TEST REPORT

Reference No. ..... : WTN16S0551798-2E

FCC ID..... : 2AFOYL434UCNN

Applicant ..... : Le Shi Zhi Xin Electronic Technology

2 Test Summary

Test Items	Test Requirement	Result
Conducted Emissions	15.207(a)	PASS
Radiated Emissions	15.407(a) 15.205(a) 15.209(a)	PASS
Duty Cycle	KDB 789033	--
6dB Bandwidth	15.407(a)	PASS
26 dB Emission Bandwidth & 99% Occupied Bandwidth	15.407(a)	PASS
Maximum Conducted Output Power	15.407(a)	PASS
Power Spectral Density	15.407(a)	PASS
Restricted bands around fundamental frequency	15.407(a)	PASS
Antenna Requirement	15.203	PASS
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	1.1307(b)(1)	PASS

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4 General Information

4.1 General Description of E.U.T.

Product Name:	LED TV
Model No.:	L434UCNN
Model Description:	N/A
Operation Frequency:	IEEE 802.11b/g/n(HT20):2412MHz ~ 2462MHz IEEE 802.11n(HT40):2422MHz~2452MHz IEEE 802.11a/ n(HT20/40)/ac(HT20/40/80): 5150MHz to 5250MHz IEEE 802.11a/ n(HT20/40)/ac(HT20/40/80): 5725MHz to 5850MHz BT: 2402-2480MHz SRD: 2403-2483MHz
Type of modulation:	IEEE 802.11b DSSS(CCK/QPSK/BPSK) IEEE 802.11g OFDM(BPSK/QPSK/16QAM/64QAM) IEEE 802.11n OFDM(BPSK/QPSK/16QAM/64QAM) IEEE for 802.11a: OFDM(BPSK/QPSK/16QAM/64QAM) IEEE for 802.11n : OFDM(BPSK/QPSK/16QAM/64QAM) IEEE for 802.11ac : OFDM (BPSK/QPSK/16QAM/64QAM/256QAM) BT: GFSK,PI/4-DQPSK,8DPSK SRD: GFSK
The Lowest Oscillator:	32.768KHz
Antenna installation:	internal permanent antenna
Antenna Gain:	ANT 0 2.4GHz WIFI:3.2 dBi 5.2GHz WIFI:4.1 dBi 5.8GHz WIFI:4.0 dBi ANT 1 2.4GHz WIFI:3.2 dBi 5.2GHz WIFI:3.3 dBi 5.8GHz WIFI:3.4 dBi ANT 2 2.4GHz BT:3.2 dBi ANT 3 2.4GHz SRD:3.0 dBi

4.2 Details of E.U.T.

Technical Data:	AC 120V, 60Hz, 110W

4.3 Channel List

U-NII-1 (5.15-5.25GHz)		U-NII-3 (5.725-5.85GHz)	
channel	Frequency(MHz)	channel	Frequency(MHz)
36	5180	149	5745
38	5190	151	5755
40	5200	153	5765
42	5210	155	5785
44	5220	157	5785
46	5230	159	5795
48	5240	161	5805

Test Mode Description:

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.
Transmitting duty cycle is no less 98%.
The software is installed in operation system, named “RFTestTool.apk” ,Version 1,date 20160518.

Test Items	Mode	Data Rate	Channel	TX/RX
Radiated Emissions	802.11a	6 Mbps	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11ac(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT80)	MCS0	U-NII-1 42 U-NII-3 155	TX
Duty Cycle	802.11a	6 Mbps	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11ac(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT80)	MCS0	U-NII-1 42 U-NII-3 155	TX
Band Edge	802.11a	6 Mbps	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX

	802.11ac(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11ac(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT80)	MCS0	U-NII-1 42 U-NII-3 155	TX
6dB Bandwidth	802.11a	6 Mbps	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11ac(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT80)	MCS0	U-NII-1 42 U-NII-3 155	TX
26dB Bandwidth and 99% Occupied Bandwidth	802.11a	6 Mbps	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11ac(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT80)	MCS0	U-NII-1 42 U-NII-3 155	TX
Conducted Output Power	802.11a	6 Mbps	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11ac(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT80)	MCS0	U-NII-1 42 U-NII-3 155	TX
Power Spectral Density	802.11a	6 Mbps	U-NII-1 36/40/48 U-NII-3 149/155/165	TX

	802.11n(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11ac(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT80)	MCS0	U-NII-1 42 U-NII-3 155	TX
Frequency Stability	Un-modulation	/	U-NII-1 36/40/48 U-NII-3 149/155/165	TX

4.4 Test Facility

The test facility has a test site registered with the following organizations:

- **IC – Registration No.: 7760A-1**

  Waltek Services(Shenzhen) Co., Ltd. Has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration number 7760A-1, October 15, 2015.

- **FCC Test Site 1#– Registration No.: 880581**

  Waltek Services(Shenzhen) Co., Ltd. EMC Laboratory `has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 880581, April 29, 2014.

- **FCC Test Site 2#– Registration No.: 328995**

  Waltek Services(Shenzhen) Co., Ltd. EMC Laboratory `has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 328995, December 3, 2014.

5 Equipment Used during Test

5.1 Equipments List

Conducted Emissions Test Site 1#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMI Test Receiver	R&S	ESCI	100947	Sep.14,2015	Sep.13,2016
2.	LISN	R&S	ENV216	101215	Sep.14,2015	Sep.13,2016
3.	Cable	Top	TYPE16(3.5M)	-	Sep.14,2015	Sep.13,2016
Conducted Emissions Test Site 2#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMI Test Receiver	R&S	ESCI	101155	Sep.14,2015	Sep.13,2016
2.	LISN	SCHWARZBECK	NSLK 8128	8128-289	Sep.14,2015	Sep.13,2016
3.	Limiter	York	MTS-IMP-136	261115-001-0024	Sep.14,2015	Sep.13,2016
4.	Cable	LARGE	RF300	-	Sep.14,2015	Sep.13,2016
3m Semi-anechoic Chamber for Radiation Emissions Test site 1#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1	EMC Analyzer	Agilent	E7405A	MY45114943	Sep.14,2015	Sep.13,2016
2	Active Loop Antenna	Beijing Dazhi	ZN30900A	-	Sep.14,2015	Sep.13,2016
3	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	336	Sep.14,2015	Sep.13,2016
4	Coaxial Cable (below 1GHz)	Top	TYPE16(13M)	-	Sep.14,2015	Sep.13,2016
5	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	Sep.14,2015	Sep.13,2016
6	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9170	335	Sep.14,2015	Sep.13,2016
7	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	Sep.14,2015	Sep.13,2016
8	Coaxial Cable (above 1GHz)	Top	1GHz-25GHz	EW02014-7	Sep.14,2015	Sep.13,2016
3m Semi-anechoic Chamber for Radiation Emissions Test site 2#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No**	**Last Calibration Date**	**Calibration Due Date**
1	Test Receiver	R&S	ESCI	101296	Sep.14,2015	Sep.13,2016
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	Sep.14,2015	Sep.13,2016
3	Amplifier	Compliance pirection systems inc	PAP-0203	22024	Sep.14,2015	Sep.13,2016
4	Cable	HUBER+SUHNER	CBL2	525178	Sep.14,2015	Sep.13,2016
RF Conducted Testing						

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1.	EMC Analyzer (9k~26.5GHz)	Agilent	E7405A	MY45114943	Sep.14,2015	Sep.13,2016
2.	Spectrum Analyzer (9k-6GHz)	R&S	FSL6	100959	Sep.14,2015	Sep.13,2016
3.	Signal Analyzer (9k~26.5GHz)	Agilent	N9010A	MY50520207	Sep.14,2015	Sep.13,2016

5.2 Description of Support Units

Equipment	Manufacturer	Model No.	Series No.
/	/	/	/

5.3 Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	± 1 x 10^{-6}
RF Power	± 1.0 dB
RF Power Density	± 2.2 dB
Radiated Spurious Emissions test	± 5.03 dB (30M~1000MHz)
	± 5.47 dB (1000M~25000MHz)
Conducted Spurious Emissions test	± 3.64 dB (AC mains 150KHz~30MHz)

5.4 Test Equipment Calibration

All the test equipments used are valid and calibrated by CEPREI Certification Body that address is No.110 Dongguan Zhuang RD. Guangzhou, P.R.China.

6 Conducted Emission

Test Requirement:	FCC CFR 47 Part 15 Section 15.207
Test Method:	ANSI C63.10:2013
Test Result:	PASS
Frequency Range:	150kHz to 30MHz
Class/Severity:	Class B
Limit:	66-56 dBμV between 0.15MHz & 0.5MHz
	56 dBμV between 0.5MHz & 5MHz
	60 dBμV between 5MHz & 30MHz
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth)

6.1 E.U.T. Operation

Operating Environment :

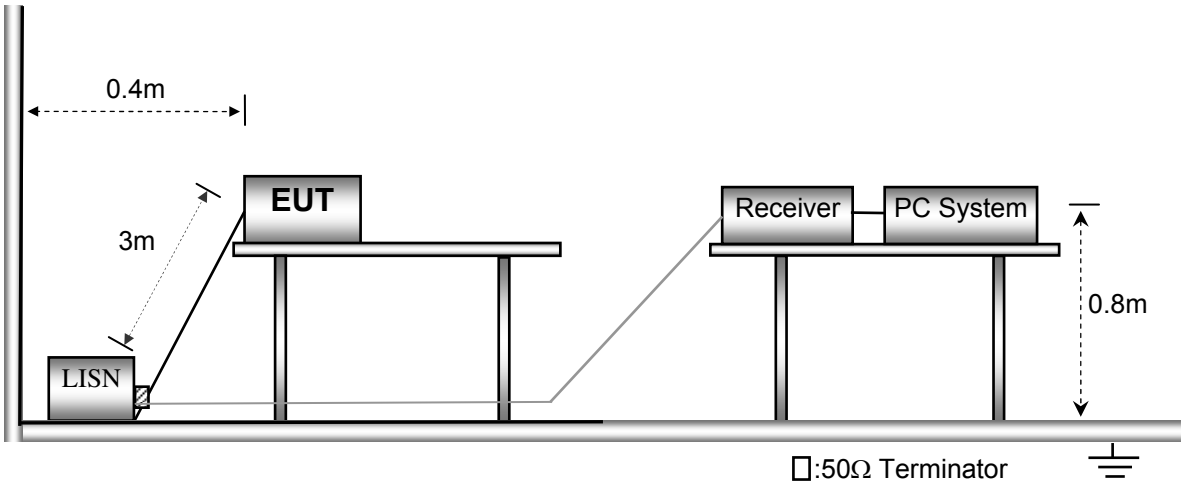
Temperature:	21.5 °C
Humidity:	51.9 % RH
Atmospheric Pressure:	101.2kPa

EUT Operation :

The test was performed in transmitting mode, the test data were shown in the report.

6.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10:2013.



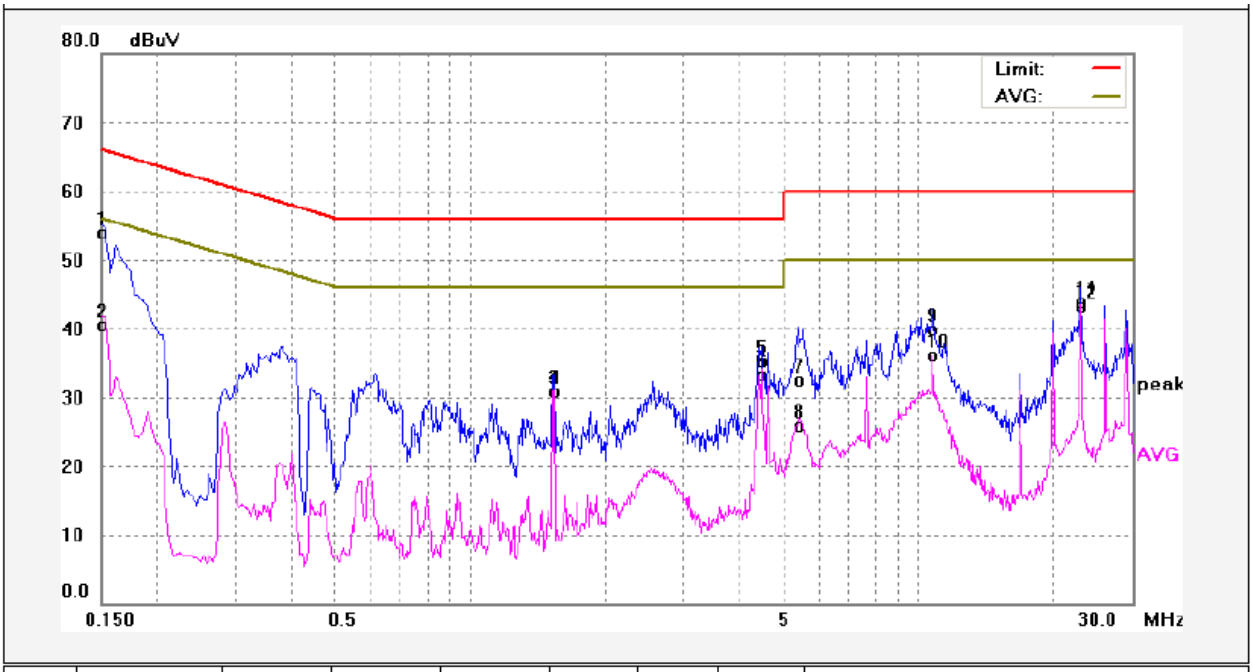
6.3 Measurement Description

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

6.4 Conducted Emission Test Result

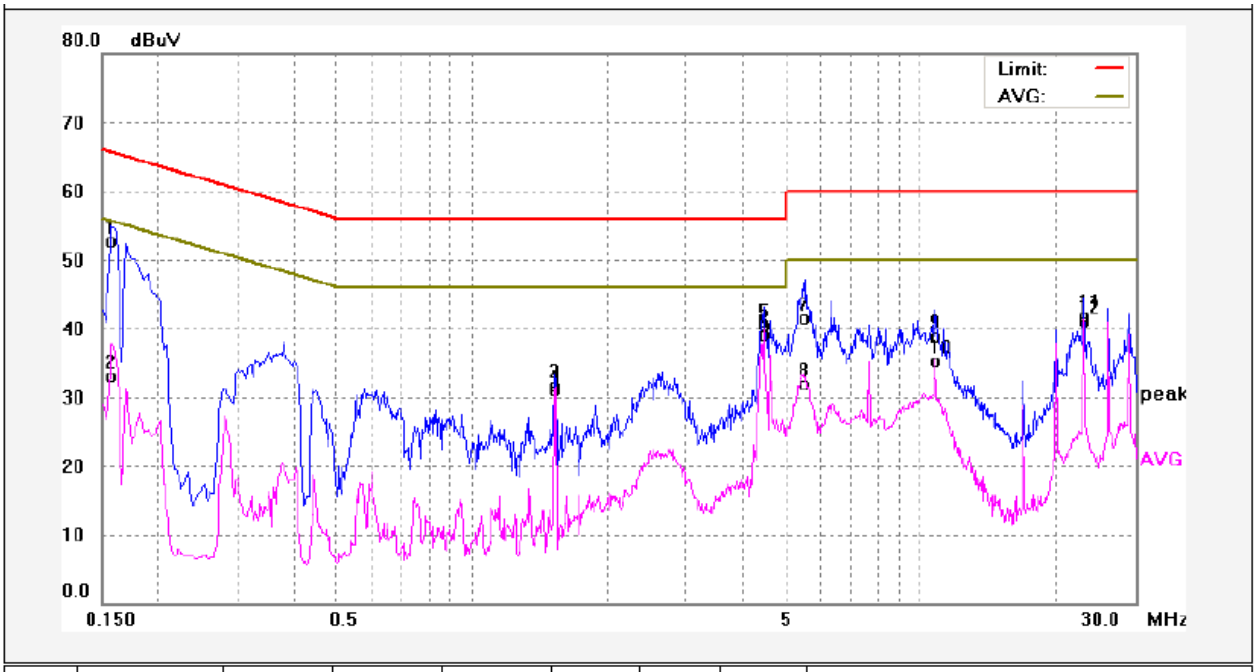
An initial pre-scan was performed on the live and neutral lines.

Live line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1500	44.16	9.75	53.91	65.99	-12.08	QP	
2	0.1500	30.67	9.75	40.42	55.99	-15.57	AVG	
3	1.5380	21.13	9.83	30.96	56.00	-25.04	QP	
4	1.5380	21.12	9.83	30.95	46.00	-15.05	AVG	
5	4.4580	25.27	9.95	35.22	56.00	-20.78	QP	
6	4.4580	23.39	9.95	33.34	46.00	-12.66	AVG	
7	5.3940	22.56	10.01	32.57	60.00	-27.43	QP	
8	5.3940	15.87	10.01	25.88	50.00	-24.12	AVG	
9	10.7540	29.57	10.28	39.85	60.00	-20.15	QP	
10	10.7540	25.91	10.28	36.19	50.00	-13.81	AVG	
11	23.0419	33.02	10.91	43.93	60.00	-16.07	QP	
12	23.0419	32.49	10.91	43.40	50.00	-6.60	AVG	

Neutral line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1580	42.99	9.75	52.74	65.56	-12.82	QP	
2	0.1580	23.28	9.75	33.03	55.56	-22.53	AVG	
3	1.5339	21.78	9.83	31.61	56.00	-24.39	QP	
4	1.5339	21.33	9.83	31.16	46.00	-14.84	AVG	
5	4.4580	30.61	9.95	40.56	56.00	-15.44	QP	
6	4.4580	29.12	9.95	39.07	46.00	-6.93	AVG	
7	5.5540	31.46	10.02	41.48	60.00	-18.52	QP	
8	5.5540	21.97	10.02	31.99	50.00	-18.01	AVG	
9	10.7540	28.67	10.28	38.95	60.00	-21.05	QP	
10	10.7540	24.95	10.28	35.23	50.00	-14.77	AVG	
11	23.0419	30.96	10.91	41.87	60.00	-18.13	QP	
12	23.0419	30.11	10.91	41.02	50.00	-8.98	AVG	

7 Radiated Emissions

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.407

Test Method: ANSI C63.10:2013

Test Result: PASS

Measurement Distance: 3m

Limit:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Distance	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

7.1 EUT Operation

Operating Environment :

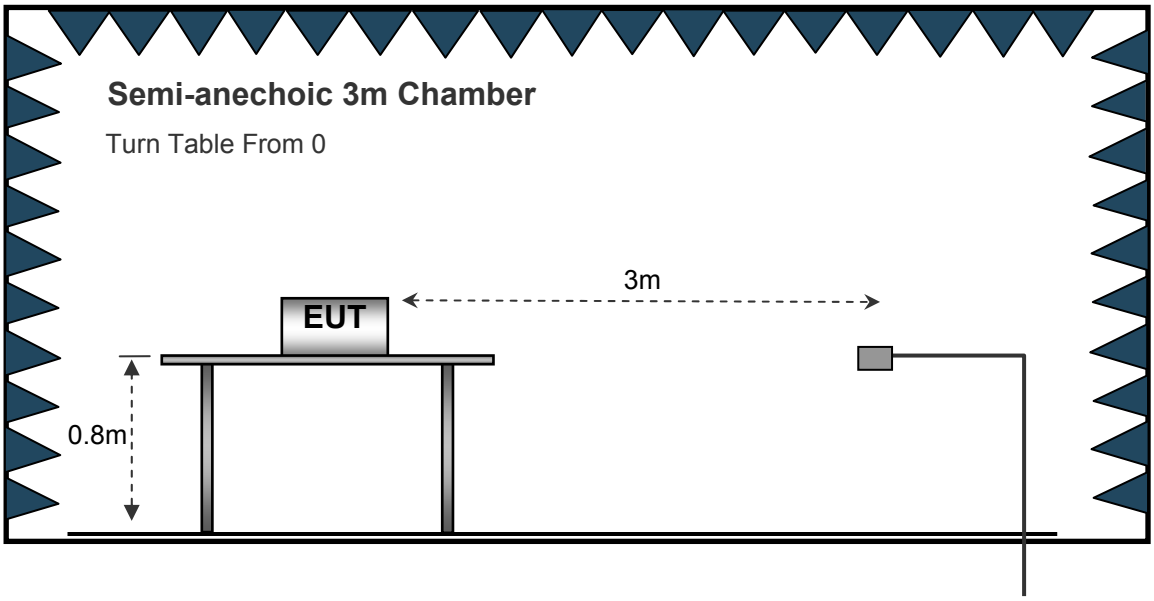
Temperature: 23.5 °C

Humidit

7.2 Test Setup

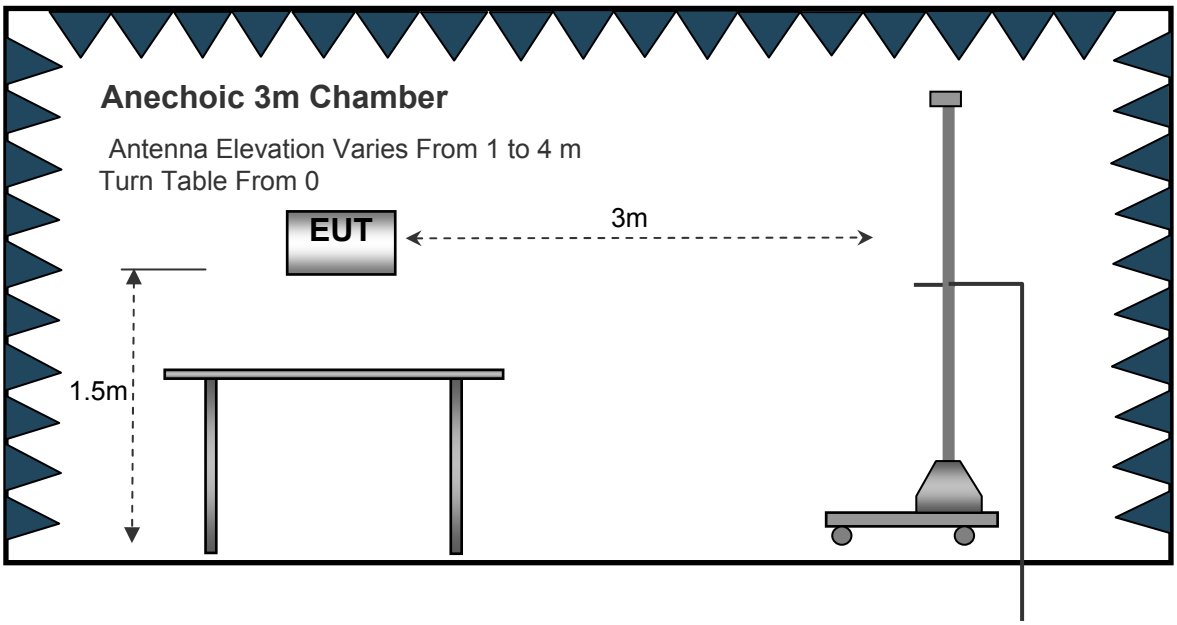
The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10: 2013.

The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.

The test setup for emission measurement above 1 GHz.



7.3 Spectrum Analyzer Setup

Below 30MHz

Sweep Speed ..... Auto
IF Bandwidth..... 10kHz
Video Bandwidth..... 10kHz
Resolution Bandwidth..... 10kHz

30MHz ~ 1GHz

Sweep Speed ..... Auto
Detector ..... PK
Resolution Bandwidth..... 100kHz
Video Bandwidth..... 300kHz

Above 1GHz

Sweep Speed ..... Auto
Detector ..... PK
Resolution Bandwidth..... 1MHz
Video Bandwidth..... 3MHz
Detector ..... Ave.
Resolution Bandwidth..... 1MHz
Video Bandwidth..... 10Hz

7.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane for below 1GHz and 1.5m for above 1GHz.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are performed in X,Y and Z axis positioning(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand),the worst condition was tested putting the eut in X axis,so the worst data were shown as follow.
8. A 2.4GHz high –pass filter is used druing radiated emissions above 1GHz measurement.

7.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – Limit

7.6 Summary of Test Results

Test Frequency: 32.768kHz~30MHz

Frequency (MHz)	Measurement results	Detector	Correct factor	Extrapolation factor	Measurement results (calculated)	Limits	Margin
	dBμV @3m	PK/QP	dB/m	dB	dBμV/m @30m	dBμV/m @30m	dB
28.691	26.00	QP	19.90	40.00	5.90	29.54	-23.64

Test Frequency : 30MHz ~ 18GHz

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11a U-NII-1 Low Channel 5180MHz									
223.45	42.36	QP	341	1.7	H	-11.62	30.74	46.00	-15.26
223.45	37.51	QP	48	1.7	V	-11.62	25.89	46.00	-20.11
4530.16	51.33	PK	274	1.5	H	-2.03	49.30	74.00	-24.70
4530.16	47.42	Ave	274	1.5	H	-2.03	45.39	54.00	-8.61
5116.96	53.17	PK	43	2.0	H	-1.02	52.15	74.00	-21.85
5116.96	49.72	Ave	43	2.0	H	-1.02	48.70	54.00	-5.30
10360.00	42.37	PK	121	1.9	H	5.33	47.70	74.00	-26.30
10360.00	37.38	Ave	121	1.9	H	5.33	42.71	54.00	-11.29
802.11a U-NII-1 middle channel 5200MHz									
223.45	42.95	QP	248	1.9	H	-11.62	31.33	46.00	-14.67
223.45	38.13	QP	142	1.2	V	-11.62	26.51	46.00	-19.49
4500.88	51.96	PK	338	1.2	H	-1.94	50.02	74.00	-23.98
4500.88	48.09	Ave	338	1.2	H	-1.94	46.15	54.00	-7.85
5120.67	53.76	PK	152	1.5	H	-1.06	52.70	74.00	-21.30
5120.67	49.66	Ave	152	1.5	H	-1.06	48.60	54.00	-5.40
10400.00	42.75	PK	355	1.7	H	5.21	47.96	74.00	-26.04
10400.00	37.77	Ave	355	1.7	H	5.21	42.98	54.00	-11.02

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11a U-NII-1 High channel 5240MHz									
223.45	41.68	QP	106	1.4	H	-11.62	30.06	46.00	-15.94
223.45	36.95	QP	263	1.9	V	-11.62	25.33	46.00	-20.67
4517.53	53.12	PK	360	1.0	H	-2.24	50.88	74.00	-23.12
4517.53	46.86	Ave	360	1.0	H	-2.24	44.62	54.00	-9.38
5125.82	55.27	PK	264	1.9	H	-1.09	54.18	74.00	-19.82
5125.82	49.87	Ave	264	1.9	H	-1.09	48.78	54.00	-5.22
10480.00	41.43	PK	302	1.0	H	5.14	46.57	74.00	-27.43
10480.00	37.94	Ave	302	1.0	H	5.14	43.08	54.00	-10.92
802.11a U-NII-3 low Channel 5745MHz									
222.36	40.23	QP	36	1.3	H	-11.62	28.61	46.00	-17.39
223.45	37.96	QP	55	1.3	V	-11.62	26.34	46.00	-19.66
4538.26	52.71	PK	203	2.0	H	-2.06	50.65	74.00	-23.35
4538.26	46.50	Ave	203	2.0	H	-2.06	44.44	54.00	-9.56
11490.00	41.94	PK	105	1.5	H	5.93	47.87	74.00	-26.13
11490.00	37.02	Ave	105	1.5	H	5.93	42.95	54.00	-11.05
5384.21	45.19	PK	357	1.5	H	-1.25	43.94	74.00	-30.06
5384.21	37.21	Ave	357	1.5	H	-1.25	35.96	54.00	-18.04

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11a U-NII-3 middle channel 5785MHz									
222.36	40.07	QP	317	1.6	H	-11.62	28.45	46.00	-17.55
223.45	38.34	QP	15	1.0	V	-11.62	26.72	46.00	-19.28
4534.01	53.95	PK	294	1.9	H	-2.03	51.92	74.00	-22.08
4534.01	46.32	Ave	294	1.9	H	-2.03	44.29	54.00	-9.71
11570.00	42.82	PK	293	1.7	H	5.81	48.63	74.00	-25.37
11570.00	37.67	Ave	293	1.7	H	5.81	43.48	54.00	-10.52
5367.17	45.31	PK	256	1.1	H	-1.22	44.09	74.00	-29.91
5367.17	37.30	Ave	256	1.1	H	-1.22	36.08	54.00	-17.92
802.11a U-NII-3 High channel 5825MHz									
222.36	41.38	QP	58	1.0	H	-11.62	29.76	46.00	-16.24
223.45	37.89	QP	358	1.9	V	-11.62	26.27	46.00	-19.73
4520.95	55.33	PK	85	1.8	H	-1.84	53.49	74.00	-20.51
4520.95	46.84	Ave	85	1.8	H	-1.84	45.00	54.00	-9.00
11650.00	42.38	PK	34	1.5	H	5.84	48.22	74.00	-25.78
11650.00	36.32	Ave	34	1.5	H	5.84	42.16	54.00	-11.84
5373.35	46.94	PK	207	1.3	H	-1.30	45.64	74.00	-28.36
5373.35	37.10	Ave	207	1.3	H	-1.30	35.80	54.00	-18.20

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11n(HT20) U-NII-1 low Channel 5180MHz									
222.36	40.84	QP	35	1.6	H	-11.62	29.22	46.00	-16.78
223.45	39.11	QP	175	1.3	V	-11.62	27.49	46.00	-18.51
4539.00	54.31	PK	103	1.3	H	-2.14	52.17	74.00	-21.83
4539.00	47.08	Ave	103	1.3	H	-2.14	44.94	54.00	-9.06
5137.23	48.34	PK	333	1.2	H	-1.06	47.28	74.00	-26.72
5137.23	39.89	Ave	333	1.2	H	-1.06	38.83	54.00	-15.17
10360.00	42.26	PK	113	1.9	H	5.33	47.59	74.00	-26.41
10360.00	37.13	Ave	113	1.9	H	5.33	42.46	54.00	-11.54
802.11n(HT20) U-NII-1 middle channel 5200MHz									
222.36	41.78	QP	78	1.9	H	-11.62	30.16	46.00	-15.84
223.45	37.86	QP	105	1.1	V	-11.62	26.24	46.00	-19.76
4514.74	55.18	PK	98	1.5	H	-2.12	53.06	74.00	-20.94
4514.74	46.86	Ave	98	1.5	H	-2.12	44.74	54.00	-9.26
5139.24	50.12	PK	70	1.1	H	-1.06	49.06	74.00	-24.94
5139.24	41.32	Ave	70	1.1	H	-1.06	40.26	54.00	-13.74
10400.00	41.27	PK	156	1.8	H	5.21	46.48	74.00	-27.52
10400.00	38.06	Ave	156	1.8	H	5.21	43.27	54.00	-10.73

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11n(HT20) U-NII-1 High channel 5240MHz									
222.36	41.98	QP	177	1.1	H	-11.62	30.36	46.00	-15.64
223.45	38.08	QP	343	1.7	V	-11.62	26.46	46.00	-19.54
4516.94	56.39	PK	346	1.2	H	-1.96	54.43	74.00	-19.57
4516.94	47.26	Ave	346	1.2	H	-1.96	45.30	54.00	-8.70
5148.74	49.33	PK	141	1.9	H	-1.06	48.27	74.00	-25.73
5148.74	42.68	Ave	141	1.9	H	-1.06	41.62	54.00	-12.38
10480.00	41.46	PK	303	1.3	H	5.14	46.60	74.00	-27.40
10480.00	37.83	Ave	303	1.3	H	5.14	42.97	54.00	-11.03
802.11n(HT20) U-NII-3 low Channel 5745MHz									
222.36	41.71	QP	301	1.3	H	-11.62	30.09	46.00	-15.91
223.45	39.40	QP	309	1.1	V	-11.62	27.78	46.00	-18.22
4539.51	53.69	PK	326	1.1	H	-1.85	51.84	74.00	-22.16
4539.51	45.09	Ave	326	1.1	H	-1.85	43.24	54.00	-10.76
11490.00	39.84	PK	36	1.3	H	5.93	45.77	74.00	-28.23
11490.00	35.85	Ave	36	1.3	H	5.93	41.78	54.00	-12.22
5364.93	45.28	PK	287	1.5	H	-1.01	44.27	74.00	-29.73
5364.93	38.40	Ave	287	1.5	H	-1.01	37.39	54.00	-16.61

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11n(HT20) U-NII-3 middle channel 5785MHz									
222.36	41.58	QP	202	1.3	H	-11.62	29.96	46.00	-16.04
223.45	40.17	QP	20	1.6	V	-11.62	28.55	46.00	-17.45
4526.63	53.73	PK	287	1.6	H	-1.89	51.84	74.00	-22.16
4526.63	44.82	Ave	287	1.6	H	-1.89	42.93	54.00	-11.07
11570.00	41.41	PK	21	1.0	H	5.81	47.22	74.00	-26.78
11570.00	38.31	Ave	21	1.0	H	5.81	44.12	54.00	-9.88
5352.37	46.62	PK	172	1.2	H	-1.04	45.58	74.00	-28.42
5352.37	38.14	Ave	172	1.2	H	-1.04	37.10	54.00	-16.90
802.11n(HT20) U-NII-3 High channel 5825MHz									
222.36	42.44	QP	87	1.4	H	-11.62	30.82	46.00	-15.18
223.45	40.74	QP	286	1.1	V	-11.62	29.12	46.00	-16.88
4515.38	53.65	PK	357	1.2	H	-1.97	51.68	74.00	-22.32
4515.38	44.27	Ave	357	1.2	H	-1.97	42.30	54.00	-11.70
11650.00	41.72	PK	6	1.9	H	5.84	47.56	74.00	-26.44
11650.00	37.52	Ave	6	1.9	H	5.84	43.36	54.00	-10.64
5368.16	46.08	PK	34	1.3	H	-1.12	44.96	74.00	-29.04
5368.16	38.45	Ave	34	1.3	H	-1.12	37.33	54.00	-16.67

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(HT20) U-NII-1 low Channel 5180MHz									
222.36	41.86	QP	131	1.6	H	-11.62	30.24	46.00	-15.76
223.45	39.51	QP	185	1.1	V	-11.62	27.89	46.00	-18.11
4509.64	52.27	PK	302	1.2	H	-1.86	50.41	74.00	-23.59
4509.64	42.40	Ave	302	1.2	H	-1.86	40.54	54.00	-13.46
5117.69	46.60	PK	307	1.2	H	-1.06	45.54	74.00	-28.46
5117.69	40.17	Ave	307	1.2	H	-1.06	39.11	54.00	-14.89
10360.00	40.17	PK	168	1.1	H	5.33	45.50	74.00	-28.50
10360.00	34.64	Ave	168	1.1	H	5.33	39.97	54.00	-14.03
802.11ac(HT20) U-NII-1 middle channel 5200MHz									
222.36	42.13	QP	28	1.3	H	-11.62	30.51	46.00	-15.49
223.45	38.60	QP	238	1.1	V	-11.62	26.98	46.00	-19.02
4528.74	52.56	PK	12	1.6	H	-1.82	50.74	74.00	-23.26
4528.74	43.25	Ave	12	1.6	H	-1.82	41.43	54.00	-12.57
5134.97	47.08	PK	16	1.6	H	-1.06	46.02	74.00	-27.98
5134.97	41.47	Ave	16	1.6	H	-1.06	40.41	54.00	-13.59
10400.00	41.93	PK	273	1.8	H	5.21	47.14	74.00	-26.86
10400.00	37.72	Ave	273	1.8	H	5.21	42.93	54.00	-11.07

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(HT20) U-NII-1 High channel 5240MHz									
222.36	42.75	QP	43	1.8	H	-11.62	31.13	46.00	-14.87
223.45	39.51	QP	86	1.0	V	-11.62	27.89	46.00	-18.11
4531.29	51.69	PK	328	1.7	H	-1.81	49.88	74.00	-24.12
4531.29	42.60	Ave	328	1.7	H	-1.81	40.79	54.00	-13.21
5116.63	48.89	PK	113	2.0	H	-1.06	47.83	74.00	-26.17
5116.63	40.58	Ave	113	2.0	H	-1.06	39.52	54.00	-14.48
10480.00	41.57	PK	106	1.5	H	5.14	46.71	74.00	-27.29
10480.00	37.42	Ave	106	1.5	H	5.14	42.56	54.00	-11.44
802.11ac(HT20) U-NII-3 low Channel 5745MHz									
222.36	42.23	QP	146	1.8	H	-11.62	30.61	46.00	-15.39
223.45	39.10	QP	358	1.1	V	-11.62	27.48	46.00	-18.52
4524.26	49.22	PK	336	1.6	H	-1.92	47.30	74.00	-26.70
4524.26	41.59	Ave	336	1.6	H	-1.92	39.67	54.00	-14.33
11490.00	39.63	PK	171	1.8	H	5.93	45.56	74.00	-28.44
11490.00	35.28	Ave	171	1.8	H	5.93	41.21	54.00	-12.79
5359.10	45.53	PK	328	1.4	H	-1.03	44.50	74.00	-29.50
5359.10	39.21	Ave	328	1.4	H	-1.03	38.18	54.00	-15.82

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(HT20) U-NII-3 middle channel 5785MHz									
222.36	43.00	QP	224	1.5	H	-11.62	31.38	46.00	-14.62
223.45	38.31	QP	59	1.2	V	-11.62	26.69	46.00	-19.31
4519.17	48.85	PK	106	1.3	H	-1.97	46.88	74.00	-27.12
4519.17	40.91	Ave	106	1.3	H	-1.97	38.94	54.00	-15.06
11570.00	41.81	PK	231	1.1	H	5.81	47.62	74.00	-26.38
11570.00	37.94	Ave	231	1.1	H	5.81	43.75	54.00	-10.25
5355.53	46.96	PK	91	1.8	H	-1.05	45.91	74.00	-28.09
5355.53	38.12	Ave	91	1.8	H	-1.05	37.07	54.00	-16.93
802.11ac(HT20) U-NII-3 High channel 5825MHz									
222.36	43.35	QP	208	1.1	H	-11.62	31.73	46.00	-14.27
223.45	37.88	QP	205	1.5	V	-11.62	26.26	46.00	-19.74
4505.40	49.32	PK	51	1.1	H	-1.88	47.44	74.00	-26.56
4505.40	40.06	Ave	51	1.1	H	-1.88	38.18	54.00	-15.82
11650.00	41.41	PK	66	1.4	H	5.84	47.25	74.00	-26.75
11650.00	36.79	Ave	66	1.4	H	5.84	42.63	54.00	-11.37
5359.51	46.99	PK	332	1.5	H	-1.06	45.93	74.00	-28.07
5359.51	39.44	Ave	332	1.5	H	-1.06	38.38	54.00	-15.62

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11n(HT40) U-NII-1 low Channel 5190MHz									
222.36	43.75	QP	281	1.9	H	-11.62	32.13	46.00	-13.87
223.45	36.91	QP	94	1.7	V	-11.62	25.29	46.00	-20.71
4511.42	47.64	PK	256	2.0	H	-1.89	45.75	74.00	-28.25
4511.42	38.34	Ave	256	2.0	H	-1.89	36.45	54.00	-17.55
5147.73	46.18	PK	271	1.4	H	-1.06	45.12	74.00	-28.88
5147.73	38.08	Ave	271	1.4	H	-1.06	37.02	54.00	-16.98
10380.00	39.99	PK	62	1.5	H	5.26	45.25	74.00	-28.75
10380.00	35.21	Ave	62	1.5	H	5.26	40.47	54.00	-13.53
802.11n(HT40) U-NII-1 High channel 5230MHz									
222.36	44.71	QP	129	1.7	H	-11.62	33.09	46.00	-12.91
223.45	36.40	QP	342	1.5	V	-11.62	24.78	46.00	-21.22
4513.22	47.59	PK	84	1.0	H	-1.94	45.65	74.00	-28.35
4513.22	39.04	Ave	84	1.0	H	-1.94	37.10	54.00	-16.90
5149.87	48.10	PK	243	1.3	H	-1.06	47.04	74.00	-26.96
5149.87	39.98	Ave	243	1.3	H	-1.06	38.92	54.00	-15.08
10460.00	42.78	PK	269	1.8	H	5.28	48.06	74.00	-25.94
10480.00	38.06	Ave	269	1.8	H	5.28	43.34	54.00	-10.66

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11n(HT40) U-NII-3 low Channel 5755MHz									
222.36	44.67	QP	157	2.0	H	-11.62	33.05	74.00	-40.95
223.45	36.96	QP	188	1.6	V	-11.62	25.34	74.00	-48.66
4520.66	45.29	PK	195	1.9	H	-1.96	43.33	74.00	-30.67
4520.66	37.89	Ave	195	1.9	H	-1.96	35.93	54.00	-18.07
11510.00	40.73	PK	23	1.7	H	5.88	46.61	74.00	-27.39
11510.00	35.00	Ave	23	1.7	H	5.88	40.88	54.00	-13.12
5355.58	46.25	PK	91	1.2	H	-1.01	45.24	74.00	-28.76
5355.58	37.29	Ave	91	1.2	H	-1.01	36.28	54.00	-17.72
802.11n(HT40) U-NII-3 High channel 5795MHz									
222.36	45.18	QP	242	1.2	H	-11.62	33.56	74.00	-40.44
223.45	37.26	QP	159	1.3	V	-11.62	25.64	74.00	-48.36
4504.47	44.33	PK	199	2.0	H	-1.92	42.41	74.00	-31.59
4504.47	37.71	Ave	199	2.0	H	-1.92	35.79	54.00	-18.21
11590.00	41.97	PK	103	1.7	H	5.63	47.60	74.00	-26.40
11590.00	37.21	Ave	103	1.7	H	5.63	42.84	54.00	-11.16
5385.80	45.63	PK	222	1.6	H	-1.04	44.59	74.00	-29.41
5385.80	38.82	Ave	222	1.6	H	-1.04	37.78	54.00	-16.22

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(HT40) U-NII-1 low Channel 5190MHz									
222.36	44.65	QP	26	1.9	H	-11.62	33.03	74.00	-40.97
223.45	36.75	QP	46	1.8	V	-11.62	25.13	74.00	-48.87
4526.44	42.15	PK	10	1.1	H	-1.91	40.24	74.00	-33.76
4526.44	35.92	Ave	10	1.1	H	-1.91	34.01	54.00	-19.99
5112.59	44.58	PK	253	1.9	H	-1.06	43.52	74.00	-30.48
5112.59	40.23	Ave	253	1.9	H	-1.06	39.17	54.00	-14.83
10380.00	39.39	PK	145	1.4	H	5.26	44.65	74.00	-29.35
10380.00	35.31	Ave	145	1.4	H	5.26	40.57	54.00	-13.43
802.11ac(HT40) U-NII-1 High channel 5230MHz									
222.36	44.48	QP	232	1.4	H	-11.62	32.86	74.00	-41.14
223.45	37.62	QP	136	1.0	V	-11.62	26.00	74.00	-48.00
4528.45	41.82	PK	242	1.2	H	-1.93	39.89	74.00	-34.11
4528.45	36.62	Ave	242	1.2	H	-1.93	34.69	54.00	-19.31
5123.66	43.66	PK	170	1.8	H	-1.06	42.60	74.00	-31.40
5123.66	41.36	Ave	170	1.8	H	-1.06	40.30	54.00	-13.70
10460.00	43.35	PK	8	1.6	H	5.28	48.63	74.00	-25.37
10480.00	36.39	Ave	8	1.6	H	5.28	41.67	54.00	-12.33

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(HT40) U-NII-3 low Channel 5755MHz									
222.36	45.79	QP	157	1.2	H	-11.62	34.17	74.00	-39.83
223.45	36.70	QP	275	2.0	V	-11.62	25.08	74.00	-48.92
4502.91	39.66	PK	172	1.4	H	-1.92	37.74	74.00	-36.26
4502.91	33.81	Ave	172	1.4	H	-1.92	31.89	54.00	-22.11
11510.00	40.30	PK	127	1.7	H	5.88	46.18	74.00	-27.82
11510.00	36.26	Ave	127	1.7	H	5.88	42.14	54.00	-11.86
5353.76	46.45	PK	39	1.9	H	-1.07	45.38	74.00	-28.62
5353.76	39.87	Ave	39	1.9	H	-1.07	38.80	54.00	-15.20
802.11ac(HT40) U-NII-3 High channel 5795MHz									
222.36	45.59	QP	199	1.3	H	-11.62	33.97	74.00	-40.03
223.45	37.51	QP	211	1.4	V	-11.62	25.89	74.00	-48.11
4533.58	39.36	PK	249	1.5	H	-1.86	37.50	74.00	-36.50
4533.58	33.71	Ave	249	1.5	H	-1.86	31.85	54.00	-22.15
11590.00	42.80	PK	231	2.0	H	5.63	48.43	74.00	-25.57
11590.00	38.05	Ave	231	2.0	H	5.63	43.68	54.00	-10.32
5381.59	46.94	PK	179	1.6	H	-1.03	45.91	74.00	-28.09
5381.59	37.06	Ave	179	1.6	H	-1.03	36.03	54.00	-17.97

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(HT80) U-NII-1 low Channel 5210MHz									
223.45	38.14	QP	227	1.9	H	-11.62	26.52	54.00	-27.48
4533.58	38.48	QP	153	1.3	V	-11.62	26.86	54.00	-27.14
4513.74	34.58	PK	20	1.7	H	-1.88	32.70	74.00	-41.30
4513.74	43.52	Ave	20	1.7	H	-1.88	41.64	54.00	-12.36
5144.39	38.00	PK	232	1.1	H	-1.06	36.94	74.00	-37.06
5144.39	46.41	Ave	232	1.1	H	-1.06	45.35	54.00	-8.65
10420.00	43.22	PK	66	1.8	H	4.65	47.87	74.00	-26.13
10420.00	37.07	Ave	66	1.8	H	4.65	41.72	54.00	-12.28
802.11ac(HT80) U-NII-3 low Channel 5775MHz									
4533.58	38.70	QP	238	1.6	H	-11.62	27.08	74.00	-46.92
4513.74	34.92	QP	82	1.8	V	-11.62	23.30	74.00	-50.70
4511.56	43.39	PK	298	1.2	H	-1.85	41.54	74.00	-32.46
4511.56	43.15	Ave	298	1.2	H	-1.85	41.30	54.00	-12.70
11550.00	43.17	PK	131	1.1	H	4.83	48.00	74.00	-26.00
11550.00	37.65	Ave	131	1.1	H	4.83	42.48	54.00	-11.52
5350.09	46.36	PK	347	1.6	H	-1.14	45.22	74.00	-28.78
5350.09	39.38	Ave	347	1.6	H	-1.14	38.24	54.00	-15.76

Test Frequency: 18GHz~40GHz

The measurements were more than 20 dB below the limit and not reported.

