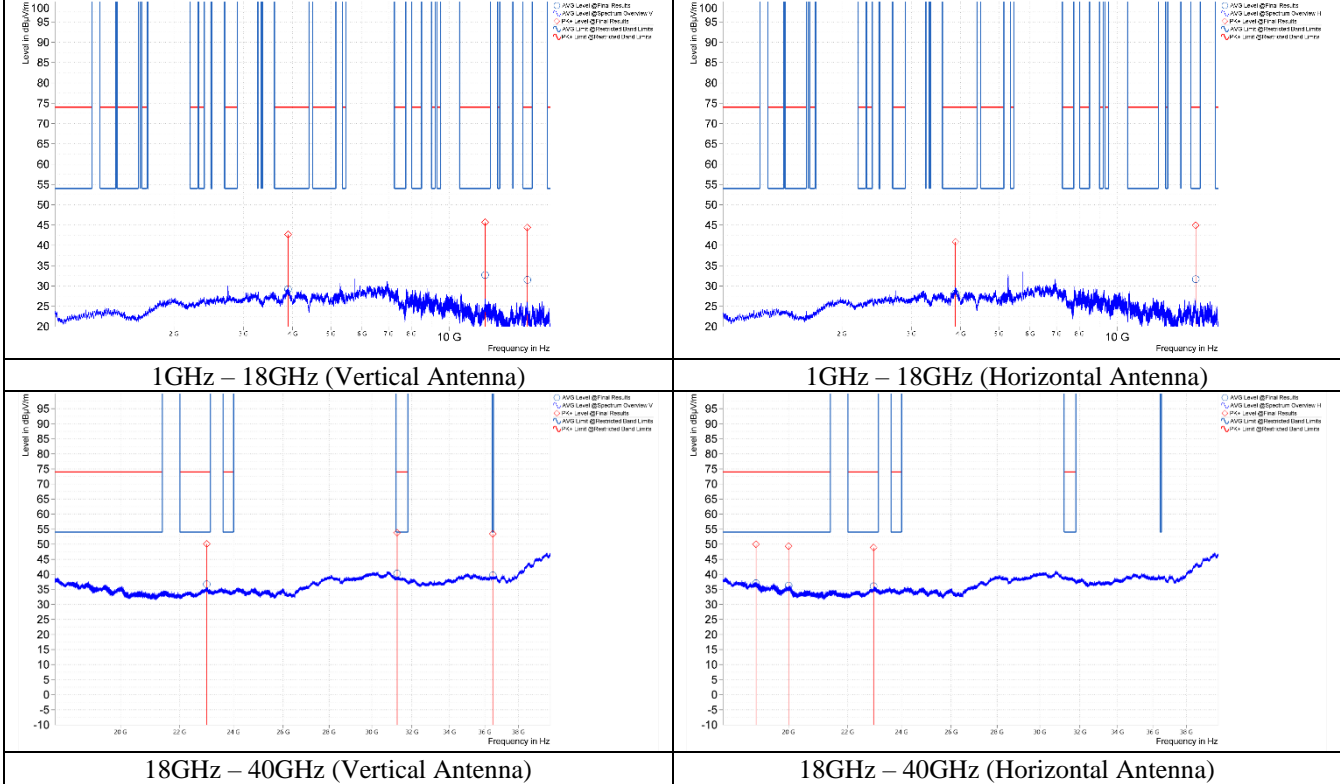
Low Band Edge (Peak Detector)



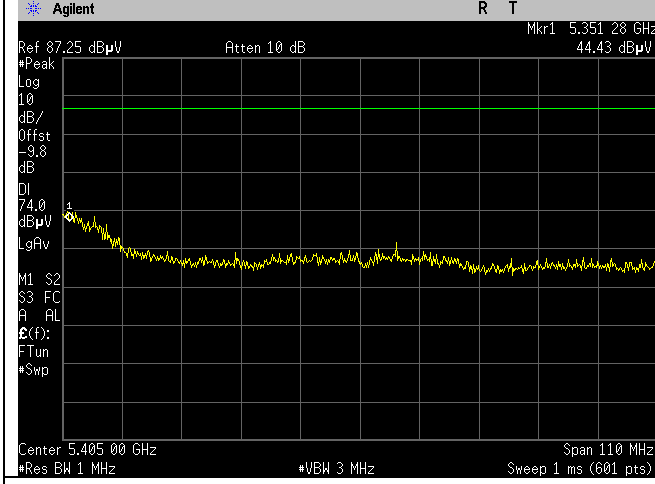
Low Band Edge (Average Detector)