8 Duty cycle

Test Requirement:	47 CFR Part 15C 15.407 and 789033 D02 General UNII Test Procedures New Rules v01, Section (B)
Test Method:	ANSI C63.10: 2013
Test Limit:	N/A
Test Result:	PASS
Remark:	Through Pre-scan, and found 802.11a at lowest channel is the worst case. Only the worst case is recorded in the report.

8.1 Summary of Test Results

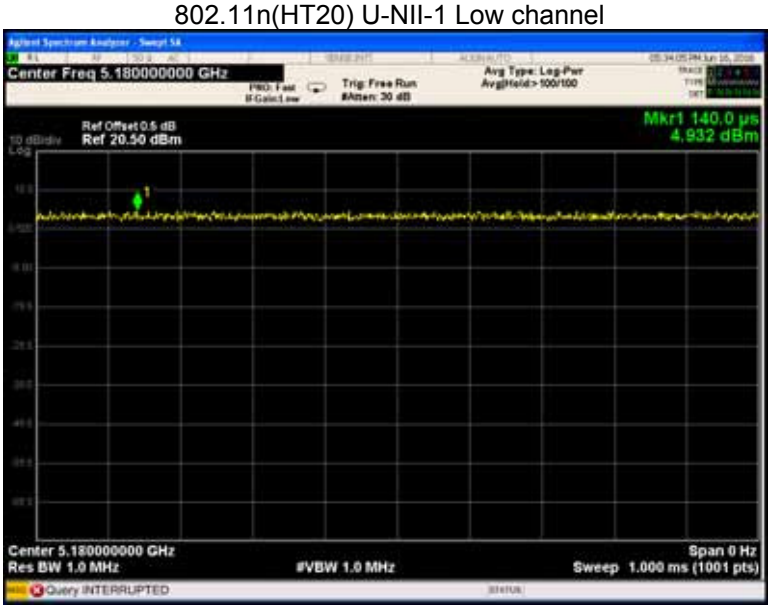
802.11a mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
36	100	100	100
149	100	100	100
802.11n(HT20) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
36	100	100	100
149	100	100	100
802.11n(HT40) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
38	100	100	100
151	100	100	100
802.11ac(HT20) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
36	100	100	100
149	100	100	100
802.11ac(HT40) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
38	100	100	100
151	100	100	100
802.11ac(HT80) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
42	100	100	100
155	100	100	100

Test result plots shown as follows:

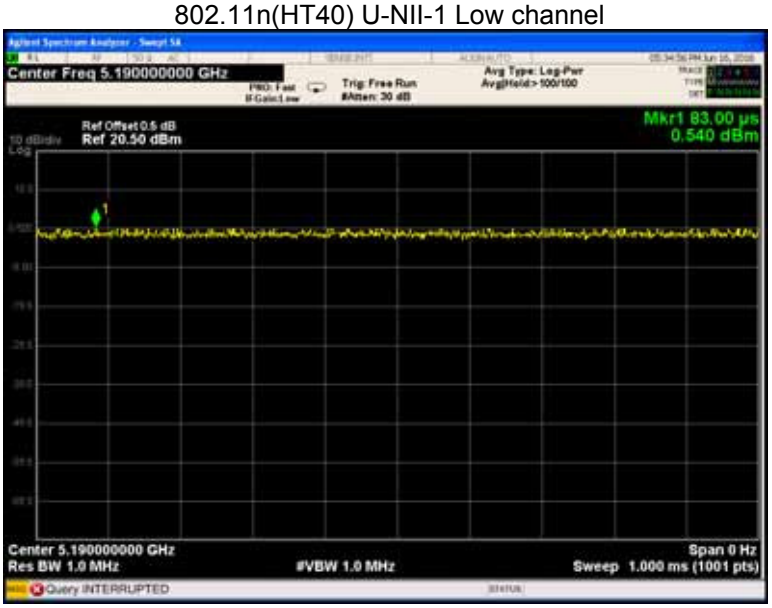
ANT0

802.11a U-NII-1 Low channel

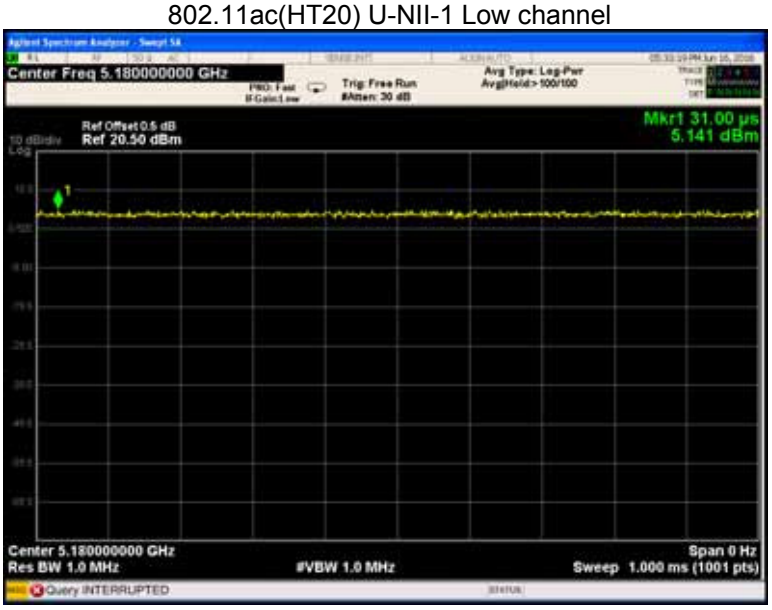
802.11n(HT20) U-NII-1 Low channel



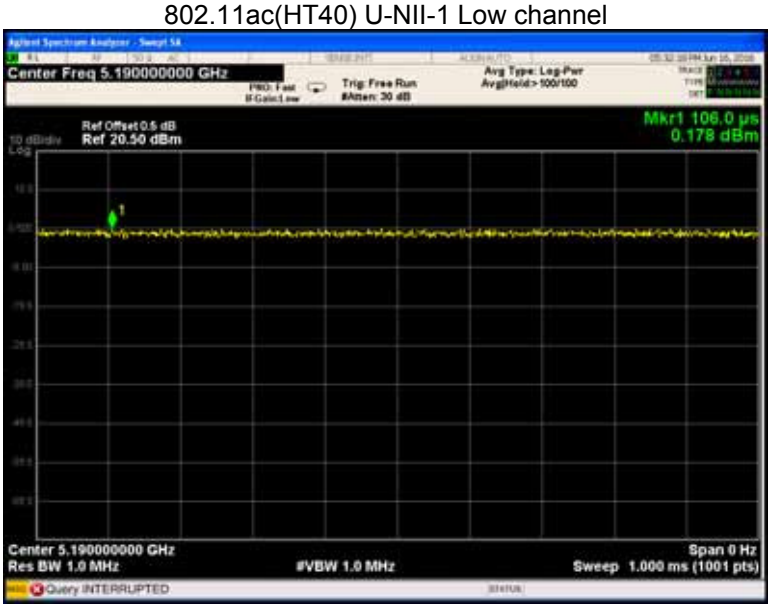
802.11n(HT40) U-NII-1 Low channel



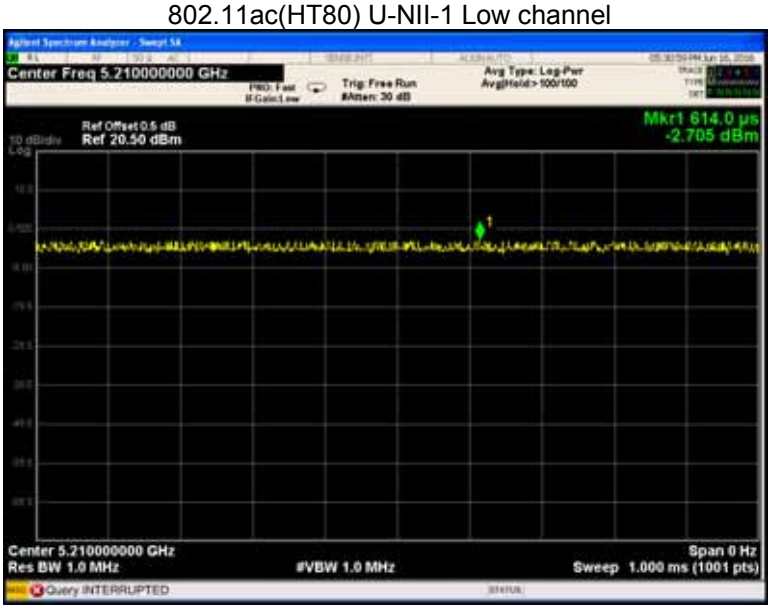
802.11ac(HT20) U-NII-1 Low channel



802.11ac(HT40) U-NII-1 Low channel

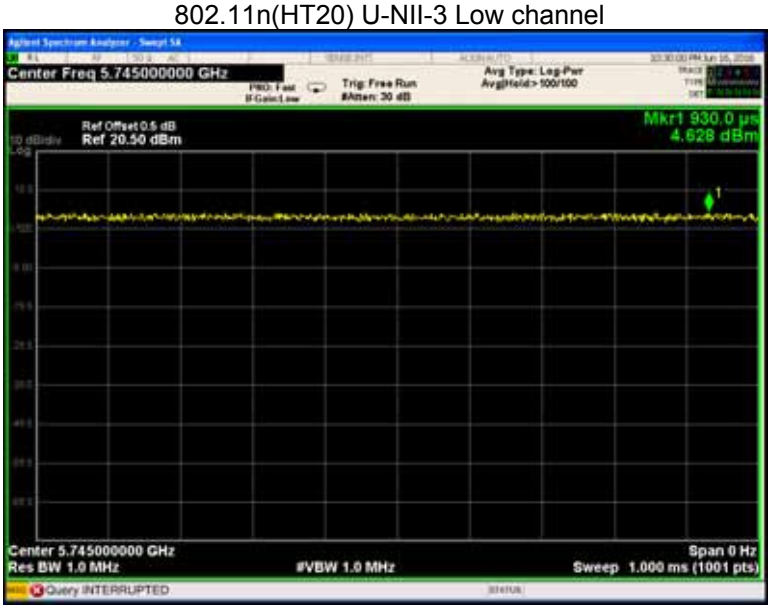


802.11ac(HT80) U-NII-1 Low channel

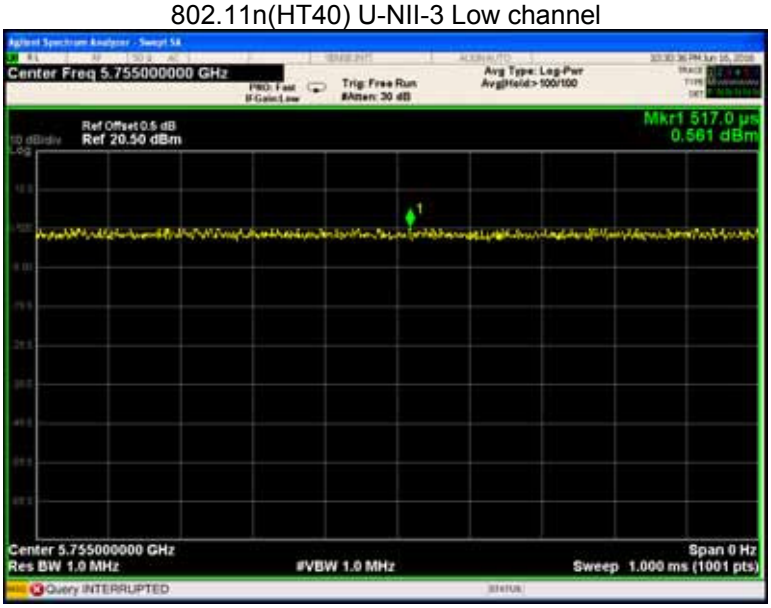


802.11a U-NII-3 Low channel

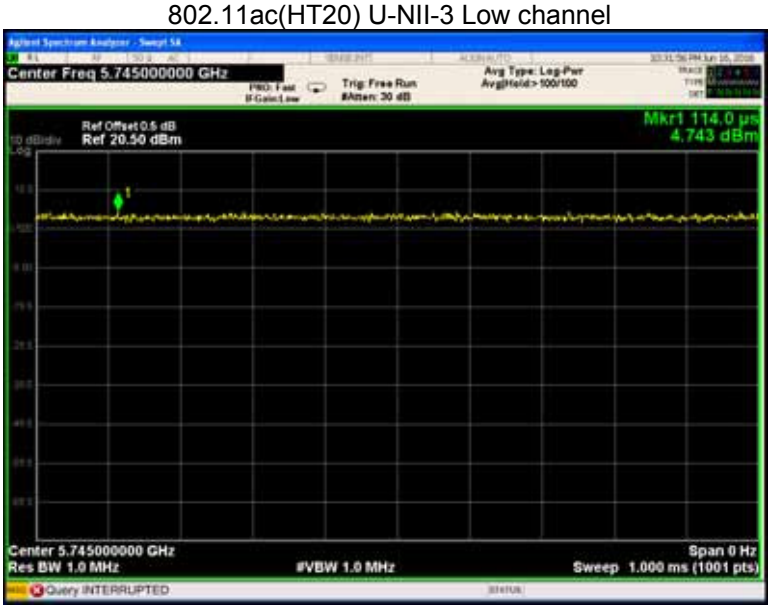
802.11n(HT20) U-NII-3 Low channel



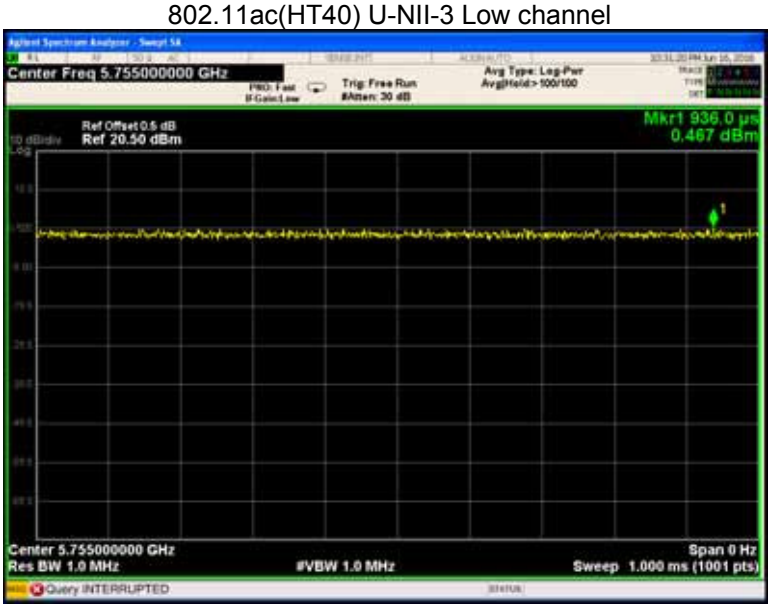
802.11n(HT40) U-NII-3 Low channel



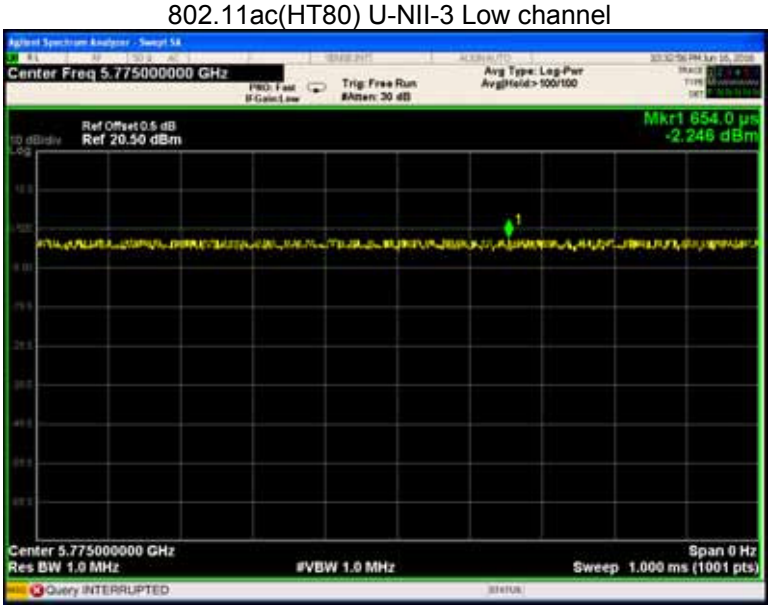
802.11ac(HT20) U-NII-3 Low channel



802.11ac(HT40) U-NII-3 Low channel



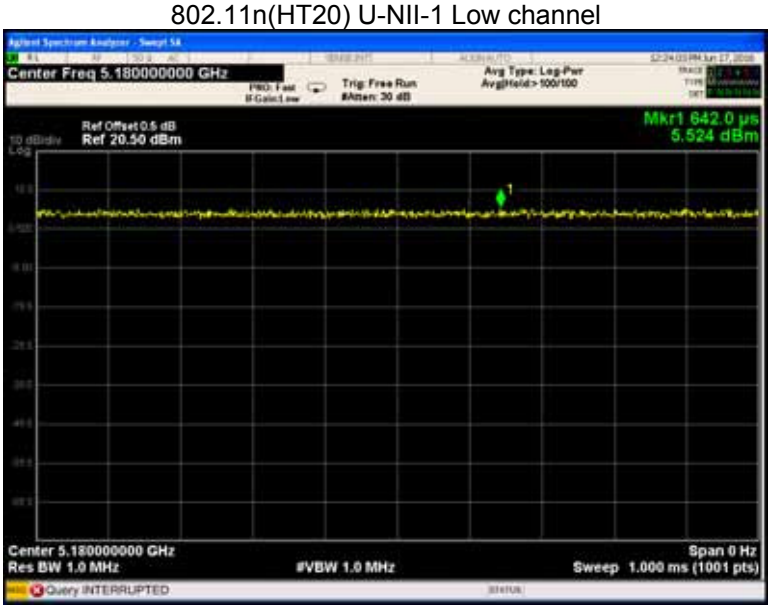
802.11ac(HT80) U-NII-3 Low channel



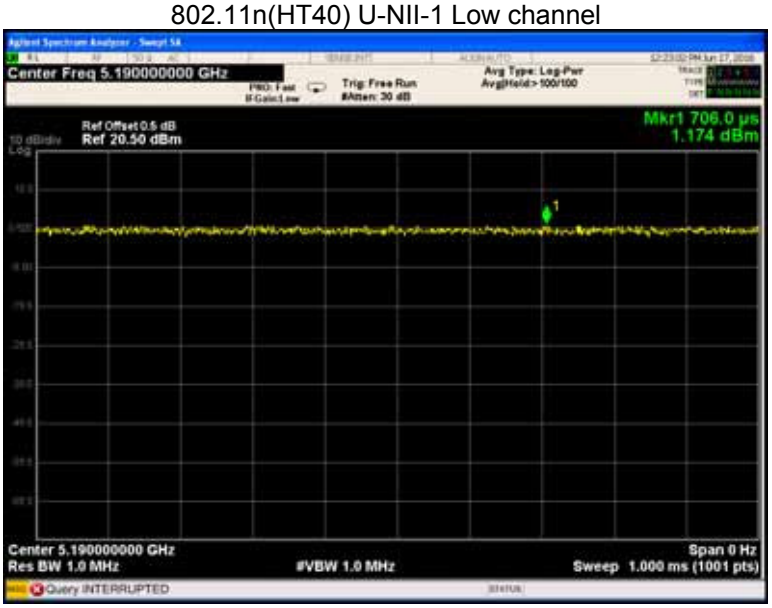
ANT1

802.11a U-NII-1 Low channel

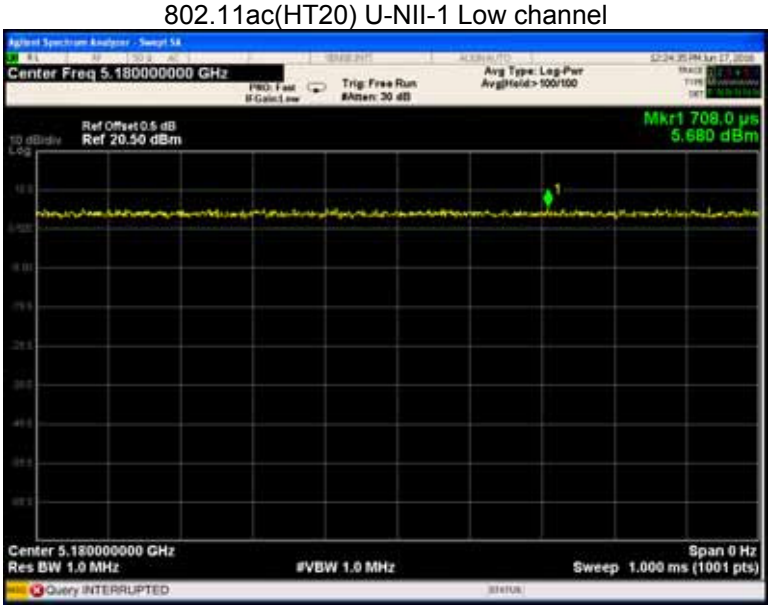
802.11n(HT20) U-NII-1 Low channel



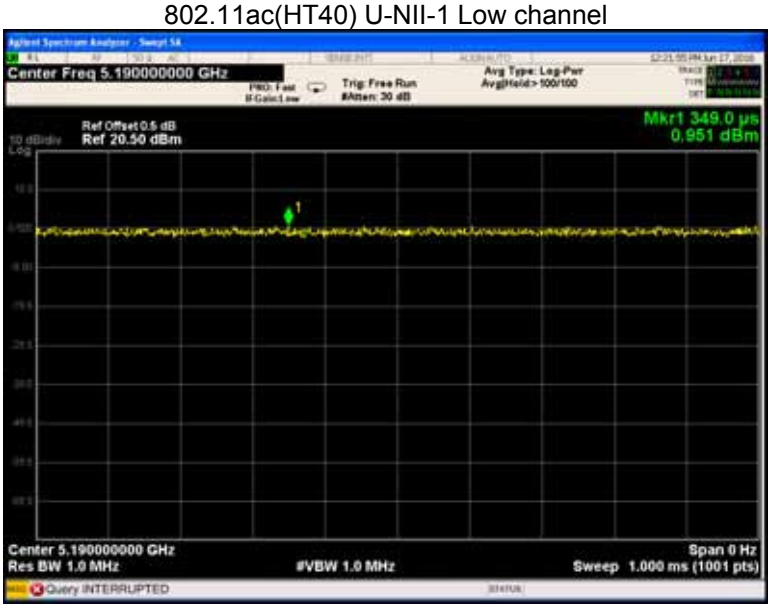
802.11n(HT40) U-NII-1 Low channel



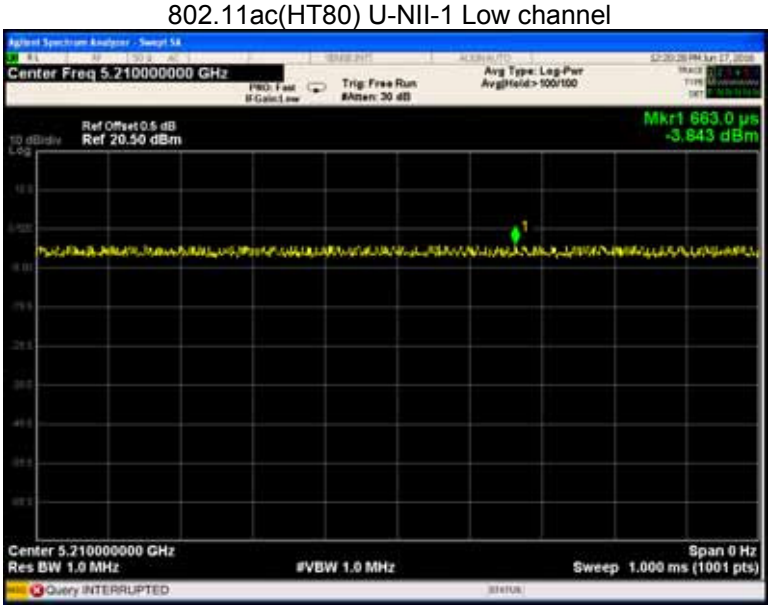
802.11ac(HT20) U-NII-1 Low channel



802.11ac(HT40) U-NII-1 Low channel



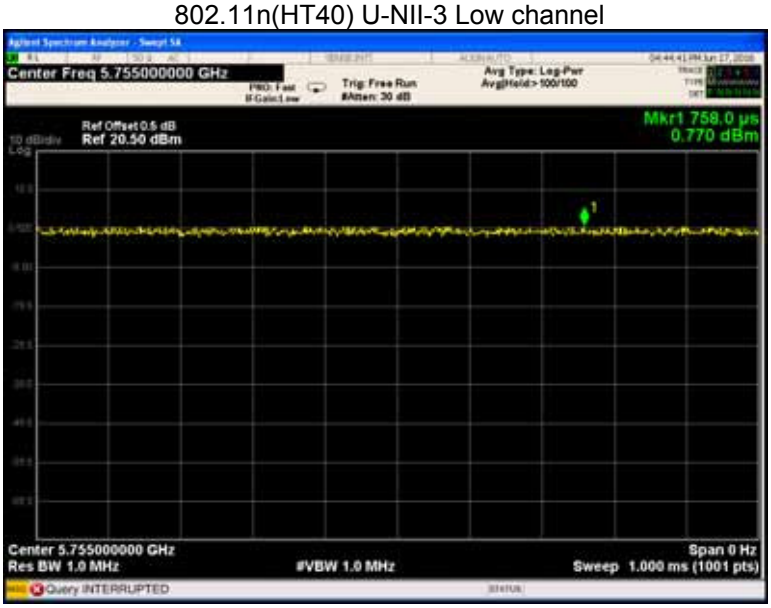
802.11ac(HT80) U-NII-1 Low channel



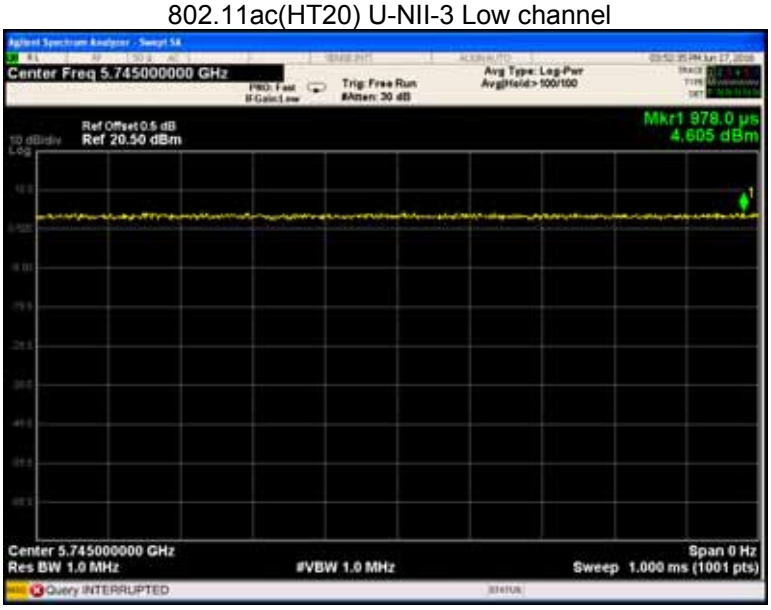
802.11a U-NII-3 Low channel

802.11n(HT20) U-NII-3 Low channel

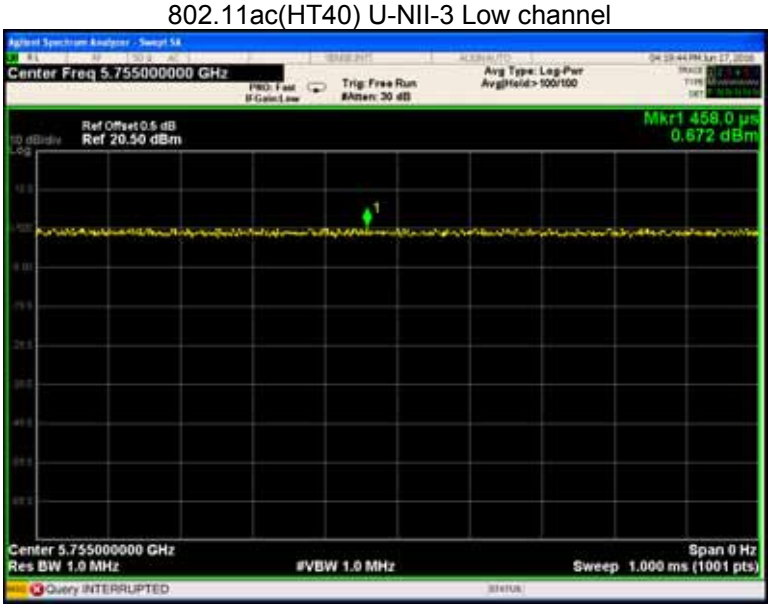
802.11n(HT40) U-NII-3 Low channel



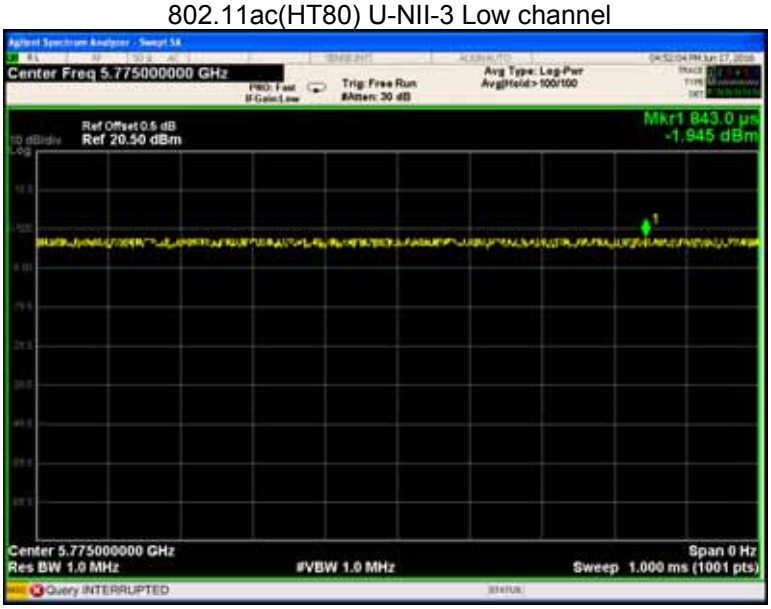
802.11ac(HT20) U-NII-3 Low channel



802.11ac(HT40) U-NII-3 Low channel



802.11ac(HT80) U-NII-3 Low channel



9 Band Edge

Test Requirement:	FCC CFR47 Part 15 Section 15.407
Test Method:	ANSI C63.10 2013
Test Limit:	(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 e.i.r.p. of −27dBm/MHz. (2) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.
Test Result:	PASS

9.1 Test Produce

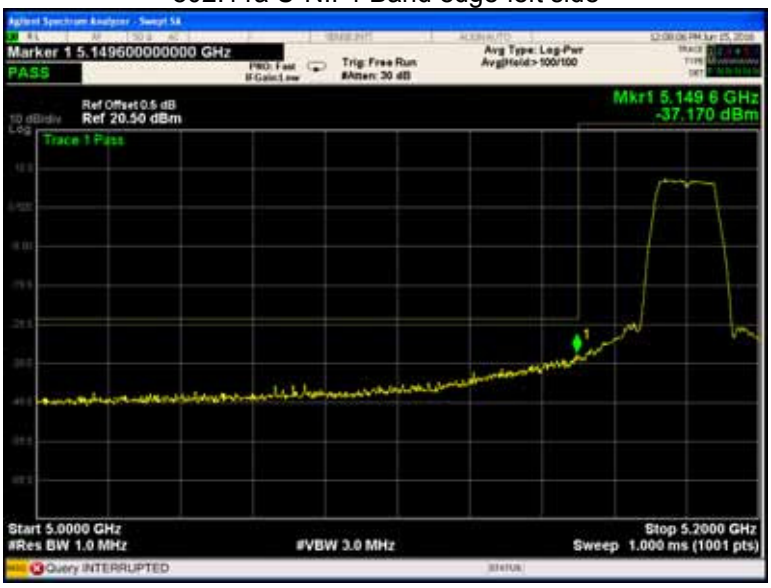
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

9.2 Test Result

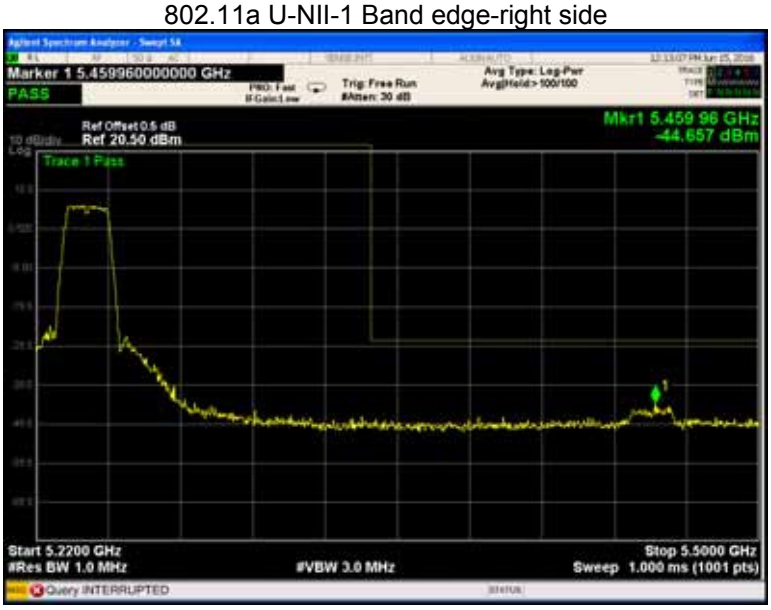
Test result plots shown as follows:

ANT0

802.11a U-NII-1 Band edge-left side



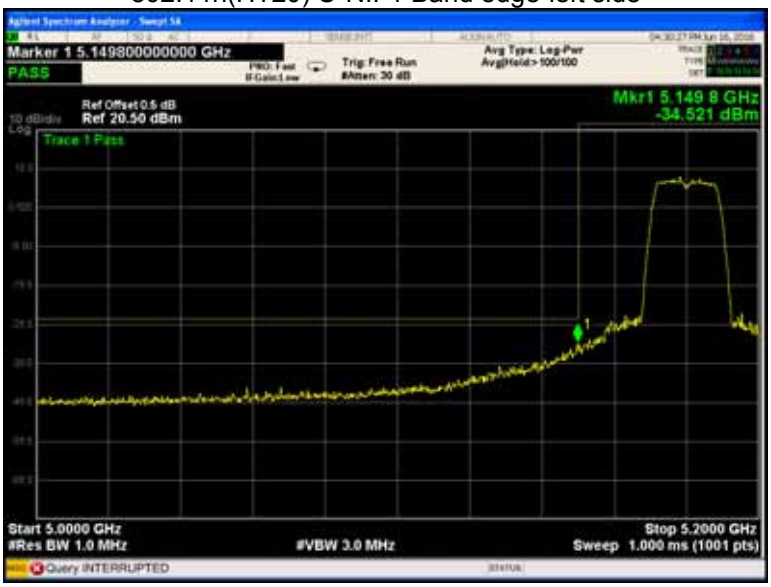
802.11a U-NII-1 Band edge-right side



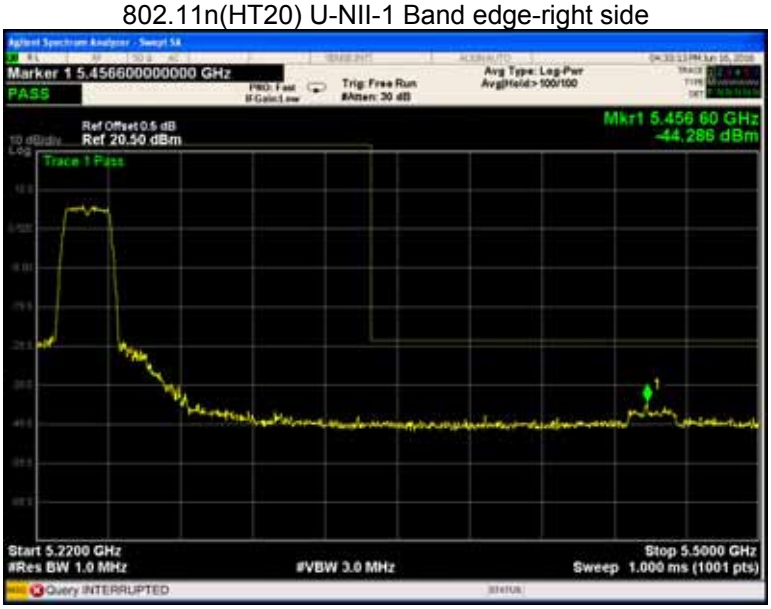
802.11a U-NII-3 Band edge-left side

802.11a U-NII-3 Band edge-right side

802.11n(HT20) U-NII-1 Band edge-left side



802.11n(HT20) U-NII-1 Band edge-right side

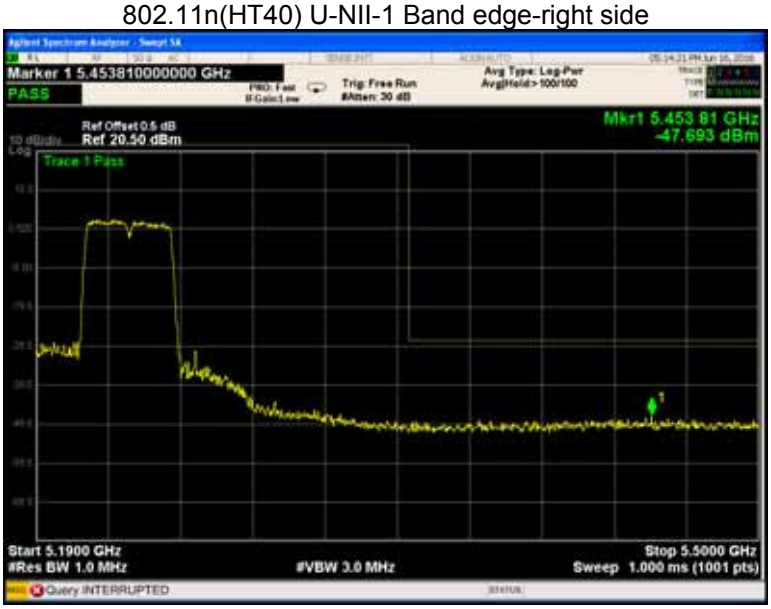


802.11n(HT20) U-NII-3 Band edge-left side

802.11n(HT20) U-NII-3 Band edge-right side

802.11n(HT40) U-NII-1 Band edge-left side

802.11n(HT40) U-NII-1 Band edge-right side



802.11n(HT40) U-NII-3 Band edge-left side

802.11n(HT40) U-NII-3 Band edge-right side

802.11ac(HT20) U-NII-1 Band edge-left side

802.11ac(HT20) U-NII-1 Band edge-right side

802.11ac(HT20) U-NII-3 Band edge-left side

802.11ac(HT20) U-NII-3 Band edge-right side

802.11ac(HT40) U-NII-1 Band edge-left side

802.11ac(HT40) U-NII-1 Band edge-right side

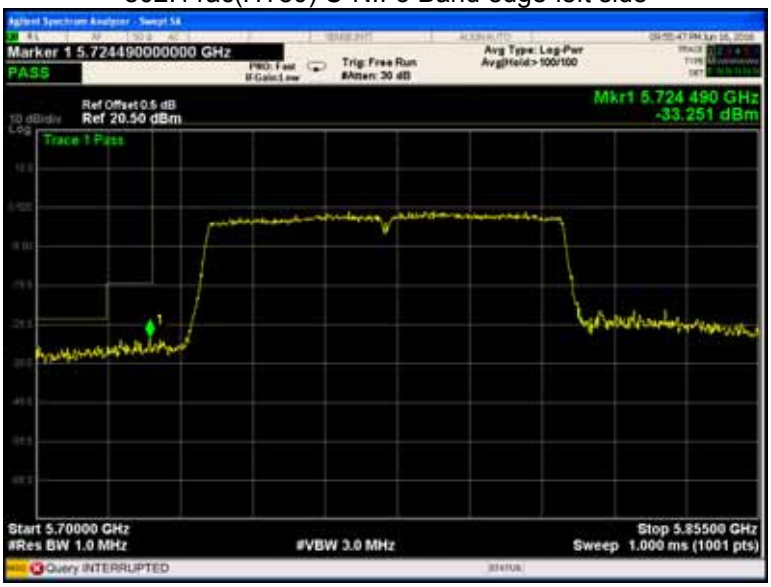
802.11ac(HT40) U-NII-3 Band edge-left side

802.11ac(HT40) U-NII-3 Band edge-right side

802.11ac(HT80) U-NII-1 Band edge-left side

802.11ac(HT80) U-NII-1 Band edge-right side

802.11ac(HT80) U-NII-3 Band edge-left side

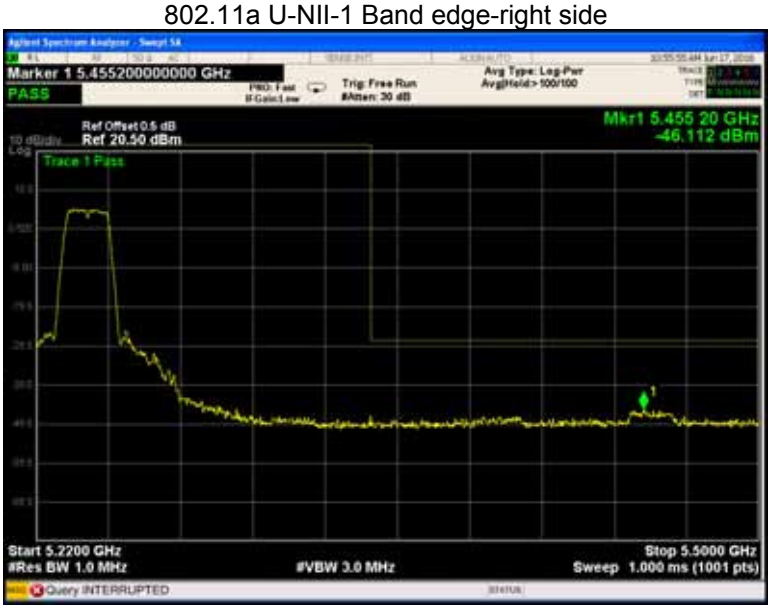


802.11ac(HT80) U-NII-3 Band edge-right side

ANT1

802.11a U-NII-1 Band edge-left side

802.11a U-NII-1 Band edge-right side

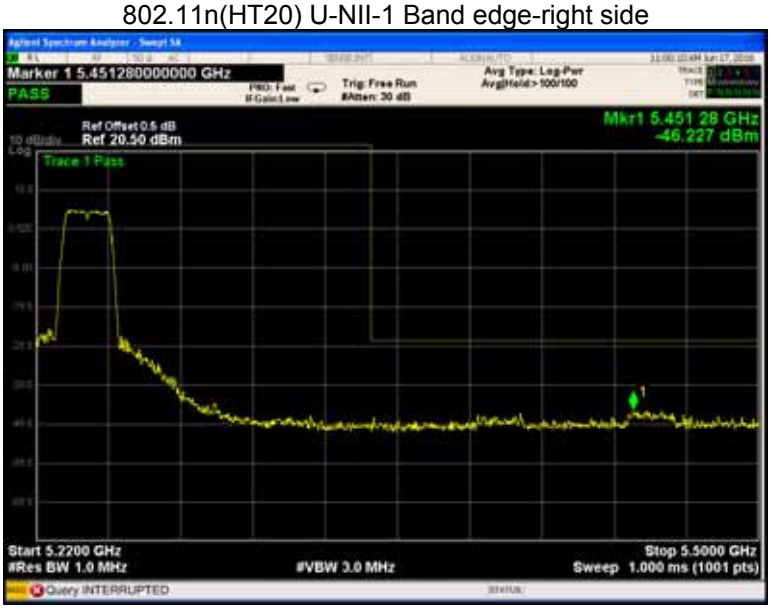


802.11a U-NII-3 Band edge-left side

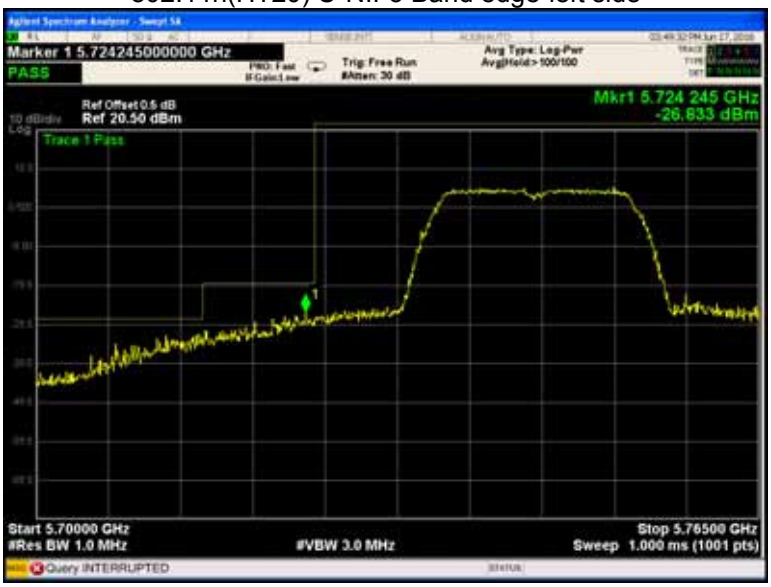
802.11a U-NII-3 Band edge-right side

802.11n(HT20) U-NII-1 Band edge-left side

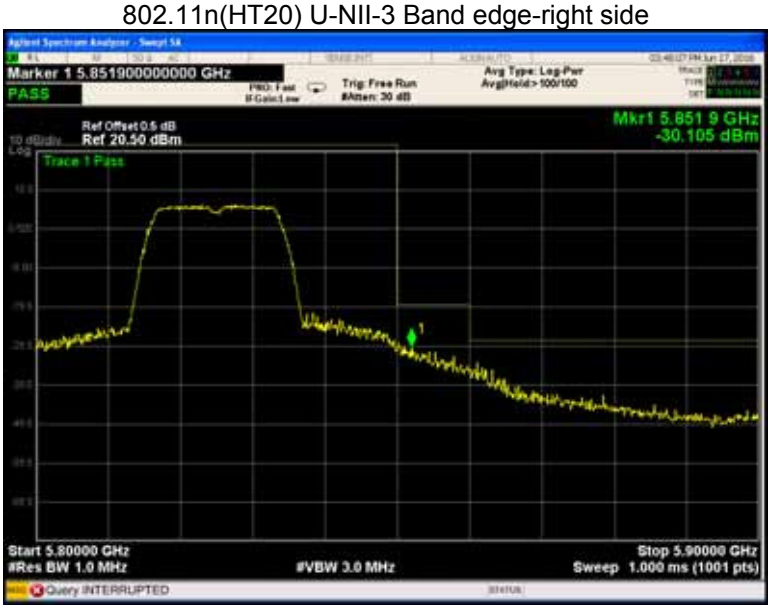
802.11n(HT20) U-NII-1 Band edge-right side



802.11n(HT20) U-NII-3 Band edge-left side

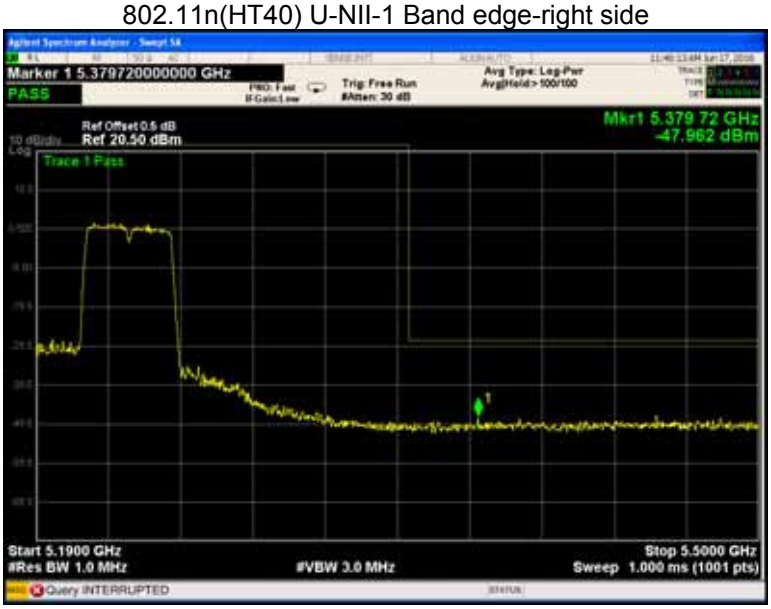


802.11n(HT20) U-NII-3 Band edge-right side



802.11n(HT40) U-NII-1 Band edge-left side

802.11n(HT40) U-NII-1 Band edge-right side



802.11n(HT40) U-NII-3 Band edge-left side

802.11n(HT40) U-NII-3 Band edge-right side

802.11ac(HT20) U-NII-1 Band edge-left side

802.11ac(HT20) U-NII-1 Band edge-right side

802.11ac(HT20) U-NII-3 Band edge-left side

802.11ac(HT20) U-NII-3 Band edge-right side

802.11ac(HT40) U-NII-1 Band edge-left side

802.11ac(HT40) U-NII-1 Band edge-right side

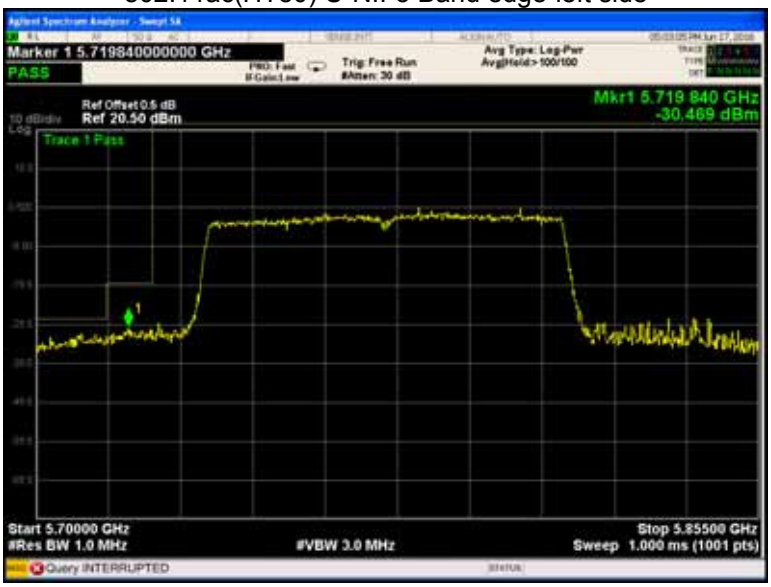
802.11ac(HT40) U-NII-3 Band edge-left side

802.11ac(HT40) U-NII-3 Band edge-right side

802.11ac(HT80) U-NII-1 Band edge-left side

802.11ac(HT80) U-NII-1 Band edge-right side

802.11ac(HT80) U-NII-3 Band edge-left side



802.11ac(HT80) U-NII-3 Band edge-right side

10 6 dB Bandwidth

Test Requirement:	FCC CFR47 Part 15 Section 15.407(e)
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v01 Section C
Test Limit:	≥ 500 kHz
Test Result:	PASS

10.1 Test Procedure:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

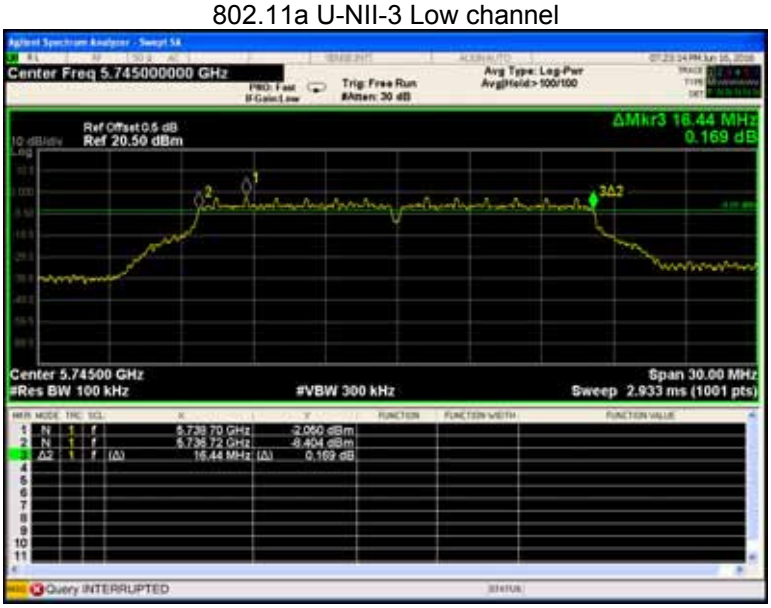
10.2 Test Result:

Band	Operation mode	6 dB Bandwidth (MHz)		
		Low	Middle	High
ANT0 U-NII-3	802.11a	16.44	16.41	16.41
	802.11n(HT20)	17.64	17.61	17.64
	802.11n(HT40)	36.42	/	36.42
	802.11ac(HT20)	17.67	17.67	17.67
	802.11ac(HT40)	36.42	/	36.42
	802.11ac(HT80)	76.20	/	/
ANT1 U-NII-3	802.11a	16.41	16.41	16.41
	802.11n(HT20)	17.64	17.64	17.64
	802.11n(HT40)	36.42	/	36.42
	802.11ac(HT20)	17.67	17.67	17.67
	802.11ac(HT40)	36.39	/	36.43
	802.11ac(HT80)	75.96	/	/

Test result plots shown as follows:

ANT0

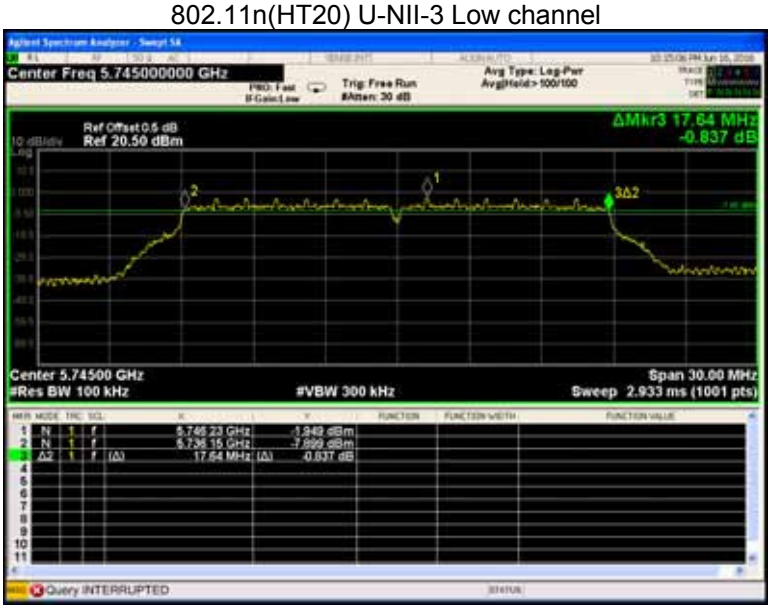
802.11a U-NII-3 Low channel



802.11a U-NII-3 Middle channel

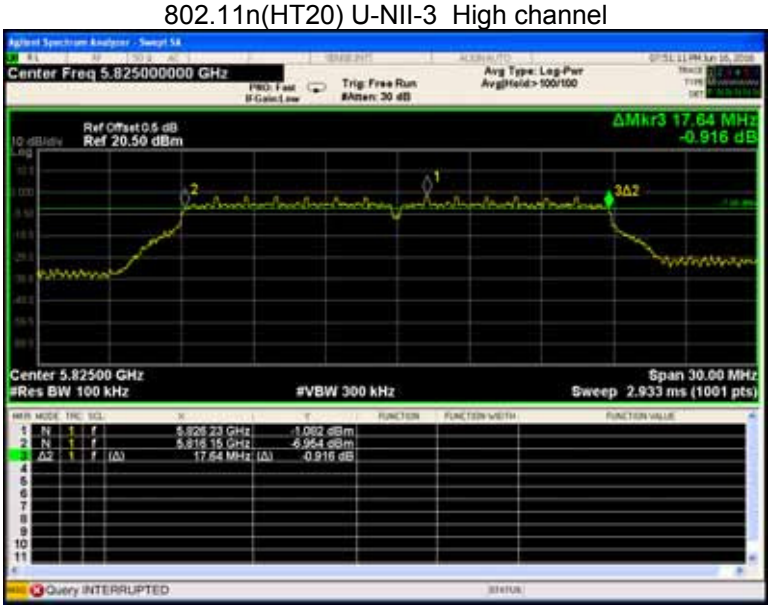
802.11a U-NII-3 High channel

802.11n(HT20) U-NII-3 Low channel

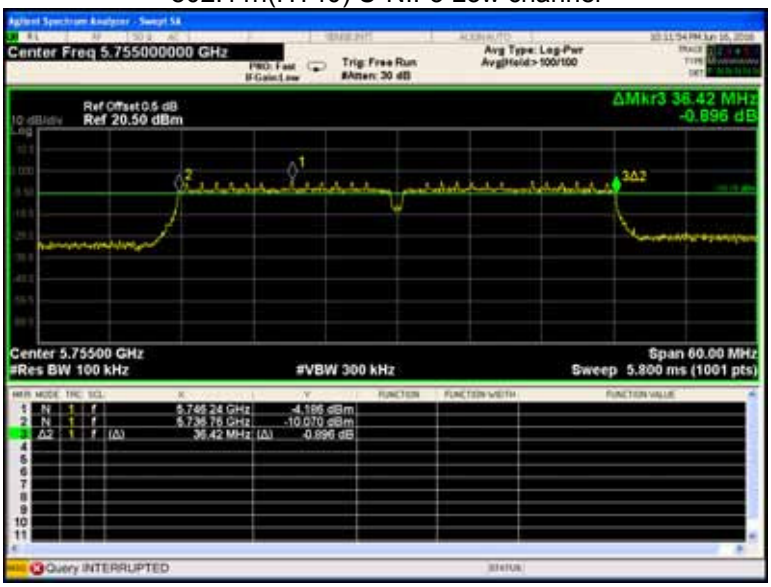


802.11n(HT20) U-NII-3 Middle channel

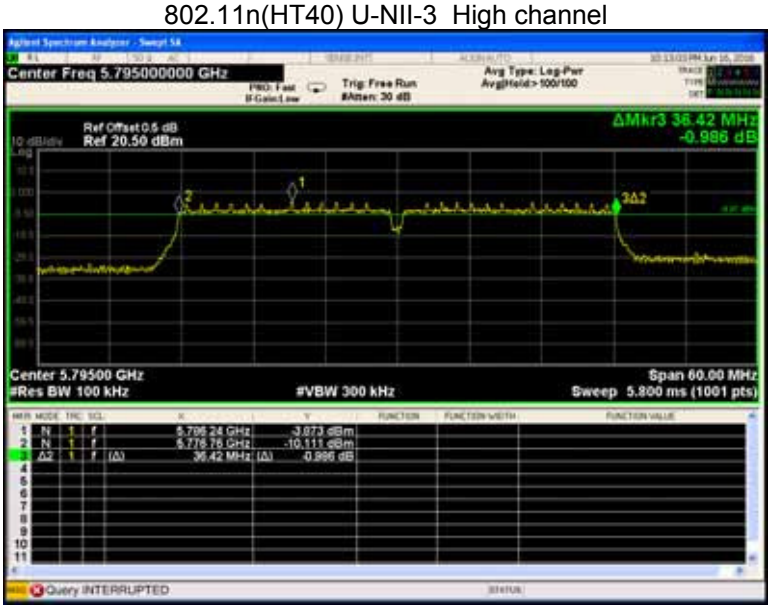
802.11n(HT20) U-NII-3 High channel



802.11n(HT40) U-NII-3 Low channel

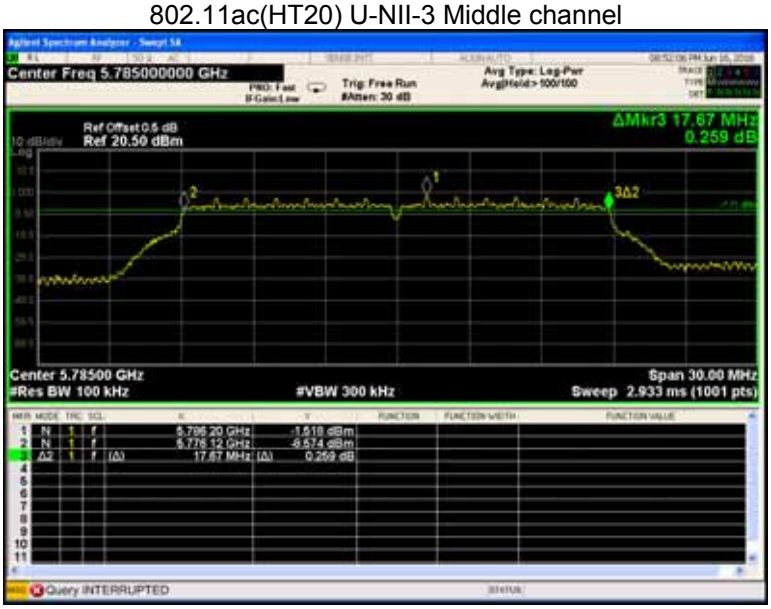


802.11n(HT40) U-NII-3 High channel



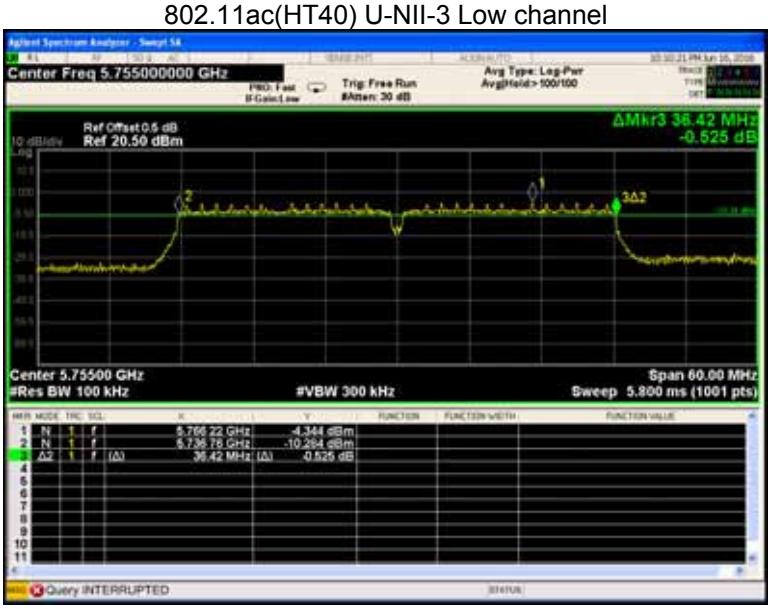
802.11ac(HT20) U-NII-3 Low channel

802.11ac(HT20) U-NII-3 Middle channel

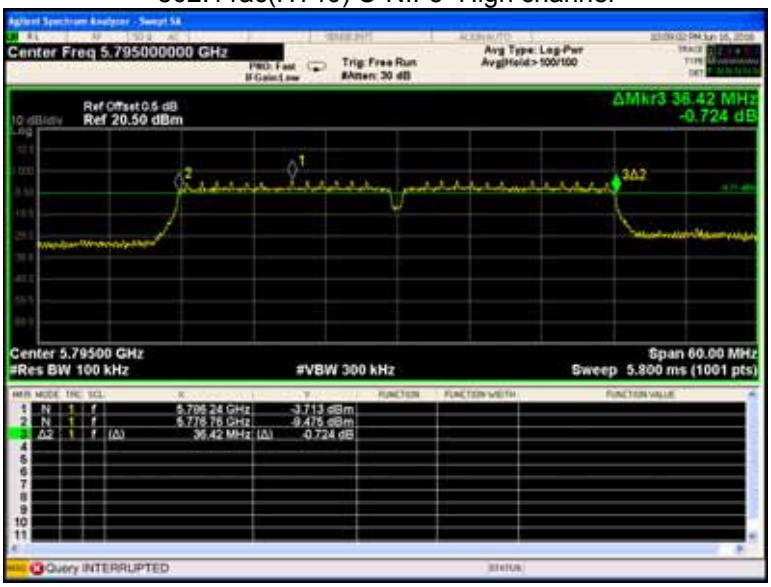


802.11ac(HT20) U-NII-3 High channel

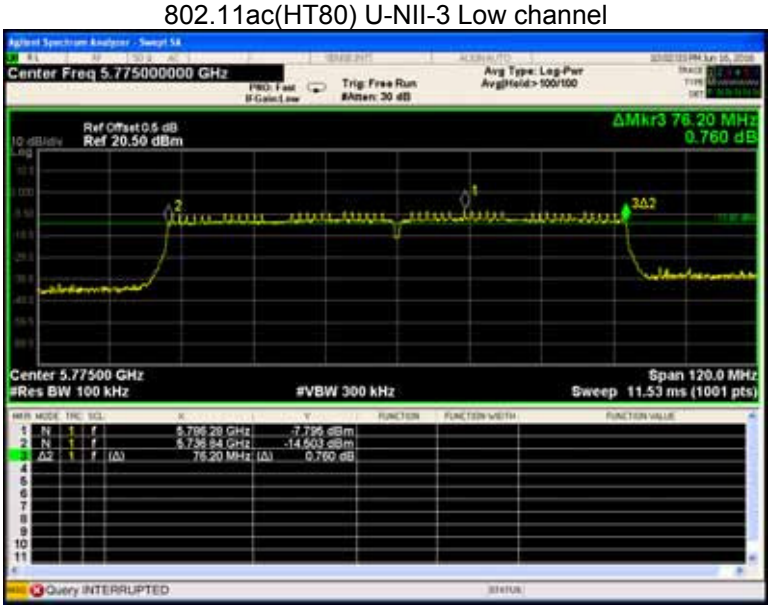
802.11ac(HT40) U-NII-3 Low channel



802.11ac(HT40) U-NII-3 High channel



802.11ac(HT80) U-NII-3 Low channel



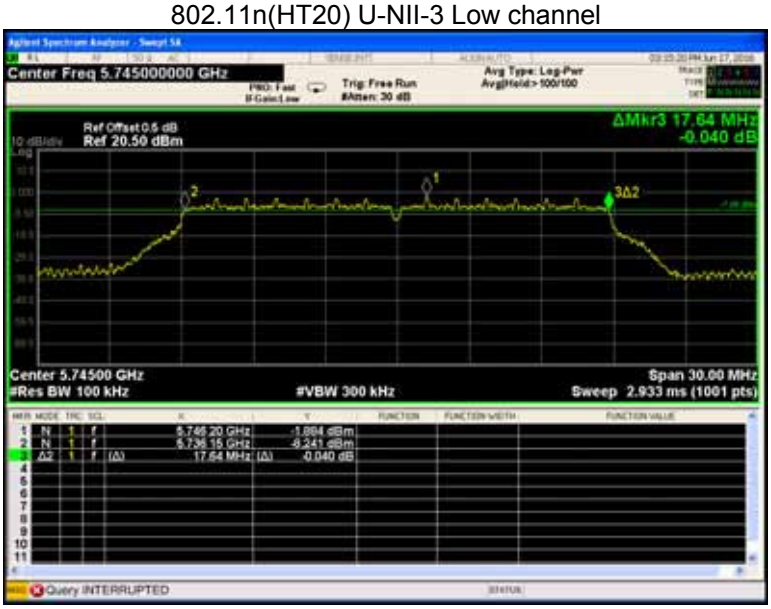
ANT1

802.11a U-NII-3 Low channel

802.11a U-NII-3 Middle channel

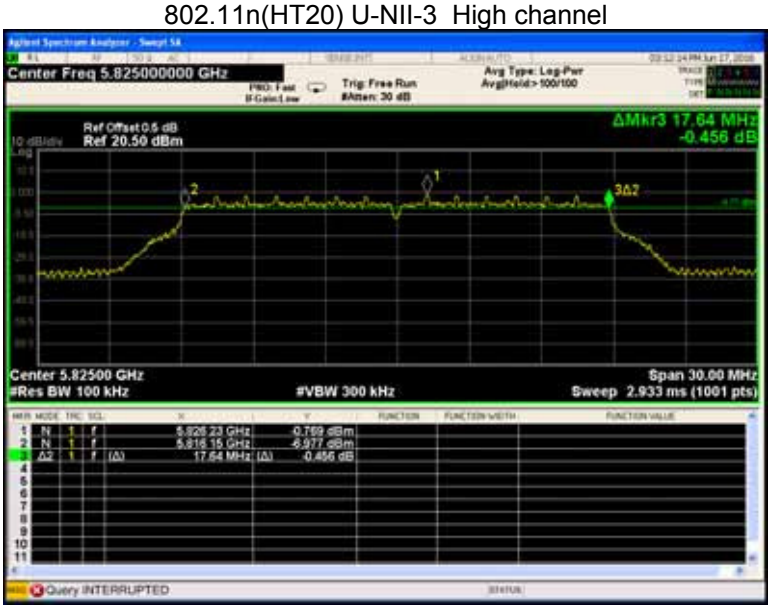
802.11a U-NII-3 High channel

802.11n(HT20) U-NII-3 Low channel

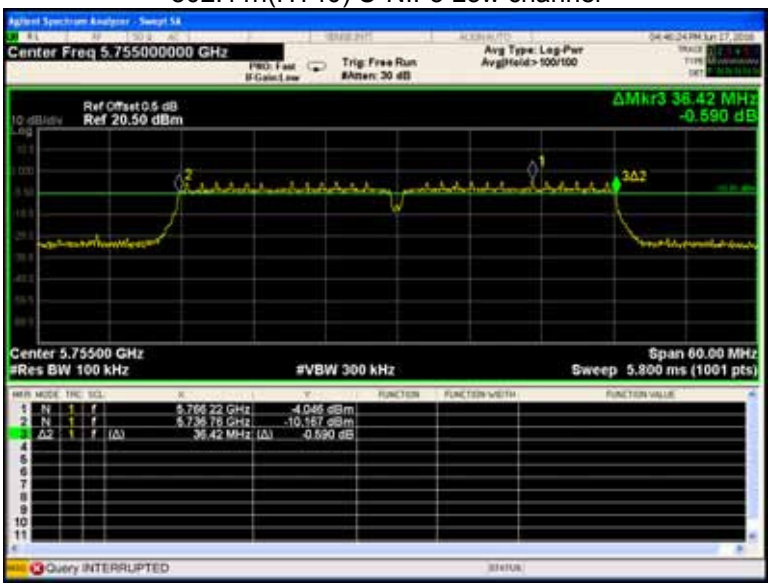


802.11n(HT20) U-NII-3 Middle channel

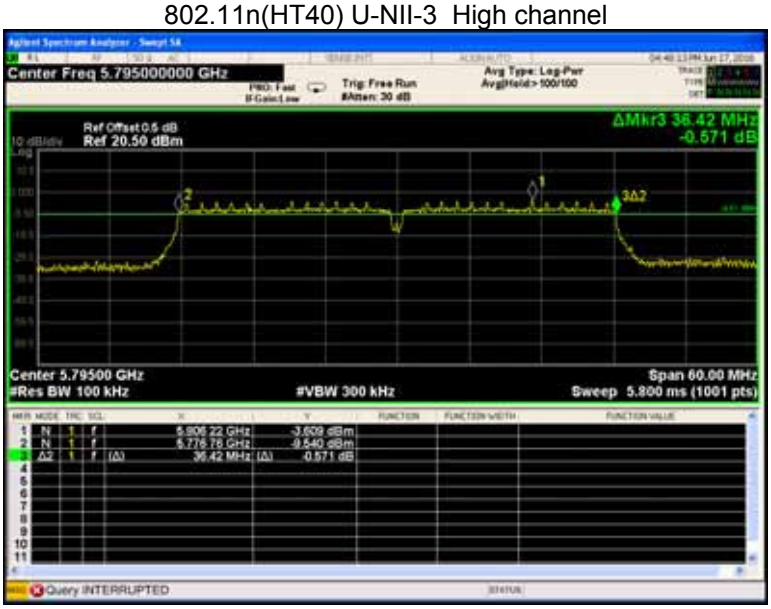
802.11n(HT20) U-NII-3 High channel



802.11n(HT40) U-NII-3 Low channel

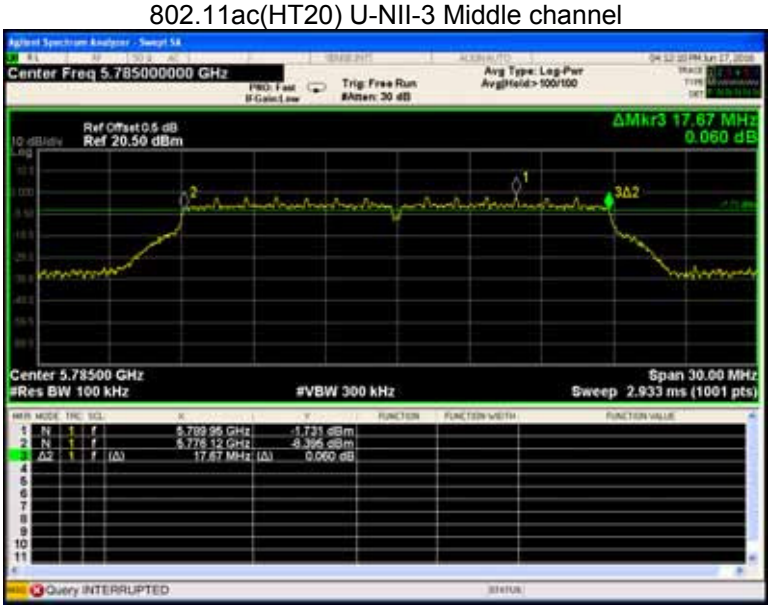


802.11n(HT40) U-NII-3 High channel



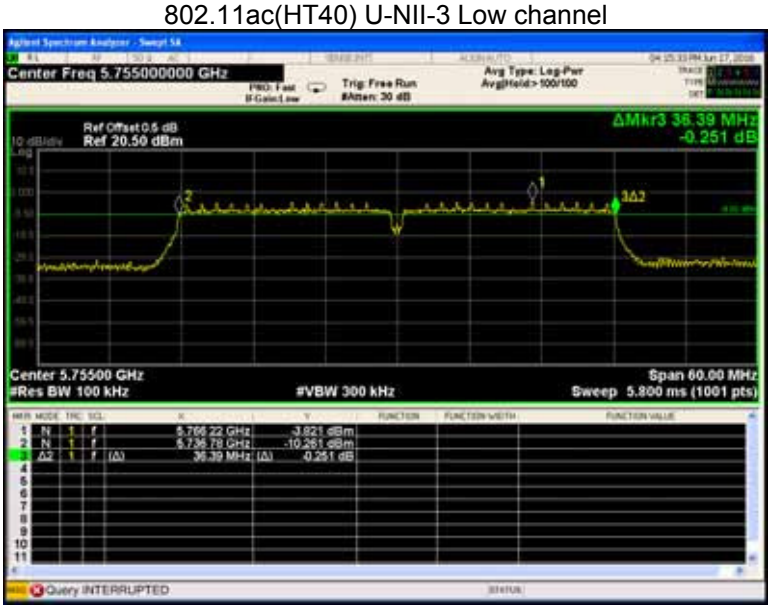
802.11ac(HT20) U-NII-3 Low channel

802.11ac(HT20) U-NII-3 Middle channel

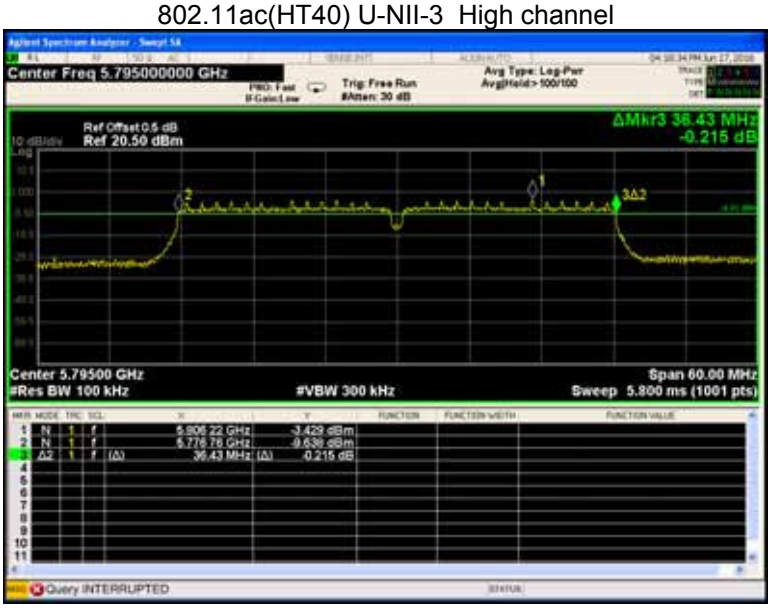


802.11ac(HT20) U-NII-3 High channel

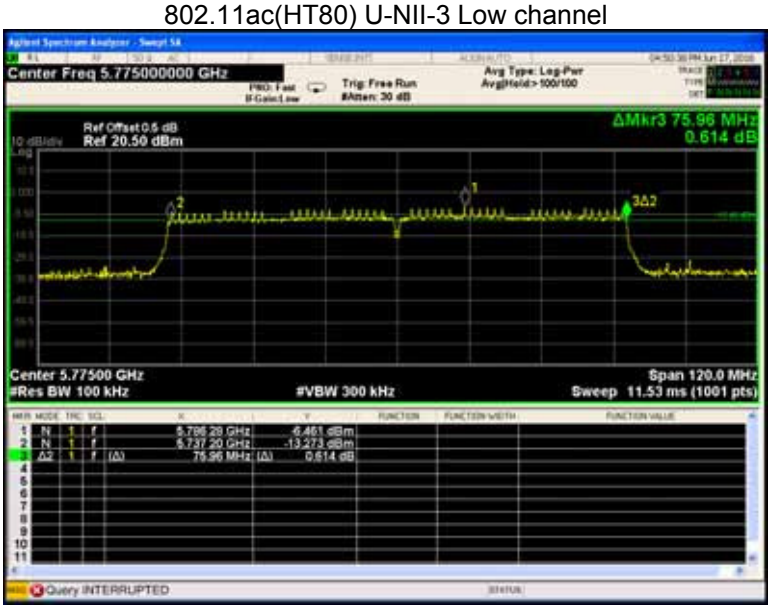
802.11ac(HT40) U-NII-3 Low channel



802.11ac(HT40) U-NII-3 High channel



802.11ac(HT80) U-NII-3 Low channel



11 26 dB Bandwidth and 99% Occupied Bandwidth

Test Requirement:	47 CFR Part 15C Section 15.407 (a)
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v01 Section D
Test Limit:	No restriction limits
Test Result:	PASS

11.1 Test Procedure:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;

2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

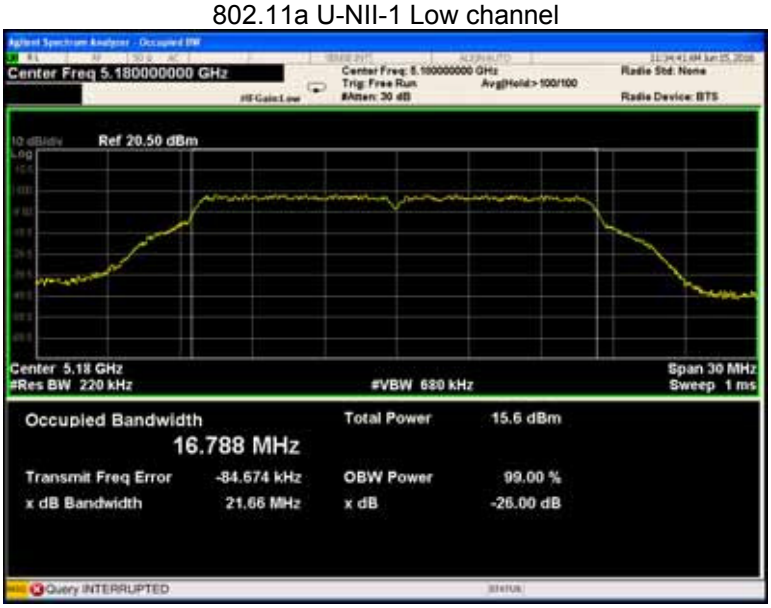
11.2 Test Result:

Band	Operation mode	26 dB Bandwidth (MHz)			99% Bandwidth (MHz)		
		Low	Middle	High	Low	Middle	High
ANT0 U-NII-1	802.11a	21.660	21.630	21.530	16.788	16.807	16.803
	802.11n(HT20)	21.800	21.820	21.800	17.922	17.954	17.931
	802.11n(HT40)	40.060	/	36.296	36.301	/	36.296
	802.11ac(HT20)	21.960	21.680	21.680	17.897	17.905	17.915
	802.11ac(HT40)	40.080	/	40.120	36.308	/	36.306
	802.11ac(HT80)	81.610	/	/	75.769	/	/
ANT0 U-NII-3	802.11a	21.590	21.480	21330	16.832	16.841	16.803
	802.11n(HT20)	21.850	21.840	21.800	17.922	17.948	17.935
	802.11n(HT40)	39.980	/	40.090	36.369	/	36.368
	802.11ac(HT20)	21.920	21.90	21.850	17.941	17.963	17.929
	802.11ac(HT40)	40.260	/	40.330	36.419	/	36.373
	802.11ac(HT80)	81.64	/	/	75.996	/	/
ANT1 U-NII-1	802.11a	21.730	21.720	21.630	16.822	16.835	16.815
	802.11n(HT20)	21.880	21.920	21.770	17.969	17.970	17.992
	802.11n(HT40)	40.080	/	40.100	36.318	/	36.345
	802.11ac(HT20)	21.850	21.870	21.890	17.924	17.953	17.950
	802.11ac(HT40)	40.300	/	40.090	36.313	/	36.333
	802.11ac(HT80)	81.710	/	/	75.840	/	/
ANT1 U-NII-3	802.11a	21.750	21.740	21.760	16.839	16.830	16.834
	802.11n(HT20)	21.780	21.850	21.870	17.957	17.935	17.944
	802.11n(HT40)	40.580	/	40.400	36.397	/	36.376
	802.11ac(HT20)	21.940	21.830	21.840	17.990	17.955	17.945
	802.11ac(HT40)	40.420	/	40.370	36.376	/	36.374
	802.11ac(HT80)	81.840	/	/	75.938	/	/

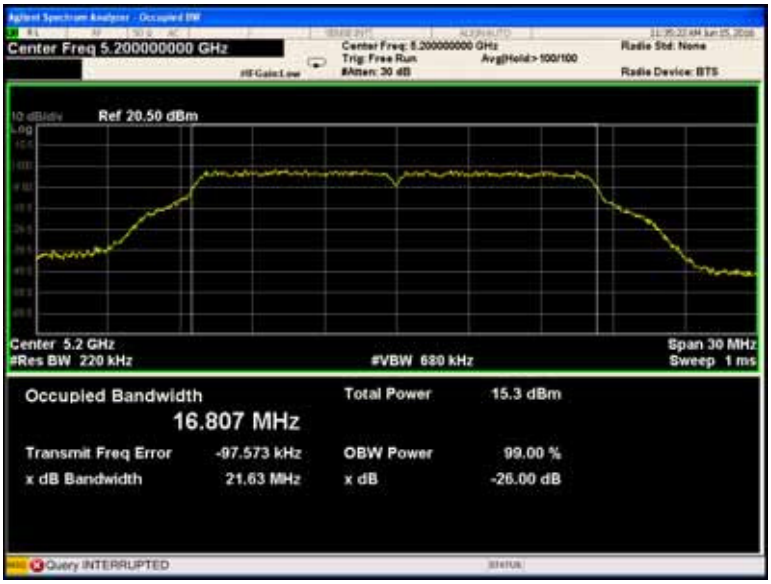
Test result plots shown as follows:

ANT0

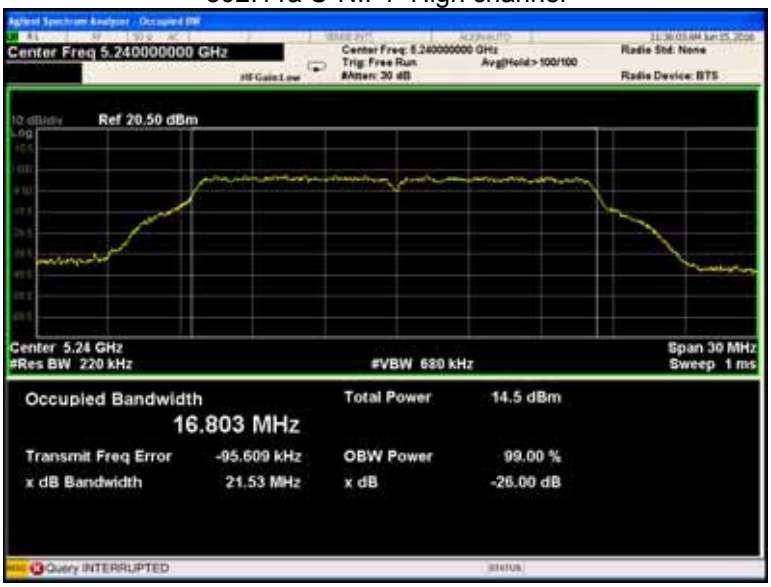
802.11a U-NII-1 Low channel



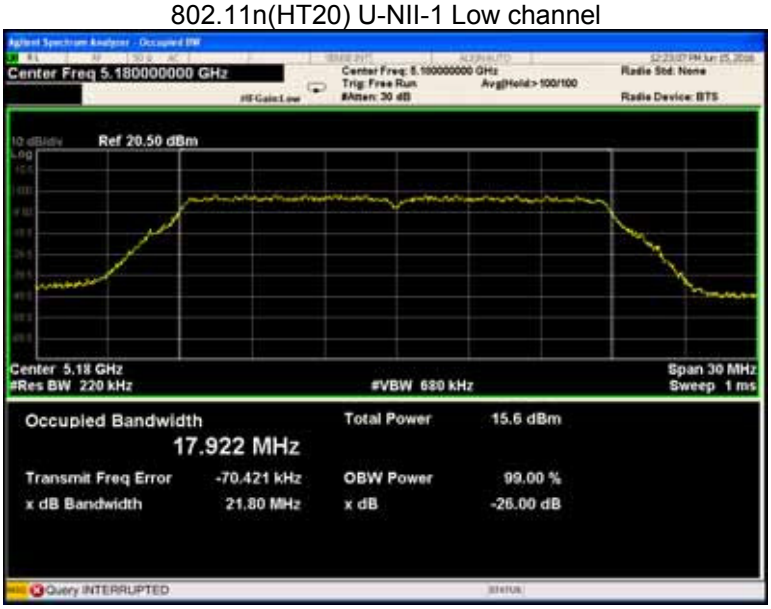
802.11a U-NII-1 Middle channel



802.11a U-NII-1 High channel

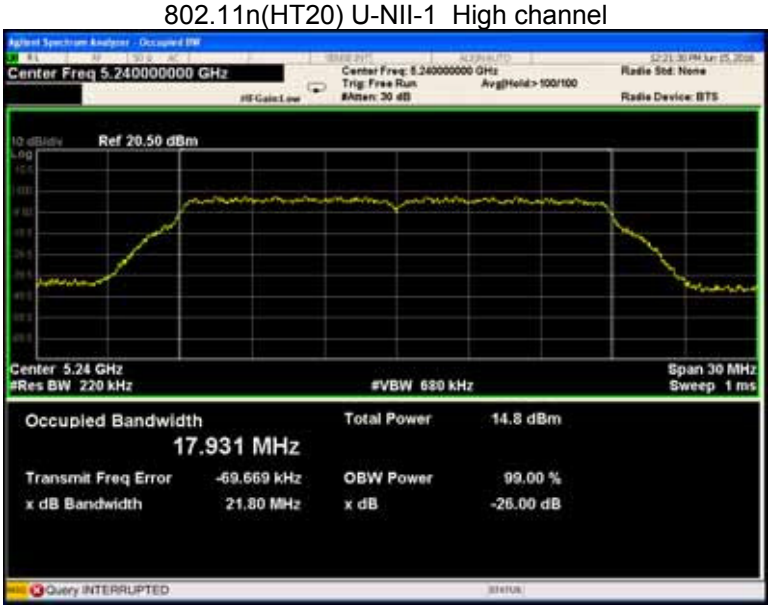


802.11n(HT20) U-NII-1 Low channel

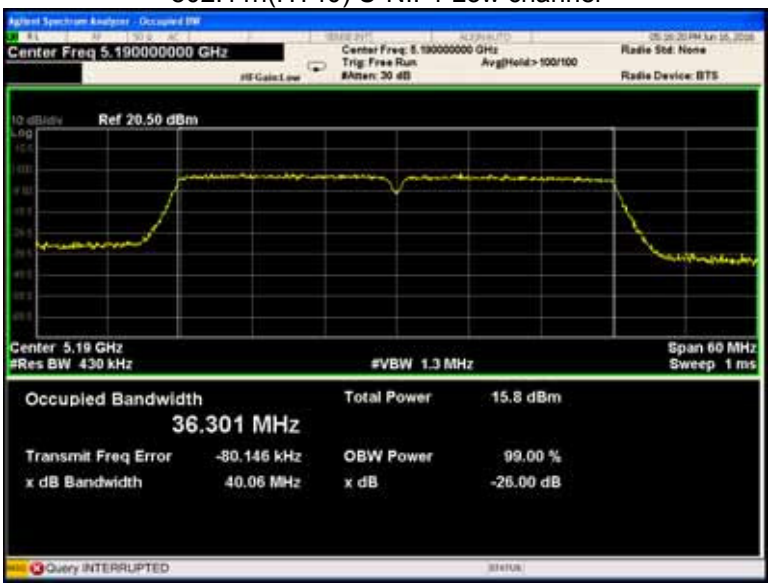


802.11n(HT20) U-NII-1 Middle channel

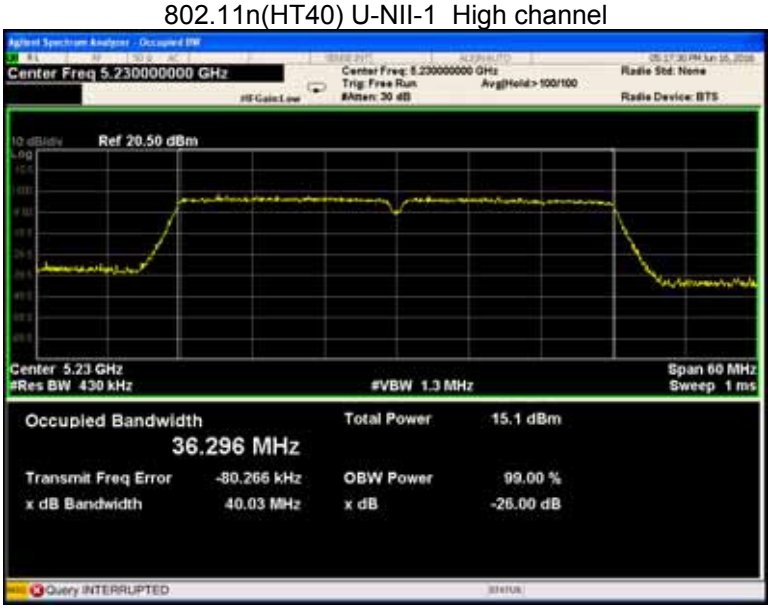
802.11n(HT20) U-NII-1 High channel



802.11n(HT40) U-NII-1 Low channel

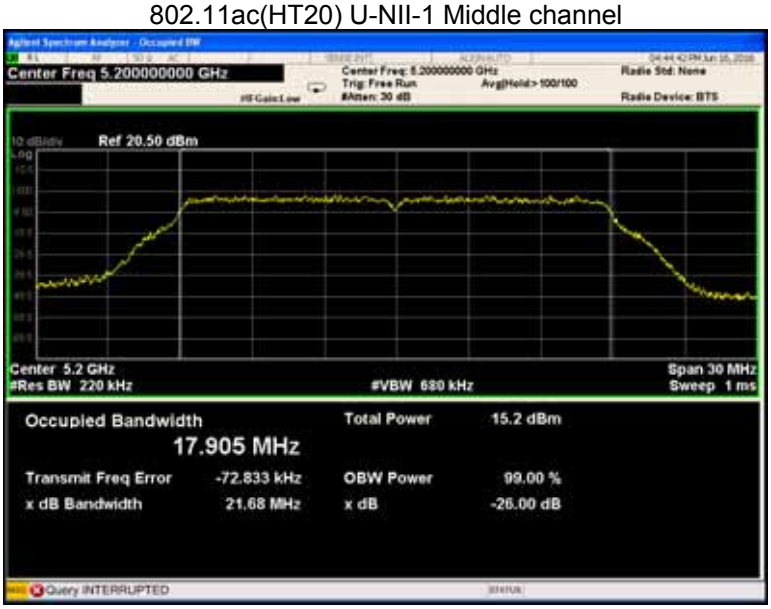


802.11n(HT40) U-NII-1 High channel

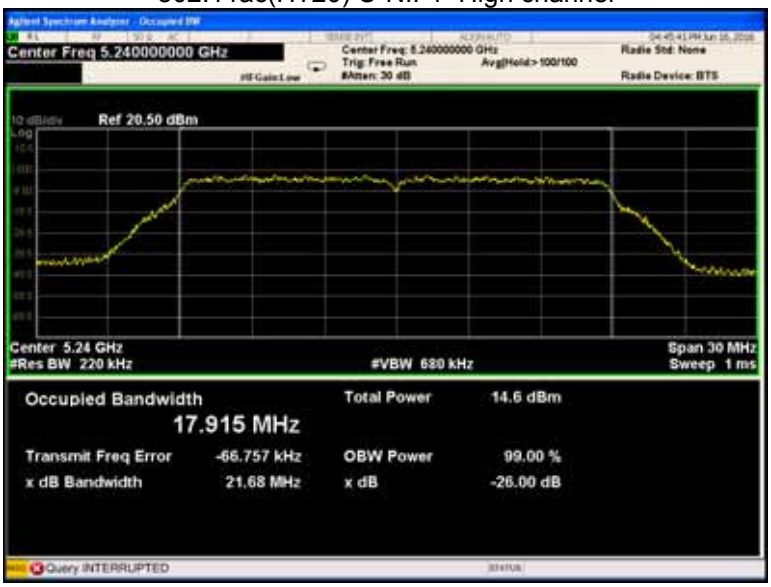


802.11ac(HT20) U-NII-1 Low channel

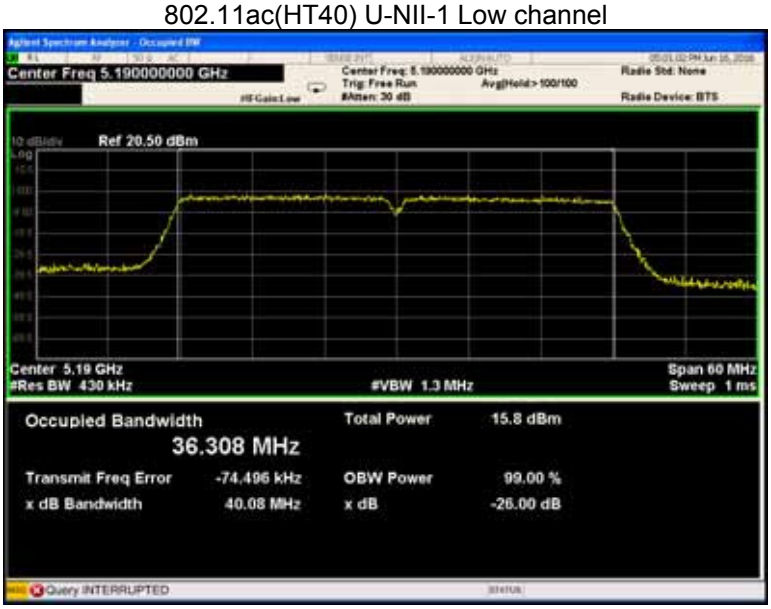
802.11ac(HT20) U-NII-1 Middle channel



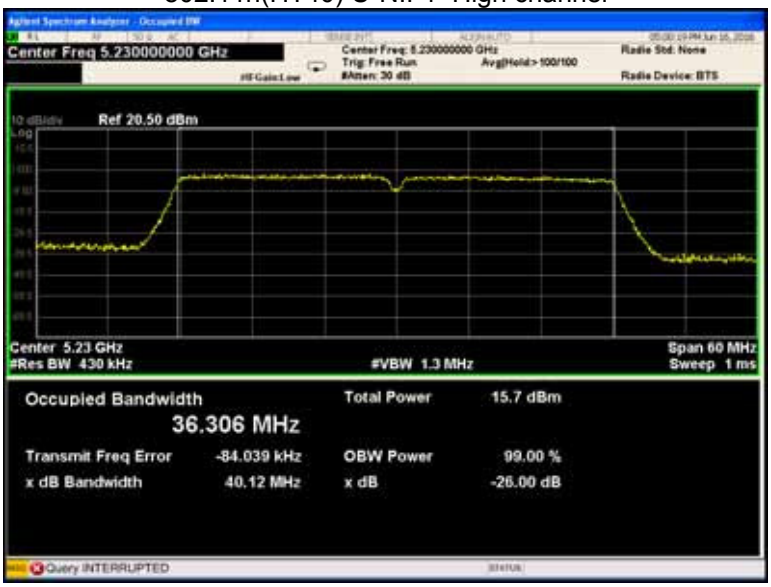
802.11ac(HT20) U-NII-1 High channel



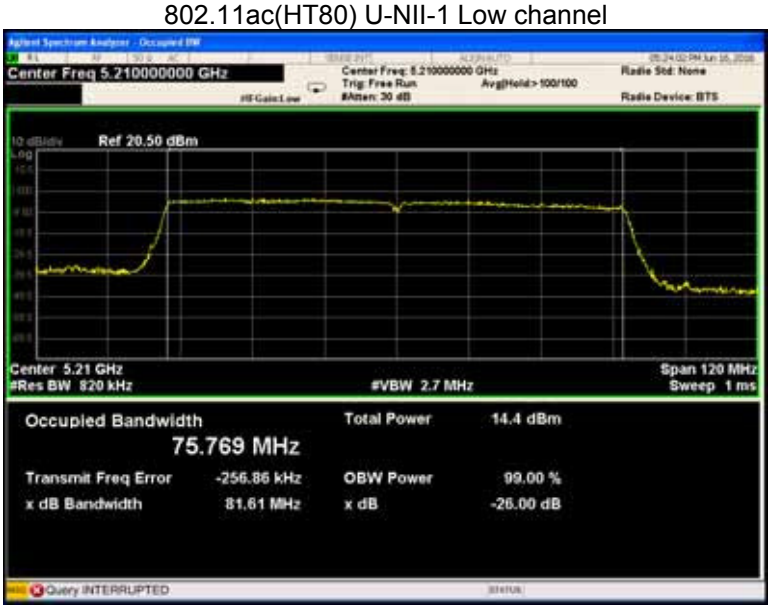
802.11ac(HT40) U-NII-1 Low channel



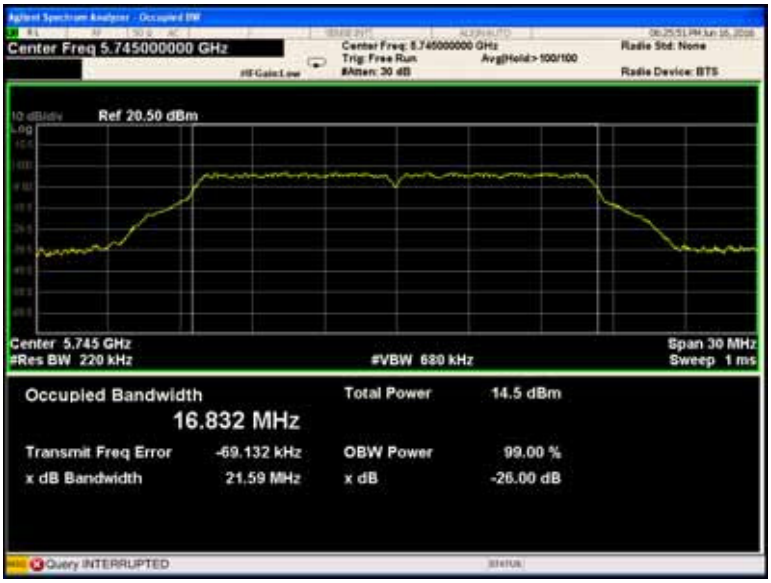
802.11n(HT40) U-NII-1 High channel



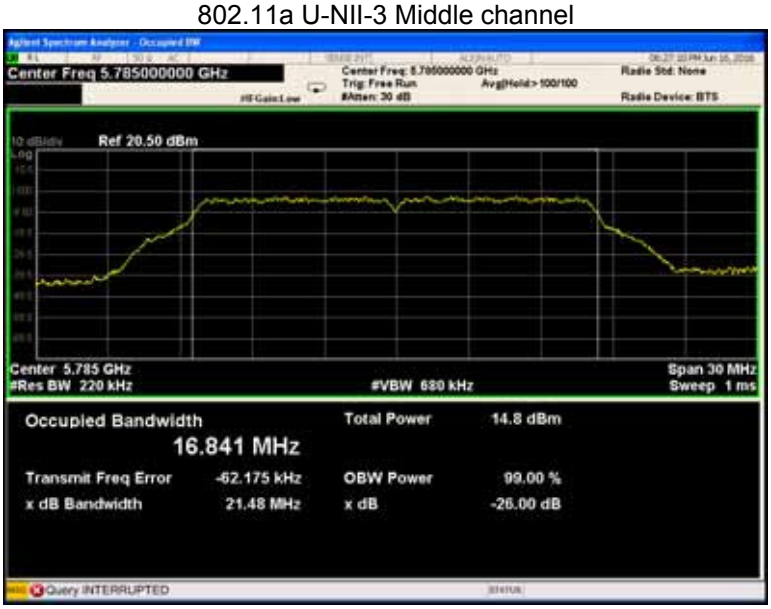
802.11ac(HT80) U-NII-1 Low channel



802.11a U-NII-3 Low channel

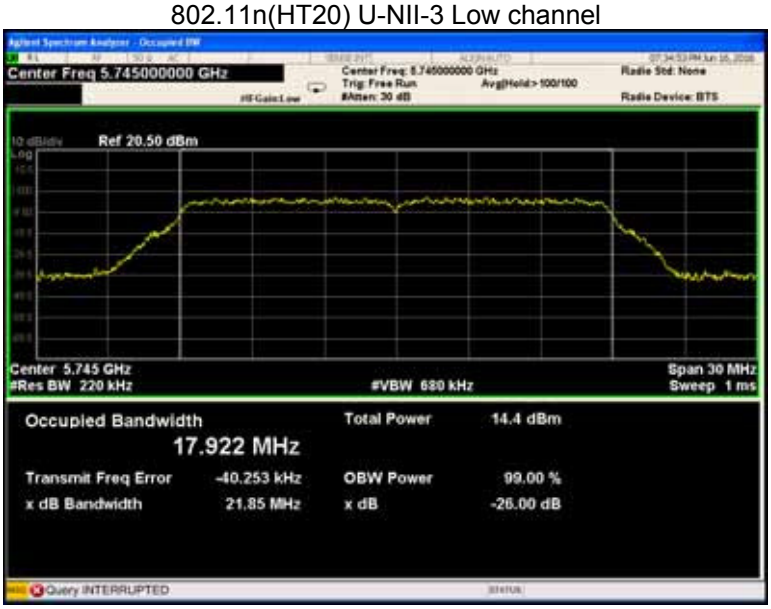


802.11a U-NII-3 Middle channel



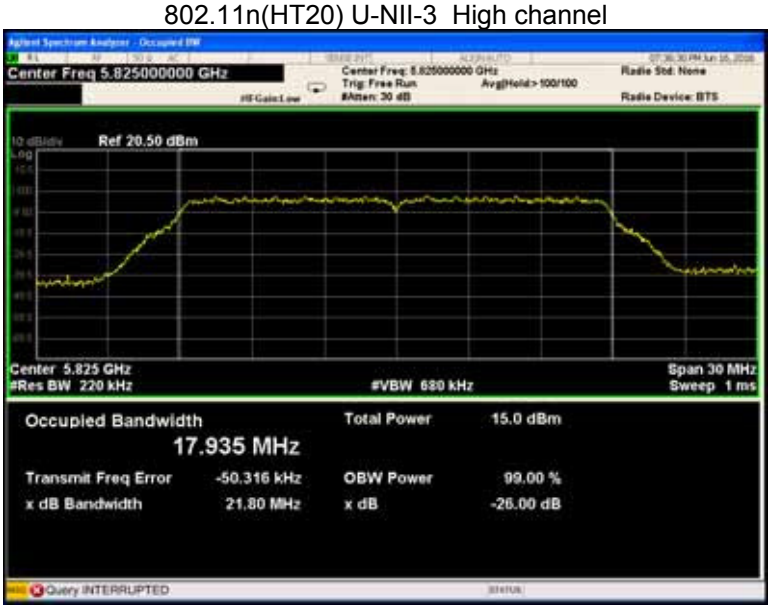
802.11a U-NII-3 High channel

802.11n(HT20) U-NII-3 Low channel



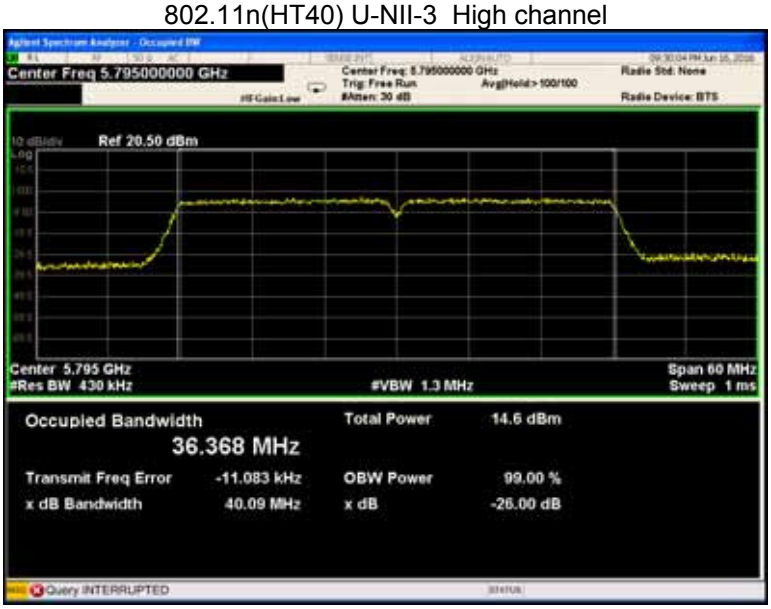
802.11n(HT20) U-NII-3 Middle channel

802.11n(HT20) U-NII-3 High channel

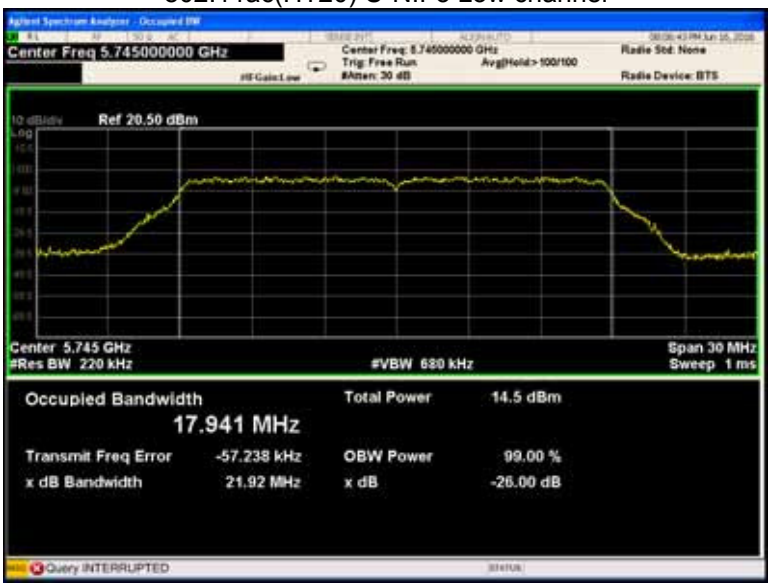


802.11n(HT40) U-NII-3 Low channel

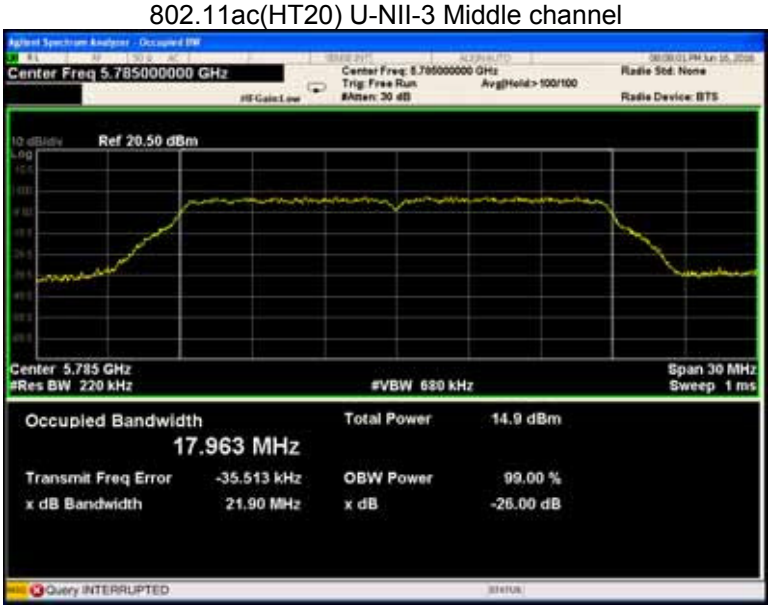
802.11n(HT40) U-NII-3 High channel



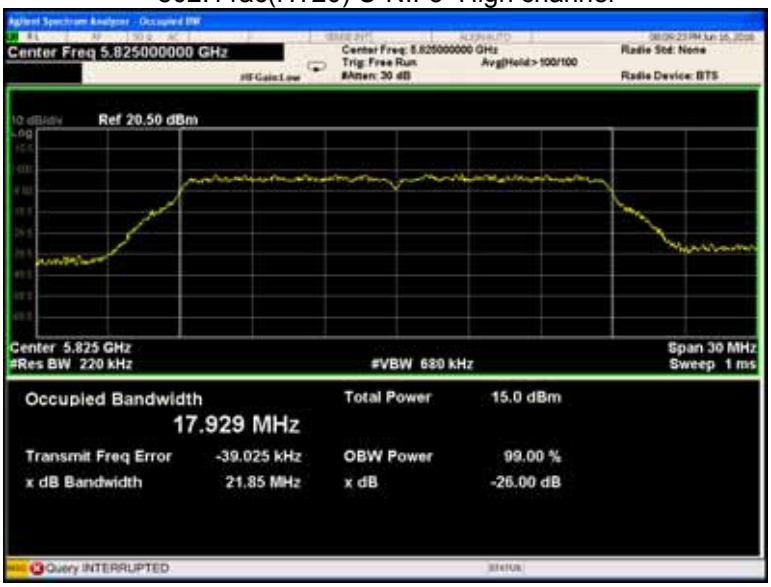
802.11ac(HT20) U-NII-3 Low channel



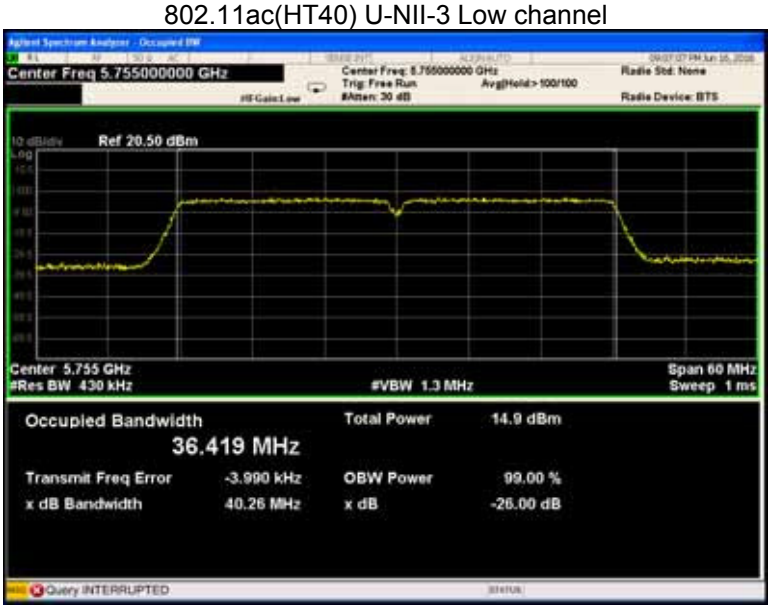
802.11ac(HT20) U-NII-3 Middle channel



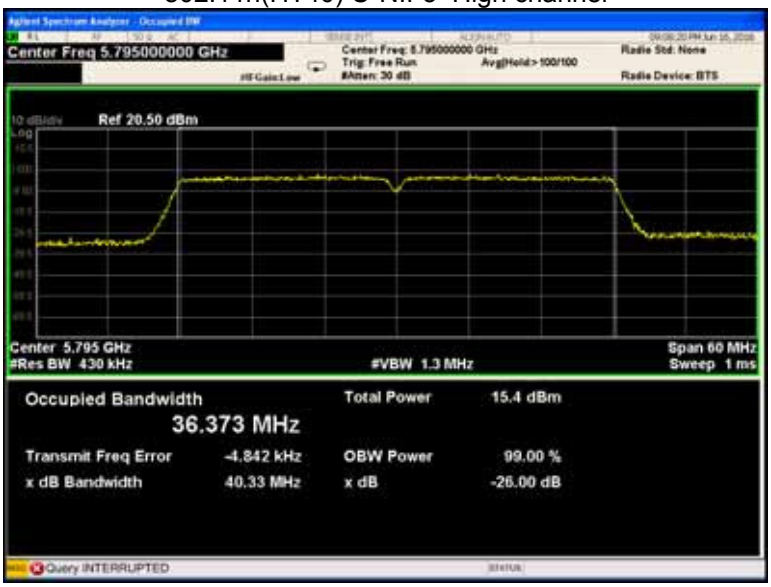
802.11ac(HT20) U-NII-3 High channel



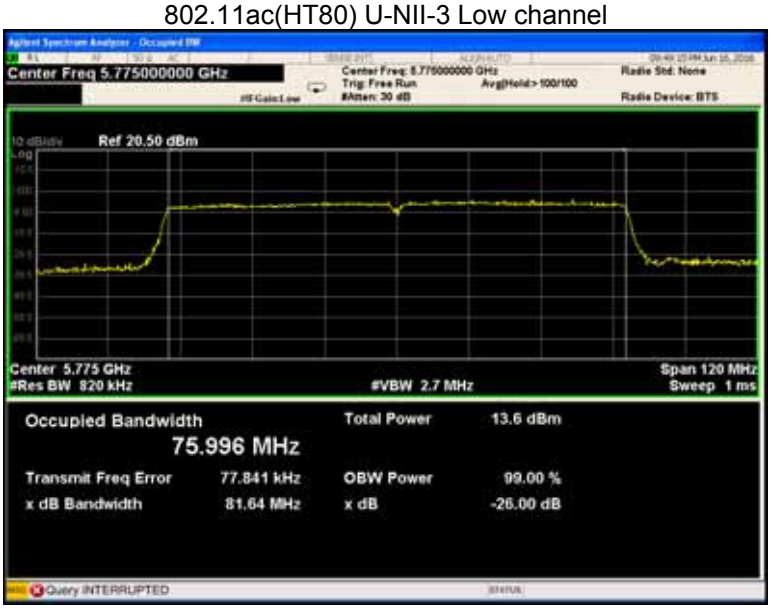
802.11ac(HT40) U-NII-3 Low channel



802.11n(HT40) U-NII-3 High channel

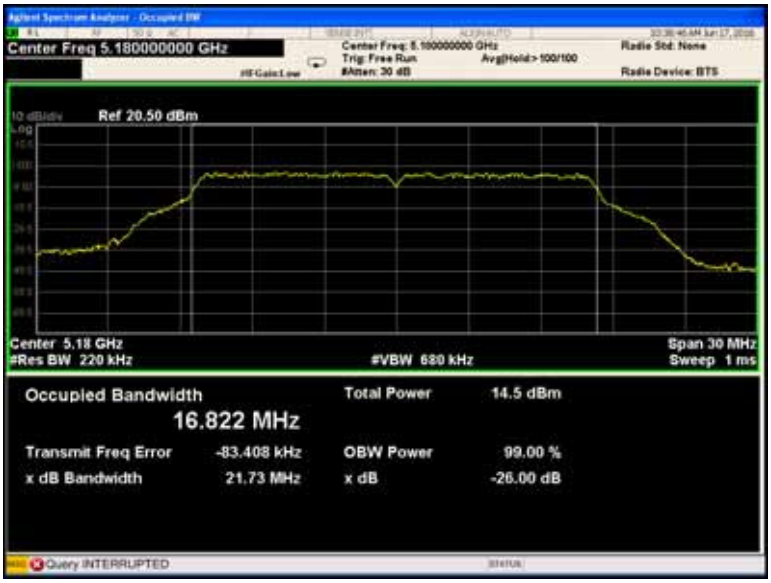


802.11ac(HT80) U-NII-3 Low channel

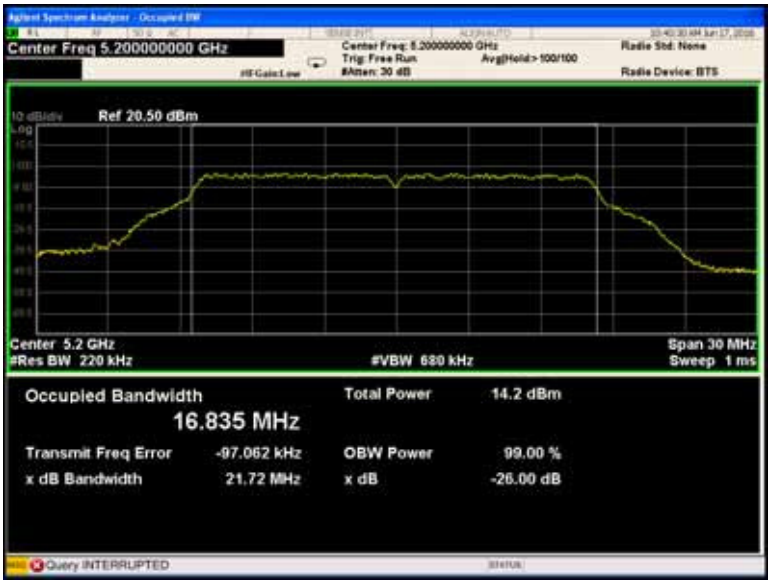


ANT1

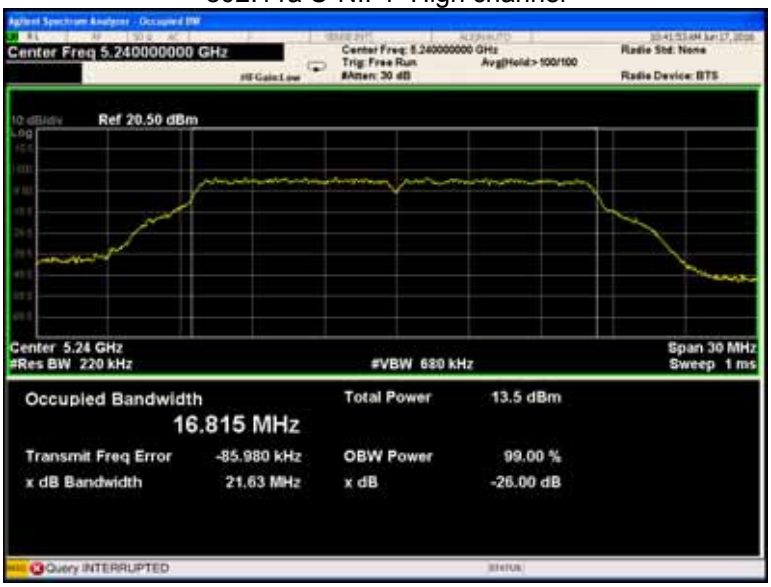
802.11a U-NII-1 Low channel



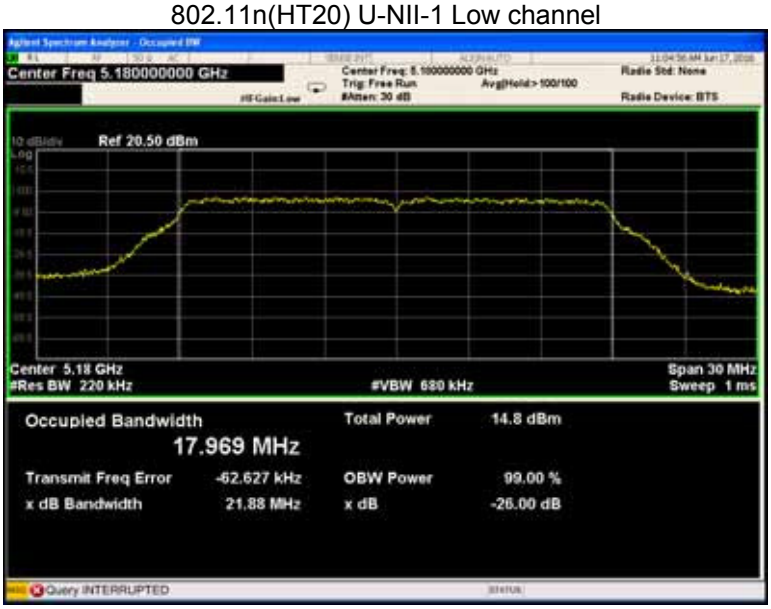
802.11a U-NII-1 Middle channel



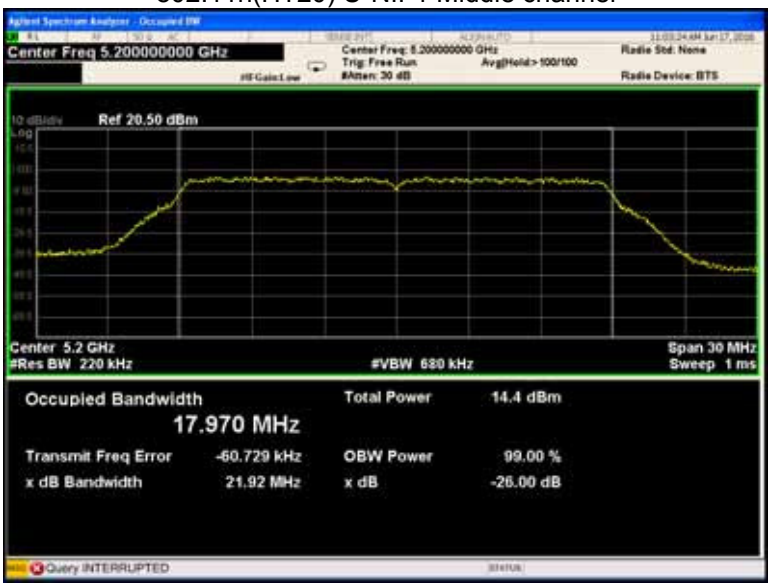
802.11a U-NII-1 High channel



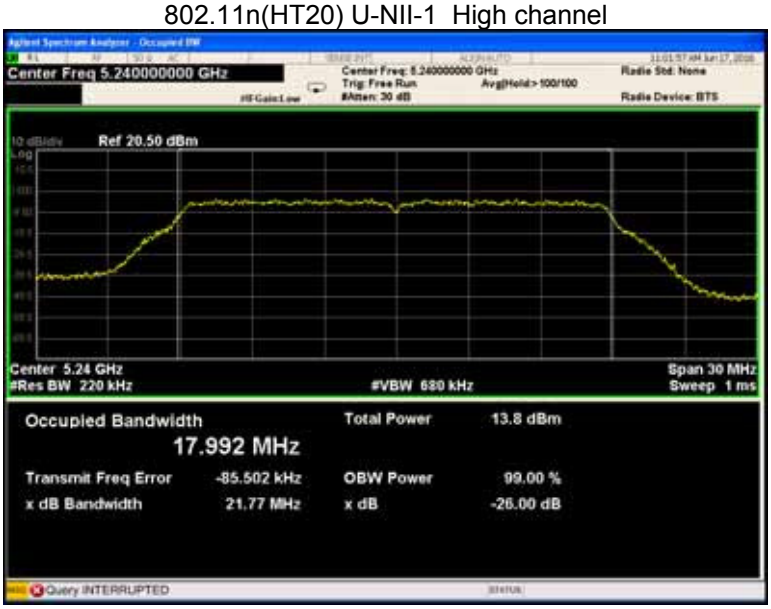
802.11n(HT20) U-NII-1 Low channel



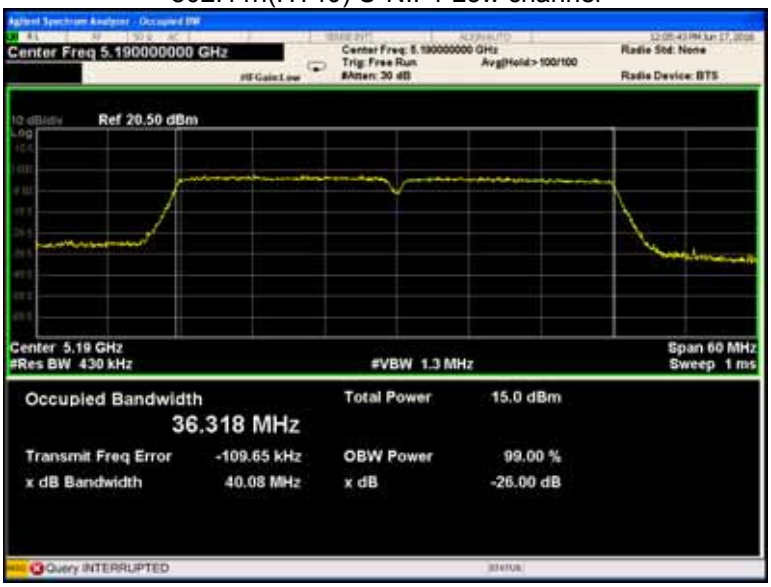
802.11n(HT20) U-NII-1 Middle channel



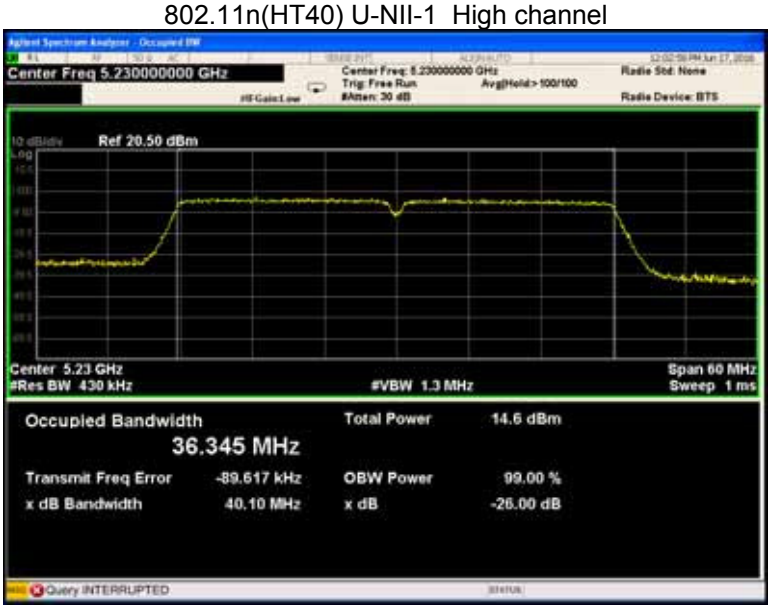
802.11n(HT20) U-NII-1 High channel



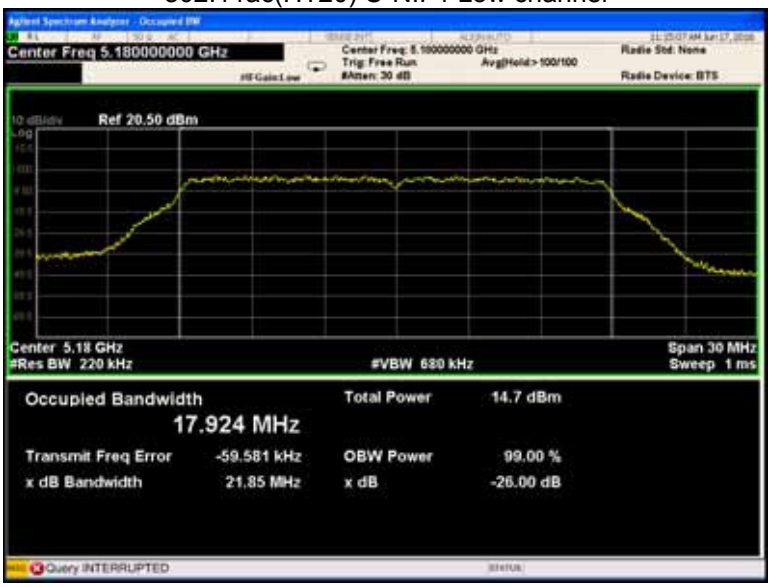
802.11n(HT40) U-NII-1 Low channel



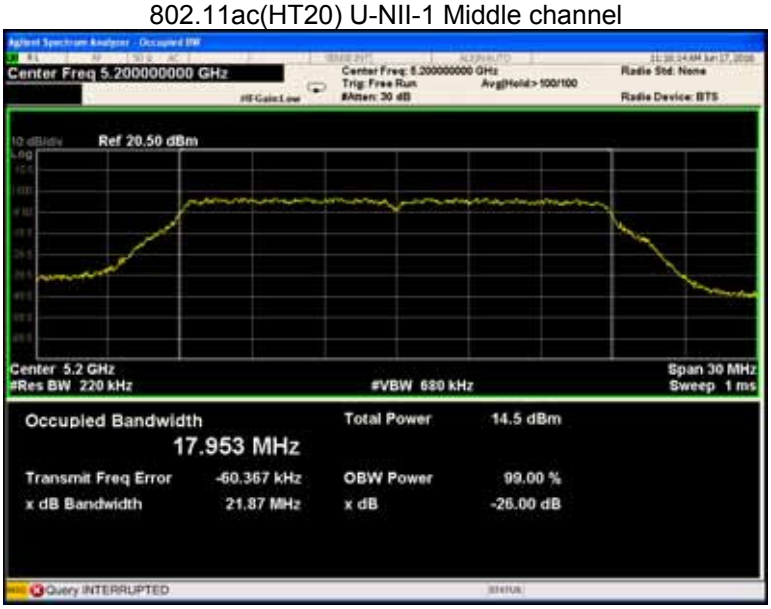
802.11n(HT40) U-NII-1 High channel



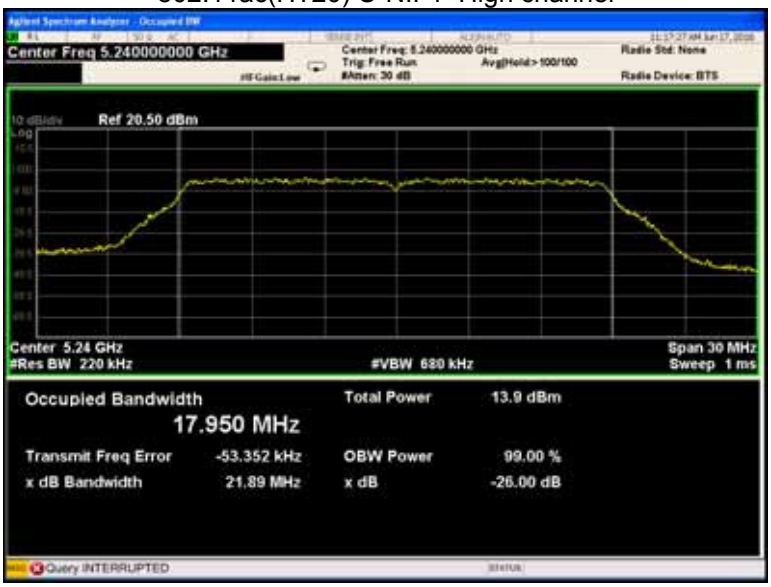
802.11ac(HT20) U-NII-1 Low channel



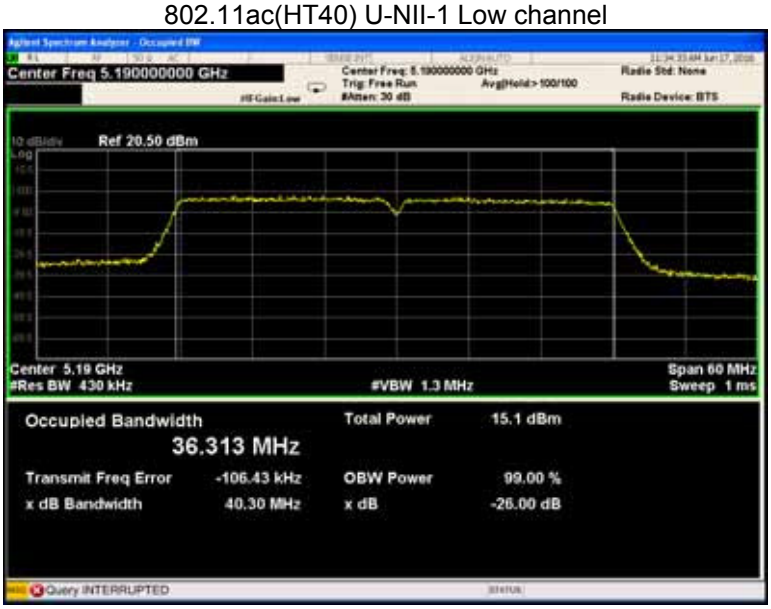
802.11ac(HT20) U-NII-1 Middle channel



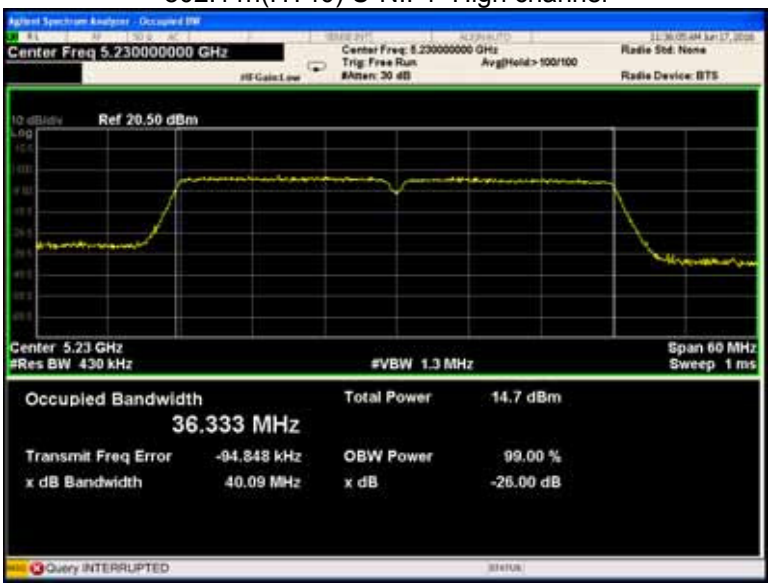
802.11ac(HT20) U-NII-1 High channel



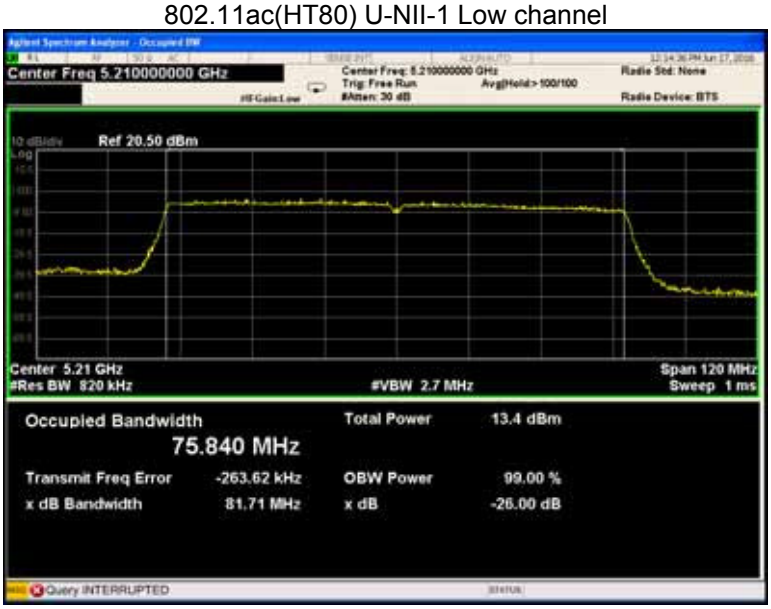
802.11ac(HT40) U-NII-1 Low channel



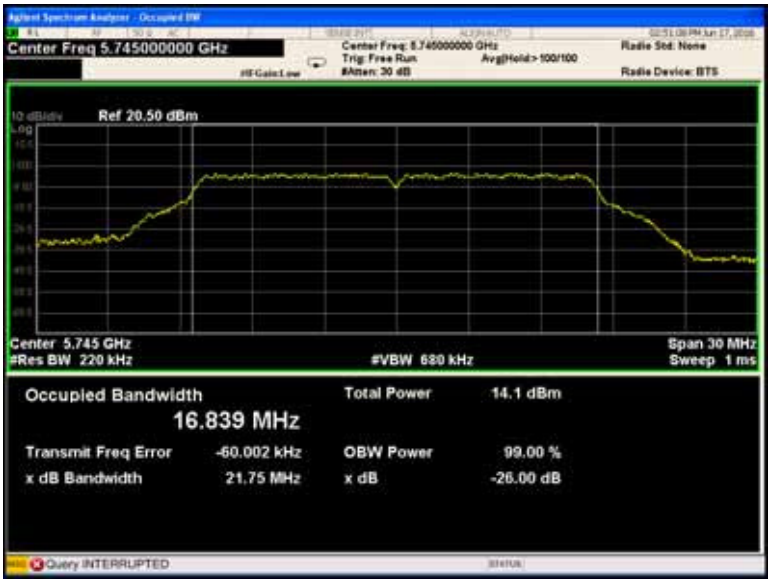
802.11n(HT40) U-NII-1 High channel



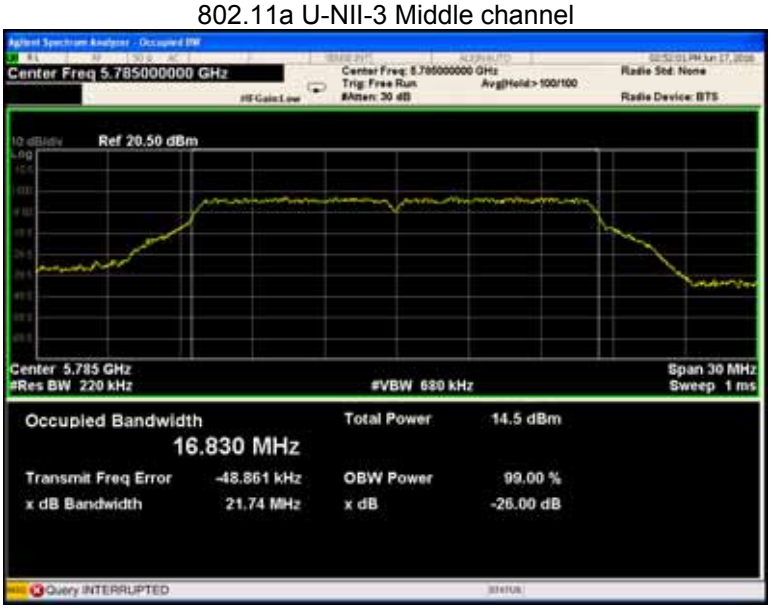
802.11ac(HT80) U-NII-1 Low channel



802.11a U-NII-3 Low channel

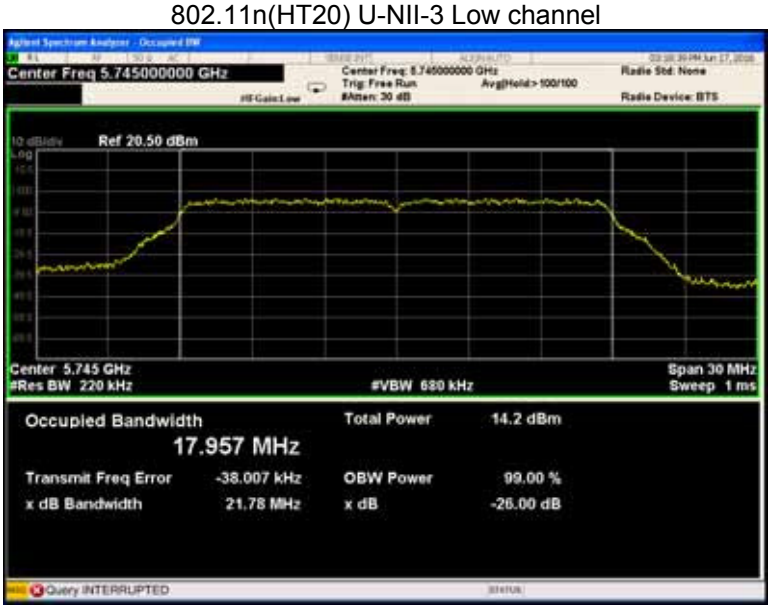


802.11a U-NII-3 Middle channel

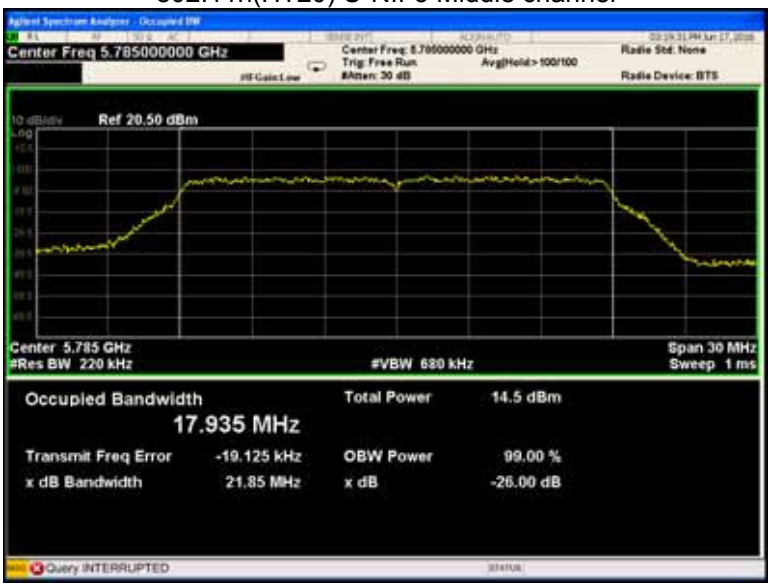


802.11a U-NII-3 High channel

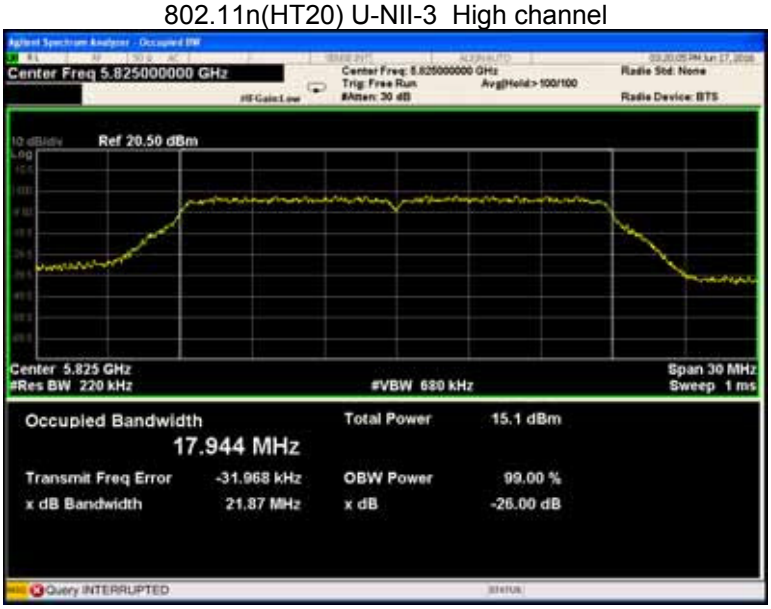
802.11n(HT20) U-NII-3 Low channel



802.11n(HT20) U-NII-3 Middle channel

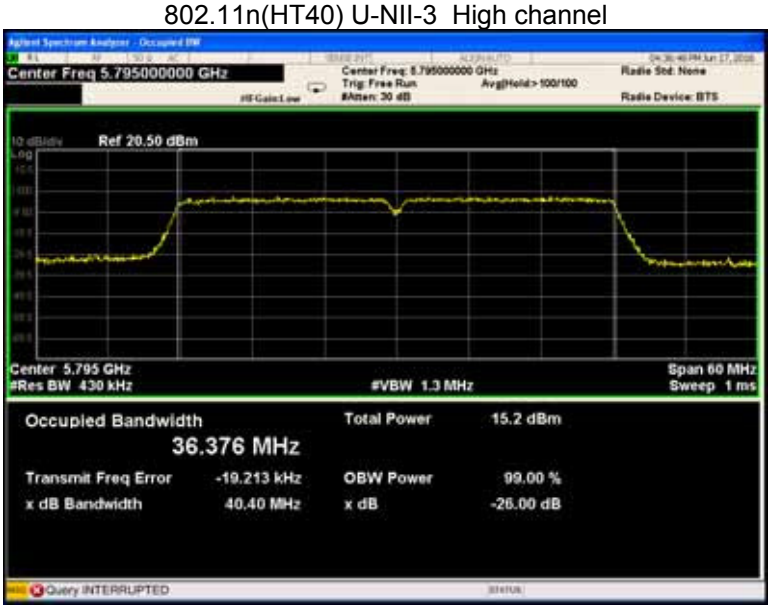


802.11n(HT20) U-NII-3 High channel

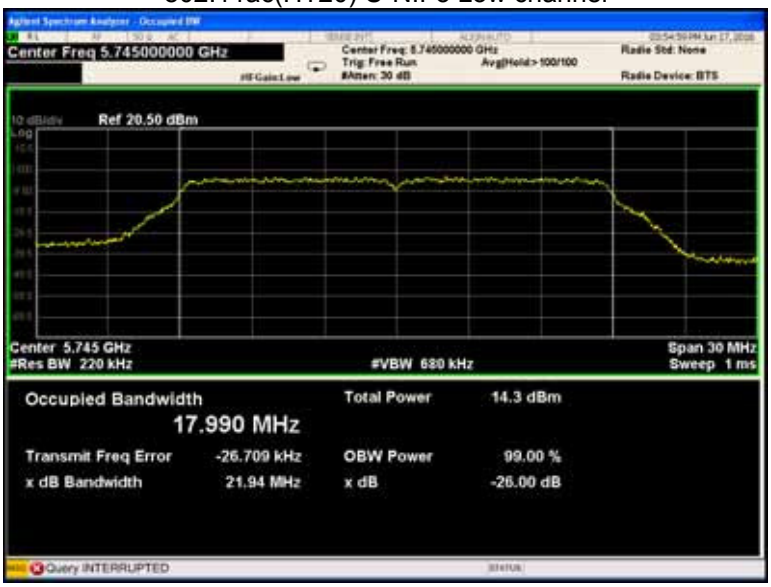


802.11n(HT40) U-NII-3 Low channel

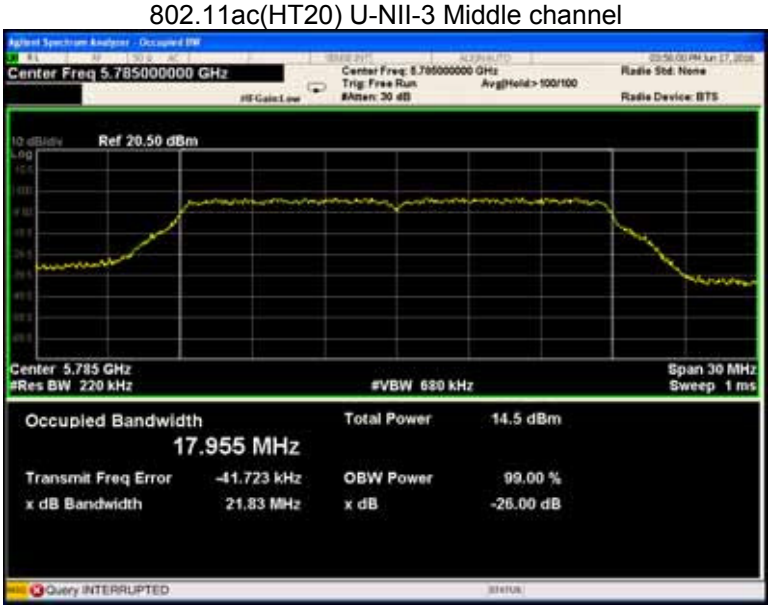
802.11n(HT40) U-NII-3 High channel



802.11ac(HT20) U-NII-3 Low channel

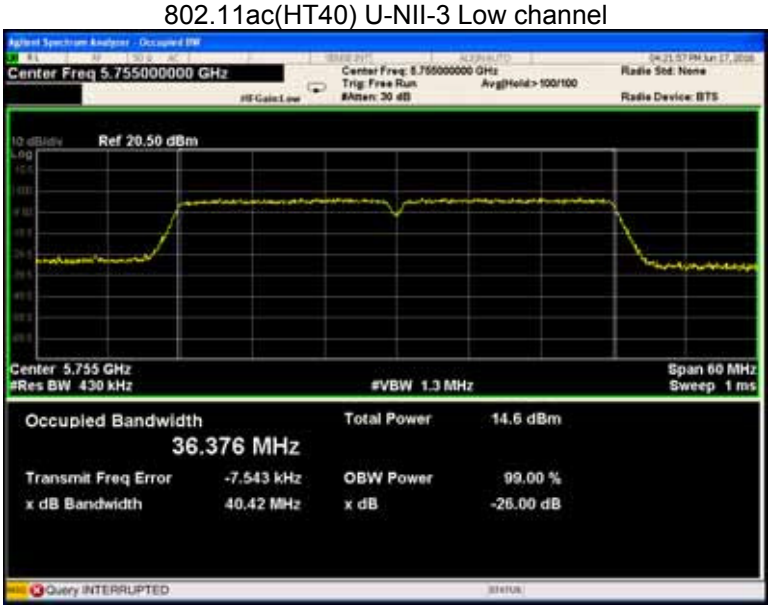


802.11ac(HT20) U-NII-3 Middle channel



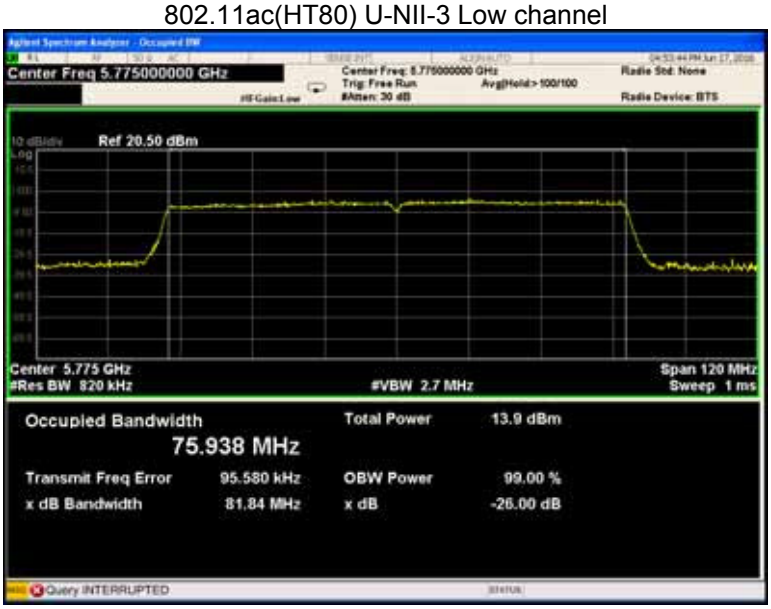
802.11ac(HT20) U-NII-3 High channel

802.11ac(HT40) U-NII-3 Low channel



802.11n(HT40) U-NII-3 High channel

802.11ac(HT80) U-NII-3 Low channel



12 Conducted Output Power

Test Requirement:	FCC CFR47 Part 15 Section 15.407(a)
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v01 Section E
Test Limit:	U-NII-1 250mW(24dBm) U-NII-3 1W(30dBm)
Test Result:	PASS
Remark:	Conducted output power= measurement power+10log(1/x) X is duty cycle=1, so 10log(1/1)=0 Conducted output power= measurement power

12.1 Test Procedure:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 1 MHz. VBW = 3 MHz. Sweep = auto; Detector Function = Peak, Set the span to fully encompass the DTS bandwidth.
3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

12.2 Test Result :

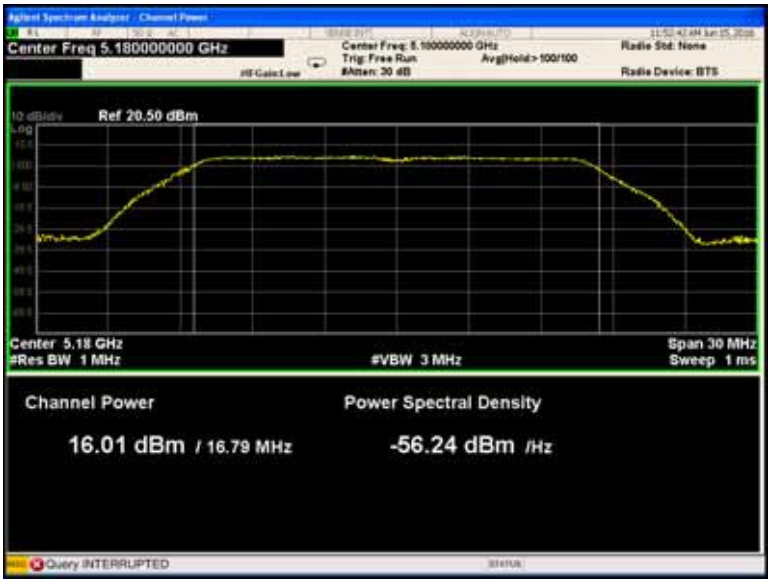
Band	Operation mode	CH	Conducted Output Power (dBm)		
			ANT0	ANT1	Total
U-NII-1	802.11a	Low	16.01	15.04	18.56
		Middle	15.84	14.71	18.32
		High	15.02	14.32	17.69
	802.11n(HT20)	Low	15.87	15.1	18.51
		Middle	15.9	14.85	18.42
		High	15.24	14.2	17.76
	802.11n(HT40)	Low	16.45	15.61	19.06
		Middle	/	/	/
		High	15.68	15.06	18.39
	802.11ac(HT20)	Low	16.05	15.06	18.59
		Middle	15.63	14.88	18.28
		High	15.04	14.25	17.67
	802.11ac(HT40)	Low	16.81	15.77	**19.33**
		Middle	/	/	/
		High	16.1	15.16	18.67
	802.11ac(HT80)	Low	15.63	14.80	18.25
		Middle	/	/	/
		High	/	/	/
U-NII-3	802.11a	Low	14.75	14.4	17.59
		Middle	15.01	14.86	17.95
		High	15.43	15.57	18.51
	802.11n(HT20)	Low	14.65	14.42	17.55
		Middle	14.93	14.79	17.87
		High	15.33	15.41	18.38
	802.11n(HT40)	Low	14.93	15.14	18.05
		Middle	/	/	/
		High	15.23	15.78	18.52
	802.11ac(HT20)	Low	15.08	14.46	17.79
		Middle	15.11	14.63	17.89
		High	15.33	15.36	18.36
	802.11ac(HT40)	Low	15.25	15.06	18.17
		Middle	/	/	/
		High	15.89	15.61	**18.76**
	802.11ac(HT80)	Low	14.53	14.8	17.68
		Middle	/	/	/
		High	/	/	/

* All transmit signals are completely uncorrelated with each other, Directional gain = G_{ANT} which is less than 6dBi. So the limit does not be reduced.