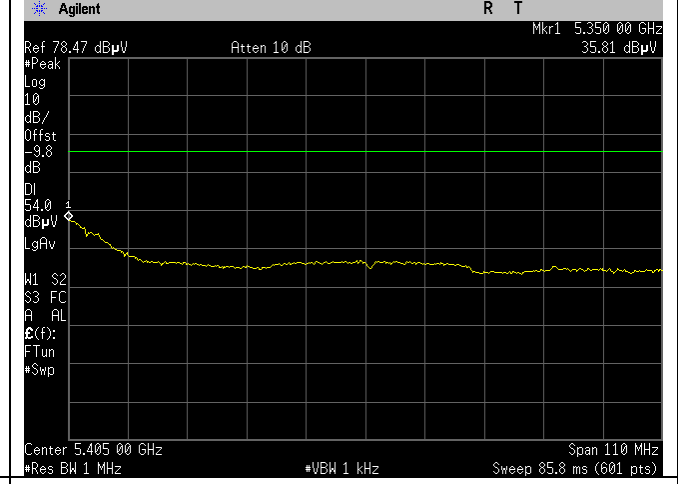
Worst Case Restricted Band Spurious Emission Plots, UNII-2A



Worst Case Restricted Band Spurious Emission Plots, UNII-2A

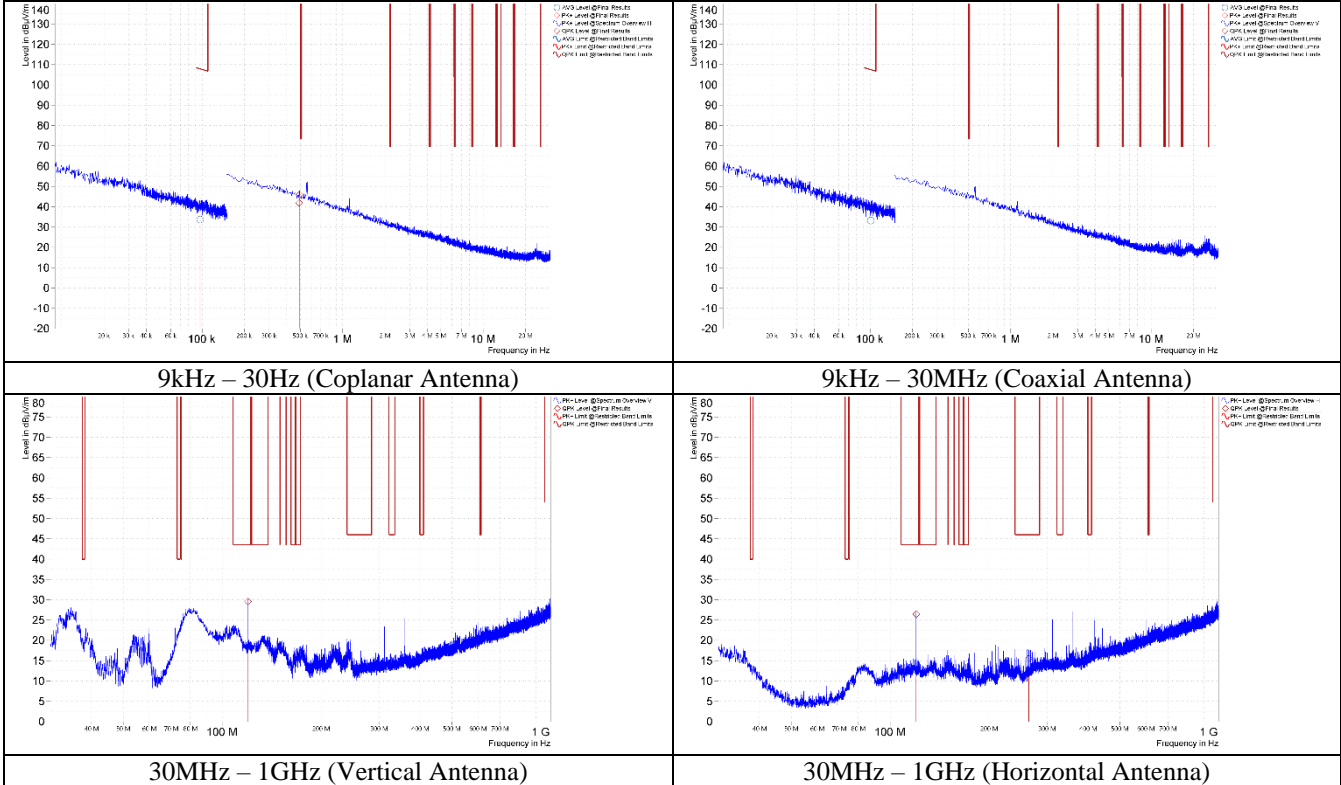


Upper Band Edge (Vertical Antenna)