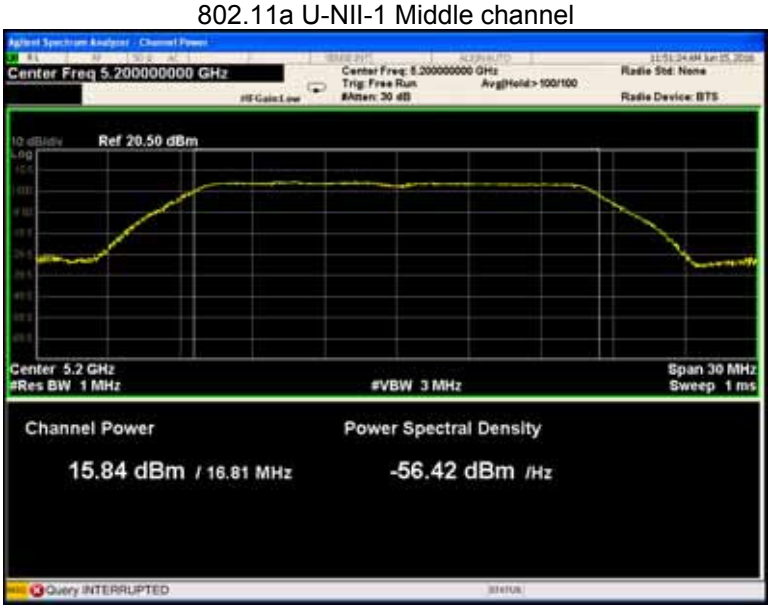
Test result plots shown as follows:

ANT0

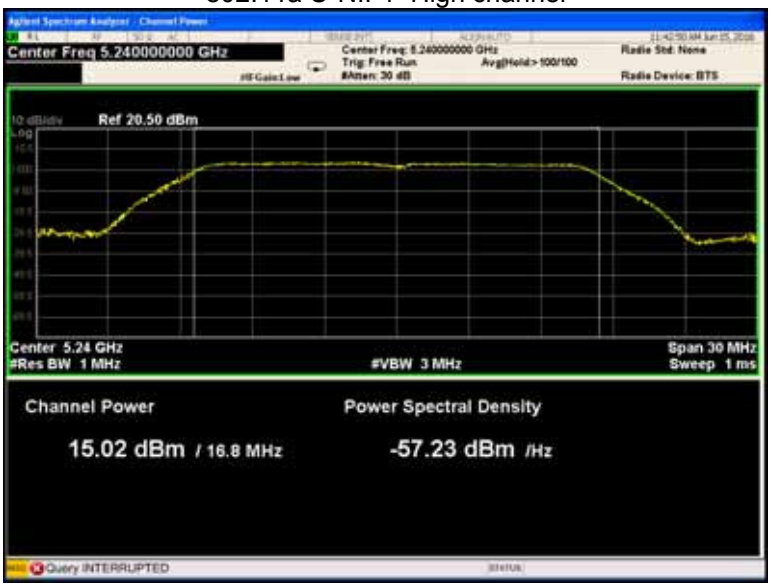
802.11a U-NII-1 Low channel



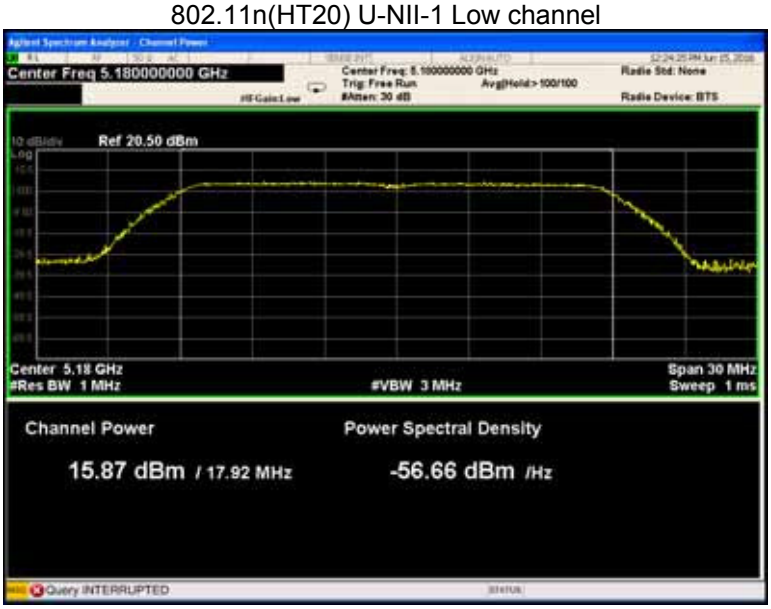
802.11a U-NII-1 Middle channel



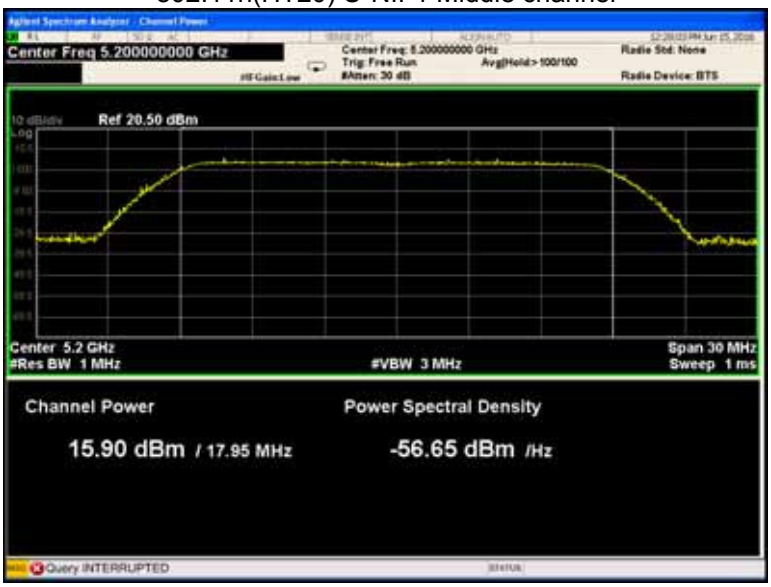
802.11a U-NII-1 High channel



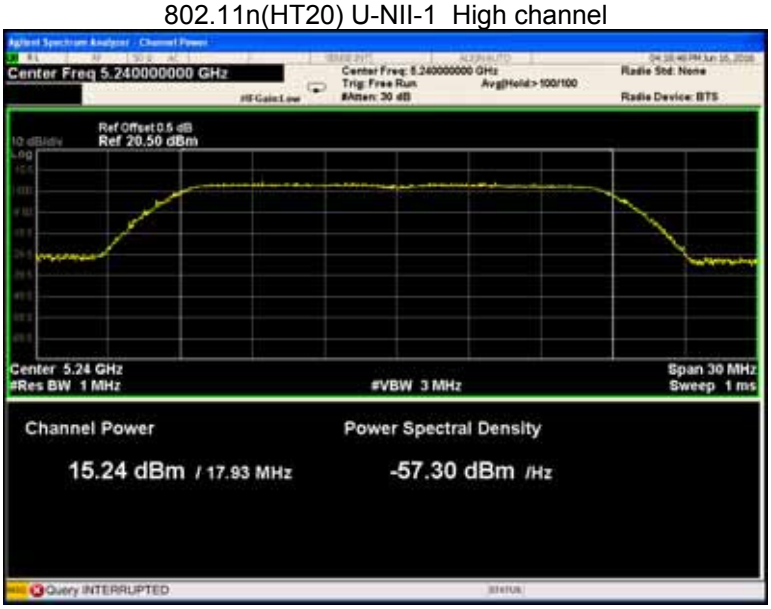
802.11n(HT20) U-NII-1 Low channel



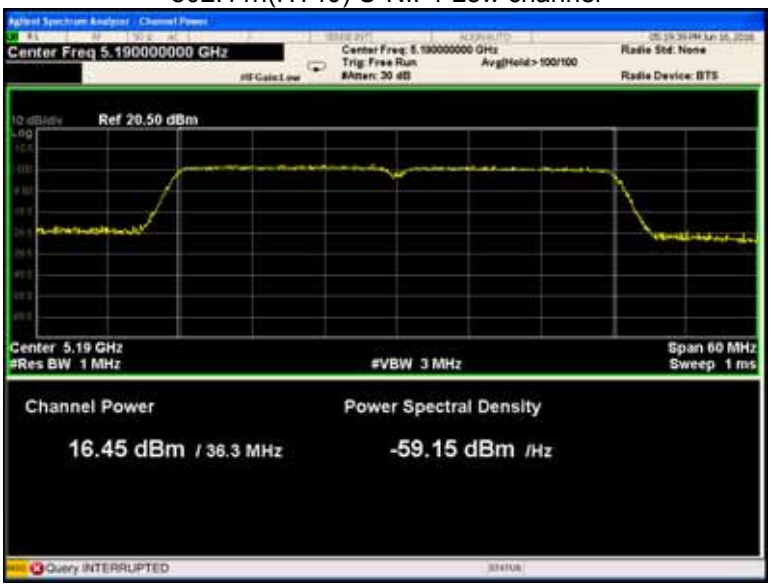
802.11n(HT20) U-NII-1 Middle channel



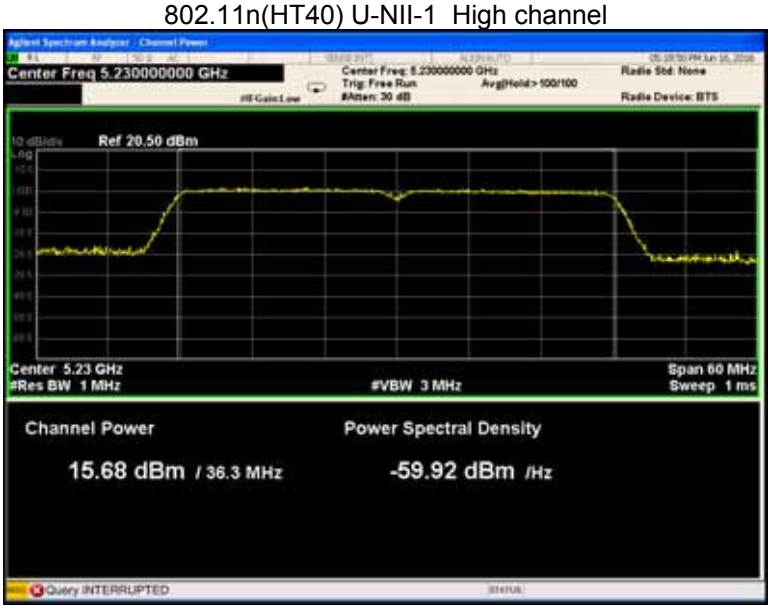
802.11n(HT20) U-NII-1 High channel



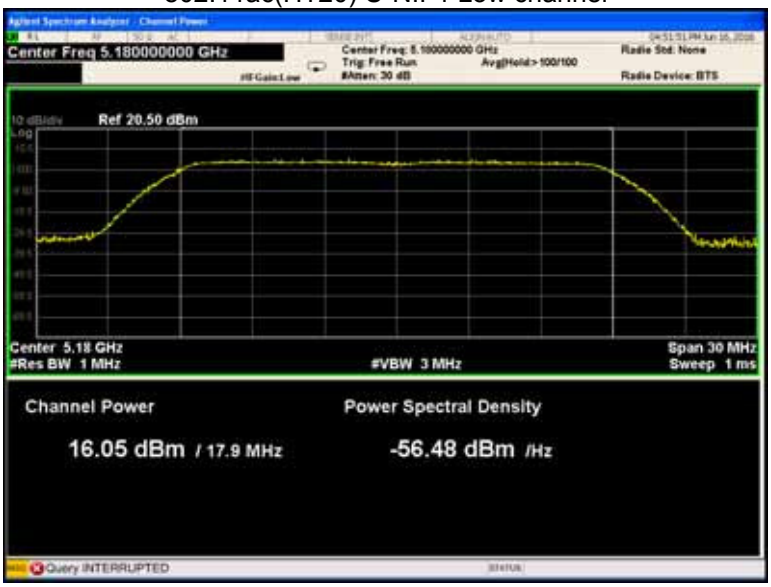
802.11n(HT40) U-NII-1 Low channel



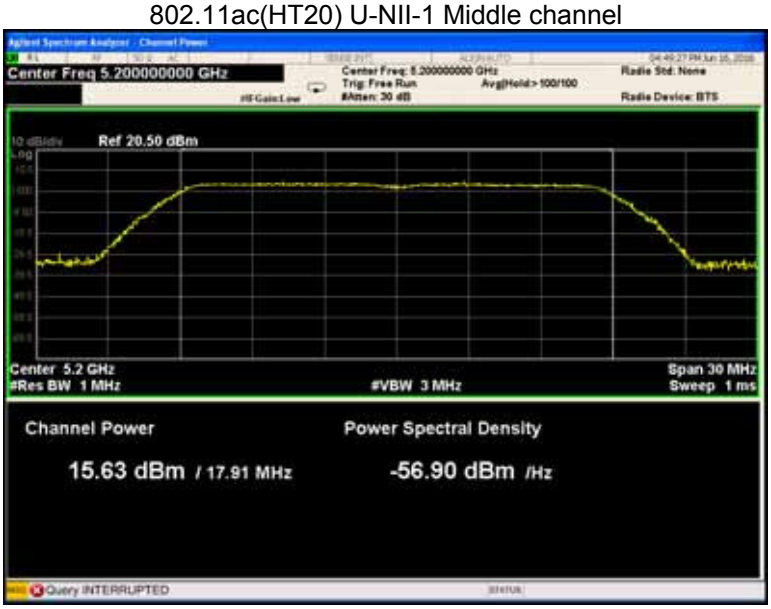
802.11n(HT40) U-NII-1 High channel



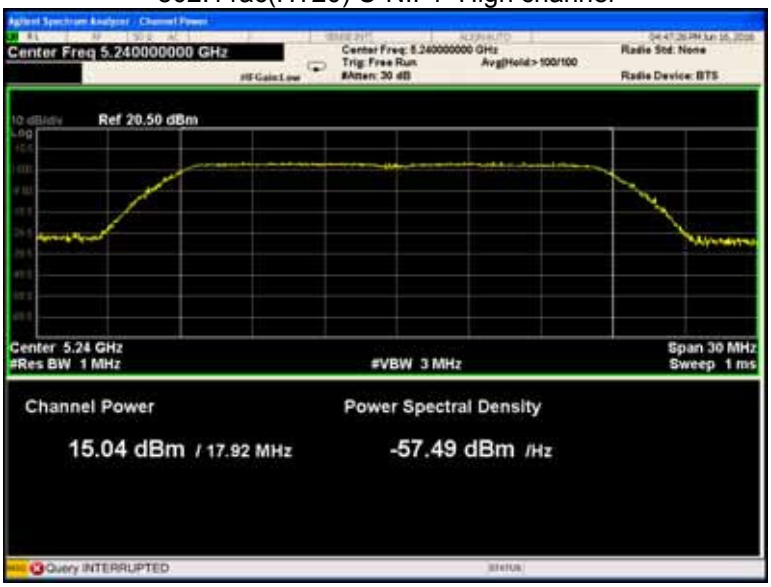
802.11ac(HT20) U-NII-1 Low channel



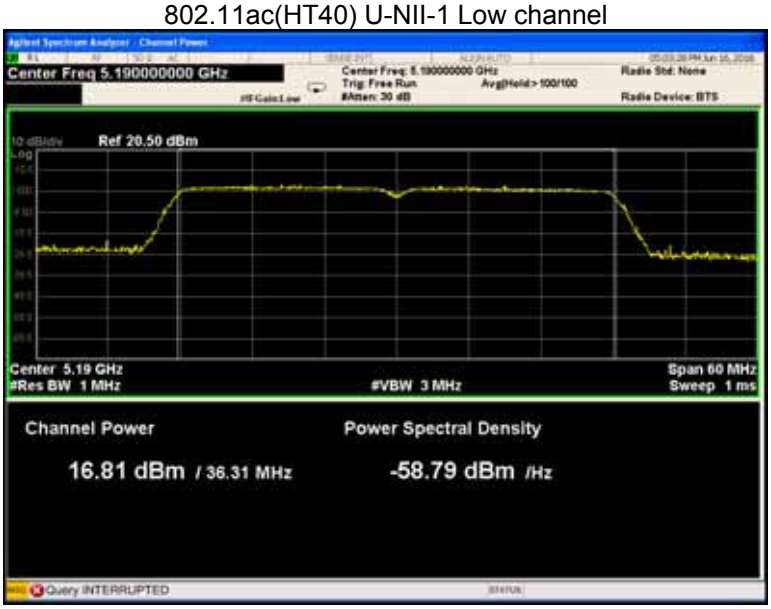
802.11ac(HT20) U-NII-1 Middle channel



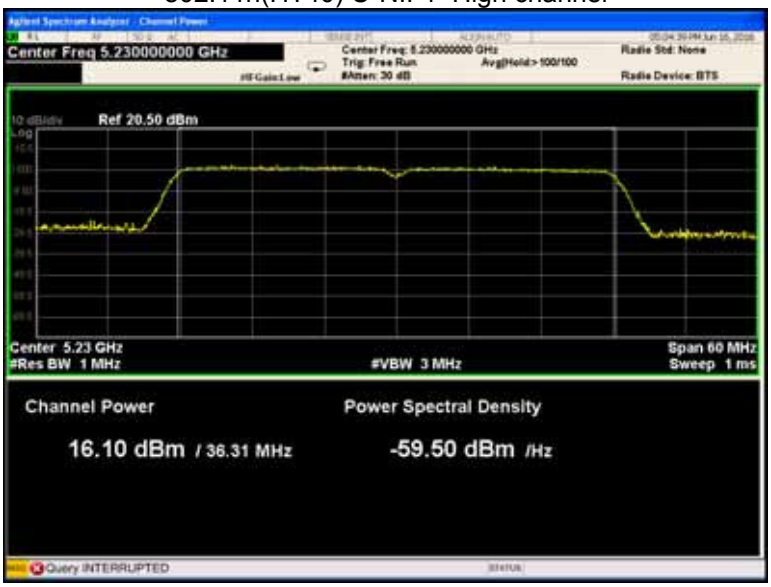
802.11ac(HT20) U-NII-1 High channel



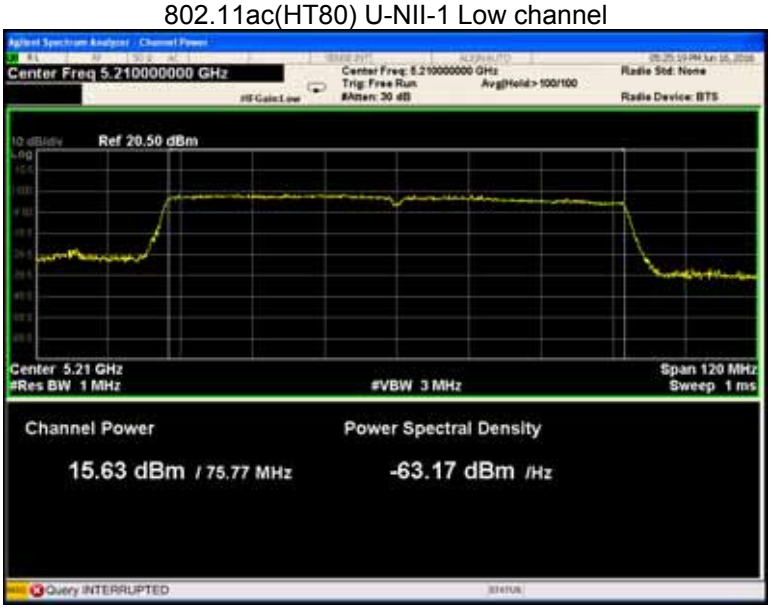
802.11ac(HT40) U-NII-1 Low channel



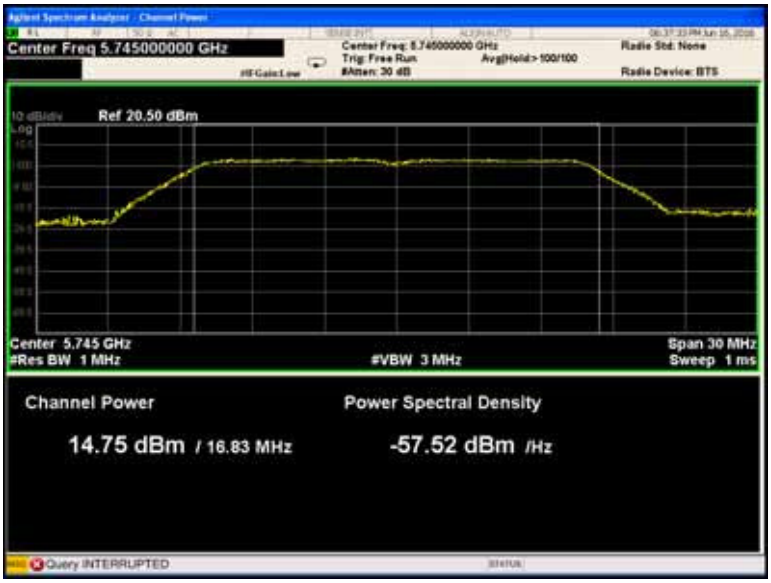
802.11n(HT40) U-NII-1 High channel



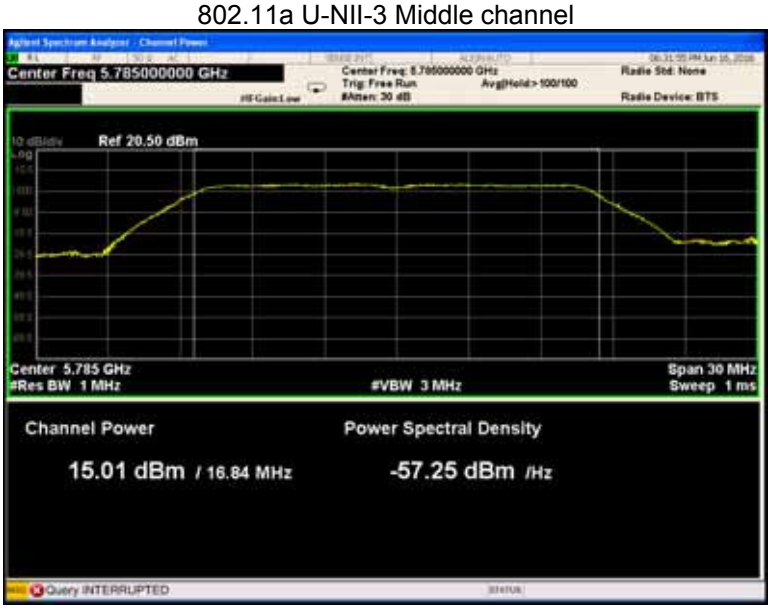
802.11ac(HT80) U-NII-1 Low channel



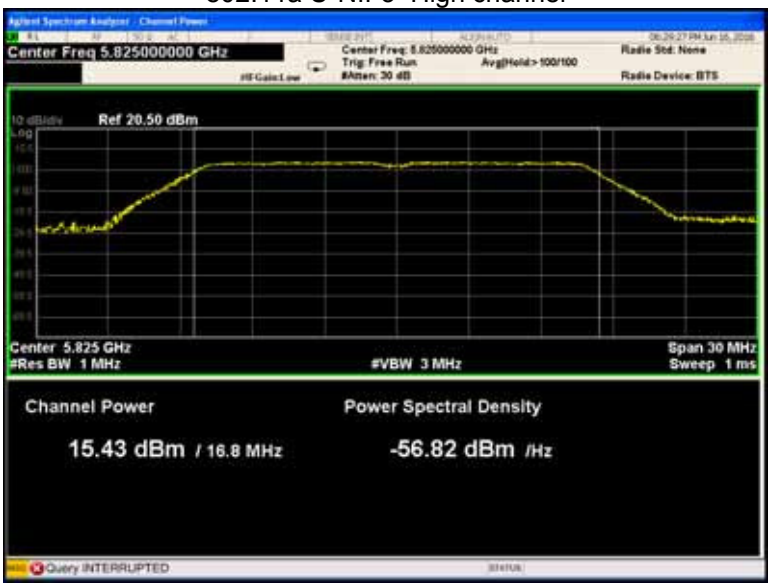
802.11a U-NII-3 Low channel



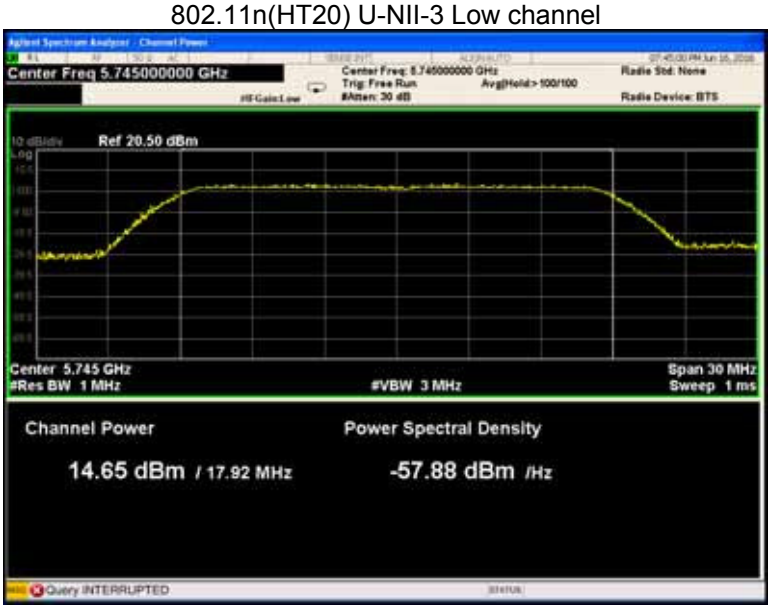
802.11a U-NII-3 Middle channel



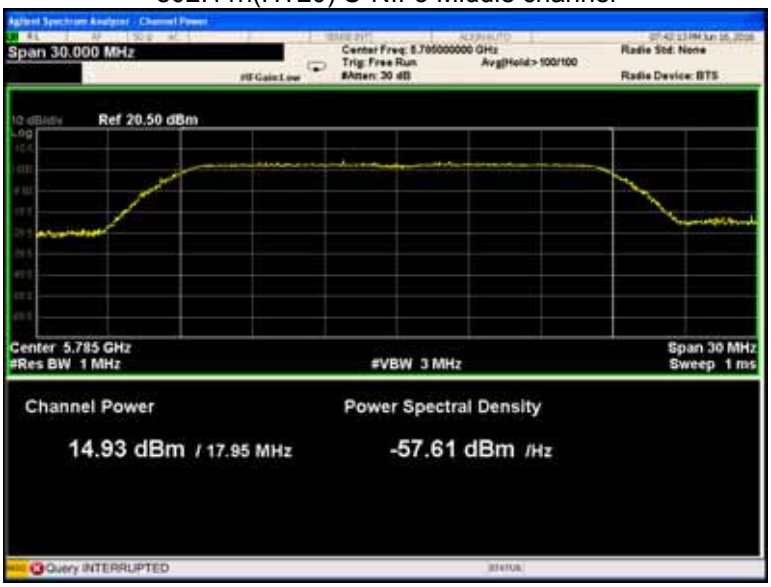
802.11a U-NII-3 High channel



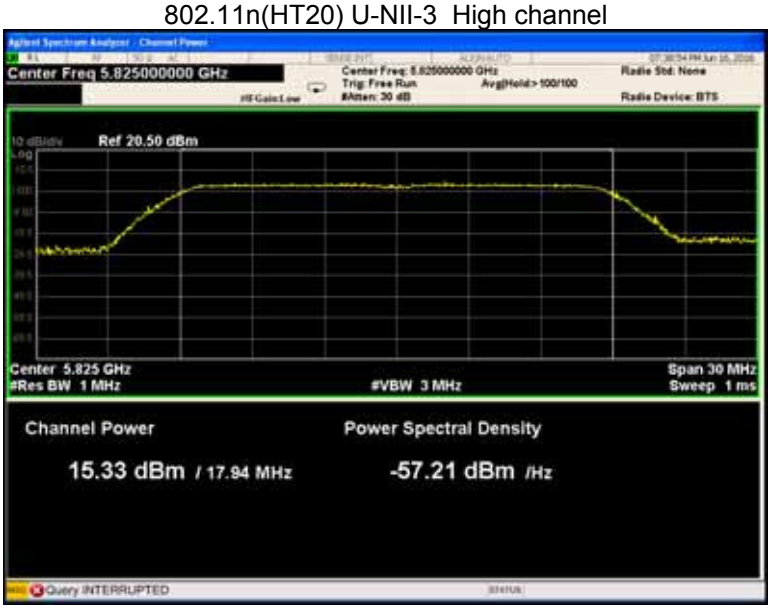
802.11n(HT20) U-NII-3 Low channel



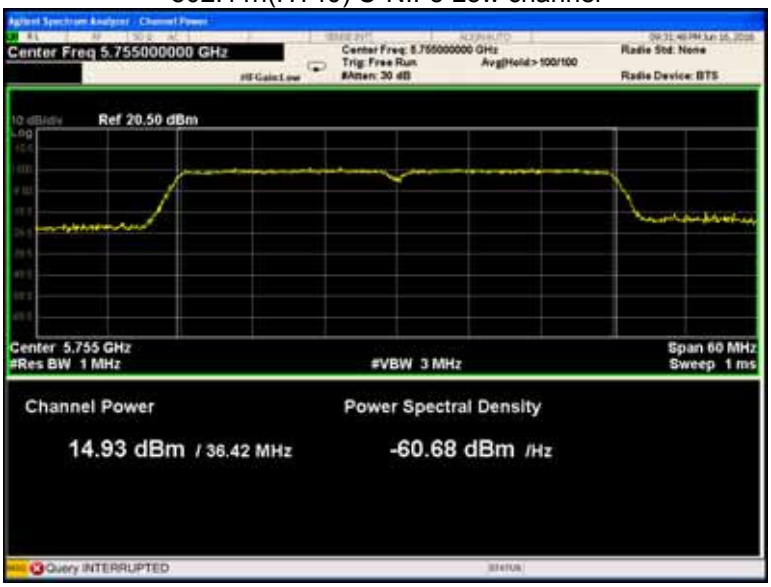
802.11n(HT20) U-NII-3 Middle channel



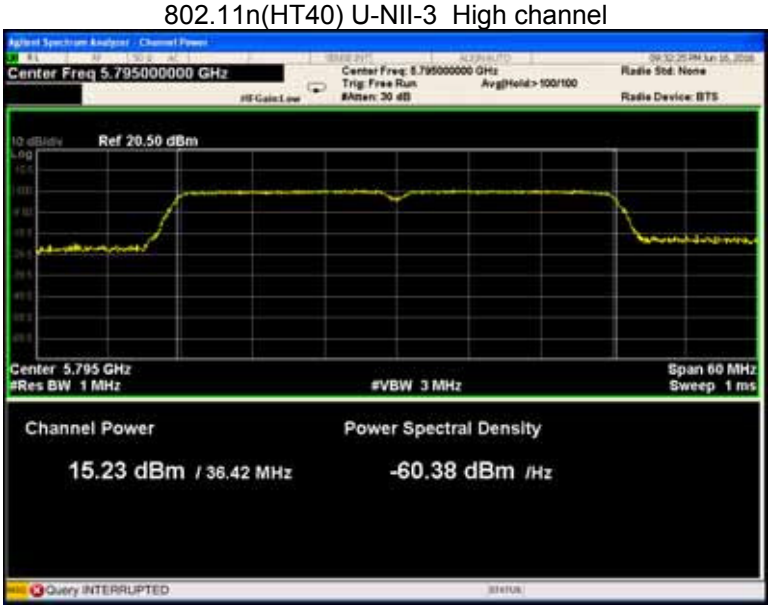
802.11n(HT20) U-NII-3 High channel



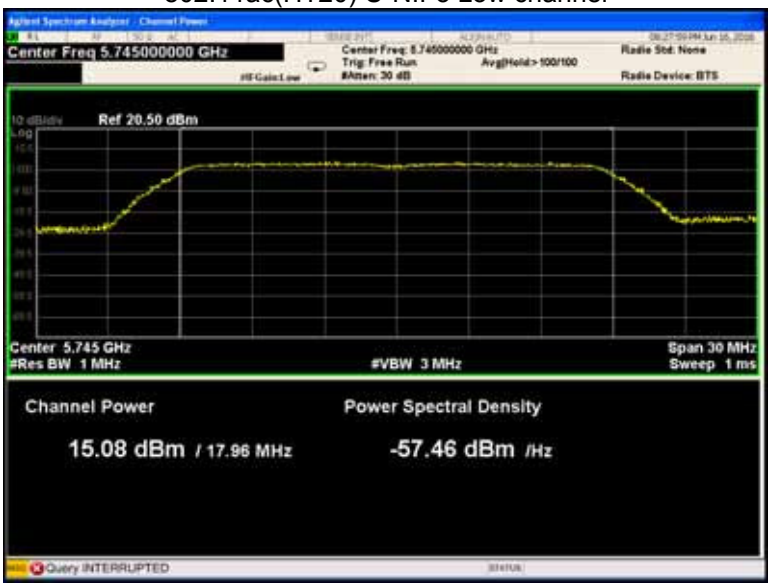
802.11n(HT40) U-NII-3 Low channel



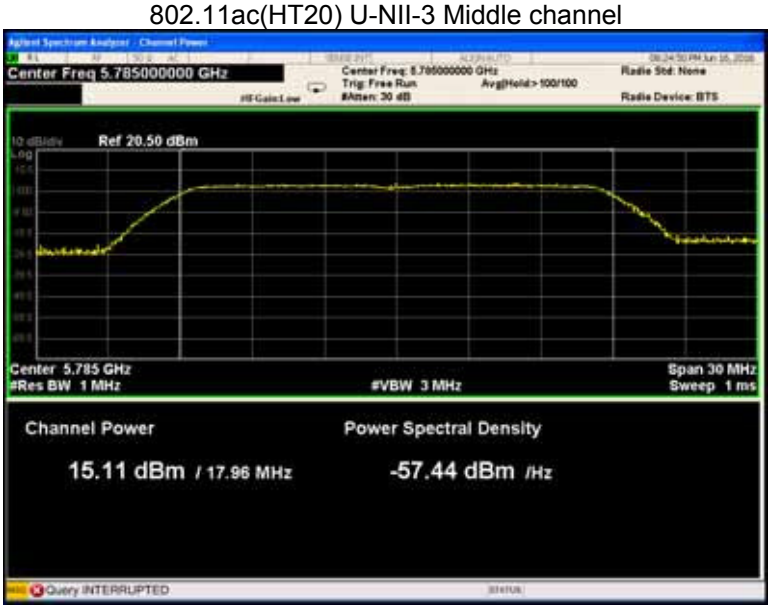
802.11n(HT40) U-NII-3 High channel



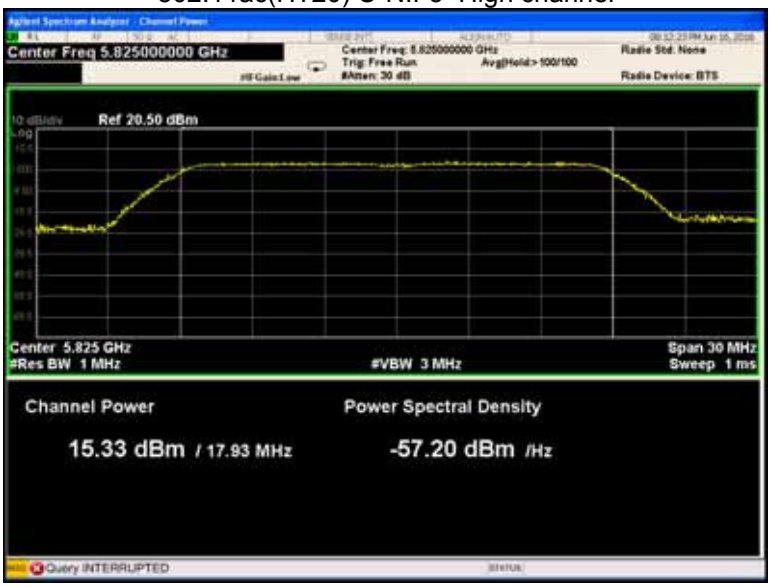
802.11ac(HT20) U-NII-3 Low channel



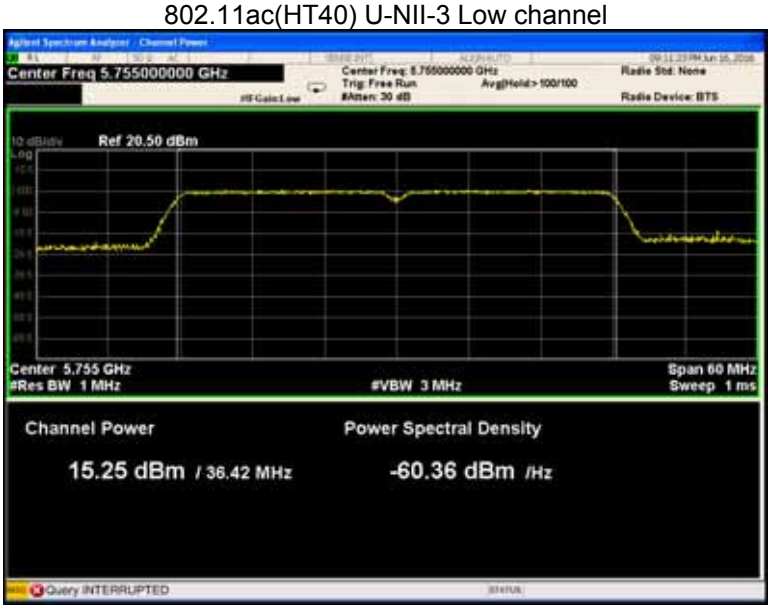
802.11ac(HT20) U-NII-3 Middle channel



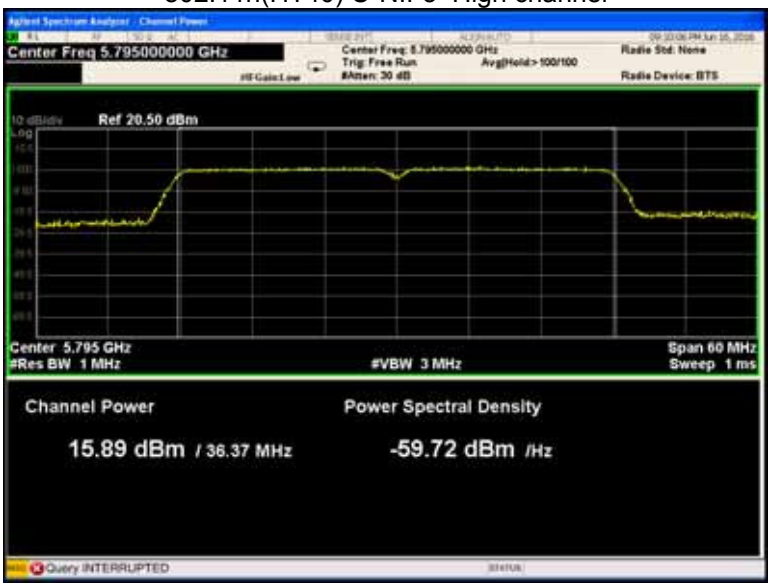
802.11ac(HT20) U-NII-3 High channel



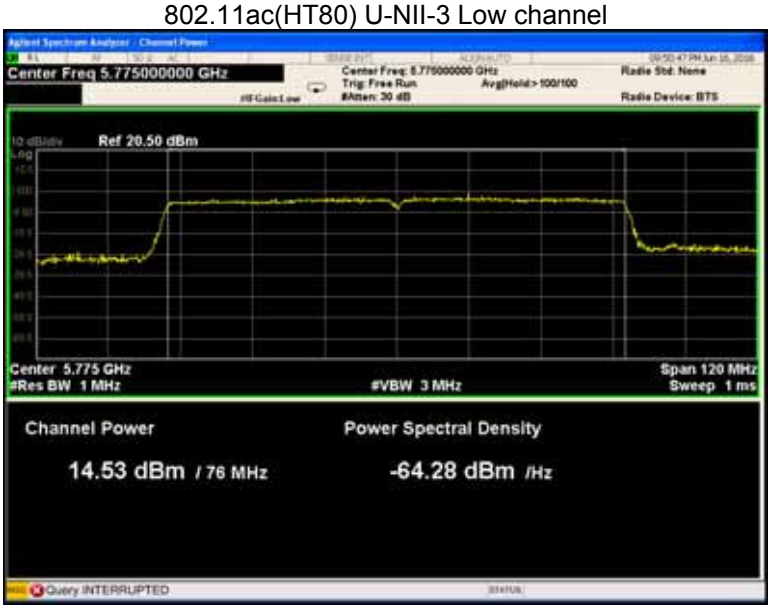
802.11ac(HT40) U-NII-3 Low channel



802.11n(HT40) U-NII-3 High channel

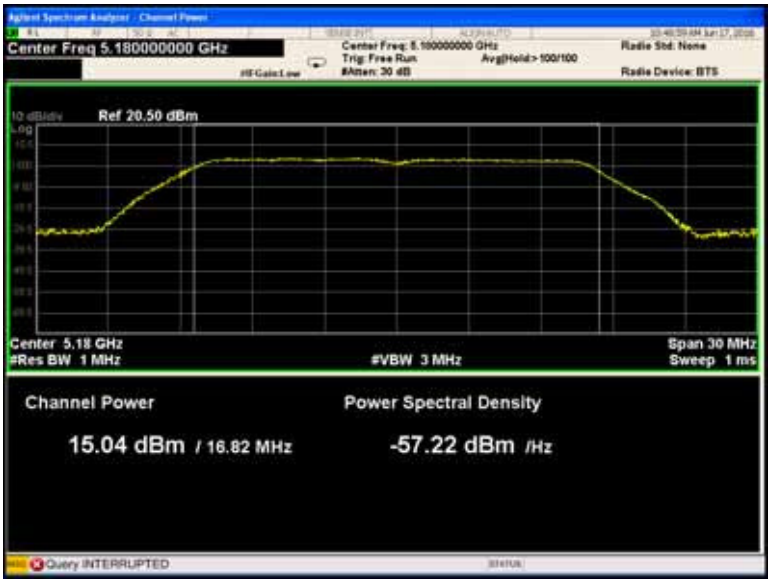


802.11ac(HT80) U-NII-3 Low channel

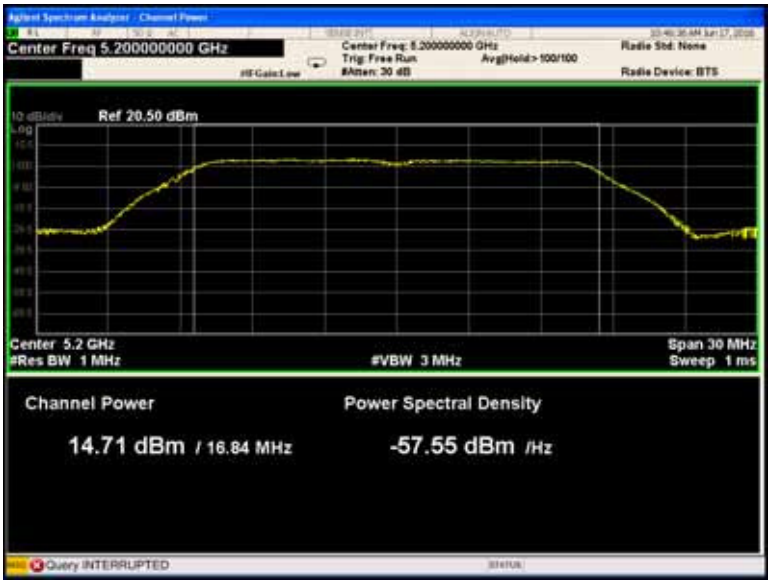


ANT1

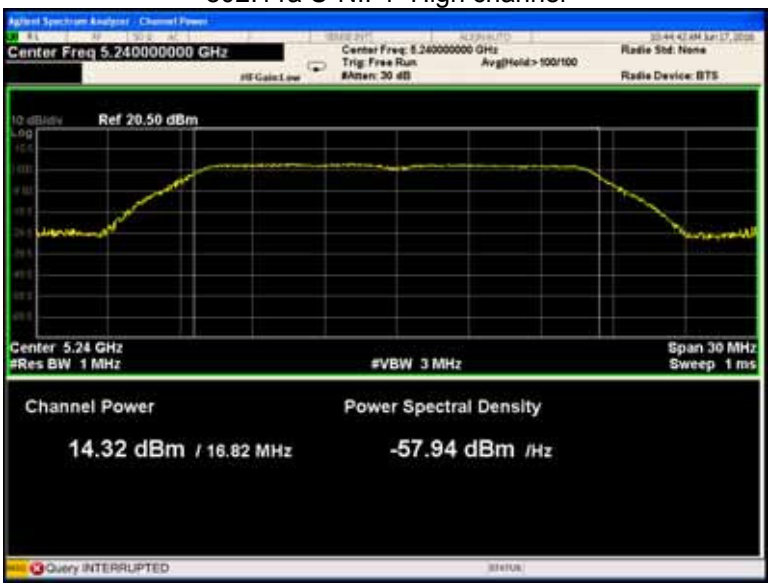
802.11a U-NII-1 Low channel



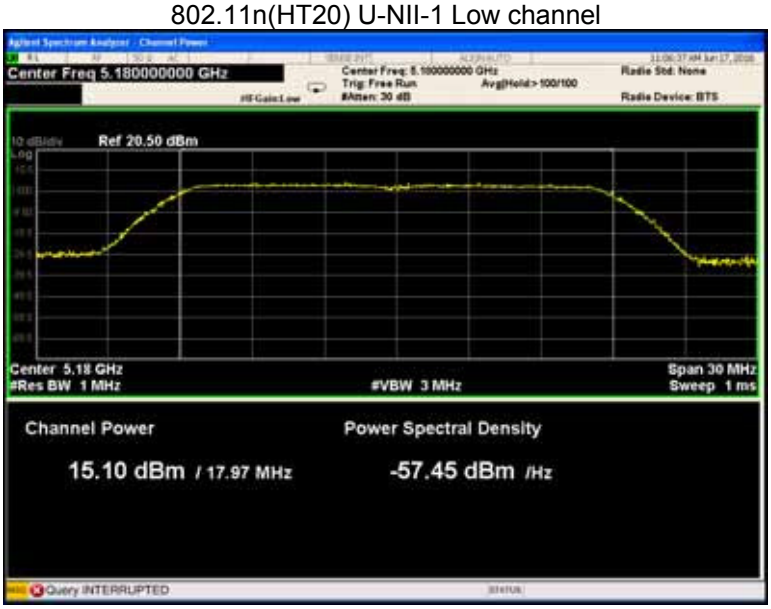
802.11a U-NII-1 Middle channel



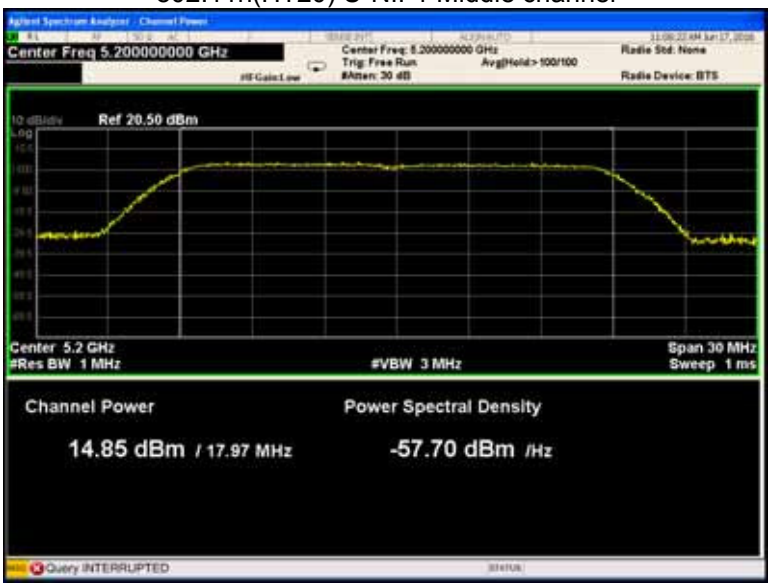
802.11a U-NII-1 High channel



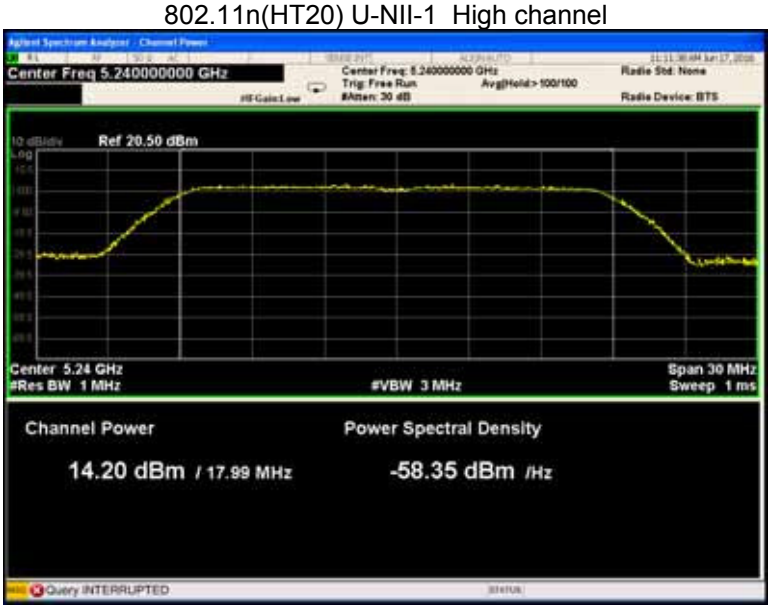
802.11n(HT20) U-NII-1 Low channel



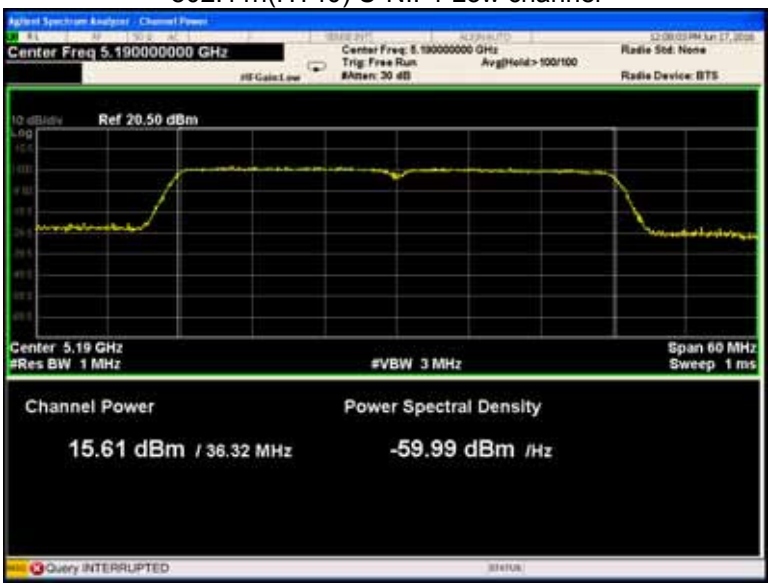
802.11n(HT20) U-NII-1 Middle channel



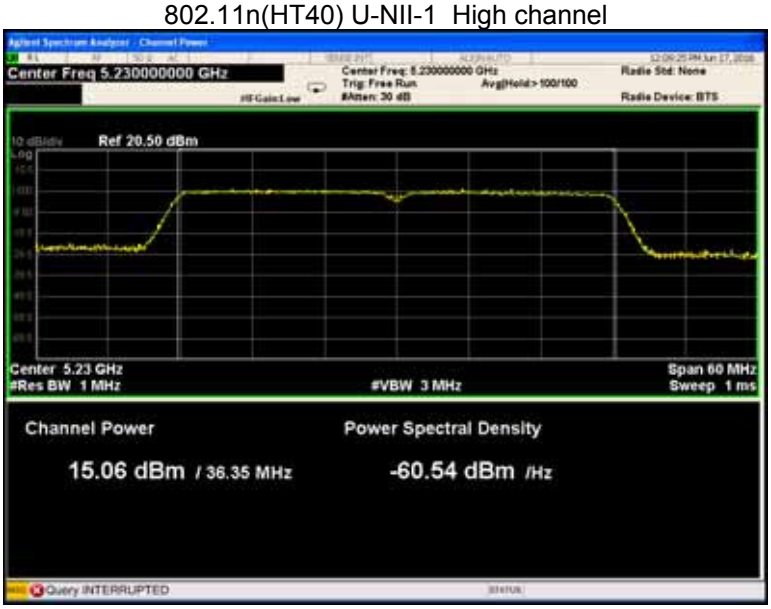
802.11n(HT20) U-NII-1 High channel



802.11n(HT40) U-NII-1 Low channel

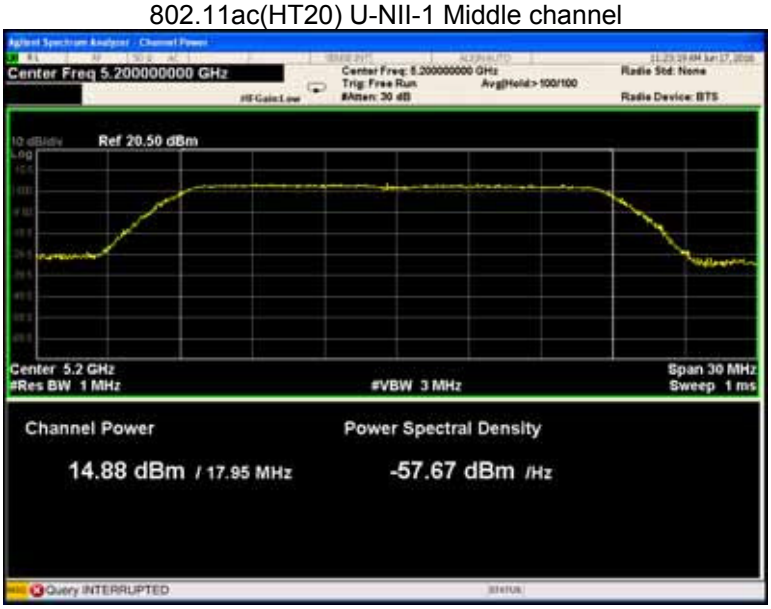


802.11n(HT40) U-NII-1 High channel

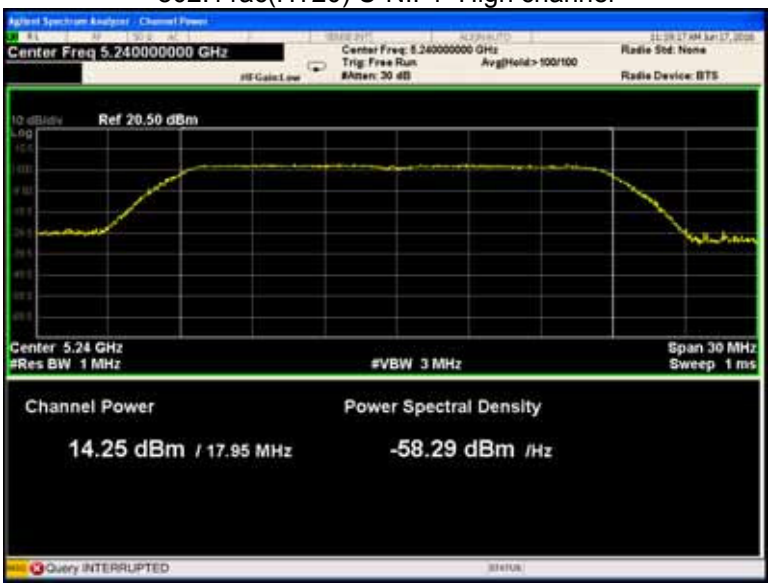


802.11ac(HT20) U-NII-1 Low channel

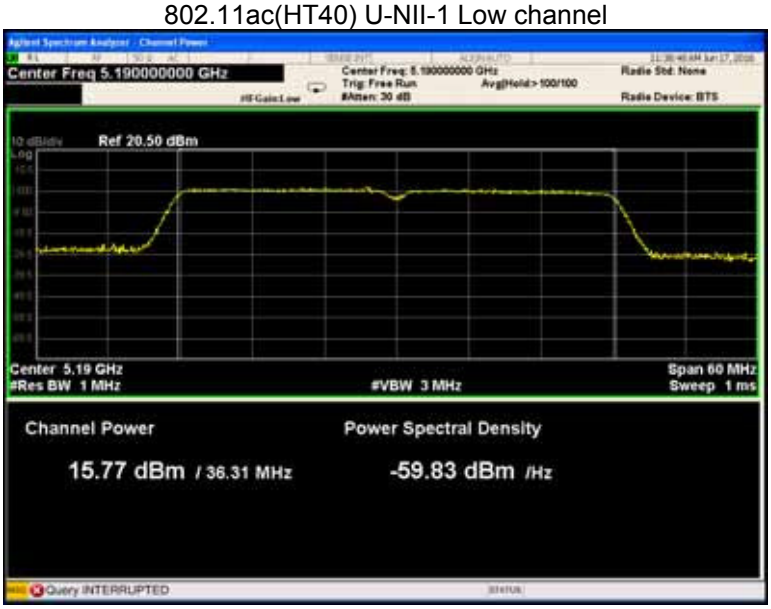
802.11ac(HT20) U-NII-1 Middle channel



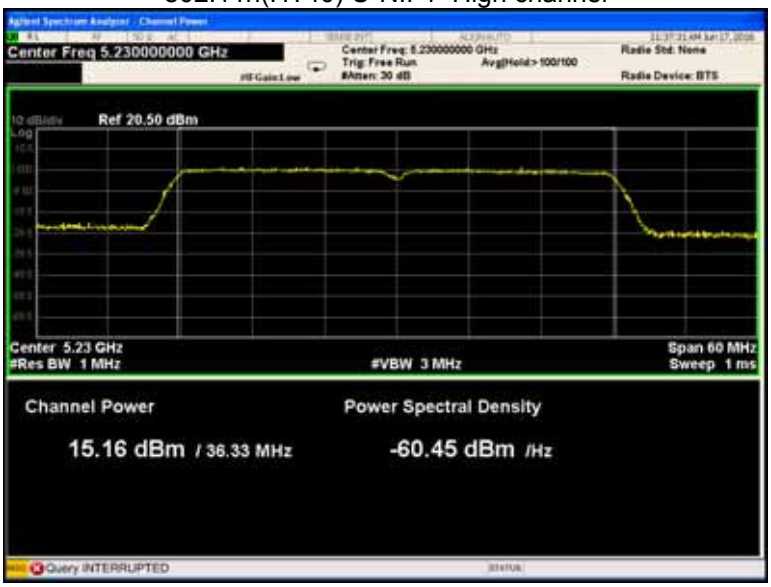
802.11ac(HT20) U-NII-1 High channel



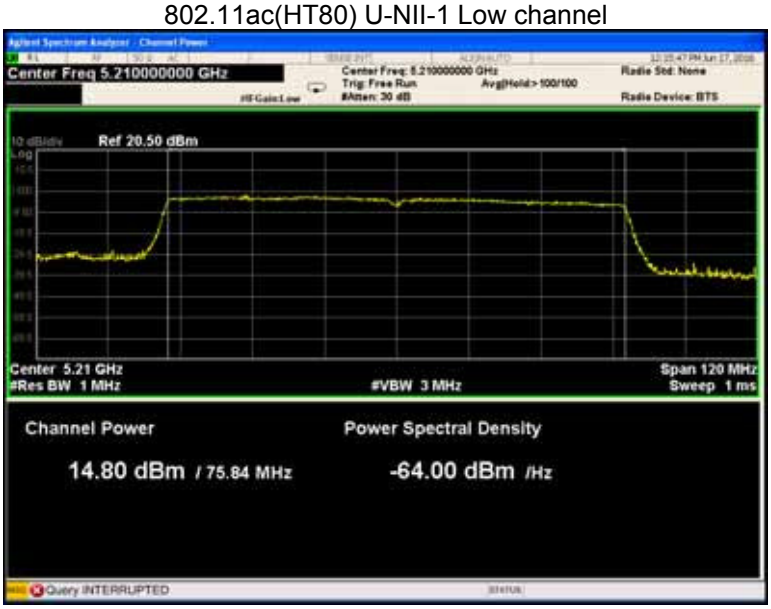
802.11ac(HT40) U-NII-1 Low channel



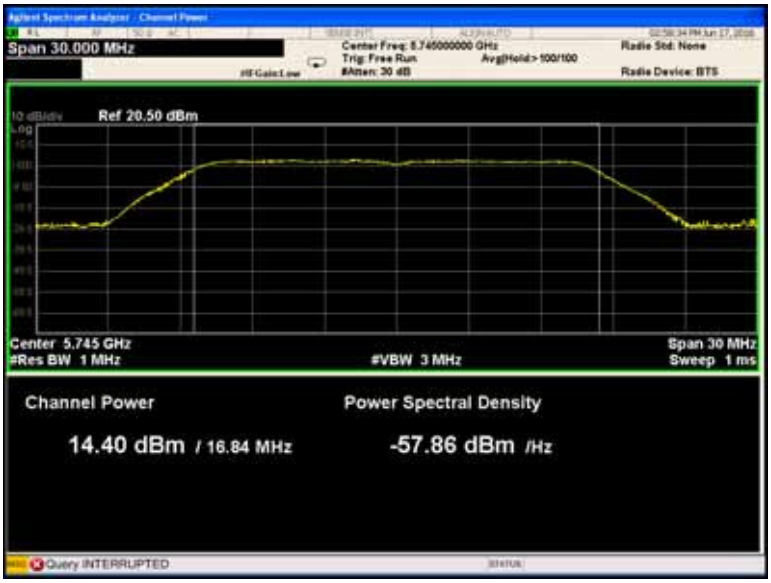
802.11n(HT40) U-NII-1 High channel



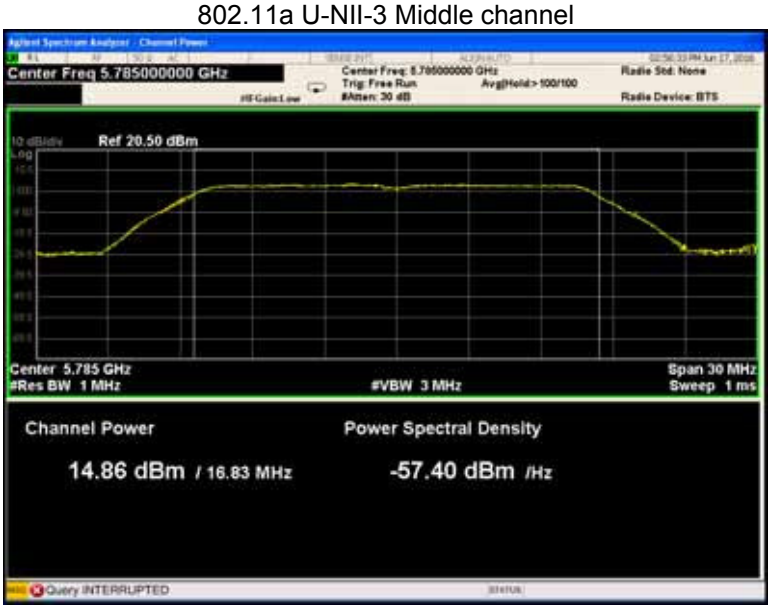
802.11ac(HT80) U-NII-1 Low channel



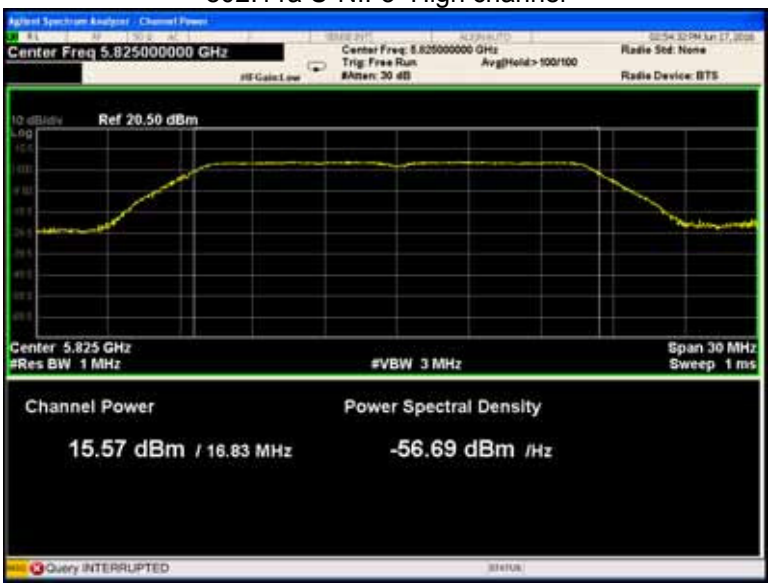
802.11a U-NII-3 Low channel



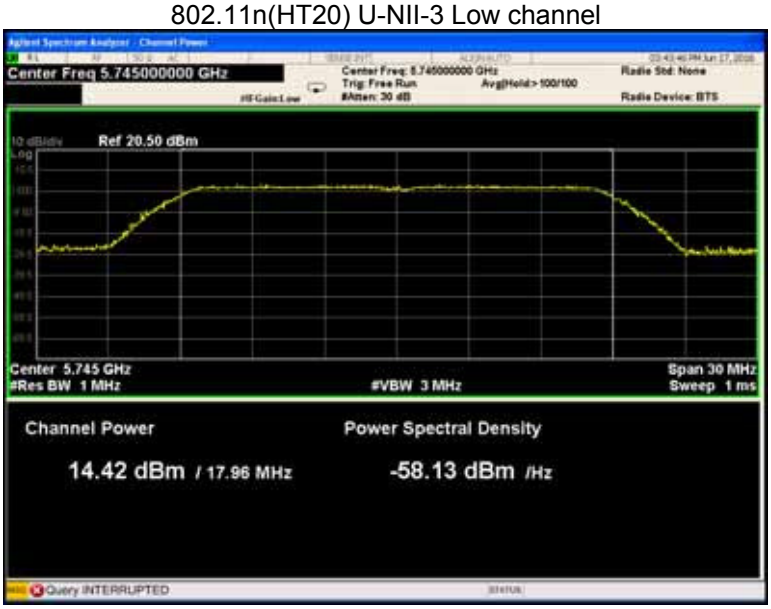
802.11a U-NII-3 Middle channel



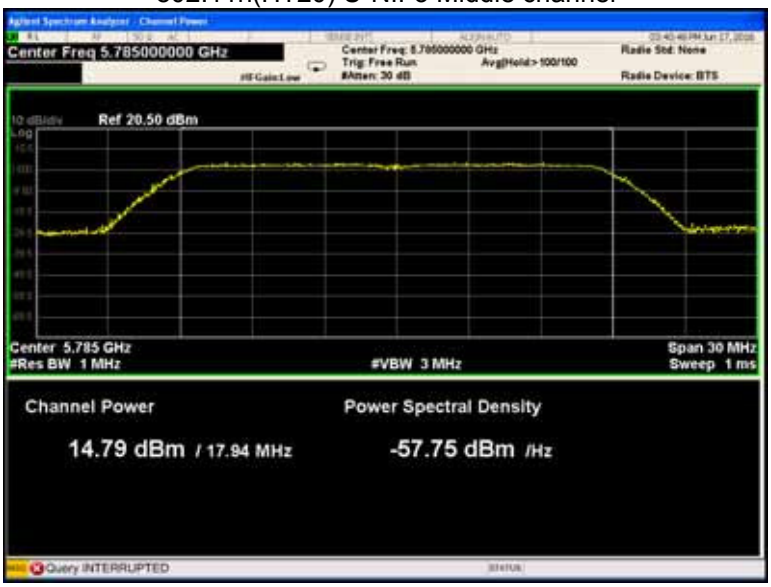
802.11a U-NII-3 High channel



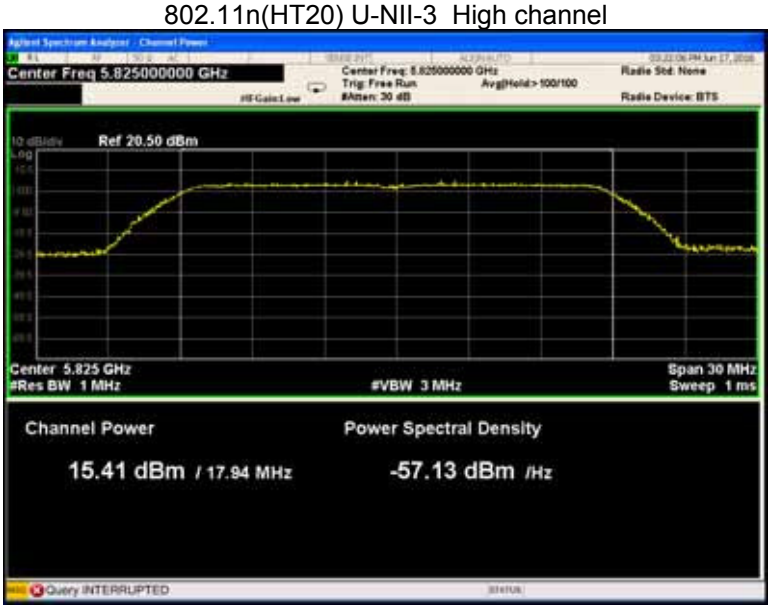
802.11n(HT20) U-NII-3 Low channel



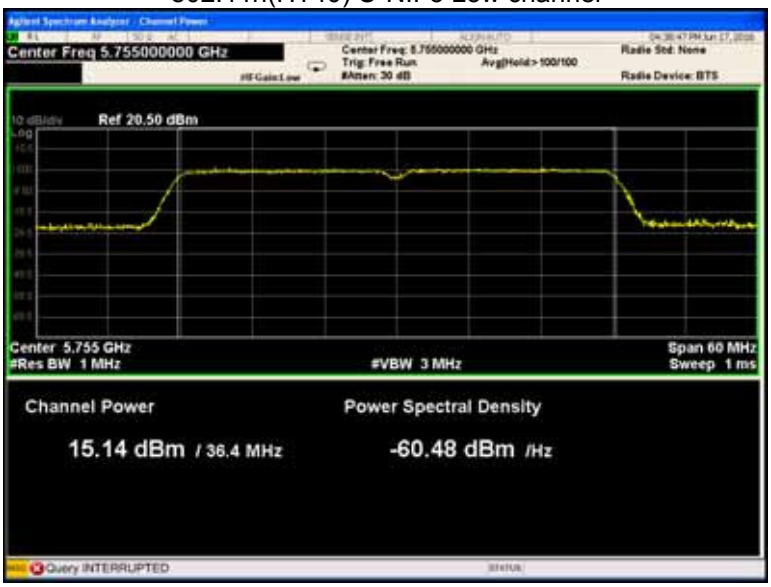
802.11n(HT20) U-NII-3 Middle channel



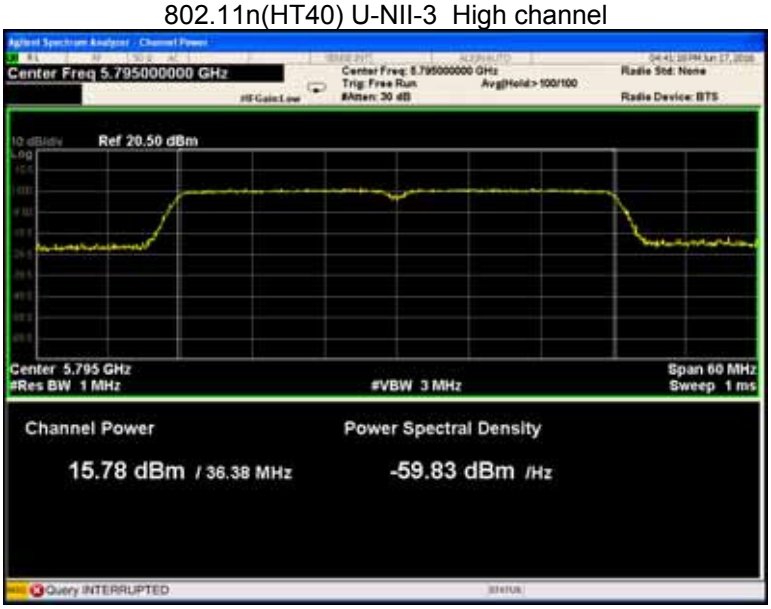
802.11n(HT20) U-NII-3 High channel



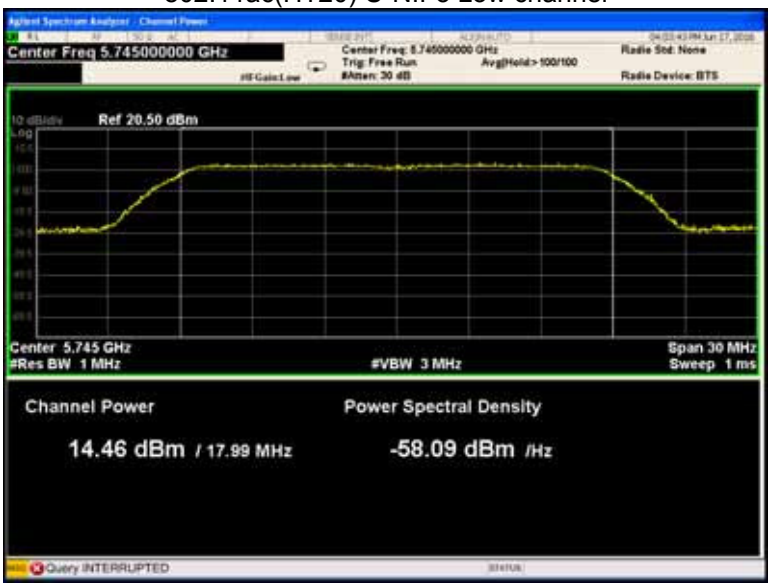
802.11n(HT40) U-NII-3 Low channel



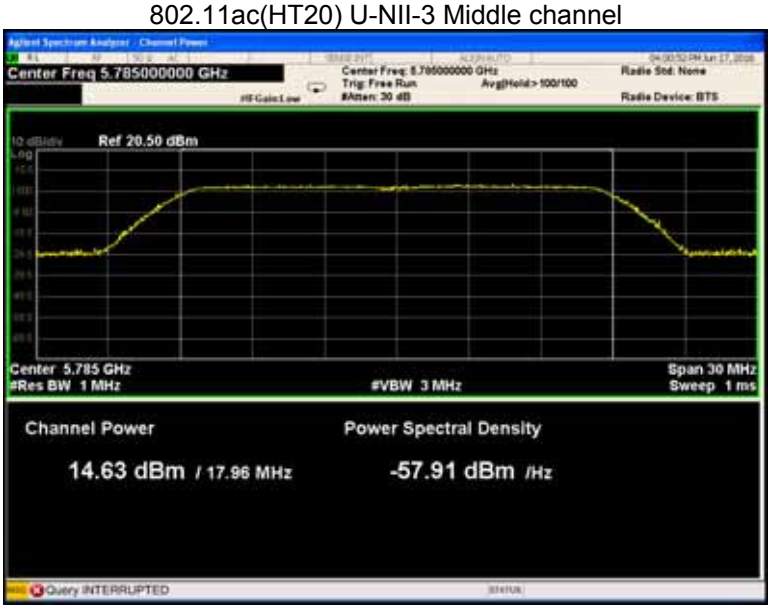
802.11n(HT40) U-NII-3 High channel



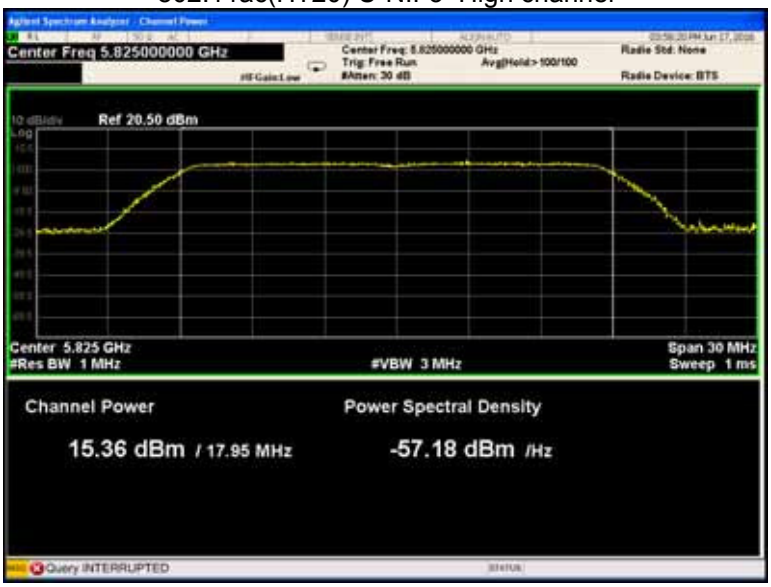
802.11ac(HT20) U-NII-3 Low channel



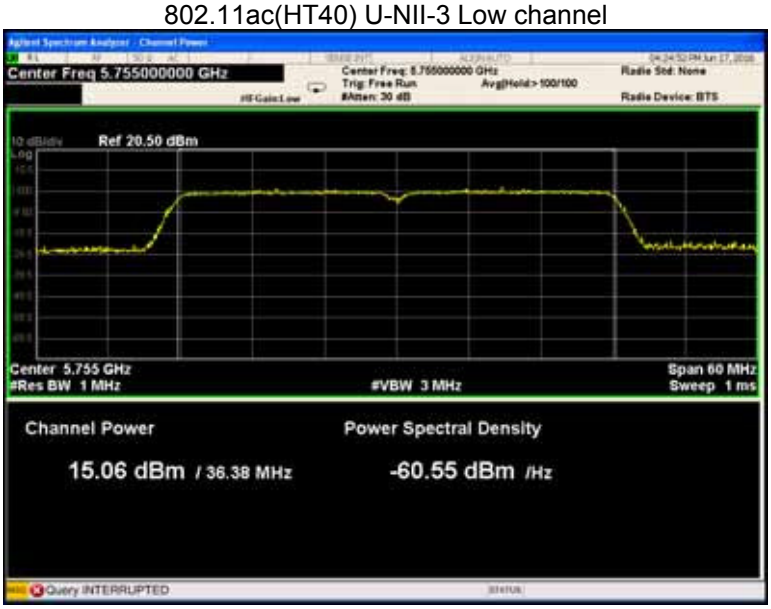
802.11ac(HT20) U-NII-3 Middle channel



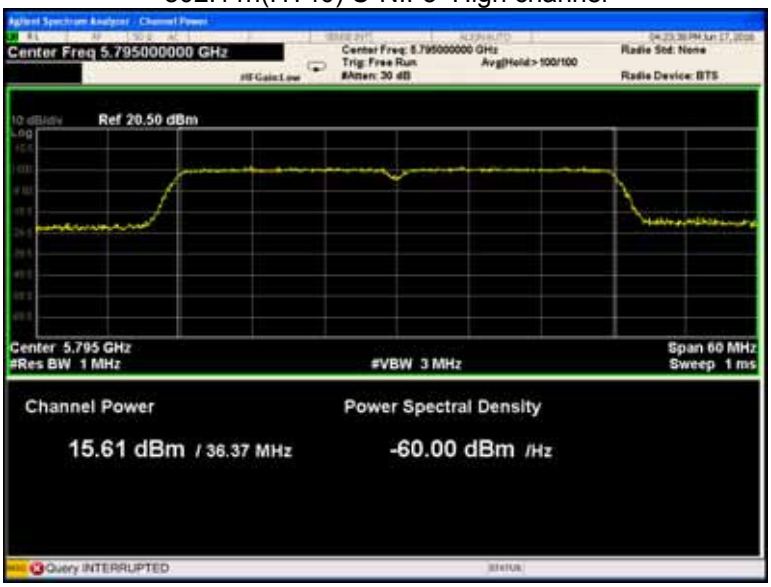
802.11ac(HT20) U-NII-3 High channel



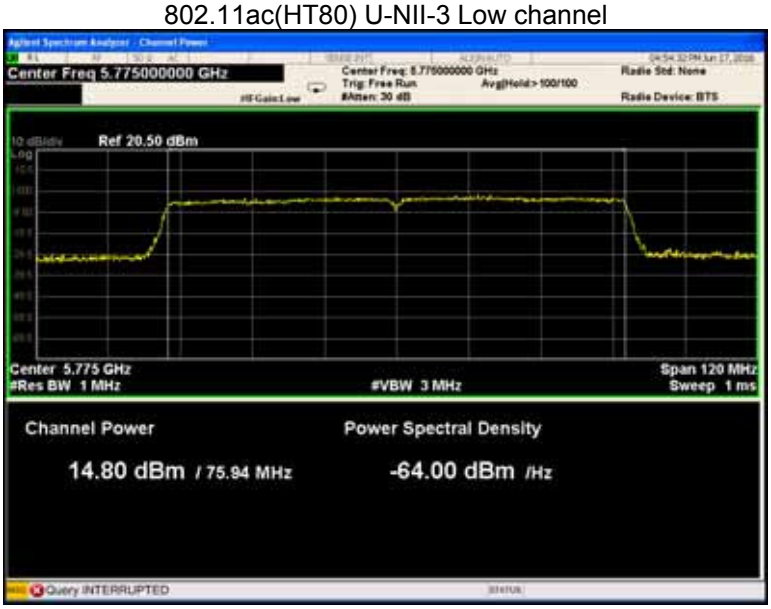
802.11ac(HT40) U-NII-3 Low channel



802.11n(HT40) U-NII-3 High channel



802.11ac(HT80) U-NII-3 Low channel



13 Power Spectral density

Test Requirement:	FCC CFR47 Part 15 Section 15.407(a) KDB662911 D01 Multiple Transmitter Output v02r01
Test Method:	KDB789033 D02 General UNII Test Procedures New Rules v01, Section F
Test Limit:	≤11.00dBm/MHz for Operation in the U-NII-1(5150MHz-5250MHz)of mobile device ≤30.00dBm/500KHz for Operation in the U-NII-3(5725MHz-5850MHz)of device
Test Result:	PASS

13.1 Test Procedure:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer:

U-NII-1

RBW = 1MHz, VBW

13.2 Test Result:

Band	Operation mode	CH	Power Spectral Density (dBm/MHz)		
			ANT0	ANT1	Total
U-NII-1	802.11a	Low	7.417	6.206	9.86
		Middle	7.337	5.907	9.69
		High	6.497	5.177	8.89
	802.11n(HT20)	Low	7.963	6.787	10.42
		Middle	7.062	6.237	9.68
		High	7.226	5.716	9.55
	802.11n(HT40)	Low	5.084	4.268	7.71
		Middle	/	/	/
		High	4.65	3.829	7.27
	802.11ac(HT20)	Low	7.503	6.929	10.24
		Middle	7.344	6.651	10.02
		High	6.554	6.129	9.36
	802.11ac(HT40)	Low	5.732	4.92	8.83
		Middle	/	/	/
		High	5.061	4.13	7.63
	802.11ac(HT80)	Low	1.92	1.405	4.68
		Middle	/	/	

Band	Operation mode	CH	Power Spectral Density (dBm/500KHz)		
			ANT0	ANT1	Total
U-NII-3	802.11a	Low	2.176	2.621	5.41
		Middle	0.415	0.75	3.59
		High	2.115	2.248	5.19
	802.11n(HT20)	Low	3.265	3.555	6.42
		Middle	2.305	2.606	5.47
		High	2.594	2.621	5.62
	802.11n(HT40)	Low	-2.51	-2.172	0.67
		Middle	/	/	/
		High	-2.769	-2.307	0.48
	802.11ac(HT20)	Low	2.529	2.486	5.52
		Middle	1.208	1.486	4.36
		High	1.833	1.854	4.85
	802.11ac(HT40)	Low	-1.822	-1.886	8.83
		Middle	/	/	/
		High	-2.171	-2.053	0.90
	802.11ac(HT80)	Low	-3.635	-3.605	-0.61
		Middle	/	/	