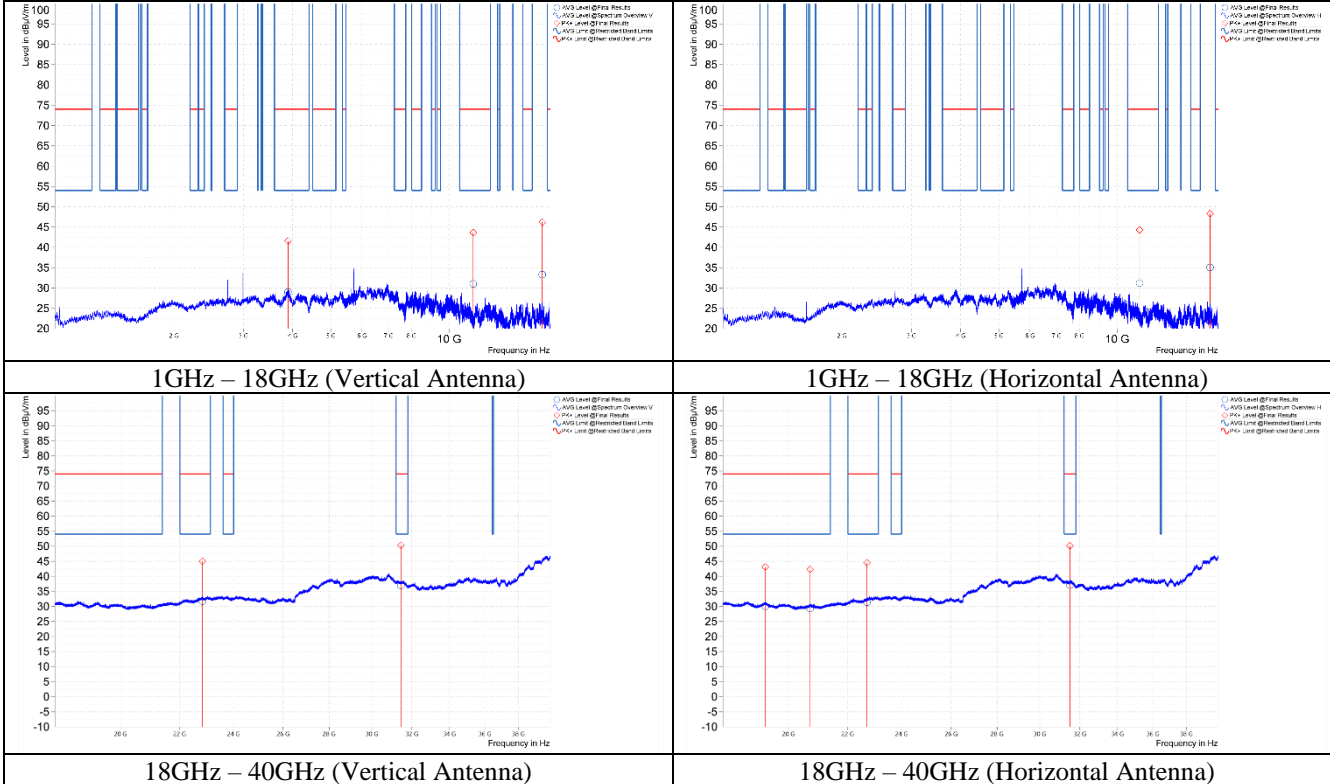


Upper Band Edge (Horizontal Band Edge)

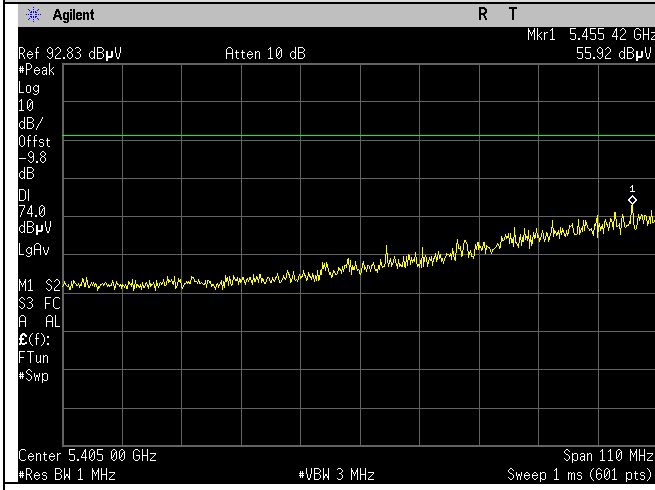
Worst Case Restricted Band Spurious Emission Plots, UNII-2C



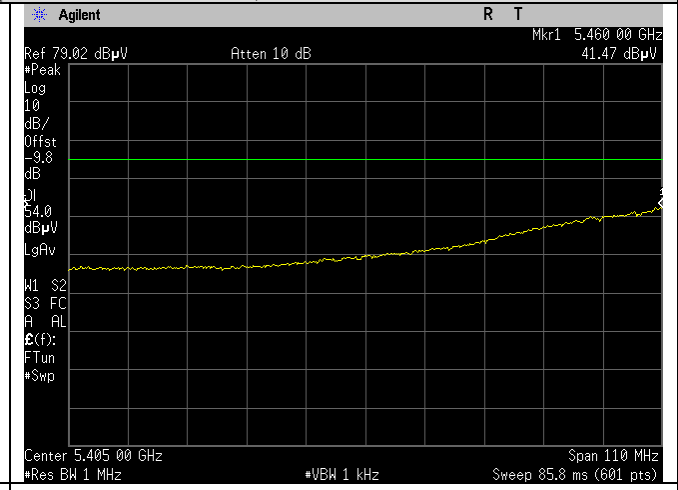
Worst Case Restricted Band Spurious Emission Plots, UNII-2C



Worst Case Restricted Band Spurious Emission Plots, UNII-2C



Low Band Edge (Peak Detector)



Low Band Edge (Average Detector)

End of Report