Test result plots shown as follows:

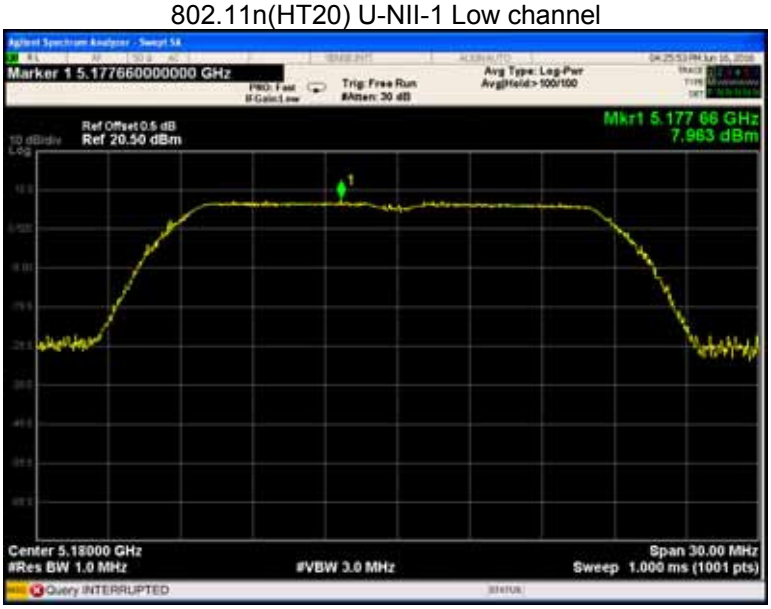
ANT0

802.11a U-NII-1 Low channel

802.11a U-NII-1 Middle channel

802.11a U-NII-1 High channel

802.11n(HT20) U-NII-1 Low channel

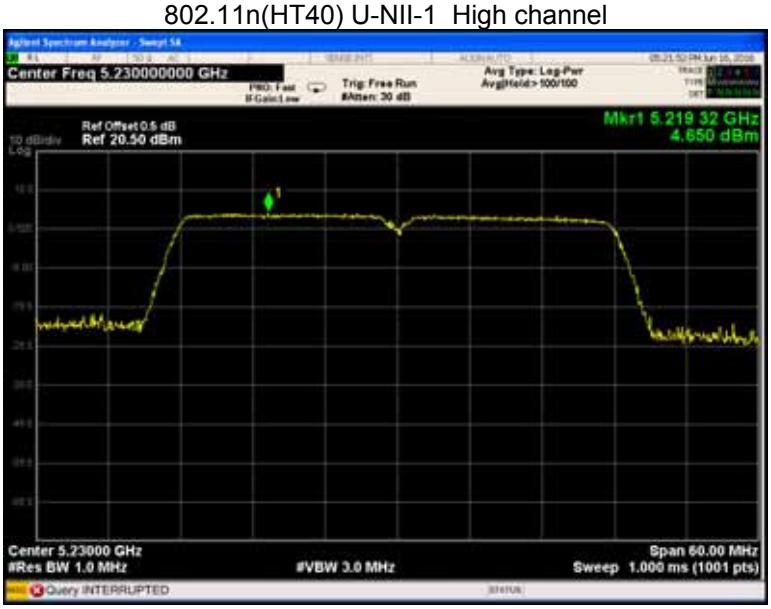


802.11n(HT20) U-NII-1 Middle channel

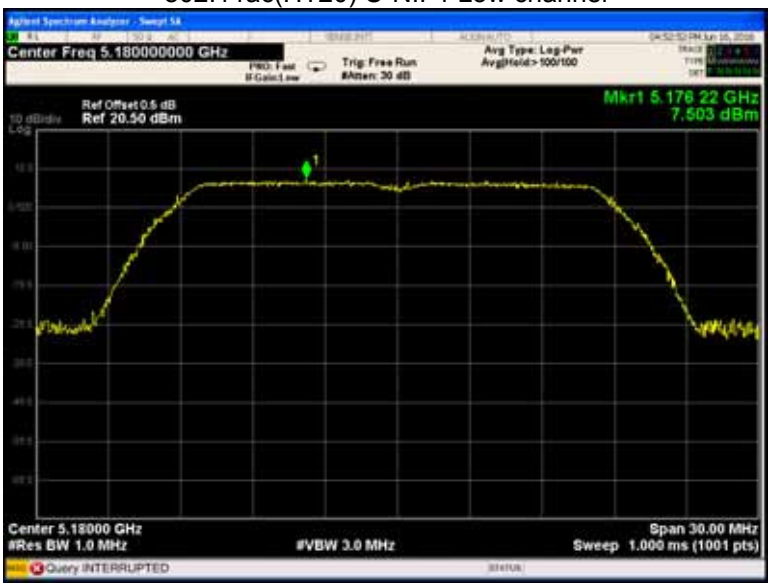
802.11n(HT20) U-NII-1 High channel

802.11n(HT40) U-NII-1 Low channel

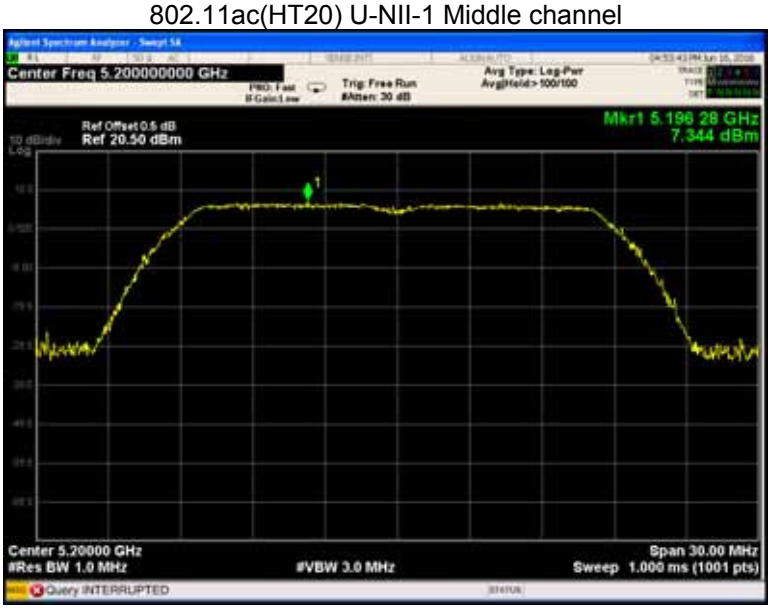
802.11n(HT40) U-NII-1 High channel



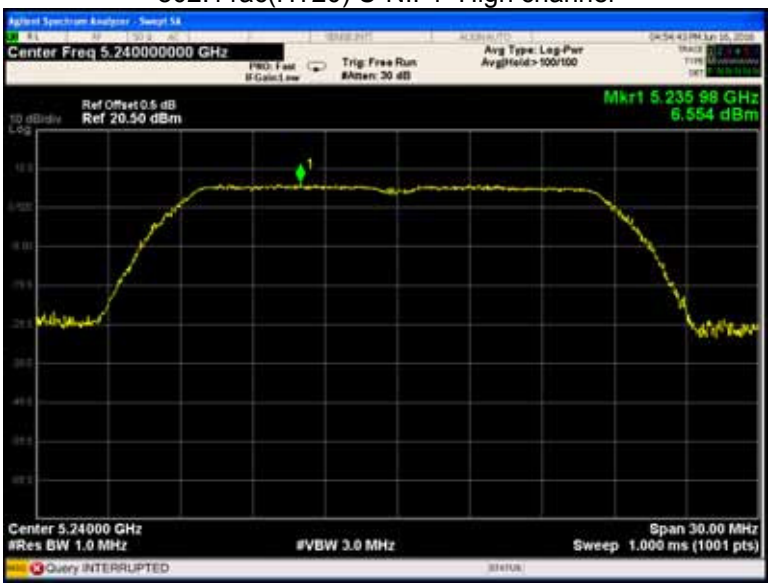
802.11ac(HT20) U-NII-1 Low channel



802.11ac(HT20) U-NII-1 Middle channel



802.11ac(HT20) U-NII-1 High channel



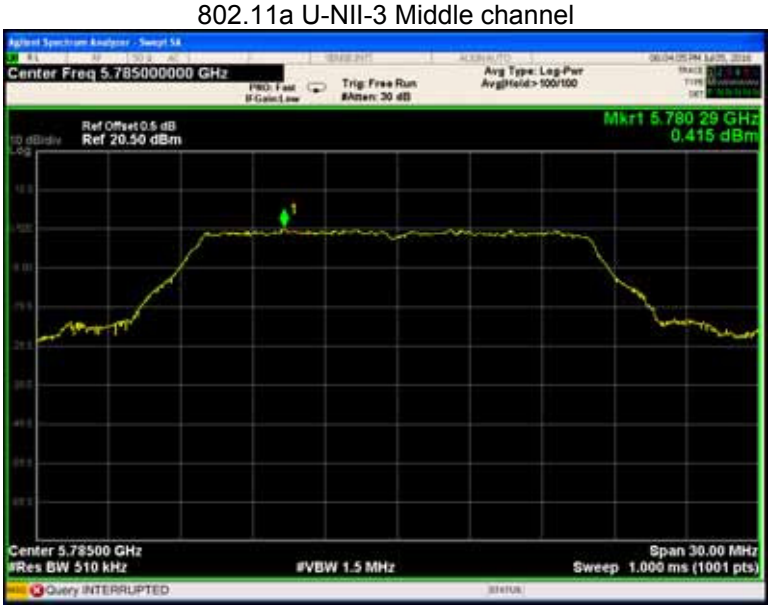
802.11ac(HT40) U-NII-1 Low channel

802.11n(HT40) U-NII-1 High channel

802.11ac(HT80) U-NII-1 Low channel

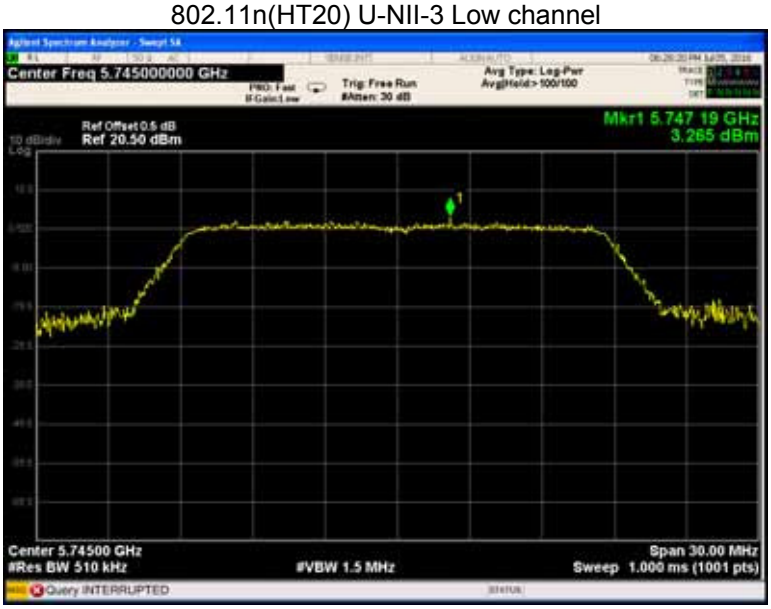
802.11a U-NII-3 Low channel

802.11a U-NII-3 Middle channel

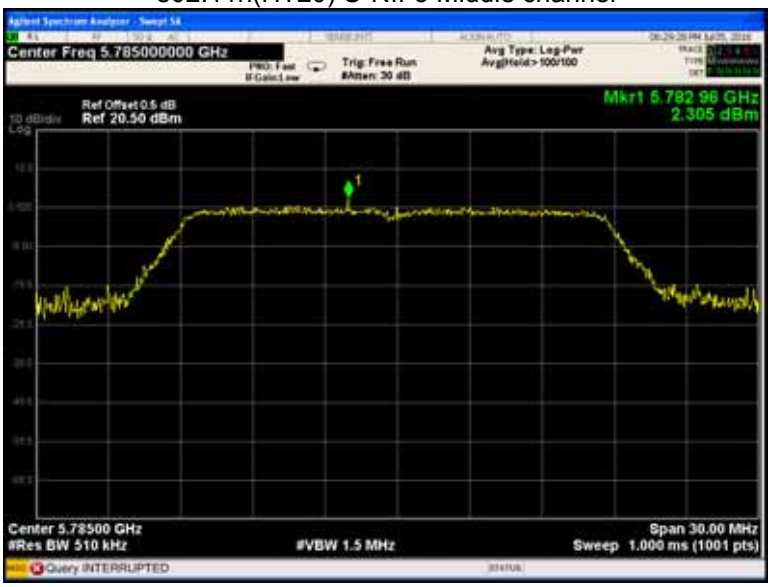


802.11a U-NII-3 High channel

802.11n(HT20) U-NII-3 Low channel



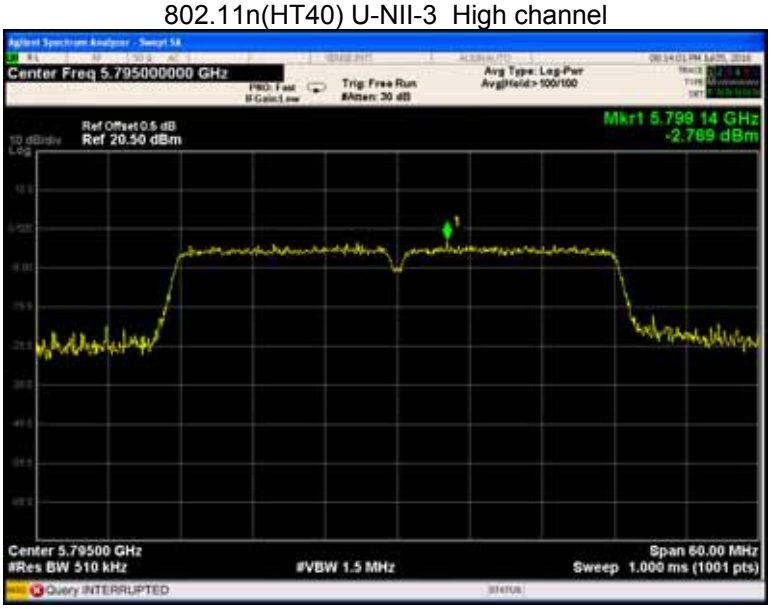
802.11n(HT20) U-NII-3 Middle channel



802.11n(HT20) U-NII-3 High channel

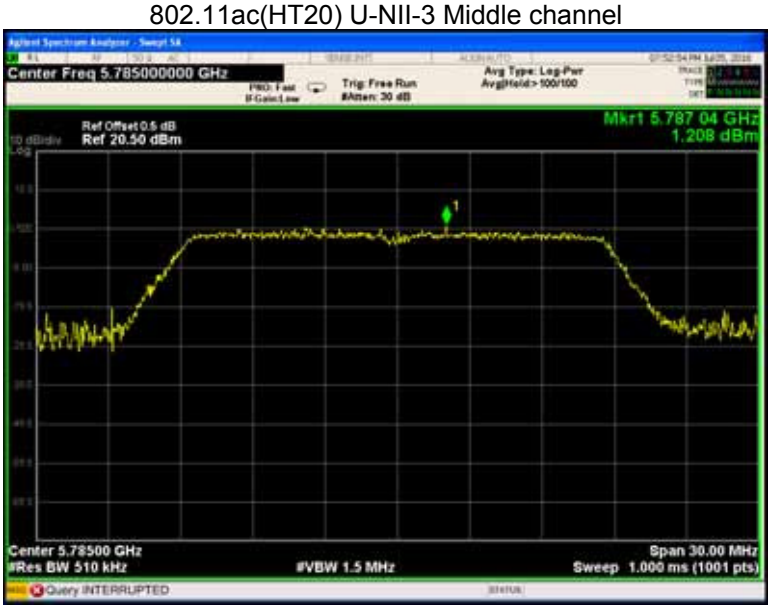
802.11n(HT40) U-NII-3 Low channel

802.11n(HT40) U-NII-3 High channel



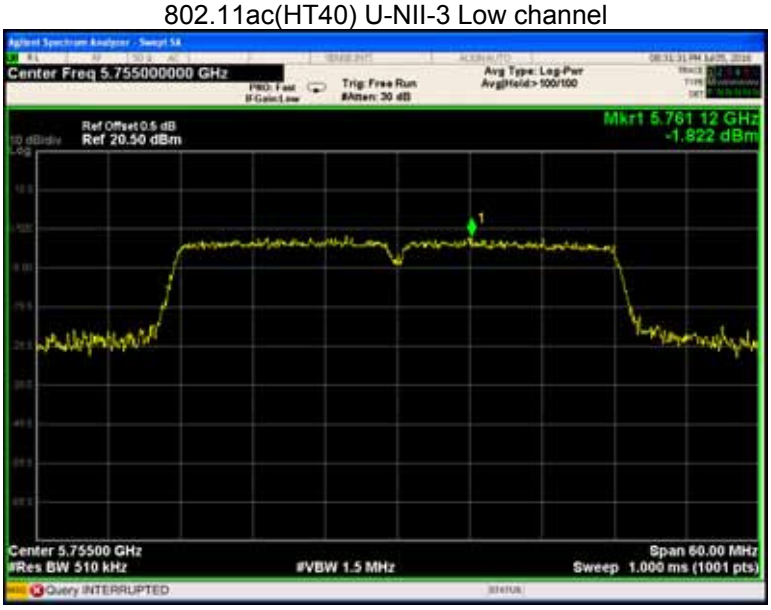
802.11ac(HT20) U-NII-3 Low channel

802.11ac(HT20) U-NII-3 Middle channel



802.11ac(HT20) U-NII-3 High channel

802.11ac(HT40) U-NII-3 Low channel



802.11n(HT40) U-NII-3 High channel

802.11ac(HT80) U-NII-3 Low channel

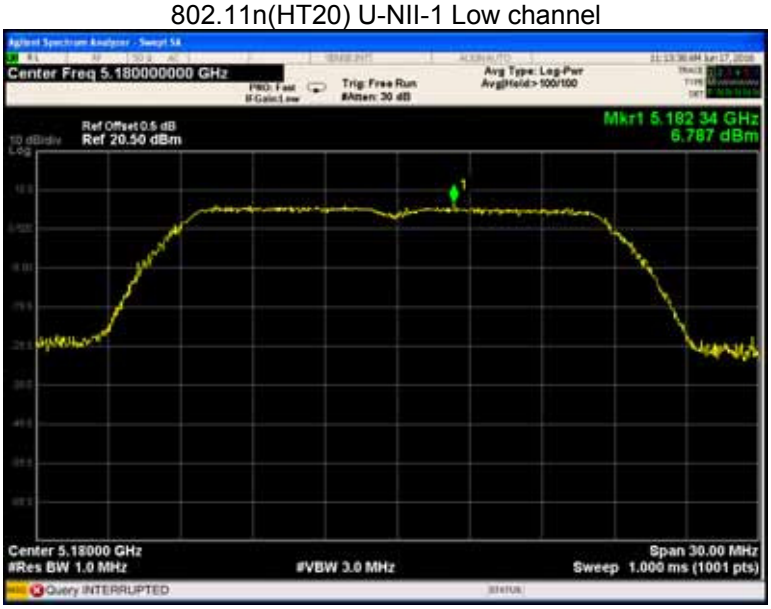
ANT 1

802.11a U-NII-1 Low channel

802.11a U-NII-1 Middle channel

802.11a U-NII-1 High channel

802.11n(HT20) U-NII-1 Low channel

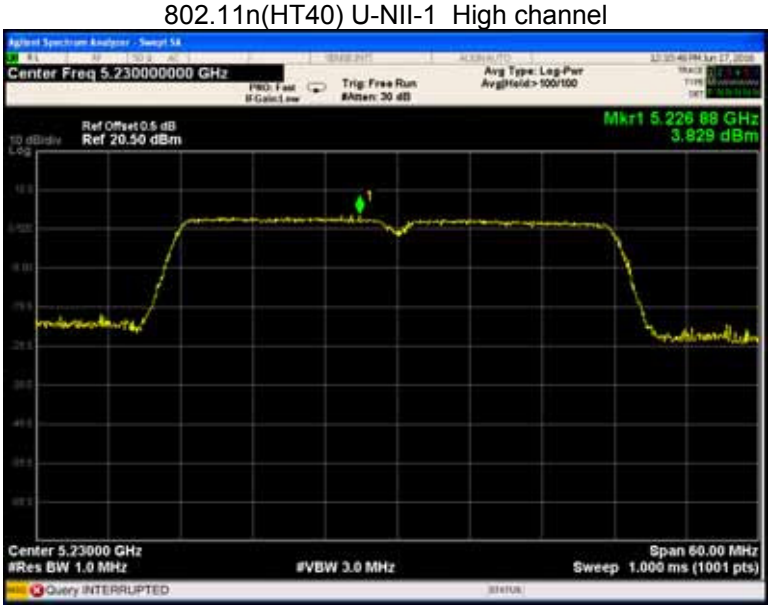


802.11n(HT20) U-NII-1 Middle channel

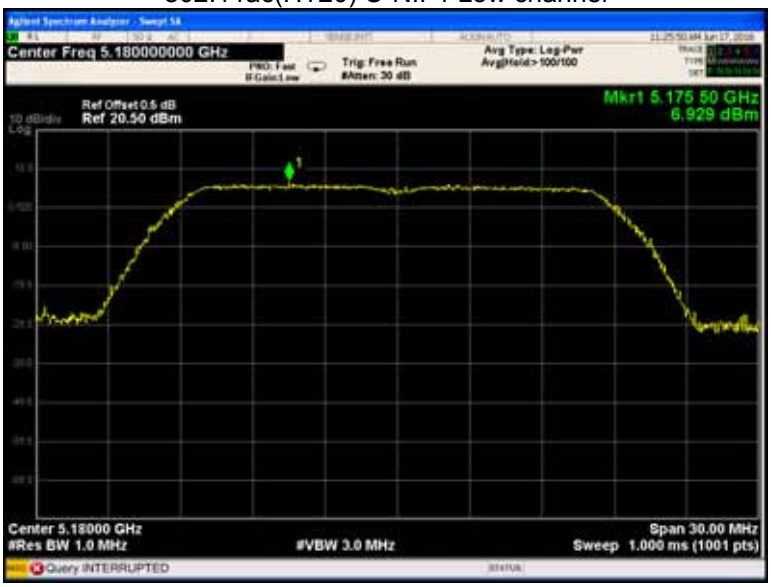
802.11n(HT20) U-NII-1 High channel

802.11n(HT40) U-NII-1 Low channel

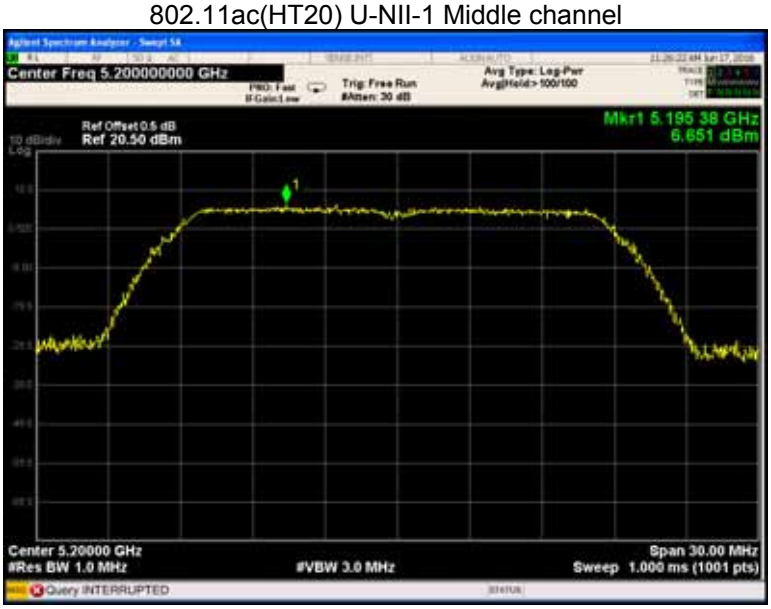
802.11n(HT40) U-NII-1 High channel



802.11ac(HT20) U-NII-1 Low channel

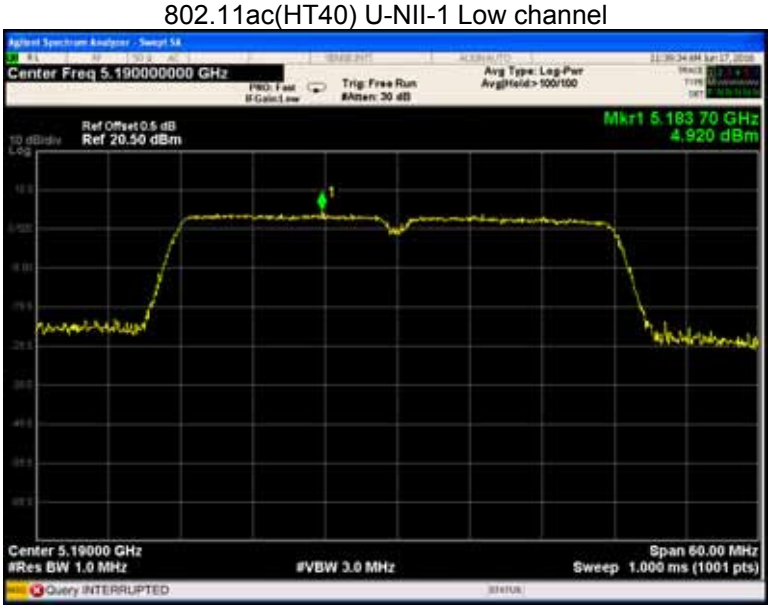


802.11ac(HT20) U-NII-1 Middle channel



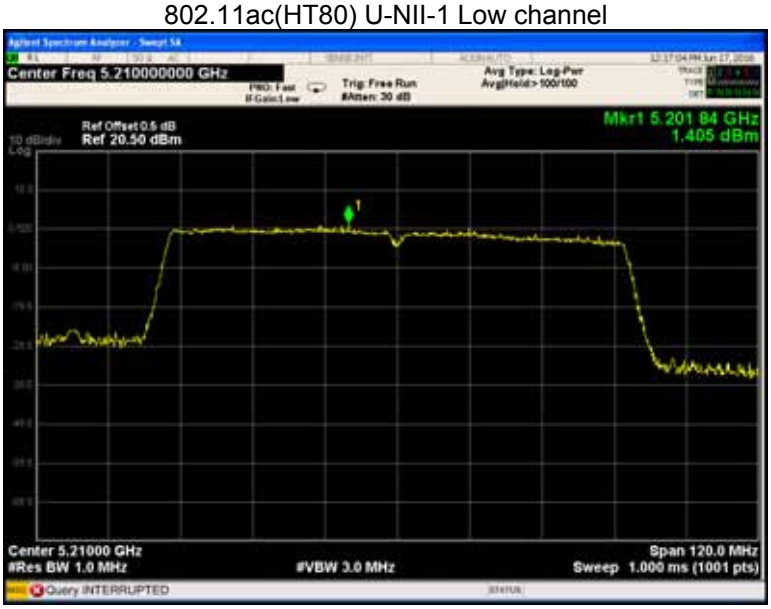
802.11ac(HT20) U-NII-1 High channel

802.11ac(HT40) U-NII-1 Low channel



802.11ac(HT40) U-NII-1 High channel

802.11ac(HT80) U-NII-1 Low channel

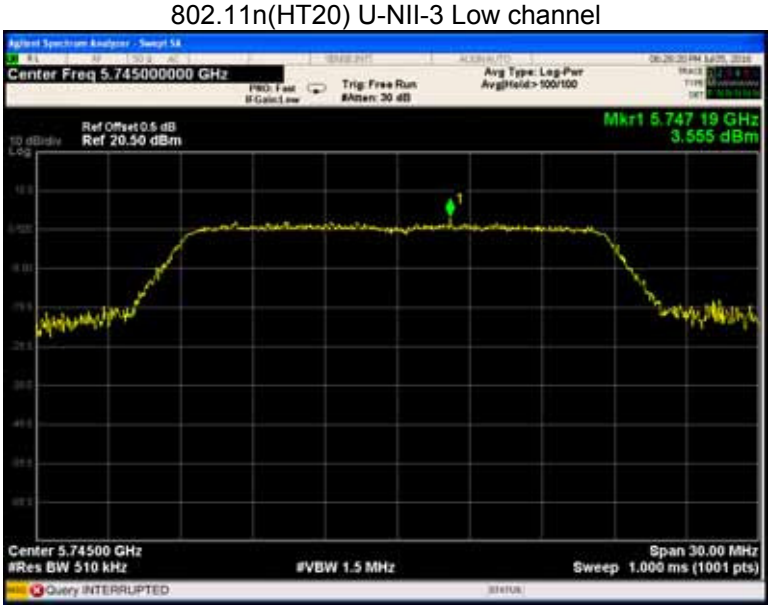


802.11a U-NII-3 Low channel

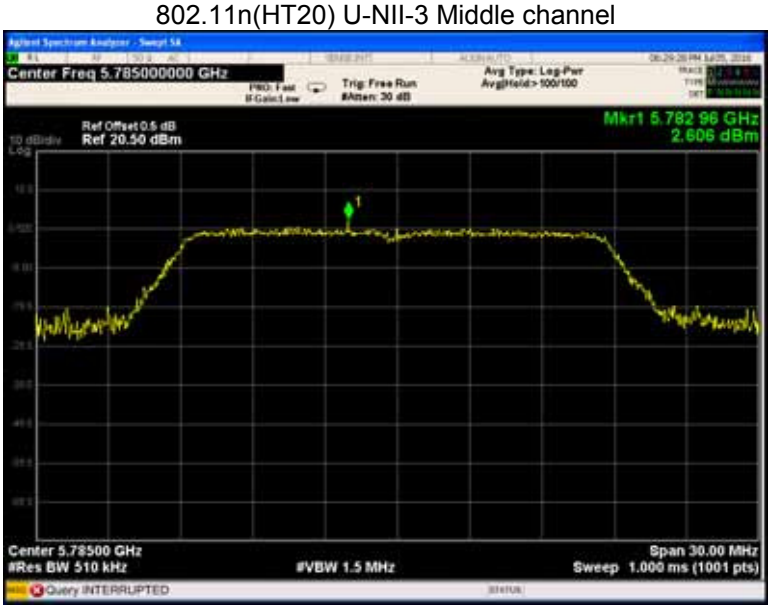
802.11a U-NII-3 Middle channel

802.11a U-NII-3 High channel

802.11n(HT20) U-NII-3 Low channel



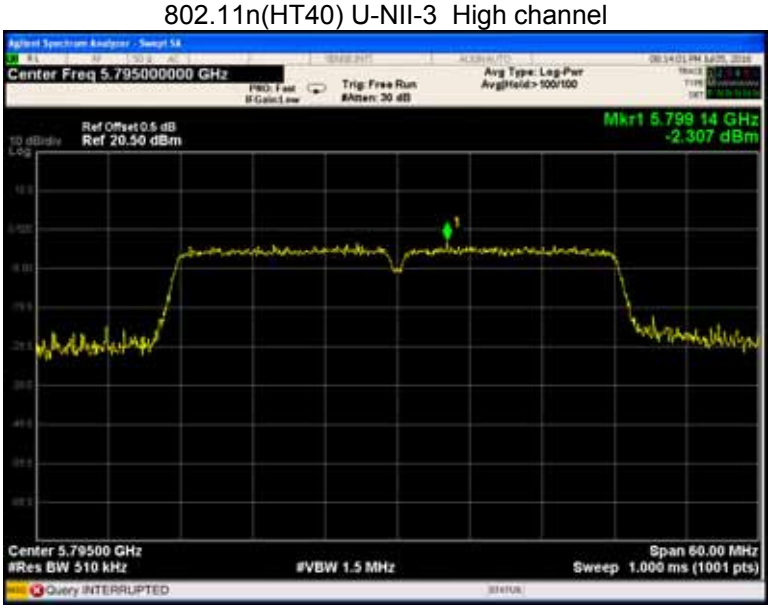
802.11n(HT20) U-NII-3 Middle channel



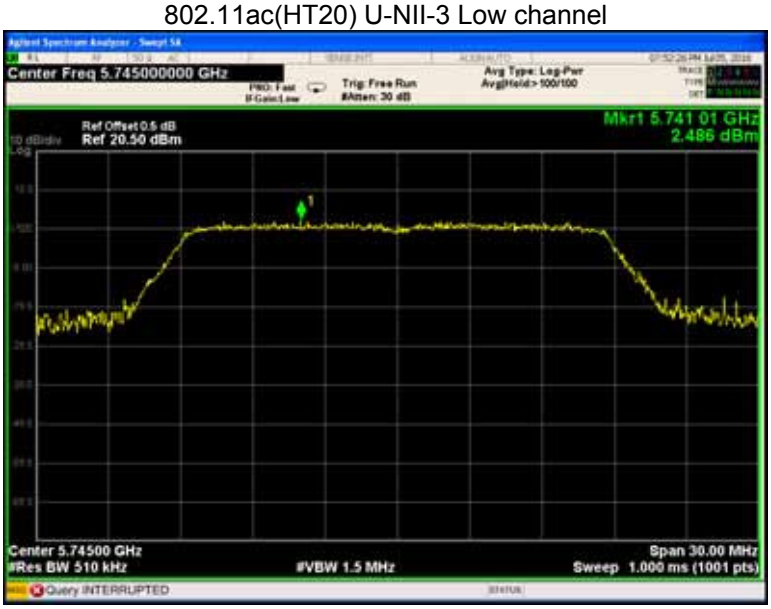
802.11n(HT20) U-NII-3 High channel

802.11n(HT40) U-NII-3 Low channel

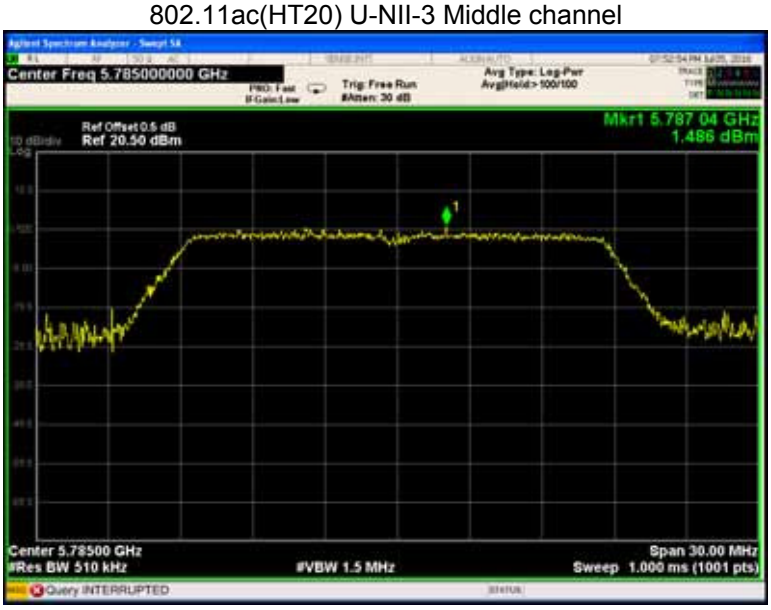
802.11n(HT40) U-NII-3 High channel



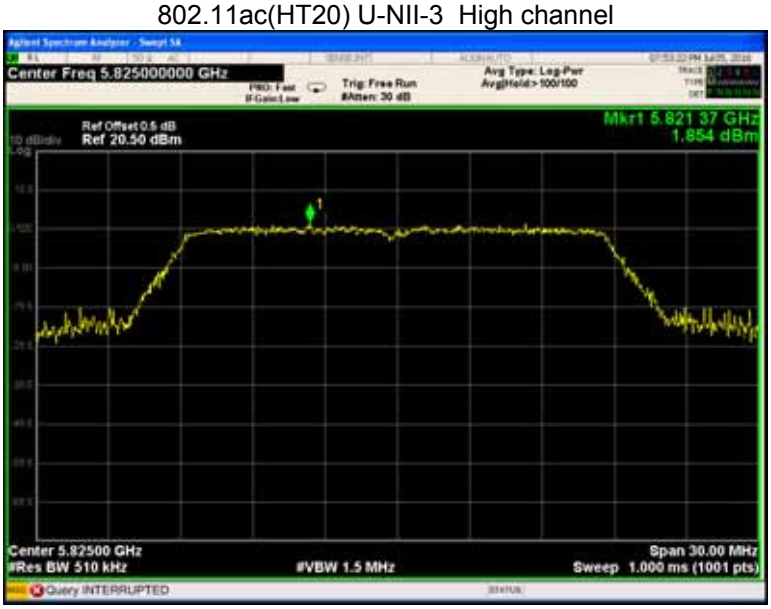
802.11ac(HT20) U-NII-3 Low channel



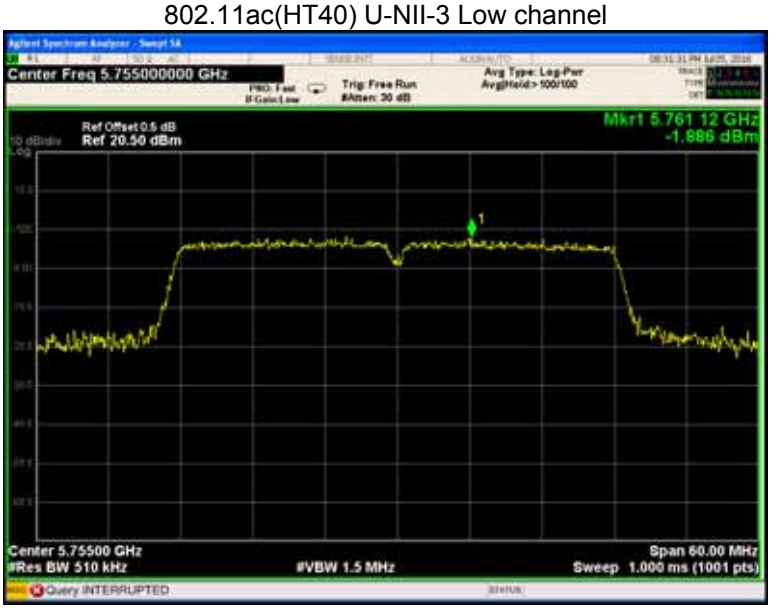
802.11ac(HT20) U-NII-3 Middle channel



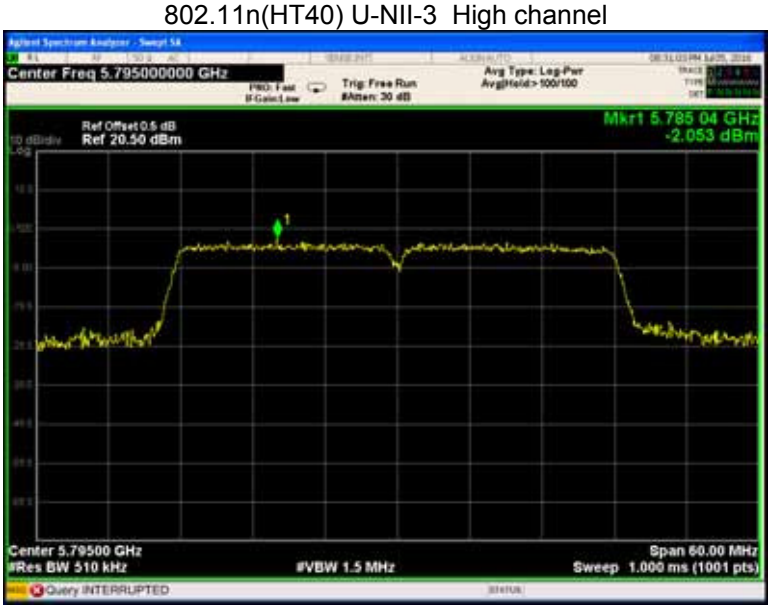
802.11ac(HT20) U-NII-3 High channel



802.11ac(HT40) U-NII-3 Low channel



802.11n(HT40) U-NII-3 High channel



802.11ac(HT80) U-NII-3 Low channel

14 Frequency Stability

Test Requirement:	FCC CFR47 Part 15 Section 15.407(g)
Test Method:	ANSI C63.10:2013
Test Limit:	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 users manual or 20ppm.
Test Result:	PASS

14.1 Test Procedure:

1. The transmitter output (antenna port) was connected to the spectrum analyzer. EUT have transmitted absence of unmodulation signal and fixed channelise. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 106 ppm and the limit is less than ±20ppm The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.

2. Extreme temperature rule is -15°C~ 45°C.

14.2 Test Result:

U-NII-1 Test Frequency:5180MHz
Temperature (

15 Antenna Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

This device uses of two antennas that uses a specified coupling to the intentional radiator. Antenna connectors complied with the requirement.

16 RF Exposure

Test Requirement: FCC Part 1.1307

Evaluation Method: FCC Part 2.1091

16.1 Requirements

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

16.2 The procedures / limit

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

16.3 MPE Calculation Method

E (V/m)